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6/23/06 ADDENDUM

* THE TxDOT STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT

STATE OF TEXAS — TODD P. CONSTANT — 88243 — LICENSED PROFESSIONAL ENGINEER

Todd P. Constant, P.E. 6/9/06

TODD P. CONSTANT — DATE

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

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CONT.	SECT.	JOB	
0451	01	032, ETC	

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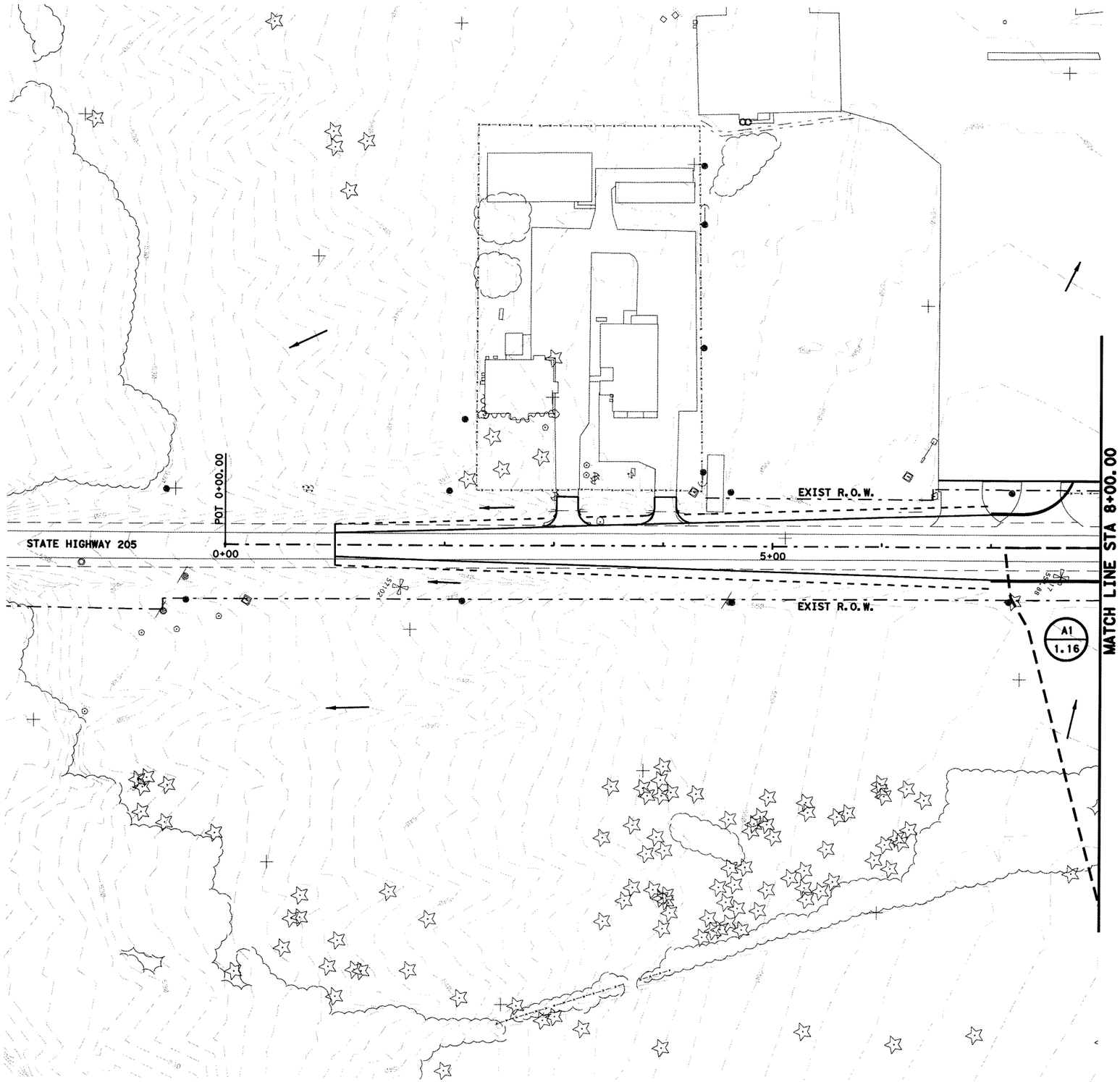

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SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

DRAINAGE AREA MAP

STA 0+00 TO 8+00

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TEXAS	DALLAS	ROCKWALL	370
CONT.	SECT.	JOB	
0451	01	032, ETC	

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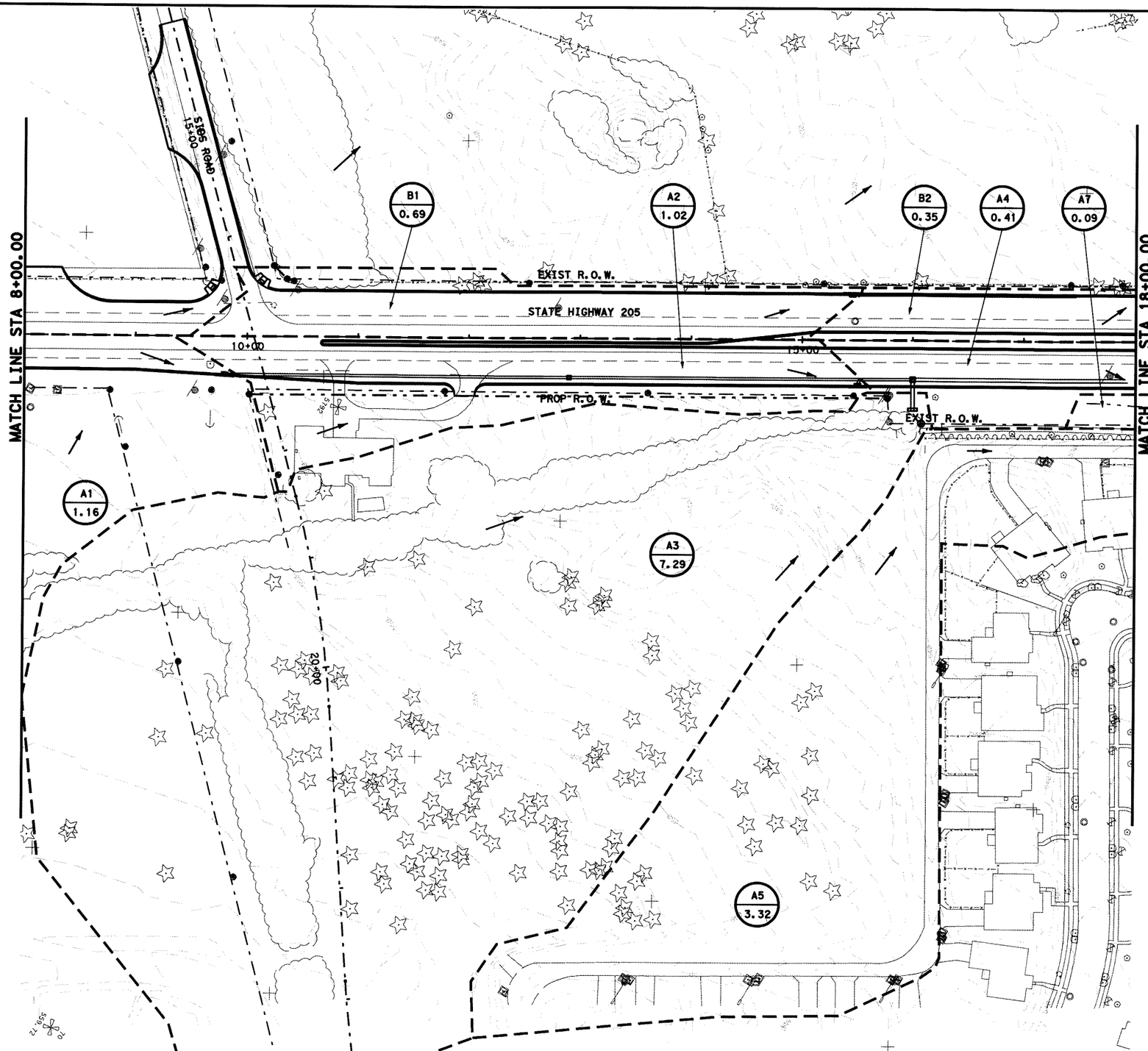

0 50 100
SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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SH 205

DRAINAGE AREA MAP

STA 8+00 TO 18+00

SHEET 2 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	371
CONT.	SECT.	JOB	
0451	01	032, ETC	

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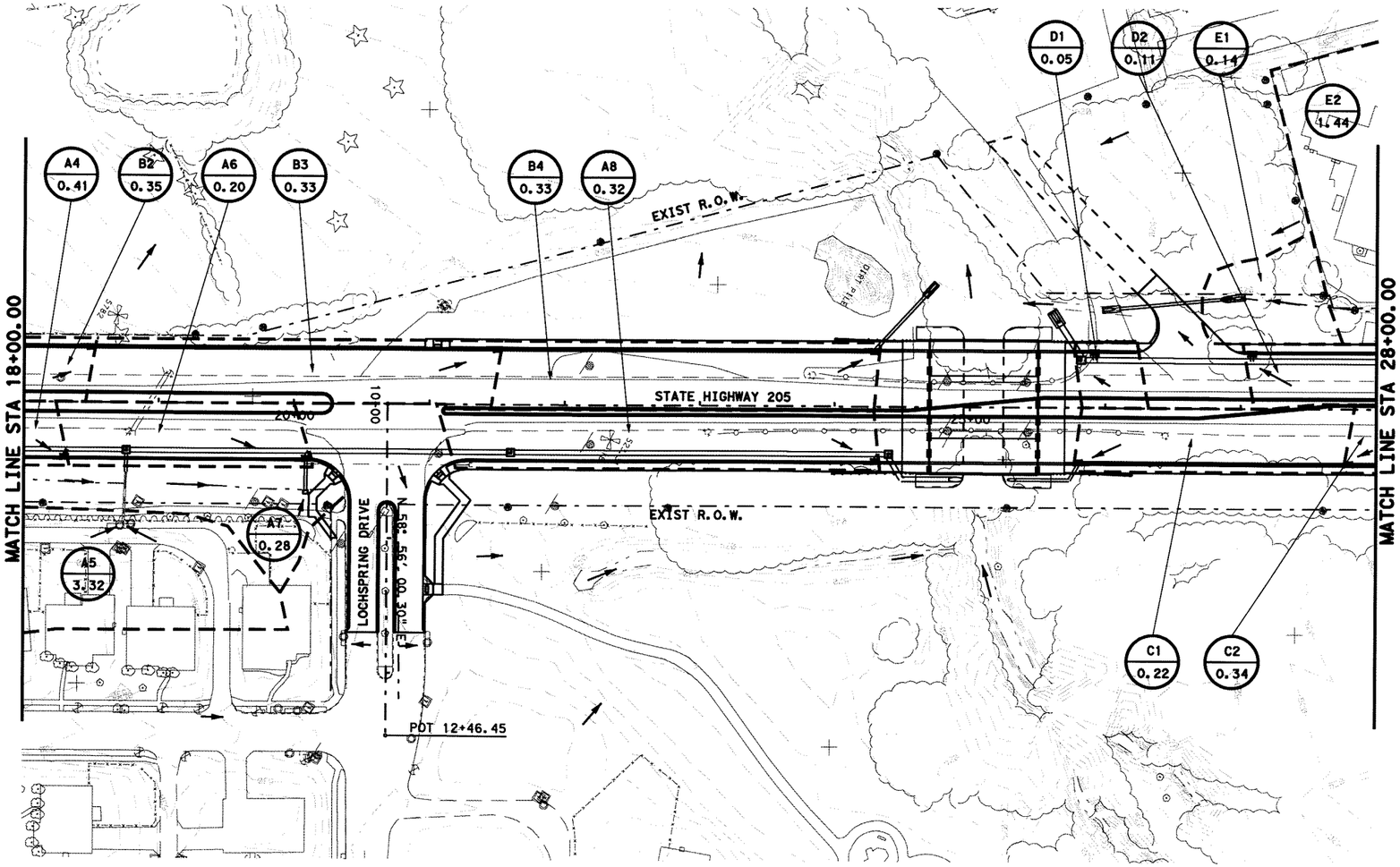

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 18+00 TO 28+00

SHEET 3 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	372
CONT.	SECT.	JOB	
0451	01	032, ETC	

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0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
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DRAINAGE AREA MAP

STA 28+00 TO 38+00

SHEET 4 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	373
CONT.	SECT.	JOB	
0451	01	032, ETC	

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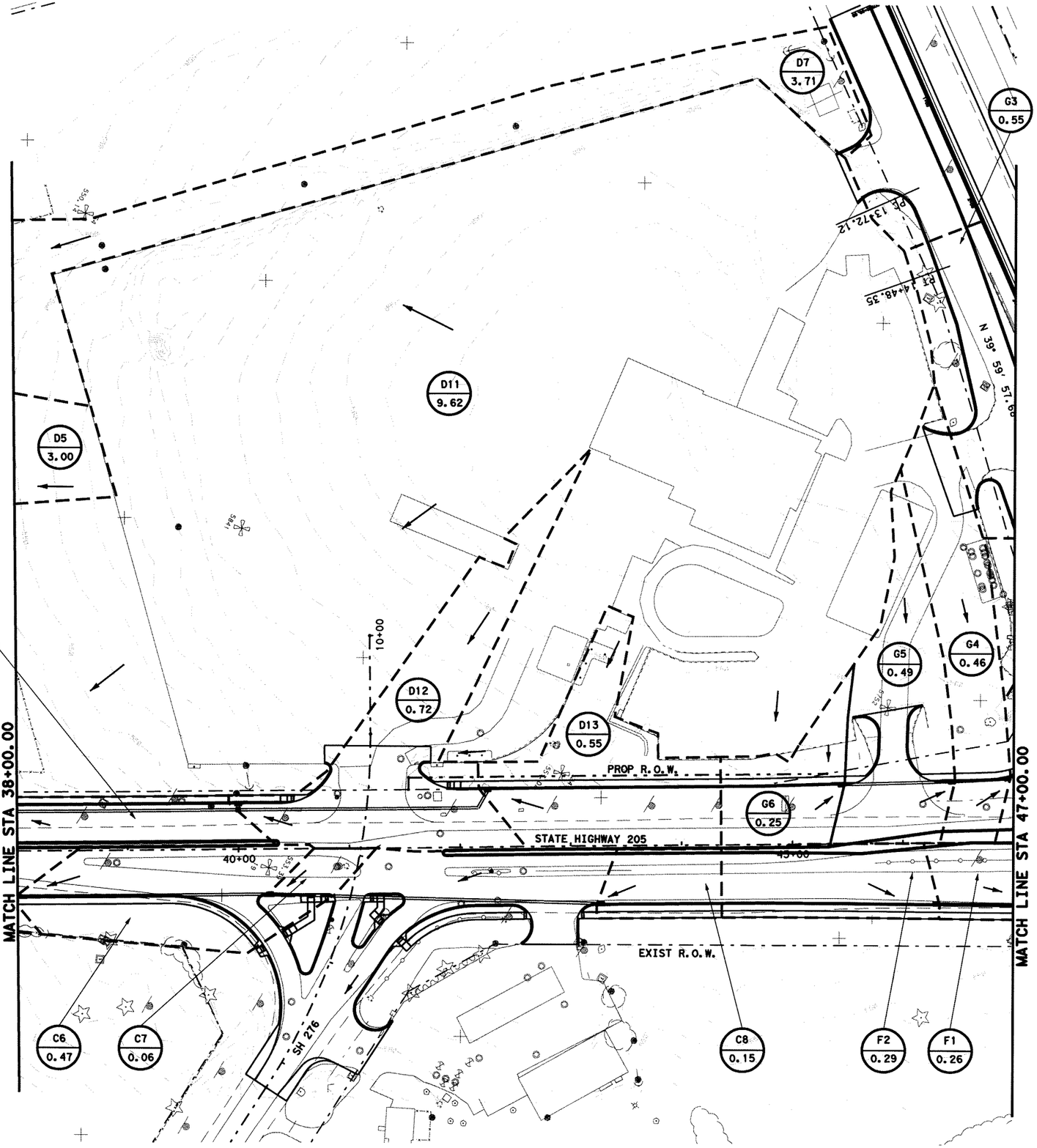

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 38+00 TO 47+00

SHEET 5 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	374
CONT.	SECT.	JOB	
0451	01	032, ETC	

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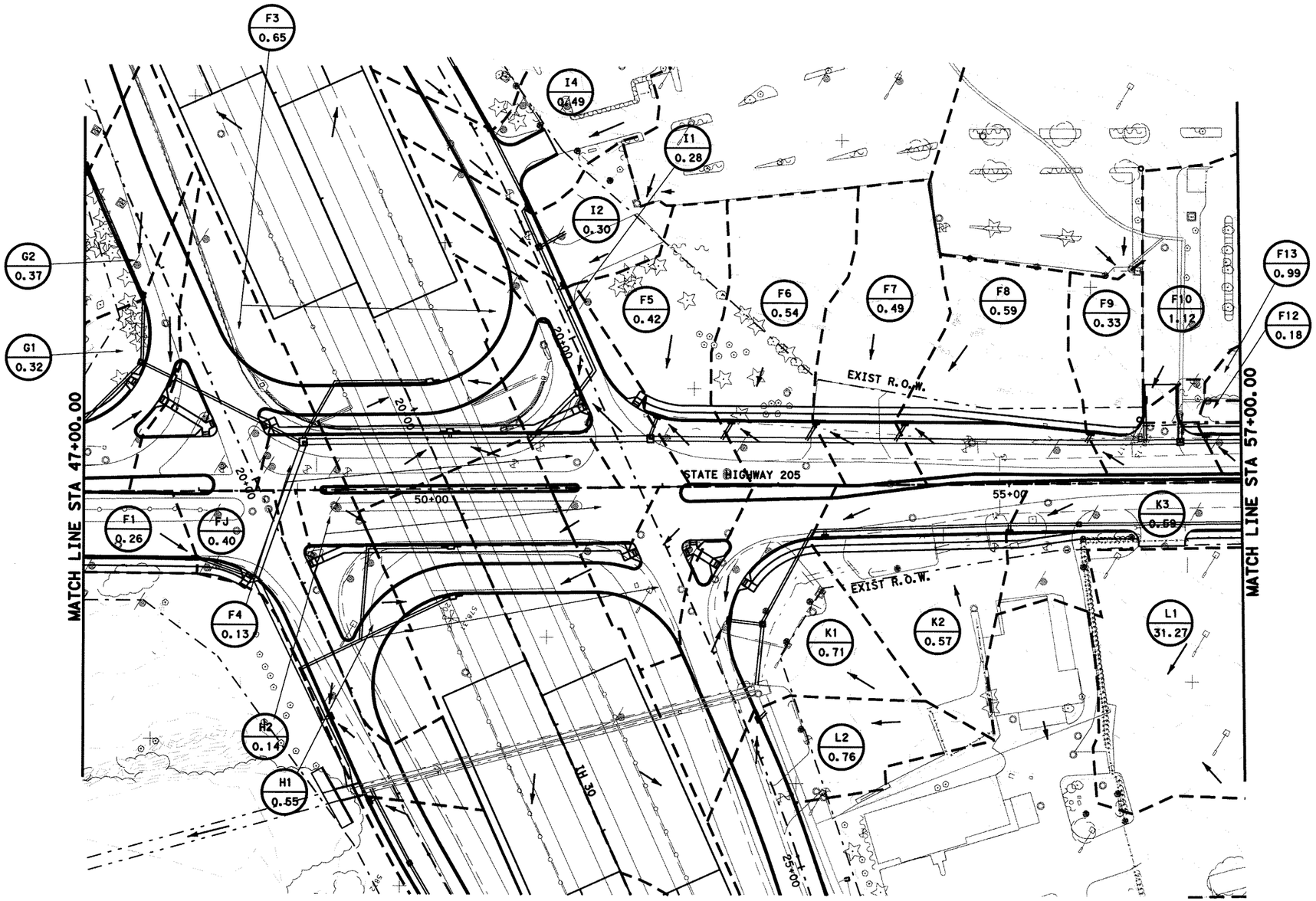

0 50 100
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LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/31/2006

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DRAINAGE AREA MAP

STA 47+00 TO 57+00

SHEET 6 OF 18

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	375
CONT.	SECT.	JOB	
0451	01	032, ETC	

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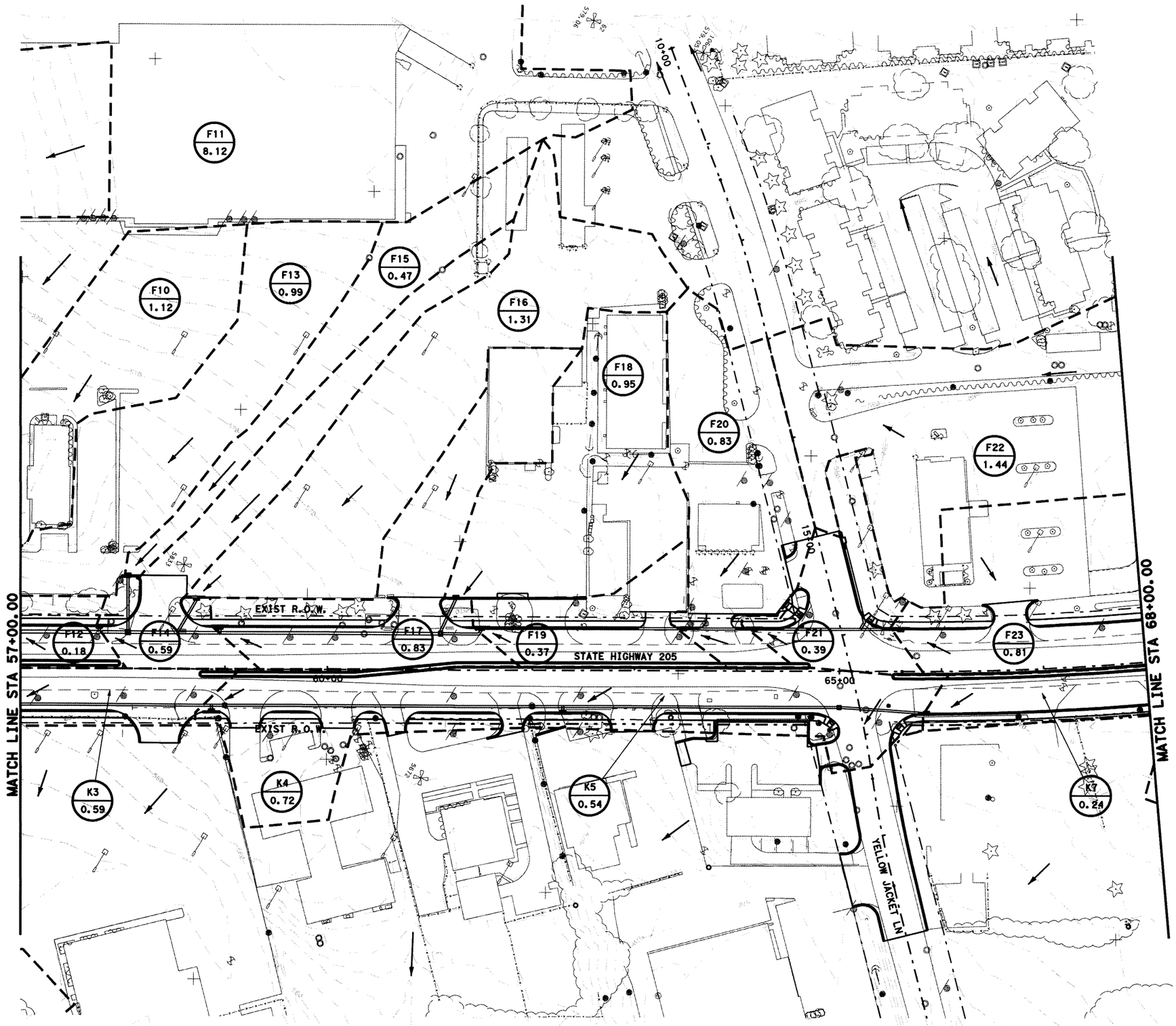

0 50 100
SCALE IN FEET

LEGEND:

XXX — DRAINAGE AREA NUMBER
XXX — DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 57+00 TO 68+00

SHEET 7 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	376
CONT.	SECT.	JOB	
0451	01	032, ETC	

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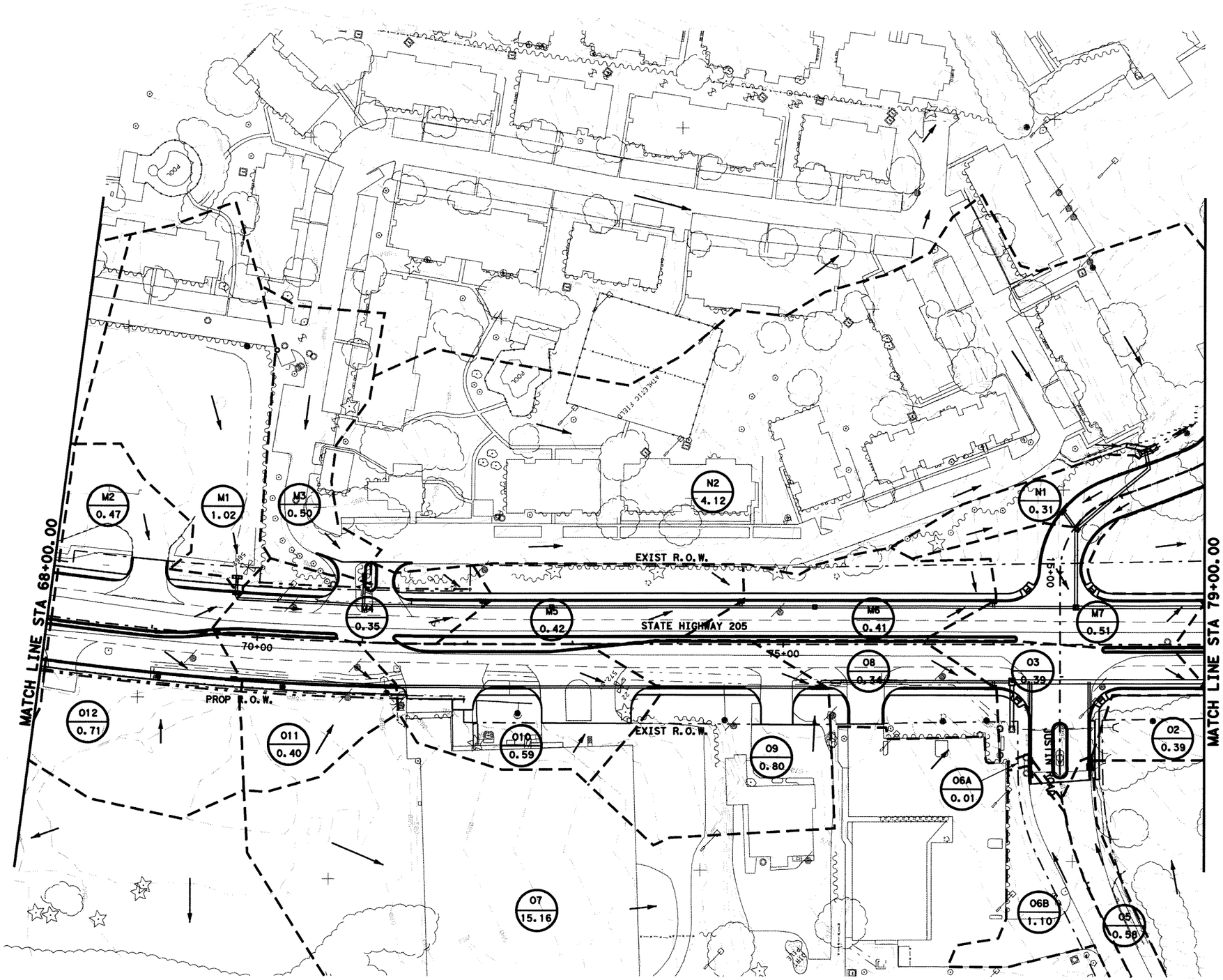

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 68+00 TO 79+00

SHEET 8 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	377
CONT.	SECT.	JOB	
0451	01	032, ETC	

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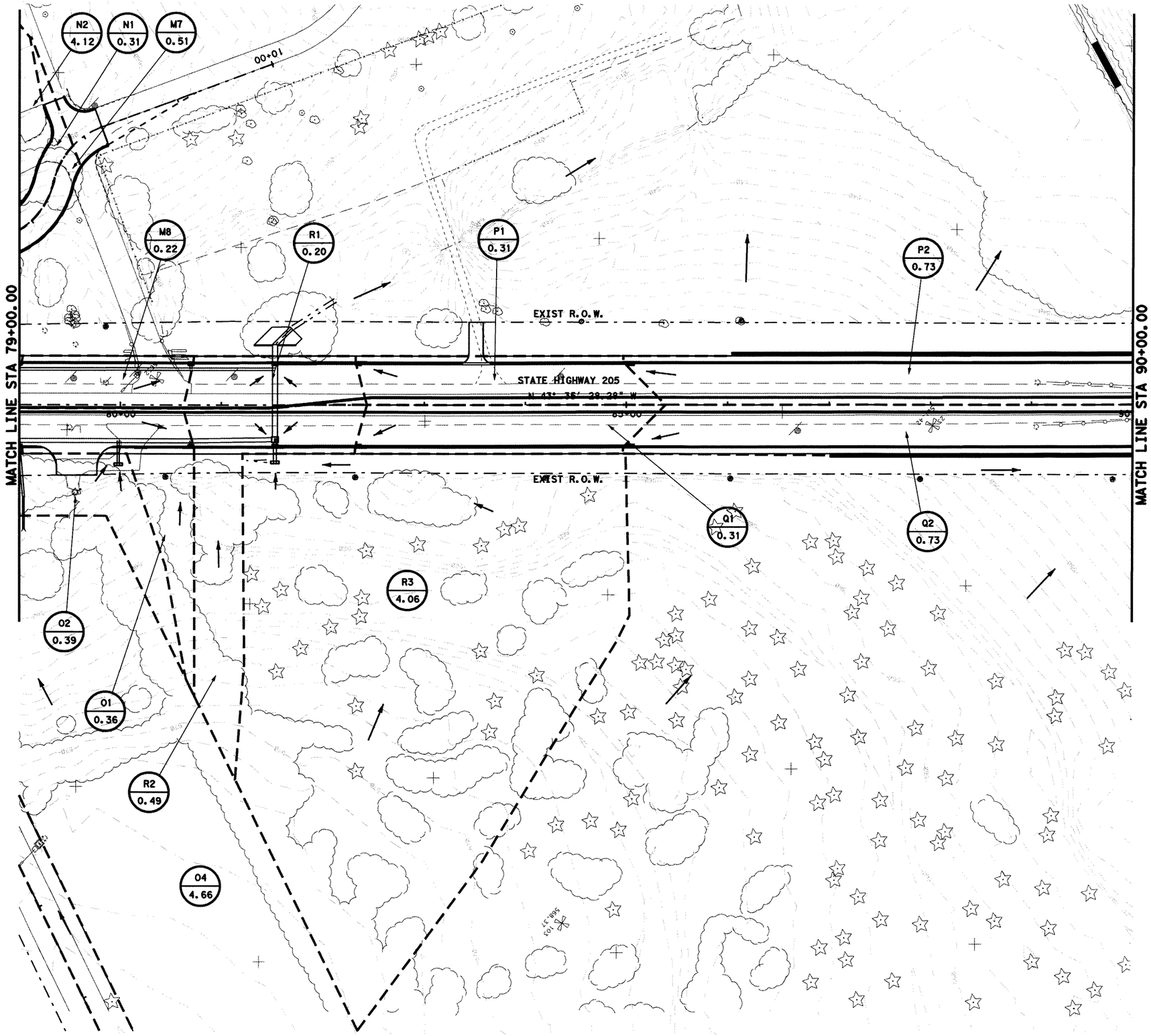

0 50 100
SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 79+00 TO 90+00

SHEET 9 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	378
CONT.	SECT.	JOB	
0451	01	032, ETC	

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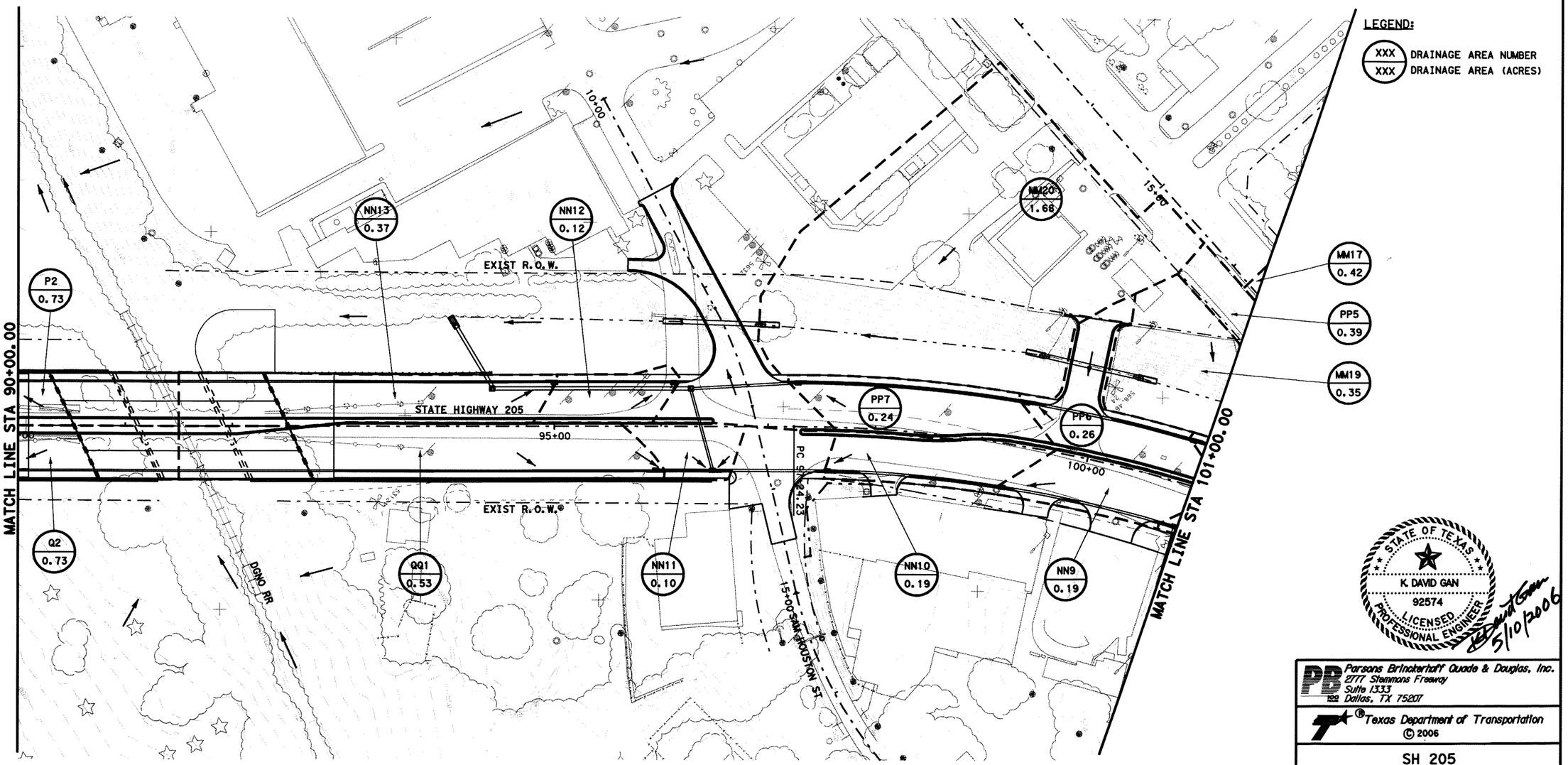

PB 122 Parsons Brinckerhoff Quade & Douglas, Inc.
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STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/10/2006

SH 205

DRAINAGE AREA MAP

STA 90+00 TO 101+00

SHEET 10 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	379
CONT.	SECT.	JOB	
0451	01	032, ETC	

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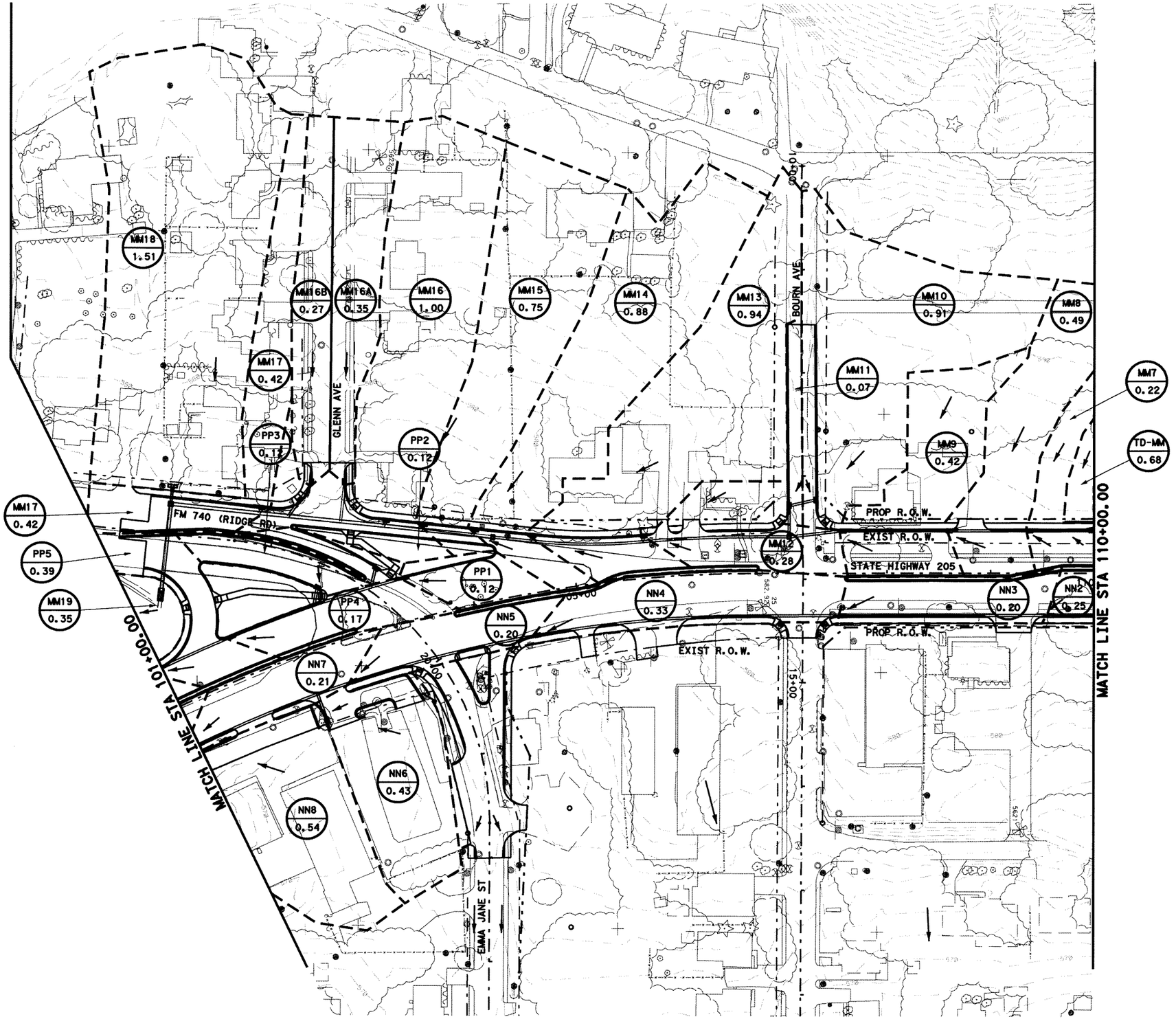

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 101+00 TO 110+00

SHEET 11 OF 18

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	380
CONT.	SECT.	JOB	
0451	01	032, ETC	

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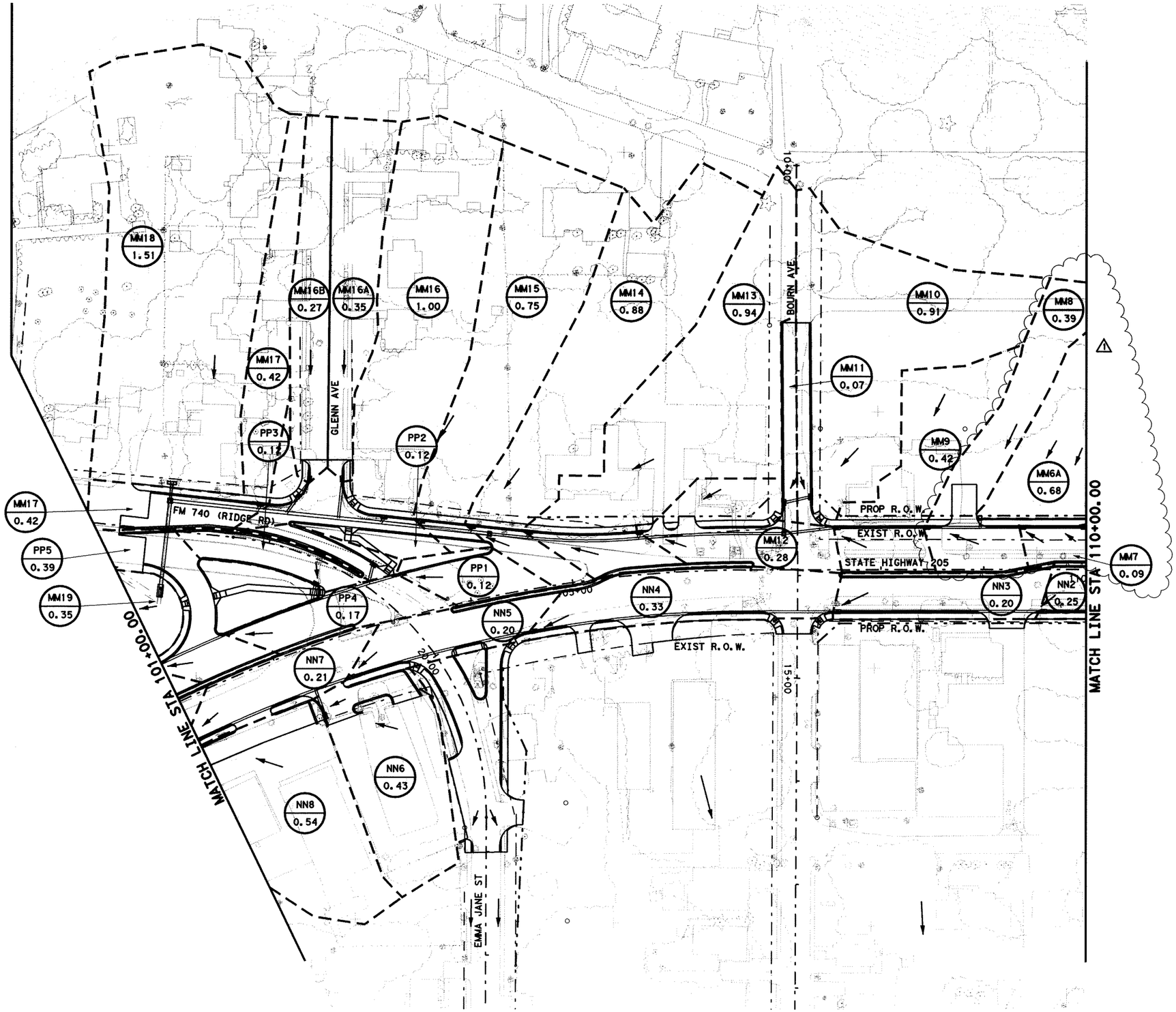

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
7/15/08

⚠ - Change Order #50

⚠ REVISED DRAINAGE AREAS - KDG - 04/24/2008

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DRAINAGE AREA MAP

STA 101+00 TO 110+00

SHEET 11 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	380A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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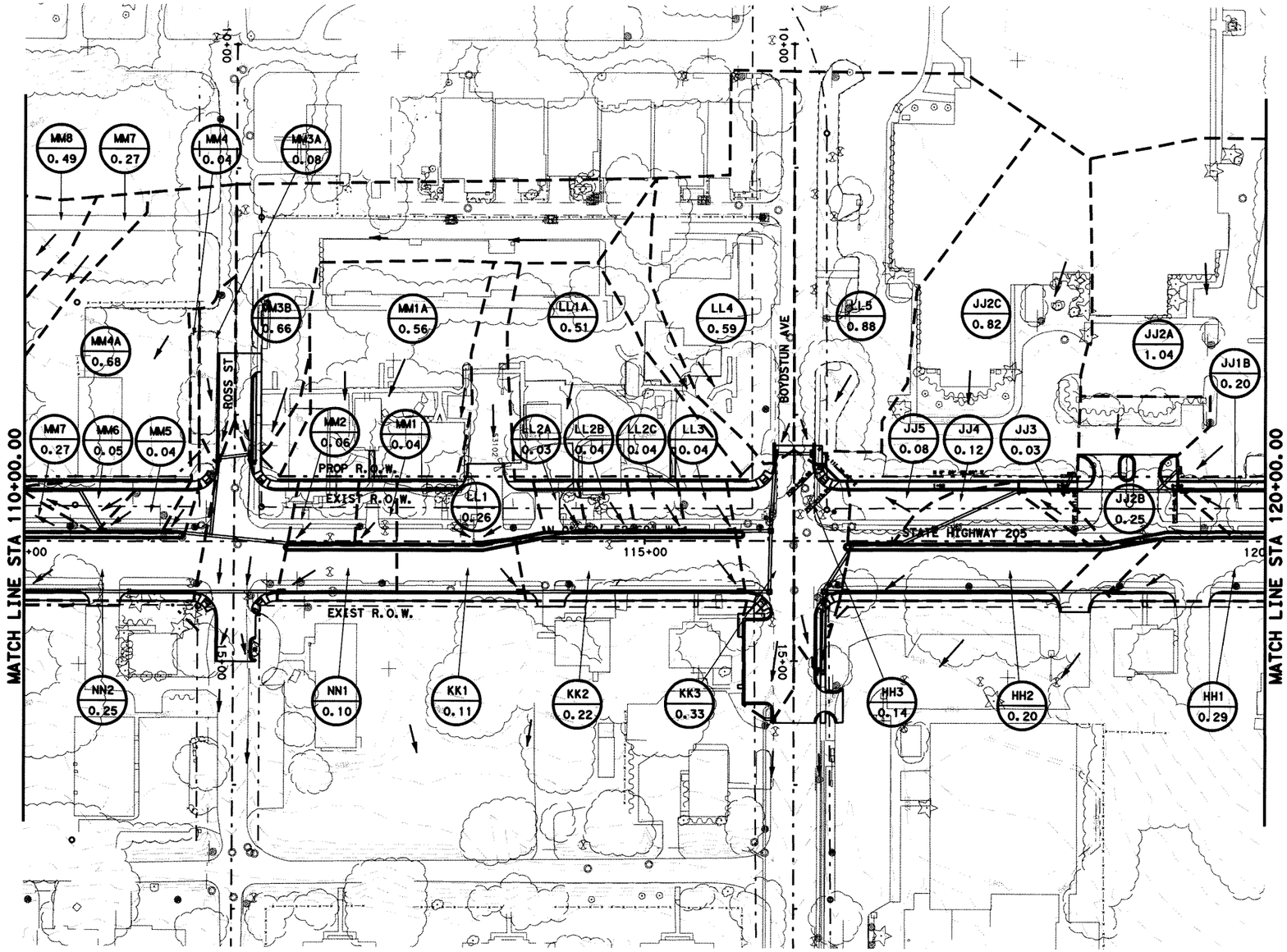

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 110+00 TO 120+00

SHEET 12 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	381
CONT.	SECT.	JOB	
0451	01	032, ETC	

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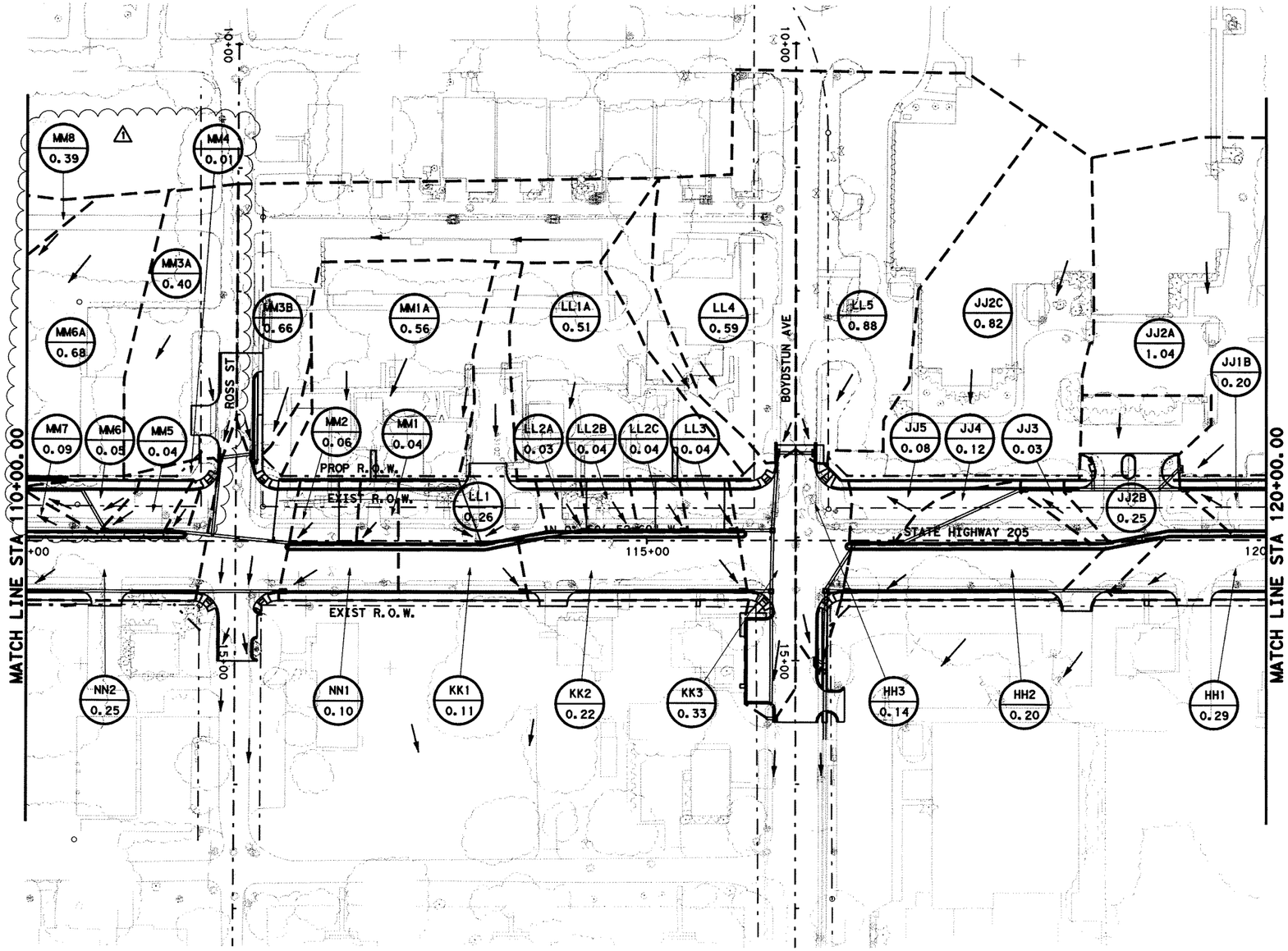

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
7/15/08

Δ- Change Order #50

Δ1 REV DRAINAGE AREA - KDG - 04/24/2008

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DRAINAGE AREA MAP

STA 110+00 TO 120+00

SHEET 12 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	381A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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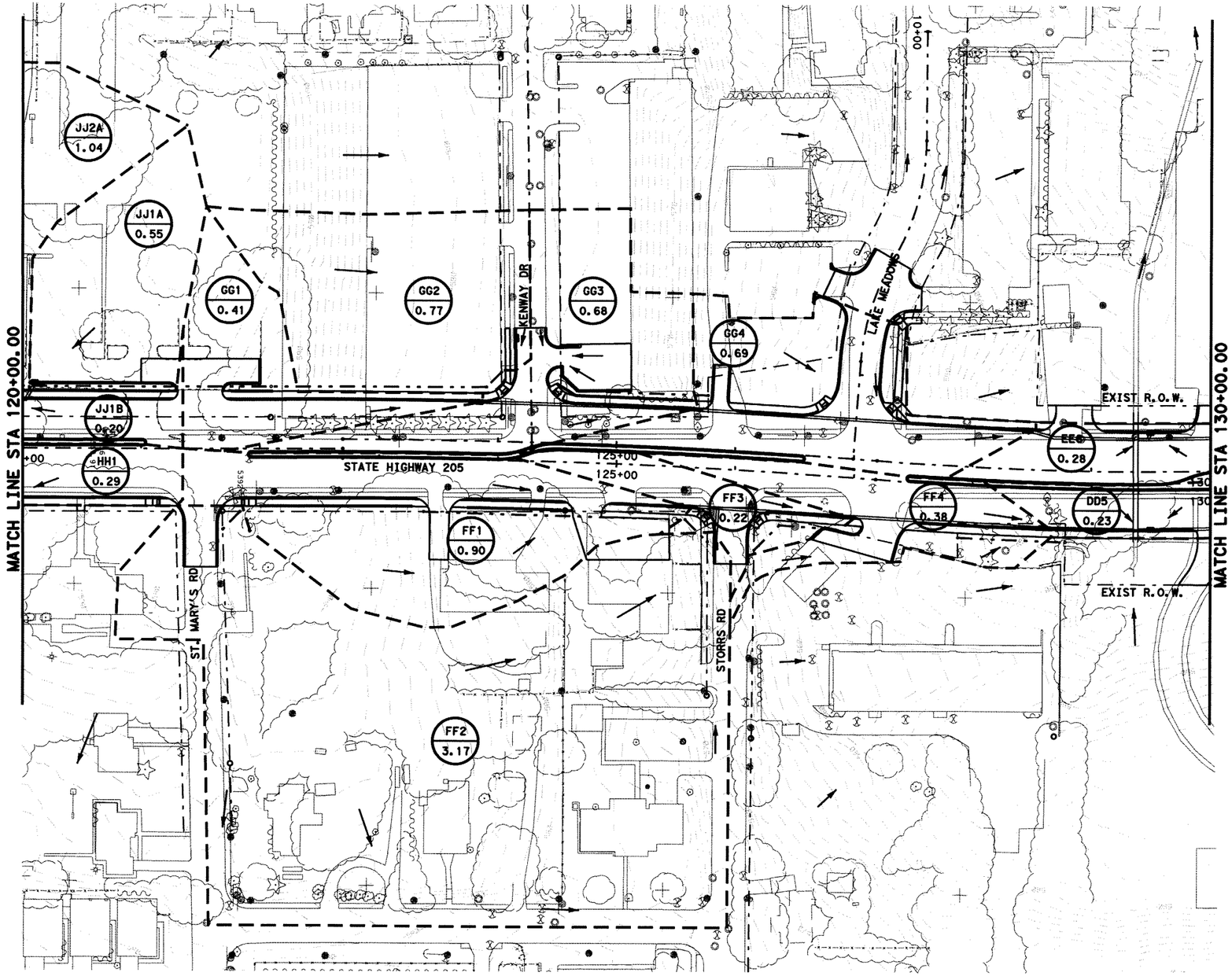

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 120+00 TO 130+00

SHEET 13 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	382
CONT.	SECT.	JOB	
0451	01	032, ETC	

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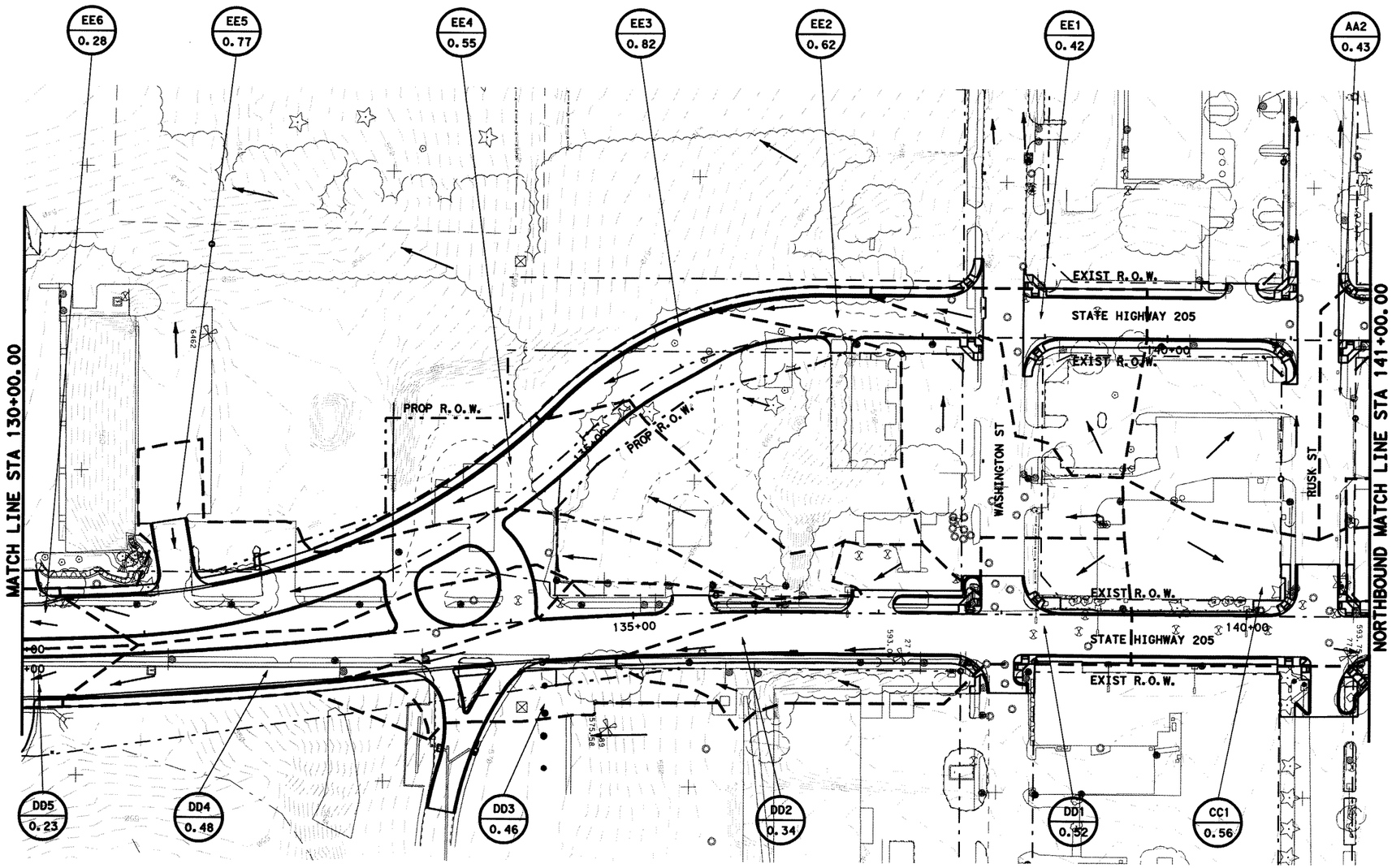
3/21/2006 Plotted 21-MAR-2006 20:36



0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

STA 130+00 TO 141+00

SHEET 14 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	383
CONT.	SECT.	JOB	
0451	01	032, ETC	

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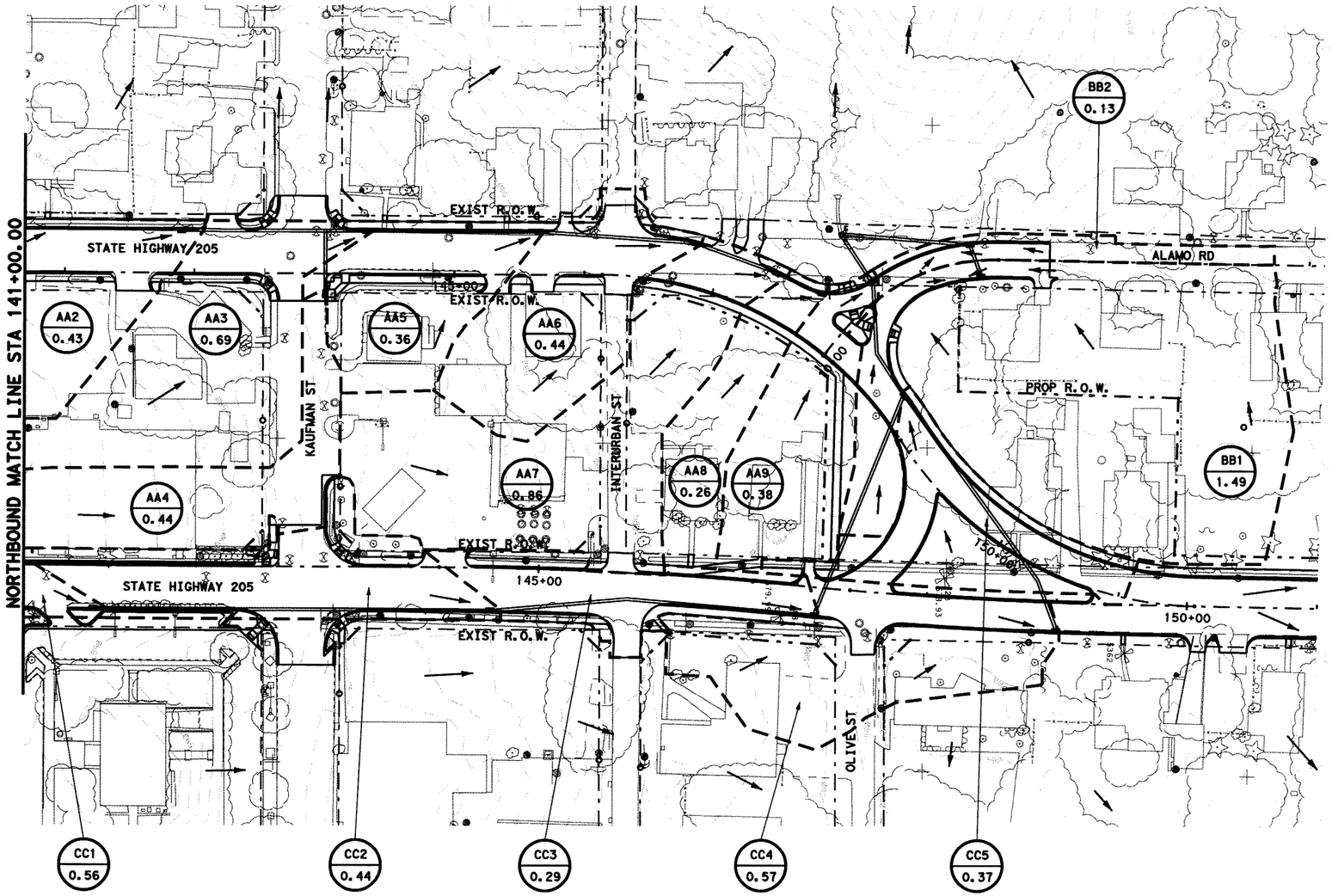

0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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Dallas, TX 75207

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DRAINAGE AREA MAP

STA 141+00 TO 151+00

SHEET 15 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	384
CONT.	SECT.	JOB	
0451	01	032, ETC	

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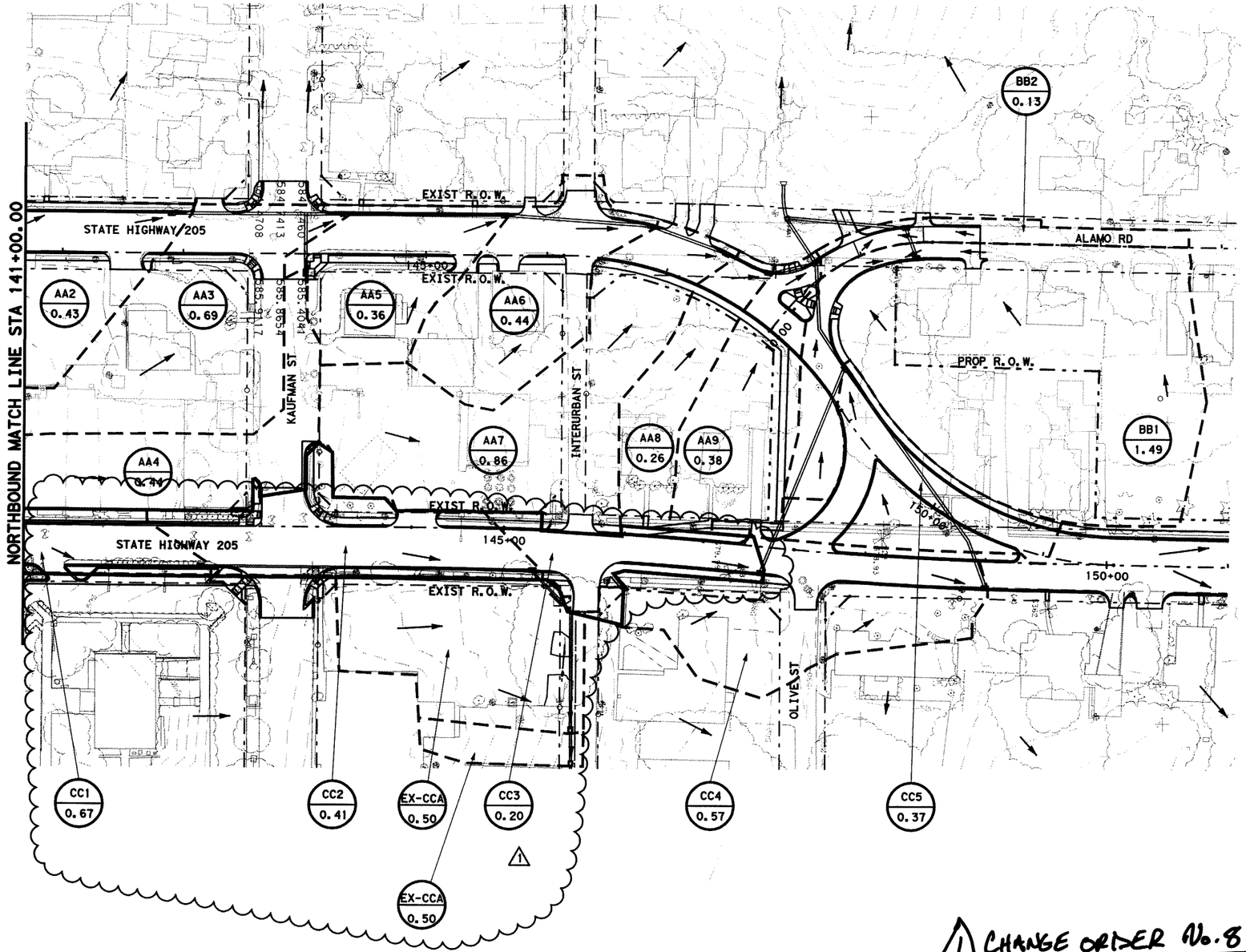
3/21/2006 Plotted 21-MAR-2006 21:06



0 50 100
SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/4/2009

1 REVISED DRAINAGE AREA FOR LINE CC BY KDG - 05-04-2009

1 CHANGE ORDER No. 84

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TBPE ID 2263

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DRAINAGE AREA MAP

STA 141+00 TO 151+00

SHEET 15 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	384
CONT.	SECT.	JOB	
0451	01	032, ETC	

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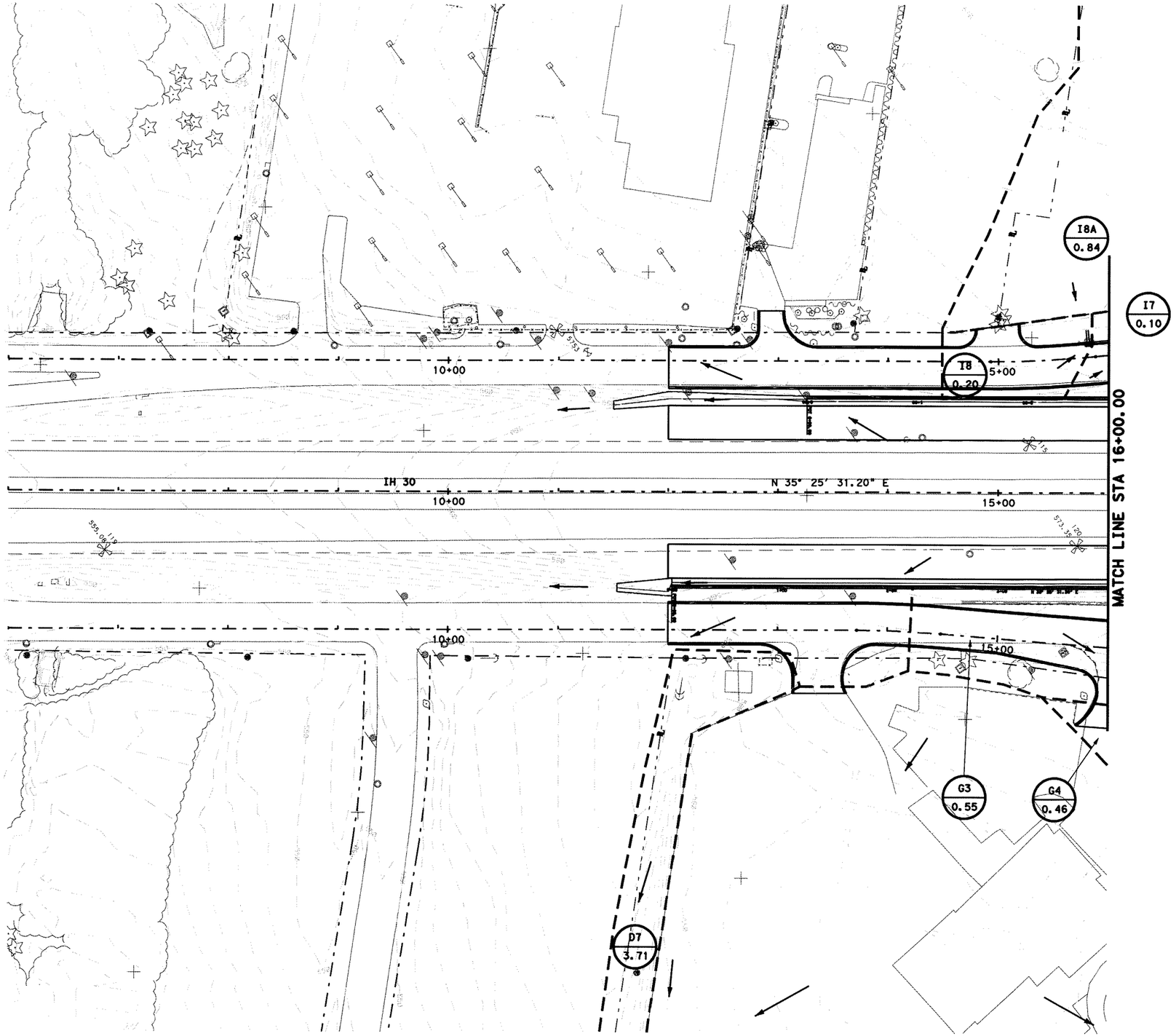

0 50 100
SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

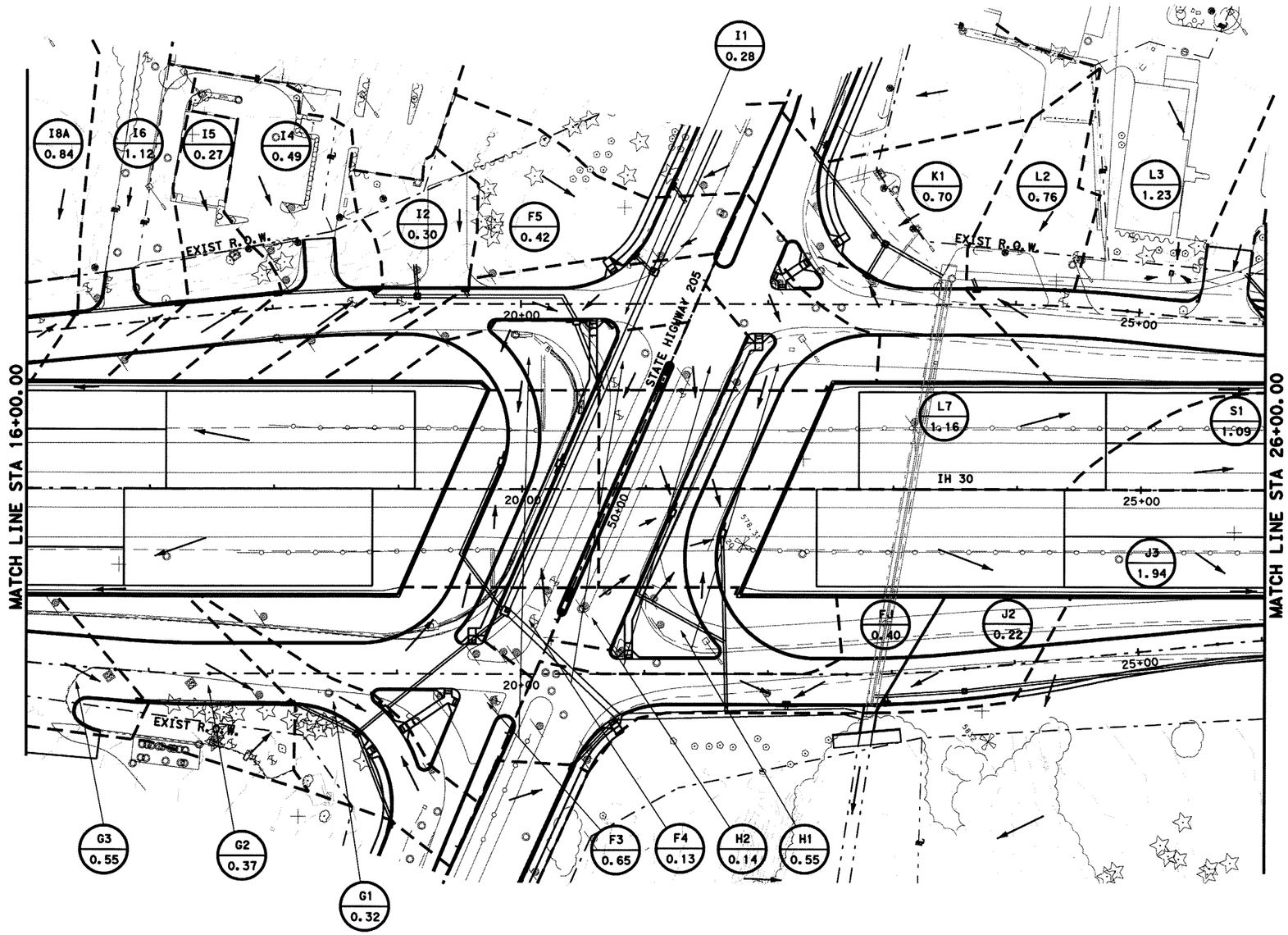
I-30 PLAN
STA 6+00 TO 16+00

SHEET 16 OF 18

FED. RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	385
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\2451dda18.dgn, ON=[0-62]
3/21/2006 Plotted 21-MAR-2006 20:36



0 50 100
SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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DRAINAGE AREA MAP

I-30 PLAN
STA 16+00 TO 26+00

SHEET 17 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	386
CONT.	SECT.	JOB	
0451	01	032, ETC	

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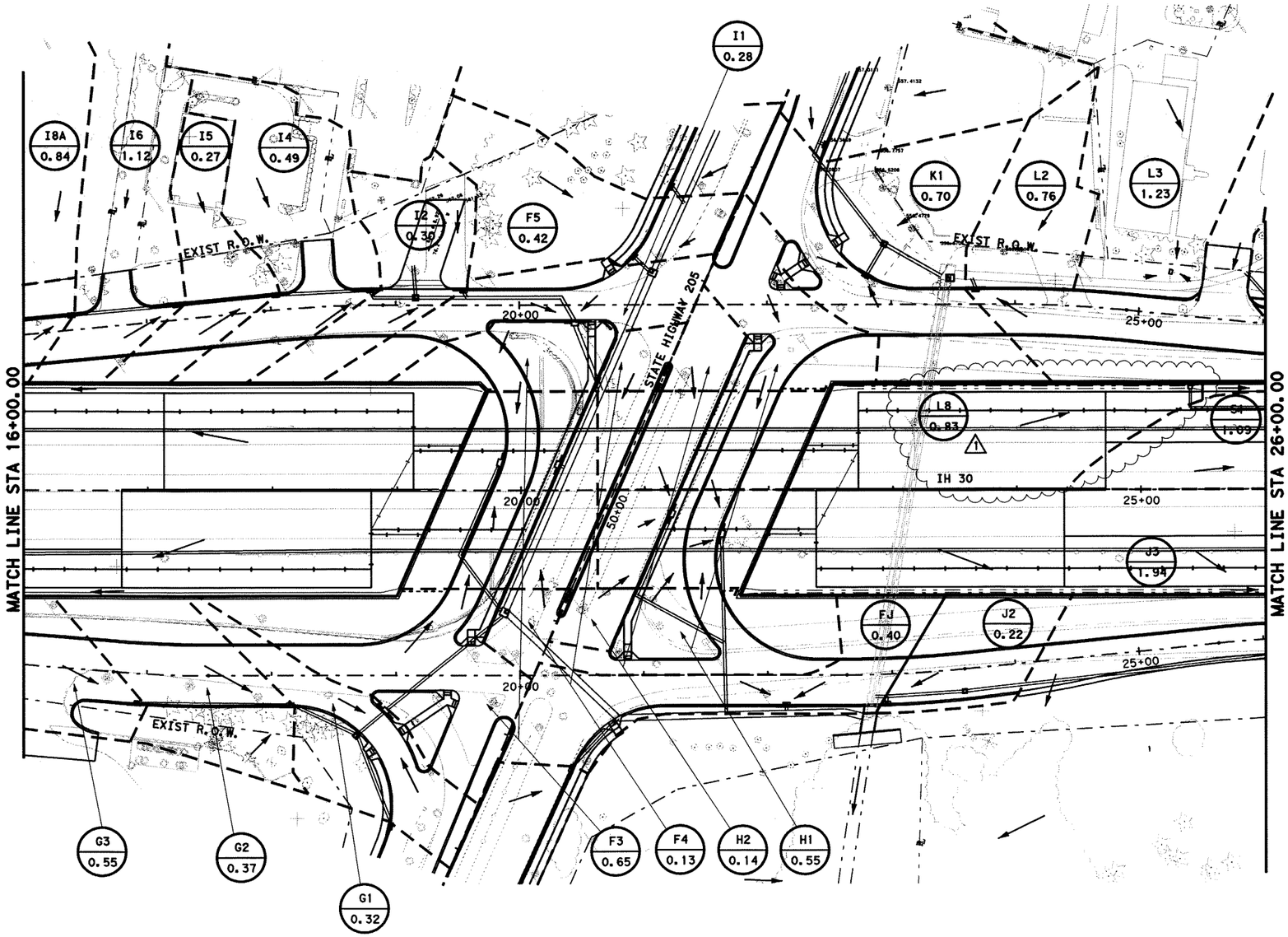

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SCALE IN FEET

LEGEND:

XXX / XXX — DRAINAGE AREA NUMBER / DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
7/15/08

55 change Order 55

1 7-15-08 ADDED LAT-L8 & DI-L8 BY KDG

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

DRAINAGE AREA MAP

I-30 PLAN
STA 16+00 TO 26+00

SHEET 17 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	386A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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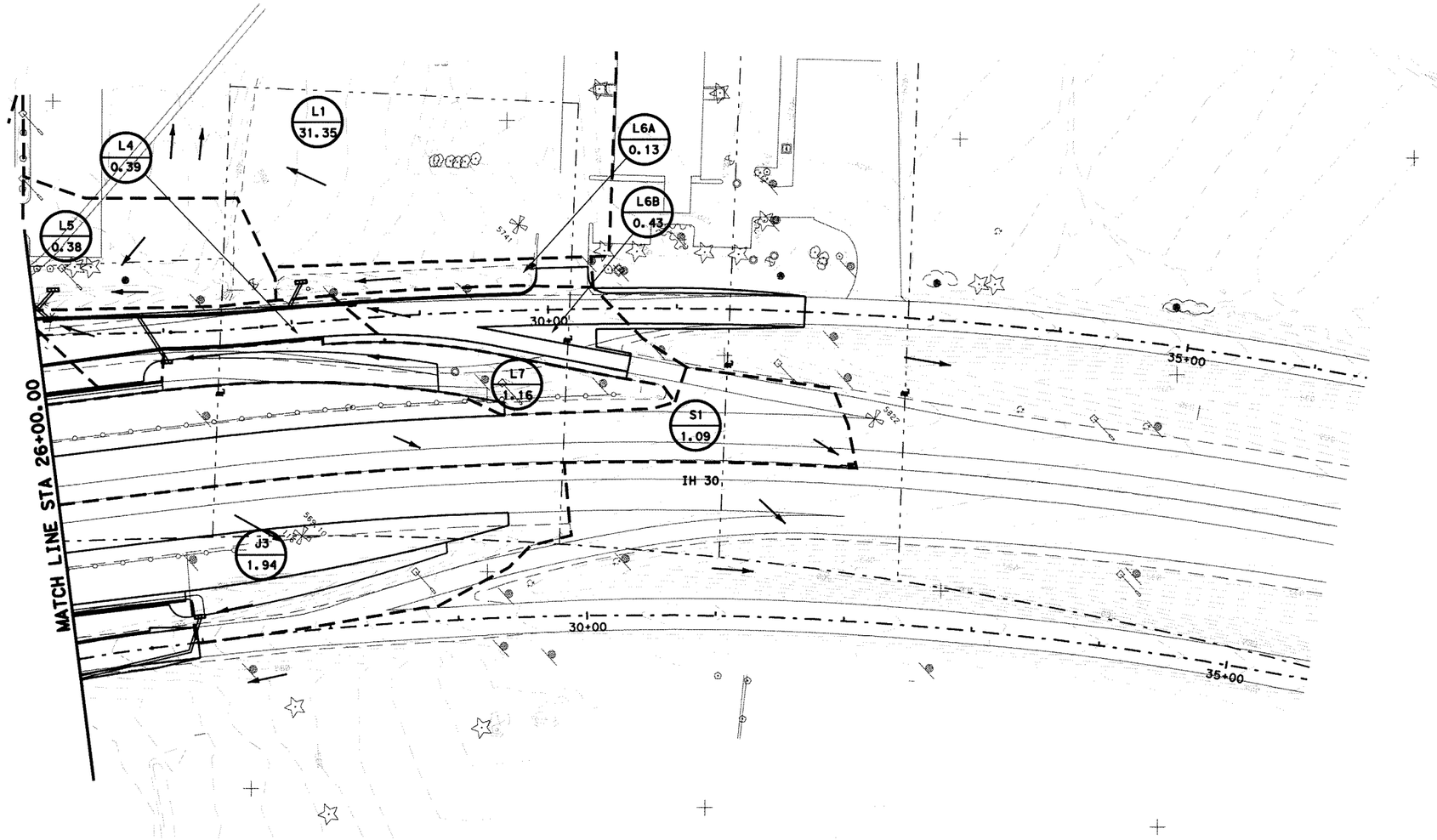

0 50 100
SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

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Suite 1333
Dallas, TX 75207

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DRAINAGE AREA MAP

I-30 PLAN
STA 26+00 TO 36+00

SHEET 18 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	387
CONT.	SECT.	JOB	
0451	01	032, ETC	

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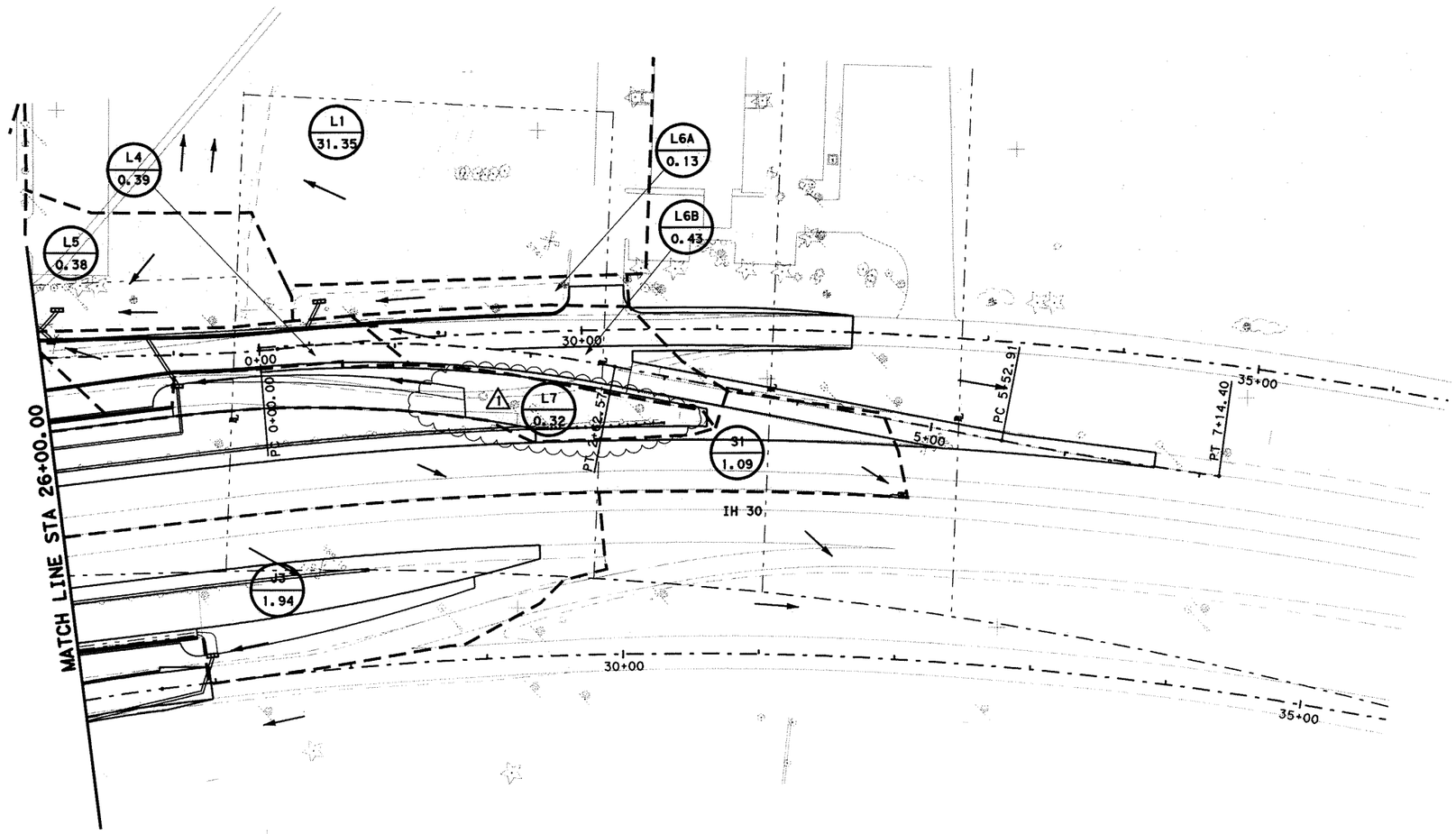

0 50 100
SCALE IN FEET

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
7/15/08

1
55 - change Order 55

1 7-15-08 ADDED LAT-L8 & DI-L8 BY KDG

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Dallas, TX 75207

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SH 205

DRAINAGE AREA MAP

I-30 PLAN
STA 26+00 TO 36+00

SHEET 18 OF 18

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	387A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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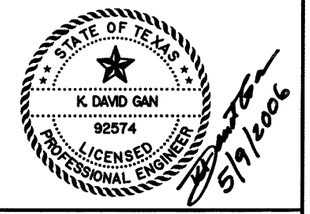
7/15/2008 Plotted 15-JUL-2008 21:31

RUNOFF COMPUTATIONS

DRAINAGE AREA															
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I_s (in/hr)	Q_s (cfs)
A1	1.16	0.219					0.938		0.616	0.713	4.60	10.00	5	6.93	4.94
A2	1.02	0.555					0.464		0.741	0.756	4.70	10.00	5	6.93	5.23
A3	7.29						7.285		0.550	4.007	5.63	10.00	5	6.93	27.75
A4	0.41	0.283					0.124		0.794	0.322	3.10	10.00	5	6.93	2.23
A5	3.32						3.320		0.550	1.826	9.90	10.00	5	6.93	12.65
A6	0.20	0.175					0.021		0.863	0.168	2.00	10.00	5	6.93	1.17
A7	0.28						0.277		0.550	0.152	3.00	10.00	5	6.93	1.06
A8	0.32	0.286					0.036		0.861	0.277	3.00	10.00	5	6.93	1.92
B1	0.69	0.546					0.140		0.829	0.569	3.00	10.00	5	6.93	3.94
B2	0.35	0.313					0.034		0.865	0.301	3.00	10.00	5	6.93	2.08
B3	0.33	0.295					0.034		0.863	0.285	3.00	10.00	5	6.93	1.97
B4	0.33	0.298					0.032		0.866	0.286	3.00	10.00	5	6.93	1.98
C1	0.22	0.200					0.023		0.864	0.193	3.00	10.00	5	6.93	1.33
C2	0.34	0.306					0.033		0.866	0.294	3.00	10.00	5	6.93	2.04
C3	0.22	0.197					0.022		0.865	0.189	3.00	10.00	5	6.93	1.31
C4	0.31	0.277					0.031		0.865	0.266	3.00	10.00	5	6.93	1.85
C5	0.39	0.276					0.113		0.798	0.310	4.00	10.00	5	6.93	2.15
C6	0.47	0.312					0.157		0.783	0.367	5.00	10.00	5	6.93	2.54
C7	0.06	0.058							0.900	0.052	1.00	10.00	5	6.93	0.36
C8	0.15	0.091	0.059						0.880	0.132	2.00	10.00	5	6.93	0.91
D1	0.05	0.053							0.899	0.048	3.00	10.00	5	6.93	0.33
D2	0.11	0.092					0.014		0.854	0.090	3.00	10.00	5	6.93	0.62
D3	0.19	0.165					0.025		0.853	0.162	3.00	10.00	5	6.93	1.12
D4	0.77	0.770							0.900	0.693	3.00	10.00	5	6.93	4.80
D5	3.00		3.001						0.850	2.551	12.00	12.00	5	6.40	16.33
D6	1.29	0.117	1.169						0.855	1.100	8.00	10.00	5	6.93	7.62
D7	3.71	0.019	3.693						0.850	3.156	14.00	14.00	5	5.96	18.80
D8	0.61	0.287	0.323						0.874	0.533	8.00	10.00	5	6.93	3.69
D9	0.97	0.258	0.711						0.863	0.836	9.00	10.00	5	6.93	5.80
D10	0.38	0.296	0.088						0.889	0.341	3.00	10.00	5	6.93	2.36
D11	9.62	0.033	9.583						0.850	8.174	22.00	22.00	5	4.70	38.46
D12	0.72	0.228	0.490						0.866	0.623	3.00	10.00	5	6.93	4.31
D13	0.55	0.202	0.344						0.868	0.473	5.00	10.00	5	6.93	3.28
E1	0.14						0.139		0.550	0.076	4.70	10.00	5	6.93	0.53
E2	1.44	0.129					1.306		0.581	0.834	3.00	10.00	5	6.93	5.78
E3	0.38						0.377		0.550	0.207	3.00	10.00	5	6.93	1.44
F1	0.26	0.173	0.087						0.883	0.230	3.00	10.00	5	6.93	1.59
F2	0.29	0.185	0.104						0.882	0.255	3.00	10.00	5	6.93	1.76
F3	0.65	0.653							0.900	0.588	5.00	10.00	5	6.93	4.07
F4	0.13	0.132							0.900	0.119	1.00	10.00	5	6.93	0.82
F5	0.42	0.063	0.353						0.858	0.357	5.00	10.00	5	6.93	2.47
F6	0.54	0.086	0.458						0.858	0.467	5.00	10.00	5	6.93	3.23
F7	0.49	0.074	0.415						0.858	0.420	5.00	10.00	5	6.93	2.91
F8	0.59	0.161	0.426						0.864	0.508	6.00	10.00	5	6.93	3.52
F9	0.33	0.120	0.210						0.868	0.286	2.00	10.00	5	6.93	1.99
F10	1.12		1.121						0.850	0.953	5.00	10.00	5	6.93	6.60
F11	8.12		8.120						0.850	6.902	12.00	12.00	5	6.40	44.17
F12	0.18	0.109	0.074						0.880	0.161	3.00	10.00	5	6.93	1.11
F13	0.99		0.987						0.850	0.839	8.00	10.00	5	6.93	5.81
F14	0.59	0.154	0.434						0.863	0.507	6.00	10.00	5	6.93	3.51
F15	0.47		0.472						0.850	0.401	7.00	10.00	5	6.93	2.78
F16	1.31		1.310						0.850	1.114	8.00	10.00	5	6.93	7.72
F17	0.83	0.266	0.566						0.866	0.721	8.00	10.00	5	6.93	4.99
F18	0.95		0.945						0.850	0.803	5.00	10.00	5	6.93	5.57
F19	0.37	0.216	0.151						0.879	0.322	3.00	10.00	5	6.93	2.23
F20	0.83	0.244	0.588						0.865	0.720	8.00	10.00	5	6.93	4.98
F21	0.39	0.251	0.135						0.883	0.341	5.00	10.00	5	6.93	2.36
F22	1.44	0.278	0.963		0.200				0.847	1.220	9.00	10.00	5	6.93	8.45
F23	0.81	0.279	0.533						0.867	0.704	8.00	10.00	5	6.93	4.88
F25-1	5.41		5.411						0.850	4.599	10.00	10.00	5	6.93	31.86
F25-2	2.71		2.709						0.850	2.303	11.00	11.00	5	6.65	15.32
FJ	0.40	0.291		0.113					0.872	0.352	5.00	10.00	5	6.93	2.44



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Dallas, TX 75207

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 1 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	388
CONT.	SECT.	JOB	
0451	01	032, ETC	

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5/9/2006 Plotted 09-MAY-2006 12:55

RUNOFF COMPUTATIONS

DRAINAGE AREA															
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I₅ (in/hr)	Q₅ (cfs)
G1	0.32	0.178	0.144						0.878	0.283	6.00	10.00	5	6.93	1.96
G2	0.37	0.229	0.136						0.881	0.322	6.00	10.00	5	6.93	2.23
G3	0.55	0.379	0.173						0.884	0.488	8.00	10.00	5	6.93	3.38
G4	0.46	0.052	0.410						0.856	0.395	5.00	10.00	5	6.93	2.74
G5	0.49	0.102	0.387						0.860	0.421	6.00	10.00	5	6.93	2.92
G6	0.25	0.107	0.140						0.872	0.215	3.00	10.00	5	6.93	1.49
H1	0.55	0.552							0.900	0.497	3.00	10.00	5	6.93	3.44
H2	0.14	0.137							0.900	0.123	8.00	10.00	5	6.93	0.85
I1	0.28	0.238	0.045						0.892	0.252	5.00	10.00	5	6.93	1.75
I2	0.30	0.112	0.190						0.869	0.262	5.00	10.00	5	6.93	1.82
I3	2.35		2.351						0.850	1.998	8.00	10.00	5	6.93	13.84
I4	0.49	0.148	0.343						0.865	0.426	5.00	10.00	5	6.93	2.95
I5	0.27	0.097	0.170						0.868	0.233	5.00	10.00	5	6.93	1.61
I6	1.12	0.122	0.994						0.855	0.954	8.00	10.00	5	6.93	6.61
I7	0.10	0.060		0.036					0.862	0.083	1.00	10.00	5	6.93	0.57
I8	0.20	0.138		0.063					0.869	0.174	1.00	10.00	5	6.93	1.21
I8A	0.84			0.836					0.800	0.669	5.00	10.00	5	6.93	4.63
J2	0.22	0.179		0.040		0.001			0.881	0.194	2.00	10.00	5	6.93	1.34
J3	1.94	1.944							0.900	1.750	9.00	10.00	5	6.93	12.12
K1	0.71	0.359		0.346					0.851	0.600	6.00	10.00	5	6.93	4.16
K2	0.57	0.174		0.393					0.831	0.471	6.00	10.00	5	6.93	3.26
K3	0.59	0.402	0.184						0.884	0.518	7.00	10.00	5	6.93	3.59
K4	0.72	0.412		0.305					0.857	0.614	8.00	10.00	5	6.93	4.26
K5	0.54	0.441		0.097					0.882	0.475	6.00	10.00	5	6.93	3.29
K7	0.24	0.189	0.055						0.889	0.217	3.00	10.00	5	6.93	1.50
L1	31.35			31.346					0.800	25.077	20.00	20.00	5	4.96	124.35
L2	0.76	0.425		0.334					0.856	0.650	5.00	10.00	5	6.93	4.50
L3	1.23			1.229					0.800	0.983	7.00	10.00	5	6.93	6.81
L4	0.39	0.363		0.022					0.894	0.344	4.00	10.00	5	6.93	2.38
L5	0.38			0.381					0.800	0.305	8.00	10.00	5	6.93	2.11
L6A	0.13			0.128					0.800	0.102	1.00	10.00	5	6.93	0.71
L6B	0.43	0.385		0.038		0.008			0.888	0.383	4.00	10.00	5	6.93	2.65
L7	1.16	1.155							0.900	1.040	8.00	10.00	5	6.93	7.20
M1	1.02	0.082	0.687		0.248				0.832	0.846	7.00	10.00	5	6.93	5.86
M2	0.47	0.168	0.301						0.868	0.406	3.00	10.00	5	6.93	2.82
M3	0.50	0.216	0.098		0.183				0.839	0.417	7.00	10.00	5	6.93	2.89
M4	0.35	0.263	0.037		0.048				0.875	0.305	3.00	10.00	5	6.93	2.11
M5	0.42	0.224			0.193				0.835	0.348	4.00	10.00	5	6.93	2.41
M6	0.41	0.212			0.202				0.832	0.344	4.00	10.00	5	6.93	2.38
M7	0.51	0.396			0.086			0.026	0.843	0.428	5.00	10.00	5	6.93	2.97
M8	0.22	0.192						0.023	0.829	0.178	2.00	10.00	5	6.93	1.24
N1	0.31				0.305				0.760	0.232	3.00	10.00	5	6.93	1.61
N2	4.12	0.489			3.632				0.777	3.202	10.00	10.00	5	6.93	22.17
O1	0.36	0.162				0.194			0.791	0.282	3.00	10.00	5	6.93	1.95
O2	0.39					0.391			0.700	0.274	3.00	10.00	5	6.93	1.90
O3	0.39	0.300	0.054			0.039			0.873	0.343	3.00	10.00	5	6.93	2.38
O4	4.66			4.633		0.030			0.799	3.726	12.00	12.00	5	6.40	23.85
O5	0.58	0.322		0.262					0.855	0.499	10.00	10.00	5	6.93	3.46
O6A	0.01	0.005		0.007					0.842	0.010	1.00	10.00	5	6.93	0.07
O6B	1.10	0.364		0.733					0.833	0.914	7.00	10.00	5	6.93	6.33
O7	15.16			15.157					0.800	12.126	15.00	15.00	5	5.76	69.83
O8	0.34	0.200	0.136						0.880	0.296	3.00	10.00	5	6.93	2.05
O9	0.80	0.190		0.607					0.824	0.657	3.00	10.00	5	6.93	4.55
O10	0.59	0.291		0.297					0.849	0.499	7.00	10.00	5	6.93	3.46
O11	0.40	0.148		0.257					0.837	0.338	5.00	10.00	5	6.93	2.34
O12	0.71	0.159	0.554						0.861	0.614	3.00	10.00	5	6.93	4.25
P1	0.31	0.276						0.033	0.830	0.257	3.00	10.00	5	6.93	1.78
P2	0.73	0.617	0.018					0.091	0.817	0.593	5.00	10.00	5	6.93	4.11
Q1	0.31	0.273				0.037			0.876	0.272	3.00	10.00	5	6.93	1.88
Q2	0.73	0.617				0.109			0.870	0.632	6.00	10.00	5	6.93	4.37
R1	0.20	0.174						0.022	0.827	0.162	2.00	10.00	5	6.93	1.13
R2	0.49	0.158				0.329	0.005		0.763	0.375	6.00	10.00	5	6.93	2.60
R3	4.06					3.006	1.054		0.661	2.684	11.00	11.00	5	6.65	17.85
S1	1.10	1.095							0.900	0.986	8.00	10.00	5	6.93	6.82

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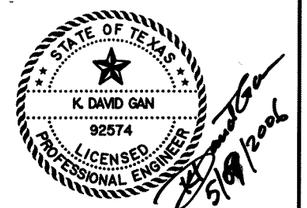
5/9/2006 Plotted 09-MAY-2006 12:55



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SH 205

HYDRAULIC COMPUTATION SHEET

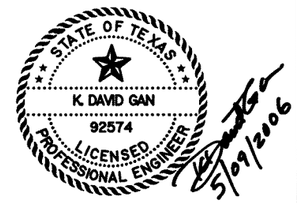
SHEET 2 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	389
CONT.	SECT.	JOB	
0451	01	032, ETC	

RUNOFF COMPUTATIONS

DRAINAGE AREA															
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I_s (in/hr)	Q_s (cfs)
AA2	0.48	0.246		0.236					0.851	0.410	7.00	10.00	5	6.93	2.84
AA3	0.69	0.202		0.484		0.001	0.001		0.829	0.570	7.00	10.00	5	6.93	3.95
AA4	0.44	0.125		0.318					0.828	0.366	6.50	10.00	5	6.93	2.53
AA5	0.36	0.162		0.190			0.003		0.844	0.300	7.00	10.00	5	6.93	2.08
AA6	0.44	0.170		0.268			0.005		0.835	0.370	7.00	10.00	5	6.93	2.56
AA7	0.86	0.267		0.464		0.130	0.001		0.816	0.703	15.20	15.20	5	5.72	4.02
AA8	0.26	0.043				0.211	0.001		0.734	0.187	8.00	10.00	5	6.93	1.30
AA9	0.38	0.058				0.321	0.004		0.729	0.277	10.60	10.60	5	6.76	1.87
BB1	1.49	0.118					1.372		0.578	0.861	12.00	12.00	5	6.40	5.51
BB2	0.13	0.062					0.066		0.720	0.092	1.00	10.00	5	6.93	0.64
CC1	0.56	0.286		0.271					0.851	0.474	10.80	10.80	5	6.70	3.18
CC2	0.44	0.347		0.087					0.880	0.383	10.00	10.00	5	6.93	2.65
CC3	0.29	0.247		0.018		0.024			0.878	0.253	10.00	10.00	5	6.93	1.75
CC4	0.57	0.162				0.245	0.160		0.715	0.405	10.65	10.65	5	6.75	2.74
CC5	0.37	0.200				0.165	0.001		0.809	0.296	8.00	10.00	5	6.93	2.05
DD1	0.52	0.292		0.224					0.857	0.443	5.00	10.00	5	6.93	3.07
DD2	0.34	0.150		0.188					0.844	0.284	8.00	10.00	5	6.93	1.97
DD3	0.46	0.271		0.188					0.859	0.393	6.00	10.00	5	6.93	2.73
DD4	0.48	0.321		0.040		0.118			0.842	0.403	8.00	10.00	5	6.93	2.79
DD5	0.23	0.227				0.005			0.896	0.208	3.00	10.00	5	6.93	1.44
EE1	0.42	0.213		0.203					0.851	0.354	4.00	10.00	5	6.93	2.45
EE2	0.62	0.235		0.382					0.838	0.517	4.00	10.00	5	6.93	3.58
EE3	0.82	0.142		0.676					0.817	0.668	6.00	10.00	5	6.93	4.63
EE4	0.55	0.001		0.416		0.133			0.776	0.427	8.00	10.00	5	6.93	2.96
EE5	0.77	0.339		0.352		0.080			0.834	0.643	8.00	10.00	5	6.93	4.45
EE6	0.28	0.276		0.003		0.001			0.898	0.251	5.00	10.00	5	6.93	1.74
FF1	0.90	0.364				0.536			0.781	0.703	10.00	10.00	5	6.93	4.87
FF2	3.17	0.469				2.700			0.730	2.313	16.00	16.00	5	5.58	12.89
FF3	0.22	0.189				0.031			0.872	0.191	5.00	10.00	5	6.93	1.33
FF4	0.38	0.258				0.126			0.834	0.320	8.00	10.00	5	6.93	2.22
GG1	0.41	0.179		0.227					0.844	0.343	6.00	10.00	5	6.93	2.38
GG2	0.77	0.045		0.721					0.806	0.617	9.00	10.00	5	6.93	4.28
GG3	0.68	0.327		0.348					0.848	0.572	9.00	10.00	5	6.93	3.97
GG4	0.69	0.432		0.254					0.863	0.592	9.00	10.00	5	6.93	4.10
HH1	0.29	0.286							0.900	0.257	5.00	10.00	5	6.93	1.78
HH2	0.20	0.196							0.900	0.176	3.00	10.00	5	6.93	1.22
HH3	0.14	0.139							0.900	0.125	5.00	10.00	5	6.93	0.86
JJ1	0.82			0.819					0.800	0.655	10.80	10.80	5	6.70	4.40
JJ1A	0.55			0.548					0.800	0.438	7.00	10.00	5	6.93	3.04
JJ1B	0.20	0.196							0.900	0.176	5.00	10.00	5	6.93	1.22
JJ2A	1.04			1.038					0.800	0.830	7.00	10.00	5	6.93	5.75
JJ2B	0.25	0.148		0.106					0.858	0.218	5.00	10.00	5	6.93	1.51
JJ2C	0.82	0.001		0.819					0.800	0.655	4.00	10.00	5	6.93	4.54
JJ3	0.03	0.032							0.900	0.029	1.00	10.00	5	6.93	0.20
JJ4	0.12	0.116							0.900	0.104	3.00	10.00	5	6.93	0.72
JJ5	0.08	0.076							0.900	0.068	2.00	10.00	5	6.93	0.47
KK1	0.11	0.106							0.900	0.095	4.00	10.00	5	6.93	0.66
KK2	0.22	0.220				0.004			0.897	0.201	7.00	10.00	5	6.93	1.39
KK3	0.33	0.188			0.139				0.840	0.275	4.00	10.00	5	6.93	1.91
LL1	0.26	0.139			0.119				0.835	0.215	5.00	10.00	5	6.93	1.49
LL1A	0.51				0.508				0.760	0.386	5.00	10.00	5	6.93	2.67
LL2A	0.03	0.034							0.900	0.031	1.00	10.00	5	6.93	0.21
LL2B	0.04	0.038							0.900	0.034	1.00	10.00	5	6.93	0.24
LL2C	0.04	0.039							0.899	0.035	1.00	10.00	5	6.93	0.24
LL3	0.04	0.039							0.900	0.035	1.00	10.00	5	6.93	0.24
LL4	0.60	0.158			0.437				0.797	0.474	10.00	10.00	5	6.93	3.28
LL5	0.89			0.885					0.800	0.708	11.00	11.00	5	6.65	4.71



Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 3 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	390
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\2451cadC03.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:55

RUNOFF COMPUTATIONS

DRAINAGE AREA												To	To	DES		
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	CAL (min)	USED (min)	FREQ (yr)	I_e (in/hr)	Q_e (cfs)
MM1	0.04	0.038							0.897	0.034	6.00	10.00	5	6.93	0.24
MM1A	0.56				0.556				0.760	0.423	6.00	10.00	5	6.93	2.93
MM2	0.06	0.061							0.899	0.055	6.00	10.00	5	6.93	0.38
MM3A	0.08	0.083							0.900	0.075	1.00	10.00	5	6.93	0.52
MM3B	0.66	0.103			0.556	0.001			0.782	0.516	12.80	12.80	5	6.21	3.20
MM4	0.04	0.036							0.900	0.032	1.00	10.00	5	6.93	0.22
MM4A	0.68	0.034				0.646			0.710	0.483	8.00	10.00	5	6.93	3.34
MM5	0.04	0.044							0.900	0.040	1.00	10.00	5	6.93	0.27
MM6	0.05	0.051							0.900	0.046	2.00	10.00	5	6.93	0.32
MM7	0.27	0.082				0.186			0.761	0.204	10.00	10.00	5	6.93	1.41
MM8	0.49	0.085				0.401			0.735	0.357	10.60	10.60	5	6.76	2.41
MM9	0.42	0.126				0.297			0.760	0.321	9.00	10.00	5	6.93	2.22
MM10	0.91	0.117				0.791			0.726	0.659	12.60	12.60	5	6.26	4.13
MM11	0.07	0.058				0.009			0.873	0.058	3.00	10.00	5	6.93	0.40
MM12	0.28	0.173				0.104			0.825	0.229	7.00	10.00	5	6.93	1.58
MM13	0.94	0.141				0.796			0.730	0.683	16.80	16.80	5	5.44	3.72
MM14	0.88	0.066				0.811			0.715	0.626	16.80	16.80	5	5.44	3.41
MM15	0.75	0.019				0.734			0.705	0.531	13.20	13.20	5	6.12	3.25
MM16	1.00	0.100				0.902			0.720	0.721	11.40	11.40	5	6.55	4.73
MM16A	0.35	0.110				0.243			0.762	0.269	2.00	10.00	5	6.93	1.86
MM16B	0.27	0.152				0.119			0.812	0.220	2.00	10.00	5	6.93	1.52
MM17	0.42	0.127				0.293			0.760	0.319	2.00	10.00	5	6.93	2.21
MM18	1.51						1.510		0.550	0.831	13.80	13.80	5	6.00	4.98
MM19	0.35	0.004		0.350					0.801	0.284	5.00	10.00	5	6.93	1.97
MM20	1.68	0.079		1.597					0.805	1.349	12.00	12.00	5	6.40	8.63
MM21	1.68	0.079		1.597					0.805	1.349	1.00	10.00	5	6.93	9.34
MM23	0.35	0.004		0.350					0.801	0.284	1.00	10.00	5	6.93	1.97
NN1	0.10	0.096							0.900	0.086	2.00	10.00	5	6.93	0.60
NN2	0.25	0.247				0.004			0.897	0.225	6.00	10.00	5	6.93	1.56
NN3	0.20	0.201				0.004			0.896	0.183	4.00	10.00	5	6.93	1.27
NN4	0.33	0.302				0.025			0.885	0.289	6.00	10.00	5	6.93	2.00
NN5	0.20	0.191				0.004			0.896	0.175	5.00	10.00	5	6.93	1.21
NN6	0.43	0.066		0.364					0.815	0.350	5.00	10.00	5	6.93	2.43
NN7	0.21	0.195		0.011					0.895	0.184	4.00	10.00	5	6.93	1.27
NN8	0.54	0.023		0.514					0.804	0.432	7.00	10.00	5	6.93	2.99
NN9	0.19	0.183		0.006					0.897	0.170	5.00	10.00	5	6.93	1.18
NN10	0.19	0.179		0.015					0.892	0.173	4.00	10.00	5	6.93	1.20
NN11	0.10	0.274				0.010			0.880	0.090	4.00	10.00	5	6.93	0.62
NN12	0.12	0.101		0.020					0.883	0.108	5.00	10.00	5	6.93	0.75
NN13	0.37	0.317		0.053					0.886	0.327	5.00	10.00	5	6.93	2.27
PP1	0.12	0.104				0.018			0.870	0.105	3.00	10.00	5	6.93	0.73
PP2	0.06	0.049				0.015			0.853	0.055	3.00	10.00	5	6.93	0.38
PP3	0.12	0.115				0.002			0.897	0.104	5.00	10.00	5	6.93	0.72
PP4	0.17	0.168				0.001			0.898	0.152	5.00	10.00	5	6.93	1.05
PP5	0.39	0.253		0.013		0.124			0.833	0.325	5.00	10.00	5	6.93	2.25
PP6	0.26	0.224		0.032					0.887	0.227	7.00	10.00	5	6.93	1.57
PP7	0.24	0.214		0.030					0.888	0.216	5.00	10.00	5	6.93	1.50
QQ1	0.53	0.448				0.078			0.870	0.458	3.00	10.00	5	6.93	3.17

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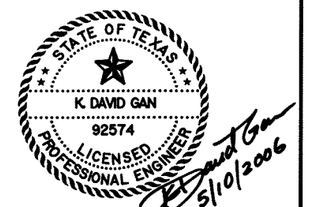

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 4 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	391
CONT.	SECT.	JOB	
0451	01	032, ETC	

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet In Sag				Drop Inlet										
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longi Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longi Slope Left (sag) (%)	Longi Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft²)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-A1	A1	35.40' RT SH205CL STA 9+80.00	0.25	0.25	3.0	2.00	15	20.0	2.50	10.81	0.22	17.21										1.00	0.22	4.94	4.82	0.12	CI-A2	0.015
CI-A2	A2	42.00' RT SH205CL STA 15+50.00	0.25	0.25	3.0	2.00	15	12.0	2.06	11.55	0.23	17.72										0.50	0.23	5.35	5.17	0.18	CI-A4	0.015
DI-A3	A3	62.50' RT SH205CL STA 16+00.00															3	7.67	2	11.19	15.92	1.10	1.09	27.75	28.35			
CI-A4	A4	42.00' RT SH205CL STA 18+30.00	0.25	0.25	3.0	2.00	10	12.5	0.35	11.95	0.24	7.66										0.50	0.24	2.42	2.42			0.015
CI-A6	A6	42.00' RT SH205CL STA 20+09.00	0.25	0.25	3.0	2.00	10	12.0	0.35	9.10	0.18	4.50										0.50	0.18	1.17	1.17			0.015
DI-A7	A7	66.00' RT SH205CL STA 20+09.00															1	3.00	2	4.62	8.58	0.50	0.19	1.06	4.68			
CI-A8	A8	42.00' RT SH205CL STA 24+30.00	0.25	0.25	3.0	2.00	10	12.0	0.25	11.72	0.23	6.16										0.50	0.23	1.92	1.92			0.015
CI-B1	B1	42.00' LT SH205CL STA 15+45.00	0.25	0.25	3.0	2.00	15	12.0	2.09	10.27	0.21	14.22										0.50	0.21	3.94	3.94			0.015
CI-B2	B2	42.00' LT SH205CL STA 18+50.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.30	0.23	6.89										0.50	0.23	2.08	2.08			0.015
CI-B3	B3	42.00' LT SH205CL STA 21+50.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.07	0.22	6.62										0.50	0.22	1.97	1.97			0.015
CI-B4	B4	42.00' LT SH205CL STA 24+30.00	0.25	0.25	3.0	2.00	10	12.5	0.25	11.86	0.24	6.29										0.50	0.24	1.98	1.98			0.015
CI-C1	C1	42.00' RT SH205CL STA 25+80.00	0.25	0.25	3.0	2.00	10	12.0	0.28	9.97	0.20	4.81										0.50	0.20	1.33	1.33			0.015
CI-C2	C2	42.00' RT SH205CL STA 27+80.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.21	0.22	6.78										0.50	0.22	2.04	2.04			0.015
CI-C3	C3	42.00' RT SH205CL STA 30+70.00	0.25	0.25	3.0	2.00	10	12.0	0.35	9.51	0.19	4.91										0.50	0.19	1.31	1.31			0.015
CI-C4	C4	42.00' RT SH205CL STA 32+60.00	0.25	0.25	3.0	2.00	10	12.0	1.41	8.32	0.17	7.65										0.50	0.17	1.85	1.85			0.015
CI-C5	C5	42.00' RT SH205CL STA 35+30.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.68	0.15	9.54										0.50	0.15	2.17	2.17			0.015
CI-C6	C6	42.00' RT SH205CL STA 38+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	8.15	0.16	10.77										0.50	0.16	2.54	2.52	0.02	CI-C5	0.015
CI-C7	C7	42.00' RT SH205CL STA 40+28.00	0.25	0.25	3.0	2.00	5	12.0	2.04	4.21	0.08	2.14										0.50	0.08	0.36	0.36			0.015
CI-C8	C8	53.00' RT SH205CL STA 43+27.00	0.25	0.25	3.0	2.00	10	12.0	0.55	7.64	0.15	3.95										0.50	0.15	0.91	0.91			0.015
CI-D1	D1	42.00' LT SH205CL STA 25+92.00	0.25	0.25	3.0	2.00	5	12.0	0.32	5.77	0.12	1.67										0.50	0.12	0.33	0.33			0.015
CI-D2	D2	42.00' LT SH205CL STA 27+08.00	0.25	0.25	3.0	2.00	5	12.0	0.35	7.20	0.14	2.79										0.50	0.14	0.62	0.62			0.015
CI-D3	D3	42.00' LT SH205CL STA 29+02.00	0.25	0.25	3.0	2.00	5	12.0	0.35	8.97	0.18	4.37										0.50	0.18	1.12	1.12			0.015
CI-D4	D4	33.50' RT RALPH STA 14+55.00	0.25	0.33	3.0	2.00	15	14.0					0.30	0.30	13.91	10.13						0.50	0.22	4.80	16.59			0.015
DI-D5	D5	39.00' LT RALPH STA 14+80.82															3	7.50	2	10.07	14.42	0.88	0.81	16.33	18.37			
EX-CI-D6	D6	33.80' LT RALPH STA 14+55.00	0.25	0.33	3.0	2.00	15	15.0					0.30	0.30	14.58	14.58						0.50	0.30	7.62	16.59			0.015
EX-DI-D7	D7	57.19' LT RALPH STA 12+58.89															1	0.00	0	16.00	16.00	1.00	0.83	18.80	24.70			
CI-D8	D8	52.00' LT SH205CL STA 32+10.00	0.25	0.25	3.0	2.00	15	12.0	1.08	11.78	0.24	13.24										0.50	0.24	4.09	4.09			0.015
CI-D9	D9	52.00' LT SH205CL STA 34+25.00	0.25	0.25	3.0	2.00	15	12.0	2.50	11.47	0.23	19.33										0.50	0.23	5.80	5.41	0.39	CI-D8	0.015
CI-D10	D10	42.00' LT SH205CL STA 36+60.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.93	0.16	10.18										0.50	0.16	2.37	2.36	0.00	CI-D9	0.015
CI-D12	D12	42.00' LT SH205CL STA 40+00.00	0.25	0.25	3.0	2.00	15	12.0	2.18	10.54	0.21	15.28										0.50	0.21	4.31	4.31	0.00	CI-D10	0.015
CI-D13	D13	53.00' LT SH205CL STA 42+25.00	0.25	0.25	3.0	2.00	15	12.0	1.06	10.90	0.22	11.26										0.50	0.22	3.28	3.28			0.015
CI-F1	F1	59.00' RT SH205CL STA 47+96.00	0.25	0.25	3.0	2.00	10	12.0	0.50	9.82	0.20	6.28										0.50	0.20	1.71	1.71			0.015
CI-F2	F2	56.00' RT SH205CL STA 46+30.00	0.25	0.25	3.0	2.00	5	12.0	0.50	9.93	0.20	6.42										0.50	0.20	1.76	1.65	0.12	CI-F1	0.015
CI-F3	F3	92.05' LT SH205CL STA 50+00.00	0.25	0.33	3.0	1.95	15	14.0					0.25	0.25	11.15	12.98						0.50	0.20	4.07	16.59			0.015
CI-F4	F4	48.50' LT SH205CL STA 50+17.00	0.25	0.33	3.0	2.00	15	12.0					0.25	0.25	6.56	6.56						0.50	0.07	0.82	16.59			0.015
CI-F5	F5	62.30' LT SH205CL STA 51+96.50	0.25	0.25	3.0	2.00	15	12.0	1.00	9.90	0.20	9.08										0.50	0.20	2.47	2.47			0.015
CI-F6	F6	57.15' LT SH205CL STA 52+60.00	0.25	0.25	3.0	2.00	15	12.0	1.00	10.95	0.22	11.07										0.50	0.22	3.24	3.24			0.015
CI-F7	F7	55.90' LT SH205CL STA 53+33.00	0.25	0.25	3.0	2.00	10	12.0	1.00	10.52	0.21	10.24										0.50	0.21	2.91	2.91	0.00	CI-F6	0.015
CI-F8	F8	54.57' LT SH205CL STA 54+10.00	0.25	0.25	3.0	2.00	15	12.0	1.00	11.29	0.23	11.75										0.50	0.23	3.52	3.52			0.015
CI-F9	F9	44.80' LT SH205CL STA 55+71.00	0.25	0.25	3.0	2.00	10	12.0	1.00	9.62	0.19	8.59										0.50	0.19	2.29	2.29			0.015
CI-F10	F10	72.20' LT SH205CL STA 56+16.40	0.25	0.25	3.0	2.00	15	15.0	1.00	14.30	0.29	18.31										0.50	0.29	6.60	6.30	0.30	CI-F9	0.015
CI-F12	F12	42.00' LT SH205CL STA 56+70.00	0.25	0.25	3.0	2.00	10	12.0	1.00	8.74	0.18	7.09										0.50	0.18	1.77	1.77			0.015
EX-CI-F13	F13	72.80' LT SH205CL STA 56+71.90	0.25	0.33	3.0	2.00	5	40.0					2.00	2.00	9.73	9.73						0.70	0.56	6.68	6.54			0.015
CI-F14	F14	42.00' LT SH205CL STA 57+77.00	0.25	0.25	3.0	2.00	10	12.0	1.30	11.99	0.24	15.06										0.50	0.24	4.70	4.04	0.66	CI-F12	0.015
CI-F15	F15	90.50' LT SH205CL STA 58+05.00	0.25	0.25	3.0	2.00	5	12.0	1.50	9.59	0.19	10.49										0.50	0.19	2.78	1.91	0.87	EX-CI-F1	0.015
CI-F16	F16	70.30' LT SH205CL STA 58+72.00	0.25	0.25	3.0	2.60	15	12.0	2.53	10.81	0.28	22.58										0.50	0.28	7.72	6.64	1.08	CI-F14	0.015
CI-F17	F17	42.00' LT SH205CL STA 58+95.00	0.25	0.25	3.0	2.00	15	12.0	2.13	11.21	0.22	17.01										0.50	0.22	5.02	4.92	0.11	CI-F14	0.015
CI-F18	F18	70.30' LT SH205CL STA 61+25.00	0.25	0.25	3.0	2.27	15	20.0	1.01	12.37	0.28	15.89										0.50	0.28	5.57	5.54	0.03	CI-F17	0.015
CI-F19	F19	42.00' LT SH205CL STA 61+50.00	0.25	0.25	3.0	2.00	15	12.0	2.40	9.38	0.19	12.77										0.50	0.19	3.32	3.32			0.015
CI-F20	F20	42.00' LT SH205CL STA 63+47.80	0.25	0.25	3.0	2.00	10	12.0	2.40	10.98	0.22	17.40										0.50	0.22	5.06	3.97	1.09	CI-F19	0.015
CI-F21	F21	42.00' LT SH205CL STA 64+17.00	0.25	0.25	3.0	2.00	15	12.0	2.40	10.74	0.22	16.66										0.50	0.22	4.76	4.69	0.08	CI-F20	0.015
CI-F22	F22	22.00' LT YELLOW STA 15+10.00	0.25	0.33	3.0	2.00	15	20.0	0.78	16.46	0.33	20.73										0.50	0.33	8.45	7.62	0.83	CI-F21	0.015
CI-F23	F23	42.00' LT SH205CL STA 65+60.00	0.25	0.25	3.0	2.00	15	12.0	1.55	11.77	0.24	15.87										0.50	0.24	4.88	4.85	0.03	CI-F21	0.015
CI-FJ	FJ	25.00' RT FREB STA 22+15.00	0.25	0.25	3.0	1.43	15	12.0					0.30	0.30	10.85	12.62						0.50	0.14	2.46	16.59			0.015

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

TRENCH DRAIN

			Trench Drain									Trench Drain Grate		
AREA ID	OUTLET ID	LOCATION	Trench Length FT	Trench Width FT	Trench Depth FT	Trench Radius FT	Manning n	Gutter Slope %	Trench Slope %	Trench Capacit CFS	5yr-Des Dischar CFS	5yr-Des Dischar per FT CFS/LF	Min GRT Opening per FT SF/LF	Sheet Flow Cap CFS/LF
TD-MM4A			164	0.33	1	0.17	0.010	0.97%	0.97%		3.34	0.02	0.10	0.09
	TD OUTFALL	49.50'LT SH205CL STA 109+67.40	55.77	0.33	1	0.17	0.010	0.97%	0.97%	1.31	1.14			
	TDO-A	49.50'LT SH205CL STA 110+23.17	55.78	0.33	1	0.17	0.010	0.97%	0.97%	1.31	1.14			
	TDO-B	49.50'LT SH205CL STA 110+78.95	52.45	0.33	1	0.17	0.010	0.97%	0.97%	1.31	1.07			
TD-MM1A			145	0.33	1	0.17	0.010		0.60%		2.93	0.02	0.10	0.09
	TDO-C	49.50'LT SH205CL STA 112+03.73	48.33	0.33	1	0.17	0.010		0.60%	1.03	0.98			
	TDO-D	49.50'LT SH205CL STA 112+52.06	48.08	0.33	1	0.17	0.010		0.60%	1.03	0.97			
	TDO-E	49.50'LT SH205CL STA 113+48.21	48.07	0.33	1	0.17	0.010		0.60%	1.03	0.97			
TD-LL1A			190	0.33	1	0.17	0.010	0.35%	0.60%		2.67	0.01	0.10	0.09
	TDO-F	49.50'LT SH205CL STA 114+51.25	55.77	0.33	1	0.17	0.010	0.35%	0.60%	1.03	0.78			
	TDO-G	49.50'LT SH205CL STA 115+07.02	55.77	0.33	1	0.17	0.010	0.35%	0.60%	1.03	0.78			
	TDO-H	49.50'LT SH205CL STA 115+62.79	55.77	0.33	1	0.17	0.010	0.35%	0.60%	1.03	0.78			

PB Parsons Brinckerhoff Quade & Douglas, Inc.
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Dallas, TX 75207

Texas Department of Transportation
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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 5 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	392
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\2451cd05.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:55

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet in Sag				Drop Inlet											
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longi Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longi Slope Left (sag) (%)	Longi Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-G1	G1	29.90' RT FREB STA 18+90.00	0.25	0.33	3.0	0.87	15	14.0					0.40	0.40	14.07	14.07						0.50	0.12	1.99	16.59			0.015
CI-G2	G2	25.00' RT FREB STA 18+15.00	0.25	0.25	3.0	1.20	10	12.0	2.50	11.47	0.14	11.01										0.50	0.14	2.48	2.44	0.03	CI-G1	0.015
CI-G3	G3	25.00' RT FREB STA 16+94.00	0.25	0.25	3.0	2.00	10	12.0	2.50	9.38	0.19	13.02										0.50	0.19	3.38	3.14	0.24	CI-G2	0.015
CI-G4	G4	58.95' LT SH205CL STA 46+95.00	0.25	0.25	3.0	2.00	10	12.0	0.50	11.72	0.23	8.85										0.50	0.23	2.74	2.74			0.015
CI-G5	G5	56.30' LT SH205CL STA 46+45.00	0.25	0.25	3.0	2.00	10	12.0	0.50	11.99	0.24	9.25										0.50	0.24	2.92	2.92			0.015
CI-G6	G6	54.40' LT SH205CL STA 45+45.00	0.25	0.25	3.0	2.00	10	12.0	0.50	9.33	0.19	5.67										0.50	0.19	1.49	1.49			0.015
CI-H1	H1	92.20' RT SH205CL STA 50+18.00	0.25	0.33	3.0	2.00	15	12.0					0.25	0.25	10.95	11.46						0.25	0.18	3.44	5.87			0.015
CI-H2	H2	48.50' RT SH205CL STA 50+17.00	0.25	0.33	3.0	2.00	15	12.0					0.25	0.25	6.98	6.28						0.25	0.07	0.85	5.87			0.015
CI-I1	I1	13.00' RT FRWB STA 20+45.00	0.25	0.33	3.0	1.00	15	13.0					0.35	0.35	12.60	12.60						0.50	0.11	1.75	16.59			0.015
CI-I2	I2	13.00' LT FRWB STA 19+55.00	0.25	0.25	3.0	1.03	10	12.0	2.06	11.55	0.12	8.59										0.50	0.12	1.82	1.82			0.015
CI-I4	I4	13.00' LT FRWB STA 18+80.00	0.25	0.25	3.0	2.00	15	12.0	3.00	9.36	0.19	14.25										0.50	0.19	3.69	3.69			0.015
CI-I5	I5	13.00' LT FRWB STA 18+05.00	0.25	0.25	3.0	2.00	5	12.0	3.00	8.00	0.16	10.38										0.50	0.16	2.43	1.68	0.74	CI-I4	0.015
CI-I6	I6	13.00' LT FRWB STA 17+25.00	0.25	0.25	3.0	2.00	15	12.0	3.00	11.65	0.23	21.83										0.50	0.23	6.61	5.80	0.82	CI-I5	0.015
CI-I7	I7	13.00' LT FRWB STA 16+40.00	0.25	0.25	3.0	2.00	5	12.0	2.17	4.95	0.10	3.16										0.50	0.10	0.57	0.57			0.015
CI-I8	I8	13.00' LT FRWB STA 15+83.00	0.25	0.25	3.0	2.00	10	12.0	1.41	7.10	0.14	5.51										0.50	0.14	1.21	1.21			0.015
CI-J2	J2	25.00' RT FREB STA 22+95.00	0.25	0.25	3.0	2.00	5	12.0	0.67	8.48	0.17	5.45										0.50	0.17	1.34	1.33	0.02	CI-FJ	0.015
DI-J3	J3	19.90' LT FRWB STA 27+00.00															3	7.67	2	11.19	15.92	0.70	0.62	12.12	8.69			
CI-K1	K1	24.45' LT FRWB STA 22+80.00	0.25	0.25	3.0	2.00	15	12.0					0.30	0.30	11.62	11.62						0.50	0.20	4.16	16.59			0.015
CI-K2	K2	45.80' RT SH205CL STA 53+40.00	0.25	0.25	3.0	2.00	15	12.0	1.00	11.15	0.22	11.46										0.50	0.22	3.40	3.40			0.015
CI-K3	K3	43.00' RT SH205CL STA 55+00.00	0.25	0.25	3.0	2.00	10	12.0	1.00	11.38	0.23	11.92										0.50	0.23	3.59	3.45	0.13	CI-K2	0.015
CI-K4	K4	42.00' RT SH205CL STA 58+87.00	0.25	0.25	3.0	2.00	15	12.0	2.07	10.59	0.21	15.03										0.50	0.21	4.26	4.26			0.015
CI-K5	K5	42.00' RT SH205CL STA 62+30.00	0.25	0.25	3.0	2.00	15	12.0	2.40	9.35	0.19	12.68										0.50	0.19	3.29	3.29			0.015
CI-K7	K7	42.00' RT SH205CL STA 65+85.00	0.25	0.25	3.0	2.00	10	12.0	1.39	7.72	0.15	6.51										0.50	0.15	1.50	1.50			0.015
CI-L2	L2	13.00' LT FRWB STA 23+68.00	0.25	0.25	3.0	2.00	15	12.0	1.52	11.45	0.23	14.94										0.50	0.23	4.50	4.50			0.015
EX-DI-L3	L3	34.30' LT FRWB STA 25+22.30															1	3.00	2	4.62	8.58	0.70	0.64	6.81	4.68			
CI-L4	L4	13.00' LT FRWB STA 26+10.00	0.25	0.25	3.0	2.00	10	12.0	2.00	8.59	0.17	9.75										0.50	0.17	2.39	2.39			0.015
DI-L5	L5	35.00' LT FRWB STA 26+15.00															3	7.50	2	10.07	14.42	0.50	0.17	1.51	7.87			
DI-L6A	L6A	32.00' LT FRWB STA 28+10.00															3	7.50	2	10.07	14.42	0.50	0.10	0.71	7.87			
CI-L6B	L6B	13.00' LT FRWB STA 28+48.00	0.25	0.25	3.0	2.00	10	12.0	2.00	8.92	0.18	10.52										0.50	0.18	2.65	2.64	0.01	CI-L4	0.015
DI-L7	L7	23.00' RT IH30CL STA 27+02.00															3	7.67	2	11.19	15.92	0.50	0.44	7.20	8.69			
EX-GI-S1	S1	0.50' LT IH30CL STA 32+18.78	0.25	0.25	3.0	3.78	10	12.0	1.06	9.61	0.36	16.66										0.50	0.36	6.82	5.51	1.31	0	0.015
DI-M1	M1	56.00' LT SH205CL STA 69+77.00															3	7.50	2	10.07	14.42	0.50	0.41	5.86	7.87			
CI-M2	M2	42.00' LT SH205CL STA 69+77.00	0.25	0.25	3.0	2.00	10	12.0	1.10	10.22	0.20	10.14										0.50	0.20	2.82	2.82	0.00	CI-M4	0.015
CI-M3	M3	63.00' LT SH205CL STA 71+01.00	0.25	0.25	3.0	1.88	5	12.0	1.88	9.69	0.18	11.24										0.50	0.18	2.89	1.89	1.00	CI-M4	0.015
CI-M4	M4	42.00' LT SH205CL STA 72+15.00	0.25	0.25	3.0	2.00	10	12.0	2.60	9.02	0.18	12.30										0.50	0.18	3.11	2.96	0.15	CI-M5	0.015
CI-M5	M5	42.00' LT SH205CL STA 74+60.00	0.25	0.25	3.0	2.00	10	12.0	3.30	8.02	0.16	10.96										0.50	0.16	2.56	2.53	0.03	CI-M6	0.015
CI-M6	M6	42.00' LT SH205CL STA 77+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.99	0.16	10.34										0.50	0.16	2.41	2.41	0.01	CI-M7	0.015
CI-M7	M7	42.00' LT SH205CL STA 79+00.00	0.25	0.25	3.0	2.00	10	12.0	1.68	9.63	0.19	11.20										0.50	0.19	2.97	2.92	0.05	CI-M8	0.015
CI-M8	M8	42.00' LT SH205CL STA 80+70.00	0.25	0.25	3.0	2.00	5	12.0	0.55	8.67	0.17	5.15										0.50	0.17	1.29	1.29	0.00	CI-R1	0.015
CI-N1	N1	19.50' RT JUSTIN STA 14+50.00	0.25	0.25	3.0	0.45	10	20.0	1.65	19.45	0.09	8.48										0.50	0.09	1.61	1.61			0.015
DI-N2	N2	31.70' RT JUSTIN STA 13+64.00															3	7.50	2	10.07	14.42	1.00	1.00	22.17	22.26			
CI-O1	O1	42.00' RT SH205CL STA 80+70.00	0.25	0.25	3.0	2.00	10	12.0	0.55	10.13	0.20	7.02										0.50	0.20	1.95	1.95			0.015
DI-O2	O2	59.00' RT SH205CL STA 79+98.00															3	7.50	2	10.07	14.42	1.00	0.19	1.90	22.26			
CI-O3	O3	42.00' RT SH205CL STA 79+00.00	0.25	0.25	3.0	2.00	10	12.0	1.68	8.85	0.18	9.48										0.50	0.18	2.38	2.38			0.015
CI-O5	O5	28.60' LT JUSTIN STA 16+86.00	0.25	0.25	3.0	2.00	15	12.0	3.03	9.12	0.18	13.60										0.50	0.18	3.46	3.46			0.015
CI-O6A	O6A	28.40' RT JUSTIN STA 16+80.00	0.25	0.25	3.0	2.00	5	12.0	3.03	5.17	0.10	4.14										0.50	0.10	0.76	0.76			0.015
CI-O6B	O6B	28.40' RT JUSTIN STA 16+92.00	0.25	0.25	3.0	2.00	15	12.0	3.03	11.44	0.23	21.18										0.50	0.23	6.33	5.64	0.69	CI-O6A	0.015
CI-O8	O8	42.00' RT SH205CL STA 77+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.74	0.16	9.71										0.50	0.16	2.22	2.22			0.015
CI-O9	O9	42.00' RT SH205CL STA 75+35.00	0.25	0.25	3.0	2.00	15	12.0	3.30	10.22	0.20	17.78										0.50	0.20	4.89	4.71	0.17	CI-O8	0.015
CI-O10	O10	42.00' RT SH205CL STA 73+80.00	0.25	0.25	3.0	2.00	10	12.0	3.30	8.98	0.18	13.76										0.50	0.18	3.46	3.13	0.34	CI-O9	0.015
CI-O11	O11	42.00' RT SH205CL STA 71+30.00	0.25	0.25	3.0	2.00	10	12.0	2.07	8.47	0.17	9.63										0.50	0.17	2.34	2.34			0.015
CI-O12	O12	42.00' RT SH205CL STA 69+81.00	0.25	0.25	3.0	2.00	15	12.0	1.12	11.87	0.24	13.70										0.50	0.24	4.25	4.25			0.015
CI-P1	P1	42.00' LT SH205CL STA 82+35.00	0.25	0.25	3.0	2.00	10	12.0	0.54	9.82	0.20	6.54										0.50	0.20	1.78	1.78			0.015
CI-P2	P2	42.00' LT SH205CL STA 85+05.00	0.25	0.25	3.0	2.00	15	12.0	2.00	10.52	0.21	14.58										0.50	0.21	4.11	4.11			0.015
CI-Q1	Q1	42.00' RT SH205CL STA 82+35.00	0.25	0.25	3.0	2.00	10	12.0	0.54	10.03	0.20	6.82										0.50	0.20	1.88	1.88			0.015
CI-Q2	Q2	42.00' RT SH205CL STA 85+05.00	0.25	0.25	3.0	2.00	15	12.0	2.00	10.77	0.22	15.25										0.50	0.22	4.37	4.37	0.00	CI-Q1	0.015
CI-R1	R1	42.00' LT SH205CL STA 81+53.00	0.25	0.25	3.0	2.00	15	12.0					0.30	0.30	7.13	7.13						0.24	0.08	1.13	5.52			0.015
CI-R2	R2	42.00' RT SH205CL STA 81+53.00	0.25	0.25	3.0	2.00	15	12.0					0.30	0.30	8.05	11.06						0.24	0.15	2.60	5.52			0.015
DI-R3	R3	57.00' RT SH205CL STA 81+53.00															3	7.67	2	11.19	15.92	1.00	0.81	17.85	24.57			

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

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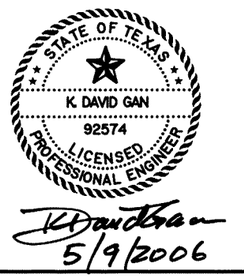
5/9/2006 Plotted 09-MAY-2006 12:56



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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 6 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	393
CONT.	SECT.	JOB	
0451	01	032, ETC	

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet in Sag				Drop Inlet											
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longl Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longl Slope Left (sag) (%)	Longl Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-NN13	NN13	42.00' LT SH205CL STA 95+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.80	0.16	9.85										0.24	0.16	2.27	2.27			0.015
CI-NN12	NN12	42.00' LT SH205CL STA 96+12.00	0.25	0.25	3.0	2.00	5	12.0	0.94	6.40	0.13	3.59										0.24	0.13	0.75	0.75			0.015
CI-NN11	NN11	42.00' RT SH205CL STA 96+48.00	0.25	0.25	3.0	2.00	10	12.0					0.90	0.90	10.13	11.79						0.24	0.07	0.62	4.17			0.15
CI-NN10	NN10	42.00' RT SH205CL STA 97+56.00	0.25	0.25	3.0	2.00	10	12.0	2.25	6.54	0.13	5.90										0.24	0.13	1.23	1.23			0.015
CI-NN9	NN9	42.00' RT SH205CL STA 99+25.00	0.25	0.25	3.0	2.00	5	12.0	2.25	6.44	0.13	5.70										0.24	0.13	1.18	1.15	0.03	CI-NN10	0.015
CI-NN8	NN8	65.00' RT SH205CL STA 100+96.56	0.25	0.25	3.0	2.19	10	12.0					3.85	4.85	4.27	6.87						0.24	0.19	2.99	4.17			0.015
CI-NN7	NN7	42.00' RT SH205CL STA 100+96.00	0.25	0.25	3.0	2.00	10	12.0	2.25	6.63	0.13	6.07										0.24	0.13	1.27	1.27			0.015
CI-NN6	NN6	68.00' RT SH205CL STA 102+27.26	0.25	0.25	3.0	4.65	10	12.0	1.00	5.80	0.27	8.12										0.30	0.27	2.43	2.43			0.015
CI-NN5	NN5	42.00' RT SH205CL STA 102+67.00	0.25	0.25	3.0	2.00	10	12.0	2.25	7.28	0.15	7.37										0.24	0.15	1.63	1.63			0.015
CI-NN4	NN4	42.00' RT SH205CL STA 104+55.00	0.25	0.25	3.0	2.00	5	12.0	2.25	7.86	0.16	8.64										0.24	0.16	2.00	1.58	0.42	CI-NN5	0.015
CI-NN3	NN3	42.00' RT SH205CL STA 107+58.00	0.25	0.25	3.0	2.00	5	12.0	0.45	9.02	0.18	5.04										0.50	0.18	1.30	1.30			0.015
CI-NN2	NN2	42.00' RT SH205CL STA 109+58.00	0.25	0.25	3.0	2.00	5	12.0	0.35	10.13	0.20	5.57										0.24	0.20	1.56	1.53	0.03	CI-NN3	0.015
CI-NN1	NN1	42.00' RT SH205CL STA 112+07.00	0.25	0.25	3.0	2.00	5	12.0	0.35	7.08	0.14	2.70										0.24	0.14	0.60	0.60			0.015
CI-QQ1	QQ1	42.00' RT SH205CL STA 95+95.00	0.25	0.25	3.0	2.00	15	12.0	1.38	10.23	0.21	11.43										0.24	0.21	3.17	3.17			0.015
CI-PP7	PP7	42.00' LT SH205CL STA 97+28.00	0.25	0.25	3.0	2.00	10	12.0	2.11	7.13	0.14	6.84										0.24	0.14	1.50	1.50			0.015
CI-PP6	PP6	42.00' LT SH205CL STA 99+35.00	0.25	0.25	3.0	2.00	15	12.0	2.25	7.18	0.14	7.17										0.24	0.14	1.57	1.57			0.015
CI-PP5	PP5	42.00' LT SH205CL STA 100+90.00	0.25	0.25	3.0	2.00	10	12.0	2.25	8.21	0.16	9.44										0.24	0.16	2.25	2.25			0.015
CI-PP4	PP4	42.00' LT SH205CL STA 101+72.00	0.25	0.25	3.0	2.00	10	12.0	2.25	6.18	0.12	5.23										0.24	0.12	1.05	1.05			0.015
CI-PP3	PP3	23.50' RT FM740 STA 18+58.39	0.25	0.25	3.0	4.55	5	12.0	3.45	2.96	0.14	4.08										0.24	0.14	0.72	0.72			0.015
CI-PP2	PP2	22.50' LT FM740 STA 18+98.00	0.25	0.25	3.0	0.90	5	12.0					0.35	0.35	9.64	3.20						0.24	0.06	0.38	2.81			0.015
CI-PP1	PP1	42.00' LT SH205CL STA 103+43.00	0.25	0.25	3.0	2.00	10	12.0					5.00	2.50	3.58	4.08						0.24	0.08	0.73	4.17			0.015
DI-MM18	MM18	46.50' LT FM740 STA 17+00.00															3	7.50	2	10.07	14.42	1.00	0.37	4.98	22.26			
CI-MM17	MM17	36.40' LT FM740 STA 17+85.00	0.25	0.25	3.0	2.00	15	12.0	2.35	8.09	0.16	9.38										0.24	0.16	2.21	2.21			0.015
CI-MM16B	MM16B	70.65' LT FM740 STA 18+18.20	0.25	0.25	3.0	2.00	10	12.0	1.00	8.26	0.17	6.32										0.24	0.17	1.52	1.52			0.015
CI-MM16A	MM16A	82.00' LT FM740 STA 18+43.00	0.25	0.25	3.0	2.00	10	12.0	1.00	8.91	0.18	7.37										0.24	0.18	1.86	1.86			0.015
CI-MM16	MM16	100.22' LT SH205CL STA 103+40.00	0.25	0.25	3.0	2.00	15	12.0					0.40	0.40	11.47	11.64						0.24	0.22	4.73	5.52			0.015
CI-MM15	MM15	87.50' LT SH205CL STA 103+72.00	0.25	0.25	3.0	2.00	15	12.0	1.75	9.88	0.20	12.04										0.24	0.20	3.25	3.25			0.015
CI-MM14	MM14	71.75' LT SH205CL STA 104+16.00	0.25	0.25	3.0	2.00	15	12.0	3.00	9.09	0.18	13.43										0.24	0.18	3.41	3.41			0.015
CI-MM13	MM13	55.92' LT SH205CL STA 104+67.00	0.25	0.25	3.0	2.00	15	12.0	2.59	9.85	0.20	14.63										0.24	0.20	3.93	3.93			0.015
CI-MM12	MM12	42.00' LT SH205CL STA 105+69.00	0.25	0.25	3.0	2.00	5	12.0	2.25	7.27	0.15	7.36										0.24	0.15	1.63	1.42	0.21	CI-MM13	0.015
CI-MM11	MM11	14.00' RT BOURN STA 13+28.50	0.25	0.25	3.0	2.00	5	12.0	4.53	3.78	0.08	2.52										0.24	0.08	0.40	0.40			0.015
CI-MM10	MM10	14.00' LT BOURN STA 13+23.50	0.25	0.25	3.0	2.00	15	12.0	4.34	9.11	0.18	16.29										0.24	0.18	4.13	4.08	0.04	CI-MM12	0.015
CI-MM9	MM9	42.00' LT SH205CL STA 107+58.00	0.25	0.25	3.0	2.00	10	12.0	0.45	11.04	0.22	7.50										0.24	0.22	2.22	2.22			0.015
CI-MM8	MM8	42.00' LT SH205CL STA 108+60.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.94	0.24	7.65										0.24	0.24	2.41	2.41			0.015
CI-MM7	MM7	42.00' LT SH205CL STA 109+38.00	0.25	0.25	3.0	1.92	10	12.0	0.35	10.02	0.19	5.22										0.24	0.19	1.41	1.41			0.015
CI-MM6	MM6	42.00' LT SH205CL STA 109+98.00	0.25	0.25	3.0	0.74	5	12.0	0.35	10.38	0.08	1.75										0.24	0.08	0.32	0.32			0.015
CI-MM5	MM5	7.00' LT SH205CL STA 110+63.00	0.25	0.25	3.0	0.62	5	12.0	0.35	11.00	0.07	1.58										0.24	0.07	0.27	0.27			0.015
CI-MM4	MM4	7.00' LT SH205CL STA 111+15.00	0.25	0.25	3.0	0.62	5	12.0	0.35	10.20	0.06	1.32										0.24	0.06	0.22	0.22			0.015
CI-MM3B	MM3B	14.00' LT ROSS STA 13+32.00	0.25	0.25	3.0	2.00	15	12.0	6.57	7.67	0.15	14.19										0.24	0.15	3.20	3.20			0.015
CI-MM3A	MM3A	14.00' RT ROSS STA 13+35.00	0.25	0.25	3.0	2.00	5	12.0	6.57	3.87	0.08	3.22										0.24	0.08	0.52	0.52			0.015
CI-MM2	MM2	3.00' RT SH205CL STA 112+15.50	0.25	0.25	3.0	2.00	10	12.0	0.35	5.99	0.12	1.89										0.24	0.12	0.38	0.38			0.015
CI-MM1	MM1	3.00' RT SH205CL STA 112+69.00	0.25	0.25	3.0	2.00	5	12.0	0.15	5.93	0.12	1.18										0.24	0.12	0.24	0.24			0.015
CI-KK3	KK3	17.50' RT BOYDSTON STA 15+47.00	0.25	0.25	3.0	2.00	10	12.0	2.87	7.37	0.15	8.57										0.24	0.15	1.91	1.91			0.015
CI-KK2	KK2	42.00' RT SH205CL STA 115+78.00	0.25	0.25	3.0	2.00	10	12.0	0.35	9.71	0.19	5.12										0.24	0.19	1.39	1.39			0.015
CI-KK1	KK1	42.00' RT SH205CL STA 114+00.00	0.25	0.25	3.0	2.00	5	12.0	0.35	7.34	0.15	2.91										0.24	0.15	0.66	0.66			0.015
CI-LL5	LL5	16.00' LT BOYDSTON STA 13+31.50	0.25	0.25	3.0	1.70	15	12.0	4.80	10.40	0.18	18.67										0.24	0.18	4.71	4.46	0.25	CI-HH3	0.015
CI-LL4	LL4	16.00' RT BOYDSTON STA 13+31.50	0.25	0.25	3.0	2.00	15	12.0	4.80	8.21	0.16	13.90										0.24	0.16	3.28	3.28			0.015
CI-LL3	LL3	7.00' LT SH205CL STA 115+70.00	0.25	0.25	3.0	2.00	5	12.0	0.35	5.03	0.10	1.30										0.24	0.10	0.24	0.24			0.015
CI-LL2C	LL2C	7.00' LT SH205CL STA 115+30.00	0.25	0.25	3.0	2.00	5	12.0	0.35	5.06	0.10	1.31										0.24	0.10	0.24	0.24			0.015
CI-LL2B	LL2B	7.00' LT SH205CL STA 114+90.00	0.25	0.25	3.0	2.00	5	12.0	0.35	5.01	0.10	1.28										0.24	0.10	0.24	0.24			0.015
CI-LL2A	LL2A	7.00' LT SH205CL STA 114+50.00	0.25	0.25	3.0	2.00	5	12.0	0.35	4.78	0.10	1.16										0.24	0.10	0.21	0.21			0.015
CI-LL1	LL1	3.00' RT SH205CL STA 113+66.00	0.25	0.25	3.0	2.00	5	12.0					0.30	0.30	8.91	6.64						0.50	0.16	1.49	8.46			0.015

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

DGN=G:\JOBS\22451C-SH205\Drainage\2451qdc07.dgn, ON=[0-63]
5/10/2006 Plotted 10-MAY-2006 09:23

STATE OF TEXAS
K DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER

5/10/2006

PB 122 Parsons Brinckerhoff Quade & Douglas, Inc.
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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 7 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	394
CONT.	SECT.	JOB	
0451	01	032, ETC	

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet In Sag				Drop Inlet										
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding Width (ft)	Longl Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longl Slope Left (sag) (%)	Longl Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-HH3	HH3	17.50' LT BOYDSTON STA 15+00.00	0.25	0.25	3.0	2.00	15	12.0	2.87	6.03	0.12	5.62										0.24	0.12	1.12	1.12			0.015
CI-HH2	HH2	42.00' RT SH205CL STA 116+62.00	0.25	0.25	3.0	2.00	10	12.0	0.23	10.51	0.21	4.83										0.24	0.21	1.39	1.39			0.015
CI-HH1	HH1	42.00' RT SH205CL STA 118+80.00	0.25	0.25	3.0	2.00	10	12.0	2.00	7.69	0.15	7.79										0.24	0.15	1.78	1.78			0.015
CI-JJ5	JJ5	3.00' RT SH205CL STA 116+68.00	0.25	0.25	3.0	2.00	5	12.0	0.32	6.58	0.13	2.22										0.24	0.13	0.47	0.47			0.015
CI-JJ4	JJ4	3.00' RT SH205CL STA 117+05.00	0.25	0.25	3.0	1.03	10	12.0	0.90	9.65	0.10	3.72										0.24	0.10	0.72	0.72			0.015
CI-JJ3	JJ3	42.00' LT SH205CL STA 118+05.00	0.25	0.25	3.0	0.93	5	12.0	2.00	5.56	0.05	1.35										0.24	0.05	0.21	0.21			0.015
DI-JJ2C	JJ2C	67.00' LT SH205CL STA 118+62.50				2.80	7.5	20.0	9.00	6.68	0.19											0.24	0.19	4.54	3.52	1.03	CI-JJ2B	0.015
CI-JJ2B	JJ2B	42.00' LT SH205CL STA 118+40.00	0.25	0.25	3.0	1.62	10	12.0	2.00	10.02	0.16	10.48										0.24	0.16	2.54	2.53	0.01	CI-JJ3	0.015
CI-JJ2A	JJ2A	57.45' LT SH205CL STA 119+29.95	0.25	0.25	3.0	2.00	10	12.0					0.50	0.50	11.93	11.93						0.24	0.18	5.75	4.56			0.015
CI-JJ1B	JJ1B	42.00' LT SH205CL STA 119+35.00	0.25	0.25	3.0	2.00	10	12.0	2.00	6.68	0.13	5.81										0.24	0.13	1.22	1.22			0.015
CI-JJ1A	JJ1A	54.50' LT SH205CL STA 120+10.00	0.25	0.25	3.0	1.67	10	12.0					0.50	0.50	4.44	13.37						0.24	0.19	3.04	4.17			0.015
CI-GG4	GG4	34.00' LT SH205SB2 STA 128+44.00	0.25	0.25	3.0	2.00	15	12.0	2.54	10.16	0.20	15.40										0.24	0.20	4.23	4.22	0.01	CI-EE6	0.015
CI-GG3	GG3	34.00' LT SH205SB2 STA 125+55.00	0.25	0.25	3.0	2.00	15	12.0	8.00	8.10	0.16	17.57										0.24	0.16	4.10	3.97	0.13	CI-GG4	0.015
CI-GG2	GG2	13.00' RT KENWAY STA 13+08.50	0.25	0.25	3.0	0.50	15	25.0	0.85	21.20	0.16	16.66										0.24	0.16	4.28	4.21	0.07	CI-GG3	0.015
CI-GG1	GG1	33.99' LT SH205SB2 STA 123+83.81	0.25	0.25	3.0	2.00	10	12.0	8.00	6.61	0.13	11.50										0.24	0.13	2.38	2.32	0.06	CI-GG3	0.015
CI-FF4	FF4	34.00' RT SH205NB2 STA 128+60.00	0.25	0.25	3.0	2.00	15	12.0	2.16	10.23	0.21	14.36										0.24	0.21	3.97	3.97			0.015
CI-FF3	FF3	34.00' RT SH205NB2 STA 126+90.00	0.25	0.25	3.0	2.00	15	12.0	6.21	10.70	0.21	26.88										0.24	0.21	7.59	5.84	1.74	CI-FF4	0.015
CI-FF2	FF2	14.00' RT STORRS STA 10+85.00	0.25	0.25	3.0	2.00	15	12.0	10.00	11.94	0.24	42.28										0.24	0.24	12.89	7.03	5.86	CI-FF3	0.015
CI-FF1	FF1	34.00' RT SH205NB2 STA 125+55.00	0.25	0.25	3.0	2.00	15	12.0	8.00	8.64	0.17	20.03										0.24	0.17	4.87	4.46	0.41	CI-FF3	0.015
CI-EE6	EE6	34.00' LT SH205SB2 STA 129+50.00	0.25	0.25	3.0	2.00	10	12.0					4.00	3.75	5.19	5.25						0.24	0.14	1.76	4.17			0.015
CI-EE5	EE5	34.00' LT SH205SB2 STA 130+40.00	0.25	0.25	3.0	2.00	15	12.0	2.13	10.71	0.21	15.59										0.24	0.21	4.45	4.44	0.01	CI-EE6	0.015
CI-EE4	EE4	34.00' LT SH205SB2 STA 132+75.00	0.25	0.25	3.0	2.00	15	12.0	7.50	7.39	0.15	14.07										0.24	0.15	3.10	3.10			0.015
CI-EE3	EE3	34.00' LT SH205SB2 STA 134+93.00	0.25	0.25	3.0	2.00	15	12.0	4.00	9.66	0.19	17.56										0.24	0.19	4.63	4.49	0.15	CI-EE4	0.015
CI-EE2	EE2	34.00' LT SH205SB2 STA 136+45.00	0.25	0.25	3.0	2.00	15	12.0	5.59	8.24	0.17	15.14										0.24	0.17	3.58	3.58	0.00	CI-EE3	0.015
CI-EE1	EE1	34.00' LT SH205SB2 STA 137+66.00	0.25	0.25	3.0	2.00	15	12.0	6.96	6.86	0.14	11.60										0.24	0.14	2.45	2.45			0.015
CI-DD5	DD5	34.00' RT SH205NB2 STA 129+50.00	0.25	0.25	3.0	2.00	10	12.0					4.00	3.75	4.81	4.87						0.24	0.12	1.44	4.17			0.015
CI-DD4	DD4	34.00' RT SH205NB2 STA 130+40.00	0.25	0.25	3.0	2.00	15	12.0	2.13	8.99	0.18	11.05										0.24	0.18	2.79	2.79			0.015
CI-DD3	DD3	34.00' RT SH205NB2 STA 132+63.00	0.25	0.25	3.0	2.00	15	12.0	7.45	7.05	0.14	12.71										0.24	0.14	2.73	2.73			0.015
CI-DD2	DD2	34.00' RT SH205NB2 STA 134+93.00	0.25	0.25	3.0	2.00	15	12.0	7.50	6.23	0.13	9.84										0.24	0.13	1.97	1.97			0.015
CI-DD1	DD1	34.00' RT SH205NB2 STA 136+31.00	0.25	0.25	3.0	2.00	15	12.0	6.96	7.46	0.15	13.81										0.24	0.15	3.07	3.07			0.015
CI-CC5	CC5	23.00' LT SH205SB2 STA 148+63.00	0.25	0.25	3.0	2.00	10	12.0	2.00	8.11	0.16	8.67										0.24	0.16	2.05	2.05			0.015
CI-CC4	CC4	23.00' RT SH205NB2 STA 149+00.00	0.25	0.25	3.0	2.00	10	12.0	0.50	11.71	0.23	8.84										0.50	0.23	2.74	2.74			0.015
CI-CC3	CC3	23.00' RT SH205NB2 STA 147+15.00	0.25	0.25	3.0	2.00	10	12.0	0.50	9.90	0.20	6.38										0.24	0.20	1.75	1.75			0.015
CI-CC2	CC2	34.00' RT SH205NB2 STA 144+63.00	0.25	0.25	3.0	2.00	15	12.0	2.28	8.71	0.17	10.72										0.24	0.17	2.65	2.65			0.015
CI-CC1	CC1	34.00' RT SH205NB2 STA 141+57.00	0.25	0.25	3.0	2.00	15	12.0	2.60	9.09	0.18	12.50										0.24	0.18	3.18	3.18			0.015
CI-BB2	BB2	14.00' LT ALAMO STA 11+40.00	0.25	0.25	3.0	3.35	5	14.0					0.40	0.40	3.72	5.29						0.47	0.12	0.97	7.71			0.015
CI-BB1	BB1	14.00' RT ALAMO STA 11+46.00	0.25	0.25	3.0	3.34	15	14.0					0.40	0.40	10.07	7.33						0.47	0.24	5.51	15.12			0.015
CI-AA9	AA9	14.00' LT ALAMO STA 10+65.00	0.25	0.25	3.0	2.00	5	8.0	1.97	7.85	0.16	8.06										0.16	0.16	1.87	1.54	0.33	CI-BB2	0.015
CI-AA8	AA8	37.83' LT SH205SB2 STA 147+71.68	0.25	0.25	3.0	2.00	5	12.0	0.13	11.38	0.23	4.23										0.24	0.23	1.30	1.30			0.015
CI-AA7	AA7	34.00' LT SH205SB2 STA 147+38.00	0.25	0.25	3.0	2.00	15	12.0	1.02	11.86	0.24	13.00										0.24	0.24	4.04	4.04			0.015
CI-AA6	AA6	34.00' LT SH205SB2 STA 146+79.00	0.25	0.25	3.0	2.00	10	12.0	2.56	8.41	0.17	10.61										0.24	0.17	2.56	2.55	0.02	CI-AA7	0.015
CI-AA5	AA5	34.00' LT SH205SB2 STA 145+65.00	0.25	0.25	3.0	2.00	10	12.0	3.25	7.44	0.15	9.30										0.24	0.15	2.08	2.08			0.015
CI-AA4	AA4	18.50' LT KAUFMAN STA 17+37.00	0.25	0.25	3.0	2.00	10	12.0	1.41	9.37	0.19	9.71										0.24	0.19	2.53	2.53			0.015
CI-AA3	AA3	34.00' LT SH205SB2 STA 144+32.00	0.25	0.25	3.0	2.00	15	12.0	3.25	9.46	0.19	15.17										0.24	0.19	3.95	3.95	0.00	CI-AA5	0.015
CI-AA2	AA2	34.00' LT SH205SB2 STA 142+90.00	0.25	0.25	3.0	2.00	15	12.0	3.25	8.37	0.17	11.84										0.24	0.17	2.84	2.84			0.015

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 8 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	395
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\24510dd08.dgn, ON=10-633
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE A10	JCT-A9-60°BEND	OUT-A1	42"	45.50	45.50	0.012	4.18	516.80	514.90	54.76	222.73	1.18	19.15	2.32	8.10	0.004	0.042	5.69	6.40	3.50	2.92	519.60	519.72	520.10	520.22
LINE A9	MH-A9	JCT-A9-60°BEND	42"	18.57	21.07	0.012	6.59	518.19	516.80	54.76	279.79	1.05	22.57	2.32	8.10	0.004	0.066	13.83	8.10	1.51	2.32	518.31	520.50	521.28	521.53
LINE A8	JCT-A8-60°Y	MH-A9	42"	5.20	7.70	0.012	0.52	518.23	518.19	54.76	78.76	2.15	8.84	2.32	8.10	0.004	0.005	8.43	8.10	2.24	2.32	520.43	520.55	521.53	521.57
LAT A8	CI-A8	JCT-A8-60°Y	24"	4.61	6.12	0.012	13.94	520.58	519.73	1.92	91.51	0.20	11.70	0.48	3.31	0.004	0.139	8.25	1.22	0.26	1.00	519.98	521.58	521.05	521.58
LINE A7B	MH-A7	JCT-A8-60°Y	42"	269.80	272.30	0.012	0.52	519.65	518.23	54.63	78.76	2.15	8.84	2.31	8.10	0.004	0.005	8.84	8.10	2.15	2.31	520.37	521.96	521.59	522.98
LINE A7A	JCT-A6-60°Y	MH-A7	42"	146.20	148.70	0.012	0.52	520.43	519.65	54.63	78.76	2.15	8.84	2.31	8.10	0.004	0.005	8.83	8.10	2.15	2.31	521.80	522.74	523.01	523.76
LAT A6	CI-A6	JCT-A6-60°Y	24"	4.61	6.11	0.012	1.83	522.04	521.93	2.22	33.18	0.35	6.00	0.52	3.44	0.004	0.018	1.85	2.25	0.81	0.71	522.74	522.75	523.76	522.80
LAT A7	DI-A7	CI-A6	24"	22.50	25.00	0.012	1.05	522.30	522.04	1.06	25.05	0.28	3.95	0.35	2.81	0.004	0.010	1.07	0.67	0.71	1.00	522.75	523.30	522.80	523.30
LINE A6	MH-A5	JCT-A6-60°Y	42"	132.80	135.30	0.012	0.52	521.13	520.43	52.81	78.82	2.10	8.78	2.27	7.98	0.004	0.005	8.76	7.98	2.10	2.27	522.53	523.41	523.72	524.40
LINE A5	JCT-A4-60°Y	MH-A5	36"	41.20	43.70	0.012	1.72	522.38	521.63	40.16	94.66	1.36	12.84	2.06	7.75	0.005	0.017	10.79	7.75	1.56	2.06	523.20	524.45	525.01	525.38
LAT A5	JCT-A5-EX 18"	MH-A5	24"	14.00	16.50	0.012	5.85	523.60	522.63	12.65	59.29	0.63	15.01	1.28	5.96	0.005	0.059	10.57	4.03	0.81	1.99	523.45	525.59	525.19	525.59
LINE A4	MH-A3	JCT-A4-60°Y	36"	230.30	232.30	0.012	1.72	526.37	522.38	37.92	94.63	1.32	12.65	2.00	7.56	0.004	0.017	12.45	7.56	1.34	2.00	523.72	528.37	526.13	529.26
LAT A4	CI-A4	JCT-A4-60°Y	24"	4.61	6.11	0.012	4.60	523.67	523.38	2.23	52.55	0.28	8.31	0.52	3.45	0.004	0.046	1.32	1.42	1.06	1.00	524.45	524.67	525.38	524.67
LINE A3	JCT-A2-60°Y	MH-A3	24"	45.70	47.70	0.012	2.52	528.57	527.37	10.17	38.88	0.70	10.42	1.14	5.49	0.004	0.025	9.46	5.49	0.75	1.14	528.12	529.71	529.51	530.18
LAT A3	DI-A3	MH-A3	36"	24.00	27.00	0.012	1.60	526.80	526.37	27.75	91.37	1.13	11.34	1.70	6.70	0.004	0.016	9.18	4.30	1.33	2.57	527.70	529.37	529.01	529.37
LINE A2	MH-A1	JCT-A2-60°Y	24"	260.80	262.30	0.012	2.52	535.17	528.57	4.94	38.88	0.48	8.48	0.78	4.33	0.004	0.025	8.48	4.33	0.48	0.78	529.05	535.95	530.17	536.24
LAT A2	CI-A2	JCT-A2-60°Y	24"	4.61	6.12	0.012	1.77	528.68	528.57	5.23	32.59	0.54	7.61	0.81	4.41	0.004	0.018	2.82	2.81	1.14	1.15	529.71	529.82	530.18	529.84
LINE A1	CI-A1	MH-A1	24"	305.95	309.95	0.012	2.50	542.92	535.17	4.94	38.76	0.48	8.47	0.78	4.33	0.004	0.025	8.45	2.78	0.48	1.10	535.65	544.03	536.77	544.03
LINE B4	CI-B4	OUT-B1	24"	66.90	68.40	0.012	5.24	519.58	516.00	9.98	56.08	0.57	13.48	1.13	5.45	0.004	0.052	12.70	5.45	0.60	1.13	516.60	520.71	519.11	521.17
LINE B3	CI-B3	CI-B4	24"	275.00	280.00	0.012	1.06	522.55	519.58	8.00	25.22	0.77	7.12	1.01	5.05	0.004	0.011	7.12	5.05	0.78	1.01	520.36	523.55	521.14	523.95
LINE B2	CI-B2	CI-B3	24"	295.00	300.00	0.012	0.85	525.10	522.55	6.02	22.60	0.71	6.09	0.87	4.61	0.004	0.009	6.09	4.61	0.71	0.87	523.25	525.96	523.83	526.29
LINE B1	CI-B1	CI-B2	24"	300.00	305.00	0.012	1.21	528.78	525.10	3.94	26.94	0.52	6.12	0.70	4.05	0.004	0.012	6.12	2.51	0.52	1.00	525.61	529.78	526.20	529.78
LINE C1A	JCT-C1-60°BEND	OUT-C1	24"	45.44	45.44	0.012	4.84	518.10	515.90	12.50	53.93	0.66	13.97	1.27	5.93	0.005	0.048	3.98	4.59	2.00	1.62	519.60	519.72	519.85	519.96
LINE C1B	CI-C1	JCT-C1-60°BEND	24"	13.26	14.76	0.012	6.82	519.11	518.10	12.50	64.02	0.60	15.80	1.27	5.93	0.005	0.068	10.76	5.93	0.79	1.27	518.89	520.38	520.70	520.93
LINE C2	CI-C2	CI-C1	24"	195.00	200.00	0.012	1.35	521.80	519.11	11.16	28.44	0.87	8.51	1.20	5.68	0.005	0.013	8.49	5.68	0.87	1.20	519.98	523.00	521.10	523.50
LINE C3	CI-C3	CI-C2	24"	285.00	290.00	0.012	1.04	524.82	521.80	9.13	24.99	0.84	7.33	1.08	5.28	0.004	0.010	7.33	5.28	0.84	1.08	522.64	525.89	523.47	526.33
LINE C4	CI-C4	CI-C3	24"	185.00	190.00	0.012	1.06	526.83	524.82	7.81	25.23	0.76	7.08	1.00	5.01	0.004	0.011	7.08	5.01	0.77	1.00	525.58	527.82	526.36	528.21
LINE C5	CI-C5	CI-C4	24"	265.00	270.00	0.012	2.29	533.02	526.83	5.97	37.11	0.54	8.67	0.86	4.59	0.004	0.023	8.66	4.59	0.54	0.86	527.37	533.88	528.54	534.21
LINE C6	CI-C6	CI-C5	24"	265.00	270.00	0.012	3.00	541.12	533.02	3.82	42.45	0.41	8.38	0.69	4.02	0.004	0.030	8.36	4.02	0.41	0.69	533.43	541.81	534.52	542.06
LINE C7	CI-C7	CI-C6	24"	223.00	228.00	0.012	2.60	547.04	541.12	1.27	39.48	0.25	5.75	0.39	2.96	0.004	0.026	5.75	2.96	0.25	0.39	541.37	547.43	541.88	547.56
LINE C8	CI-C8	CI-C7	24"	294.21	299.21	0.012	1.22	550.68	547.04	0.91	27.04	0.25	3.99	0.33	2.71	0.004	0.012	3.99	0.58	0.25	1.00	547.29	551.68	547.54	551.68
LINE D1A	MH-D1	OUT-D1	48"	40.22	42.72	0.012	3.14	518.24	516.90	86.04	275.90	1.53	19.40	2.81	9.12	0.004	0.031	14.07	9.12	1.96	2.81	518.86	521.06	521.94	522.35
LINE D1B	JCT-D1-90°T	MH-D1	48"	7.00	10.00	0.012	0.73	518.32	518.24	86.04	132.46	2.35	11.22	2.81	9.12	0.004	0.007	9.79	9.12	2.64	2.81	520.88	521.13	522.37	522.42
LAT D1	CI-D1	JCT-D1-90°T	24"	4.00	5.50	0.012	15.05	521.14	520.32	0.33	95.09	0.09	7.05	0.20	2.07	0.004	0.151	6.27	0.21	0.09	1.00	520.41	522.14	521.04	522.14
LINE D1C	JCT-D2-90°T	JCT-D1-90°T	48"	116.00	116.00	0.012	0.72	519.15	518.32	85.82	132.10	2.35	11.19	2.81	9.10	0.004	0.007	10.84	9.10	2.41	2.81	520.73	521.96	522.55	523.25
LAT D2	CI-D2	JCT-D2-90°T	24"	4.00	5.50	0.012	7.22	521.55	521.15	0.62	65.85	0.14	6.62	0.27	2.44	0.004	0.072	0.53	0.40	0.81	1.00	521.96	522.55	523.25	522.55
LINE D2	JCT-D3-90°T	JCT-D2-90°T	48"	194.00	194.00	0.012	0.72	520.55	519.15	85.40	132.15	2.34	11.18	2.80	9.09	0.004	0.007	11.02	9.09	2.37	2.80	521.52	523.35	523.41	524.63
LAT D3	CI-D3	JCT-D3-90°T	24"	4.00	5.50	0.012	3.22	522.73	522.55	1.12	43.97	0.22	5.97	0.37	2.86	0.004	0.032	0.96	0.72	0.80	1.00	523.35	523.73	524.63	523.73
LINE D3	MH-D4	JCT-D3-90°T	48"	187.80	190.80	0.012	0.72	521.93	520.55	85.26	132.10	2.34	11.17	2.80	9.08	0.004	0.007	11.01	9.08	2.37	2.80	522.92	524.72	524.80	526.01
LAT D4	JCT-D7-60°Y	MH-D4	48"	29.36	31.86	0.012	0.42	522.06	521.93	43.70	101.24	1.84	7.76	1.98	7.06	0.003	0.004	4.65	4.84	2.80	2.70	524.72	524.76	526.01	525.10
LAT D5	EX-JCT-D5A-BRK	JCT-D7-60°Y	48"	26.53	26.53	0.012	0.30	522.14	522.06	39.90	85.46	1.92	6.69	1.89	6.85	0.003	0.003	4.42	4.55	2.70	2.63	524.76	524.77	525.10	525.09
EX LAT D5A	JCT-D5-60°Y	EX-JCT-D5A-BRK	48"	52.81	52.81	0.012	0.47	522.39	522.14	39.90	107.07	1.69	7.90	1.89	6.85	0.003	0.005	4.55	4.97	2.63	2.44	524.77	524.83	525.09	525.15
LAT D5B	DI-D5	JCT-D5-60°Y	24"	29.08	30.08	0.012	5.35	526.00	524.39	16.33	56.70	0.74	15.60	1.46	6.66	0.006	0.054	12.21	5.20	0.88	2.00	525.27	528.42	527.60	528.42
LAT D4A	JCT-D4A-20°BEND	JCT-D7-60°Y	24"	7.52	7.52	0.012	2.01	524.21	524.06	4.80	34.73	0.50	7.77	0.77	4.30	0.004	0.020	5.90	4.30	0.61	0.77	524.67	524.98	525.21	525.27
LAT D4B	CI-D4	JCT-D4A-20°BEND	24"	86.43	88.93	0.012	2.01	526.00	524.21	4.80	34.72	0.50	7.76	0.77	4.30	0.004	0.020	7.68	2.76	0.51	1.08	524.72	527.08	525.64	527.08
EX LAT D6A	EX-JCT-D6-60°Y	JCT-D5-60°Y	48"	24.04	24.04	0.012	0.50	522.51	522.39	24.99	109.94	1.30	7.08	1.48	5.93	0.003	0.005	3.12	3.29	2.44	2.33	524.83	524.84	525.15	524.99
EX LAT D6B	EX-CI-D6	EX-JCT-D6-60°Y	30"	17.82	19.82	0.012	4.89	524.98	524.51	7.62	98.29	0.47	11.88	0.92	4.67	0.004	0.049	9.32	3.03	0.56	1.27	524.57	526.25	525.92	526.25
EX LAT D6C	EX-JCT-D7A-SIZE	EX-JCT-D6-60°Y	48"	5.00	5.00	0.012	0.40	522.53	522.51	18.80	98.43	1.19	6.04	1.28	5.45	0.003	0.004	2.47	2.50	2.33	2.31	524.84	524.84	524.99	524.94
EX LAT D7A	EX-JCT-D7B-BRK	EX-JCT-D7A-SIZE	36"	117.64	117.64	0.012	0.49	524.10	523.53	18.80	50.30	1.27	6.60	1.39	5.87	0.004	0.005	6.59	5.87	1.27	1.39	524.80	525.49	525.48	526.03
EX LAT D7B	EX-DI-D7	EX-JCT-D7B-BRK	36"	84.76	84.76	0.012	4.01	527.50	524.10	18.80	144.72	0.73	14.13	1.39	5.87	0.004	0.040	13.12	3.70	0.77	2.03	524.87	529.53	527.55	529.53
LINE D8	JCT-D8-60°Y	MH-D4	30"	106.10	109.10	0.012	1.42	524.97	523.43	50.85	52.91	1.97	12.28	2.31	10.73	0.011	0.014	12.00	10.73	2.01	2.31	525.44	527.28	527.68	529.07
LAT D8	CI-D8	JCT-D8-60°Y	24"	16.17	17.67	0.012	3.02	526.01	525.47	3.69	42.60	0.40	8.32	0.67	3.98	0.004	0.030	1.24	1.74	1.81	1.28	527.28	527.29	529.07	527.31
LINE D9	MH-D9	JCT-D8-60°Y	30"	216.10	218.10	0.012	1.42	528.06	524.97	48.74	52.89	1.89	12.23	2.28	10.37	0.010	0.014	12.14	10.37	1.91	2.28	526.88	530.35	529.17	532.02
LAT D9	CI-D9	MH-D9	24"	13.00	16.50	0.012	7.84	529.86	528.56	5.80	68.64	0.39	13.30	0.85	4.55	0.004	0.078	10.19	2.89	0.47	1.22	529.04	531.08	530.66	531.08
LINE D10	JCT-D10-60°Y	MH-D9	30"	235.70	237.70	0.012	3.09	535.41	528.06	45.11	78.13	1.36	16.49	2.23	9.77	0.009	0.031	16.17	9.77	1.39	2.23	529.45	537.64	533.52	539.12
LAT D10	CI-D10	JCT-D10-60°Y	24"	4.61	6.12	0.012	8.34	536.42	535.91	2.36	70.78	0.25	10.41	0.53	3.50	0.004	0.083	0.82	1.18	1.73	1.22	537.64	537.64	539.12	537.65
LINE D11	MH-D11	JCT-D10-60°Y	36"	73.80	76.80	0.012	3.09	537.79	535.41	43.60	78.14	1.34	16.35	2.20	9.53	0.009	0.031	14.36	9.53	1.48	2.20	536.89	539.99	540.10	541.40
LAT D11	JCT-D11-27"RCP	MH-D11	27"	21.16	23.16	0.012	17.72	542.14	538.04	38.46	282.49	0.56	24.85	1.53	6.66	0.005	0.177	17.46	4.84	0.72	2.25	538.76	544.59	543.51	544.59
LINE D12	MH-D12	MH-D11	24"	261.00	265.50	0.012	2.94	546.08	538.29	7.59	41.98	0.58	10.14	0.98	4.96	0.004	0.029	10.12	4.96	0.58	0.98	538.86	547.06	540.46	547.44
LAT D12	CI-D12	MH-D12	24"	2.50	5.50	0.012	6.73	546.45	546.08	4.31	63.57	0.35	11.54	0.73	4.16	0.004	0.067	7.22	2.70	0.49	1.01	546.57	547.46	547.38	547.46
LINE D13	JCT-D13-60°BEND	MH-D12	24"	214.80	216.30	0.012	1.61	549.56	546.08	3.28	31.11	0.44	6.43	0.63	3.84	0.004	0.016	6.42	3.84	0.44	0.63	546.52	550.20	547.16	550.42
LINE D13B	CI-D13	JCT-D13-60°BEND	24"	17.34	18.84	0.012	1.61	549.87	549.56	3.28	31.11	0.44	6.43	0.63	3.84	0.004	0.016	5.78	2.09	0.47	1.00	550.04	550.87	550.56	550.87

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

HYDRAULIC COMPUTATION SHEET

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	396
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

DGN=G:\JOBS\22451C-SH205\Drainage\245101d009.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE E1	SET-E1	SET-E0	24"	75.00	75.00	0.012	2.13	517.60	516.00	7.75	35.80	0.63	9.10	0.99	5.00	0.004	0.021	2.47	2.63	2.00	1.78	519.30	519.38	519.40	519.47
DITCH E2	SET-E2	SET-E1	27"	120.39	120.39	0.012	4.03	522.45	517.60	7.22	338.82	0.47	9.25	0.77	3.51	0.003	0.040	9.27	3.51	0.47	0.77	518.07	523.22	519.40	523.41
LINE E2	SET-E3	SET-E2	24"	80.13	80.13	0.012	1.93	524.00	522.45	1.44	34.09	0.28	5.38	0.41	3.06	0.004	0.019	5.37	0.92	0.28	1.00	522.73	525.00	523.18	525.00
LINE F1A	JCT-F0-15°BEND	OUT-F1	5'X4'	15.79	15.79	0.012	1.83	542.83	542.54	165.92	359.40	1.89	17.58	3.25	10.22	0.004	0.018	12.38	10.22	2.68	3.25	545.22	546.08	547.60	547.70
LINE F1B	JCT-FJ-90°T	JCT-F0-15°BEND	5'X4'	46.32	46.32	0.012	1.83	543.68	542.83	165.92	359.08	1.89	17.57	3.25	10.22	0.004	0.018	13.80	10.22	2.41	3.25	545.23	546.92	548.19	548.55
LAT FJ	CI-FJ	JCT-FJ-90°T	24"	3.15	3.20	0.012	9.72	545.99	545.68	2.44	76.40	0.25	11.09	0.54	3.53	0.004	0.097	1.19	1.55	1.25	1.00	546.92	546.99	548.55	547.89
LINE F1C	JCT-FH-90°T	JCT-FJ-90°T	5'X4'	48.56	48.56	0.012	1.83	544.56	543.68	164.05	358.88	1.87	17.51	3.22	10.18	0.004	0.018	13.84	10.18	2.37	3.22	546.05	547.78	549.02	549.39
LINE F1D	JCT-F1-90°T	JCT-FH-90°T	5'X4'	87.60	87.60	0.012	1.83	546.16	544.56	160.75	358.96	1.85	17.42	3.18	10.11	0.004	0.018	14.80	10.11	2.17	3.18	546.73	549.34	550.14	550.93
LAT F1	CI-F1	JCT-F1-90°T	24"	52.78	55.28	0.012	2.46	549.52	548.16	3.36	38.40	0.40	7.51	0.64	3.87	0.004	0.025	7.33	3.87	0.41	0.64	548.57	550.16	549.41	550.93
LAT F2	CI-F2	CI-F1	24"	161.01	166.01	0.012	0.41	550.20	549.52	1.76	15.69	0.45	3.30	0.46	3.23	0.004	0.004	3.30	1.12	0.45	1.00	549.97	551.20	550.14	551.20
LINE F3	MH-F3	JCT-F1-90°T	5'X4'	122.44	125.44	0.012	0.41	546.67	546.16	158.95	169.91	3.20	9.93	3.16	10.08	0.004	0.004	10.00	9.93	3.18	3.20	549.34	549.88	550.93	551.41
LAT F3A	JCT-F3 60°BEND	MH-F3	24"	56.25	59.25	0.012	0.41	548.24	548.00	4.07	15.60	0.70	4.18	0.71	4.09	0.004	0.004	1.33	1.47	1.88	1.65	549.88	549.89	551.41	549.92
LAT F3B	CI-F3	JCT-F3 60°BEND	24"	79.13	81.63	0.012	0.40	548.57	548.24	4.07	15.48	0.70	4.15	0.71	4.09	0.004	0.004	1.47	1.81	1.65	1.35	549.89	549.91	549.92	549.95
LINE F4	JCT-F4 90° T	MH-F3	5'X4'	124.00	127.00	0.012	0.36	547.12	546.67	143.47	158.33	3.12	9.19	2.95	9.74	0.004	0.004	8.96	9.15	3.20	3.14	549.88	550.26	551.41	551.56
LAT F4	CI-F4	JCT-F4 90° T	24"	4.50	4.50	0.012	6.03	549.40	549.12	0.82	60.18	0.16	6.77	0.31	2.63	0.004	0.060	0.45	0.53	1.14	1.00	550.26	550.40	551.56	551.13
LINE F5A	JCT-F5-45°Y	JCT-F4 90° T	5'X4'	68.60	68.60	0.012	0.33	547.35	547.12	143.38	152.50	3.21	8.92	2.95	9.74	0.004	0.003	9.15	9.01	3.14	3.18	550.26	550.53	551.56	551.80
LINE F5B	MH-F5	JCT-F5-45°Y	5'X4'	101.90	104.40	0.012	0.33	547.69	547.35	112.82	152.36	2.68	8.43	2.51	8.99	0.004	0.003	7.09	7.63	3.18	2.96	550.53	550.65	551.80	551.56
LAT F5	CI-F5	MH-F5	24"	15.98	20.48	0.012	1.56	550.01	549.69	2.47	30.63	0.38	5.85	0.55	3.55	0.004	0.016	1.66	1.57	0.96	1.00	550.65	551.01	551.56	551.01
LINE F6	JCT-F6-60°Y	MH-F5	48"	59.11	61.61	0.012	0.82	548.20	547.69	110.92	140.88	2.68	12.42	3.18	10.34	0.005	0.008	11.68	10.34	2.83	3.18	550.52	551.38	552.64	553.04
LAT F6	CI-F6	JCT-F6-60°Y	24"	16.18	17.68	0.012	0.30	550.25	550.20	3.23	13.42	0.67	3.52	0.63	3.83	0.004	0.003	1.67	1.76	1.18	1.13	551.38	551.39	553.04	551.43
LINE F7	JCT-F21-60°Y	JCT-F6-60°Y	48"	73.01	73.01	0.012	1.03	548.95	548.20	108.33	157.93	2.43	13.54	3.15	10.21	0.005	0.010	12.32	10.21	2.64	3.15	550.84	552.10	553.20	553.72
LAT F7	CI-F7	JCT-F21-60°Y	24"	16.22	17.72	0.012	0.32	551.01	550.95	2.91	13.78	0.62	3.48	0.60	3.71	0.004	0.003	1.56	1.65	1.15	1.10	552.10	552.10	553.72	552.14
LINE F8	JCT-F8-60°Y	JCT-F21-60°Y	48"	77.01	77.01	0.012	0.90	549.65	548.95	106.07	147.94	2.51	12.80	3.12	10.09	0.005	0.009	11.92	10.09	2.67	3.12	551.62	552.76	553.83	554.35
LAT F8	CI-F8	JCT-F8-60°Y	24"	16.19	17.69	0.012	0.89	551.80	551.65	3.52	23.06	0.53	5.30	0.66	3.92	0.004	0.009	1.95	2.24	1.12	1.00	552.76	552.80	554.35	552.83
LINE F9	JCT-F9-90°T	JCT-F8-60°Y	48"	165.02	165.02	0.012	0.97	551.25	549.65	103.63	153.42	2.41	13.11	3.08	9.97	0.005	0.010	12.61	9.97	2.49	3.08	552.14	554.33	554.61	555.88
LAT F9	CI-F9	JCT-F9-90°T	24"	7.97	9.47	0.012	3.78	553.61	553.25	1.99	47.66	0.28	7.49	0.49	3.34	0.004	0.038	1.14	1.26	1.08	1.00	554.33	554.61	555.88	554.61
LINE F10	JCT-F10-90°T	JCT-F9-90°T	48"	50.91	50.91	0.012	0.90	551.71	551.25	102.05	147.77	2.44	12.69	3.06	9.89	0.005	0.009	11.50	9.89	2.66	3.06	553.91	554.77	555.97	556.29
LAT F10	CI-F10	JCT-F10-90°T	24"	34.20	36.70	0.012	6.11	555.95	553.71	6.60	60.56	0.45	12.64	0.91	4.74	0.004	0.061	11.27	2.99	0.48	1.32	554.19	557.27	556.18	557.27
LINE F11	MH F11	JCT-F10-90°T	48"	27.71	30.21	0.012	1.17	552.06	551.71	96.09	168.00	2.17	13.82	2.97	9.60	0.005	0.012	11.42	9.60	2.54	2.97	554.25	555.03	556.28	556.47
LAT F11	EX-JCT-F11-36"	MH F11	36"	22.40	24.90	0.012	15.86	557.01	553.06	49.54	287.71	0.84	30.46	2.29	8.55	0.005	0.159	18.90	7.01	1.19	3.00	554.26	560.98	559.82	560.98
LINE F12	JCT-F12-90°T	MH F11	36"	19.78	22.28	0.012	1.11	553.31	553.06	49.30	76.20	1.76	11.46	2.29	8.53	0.005	0.011	9.88	8.53	2.00	2.29	555.06	555.60	556.57	556.73
LAT F12	CI-F12	JCT-F12-90°T	24"	4.00	5.50	0.012	6.27	554.65	554.31	1.11	61.38	0.19	7.51	0.36	2.85	0.004	0.063	0.52	0.71	1.29	1.00	555.60	555.65	556.73	555.65
LINE F14	JCT-F14-90°T	JCT-F12-90°T	36"	107.00	107.00	0.012	1.11	554.50	553.31	48.49	76.18	1.74	11.42	2.27	8.46	0.005	0.011	10.91	8.46	1.81	2.27	555.12	556.77	556.97	557.88
LAT F14	CI-F14	JCT-F14-90°T	24"	4.00	5.50	0.012	5.26	555.79	555.50	3.51	56.21	0.34	9.96	0.66	3.92	0.004	0.053	1.67	2.24	1.27	1.00	556.77	556.79	557.88	556.81
LINE F15	MH F15	JCT-F14-90°T	36"	26.00	28.00	0.012	1.11	554.81	554.50	45.09	76.19	1.66	11.23	2.19	8.16	0.005	0.011	9.75	8.16	1.87	2.19	556.37	557.00	557.84	558.03
LAT F15	CI-F15	MH F15	24"	52.50	56.00	0.012	1.69	556.76	555.81	2.78	31.90	0.40	6.24	0.58	3.67	0.004	0.017	6.14	1.77	0.40	1.00	556.21	557.76	556.80	557.76
LINE F16	JCT-F16-60°Y	MH F15	30"	46.35	48.35	0.012	2.21	556.38	555.31	42.42	66.03	1.46	14.28	2.18	9.34	0.008	0.022	12.27	9.34	1.66	2.18	556.97	558.56	559.31	559.91
LAT F16	CI-F16	JCT-F16-60°Y	24"	37.30	38.80	0.012	9.34	560.50	556.88	7.72	74.89	0.43	15.38	0.99	4.99	0.004	0.093	13.67	3.15	0.47	1.46	557.35	561.96	560.27	561.96
LINE F17	JCT-F17-90°T	JCT-F16-60°Y	30"	41.65	41.65	0.012	2.21	557.30	556.38	34.83	66.01	1.29	13.63	2.01	8.25	0.006	0.022	11.43	8.25	1.49	2.01	557.87	559.30	559.90	560.36
LAT F17	CI-F17	JCT-F17-90°T	24"	4.00	5.50	0.012	2.02	557.91	557.80	4.99	34.82	0.51	7.87	0.79	4.35	0.004	0.020	1.97	2.13	1.51	1.40	559.30	559.31	560.36	559.37
LINE F18	MH F18	JCT-F17-90°T	30"	213.50	215.00	0.012	2.21	562.04	557.30	30.00	66.03	1.18	13.13	1.87	7.63	0.006	0.022	12.94	7.63	1.20	1.87	558.49	563.91	561.10	564.82
LAT F18	CI-F18	MH F18	24"	35.61	39.11	0.012	6.66	565.15	562.54	5.57	63.26	0.40	12.40	0.83	4.50	0.004	0.067	11.34	2.86	0.43	1.19	562.97	566.34	564.98	566.34
LINE F19A	JCT-F19-60°BEND	MH F18	24"	36.20	37.70	0.012	2.40	563.45	562.54	24.44	37.97	1.17	12.84	1.75	8.40	0.009	0.024	11.08	8.40	1.32	1.75	563.87	565.20	565.78	566.29
LINE F19B	CI-F19	JCT-F19-60°BEND	24"	4.61	6.11	0.012	6.95	563.87	563.45	24.44	64.63	0.85	19.14	1.75	8.40	0.009	0.070	10.89	8.40	1.34	1.75	564.79	565.62	566.64	566.72
LINE F20	CI-F20	CI-F19	24"	192.80	197.80	0.012	2.40	568.62	563.87	22.21	37.97	1.10	12.56	1.68	7.88	0.008	0.024	12.42	7.88	1.11	1.68	564.98	570.30	567.38	571.27
LINE F21	CI-F21	CI-F20	24"	64.20	69.20	0.012	0.96	569.28	568.62	17.23	23.95	1.26	8.30	1.50	6.83	0.006	0.010	8.14	6.83	1.28	1.50	569.90	570.78	570.93	571.50
LINE F22	JCT-F22-60°Y	CI-F21	24"	100.90	103.40	0.012	0.60	569.90	569.28	13.33	18.95	1.24	6.53	1.31	6.09	0.005	0.006	6.53	6.09	1.24	1.31	570.52	571.21	571.18	571.79
LAT F22A	JCT-F22-45°BEND	JCT-F22-60°Y	24"	7.98	7.98	0.012	6.27	570.40	569.90	8.45	61.35	0.50	13.71	1.04	5.14	0.004	0.063	8.60	5.14	0.70	1.04	570.60	571.44	571.76	571.85
LAT F22B	CI-F22	JCT-F22-45°BEND	24"	80.59	83.09	0.012	3.36	573.19	570.40	8.45	44.91	0.59	10.97	1.04	5.14	0.004	0.034	10.61	3.26	0.60	1.54	571.00	574.73	572.76	574.73
LINE F23	CI-F23	JCT-F22-60°Y	24"	37.10	39.60	0.012	0.60	570.14	569.90	4.88	18.94	0.69	5.05	0.78	4.32	0.004	0.006	2.23	2.74	1.31	1.10	571.21	571.24	571.79	571.32
LINE H1	JCT-H1-60°Y	JCT-FH-90°T	24"	58.36	58.36	0.012	1.00	547.14	546.56	4.30	24.50	0.57	5.87	0.73	4.16	0.004	0.010	5.79	4.16	0.57	0.73	547.13	547.87	547.66	548.14
LAT H1	JCT-H2-85°BEND	JCT-H1-60°Y	24"	80.61	80.61	0.012	1.15	548.07	547.14	0.85	26.25	0.25	3.83	0.32	2.66	0.004	0.011	3.83	2.66	0.25	0.32	547.39	548.39	547.62	548.50
LAT H2	CI-H2	JCT-H2-85°BEND	24"	69.50	72.00	0.012	1.15	548.90	548.07	0.85	26.26	0.25	3.83	0.32	2.66	0.004	0.011	3.83	0.54	0.25	1.00	548.32	549.90	548.55	549.90
LINE H2	CI-H1	JCT-H1-60°Y	24"	85.85	88.35	0.012	1.00	548.03	547.14	3.44	24.49	0.51	5.50	0.65	3.90	0.004	0.010	5.48	2.19	0.51	1.00	547.65	549.03	548.12	549.03
LINE G1A	CI-G1	MH-F3	24"	120.41	124.91	0.012	0.48	549.28	548.67	14.72	17.03	1.44	6.10	1.38	6.35	0.005	0.005	6.35	6.10	1.38	1.44	550.06	550.71	551.41	551.29
LINE G1B	MH-G1	CI-G1	24"	27.59	31.09	0.012	1.04	549.60	549.28	12.76	25.02	1.01	8.00	1.29	5.98	0.005	0.010	7.44	5.98	1.07	1.29	550.35	550.89	551.21	551.44
LINE G2	CI-G2	MH-G1	24"	54.14	58.64	0.012	0.51	549.90	549.60	5.61	17.43	0.78	4.94	0.84	4.51	0.004	0.005	2.63	3.38	1.29	1.04	550.89	550.94	551.44	551.05
LINE G3	CI-G3	CI-G2	24"	117.37	122.37	0.012	2.31	552.72	549.90	3.38	37.26	0.41	7.37	0.64	3.88	0.004	0.023	7.35	2.15	0.41	1.00	550.30	553.72	551.15	553.72
LAT G4	CI-G4	MH-G1	24"	73.82	78.32	0.012	0.40	549.91	549.60	7.15	15.49	0.95	4.83	0.95	4.87	0.004	0.004	3.35	4.50	1.29	1.01	550.89	550.92	551.44	551.24
LAT G5	CI-G5	CI-G4	24"	45.25	50.25	0.012	0.40	550.12	549.91	4.41	15.58	0.73	4.27	0.74	4.19	0.004	0.004	2.78	3.37	1.01	0.87	550.92	550.99	551.24	551.11
LAT G6	CI-G6	CI-G5	24"	95.02	100.02	0.012	0.54	550.65	550.12	1.49	17.98	0.39	3.46	0.42	3.09	0.004	0.005	3.46	0.95	0.39	1.00	550.51	551.65	550.69	551.65
LINE I1	CI-I1	JCT-F5-45°Y	36"	57.25	58.75	0.012	0.84	547.85	547.35	34.98	66.39	1.55	9.51	1.92	7.31	0.004	0.008	4.95	5.07	3.00	2.83	550.53	550.67	551.80	551.05
LINE I2A	JCT-I2-60°BEND	CI-I1	30"	22.51	24.01	0.012	1.02	548.59	548.35	33.23	44.88	1.60	10.01	1.96	8.04	0.006	0.010	6.98	7.27	2.33	2.20	550.67	550.79	551.05	551.55
LINE I2B	JCT-I2-60°Y	JCT-I2-60°BEND	30"	76.15	76.15	0.012	1.02	549.37	548.59	33.23	44.88	1.60	10.01	1.96	8.04	0.006	0.010	9.67	8.04	1.65	1.96	550.24	551.33	551.69	552.33
LAT I2	CI-I2	JCT-I2-60°Y	24"	5.20	6.70	0.012	0.74	549.92	549.87	1.82	21.02	0.40	4.10	0.47	3.26	0.004	0.007	0.74	0.77	1.46	1.41	551.33	551.33	552.33	551.34
LINE I3	MH I3	JCT-I2-60°Y	30"	39.50	41.50	0.012	1.02	549.79	549.37	31.41	44.87	1.54	9.89	1.91	7.81	0.006	0.010	9.24	7.81	1.64	1.91	551.00	551.70	552.33	552.65
LAT I3	EX-JCT-I3-18"	MH I3	24"	24.09	26.09	0.012	23.95	556.54	550.29	13.84	119.94	0.46	25.45	1.34	6.19	0.005	0.239	19.57	4.41	0.55	2.00	550.84	558.66	556.82	558.66
LINE I4A	JCT-I4-60°BEND	MH I3	24"	31.65	33.65	0.012	3.88	551.60	550.29	17.57	48.28	0.84	14.15	1.51	6.90	0.006	0.039	11.47	6.90	0.98	1.51	551.27	553.11	553.32	553.85
LINE I4B	CI-I4	JCT-I4-60°BEND	24"	5.16	6.66	0.012	3.88	551.85	551.60	17.57	48.24	0.84	14.15	1.51	6.90	0.006	0.039	8.97	6.90	1.20	1.51	552.79	553.37	554.04	554.11
LINE I5	CI-I5	CI-I4	24"	70.93	75.93	0.012	2.96	554.10	551.85	14.63	42.19	0.81	12.21	1.38	6.34	0.005	0.030	11.41	6.34	0.86	1.38	552.71	555.48	554.74	556.11
LINE I6	CI-I6	CI-I5	24"	75.13	80.13	0.012	3.00	556.50	554.10	13.02	42.41	0.76	11.88	1.30	6.03	0.005	0.030	11.22	6.03	0.79	1.30	554.90	557.80	556.86	558.37
LINE I7	CI-I7	CI-I6	24"	80.00	85.00	0.012	2.69	558.79	556.50	6.41	40.22	0.54	9.37	0.90	4.70	0.004	0.027	9.18	4.70	0.55	0.90	557.05	559.69	558.37	560.03
LINE I8	CI-I8	CI-I7	24"	51.93	56.93	0.012	1.79	559.81	558.79	5.84	32.78	0.57	7.88	0.85	4.56	0.004	0.018	7.58	4.56	0.59	0.85	559.38	560.67	560.28	560.99
LINE I8A	EX-JCT-I8A-18	CI-I8	24"	11.50	13.00	0.012	8.40	560.91	559.81	4.63	71.03	0.35	12.75	0.76	4.25	0.004	0.084	9.53	2.74	0.42	1.06	560.24	561.96	561.66	561.96

PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 10 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	397
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

5/9/2006

DGN=G:\JOBS\22451C-SH205\Drainage\2451odc10.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE J2A	JCT-J2-90°T	OUT-J2	24"	9.11	9.11	0.012	3.70	543.84	543.50	13.46	47.14	0.73	12.94	1.32	6.12	0.005	0.037	8.63	6.12	1.00	1.32	544.50	545.16	545.65	545.74
LAT J2	CI-J2	JCT-J2-90°T	24"	4.50	6.00	0.012	6.08	544.20	543.84	1.34	60.45	0.21	7.86	0.40	3.00	0.004	0.061	0.61	0.85	1.32	1.00	545.16	545.20	545.74	545.20
LINE J2B	MH-J3	JCT-J2-90°T	24"	61.66	63.16	0.012	3.70	546.18	543.84	12.12	47.16	0.69	12.58	1.25	5.86	0.005	0.037	11.57	5.86	0.74	1.25	544.57	547.43	546.66	547.96
LINE J3A	JCT-J3-60°BEND	MH-J3	24"	329.66	331.16	0.012	2.72	555.18	546.18	12.12	40.42	0.75	11.24	1.25	5.86	0.005	0.027	11.24	5.86	0.75	1.25	546.93	556.43	548.90	556.97
LINE J3B	DI-J3	JCT-J3-60°BEND	24"	27.23	28.23	0.012	2.72	555.95	555.18	12.12	40.42	0.75	11.25	1.25	5.86	0.005	0.027	9.33	3.90	0.86	1.93	556.05	557.88	557.40	557.88
LINE K1	MH-K1	OUT-K1	30"	51.01	53.01	0.012	0.55	549.80	549.51	20.05	32.87	1.41	7.03	1.52	6.42	0.004	0.005	6.98	6.42	1.42	1.52	550.93	551.32	551.69	551.96
LAT K1	CI-K1	MH-K1	24"	25.80	29.30	0.012	0.58	550.47	550.30	4.16	18.67	0.64	4.78	0.72	4.12	0.004	0.006	2.58	2.65	1.02	1.00	551.32	551.47	551.96	551.47
LINE K2A	JCT-K1-60°BEND	MH-K1	24"	89.74	91.74	0.012	0.89	551.12	550.30	15.89	23.17	1.22	7.95	1.44	6.58	0.006	0.009	7.87	6.58	1.23	1.44	551.53	552.56	552.49	553.23
LINE K2B	JCT-K2-90°T	JCT-K1-60°BEND	24"	11.00	11.00	0.012	0.89	551.22	551.12	15.89	23.18	1.22	7.95	1.44	6.58	0.006	0.009	7.27	6.58	1.31	1.44	552.43	552.66	553.26	553.33
LAT K2	CI-K2	JCT-K2-90°T	24"	4.05	5.55	0.012	6.45	551.58	551.22	3.26	62.24	0.31	10.47	0.63	3.84	0.004	0.064	1.35	1.88	1.44	1.08	552.66	552.66	553.33	552.69
LINE K3	JCT-K3-90°T	JCT-K2-90°T	24"	160.14	160.14	0.012	0.89	552.65	551.22	12.63	23.16	1.05	7.53	1.28	5.96	0.005	0.009	7.51	5.96	1.06	1.28	552.27	553.93	553.15	554.48
LAT K3	CI-K3	JCT-K3-90°T	24"	5.00	6.50	0.012	4.40	552.93	552.65	3.59	51.40	0.36	9.41	0.66	3.94	0.004	0.044	1.69	2.28	1.28	1.00	553.93	553.93	554.48	553.97
LINE K4A	MH-K4	JCT-K3-90°T	24"	58.50	60.00	0.012	0.89	553.18	552.65	9.04	23.16	0.87	6.92	1.07	5.26	0.004	0.009	6.78	5.26	0.88	1.07	553.53	554.26	554.25	554.69
LINE K4B	JCT-K4-90°T	MH-K4	24"	325.50	327.00	0.012	1.28	557.38	553.18	9.04	27.76	0.79	7.90	1.07	5.26	0.004	0.013	7.90	5.26	0.79	1.07	553.97	558.45	554.94	558.88
LAT K4	CI-K4	JCT-K4-90°T	24"	4.00	5.50	0.012	4.76	557.64	557.38	4.26	53.49	0.38	10.18	0.72	4.15	0.004	0.048	2.48	2.70	1.07	1.00	558.45	558.64	558.88	558.64
LINE K5A	MH-K5A	JCT-K4-90°T	24"	11.50	13.00	0.012	1.28	557.55	557.38	4.79	27.77	0.56	6.62	0.77	4.29	0.004	0.013	2.79	3.38	1.07	0.92	558.45	558.47	558.88	558.59
LINE K5B	MH-K5B	MH-K5A	24"	297.00	300.00	0.012	2.39	564.70	557.55	4.79	37.86	0.48	8.25	0.77	4.29	0.004	0.024	8.25	4.29	0.48	0.77	558.03	565.47	559.08	565.76
LINE K5C	JCT-K5-90°T	MH-K5B	24"	28.50	30.00	0.012	1.34	565.11	564.70	4.79	28.37	0.56	6.72	0.77	4.29	0.004	0.013	6.27	4.29	0.58	0.77	565.29	565.88	565.90	566.16
LAT K5	CI-K5	JCT-K5-90°T	24"	4.00	5.50	0.012	3.42	565.29	565.11	3.29	45.31	0.37	8.39	0.63	3.84	0.004	0.034	5.85	2.09	0.47	1.00	565.58	566.29	566.11	566.29
LINE K6	MH-K6	JCT-K5-90°T	24"	268.50	270.00	0.012	1.34	568.73	565.11	1.50	28.38	0.31	4.79	0.42	3.09	0.004	0.013	4.79	3.09	0.31	0.42	565.42	569.15	565.78	569.30
LINE K7	CI-K7	MH-K6	24"	81.52	85.52	0.012	1.49	570.00	568.73	1.50	29.95	0.30	4.97	0.42	3.09	0.004	0.015	4.97	0.96	0.31	1.00	569.03	571.00	569.42	571.00
LINE L1	CI-L2	OUT-L1	24"	8.08	9.58	0.012	0.30	549.95	549.92	4.50	13.42	0.80	3.85	0.75	4.21	0.004	0.003	3.85	2.72	0.80	1.04	550.72	550.99	550.95	550.99
LINE L4	JCT-L5-90°T	JCT-OL2	24"	27.66	27.66	0.012	0.49	552.66	552.53	10.77	17.08	1.15	5.75	1.18	5.61	0.005	0.005	5.75	5.61	1.15	1.18	553.68	553.84	554.20	554.33
LAT L5	DI-L5	JCT-L5-90°T	24"	18.39	19.39	0.012	1.73	553.00	552.66	1.51	32.26	0.30	5.25	0.43	3.10	0.004	0.017	0.79	0.96	1.18	1.00	553.84	554.00	554.33	554.00
LINE L4B	CI-L4	JCT-L5-90°T	24"	10.40	11.90	0.012	0.49	552.72	552.66	12.94	17.13	1.30	5.99	1.29	6.02	0.005	0.005	6.02	6.00	1.29	1.30	553.96	554.02	554.33	554.58
LINE L5	JCT-L6-60°Y	CI-L4	24"	67.30	69.80	0.012	2.43	554.42	552.72	10.56	38.18	0.72	10.39	1.16	5.56	0.005	0.024	9.83	5.56	0.75	1.16	553.47	555.58	554.98	556.06
LAT L7	DI-L7	JCT-L6-60°Y	24"	42.30	43.30	0.012	0.76	554.75	554.42	7.20	21.41	0.80	6.15	0.95	4.88	0.004	0.008	6.02	3.08	0.81	1.40	555.23	556.14	555.79	556.14
LINE L6A	JCT-L6A-60°Y	JCT-L6-60°Y	24"	118.32	118.32	0.012	2.43	557.29	554.42	3.35	38.19	0.40	7.48	0.64	3.87	0.004	0.024	7.46	3.87	0.40	0.64	554.82	557.93	555.69	558.16
LAT L6A	DI-L6A	JCT-L6A-60°Y	24"	20.86	21.86	0.012	5.54	558.50	557.29	0.71	57.69	0.16	6.27	0.29	2.53	0.004	0.055	6.12	0.45	0.16	1.00	557.45	559.50	558.04	559.50
LINE L6B	CI-L6B	JCT-L6A-60°Y	24"	46.67	49.17	0.012	2.43	558.48	557.29	2.65	38.17	0.36	6.98	0.57	3.62	0.004	0.024	6.84	1.69	0.36	1.00	557.65	559.48	558.38	559.48
LINE M1	DI-M1	CI-M2	24"	12.50	15.00	0.012	10.85	575.70	574.07	5.86	80.72	0.37	14.96	0.86	4.57	0.004	0.108	11.16	2.90	0.45	1.23	574.52	576.93	576.47	576.93
LINE M2A	CI-M2	JCT-M2-60°BEND	24"	4.65	6.15	0.012	2.01	574.07	573.95	8.68	34.73	0.68	9.19	1.05	5.19	0.004	0.020	6.62	5.19	0.87	1.05	574.82	575.12	575.50	575.54
LINE M2B	JCT-M2-60°BEND	JCT-M3-90°T	24"	119.10	119.10	0.012	2.01	573.95	571.56	8.68	34.70	0.68	9.18	1.05	5.19	0.004	0.020	9.07	5.19	0.69	1.05	572.25	575.00	573.53	575.42
LAT M3	CI-M3	JCT-M3-90°T	24"	25.00	27.50	0.012	6.32	573.30	571.56	2.89	61.62	0.30	10.03	0.59	3.71	0.004	0.063	9.24	1.84	0.31	1.00	571.87	574.30	573.21	574.30
LINE M3	JCT-M3-90°T	JCT-M4-90°T	24"	113.91	113.91	0.012	2.01	571.56	569.28	11.57	34.70	0.80	9.94	1.22	5.76	0.005	0.020	9.74	5.76	0.81	1.22	570.09	572.78	571.56	573.30
LAT M4	CI-M4	JCT-M4-90°T	24"	4.00	5.50	0.012	7.15	569.67	569.28	2.11	65.52	0.25	9.53	0.50	3.39	0.004	0.071	0.95	1.34	1.33	1.00	570.61	570.67	571.20	570.67
LINE M4A	JCT-M4-90°T	MH-M4	24"	63.50	65.00	0.012	2.01	569.28	567.98	13.67	34.70	0.87	10.39	1.33	6.16	0.005	0.020	9.71	6.16	0.92	1.33	568.89	570.61	570.36	571.20
LINE M4B	MH-M4	JCT-M5-90°T	24"	178.50	180.00	0.012	3.27	567.98	562.08	13.67	44.35	0.76	12.43	1.33	6.16	0.005	0.033	12.34	6.16	0.77	1.33	562.85	569.31	565.22	569.90
LAT M5	CI-M5	JCT-M5-90°T	24"	4.00	5.50	0.012	7.06	562.47	562.08	2.41	65.09	0.26	9.87	0.54	3.52	0.004	0.071	0.99	1.43	1.45	1.06	563.53	563.53	564.21	563.54
LINE M5A	JCT-M5-90°T	MH-M5	24"	68.50	70.00	0.012	3.27	562.08	559.79	16.08	44.35	0.83	12.99	1.45	6.61	0.006	0.033	11.92	6.61	0.89	1.45	560.68	563.53	562.89	564.21
LINE M5B	MH-M5	JCT-M6-90°T	24"	168.50	170.00	0.012	3.30	559.79	554.18	16.08	44.52	0.83	13.03	1.45	6.61	0.006	0.033	12.86	6.61	0.84	1.45	555.02	561.24	557.60	561.91
LAT M6	CI-M6	JCT-M6-90°T	24"	4.00	5.50	0.012	7.95	554.62	554.18	2.38	69.08	0.25	10.26	0.54	3.51	0.004	0.079	0.91	1.33	1.55	1.11	555.73	555.73	556.51	555.74
LINE M6A	JCT-M6-90°T	MH-M6	24"	76.00	78.00	0.012	3.30	554.18	551.60	18.47	44.52	0.90	13.51	1.55	7.08	0.006	0.033	12.48	7.08	0.95	1.55	552.56	555.73	554.99	556.51
LINE M6B	MH-M6	JCT-M7-90°T	30"	120.00	122.00	0.012	1.30	551.10	549.52	41.69	50.69	1.73	11.53	2.16	9.23	0.008	0.013	11.23	9.23	1.77	2.16	551.29	553.27	553.25	554.59
LAT M7	CI-M7	JCT-M7-90°T	24"	4.00	5.50	0.012	0.30	550.03	550.02	2.97	13.42	0.64	3.43	0.60	3.73	0.004	0.003	1.04	1.04	1.71	1.70	551.73	551.73	553.17	551.75
LINE M8	JCT-M7-90°T	JCT-M8-90°T	30"	170.00	170.00	0.012	1.21	549.52	547.46	44.30	48.88	1.87	11.28	2.21	9.64	0.009	0.012	11.18	9.64	1.88	2.21	549.34	551.73	551.28	553.17
LAT M8	CI-M8	JCT-M8-90°T	24"	4.00	5.50	0.012	1.40	548.04	547.96	1.24	29.00	0.28	4.59	0.38	2.93	0.004	0.014	0.43	0.45	1.73	1.65	549.69	549.69	551.17	549.69
LINE M9	JCT-M8-90°T	JCT-RM	30"	83.00	83.00	0.012	1.25	547.46	546.42	45.05	49.65	1.87	11.46	2.23	9.76	0.009	0.012	11.10	9.76	1.93	2.23	548.35	549.69	550.27	551.17
LINE N1	MH-N1	MH-M6	30"	71.28	74.78	0.012	2.11	552.68	551.10	23.57	64.55	1.05	12.12	1.65	6.84	0.005	0.021	11.08	6.84	1.12	1.65	552.22	554.34	554.13	555.06
LAT N1	CI-N1	MH-N1	24"	18.52	22.02	0.012	4.85	554.25	553.18	1.61	53.95	0.24	7.67	0.44	3.15	0.004	0.048	7.18	1.02	0.25	1.00	553.43	555.25	554.24	555.25
LINE N2A	JCT-N2-60°BEND	MH-N1	30"	87.73	89.23	0.012	0.77	553.37	552.68	22.17	39.02	1.35	8.20	1.60	6.67	0.005	0.008	8.08	6.67	1.37	1.60	554.05	554.97	555.06	555.66
LINE N2B	DI-N2	JCT-N2-60°BEND	30"	15.89	16.89	0.012	0.77	553.50	553.37	22.17	38.99	1.35	8.20	1.60	6.67	0.005	0.008	7.53	4.52	1.45	2.49	554.82	555.99	555.70	555.99
LINE O1	JCT-O1-90°T	MH-R2	48"	80.01	83.01	0.012	0.62	545.65	545.14	116.85	122.74	3.12	11.12	3.26	10.66	0.006	0.006	10.32	10.52	3.38	3.31	548.52	548.96	549.56	550.62
LAT O1	CI-O1	JCT-O1-90°T	24"	4.00	5.50	0.012	6.98	548.04	547.65	1.95	64.74	0.24	9.23	0.49	3.32	0.004	0.070	0.90	1.24	1.31	1.00	548.96	549.04	550.62	549.04
LINE O2	JCT-O2-90°T	JCT-O1-90°T	48"	72.00	72.00	0.012	0.62	546.10	545.65	115.65	122.77	3.09	11.11	3.25	10.59	0.006	0.006	10.41	10.57	3.31	3.25	548.96	549.35	550.62	551.04
LAT O2	DI-O2	JCT-O2-90°T	24"	22.50	23.50	0.012	0.42	548.20	548.10	1.90	15.88	0.47	3.40	0.48	3.30	0.004	0.004	0.92	1.01	1.25	1.16	549.35	549.36	551.04	549.37
LINE O3A	JCT-O3-VERT BRK	JCT-O2-90°T	48"	32.00	32.00	0.012	0.62	546.30	546.10	114.50	122.50	3.07	11.08	3.23	10.53	0.006	0.006	10.92	10.53	3.11	3.23	549.21	549.53	551.07	551.25
LINE O3B	JCT-O3-90°T	JCT-O3-VERT BRK	48"	66.00	66.00	0.012	1.98	547.61	546.30	114.50	219.20	2.05	17.63	3.23	10.53	0.006	0.020	14.40	10.53	2.42	3.23	548.72	550.84	551.95	552.56
LAT O3	CI-O3	JCT-O3-90°T	24"	4.00	5.50	0.012	5.89	549.93	549.61	26.00	59.48	0.93	18.30	1.79	8.78	0.010	0.059	10.76	8.78	1.44	1.79	551.05	551.72	552.85	552.92
LAT O4	JCT-O4-EXI8"	CI-O3	24"	48.67	49.67	0.012	4.16	552.00	549.93	23.85	50.00	0.97	15.73	1.73	8.25	0.009	0.042	13.35	7.59	1.11	2.00	551.04	555.61	553.82	555.61
LINE O5	JCT-O5-90°T	JCT-O3-90°T	48"	109.50	109.50	0.012	1.98	549.78	547.61	91.56	219.12	1.80	16.66	2.90	9.38	0.005	0.020	14.56	9.38	2.00	2.90	549.61	552.68	552.91	554.05
LAT O5	CI-O5	JCT-O5-90°T	24"	78.10	80.60	0.012	2.16	553.52	551.78	3.46	35.98	0.42	7.24	0.65	3.90	0.004	0.022	7.17	2.20	0.42	1.00	552.20	554.52	553.01	554.52
LINE O6	JCT-O6-90°T	JCT-O5-90°T	48"	55.00	55.00	0.012	1.98	550.87	549.78	88.85	219.01	1.77	16.52	2.86	9.25	0.004	0.020	13.18	9.25	2.12	2.86	551.90	553.73	554.60	555.06
LAT O6A	CI-O6A	JCT-O6-90°T	24"	72.58	75.08	0.012	1.29	553.84	552.87	6.40	27.81	0.65	7.19	0.90	4.70	0.004	0.013	7.07	4.70	0.66	0.90	553.53	554.73	554.31	555.08
LAT O6B	CI-O6B	CI-O6A	24"	8.08	13.08	0.012	2.78	554.20	553.84	6.33	40.84	0.53	9.44	0.89	4.68	0.004	0.028	7.28	2.96	0.64	1.29	554.48	555.49	555.30	555.49
LINE O7	MH-O7	JCT-O6-90°T	48"	15.20	17.70	0.012	1.99	551.22	550.87	83.59	219.25	1.71	16.27	2.77	9.00	0.004	0.020	11.33	9.00	2.28	2.77	553.15	553.99	555.14	555.25
LAT O7	EX-JCT-O7	MH-O7	42"	42.20	45.20	0.012	7.56	555.14	551.72	69.83	299.76	1.15	25.39	2.62	9.04	0.005	0.076	17.90	7.26	1.49	3.50	553.21	559.59	558.20	559.59
LINE O8	JCT-O8-90°T	MH-O7	24"	15.30	17.80	0.012	3.36	553.82	553.22	16.66	44.93	0.84	13.24	1.47	6.72	0.006	0.034	9.85	6.72	1.06	1.47	554.28	555.29	555.79	555.99
LAT O8	CI-O8	JCT-O8-90°T	24"	4.00	5.50	0.012	5.39	554.12	553.82	2.05	56.90	0.26	8.56	0.50	3.37	0.004	0.054	0.83	1.07	1.47	1.18	555.29	555.29	555.99	555.30
LINE O9A	JCT-O9-60°BEND	JCT-O8-90°T	24"	162.70	162.70	0.012	3.36	559.29	553.82	14.61	44.93	0.78	12.78	1.38	6.33	0.005	0.034	12.63	6.33	0.79	1.38	554.61	560.67	557.10	561.29
LAT O9B	CI-O9	JCT-O9-60°BEND	24"	4.61	6.11	0.012	3.37	559.49	559.29	14.61	44.98	0.78	12.79	1.38	6.33	0.005	0.034	8.23	6.33	1.10	1.38	560.39	560.87	561.44	561.49
LINE O10	CI-O10	CI-O9	24"	150.00	155.00	0.012	3.30	564.61	559.49	10.06	44.52	0.65	11.45	1.14	5.47	0.004	0.033	11.36	5.47	0.65	1.14	560.14	565.74	562.16	566.21
LINE O11	CI-O11	CI-O10	24"	245.82	250.82	0.012	2.81	571.66	564.61	6.60	41.08	0.54	9.59	0.91	4.74	0.004	0.028	9.58	4.74	0.54	0.91	565.15	572.57	566.59	572.91
LINE O12	CI-O12	CI-O11	24"	146.12	151.12	0.012	1.57	574.03	571.66	4.25	30.72	0.50	6.87	0.72	4.14	0.004	0.016	6.86	2.70	0.50	1.00	572.16	575.03	572.89	575.03

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 11 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	398
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

DGN=G:\JOBS\22451C-SH205\Drainage\22451cdd11.dgn, ON=10-633
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE P1	CI-P1	CI-R1	24"	77.00	82.00	0.012	1.38	548.03	546.90	5.89	28.74	0.61	7.19	0.86	4.57	0.004	0.014	7.09	4.57	0.62	0.86	547.52	548.89	548.30	549.21
LINE P2	CI-P2	CI-P1	24"	265.00	270.00	0.012	1.22	551.32	548.03	4.11	27.07	0.53	6.22	0.71	4.10	0.004	0.012	6.22	2.62	0.53	1.00	548.55	552.32	549.16	552.32
LINE Q1	CI-Q1	CI-R2	24"	77.00	82.00	0.012	0.88	548.03	547.31	6.25	22.98	0.71	6.22	0.89	4.66	0.004	0.009	6.18	4.66	0.72	0.89	548.02	548.91	548.62	549.25
LINE Q2	CI-Q2	CI-Q1	24"	265.00	270.00	0.012	1.22	551.32	548.03	4.37	27.07	0.54	6.33	0.74	4.18	0.004	0.012	6.33	2.71	0.54	1.02	548.57	552.34	549.20	552.34
LINE R1	CI-R1	OUT-R1	5'X4'	17.25	18.75	0.012	0.53	544.90	544.80	181.59	193.84	3.21	11.33	3.45	10.53	0.004	0.005	11.01	10.53	3.30	3.45	548.10	548.35	549.98	550.07
LINE R2A	JCT-RM	CI-R1	5'X4'	4.00	5.50	0.012	0.44	544.92	544.90	175.94	175.94	3.37	10.44	3.38	10.42	0.004	0.004	10.21	10.21	3.45	3.45	548.35	548.37	550.07	549.99
LINE R2B	MH-R2	JCT-RM	5'X4'	67.50	70.00	0.012	0.30	545.14	544.92	138.79	146.50	3.23	8.59	2.88	9.63	0.004	0.003	8.05	8.22	3.45	3.38	548.37	548.52	549.99	549.56
LINE R2C	CI-R2	MH-R2	36"	2.50	6.50	0.012	2.62	546.31	546.14	26.33	116.86	0.97	13.35	1.66	6.57	0.004	0.026	4.38	4.70	2.38	2.22	548.52	548.53	549.56	548.82
LINE R3	DI-R3	CI-R2	36"	13.50	16.00	0.012	4.33	547.00	546.31	17.85	150.40	0.70	14.30	1.35	5.77	0.003	0.043	3.19	3.65	2.22	1.96	548.53	548.96	548.82	548.96
LINE QQ1	CI-QQ1	CI-NN11	24"	48.00	53.00	0.012	0.69	555.37	555.01	3.17	20.29	0.54	4.70	0.62	3.81	0.004	0.007	1.19	1.56	1.59	1.23	556.59	556.60	557.42	556.63
LINE PP1	CI-PP1	JCT-PP1	24"	32.24	32.24	0.012	2.24	569.19	568.47	0.73	36.71	0.20	4.62	0.29	2.55	0.004	0.022	4.58	0.47	0.20	1.00	568.66	570.19	568.99	570.19
LINE PP2	JCT-PP1	JCT-PP2	24"	57.57	57.57	0.012	2.24	568.47	567.17	1.11	36.70	0.24	5.24	0.36	2.85	0.004	0.022	5.22	2.85	0.24	0.36	567.41	568.83	567.84	568.95
LAT PP2	CI-PP2	JCT-PP1	24"	17.70	19.20	0.012	0.97	568.65	568.47	0.38	24.08	0.18	2.82	0.21	2.14	0.004	0.010	2.82	0.24	0.18	1.00	568.64	569.65	568.76	569.65
LAT PP3	CI-PP3	JCT-PP2	24"	16.34	17.84	0.012	8.56	568.70	567.17	0.72	71.69	0.14	7.34	0.29	2.54	0.004	0.086	7.10	0.46	0.15	1.00	567.32	569.70	568.12	569.70
LINE PP3	JCT-PP2	CI-PP4	24"	81.70	81.70	0.012	2.24	567.17	565.34	1.83	36.71	0.30	6.09	0.47	3.26	0.004	0.022	6.08	3.26	0.30	0.47	565.65	567.64	566.22	567.81
LINE PP4	CI-PP4	CI-PP5	24"	79.64	79.64	0.012	1.69	565.34	564.00	2.89	31.85	0.41	6.30	0.59	3.70	0.004	0.017	6.26	3.70	0.41	0.59	564.40	565.93	565.02	566.15
LINE PP5	CI-PP5	CI-PP6	24"	154.99	154.99	0.012	2.25	564.00	560.51	5.13	36.76	0.51	8.25	0.80	4.39	0.004	0.023	8.23	4.39	0.51	0.80	561.01	564.79	562.07	565.09
LINE PP6	CI-PP6	CI-PP7	24"	208.67	208.67	0.012	2.23	560.51	555.85	6.71	36.60	0.58	8.87	0.92	4.77	0.004	0.022	8.87	4.77	0.58	0.92	556.44	561.43	557.66	561.78
LINE PP7	CI-PP7	MH-NN1	24"	95.78	100.28	0.012	1.58	555.85	554.27	8.20	30.82	0.71	8.30	1.02	5.09	0.004	0.016	8.18	5.09	0.71	1.02	554.98	556.88	556.02	557.28
LINE NN1	CI-NN1	CI-NN2	24"	244.00	249.00	0.012	0.35	579.50	578.62	0.60	14.50	0.28	2.27	0.27	2.42	0.004	0.003	0.87	0.38	0.54	1.00	579.17	580.50	579.32	580.50
LINE NN2	CI-NN2	CI-NN3	24"	195.00	200.00	0.012	0.30	578.62	578.02	2.16	13.42	0.54	3.13	0.51	3.41	0.004	0.003	2.45	3.13	0.65	0.54	578.67	579.17	578.91	579.32
LINE NN3	CI-NN3	CI-NN4	24"	290.95	290.95	0.012	2.17	578.02	571.71	3.43	36.11	0.42	7.24	0.65	3.89	0.004	0.022	7.24	3.89	0.42	0.65	572.12	578.67	572.94	578.91
LINE NN4	CI-NN4	CI-NN5	24"	176.95	176.95	0.012	2.39	571.71	567.48	5.43	37.89	0.51	8.56	0.82	4.46	0.004	0.024	8.55	4.46	0.51	0.82	567.99	572.53	569.13	572.84
LINE NN5A	CI-NN5	JCT-NN1	24"	34.96	34.96	0.012	3.02	567.48	566.42	6.63	42.59	0.53	9.86	0.91	4.75	0.004	0.030	8.80	4.75	0.58	0.91	567.00	568.39	568.21	568.74
LAT NN6	CI-NN6	JCT-NN1	24"	24.50	27.00	0.012	0.97	566.68	566.42	2.43	24.08	0.43	4.91	0.54	3.53	0.004	0.010	1.41	1.55	1.08	1.00	567.50	567.68	567.93	567.68
LINE NN5B	JCT-NN1	CI-NN7	24"	125.54	125.54	0.012	3.02	566.42	562.63	9.06	42.59	0.63	10.77	1.08	5.27	0.004	0.030	10.64	5.27	0.63	1.08	563.26	567.50	565.03	567.93
LAT NN8	CI-NN8	CI-NN7	24"	20.06	24.06	0.012	0.83	562.83	562.63	2.99	22.33	0.49	4.95	0.60	3.74	0.004	0.008	1.37	1.65	1.31	1.12	563.95	564.52	564.52	563.98
LINE NN7	CI-NN7	CI-NN9	24"	160.49	160.49	0.012	1.46	562.63	560.28	13.33	29.64	0.94	9.18	1.31	6.09	0.005	0.015	9.12	6.09	0.95	1.31	561.23	563.95	562.52	564.52
LINE NN9	CI-NN9	CI-NN10	24"	158.56	158.56	0.012	2.40	560.28	556.48	14.50	37.95	0.86	11.27	1.37	6.31	0.005	0.024	11.14	6.31	0.87	1.37	557.35	561.66	559.28	562.27
LINE NN10	CI-NN10	CI-NN11	24"	101.98	106.98	0.012	1.38	556.48	555.01	15.70	28.77	1.05	9.36	1.43	6.54	0.006	0.014	9.16	6.54	1.07	1.43	556.08	557.91	557.38	558.57
LINE NN11A	CI-NN11	MH-NN1	24"	75.69	79.19	0.012	0.93	555.01	554.27	20.07	23.65	1.42	8.45	1.61	7.41	0.007	0.009	8.37	7.41	1.43	1.61	555.70	556.62	556.79	557.47
LINE NN11B	MH-NN1	JCT-NN2	36"	16.31	18.31	0.012	0.30	553.27	553.21	28.28	39.58	1.88	6.08	1.72	6.74	0.004	0.003	5.88	5.92	1.93	1.92	555.14	555.19	555.71	555.73
LAT NN12	CI-NN12	JCT-NN2	24"	4.62	6.12	0.012	7.50	554.67	554.21	0.75	67.11	0.15	7.08	0.30	2.56	0.004	0.075	0.52	0.47	0.93	1.00	555.14	555.67	555.71	555.67
LINE NN12	JCT-NN2	JCT-NN3	36"	112.00	112.00	0.012	0.30	553.21	552.88	29.02	39.58	1.91	6.12	1.74	6.81	0.004	0.003	5.82	6.04	1.99	1.93	554.87	555.14	555.48	555.71
LAT NN13	CI-NN13	JCT-NN3	24"	4.62	6.12	0.012	5.60	554.22	553.88	2.27	57.98	0.27	8.94	0.52	3.46	0.004	0.056	1.46	1.44	0.99	1.00	554.87	555.22	555.48	555.22
LINE NN13A	JCT-NN3	MH-NN2	36"	53.71	55.71	0.012	0.30	552.88	552.71	31.29	39.58	2.01	6.21	1.81	7.00	0.004	0.003	6.37	6.28	1.97	1.99	554.68	554.87	555.31	555.48
LINE NN13B	MH-NN2	OUT-NN0	36"	76.22	78.22	0.012	0.31	552.71	552.47	31.29	40.10	1.99	6.27	1.81	7.00	0.004	0.003	7.00	6.37	1.81	1.97	554.28	554.68	555.05	555.31
LINE MM1	CI-MM1	CI-MM2	24"	48.50	53.50	0.012	1.20	580.63	579.99	0.24	26.85	0.13	2.65	0.17	1.89	0.005	0.012	2.65	0.15	0.13	1.00	580.12	581.63	580.23	581.63
LINE MM2	CI-MM2	JCT-MM3-90°T	24"	63.45	65.94	0.012	0.35	579.99	579.75	0.62	14.52	0.28	2.30	0.27	2.45	0.004	0.004	0.40	0.56	1.00	0.77	580.75	580.75	581.05	580.76
LAT MM3B	CI-MM3B	CI-MM3A	24"	23.20	26.20	0.012	0.75	582.11	581.91	5.83	21.26	0.72	5.77	0.85	4.56	0.004	0.008	5.55	2.89	0.74	1.23	582.65	583.34	583.13	583.34
LAT MM3A	CI-MM3A	JCT-MM3-90°T	24"	60.85	63.35	0.012	3.41	581.91	579.75	6.28	45.25	0.50	10.13	0.89	4.67	0.004	0.034	9.73	4.67	0.52	0.89	580.27	582.80	581.75	583.14
LINE MM3	JCT-MM3-90°T	CI-MM4	24"	32.58	35.08	0.012	0.30	579.75	579.65	6.81	13.42	1.01	4.29	0.93	4.79	0.004	0.003	4.71	4.34	0.94	1.00	580.59	580.75	580.95	581.05
LINE MM4	CI-MM4	CI-MM5	24"	47.00	52.00	0.012	0.93	579.65	579.17	6.97	23.62	0.74	6.54	0.94	4.83	0.004	0.009	6.38	4.83	0.76	0.94	579.92	580.59	580.56	580.95
LINE MM5	CI-MM5	JCT-MM5-60°BEND	24"	36.38	37.88	0.012	0.44	579.17	579.00	7.18	16.25	0.93	5.01	0.95	4.87	0.004	0.004	3.83	4.21	1.15	1.07	580.15	580.23	580.33	580.46
LINE MM6	JCT-MM5-60°BEND	CI-MM6	24"	44.30	46.80	0.012	0.44	579.00	578.79	7.18	16.28	0.93	5.02	0.95	4.87	0.004	0.004	3.36	3.83	1.29	1.15	580.08	580.15	580.44	580.33
LINE MM7	CI-MM6	CI-MM7	24"	55.00	60.00	0.012	0.35	578.79	578.58	10.31	14.54	1.24	5.02	1.15	5.52	0.004	0.004	4.50	4.83	1.37	1.29	579.95	580.08	580.34	580.44
LINE MM8	CI-MM7	CI-MM8	24"	73.00	78.00	0.012	0.39	578.58	578.28	11.46	15.20	1.30	5.32	1.22	5.74	0.005	0.004	4.49	5.01	1.51	1.37	579.79	579.95	580.23	580.34
LINE MM9	CI-MM8	CI-MM9	24"	97.00	102.00	0.012	0.35	578.28	577.92	13.49	14.57	1.52	5.27	1.32	6.12	0.005	0.004	5.35	5.29	1.50	1.51	579.42	579.79	579.92	580.23
LINE MM10	CI-MM9	MH-MM11	24"	48.31	52.31	0.012	0.58	577.92	577.62	15.24	18.65	1.38	6.62	1.41	6.45	0.005	0.006	5.71	6.04	1.58	1.50	579.20	579.42	580.02	579.92
LAT MM10	CI-MM10	CI-MM11	24"	23.54	26.54	0.012	0.84	578.74	578.51	4.13	22.40	0.58	5.44	0.71	4.11	0.004	0.008	5.23	2.63	0.60	1.00	579.11	579.74	579.54	579.74
LAT MM11	CI-MM11	MH-MM11	24"	25.85	30.35	0.012	2.95	578.51	577.62	4.48	42.12	0.44	8.73	0.74	4.21	0.004	0.030	7.89	4.21	0.47	0.74	578.09	579.26	579.06	579.53
LINE MM11	MH-MM11	JCT-MM12-60°Y	24"	140.74	140.74	0.012	2.32	577.62	574.35	19.38	37.36	1.02	12.00	1.58	7.27	0.007	0.023	11.73	7.27	1.04	1.58	575.39	579.20	577.53	580.02
LAT MM12	CI-MM12	JCT-MM12-60°Y	24"	4.62	6.12	0.012	6.96	574.77	574.35	1.58	64.65	0.22	8.66	0.44	3.14	0.004	0.070	0.58	0.80	1.63	1.20	575.97	575.98	576.85	575.98
LINE MM12	JCT-MM12-60°Y	JCT-MM13-60°Y	24"	108.21	108.21	0.012	2.30	574.35	571.86	20.58	37.16	1.06	12.13	1.63	7.52	0.007	0.023	11.65	7.52	1.10	1.63	572.96	575.97	575.07	576.85
LAT MM13	CI-MM13	JCT-MM13-60°Y	24"	4.63	6.13	0.012	5.56	572.20	571.86	3.72	57.77	0.34	10.33	0.68	3.98	0.004	0.056	1.30	1.63	1.70	1.36	573.56	573.56	574.57	573.59
LINE MM13A	JCT-MM13-60°Y	MH-MM14	24"	34.57	36.07	0.012	1.61	571.86	571.28	22.91	31.05	1.28	10.81	1.70	8.04	0.008	0.016	9.79	8.04	1.40	1.70	572.68	573.56	574.17	574.57
LINE MM13B	MH-MM14	JCT-MM14-60°Y	36"	18.27	19.77	0.012	0.38	569.02	568.95	22.91	44.50	1.53	6.34	1.54	6.26	0.004	0.004	5.60	5.69	1.69	1.67	570.64	570.69	571.27	571.18
LAT MM14	CI-MM14	JCT-MM14-60°Y	24"	4.62	6.12	0.012	2.79	570.12	569.95	3.41	40.97	0.39	7.90	0.65	3.89	0.004	0.028	5.73	2.17	0.49	1.00	570.44	571.12	570.95	571.12
LINE MM14	JCT-MM14-60°Y	JCT-MM15-60°Y	36"	49.34	49.34	0.012	0.38	568.95	568.76	26.23	44.48	1.66	6.55	1.65	6.56	0.004	0.004	5.77	6.41	1.84	1.69	570.60	570.64	571.23	571.27
LAT MM15	CI-MM15	JCT-MM15-60°Y	24"	4.63	6.13	0.012	7.63	570.23	569.76	3.25	67.71	0.30	11.10	0.63	3.83	0.004	0.076	7.32	2.07	0.40	1.00	570.16	571.23	571.00	571.23
LINE MM15	JCT-MM15-60°Y	JCT-MM16-60°Y	36"	36.66	36.66	0.012	0.38	568.76	568.62	29.00	44.65	1.76	6.72	1.74	6.81	0.004	0.004	6.00	6.38	1.94	1.84	570.56	570.60	571.28	571.23
LAT MM16	CI-MM16	JCT-MM16-60°Y	24"	4.63	6.13	0.012	2.09	569.75	569.62	4.73	35.41	0.49	7.84	0.77	4.28	0.004	0.021	3.26	2.75	0.94	1.07	570.56	570.82	571.28	570.82
LINE MM16A	JCT-MM16-60°Y	JCT-MM16A-90°T	36"	41.38	41.38	0.012	0.38	568.62	568.47	32.80	44.51	1.92	6.89	1.86	7.13	0.004	0.004	6.58	6.79	1.99	1.94	570.46	570.56	571.19	571.28
LAT MM16A	CI-MM16A	JCT-MM16A-90°T	24"	36.16	38.66	0.012	7.18	572.24	569.47	1.86	65.66	0.23	9.20	0.47	3.28	0.004	0.072	9.04	1.19	0.23	1.00	569.70	573.24	570.98	573.24
LINE MM16B	JCT-MM16A-90°T	JCT-MM16B-60°Y	36"	50.62	50.62	0.012	0.38	568.47	568.27	34.15	44.50	1.97	6.94	1.90	7.24	0.004	0.004	6.64	6.85	2.05	1.99	570.32	570.46	571.05	571.19
LAT MM16B	CI-MM16B	JCT-MM16B-60°Y	24"	37.77	40.27	0.012	7.37	572.24	569.27	1.52	66.52	0.21	8.73	0.43	3.10	0.004	0.074	8.62	0.97	0.21	1.00	569.48	573.24	570.65	573.24
LINE MM17	JCT-MM16B-60°Y	JCT-MM17-60°Y	36"	28.39	28.39	0.012	0.38	568.27	568.17	35.20	44.56	2.01	6.99	1.93	7.33	0.004	0.004	6.73	6.84	2.08	2.05	570.25	570.32	571.02	571.05
LAT MM17	CI-MM17	JCT-MM17-60°Y	24"	4.74	6.24	0.012	9.06	569.73	569.17	2.21	73.77	0.24	10.51	0.52	3.44	0.004	0.091	7.32	1.41	0.31	1.00	569.47	570.73	570.31	570.73
LINE MM17A	JCT-MM17-60°Y	MH-MM18	36"	83.36	85.36	0.012	0.38	568.17	567.84	36.83	44.58	2.08	7.05	1.97	7.47	0.004	0.004	7.02	7.04	2.09	2.08	569.93	570.25	570.88	571.02
LAT MM18	DI-MM18	MH-MM18	24"	14.36	17.36	0.012	2.36	572.25	571.84	4.98	37.66	0.49	8.32	0.79	4.35	0.004	0.024	6.95	2.78	0.56	1.11	572.40	573.36	573.15	573.36
LINE MM17B	MH-MM18	OUT-MM0	36"	92.83	94.83	0.012	1.23	567.84	566.67	41.02	80.26	1.52	11.42	2.09	7.82	0.005	0.012	10.72	7.82	1.60	2.09	568.27	569.93	570.06	570.88
LINE MM21	SET-MM21	SET-MM20	4'x2'	73.34	73.34	0.012	1.36	557.00	556.00	55.34	88.28	1.17	11.82	1.81	7.64	0.004	0.014	10.81	7.64	1.28	1.81	557.28	558.81	559.10	559.72
LINE MM22	SET-MM23	SET-MM22	4'x2'	89.68	89.68	0.012	1.68	564.00	562.49	46.00	98.10	0.96	12.02	1.60	7.18	0.004	0.017	11.19	5.75	1.03	2.00	563.52	566.89	565.47	566.89

DGN=G:\JOBS\224510-SH205\Drainage\24510dd12.dgn, ON=10-633
5/10/2006 Plotted 10-MAY-2006 09:23

PB 122 Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 12 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	399
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/10/2006

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE LL1	CI-LL1	CI-LL2A	24"	79.63	84.63	0.012	0.70	580.55	579.96	1.49	20.50	0.37	3.80	0.42	3.09	0.004	0.007	3.80	0.95	0.37	1.00	580.32	581.55	580.55	581.55
LINE LL2A	CI-LL2A	CI-LL2B	24"	35.00	40.00	0.012	0.35	579.96	579.82	1.67	14.50	0.46	3.08	0.45	3.19	0.004	0.004	2.82	3.08	0.49	0.46	580.30	580.41	580.46	580.56
LINE LL2B	CI-LL2B	CI-LL2C	24"	35.00	40.00	0.012	0.35	579.82	579.68	1.89	14.50	0.49	3.19	0.48	3.29	0.004	0.004	2.58	3.18	0.57	0.49	580.24	580.30	580.37	580.46
LINE LL2C	CI-LL2C	CI-LL3	24"	35.00	40.00	0.012	0.35	579.68	579.54	2.11	14.50	0.52	3.29	0.50	3.39	0.004	0.003	2.17	2.88	0.70	0.57	580.23	580.24	580.25	580.37
LINE LL3A	CI-LL3	MH-LL1	24"	28.00	32.00	0.012	1.85	579.54	578.94	2.32	33.33	0.36	6.10	0.53	3.49	0.004	0.019	1.09	2.39	1.28	0.70	580.23	580.23	580.78	580.25
LAT LL5A	CI-LL5	CI-LL4	24"	27.00	30.00	0.012	1.83	581.06	580.51	4.90	33.12	0.52	7.55	0.78	4.32	0.004	0.018	6.90	2.77	0.56	1.10	581.07	582.16	581.81	582.16
LAT LL5B	CI-LL4	MH-LL1	24"	59.14	63.14	0.012	2.49	580.51	578.94	10.83	38.65	0.72	10.56	1.18	5.62	0.005	0.025	9.86	5.62	0.76	1.18	579.71	581.69	581.22	582.18
LINE LL3B	MH-LL1	MH-LL2	24"	46.32	49.32	0.012	1.28	578.94	578.31	12.71	27.69	0.95	8.63	1.28	5.97	0.005	0.013	8.11	5.97	1.00	1.28	579.31	580.23	580.34	580.78
EXIST LL3B	MH-LL2	OUT-LLO	24"	90.60	92.10	0.012	1.43	578.31	577.00	14.61	29.27	1.00	9.31	1.38	6.33	0.005	0.014	9.05	6.33	1.02	1.38	578.02	579.69	579.30	580.32
LINE KK1	CI-KK1	CI-KK2	24"	173.00	178.00	0.012	0.35	579.47	578.85	0.66	14.50	0.29	2.34	0.28	2.49	0.004	0.004	0.52	0.42	0.85	1.00	579.69	580.47	579.71	580.47
LINE KK2	CI-KK2	MH-LL2	24"	18.80	22.80	0.012	2.34	578.85	578.31	2.05	37.49	0.32	6.39	0.50	3.37	0.004	0.023	0.89	1.62	1.38	0.85	579.69	579.69	580.32	579.71
LINE KK3	CI-KK3	OUT-KK3	24"	5.50	7.00	0.012	1.45	577.10	577.00	1.91	29.50	0.34	5.28	0.48	3.30	0.004	0.014	4.47	1.21	0.39	1.00	577.39	578.10	577.70	578.10
LINE HH1	CI-HH1	CI-HH2	24"	213.00	218.00	0.012	1.54	582.02	578.66	1.78	30.43	0.33	5.29	0.46	3.24	0.004	0.015	5.29	1.14	0.33	1.00	578.99	583.02	579.43	583.02
LINE HH2	CI-HH2	MH-JJ1	24"	12.50	17.00	0.012	2.92	578.66	578.16	3.17	41.88	0.37	7.86	0.62	3.81	0.004	0.029	1.16	1.72	1.63	1.14	579.79	579.80	580.68	579.82
LINE JJ1A	CI-JJ1A	JCT-JJ1A	24"	15.01	16.51	0.012	0.75	583.75	583.63	3.04	21.20	0.51	4.79	0.61	3.76	0.004	0.007	4.59	1.93	0.53	1.00	584.15	584.75	584.48	584.75
LINE JJ1B	JCT-JJ1A	CI-JJ1B	24"	65.00	67.50	0.012	0.75	583.63	583.12	3.04	21.22	0.51	4.79	0.61	3.76	0.004	0.007	4.78	3.76	0.51	0.61	583.63	584.24	583.99	584.45
LINE JJ2A	CI-JJ1B	JCT-JJ1	24"	19.50	22.00	0.012	1.86	583.12	582.71	4.26	33.46	0.48	7.31	0.73	4.15	0.004	0.019	2.32	4.03	1.13	0.74	583.84	583.86	584.31	583.94
LAT JJ2	CI-JJ2A	JCT-JJ1	24"	23.25	24.75	0.012	8.85	584.90	582.71	5.75	72.89	0.38	13.84	0.85	4.54	0.004	0.088	11.66	2.88	0.43	1.22	583.14	586.12	585.26	586.12
LINE JJ2B	JCT-JJ1	JCT-JJ2	24"	50.50	50.50	0.012	1.86	582.71	581.77	10.01	33.45	0.75	9.30	1.13	5.46	0.004	0.019	8.61	5.46	0.79	1.13	582.56	583.84	583.72	584.31
LAT JJ2C	DI-JJ2C	JCT-JJ2	24"	25.00	26.00	0.012	8.96	584.10	581.77	4.54	73.37	0.34	12.97	0.75	4.23	0.004	0.090	11.34	2.73	0.37	1.05	582.14	585.15	584.15	585.15
LINE JJ2C	JCT-JJ2	CI-JJ2B	24"	20.00	22.50	0.012	1.87	581.77	581.35	14.56	33.48	0.92	10.28	1.38	6.32	0.005	0.019	8.58	6.32	1.06	1.38	582.41	583.14	583.56	583.77
LINE JJ3	CI-JJ2B	CI-JJ3	24"	30.00	35.00	0.012	1.33	581.35	580.88	16.07	28.26	1.08	9.28	1.45	6.61	0.006	0.013	8.47	6.61	1.16	1.45	582.05	582.80	583.16	583.47
LINE JJ4	CI-JJ3	CI-JJ4	24"	104.28	109.28	0.012	1.36	580.88	579.40	16.27	28.56	1.08	9.39	1.45	6.65	0.006	0.014	9.20	6.65	1.10	1.45	580.50	582.34	581.82	583.03
LINE JJ5A	CI-JJ4	CI-JJ5	24"	32.00	37.00	0.012	0.68	579.40	579.15	16.99	20.15	1.41	7.19	1.49	6.79	0.006	0.007	7.16	6.79	1.41	1.49	580.56	580.89	581.36	581.60
LINE JJ5B	CI-JJ5	MH-JJ1	24"	42.72	45.72	0.012	2.16	579.15	578.16	17.46	35.99	0.98	11.37	1.51	6.88	0.006	0.022	10.09	6.88	1.08	1.51	579.24	580.66	580.83	581.39
LINE JJ5C	MH-JJ1	JCT-JJ5B	24"	58.34	59.84	0.012	1.02	578.16	577.56	20.63	24.69	1.40	8.80	1.63	7.53	0.007	0.010	8.62	7.53	1.43	1.63	578.98	579.79	580.14	580.68
LAT JJ5	CI-HH3	JCT-JJ5B	24"	6.41	7.91	0.012	1.84	577.70	577.56	0.86	33.22	0.22	4.53	0.32	2.67	0.004	0.018	0.31	0.34	1.66	1.51	579.22	579.22	580.14	579.22
LINE JJ5D	JCT-JJ5B	MH-JJ2	24"	4.05	5.55	0.012	1.03	577.56	577.50	21.50	24.84	1.44	8.90	1.66	7.72	0.008	0.010	8.13	9.72	1.57	1.66	579.07	579.22	580.10	580.14
EXIST JJ5C	MH-JJ2	OUT-JJO	24"	53.51	55.01	0.012	1.53	577.50	576.66	21.50	30.29	1.25	10.46	1.66	7.72	0.008	0.015	9.79	7.72	1.32	1.66	577.98	579.16	579.47	580.08
LINE GG1A	CI-GG1	JCT-GG1	24"	27.45	29.95	0.012	9.90	573.96	570.99	2.38	77.09	0.24	11.07	0.54	3.51	0.004	0.099	10.54	1.51	0.25	1.00	571.24	574.96	572.99	574.96
LAT GG2	CI-GG2	JCT-GG1	24"	52.54	55.04	0.012	1.04	571.56	570.99	4.28	24.98	0.56	5.94	0.73	4.15	0.004	0.010	5.85	2.70	0.57	1.01	571.56	572.57	572.09	572.57
LINE GG1B	JCT-GG1	CI-GG3	24"	139.73	142.23	0.012	9.89	570.99	556.92	6.65	77.09	0.40	15.03	0.91	4.75	0.004	0.099	14.97	4.75	0.40	0.91	557.32	571.91	560.83	572.26
LINE GG3	CI-GG3	CI-GG4	24"	283.46	288.46	0.012	6.54	556.92	538.05	10.62	62.68	0.56	14.86	1.17	5.58	0.005	0.065	14.83	5.58	0.56	1.17	538.61	558.09	542.04	558.57
LINE GG4A	CI-GG4	JCT-GG2	24"	22.38	24.88	0.012	7.07	538.05	536.29	14.72	65.17	0.65	16.76	1.38	6.35	0.005	0.071	12.57	6.35	0.80	1.38	537.09	539.43	539.55	540.06
LINE GG4B	JCT-GG2	OUT-GGO	24"	67.74	67.74	0.012	6.26	536.29	532.05	14.72	61.31	0.67	16.04	1.38	6.35	0.005	0.063	14.66	6.35	0.71	1.38	532.76	537.67	536.11	538.30
LINE FF1A	CI-FF1	JCT-FF1	24"	29.65	32.15	0.012	8.29	559.92	557.25	4.87	70.58	0.36	12.88	0.78	4.32	0.004	0.083	11.59	2.77	0.38	1.09	557.64	561.01	559.74	561.01
LAT FF2	CI-FF2	JCT-FF1	24"	29.68	32.18	0.012	0.76	557.50	557.25	12.89	21.42	1.12	7.13	1.29	6.01	0.005	0.008	5.19	4.10	1.48	2.00	558.73	559.52	559.44	559.52
LINE FF1B	JCT-FF1	CI-FF3	24"	99.56	102.07	0.012	8.29	557.25	548.79	16.77	70.57	0.66	18.41	1.48	6.75	0.006	0.083	17.61	6.75	0.69	1.48	549.47	558.73	554.31	559.44
LINE FF3	CI-FF3	CI-FF4	24"	166.45	171.45	0.012	3.57	548.79	542.67	17.78	46.29	0.86	13.77	1.52	6.94	0.006	0.036	13.57	6.94	0.87	1.52	543.54	550.31	546.41	551.06
LINE FF4	CI-FF4	OUT-FFO	24"	73.79	76.29	0.012	2.74	542.67	540.59	19.44	40.54	0.98	12.77	1.59	7.28	0.007	0.027	11.81	7.28	1.04	1.59	541.62	544.26	543.80	545.08
LINE EE1	CI-EE1	CI-EE2	24"	125.25	125.25	0.012	5.56	580.35	573.39	2.45	57.77	0.28	9.13	0.55	3.54	0.004	0.056	9.13	1.56	0.28	1.00	573.67	581.35	574.96	581.35
LINE EE2	CI-EE2	CI-EE3	24"	163.13	163.13	0.012	5.55	573.39	564.33	6.03	57.74	0.44	11.91	0.87	4.61	0.004	0.056	11.90	4.61	0.44	0.87	564.77	574.26	566.98	574.59
LINE EE3	CI-EE3	CI-EE4	24"	200.45	200.45	0.012	5.79	564.33	552.74	10.66	58.94	0.58	14.24	1.17	5.58	0.005	0.058	14.19	5.58	0.58	1.17	553.31	565.50	556.46	565.98
LINE EE4	CI-EE4	CI-EE5	24"	218.43	218.43	0.012	5.08	552.74	541.65	13.62	55.21	0.68	14.56	1.33	6.15	0.005	0.051	14.52	6.15	0.68	1.33	542.33	554.06	545.62	554.65
LINE EE5A	CI-EE5	JCT-EE1	24"	21.78	24.28	0.012	6.33	541.65	540.11	18.07	61.66	0.74	17.05	1.53	7.00	0.006	0.063	12.54	7.00	0.94	1.53	541.05	543.18	543.50	543.94
LINE EE5B	JCT-EE1	JCT-EE2	24"	67.73	67.73	0.012	6.33	540.11	535.83	18.07	61.65	0.74	17.05	1.53	7.00	0.006	0.063	15.31	7.00	0.80	1.53	536.63	541.64	540.29	542.41
LAT EE6	CI-EE6	JCT-EE2	24"	4.58	6.08	0.012	14.29	536.70	535.83	1.74	92.64	0.19	11.46	0.46	3.22	0.004	0.143	0.65	1.11	1.60	1.00	537.43	537.70	538.27	537.70
LINE EE5C	JCT-EE2	OUT-EEO	24"	7.77	7.77	0.012	6.27	535.83	535.34	19.81	61.34	0.78	17.42	1.60	7.36	0.007	0.063	10.33	7.36	1.17	1.60	536.51	537.43	538.18	538.27
LINE DD1	CI-DD1	CI-DD2	24"	131.40	136.40	0.012	7.55	579.38	569.09	3.07	67.32	0.29	10.86	0.61	3.77	0.004	0.075	10.82	1.95	0.29	1.00	569.38	580.38	571.21	580.38
LINE DD2	CI-DD2	CI-DD3	24"	222.85	222.85	0.012	8.41	569.09	550.34	5.04	71.09	0.36	13.08	0.79	4.36	0.004	0.084	13.06	4.36	0.36	0.79	550.70	569.88	553.37	570.17
LINE DD3	CI-DD3	CI-DD4	24"	220.51	225.51	0.012	3.19	550.34	543.15	7.76	43.75	0.57	10.51	0.99	5.00	0.004	0.032	10.49	5.00	0.57	0.99	543.72	551.33	545.44	551.72
LINE DD4	CI-DD4	CI-DD5	24"	86.03	91.03	0.012	1.60	543.15	541.70	10.56	30.97	0.81	8.92	1.16	5.56	0.005	0.016	8.69	5.56	0.82	1.16	542.52	544.31	543.69	544.79
LINE DD5	CI-DD5	OUT-DDO	24"	8.24	10.74	0.012	10.20	541.70	540.60	12.00	78.25	0.53	18.03	1.24	5.84	0.005	0.102	3.82	3.86	2.00	1.93	543.60	543.63	543.83	543.85
LINE CC1	CI-CC1	CI-CC2	24"	300.54	305.54	0.012	2.59	585.78	577.88	3.18	39.42	0.38	7.53	0.62	3.81	0.004	0.026	7.53	2.02	0.38	1.00	578.26	586.78	579.15	586.78
LINE CC2A	CI-CC2	JCT-CC1	24"	102.99	105.49	0.012	1.01	577.88	576.81	5.59	24.68	0.65	6.35	0.84	4.50	0.004	0.010	6.33	4.50	0.65	0.84	577.46	578.71	578.08	579.03
LINE CC2B	JCT-CC1	CI-CC3	24"	143.08	145.59	0.012	1.01	576.81	575.33	5.59	24.68	0.65	6.35	0.84	4.50	0.004	0.010	6.34	4.50	0.65	0.84	575.98	577.64	576.61	577.96
LINE CC3	CI-CC3	CI-CC5	24"	181.11	184.11	0.012	2.87	575.33	570.05	7.06	41.51	0.56	9.85	0.94	4.85	0.004	0.029	9.83	4.85	0.56	0.94	570.61	576.28	572.12	576.64
LAT CC4A	CI-CC4	JCT-CC2	24"	40.54	42.04	0.012	1.99	574.39	573.55	2.74	34.58	0.38	6.57	0.58	3.65	0.004	0.020	6.38	1.74	0.39	1.00	573.94	575.39	574.57	575.39
LAT CC4B	JCT-CC2	CI-CC5	24"	173.32	175.82	0.012	1.99	573.55	570.05	2.74	34.58	0.38	6.57	0.58	3.65	0.004	0.020	6.57	3.65	0.38	0.58	570.43	574.13	571.10	574.33
LINE CC5A	CI-CC5	JCT-CC3	24"	36.59	39.09	0.012	1.63	570.05	569.41	11.40	31.28	0.84	9.17	1.21	5.72	0.005	0.016	8.30	5.72	0.90	1.21	570.31	571.26	571.39	571.77
LINE CC5B	JCT-CC3	CI-AA9	24"	54.29	55.79	0.012	1.52	569.41	568.56	11.40	30.23	0.85	8.95	1.21	5.72	0.005	0.015	8.41	5.72	0.89	1.21	569.46	570.62	570.56	571.13
LAT BB1	CI-BB1	CI-BB2	24"	23.77	26.77	0.012	0.49	568.33	568.19	5.51	17.22	0.78	4.88	0.83	4.48	0.004	0.005	2.23	2.43	1.47	1.35	569.66	569.68	569.72	569.76
LINE BB2	CI-BB2	MH-AA1	24"	94.85	98.85	0.012	0.50	568.19	567.70	6.08	17.30	0.82	5.02	0.87	4.62	0.004	0.005	1.97	2.46	1.91	1.47	569.61	569.66	571.46	569.72
LINE AA2A	CI-AA2	JCT-AA1	24"	108.25	110.75	0.012	3.25	582.67	579.07	2.84	44.18	0.34	7.90	0.59	3.69	0.004	0.033	7.89	1.81	0.34	1.00	579.41	583.67	580.39	583.67
LAT AA4	CI-AA4	JCT-AA1	24"	46.43	48.93	0.012	3.78	580.92	579.07	2.53	47.63	0.31	8.05	0.55	3.57	0.004	0.038	7.88	1.61	0.32	1.00	579.39	581.92	580.36	581.92
LINE AA2B	JCT-AA1	CI-AA3	24"	28.75	31.25	0.012	3.25	579.07	578.06	5.38	44.17	0.47	9.52	0.82	4.45	0.004	0.032	8.49	4.45	0.51	0.82	578.57	579.89	579.69	580.20
LINE AA3	CI-AA3	CI-AA5	24"	128.00	133.00	0.012	3.25	578.06	573.73	9.33	44.18	0.62	11.15	1.09	5.32	0.004	0.033	11.04	5.32	0.63	1.09	574.36	579.15	576.26	579.59
LINE AA5	CI-AA5	CI-AA6	24"	116.55	121.55	0.012	2.97	573.73	570.12	11.40	42.27	0.71	11.42	1.21	5.73	0.005	0.030	11.20	5.73	0.72	1.21	570.84	574.94	572.79	575.45
LINE AA6	CI-AA6	CI-AA7	24"	61.04	66.04	0.012	1.60	570.12	569.06	13.97	30.99	0.94	9.61	1.35	6.21	0.005	0.016	9.09	6.21	0.98	1.35	570.04	571.46	571.33	572.06
LINE AA7	CI-AA7	CI-AA8	24"	33.68	38.68	0.012	0.70	569.06	568.79	15.56	20.46	1.31	7.17	1.42	6.51	0.006	0.007	5.41	5.78	1.72	1.60	570.51	570.66	571.03	571.11
LINE AA8	CI-AA8	CI-AA9	24"	34.63	39.63	0.012	0.58	568.79	568.56	16.58	18.59	1.47	6.69	1.47	6.71	0.006	0.006	5.49	5.76	1.84	1.72	570.40	570.51	571.77	571.03
LINE AA9A	CI-AA9	MH-AA1	24"	40.20	43.20	0.012	2.00	568.56	567.70	28.39	34.65	1.38	12.31	1.84	9.41	0.012	0.020	11.20	9.41	1.51	1.84	569.21	570.40	571.16	571.77
EXIST AA9B	MH-AA1	OUT-AAO	24"	26.99	26.99	0.013	2.33	567.70	567.07	33.75	34.56	1.60	12.54	1.91	10.92	0.019	0.023	11.70	10.92	1.73	1.91	568.80	569.61	570.93	571.46

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PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 13 OF 13

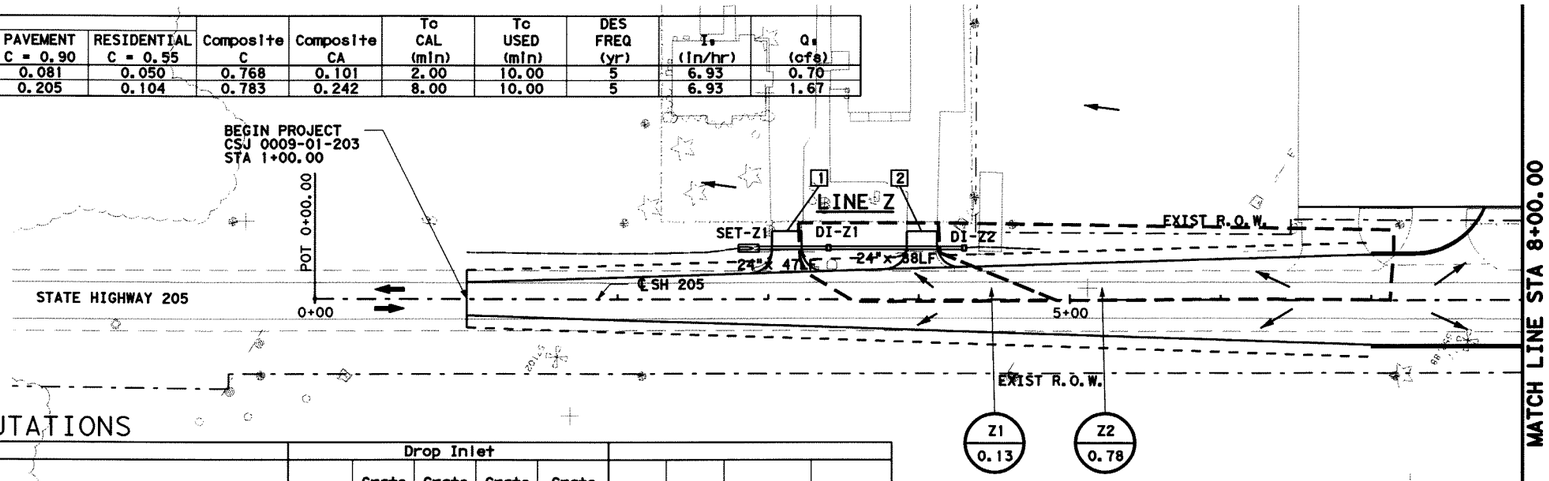
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	400
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

RUNOFF COMPUTATIONS

DRAINAGE AREA										
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	RESIDENTIAL C = 0.55	Composite C	Composite CA	Tc CAL (min)	Tc USED (min)	DES FREQ (yr)	I_a (in/hr)	Q_a (cfs)
DI-Z1	0.13	0.081	0.050	0.768	0.101	2.00	10.00	5	6.93	0.70
DI-Z2	0.31	0.205	0.104	0.783	0.242	8.00	10.00	5	6.93	1.67



SCALE IN FEET HORIZONTAL
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SCALE IN FEET VERTICAL
0 10 20

LEGEND:

XXX
XXX
DRAINAGE AREA NUMBER
DRAINAGE AREA (ACRES)

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

INLET COMPUTATIONS

			Drop Inlet									
Inlet ID	Drainage Area ID	Inlet Location	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)
DI-Z1	Z1	34.00' LT SH205CL STA 3+40.00	1	3.00	2	4.62	8.58	0.50	0.14	0.70	4.68
DI-Z2	Z2	34.00' LT SH205CL STA 4+30.00	1	3.00	2	4.62	8.58	0.60	0.25	1.67	6.16

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE Z1	DI-Z1	SET-Z1	24"	47.00	48.00	0.012	0.33	540.90	540.74	2.37	14.15	0.55	3.34	0.54	3.50	0.004	0.003	3.34	3.34	0.55	0.55	541.25	541.45	541.43	541.63
LINE Z2	DI-Z2	DI-Z1	24"	88.00	90.00	0.012	3.17	543.75	540.90	1.67	43.61	0.27	6.69	0.45	3.19	0.004	0.032	6.68	1.07	0.27	1.00	541.17	544.75	541.87	544.75

PLAN
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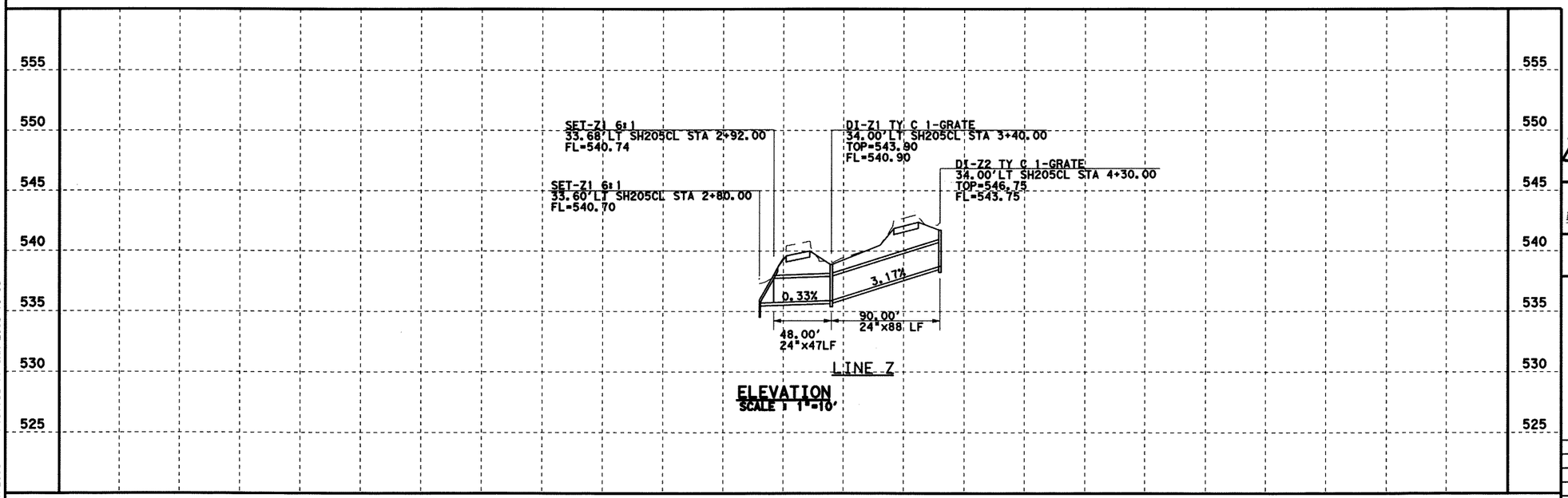

ELEVATION
SCALE : 1"=10'

K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

K David Gan
1-17-2008

Change Order 51

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2777 Stemmons Freeway
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Dallas, TX 75207

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 0+00 TO 8+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	400AA
CONT.	SECT.	JOB	
0451	01	032, ETC	

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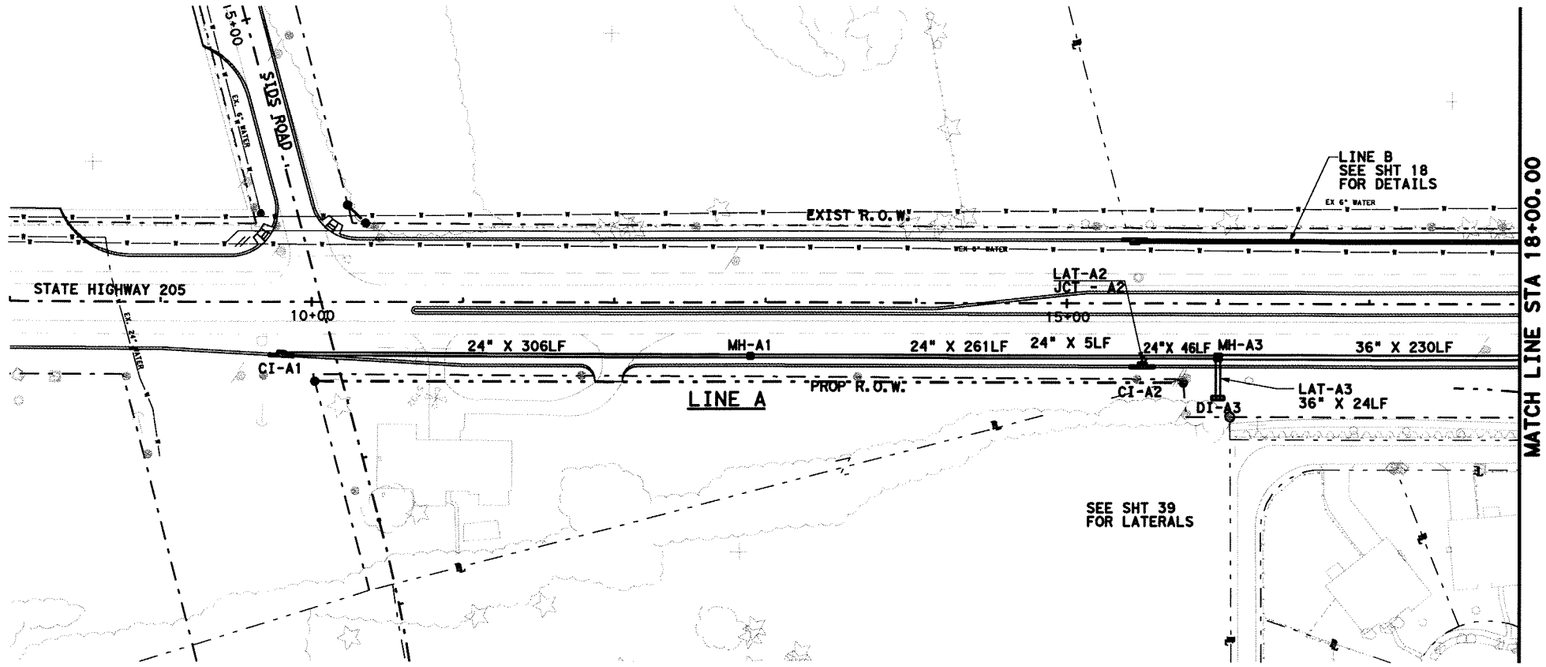

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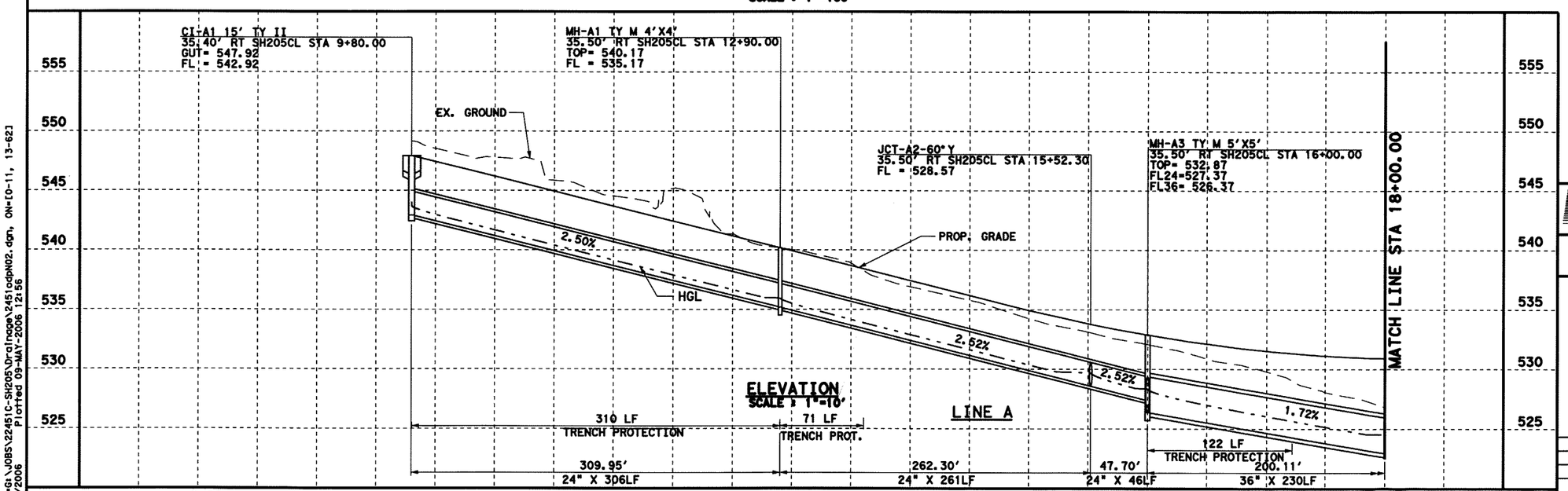

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0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

Parsons Brinckerhoff Quade & Douglas, Inc.
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Suite 1333
Dallas, TX 75207

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SH 205

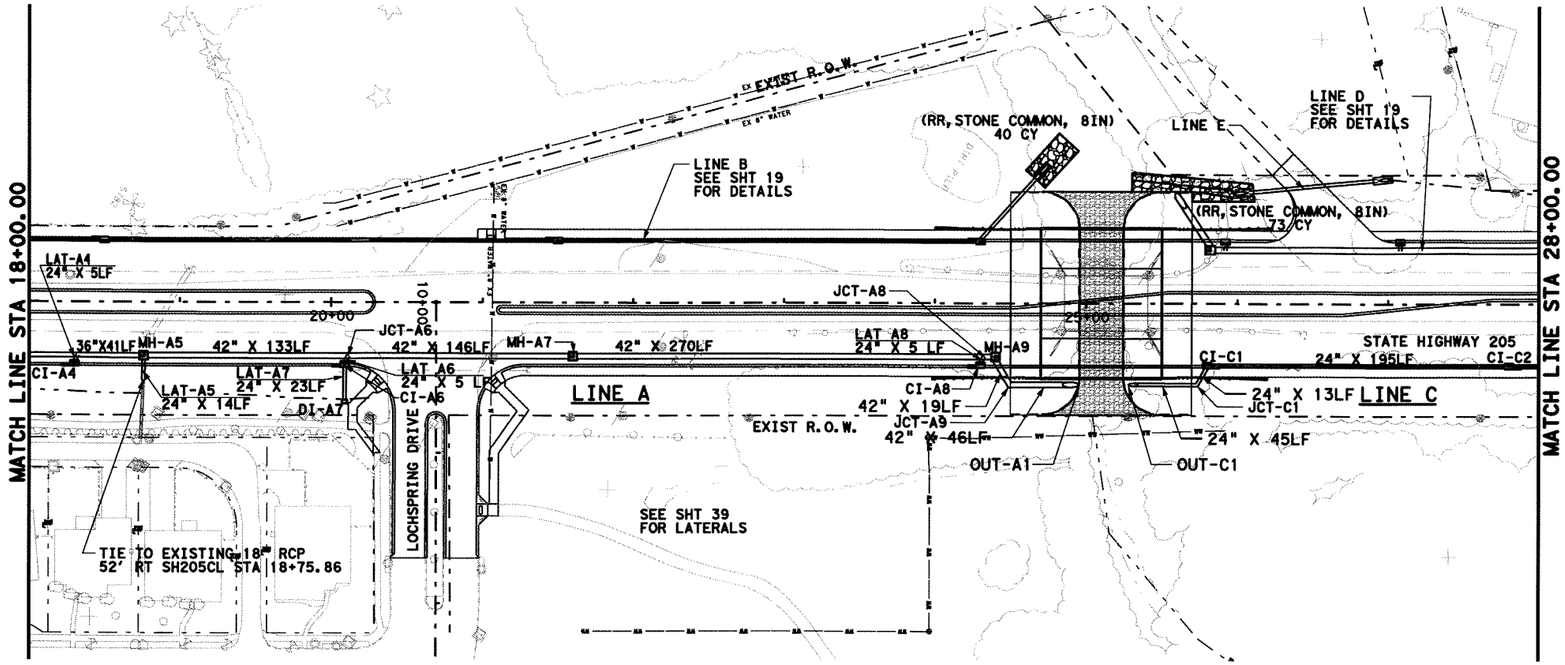
NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 8+00 TO 18+00

SHEET 1 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	401
CONT.	SECT.	JOB	
0451	01	032, ETC	



PLAN
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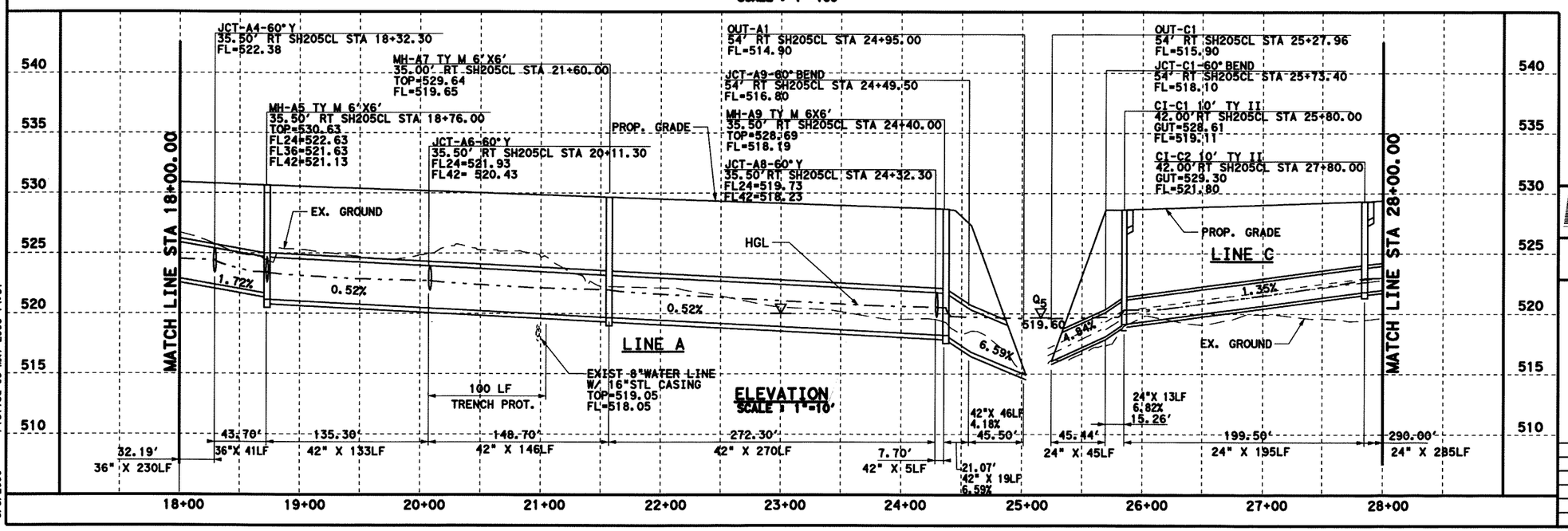

ELEVATION
SCALE 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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Dallas, TX 75207

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 18+00 TO 28+00

SHEET 2 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	402
CONT.	SECT.	JOB	
0451	01	032, ETC	

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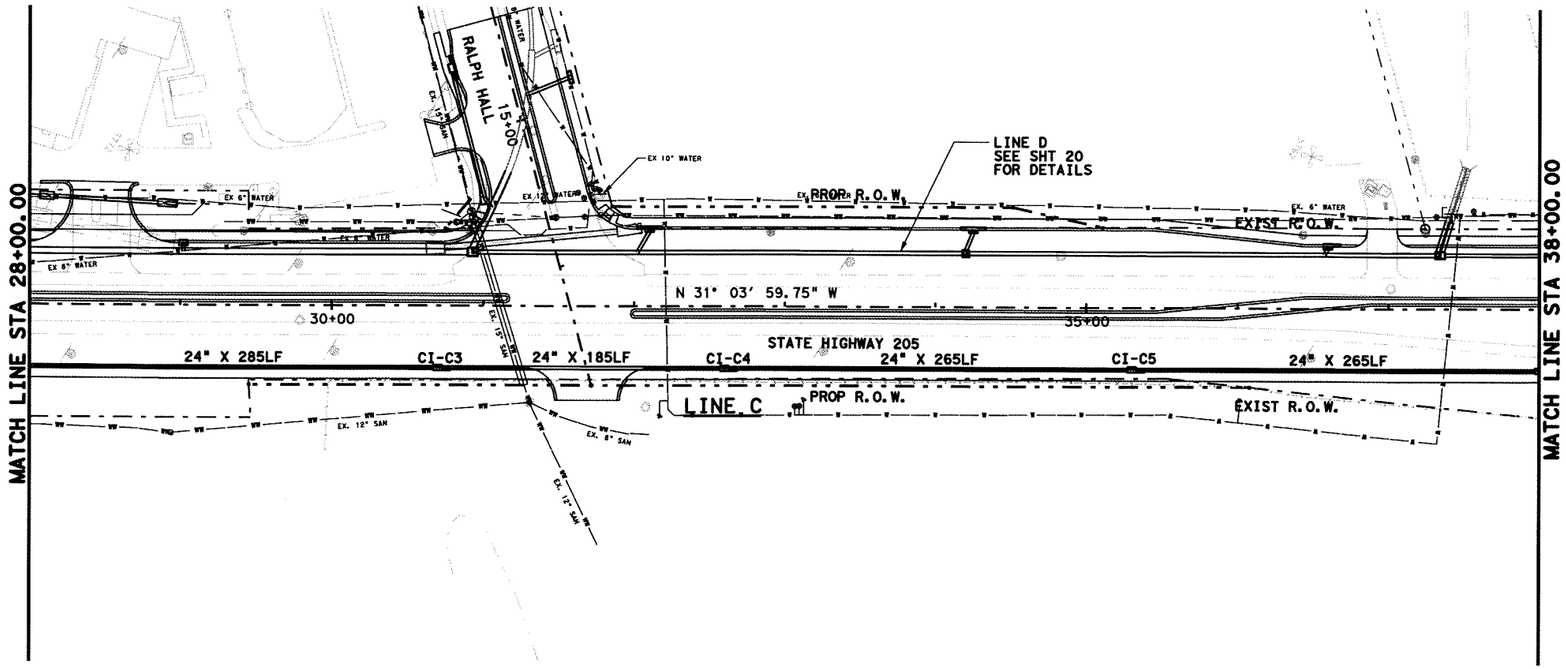

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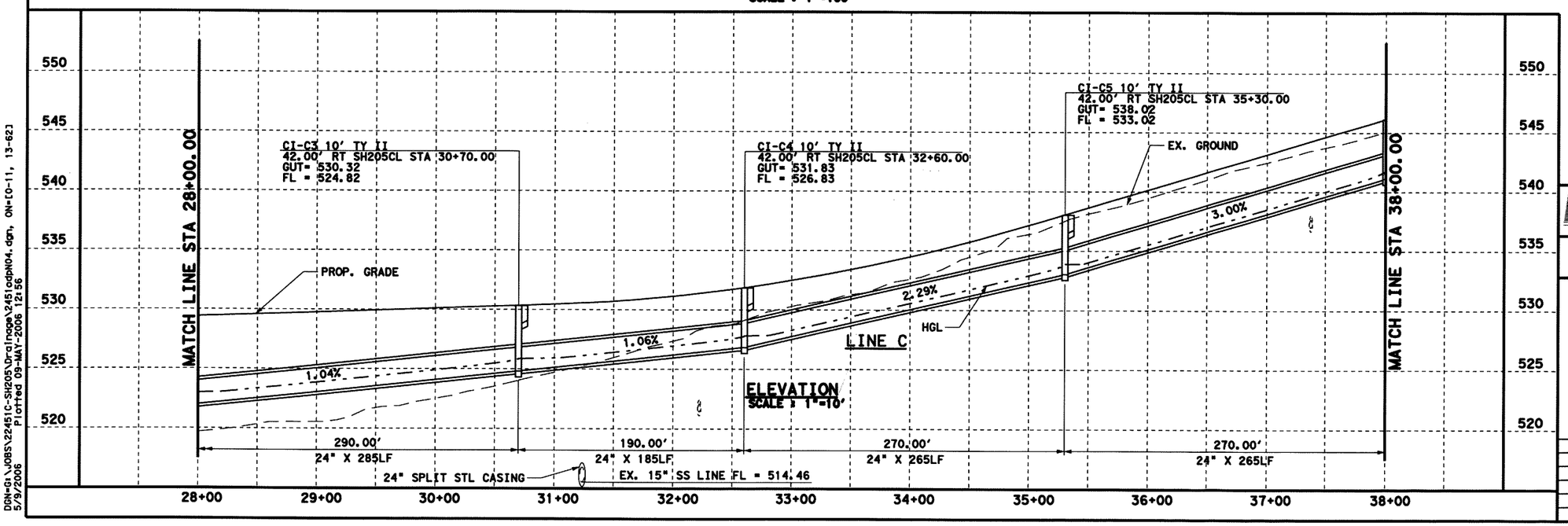

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/19/2006

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 28+00 TO 38+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	403
CONT.	SECT.	JOB	
0451	01	032, ETC	

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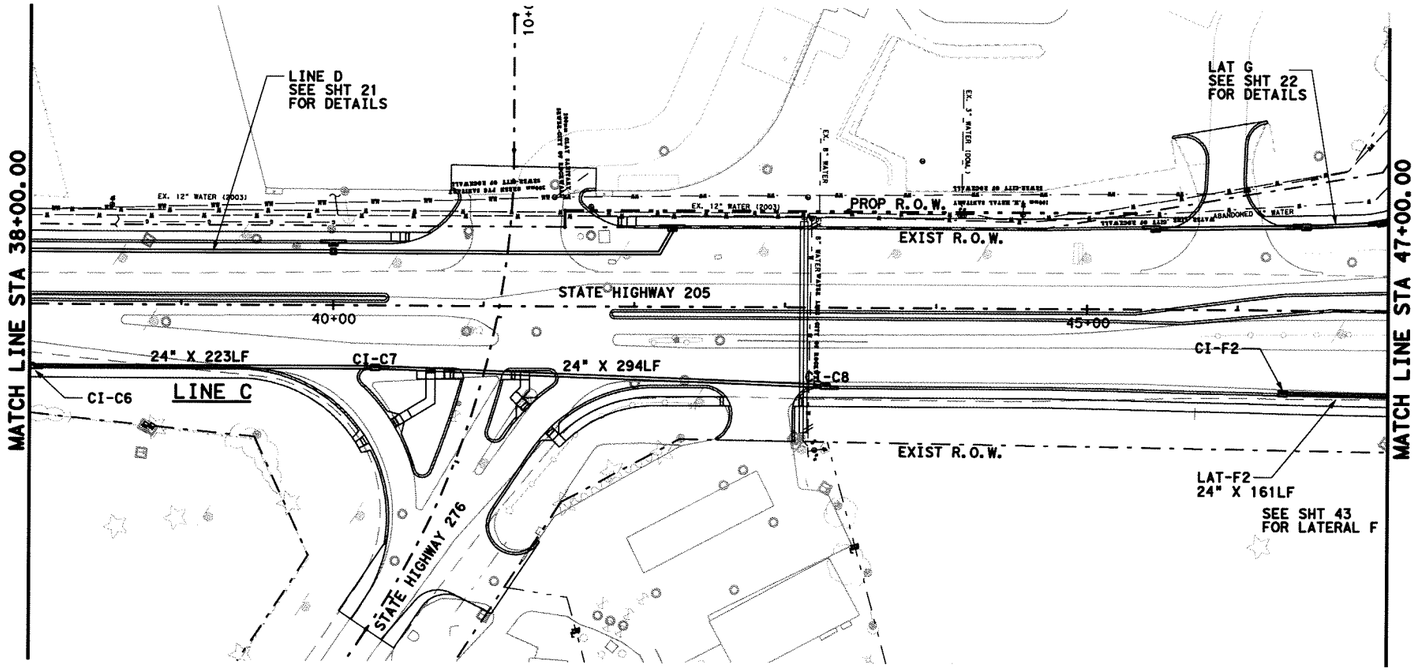

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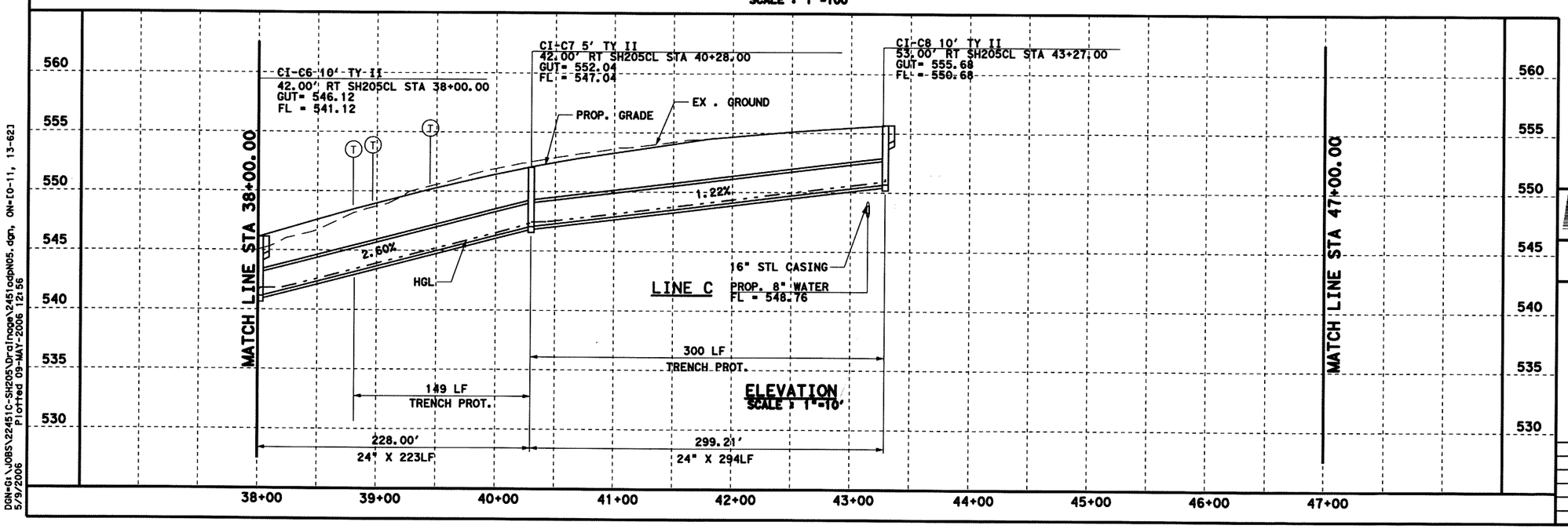

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 38+00 TO 47+00

SHEET 4 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	404
CONT.	SECT.	JOB	
0451	01	032, ETC	

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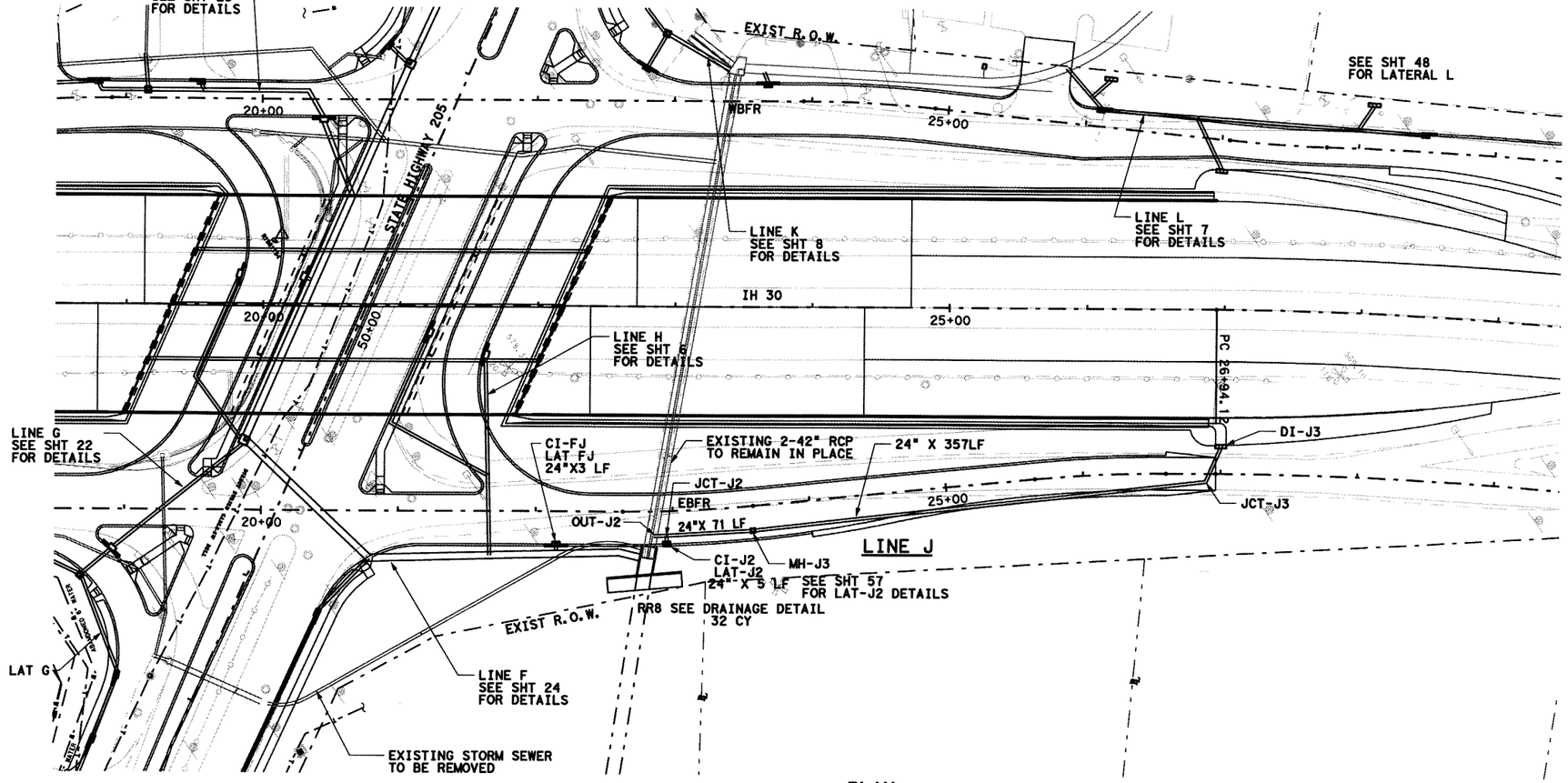
5/9/2006



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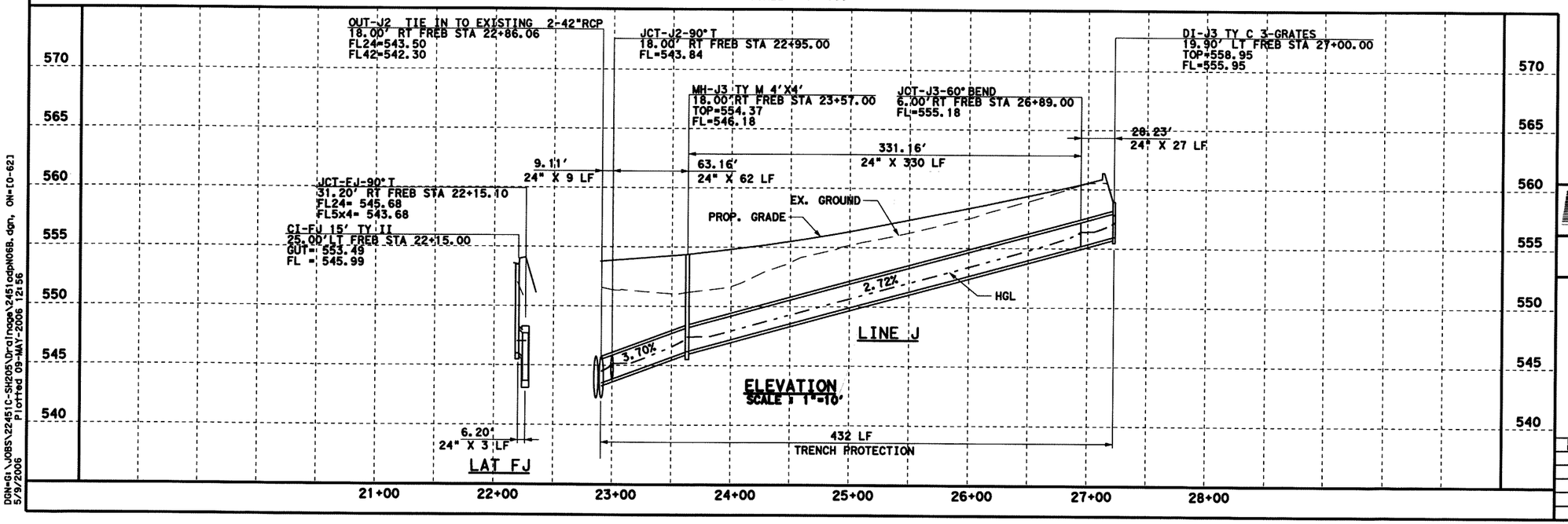

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
I-30 EBFR STA 16+00 TO 26+00

SHEET 5 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	405
CONT.	SECT.	JOB	
0451	01	032, ETC	

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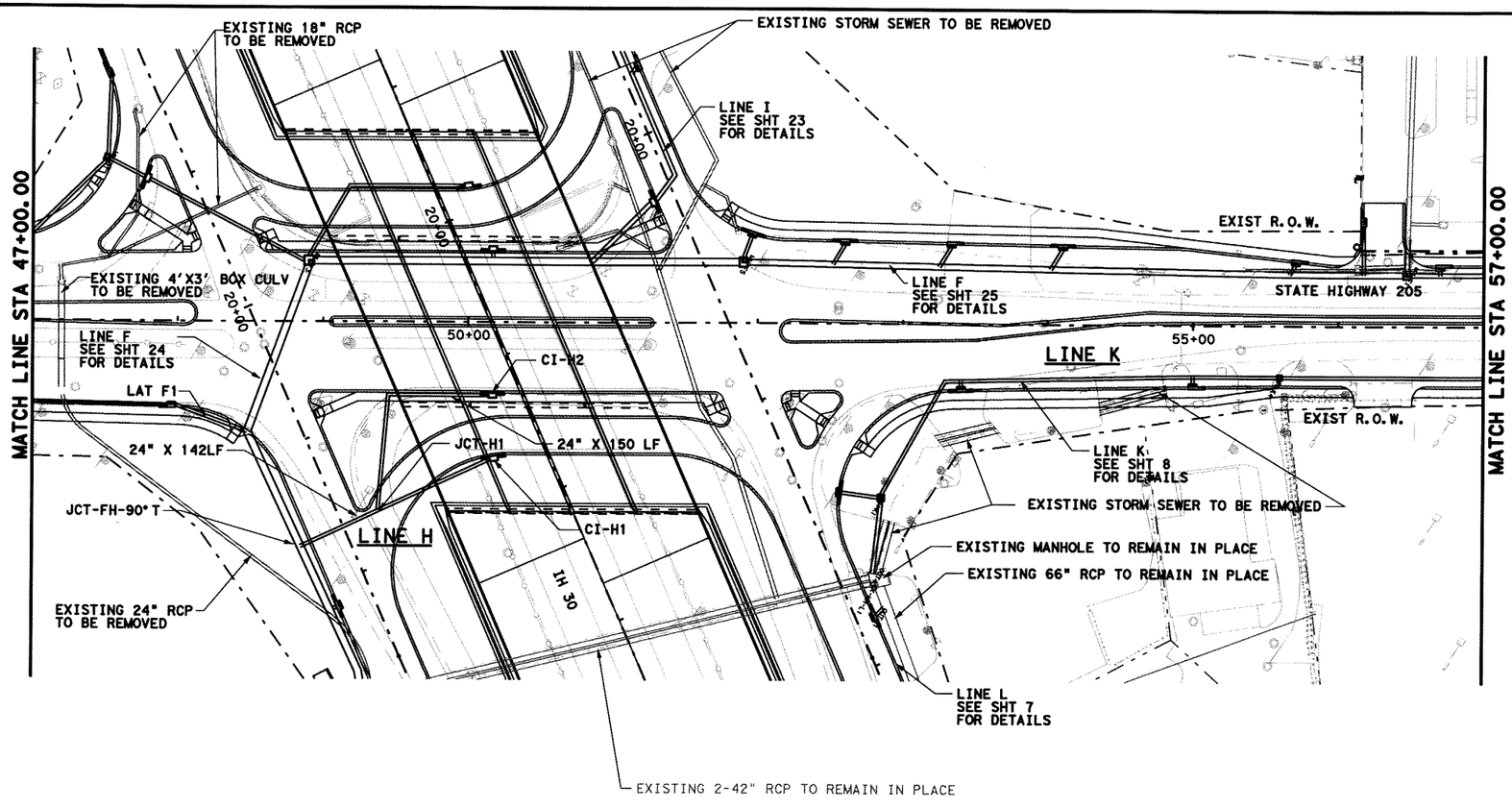
5/9/2006



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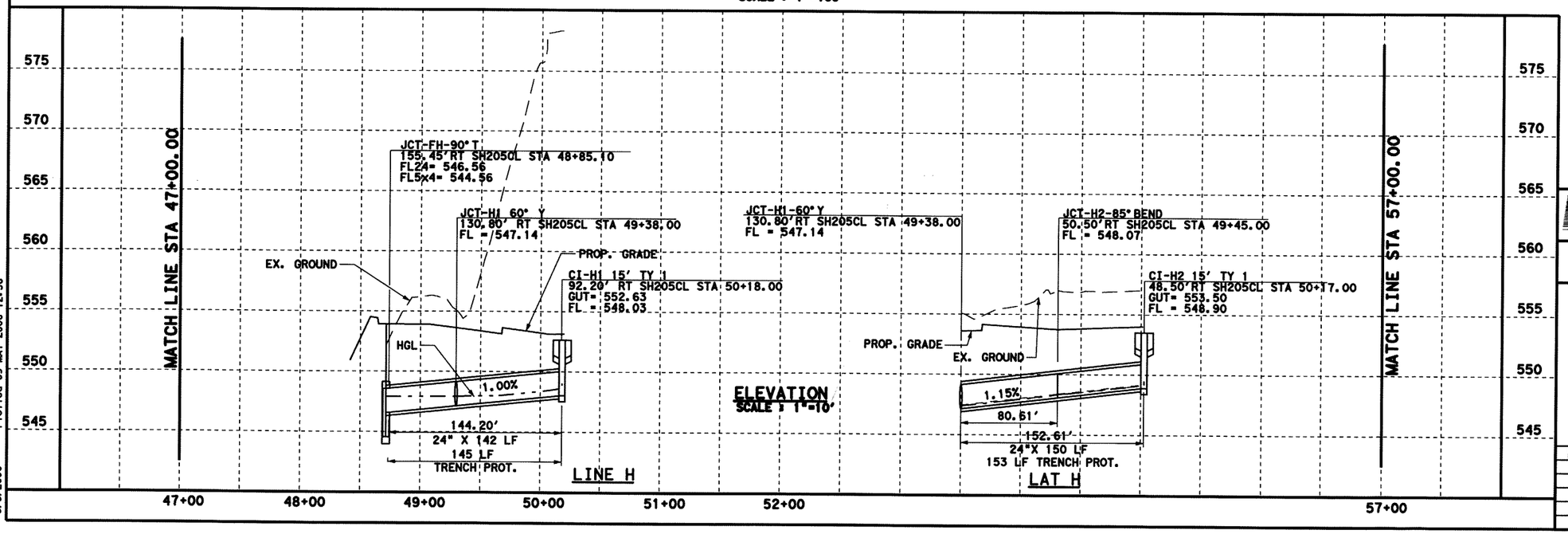

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
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LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 6 OF 57

DIST. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	406
CONT.	SECT.	JOB	
0451	01	032, ETC	

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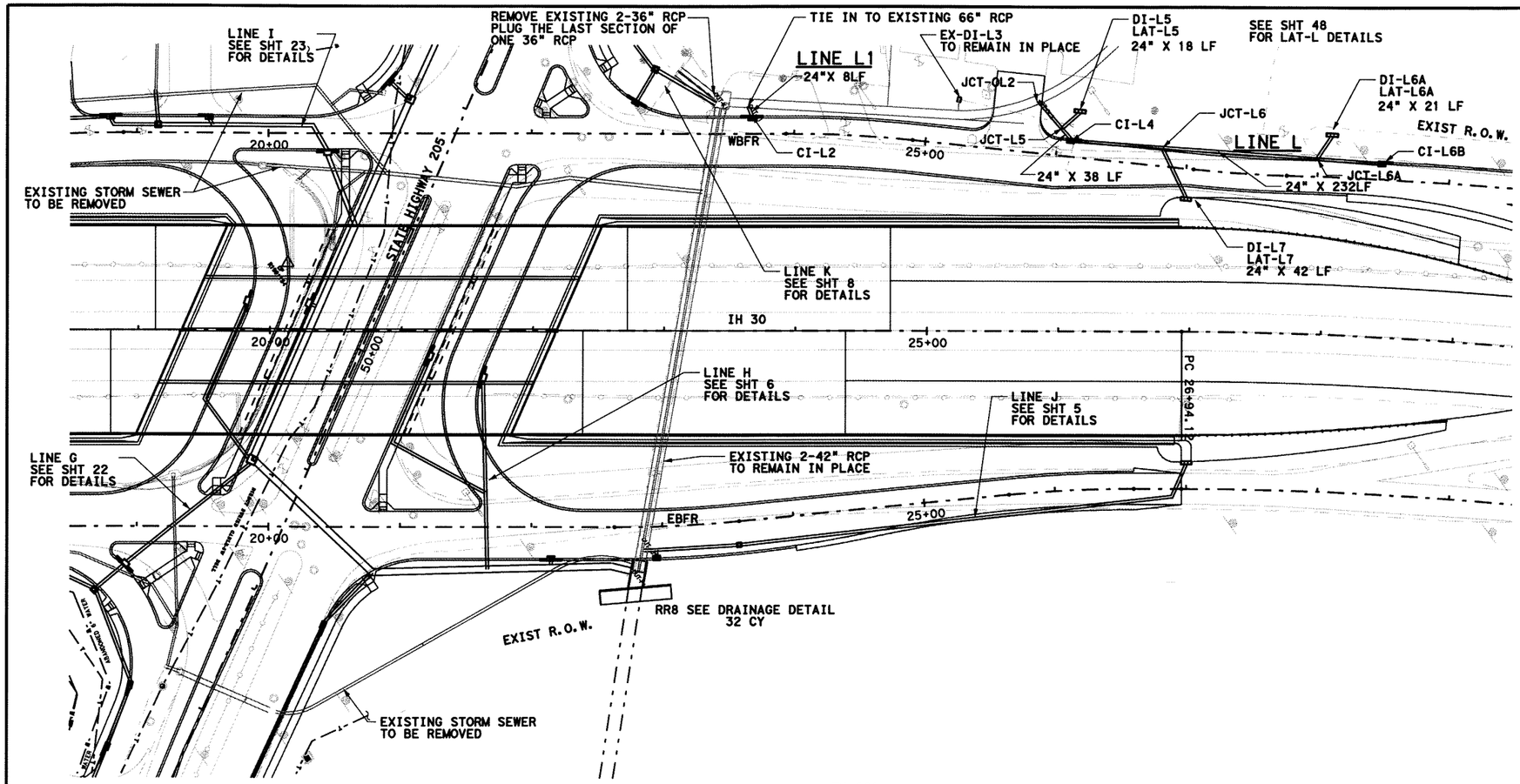

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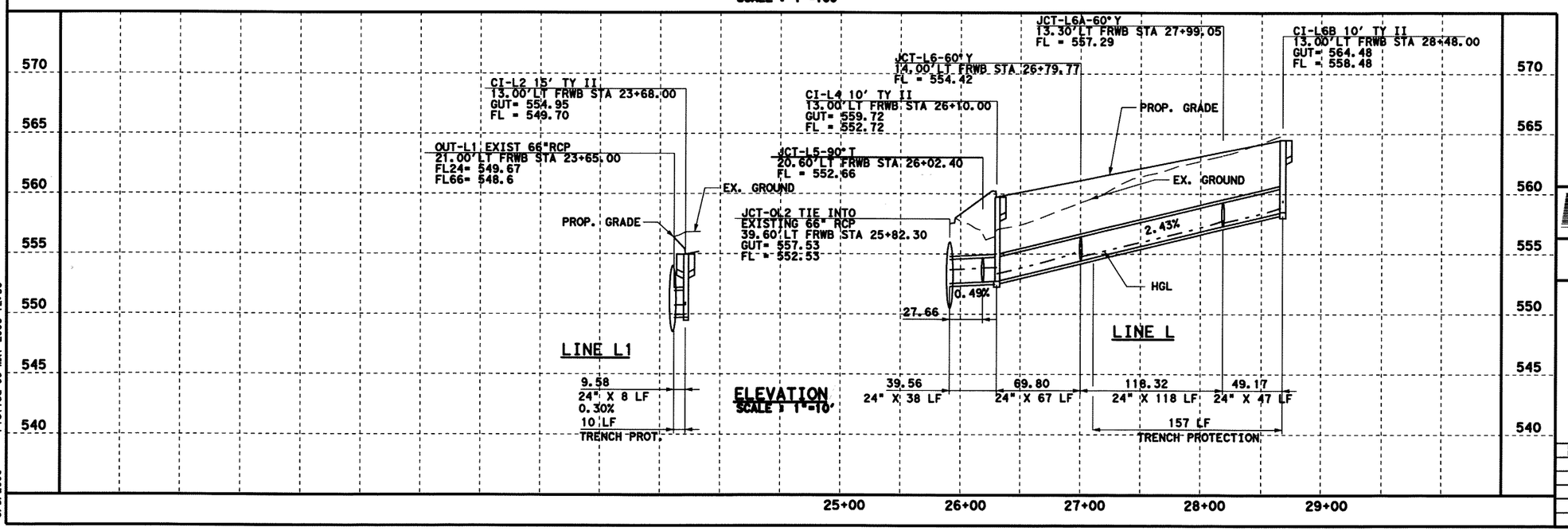
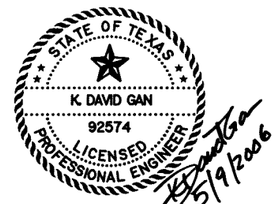


ELEVATION
SCALE : 1"=10'

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.



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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
I-30 WBFR STA 22+00 TO 28+00

SHEET 7 OF 57

DIST. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	407
CONT.	SECT.	JOB	
0451	01	032, ETC	

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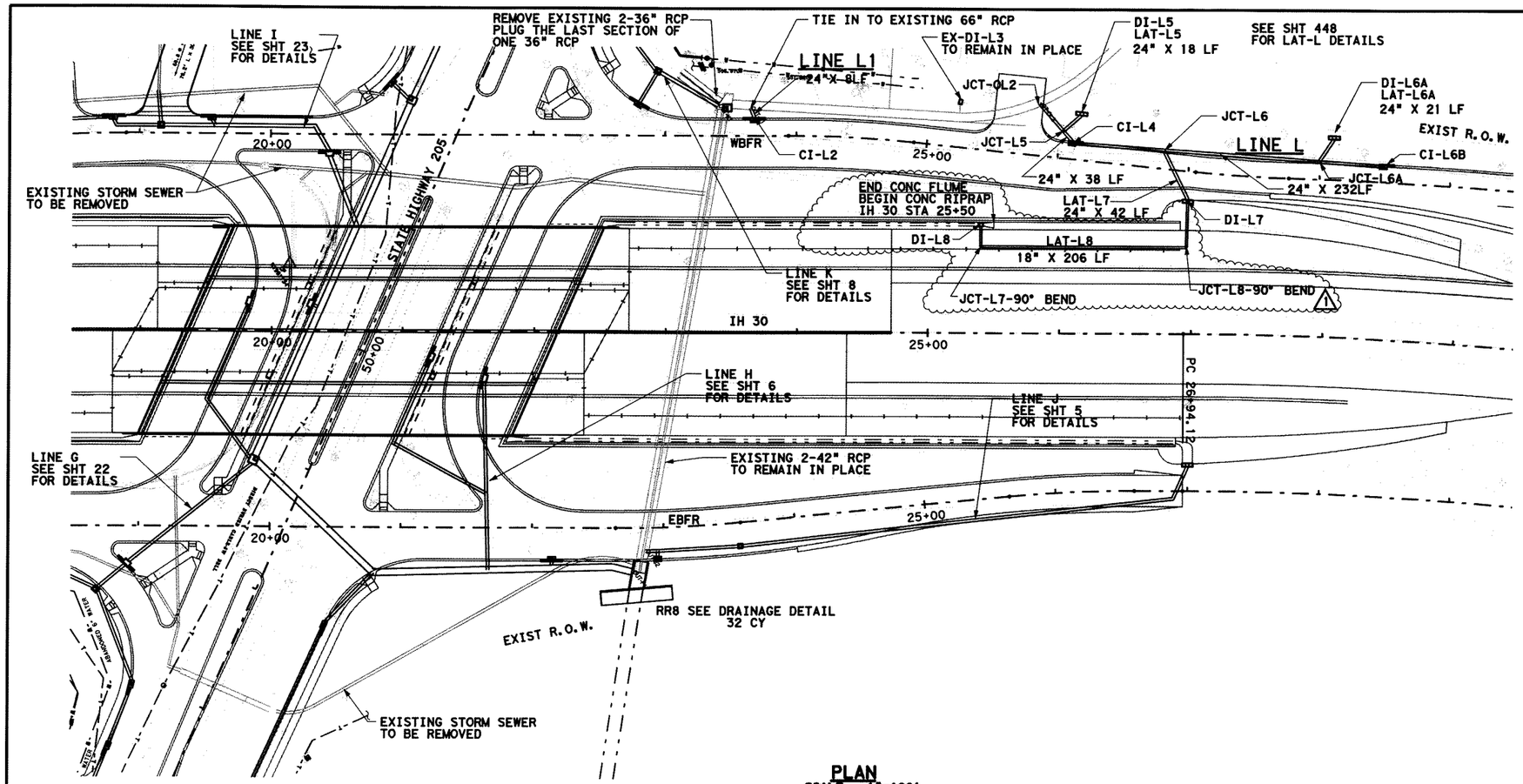

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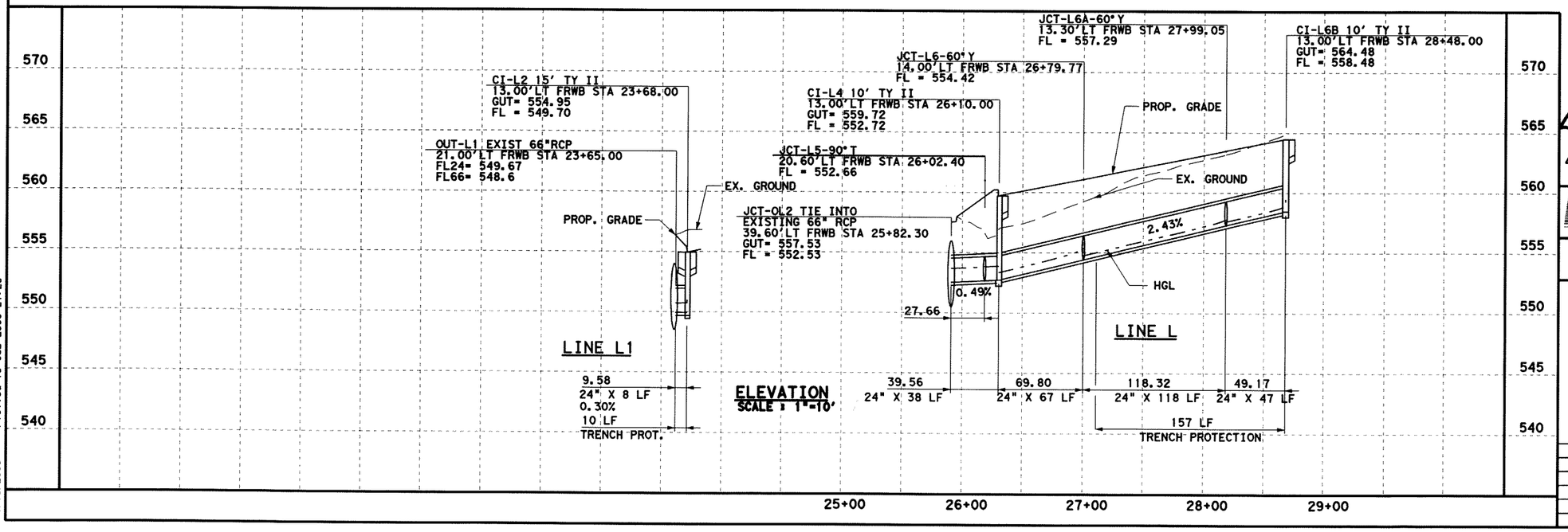

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
7/15/08

SS - Change Order

1 7-15-08 ADDED LAT-L8 & DI-L8 BY KDG

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
I-30 WBFR STA 22+00 TO 28+00

SHEET 7 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	407A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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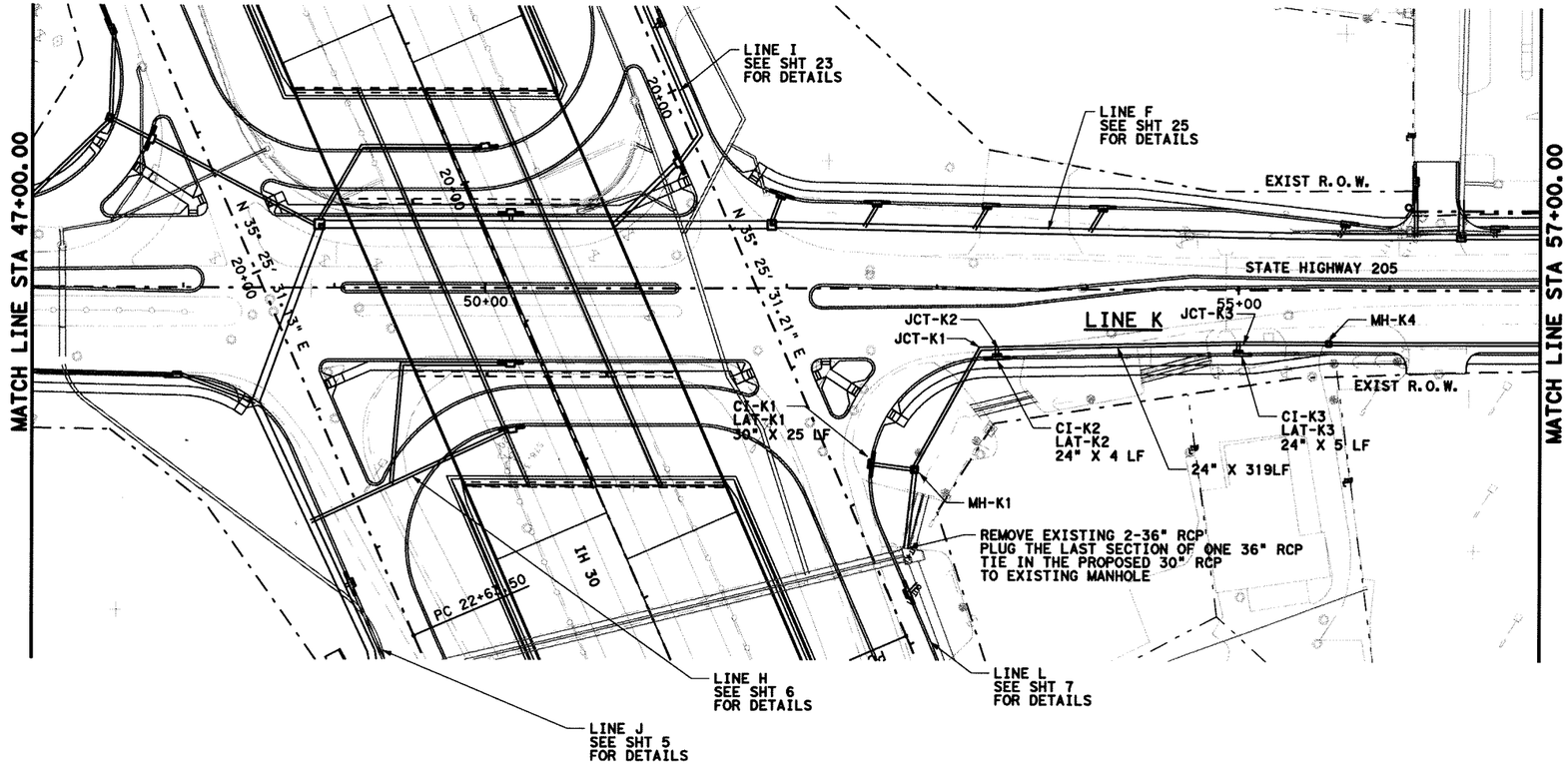

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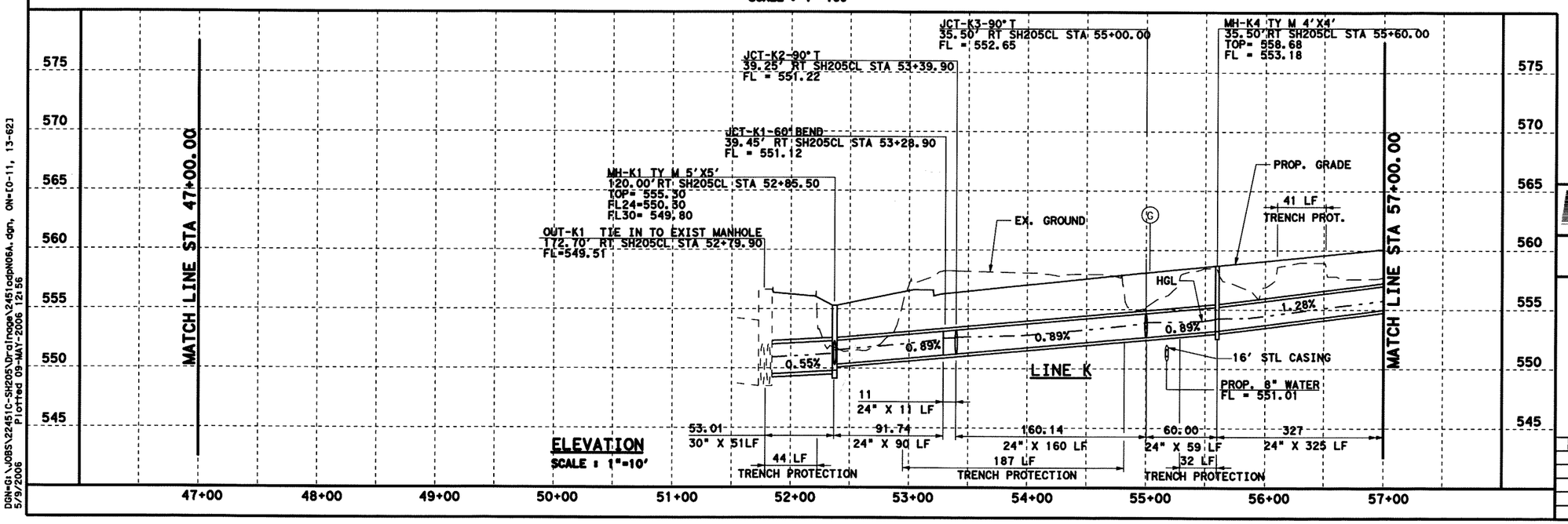

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 8 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	408
CONT.	SECT.	JOB	
0451	01	032, ETC	

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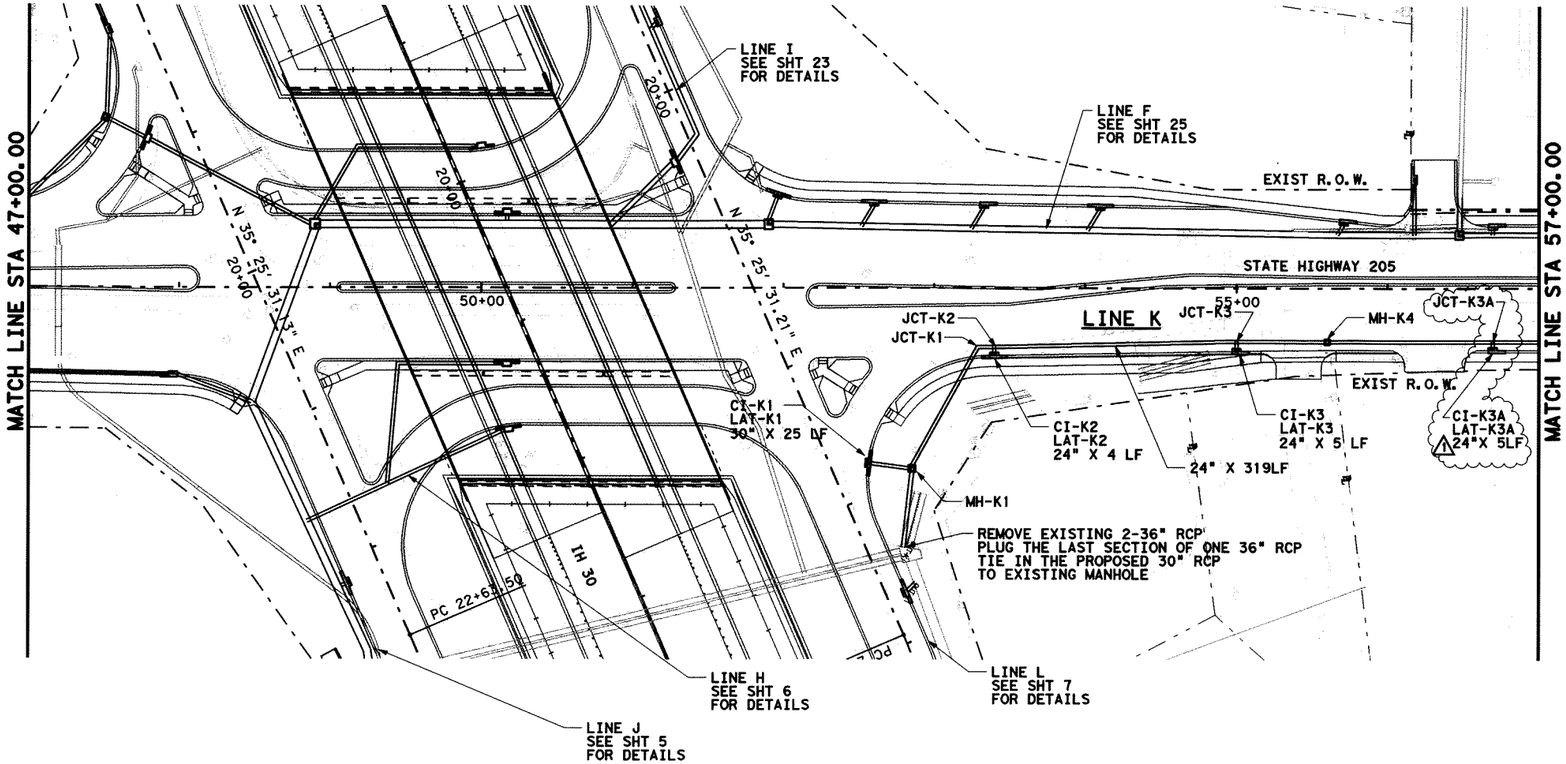
5/9/2006



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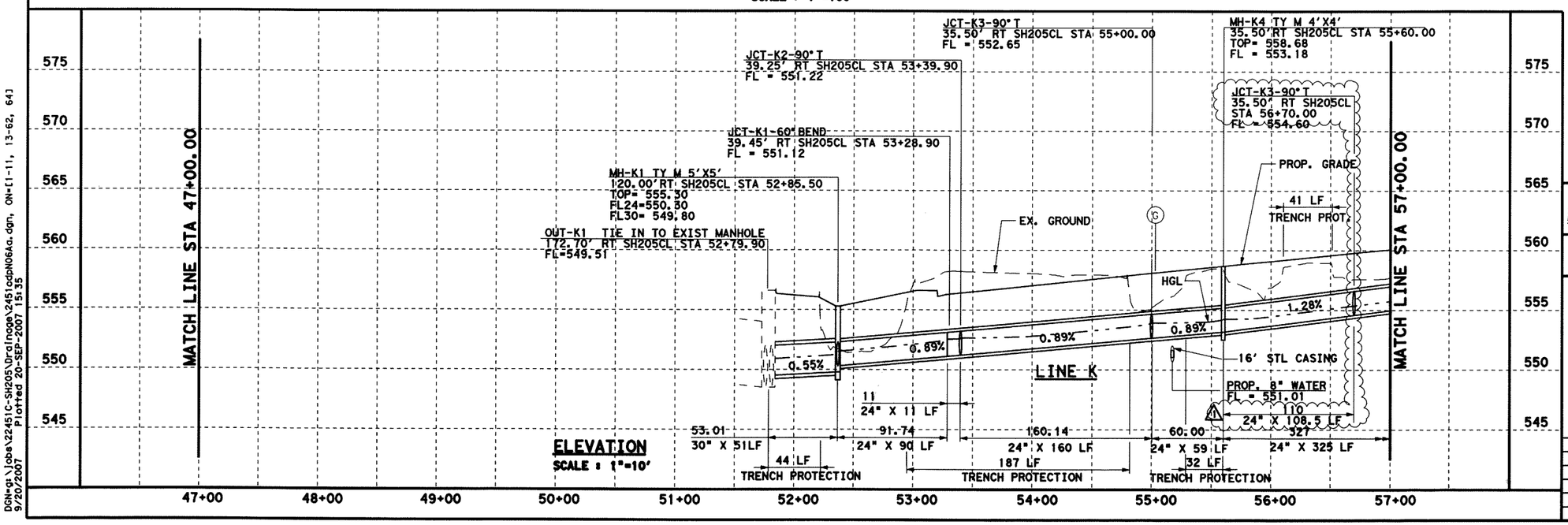

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0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
9/20/07

⚠ Added Inlet CI-K3A by KDG -09/20/07

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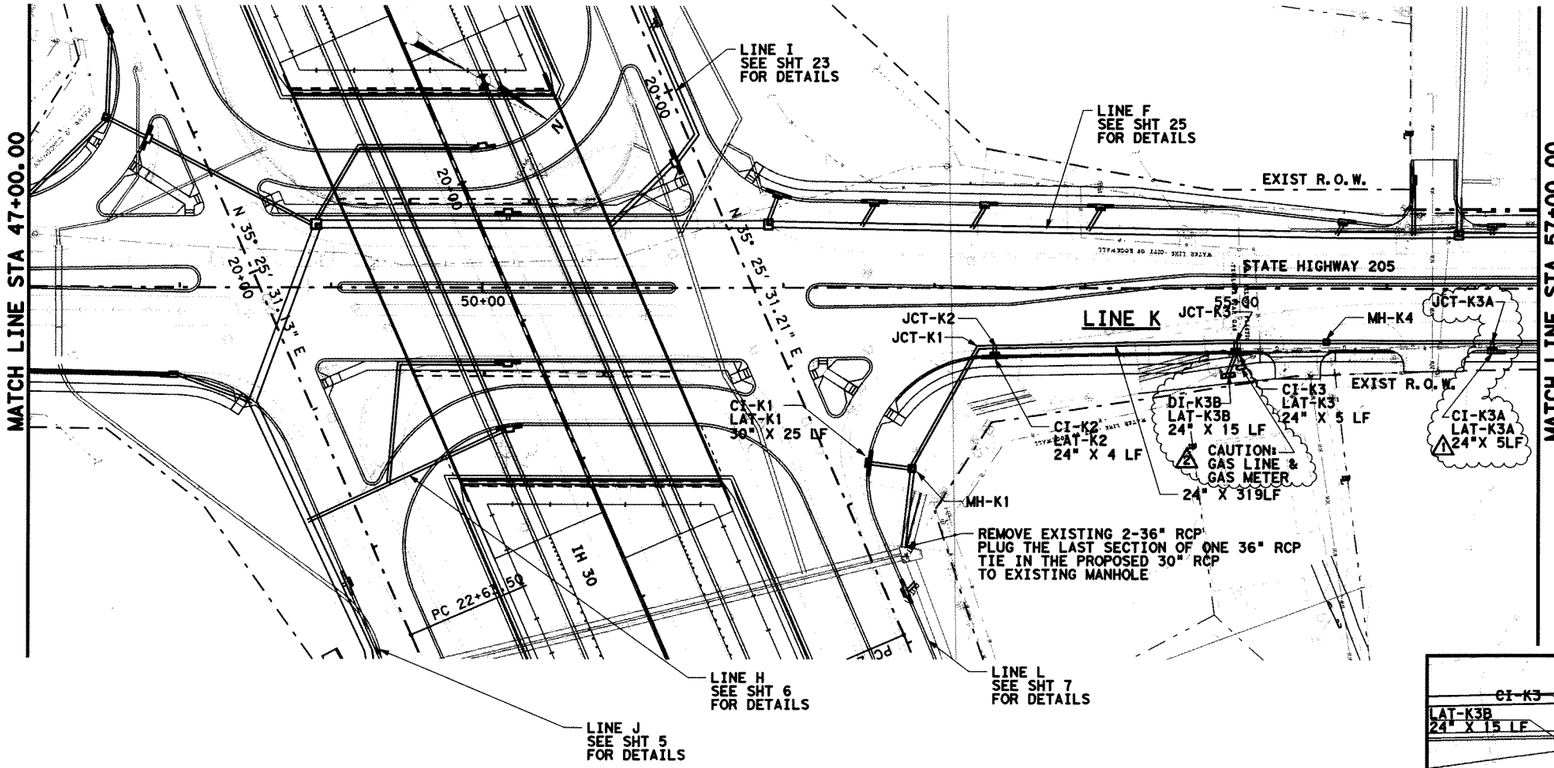
NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 8 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	408A
CONT.	SECT.	JOB	
0451	01	032, ETC	



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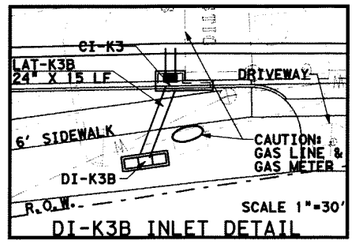

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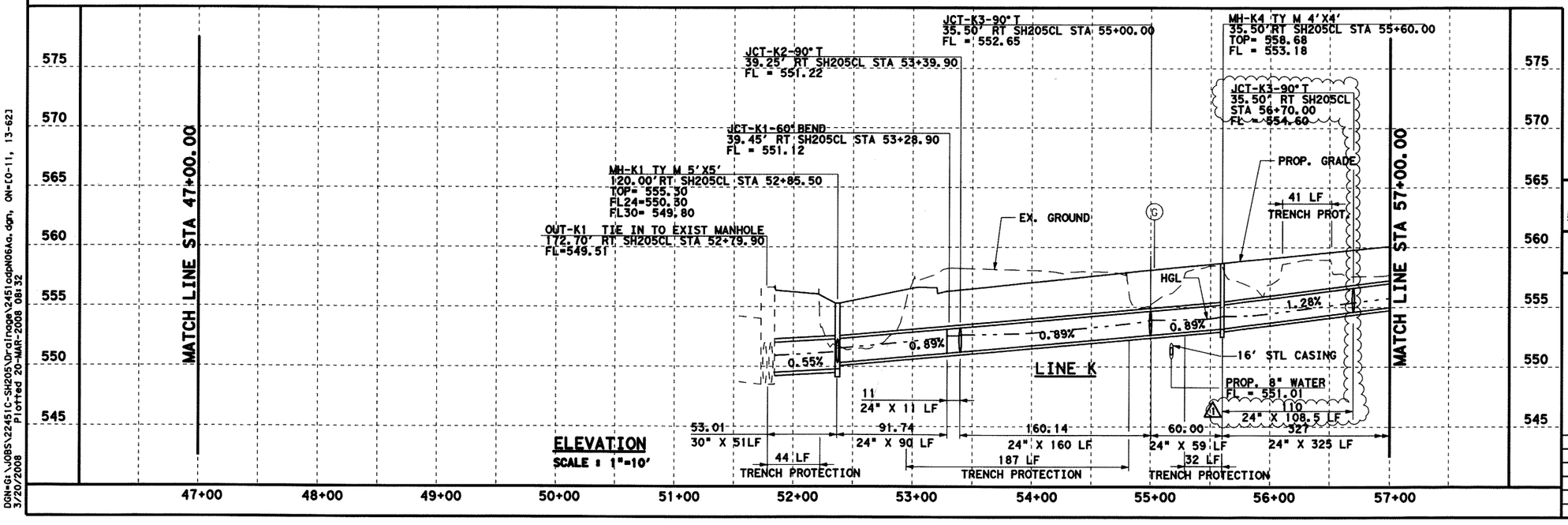

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/08

⚠1 Added Inlet CI-K3A by KDG -09/20/07
⚠2 Added Inlet DI-K3B by KDG -03/19/08

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 8 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	408B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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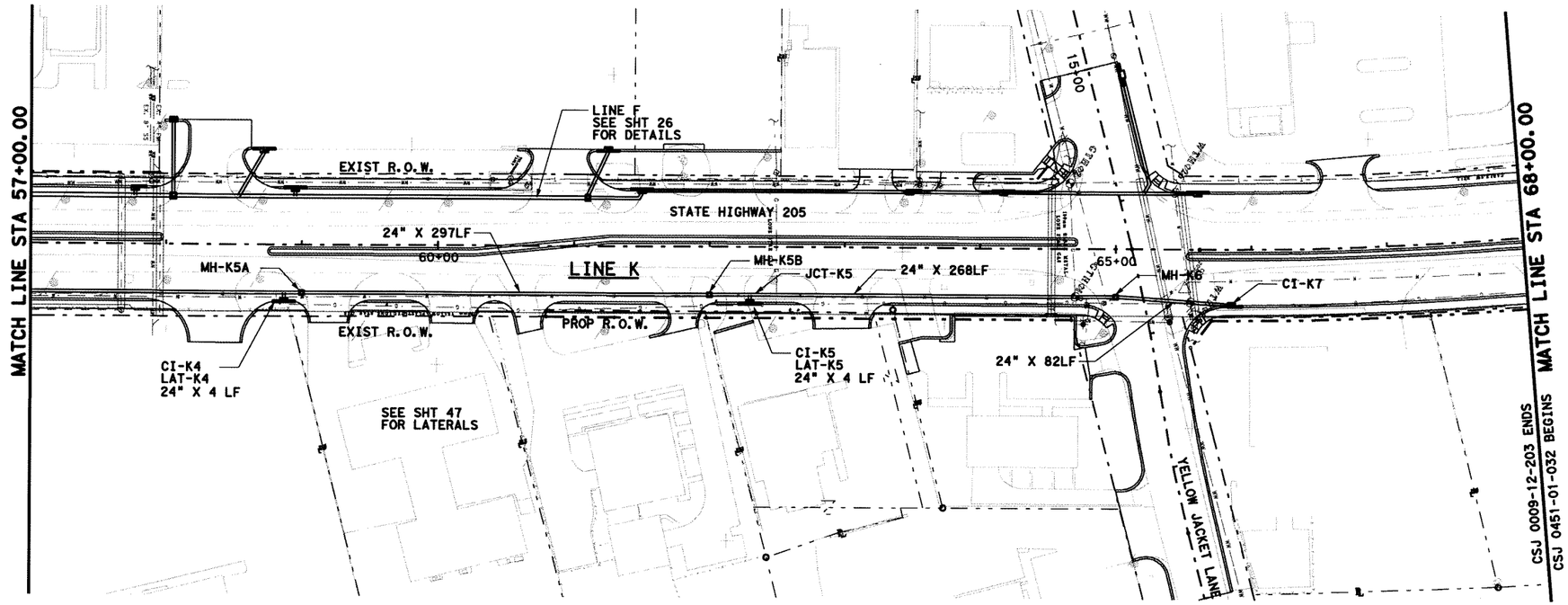


0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

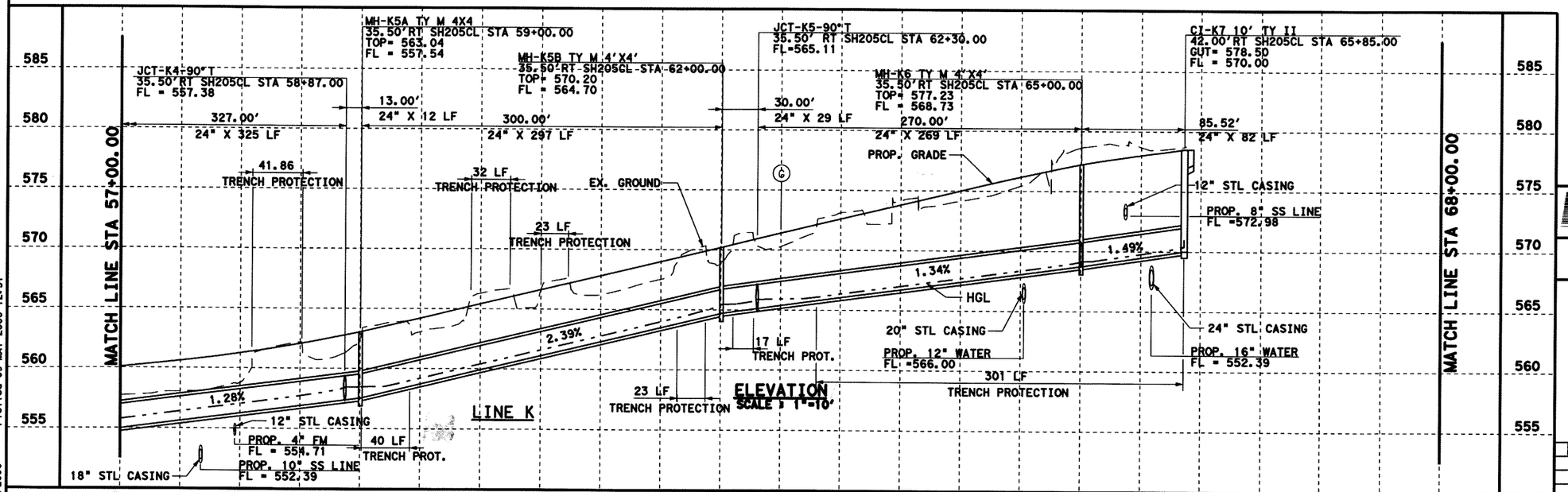
1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 57+00 TO 68+00

SHEET 9 OF 57

DIST. NO. / DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	409
CONT.	SECT.	JOB	
0451	01	032, ETC	

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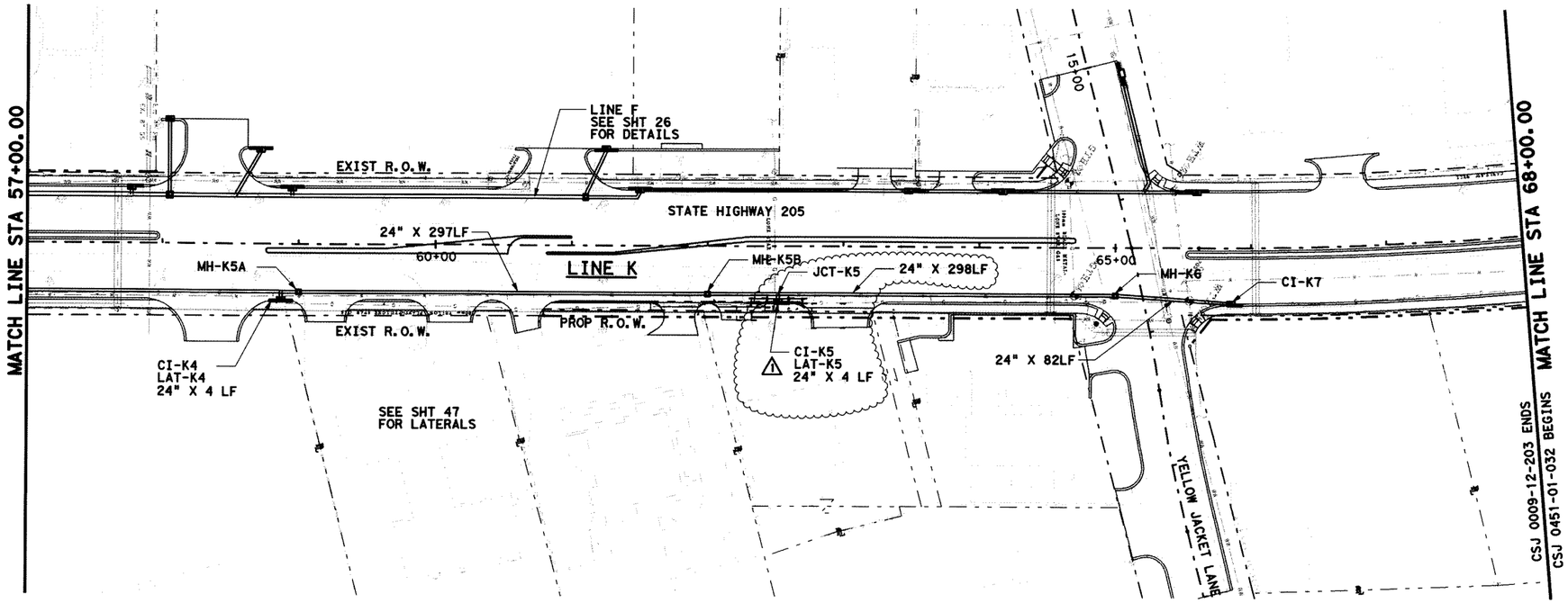
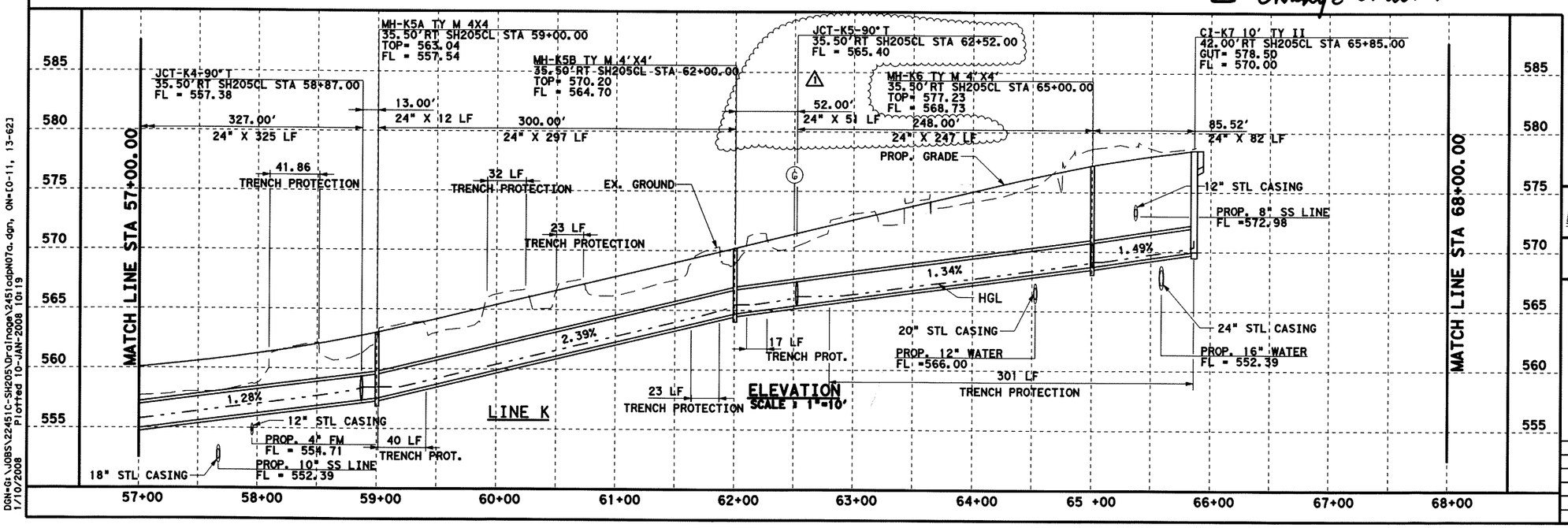
Plotted 09-MAY-2006 12:57
5/9/2006



PLAN
SCALE : 1"=100'

Δ- Change Order #27



ELEVATION
SCALE : 1"=10'

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1/10/2008 Plotted 10-JAN-2008 10:19

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

Δ 1-10-2008 REV CI-K5 LOCATION BY KDG

K. David Gan
1-10-2008

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Suite 1333
Dallas, TX 75207

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SH 205

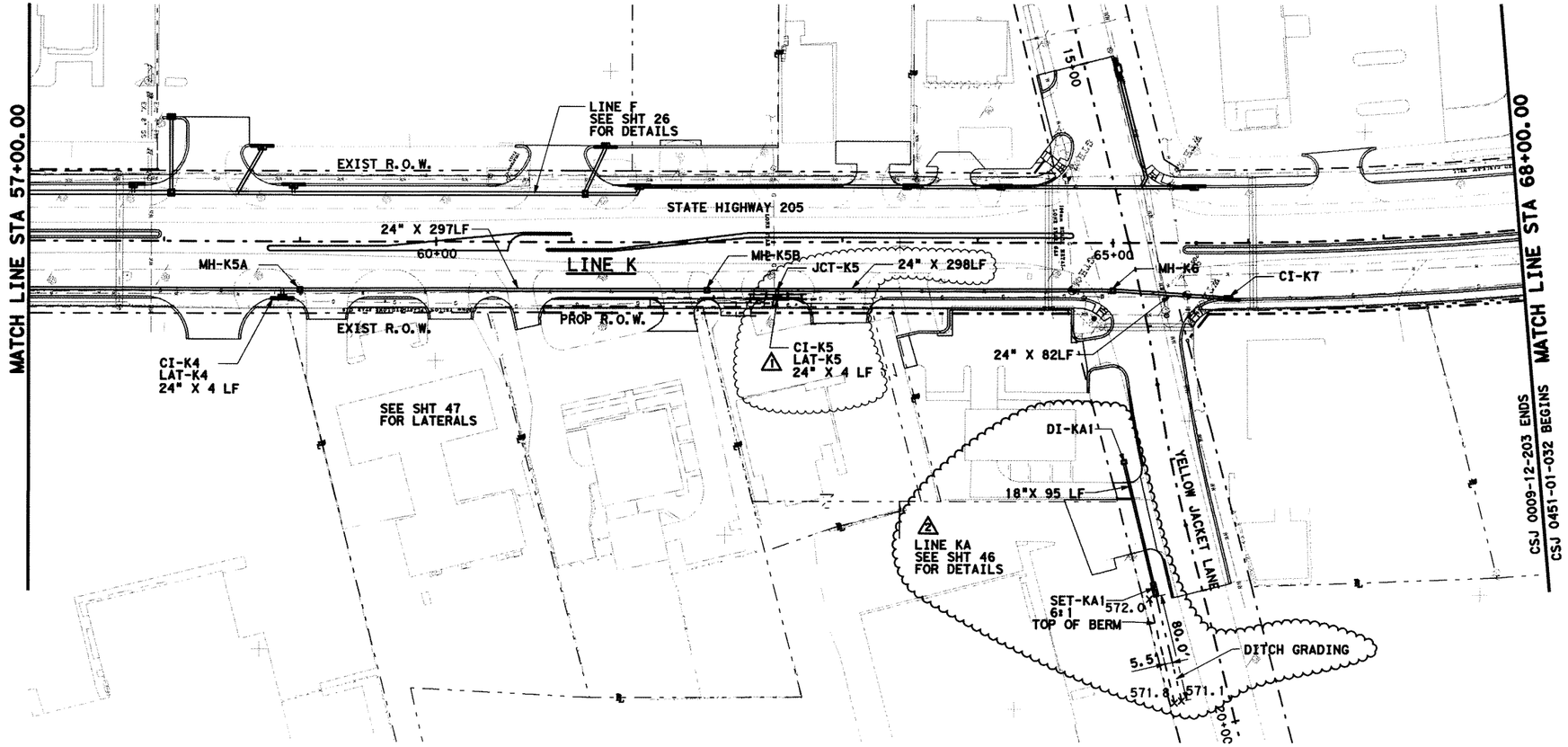
NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 57+00 TO 68+00

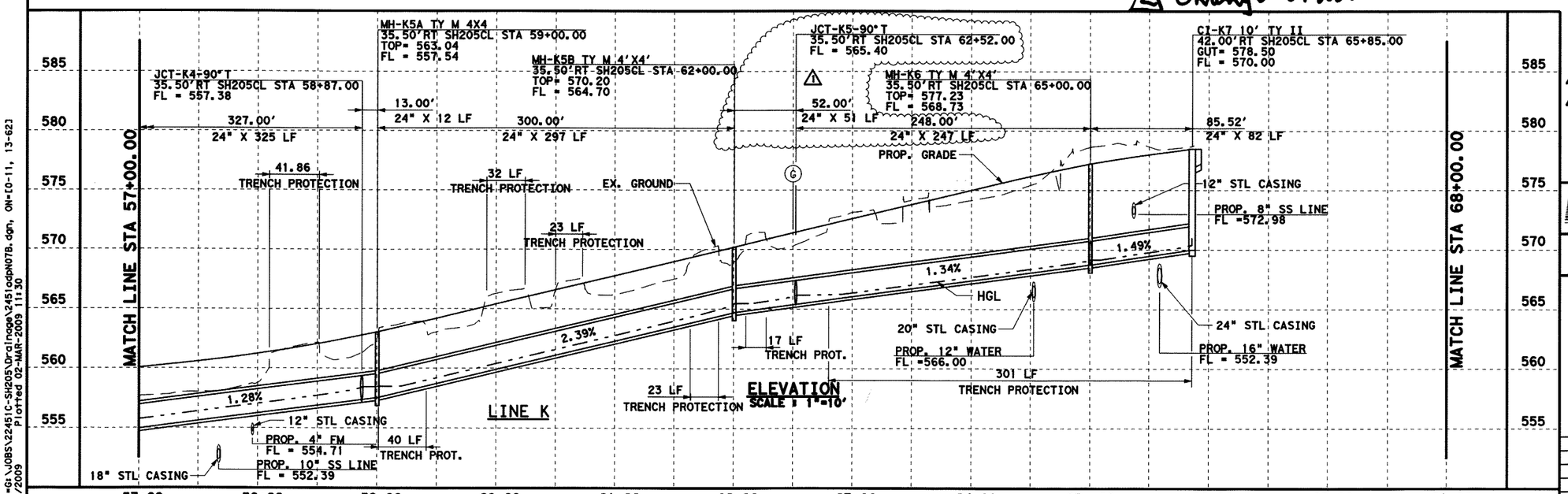
SHEET 9 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	409A
CONT.	SECT.	JOB	
0451	01	032, ETC	



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

2 Change Order #69

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
3/2/2009

2 11-07-2008 ADDED LINE KA BY KDG
1 1-10-2008 REV CI-K5 LOCATION BY KDG

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 57+00 TO 68+00

SHEET 9 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	409B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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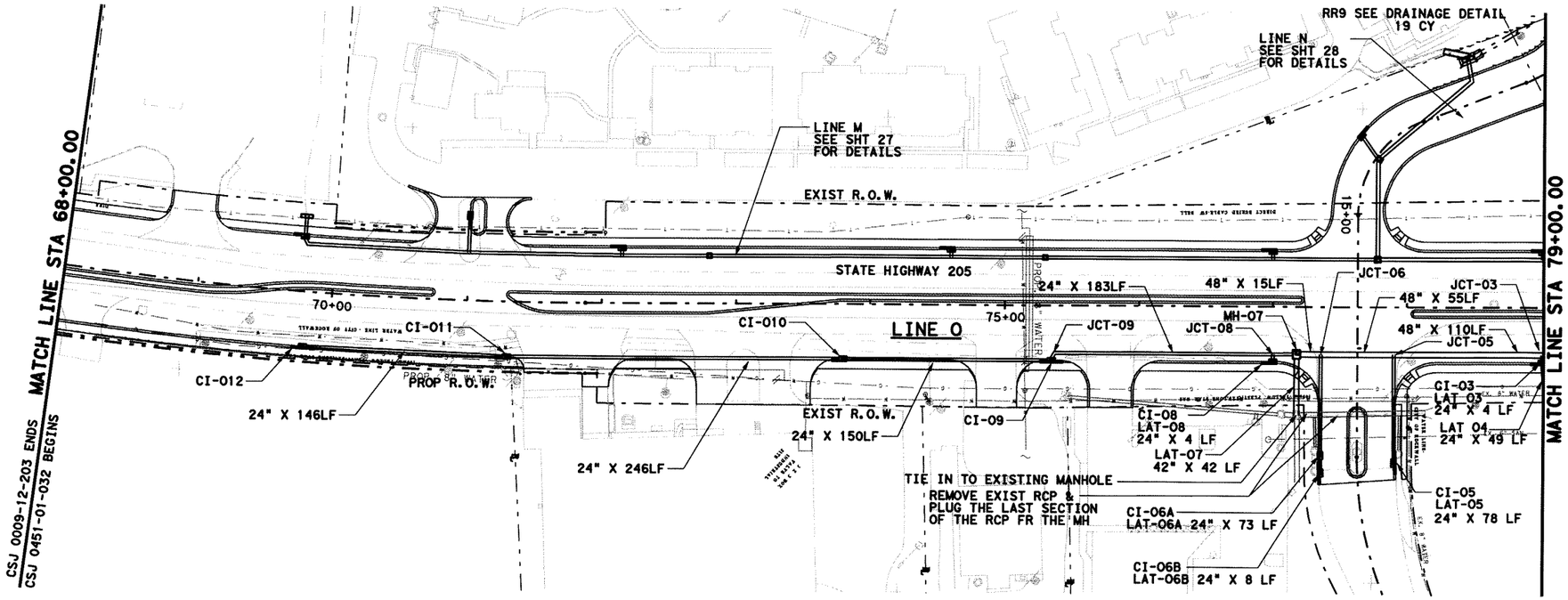
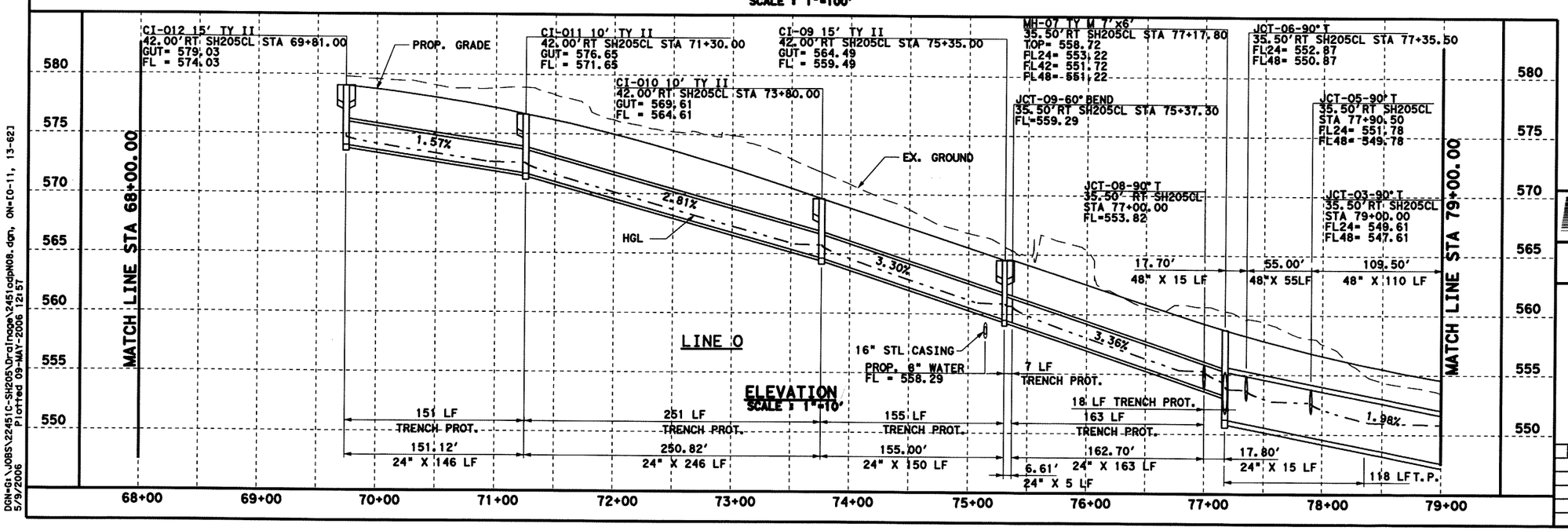
Plotted 02-MAR-2009 11:30
3/2/2009

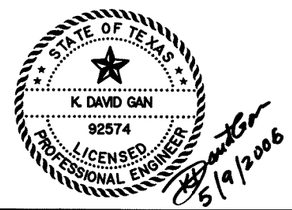


SEE SHT 50 AND 51 FOR LATERALS



GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.



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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 68+00 TO 79+00

SHEET 10 OF 57

DIST. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	410
CONT.	SECT.	JOB	
0451	01	032, ETC	

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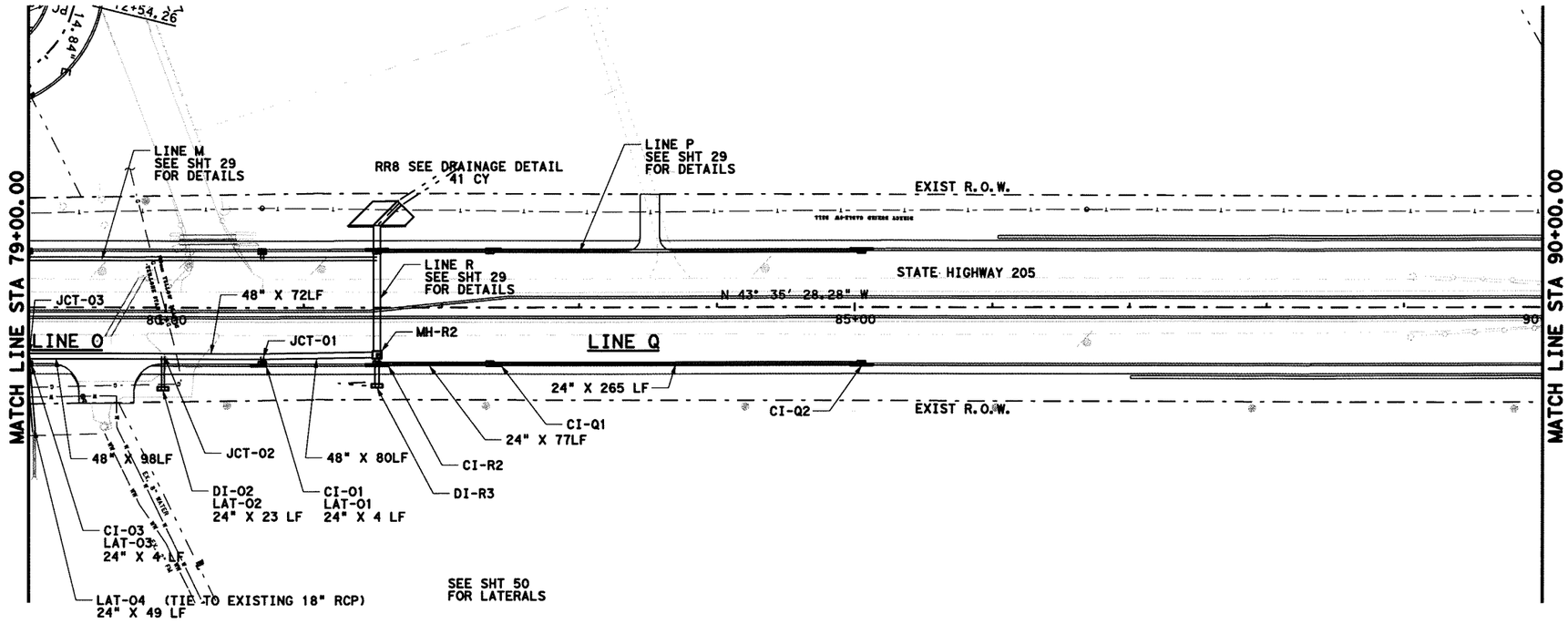
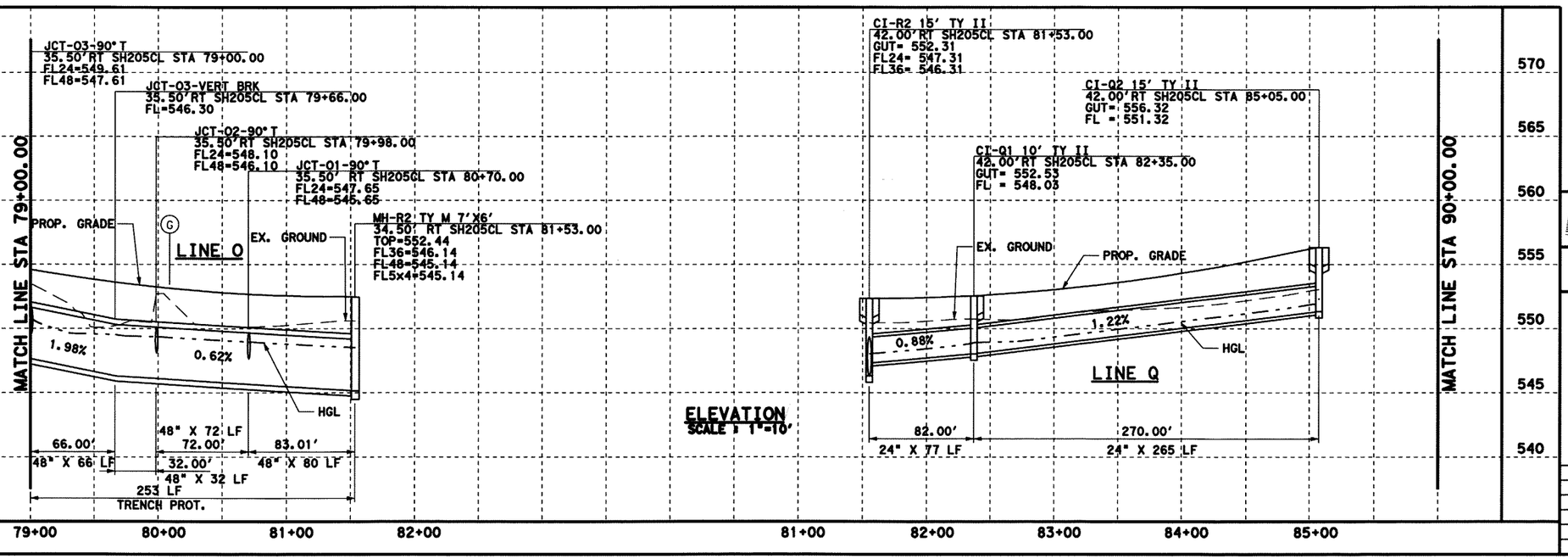
5/9/2006 Plotted 09-MAY-2006 12:57



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 79+00 TO 90+00

SHEET 11 OF 57

DIST. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	411
CONT.	SECT.	JOB	
0451	01	032, ETC	

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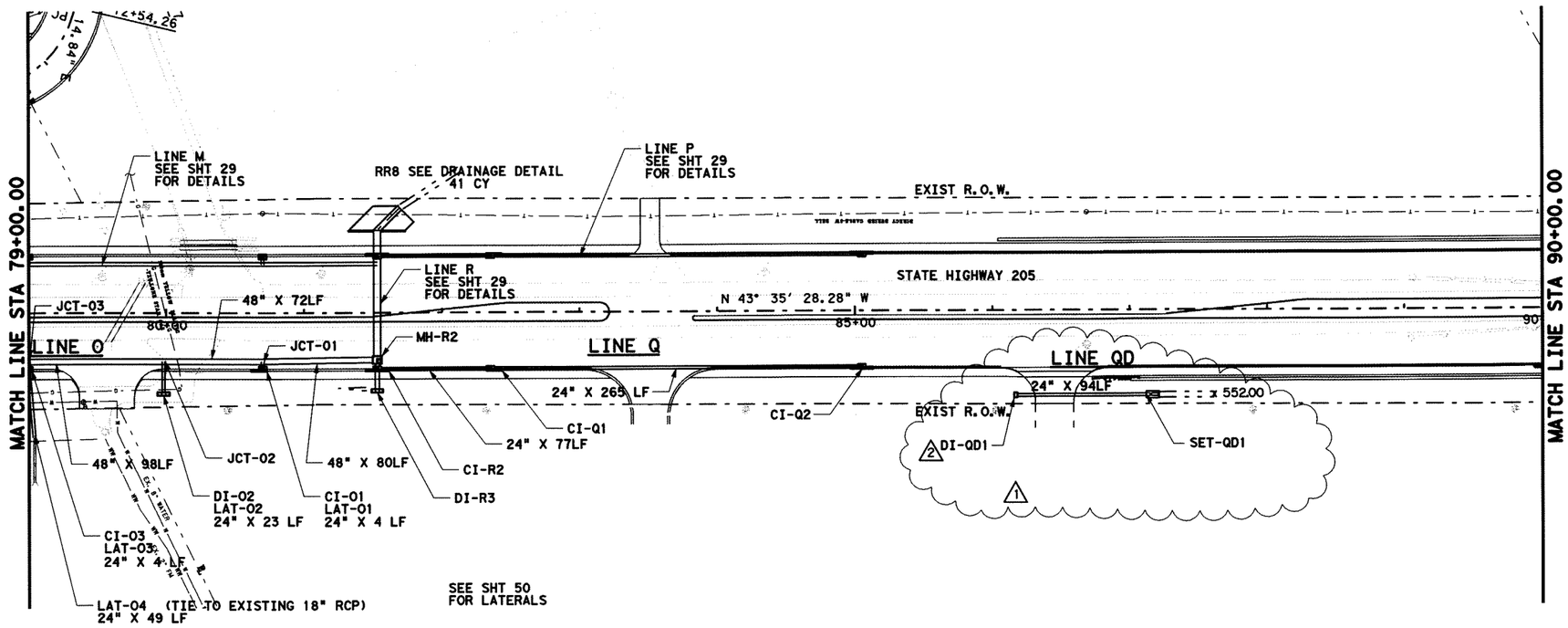
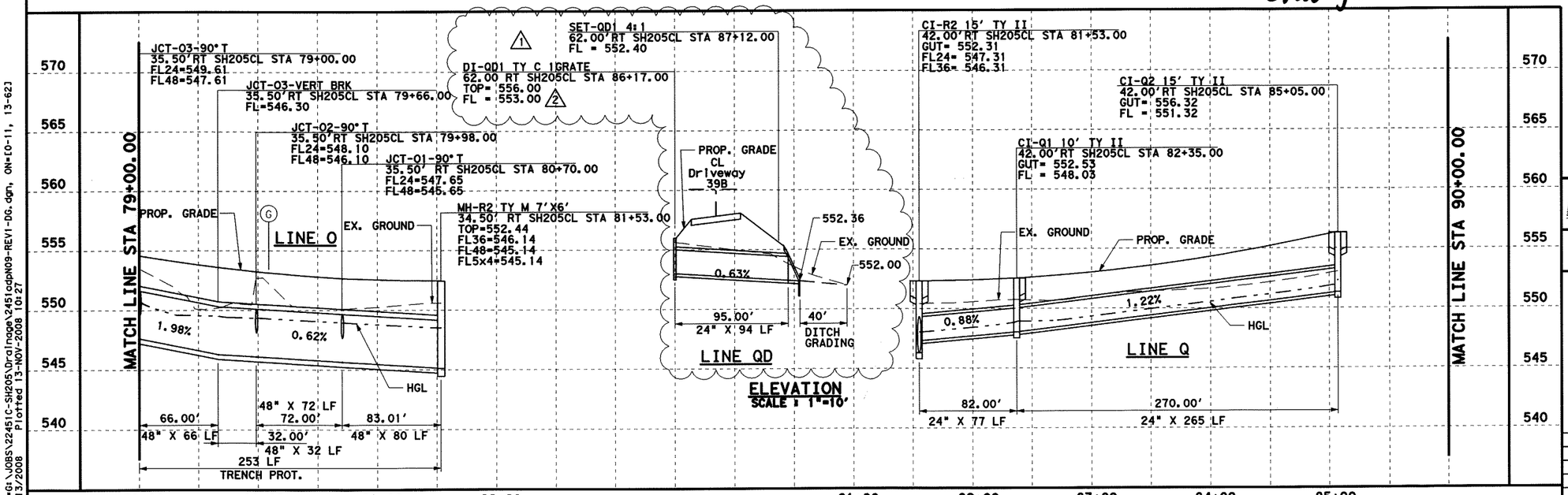


PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

Change Order #58

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
11/13/08

(2) RELOCATED INLET DI-QD1
(1) ADDED LINE QD FOR DRIVEWAY 39B

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 79+00 TO 90+00

SHEET 11 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	411A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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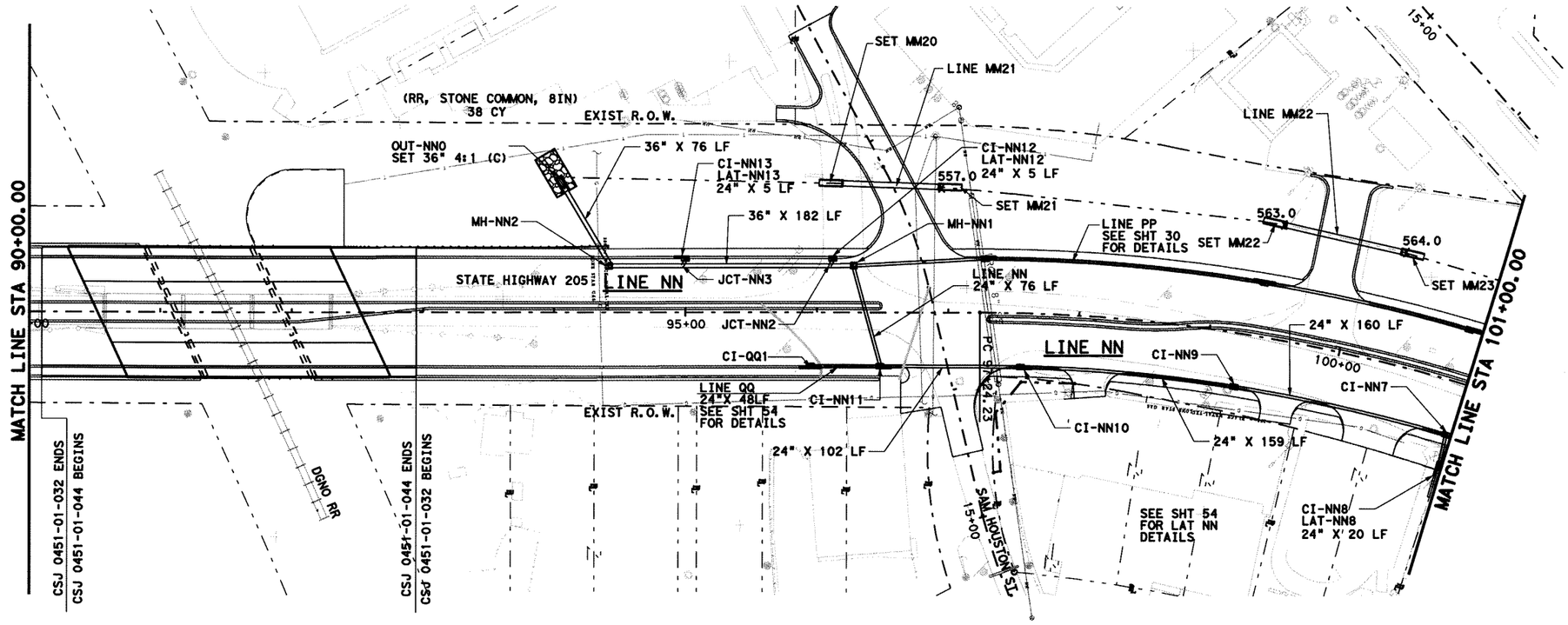
11/13/2008 Plotted 13-NOV-2008 10:27



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

(1) OUT-NN0 4:1
103.00'LT SH205CL STA 94+03.00
FL = 552.47

(2) MH-NN2 TY M MH 5X5
35.50' LT SH205CL STA 94+41.98
TOP= 563.79
FL = 552.71

(3) JCT-NN3 60°Y
35.50'LT SH205CL STA 94+97.69
FL24=553.88
FL36=552.88

(4) JCT-NN2 60°Y
35.50'LT SH205CL STA 96+09.69
FL24=554.21
FL36=553.21

(5) MH-NN1 TY M 5'X5'
35.50'LT SH205CL STA 96+28.00
TOP= 559.69
FL24=554.27
FL36= 553.27

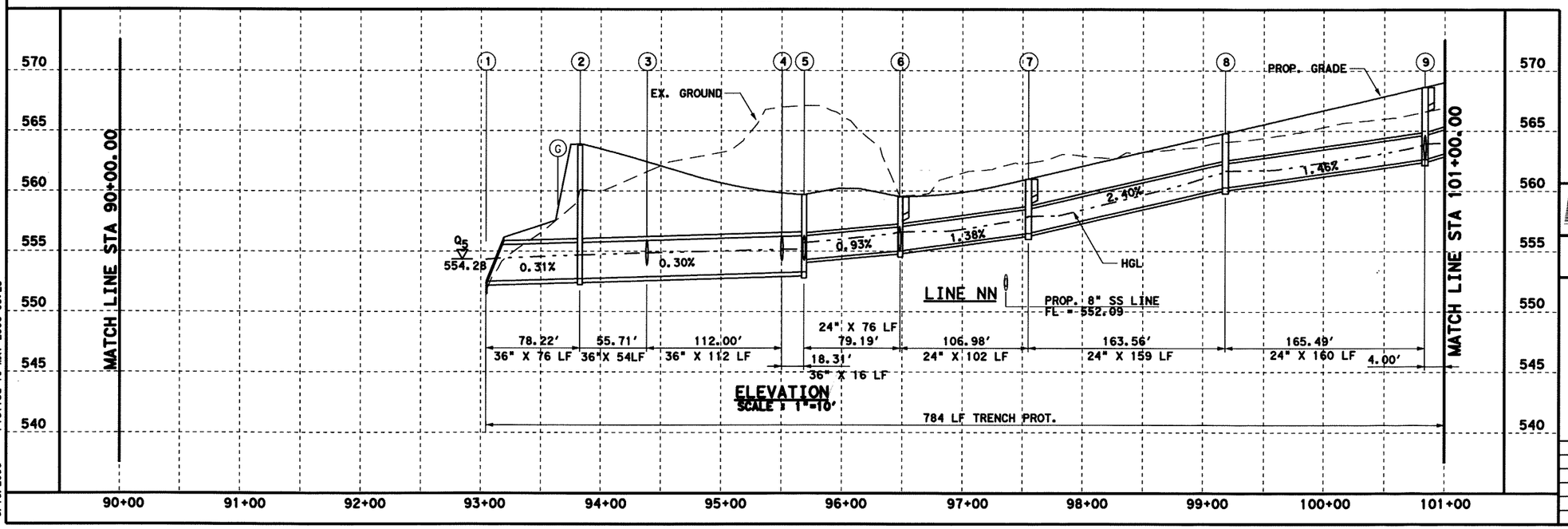
(6) CI-NN11 10' TY II
42.00'RT SH205CL STA 96+48.00
GUT= 559.51
FL = 555.01

(7) CI-NN10 10' TY II
42.00'RT SH205CL STA 97+56.00
GUT= 560.98
FL = 556.48

(8) CI-NN9 5' TY II
42.00'RT SH205CL STA 99+25.00
GUT= 564.78
FL = 560.28

(9) CI-NN7 10' TY II
42.00'RT SH205CL STA 100+96.00
GUT=568.63
FL=562.76

PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

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5/10/2006 Plotted 10-MAY-2006 09:23

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/10/2006

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SH 205

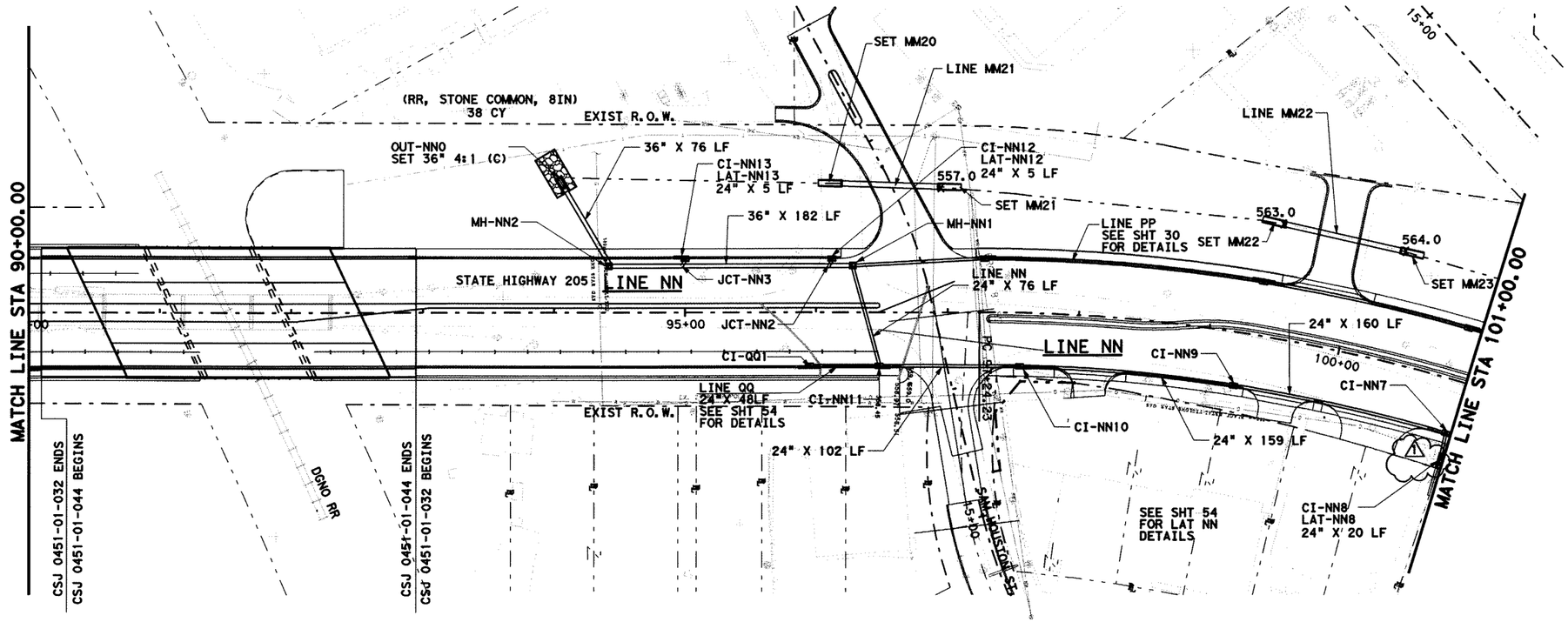
NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 90+00 TO 101+00

SHEET 12 OF 57

FED. RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	412
CONT.	SECT.	JOB	
0451	01	032, ETC	



① OUT-NN0 4:1
103.00'LT SH205CL STA 94+03.00
FL = 552.47

② MH-NN2 TY M MH 5X5
35.50' LT SH205CL STA 94+41.98
TOP= 563.79
FL = 552.71

③ JCT-NN3 60°Y
35.50'LT SH205CL STA 94+97.69
FL24=553.88
FL36=552.88

④ JCT-NN2 60°Y
35.50'LT SH205CL STA 96+09.69
FL24=554.21
FL36=553.21

⑤ MH-NN1 TY M 5'X5'
35.50'LT SH205CL STA 96+28.00
TOP= 559.69
FL24=554.27
FL36= 553.27

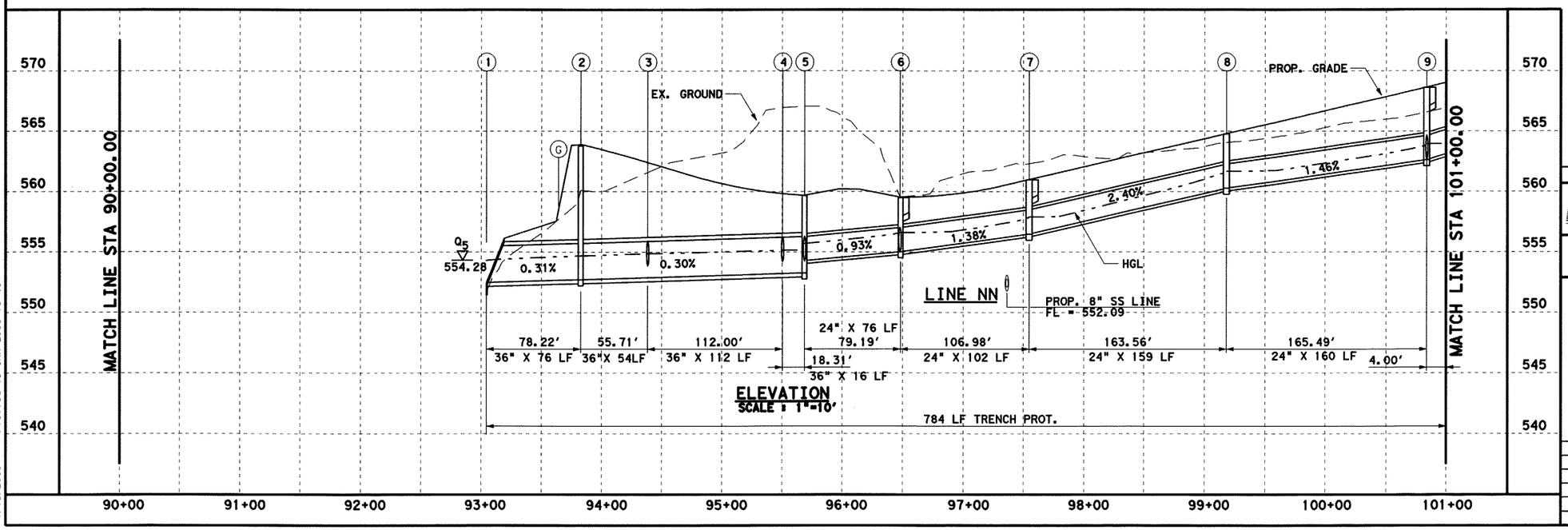
⑥ CI-NN11 10' TY II
42.00'RT SH205CL STA 96+48.00
GUT= 559.51
FL = 555.01

⑦ CI-NN10 10' TY II
42.00'RT SH205CL STA 97+56.00
GUT= 560.98
FL = 556.48

⑧ CI-NN9 5' TY II
42.00'RT SH205CL STA 99+25.00
GUT= 564.78
FL = 560.28

⑨ CI-NN7 10' TY II
42.00'RT SH205CL STA 100+96.00
GUT=568.63
FL=562.63

PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
1/18/2009

1	09-05-08	REV NN7 FL, NN8 ORIENT	AM

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 90+00 TO 101+00

SHEET 12 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	412A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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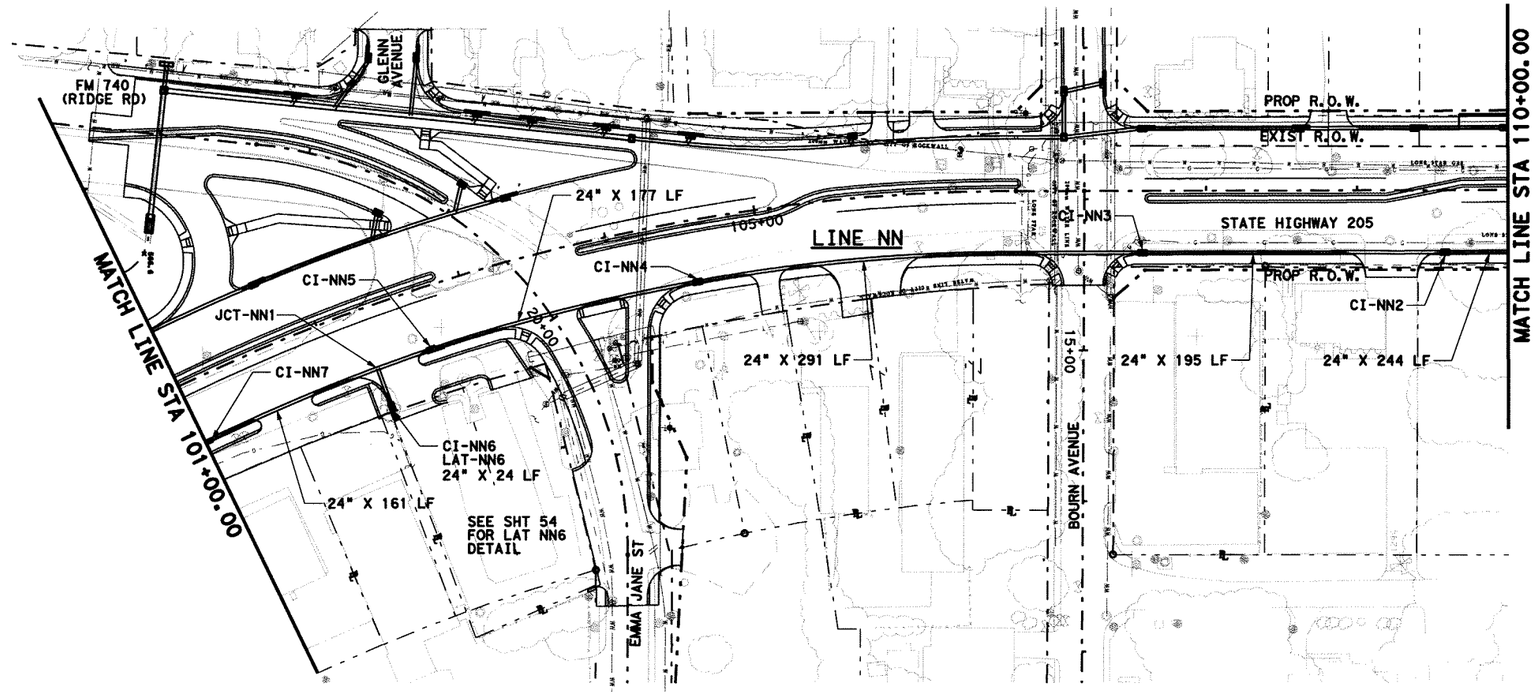
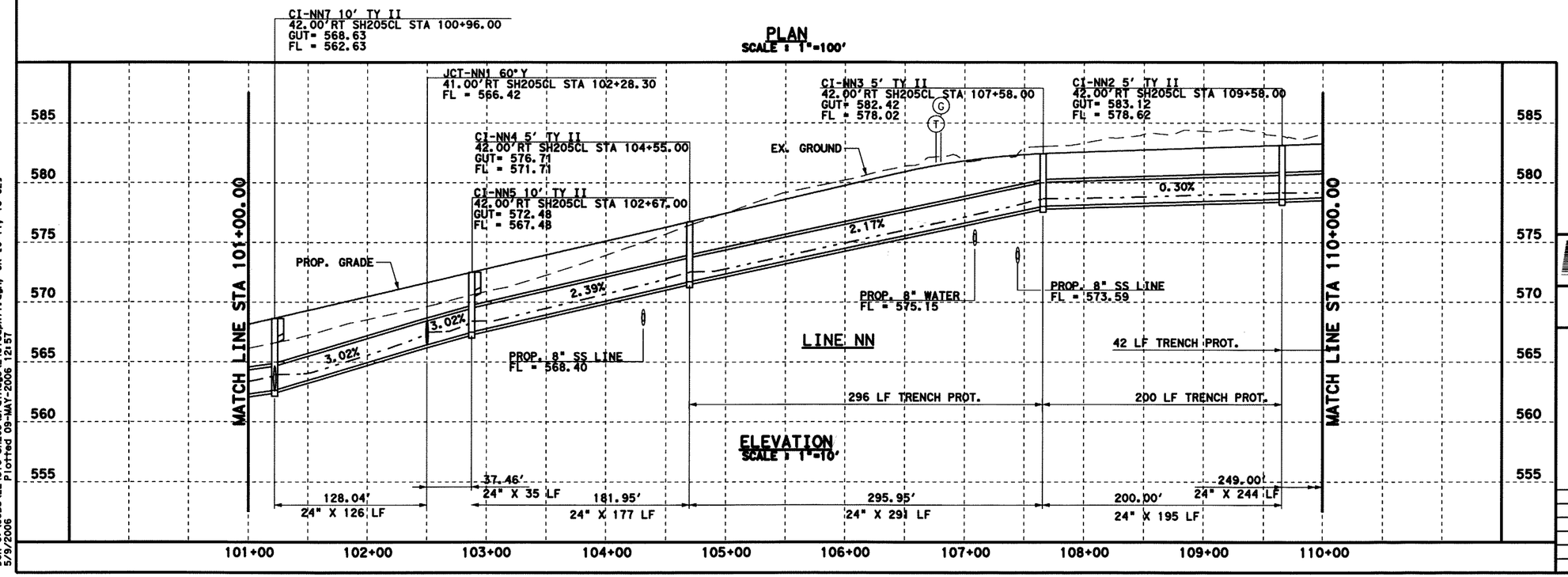
1/13/2009 Plotted 13-JAN-2009 19:46





0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLEI. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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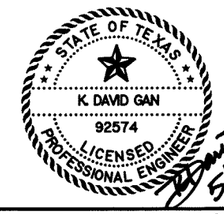
LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN



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Dallas, TX 75207

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 13 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	413
CONT.	SECT.	JOB	
0451	01	032, ETC	

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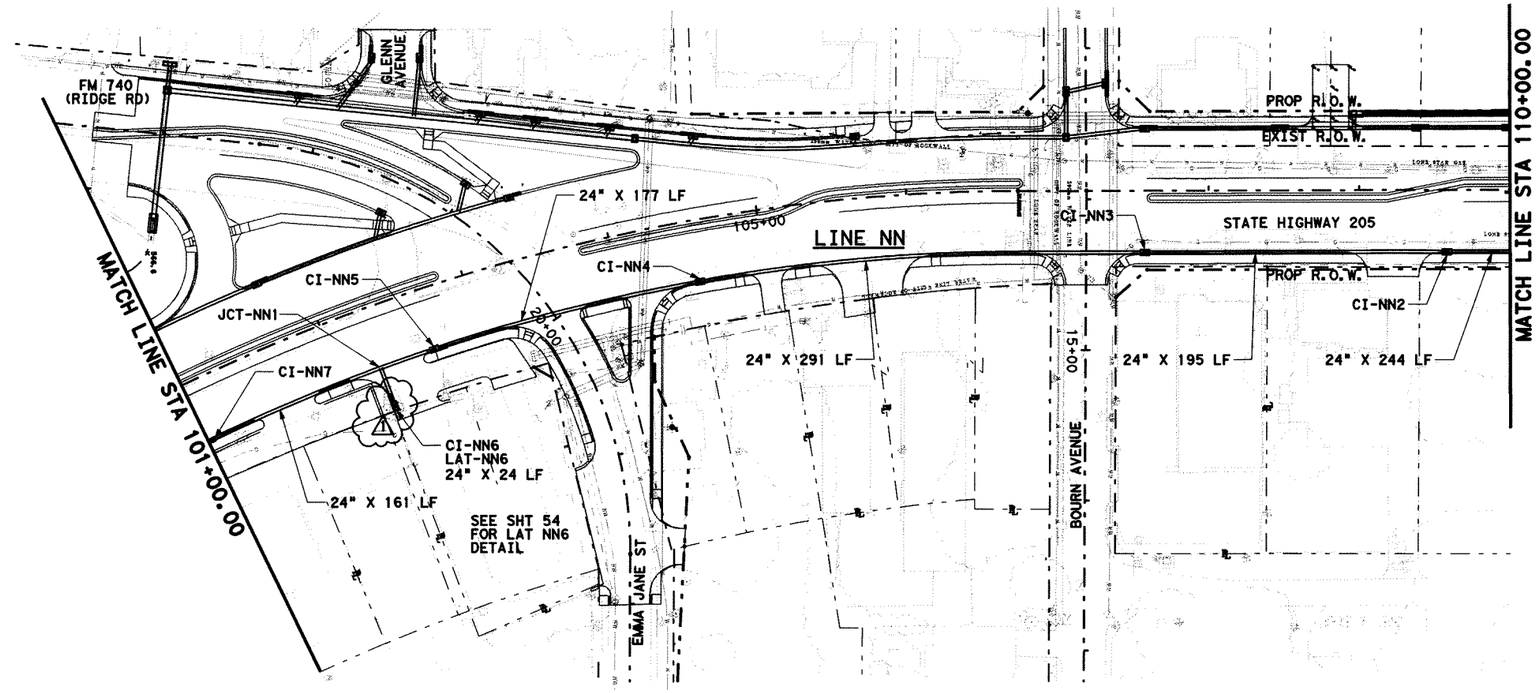
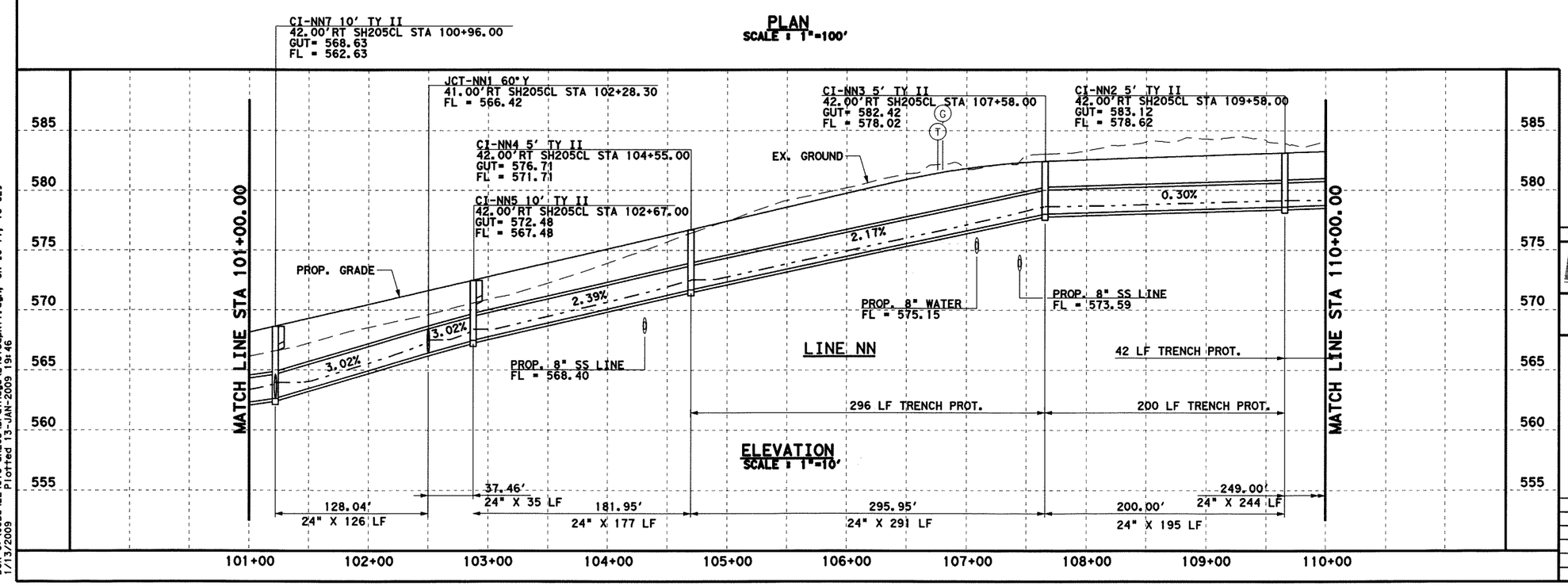
Plotted 09-MAY-2006 12:57
5/9/2006





0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
1/13/2009

1	09-05-08	CI-INLET ORIENTATION	AM

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SH 205

NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 101+00 TO 110+00

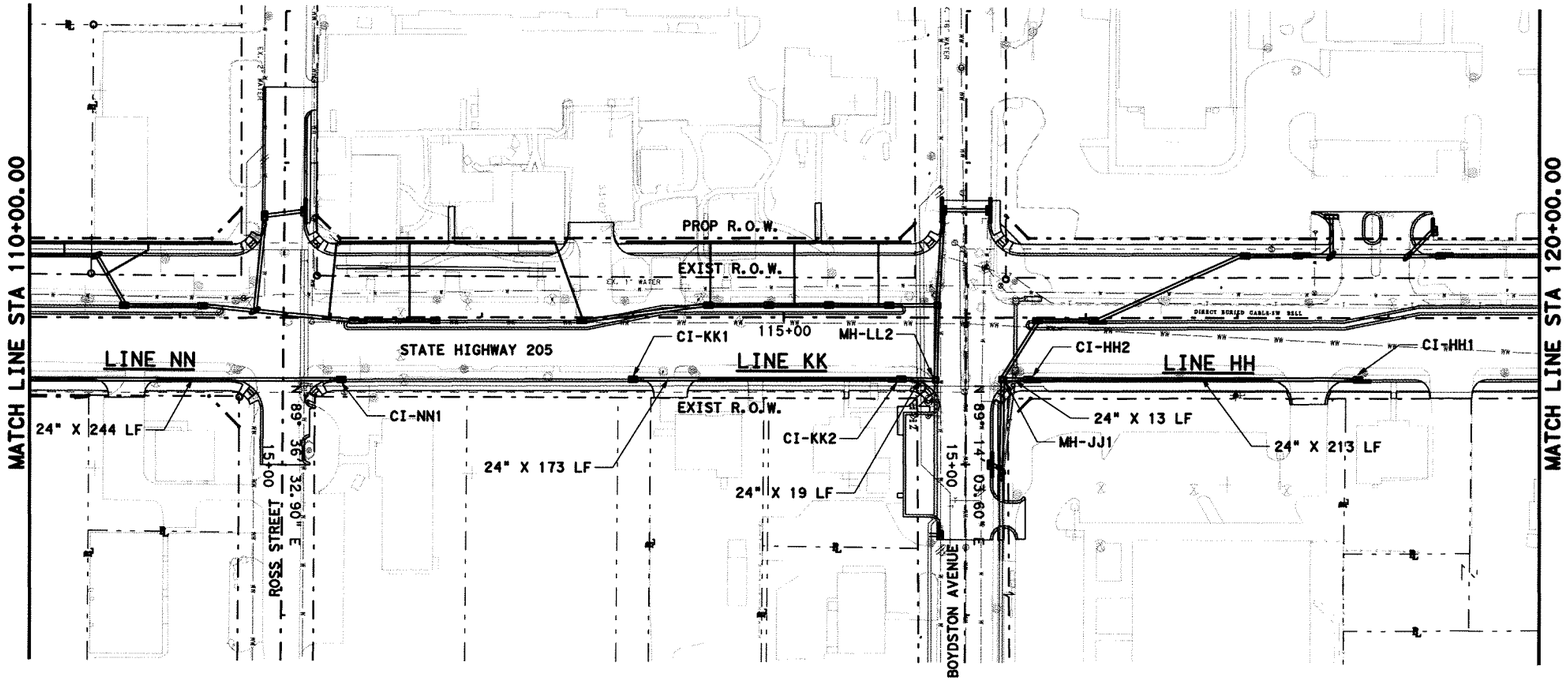
SHEET 13 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

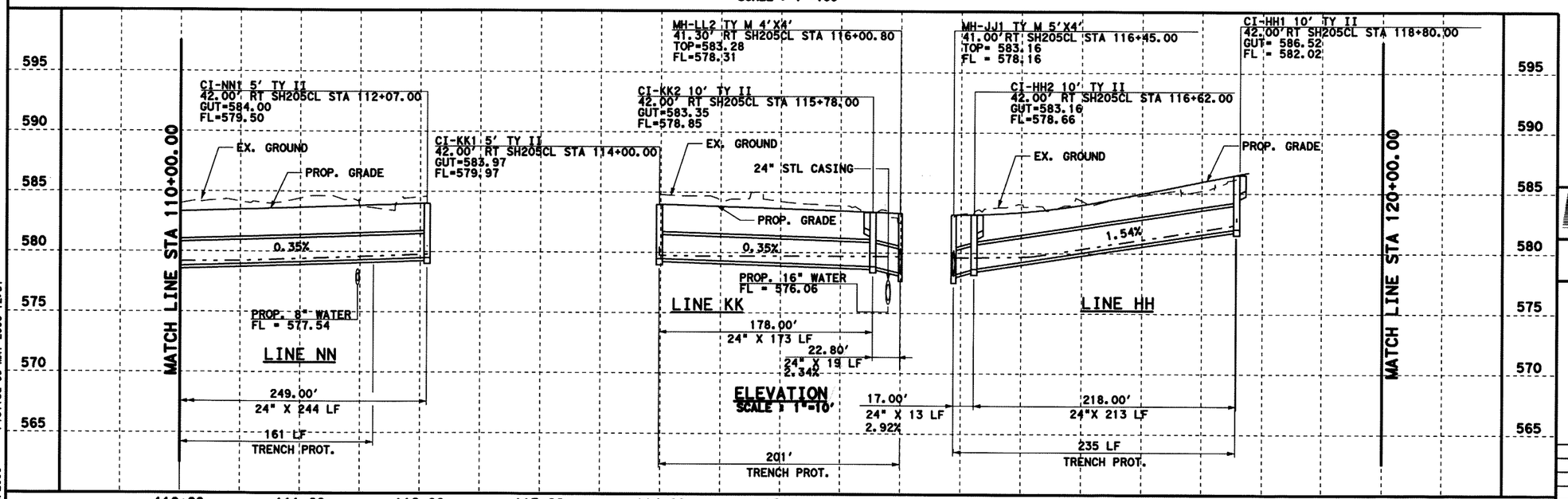
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	413A
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\24510dgN11.dgn, ON=10-11, 13-62
1/13/2009 Plotted 13-JAN-2009 19:46

PLAN
SCALE : 1"=100'

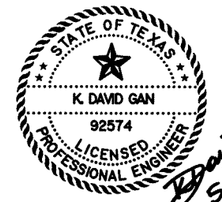


ELEVATION
SCALE : 1"=10'



GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.



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SH 205

NORTHBOUND DRAINAGE

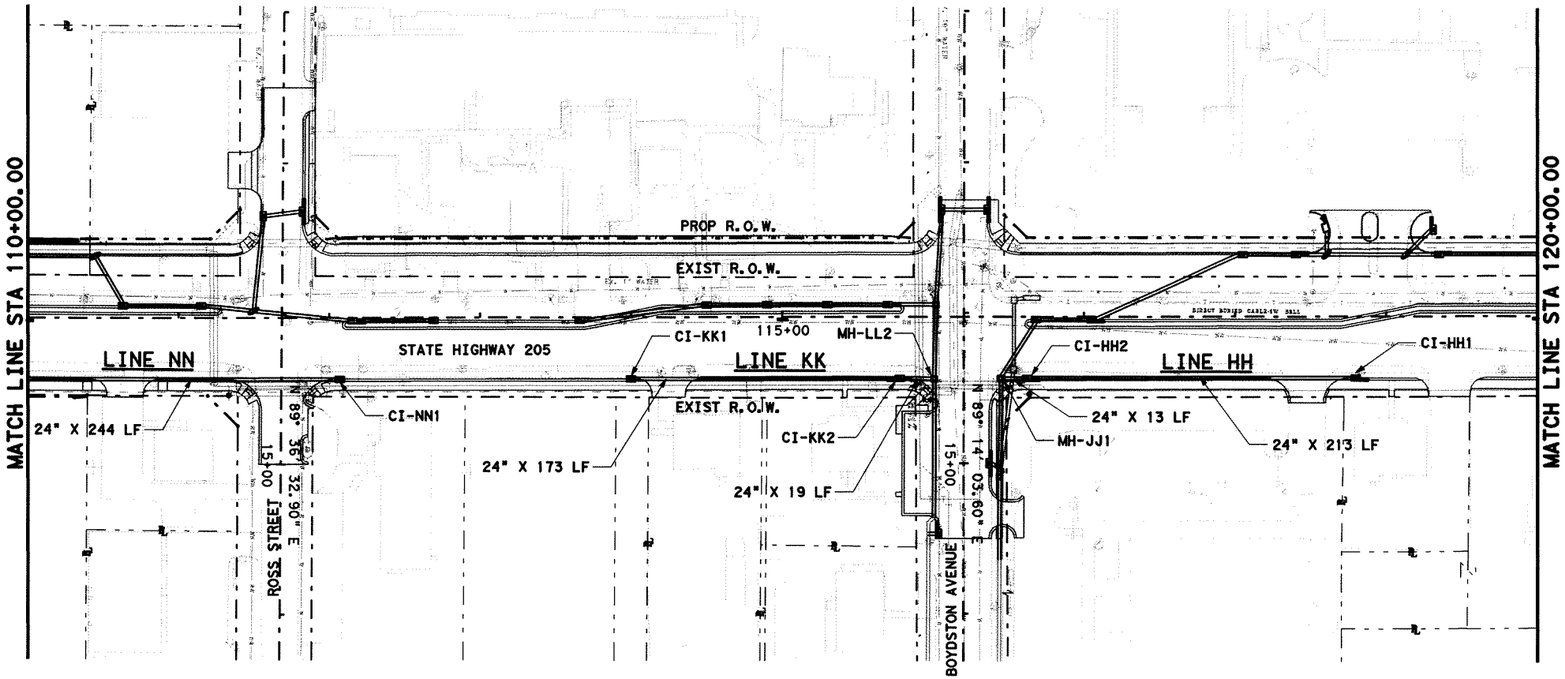
STORM SEWER PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 14 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	414
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=Gi \JOBS\22451C-SH205\Drainage\24510dpN12.dgn, ON=[0-11, 13-58, 60-62]
Plotted 09-MAY-2006 12:57
5/9/2006



PLAN
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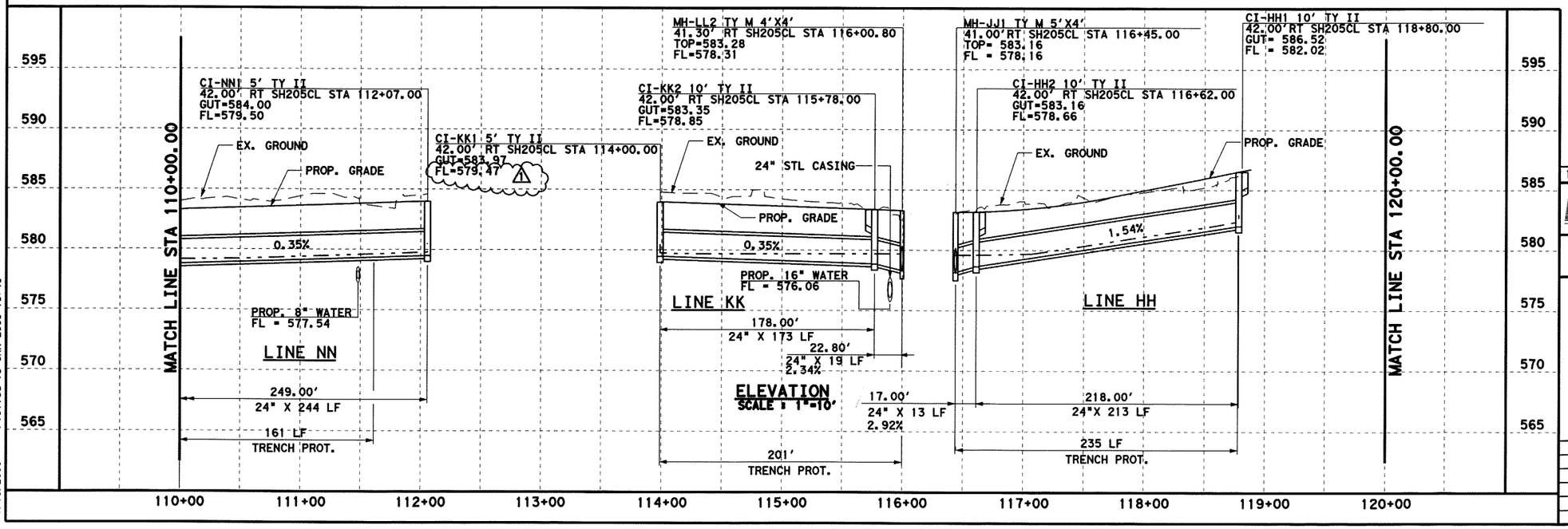

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
1/13/2009

1	09-05-08	REVISED FL ELEV.	AM

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 14 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	414A
0451	01	032, ETC	

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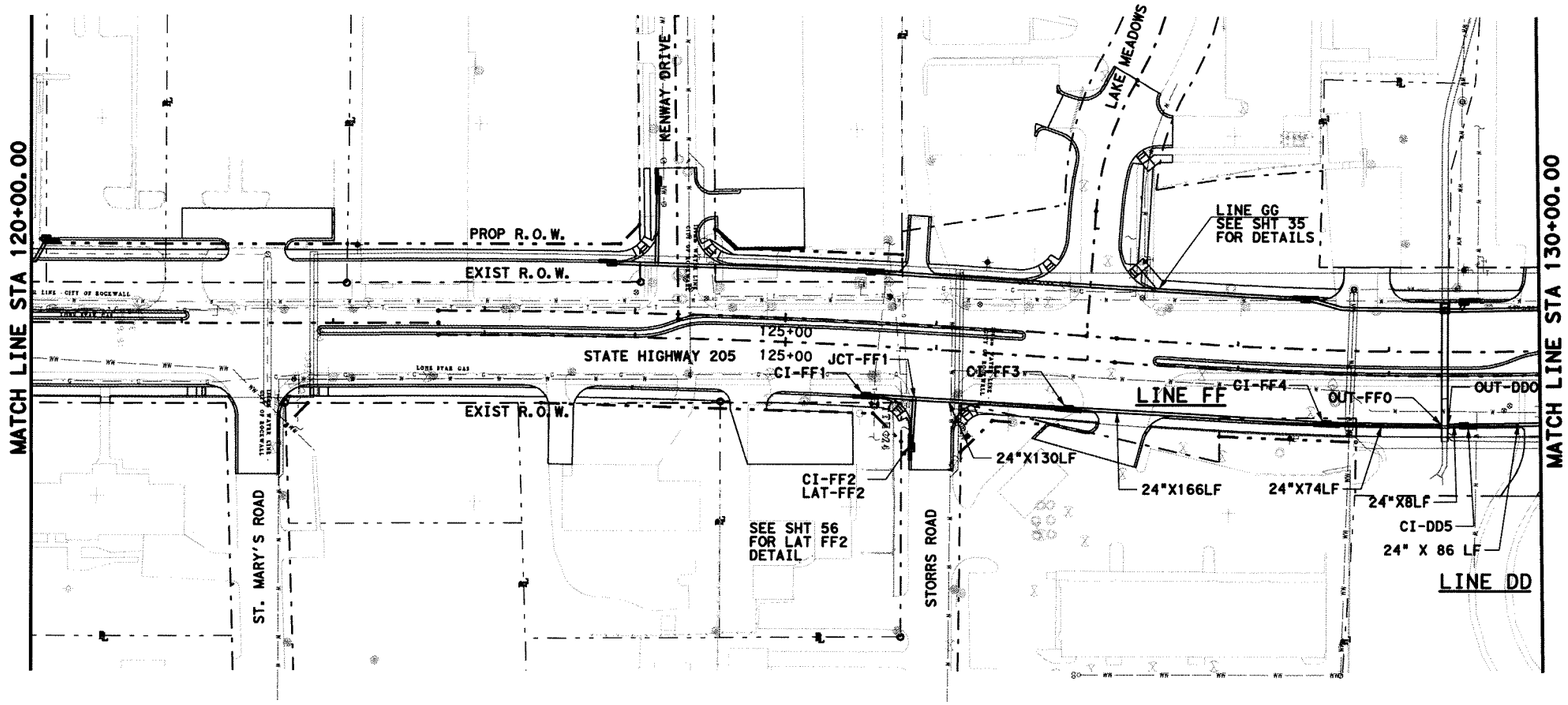
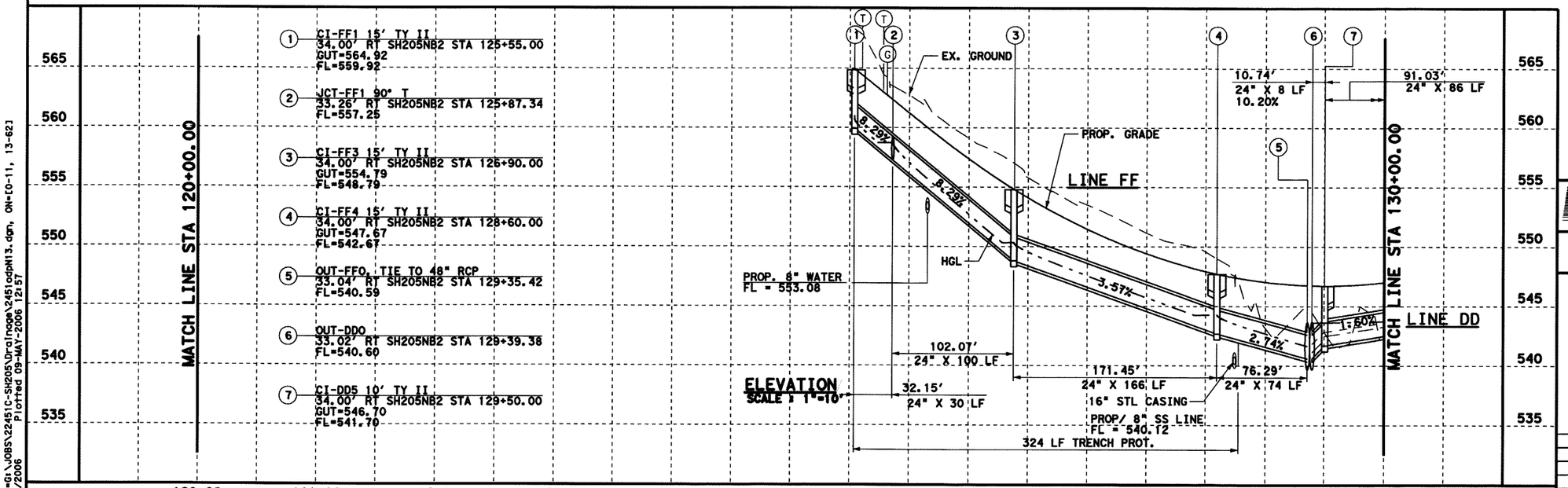
1/13/2009



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 120+00 TO 130+00

SHEET 15 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	415
CONT.	SECT.	JOB	
0451	01	032, ETC	

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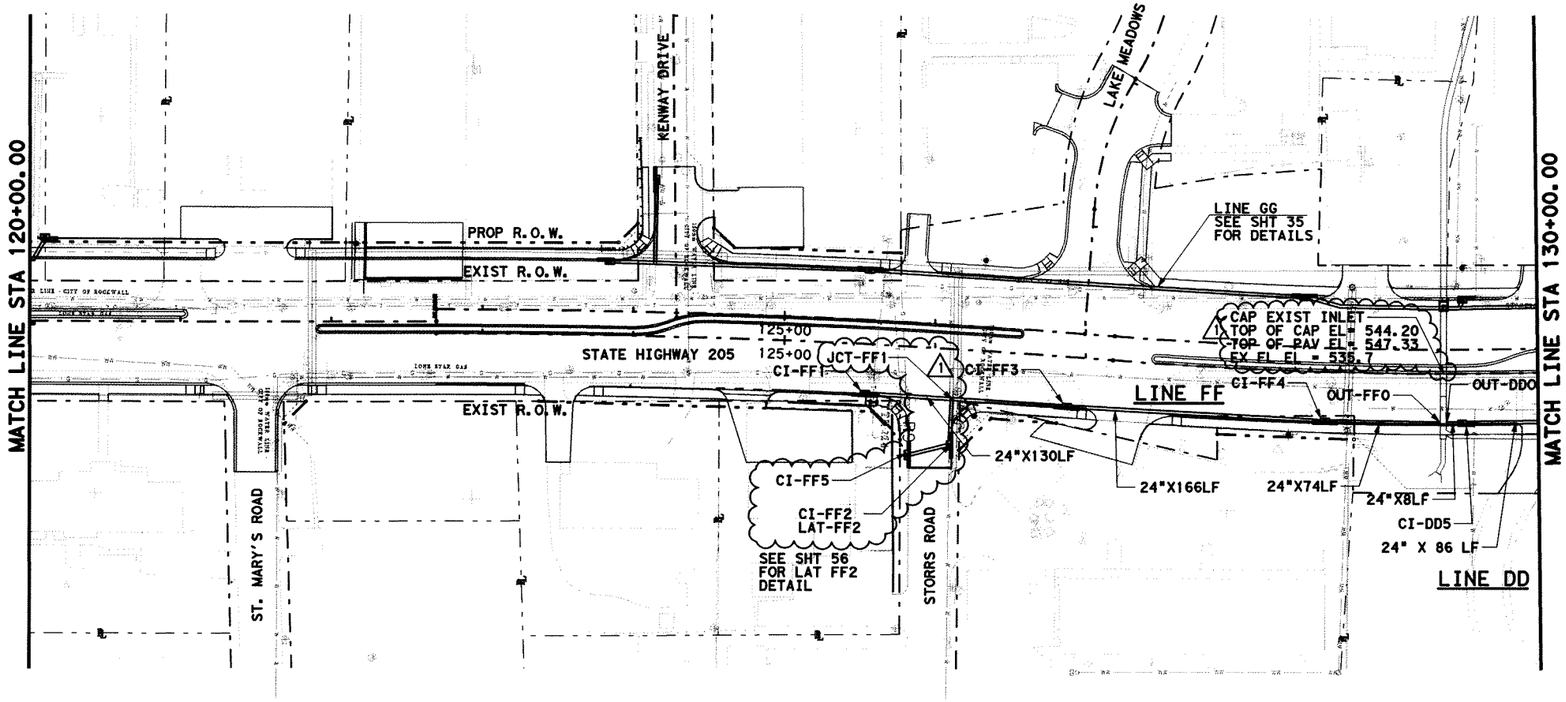

PLAN
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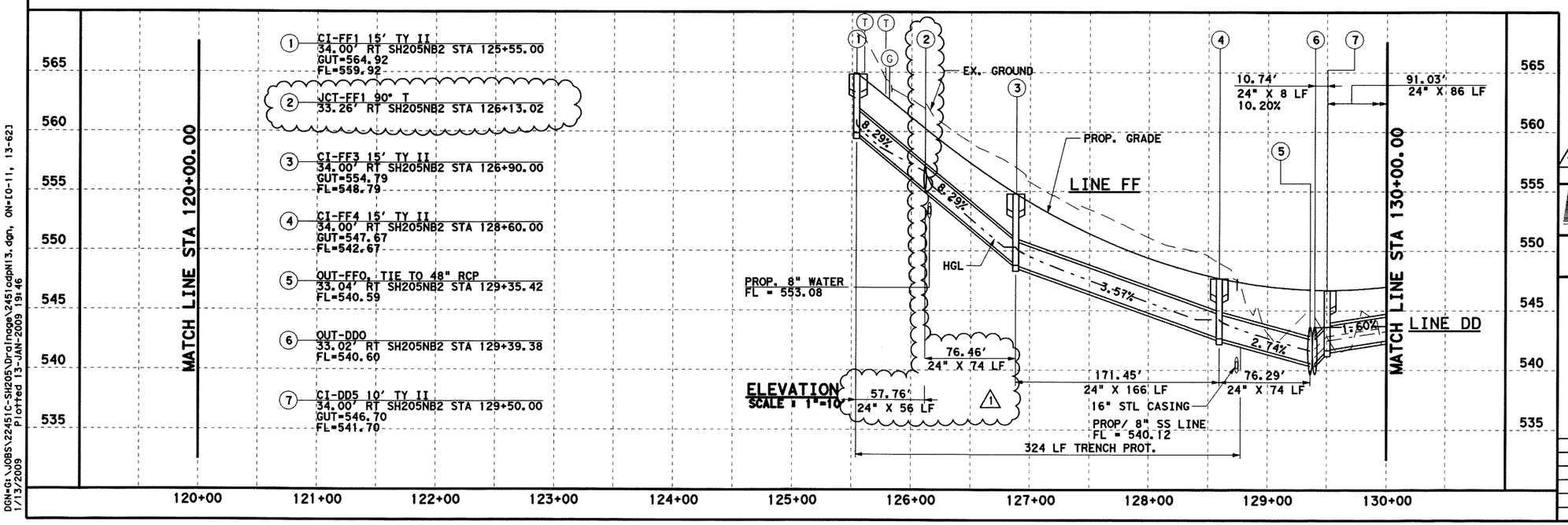

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER

1/13/2009

⚠1 REV CI-FF2& ADDED CI-FF5 10/20/08 -AM
ADDED CAPING EXIST INLET 09/05/08 -KDG

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NORTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 120+00 TO 130+00

SHEET 15 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	415A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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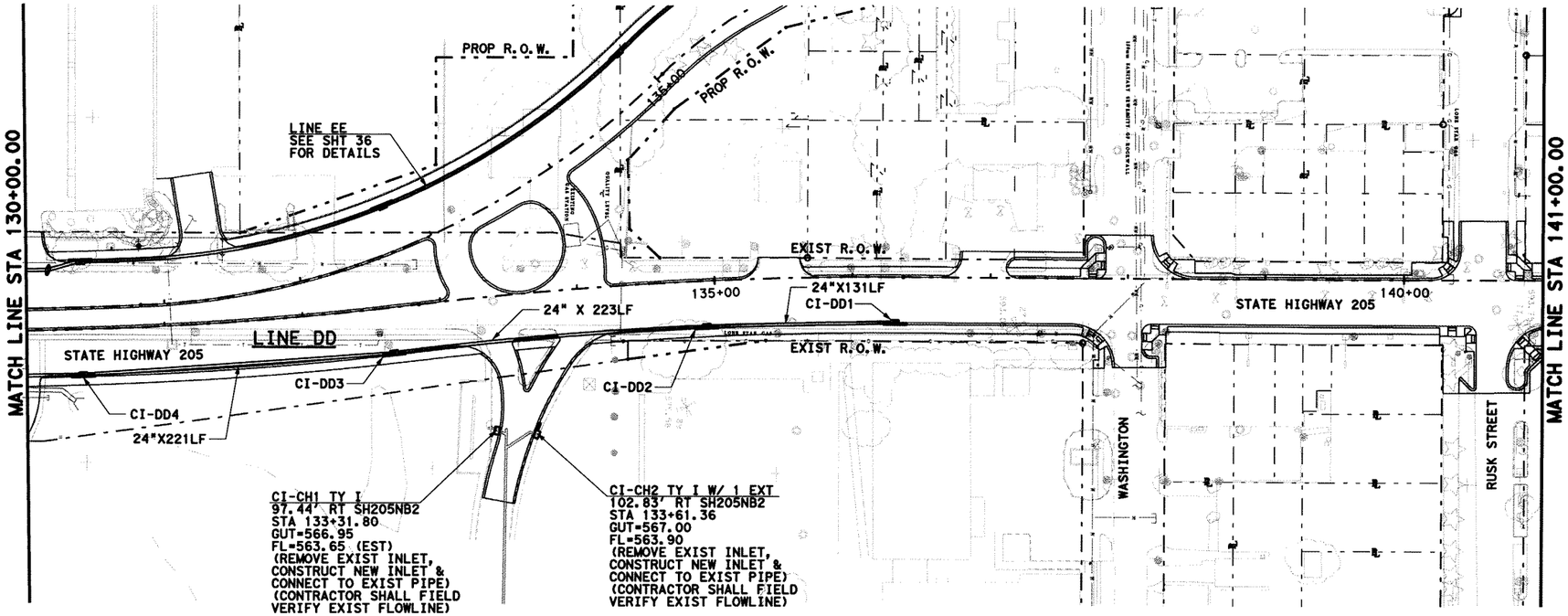
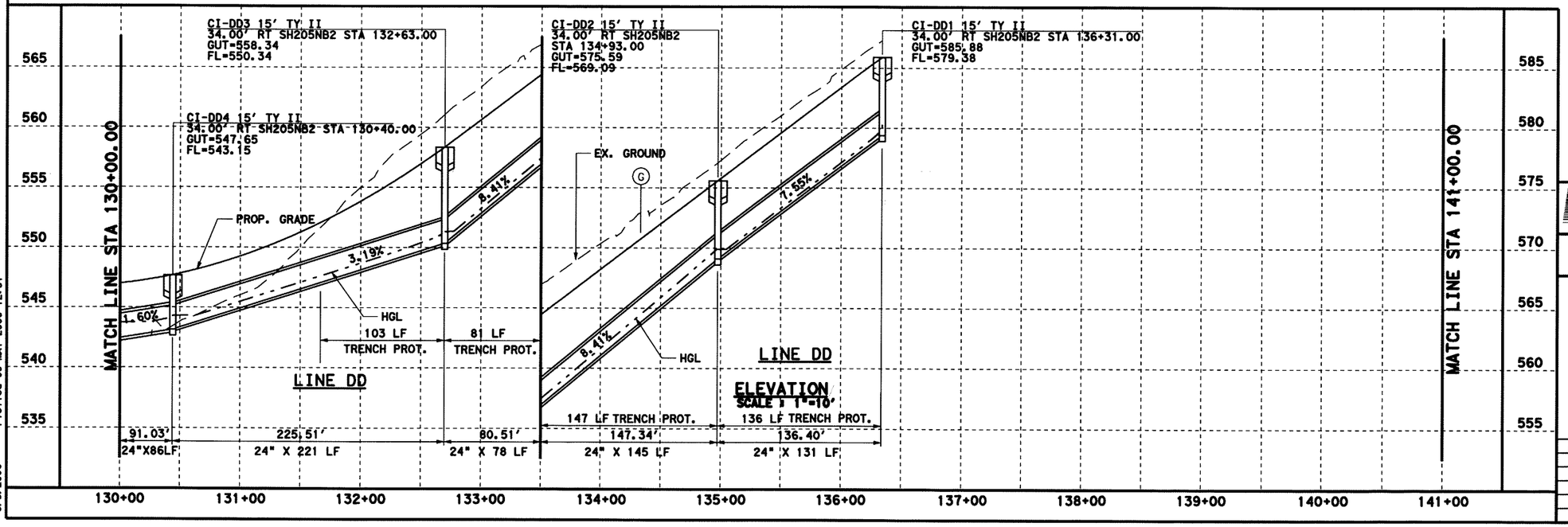


PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

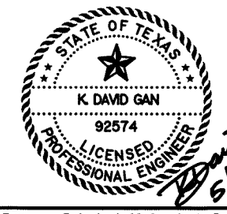
GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN



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NORTHBOUND DRAINAGE
NB COUPLET
STORM SEWER PLAN & PROFILE
STA 130+00 TO 141+00

SHEET 16 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	416
CONT.	SECT.	JOB	
0451	01	032, ETC	

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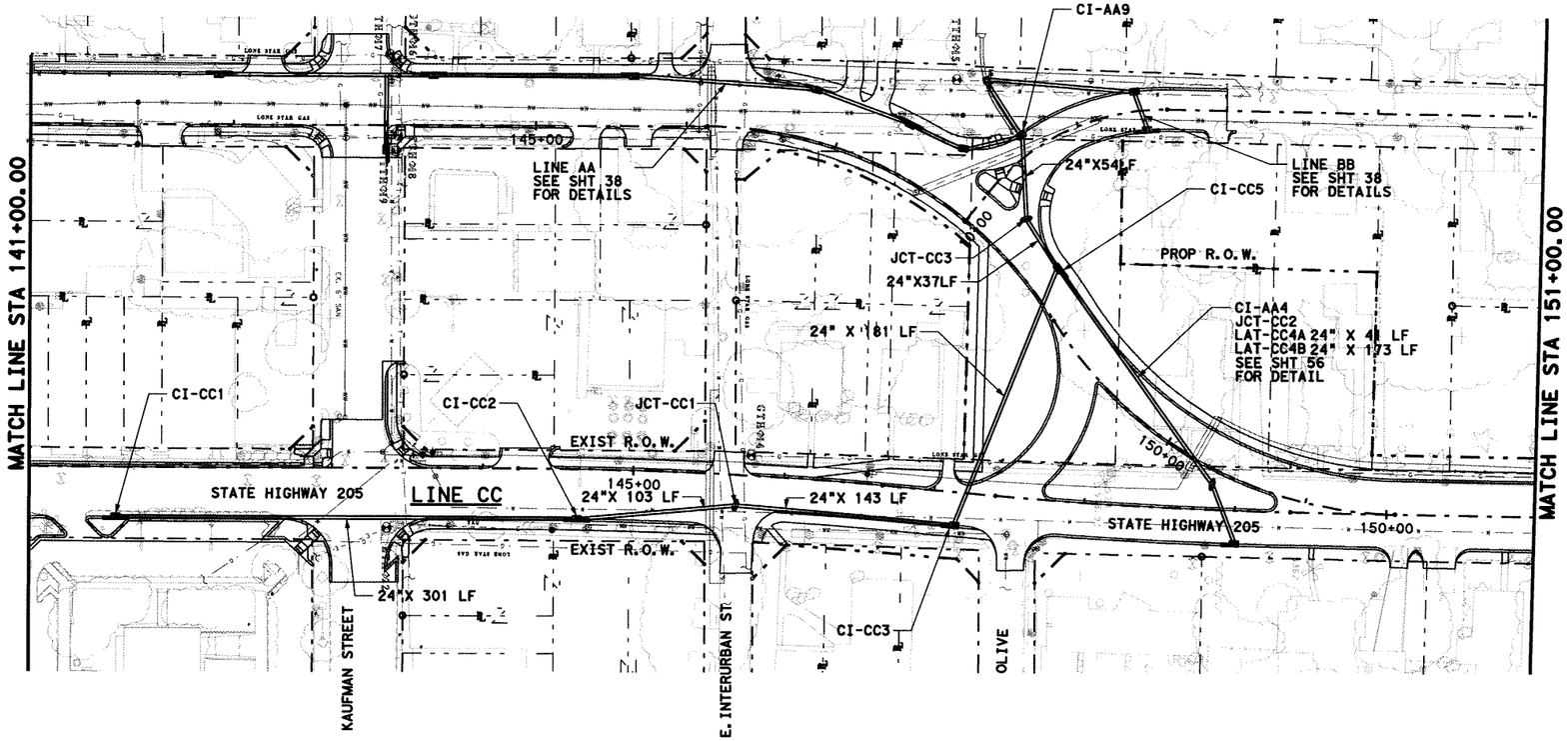

PLAN
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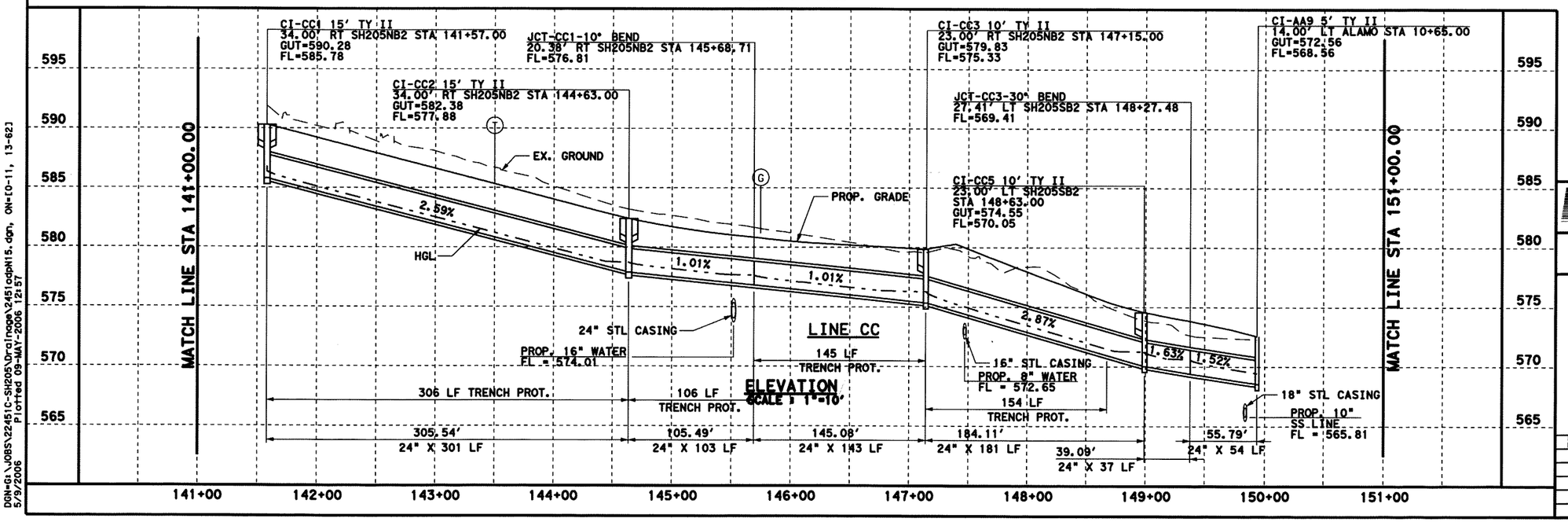

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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NORTHBOUND DRAINAGE
NB COUPLET
STORM SEWER PLAN & PROFILE
STA 141+00 TO 151+00

SHEET 17 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	417
CONT.	SECT.	JOB	
0451	01	032, ETC	

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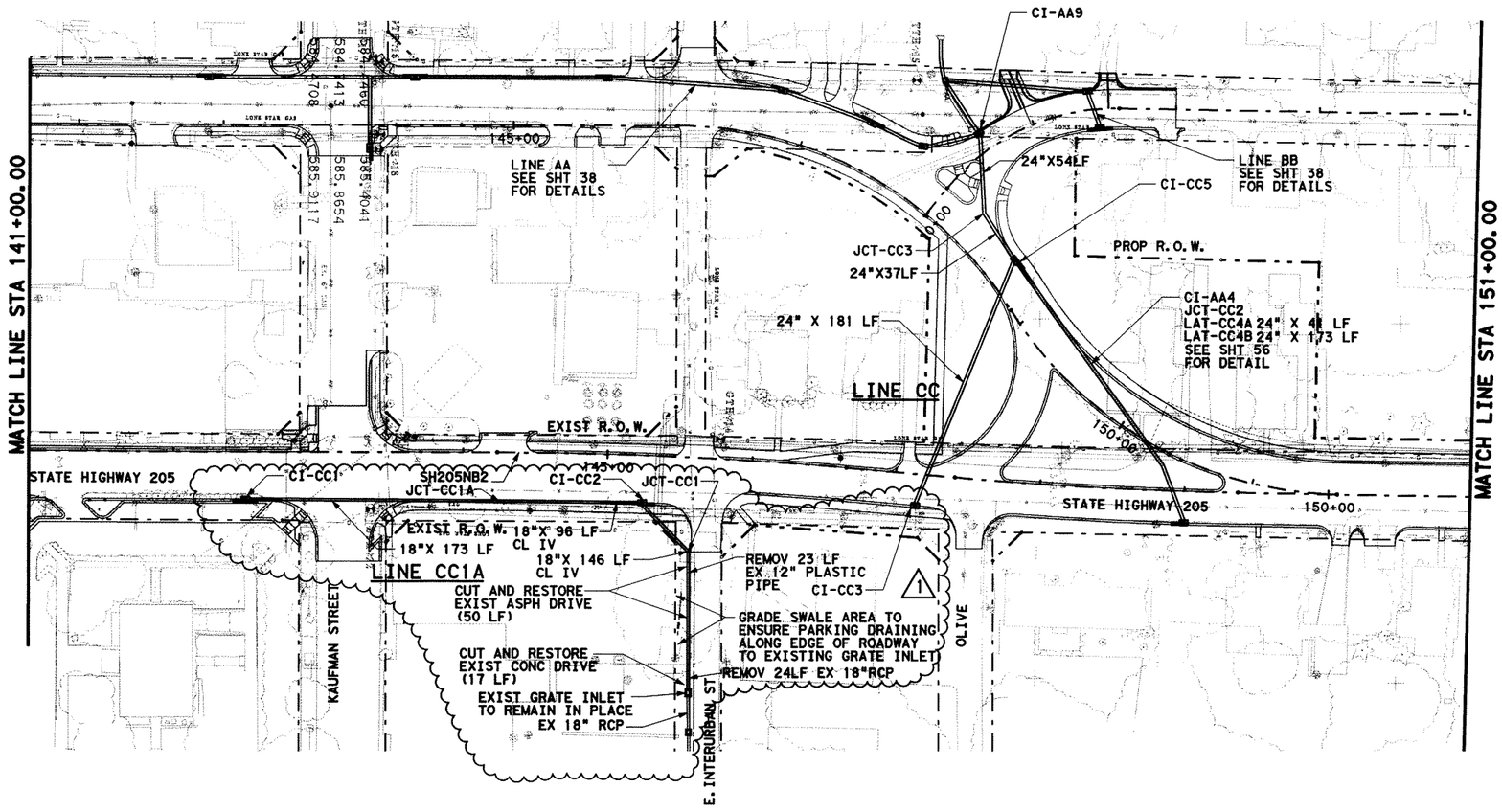
Plotted 09-MAY-2006 12:57
5/9/2006



PLAN
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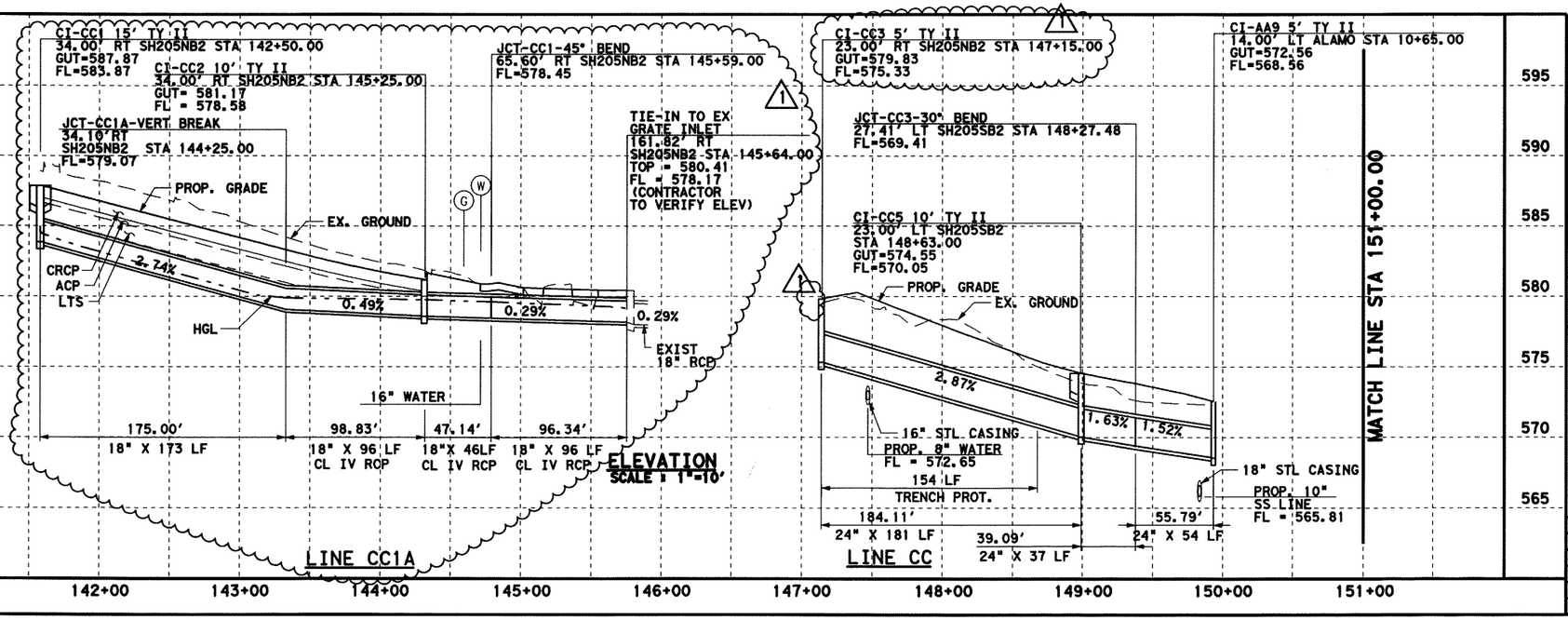

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/4/2009

Change Order #84

1 Revised Line CC - DG - 4/6/2009

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SH 205

NORTHBOUND DRAINAGE
NB COUPLET
STORM SEWER PLAN & PROFILE
STA 141+00 TO 151+00

SHEET 17 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	417
CONT.	SECT.	JOB	
0451	01	032, ETC	

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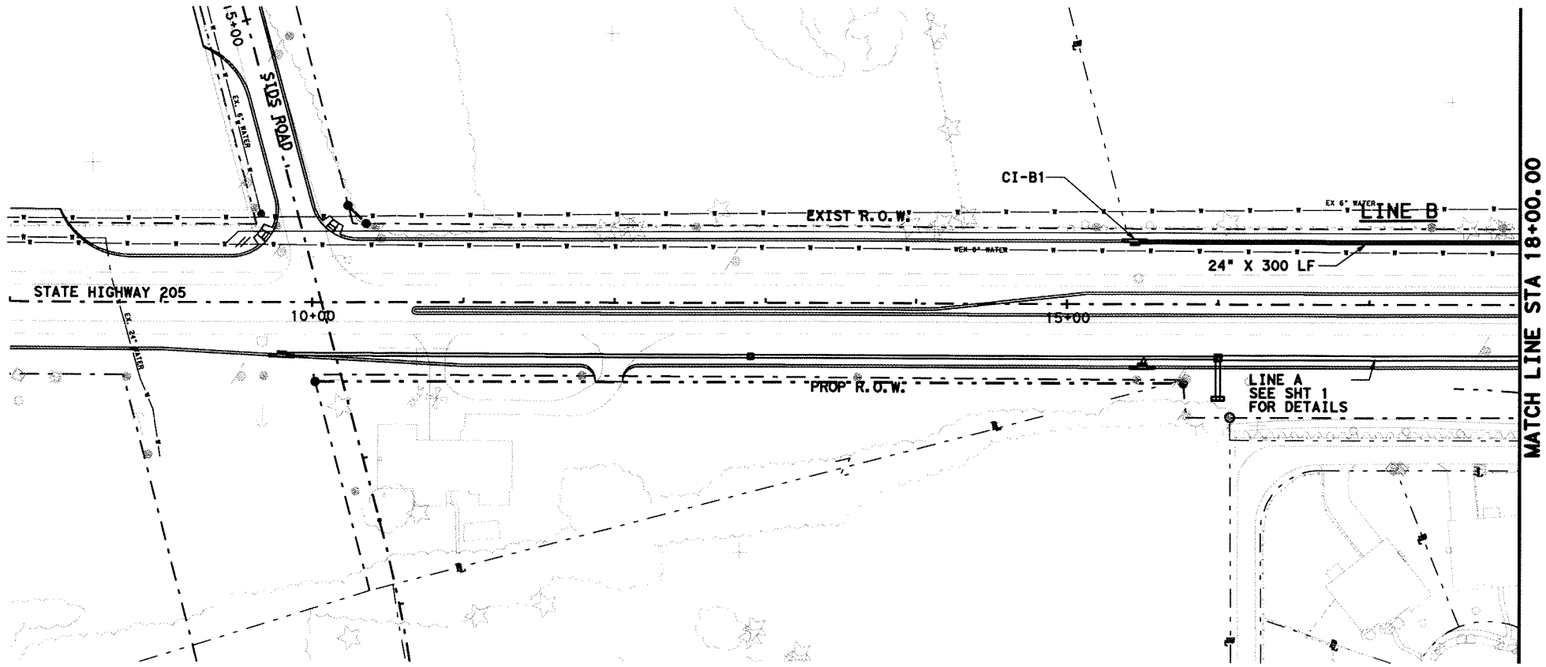
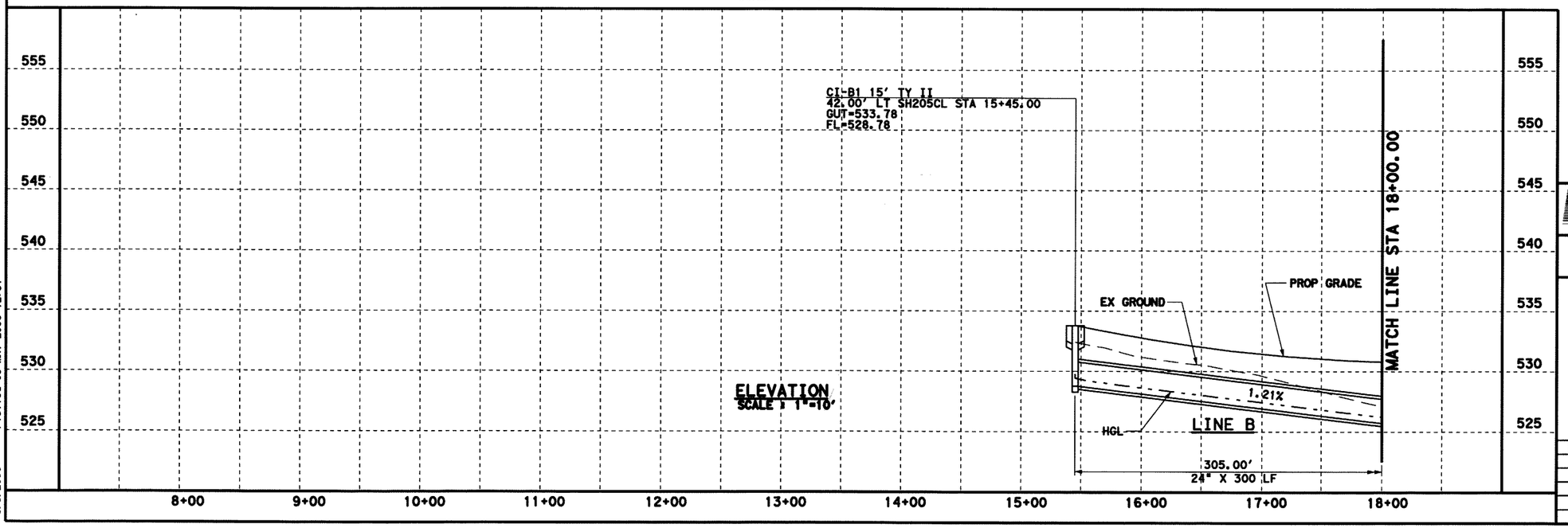
5/4/2009



PLAN
SCALE 1"=100'



ELEVATION
SCALE 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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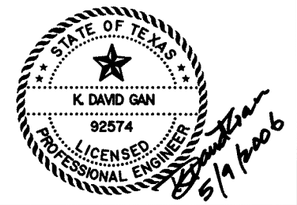

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 8+00 TO 18+00

SHEET 18 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	418
CONT.	SECT.	JOB	
0451	01	032, ETC	

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PLAN
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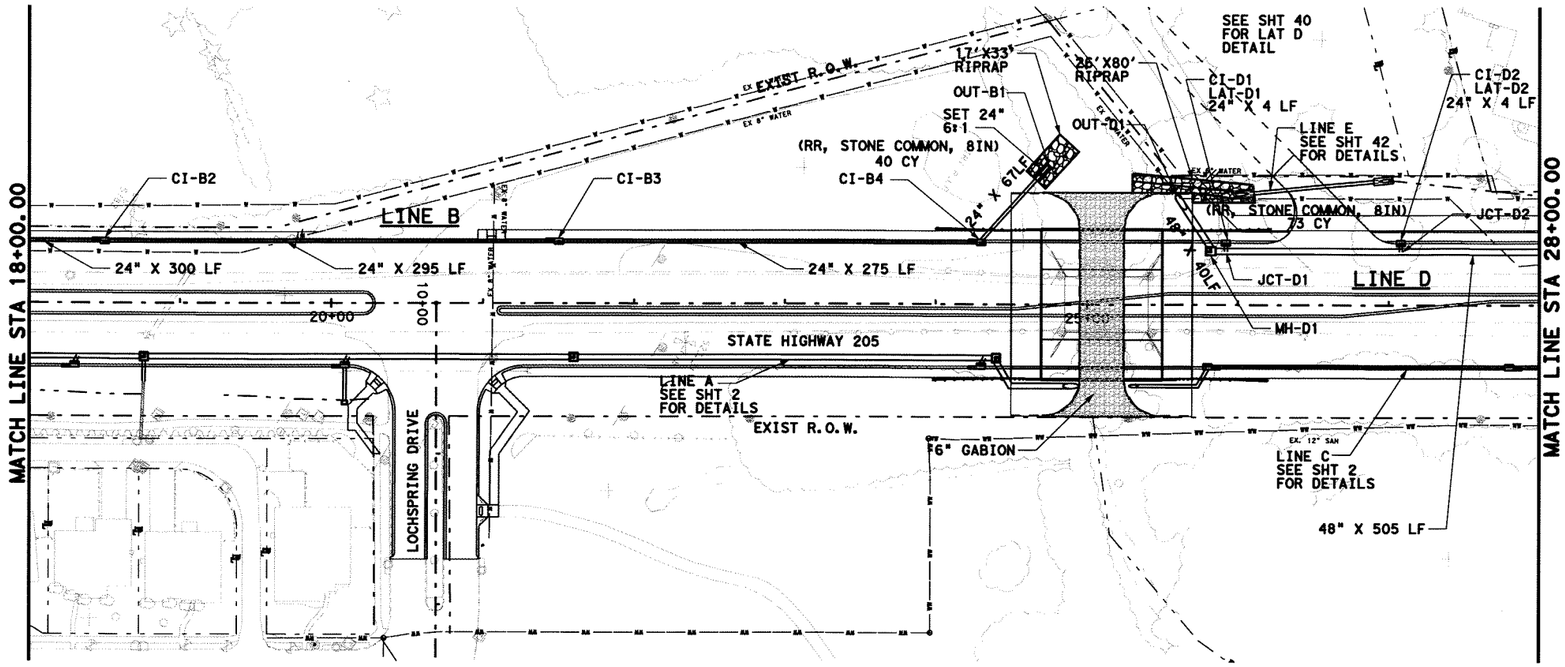

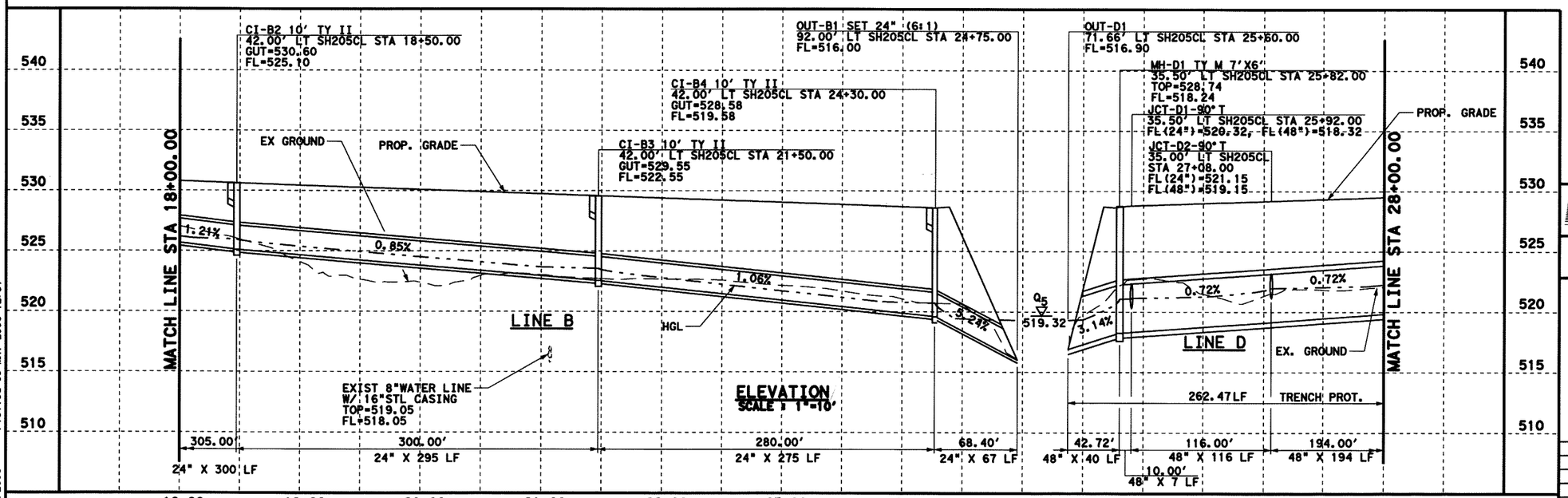

ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 18+00 TO 28+00

SHEET 19 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	419
CONT.	SECT.	JOB	
0451	01	032, ETC	

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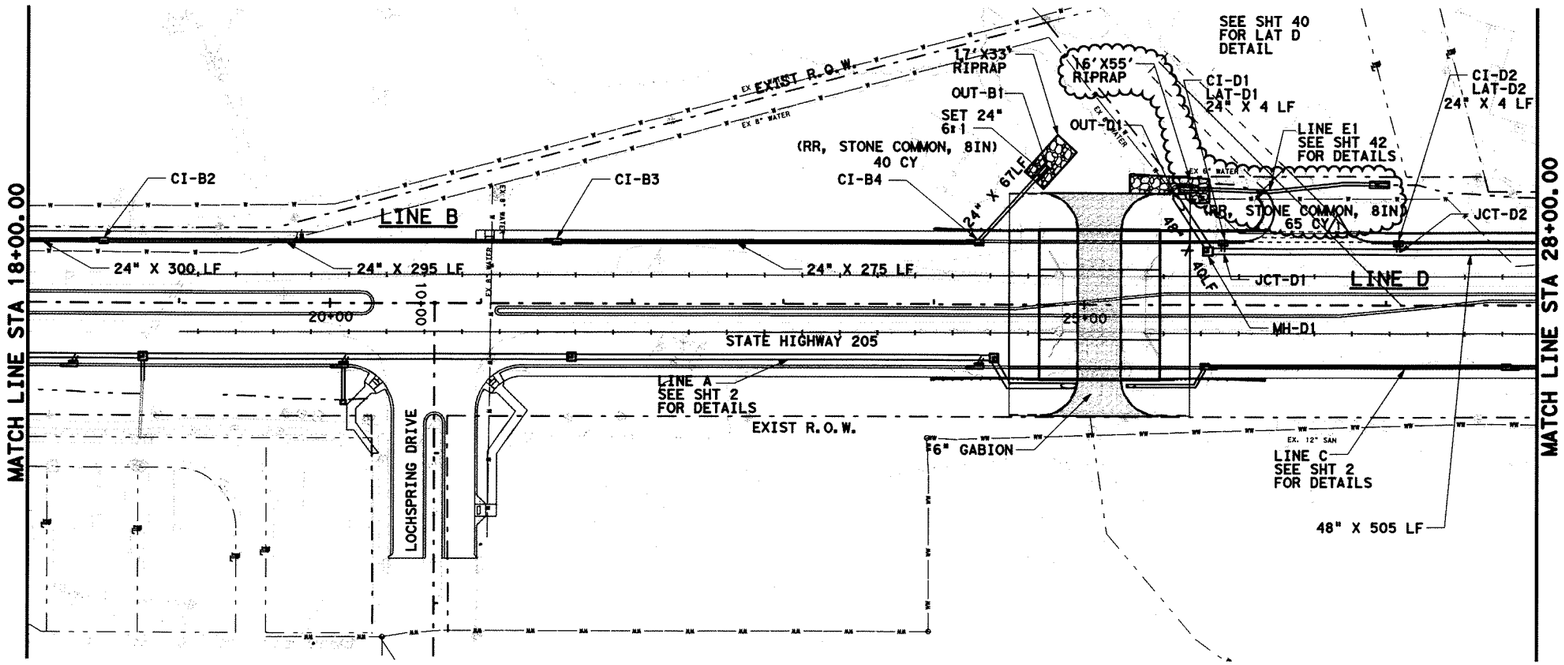
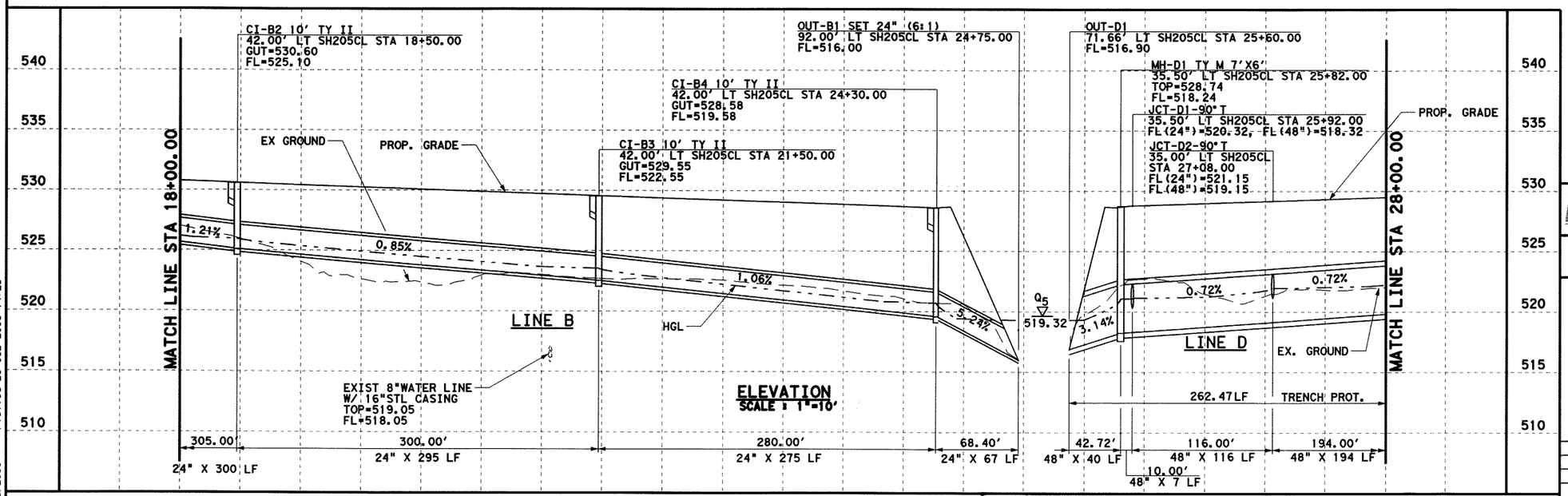


PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

Δ-Change Order #48

⚠ REVISED LINE E1 BY DG - 01/03/2008

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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 18+00 TO 28+00

SHEET 19 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	419A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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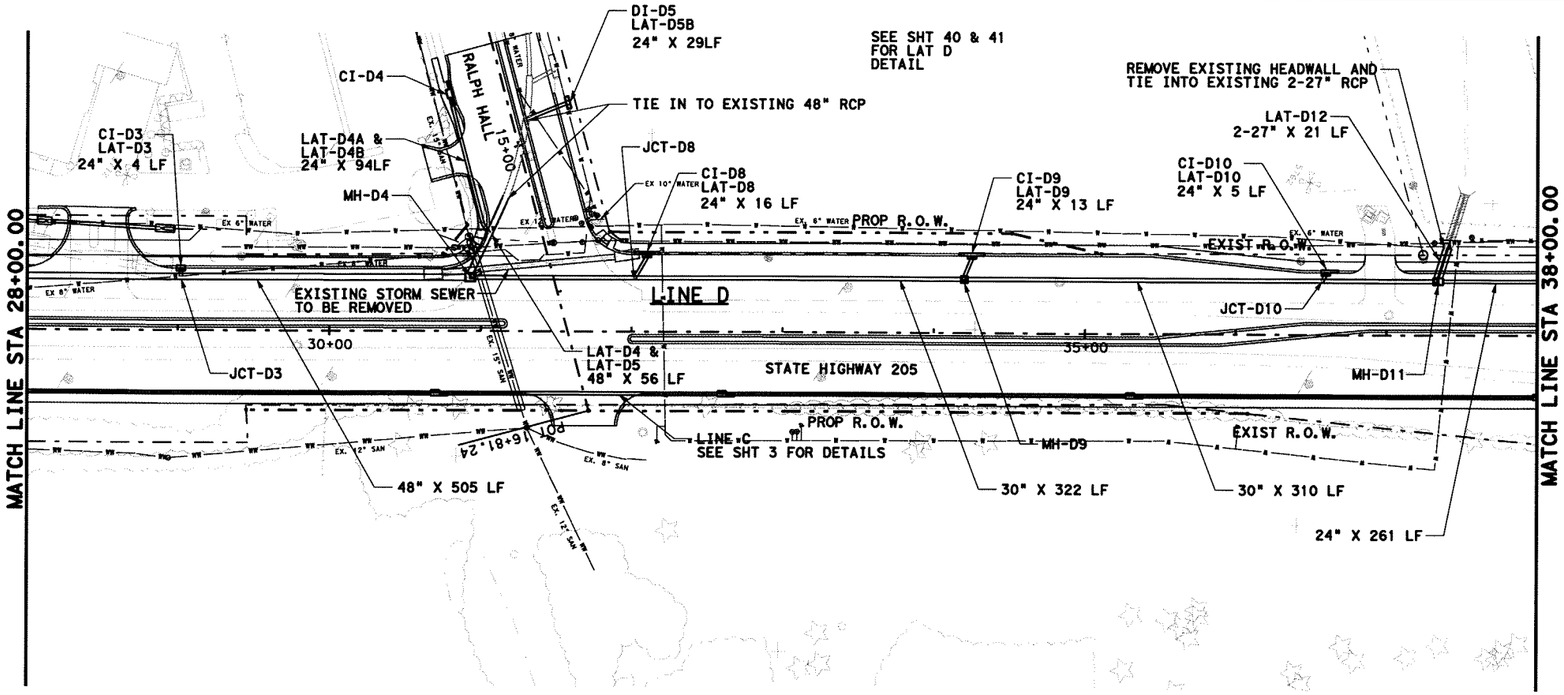
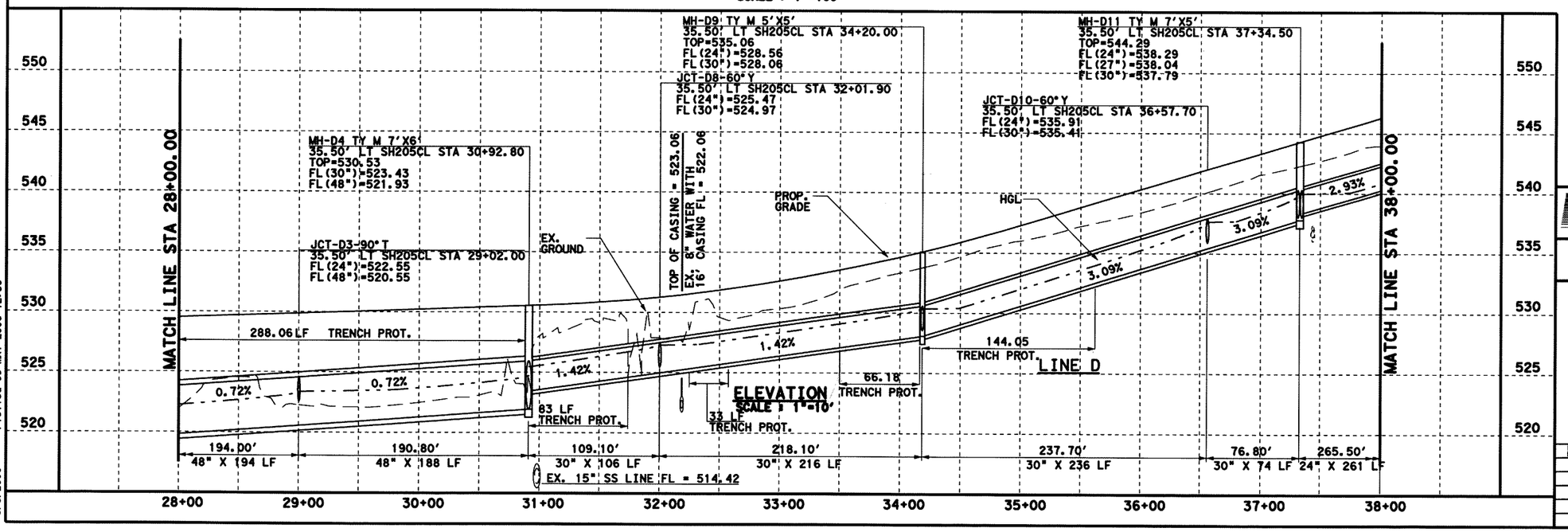
7/28/2008



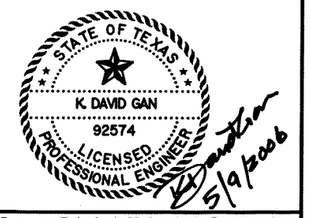


0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.



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SH 205

SOUTHBOUND DRAINAGE

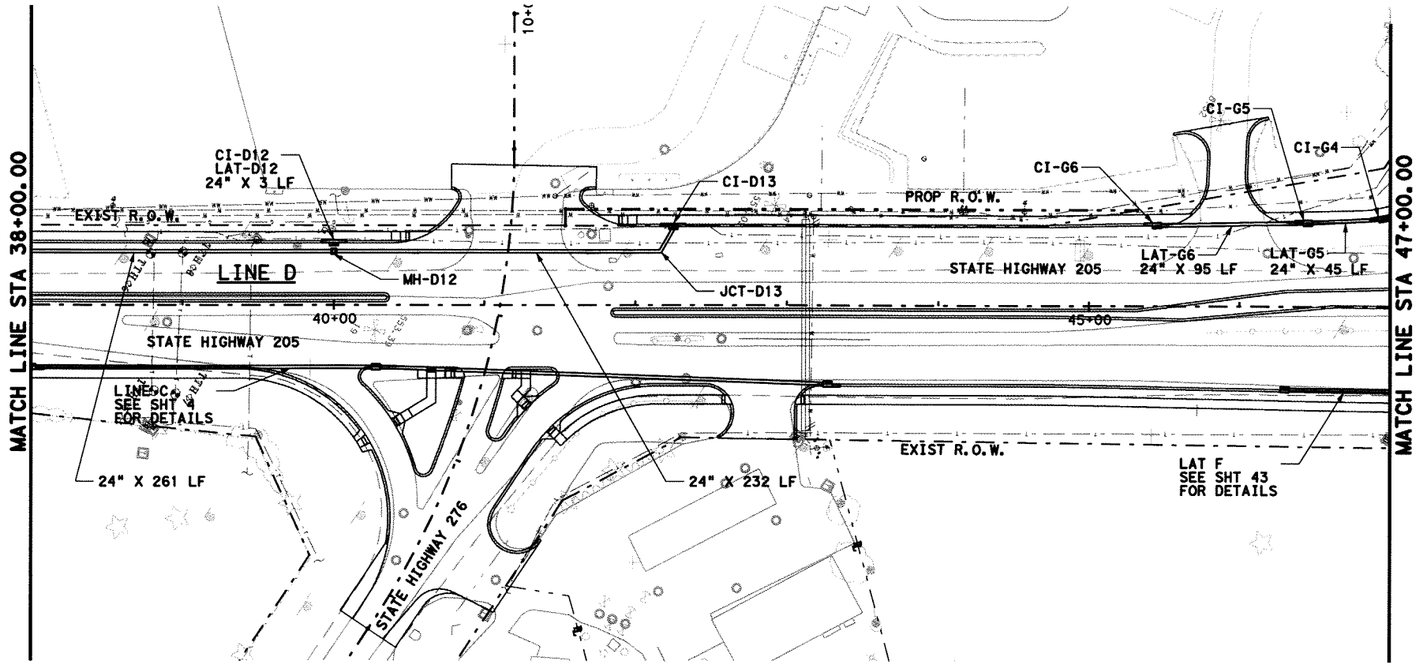
STORM SEWER PLAN & PROFILE
STA 28+00 TO 38+00

SHEET 20 OF 57

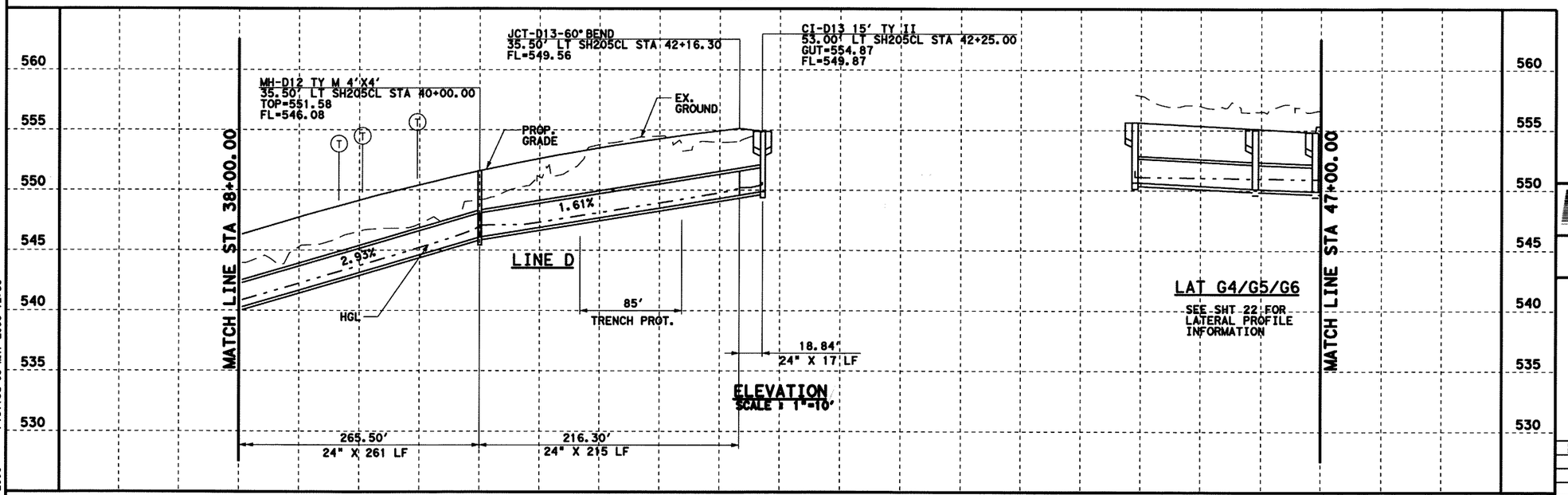
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	420
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=Gr\JOBS\22451C-SH205\Drainage\24510dpS04.dgn, ON=10-11, 13-62
Plotted 09-MAY-2006 12:58
5/9/2006



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 38+00 TO 47+00

SHEET 21 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	421
CONT.	SECT.	JOB	
0451	01	032, ETC	

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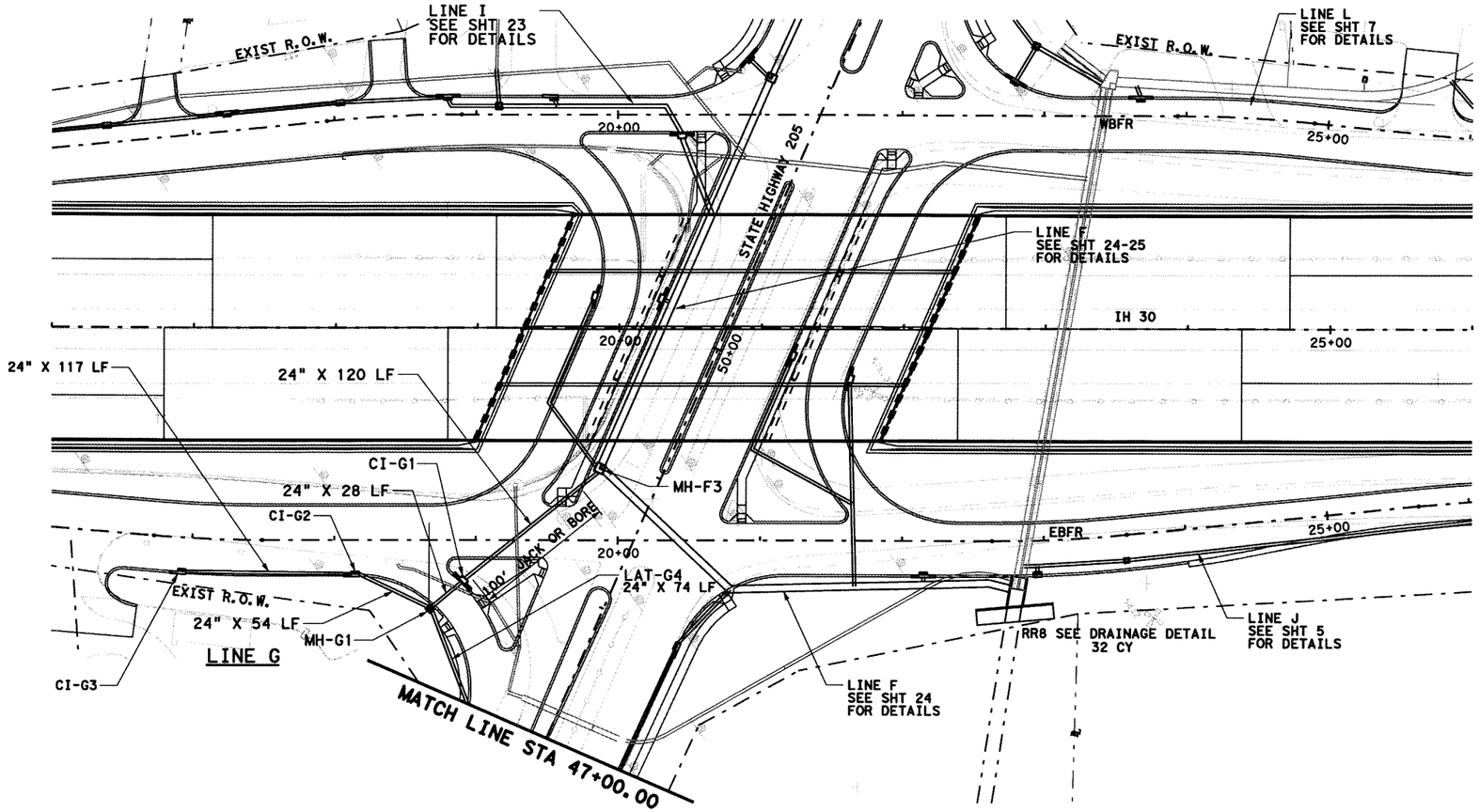
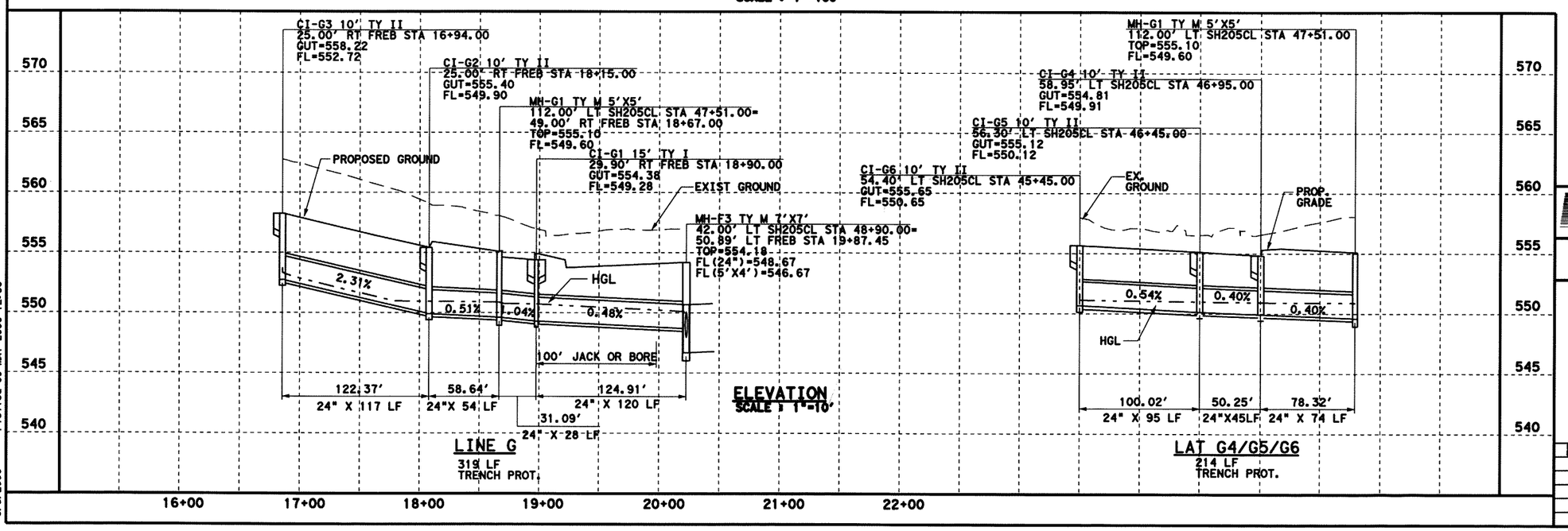


PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

LINE G
319 LF
TRENCH PROT.

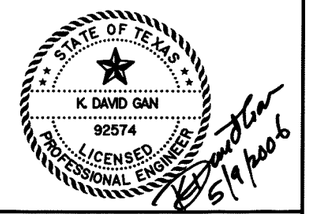
LAT G4/G5/G6
214 LF
TRENCH PROT.

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.



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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
I-30 EBFR STA 16+00 TO 26+00

SHEET 22 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	422
CONT.	SECT.	JOB	
0451	01	032, ETC	

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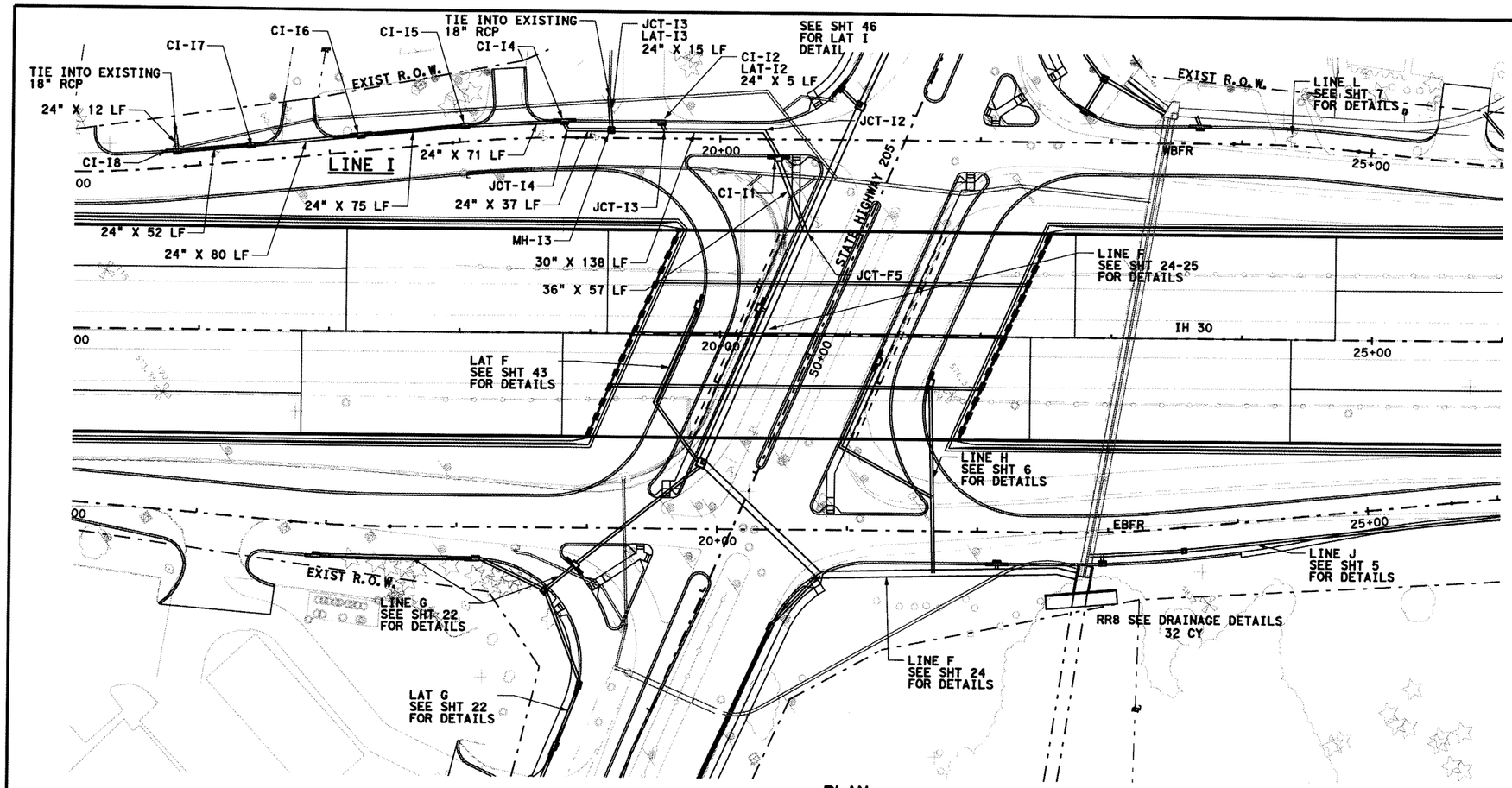
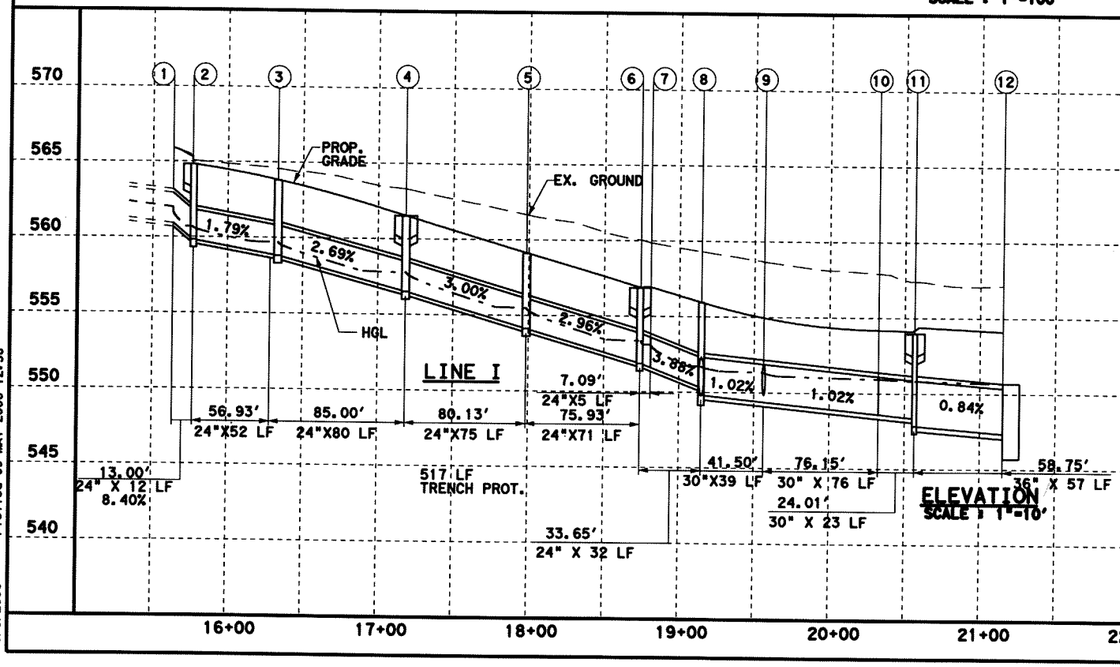
Plotted 09-MAY-2006 12:58



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

1. JCT-I8A-18"(TIE INTO EXIST 18"RCP)
25.00' LT FRWB STA 15+83.00
FL=560.90

2. CI-I8 10' TY II
13.00' LT FRWB STA 15+83.00
GUT=565.20
FL=560.20

3. CI-I7 5' TY II
13.00' LT FRWB STA 16+40.00
GUT=563.79
FL=558.79

4. CI-I6 15' TY II
13.00' LT FRWB STA 17+25.00
GUT=561.50
FL=556.50

5. CI-I5 5' TY II
13.00' LT FRWB STA 18+05.00
GUT=559.10
FL=554.10

6. CI-I4 15' TY II
13.00' LT FRWB STA 18+80.00
GUT=556.85
FL=551.85

7. JCT-I4-60° BEND
6.00' LT FRWB STA 18+82.50
FL=551.60

8. MH I3 TY M 5'X5'
6.00' LT FRWB STA 19+16.10
TOP=555.93
FL(24")=550.29, FL(30")=549.79

9. JCT-I3-60° Y
6.00' LT FRWB STA 19+57.60
FL(30")=549.37
FL(24")=549.87

10. JCT-I2-60° BEND
6.00' LT FRWB STA 20+33.75
FL=548.59

11. CI-I1 15' TY I
13.00' RT FRWB STA 20+45.00
GUT=553.95
FL(30")=549.35, FL(36")=547.85

12. JCT-F5-45° Y
42.00' LT SH205CL STA 50+85.60
FL=547.35

0 50 100
SCALE IN FEET HORIZONTAL

0 5 10
SCALE IN FEET VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
I-30 EBFR STA 16+00 TO 26+00

SHEET 23 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	423
CONT.	SECT.	JOB	
0451	01	032, ETC	

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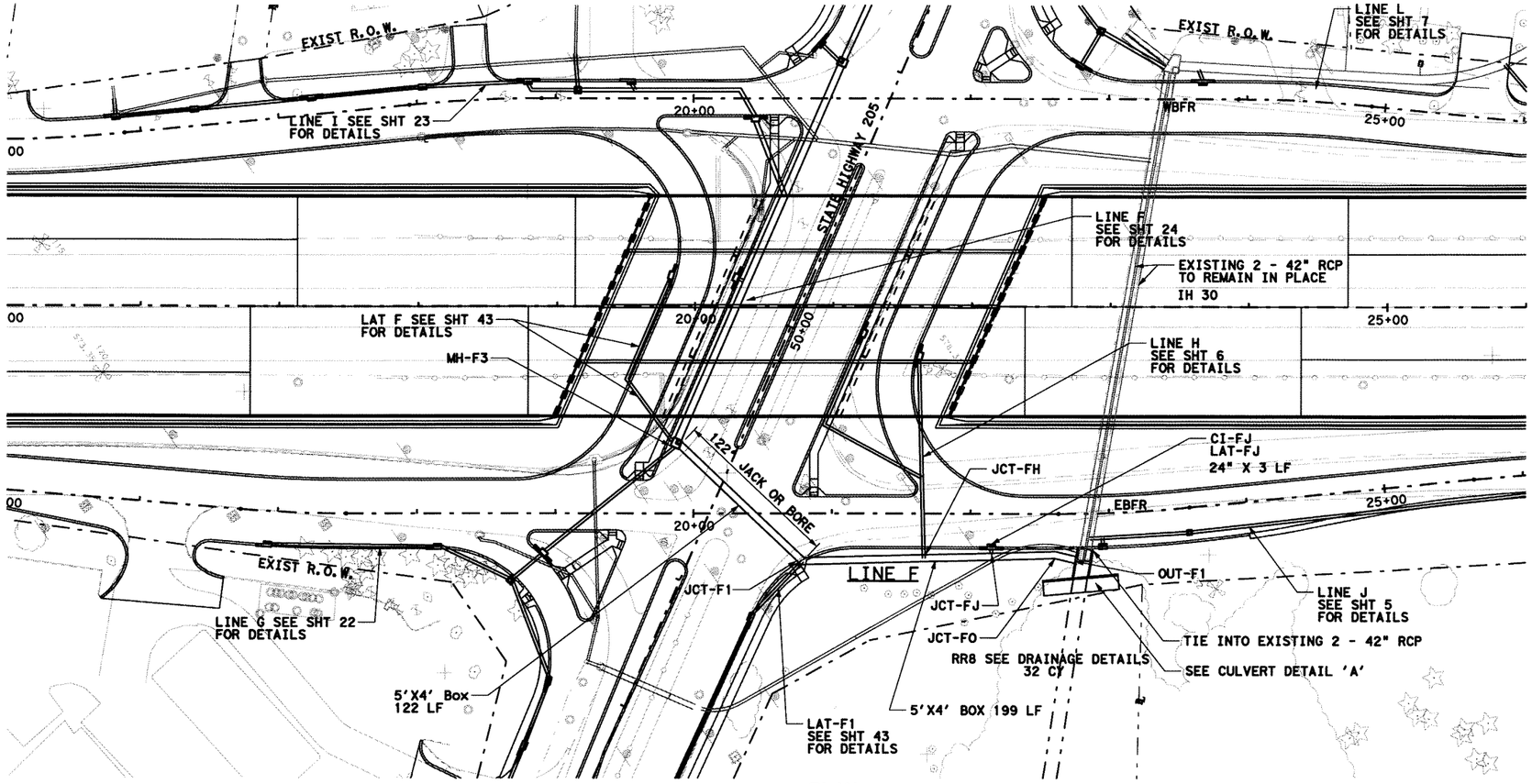
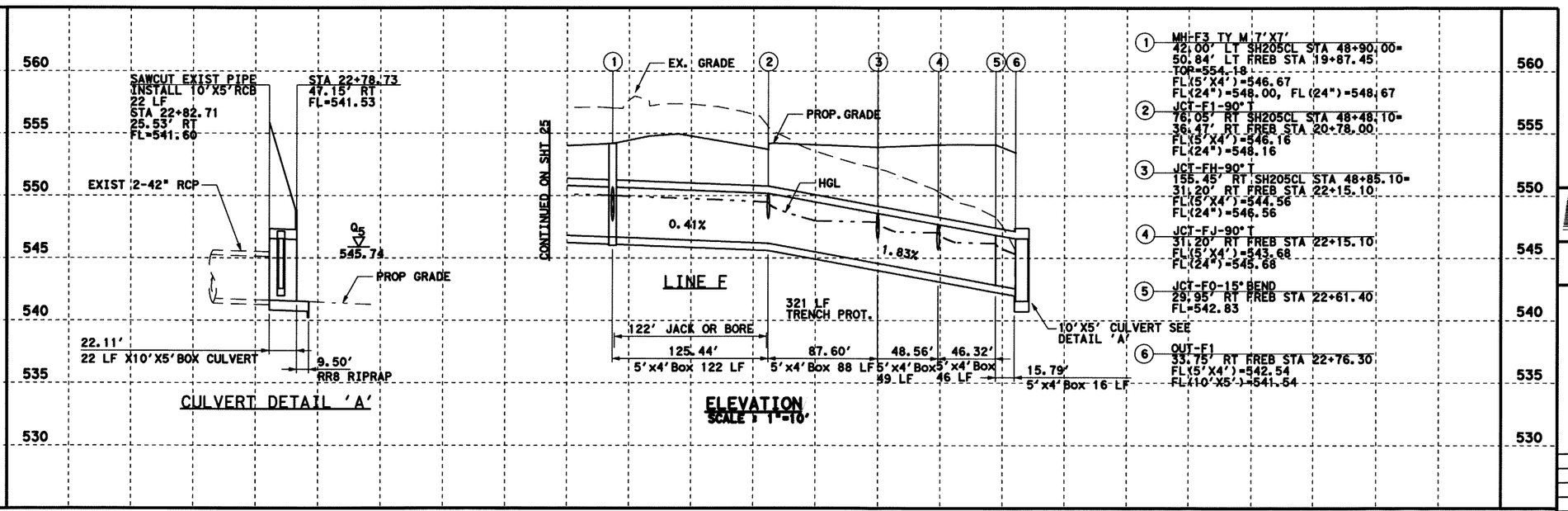
5/9/2006 Plotted 09-MAY-2006 12:58



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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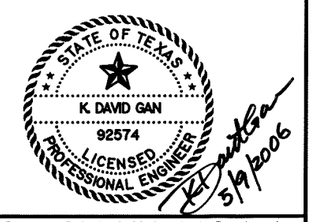

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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
I-30 EBFR STA 16+00 TO 26+00

SHEET 24 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	424
0451	01	032, ETC	

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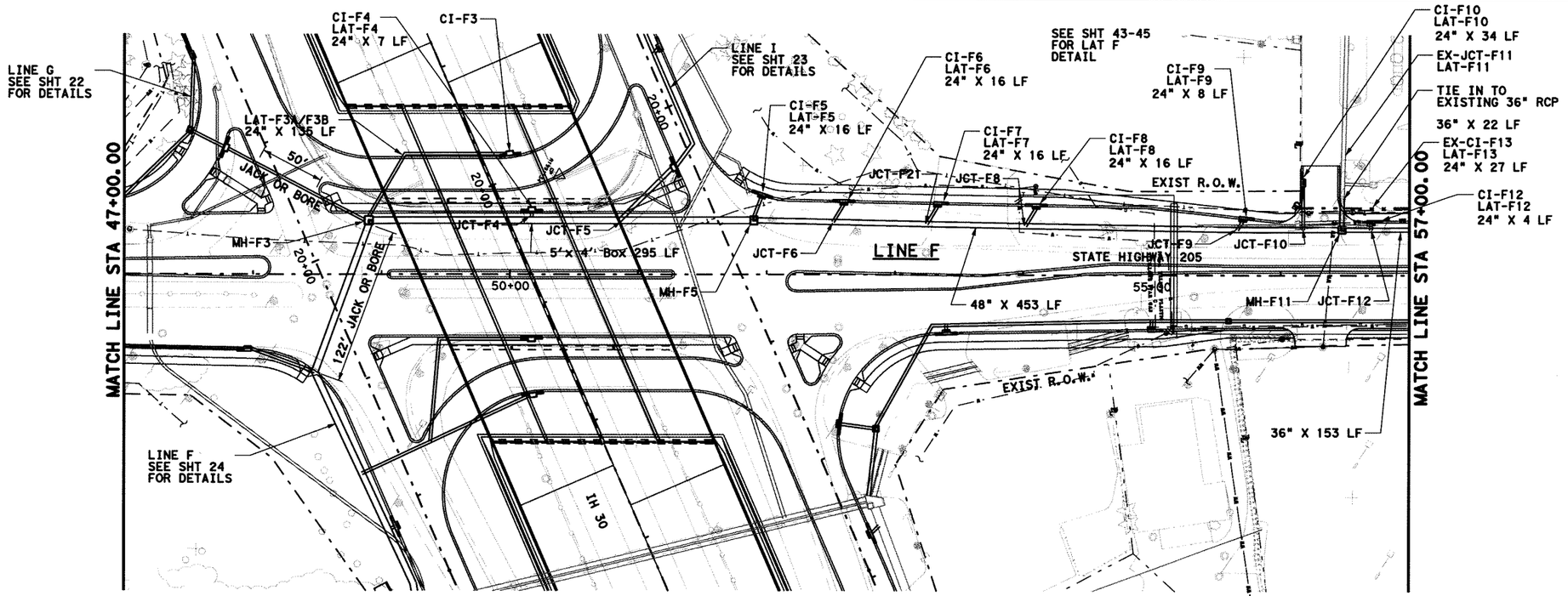


① MH-F3 TY M 7'X7'
42.00' LT SH205CL STA 48+90.00
TOP=554.18
FL(5'X4')=546.67

② JCT-F4 90° T
42.00' LT SH205CL STA 50+17.00
FL(5'X4')=547.12
FL(24")=549.12

③ JCT-F5-45° Y
42.00' LT SH205CL STA 50+85.60
FL(5'X4')=547.35
FL(36")=547.35

④ MH-F5 TY M 7'X6'
42.00' LT SH205CL STA 51+90.00
TOP=554.85
FL(5'X4')=547.69
FL(24")=549.69

⑤ JCT-F6-60° Y
41.00' LT SH205CL STA 52+51.60
FL(48")=548.20
FL(24")=550.20

⑥ JCT-F21-60° Y
39.50' LT SH205CL STA 53+24.60
FL(48")=548.95
FL(24")=550.95

⑦ JCT-F8-60° Y
38.20' LT SH205CL STA 54+01.60
FL(48")=549.65
FL(24")=551.65

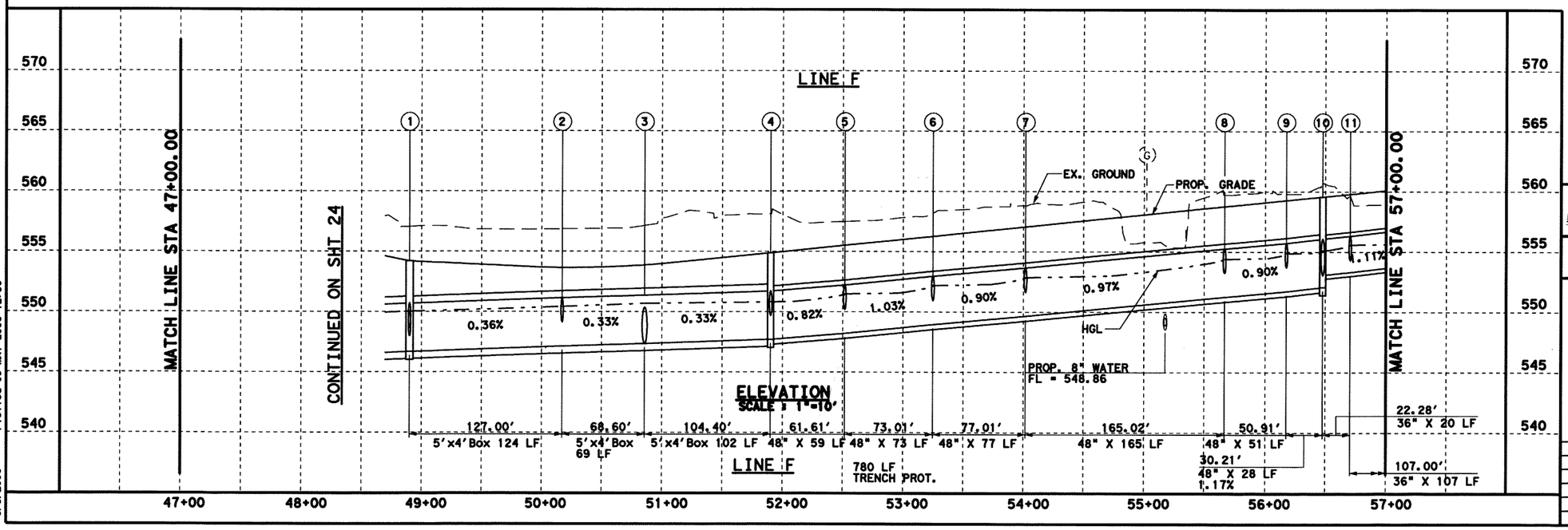
⑧ JCT-F9-90° T
35.50' LT SH205CL STA 55+66.60
FL(48")=551.25
FL(24")=553.25

⑨ JCT-F10-90° T
35.50' LT SH205CL STA 56+17.51
FL(48")=551.71
FL(24")=553.71

⑩ MH F11 TY M 6'X6'
35.50' LT SH205CL STA 56+47.72
TOP=559.56
FL(48")=552.06
FL(36")=553.06

⑪ JCT-F12-90° T
35.50' LT SH205CL STA 56+70.00
FL(36")=553.31
FL(24")=554.31

PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

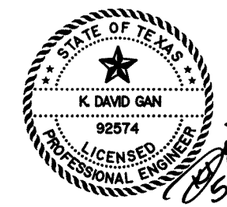
GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN



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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 25 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	425
CONT.	SECT.	JOB	
0451	01	032, ETC	

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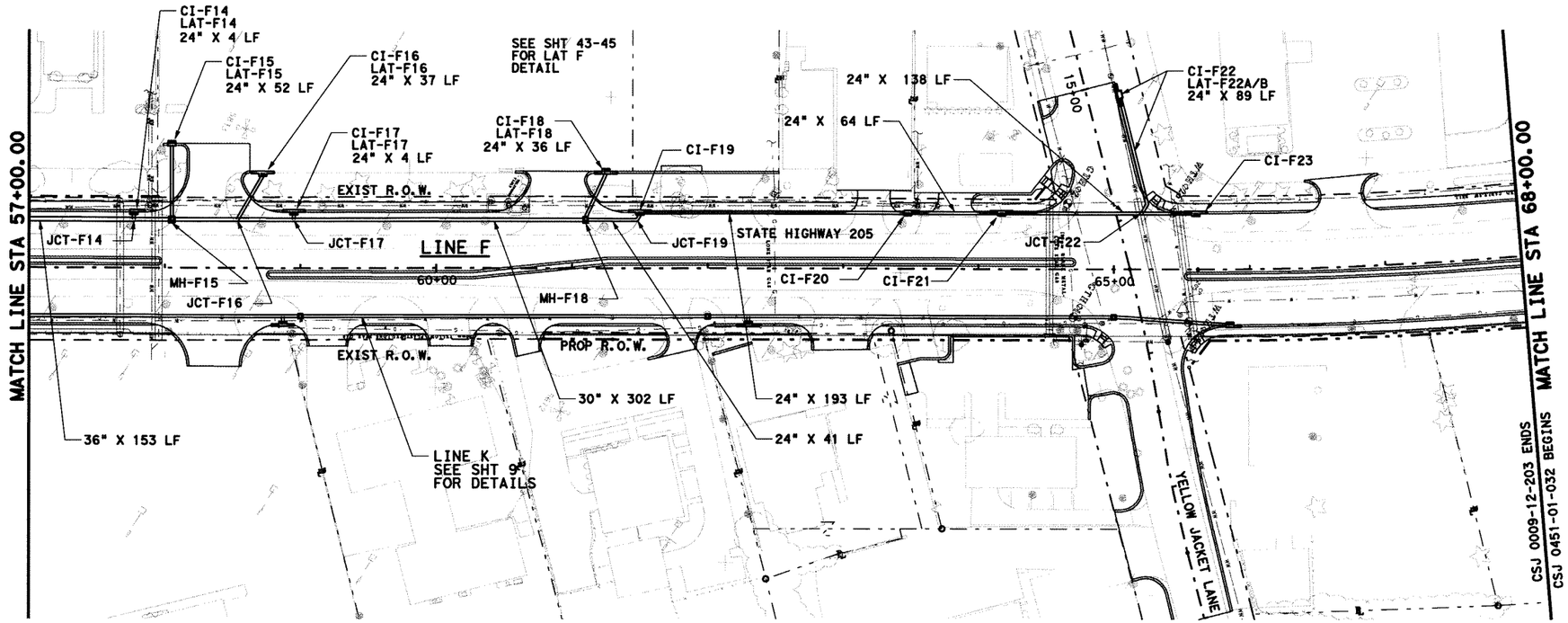
5/9/2006 Plotted 09-MAY-2006 12:58



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

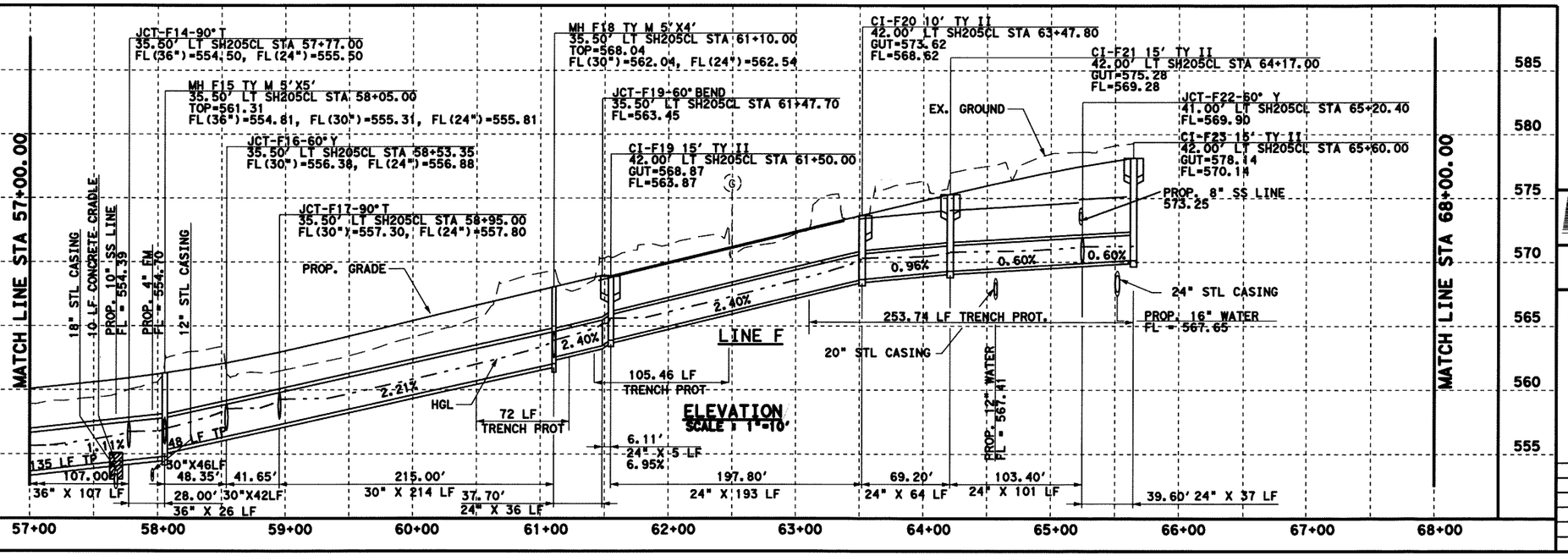
1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

PLAN
SCALE : 1"=100'



STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 57+00 TO 68+00

SHEET 26 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	426
CONT.	SECT.	JOB	
0451	01	032, ETC	

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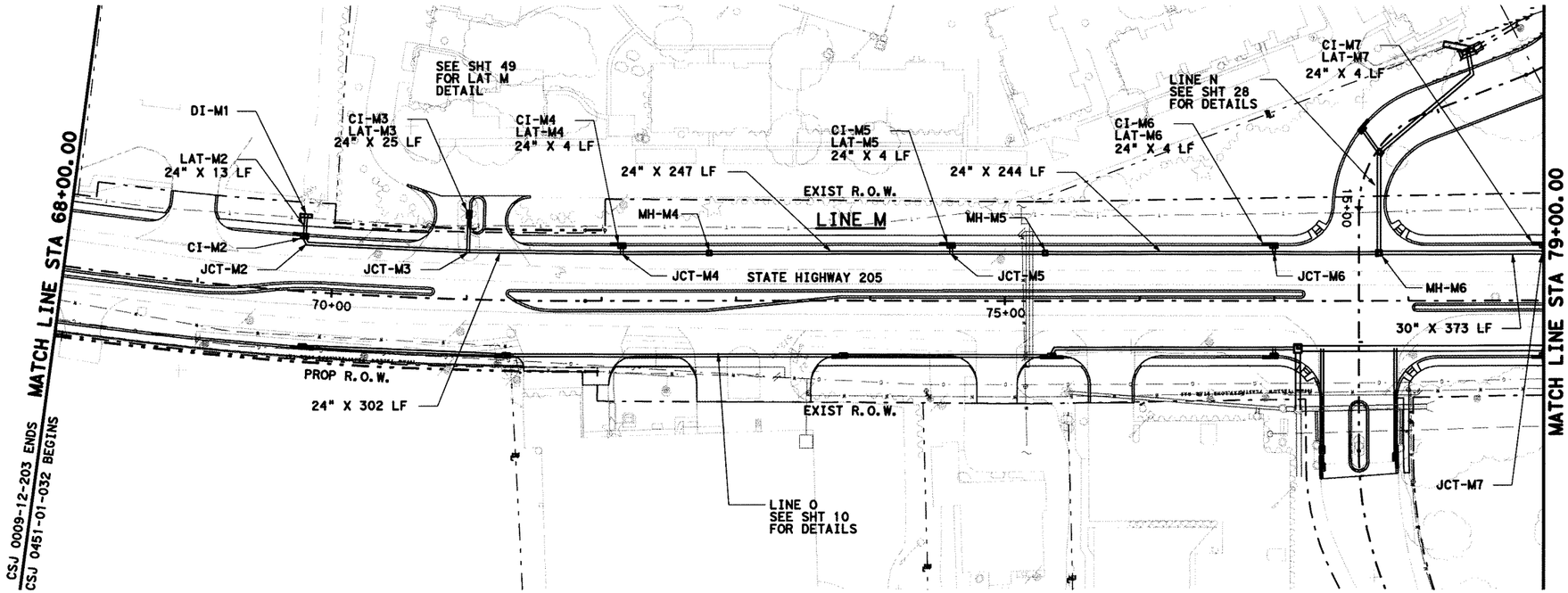


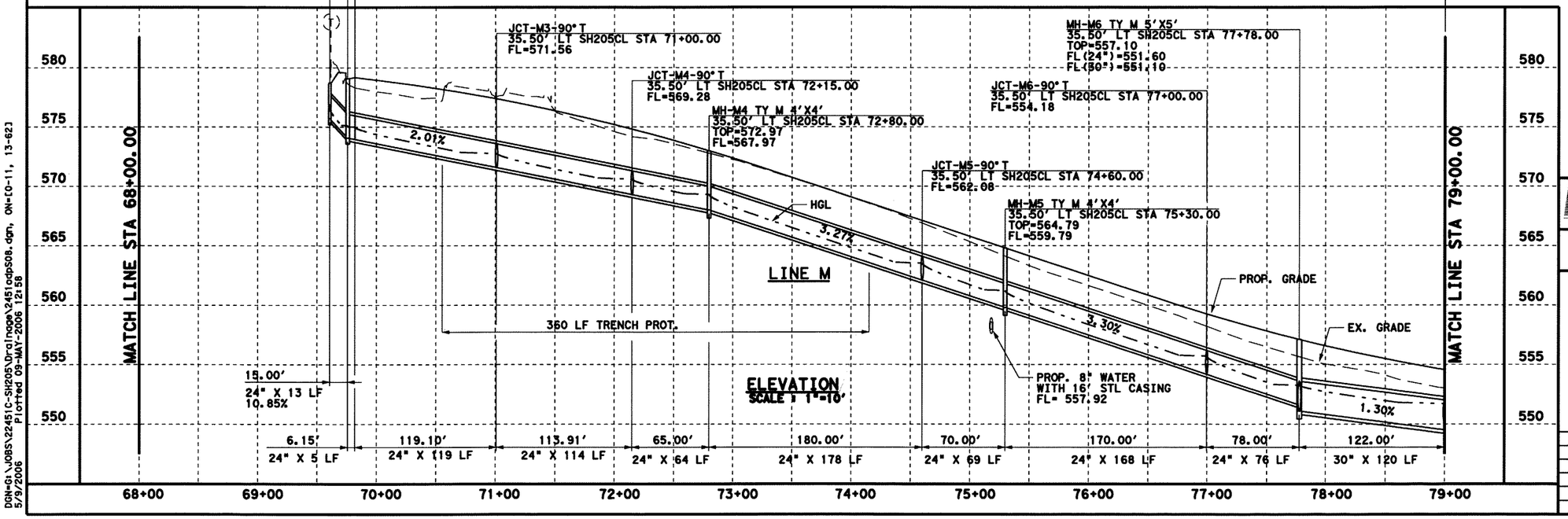
JCT-M2-60° BEND
35.50' LT SH205CL STA 69+79.40
FL=573.95

CI-M2 10' TY II
42.00' LT SH205CL STA 69+77.00
GUT=579.07
FL=574.07

DI-M1 TY E 3-GRATES
56.00' LT SH205CL STA 69+77.00
TOP=578.70
FL=575.70

JCT-M7-90° T
35.50' LT SH205CL STA 79+00.00
FL(24")=550.52
FL(30")=549.52

PLAN
SCALE 1"=100'



ELEVATION
SCALE 1"=10'

0 50 100
SCALE IN FEET HORIZONTAL

0 5 10
SCALE IN FEET VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 68+00 TO 79+00

SHEET 27 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	427
CONT.	SECT.	JOB	
0451	01	032, ETC	

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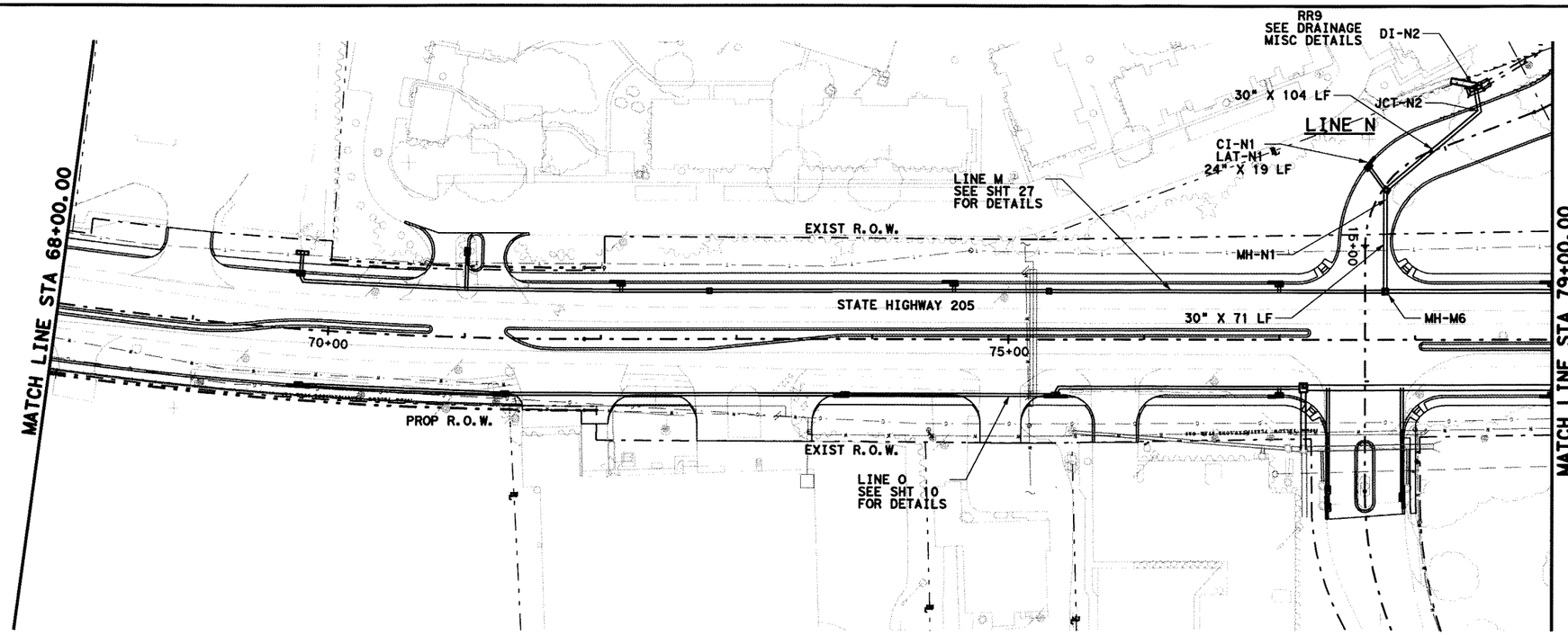
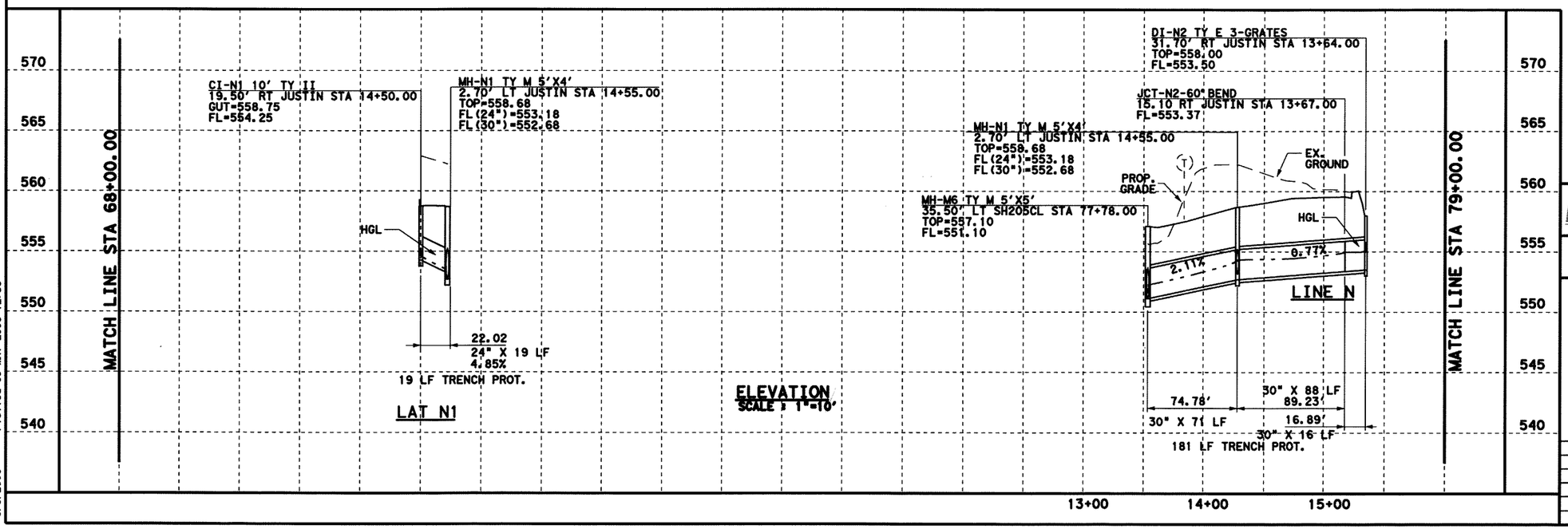
5/9/2006 Plotted 09-MAY-2006 12:58



PLAN
SCALE : 1"=100'



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 68+00 TO 79+00

SHEET 28 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	428
CONT.	SECT.	JOB	
0451	01	032, ETC	

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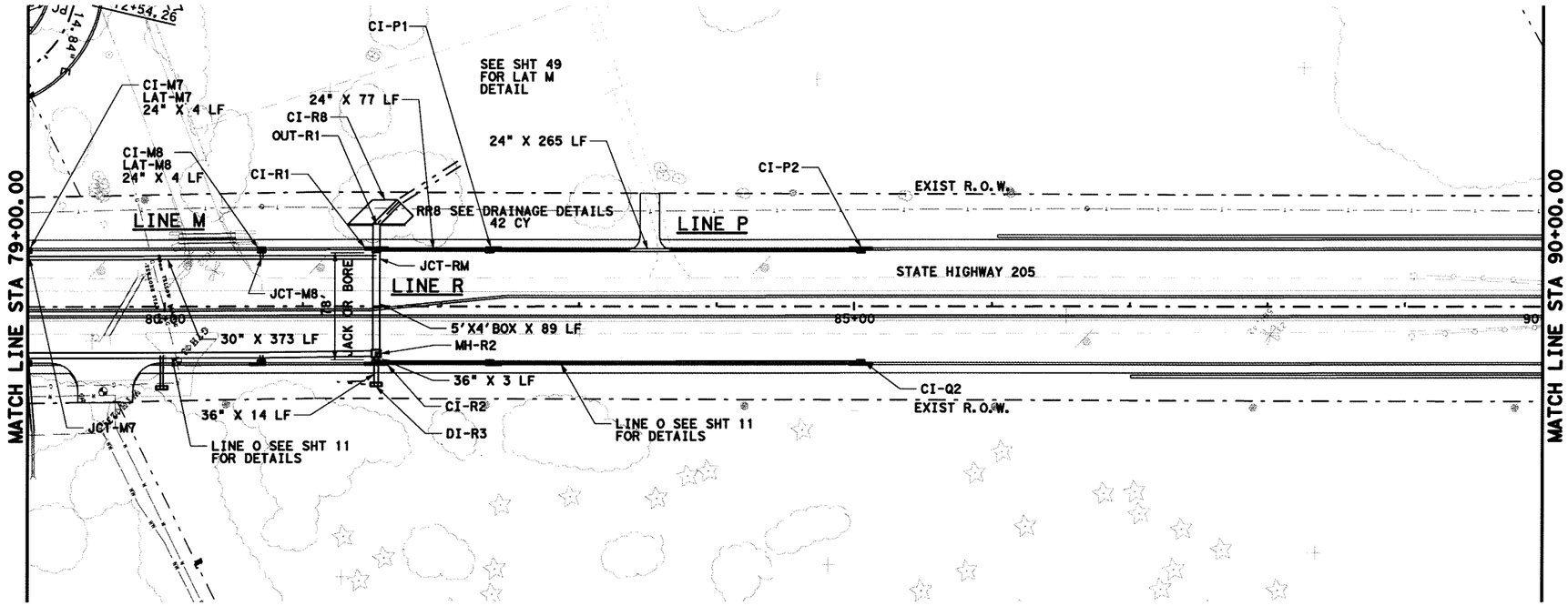
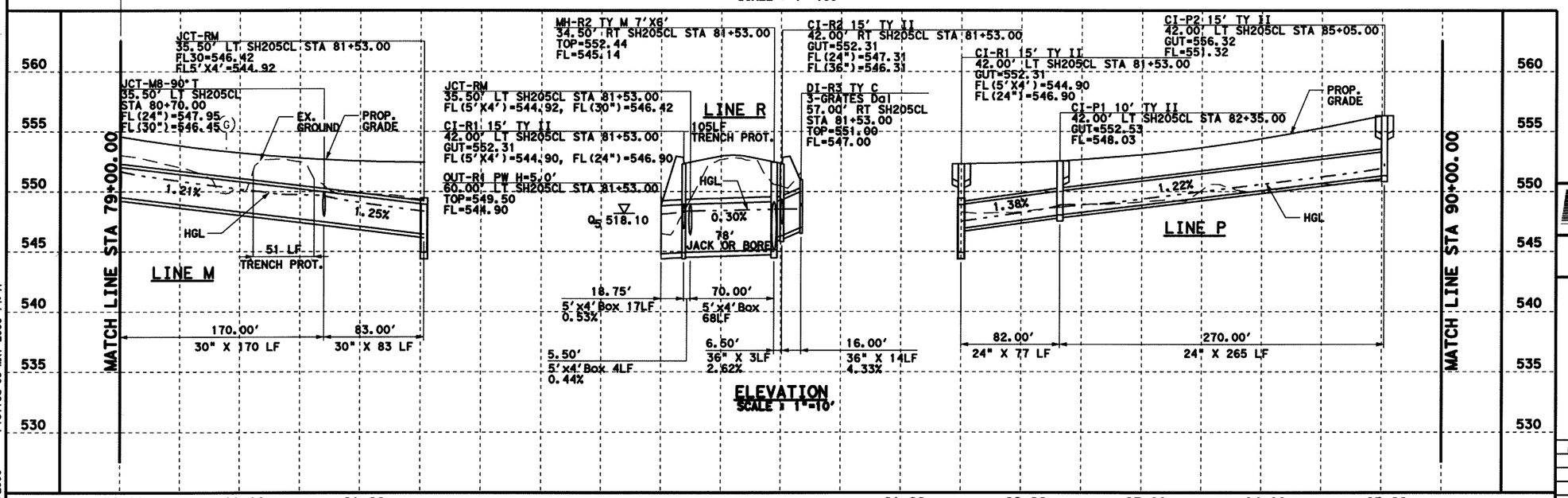


PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET HORIZONTAL

0 5 10
SCALE IN FEET VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

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Suite 1333
Dallas, TX 75207

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 79+00 TO 90+00

SHEET 29 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	429
0451	01	032, ETC	

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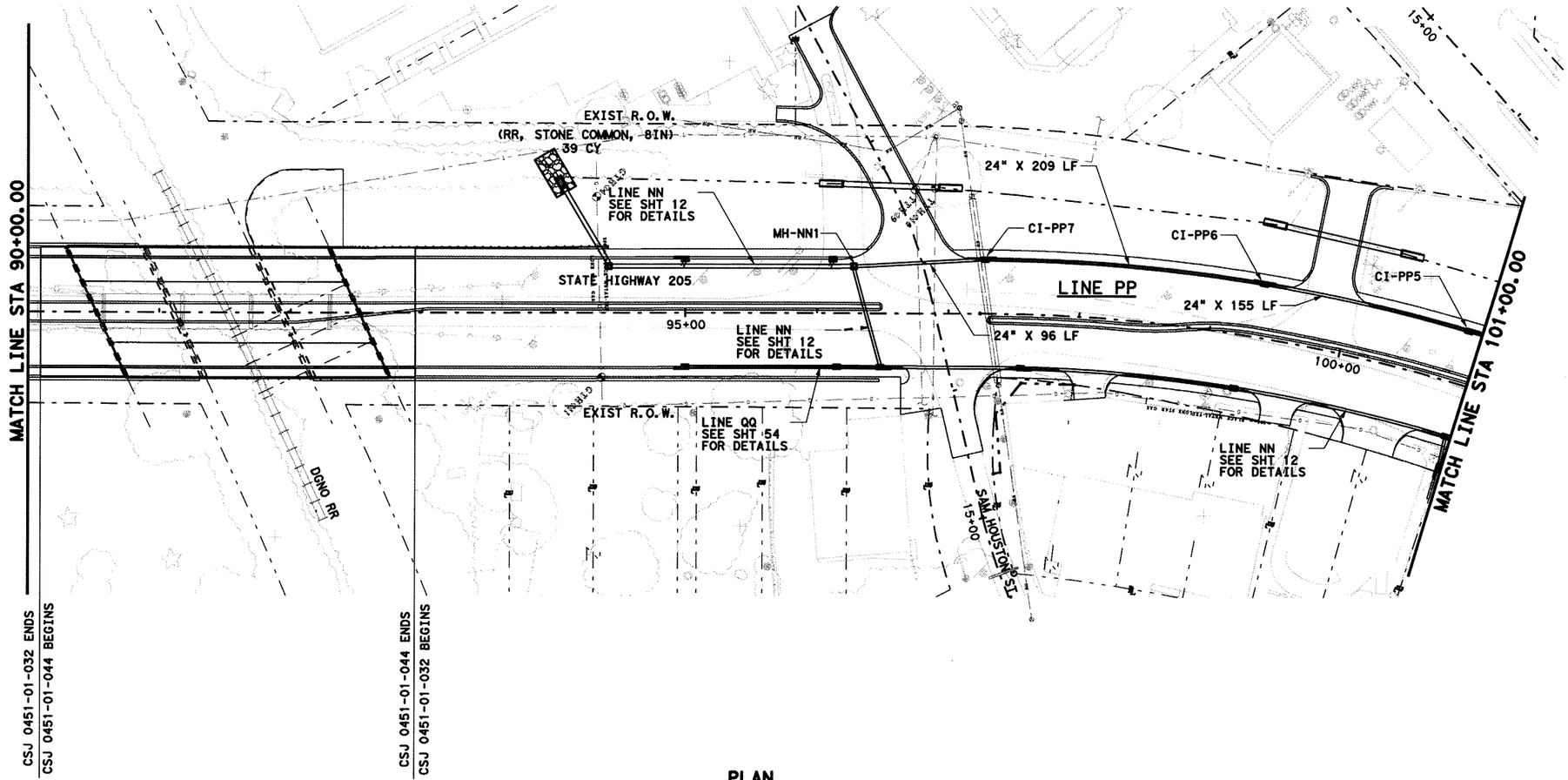
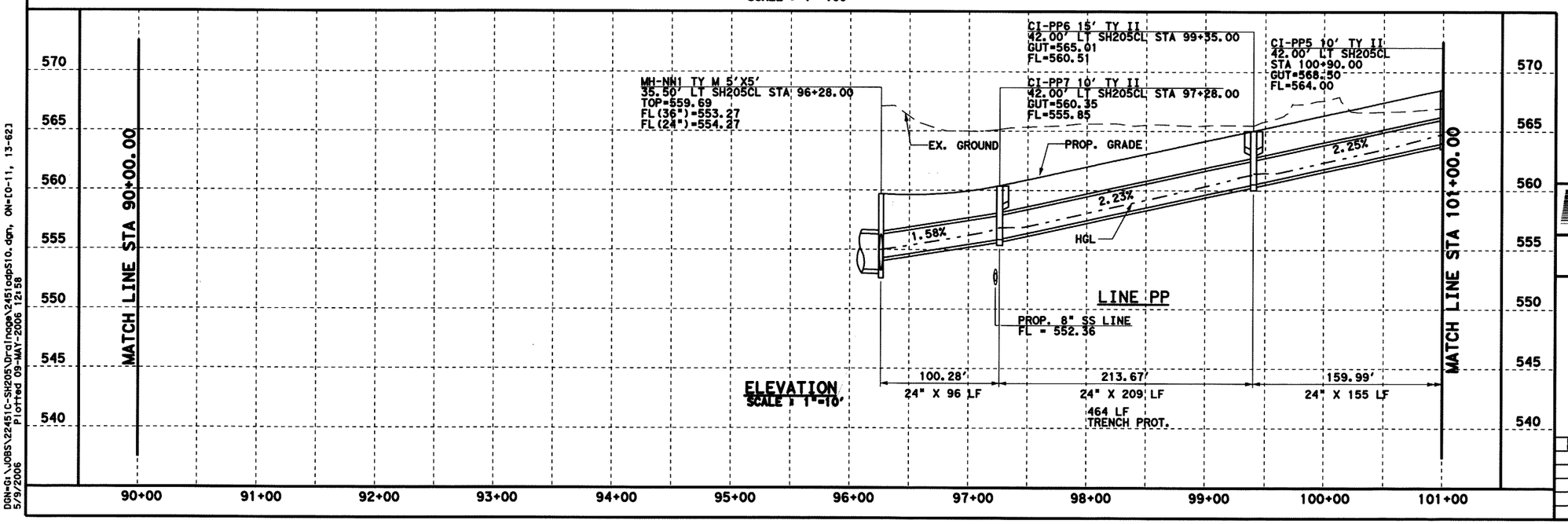
5/9/2006



PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 90+00 TO 101+00

SHEET 30 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	430
CONT.	SECT.	JOB	
0451	01	032, ETC	

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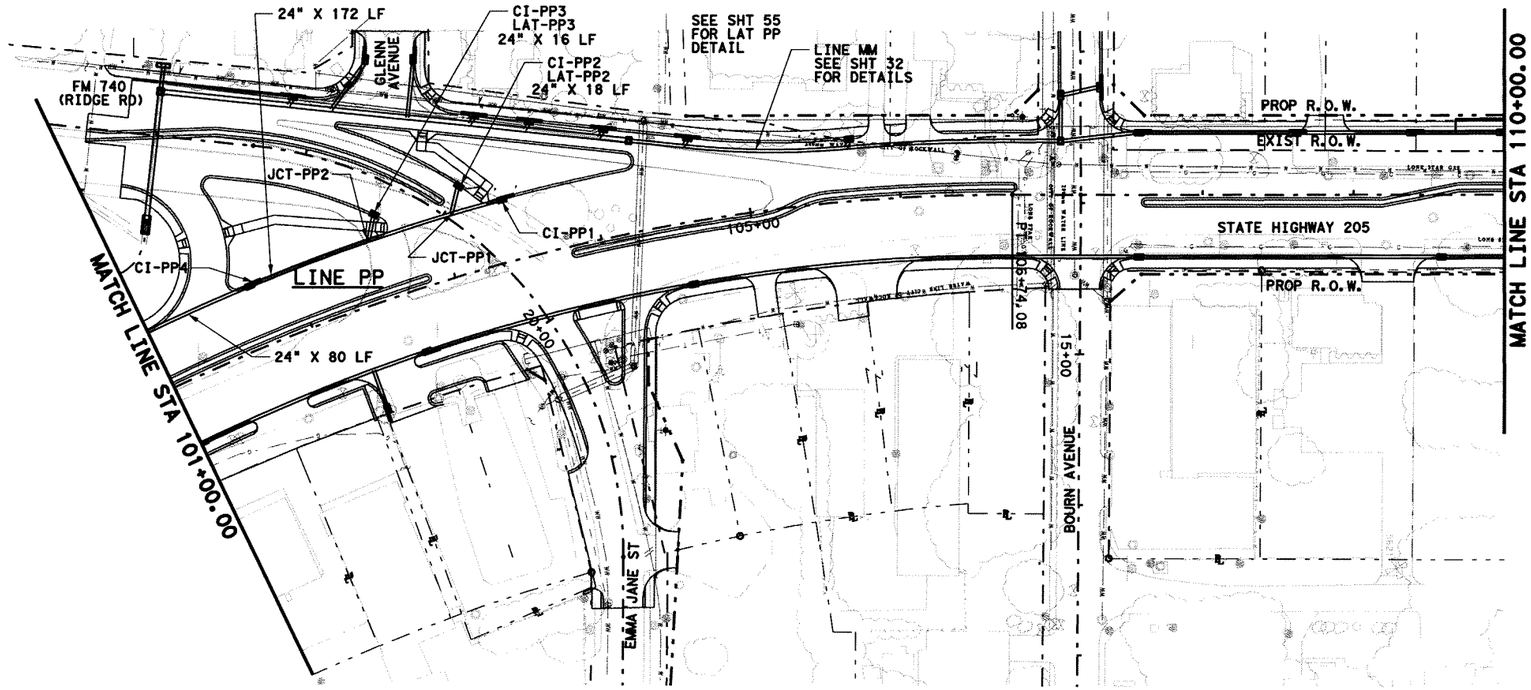
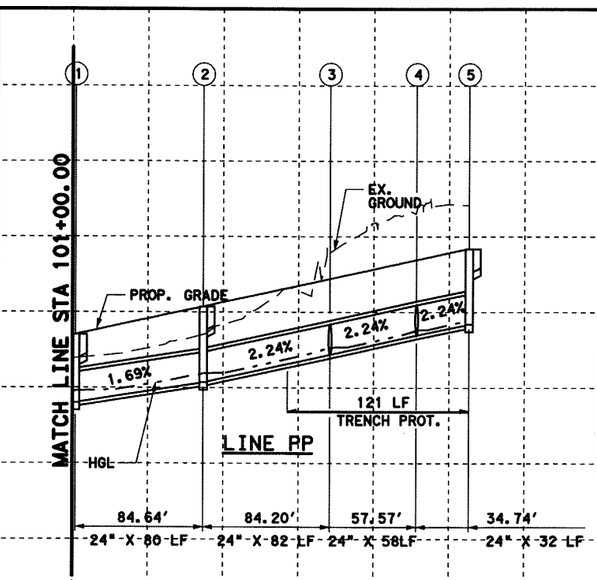


PLAN
SCALE 1"=100'



① CI-PP5 10' TY II
42.00' LT SH205CL STA 100+90.00
GUT=568.50
FL=564.00

② CI-PP4 10' TY II
42.00' LT SH205CL STA 101+72.00
GUT=570.34
FL=565.84

③ JCT-PP2
41.00' LT SH205CL STA 102+53.57
FL=567.17

④ JCT-PP1
41.00' LT SH205CL STA 103+09.34
FL=568.46

⑤ CI-PP1 10' TY II
42.00' LT SH205CL STA 103+43.00
GUT=574.19
FL=569.19

ELEVATION
SCALE 1"=10'

MATCH LINE STA 110+00.00

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 31 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	431
CONT.	SECT.	JOB	
0451	01	032, ETC	

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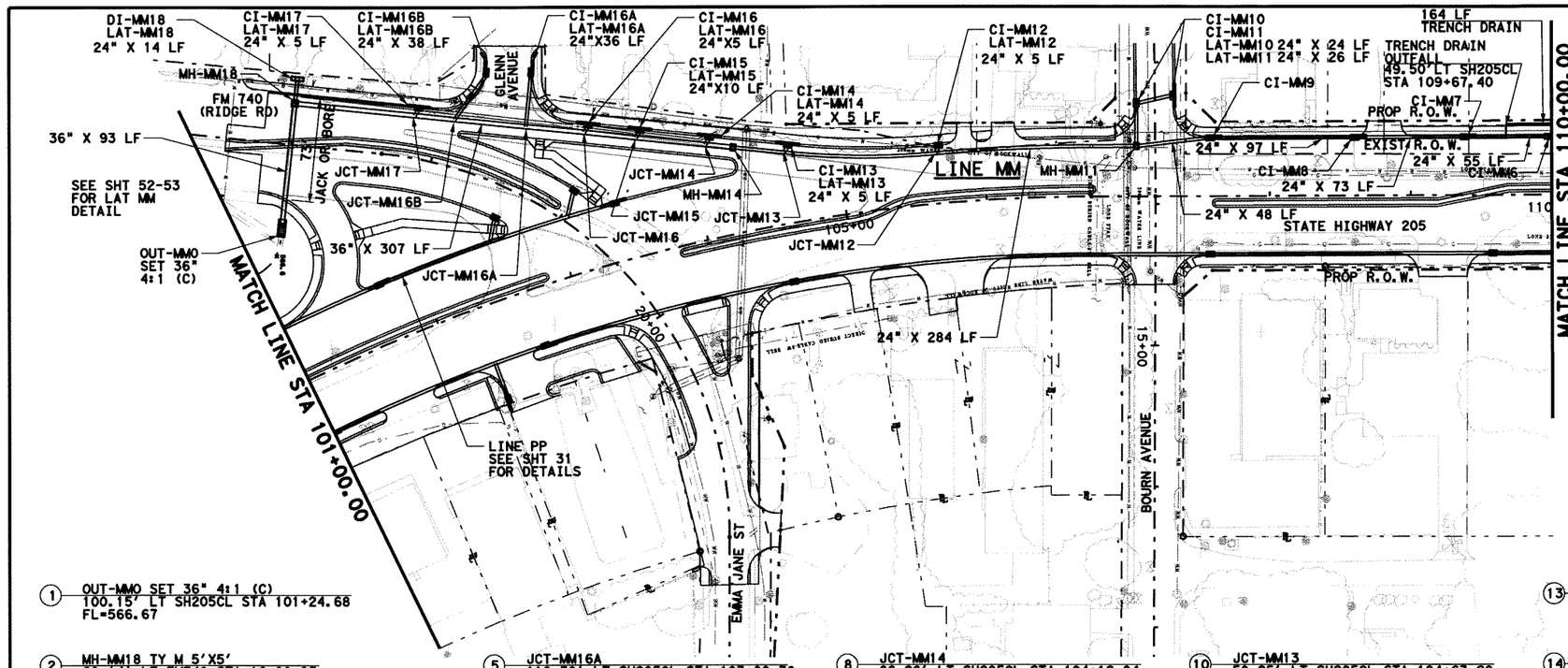


0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.
4. AT EACH TRENCH DRAIN OUTFALL LOCATION, PLACE INLINE CATCH BASIN WITH MIN. DEPTH OF 2.5' AND CONNECT 12" PVC PIPE TO THE NEAREST DRAINAGE STRUCTURE OR PIPE. BID PRICE FOR LF OF TRENCH DRAIN INCLUDES ALL ITEMS AND WORK FOR THE CONSTRUCTION OF THE ENTIRE TRENCH DRAIN SYSTEM.

(1) OUT-MM0 SET 36" 4:1 (C)
100.15' LT SH205CL STA 101+24.68
FL=566.67

(2) MH-MM18 TY M 5'X5'
29.14' LT FM740 STA 16+99.95
TOP=577.84
FL(24")=571.84
FL(36")=567.84

(3) JCT-MM17
29.65' LT FM740 STA 17+83.30
FL(24")=569.16
FL(30")=568.16

(4) JCT-MM16B
130.95' LT SH205CL STA 103+58.00
FL(24")=569.27
FL(36")=568.27

(5) JCT-MM16A
110.50' LT SH205CL STA 103+00.30
FL(24")=569.47
FL(36")=568.47

(6) JCT-MM16
95.00' LT SH205CL STA 103+35.80
FL(24")=569.62
FL(36")=568.62

(7) JCT-MM15
82.15' LT SH205CL STA 103+67.90
FL(24")=569.76
FL(36")=568.76

(8) JCT-MM14
66.26' LT SH205CL STA 104+12.04
FL(24")=569.95
FL(36")=568.95

(9) MH-MM14 TY M 5'X4'
60.30' LT SH205CL STA 104+30.00
TOP=575.78
FL(24")=571.62
FL(36")=569.02

(10) JCT-MM13
50.25' LT SH205CL STA 104+63.20
FL=571.86

(11) JCT-MM12
35.50' LT SH205CL STA 105+66.75
FL(24")=574.35
FL(24")=574.35

(12) MH-MM11 TY M 5'X4'
35.50' LT SH205CL STA 107+06.00
TOP=582.12
FL(24")=577.62
FL(24")=577.62

(13) CI-MM9 10' TY II
42.00' LT SH205CL STA 107+58.00
GUT=582.42
FL=577.92

(14) CI-MM8 10' TY II
42.00' LT SH205CL STA 108+60.00
GUT=582.78
FL=578.28

(15) CI-MM7 10' TY II
42.00' LT SH205CL STA 109+38.00
GUT=583.08
FL=578.58

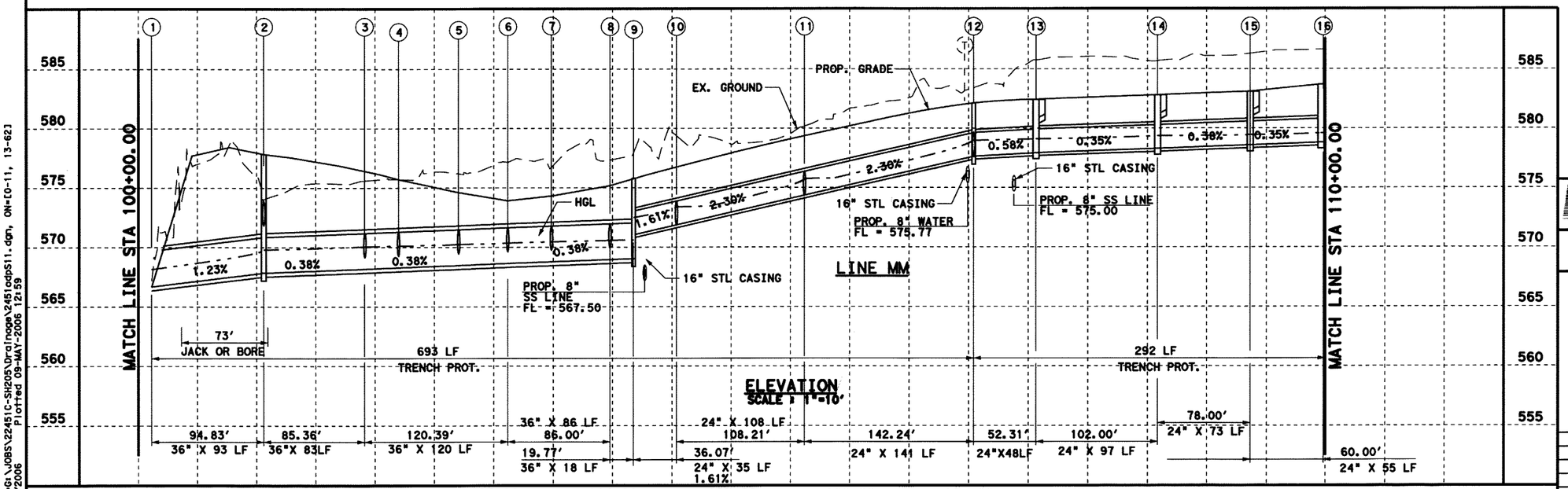
(16) CI-MM6 5' TY II
42.00' LT SH205CL STA 109+98.00
GUT=583.69
FL=578.79

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

PLAN
SCALE : 1"=100'



ELEVATION
SCALE : 1"=10'

K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
5/9/2006

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Dallas, TX 75207

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 32 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	432
CONT.	SECT.	JOB	
0451	01	032, ETC	

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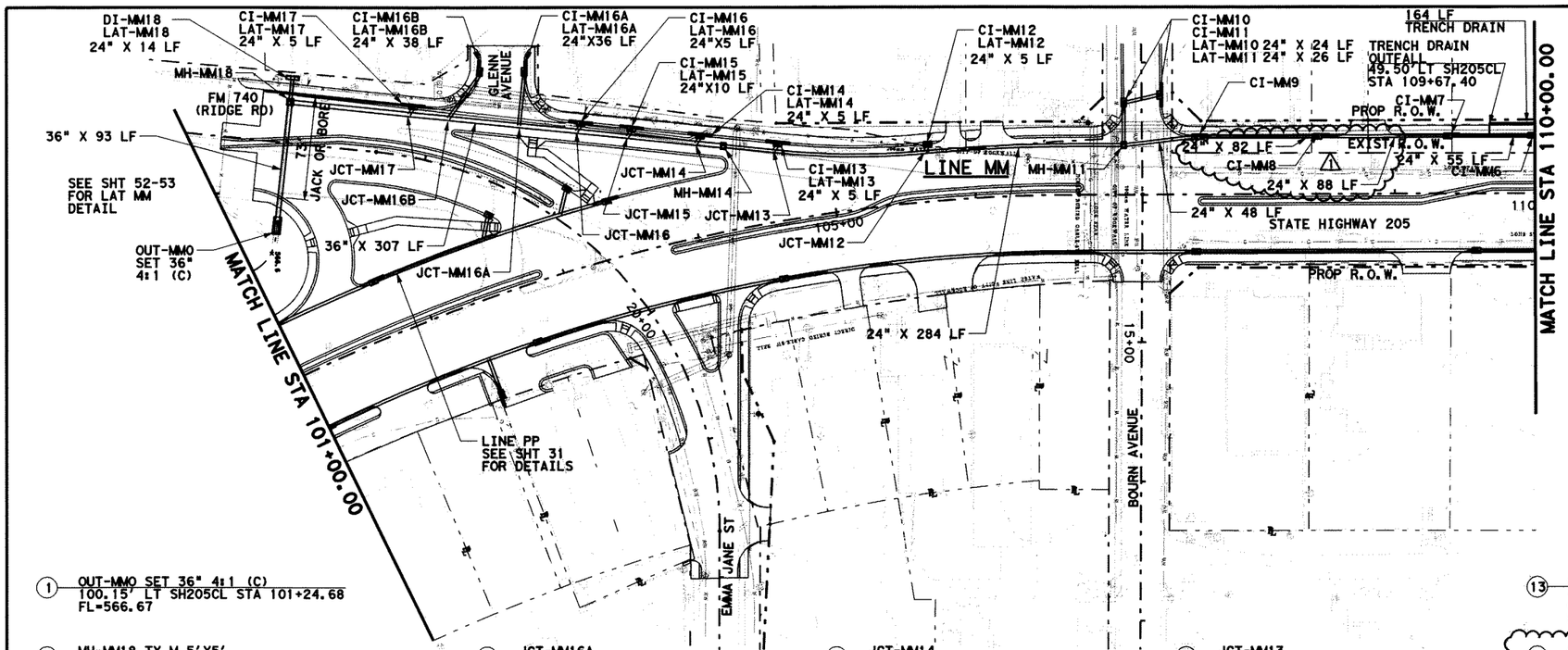
5/9/2006



① OUT-MM0 SET 36" 4:1 (C)
100.15' LT SH205CL STA 101+24.68
FL=566.67

② MH-MM18 TY M 5'X5'
29.14' LT FM740 STA 16+99.95
TOP=577.84
FL (24")=571.84
FL (36")=567.84

③ JCT-MM17
29.65' LT FM740 STA 17+83.30
FL (24")=569.16
FL (30")=568.16

④ JCT-MM16B
130.95' LT SH205CL STA 103+58.00
FL (24")=569.27
FL (36")=568.27

⑤ JCT-MM16A
110.50' LT SH205CL STA 103+00.30
FL (24")=569.47
FL (36")=568.47

⑥ JCT-MM16
95.00' LT SH205CL STA 103+35.80
FL (24")=569.62
FL (36")=568.62

⑦ JCT-MM15
82.15' LT SH205CL STA 103+67.90
FL (24")=569.76
FL (36")=568.76

⑧ JCT-MM14
66.26' LT SH205CL STA 104+12.04
FL (24")=569.95
FL (36")=568.95

⑨ MH-MM14 TY M 5'X4'
60.30' LT SH205CL STA 104+30.00
TOP=575.78
FL (24")=571.62
FL (36")=569.02

PLAN
SCALE : 1"=100'

⑩ JCT-MM13
50.25' LT SH205CL STA 104+63.20
FL=571.86

⑪ JCT-MM12
35.50' LT SH205CL STA 105+66.75
FL (24")=574.35
FL (24")=574.35

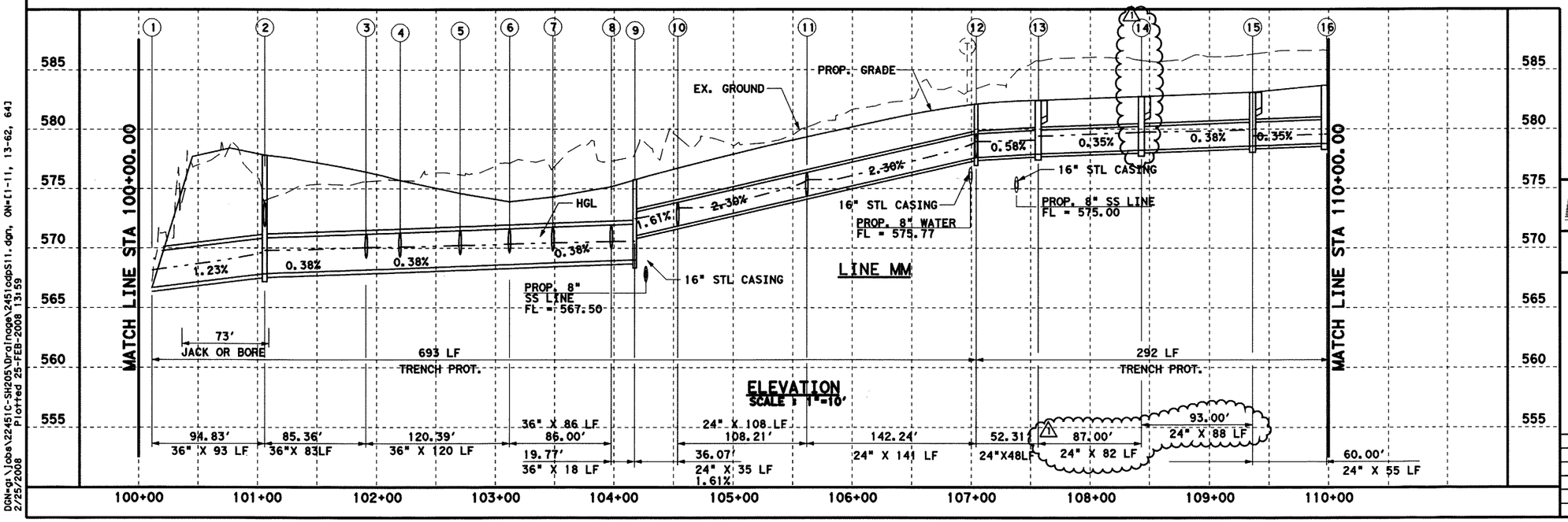
⑫ MH-MM11 TY M 5'X4'
35.50' LT SH205CL STA 107+06.00
TOP=582.12
FL (24")=577.62
FL (24")=577.62

⑬ CI-MM9 10' TY II
42.00' LT SH205CL STA 107+58.00
GUT=582.42
FL=577.92

⑭ CI-MM8 10' TY II
42.00' LT SH205CL STA 108+45.00
GUT=582.73
FL=578.23

⑮ CI-MM7 10' TY II
42.00' LT SH205CL STA 109+38.00
GUT=583.08
FL=578.58

⑯ CI-MM6 5' TY II
42.00' LT SH205CL STA 109+98.00
GUT=583.69
FL=578.79



ELEVATION
SCALE : 1"=10'

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.
4. AT EACH TRENCH DRAIN OUTFALL LOCATION, PLACE INLINE CATCH BASIN WITH MIN. DEPTH OF 2.5' AND CONNECT 12" PVC PIPE TO THE NEAREST DRAINAGE STRUCTURE OR PIPE. BID PRICE FOR LF OF TRENCH DRAIN INCLUDES ALL ITEMS AND WORK FOR THE CONSTRUCTION OF THE ENTIRE TRENCH DRAIN SYSTEM.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
2/25/08

⚠1 MOVED CURB INLET 15' SOUTH FOR DRWY - KDG - 02-25-2008

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 32 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	432A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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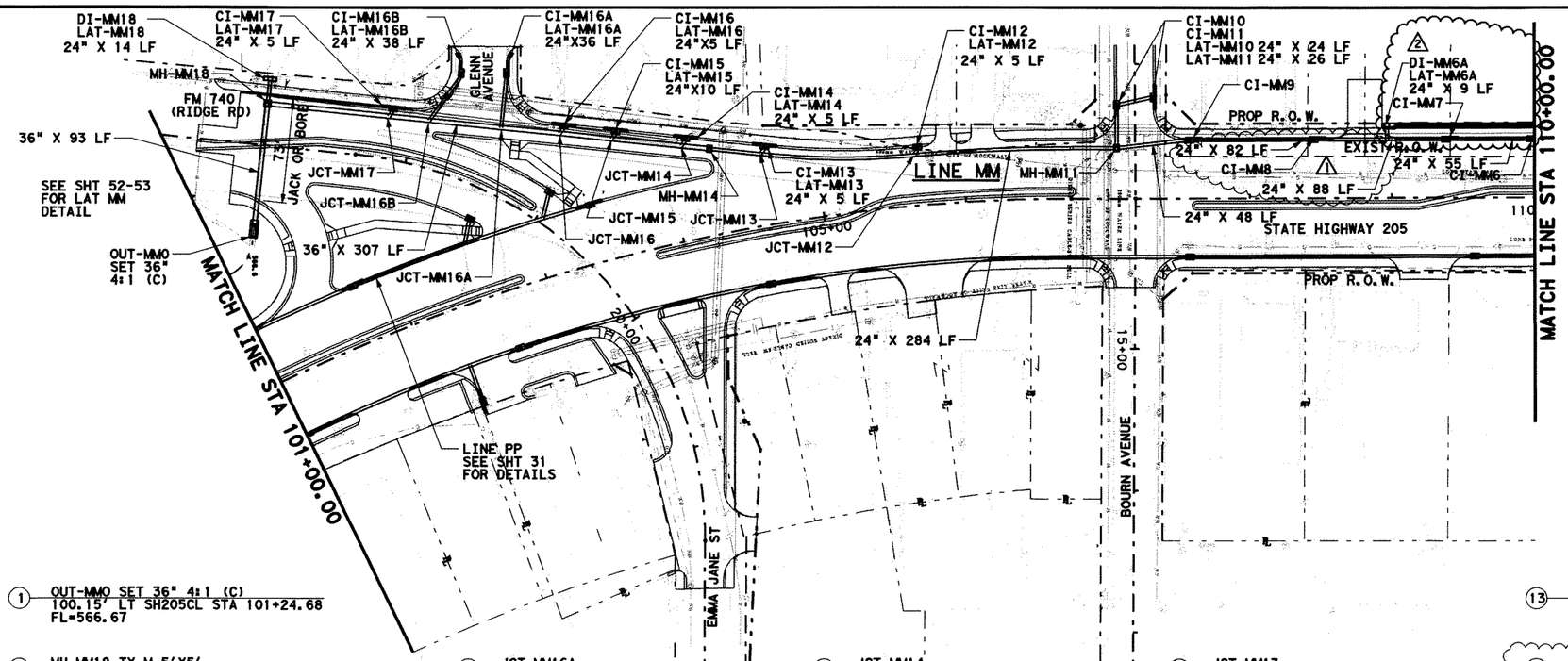
2/25/2008



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.
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(1) OUT-MM0 SET 36" 4:1 (C)
100.15' LT SH205CL STA 101+24.68
FL=566.67

(2) MH-MM18 TY M 5'X5'
29.14' LT FM740 STA 16+99.95
TOP=577.84
FL(24")=571.84
FL(36")=567.84

(3) JCT-MM17
29.65' LT FM740 STA 17+83.30
FL(24")=569.16
FL(30")=568.16

(4) JCT-MM16B
130.95' LT SH205CL STA 103+58.00
FL(24")=569.27
FL(36")=568.27

(5) JCT-MM16A
110.50' LT SH205CL STA 103+00.30
FL(24")=569.47
FL(36")=568.47

(6) JCT-MM16
95.00' LT SH205CL STA 103+35.80
FL(24")=569.62
FL(36")=568.62

(7) JCT-MM15
82.15' LT SH205CL STA 103+67.90
FL(24")=569.76
FL(36")=568.76

(8) JCT-MM14
66.26' LT SH205CL STA 104+12.04
FL(24")=569.95
FL(36")=568.95

(9) MH-MM14 TY M 5'X4'
60.30' LT SH205CL STA 104+30.00
TOP=575.78
FL(24")=571.62
FL(36")=569.02

(10) JCT-MM13
50.25' LT SH205CL STA 104+63.20
FL=571.86

(11) JCT-MM12
35.50' LT SH205CL STA 105+66.75
FL(24")=574.35
FL(24")=574.35

(12) MH-MM11 TY M 5'X4'
35.50' LT SH205CL STA 107+06.00
TOP=582.12
FL(24")=577.62
FL(24")=577.62

(13) CI-MM9 10' TY II
42.00' LT SH205CL STA 107+58.00
GUT=582.42
FL=577.92

(14) CI-MM8 10' TY II
42.00' LT SH205CL STA 108+45.00
GUT=582.73
FL=578.23

(15) CI-MM7 10' TY II
42.00' LT SH205CL STA 109+38.00
GUT=583.08
FL=578.58

(16) CI-MM6 5' TY II
42.00' LT SH205CL STA 109+98.00
GUT=583.69
FL=578.79

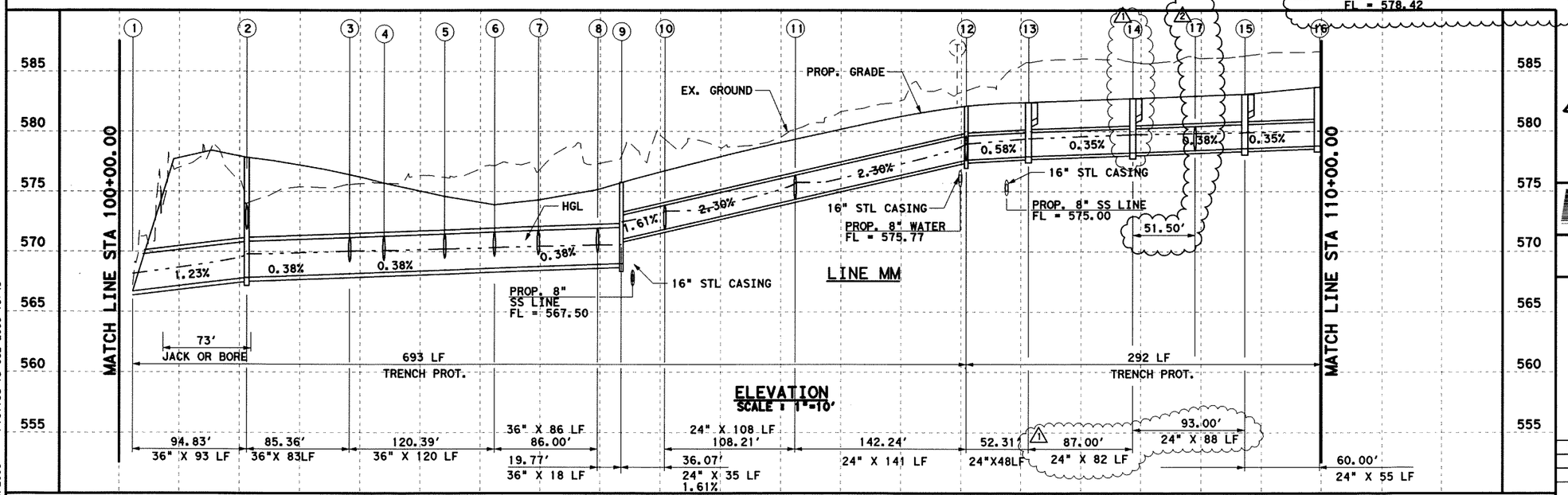
(2)(17) JCT-MM6A-90° T
41.00'LT SH205CL STA 108+96.50
FL = 578.42

PLAN
SCALE : 1"=100'

LEGENDS

G — EX. GAS LINE CROSSING ELEVATION UNKNOWN

T — EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN



ELEVATION
SCALE : 1"=10'

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
7/15/08

Change Order #50

2 ADDED DI-6A & REMOVED TRENCH DRAIN - KDG - 04/24/2008

1 MOVED CURB INLET 15' SOUTH FOR DRWY - KDG - 02-25-2008

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Suite 1333
Dallas, TX 75207

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 32 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	432B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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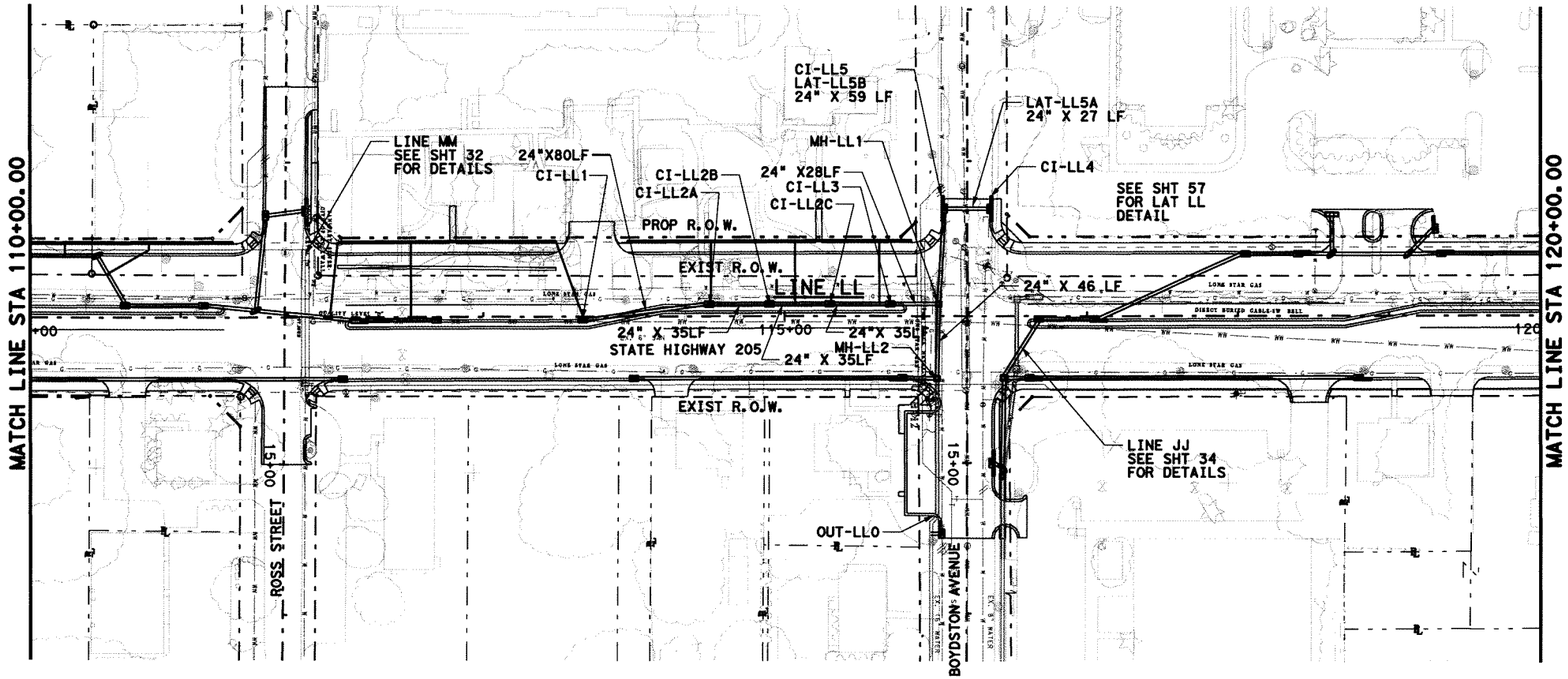
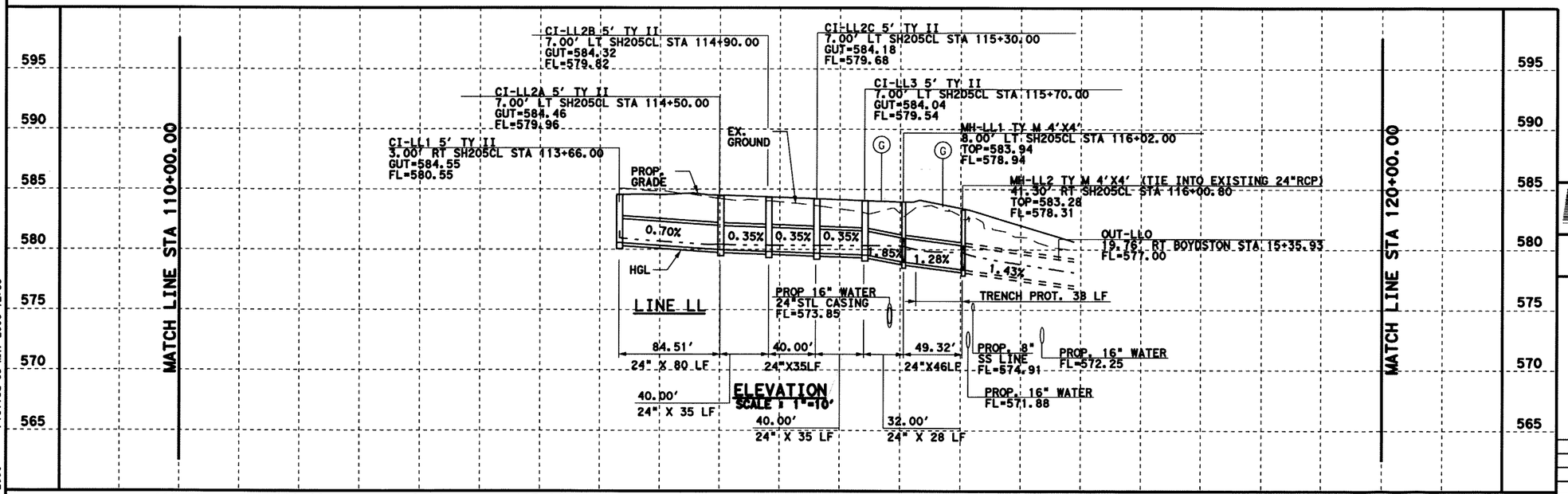


PLAN
SCALE : 1"=100'



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

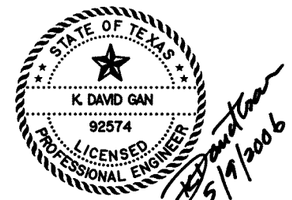
GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN



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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 33 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	433
CONT.	SECT.	JOB	
0451	01	032, ETC	

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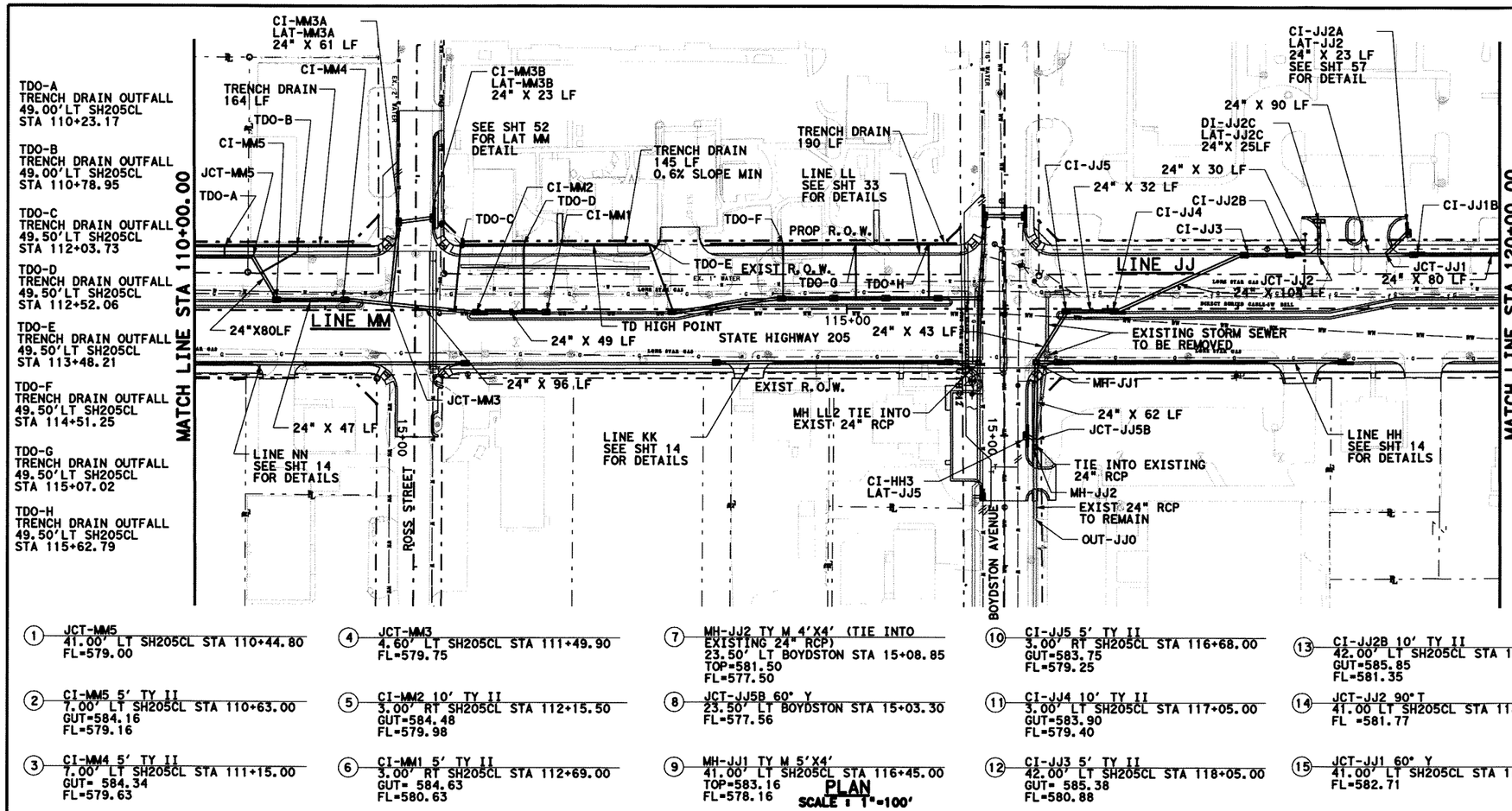


GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.
4. AT EACH TRENCH DRAIN OUTFALL LOCATION, PLACE INLINE CATCH BASIN WITH MIN. DEPTH OF 2.5' AND CONNECT 12" PVC PIPE TO THE NEAREST DRAINAGE STRUCTURE OR PIPE. BID PRICE FOR LF OF TRENCH DRAIN INCLUDES ALL ITEMS AND WORK FOR THE CONSTRUCTION OF THE ENTIRE TRENCH DRAIN SYSTEM.

LEGENDS

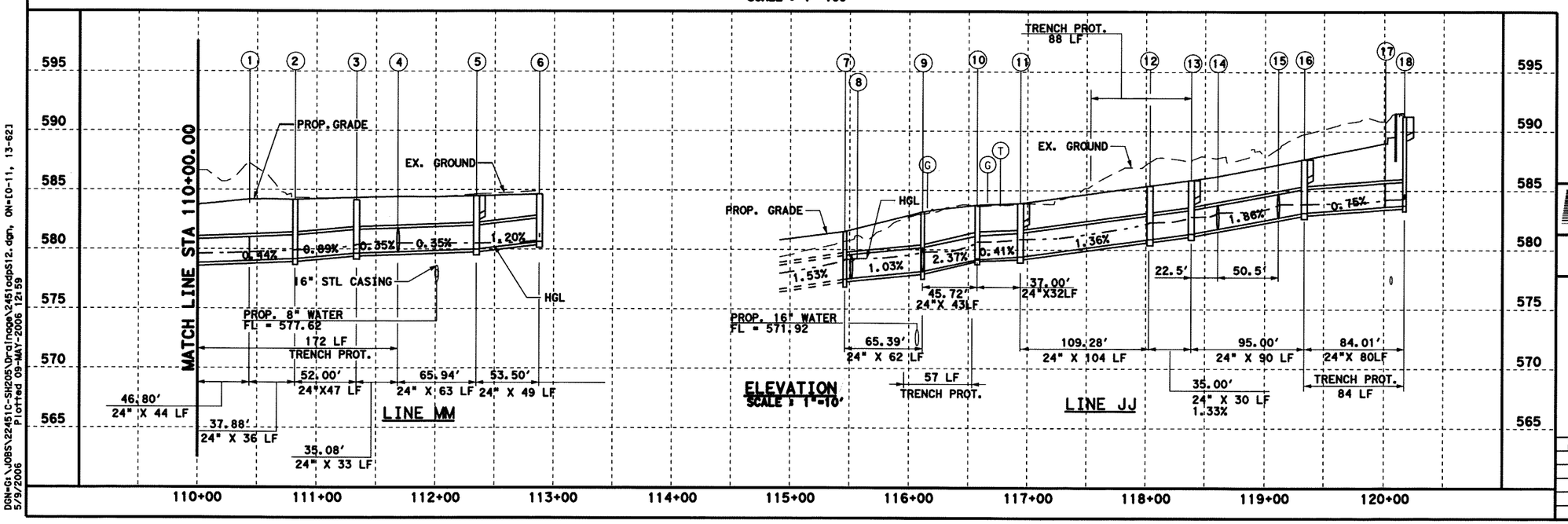
(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

(1) JCT-MM5 41.00' LT SH205CL STA 110+44.80 FL=579.00	(4) JCT-MM3 4.60' LT SH205CL STA 111+49.90 FL=579.75	(7) MH-JJ2 TY M 4'X4' (TIE INTO EXISTING 24" RCP) 23.50' LT BOYDSTON STA 15+08.85 TOP=581.50 FL=577.50
(2) CI-MM5 5' TY II 7.00' LT SH205CL STA 110+63.00 GUT=584.16 FL=579.16	(5) CI-MM2 10' TY II 3.00' RT SH205CL STA 112+15.50 GUT=584.48 FL=579.98	(8) JCT-JJ5B 60° Y 23.50' LT BOYDSTON STA 15+03.30 FL=577.56
(3) CI-MM4 5' TY II 7.00' LT SH205CL STA 111+15.00 GUT= 584.34 FL=579.63	(6) CI-MM1 5' TY II 3.00' RT SH205CL STA 112+69.00 GUT= 584.63 FL=580.63	(9) MH-JJ1 TY M 5'X4' 41.00' LT SH205CL STA 116+45.00 TOP=583.16 FL=578.16

PLAN
SCALE : 1"=100'

(10) CI-JJ5 5' TY II 3.00' RT SH205CL STA 116+68.00 GUT=583.75 FL=579.25	(13) CI-JJ2B 10' TY II 42.00' LT SH205CL STA 118+40.00 GUT=585.85 FL=581.35	(16) CI-JJ1B 10' TY II 42.00' LT SH205CL STA 119+35.00 GUT=587.62 FL=583.12
(11) CI-JJ4 10' TY II 3.00' LT SH205CL STA 117+05.00 GUT=583.90 FL=579.40	(14) JCT-JJ2 90° T 41.00 LT SH205CL STA 118+62.50 FL =581.77	(17) JCT-JJ1A 60° Y 41.00' LT SH205CL STA 120+02.50 FL=583.63
(12) CI-JJ3 5' TY II 42.00' LT SH205CL STA 118+05.00 GUT= 585.38 FL=580.88	(15) JCT-JJ1 60° Y 41.00' LT SH205CL STA 119+13.00 FL=582.71	(18) CI-JJ1A 10' TY II 54.50' LT SH205CL STA 120+10.00 GUT=591.25 FL=583.75



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Plotted 09-MAY-2006 12:59
5/9/2006

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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Suite 1333
Dallas, TX 75207

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SH 205

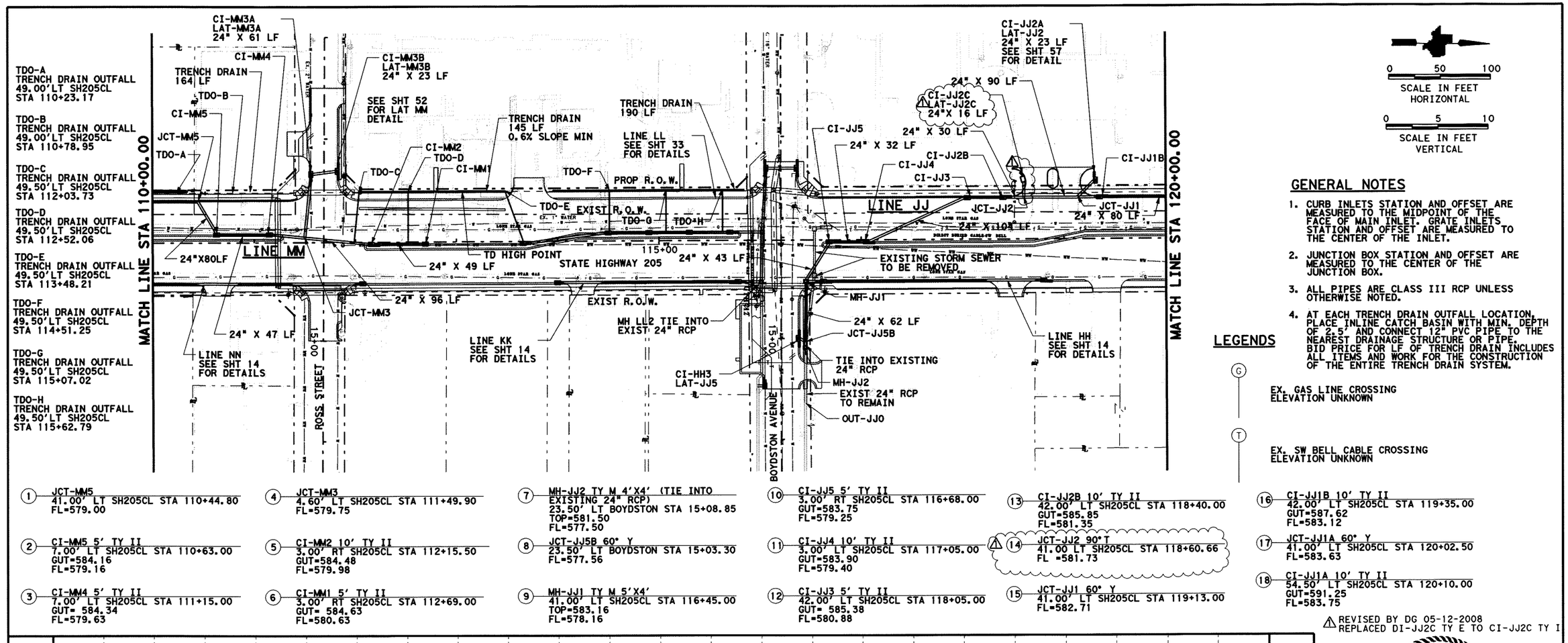
SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 34 OF 57

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	434
CONT.	SECT.	JOB	
0451	01	032, ETC	



GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.
4. AT EACH TRENCH DRAIN OUTFALL LOCATION, PLACE INLINE CATCH BASIN WITH MIN. DEPTH OF 2.5' AND CONNECT 12" PVC PIPE TO THE NEAREST DRAINAGE STRUCTURE OR PIPE. BID PRICE FOR LF OF TRENCH DRAIN INCLUDES ALL ITEMS AND WORK FOR THE CONSTRUCTION OF THE ENTIRE TRENCH DRAIN SYSTEM.

LEGENDS

(G) EX. GAS LINE CROSSING
ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING
ELEVATION UNKNOWN

(1) JCT-MM5
41.00' LT SH205CL STA 110+44.80
FL=579.00

(2) CI-MM5 5' TY II
7.00' LT SH205CL STA 110+63.00
GUT=584.16
FL=579.16

(3) CI-MM4 5' TY II
7.00' LT SH205CL STA 111+15.00
GUT= 584.34
FL=579.63

(4) JCT-MM3
4.60' LT SH205CL STA 111+49.90
FL=579.75

(5) CI-MM2 10' TY II
3.00' RT SH205CL STA 112+15.50
GUT=584.48
FL=579.98

(6) CI-MM1 5' TY II
3.00' RT SH205CL STA 112+69.00
GUT= 584.63
FL=580.63

(7) MH-JJ2 TY M 4'X4' (TIE INTO EXISTING 24" RCP)
23.50' LT BOYDSTON STA 15+08.85
TOP=581.50
FL=577.50

(8) JCT-JJ5B 60° Y
23.50' LT BOYDSTON STA 15+03.30
FL=577.56

(9) MH-JJ1 TY M 5'X4'
41.00' LT SH205CL STA 116+45.00
TOP=583.16
FL=578.16

(10) CI-JJ5 5' TY II
3.00' RT SH205CL STA 116+68.00
GUT=583.75
FL=579.25

(11) CI-JJ4 10' TY II
3.00' LT SH205CL STA 117+05.00
GUT=583.90
FL=579.40

(12) CI-JJ3 5' TY II
42.00' LT SH205CL STA 118+05.00
GUT= 585.38
FL=580.88

(13) CI-JJ2B 10' TY II
42.00' LT SH205CL STA 118+40.00
GUT=585.85
FL=581.35

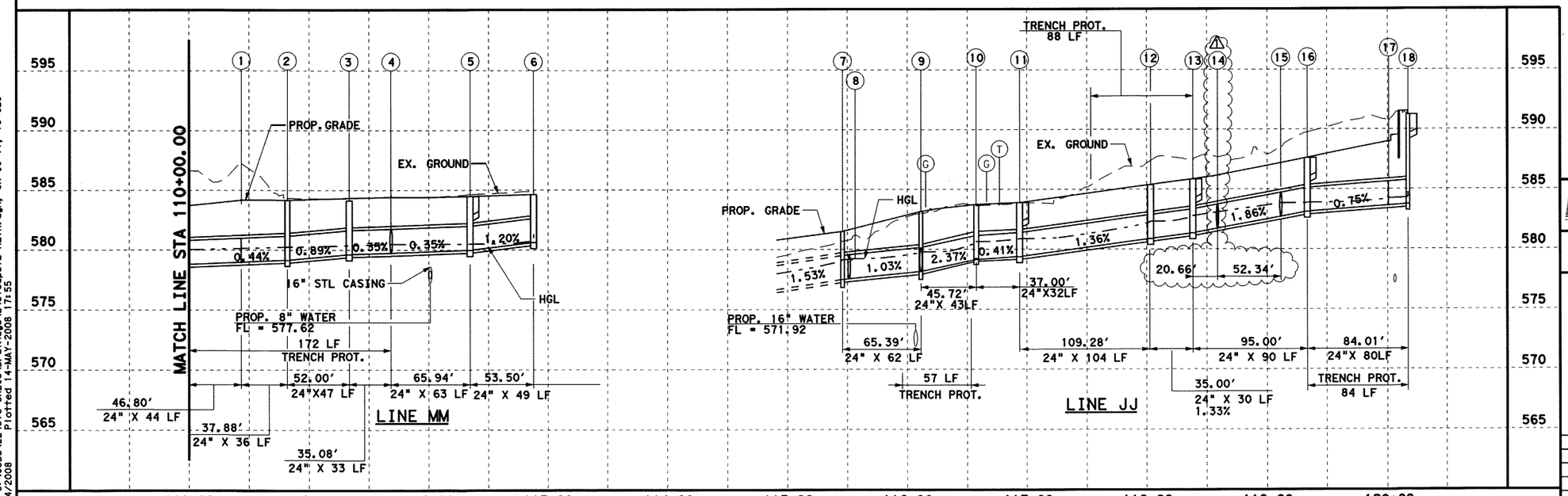
(14) JCT-JJ2 90° T
41.00 LT SH205CL STA 118+60.66
FL =581.73

(15) JCT-JJ1 60° Y
41.00' LT SH205CL STA 119+13.00
FL=582.71

(16) CI-JJ1B 10' TY II
42.00' LT SH205CL STA 119+35.00
GUT=587.62
FL=583.12

(17) JCT-JJ1A 60° Y
41.00' LT SH205CL STA 120+02.50
FL=583.63

(18) CI-JJ1A 10' TY II
54.50' LT SH205CL STA 120+10.00
GUT=591.25
FL=583.75



⚠ REVISED BY DG 05-12-2008
REPLACED DI-JJ2C TY E TO CI-JJ2C TY I

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/14/08

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 34 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	434A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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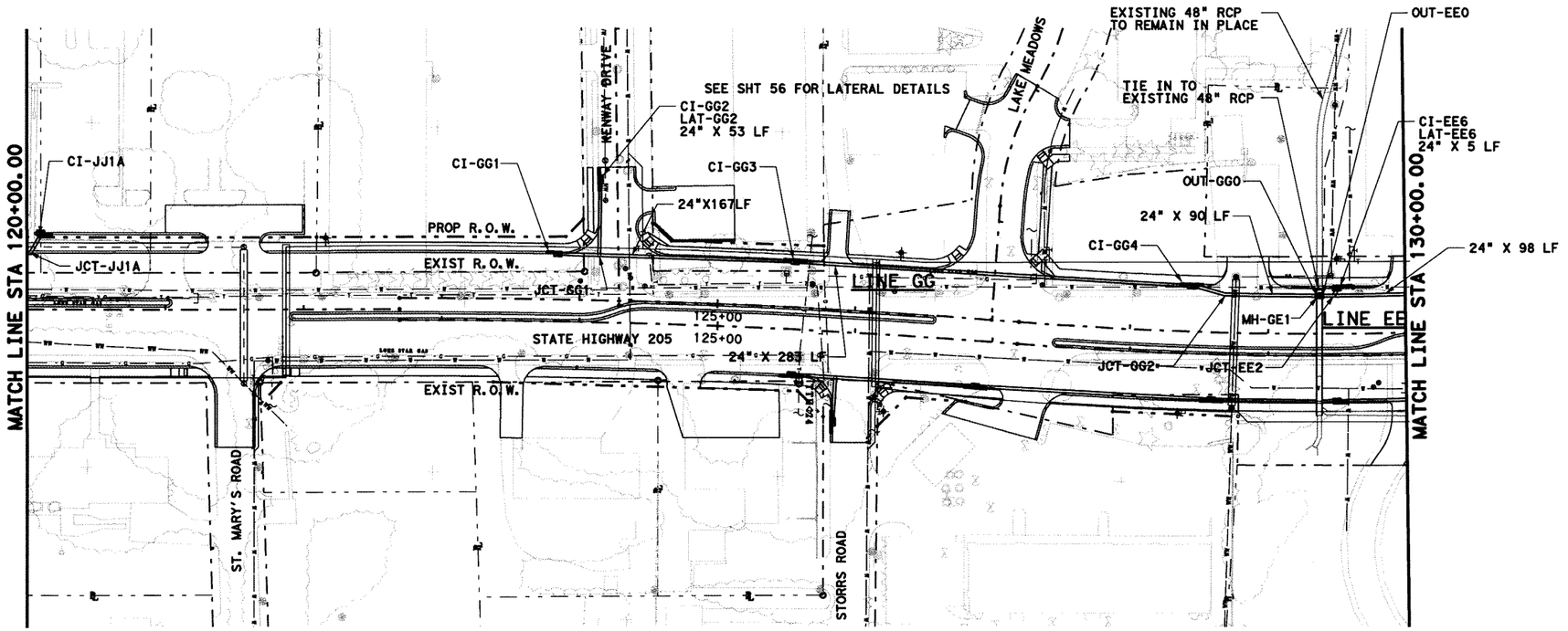


0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

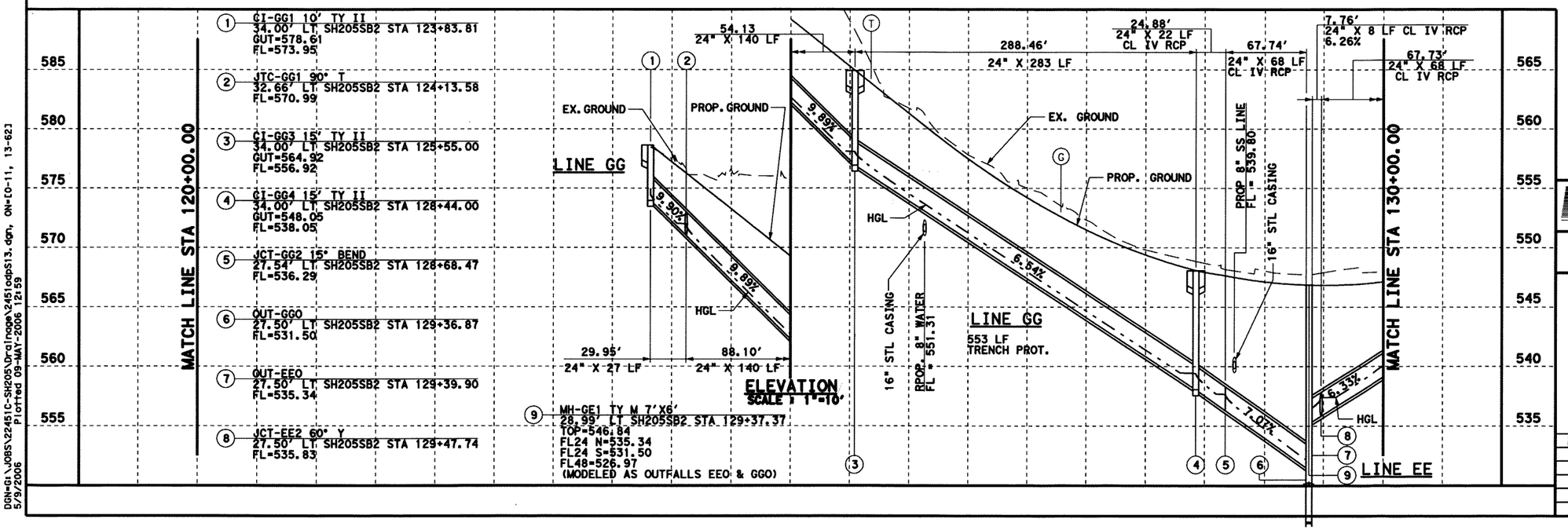
LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

PLAN
SCALE : 1"=100'

ELEVATION
SCALE : 1"=10'



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Plotted 09-MAY-2006 12:59
5/9/2006

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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Dallas, TX 75207

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SH 205

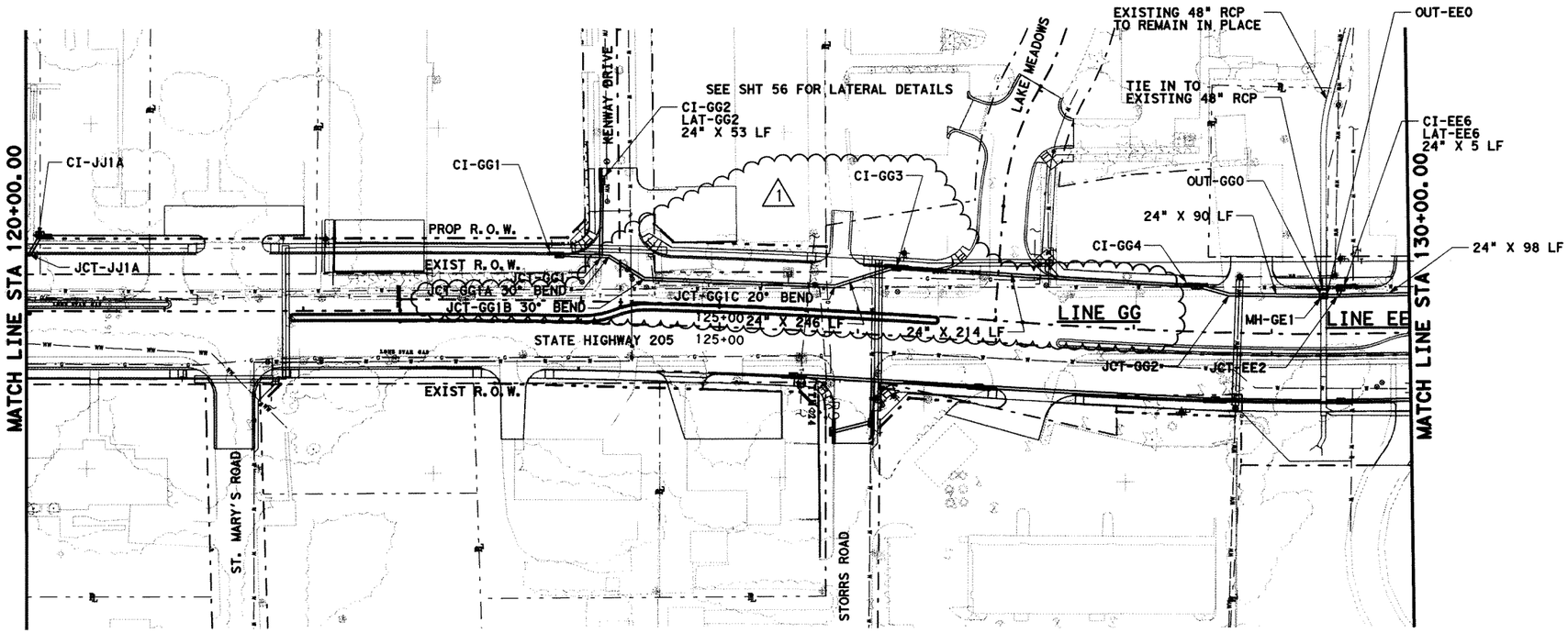
SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 120+00 TO 130+00

SHEET 35 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	435
CONT.	SECT.	JOB	
0451	01	032, ETC	



1 CI-GG1 10' TY II
34.00' LT SH205SB2 STA 123+83.81
GUT=578.61
FL=573.95

2 JTC-GG1 90° T
32.66' LT SH205SB2 STA 124+13.58
FL=570.99

2A JCT-GG1A 30° BEND
32.61' LT SH205SB2 STA 124+19.55
FL =570.48

2B JCT-GG1B 30° BEND
17.00' LT SH205SB2 STA 124+45.30
FL =567.91

2C JCT-GG1C 20° BEND
17.00' LT SH205SB2 STA 125+82.60
FL =556.21

3 CI-GG3 15' TY II
34.00' LT SH205SB2 STA 126+26.00
GUT= 559.25
FL = 552.25

4 CI-GG4 15' TY II
34.00' LT SH205SB2 STA 128+44.00
GUT=548.05
FL=538.05

5 JCT-GG2 15° BEND
27.54' LT SH205SB2 STA 128+68.47
FL=536.29

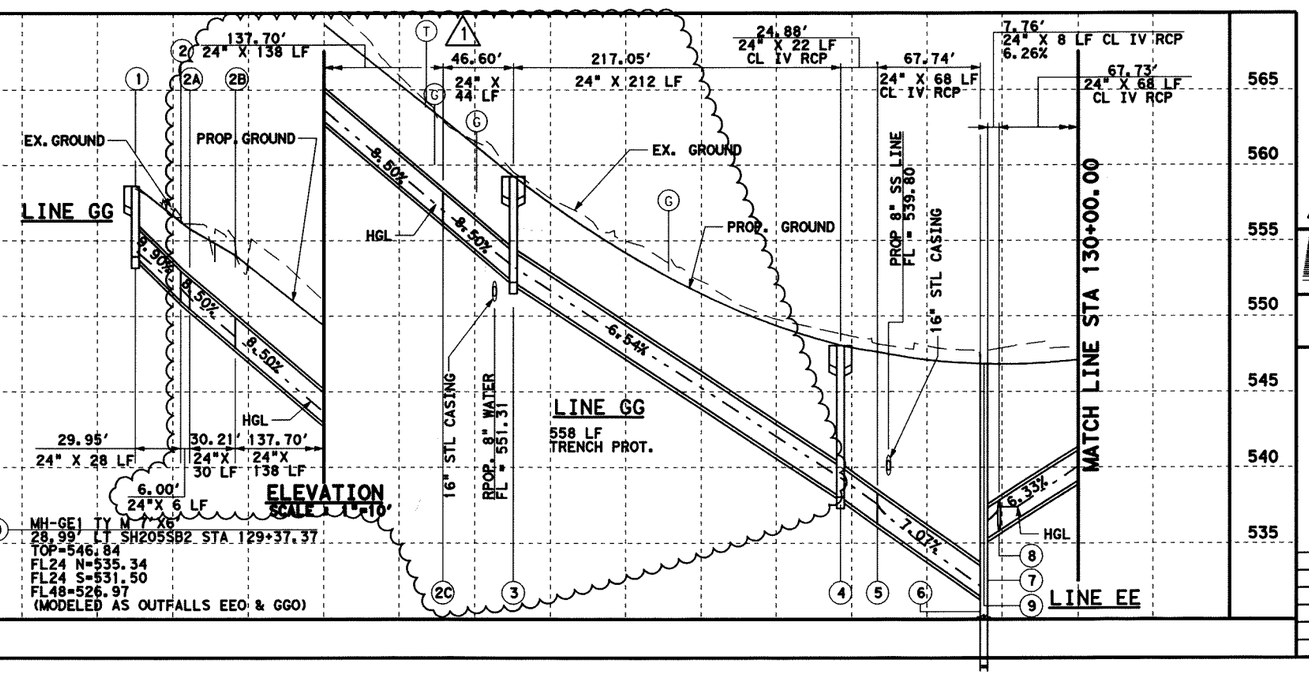
6 OUT-GG0
27.50' LT SH205SB2 STA 129+36.87
FL=531.50

7 OUT-EE0
27.50' LT SH205SB2 STA 129+39.90
FL=535.34

8 JCT-EE2 60° Y
27.50' LT SH205SB2 STA 129+47.74
FL=535.83

9 MH-GE1 TY M 7'-X6
28.99' LT SH205SB2 STA 129+37.37
TOP=546.84
FL24 N=535.34
FL24 S=531.50
FL48=526.97
(MODELED AS OUTFALLS EE0 & GG0)

PLAN
SCALE 1"=100'



1 - Change Order 74

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

5/1/2009

1 REV. LINE GG BTWN CI-GG1 AND CI-GG4 BY KDG - 04-27-2009

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207
TBPE ID 2263

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SH 205

SOUTHBOUND DRAINAGE

STORM SEWER PLAN & PROFILE
STA 120+00 TO 130+00

SHEET 35 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	435
CONT.	SECT.	JOB	
0451	01	032, ETC	

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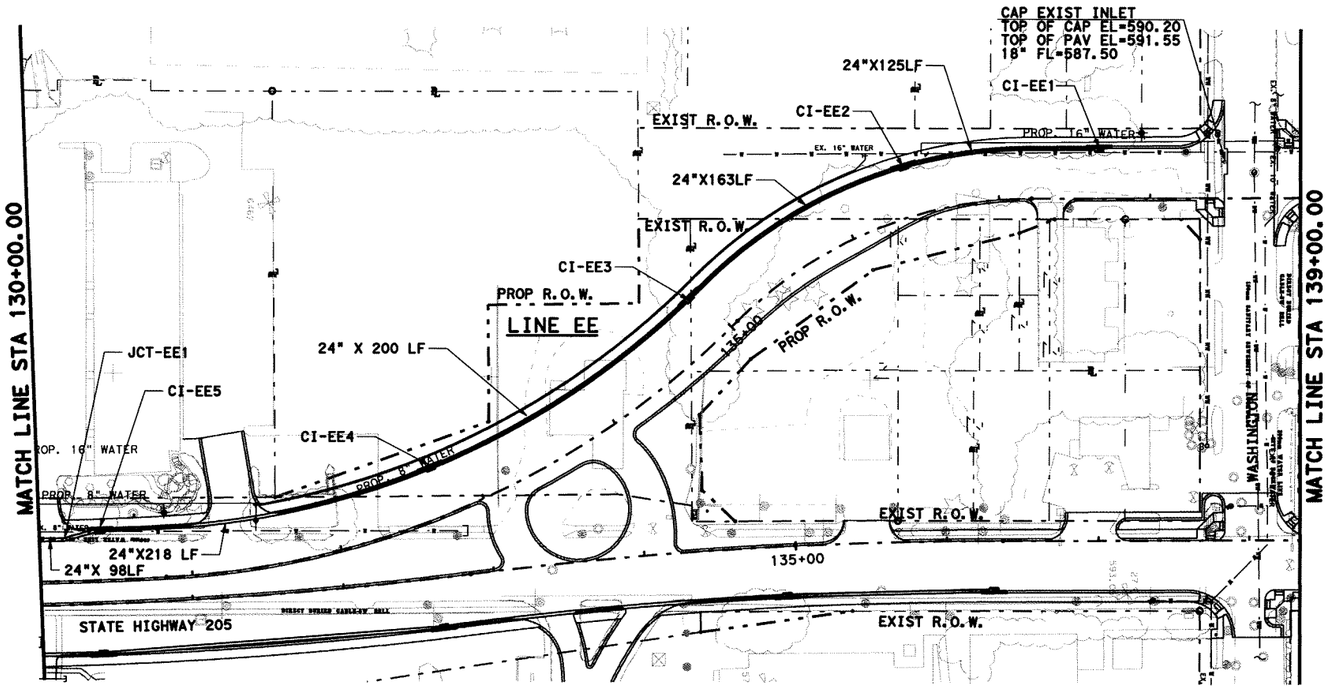
5/1/2009



PLAN
SCALE : 1"=100'

① JCT-EE1 15° BEND
27.65' LT SH205SB2 STA 130+16.13
FL=540.11

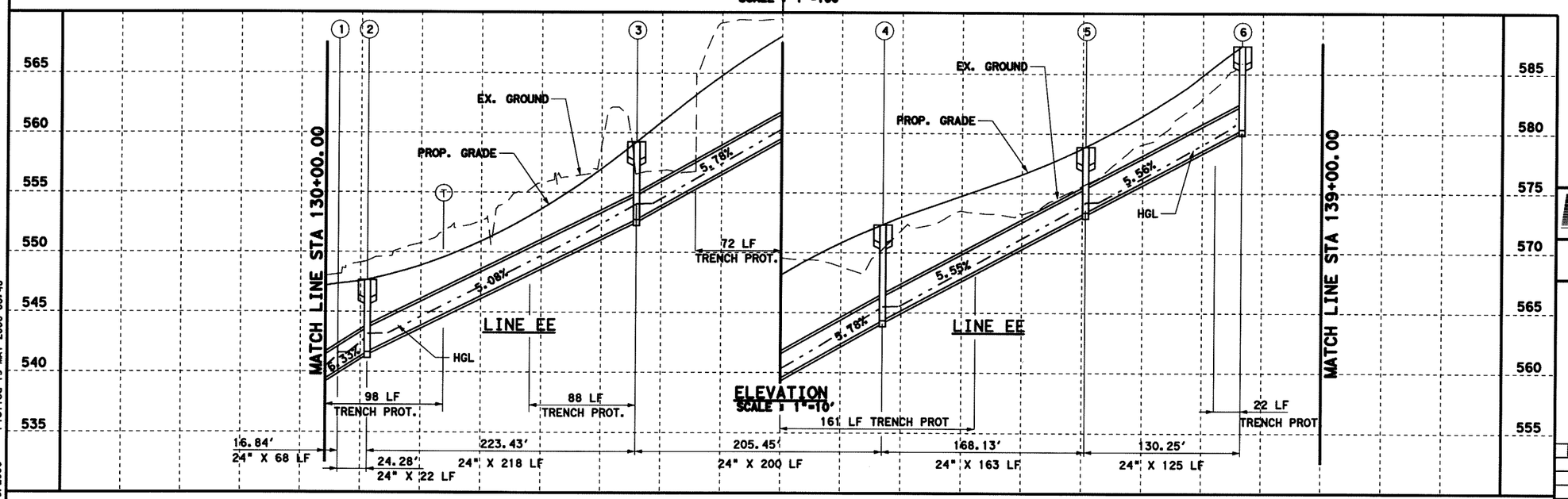
② CI-EE5 15' TY II
34.00' LT SH205SB2 STA 130+40.00
GUT=547.65
FL=541.65

③ CI-EE4 15' TY II
34.00' LT SH205SB2 STA 132+75.00
GUT=559.23
FL=554.73

④ CI-EE3 15' TY II
34.00' LT SH205SB2 STA 134+93.00
GUT=572.33
FL=567.83

⑤ CI-EE2 15' TY II
34.00' LT SH205SB2 STA 136+45.00
GUT=578.89
FL=574.39

⑥ CI-EE1 15' TY II
34.00' LT SH205SB2 STA 137+66.00
GUT=587.35
FL=582.85



ELEVATION
SCALE : 1"=10'

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/19/2006

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Dallas, TX 75207

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SH 205

SOUTHBOUND DRAINAGE

SB COUPLET
STORM SEWER PLAN & PROFILE
STA 130+00 TO 139+00

SHEET 36 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	436
CONT.	SECT.	JOB	
0451	01	032, ETC	

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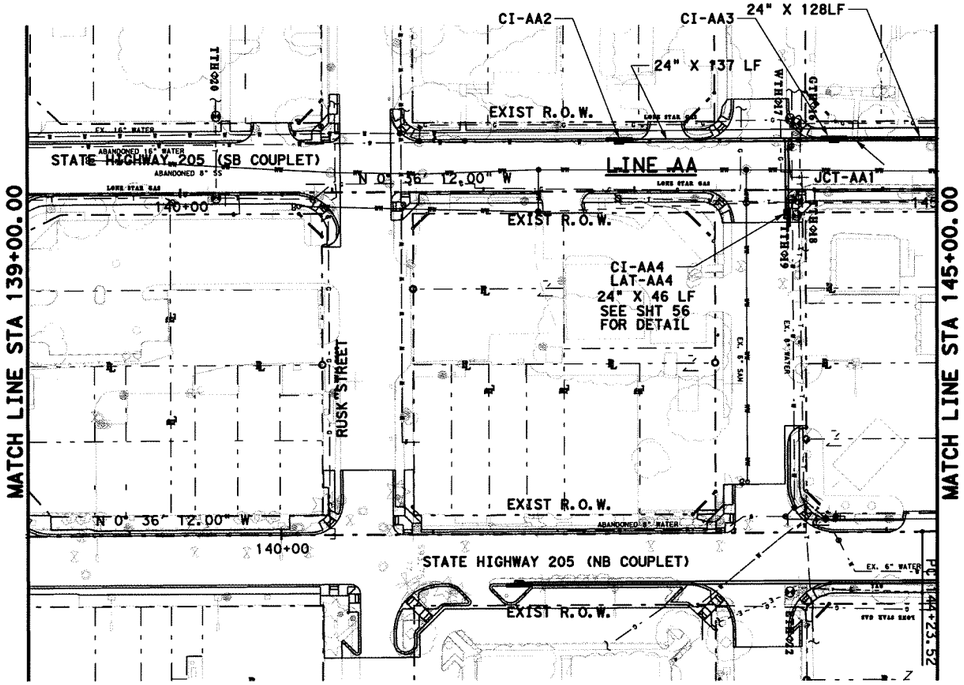
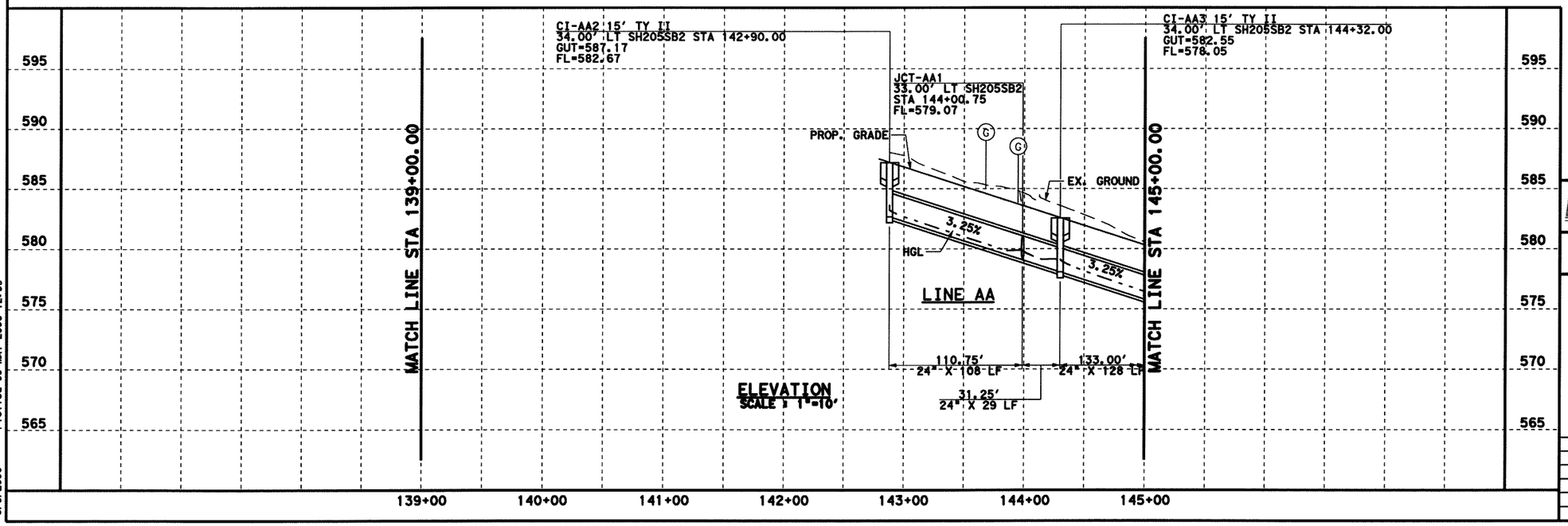




0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

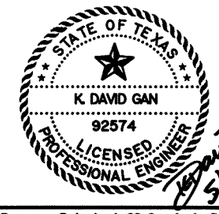
GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN



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SH 205

SOUTHBOUND DRAINAGE
SB COUPLET
STORM SEWER PLAN & PROFILE
STA 139+00 TO 145+00

SHEET 37 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	437
CONT.	SECT.	JOB	
0451	01	032, ETC	

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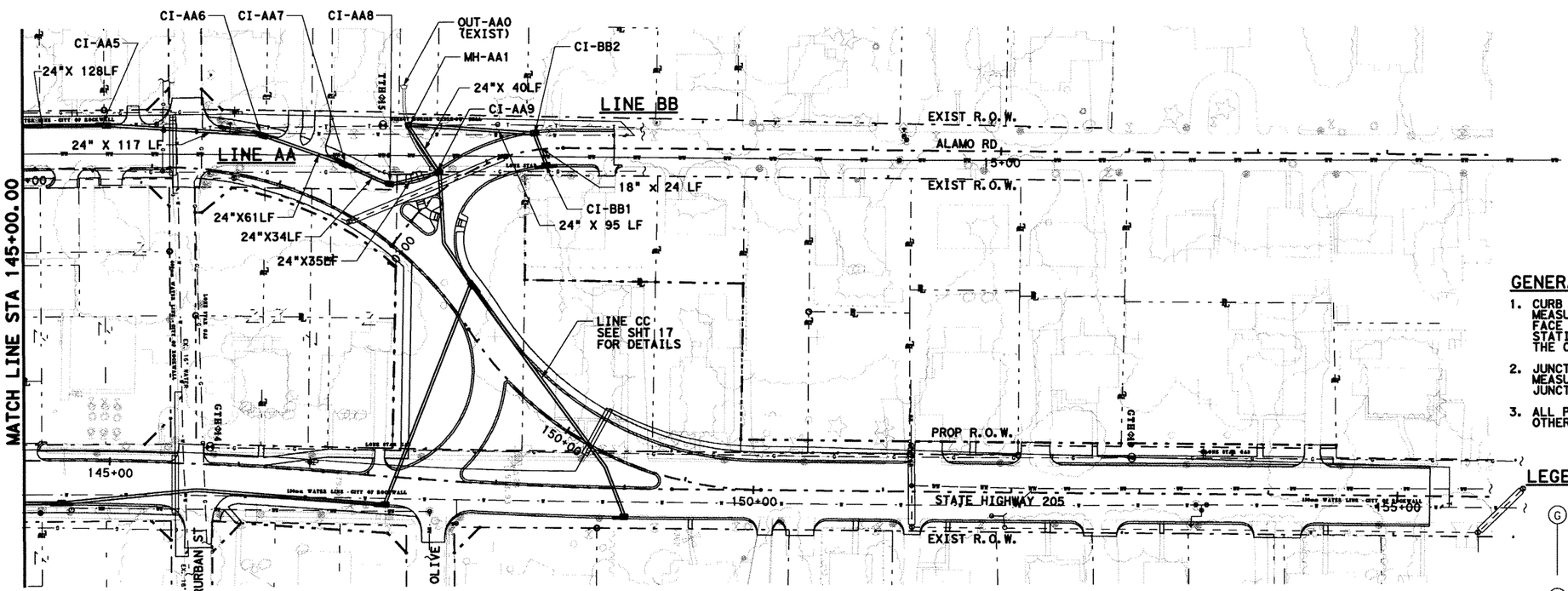
5/9/2006 Plotted 09-MAY-2006 12:59



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

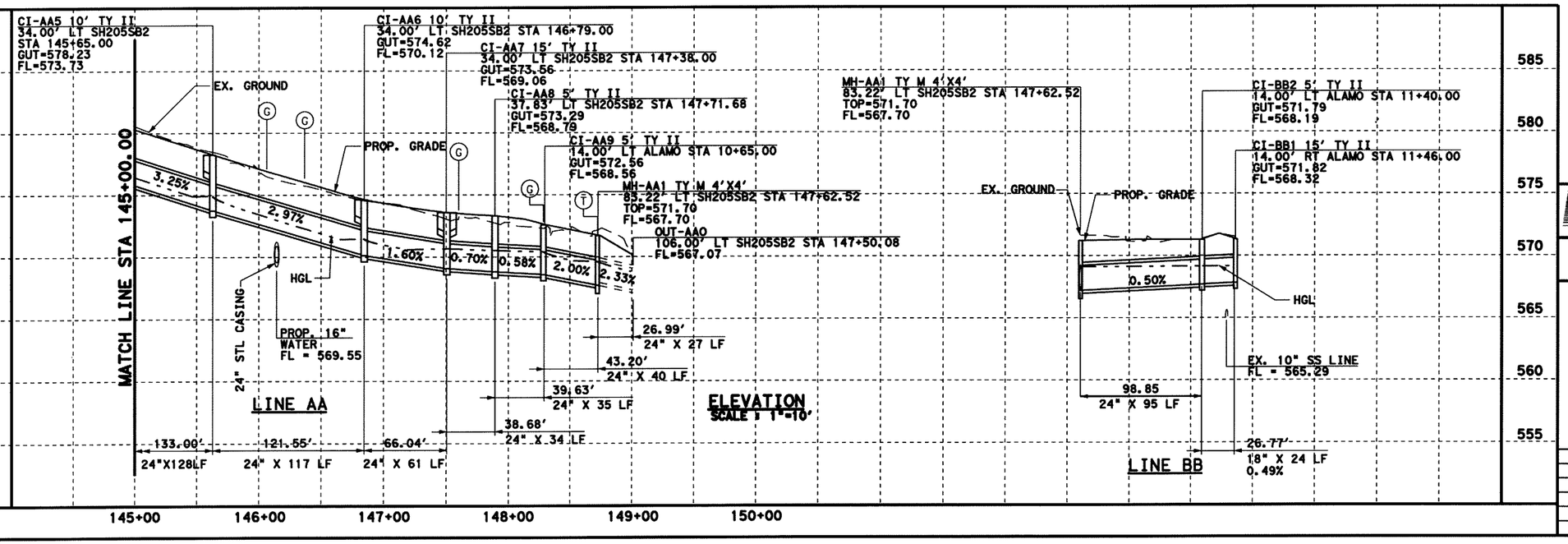
1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

PLAN
SCALE : 1"=100'



K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
5/9/2006

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SH 205

SOUTHBOUND DRAINAGE
SB COUPLET
STORM SEWER PLAN & PROFILE
STA 145+00 TO END OF PROJECT

SHEET 38 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	438
CONT.	SECT.	JOB	
0451	01	032, ETC	

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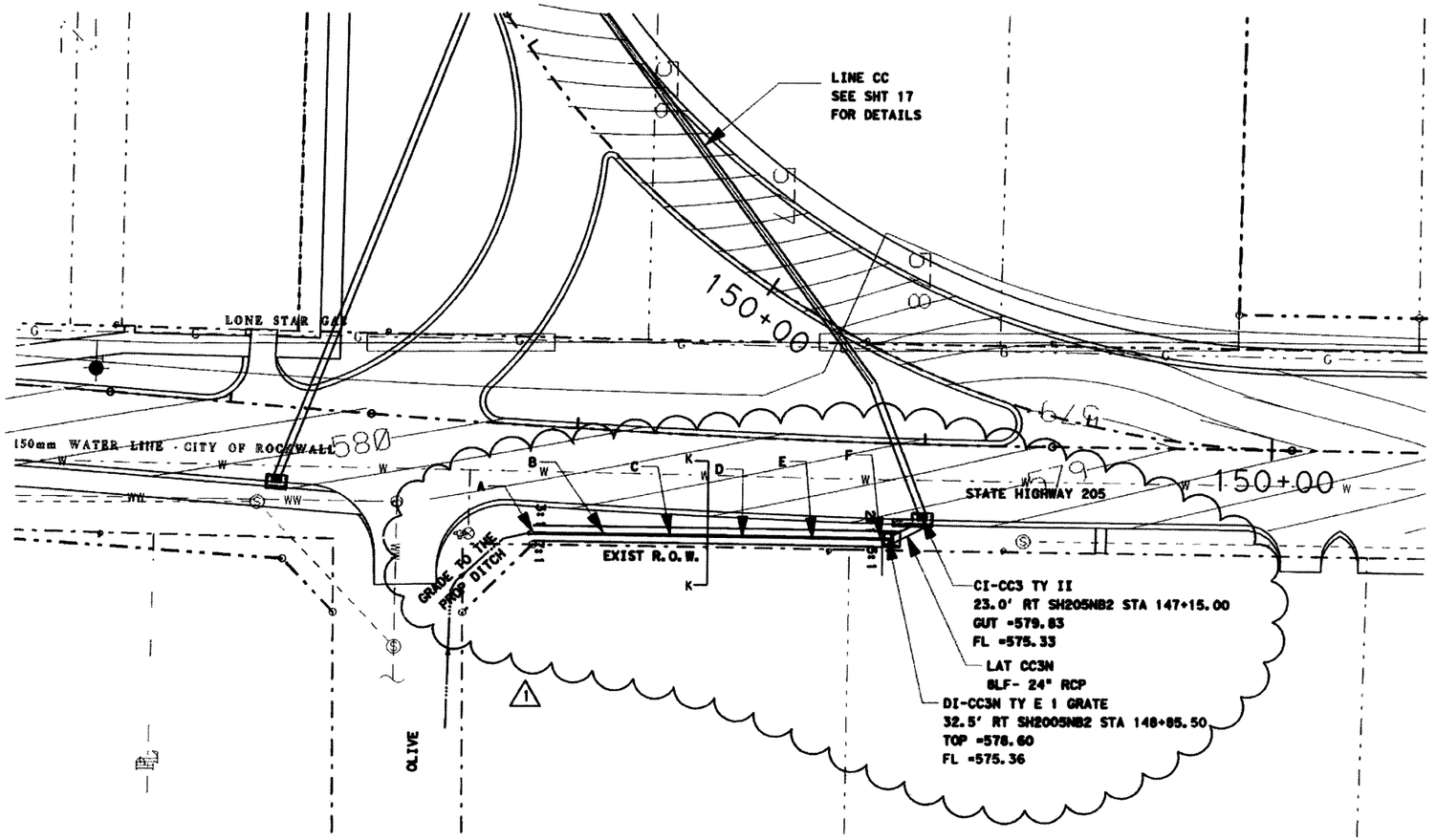
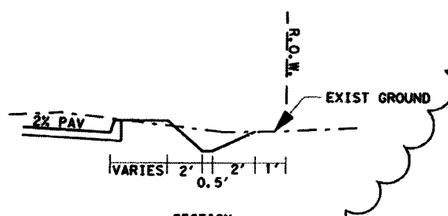


	SH205NB STA	Offset LF	Top of Ditch left	Bottom Dito 0.79% slope	Top of Ditch right	Slope Left	Slope Right
F	148+85.50	32.5 RT	579.56	578.60	578.79	2.1	10.4
E	148+63.44	32.5 RT	579.66	578.76	578.94	2.2	11.1
D	148+43.61	32.5 RT	579.76	578.92	579.47	2.4	3.6
C	148+23.88	32.7 RT	579.86	579.07	579.54	2.5	4.3
B	148+04.1.	33.0 RT	579.96	579.23	579.60	2.7	5.4
A	147+84.29	33.5 RT	580.06	579.39	579.67	3.0	7.1



SECTION
K-K

0 20 40
SCALE IN FEET
HORIZONTAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

G — EX. GAS LINE CROSSING ELEVATION UNKNOWN

T — EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
AKAYU MEKONNEN
93580
LICENSED
PROFESSIONAL ENGINEER

12/29/09

1 ADDED A DITCH AND 1GRATE DROP INLET 12-17-09

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Suite 1393
Dallas, TX 75207
TBPE ID 2863

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SOUTHBOUND DRAINAGE
SB COUPLET
STORM SEWER PLAN & PROFILE
STA 145+00 TO END OF PROJECT

SHEET 38A OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	438 38A
CONT.	SECT.	JOB	
0451	01	032, ETC	

1 CHANGE ORDER 93

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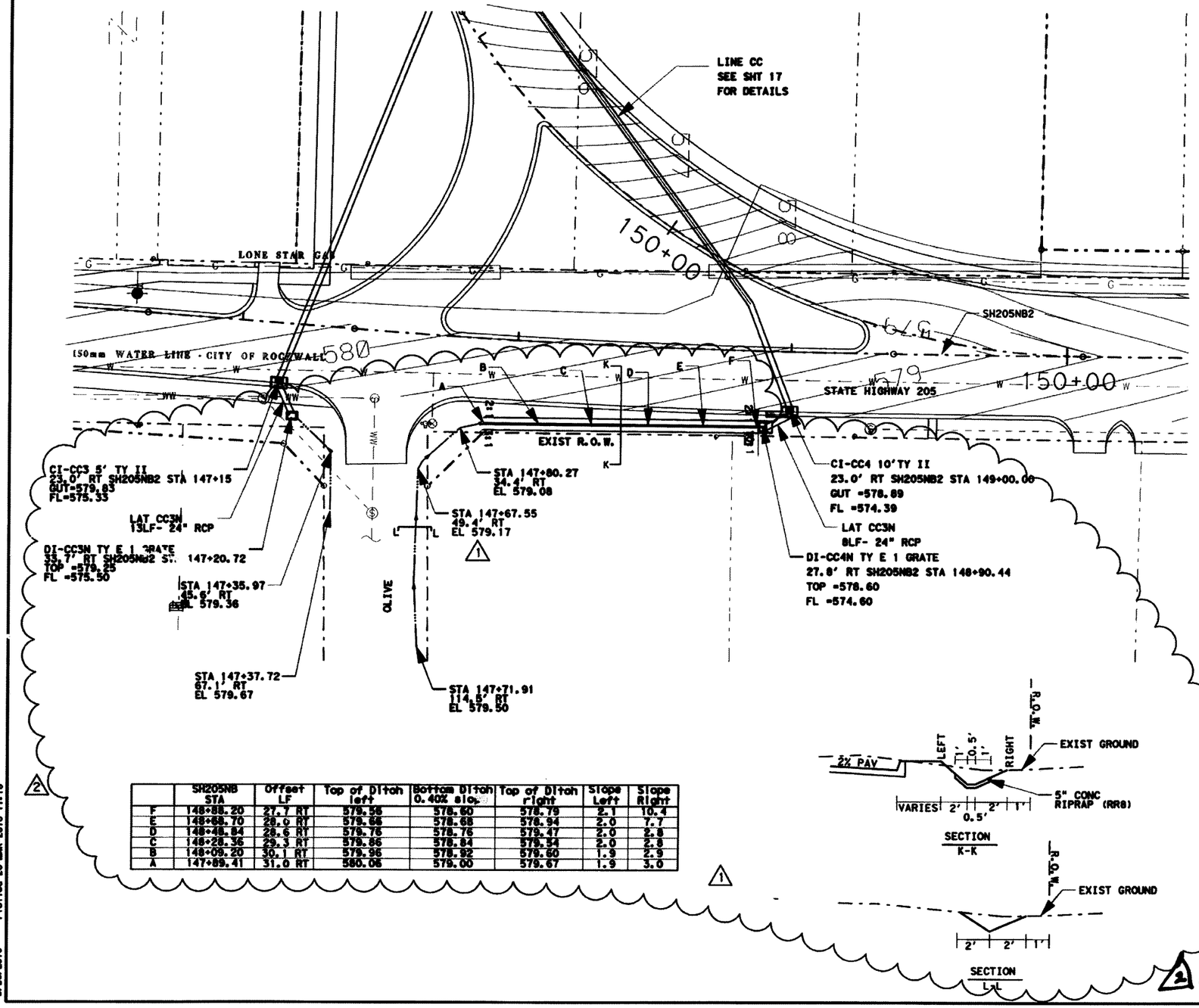

	SH205NB STA	Offset LF	Top of Ditch left	Bottom Ditch 0.40% slo.	Top of Ditch right	Slope Left	Slope Right
F	148+88.20	27.7 RT	579.56	578.60	578.79	2.1	10.4
E	148+68.70	28.0 RT	579.66	578.68	578.94	2.0	7.7
D	148+48.84	28.6 RT	579.76	578.76	579.47	2.0	2.8
C	148+28.36	29.3 RT	579.86	578.84	579.54	2.0	2.8
B	148+09.20	30.1 RT	579.96	578.92	579.60	1.9	2.9
A	147+89.41	31.0 RT	580.06	579.00	579.67	1.9	3.0

0 20 40
SCALE IN FEET
HORIZONTAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

3/26/10

STATE OF TEXAS
AKAYU MEKONNEN
93580
LICENSED
PROFESSIONAL ENGINEER

PREPARED UNDER THE SUPERVISION OF
AKAYU MEKONNEN P.E. #93580
3/26/2010

2 REVISED AND ADDED A DITCH GRATE DROP INLET 3-24-10

1 ADDED A DITCH AND 1GRATE DROP INLET 12-17-09

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SOUTHBOUND DRAINAGE
SB COUPLET
STORM SEWER PLAN & PROFILE
STA 145+00 TO END OF PROJECT

SHEET 38A OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	438A
CONT.	SECT.	JOB	
0451	01	032, ETC	

2 CHANGE ORDER 97

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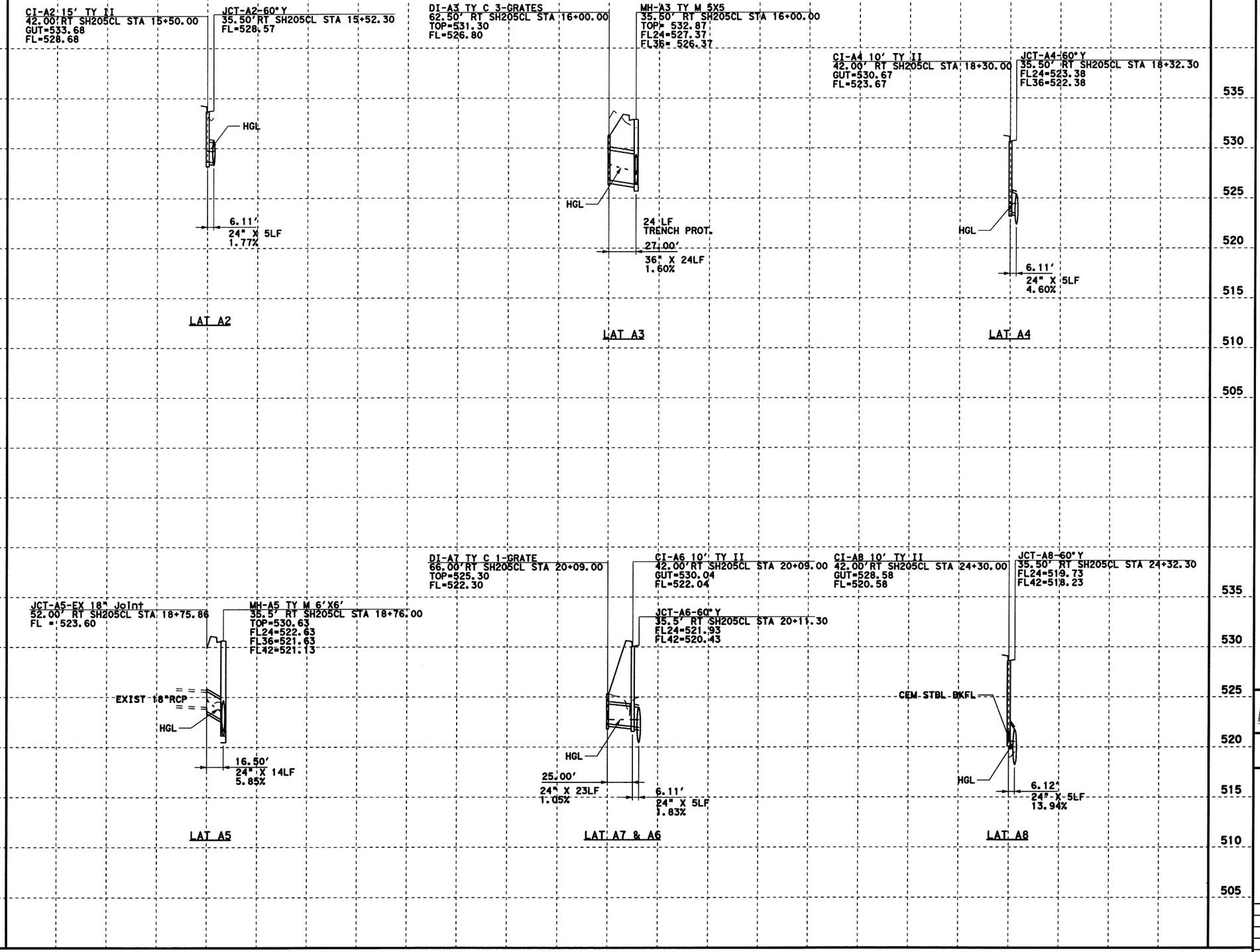

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE A LATERALS
STORM SEWER LATERAL PROFILES

SHEET 39 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	439
CONT.	SECT.	JOB	
0451	01	032, ETC	

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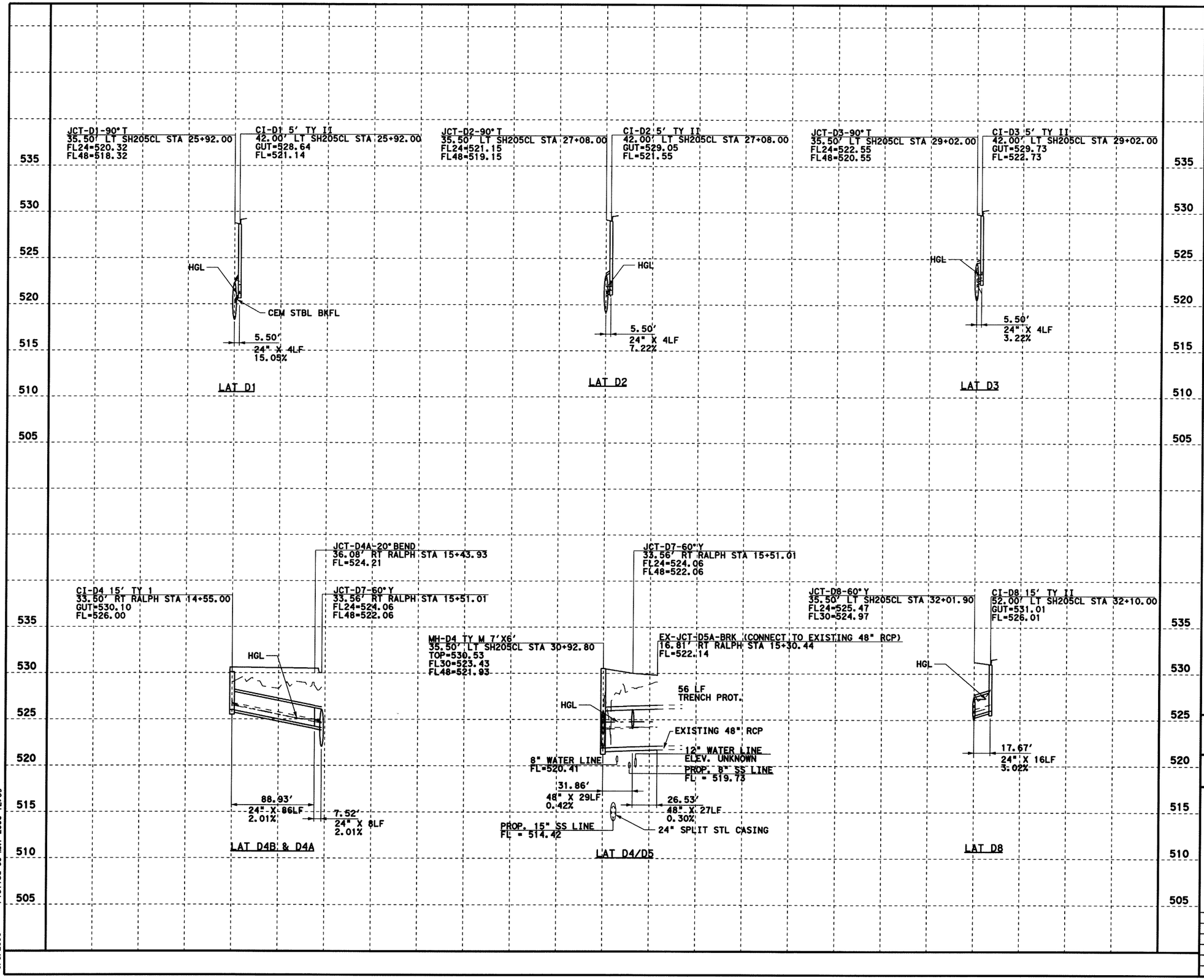
5/9/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
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5/9/2006

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DRAINAGE
LINE D LATERALS
STORM SEWER LATERAL PROFILES

SHEET 40 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	440
CONT.	SECT.	JOB	
0451	01	032, ETC	

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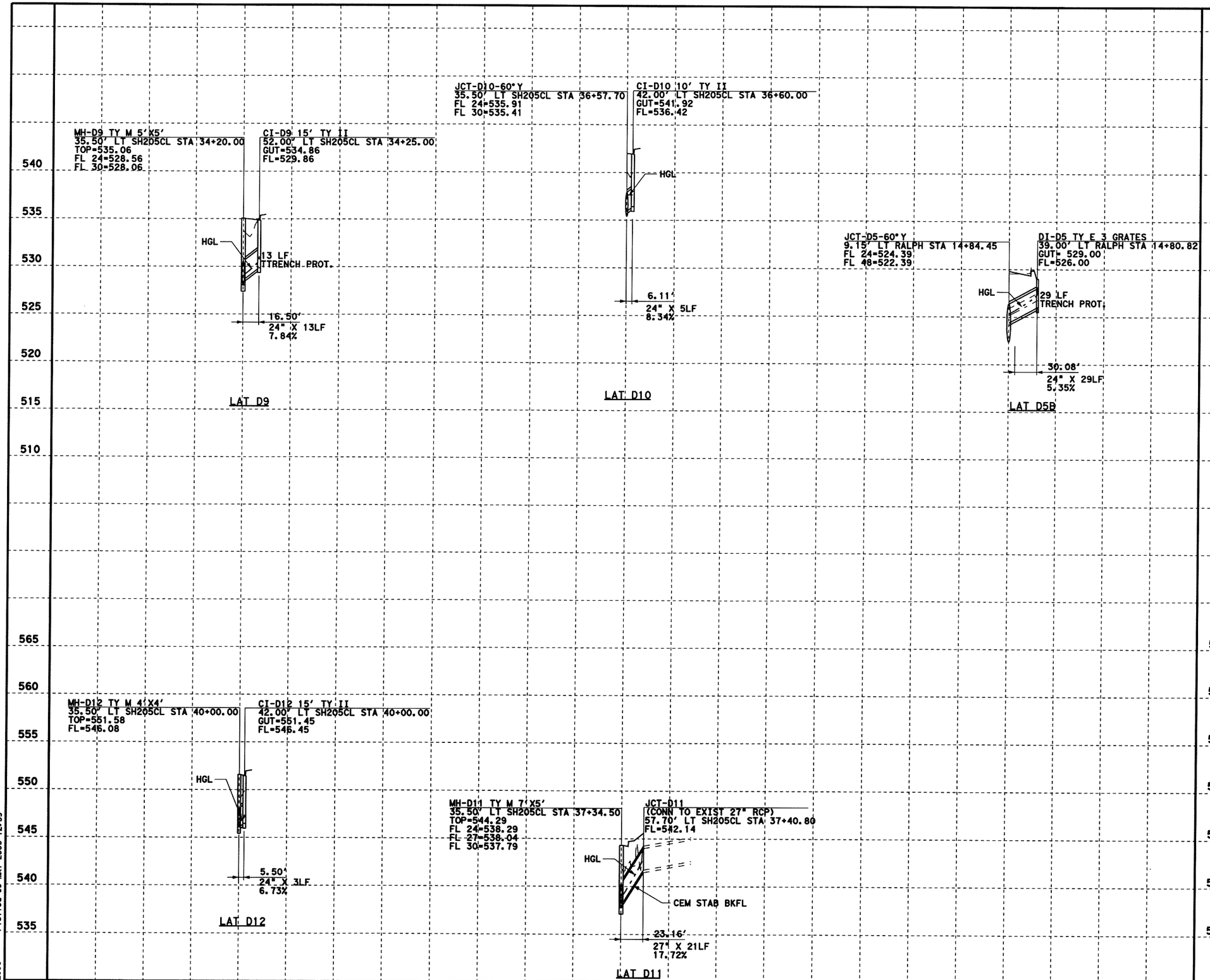
5/9/2006 Plotted 09-MAY-2006 12:59



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
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PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE D LATERALS
STORM SEWER LATERAL PROFILES

SHEET 41 OF 57

FED. RGN. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	441
CONT.	SECT.	JOB	
0451	01	032, ETC	

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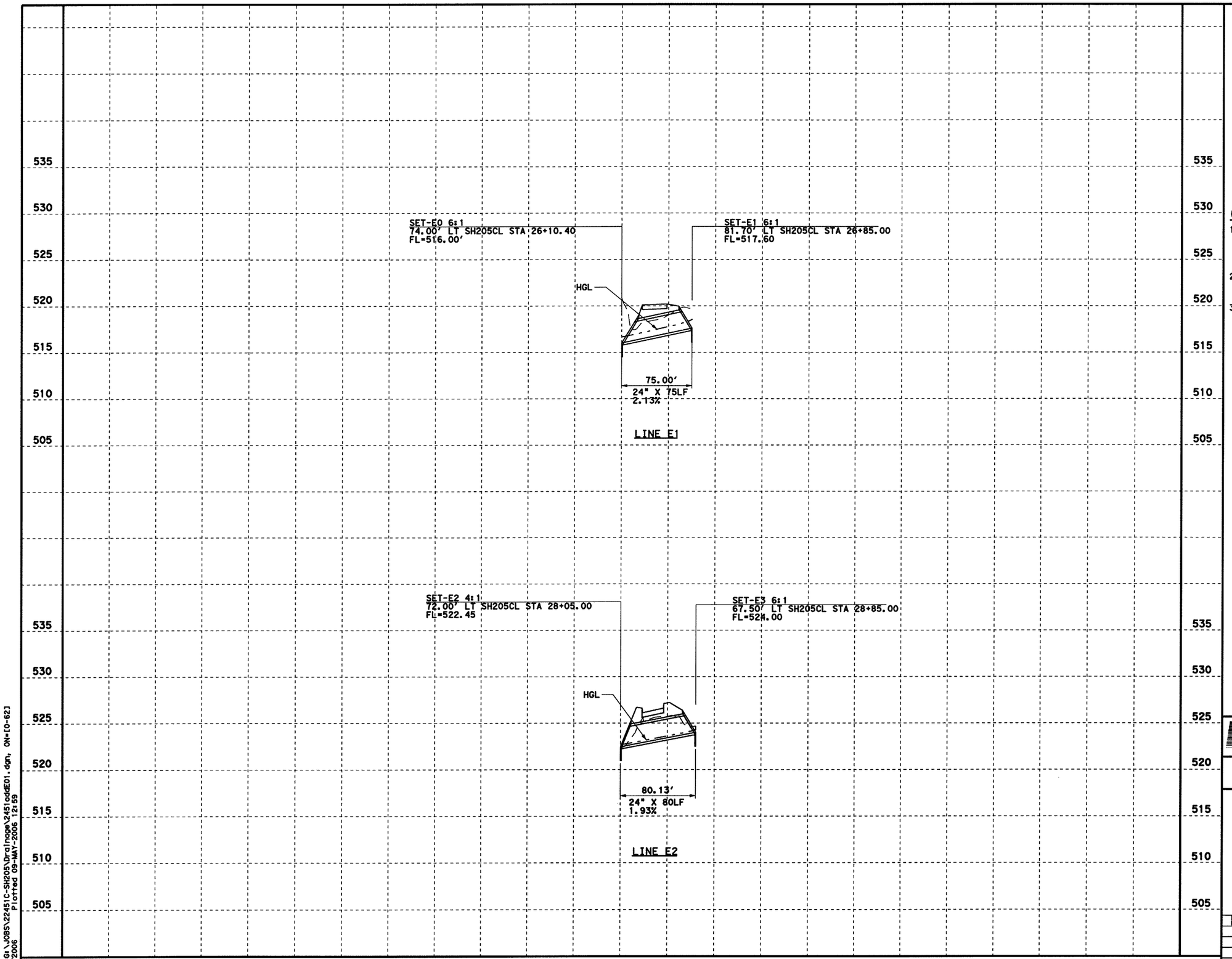

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE E

STORM SEWER LATERAL PROFILES

SHEET 42 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	442
CONT.	SECT.	JOB	
0451	01	032, ETC	

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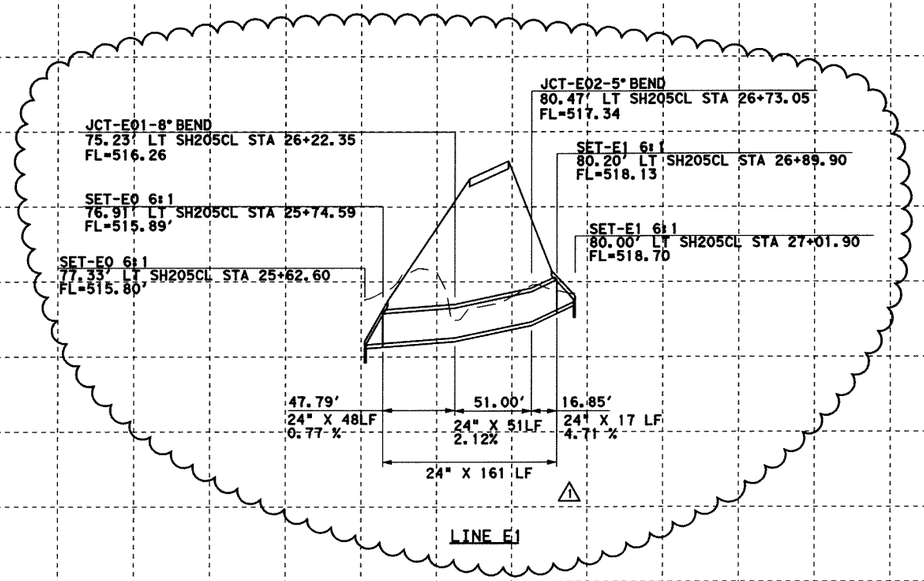
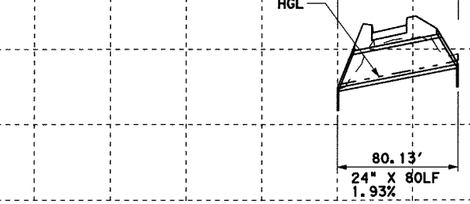


LINE E1



LINE E2

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

7/28/08

Δ- Change Order #48

⚠ REVISED LINE E1 BY DG - 01/03/2008

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DRAINAGE
LINE E

STORM SEWER LATERAL PROFILES

SHEET 42 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	442A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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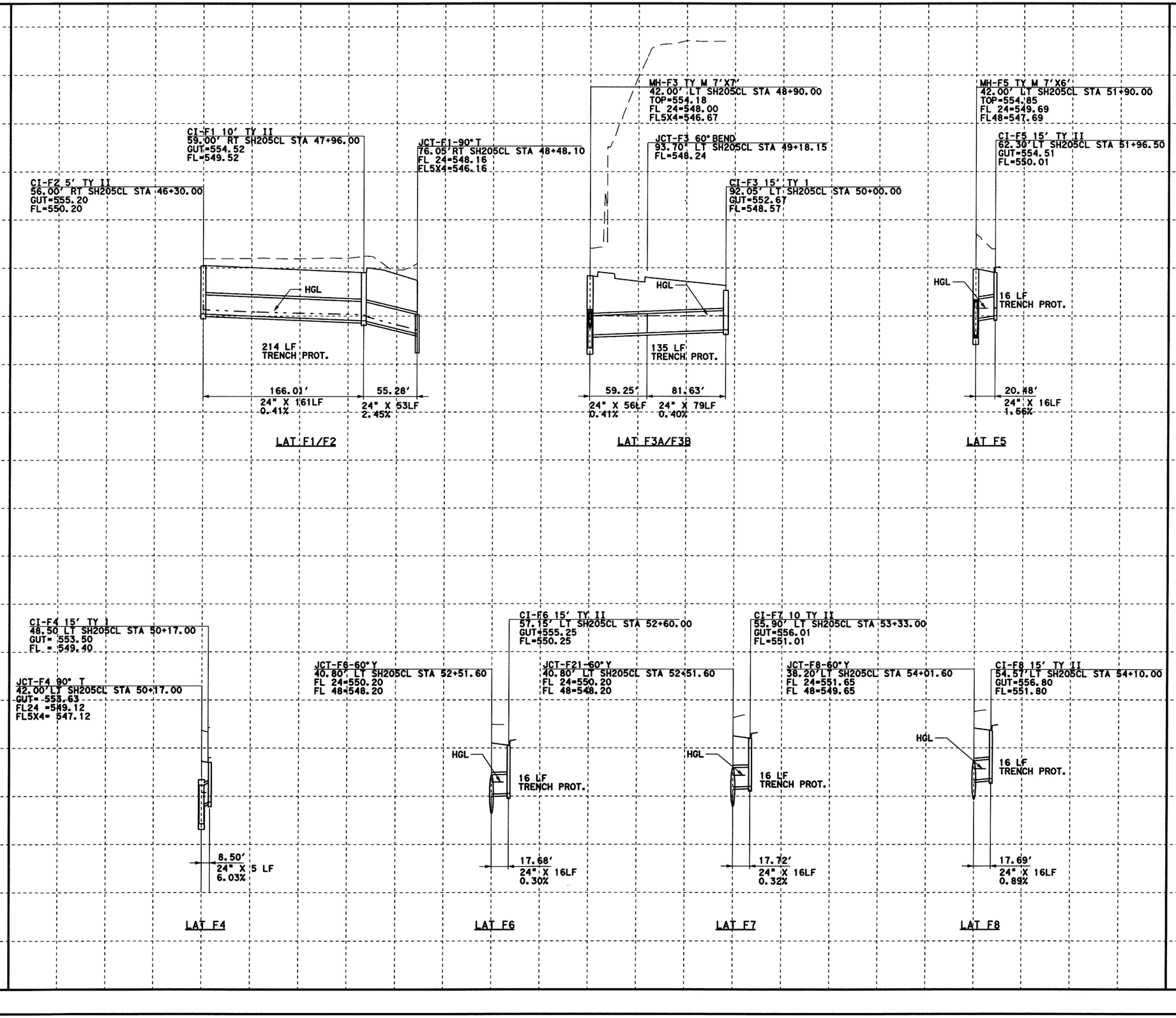
7/28/2008



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE F LATERALS
STORM SEWER LATERAL PROFILES

SHEET 43 OF 57

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	443
CONT.	SECT.	JOB	
0451	01	032, ETC	

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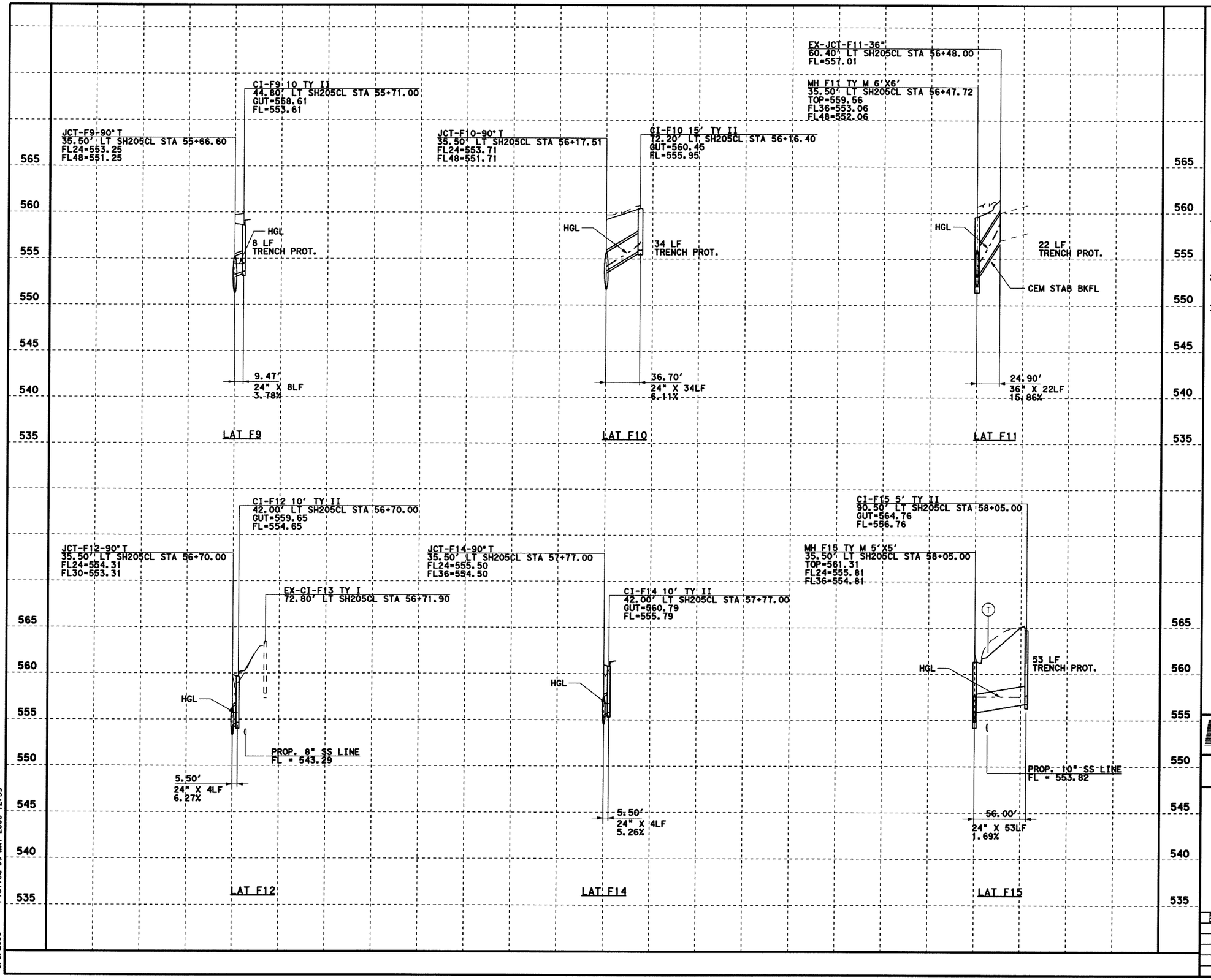

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0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

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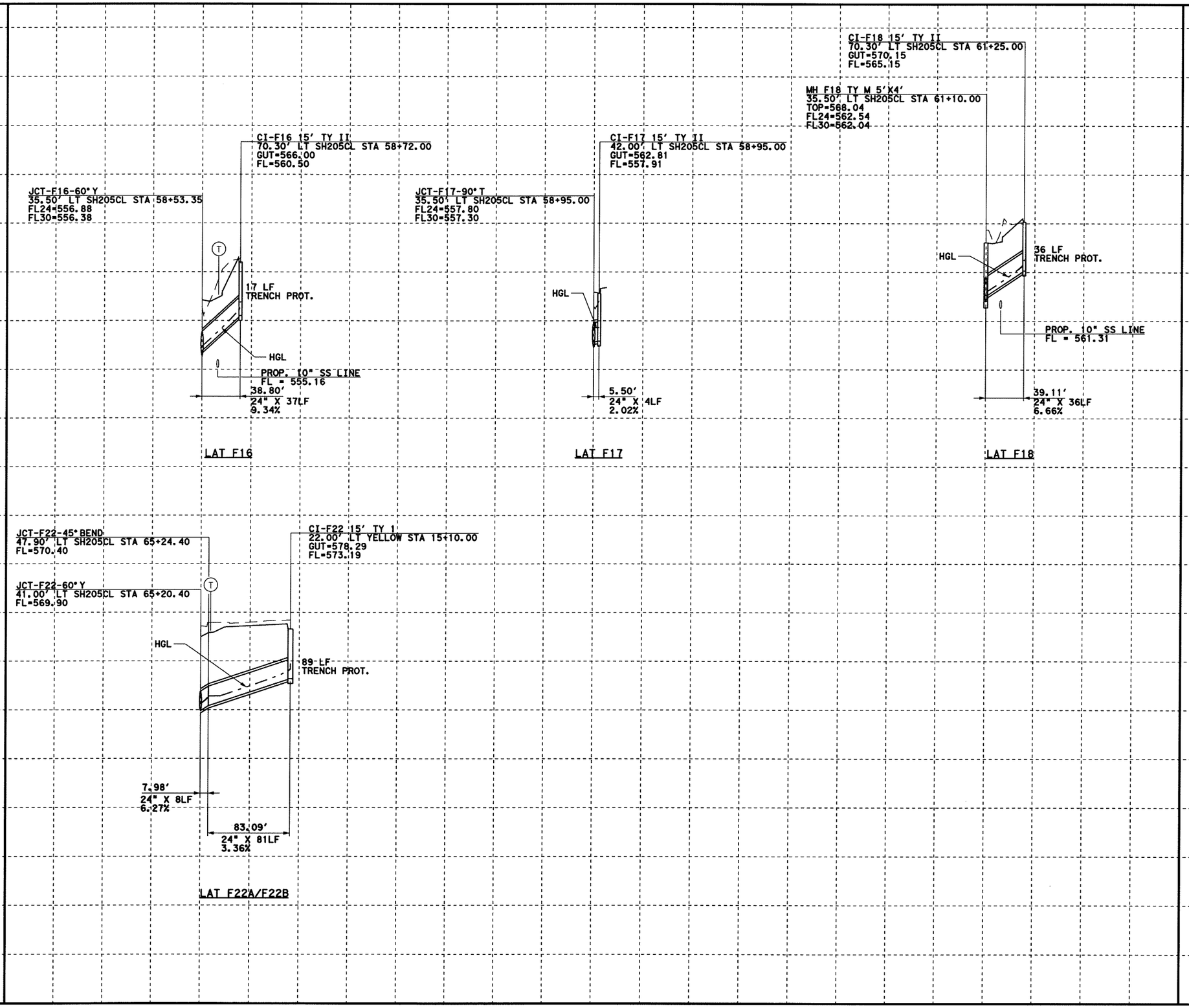
DRAINAGE
LINE F LATERALS
STORM SEWER LATERAL PROFILES

SHEET 44 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	444
CONT.	SECT.	JOB	
0451	01	032, ETC	



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5/9/2006 Plotted 09-MAY-2006 12:59

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

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LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K DAVID GAN
92574
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PROFESSIONAL ENGINEER
5/9/2006

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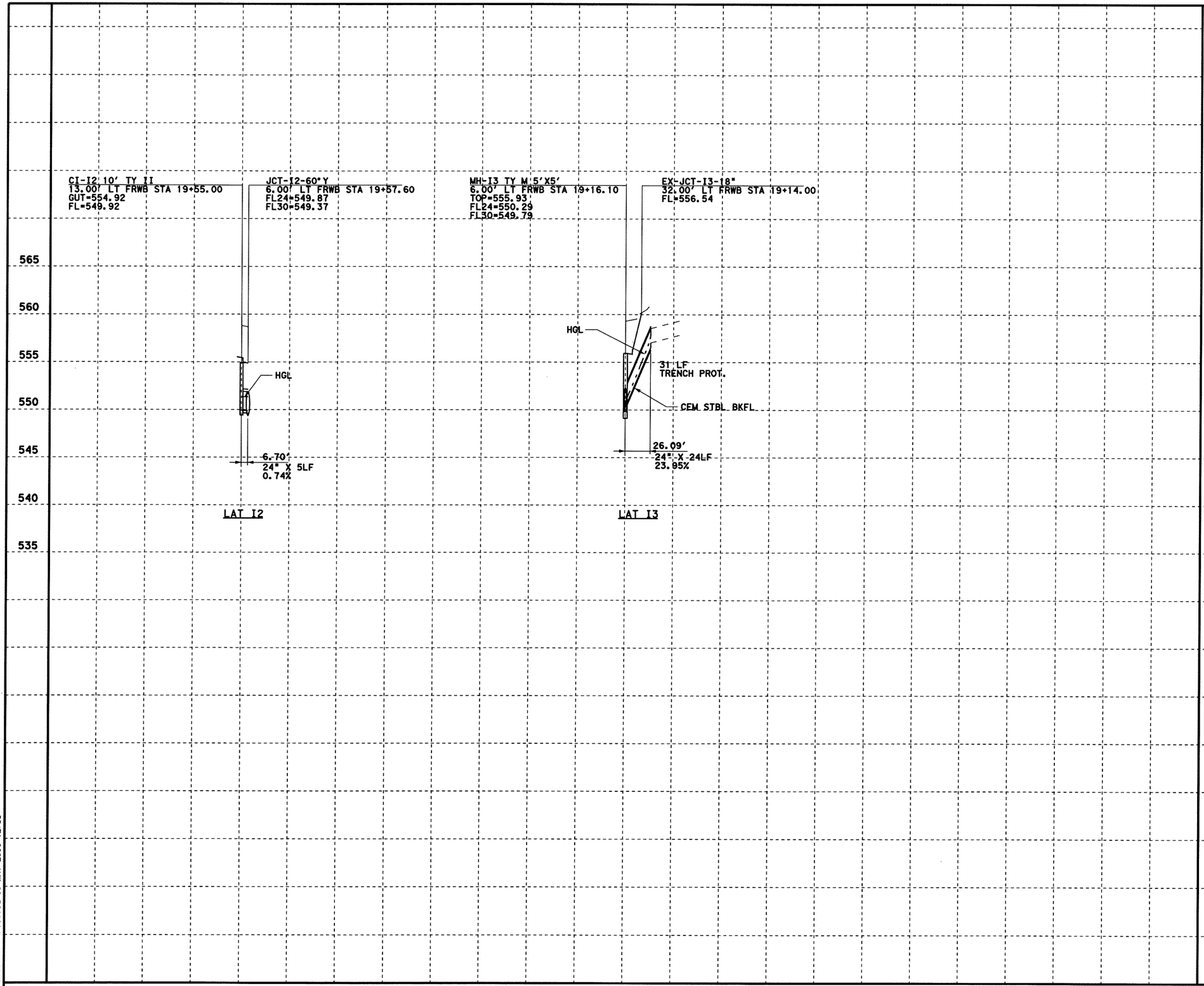
DRAINAGE
LINE F LATERALS
STORM SEWER LATERAL PROFILES

SHEET 45 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	445
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

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STATE OF TEXAS
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5/9/2006

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DRAINAGE
LINE I LATERALS
STORM SEWER LATERAL PROFILES

SHEET 46 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	446
CONT.	SECT.	JOB	
0451	01	032, ETC	

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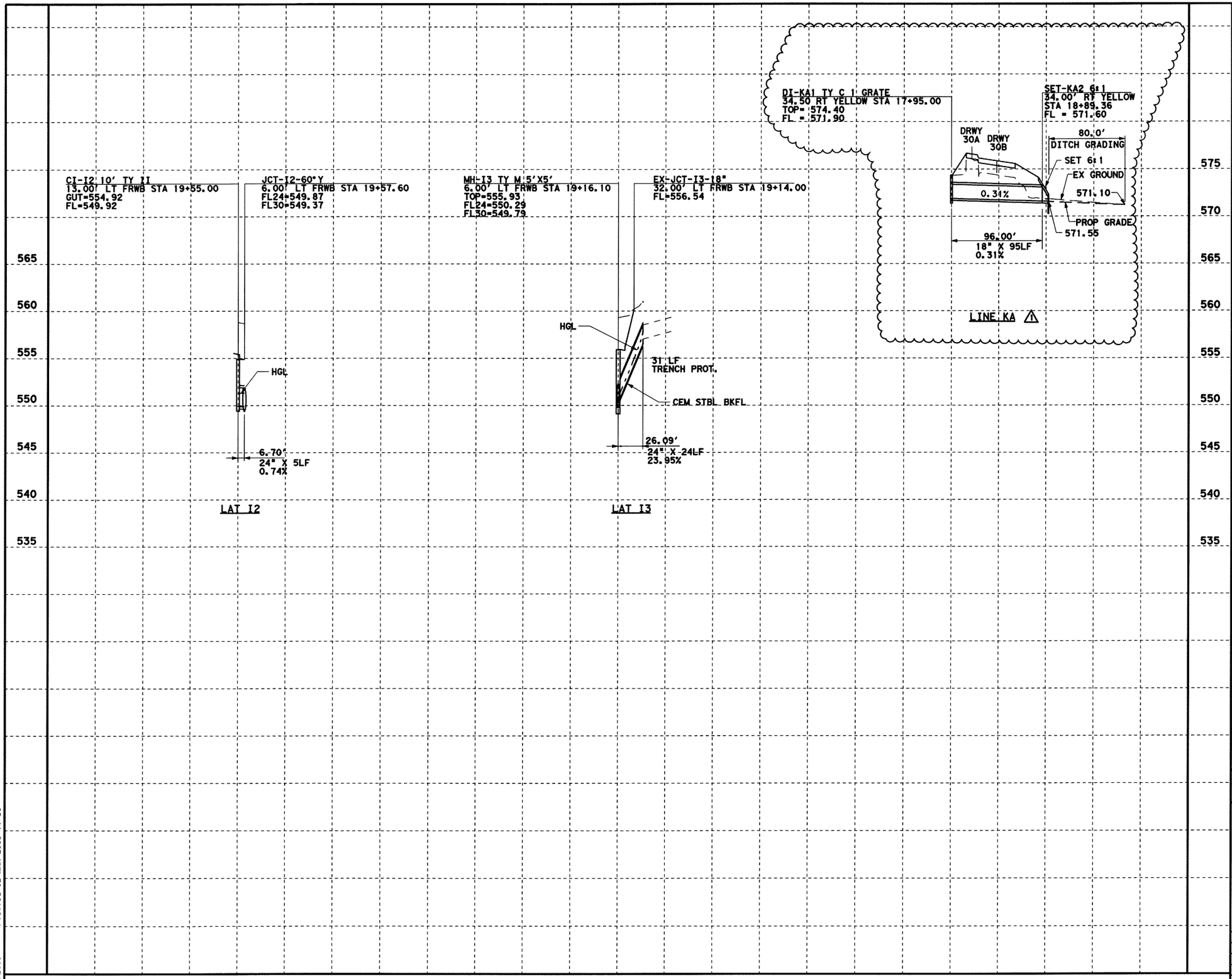

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/2/2009

⚠1 ADDED LINE KA - KDG - 11/07/2008

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SH 205

DRAINAGE
LINE I LATERALS
STORM SEWER LATERAL PROFILES

SHEET 46 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	446A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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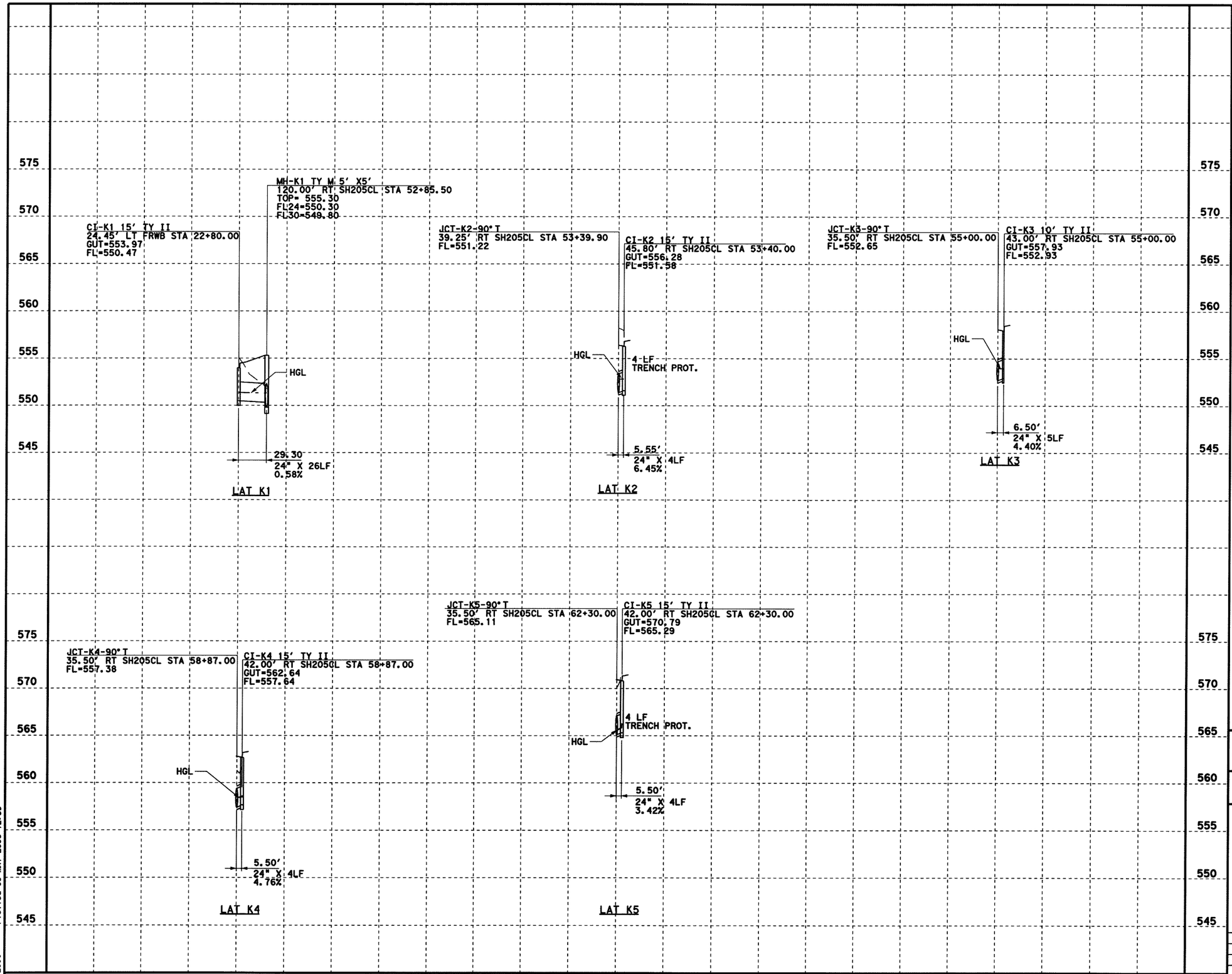

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5/9/2006 Plotted 09-MAY-2006 12:59

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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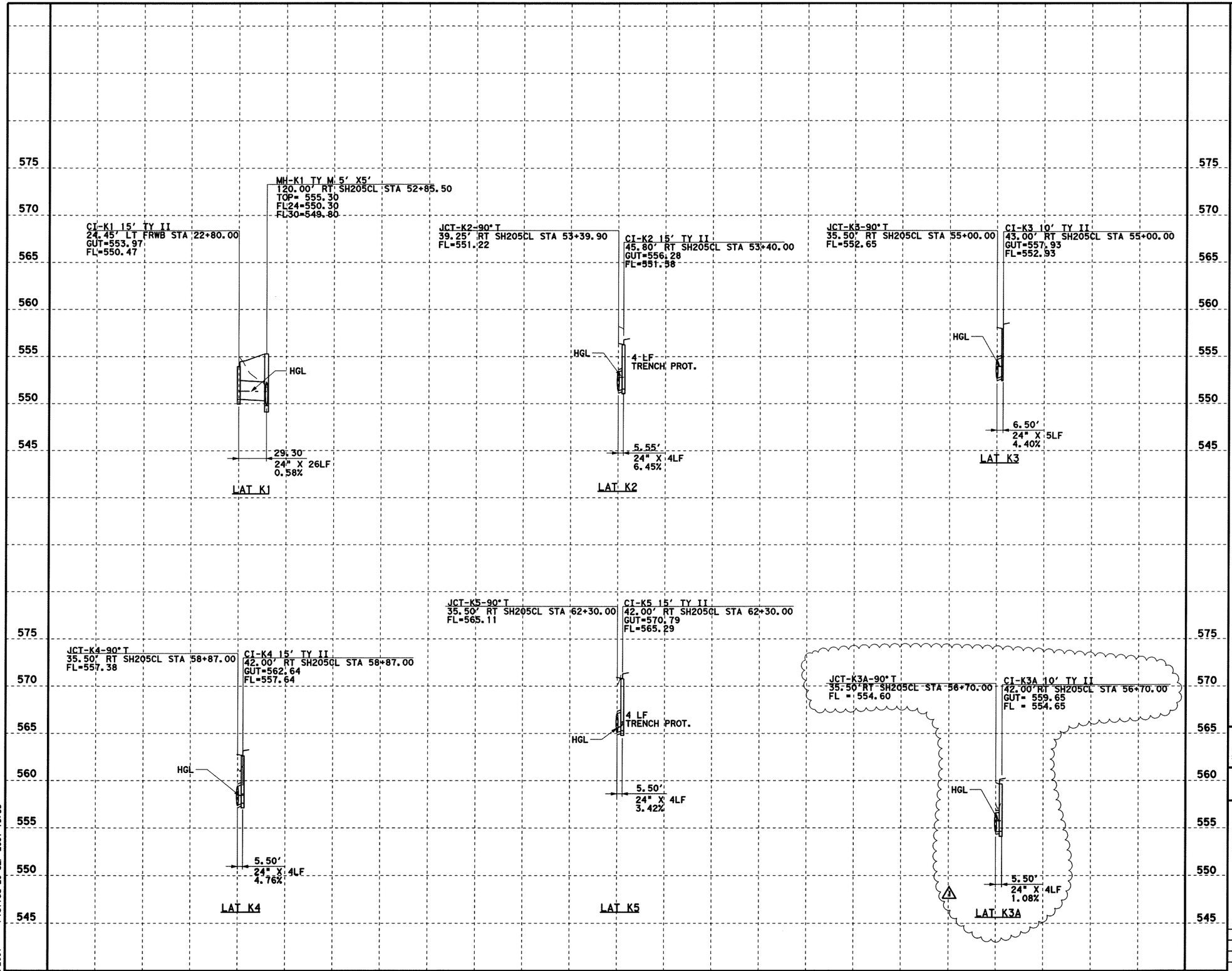
DRAINAGE
LINE K LATERALS
STORM SEWER LATERAL PROFILES

SHEET 47 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	447
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
9/20/07

1 Added Inlet CI-K3A by KDG -09/20/07

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DRAINAGE
LINE K LATERALS
STORM SEWER LATERAL PROFILES

SHEET 47 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	447A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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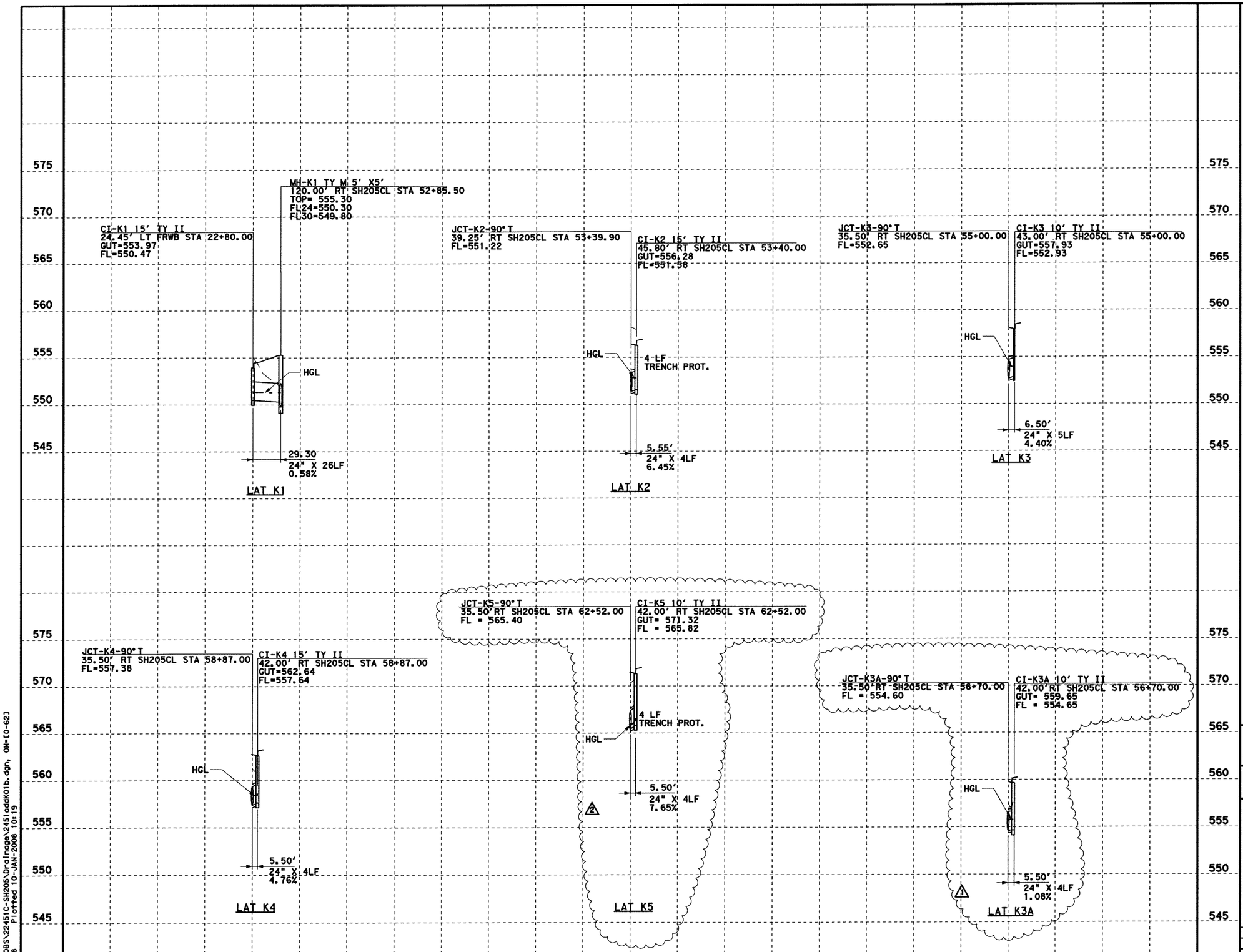

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0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

1 Added Inlet CI-K3A by KDG -09/20/07
2 Rev CI-K5 Location by KDG -1/10/08
K David Gan
1-10-2008
Δ-Change Order #27

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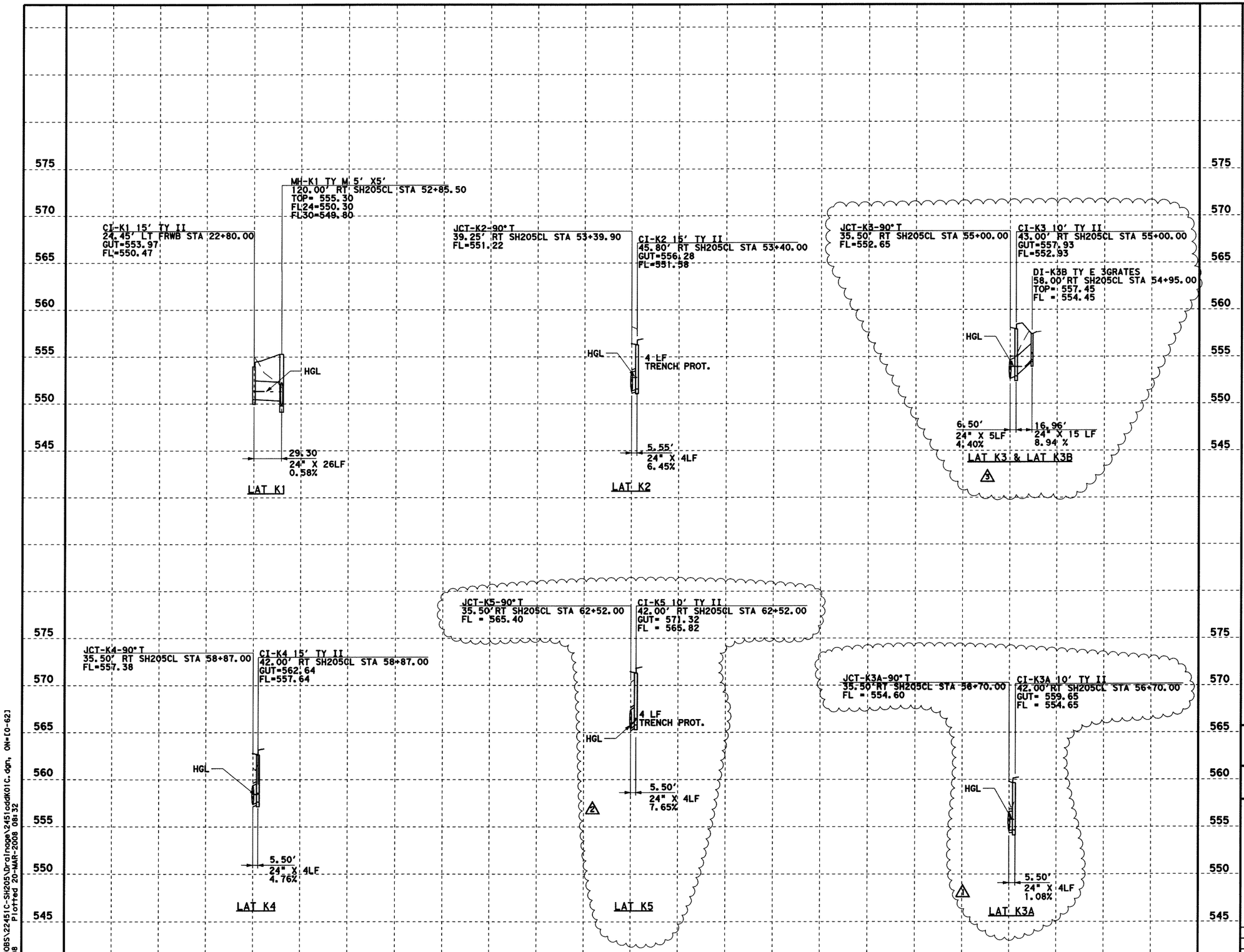
DRAINAGE
LINE K LATERALS
STORM SEWER LATERAL PROFILES

SHEET 47 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	447B
CONT.	SECT.	JOB	
0451	01	032, ETC	



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0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/08

1 Added Inlet CI-K3A by KDG -09/20/07
2 Rev CI-K5 Location by KDG -1/10/08
3 Added Inlet DI-K3B by KDG -03/19/08

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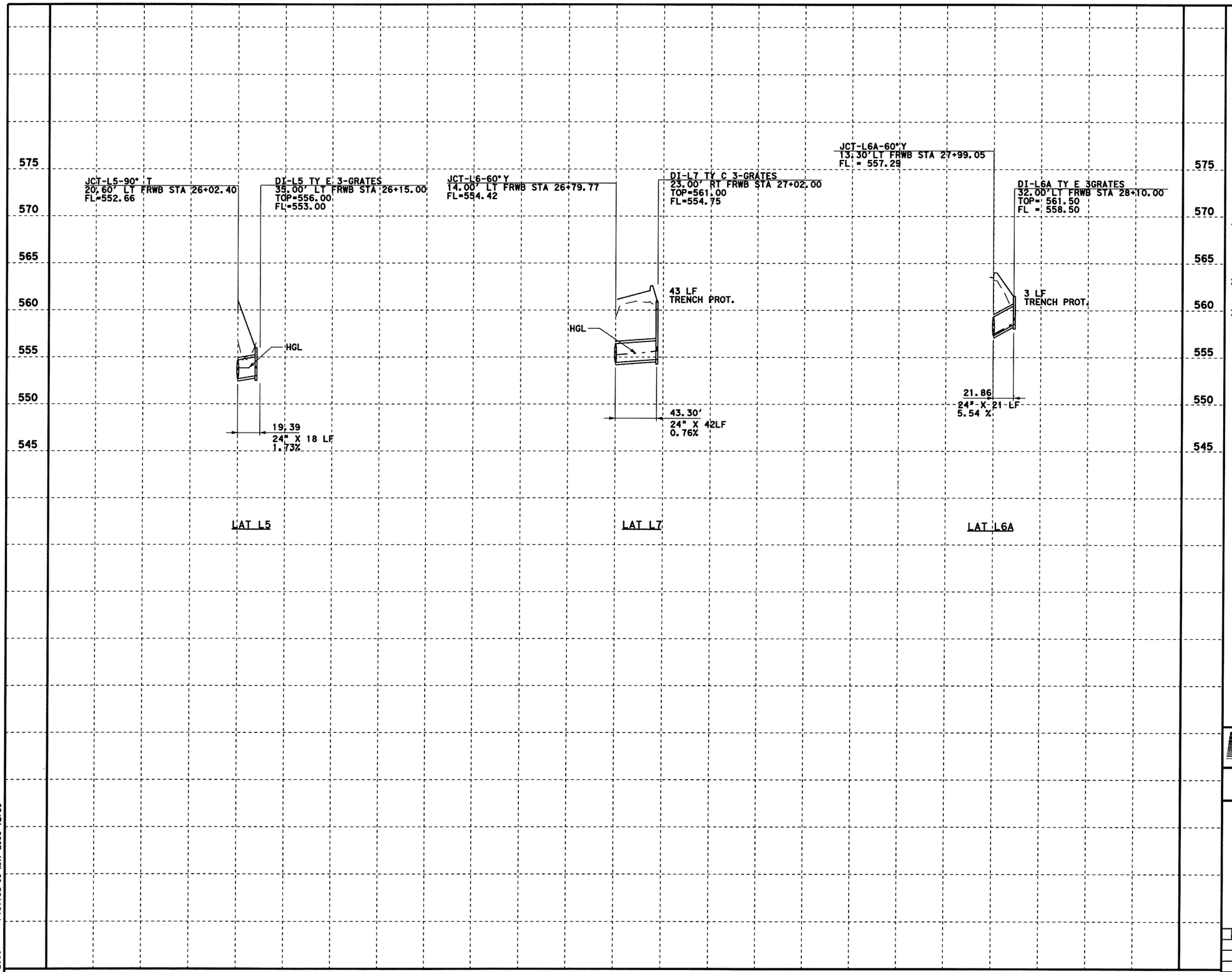
DRAINAGE
LINE K LATERALS
STORM SEWER LATERAL PROFILES

SHEET 47 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	447C
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE L LATERALS
STORM SEWER LATERAL PROFILES

SHEET 48 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	448
CONT.	SECT.	JOB	
0451	01	032, ETC	

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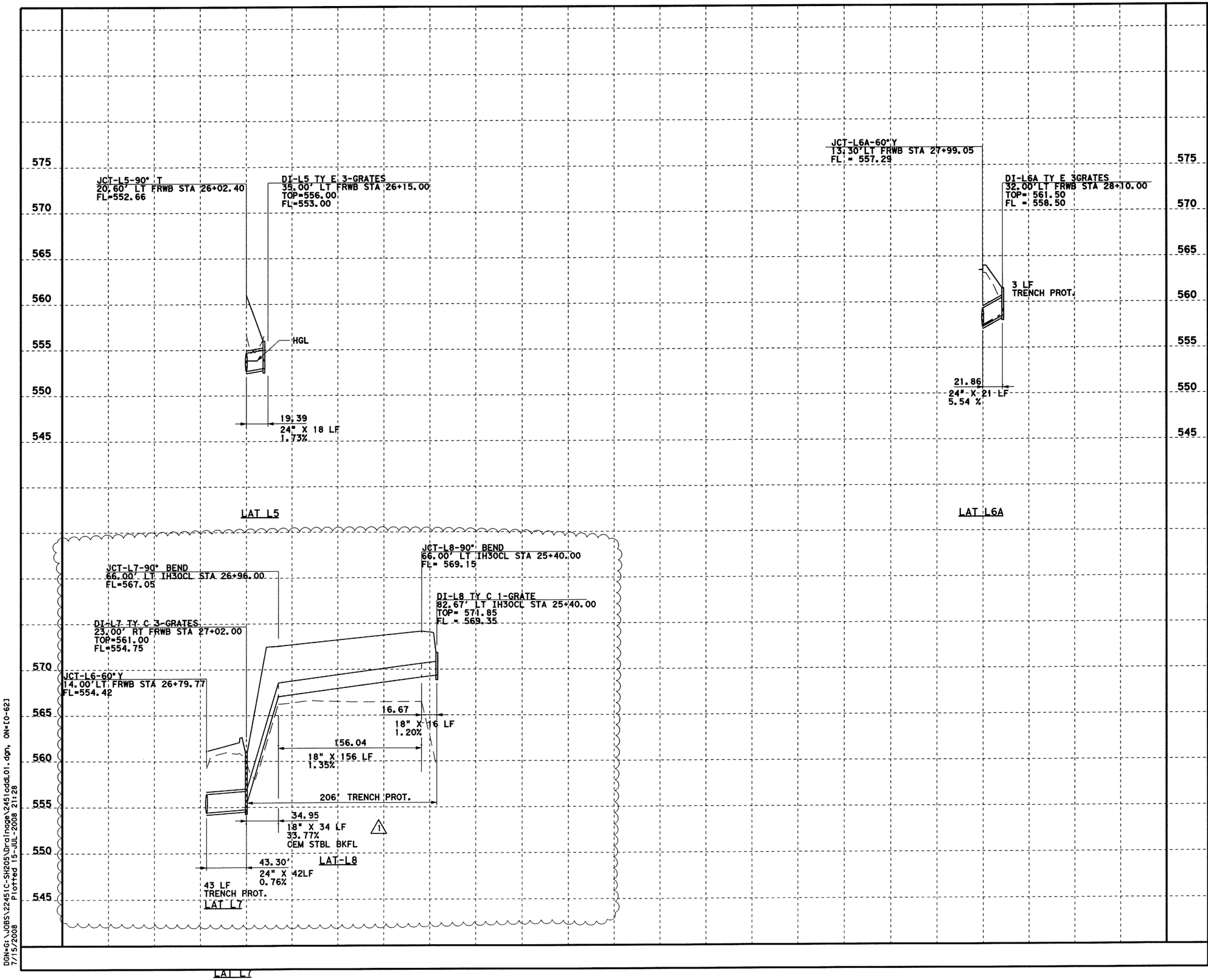

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
7/15/08

1 5B - Change Order 55

1 7/15/08 ADD LAT-L8 & DI-L8 BY KDG

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DRAINAGE
LINE L LATERALS
STORM SEWER LATERAL PROFILES

SHEET 48 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	448A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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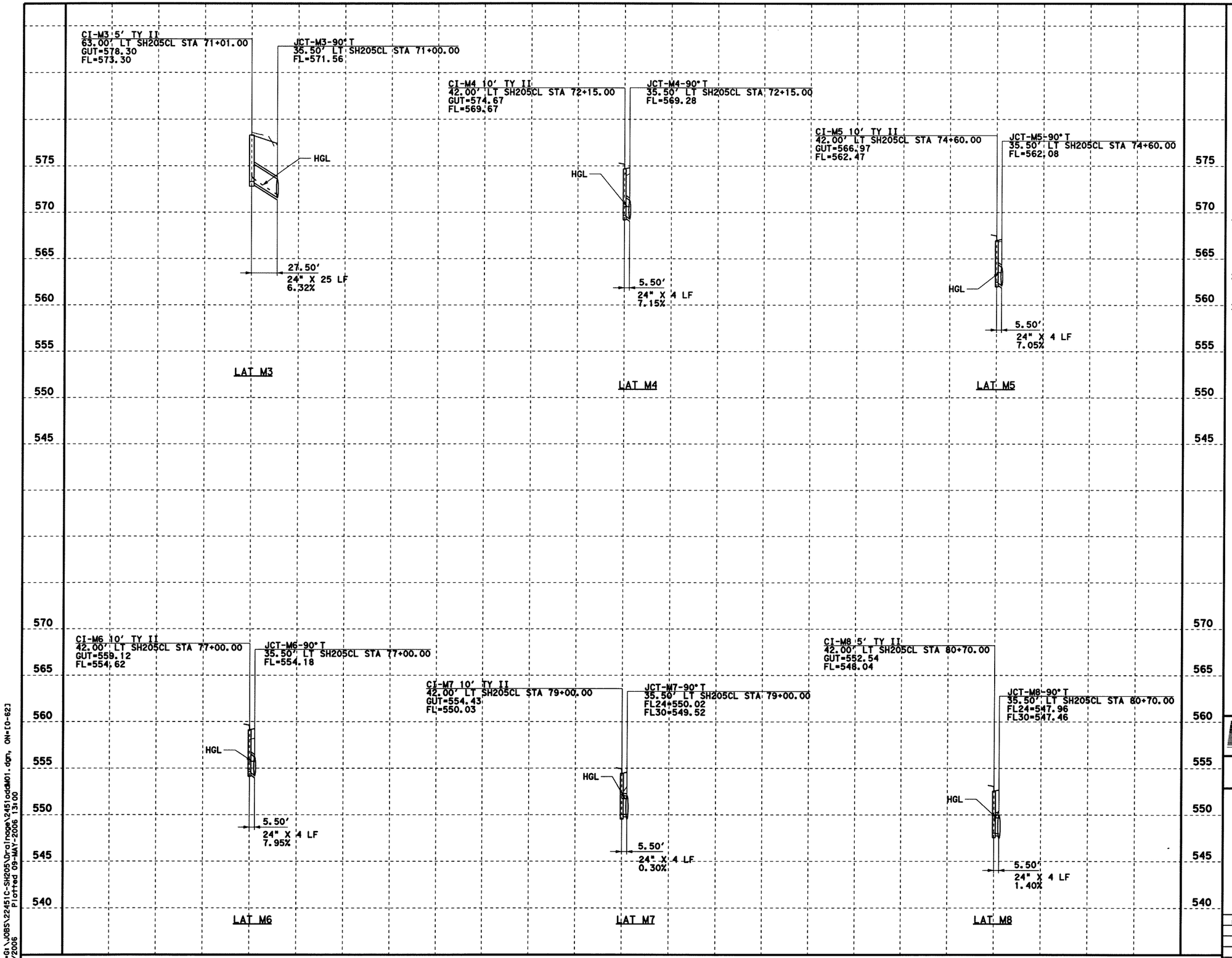

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE M LATERALS
STORM SEWER LATERAL PROFILES

SHEET 49 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	449
CONT.	SECT.	JOB	
0451	01	032, ETC	

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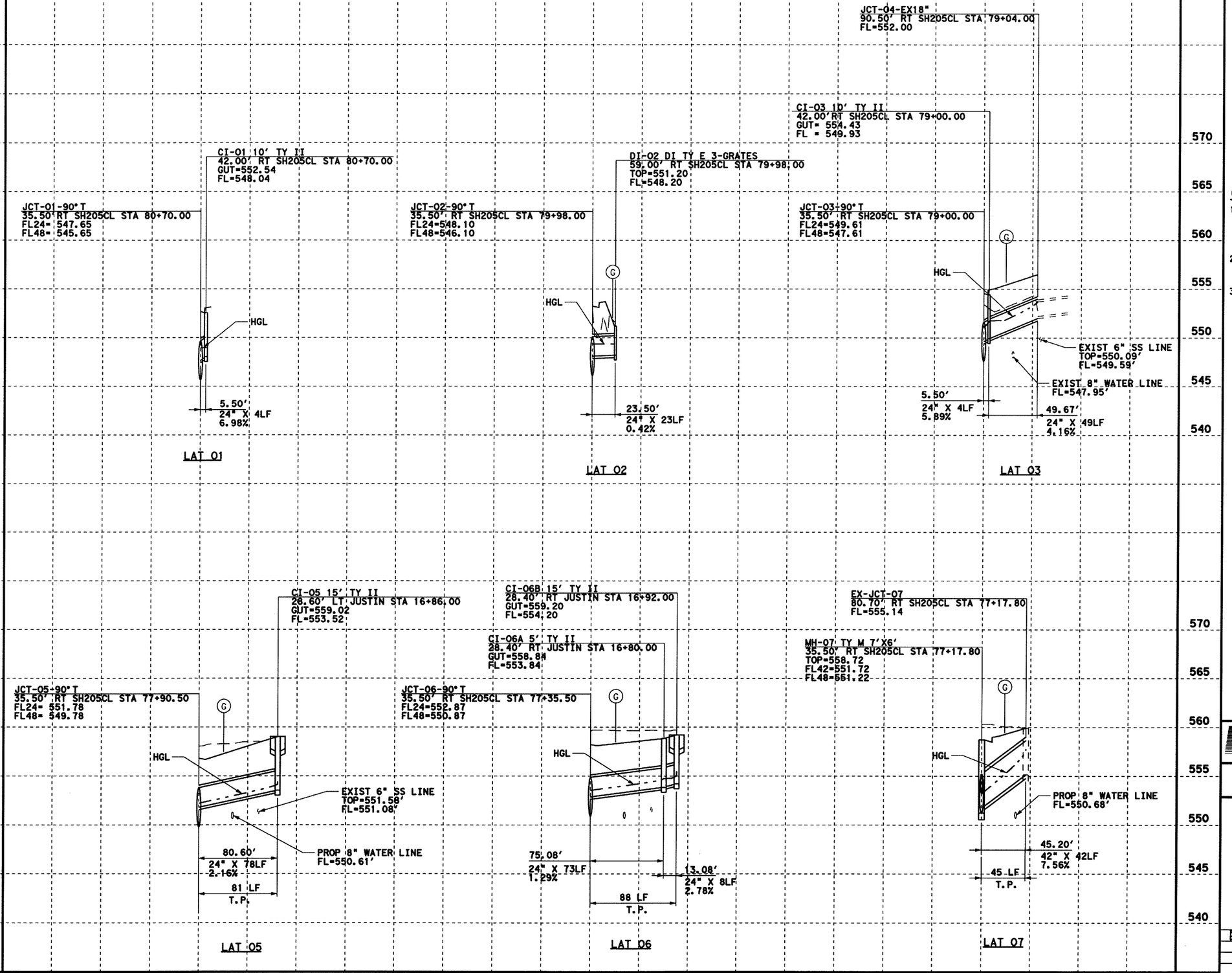

SCALE IN FEET
HORIZONTAL
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SCALE IN FEET
VERTICAL
0 5 10

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE O LATERALS
STORM SEWER LATERAL PROFILES

SHEET 50 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	450
CONT.	SECT.	JOB	
0451	01	032, ETC	

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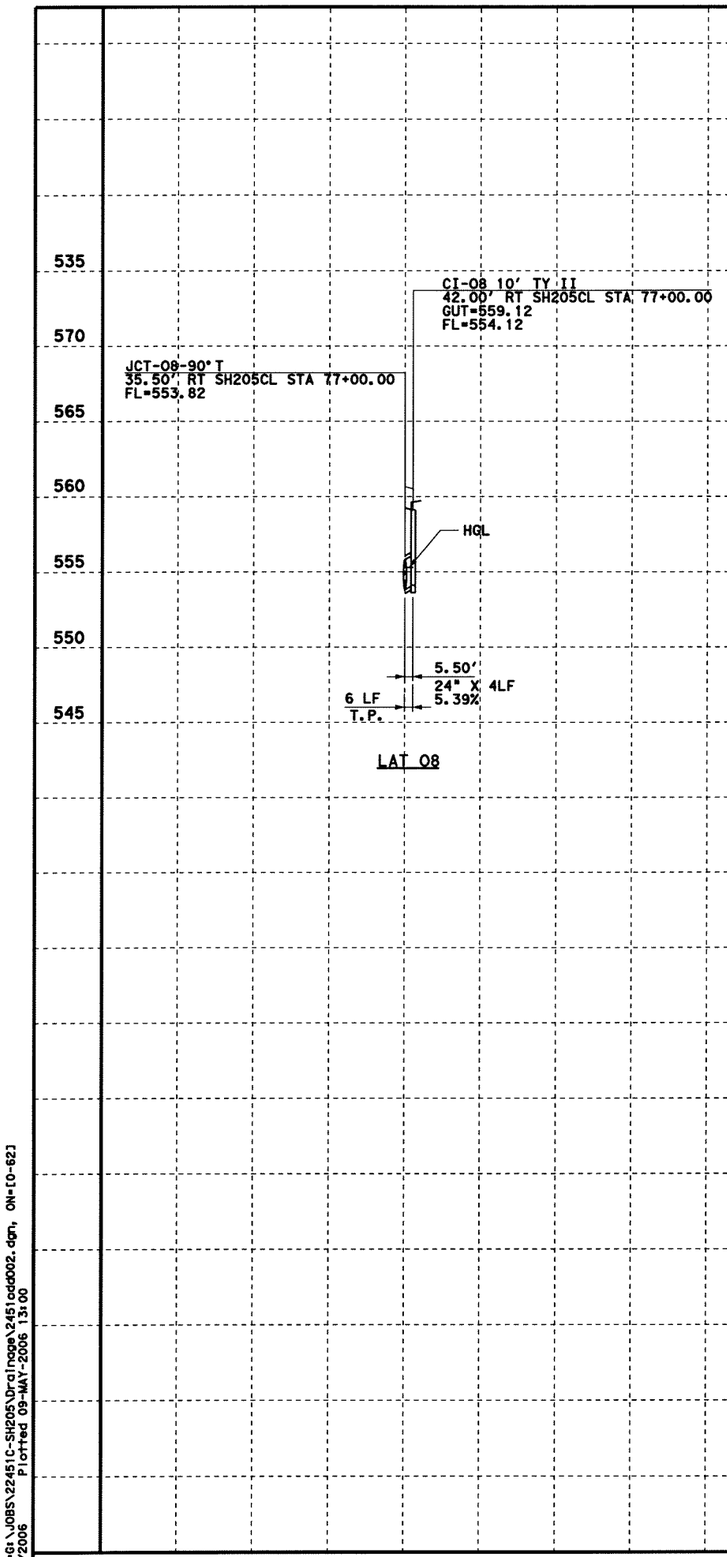

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE O LATERALS
STORM SEWER LATERAL PROFILES

SHEET 51 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	451
CONT.	SECT.	JOB	
0451	01	032, ETC	

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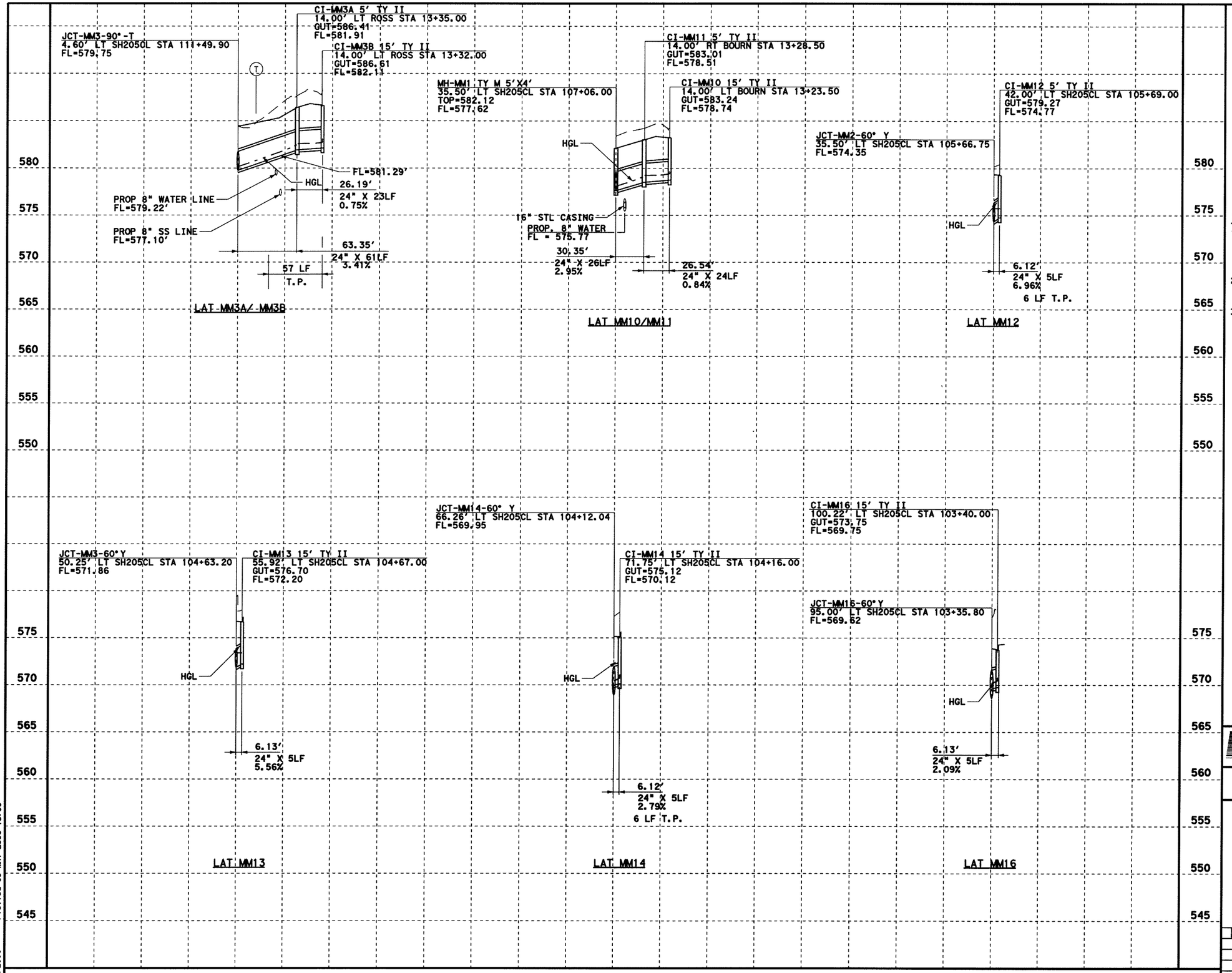
5/9/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE MM LATERALS
STORM SEWER LATERAL PROFILES

SHEET 52 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	452
CONT.	SECT.	JOB	
0451	01	032, ETC	

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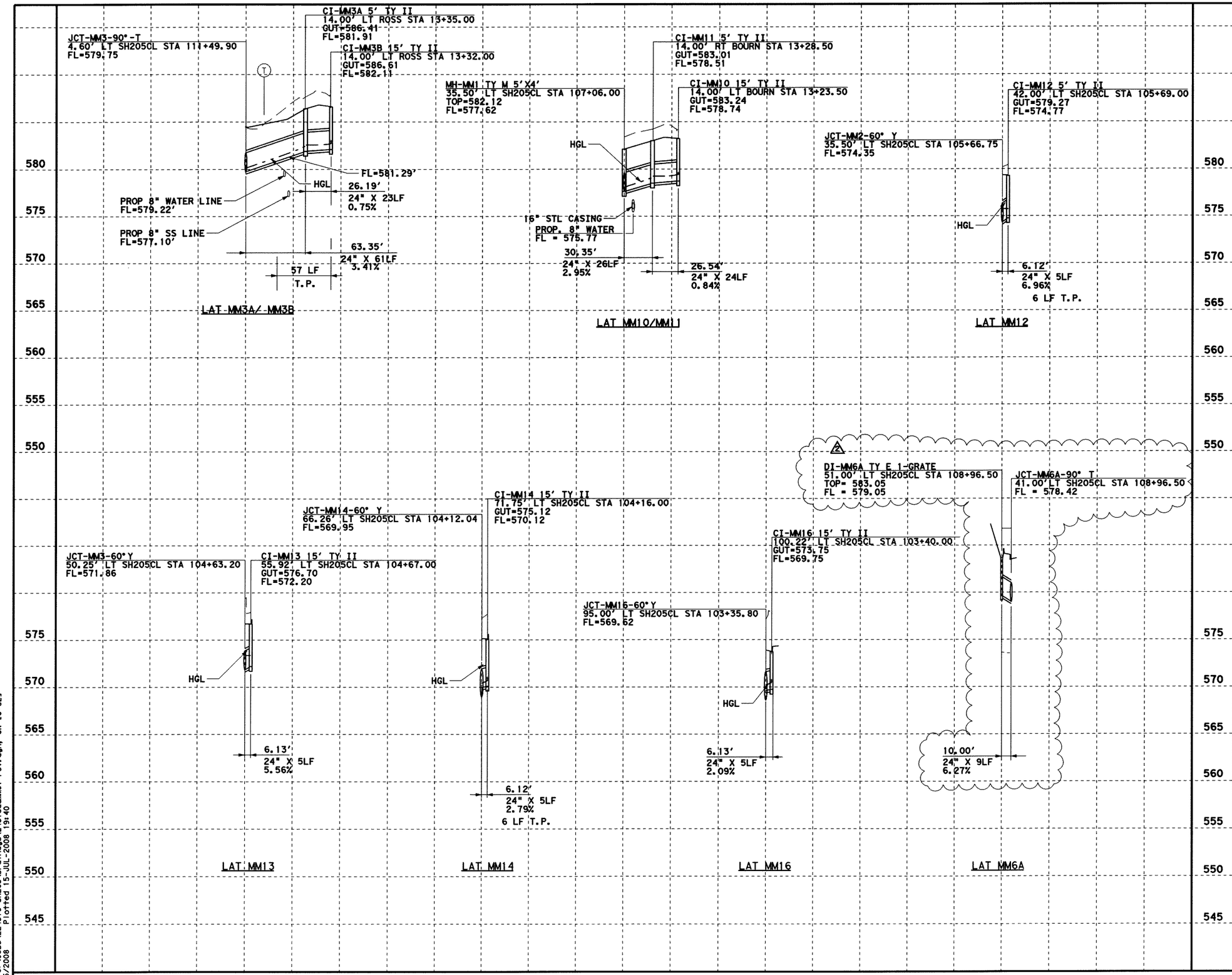
5/9/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

LEGENDS

(G) EX. GAS LINE CROSSING ELEVATION UNKNOWN

(T) EX. SW BELL CABLE CROSSING ELEVATION UNKNOWN

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
7/15/08

Δ- Change Order #50

2 ADDED DI-6A - KDG - 04/24/2008

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DRAINAGE
LINE MM LATERALS
STORM SEWER LATERAL PROFILES

SHEET 52 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	452A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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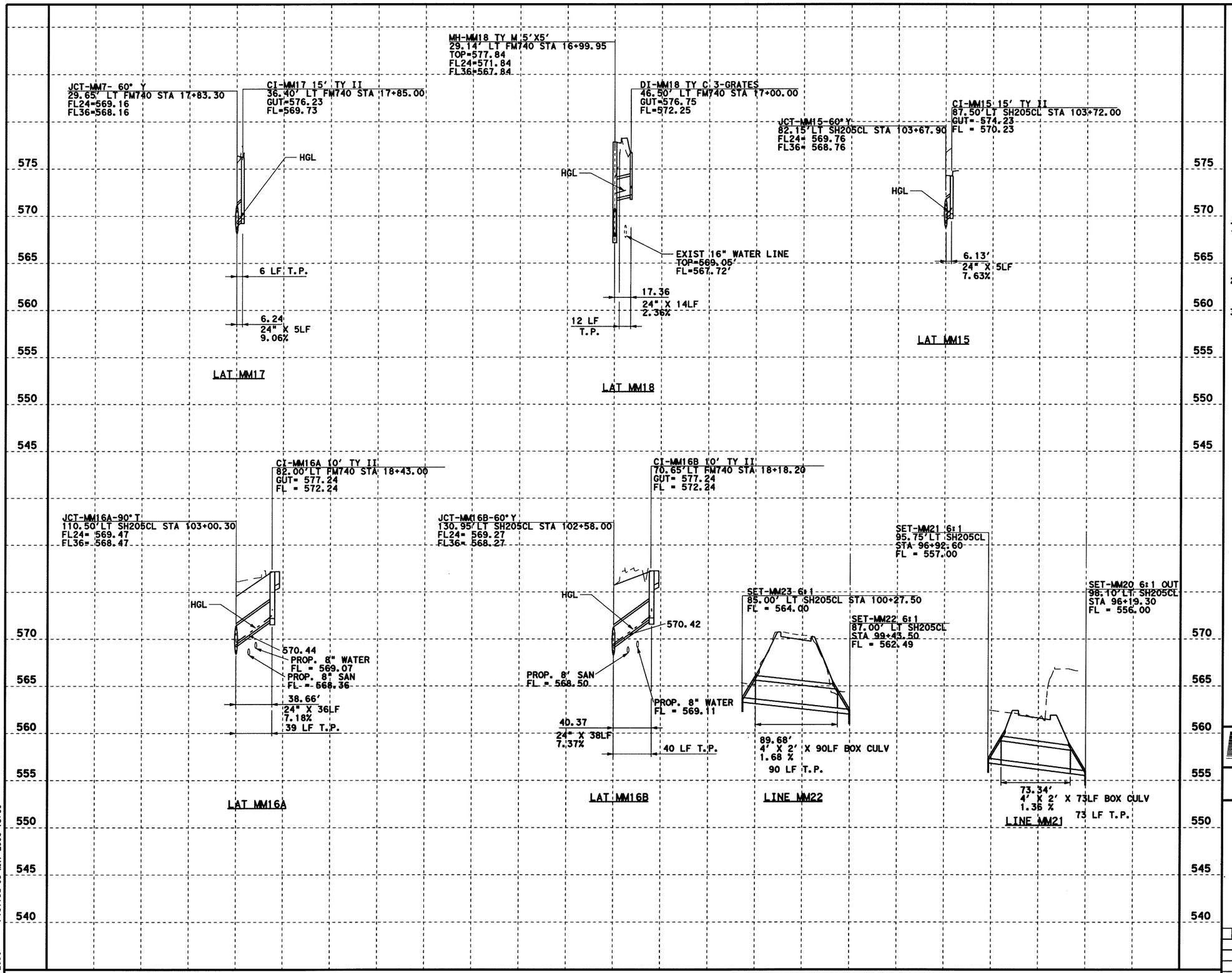

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/9/2006

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DRAINAGE
LINE MM LATERALS

STORM SEWER LATERAL PROFILES

SHEET 53 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	453
CONT.	SECT.	JOB	
0451	01	032, ETC	

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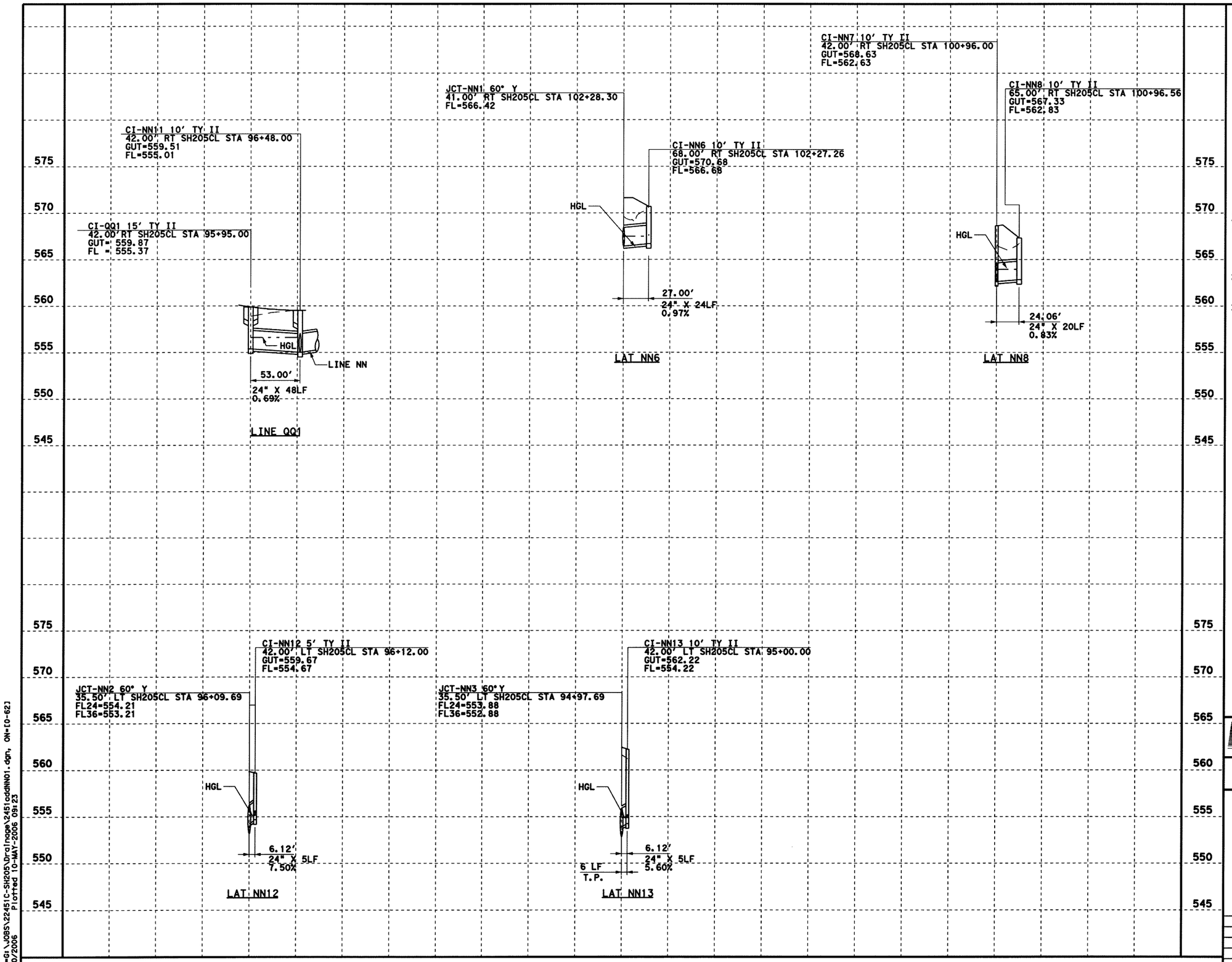

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
5/10/2006

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DRAINAGE
LINE NN LATERALS
STORM SEWER LATERAL PROFILES

SHEET 54 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	454
CONT.	SECT.	JOB	
0451	01	032, ETC	

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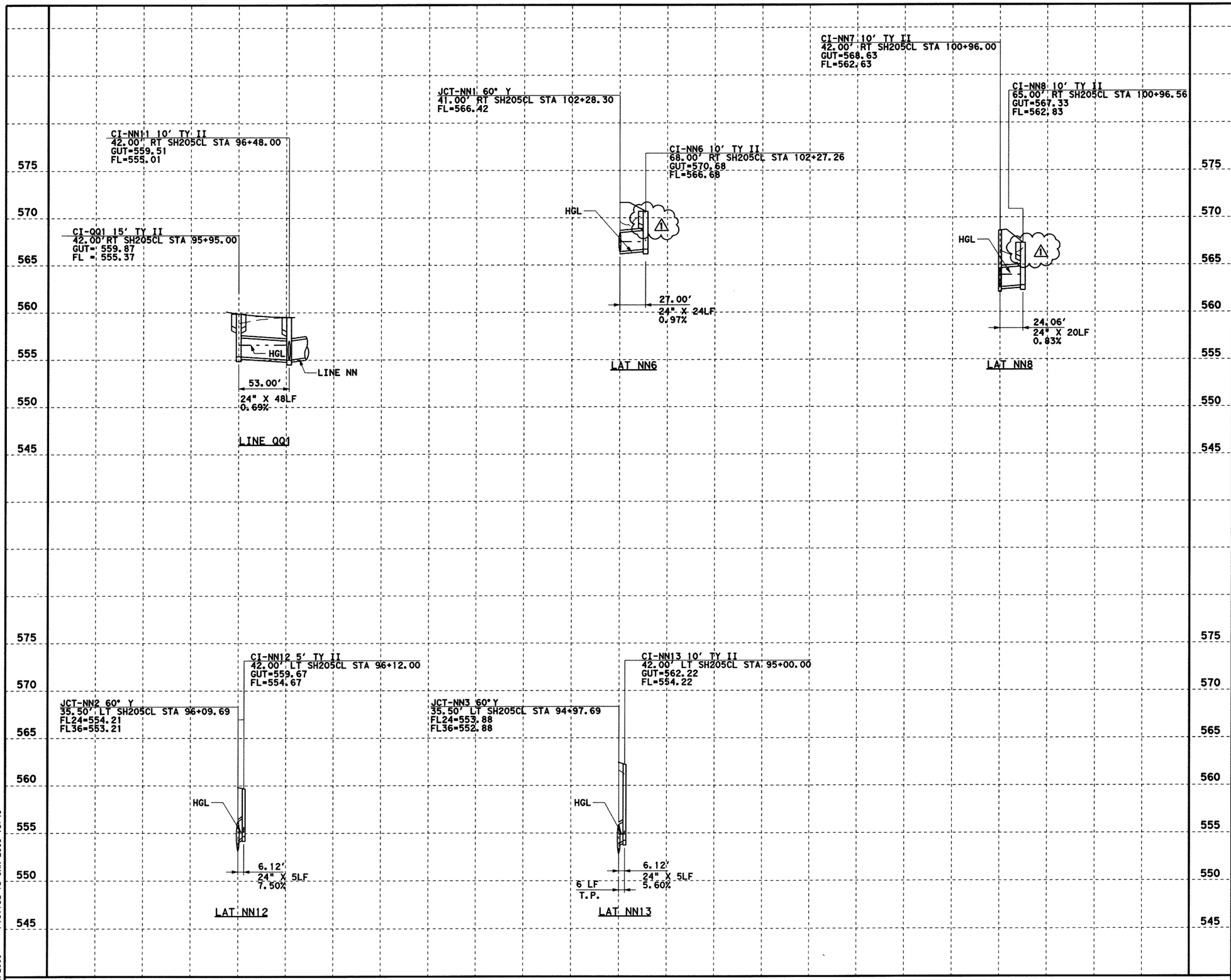

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HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
2. JUNCTION BOX STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE JUNCTION BOX.
3. ALL PIPES ARE CLASS III RCP UNLESS OTHERWISE NOTED.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
1/13/2009

1	09-05-08	CI-INLET EXT	AM

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SH 205

DRAINAGE
LINE NN LATERALS
STORM SEWER LATERAL PROFILES

SHEET 54 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	454A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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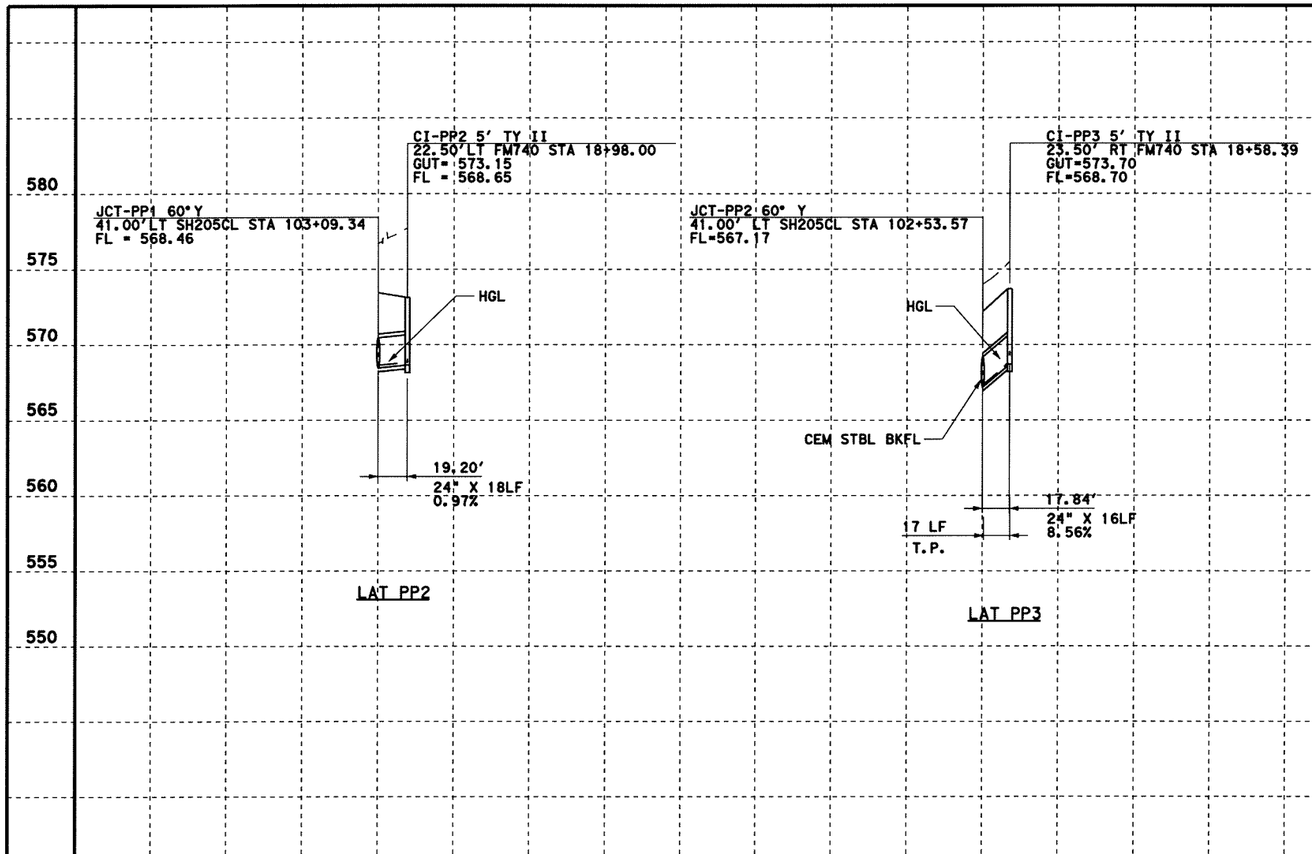

SCALE IN FEET
HORIZONTAL
0 50 100

SCALE IN FEET
VERTICAL
0 5 10

GENERAL NOTES

1. CURB INLETS STATION AND OFFSET ARE MEASURED TO THE MIDPOINT OF THE FACE OF MAIN INLET. GRATE INLETS STATION AND OFFSET ARE MEASURED TO THE CENTER OF THE INLET.
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STATE OF TEXAS
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92574
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5/9/2006

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DRAINAGE
LINE PP LATERALS
STORM SEWER LATERAL PROFILES

SHEET 55 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	455
CONT.	SECT.	JOB	
0451	01	032, ETC	

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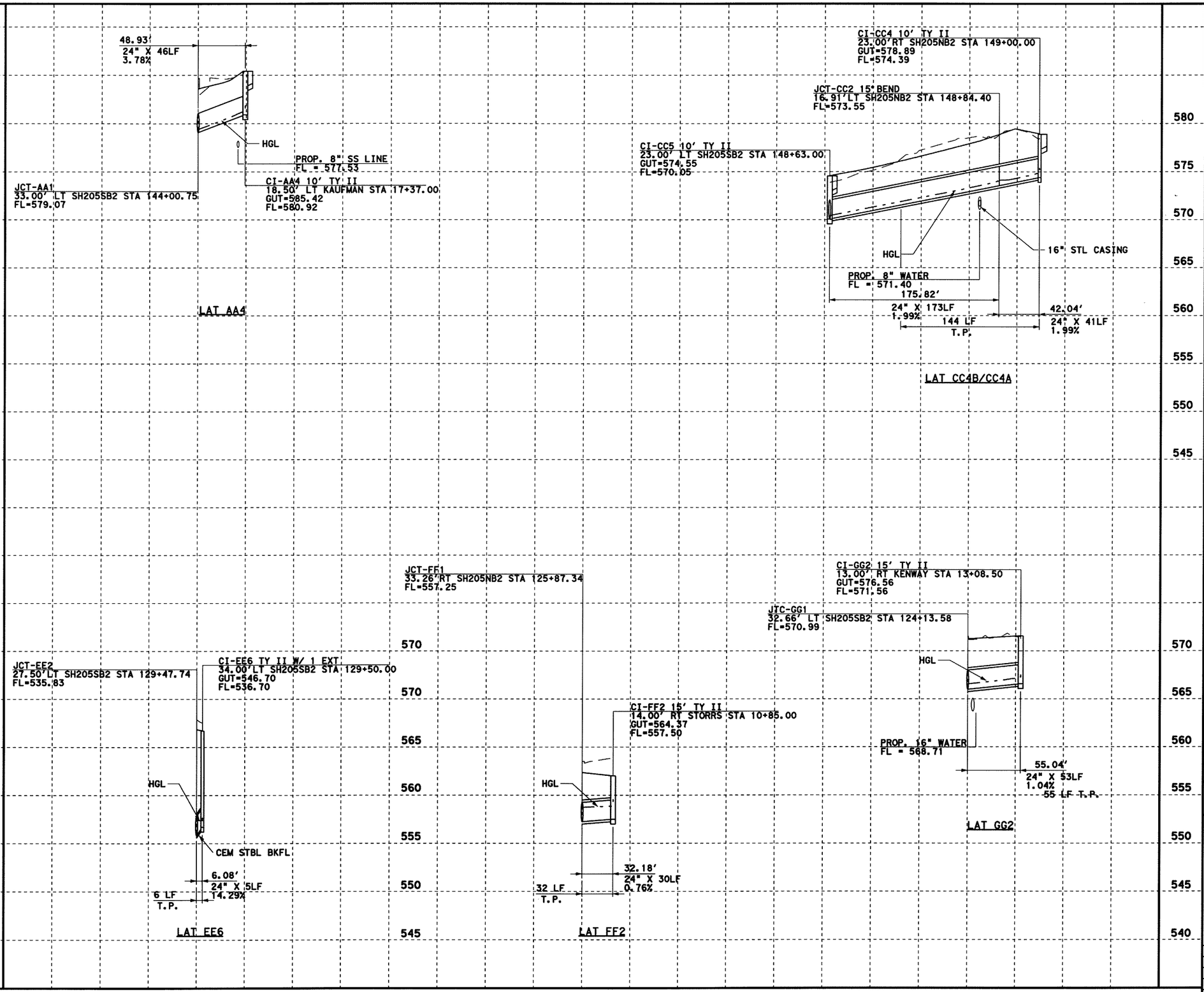
5/9/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

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DRAINAGE
MISC LINE LATERALS
STORM SEWER LATERAL PROFILES

SHEET 56 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	456
CONT.	SECT.	JOB	
0451	01	032, ETC	

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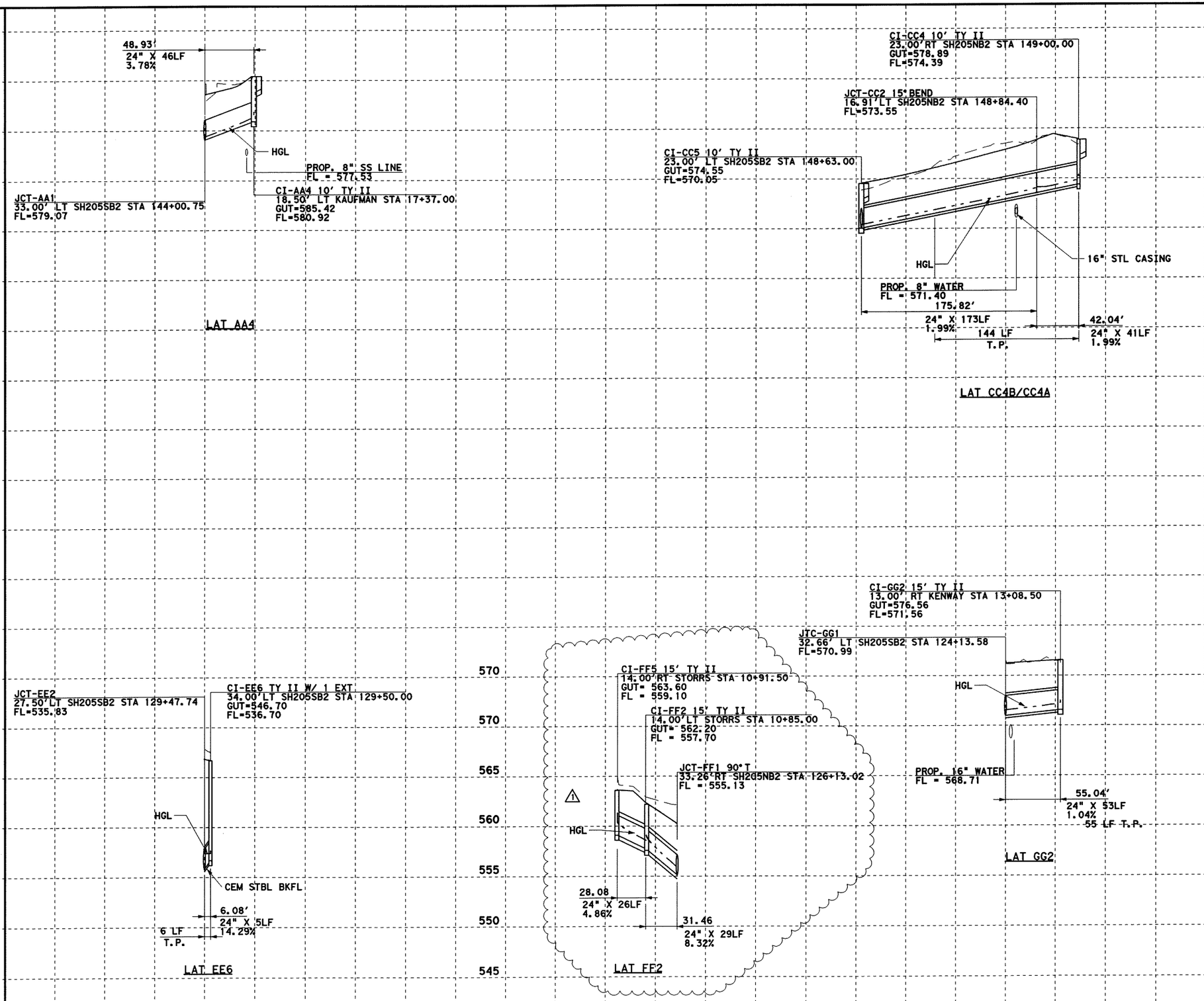

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

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STATE OF TEXAS
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1/13/2009

ORIGINAL PLANS SEALED BY TODD P. CONSTANT, P.E.
⚠ REIVISED LAT FF2 10/20/08 -AM

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STORM SEWER LATERAL PROFILES

SHEET 56 OF 57

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	456A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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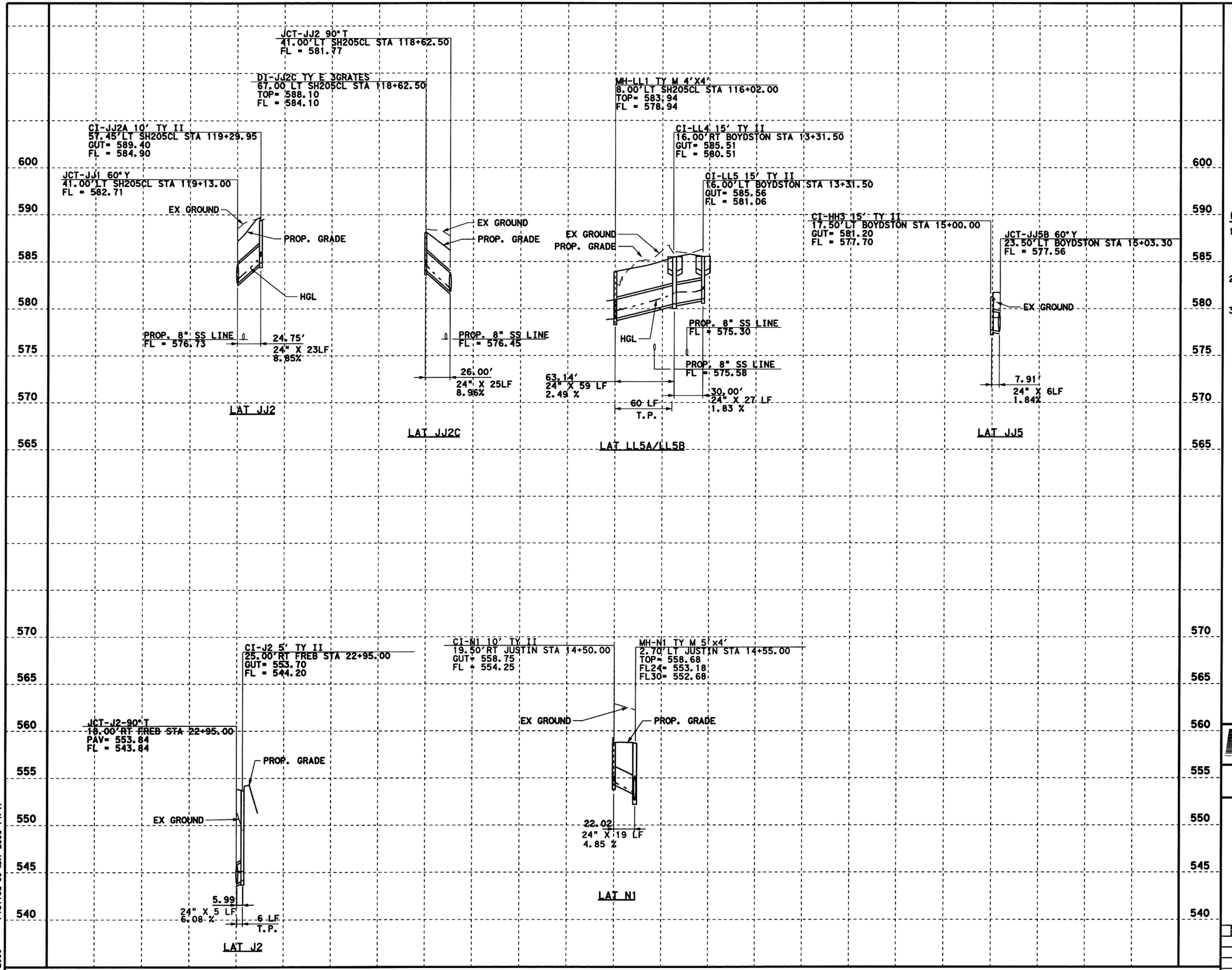
1/13/2009



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5/9/2006

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

GENERAL NOTES

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STATE OF TEXAS
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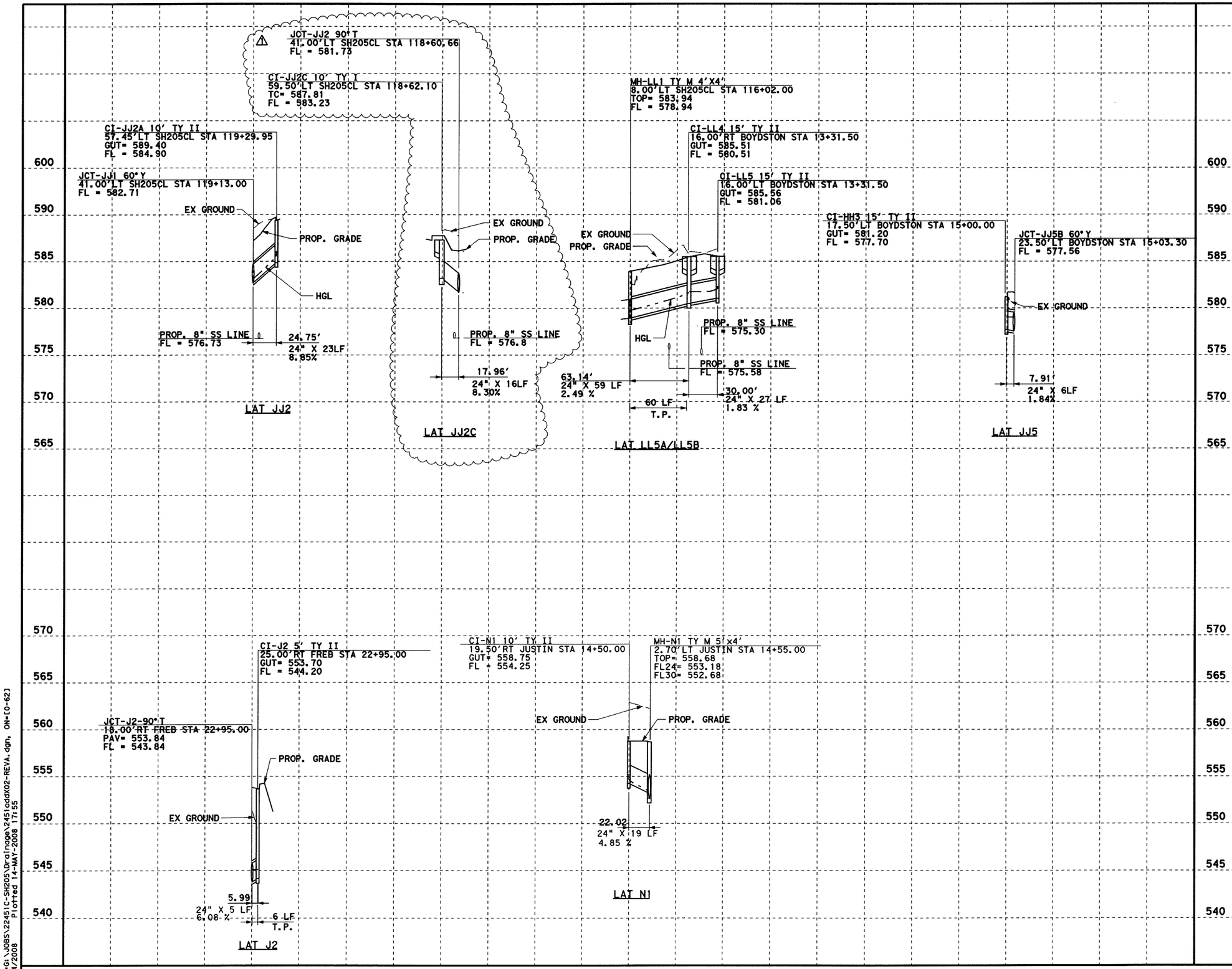
DRAINAGE
MISC LINE LATERALS
STORM SEWER LATERAL PROFILES

SHEET 57 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	457
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

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⚠ REVISED BY DG 05-12-2008
REPLACED DI-JJ2C TY E TO CI-JJ2C TY I

STATE OF TEXAS
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92574
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DRAINAGE
MISC LINE LATERALS

STORM SEWER LATERAL PROFILES

SHEET 57 OF 57

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	457AA
CONT.	SECT.	JOB	
0451	01	032, ETC	

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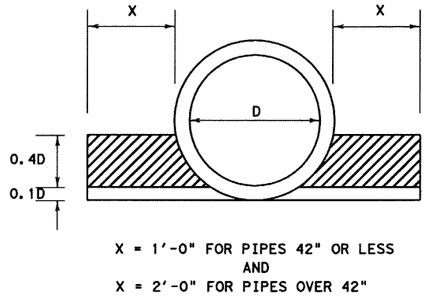
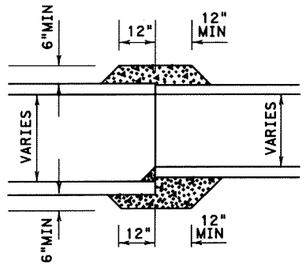


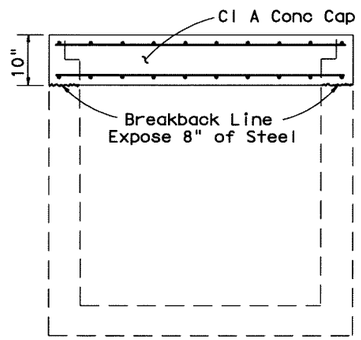
X = 1'-0" FOR PIPES 42" OR LESS
AND
X = 2'-0" FOR PIPES OVER 42"

CEMENT STABILIZED BACKFILL

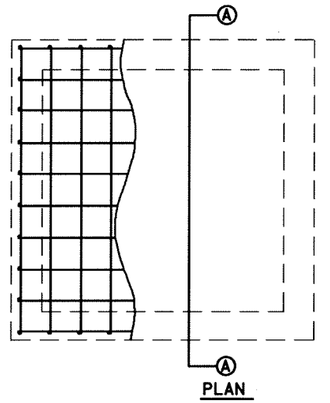
FOR STORM SEWERS ON SLOPES GREATER THAN 10%



CONCRETE COLLAR FOR PIPE CONNECTION



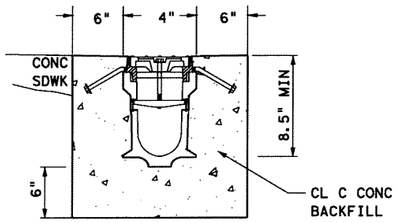
SECTION A-A



PLAN

NOTE: All inlets to be capped shall be broken back a minimum of 10" from top.

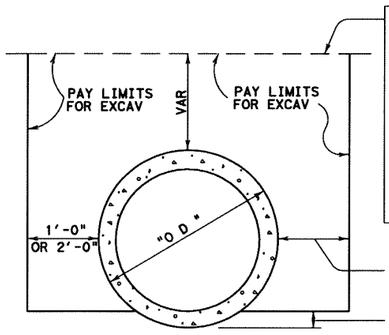
All Reinforcing Steel shall be #4 Bars on 6" Centers. Spacing of Reinforcing Steel in 10" Cap shall be 2" from top and bottom on 6" centers.



TRENCH DRAIN

INLINE CATCH BASIN SHALL
REQUIRE SAME BAKFILL SECTION

CAPPED INLET DETAILS



WHERE ROADWAY EXCAVATION IS REQUIRED THE UPPER LIMIT FOR SEWER EXCAVATION SHALL BE THE SUBGRADE.

WHERE ANY PORTION OF THE PIPE IS IN EMBANKMENT THE UPPER PAY LIMIT FOR SEWER EXCAVATION SHALL BE 1'- 0" ABOVE THE TOP OF THE PIPE.

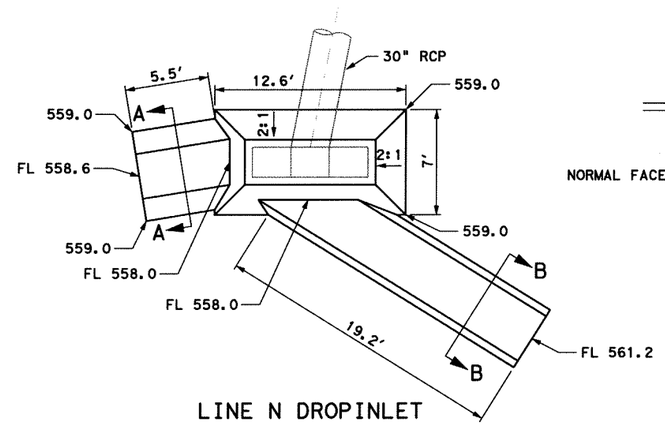
WHEN THE NATURAL GROUND LINE IS MORE THAN 1'- 0" ABOVE THE TOP OF PIPE AND BELOW THE SUBGRADE, SEWER EXCAVATION SHALL BE PAID TO THE NATURAL GROUND LINE.

1'-0" FOR PIPES 42" DIA AND UNDER
2'-0" FOR PIPES LARGER THAN 42" DIA

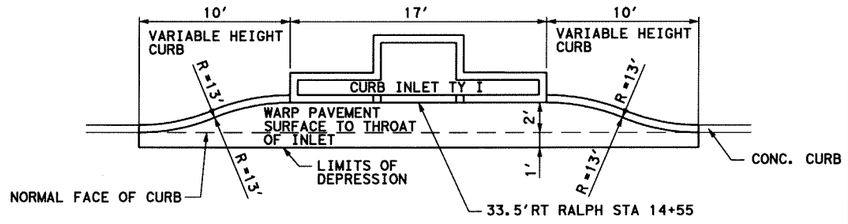
0.10 X O D

EXCAVATION DIAGRAM

STORM SEWERS

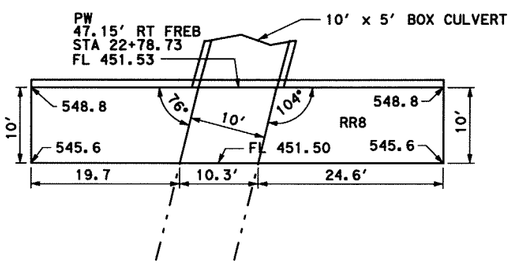


LINE N DROPINLET

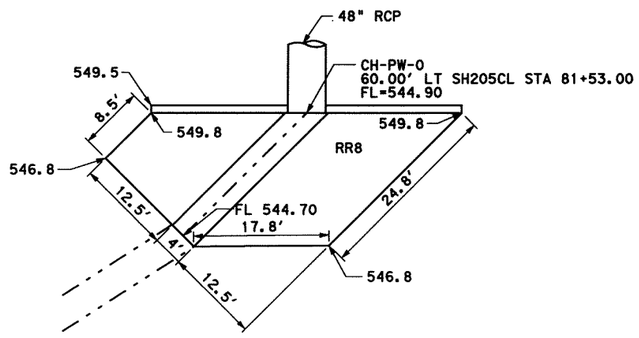


DETAILS OF RECESSED INLET CI-D4

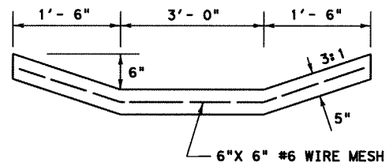
THE WORK AND MATERIAL FOR THIS RECESSED INLET WILL BE PAID UNDER ITEM 465 (CURB INLET TY I).



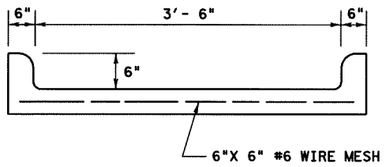
10' x 5' BOX CULVERT OUTFALL



LINE R OUTFALL



SECTION A-A



SECTION B-B

STATE OF TEXAS
K. DAVID GAN
92574
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5/19/2006

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MISCELLANEOUS DETAIL SHEET

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	457A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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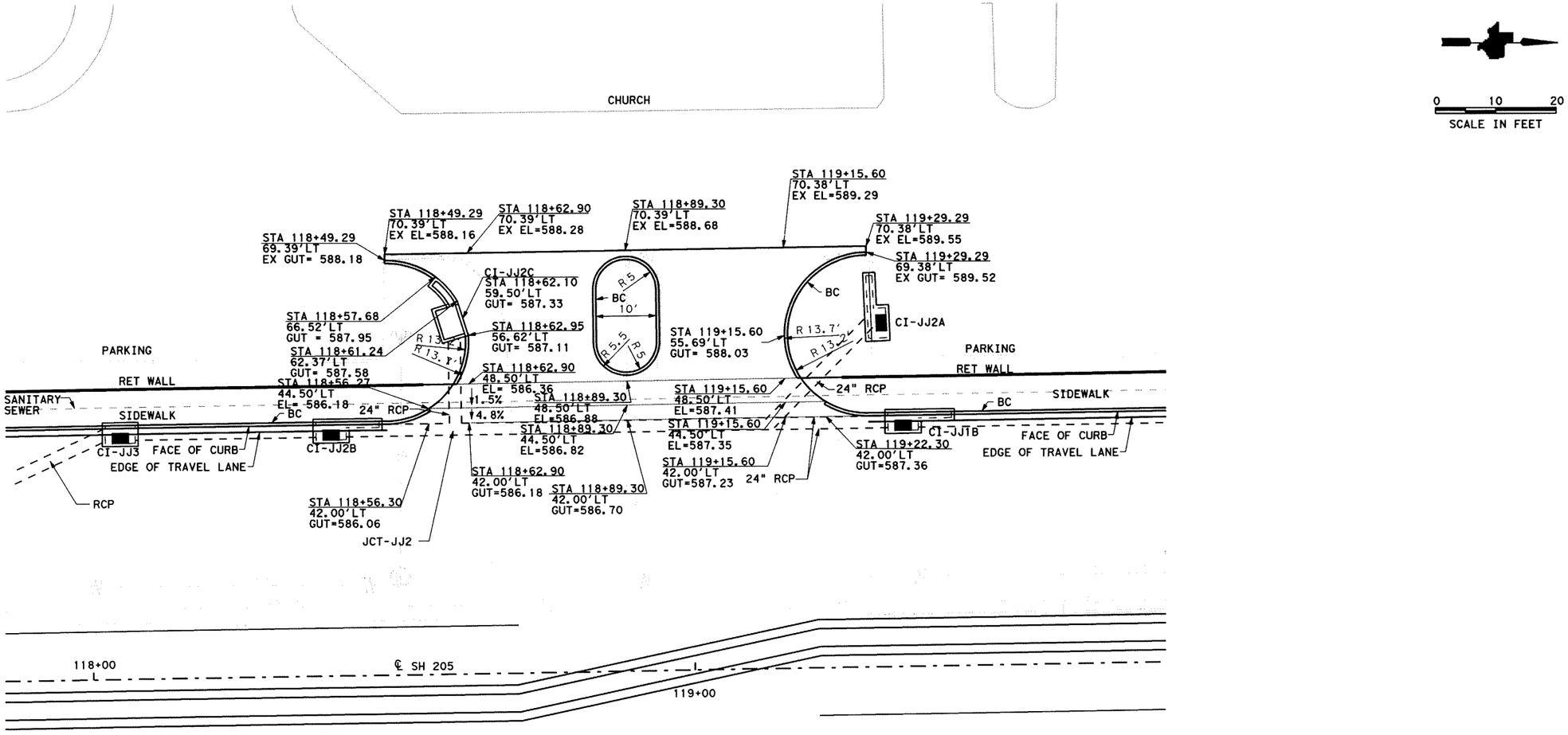

STATE OF TEXAS
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5/14/08

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MISCELLANEOUS DETAIL SHEET

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	457B
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\2451cdMiscD2.dgn, ON=10-621
5/14/2008 Plotted 14-MAY-2008 17:55

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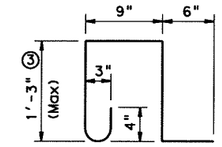
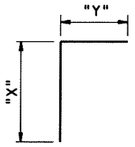
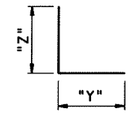
SECTION DIMENSIONS				FILL HEIGHT	BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																												QUANTITIES				
					Bars B					Bars C							Bars D							Bars E~#4 at 18" Max			Bars F_1 ~#4				Bars F_2~#4 at 18" Max			Bars H 4~#4		Bars K		Per foot of Barrel		Curb		Total	
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
3'-0"	2'-0"	7"	7"	30'	138	#4	7"	3'-11"	361	98	#4	10"	4'- 2"	273	2'- 5"	1'- 9"	98	#4	10"	3'-11"	256	1'- 9"	2'- 2"	56	2'-0"	75	3	13"	39'-9"	80	19	39'-9"	505	3'-11"	10	10	28	0.266	38.8	0.3	38	10.9	1,588
3'-0"	3'-0"	7"	7"	30'	162	#4	6"	3'-11"	424	98	#4	10"	5'- 2"	338	3'- 5"	1'- 9"	98	#4	10"	3'-11"	256	1'- 9"	2'- 2"	56	3'-0"	112	3	12"	39'-9"	80	23	39'-9"	611	3'-11"	10	10	28	0.310	45.5	0.3	38	12.7	1,859
4'-0"	2'-0"	7"	7"	30'	194	#4	5"	4'-11"	637	162	#4	6"	4'- 8"	505	2'- 5"	2'- 3"	162	#4	6"	4'- 5"	478	2'- 3"	2'- 2"	56	2'-0"	75	5	10"	39'-9"	133	21	39'-9"	558	4'-11"	13	12	34	0.310	59.7	0.4	47	12.8	2,433
4'-0"	3'-0"	7"	7"	30'	162	#5	6"	4'-11"	831	162	#4	6"	5'- 8"	613	3'- 5"	2'- 3"	162	#4	6"	4'- 5"	478	2'- 3"	2'- 2"	56	3'-0"	112	6	8"	39'-9"	159	25	39'-9"	664	4'-11"	13	12	34	0.353	71.4	0.4	47	14.5	2,904
4'-0"	4'-0"	7"	7"	30'	162	#5	6"	4'-11"	831	162	#4	6"	6'- 8"	721	4'- 5"	2'- 3"	162	#4	6"	4'- 5"	478	2'- 3"	2'- 2"	56	4'-0"	150	6	8"	39'-9"	159	25	39'-9"	664	4'-11"	13	12	34	0.396	75.1	0.4	47	16.2	3,050



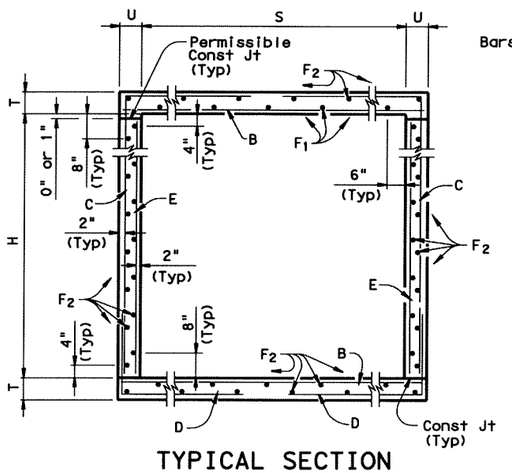
BARS K ~ #4
(Spa = 1'-0" Max)
(Length = 4'-3")



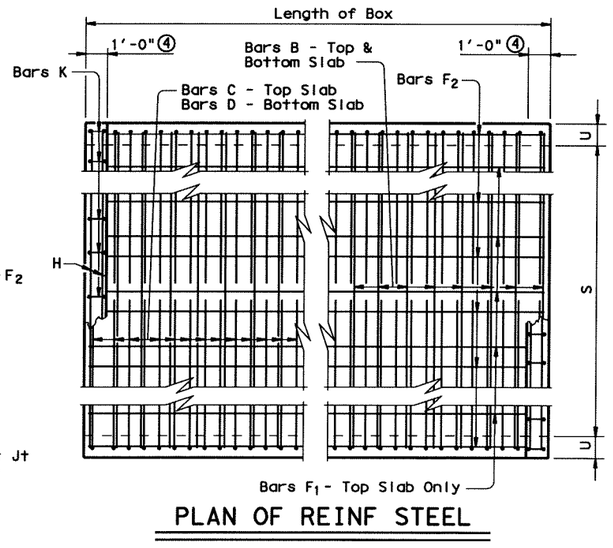
BARS C



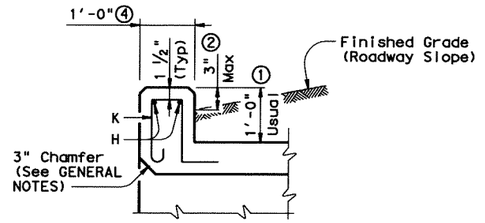
BARS D



TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with bridge rail, other than T6, refer to RAC standard.

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.

Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.

④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

Designed to the maximum fill heights shown.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.

The use of permanent forms is not allowed.

Reinforcing bars shall be adjusted to provide a minimum of 1 ¼ inches clear cover.

The bottom edge of the top slab shall be chamfered 3 inches at the entrance.

Construction joints shown at the flow line may be raised a maximum of 6 inches at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.

See Standard SCC-MD for skewed ends, angle sections and lengthening details.

HS20 LOADING

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS CAST-IN-PLACE 0' TO 30' FILL

SCC-3 & 4

FILE: scc34ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		458

COUNTY	CONTROL	SECT	JOB	HIGHWAY
ROCKWALL	0451	01	032	SH205

ACC:
LEVELS DISPLAYED
1

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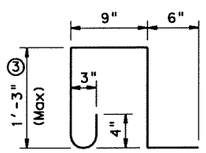
LEVELS DISPLAYED

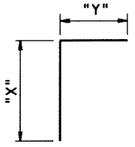
ACC:

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

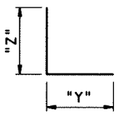
SECTION DIMENSIONS				FILL HEIGHT ⑤	Bars B					Bars C							Bars D							Bars E~#4 at 18" Max			Bars F_1 ~#4				Bars F_2~#4 at 18" Max			Bars H 4~#4		Bars K		QUANTITIES: Per foot of Barrel		QUANTITIES: Curb		QUANTITIES: Total	
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
5'-0"	2'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	162	#5	6"	5'- 2"	873	2'- 5"	2'- 9"	162	#5	6"	5'- 4"	901	2'- 9"	2'- 7"	56	2'-0"	75	8	7"	39'-9"	212	22	39'-9"	584	5'-11"	16	14	40	0.353	96.1	0.5	56	14.6	3,898
5'-0"	2'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	5'- 0"	648	2'- 6"	2'- 6"	194	#4	5"	4'- 9"	616	2'- 6"	2'- 3"	56	2'-0"	75	4	18"	39'-9"	106	22	39'-9"	584	5'-11"	16	14	40	0.391	80.7	0.5	56	16.1	3,282
5'-0"	3'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	5'-11"	767	3'- 5"	2'- 6"	194	#4	5"	4'- 8"	605	2'- 6"	2'- 2"	56	3'-0"	112	8	7"	39'-9"	212	26	39'-9"	690	5'-11"	16	14	40	0.396	89.6	0.5	56	16.3	3,639
5'-0"	3'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	6'- 0"	778	3'- 6"	2'- 6"	194	#4	5"	4'- 9"	616	2'- 6"	2'- 3"	56	3'-0"	112	4	18"	39'-9"	106	26	39'-9"	690	5'-11"	16	14	40	0.434	87.5	0.5	56	17.9	3,555
5'-0"	4'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	6'-11"	896	4'- 5"	2'- 6"	194	#4	5"	4'- 8"	605	2'- 6"	2'- 2"	56	4'-0"	150	8	7"	39'-9"	212	26	39'-9"	690	5'-11"	16	14	40	0.439	93.8	0.5	56	18.1	3,806
5'-0"	4'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	7'- 0"	907	4'- 6"	2'- 6"	194	#4	5"	4'- 9"	616	2'- 6"	2'- 3"	56	4'-0"	150	4	18"	39'-9"	106	26	39'-9"	690	5'-11"	16	14	40	0.477	91.7	0.5	56	19.6	3,722
5'-0"	5'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	7'-11"	1,026	5'- 5"	2'- 6"	194	#4	5"	4'- 8"	605	2'- 6"	2'- 2"	56	5'-0"	187	8	7"	39'-9"	212	30	39'-9"	797	5'-11"	16	14	40	0.483	100.6	0.5	56	19.8	4,080
5'-0"	5'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	8'- 0"	1,037	5'- 6"	2'- 6"	194	#4	5"	4'- 9"	616	2'- 6"	2'- 3"	56	5'-0"	187	4	18"	39'-9"	106	30	39'-9"	797	5'-11"	16	14	40	0.521	98.5	0.5	56	21.3	3,996
6'-0"	3'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	162	#5	6"	6'- 6"	1,098	3'- 5"	3'- 1"	162	#5	6"	5'- 8"	957	3'- 1"	2'- 7"	56	3'-0"	112	10	7"	39'-9"	266	29	39'-9"	770	6'-11"	18	16	45	0.439	115.1	0.5	63	18.1	4,666
6'-0"	3'-0"	8"	7"	26'	162	#6	6"	6'-11"	1,683	162	#5	6"	6'- 7"	1,112	3'- 6"	3'- 1"	162	#5	6"	5'- 9"	972	3'- 1"	2'- 8"	56	3'-0"	112	5	18"	39'-9"	133	29	39'-9"	770	6'-11"	18	16	45	0.484	119.6	0.5	63	19.9	4,845
6'-0"	3'-0"	9"	8"	30'	162	#6	6"	7'- 1"	1,724	162	#5	6"	6'- 8"	1,126	3'- 7"	3'- 1"	162	#5	6"	5'-10"	986	3'- 1"	2'- 9"	56	3'-0"	112	5	18"	39'-9"	133	29	39'-9"	770	7'- 1"	19	18	51	0.556	121.3	0.5	70	22.7	4,921
6'-0"	4'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	7'- 3"	940	4'- 5"	2'-10"	194	#4	5"	5'- 0"	648	2'-10"	2'- 2"	56	4'-0"	150	10	7"	39'-9"	266	29	39'-9"	770	6'-11"	18	16	45	0.483	104.4	0.5	63	19.8	4,237
6'-0"	4'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	7'- 7"	1,281	4'- 6"	3'- 1"	162	#5	6"	5'- 9"	972	3'- 1"	2'- 8"	56	4'-0"	150	5	18"	39'-9"	133	29	39'-9"	770	6'-11"	18	16	45	0.527	133.0	0.5	63	21.6	5,384
6'-0"	4'-0"	9"	8"	30'	162	#6	6"	7'- 1"	1,724	162	#5	6"	7'- 8"	1,295	4'- 7"	3'- 1"	162	#5	6"	5'-10"	986	3'- 1"	2'- 9"	56	4'-0"	150	5	18"	39'-9"	133	29	39'-9"	770	7'- 1"	19	18	51	0.605	126.5	0.5	70	24.7	5,128
6'-0"	5'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	8'- 3"	1,069	5'- 5"	2'-10"	194	#4	5"	5'- 0"	648	2'-10"	2'- 2"	56	5'-0"	187	10	7"	39'-9"	266	33	39'-9"	876	6'-11"	18	16	45	0.526	111.2	0.5	63	21.5	4,509
6'-0"	5'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	8'- 7"	1,450	5'- 6"	3'- 1"	162	#5	6"	5'- 9"	972	3'- 1"	2'- 8"	56	5'-0"	187	5	18"	39'-9"	133	33	39'-9"	876	6'-11"	18	16	45	0.570	140.8	0.5	63	23.3	5,696
6'-0"	5'-0"	9"	8"	30'	194	#6	5"	7'- 1"	2,064	162	#5	6"	8'- 8"	1,464	5'- 7"	3'- 1"	162	#5	6"	5'-10"	986	3'- 1"	2'- 9"	56	5'-0"	187	5	18"	39'-9"	133	33	39'-9"	876	7'- 1"	19	18	51	0.654	142.8	0.5	70	26.7	5,780
6'-0"	6'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	9'- 3"	1,199	6'- 5"	2'-10"	194	#4	5"	5'- 0"	648	2'-10"	2'- 2"	56	6'-0"	224	10	7"	39'-9"	266	37	39'-9"	982	6'-11"	18	16	45	0.569	118.0	0.5	63	23.3	4,782
6'-0"	6'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	9'- 7"	1,619	6'- 6"	3'- 1"	162	#5	6"	5'- 9"	972	3'- 1"	2'- 8"	56	6'-0"	224	5	18"	39'-9"	133	37	39'-9"	982	6'-11"	18	16	45	0.613	148.6	0.5	63	25.0	6,008
6'-0"	6'-0"	9"	8"	30'	194	#6	5"	7'- 1"	2,064	162	#5	6"	9'- 8"	1,633	6'- 7"	3'- 1"	162	#5	6"	5'-10"	986	3'- 1"	2'- 9"	56	6'-0"	224	5	18"	39'-9"	133	37	39'-9"	982	7'- 1"	19	18	51	0.704	150.6	0.5	70	28.7	6,092



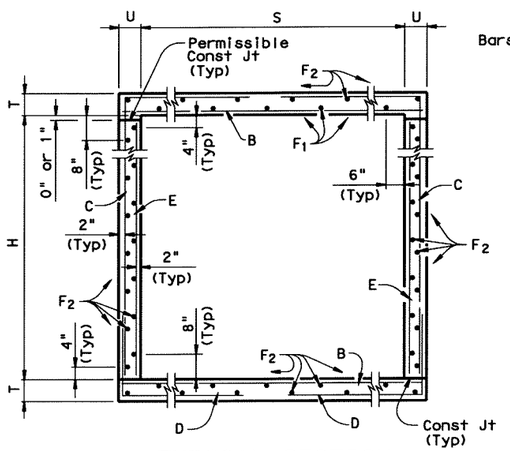
BARS K ~ #4
(Spa = 1'-0" Max)
(Length = 4'-3")



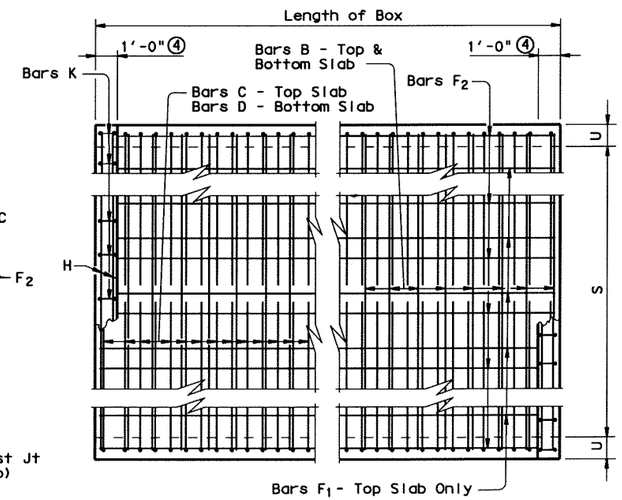
BARS C



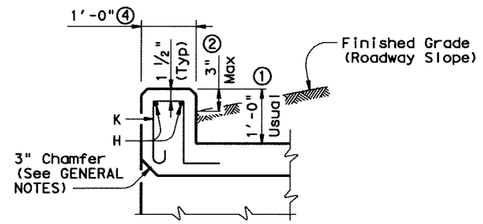
BARS D



TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with bridge rail, other than T6, refer to RAC standard.

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.

Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.

④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

⑤ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

Designed to the maximum fill heights shown.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.

The use of permanent forms is not allowed.

Reinforcing bars shall be adjusted to provide a minimum of 1 ¼ inches clear cover.

The bottom edge of the top slab shall be chamfered 3 inches at the entrance.

Construction joints shown at the flow line may be raised a maximum of 6 inches at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.

See Standard SCC-MD for skewed ends, angle sections and lengthening details.

HS20 LOADING

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS CAST-IN-PLACE
0' TO 30' FILL

SCC-5 & 6

FILE: scc56ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF	
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT			SHEET
REVISIONS	DAL	(SEE TITLE SHEET)			459
	COUNTY		CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL		0451	01	032	SH205

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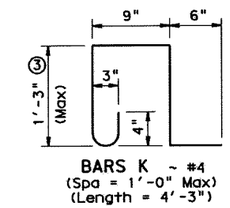
ACC:

LEVELS DISPLAYED

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

SECTION DIMENSIONS				FILL HEIGHT ⑤	Bars B					Bars C							Bars D							Bars E~#4 at 18" Max			Bars F_1 ~#4				Bars F_2~#4 at 18" Max			Bars H 4~#4		Bars K		QUANTITIES					
																																						Per foot of Barrel		Curb		Total	
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
10'-0"	5'-0"	7"	7"	7'	138	#7	7"	10'-11"	3,079	194	#5	5"	10'- 8"	2,158	5'- 5"	5'- 3"	194	#5	5"	7'-10"	1,585	5'- 3"	2'- 7"	56	5'-0"	187	17	7"	39'-9"	451	41	39'-9"	1,089	10'-11"	29	24	68	0.699	213.7	0.8	97	28.8	8,646
10'-0"	5'-0"	8"	7"	10'	194	#6	5"	10'-11"	3,181	194	#5	5"	10'- 9"	2,175	5'- 6"	5'- 3"	194	#5	5"	7'-11"	1,602	5'- 3"	2'- 8"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	10'-11"	29	24	68	0.767	210.5	0.8	97	31.5	8,517
10'-0"	5'-0"	9"	8"	13'	194	#6	5"	11'- 1"	3,230	194	#5	5"	10'-10"	2,192	5'- 7"	5'- 3"	194	#5	5"	8'- 0"	1,619	5'- 3"	2'- 9"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'- 1"	30	26	74	0.877	212.6	0.8	104	35.9	8,607
10'-0"	5'-0"	10"	8"	16'	162	#7	6"	11'- 1"	3,670	194	#5	5"	10'-11"	2,209	5'- 8"	5'- 3"	194	#5	5"	8'- 1"	1,636	5'- 3"	2'-10"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'- 1"	30	26	74	0.947	224.4	0.8	104	38.7	9,081
10'-0"	5'-0"	11"	9"	20'	194	#7	5"	11'- 3"	4,461	162	#6	6"	11'- 0"	2,677	5'- 9"	5'- 3"	162	#6	6"	8'- 7"	2,089	5'- 3"	3'- 4"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'- 3"	30	26	74	1.059	267.2	0.9	104	43.3	10,793
10'-0"	5'-0"	12"	10"	23'	194	#7	5"	11'- 5"	4,527	162	#6	6"	11'- 1"	2,697	5'-10"	5'- 3"	162	#6	6"	8'- 8"	2,109	5'- 3"	3'- 5"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'- 5"	31	26	74	1.173	269.9	0.9	105	47.8	10,900
10'-0"	5'-0"	13"	11"	26'	194	#7	5"	11'- 7"	4,593	194	#6	5"	11'- 2"	3,254	5'-11"	5'- 3"	194	#6	5"	8'- 9"	2,550	5'- 3"	3'- 6"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'- 7"	31	26	74	1.289	296.5	0.9	105	52.5	11,964
10'-0"	5'-0"	14"	12"	30'	194	#7	5"	11'- 9"	4,659	194	#6	5"	11'- 3"	3,278	6'- 0"	5'- 3"	194	#6	5"	8'-10"	2,574	5'- 3"	3'- 7"	56	5'-0"	187	7	18"	39'-9"	186	41	39'-9"	1,089	11'- 9"	31	26	74	1.407	299.3	0.9	105	57.2	12,078
10'-0"	6'-0"	7"	7"	7'	162	#7	6"	10'-11"	3,615	194	#5	5"	11'- 8"	2,361	6'- 5"	5'- 3"	194	#5	5"	7'-10"	1,585	5'- 3"	2'- 7"	56	6'-0"	224	19	6"	39'-9"	505	45	39'-9"	1,195	10'-11"	29	24	68	0.742	237.1	0.8	97	30.5	9,582
10'-0"	6'-0"	8"	7"	10'	194	#6	5"	10'-11"	3,181	194	#5	5"	11'- 9"	2,378	6'- 6"	5'- 3"	194	#5	5"	7'-11"	1,602	5'- 3"	2'- 8"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	10'-11"	29	24	68	0.811	219.2	0.8	97	33.2	8,863
10'-0"	6'-0"	9"	8"	13'	194	#6	5"	11'- 1"	3,230	194	#5	5"	11'-10"	2,394	6'- 7"	5'- 3"	194	#5	5"	8'- 0"	1,619	5'- 3"	2'- 9"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 1"	30	26	74	0.926	221.2	0.8	104	37.8	8,952
10'-0"	6'-0"	10"	8"	16'	194	#7	5"	11'- 1"	4,395	194	#5	5"	11'-11"	2,411	6'- 8"	5'- 3"	194	#5	5"	8'- 1"	1,636	5'- 3"	2'-10"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 1"	30	26	74	0.996	251.2	0.8	104	40.6	10,151
10'-0"	6'-0"	11"	9"	20'	194	#7	5"	11'- 3"	4,461	162	#6	6"	12'- 0"	2,920	6'- 9"	5'- 3"	162	#6	6"	8'- 7"	2,089	5'- 3"	3'- 4"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 3"	30	26	74	1.114	276.9	0.9	104	45.5	11,179
10'-0"	6'-0"	12"	10"	23'	194	#7	5"	11'- 5"	4,527	162	#6	6"	12'- 1"	2,940	6'-10"	5'- 3"	162	#6	6"	8'- 8"	2,109	5'- 3"	3'- 5"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 5"	31	26	74	1.235	279.5	0.9	105	50.3	11,286
10'-0"	6'-0"	13"	11"	26'	194	#7	5"	11'- 7"	4,593	162	#6	6"	12'- 2"	2,960	6'-11"	5'- 3"	162	#6	6"	8'- 9"	2,129	5'- 3"	3'- 6"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 7"	31	26	74	1.357	282.2	0.9	105	55.2	11,392
10'-0"	6'-0"	14"	12"	30'	194	#7	5"	11'- 9"	4,659	194	#6	5"	12'- 3"	3,570	7'- 0"	5'- 3"	194	#6	5"	8'-10"	2,574	5'- 3"	3'- 7"	56	6'-0"	224	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 9"	31	26	74	1.481	310.2	0.9	105	60.1	12,513
10'-0"	7'-0"	7"	7"	7'	162	#7	6"	10'-11"	3,615	194	#5	5"	12'- 8"	2,563	7'- 5"	5'- 3"	194	#5	5"	7'-10"	1,585	5'- 3"	2'- 7"	56	7'-0"	262	19	6"	39'-9"	505	45	39'-9"	1,195	10'-11"	29	24	68	0.785	243.1	0.8	97	32.2	9,822
10'-0"	7'-0"	8"	7"	10'	162	#7	6"	10'-11"	3,615	194	#5	5"	12'- 9"	2,580	7'- 6"	5'- 3"	194	#5	5"	7'-11"	1,602	5'- 3"	2'- 8"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	10'-11"	29	24	68	0.854	236.0	0.8	97	35.0	9,537
10'-0"	7'-0"	9"	8"	13'	162	#7	6"	11'- 1"	3,670	194	#5	5"	12'-10"	2,597	7'- 7"	5'- 3"	194	#5	5"	8'- 0"	1,619	5'- 3"	2'- 9"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 1"	30	26	74	0.975	238.2	0.8	104	39.8	9,633
10'-0"	7'-0"	10"	8"	16'	194	#7	5"	11'- 1"	4,395	194	#5	5"	12'-11"	2,614	7'- 8"	5'- 3"	194	#5	5"	8'- 1"	1,636	5'- 3"	2'-10"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 1"	30	26	74	1.045	257.2	0.8	104	42.6	10,392
10'-0"	7'-0"	11"	9"	20'	194	#7	5"	11'- 3"	4,461	162	#6	6"	13'- 0"	3,163	7'- 9"	5'- 3"	162	#6	6"	8'- 7"	2,089	5'- 3"	3'- 4"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 3"	30	26	74	1.170	283.9	0.9	104	47.7	11,460
10'-0"	7'-0"	12"	10"	23'	194	#7	5"	11'- 5"	4,527	162	#6	6"	13'- 1"	3,183	7'-10"	5'- 3"	162	#6	6"	8'- 8"	2,109	5'- 3"	3'- 5"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 5"	31	26	74	1.296	286.6	0.9	105	52.7	11,567
10'-0"	7'-0"	13"	11"	26'	194	#7	5"	11'- 7"	4,593	162	#6	6"	13'- 2"	3,204	7'-11"	5'- 3"	162	#6	6"	8'- 9"	2,129	5'- 3"	3'- 6"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 7"	31	26	74	1.425	289.2	0.9	105	57.9	11,674
10'-0"	7'-0"	14"	12"	30'	194	#7	5"	11'- 9"	4,659	162	#6	6"	13'- 3"	3,224	8'- 0"	5'- 3"	162	#6	6"	8'-10"	2,149	5'- 3"	3'- 7"	56	7'-0"	262	7	18"	39'-9"	186	45	39'-9"	1,195	11'- 9"	31	26	74	1.556	291.9	0.9	105	63.1	11,780



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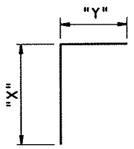
(Length = 4'-3")



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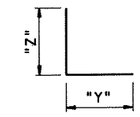
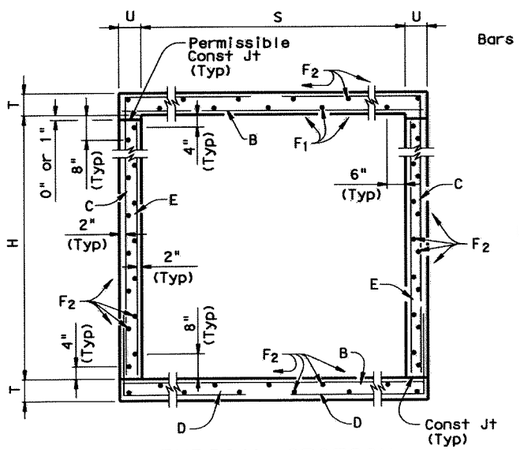
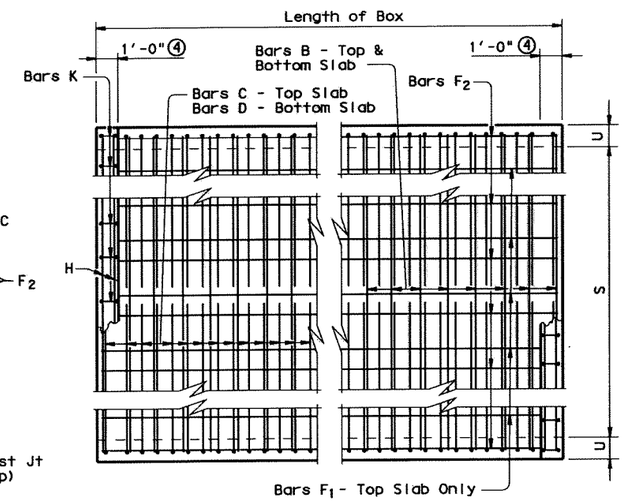


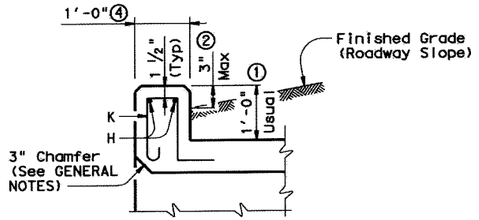
BARS D



TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with bridge rail, other than T6, refer to RAC standard.

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.

Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.

④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

⑤ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

Designed to the maximum fill heights shown.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.

The use of permanent forms is not allowed.

Reinforcing bars shall be adjusted to provide a minimum of 1 ¼ inches clear cover.

The bottom edge of the top slab shall be chamfered 3 inches at the entrance.

Construction joints shown at the flow line may be raised a maximum of 6 inches at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.

See Standard SCC-MD for skewed ends, angle sections and lengthening details.

HS20 LOADING SHEET 1 OF 2

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS CAST-IN-PLACE 0' TO 30' FILL

SCC-10

FILE: scc10ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
© TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		460
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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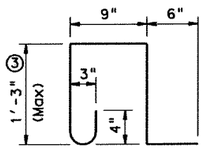
BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

SECTION DIMENSIONS				FILL HEIGHT ⑤	Bars B					Bars C							Bars D							Bars E~#4 at 18" Max			Bars F_1 ~#4				Bars F_2~#4 at 18" Max			Bars H 4~#4		Bars K		QUANTITIES: Per foot of Barrel		Curb		Total	
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
10'-0"	8'-0"	7"	7"	7'	162	#7	6"	10'-11"	3,615	194	#5	5"	13'- 8"	2,765	8'- 5"	5'- 3"	194	#5	5"	7'-10"	1,585	5'- 3"	2'- 7"	56	8'-0"	299	19	6"	39'-9"	505	49	39'-9"	1,301	10'-11"	29	24	68	0.828	251.8	0.8	97	33.9	10,167
10'-0"	8'-0"	8"	7"	10'	162	#7	6"	10'-11"	3,615	194	#5	5"	13'- 9"	2,782	8'- 6"	5'- 3"	194	#5	5"	7'-11"	1,602	5'- 3"	2'- 8"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	10'-11"	29	24	68	0.897	244.6	0.8	97	36.7	9,882
10'-0"	8'-0"	9"	8"	13'	162	#7	6"	11'- 1"	3,670	194	#5	5"	13'-10"	2,799	8'- 7"	5'- 3"	194	#5	5"	8'- 0"	1,619	5'- 3"	2'- 9"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'- 1"	30	26	74	1.025	246.9	0.8	104	41.8	9,978
10'-0"	8'-0"	10"	8"	16'	194	#7	5"	11'- 1"	4,395	194	#5	5"	13'-11"	2,816	8'- 8"	5'- 3"	194	#5	5"	8'- 1"	1,636	5'- 3"	2'-10"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'- 1"	30	26	74	1.095	265.8	0.8	104	44.6	10,737
10'-0"	8'-0"	11"	9"	20'	194	#7	5"	11'- 3"	4,461	162	#6	6"	14'- 0"	3,407	8'- 9"	5'- 3"	162	#6	6"	8'- 7"	2,089	5'- 3"	3'- 4"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'- 3"	30	26	74	1.225	293.6	0.9	104	49.9	11,847
10'-0"	8'-0"	12"	10"	23'	194	#7	5"	11'- 5"	4,527	162	#6	6"	14'- 1"	3,427	8'-10"	5'- 3"	162	#6	6"	8'- 8"	2,109	5'- 3"	3'- 5"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'- 5"	31	26	74	1.358	296.2	0.9	105	55.2	11,954
10'-0"	8'-0"	13"	11"	26'	194	#7	5"	11'- 7"	4,593	162	#6	6"	14'- 2"	3,447	8'-11"	5'- 3"	162	#6	6"	8'- 9"	2,129	5'- 3"	3'- 6"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'- 7"	31	26	74	1.493	298.9	0.9	105	60.6	12,060
10'-0"	8'-0"	14"	12"	30'	194	#7	5"	11'- 9"	4,659	162	#6	6"	14'- 3"	3,467	9'- 0"	5'- 3"	162	#6	6"	8'-10"	2,149	5'- 3"	3'- 7"	56	8'-0"	299	7	18"	39'-9"	186	49	39'-9"	1,301	11'- 9"	31	26	74	1.630	301.5	0.9	105	66.1	12,166
10'-0"	9'-0"	7"	7"	7'	162	#7	6"	10'-11"	3,615	194	#5	5"	14'- 8"	2,968	9'- 5"	5'- 3"	194	#5	5"	7'-10"	1,585	5'- 3"	2'- 7"	56	9'-0"	337	19	6"	39'-9"	505	53	39'-9"	1,407	10'-11"	29	24	68	0.871	260.4	0.8	97	35.6	10,514
10'-0"	9'-0"	8"	7"	10'	162	#7	6"	10'-11"	3,615	162	#6	6"	14'- 9"	3,589	9'- 6"	5'- 3"	162	#6	6"	8'- 4"	2,028	5'- 3"	3'- 1"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	10'-11"	29	24	68	0.940	279.1	0.8	97	38.4	11,259
10'-0"	9'-0"	9"	8"	13'	162	#7	6"	11'- 1"	3,670	162	#6	6"	14'-10"	3,609	9'- 7"	5'- 3"	162	#6	6"	8'- 5"	2,048	5'- 3"	3'- 2"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 1"	30	26	74	1.074	281.4	0.8	104	43.8	11,361
10'-0"	9'-0"	10"	8"	16'	194	#7	5"	11'- 1"	4,395	162	#6	6"	14'-11"	3,630	9'- 8"	5'- 3"	162	#6	6"	8'- 6"	2,068	5'- 3"	3'- 3"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 1"	30	26	74	1.144	300.6	0.8	104	46.6	12,127
10'-0"	9'-0"	11"	9"	20'	194	#7	5"	11'- 3"	4,461	162	#6	6"	15'- 0"	3,650	9'- 9"	5'- 3"	162	#6	6"	8'- 7"	2,089	5'- 3"	3'- 4"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 3"	30	26	74	1.281	303.3	0.9	104	52.1	12,234
10'-0"	9'-0"	12"	10"	23'	194	#7	5"	11'- 5"	4,527	162	#6	6"	15'- 1"	3,670	9'-10"	5'- 3"	162	#6	6"	8'- 8"	2,109	5'- 3"	3'- 5"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 5"	31	26	74	1.420	305.9	0.9	105	57.7	12,341
10'-0"	9'-0"	13"	11"	26'	194	#7	5"	11'- 7"	4,593	162	#6	6"	15'- 2"	3,690	9'-11"	5'- 3"	162	#6	6"	8'- 9"	2,129	5'- 3"	3'- 6"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 7"	31	26	74	1.561	308.6	0.9	105	63.3	12,447
10'-0"	9'-0"	14"	12"	30'	194	#7	5"	11'- 9"	4,659	194	#6	5"	15'- 3"	4,444	10'- 0"	5'- 3"	194	#6	5"	8'-10"	2,574	5'- 3"	3'- 7"	56	9'-0"	337	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 9"	31	26	74	1.704	340.2	0.9	105	69.1	13,712
10'-0"	10'-0"	7"	7"	7'	162	#7	6"	10'-11"	3,615	162	#6	6"	15'- 8"	3,812	10'- 5"	5'- 3"	162	#6	6"	8'- 3"	2,007	5'- 3"	3'- 0"	56	10'-0"	374	19	6"	39'-9"	505	53	39'-9"	1,407	10'-11"	29	24	68	0.915	293.0	0.8	97	37.4	11,817
10'-0"	10'-0"	8"	7"	10'	194	#7	5"	10'-11"	4,329	194	#6	5"	15'- 9"	4,589	10'- 6"	5'- 3"	194	#6	5"	8'- 4"	2,428	5'- 3"	3'- 1"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	10'-11"	29	24	68	0.984	332.8	0.8	97	40.2	13,410
10'-0"	10'-0"	9"	8"	13'	162	#7	6"	11'- 1"	3,670	162	#6	6"	15'-10"	3,853	10'- 7"	5'- 3"	162	#6	6"	8'- 5"	2,048	5'- 3"	3'- 2"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 1"	30	26	74	1.123	288.5	0.8	104	45.7	11,642
10'-0"	10'-0"	10"	8"	16'	194	#7	5"	11'- 1"	4,395	162	#6	6"	15'-11"	3,873	10'- 8"	5'- 3"	162	#6	6"	8'- 6"	2,068	5'- 3"	3'- 3"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 1"	30	26	74	1.193	307.6	0.8	104	48.5	12,407
10'-0"	10'-0"	11"	9"	20'	194	#7	5"	11'- 3"	4,461	194	#6	5"	16'- 0"	4,662	10'- 9"	5'- 3"	194	#6	5"	8'- 7"	2,501	5'- 3"	3'- 4"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 3"	30	26	74	1.336	339.8	0.9	104	54.3	13,695
10'-0"	10'-0"	12"	10"	23'	194	#7	5"	11'- 5"	4,527	194	#6	5"	16'- 1"	4,686	10'-10"	5'- 3"	194	#6	5"	8'- 8"	2,525	5'- 3"	3'- 5"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 5"	31	26	74	1.481	342.6	0.9	105	60.1	13,810
10'-0"	10'-0"	13"	11"	26'	194	#7	5"	11'- 7"	4,593	194	#6	5"	16'- 2"	4,711	10'-11"	5'- 3"	194	#6	5"	8'- 9"	2,550	5'- 3"	3'- 6"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 7"	31	26	74	1.629	345.5	0.9	105	66.1	13,926
10'-0"	10'-0"	14"	12"	30'	194	#7	5"	11'- 9"	4,659	194	#6	5"	16'- 3"	4,735	11'- 0"	5'- 3"	194	#6	5"	8'-10"	2,574	5'- 3"	3'- 7"	56	10'-0"	374	7	18"	39'-9"	186	53	39'-9"	1,407	11'- 9"	31	26	74	1.778	348.4	0.9	105	72.0	14,040



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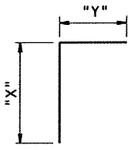

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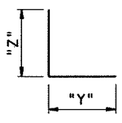

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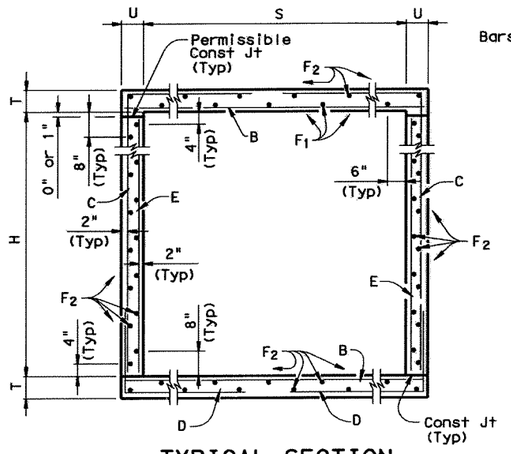
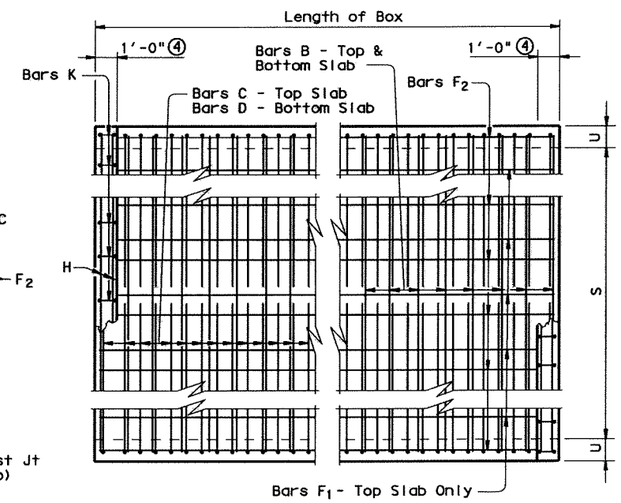
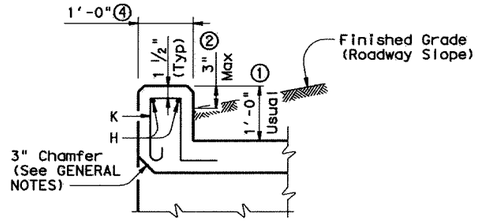


TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with bridge rail, other than T6, refer to RAC standard.

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.

Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.

④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

⑤ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

Designed to the maximum fill heights shown.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.

The use of permanent forms is not allowed.

Reinforcing bars shall be adjusted to provide a minimum of 1 ¼ inches clear cover.

The bottom edge of the top slab shall be chamfered 3 inches at the entrance.

Construction joints shown at the flow line may be raised a maximum of 6 inches at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.

See Standard SCC-MD for skewed ends, angle sections and lengthening details.

HS20 LOADING SHEET 2 OF 2

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS CAST-IN-PLACE 0' TO 30' FILL

SCC-10

FILE: scc10ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		460A
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

LEVELS DISPLAYED
ACC:

DISCLAIMER:
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LEVELS DISPLAYED

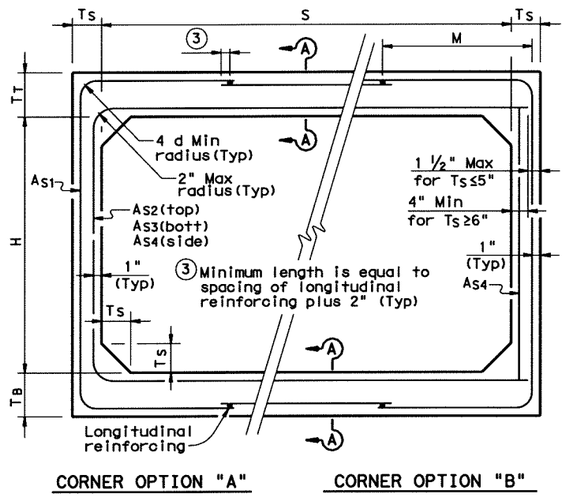
ACC:

BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (in^2/ft) ②								① Liff Weight (Tons)
S (ft)	H (ft)	T_T (in)	T_B (in)	T_S (in)	(ft)	(in)	A_{S1}	A_{S2}	A_{S3}	A_{S4}	A_{S5}	A_{S6}	A_{S7}	A_{S8}	
4	2	8	6	5	<2	-	0.18	0.42	0.22	0.12	0.21	0.18	0.18	0.14	4.5
4	2	5	5	5	2<3	37	0.24	0.29	0.25	0.12	-	-	-	-	3.6
4	2	5	5	5	3-5	18	0.12	0.14	0.14	0.12	-	-	-	-	3.6
4	2	5	5	5	10	18	0.12	0.12	0.12	0.12	-	-	-	-	3.6
4	2	5	5	5	15	18	0.15	0.16	0.16	0.12	-	-	-	-	3.6
4	2	5	5	5	20	18	0.19	0.21	0.21	0.12	-	-	-	-	3.6
4	2	5	5	5	25	18	0.24	0.26	0.26	0.12	-	-	-	-	3.6
4	2	5	5	5	30	18	0.28	0.31	0.31	0.12	-	-	-	-	3.6
4	3	8	6	5	<2	-	0.18	0.46	0.25	0.12	0.23	0.18	0.18	0.14	5.0
4	3	5	5	5	2<3	37	0.20	0.35	0.31	0.12	-	-	-	-	4.1
4	3	5	5	5	3-5	27	0.12	0.17	0.17	0.12	-	-	-	-	4.1
4	3	5	5	5	10	18	0.12	0.14	0.14	0.12	-	-	-	-	4.1
4	3	5	5	5	15	18	0.12	0.19	0.19	0.12	-	-	-	-	4.1
4	3	5	5	5	20	18	0.14	0.24	0.25	0.12	-	-	-	-	4.1
4	3	5	5	5	25	18	0.18	0.30	0.30	0.12	-	-	-	-	4.1
4	3	5	5	5	30	18	0.21	0.36	0.36	0.12	-	-	-	-	4.1
4	4	8	6	5	<2	-	0.18	0.48	0.27	0.12	0.24	0.18	0.18	0.14	5.5
4	4	5	5	5	2<3	37	0.16	0.38	0.34	0.12	-	-	-	-	4.6
4	4	5	5	5	3-5	27	0.12	0.18	0.18	0.12	-	-	-	-	4.6
4	4	5	5	5	10	27	0.12	0.15	0.15	0.12	-	-	-	-	4.6
4	4	5	5	5	15	18	0.12	0.20	0.21	0.12	-	-	-	-	4.6
4	4	5	5	5	20	18	0.12	0.26	0.26	0.12	-	-	-	-	4.6
4	4	5	5	5	25	18	0.15	0.31	0.32	0.12	-	-	-	-	4.6
4	4	5	5	5	30	18	0.17	0.38	0.38	0.12	-	-	-	-	4.6

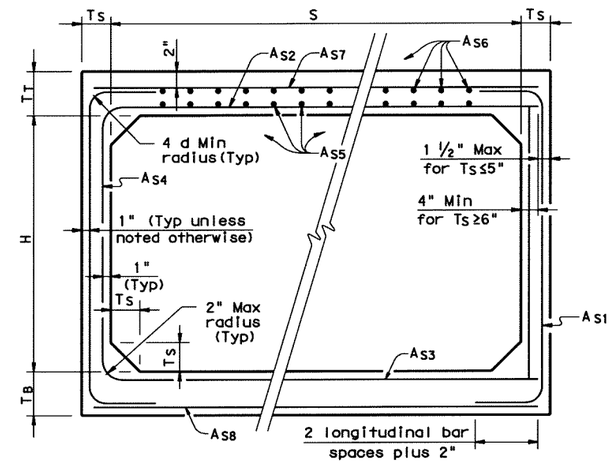
① For Box Length = 8'-0"

② A_{S1} thru A_{S4}, A_{S7} and A_{S8} are minimum required areas of reinforcement per linear foot of box length. A_{S6} and A_{S5} are minimum required areas of reinforcement per linear foot of box width.



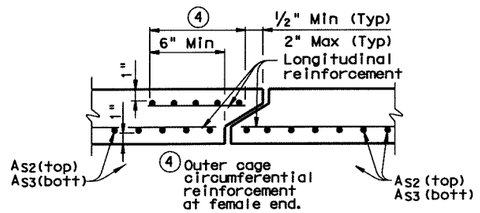
CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT



SECTION A-A

(TOP AND BOTTOM SLAB JOINT REINFORCEMENT)

GENERAL NOTES:

Designs shown conform to ASTM C1433. Refer to ASTM C1433 for information or details not shown.

All reinforcing steel shall have a minimum specified yield stress of 65 ksi. for welded wire fabric and 60 ksi. for deformed bars.

All concrete shall be Class "H" Concrete with a minimum compressive strength of 5,000 psi.

See SCP-MD standard sheet for miscellaneous details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Shop plans for alternate designs shall be submitted in accordance with Item "Precast Concrete Structures".

HS20 LOADING

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS PRECAST
4'-0" SPAN

SCP-4

FILE: scp04ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		461
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

Culvert Station and/or Creek name followed by applicable end (Lt, Rt or Both)	Description of Box Culvert No. Spans ~ Span X Height	Max Fill Height (Ft)	Applicable Box Culvert Standard (4)	Applicable Wingwall or End Treatment Standard	Skew Angle (0°, 15°, 30° or 45°)	Side Slope or Channel Slope Ratio (SL:1)	T Culvert Top Slab Thickness (In)	U Culvert Wall Thickness (In)	C Estimated Curb Height (Ft)	Hw (1) Height of Wingwall (Ft)	A Curb to End of Wingwall (Ft)	B Offset of End of Wingwall (Ft)	Lw Length of Longest Wingwall (Ft)	Ltw Culvert Toewall Length (Ft)	Atw Anchor Toewall Length (Ft)	Riprap Apron (C.Y.)	Class (2) "C" Conc (Curb) (C.Y.)	Class (3) "C" Conc (Wingwall) (C.Y.)	Total Wingwall Area (S.F.)
47.15' RT EBFR STA 22+78.73 (Rt)	1 ~10'x 5'	8'	SCP-10	PW	15°	3:1	10"	10"	1.500'	7.333'	N/A	N/A	22.776'	12.078'	N/A	0.0	0.7	21.7	334
59.75' LT SH205 STA 81+53 (Lt)	1 ~ 5'x 4'	4'	SCP-5	PW	0°	3:1	6"	6"	0.500'	5.000'	N/A	N/A	15.000'	6.000'	N/A	0.0	0.1	9.9	150
95.5' LT SH205 STA 96+56 (Both)	1 ~ 4'x 2'	2'	SCP-4	SETB-PD	0°	6:1	5"	5"	0.500'	2.667'	N/A	N/A	14.500'	N/A	5.167'	0.0	0.2	4.0	N/A
85.25' LT SH205 STA 99+85 (Both)	1 ~ 4'x 2'	2'	SCP-4	SETB-PD	0°	6:1	5"	5"	0.500'	2.667'	N/A	N/A	14.500'	N/A	5.167'	0.0	0.2	4.0	N/A

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COMMENTS:

REVISED

LEVELS

NOTES:
Skew Angle = 0° for SW-0, FW-0, SETB-CD, SETB-SW-0, and SETB-FW-0 standards.
30° Maximum for Safety End Treatment

SL:1 = Horizontal:1 Vertical
Side Slope at culvert for Flared or Straight Wingwalls. Channel Slope for Parallel Wingwalls.
Slope shall be 3:1 or flatter for Safety End Treatments.

T = Box Culvert Top Slab Thickness. Dimension can be found on the applicable Box Culvert Standard.

U = Box Culvert Wall Thickness. Dimension can be found on the applicable Box Culvert Standard.

C = Curb Height.

See applicable wing or end treatment standards for calculations of Hw, A, B, Lw, Ltw, Atw, and Total Wingwall Area.
Hw = Height of Wingwall.
A = Distance from Face of Curb to End of Wingwall (Not applicable to Parallel or Straight Wingwalls).
B = Offset of End of Wingwall (Not applicable to Parallel or Straight Wingwalls).
Lw = Length of Longest Wingwall.
Ltw = Length of Culvert Toewall (Not applicable when using Riprap Apron).
Atw = Length of Anchor Toewall (Applicable to Safety End Treatment only).
Total Wingwall Area = Wingwall area in S.F. for two wingwalls (one structure end) if Lt or Rt.
Area for four wingwalls (two structure ends) if Both.

(1) The wall heights shown will be rounded to the nearest Foot for bidding purposes.

(2) Concrete volume shown is for box culvert curb only. For curbs using the RAC standard, quantities shown must be increased by a factor of 2. If Class "S" concrete is required for the top slab of the culvert, the curb concrete shall also be Class "S". Curb concrete is considered part of the Box Culvert for payment.

(3) Concrete volume shown is total of wing, footing, culvert toewall (if any), anchor toewall (if any) and wingwall toewall. Riprap apron, culvert and curb quantities are not included.

(4) Regardless of the type of culvert shown on this sheet, the Contractor shall have the option of furnishing cast-in-place or precast culverts unless otherwise shown elsewhere on the plans. If the Contractor elects to provide culverts of a different type than those shown on this sheet, it shall be the Contractor's responsibility to make the necessary adjustments to the dimensions and quantities shown.

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER
3/21/2006

Texas Department of Transportation
Bridge Division

BOX CULVERT SUPPLEMENT
WINGS AND END TREATMENTS

BCS

FILE: bcsstdel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: GAF
© TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		462
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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BOX DATA

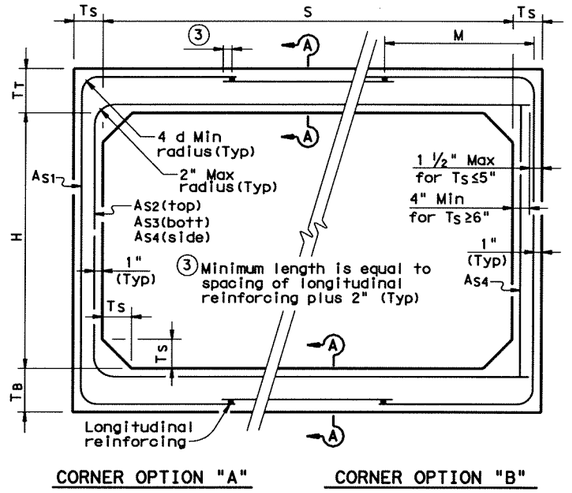
SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (in²/ft) ②								Lift Weight (Tons) ①
S (ft)	H (ft)	T_T (in)	T_B (in)	T_S (in)	(ft)	(in)	A_{S1}	A_{S2}	A_{S3}	A_{S4}	A_{S5}	A_{S6}	A_{S7}	A_{S8}	
5	3	8	7	6	<2	-	0.19	0.47	0.24	0.14	0.22	0.19	0.19	0.17	6.6
5	3	6	6	6	2<3	44	0.26	0.36	0.28	0.14	-	-	-	-	5.7
5	3	6	6	6	3-5	29	0.14	0.19	0.19	0.14	-	-	-	-	5.7
5	3	6	6	6	10	18	0.14	0.16	0.16	0.14	-	-	-	-	5.7
5	3	6	6	6	15	18	0.17	0.22	0.22	0.14	-	-	-	-	5.7
5	3	6	6	6	20	18	0.21	0.28	0.29	0.14	-	-	-	-	5.7
5	3	6	6	6	25	18	0.26	0.35	0.35	0.14	-	-	-	-	5.7
5	3	6	6	6	30	18	0.32	0.42	0.42	0.14	-	-	-	-	5.7
5	4	8	7	6	<2	-	0.19	0.50	0.27	0.14	0.24	0.19	0.19	0.17	7.2
5	4	6	6	6	2<3	44	0.22	0.41	0.33	0.14	-	-	-	-	6.3
5	4	6	6	6	3-5	29	0.14	0.21	0.21	0.14	-	-	-	-	6.3
5	4	6	6	6	10	18	0.14	0.17	0.18	0.14	-	-	-	-	6.3
5	4	6	6	6	15	18	0.14	0.24	0.25	0.14	-	-	-	-	6.3
5	4	6	6	6	20	18	0.18	0.31	0.32	0.14	-	-	-	-	6.3
5	4	6	6	6	25	18	0.22	0.38	0.39	0.14	-	-	-	-	6.3
5	4	6	6	6	30	18	0.26	0.46	0.46	0.14	-	-	-	-	6.3
5	5	8	7	6	<2	-	0.19	0.52	0.29	0.14	0.24	0.19	0.19	0.17	7.8
5	5	6	6	6	2<3	44	0.19	0.43	0.35	0.14	-	-	-	-	6.9
5	5	6	6	6	3-5	29	0.14	0.22	0.22	0.14	-	-	-	-	6.9
5	5	6	6	6	10	29	0.14	0.18	0.19	0.14	-	-	-	-	6.9
5	5	6	6	6	15	18	0.14	0.25	0.26	0.14	-	-	-	-	6.9
5	5	6	6	6	20	18	0.15	0.32	0.33	0.14	-	-	-	-	6.9
5	5	6	6	6	25	18	0.19	0.40	0.41	0.14	-	-	-	-	6.9
5	5	6	6	6	30	18	0.23	0.47	0.48	0.14	-	-	-	-	6.9
5	2	8	7	6	<2	-	0.20	0.31	0.20	0.14	0.22	0.19	0.19	0.17	6.0
5	2	6	6	6	30	44	0.39	0.33	0.34	0.14	-	-	-	-	5.1

⑤

① For Box Length = 8'-0"

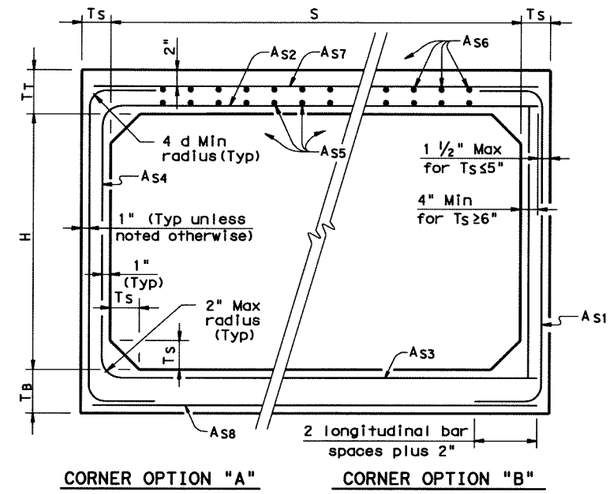
② A_{S1} thru A_{S4}, A_{S7} and A_{S8} are minimum required areas of reinforcement per linear foot of box length. A_{S6} and A_{S5} are minimum required areas of reinforcement per linear foot of box width.

⑤ These designs were created by TxDOT and are not shown in the ASTM Specifications.



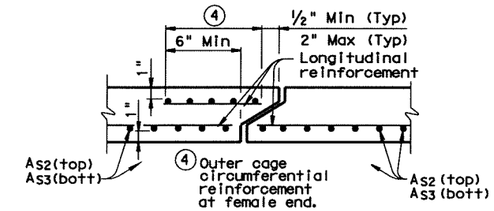
CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT



SECTION A-A

(TOP AND BOTTOM SLAB JOINT REINFORCEMENT)

GENERAL NOTES:

Designs shown conform to ASTM C1433.

Refer to ASTM C1433 for information or details not shown.

All reinforcing steel shall have a minimum specified yield stress of 65 ksi for welded wire fabric and 60 ksi for deformed bars.

All concrete shall be Class "H" Concrete with a minimum compressive strength of 5,000 psi.

See SCP-MD standard sheet for miscellaneous details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Shop plans for alternate designs shall be submitted in accordance with Item "Precast Concrete Structures".

HS20 LOADING

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS PRECAST
5'-0" SPAN

SCP-5

FILE: scp05ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF			
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT			SHEET		
REVISIONS	DAL	(SEE TITLE SHEET)			463		
	COUNTY		CONTROL	SECT	JOB	HIGHWAY	
	ROCKWALL		0451	01	032	SH205	

LEVELS DISPLAYED
ACC:
1

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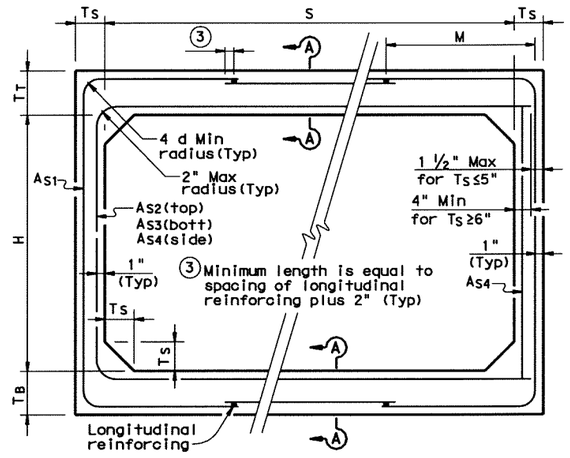
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (in²/ft) ②								① Lift Weight (Tons)
S (ft)	H (ft)	T_T (in)	T_B (in)	T_S (in)	(ft)	(in)	A_{S1}	A_{S2}	A_{S3}	A_{S4}	A_{S5}	A_{S6}	A_{S7}	A_{S8}	
10	5	10	10	10	<2	-	0.33	0.57	0.27	0.24	0.24	0.24	0.24	0.24	17.5
10	5	10	10	10	2<3	58	0.39	0.55	0.34	0.24	-	-	-	-	17.5
10	5	10	10	10	3-5	52	0.25	0.33	0.27	0.24	-	-	-	-	17.5
10	5	10	10	10	10	52	0.32	0.35	0.36	0.24	-	-	-	-	17.5
10	5	10	10	10	15	47	0.44	0.48	0.49	0.24	-	-	-	-	17.5
10	5	10	10	10	20	47	0.57	0.61	0.63	0.24	-	-	-	-	17.5
10	5	10	10	10	25	47	0.70	0.78	0.80	0.24	-	-	-	-	17.5
10	6	10	10	10	<2	-	0.30	0.60	0.30	0.24	0.24	0.24	0.24	0.24	18.5
10	6	10	10	10	2<3	58	0.37	0.58	0.37	0.24	-	-	-	-	18.5
10	6	10	10	10	3-5	52	0.24	0.35	0.29	0.24	-	-	-	-	18.5
10	6	10	10	10	10	52	0.30	0.37	0.39	0.24	-	-	-	-	18.5
10	6	10	10	10	15	47	0.40	0.51	0.53	0.24	-	-	-	-	18.5
10	6	10	10	10	20	47	0.52	0.66	0.68	0.24	-	-	-	-	18.5
10	6	10	10	10	25	47	0.64	0.86	0.91	0.24	-	-	-	-	18.5
10	7	10	10	10	<2	-	0.28	0.62	0.32	0.24	0.24	0.24	0.24	0.24	19.5
10	7	10	10	10	2<3	64	0.34	0.60	0.40	0.24	-	-	-	-	19.5
10	7	10	10	10	3-5	58	0.24	0.36	0.31	0.24	-	-	-	-	19.5
10	7	10	10	10	10	52	0.28	0.39	0.42	0.24	-	-	-	-	19.5
10	7	10	10	10	15	47	0.37	0.54	0.56	0.24	-	-	-	-	19.5
10	7	10	10	10	20	47	0.48	0.69	0.72	0.24	-	-	-	-	19.5
10	7	10	10	10	25	47	0.58	0.92	1.01	0.24	-	-	-	-	19.5
10	8	10	10	10	<2	-	0.26	0.63	0.34	0.24	0.24	0.24	0.24	0.24	20.5
10	8	10	10	10	2<3	78	0.31	0.62	0.42	0.24	-	-	-	-	20.5
10	8	10	10	10	3-5	58	0.24	0.37	0.34	0.24	-	-	-	-	20.5
10	8	10	10	10	10	52	0.26	0.41	0.44	0.24	-	-	-	-	20.5
10	8	10	10	10	15	47	0.35	0.56	0.59	0.24	-	-	-	-	20.5
10	8	10	10	10	20	47	0.44	0.72	0.75	0.24	-	-	-	-	20.5
10	8	10	10	10	25	47	0.54	0.97	1.09	0.24	-	-	-	-	20.5
10	9	10	10	10	<2	-	0.29	0.65	0.35	0.24	0.24	0.24	0.24	0.24	21.5
10	9	10	10	10	2<3	78	0.29	0.64	0.43	0.24	-	-	-	-	21.5
10	9	10	10	10	3-5	64	0.24	0.37	0.36	0.24	-	-	-	-	21.5
10	9	10	10	10	10	58	0.25	0.43	0.46	0.24	-	-	-	-	21.5
10	9	10	10	10	15	52	0.33	0.58	0.61	0.24	-	-	-	-	21.5
10	9	10	10	10	20	47	0.42	0.74	0.80	0.24	-	-	-	-	21.5
10	9	10	10	10	25	47	0.51	1.01	1.16	0.24	-	-	-	-	21.5
10	10	10	10	10	<2	-	0.32	0.65	0.37	0.24	0.24	0.24	0.24	0.24	22.5
10	10	10	10	10	2<3	78	0.27	0.65	0.44	0.24	-	-	-	-	22.5
10	10	10	10	10	3-5	78	0.24	0.37	0.38	0.24	-	-	-	-	22.5
10	10	10	10	10	10	64	0.24	0.44	0.48	0.24	-	-	-	-	22.5
10	10	10	10	10	15	52	0.32	0.59	0.64	0.24	-	-	-	-	22.5
10	10	10	10	10	20	52	0.40	0.76	0.83	0.24	-	-	-	-	22.5
10	10	10	10	10	25	52	0.49	1.03	1.21	0.24	-	-	-	-	22.5

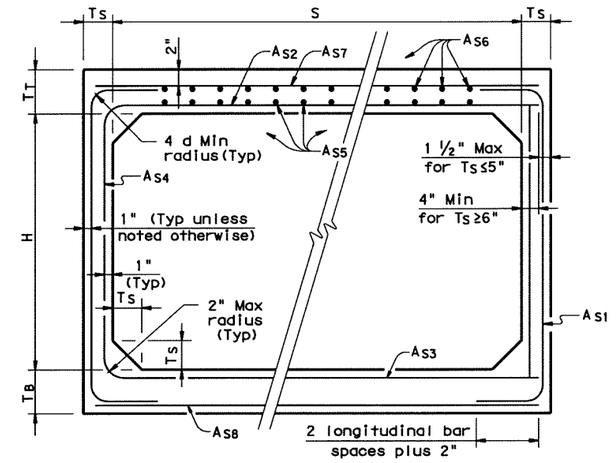
① For Box Length = 8'-0"

② A_{S1} thru A_{S4}, A_{S7} and A_{S8} are minimum required areas of reinforcement per linear foot of box length. A_{S6} and A_{S5} are minimum required areas of reinforcement per linear foot of box width.



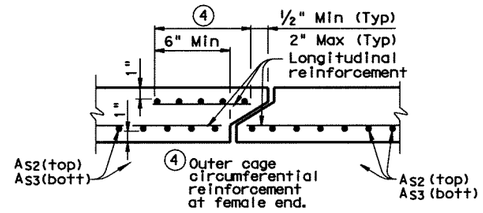
CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT



SECTION A-A

(TOP AND BOTTOM SLAB JOINT REINFORCEMENT)

GENERAL NOTES:

Designs shown conform to ASTM C1433. Refer to ASTM C1433 for information or details not shown.

All reinforcing steel shall have a minimum specified yield stress of 65 ksi. for welded wire fabric and 60 ksi. for deformed bars.

All concrete shall be Class "H" Concrete with a minimum compressive strength of 5,000 psi.

See SCP-MD standard sheet for miscellaneous details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Shop plans for alternate designs shall be submitted in accordance with Item "Precast Concrete Structures".

HS20 LOADING

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS PRECAST
10'-0" SPAN

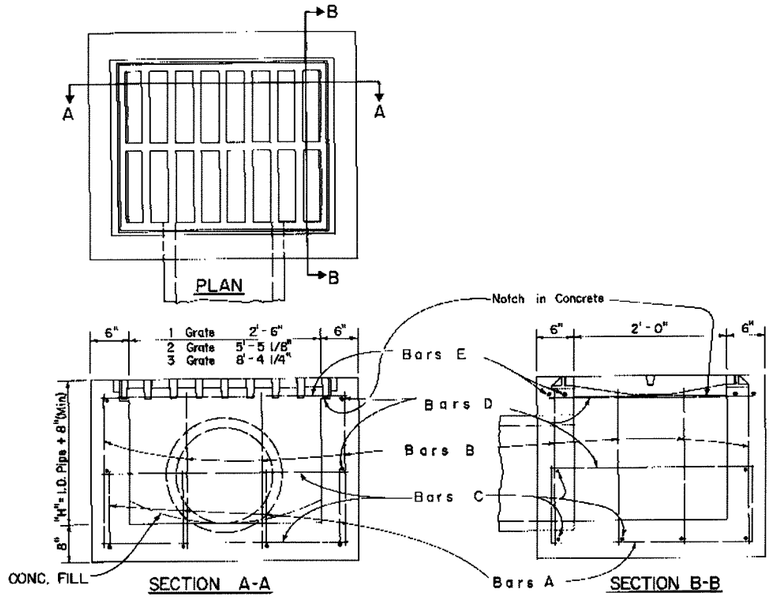
SCP-10

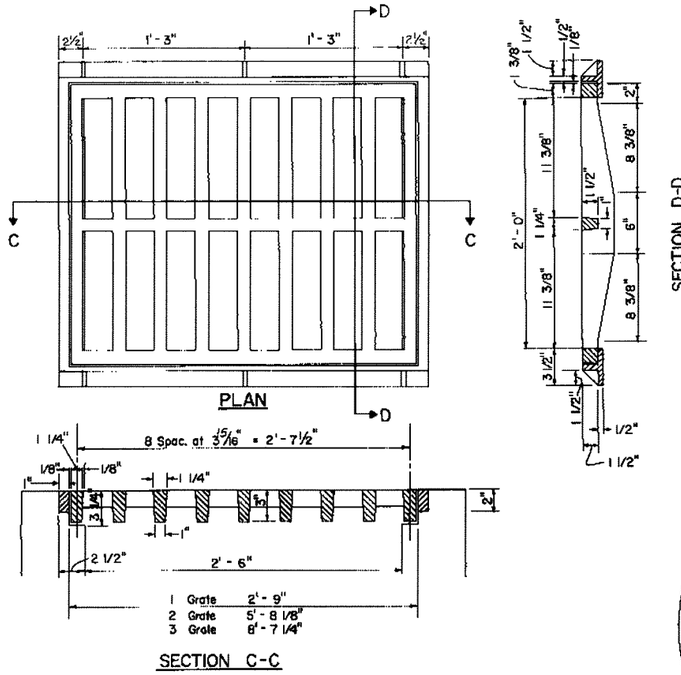
FILE: scp10ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		464
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

LEVELS DISPLAYED
ACC:
1

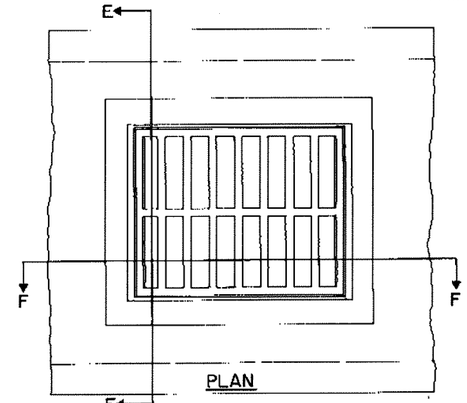
ENNY

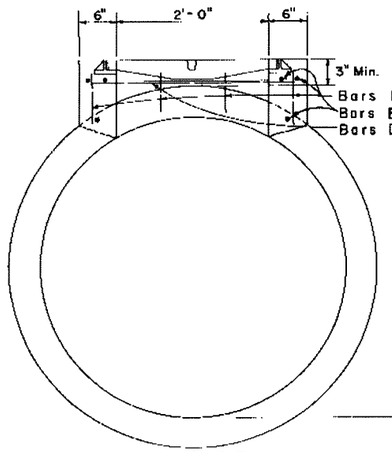
DITEFD34.DGN

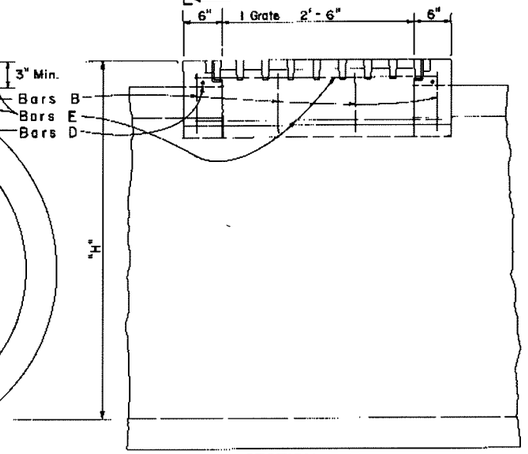




SECTION D-D

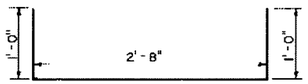




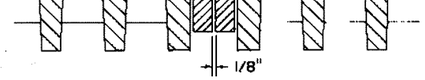


DETAILS OF INLET - TYPE "E"

FOR USE WITH 30 INCH DIAMETER PIPES AND UNDER



BARS A



FOR MULTIPLE GRATE INLETS

BILL of REINFORCING STEEL for TYPE "E" INLETS

	"H"	BARS A 12"c-c No.	Length	Size	Wt.	BARS B 12"c-c No.	Length	Size	Wt.	BARS C 12"c-c No.	Length	Size	Wt.	BARS D 12"c-c No.	Length	Size	Wt.	BARS E 12"c-c No.	Length	Size	Wt.	REINF. STEEL Lb.	CL. "A" CONC. C.Y.	GRATE & FRAME STEEL
1-GRATE	2'-0"	4	4'-8"	4	12	12	2'-2"	4	17	6	3'-2"	4	13	4	2'-8"	4	7	4	3'-2"	5	13	62	.65	294#
	2'-6"	4	4'-8"	4	12	12	2'-8"	4	21	6	3'-2"	4	13	4	2'-8"	4	7	4	3'-2"	5	13	66	.75	
	3'-0"	4	4'-8"	4	12	12	3'-2"	4	25	8	3'-2"	4	17	6	2'-8"	4	11	4	3'-2"	5	13	78	.85	
	3'-6"	4	4'-8"	4	12	12	3'-8"	4	29	8	3'-2"	4	17	6	2'-8"	4	11	4	3'-2"	5	13	82	.95	
	4'-0"	4	4'-8"	4	12	12	4'-2"	4	33	10	3'-2"	4	21	8	2'-8"	4	14	4	3'-2"	5	13	93	1.05	
	4'-6"	4	4'-8"	4	12	12	4'-8"	4	37	10	3'-2"	4	21	8	2'-8"	4	14	4	3'-2"	5	13	97	1.15	
2-GRATE	3'-0"	7	4'-8"	4	22	18	3'-2"	4	38	10	6'-1"	4	41	6	2'-8"	4	11	4	6'-1"	5	25	137	1.39	588#
	3'-6"	7	4'-8"	4	22	18	3'-8"	4	44	10	6'-1"	4	41	6	2'-8"	4	11	4	6'-1"	5	25	143	1.55	
	4'-0"	7	4'-8"	4	22	18	4'-2"	4	50	12	6'-1"	4	49	8	2'-8"	4	14	4	6'-1"	5	25	160	1.70	
	4'-6"	7	4'-8"	4	22	18	4'-8"	4	56	12	6'-1"	4	49	8	2'-8"	4	14	4	6'-1"	5	25	166	1.86	
	5'-0"	7	4'-8"	4	22	18	5'-2"	4	62	14	6'-1"	4	57	10	2'-8"	4	18	4	6'-1"	5	25	184	2.01	
	5'-6"	7	4'-8"	4	22	18	5'-8"	4	68	14	6'-1	4	57	10	2'-8"	4	18	4	6'-1"	5	25	190	2.17	
3-GRATE	4'-0"	10	4'-8"	4	31	24	4'-2"	4	67	12	9'-0"	4	72	8	2'-8"	4	14	4	9'-0"	5	38	222	2.36	882#
	4'-6"	10	4'-8"	4	31	24	4'-8"	4	75	12	9'-0"	4	72	8	2'-8"	4	14	4	9'-0"	5	38	230	2.57	
	5'-0"	10	4'-8"	4	31	24	5'-2"	4	83	14	9'-0"	4	84	10	2'-8"	4	18	4	9'-0"	5	38	254	2.78	
	5'-6"	10	4'-8"	4	31	24	5'-8"	4	91	14	9'-0"	4	84	10	2'-8"	4	18	4	9'-0"	5	38	262	2.99	
	6'-0"	10	4'-8	4	31	24	6'-2"	4	99	16	9'-0"	4	96	12	2'-8"	4	21	4	9'-0"	5	38	285	3.20	
	6'-6"	10	4'-8"	4	31	24	6'-8"	4	107	16	9'-0"	4	96	12	2'-8"	4	21	4	9'-0"	5	38	293	3.41	

Concrete To Be Deducted For Pipes

Pipe Size	Conc. C.Y.
15"	0.04
18"	0.05
21"	0.07
24"	0.09
27"	0.11
30"	0.14
33"	0.17
36"	0.20
39"	0.23
42"	0.26
48"	0.34

DETAILS OF FRAME AND GRATE TY E

DETAILS OF INLET - TYPE "F"

FOR USE WITH PIPES GREATER THAN 30" DIAMETER

NOTES:

Inlet frame and grate to be ductile iron, in accordance with Item 442. Even bearing between inlet frame and grate will be required, grinding down the metal where necessary. Frame and grate will be match-marked to insure proper fit in field.

Payment for grates and frames shall be made under the bid item "Frame and Grate (Ty. E)"

Concrete and reinforcing steel will not be paid for directly but will be included in the bid item "Inlets (Ty. E Single)", "(Ty. E Double)", "(Ty. E Triple)" or "Inlets (Ty. F Single)".

Concrete and reinforcing steel quantities shown are for informational purposes only.

All concrete shall be Class "A".

All dimensions to reinforcing steel are to centers of bars.

After the inlet has been constructed and the inside forms removed, additional Class "A" concrete shall be placed in the bottom of the inlet as indicated. The circular surface shall receive a smooth steel trowel finish.

Lateral pipe may enter at any location.

DROP INLET TYPE E & F DETAILS

TxDOT
DISTRICT 18 STANDARD

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	(SEE TITLE SHEET)	465

STATE	STATE DIST. NO.	COUNTY
TEXAS	18	ROCKWALL

CONT.	SECT.	JOB	HIGHWAY NO.
0451	01	032, ETC	SH 205

2/92

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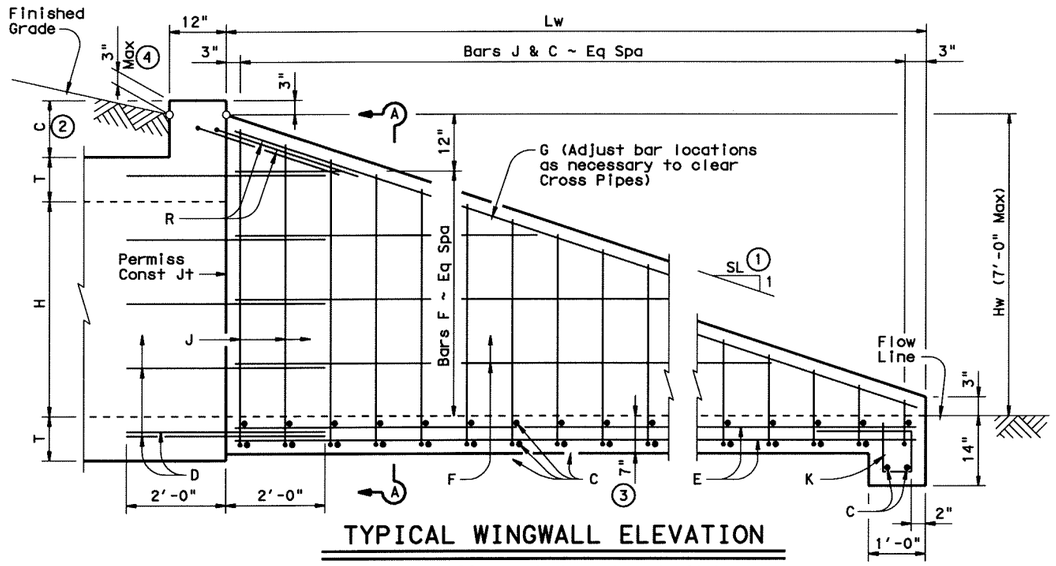
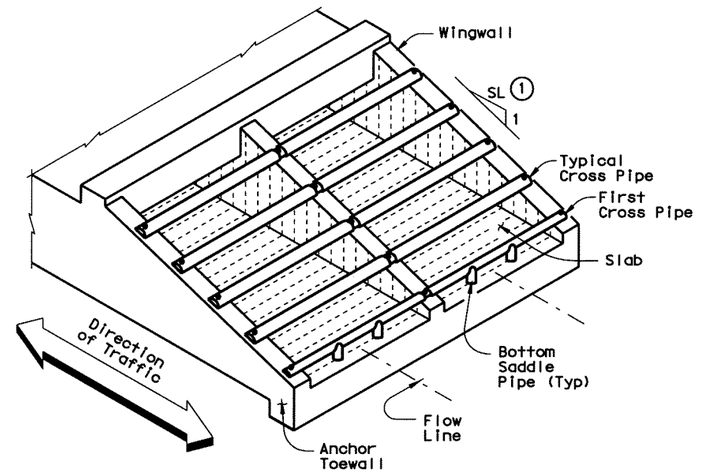


TYPICAL WINGWALL ELEVATION

(Cross Pipes not shown for clarity)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing Bolted Anchor Option)

Formulas: (All values are in Feet)

Hw = H + T + C - 0.250'

Lw = (Hw - 0.250') (SL)

For Cast-in-place culverts:

Atw = (N) (S) + (N+1) (U)

For Precast culverts:

Atw = (N) (2U+S) + (N-1) (0.500')

Total Wingwall Area (S.F.)
= (0.5) (Hw + 0.250') (Lw) (N+1)

Total Concrete Volume (C.Y.)
= [(Wingwall Area) (0.583') +
(Lw) (Atw) (0.583') +
(Atw) (1.000') (1.167' - 0.583')] ÷ (27)

Total Reinforcing (Lbs)
= (1.55) (Lw) (Atw) +
(4.43) (Atw) +
(K) (Hw) (N+1) (√Lw)

C = Height of Curb above top of Top Slab
Hw = Height of Wingwall
K = Constant Value for use in formulas
Slope SL:1 K
6:1 ~ 10.41
Atw = Anchor Toewall Length
Lw = Length of Wingwall
N = Number of Culvert Barrels
S = Clear Span of each Barrel
SL:1 = Side Slope Ratio (Horizontal : 1 Vertical)

See applicable box culvert standard for H, S, T, and U values.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Cross Pipes.

Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.

All reinforcing steel shall be Grade 60. All reinforcing shall be adjusted as necessary to provide a minimum clear cover of 1 ¼".

The quantities for concrete, reinforcing steel, and Cross Pipes resulting from the formulas given herein are for Contractor's information only.

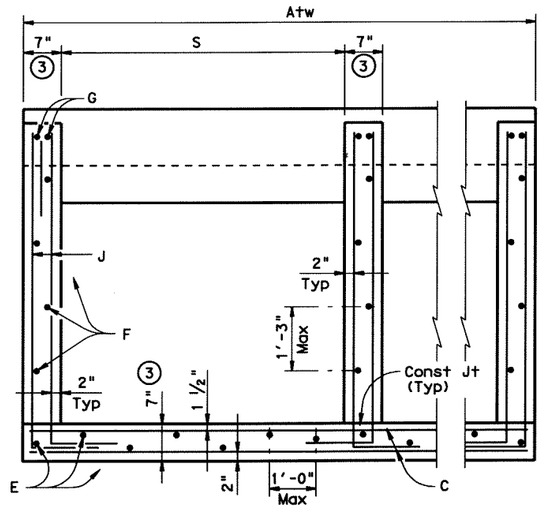
Cross Pipes, Sleeve Pipes, and Saddle Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except the concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

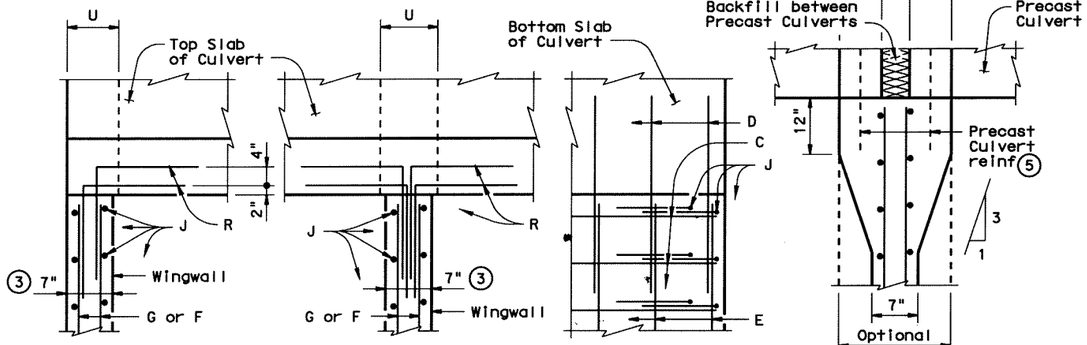
See BCS standard sheet for additional dimensions and information.

Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the Safety End Treatments.



SECTION A-A

(Showing typical Wingwall and Wing Slab reinforcing)
(Pipe Runners not shown for clarity)



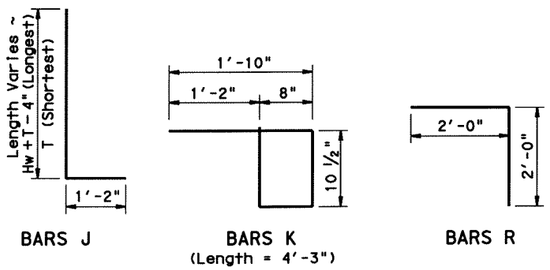
AT TOP OF EXTERIOR WINGWALL (Cast-in-Place Culvert)

AT TOP OF INTERIOR WINGWALL (Cast-in-Place Culvert)

AT OUTSIDE OF BOTTOM SLAB (Cast-in-Place Culvert)

AT INTERIOR WINGWALL (Precast Culvert)

PLAN VIEWS OF CORNER DETAILS



BARS J

BARS K (Length = 4'-3")

BARS R

TABLE OF REINFORCING BAR SIZES & SPACING		
Bar	Size	Spacing
C	#4	10" Max
D	#4	match F & E
E	#4	1'- 0" Max
F	#4	1'- 3" Max
G	#6	Shown
J	#4	10" Max
K	#4	1'- 0" Max
R	#4	Shown

(1) Recommended values of slope are: 3:1, 4:1, & 6:1. Slope shall be 3:1 or flatter.

(2) 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard.

(3) Wingwall and slab thicknesses may be the same as the adjacent culvert wall and slab thicknesses (7" Minimum). If thicknesses greater than the minimum (7") are used, no changes will be made in quantities and no additional compensation will be allowed.

(4) 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.

(5) For Culverts with C = 0", the precast culvert reinforcing may extend 1'-0" minimum into Wingwall. Wingwall Bars D and R may be omitted. Otherwise, refer to the "Wingwall Connection Detail" on the SCP-MD standard.

Texas Department of Transportation
Bridge Division

SAFETY END TREATMENT
FOR BOX CULVERTS (MAXIMUM Hw = 7'-0")
TYPE I ~ PARALLEL DRAINAGE

SETB-PD

FILE: setbpdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				466
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032,ETC	SH205

ACC:
LEVELS DISPLAYED
1

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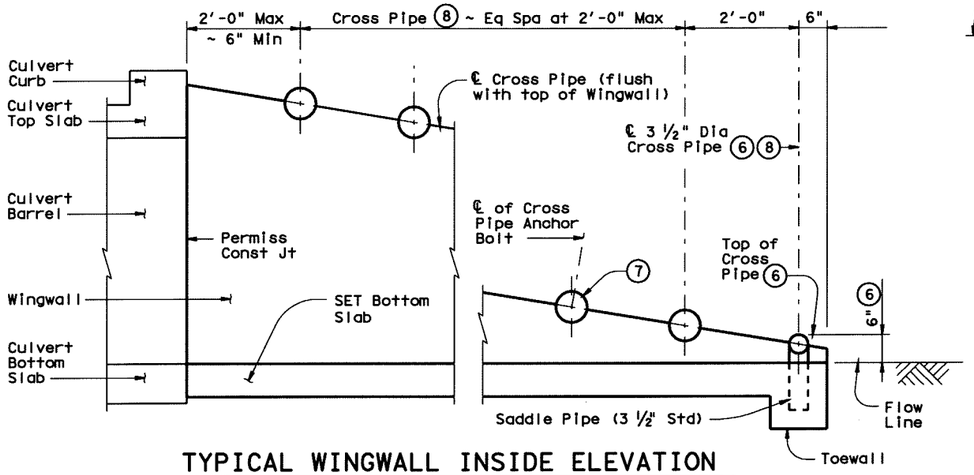
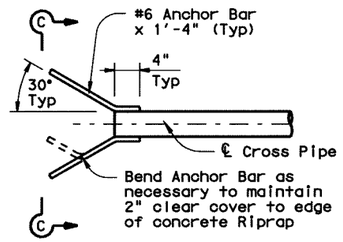
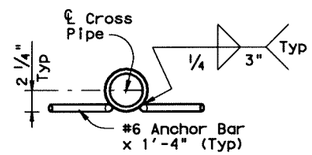


TYPICAL WINGWALL INSIDE ELEVATION

(Showing Installation of Cross Pipes)

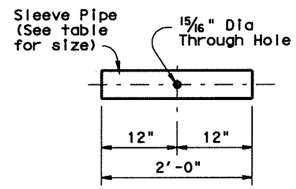


PART PLAN



SECTION C-C

OPTIONAL ANCHOR BAR DETAILS



SLEEVE PIPE DETAILS (9)

REQUIRED PIPE SIZES (8)		
Culvert Span Sizes	Cross Pipe Size	Sleeve Pipe Size (9)
First Pipe	3 ½" STD	2 ½" STD
30" to 42"	4" STD	3" STD
48" to 72"	5" STD	4" STD
78" to 120"	6" STD	5" STD

STANDARD PIPE SIZES		
Pipe Size	Pipe O.D.	Pipe I.D.
2 ½" STD	2.875"	2.469"
3" STD	3.500"	3.068"
3 ½" STD	4.000"	3.548"
4" STD	4.500"	4.026"
5" STD	5.563"	5.047"
6" STD	6.625"	6.065"

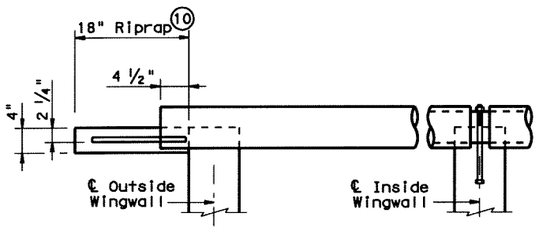
(6) The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.

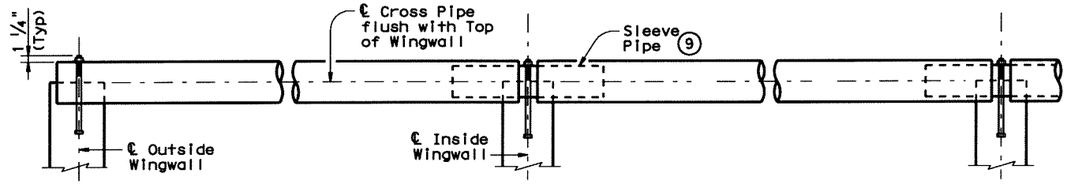
(7) The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to ensure that concrete does not flow into this Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(8) Cross Pipes and Sleeve Pipes (if required) shall be as shown in the REQUIRED PIPE SIZES table. Saddle Pipes for the 3 ½" first Cross Pipe shall also be 3 ½".

(9) At Contractor's option, the Cross Pipe may be continuous across the Inside Wingwalls. If such option is selected, the Sleeve Pipe shall be omitted and a 15/16" diameter through hole made in the Cross Pipe to accept the anchor bolt at the centerline of each Interior Wingwall.

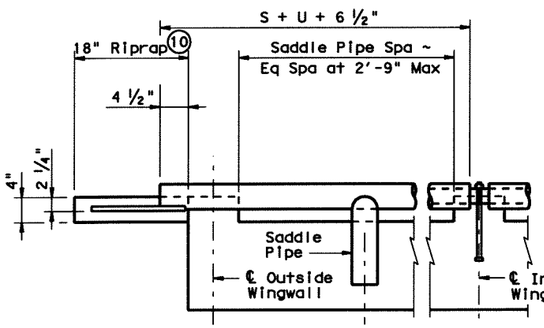
(10) Riprap will be required when using the optional Anchor Bar details and shall be included in the Price Bid for Safety End Treatment. Such Riprap shall be concrete Riprap in accordance with Item 432, "Riprap".

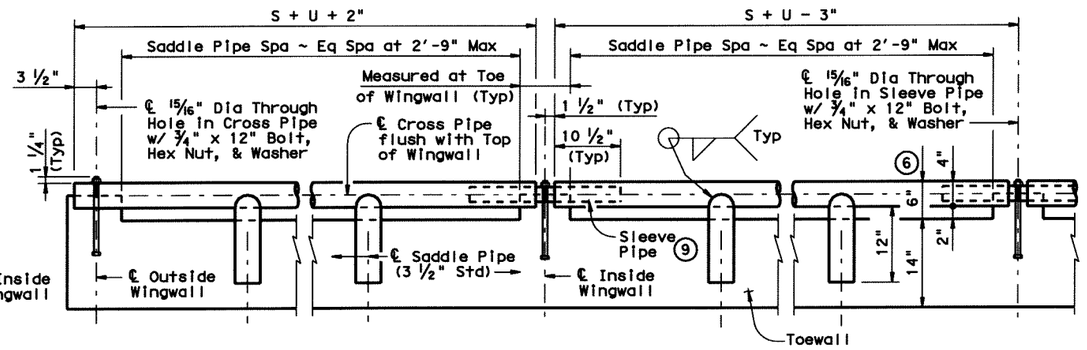




SECTION THROUGH INSTALLATION OF TYPICAL FULL CROSS PIPE

(Anchor details and dimensions are similar to those shown below in SECTION THROUGH INSTALLATION OF 3 ½" FIRST CROSS PIPE detail.)





SECTION THROUGH INSTALLATION OF 3 ½" FIRST CROSS PIPE

OUTSIDE CULVERT BARREL WITH OPTIONAL ANCHOR BARS & RIPRAP

OUTSIDE CULVERT BARREL WITH BOLTED ANCHOR

INSIDE CULVERT BARREL

CROSS PIPE INSTALLATION DETAILS

ACC:
LEVELS DISPLAYED
1

SHEET 2 OF 2

Texas Department of Transportation
Bridge Division

SAFETY END TREATMENT
FOR BOX CULVERTS (MAXIMUM Hw = 7'-0")
TYPE I ~ PARALLEL DRAINAGE

SETB-PD

FILE: setbpdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				467
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032, ETC	SH205

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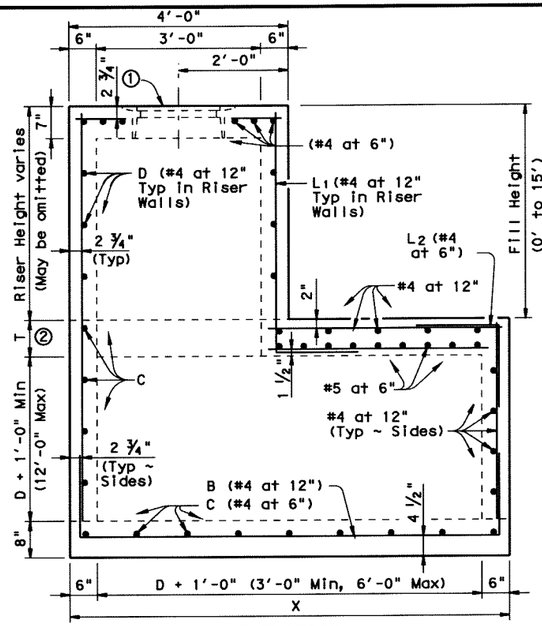
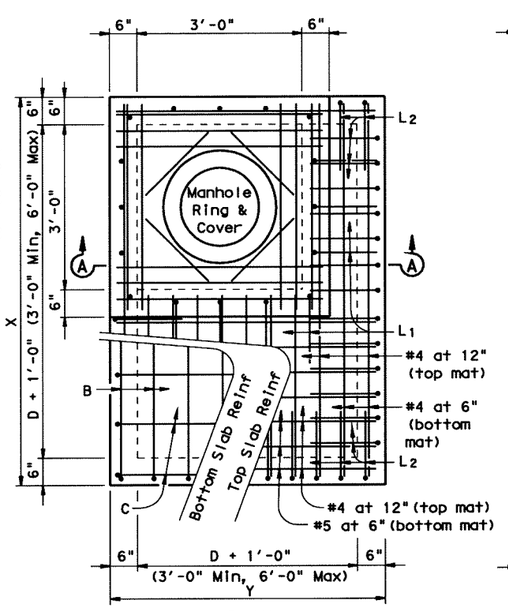
LEVELS DISPLAYED

ACC:

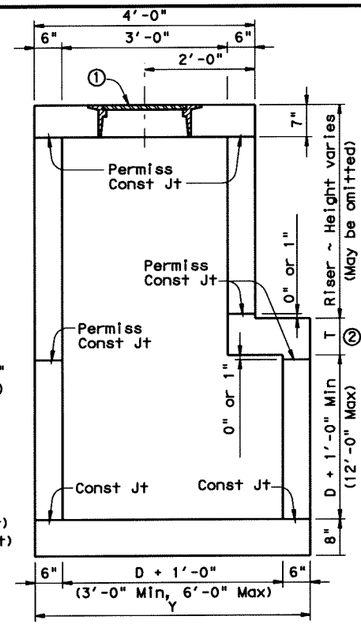


ELEVATION

D = Maximum inside diameter of any Pipe entering the side shown or the opposite side



PLAN

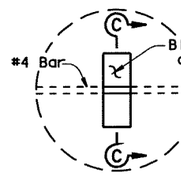


SECTION A-A

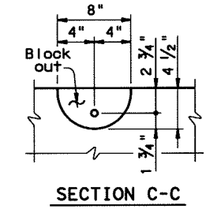
MANHOLE WITH CAST-IN-PLACE RISER

① See Ring and Cover Details

② For Fill Height less than or equal to 10', T=8". For Fill Height between 10' and 15', T=10".

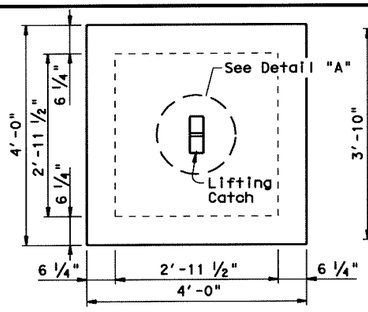


DETAIL "A"

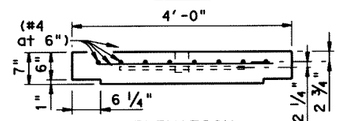


SECTION C-C

LIFTING CATCH

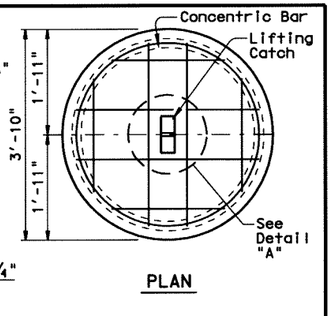


PLAN

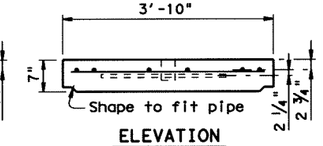


ELEVATION

CAST-IN-PLACE RISER COVER



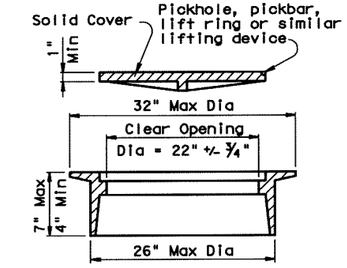
PLAN



ELEVATION

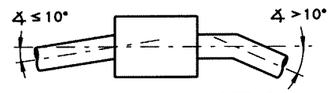
CONCRETE PIPE RISER COVER

OPTIONAL PRECAST CONCRETE LIFT-OFF COVERS



RING AND COVER DETAILS

Approximate Weight = 245 lb



PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

GENERAL NOTES:

Unless otherwise shown in the plans, payment will be made for each manhole of the Type M.

When approved, precast inlets with equivalent structural capacity may be furnished. Sealed engineering calculations and drawings shall be submitted for approval prior to construction.

Shop drawings will not be required.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

The riser may be constructed of reinforced concrete as shown or of Reinforced Concrete Pipe, Class III, in accordance with ASTM Designation C-76. If pipe is used, joints shall conform to the Item "Reinforced Concrete Pipe Culverts". Precast Concrete Lift-Off Cover may be substituted for Ring and Cover.

The riser, either cast-in-place or concrete pipe, may be located in any corner.

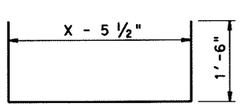
All reinforcing steel shall be #4 unless otherwise noted.

Pipes may enter any or all walls. The maximum size of pipe that can be accommodated is 60". More than one pipe may enter a side, subject to the maximum box dimension shown. The clear distance between adjacent pipes should be 9" minimum.

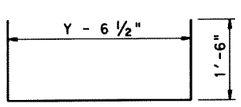
Ring and cover shall conform to the requirements of AASHTO M306, "Standard Specification for Drainage Structure Castings". Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.

All concrete shall be Class "A" (f'c = 3000 psi).

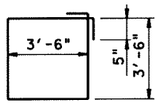
OPTIONAL MANHOLE WITH CONCRETE PIPE RISER



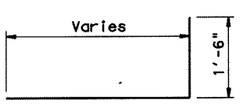
BARS B



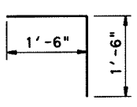
BARS C



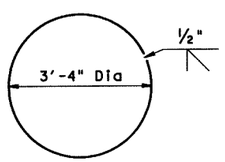
BARS D



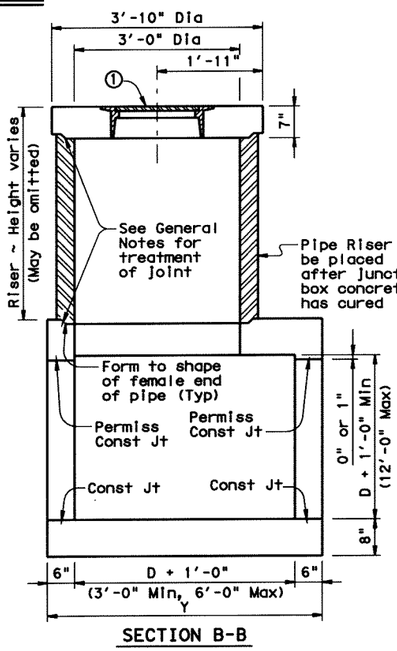
BARS L_1



BARS L_2



CONCENTRIC BAR



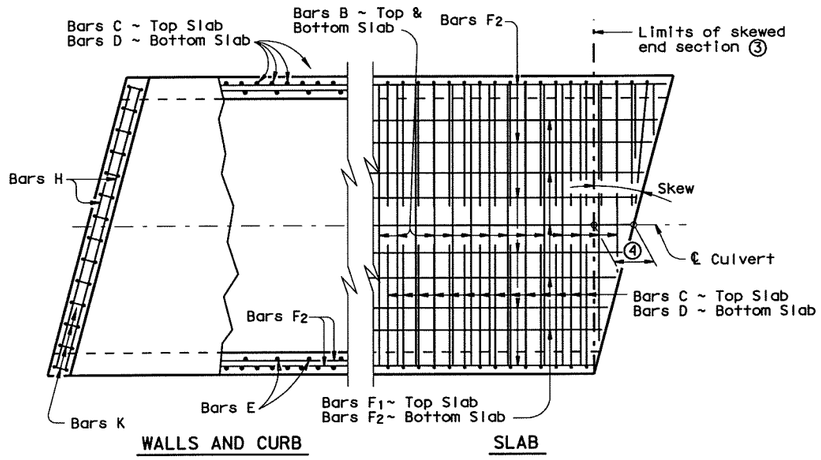
SECTION B-B

Texas Department of Transportation
Bridge Division

MANHOLE TYPE M
(JUNCTION BOX WITH ACCESS)
15' MAX FILL

MH-M

FILE: mh-mstde.dgn	DN: TxDOT	CK: TER	DW: MCB	CK: TER/GAF
© TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		471
	COUNTY	CONTROL	SECT	JOB	HIGHWAY



PLAN OF SKEWED ENDS ~ FROM 0° TO 15°⑦

② When the spacing between Bars B becomes less than half of the normal spacing, bars shall be cut to avoid fouling

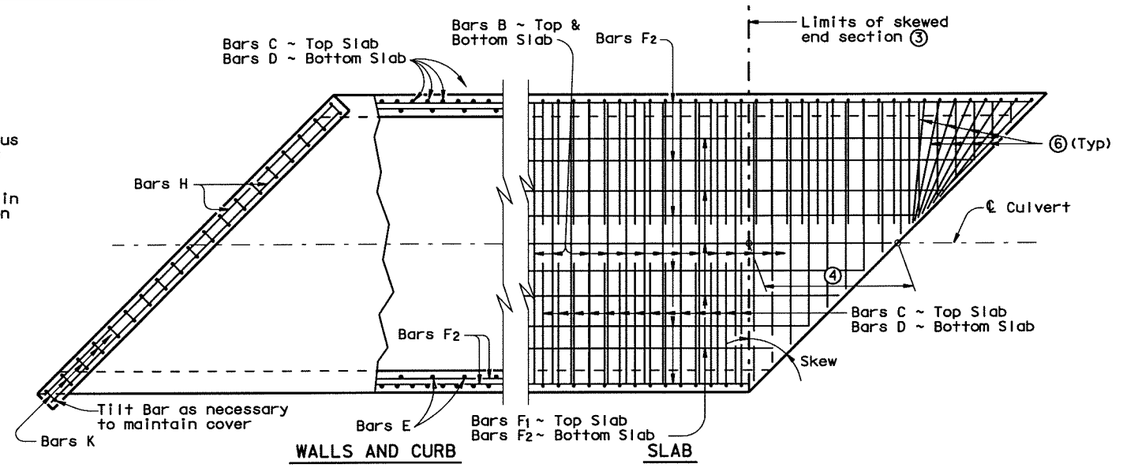
③ The length of Bars B and E will vary in the skewed end sections

④ [One half of overall width] x [Tan of the skew angle]

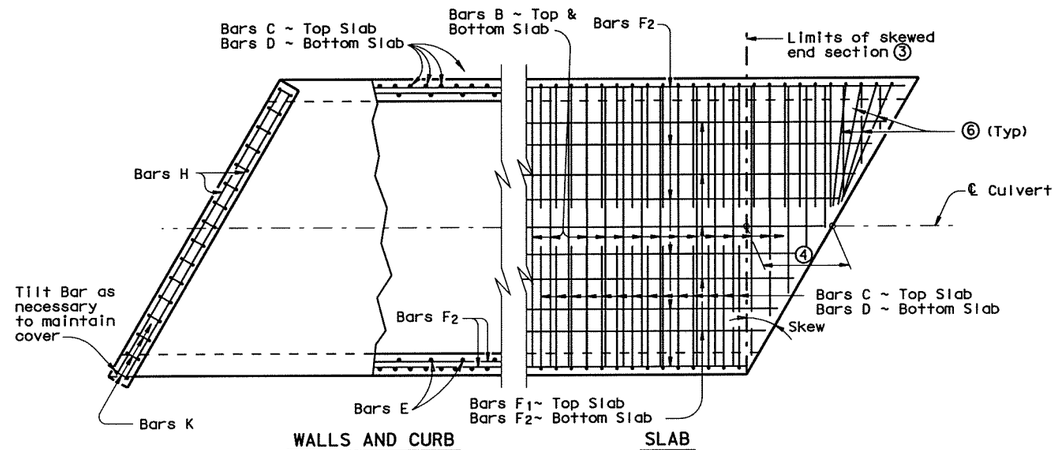
⑤ Bars F_1 and F_2 shall be continuous through the angle section. They shall be bent to remain parallel to the walls of the Box Culvert.

⑥ When necessary to avoid fouling in acute corners, the slab extension leg of Bars C and Bars D may be shortened to a minimum of 1'-6" for skews of 30° and 45°.

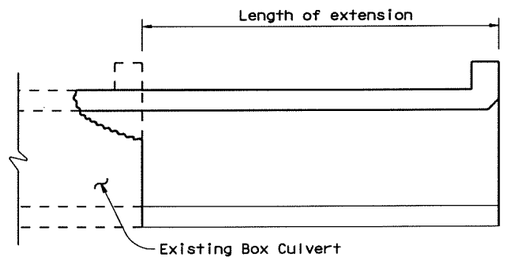
⑦ For skews of 15° or less, the contractor has the option of placing Bars B, C and D parallel to the skewed end while maintaining spacing along centerline box. Lengths of Bars B shown on the standards shall be increased to accommodate the skew.



PLAN OF SKEWED ENDS ~ OVER 30° TO 45°

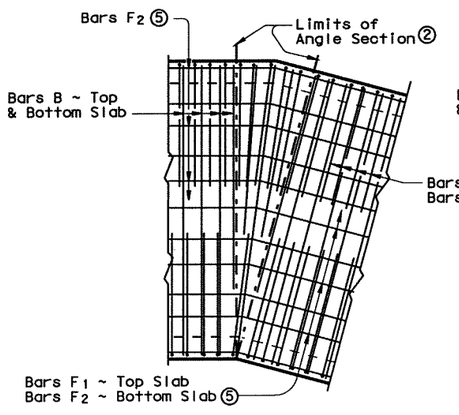


PLAN OF SKEWED ENDS ~ OVER 15° TO 30°

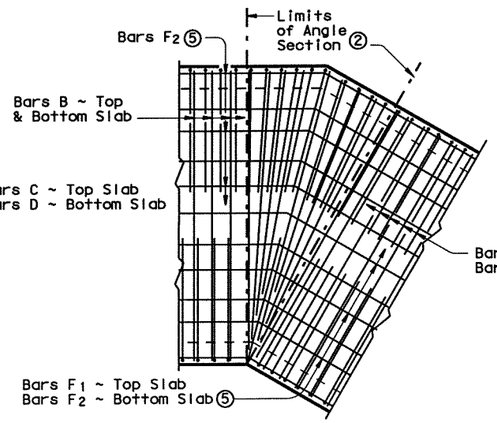


LENGTHENING DETAIL①

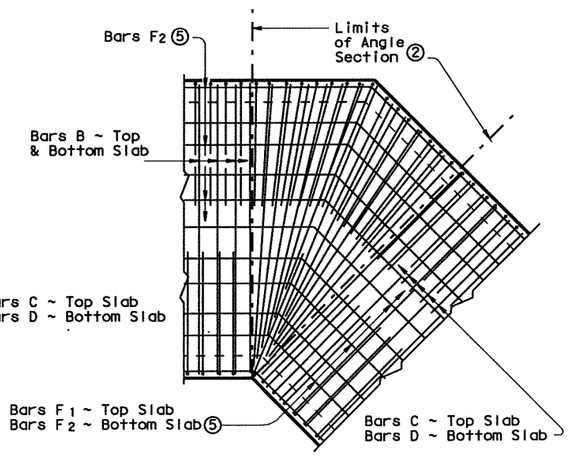
① For box culverts with less than 2'-0" of fill, the top slab shall be broken back to provide a minimum 1'-10" lap of the existing longitudinal bars with the longitudinal bars in the extension. If the depth of fill is 2'-0" or greater, the top slab shall be broken back to provide a 1'-0" minimum embedment of existing longitudinal reinforcing into the extension. Alternatively, if the fill height is greater than 2'-0", the existing curb may be left in place and 2'-0" long #6 bars shall be drilled and grouted 1'-0" into the existing top slab at 1'-6" center to center spacing. Wings and apron shall be broken back as necessary to install the extension. Exposed wingwall and apron reinforcing may be removed or cleaned and included in the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, horizontal and vertical transitions shall be formed as directed by the Engineer. Bottom slabs shall match to maintain an uninterrupted flow line. Existing and new reinforcing shall be field bent into transition maintaining specified cover requirements.



PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.

The use of permanent forms is not allowed.

Refer to Single Box Culverts Cast-in-Place standard for details of straight sections of culvert. For skewed sections and angle sections refer to Single Box Culverts Cast-in-Place standard for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown. For Skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume and reinforcing steel weight by dividing the values shown on the culvert standards by the cosine of the skew angle.

Laps for Bars H, when required, shall be 1'-9" for uncoated bars and 2'-7" for epoxy coated.

HS20 LOADING

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LEVELS DISPLAYED

ACC:

Texas Department of Transportation
Bridge Division

SINGLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS

SCC-MD

FILE: sccmdste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		472
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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LEVELS DISPLAYED
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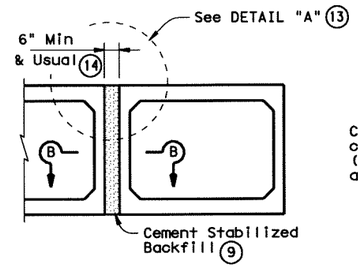
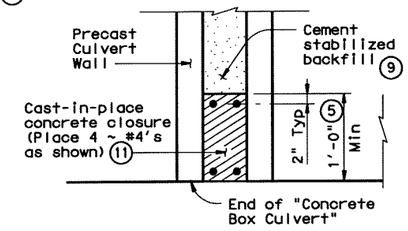
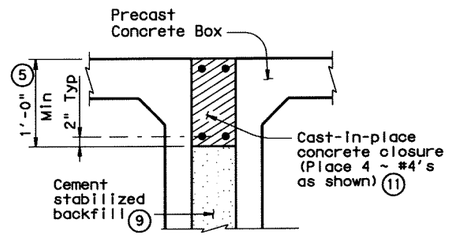


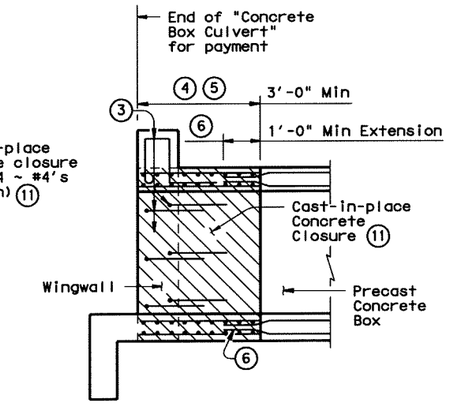
MULTIPLE UNIT PLACEMENT



SECTION B-B

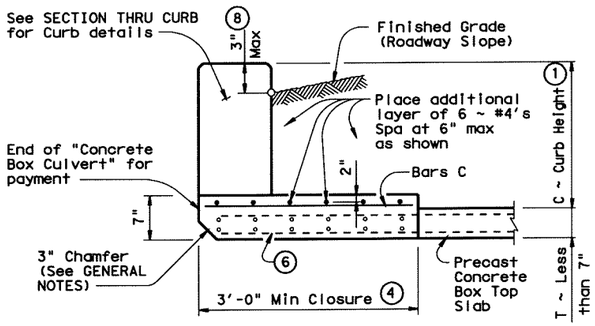


DETAIL "A" (13)

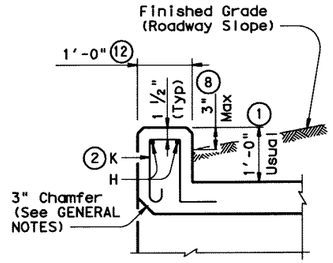


WINGWALL CONNECTION

(Also applies to Safety End Treatment)

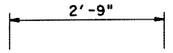


SECTION THRU TOP SLABS LESS THAN 7"

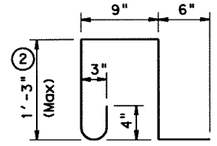


SECTION THRU CURB

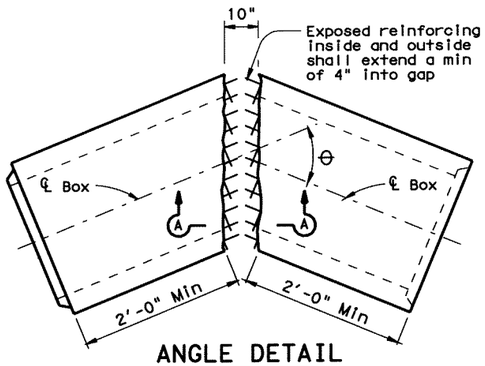
(10) QUANTITIES PER FOOT OF CURB	
Reinforcing Steel	4.18 Lb
Concrete	0.037 CY



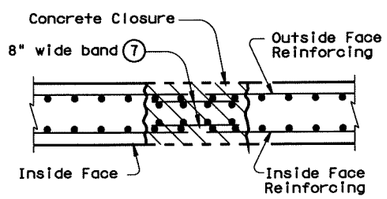
BARS C ~ #4
(Spa = 1'-0" Max)



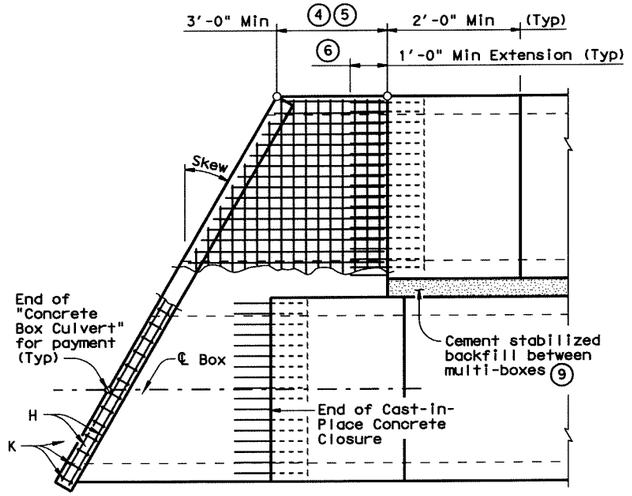
BARS K ~ #4
(Spa = 1'-0" Max)
(Length = 4'-3")



ANGLE DETAIL



SECTION A-A



PLAN OF SKEWED ENDS

(Showing multi-box placement)

(1) 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with bridge rail, other than T6, refer to RAC standard.

(2) For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

(3) Curb, Wingwall or Safety End Treatment reinforcing shall extend into concrete closure. Any reinforcing that does not fit into the closure shall be bent or trimmed as necessary.

(4) Cast-in-place concrete closure shall be 3'-0" min. Boxes shall be cast short or broken back in the field. All reinforcing in the closure shall be the same size and spacing as in the precast box section. Except where shown otherwise, the cast-in-place closure shall be flush with the inside and outside faces of the precast box section.

(5) For multiple unit placements the length of the closure for the interior walls may be adjusted as necessary. The length of the top slab, bottom slab, and exterior wall closure shall not be less than 3'-0". See Section B-B detail when interior walls are cast full length.

(6) Precast box reinforcing shall extend a minimum of 1'-0" into concrete closure (Typ).

(7) Bands of reinforcing matching the inside and outside face reinforcing shall be placed in the gaps of the top and bottom slabs. A band matching the outside face reinforcing of the wall shall be placed in the gaps of the walls (placed in the outside face only). The bands shall be tack welded to the exposed reinforcing at each point of contact.

(8) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.

Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(9) Cement Stabilized Backfill between boxes is considered part of the Box Culvert for payment.

(10) All curb concrete and reinforcing is considered part of the Box Culvert for payment.

(11) Any additional concrete and reinforcing required for the closures shall be considered as subsidiary to the Concrete Box Culvert.

(12) 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

(13) For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in DETAIL "A".

(14) This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box". No payment will be made for any additional material in the gap between adjacent boxes.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

All closure concrete shall be Class "C" with a minimum compressive strength of 3600 psi and shall be placed according to the Item, "Concrete Structures".

Any additional concrete required for the closures shall be considered as subsidiary to the Concrete Box Culvert.

Refer to the Single Box Culverts Precast standard for details not shown.

The bottom edge of the top slab closure shall be chamfered 3 inches at the entrance.

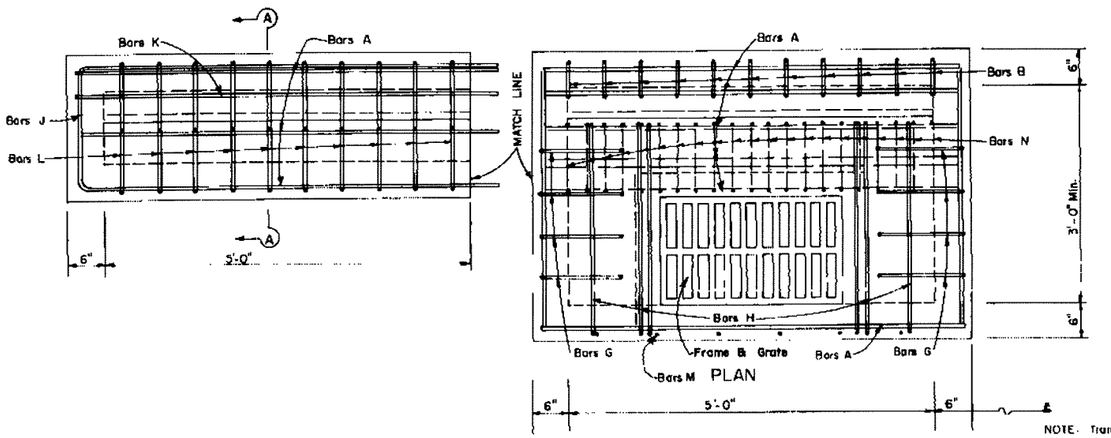
HS20 LOADING

Texas Department of Transportation
Bridge Division

BOX CULVERTS PRECAST MISCELLANEOUS DETAILS

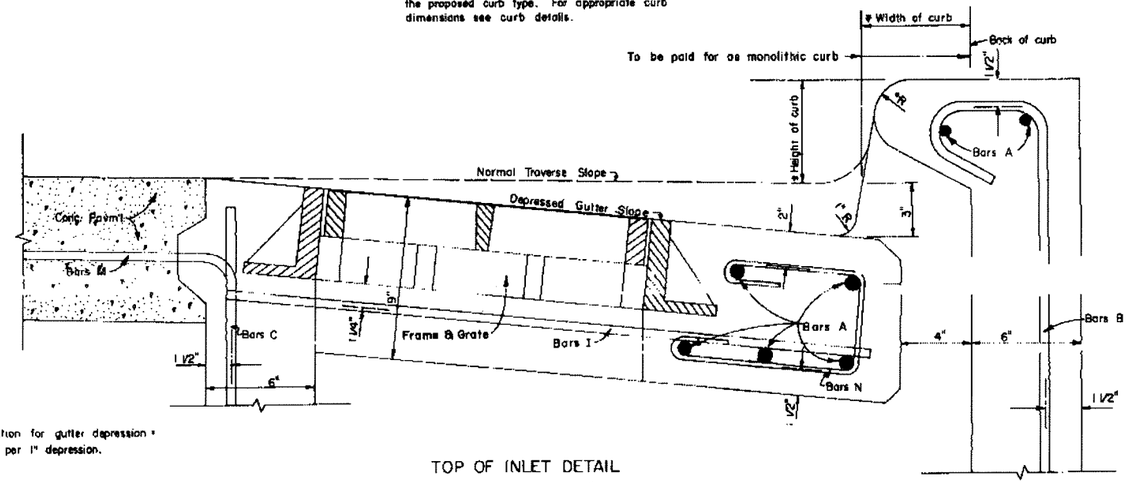
SCP-MD

FILE: scpmdste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF		
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT			SHEET	
REVISIONS	DAL	(SEE TITLE SHEET)			473	
	COUNTY		CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL		0451	01	032	SH205

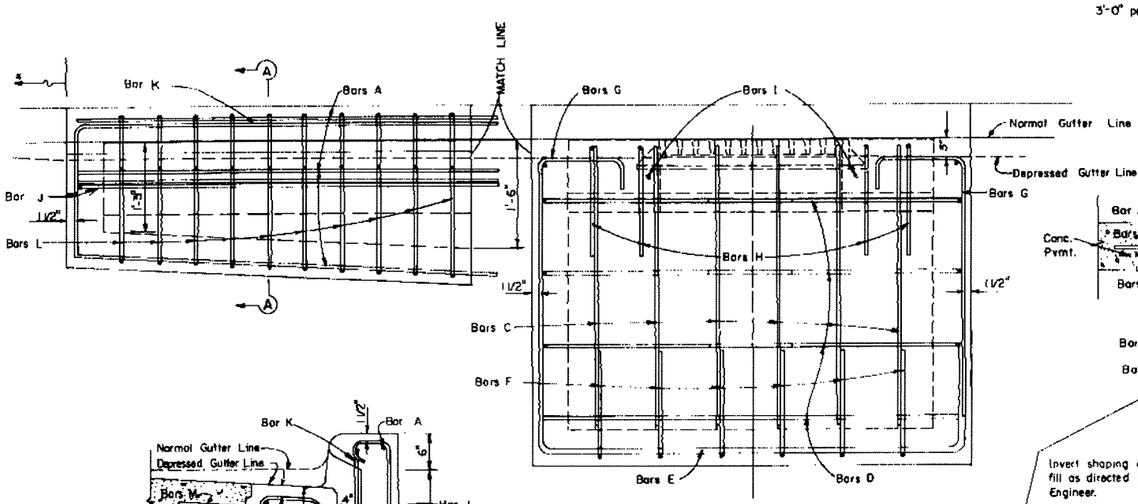


NOTE. Transition for gutter depression = 3'-0" per 1" depression.

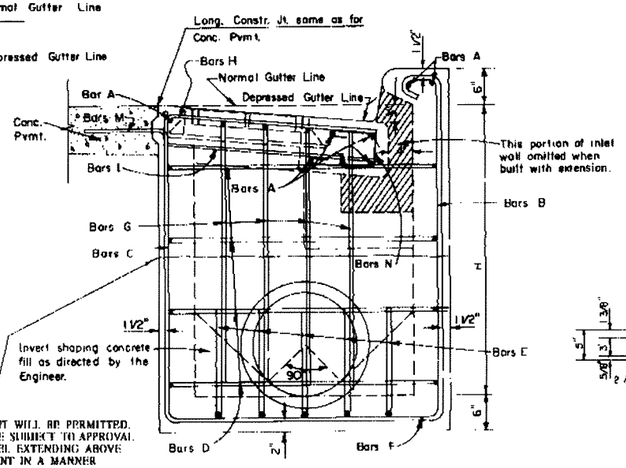
* Dimensions for curb sections vary according to the proposed curb type. For appropriate curb dimensions see curb details.



TOP OF INLET DETAIL
Scale: 3" = 1'-0"

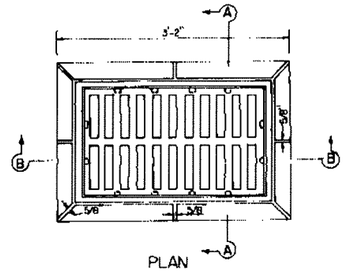


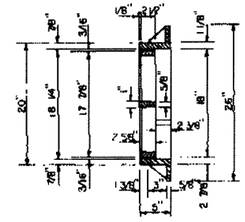
ELEVATION

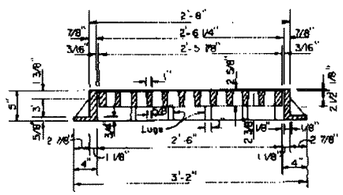


ONE HORIZONTAL CONSTRUCTION JOINT WILL BE PERMITTED. THE LOCATION OF THIS JOINT WILL BE SUBJECT TO APPROVAL BY THE ENGINEER. REINFORCING STEEL EXTENDING ABOVE THE CONSTRUCTION JOINT MAY BE BENT IN A MANNER ACCEPTABLE TO THE ENGINEER TO PROVIDE CLEARANCE FOR PAVING OPERATIONS. IN LIEU OF BENDING THE STEEL, THE CONTRACTOR MAY PROVIDE A MINIMUM 1' 0" LAP SPLICE TO THE LOWER STEEL.

SIDE VIEW



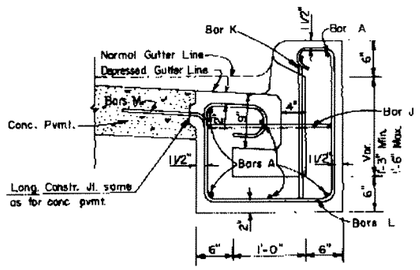




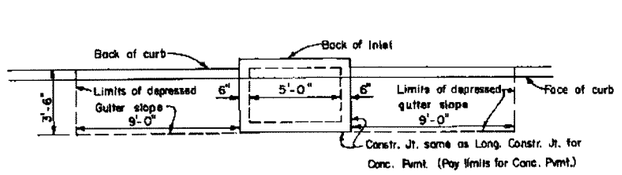
SECTION B-B

NOTE.
Frame and grate to be of gray cast iron conforming to A.S.T.M. Spec. A-48 for Class No. 30 Cast Iron.

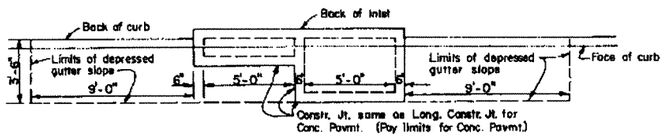
FRAME & GRATE TYPE A



SECTION A-A

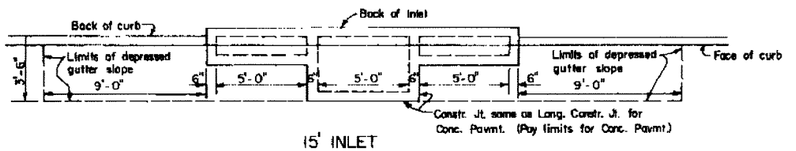


5' INLET



10' INLET

PLAN OF INLET AND EXTENSIONS



15' INLET

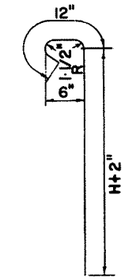
CURB & GRATE INLET TYPE II DETAILS

TxDOT
DISTRICT 18 STANDARD

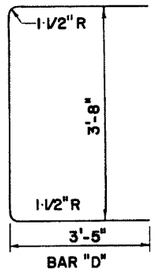
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	(SEE TITLE SHEET)		473A
STATE	STATE DIST. NO.	COUNTY	
TEXAS	18	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
0451	01	032	SH205

SHEET 1 OF 2

VNY 185



BAR "B"



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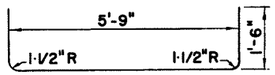

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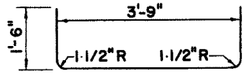

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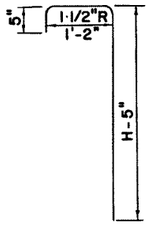

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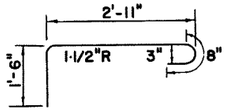
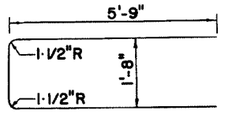
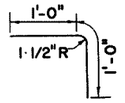


BAR "H"



BAR "J"



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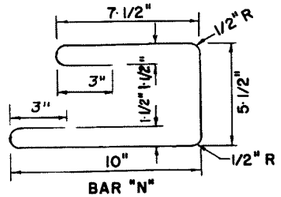

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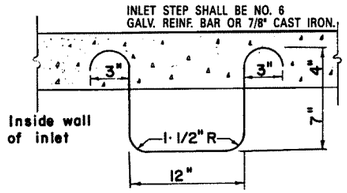
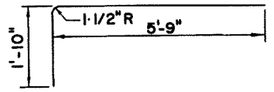
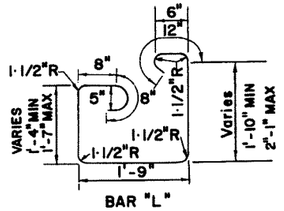


DETAIL OF INLET STEP



BAR "K"

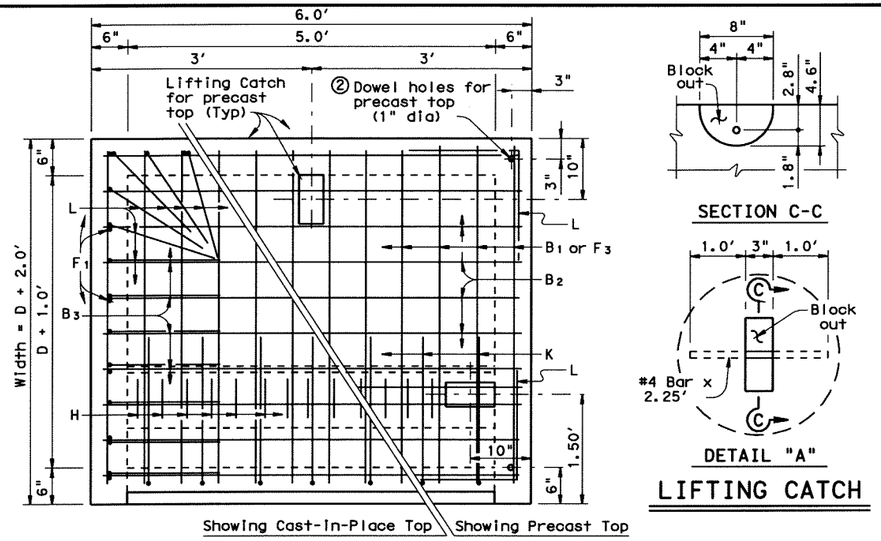


BAR "L"

REINFORCING STEEL AND CONCRETE FOR 5' INLET

| INLET SIZE | | STEEL | | |

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



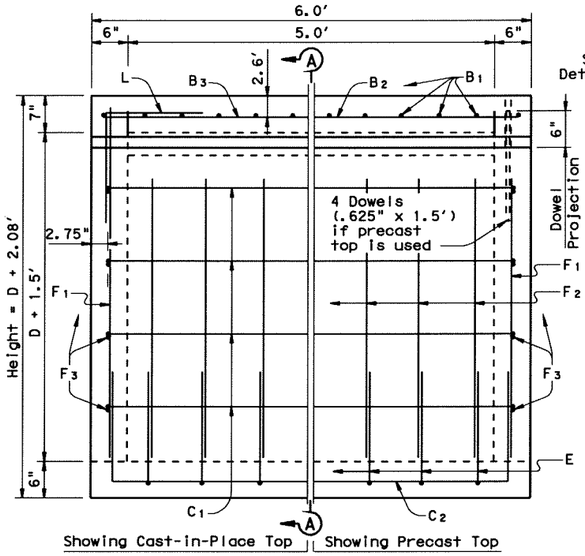
② If precast top is used, provide .625" dia x 1.5' smooth bars in inlet walls for 1" dia holes

PLAN

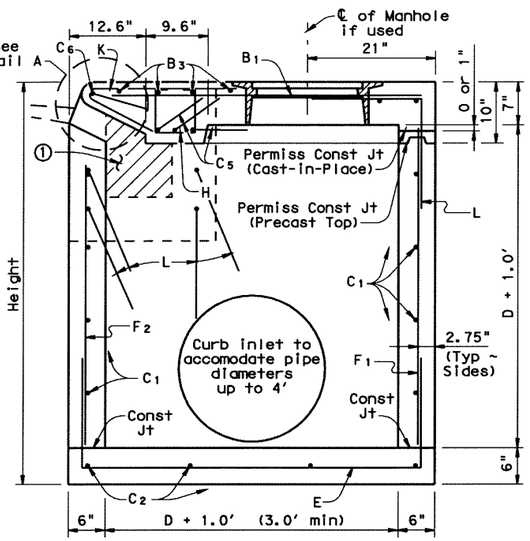
SECTION C-C

DETAIL "A"

LIFTING CATCH

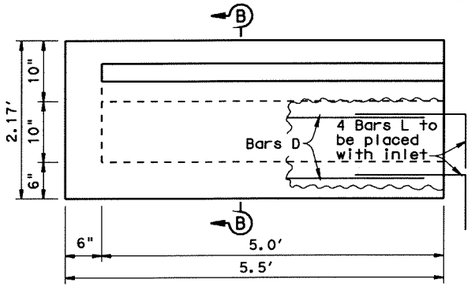


ELEVATION

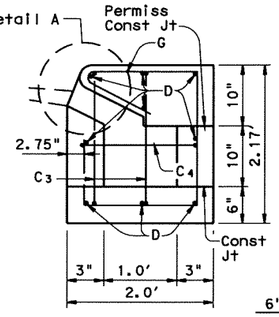


SECTION A-A

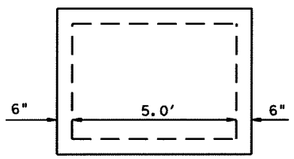
① Block out to accomodate extension if used and to place 4 Bars L



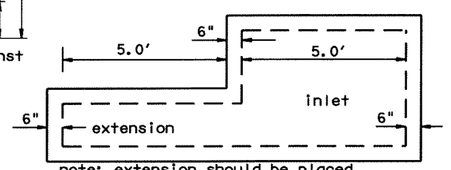
EXTENSION ELEVATION



SECTION B-B

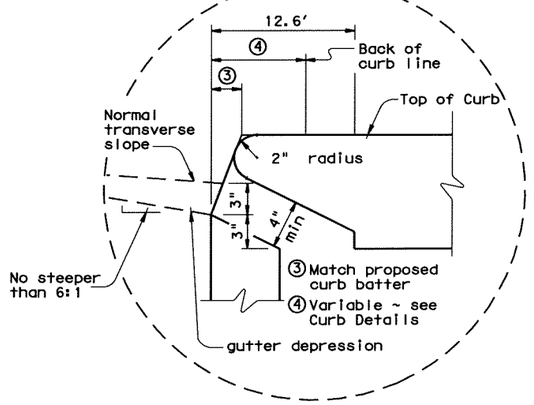


REGULAR INLET

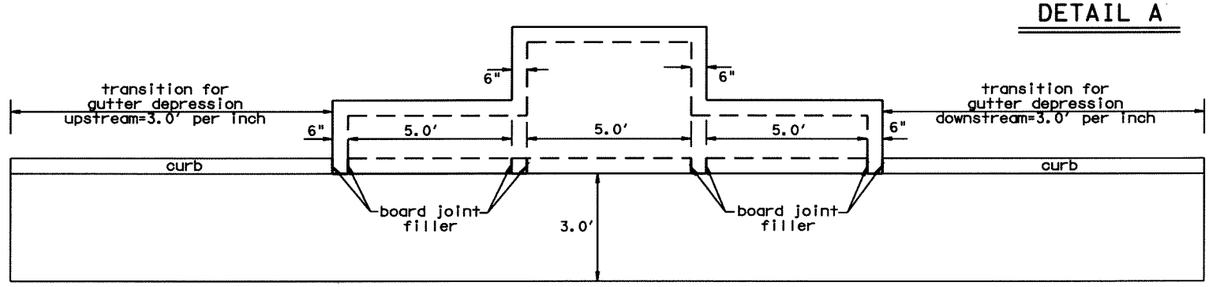


note: extension should be placed on upstream side of inlet.

INLET WITH ONE EXTENSION



DETAIL A



INLET WITH TWO EXTENSIONS

PLAN OF INLET AND EXTENSIONS

GENERAL NOTES:

Quantities shown hereon are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the type specified and for each extension.

Engineer has the option of specifying top with manhole or removable precast top as specified elsewhere in plans.

Exposed edges shall be chamfered 0.75'.

Alternate design drawings bearing the seal of a registered professional engineer will be acceptable for precast construction of inlets.

When approved by the Engineer opening configurations of equivalent hydraulic design may be furnished.

Shop drawings will not be required.

The Contractor may with the approval of the Engineer furnish inlets of equivalent structural design.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

LEVELS DISPLAYED 1 3 58 (LV=1,2 for English; 1,3 for Metric)

DALLAS DISTRICT STANDARD

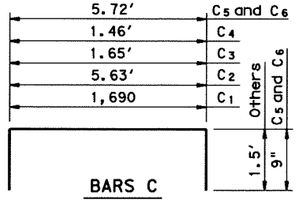
Texas Department of Transportation
Design Division (Bridge)

CURB INLET TYPE 1 DETAILS
(5 FT INLET)

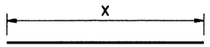
SHEET 1 OF 2

ORIG DATE: APR 97	DIST	FED REG	FEDERAL AID PROJECT #	SHEET
REVISIONS	18	6	(SEE TITLE SHEET)	473C
	COUNTY		CONTROL SECT JOB	HIGHWAY
	ROCKWALL		0451 01 032	SH205

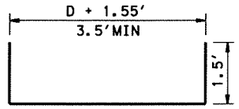
etyl1inl.dgn



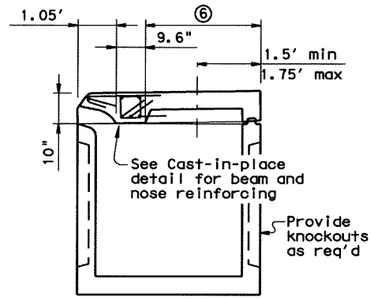
BARS C



BARS D

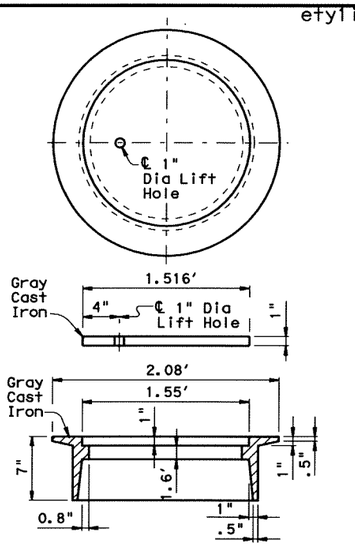


BARS E



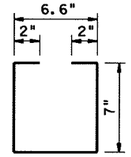
PREFABRICATED INLET

⑥ For reinforcing steel and dimensions not shown, see fabricators design drawing. Structure shall be of the size required to accomodate size of pipe shown elsewhere in the plans. Length of inlet = 5.0′.

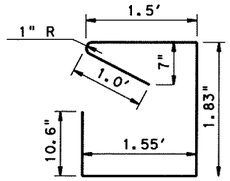


RING AND COVER DETAILS

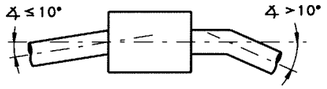
Approximate Weight = 198 LBS



BARS H

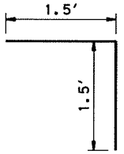


BARS G

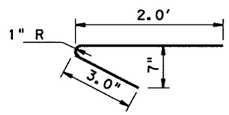


PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.



BARS L



BARS K

ESTIMATED QUANTITIES ⑧

Pipe Size = D	Height	For 4.0′ Width		Per 6" Add'l Width		Per 1.0′ ⑦ Add'l Height	
		Cl "A" Conc	Reinf Steel	Cl "A" Conc	Reinf Steel	Cl "A" Conc	Reinf Steel
IN	FT	YD³	LBS	YD³	LBS	YD³	LBS
18	3.58	1.56	315	--	--	.33	33
24	4.08	1.95	328	--	--	.33	33
30	4.58	2.34	345	.18	20	.33	33
36	5.08	2.73	361	.20	20	.36	35
42	5.58	3.12	378	.20	22	.39	35
48	6.08	3.51	392	.21	22	.40	37

⑦ For Width 4′ min = D+2′

⑧ Does not apply to prefabricated inlets

REINF STEEL

Bar	Size	Spacing
B_1	#4	6"
B_2	#5	6"
B_3	#4	6"
C_{1-2}	#4	1.0′
C_{3-4}	#4	⑨
C_5	#6	⑨
C_6	#4	⑨
D	#4	⑨
E	#4	1.0′
F_{1-3}	#4	1.0′
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"

⑨ As shown

EXTENSION QUANTITIES

Ext	length	Cl "A" Conc	Reinf Steel
No.	FT	YD³	LBS
1	5.0′	0.65	103

DISCLAIMER:
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LEVELS DISPLAYED (LV=1,2 for English; 1,3 for Metric)
1 3 58

Texas Department of Transportation
Design Division (Bridge)

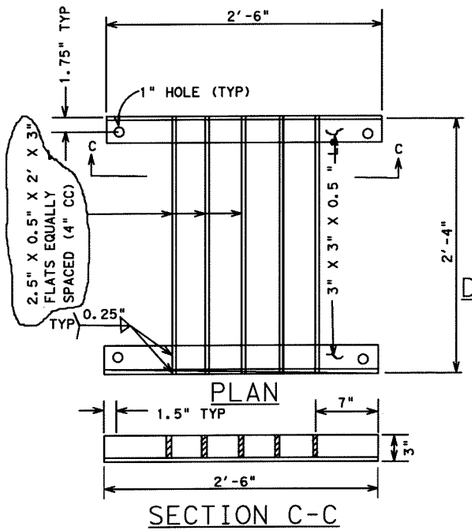
CURB INLET TYPE 1 DETAILS (5 FT INLET)

DALLAS DISTRICT STANDARD

SHEET 2 OF 2

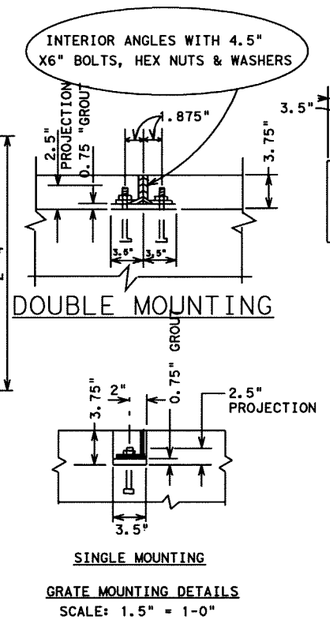
ORIG DATE: APR 97	DIST	FED REG	FEDERAL AID PROJECT •		SHEET
REVISIONS	18	6	(SEE TITLE SHEET)		473D
	COUNTY		CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL		0451	01	032	SH205

EXT



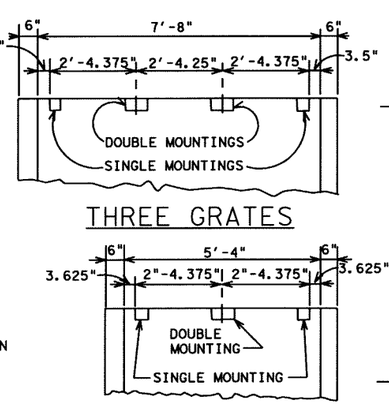
GRATE DETAILS TYPE C

SC: 1.5" = 1'-0"



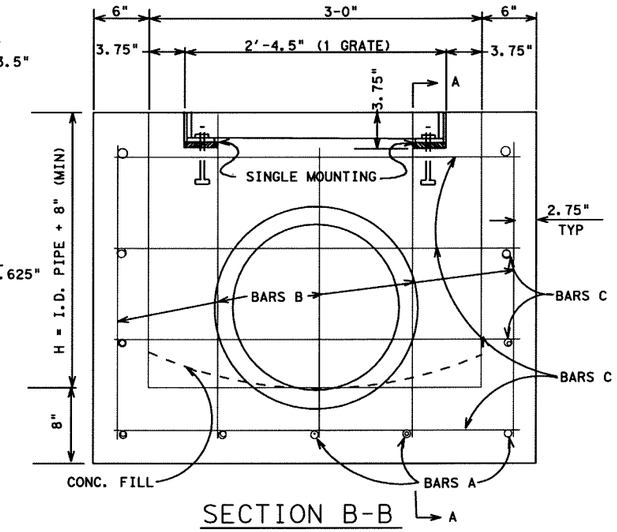
GRATE MOUNTING DETAILS

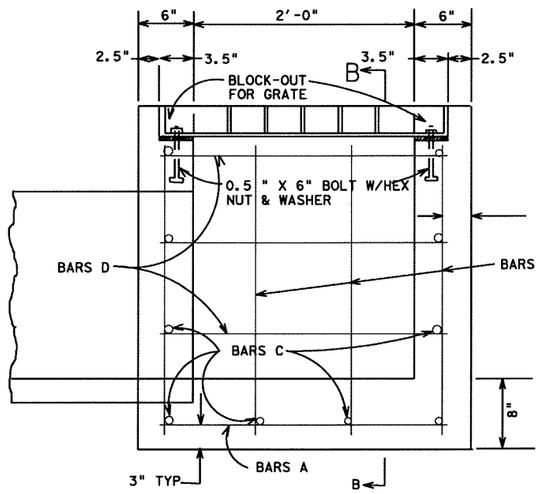
SCALE: 1.5" = 1-0"



MULTIPLE GRATE INLET DETAILS

SCALE: 1/2" = 1'-0"



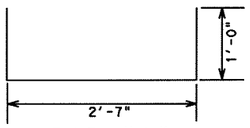


INLET DETAILS TYPE "C"

SCALE : 1.5" = 1'-0"

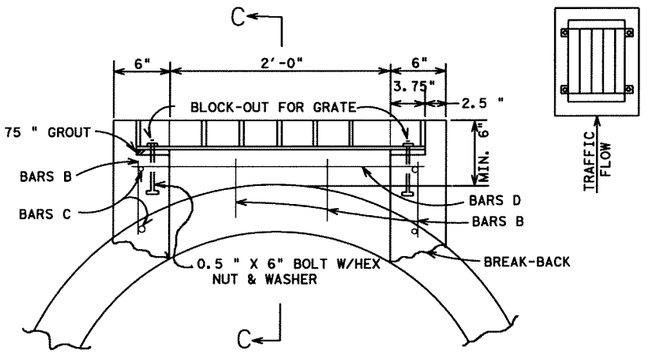
PIPE SIZE	CONC. C.Y.
15"	0.04
18"	0.05
21"	0.07
24"	0.09
27"	0.11
30"	0.14
33"	0.17
36"	0.20
39"	0.23
42"	0.26
48"	0.34

CONCRETE TO BE DEDUCTED FOR PIPES

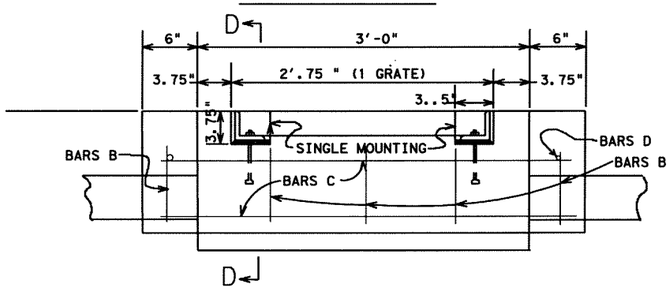


BAR "A"

TWO GRATES



SECTION D-D



SECTION C-C

INLET DETAILS TYPE "G"

FOR USE WITH PIPES GREATER THAN 30" DIAMETER

BILL OF REINFORCING STEEL FOR TYPE "C" INLETS

	H	BARS A 12" C.C. NO.	LENGTH	SIZE	WT.	BARS B 12" C.C. NO.	LENGTH	SIZE	WT.	BARS C 12" C.C. NO.	LENGTH	SIZE	WT.	BARS D 12" C.C. NO.	LENGTH	SIZE	WT.	REINF. STEEL LB.	CL "A" CONC. C.Y.	GRATE
1 GRATE	2'-6"	5	4'-7"	4	15	14	2'-8"	4	25	10	3'-8"	4	24	6	2"-8"	4	11	75	0.85	95#
	3'-0"	5	↑	↑	15	14	3'-2"	↑	30	10	3'-8"	↑	24	6	↑	↑	11	80	0.96	
	3'-6"	5			15	14	3'-8"		34	12	3'-8"		29	8			14	92	1.07	
	4'-0"	5			15	14	4'-2"		39	12	3'-8"		29	8			14	97	1.18	
	4'-6"	5			15	14	4'-8"		44	14	3'-8"		34	10			18	111	1.29	
	5'-0"	5			15	14	5'-2"		48	14	3'-8"		34	10			18	115	1.40	
2-GRATE	3'-0"	7			21	18	3"-2"		38	10	6'-0"		40	6			11	110	1.38	190#
	3'-6"	7			21	18	3'-8"		44	12	6'-0"		48	8			14	127	1.53	
	4'-0"	7			21	18	4'-2"		50	12	6'-0"		48	8			14	133	1.68	
	4'-6"	7			21	18	4'-8"		56	14	6'-0"		56	10			18	151	1.83	
	5'-0"	7			21	18	5'-2"		62	14	6'-0"		56	10			18	157	1.98	
	5'-6"	7			21	18	5'-8"		68	16	6'-0"		64	12			21	174	2.13	
3-GRATE	4'-0"	10			31	24	4'-2"		67	12	8'-4"		67	8			14	178	2.22	285#
	4'-6"	10			31	24	4'-8"		75	14	8'-4"		78	10			18	202	2.41	
	5'-0"	10			31	24	5'-2"		83	14	8'-4"		78	10			18	210	2.60	
	5'-6"	10			31	24	5'-8"		91	16	8'-4"		89	12			21	232	2.79	
	6'-0"	10	↓	↓	31	24	6'-2"	↓	99	16	8'-4"	↓	89	12	↓	↓	21	240	2.98	
	6'-6"	10	4'-7"	4	31	24	6'-8"	4	107	16	8'-4"	4	100	14	2"-8"	4	25	263	3.17	

* DOES NOT INCLUDE QUANTITY FOR SHAPING OR DEDUCTION FOR PIPES

GENERAL NOTES

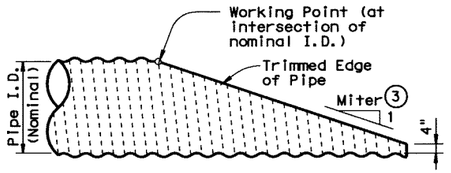
1. EXPOSED EDGES SHALL BE CHAMFERED 0.75".
2. ALL CONCRETE SHALL BE CLASS "A".
3. ALL DIMENSIONS TO BE REINFORCING STEEL ARE TO CENTERS OF BARS.
4. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
5. IF POSSIBLE HORIZONTAL GRATE INLET SHOULD BE ORIENTED SUCH THAT BOTH TRAFFIC AND DITCH WATER APPROACH PARRALLEL TO BARS ON GRATE. IF THIS IS NOT POSSIBLE ORIENTATION SHOULD FAVOR TRAFFIC FLOW WHERE PIPE SIZES PERMIT.
6. STRUCTURAL STEEL FOR GRATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A-36 OR AISI DESIGNATION m1010-m1020. PAYMENT FOR GRATES SHALL BE MADE UNDER THE BID ITEM "GRATE (TY C)." QUANTITIES FOR CONCRETE & STEEL ARE FOR CONTRACTOR'S INFORMATION ONLY.
7. PAYMENT FOR INLETS SHALL BE MADE UNDER THE BID ITEM "INLETS (COMP) (TY C-1 GRATE), (TY C-2 GRATE), (TY C=3 GRATE) OR (TY G-1 GRATE)."
8. EXISTING BARS EXPOSED BY BREAK -BACK SHALL BE CLEANED AND BENT INTO POSITION TO PROVIDE A TIE TO THE NEW CONCRETE EXTENSION FOR TYPE "G" INLET.

DROP INLET TYPE C & G DETAILS

TXDOT DISTRICT 18 STANDARD

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	(SEE TITLE SHEET)		473E
STATE	STATE DIST. NO.	COUNTY	
TEXAS	18	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
0451	01	032	SH205

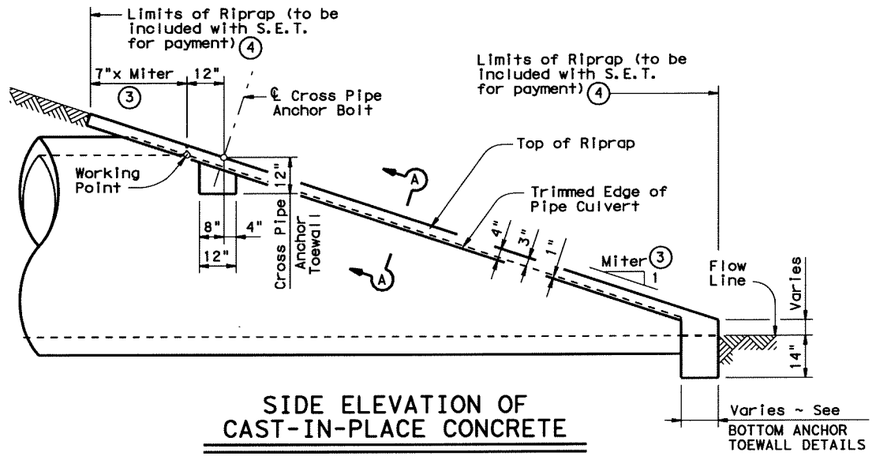
$$$$date$$$$



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

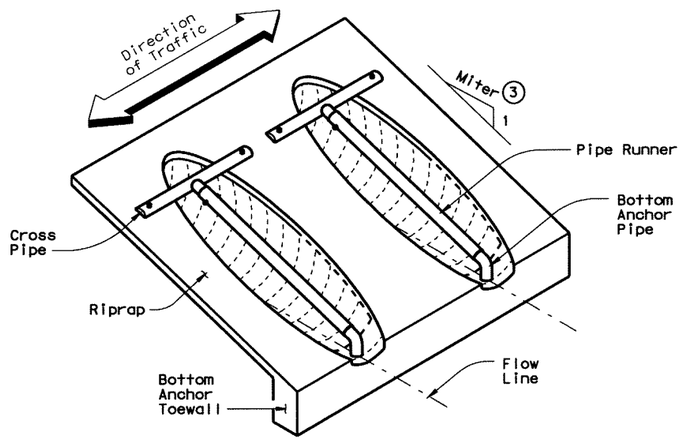
SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

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



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

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



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS (1)(2)

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

TYPICAL PIPE CULVERT MITERS (3)

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

CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED (2)

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

STANDARD PIPE SIZES & MAX PIPE RUNNER LENGTHS (1)

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

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) (5)

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

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

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

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

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

(3) Miter = Slope of Mitered Pipe Culvert End

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

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

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LEVELS DISPLAYED
ACC:

Texas Department of Transportation
Bridge Division

SAFETY END TREATMENT
FOR 12" DIA TO 60" DIA PIPE CULVERTS TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		473F
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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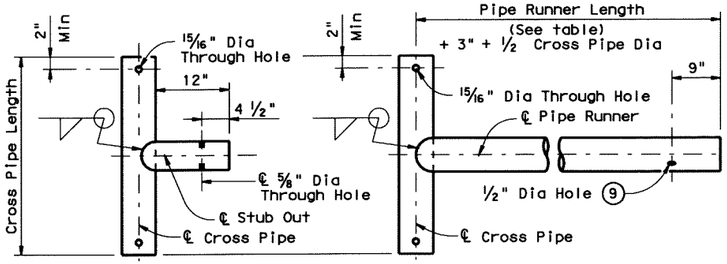
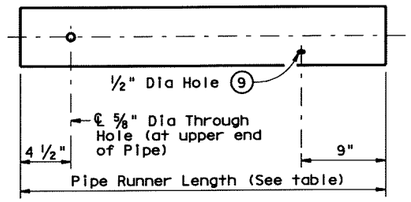


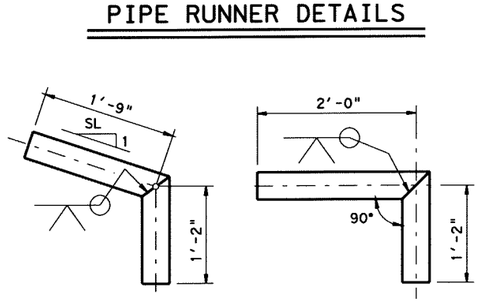
OPTION A1 OPTION A2

CROSS PIPE AND CONNECTIONS DETAILS



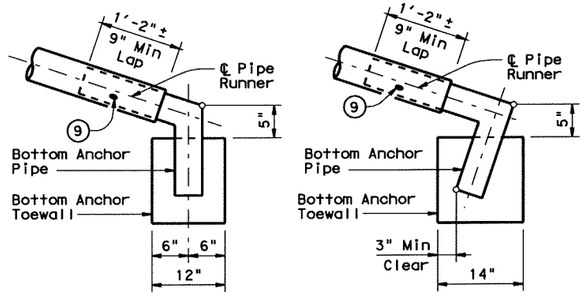
NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS



OPTION B1 OPTION B2

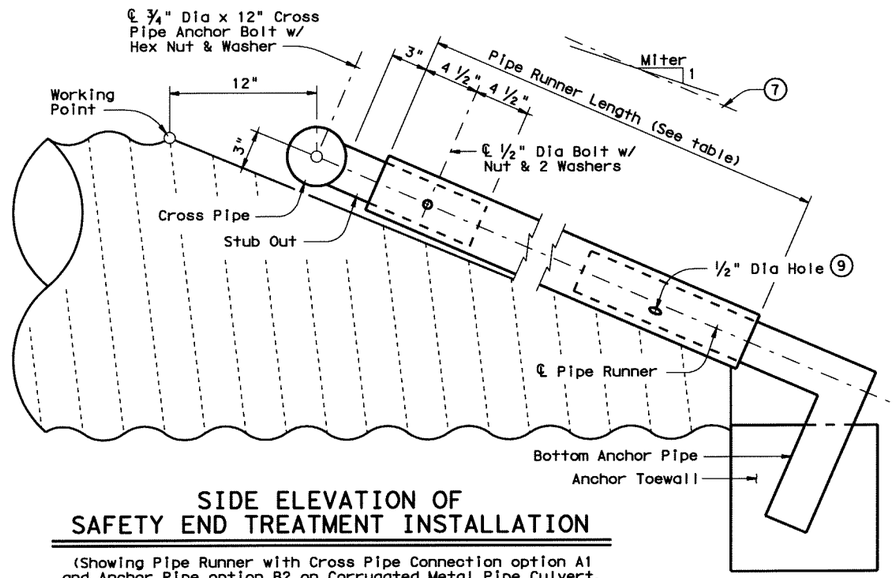
BOTTOM ANCHOR PIPE DETAILS (10)



OPTION B1 OPTION B2

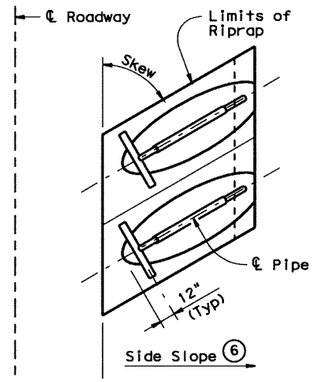
BOTTOM ANCHOR TOEWALL DETAILS

(Culvert & Riprap not shown for clarity)

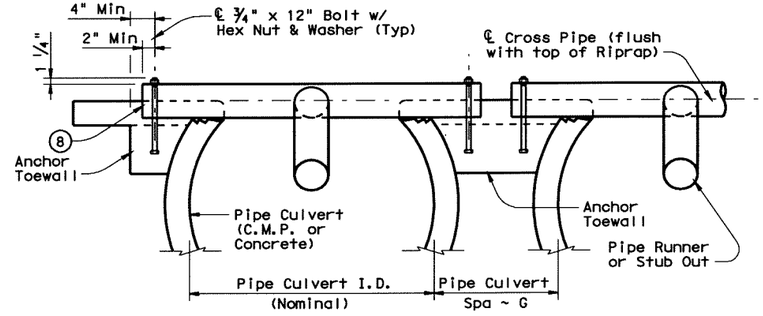


SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

(Showing Pipe Runner with Cross Pipe Connection option A1 and Anchor Pipe option B2 on Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Riprap not shown for clarity)

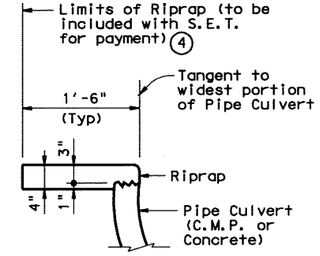


PLAN OF SKEWED INSTALLATION



SHOWING CROSS PIPE & ANCHOR TOEWALL

SECTION A-A



SHOWING TYPICAL PIPE CULVERT & RIPRAP

(6) Recommended values of side slope are 3:1, 4:1, & 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.

(7) Note that actual slope of Pipe Runner may vary slightly from Side Slope of Riprap and trimmed Culvert Pipe edge.

(8) Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(9) After installation, the 1/2" hole shall be inspected to ensure that the lap of the Pipe Runner with the Bottom Anchor Pipe is adequate.

(10) At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the Runner) may be substituted for the mitered and welded joint in the Bottom Anchor Pipe.

GENERAL NOTES:

Pipe Runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Pipe Runners, Cross Pipes, and Anchor Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

LEVELS DISPLAYED ACC:

Texas Department of Transportation
Bridge Division

SAFETY END TREATMENT
FOR 12" DIA TO 60" DIA PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		473G
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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TABLE OF DIMENSIONS & REINFORCING STEEL
(Wings for One Structure End)

Dimensions					Variable Reinforcing				Estimated ④ Quantities per ft of wing (2~Wings)		Estimated Quantities per ft of Toewall (1~Toewall)	
					Bars J1		Bars J2					
Maximum Wingwall Height Hw	W	X	Y	Z	Size	Spa	Size	Spa	Reinf (Lb/Ft)	Conc (CY/Ft)	Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	43.13	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	43.80	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	44.47	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	47.81	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	48.48	0.480	6.85	0.071
4'-0"	3'- 2"	1'- 2"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	50.26	0.532	6.85	0.071
4'-6"	3'- 2"	1'- 2"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	54.27	0.568	6.85	0.071
5'-0"	3'- 9"	1'- 7"	1'- 2"	7"	#4	1'-0"	#4	1'-0"	57.94	0.632	6.96	0.075
5'-6"	3'- 9"	1'- 7"	1'- 2"	7"	#4	1'-0"	#4	1'-0"	61.95	0.668	6.96	0.075
6'-0"	4'- 4"	2'- 0"	1'- 4"	7"	#5	1'-0"	#5	1'-0"	75.16	0.730	7.07	0.078
6'-6"	4'- 4"	2'- 0"	1'- 4"	7"	#5	1'-0"	#5	1'-0"	79.54	0.768	7.07	0.078
7'-0"	5'- 0"	2'- 3"	1'- 9"	8"	#5	1'-0"	#5	1'-0"	86.65	0.864	8.07	0.093
7'-6"	5'- 0"	2'- 3"	1'- 9"	8"	#5	1'-0"	#5	1'-0"	91.03	0.902	8.07	0.093
8'-0"	5'- 6"	2'- 8"	1'-10"	8"	#5	6"	#5	6"	133.54	0.962	8.13	0.095
8'-6"	5'- 6"	2'- 8"	1'-10"	8"	#5	6"	#5	6"	138.96	1.000	8.13	0.095
9'-6"	6'- 0"	2'-10"	2'- 2"	9"	#5	6"	#5	6"	151.43	1.136	8.41	0.110
10'-6"	6'- 5"	3'- 0"	2'- 5"	9"	#6	6"	#5	6"	190.76	1.234	8.57	0.117
11'-6"	7'- 2"	3'- 6"	2'- 8"	11"	#6	6"	#6	6"	224.62	1.438	9.52	0.140
12'-6"	7'- 8"	3'- 9"	2'-11"	1'- 0"	#7	6"	#6	6"	277.90	1.592	9.74	0.157
13'-6"	8'- 2"	4'- 0"	3'- 2"	1'- 2"	#8	6"	#6	6"	343.21	1.804	10.02	0.186
14'-6"	8'-10"	4'- 5"	3'- 5"	1'- 4"	#9	6"	#6	6"	427.43	2.046	10.30	0.218
15'-6"	9'- 6"	4'-10"	3'- 8"	1'- 6"	#9	6"	#7	6"	484.01	2.302	11.24	0.253
16'-0"	9'-11"	5'- 0"	3'-11"	1'- 7"	#9	6"	#7	6"	500.21	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING (2~Wings)

Bar	Size	No.	Spa
D1	#5	~	1'-0"
D2	#5	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#5	~	1'-0"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"

WING DIMENSION CALCULATIONS:

Formulas: (All values are in Feet)

Hw = H + T + C

Lw = (Hw) (SL) ÷ Cosine (ν)

For Cast-in-place culverts:

Ltw = [(N) (S) + (N + 1) (U)] ÷ (Cosine ν)

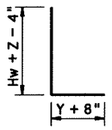
For Precast culverts:

Ltw = [(N) (2 U + S) + (N − 1) (0.5')] ÷ (Cosine ν)

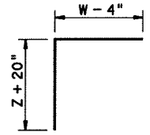
Total Wingwall Area (Two Wings ~ S.F.) = (2) (Hw) (Lw)

Hw = Height of Wingwall
Lw = Length of Wingwall
Ltw = Culvert Toewall Length
N = Number of Culvert Spans
SL:1 = Channel Slope ratio. (Horizontal: 1 Vertical, Usual value is 2:1)
ν = Culvert Skew

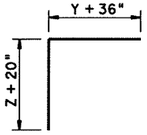
See applicable box culvert standard for S, H, T and U values.



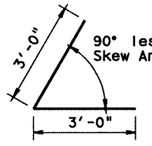
BARS J1



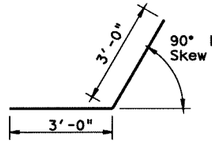
BARS J2



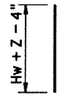
BARS J3



BARS D1



BARS D2



BARS V

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.

All reinforcing bars shall be adjusted to provide a minimum of 1 ¼" clear cover.

When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.

See BCS sheet for additional dimensions and information.

The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

① Skew Angle = 0°

② At discharge end, chamfer may be ¾".

③ For 15° Skew ~ 1"
For 30° Skew ~ 2"
For 45° Skew ~ 3"

④ Quantities shown are for two wings. To determine total quantities for two wings, multiply the tabulated values by Lw.

⑤ Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.

⑥ Extend Bars E1 1'-6" minimum into the bottom slab of the culvert.

⑦ Lap Bars M1 1'-6" minimum with Bars M2.

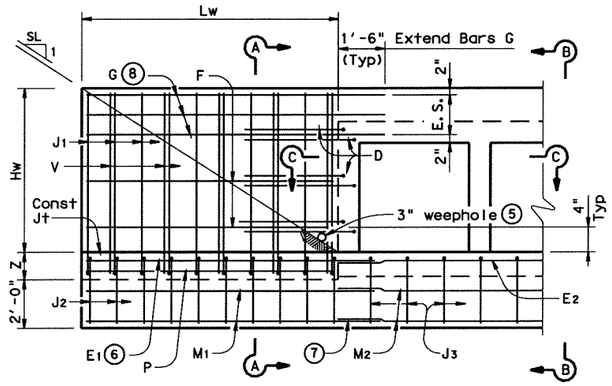
⑧ Bars G shall be equally spaced at 1'-0" maximum, placed as shown. There shall be at least 4 Bars G per wing.

⑨ 0" min to 5'-0" max. For T6 or C6 Rail, see T6-CM standard for additional details. For all other rail types, refer to the RAC standard. For curbs without rail and greater than 1'-0" high, see ECD standard for additional details. Estimated curb heights are shown elsewhere in the plans.

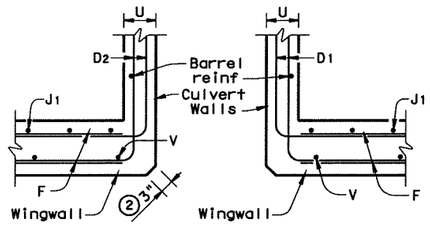
⑩ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.

Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

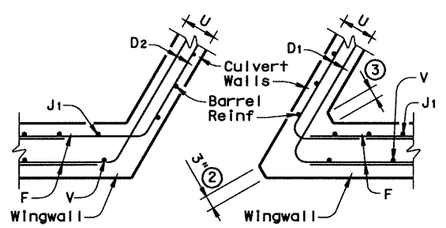
⑪ 1'-0" typical. 2'-0" typical when RAC standard is referenced elsewhere in the plans.



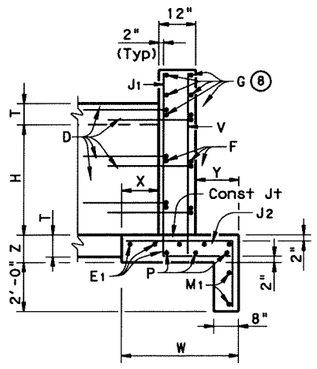
PARTIAL ELEVATION



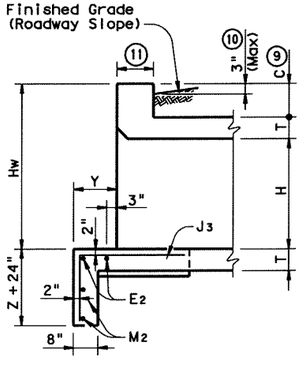
SECTION C-C



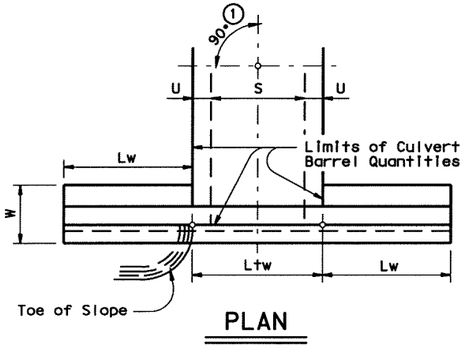
SECTION C-C



SECTION A-A
(Showing Wing Reinf)

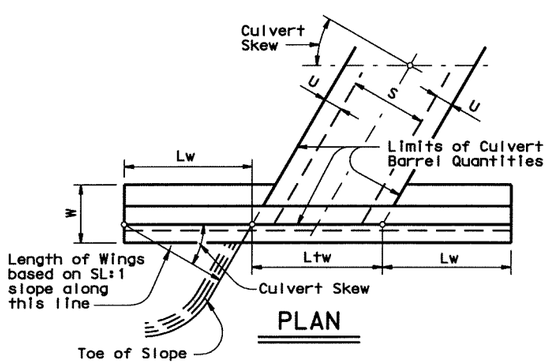


SECTION B-B
(Showing Toewall Reinf)



PLAN

DETAILS FOR NON-SKEWED BOX CULVERTS



PLAN

DETAILS FOR SKEWED BOX CULVERTS
(Showing 30° Skew)

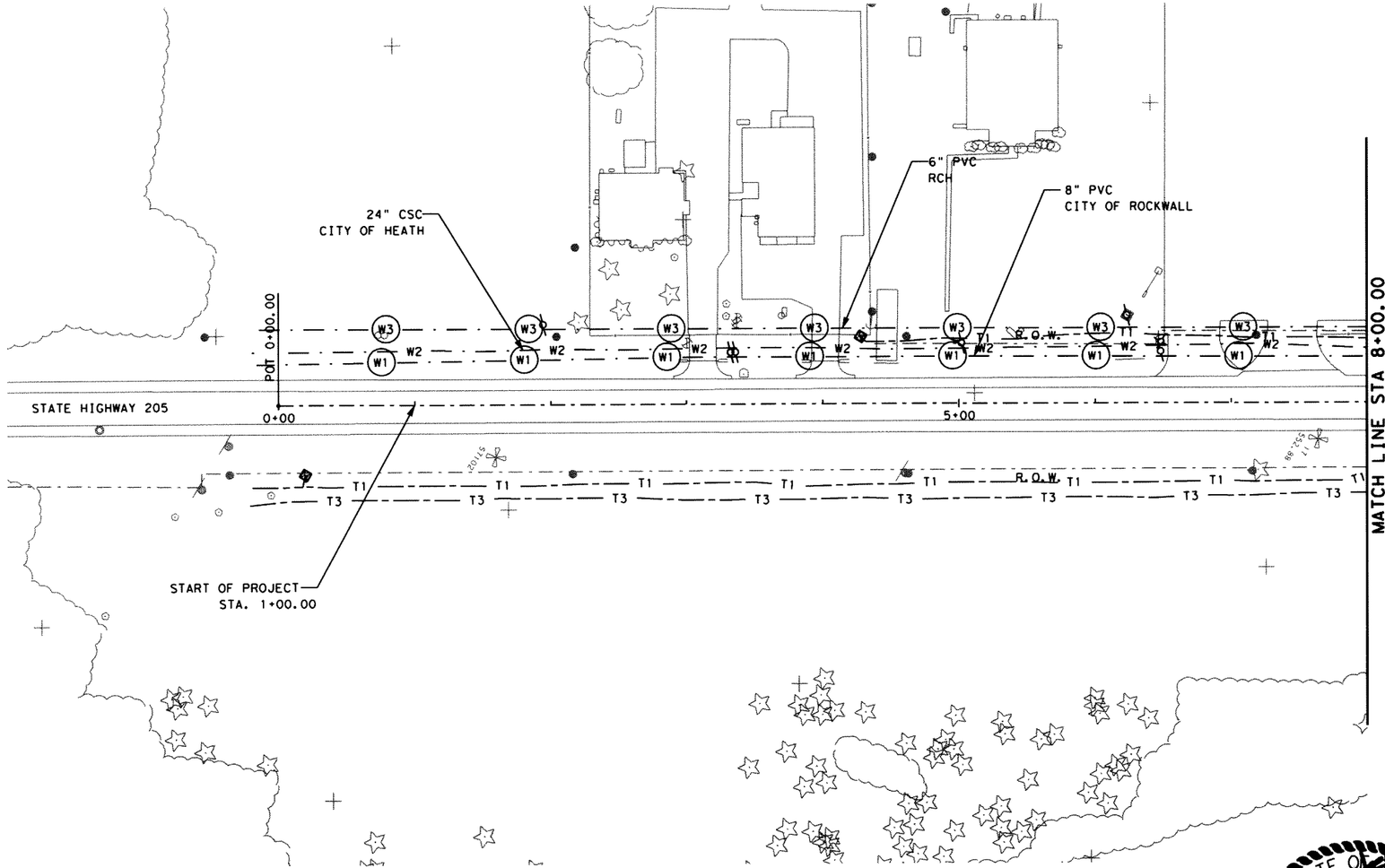
Texas Department of Transportation
Bridge Division

CONCRETE WINGWALLS
WITH PARALLEL WINGS FOR SKEWED AND NON-SKEWED BOX CULVERTS

PW

FILE: pwstde01.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: GAF
©TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		473H
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

ACC:
LEVELS DISPLAYED



0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL
TELEPHONE MANHOLE
WATER VALVE
WATER METER
FIRE HYDRANT
GAS VALVE
GAS METER
WASTE WATER MANHOLE
WASTE WATER CLEANOUT
STORM SEWER MANHOLE
ELECTRIC POLE
TEST HOLE
CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY CORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

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PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED
PROFESSIONAL ENGINEER
3/22/06

SH 205

UTILITY PLAN

STA 0+00 TO 8+00

SHEET 1 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	474
CONT.	SECT.	JOB	
0451	01	032	

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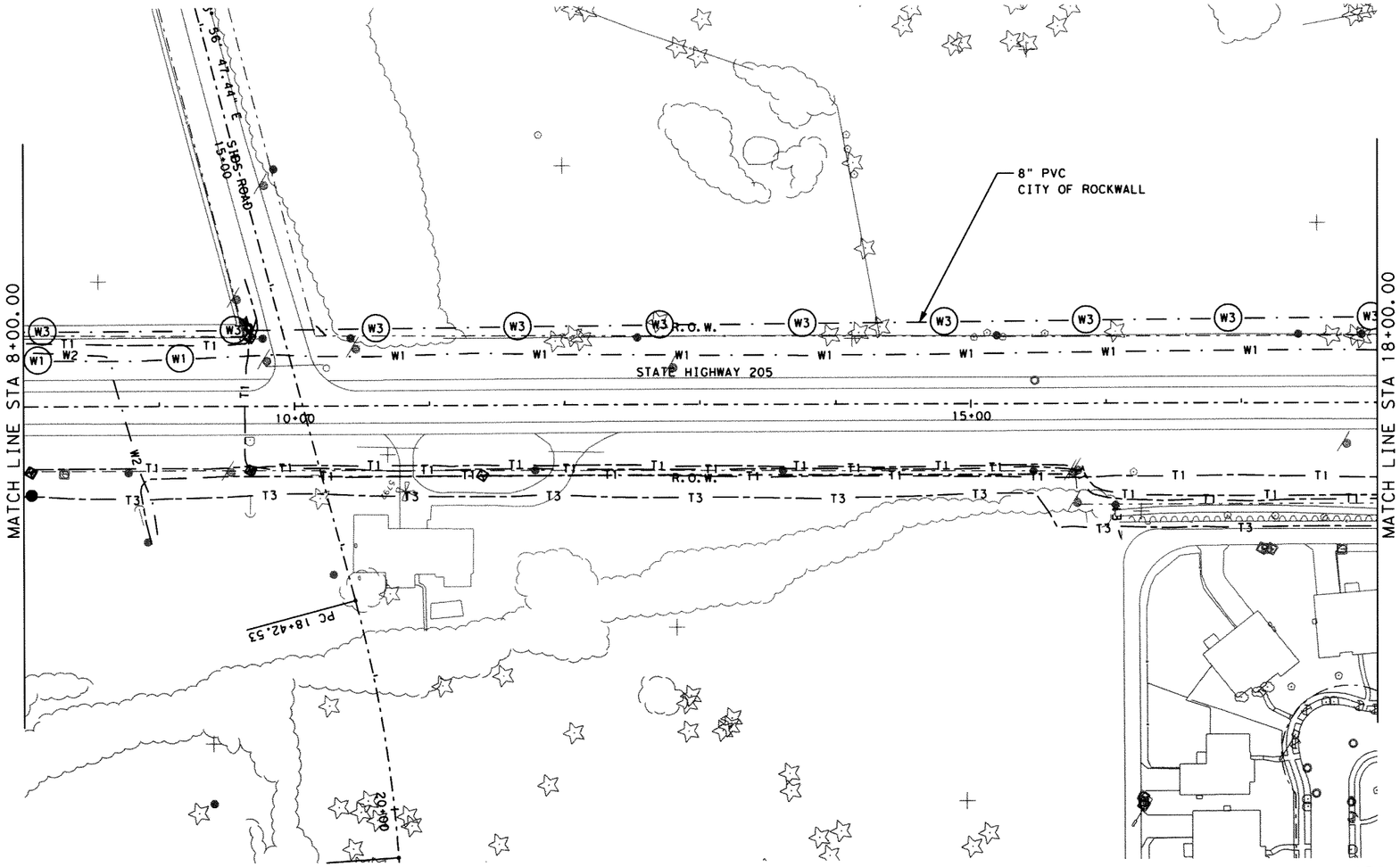

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
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- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL, TELEPHONE MANHOLE, WATER VALVE, WATER METER, FIRE HYDRANT, GAS VALVE, GAS METER, WASTE WATER MANHOLE, WASTE WATER CLEANOUT, STORM SEWER MANHOLE, ELECTRIC POLE, TEST HOLE, CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

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Dallas, TX 75207

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SH 205

UTILITY PLAN

STA 8+00 TO 18+00

SHEET 2 OF 16

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	475
CONT.	SECT.	JOB	
0451	01	032	

STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/22/06

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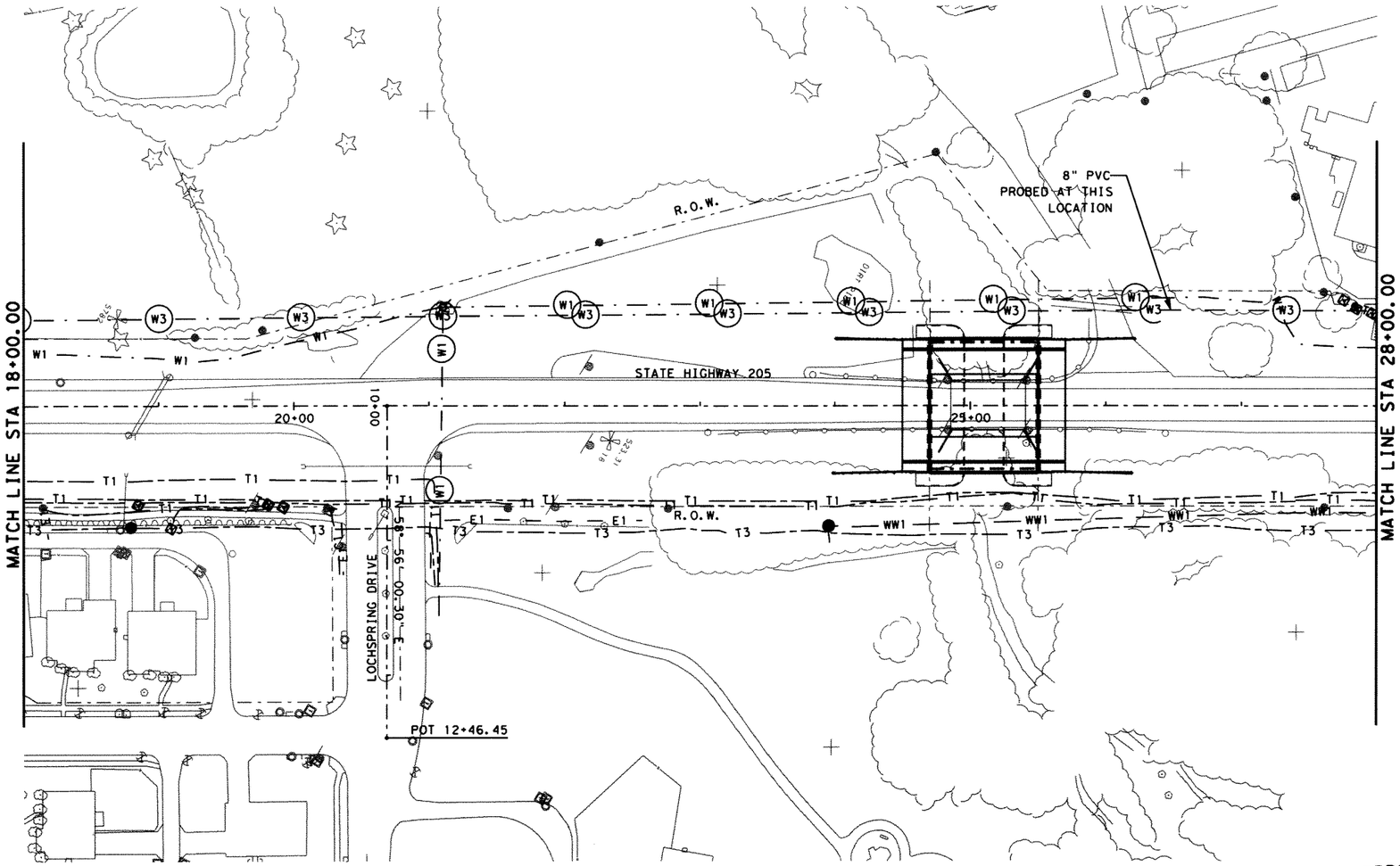

0 50 100
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- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL
TELEPHONE MANHOLE
WATER VALVE
WATER METER
FIRE HYDRANT
GAS VALVE
GAS METER
WASTE WATER MANHOLE
WASTE WATER CLEANOUT
STORM SEWER MANHOLE
ELECTRIC POLE
TEST HOLE
CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED
PROFESSIONAL ENGINEER
3/22/06

SH 205

UTILITY PLAN

STA 18+00 TO 28+00

SHEET 3 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	476
CONT.	SECT.	JOB	
0451	01	032	

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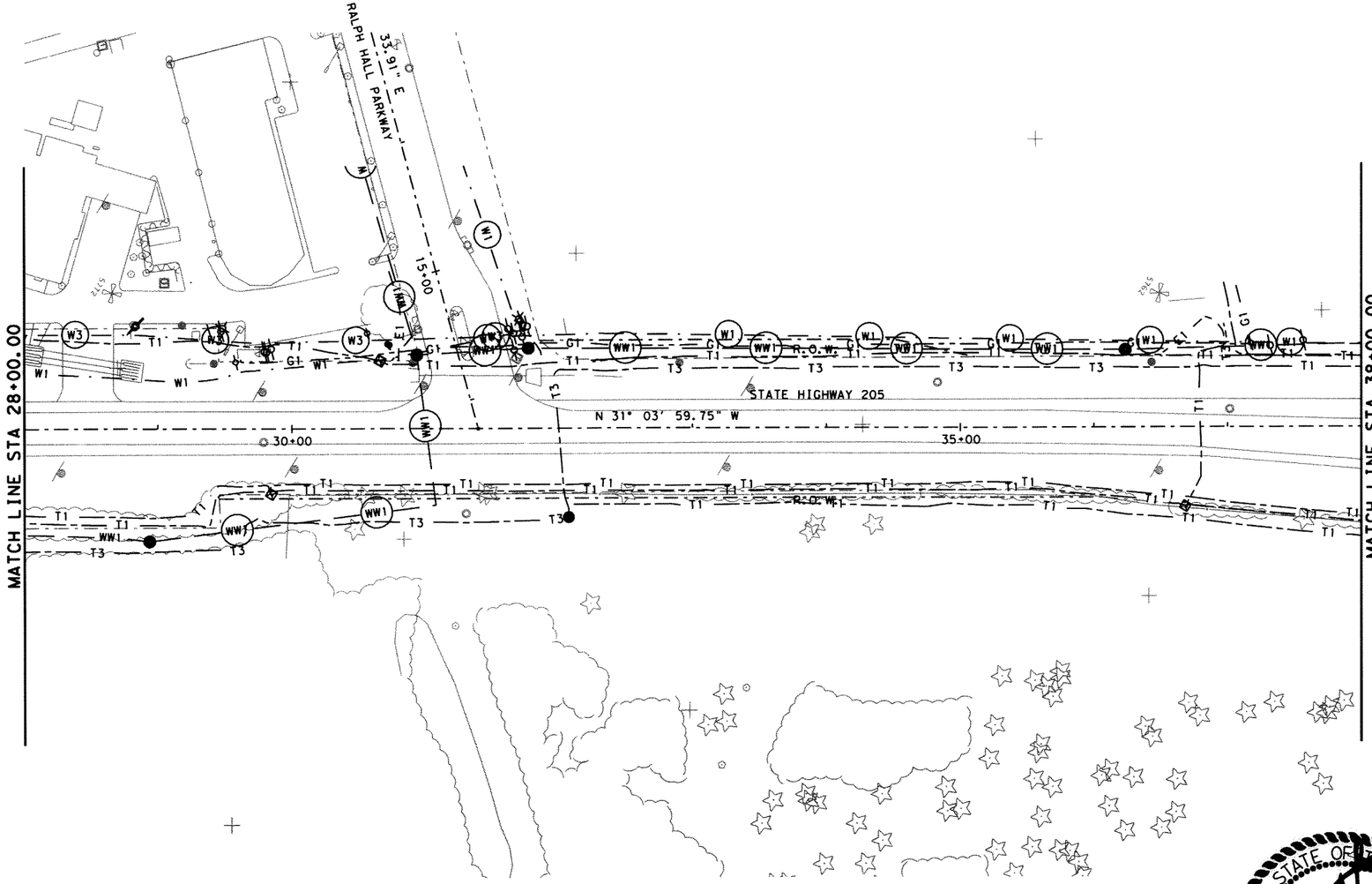

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SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- GAS VALVE
- GAS METER
- WASTE WATER MANHOLE
- WASTE WATER CLEANOUT
- STORM SEWER MANHOLE
- ELECTRIC POLE
- TEST HOLE
- CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/22/06

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SH 205

UTILITY PLAN

STA 28+00 TO 38+00

SHEET 4 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	477
CONT.	SECT.	JOB	
0451	01	032	

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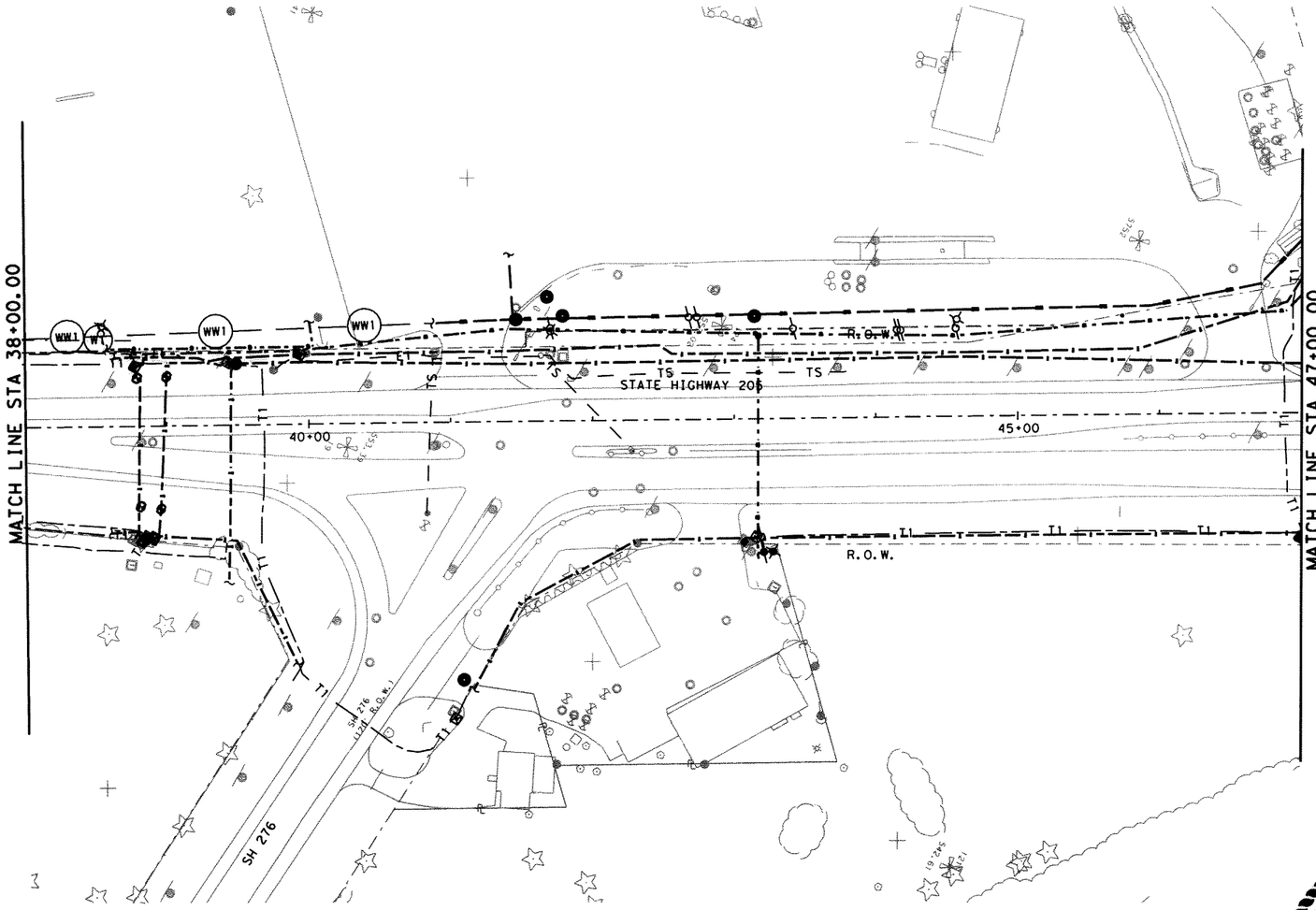

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SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	T
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/21/06

SH 205

UTILITY PLAN

STA 38+00 TO 47+00

SHEET 5 OF 16

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	478
CONT.	SECT.	JOB	
0451	01	032	

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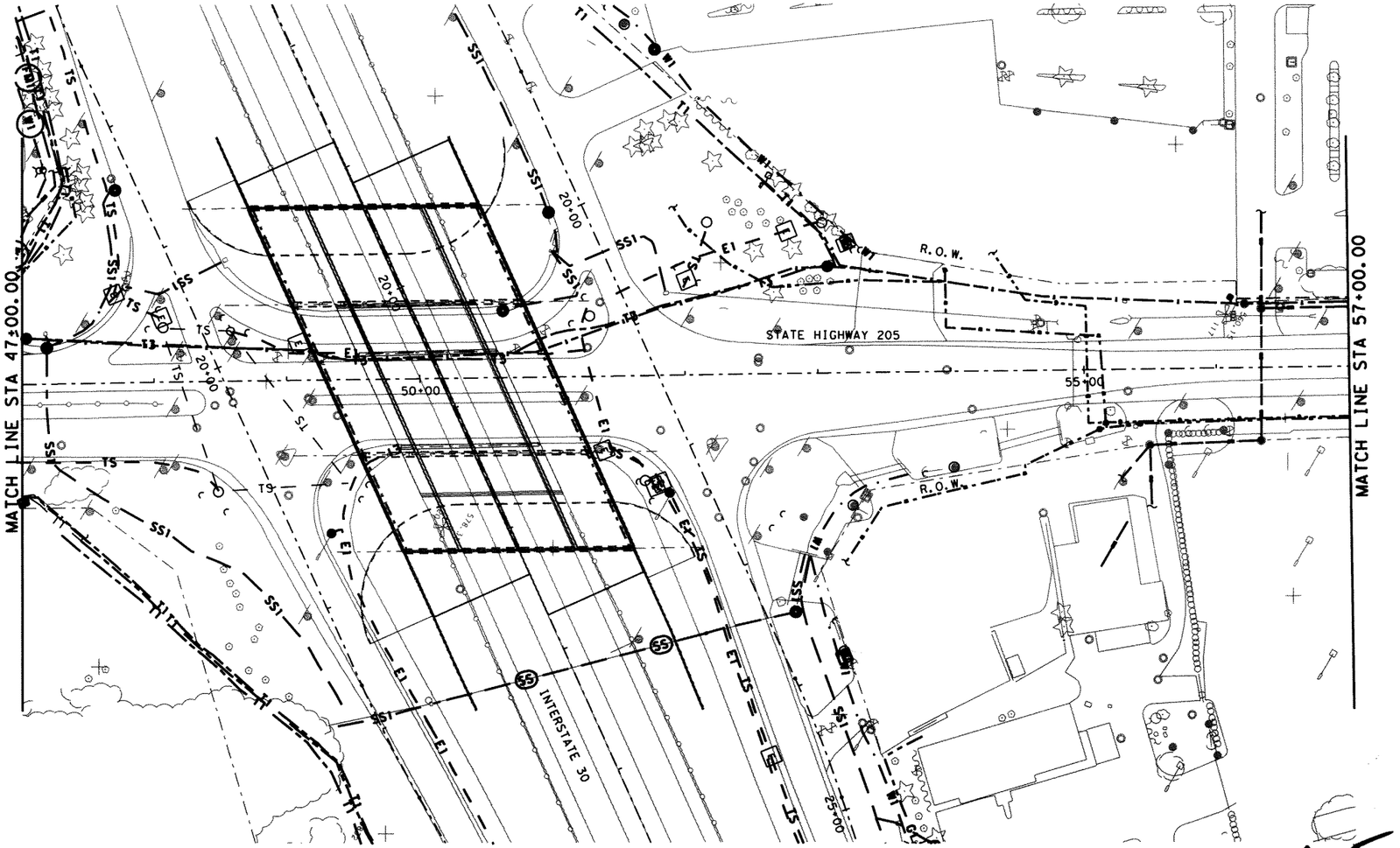

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SCALE IN FEET

EXISTING UTILITIES:

(T)	TELEPHONE RISER
TMH	TELEPHONE MANHOLE
TM	TELEPHONE MARKER
—TEL—	UNDERGROUND TELEPHONE LINE
(F)	FIBER OPTIC MARKER
—OH P—	OVERHEAD POWER LINE
—UP—	UNDER GROUND POWER LINE
PP	POWER POLE
LP	LIGHT POLE
TFP	TRANSFORMER POLE
— W —	WATER LINE
—OIL—	OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY CORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY CORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

STA 47+00 TO 57+00

SHEET 6 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	479
CONT.	SECT.	JOB	
0451	01	032	

STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/27/06

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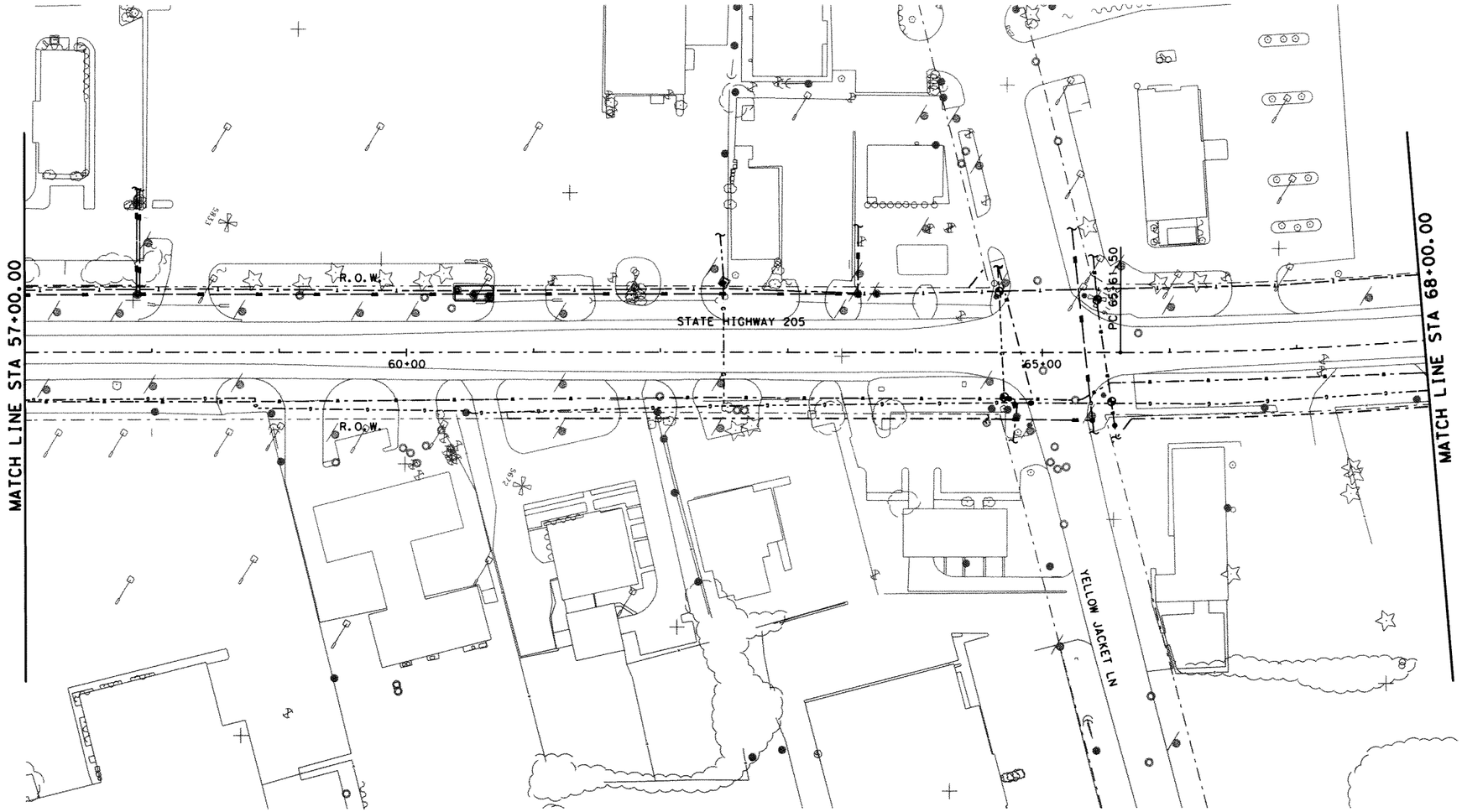

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SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

STA 57+00 TO 68+00

SHEET 7 OF 16

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	480
CONT.	SECT.	JOB	
0451	01	032	

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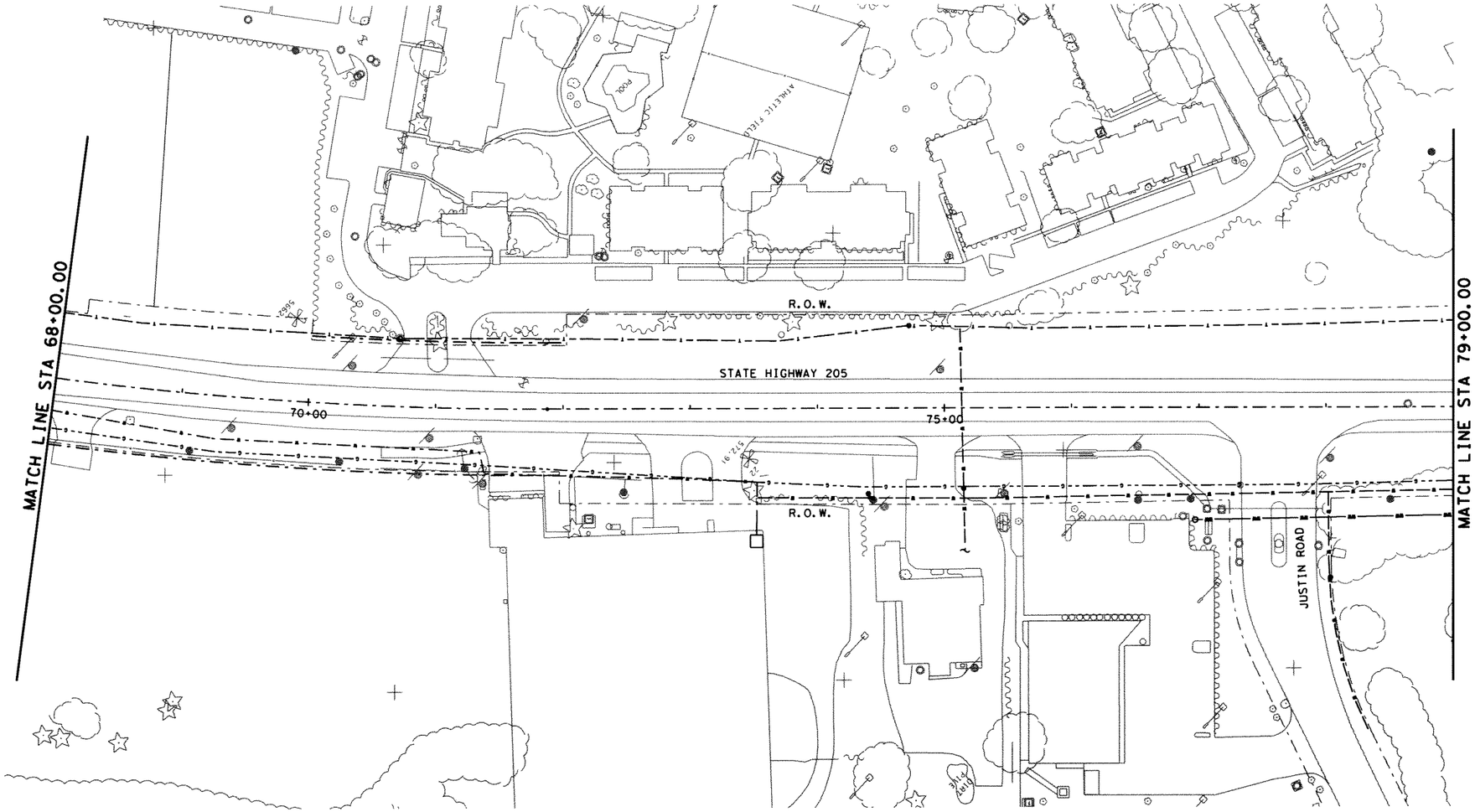

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SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

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SH 205

UTILITY PLAN

STA 68+00 TO 79+00

SHEET 8 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	481
CONT.	SECT.	JOB	
0451	01	032	

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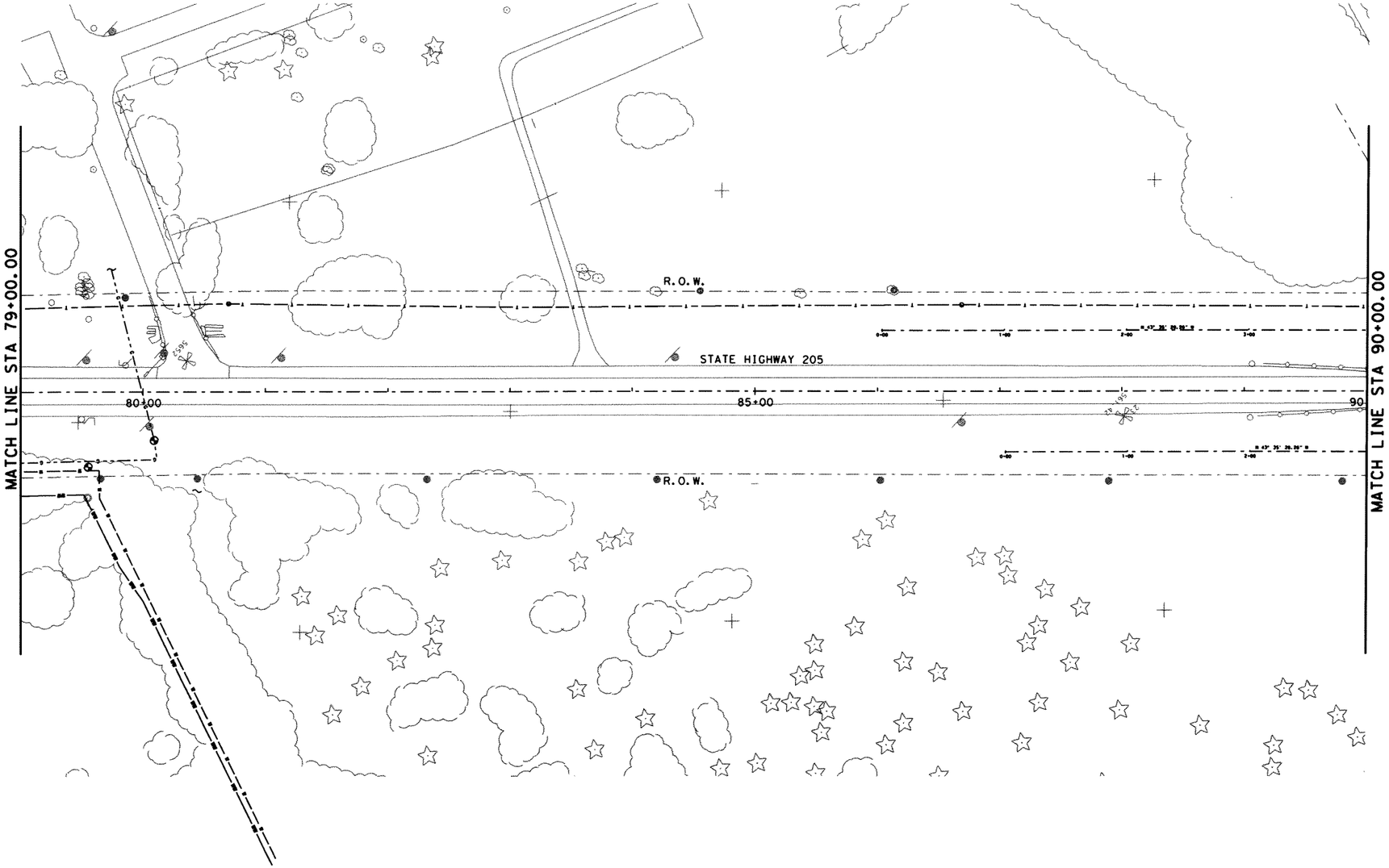

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SCALE IN FEET

EXISTING UTILITIES:

(T)	TELEPHONE RISER
TMH	TELEPHONE MANHOLE
TM	TELEPHONE MARKER
—TEL—	UNDERGROUND TELEPHONE LINE
(F)	FIBER OPTIC MARKER
—OH P—	OVERHEAD POWER LINE
—UP—	UNDER GROUND POWER LINE
PP	POWER POLE
LP	LIGHT POLE
TFP	TRANSFORMER POLE
— W —	WATER LINE
—OIL—	OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	TP
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

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SH 205

UTILITY PLAN

STA 79+00 TO 90+00

SHEET 9 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	482
CONT.	SECT.	JOB	
0451	01	032	

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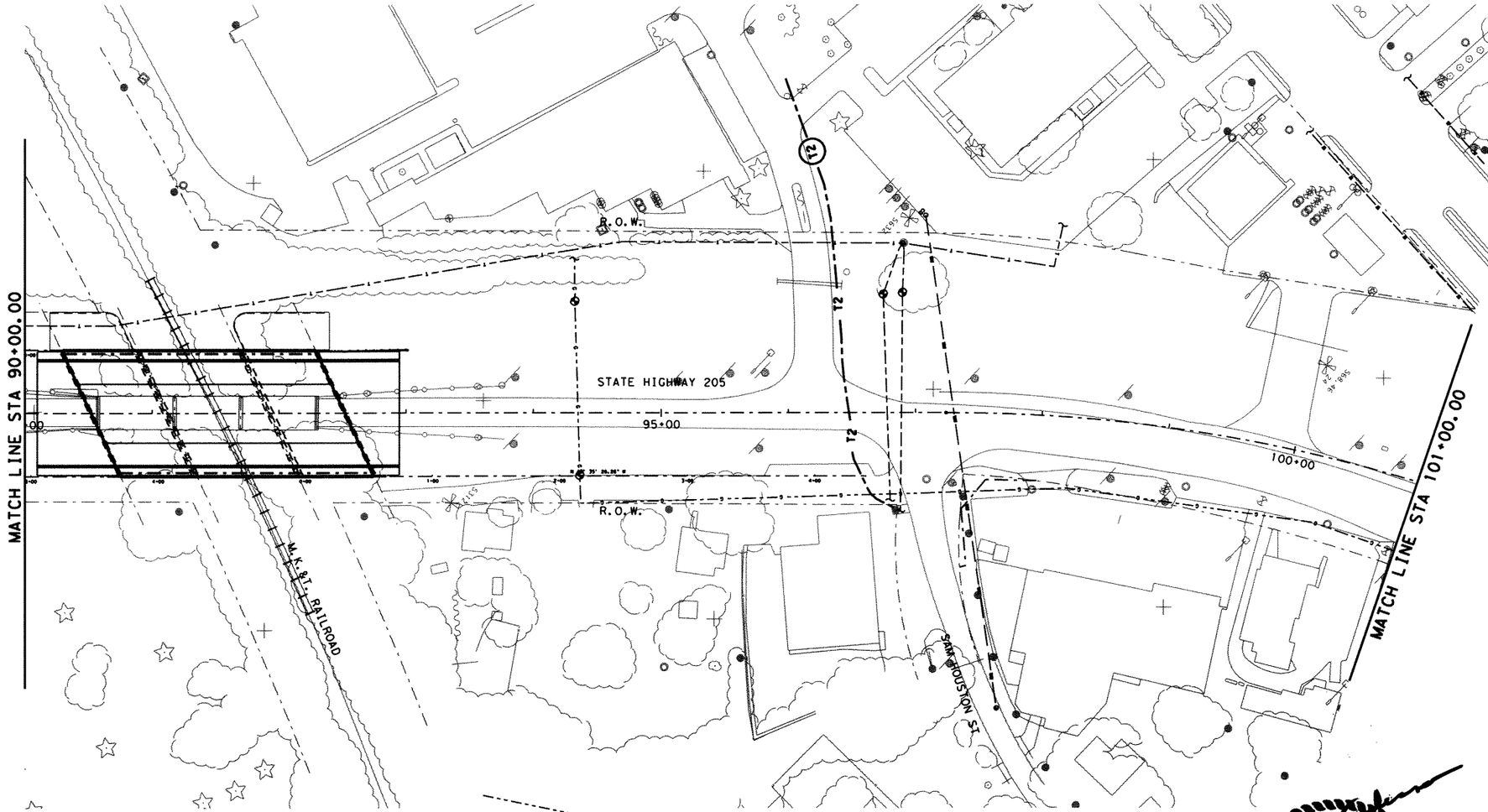
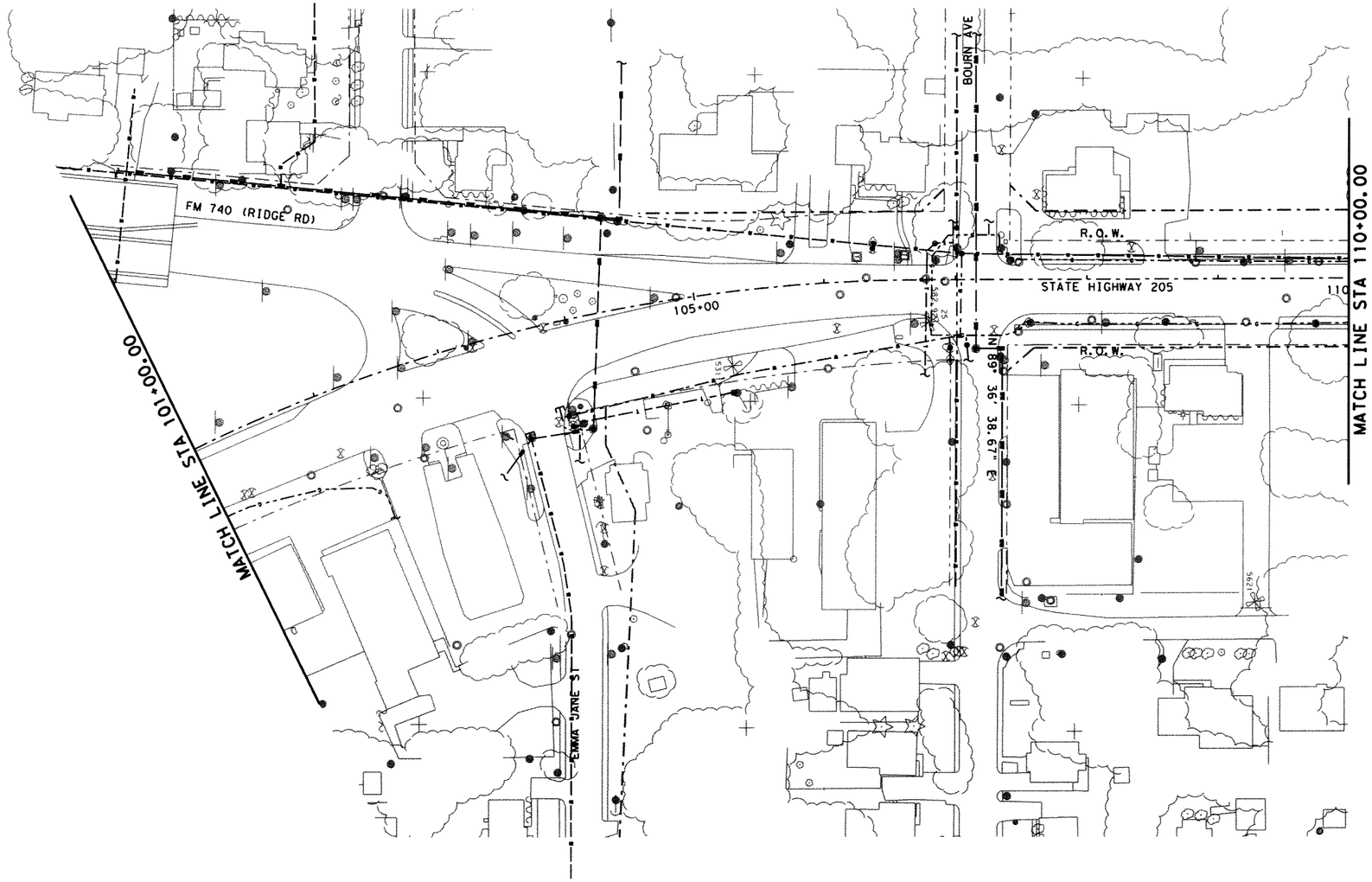

MATCH LINE STA 90+00.00
90+00
95+00
100+00
MATCH LINE STA 101+00.00
STATE HIGHWAY 205
R.O.W.
R.O.W.
M.K.&T. RAILROAD
SAM HOUSTON ST.
T1
T2
T2
T2



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SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL
TELEPHONE MANHOLE
WATER VALVE
WATER METER (WM)
FIRE HYDRANT
GAS VALVE
GAS METER (GM)
WASTE WATER MANHOLE
WASTE WATER CLEANOUT
STORM SEWER MANHOLE
ELECTRIC POLE
TEST HOLE
CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY CORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

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SH 205

UTILITY PLAN

STA 101+00 TO 110+00

SHEET 11 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	484
CONT.	SECT.	JOB	
0451	01	032	

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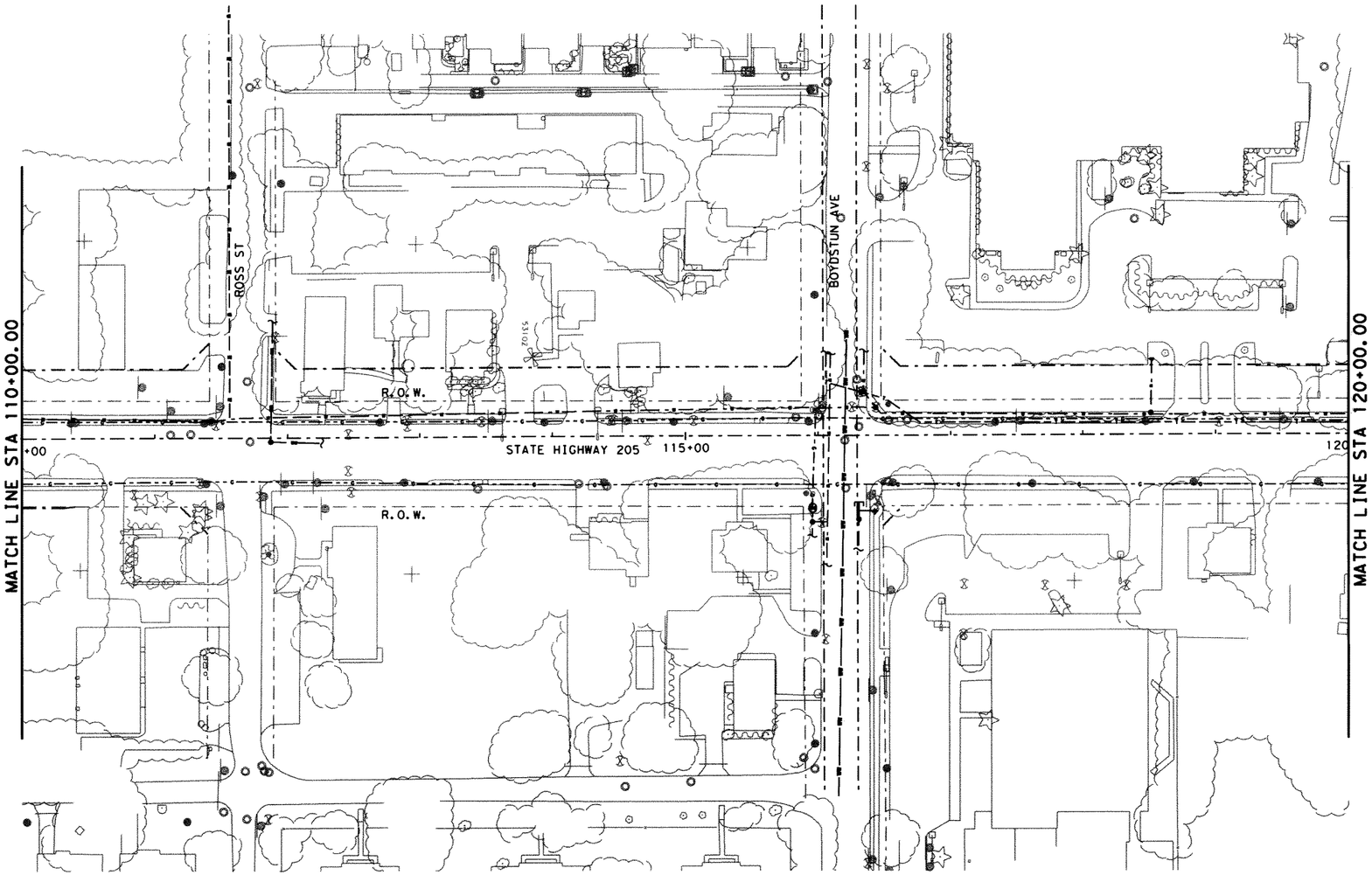

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL
TELEPHONE MANHOLE
WATER VALVE
WATER METER (WM)
FIRE HYDRANT
GAS VALVE
GAS METER (GM)
WASTE WATER MANHOLE
WASTE WATER CLEANOUT
STORM SEWER MANHOLE
ELECTRIC POLE
TEST HOLE
CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

STA 110+00 TO 120+00

SHEET 12 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	485
CONT.	SECT.	JOB	
0451	01	032	

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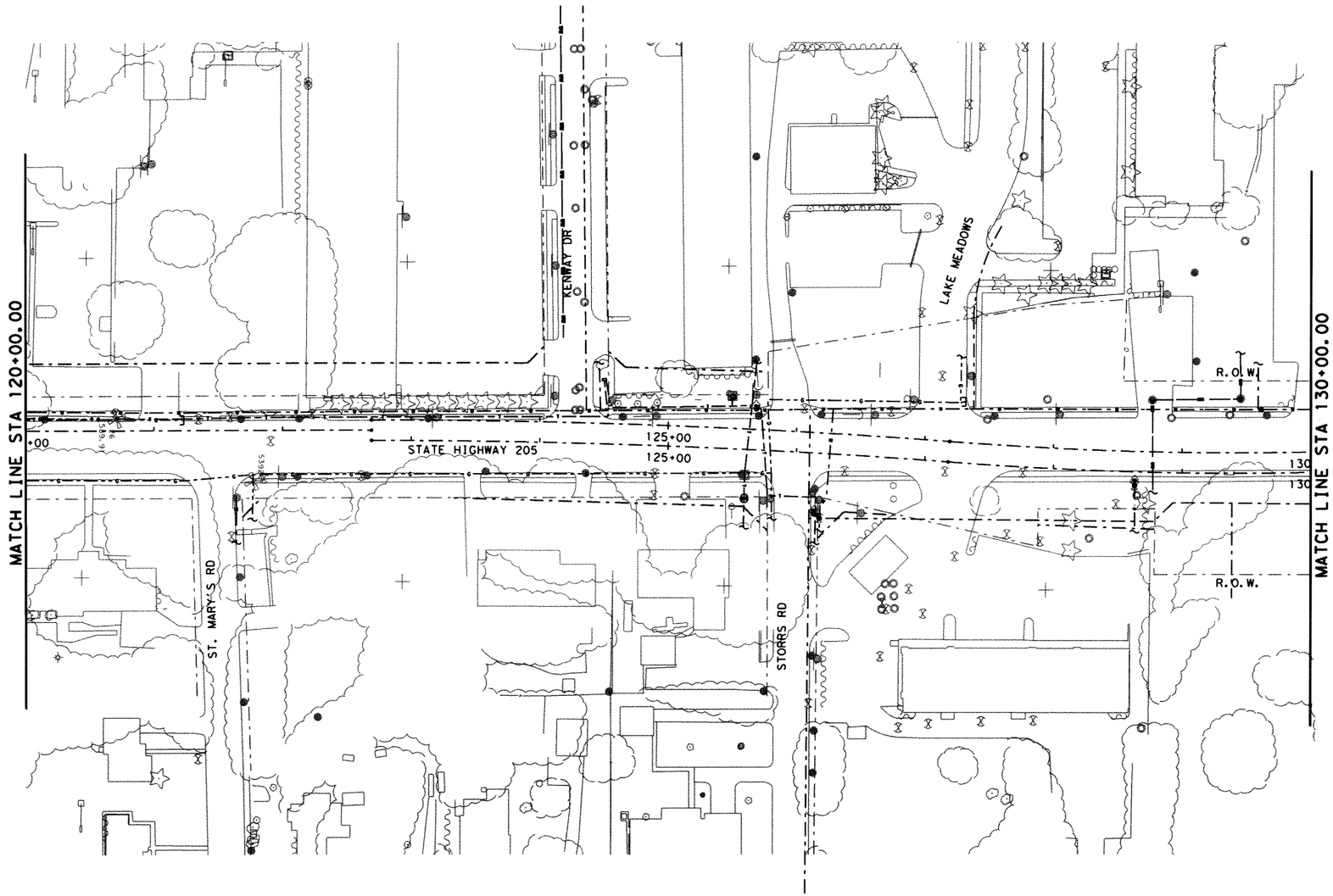

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

STA 120+00 TO 130+00

SHEET 13 OF 16

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	486
CONT.	SECT.	JOB	
0451	01	032	

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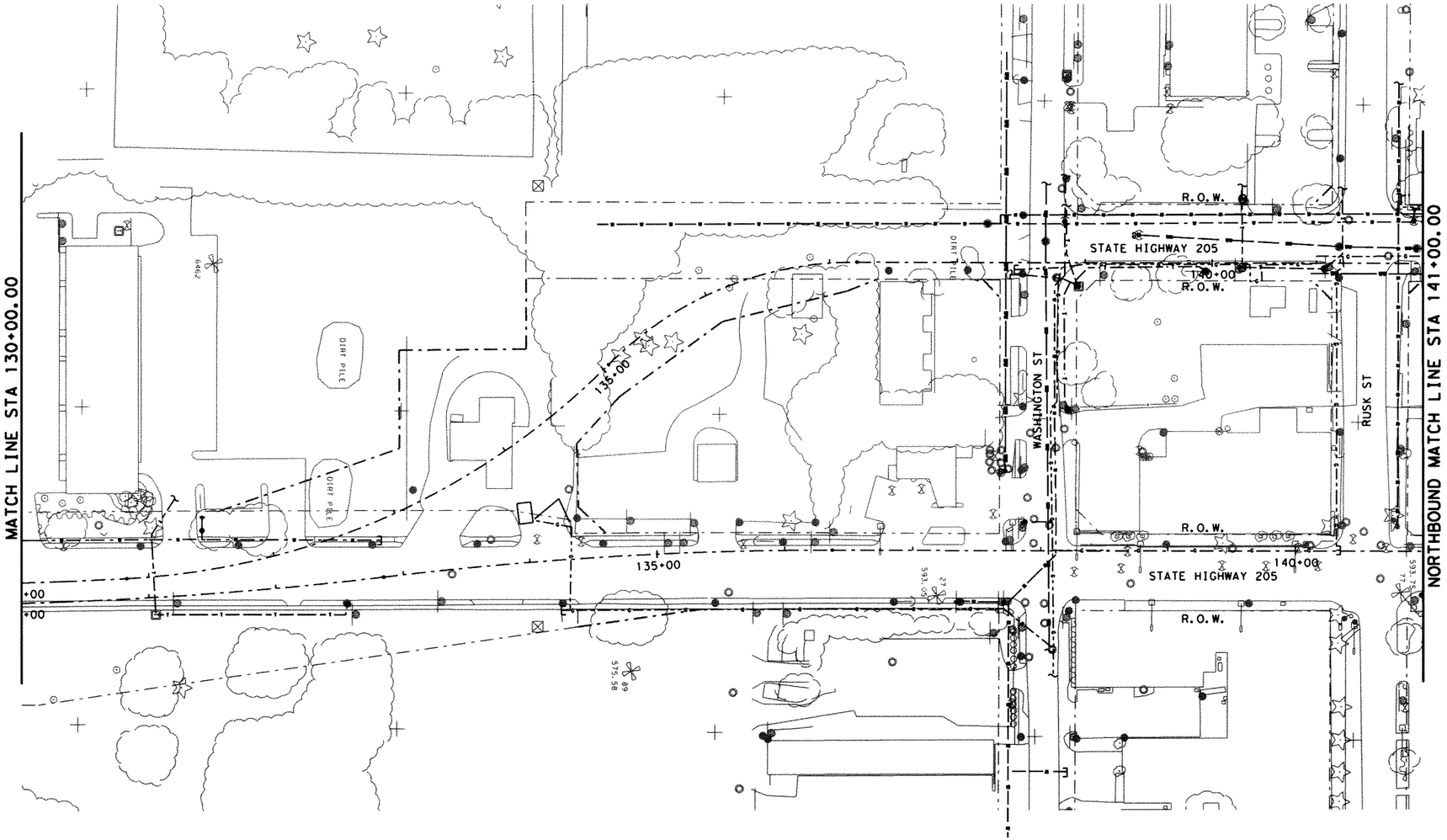

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL, TELEPHONE MANHOLE, WATER VALVE, WATER METER, FIRE HYDRANT, GAS VALVE, GAS METER, WASTE WATER MANHOLE, WASTE WATER CLEANOUT, STORM SEWER MANHOLE, ELECTRIC POLE, TEST HOLE, CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

STA 130+00 TO 141+00

SHEET 14 OF 16

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	487
CONT.	SECT.	JOB	
0451	01	032	

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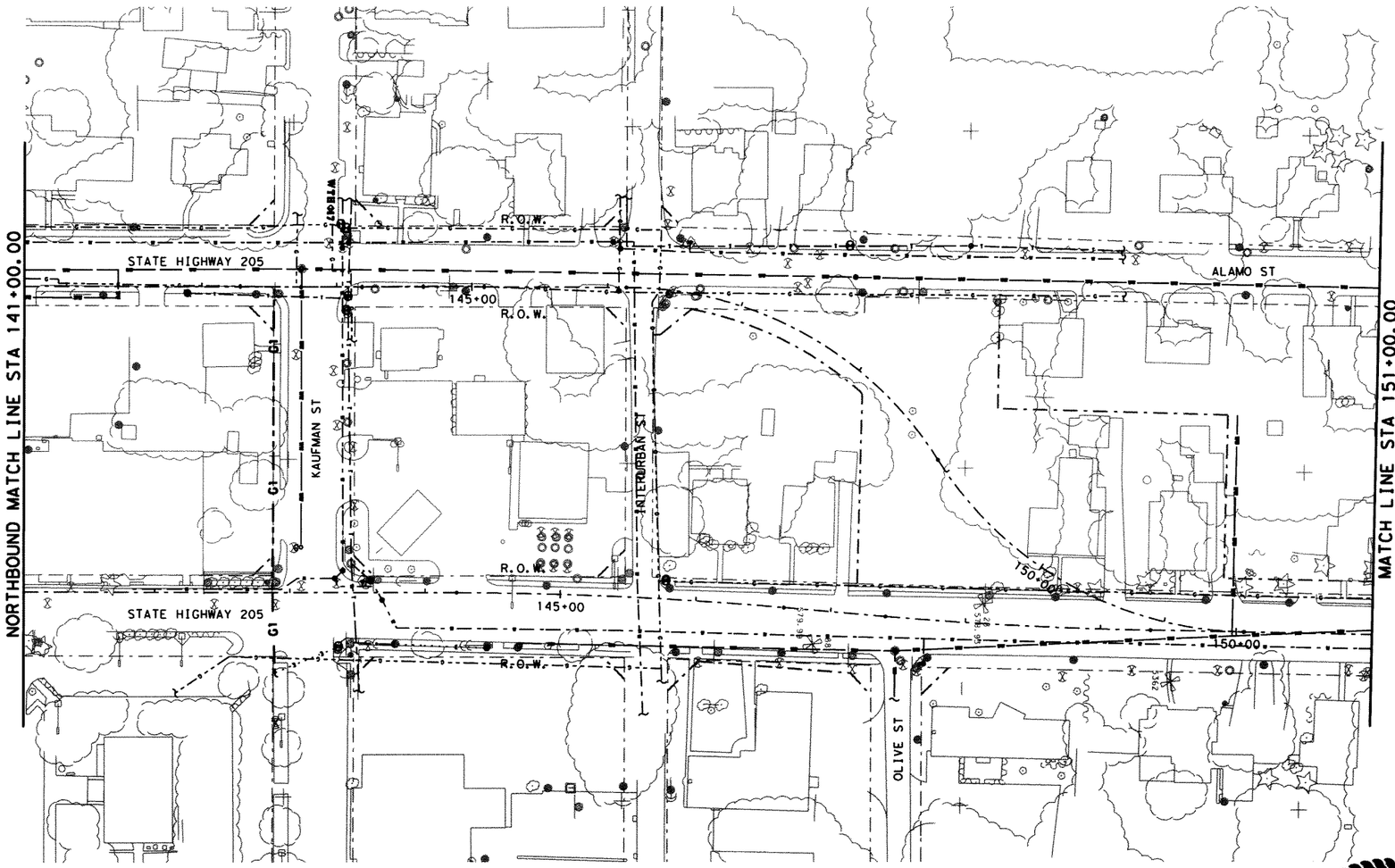

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL, TELEPHONE MANHOLE, WATER VALVE, WATER METER, FIRE HYDRANT, GAS VALVE, GAS METER, WASTE WATER MANHOLE, WASTE WATER CLEANOUT, STORM SEWER MANHOLE, ELECTRIC POLE, TEST HOLE, CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/21/06

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SH 205

UTILITY PLAN

STA 141+00 TO 151+00

SHEET 15 OF 16

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	488
CONT.	SECT.	JOB	
0451	01	032	

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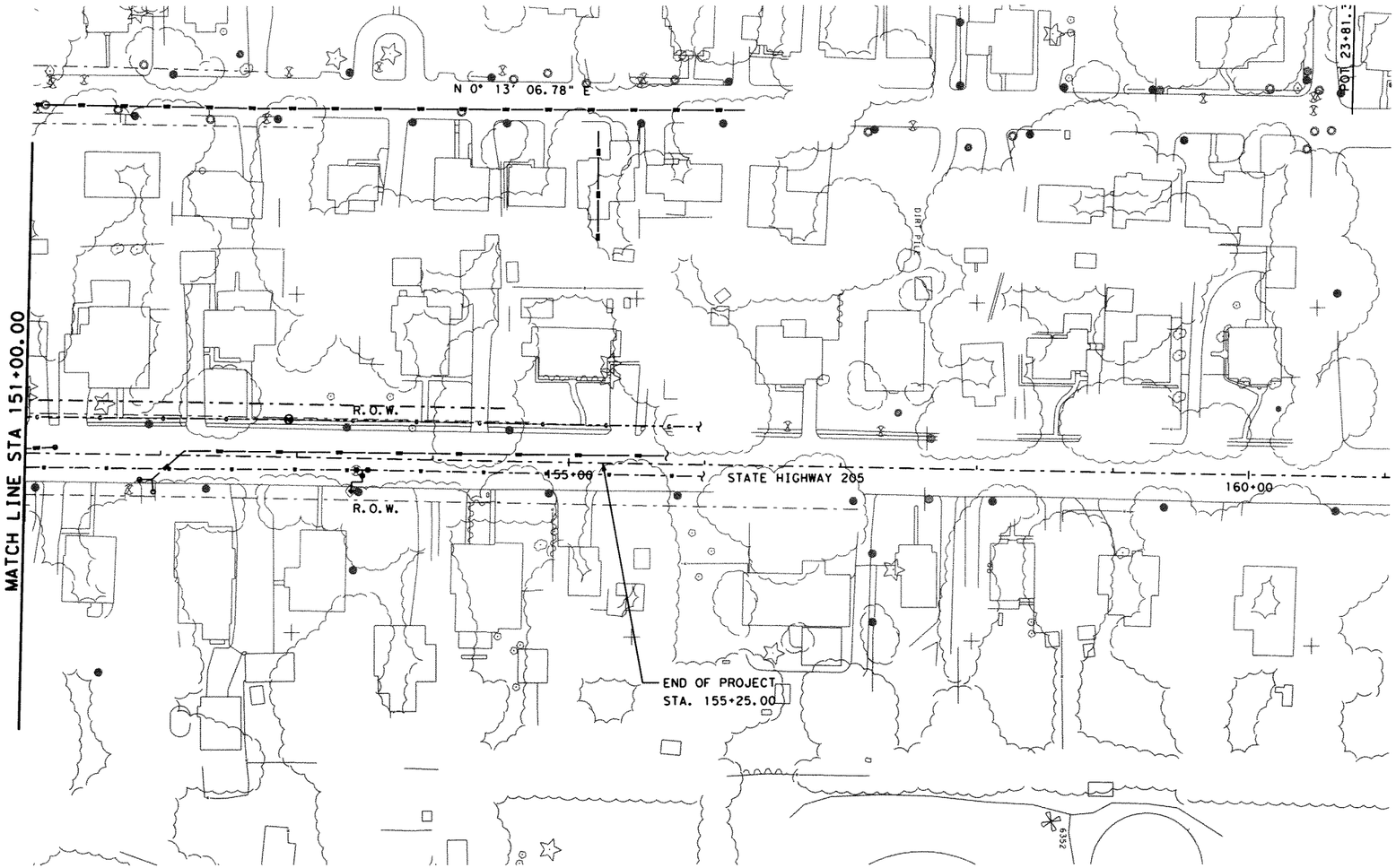

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL
TELEPHONE MANHOLE
WATER VALVE
WATER METER
FIRE HYDRANT
GAS VALVE
GAS METER
WASTE WATER MANHOLE
WASTE WATER CLEANOUT
STORM SEWER MANHOLE
ELECTRIC POLE
TEST HOLE
CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY CORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY CORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

STA 151+00 TO END OF PROJECT

SHEET 16 OF 16

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	489
CONT.	SECT.	JOB	
0451	01	032	

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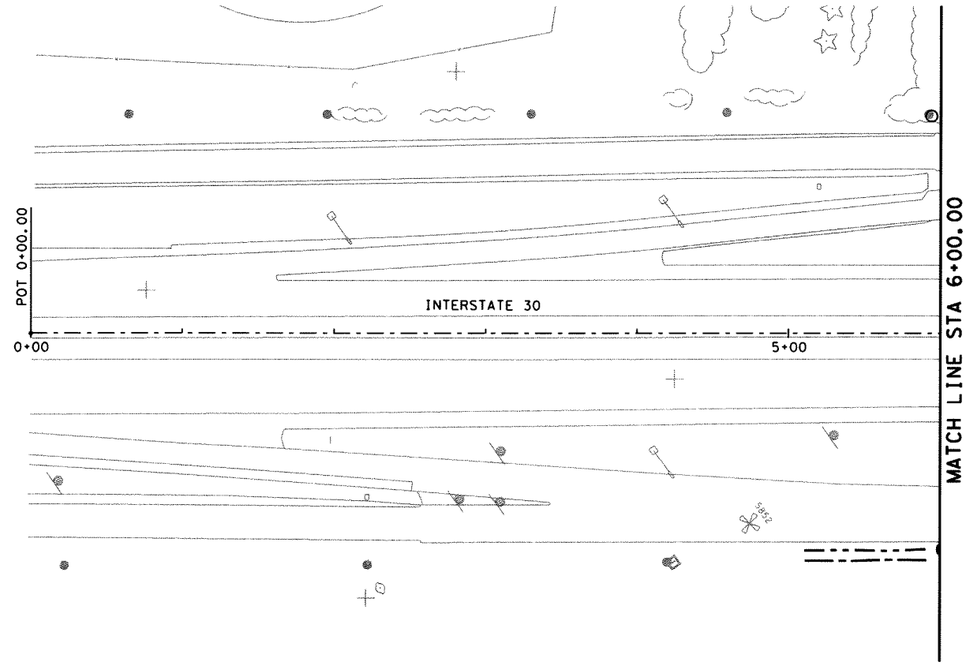

0 50 100

SCALE IN FEET

EXISTING UTILITIES:

(T)	TELEPHONE RISER
TMH	TELEPHONE MANHOLE
[TM]	TELEPHONE MARKER
—TEL—	UNDERGROUND TELEPHONE LINE
(F)	FIBER OPTIC MARKER
—OH P—	OVERHEAD POWER LINE
—UP—	UNDER GROUND POWER LINE
PP ⊗	POWER POLE
LP •	LIGHT POLE
TFP	TRANSFORMER POLE
— W —	WATER LINE
—OIL—	OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	⊠
TELEPHONE MANHOLE	●
WATER VALVE	⋈
WATER METER	WM
FIRE HYDRANT	⊹
GAS VALVE	⋈
GAS METER	GM
WASTE WATER MANHOLE	●
WASTE WATER CLEANOUT	⌀
STORM SEWER MANHOLE	●
ELECTRIC POLE	○
TEST HOLE	⊗
CONTINUATION	≀

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

I-30 PLAN
STA 0+00 TO 6+00

SHEET 1 OF 5

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	490
CONT.	SECT.	JOB	
0451	01	032	

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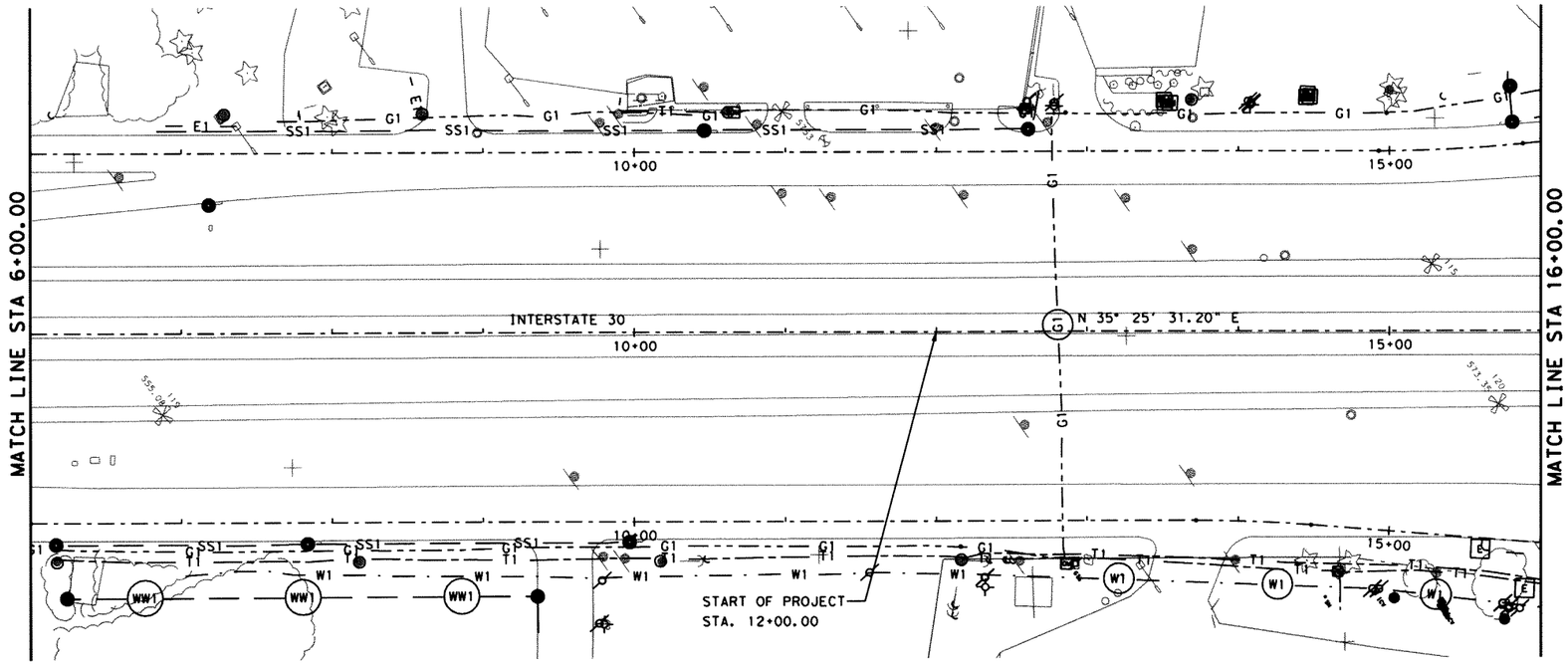

0 50 100

SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	
FIRE HYDRANT	
GAS VALVE	
GAS METER	
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY CORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY CORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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Dallas, TX 75207

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STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/22/06

SH 205

UTILITY PLAN

I-30 PLAN
STA 6+00 TO 16+00

SHEET 2 OF 5

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	491
CONT.	SECT.	JOB	
0451	01	032	

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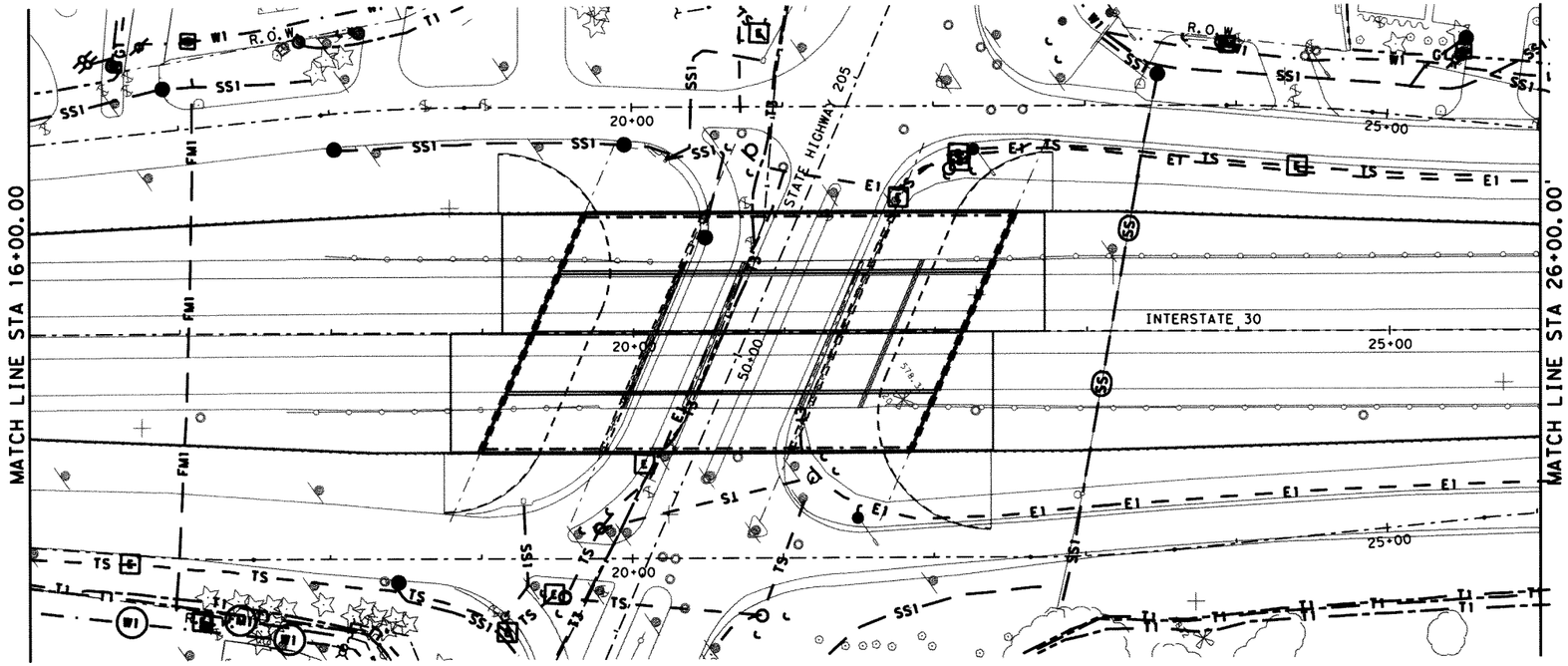

0 50 100
SCALE IN FEET

EXISTING UTILITIES:

(T)	TELEPHONE RISER
TMH	TELEPHONE MANHOLE
TM	TELEPHONE MARKER
—TEL—	UNDERGROUND TELEPHONE LINE
(F)	FIBER OPTIC MARKER
—OH P—	OVERHEAD POWER LINE
—UP—	UNDER GROUND POWER LINE
PP	POWER POLE
LP	LIGHT POLE
TFP	TRANSFORMER POLE
— W —	WATER LINE
—OIL—	OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY CORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

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STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/22/06

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Dallas, TX 75207

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SH 205

UTILITY PLAN

I-30 PLAN
STA 16+00 TO 26+00

SHEET 3 OF 5

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	492
CONT.	SECT.	JOB	
0451	01	032	

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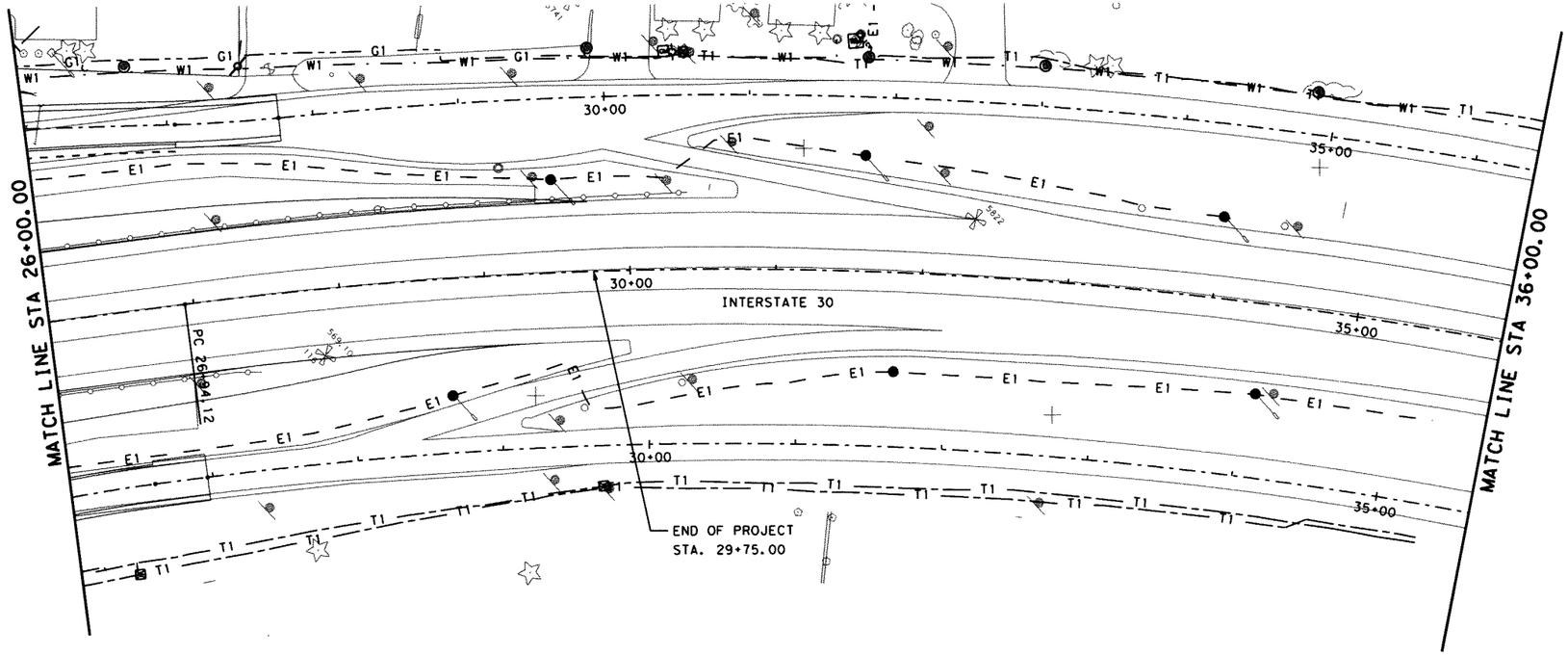

0 50 100

SCALE IN FEET

EXISTING UTILITIES:

- (T) TELEPHONE RISER
- TMH TELEPHONE MANHOLE
- [TM] TELEPHONE MARKER
- —TEL— UNDERGROUND TELEPHONE LINE
- (F) FIBER OPTIC MARKER
- —OH P— OVERHEAD POWER LINE
- —UP— UNDER GROUND POWER LINE
- PP POWER POLE
- LP LIGHT POLE
- TFP TRANSFORMER POLE
- — W — WATER LINE
- —OIL— OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TXDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL, TELEPHONE MANHOLE, WATER VALVE, WATER METER, FIRE HYDRANT, GAS VALVE, GAS METER, WASTE WATER MANHOLE, WASTE WATER CLEANOUT, STORM SEWER MANHOLE, ELECTRIC POLE, TEST HOLE, CONTINUATION

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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STATE OF TEXAS
J. S. ANDERSON
69493
REGISTERED PROFESSIONAL ENGINEER
3/22/06

SH 205

UTILITY PLAN

I-30 PLAN
STA 26+00 TO 36+00

SHEET 4 OF 5

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	493
CONT.	SECT.	JOB	
0451	01	032	

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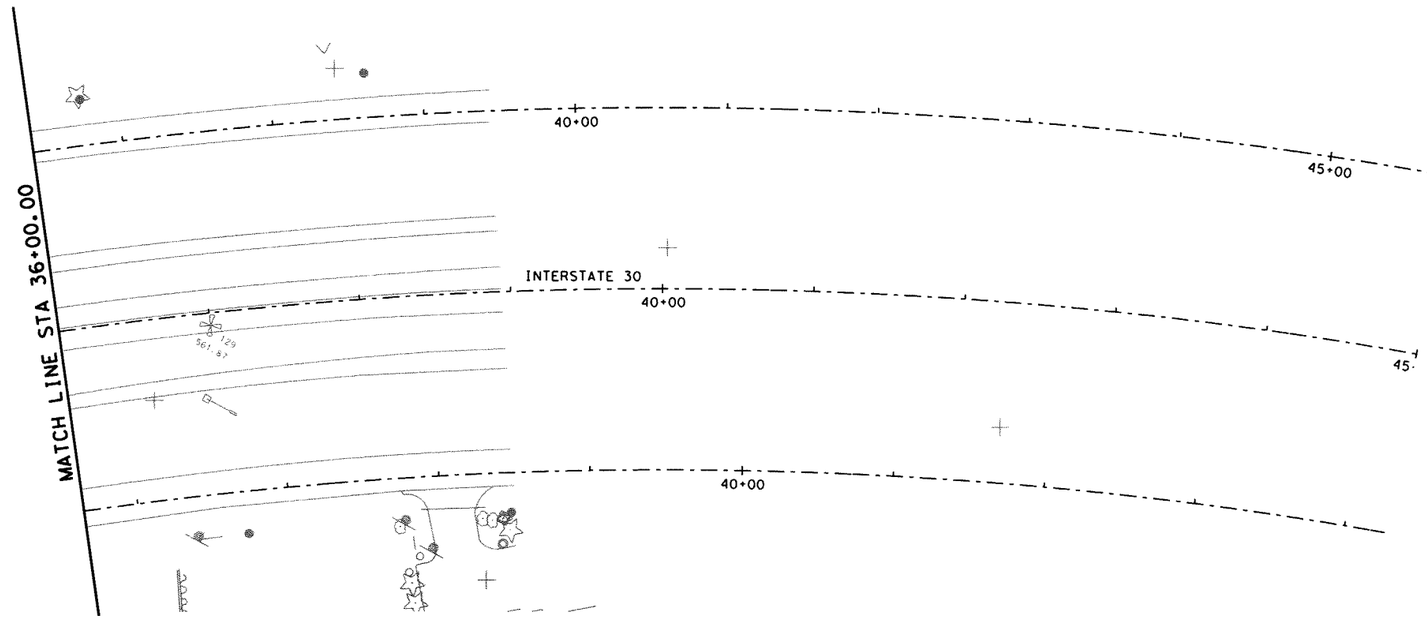

0 50 100

SCALE IN FEET

EXISTING UTILITIES:

Ⓣ	TELEPHONE RISER
TMH	TELEPHONE MANHOLE
TM	TELEPHONE MARKER
—TEL—	UNDERGROUND TELEPHONE LINE
Ⓕ	FIBER OPTIC MARKER
—OH P—	OVERHEAD POWER LINE
—UP—	UNDER GROUND POWER LINE
PP	POWER POLE
LP	LIGHT POLE
TFP	TRANSFORMER POLE
— W —	WATER LINE
—OIL—	OIL LINE

G&A EXISTING UTILITIES LEGEND

UG TELEPHONE (SBC)	T1
OH TELEPHONE (SBC)	OT1
UG TELEPHONE DUCT (SBC)	T3
GAS (ATMOS)	G1
WATER (CITY OF ROCKWALL)	W1
WATER (CITY OF HEATH)	W2
WASTEWATER (C.O. ROCKWALL)	WW1
UG CABLE TV (CHARTER COMM.)	C1
UG FIBER (CHARTER COMM.)	T2
OH CABLE TV (CHARTER COMM.)	OC1
OH ELECTRIC (TXU)	OE1
UG ELECTRIC (TXU)	E1
UG TRAFFIC SIGNAL (TxDOT)	TS
STORM SEWER (TxDOT)	SS1

A CIRCLE AROUND THE SYMBOL DESIGNATES LEVEL C & D.

SYMBOL LEGEND

TELEPHONE PEDESTAL	
TELEPHONE MANHOLE	
WATER VALVE	
WATER METER	WM
FIRE HYDRANT	
GAS VALVE	
GAS METER	GM
WASTE WATER MANHOLE	
WASTE WATER CLEANOUT	
STORM SEWER MANHOLE	
ELECTRIC POLE	
TEST HOLE	
CONTINUATION	

ALL UTILITIES REPRESENTED BY THE ABOVE LINESTYLES WERE DESIGNATED BY GORRONDONA & ASSOCIATES, INC., ALL OTHER UTILITIES WERE DESIGNATED BY OTHERS.

SUBSURFACE UTILITY ENGINEERING (SUE) CERTIFICATION:

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES DESIGNATED BY GORRONDONA & ASSOCIATES, INC. HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION SHOWN HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT PART OF THIS CERTIFICATION.

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SH 205

UTILITY PLAN

I-30 PLAN
STA 36+00 TO 45+00

SHEET 5 OF 5

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	494
CONT.	SECT.	JOB	
0451	01	032	

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GENERAL NOTES FOR WATER AND SANITARY SEWER CONSTRUCTION

GENERAL:

1. WATER AND SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION, AUGUST 2003, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS, THIRD EDITION, 1998 AND CITY OF ROCKWALL SUPPLEMENTAL SPECIAL PROVISIONS TO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS, THIRD EDITION.

2. A COPY OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS, THIRD EDITION, 1998 MAY BE PURCHASED FROM THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, 616 SIX FLAGS DRIVE, ARLINGTON, TEXAS, TELEPHONE 817-640-3300.

3. A COPY OF THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION, AUGUST 2003 AND SUPPLEMENTAL SPECIAL PROVISIONS MAY BE PURCHASED FROM THE CITY OF ROCKWALL ENGINEERING DEPARTMENT, 385 S. GOLIAD (SH 205), ROCKWALL, TEXAS, TELEPHONE 972-771-7746.

4. THE CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED MANHOLES, CLEANOUTS, VALVE BOXES AND OTHER WATER AND SANITARY SEWER APPURTENANCES TO FINISH GRADE FOLLOWING ROADWAY AND EARTHWORK CONSTRUCTION.

5. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION. REFER TO THE EXISTING UTILITY PLANS FOR INFORMATION.

6. SEE "EXISTING UTILITY PLANS" FOR UTILITY CONTACT INFORMATION.

7. THE CONTRACTOR SHALL PROVIDE TRENCH SAFETY MEASURES AS REQUIRED.

WATER:

1. WATER LINE CONNECTIONS TO EXISTING MAINS SHALL BE LIMITED TO LOW FLOW PERIODS. THESE CONNECTIONS SHALL BE COORDINATED WITH THE CITY OF ROCKWALL PRIOR TO BEGINNING ANY OF THE WORK.

2. 16 INCH PVC WATER PIPE SHALL CONFORM TO AWWA C905, CLASS 200, DR 18 REQUIREMENTS AND SHALL HAVE A MINIMUM OF FIVE FEET (5') OF COVER AND SHALL COMFORM TO THE PROFILE SHOW ON THE PLANS.

3. 12 INCH AND 10 INCH PVC WATER PIPE SHALL CONFORM TO AWWA C900, CLASS 200, DR 14 REQUIREMENTS AND SHALL HAVE A MINIMUM OF FIVE FEET (5') OF COVER AND SHALL CONFORM TO THE PROFILE SHOWN ON THE PLANS.

4. 8 INCH AND 6 INCH WATER PIPE SHALL CONFORM TO AWWA C900, CLASS 200, DR 14 REQUIREMENTS AND SHALL HAVE A MINIMUM OF FIVE FEET (5') OF COVER. WATER PIPES SMALLER THAN 12 INCH HAVE NOT BEEN PROFILED. THE CONTRACTOR SHALL PROVIDE VERTICAL BENDS AND ALIGNMENT AS NECESSARY TO AVOID CONFLICT WITH OTHER UNDERGROUND FACILITIES.

5. ALL WATER LINE FITTINGS SHALL BE DUCTILE IRON OF THE MECHANICAL JOINT TYPE WITH A MINIMUM RATED WORKING PRESSURE OF 250 PSI AND SHALL BE RESTRAINED WITH MEGA-LUG OR APPROVED EQUAL.

6. WATER LINES THAT ARE SHOWN TO BE BORED (BY OTHER THAN OPEN CUT) UNDER EXISTING ROADWAYS SHALL BE ENCASED IN RUST RESISTANT STEEL CASINGS (1/4 INCH THICK) USING "RACI" PATENTED SPACERS. WOOD SPACERS ARE NOT ACCEPTABLE.

7. THRUST RESTRAINTS ARE REQUIRED AT ALL POINTS OF DEFLECTION AND INTERSECTION OF THE WATER LINES (TEES, BENDS, PLUGS, FIRE HYDRANTS, ETC.) HORIZONTALLY AND VERTICALLYAND SHALL BE MEGA-LUGS OR APPROVED EQUAL. THE RESTRAINTS SHALL BE PLACED AT THE BEND AND AT THE NEXT PIPE JOINT IN EACH DIRECTION FROM THE BEND.

8. PVC PIPE EMBEDMENT SHALL BE CLASS "C" PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS, THIRD EDITION, STANDARD DRAWING NO. 3040.

9. VALVE BOXES ARE REQUIRED WITH CONCRETE PADS AND SHALL BE THREE PIECE SCREW TYPE CAST IRON OF THE EXTENSION TYPE SIMILAR TO MUELLER NO. H-10360 OR APPROVED EQUAL.

10. THE CONTRACTOR SHALL CENTER A FULL 20-FOOT LONG JOINT OF THE PROPOSED PVC WATER PIPE AT A STORM SEWER CROSSING IF THE PROPOSED PIPE MUST PASS UNDER THE STORM DRAIN.

11. WHERE PROPOSED WATER LINES CROSS PROPOSED OR EXISTING SANITARY SEWER LINES, A FULL 20-FOOT LONG JOINT OF PIPE SHALL BE CENTERED AT THE CROSSING AND A 2-FOOT VERTICAL CLEARANCE SHALL BE MAINTAINED.

12. THE CONTRACTOR SHALL TRANSFER ALL EXISTING METERED SERVICES AFTER THE PROPOSED WATER MAIN HAS BEEN TESTED AND APPROVED BY THE CITY OF ROCKWALL. NO SERVICE SHALL BE DISRUPTED FOR A PERIOD LONGER THAN SIX (6) HOURS.

13. ALL VALVES TO BE ABANDONED SHALL HAVE THE VALVE STACKS REMOVED AND BACKFILLED. THE REMOVAL OF SAID VALVE STACKS SHALL BE CONSIDERED A NON-PAY ITEM.

14. FIRE HYDRANTS SHALL BE PAINTED TO MEET THE CITY OF ROCKWALL REQUIREMENTS FOR COLOR CODE. BODIES SHALL BE SILVER WITH DIFFERING CAP COLOR PER TABLE 5.2.

15. WATER SERVICES SHALL BE MINIMUM 1" I.D. C.T.S. POLY TUBE SDR-9

SANITARY SEWER:

1. PVC SANITARY SEWER PIPE SHALL BE SDR 26 (ASTM 2241) PRESSURE RATED CLASS 160.

2. PVC SANITARY SEWER PIPE EMBEDMENT SHALL BE CLASS "B-1" PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS, THIRD EDITION, STANDARD DRAWING NO. 3020.

3. THE CONTRACTOR SHALL MAINTAIN FLOW IN THE EXISTING SANITARY SEWER MAIN LINES AND PROVIDE ALL SANITARY SEWER BY-PASSES AS NECESSARY TO PERFORM THE WORK UNTILL ALL CONNECTIONS HAVE BEEN MADE TO THE PROPOSED SYSTEM (NON-PAY ITEM).

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND CONNECTING THE EXISTING SANITARY SEWER SERVICES TO THE NEW SANITARY SEWER MAIN. ALL SEWER SERVICE TRANSFERS TO THE NEW MAIN SHALL BE MADE AFTER THE MAIN HAS BEEN TESTED AND APPROVED EXCEPT WHEN THE PROPOSED SANITARY SEWER LINE IS TO BE PLACED IN THE SAME TRENCH AS THE EXISTING SANITARY SEWER LINE. NO SEWER SERVICE SHALL BE DISRUPTED LONGER THAN SIX (6) HOURS. ALL SEWER SERVICES SHALL BE 4 INCH PVC (SDR-35) SANITARY SEWER PIPE.

5. WHEN THE PROPOSED SANITARY SEWER LINE IS TO BE PLACED IN THE SAME TRENCH AS THE EXISTING SANITARY SEWER LINE, THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO ROUTE THE UPSTREAM SEWER FLOW IN THE EXISTING SEWER LINE INTO THE DOWNSTREAM MANHOLE AND INTO THE PROPOSED PVC LINE THAT IS INSTALLED DOWNSTREAM DURING THE CONSTRUCTION (NON-PAY ITEM). THE CONTRACTOR SHALL INSTALL THE SANITARY SEWER SERVICES AND TRANSFER THE SANITARY SERVICES AS THE PROPOSED PVC LINE IS INSTALLED. THE CONTRACTOR SHALL REMOVE THE EXISTING SANITARY SEWER MAIN AS THE PROPOSED MAIN IS INSTALLED (NON-PAY ITEM). THE CONTRACTOR SHALL NOT BE REQUIRED TO PRESSURE TEST THIS SECTION OF THE PROPOSED LINE AFTER THE INSTALLATION IS COMPLETED. THE CONTRACTOR SHALL MAKE A TEMPORARY CONNECTION BETWEEN THE PROPOSED PVC LINE THAT IS INSTALLED AND THE EXISTING SEWER LINE AT THE END OF EACH WORKING DAY TO MAINTAIN FLOW IN THE SEWER LINE (NON-PAY ITEM).

6. ALL SANITARY SEWER PIPE CONSTRUCTED IN THIS CONTRACT SHALL BE VISUALLY INSPECTED BY THE CONTRACTOR BY PHOTOGRAPHIC MEANS (TELEVISION AND VIDEO TAPE) PRIOR TO FINAL ACCEPTANCE BY THE CITY OF ROCKWALL. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE PROVIDED FOR THE VIDEO INSPECTION.

7. EXISTING SANITARY SEWER MAINS TO BE ABANDONED ARE TO BE PLUGGED WITH CLASS "B" CONCRETE AT ALL OPEN ENDS (NOT A SEPARATE PAY ITEM).

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3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED PROFESSIONAL ENGINEER

PB Parsons Brinckerhoff Quade & Douglas, Inc.
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Dallas, TX 75207

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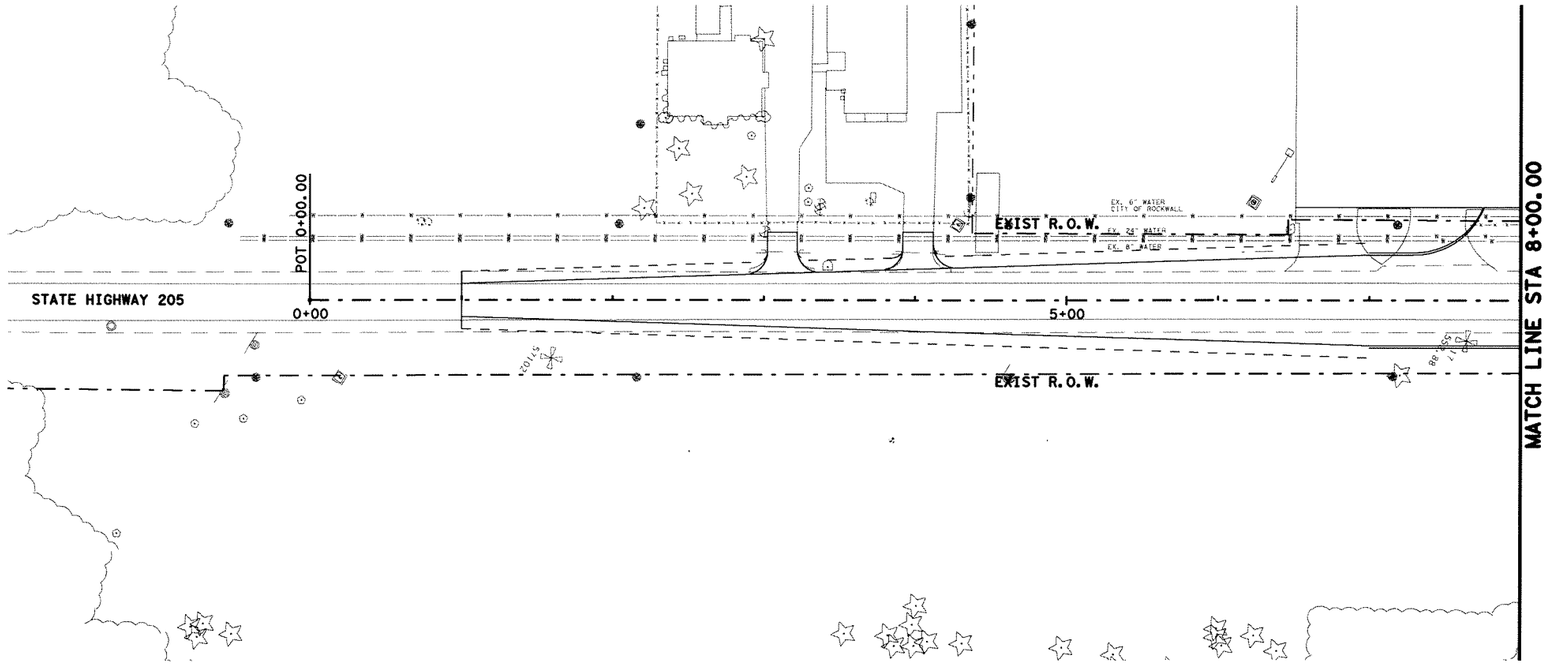
SH 205

WATER & SANITARY SEWER

GENERAL NOTES

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	509
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

555 550 545 540 535 530 525

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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Suite 1333
Dallas, TX 75207

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SH 205

WATER LINE

PLAN & PROFILE
STA 0+00 TO 8+00

SHEET 1 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	510
CONT.	SECT.	JOB	
0451	01	032, ETC	

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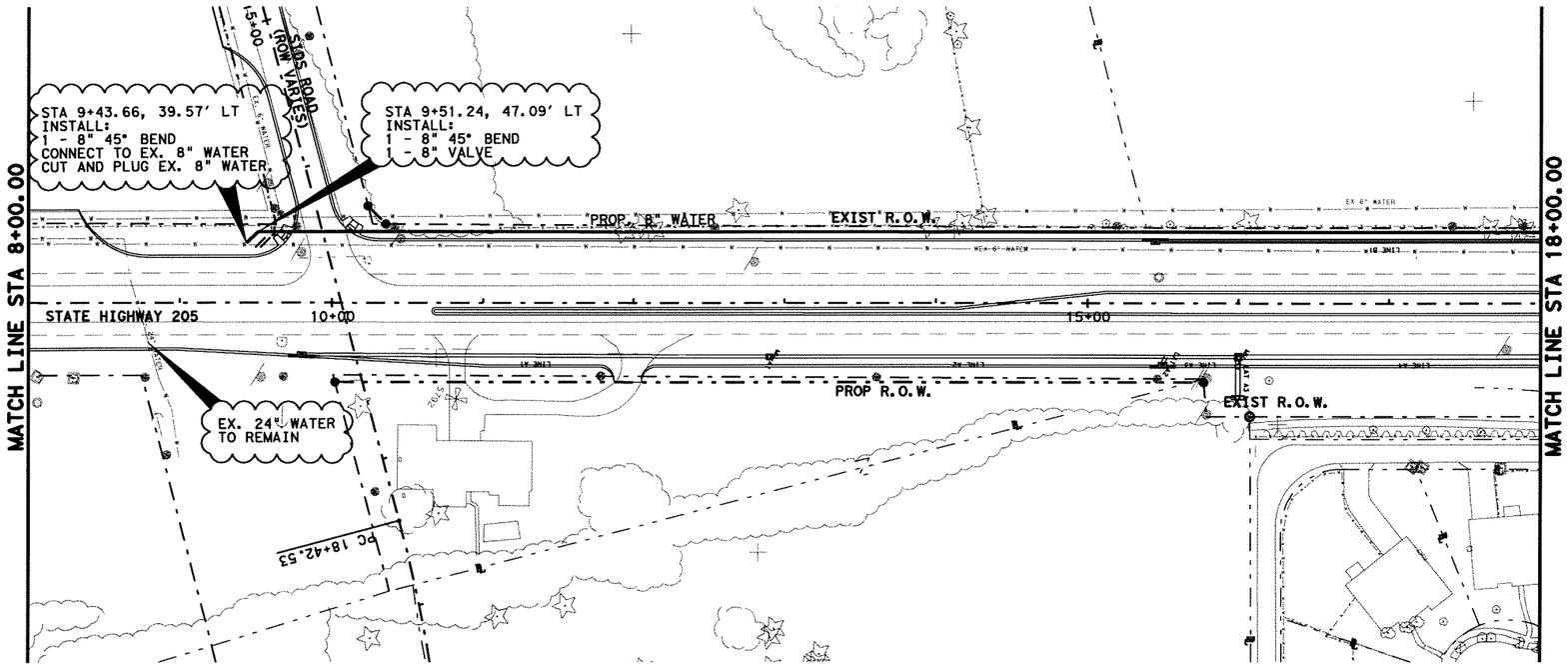

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

NO PROFILE PROVIDED FOR 8" WATER LINE

555 550 545 540 535 530 525

8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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Dallas, TX 75207

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SH 205

WATER LINE

PLAN & PROFILE
STA 8+00 TO 18+00

SHEET 2 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	511
CONT.	SECT.	JOB	
0451	01	032, ETC	

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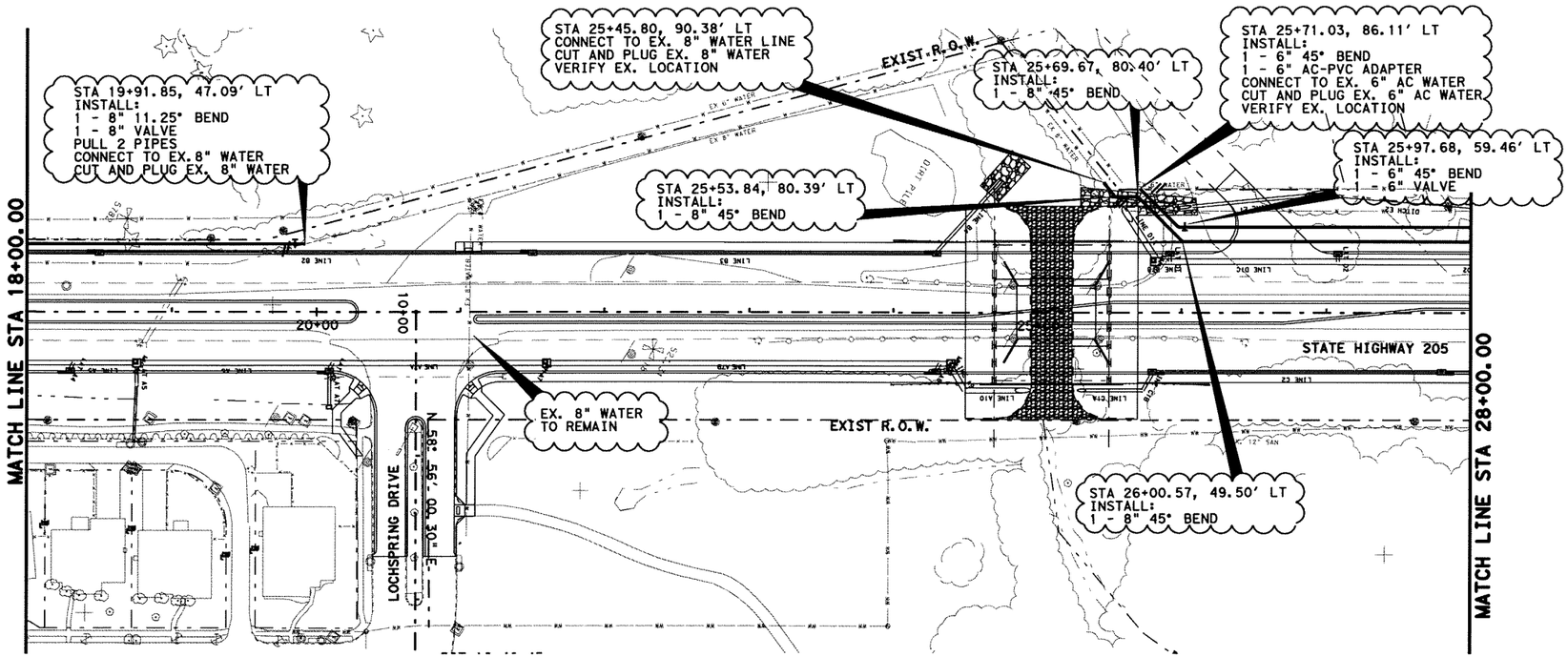

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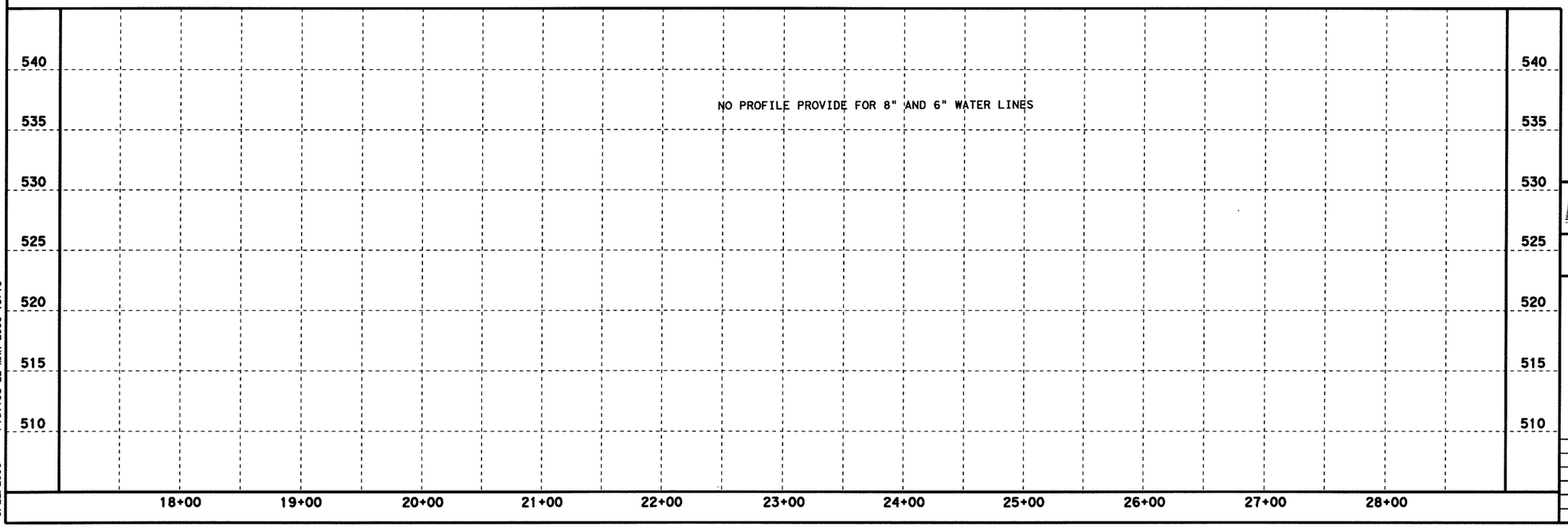
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL



3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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SH 205

WATER LINE

PLAN & PROFILE
STA 18+00 TO 28+00

SHEET 3 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	512
CONT.	SECT.	JOB	
0451	01	032, ETC	

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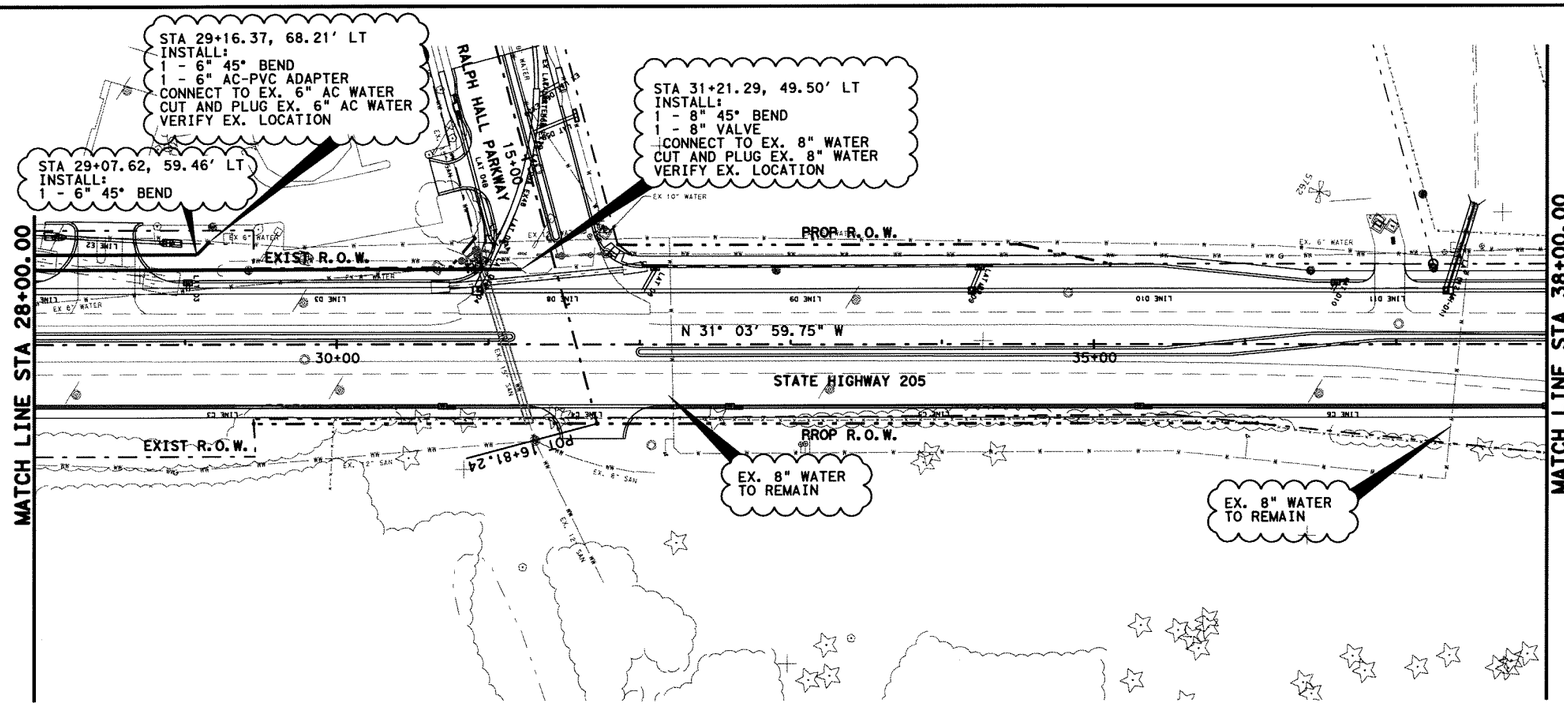

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

NOR PROFILE PROVIDED FOR 8" AND 6" WATER LINES

550 545 540 535 530 525 520

28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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Dallas, TX 75207

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SH 205

WATER LINE

PLAN & PROFILE
STA 28+00 TO 38+00

SHEET 4 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	513
CONT.	SECT.	JOB	
0451	01	032, ETC	

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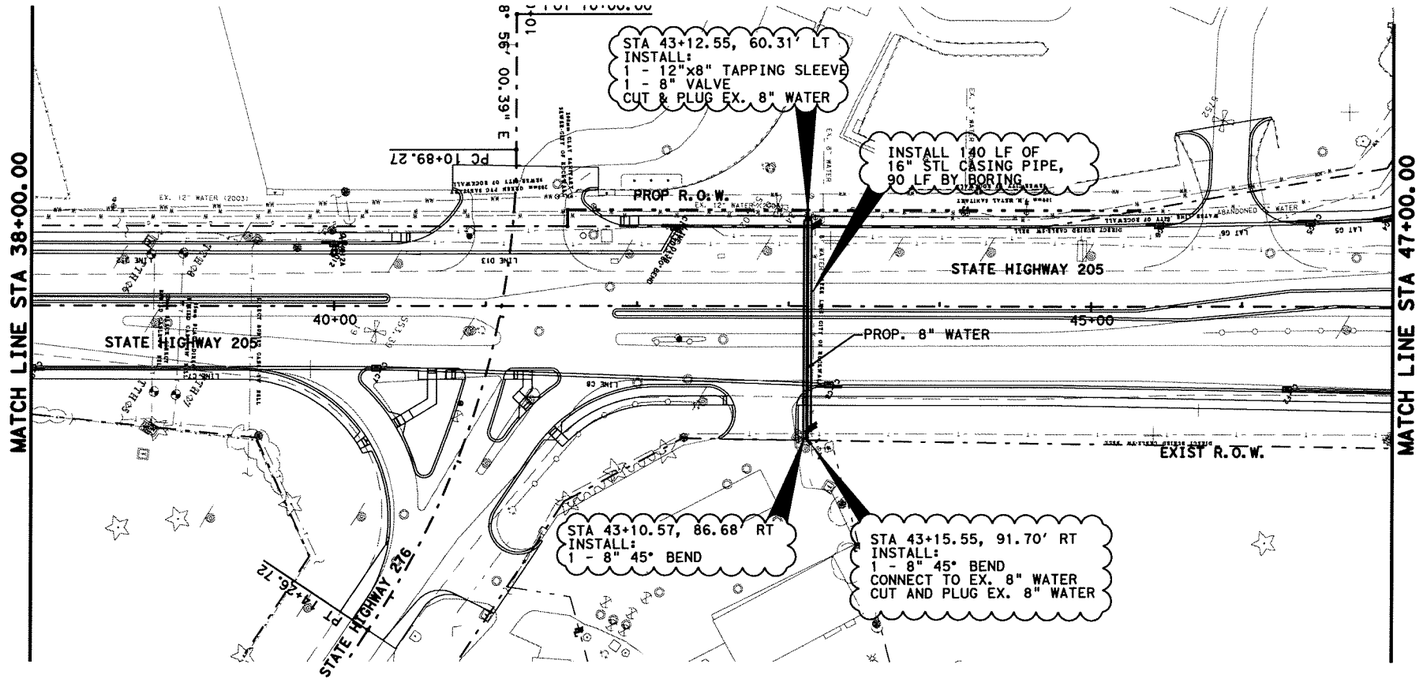

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

560 555 550 545 540 535 530

NO PROFILE PROVIDED FOR 8" WATER LINE

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
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SH 205

WATER LINE

PLAN & PROFILE
STA 38+00 TO 47+00

SHEET 5 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	514
CONT.	SECT.	JOB	
0451	01	032, ETC	

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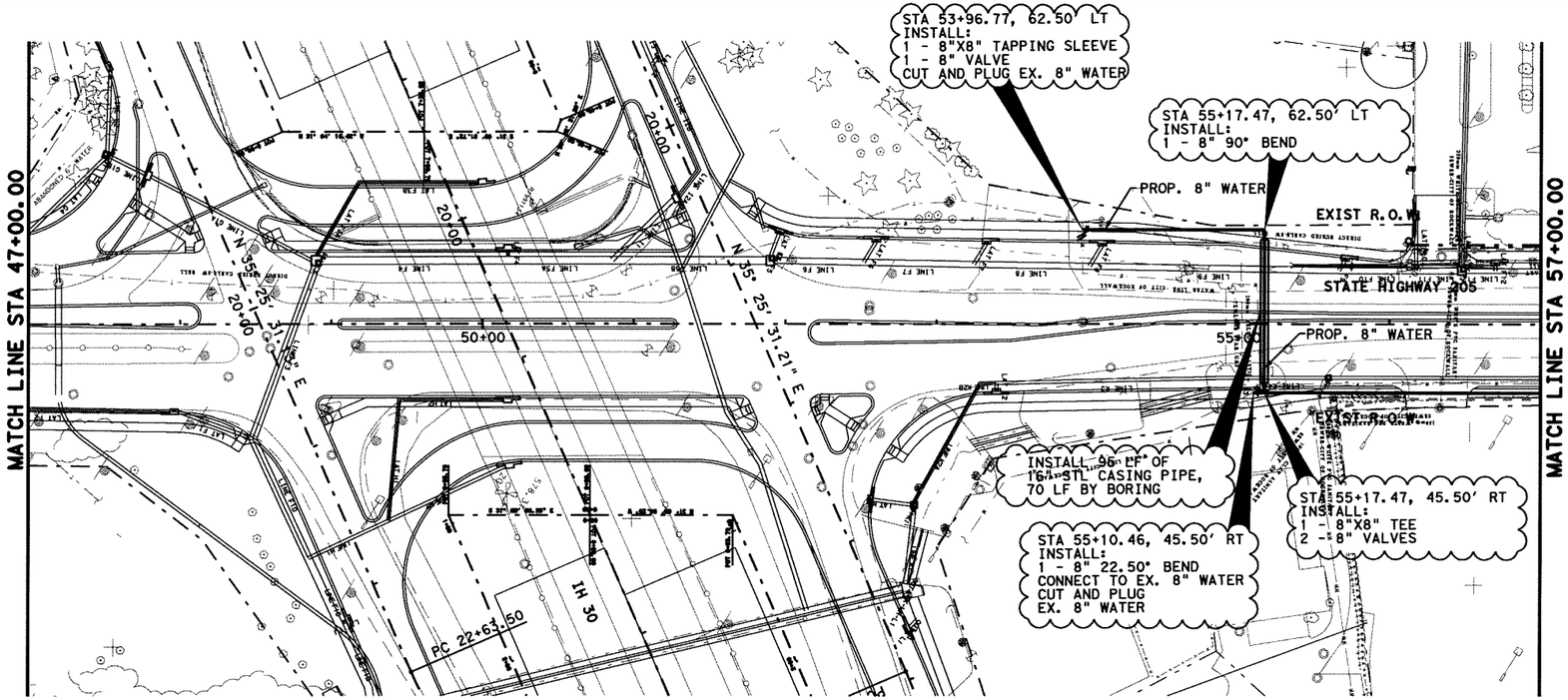

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

NO PROFILE PROVIDED FOR 8" WATER LINE

570 565 560 555 550 545 540

47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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Suite 1333
Dallas, TX 75207

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SH 205

WATER LINE

PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 6 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	515
CONT.	SECT.	JOB	
0451	01	032, ETC	

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MATCH LINE STA 57+00.00

EXISTING WATER METERS FOR LUIGI'S AND PIZZA INN PRESENTLY LOCATED EAST OF SH 205 ARE TO BE RELOCATED TO THE WEST SIDE OF SH 205

INSTALL 12" WATER

EXIST R.O.W.

STATE HIGHWAY 205

WATER LINE I

60+00

STA 57+77.00, 49.50' RT
INSTALL:
1 - 8" 45° BEND

STA 57+73.00, 45.50' RT
INSTALL:
1 - 8" 45° BEND

INSTALL 8" WATER

DETAIL D

STA64+59.99, 86.82' LT
INSTALL:
1 - 12" 22.50° BEND
CUT AND PLUG EX. 12" WATER
CONNECT TO EX. 12" WATER

STA 64+52.52, 49.29' LT
INSTALL:
1 - 12" 11.25° BEND

INSTALL 95 LF OF 20" STL CASING PIPE, 70 LF BY BORING

STA 64+52.52, 49.50' RT
REFER TO DETAIL D

STA 64+76.03, 49.50' RT
INSTALL:
1 - FIRE HYDRANT
1 - 6" VALVE
1 - 8"X6" TEE
6 LF OF PVC 6" WATER PIPE
REMOVE AND SALVAGE
EX. FIRE HYDRANT

PROP. 8" SS

STA 65+41.97, 52.09' LT
INSTALL:
1 - 16" 45° BEND
CUT AND PLUG
EX. 16" STL CYL. RCCP WATER
CONNECT TO
EX. 16" STL CYL. RCCP WATER

STA 65+46.56, 48.55' LT
INSTALL:
1 - 16" 45° BEND

INSTALL 16" WATER

WATER LINE H

INSTALL 95 LF OF 24" STL CASING PIPE, 70 LF BY BORING

STA 65+59.25, 49.50' RT
REFER TO DETAIL C

MATCH LINE STA 68+00.00

YELLOW JACKET LANE

STA 65+60.25, 57.23' RT
INSTALL:
1 - 16" 45° BEND

STA 65+57.28, 57.62' RT
INSTALL:
1 - 16" 45° BEND
CUT AND PLUG
EX. 16" STL CYL. RCCP WATER
CONNECT TO
EX. 16" STL CYL. RCCP WATER

INSTALL 8" WATER

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

DETAIL D

8" WATER
12" WATER
8" WATER

INSTALL:
1 - 12"X12" TEE
2 - 12"X8" REDUCERS
1 - 12" VALVE
2 - 8" VALVES

DETAIL C

8" WATER
8" WATER

INSTALL:
1 - 16"X8" TEE
1 - 8" VALVE
1 - 16" VALVE

INSTALL:
1 - 16"X8" TEE
1 - 8" VALVE
1 - 16" VALVE

16" WATER

WATER LINE I

STA 64+52.52, 49.29' LT
INSTALL:
1 - 12" 11.25° BEND

STA64+59.99, 86.82' LT
INSTALL:
1 - 12" 22.50° BEND
CUT AND PLUG
EX. 12" WATER

PROP. GRADE
EX. GRADE

STA 64+52.52, 49.50' RT
INSTALL:
1 - 8"X8" TEE
1 - 10"X8" REDUCER

95 LF
20" STL CASING

FL = 571.59
GRADE BREAK

FL = 567.57
GRADE BREAK

PROP. 24" STM
FL = 569.49

PROP. 24" STM
FL = 568.09

FL = 565.81
INSTALL:
1 - 12" 45° VERTICAL BEND

FL = 569.22

137.05 LF 12" P.V.C. WATER PIPE - CLASS 200
& CLASS "C" EMBEDMENT

WATER LINE H

STA 65+46.56, 48.55' LT
INSTALL:
1 - 16" 45° VERTICAL BEND

STA 65+41.97, 52.09' LT
INSTALL:
1 - 16" 45° BEND
CUT AND PLUG
EX. 16" STL CYL. RCCP WATER
CONNECT TO
EX. 16" STL CYL. RCCP WATER

95 LF
24" STL CASING

STA 65+60.25, 57.23' RT
INSTALL:
1 - 16" 45° VERTICAL BEND

STA 65+57.28, 57.62' RT
INSTALL:
1 - 16" 45° BEND
CUT AND PLUG
EX. 16" STL CYL. RCCP WATER
CONNECT TO
EX. 16" STL CYL. RCCP WATER

FL = 567.71

PROP. 24" STM
FL = 570.06

PROP. 24" STM
FL = 569.60

FL = 567.09

113.95 LF 16" P.V.C. WATER PIPE - CLASS 200
& CLASS "C" EMBEDMENT

585 580 575 570 565 560 555

57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00

DGN=G:\JOBS\22451C-SH205\Uh111ry\24510wp07.dgn, ON=10-11, 13-623
3/24/2006 Plotted 24-MAR-2006 13:14

3-24-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

PB 122 Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

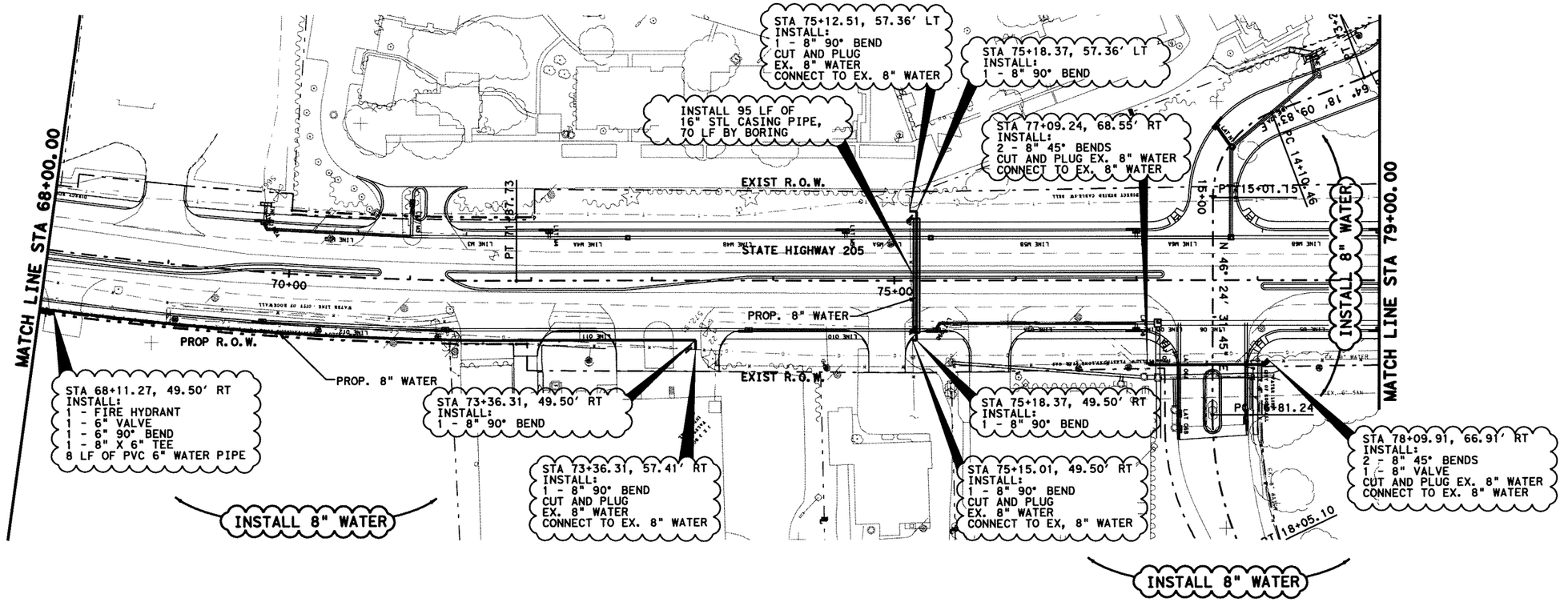
WATER LINE

PLAN & PROFILE
STA 57+00 TO 68+00

SHEET 7 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	516
CONT.	SECT.	JOB	
0451	01	032, ETC	



NO PROFILE PROVIDED FOR 8" WATER LINE

585 580 575 570 565 560 555

68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00 79+00

3-24-06

STATE OF TEXAS
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WATER LINE

PLAN & PROFILE
STA 68+00 TO 79+00

SHEET 8 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	517
CONT.	SECT.	JOB	
0451	01	032, ETC	

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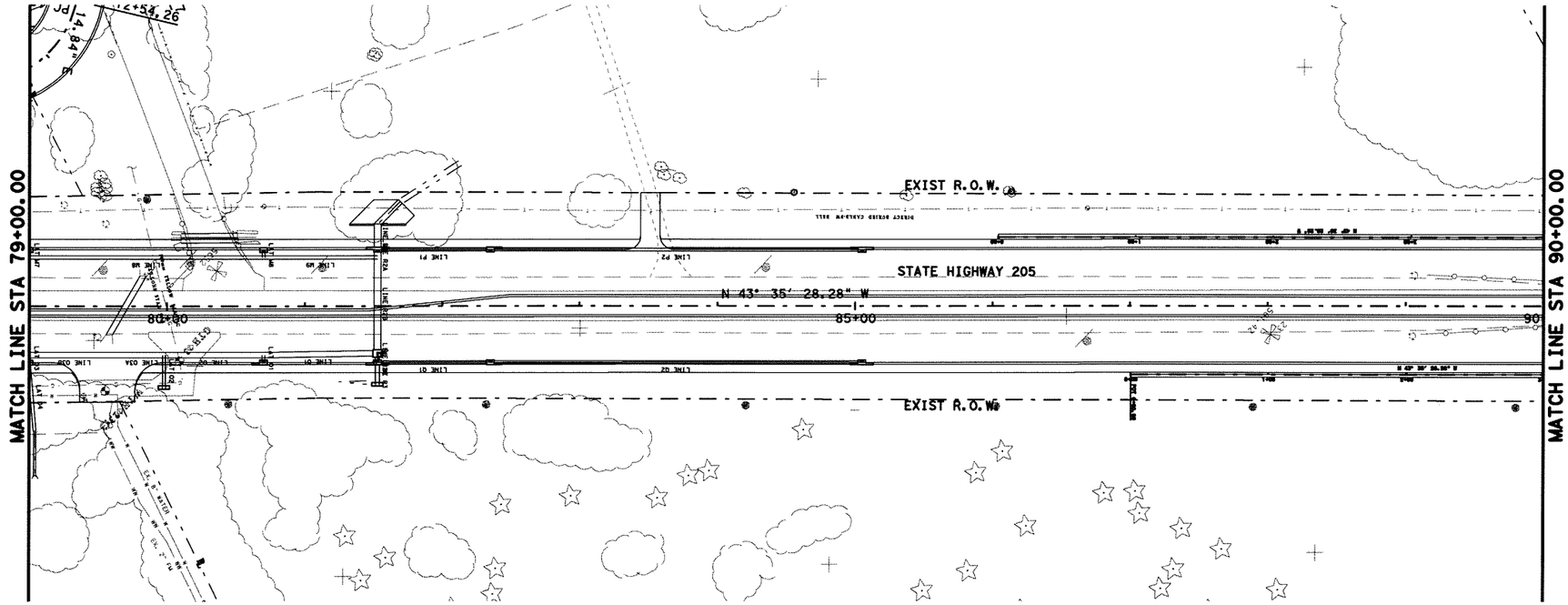
3/24/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

570												570
565												565
560												560
555												555
550												550
545												545
540												540
	79+00	80+00	81+00	82+00	83+00	84+00	85+00	86+00	87+00	88+00	89+00	90+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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WATER LINE

PLAN & PROFILE
STA 79+00 TO 90+00

SHEET 9 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	518
CONT.	SECT.	JOB	
0451	01	032, ETC	

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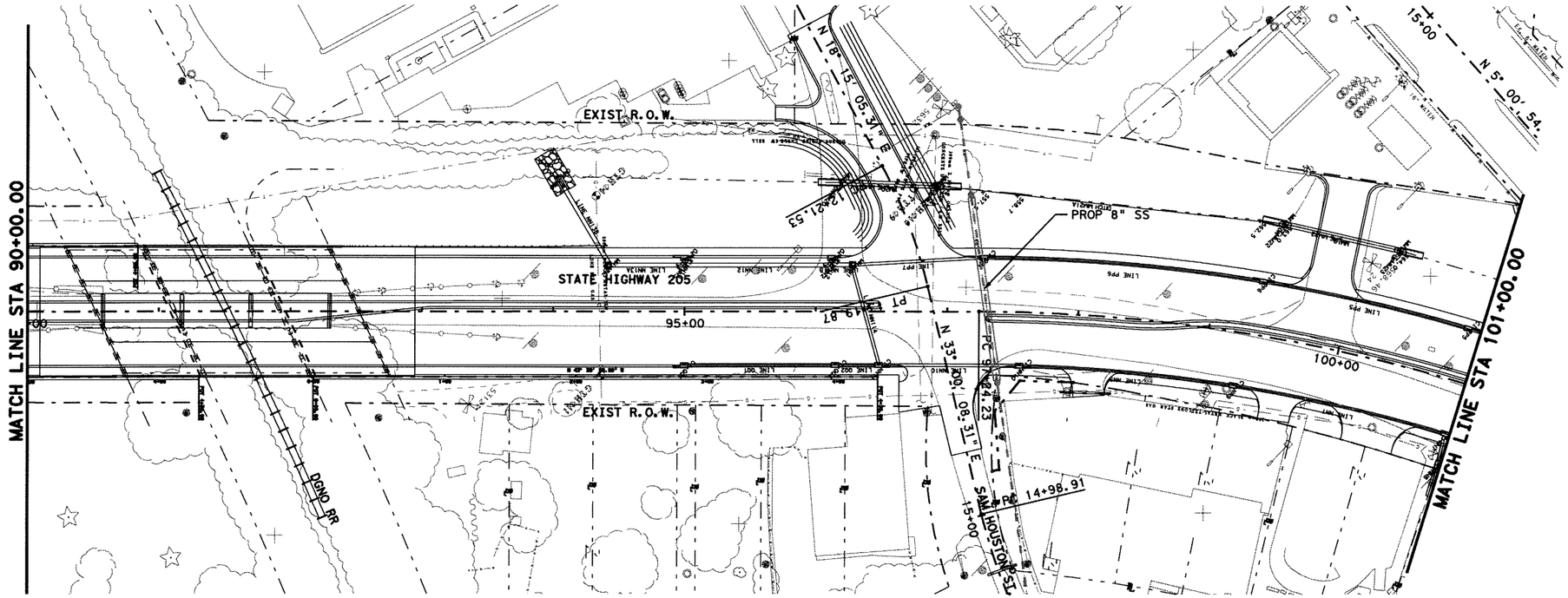
3/22/2006 Plotted 22-MAR-2006 15:18



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

570	565	560	555	550	545	540

90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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Richard T. Grice

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SH 205

WATER LINE

PLAN & PROFILE
STA 90+00 TO 101+00

SHEET 10 OF 19

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	519
CONT.	SECT.	JOB	
0451	01	032, ETC	

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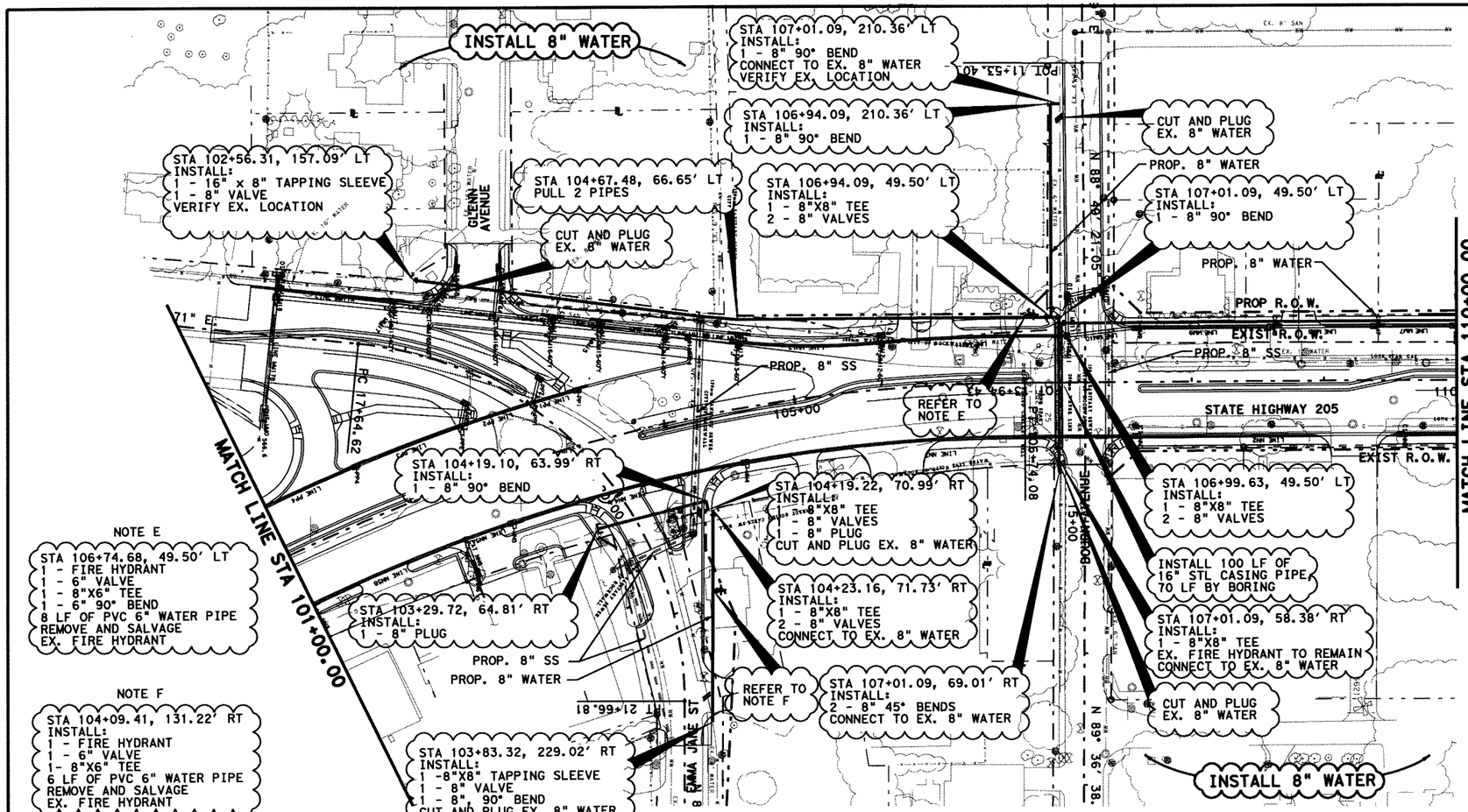

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

NO PROFILE PROVIDED FOR 8" WATER LINE

585 580 575 570 565 560 555

101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00

DGN=G:\JOBS\22451C-SH205\Utility\2451owp11.dgn, ON=[0-11, 13-62]
3/24/2006 Plotted 24-MAR-2006 13:15

3-24-06

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SH 205

WATER LINE

PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 11 OF 19

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	520
CONT.	SECT.	JOB	
0451	01	032, ETC	

STA 111+58.27, 114.71' LT
INSTALL:
1 - 8" 45° BEND
CONNECT TO EX. 8" WATER
VERIFY EX. LOCATION

STA 111+44.23, 102.71' LT
INSTALL:
1 - 8" 45° BEND

CUT AND PLUG
EX. 8" WATER

PROP. 8" WATER

STA 111+44.23, 45.00' LT
INSTALL:
1 - 8"X8" TEE
3 - 8" VALVES

STA 111+82.40, 45.00' LT
INSTALL:
1 - 8" 90° BEND

STA 115+89.94, 73.54' LT
INSTALL:
1 - 16" 45° BEND

STA 115+89.94, 45.50' RT
REFER TO DETAIL B

PROP R.O.W.

EXIST R.O.W.

PROP. 8" SS

STA 116+03.86, 87.48' LT
INSTALL:
1 - 16" 45° BEND
CONNECT TO EX. 16" WATER
VERIFY EX. LOCATION
CUT & PLUG EX. 16" WATER

INSTALL 95LF OF
24" STL CASING PIPE,
60 LF BY BORING

STA 118+04.81, 49.50' RT
1 - FIRE HYDRANT
1 - 6" VALVE
1 - 16"X6" TEE
1 - 6" 90° BEND
8 LF OF PVC 6" WATER PIPE
REMOVE AND SALVAGE
EX. FIRE HYDRANT

MATCH LINE STA 110+00.00

INSTALL 8" WATER

PROP. 8" WATER

STATE HIGHWAY 205

WATER LINE G

WATER LINE F

PROP. 8" SS

EXIST R.O.W.

ROSS STREET

BOYDSTON AVENUE

MATCH LINE STA 120+00.00

STA 115+91.34, 97.68' RT
INSTALL:
1 - 16" 45° BEND

STA 116+10.40, 116.47' RT
INSTALL:
1 - 16" 45° BEND

STA 116+75.87, 49.50' RT
INSTALL:
1 - 16" 45° BEND

STA 116+71.87, 45.50' RT
INSTALL:
1 - 16" 45° BEND

INSTALL 90 LF OF
16" STL CASING PIPE,
70 LF BY BORING

STA 111+82.40, 45.50' RT
INSTALL:
1 - 8"X8" TEE

STA 116+10.40, 152.49' RT
INSTALL:
1 - 16" 45° BEND

STA 111+82.40, 51.35' RT
REMOVE EX. PLUG &
CONNECT TO EX. 8" WATER

STA 116+04.12, 158.74' RT
INSTALL:
1 - 16" 45° BEND
CONNECT TO EX. 16" WATER
CUT AND PLUG EX. 16" WATER
VERIFY EX. LOCATION

STA 116+10.44, 121.47' RT
INSTALL:
1 - 16"X8" TEE
1 - 16" VALVE
1 - 8" VALVE

STA 116+30.91, 121.50' RT
INSTALL:
1 - 8" 90° BEND
CONNECT TO EX. 8" WATER
CUT AND PLUG
EX. 8" WATER

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

DETAIL B

8" WATER
16" WATER
16" WATER
16" WATER

INSTALL:
1 - 16"X8" TEE
1 - 8" VALVE
1 - 16" VALVE

INSTALL:
1 - 16"X16" TEE
2 - 16" VALVES

INSTALL 16" WATER

WATER LINE G

STA 115+89.94, 73.54' LT
INSTALL:
1 - 16" 45° BEND

STA 116+03.86, 87.48' LT
INSTALL:
1 - 16" 45° BEND
CONNECT TO EX. 16" WATER
VERIFY EX. LOCATION

STA 116+10.40, 116.47' RT
INSTALL:
1 - 16" 45° BEND

STA 115+91.34, 97.68' RT
INSTALL:
1 - 16" 45° BEND

STA 115+89.94, 45.50' RT
SEE DETAIL B

STA 116+10.44, 121.47' RT
INSTALL:
1 - 16"X8" TEE

STA 116+10.40,
152.49' RT
INSTALL:
1 - 16" 45° BEND

STA 116+04.12,
158.74' RT
INSTALL:
1 - 16" 45° BEND
CONNECT TO
EX. 16" WATER
CUT AND PLUG
EX. 16" WATER
VERIFY EX. LOCATION

95 LF
24" STL CASING
60 LF BY BORING

FL = 580.90

16" ON (-) 3.23%

16" ON
(-) 11.72%
FL = 575.22

PROP. 8" SS LINE
FL = 577.89

PROP. 24" STM
FL = 579.16

PROP. 24" STM
FL = 578.55

FL = 571.87

PROP. SS LINE
FL = 574.94

FL = 572.64

16" ON 0.66%

EX. 24" STM
FL = 577.38

268.81 LF 16" P.V.C. WATER PIPE - CLASS 200
& CLASS "C" EMBEDMENT

WATER LINE F

STA 115+89.94, 45.50' RT
INSTALL:
1 - 16"X16" TEE
1 - 16"X8" TEE
1 - 16" VALVE
1 - 8" VALVE

BOYDSTON

8" ON (-) 0.10%

INSTALL:
1 - 8" 45°
VERTICAL BEND
FL = 578.34

INSTALL:
1 - 16" 45°
VERTICAL BEND
FL = 571.87

PROP. 24" STM
FL = 578.25

PROP. SS
FL = 574.56

STA 116+71.87, 45.50' RT
INSTALL:
1 - 16" 45° BEND

STA 116+75.87, 49.50' RT
INSTALL:
1 - 16" 45° BEND

PROP. GRADE

EX. GRADE

STA 118+04.81, 49.50' RT
INSTALL:
1 - 16"X6" TEE

16" ON 1.64%

INSTALL:
1 - 16" 45° VERTICAL BEND
FL = 576.13

PROP. 24" STM
FL = 578.12

INSTALL:
1 - 16" 45° VERTICAL BEND
FL = 571.93

16" ON 0.10%

410.06 LF 16" P.V.C. WATER PIPE - CLASS 200
& CLASS "C" EMBEDMENT

MATCH LINE STA 120+00.00

595 590 585 580 575 570

110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00

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3/24/2006 Plotted 24-MAR-2006 13:15

3-24-06
STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

PB Parsons Brinckerhoff Quade & Douglas, Inc.
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Dallas, TX 75207

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SH 205

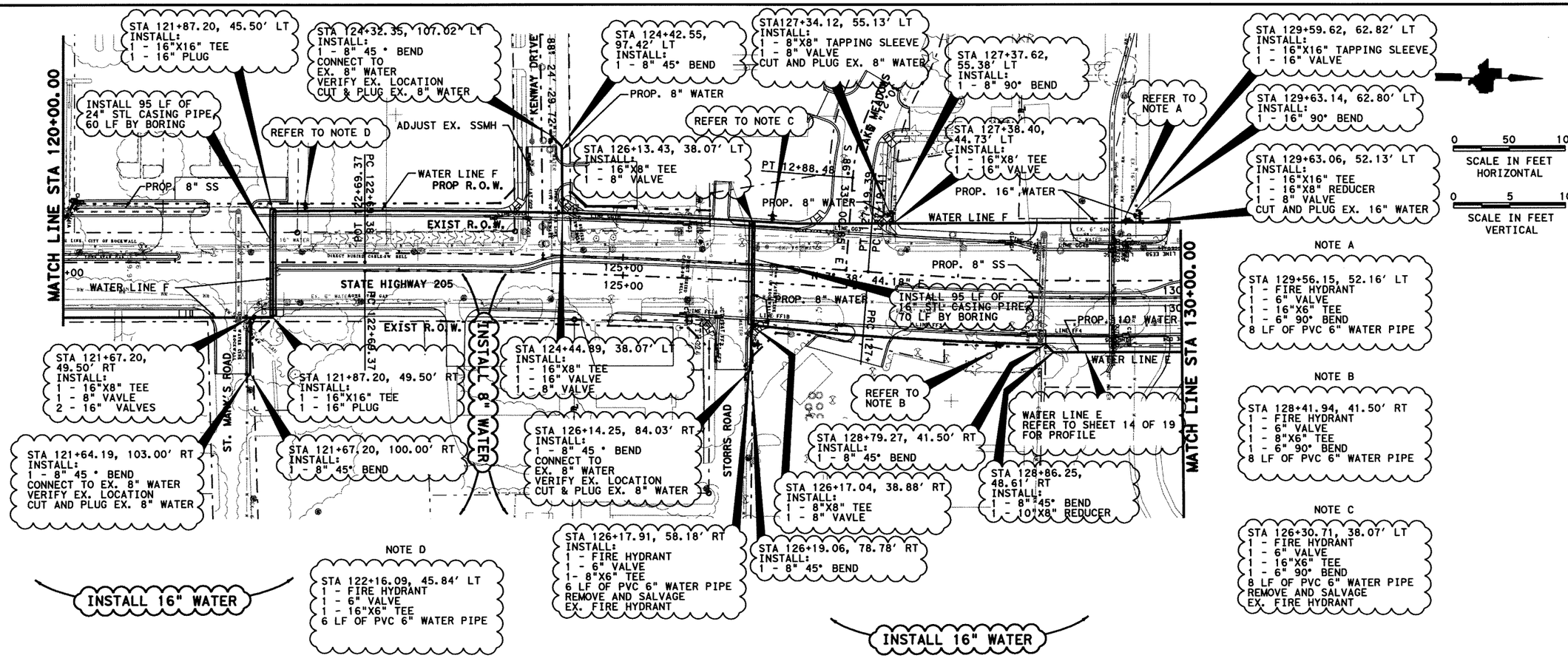
WATER LINE

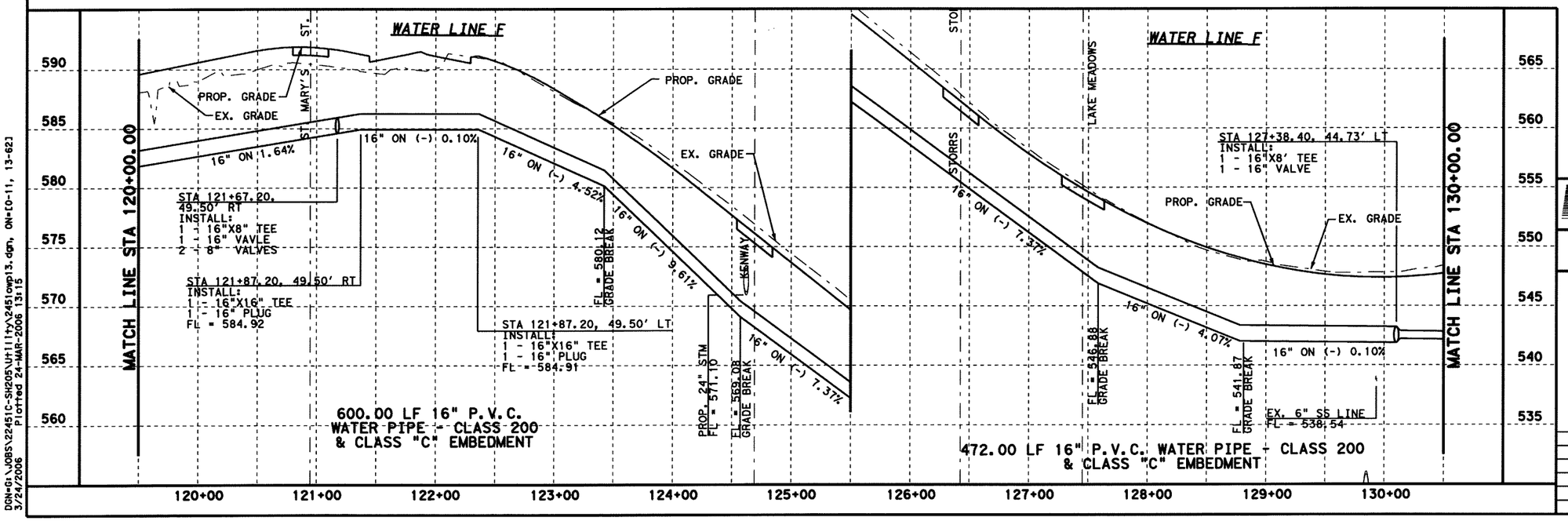
PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 12 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	521
CONT.	SECT.	JOB	
0451	01	032, ETC	





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3/24/2006 Plotted 24-MAR-2006 13:15

3-24-06

STATE OF TEXAS
RICHARD T. GRICE
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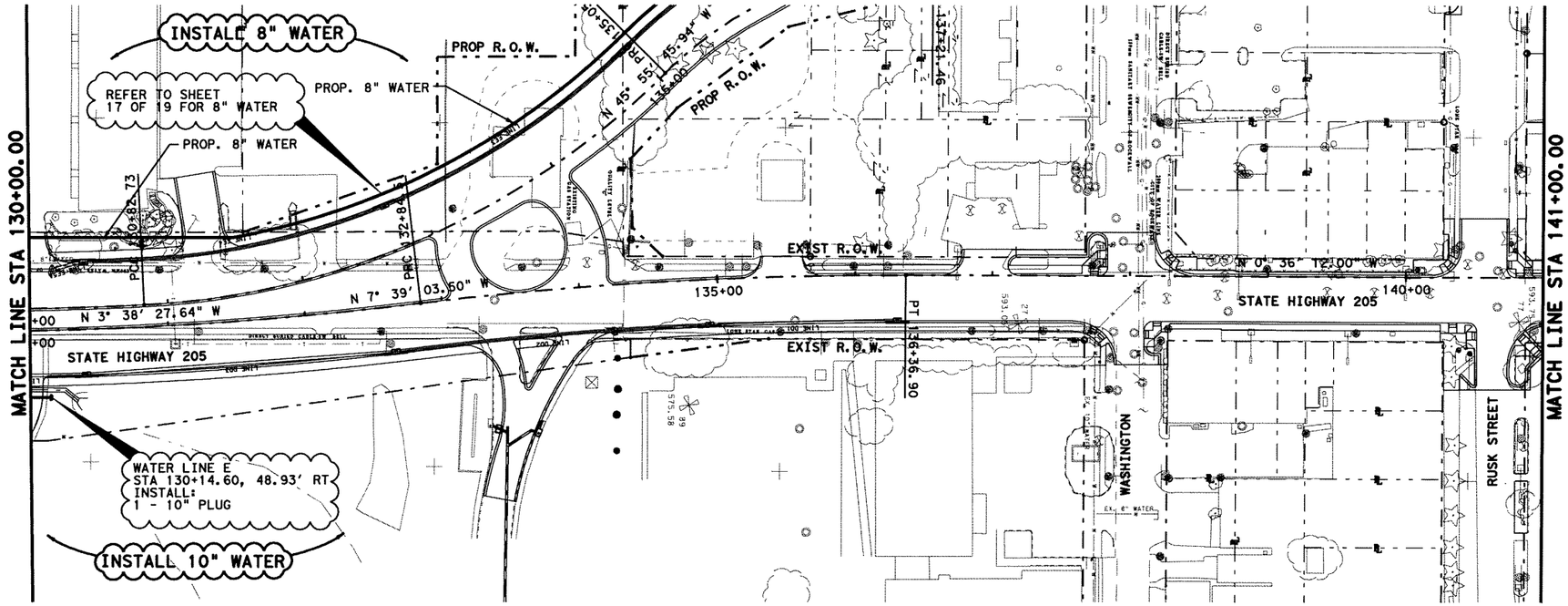
WATER LINE

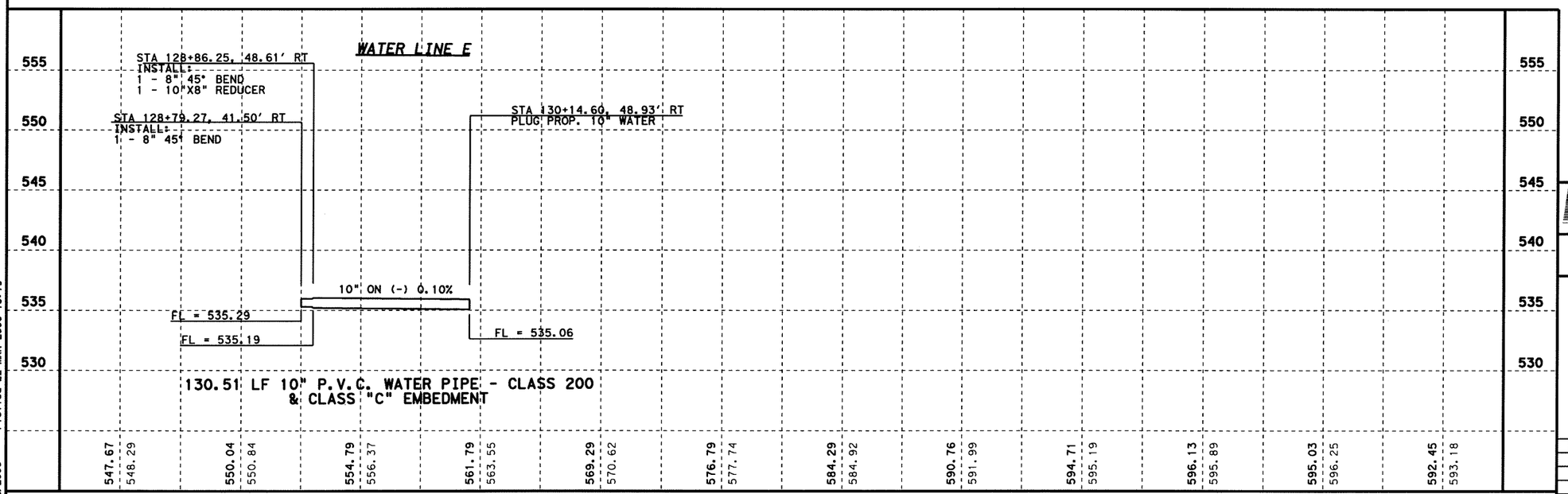
PLAN & PROFILE
STA 120+00 TO 130+00

SHEET 13 OF 19

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	522
CONT.	SECT.	JOB	
0451	01	032, ETC	





3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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WATER LINE
NB COUPLET
PLAN & PROFILE
STA 130+00 TO 141+00

SHEET 14 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	523
CONT.	SECT.	JOB	
0451	01	032, ETC	

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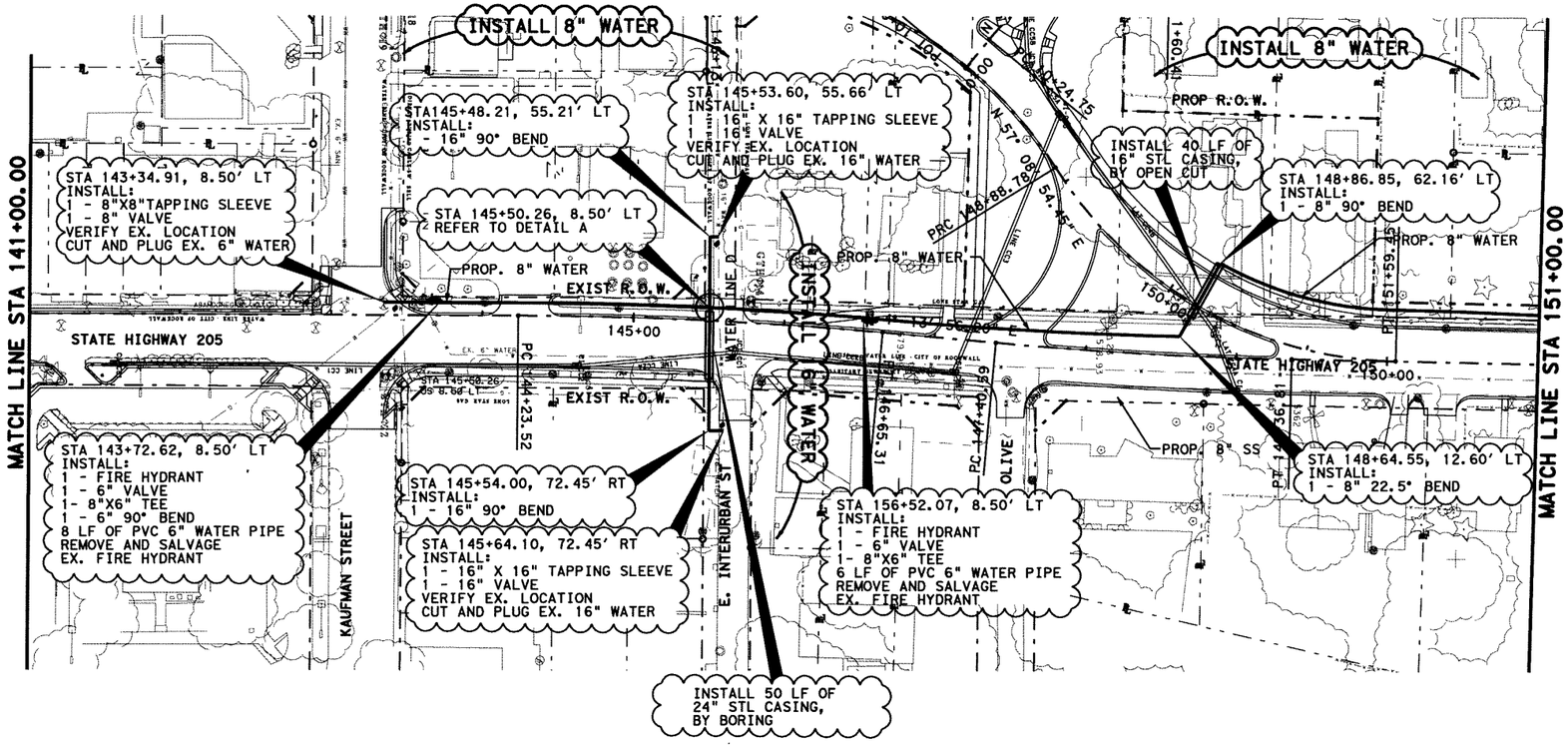

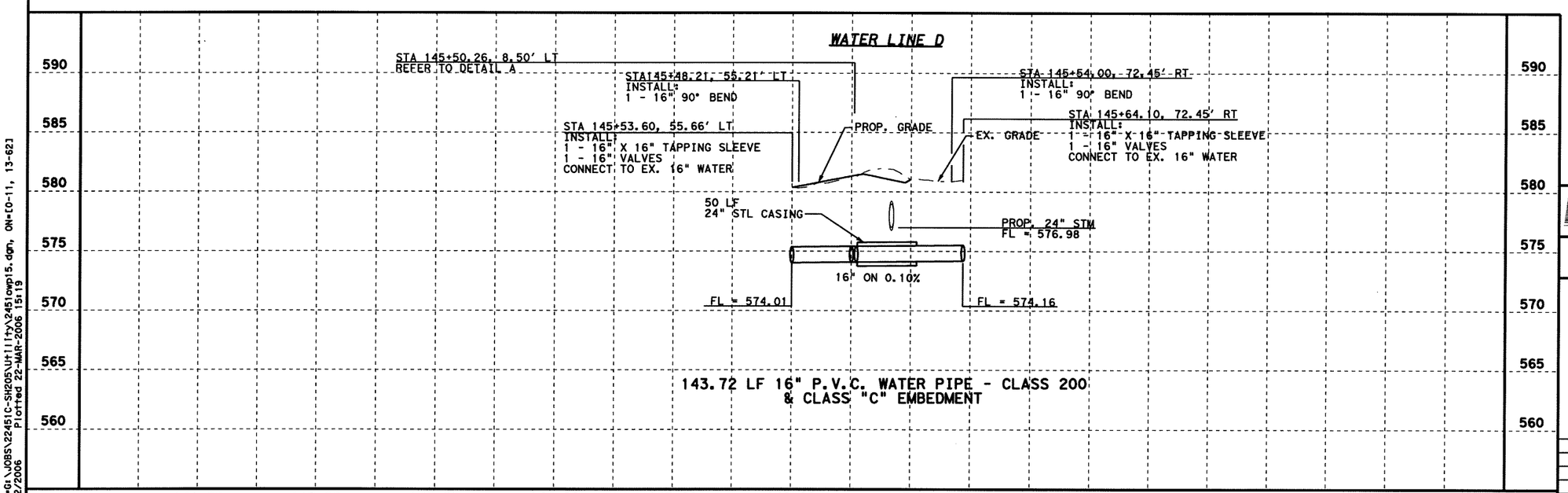

143.72 LF 16" P.V.C. WATER PIPE - CLASS 200
& CLASS "C" EMBEDMENT

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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SH 205

WATER LINE
NB COUPLET
PLAN & PROFILE
STA 141+00 TO 151+00

SHEET 15 OF 19

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	524
CONT.	SECT.	JOB	
0451	01	032, ETC	

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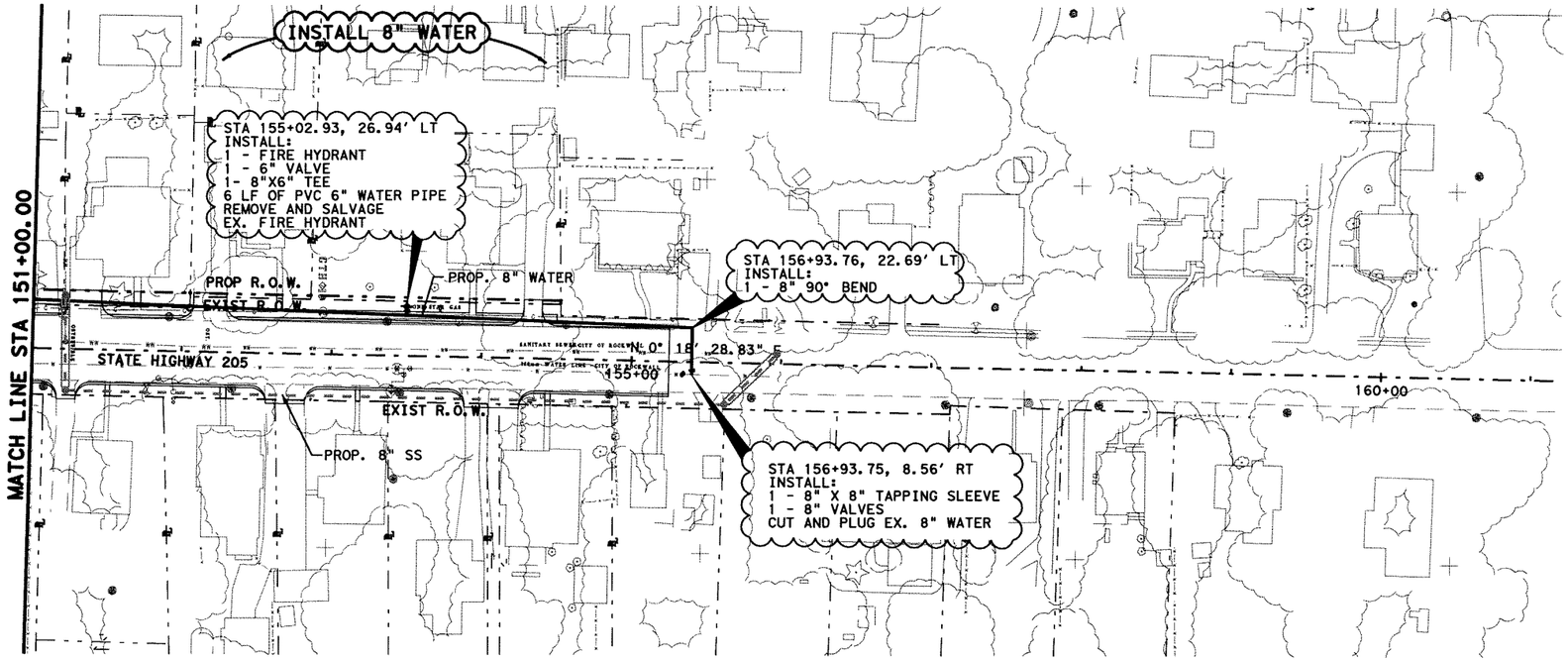
3/22/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

585 580 575 570 565 560 555

151+00 152+00 153+00 154+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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SH 205

WATER LINE
NB COUPLET
PLAN & PROFILE
STA 151+00 TO END OF PROJECT

SHEET 16 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	525
CONT.	SECT.	JOB	
0451	01	032, ETC	

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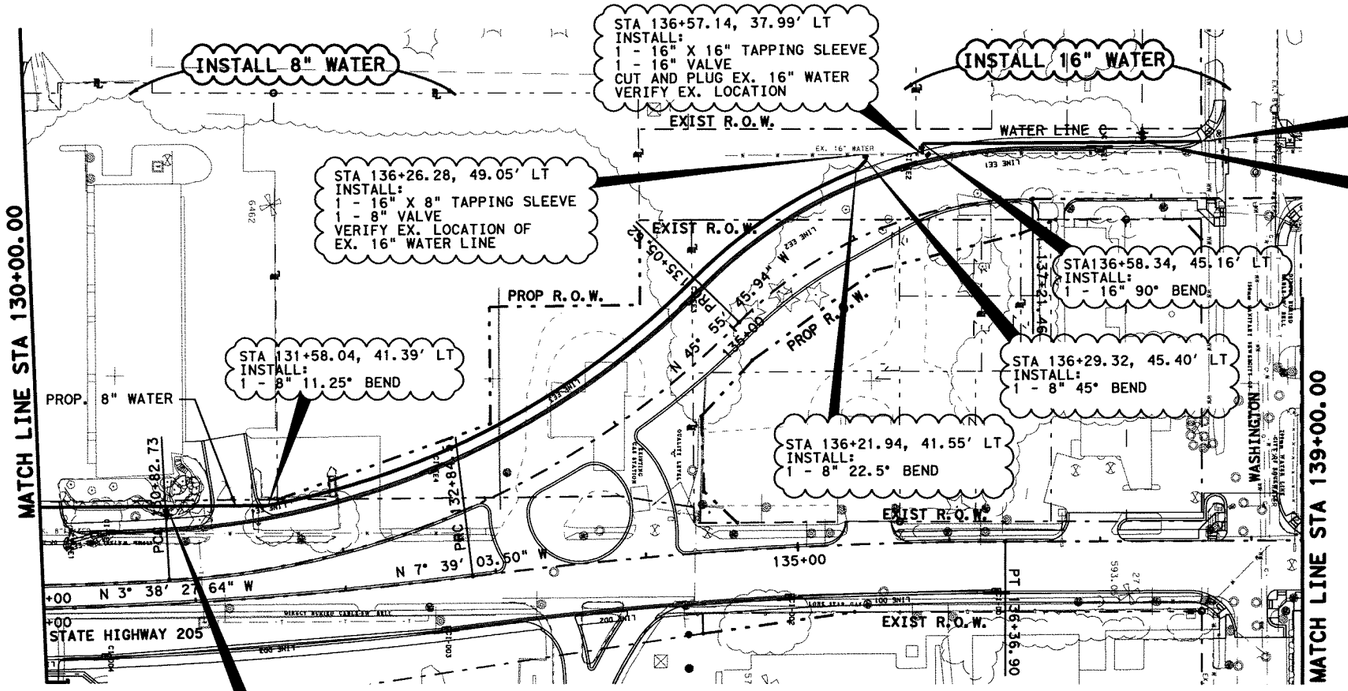
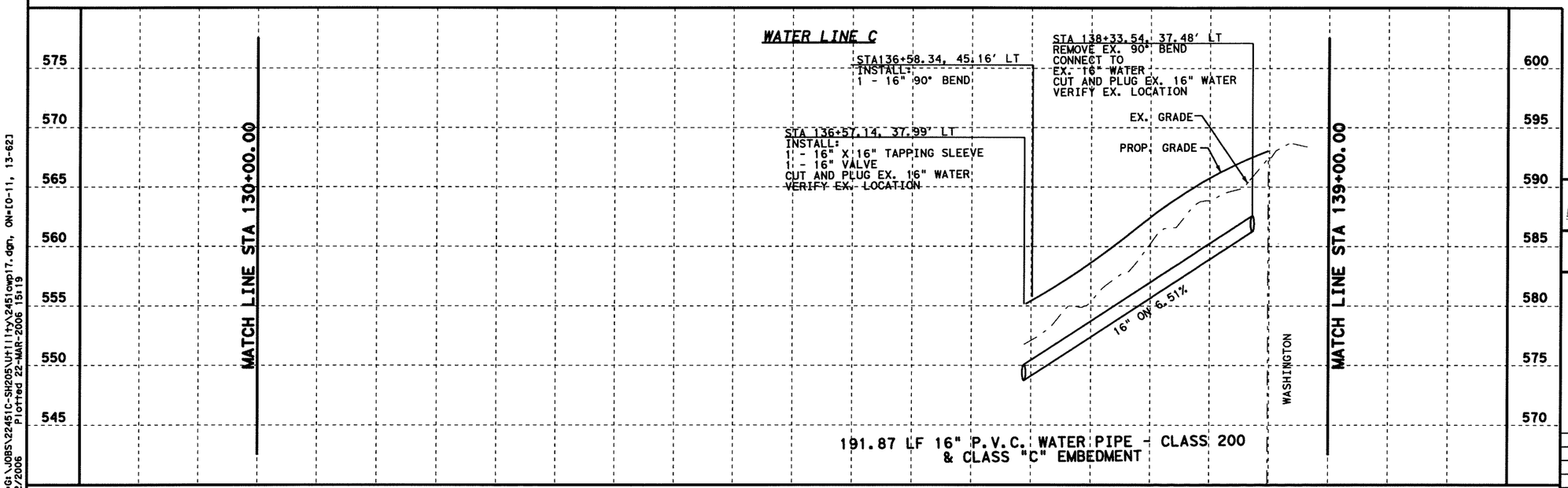
3/22/2006 Plotted 22-MAR-2006 15:19





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Plotted 22-MAR-2006 15:19
3/22/2006

3-22-06

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SH 205

WATER LINE

SB COUPLET

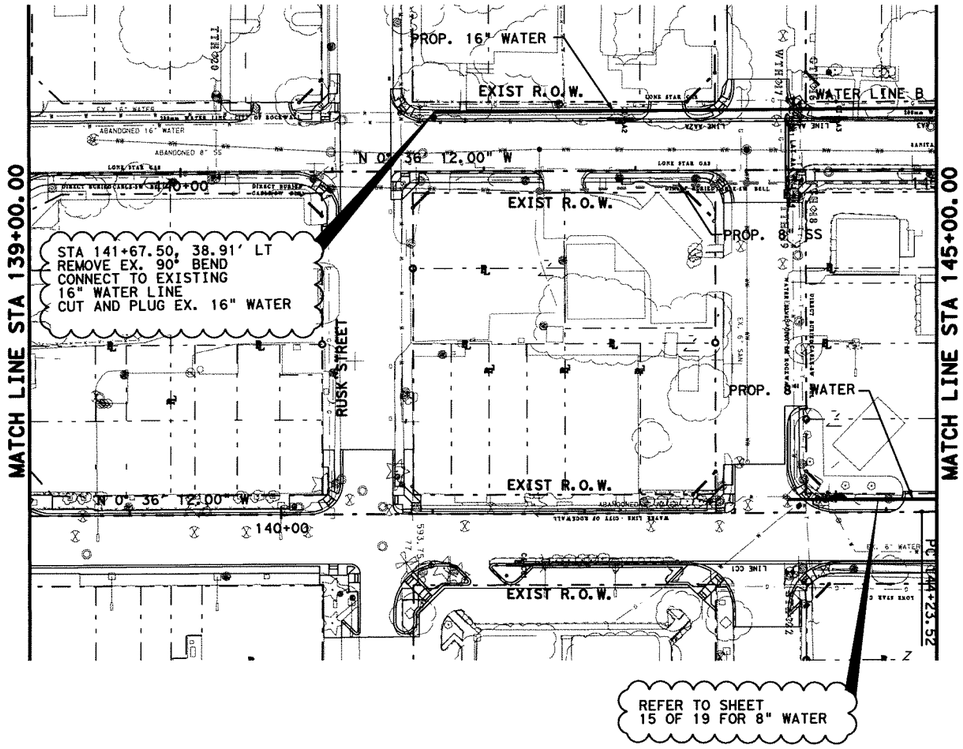
PLAN & PROFILE

STA 130+00 TO 139+00

SHEET 17 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	526
CONT.	SECT.	JOB	
0451	01	032, ETC	



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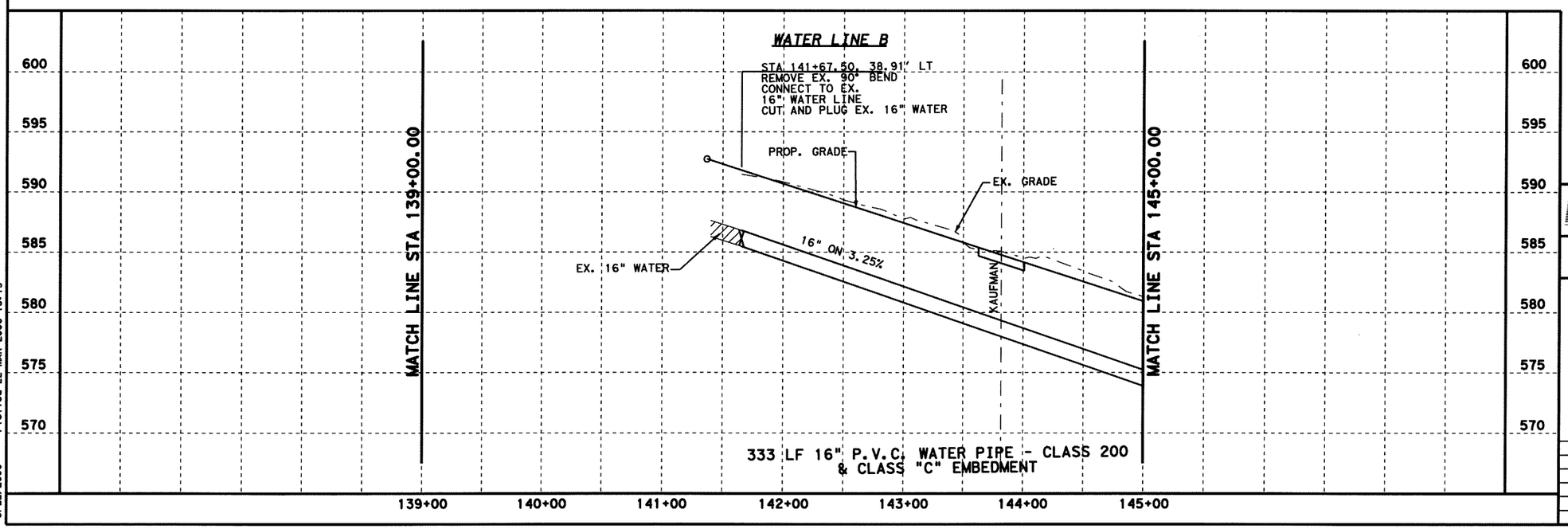
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL



3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

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SH 205

WATER LINE
SB COUPLET
PLAN & PROFILE
STA 139+00 TO 145+00

SHEET 18 OF 19

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	527
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Util\ty\2451owp18.dgn, ON=[0-11, 13-62]
3/22/2006 Plotted 22-MAR-2006 15:19

INSTALL 16" WATER

INSTALL 45 LF 24" STL CASING, BY BORING

INSTALL 8" WATER

WATER LINE B

WATER LINE A

STA 146+15.01, 40.83' LT
INSTALL:
1 - 16" X 16" TEE
1 - 16" X 8" REDUCER
1 - 16" VALVE
1 - 8" VALVE
INSTALL 65 LF OF 16" PVC PIPE

STA 146+20.37, 19.94' RT
INSTALL:
1 - 16"X16" TAPPING SLEEVE
1 - 16" 90° BEND
1 - 16" VALVE
CUT AND PLUG EX. 16" WATER

STA 146+59.51, 45.90' LT
PULL ONE PIPE

STA 146+62.37, 45.99' LT
INSTALL:
1 - FIRE HYDRANT
1 - 6" VALVE
1 - 6" 90° BEND
1- 8"X6" TEE
8 LF OF PVC 6" WATER PIPE
REMOVE AND SALVAGE
EX. FIRE HYDRANT

CUT AND PLUG EX. 8" WATER

STA 148+46.43, 191.85' LT
INSTALL:
1 - 8" 45° BEND

STA 148+55.25, 192.70' LT
INSTALL:
1 - 8" 45° BEND
CONNECT TO
EXISTING 8" WATER

REFER TO SHEET 15 AND 16 OF 19 FOR 8" WATER

PROP. 8" SS

PROP. 10" SS

MATCH LINE STA 145+00.00

INTERURBAN ST

OLIVE ST

ALAMO RD

EXIST R.O.W.

PROP R.O.W.

STATE HIGHWAY 205

N 0° 13' 06.78" E

N 0° 18' 28.8

PRC 148+88.78

PT 149+59.45

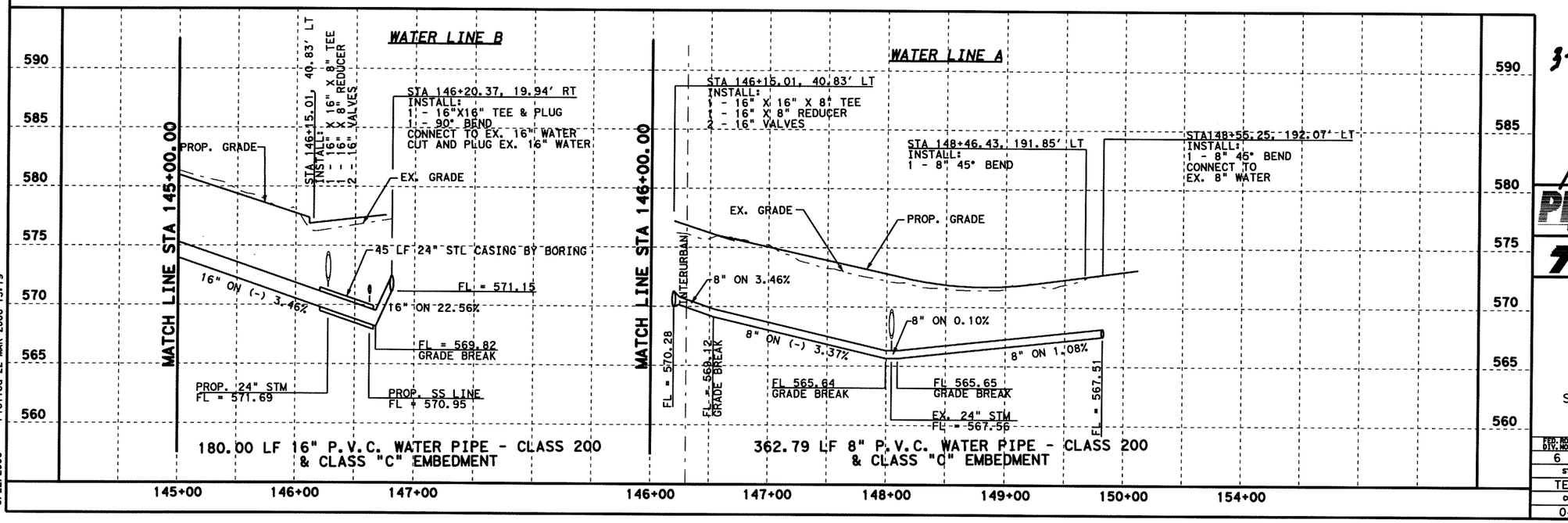
145+00

150+00

155+00

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL



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3-22-06

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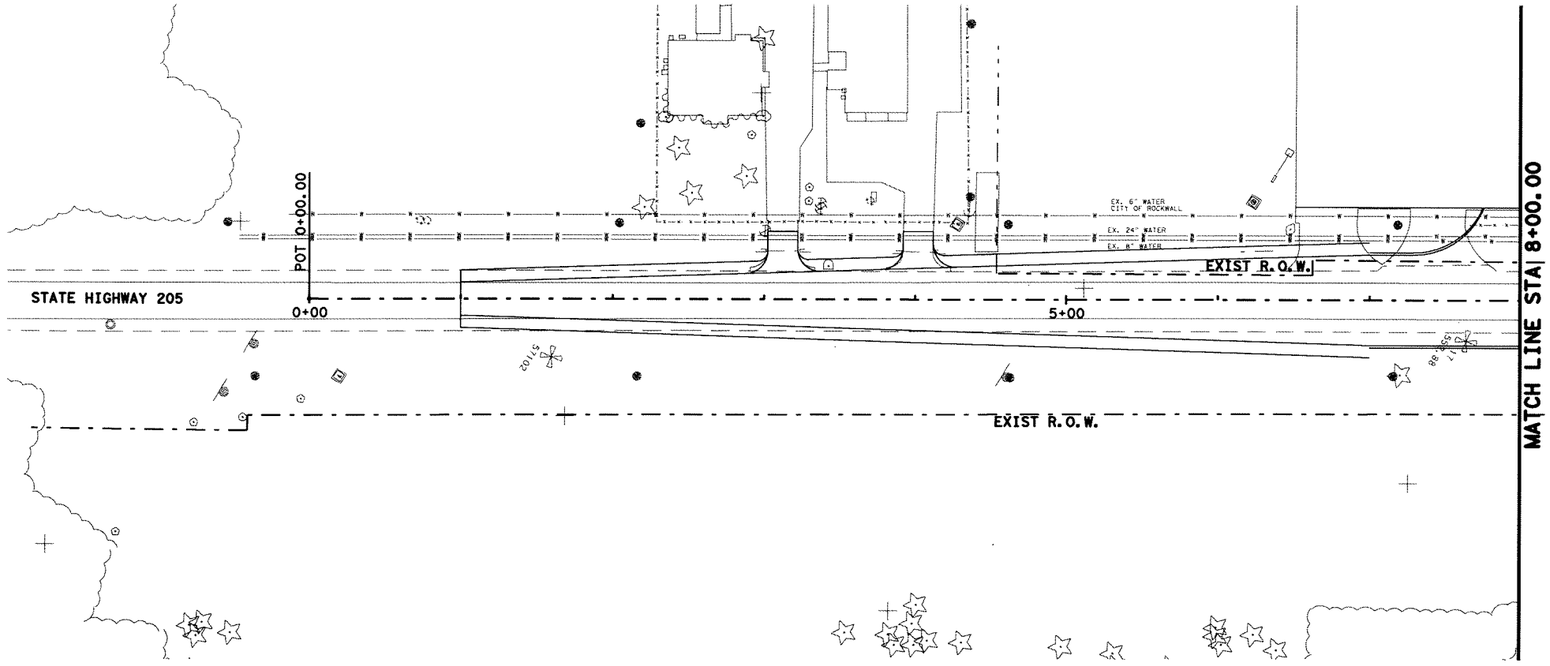
WATER LINE
SB COUPLET
PLAN & PROFILE
STA 145+00 TO END OF PROJECT

SHEET 19 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	528
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

555
550
545
540
535
530
525

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

3-27-06

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SANITARY SEWER

PLAN & PROFILE
STA 0+00 TO 8+00

SHEET 1 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	529
CONT.	SECT.	JOB	
0451	01	032, ETC	

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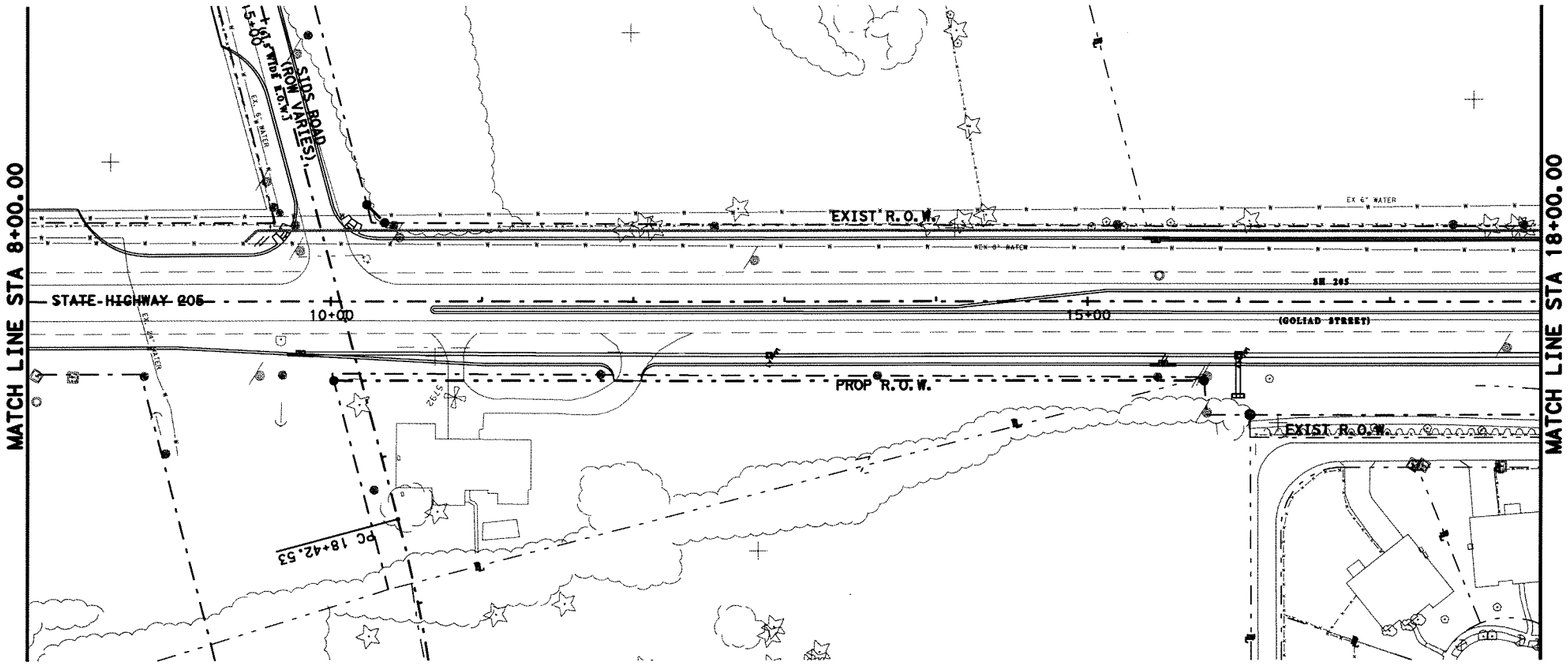

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SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

555 550 545 540 535 530 525

8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00

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Plotted 22-MAR-2006 15:44
3/22/2006

3-22-06

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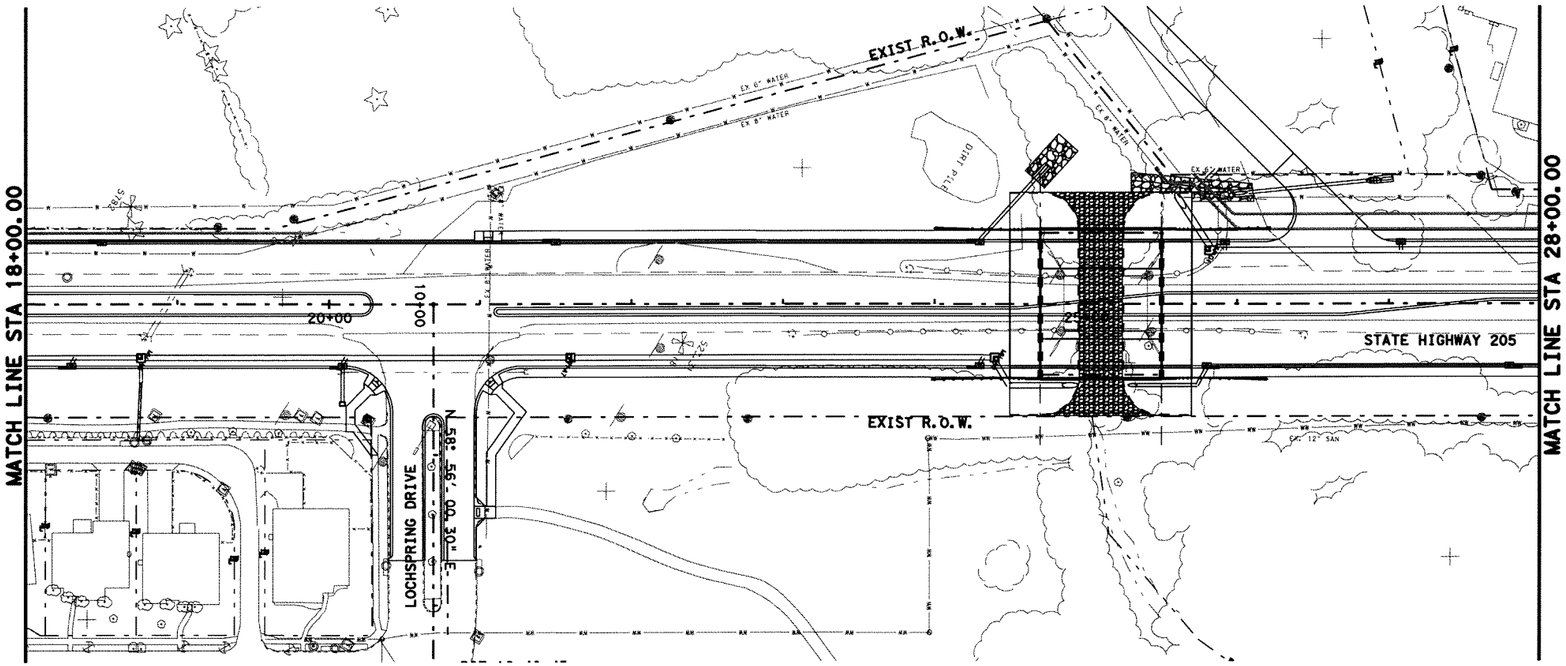
SANITARY SEWER

PLAN & PROFILE
STA 8+00 TO 18+00

SHEET 2 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	530
CONT.	SECT.	JOB	
0451	01	032, ETC	



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

	18+00	19+00	20+00	21+00	22+00	23+00	24+00	25+00	26+00	27+00	28+00
540											
535											
530											
525											
520											
515											
510											

3-22-06

STATE OF TEXAS
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SANITARY SEWER

PLAN & PROFILE
STA 18+00 TO 28+00

SHEET 3 OF 19

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	531
CONT.	SECT.	JOB	
0451	01	032, ETC	

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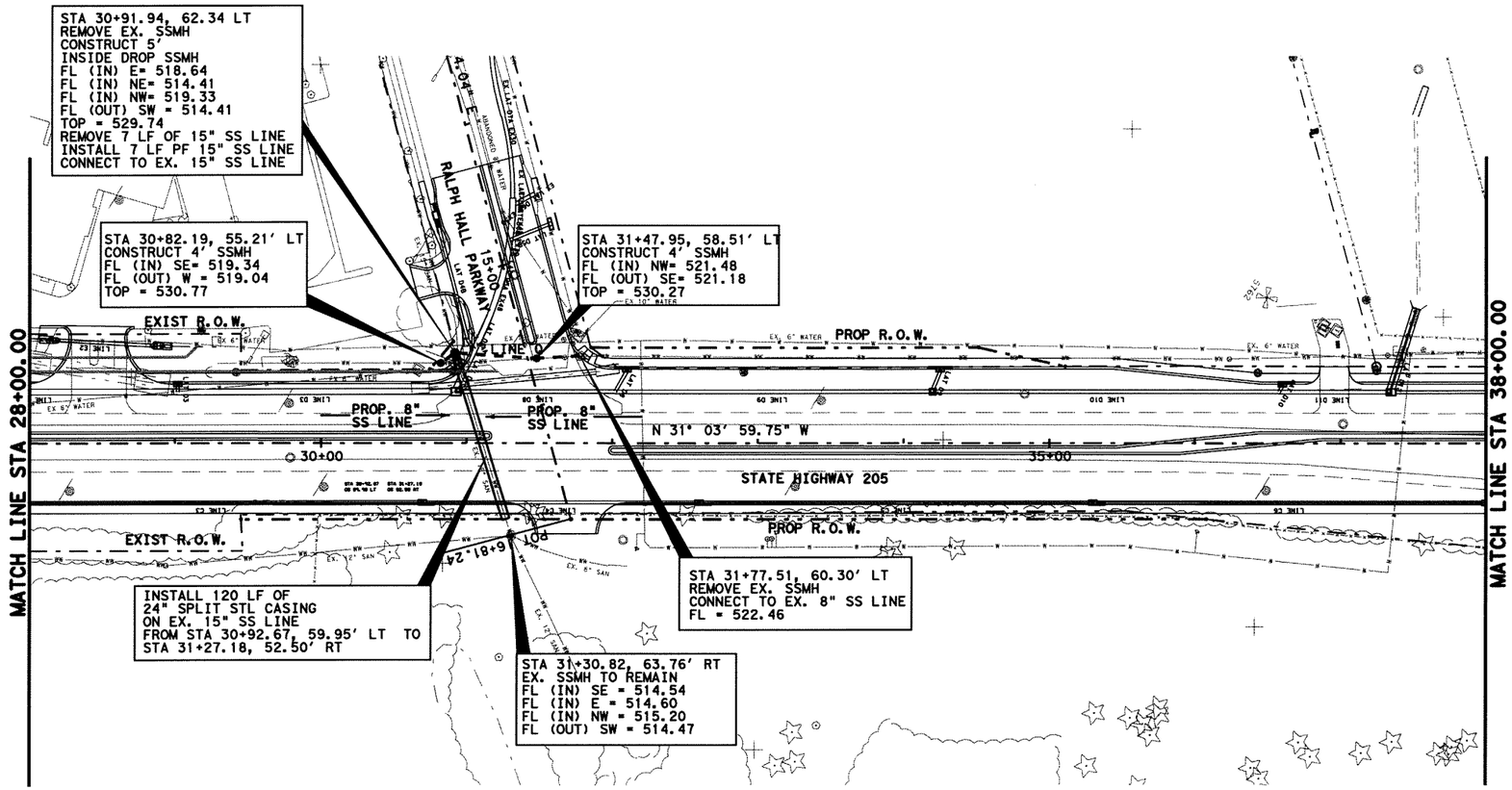
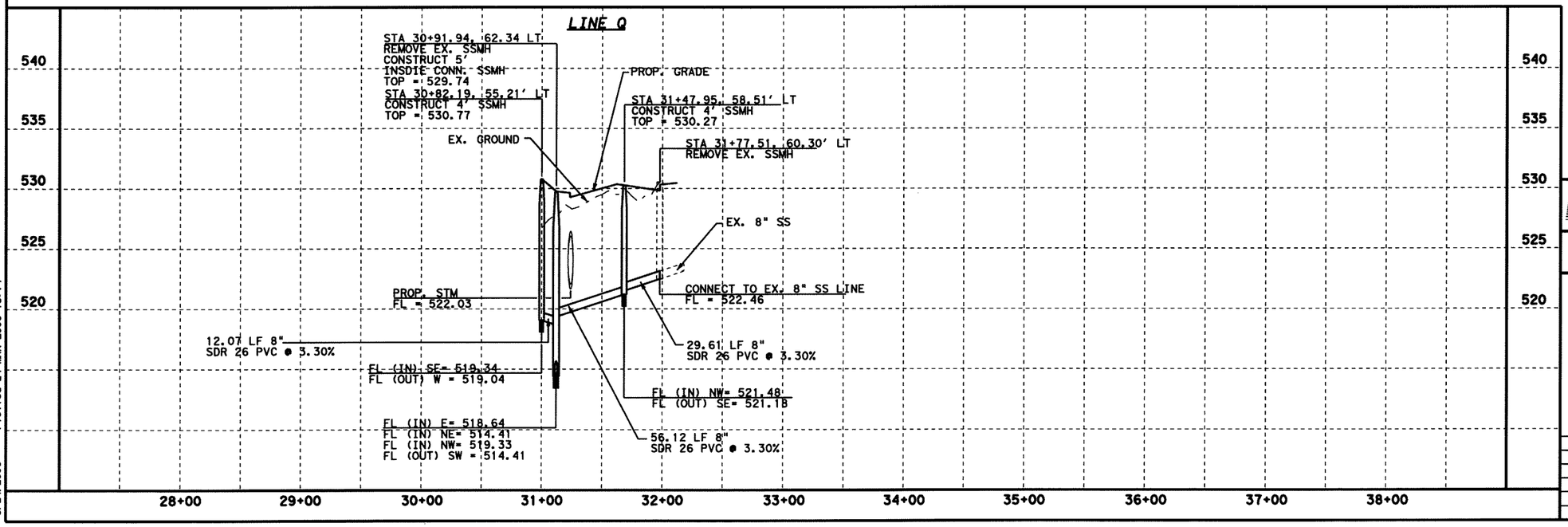


0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

NOTE:

EX. 15" SS LINE ALSO TO BE TV INSPECTED AFTER SPLIT CASING IS INSTALLED.



3-24-06

STATE OF TEXAS
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PLAN & PROFILE
STA 28+00 TO 38+00

SHEET 4 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	532
CONT.	SECT.	JOB	
0451	01	032, ETC	

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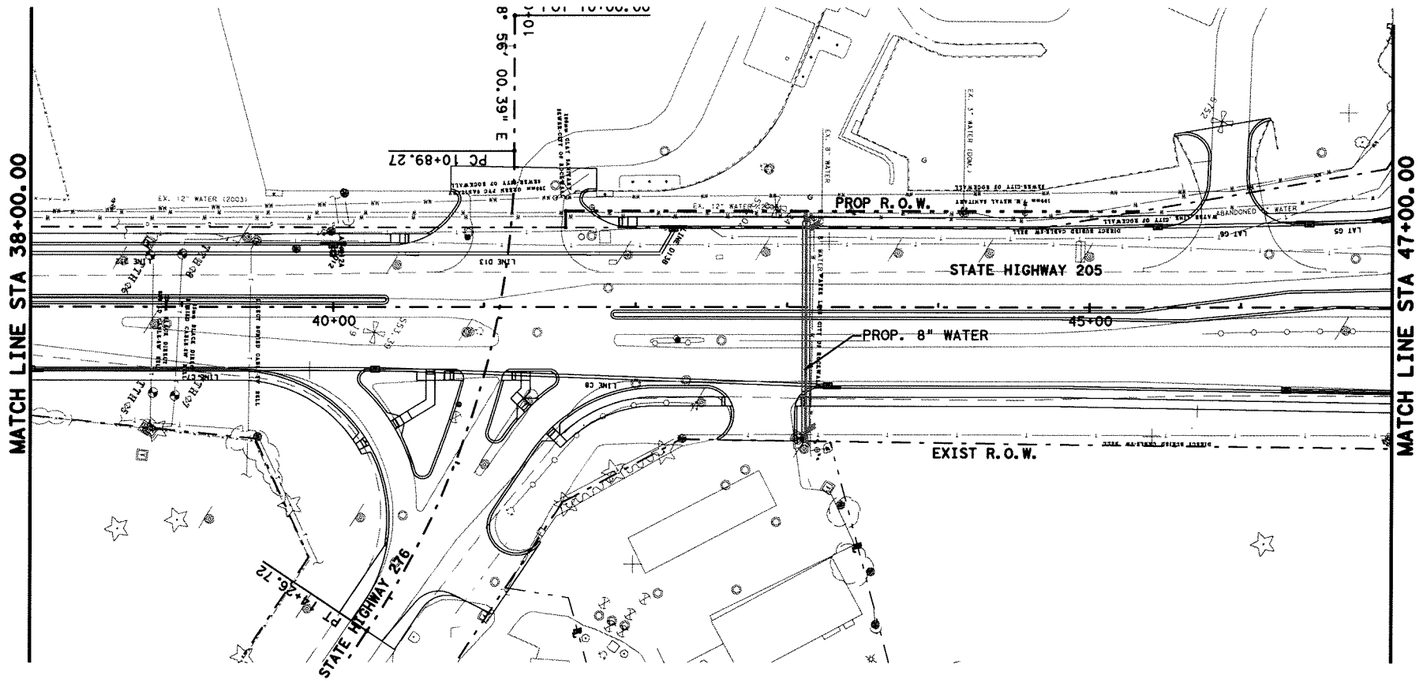

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

560 555 550 545 540 535 530

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00

3-22-06

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PLAN & PROFILE
STA 38+00 TO 47+00

SHEET 5 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	533
CONT.	SECT.	JOB	
0451	01	032, ETC	

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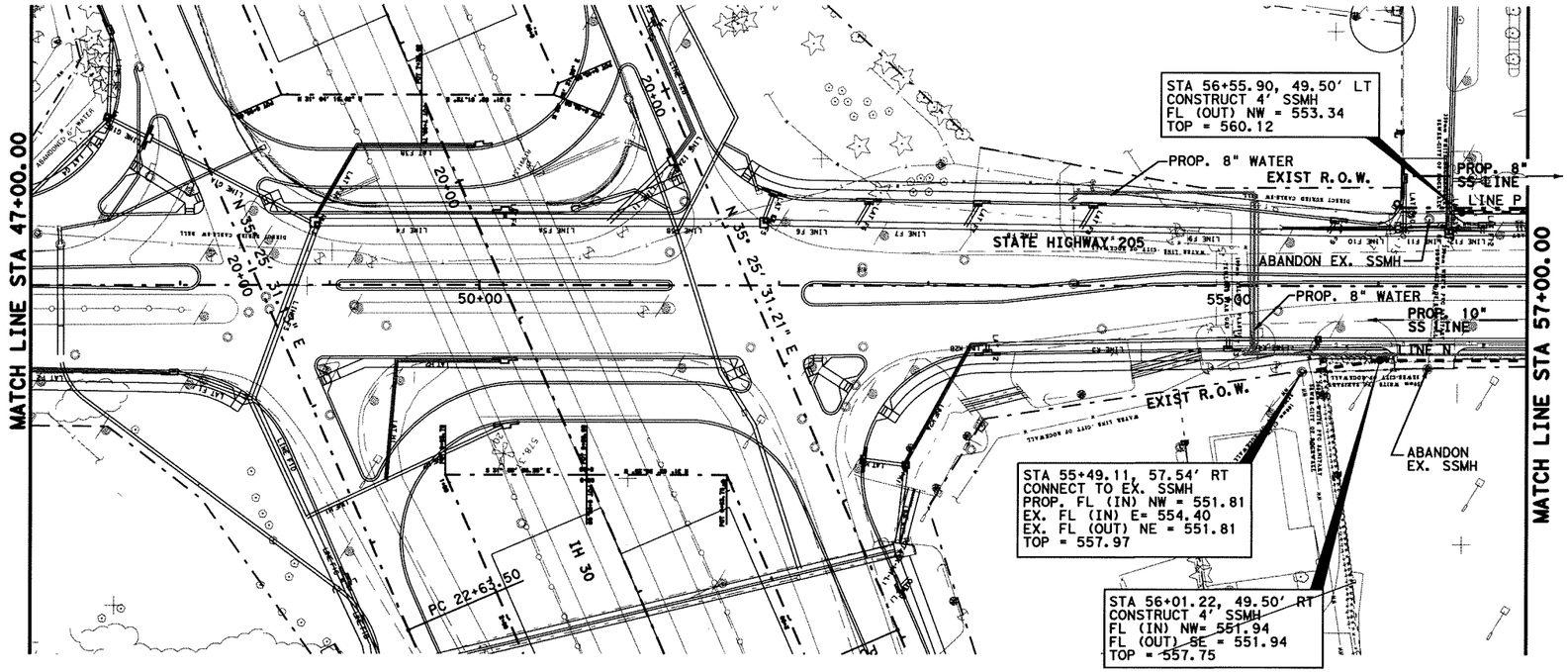

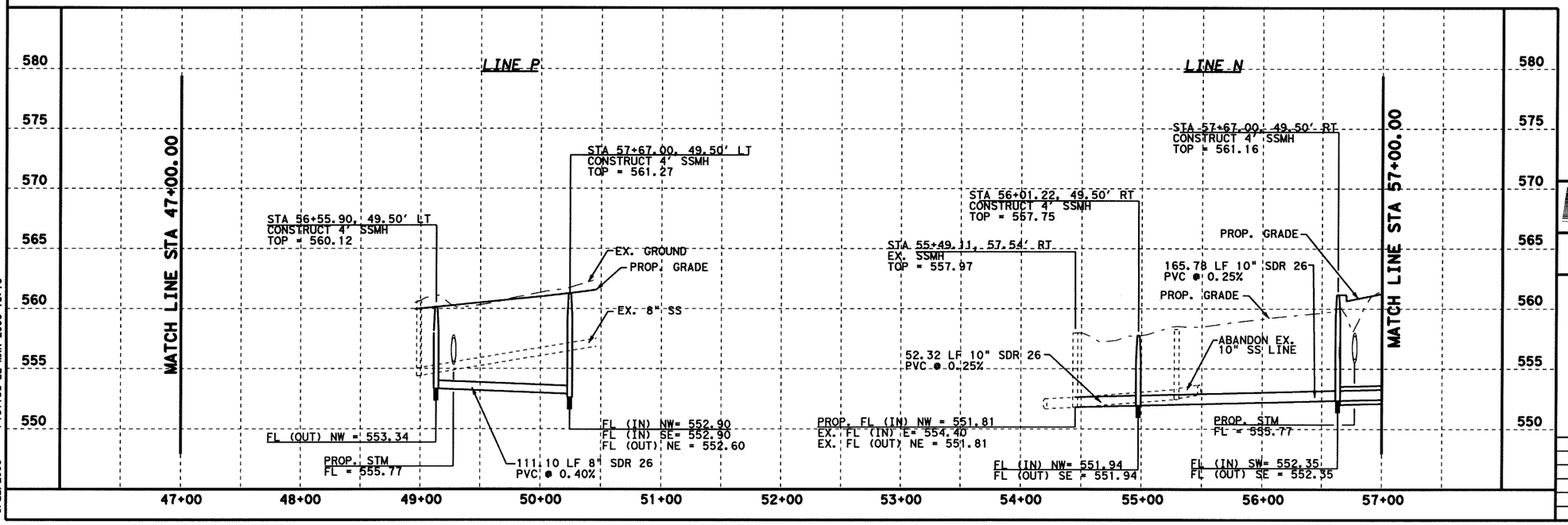

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3/22/2006

3-22-06
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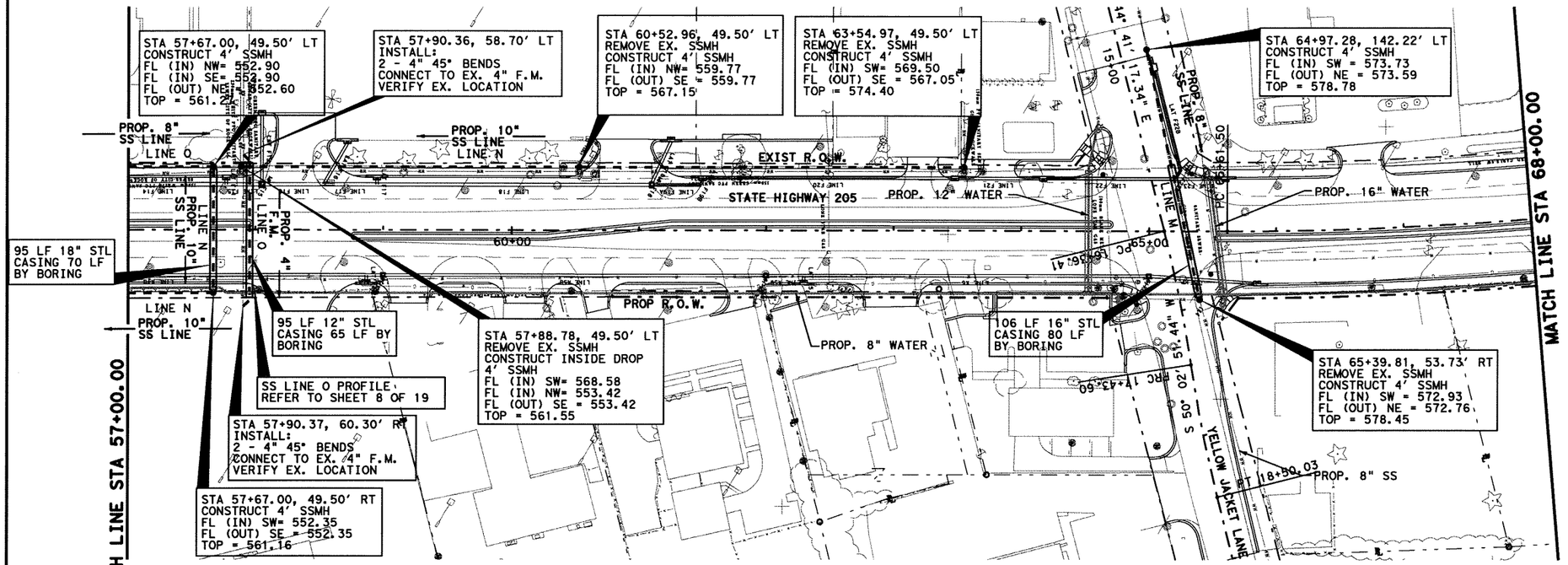
SANITARY SEWER

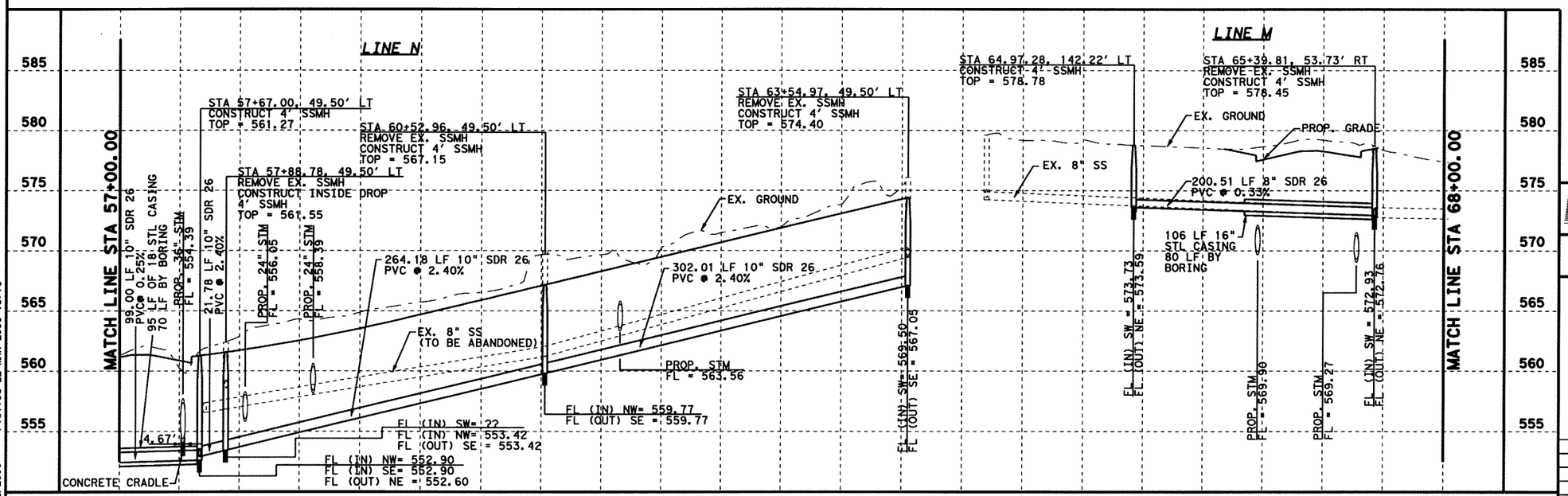
PLAN & PROFILE
STA 47+00 TO 57+00

SHEET 6 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	534
CONT.	SECT.	JOB	
0451	01	032, ETC	





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Plotted 22-MAR-2006 15:16
3/22/2006

3-22-06

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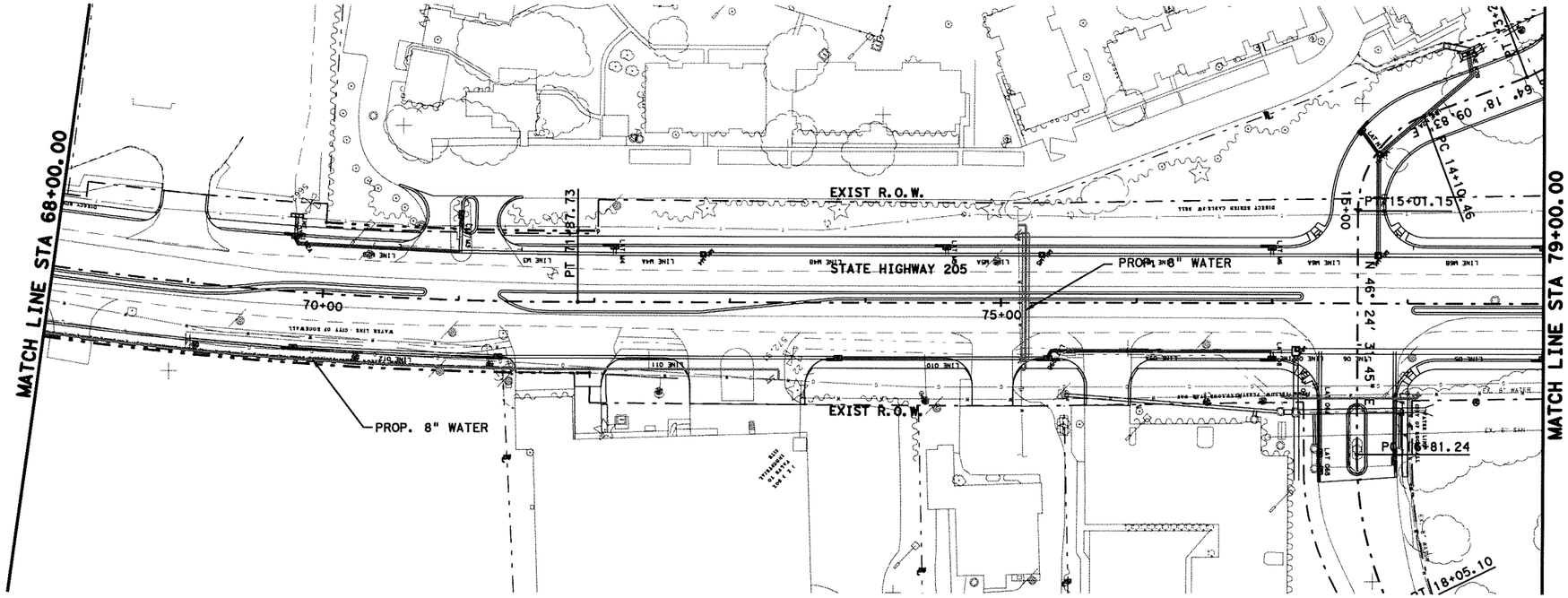
SANITARY SEWER

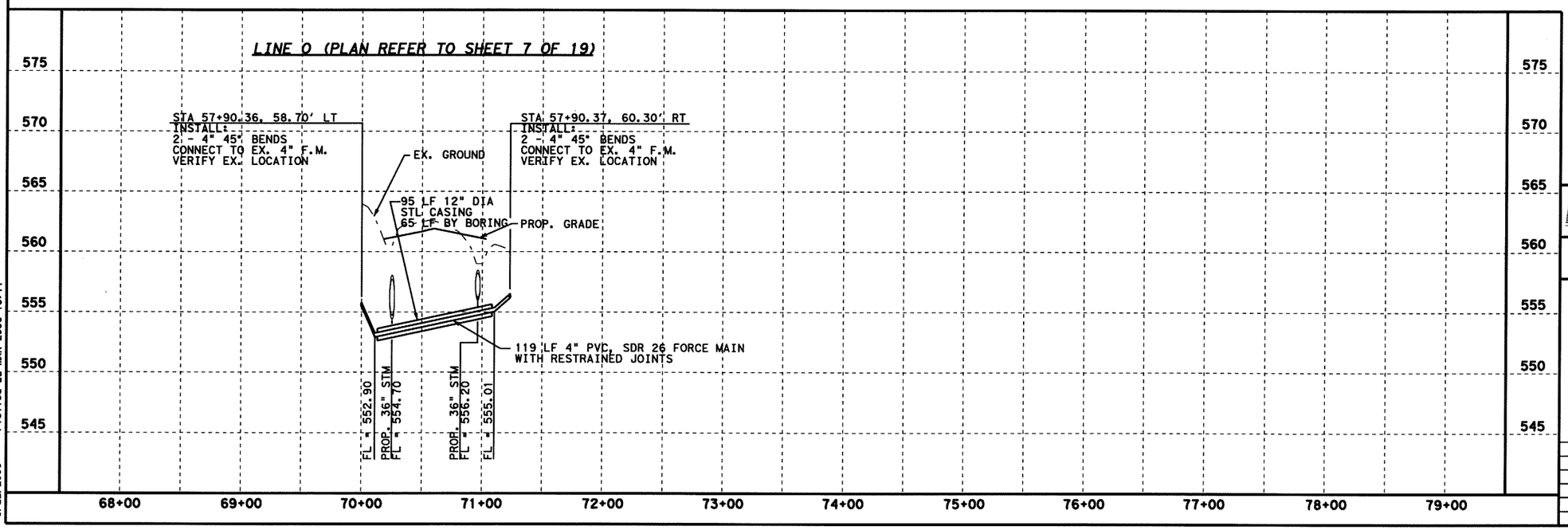
PLAN & PROFILE
STA 57+00 TO 68+00

SHEET 7 OF 19

FED. RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	535
CONT.	SECT.	JOB	
0451	01	032, ETC	





3-22-06

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SANITARY SEWER

PLAN & PROFILE
STA 68+00 TO 79+00

SHEET 8 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	536
CONT.	SECT.	JOB	
0451	01	032, ETC	

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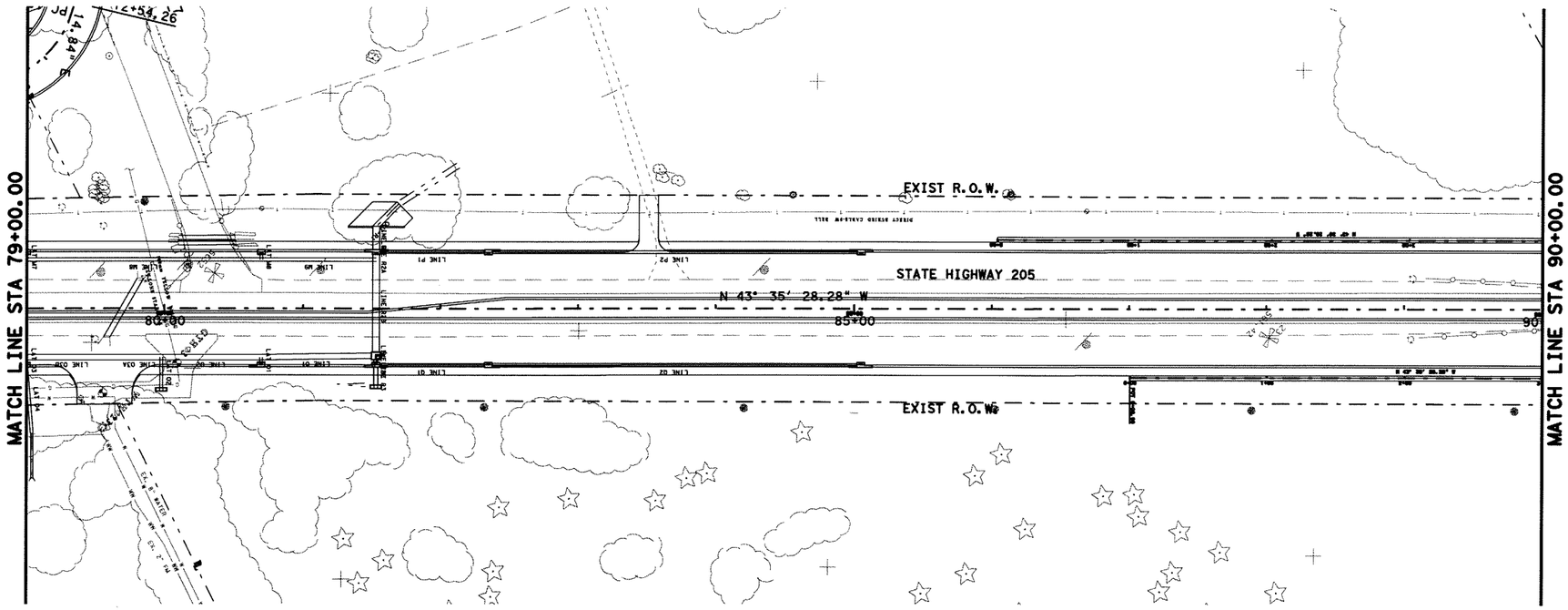
3/22/2006



0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

3-22-06

STATE OF TEXAS
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SANITARY SEWER

PLAN & PROFILE
STA 79+00 TO 90+00

SHEET 9 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	537
CONT.	SECT.	JOB	
0451	01	032, ETC	

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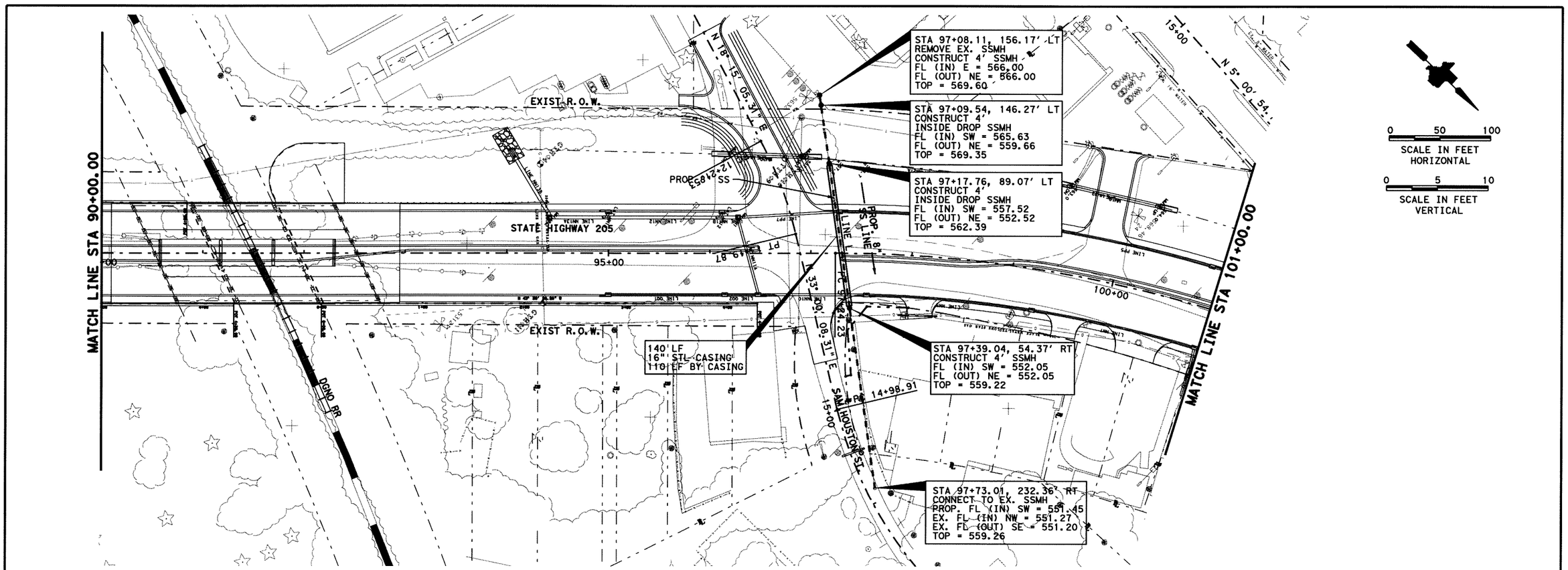

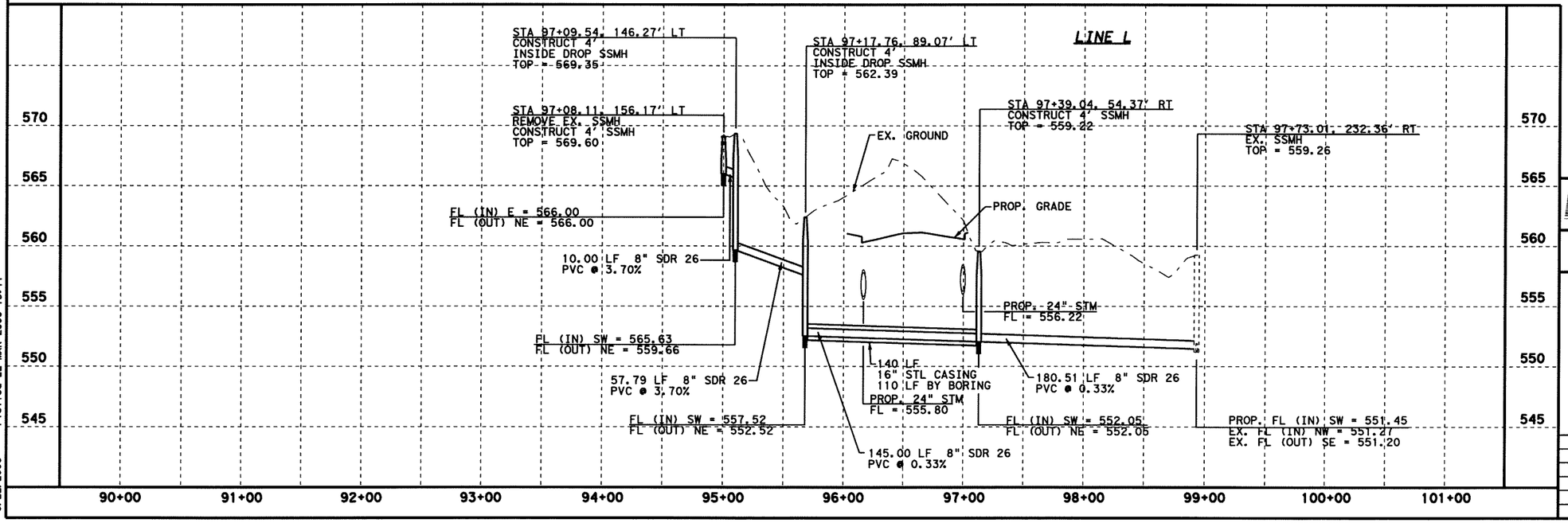

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3-22-06

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SANITARY SEWER

PLAN & PROFILE
STA 90+00 TO 101+00

SHEET 10 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	538
CONT.	SECT.	JOB	
0451	01	032, ETC	

STA 102+62.65, 143.40' LT
CONSTRUCT 4'
INSIDE DROP SSMH
FL (IN) S= 568.83
FL (OUT) N = 568.53
TOP = 576.22
VERIFY EX. 6" SS LINE LOCATION

STA 104+41.52, 71.46' LT
REMOVE EX. SSMH
CONSTRUCT 4'
INSIDE DROP SSMH
FL (IN) S= 567.85
FL (IN) W= 575.27
FL (IN) N= 574.93
FL (OUT) E = 567.55
TOP = 576.91

STA 107+13.02, 264.05'
REMOVE EX. SSMH
CONSTRUCT 4' SSMH
FL (IN) W = 579.71
FL (OUT) N = 579.68
TOP = 588.01

STA 107+38.01, 264.06' LT
REMOVE EX. SSMH
CONSTRUCT 4' SSMH
FL (IN) S = 579.24
FL (IN) N = 580.29
FL (OUT) E = 578.94
TOP = 587.99

LINE I PROFILE
REFER TO PAGE
11A OF 19

157.00 LF
16" STL CASING
140 LF BY BORING

120.00 LF
16" STL CASING
70 LF BY BORING

STA 107+87.42, 49.50' LT
CONSTRUCT CLEAN OUT
FL = 578.57
TOP = 583.14

STA 107+87.42, 49.50' RT
CONSTRUCT CLEAN OUT
FL = 577.57
TOP = 583.14

STA 107+36.93, 70.41' RT
REMOVE EX. SSMH
CONSTRUCT 4' SSMH
FL (IN) W = 573.08
FL (OUT) E = 573.08
TOP = 581.19

LINE E PROFILE
REFER TO PAGE
11A OF 19

STA 104+03.26, 86.60' RT
REMOVE EX. SSMH
CONSTRUCT 4' SSMH
FL (IN) W = 567.01
FL (OUT) SE= 566.71
TOP = 574.84

50 LF
16" STL CASING
BY BORING

STA 103+45.09, 96.24' RT
CONSTRUCT 4' SSMH
FL (IN) SE = 566.53
FL (IN) NW = 566.53
FL (OUT) NE = 566.23
TOP = 573.25

STA 103+41.44, 236.69' RT
REMOVE EX. SSMH
CONSTRUCT 4' SSMH
FL (IN) SW = 564.14
FL (OUT) E= 564.05
TOP = 572.28

STA 103+32.61, 97.97' RT
CONSTRUCT 4' SSMH
FL EX. 6" (IN) SE = UNKNOWN
(VERIFY EX. ELEVATION
AND LOCATION)
FL (OUT) NW = 566.57
TOP = 573.23
REFER TO SHEET 11A OF 19
FOR PROFILE

EX. SSMH TO BE ABANDONED

MATCH LINE STA 101+00.00

MATCH LINE STA 110+00.00

GLENN AVENUE

BORN AVENUE

STATE HIGHWAY 205

PROP. 8" SS LINE

PROP. 8" WATER

EXIST. R.O.W.

LINE J

LINE D

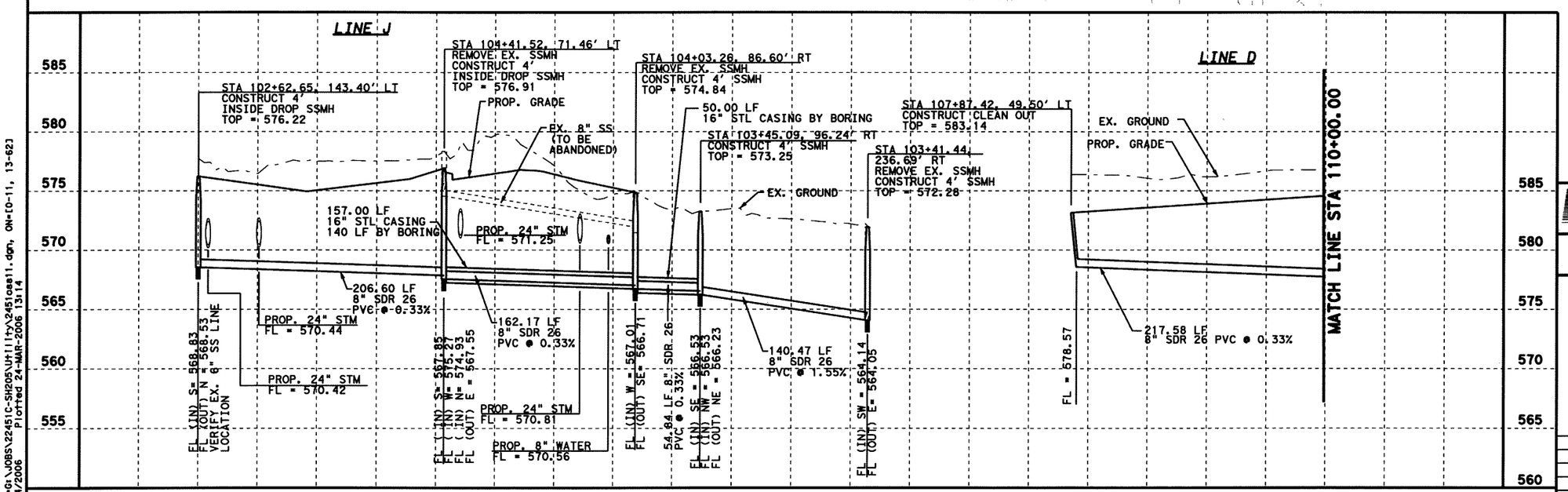
LINE E

NOTE:

WASTEWATER LINE E, I & J
ARE LOCATED ON
SHEET 11A OF 19

0 50 100
SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL



3-24-06

STATE OF TEXAS
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SH 205

SANITARY SEWER

PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 11 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	539
CONT.	SECT.	JOB	
0451	01	032, ETC	

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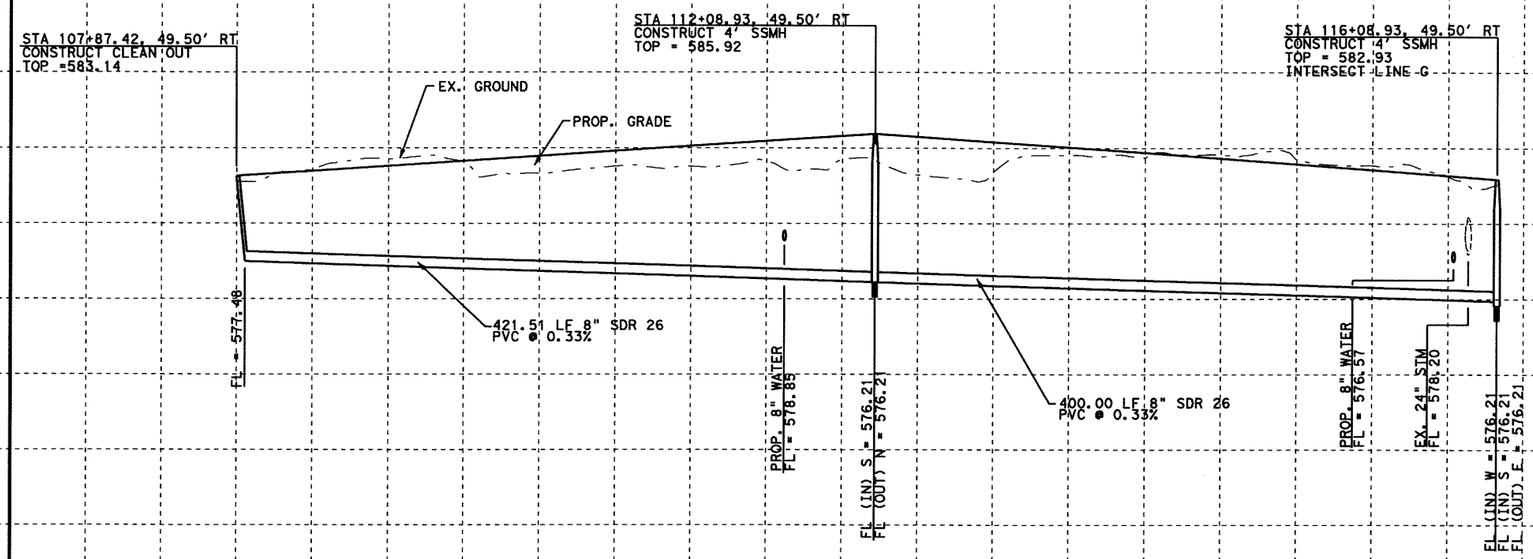

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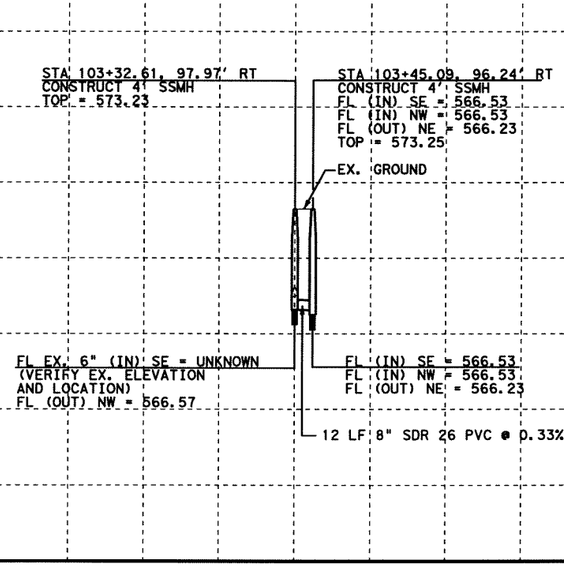

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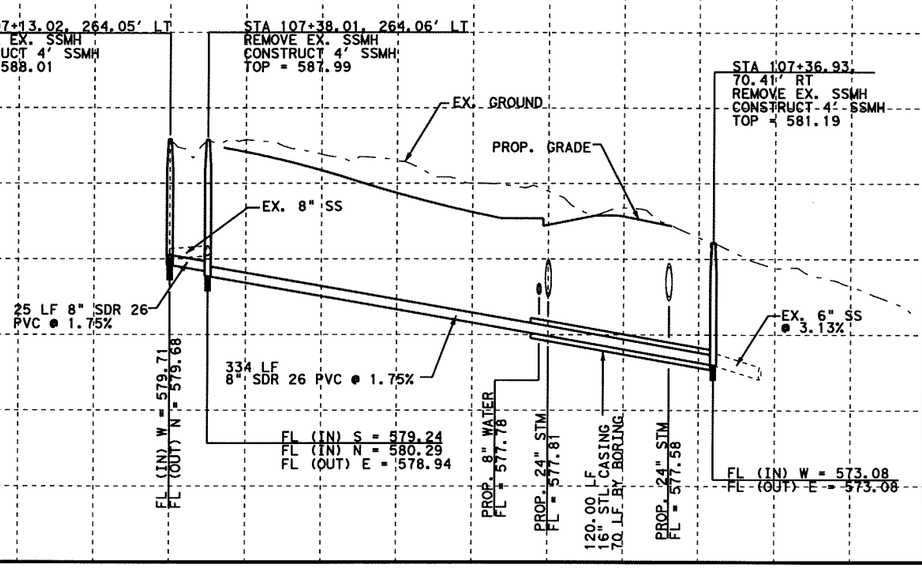

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HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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PLAN & PROFILE
STA 101+00 TO 110+00

SHEET 11A OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	540
CONT.	SECT.	JOB	
0451	01	032, ETC	

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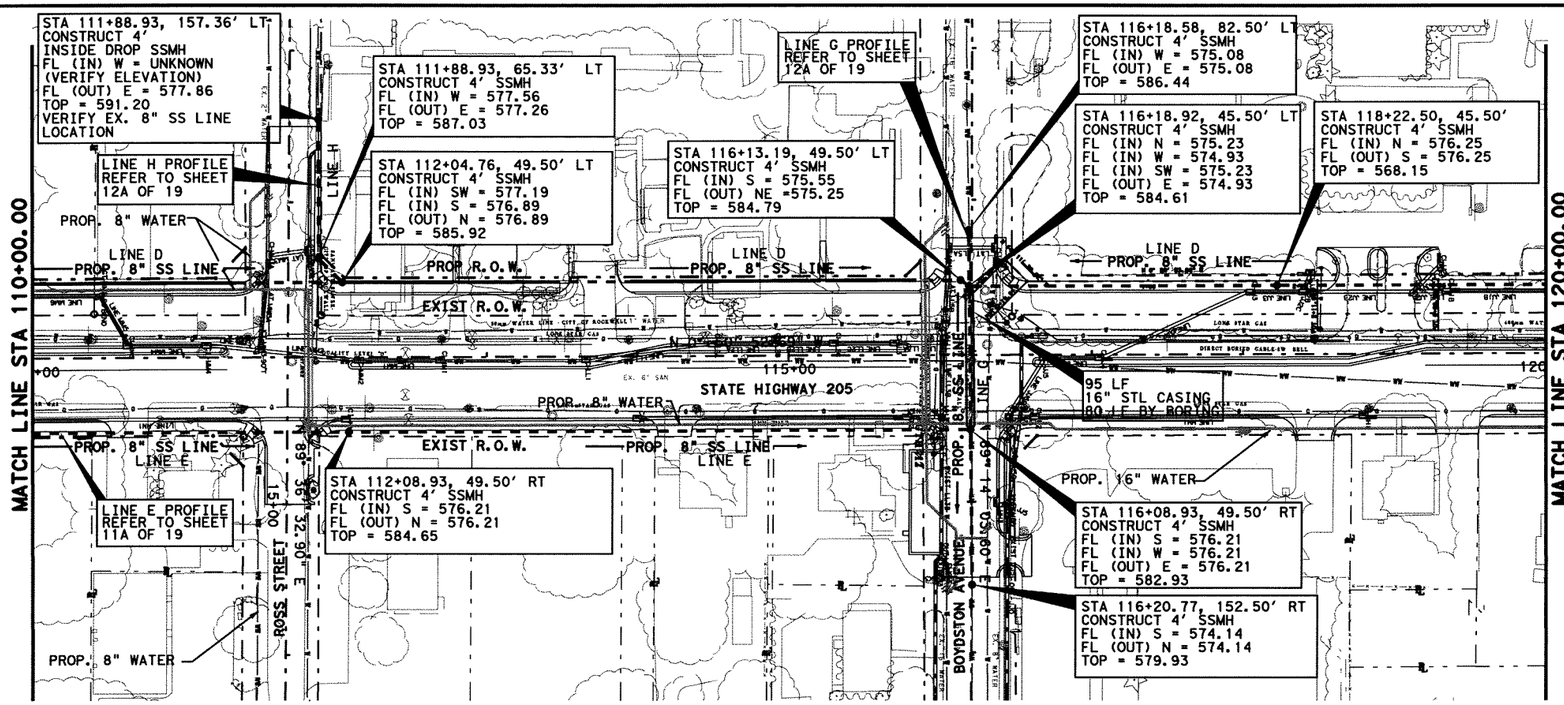

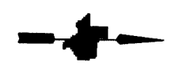

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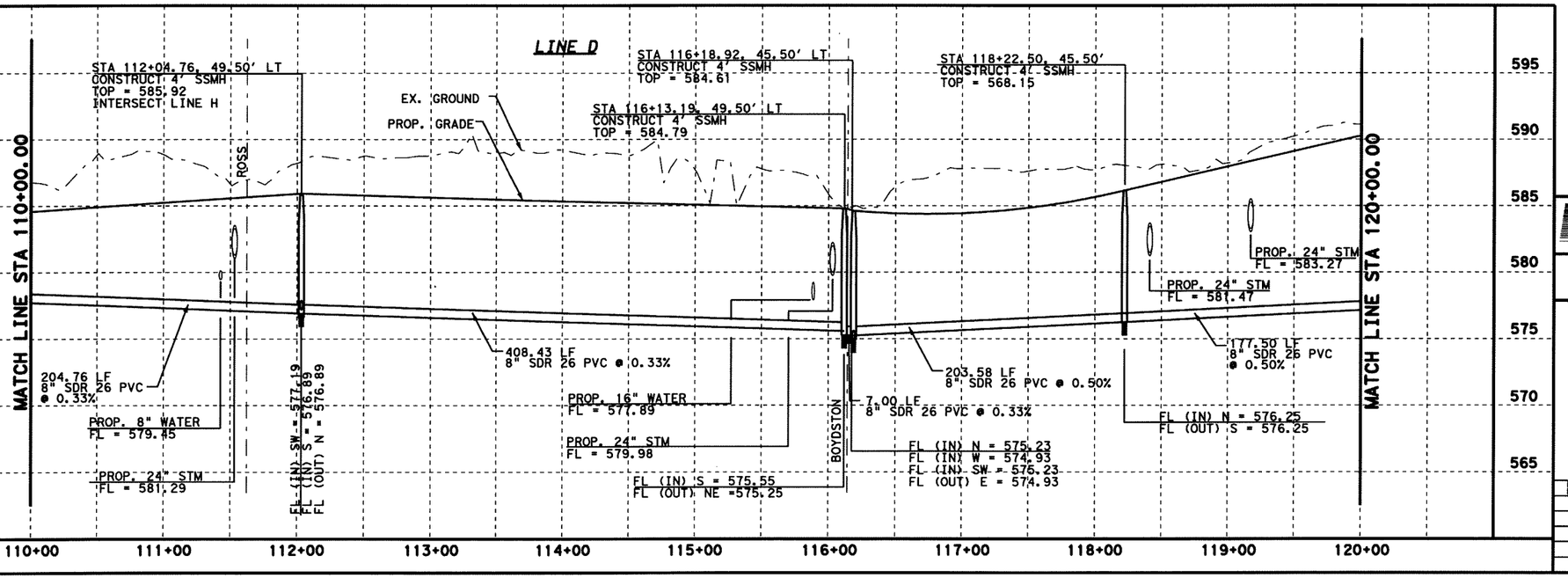

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3/22/2006

3-22-06
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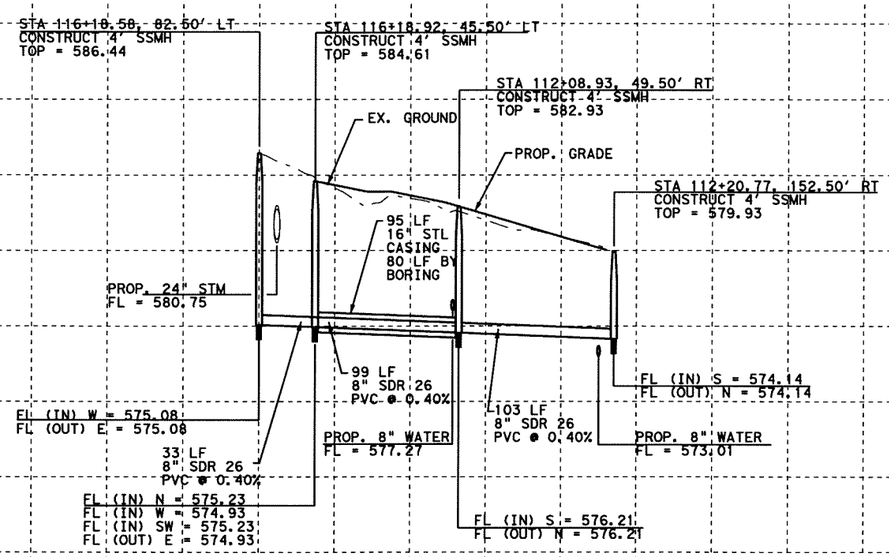
PLAN & PROFILE
STA 110+00 TO 120+00

SHEET 12 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	541
CONT.	SECT.	JOB	
0451	01	032, ETC	

LINE G (PLAN ON SHEET 12 OF 19)



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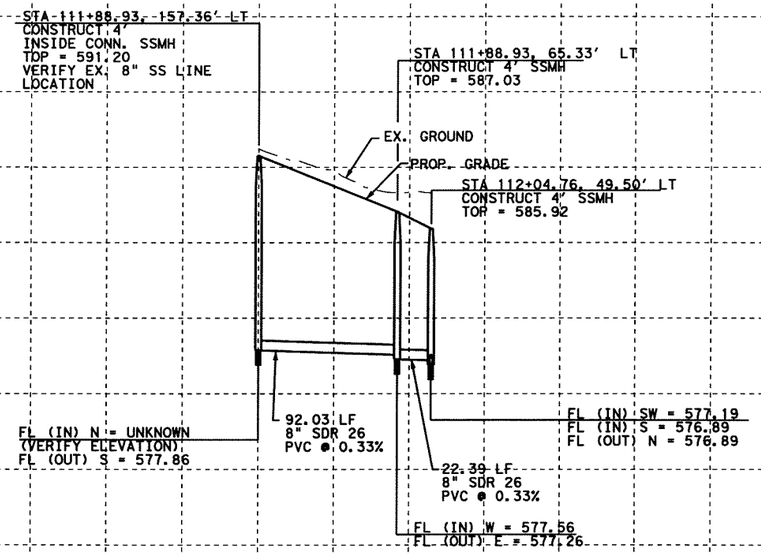

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HORIZONTAL

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SCALE IN FEET
VERTICAL

3-22-06

STATE OF TEXAS
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SHEET 12A OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	542
CONT.	SECT.	JOB	
0451	01	032, ETC	

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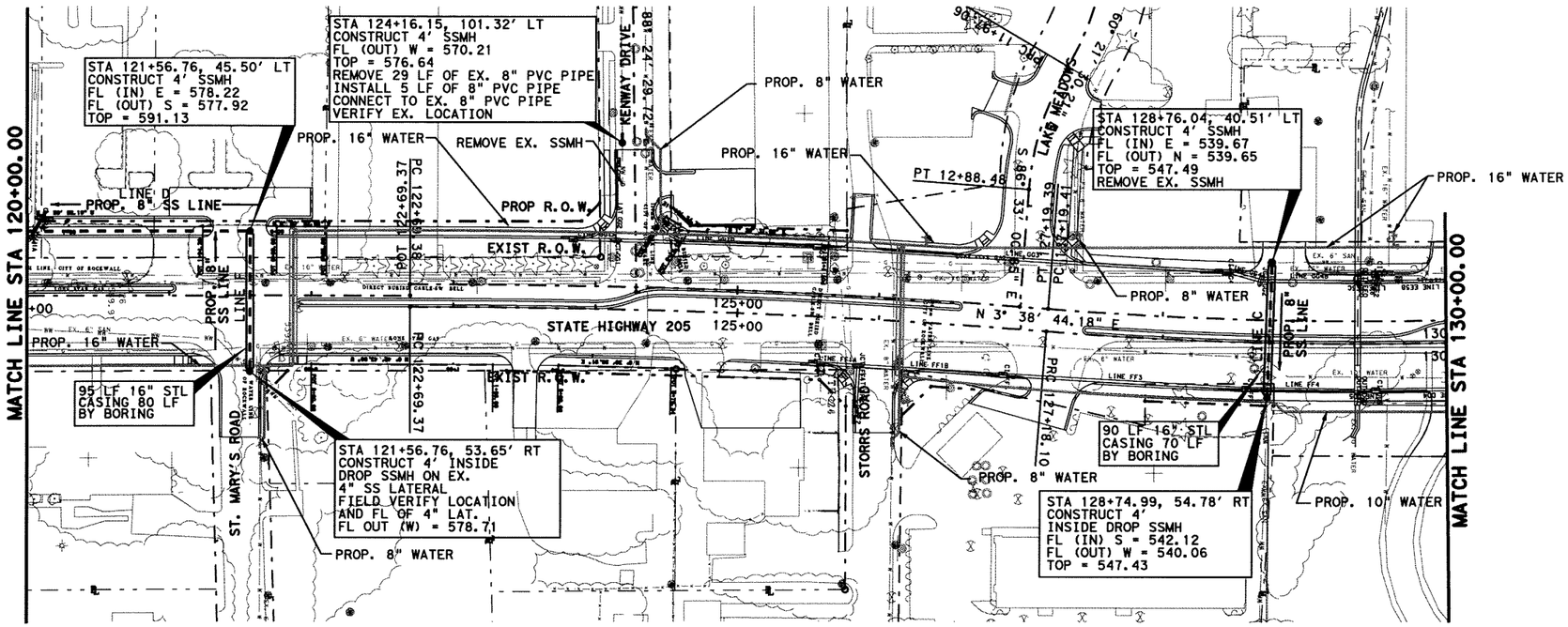

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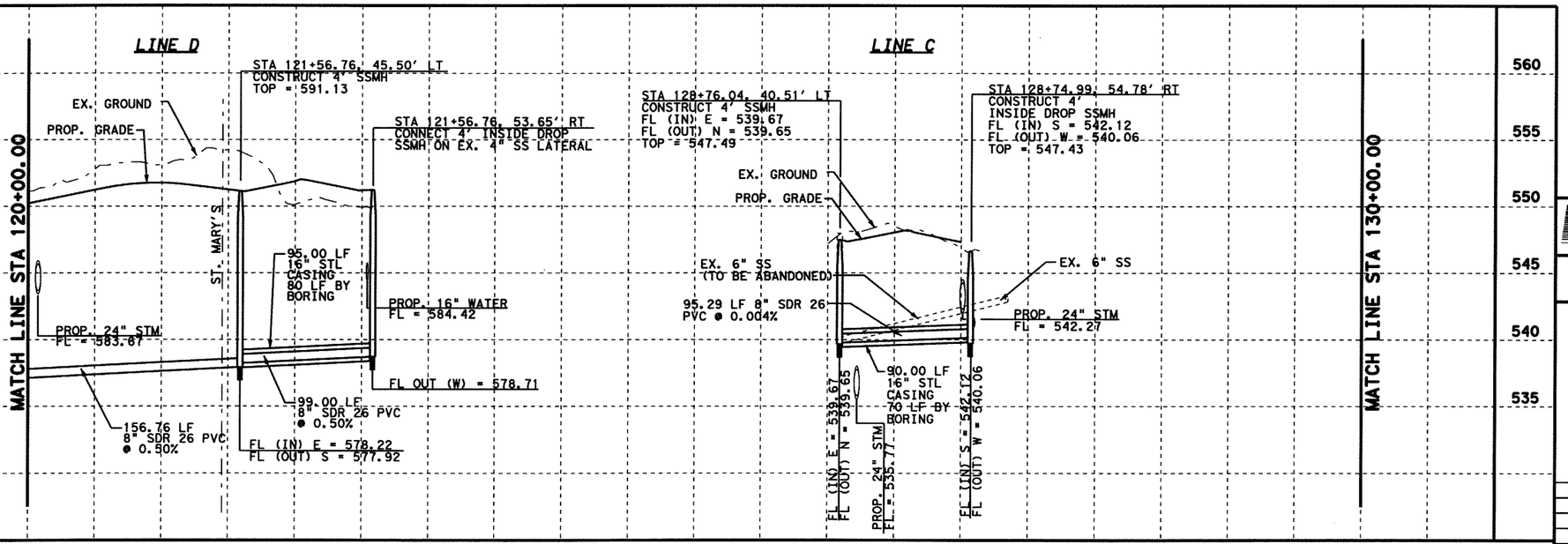

3-22-06

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PLAN & PROFILE
STA 120+00 TO 130+00

SHEET 13 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	543
CONT.	SECT.	JOB	
0451	01	032, ETC	

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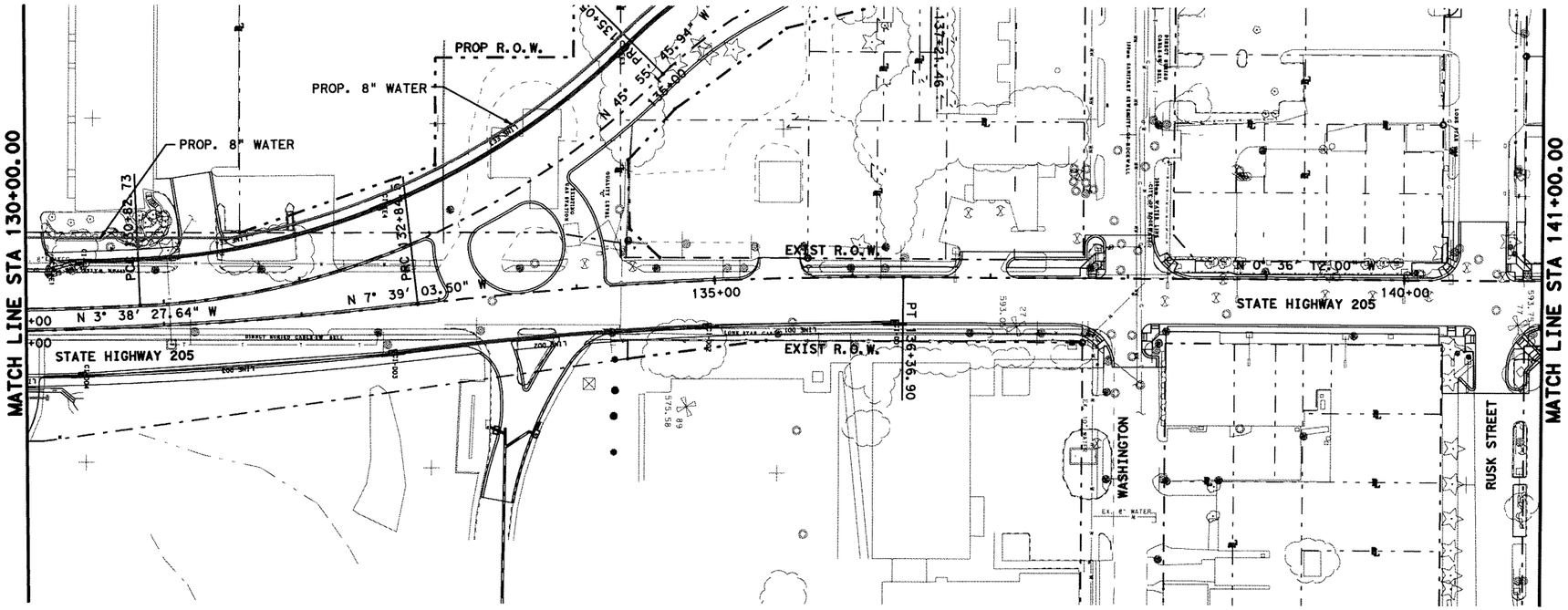

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130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00

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STA 130+00 TO 141+00

SHEET 14 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	544
CONT.	SECT.	JOB	
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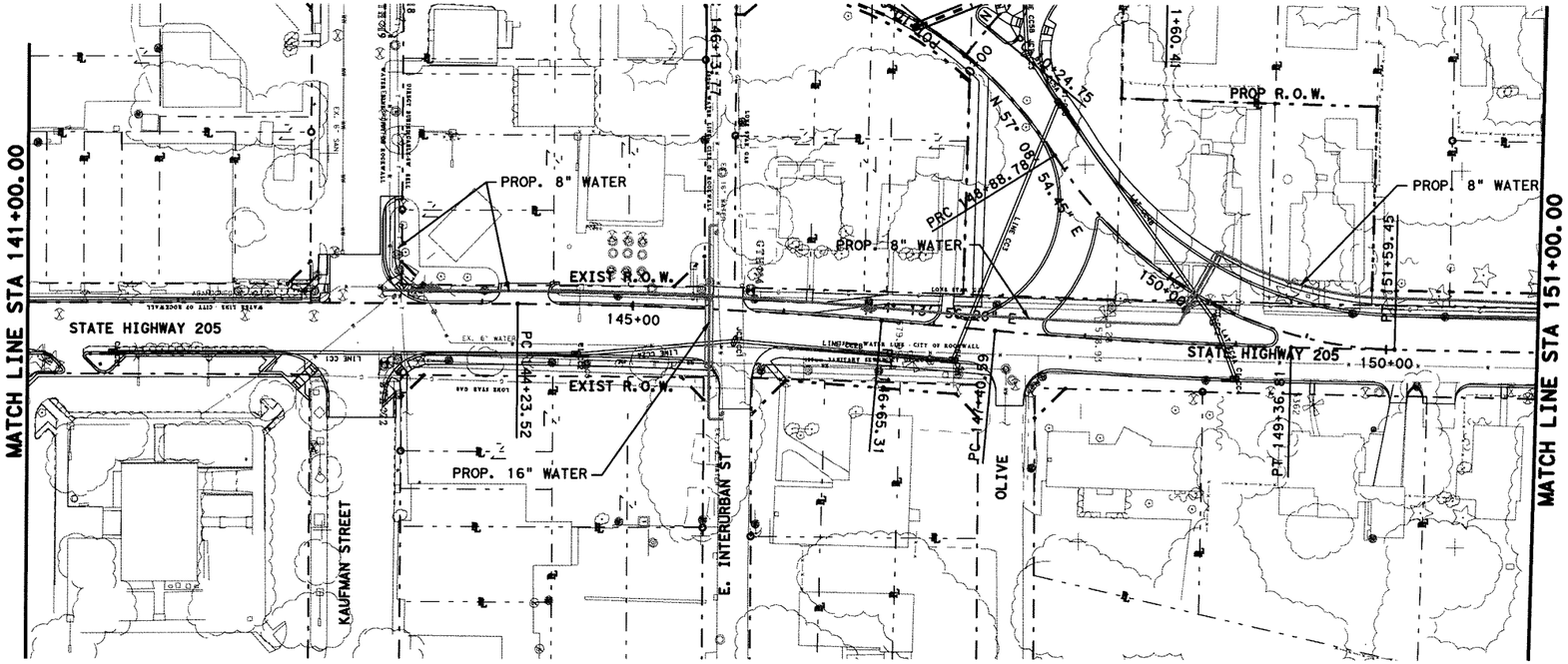

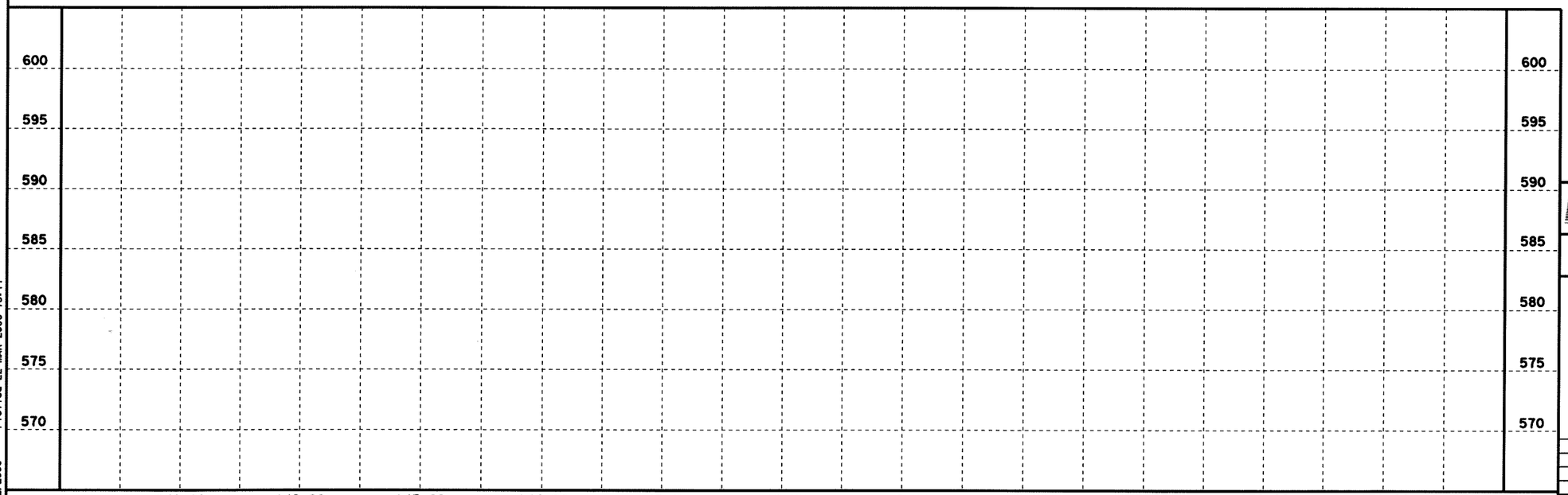

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HORIZONTAL

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SCALE IN FEET
VERTICAL

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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PLAN & PROFILE
STA 141+00 TO 151+00

SHEET 15 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	545
CONT.	SECT.	JOB	
0451	01	032, ETC	

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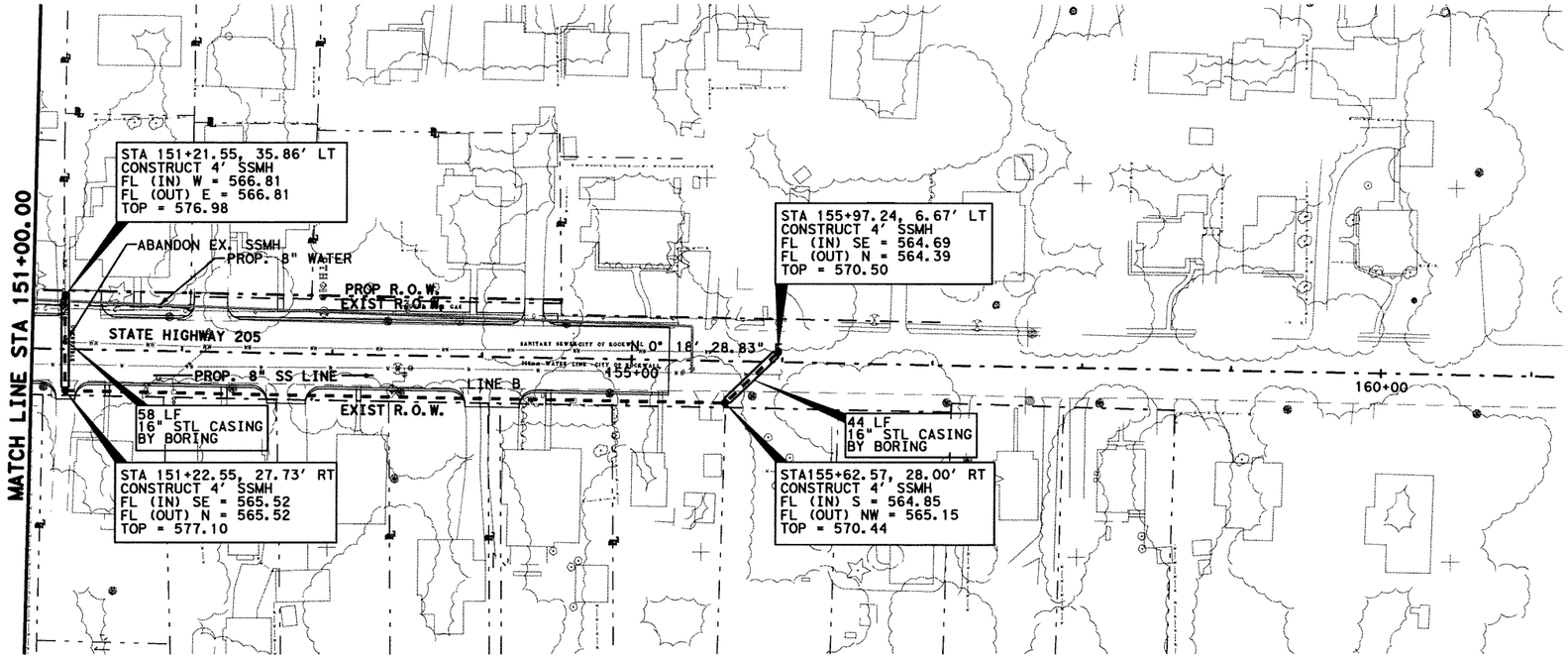

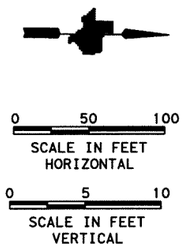

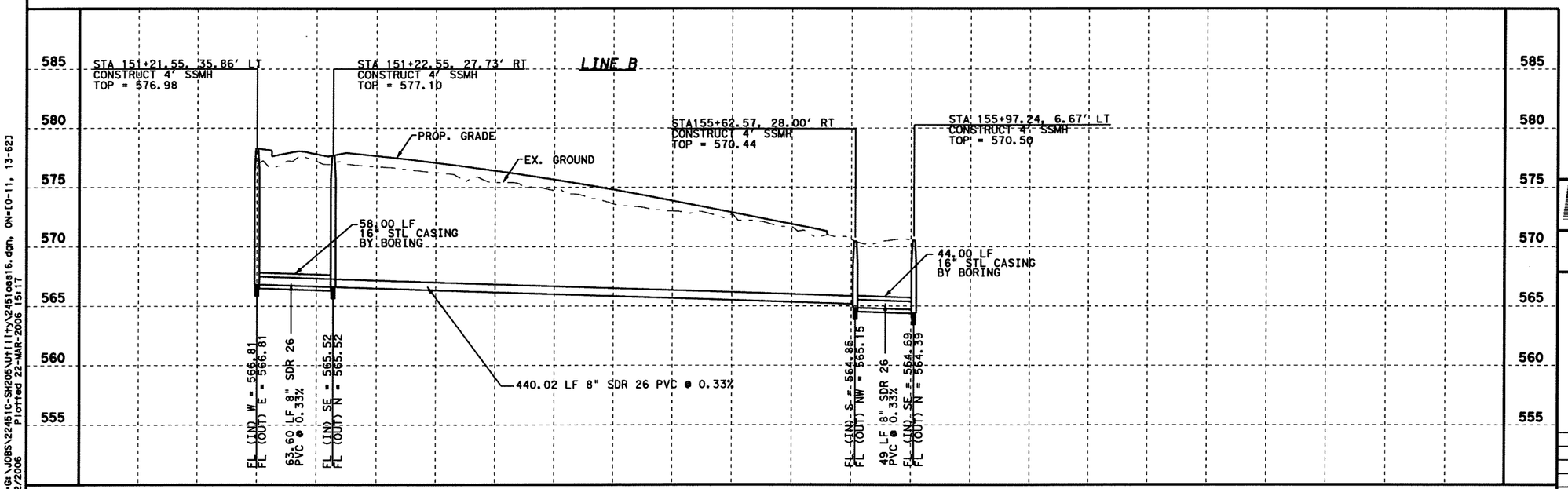

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3-22-06

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NB COUPLET
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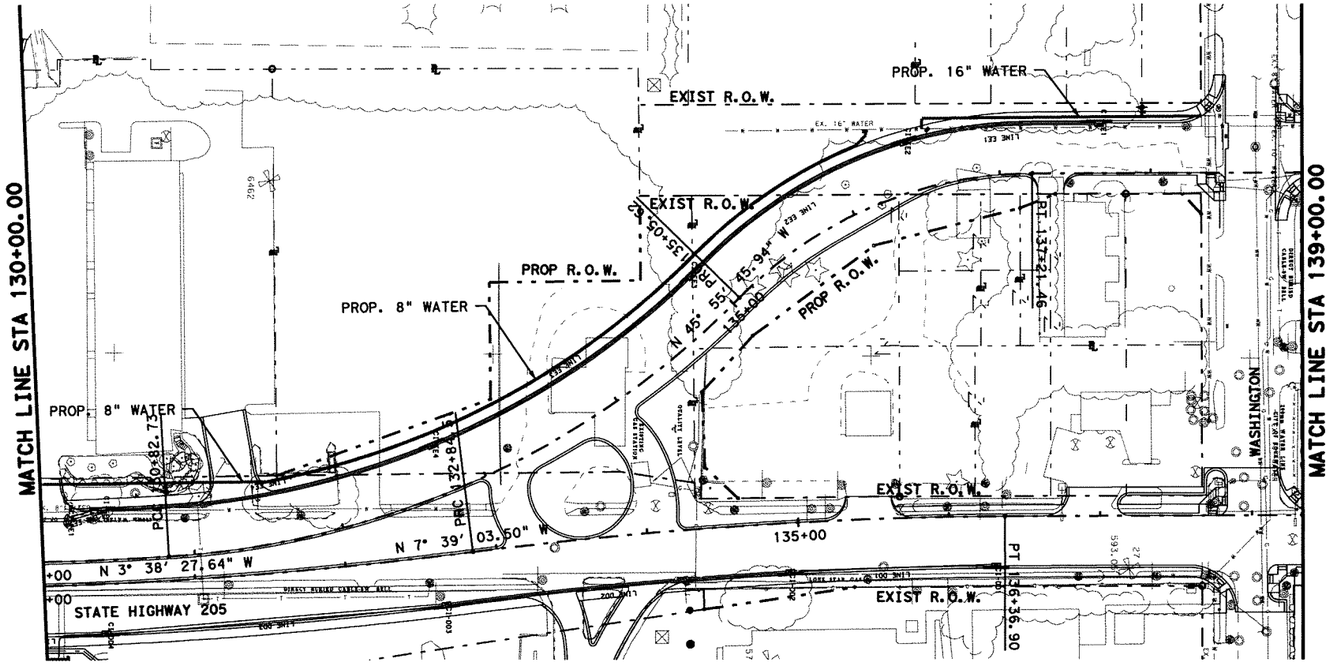
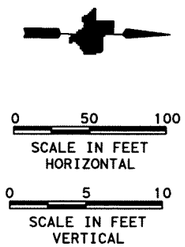
STA 151+00 TO END OF PROJECT

SHEET 16 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	546
CONT.	SECT.	JOB	
0451	01	032, ETC	





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130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
37520
REGISTERED
PROFESSIONAL ENGINEER

Richard T. Grice

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SANITARY SEWER

SB COUPLET
PLAN & PROFILE
STA 130+00 TO 139+00

SHEET 17 OF 19

FED. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	547
CONT.	SECT.	JOB	
0451	01	032, ETC	

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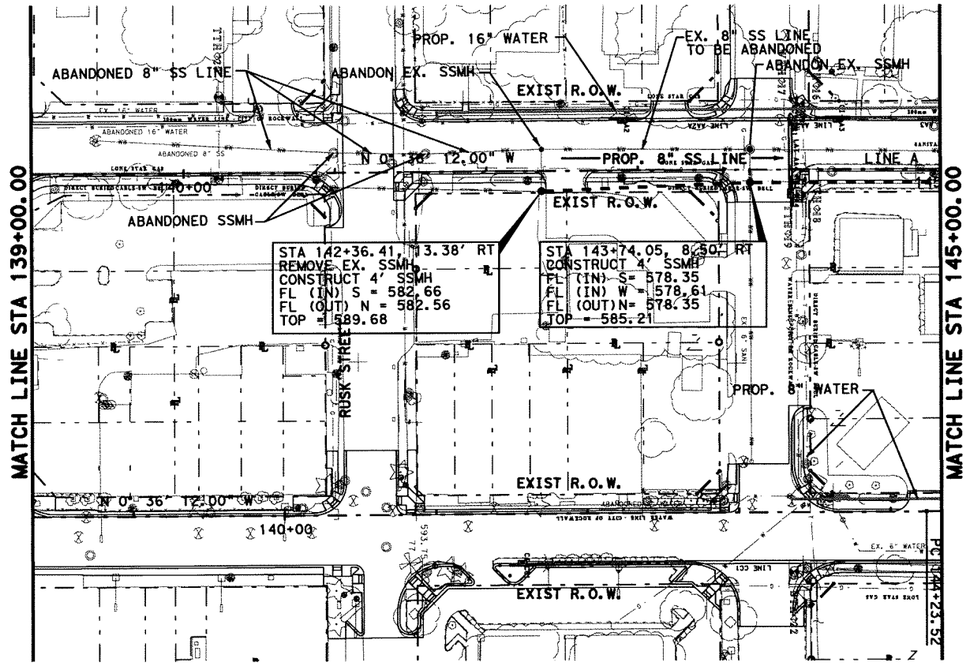

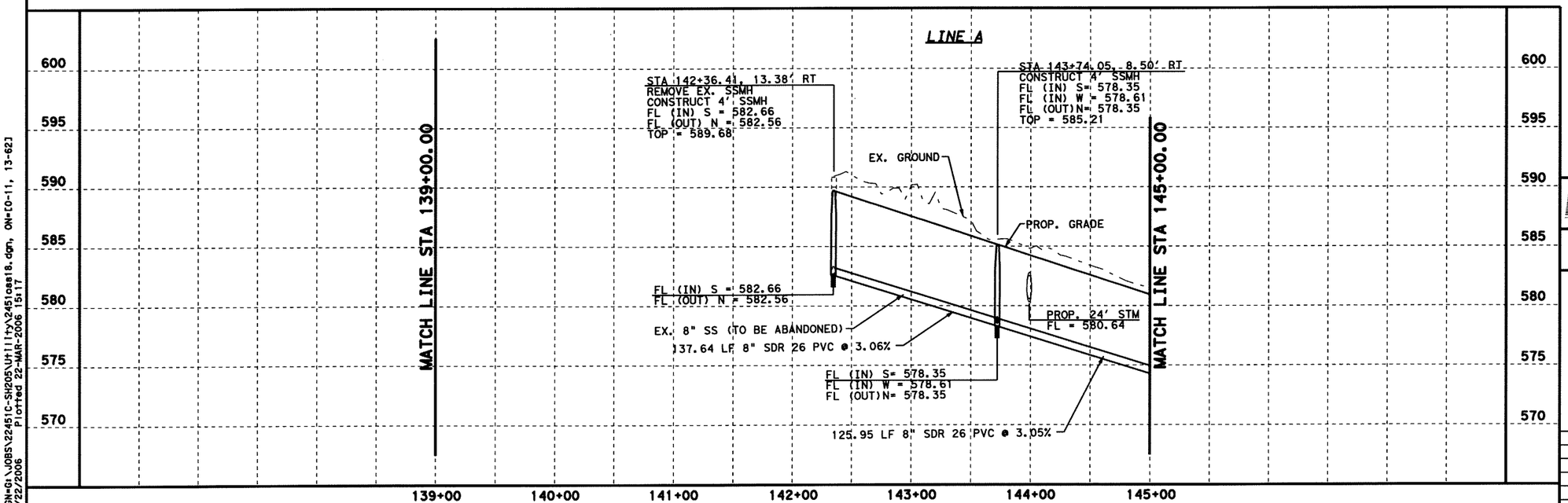

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SCALE IN FEET
HORIZONTAL

0 5 10
SCALE IN FEET
VERTICAL

3-22-06

STATE OF TEXAS
RICHARD T. GRICE
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SANITARY SEWER

SB COUPLET
PLAN & PROFILE
STA 139+00 TO 145+00

SHEET 18 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	548
CONT.	SECT.	JOB	
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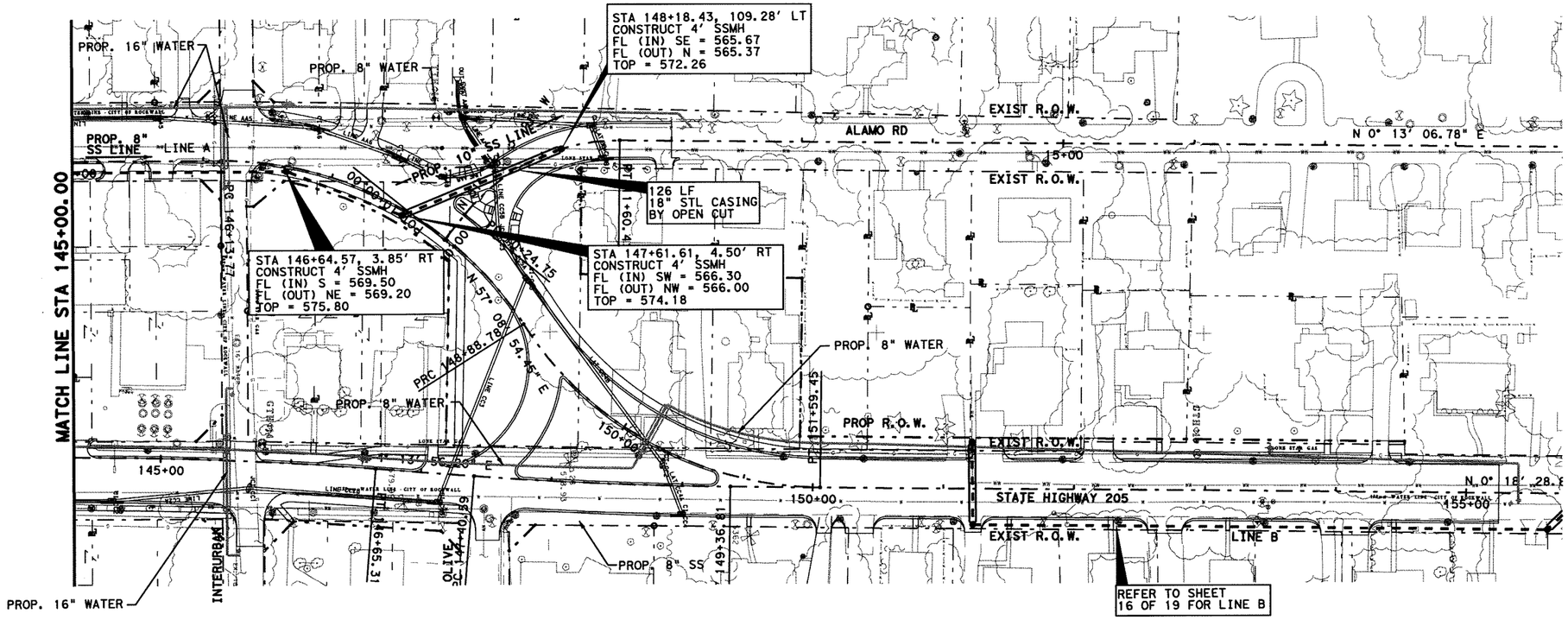

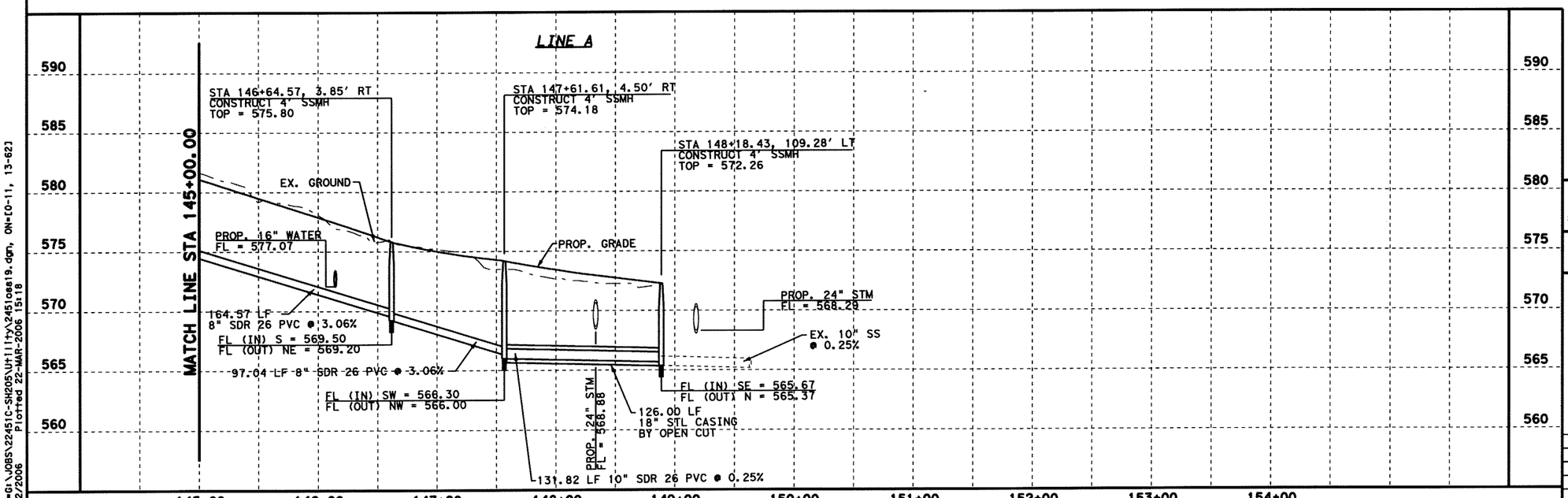

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3/22/2006 Plotted 22-MAR-2006 15:18

3-22-06

STATE OF TEXAS
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PLAN & PROFILE
STA 145+00 TO END OF PROJECT

SHEET 19 OF 19

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	549
CONT.	SECT.	JOB	
0451	01	032, ETC	

SUMMARY OF ESTIMATED QUANTITIES

ITEM / DESCRIPTION	ITEM 416	ITEM 420		ITEM 422	ITEM 425	ITEM 428	ITEM 450	ITEM 454	ITEM 459
	DRILLED SHAFT	CLASS "C" CONCRETE	CLASS "S" CONCRETE	REINFORCED CONCRETE SLAB	PRESTRESSED CONCRETE BEAM TYPE 'C'	CONCRETE SURFACE TREATMENT (TYPE II)	RAIL TYPE C221 (DAL)	SEALED EXPANSION JOINT (SEJ-A) (4")	GABION MATTRESSES (PVC) (6 IN)
		ABUTMENT	APPR SLAB						
	LF (30"DIA)	CY	CY	SF	LF	SY	LF	LF	SY
BUFFALO CREEK									
2 - ABUTMENTS	450	97.8	160.5					200	
1 - 80.00' PRESTR CONC BEAM UNIT				8000	1035.67	871	200		
									500
TOTAL	450	97.8	160.5	8000	1035.67	871	200	200	500

BEARING SEAT ELEVATIONS

ABUT 1 (FWD)	BEAM 1 523.89	BEAM 2 524.05	BEAM 3 524.20	BEAM 4 524.36	BEAM 5 524.52	BEAM 6 524.67	BEAM 7 524.83	BEAM 8 524.67	BEAM 9 524.52	BEAM 10 524.36	BEAM 11 524.20	BEAM 12 524.05	BEAM 13 523.89
ABUT 2 (BK)	BEAM 1 523.92	BEAM 2 524.07	BEAM 3 524.23	BEAM 4 524.39	BEAM 5 524.54	BEAM 6 524.70	BEAM 7 524.86	BEAM 8 524.70	BEAM 9 524.54	BEAM 10 524.39	BEAM 11 524.23	BEAM 12 524.07	BEAM 13 523.92

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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BUFFALO CREEK BRIDGE

SUMMARY OF ESTIMATED QUANTITIES
AND BEARING SEAT ELEVATIONS

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	550
CONT.	SECT.	JOB	
0451	01	032, ETC	

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5/22/2006 Plotted 22-MAY-2006 13:27

SUMMARY OF ESTIMATED QUANTITIES

ITEM / DESCRIPTION	ITEM 416	ITEM 420			ITEM 422	ITEM 425	ITEM 428	ITEM 450	ITEM 454	ITEM 514
	DRILLED SHAFT	CLASS "C" CONCRETE		CLASS "S" CONCRETE	REINFORCED CONCRETE SLAB	PRESTRESSED CONCRETE BEAM TYPE 'IV'	CONCRETE SURFACE TREATMENT (TYPE II)	RAIL TYPE T501	SEALED EXPANSION JOINT (SEJ-A) (4")	PERM CONC TRF BARR (F-SHAPE) (TY 1)
		ABUTMENT	BENT	APPR SLAB						
	LF (42"DIA)	CY	CY	CY	SF	LF	SY	LF	LF	LF
IH 30 UNDERPASS										
2 - ABUTMENTS	1245	177.4		480.2				48		
2 - BENTS	1050		287.2							
1 - 285.00' PRESTR CONC BEAM UNIT					45600	7384	5003	570	350	855
TOTAL	2295	177.4	287.2	480.2	45600	7384	5003	618	350	855

BEARING SEAT ELEVATIONS

		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
ABUT 1	(FWD)	571.42	571.53	571.65	571.77	571.89	572.00	572.12	572.24	572.35	572.47	572.58	572.70	572.79	572.77	572.67	572.53
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
ABUT 1	(FWD)	572.38	572.24	572.10	571.95	571.81	571.66	571.52	571.37	571.23	571.08						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
BENT 2	(BK)	571.59	571.71	571.84	571.97	572.09	572.22	572.34	572.47	572.59	572.71	572.84	572.96	573.05	573.04	572.95	572.82
	(FWD)	571.59	571.71	571.84	571.97	572.09	572.22	572.34	572.47	572.59	572.72	572.84	572.96	573.06	573.04	572.95	572.82
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
BENT 2	(BK)	572.68	572.55	572.41	572.28	572.14	572.00	571.87	571.73	571.59	571.46						
	(FWD)	572.68	572.55	572.41	572.28	572.14	572.01	572.87	571.74	571.60	571.46						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
BENT 3	(BK)	571.37	571.51	571.65	571.78	571.92	572.06	572.20	572.34	572.48	572.61	572.75	572.89	572.99	572.99	572.90	572.78
	(FWD)	571.36	571.50	571.64	571.78	571.92	572.06	572.20	572.33	572.47	572.61	572.75	572.88	572.99	572.98	572.90	572.78
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
BENT 3	(BK)	572.66	572.54	572.42	572.30	572.18	572.05	571.93	571.81	571.68	571.56						
	(FWD)	572.66	572.54	572.42	572.29	572.17	572.05	571.93	571.80	571.68	571.56						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
ABUT 4	(BK)	570.90	571.05	571.19	571.34	571.49	571.64	571.78	571.93	572.08	572.22	572.37	572.52	572.63	572.62	572.55	572.44
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
ABUT 4	(BK)	572.33	572.21	572.10	571.99	571.87	571.76	571.65	571.53	571.42	571.30						

HL93 LOADING 6/23/06

Addendum 6/30/06

PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

SUMMARY OF ESTIMATED QUANTITIES AND BEARING SEAT ELEVATIONS

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	551
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Bridge\24510d02.dgn, ON=10-15, 17-621
6/23/2006 Plotted 23-JUN-2006 10:08

SUMMARY OF ESTIMATED QUANTITIES

ITEM / DESCRIPTION	ITEM 416		ITEM 420			ITEM 422	ITEM 425	ITEM 428	ITEM 450	ITEM 454	ITEM 514
	DRILLED SHAFT		CLASS "C" CONCRETE		CLASS "S" CONCRETE	REINFORCED CONCRETE SLAB	PRESTRESSED CONCRETE BEAM TYPE 'IV'	CONCRETE SURFACE TREATMENT (TYPE II)	RAIL TYPE T501	SEALED EXPANSION JOINT (SEJ-A) (4")	PERM CONC TRF BARR (F-SHAPE) (TY 1)
			ABUTMENT	BENT	APPR SLAB						
	LF (36"DIA)	LF (42"DIA)	CY	CY	CY	SF	LF	SY	LF	LF	LF
IH 30 UNDERPASS											
2 - ABUTMENTS	1245		173.4		485.6				148		
2 - BENTS		1050		287.2							
1 - 285.00' PRESTR CONC BEAM UNIT						45600	7384	5003	570	350	855
TOTAL	1245	1050	173.4	287.2	485.6	45600	7384	5003	718	350	855

1

1 REVISED BY JC 05/07/07

2 REVISED BY JC 05/21/07

BEARING SEAT ELEVATIONS

		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
ABUT 1	(FWD)	571.42	571.53	571.65	571.77	571.89	572.00	572.12	572.24	572.35	572.47	572.58	572.70	572.79	572.76	572.67	572.53
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
ABUT 1	(FWD)	572.38	572.24	572.10	571.95	571.81	571.66	571.52	571.37	571.23	571.08						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
BENT 2	(BK)	571.59	571.71	571.84	571.97	572.09	572.22	572.34	572.47	572.59	572.71	572.84	572.96	573.06	573.03	572.95	572.82
	(FWD)	571.59	571.71	571.84	571.97	572.09	572.22	572.34	572.47	572.59	572.72	572.84	572.96	573.07	573.03	572.95	572.82
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
BENT 2	(BK)	572.68	572.55	572.41	572.28	572.14	572.00	571.87	571.73	571.59	571.46						
	(FWD)	572.68	572.55	572.41	572.28	572.14	572.01	571.87	571.74	571.60	571.46						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
BENT 3	(BK)	571.37	571.51	571.65	571.78	571.92	572.06	572.20	572.34	572.48	572.61	572.75	572.89	573.00	572.98	572.90	572.78
	(FWD)	571.36	571.50	571.64	571.78	571.92	572.06	572.20	572.33	572.47	572.61	572.75	572.88	573.00	572.97	572.90	572.78
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
BENT 3	(BK)	572.66	572.54	572.42	572.30	572.18	572.05	571.93	571.81	571.68	571.56						
	(FWD)	572.66	572.54	572.42	572.29	572.17	572.05	571.93	571.80	571.68	571.56						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
ABUT 4	(BK)	570.90	571.05	571.19	571.34	571.49	571.64	571.78	571.93	572.08	572.22	572.37	572.52	572.64	572.62	572.55	572.44
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
ABUT 4	(BK)	572.33	572.21	572.10	571.99	571.87	571.76	571.65	571.53	571.42	571.30						

2

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-23-07

NO.	REVISION	BY	DATE
2	REVISE QUANTITIES	J.C.	04-27-07
1	REVISE QUANTITIES	J.C.	02-02-07

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

SUMMARY OF ESTIMATED QUANTITIES AND BEARING SEAT ELEVATIONS

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	551A
CONT.	SECT.	JOB	
0451	01	032, ETC	

D:\Hwy\Jobs\22451C-SH205\Bridge\2451cd02.dgn, ON=[0-15, 17-63]
5/23/2007 Plotted 23-MAY-2007 14:29

SUMMARY OF ESTIMATED QUANTITIES

ITEM / DESCRIPTION	ITEM 416		ITEM 420			ITEM 422	ITEM 425	ITEM 428	ITEM 450	ITEM 454	ITEM 514
	DRILLED SHAFT		CLASS "C" CONCRETE		CLASS "S" CONCRETE	REINFORCED CONCRETE SLAB	PRESTRESSED CONCRETE BEAM TYPE 'IV'	CONCRETE SURFACE TREATMENT (TYPE II)	RAIL TYPE T501	SEALED EXPANSION JOINT (SEJ-A) (4")	PERM CONC TRF BARR (F-SHAPE) (TY 1)
			ABUTMENT	BENT	APPR SLAB						
	LF (36"DIA)	LF (42"DIA)	CY	CY	CY	SF	LF	SY	LF	LF	LF
IH 30 UNDERPASS											
2 - ABUTMENTS	1710		173.4		485.6				148		
2 - BENTS		1260		287.2							
1 - 285.00' PRESTR CONC BEAM UNIT						45600	7384	5003	570	350	855
TOTAL	1710	1260	173.4	287.2	485.6	45600	7384	5003	718	350	855

3 1

1 REVISED BY JC 05/07/07
2 REVISED BY JC 05/21/07

BEARING SEAT ELEVATIONS

		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
ABUT 1	(FWD)	571.42	571.53	571.65	571.77	571.89	572.00	572.12	572.24	572.35	572.47	572.58	572.70	572.79	572.76	572.67	572.53
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
ABUT 1	(FWD)	572.38	572.24	572.10	571.95	571.81	571.66	571.52	571.37	571.23	571.08						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
BENT 2	(BK)	571.59	571.71	571.84	571.97	572.09	572.22	572.34	572.47	572.59	572.71	572.84	572.96	573.06	573.03	572.95	572.82
	(FWD)	571.59	571.71	571.84	571.97	572.09	572.22	572.34	572.47	572.59	572.72	572.84	572.96	573.07	573.03	572.95	572.82
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
BENT 2	(BK)	572.68	572.55	572.41	572.28	572.14	572.00	571.87	571.73	571.59	571.46						
	(FWD)	572.68	572.55	572.41	572.28	572.14	572.01	572.87	571.74	571.60	571.46						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
BENT 3	(BK)	571.37	571.51	571.65	571.78	571.92	572.06	572.20	572.34	572.48	572.61	572.75	572.89	573.00	572.98	572.90	572.78
	(FWD)	571.36	571.50	571.64	571.78	571.92	572.06	572.20	572.33	572.47	572.61	572.75	572.88	573.00	572.97	572.90	572.78
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
BENT 3	(BK)	572.66	572.54	572.42	572.30	572.18	572.05	571.93	571.81	571.68	571.56						
	(FWD)	572.66	572.54	572.42	572.29	572.17	572.05	571.93	571.80	571.68	571.56						
		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9	BEAM 10	BEAM 11	BEAM 12	BEAM 13	BEAM 14	BEAM 15	BEAM 16
ABUT 4	(BK)	570.90	571.05	571.19	571.34	571.49	571.64	571.78	571.93	572.08	572.22	572.37	572.52	572.64	572.62	572.55	572.44
		BEAM 17	BEAM 18	BEAM 19	BEAM 20	BEAM 21	BEAM 22	BEAM 23	BEAM 24	BEAM 25	BEAM 26						
ABUT 4	(BK)	572.33	572.21	572.10	571.99	571.87	571.76	571.65	571.53	571.42	571.30						

2

CHINH T. PHAN IS SEALING THE REVISION NO. 3 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS
CHINH TAI PHAN
92726
LICENSED
PROFESSIONAL ENGINEER
6-19-08

HL93 LOADING

NO.	REVISION	BY	DATE
3	REVISE QUANTITIES	C.P.	06-18-08
2	REVISE QUANTITIES	J.C.	04-27-07
1	REVISE QUANTITIES	J.C.	02-02-07

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

SUMMARY OF ESTIMATED QUANTITIES AND BEARING SEAT ELEVATIONS

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	551B
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=gi:\Jobs\22451C-SH205\Bridge\2451cq02.dgn, ON=10-15, 17-63
6/19/2008 Plotted 19-JUN-2008 20:05

SUMMARY OF ESTIMATED QUANTITIES

ITEM / DESCRIPTION	ITEM 416	ITEM 420			ITEM 422	ITEM 425	ITEM 428	ITEM 450	ITEM 454	ITEM 427	ITEM 550
	DRILLED SHAFT	CLASS "C" CONCRETE		CLASS "S" CONCRETE	REINFORCED CONCRETE SLAB	PRESTRESSED CONCRETE BEAM TYPE 'C'	CONCRETE SURFACE TREATMENT (TYPE II)	RAIL TYPE C221 (DAL)	SEALED EXPANSION JOINT (SEJ-A) (4")	CONCRETE PAINT FINISH	CHAIN LINK FENCE (PVC COATED) (8')
		ABUTMENT	BENT	APPR SLAB							
	LF (30"DIA)	CY	CY	CY	SF	LF	SY	LF	LF	SF	LF
UPRR OVERPASS											
2 - ABUTMENTS	675	90.4		336.9				20			
2 - BENTS	360		148.3								
1 - 200.00' PRESTR CONC BEAM UNIT					20000	2586.74	2178	800	212		
										1066	400
TOTAL	1035	90.4	148.3	336.9	20000	2586.74	2178	820	212	1066	400

BEARING SEAT ELEVATIONS

ABUT 1 (FWD)	BEAM 1 562.34	BEAM 2 562.56	BEAM 3 562.78	BEAM 4 563.00	BEAM 5 563.22	BEAM 6 563.44	BEAM 7 563.66	BEAM 8 563.56	BEAM 9 563.45	BEND 10 563.35	BEND 11 563.25	BEND 12 563.14	BEND 13 563.03	
BENT 2 (BK)	BEAM 1 563.21	BEAM 2 563.41	BEAM 3 563.61	BEAM 4 563.80	BEAM 5 563.99	BEAM 6 564.18	BEAM 7 564.37	BEAM 8 564.24	BEAM 9 564.12	BEAM 10 563.99	BEAM 11 563.86	BEAM 12 563.72	BEAM 13 563.59	
(FWD)	563.23	563.43	563.62	563.81	564.00	564.19	564.38	564.26	564.13	564.00	563.87	563.73	563.60	
BENT 3 (BK)	BEAM 1 563.72	BEAM 2 563.88	BEAM 3 564.04	BEAM 4 564.19	BEAM 5 564.35	BEAM 6 564.50	BEAM 7 564.66	BEAM 8 564.49	BEAM 9 564.33	BEAM 10 564.16	BEAM 11 564.00	BEAM 12 563.83	BEAM 13 563.65	
(FWD)	563.72	563.88	564.04	564.19	564.35	564.50	564.65	564.49	564.33	564.16	563.99	563.82	563.65	
ABUT 4 (BK)	BEAM 1 563.57	BEAM 2 563.70	BEAM 3 563.84	BEAM 4 563.97	BEAM 5 564.09	BEAM 6 564.22	BEAM 7 564.35	BEAM 8 564.16	BEAM 9 563.96	BEAM 10 563.77	BEND 11 563.58	BEND 12 563.38	BEND 13 563.18	

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

SUMMARY OF ESTIMATED QUANTITIES
AND BEARING SEAT ELEVATIONS

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	552
0451	01	032, ETC	

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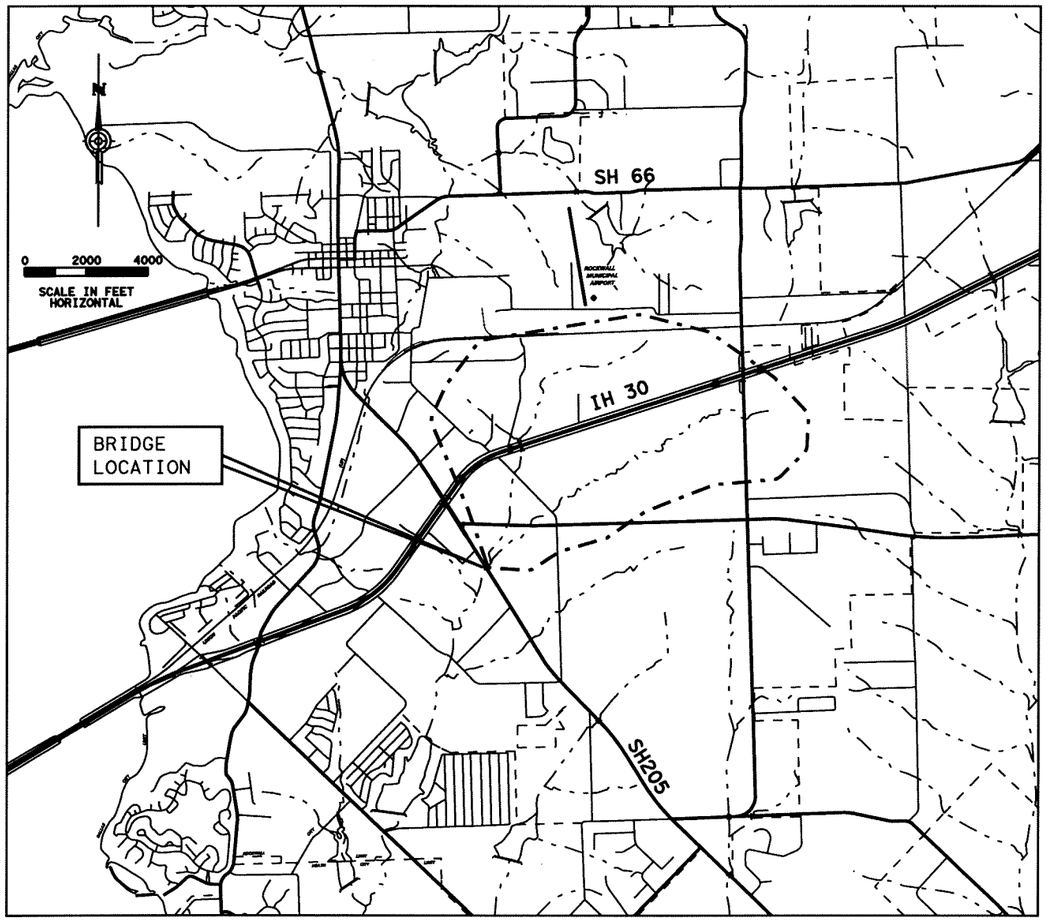
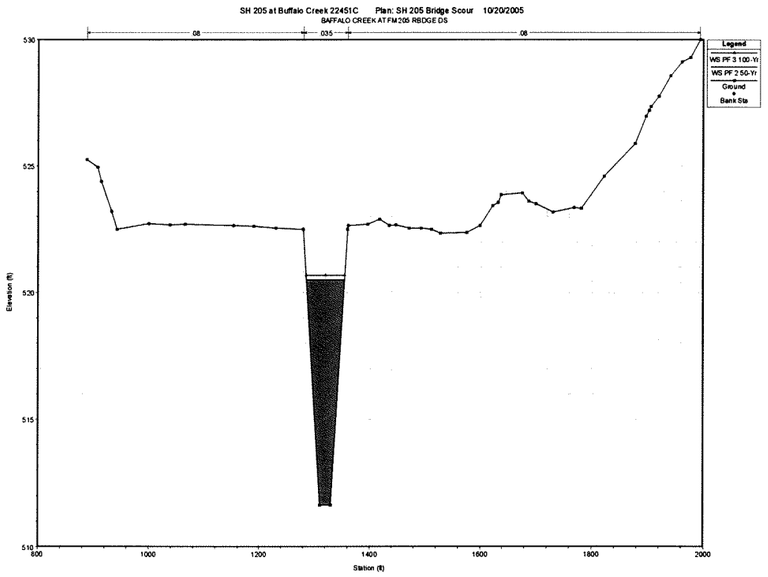
5/22/2006 Plotted 22-MAY-2006 13:27

SH 205 BUFFALO CREEK BRIDGE

Section	Location	EXISTING CONDITION						PROPOSED CONDITION					
		50-Year			100-Year			50-Year			100-Year		
		Q	V	WSEL	Q	V	WSEL	Q	V	WSEL	Q	V	WSEL
		cfs	fps	ft	cfs	fps	ft	cfs	fps	ft	cfs	fps	ft
3570	Departure	4410	5.61	517.80	5010	5.72	518.11	4410	5.61	517.80	5010	5.72	518.11
4921	Expansion	4410	7.00	520.93	5010	7.30	521.25	4410	7.00	520.93	5010	7.30	521.25
4990*	D/S BRIDGE	4410	12.30	520.55	5010	13.80	520.64	4410	11.35	520.43	5010	12.57	520.57
5090*	U/S BRIDGE	4410	10.11	521.11	5010	10.99	522.89	4410	8.79	521.98	5010	9.02	522.66
5108	Contraction	4410	10.43	523.64	5010	8.94	524.62	4410	10.57	523.60	5010	10.97	523.89
5210	Approch	4410	1.97	525.10	5010	1.99	525.59	4410	1.96	525.10	5010	2.06	525.45

* DENOTES PROPOSED CONDITION CROSS SECTION





NOTE: HEC-2 HYDRAULIC MODEL PROGRAM USED FOR HYDRAULIC ANALYSIS AND DESIGN

NOTE: ALL SECTIONS ARE NORMAL TO STREAM FLOW.

THE DESIGN FLOOD DISCHARGES ARE BASED ON THE CURRENT EFFECTIVE FEMA FLOOD INSURANCE STUDY.

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
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Dallas, TX 75207

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SH 205

HYDRAULIC DATA SHEET

BUFFALO CREEK

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	553
CONT.	SECT.	JOB	
0451	01	032, ETC	

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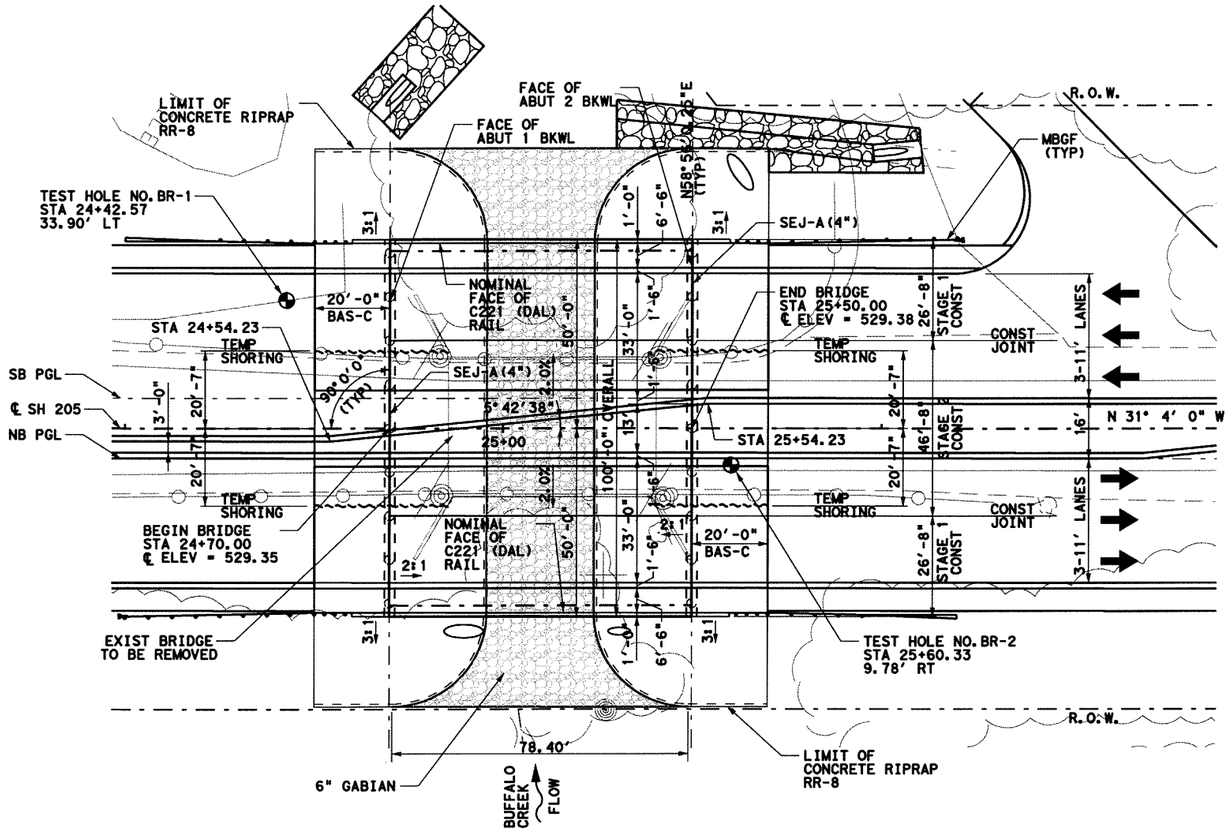
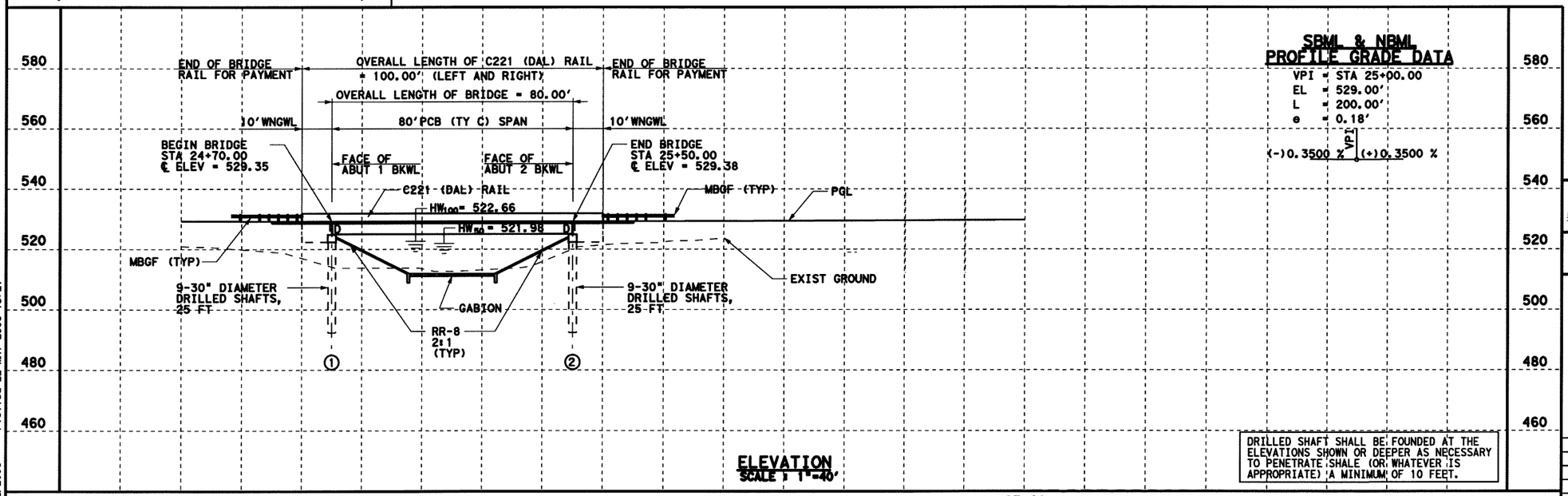
3/20/2006 Plotted 20-MAR-2006 14:54



PLAN
SCALE : 1"=40'



ELEVATION
SCALE : 1"=40'

HYDRAULIC DATA

50 yr	Q= 4410 cfs	WS= 521.98	V= 8.79 fps
100 yr	Q= 5010 cfs	WS= 522.66	V= 9.02 fps

SBML & NBML PROFILE GRADE DATA

VPI = STA 25+00.00
EL = 529.00'
L = 200.00'
e = 0.18'

(-)0.3500 % VPI (+)0.3500 %

DRILLED SHAFT SHALL BE FOUNDED AT THE ELEVATIONS SHOWN OR DEEPER AS NECESSARY TO PENETRATE SHALE (OR WHATEVER IS APPROPRIATE) A MINIMUM OF 10 FEET.

SCALE: 0 20 40

GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
TRAFFIC - 8550 ADT (2000)
TRAFFIC - 13500 ADT (2020)
DESIGN SPEED - 45 MPH

NEW NBI: 18-199-0-0451-01-021
EXIST NBI: 18-199-0-0451-01-001

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

BUFFALO CREEK BRIDGE LAYOUT

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	554
CONT.	SECT.	JOB	
0451	01	032, ETC	

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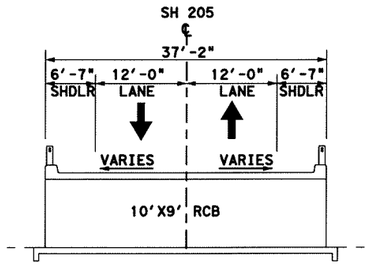
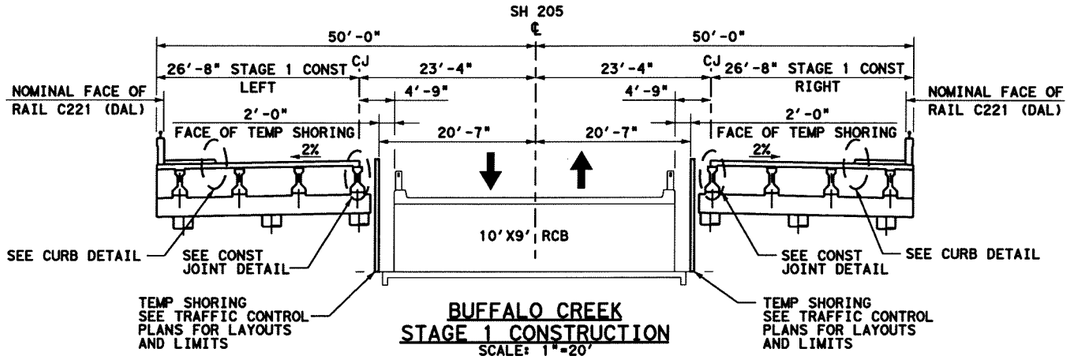
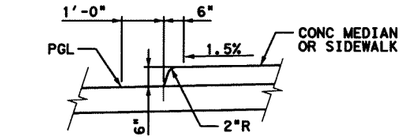
5/22/2006 Plotted 22-MAY-2006 13:27



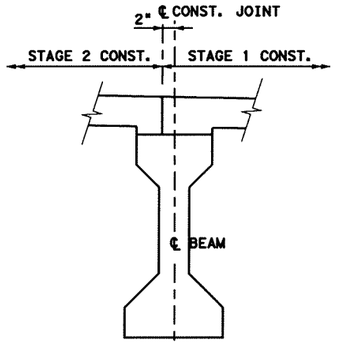
BUFFALO CREEK
EXISTING STRUCTURE
SCALE: 1"=20'



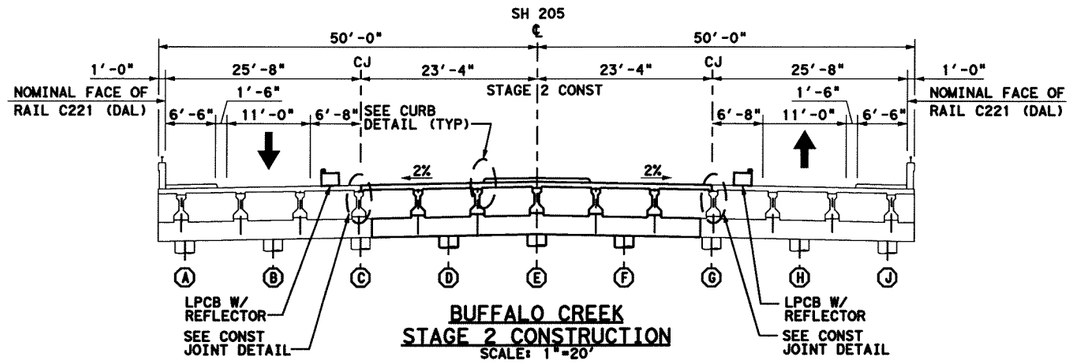
BUFFALO CREEK
STAGE 1 CONSTRUCTION
SCALE: 1"=20'



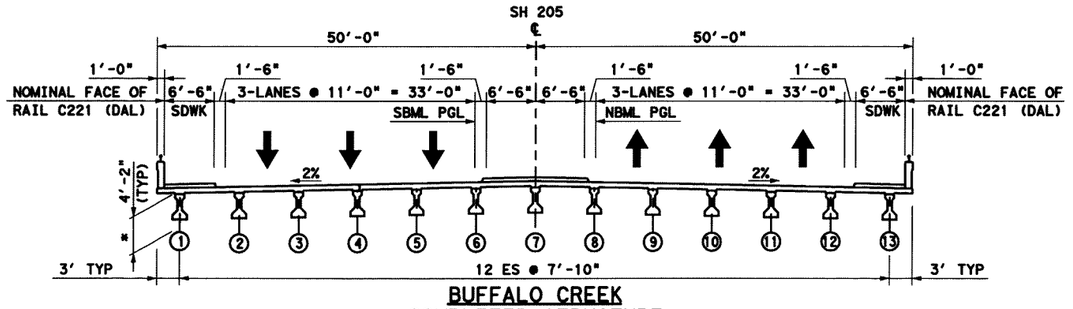
CURB DETAIL
SCALE: NTS (ATYPICAL)



CONSTRUCTION JOINT DETAIL
SCALE: NTS



BUFFALO CREEK
STAGE 2 CONSTRUCTION
SCALE: 1"=20'



BUFFALO CREEK
COMPLETED STRUCTURE
SCALE: 1"=20'

*- ASSUMED DEPTH OF STRUCTURE FOR FREEBOARD CALCULATIONS

STATE OF TEXAS
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88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

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SH 205

BUFFALO CREEK BRIDGE LAYOUT

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	555
CONT.	SECT.	JOB	
0451	01	032, ETC	

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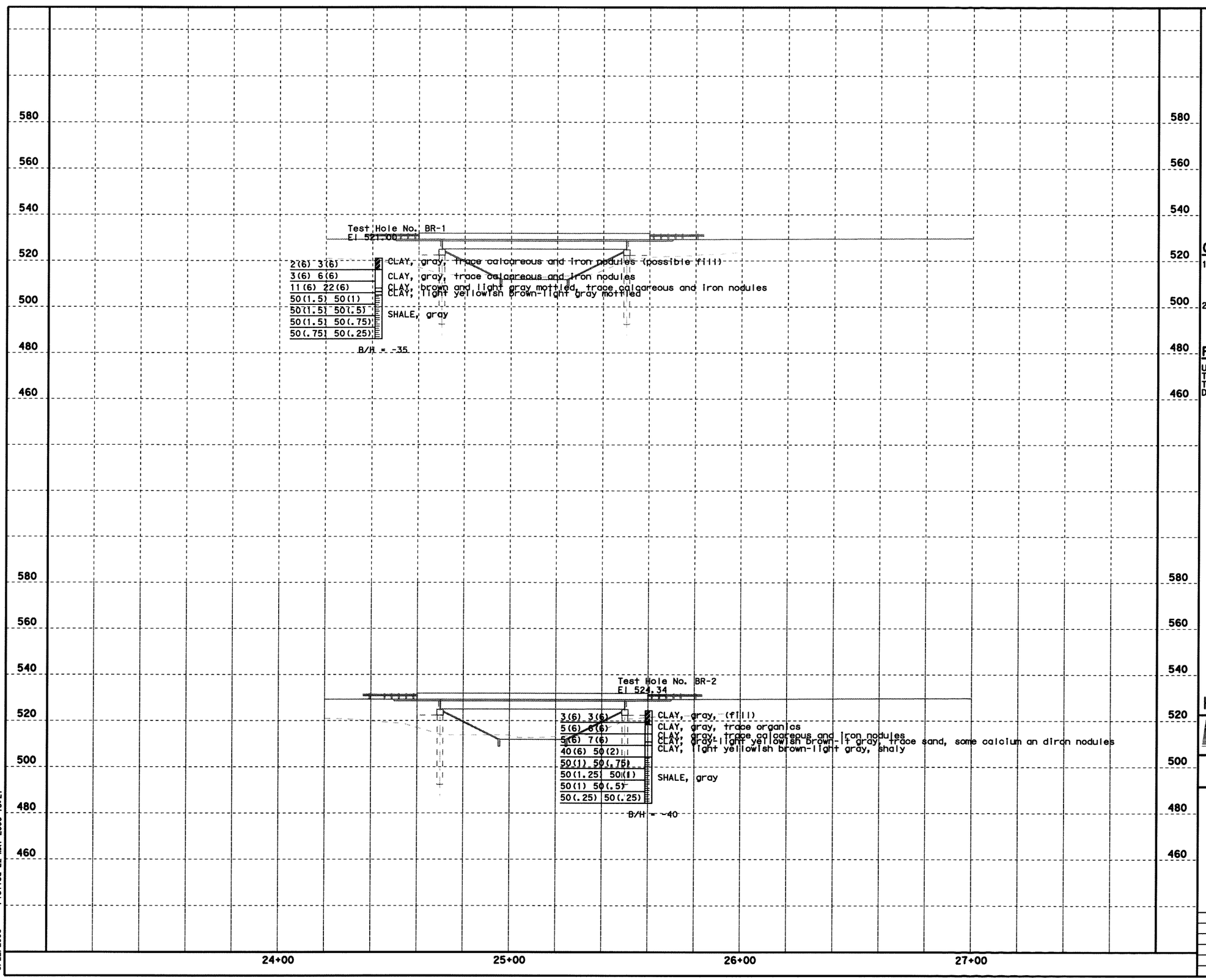

GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
TRAFFIC - 8550 ADT (2000)
TRAFFIC - 13500 ADT (2020)
DESIGN SPEED - 45 MPH

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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BUFFALO CREEK BRIDGE
BORING LOG

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	556
CONT.	SECT.	JOB	
0451	01	032, ETC	

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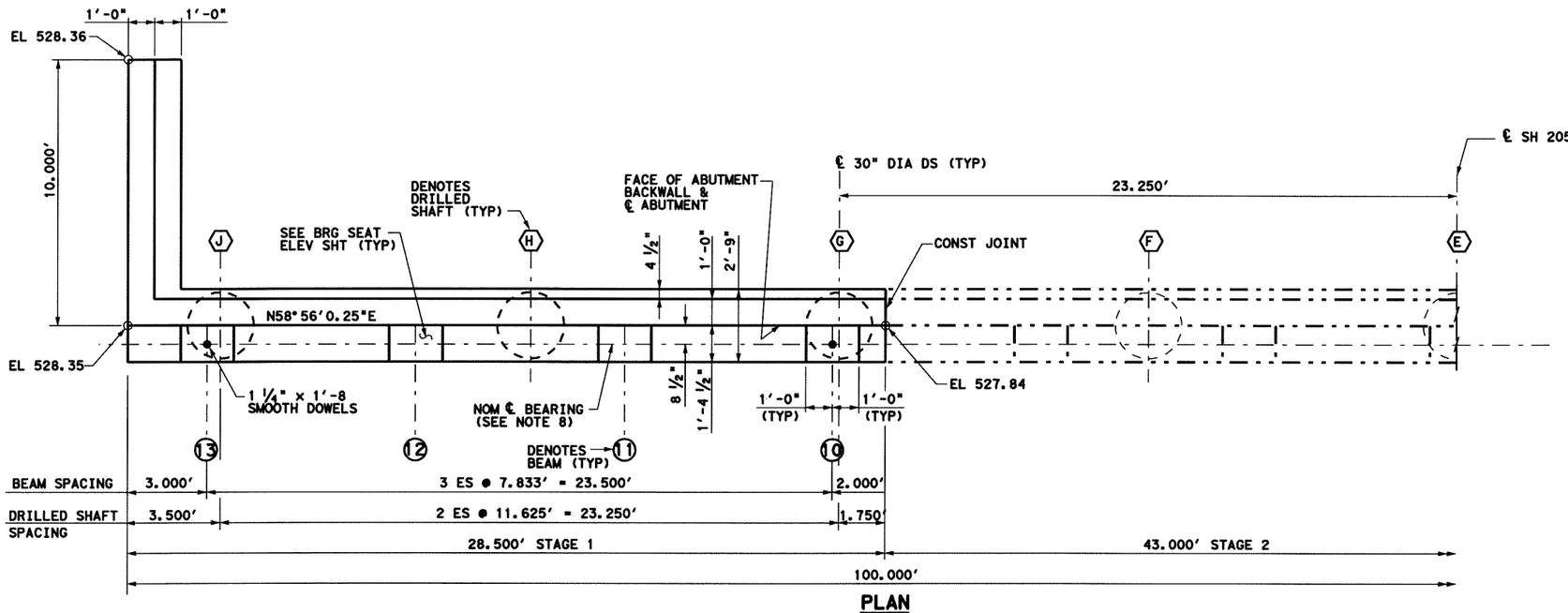
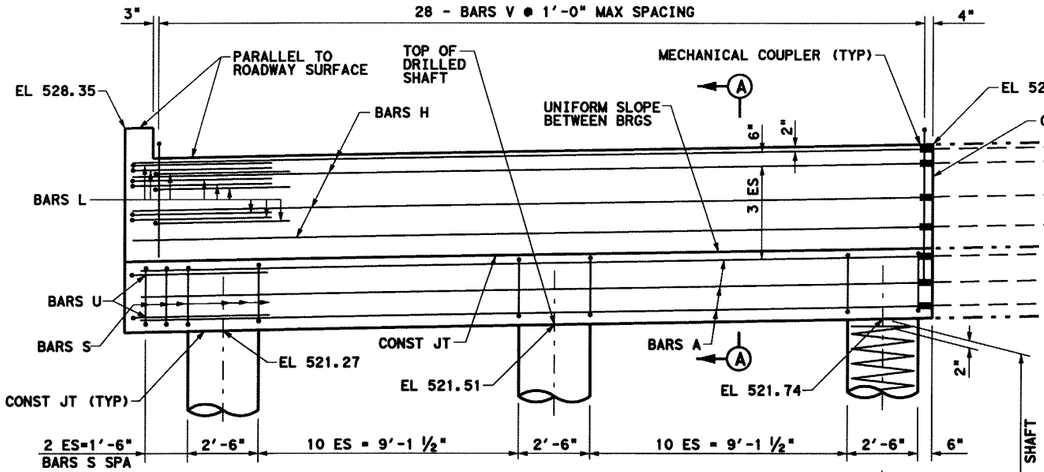
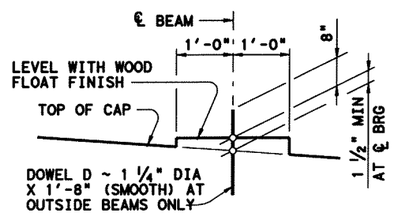
5/22/2006



PLAN

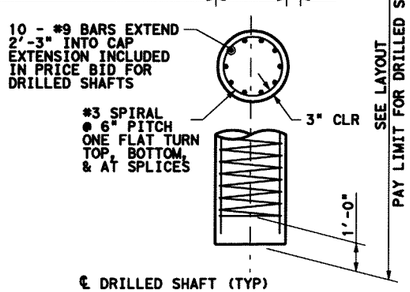
SCALE: 3/16" = 1'-0"





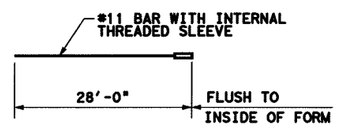
BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

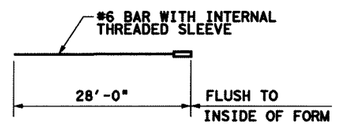


ELEVATION

SCALE: 3/16" = 1'-0"



BARS A



BARS H

GENERAL NOTES

1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 30" DIA DRILLED SHAFT LOAD = 122 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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BUFFALO CREEK BRIDGE

ABUTMENT 1
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	557
CONT.	SECT.	JOB	
0451	01	032, ETC	

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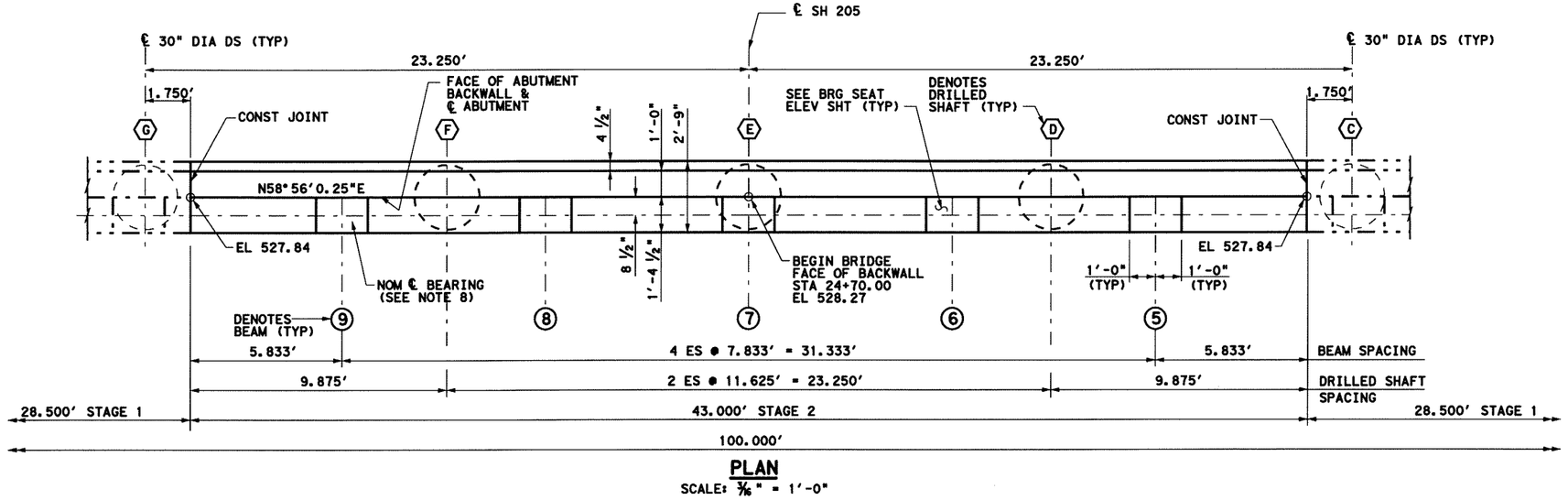
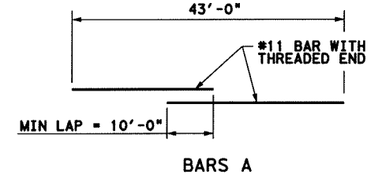
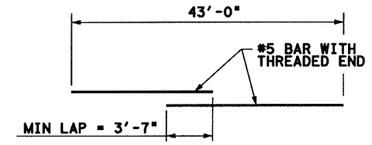


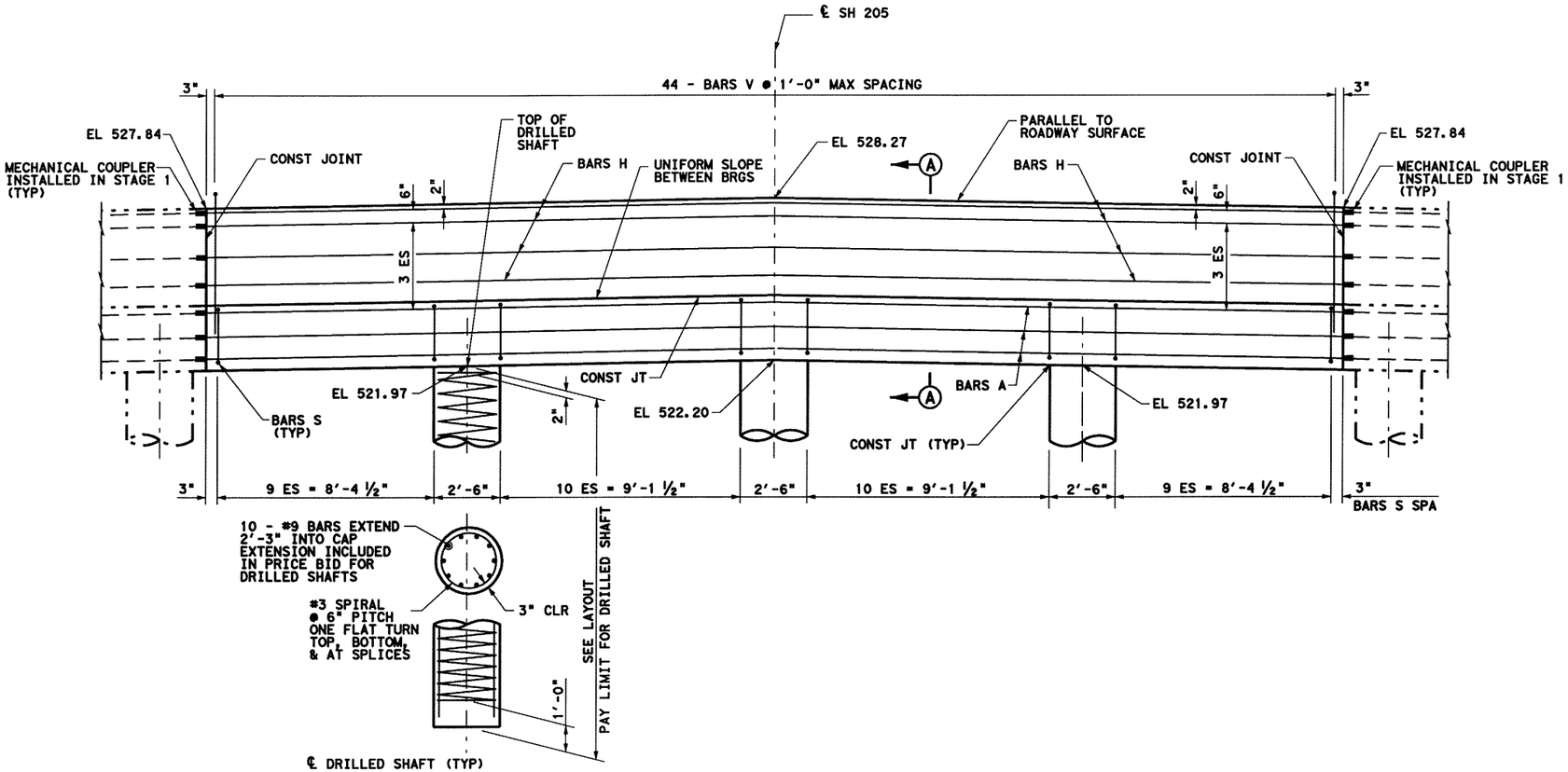
PLAN
SCALE: 3/16" = 1'-0"



BARS A



BARS H



ELEVATION
SCALE: 3/16" = 1'-0"

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

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BUFFALO CREEK BRIDGE

ABUTMENT 1
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	557A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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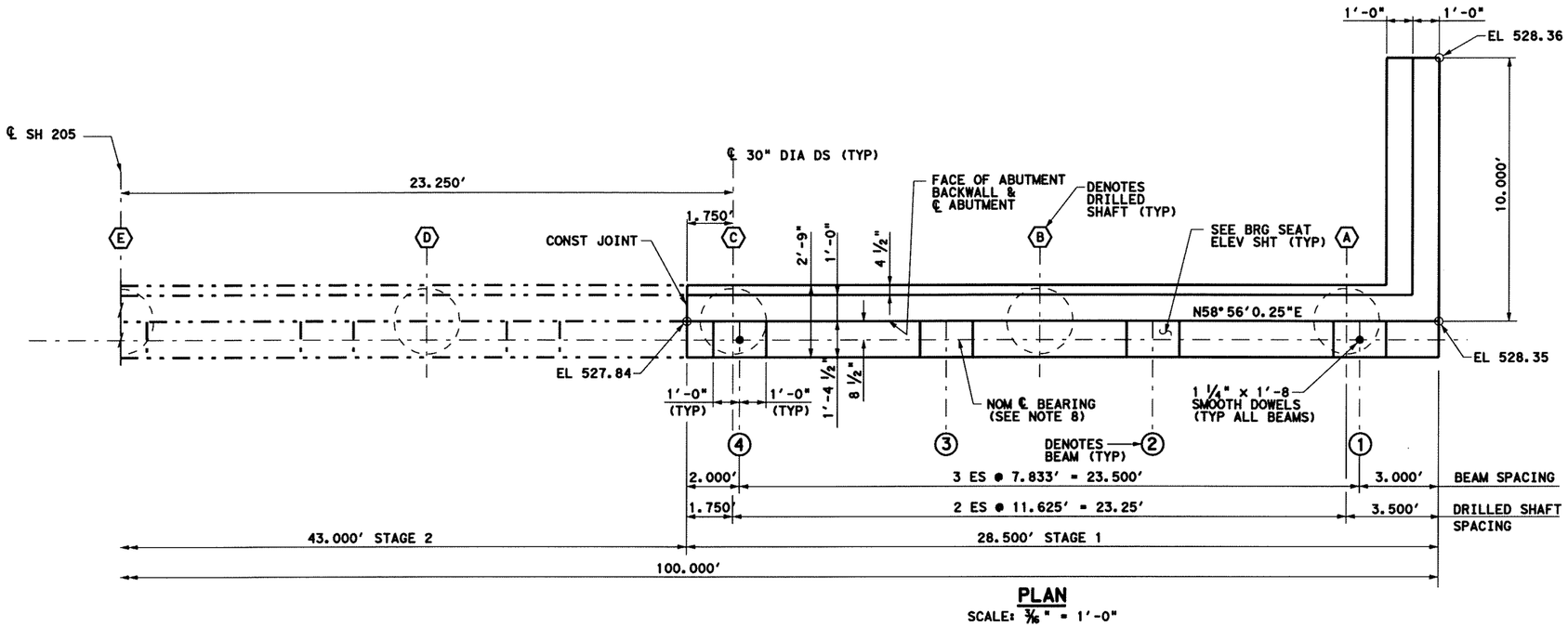

PLAN
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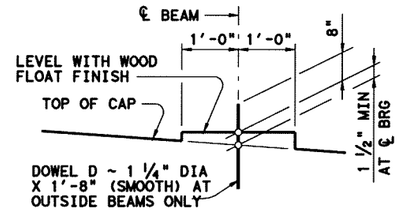
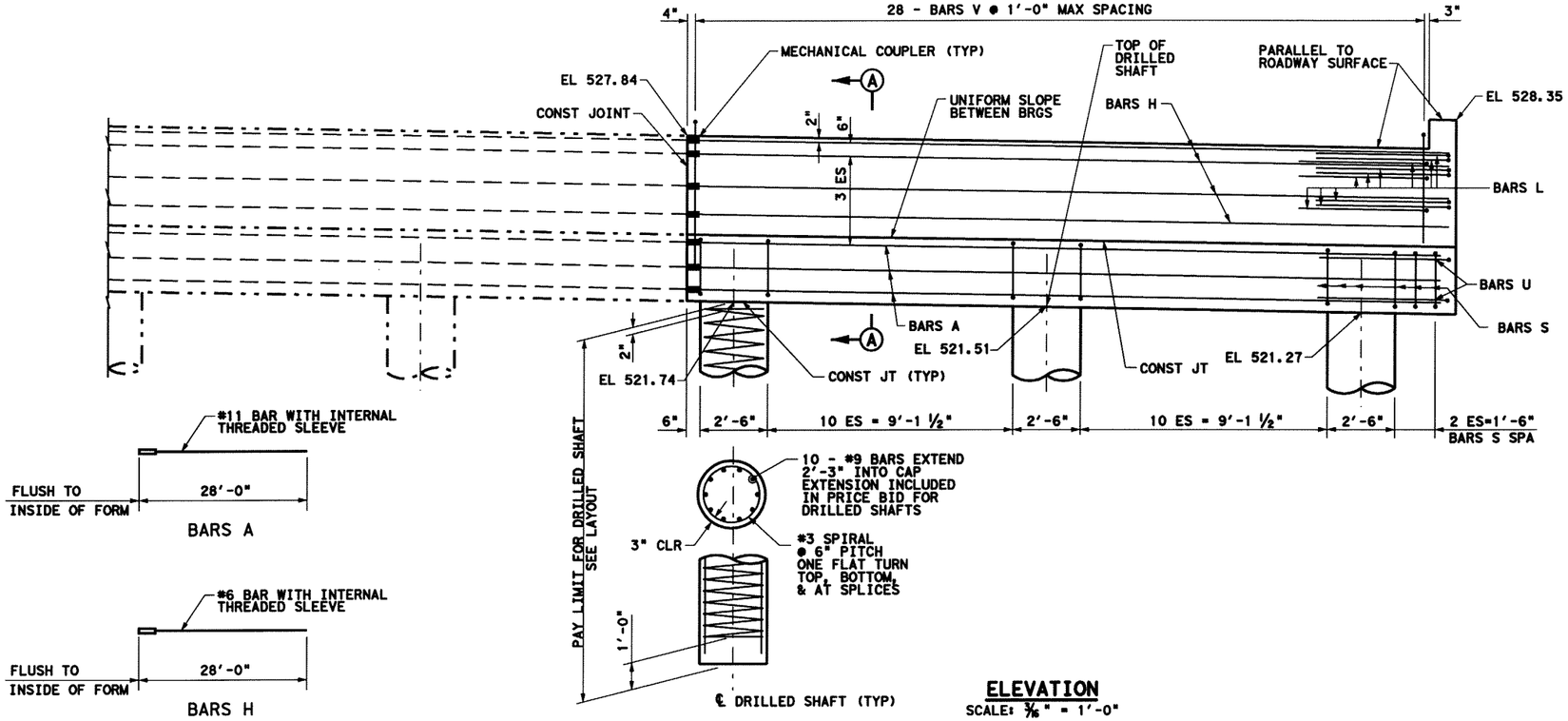


BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



ELEVATION
SCALE: 3/16" = 1'-0"

BARS A

BARS H

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BUFFALO CREEK BRIDGE

ABUTMENT 1
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	558
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

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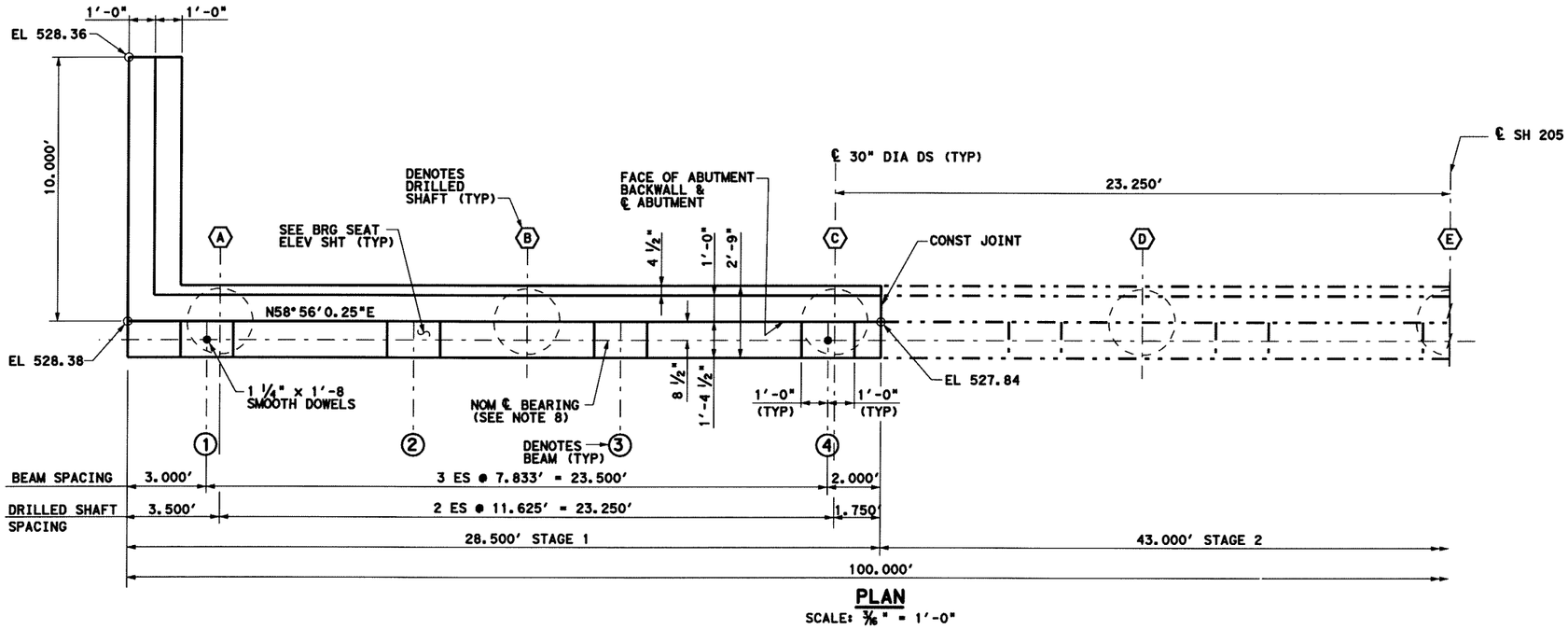
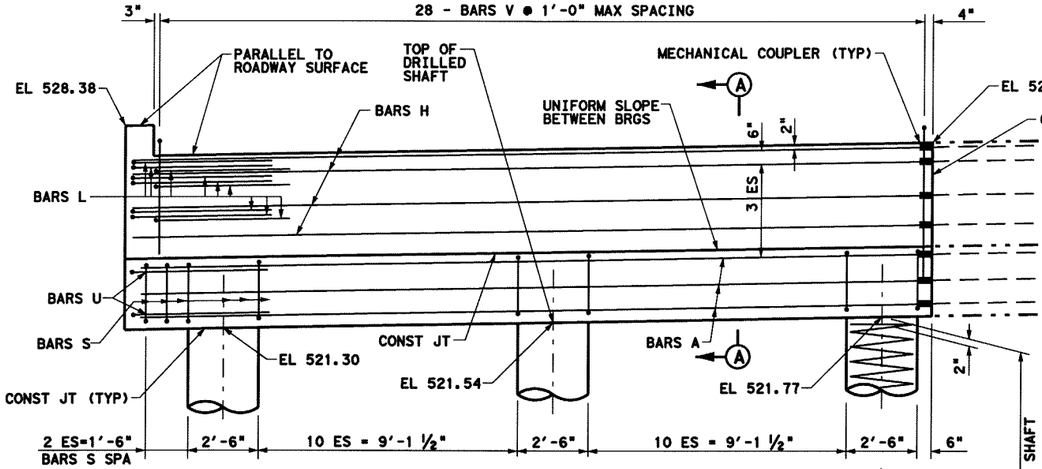
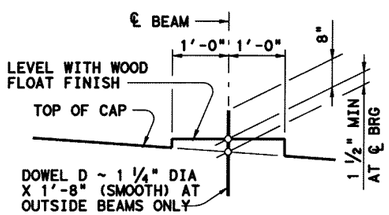


PLAN

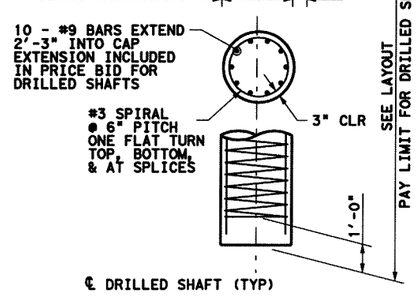
SCALE: 3/16" = 1'-0"





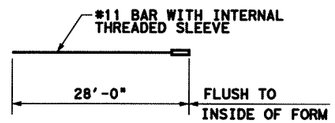
BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

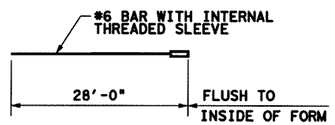


ELEVATION

SCALE: 3/16" = 1'-0"



BARS A



BARS H

GENERAL NOTES

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STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
6-9-06

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BUFFALO CREEK BRIDGE

ABUTMENT 2
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	559
CONT.	SECT.	JOB	
0451	01	032, ETC	

6/23/06 ADDENDUM

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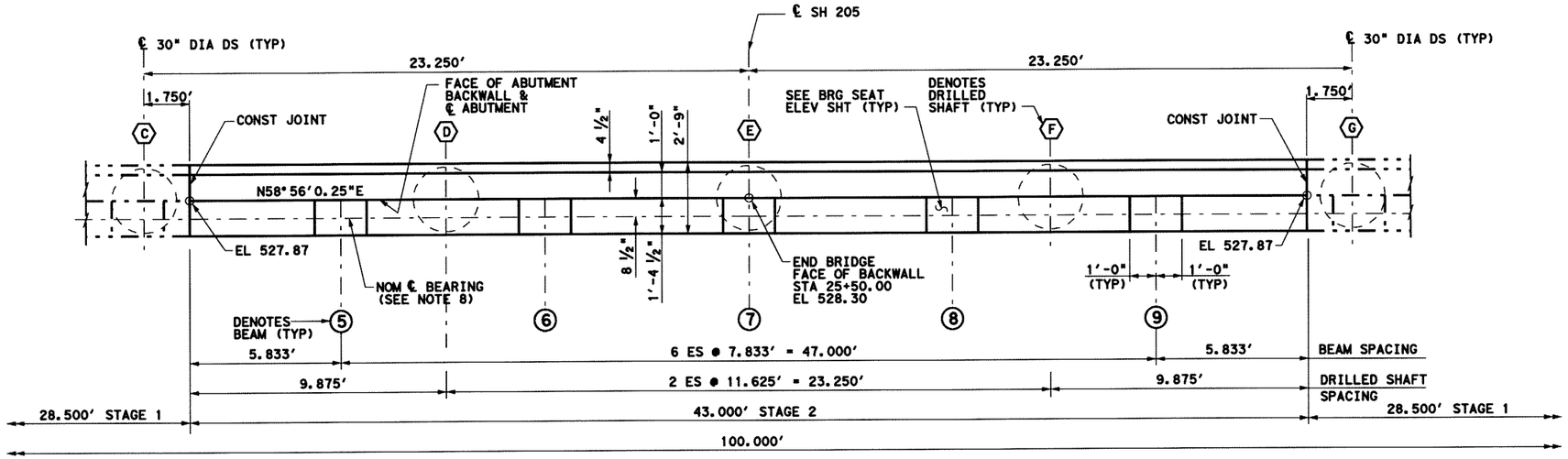
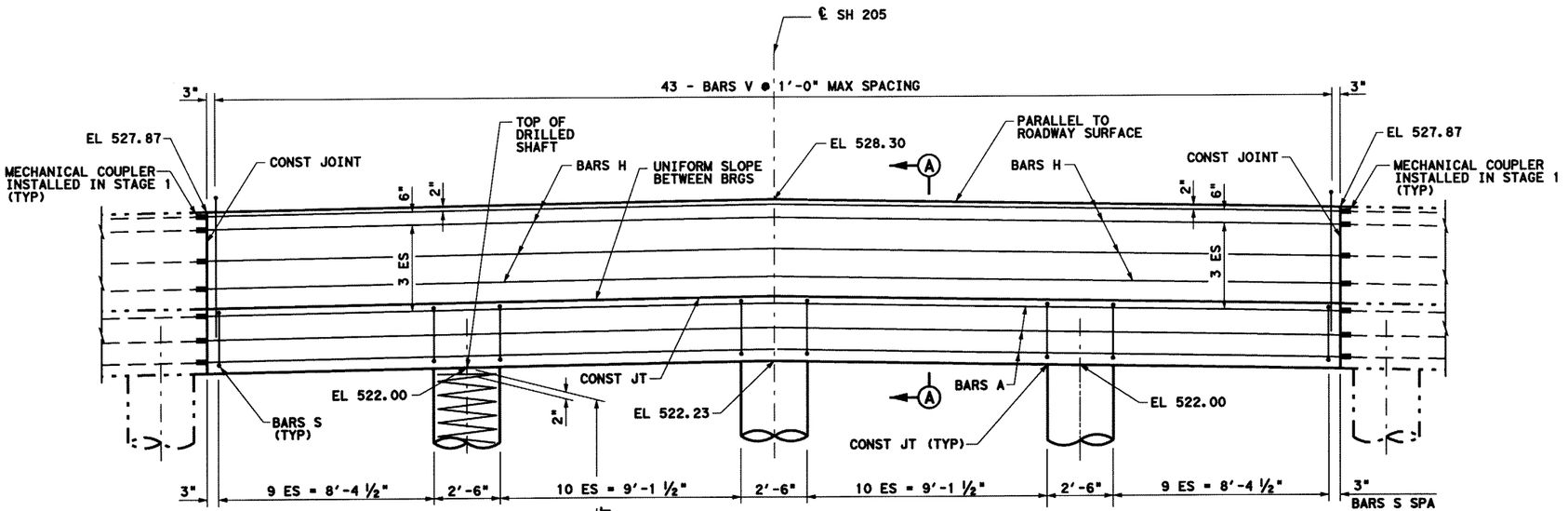
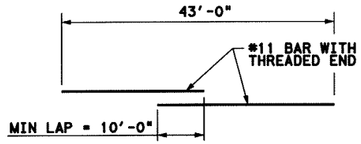


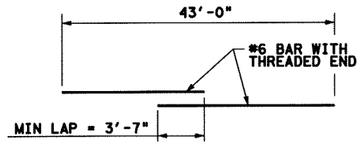
PLAN
SCALE: 3/16" = 1'-0"



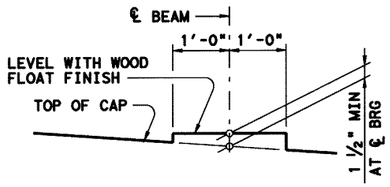
ELEVATION
SCALE: 3/16" = 1'-0"



BARS A



BARS H



BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

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BUFFALO CREEK BRIDGE

ABUTMENT 2
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	559A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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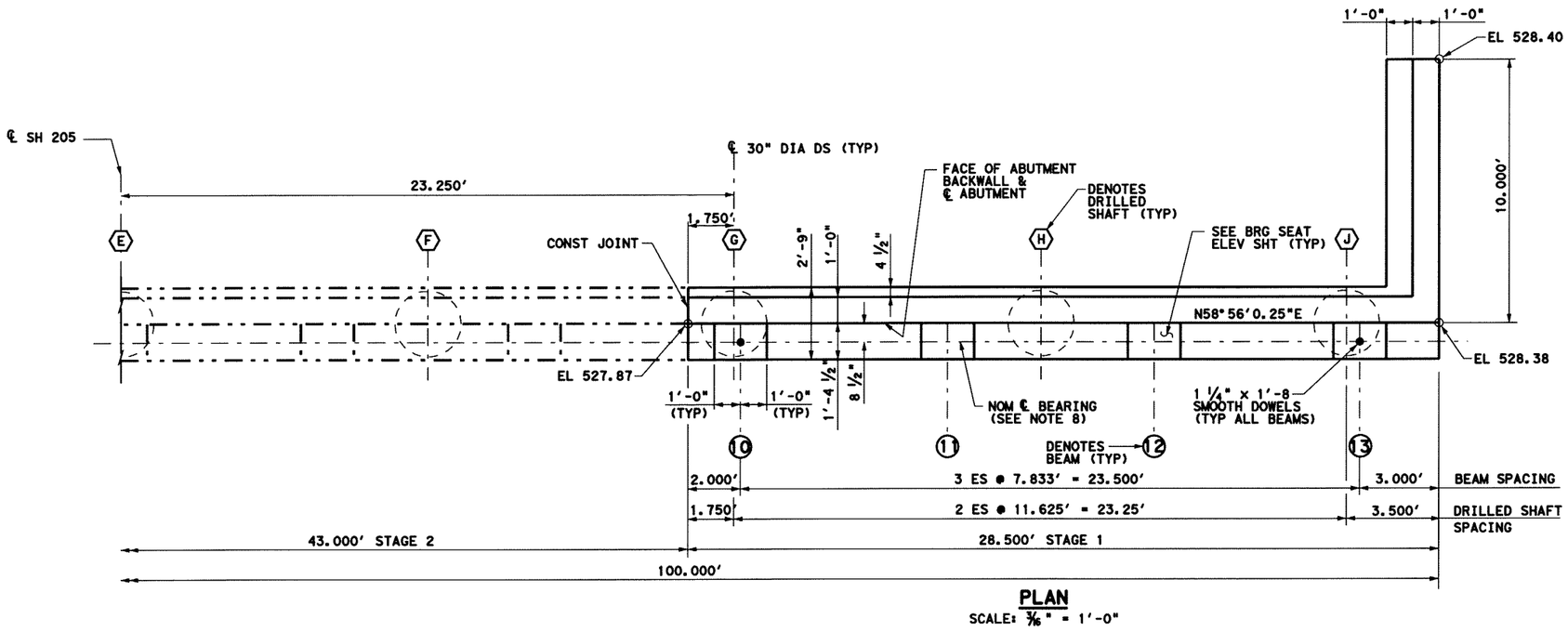
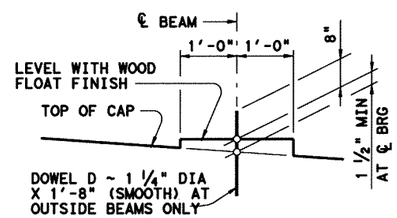
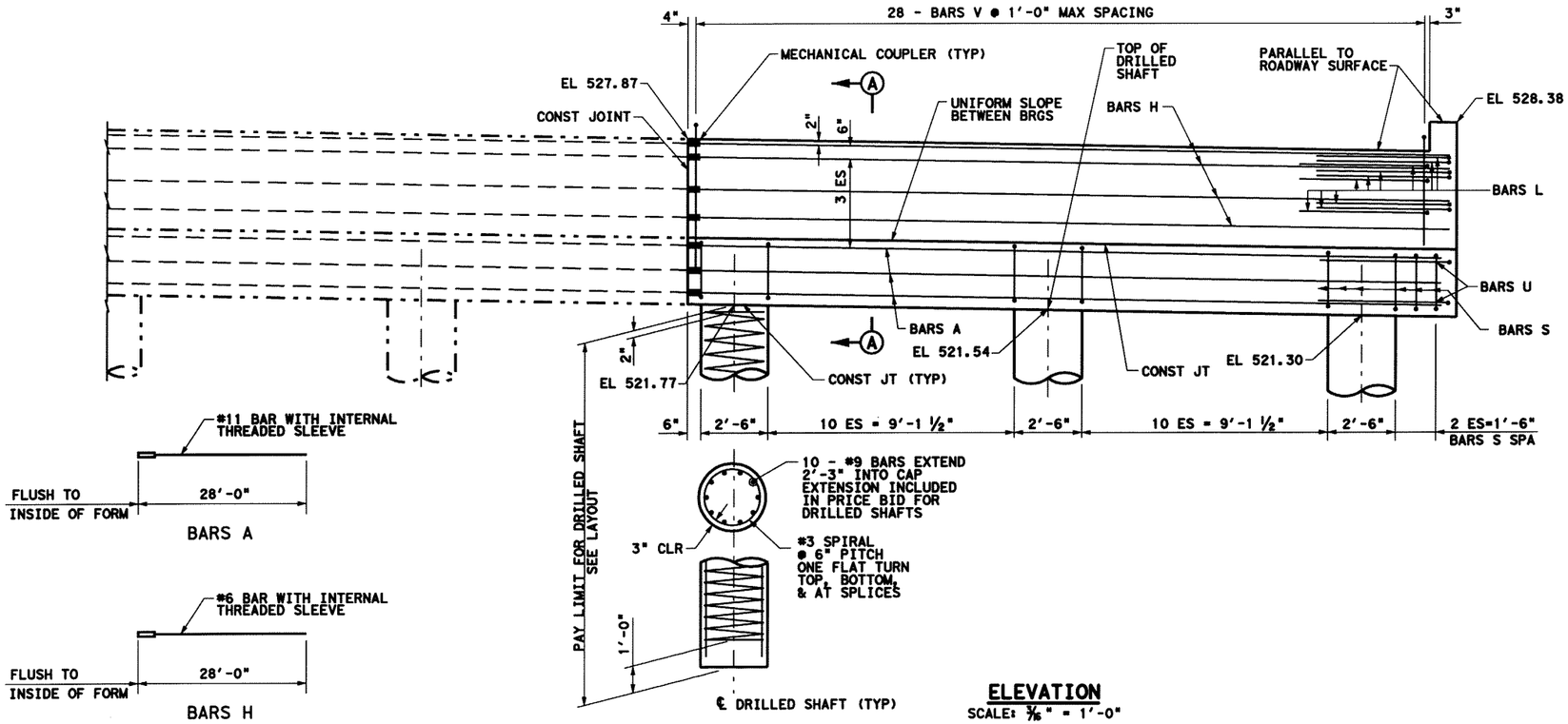


PLAN
SCALE: 3/16" = 1'-0"



BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



ELEVATION
SCALE: 3/16" = 1'-0"

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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Suite 1333
Dallas, TX 75207

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BUFFALO CREEK BRIDGE

ABUTMENT 2
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	560
CONT.	SECT.	JOB	
0451	01	032, ETC	

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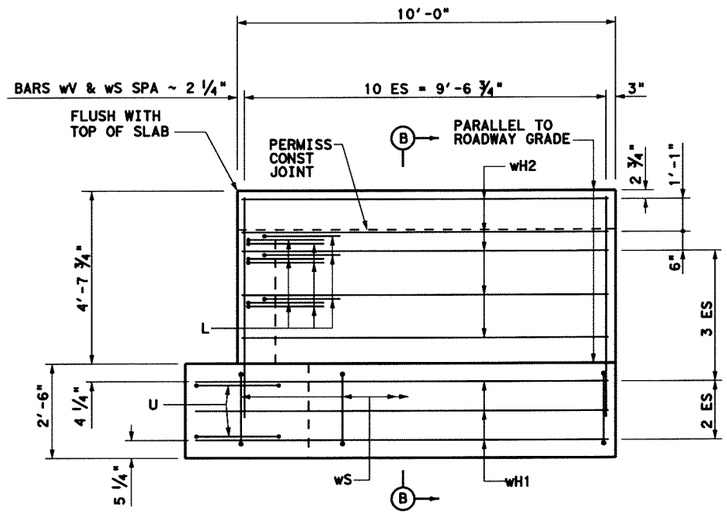
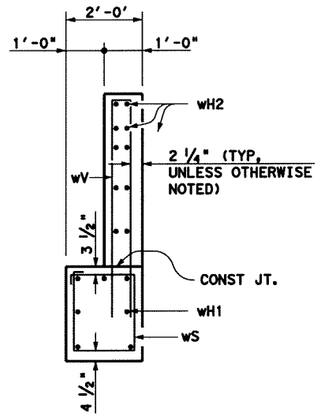


WINGWALL ELEVATION
NOT TO SCALE



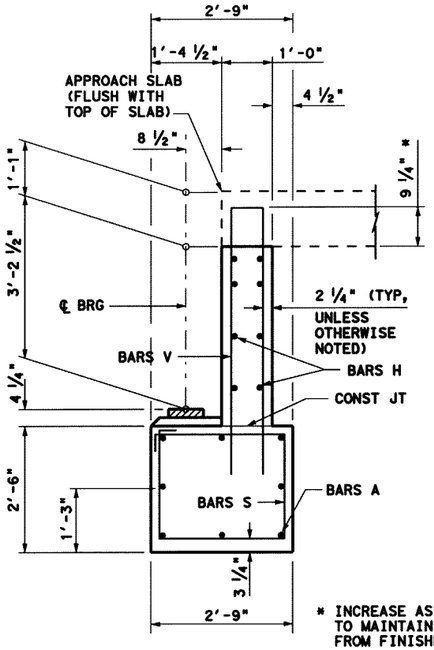
SECTION B-B
NOT TO SCALE

TABLE OF ESTIMATED QUANTITIES				
ONE ABUTMENT - STAGE 1 L/R				
BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	28'-0"	1190
D	2	1¼"Ø	1'-8"	46
H	8	#6	28'-4"	340
L	9	#6	4'-0"	54
S	26	#4	9'-8"	168
U	2	#6	7'-3"	22
V	28	#5	11'-7"	338
wH1	7	#6	11'-1"	117
wH2	10	#6	9'-8"	145
wS	11	#4	7'-9"	57
wV	11	#5	11'-10"	136
REINFORCING STEEL (1)		LB		2474
CLASS "C" CONCRETE		CY		15.3
DRILLED SHAFT (30")		LF		90

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

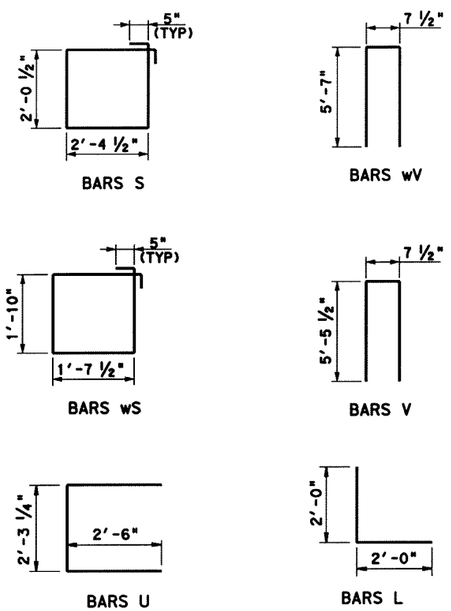
TABLE OF ESTIMATED QUANTITIES				
ONE ABUTMENT - STAGE 2				
BAR	NO.	SIZE	LENGTH	WEIGHT
A □	8	#11	53'-0"	2253
H ●	8	#6	46'-4"	560
S	42	#4	9'-8"	271
V	44	#5	11'-7"	532
REINFORCING STEEL (1)		LB		3615
CLASS "C" CONCRETE		CY		18.3
DRILLED SHAFT (30")		LF		90

□ INCLUDES 10'-0" MIN LAP SPLICE
● INCLUDES 3'-7" MIN LAP SPLICE

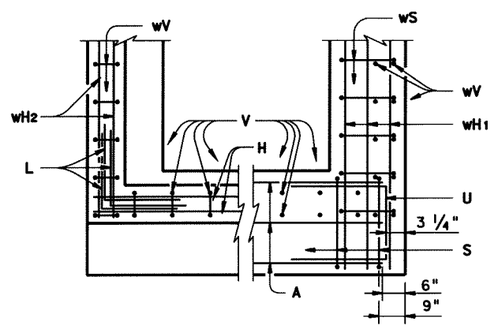


* INCREASE AS REQUIRED TO MAINTAIN 3 ¾" FROM FINISHED GRADE.

SECTION A-A
NOT TO SCALE



BAR BEND DIAGRAMS



BACKWALL CAP

CORNER DETAILS
NOT TO SCALE

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

PB Parsons Brinckerhoff Quade & Douglas, Inc.
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Suite 1333
Dallas, TX 75207

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SH 205

BUFFALO CREEK BRIDGE

ABUTMENT 1 AND 2 DETAILS

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	561
CONT.	SECT.	JOB	
0451	01	032, ETC	

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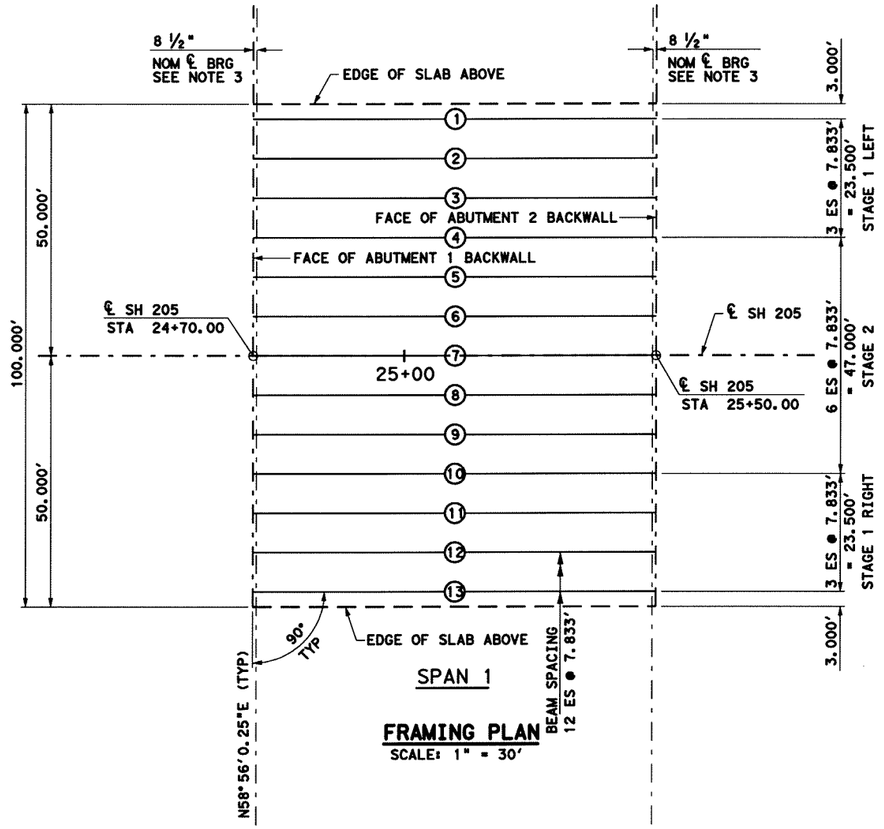


SPAN 1

FRAMING PLAN

SCALE: 1" = 30'

GENERAL NOTES

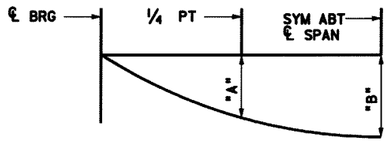
1. FOR BEAM DETAILS, SEE TxDOT STANDARD DRAWINGS "IBD", "IBEB", AND "IBND".
2. FOR BEAM ERECTION AND BRACING REQUIREMENTS, SEE TxDOT STANDARD DRAWING "MEBR(C)".
3. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

BEAM DATA TABLE

SPAN NO.	BEAM	LENGTH ℄- ℄ ABUTMENT	LENGTH OF ① BEAM	LENGTH ℄- ℄ NOMINAL BRG	ANGLE
1	ALL	80.000'	79.667'	78.583'	90°00'00"

① FABRICATOR SHALL ADJUST BEAM LENGTHS FOR BEAM SLOPES AS REQUIRED

SPAN NO.	BEAM NO.	"A" ft.	"B" ft.
1	1 - 13	0.097	0.136



NOTE: DEFLECTIONS SHOWN ARE DUE TO CAST-IN-PLACE SLAB CONCRETE ONLY. DEFLECTIONS ARE BASED ON E_c = 5000 KSI CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY DIFFER. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

DEAD LOAD DEFLECTION DIAGRAM

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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Dallas, TX 75207

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SH 205

BUFFALO CREEK BRIDGE

FRAMING PLAN

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	562
CONT.	SECT.	JOB	
0451	01	032, ETC	

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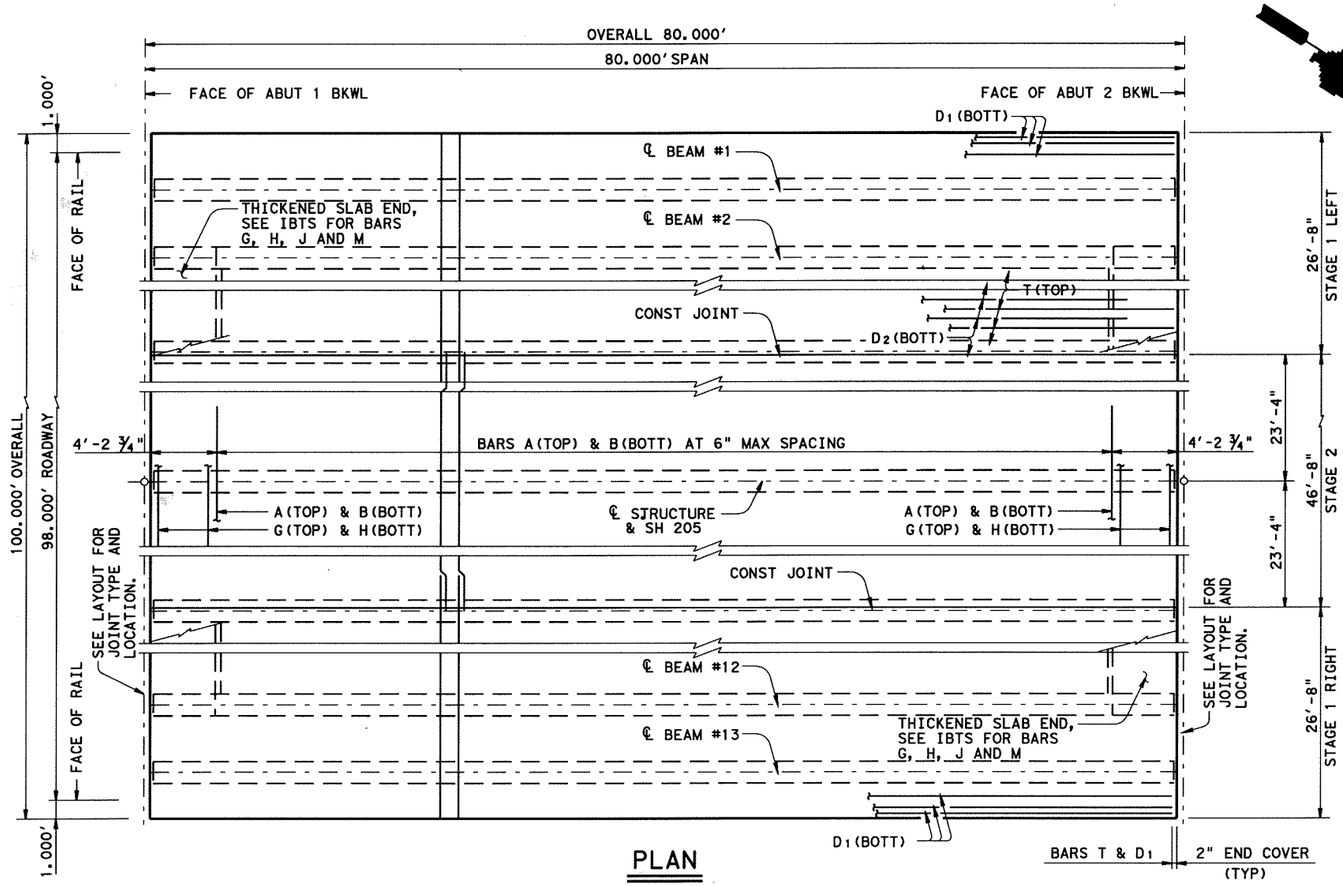
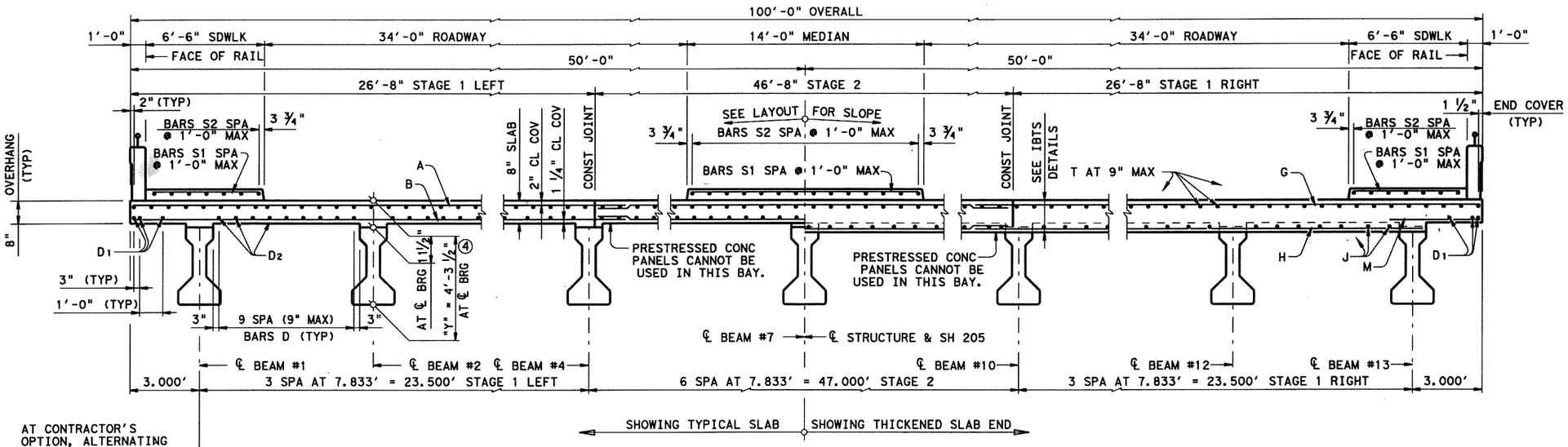


PLAN



TYPICAL TRANSVERSE SECTION

BAR TABLE	
BAR	SIZE
A	#5
B	#5
D	#5
G	#5
H	#5
J	#5
M	#5
S1	#4
S2	#4
T	#4

TABLE OF ESTIMATED QUANTITIES-STAGE 1 L/R

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY C)	CLASS "S" CONCRETE ①	REINF STEEL ①②
NO.	SF	LF	CY	LB
1	2133	318.67	69.97	22,765
TOTAL	2133	318.67	69.97	22,765

TABLE OF ESTIMATED QUANTITIES-STAGE 2

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY C)	CLASS "S" CONCRETE ①	REINF STEEL ①②
NO.	SF	LF	CY	LB
1	3733	398.33	95.79	30,833
TOTAL	3733	398.33	95.79	30,833

① PROVIDED FOR CONTRACTOR'S INFORMATION ONLY.

② REINFORCING STEEL WEIGHT FOR THE CONCRETE SLAB IS CALCULATED USING AN APPROXIMATE FACTOR OF 6.5 LB/SF

GENERAL NOTES:

DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
SEE IBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
SEE IBMS STANDARD FOR MISCELLANEOUS DETAILS.
ALL REINFORCING SHALL BE GRADE 60 AND EPOXY COATED.
CONCRETE STRENGTH F'C = 4,000 PSI.
BAR LAPS, WHERE REQUIRED, SHALL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.
FOR CURB DETAILS & CONSTRUCTION JOINTS SEE SHEET 555.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
6-9-06

HL93 LOADING

6/23/06 ADDENDUM

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SH 205

BUFFALO CREEK BRIDGE

SLAB DETAILS

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	563
CONT.	SECT.	JOB	
0451	01	032, ETC	

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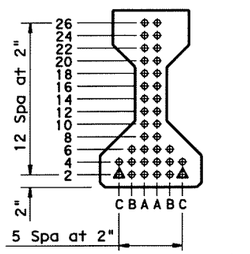
DESIGNED BEAMS (DEPRESSED STRANDS)

STRUCTURE	SPAN NO.	BEAM NO.	BEAM TYPE	NON-STD STRAND PATTERN	PRESTRESSING STRANDS TOTAL NO.	TOTAL SIZE (in)	TOTAL STRGTH fpu (ksi)	TOTAL "e" ℄ (in)	TOTAL "e" END (in)	DEPRESSED NO.	DEPRESSED TO (in)	CONCRETE RELEASE STRGTH f'ci (ksi)	CONCRETE MINIMUM 28 DAY COMP STRGTH f'c (ksi)
BUFFALO CREEK	1	1,13	C		44	½	270K	11.54	7.45	10	28.0	7.280	7.280
BRIDGE	1	2,12	C		36	½	270K	12.42	7.53	8	30.0	6.074	6.074
Type C Beams	1	3-5	C		32	½	270K	12.84	7.34	8	30.0	5.378	5.612
98' Rdwy	1	6,8	C		36	½	270K	12.42	7.53	8	30.0	6.075	6.075
8" Slab	1	7	C		40	½	270K	11.99	7.49	10	28.0	6.732	6.732
7.833' Bm Spa	1	9-11	C		32	½	270K	12.84	7.34	8	30.0	5.378	5.612
80' Span													

OPTIONAL DESIGN

DESIGN LOAD COMP STRESS (TOP ℄) (SERVICE I) fct (ksi)	DESIGN LOAD TENSILE STRESS (BOTT ℄) (SERVICE III) fcb (ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (ft-kips)	LIVE LOAD DISTRIB FACTOR ①
3.819	-4.554	4203	0.638
3.670	-4.151	3725	0.638
3.617	-3.884	3462	0.638
3.651	-4.057	3631	0.638
3.714	-4.369	3938	0.638
3.617	-3.884	3462	0.638



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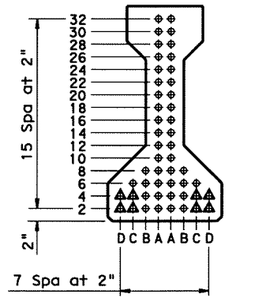

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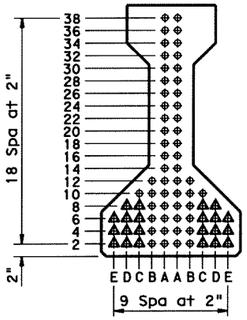
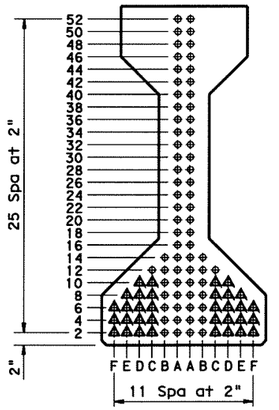
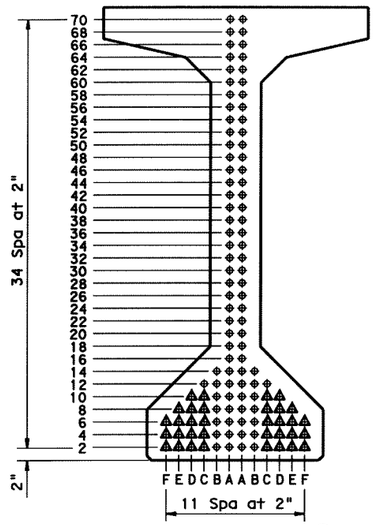


TYPE C BM ②



TYPE IV BM ②
(AASHTO TYPE IV BM)



TYPE VI BM ②
(AASHTO TYPE VI BM)

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF BEAM

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.

All concrete shall be Class H. All reinforcing bars shall be Grade 60.

When shown on this sheet, the Fabricator has the option of furnishing either the designed depressed strand beam or an approved optional design. All optional design submittals shall be signed, sealed and dated by a registered Professional Engineer.

Optional designs for beams 120 feet or longer shall have a calculated residual camber equal to or greater than that of the designed beam.

Prestress losses for the designed beams have been calculated for a relative humidity of 65 percent. Optional designs shall likewise conform.

Certain beams with depressed strands are subject to cracking in the end of the beam. When such cracks occur, all subsequent beams of the same type and strand pattern shall have strands debonded in the following manner:

1. Alternate rows of depressed strands shall be debonded for two feet from each end of the beam.
2. One half of the straight strands, as nearly as possible, shall be debonded for four feet from each end of the beam.
3. The debonding pattern shall be symmetrical about the vertical axis of the beam for both depressed and straight strands.
4. Strands shall be debonded so that the centers of gravity of the depressed strands and the straight strands will remain within one inch of their original location.
5. Strands shall be encased in plastic tubing along entire debonded length, and ends of tubing shall be sealed with waterproof tape. Split plastic tubing may be used provided the seam of the tubing is sufficiently sealed with waterproof tape to prohibit grout infiltration. Wrapping of strands with tape to provide debonding will not be permitted.
6. Revised shop drawings will not be required.

For depressed strand designed beams, strands shall be located as low as possible on the 2" grid system unless a Non-Standard Strand Pattern is indicated. Fill row "2", then row "4", then row "6", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position shall be depressed, maintaining the 2" spacing so that, at the beam ends, the upper two strands are in the position shown in the table.

Strands for the designed beam shall be low relaxation strands pretensioned to 75 percent of fpu each.

① Portion of full HL93

② Full-length debonded strands are only permitted in strand positions marked Δ. Double wrap full-length debonded strands in outermost position of each row. Full-length debonding must comply with Item 426.4.F.4.

HL93 LOADING

DISCLAIMER:
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LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 21 31 41 51 61
17 18 19 20 21 22 32 42 52 62 92 93 03 13 23
33 43 53 63 73 83 94 04 14 24 34 44 54 64 74 84
95 05 15 25 35 45 55 65 75 85 96 06 16 26 36

ACC:

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5/22/2006 Plotted 22-MAY-2006 13:30

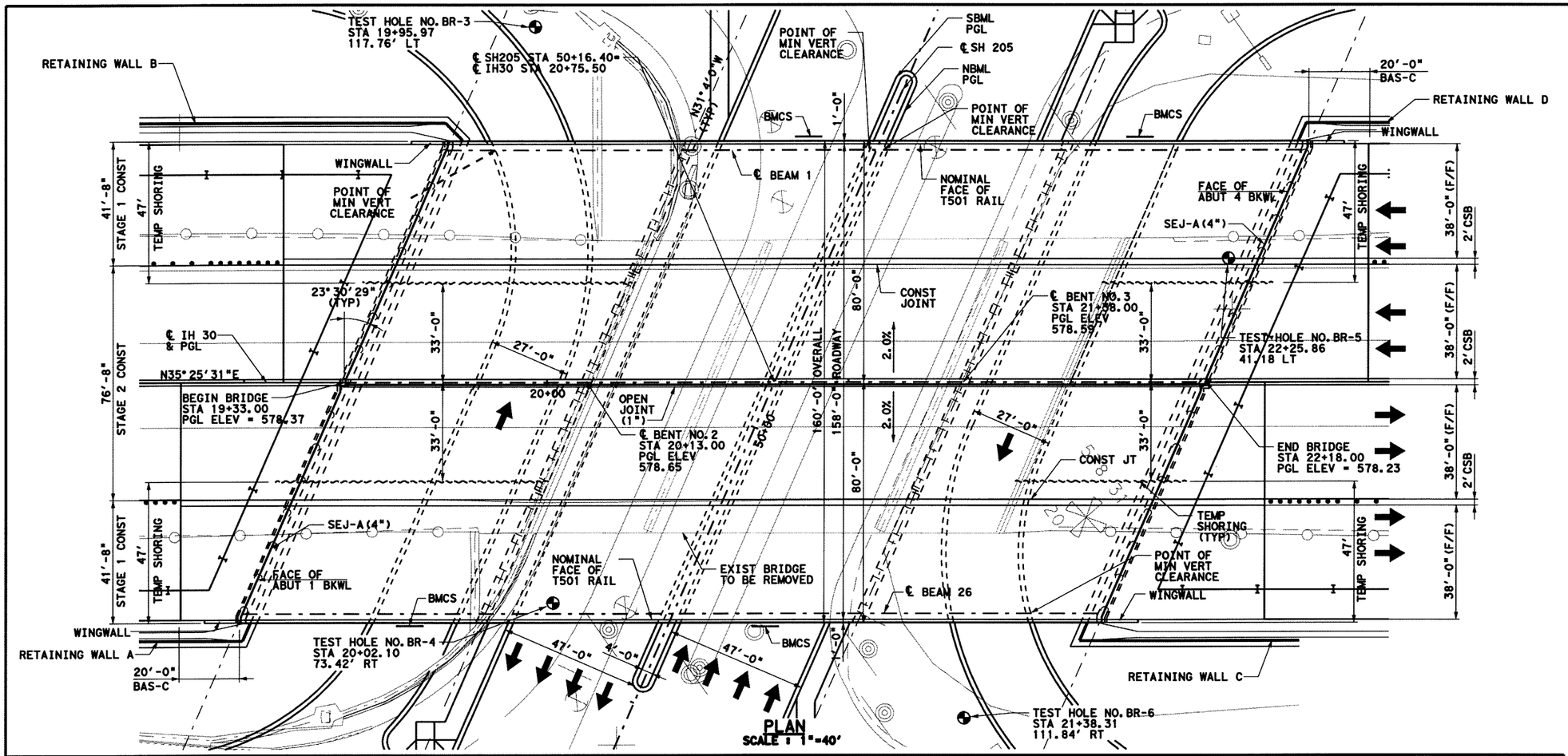
STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE I-BEAM DESIGNS (NON-STANDARD SPANS)

IBND

FILE: ibndstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		564
01-06: Full-length debonding	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0009	12	203	SH 205



PLAN
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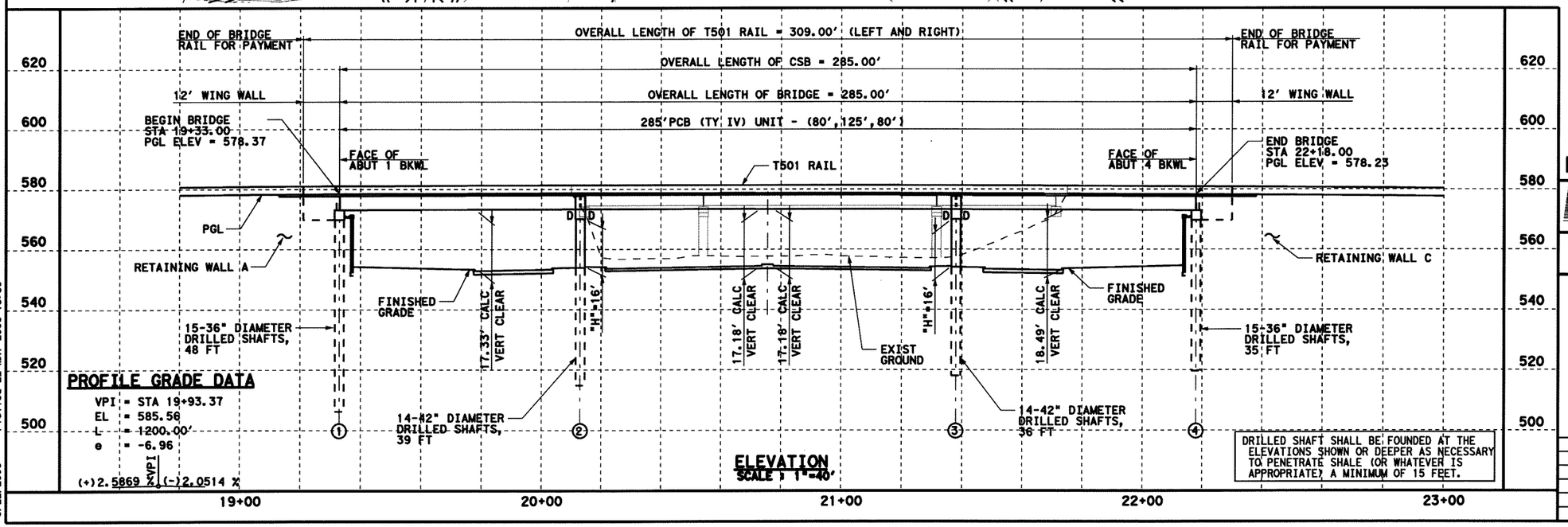

PROFILE GRADE DATA

VPI = STA 19+93.37
EL = 585.56
L = 1200.00'
e = -6.96

(+)2.5869 %VPI (-)2.0514 %

ELEVATION
SCALE : 1"=40'

DRILLED SHAFT SHALL BE FOUNDED AT THE ELEVATIONS SHOWN OR DEEPER AS NECESSARY TO PENETRATE SHALE (OR WHATEVER IS APPROPRIATE) A MINIMUM OF 15 FEET.

GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
SH 205
TRAFFIC - 7700 ADT (2000)
TRAFFIC - 11800 ADT (2020)
DESIGN SPEED - 45 MPH

INTERSTATE HIGHWAY
IH 30
TRAFFIC - 4400 ADT (2000)
TRAFFIC - 6700 ADT (2020)
DESIGN SPEED - 70 MPH

NEW NBI
WESTBOUND: 18-199-0009-12-051
EASTBOUND: 18-199-0009-12-052
EXIST NBI
18-199-0-0009-12-112

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS BRIDGE LAYOUT

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	565
0451	01	032, ETC	

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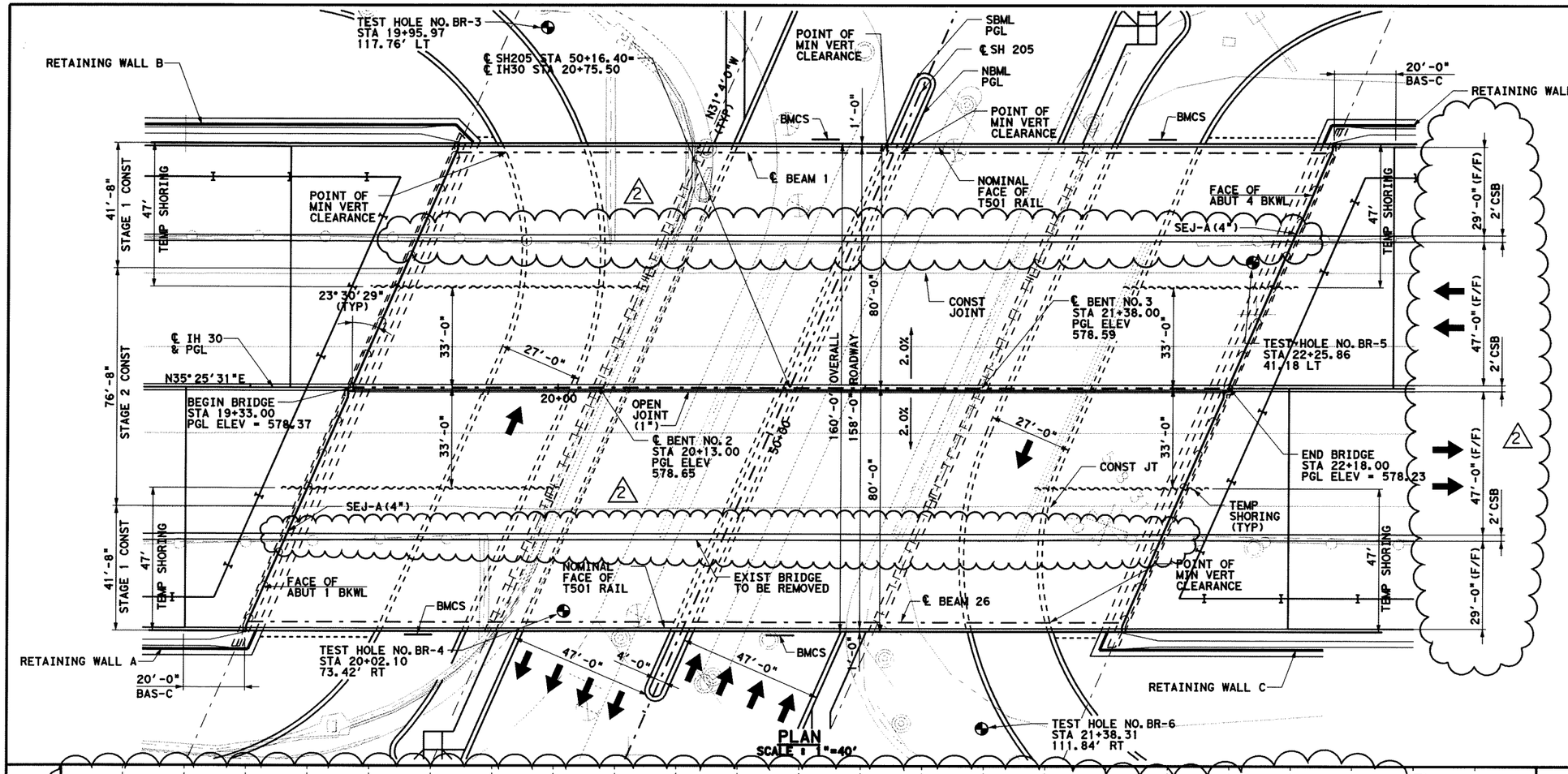
5/22/2006



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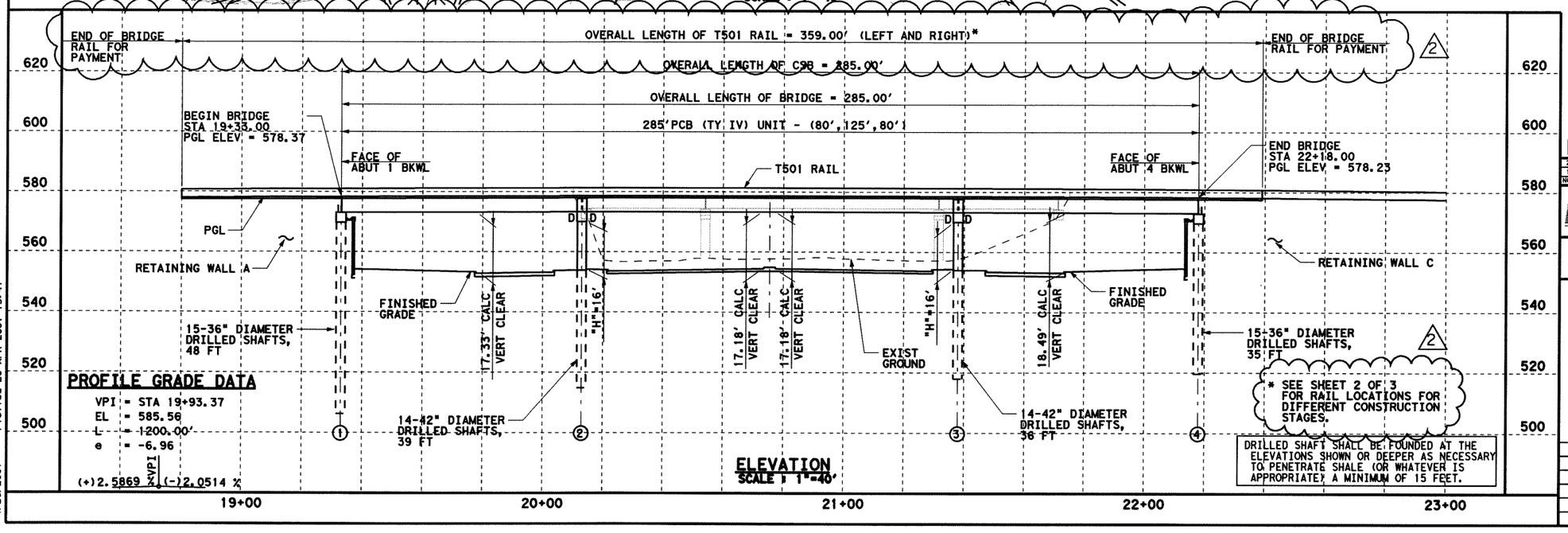

PROFILE GRADE DATA

VPI = STA 19+93.37
EL = 585.56
L = 1200.00'
e = -6.96
(+)2.5869 %VPI (-)2.0514 %

ELEVATION
SCALE : 1"=40'

* SEE SHEET 2 OF 3 FOR RAIL LOCATIONS FOR DIFFERENT CONSTRUCTION STAGES.

DRILLED SHAFT SHALL BE FOUNDED AT THE ELEVATIONS SHOWN OR DEEPER AS NECESSARY TO PENETRATE SHALE (OR WHATEVER IS APPROPRIATE) A MINIMUM OF 15 FEET.

GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
SH 205
TRAFFIC - 7700 ADT (2000)
TRAFFIC - 11800 ADT (2020)
DESIGN SPEED - 45 MPH

INTERSTATE HIGHWAY
IH 30
TRAFFIC - 4400 ADT (2000)
TRAFFIC - 6700 ADT (2020)
DESIGN SPEED - 70 MPH

NEW NBI
WESTBOUND: 18-199-0009-12-051
EASTBOUND: 18-199-0009-12-052
EXIST NBI
18-199-0-0009-12-112

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
4-26-07

HL93 LOADING

NO.	REVISION	BY	DATE
2	REVISE PLAN AND PROFILE	J.C.	04-27-07
1	REVISE PLAN AND PROFILE	J.C.	02-02-07

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SH 205

IH 30 UNDERPASS BRIDGE LAYOUT

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	565A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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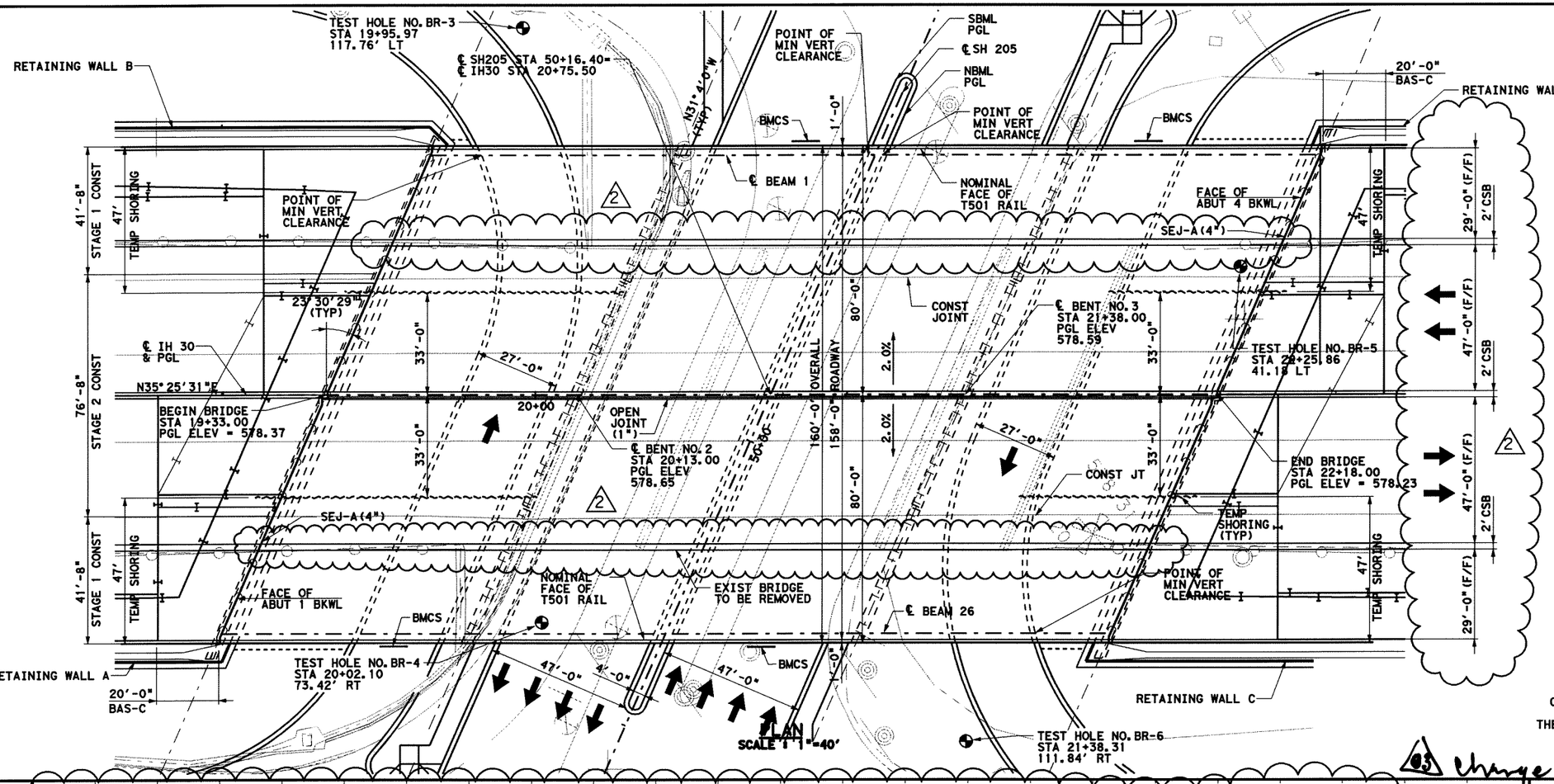


GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

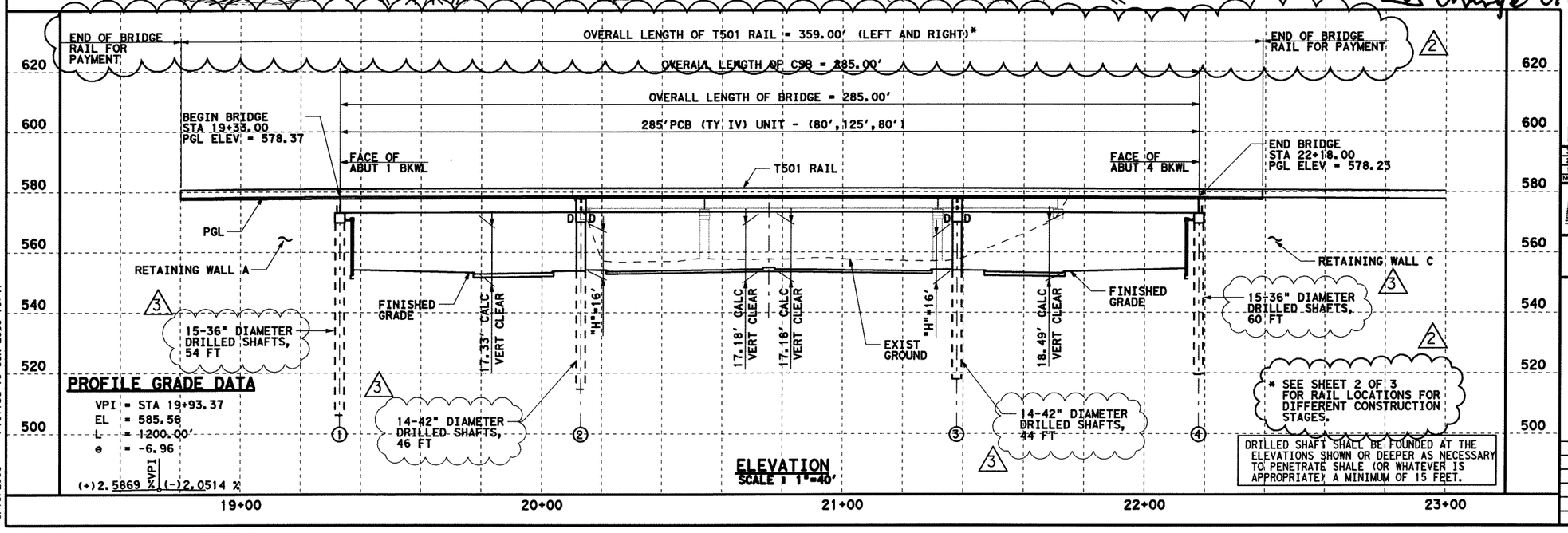
ROADWAY DATA

URBAN DIVIDED HIGHWAY
SH 205
TRAFFIC - 7700 ADT (2000)
TRAFFIC - 11800 ADT (2020)
DESIGN SPEED - 45 MPH

INTERSTATE HIGHWAY
IH 30
TRAFFIC - 4400 ADT (2000)
TRAFFIC - 6700 ADT (2020)
DESIGN SPEED - 70 MPH

NEW NBI
WESTBOUND: 18-199-0009-12-051
EASTBOUND: 18-199-0009-12-052
EXIST NBI
18-199-0-0009-12-112

CHINH T. PHAN IS SEALING THE REVISION NO. 3 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.



PROFILE GRADE DATA

VPI = STA 19+93.37
EL = 585.56
L = 1200.00'
e = -6.96
(+)2.5869 % VPI (-)2.0514 %

ELEVATION

SCALE 1"=40'

03 Change Order 53

STATE OF TEXAS
CHINH T. PHAN
92726
LICENSED
PROFESSIONAL ENGINEER
6-19-08

HL93 LOADING

NO.	REVISION	BY	DATE
3	REVISE DRILLED SHAFT LENGTHS	C.P.	06-18-08
2	REVISE PLAN AND PROFILE	J.C.	04-27-07
1	REVISE PLAN AND PROFILE	J.C.	02-02-07

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SH 205

IH 30 UNDERPASS
BRIDGE LAYOUT

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	565B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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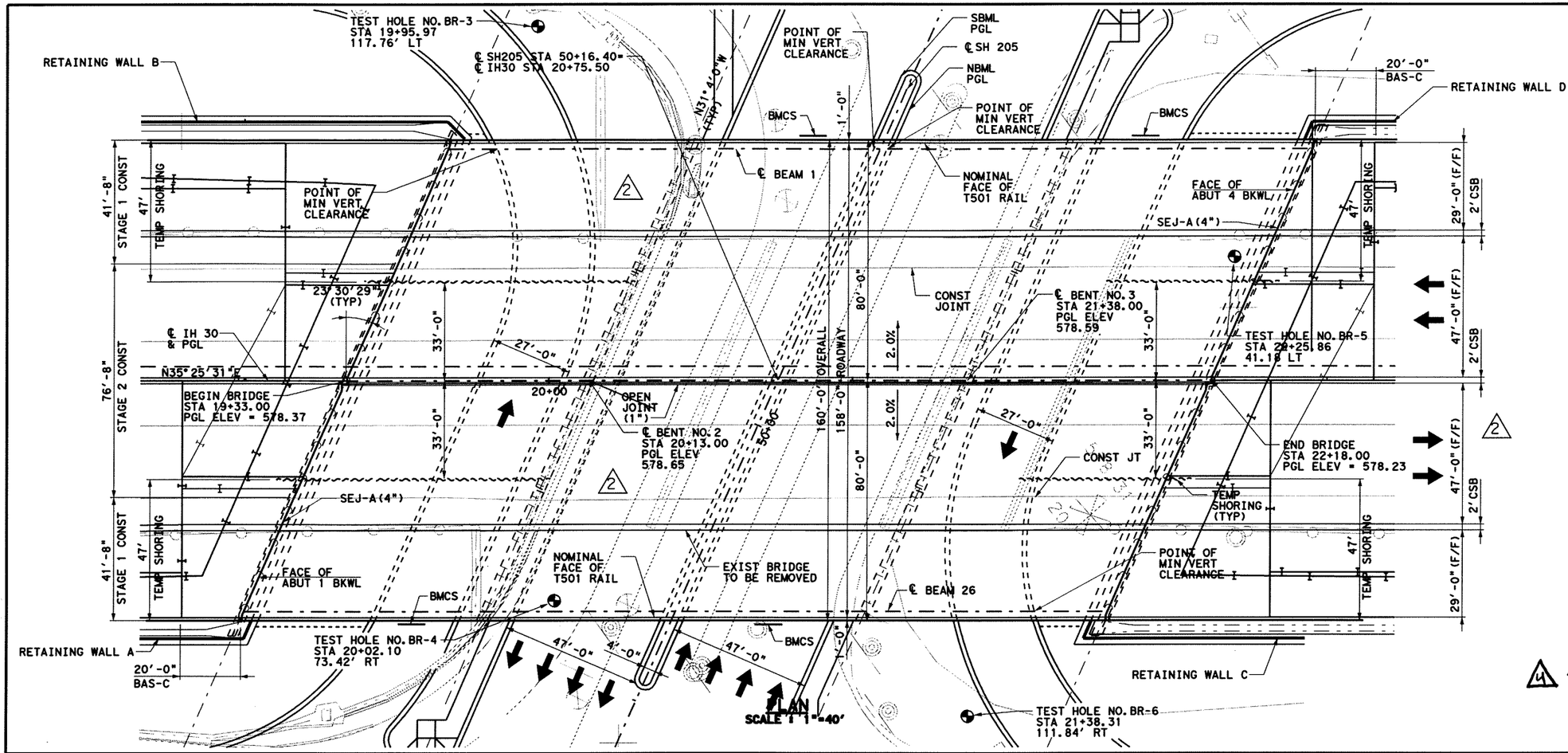

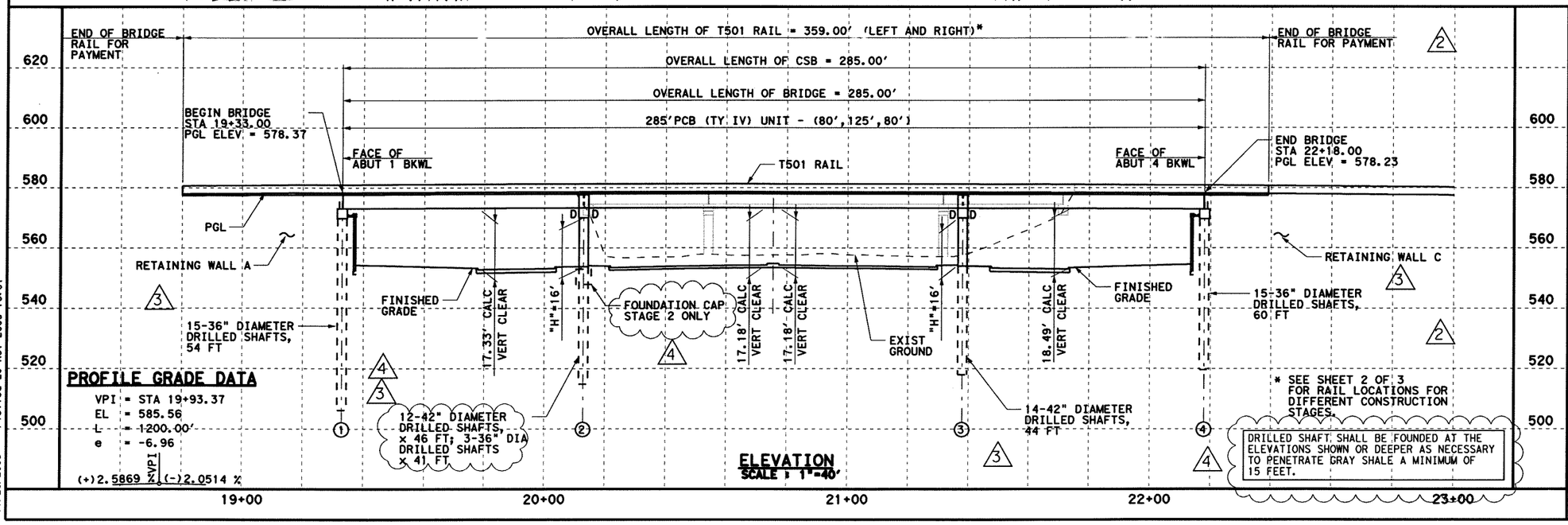

PROFILE GRADE DATA

VPI = STA 19+93.37
EL = 585.56
L = 1200.00'
e = -6.96
(+)2.5869 %VPI %(-)2.0514 %

ELEVATION
SCALE 1"=40'

GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
SH 205
TRAFFIC - 7700 ADT (2000)
TRAFFIC - 11800 ADT (2020)
DESIGN SPEED - 45 MPH

INTERSTATE HIGHWAY
IH 30
TRAFFIC - 4400 ADT (2000)
TRAFFIC - 6700 ADT (2020)
DESIGN SPEED - 70 MPH

NEW NBI
WESTBOUND: 18-199-0009-12-051
EASTBOUND: 18-199-0009-12-052
EXIST NBI
18-199-0-0009-12-112

4 ~ FIELD CHANGE # 63

STATE OF TEXAS
OSAMA A. SHAHAWY
88476
LICENSED
PROFESSIONAL ENGINEER
11/20/08

HL93 LOADING

NO.	REVISION	BY	DATE
4	ADDED BENT NO.2 FOUNDATION CAP	O.S.	11-19-08
3	REVISE DRILLED SHAFT LENGTHS	C.P.	06-18-08
2	REVISE PLAN AND PROFILE	J.C.	04-27-07
1	REVISE PLAN AND PROFILE	J.C.	02-02-07

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SH 205

IH 30 UNDERPASS
BRIDGE LAYOUT

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	56
CONT.	SECT.	JOB	
0451	01	032, ETC	

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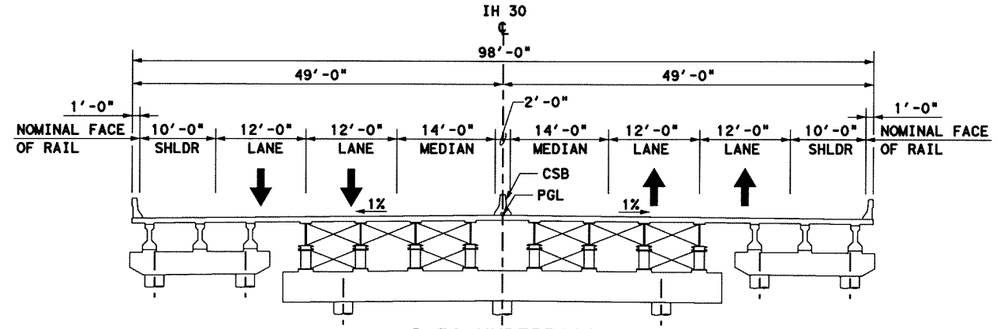
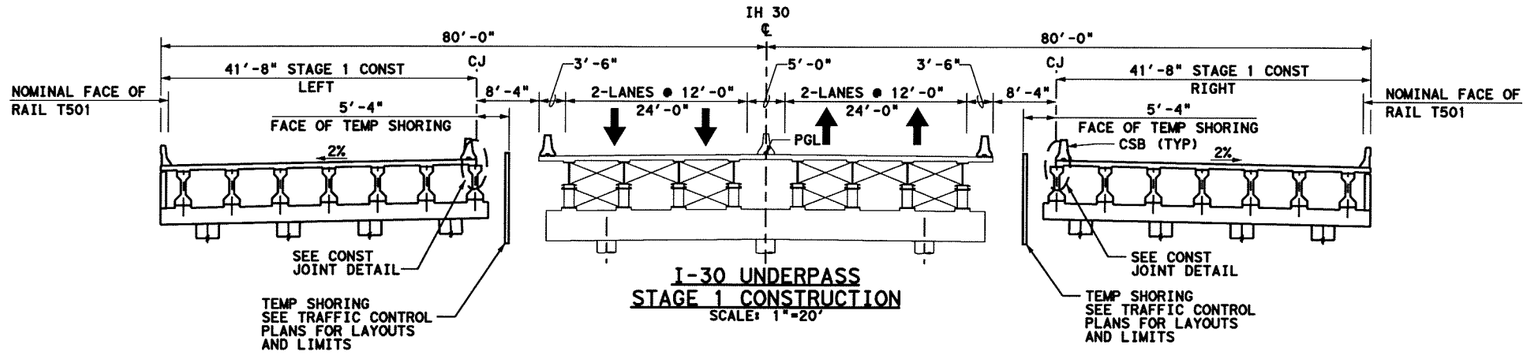
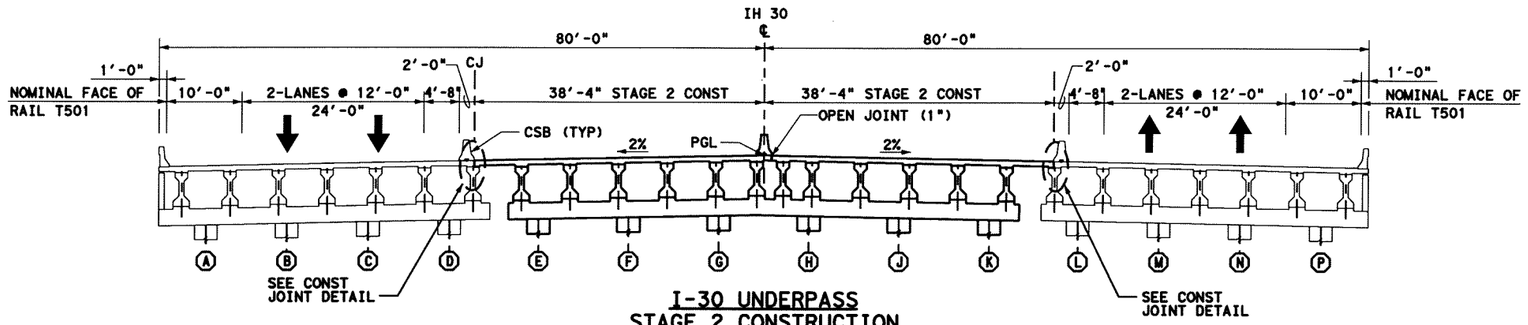


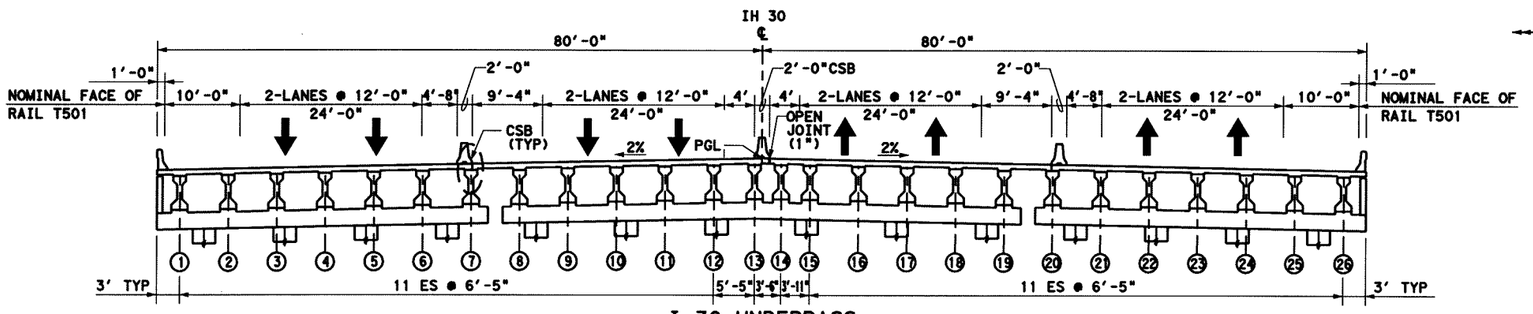
I-30 UNDERPASS
EXISTING STRUCTURE
SCALE: 1"=20'



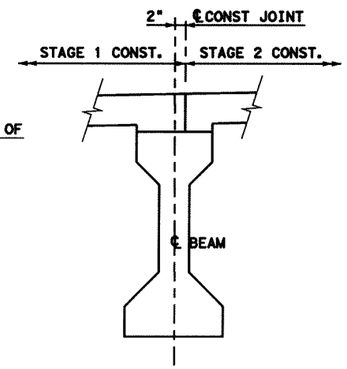
I-30 UNDERPASS
STAGE 1 CONSTRUCTION
SCALE: 1"=20'



I-30 UNDERPASS
STAGE 2 CONSTRUCTION
SCALE: 1"=20'



I-30 UNDERPASS
COMPLETED STRUCTURE
SCALE: 1"=20'



CONSTRUCTION JOINT DETAIL
SCALE: NTS

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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SH 205

IH 30 UNDERPASS
BRIDGE LAYOUT

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	566
CONT.	SECT.	JOB	
0451	01	032, ETC	

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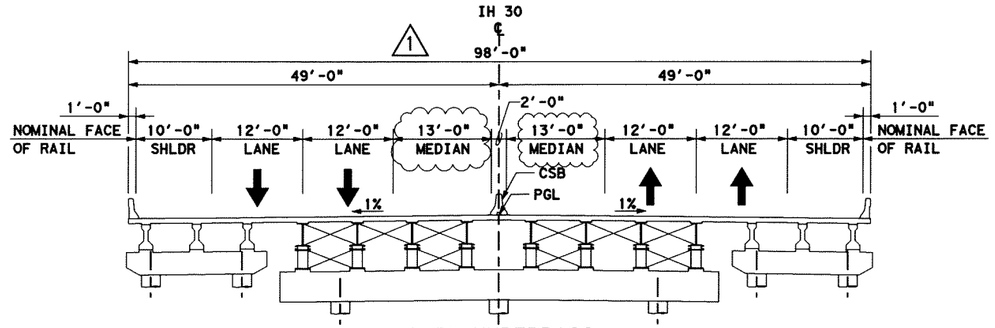
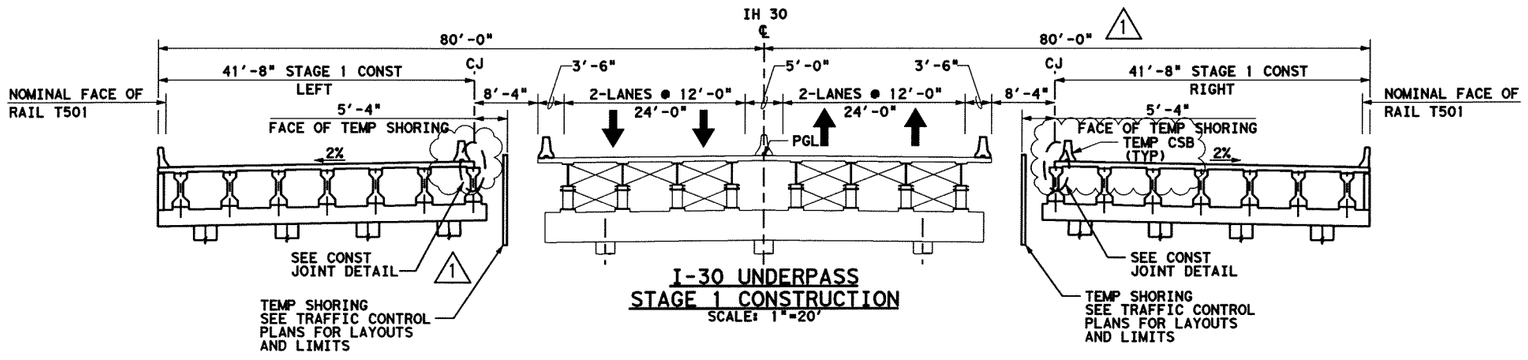


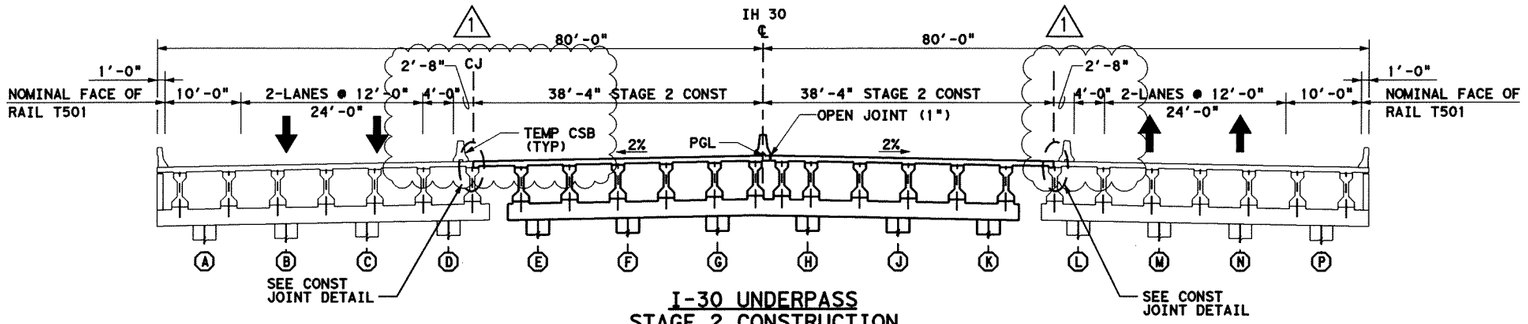
I-30 UNDERPASS EXISTING STRUCTURE

SCALE: 1"=20'



I-30 UNDERPASS STAGE 1 CONSTRUCTION

SCALE: 1"=20'



I-30 UNDERPASS STAGE 2 CONSTRUCTION

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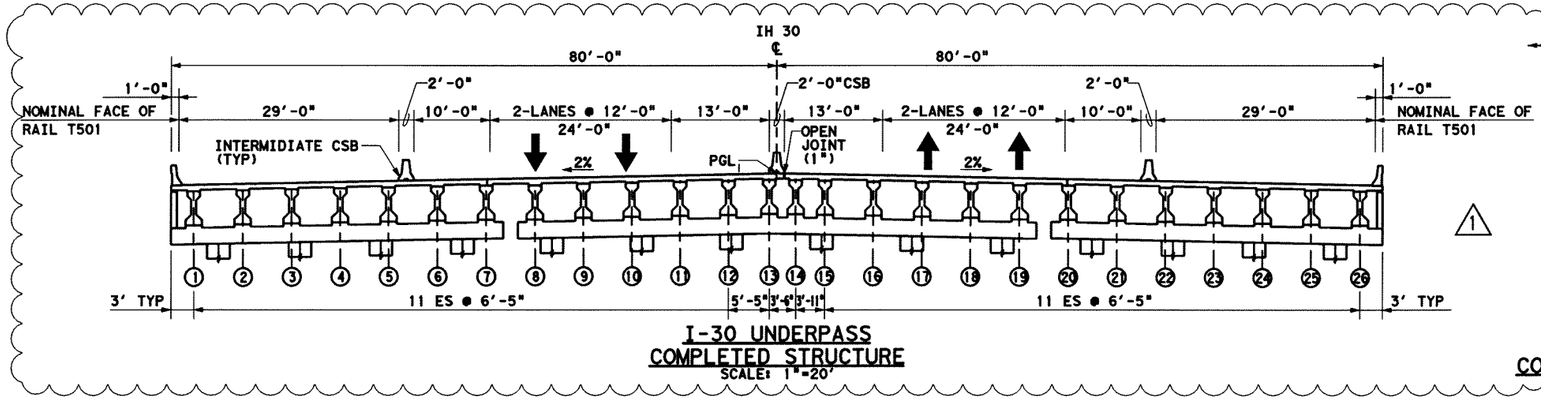
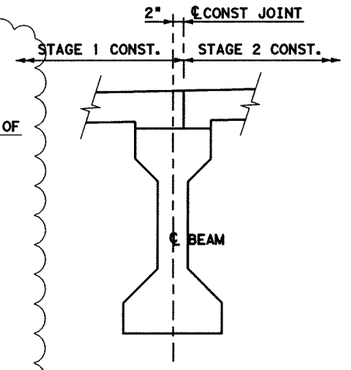


I-30 UNDERPASS COMPLETED STRUCTURE

SCALE: 1"=20'



CONSTRUCTION JOINT DETAIL

SCALE: NTS

HL93 LOADING

NO.	REVISION	BY	DATE
1	REVISE CSB LOCATION AND COMPLETED STRUCTURE	J.C.	04-27-07

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88343
LICENSED PROFESSIONAL ENGINEER
4-26-07

SH 205

IH 30 UNDERPASS BRIDGE LAYOUT

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	566A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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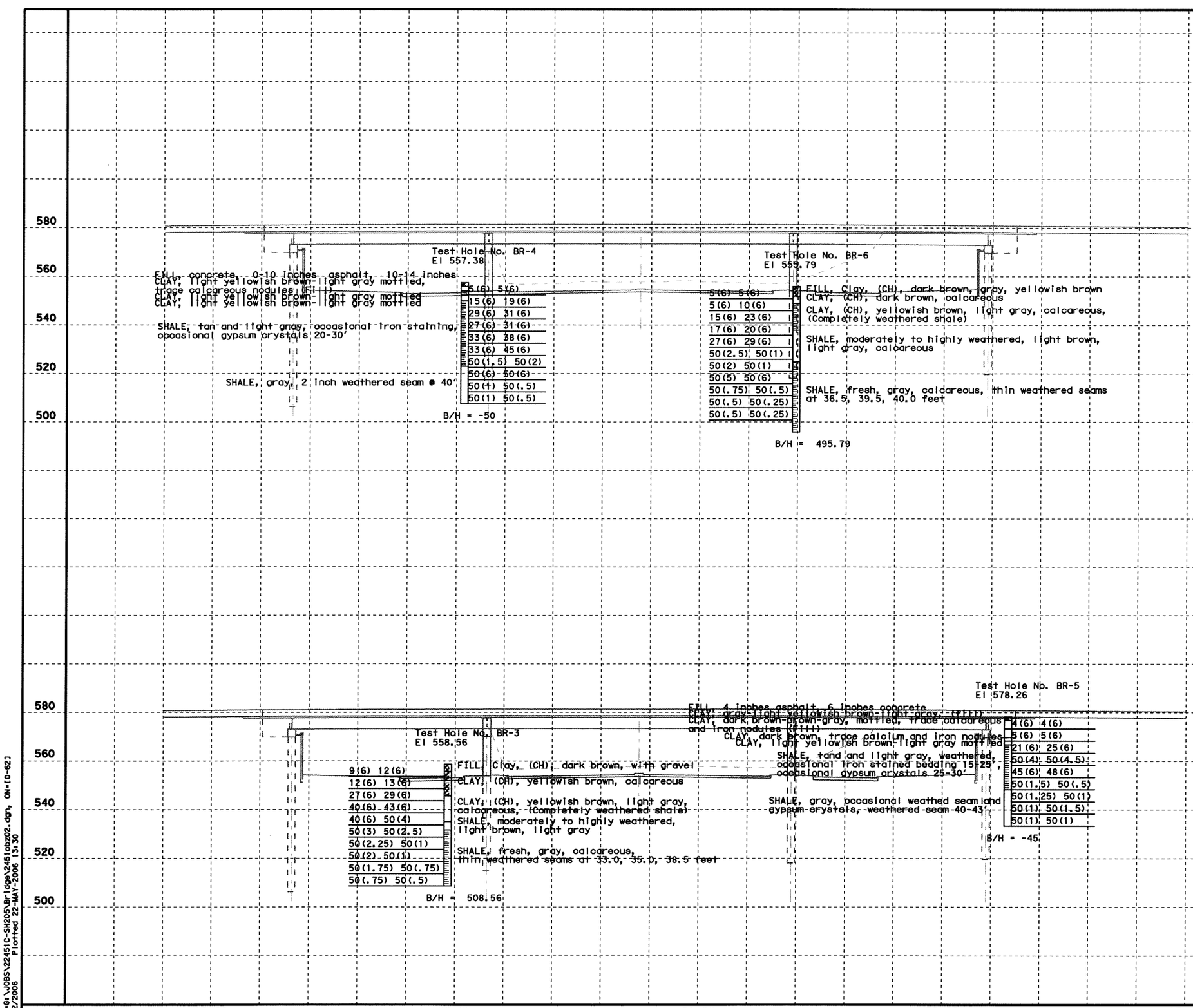

GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
SH 205
TRAFFIC - 7700 ADT (2000)
TRAFFIC - 11800 ADT (2020)
DESIGN SPEED - 45 MPH

INTERSTATE HIGHWAY
IH 30
TRAFFIC - 4400 ADT (2000)
TRAFFIC - 6700 ADT (2020)
DESIGN SPEED - 70 MPH

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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SH 205

IH 30 UNDERPASS
BORING LOG

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	567
0451	01	032, ETC	

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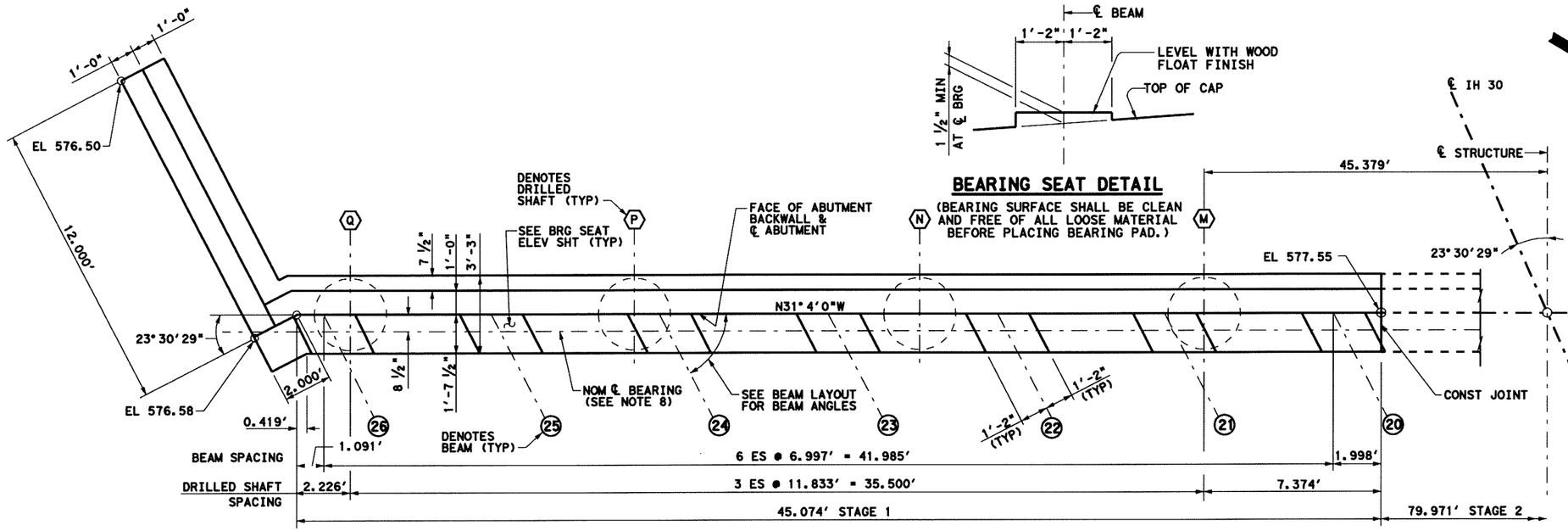
5/22/2006



PLAN

SCALE: 3/16" = 1'-0"

BEARING SEAT DETAIL

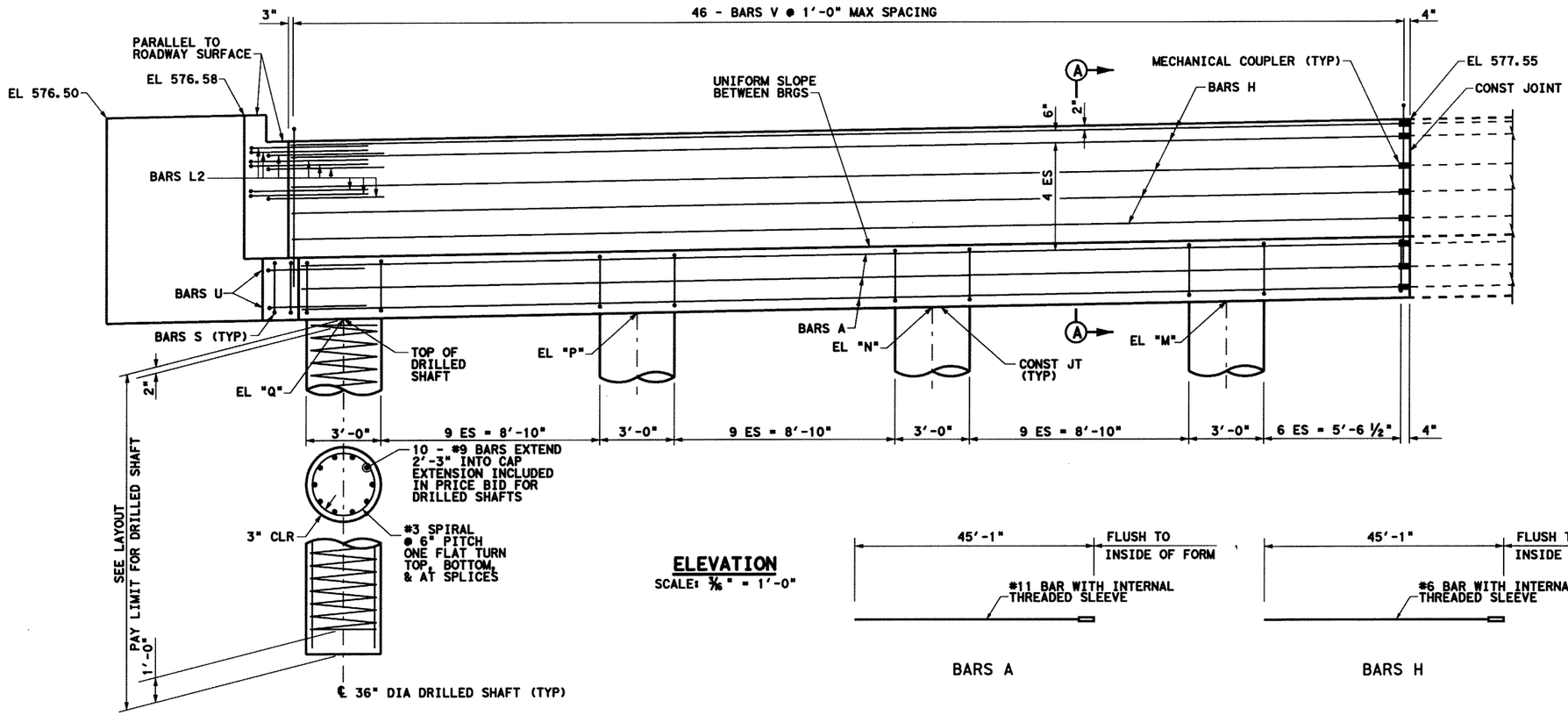
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

GENERAL NOTES

1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 36" DIA DRILLED SHAFT LOAD = 130 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

CONTROL ELEVATIONS

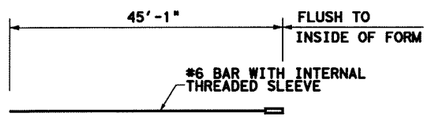
TOP OF DRILLED SHAFTS			
EL "M"	EL "N"	EL "P"	EL "Q"
569.21	568.97	568.72	568.48



ELEVATION

SCALE: 3/16" = 1'-0"

BARS A



BARS H

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	568
CONT.	SECT.	JOB	
0451	01	032, ETC	

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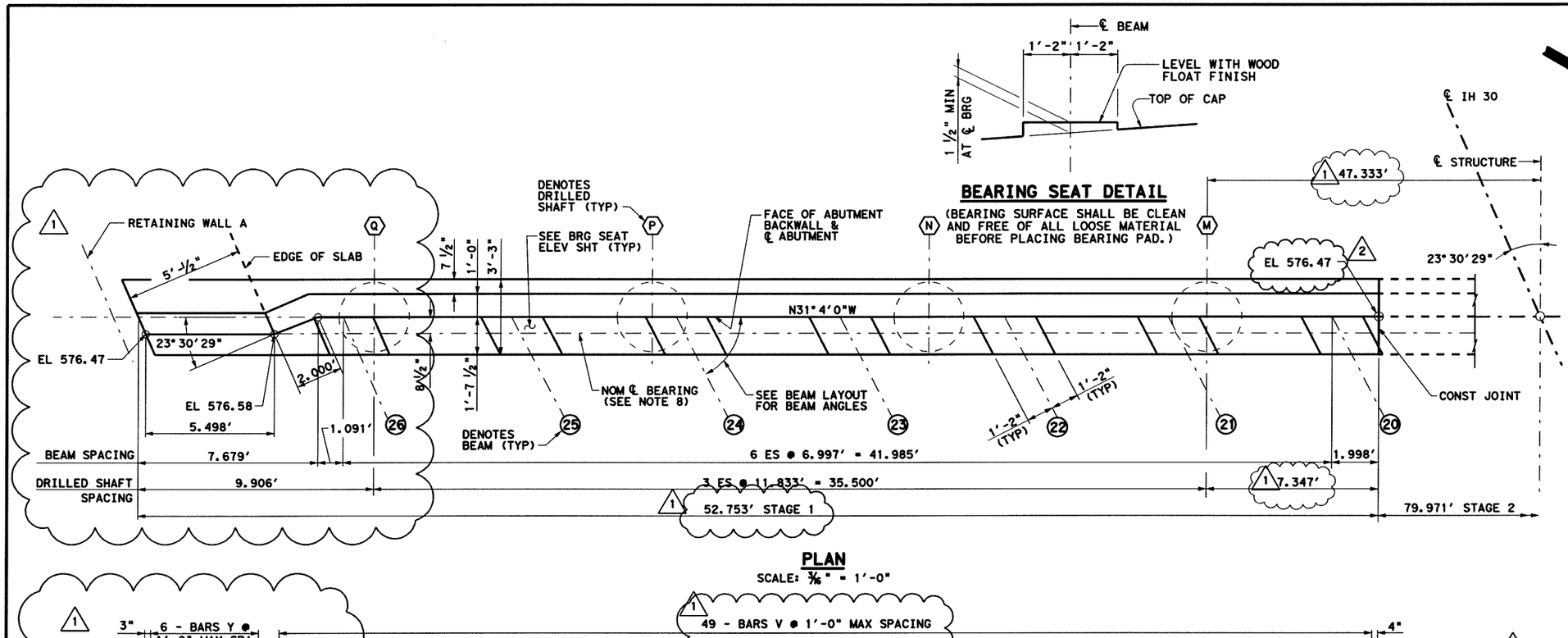
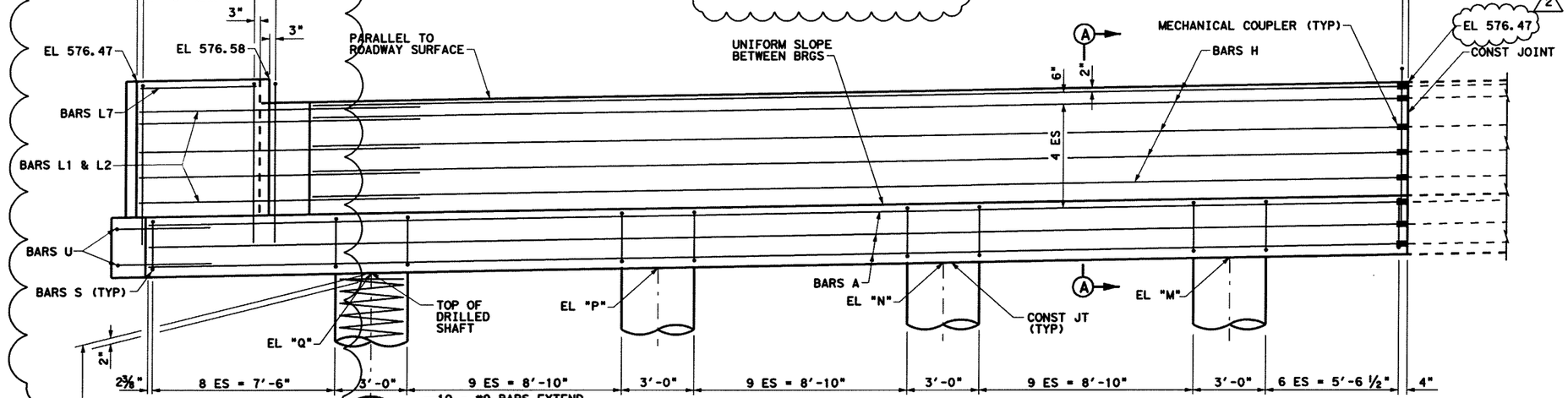


GENERAL NOTES

1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 36" DIA DRILLED SHAFT LOAD = 132 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

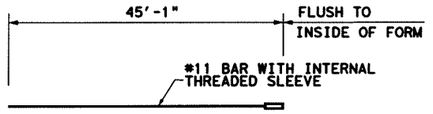
PLAN

SCALE: ⅜" = 1'-0"

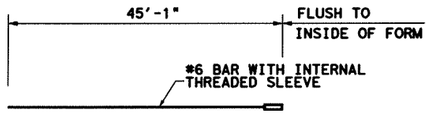


ELEVATION

SCALE: ⅜" = 1'-0"



BARS A



BARS H

CONTROL ELEVATIONS

TOP OF DRILLED SHAFTS			
EL "M"	EL "N"	EL "P"	EL "Q"
569.21	568.97	568.72	568.48

1 REVISED BY JC 05/07/2007

2 REVISED BY JC 05/23/2007

HL93 LOADING 5-23-07

NO.	REVISION	BY	DATE
1	REVISE PLAN AND QUANTITIES	J.C.	02-02-07

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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	568A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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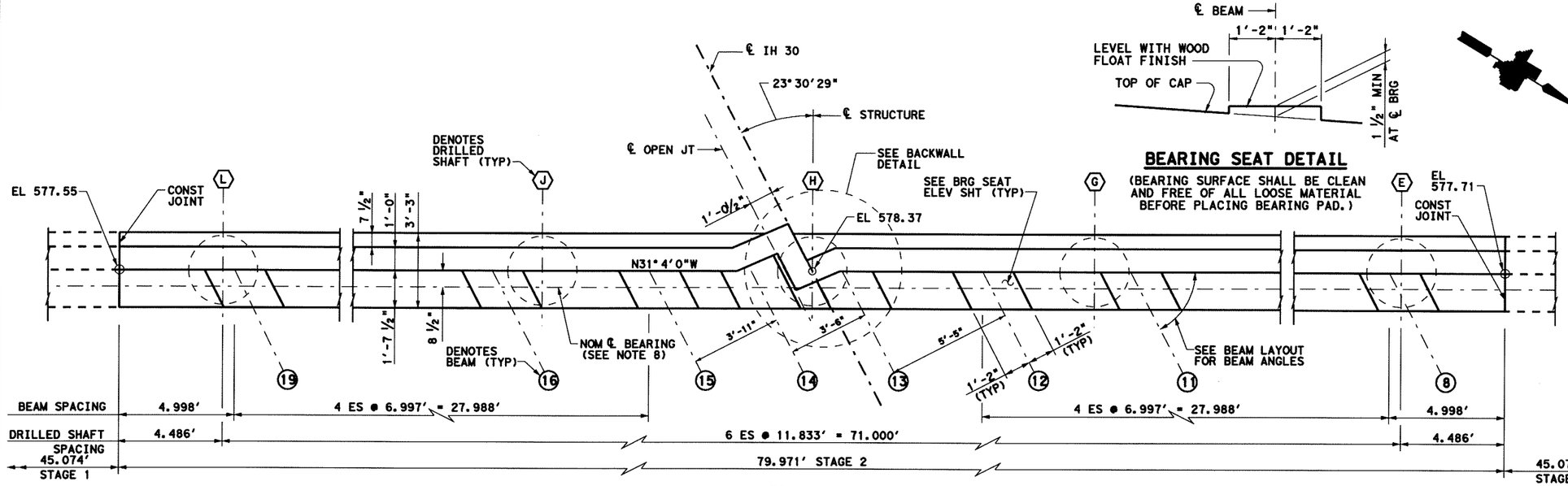
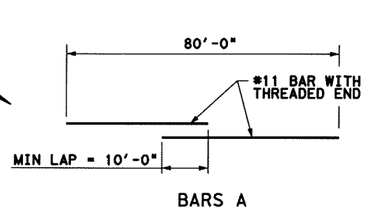


PLAN

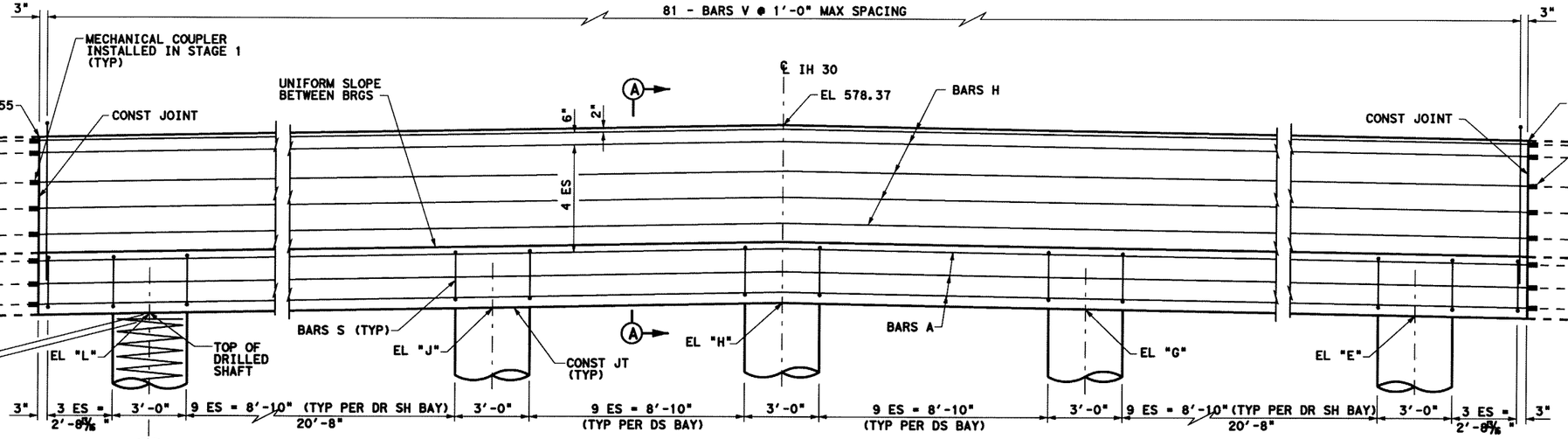
SCALE: 3/16" = 1'-0"

BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "E"	EL "F"	EL "G"	EL "H"
569.60	569.79	569.99	570.18
EL "J"	EL "K"	EL "L"	
569.94	569.70	569.46	



ELEVATION

SCALE: 3/16" = 1'-0"

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	569
CONT.	SECT.	JOB	
0451	01	032, ETC	

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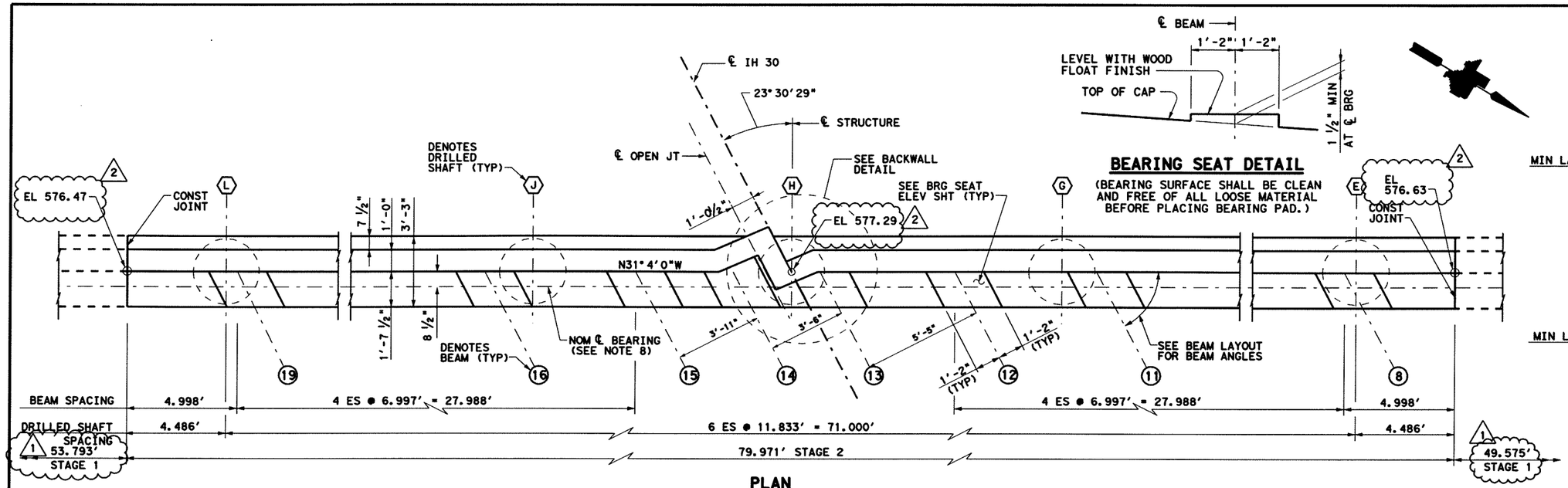
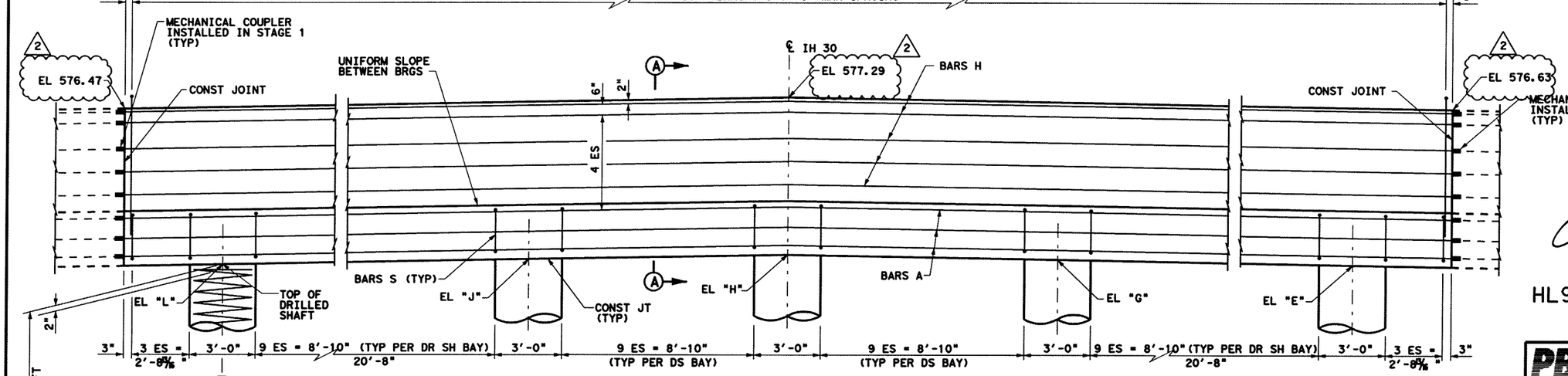


CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "E"	EL "F"	EL "G"	EL "H"
569.60	569.79	569.99	570.18
EL "J"	EL "K"	EL "L"	
569.94	569.70	569.46	

1 REVISED BY JC 05-07-2007
2 REVISED BY JC 05-23-2007



ELEVATION
SCALE: 3/16" = 1'-0"

HL93 LOADING

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-23-07

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Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	569A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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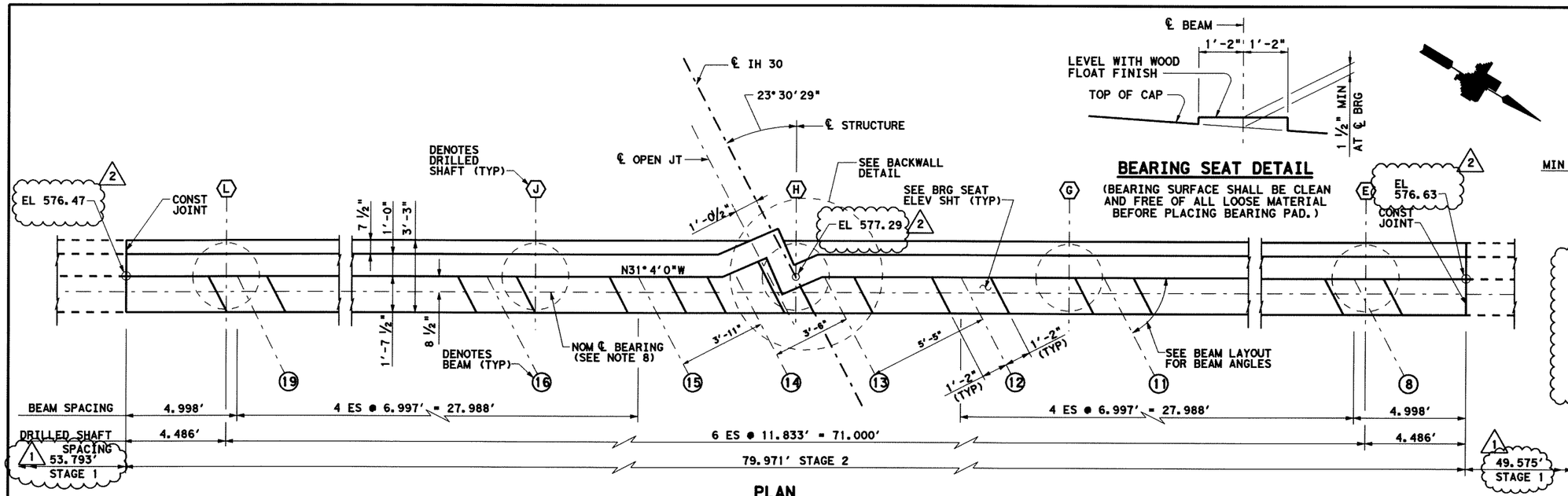
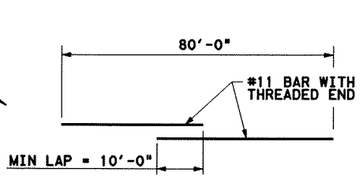
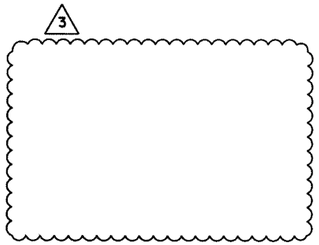


PLAN
SCALE: 3/16" = 1'-0"

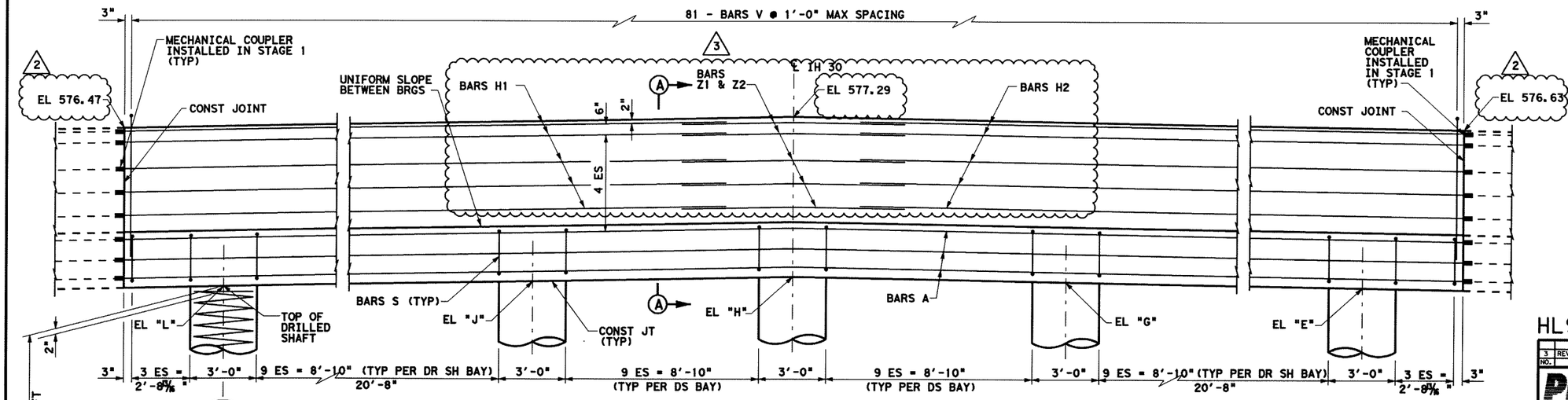
BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

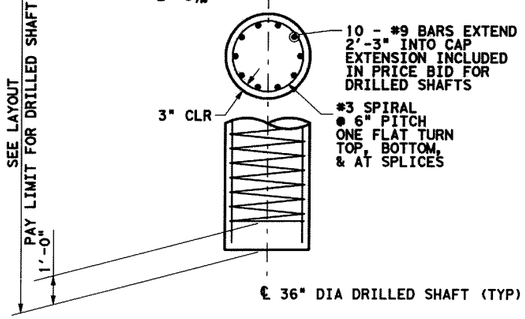


BARS A



CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "E"	EL "F"	EL "G"	EL "H"
569.60	569.79	569.99	570.18
EL "J"	EL "K"	EL "L"	
569.94	569.70	569.46	





ELEVATION
SCALE: 3/16" = 1'-0"

#3 Change Order 53

1 REVISED BY JC 05-07-2007
2 REVISED BY JC 05-23-2007

CHINH T. PHAN IS SEALING THE REVISION NO. 3 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS
CHINH TAI PHAN
92726
LICENSED
PROFESSIONAL ENGINEER
6-19-08

HL93 LOADING

NO.	REVISION	BY	DATE
3	REVISE REINFORCING IN ELEVATION	C.P.	06-18-08

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	569B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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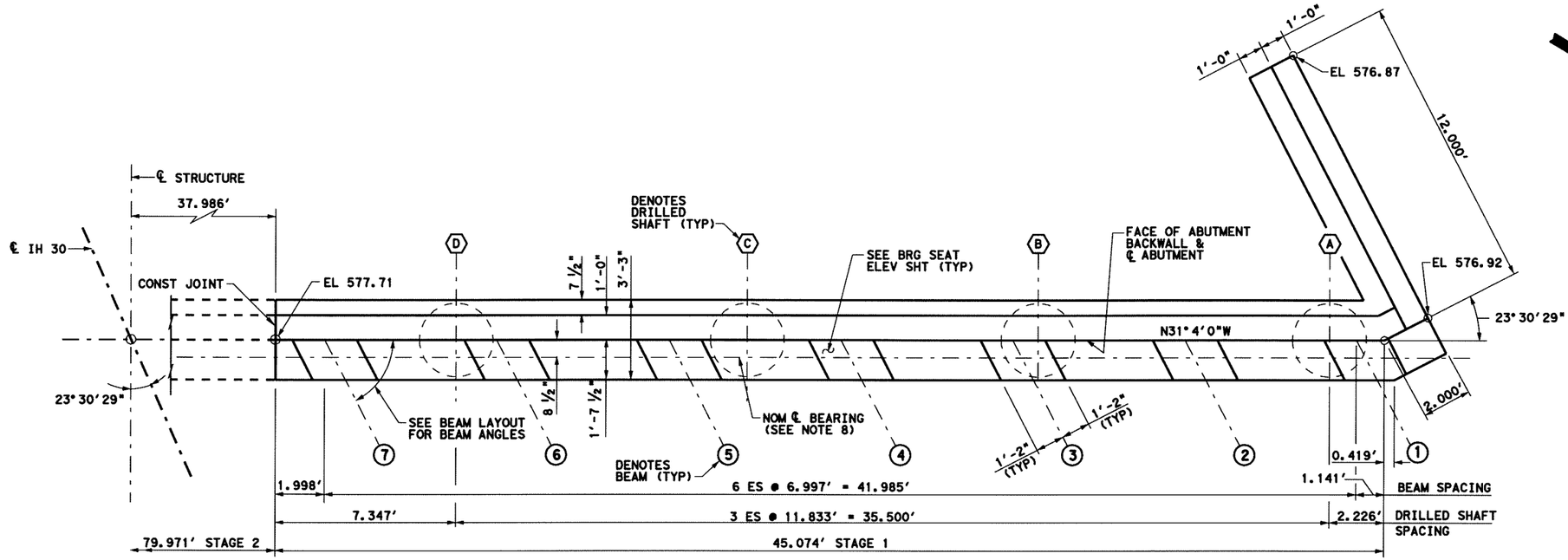
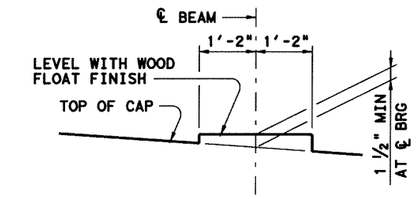
6/19/2008 Plotted 19-JUN-2008 20:05



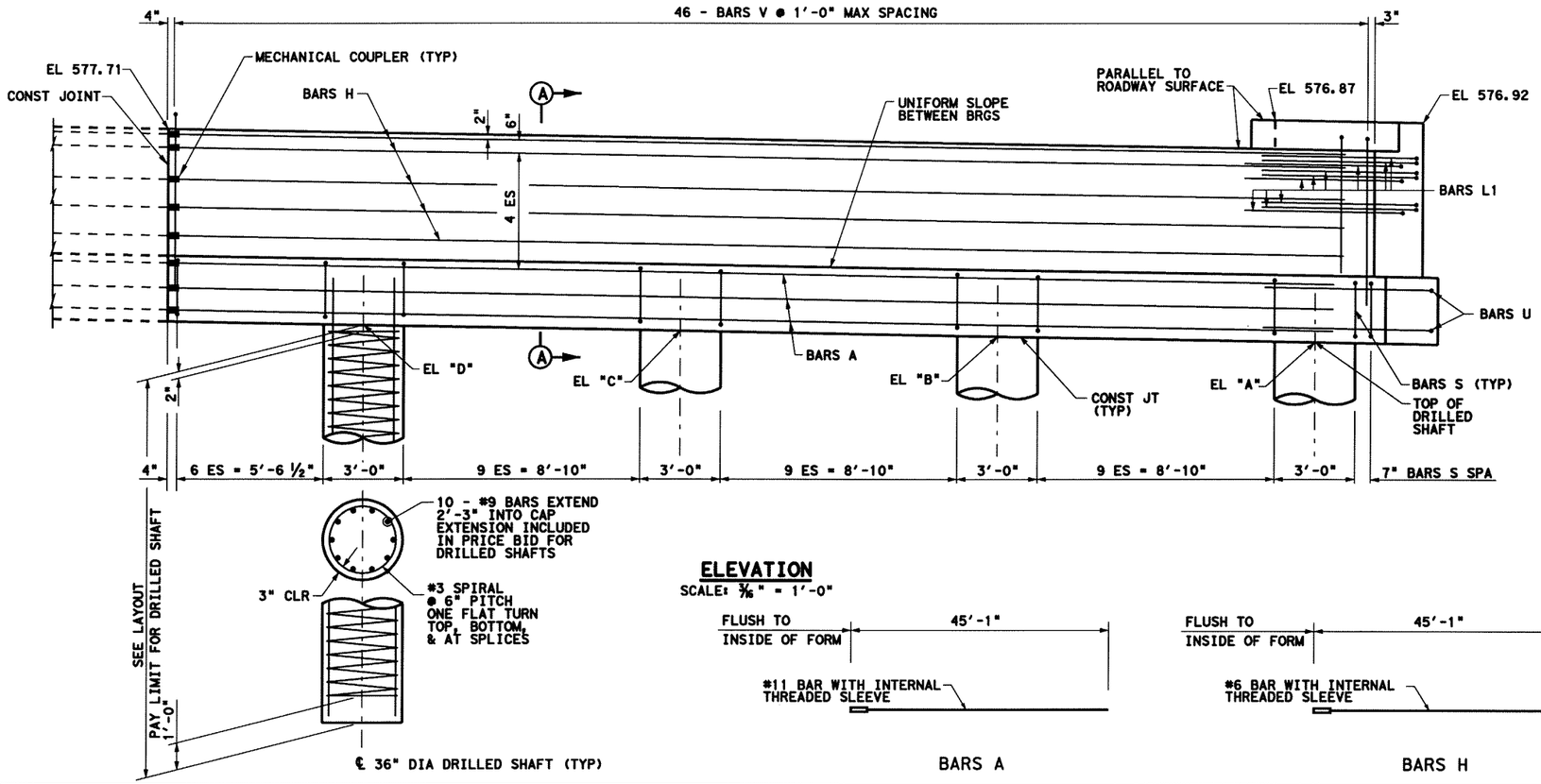
PLAN

SCALE: 3/16" = 1'-0"



BEARING SEAT DETAIL

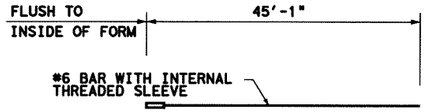
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



ELEVATION

SCALE: 3/16" = 1'-0"

BARS A



BARS H

CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "A"	EL "B"	EL "C"	EL "D"
568.81	569.01	569.21	569.40

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

Parsons Brinckerhoff Quade & Douglas, Inc.
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Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	570
CONT.	SECT.	JOB	
0451	01	032, ETC	

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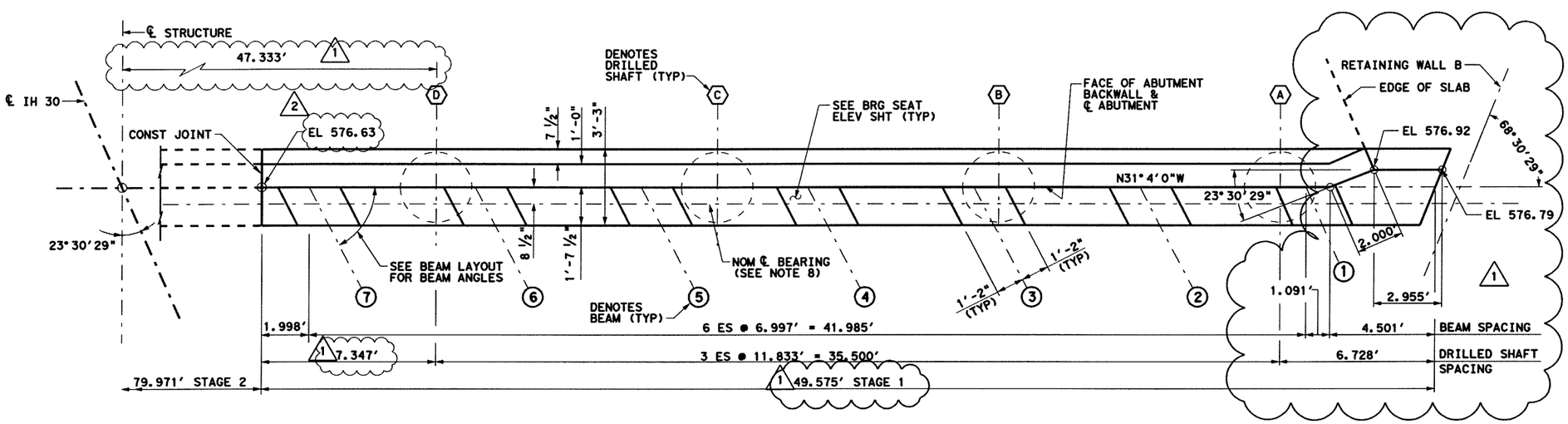
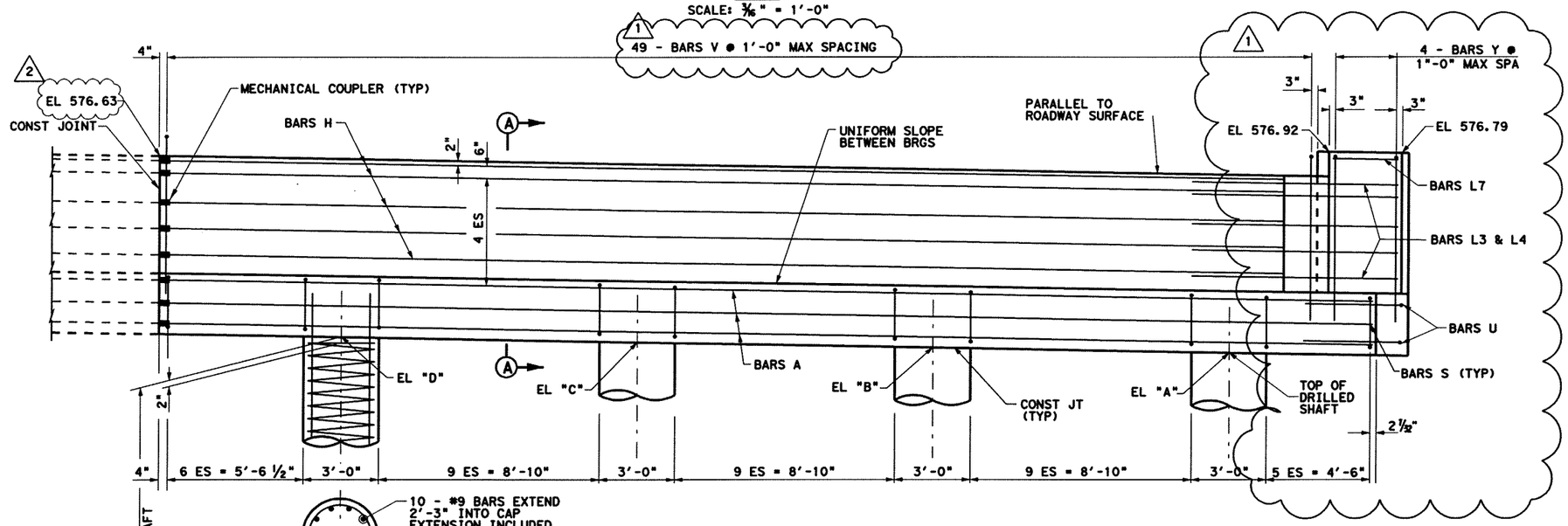
5/22/2006 Plotted 22-MAY-2006 13:30



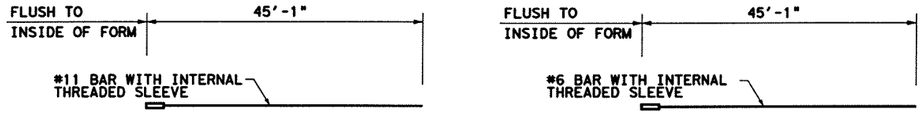
PLAN

SCALE: 3/16" = 1'-0"

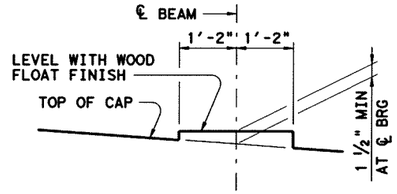


ELEVATION

SCALE: 3/16" = 1'-0"



BARS A BARS H



BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "A"	EL "B"	EL "C"	EL "D"
568.81	569.01	569.21	569.40

1 REVISED BY JC 05-07-2007

2 REVISED BY JC 05-23-2007

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-23-07

NO.	REVISION	BY	DATE
1	REVISE PLAN AND QUANTITIES	J.C.	02-02-07

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Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 1
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	570A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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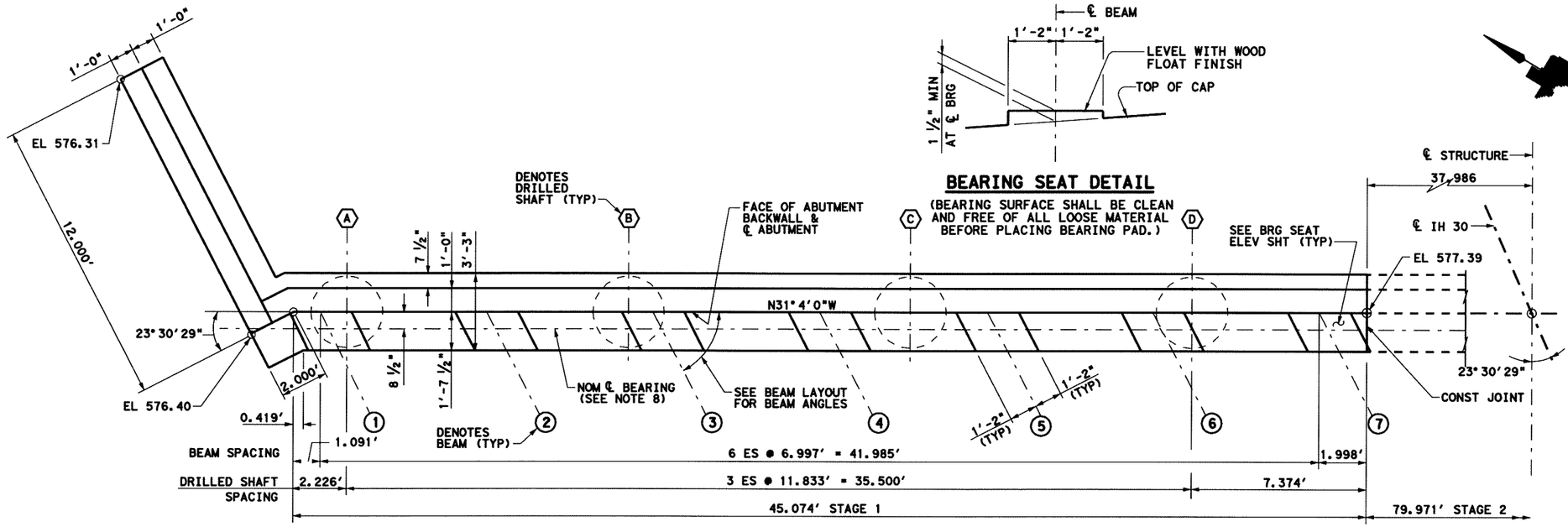


BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

GENERAL NOTES

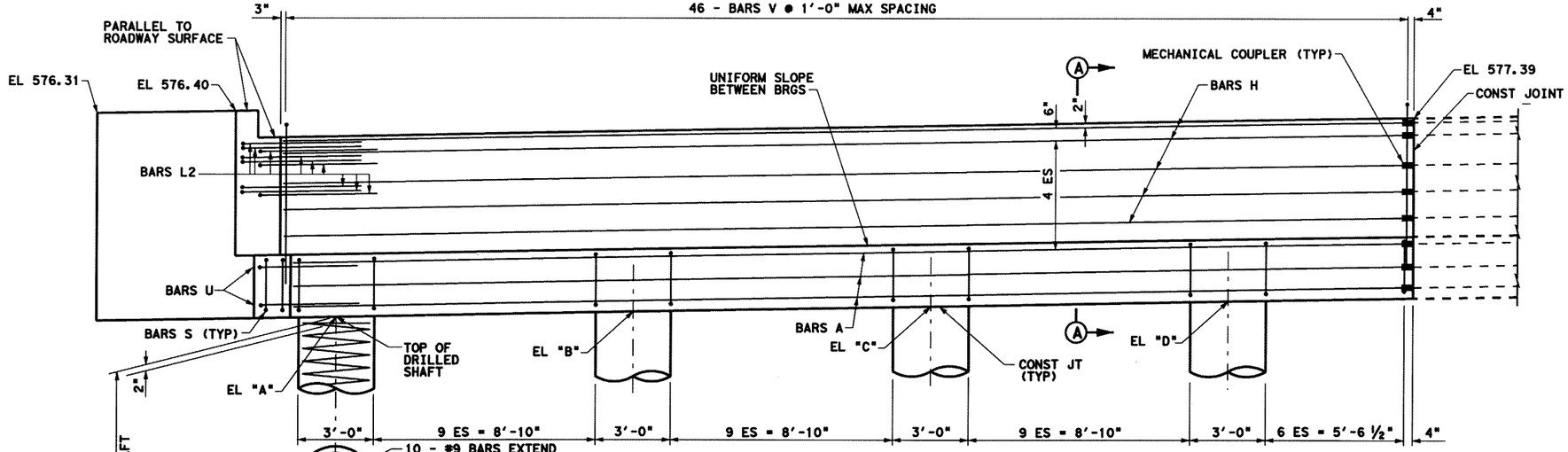
1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 36" DIA DRILLED SHAFT LOAD = 124 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

CONTROL ELEVATIONS

TOP OF DRILLED SHAFTS			
EL "A"	EL "B"	EL "C"	EL "D"
568.30	568.55	568.80	569.05

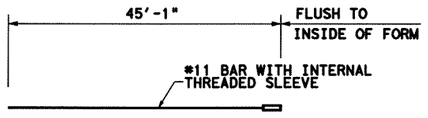
PLAN

SCALE: 3/16" = 1'-0"



ELEVATION

SCALE: 3/16" = 1'-0"



BARS A

BARS H

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	571
CONT.	SECT.	JOB	
0451	01	032, ETC	

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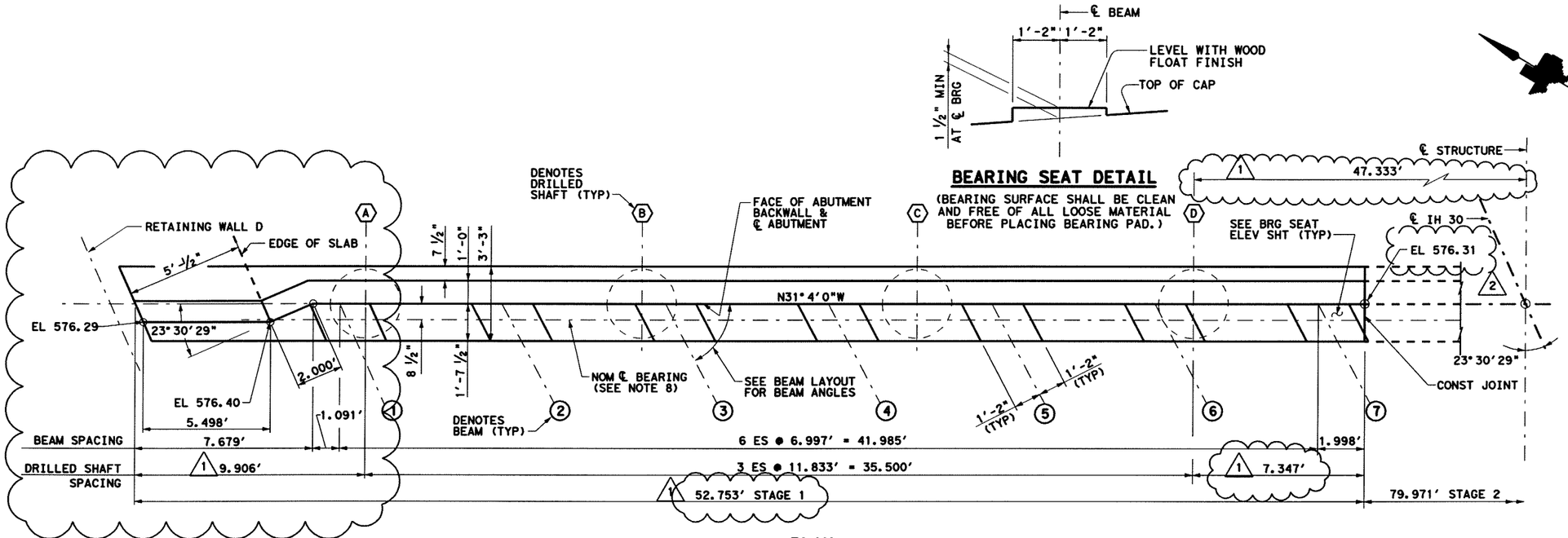
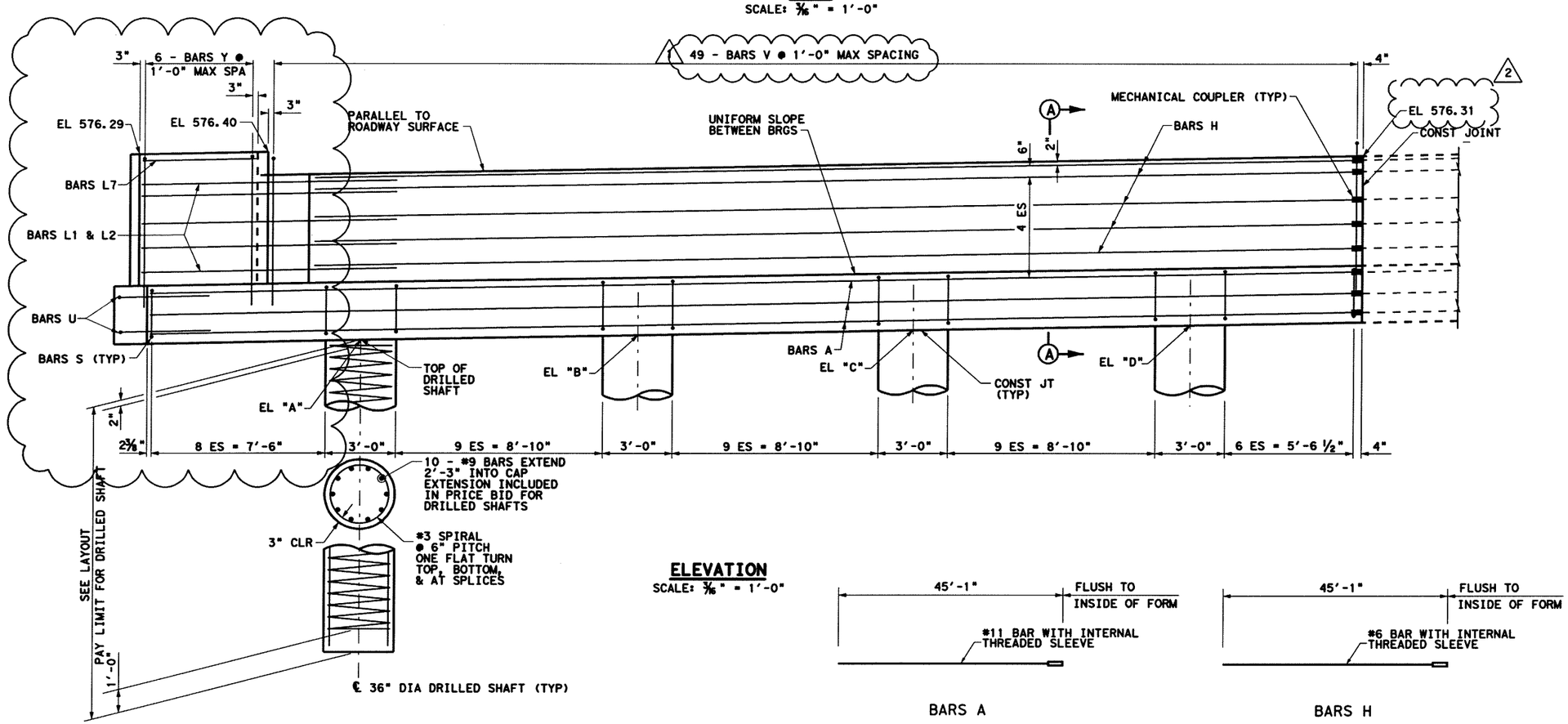
5/22/2006 Plotted 22-MAY-2006 13:30



PLAN

SCALE: 3/16" = 1'-0"



ELEVATION

SCALE: 3/16" = 1'-0"

BARS A

BARS H

GENERAL NOTES

1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 36" DIA DRILLED SHAFT LOAD = 125 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

CONTROL ELEVATIONS

TOP OF DRILLED SHAFTS			
EL "A"	EL "B"	EL "C"	EL "D"
568.30	568.55	568.80	569.05

1 REVISED BY JC 05/07/2007
2 REVISED BY JC 05/23/2007

JINGGANG CAO 88343 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

HL93 LOADING 5-23-07

NO.	REVISION	BY	DATE
1	REVISE PLAN AND QUANTITIES	J.C.	02-02-07

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Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	571A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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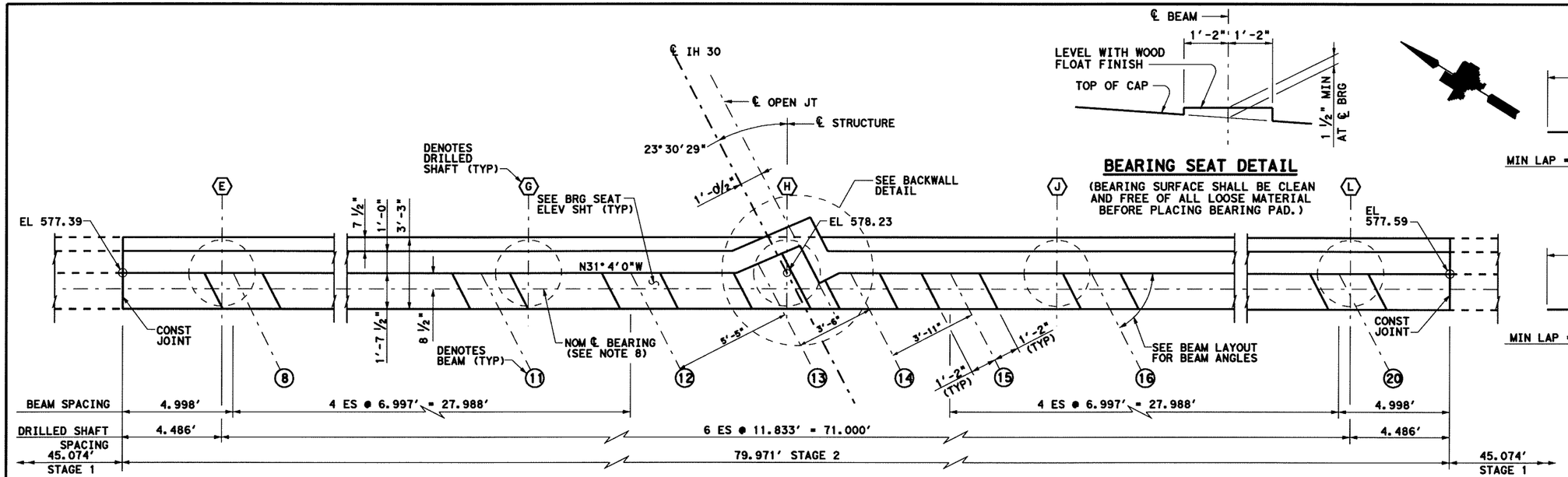
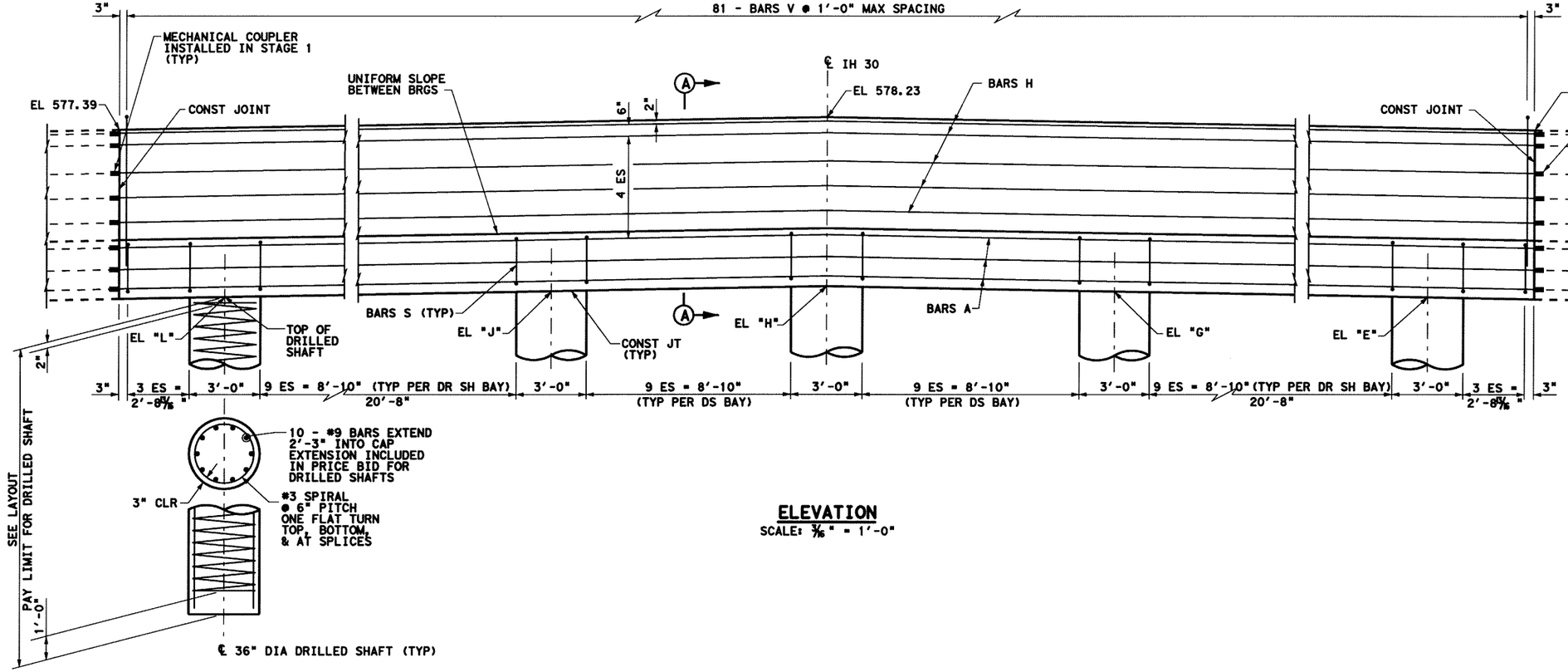


PLAN

SCALE: 3/16" = 1'-0"

CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "E"	EL "F"	EL "G"	EL "H"
569.30	569.55	569.79	570.04
EL "J"	EL "K"	EL "L"	
569.85	569.66	569.47	



ELEVATION

SCALE: 3/16" = 1'-0"

HL93 LOADING 5-22-06

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

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Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	572
CONT.	SECT.	JOB	
0451	01	032, ETC	

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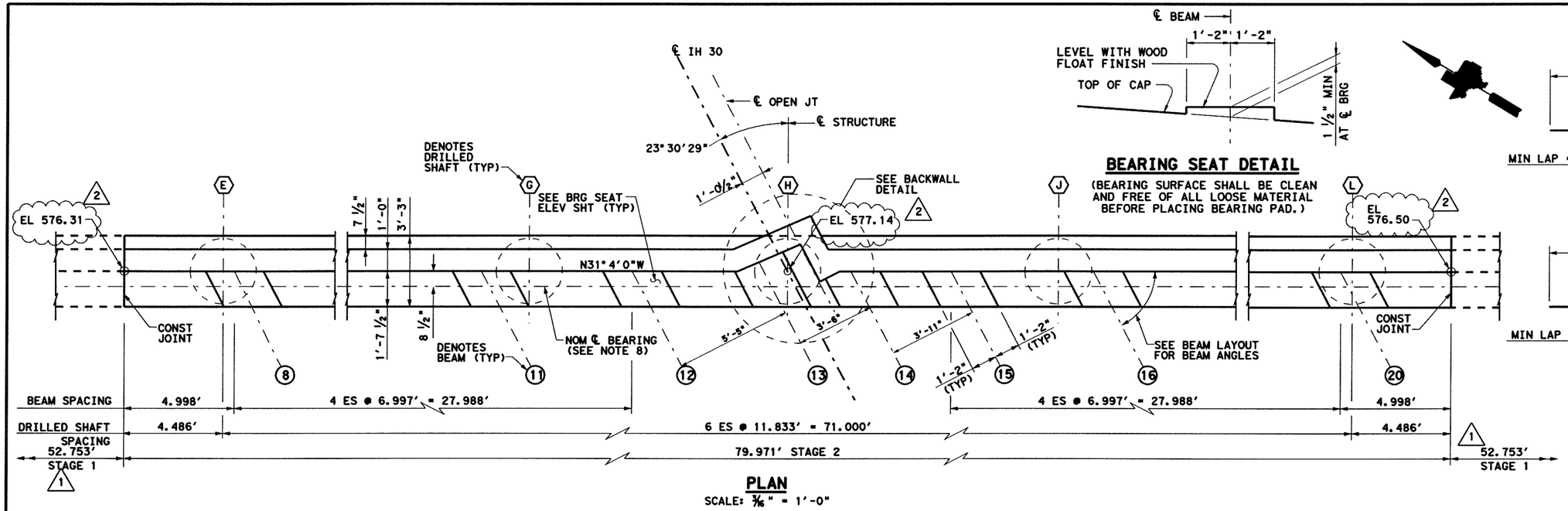
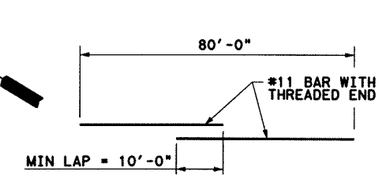
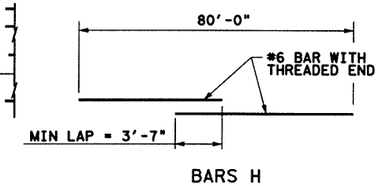


PLAN
SCALE: 3/16" = 1'-0"

BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



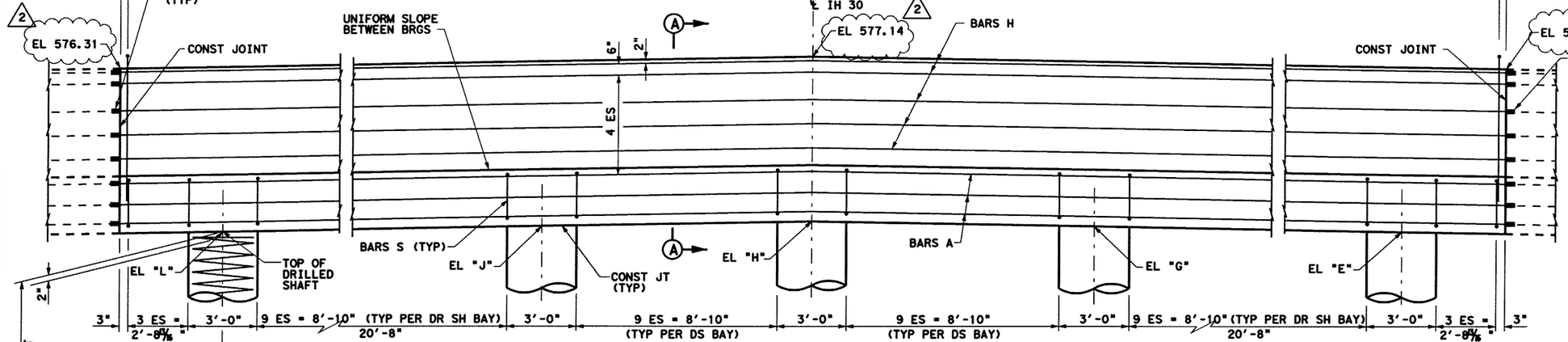
BARS A

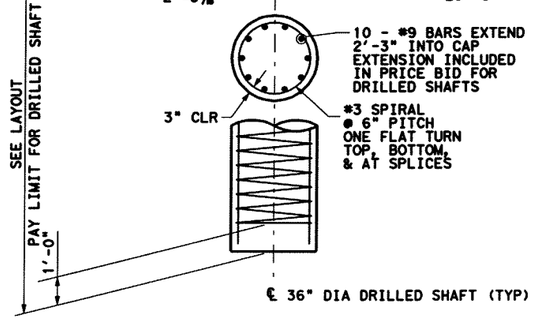


BARS H

CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "E"	EL "F"	EL "G"	EL "H"
569.30	569.55	569.79	570.04
EL "J"	EL "K"	EL "L"	
569.85	569.66	569.47	

1 REVISED BY JC 05/07/2007
2 REVISED BY JC 05/23/2007





ELEVATION
SCALE: 3/16" = 1'-0"

HL93 LOADING

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-23-07

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Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	572A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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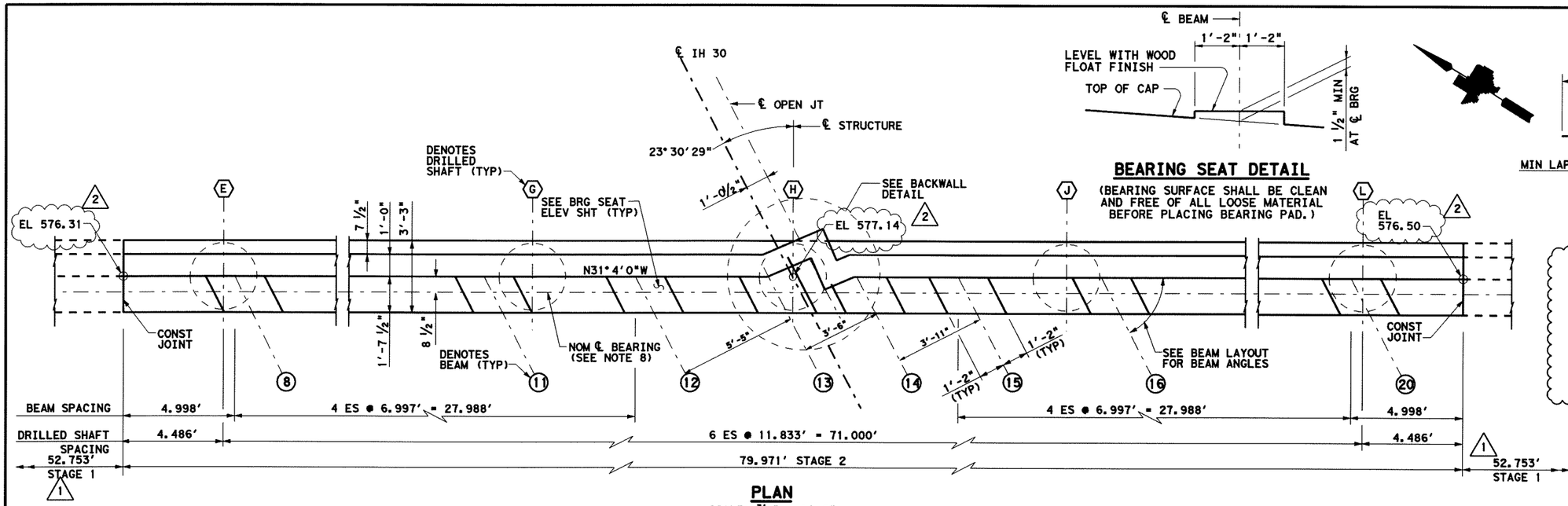
5/23/2007 Plotted 23-MAY-2007 14:46

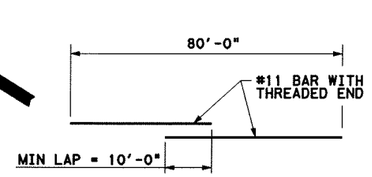


PLAN

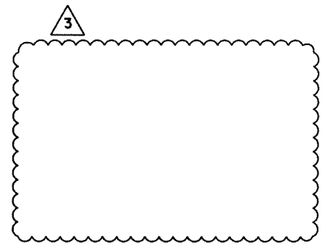
SCALE: 3/16" = 1'-0"

BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BARS A



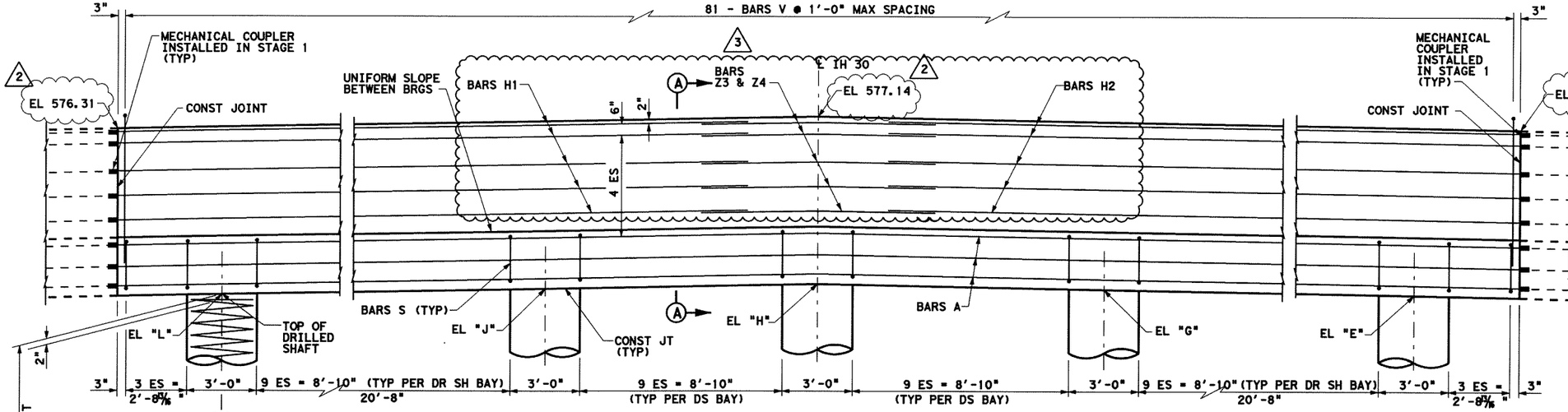
CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "E"	EL "F"	EL "G"	EL "H"
569.30	569.55	569.79	570.04
EL "J"	EL "K"	EL "L"	
569.85	569.66	569.47	

1 REVISED BY JC 05/07/2007

2 REVISED BY JC 05/23/2007

CHINH T. PHAN IS SEALING THE REVISION NO. 3 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

6.19.08



ELEVATION

SCALE: 3/16" = 1'-0"

#3 Change Order 53

3	REVISE REINFORCING IN ELEVATION	C.P. BY	06-18-08 DATE
NO.	REVISION		

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	572B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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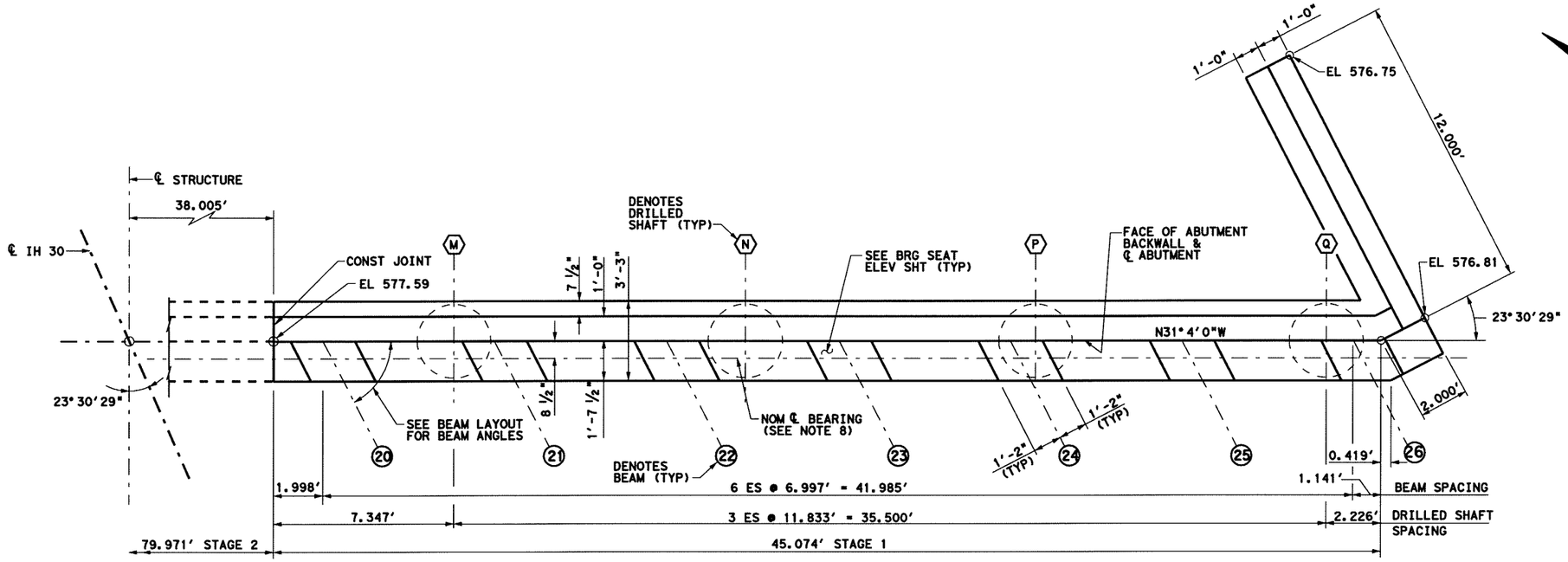
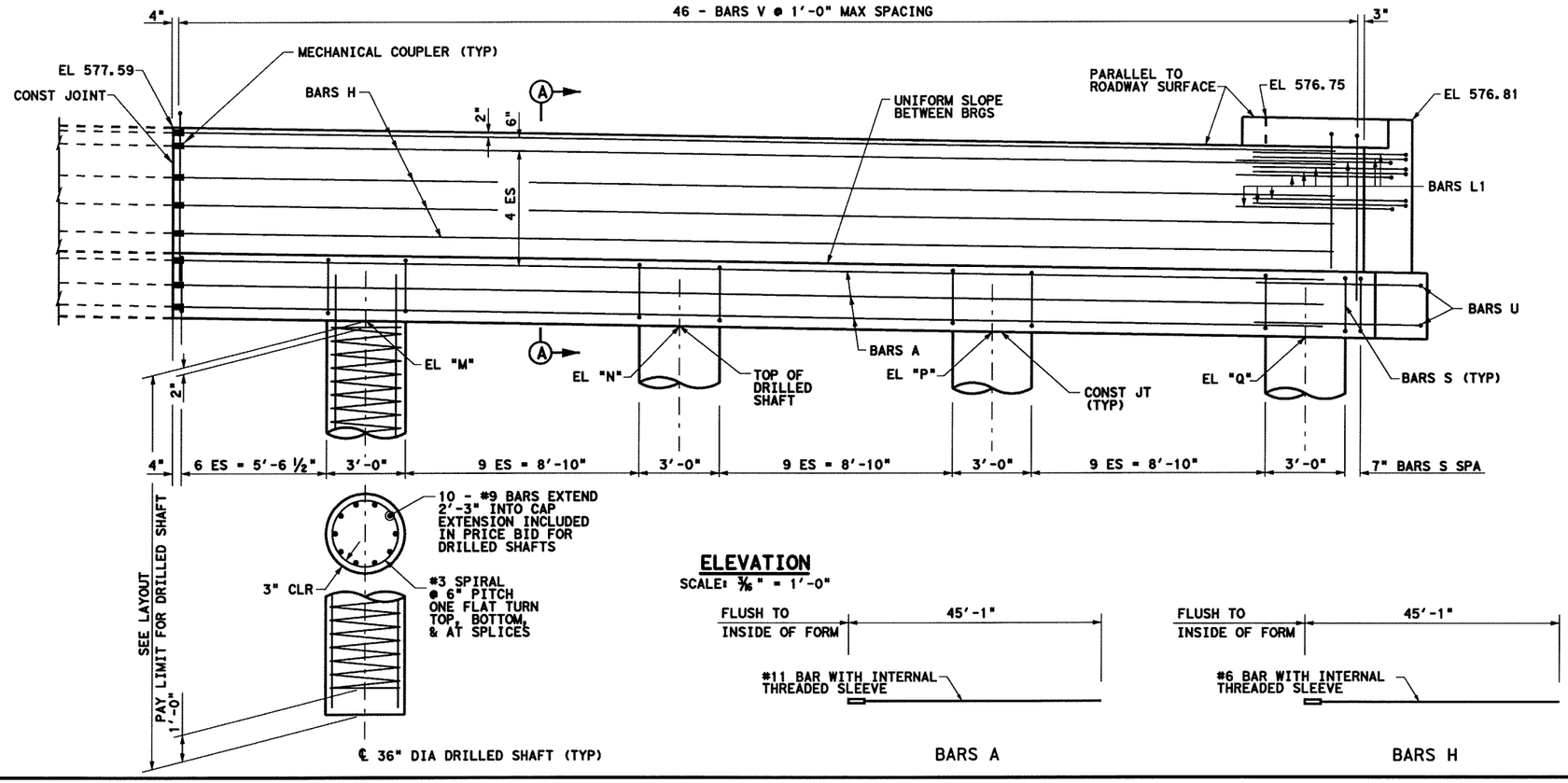


PLAN

SCALE: 3/16" = 1'-0"

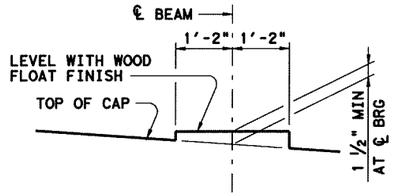


ELEVATION

SCALE: 3/16" = 1'-0"

BARS A

BARS H



BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

CONTROL ELEVATIONS

TOP OF DRILLED SHAFTS			
EL "M"	EL "N"	EL "P"	EL "Q"
569.28	569.09	568.89	568.70

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	573
CONT.	SECT.	JOB	
0451	01	032, ETC	

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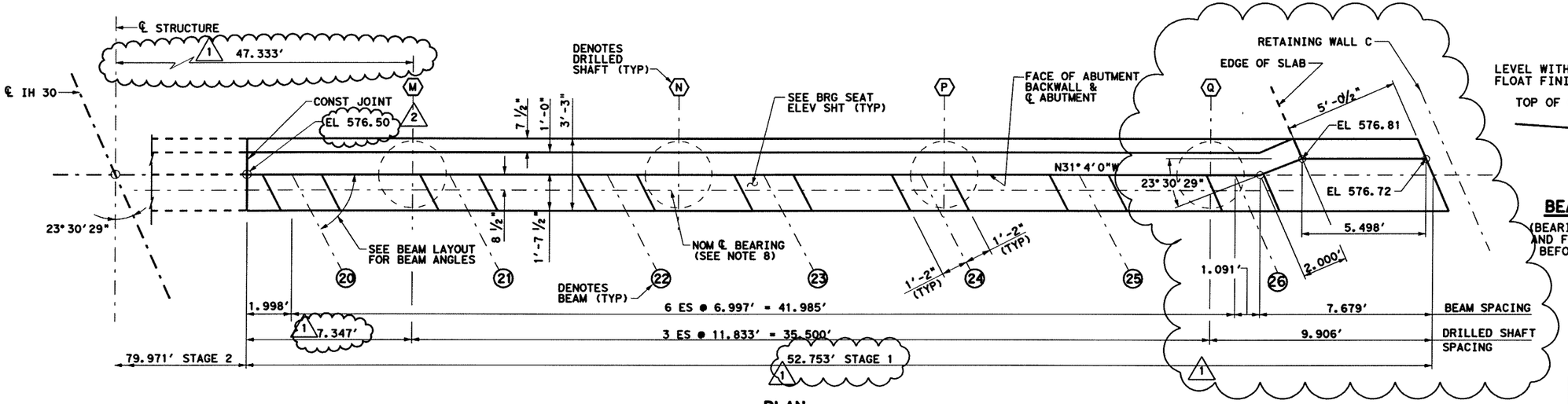
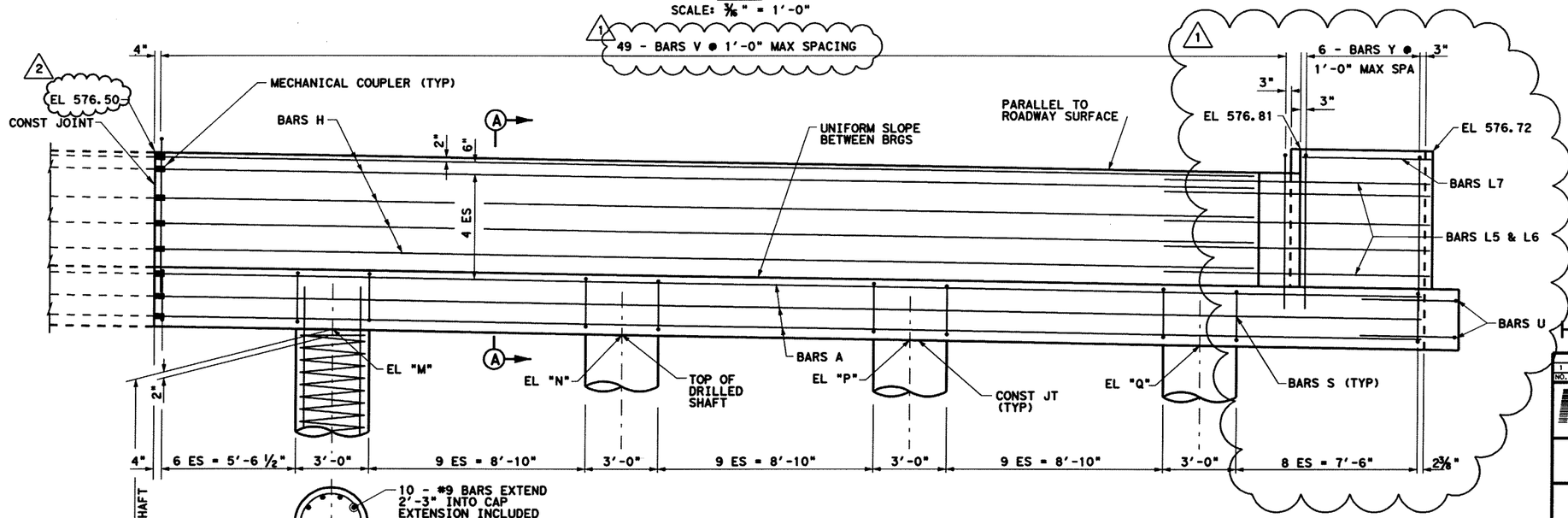
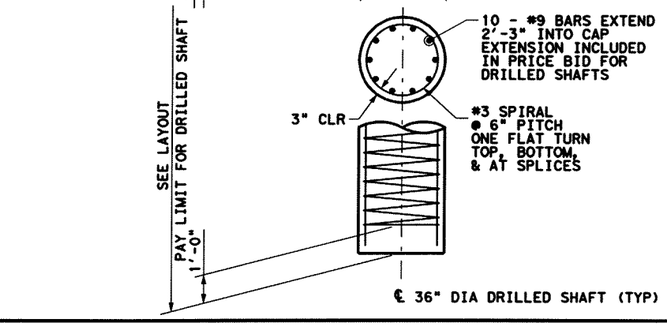


PLAN

SCALE: 3/16" = 1'-0"





ELEVATION

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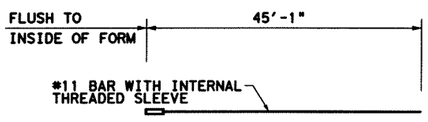

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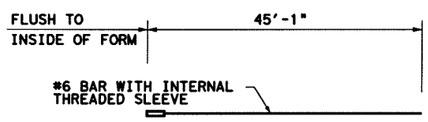

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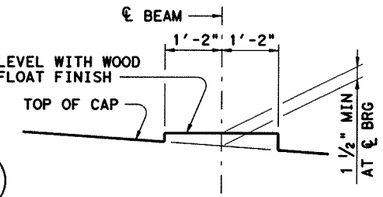

BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

CONTROL ELEVATIONS			
TOP OF DRILLED SHAFTS			
EL "M"	EL "N"	EL "P"	EL "Q"
569.28	569.09	568.89	568.70

1 REVISED BY JC 05/07/2007
2 REVISED BY JC 05/23/2007

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-23-07

HL93 LOADING

NO.	REVISION	BY	DATE
1	REVISE PLAN AND QUANTITIES	J.C.	02-02-07

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Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 4
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	573A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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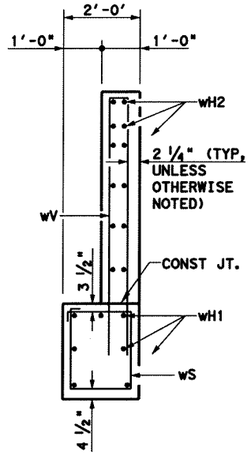
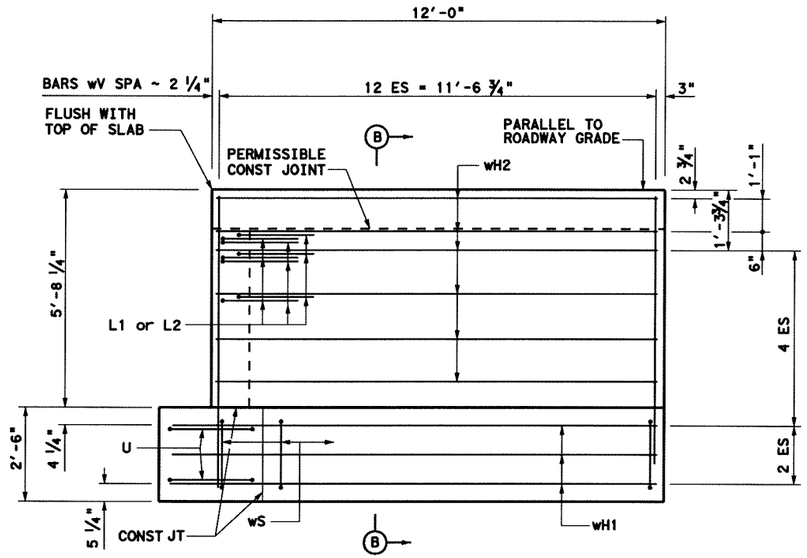


SECTION B-B
NOT TO SCALE



WINGWALL ELEVATION
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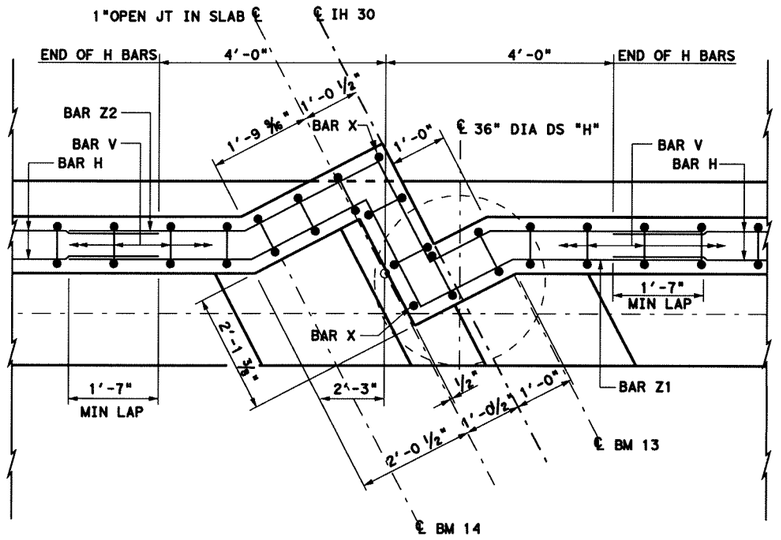
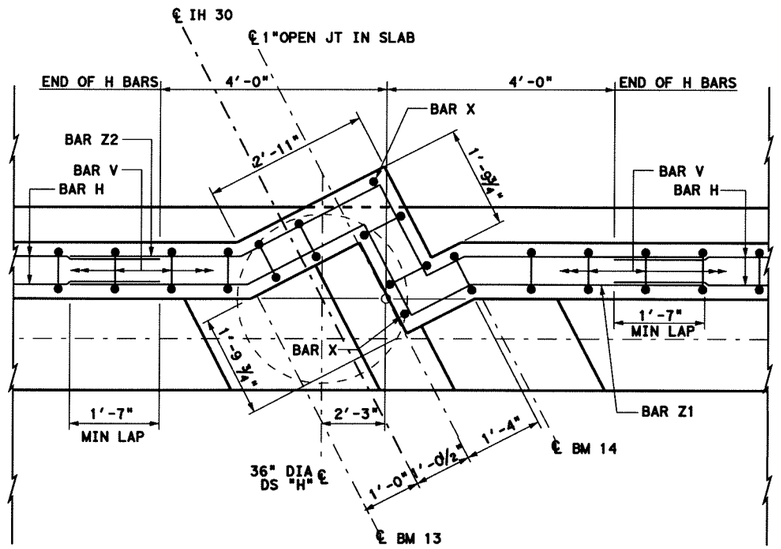
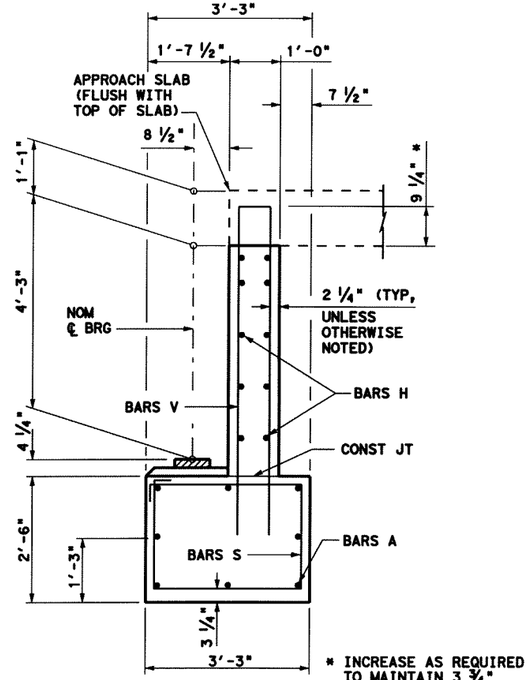


ABUTMENT 1



ABUTMENT 4

BACKWALL DETAIL
NOT TO SCALE



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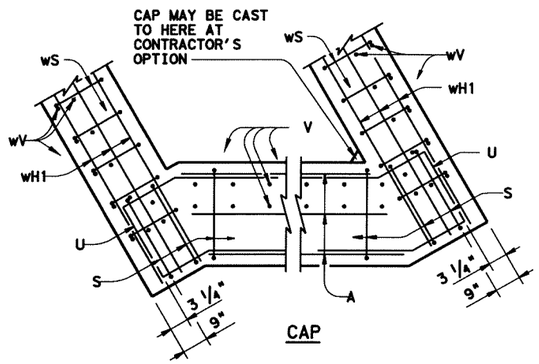

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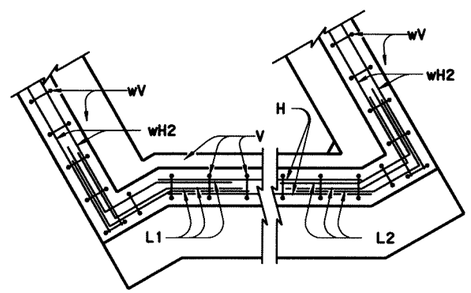

BACKWALL

CORNER DETAILS
NOT TO SCALE

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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SH 205

IH 30 UNDERPASS

ABUTMENT 1 AND 4 DETAILS

SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	574
CONT.	SECT.	JOB	
0451	01	032, ETC	

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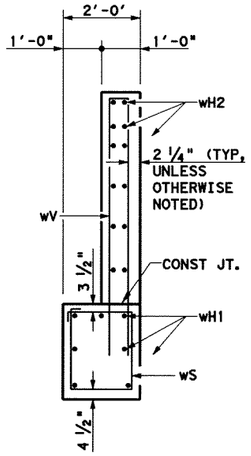

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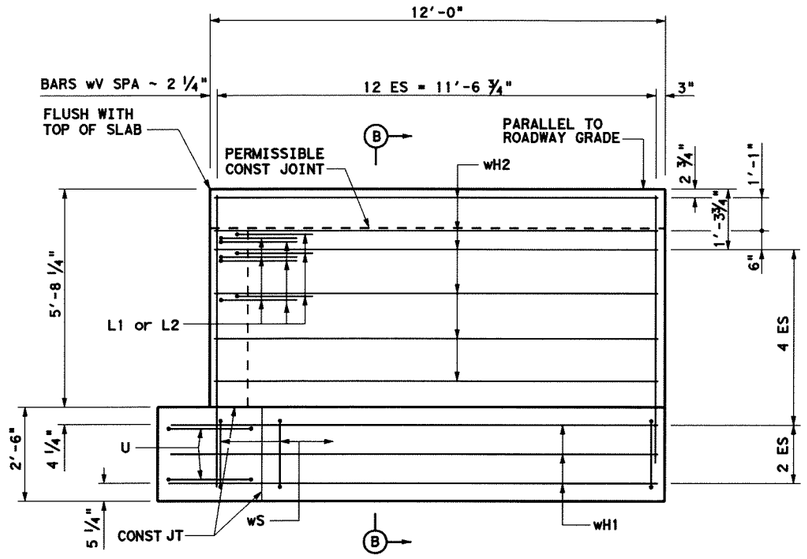

WINGWALL ELEVATION
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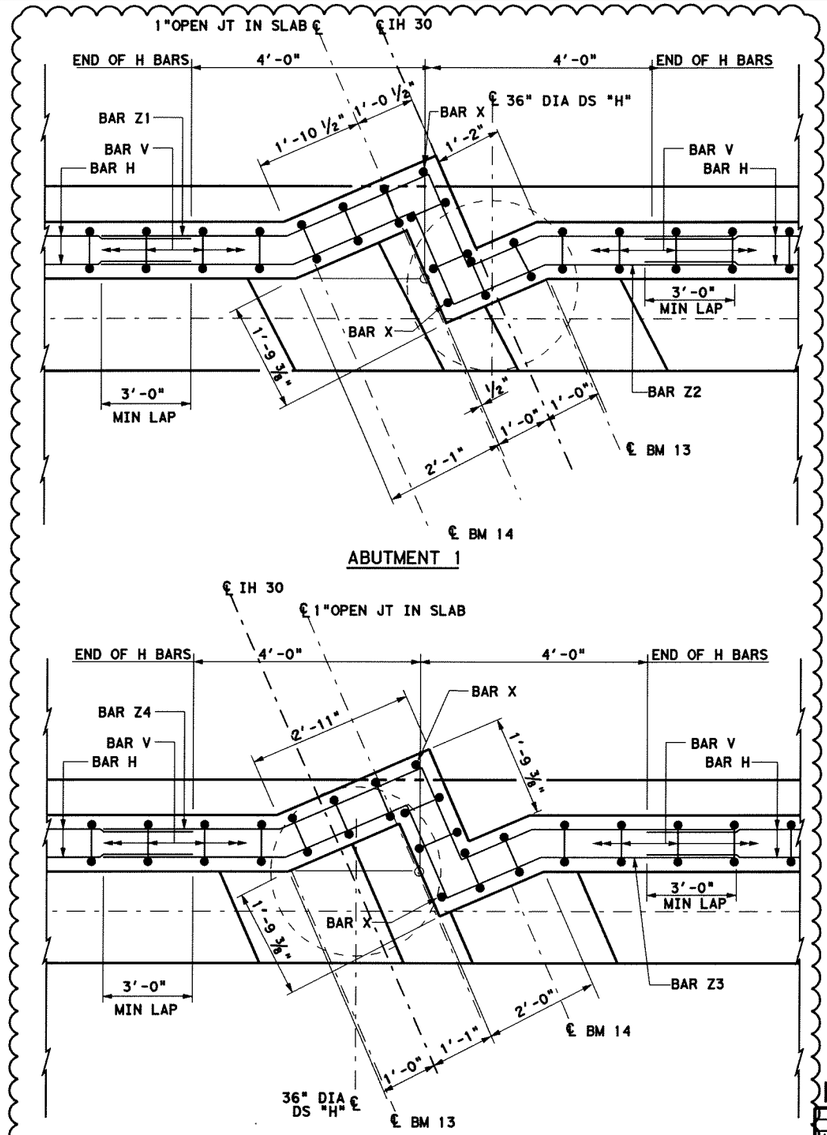
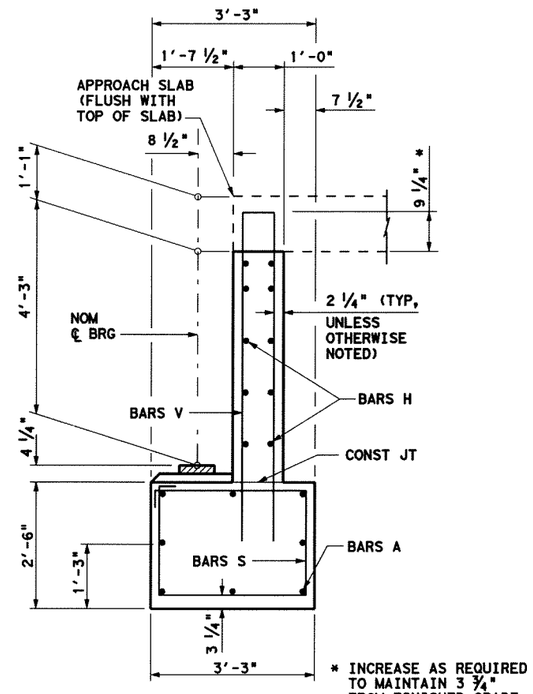


ABUTMENT 1

ABUTMENT 4

BACKWALL DETAIL
NOT TO SCALE



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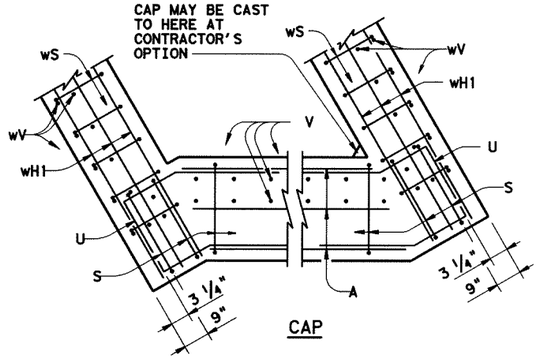

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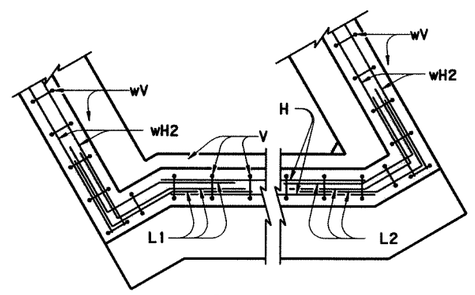

BACKWALL

CORNER DETAILS
NOT TO SCALE

1 53 Change Order 53

CHINH T. PHAN IS SEALING THE REVISION NO. 1 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS
CHINH TAI PHAN
92726
LICENSED
PROFESSIONAL ENGINEER
6-19-08

HL93 LOADING

NO.	REVISION	BY	DATE
1	REVISE BACKWALL DETAIL	C.P.	06-18-08

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IH 30 UNDERPASS

ABUTMENT 1 AND 4 DETAILS

SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	574
CONT.	SECT.	JOB	
0451	01	032, ETC	

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6/19/2008 Plotted 19-JUN-2008 19:41

TABLE OF ESTIMATED QUANTITIES

ONE ABUT (STAGE 1 - RIGHT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	45'-1"	1916
H	10	#6	45'-1"	677
L1	9	#6	5'-10"	79
S	40	#4	27'-2"	726
U	2	#6	11'-3"	34
V	46	#5	14'-2"	678
wH1	7	#6	13'-4"	140
wH2	12	#6	11'-8"	210
wS	13	#4	7'-9"	67
wV	13	#5	13'-9"	187
REINFORCING STEEL ◆		LB		4714
CLASS "C" CONCRETE		CY		25.5
DRILLED SHAFT (36")		LF		735

◆ PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ONE ABUT (STAGE 2)

BAR	NO.	SIZE	LENGTH	WEIGHT
A □	8	#11	80'-0"	3400
H ◇	10	#6	80'-0"	1202
S	40	#4	27'-2"	726
V	48	#5	14'-2"	678
Z1	5	#5	12'-9"	66
Z2	5	#5	12'-8"	66
X	2	#6	4'-2"	13
REINFORCING STEEL ◆		LB		6138
CLASS "C" CONCRETE		CY		37.7
DRILLED SHAFT (36")		LF		735

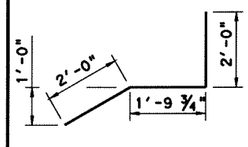
□ LENGTH SHOWN INCLUDES ONE ~ 3'-0" MIN LAP
◇ LENGTH SHOWN INCLUDES ONE ~ 10'-0" MIN LAP
◆ PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ONE ABUT (STAGE 1 - LEFT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A □	8	#11	45'-1" ②	1916
H ◇	10	#6	45'-1" ①	677
L2	9	#6	5'-8"	77
S	40	#4	27'-2"	726
U	2	#6	11'-3"	34
V	46	#5	14'-2"	678
wH1	7	#6	13'-4"	140
wH2	12	#6	11'-8"	210
wS	13	#4	7'-9"	67
wV	13	#5	13'-10"	187
REINFORCING STEEL ◆		LB		4712
CLASS "C" CONCRETE		CY		25.5
DRILLED SHAFT (36")		LF		735

□ LENGTH INCLUDES ONE ~ 3'-0" MIN LAP
◇ LENGTH INCLUDES ONE ~ 10'-0" MIN LAP
◆ PROVIDED FOR CONTRACTOR'S INFORMATION ONLY



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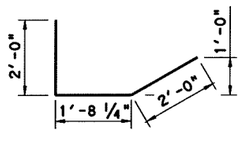

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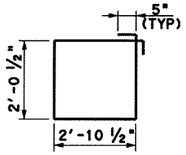

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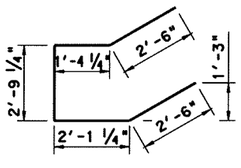

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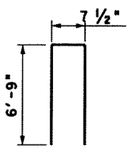

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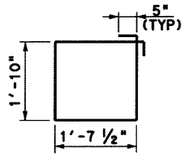

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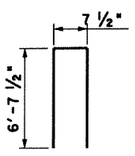

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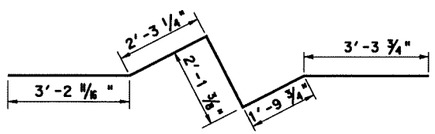

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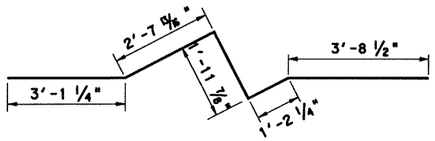

BARS Z2

BAR BEND DIAGRAMS

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
Caojingan
5-22-06

HL93 LOADING

PB Parsons Brinckerhoff Quade & Douglas, Inc.
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Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

ABUTMENT 1 AND 4 DETAILS

SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	574A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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5/22/2006 Plotted 22-MAY-2006 13:34

TABLE OF ESTIMATED QUANTITIES

ONE ABUT (STAGE 1 - RIGHT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A ◇	8	#11	45'-1"	1916
H □	10	#6	45'-1"	677
L1	9	#6	5'-10"	79
S	40	#4	27'-2"	726
U	2	#6	11'-3"	34
V	46	#5	14'-2"	678
wH1	7	#6	13'-4"	140
wH2	12	#6	11'-8"	210
wS	13	#4	7'-9"	67
wV	13	#5	13'-9"	187
REINFORCING STEEL ◆			LB	4714
CLASS "C" CONCRETE			CY	25.5
DRILLED SHAFT (36") (ABUT 1)			LF	216
DRILLED SHAFT (36") (ABUT 4)			LF	240

1

□ LENGTH SHOWN INCLUDES ONE ~ 3'-0" MIN LAP
◇ LENGTH SHOWN INCLUDES ONE ~ 10'-0" MIN LAP
◆ PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ONE ABUT (STAGE 2)

BAR	NO.	SIZE	LENGTH	WEIGHT
A ◇	8	#11	90'-0"	3825
H1	10	#6	37'-4"	561
H2	10	#6	34'-10"	523
S	68	#4	10'-8"	485
V	85	#5	14'-2"	1256
Z1	5	#5	15'-5"	80
Z2	5	#5	15'-7"	81
⚹ Z3	5	#5	15'-5"	80
⚹ Z4	5	#5	15'-5"	80
X	2	#6	4'-2"	13
REINFORCING STEEL ◆			LB	6824 ⚹
CLASS "C" CONCRETE			CY	37.7
DRILLED SHAFT (36") (ABUT 1)			LF	378
DRILLED SHAFT (36") (ABUT 4)			LF	420

1

□ LENGTH SHOWN INCLUDES ONE ~ 3'-0" MIN LAP
◇ LENGTH SHOWN INCLUDES ONE ~ 10'-0" MIN LAP
◆ PROVIDED FOR CONTRACTOR'S INFORMATION ONLY
⚹ QUANTITY MUST BE RE-CALCULATED FOR ABUTMENT #4

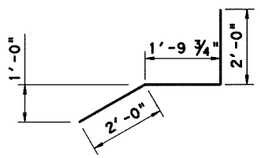
TABLE OF ESTIMATED QUANTITIES

ONE ABUT (STAGE 1 - LEFT)

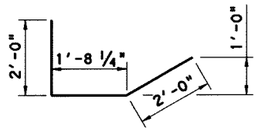
BAR	NO.	SIZE	LENGTH	WEIGHT
A ◇	8	#11	45'-1"	1916
H □	10	#6	49'-2"	677
L2	9	#6	5'-8"	77
S	40	#4	27'-2"	726
U	2	#6	11'-3"	34
V	46	#5	14'-2"	678
wH1	7	#6	13'-4"	140
wH2	12	#6	11'-8"	210
wS	13	#4	7'-9"	67
wV	13	#5	13'-10"	187
REINFORCING STEEL ◆			LB	4712
CLASS "C" CONCRETE			CY	25.5
DRILLED SHAFT (36") (ABUT 1)			LF	216
DRILLED SHAFT (36") (ABUT 4)			LF	240

1

□ LENGTH SHOWN INCLUDES ONE ~ 3'-0" MIN LAP
◇ LENGTH SHOWN INCLUDES ONE ~ 10'-0" MIN LAP
◆ PROVIDED FOR CONTRACTOR'S INFORMATION ONLY



BARS L 1



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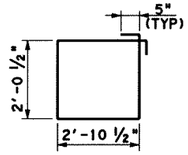
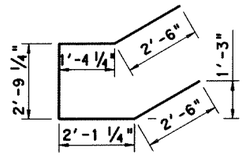
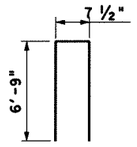


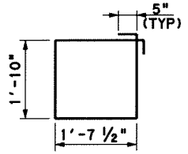
BARS S



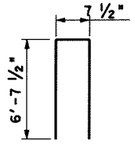
BARS U



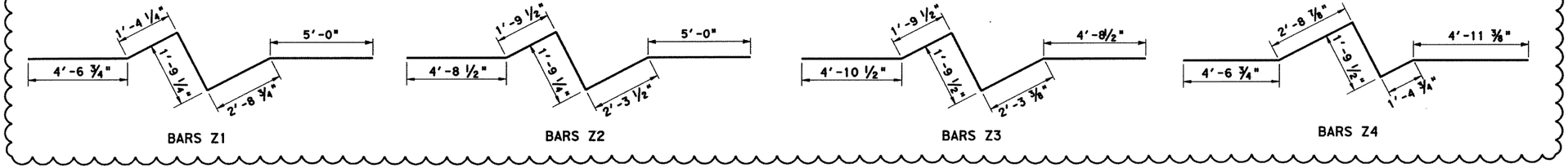
BARS V



BARS wS



BARS wV



BARS Z1 BARS Z2 BARS Z3 BARS Z4

BAR BEND DIAGRAMS

CHINH T. PHAN IS SEALING THE REVISION NO. 1
ITEMS REPRESENTED ON THIS SHEET ONLY.
THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS
CHINH TAI PHAN
92726
LICENSED
PROFESSIONAL ENGINEER
6.19.08

HL93 LOADING

NO.	REVISION	BY	DATE
1	REVISE ESTIMATED QUANTITIES	C.P.	06-18-08

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

ABUTMENT 1 AND 4 DETAILS

SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	574A8
CONT.	SECT.	JOB	
0451	01	032, ETC	

1 CHANGE ORDER 53

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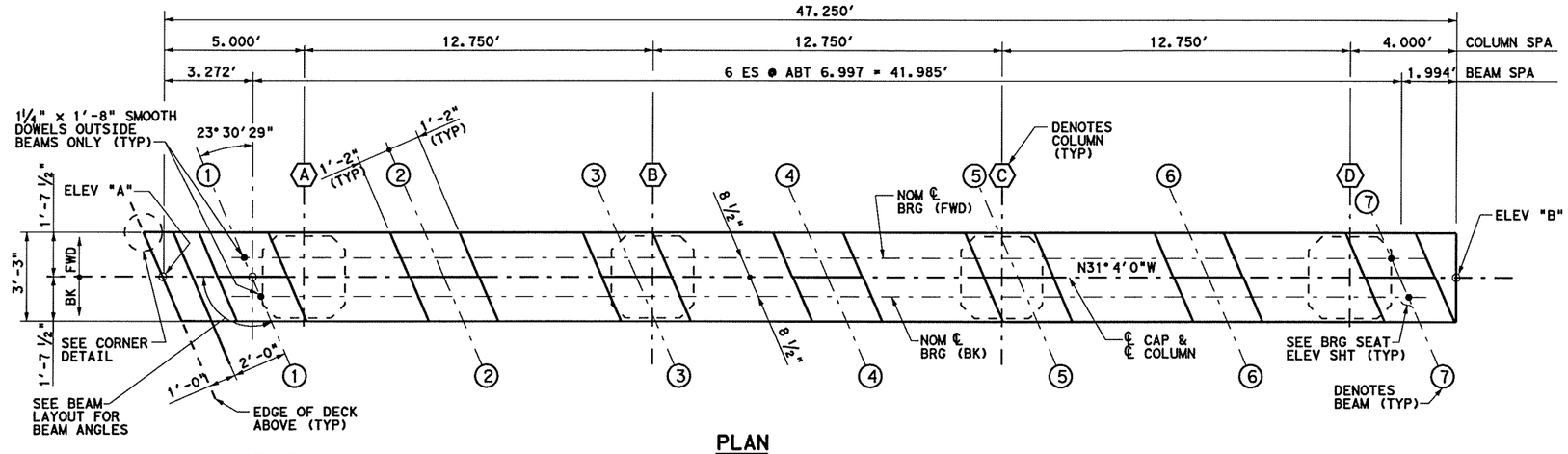
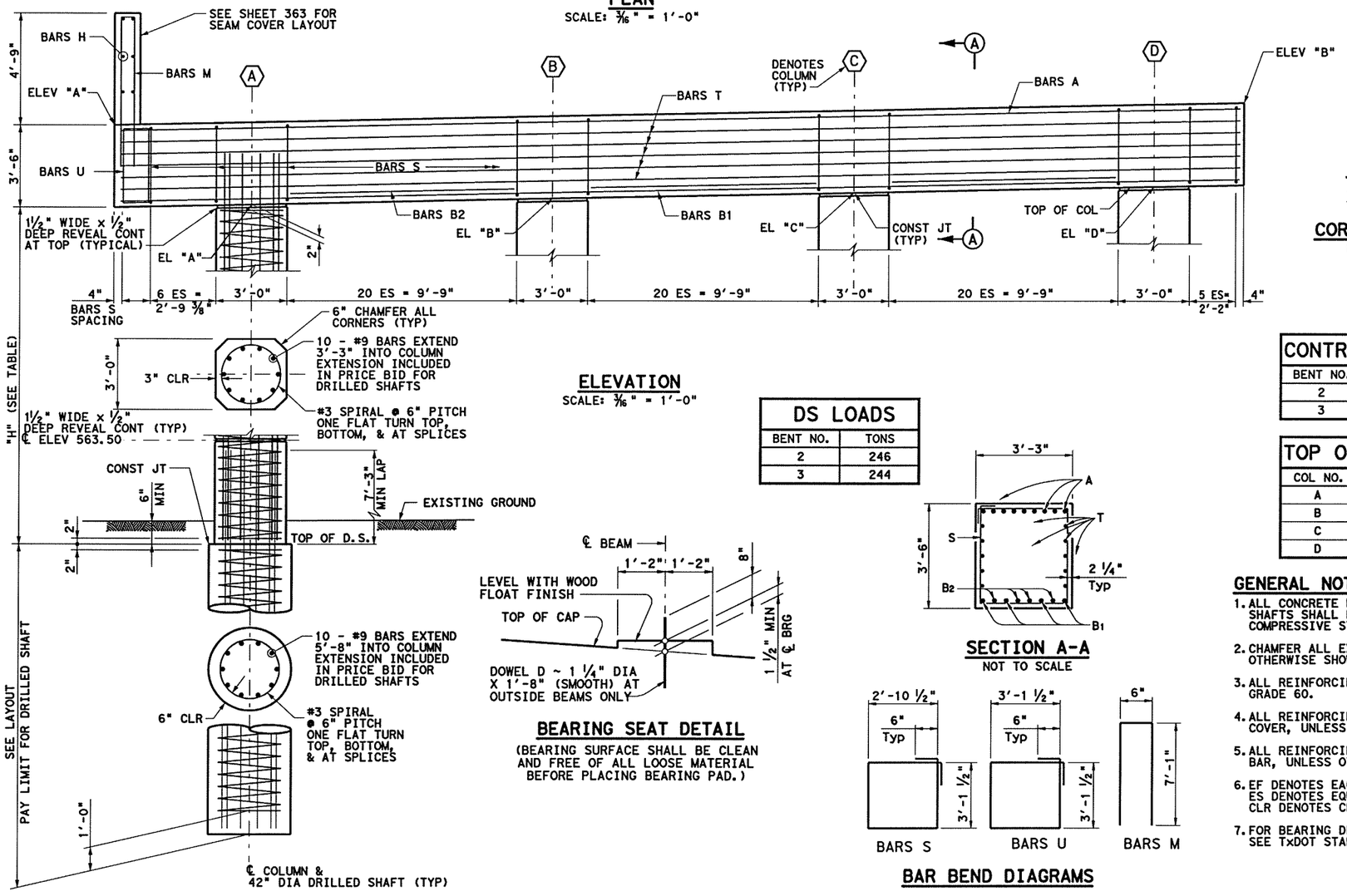


PLAN
SCALE: 3/16" = 1'-0"



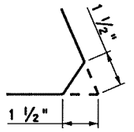
ELEVATION
SCALE: 3/16" = 1'-0"

DS LOADS	
BENT NO.	TONS
2	246
3	244

BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

SECTION A-A
NOT TO SCALE

BAR BEND DIAGRAMS



CORNER DETAIL
NOT TO SCALE

TABLES OF CAP QUANTITIES ONE CAP (STAGE 1 - LEFT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	46'-11"	2243
B1	4	#11	46'-11"	997
B2	12	#11	9'-9"	622
D	4	1¼" DIA	1'-8"	93
H	6	#5	5'-6"	34
M	4	#5	14'-8"	61
S	76	#5	13'-0"	1030
T	10	#5	46'-11"	489
U	2	#5	13'-6"	14
REINFORCING STEEL			LB	5584
CLASS "C" CONCRETE			CY	20.5

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	A	16.2	4.8	18'-5"	627	284'-0"	107
	B	16.5	4.9	18'-9"	638	289'-0"	109
	C	16.7	4.9	18'-11"	644	292'-0"	110
	D	16.9	5.0	19'-2"	651	296'-0"	111
3	A	16.0	4.7	18'-3"	621	281'-0"	106
	B	16.3	4.8	18'-7"	631	286'-0"	107
	C	16.5	4.9	18'-9"	638	289'-0"	109
	D	16.8	5.0	19'-1"	648	294'-0"	111

ESTIMATED QUANTITY SUMMARY

BENT NO.	42" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	156	40.2	11578
3	148	40.0	11522

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

CONTROL ELEVATIONS		
BENT NO.	ELEV A	ELEV B
2	571.40	572.25
3	571.17	572.11

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
A	567.99	567.77
B	568.22	568.03
C	568.45	568.28
D	568.68	568.53

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	575
CONT.	SECT.	JOB	
0451	01	032, ETC	

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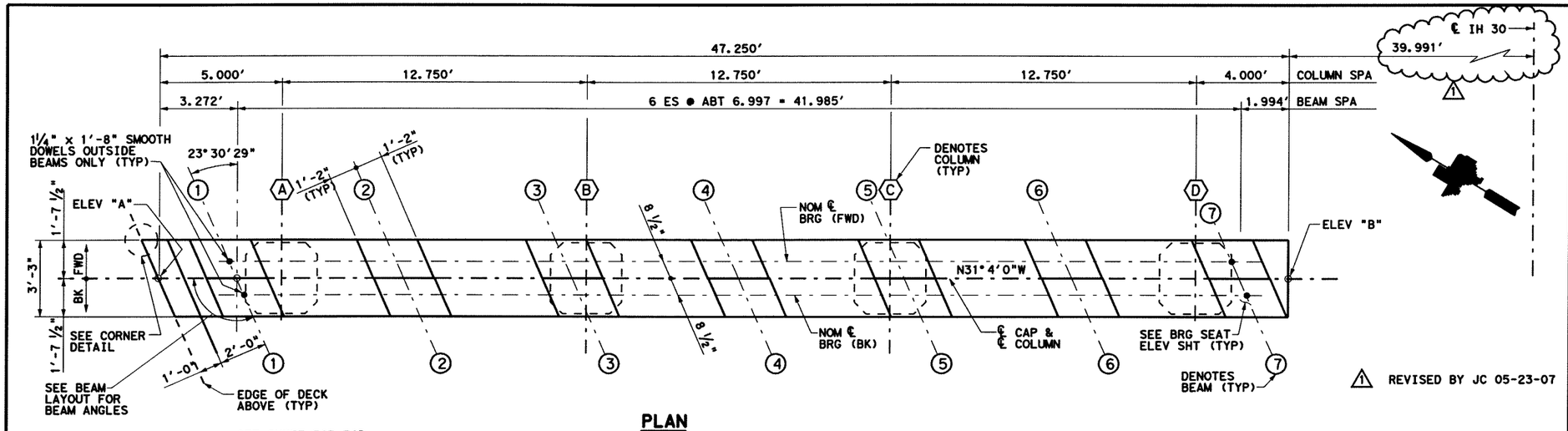
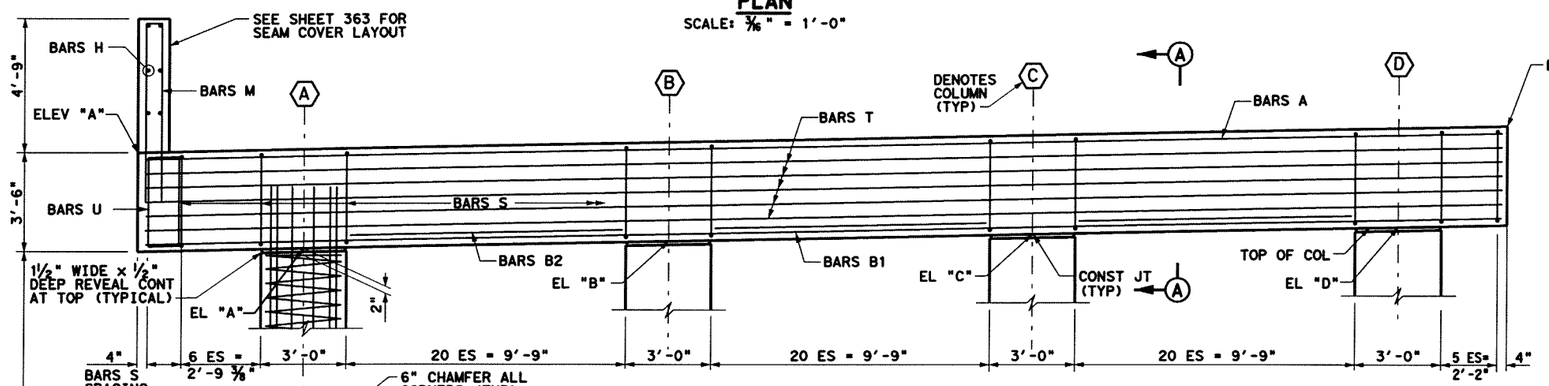
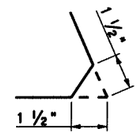


1 REVISED BY JC 05-23-07

PLAN
SCALE: 3/16" = 1'-0"





CORNER DETAIL
NOT TO SCALE

TABLES OF CAP QUANTITIES ONE CAP (STAGE 1 - LEFT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	46'-11"	2243
B1	4	#11	46'-11"	997
B2	12	#11	9'-9"	622
D	4	1¼" DIA	1'-8"	93
H	6	#5	5'-6"	34
M	4	#5	14'-8"	61
S	76	#5	13'-0"	1030
T	10	#5	46'-11"	489
U	2	#5	13'-6"	14
REINFORCING STEEL			LB	5584
CLASS "C" CONCRETE			CY	20.5

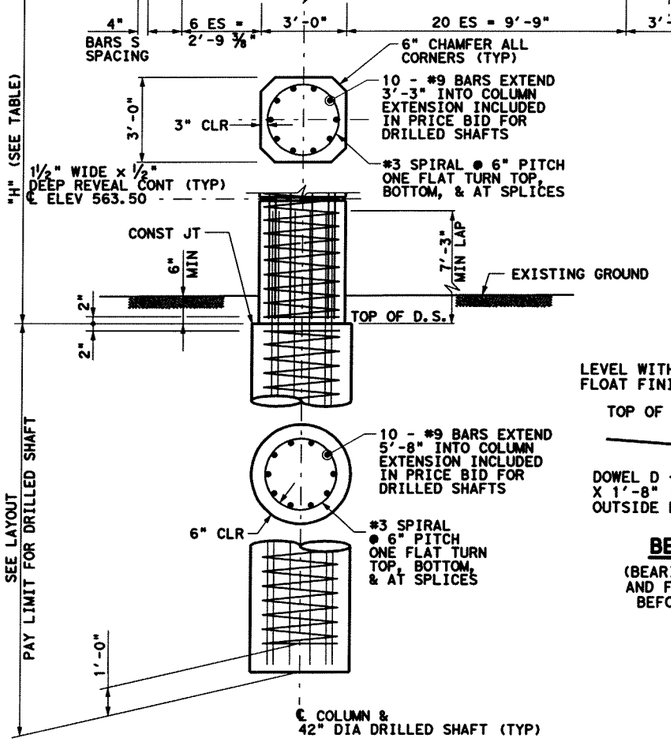
② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	A	16.2	4.8	18'-5"	627	284'-0"	107
	B	16.5	4.9	18'-9"	638	289'-0"	109
	C	16.7	4.9	18'-11"	644	292'-0"	110
	D	16.9	5.0	19'-2"	651	296'-0"	111
3	A	16.0	4.7	18'-3"	621	281'-0"	106
	B	16.3	4.8	18'-7"	631	286'-0"	107
	C	16.5	4.9	18'-9"	638	289'-0"	109
	D	16.8	5.0	19'-1"	648	294'-0"	111

ESTIMATED QUANTITY SUMMARY

BENT NO.	42" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	156	40.2	11578
3	148	40.0	11522

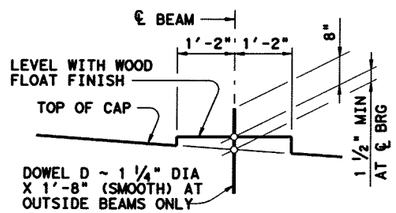
① PROVIDED FOR CONTRACTORS INFORMATION ONLY.
② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.



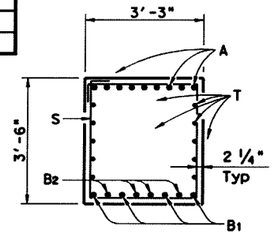
ELEVATION
SCALE: 3/16" = 1'-0"

DS LOADS

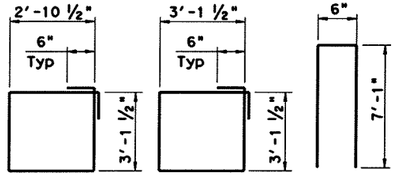
BENT NO.	TONS
2	246
3	244



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



SECTION A-A
NOT TO SCALE



BAR BEND DIAGRAMS

CONTROL ELEVATIONS

BENT NO.	ELEV A	ELEV B
2	571.40	572.25
3	571.17	572.11

TOP OF COLUMN ELEV

COL NO.	BENT #2	BENT #3
A	567.99	567.77
B	568.22	568.03
C	568.45	568.28
D	568.68	568.53

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
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6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-23-07

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	575A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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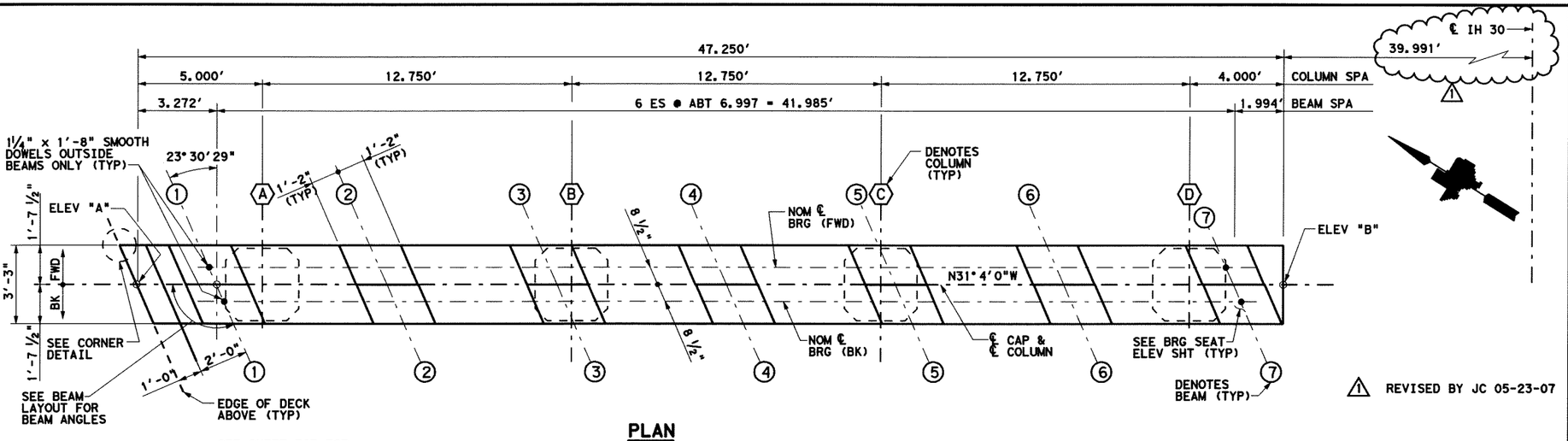
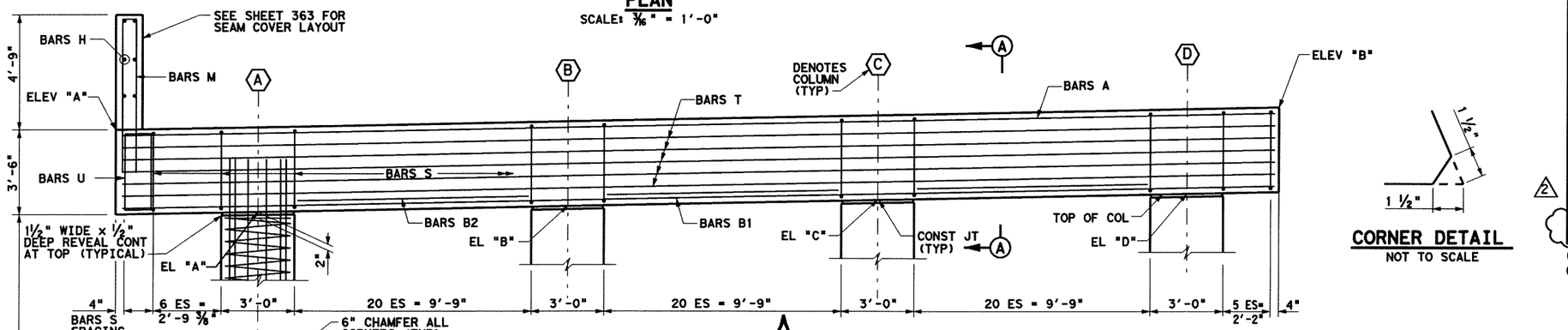
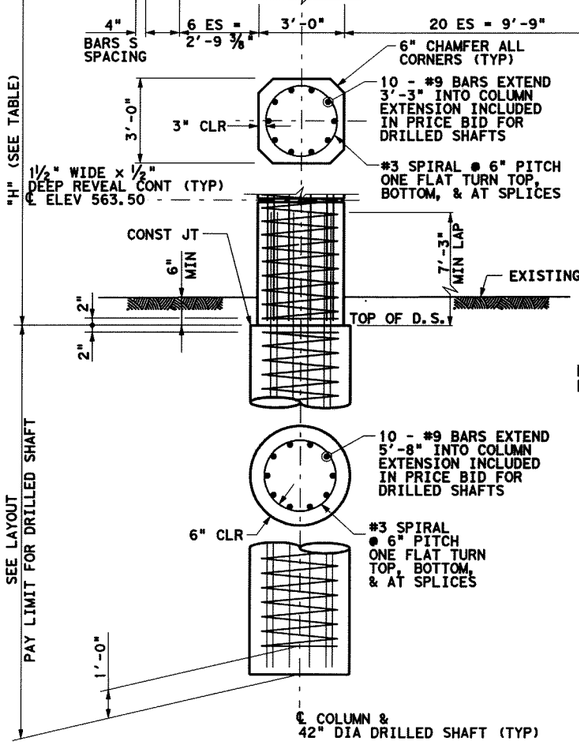


PLAN

SCALE: 3/16" = 1'-0"



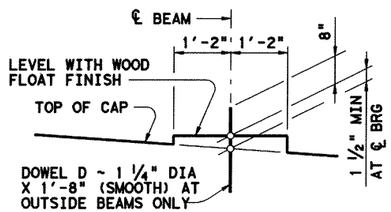


ELEVATION

SCALE: 3/16" = 1'-0"

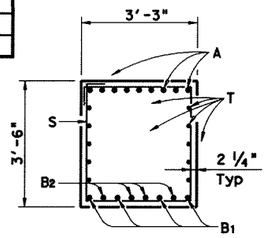
2/53 Change Order 53

DS LOADS	
BENT NO.	TONS
2	246
3	244



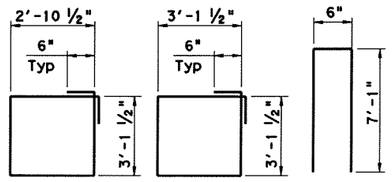
BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



SECTION A-A

NOT TO SCALE



BAR BEND DIAGRAMS

CORNER DETAIL

NOT TO SCALE

CONTROL ELEVATIONS		
BENT NO.	ELEV A	ELEV B
2	571.40	572.25
3	571.17	572.11

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
A	567.99	567.77
B	568.22	568.03
C	568.45	568.28
D	568.68	568.53

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

TABLES OF CAP QUANTITIES ONE CAP (STAGE 1 - LEFT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	46'-11"	2243
B1	4	#11	46'-11"	997
B2	12	#11	9'-9"	622
D	4	1¼" DIA	1'-8"	93
H	6	#5	5'-6"	34
M	4	#5	14'-8"	61
S	76	#5	13'-0"	1030
T	10	#5	46'-11"	489
U	2	#5	13'-6"	14
REINFORCING STEEL			LB	5584
CLASS "C" CONCRETE			CY	20.5

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	A	16.2	4.8	18'-5"	627	284'-0"	107
	B	16.5	4.9	18'-9"	638	289'-0"	109
	C	16.7	4.9	18'-11"	644	292'-0"	110
	D	16.9	5.0	19'-2"	651	296'-0"	111
3	A	16.0	4.7	18'-3"	621	281'-0"	106
	B	16.3	4.8	18'-7"	631	286'-0"	107
	C	16.5	4.9	18'-9"	638	289'-0"	109
	D	16.8	5.0	19'-1"	648	294'-0"	111

ESTIMATED QUANTITY SUMMARY

BENT NO.	42" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	184	40.2	11578
3	176	40.0	11522

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.
② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

CHINH T. PHAN IS SEALING THE REVISION NO. 2 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS
CHINH TAI PHAN
92726
LICENSED PROFESSIONAL ENGINEER
6-19-08

HL93 LOADING

1 REVISED BY JC 05-23-07

NO.	REVISION	BY	DATE
2	REVISE ESTIMATE QUANTITY SUMMARY	C.P.	06-18-08
1	REVISE PLAN AND PROFILE	J.C.	02-07-07

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	575
CONT.	SECT.	JOB	
0451	01	032, ETC	

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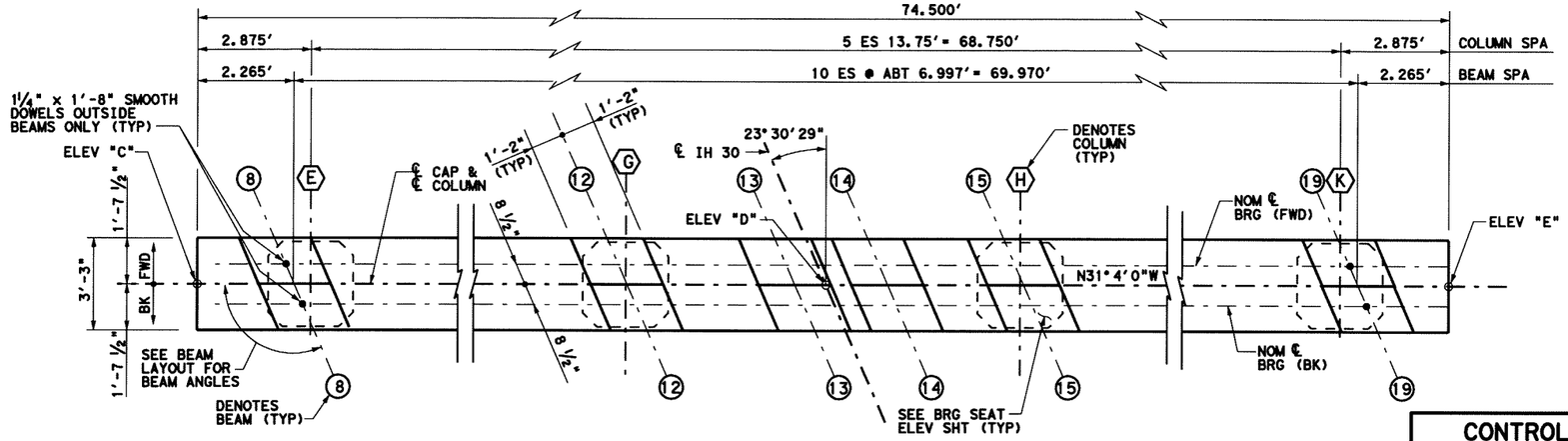
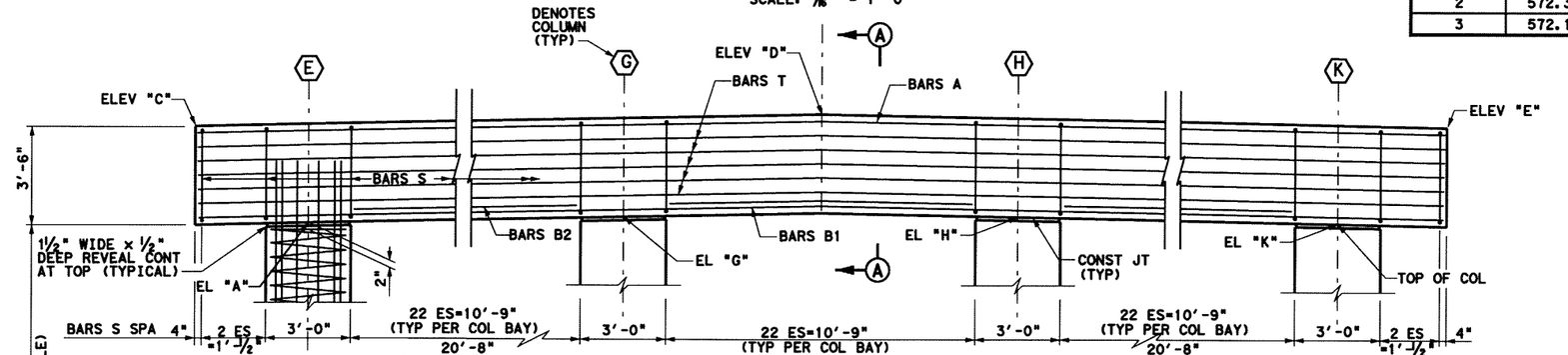
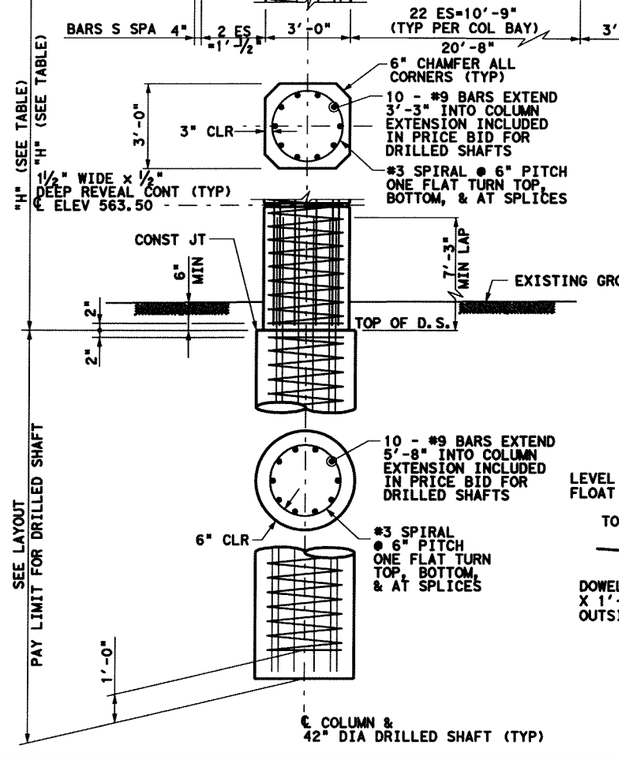


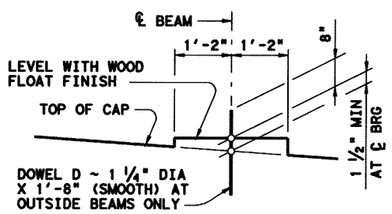
PLAN
SCALE: 3/16" = 1'-0"



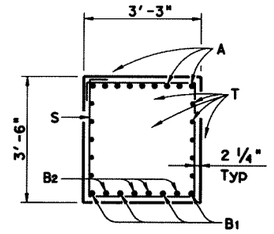


ELEVATION
SCALE: 3/16" = 1'-0"

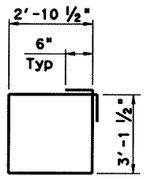
DS LOADS	
BENT NO.	TONS
2	211
3	209



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



SECTION A-A
NOT TO SCALE



BARS S

BAR BEND DIAGRAMS

CONTROL ELEVATIONS			
BENT NO.	ELEV C	ELEV D	ELEV E
2	572.30	572.96	572.24
3	572.17	572.90	572.25

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
E	568.85	568.72
F	569.10	568.99
G	569.34	569.26
H	569.33	569.28
J	569.06	569.04
K	568.80	568.80

GENERAL NOTES
1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

TABLES OF CAP QUANTITIES ONE CAP (STAGE 2)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	74'-2"	3546
B1	4	#11	74'-2"	1576
B2	20	#11	10'-9"	1142
D	4	1¼" DIA	1'-8"	93
S	121	#5	13'-0"	1641
T	10	#5	74'-2"	774
REINFORCING STEEL			LB	8772
CLASS "C" CONCRETE			CY	31.4

TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	E	17.1	5.1	19'-4"	658	299'-0"	112
	F	17.3	5.1	19'-7"	665	302'-0"	114
	G	17.6	5.2	19'-10"	675	307'-0"	116
	H	17.6	5.2	19'-10"	675	307'-0"	116
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112
3	E	17.0	5.0	19'-3"	655	297'-0"	112
	F	17.2	5.1	19'-5"	661	301'-0"	113
	G	17.5	5.2	19'-9"	672	306'-0"	115
	H	17.5	5.2	19'-9"	672	306'-0"	115
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112

ESTIMATED QUANTITY SUMMARY

BENT NO.	36" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	234	62.2	18120
3	222	62.1	18088

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576
CONT.	SECT.	JOB	
0451	01	032, ETC	

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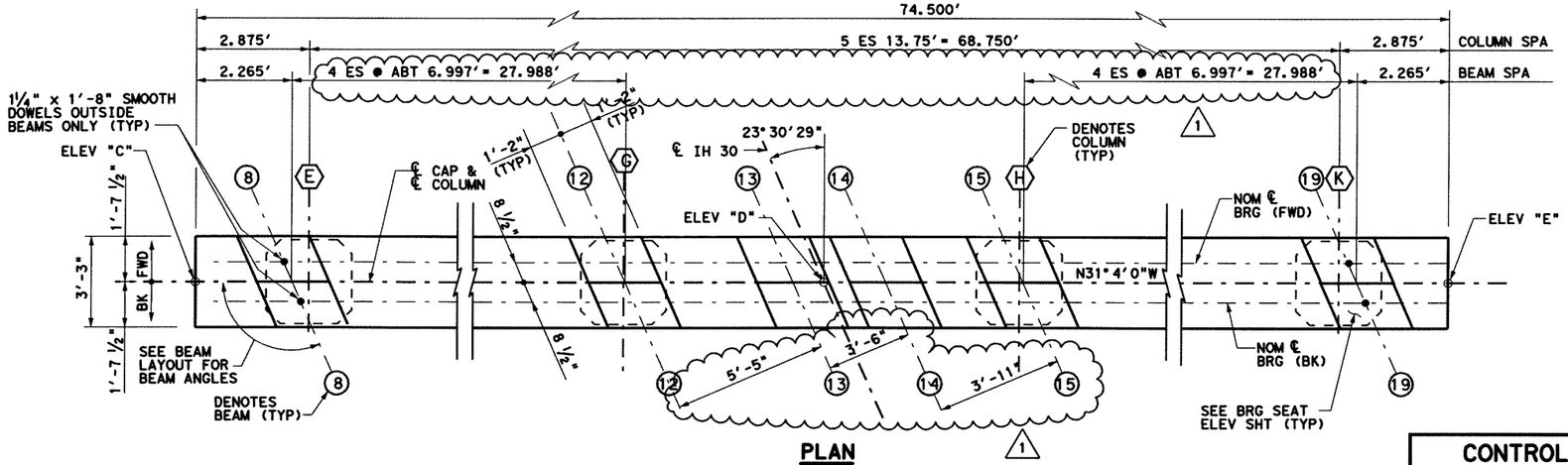
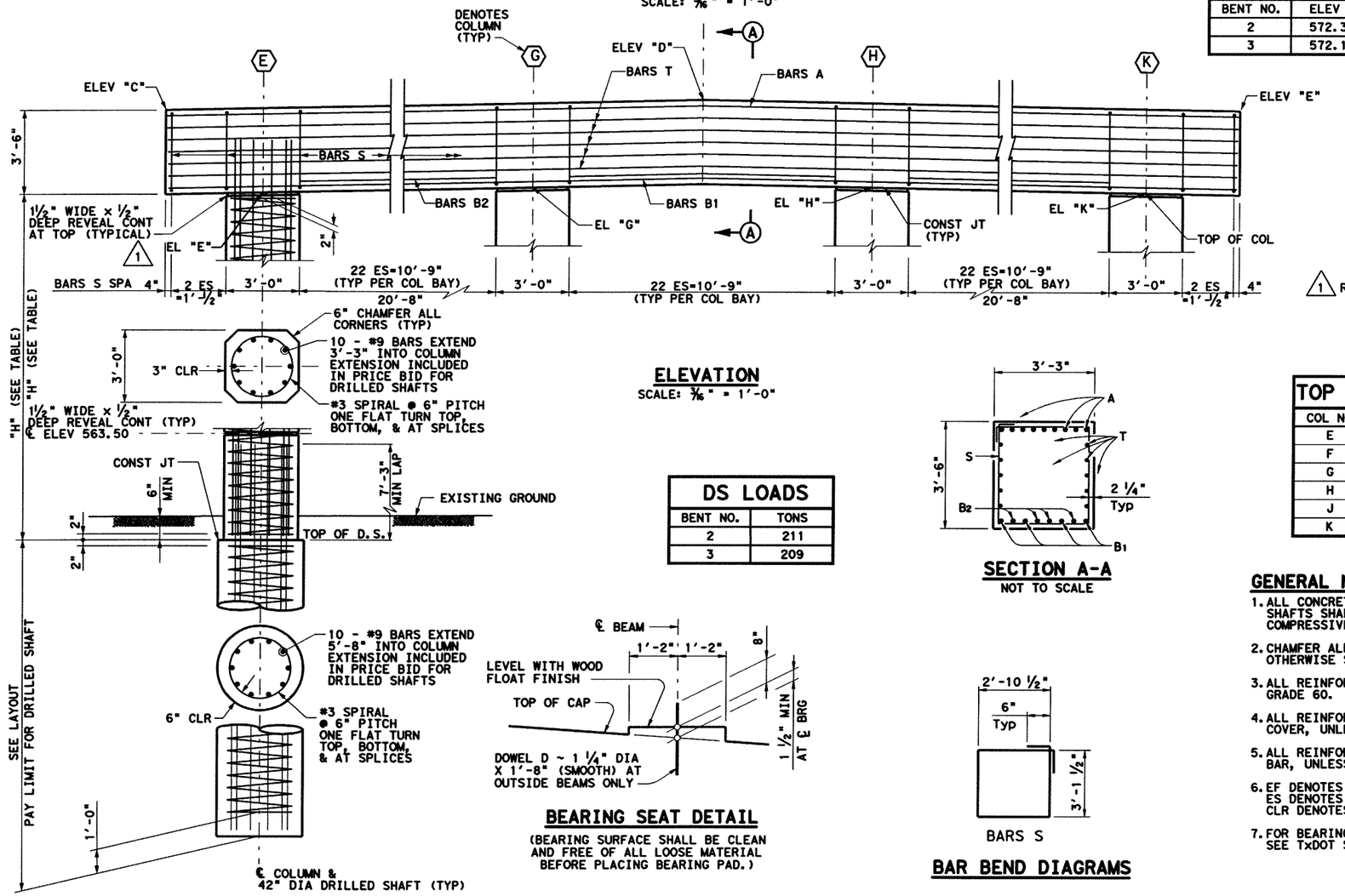


PLAN
SCALE: 3/16" = 1'-0"



ELEVATION
SCALE: 3/16" = 1'-0"

CONTROL ELEVATIONS			
BENT NO.	ELEV C	ELEV D	ELEV E
2	572.30	572.96	572.24
3	572.17	572.90	572.25

DS LOADS	
BENT NO.	TONS
2	211
3	209

BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

SECTION A-A
NOT TO SCALE

BARS S

BAR BEND DIAGRAMS

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
E	568.85	568.72
F	569.10	568.99
G	569.34	569.26
H	569.33	569.28
J	569.06	569.04
K	568.80	568.80

GENERAL NOTES
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3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
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TABLES OF CAP QUANTITIES ONE CAP (STAGE 2)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	74'-2"	3546
B1	4	#11	74'-2"	1576
B2	20	#11	10'-9"	1142
D	4	1¼" DIA	1'-8"	93
S	121	#5	13'-0"	1641
T	10	#5	74'-2"	774
REINFORCING STEEL			LB	8772
CLASS "C" CONCRETE			CY	31.4

TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	E	17.1	5.1	19'-4"	658	299'-0"	112
	F	17.3	5.1	19'-7"	665	302'-0"	114
	G	17.6	5.2	19'-10"	675	307'-0"	116
	H	17.6	5.2	19'-10"	675	307'-0"	116
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112
3	E	17.0	5.0	19'-3"	655	297'-0"	112
	F	17.2	5.1	19'-5"	661	301'-0"	113
	G	17.5	5.2	19'-9"	672	306'-0"	115
	H	17.5	5.2	19'-9"	672	306'-0"	115
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112

ESTIMATED QUANTITY SUMMARY

BENT NO.	36" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	234	62.2	18120
3	222	62.1	18088

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

1 REVISED BY JC 05-21-2007

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-23-07

HL93 LOADING

NO.	REVISION	BY	DATE
1	REVISE ELEVATIONS	J.C.	05-21-07

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Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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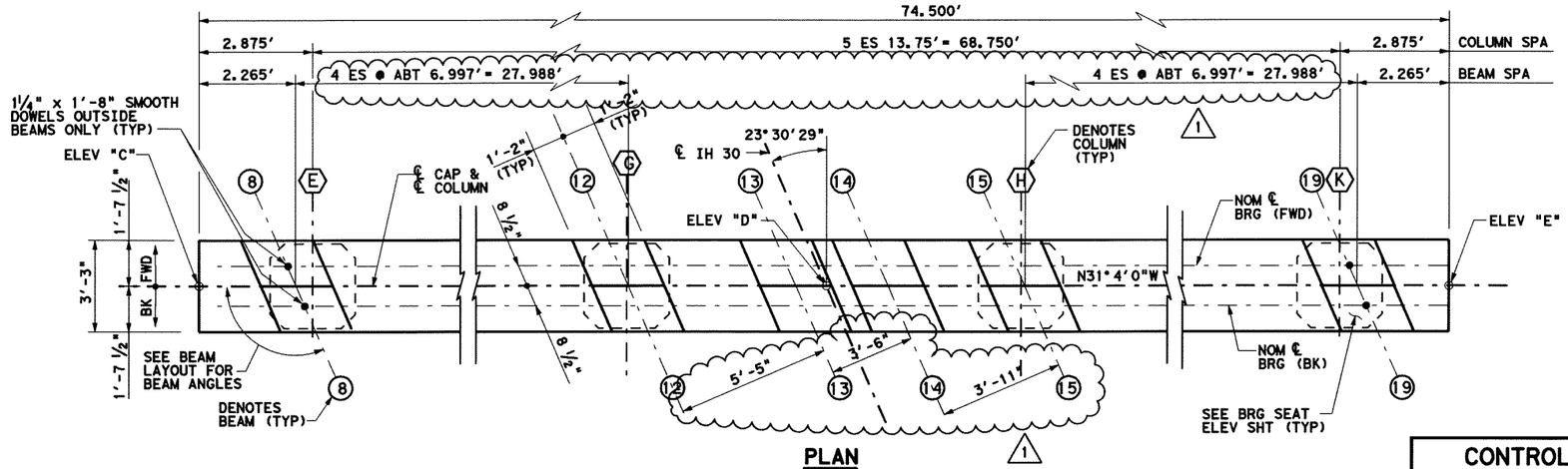
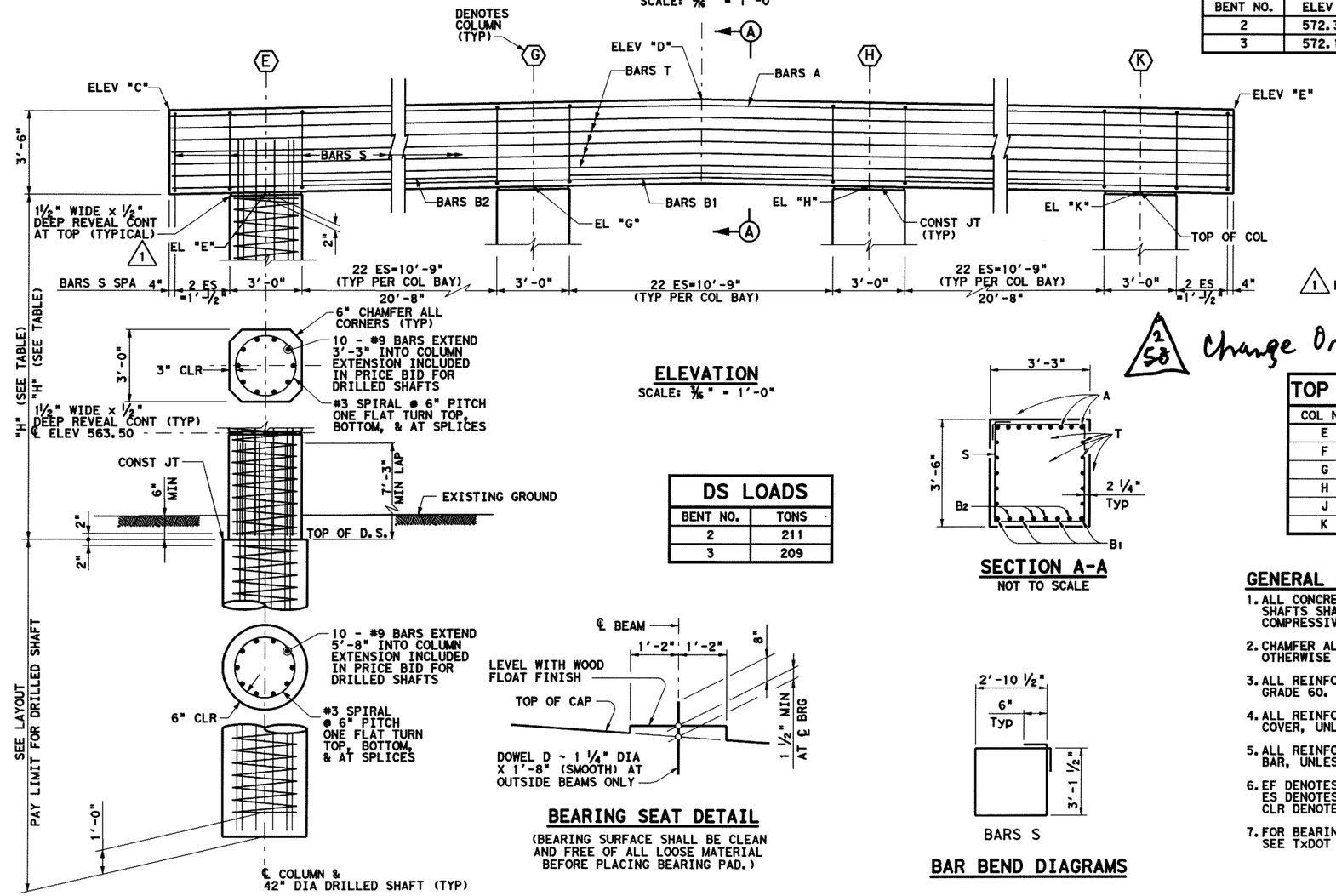


PLAN

SCALE: 3/16" = 1'-0"



ELEVATION

SCALE: 3/16" = 1'-0"

CONTROL ELEVATIONS			
BENT NO.	ELEV C	ELEV D	ELEV E
2	572.30	572.96	572.24
3	572.17	572.90	572.25

DS LOADS	
BENT NO.	TONS
2	211
3	209

BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

SECTION A-A

NOT TO SCALE

BARS S

BAR BEND DIAGRAMS

TABLES OF CAP QUANTITIES ONE CAP (STAGE 2)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	74'-2"	3546
B1	4	#11	74'-2"	1576
B2	20	#11	10'-9"	1142
D	4	1¼" DIA	1'-8"	93
S	121	#5	13'-0"	1641
T	10	#5	74'-2"	774
REINFORCING STEEL			LB	8772
CLASS "C" CONCRETE			CY	31.4

TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	E	17.1	5.1	19'-4"	658	299'-0"	112
	F	17.3	5.1	19'-7"	665	302'-0"	114
	G	17.6	5.2	19'-10"	675	307'-0"	116
	H	17.6	5.2	19'-10"	675	307'-0"	116
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112
3	E	17.0	5.0	19'-3"	655	297'-0"	112
	F	17.2	5.1	19'-5"	661	301'-0"	113
	G	17.5	5.2	19'-9"	672	306'-0"	115
	H	17.5	5.2	19'-9"	672	306'-0"	115
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112

ESTIMATED QUANTITY SUMMARY

BENT NO.	36" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	276	62.2	18120
3	264	62.1	18088

① PROVIDED FOR CONTRACTORS INFORMATION ONLY. VARIATION IN "H" VALUE.

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
E	568.85	568.72
F	569.10	568.99
G	569.34	569.26
H	569.33	569.28
J	569.06	569.04
K	568.80	568.80

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
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3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
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6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

△1 REVISED BY JC 05-21-2007

△2 Change Order 53

CHINH T. PHAN IS SEALING THE REVISION NO. 2 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS — CHINH TAI PHAN — 92726 — LICENSED PROFESSIONAL ENGINEER — 6.19.08

HL93 LOADING

NO.	REVISION	BY	DATE
2	REVISE ESTIMATED QUANTITY SUMMARY		C.P. 06-18-08
1	REVISE PLAN AND PROFILE		J.C. 02-02-07

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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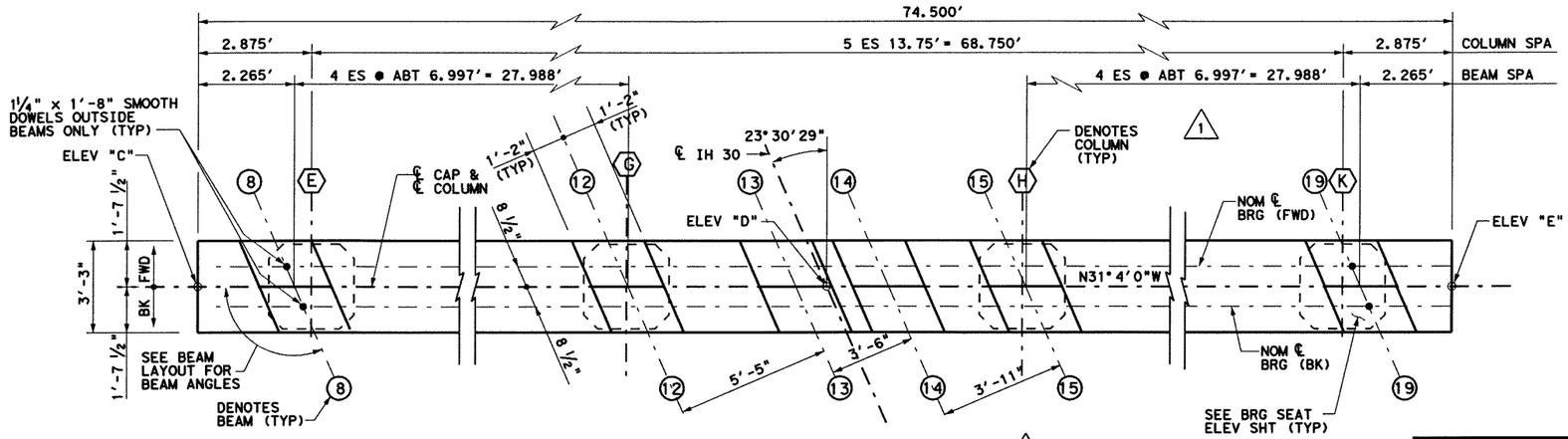
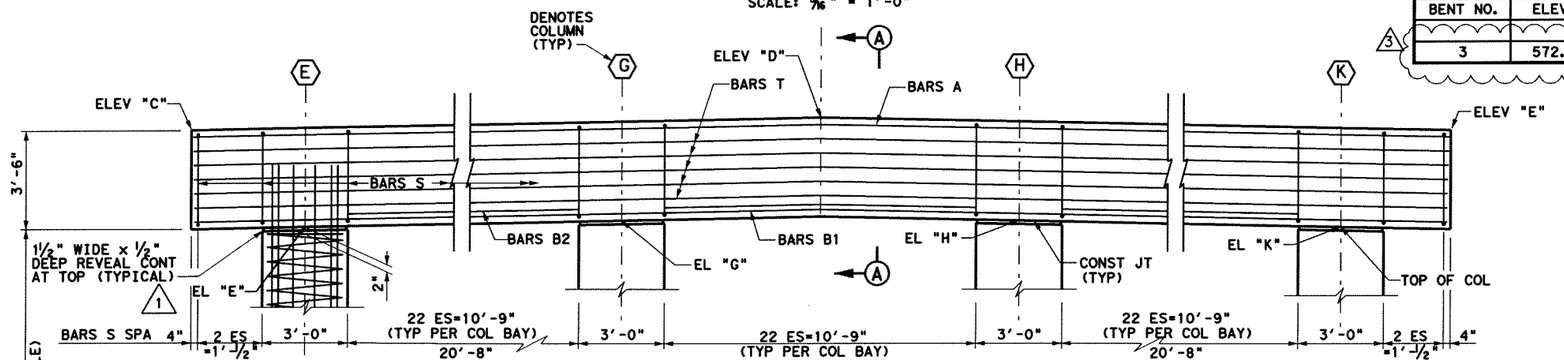


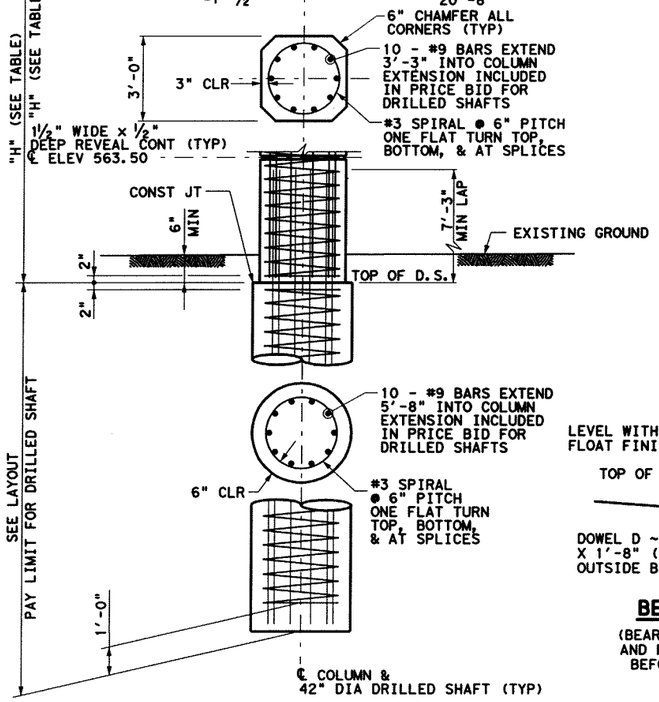
PLAN

SCALE: 3/16" = 1'-0"



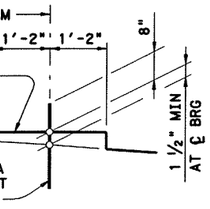
ELEVATION

SCALE: 3/16" = 1'-0"



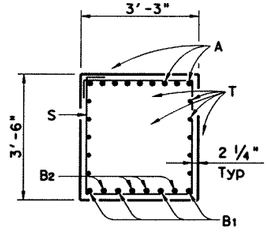
DS LOADS	
BENT NO.	TONS
3	375

△3



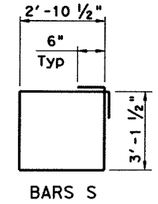
BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



SECTION A-A

NOT TO SCALE



BARS S

BAR BEND DIAGRAMS

CONTROL ELEVATIONS

BENT NO.	ELEV C	ELEV D	ELEV E
3	572.17	572.90	572.25

△3

TABLES OF CAP QUANTITIES ONE CAP (STAGE 2)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	74'-2"	3546
B1	4	#11	74'-2"	1576
B2	20	#11	10'-9"	1142
D	4	1¼" DIA	1'-8"	29
S	121	#5	13'-0"	1641
T	10	#5	74'-2"	774
REINFORCING STEEL			LB	8708
CLASS "C" CONCRETE			CY	31.4

△3

TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
3	E	17.0	5.0	19'-3"	655	297'-0"	112
	F	17.2	5.1	19'-5"	661	301'-0"	113
	G	17.5	5.2	19'-9"	672	306'-0"	115
	H	17.5	5.2	19'-9"	672	306'-0"	115
	J	17.3	5.1	19'-7"	665	302'-0"	114
	K	17.0	5.0	19'-3"	655	297'-0"	112

ESTIMATED QUANTITY SUMMARY

BENT NO.	42" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
3	264	62.1	18024

△2 △3

① PROVIDED FOR CONTRACTORS INFORMATION ONLY. VARIATION IN "H" VALUE.

△3 ~ FIELD CHANGE # 63

TOP OF COLUMN ELEV	
COL NO.	BENT #3
E	568.72
F	568.99
G	569.26
H	569.28
J	569.04
K	568.80

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

STATE OF TEXAS
OSAMA A. SHAHAWY
88476
LICENSED
PROFESSIONAL ENGINEER
11/20/08

HL93 LOADING

NO.	REVISION	BY	DATE
3	ADDED BENT 2 FOUNDATION CAP	OAS	11-20-08
2	REVISE ESTIMATED QUANTITY SUMMARY	C.P.	06-18-08
1	REVISE PLAN AND PROFILE	J.C.	02-02-07

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

IH 30 UNDERPASS

△3 BENT NO. 3 DETAILS STAGE 2

SHEET 1 OF 1

FED.RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576
CONT.	SECT.	JOB	
0451	01	032, ETC	

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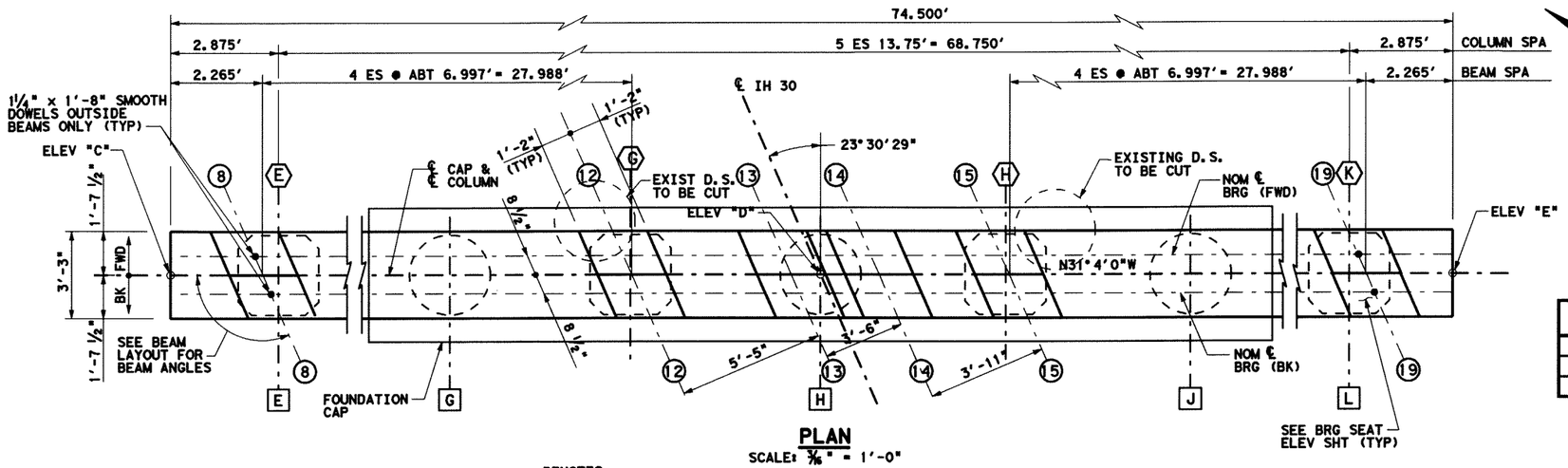
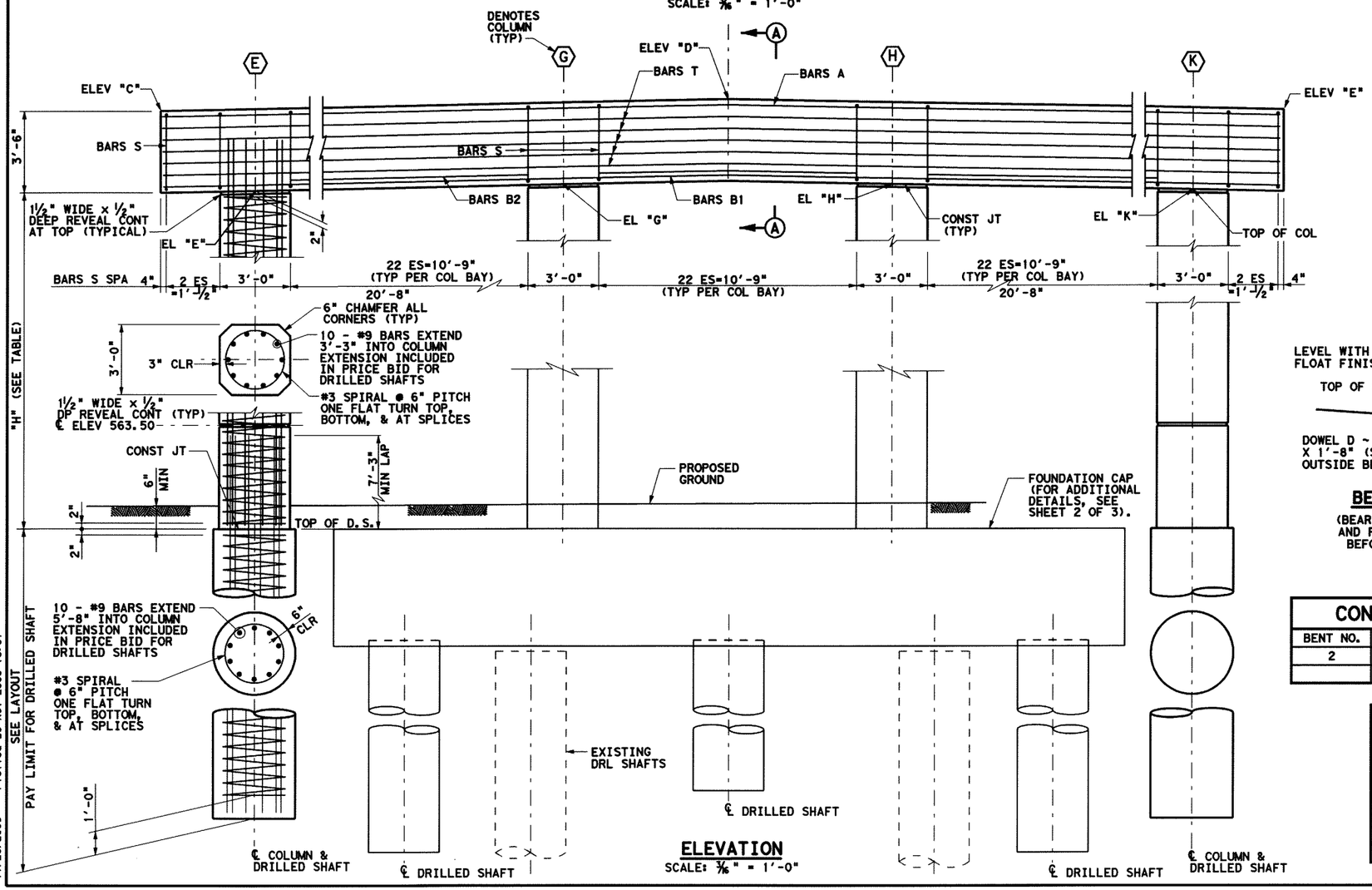


PLAN
SCALE: 3/16" = 1'-0"



ELEVATION
SCALE: 3/16" = 1'-0"

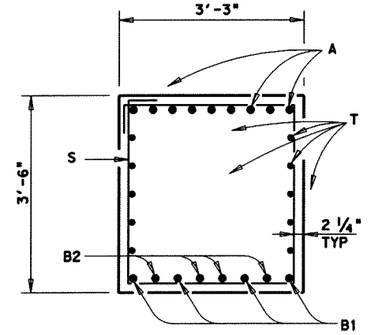
GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS, FOUNDATION CAP AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

○ DENOTES BEAM NO.
⬡ DENOTES COLUMN
□ DENOTES DRILLED SHAFT

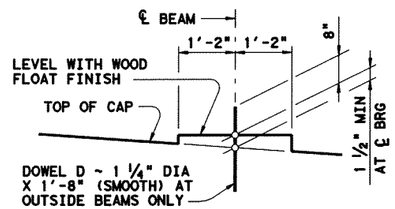
DS LOADS	
BENT NO.	TONS
2	315

DS SIZE	
E	42" DIA
F	42" DIA
G	36" DIA
H	36" DIA
J	36" DIA
K	42" DIA
L	42" DIA



SECTION A-A
SCALE: 3/16"=1'-0"

△3 ~ Field Change # 63



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

CONTROL ELEVATIONS			
BENT NO.	ELEV C	ELEV D	ELEV E
2	572.30	572.96	572.24

TOP OF COLUMN ELEV	
COL NO.	BENT #2
E	568.85
F	569.10
G	569.34
H	569.33
J	569.06
K	568.80

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IH 30 UNDERPASS

BENT NO. 2 DETAILS
STAGE 2

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576A
CONT.	SECT.	JOB	
0451	01	032, ETC	

OSAMA A. SHAHAWY 88476 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
11/20/08

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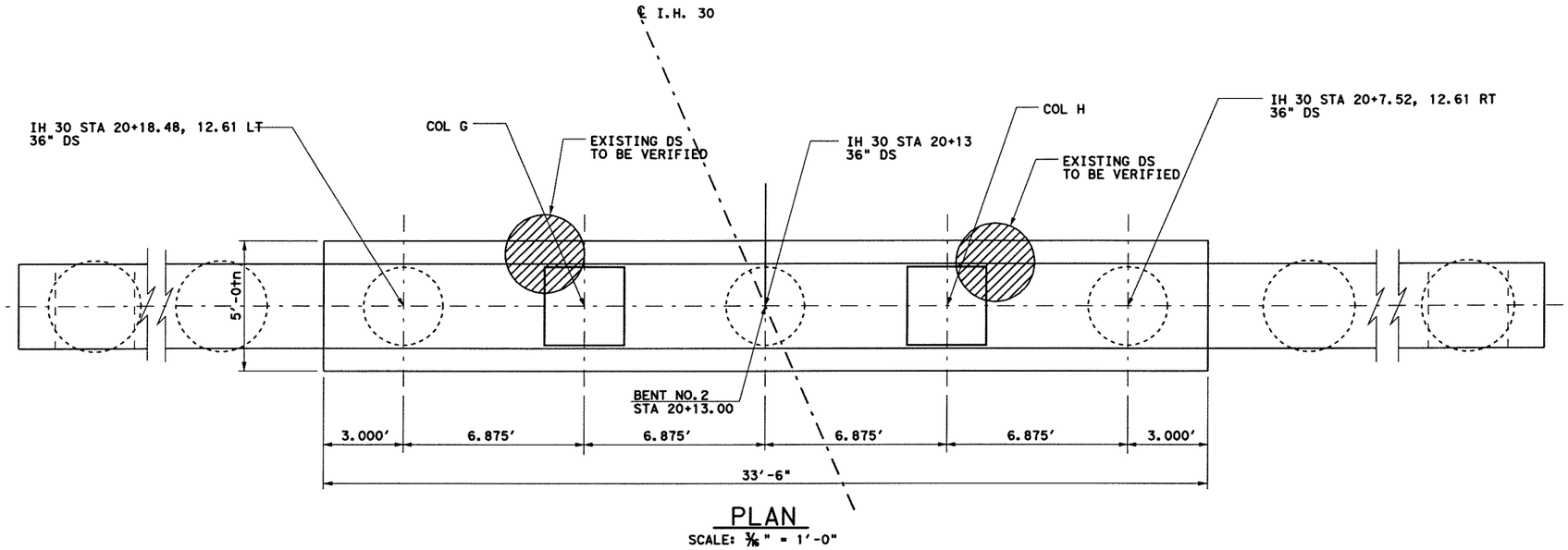
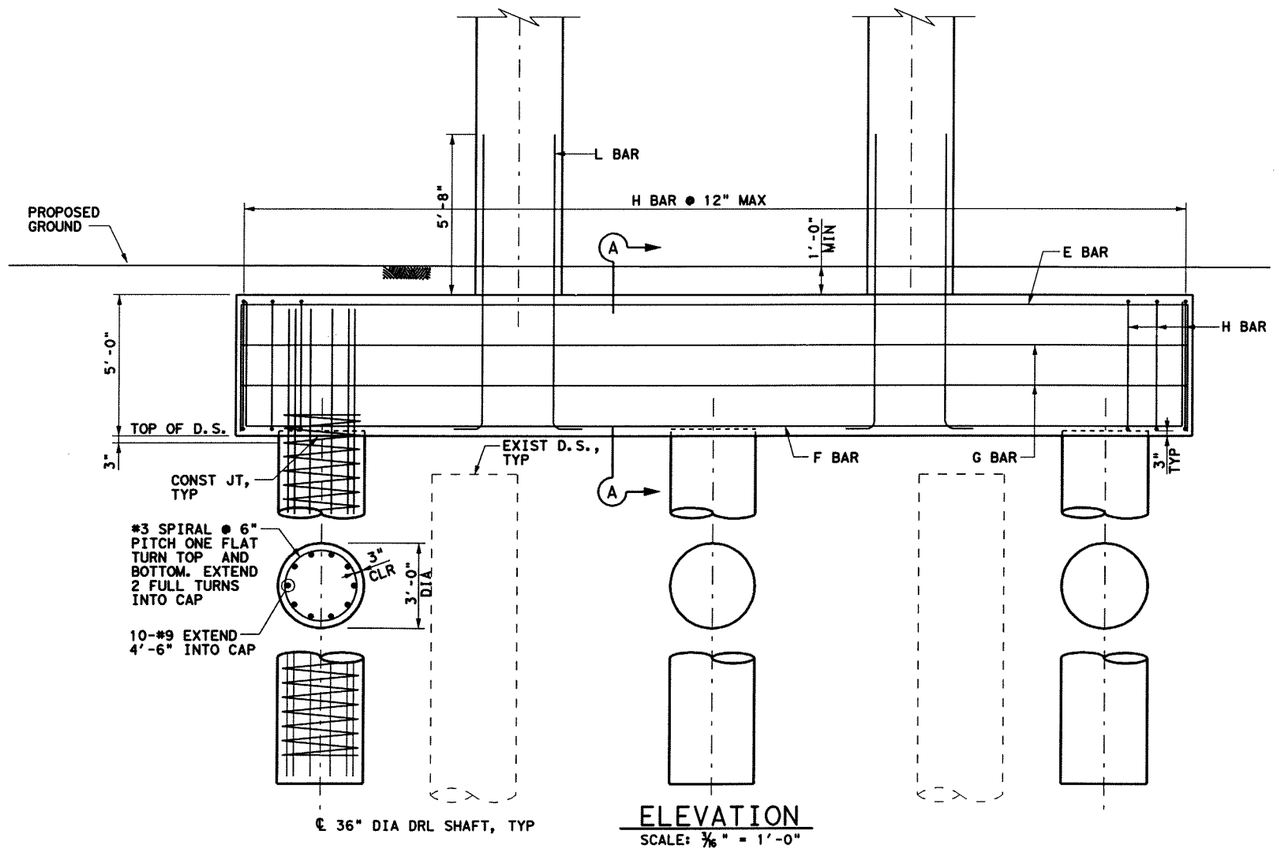


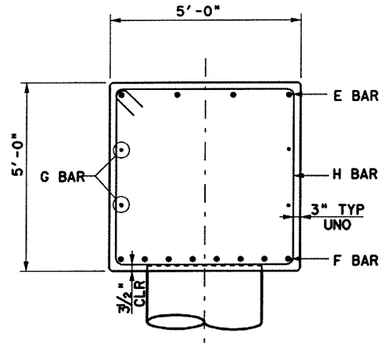
PLAN

SCALE: 3/16" = 1'-0"



ELEVATION

SCALE: 3/16" = 1'-0"



SECTTION A-A

SCALE: 1/4" = 1'-0"

NOTE:

FOR BAR BEND DETAILS, SEE SHEET 3 OF 3.

△ ~ FIELD CHANGE # 63

STATE OF TEXAS
OSAMA A. SHAHAWY
88476
LICENSED
PROFESSIONAL ENGINEER
11/20/08

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IH 30 UNDERPASS

BENT NO. 2 FOUNDATION DETAILS
STAGE 2

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576B
CONT.	SECT.	JOB	
0451	01	032, ETC	

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TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	E	17.1	5.4	19'-4"	658	299'-0"	112
	F	17.3	5.4	19'-7"	665	302'-0"	114
	G	17.6	5.5	19'-10"	675	307'-0"	116
	H	17.6	5.5	19'-10"	675	307'-0"	116
	J	17.3	5.4	19'-7"	665	302'-0"	114
	K	17.0	5.3	19'-3"	655	297'-0"	112
TOTAL			32.5	TOTAL	3993	TOTAL	684

ESTIMATED QUANTITY SUMMARY

42" DIA DS	36" DIA DS	CLASS "C" CONC	① REINF STEEL
LF	LF	CY	LB
184	123	94.9	17334

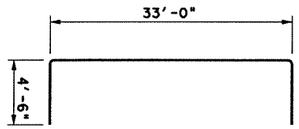
① PROVIDED FOR CONTRACTORS INFORMATION ONLY.
VARIATION IN "H" VALUE.

TABLES OF CAP QUANTITIES (STAGE 2)

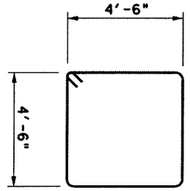
BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	74'-2"	3546
B1	4	#11	74'-2"	1576
B2	20	#11	10'-9"	1142
D	4	1¼" DIA	1'-8"	29
S	121	#5	13'-0"	1641
T	10	#5	74'-2"	774
REINFORCING STEEL ①			LB	8708
CLASS "C" CONCRETE			CY	31.4

TABLE OF ESTIMATED FOUNDATION CAP QUANTITIES

BAR	NO.	SIZE	LENGTH	WEIGHT
E	4	#9	42'-0"	575
F	8	#11	42'-0"	1796
G	4	#5	33'-0"	139
H	34	#5	18'-8"	662
L	20	#9	11'-5"	777
REINFORCING STEEL ①			LB	3949
CLASS "C" CONCRETE			CY	31.0



BAR E & F



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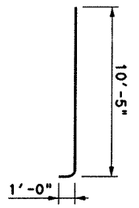

BAR L

BAR BEND DETAILS

△ ~ FIELD CHANGE# 63

STATE OF TEXAS
OSAMA A. SHAHAWY
88476
LICENSED
PROFESSIONAL ENGINEER
11/20/08

HL93 LOADING

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SH 205

IH 30 UNDERPASS

BENT NO. 2 DETAILS
STAGE 2

SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	576C
CONT.	SECT.	JOB	
0451	01	032, ETC	

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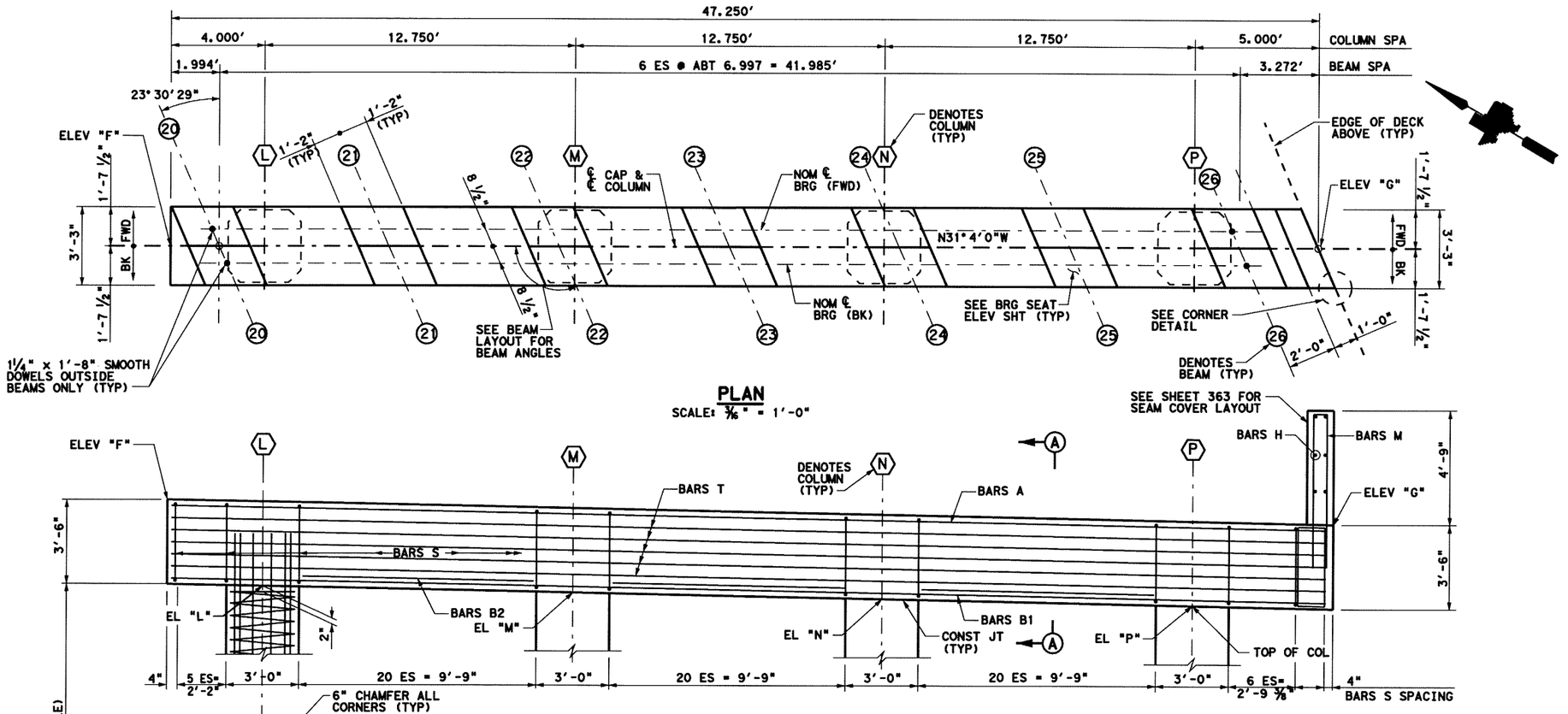
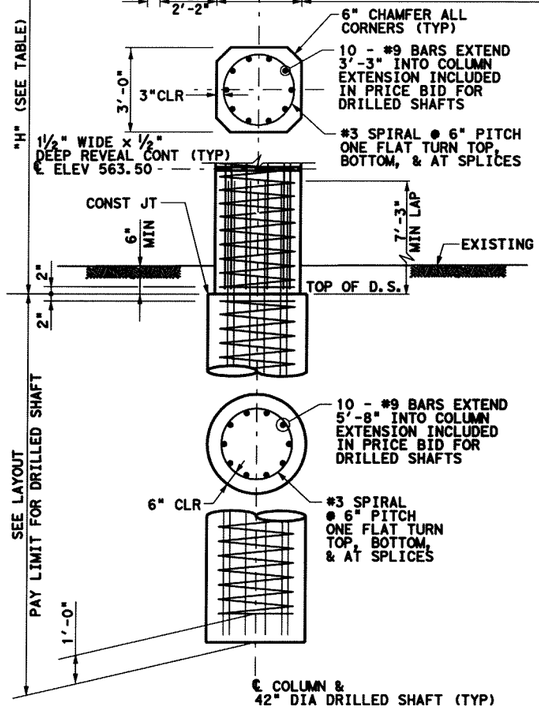
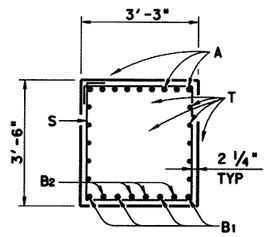


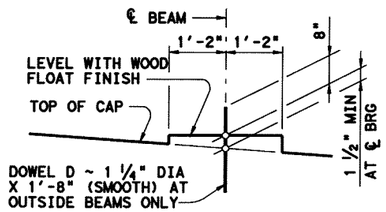
PLAN
SCALE: 3/16" = 1'-0"



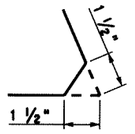
ELEVATION
SCALE: 3/16" = 1'-0"



SECTION A-A
NOT TO SCALE



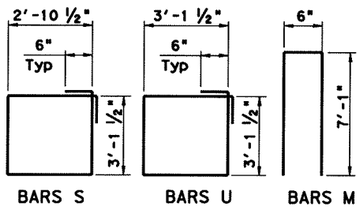
BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



CORNER DETAIL
NOT TO SCALE

DS LOADS

BENT NO.	TONS
2	246
3	244



BAR BEND DIAGRAMS

CONTROL ELEVATIONS

BENT NO.	ELEV F	ELEV G
2	572.19	572.27
3	572.21	571.38

TOP OF COLUMN ELEV

COL NO.	BENT #2	BENT #3
L	568.61	568.64
M	568.37	568.41
N	568.12	568.19
P	567.87	567.96

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
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7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

TABLES OF CAP QUANTITIES ONE CAP (STAGE 1 - LEFT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	46'-11"	2243
B1	4	#11	46'-11"	997
B2	12	#11	9'-9"	622
D	4	1¼" DIA	1'-8"	93
H	6	#5	5'-6"	34
M	4	#5	14'-8"	61
S	76	#5	13'-0"	1030
T	10	#5	46'-11"	489
U	1	#5	13'-6"	14
REINFORCING STEEL			LB	5584
CLASS "C" CONCRETE			CY	20.5

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	L	16.8	5.0	19'-1"	648	294'-0"	111
	M	16.6	4.9	18'-10"	641	291'-0"	109
	N	16.3	4.8	18'-6"	631	286'-0"	107
	P	16.1	4.8	18'-4"	624	283'-0"	106
3	L	16.9	5.0	19'-2"	651	296'-0"	111
	N	16.6	4.9	18'-10"	641	291'-0"	109
	M	16.4	4.8	18'-8"	634	287'-0"	108
	P	16.2	4.8	18'-5"	627	284'-0"	107

ESTIMATED QUANTITY SUMMARY

BENT NO.	42" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	156	40.0	11538
3	148	40.1	11562

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

HL93 LOADING

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	577
CONT.	SECT.	JOB	
0451	01	032, ETC	

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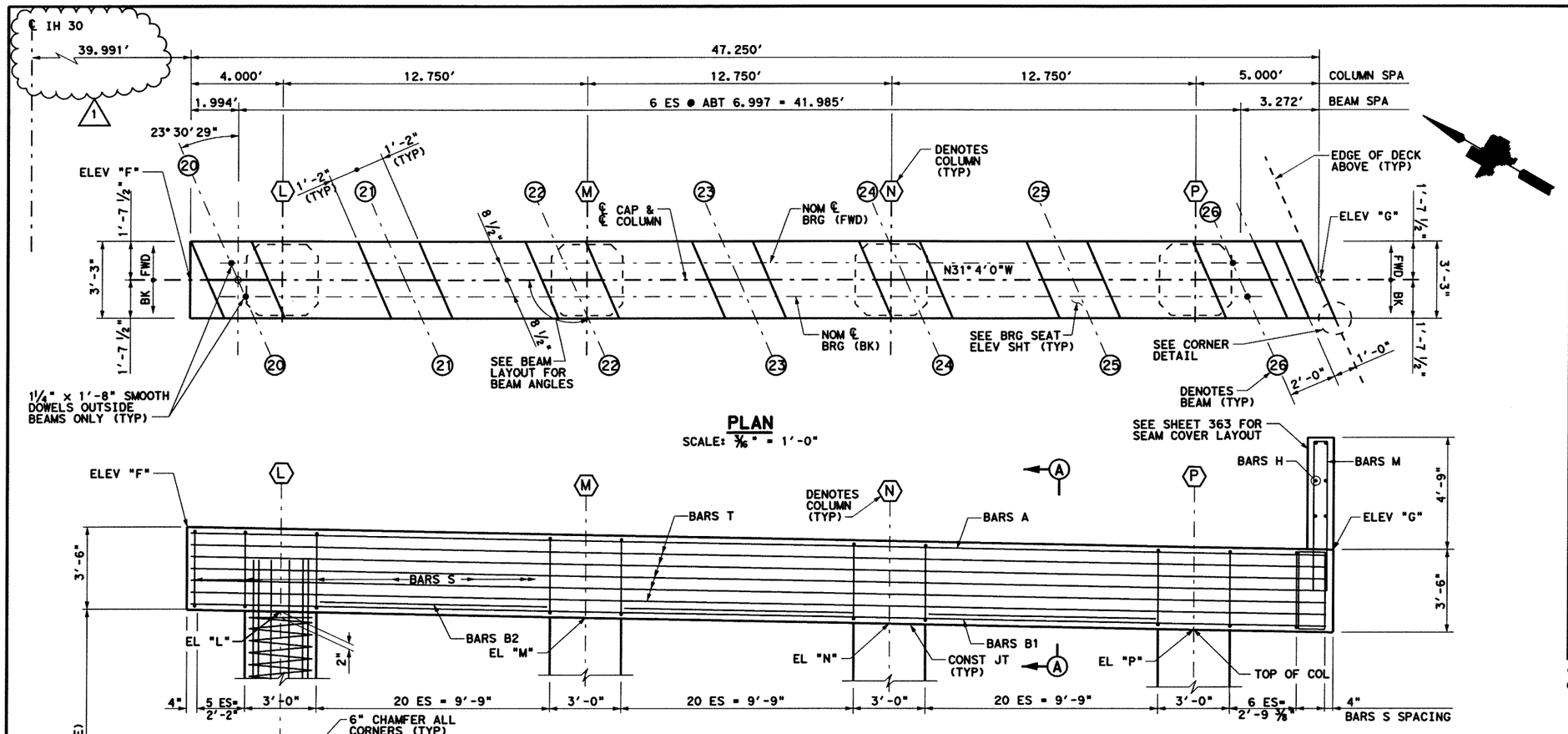
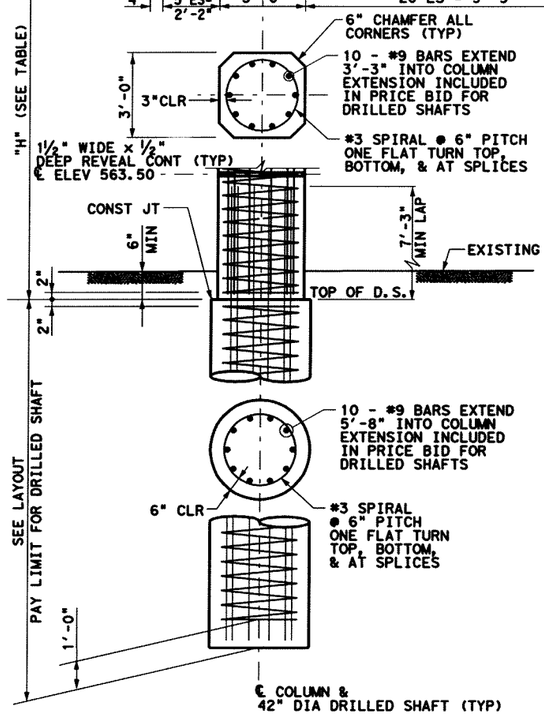
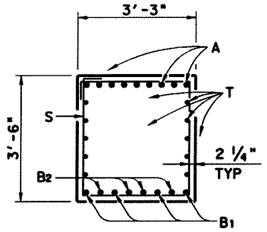


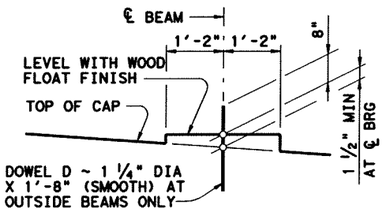
PLAN
SCALE: 3/16" = 1'-0"



ELEVATION
SCALE: 3/16" = 1'-0"

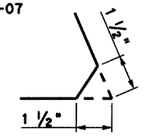


SECTION A-A
NOT TO SCALE



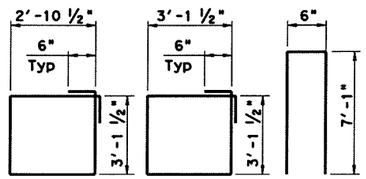
BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

1 REVISED BY JC 05-23-07



CORNER DETAIL
NOT TO SCALE

DS LOADS	
BENT NO.	TONS
2	246
3	244



BAR BEND DIAGRAMS

CONTROL ELEVATIONS		
BENT NO.	ELEV F	ELEV G
2	572.19	571.27
3	572.21	571.38

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
L	568.61	568.64
M	568.37	568.41
N	568.12	568.19
P	567.87	567.96

GENERAL NOTES
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6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

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T	10	#5	46'-11"	489
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REINFORCING STEEL			LB	5584
CLASS "C" CONCRETE			CY	20.5

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
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	N	16.3	4.8	18'-6"	631	286'-0"	107
	P	16.1	4.8	18'-4"	624	283'-0"	106
3	L	16.9	5.0	19'-2"	651	296'-0"	111
	N	16.6	4.9	18'-10"	641	291'-0"	109
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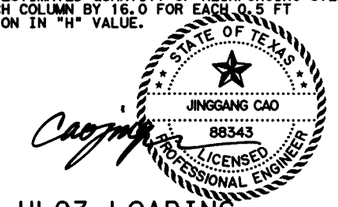
2	156	40.0	11538
3	148	40.1	11562

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.
② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.



HL93 LOADING
5-23-07

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	577A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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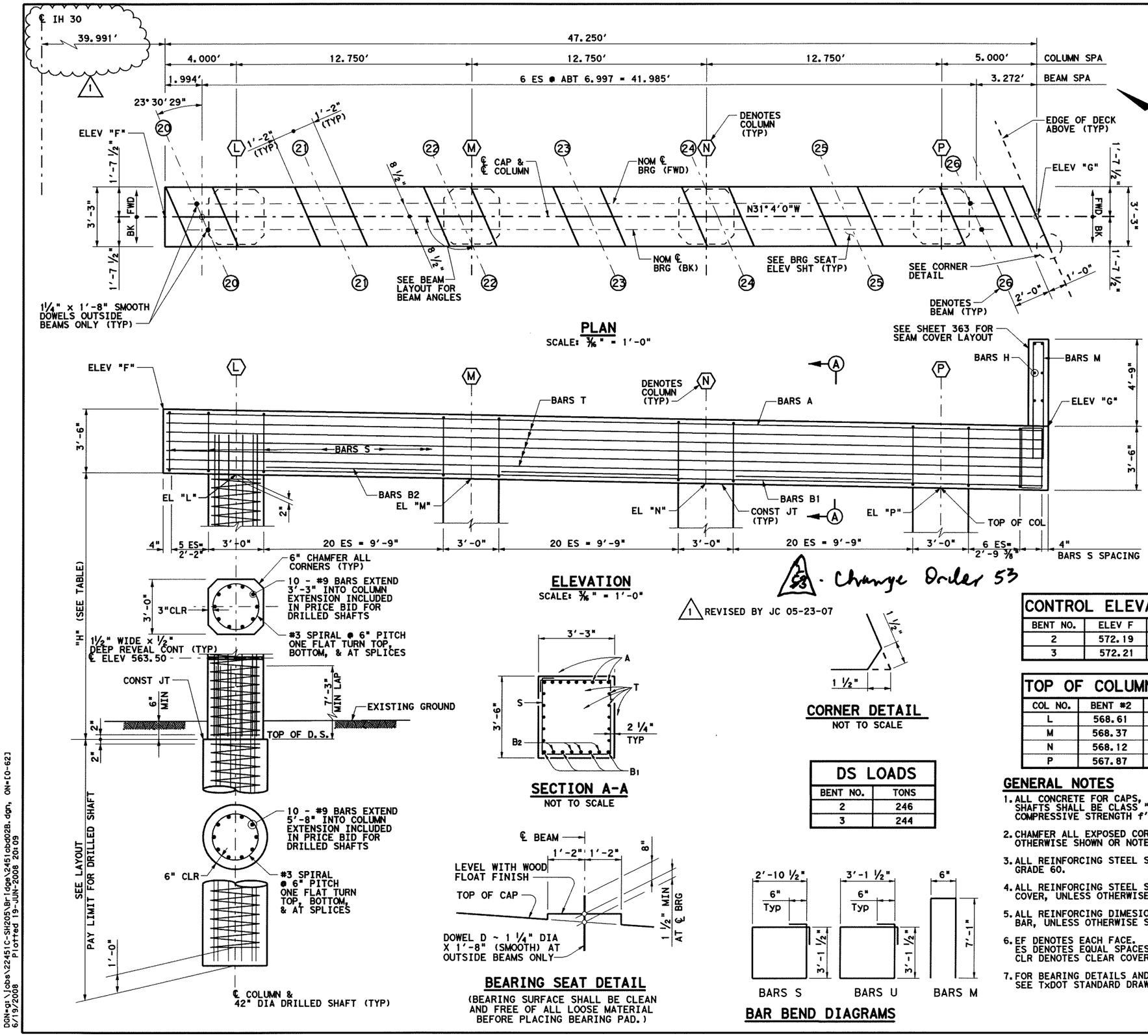

1 REVISED BY JC 05-23-07

Change Order 53

TABLES OF CAP QUANTITIES ONE CAP (STAGE 1 - LEFT)

BAR	NO.	SIZE	LENGTH	WEIGHT
A	9	#11	46'-11"	2243
B1	4	#11	46'-11"	997
B2	12	#11	9'-9"	622
D	4	1¼" DIA	1'-8"	93
H	6	#5	5'-6"	34
M	4	#5	14'-8"	61
S	76	#5	13'-0"	1030
T	10	#5	46'-11"	489
U	1	#5	13'-6"	14
REINFORCING STEEL			LB	5584
CLASS "C" CONCRETE			CY	20.5

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 10 ~ #9		BARS Z 1 #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	L	16.8	5.0	19'-1"	648	294'-0"	111
	M	16.6	4.9	18'-10"	641	291'-0"	109
	N	16.3	4.8	18'-6"	631	286'-0"	107
	P	16.1	4.8	18'-4"	624	283'-0"	106
3	L	16.9	5.0	19'-2"	651	296'-0"	111
	N	16.6	4.9	18'-10"	641	291'-0"	109
	M	16.4	4.8	18'-8"	634	287'-0"	108
	P	16.2	4.8	18'-5"	627	284'-0"	107

ESTIMATED QUANTITY SUMMARY

BENT NO.	42" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	184	40.0	11538
3	176	40.1	11562

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.
② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

CONTROL ELEVATIONS		
BENT NO.	ELEV F	ELEV G
2	572.19	571.27
3	572.21	571.38

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
L	568.61	568.64
M	568.37	568.41
N	568.12	568.19
P	567.87	567.96

DS LOADS	
BENT NO.	TONS
2	246
3	244

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

CHINH T. PHAN IS SEALING THE REVISION NO. 2 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO.

STATE OF TEXAS — CHINH TAI PHAN — 92726 — LICENSED PROFESSIONAL ENGINEER — 6.19.08

HL93 LOADING

NO.	REVISION	BY	DATE
2	REVISE ESTIMATED QUANTITY SUMMARY	C.P.	06-18-08

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SH 205

IH 30 UNDERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	577
CONT.	SECT.	JOB	
0451	01	032, ETC	

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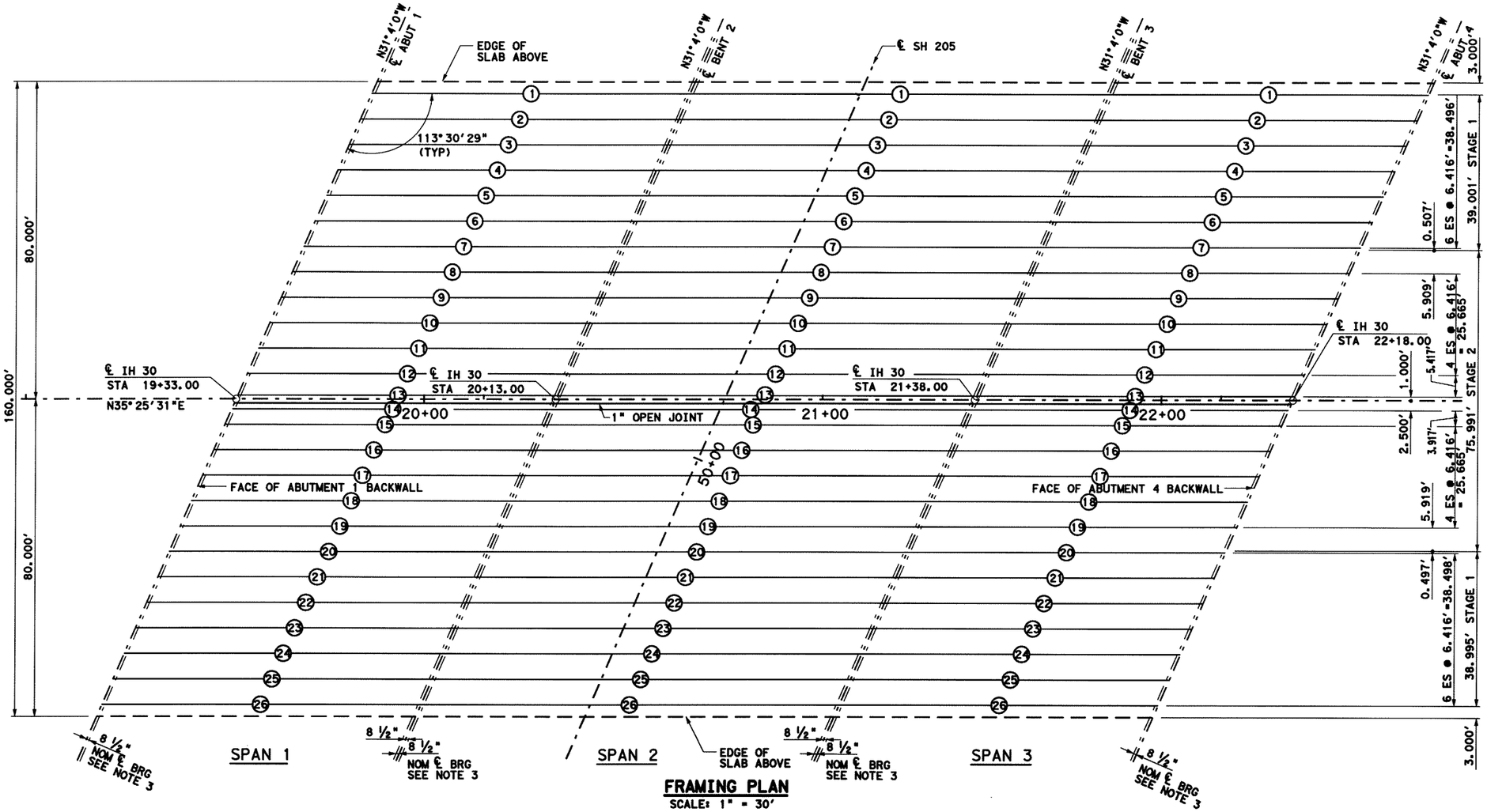
6/19/2008 Plotted 19-JUN-2008 20:09

GENERAL NOTES

1. FOR BEAM DETAILS, SEE TxDOT STANDARD DRAWINGS "IBD", "IBEB", AND "IBND".
2. FOR BEAM ERECTION AND BRACING REQUIREMENTS, SEE TxDOT STANDARD DRAWING "MEBR(C)".
3. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

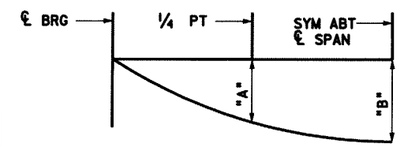


FRAMING PLAN
SCALE: 1" = 30'

BEAM DATA TABLE					
SPAN NO.	BEAM	LENGTH ℄ - ℄ ABUT/BENT	LENGTH OF ① BEAM	LENGTH ℄ - ℄ NOMINAL BRG	ANGLE
1	ALL	80.000'	79.636'	78.519'	113°30'29"
2	ALL	125.000'	124.667'	123.583'	113°30'29"
3	ALL	80.000'	79.636'	78.519'	113°30'29"

① FABRICATOR SHALL ADJUST BEAM LENGTHS FOR BEAM SLOPES AS REQUIRED

SPAN NO.	BEAM NO.	"A" ft.	"B" ft.
1	1-26	0.033	0.047
2	1-26	0.154	0.216
3	1-26	0.033	0.047



NOTE: DEFLECTIONS SHOWN ARE DUE TO CAST-IN-PLACE SLAB CONCRETE ONLY. DEFLECTIONS ARE BASED ON E_c = 5000 KSI CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY DIFFER. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

DEAD LOAD DEFLECTION DIAGRAM

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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FRAMING PLAN

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	578
CONT.	SECT.	JOB	
0451	01	032, ETC	

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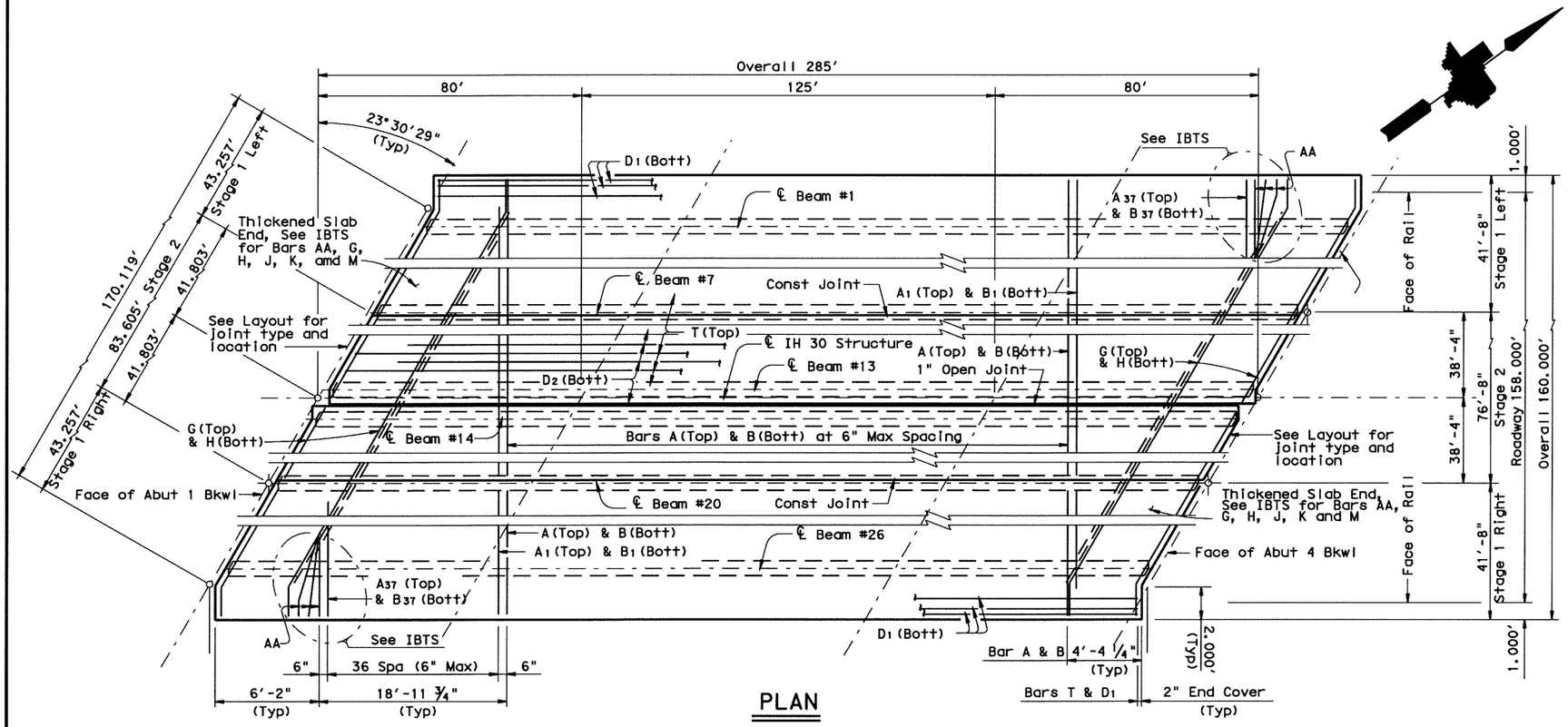
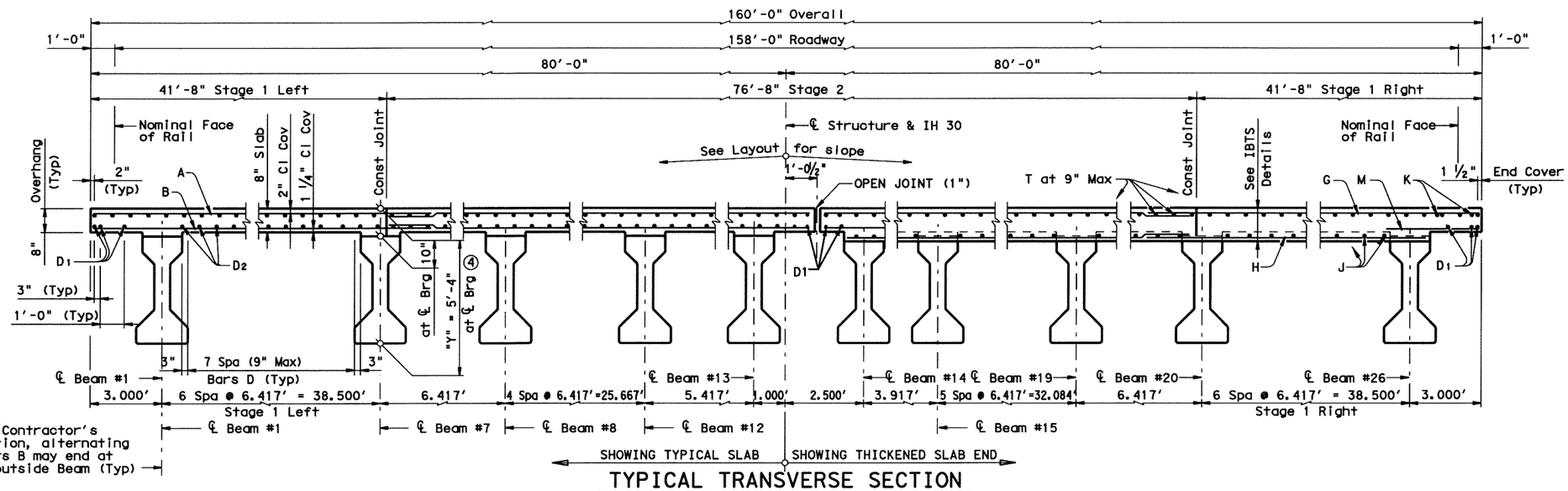


PLAN



TYPICAL TRANSVERSE SECTION

TABLE OF ESTIMATED QUANTITIES STAGE 1 L/R

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY IV)	CLASS "S" CONCRETE ①	REINF STEEL ① ②
NO.	SF	LF	CY	LB
1	3333	557.56	89.80	21665
2	5208	872.67	139.34	33852
3	3333	557.56	89.80	21665
TOTAL	11875	1987.79	318.95	77182

TABLE OF ESTIMATED QUANTITIES STAGE 2

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY IV)	CLASS "S" CONCRETE ①	REINF STEEL ① ②
NO.	SF	LF	CY	LB
1	6133	955.82	164.80	39865
2	9583	1469.00	255.84	62290
3	6133	955.82	164.80	39865
TOTAL	21850	3407.64	585.73	142020

① PROVIDED FOR CONTRACTOR'S INFORMATION ONLY.

② REINFORCING STEEL WEIGHT FOR THE CONCRETE SLAB IS CALCULATED USING AN APPROXIMATE FACTOR OF 6.5 LB/SF

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.
See IBTS Standard for Thickened Slab End Details and quantity adjustments.
See PCP or PMDF Standards for details and quantity adjustments if either of these options are used.
See IBMS Standard for miscellaneous details.
All reinforcing shall be Grade 60.
Concrete strength f'c = 4,000 psi.
Bar laps, where required, shall be as follows:
Epoxy Coated ~ #4 = 2'-1"
~ #5 = 2'-7"
See railing details for rail anchorage in slab.
All reinforcements shall be grade 60 and epoxy coated.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
5-22-06

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SLAB DETAILS

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	579
CONT.	SECT.	JOB	
0451	01	032, ETC	

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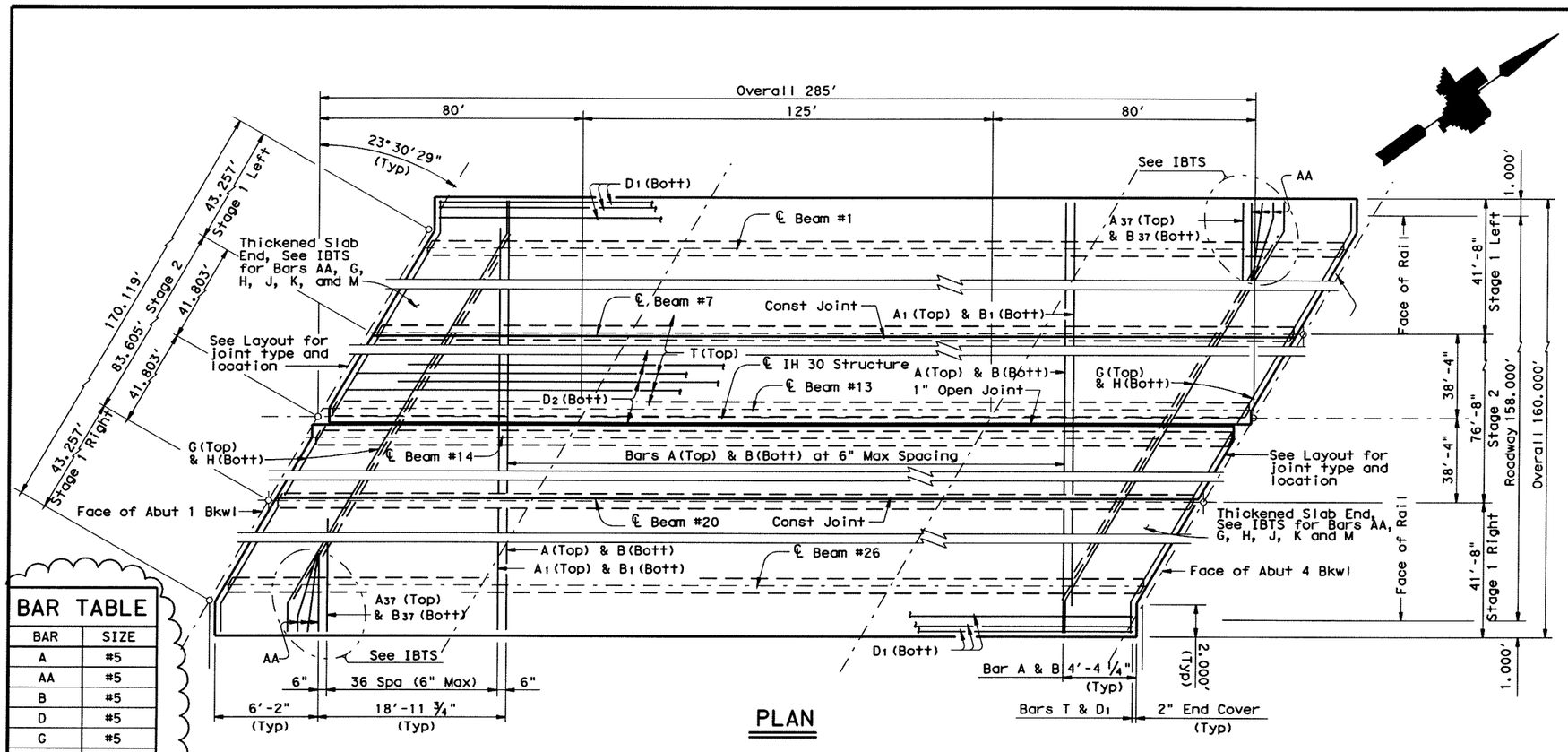


PLAN

BAR TABLE	
BAR	SIZE
A	#5
AA	#5
B	#5
D	#5
G	#5
H	#5
J	#5
K	#5
M	#5
T	#4

1

TABLE OF ESTIMATED QUANTITIES STAGE 1 L/R

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY IV)	CLASS "S" CONCRETE (1)	REINF STEEL (1) (2)
NO.	SF	LF	CY	LB
1	3333	557.56	89.80	21665
2	5208	872.67	139.34	33852
3	3333	557.56	89.80	21665
TOTAL	11875	1987.79	318.95	77182

TABLE OF ESTIMATED QUANTITIES STAGE 2

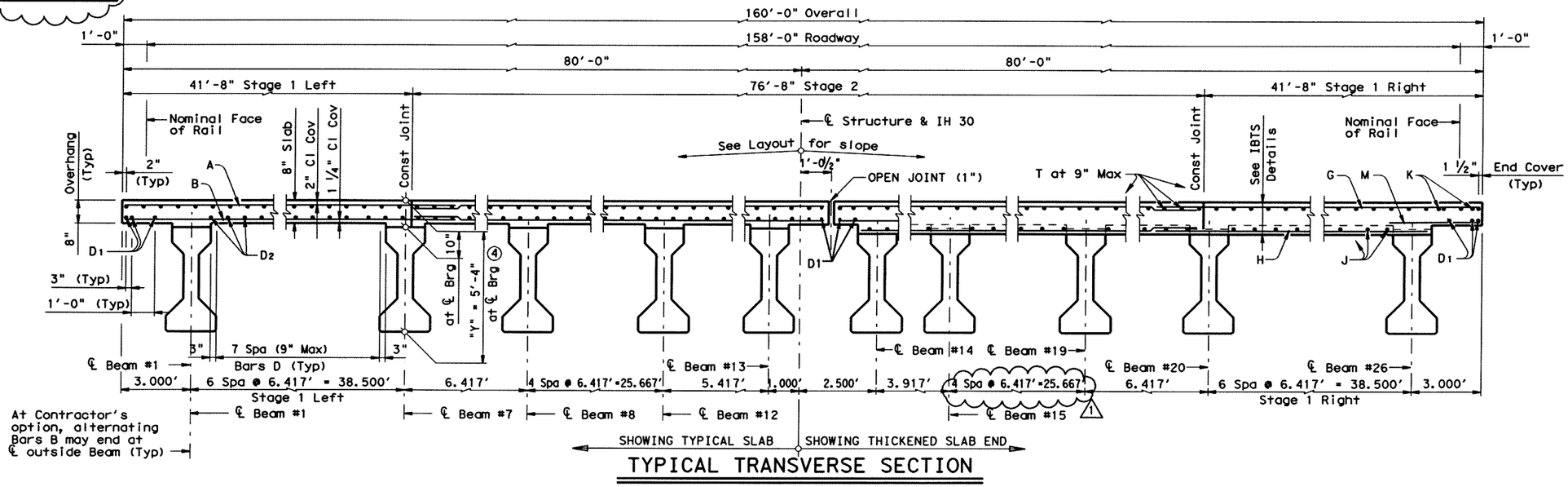
SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY IV)	CLASS "S" CONCRETE (1)	REINF STEEL (1) (2)
NO.	SF	LF	CY	LB
1	6133	955.82	164.80	39865
2	9583	1469.00	255.84	62290
3	6133	955.82	164.80	39865
TOTAL	21850	3407.64	585.73	142020

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY.

(2) REINFORCING STEEL WEIGHT FOR THE CONCRETE SLAB IS CALCULATED USING AN APPROXIMATE FACTOR OF 6.5 LB/SF

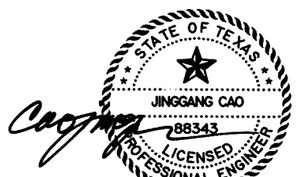
GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.
See IBTS Standard for Thickened Slab End Details and quantity adjustments.
See PCP or PMDF Standards for details and quantity adjustments if either of these options are used.
See IBMS Standard for miscellaneous details.
All reinforcing shall be Grade 60.
Concrete strength f'c = 4,000 psi.
Bar laps, where required, shall be as follows:
Epoxy Coated ~ #4 = 2'-1"
~ #5 = 2'-7"
See railing details for rail anchorage in slab.
All reinforcements shall be grade 60 and epoxy coated.



TYPICAL TRANSVERSE SECTION

1 REVISED BY JC 05-21-07



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SLAB DETAILS

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	579A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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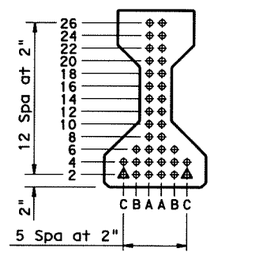
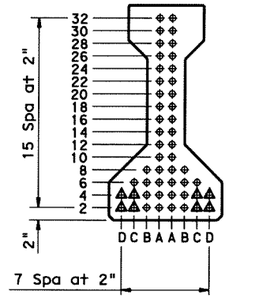
LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
ACC:

DESIGNED BEAMS (DEPRESSED STRANDS)

STRUCTURE	SPAN NO.	BEAM NO.	BEAM TYPE	NON-STD STRAND PATTERN	PRESTRESSING STRANDS TOTAL NO.	TOTAL SIZE (in)	TOTAL STRGTH fpu (ksi)	TOTAL "e" ℄ (in)	TOTAL "e" END (in)	DEPRESSED NO.	DEPRESSED TO (in)	CONCRETE RELEASE STRGTH f'ci (ksi)	CONCRETE MINIMUM 28 DAY COMP STRGTH f'c (ksi)	OPTIONAL DESIGN: DESIGN LOAD COMP STRESS (TOP ℄) (SERVICE I) fct(ksi)	DESIGN LOAD TENSILE STRESS (BOTT ℄) (SERVICE III) fcb(ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (ft-kips)	LIVE LOAD DISTRIB FACTOR ①
IH 30 UNDERPASS Type IV Beams 158' Rdwy 8" Slab 6.417' Bm Spa 80' Span	1,3	1,26	IV		24	½	270K	21.75	17.08	4	32.0	4.000	5.000	2.056	-2.372	4146	0.601
	1,3	2,25	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000	1.971	-2.251	3850	0.601
	1,3	3-5	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000	1.953	-2.192	3741	0.601
	1,3	6,21	IV		24	½	270K	21.75	17.08	4	32.0	4.000	5.000	2.007	-2.375	4079	0.601
	1,3	7,20	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000	1.980	-2.283	3909	0.601
	1,3	8-12	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000	1.953	-2.192	3741	0.601
	1,3	13,14	IV		26	½	270K	21.52	16.91	6	26.0	4.000	5.000	2.034	-2.466	4247	0.601
	1,3	15-19	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000	1.953	-2.192	3741	0.601
	1,3	22-24	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000	1.953	-2.192	3741	0.601
IH 30 UNDERPASS Type IV Beams 158' Rdwy 8" Slab 6.417' Bm Spa 125' Span	1,3	1,26	IV		72	½	270K	16.64	7.47	22	52.0	6.560	6.774	4.512	-4.894	8015	0.534
	1,3	2,25	IV		56	½	270K	18.89	10.32	12	52.0	5.926	6.973	4.245	-4.474	7005	0.534
	1,3	3-5	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831	4.188	-4.321	6734	0.534
	1,3	6,21	IV		58	½	270K	18.68	10.41	12	52.0	6.150	7.052	4.275	-4.556	7151	0.534
	1,3	7,20	IV		64	½	270K	18.00	9.69	14	52.0	6.544	7.330	4.363	-4.792	7571	0.534
	1,3	8-12	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831	4.188	-4.321	6734	0.534
	1,3	13,14	IV		72	½	270K	16.64	7.47	22	52.0	6.607	7.935	4.450	-5.026	7988	0.534
	1,3	15-19	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831	4.188	-4.321	6734	0.534
	1,3	22-24	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831	4.188	-4.321	6734	0.534



TYPE A BM ②



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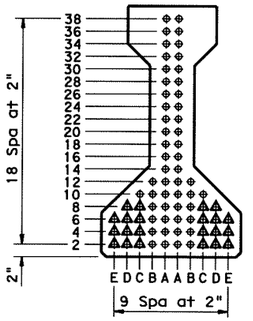

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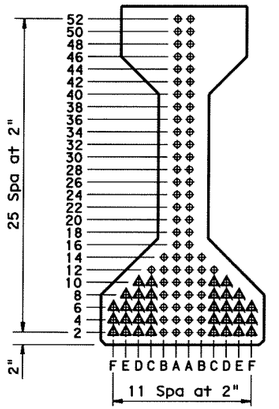
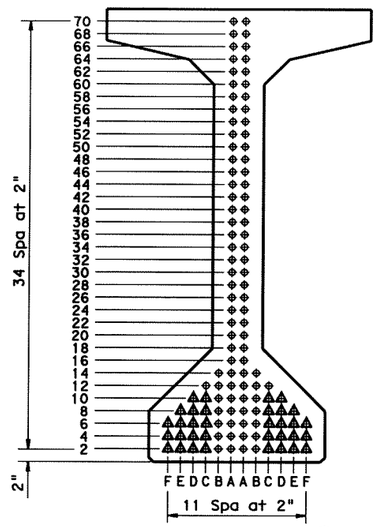


TYPE IV BM ②
(AASHTO TYPE IV BM)



TYPE VI BM ②
(AASHTO TYPE VI BM)

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF BEAM

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.

All concrete shall be Class H. All reinforcing bars shall be Grade 60.

When shown on this sheet, the Fabricator has the option of furnishing either the designed depressed strand beam or an approved optional design. All optional design submittals shall be signed, sealed and dated by a registered Professional Engineer.

Optional designs for beams 120 feet or longer shall have a calculated residual camber equal to or greater than that of the designed beam.

Prestress losses for the designed beams have been calculated for a relative humidity of 65 percent. Optional designs shall likewise conform.

Certain beams with depressed strands are subject to cracking in the end of the beam. When such cracks occur, all subsequent beams of the same type and strand pattern shall have strands debonded in the following manner:

1. Alternate rows of depressed strands shall be debonded for two feet from each end of the beam.
2. One half of the straight strands, as nearly as possible, shall be debonded for four feet from each end of the beam.
3. The debonding pattern shall be symmetrical about the vertical axis of the beam for both depressed and straight strands.
4. Strands shall be debonded so that the centers of gravity of the depressed strands and the straight strands will remain within one inch of their original location.
5. Strands shall be encased in plastic tubing along entire debonded length, and ends of tubing shall be sealed with waterproof tape. Split plastic tubing may be used provided the seam of the tubing is sufficiently sealed with waterproof tape to prohibit grout infiltration. Wrapping of strands with tape to provide debonding will not be permitted.
6. Revised shop drawings will not be required.

For depressed strand designed beams, strands shall be located as low as possible on the 2" grid system unless a Non-Standard Strand Pattern is indicated. Fill row "2", then row "4", then row "6", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position shall be depressed, maintaining the 2" spacing so that, at the beam ends, the upper two strands are in the position shown in the table.

Strands for the designed beam shall be low relaxation strands pretensioned to 75 percent of fpu each.

① Portion of full HL93

② Full-length debonded strands are only permitted in strand positions marked Δ. Double wrap full-length debonded strands in outermost position of each row. Full-length debonding must comply with Item 426.4.F.4.

HL93 LOADING

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE I-BEAM DESIGNS (NON-STANDARD SPANS)

IBND

FILE: ibndstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS 01-06: Full-length debonding	DAL	(SEE TITLE SHEET)		580
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0009	12	203	SH 205

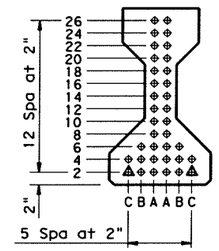
DESIGNED BEAMS (DEPRESSED STRANDS)

STRUCTURE	SPAN NO.	BEAM NO.	BEAM TYPE	NON-STD STRAND PATTERN	PRESTRESSING STRANDS TOTAL NO.	TOTAL SIZE (in)	TOTAL STRGTH fpu (ksi)	TOTAL "e" ℄ (in)	TOTAL "e" END (in)	DEPRESSED NO.	DEPRESSED TO (in)	CONCRETE RELEASE STRGTH f'ci (ksi)	CONCRETE MINIMUM 28 DAY COMP STRGTH f'c (ksi)
IH 30 UNDERPASS Type IV Beams 158' Rdwy 8" Slab 6.417' Bm Spa 80' Span	1,3	1,26	IV		24	½	270K	21.75	17.08	4	32.0	4.000	5.000
	1,3	2,25	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000
	1,3	3-5	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000
	1,3	6,21	IV		24	½	270K	21.75	17.08	4	32.0	4.000	5.000
	1,3	7,20	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000
	1,3	8-12	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000
	1,3	13,14	IV		26	½	270K	21.52	16.91	6	26.0	4.000	5.000
	1,3	15-19	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000
	1,3	22-24	IV		22	½	270K	21.84	17.84	4	26.0	4.000	5.000
IH 30 UNDERPASS Type IV Beams 158' Rdwy 8" Slab 6.417' Bm Spa 125' Span	2	1,26	IV		72	½	270K	16.64	7.47	22	52.0	6.560	6.774
	2	2,25	IV		56	½	270K	18.89	10.32	12	52.0	5.926	6.973
	2	3-5	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831
	2	6,21	IV		58	½	270K	18.68	10.41	12	52.0	6.150	7.052
	2	7,20	IV		64	½	270K	18.00	9.69	14	52.0	6.544	7.330
	2	8-12	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831
	2	13,14	IV		72	½	270K	16.64	7.47	22	52.0	6.607	7.935
	2	15-19	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831
	2	22-24	IV		54	½	270K	19.12	11.34	10	52.0	5.983	6.831

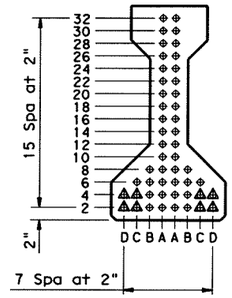
(1)

OPTIONAL DESIGN

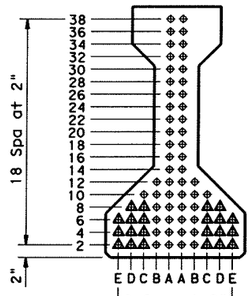
DESIGN LOAD COMP STRESS (TOP ℄) (SERVICE I) fct (ksi)	DESIGN LOAD TENSILE STRESS (BOTT ℄) (SERVICE III) fcb (ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (ft-kips)	LIVE LOAD DISTRIB FACTOR (1)
2.056	-2.372	4146	0.601
1.971	-2.251	3850	0.601
1.953	-2.192	3741	0.601
2.007	-2.375	4079	0.601
1.980	-2.283	3909	0.601
1.953	-2.192	3741	0.601
2.034	-2.466	4247	0.601
1.953	-2.192	3741	0.601
1.953	-2.192	3741	0.601
4.512	-4.894	8015	0.534
4.245	-4.474	7005	0.534
4.188	-4.321	6734	0.534
4.275	-4.556	7151	0.534
4.363	-4.792	7571	0.534
4.188	-4.321	6734	0.534
4.450	-5.026	7988	0.534
4.188	-4.321	6734	0.534
4.188	-4.321	6734	0.534



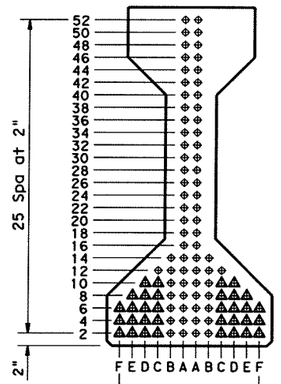
TYPE A BM (2)



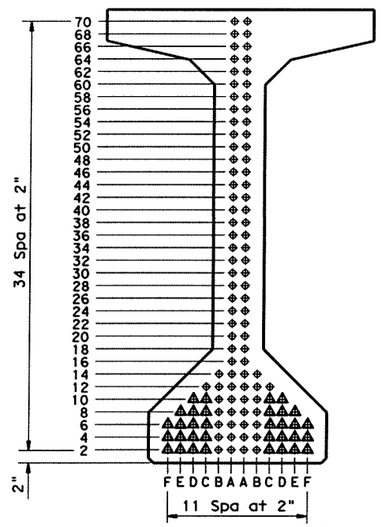
TYPE B BM (2)



TYPE C BM (2)



TYPE IV BM (2)
(AASHTO TYPE IV BM)



TYPE VI BM (2)
(AASHTO TYPE VI BM)

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF BEAM

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.

All concrete shall be Class H. All reinforcing bars shall be Grade 60.

When shown on this sheet, the Fabricator has the option of furnishing either the designed depressed strand beam or an approved optional design. All optional design submittals shall be signed, sealed and dated by a registered Professional Engineer.

Optional designs for beams 120 feet or longer shall have a calculated residual camber equal to or greater than that of the designed beam.

Prestress losses for the designed beams have been calculated for a relative humidity of 65 percent. Optional designs shall likewise conform.

Certain beams with depressed strands are subject to cracking in the end of the beam. When such cracks occur, all subsequent beams of the same type and strand pattern shall have strands debonded in the following manner:

1. Alternate rows of depressed strands shall be debonded for two feet from each end of the beam.
2. One half of the straight strands, as nearly as possible, shall be debonded for four feet from each end of the beam.
3. The debonding pattern shall be symmetrical about the vertical axis of the beam for both depressed and straight strands.
4. Strands shall be debonded so that the centers of gravity of the depressed strands and the straight strands will remain within one inch of their original location.
5. Strands shall be encased in plastic tubing along entire debonded length, and ends of tubing shall be sealed with waterproof tape. Split plastic tubing may be used provided the seam of the tubing is sufficiently sealed with waterproof tape to prohibit grout infiltration. Wrapping of strands with tape to provide debonding will not be permitted.
6. Revised shop drawings will not be required.

For depressed strand designed beams, strands shall be located as low as possible on the 2" grid system unless a Non-Standard Strand Pattern is indicated. Fill row "2", then row "4", then row "6", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position shall be depressed, maintaining the 2" spacing so that, at the beam ends, the upper two strands are in the position shown in the table.

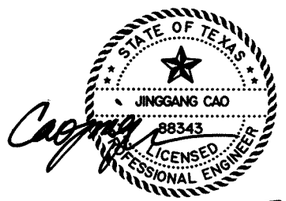
Strands for the designed beam shall be low relaxation strands pretensioned to 75 percent of fpu each.

(1) Portion of full HL93

(2) Full-length debonded strands are only permitted in strand positions marked Δ. Double wrap full-length debonded strands in outermost position of each row. Full-length debonding must comply with Item 426.4.F.4.

(1) REVISED BY JC 05-23-07

HL93 LOADING



Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE I-BEAM DESIGNS
(NON-STANDARD SPANS)

IBND

FILE: ibndstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		580 A
01-06: Full-length debonding	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0009	12	203	SH 205

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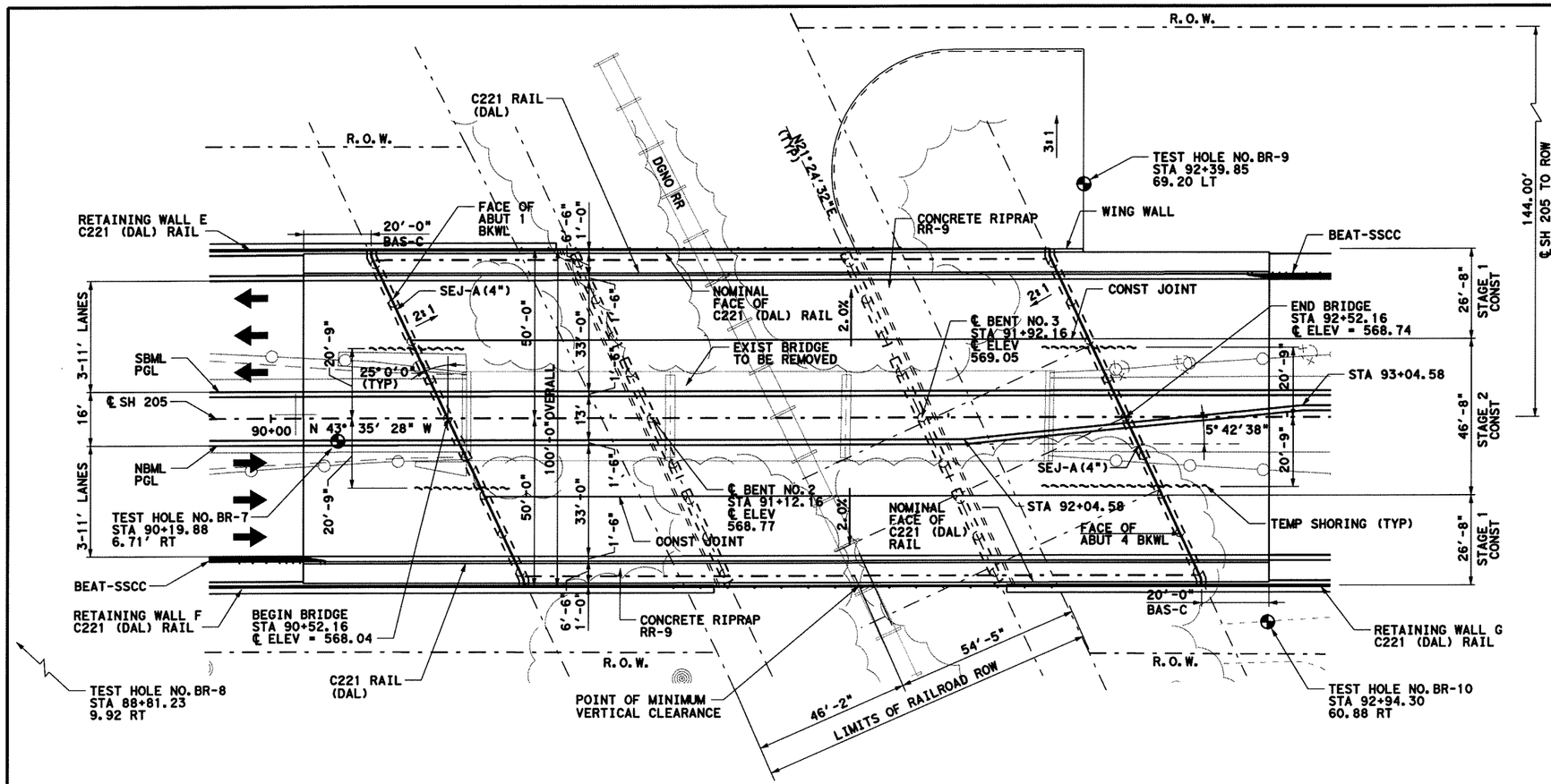
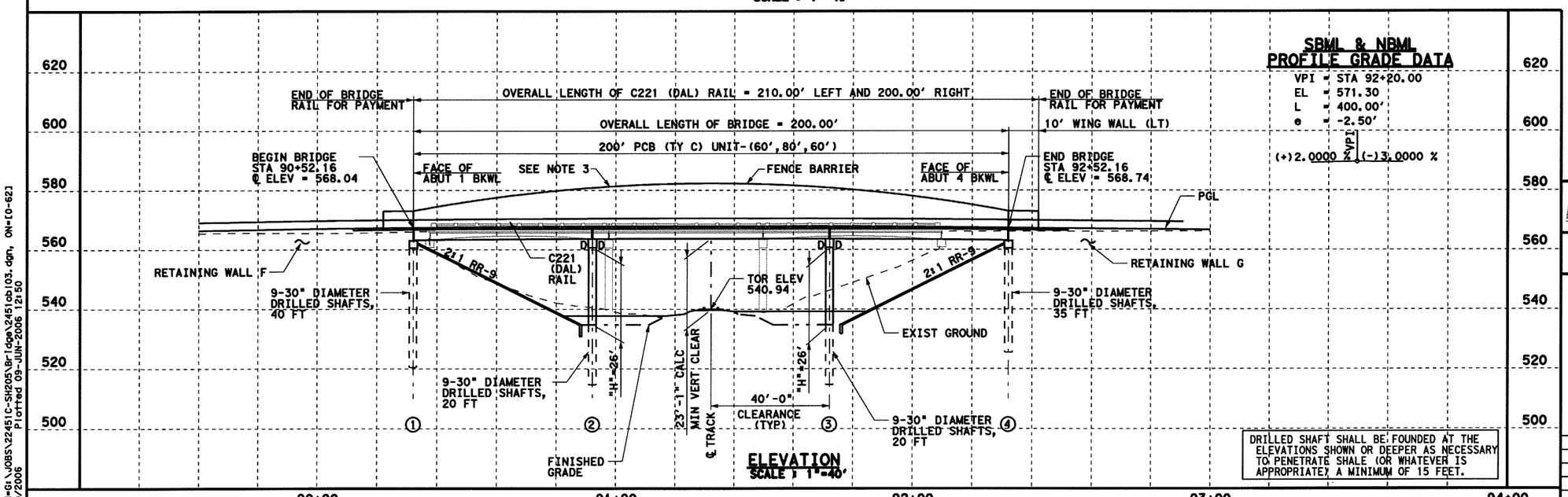
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DGN=g:\jobs\22451\C-SH205\Bridge\2451CFP02B.dgn, ON=(1-67, 71, 97, 100, 103)
5/23/2007 Plotted 23-MAY-2007 15:01

LEVELS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 YED ACC:



PLAN
SCALE : 1"=40'



ELEVATION
SCALE : 1"=40'

SBML & NBML PROFILE GRADE DATA
VPI = STA 92+20.00
EL = 571.30
L = 400.00'
e = -2.50'
(+)2.0000 % VPI (-)3.0000 %

DRILLED SHAFT SHALL BE FOUNDED AT THE ELEVATIONS SHOWN OR DEEPER AS NECESSARY TO PENETRATE SHALE (OR WHATEVER IS APPROPRIATE), A MINIMUM OF 15 FEET.

6/23/06 ADDENDUM

GENERAL NOTES
1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.
3. SEE RR PROTECTION FENCING DETAILS SHEET 1 OF 3.

ROADWAY DATA
URBAN DIVIDED HIGHWAY
TRAFFIC - 15300 ADT (2000)
TRAFFIC - 23900 ADT (2020)
DESIGN SPEED - 45 MPH

NEW NBI: 18-199-0-0451-01-022
EXIST NBI: 18-199-0-0451-01-005

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
6-9-06

HL93 LOADING

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

DGNO RR OVERPASS
BRIDGE LAYOUT

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	581
CONT.	SECT.	JOB	
0451	01	032, ETC	

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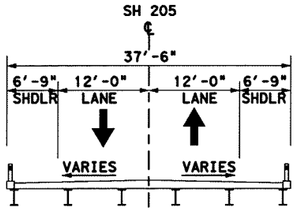
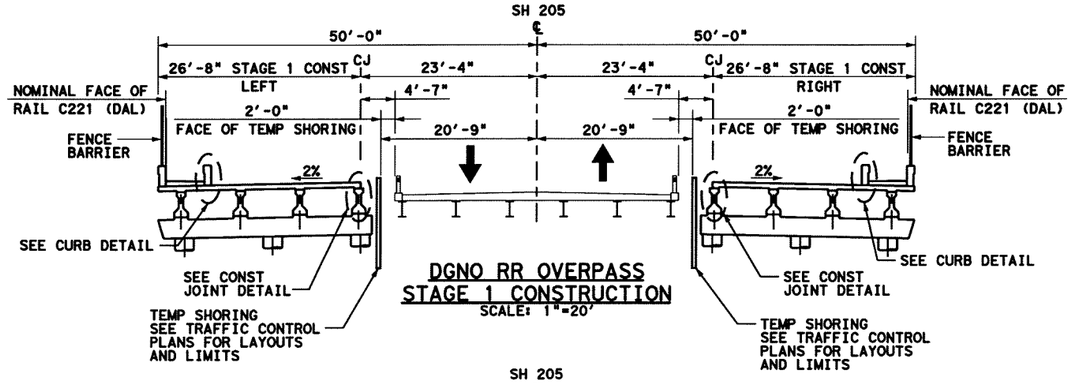
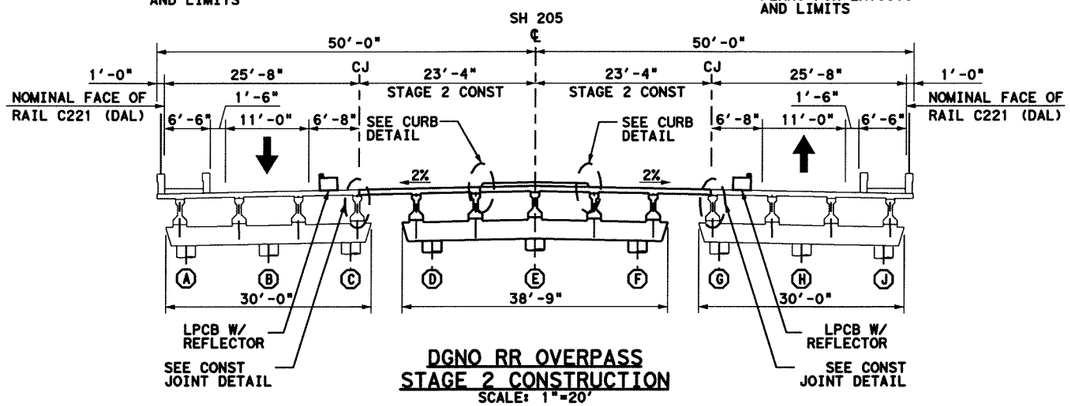
Plotted 09-JUN-2006 12:50
6/9/2006



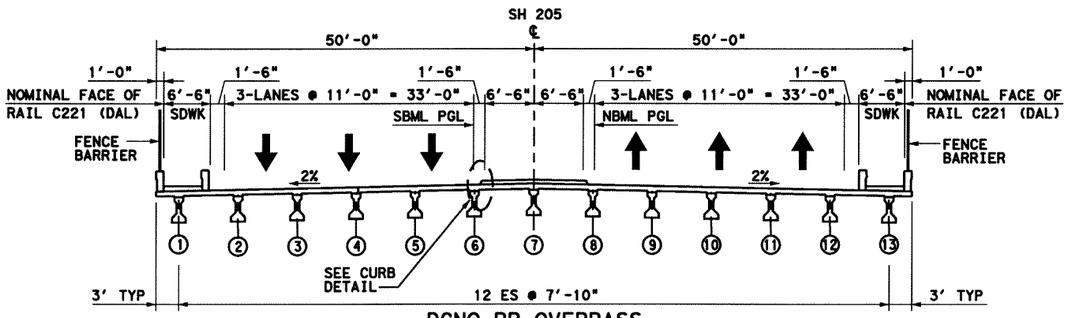
DGNO RR OVERPASS
EXISTING STRUCTURE
SCALE: 1"=20'



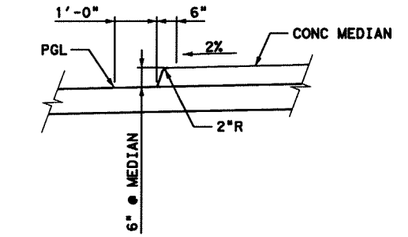
DGNO RR OVERPASS
STAGE 1 CONSTRUCTION
SCALE: 1"=20'



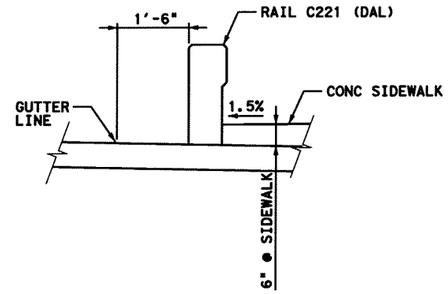
DGNO RR OVERPASS
STAGE 2 CONSTRUCTION
SCALE: 1"=20'



DGNO RR OVERPASS
COMPLETED STRUCTURE
SCALE: 1"=20'



CURB DETAIL
SCALE: NTS (ATYPICAL)
MEDIAN



CURB DETAIL
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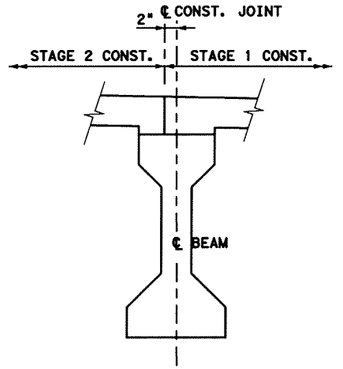

CONSTRUCTION JOINT DETAIL
SCALE: NTS

6/23/06 ADDENDUM

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
6-9-06

HL93 LOADING

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

DGNO RR OVERPASS
BRIDGE LAYOUT

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	582
CONT.	SECT.	JOB	
0451	01	032, ETC	

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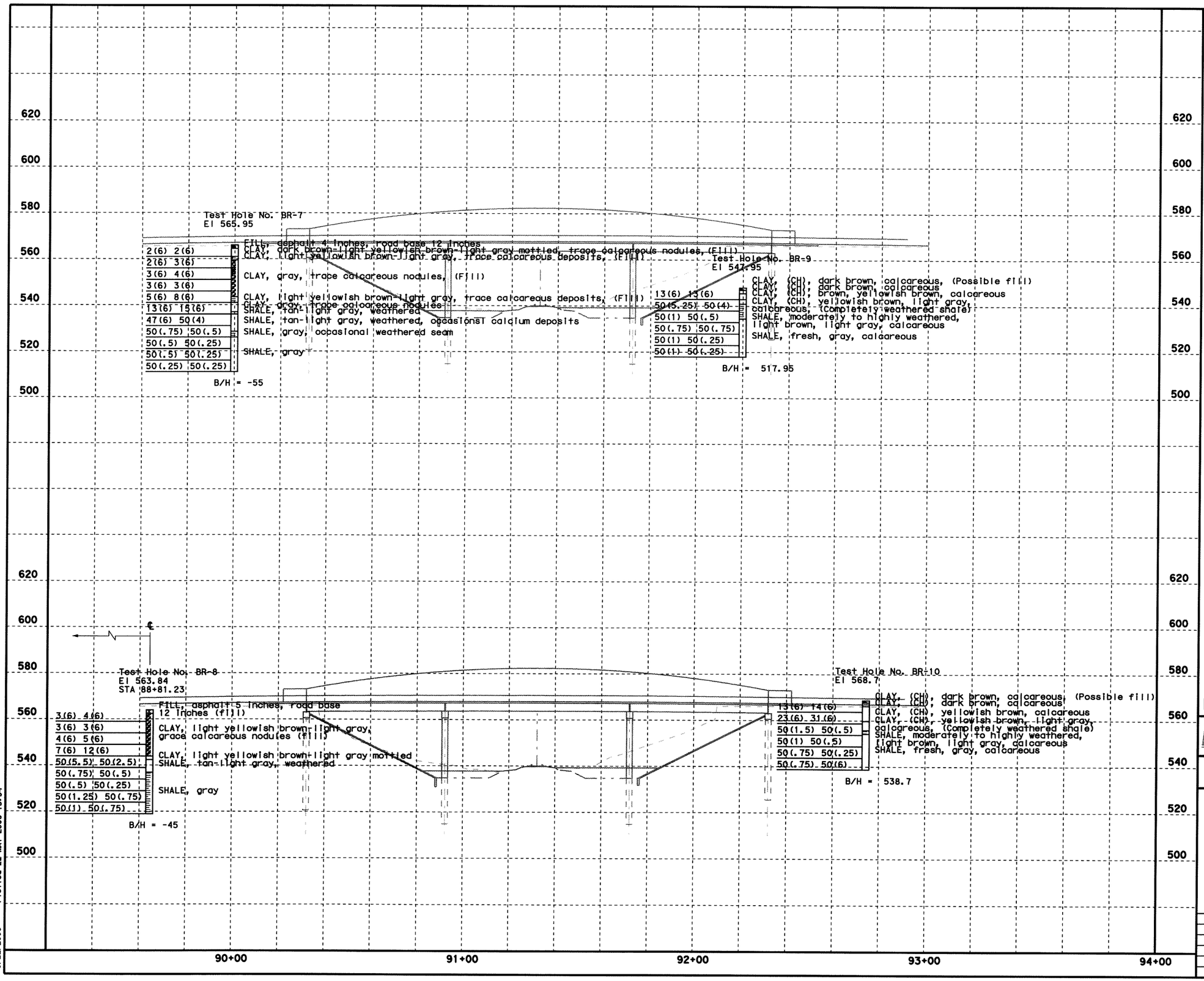

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GENERAL NOTES

1. BRIDGE DESIGNED FOR HL93 IN ACCORDANCE WITH THE AASHTO-LRFD BRIDGE DESIGN STANDARD SPECIFICATIONS, THIRD EDITION 2004.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND MUST BE CORRECTED FOR GRADE WHERE APPROPRIATE.

ROADWAY DATA

URBAN DIVIDED HIGHWAY
TRAFFIC - 15300 ADT (2000)
TRAFFIC - 23900 ADT (2020)
DESIGN SPEED - 45 MPH

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

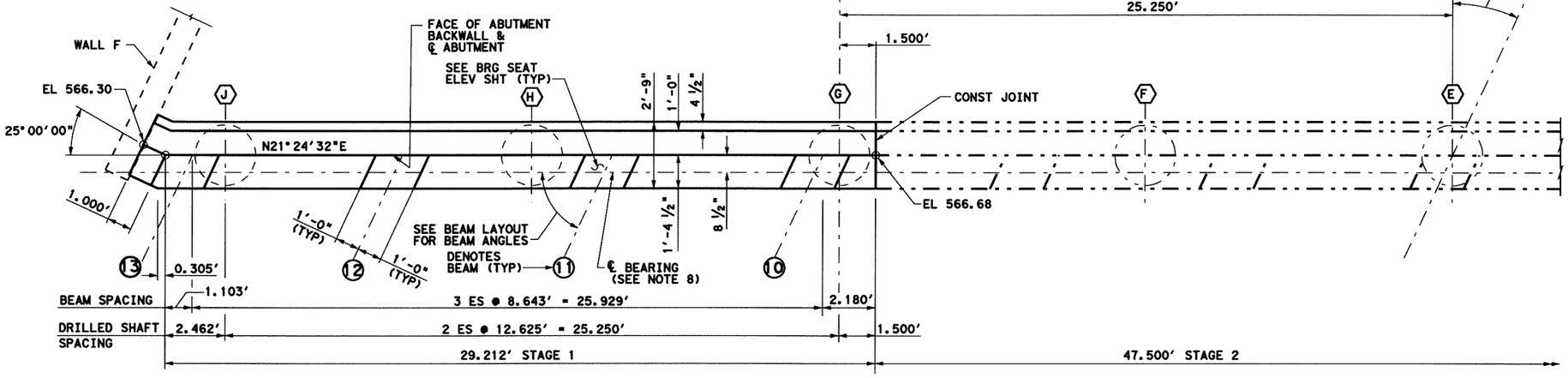
DGNO RR OVERPASS

BORING LOG

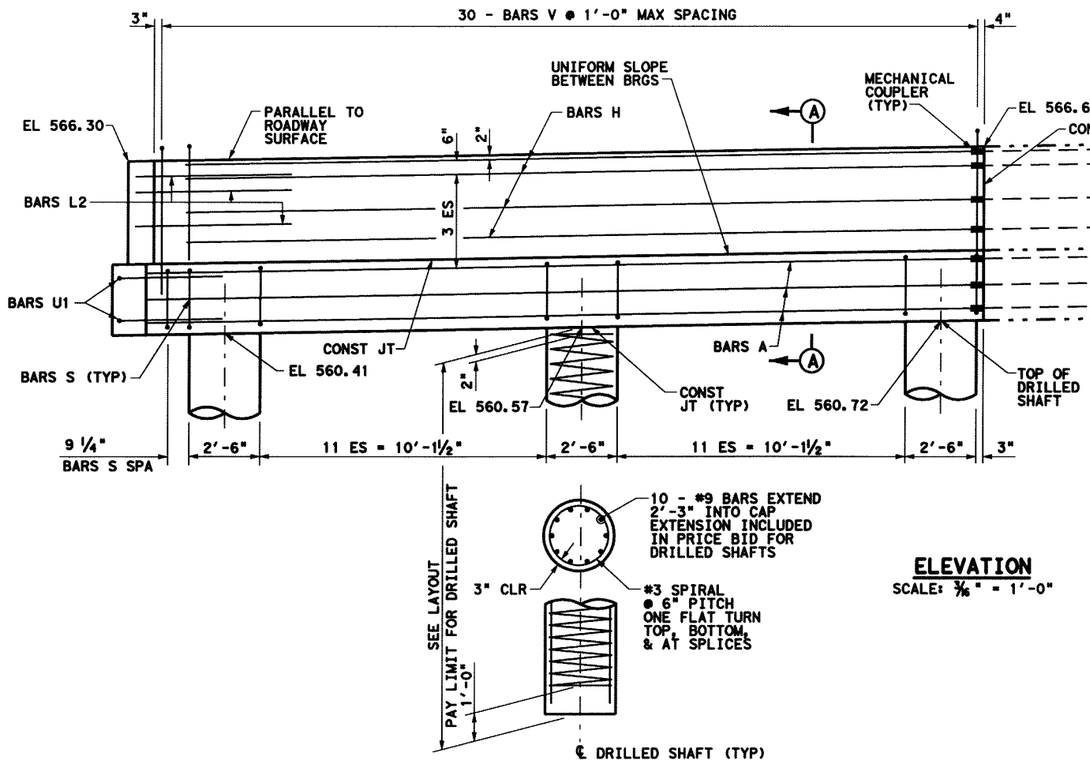
SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

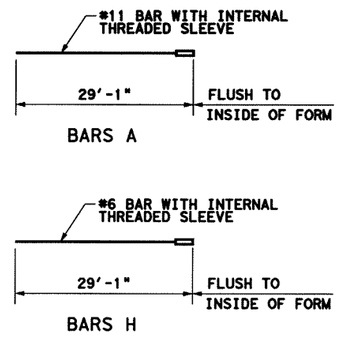
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	583
CONT.	SECT.	JOB	
0451	01	032, ETC	



PLAN
SCALE: 3/16" = 1'-0"

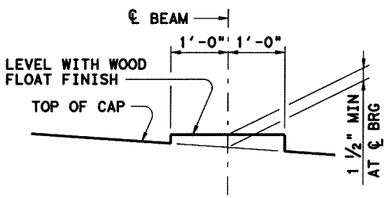


ELEVATION
SCALE: 3/16" = 1'-0"



GENERAL NOTES

1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 30" DIA DRILLED SHAFT LOAD = 112 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

ABUTMENT 1
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	584
CONT.	SECT.	JOB	
0451	01	032, ETC	

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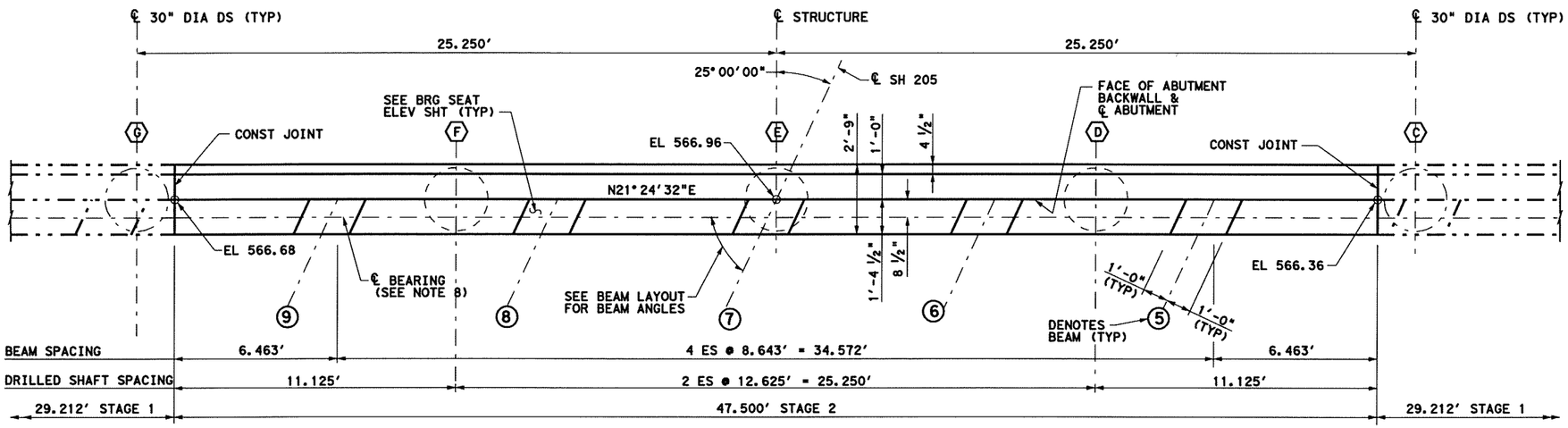
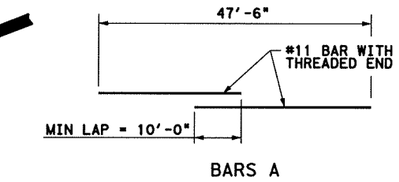
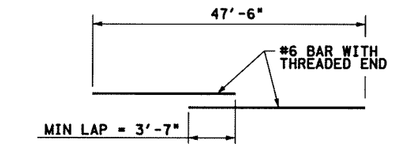


PLAN
SCALE: 3/16" = 1'-0"



BARS A



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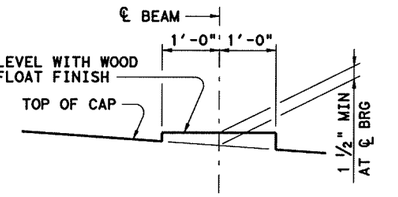
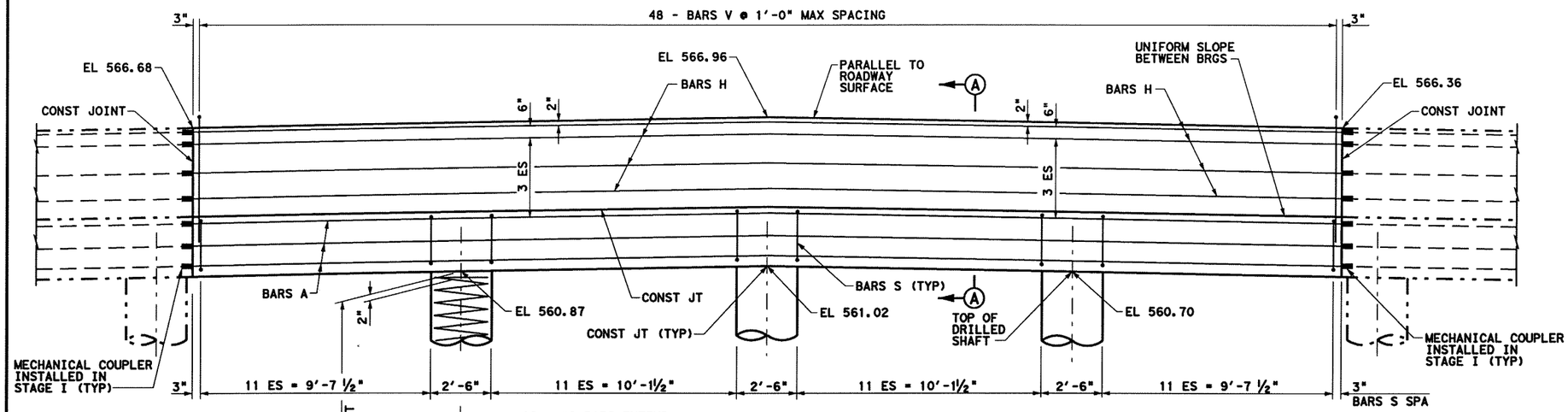
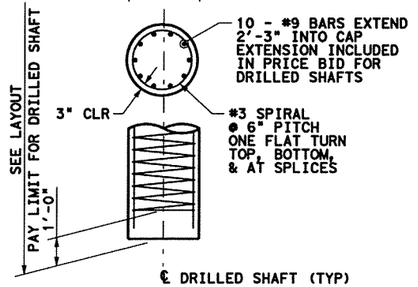


BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)





ELEVATION
SCALE: 3/16" = 1'-0"

HL93 LOADING 5-22-06

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Suite 1333
Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

ABUTMENT 1
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	584A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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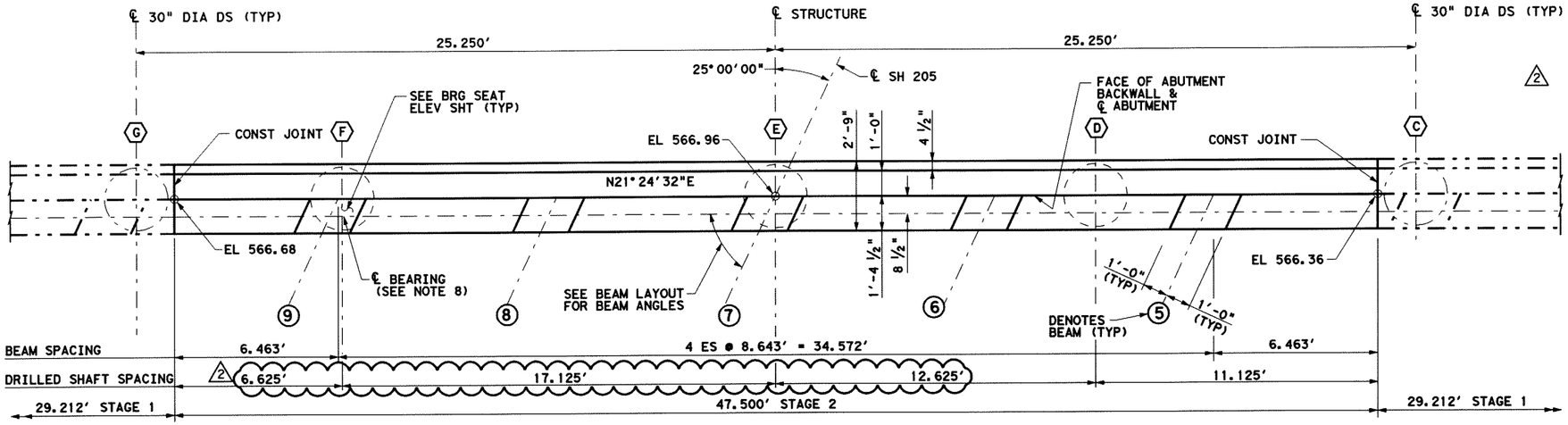
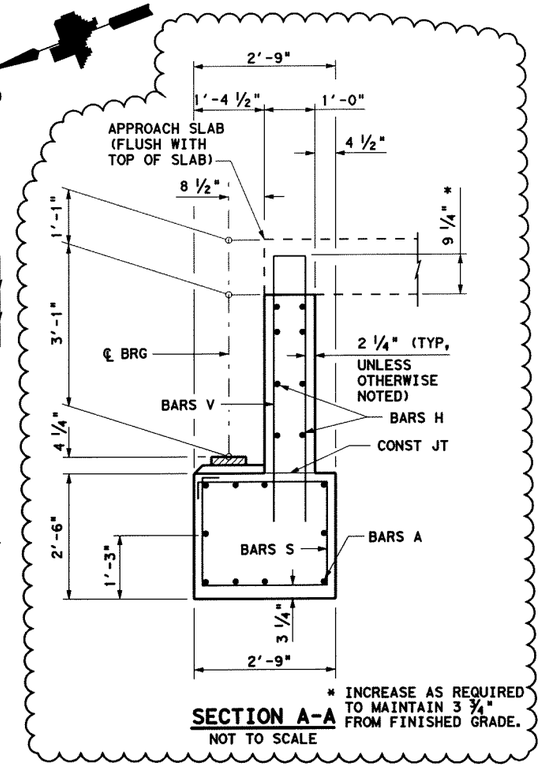
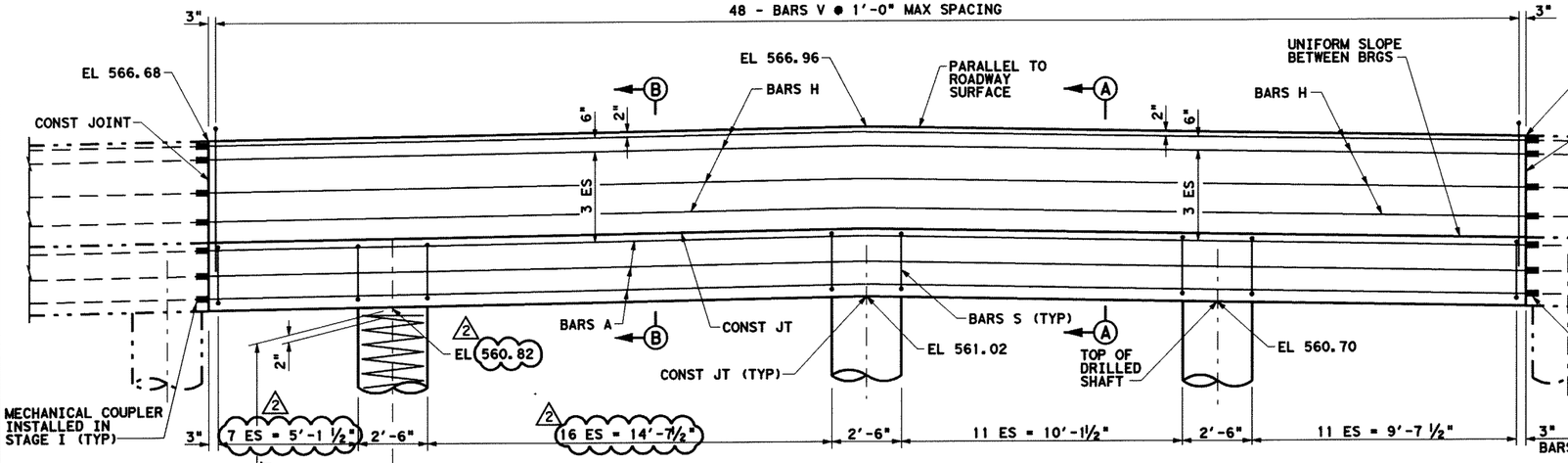


PLAN
SCALE: 3/16" = 1'-0"

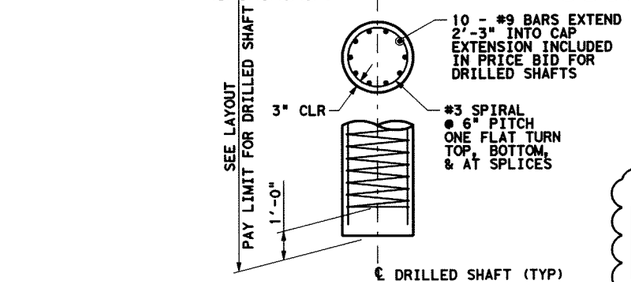


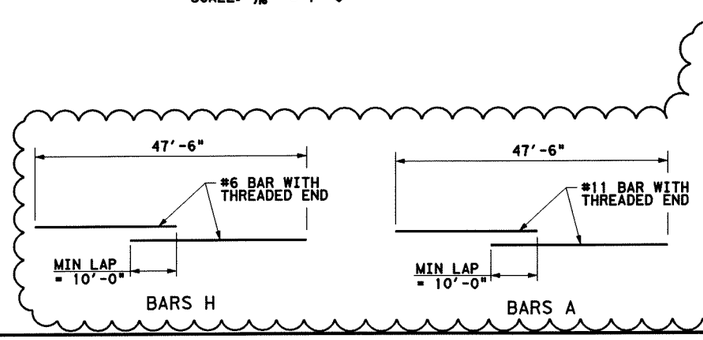
* INCREASE AS REQUIRED TO MAINTAIN 3 ¾" FROM FINISHED GRADE.

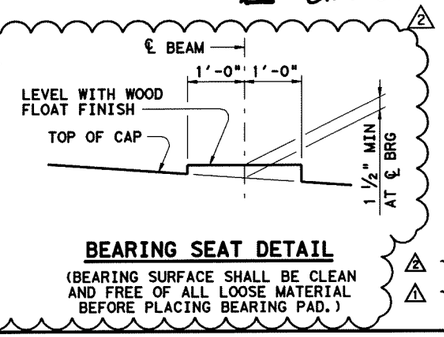
SECTION A-A
NOT TO SCALE



ELEVATION
SCALE: 3/16" = 1'-0"







BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

2 CHANGE ORDER 72

2 ~ FIELD CHANGE # ___

1 ~ FIELD CHANGE # ___

CHINH T. PHAN IS SEALING REVISION 2 ITEMS REPRESENTED ON THIS SHEET ONLY. THE ORIGINAL DESIGN WAS SEALED BY JINGGANG CAO P.E. No. 88343

STATE OF TEXAS
CHINH T. PHAN
92726
LICENSED PROFESSIONAL ENGINEER
3.19.09

HL93 LOADING

NO.	DATE	REVISION	APPROV.
2	03-19-09	RELOCATED D.S. F	CTP
1	02-12-09	RELOCATED D.S.	CTP

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Dallas, TX 75207
TBPE ID 2263

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SH 205

DGNO RR OVERPASS

ABUTMENT 1
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	584
CONT.	SECT.	JOB	
0451	01	032, ETC	

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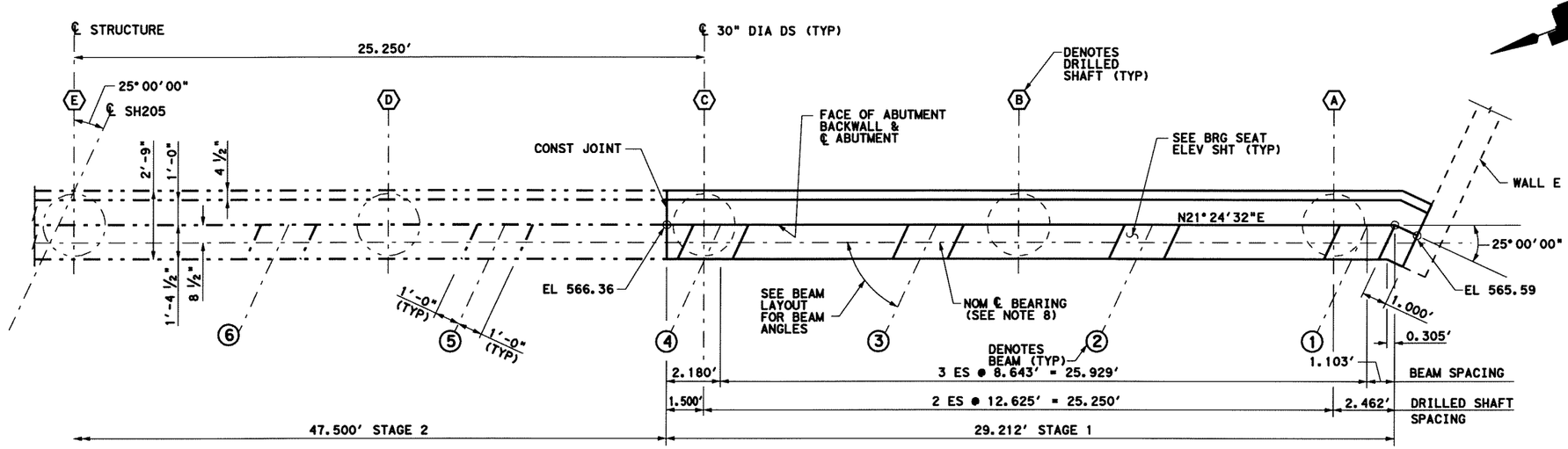
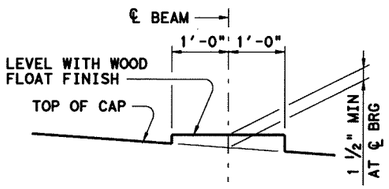
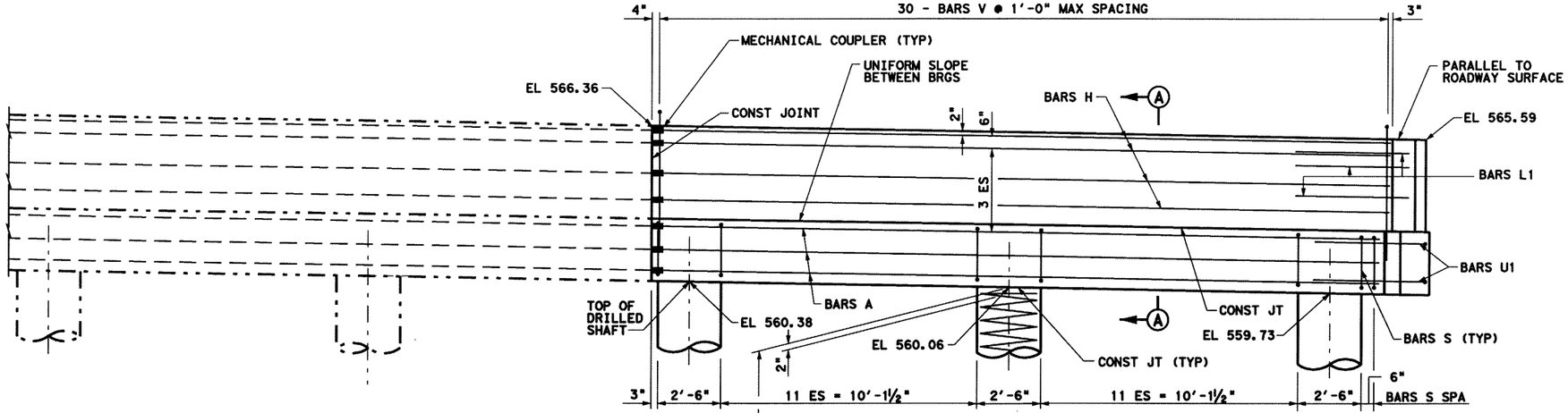
3/19/2009 Plotted 19-MAR-2009 17:00



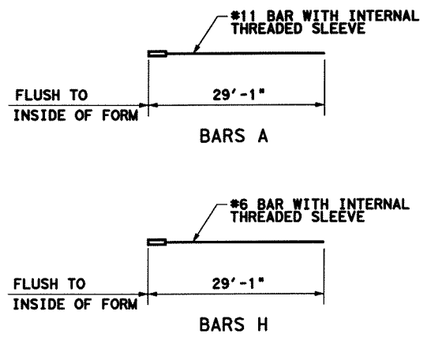
PLAN
SCALE: 3/16" = 1'-0"

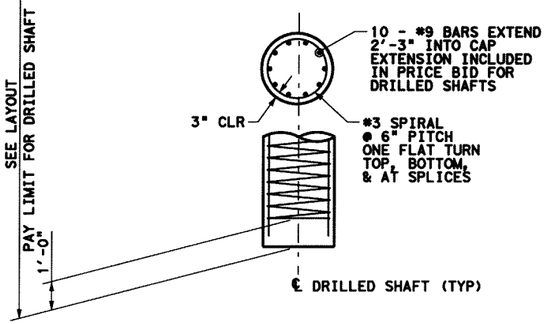


BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



ELEVATION
SCALE: 3/16" = 1'-0"





HL93 LOADING 5-22-06

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

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Dallas, TX 75207

Texas Department of Transportation
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SH 205

DGNO RR OVERPASS

ABUTMENT 1
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	585
CONT.	SECT.	JOB	
0451	01	032, ETC	

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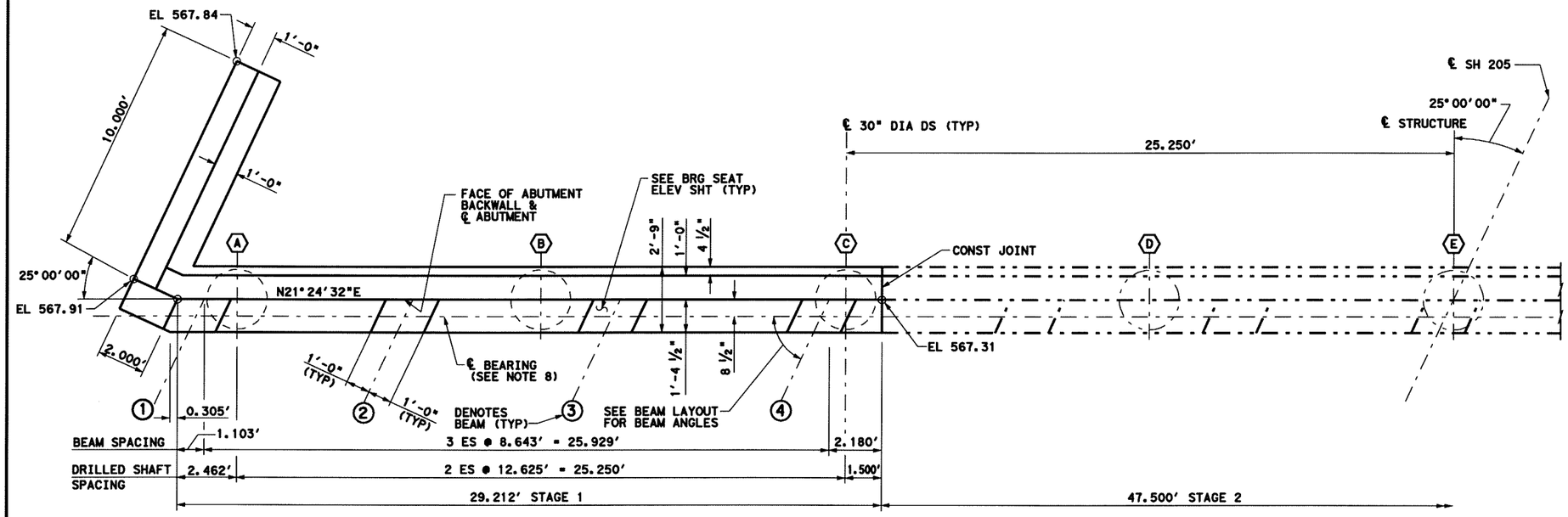
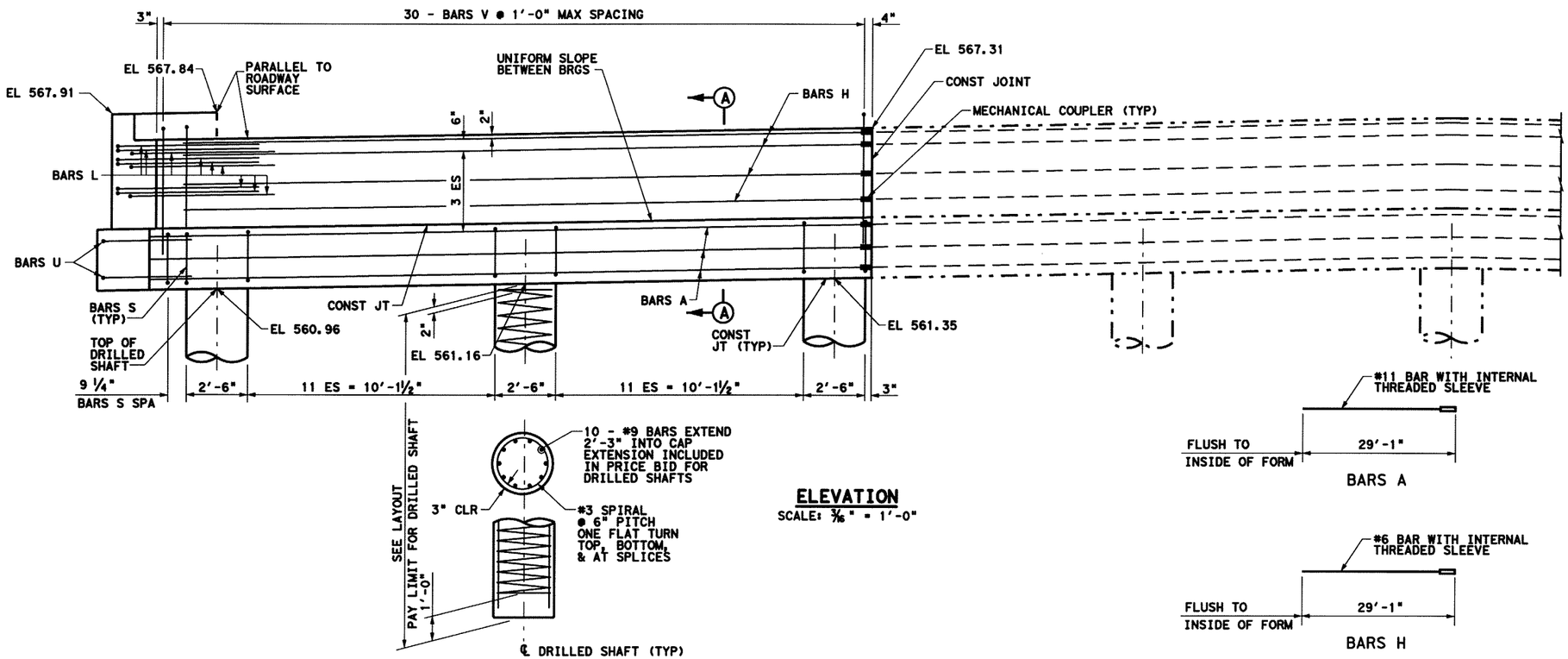


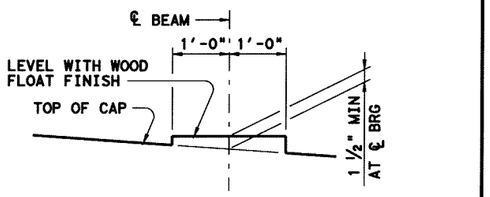
PLAN
SCALE: 3/16" = 1'-0"



ELEVATION
SCALE: 3/16" = 1'-0"

GENERAL NOTES

1. ALL CONCRETE, INCLUDING DRILLED SHAFT CONCRETE, SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60.
3. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMENSIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE NOTED.
6. CLR DENOTES CLEAR COVER TO REINFORCING. ES DENOTES EQUAL SPACES.
7. MAXIMUM CALCULATED 30" DIA DRILLED SHAFT LOAD = 111 TONS PER DRILLED SHAFT.
8. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".



BEARING SEAT DETAIL

(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER
6-9-06

HL93 LOADING

6/23/06 ADDENDUM

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SH 205

DGNO RR OVERPASS

ABUTMENT 4
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	586
CONT.	SECT.	JOB	
0451	01	032, ETC	

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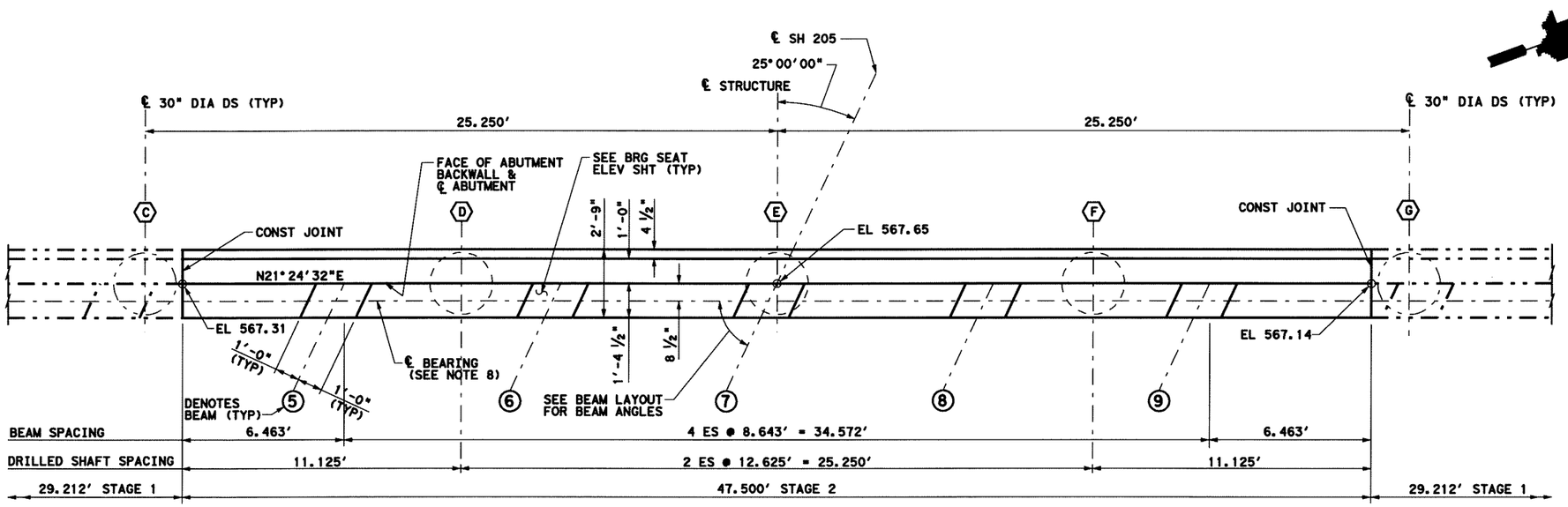
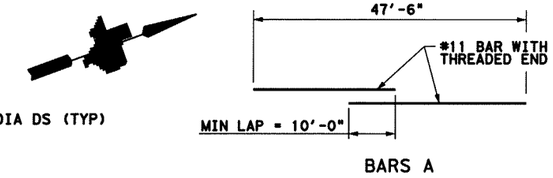
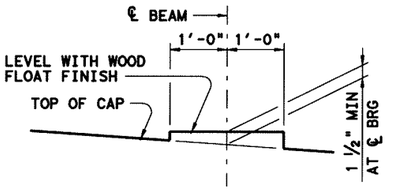
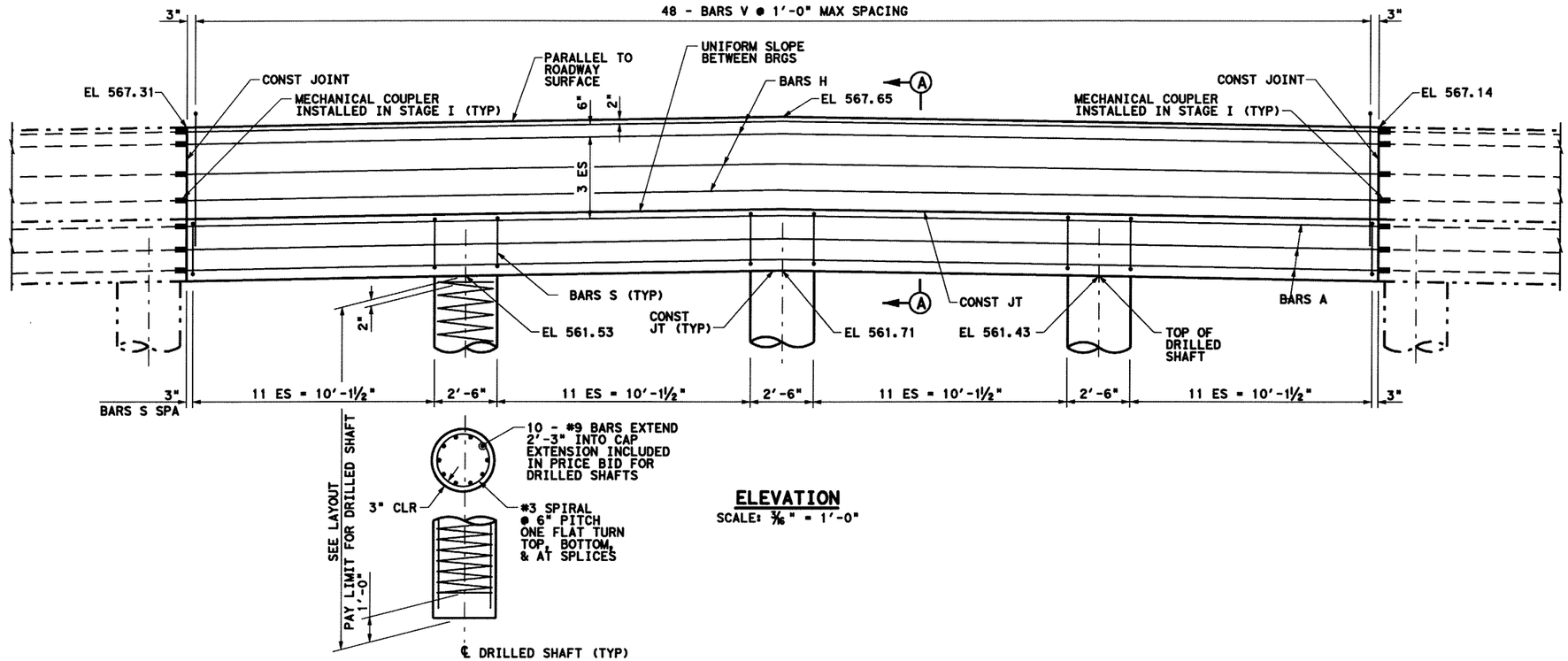


PLAN
SCALE: 3/16" = 1'-0"





BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



ELEVATION
SCALE: 3/16" = 1'-0"

HL93 LOADING

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
6-9-06

6/23/06 ADDENDUM

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Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

ABUTMENT 4
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	586A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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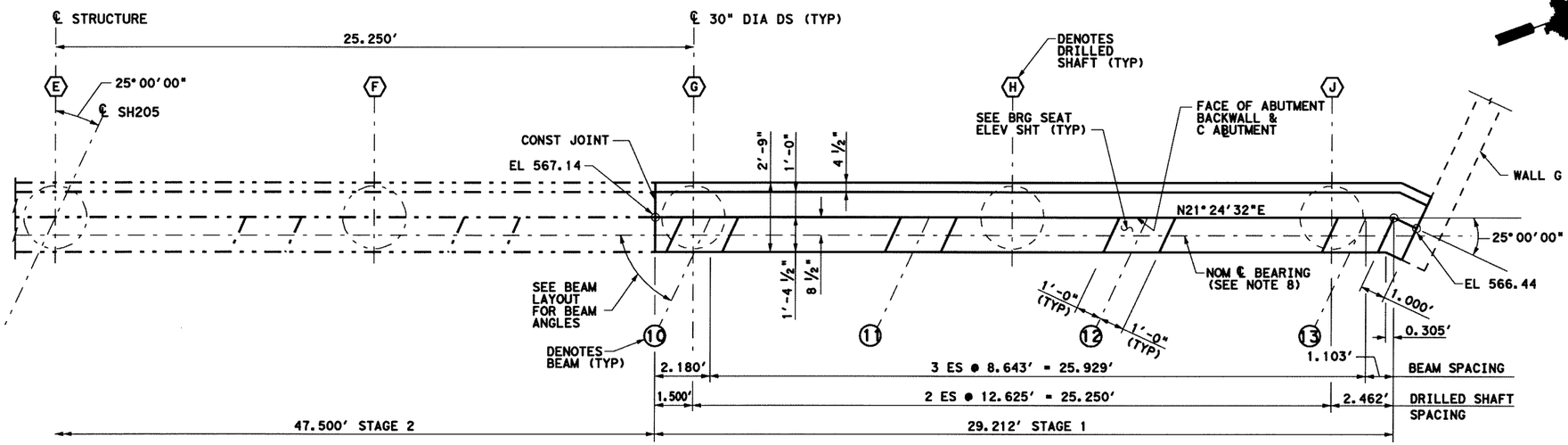
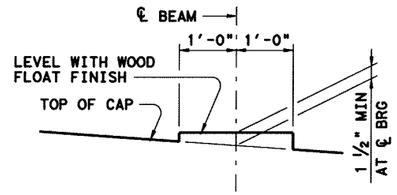
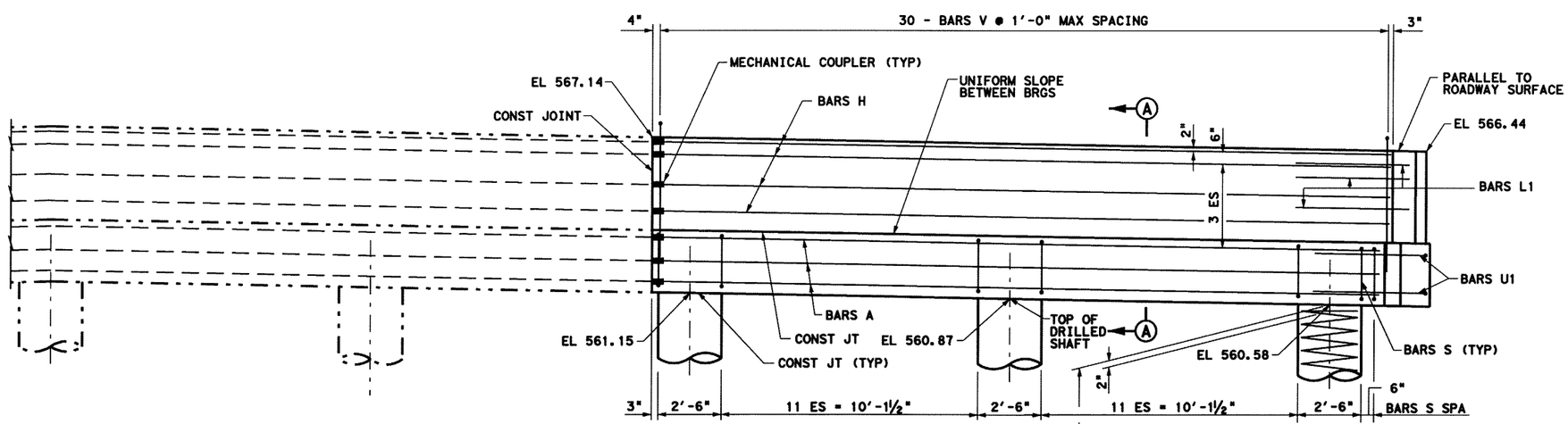


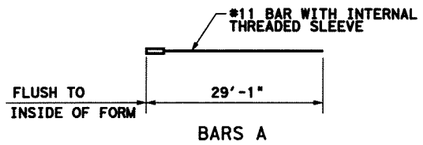
PLAN
SCALE: 3/16" = 1'-0"



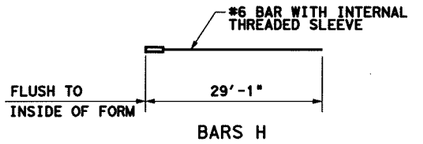
BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



ELEVATION
SCALE: 3/16" = 1'-0"



BARS A



BARS H

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

ABUTMENT 4
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	587
CONT.	SECT.	JOB	
0451	01	032, ETC	

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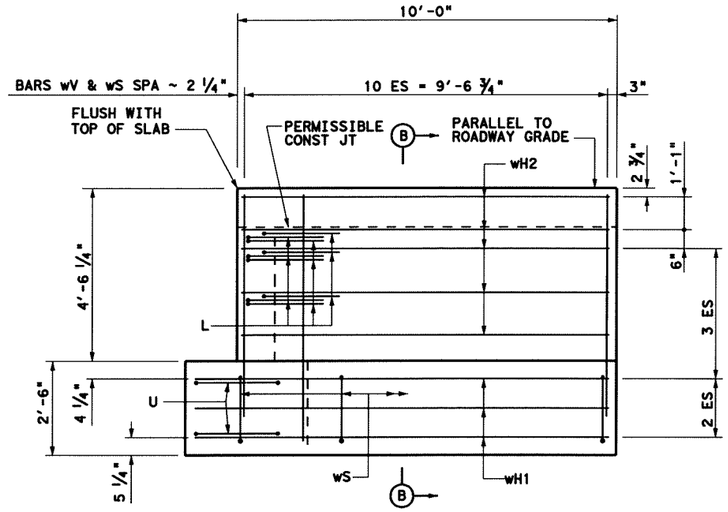
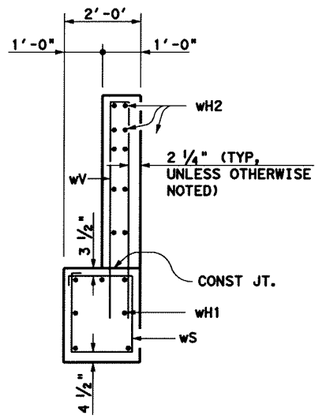
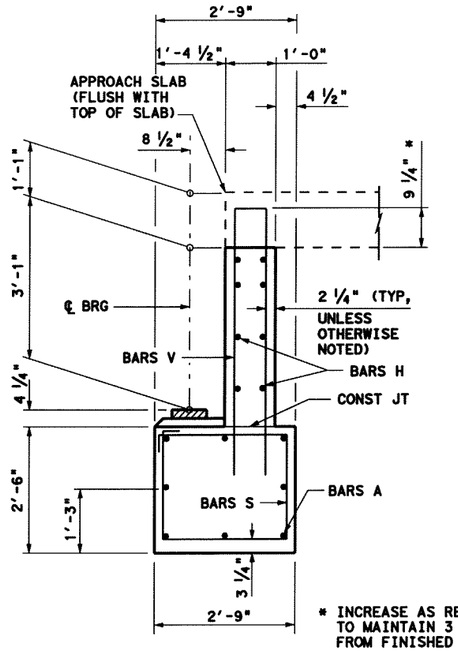


WINGWALL ELEVATION
NOT TO SCALE

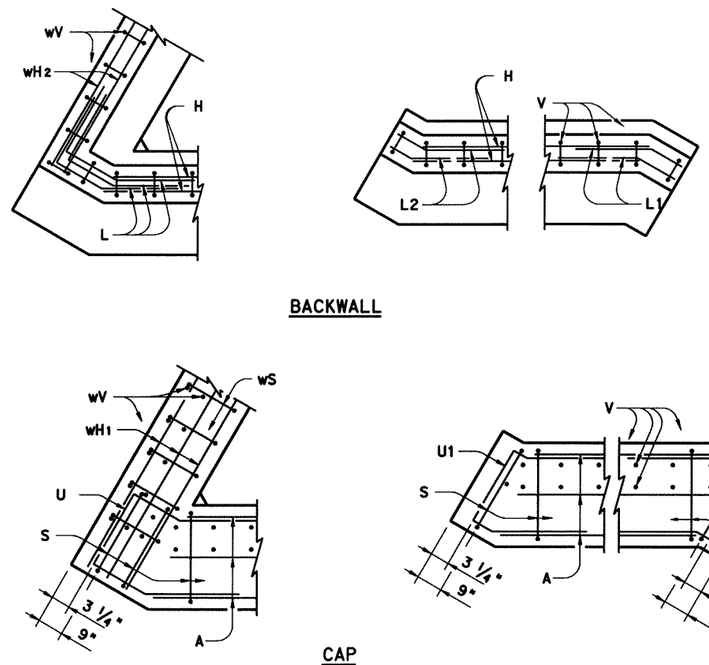


SECTION B-B
NOT TO SCALE



* INCREASE AS REQUIRED TO MAINTAIN 3 3/4" FROM FINISHED GRADE.

SECTION A-A
NOT TO SCALE



CORNER DETAILS
NOT TO SCALE

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

PB 122 Parsons Brinckerhoff Quade & Douglas, Inc.
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Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

ABUTMENT DETAILS

SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	588
CONT.	SECT.	JOB	
0451	01	032, ETC	

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5/22/2006 Plotted 22-MAY-2006 13:34

TABLE OF ESTIMATED QUANTITIES
ABUTMENT 1-STAGE 1 LEFT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1236
H	8	#6	29'-1"	349
L1	9	#6	2'-10"	38
S	27	#4	9'-8"	174
U1	2	#6	8'-9"	26
V	30	#5	11'-7"	362
REINFORCING STEEL (1)			LB	2187
CLASS "C" CONCRETE			CY	12.6
DRILLED SHAFT (30")			LF	120

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES
ABUTMENT 1-STAGE 1 RIGHT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1360
H	8	#6	29'-1"	267
L2	9	#6	2'-8"	36
S	27	#4	9'-8"	189
U1	2	#6	8'-9"	26
V	30	#5	11'-7"	361
REINFORCING STEEL (1)			LB	2189
CLASS "C" CONCRETE			CY	12.6
DRILLED SHAFT (30")			LF	120

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES
ABUTMENT 1-STAGE 2

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	57'-6"	2444
H	8	#6	51'-1"	614
S	46	#4	9'-8"	297
V	48	#5	11'-7"	580
REINFORCING STEEL (1)			LB	3935
CLASS "C" CONCRETE			CY	18.2
DRILLED SHAFT (30")			LF	120

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES
ABUTMENT 4-STAGE 1 LEFT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1236
H	8	#6	29'-1"	349
L	9	#6	3'-8"	50
S	27	#4	9'-8"	174
U	2	#6	10'-9"	32
V	30	#5	11'-7"	362
wH1	7	#6	11'-1"	117
wH2	10	#6	9'-8"	145
wS	11	#4	7'-9"	57
wV	11	#5	11'-10"	136
REINFORCING STEEL (1)			LB	2659
CLASS "C" CONCRETE			CY	16.2
DRILLED SHAFT (30")			LF	105

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES
ABUTMENT 4-STAGE 1 RIGHT

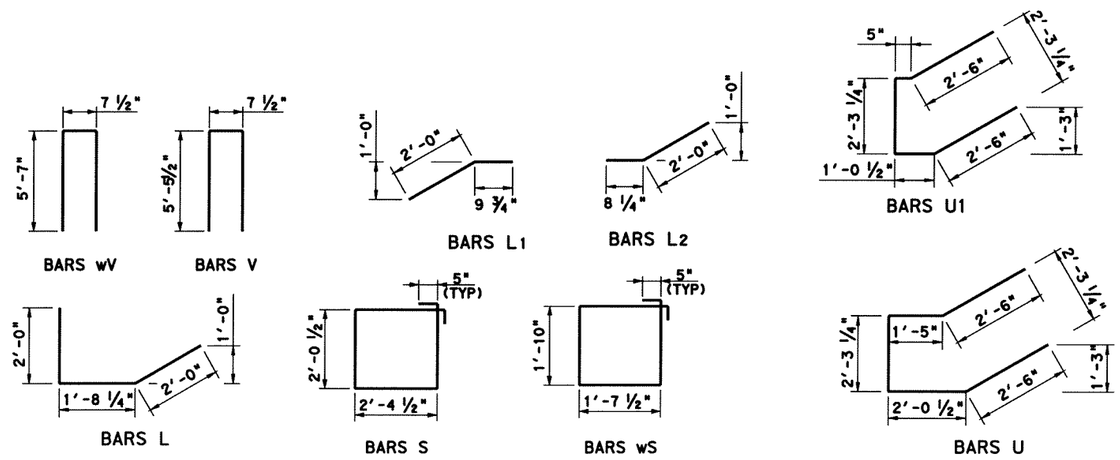
BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1236
H	8	#6	29'-1"	349
L1	9	#6	2'-10"	38
S	27	#4	9'-8"	174
U1	2	#6	8'-9"	26
V	30	#5	11'-7"	362
REINFORCING STEEL (1)			LB	2185
CLASS "C" CONCRETE			CY	12.6
DRILLED SHAFT (30")			LF	105

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES
ABUTMENT 4-STAGE 2

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	57'-6"	2444
H	8	#6	51'-1"	614
S	46	#4	9'-8"	297
V	48	#5	11'-7"	578
REINFORCING STEEL (1)			LB	3935
CLASS "C" CONCRETE			CY	18.2
DRILLED SHAFT (30")			LF	105

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY



BAR BEND DIAGRAMS

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

DGNO RR OVERPASS

ABUTMENT DETAILS

SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	588A
CONT.	SECT.	JOB	
0451	01	032, ETC	

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5/22/2006 Plotted 22-MAY-2006 13:34

TABLE OF ESTIMATED QUANTITIES

ABUTMENT 1-STAGE 1 LEFT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1236
H	8	#6	29'-1"	349
L1	9	#6	2'-10"	38
S	27	#4	9'-8"	174
U1	2	#6	8'-9"	26
V	30	#5	11'-7"	362
REINFORCING STEEL (1)		LB		2187
CLASS "C" CONCRETE		CY		12.6
DRILLED SHAFT (30")		LF		120

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ABUTMENT 1-STAGE 1 RIGHT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1360
H	8	#6	29'-1"	267
L2	9	#6	2'-8"	36
S	27	#4	9'-8"	189
U1	2	#6	8'-9"	26
V	30	#5	11'-7"	361
REINFORCING STEEL (1)		LB		2189
CLASS "C" CONCRETE		CY		12.6
DRILLED SHAFT (30")		LF		120

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ABUTMENT 1-STAGE 2

BAR	NO.	SIZE	LENGTH	WEIGHT
A	10	#11	57'-6"	3055
H	8	#6	51'-1"	614
S	49	#4	9'-8"	316
V	48	#5	11'-7"	580
REINFORCING STEEL (1)		LB		4565
CLASS "C" CONCRETE		CY		18.2
DRILLED SHAFT (30")		LF		120

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ABUTMENT 4-STAGE 1 LEFT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1236
H	8	#6	29'-1"	349
L	9	#6	3'-8"	50
S	27	#4	9'-8"	174
U	2	#6	10'-9"	32
V	30	#5	11'-7"	362
wH1	7	#6	11'-1"	117
wH2	10	#6	9'-8"	145
wS	11	#4	7'-9"	57
wV	11	#5	11'-10"	136
REINFORCING STEEL (1)		LB		2659
CLASS "C" CONCRETE		CY		16.2
DRILLED SHAFT (30")		LF		105

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ABUTMENT 4-STAGE 1 RIGHT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	29'-1"	1236
H	8	#6	29'-1"	349
L1	9	#6	2'-10"	38
S	27	#4	9'-8"	174
U1	2	#6	8'-9"	26
V	30	#5	11'-7"	362
REINFORCING STEEL (1)		LB		2185
CLASS "C" CONCRETE		CY		12.6
DRILLED SHAFT (30")		LF		105

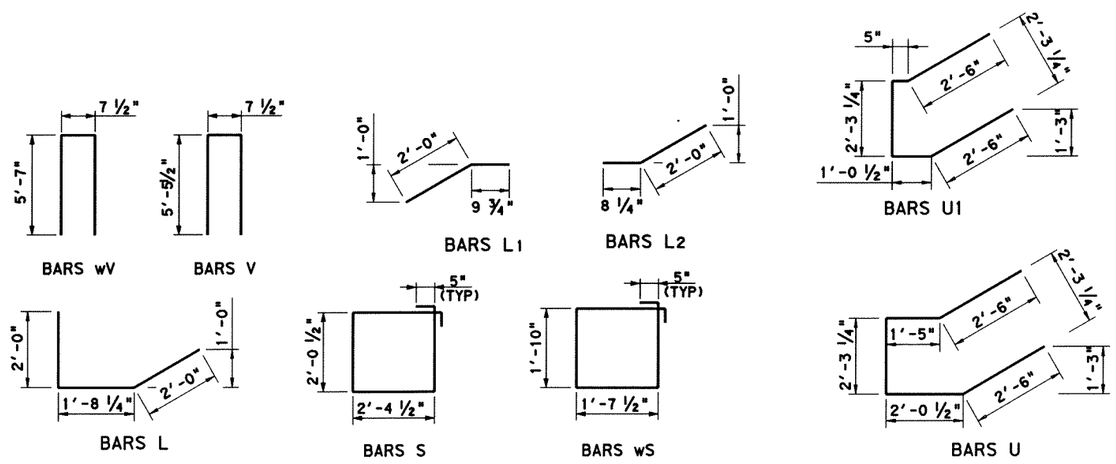
(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY

TABLE OF ESTIMATED QUANTITIES

ABUTMENT 4-STAGE 2

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#11	57'-6"	2444
H	8	#6	51'-1"	614
S	46	#4	9'-8"	297
V	48	#5	11'-7"	578
REINFORCING STEEL (1)		LB		3935
CLASS "C" CONCRETE		CY		18.2
DRILLED SHAFT (30")		LF		105

(1) PROVIDED FOR CONTRACTOR'S INFORMATION ONLY



BAR BEND DIAGRAMS

CHINH T. PHAN IS SEALING REVISION 1 ITEMS REPRESENTED ON THIS SHEET ONLY.
THE ORIGINAL DESIGN WAS SEALED BY
JINGGANG CAO P.E. No. 88343

STATE OF TEXAS
CHINH T. PHAN
92726
LICENSED
PROFESSIONAL ENGINEER
3.19.09

HL93 LOADING

No.	Revision	By	Date
1	REVISED REBARS	CTP	03-19-09

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207
TBPE ID 2263

Texas Department of Transportation
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SH 205

DGNO RR OVERPASS

ABUTMENT DETAILS

SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	588
CONT.	SECT.	JOB	
0451	01	032, ETC	

⚠ ~ FIELD CHANGE # 72

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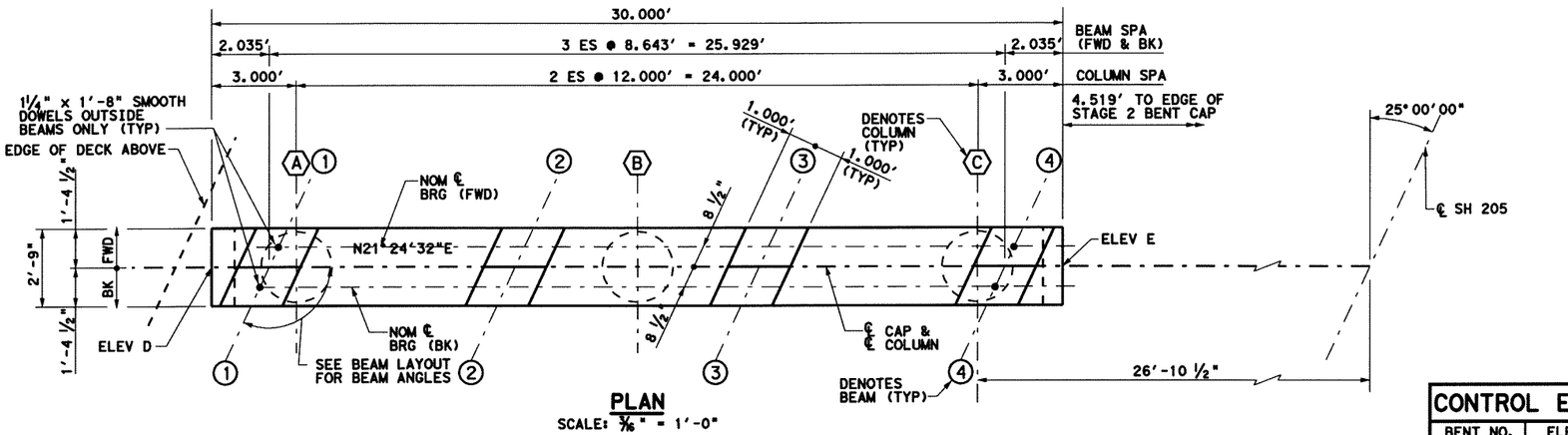

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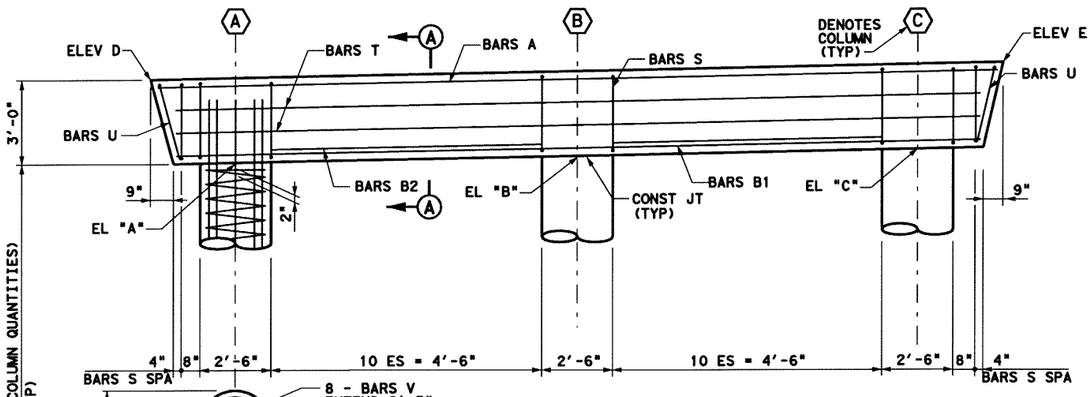

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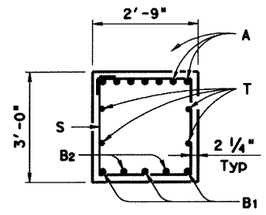
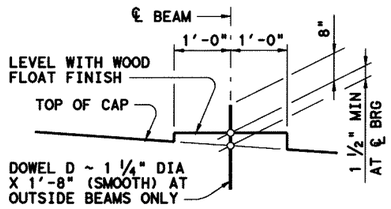


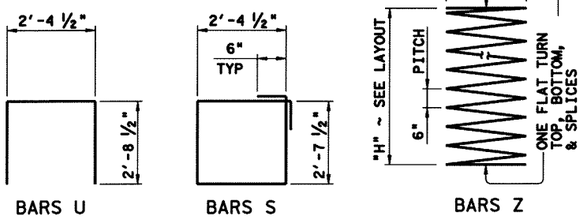
SECTION A-A
NOT TO SCALE

CONTROL ELEVATIONS		
BENT NO.	ELEV D	ELEV E
2	563.05	563.73
3	563.56	564.11

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
A	560.12	560.61
B	560.39	560.83
C	560.66	561.05



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BAR BEND DIAGRAMS
NOT TO SCALE

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".
8. MAXIMUM CALCULATED 30" DIA DRILLED SHAFT LOAD = 139 TONS PER DRILLED SHAFT.

TABLES OF CAP QUANTITIES STAGE 1 LEFT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	7	#11	29'-6"	1097
B1	3	#11	28'-3"	450
B2	4	#11	4'-6"	96
D	4	1¼" DIA	1'-8"	93
S	26	#5	11'-0"	298
T	4	#5	28'-3"	120
U	1	#5	7'-10"	16
REINFORCING STEEL			LB	2170
CLASS "C" CONCRETE			CY	8.9

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 8 ~ #9		BARS Z 1 ~ #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	A	26.5	4.8	28'-9"	782	346'-8"	130
	B	26.8	4.9	29'-1"	791	350'-5"	132
	C	27.0	4.9	29'-3"	796	353'-0"	133
3	A	27.2	4.9	29'-5"	800	342'-10"	129
	B	27.4	5.0	29'-8"	807	358'-0"	135
	C	27.6	5.0	29'-10"	811	360'-6"	136

ESTIMATED QUANTITY SUMMARY

BENT NO.	30" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	60	23.5	4934
3	60	23.8	4988

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

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2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 LEFT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	589
CONT.	SECT.	JOB	
0451	01	032, ETC	

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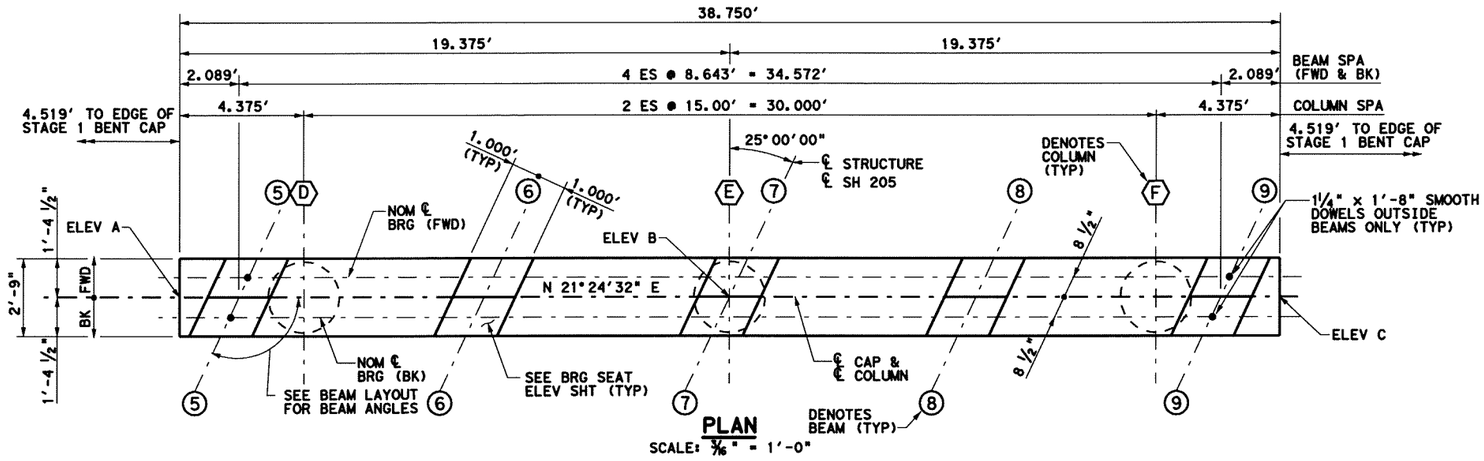

PLAN
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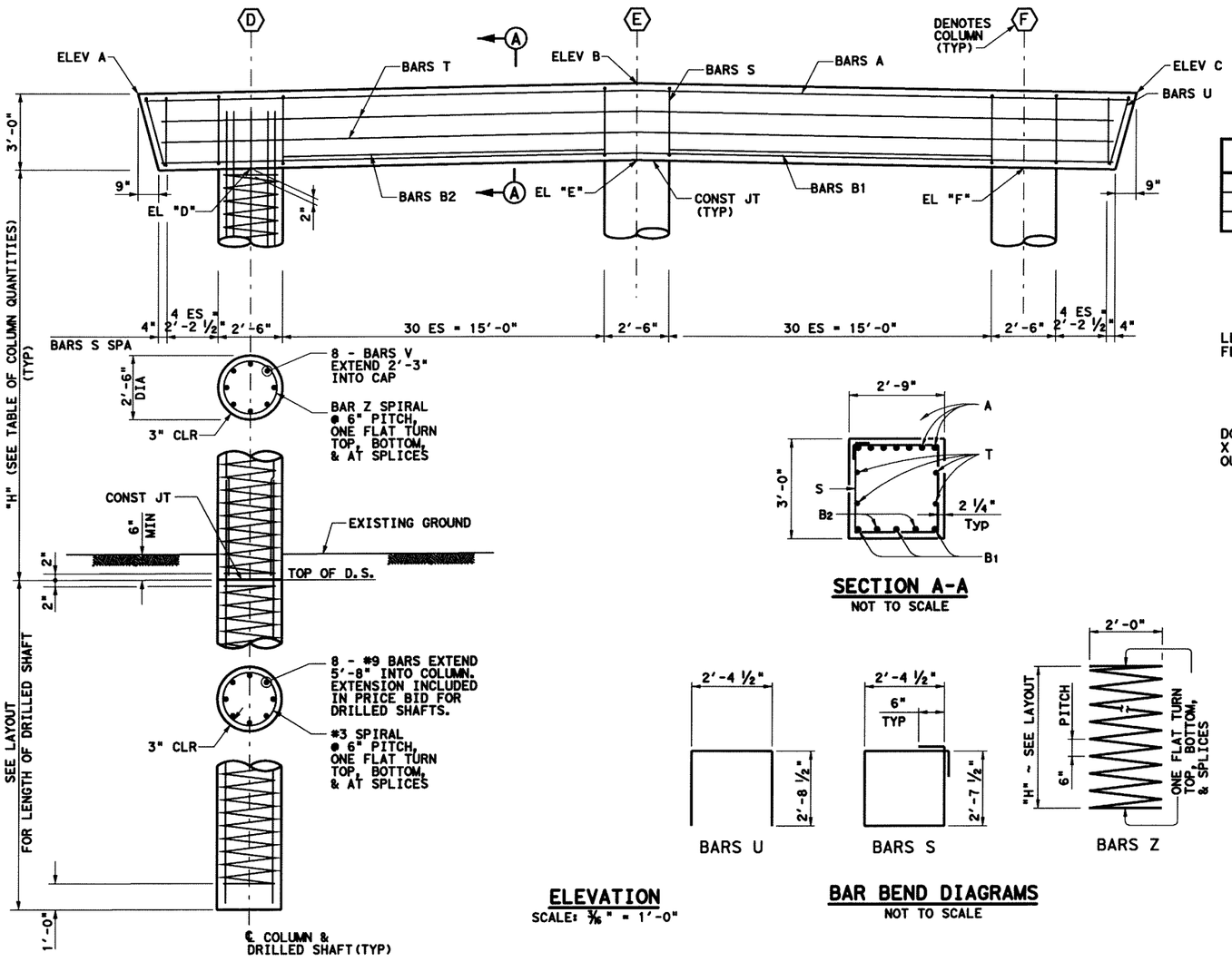


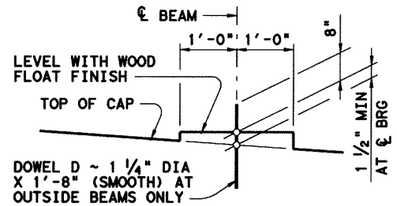
ELEVATION
SCALE: 3/16" = 1'-0"

SECTION A-A
NOT TO SCALE

BAR BEND DIAGRAMS
NOT TO SCALE

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
D	560.92	561.27
E	561.25	561.53
F	561.03	561.25

CONTROL ELEVATIONS			
BENT NO.	ELEV A	ELEV B	ELEV C
2	563.83	564.25	563.97
3	564.19	564.53	564.16



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".
8. MAXIMUM CALCULATED 30" DIA DRILLED SHAFT LOAD = 178 TONS PER DRILLED SHAFT.

TABLES OF CAP QUANTITIES STAGE 2

BAR	NO.	SIZE	LENGTH	WEIGHT
A	7	#11	38'-3"	1423
B1	3	#11	37'-0"	590
B2	4	#11	4'-6"	96
D	4	1¼" DIA	1'-8"	93
S	70	#5	11'-0"	803
T	4	#5	37'-0"	154
U	2	#5	7'-10"	16
REINFORCING STEEL			LB	3175
CLASS "C" CONCRETE			CY	11.6

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 8 ~ #9		BARS Z 1 ~ #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	D	27.4	5.0	29'-8"	807	358'-0"	135
	E	27.7	5.0	29'-11"	814	361'-9"	136
	F	27.4	5.0	29'-8"	807	358'-0"	135
3	D	27.9	5.1	30'-2"	821	364'-4"	137
	E	28.1	5.1	30'-4"	825	366'-10"	138
	F	27.8	5.1	30'-1"	818	363'-1"	137

ESTIMATED QUANTITY SUMMARY

BENT NO.	30" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	60	26.6	6009
3	60	26.9	6051

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

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Suite 1333
Dallas, TX 75207

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DGNO RR OVERPASS

BENT NO. 2 & 3 DETAILS
STAGE 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	(SEE TITLE SHEET)		SH 205
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	590
CONT.	SECT.	JOB	
0451	01	032, ETC	

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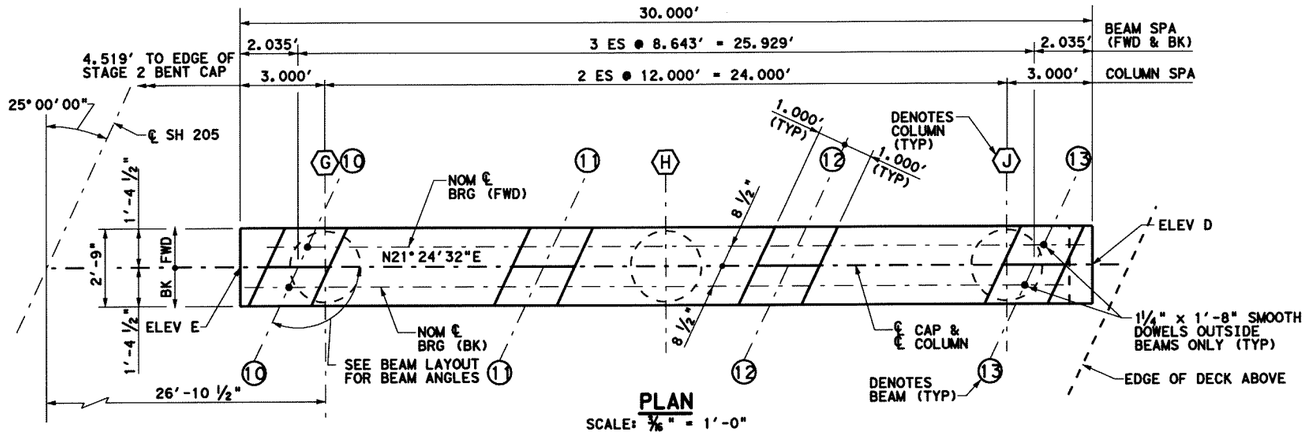

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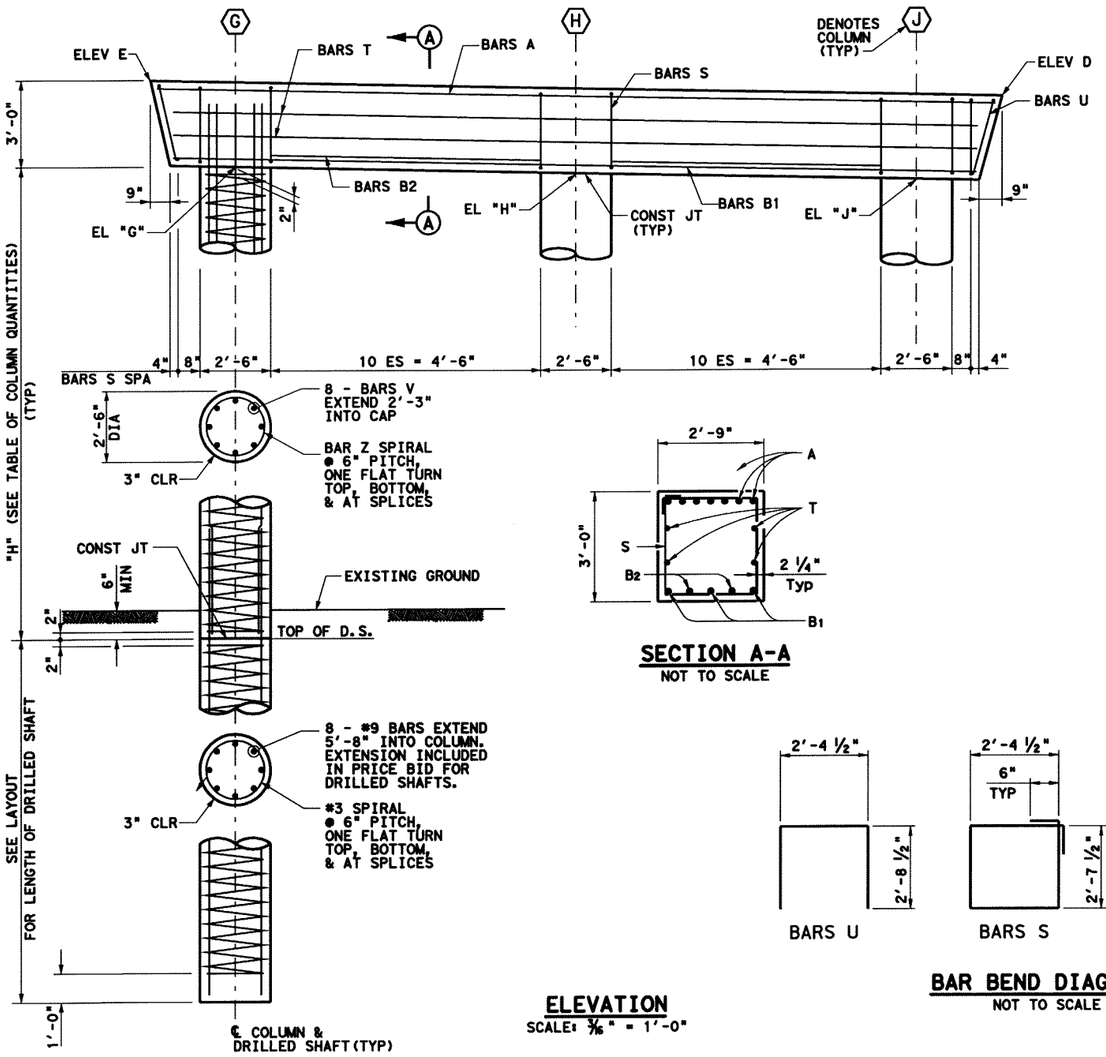
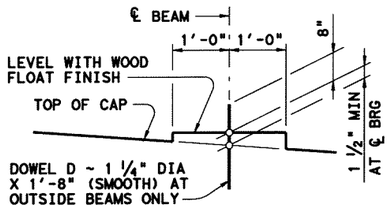


ELEVATION
SCALE: 3/16" = 1'-0"

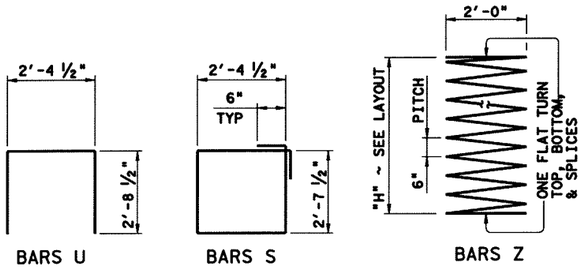
SECTION A-A
NOT TO SCALE

CONTROL ELEVATIONS		
BENT NO.	ELEV D	ELEV E
2	563.90	563.44
3	564.08	563.49

TOP OF COLUMN ELEV		
COL NO.	BENT #2	BENT #3
G	560.85	561.02
H	560.67	560.78
I	560.48	560.55



BEARING SEAT DETAIL
(BEARING SURFACE SHALL BE CLEAN AND FREE OF ALL LOOSE MATERIAL BEFORE PLACING BEARING PAD.)



BAR BEND DIAGRAMS
NOT TO SCALE

GENERAL NOTES

1. ALL CONCRETE FOR CAPS, COLUMNS AND DRILLED SHAFTS SHALL BE CLASS "C" WITH MINIMUM COMPRESSIVE STRENGTH f'c = 3600 PSI.
2. CHAMFER ALL EXPOSED CORNERS ¾", UNLESS OTHERWISE SHOWN OR NOTED.
3. ALL REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60.
4. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER, UNLESS OTHERWISE SHOWN OR NOTED.
5. ALL REINFORCING DIMESIONS ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN OR NOTED.
6. EF DENOTES EACH FACE. FF DENOTES FAR FACE. ES DENOTES EQUAL SPACES. CLR DENOTES CLEAR COVER TO RENIFORCING.
7. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".
8. MAXIMUM CALCULATED 30" DIA DRILLED SHAFT LOAD = 139 TONS PER DRILLED SHAFT.

TABLES OF CAP QUANTITIES STAGE 1 RIGHT

BAR	NO.	SIZE	LENGTH	WEIGHT
A	7	#11	29'-6"	1097
B1	3	#11	28'-3"	450
B2	4	#11	4'-6"	96
D	4	1¼" DIA	1'-8"	93
S	26	#5	11'-0"	298
T	4	#5	28'-3"	120
U	2	#5	7'-10"	16
REINFORCING STEEL			LB	2170
CLASS "C" CONCRETE			CY	8.9

② TABLE OF COLUMN QUANTITIES

BENT NO.	COLUMN	"H"	CLASS "C" CONC	BARS V 8 ~ #9		BARS Z 1 ~ #3 SPIRAL	
		FT	CY	LENGTH	WEIGHT	LENGTH	WEIGHT
2	G	27.3	5.0	29'-7"	805	356'-9"	134
	H	27.0	4.9	29'-3"	796	353'-0"	133
	J	26.9	4.9	29'-2"	793	351'-9"	132
3	G	27.6	5.0	29'-10"	811	360'-6"	136
	H	27.3	5.0	29'-7"	805	356'-9"	134
	J	27.1	4.9	29'-4"	798	354'-3"	133

ESTIMATED QUANTITY SUMMARY

BENT NO.	30" DIA DS	CLASS "C" CONC	① REINF STEEL
	LF	CY	LB
2	60	23.7	4963
3	60	23.8	4987

① PROVIDED FOR CONTRACTORS INFORMATION ONLY.

② ADJUST SPIRAL Z LENGTH BY 6.3 FT AND BARS V BY 0.5 FT FOR EACH 0.5 FT VARIATION IN "H" VALUE. ADJUST ESTIMATED QUANTITY OF CONCRETE FOR EACH COLUMN BY 0.1 CY FOR EACH 0.5 FT VARIATION IN "H" VALUE.
ADJUST ESTIMATED QUANTITY OF REINFORCING STEEL FOR EACH COLUMN BY 16.0 FOR EACH 0.5 FT VARIATION IN "H" VALUE.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

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SH 205

DGNO RR OVERPASS

BENT NO. 2 & 3 DETAILS
STAGE 1 RIGHT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	591
CONT.	SECT.	JOB	
0451	01	032, ETC	

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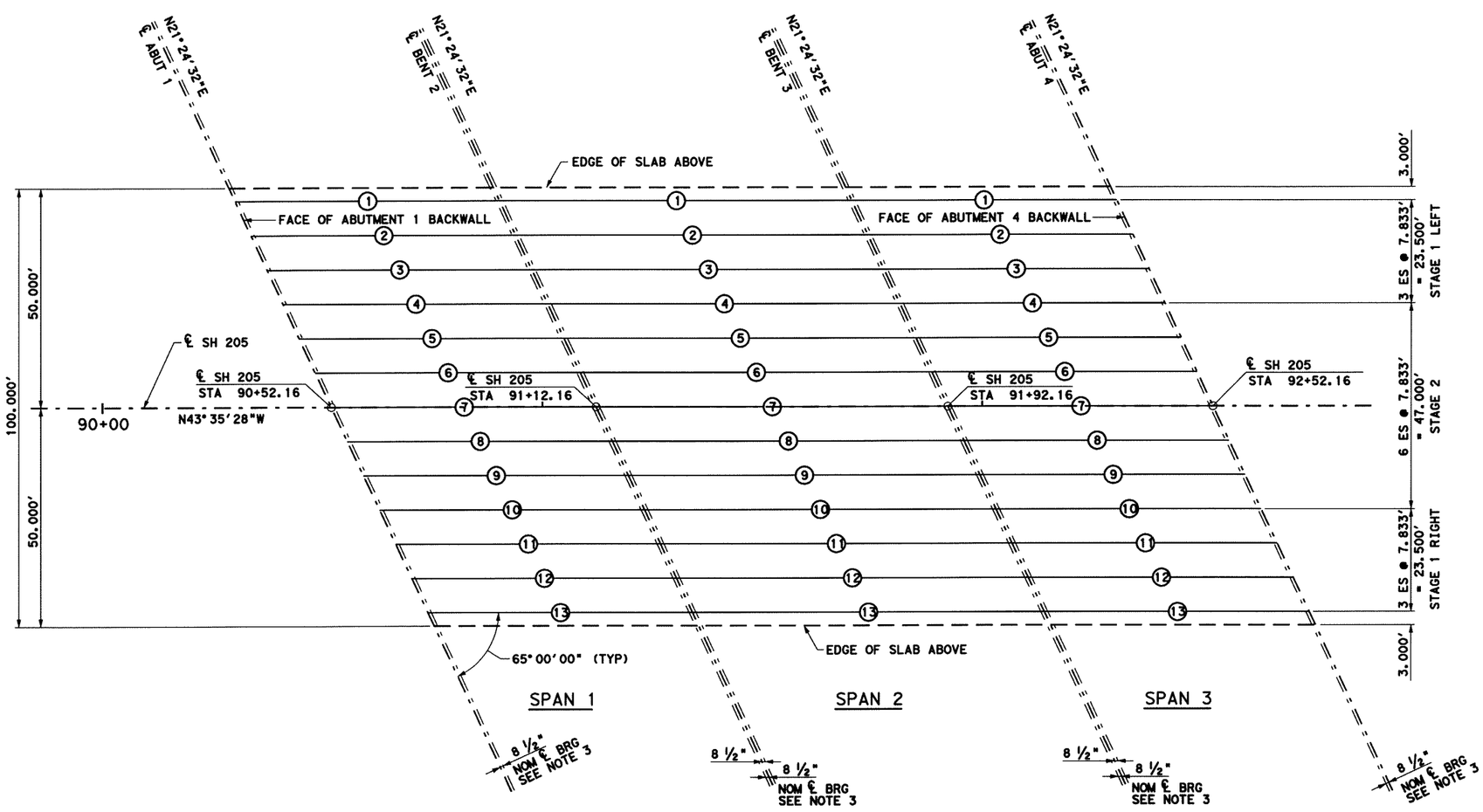
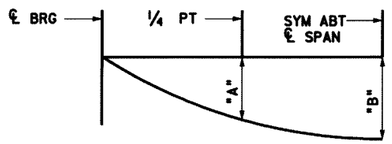


FRAMING PLAN
SCALE: 1" = 30'

BEAM DATA TABLE					
SPAN NO.	BEAM	LENGTH ℄- ℄ ABUT/BENT	LENGTH OF ① BEAM	LENGTH ℄- ℄ NOMINAL BRG	ANGLE
1	ALL	60.000'	59.649'	58.583'	65°00'00"
2	ALL	80.000'	79.667'	78.583'	65°00'00"
3	ALL	60.000'	59.649'	58.583'	65°00'00"

① FABRICATOR SHALL ADJUST BEAM LENGTHS FOR BEAM SLOPES AS REQUIRED

SPAN NO.	BEAM NO.	"A" ft.	"B" ft.
1	1-13	0.030	0.042
2	1-13	0.097	0.136
3	1-13	0.030	0.042



NOTE: DEFLECTIONS SHOWN ARE DUE TO CAST-IN-PLACE SLAB CONCRETE ONLY. DEFLECTIONS ARE BASED ON E_c = 5000 KSI CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY DIFFER. DEFLECTIONS SHALL BE ADJUSTED BASED ON FIELD OBSERVATIONS.

DEAD LOAD DEFLECTION DIAGRAM

GENERAL NOTES

1. FOR BEAM DETAILS, SEE TxDOT STANDARD DRAWINGS "IBD", "IBEB", AND "IBND".
2. FOR BEAM ERECTION AND BRACING REQUIREMENTS, SEE TxDOT STANDARD DRAWING "MEBR(C)".
3. FOR BEARING DETAILS AND NOMINAL ℄ BEARING, SEE TxDOT STANDARD DRAWING "IBEB".

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER

HL93 LOADING 5-22-06

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation
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SH 205

DGNO RR OVERPASS

FRAMING PLAN

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	592
CONT.	SECT.	JOB	
0451	01	032, ETC	

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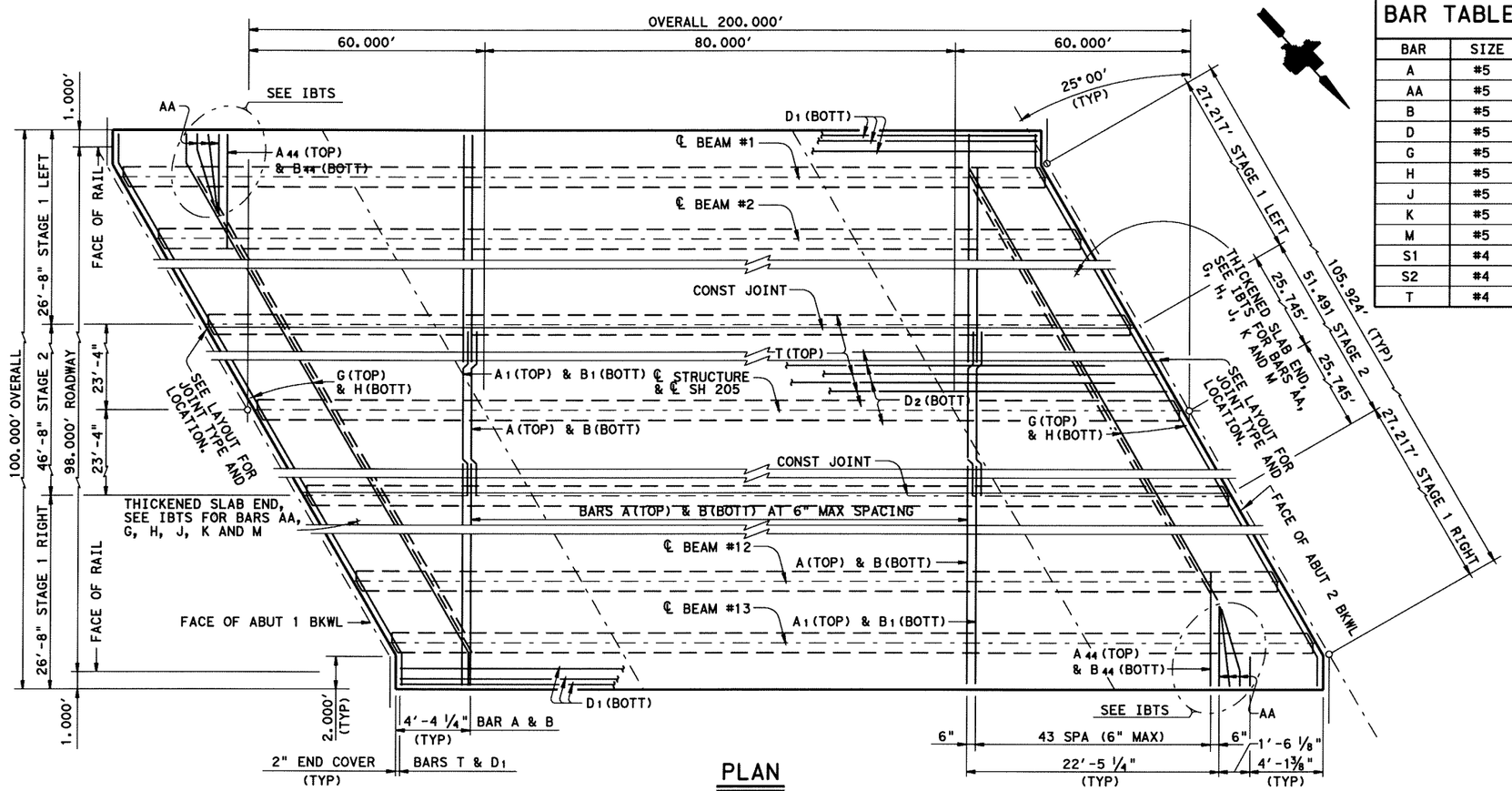
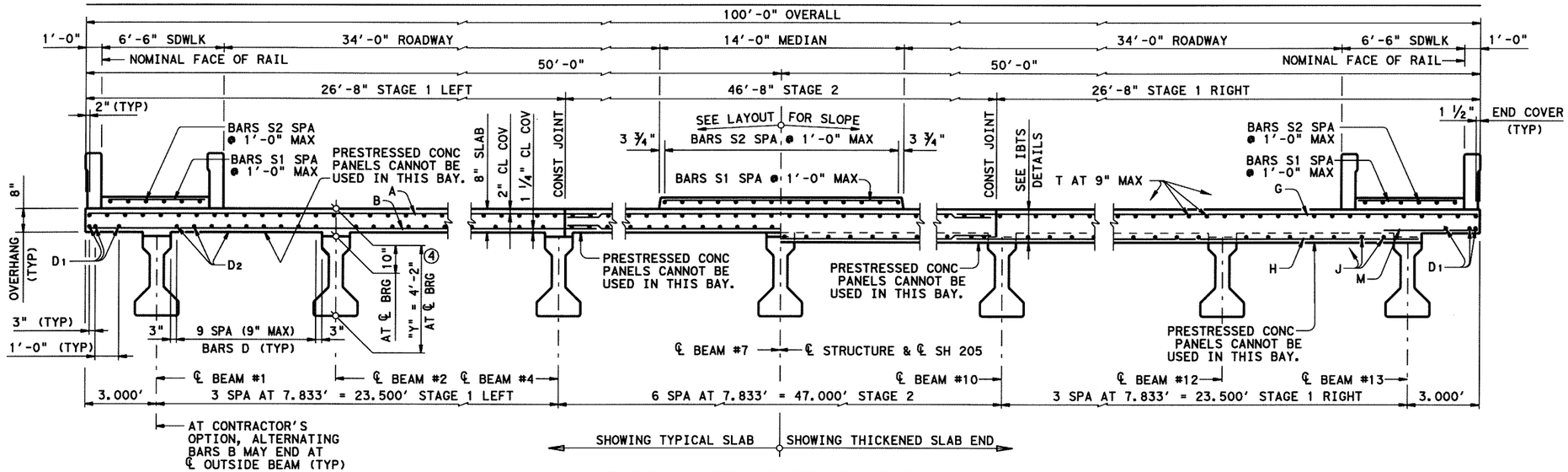


PLAN



TYPICAL TRANSVERSE SECTION

BAR TABLE

BAR	SIZE
A	#5
AA	#5
B	#5
D	#5
G	#5
H	#5
J	#5
K	#5
M	#5
S1	#4
S2	#4
T	#4

TABLE OF ESTIMATED QUANTITIES STAGE 1 L/R

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY C)	CLASS "S" CONCRETE ①	REINF STEEL ①②
NO.	SF	LF	CY	LB
1	1600	238.60	41.82	10,400
2	2133	318.67	55.57	13,865
3	1600	238.60	41.82	10,400
TOTAL	5333	795.87	139.21	34,665

TABLE OF ESTIMATED QUANTITIES STAGE 2

SPAN	REINF CONC SLAB	PRESTR CONC BEAMS (TY C)	CLASS "S" CONCRETE ①	REINF STEEL ①②
NO.	SF	LF	CY	LB
1	2800	298.33	72.48	18,200
2	3733	398.33	96.24	24,265
3	2800	298.33	72.48	18,200
TOTAL	9333	995.00	241.20	60,665

① PROVIDED FOR CONTRACTOR'S INFORMATION ONLY.

② REINFORCING STEEL WEIGHT FOR THE CONCRETE SLAB IS CALCULATED USING AN APPROXIMATE FACTOR OF 6.5 LB/SF

GENERAL NOTES:

DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS.
SEE IBTS STANDARD FOR THICKENED SLAB END DETAILS AND QUANTITY ADJUSTMENTS.
SEE PCP OR PMDF STANDARDS FOR DETAILS AND QUANTITY ADJUSTMENTS IF EITHER OF THESE OPTIONS ARE USED.
SEE IBMS STANDARD FOR MISCELLANEOUS DETAILS.
ALL REINFORCING SHALL BE GRADE 60 AND EPOXY COATED.
CONCRETE STRENGTH F'C = 4,000 PSI.
BAR LAPS, WHERE REQUIRED, SHALL BE AS FOLLOWS:
EPOXY COATED ~ #4 = 2'-1"
~ #5 = 2'-7"
SEE RAILING DETAILS FOR RAIL ANCHORAGE IN SLAB.
FOR CURB DETAILS & CONSTRUCTION JOINTS SEE SHEET 582.

STATE OF TEXAS
JINGGANG CAO
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PROFESSIONAL ENGINEER

HL93 LOADING 6-9-06

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Suite 1333
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SH 205

DGNO RR OVERPASS

SLAB DETAILS

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	593
CONT.	SECT.	JOB	
0451	01	032, ETC	

6/23/06 ADDENDUM

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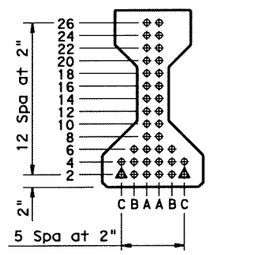
6/9/2006 Plotted 09-JUN-2006 13:40

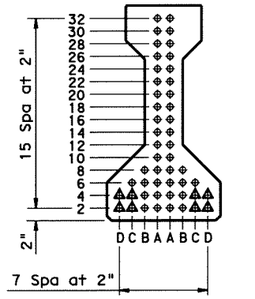
DESIGNED BEAMS (DEPRESSED STRANDS)

STRUCTURE	SPAN NO.	BEAM NO.	BEAM TYPE	NON-STD STRAND PATTERN	PRESTRESSING STRANDS TOTAL NO.	TOTAL SIZE (in)	TOTAL STRGTH fpu (ksi)	TOTAL "e" ℄ (in)	TOTAL "e" END (in)	DEPRESSED NO.	DEPRESSED TO (in)	CONCRETE RELEASE STRGTH f'ci (ksi)	CONCRETE MINIMUM 28 DAY COMP STRGTH f'c (ksi)	DESIGN LOAD COMP STRESS (TOP ℄) (SERVICE I) fct(ksi)	DESIGN LOAD TENSILE STRESS (BOTT ℄) (SERVICE III) fcb(ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (ft-kips)	LIVE LOAD DISTRIB FACTOR ①
DGNO RR OVERPASS Type C Beams 98′ Rdwy 8" Slab 7.833′ Bm Spa 60′ Span	1,3	1,13	C		22	½	270K	13.82	9.45	6	22.0	4.154	5.000	2.197	-2.873	2805	0.690
	1,3	2,12	C		18	½	270K	14.20	10.20	4	22.0	4.000	5.000	2.098	-2.615	2532	0.690
	1,3	3-5	C		16	½	270K	14.34	10.84	4	18.0	4.000	5.000	2.054	-2.395	2315	0.690
	1,3	6,8	C		18	½	270K	14.20	10.20	4	22.0	4.000	5.000	2.073	-2.490	2409	0.690
	1,3	7	C		20	½	270K	14.09	10.09	4	24.0	4.000	5.000	2.107	-2.663	2579	0.690
	1,3	9-11	C		16	½	270K	14.34	10.84	4	18.0	4.000	5.000	2.054	-2.395	2315	0.690
DGNO RR OVERPASS Type C Beams 98′ Rdwy 8" Slab 7.833′ Bm Spa 80′ Span	2	1,13	C		48	½	270K	11.01	7.01	12	28.0	7.819	7.819	3.871	-4.813	4448	0.638
	2	2,12	C		38	½	270K	12.25	7.62	8	30.0	6.420	6.420	3.696	-4.281	3852	0.638
	2	3-5	C		32	½	270K	12.84	7.34	8	30.0	5.378	5.612	3.617	-3.884	3462	0.638
	2	6,8	C		36	½	270K	12.42	7.53	8	30.0	6.075	6.075	3.651	-4.057	3631	0.638
	2	7	C		40	½	270K	11.99	7.49	10	28.0	6.732	6.732	3.714	-4.369	3938	0.638
	2	9-11	C		32	½	270K	12.84	7.34	8	30.0	5.378	5.612	3.617	-3.884	3462	0.638

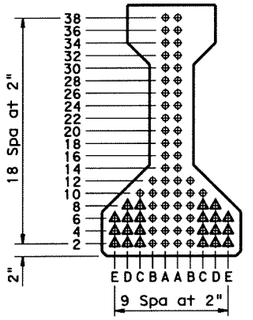
OPTIONAL DESIGN



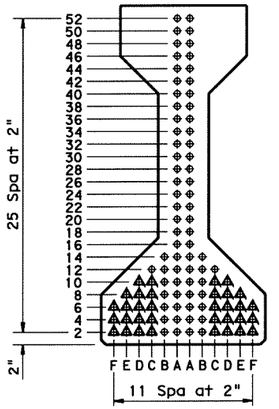
TYPE A BM ②



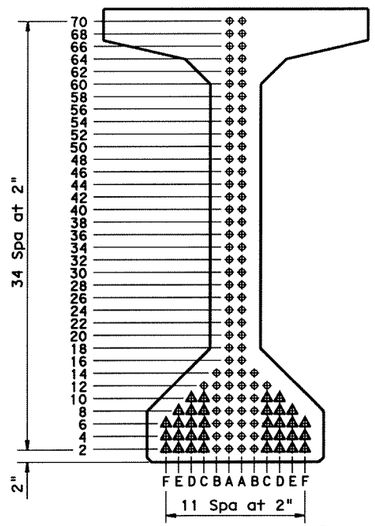
TYPE B BM ②



TYPE C BM ②



TYPE IV BM ②
(AASHTO TYPE IV BM)



TYPE VI BM ②
(AASHTO TYPE VI BM)

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF BEAM

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.

All concrete shall be Class H. All reinforcing bars shall be Grade 60.

When shown on this sheet, the Fabricator has the option of furnishing either the designed depressed strand beam or an approved optional design. All optional design submittals shall be signed, sealed and dated by a registered Professional Engineer.

Optional designs for beams 120 feet or longer shall have a calculated residual camber equal to or greater than that of the designed beam.

Prestress losses for the designed beams have been calculated for a relative humidity of 65 percent. Optional designs shall likewise conform.

Certain beams with depressed strands are subject to cracking in the end of the beam. When such cracks occur, all subsequent beams of the same type and strand pattern shall have strands debonded in the following manner:

1. Alternate rows of depressed strands shall be debonded for two feet from each end of the beam.
2. One half of the straight strands, as nearly as possible, shall be debonded for four feet from each end of the beam.
3. The debonding pattern shall be symmetrical about the vertical axis of the beam for both depressed and straight strands.
4. Strands shall be debonded so that the centers of gravity of the depressed strands and the straight strands will remain within one inch of their original location.
5. Strands shall be encased in plastic tubing along entire debonded length, and ends of tubing shall be sealed with waterproof tape. Split plastic tubing may be used provided the seam of the tubing is sufficiently sealed with waterproof tape to prohibit grout infiltration. Wrapping of strands with tape to provide debonding will not be permitted.
6. Revised shop drawings will not be required.

For depressed strand designed beams, strands shall be located as low as possible on the 2" grid system unless a Non-Standard Strand Pattern is indicated. Fill row "2", then row "4", then row "6", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position shall be depressed, maintaining the 2" spacing so that, at the beam ends, the upper two strands are in the position shown in the table.

Strands for the designed beam shall be low relaxation strands pretensioned to 75 percent of fpu each.

① Portion of full HL93

② Full-length debonded strands are only permitted in strand positions marked Δ. Double wrap full-length debonded strands in outermost position of each row. Full-length debonding must comply with Item 426.4.F.4.

HL93 LOADING

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LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
ACC:

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5/22/2006 Plotted 22-MAY-2006 13:34

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE I-BEAM DESIGNS (NON-STANDARD SPANS)

IBND

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
5-22-06

FILE: ibndstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		594
01-06: Full-length debonding	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	044	SH 205

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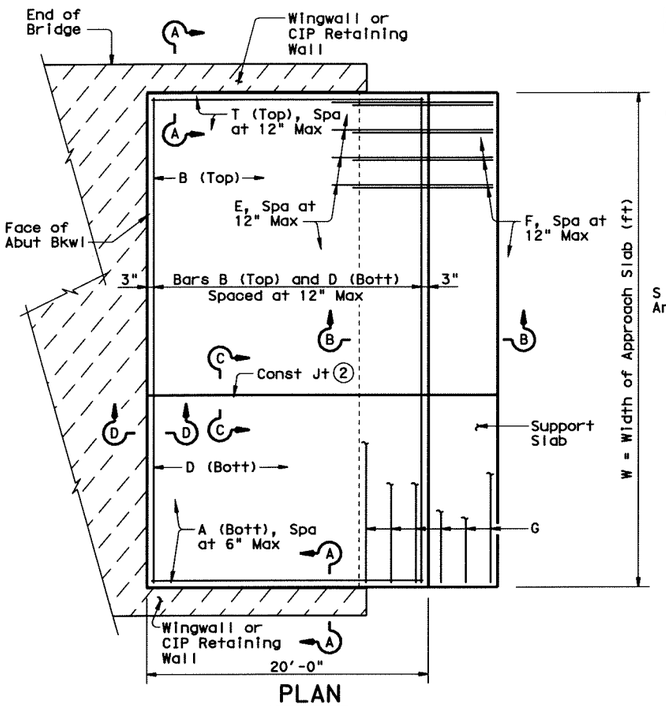
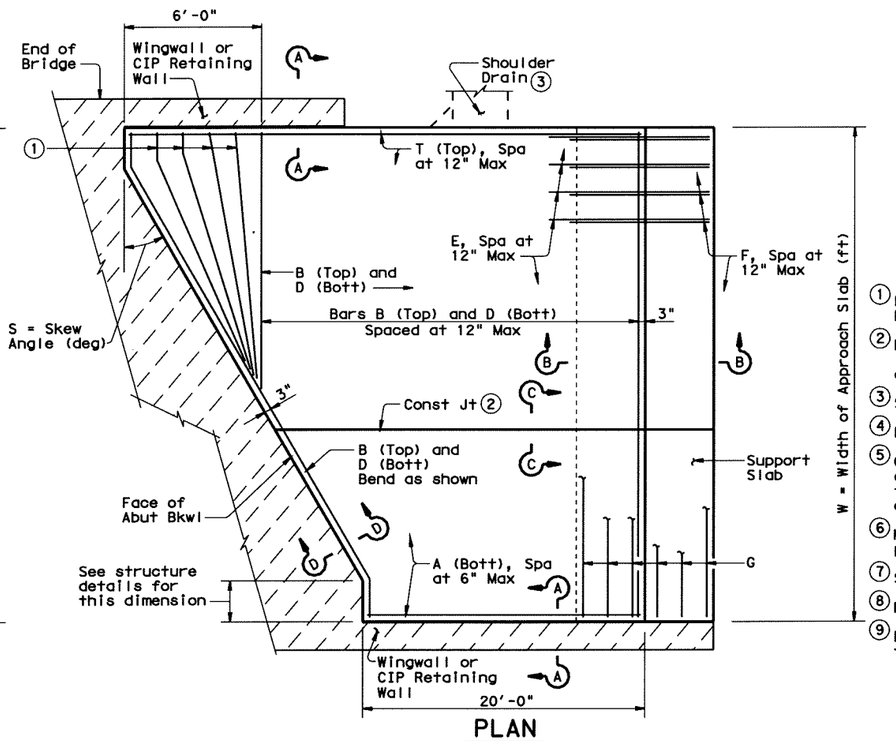
LEVELS DISPLAYED | PATH:



PLAN

(Showing Non-Skewed Approach Slab)



PLAN

(Showing Skewed Approach Slab)

BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
E	#5
F	#5
G	#5
T	#5

APPROXIMATE QUANTITIES ④

Reinf steel weight = 8.5 Lbs/SF of Approach Slab
= 18.4 Lbs/LF of Support Slab

Area of Appr Slab = $20W + 0.5W^2 \tan S$ (SF)
(Support Slab not included)

W = Width of Approach Slab (ft)

S = Skew Angle (deg)

① Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.

② Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.

③ See details elsewhere in plans for shoulder drain location and details.

④ For Contractor's information only.

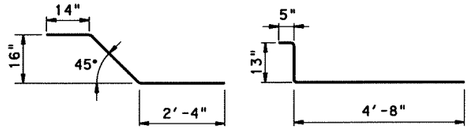
⑤ On portion of support slab that supports the concrete pavement, adjust top surface elevation, if required, to accommodate concrete pavement thickness. Smooth trowel finish. Oil top of support slab with 60 grade oil and apply heavy coat of powdered graphite. Press down one layer of 30# roofing felt.

⑥ Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.

⑦ See details elsewhere in plans for required cross-slope.

⑧ Place in accordance with Item 438.

⑨ Backer rod shall be 25% larger than joint opening and shall be compatible with the sealant.



BARS E (#5) BARS F (#5)

GENERAL NOTES:

Construct approach slab in accordance with Item 420.

Concrete shall be Class "S" with a minimum compressive strength of 4,000 psi.

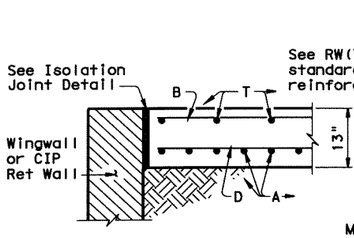
All reinforcing steel shall be Grade 60.

Construct the subgrade or subbase from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.

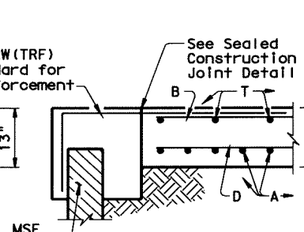
Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans.

Cure for 4 days using water or membrane curing per Item 420.

Sealant, backer rod and preformed bituminous fiber material is subsidiary to approach slab concrete.

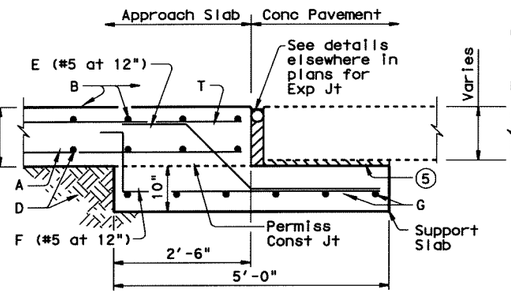


SHOWING WINGWALL OR CIP RETAINING WALL

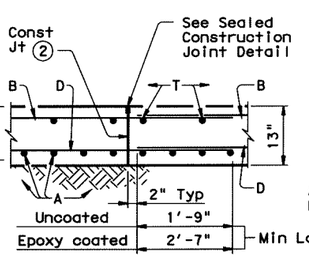


SHOWING MSE WALL

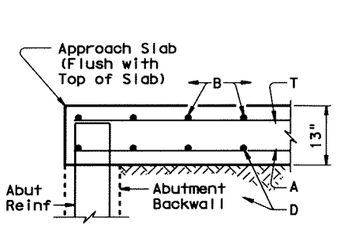
SECTION A-A



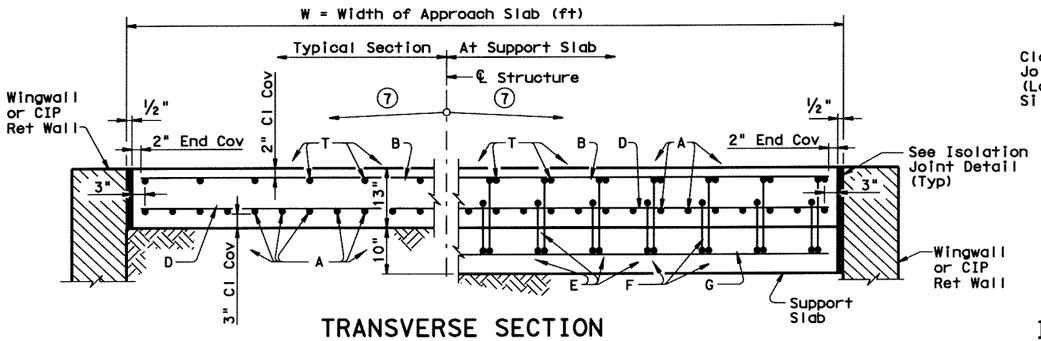
SECTION B-B



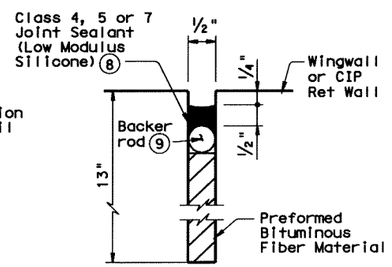
SECTION C-C ⑥



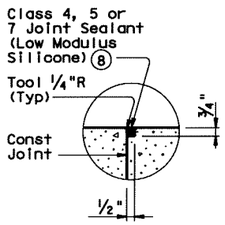
SECTION D-D



TRANSVERSE SECTION



ISOLATION JOINT DETAIL



SEALED CONSTRUCTION JOINT DETAIL

Texas Department of Transportation
Bridge Division

BRIDGE APPROACH SLAB

CONCRETE PAVEMENT

BAS-C

FILE: bascstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT June 2004	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		595
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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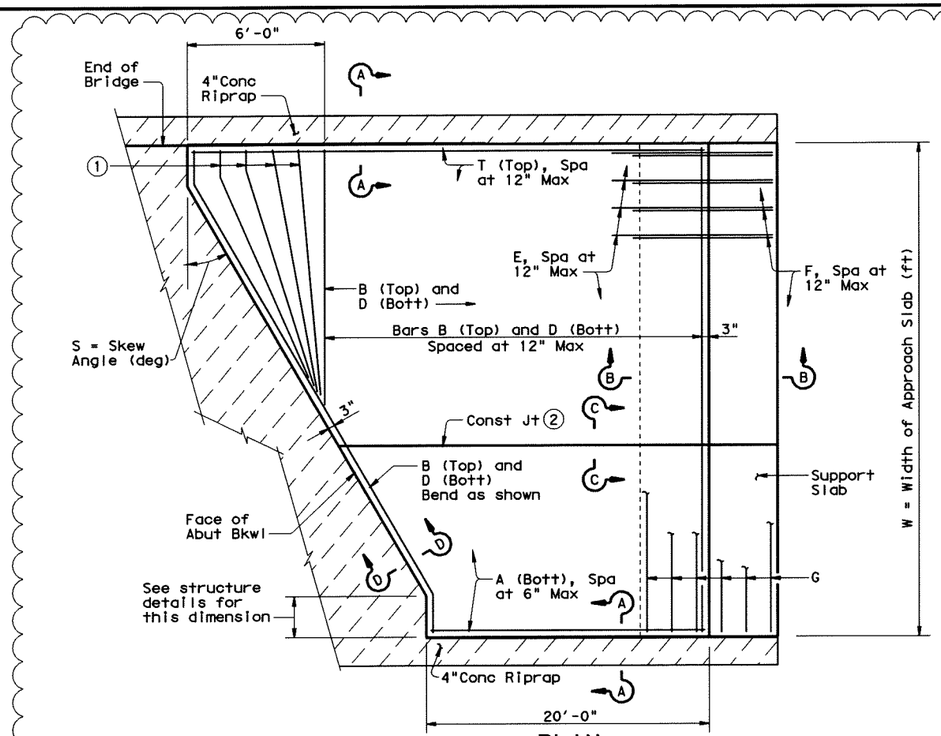
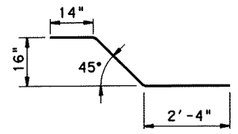
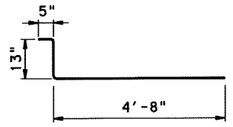


PLAN

(Showing Skewed Approach Slab)



BARS E (#5)



BARS F (#5)

BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
E	#5
F	#5
G	#5
T	#5

APPROXIMATE QUANTITIES (4)

Reinf steel weight = 8.5 Lbs/SF of Approach Slab
= 18.4 Lbs/LF of Support Slab

Area of Appr Slab = $20W + 0.5W^2 \tan S$ (SF)
(Support Slab not included)

W = Width of Approach Slab (ft)

S = Skew Angle (deg)

(1) Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.

(2) Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.

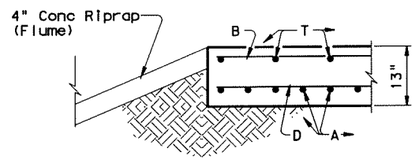
(4) For Contractor's information only.

(5) On portion of support slab that supports the concrete pavement, adjust top surface elevation, if required, to accommodate concrete pavement thickness. Smooth trowel finish. Oil top of support slab with 60 grade oil and apply heavy coat of powdered graphite. Press down one layer of 30# roofing felt.

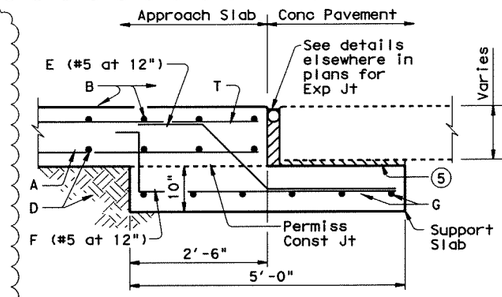
(6) Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.

(7) See details elsewhere in plans for required cross-slope.

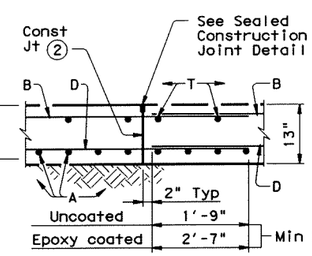
(8) Place in accordance with Item 438.



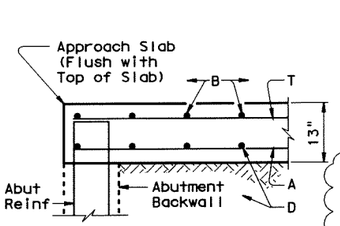
SECTION A-A



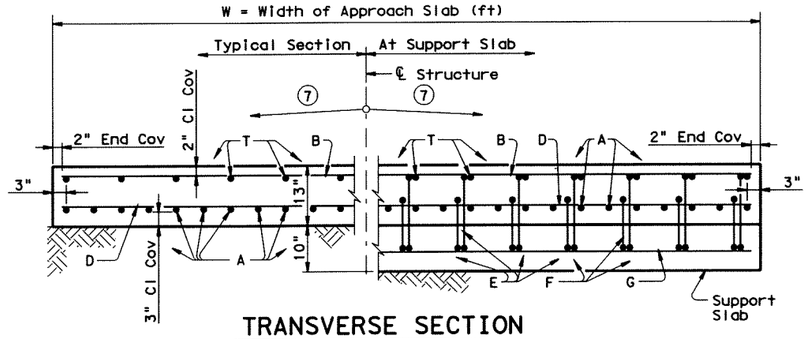
SECTION B-B



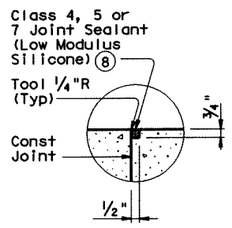
SECTION C-C (6)



SECTION D-D



TRANSVERSE SECTION



SEALED CONSTRUCTION JOINT DETAIL

GENERAL NOTES:

Construct approach slab in accordance with Item 420.

Concrete shall be Class "S" with a minimum compressive strength of 4,000 psi.

All reinforcing steel shall be Grade 60.

Construct the subgrade or subbase from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.

Compact and finish the subgrade or foundation for the approach slab, to the typical cross-section and to the lines and grades shown on the plans.

Cure for 4 days using water or membrane curing per Item 420.

Preformed bituminous fiber material is subsidiary to approach slab concrete.

Provide a 1" bondbreaker (asphaltic concrete pavement or asphalt stabilized base) between the approach slab and cement stabilized backfill or cement treated base. Other bondbreakers may be used if approved by the Engineer.

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED PROFESSIONAL ENGINEER

4-26-07

Texas Department of Transportation
Bridge Division

BRIDGE APPROACH SLAB
CONCRETE PAVEMENT

BAS-C (MOD)

FILE: bascste1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2006	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		595A
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

PATH: BASCSTE1 MOD.dgn

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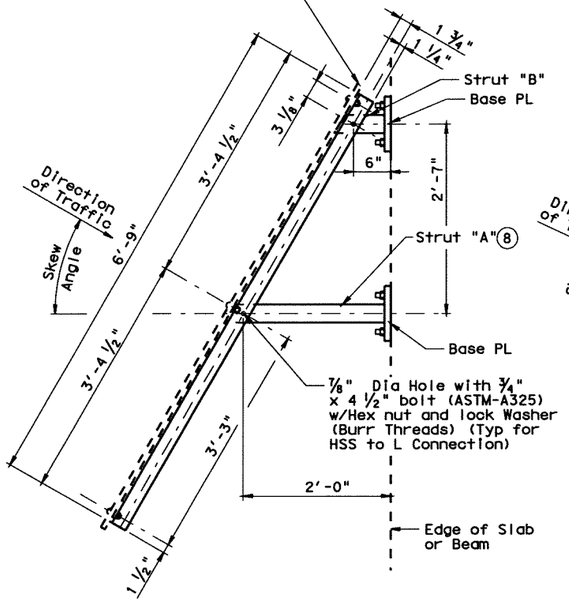
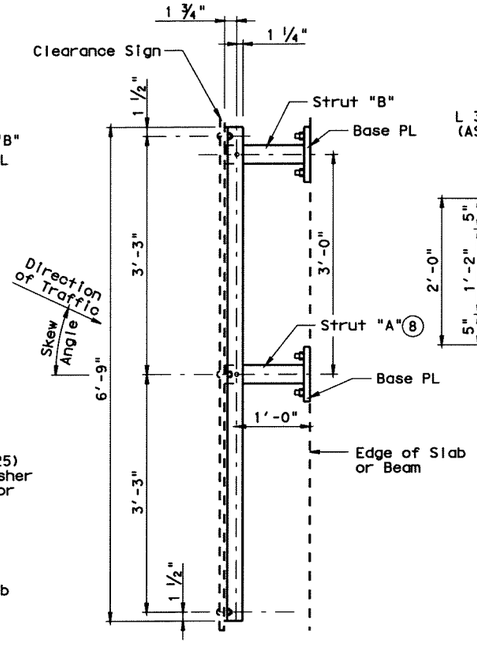
ACC:

LEVELS DISPLAYED



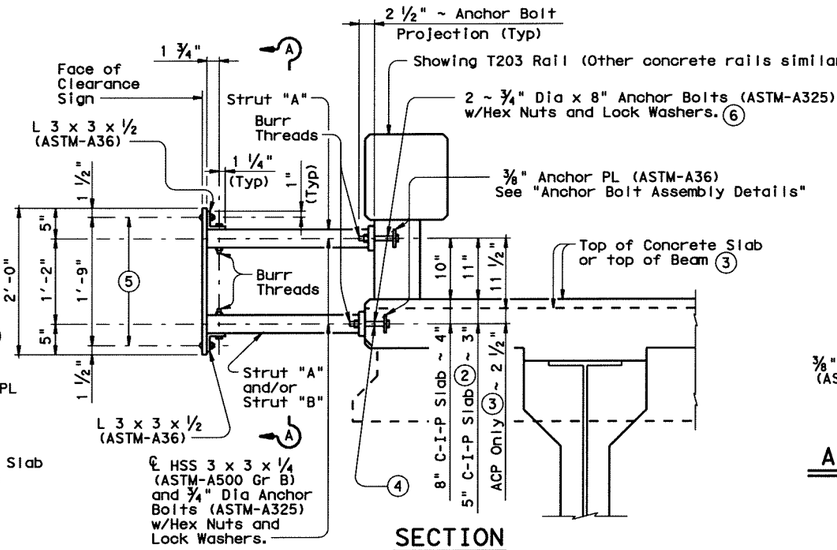
PLAN OF TYPE S MOUNT

(Used for Skews over 30°)

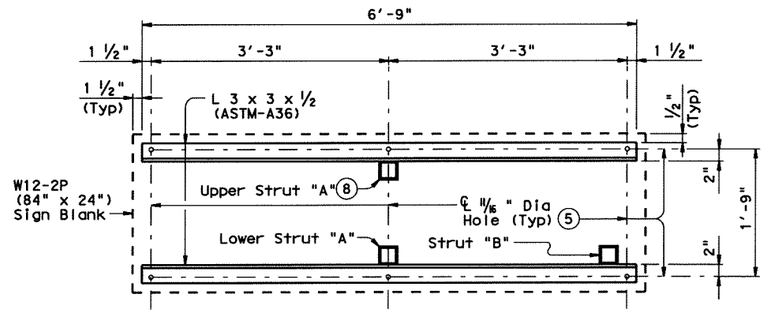


PLAN OF TYPE N MOUNT

(Used for 0° to 30° Skews)



SECTION



VIEW A-A

(1) Adjust length to accommodate edge of slab to back of rail for specific project conditions and to help plumb the vertical face of clearance sign.

(2) For Prestressed Concrete Box Beams, Slab Beams and Dbl-T Beams with a composite cast-in-place slab used as a topping.

(3) For Prestressed Concrete Box Beams and Dbl-T Beams topped with a 2 course surface treatment and ACP overlay.

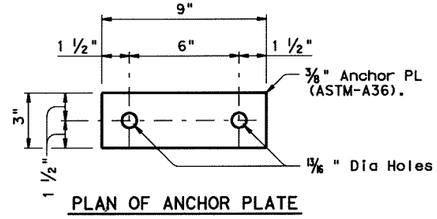
(4) Anchor bolts to be cast in Box Beams and Dbl-T Beams topped with a 2 course surface treatment and ACP overlay. The Anchor Bolts w/Hex Nuts, Lock Washers and Anchor PL that is embeded in the beam will be provided by the beam fabricator.

(5) ℄ ⅝" Dia x 2" Hexagon Socket Button Head Cap Screws (ASTM A574) w/Hex Nuts. Attach hex nuts to L 3 x 3 x ½ by tack welding in two places. Threads shall have Class 3A fit tolerance in accordance ASME B1.1. Six screws required.

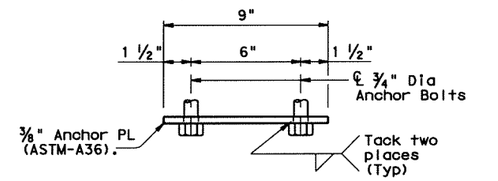
(6) Epoxy anchors utilizing A193 Grade B7 anchor rods (no expansion anchors) can be substituted for the anchor bolts detailed at all locations except for the lower anchor bolt groups on any Box Beam, Slab Beam, or Dbl-T Beam bridge. Minimum pullout strength of epoxy anchors must exceed 7 kips, taking spacing and edge distances into consideration. Install according to the manufacturer's specifications. Min embedment allowed is 6". Galvanize anchor rods and lock washers used with optional epoxy anchors.

(7) Hole required to drain zinc from base plate during galvanizing.

(8) Locate centerline of Strut A no closer than 12" from a vertical concrete edge.

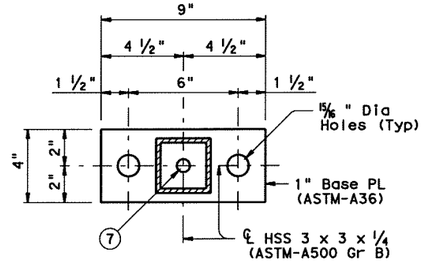


PLAN OF ANCHOR PLATE



ELEVATION

ANCHOR BOLT ASSEMBLY DETAILS (6)



BASE PLATE DETAIL

GENERAL NOTES:

This standard provides details to mount a vertical clearance sign (W12-2P) (84" x 24") to bridges with concrete railing only. Rail Types T101, T411, T6, T77, C101, C411, PR1, and PR2 are not accommodated.

The vertical face of clearance sign shall be plumb unless otherwise approved by the Engineer.

All steel components shall be galvanized after fabrication unless otherwise noted.

The Engineer will furnish the clearance to be shown on the sign.

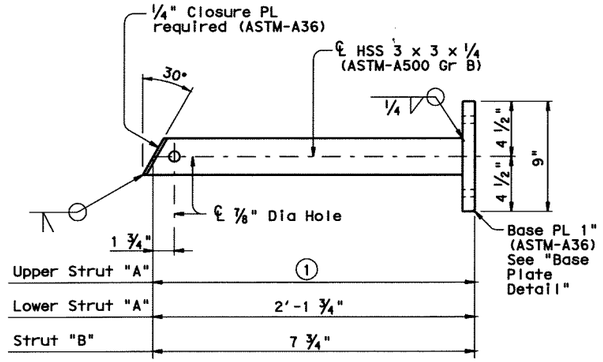
See Bridge Layout for sign location and mounting type (Type N or S).

Cost of furnishing, installing, relocating or removing a Clearance Sign shall be included in unit price bid for "Aluminum Signs".

One Sign Blank (W12-2P) (84" x 24") is 14 SF.

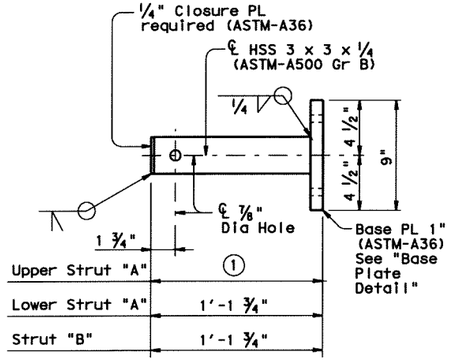
Average steel weight for one complete Type N Mount is 209 Lb.

Average steel weight for one complete Type S Mount is 222 Lb.



STRUT DETAILS FOR (TYPE S MOUNT)

(Used for Skews over 30°)



STRUT DETAILS FOR (TYPE N MOUNT)

(Used for 0° to 30° Skews)

Texas Department of Transportation
Bridge Division

BRIDGE MOUNTED CLEARANCE SIGN ASSEMBLY

BMCS

FILE: bmcsste1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT June 2004	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		596
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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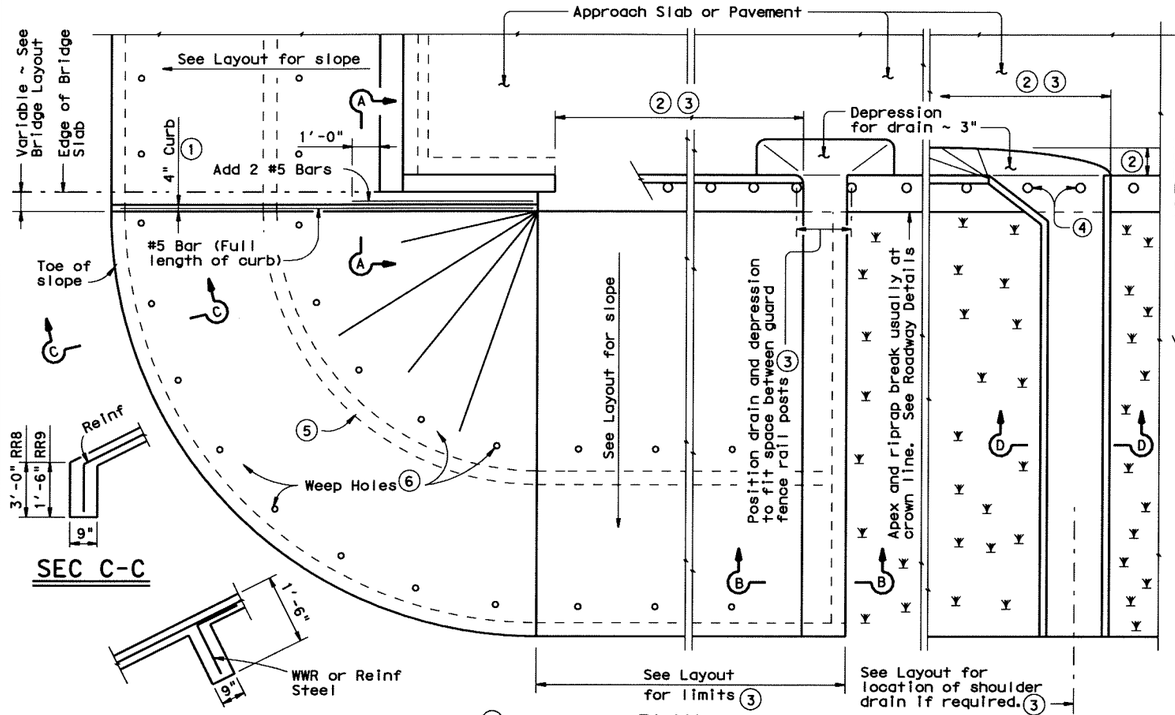
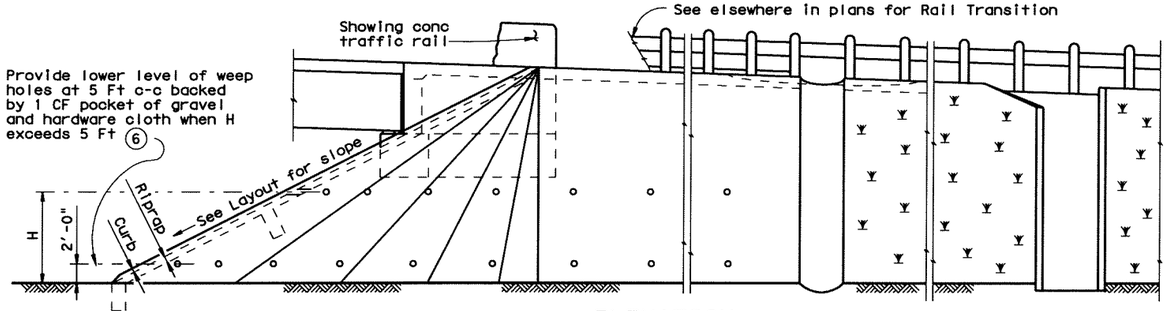


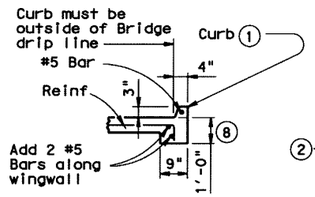
PLAN

SEC C-C

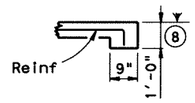
OPTIONAL INTERMEDIATE TOEWALL (5)



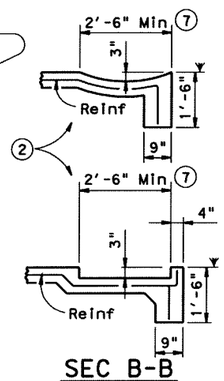
ELEVATION



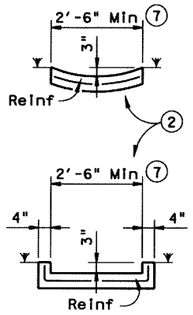
SEC A-A



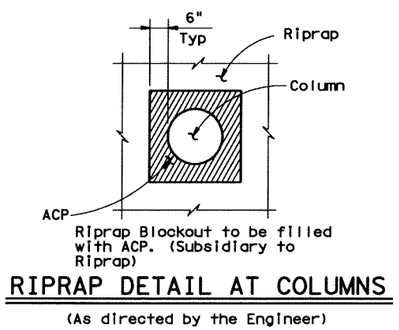
SEC B-B
(No Drain)



SEC B-B
(Shoulder Drain integral with riprap)

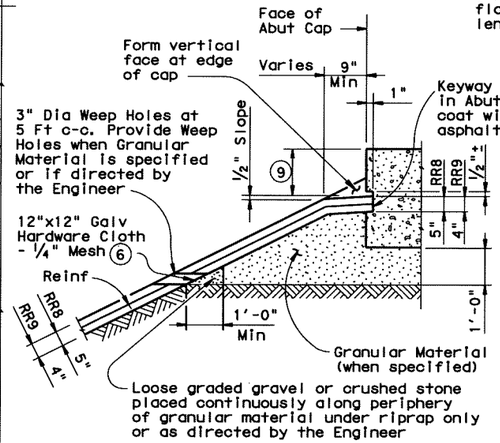


SEC D-D
(Shoulder Drain)

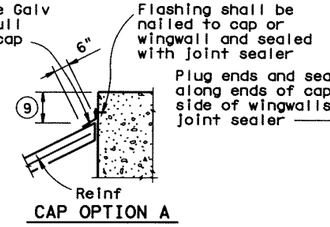


Riprap Blockout to be filled with ACP. (Subsidiary to Riprap)

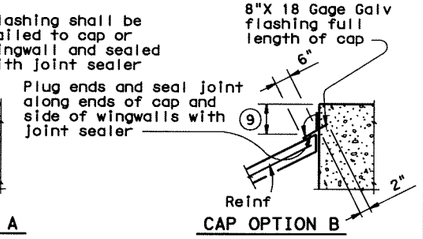
RIPRAP DETAIL AT COLUMNS
(As directed by the Engineer)



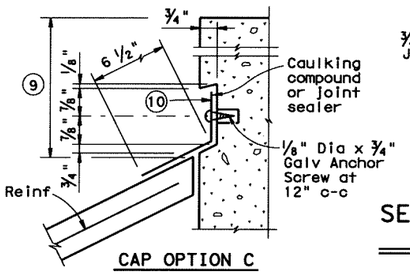
SHOWING KEYWAY OPTION



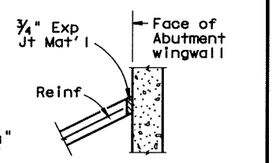
CAP OPTION A



CAP OPTION B

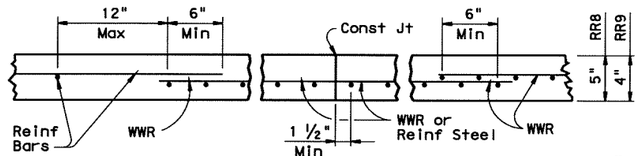


CAP OPTION C



SECT THRU RIPRAP AT WINGWALL (12)

SECTIONS THRU RIPRAP AT CAP (11)



DETAILS OF WWR, REINF AND CONST JOINT (13)

(1) When riprap is shown extended around header on layout, extend slab and toewall as shown and eliminate 4" curb.

(2) Limits and configuration of drains and depressions shall be as shown elsewhere in plans or as directed by the Engineer.

(3) Location of shoulder drain must consider limitations imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.

(4) See details elsewhere in plans for installation of guard fence posts through concrete riprap.

(5) The optional intermediate toewall shall be constructed when designated elsewhere in the plans or included in the specifications.

(6) If erodible soils occur in the embankment

(7) Wider or other drain configurations shall be used if shown elsewhere in plans or if directed by the Engineer.

(8) Wall extension may be reduced or modified if approved by the Engineer. Wall extension shall be increased to 1'-6" whenever the optional intermediate toewall is called for in the plans.

(9) Top of cap to top of riprap dimension varies as directed by the Engineer. Should be 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.

(10) 8" x 18 Gage Galv Sheet Metal

(11) The sealing option of the joint between the face of cap and riprap shall be as designated by the Engineer or as shown elsewhere on plans.

(12) Flashing (shown in Cap Option A) may be used at wingwall in addition to Exp Jt Mat'l if shown on plans or directed by the Engineer.

(13) Reinforcing bars shall be #3 at 18" Spa c-c. Welded Wire Reinforcement (WWR) shall be 6X6-W2.9XW2.9. Combinations of WWR and reinforcing bars may be used if both are permitted. Lap splices shall be a minimum of 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.

FOR CONTRACTOR'S INFORMATION ONLY:
5" of RR8 = 0.015 CY/SF
4" of RR9 = 0.012 CY/SF
#3 Reinf at 18" c-c = 0.501 Lbs/SF
6X6-W2.9XW2.9 = 0.394 Lbs/SF

GENERAL NOTES:
Concrete shall be Class "B" with a minimum compressive strength of 2,000 psi unless noted elsewhere in plans.
All reinforcing steel shall be Grade 60.
Reinforcing other than that shown may be used by substituting reinforcement of equal or greater unit cross-sectional area. The maximum reinforcement spacing shall be 18 inches.
Construction joints or grooved joints extending the full slant slope height shall be at intervals of approximately 20 feet unless otherwise directed by the Engineer.
Hardware cloth, loose graded stone behind weep holes, flashing, or other sealing material shall not be paid for directly but shall be subsidiary to the bid item "Riprap".
Unless specified elsewhere in the plans to be only reinforcing bars, the riprap reinforcing may be composed of reinforcing bars, Welded Wire Reinforcement (WWR), or any suitable combination of both types.
See Layout for limits of riprap.
RR8 is to be used on stream crossings.
RR9 is to be used on other embankments.

Texas Department of Transportation
Bridge Division

CONCRETE RIPRAP AND SHOULDER DRAINS
EMBANKMENTS AT BRIDGE ENDS (TYPES RR8 & RR9)

CRR

FILE: crrstdel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT June 2004	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		597
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

LEVELS DISPLAYED
PATH:

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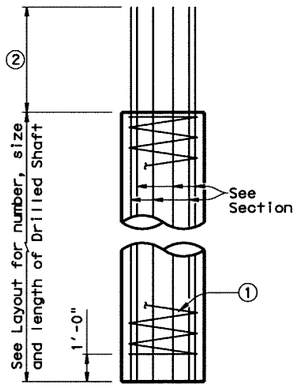
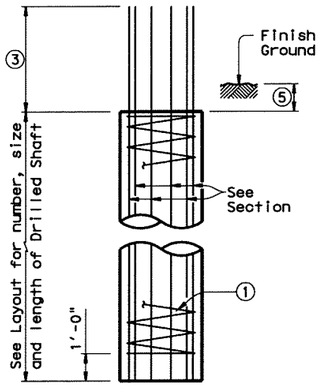
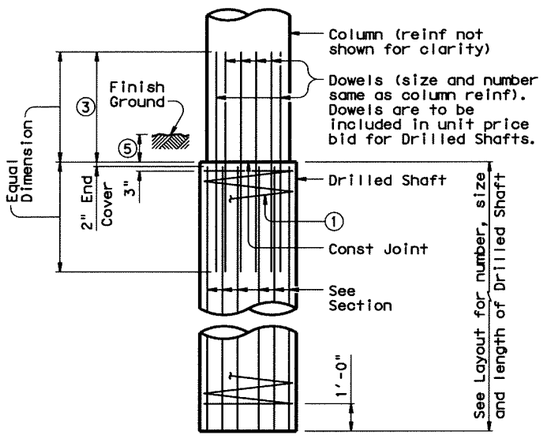


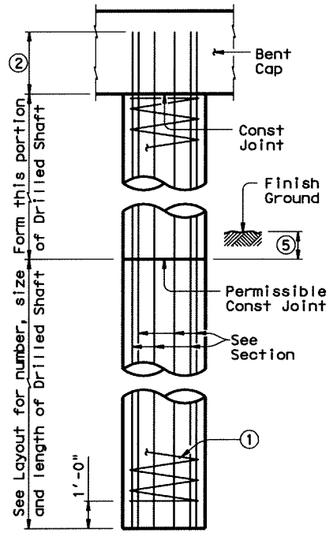
ABUTMENTS
AND
WINGWALLS



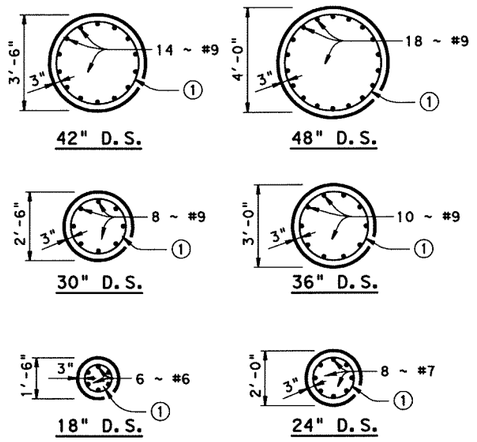
INTERIOR BENTS
DRILLED SHAFT DIA
EQUAL TO COLUMN DIA



INTERIOR BENTS
DRILLED SHAFT DIA
GREATER THAN COLUMN DIA



OPTIONAL
INTERIOR BENT
DRILLED SHAFT DETAIL④



DRILLED SHAFT SECTIONS

DRILLED SHAFT DETAILS

① #3 Spiral at 6" pitch (One flat turn top & bottom)

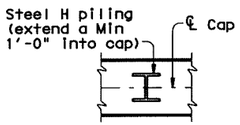
② Min extension into supported element:
#7 Bars = 1'-5"
#9 Bars = 2'-3"

③ Min lap with Column reinf:
#7 Bars = 2'-4"
#9 Bars = 3'-10"

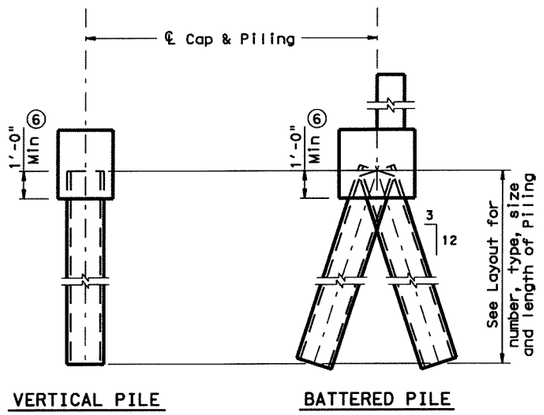
④ If approved by the Engineer, Drilled Shafts may extend to bottom of bent caps for "H" heights of 6 ft or less (as shown on Bridge Layout). This option can only be used when Drilled Shaft Dia equals Column Dia. The forming method shall be submitted for approval prior to construction. No adjustments in payment will be made if this option is used.

⑤ 6" Min at Grade Crossing, 1'-0" Min in Channel.

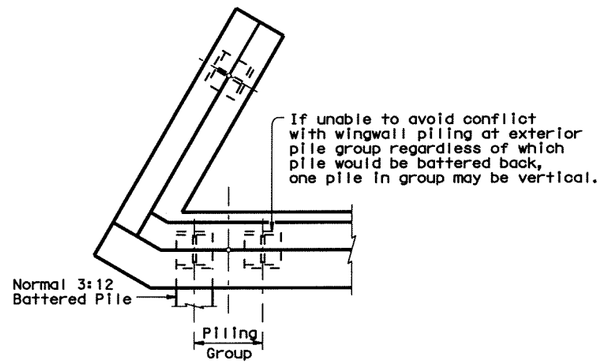
⑥ Or as shown on plans.



ORIENTATION OF
STEEL H PILING



PILING DETAILS
(Concrete or Steel H)



DETAIL "A"
(Showing Plan View of a
30° Skewed Abutment)

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

See Bridge Layout of each Structure for Foundation Type to be used.

Drilled shaft details shown are not to be used for retaining wall, noise wall, barrier or sign foundation without structural evaluation.

Footings shown on this standard are not applicable for columns larger than 36" Diameter.

Details shown on this standard to be used unless shown otherwise in the plans.

Maximum Pile Load for the footings shown shall be as follows : 72 Tons/Pile with 24" Dia Column
80 Tons/Pile with 30" Dia Column
100 Tons/Pile with 36" Dia Column

The footings shown on this Standard are not to be used in direct contact with salt water or exposed to salt water spray.

Drilled Shaft reinforcing may be Grade 40.

Piling under abutment wings to be driven to a minimum resistance of 10 Tons.

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COMMON FOUNDATION DETAILS

FD

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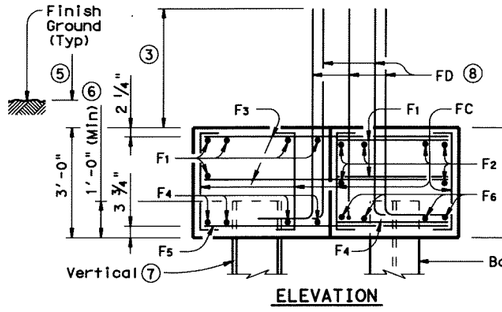
REVISIONS	DAL	(SEE TITLE SHEET)		598
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205



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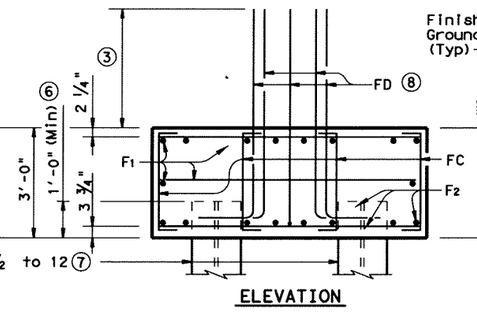

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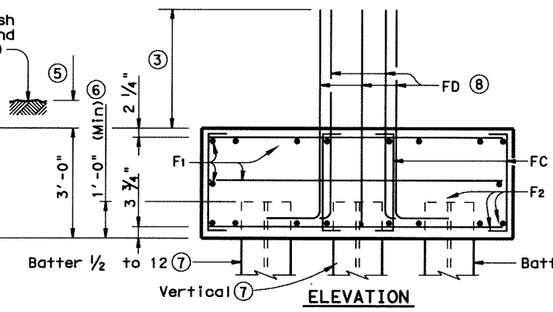

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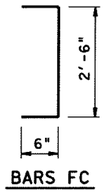
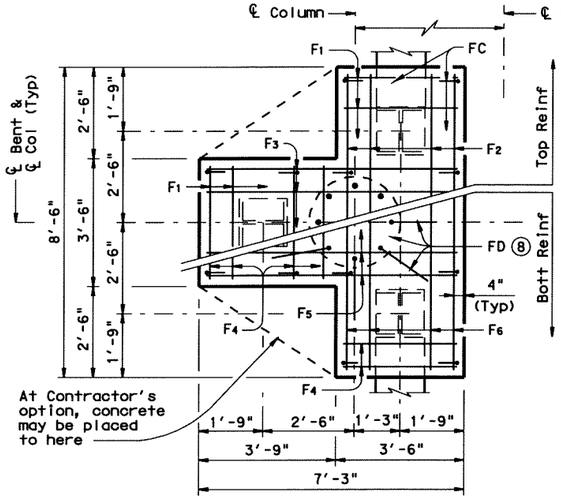
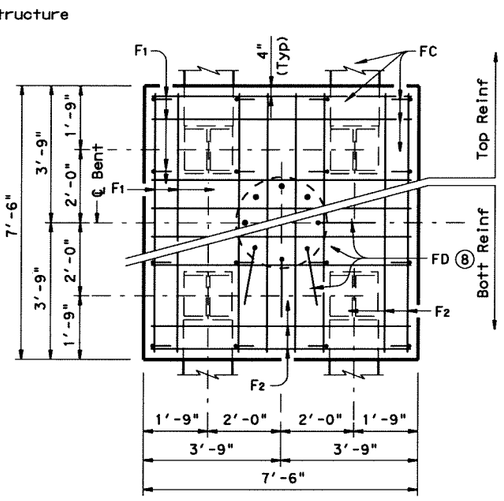


BARS FC



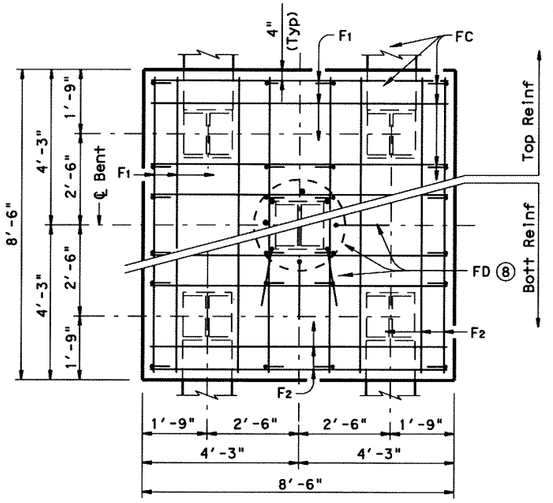
PLAN

THREE PILE FOOTING



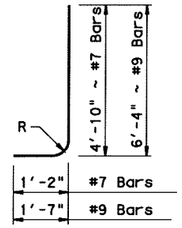
PLAN

FOUR PILE FOOTING



PLAN

FIVE PILE FOOTING



BARS FD ⑧

R = 3 1/4" ~ #7 Bars
and 5 1/4" ~ #9 Bars

TABLE OF FOOTING QUANTITIES FOR 30" COLUMNS

ONE 3 PILE FOOTING				
Bar	No.	Size	Length	Weight
F_1	11	#4	3'- 2"	23
F_2	6	#4	8'- 2"	33
F_3	6	#4	6'- 11"	28
F_4	8	#9	3'- 2"	86
F_5	4	#9	6'- 11"	94
F_6	4	#9	8'- 2"	111
FC	12	#4	3'- 6"	28
FD ⑨	8	#9	7'- 11"	215
Reinforcing Steel			Lb	618
Class "C" Concrete			CY	4.8

ONE 4 PILE FOOTING				
Bar	No.	Size	Length	Weight
F_1	20	#4	7'- 2"	96
F_2	16	#8	7'- 2"	306
FC	16	#4	3'- 6"	37
FD ⑨	8	#9	7'- 11"	215
Reinforcing Steel			Lb	654
Class "C" Concrete			CY	6.3

ONE 5 PILE FOOTING				
Bar	No.	Size	Length	Weight
F_1	20	#4	8'- 2"	109
F_2	16	#9	8'- 2"	444
FC	24	#4	3'- 6"	56
FD ⑨	8	#9	7'- 11"	215
Reinforcing Steel			Lb	824
Class "C" Concrete			CY	8.0

③ Min lap with Column reinf:
#7 Bars = 2'-4"
#9 Bars = 3'-10"

⑤ 6" Min at Grade Crossing, 1'-0" Min in Channel.

⑥ Or as shown on plans.

⑦ See Layout for Type, Size and length of Piling.

⑧ Number and size of FD bars must match Column reinforcing. FD bars shall be tied to the top of the bottom mat of reinforcing

⑨ For 24" Columns, use #7 FD bars (6'-0") in place of #9 bars and deduct 116 lbs. For 36" Columns, add 2 FD bars (54 lbs).

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SHEET 2 OF 2

Texas Department of Transportation
Bridge Division

COMMON FOUNDATION DETAILS

FD

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REVISIONS	DAL	(SEE TITLE SHEET)		598A
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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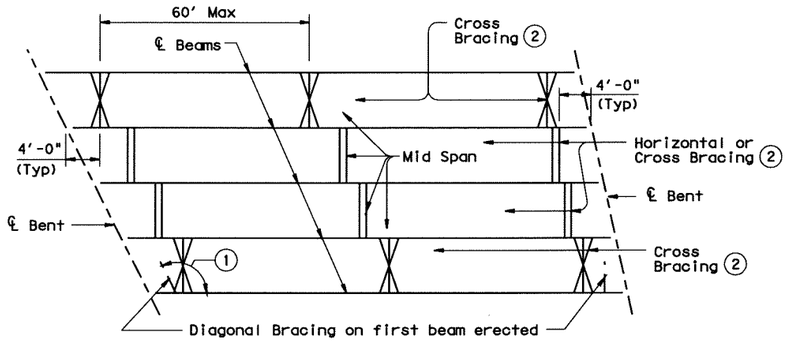
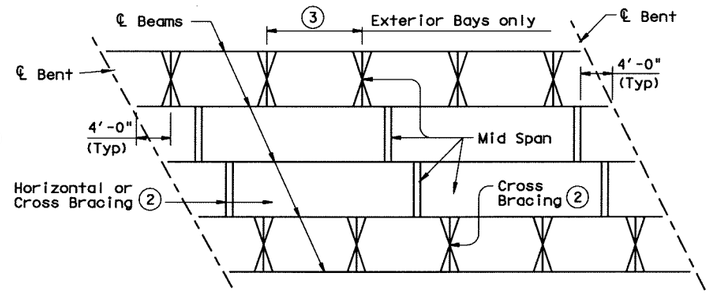
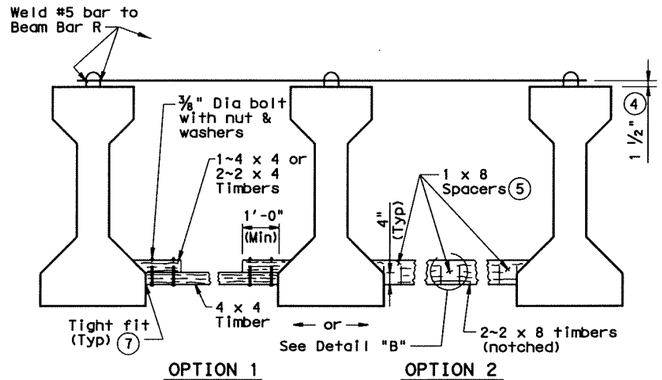


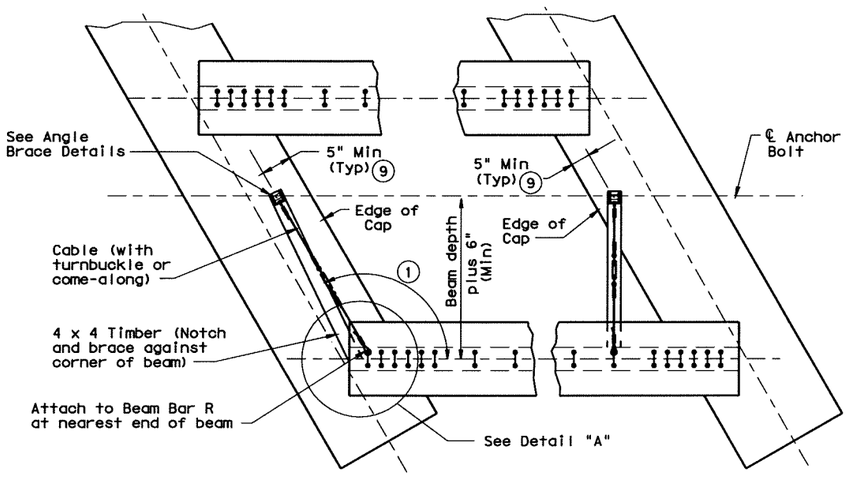
ERECTION BRACING



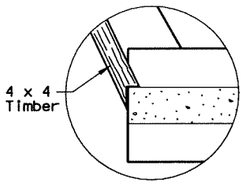
SLAB PLACEMENT BRACING



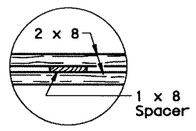
HORIZONTAL BRACING DETAILS (6)



PLAN



DETAIL "A"



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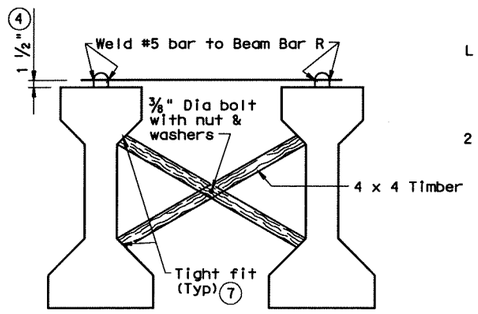
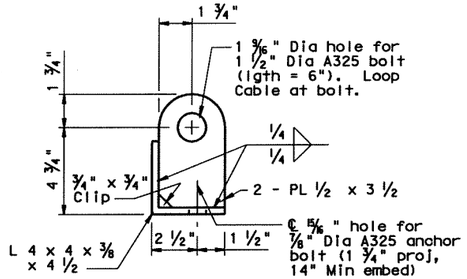
DETAIL "B"



CROSS BRACING DETAILS (6)



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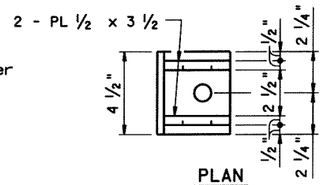
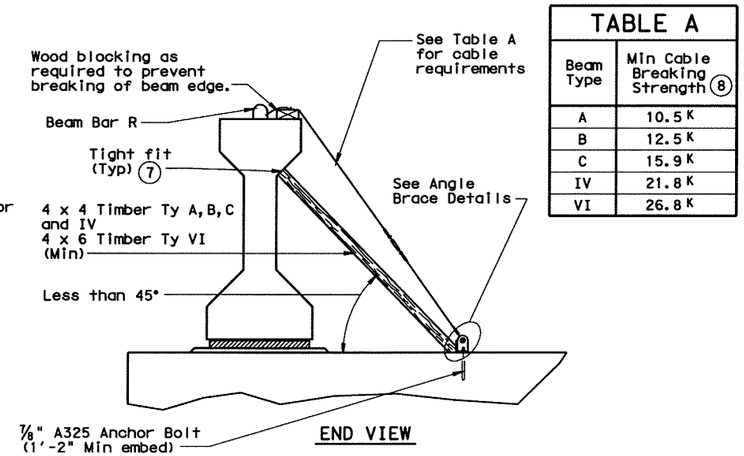


PLAN

ANGLE BRACE DETAILS



END VIEW

DIAGONAL BRACING DETAILS (6)

(To be used on both ends of the first beam erected in the span.)

TABLE A	
Beam Type	Min Cable Breaking Strength (8)
A	10.5 K
B	12.5 K
C	15.9 K
IV	21.8 K
VI	26.8 K

HAULING & ERECTION:

The Contractor's attention is directed to the possible lateral instability of Type VI prestressed concrete beams, especially during hauling and erection. The use of the following methods of improving the stability of these beams is encouraged: Location of lifting devices at the maximum practical distance from the beam ends; use of external lateral stiffening devices during hauling and erection; lifting with vertical lines using two machines and care in handling to minimize inertial and impact forces. External adjustable stiffening devices (hog rods) will be required for any Ty VI beam in excess of 120'.

ERECTION BRACING:

Erection bracing details are considered minimum for fulfilling the requirements of Specification Item 425 for bracing Types A, B, C, IV, and VI prestressed concrete beams regardless of location of structure.

Required erection bracing shall be placed immediately after erection of each beam and remain in place until additional bracing as required for slab placement is in place. This standard is needed in all cases to meet requirements for Slab Placement Bracing.

SLAB PLACEMENT BRACING:

The details for slab placement bracing are considered minimum for fulfilling the requirements of Specification Item 420.

Required slab placement bracing shall remain in place until slab concrete has attained a compressive strength of 3000 psi.

GENERAL NOTES:

Bracing details for closely spaced beams (as on ramps or railroad structures) are not included herein. Details for spans longer than 150' are not provided. The Contractor shall submit his proposed bracing details for such conditions to the Engineer for approval prior to erection.

Systems equal to or better than those shown may be used provided details of such systems are submitted to and approved by the Engineer prior to erection.

Use of these systems and/or details does not relieve the Contractor of the responsibility for the adequacy of the bracing and the safety of the structure.

Removal of bracing for short periods of time to align beams is permissible.

All turn-buckles, come-alongs, anchors and other connections shall be capable of developing the full strength of the cable shown hereon.

(1) If angle shown exceeds 120 degrees, move diagonal brace to other side of beam and place square to beam. This may prevent exterior beam from being erected first.

(2) Cross bracing must be placed between the first two beams erected, in exterior bays, and in every fourth bay. At the Contractor's option, remaining bays may have either cross-bracing or horizontal bracing.

(3) 15'-0" Max for Type A and B beams. 30'-0" Max for Type C, IV, and VI beams.

(4) Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to Beam Bars R.

(5) Clear distance between spacers must not exceed 3'. Nail together with 16d nails.

(6) Pressure treated landscape timbers can not be used.

(7) Use wedges as necessary to obtain tight fit. Nail wedges to timbers.

(8) All hardware used with cable must be able to develop the minimum breaking strength specified. Use thimbles at all loops in cable. Install cable clamps with saddles bearing against the live end and U-bolts bearing aginst the dead end.

(9) It is acceptable to tie anchor bolts to cap reinforcement.

Texas Department of Transportation
Bridge Division

MINIMUM ERECTION AND BRACING REQUIREMENTS
PRESTRESSED CONCRETE I-BMS (TYPE A, B, C, IV & VI)

MEBR(C)

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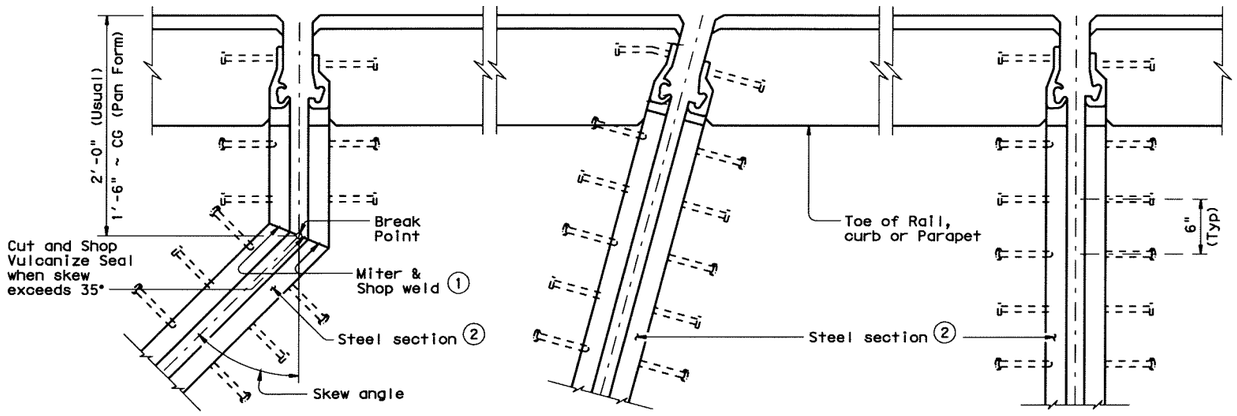


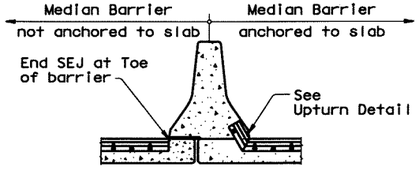
SHOWING SKEWS WITH SLAB BREAKBACKS

SHOWING SKEWS WITHOUT SLAB BREAKBACKS

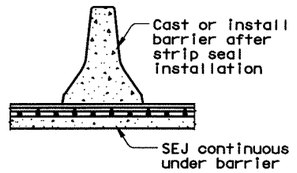
SHOWING WITHOUT SKEWS AND SLAB BREAKBACKS

PLANS OF END CONDITIONS

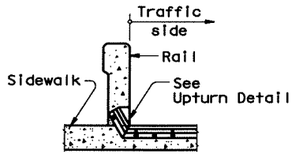
SHOWN WITH UPTURNS



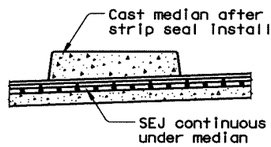
WITH OPEN DECK JT BELOW MEDIAN BARRIER



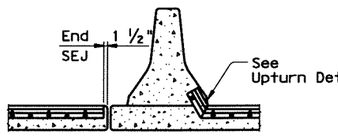
AT MEDIAN BARRIER



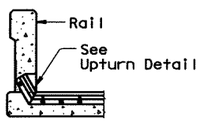
AT SIDEWALK BEHIND BRIDGE RAIL



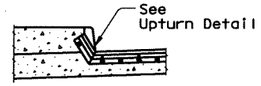
AT RAISED MEDIAN



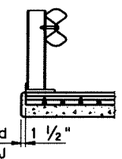
WITH OPEN DECK JT ADJACENT TO MEDIAN BARRIER



AT CONCRETE BRIDGE RAIL

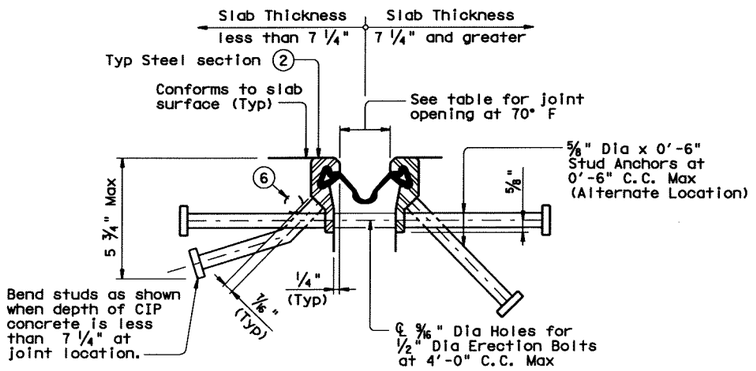


AT SIDEWALK



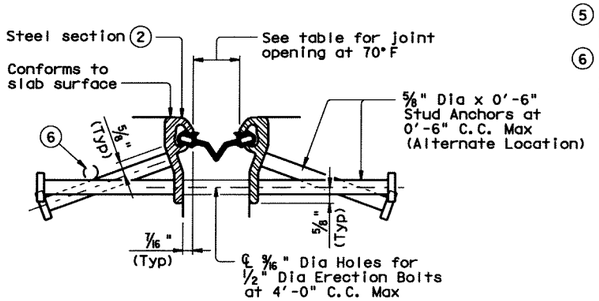
AT STEEL POST BRIDGE RAIL

TYPICAL SECTIONS (5)



WATSON BOWMAN ACME

Type R



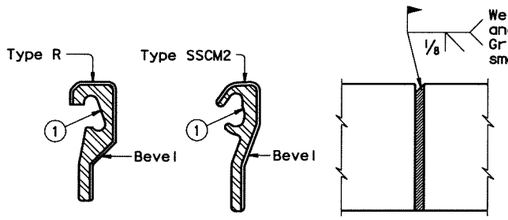
D S BROWN COMPANY

Type SSCM2

SECTIONS THRU SEALED EXPANSION JOINT

TABLE OF SEALED EXPANSION JOINT INFORMATION

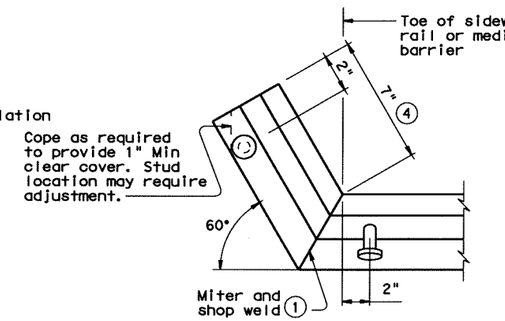
MANUFACTURER	STEEL SECTION (2)	NEOPRENE STRIP SEAL			
		4" JOINT		5" JOINT	
		Seal Type	Joint Opening (3)	Seal Type	Joint Opening (3)
D.S. Brown	Type SSCM2	A2R-400	1 ¾"	A2R-XTRA	2"
Watson Bowman Acme	Type R	SE-400	1 ¾"	SE-500	2"



WELD LIMITS | WELD LIMITS | REAR VIEW

BEVEL AT FIELD SPLICE

Weld preparation shall be done by shop



UPTURN DETAIL

(1) Remove all burrs which will be in contact with seal prior to making splice.

(2) Shape of steel section shown is typical. Variations in sections must be approved by the Engineer.

(3) These openings are also the recommended minimum installation openings.

(4) Reduce for sidewalk or parapet heights less than 6".

(5) Other conditions affecting the joint profile should be noted elsewhere.

(6) Transverse bars in conflict with SEJ studs in either the bridge slab or approach slab shall be moved to rest at the junction of the studs.

FABRICATION NOTES:

Corresponding sections of Sealed Exp Jts shall be temporarily shop assembled, checked for fit, and match marked for shipment.

Erection holes shall be punched so as to line up when Sealed Exp Jts are in their final position.

Stud anchors shall be electric arc end-welded with complete fusion.

The neoprene seal shall be continuous and included in the price bid for Sealed Exp Jt.

Steel sections shall be shipped in convenient lengths of 24'-0" Max and 10'-0" Min unless otherwise necessary for stage construction or widenings. One shop splice will be permitted in each shipping length provided no piece is less than 2'-0" in length and sufficient studs are added to limit the stud to shop or field splice distance to 2" Min and 4" Max.

Shop and field splices shall be made by butt welding with areas in contact with seal to be ground smooth.

Paint portions of steel sections not in contact with concrete with the primer specified for System II paint.

Shop drawings for the fabrication of Sealed Expansion Joints will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

An SEJ Layout which identifies location of each steel section shall be developed by the fabricator. Permanently mark each steel section in accordance with the SEJ Layout. A copy of the SEJ layout is to be provided to the Engineer.

CONSTRUCTION NOTES:

The Contractor shall arrange for securing the Sealed Exp Jt in position, and placing to the proper grade and alignment by welding braces to adjacent reinf steel, to prestressed beam stirrups, or to anchors cast in concrete diaphragms. Cost of temporary bracing is to be included in the price bid for Sealed Exp Jt.

After bracing and welding the steel section, the erection bolts and spacers shall be removed and erection holes sealed before placing slab concrete.

Seal cavity shall be cleaned and prepared for seal installation as per the manufacturer's suggested installation procedures.

GENERAL NOTES:

Sealed Exp Jts shall be provided in the size and at locations shown on plans.

Minimum slab and overhang thickness required for the use of SEJ-A is 6 ½".

Texas Department of Transportation
Bridge Division

SEALED EXPANSION JOINT TYPE A WITHOUT OVERLAY

SEJ-A

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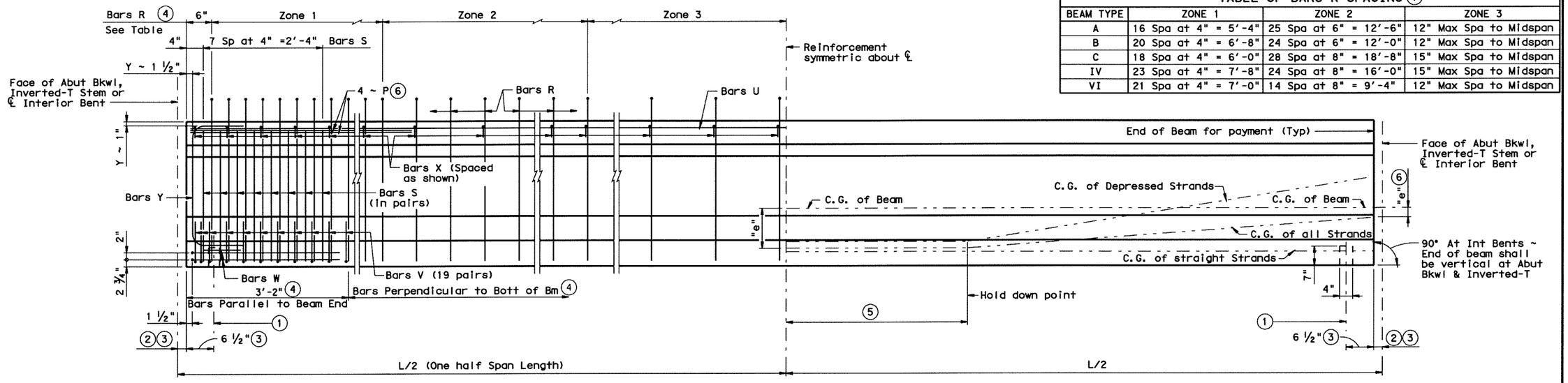
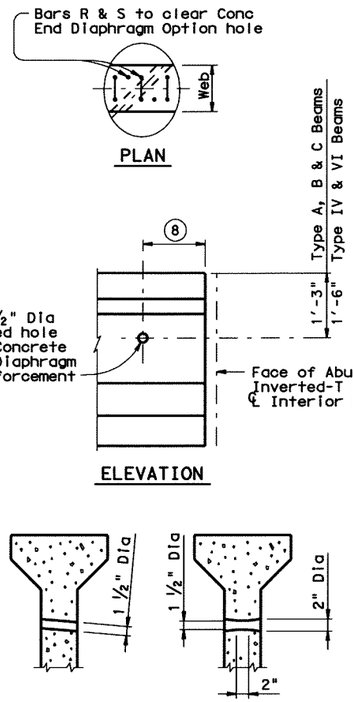
TABLE OF BARS R SPACING (7)			
BEAM TYPE	ZONE 1	ZONE 2	ZONE 3
A	16 Spa at 4" = 5'-4"	25 Spa at 6" = 12'-6"	12" Max Spa to Midspan
B	20 Spa at 4" = 6'-8"	24 Spa at 6" = 12'-0"	12" Max Spa to Midspan
C	18 Spa at 4" = 6'-0"	28 Spa at 8" = 18'-8"	15" Max Spa to Midspan
IV	23 Spa at 4" = 7'-8"	24 Spa at 8" = 16'-0"	15" Max Spa to Midspan
VI	21 Spa at 4" = 7'-0"	14 Spa at 8" = 9'-4"	12" Max Spa to Midspan



BEAM ELEVATION

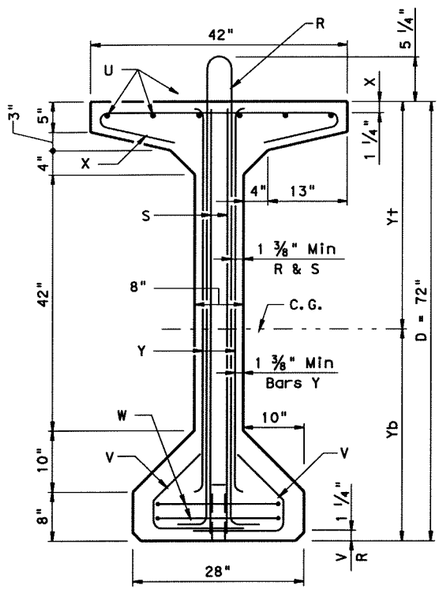


Form holes parallel to roadway slope if superelevation is greater than 0.03'/Ft for 1 ½" Dia holes or 0.06'/Ft for 2" Dia holes.

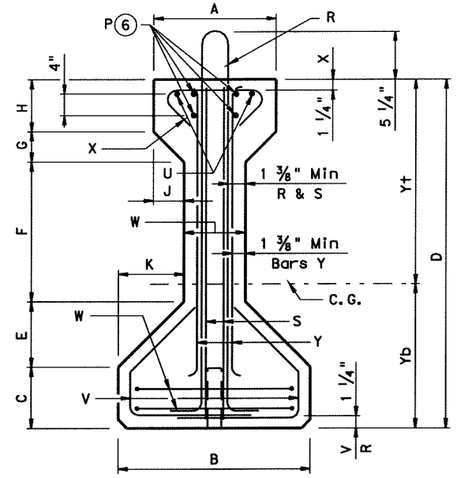
FORMED HOLE SECTIONS

CONCRETE END DIAPHRAGM OPTION HOLE

(Diaphragm holes for lifting purposes will not be permitted.)
Only required when span details require End Diaphragms.



TYPE VI BEAM



TYPES A, B, C & IV BEAMS

TABLE OF BEAM DIMENSIONS AND SECTION PROPERTIES																
BEAM TYPE	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	K in.	W in.	Yt in.	Yb in.	AREA in.²	I in.⁴	Weight plf
A	12	16	5	28	5	11	3	4	3	5	6	15.39	12.61	275.4	22,658	287
B	12	18	6	34	5 ¾	14	2 ¾	5 ½	2 ¾	5 ¾	6 ½	19.07	14.93	360.3	43,177	375
C	14	22	7	40	7 ½	16	3 ½	6	3 ½	7 ½	7	22.91	17.09	494.9	82,602	516
IV	20	26	8	54	9	23	6	8	6	9	8	29.25	24.75	788.4	260,403	821
VI	See section for beam dimensions											35.60	36.40	1,084.4	732,586	1,130

(1) ℄ 4" x 1 ½" Vertical Slotted Hole at Doweled Beam end [labeled (D) on Bridge Layout]. Required for Outside Beams only or as shown on substructure details. Anchorage holes may be tapered (4 ¾" x 1 ⅝") at base. If holes are formed with sheet metal, forms may be left in place.

(2) 3" ~ Inverted-T Stem, 2" ~ Abutment Bkwl and Interior Bents.

(3) Measured along ℄ Beam at Interior Bents; perpendicular to Abutment Bkwl or Inverted-T Stem.

(4) Spacing shown shall not be exceeded at either top or bottom of beam.

(5) 5'-0" Min or L/20 (- 0 ; + 2'-0") Max.

(6) Bars P (#6 x 10'-0") are only required for Type IV Beams when "e" at beam ends exceeds 14.0". At the fabricator's option, bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars U.

(7) Short beams may not include all of Zone 2 and none of Zone 3 reinforcing.

(8) [(1'-2 ½" ÷ Cos Skew Angle) - 2"] at Interior Bents.
[1'-0 ½" ÷ Cos Skew Angle] at Abutment Bents and Inverted-T Bents.
Measured along beam centerline. Skew Angle = 90° - Beam Angle.

GENERAL NOTES:
Designed in accordance with AASHTO LRFD Specifications.
All concrete shall be Class H.
Bottom corners of all beam flanges and outside corners of exterior beam ends shall be chamfered ¾" or rounded to a ¾" radius.
All reinforcing bars for beams shall be Grade 60.
An equal area of deformed Welded Wire Reinforcement (WWR) (ASTM A497) may be substituted for Bars R, V, S or X.
It is permissible for bars or strands to come in contact with materials used in forming anchor holes.

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PRESTRESSED CONCRETE I-BEAM DETAILS

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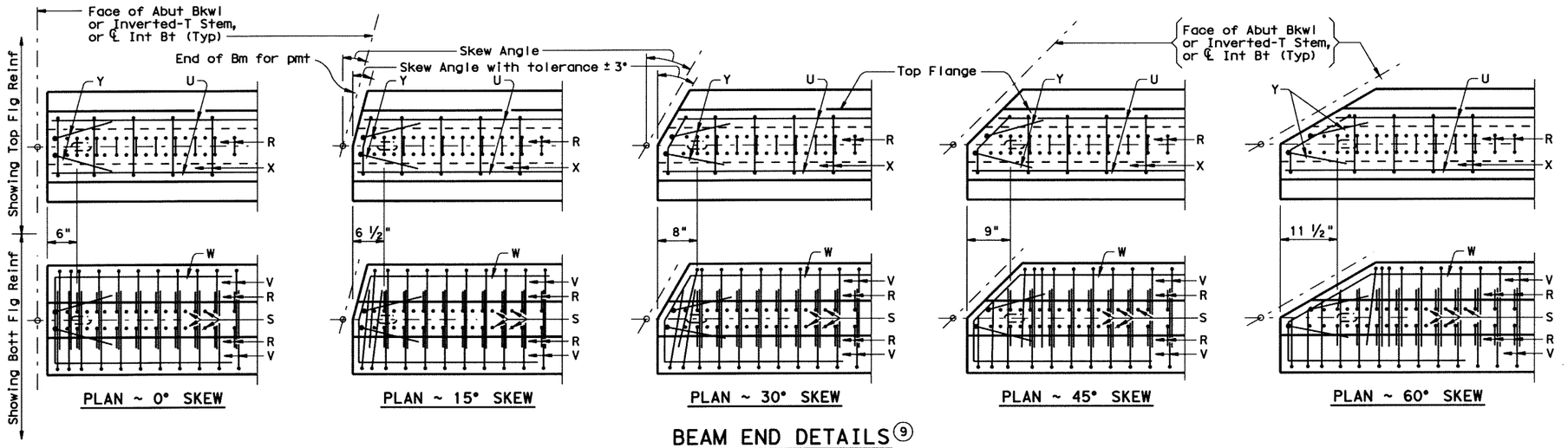
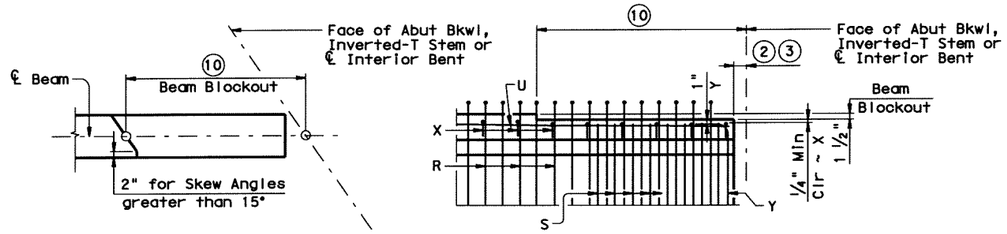
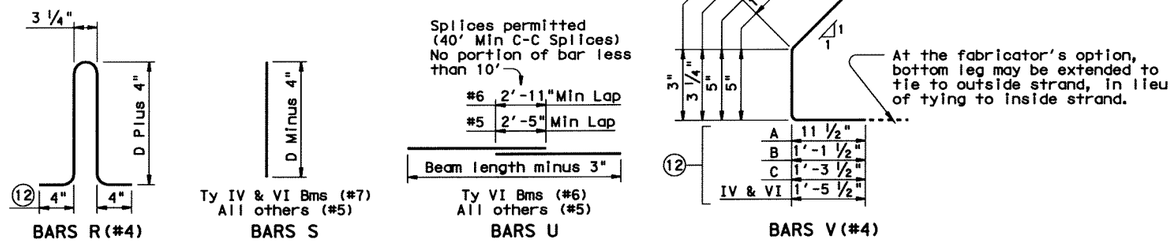
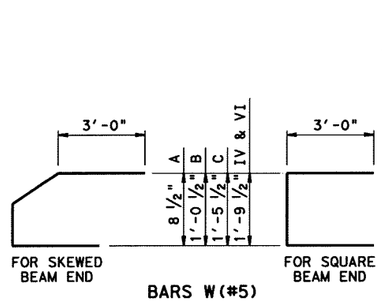


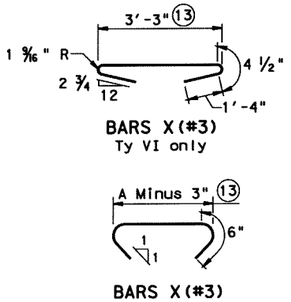
BEAM END DETAILS (9)

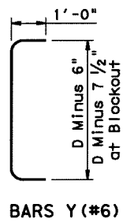


BEAM BLOCKOUT DETAIL FOR THICKENED SLAB END (11)









(2) 3" ~ Inverted-T Stem, 2" ~ Abutment Bkwl and Interior Bents.

(3) Measured along ℄ Beam at Interior Bents; perpendicular to Abutment Bkwl or Inverted-T Stem.

(9) Reinforcing patterns shown are to be used as guides in determining the reinforcement for the actual beam type (Type C shown) and the skew angle used. In general, the distance between consecutive Bars R and/or S shall be 2". This spacing may be varied in order to avoid Dowel Holes or Concrete End Diaphragm Option holes. However, a minimum cross sectional area equivalent to that of Bars R & S in a square beam end shall be provided.

(10) 4'-0" ÷ Cos Skew Angle. Skew Angle = 90° - Beam Angle.

(11) Beam blockout required only when beam haunch at ℄ Brg is less than 2". Haunch = top of slab to top of beam dimension minus slab thickness.

(12) Bars may be cut or bent at skewed end as required.

(13) Increase for first bar at skewed end.

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PRESTRESSED CONCRETE I-BEAM DETAILS

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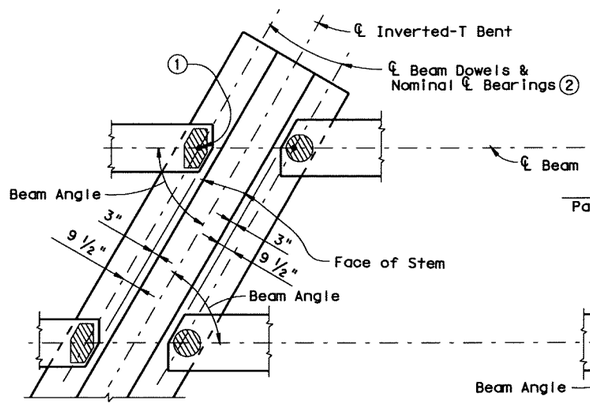
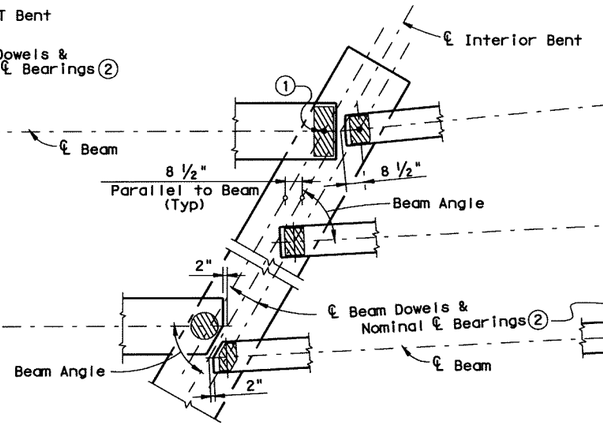
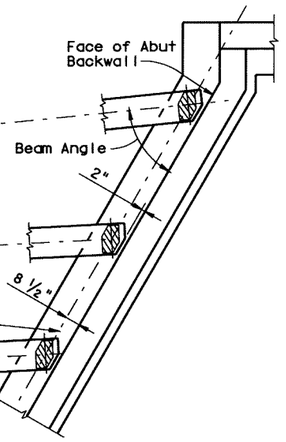


AT INVERTED-T BENT
WITH SKEW

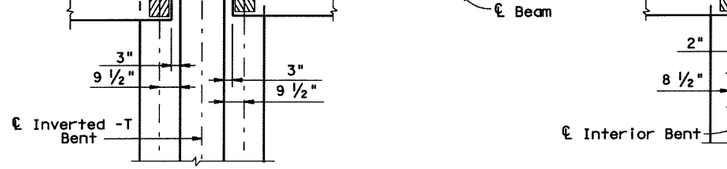


AT CONVENTIONAL
INTERIOR BENT
WITH SKEW

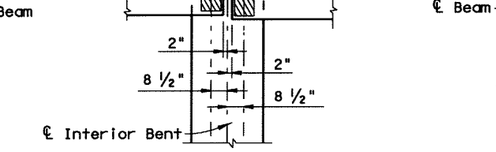


AT ABUTMENT (3)
WITH SKEW

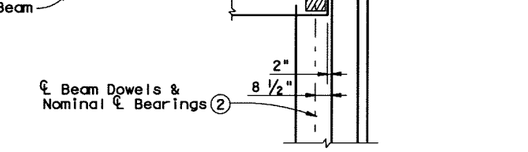
1. Dowel at doweled beam end [labeled (D) on Bridge Layout]. Required for outside beams only or as shown on substructure details.
2. For purposes of computing Bearing Seat Elevations, nominal centerline of bearing shall be defined as shown. The actual center of bearing pad may vary from this line.
3. For Transition Bents with backwall, beams and elastomeric bearings shall receive the same treatment as shown for Abutments.
4. When angle exceeds 0°, one or both beam ends shall be clipped to maintain the clearance between beam ends as shown in view.
5. See Elastomeric Bearing Data Table for Bearing size. Corner clips in Table not applicable for this situation. Table reflects beam conflicts of this type on radial bents only.



AT INVERTED-T BENT



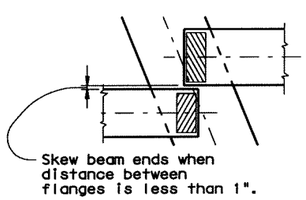
AT CONVENTIONAL
INTERIOR BENT

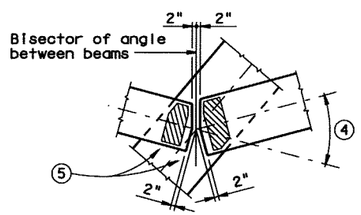


AT ABUTMENT

BEAM END DETAILS

GENERAL NOTES:
These details accommodate skew angles up to 60°.
Shop drawings for approval are required.
A bearing layout which identifies location and orientation of all bearings shall be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. A copy of the bearing layout is to be provided to the Engineer.
Cost of furnishing and installing elastomeric bearings shall be included in unit price bid for "Prestressed Concrete Beams".





BEAM CONFLICT DETAILS

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ELASTOMERIC BEARING AND BEAM END DETAILS

PRESTR CONCRETE I-BEAMS

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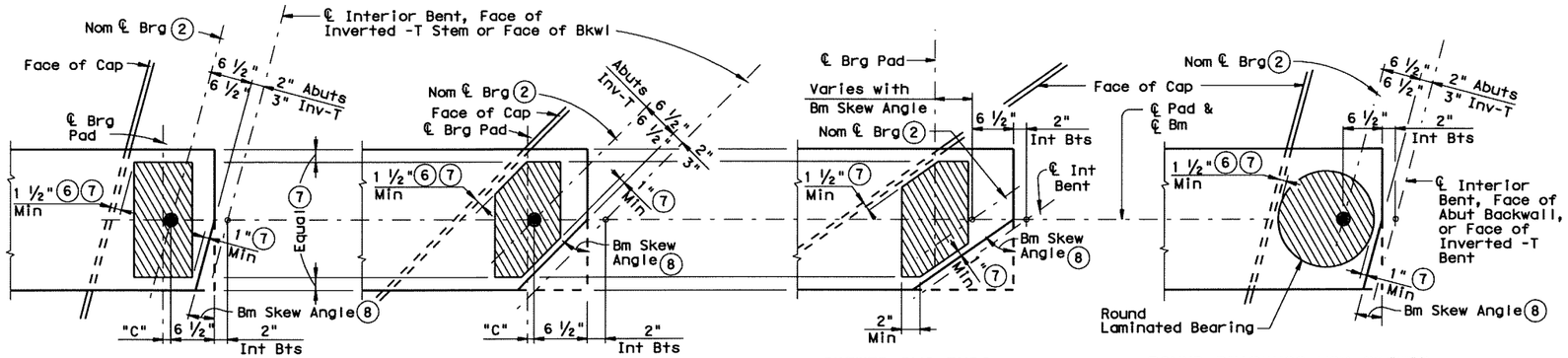
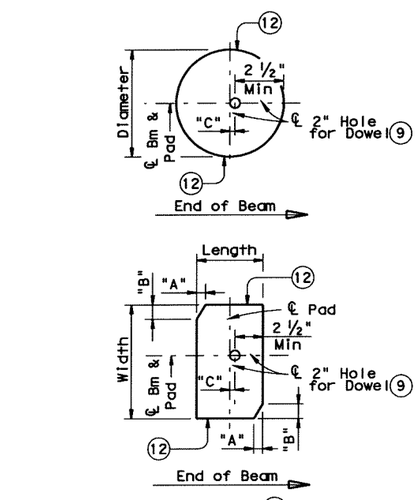


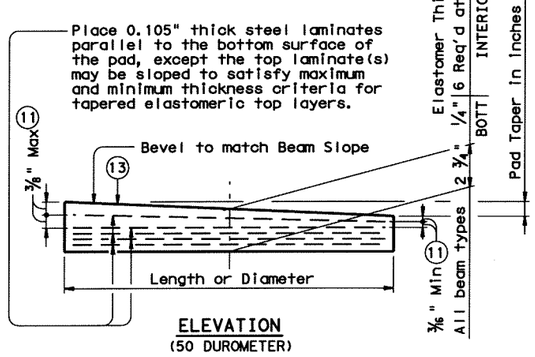
SKEWED BMS ENDS AT CONV INT BENTS

ROUND BEARINGS FOR SKEWED TYPE IV & VI BEAMS ONLY

ELASTOMERIC BEARING PLACEMENT DIAGRAMS



PLANS (10)



ELEVATION
(50 DUROMETER)

LAMINATED ELASTOMERIC BEARING DETAILS (14)

(2) For purposes of computing Bearing Seat Elevations, nominal centerline of bearing shall be defined as shown. The actual center of bearing pad may vary from this line.

(6) 3" for Inverted -T.

(7) Factors controlling laminated bearing placement if no dowel is present. Place ℄ Pad as near Nominal ℄ Brg as possible between limits shown.

(8) Complement of Beam Angle except at some conflicting beams.

(9) Provide 2" Dia Hole (always on beam end side of centerline pad) only at locations required. See substructure details for location. The Dowel offset "C" dimension may be 0" when the bridge is square.

(10) See Elastomeric Bearing Data Table for dimensions.

(11) Maximum and minimum layer thicknesses shown are for elastomer only, on tapered layers.

(12) Locate Permanent Mark here.

(13) BEARING TYPE shall be indicated on all pads. For tapered pads, BEARING TYPE shall be located on the high side. The Fabricator shall include the value of "N" (amount of taper in 1/8" increments) in this mark.
Examples: N=0, (for 0" taper)
N=1, (for 1/8" taper)
N=2, (for 1/4" taper)
(etc.)
Fabricated pad top surface slope shall not vary from plan beam slope by more than $\left(\frac{0.0625"}{\text{Length or Dia}}\right)$ IN/IN.

(14) The use of Polyisoprene (natural rubber), for the manufacture of bearing pads, is not permitted.

(15) Substructure dimensions must satisfy the minimums provided to accommodate the elastomeric bearings shown on this standard.

(16) Interpolate "C" values for angles not shown between 30° & 40°, 40° & 50°, 50° & 60°.

TABLE OF MINIMUM SUBSTRUCTURE DIMENSIONS (15)

Beam Type	Abutments: Face of Bkwl to Face of Cap	Int Bents: Overall Cap Width	Inv-T Bents: Corbel Width
A, B, & C	1'-4 ½"	2'-9"	1'-8"
IV	1'-7 ½"	3'-3"	1'-10"
VI	1'-10 ½"	3'-9"	2'-0"

ELASTOMERIC BEARING DATA TABLE

Bent Type		Beam Type	Brg Type (13)	Beam End Skew Angle Range	Pad Size Lgth x Wdth	Pad Clip Dimensions "A"	Pad Clip Dimensions "B"	"C" (9)
AT ABUTMENTS, INVERTED - T & TRANSITION BENTS WITH BACKWALLS		A	A-1-"N"	0° thru 15°	7" x 12"	—	—	—
		A	A-2-"N"	15° + thru 45°	7" x 12"	1 ¼"	1 ¼"	¾"
		A	A-3-"N"	45° + thru 60°	7" x 12"	1 ½"	2"	1"
		B	B-1-"N"	0° thru 15°	7" x 14"	—	—	—
		B	B-2-"N"	15° + thru 45°	7" x 14"	2 ¼"	2 ¼"	¾"
		B	B-3-"N"	45° + thru 60°	7" x 14"	3 ¾"	2 ¼"	1"
		C	C-1-"N"	0° thru 15°	7" x 16"	—	—	—
		C	C-2-"N"	15° + thru 45°	7" x 16"	3 ¼"	3 ¼"	¾"
		C	C-3-"N"	45° + thru 60°	8" x 16"	6"	4"	1"
		IV	IV-1-"N"	0° thru 15°	7" x 22"	—	—	1"
		IV	IV-2-"N"	15° + thru 29°	7" x 22"	2 ½"	4 ½"	1"
		IV	IV-3-"N"	30° (16)	15" Dia	—	—	2 ⅜"
		IV	IV-4-"N"	40° (16)	15" Dia	—	—	2 ⅝"
		IV	IV-5-"N"	50° (16)	15" Dia	—	—	3 ⅛"
		IV	IV-6-"N"	60° (16)	15" Dia	—	—	4"
		VI	VI-1-"N"	0° thru 15°	9" x 24"	—	—	2"
		VI	VI-2-"N"	15° + thru 29°	9" x 24"	3 ¼"	5 ½"	2"
		VI	VI-3-"N"	30° (16)	17" Dia	—	—	3 ¾"
		VI	VI-4-"N"	40° (16)	17" Dia	—	—	4"
		VI	VI-5-"N"	50° (16)	17" Dia	—	—	5 ½"
		VI	VI-6-"N"	60° (16)	17" Dia	—	—	6"
AT CONVENTIONAL INTERIOR BENTS	Sq Bm Ends	A	A-4-"N"	Not Applicable	7" x 12"	—	—	—
		B	B-4-"N"	Not Applicable	7" x 14"	—	—	—
		C	C-4-"N"	Not Applicable	7" x 16"	—	—	—
		IV	IV-7-"N"	Not Applicable	7" x 22"	—	—	—
		VI	VI-7-"N"	Not Applicable	9" x 24"	—	—	—
	Skewed Bm Ends	A	A-5-"N"	0° thru 15°	7" x 12"	—	—	—
		A	A-6-"N"	15° + thru 60°	7" x 12"	1"	1"	—
		B	B-5-"N"	0° thru 15°	7" x 14"	—	—	—
		B	B-6-"N"	15° + thru 45°	7" x 14"	1 ¾"	1 ¾"	—
		B	B-7-"N"	45° + thru 60°	7" x 14"	2 ¾"	1 ¾"	—
		C	C-5-"N"	0° thru 15°	7" x 16"	—	—	½"
		C	C-6-"N"	15° + thru 45°	7" x 16"	2 ¾"	2 ¾"	—
		C	C-7-"N"	45° + thru 60°	7" x 16"	4 ½"	2 ¾"	—
		IV	IV-8-"N"	0° thru 15°	7" x 22"	—	—	1"
		IV	IV-9-"N"	15° + thru 29°	7" x 22"	1 ¼"	2"	—
		IV	IV-10-"N"	29° + thru 60°	15" Dia	—	—	—
		VI	VI-8-"N"	0° thru 15°	9" x 24"	1"	3 ¾"	1 ½"
		VI	VI-9-"N"	15° + thru 29°	9" x 24"	1"	2"	—
		VI	VI-10-"N"	29° + thru 60°	17" Dia	—	—	—

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Bridge Division

ELASTOMERIC BEARING AND BEAM END DETAILS

PRESTR CONCRETE I-BEAMS

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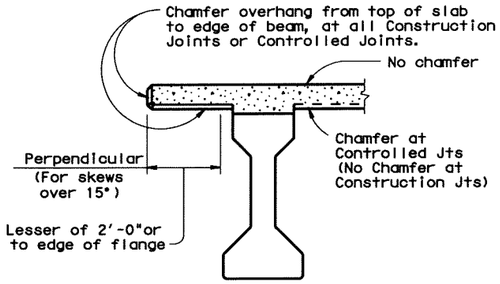
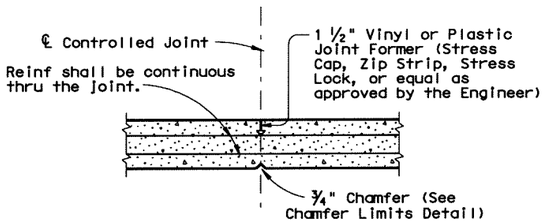
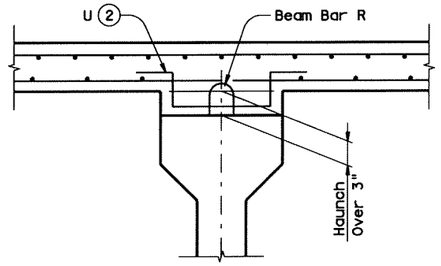


CHAMFER LIMITS DETAIL (1)

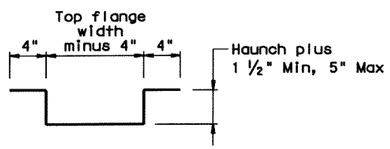


CONTROLLED JOINT DETAIL

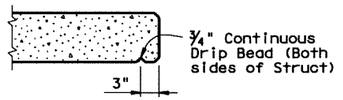
(Saw-cutting will not be allowed)



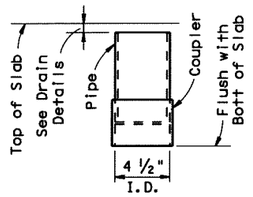
HAUNCH REINFORCING DETAIL



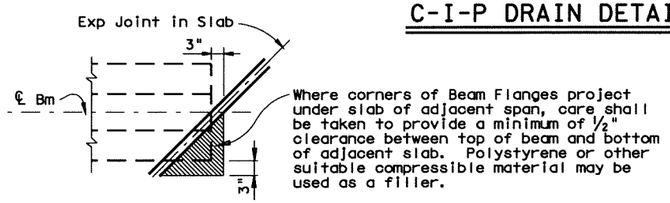
BARS U (#4)



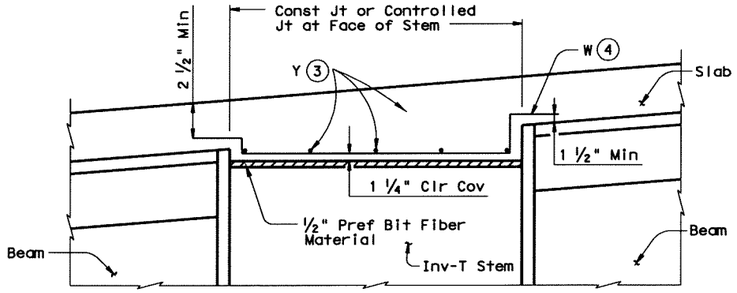
DRIP BEAD DETAIL



C-I-P DRAIN DETAIL (8)

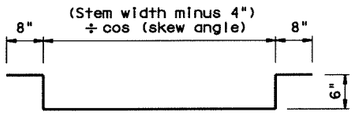


TREATMENT AT BEAM END FOR SKEWED SPANS

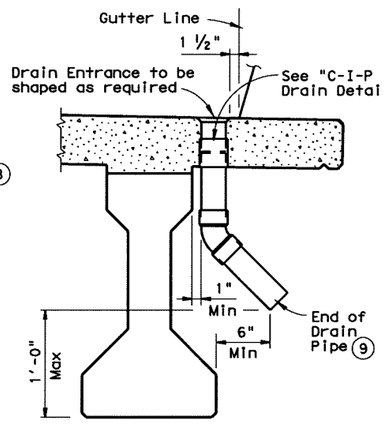


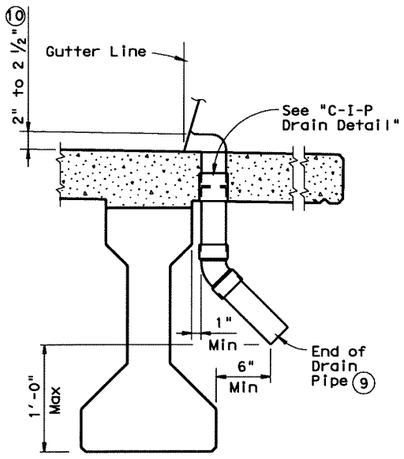
REINFORCEMENT OVER INV-T BENTS

Slab reinforcement not shown for clarity.

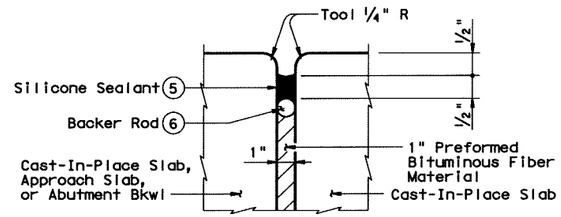


BARS W (#4)





DRAIN DETAILS (11)



TYPE A JOINT DETAIL (7)

(1) See Span details for type of joint and joint locations.

(2) Space Bars U with Beam Bars R in all areas where measured haunch exceeds 3".

(3) Space Bars Y (#4) at 12" Max. Use 2" end cover. Number of Bars Y must satisfy spacing limit. Place parallel to bent.

(4) Space Bars W at 12" Max (3" from end of cap). Tilt if necessary to maintain cover requirements. Place parallel to longitudinal slab reinforcement.

(5) Class 7 silicone sealant that conforms to DMS-6310. Install when ambient temperature is between 55°F and 85°F and rising. Engineer to determine allowable hours for sealant application.

(6) 1 ¼" backer rod must be compatible with joint sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.

(7) The maximum distance between Type A expansion joints is 100'. See Bridge Layout for location of joints. Type A joints will not be paid for directly, but shall be considered subsidiary to Item 420, "Concrete Structures".

(8) Roughen outside of PVC with coarse rasp or equal to ensure bond with cast-in-place concrete.

(9) No water shall be discharged onto girders.

(10) Drain Entrance formed in Rail or Sidewalk.

(11) All drain pipe and fittings to be 4" diameter (Sch 40) PVC. See Item 481 "PVC Pipe for Drains" for pipe, connections and solvent welding. Bend reinforcing steel to clear PVC 1". Drain length and location shall be as directed by the Engineer. No drains shall be permitted over roadways or railways, or within 10'-0" of Bent Caps. Degrease outside of exposed PVC, apply acrylic water base primer, then coat with same surface finishing material as used for outside girder face. Variations of the above designs, as required for the type of rail used and its location on the structure, shall be installed with the approval and direction of the Engineer.

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Specifications.

All items (reinforcing steel, drains, joint formers, etc.) shown on this sheet shall be considered subsidiary to other bid items.

LEVELS DISPLAYED
ACC:
1

Texas Department of Transportation
Bridge Division

MISCELLANEOUS SLAB DETAILS
PRESTR CONCRETE I-BEAMS

IBMS

FILE: ibmsstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		603
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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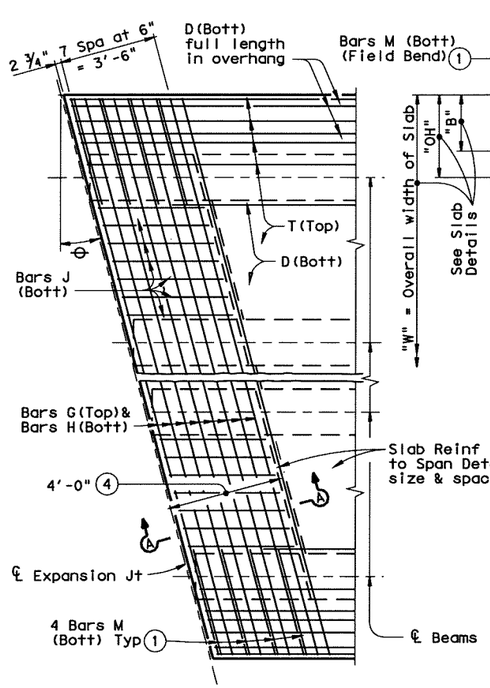
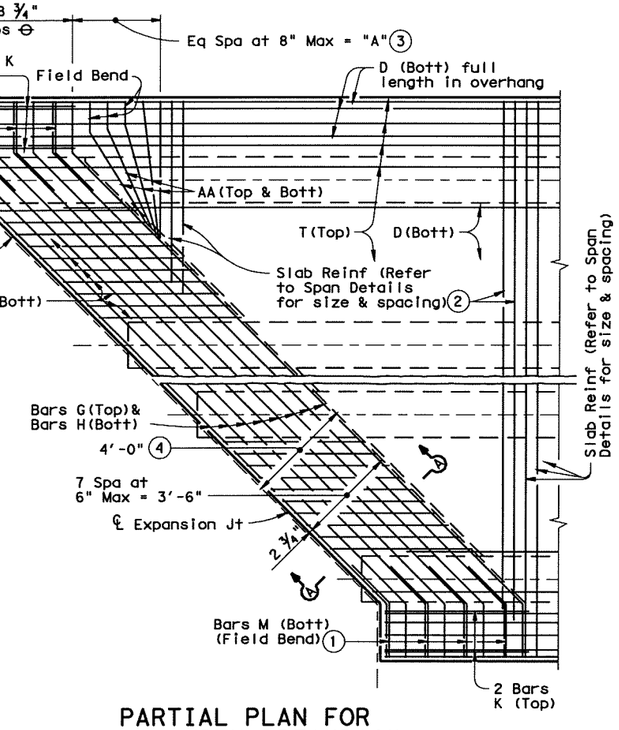
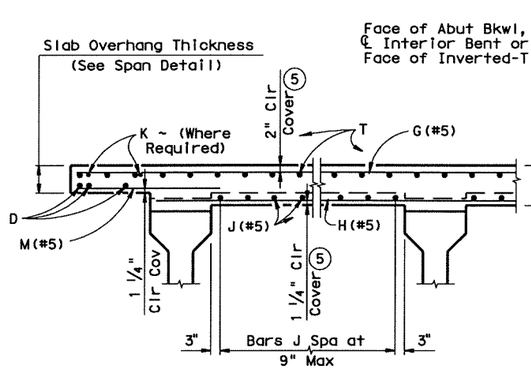
LEVELS DISPLAYED



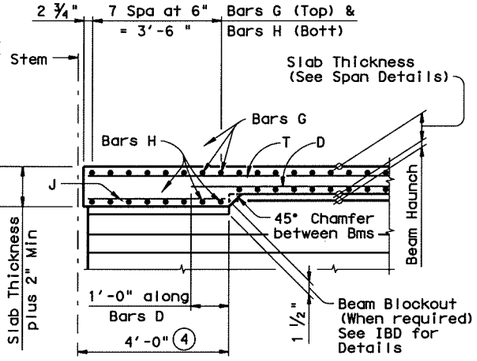
PARTIAL PLAN FOR SLABS WITHOUT BREAKBACK



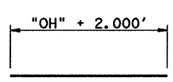
PARTIAL PLAN FOR SLABS WITH BREAKBACK



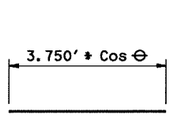
TYPICAL TRANSVERSE SECTION



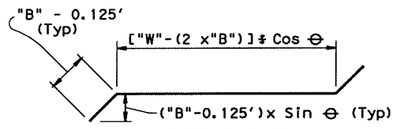
SECTION A-A



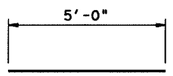
BARS AA (#5)



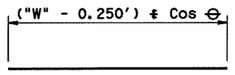
BARS J (#5)



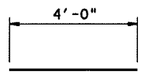
BARS G (#5)
(For Slabs With Breakbacks)



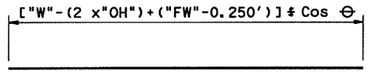
BARS K (#5)



BARS G (#5)
(For Slabs Without Breakbacks)



BARS M (#5)



BARS H (#5)

(1) 1' Max Spacing measured along slab edge.

(2) End the top transverse reinforcement steel at inside Bar G. End the bottom transverse reinforcement steel 1'-0" beyond inside Bar G.

(3) "A"= ("OH" + 2.125' + $\frac{0.052'}{\text{Sin} \ominus}$ -"B") x Tan ⊖

(4) Thickened Slab End dimensioned perpendicular to Face of Bkwl, Centerline Interior Bent or Face of Inverted-T Stem.

(5) Clear Cover shall be as indicated unless otherwise shown on Span Details.

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

These details are to be used in conjunction with the Span Details and Standard PCP (if prestressed concrete panels are used).

All reinforcing bars shall be Grade 60 steel.

Unless otherwise shown or noted hereon, all Span Details remain unchanged.

If slab reinforcing steel is shown on the Slab Details to be epoxy coated, then Bars AA, G, K, H, J and M shall be epoxy coated.

Bar laps, where required, shall be as follows:

Uncoated ~ #4 = 1'-5"
~ #5 = 1'-9"
Epoxy Coated ~ #4 = 2'-1"
~ #5 = 2'-7"

HL93 LOADING

Texas Department of Transportation
Bridge Division

THICKENED SLAB END DETAILS
PRESTR CONC I-BEAM SPANS

IBTS

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©TxDOT January 2005		DISTRICT	FEDERAL AID PROJECT				SHEET
REVISIONS		DAL	(SEE TITLE SHEET)				604
		COUNTY			CONTROL	SECT	JOB	HIGHWAY
		ROCKWALL			0451	01	032	SH205

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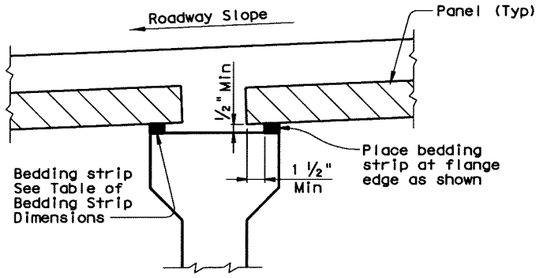
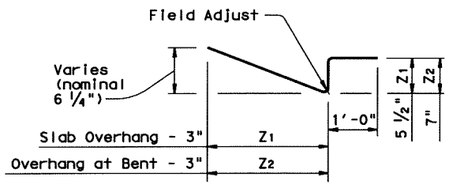


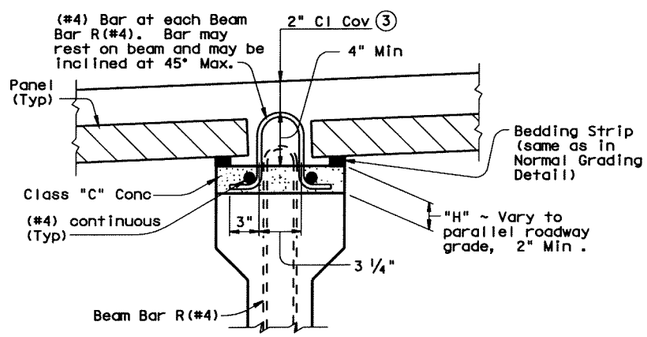
NORMAL GRADING DETAIL (1)

Showing Prestressed Concrete I-Beams.
(Other Beam Types Similar)

TABLE OF BEDDING STRIP DIMENSIONS		
WIDTH	HEIGHT (2)	
	Min	Max
1" (Min)	½"	2"
1 ¼"	½"	2 ½"
1 ½"	½"	3"
1 ¾"	½"	3 ½"
2" (Max)	½"	4"

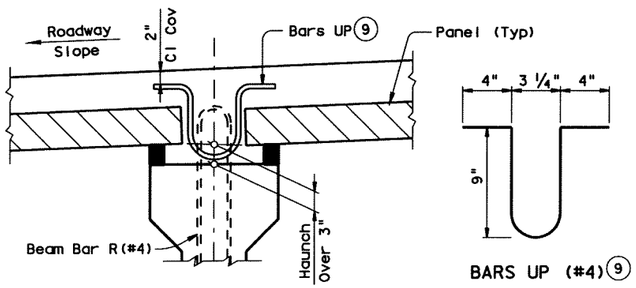


BARS Z (#4) (7)



SPECIAL GRADING DETAILS FOR CONCRETE BEAMS (4)

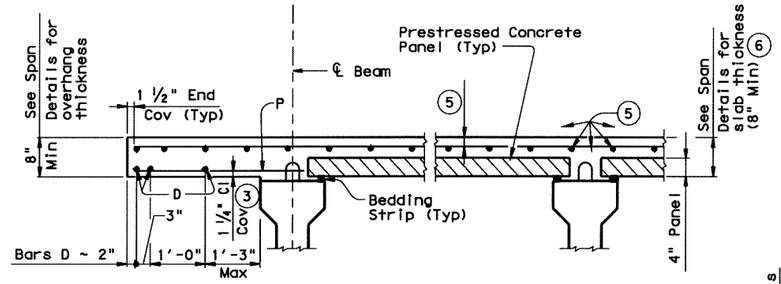
Showing Prestressed Concrete I-Beams.
(U-Beams Similar)



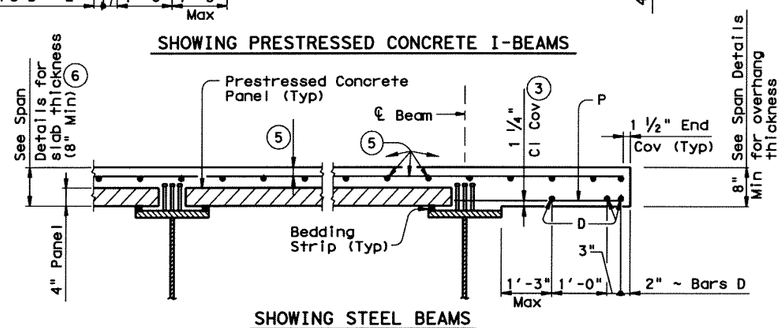
HAUNCH REINFORCING DETAIL

Showing Prestressed Concrete I-Beams.
(Other Beam Types Similar)

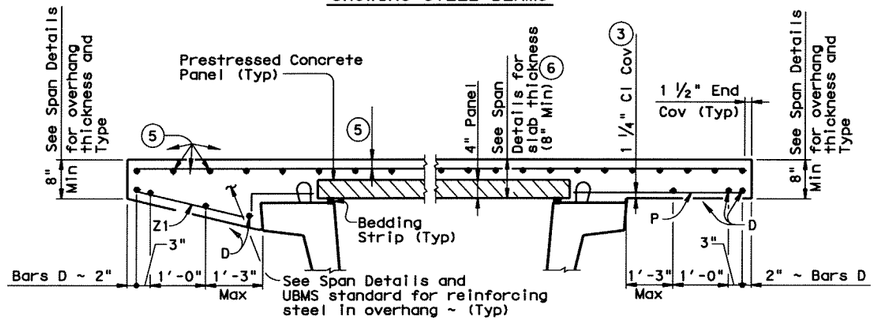
BARS UP (#4) (9)



SHOWING PRESTRESSED CONCRETE I-BEAMS



SHOWING STEEL BEAMS



SHOWING SLOPED OVERHANG WITH PRESTR CONC U-BEAMS

SHOWING NORMAL OVERHANG WITH PRESTR CONC U-BEAMS

TYPICAL PART TRANSVERSE SECTIONS

(1) To reduce the quantity of cast-in-place concrete, bedding strip thickness may be increased in ¼" increments. Bedding strips shall be comprised of one layer. Bedding strips shall be bonded to the beam with an adhesive compatible with bedding strip. The same thickness strip shall be used under any one panel edge and the maximum change in thickness between adjacent panels shall be ¼". Alternatively, bedding strips may be cut to grade. Panels may be supported by an alternate method, using a commercial product, if approved by the Engineer of Bridge Design, Bridge Division.

(2) Height must not exceed twice the width.

(3) Clear cover shall be as indicated unless otherwise shown on Span Details.

(4) For use where the distance between top of beam and finished grade can not be achieved within tolerances on cast-in-place slab thickness and thickness of bedding strips. Control dimensions shown in Normal Grading Detail still apply.

(5) See Span Details for top slab reinforcement and clear cover. Longitudinal top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(6) The actual thickness constructed may exceed the slab thickness shown on the Span Details but, at mid-span of beams, the extra thickness shall be no more than 2". Bearing Seat Elevations or finished grade may be adjusted.

(7) Bars Z1(#4) shall be field adjusted to match actual slope of slab overhangs. Width of slab overhang will vary along span with curved slab edges. Adjust Bar Z1(#4) dimensions to maintain proper cover. Bars Z2(#4) are located at Inv-T stems only.

(8) Max Spacing as listed unless otherwise shown.

(9) Space Bars UP(#4) with Beam Bars R(#4) in all areas where measured haunch exceeds 3".

TABLE OF REINFORCING STEEL (8)		
BAR	SIZE	Max Spa (in.)
A	#5	~
D	#5	9
E	#5	6
P	#4	18
UP	#4	~
Z	#4	18

CONSTRUCTION NOTES:

Erected panels must bear uniformly on bedding strips of extruded polystyrene placed along top flange edges.

If additional blocking is needed, special grading details for supporting the panels and extra reinforcing between beam and slab will be considered subsidiary to deck construction.

Care must be taken to ensure proper cleaning of construction debris and consolidation of concrete mortar under the edges of the panels. Bedding strips must be placed at beam flange edges so that adequate space is provided for the mortar to flow a minimum of 1 ½" under the panels as the slab concrete is placed.

To allow the proper amount of mortar to flow between beam and panel, the minimum vertical opening must be at least ½". Roadway cross-slope reduces the opening available for entry of the mortar. Bedding strips varying in thickness across the beam are therefore required.

All reinforcing steel in the cast-in-place slab must be Grade 60. See Table of Reinforcing Steel for size and spacing of reinforcement. Orientation of reinforcement (normal or skewed) must match that shown on the Span Details.

If the top and bottom layer of reinforcing steel is shown on the Span Details to be epoxy coated, then the A, D, E, P, & Z bars must be epoxy coated.

For clear span between U-beams less than or equal to 18", see Permissible Slab Forming Detail on Miscellaneous Slab Detail sheets, UBMS.

Bar Laps, where required, must be as follows:

Uncoated	~ #4 = 1'-5"
	~ #5 = 1'-9"
Epoxy Coated	~ #4 = 2'-1"
	~ #5 = 2'-7"

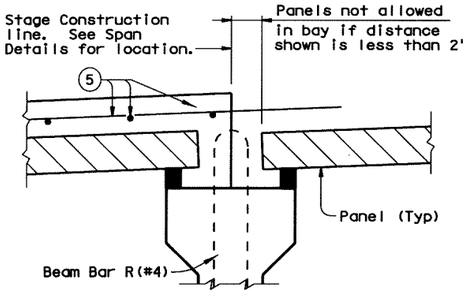
GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

Use of Prestressed Concrete Panels is not permitted for horizontally curved steel plate or tub girders. See Span Details for other possible restrictions on their use.

These details are to be used in conjunction with the Span Details and applicable Standard sheets.

Any additional reinforcement or concrete required on this standard is to be considered subsidiary to the bid Item "Reinforced Concrete Slab".



STAGE CONSTRUCTION LIMITATIONS ON PANELS

Showing Prestressed Concrete I-Beams.
(Other Beam Types Similar)

HL93 LOADING

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Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE PANELS

OPTIONAL DECK DETAILS FOR BEAM SPANS

PCP

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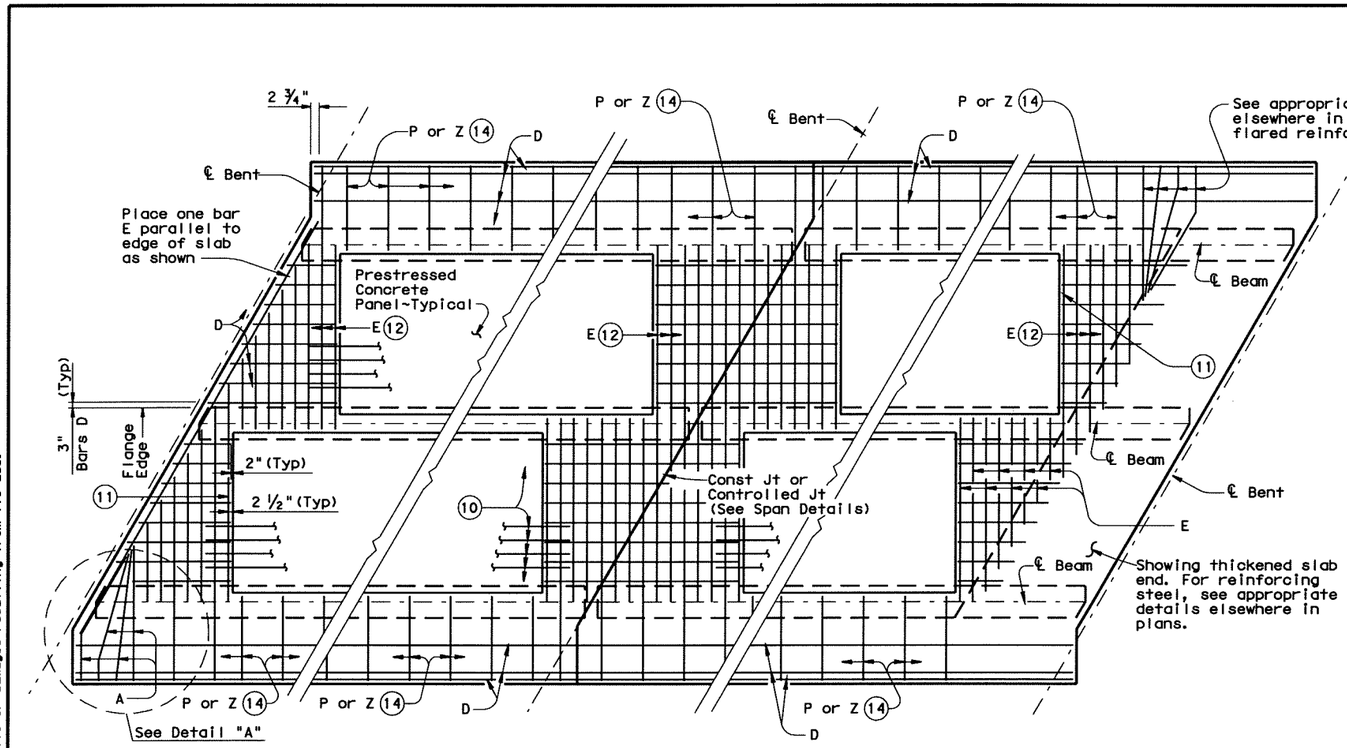


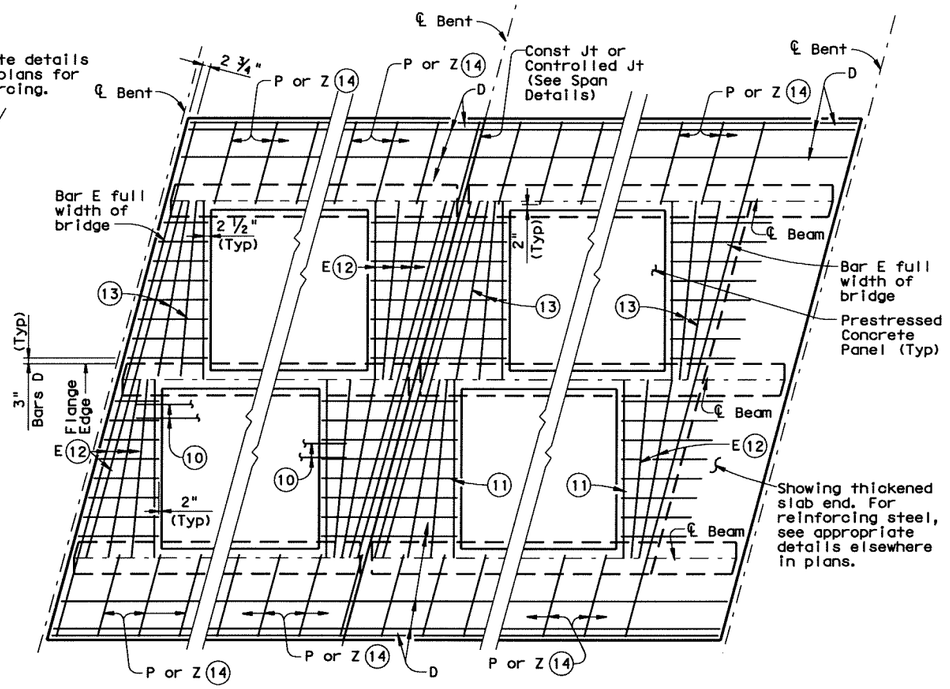
AT ALL SPAN ENDS UNLESS NOTED OTHERWISE

AT INTERIOR BENTS

AT THICKENED END SLABS ON STEEL OR CONCRETE I-BEAMS

PLAN OF SLABS WITH NORMAL REINFORCEMENT

(Showing bottom reinforcing steel. See Span Details for top reinforcement steel.)



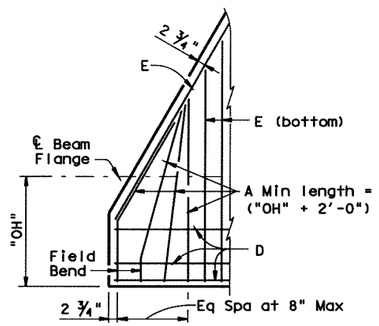
AT ALL SPAN ENDS UNLESS NOTED OTHERWISE

AT INTERIOR BENTS

AT THICKENED END SLABS ON STEEL OR CONCRETE I-BEAMS

PLAN OF SLABS WITH SKEWED REINFORCEMENT

(Showing bottom reinforcing steel. See Span Details for top reinforcement steel.)



DETAIL "A"

APPROXIMATE QUANTITIES FOR ONE SQUARE FOOT OF SLAB (15)	
Slab Thickness (In.)	Class S Concrete CY
8	0.0123
8 1/4	0.0131
8 1/2	0.0139

(For Contractor's information only)

(8) Max Spacing as listed unless otherwise shown.

(10) At connection with cast-in-place slab, extend longitudinal panel reinforcement 1'-0" (+2", -0") past panel end. Alternatively, provide (#3) x 2'-0" dowels at 6" Max spacing and extend dowels 1'-0" past panel end.

(11) Maintain one Bar E(#5) parallel to panel ends (Typ).

(12) Bars E(#5) not continuous over beam flanges shall overlap beam flange 6" Min.

(13) Add flared Bars E(#5) (Min Spa = 2", Max Spa = 10") as required at panel ends.

(14) Where possible, Bars E(#5) may be extended into overhangs to replace Bars P(#4). Bars Z(#4) are required for sloped overhangs with U-Beams.

(15) These approximate quantities are for a typical square foot of cast-in-place slab over the PCP. They do not include an allowance for slab overhangs, thickened ends at diaphragms, or the portion between panels over the beams.

TABLE OF REINFORCING STEEL (8)		
BAR	SIZE	Max Spa (In.)
A	#5	~
D	#5	9
E	#5	6
P	#4	18
UP	#4	~
Z	#4	18

HL93 LOADING SHEET 2 OF 4

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE PANELS

OPTIONAL DECK DETAILS FOR BEAM SPANS

PCP

FILE: pcpstdel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT June 2004	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		605A
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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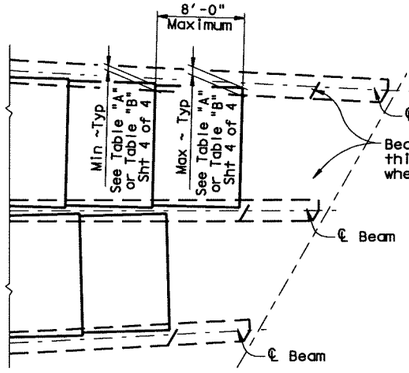
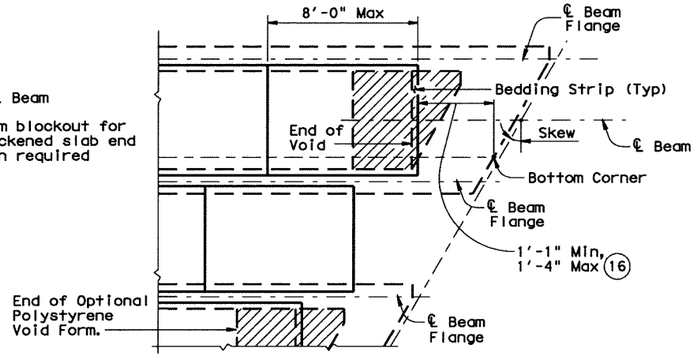
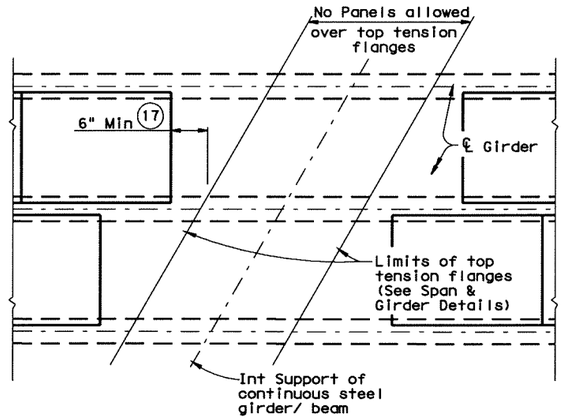


AT ENDS OF FLARED I-BEAMS
(Showing thickened slab end condition)

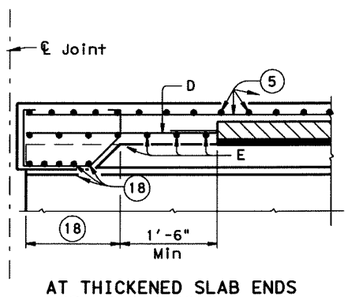


AT ENDS OF CONC U-BEAMS

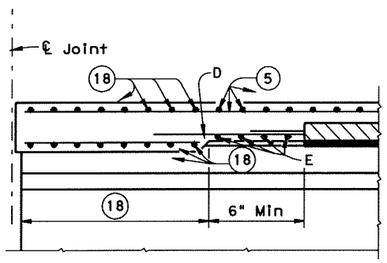


AT INT SUPPORTS OF CONTINUOUS STEEL GIRDERS

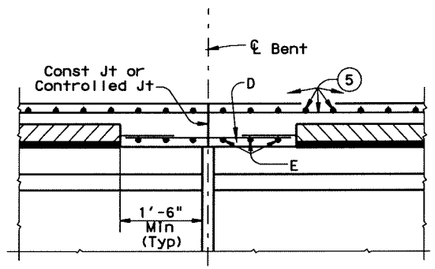
PART PLANS OF PANEL PLACEMENT



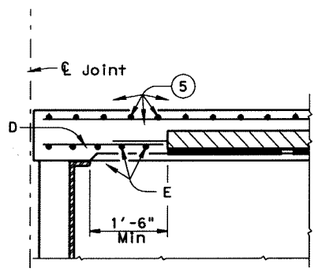
AT THICKENED SLAB ENDS FOR PRESTR CONC U-BMS



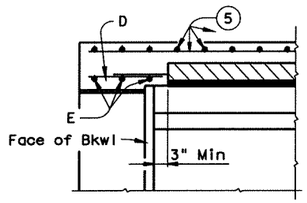
AT THICKENED SLAB ENDS FOR PRESTR CONC I-BMS AND STEEL BMS



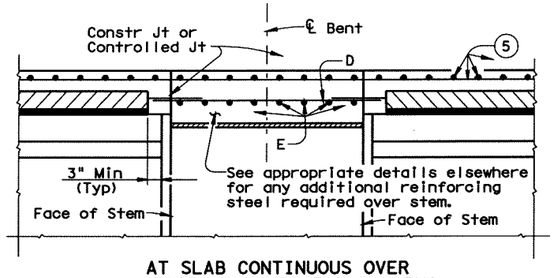
AT SLAB CONTINUOUS OVER CONVENTIONAL INTERIOR BENTS FOR ALL SIMPLE SPAN BMS



AT CONVENTIONAL END DIAPHRAGMS FOR STEEL BMS

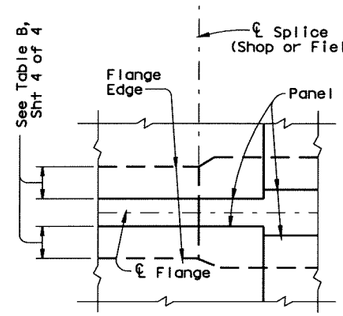


AT SLAB OVER ABUTMENT BACKWALL FOR ALL BMS



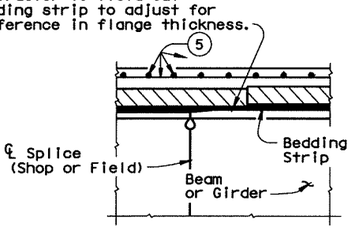
AT SLAB CONTINUOUS OVER INVERTED-T BENTS FOR ALL BMS

ELEVATIONS AT BEAM ENDS

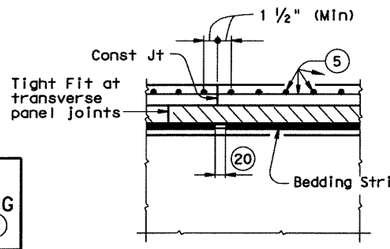


PLAN AT SPLICE
(Showing Steel Bms with flange width transition)

Contractor to field cut bedding strip to adjust for difference in flange thickness.



ELEVATION AT SPLICE (19)
(Showing Steel Bms with different flange thickness)



TRANSVERSE PANEL JOINTS AND SLAB CONST JOINTS

(5) See Span Details for top slab reinforcement and clear cover. Longitudinal top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(8) Max Spacing as listed unless otherwise shown.

(16) For panel placement at ends of dapped end U-Beams, with Skews under 30°, use 2'-9" ± 1" or with Skews 30° thru 45°, use 3'-3" ± 1".

(17) Location of concrete placement sequence boundaries and bolted field splices should be considered by the contractor in determining panel limits.

(18) See appropriate thickened slab end details for reinforcing and limits of thickened slab end.

(19) When flange thickness differs or flange cover plates are used the Contractor shall compensate by using different thickness bedding strips to assure that the tops of Precast Panels are within ¼" of alignment. See Normal Grading Detail for additional notes.

(20) ¼" Open Joint in bedding strip at 8'-0" c/c. Place 6" long piece of bedding strip ¼" behind opening if necessary to reduce grout leakage.

TABLE OF REINFORCING STEEL (8)

BAR	SIZE	Max Spa (in.)
A	#5	~
D	#5	9
E	#5	6
P	#4	18
UP	#4	~
Z	#4	18

HL93 LOADING SHEET 3 OF 4

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE PANELS
OPTIONAL DECK DETAILS FOR BEAM SPANS

PCP

FILE: pcpstdet.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	DAL	(SEE TITLE SHEET)		605B
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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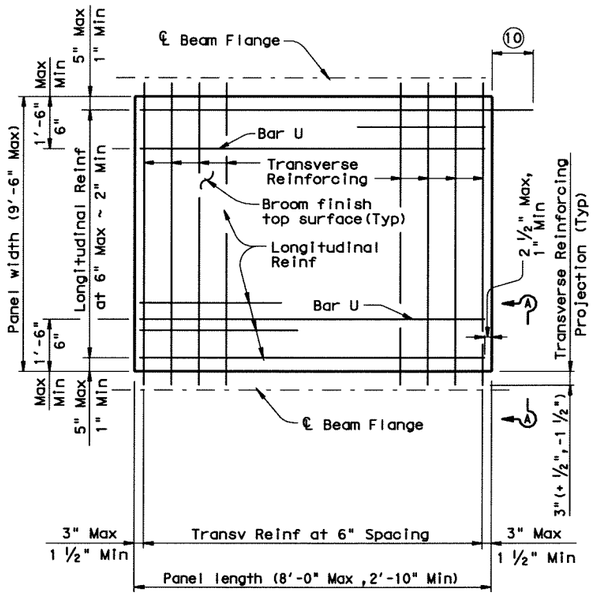
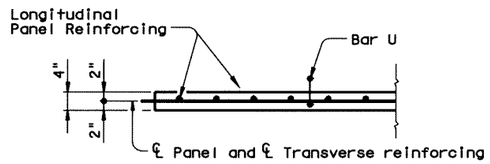
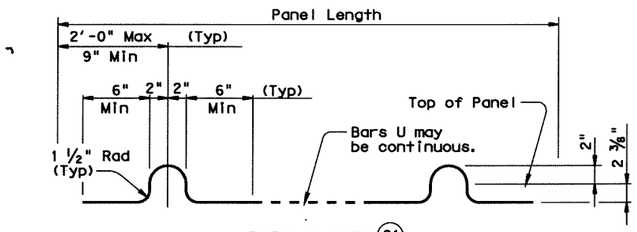


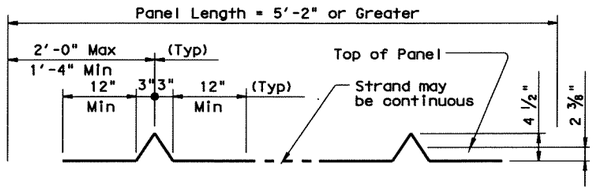
TYPICAL PANEL PLAN



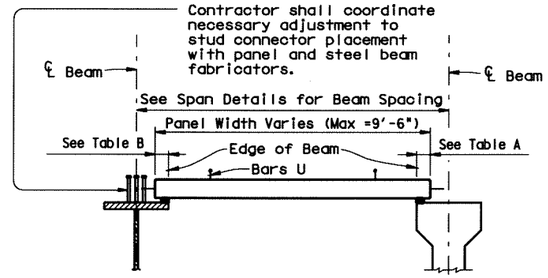
SECTION A-A



BARS U (#3) (21)

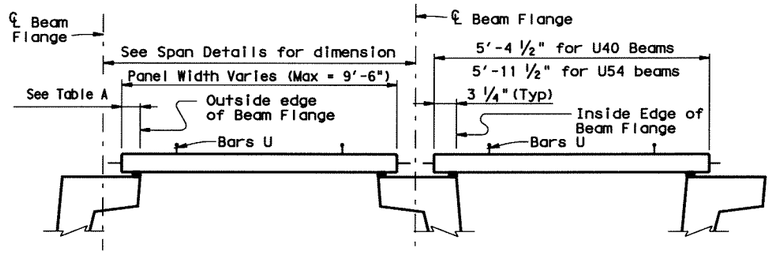


OPTIONAL STRAND FOR BARS U (22)



SHOWING STEEL BEAMS

SHOWING PRESTRESSED CONCRETE I-BEAMS



SHOWING PRESTRESSED CONCRETE U-BEAMS

TYPICAL SECTIONS FOR DETERMINING PANEL WIDTH

(10) At connection with cast-in-place slab, extend longitudinal panel reinforcement 1'-0" (+2",-0") past panel end. Alternatively, provide (#3) x 2'-0" dowels at 6" Max Spacing and extend dowels 1'-0" past panel end.

(21) Four loops required per panel.

(22) Four loops required per panel. ⅜" or ½" strands may be used.

(23) Normal dimensions shall be used on spans with parallel beams. Maximum and Minimum dimensions apply only to spans with flared beams.

(24) See Normal Grading Detail on Sht 1 of 4 for lap requirements and bedding strip dimensions. Some laps shown in tables cannot utilize all bedding strip widths.

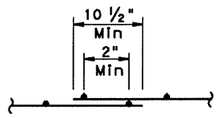
(25) One Splice allowed per panel.

TABLE A (23)(24)

Beam Type	Normal (In.)	Min (In.)	Max (In.)
A	3	2 ½	3 ½
B	3	2 ½	3 ½
C	4	3	4 ½
IV	6	4	7 ½
VI	6 ½	4 ½	8 ½
U40	5 ½	5 ½	7
U54	5 ½	5 ½	7

TABLE B (23)(24)

Top Flange Width	Normal (In.)	Min (In.)	Max (In.)
11" to 12"	2 ¾	2 ½	2 ¾
Over 12" to 15"	3 ¼	3	3 ¼
Over 15" to 18"	4	3	4 ¾
Over 18"	5	3 ½	6 ¼



WELDED WIRE REINFORCEMENT (WWR) SPLICE DETAIL (25)

FABRICATION NOTES:

All concrete for panels is to be Class H. Release strength f'ci=4000 psi. Minimum 28 day strength f'c=5000 psi.

Suitable holes or anchorage devices for lifting panels may be cast in the panels provided they are shown on the shop plans and approved by the Engineer.

Remove laitance from top panel surface.

A minimum of 90 percent of the top surface area shall have the required broom finish.

Shop drawings for the fabrication of panels will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

A panel layout which identifies location of each panel shall be developed by the fabricator. Permanently mark each panel in accordance with the panel layout. A copy of the layout is to be provided to the Engineer.

TRANSVERSE PANEL REINFORCEMENT:

For panel widths over 5', use ⅜" or ½" Dia (270k) prestressing strands with an initial tension of 16.1 kips per strand.

For panel widths over 3'-6" up to and including 5', use ⅜" or ½" Dia (270k) prestressing strands with an initial tension of 16.1 kip per strand. Optionally, #4 Grade 60 reinforcing bars may be used in lieu of prestressed strands.

For panel widths up to 3'-6", use #4 Grade 60 reinforcing bars (prestressed strands are not allowed).

Place transverse panel reinforcement at panel centroid and space at 6" Max.

LONGITUDINAL PANEL REINFORCEMENT:

Any of the following options may be used for longitudinal panel reinforcement:

1. (#3) Grade 60 reinforcing steel at 6" Max Spacing. No splices allowed.
2. ⅜" Dia prestressed strands at 4 ½" Max Spacing (unstressed). No splices allowed.
3. ½" Dia prestressed strands at 6" Max Spacing (unstressed). No splices allowed.
4. Deformed Welded Wire Reinforcement (WWR) (ASTM A497) providing 0.22 sq in per foot of panel width. Wires larger than D11 not permitted. Provide transverse wires to ensure proper handling of reinforcing. One splice per panel is allowed. See WWR Splice Detail.

No combination of longitudinal reinforcement options in a panel is allowed.

Place longitudinal panel reinforcement above transverse panel reinforcement.

HL93 LOADING

Texas Department of Transportation
Bridge Division

PRESTRESSED CONCRETE PANELS

OPTIONAL DECK DETAILS FOR BEAM SPANS

PCP

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REVISIONS	DAL	(SEE TITLE SHEET)		605C
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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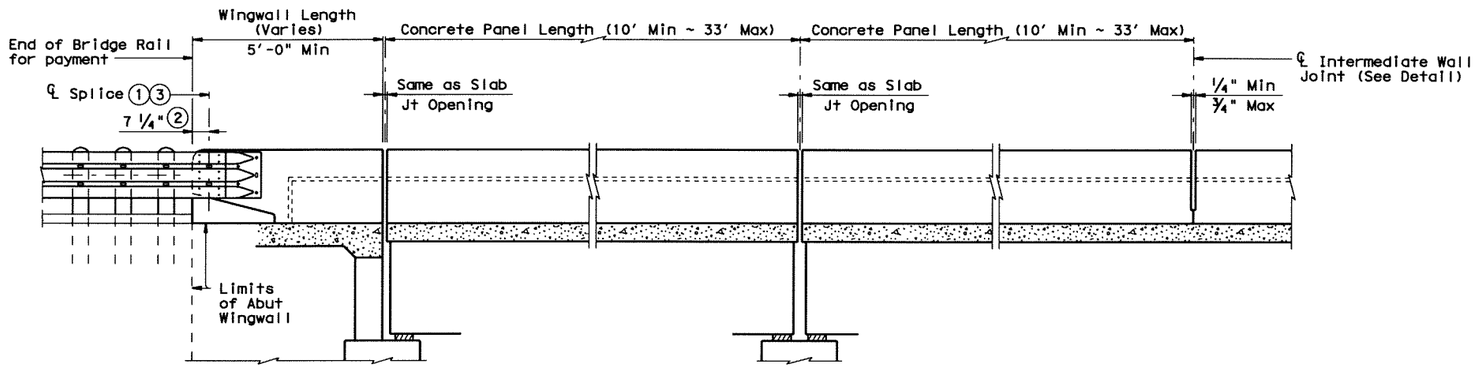
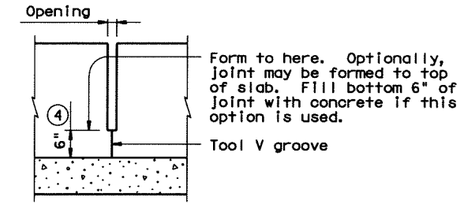


AT ABUTMENT BENTS
Showing TL-3 Transition

AT SLAB EXP JOINTS

AT INTERMEDIATE WALL JOINTS

ROADWAY ELEVATION OF RAIL

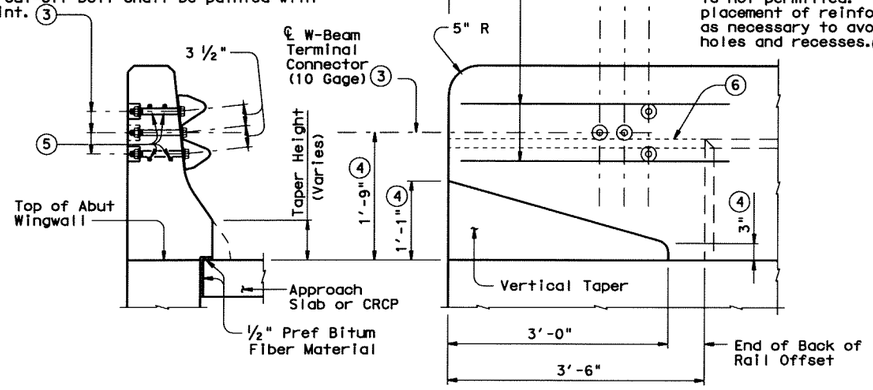


INTERMEDIATE WALL JOINT DETAIL

Note: Provide intermediate wall joints over all slab construction joints, over interior supports on continuous units, and at equal intervals in between as necessary to maintain a 33' maximum length of unbroken wall.

℄ 4 ~ 7/8" Dia A325 Hex Head Bolts with two 1 3/4" O.D. washers. Place washer under each head and nut. The 4 Terminal Connection Bolts shall be tightened in a well distributed pattern so to prevent damage or distortion of the W-Beam Connection and the MBGF Transition. Bolts shall be cut off after installation so as to extend no more than 3/4" beyond nut. End of cut-off bolt shall be painted with Zinc-rich paint. (3)

℄ 4 ~ 1" Dia holes and 2 1/2" Dia x 2" deep recesses. Holes and recesses must be formed or cored. Percussion drilling is not permitted. Adjust placement of reinforcing steel as necessary to avoid bolt holes and recesses. (7)

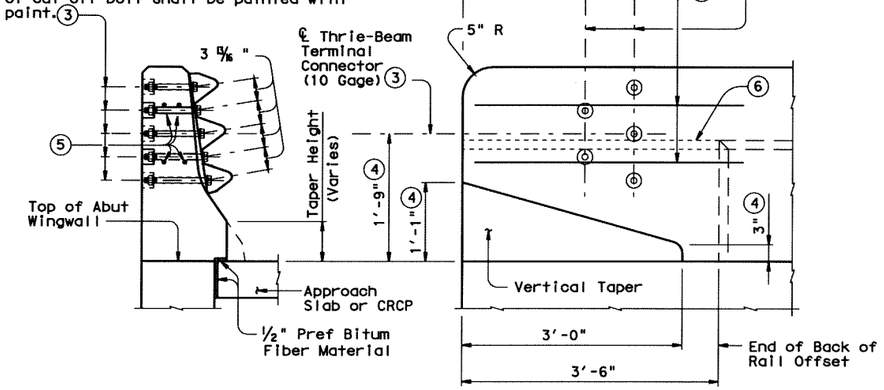


SECTION ELEVATION

TL-2 TERMINAL CONNECTION DETAILS

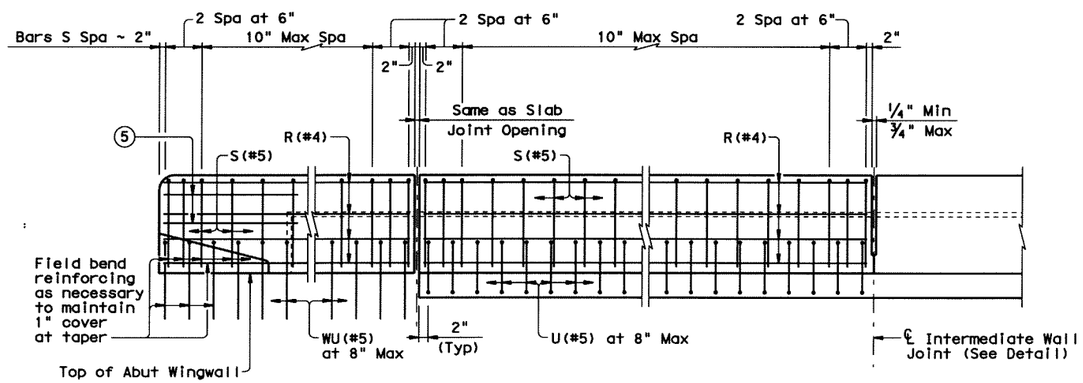
℄ 5 ~ 7/8" Dia A325 Hex Head Bolts with two 1 3/4" O.D. washers. Place washer under each head and nut. The 5 Terminal Connection Bolts shall be tightened in a well distributed pattern so to prevent damage or distortion of the Thrie-Beam Connection and the MBGF Transition. Bolts shall be cut off after installation so as to extend no more than 3/4" beyond nut. End of cut-off bolt shall be painted with Zinc-rich paint. (3)

℄ 5 ~ 1" Dia holes and 2 1/2" Dia x 2" deep recesses. Holes and recesses must be formed or cored. Percussion drilling is not permitted. Adjust placement of reinforcing steel as necessary to avoid bolt holes and recesses. (7)



SECTION ELEVATION

TL-3 TERMINAL CONNECTION DETAILS



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

(1) Metal Beam Guard Fence Transitions must be attached to the bridge rail and extended along the embankment unless otherwise shown in the plans.

(2) Showing TL-3 Splice location, TL-2 Splice location is 1'-0".

(3) Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence".

(4) Increase 2" for structures with Overlay.

(5) 4 additional Bars R(#4) 3'-8" in length shall be placed inside Bars S(#5) and centered 2'-0" from end of rail when Terminal Connections are required.

(6) Back of rail offset may, with Engineer's approval be continued to the end of the railing.

(7) Bolt recesses are only required when pedestrian sidewalks are adjacent to back of rail.

Texas Department of Transportation
Bridge Division

TRAFFIC RAIL

TYPE T501

FILE: ristde16.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: TxDOT
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REVISIONS	DAL	(SEE TITLE SHEET)		606
4-05: Added TL-2 Terminal Connection, minor corrections & modified Notes.	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

LEVELS DISPLAYED
ACC:
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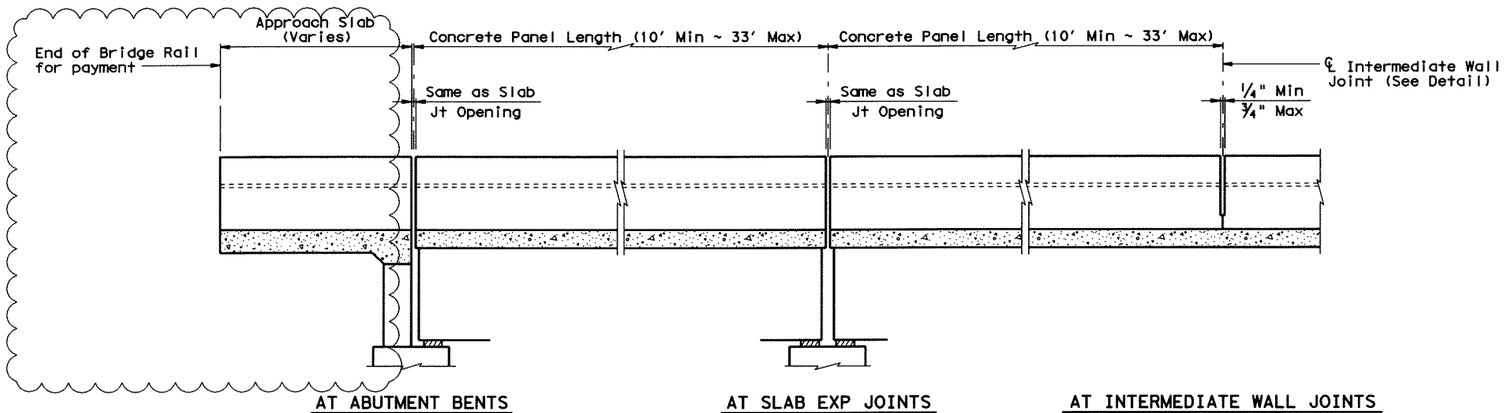
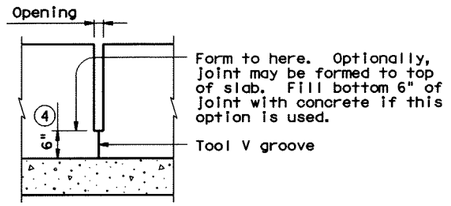
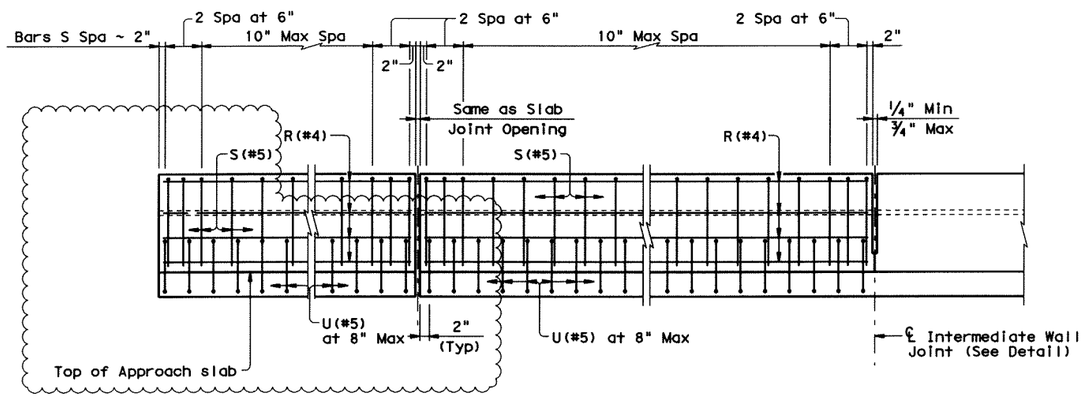


ROADWAY ELEVATION OF RAIL



INTERMEDIATE WALL JOINT DETAIL

Note: Provide intermediate wall joints over all slab construction joints, over interior supports on continuous units, and at equal intervals in between as necessary to maintain a 33' maximum length of unbroken wall.



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

(4) Increase 2" for structures with Overlay.

STATE OF TEXAS
JINGGANG CAO
88343
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PROFESSIONAL ENGINEER
4-26-07

SHEET 1 OF 2

Texas Department of Transportation
Bridge Division

TRAFFIC RAIL

TYPE T501 (MOD)

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REVISIONS	DAL	(SEE TITLE SHEET)		606A
4-05: Added TL-2 Terminal Connection, minor corrections & modified Notes.	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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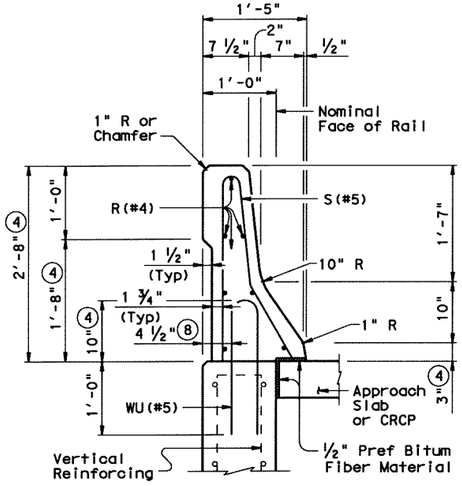
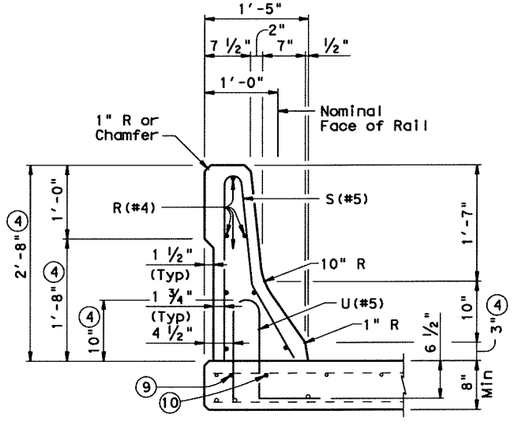
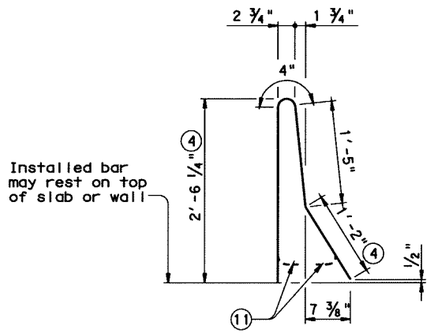


ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS

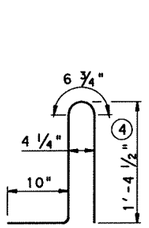


ON BRIDGE SLAB

SECTIONS THRU RAIL



BARS S (#5)



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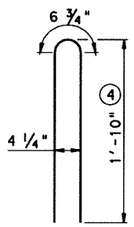

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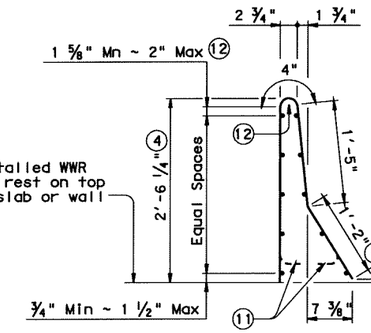
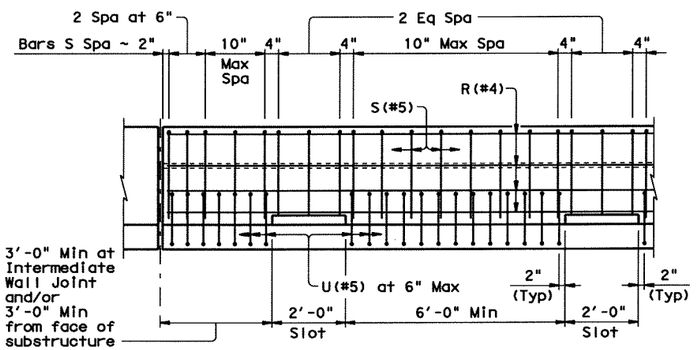
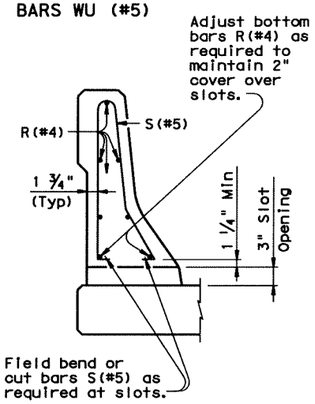


OPTIONAL WELDED WIRE REINFORCEMENT (WWR)

DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	0.933 Sq In.	0.248 Sq In. per Ft
	No. of Wires	Spacing
Minimum	6	4"
Maximum	11	12"
Maximum Wire Size Differential	The smaller wire shall have an area of 40% or more of the larger wire.	



OPTIONAL SIDE SLOT DRAIN DETAIL



SECTION THRU OPTIONAL SIDE SLOT DRAIN

Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. If continuous slots at 8 ft c-c are required, then details as on standard Type T502 should apply. Drains should not be placed over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.

④ Increase 2" for structures with Overlay.

⑧ 5 ½" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.

⑨ As an aid in supporting reinforcement, additional longitudinal bars may be used in the slab with the approval of the Engineer. Such bars shall be furnished at the Contractors expense.

⑩ Top longitudinal slab bar may be adjusted laterally 3" ± to tie reinforcing.

⑪ Bend or cut as required to clear drain slots.

⑫ No longitudinal wires may be within upper bend.

GENERAL NOTES:

This rail has been evaluated and approved to be of equal strength to railings with like geometry, which have been crash tested to meet NCHRP Report 350 TL-4 criteria. This rail can be used for design speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for design speeds of 45 mph and less.

Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

All steel components except reinforcing shall be galvanized unless otherwise shown on plans.

All concrete shall be Class "C".

All reinforcing steel shall be Grade 60.

Shop drawings will not be required for this rail.

This railing may be constructed with slip-forms when approved by the Engineer, with equipment approved by the Engineer. Sensor control for both line and grade must be provided. Tack welding to provide bracing for slip-form operations is acceptable. Welding can be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to U, WU and S bars at any location on the cage. If increased bracing is needed, additional anchorage devices must be added and welding must be performed in the upper two thirds of the cage.

The back of railing shall be vertical unless otherwise shown on the plans or approved by the Engineer.

Deformed welded wire reinforcement (WWR) may be used as an option to conventional reinforcement and shall be made in accordance with ASTM A497 (Deformed Wire). Combinations of Reinforcing Steel and WWR or configurations of WWR other than shown will be permitted when the conditions in the table are satisfied and the dimension from end of section to first welded vertical wire does not exceed 3".

Epoxy coat bars U and WU if slab bars are epoxy coated.

Average weight of railing with no overlay is 326 plf.

Texas Department of Transportation
Bridge Division

TRAFFIC RAIL

TYPE T501

FILE: ristdel6.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: TxDOT
© TxDOT February 2003	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		607
4-05: Added TL-2 Terminal Connection, minor corrections & modified Notes.	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

ACC:
LEVELS DISPLAYED

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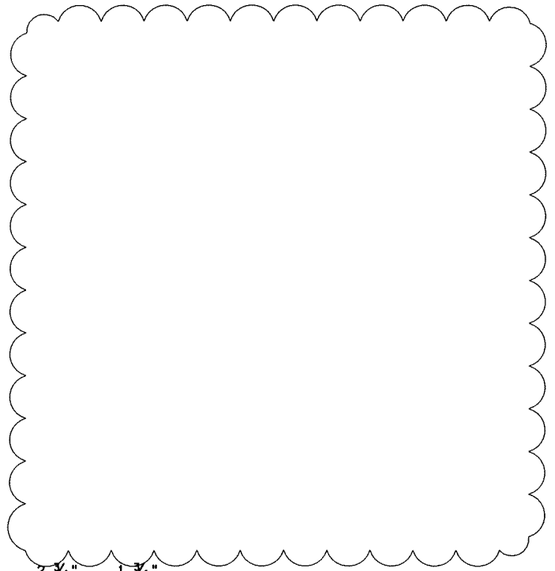
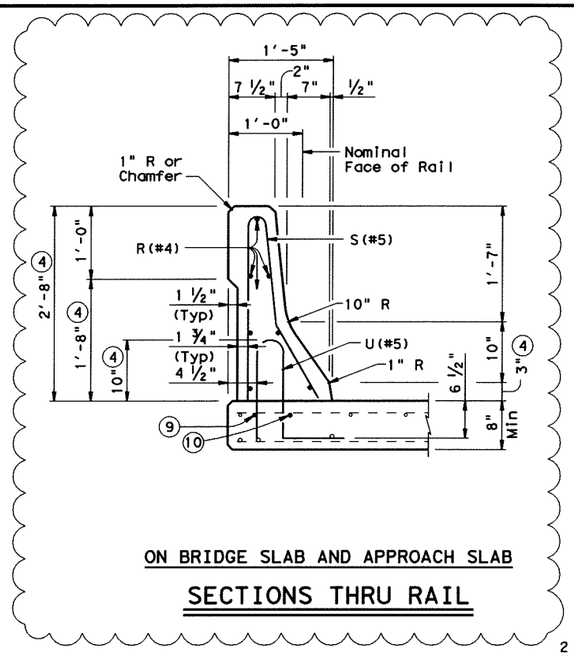
ACC: RLSTDE16 MOD.dgn

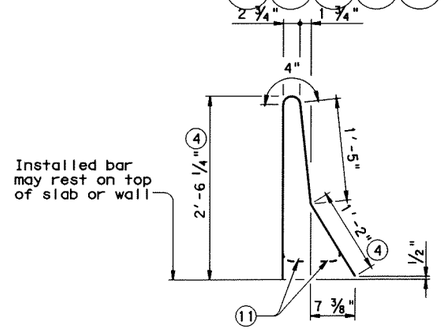
LEVELS DISPLAYED





ON BRIDGE SLAB AND APPROACH SLAB

SECTIONS THRU RAIL



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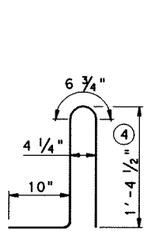

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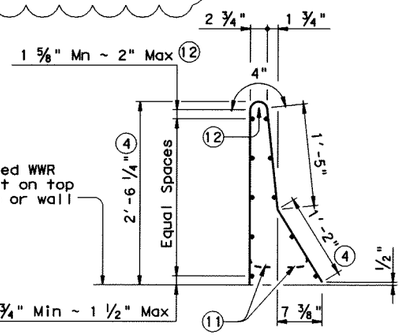
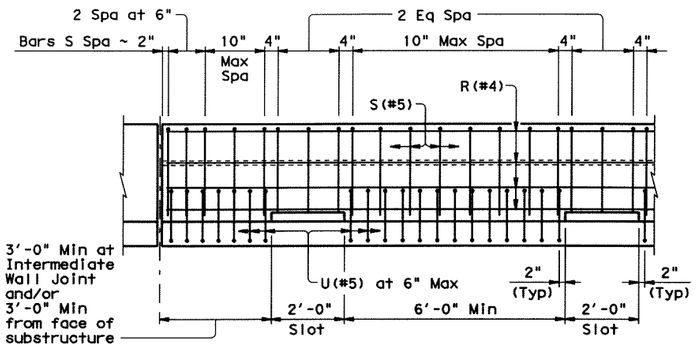
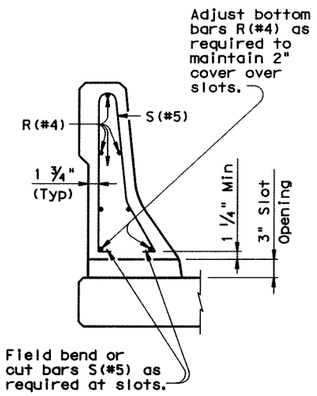


OPTIONAL WELDED WIRE REINFORCEMENT (WWR)



OPTIONAL SIDE SLOT DRAIN DETAIL

Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. If continuous slots at 8 ft c-c are required, then details as on standard Type T502 should apply. Drains should not be placed over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.



SECTION THRU OPTIONAL SIDE SLOT DRAIN

DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	0.933 Sq In.	0.248 Sq In. per Ft
	No. of Wires	Spacing
Minimum	6	4"
Maximum	11	12"
Maximum Wire Size Differential	The smaller wire shall have an area of 40% or more of the larger wire.	

(4) Increase 2" for structures with Overlay.

(8) 5 ½" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.

(9) As an aid in supporting reinforcement, additional longitudinal bars may be used in the slab with the approval of the Engineer. Such bars shall be furnished at the Contractors expense.

(10) Top longitudinal slab bar may be adjusted laterally 3" ± to tie reinforcing.

(11) Bend or cut as required to clear drain slots.

(12) No longitudinal wires may be within upper bend.

GENERAL NOTES:

This rail has been evaluated and approved to be of equal strength to railings with like geometry, which have been crash tested to meet NCHRP Report 350 TL-4 criteria. This rail can be used for design speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for design speeds of 45 mph and less.

Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

All steel components except reinforcing shall be galvanized unless otherwise shown on plans.

All concrete shall be Class "C".

All reinforcing steel shall be Grade 60.

Shop drawings will not be required for this rail.

This railing may be constructed with slip-forms when approved by the Engineer, with equipment approved by the Engineer. Sensor control for both line and grade must be provided. Tack welding to provide bracing for slip-form operations is acceptable. Welding can be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to U and S bars at any location on the cage. If increased bracing is needed, additional anchorage devices must be added and welding must be performed in the upper two thirds of the cage.

The back of railing shall be vertical unless otherwise shown on the plans or approved by the Engineer.

Deformed welded wire reinforcement (WWR) may be used as an option to conventional reinforcement and shall be made in accordance with ASTM A497 (Deformed Wire). Combinations of Reinforcing Steel and WWR or configurations of WWR other than shown will be permitted when the conditions in the table are satisfied and the dimension from end of section to first welded vertical wire does not exceed 3".

Epoxy coat bars U and WU if slab bars are epoxy coated.

Average weight of railing with no overlay is 326 plf.

Texas Department of Transportation
Bridge Division

TRAFFIC RAIL

TYPE T501 (MOD)

STATE OF TEXAS
JINGGANG CAO
88343
LICENSED
PROFESSIONAL ENGINEER
4-26-07

FILE: rlstde16.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: TxDOT
© TxDOT February 2003	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		607A
4-05: Added TL-2 Terminal Connection, minor corrections & modified Notes.	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

DISCLAIMER:
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MBGF TERMINAL CONNECTION SPECIAL NOTES:

Metal Beam Guard Fence shall be attached to the bridge rail and extend along the embankment using the standard, TL-2 MBGF Terminal Connection unless shown otherwise on the plans. If the MBGF Terminal Connection is not used, omit bolt holes and Bars R.

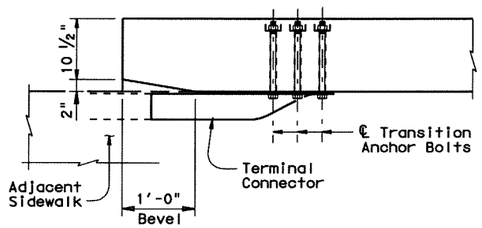
The four (4) Terminal Connection Bolt Holes shall be 1" diameter holes perpendicular to the back face of the railing. Each Bolt Hole shall have a 2 ½" diameter x 2" deep recess, as shown, when pedestrian sidewalks are adjacent to back of rail. Adjust placement of reinforcing steel as necessary to avoid bolt holes and recesses. The holes may be formed or cored. Masonry or percussion (star drill) type drilling equipment shall not be used.

Four (4) additional Bars R, #5 x 3'-8" in length, shall be placed inside Bars S(#5) and centered 2'-0" from end of rail when the Terminal Connections are required. Field bend as needed.

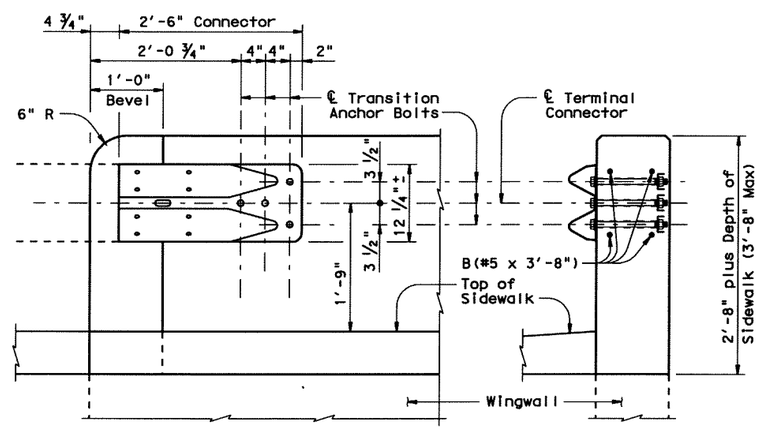
The MBGF Terminal Connection shall be attached to the railing using four (4) ~ ⅞" diameter A325 Hex Head Bolts, each with two (2) ~ 1 ¾" O.D. washers. Place washer under each head and nut. Bolts shall be cut off after installation so as to extend no more than ¾" beyond nut. End of cut-off bolt shall be painted with Zinc-rich paint.

The splice between the Transition Guard Rail and the Terminal Connector shall be with the normal eight (8) Connection Bolts. The Terminal Connector shall receive the same protective coating as the attached Metal Beam Guard Fence.

METAL BEAM GUARD FENCE TRANSITION (TL2) and METAL BEAM GUARD FENCE standard sheets must be referred to for additional details and information not shown herein.



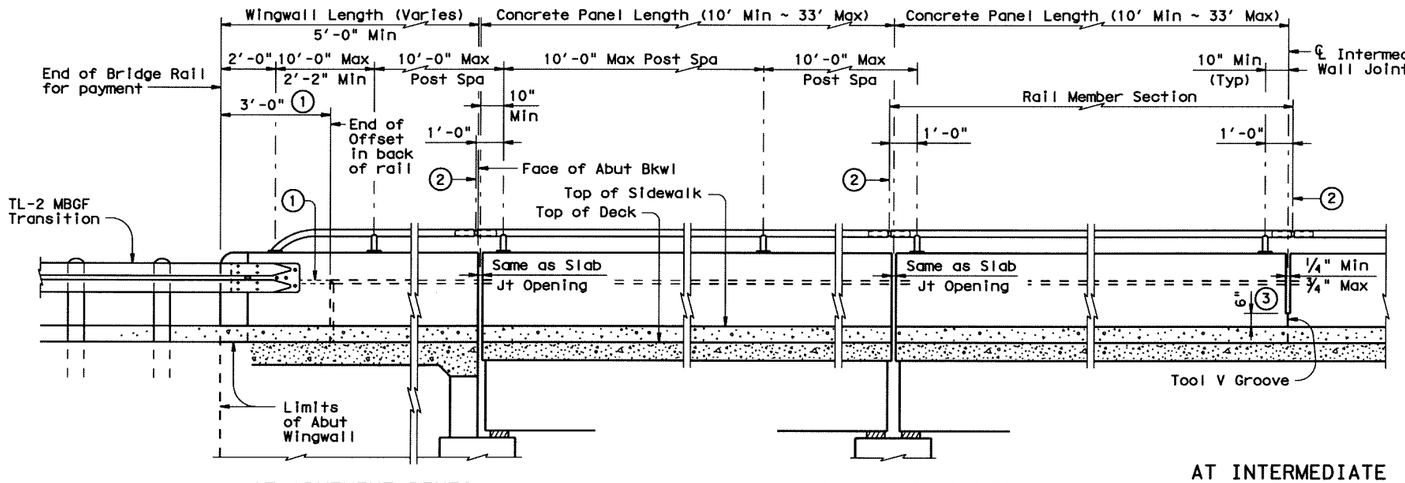
TERMINAL PLAN



ROADSIDE ELEVATION — TRANSVERSE SECTION

TYPICAL TL-2 TERMINAL CONNECTION DETAILS

Showing geometry. Wingwall Rail reinforcing not shown for clarity.



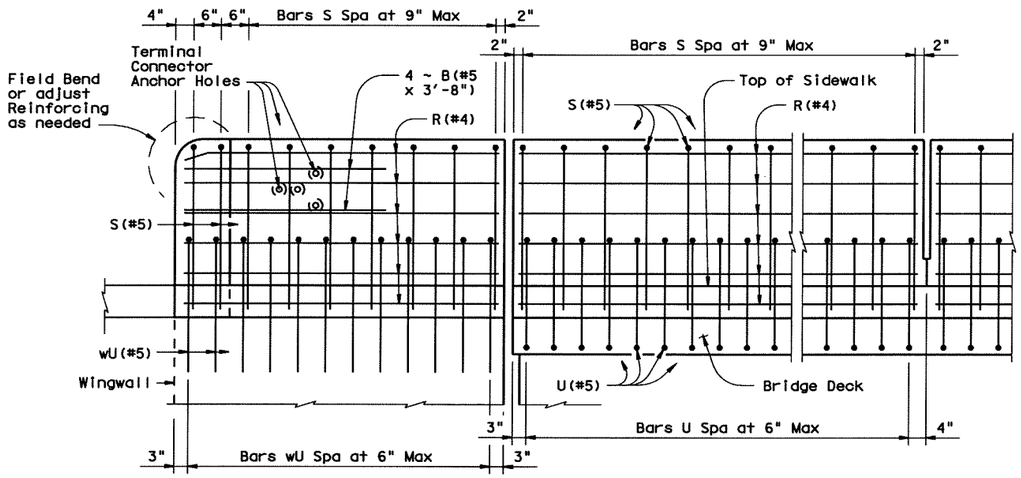
AT ABUTMENT BENTS
Showing TL-2 Transition

AT SLAB EXP JOINTS

AT INTERMEDIATE WALL JOINTS

PARTIAL ROADWAY ELEVATION OF RAIL GEOMETRY

Reinforcing not shown for clarity.



PARTIAL ROADWAY ELEVATION OF RAIL REINFORCING

Geometry not shown for clarity.

① Back of rail offset may, with Engineer's approval, be continued to the end of the railing.

② Centerline Expansion Joint or Splice Joint as required.

③ Provide intermediate wall joints over interior supports on continuous units, over all slab construction joints, and at equal intervals in between as necessary to maintain a 33' maximum length of unbroken wall. Form open joint as shown. Optionally, joint may be formed to top of slab. If this option is used, fill bottom of joint with concrete.

LEVELS DISPLAYED

	1	2	3	4	5
1	6	7	8	9	10
2	11	12	13	14	15
3	16	17	18	19	20
4	21	22	23	24	25
5	26	27	28	29	30
6	31	32	33	34	35
7	36	37	38	39	40
8	41	42	43	44	45
9	46	47	48	49	50
10	51	52	53	54	55
11	56	57	58	59	60
12	61	62	63		

COMMENTS:

SHEET 1 OF 3

Texas Department of Transportation
Dallas District

SIDEWALK TRAFFIC RAIL

(Use of this railing is restricted to design speeds of 45 mph or less)

TYPE C221(DAL)

FILE: c221DAL03.dgn	DN: TxDOT	CK: TxDOT	DW: JRP	CK: MJB
©TxDOT OCTOBER 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		608

COUNTY	CONTROL	SECT	JOB	HIGHWAY
ROCKWALL	0451	01	032	SH205

GENERAL NOTES:

This rail, without the pipe rail, has been evaluated and accepted to be of equal strength to railings with similar geometry, which have been crash tested to meet NCHRP Report 350 TL-3 criteria. However, its use is limited to design speeds of 45 mph and less, because the pipe rail presents an occupant compartment intrusion threat to high speed vehicular traffic.

See elsewhere in the plans for details and dimensions of sidewalk. If sidewalk depth at toe of rail exceeds 12", an alternate design from that shown will be required to permit a concrete parapet height in excess of 3'-8".

All concrete shall be Class "C". Chamfer all exposed corners.

All reinforcing shall be Grade 60. Epoxy coat bars U and wU if slab bars are epoxy coated.

All steel components, except reinforcing, shall be galvanized in accordance with Item 445, "Galvanizing". Note that reliance on internal venting between hollow sections during the galvanizing process is not permitted. Anchor bolts and nuts shall have Class 2A and 2B fit tolerances in accordance with ANSI B1.1. The nuts shall be tapped after galvanizing.

Pipe for pipe rail shall conform to ASTM A53 Grade B or A501. Post Base plate shall conform to ASTM A36. Exposed edges of pipe rail and pipe rail posts shall be rounded or chamfered to approximately 1/16" by grinding prior to galvanizing.

Anchors shall be 5/8" Dia ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. Embed threaded rods into parapet wall with an epoxy anchorage system. Estimated required embedment depth is 3". Core drill all holes (percussion or masonry drill type drilling not permitted). Holes must be wire brushed and then cleaned with compressed air which shall have no oil or water in suspension. The holes shall be clean and dry prior to placing adhesive and anchors.

Anchorage system chosen must be able to achieve an ultimate tensile resistance of 3.9 kips. The Contractor must provide evidence to the Engineer that this can be achieved. Evidence of adequate tensile resistance can be based on the manufacturer's published values of ultimate tensile strength (anchor spacing and edge distance must be accounted for). Anchor installation, including hole size, must be in accordance with the manufacturer's recommendations.

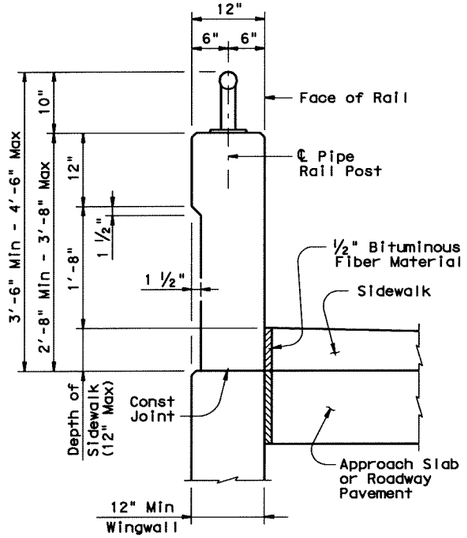
At the contractor's option anchor bolts may be cast with the parapet (See CAST-IN-PLACE ANCHOR BOLT OPTIONS detail). Optional cast-in-place anchor bolts shall be 5/8" Dia ASTM A307 Grade A bolts (or ASTM A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt.

This railing may be constructed with slip-forms with the prior approval of the Engineer, with equipment approved by the Engineer, and when epoxy adhesive anchor bolts are used. Slip-forming parapet is not allowed if anchor bolts are cast with parapet wall. Sensor control for both line and grade must be provided. Tack welding to provide bracing for slip-form operations is acceptable. Welding can be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to S bars at any location on the cage. It is also permissible to weld to U and wU bars in the upper two thirds of the anchor bar projection above the slab. (Epoxy coating, if present, on U and wU bars adjacent to welding need not be repaired.) If increased bracing is needed, additional anchorage devices shall be added (at the Contractor's expense) and welding must be performed in the upper two thirds of the cage.

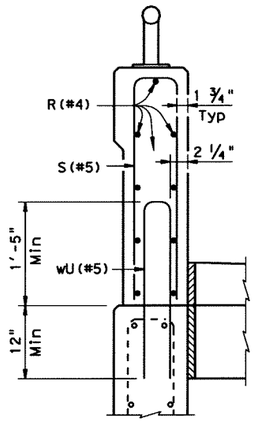
Face of rail, parapet shall be plumb unless otherwise approved by the Engineer. Pipe rail posts shall be square to the top of parapet. Grout may be used under pipe rail post base plates if necessary.

Average weight of railing (with an anticipated sidewalk depth at the face of railing of 9") : 467 plf (Conc)
10 plf (Steel)
Adjust concrete parapet height and reinforcing as necessary for other sidewalk depths.

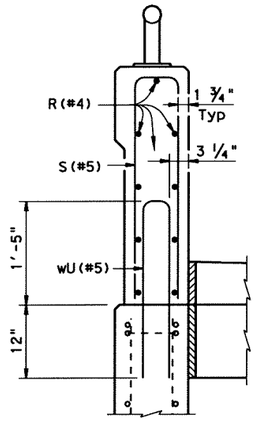
Erection drawings showing panel lengths, rail post spacing, and anchor bolt setting are required for this railing. For railings not requiring shop drawings, erection drawings shall be submitted to the Area Engineer for approval. If handrail also requires shop drawings, both erection and shop drawings shall be submitted to the District Bridge Engineer for approval. Drawings may be submitted as 11"x 17" prints, provided they are clearly legible.



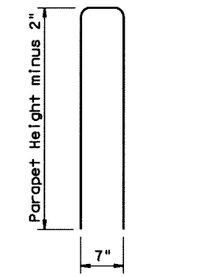
SHOWING GEOMETRY ON ABUTMENT WINGWALL



SHOWING REINFORCING ON CIP RETAINING WALL & ON FOUNDED WINGWALL

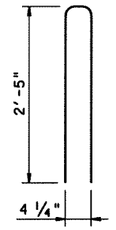


SHOWING REINFORCING ON CANTILEVERED WINGWALL

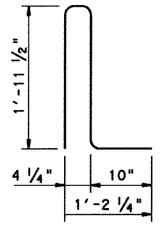


Installed Bars S may rest on top of slab or wall

BARS S (#5)



BARS wU (#5)



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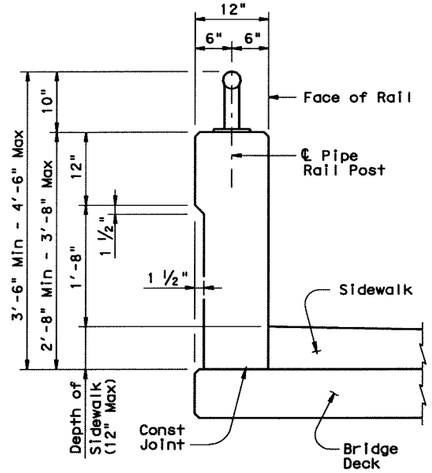
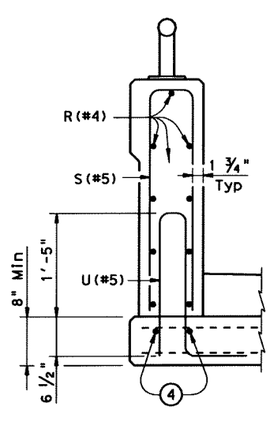


SHOWING GEOMETRY ON BRIDGE SLAB



SHOWING REINFORCING ON BRIDGE SLAB

TYPICAL TRANSVERSE SECTIONS

(4) As an aid in supporting rail anchor bars, the usual top longitudinal slab bars may be adjusted laterally 3"± to tie reinforcing. With the approval of the Engineer and at the Contractor's expense, additional longitudinal bars may also be used in the slab.

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LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

COMMENTS:

SHEET 2 OF 3

Texas Department of Transportation
Dallas District

SIDEWALK TRAFFIC RAIL

(Use of this railing is restricted to design speeds of 45 mph or less)

TYPE C221 (DAL)

FILE: c221DAL03.dgn	DN: TxDOT	CK: TxDOT	DW: JRP	CK: MJB
©TxDOT OCTOBER 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		609
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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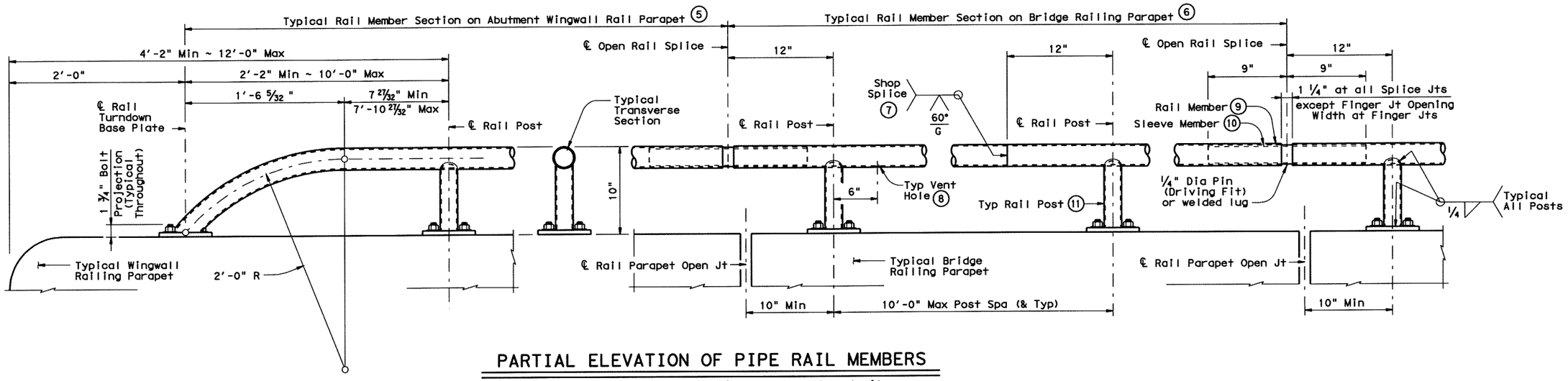
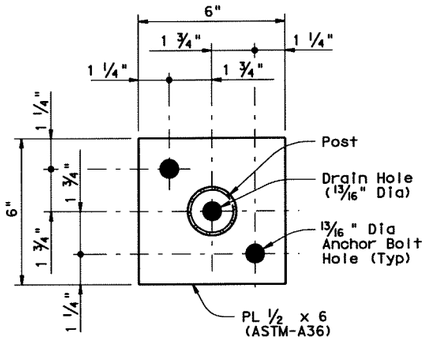
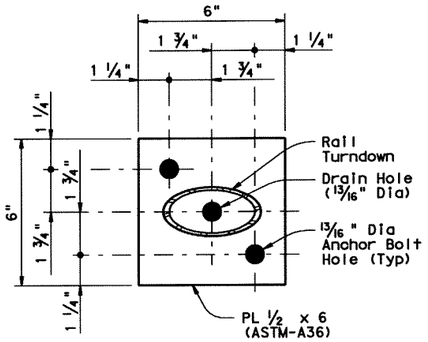


PARTIAL ELEVATION OF PIPE RAIL MEMBERS

Concrete railing parapet details not shown for clarity.



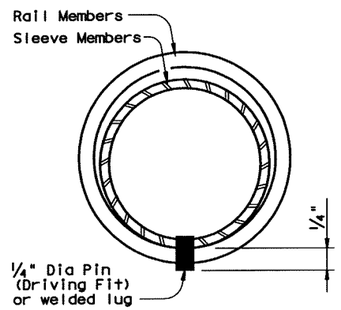
NORMAL BASE PLATE



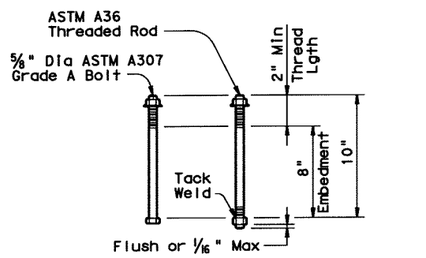
RAIL TURNDOWN BASE PLATE

PIPE RAIL POST BASE PLATE PLANS

RAIL DATA FOR HORIZONTAL CURVES				
	RADIUS TO FACE OF RAIL	MAX CHORD LENGTH	CONSTRUCT OR FABRICATE	SHOP PLANS REQUIRED
Pipe Rail	Over 2800'	29'-0"	Straight rail panels	No
	Over 1400' thru 2800'	14'-6"	To required radius or to chords shown	Yes
	Over 700' thru 1400'	7'-3"		
	Thru 700'	Zero	To required radius	Yes



TYPICAL SECTION THRU OPEN SPLICE



See GENERAL NOTES for anchor bolt information.

CAST-IN-PLACE ANCHOR BOLT OPTIONS

(5) At least two anchor points (as shown) are required for the Bridge Rail on the Abutment Wingwall. Longer Wingwalls may require more than two Rail anchorages.

(6) Pipe rail sections, except at Abutments, shall not include less than two posts and no more than four.

(7) One shop splice per rail member section is permitted with a minimum 85 percent penetration. The weld may be square groove, or single vee groove. Grind smooth.

(8) A minimum of one (1) 3/8" Dia vent hole shall be placed in the underside of the rail member between each pair of posts.

(9) Rail member shall be 2 1/2" Std Pipe (2.875" O.D., 0.203" wall thickness).

(10) The difference between the outside dimension of sleeve member and the inside dimension of rail member shall not exceed 0.167" before galvanizing. Minimum wall thickness of sleeve shall be 0.120".

(11) Rail post shall be 2" Std Pipe (2.375" O.D., 0.154" wall thickness).

SHEET 3 OF 3

Texas Department of Transportation
Dallas District

SIDEWALK TRAFFIC RAIL

(Use of this railing is restricted to design speeds of 45 mph or less)

TYPE C221 (DAL)

FILE: c221DAL03.dgn	DN: TxDOT	CK: TxDOT	DW: JRP	CK: MJB
©TxDOT OCTOBER 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		610
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

LEVELS DISPLAYED
1 2 3 4 5 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

COMMENTS:

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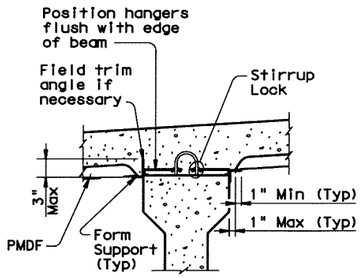
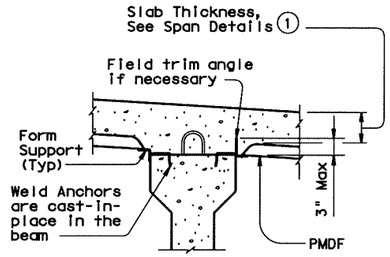
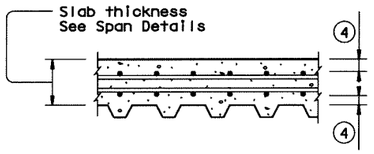


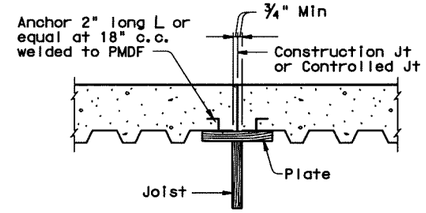
SHOWING PRESTR CONC I-BMS WITH STIRRUP LOCKS



SHOWING PRESTR CONC I-BMS WITH WELD ANCHORS

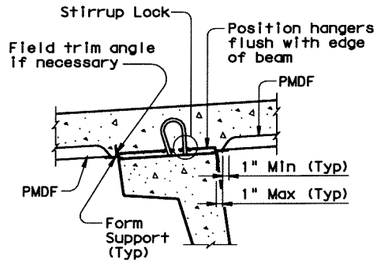


TYP LONGITUDINAL SLAB SECTION

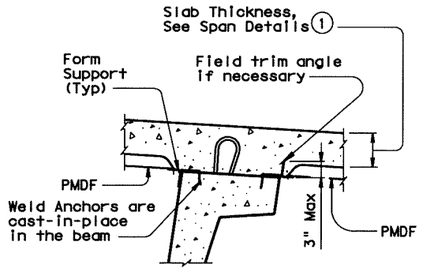


Note: In spans where PMD forms are used, timber forms shall be used at construction joints. Adequate provision shall be made to support edge of metal form and to provide anchorage of metal form to slab concrete where joined to wood forms.

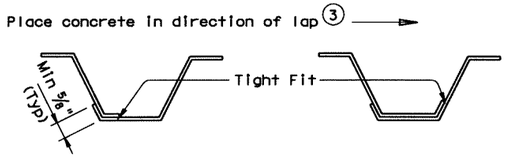
SECTION THRU CONSTRUCTION JOINT



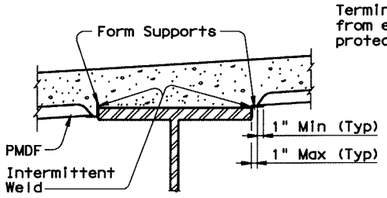
SHOWING U-BEAMS WITH STIRRUP LOCKS



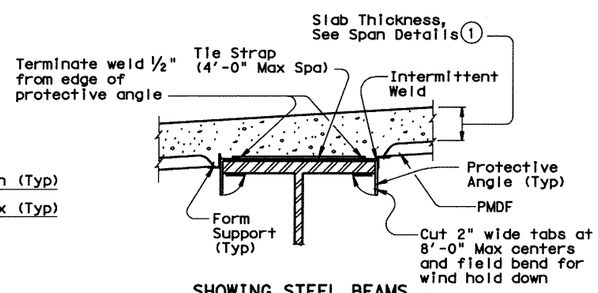
SHOWING U-BEAMS WITH WELD ANCHORS



SIDE LAP DETAILS

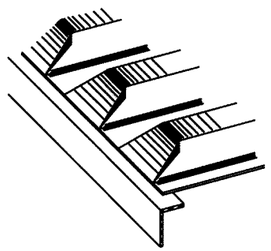


SHOWING STEEL BEAMS AT COMPRESSION FLANGES

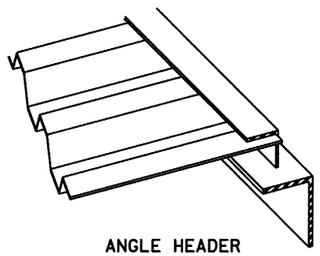


SHOWING STEEL BEAMS AT TENSION FLANGES (2)

TYPICAL TRANSVERSE SECTIONS



PRECLOSED



ANGLE HEADER

NOTE: This type is to be used for skewed ends only.

TYPES OF END CLOSURES

1. Slab thickness minus 5/8" if corrugations match reinforcing bars.
2. Welding of form supports to tension flanges will not be permitted. Other methods of providing wind hold down resistance for PMDF in tension flange zones will be considered. At least one layer of sheet metal must be provided between the flange and the weld joint.
3. The direction of concrete placement will be such that the upper layer of the form overlap is loaded first.
4. See Span details for cover requirements.

GENERAL NOTES:

Steel for Permanent Metal Deck Forms (PMDF) and support angles shall conform to ASTM A653, Structural Steel (SS), with coating designation G165. Steel shall have a minimum yield strength of 33 ksi. Minimum thickness of PMDF is 20 gage and that of support angles and protective angles is 12 gage.

Submit two copies of forming plans for PMDF to the Engineer. These plans must show all essential details of proposed form sheets, closures, fasteners, supports, connectors, special conditions and size and location of welds. These plans shall clearly show areas of tension flanges for steel beams and provisions for protecting the tension flanges from welding notch effects by inclusion of separating sheet metal or other positive method. These plans must be designed, signed, and sealed by a licensed professional engineer. Department approval of these plans is not required, but the Department reserves the right to require modifications to the plans. The Contractor is responsible for the adequacy of these plans.

The details and notes shown on this standard are to be used as a guide in preparation of the forming plans.

All material, labor, tools and incidentals necessary to form a bridge deck with Permanent Metal Deck Forms is considered subsidiary to Item 422, "Reinforced Concrete Slab".

FOR PRESTR CONC U-BEAM BRIDGES:

Size, spacing, and orientation of bottom mat of slab reinforcement shall match the top mat of reinforcing shown on the span details except all bottom mat bars are to be #5.

DESIGN NOTES:

As a minimum, PMDF and support angles shall be designed for the dead load of the form, reinforcement and concrete plus 50 psf for construction loads. Flexural stresses due to these design loads shall not exceed 75 percent of the yield strength of the steel. Allowable stress for weld metal shall be 12,400 psi.

Maximum deflection under the weight of forms, reinforcement and concrete or 120 psf, whichever is greater, shall not exceed the following:

1/180 of the form design span, but not more than 0.50", for design spans of 10' or less.

1/240 of the form design span, but not more than 0.75", for design spans greater than 10'.

The form design span shall not be less than the clear distance between beam flanges, measured parallel to the form flutes, minus 2".

CONSTRUCTION NOTES:

Form sheets shall not be permitted to rest directly on the top of beam flanges. Form sheets shall be securely fastened to form supports and shall have a minimum bearing length of one inch at each end. Form supports shall be placed in direct contact with beam flanges.

All attachments shall be made by permissible welds, screws, bolts, clips or other means shown on the the forming plans. All sheet metal assembly screws shall be installed with torque-limiting devices to prevent stripping. Only welds or bolts shall be used to support vertical loads.

Welding and welds shall be in accordance with the provisions of Item 448, "Structural Field Welding", pertaining to fillet welds. All welds shall be made by a qualified welder in accordance with Item 448.

All permanently exposed form metal, where the galvanized coating has been damaged, shall be thoroughly cleaned and repaired in accordance with Item 445, "Galvanizing". Minor heat discoloration in areas of welds need not be touched up.

Flutes shall line up uniformly across the entire width of the structure where main reinforcing steel is located in the flute.

Construction joints will not be permitted unless shown on the plans. The location of and forming details for any construction joint used shall be shown on the forming plans. Forms below a construction joint must be removed after curing of the slab.

A sequence for uniform vibration of concrete shall be approved by the Engineer prior to concrete placement. Attention must be given to prevent damage to the forms, yet provide proper vibration to prevent voids or honeycomb in the flutes and at headers and/or construction joints.

Texas Department of Transportation
Bridge Division

PERMANENT METAL DECK FORMS

PMDF

FILE: pmdfstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 2006	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		613A
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

PATH:
LEVELS DISPLAYED

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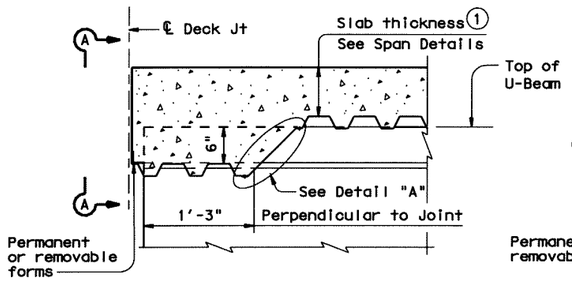
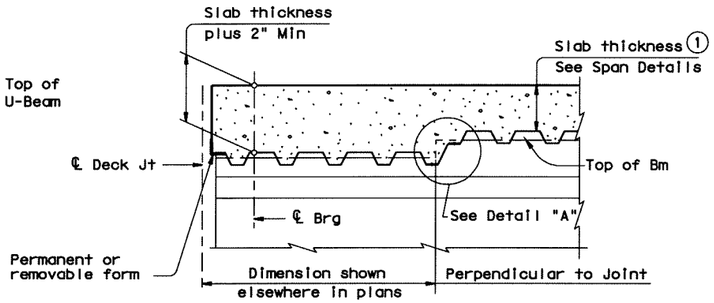
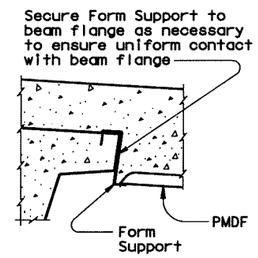


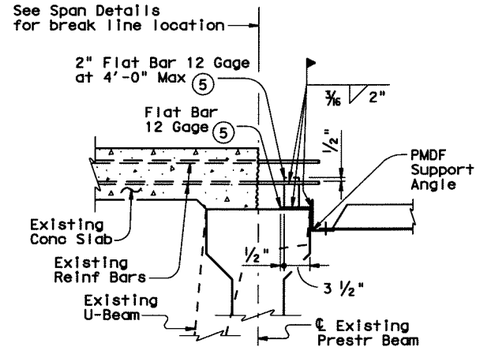
AT THICKENED SLAB END FOR U-BEAMS



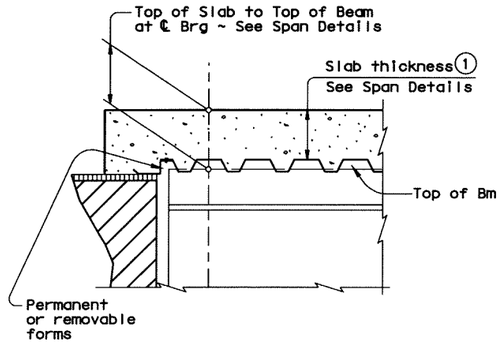
AT THICKENED SLAB END FOR PRESTRESSED I-BEAMS AND STEEL BEAMS



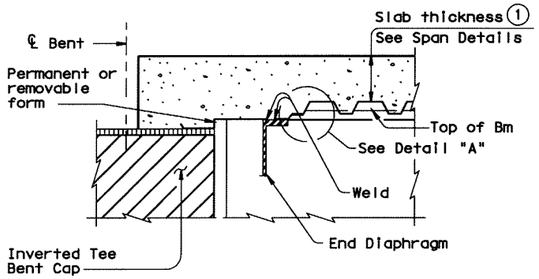
SECTION A-A



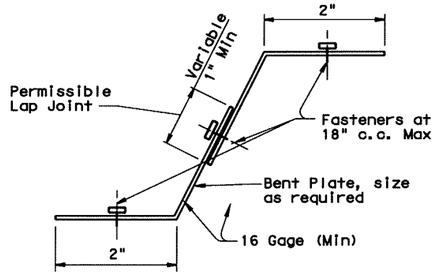
SHOWING PRESTRESSED CONCRETE I-BEAMS AND U-BEAMS



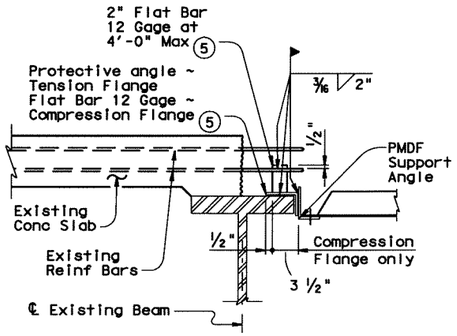
AT SLAB OVER ABUT BKWL OR INV TEE STEM FOR CONC BEAMS WITHOUT THICKENED SLAB END



AT SLAB OVER INV TEE STEM FOR STEEL BEAMS WITHOUT THICKENED SLAB END

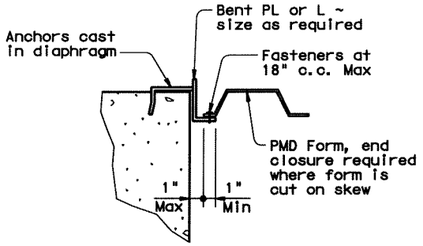


DETAIL "A"

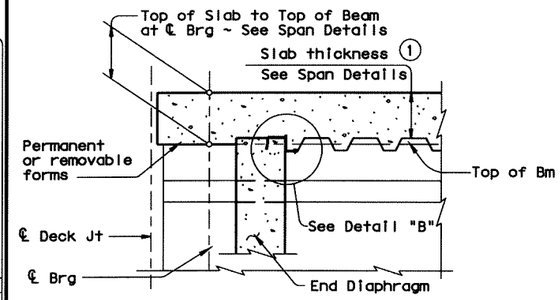


SHOWING STEEL BEAMS

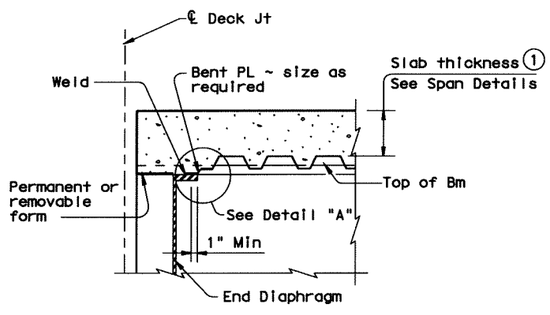
WIDENING DETAILS



DETAIL "B"



AT CONC END DIAPHRAGM FOR PRESTRESSED I-BEAMS AND STEEL BEAMS



AT END DIAPHRAGM FOR STEEL BEAMS WITHOUT THICKENED SLAB END

(1) Slab thickness minus 5/8" if corrugations match reinforcing bars

(5) Minimum yield stress of 12 Gage bars shall be 40 ksi

DETAILS AT ENDS OF BEAMS

SHEET 2 OF 2

Texas Department of Transportation
Bridge Division

PERMANENT METAL DECK FORMS

PMDF

FILE: pmdfstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2006	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	DAL	(SEE TITLE SHEET)		613B
	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	ROCKWALL	0451	01	032	SH205

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PATH:

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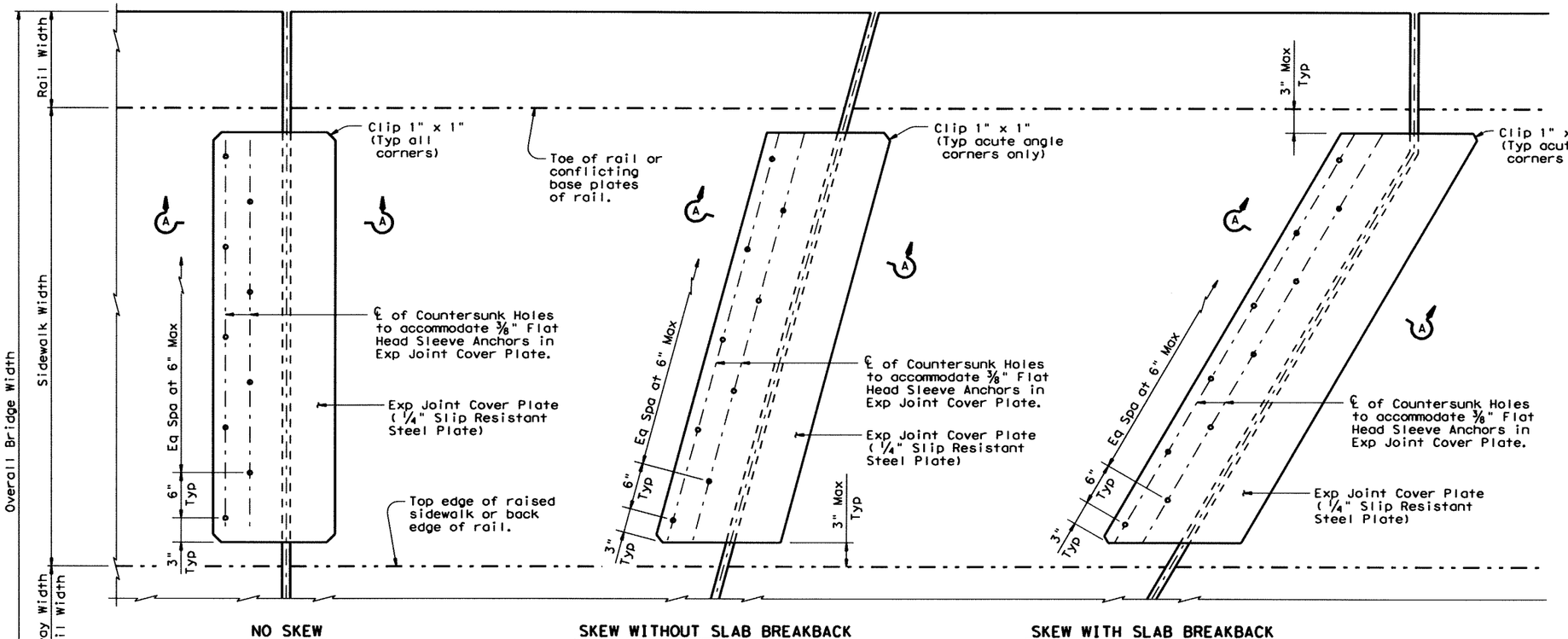
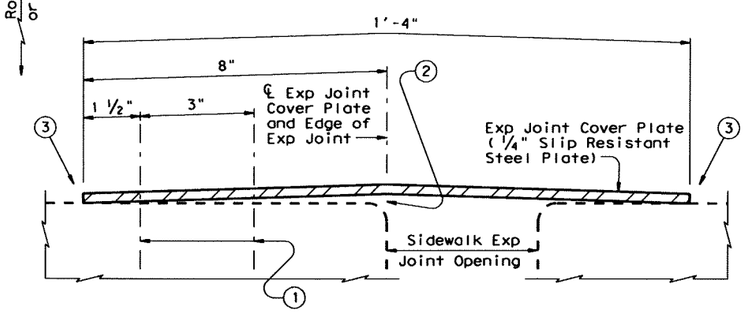
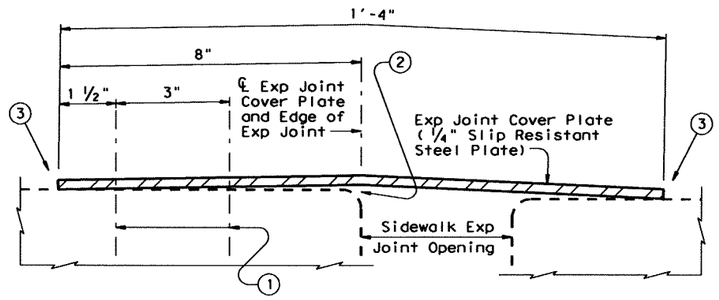


PLAN

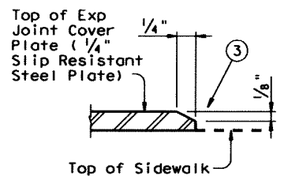


SHOWING LEVEL EXP JOINT

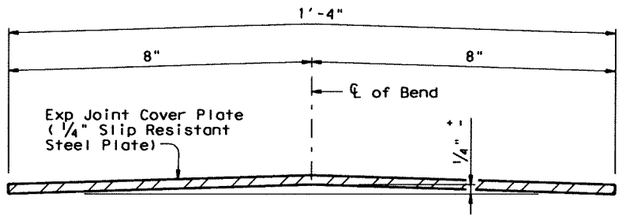


SHOWING UNLEVEL EXP JOINT
(Install Sleeve Anchors on high side of Exp Joint)

SECTION A-A



EXP JOINT COVER PLATE BEVEL DETAIL
Bevel all plate edges as shown.



BENDING DIAGRAM OF EXP JOINT COVER PLATE

① ℄ ⅜" x 2 ½" Min, Flat Head Sleeve Anchors, Stainless Steel. Countersink Flat Head Sleeve Anchors in ¼" Slip Resistant Steel Plate.

② It is not necessary to remove plate crown provided the plate is firmly secured to the sidewalk.

③ Transverse edges must be in contact with sidewalk surface after installation.

APPROVED SLIP RESISTANT PLATE	
Product	Manufacturer Website
Mebac® #2, Steel	www.ikgindustries.com
Algrip™, Steel	www.algrip.com
SlipNOT® Grade 2, Steel	www.slipnot.com

GENERAL NOTES:

Sidewalk expansion joint cover plates can only accommodate up to a 7" maximum expansion joint.

Details provided are applicable to concrete walkway surfaces only.

Sidewalk expansion joint cover plates must be hot-dipped galvanized ¼" slip resistant steel plate. Checker plate or diamond plate is not allowed nor are slip resistant tapes, films and non-metallic coatings.

Minimum required yield strength of steel plate is 36 ksi.

Hot-dip galvanize slip resistant steel plate after fabrication in accordance with Item 445, "Galvanizing".

Provide stainless steel flat head sleeve anchors meeting the requirements of ASTM F 593, Group I, Alloy 304. Countersink holes in slip-resistant plate for sleeve anchors. Drill holes in sidewalk as per sleeve anchor manufacturer's recommendations. Install sleeve anchors flush with, or slightly recessed below, top surface of sidewalk expansion joint cover plate.

Shop drawings for the fabrication of Sidewalk Expansion Joint Cover Plate will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

A Bridge Sidewalk Expansion Joint Cover Plate Layout which identifies location side of sleeve anchors and orientation of all cover plate sections will be developed by the fabricator. Mark each steel section in accordance with the Bridge Sidewalk Expansion Joint Cover Plate Layout. A copy of the Bridge Sidewalk Expansion Joint Cover Plate Layout is to be provided to the Engineer.

Payment for sidewalk expansion joint cover plates will be by the pound of "Structural Steel (Misc)" as per Item 442, "Metal for Structures".

Estimated weight of one sidewalk expansion joint cover plate is 14 plf.

CHANGE ORDER #96

Texas Department of Transportation
Bridge Division

BRIDGE SIDEWALK EXPANSION JOINT COVER PLATE (ALL SKEWS)

BS-EJCP

FILE: bsejstel.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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	DALLAS	0451	01	032	SH 356

ACC:
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1