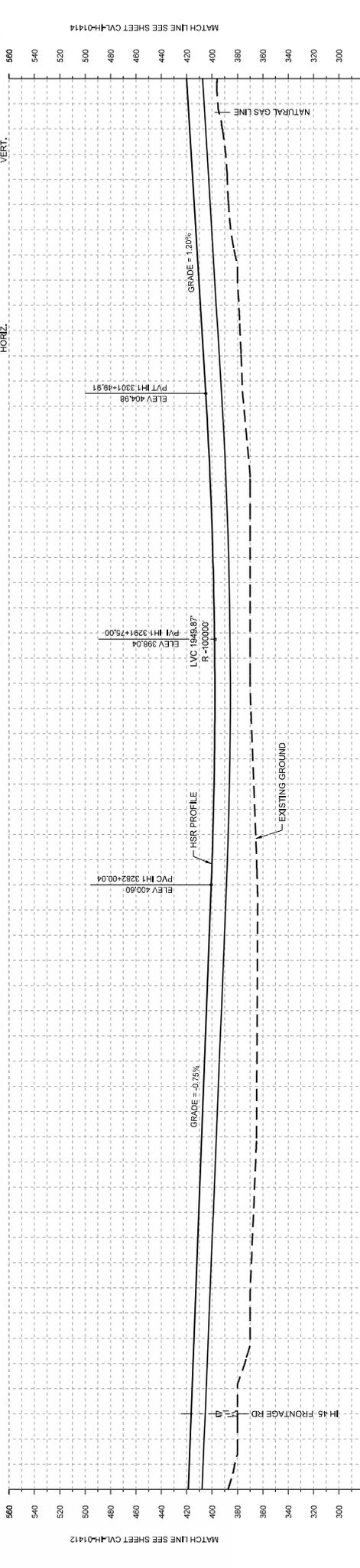




PLAN



STATIONING	IH1 3258+00	IH1 3260+00	IH1 3270+00	IH1 3280+00	IH1 3290+00	IH1 3300+00	IH1 3310+00	IH1 3314+00
HOR. ALIGNMENT	R=27000 EZ157							
VER. ALIGNMENT	L=1350 L=2725.03 G=0.750%							
CUT AND FILL	VIADUCT							
TYP. SECTION	VIADUCT							

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
IN CHARGE	K. SEYMOUR
DATE	C. TAYLOR
DISCIPLINE	09/15/2017

**ARUP**  
 1070 RHMARD AVE., SUITE 475  
 HOUSTON, TEXAS 77002, USA  
 www.arup.com  
 Tel: +1 281 541 4407  
 Fax: +1 281 541 4407  
 Texas Registered Engineering Firm #1980

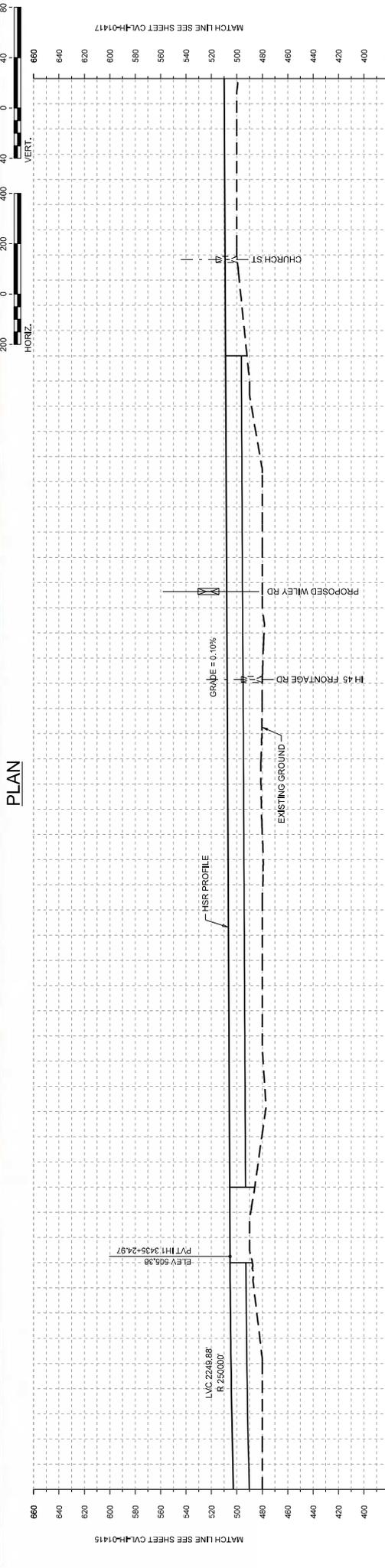
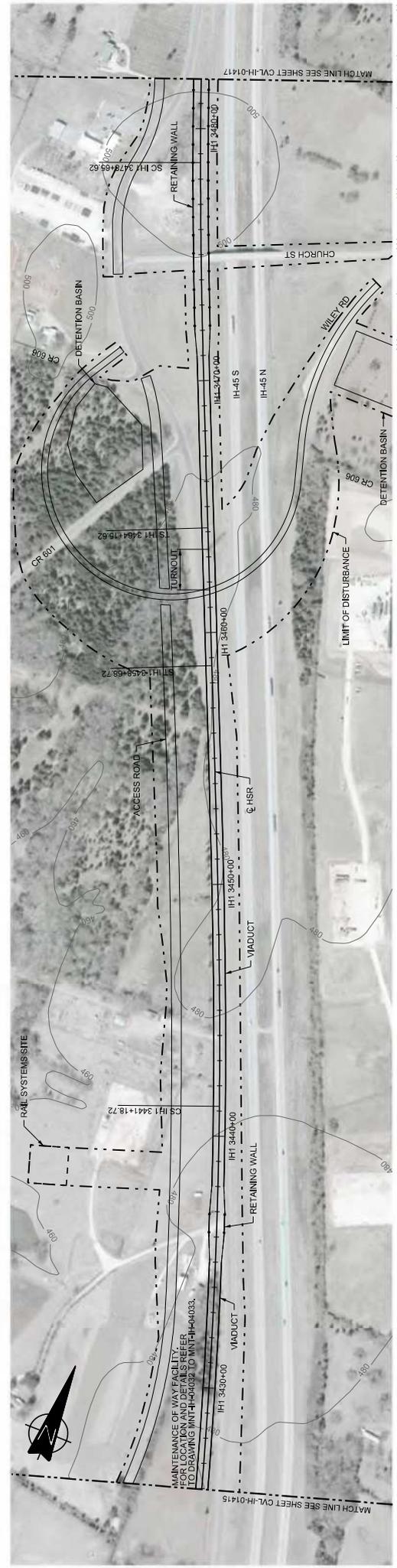
**FRESE NICHOLS**  
 2711 North Highway Ave., Suite 3000  
 Dallas, Texas 75208  
 www.fresenichols.com  
 Tel: 214 372 2001  
 Texas Registered Engineering Firm #2144

**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Scale: AS SHOWN  
 Drawing Title: FINAL DRAFT  
 Job No: 234180  
 Drawing No: CIVL-IH-01413  
 Rev: 01







STATIONING	IH1 3426+00	IH1 3430+00	IH1 3440+00	IH1 3450+00	IH1 3460+00	IH1 3470+00	IH1 3480+00	IH1 3482+00
HOR. ALIGNMENT	L=7850							
VER. ALIGNMENT	L=3388 L=7850 L=1450 L=1401							
CUT AND FILL	RETAINED FILL (C)							
TYP. SECTION	VIADUCT (V)							

MAINTENANCE OF WAY FACILITY FOR LOCATION AND DETAILS REFER TO DRAWING WNI-H-0032 TO WNI-H-0033.

DESIGNED BY  
**F. DAGRIN**

CHECKED BY  
**R. GIBBINS**

DRAWN BY  
**K. SEYMOUR**

IN CHARGE  
**C. TAYLOR**

DATE  
**09/15/2017**

BY  
**CHK**

APP  
**DISCIP:RKN**

Scale: **AS SHOWN**  
Drawing Status: **FINAL DRAFT**

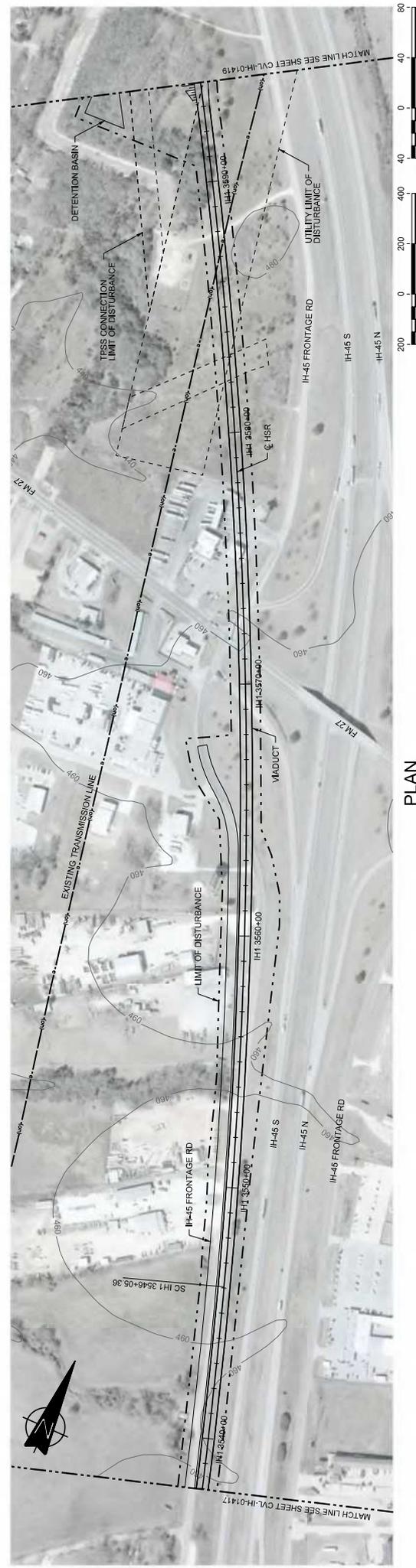
Job No: **234180**  
Drawing No: **CVL-IH-01416**  
Rev: **01**

Client: **TEXAS CENTRAL**  
1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

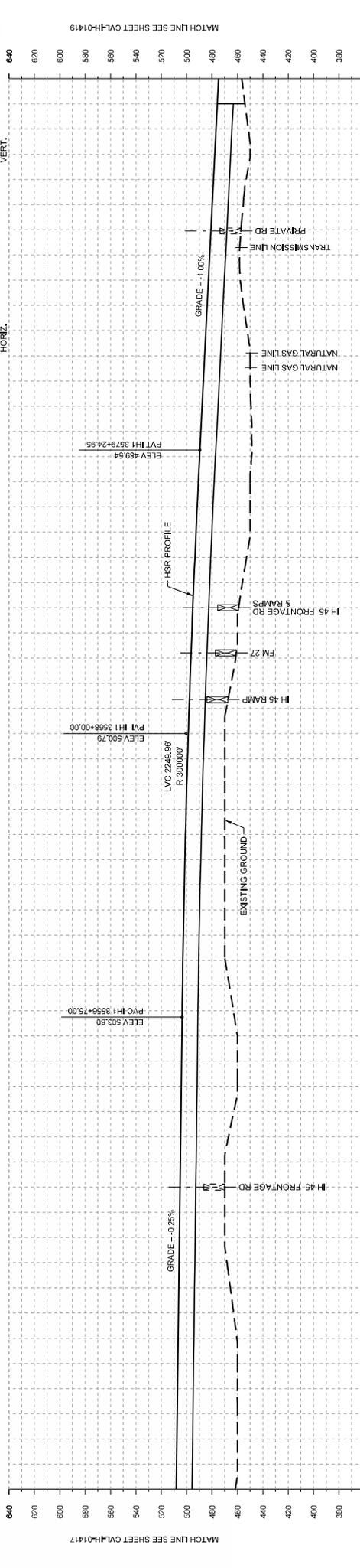
Client: **FRESE NICHOLS**  
2711 North Harvard Ave., Suite 3000  
Dallas, Texas 75206  
www.fresenichols.com  
Tel: (214) 372-2001  
Fax: (214) 372-2001  
Texas Registered Engineering Firm F-144

ARUP  
Rail Systems Inc.  
10707 Rinkwood Ave., Suite 475  
Houston, Texas 77042, USA  
www.arup.com  
Tel: (713) 843-1467  
Texas Registered Engineering Firm F-1980





PLAN



STATIONING	IH1 3538+00	IH1 3540+00	IH1 3550+00	IH1 3560+00	IH1 3570+00	IH1 3580+00	IH1 3590+00	IH1 3594+00
HOR. ALIGNMENT	L=1750							
VER. ALIGNMENT	L=3665.00 G=-0.250%							
CUT AND FILL	L=6965.09 G=+1.000%							
TYP. SECTION	VIADUCT (T)							

PROFILE

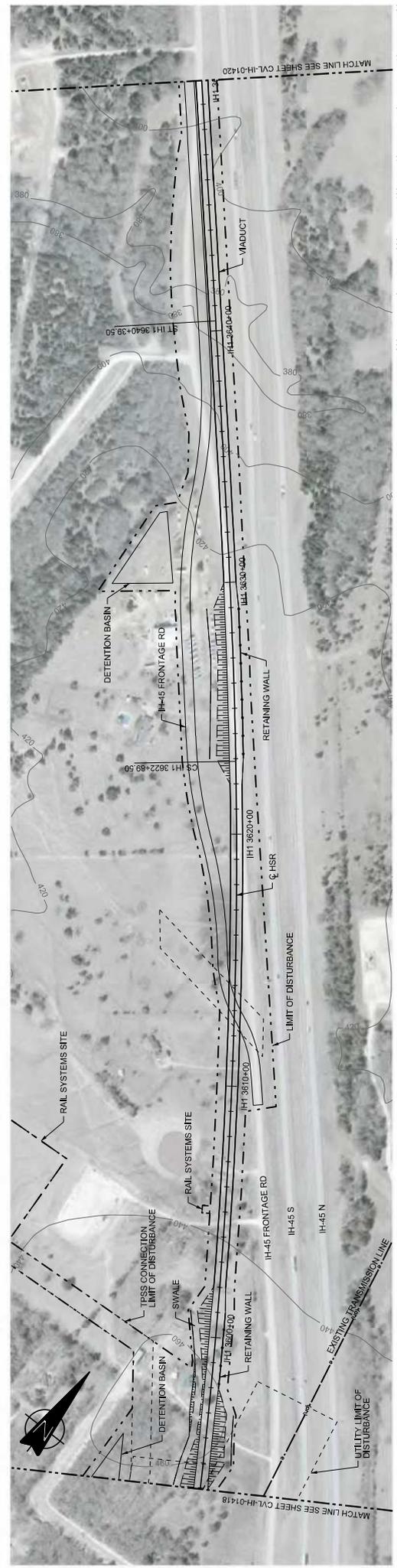
DESIGNED BY	F. DAGRIN			
CHECKED BY	R. GIBBINS			
DRAWN BY	K. SEYMOUR			
IN CHARGE	C. TAYLOR			
DATE	09/15/2017			
BY	CHK			
DATE	APP			
REV	DATE	BY	CHK	APP
DISCIPLINE				

**ARUP**  
 1070 Riva Road, Suite 475  
 Houston, Texas 77042, USA  
 www.arup.com | Tel: (713) 843 1467  
 Texas Registered Engineering Firm F-1968

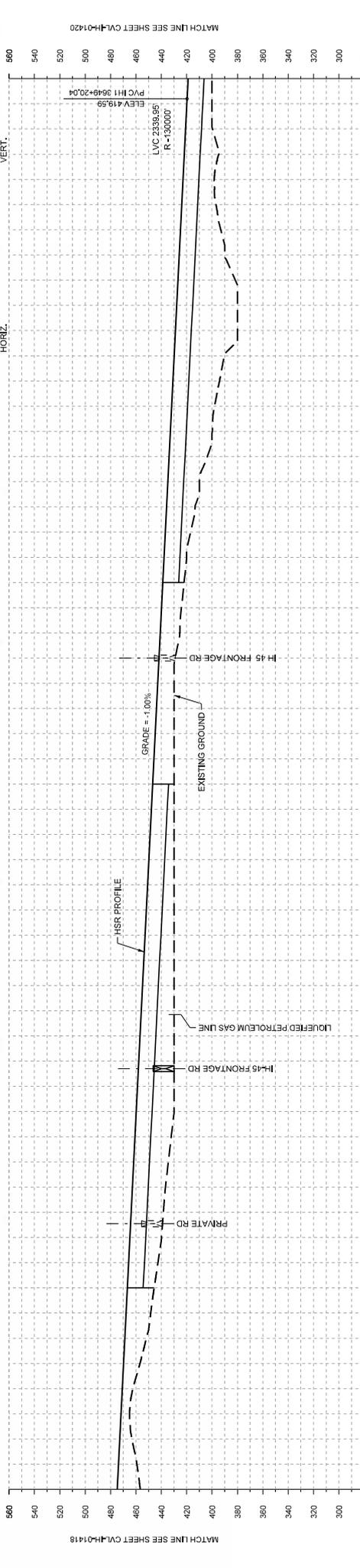
**FRESE NICHOLS**  
 2711 North Island Ave., Suite 3000  
 Dallas, Texas 75238  
 www.fresenichols.com | Tel: (214) 372 2001  
 Texas Registered Engineering Firm F-1644

**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Scale: AS SHOWN  
 Drawing Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 Job No: 234180  
 Drawing No: CVL-IH-01418  
 Date: 01



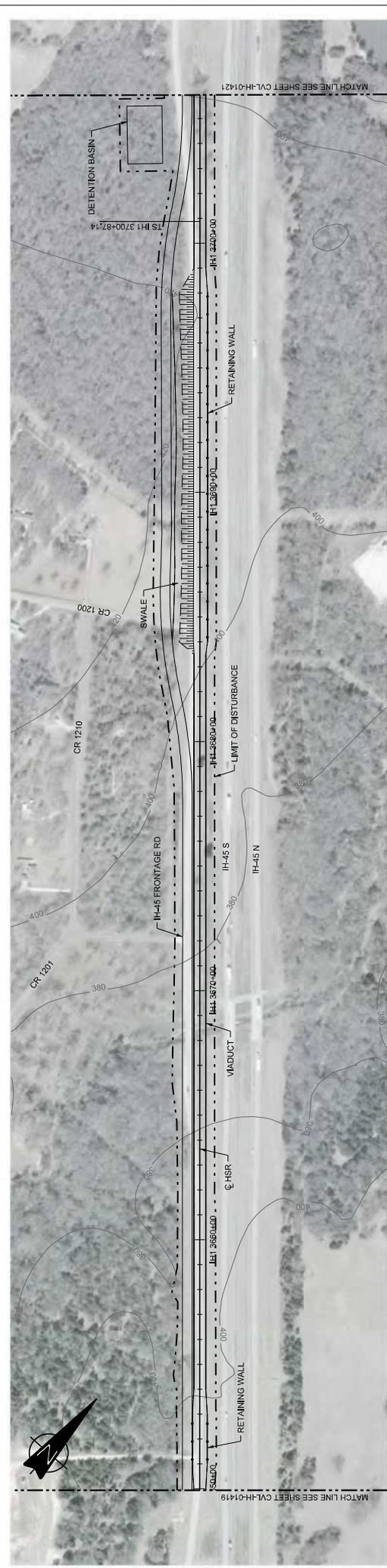
PLAN



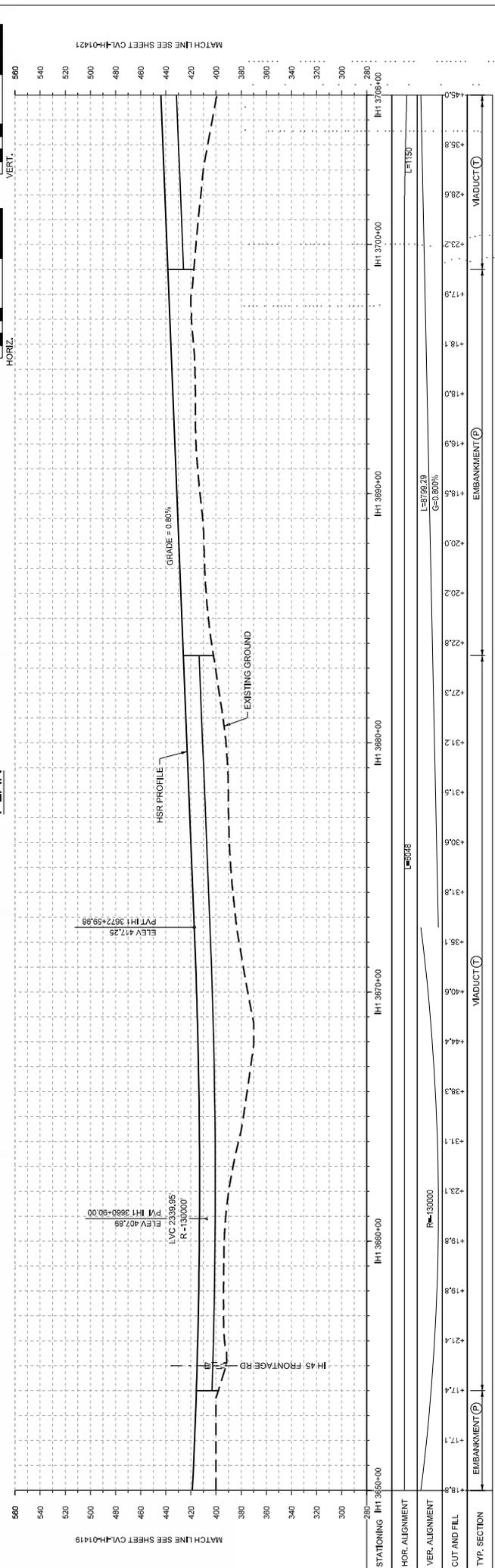
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VER. ALIGNMENT	L=6985.09 G=-1.000%						
CUT AND FILL	+18.2						
TYP. SECTION	EMBANKMENT (E)		VIADUCT (V)		EMBANKMENT (E)		

PROFILE

DESIGNED BY <b>F. DAGRIN</b>	<p><b>ARUP</b> 2711 North Howard Ave., Suite 3300 Dallas, Texas 75242, USA www.arup.com   Tel: (214) 343 1467 Texas Registered Engineering Firm F-1989</p>	<p><b>TEXAS CENTRAL</b> 1408 South Lamar Street, Suite 1022, Dallas, Texas 75215</p>	<p>Client <b>ARUP</b></p>	<p>Contracting Firm <b>ARUP</b></p>	<p>Scale: <b>AS SHOWN</b> Drawing Status: <b>FINAL DRAFT</b></p>
CHECKED BY <b>R. GIBBINS</b>					
DATE <b>09/15/2017</b>	<p>PROJECT NO. <b>234180</b></p>	<p>JOB NO. <b>234180</b></p>	<p>DRAWING NO. <b>CVL-IH-01419</b></p>	<p>DATE <b>01</b></p>	



PLAN



PROFILE

DESIGNED BY <b>F. DAGRIN</b>	DATE 09/15/2017
CHECKED BY <b>R. GIBBINS</b>	BY CHK
DESIGNED BY <b>K. SEYMOUR</b>	DATE 09/15/2017
CHECKED BY <b>C. TAYLOR</b>	BY CHK
DATE 09/15/2017	APP

ARUP

1400 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Howard Ave., Suite 3000  
 Dallas, Texas 75206  
 www.arup.com

TEXAS CENTRAL

Client: **TEXAS CENTRAL**

1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Scale: **AS SHOWN**

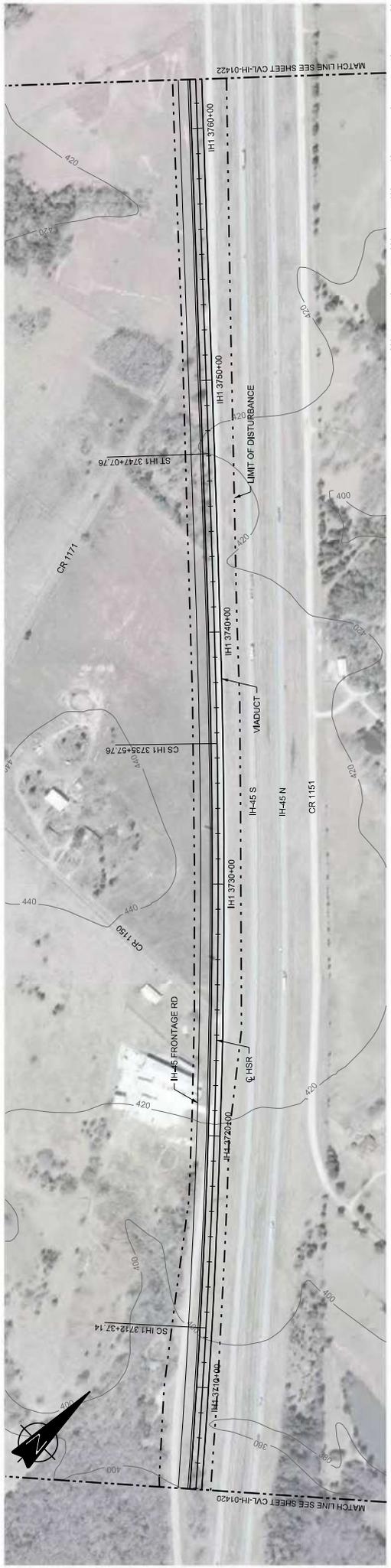
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Job No: **234180**

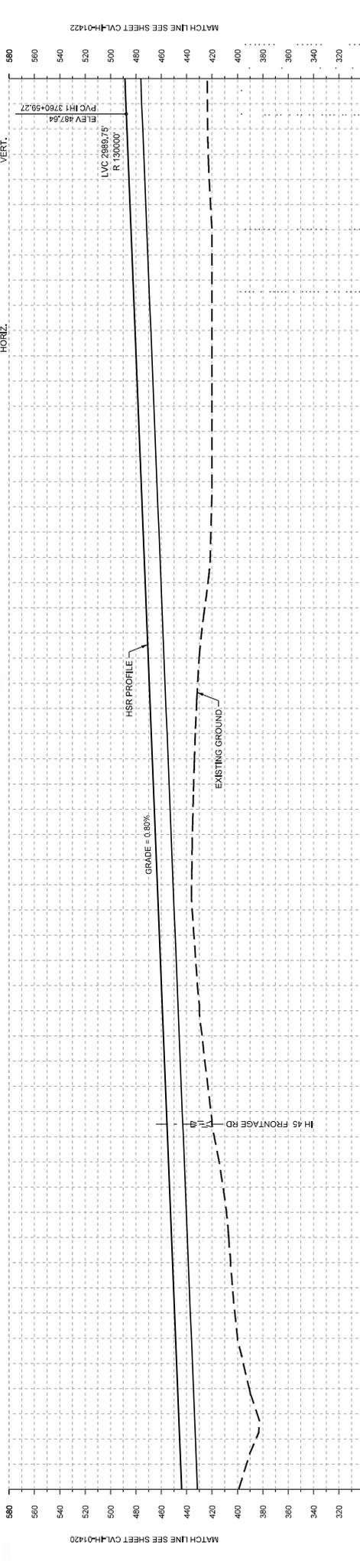
Drawn By: **CVL-JH-01420**

Checked By: **01**

Final Draft



PLAN



STATIONING	IH1 3706+00	IH1 3710+00	IH1 3720+00	IH1 3730+00	IH1 3740+00	IH1 3750+00	IH1 3760+00	IH1 3762+00
HOR. ALIGNMENT	R=23000 E=521							
VER. ALIGNMENT	L=1150							
CUT AND FILL	L=6795.29 G=0.800%							
TYP. SECTION	VIADUCT (1)							

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
IN CHARGE	K. SEYMOUR
DATE	C. TAYLOR
REV	09/15/2017
BY	CHK
DATE	APP
REV	DISCIP:EN

**ARUP**  
 100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Howard Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 www.arup.com Tel: (214) 312 2001  
 Fax: (214) 312 2001  
 Texas Registered Engineering Firm F-1980

**FRESE NICHOLS**  
 2711 North Howard Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 www.fresenichols.com Tel: (214) 312 2001  
 Fax: (214) 312 2001  
 Texas Registered Engineering Firm F-144

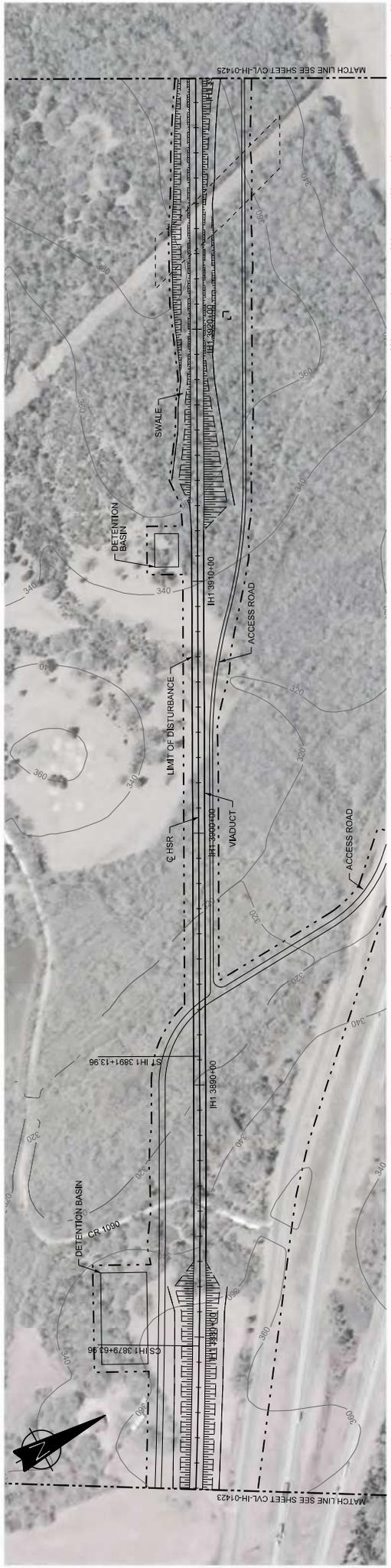
**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 IH1 3706+00 TO IH1 3762+00

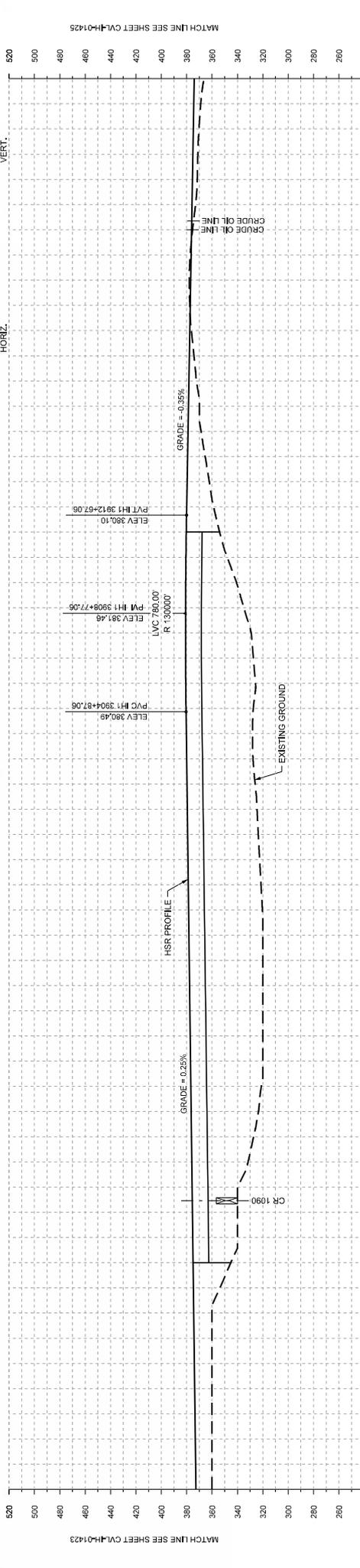
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 Job No: 234180  
 Drawing No: CVL-IH-01421  
 Rev: 01







PLAN



STATIONING	IH1 3874+00	IH1 3880+00	IH1 3900+00	IH1 3910+00	IH1 3930+00
HOR. ALIGNMENT	R=33000 L=757				
VER. ALIGNMENT		L=3141.43 G=0.250%			L=3078.10 G=-0.350%
CUT AND FILL	EMBANKMENT (E)	EMBANKMENT (A)	EMBANKMENT (A)	CUT (C)	EMBANKMENT (A)
TYP. SECTION		VIADUCT (E)			

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
DRAWN BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017

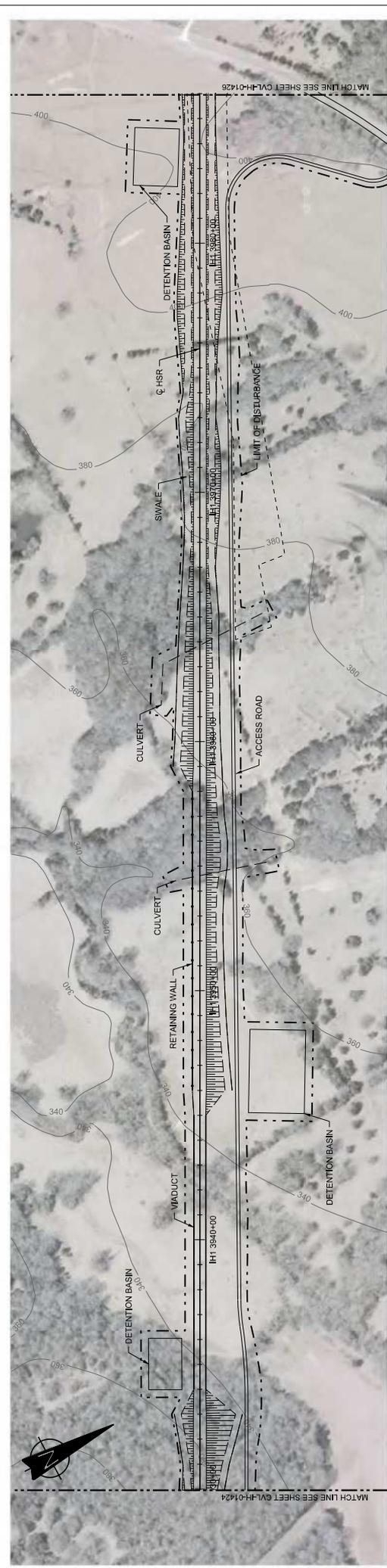
REV	DATE	BY	CHK	APP

Client: **ARUP**  
 100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Highway Ave., Suite 3300  
 Dallas, Texas 75206  
 www.arup.com Fax: (214) 312 2001  
 Texas Registered Engineering Firm F-1968

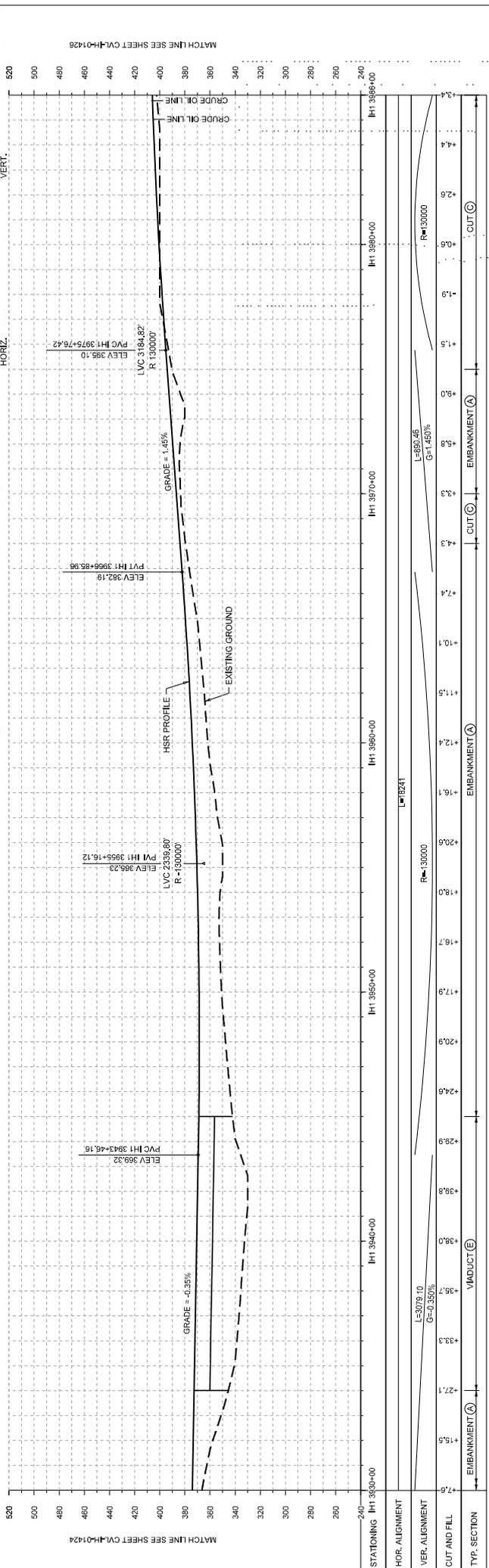
Client: **FREES NICHOLS**  
 2711 North Highway Ave., Suite 3300  
 Dallas, Texas 75206  
 www.freesnichols.com Fax: (214) 312 2001  
 Texas Registered Engineering Firm F-1968

Client: **TEXAS CENTRAL**  
 1408 South Lamar Street, Suite 1022, Dallas, Texas 75215

Scale: AS SHOWN  
 Drawing Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 Job No: 234180  
 Drawing No: CVL-IH-01424  
 Date: 01



PLAN



PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
DESIGNED BY	K. SEYMOUR
CHECKED BY	C. TAYLOR
DATE	09/15/2017

REV	DATE	BY	CHK	APP

DESCRIPTION: DISCIPLINE

**ARUP**  
 1070 Riva Road, Suite 475  
 Houston, Texas 77042, USA  
 www.arup.com Tel: (713) 443 1467  
 Texas Registered Engineering Firm F-0980

**FRESE NICHOLS**  
 2711 North Island Ave., Suite 3000  
 Dallas, Texas 75206  
 www.fresenichols.com Tel: (214) 372 2001  
 Texas Registered Engineering Firm F-044

**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Client: **ARUP**

Project: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**

Job No: **234180**

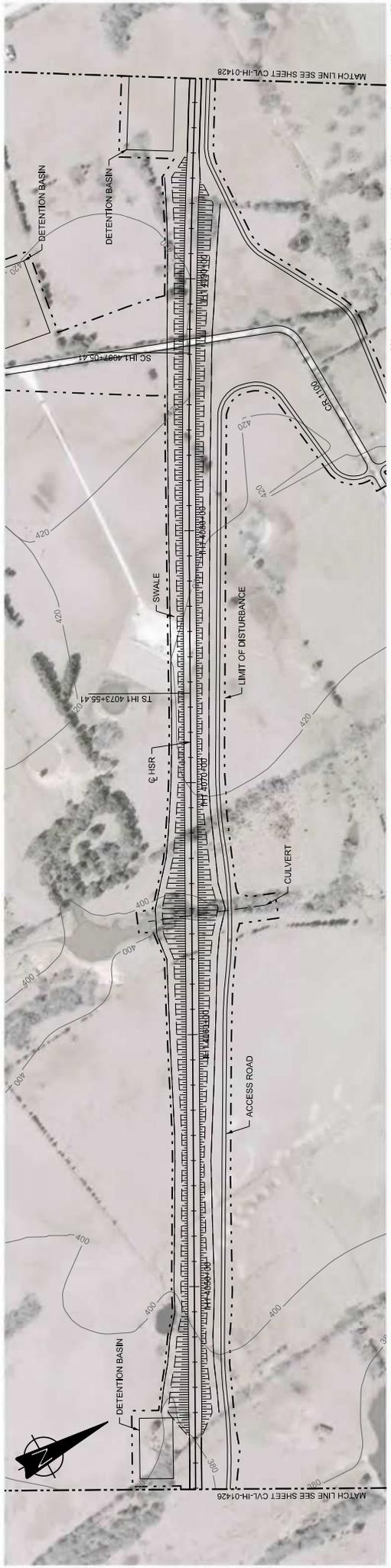
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Checked By: **01**

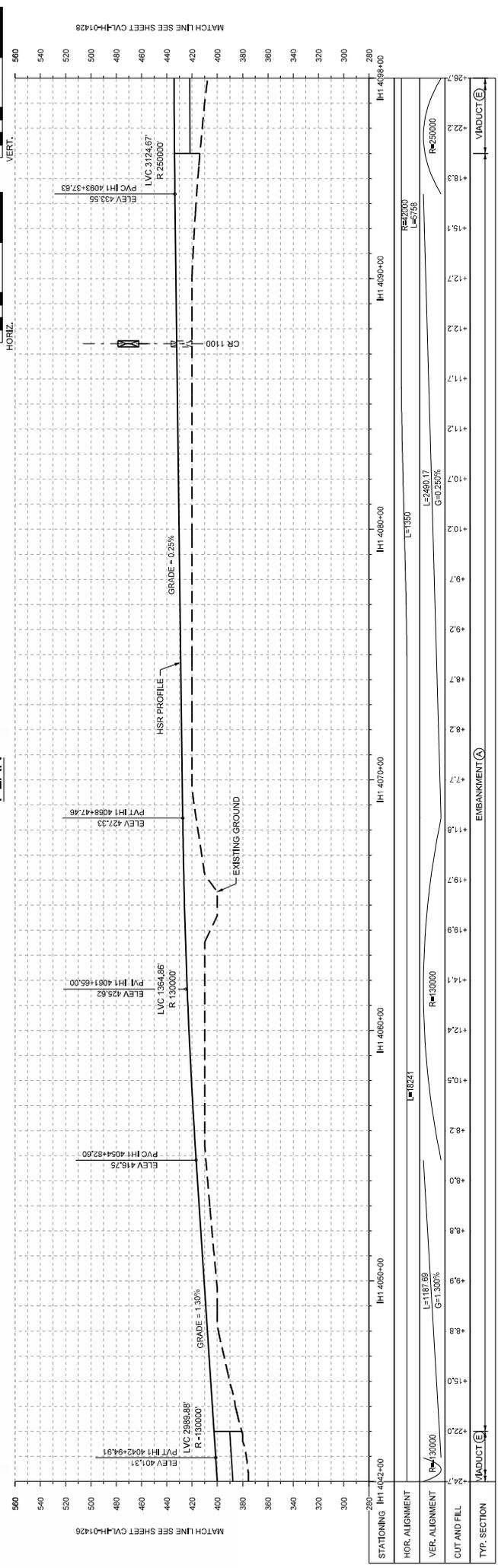
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Design Status: **FINAL DRAFT**





PLAN



PROFILE

REV	DATE	BY	CHK	APP

DESIGNED BY <b>F. DAGRIN</b>
CHECKED BY <b>R. GIBBINS</b>
DRAWN BY <b>K. SEYMOUR</b>
IN CHARGE <b>C. TAYLOR</b>
DATE <b>09/15/2017</b>

DISCIPLINE <b>DISCIPLINE</b>
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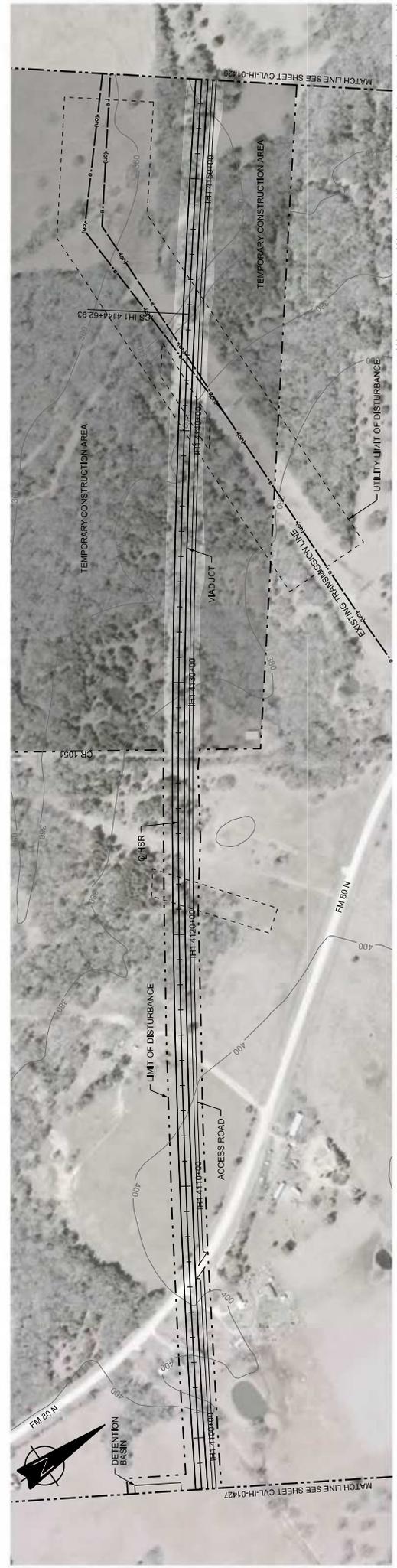
**ARUP**  
 1070 Rhythmic Ave., Suite 475  
 Houston, Texas 77002, USA  
 Tel: (713) 443 1467  
 www.arup.com  
 Texas Registered Engineering Firm F-0980

**FRESE NICHOLS**  
 2711 North Island Ave., Suite 300  
 Dallas, Texas 75206  
 Tel: (214) 371 2001  
 www.fresenichols.com  
 Texas Registered Engineering Firm F-0144

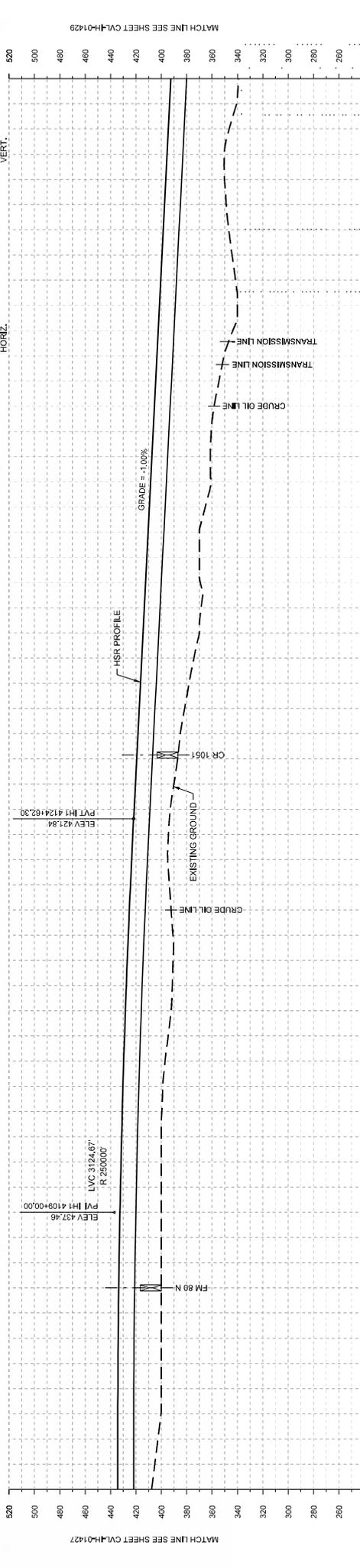
**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Client  
 Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
**IH1 4042+00 TO IH1 4098+00**

Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01427**  
 Rev: **01**



PLAN



STATIONING	IH1 4098+00	IH1 4103+00	IH1 4110+00	IH1 4120+00	IH1 4130+00	IH1 4140+00	IH1 4150+00	IH1 4154+00
HOR. ALIGNMENT	R=20000 L=5759							
VER. ALIGNMENT	P=250000							
CUT AND FILL	[Graph showing cut and fill areas]							
TYP. SECTION	[Graph showing typical cross-section]							

PROFILE

DESIGNED BY	F. DAGRIN			
CHECKED BY	R. GIBBINS			
DRAWN BY	K. SEYMOUR			
IN CHARGE	C. TAYLOR			
DATE	09/15/2017			
REV	DATE	BY	CHK	APP

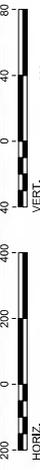
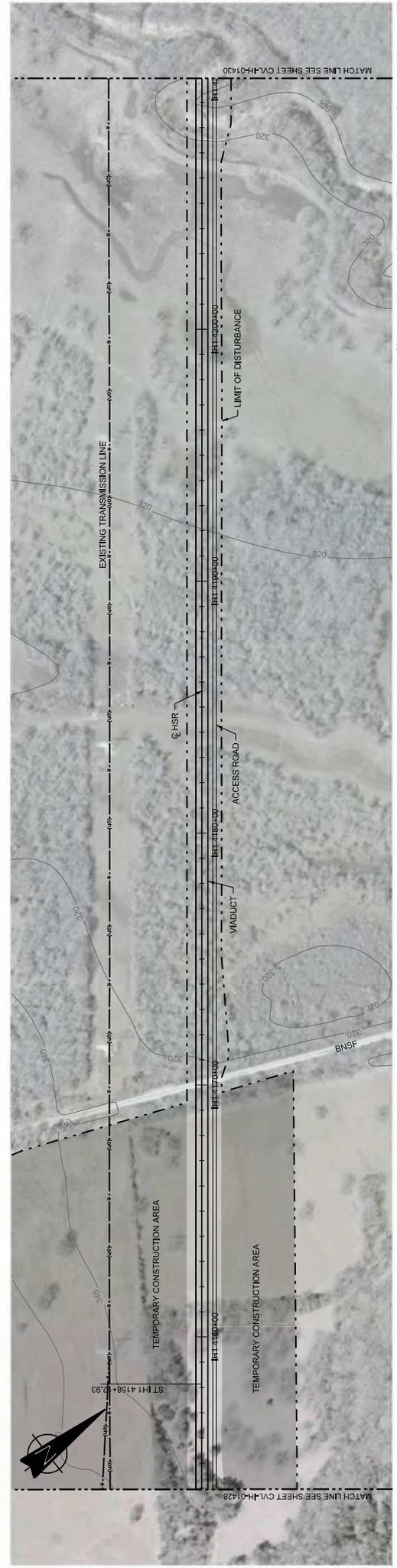
**ARUP**  
 1070 RHM Road, Suite 475  
 Houston, Texas 77062, USA  
 Tel: +1 281 443 1467  
 www.arup.com  
 Texas Registered Engineering Firm F-1968

**FRESE NICHOLS**  
 2711 North Loop West, Suite 3300  
 Dallas, Texas 75208  
 Tel: +1 214 371 2001  
 www.fresenichols.com  
 Texas Registered Engineering Firm F-0414

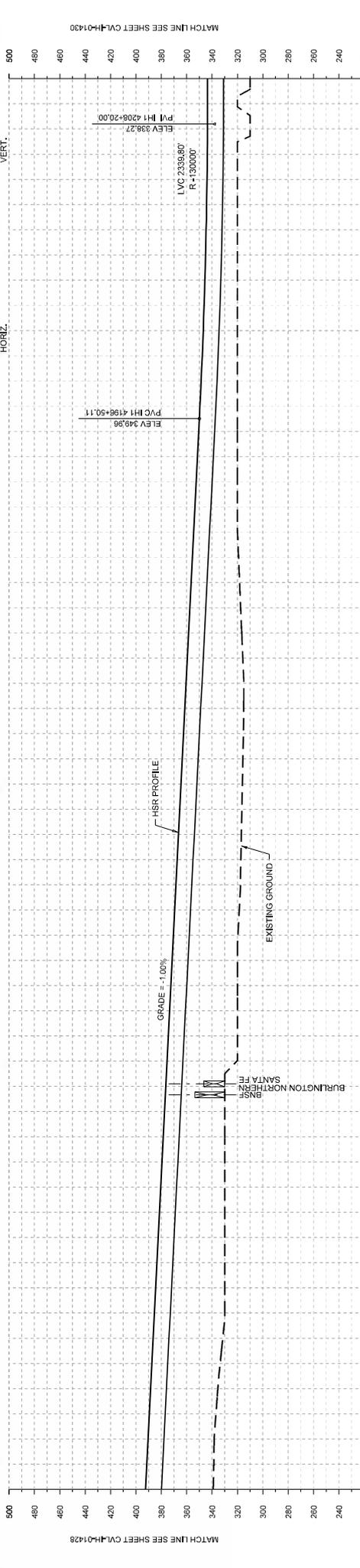
**TEXAS CENTRAL**  
 1408 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawn by: **IH**  
**IH (45) SEGMENT CIVIL**  
**PLAN AND PROFILE**  
**IH1 4098+00 TO IH1 4154+00**

Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**  
 Job No: **234189**  
 Drawing No: **CVL-IH-01428**  
 Rev: **01**



PLAN



STATIONING	IH1 4154+00	IH1 4160+00	IH1 4170+00	IH1 4180+00	IH1 4190+00	IH1 4200+00	IH1 4210+00
HOR. ALIGNMENT	L=1950						
VER. ALIGNMENT	L=787.82 G=-1.000%						
CUT AND FILL	VADUCT (X)						
TYP. SECTION	VADUCT (X)						

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
DRAWN BY	K. SEYMOUR
IN CHARGE	C. TAYLOR
DATE	09/15/2017
BY	CHK
APP	APP

**ARUP**  
 1000 North Lamar Street, Suite 475  
 Houston, Texas 77002, USA  
 Tel: +1 281 445 4400  
 Fax: +1 281 445 4407  
 www.arup.com  
 Texas Registered Engineering Firm F-1988

**FRESE NICHOLS**  
 2711 North Lamar Ave., Suite 300  
 Dallas, Texas 75228  
 Tel: 214 312 2001  
 Fax: 214 312 2001  
 www.fresenichols.com  
 Texas Registered Engineering Firm F-5214

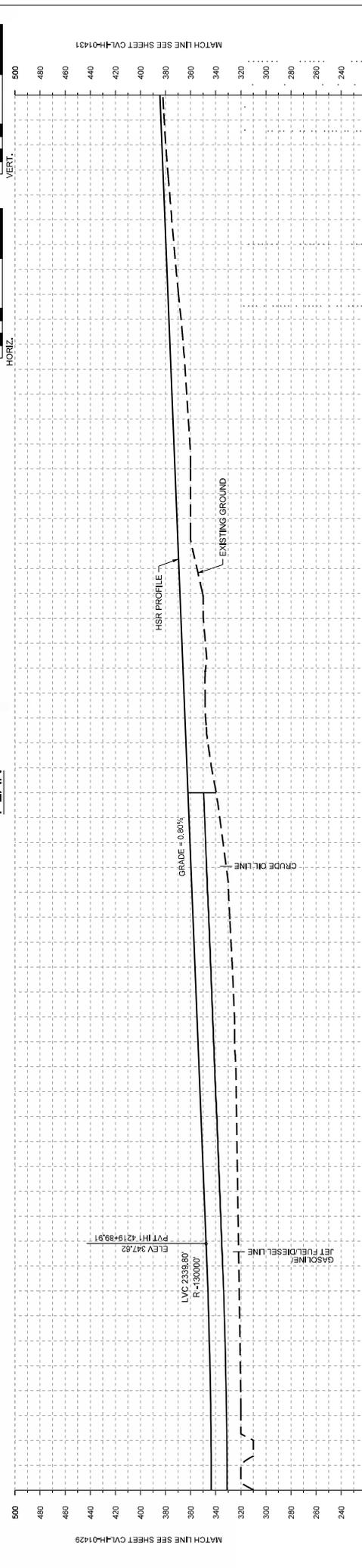
**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawn by: **IB**  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 IH1 4154+00 TO IH1 4210+00

Scale: **AS SHOWN**  
 Drawing Title: **FINAL DRAFT**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01429**  
 Rev: **01**



PLAN



STATIONING	IH1 4210+00	IH1 4220+00	IH1 4230+00	IH1 4240+00	IH1 4250+00	IH1 4260+00	IH1 4266+00
HOR. ALIGNMENT	R=17185						
VER. ALIGNMENT	L=5002.82 G=-0.8007%						
CUT AND FILL	VIADUCT (K)						
TYP. SECTION	EMBANKMENT (E)						

PROFILE

DESIGNED BY	F. DAGRIN			
CHECKED BY	R. GIBBINS			
DRAWN BY	K. SEYMOUR			
IN CHARGE	C. TAYLOR			
DATE	09/15/2017			
BY	CHK			
APP	APP			
REV	DATE	BY	CHK	APP
DISCIPLINE				

**ARUP**  
 100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Howard Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 www.arup.com  
 Tel: (214) 312 2001  
 Fax: (214) 312 2001  
 Texas Registered Engineer #17154

**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Client: **ARUP**

Contract No: **IH (45) SEGMENT CIVIL**

Job No: **234180**

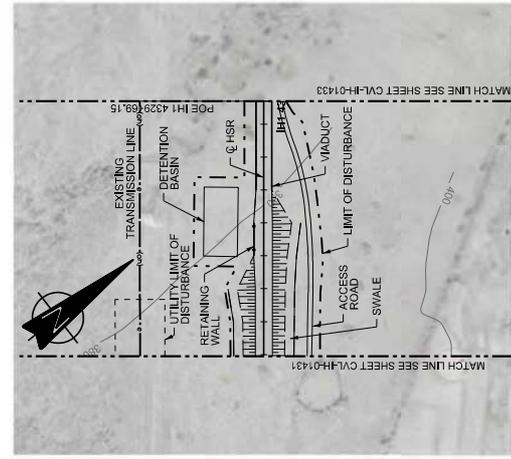
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Checked By: **01**

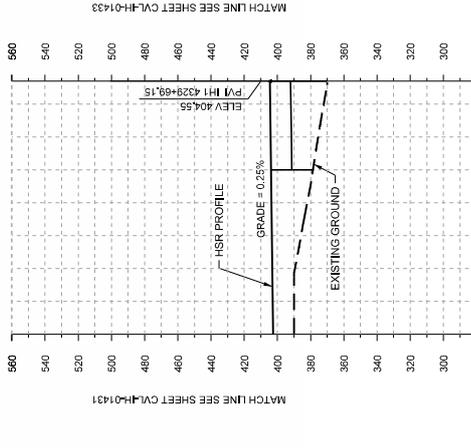
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Design Status: **FINAL DRAFT**





PLAN



STATIONING	IH1 4322+00	IH1 4329+69
HOR. ALIGNMENT	L=177.56	
VER. ALIGNMENT	L=5261.67 G=0.250%	
CUT AND FILL	2.28	2.28
TYP. SECTION	EMBANKMENT (E)	

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
IN CHARGE	K. SEYMOUR
DATE	C. TAYLOR
REV	09/15/2017
BY	CHK
DATE	APP
DESCRIPTION	

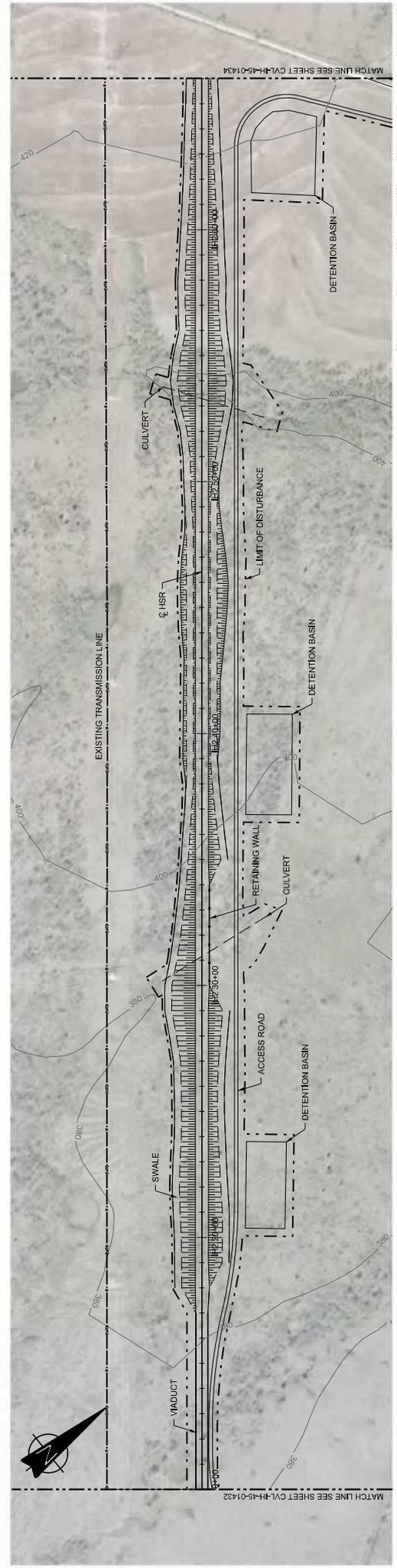
**ARUP**  
 1070 Rhythmic Ave., Suite 475  
 Houston, Texas 77002, USA  
 Tel: (713) 843 1467  
 www.arup.com  
 Texas Registered Engineer #1969

**FREESSE NICHOLS**  
 2711 North Island Ave., Suite 300  
 Dallas, Texas 75206  
 Tel: (214) 372 2001  
 www.freesse.com  
 Texas Registered Engineer #1964

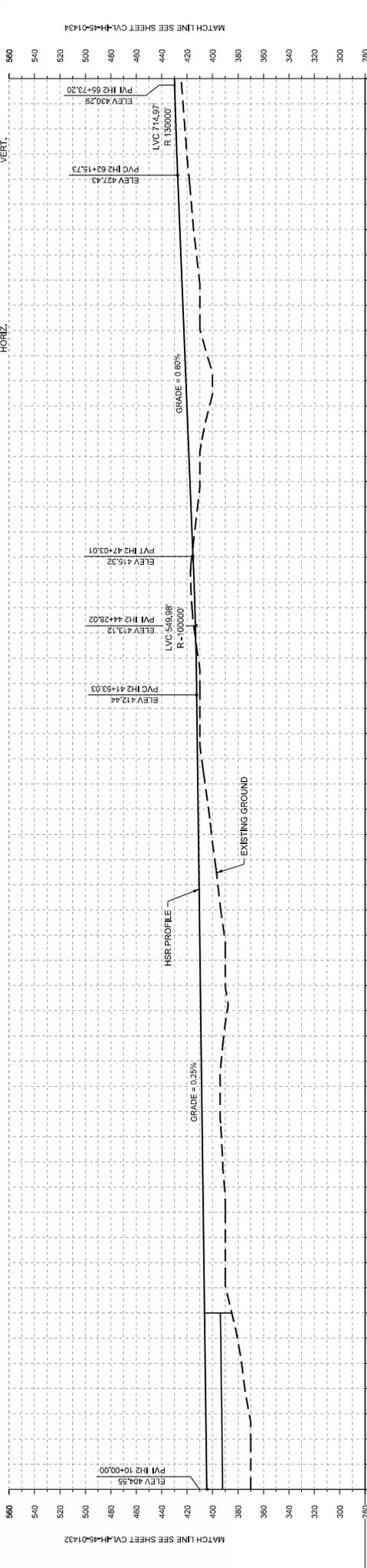
**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 IH1 4322+00 TO IH1 4329+69

Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01432**  
 Rev: **01**



PLAN



STATIONING	IH2 10+00	IH2 20+00	IH2 30+00	IH2 40+00	IH2 50+00	IH2 60+00	IH2 66+00
HOR. ALIGNMENT	L=1512.72 G=0.800%						
VER. ALIGNMENT	L=3153.03 G=0.250%						
CUT AND FILL	EM BANKMENT (E)						
TYP. SECTION	VIADUCT (X)	EM BANKMENT (E)					CUT (C)

**ARUP**  
1400 South Lamar Street, Suite 1022, Dallas, Texas 75215  
Tel: (214) 761-2001  
www.arup.com  
Texas Registered Engineering Firm F-1980

**TEXAS CENTRAL**  
1400 South Lamar Street, Suite 1022, Dallas, Texas 75215  
Tel: (214) 761-2001  
www.texascentral.com  
Texas Registered Engineering Firm F-1980

Client: **ARUP**

Project: **IH (45) SEGMENT CIVIL PLAN AND PROFILE IH2 10+00 TO IH2 66+00**

Scale: **AS SHOWN**

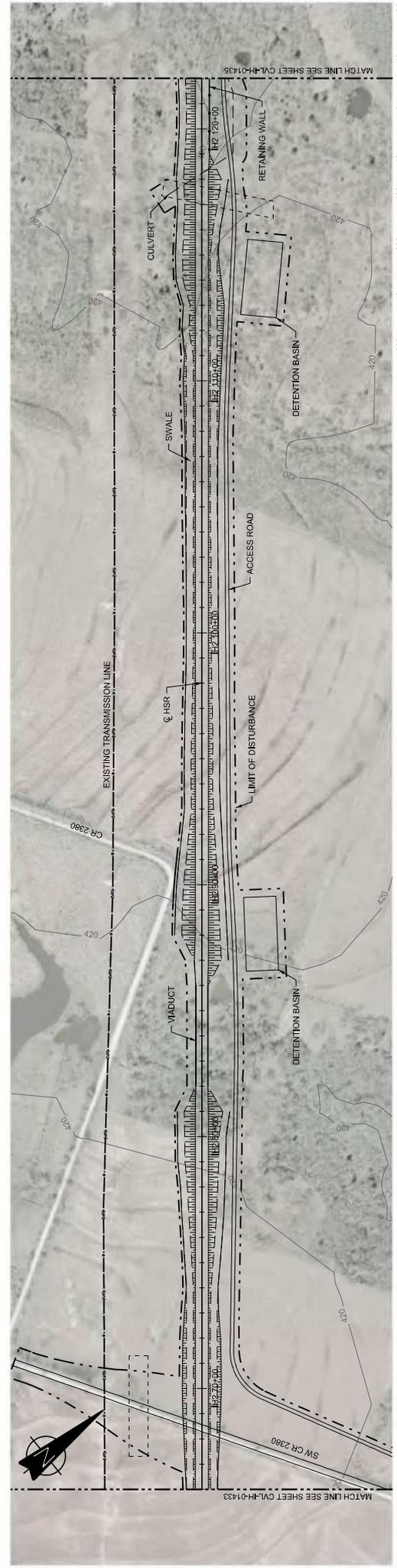
Drawing Title: **FINAL DRAFT**

Job No: **234180**

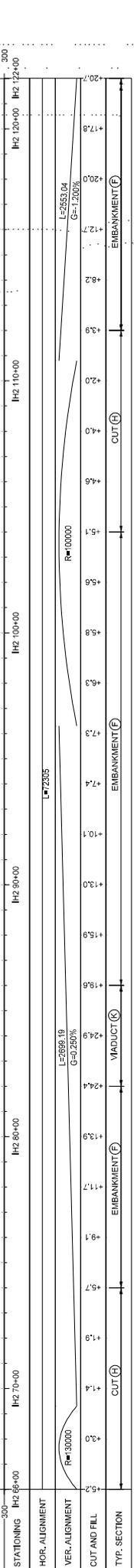
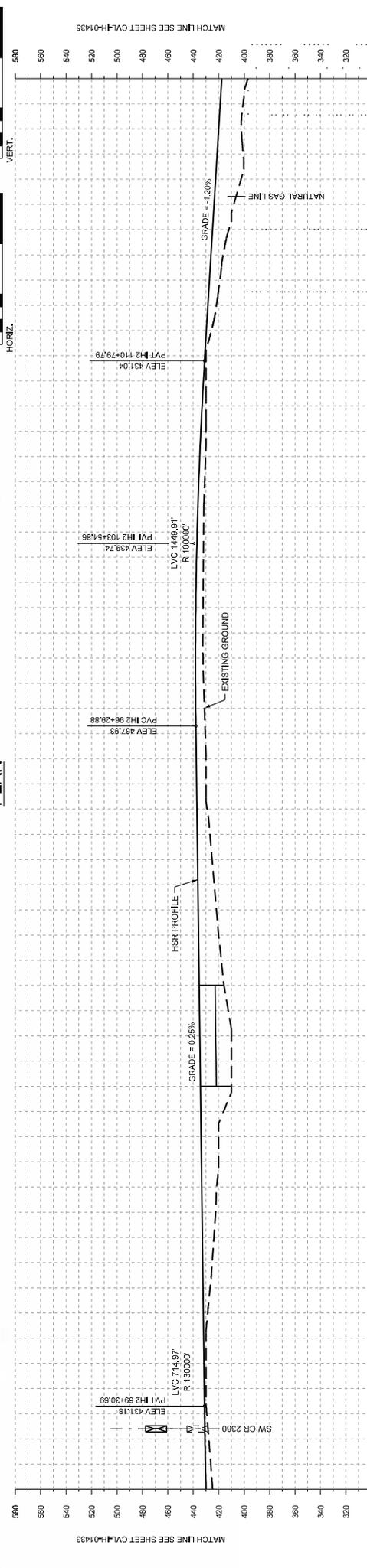
Drawn By: **CVL-JH-01433**

Rev: **01**

REV	DATE	BY	CHK	APP



PLAN



PROFILE

DESIGNED BY <b>F. DAGRIN</b>	DATE 09/15/2017
CHECKED BY <b>R. GIBBINS</b>	BY CHK
DESIGNED BY <b>K. SEYMOUR</b>	DATE 09/15/2017
CHECKED BY <b>C. TAYLOR</b>	BY CHK
DATE	APP
REV	APP

ARUP

1070 RHWood Ave., Suite 475  
Houston, Texas 77062, USA  
www.arup.com Tel: (713) 843 1467  
Texas Registered Engineering Firm #1980

Client: **FREESE NICHOLS**  
2711 North Island Ave., Suite 300  
Dallas, Texas 75206  
www.freese-nichols.com Tel: (214) 371 2001  
Texas Registered Engineering Firm #1544

Drawing Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE IH2 66+00 TO IH2 122+00**

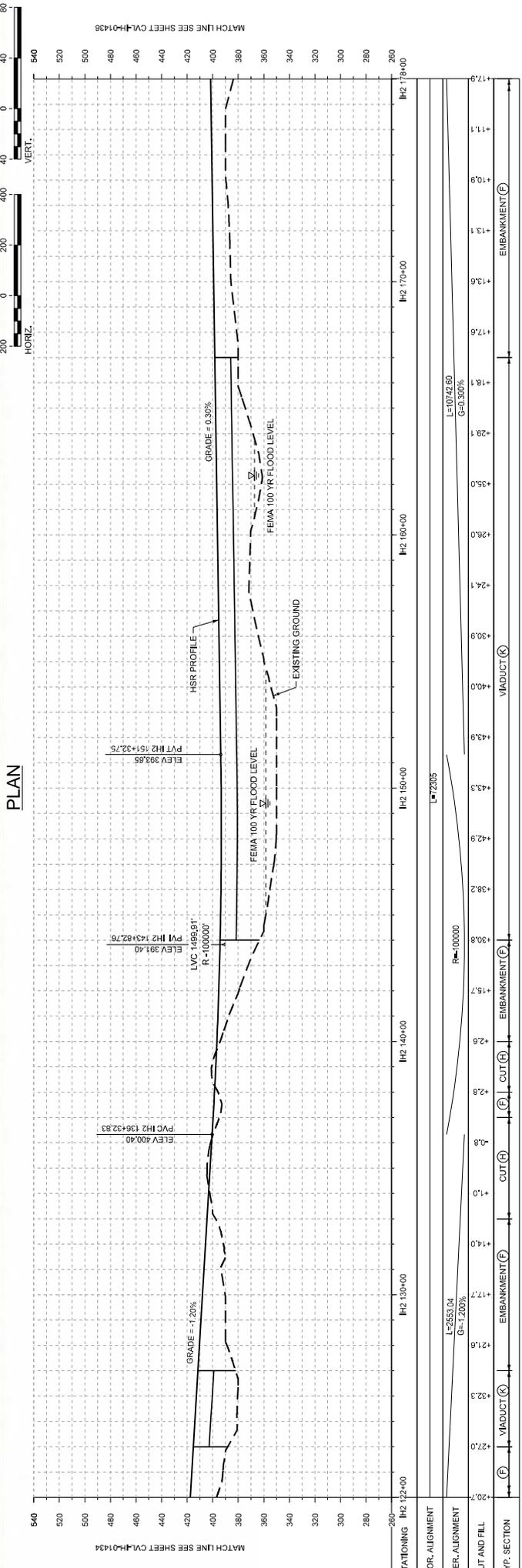
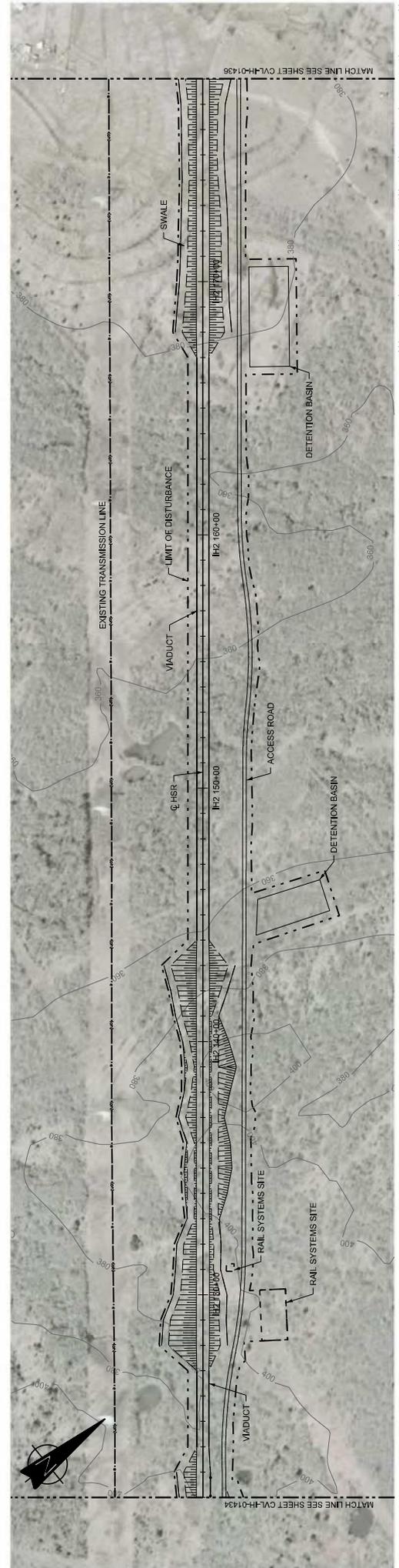
Scale: **AS SHOWN**

Job No: **234180**

Drawn By: **CVL-IH-01434**

Checked By: **01**

FINAL DRAFT



STATIONING	IH2 122+00	IH2 130+00	IH2 140+00	IH2 150+00	IH2 160+00	IH2 170+00	IH2 178+00
HOR. ALIGNMENT	R=100000						
VER. ALIGNMENT	L=553.04 G=-1.200% L=10742.60 G=0.300%						
CUT AND FILL	CUT (A)	CUT (B)	CUT (C)	CUT (D)	CUT (E)	CUT (F)	EMBANKMENT (G)
TYP. SECTION	VADUCT (K)	EMBANKMENT (F)	CUT (A)	CUT (B)	CUT (C)	CUT (D)	EMBANKMENT (G)

Scale: AS SHOWN  
Drawing Title: FINAL DRAFT  
Job No: 234180  
Drawing No: CVL-IH-01435  
01

Client: ARUP  
Project: IH (45) SEGMENT CIVIL PLAN AND PROFILE  
Stationing: IH2 122+00 TO IH2 178+00



2711 North Howard Ave., Suite 3000  
Dallas, Texas 75206  
www.freese-nichols.com  
Tel: (214) 372-2001  
Texas Registered Engineering Firm #1980

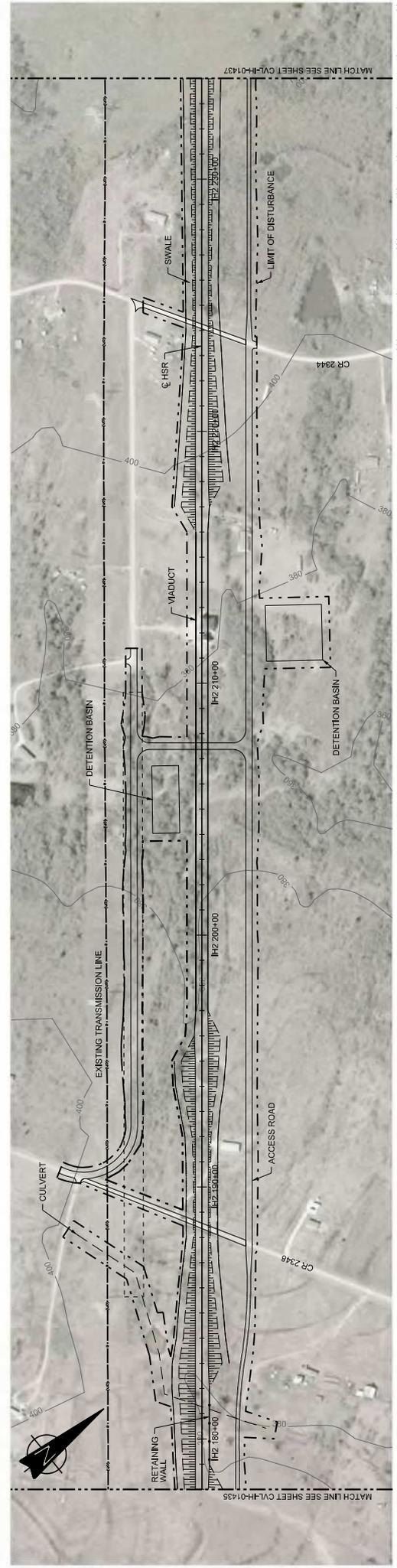
ARUP  
2711 North Howard Ave., Suite 475  
Houston, Texas 77002, USA  
www.arup.com  
Tel: (713) 843-1467  
Texas Registered Engineering Firm #1980

DESIGNED BY: F. DAGRIN  
CHECKED BY: R. GIBBINS  
K. SEYMOUR  
C. TAYLOR  
09/15/2017

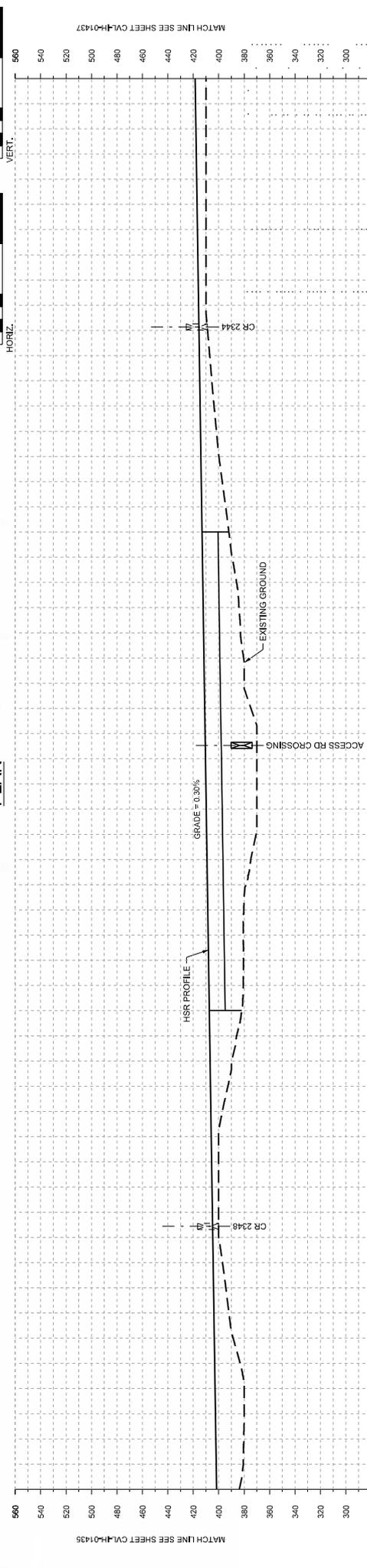
DISCIPLINE: DISCIPLINE

REV: DATE BY CHK APP

\\ARUP\SS1\CS\_Temp\2566613715\_378234\BNA\CVL-IH-01435-04-15-2017.dgn



PLAN



STATIONING	IH2 178+00	IH2 180+00	IH2 200+00	IH2 210+00	IH2 220+00	IH2 230+00	IH2 234+00
HOR. ALIGNMENT	L=72305						
VER. ALIGNMENT	L=10742.80 G=0.300%						
CUT AND FILL	EMBANKMENT (F)		EMBANKMENT (F)		EMBANKMENT (F)		EMBANKMENT (F)
TYP. SECTION	CUT (H)		EMBANKMENT (F)		EMBANKMENT (F)		EMBANKMENT (F)



MATCH LINE SEE SHEET CIV-IH-01436

MATCH LINE SEE SHEET CIV-IH-01437

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
DESIGNED BY	K. SEYMOUR
CHECKED BY	N. CHASE
DATE	C. TAYLOR
REV	09/15/2017
BY	DISCIP:EN
CHK	
APP	

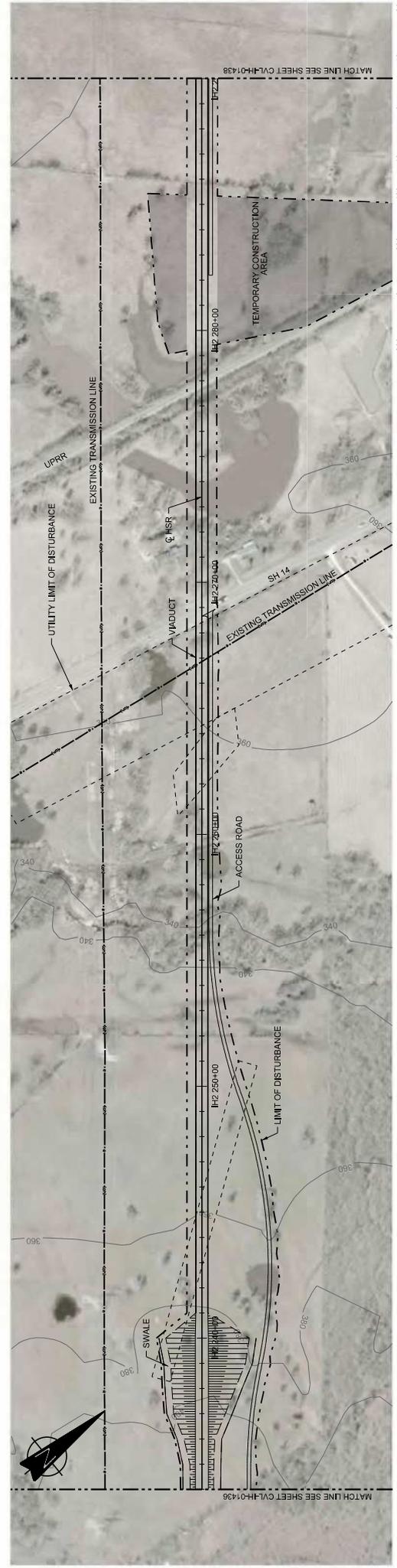
**ARUP**  
 1070 RHM Road, Suite 475  
 Houston, Texas 77062, USA  
 Tel: +1 281 443 1467  
 www.arup.com  
 Texas Registered Engineering Firm F-1988

**FRESE NICHOLS**  
 2711 North Island Ave., Suite 300  
 Dallas, Texas 75206  
 Tel: (214) 372 2001  
 Texas Registered Engineering Firm F-144

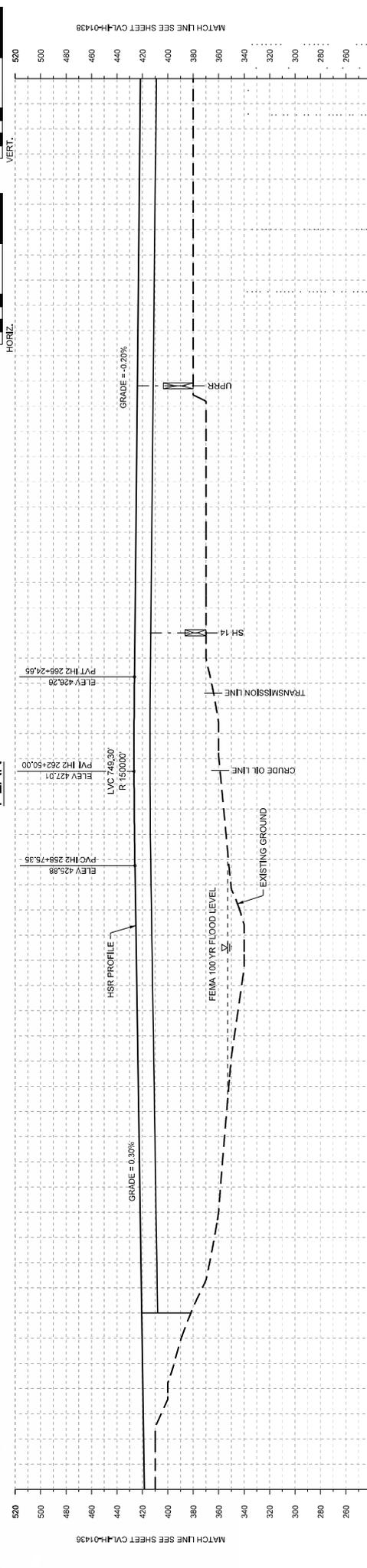
**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Client: **ARUP**  
 Drawing Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01436**  
 Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**

REV	DATE	BY	CHK	APP



PLAN



STATIONING	IH2 234+00	IH2 240+00	IH2 250+00	IH2 260+00	IH2 270+00	IH2 280+00	IH2 290+00
HOR. ALIGNMENT	L=10742.80 G=-0.300%						
VER. ALIGNMENT	L=15855.07 G=-0.200%						
CUT AND FILL	EMEMBANKMENT (E)						
TYP. SECTION	VIADUCT (V)						

MATCH LINE SEE SHEET CVL-IH-01436

ARUP

2711 North Howard Ave., Suite 3300  
Dallas, Texas 75226 USA  
www.arup.com

Project No. 1401312301  
Task Registered Engineering Firm F-1980

PREPARED BY: F. DAGRIN  
CHECKED BY: R. GIBBINS  
K. SEYMOUR  
IN CHARGE: C. TAYLOR  
DATE: 09/15/2017

DISCIPLINE: CIVIL

ARUP

1401 South Lamar Street, Suite 1022, Dallas, Texas 75215  
www.arup.com

TEXAS CENTRAL

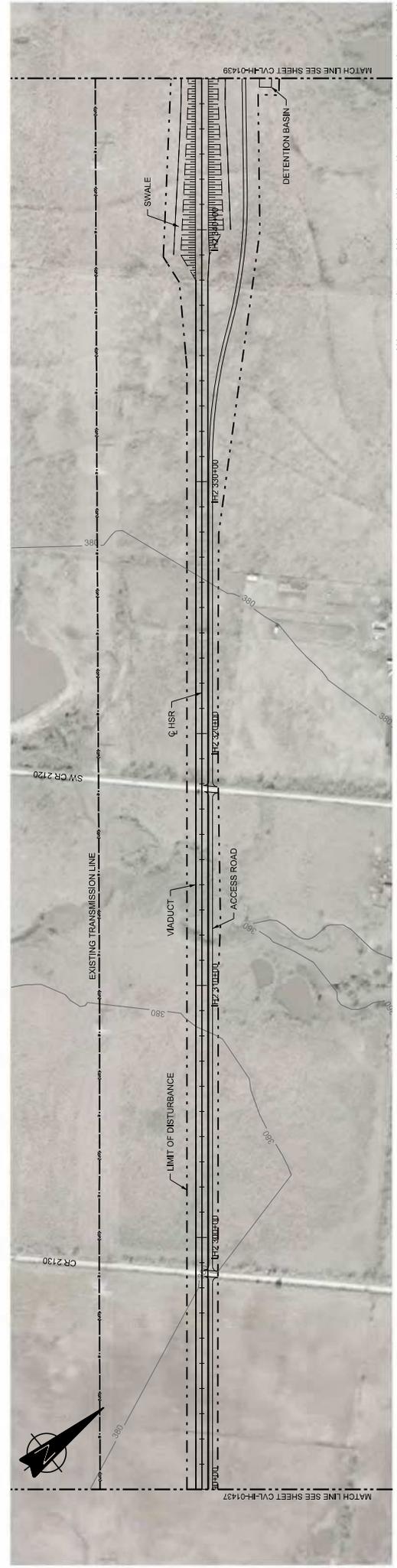
1401 South Lamar Street, Suite 1022, Dallas, Texas 75215

AS SHOWN

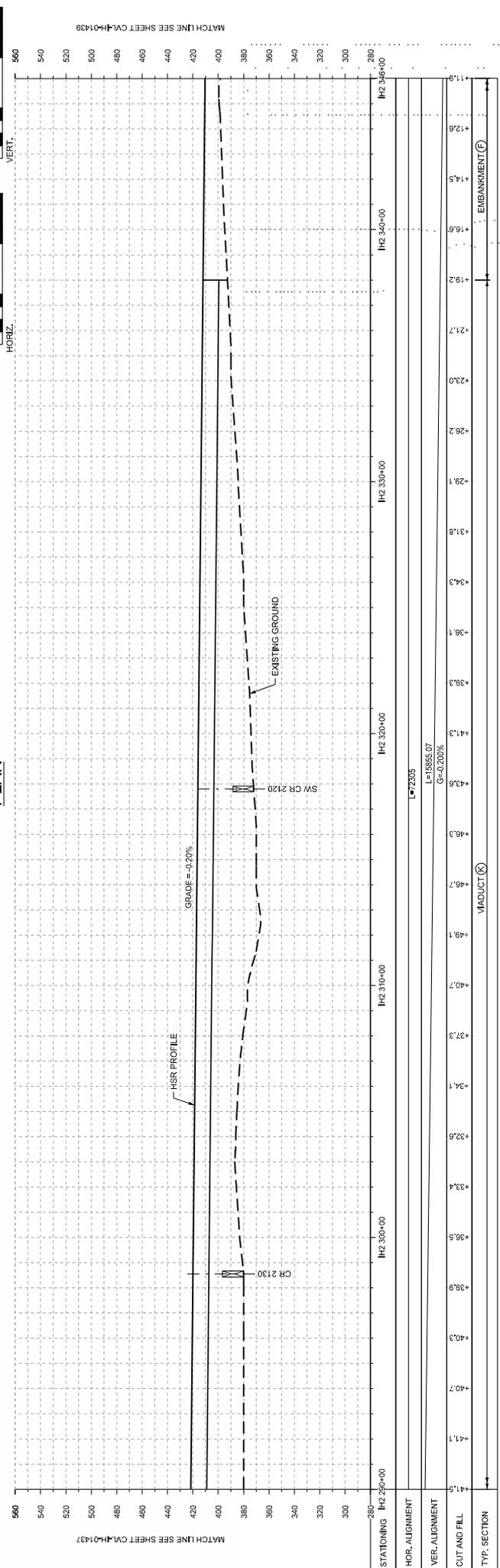
FINAL DRAFT

Job No. 234180  
Drawing No. CIVL-IH-01437

IH (45) SEGMENT CIVIL  
PLAN AND PROFILE  
IH2 234+00 TO IH2 290+00

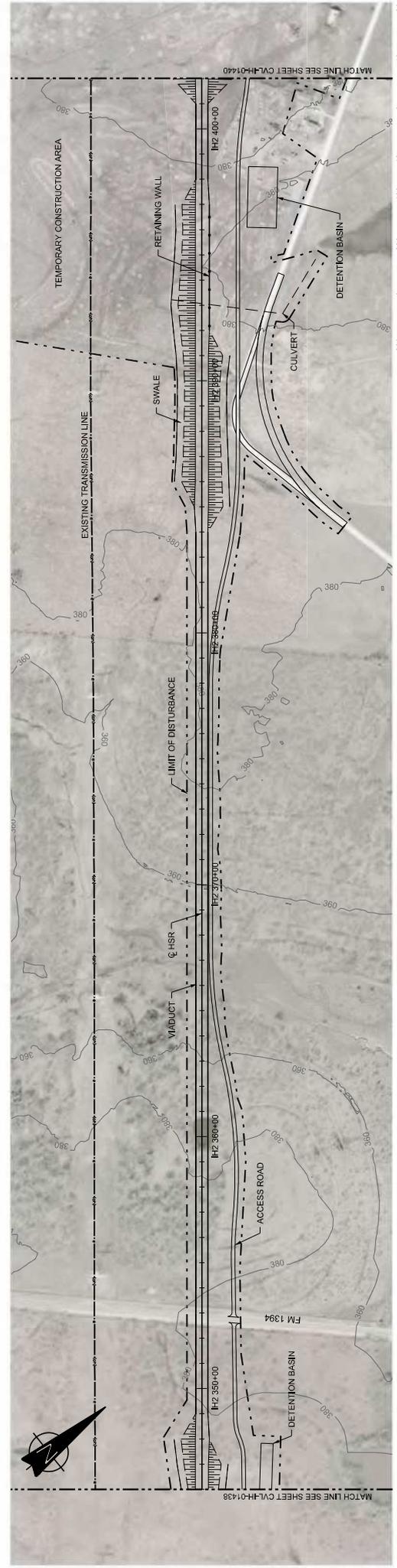


PLAN

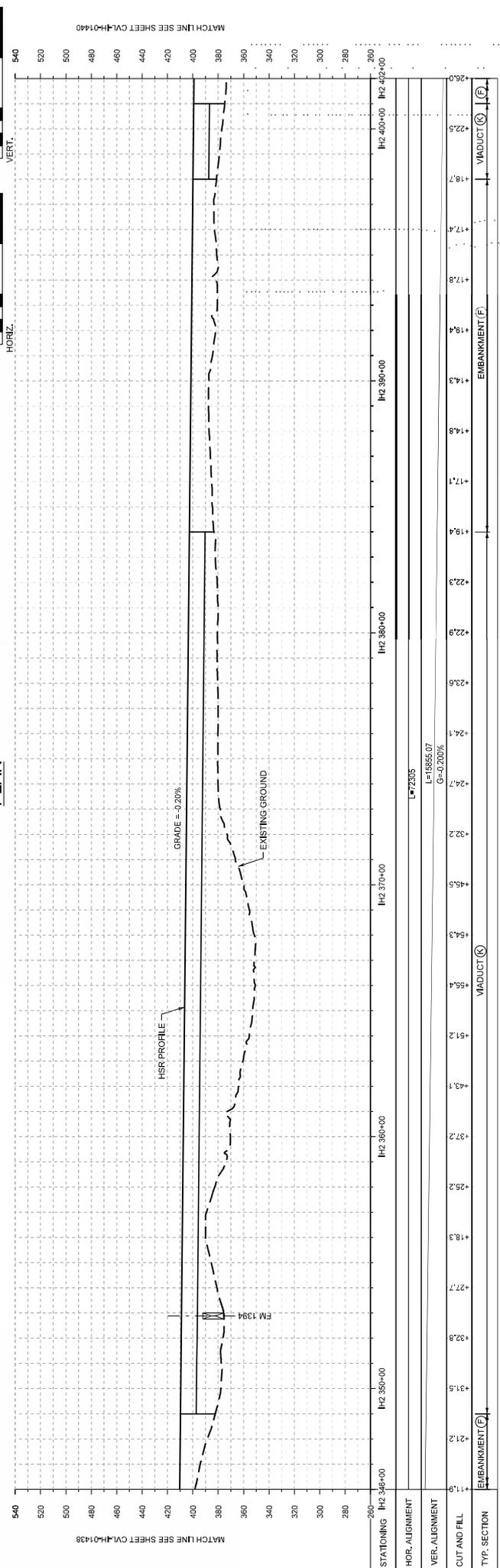


PROFILE

<p>DESIGNED BY <b>F. DAGRIN</b></p> <p>CHECKED BY <b>R. GIBBINS</b></p> <p>IN CHARGE <b>C. TAYLOR</b></p> <p>DATE <b>09/15/2017</b></p>	<p>DISCIP: RKN</p>	<p>Client <b>ARUP</b></p> <p>100 South Lamar Street, Suite 1022, Dallas, Texas 75215          2711 North Highland Ave., Suite 3000          Dallas, Texas 75206          www.arup.com          Tel: (214) 312 2001          Texas Registered Engineer #17192-044</p>	<p>Client <b>FRESE NICHOLS</b></p> <p>2711 North Highland Ave., Suite 3000          Dallas, Texas 75206          www.fresenichols.com          Tel: (214) 312 2001          Texas Registered Engineer #17192-044</p>	<p>Drawing Title <b>IH (45) SEGMENT CIVIL PLAN AND PROFILE</b></p> <p><b>IH2 290+00 TO IH2 346+00</b></p>	<p>Scale <b>AS SHOWN</b></p> <p>Drawing Status <b>FINAL DRAFT</b></p> <p>Job No. <b>234180</b></p> <p>Drawn By <b>CVL-JH-01438</b></p> <p>Rev <b>01</b></p>
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PLAN



PROFILE

DESIGNED BY <b>F. DAGRIN</b>	DATE 09/15/2017
CHECKED BY <b>R. GIBBINS</b>	BY CHK
DESIGNED BY <b>K. SEYMOUR</b>	DATE
CHECKED BY <b>C. TAYLOR</b>	BY CHK
DATE	APP
DISCIPLINE	

**ARUP**  
 1070 RHEINROD AVENUE, SUITE 475  
 HOUSTON, TEXAS 77002, USA  
 TEL: +1 281 413 3000  
 WWW.ARUP.COM  
 Texas Registered Engineering Firm F-1980

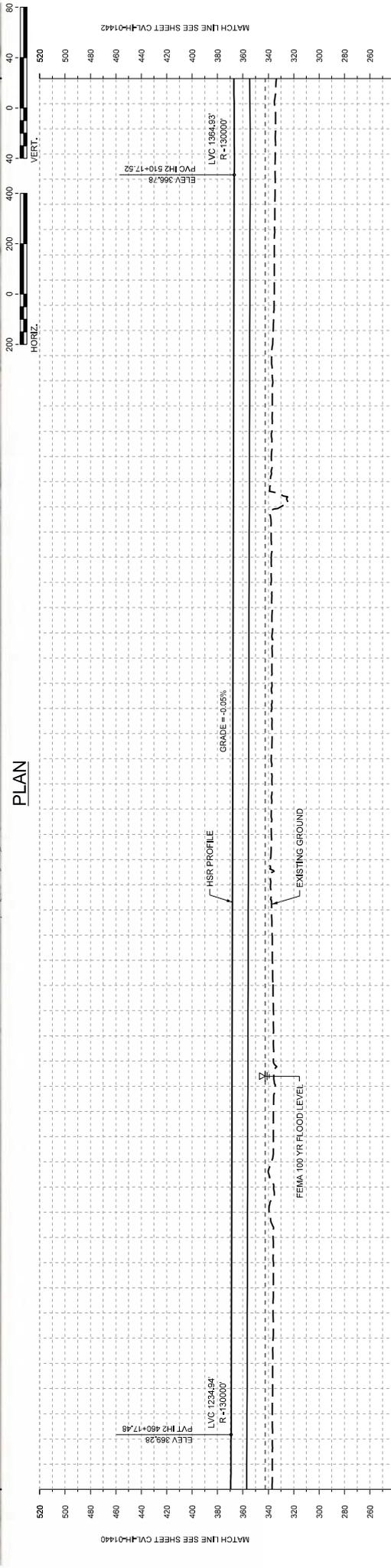
**FREES NICHOLS**  
 2711 North Island Ave., Suite 3300  
 Dallas, Texas 75238  
 Tel: (214) 312 2001  
 www.freesnichols.com  
 Texas Registered Engineering Firm F-5214

**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Drawn by: **TH**  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 IH2 346+00 TO IH2 402+00

Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01439**  
 Rev: **01**





STATIONING	IH2 488+00	IH2 490+00	IH2 480+00	IH2 500+00	IH2 510+00	IH2 514+00
HOR. ALIGNMENT	L=72305					
VER. ALIGNMENT	L=5000.03					
CUT AND FILL	G=-0.0500%					
TYP. SECTION	VAADUCT (C)					

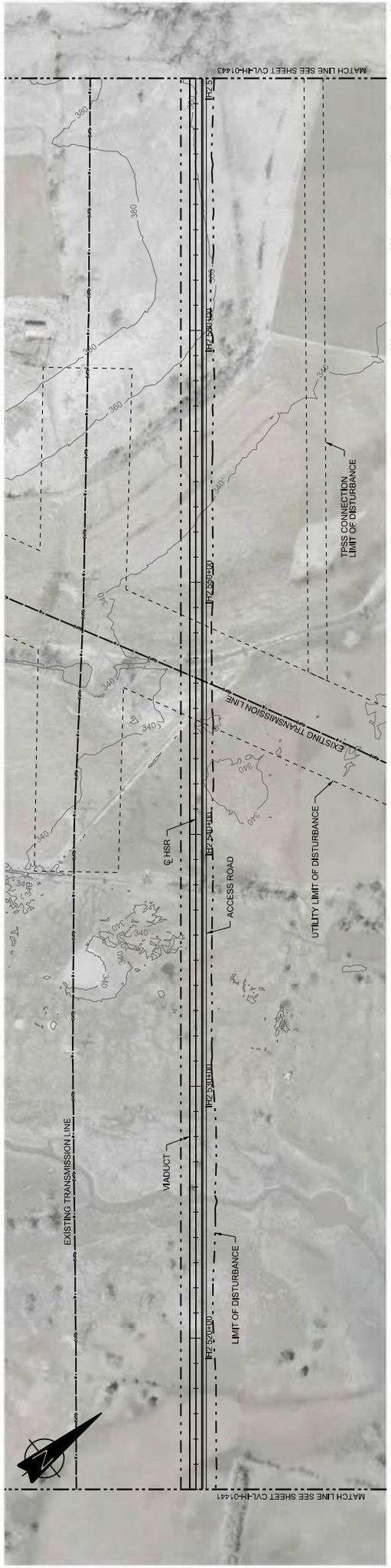
**ARUP**  
 1070 RHM Road, Suite 475  
 Houston, Texas 77062, USA  
 Tel: (713) 433 1467  
 www.arup.com  
 Texas Registered Engineering Firm F-1980

**FRESE NICHOLS**  
 2711 North Island Ave., Suite 3000  
 Dallas, Texas 75238  
 Tel: (214) 312 2001  
 www.fresenichols.com  
 Texas Registered Engineering Firm F-1844

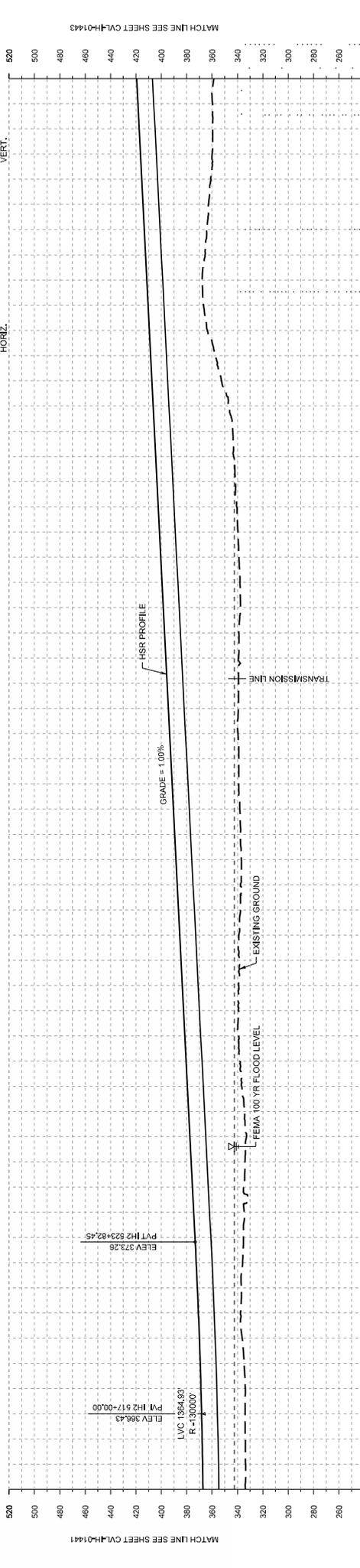
Client: **TEXAS CENTRAL**  
 Drawing Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE IH2 458+00 TO IH2 514+00**

DESIGNED BY: **F. DAGRIN**  
 CHECKED BY: **R. GIBBINS**  
 IN CHARGE: **K. SEYMOUR**  
 DATE: **09/15/2017**

Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01441**  
 Rev: **01**



PLAN



STATIONING	IH2 514+00	IH2 520+00	IH2 530+00	IH2 540+00	IH2 550+00	IH2 570+00
HOR. ALIGNMENT	L=72305					
VER. ALIGNMENT	R=130000					
CUT AND FILL	Y=PRODUCT					
TYP. SECTION						

520  
500  
480  
460  
440  
420  
400  
380  
360  
340  
320  
300  
280  
260

200  
400  
600  
800  
VERT.

200  
400  
600  
800  
HORIZ.

MATCH LINE SEE SHEET CIVL-IH-01441  
ELEV 373.26  
PVT IH2 523+82.45  
LVC 1864.93  
R=130000  
TYP IH2 517+00.00  
ELEV 366.43

MATCH LINE SEE SHEET CIVL-IH-01443

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
IN CHARGE	K. SEYMOUR
DATE	C. TAYLOR
REV	09/15/2017
BY	CHK
DATE	APP
DISCIP	REN

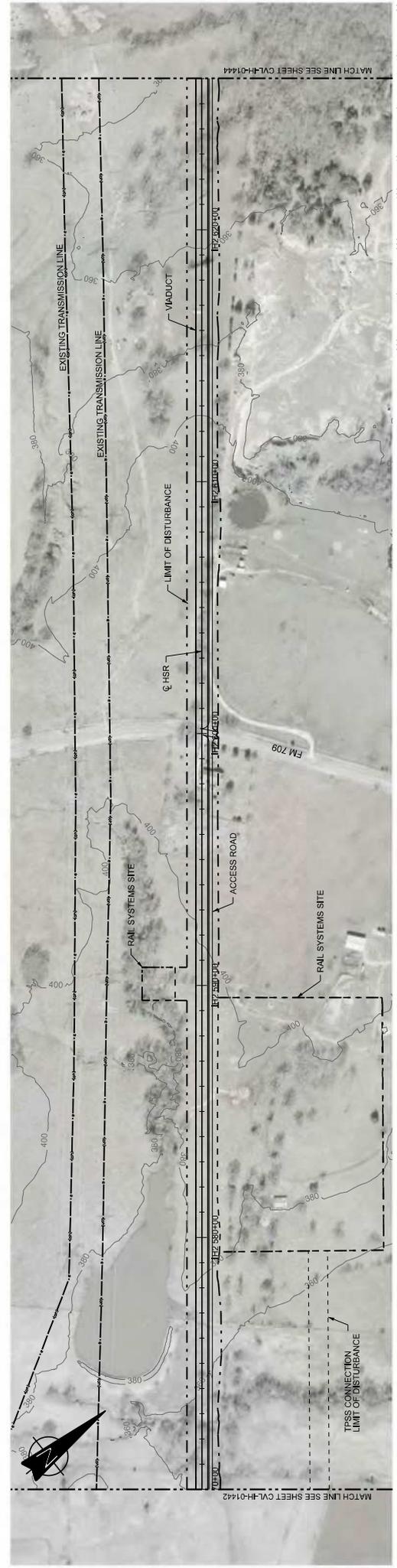
**ARUP**  
 100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Highway Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 www.arup.com Tel: (214) 343 1467  
 Texas Registered Engineer #17197-0144

**FRESE NICHOLS**  
 2711 North Highway Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 www.fresenichols.com Tel: (214) 312 2001  
 Texas Registered Engineer #17197-0144

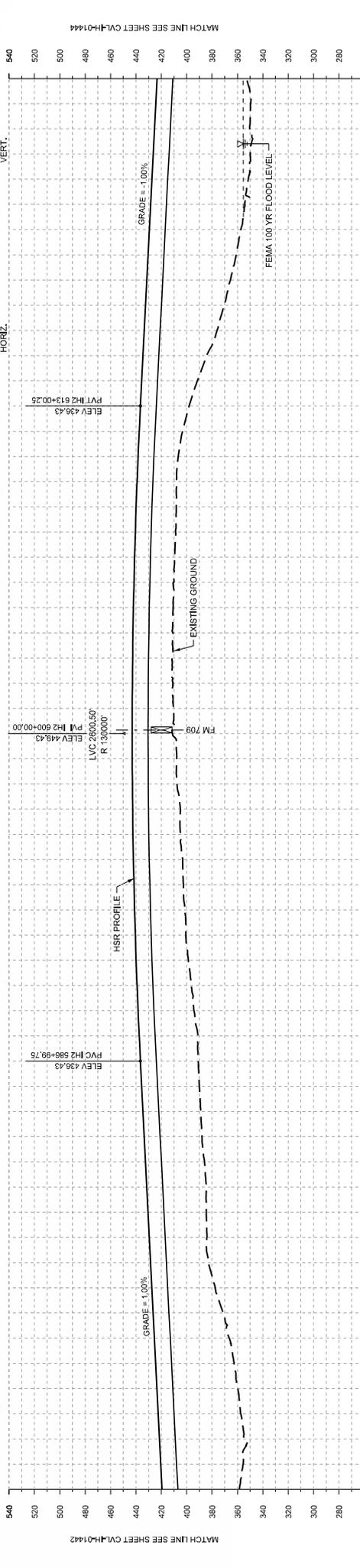
**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215

Client: IH (45) SEGMENT CIVIL  
 PLAN AND PROFILE  
 IH2 514+00 TO IH2 570+00

Scale: AS SHOWN  
 Drawing Title: FINAL DRAFT  
 Job No: 234180  
 Drawing No: CIVL-IH-01442  
 Rev: 01



PLAN



STATIONING	IH2 570+00	IH2 580+00	IH2 590+00	IH2 600+00	IH2 610+00	IH2 620+00	IH2 626+00
HOR. ALIGNMENT	L=72305						
VER. ALIGNMENT	L=6317.30 G=1.000%						
CUT AND FILL	R=100000						
TYP. SECTION	VIADUCT (6)						

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
IN CHARGE	K. SEYMOUR
DATE	C. TAYLOR
REV	09/15/2017
BY	CHK
DATE	APP
DISCRIPTION	

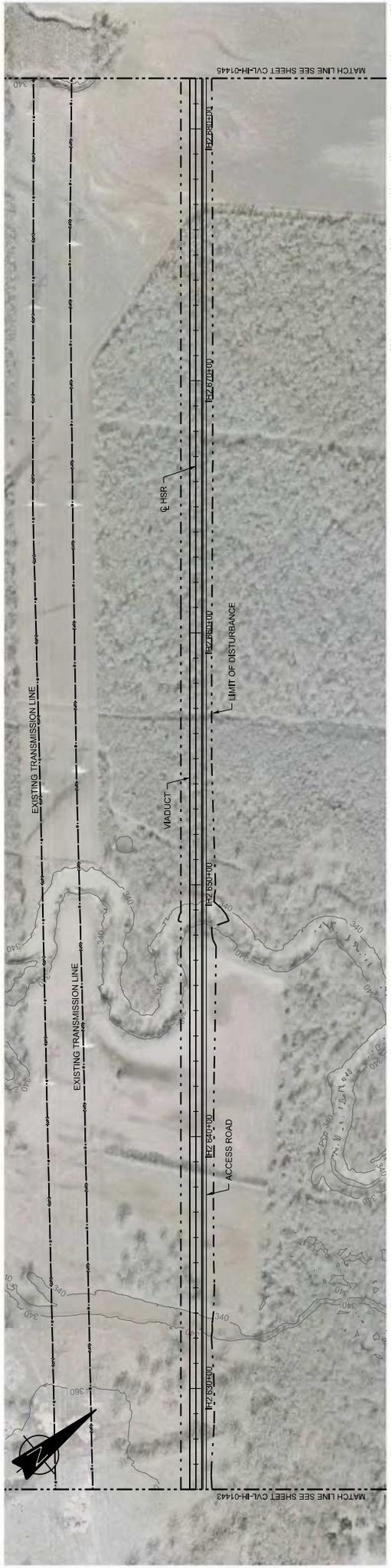
**ARUP**  
 1070 RHWIND AVENUE, SUITE 475  
 HOUSTON, TEXAS 77062, USA  
 WWW.ARUP.COM TEL: +1 281 541 4607  
 TEXAS REGISTERED ENGINEERING FIRM #5144

**FRESE NICHOLS**  
 2711 NORTH HIGHTWAY AVENUE, SUITE 3000  
 DALLAS, TEXAS 75206  
 WWW.FRESE-NICHOLS.COM TEL: (214) 371 2001  
 TEXAS REGISTERED ENGINEERING FIRM #7198

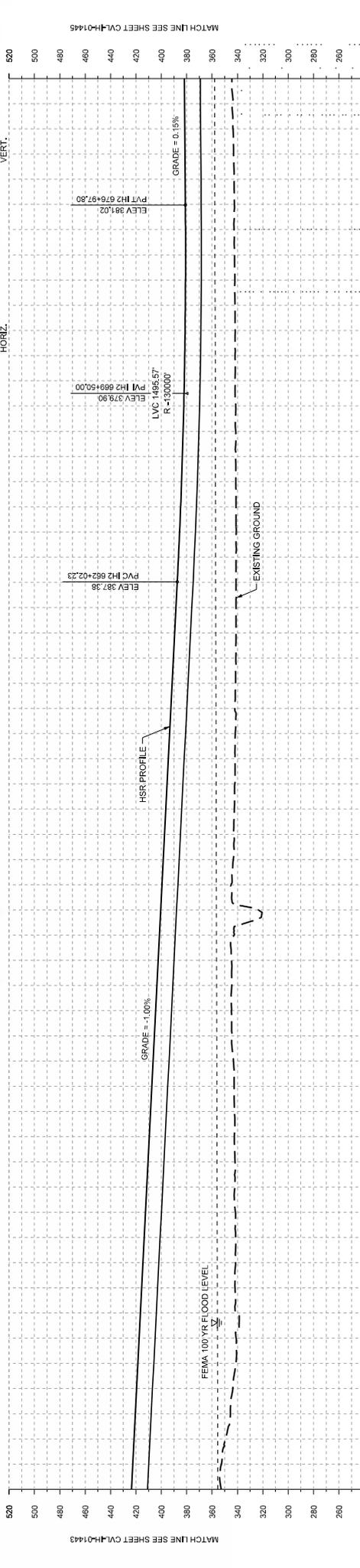
**TEXAS CENTRAL**  
 1408 SOUTH LAMAR STREET, SUITE 1022, DALLAS, TEXAS 75215

Client: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 IH2 570+00 TO IH2 626+00

Scale: **AS SHOWN**  
 Drawing Title: **FINAL DRAFT**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01443**  
 Rev: **01**



PLAN



STATIONING	IH2 626+00	IH2 630+00	IH2 640+00	IH2 650+00	IH2 660+00	IH2 670+00	IH2 680+00	IH2 692+00
HOR. ALIGNMENT	L=7205							
VER. ALIGNMENT	L=480.38 G=-1.000%							
CUT AND FILL	L=1423.15 G=-0.5% G=1.50%							
TYP. SECTION	VIA DUCT (C)							

PROFILE

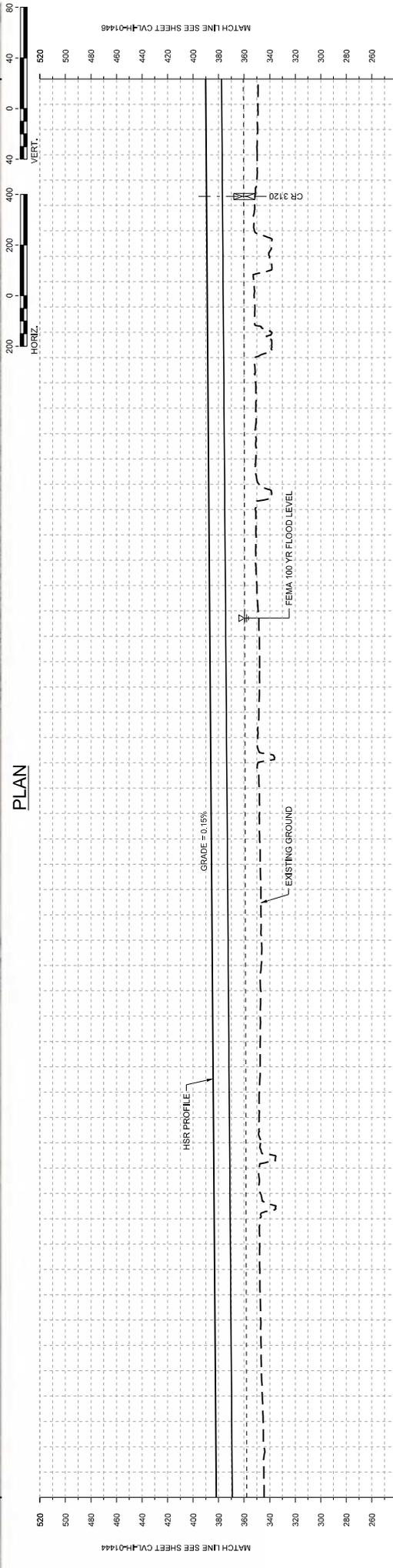
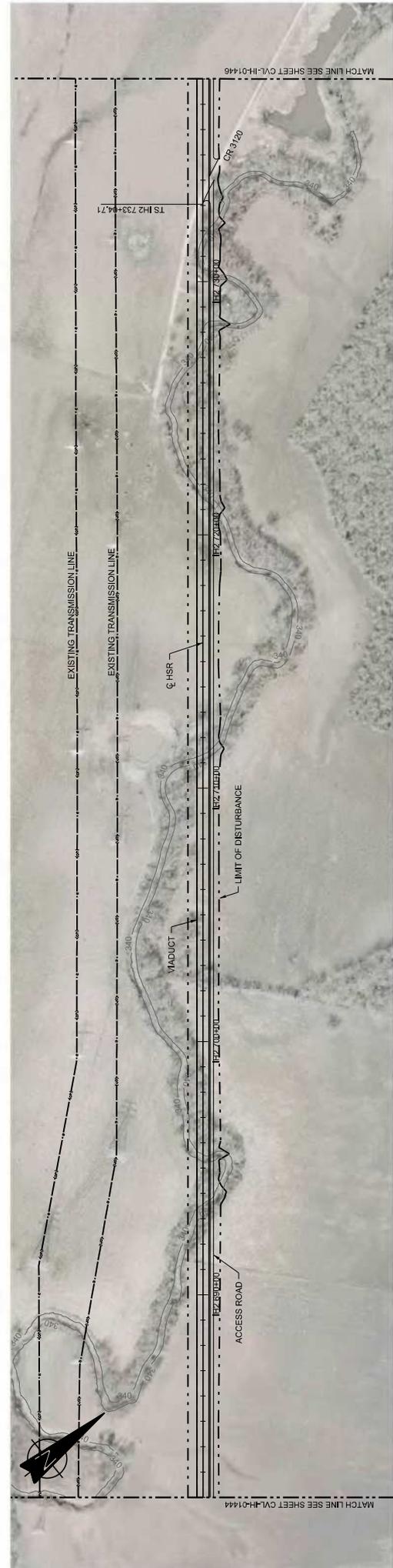
DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
DESIGNED BY	K. SEYMOUR
CHECKED BY	C. TAYLOR
DATE	09/15/2017
BY	CHK
DATE	09/15/2017
BY	APP
DATE	

**ARUP**  
 100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Highway Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 Tel: (214) 312 2001  
 Fax: (214) 312 2001  
 www.arup.com  
 Texas Registered Engineering Firm F-1988

**FRESE NICHOLS**  
 2711 North Highway Ave., Suite 3000  
 Dallas, Texas 75206  
 Houston, Texas 77062, USA  
 Tel: (214) 312 2001  
 Fax: (214) 312 2001  
 www.fresenichols.com  
 Texas Registered Engineering Firm F-1988

**TEXAS CENTRAL**  
 1408 South Lamar Street, Suite 1022, Dallas, Texas 75215

Client: **ARUP**  
 Drawing Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 Job No: **234180**  
 Drawing No: **CVL-IH-01444**  
 Scale: **AS SHOWN**  
 Drawing Status: **FINAL DRAFT**



STATIONING	IH2 662+00	IH2 680+00	IH2 700+00	IH2 710+00	IH2 720+00	IH2 730+00	IH2 738+00
HOR. ALIGNMENT	L=7205						
VER. ALIGNMENT	L=1425.15 G=0.150%						
CUT AND FILL	VIADUCT (X)						
TYP. SECTION							

**ARUP**  
 100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 2711 North Highland Ave., Suite 3000  
 Dallas, Texas 75206  
 www.arup.com    Tel: (214) 312 2001  
 Texas Registered Engineer #17444

**FRESE NICHOLS**  
 2711 North Highland Ave., Suite 3000  
 Dallas, Texas 75206  
 www.fresenichols.com    Tel: (214) 312 2001  
 Texas Registered Engineer #17444

Client: **TEXAS CENTRAL**

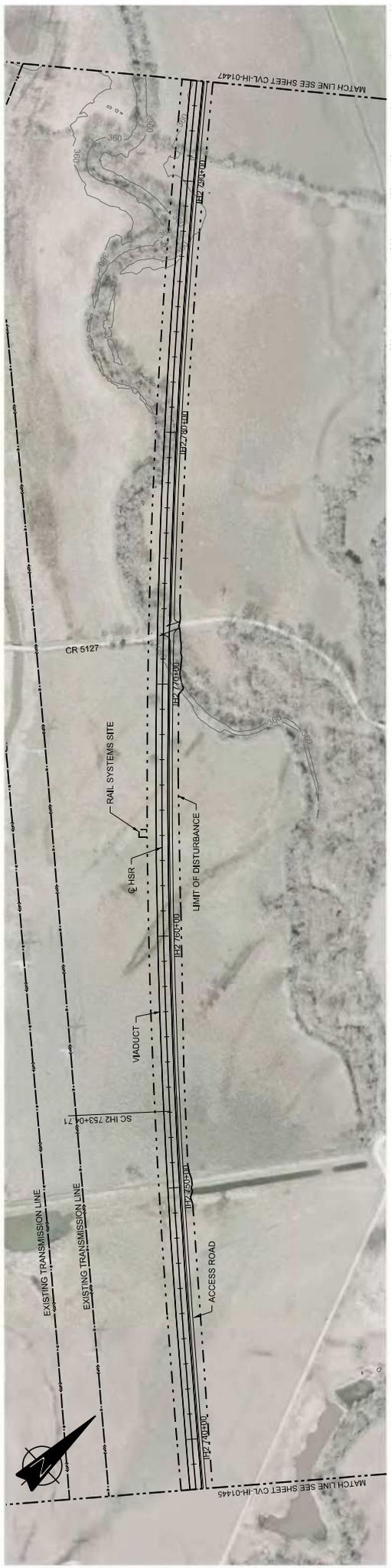
Contract Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE IH2 662+00 TO IH2 738+00**

Scale: **AS SHOWN**

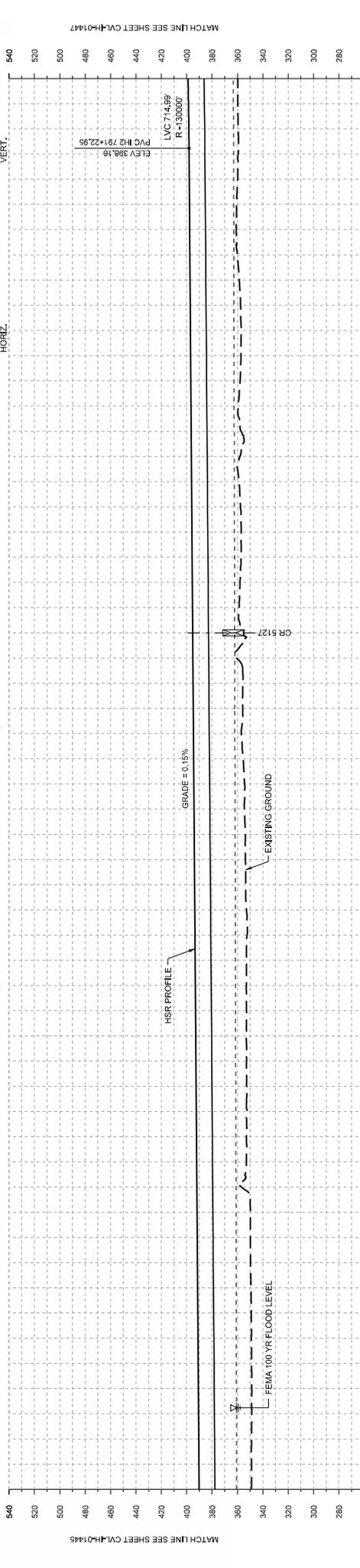
Drawing Status: **FINAL DRAFT**

Job No: **234180**    Drawing No: **CVL-IH-01445**    01

REV	DATE	BY	CHK	APP



PLAN



STATIONING	IH2 738+00	IH2 740+00	IH2 750+00	IH2 760+00	IH2 770+00	IH2 780+00	IH2 790+00	IH2 794+00
HOR. ALIGNMENT	L=2000							
VER. ALIGNMENT	R=20000 L=13277							
CUT AND FILL	L=11424.15 G=0.150%							
TYP. SECTION	VADUCT (C)							

PROFILE

DESIGNED BY	F. DAGRIN
CHECKED BY	R. GIBBINS
DESIGNED BY	K. SEYMOUR
CHECKED BY	N. CHESSE
DATE	C. TAYLOR
REV	09/15/2017
BY	CHK
DATE	APP
DISCIPLINE	DISCIPLINE

**ARUP**  
100 South Lamar Street, Suite 1022, Dallas, Texas 75215  
2711 North Highland Ave., Suite 3000  
Dallas, Texas 75206  
www.arup.com

**TEXAS CENTRAL**

Client: **ARUP**  
2711 North Highland Ave., Suite 3000  
Dallas, Texas 75206  
www.arup.com

Contract Title: **IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
Drawing No: **IH2 738+00 TO IH2 794+00**

Scale: **AS SHOWN**  
Drawing Status: **FINAL DRAFT**

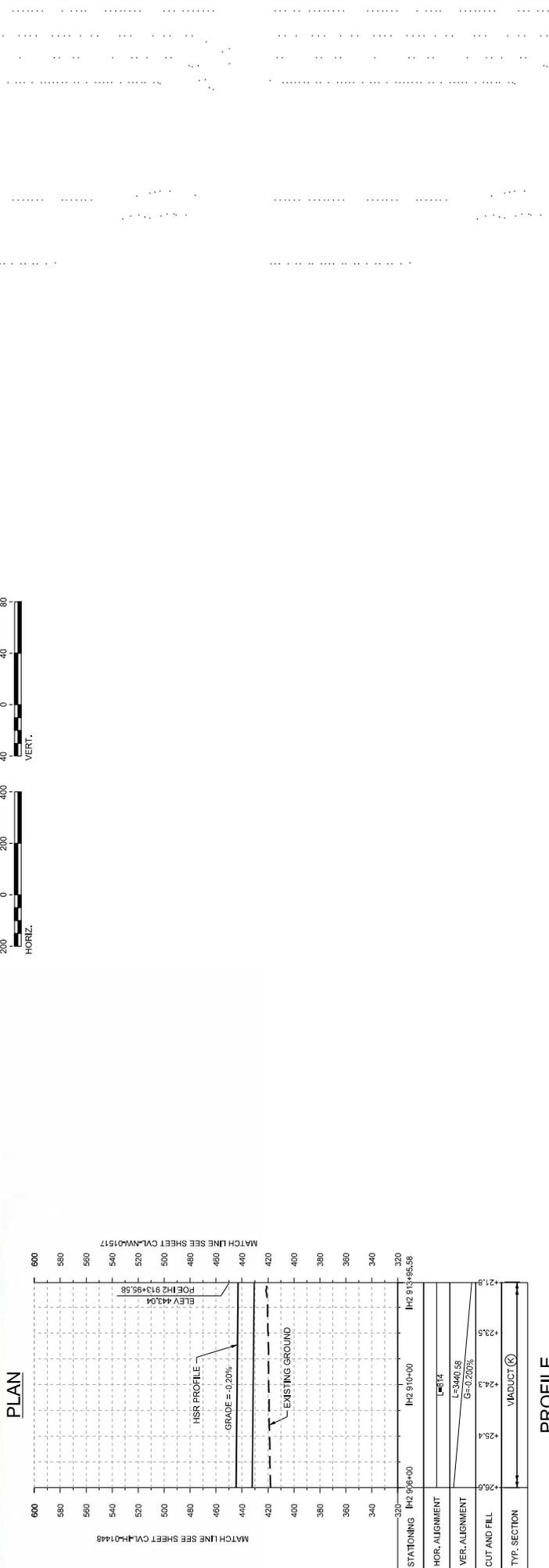
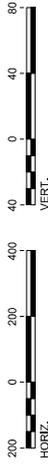
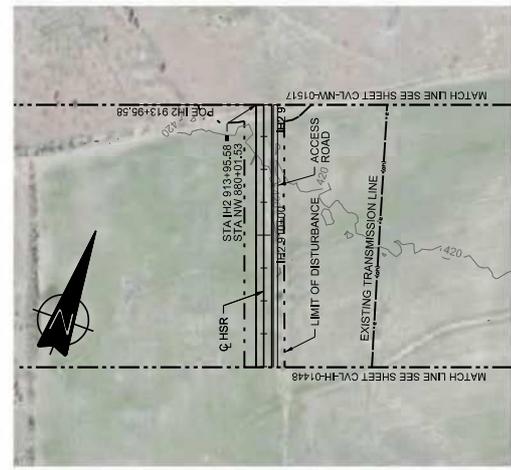
Job No: **234180**  
Drawing No: **CVL-IH-011446**

Rev: **01**





A B C D E F G H J K L M N O P



**PROFILE**

DESIGNED BY <b>F. DAGRIN</b>	DATE <b>09/15/2017</b>
CHECKED BY <b>R. GIBBINS</b>	BY <b>CHK</b>
IN CHARGE <b>C. TAYLOR</b>	DATE <b>09/15/2017</b>
DESCRIPTION <b>DISCRIPTION</b>	APP <b>APP</b>

**ARUP**  
 1070 Rhyland Ave., Suite 475  
 Houston, Texas 77002, USA  
 Tel: (713) 443-1467  
 www.arup.com  
 Texas Registered Engineering Firm F-1980

**FRESE NICHOLS**  
 2711 North Hight Ave., Suite 300  
 Dallas, Texas 75206  
 Tel: (214) 372-2001  
 www.fresenichols.com  
 Texas Registered Engineering Firm F-5244

**TEXAS CENTRAL**  
 1400 South Lamar Street, Suite 1022, Dallas, Texas 75215  
 Any? Texas Inc

Drawing Title  
**IH (45) SEGMENT CIVIL PLAN AND PROFILE**  
 IH2 906+00 TO IH2 913+96

Scale  
**AS SHOWN**

Drawing No.  
**234180**

Checked by  
**CVL-IH-01449**

Job No.  
**01**