

FEDERAL AID PROJECT NO.			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		1

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS

**STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION**

**PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT**

FEDERAL AID PROJECT NO. xxxxx
CSJ NO: 0015-13-433, ETC.
**INTERSTATE 35 & CESAR CHAVEZ RD
TRAVIS COUNTY**

DESIGN SPEED

FRONTAGE ROADS: 35 MPH
CROSSROADS: 35/40/25 MPH
RAMPS: 40 MPH

A.D.T.

2021: 189,100
2040: 257,900

FUNCTIONAL CLASS

FRONTAGE ROADS: URBAN MAJOR COLLECTOR
CROSSROADS: URBAN MINOR ARTERIAL/URBAN COLLECTOR/URBAN LOCAL
RAMPS: RAMP

NET LENGTH OF I-35 TUNNEL=	17,973.15 FT.	3.404 MI.
NET LENGTH OF CESAR CHAVEZ TUNNEL =	14,411.44 FT.	2.729 MI.
TOTAL NET LENGTH OF PROJECT =	32,384.59 FT.	6.133 MI.

NS IH35 TUNNEL LIMITS: FROM AIRPORT BLVD TO RIVER ST ON INTERSTATE HIGHWAY 35
CESAR CHAVEZ TUNNEL LIMITS: FROM INTERSTATE HIGHWAY 35 TO US-183 HIGHWAY ON CESAR CHAVEZ

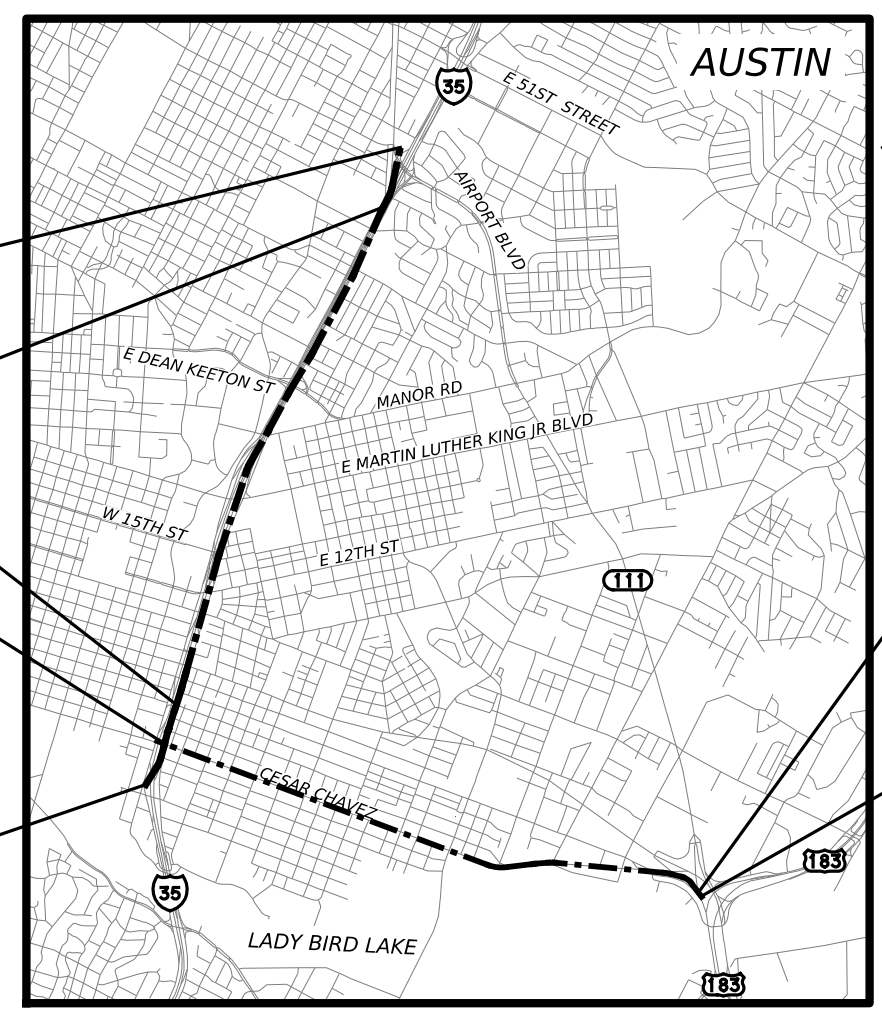
FOR THE CONSTRUCTION OF DRAINAGE TUNNEL CONSISTING OF DRAINAGE DROP SHAFTS, ROADWAY RECONSTRUCTION AT MINOR CROSS STREETS AND RAMPS, TRAFFIC CONTROL, SIGNING & STRIPING, SIGNALIZATION, ILLUMINATION, SWP3, ETC.

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Supervised By: FELIPE S. TUDTUD
P.E. Serial No. 104836
Date: 6/29/2023

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Supervised By: ROMAN D. GRIJALVA
P.E. Serial No. 99411
Date: 6/29/2023

HDR HDR Engineering, Inc
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

BGE, Inc.
1701 Directors Blvd., Suite 1000, Austin, TX 78744
Tel: 512-879-0400 • www.bgeinc.com
TBPE Registration No. F-1046



END CSJ
CSJ: 0015-13-433
STA: 371+67.42

CAPMETRO REDLINE FUTURE GOLDLINE
AT AIRPORT BLVD

CAPMETRO REDLINE
AT 4TH STREET

END CSJ
CSJ: 0914-04-341
STA: 236+20.81

BEGIN PROJECT
CSJ: 0015-13-433
STA: 191+90.00

BEGIN PROJECT
CSJ: 0914-04-341
STA: 92+09.37

PUMP STATION

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH BC (1)- 07 THRU BC (12)- 07 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION NOT REQUIRED

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 2012)

NOTE:
1. ALL PROJECT COORDINATES ARE BASED ON THE NATIONAL GEODETIC SURVEY (NGS), GEOID 12B. ALL SURFACE COORDINATES MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00011. UNITS: U.S. SURVEY FEET

EXCEPTIONS: NA
EQUATIONS: NA
RAILROAD CROSSINGS: CMTY

FINAL PLANS

LETTING DATE: _____
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS COMPLETED & ACCEPTED: _____
FINAL CONTRACT COST: \$ _____
CONTRACTOR: _____

I CERTIFY THAT THIS PROJECT WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE FINAL AS-BUILT PLANS AND SPECIFICATIONS.

AREA ENGINEER P.E. DATE



SUBMITTED FOR LETTING: <input type="text"/>	APPROVED FOR LETTING: <input type="text"/>
<input type="text"/> AREA ENGINEER	<input type="text"/> DIRECTOR, BRIDGE DIVISION
RECOMMENDED FOR LETTING: <input type="text"/>	APPROVED FOR LETTING: <input type="text"/>
<input type="text"/> DISTRICT DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT	<input type="text"/> DIRECTOR, TRAFFIC OPERATIONS DIVISION
RECOMMENDED FOR LETTING: <input type="text"/>	APPROVED FOR LETTING: <input type="text"/>
<input type="text"/> DISTRICT ENGINEER	<input type="text"/> DIRECTOR, DESIGN DIVISION

DATE: 6/29/2023 8:57:16 PM
FILE: IH35-GEN-TITLE.dgn

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 P.E. Serial No. 112938
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 P.E. Serial No. 89252
 Date: 6/29/2023

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		HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681	
		CAPITAL AREA	
			
CAPITAL EXPRESS CENTRAL			
INDEX OF SHEETS			
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 <p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
			
 <p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>GENERAL NOTES</p>			
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SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS


LOCATION	506 6020	506 6024	512 6005	512 6053	545 6005	545 6007
	CONSTRUCTION EXITS (INSTALL) (TY 1)	CONSTRUCTION EXITS (REMOVE)	PORT CTB (FUR & INST)(F- SHAPE)(TY 1)	PORT CTB (REMOVE)(F- SHAPE)(TY 1)	CRASH CUSH ATTEN (REMOVE)	CRASH CUSH ATTEN (INSTL) (L)(N)(TL3)
UNIT	SY	SY	LF	LF	EA	EA
TCP I-35 NBFR SHEET 1 OF 4	125	125	1290	1290	3	3
TCP I-35 NBFR SHEET 2 OF 4	0	0	250	250	0	0
TCP I-35 NBFR SHEET 3 OF 4	75	75	810	810	2	2
TCP I-35 NBFR SHEET 4 OF 4						
I-35 SBFR SHEET 1 OF 1	130	130	930	930	7	7
PROJECT TOTALS	330	330	3280	3280	12	12

SUMMARY OF REMOVAL ITEMS

LOCATION	104 6011	104 6015	104 6017	104 6021	104 6022	104 6023	105 6026	106 6002	496 6002	542 6001	542 6002	542 6003	680 6004	690 6027	690 6030	690 6127	7049 6114
	REMOVING CONC (MEDIANS)	REMOVING CONC (SIDEWALKS)	REMOVING CONC (DRIVEWAYS)	REMOVING CONC (CURB)	REMOVING CONC (CURB AND GUTTER)	REMOVING CONC (CTB)	REMOVE STAB BASE & ASPH PAV (13*-18")	OBLITERATING ABANDONED ROAD	REMOV STR (INLET)	REMOVE METAL BEAM GUARD FENCE	REMOVE TERMINAL ANCHOR SECTION	REMOVE DOWNSTREAM ANCHOR TERMINAL	REMOVING TRAFFIC SIGNALS	REMOVAL OF SIGNAL RELATED SIGNS	REMOVAL OF PEDESTRIAN PUSH BUTTONS	REMOVE LUMINAIRE POLE	REMOVING FIRE HYDRANT
UNIT	SY	SY	SY	LF	LF	LF	SY	SY	EA	LF	EA	EA	EA	EA	EA	EA	EA
CSJ: 0015-13-433																	
REMOVAL SHEET 1 OF 6	0	0	0	319	0	0	902	0	0	230	1	2	0	1	0	1	0
REMOVAL SHEET 2 OF 6	196	27	0	0	1804	0	2017	0	1	0	0	0	0	4	0	1	0
REMOVAL SHEET 3 OF 6	152	79	0	0	611	64	450	0	1	0	0	0	1	30	0	1	0
REMOVAL SHEET 4 OF 6	85	136	0	0	329	0	715	0	2	0	0	0	1	4	1	0	0
REMOVAL SHEET 5 OF 6	0	162	62	0	775	0	932	273	0	0	0	0	0	8	2	1	1
REMOVAL SHEET 6 OF 6	0	79	0	559	0	0	981	0	1	0	0	0	0	18	0	0	0
PROJECT TOTALS	433	483	62	878	3519	64	5997	273	5	230	1	2	2	65	3	4	1


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CAPITAL EXPRESS CENTRAL
 SUMMARY OF QUANTITIES

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CONT	SECT	JOB	HIGHWAY
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SUMMARY OF ROADWAY ITEMS


LOCATION	247 6305	340 6138	420 6074	465 6013	465 6016	529 6002	529 6008	530 6004	531 6002	536 6002	540 6001	540 6016	5007 6008
	FL BS (CMP IN PLACE) (TY D GR 1-2)(15")	D-GR HMA(SQ) TY-D PG76-22	CL C CONC (MISC)	INLET (COMPL)(PCO)(3FT)(NONE)	INLET (COMPL)(PCO)(3FT)(BOTH)	CONC CURB (TY II)	CONC CURB & GUTTER (TY II)	DRIVEWAYS (CONC)	CONC SIDEWALKS (5")	CONC MEDIAN	MTL W-BEAM GD FEN (TIM POST)	DOWNSTREAM ANCHOR TERMINAL SECTION	INSTALL FIRE HYDRANT
UNIT	SY	TON	CY	EA	EA	LF	LF	SY	SY	SY	LF	EA	EA
CSJ: 0015-13-433													
AIRPORT BOULEVARD ROADWAY RECONSTRUCTION	902	99	0	0	0	319	0	0	0	0	280	2	0
DEAN KEETON ST EXIT ROADWAY RECONSTRUCTION	2017	222	0	0	1	0	1804	0	27	196	0	0	0
DEAN KEETON ST ENTRANCE ROADWAY RECONSTRUCTION	450	50	64	0	1	0	611	0	79	152	0	0	0
11TH ST ROADWAY RECONSTRUCTION	715	79	0	1	1	0	329	0	136	85	0	0	0
BRUSHY ST ROADWAY RECONSTRUCTION	932	103	0	0	0	0	775	62	162	0	0	0	1
PROJECT TOTALS	5016	553	64	1	3	319	3519	62	404	433	280	2	1



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Round Rock, Texas 78681



CAPITAL AREA



Texas Department of Transportation

CAPITAL EXPRESS CENTRAL




SUMMARY OF QUANTITIES

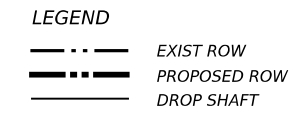
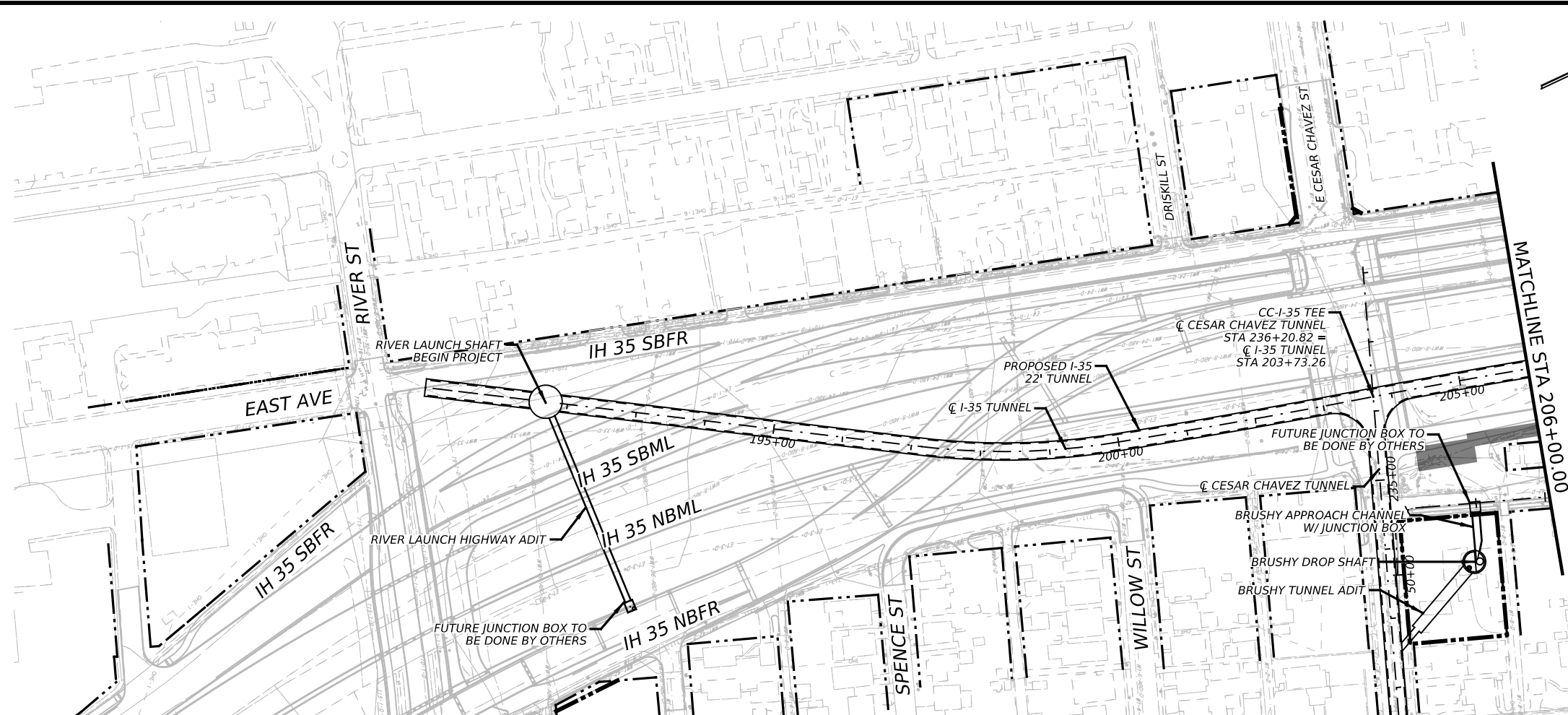
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
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AUS		TRAVIS	6

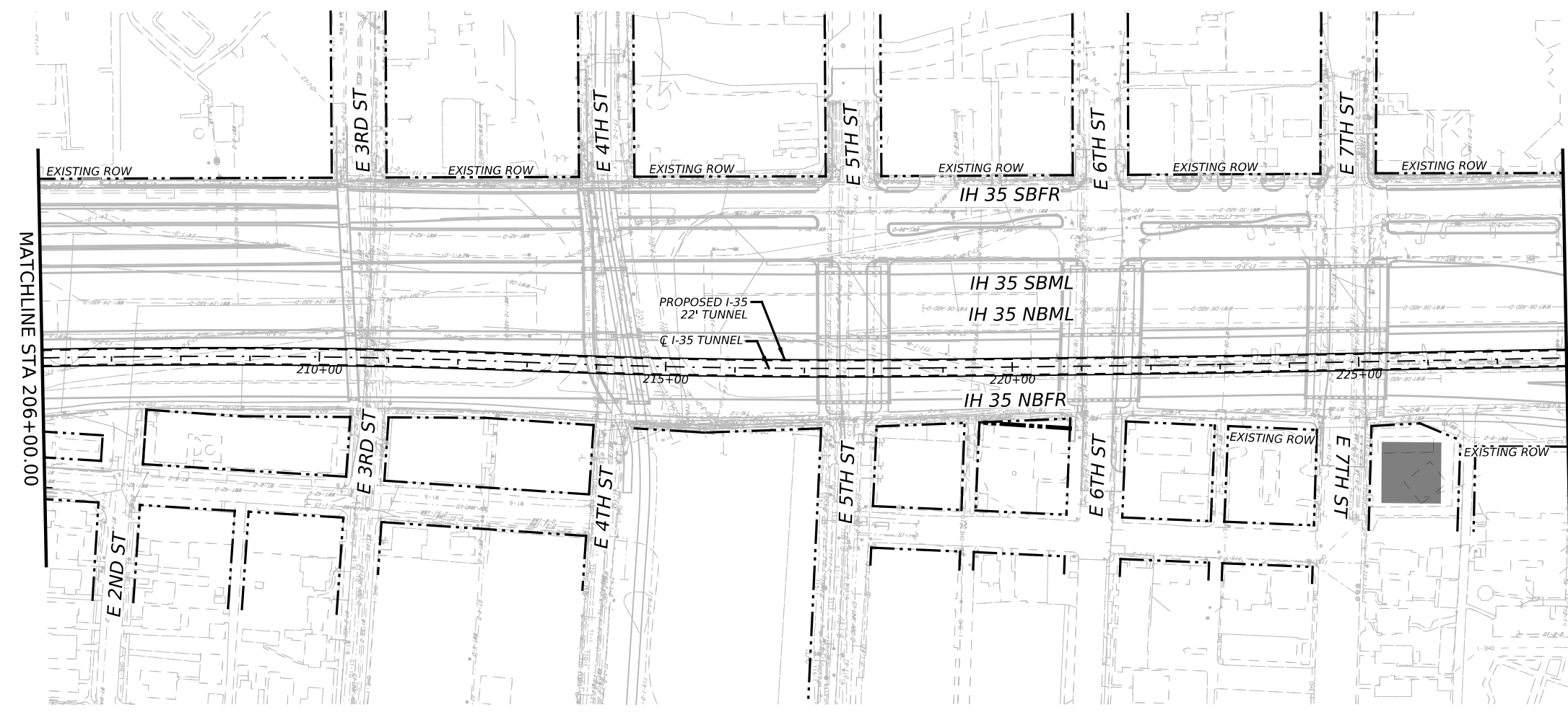
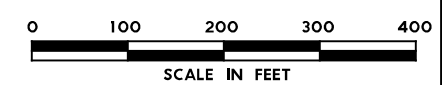
SUMMARY OF DRAINAGE ITEMS

LOCATION	403 6001	462 6017	465 6017	496 6007
	TEMPORARY SPL SHORING	CONC BOX CULV (7 FT X 6 FT)	INLET (COMPL) (PCO)(4FT) (NONE)	REMOV STR (PIPE)
UNIT	SF	LF	EA	LF
11TH ST LOOP-PLAN AND PROFILE	9798	86	2	42
PROJECT TOTALS	9798	86	2	42

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CAPITAL EXPRESS CENTRAL SUMMARY OF QUANTITIES			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
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AUS	TRAVIS		7



- NOTES:**
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 2. ALL PROJECT COORDINATES WERE DERIVED UTILIZING STATIC AND GPS OBSERVATIONS PROCESSED TO CORS STATIONS TXBU, TXTA, TXBS, TXSM, TXJC, AND TXAU.
 3. SEE SURVEY CONTROL SHEETS FOR CONTROL POINTS



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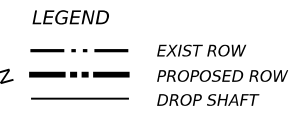
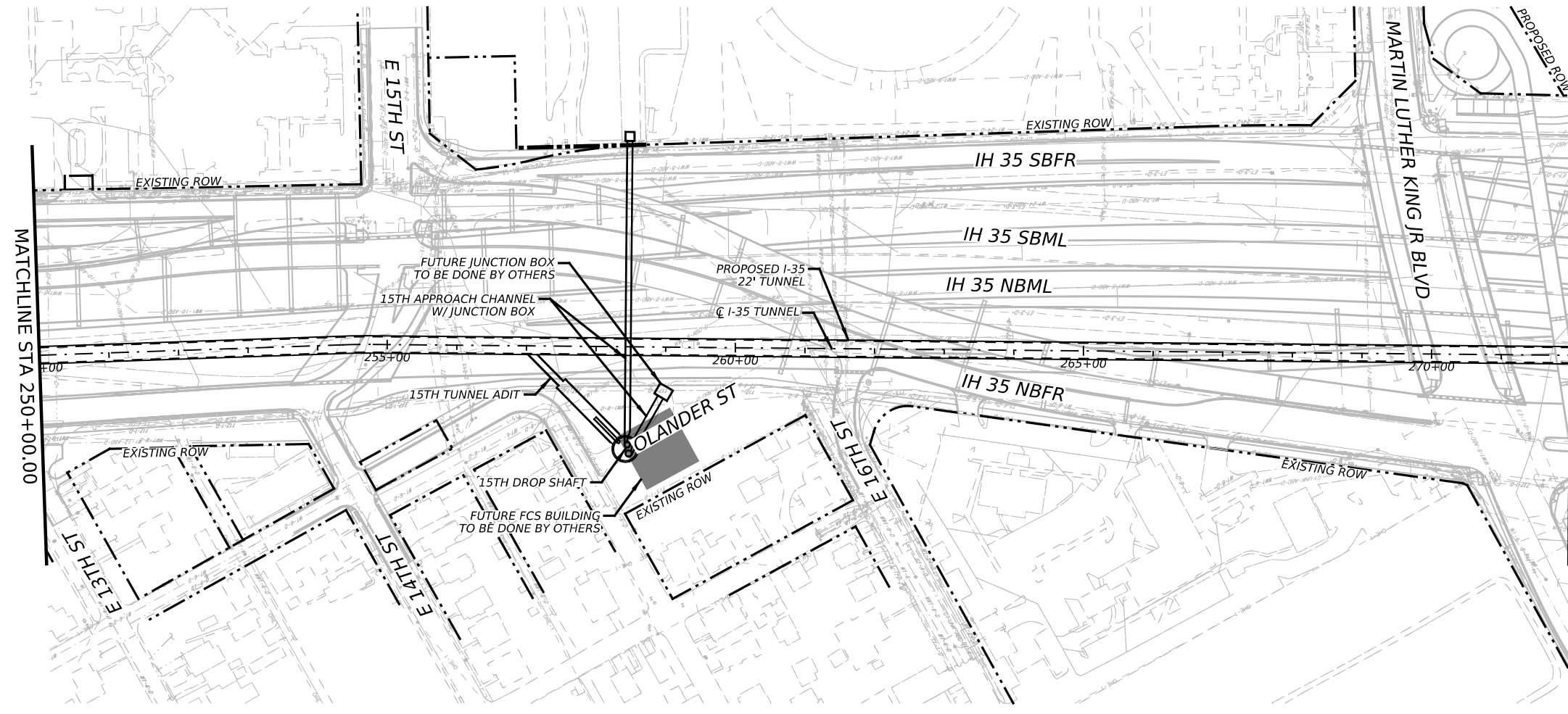
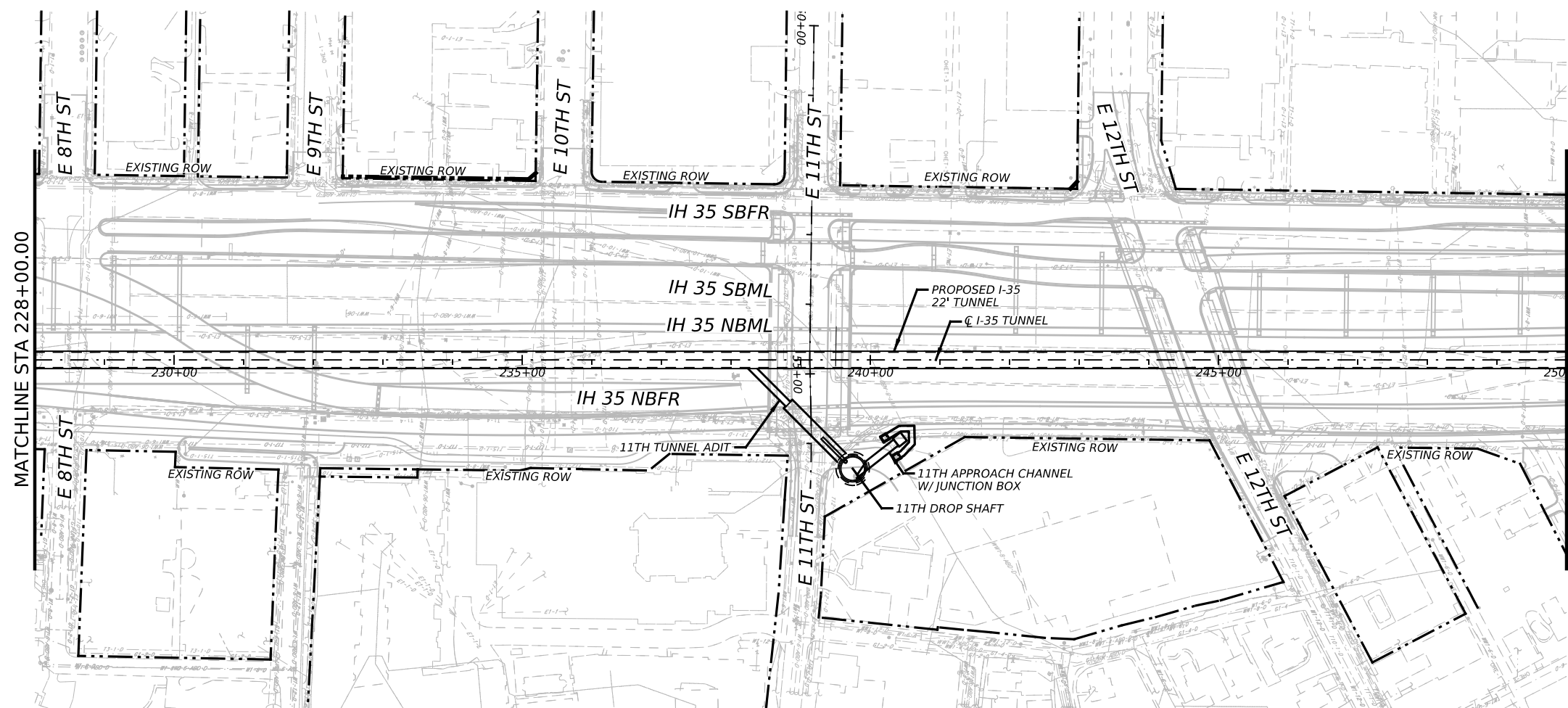
mobility CAPITAL AREA **35**

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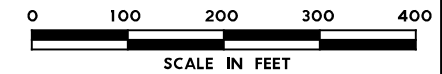
CAPITAL EXPRESS CENTRAL
I-35 TUNNEL PROJECT LAYOUT
BEGIN TO STA 228+00

SCALE: 1"=200' SHEET 1 OF 5

CONT	SECT	JOB	HIGHWAY
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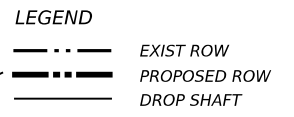
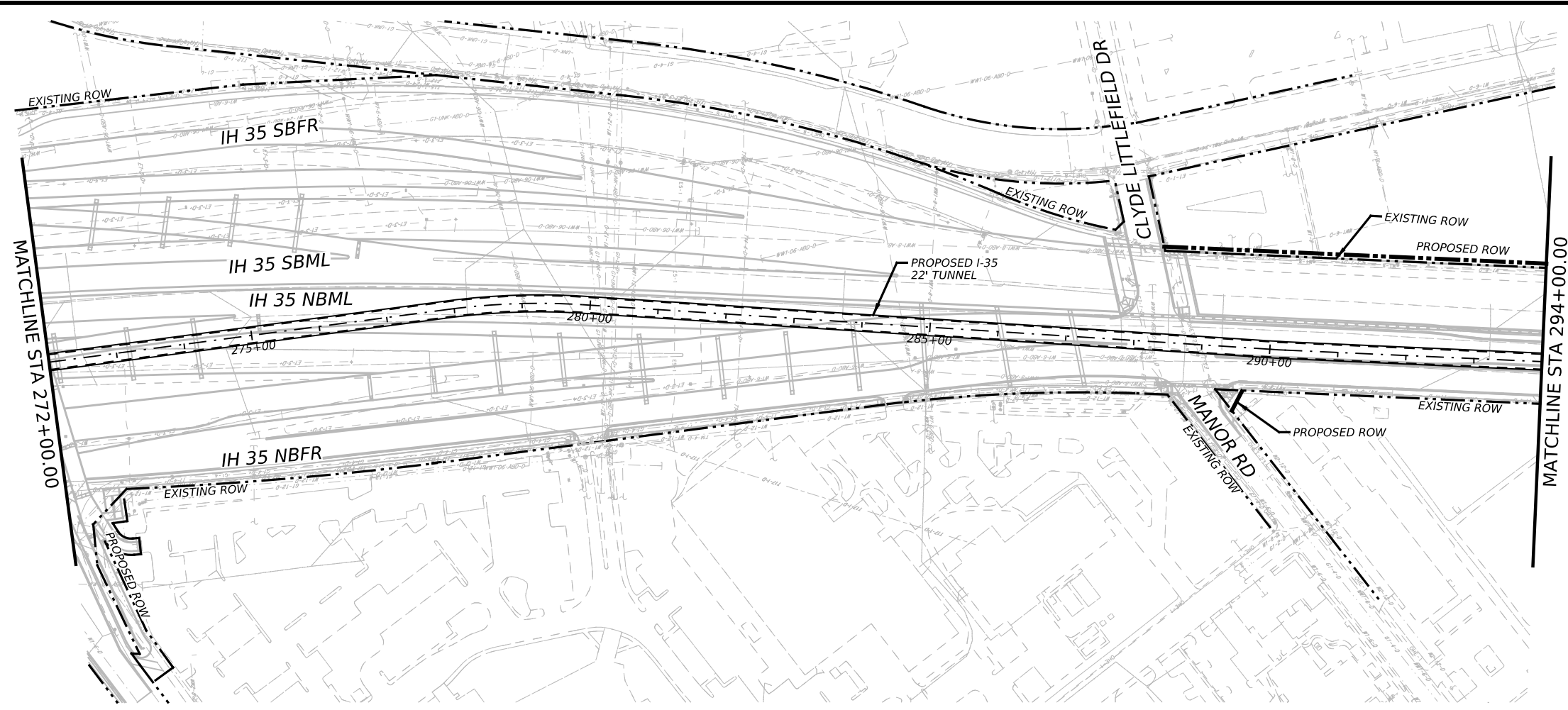


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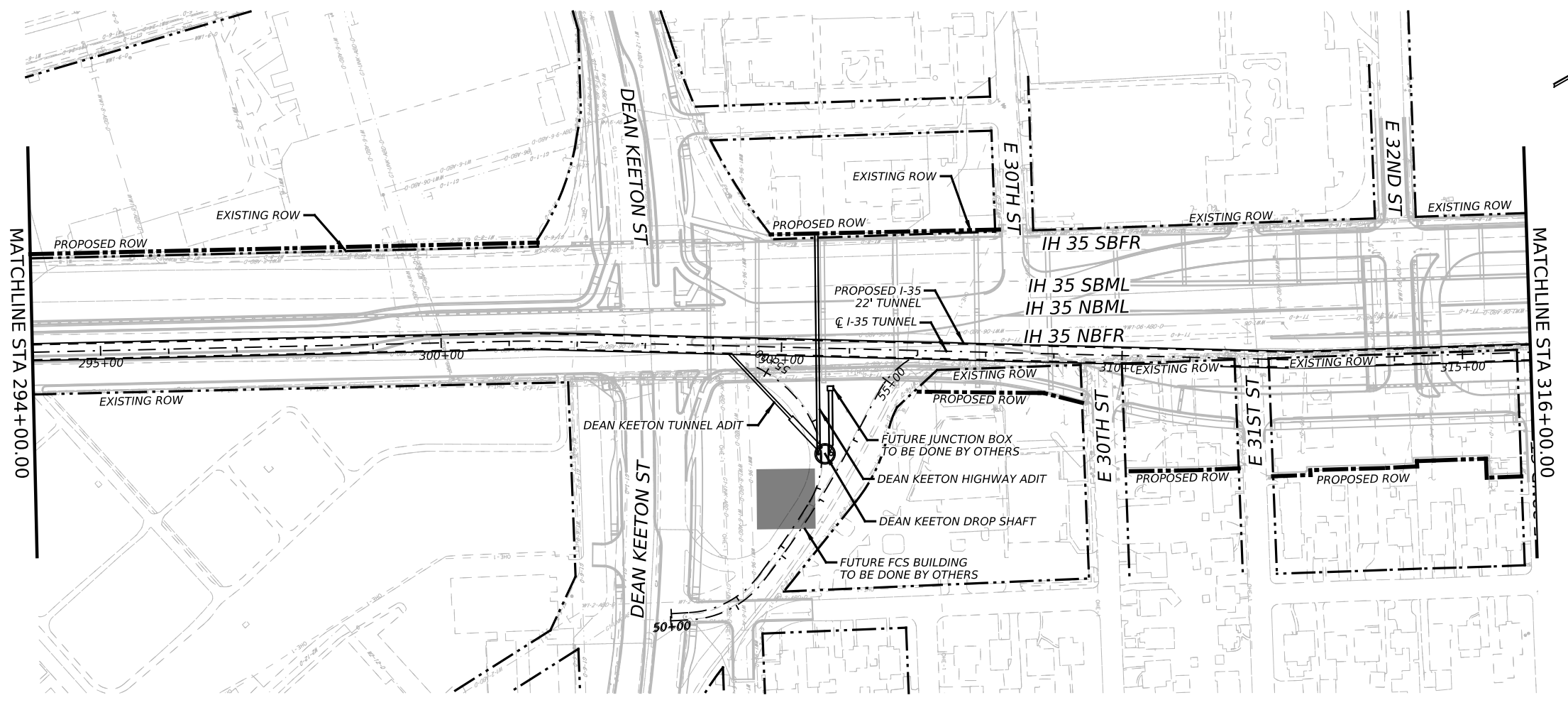
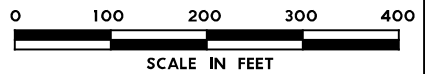
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I-35 TUNNEL PROJECT LAYOUT
 STA 228+00 TO STA 272+00

SCALE: 1"=200' SHEET 2 OF 5

CONT	SECT	JOB	HIGHWAY
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mobility CAPITAL AREA

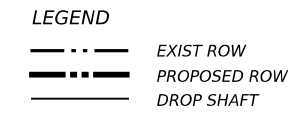
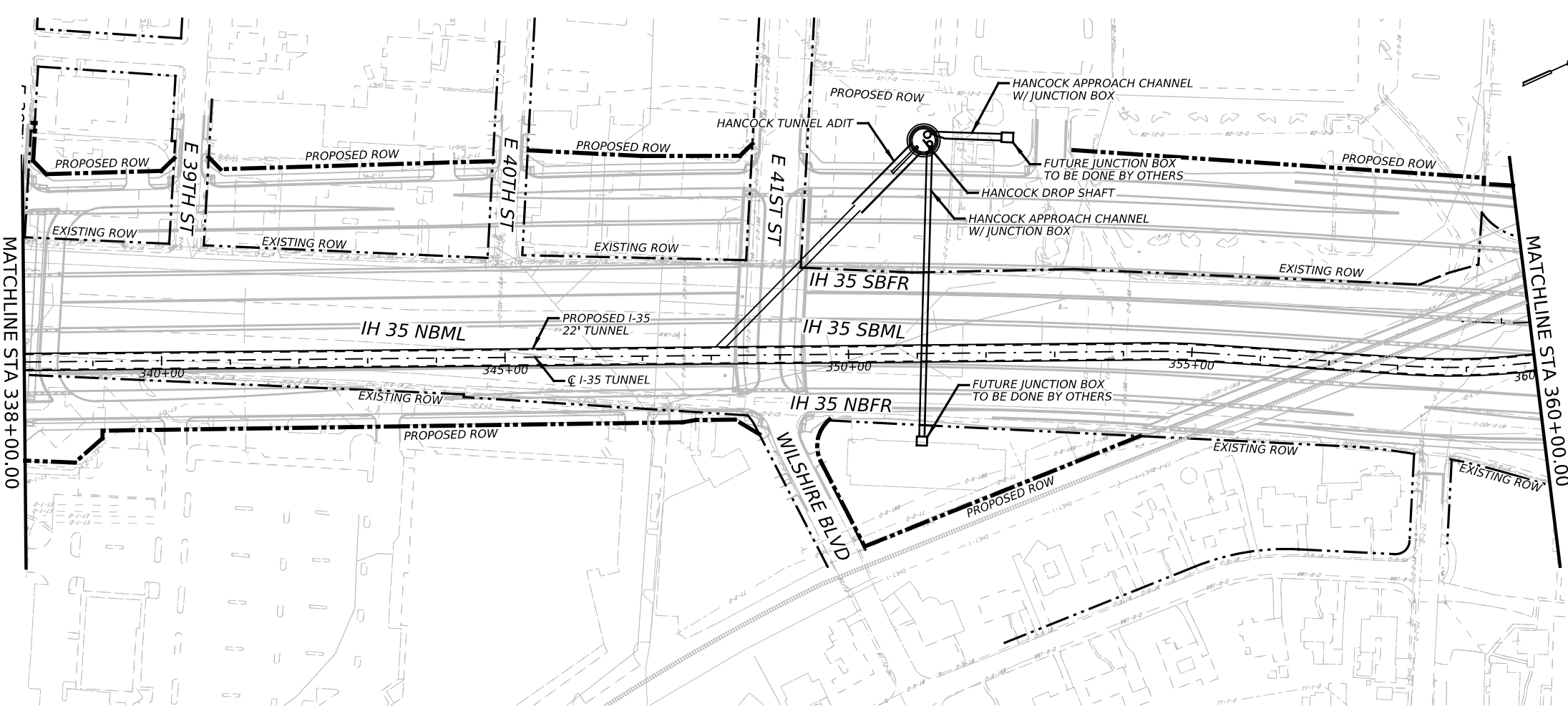
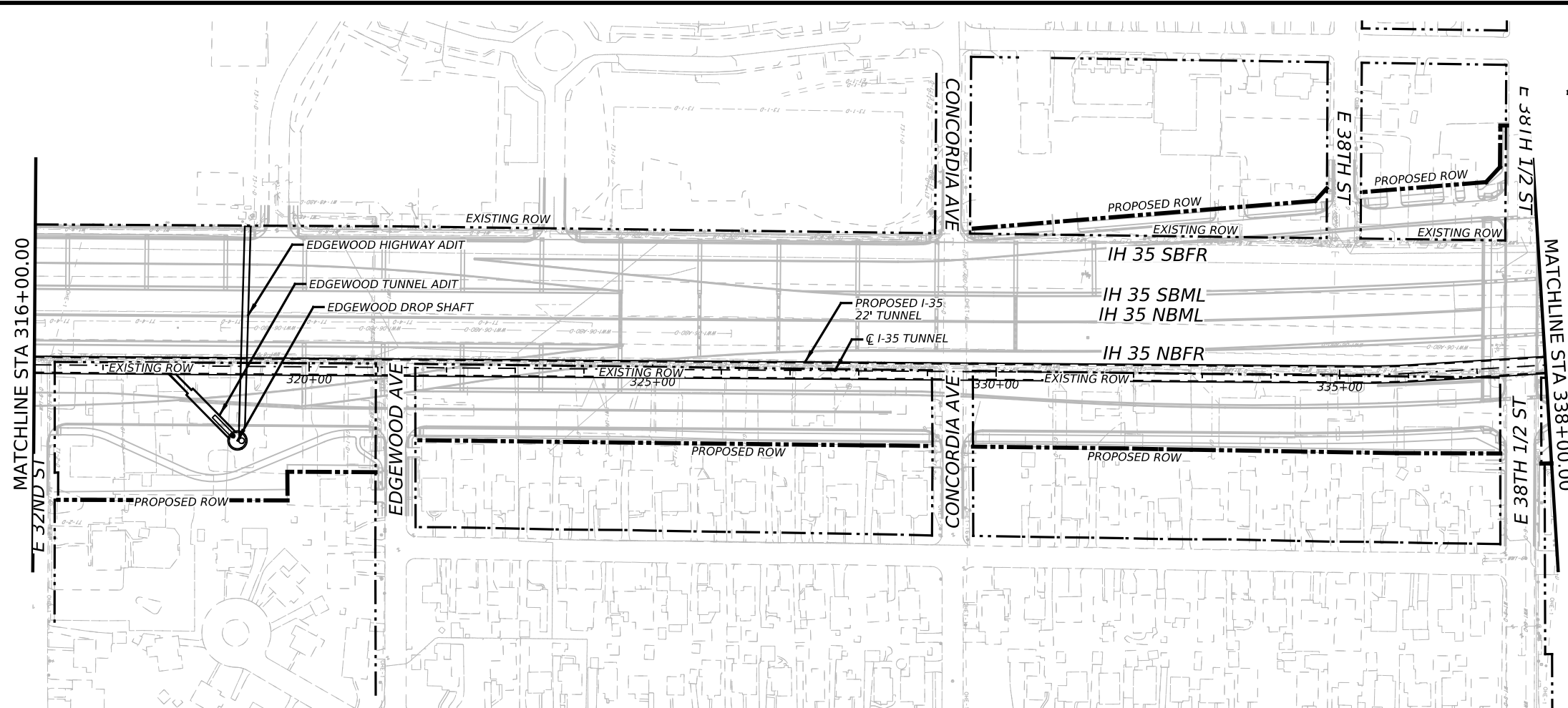
Texas Department of Transportation

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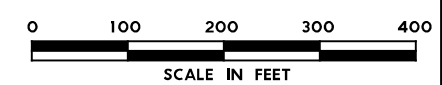
I-35 TUNNEL PROJECT LAYOUT
 STA 272+00 TO STA 316+00

SCALE: 1"=200' SHEET 3 OF 5

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0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	13	



- NOTES:**
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 3. SEE SURVEY CONTROL SHEETS FOR CONTROL POINTS



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HR

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

I-35 TUNNEL

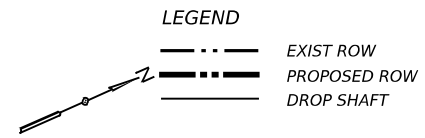
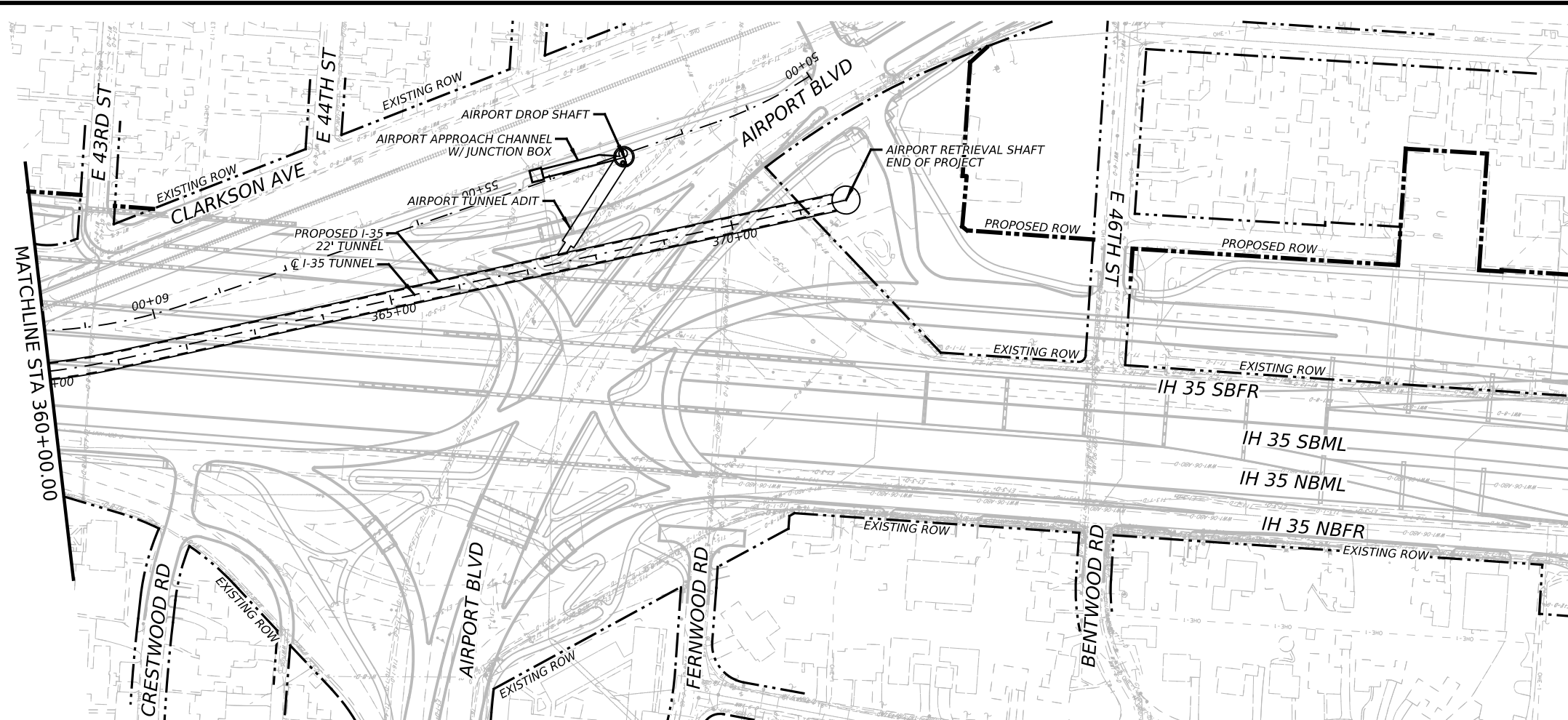
PROJECT LAYOUT

STA 316+00 TO STA 360+00

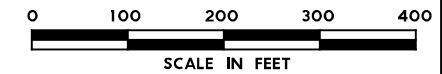
SCALE: 1"=200'

SHEET 4 OF 5

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	14	



- NOTES:**
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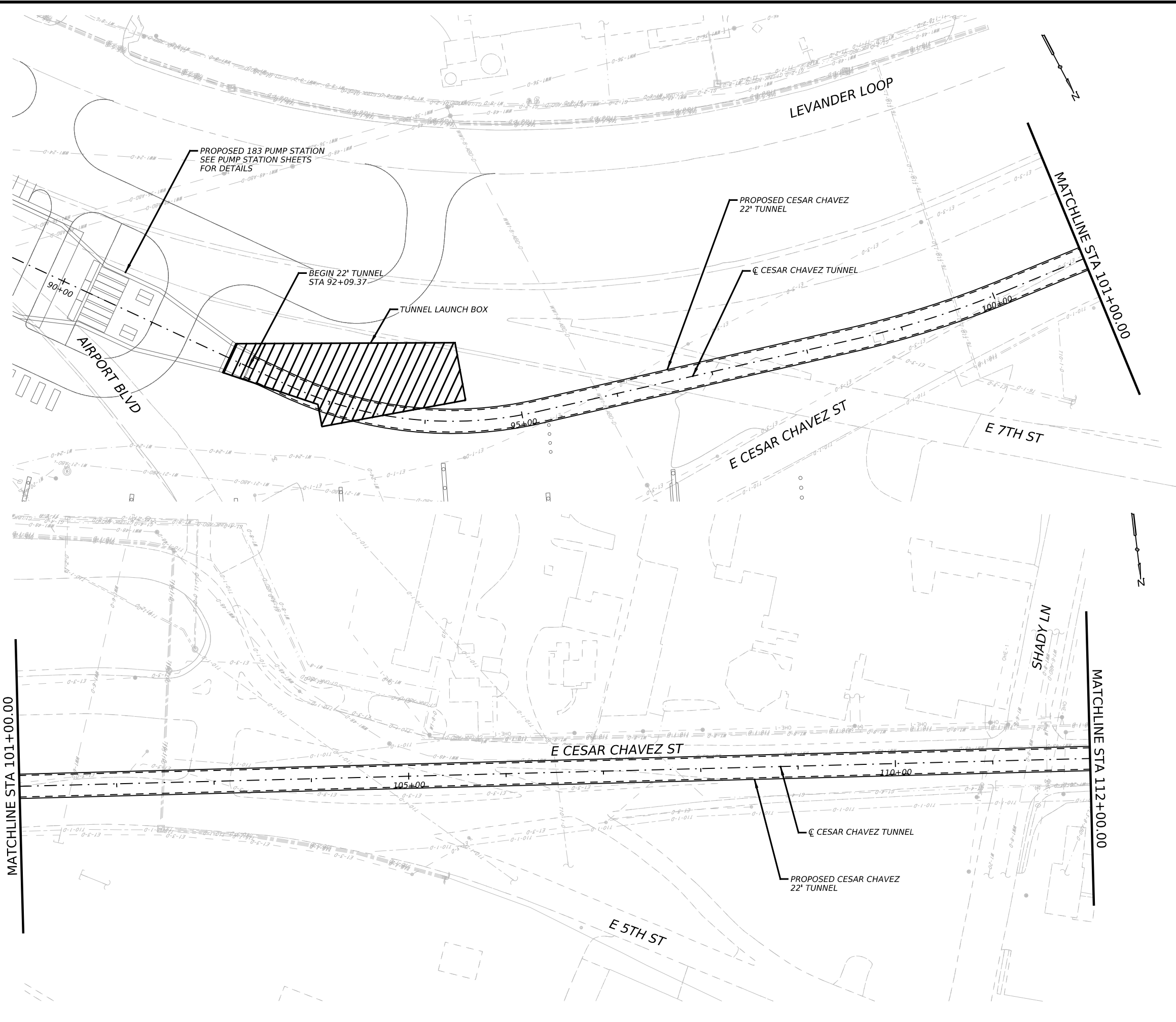
mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
I-35 TUNNEL
PROJECT LAYOUT
STA 360+00 TO END

SCALE: 1"=200' SHEET 5 OF 5

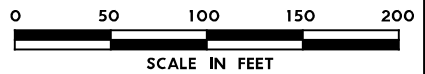
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	15	



LEGEND

---	EXIST ROW
---	PROPOSED ROW
---	DROP SHAFT

- NOTES:**
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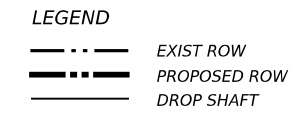
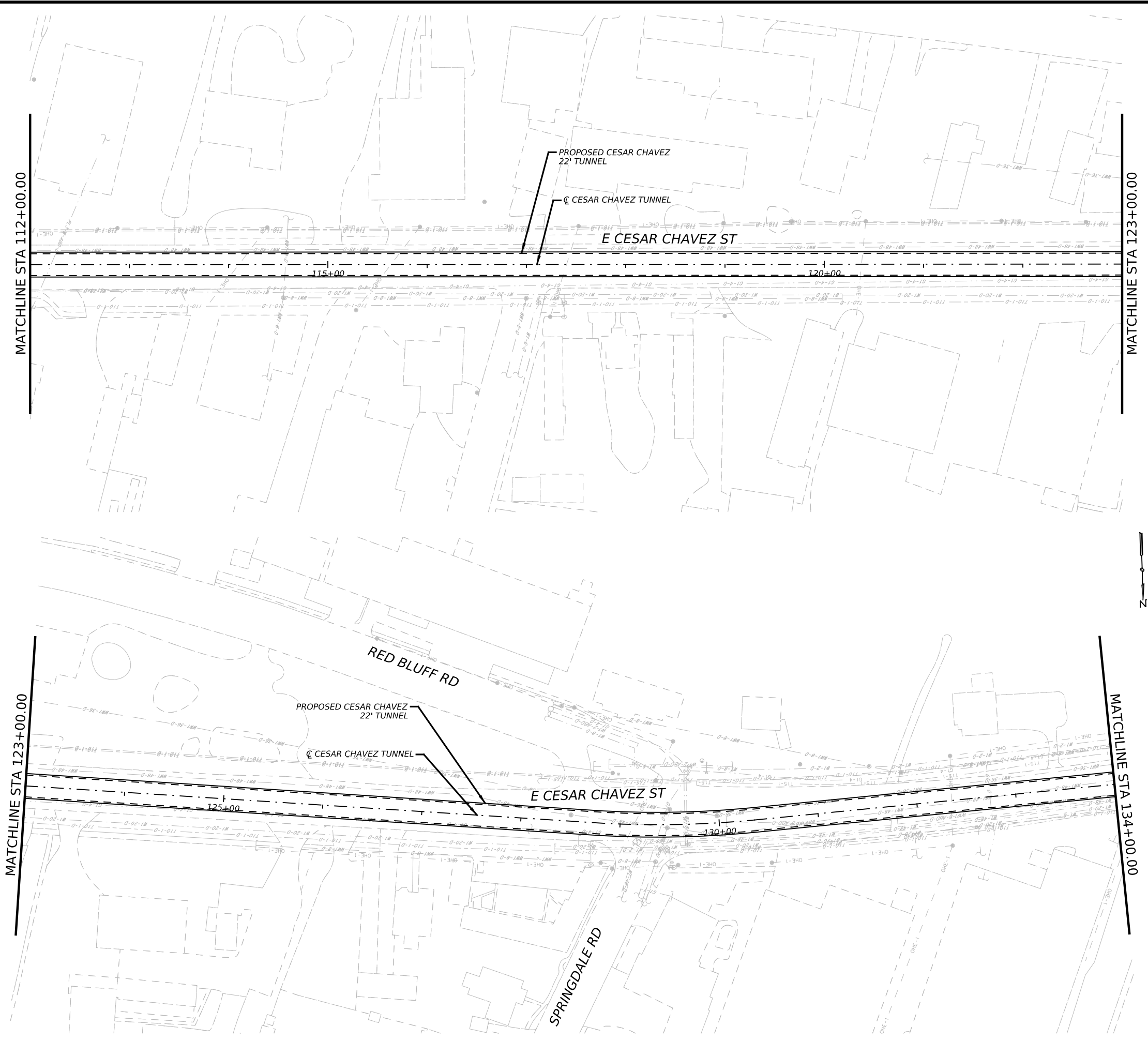


Texas Department of Transportation

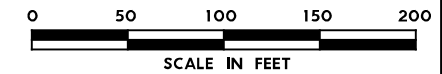
CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ TUNNEL
PROJECT LAYOUT
BEGIN TO STA 112+00

SCALE: 1"=100' SHEET 1 OF 7

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	16	



- NOTES:**
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 710 Hester Crossing, Suite 150
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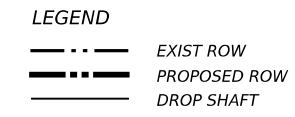


Texas Department of Transportation

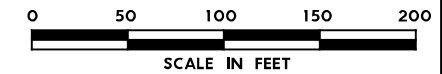
CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ TUNNEL
PROJECT LAYOUT
STA 112+00 TO STA 134+00

SCALE: 1"=100' SHEET 2 OF 7

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	17	



- NOTES:**
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 3. SEE SURVEY CONTROL SHEETS FOR CONTROL POINTS



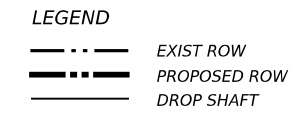
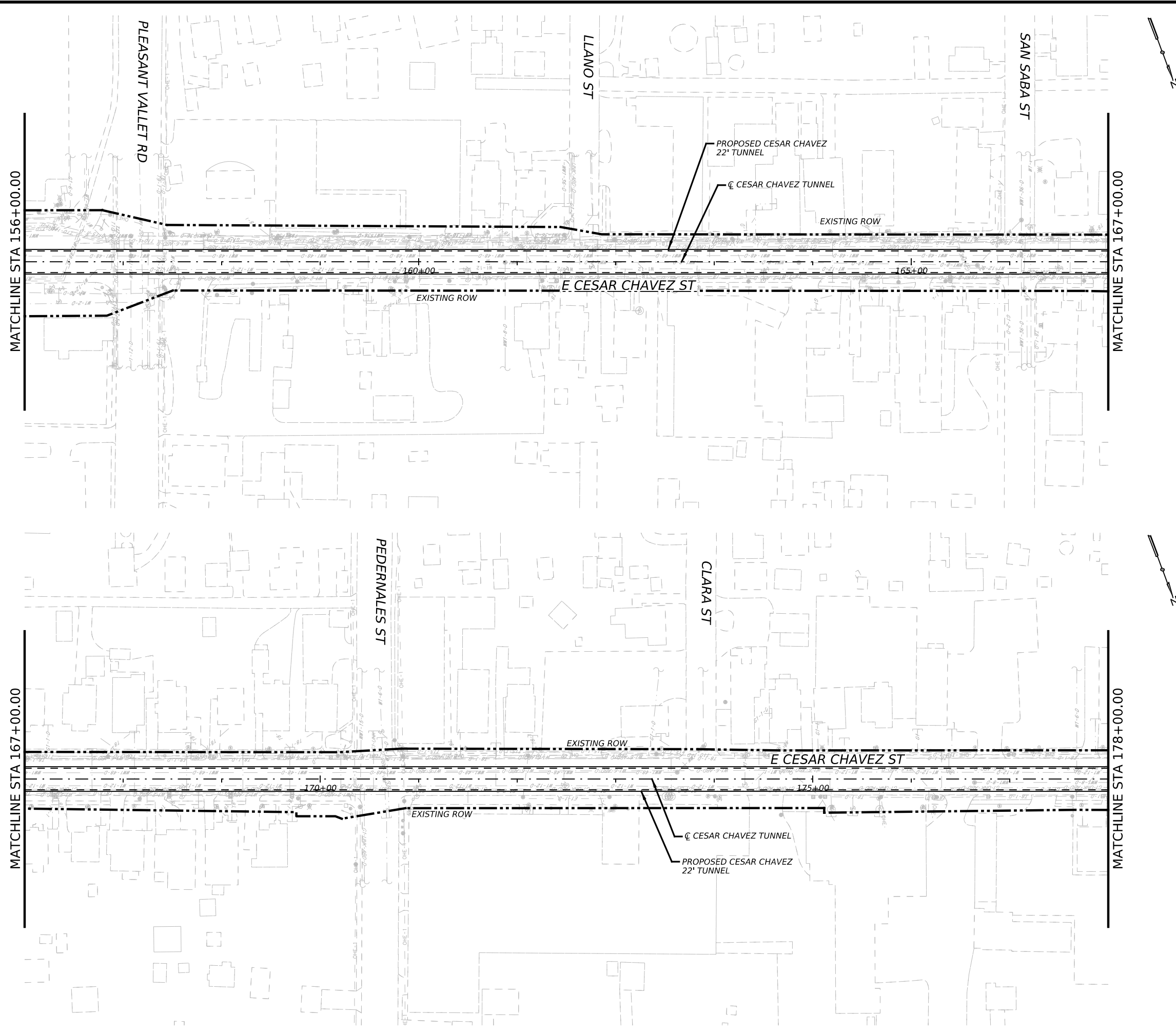
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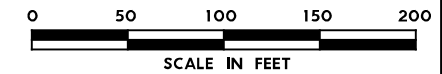
CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ TUNNEL
PROJECT LAYOUT
STA 134+00 TO STA 156+00

SCALE: 1"=100' SHEET 3 OF 7

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	18



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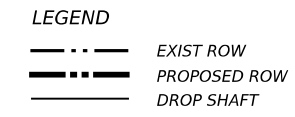
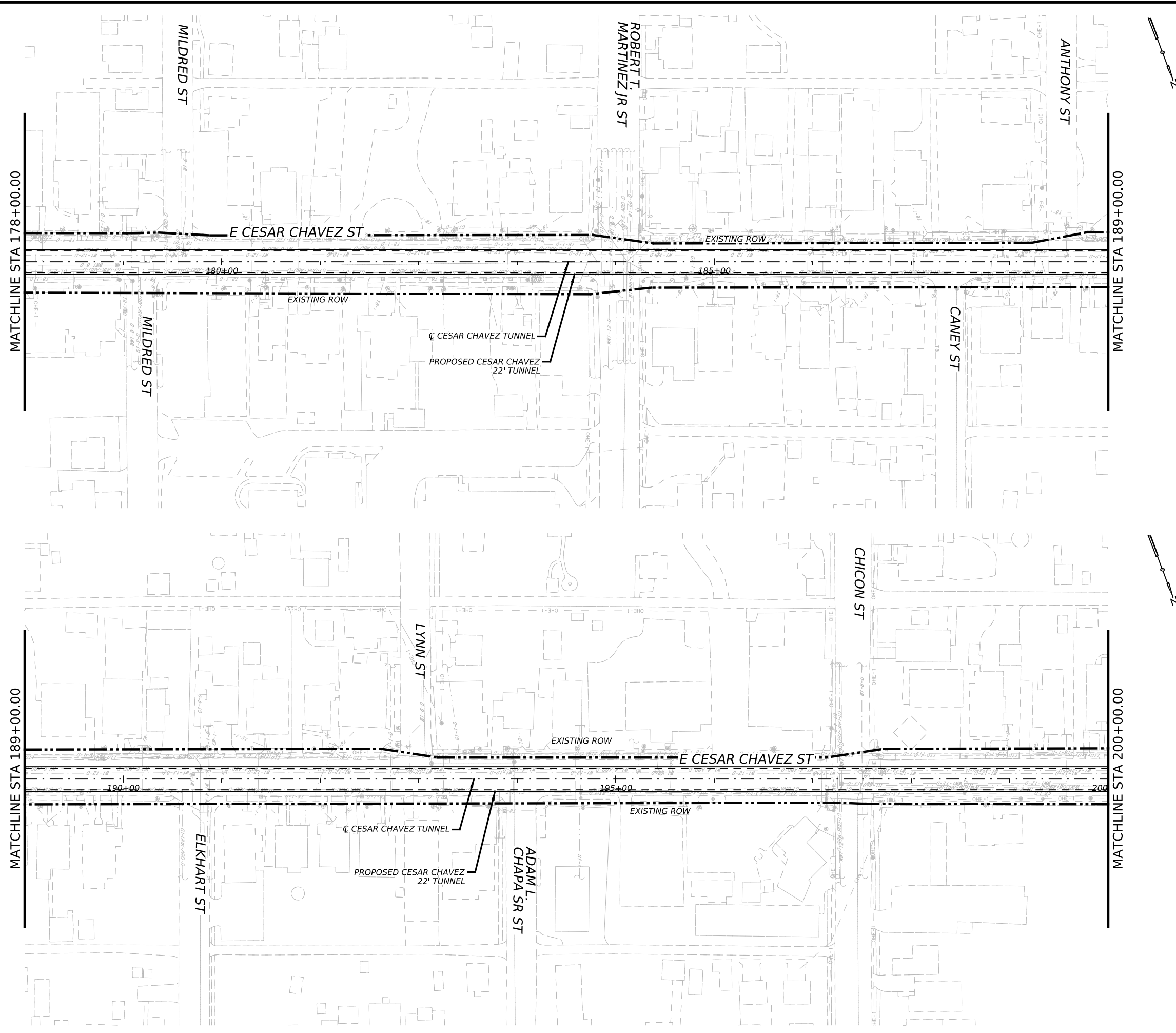
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 Round Rock, Texas 78681



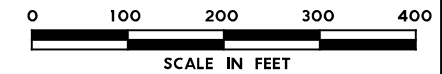
CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ TUNNEL
PROJECT LAYOUT
STA 156+00 TO STA 178+00

SCALE: 1"=100' SHEET 4 OF 7

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	19	



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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

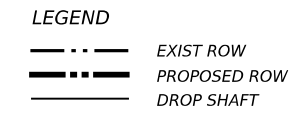
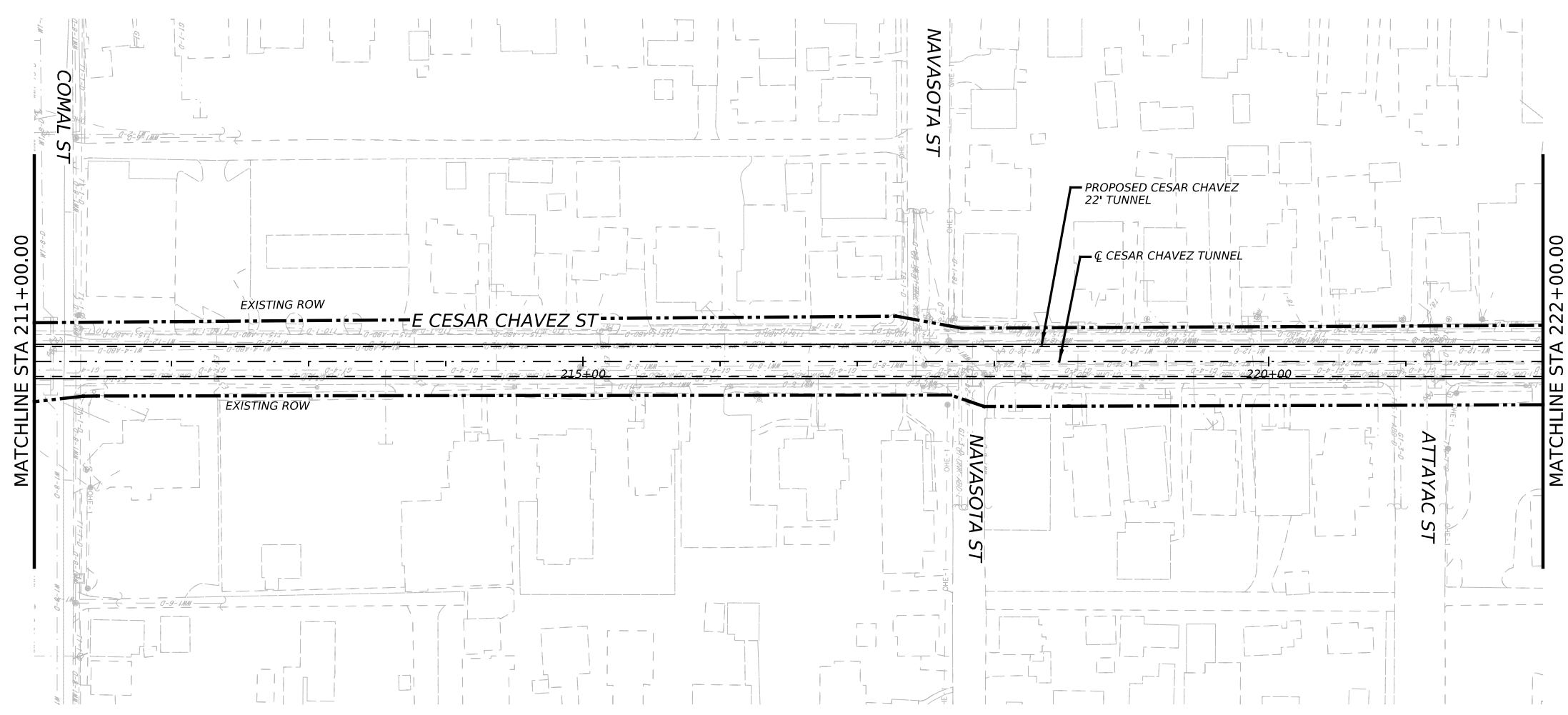
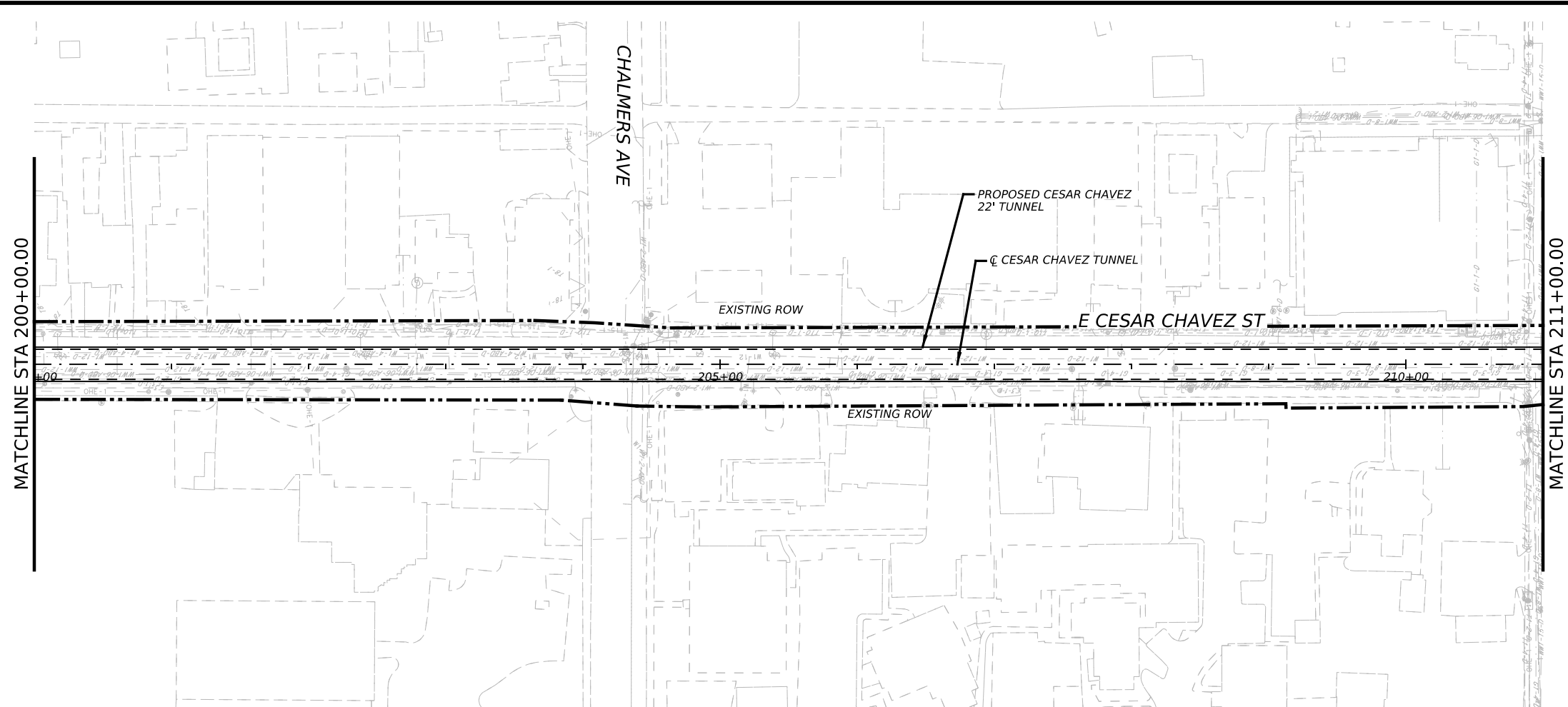
CESAR CHAVEZ TUNNEL

PROJECT LAYOUT

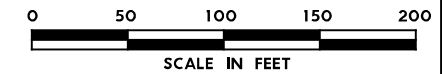
STA 178+00 TO STA 200+00

SCALE: 1"=100' SHEET 5 OF 7

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	20	



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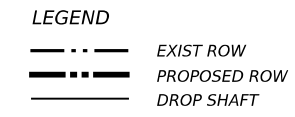
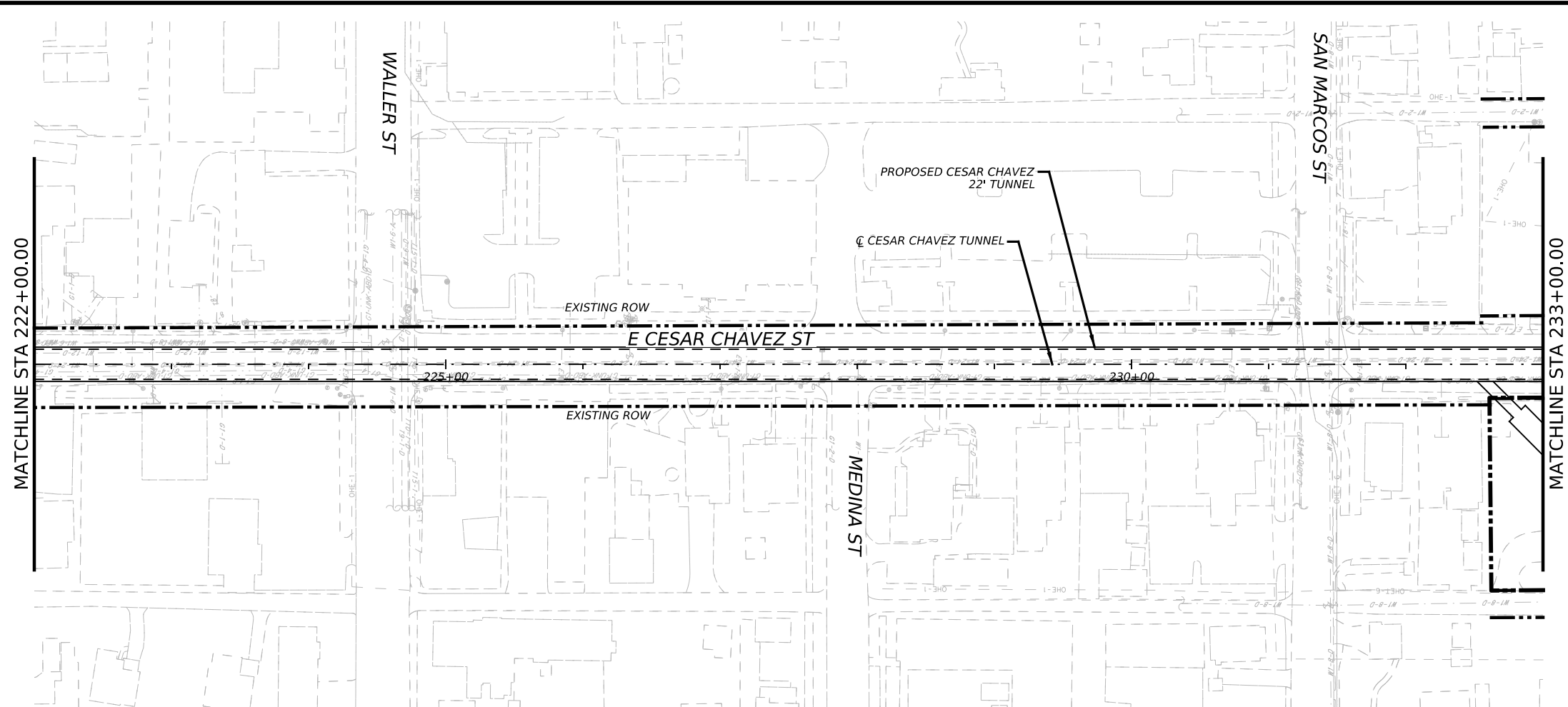
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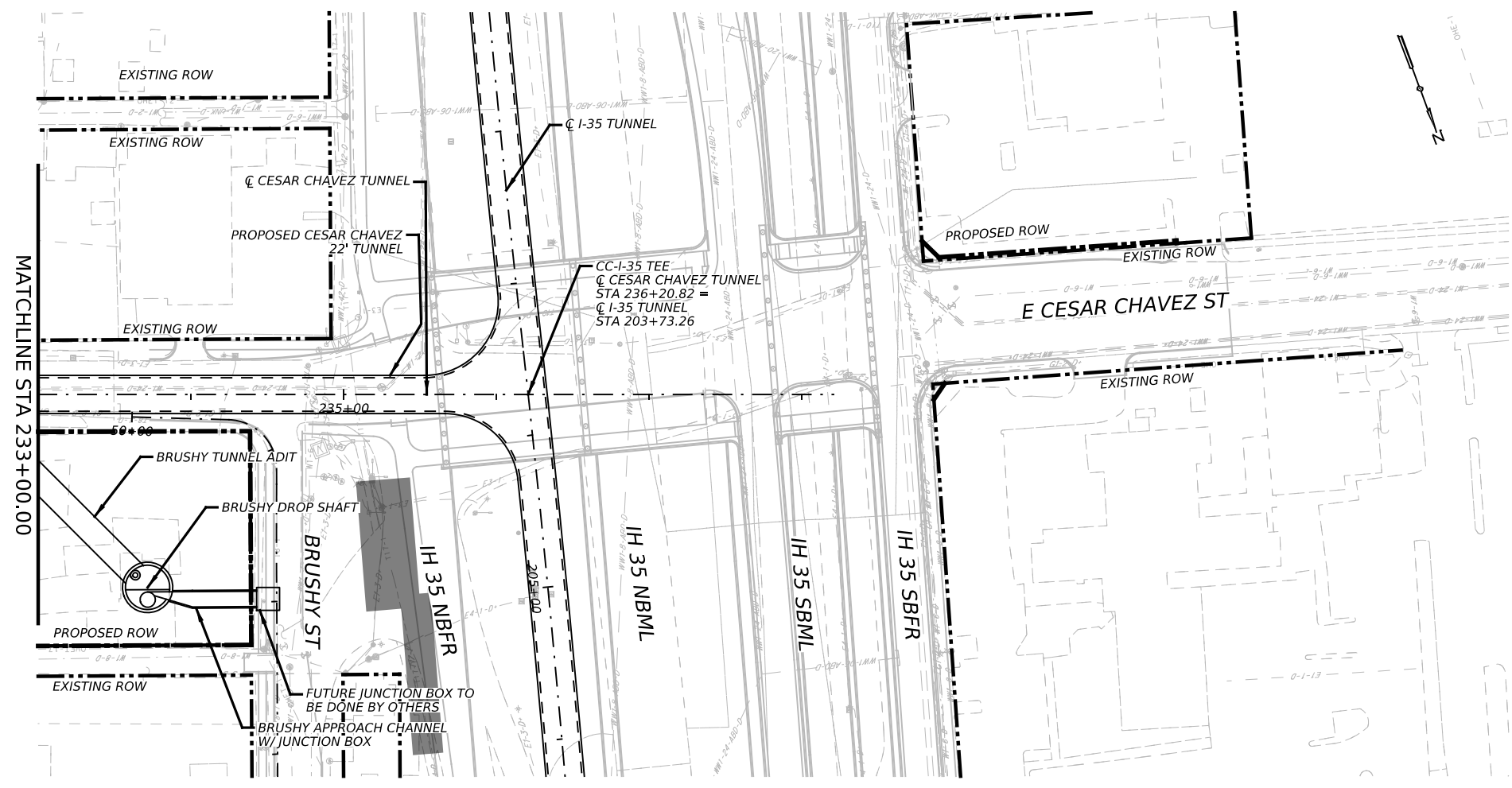
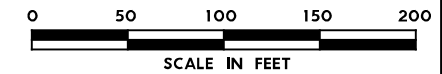
CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ TUNNEL
PROJECT LAYOUT
STA 200+00 TO STA 222+00

SCALE: 1"=100' SHEET 6 OF 7

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	21	



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 Round Rock, Texas 78681

mobility CAPITAL AREA

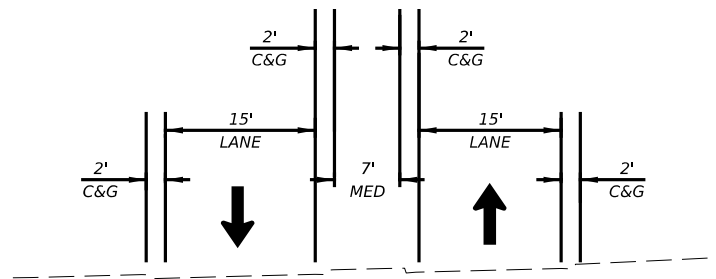
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

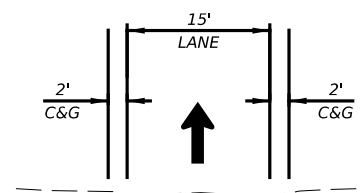
**CESAR CHAVEZ TUNNEL
 PROJECT LAYOUT
 STA 222+00 TO END**

SCALE: 1"=100' SHEET 7 OF 7

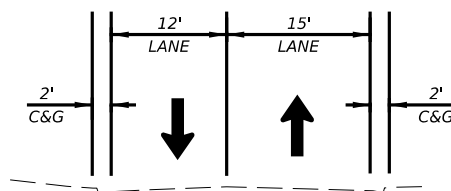
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	22



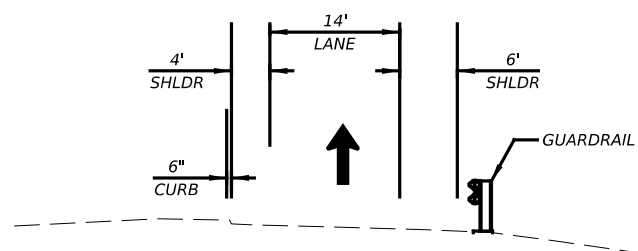
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 IH35 NBFR CONNECTOR RD



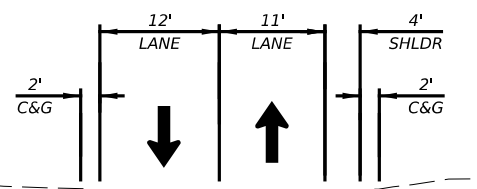
EXISTING BRUSHY ST
 STA. 50+85 TO STA. 52+17



EXISTING BRUSHY ST
 STA. 52+17.00 TO STA. 53+16.53



EXISTING RIGHT TURN RAMP TO
 I-35 UPPER DECK AT AIRPORT BLVD



EXISTING 11TH ST

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 P.E. Serial No. 89252
 Date: 6/29/2023

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 Round Rock, Texas 78681

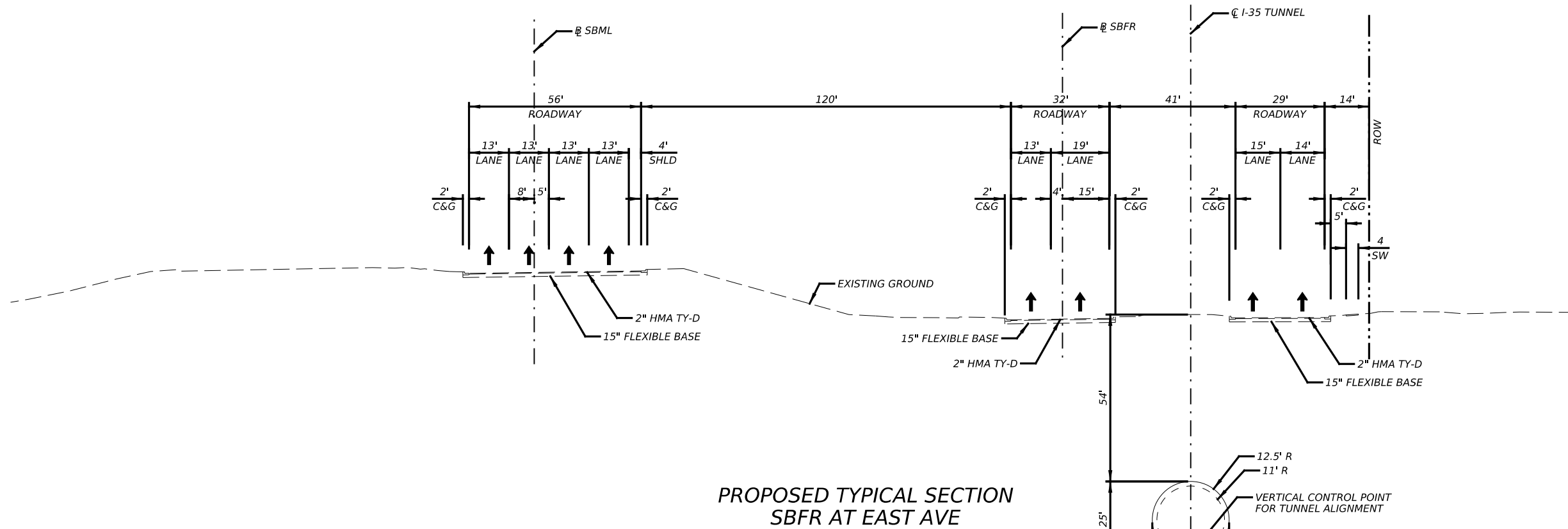
mobility CAPITAL AREA **35**

Texas Department of Transportation

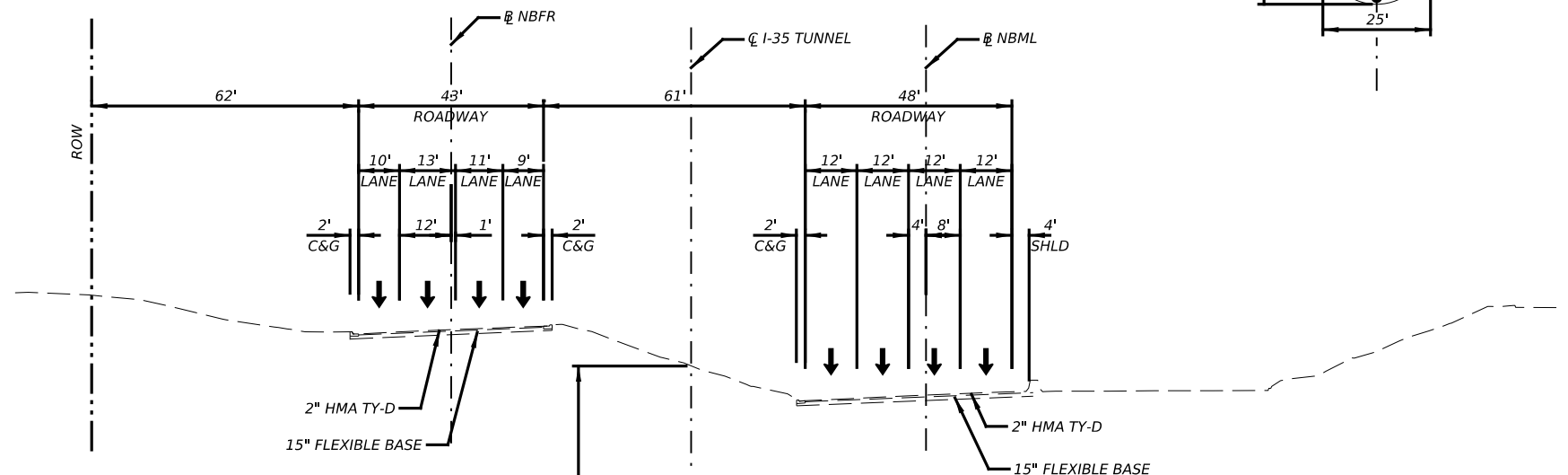
CAPITAL EXPRESS CENTRAL
 EXISTING TYPICAL SECTIONS

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	23	



PROPOSED TYPICAL SECTION
 SBFR AT EAST AVE



PROPOSED TYPICAL SECTION
 NBFR AT E 11th ST

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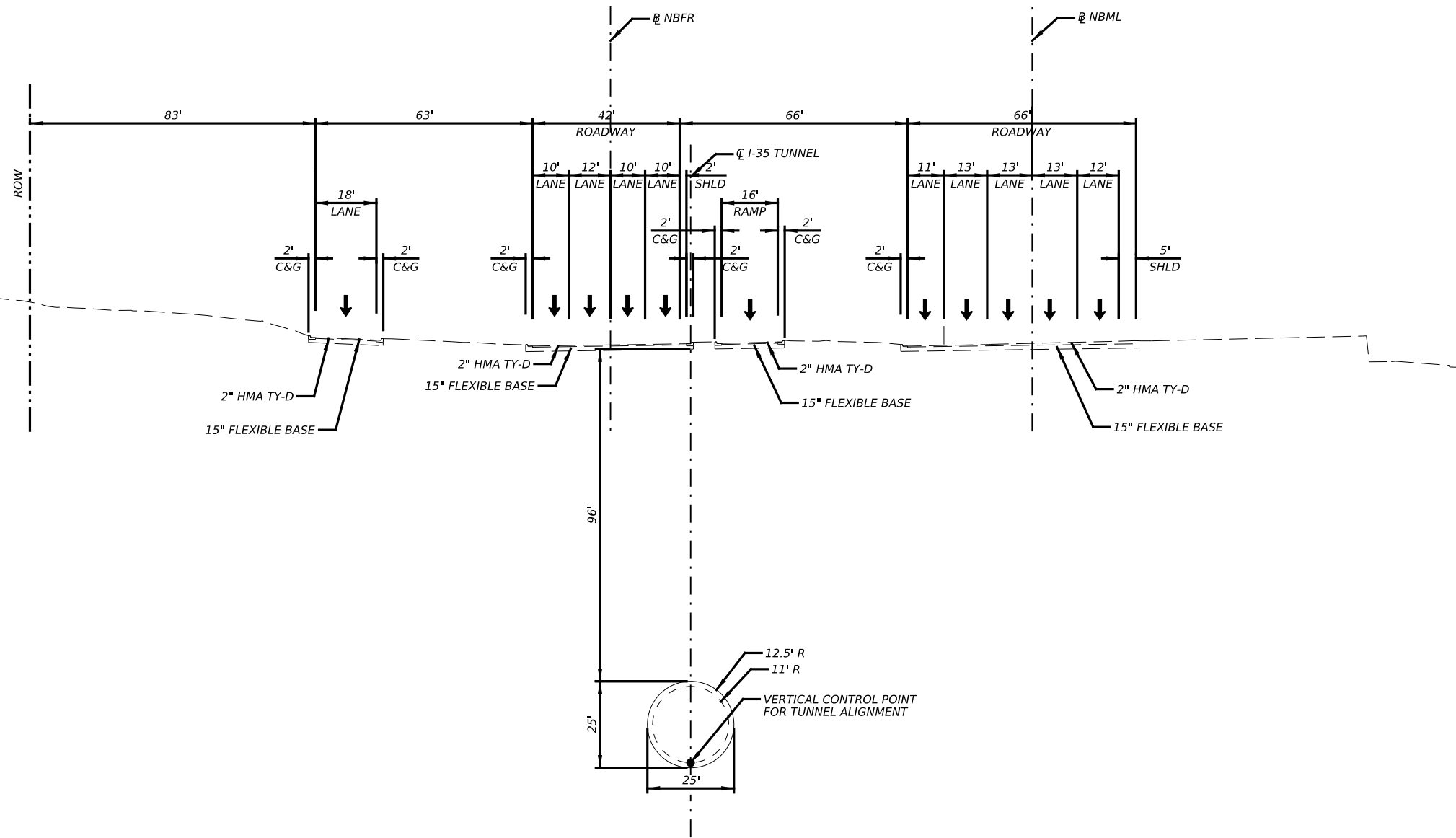
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 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

Texas Department of Transportation

**CAPITAL EXPRESS CENTRAL
 PROPOSED TYPICAL SECTIONS**

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	24	



PROPOSED TYPICAL SECTION
 NBFR AT OLANDER ST

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

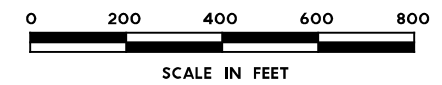
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 PROPOSED TYPICAL SECTION

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	25	

LEGEND

- CONSTRUCTION AREA
- DETOUR TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- TYPE III BARRICADE
- PROPOSED TEMPORARY SIGN
- PEDESTRIAN DETOUR



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P.E. Serial No. 135080			
Date: 6/30/2023			

RTG RODRIGUEZ TRANSPORTATION GROUP
 FIRM #597

HR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

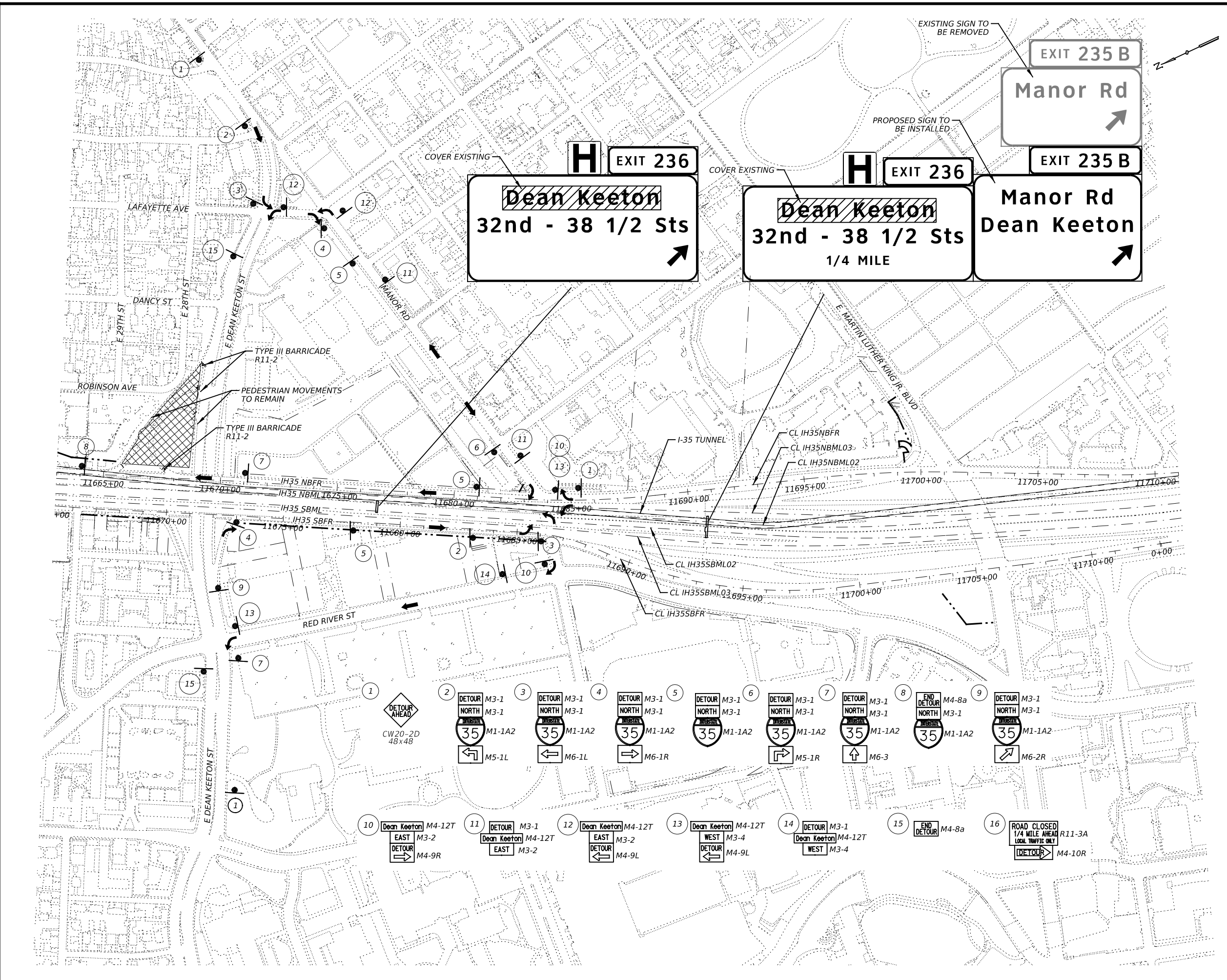
Texas Department of Transportation

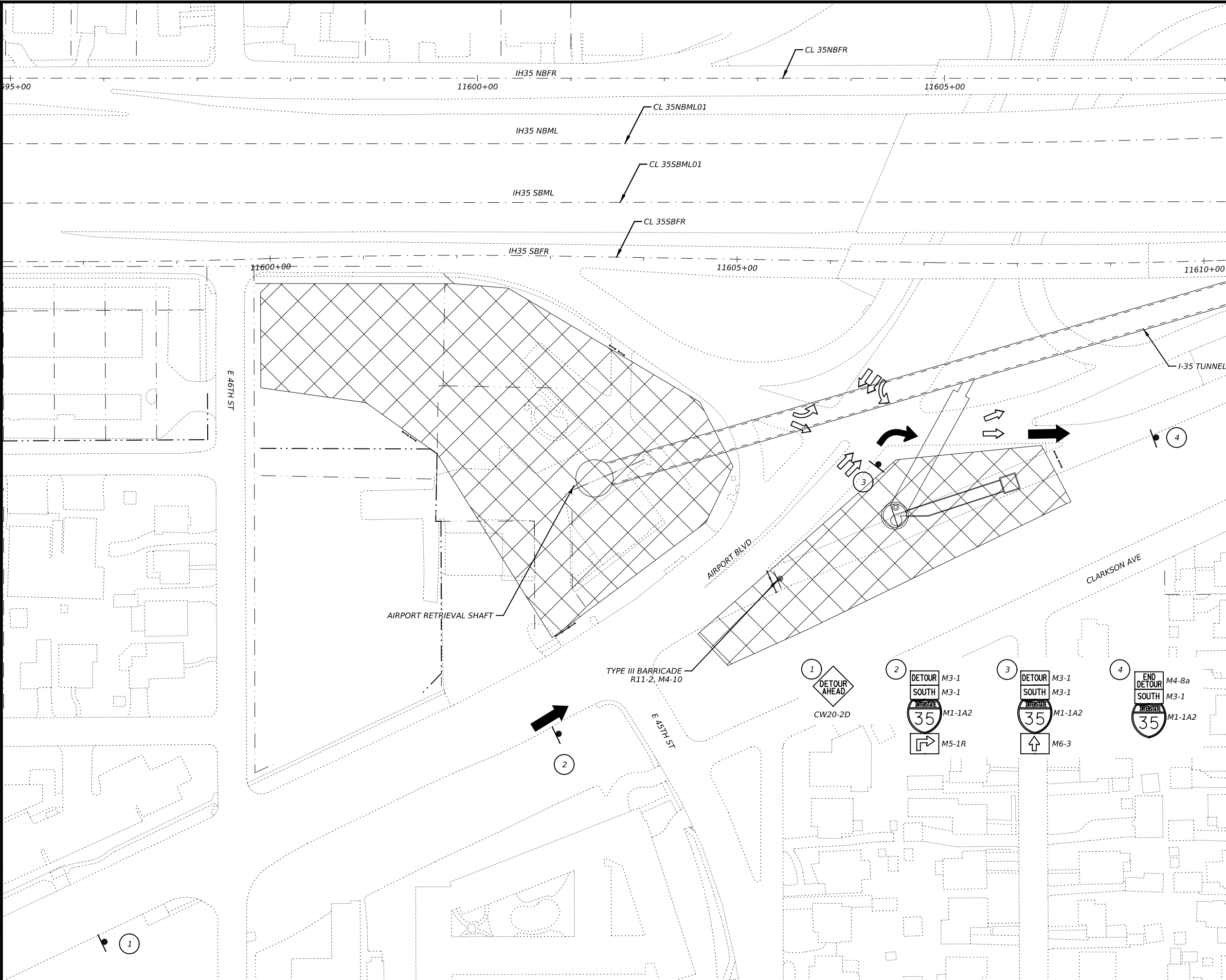
CAPITAL EXPRESS CENTRAL

DETOUR PLAN
DEAN KEETON

SCALE: 1"=400' SHEET 1 OF 2

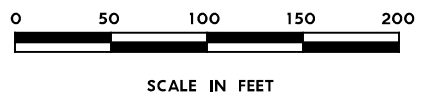
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		26





LEGEND

- CONSTRUCTION AREA
- DETOUR TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- TYPE III BARRICADE
- PROPOSED TEMPORARY SIGN
- PEDESTRIAN DETOUR



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RTG RODRIGUEZ TRANSPORTATION GROUP
 #B04 #587

HR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

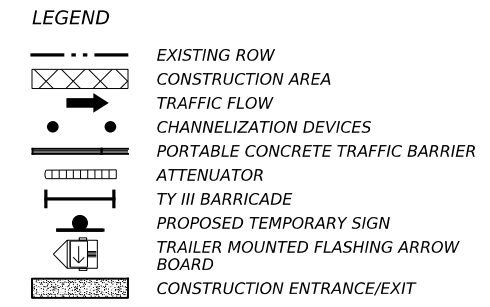
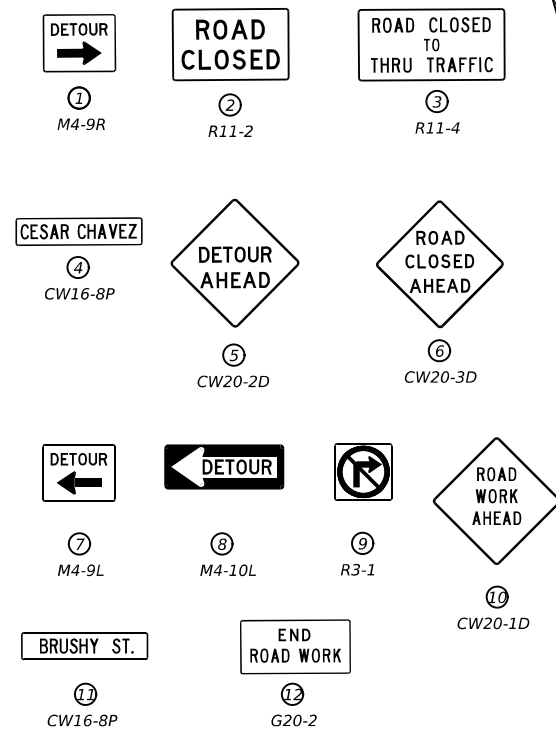
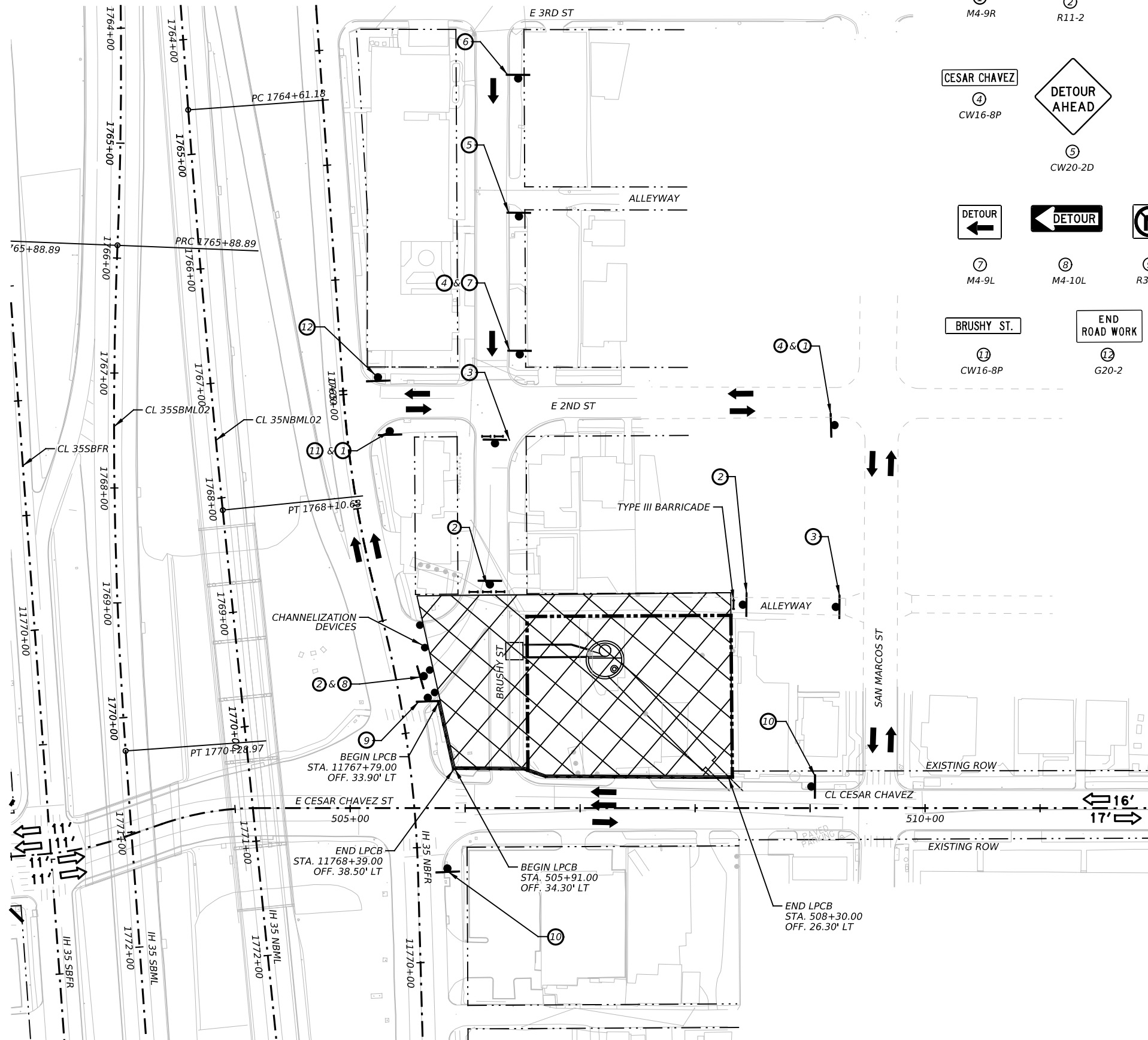
mobility CAPITAL AREA **35**

Texas Department of Transportation

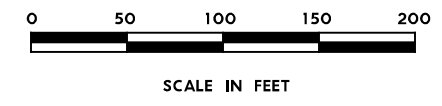
CAPITAL EXPRESS CENTRAL
DETOUR PLAN
AIRPORT SB ENTERANCE RAMP

SCALE: 1"=100' SHEET 2 OF 2

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	27	



- NOTES:**
1. ADVANCED WARNING SIGNS SHALL REMAIN UNTIL COMPLETION OF THE WORK.
 2. SEE BC(2)-22 FOR SIGN SPACING AND LOCATION OF TYPICAL CROSS ROAD SIGNS.
 3. SEE TCP(2-5)-18 FOR SIGN SPACING AND CHANNELIZATION DEVICES PLACEMENT.
 4. CONTRACTOR WILL PROVIDE ACCESS TO PROPERTY OWNERS DURING CONSTRUCTION.
 5. CONTRACTOR TO MAINTAIN ACCESS TO PEDESTRIAN RAMPS AND SIDEWALKS.
 6. CONTRACTOR MUST MAINTAIN INGRESS AND EGRESS FOR CONSTRUCTION VEHICLES THROUGH THE FRONTAGE ROAD ONLY. NO ACCESS TO BE GIVEN ALONG CITY STREETS.



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 P.E. Serial No. 124689
 Date: 6/30/2023

LAMB-STAR ENGINEERING, L.L.C.
 3801 PARKWOOD BOULEVARD, SUITE 550
 FRISCO, TEXAS 75034 (972) 440-9600
 TEXAS REGISTERED ENGINEERING FIRM F-9073

HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

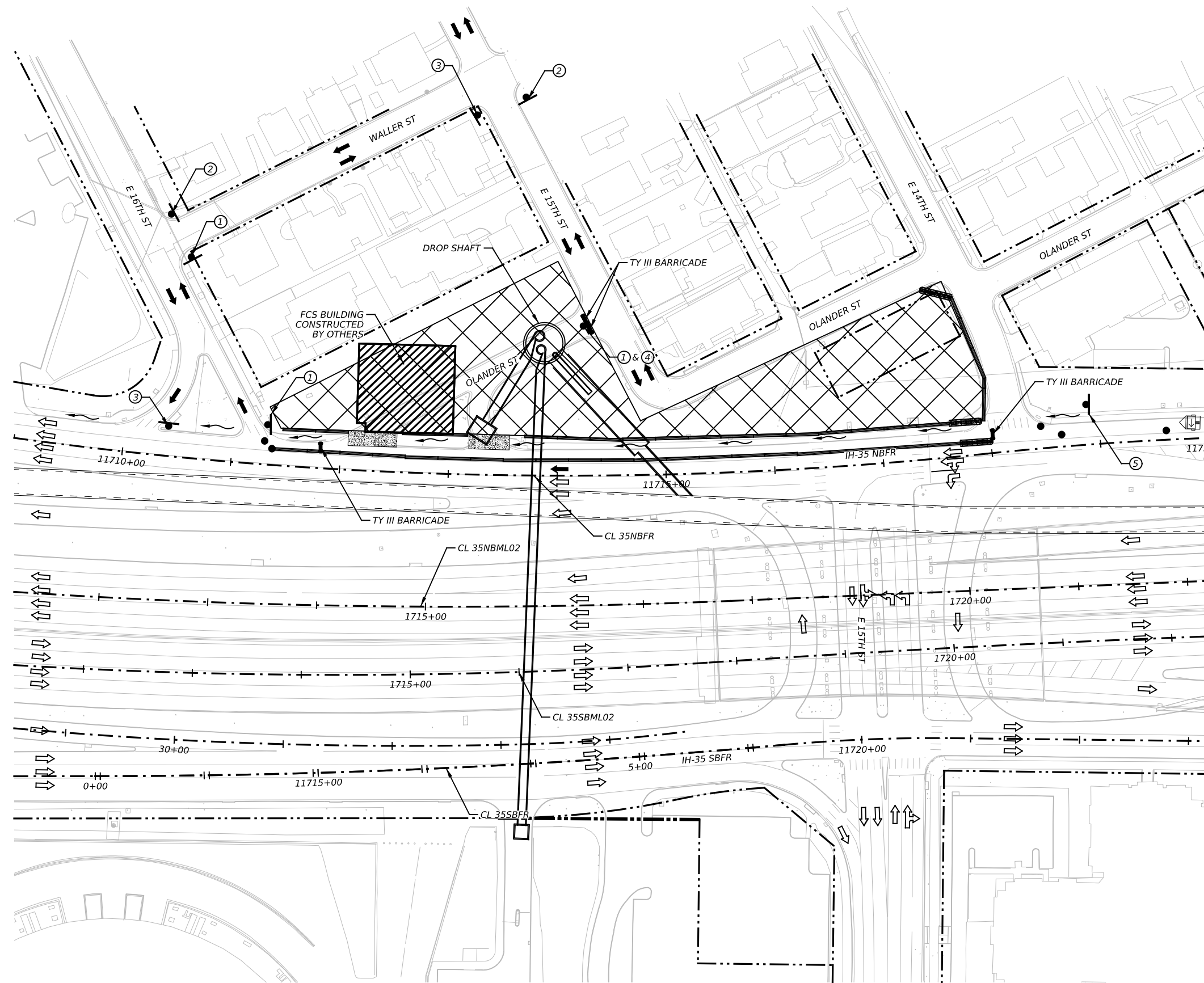
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
IH-35 DRAINAGE TUNNEL
DETOUR PLAN
CESAR CHAVEZ AT BRUSHY ST

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	28	



LEGEND

- CONSTRUCTION AREA
- DETOUR TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- TY III BARRICADE
- PROPOSED TEMPORARY SIGN
- PEDESTRIAN DETOUR



15 TH
DETOUR
 ① M4-9R

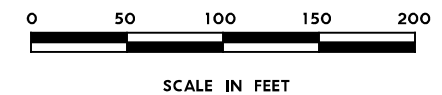
15 TH
DETOUR
 ② M4-9L

15 TH
END
DETOUR
 ③ M4-8a

ROAD
CLOSED
 ④ R11-2

DETOUR
 ⑤ M4-9S

DETOUR
AHEAD
 ⑥ CW20-2D



STA. 11725+00.00

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 P.E. Serial No. 89252
 Date: 6/30/2023

HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681



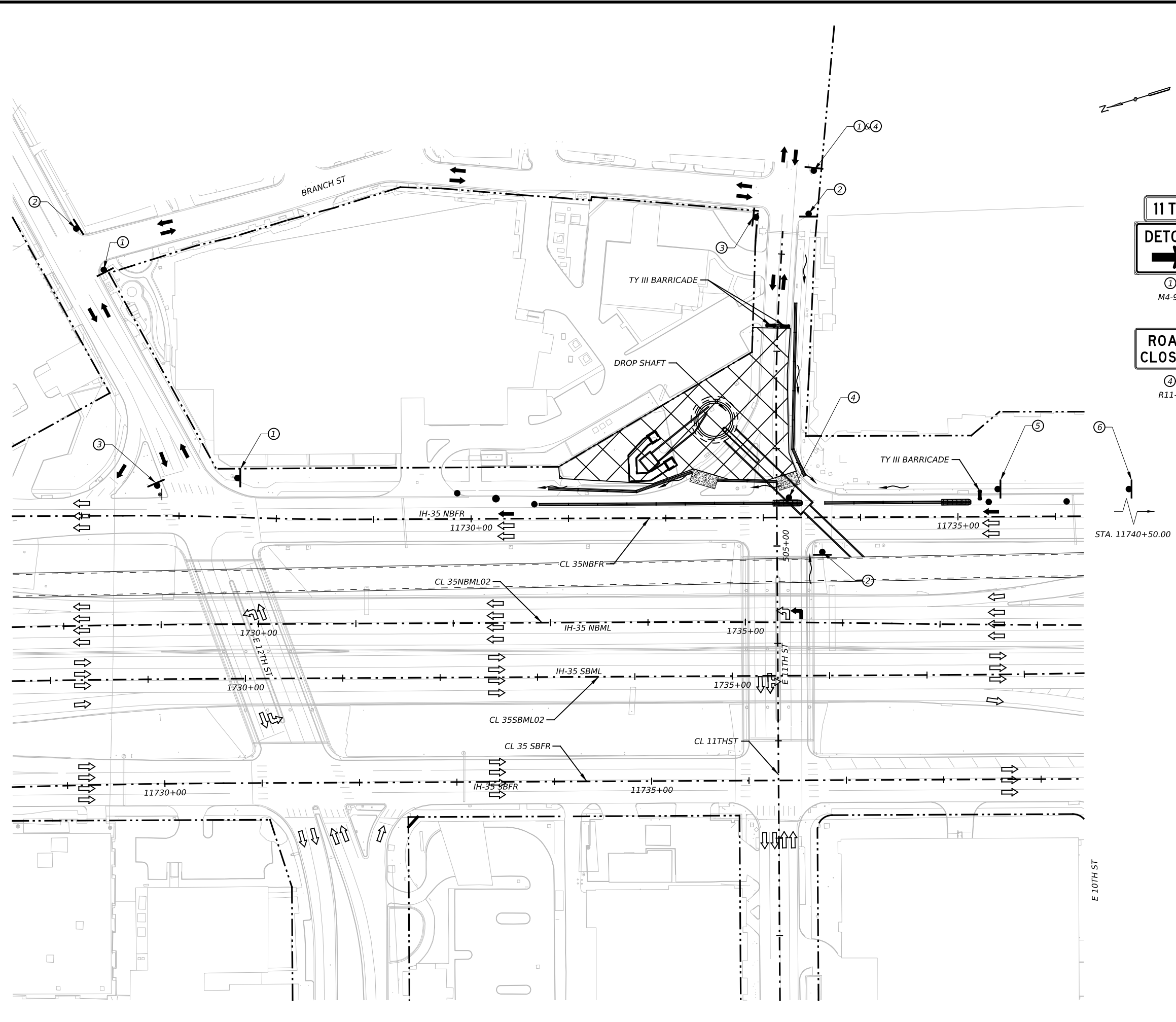
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

DETOUR PLAN
I-35 NBFR AT 15TH ST

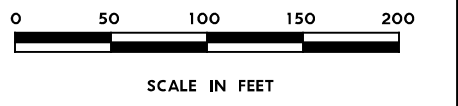
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	29	



LEGEND

- CONSTRUCTION AREA
- DETOUR TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- TY III BARRICADE
- PROPOSED TEMPORARY SIGN
- PEDESTRIAN DETOUR



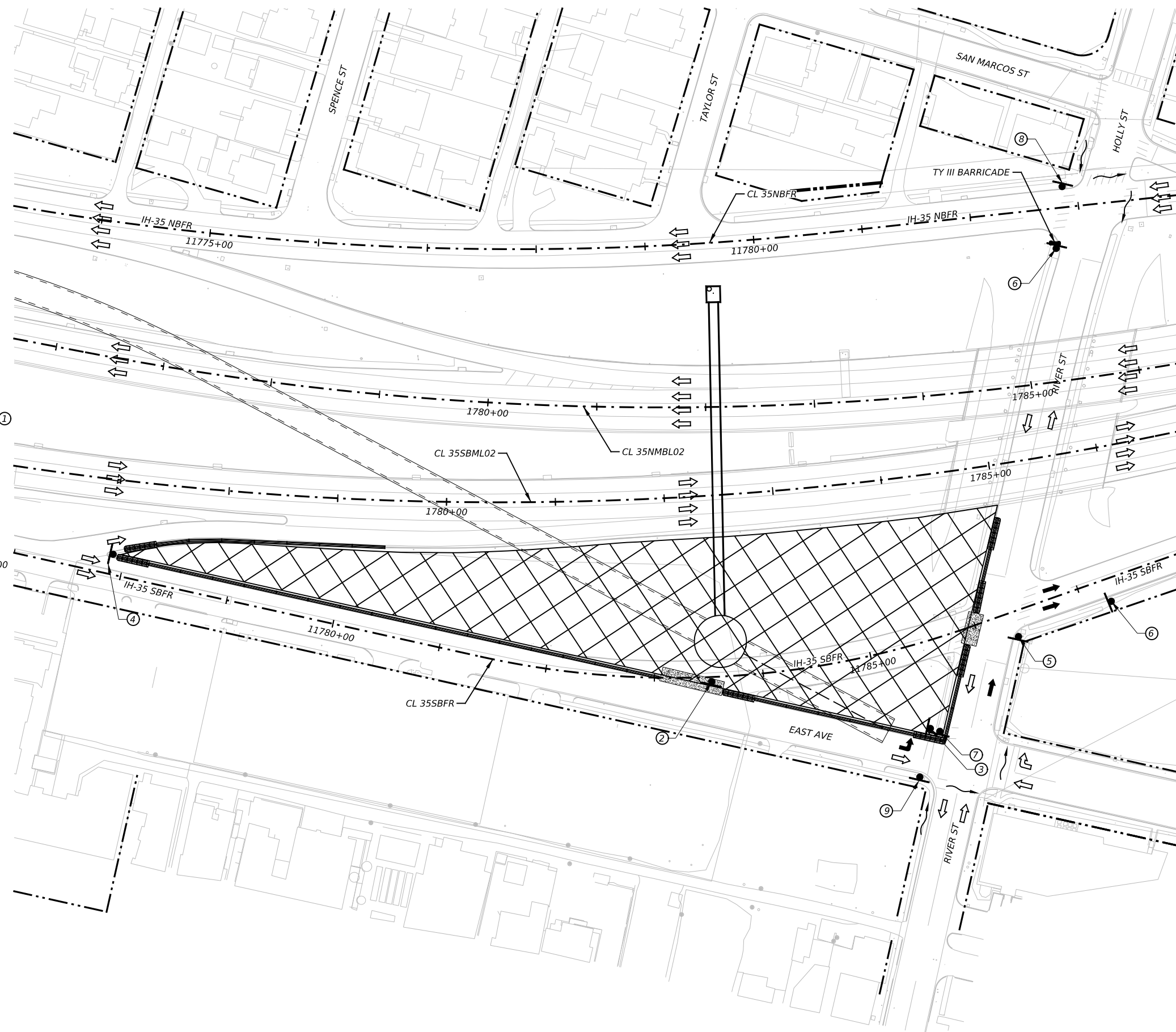
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CAPITAL EXPRESS CENTRAL
DETOUR PLAN
I-35 NBFR AT E 11TH ST

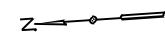
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	30	



LEGEND

- CONSTRUCTION AREA
- DETOUR TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- TY III BARRICADE
- PROPOSED TEMPORARY SIGN
- PEDESTRIAN DETOUR



DETOUR AHEAD
 ① CW20-2D

ROAD CLOSED
 ② R11-2

END DETOUR SOUTH
 ⑥ M3-1 M3-1 M1-1A2

DETOUR SOUTH
 ③ M3-1 M3-1 M1-1A2 M5-1L
 ④ M3-1 M3-1 M1-1A2 M6-3
 ⑤ M3-1 M3-1 M1-1A2 M5-1R

SIDEWALK CLOSED
 ⑦ R9-9

SIDEWALK CLOSED CROSS HERE
 ⑧ R9-11L

SIDEWALK CLOSED CROSS HERE
 ⑨ R9-11R

Scale: 0 50 100 150 200
 SCALE IN FEET

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 Round Rock, Texas 78681

mobility CAPITAL AREA

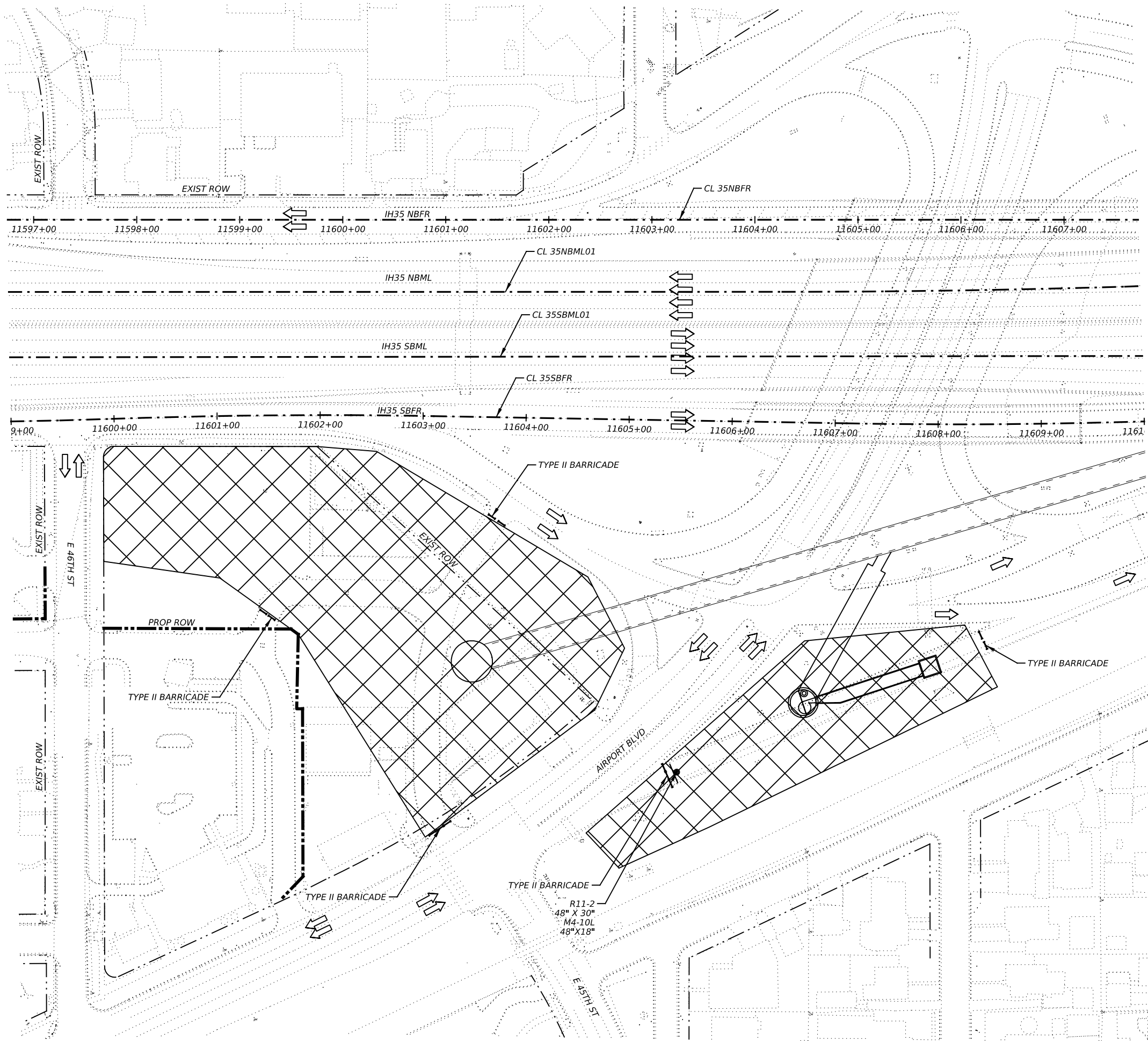
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

DETOUR PLAN
I-35 SB FR AT RIVER ST

SCALE: 1"=100' SHEET 1 OF 1

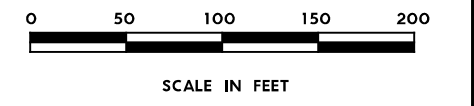
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	31	



LEGEND

- EXISTING ROW
- CONSTRUCTION AREA
- TRAFFIC FLOW
- CHANNELIZATION DEVICES
- PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
- TY III BARRICADE
- PROPOSED TEMPORARY SIGN
- TRAILER MOUNTED FLASHING ARROW BOARD
- CONSTRUCTION ENTRANCE/EXIT

- NOTES:**
- ADVANCED WARNING SIGNS SHALL REMAIN UNTIL COMPLETION OF THE WORK.
 - SEE BC(2)-22 FOR SIGN SPACING AND LOCATION OF TYPICAL CROSS ROAD SIGNS.
 - SEE TCP(2-5)-18 FOR SIGN SPACING AND CHANNELIZATION DEVICES PLACEMENT.
 - CONTRACTOR WILL PROVIDE ACCESS TO PROPERTY OWNERS DURING CONSTRUCTION.



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RTG RODRIGUEZ TRANSPORTATION GROUP
 FIRM #597

HR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

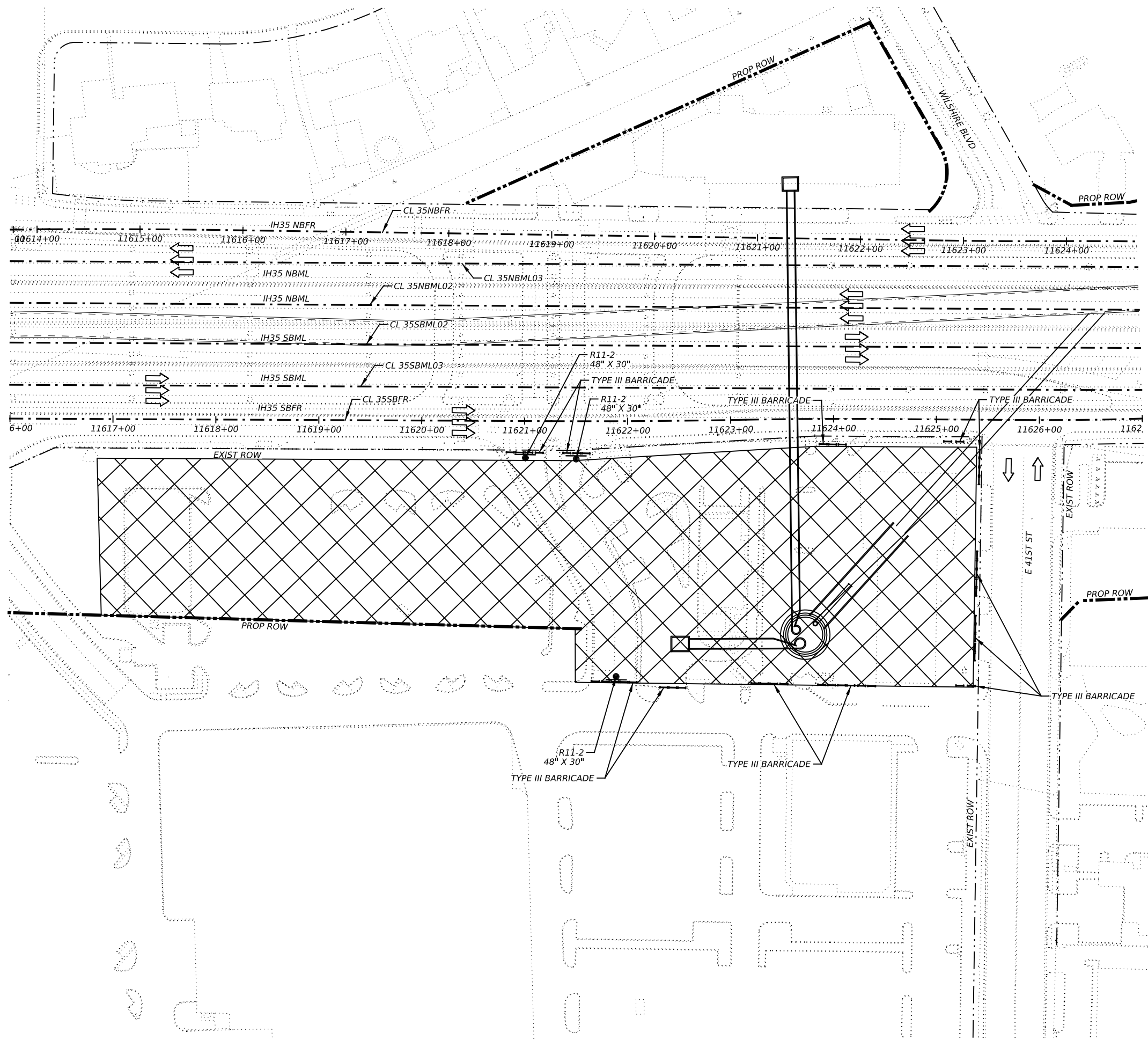
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

TRAFFIC CONTROL PLAN
PHASE 1
AIRPORT RETRIEVAL SHAFT

SCALE: 1"=100' SHEET 1 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	32

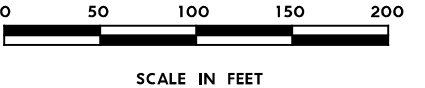


LEGEND

- EXISTING ROW
- CONSTRUCTION AREA
- TRAFFIC FLOW
- CHANNELIZATION DEVICES
- PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
- TYPE III BARRICADE
- PROPOSED TEMPORARY SIGN
- TRAILER MOUNTED FLASHING ARROW BOARD
- CONSTRUCTION ENTRANCE/EXIT

NOTES:

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RTG RODRIGUEZ TRANSPORTATION GROUP
 FIRM #597

HR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility 35 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 TRAFFIC CONTROL PLAN
 PHASE 1
 HANCOCK DROP SHAFT

SCALE: 1"=100' SHEET 2 OF 4

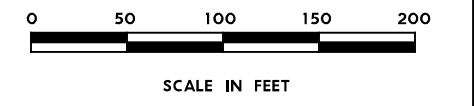
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	33	



LEGEND

	EXISTING ROW
	CONSTRUCTION AREA
	TRAFFIC FLOW
	CHANNELIZATION DEVICES
	PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
	TY III BARRICADE
	PROPOSED TEMPORARY SIGN
	TRAILER MOUNTED FLASHING ARROW BOARD
	CONSTRUCTION ENTRANCE/EXIT

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HR	HDR Engineering, Inc Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681

mobility

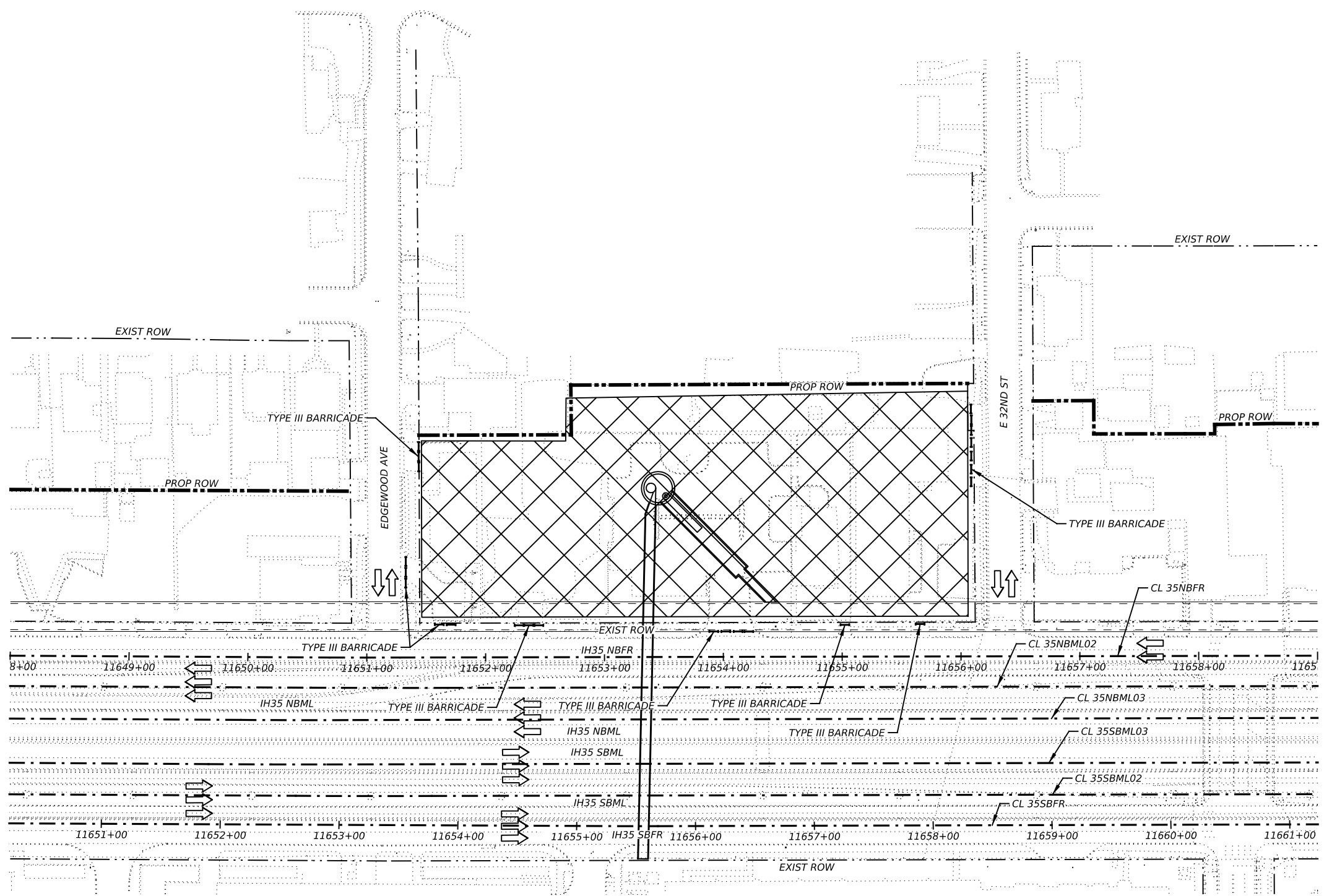
CAPITAL AREA

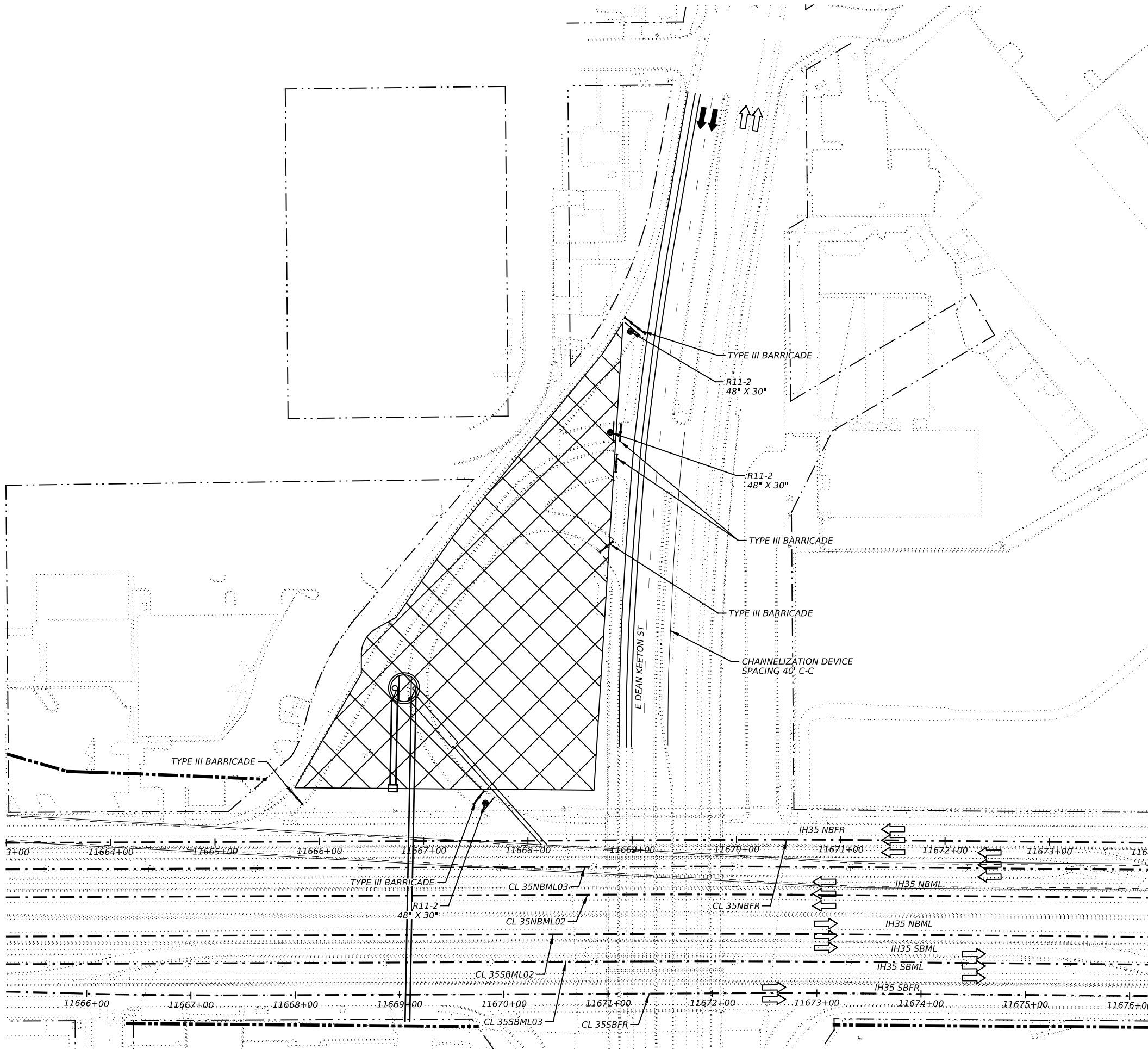
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 TRAFFIC CONTROL PLAN
 PHASE 1
 EDGEWOOD DROP SHAFT

SCALE: 1"=100' SHEET 3 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	34	

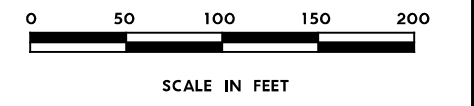




LEGEND

- EXISTING ROW
- CONSTRUCTION AREA
- TRAFFIC FLOW
- CHANNELIZATION DEVICES
- PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
- TYPE III BARRICADE
- PROPOSED TEMPORARY SIGN
- TRAILER MOUNTED FLASHING ARROW BOARD
- CONSTRUCTION ENTRANCE/EXIT

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 FIRM #597

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

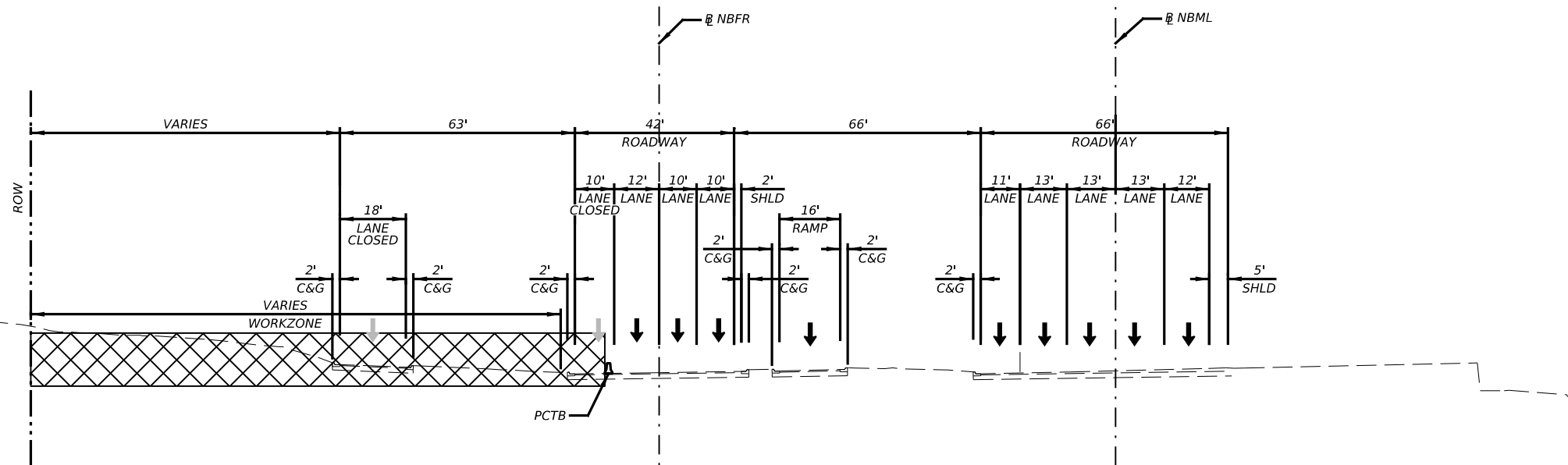
mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
TRAFFIC CONTROL PLAN
PHASE 1
DEAN KEETON DROPSHAFT

SCALE: 1"=100' SHEET 4 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	35



EXISTING TCP TYPICAL SECTION
 NBFR AT OLANDER ST

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 Date: 6/30/2023

HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

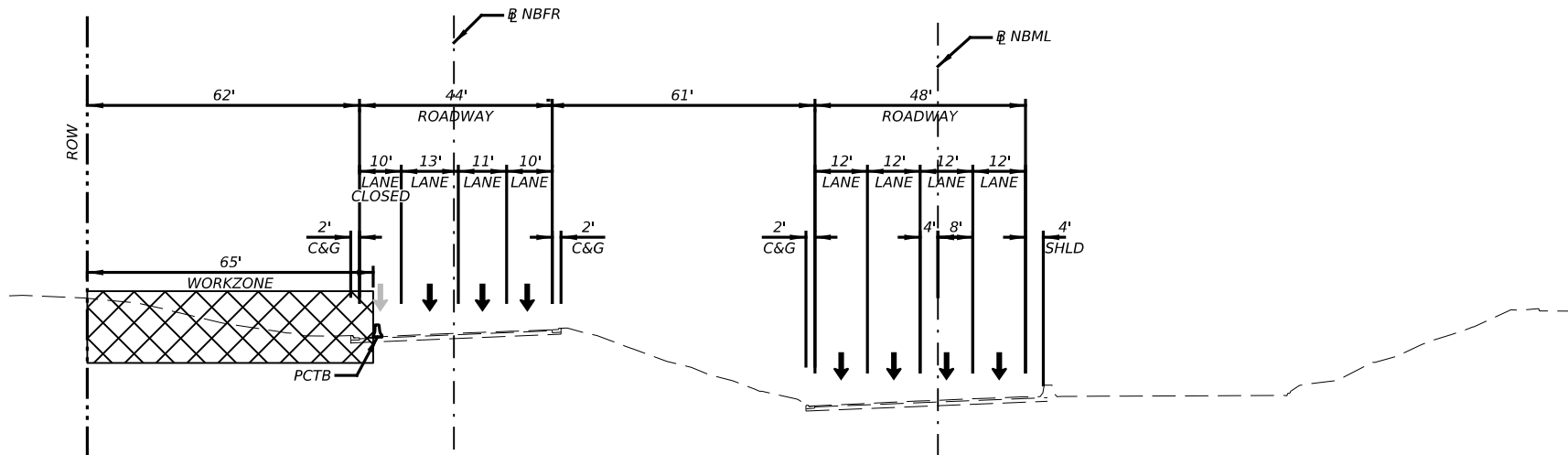
mobility CAPITAL AREA **35**

Texas Department of Transportation

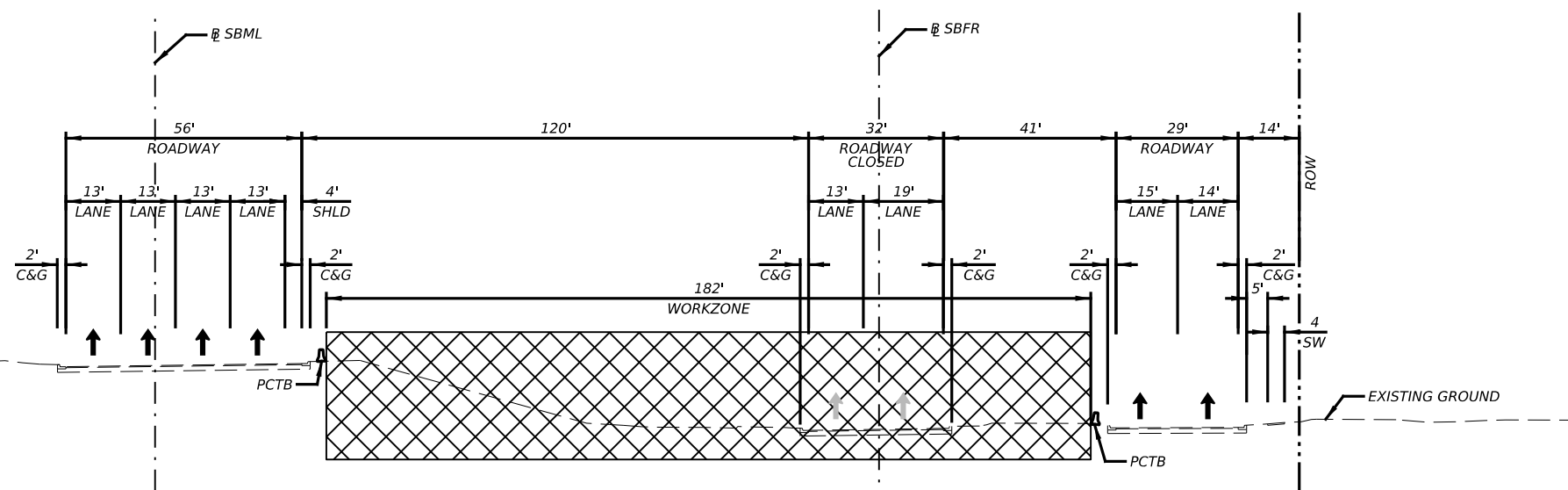
CAPITAL EXPRESS CENTRAL
 TRAFFIC CONTROL PLAN
 TYPICAL SECTIONS

NTS SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	36	



EXISTING TCP TYPICAL SECTION
 NBFR AT E 11th ST



EXISTING TCP TYPICAL SECTION
 SBFR AT EAST AVE

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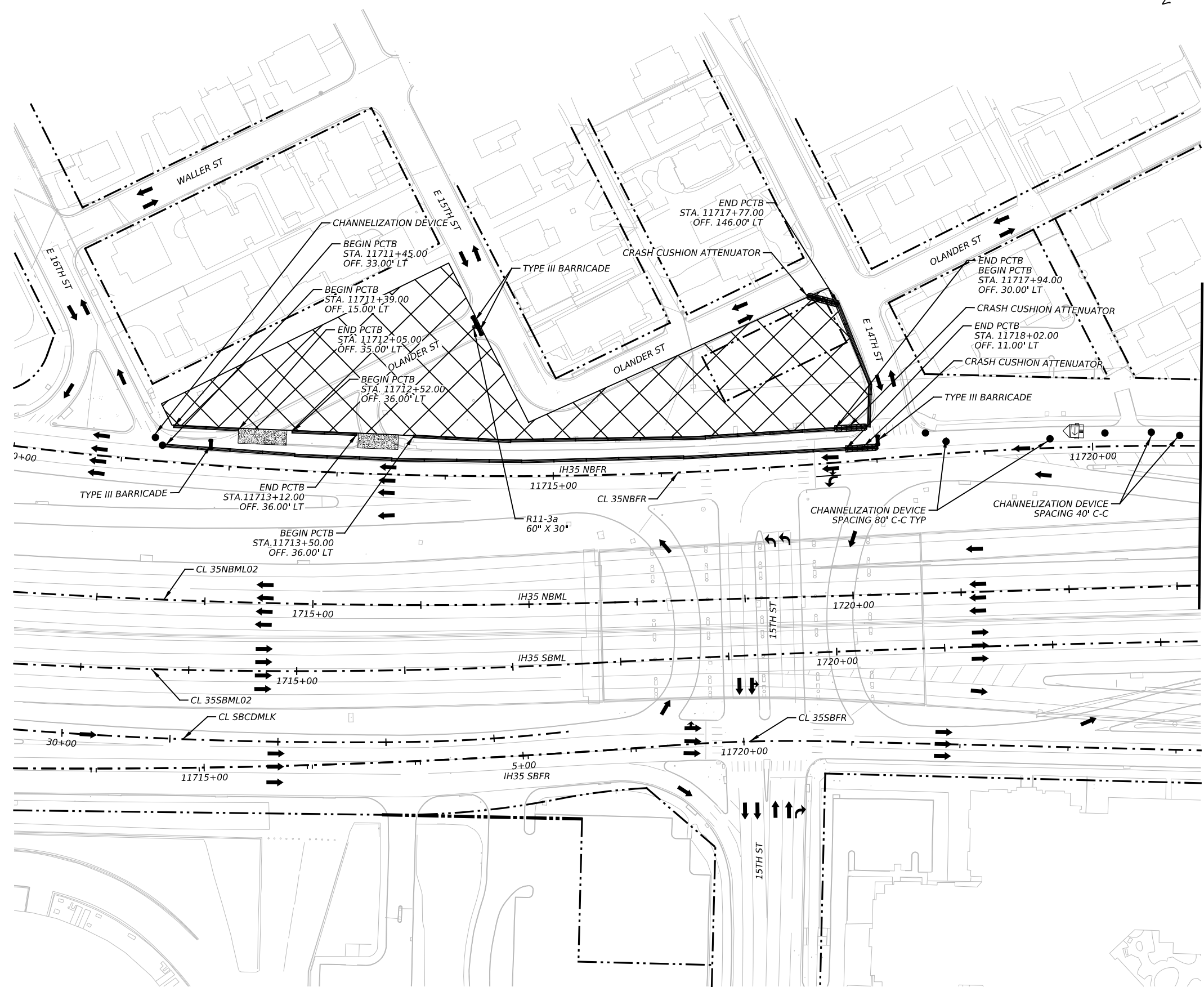
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CAPITAL EXPRESS CENTRAL
 TRAFFIC CONTROL PLAN
 TYPICAL SECTIONS

NTS SHEET 2 OF 2

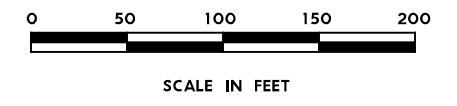
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	37	



LEGEND

	EXISTING ROW
	CONSTRUCTION AREA
	TRAFFIC FLOW
	CHANNELIZATION DEVICES
	PORTABLE CONCRETE TRAFFIC BARRIER
	ATTENUATOR
	TY III BARRICADE
	PROPOSED TEMPORARY SIGN
	TRAILER MOUNTED FLASHING ARROW BOARD
	CONSTRUCTION ENTRANCE/EXIT

- NOTES:**
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mobility CAPITAL AREA

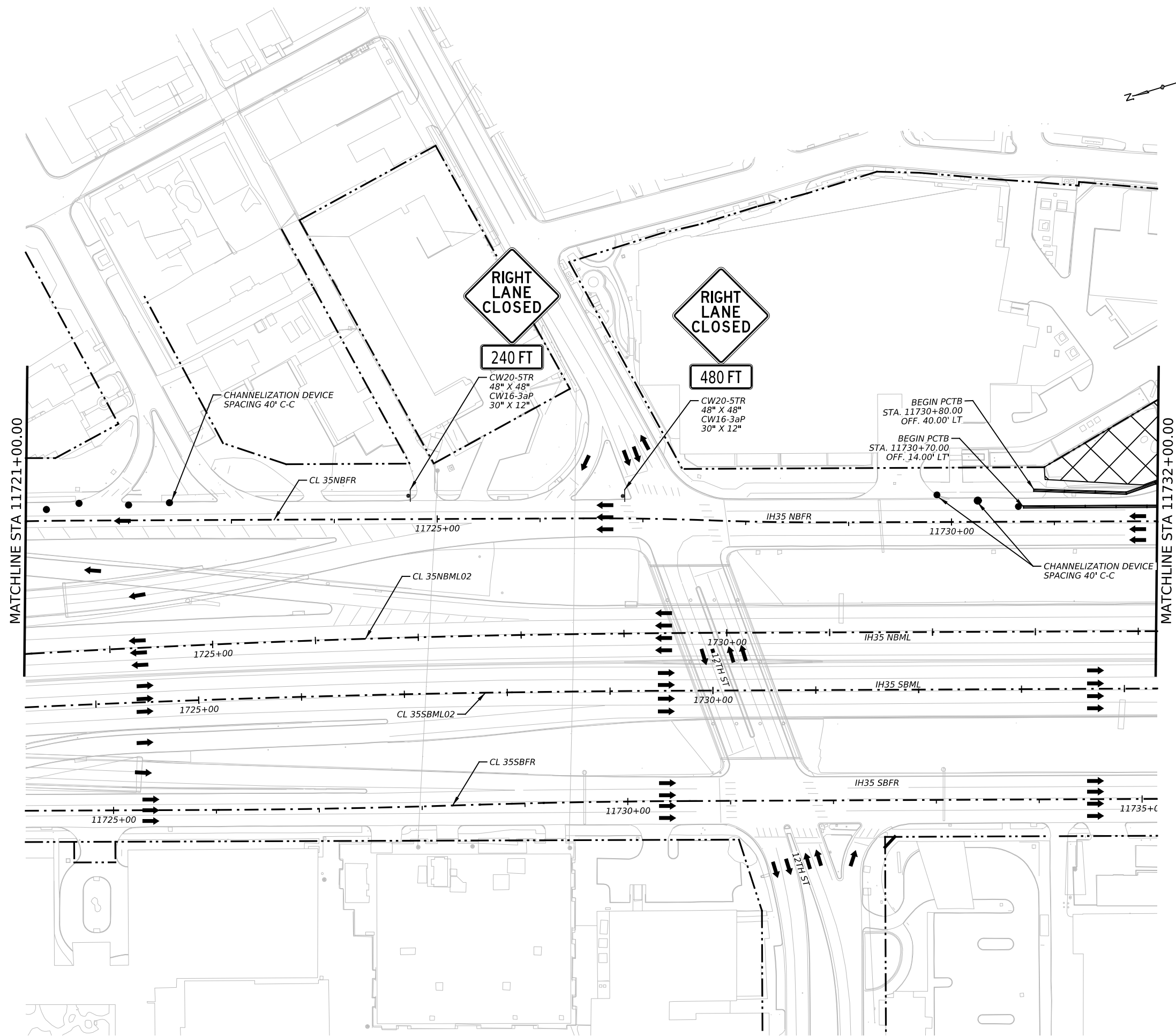
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

TRAFFIC CONTROL PLAN
I-35 NB FRONTAGE RD

SCALE: 1"=100' SHEET 1 OF 4

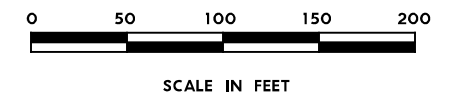
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	38	



LEGEND

	EXISTING ROW
	CONSTRUCTION AREA
	TRAFFIC FLOW
	CHANNELIZATION DEVICES
	PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
	TY III BARRICADE
	PROPOSED TEMPORARY SIGN
	TRAILER MOUNTED FLASHING ARROW BOARD
	CONSTRUCTION ENTRANCE/EXIT

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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

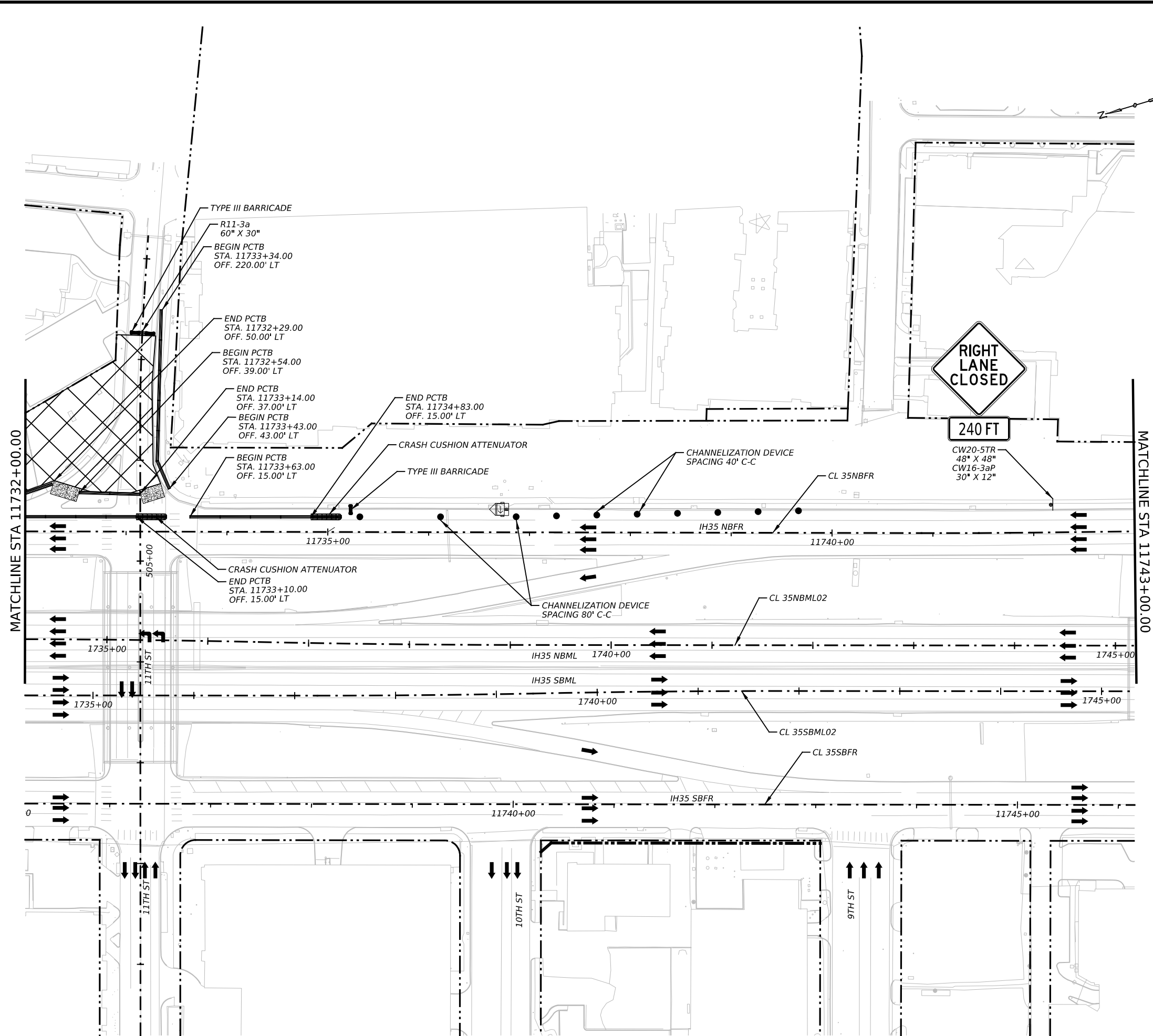
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

TRAFFIC CONTROL PLAN
 I-35 NB FRONTAGE RD

SCALE: 1"=100' SHEET 2 OF 4

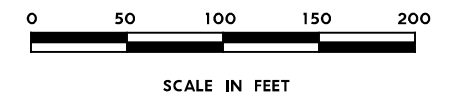
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	39	



LEGEND

	EXISTING ROW
	CONSTRUCTION AREA
	TRAFFIC FLOW
	CHANNELIZATION DEVICES
	PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
	TY III BARRICADE
	PROPOSED TEMPORARY SIGN
	TRAILER MOUNTED FLASHING ARROW BOARD
	CONSTRUCTION ENTRANCE/EXIT

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

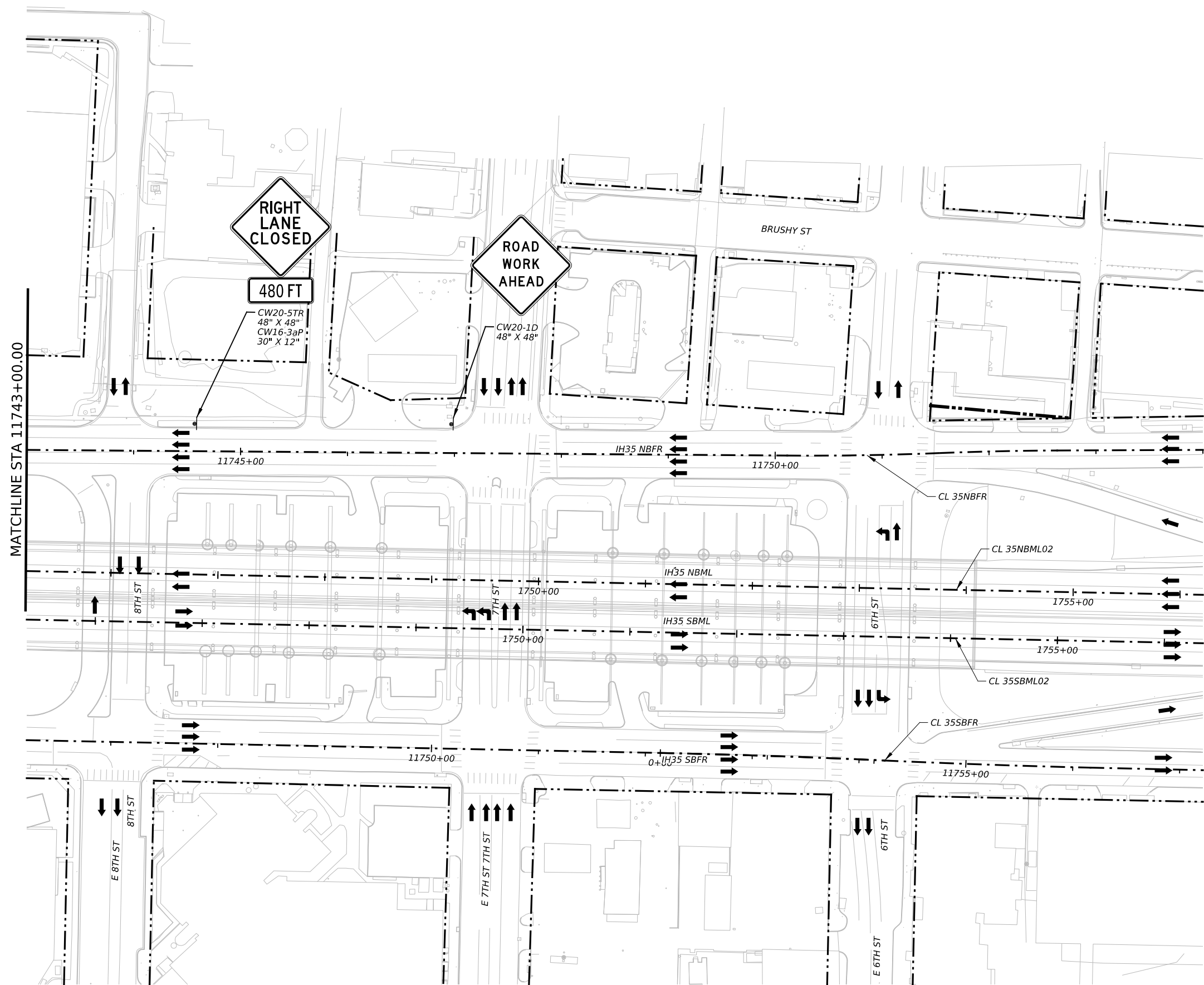
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

TRAFFIC CONTROL PLAN
 I-35 NB FRONTAGE RD

SCALE: 1"=100' SHEET 3 OF 4

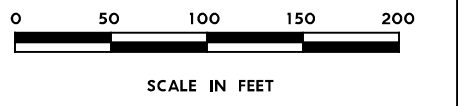
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	40	



LEGEND

- EXISTING ROW
- CONSTRUCTION AREA
- TRAFFIC FLOW
- CHANNELIZATION DEVICES
- PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
- TY III BARRICADE
- PROPOSED TEMPORARY SIGN
- TRAILER MOUNTED FLASHING ARROW BOARD
- CONSTRUCTION ENTRANCE/EXIT

- NOTES:**
1. ADVANCED WARNING SIGNS SHALL REMAIN UNTIL COMPLETION OF THE WORK.
 2. SEE BC(2)-22 FOR SIGN SPACING AND LOCATION OF TYPICAL CROSS ROAD SIGNS.
 3. SEE TCP(2-5)-18 FOR SIGN SPACING AND CHANNELIZATION DEVICES PLACEMENT.
 4. CONTRACTOR WILL PROVIDE ACCESS TO PROPERTY OWNERS DURING CONSTRUCTION.



NO.	DATE	REVISION	APPR BY
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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

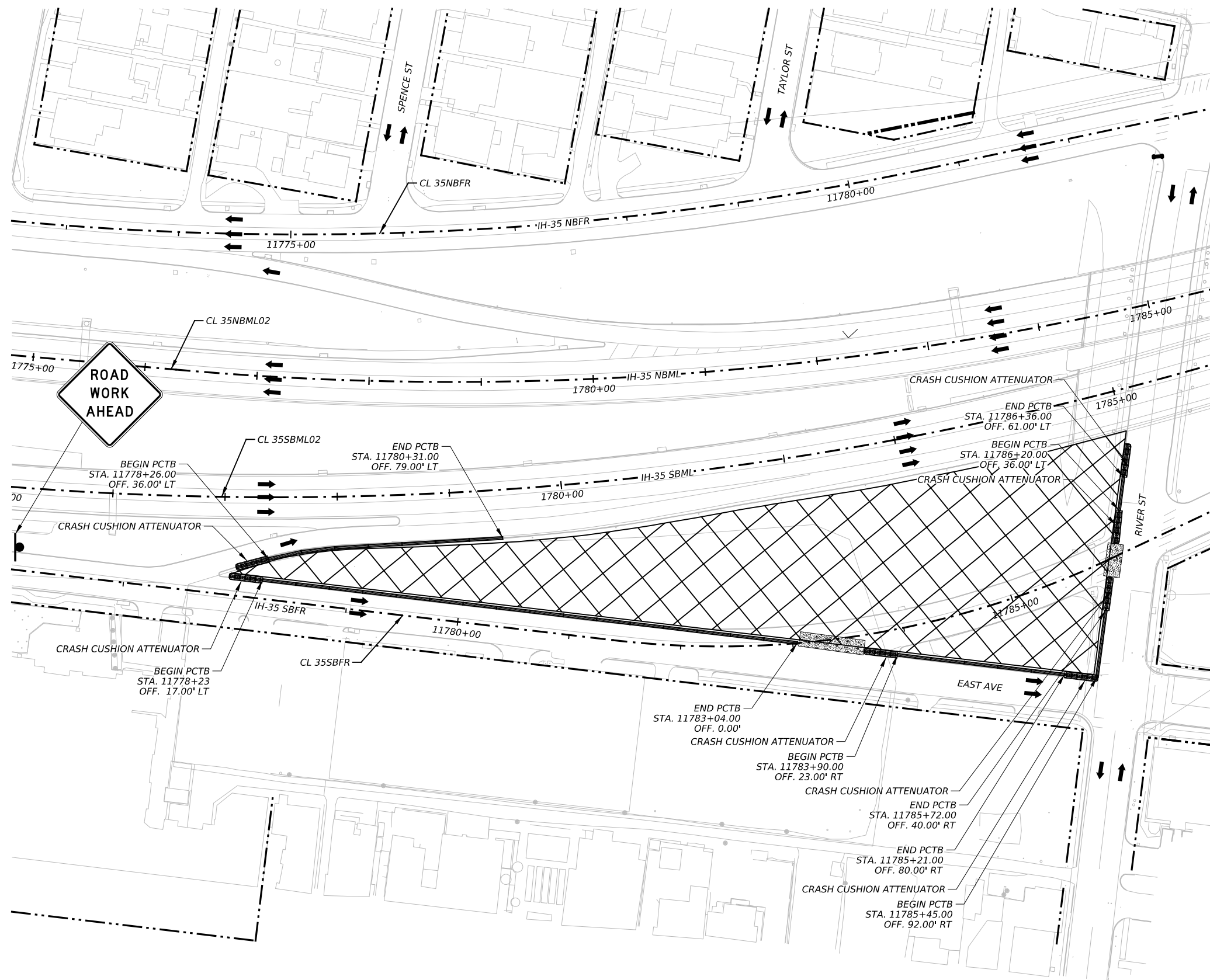
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

TRAFFIC CONTROL PLAN
I-35 NB FRONTAGE RD

SCALE: 1"=100' SHEET 4 OF 4

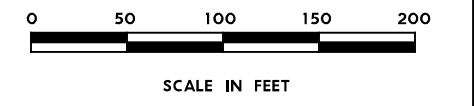
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	41	



LEGEND

	EXISTING ROW
	CONSTRUCTION AREA
	TRAFFIC FLOW
	CHANNELIZATION DEVICES
	PORTABLE CONCRETE TRAFFIC BARRIER ATTENUATOR
	TY III BARRICADE
	PROPOSED TEMPORARY SIGN
	TRAILER MOUNTED FLASHING ARROW BOARD
	CONSTRUCTION ENTRANCE/EXIT

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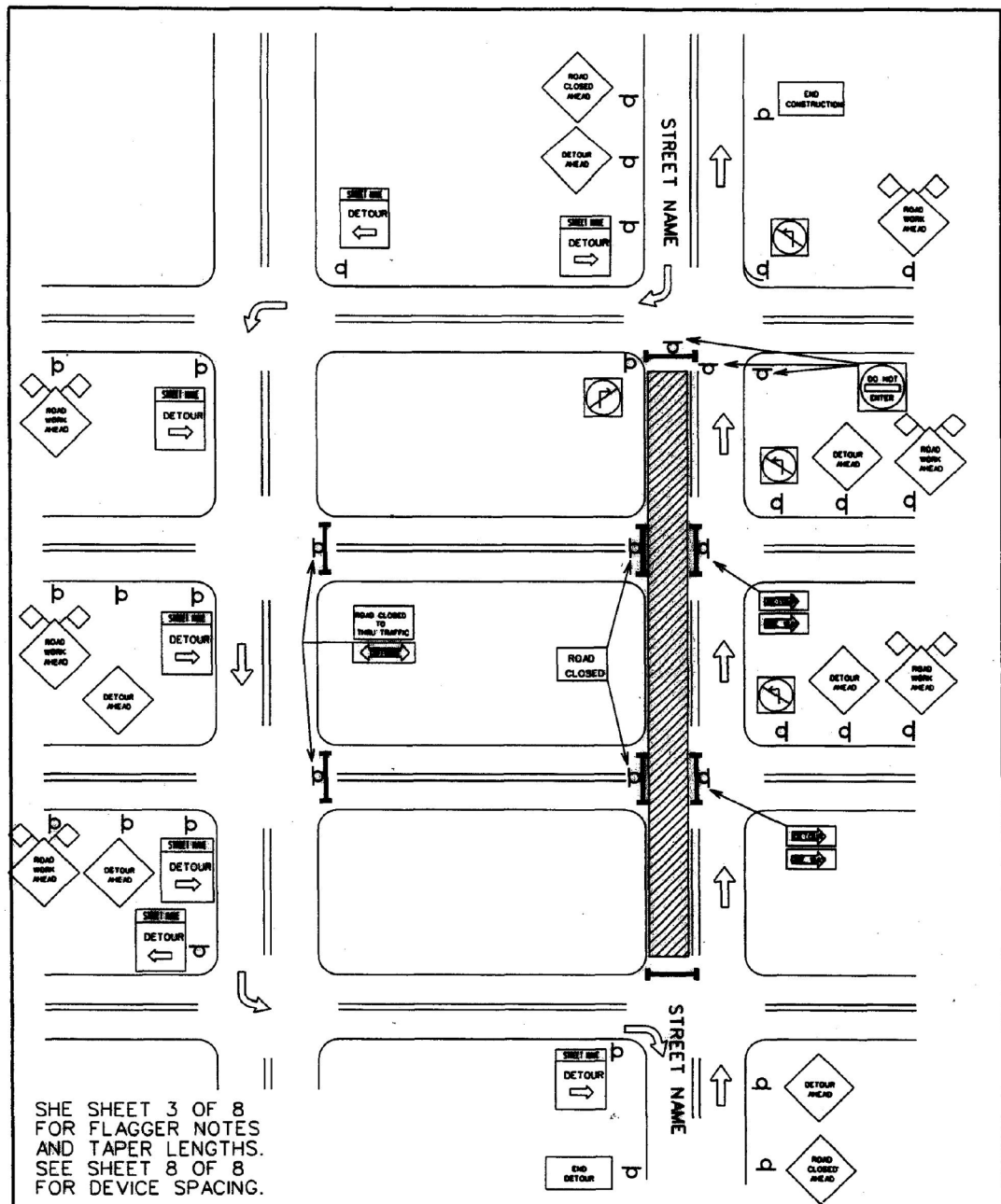
mobility CAPITAL AREA 35

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
TRAFFIC CONTROL PLAN
I-35 SB FRONTAGE RD

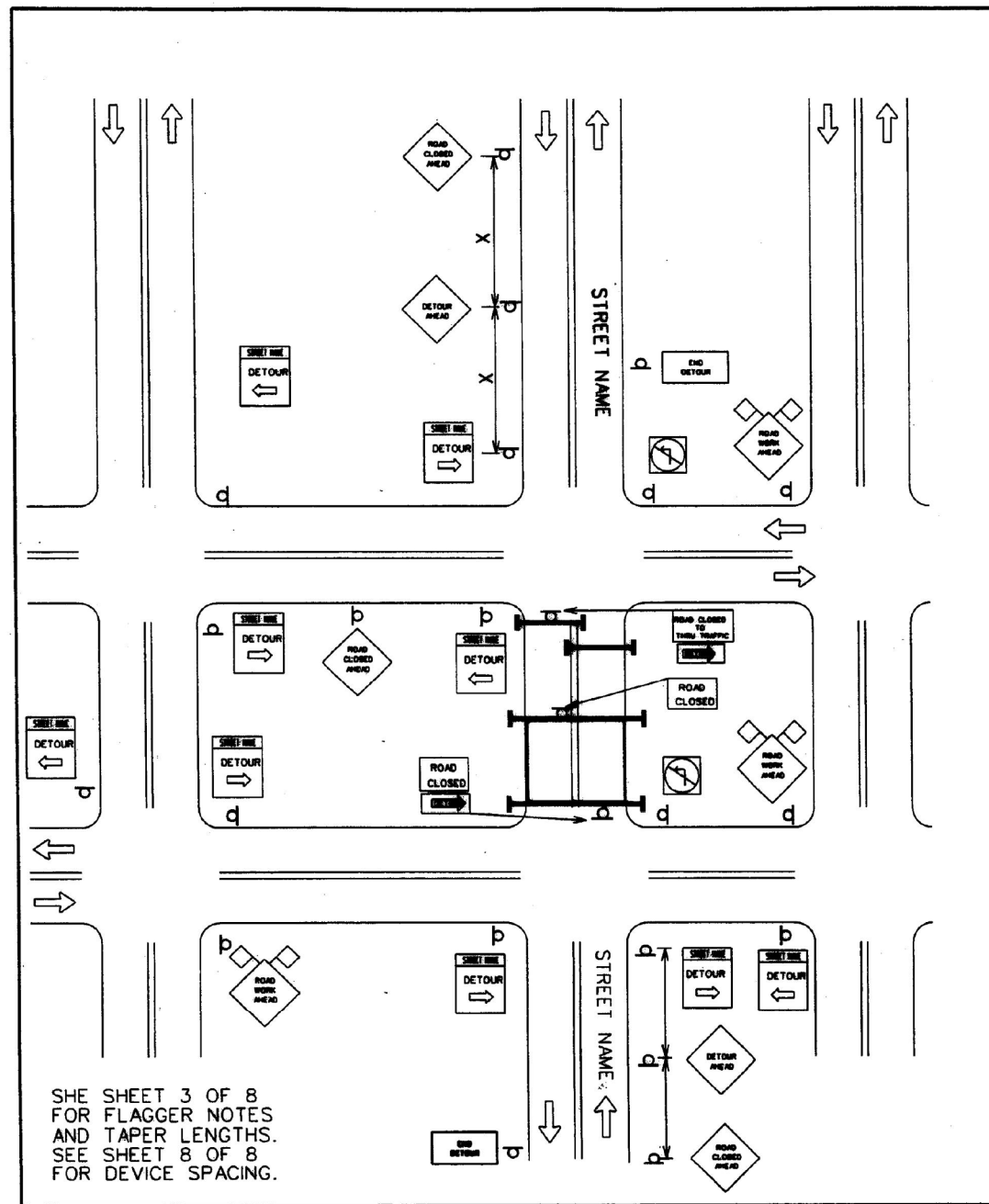
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	IH35-NS-TCP-SBFR-02.	



SHE SHEET 3 OF 8
 FOR FLAGGER NOTES
 AND TAPER LENGTHS.
 SEE SHEET 8 OF 8
 FOR DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STREET DETOUR SINGLE DIRECTION	
<i>Bill Anderson</i>	3/13/06 ADOPTED	STANDARD NO. 804S-2 5 OF 8	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



SHE SHEET 3 OF 8
 FOR FLAGGER NOTES
 AND TAPER LENGTHS.
 SEE SHEET 8 OF 8
 FOR DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		STREET DETOUR BOTH DIRECTIONS	
<i>Bill Anderson</i>	3/13/06 ADOPTED	STANDARD NO. 804S-2 6 OF 8	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

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 P.E. Serial No. 124689
 Date: 6/12/2023

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 TEXAS REGISTERED ENGINEERING FIRM F-9073

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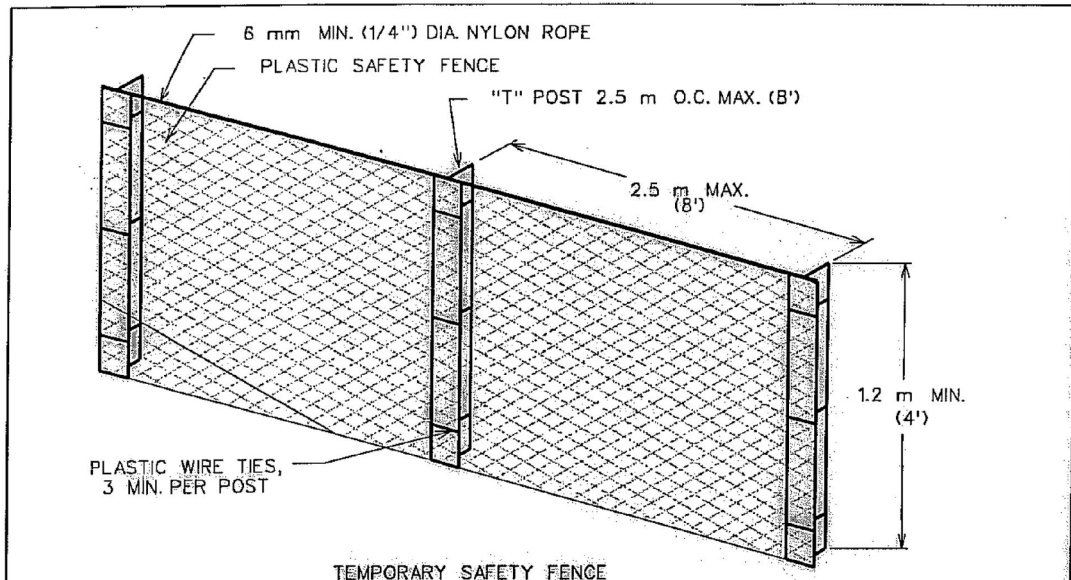
mobility 35
 CAPITAL AREA

Texas Department of Transportation

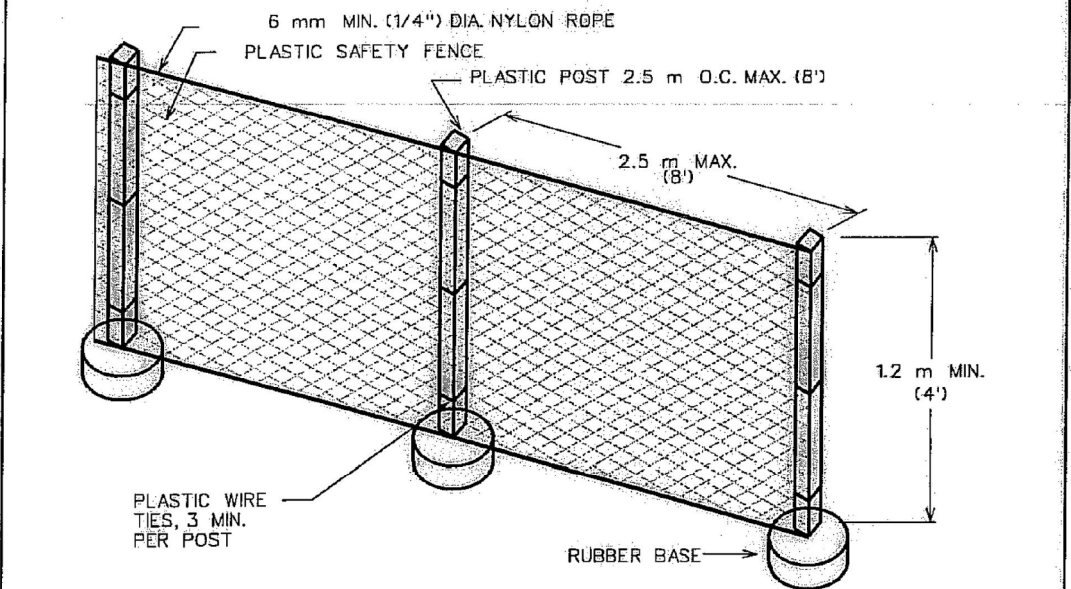
CAPITAL EXPRESS CENTRAL
 CITY OF AUSTIN DETAILS

SCALE: NTS SHEET 1 OF 12

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



TEMPORARY SAFETY FENCE



PORTABLE SAFETY FENCE

1. SAFETY FENCE SHALL BE USED TO PROTECT ALL EXCAVATIONS IN THE RIGHT-OF-WAY.
2. SAFETY FENCES SHALL BE USED TO SEPARATE CONSTRUCTION ACTIVITIES FROM PEDESTRIAN.
3. ALL SAFETY FENCING SHALL BE PLASTIC, 1,200 mm (48") MINIMUM HEIGHT AND ORANGE IN COLOR.
4. SAFETY FENCE USED WITHIN THE ROADWAY SHALL BE REFLECTORIZED WITH A MINIMUM OF TWO (2) STRIPS OF RETROREFLECTIVE MATERIAL, A MINIMUM OF 25 mm (1") WIDE, THE LENGTH OF THE FENCE OR DELINEATED BY CHANNELIZING DEVICES.
5. SAFETY FENCE USED TO SEPARATE SIDEWALKS FROM CONSTRUCTION ACTIVITIES SHALL HAVE MINIMUM ENCROACHMENT TO THE SIDEWALK.
6. AS A MINIMUM, SAFETY FENCING IS REQUIRED IN AREAS ADJACENT TO EXCAVATIONS GREATER THAN OR EQUAL TO 150 mm (6").
7. SAFETY FENCING SHALL BE PAID FOR UNDER ITEM 803S, 'BARRICADES, SIGNS AND TRAFFIC HANDLING', PAY ITEM NO. 803S-SF.
8. PORTABLE SAFETY FENCE MOUNTS SHALL BE APPROVED BY THE TRANSPORTATION DIVISION PRIOR TO CONSTRUCTION.

NOTE:

STANDARDS APPLY TO CESAR CHAVES ONLY

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SAFETY FENCE	STANDARD NO. 804S-4 1 OF 9
<i>R. A. Agj</i> 4/3/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SAFETY FENCE	STANDARD NO. 804S-4 2 OF 9
<i>R. A. Agj</i> 4/3/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

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3801 PARKWOOD BOULEVARD, SUITE 550
PRISCO, TEXAS 75034 (214) 440-3600
TEXAS REGISTERED ENGINEERING FIRM F-9073

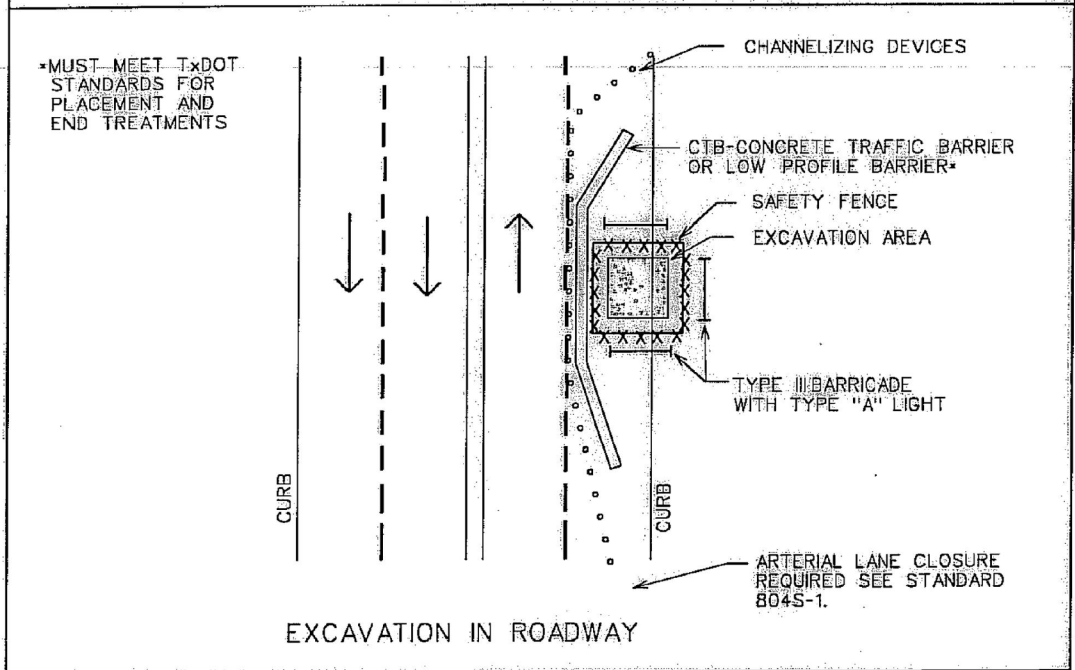
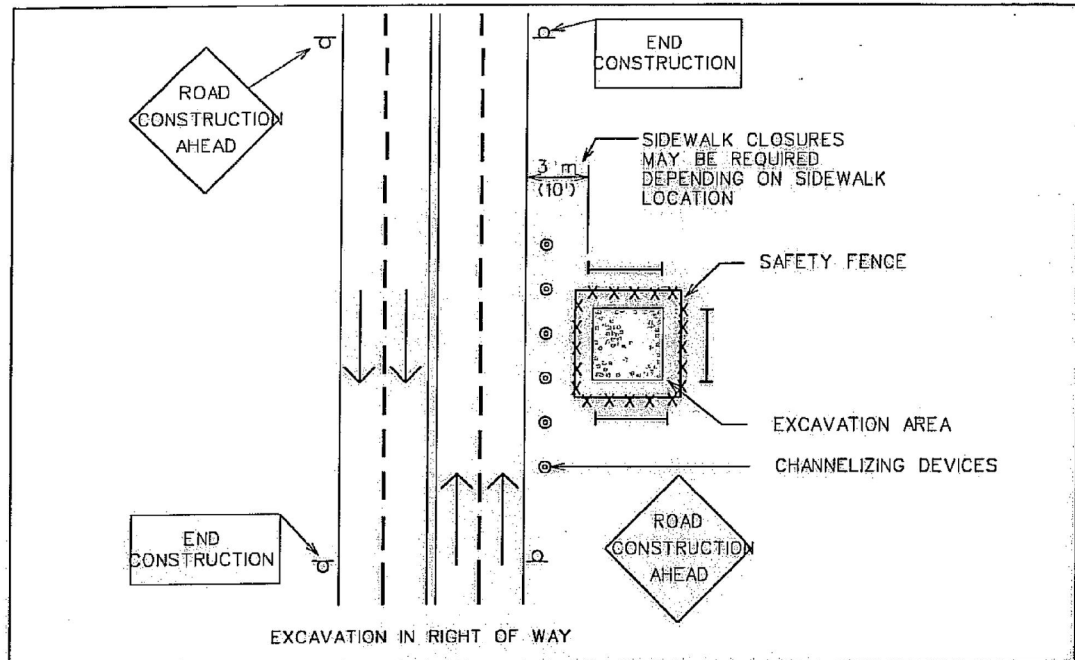
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Firm Registration No. F-754
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mobility 35
CAPITAL AREA

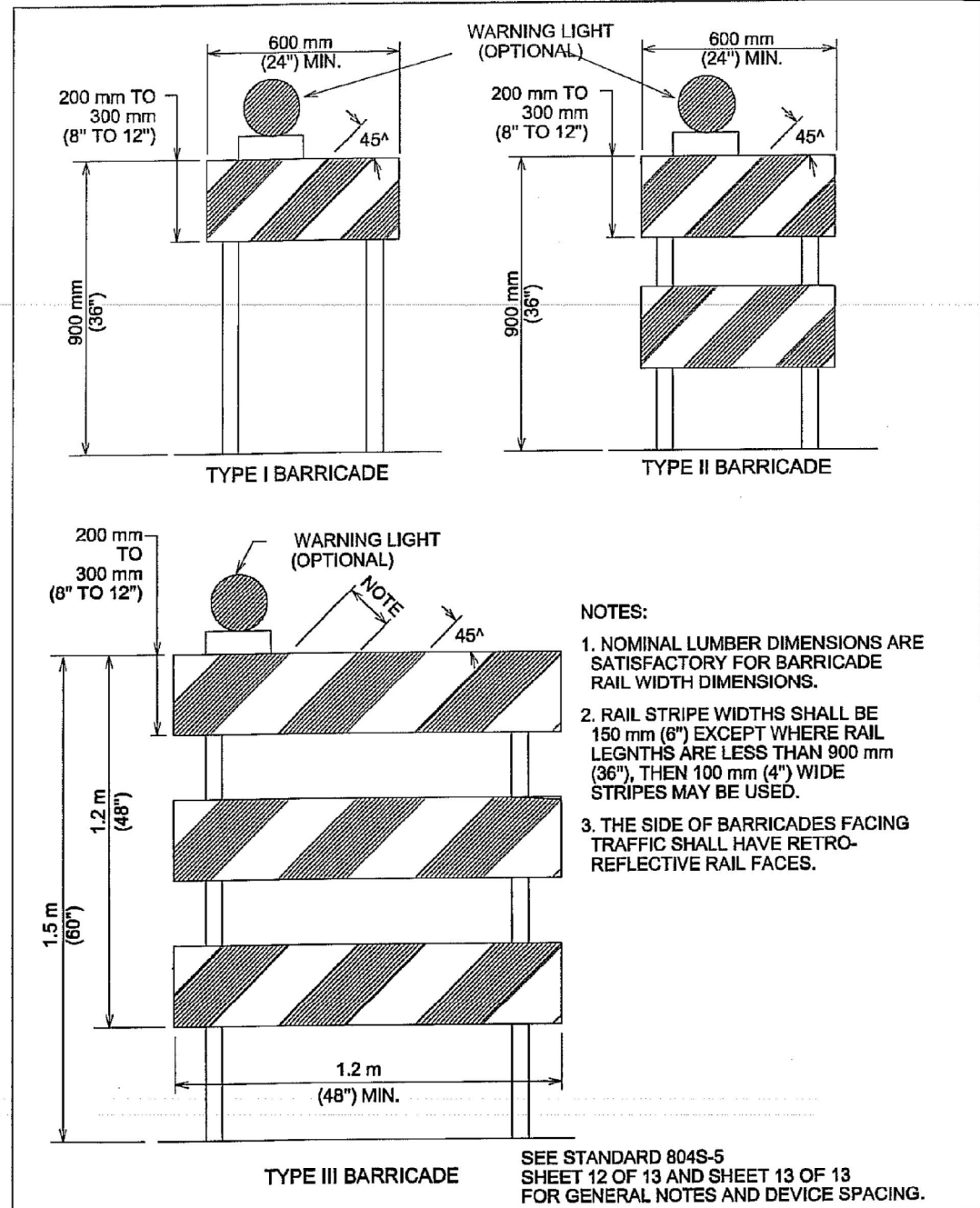
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS		SHEET 2 OF 12	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	LARGE EXCAVATION	STANDARD NO. 804S-4 3 OF 9
<i>S.A. Ogilvy</i> 4/3/09 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	BARRICADES	STANDARD NO. 804S-5 3 OF 13
<i>S.A. Ogilvy</i> 1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

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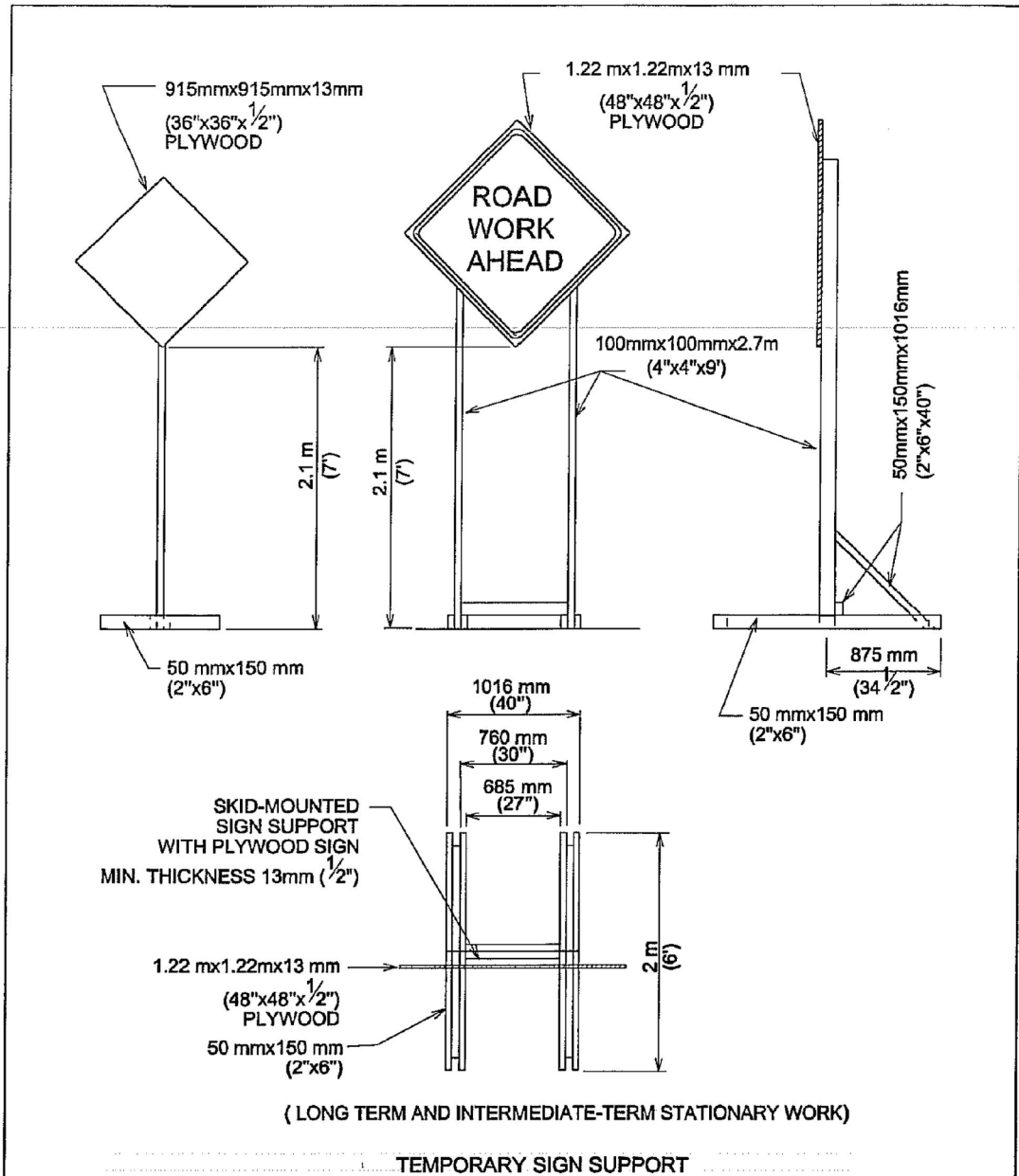
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Round Rock, Texas 78681

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Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS		SHEET 3 OF 12	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC CONTROL SIGNS	
<i>[Signature]</i> 1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 5 OF 13	

BARRICADES

- BARRICADES SHALL BE OF THREE TYPES: TYPE I, TYPE II OR TYPE III.
- STRIPES ON BARRICADE RAILS SHALL BE ALTERNATING ORANGE AND WHITE RETRO-REFLECTIVE STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS). THE STRIPES SHALL BE 150 mm (6") WIDE, EXCEPT WHERE RAIL LENGTHS ARE LESS THAN 900 mm (36"), WHEN 100 mm (4") WIDE STRIPES MAY BE USED.
- WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, THE SURFACE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE STRIPES MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.
- BARRICADE RAILS SHOULD BE SUPPORTED IN A MANNER THAT WILL ALLOW THEM TO BE SEEN BY THE MOTORIST AND PROVIDE A STABLE SUPPORT NOT EASILY BLOWN OVER BY THE WIND OR TRAFFIC. FOR TYPE I BARRICADES, THE SUPPORT MAY INCLUDE OTHER UNSTRIPED HORIZONTAL PANELS NECESSARY TO PROVIDE STABILITY.
- BARRICADES ARE LOCATED ADJACENT TO TRAFFIC AND ARE THEREFORE SUBJECT TO IMPACT WITH ERRANT VEHICLES. BECAUSE OF THEIR VULNERABLE POSITION AND THE HAZARD THEY COULD CREATE, THEY SHOULD BE CONSTRUCTED OF LIGHTWEIGHT MATERIALS AND HAVE NO RIGID STAY BRACING FOR A-FRAME DESIGNS. ALL BARRICADE SYSTEMS SHOULD BE CRASHWORTHY.
- ON HIGH-SPEED EXPRESSWAYS OR IN OTHER SITUATION WHERE BARRICADES MAY BE SUSCEPTIBLE TO OVERTURNING IN THE WIND, SANDBAGS SHOULD BE USED FOR BALLASTING. SANDBAGS MAY BE PLACED ON PARTS OF THE FRAME OR STAYS TO PROVIDE THE REQUIRED BALLAST BUT SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY HEAVY OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		BARRICADES	
<i>[Signature]</i> 1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 4 OF 13	

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mobility CAPITAL AREA **35**

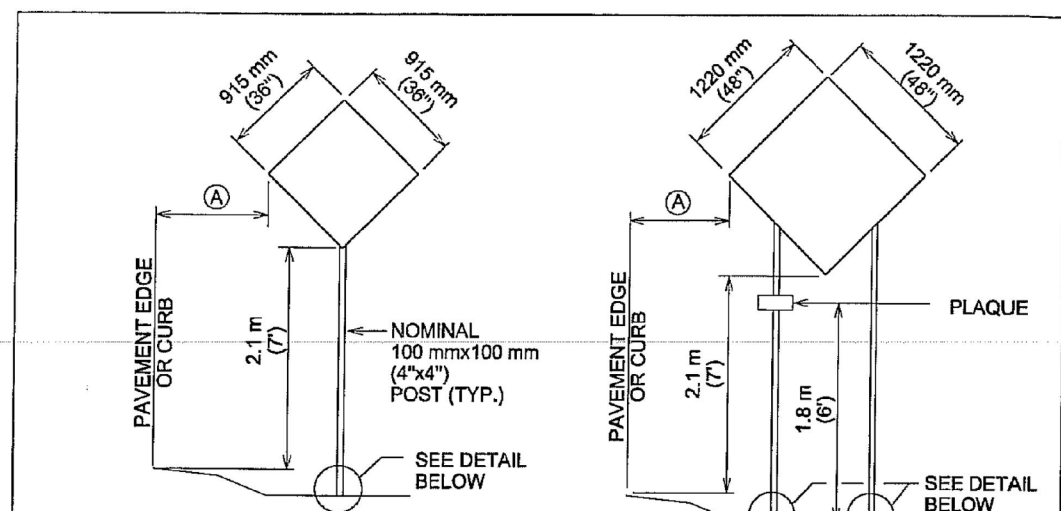
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS		SHEET 4 OF 12	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	

NOTE:

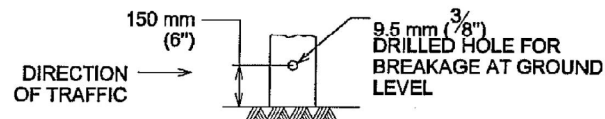
STANDARDS APPLY TO
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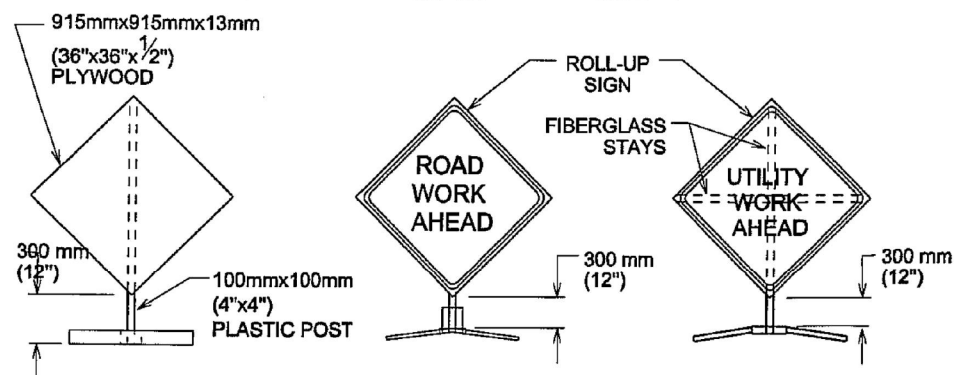
FOR 915 mm x 915 mm (36"x36")
AND SMALLER WARNING SIGNS &
OTHER SIGNS HAVING AN AREA
NOT EXCEEDING 1 sm (10.7 sf).

FOR 1220 mm x 1220 mm
(48"x48") WARNING SIGNS.

(A) 610 mm (2') MINIMUM
(REFER TO T MUTCD)



WOOD POST SIGN SUPPORT USED AS
FIXED SIGN SUPPORTS



300 mm (1') MOUNTING HEIGHT
(SHORT TERM AND SHORT DURATION WORK)

PORTABLE SIGN SUPPORT

SEE STANDARD 804S-5
SHEET 12 OF 13 AND
SHEET 13 OF 13 FOR
GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC CONTROL SIGNS	
<i>[Signature]</i>	1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 6 OF 13

1. WARNING SIGNS SHALL BE ORANGE, FLUORESCENT RED-ORANGE OR FLUORESCENT YELLOW-ORANGE IN COLOR. THE FLUORESCENT VERSIONS OF ORANGE PROVIDE HIGHER CONSPICUITY THAN STANDARD ORANGE, ESPECIALLY DURING TWILIGHT. ALL SIGNS USED AT NIGHT SHALL BE EITHER RETROREFLECTIVE, WITH A MATERIAL THAT HAS A SMOOTH, SEALED OUTER SURFACE, OR ILLUMINATED TO SHOW SIMILAR SHAPE AND COLOR BOTH DAY AND NIGHT. SIGN ILLUMINATION MAY BE EITHER INTERNAL OR EXTERNAL. ROADWAY LIGHTING DOES NOT MEET THE REQUIREMENTS FOR SIGN ILLUMINATION.
2. TYPE A FLASHING WARNING LIGHTS MAY BE USED IN CONJUNCTION WITH SIGNS AT NIGHT. STANDARD ORANGE FLAGS MAY BE USED FOR DAY TIME OPERATIONS. HOWEVER, NEITHER LIGHTS NOR FLAGS MAY BLOCK THE SIGN LEGEND.
3. SIGNS SHOULD BE LOCATED ON THE RIGHT-HAND SIDE OF THE ROADWAY. WHEN SPECIAL EMPHASIS IS NEEDED, SIGNS MAY BE PLACED ON BOTH THE LEFT AND RIGHT SIDES OF ROADWAY. SIGNS SHALL BE PLACED ON BOTH THE LEFT AND RIGHT SIDES OF ONE-WAY OR DIVIDED ROADWAYS. SIGNS USED FOR LONG-TERM STATIONARY AND INTERMEDIATE-TERM STATIONARY WORK SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 2.1 m (7'), MEASURED FROM THE BOTTOM OF THE SIGN. THE HEIGHT TO THE BOTTOM OF A SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN MAY BE 0.3 m (1') LESS THAN THE APPROPRIATE HEIGHT ABOVE.
4. SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, MOBILE CONDITIONS AND EMERGENCIES. SIGNS MOUNTED ON PORTABLE SUPPORTS SHALL BE AT A HEIGHT OF AT LEAST 0.3 m (1'), MEASURED FROM THE BOTTOM OF THE SIGN.
5. ALL SIGN SYSTEMS SHOULD BE CRASHWORTHY. NO SIGN MOUNTS SHALL BLOCK OR IMPEDE SIDEWALKS UNLESS NO OTHER OPTION IS AVAILABLE. ONLY SANDBAGS SHOULD BE USED FOR BALLASTING SIGN MOUNTS.

TABLE VI-3 TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Roadway Classification	Posted Speed	Sign Spacing *	Long-term Stationary Or Intermediate-term Stationary Approaching Warning Signs CW20 Series And CW22-1 Sign		Short-term Stationary Or Short Duration Approach Warning Signs CW22 Series		Other Warning Signs
			Standard	Minimum [†]	Standard	Minimum [†]	
Conven.	KPH (MPH)	meters (feet)	mm (inches)	mm (inches)	mm (inches)	mm (inches)	mm (inches)
	50 (30)	40 (120)	1220x1220 (48x48)	915x915 (36x36)			
	55 (35)	50 (150)			915x915 (36x36)		915x915 (36x36)
	65 (40)	75 (240)					
	70 (45)	100 (320)		Use Standard Size		Use Standard Size	
	80 (50)	120 (400)					
	90 (55)	150 (500)					
	100 (60)	180 (600)			1220x1220 (48x48)		1220x1220 (48x48)
	105 (65)	210 (700)					
	115 (70)	240 (800)					
Exp. or Fwy	★ ★	★ ★ 3			★ ★ ★	★ ★ ★	★ ★ ★

- ★ MINIMUM DISTANCE FROM WORK TO 1st ADVANCE WARNING SIGN AND/OR DISTANCE BETWEEN EACH ADDITIONAL SIGN.
- ★ ★ FOR TYPICAL SIGN SPACINGS ON EXPRESSWAYS AND FREEWAYS, REFER TO THE CURRENT ADDITION OF T MUTCD.
- ★ ★ ★ SMALLER SIGN SIZES MAY BE USED WHERE SIGN DESIGNS HAVE NOT BEEN INCLUDED IN THE "STANDARD HIGHWAY SIGNS DESIGN MANUAL".

1. SPECIAL OR LARGER SIZE SIGNS MAY BE USED AS NECESSARY.
2. DISTANCE BETWEEN SIGNS SHOULD BE INCREASED AS REQUIRED TO HAVE 450 m (1500') OR MORE ADVANCE WARNING.
3. DISTANCE BETWEEN SIGNS SHOULD BE INCREASED AS REQUIRED TO HAVE A 0.8 km (½ MILE) OR MORE ADVANCE WARNING.
4. FOR USE ONLY ON SECONDARY ROADS OR CITY STREETS WHERE SPEEDS ARE LOW.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TRAFFIC CONTROL SIGNS	
<i>[Signature]</i>	1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 7 OF 13

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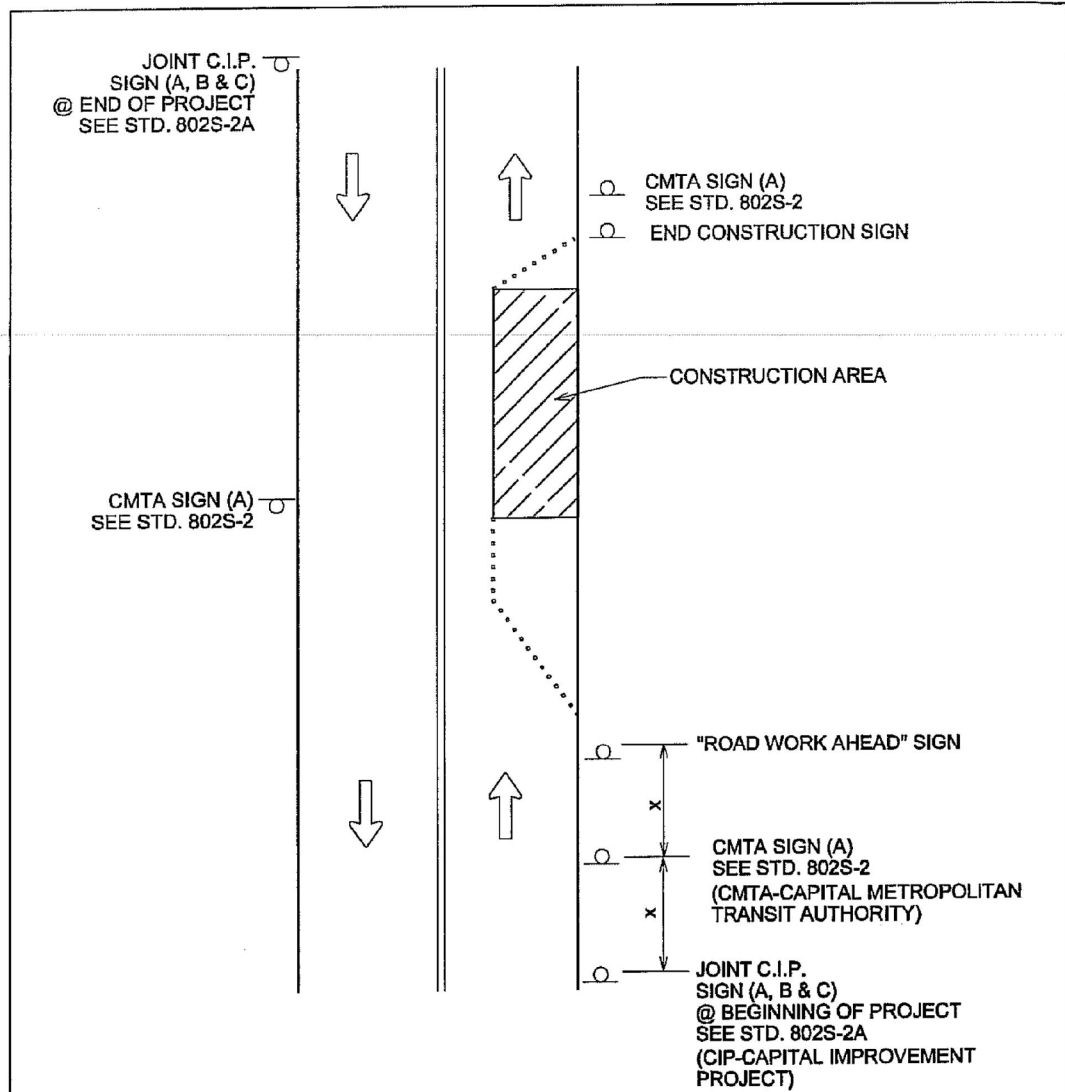
mobility 35
CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS SHEET 5 OF 12

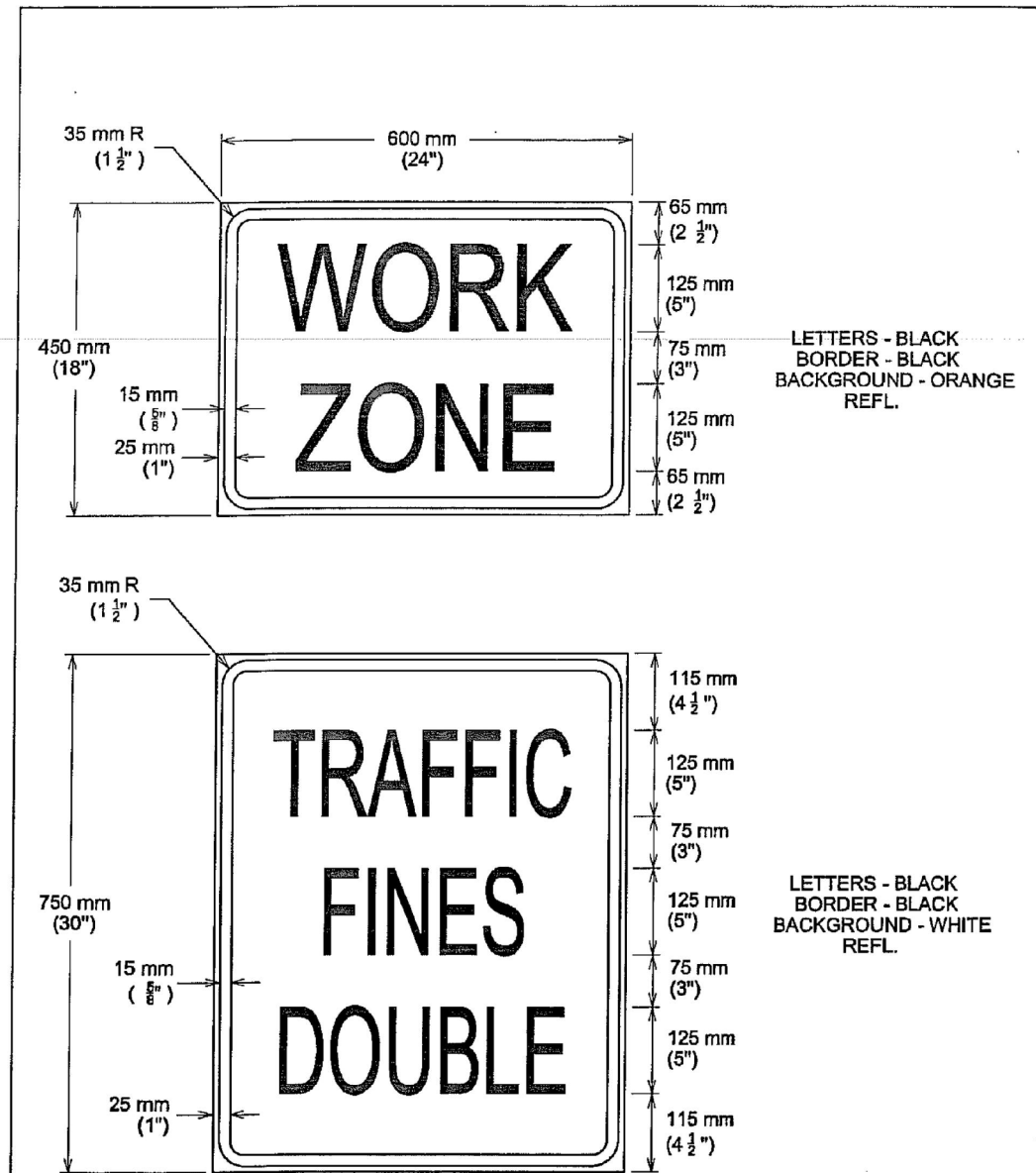
COUNT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



- NOTES:**
1. OTHER REQUIRED SIGNS NOT SHOWN FOR CLARITY.
 2. "X" DISTANCES SAME AS STANDARD TABLE SHOWN ON SHEET 13 OF 13.

SEE STANDARD 804S-5
SHEET 12 OF 13 AND SHEET 13 OF 13
FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL CMTA/C.I.P. SIGN LOCATIONS	
	1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 8 OF 13



SEE STANDARD DETAIL 804S-5
SHEET 5 OF 13 FOR SKID-
MOUNTED SIGN SUPPORT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SPECIAL WORK ZONE SIGNS	
	1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 804S-5 8 OF 13

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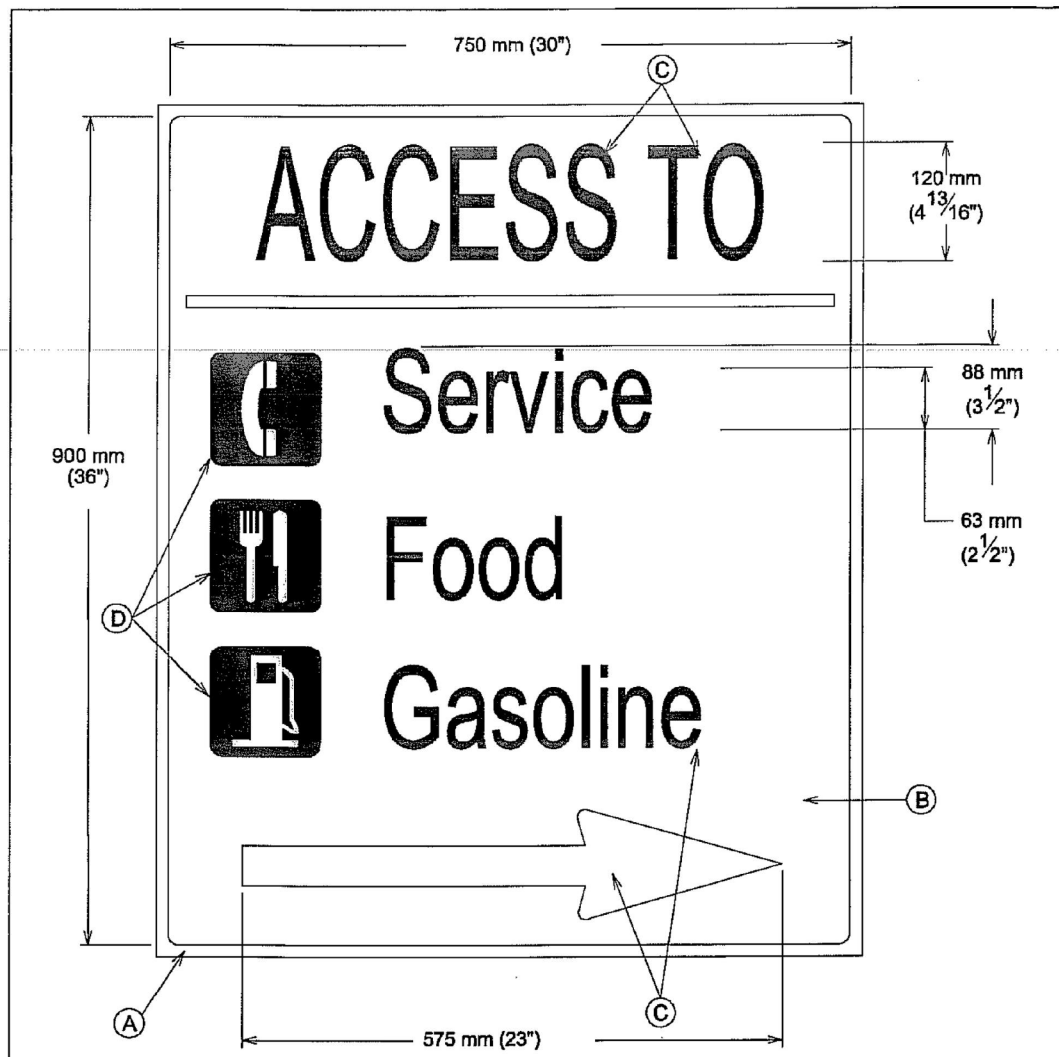
mobility 35
CAPITAL AREA

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CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS SHEET 6 OF 12

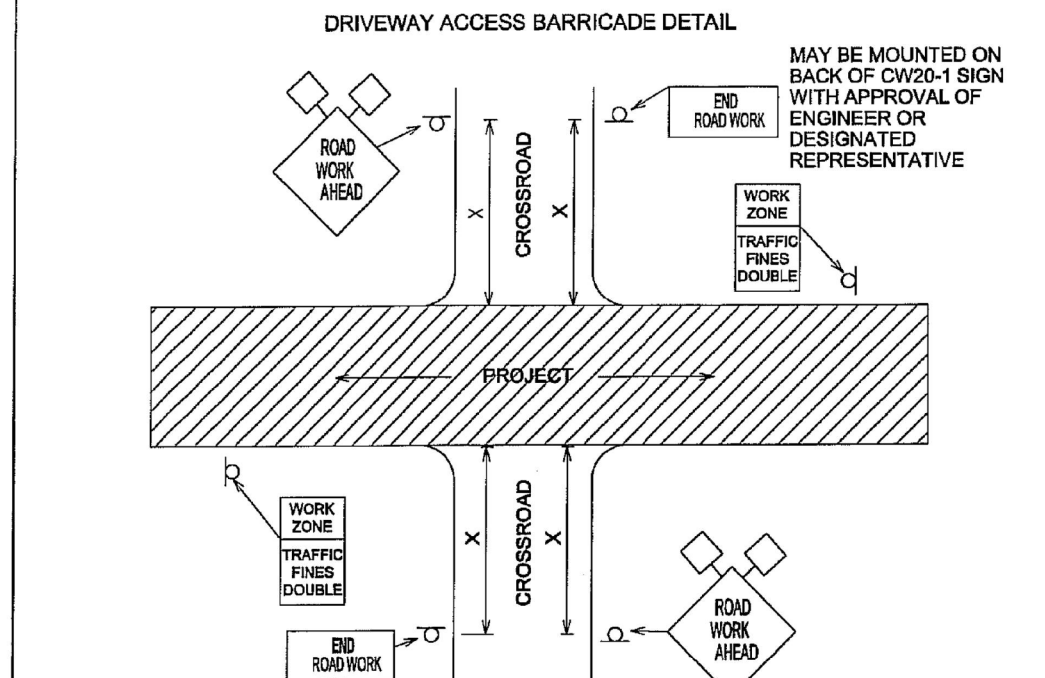
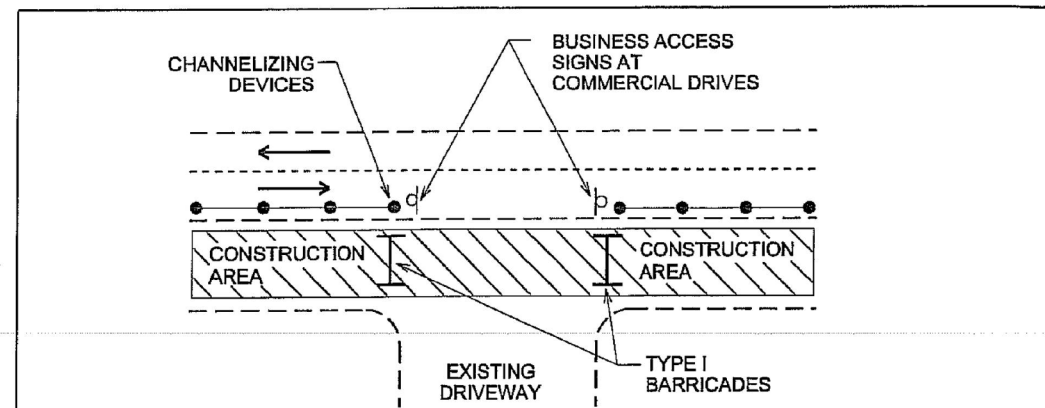
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



- (A) 50 mm (1/2") WHITE RETROREFLECTIVE BORDER
- (B) BLUE RETROREFLECTIVE BACKGROUND
- (C) WHITE RETROREFLECTIVE ARROW AND LETTERS
- (D) WHITE RETROREFLECTIVE BUSINESS LOGO

NOTES:
 1. CONTRACTORS CAN MAKE BUSINESS NAMES REMOVABLE/CHANGEABLE AS AN OPTION.
 2. BUSINESS LOGO ARE OPTIONAL. IF USED LETTERING MUST BE MINIMIZED.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SPECIAL WORK ZONE SIGNS	STANDARD NO. 804S-5 10 OF 13
<i>S. D. Coy.</i> 1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	



MAY BE MOUNTED ON BACK OF TMUTCD CW20-1 SIGN WITH APPROVAL OF ENGINEER OR DESIGNATED REPRESENTATIVE (TMUTCD-TEXAS MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES)

SEE STANDARD 804S-5 SHEET 12 OF 13 AND SHEET 13 OF 13 FOR GENERAL NOTES AND DEVICE SPACING.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SIGNING AND BARRICADING CROSSROAD & DRIVEWAY	STANDARD NO. 804S-5 11 OF 13
<i>S. D. Coy.</i> 1/4/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

NOTE:
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 Supervised By: JASON J. GRANADO
 P.E. Serial No. 124689
 Date: 6/12/2023

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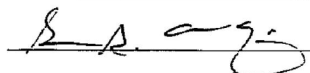
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 CITY OF AUSTIN DETAILS

SCALE: NTS SHEET 7 OF 12

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		

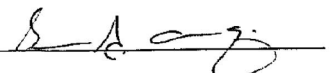
1. ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES AND WARNING SIGNS SHALL BE FURNISHED, PLACED, CONSTRUCTED AND MAINTAINED IN THE APPROPRIATE TYPES AND SIZES AND FLAGGER OPERATIONS EXECUTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM CONTROL DEVICES (TMUTCD), THE CITY OF AUSTIN STANDARD SPECIFICATIONS SERIES 800 AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL, OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. IF A CONFLICT ARISES THEN THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL SHALL CONTROL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
2. THE CONTRACTOR SHALL NOTIFY THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-7024 NO LATER THAN THE MONDAY OF THE WEEK DURING WHICH THE CONTRACTOR INTENDS TO SET UP BARRICADES TO START CONSTRUCTION.
3. PROPOSED CONSTRUCTION TRAFFIC MOVEMENTS MAY REQUIRE EXISTING SIGNAL HEADS TO BE RELOCATED. THE CITY OF AUSTIN WILL REVIEW SIGNAL HEAD LOCATIONS DURING CONSTRUCTION AND PERFORM THE REQUIRED ADJUSTMENTS. THE CONTRACTOR SHALL CONTACT THE TRANSPORTATION DIVISION OF THE DEPARTMENT OF PUBLIC WORKS AT 974-7024, THREE (3) DAYS PRIOR TO PLACEMENT ANY TRAFFIC CONTROLS WHICH MAY REQUIRE SIGNAL HEAD ADJUSTMENTS/RELOCATION.
4. THE CONTRACTOR SHALL PROVIDE ONE (1) FULL-TIME OFF-DUTY, UNIFORMED AUSTIN POLICE DEPARTMENT CERTIFIED PEACE OFFICER AND ONE (1) VEHICLE OF THE TYPE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE FOR TEMPORARY LANE CLOSURES WHEN UNDERSEALING, MILLING, PAVING AND WHEN WORKING IN INTERSECTIONS AS PART OF THE TRAFFIC CONTROL OPERATIONS. THE PEACE OFFICER SHALL BE ABLE TO SHOW PROOF OF CERTIFICATION BY THE TEXAS COMMISSION ON LAW ENFORCEMENT OFFICER STANDARDS.
5. THE CONTRACTOR SHALL NOTIFY ALL OTHER GOVERNMENTAL AGENCIES WHOSE RIGHTS-OF-WAY ARE AFFECTED BY HIS WORK ACTIVITIES. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT THEY MAY NEED.
6. THE CONTRACTOR SHALL MAINTAIN ONE (1) DUST-FREE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR APPROVED THE ENGINEER OR DESIGNATED REPRESENTATIVE.
7. THERE SHALL BE A MINIMUM OF THREE (3) METERS (10 FEET) CLEAR WIDTH FOR EACH LANE OF TRAFFIC IN CHANNELIZED AREAS, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER OR DESIGNATED REPRESENTATIVE SHALL PROVIDE AT LEAST 24 HOUR WRITTEN NOTICE OF LIMITED ACCESS TO AFFECTED PROPERTY OWNERS. THE CONTRACTOR SHALL PROVIDE BUSINESS ACCESS SIGNS AS NEEDED TO INFORM DRIVERS OF THE LOCATIONS OF ALL DRIVEWAYS.
9. TEMPORARY LANE CLOSURES IN THE CENTRAL BUSINESS DISTRICT (CBD) OR ON ARTERIAL STREETS SHALL NOT BE PERMITTED DURING THE HOURS OF 7 AM TO 9 AM AND 4 PM TO 6PM MONDAY THROUGH FRIDAY UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE TRANSPORTATION DIVISION.
10. TRAFFIC CONTROL SHOWN ON STANDARD DETAILS IS TYPICAL. ADDITIONAL SIGNING AND/OR BARRICADING, AS WELL AS TEMPORARY PAVEMENT MARKINGS AND OBLITERATION/RESTORATION OF EXISTING PAVEMENT MARKINGS, MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS. FIELD ADJUSTMENTS TO TRAFFIC CONTROLS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM NO. 803S "BARRICADES, SIGNS AND TRAFFIC HANDLING".
11. THE CONTRACTOR SHALL DESIGNATE A COMPETENT PERSON FOR TRAFFIC CONTROL. THE COMPETENT PERSON SHALL MAKE INSPECTIONS OF THE TRAFFIC CONTROL DEVICES AT LEAST TWO (2) TIMES A DAY (ONCE AT THE BEGINNING OF THE DAY AND ONCE AT THE END OF THE DAY), INCLUDING NON-WORKING DAYS, ENSURING THAT ALL DEVICES ARE IN THEIR PROPER PLACE AND ARE IN WORKING ORDER.
12. ALL DEVICES SHALL BE MADE USING MATERIALS LISTED ON THE TxDOT APPROVED PRODUCTS LIST.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GENERAL TRAFFIC CONTROL NOTES
 ADOPTED	STANDARD NO. 804S-5 12 OF 13 THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

13. ALL PERSONS WORKING WITHIN THE RIGHT-OF-WAY SHALL WEAR A BRIGHTLY COLORED SAFETY VEST. FOR NIGHTTIME WORK THE VEST SHALL BE RETROREFLECTIVE.
14. WHEN AN INTERSECTION IS CLOSED FOR CONSTRUCTION, THE CONTRACTOR SHALL PROCEED WITH CONSTRUCTION IN SUCH A MANNER THAT THE CLOSURE TIME IS MINIMIZED.
15. THE CONTRACTOR SHALL NOTIFY THE CAPITAL METRO DISPATCHER AT 385-4295 ONE (1) WEEK PRIOR TO LANE CLOSURES ADJACENT TO BUS STOPS.

- DURATION OF WORK**
WORK DURATION IS A MAJOR FACTOR IN DETERMINING THE NUMBER AND TYPES OF DEVICES USED IN TEMPORARY TRAFFIC ZONES. THE FIVE (5) CATEGORIES OF WORK DURATION AND THEIR TIME AT A LOCATION ARE AS FOLLOWS:
- LONG-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FOR MORE THAN 3 DAYS.
 - INTERMEDIATE-TERM STATIONARY-WORK THAT OCCUPIES A LOCATION FROM OVERNIGHT TO 3 DAYS.
 - SHORT-TERM STATIONARY-DAYTIME WORK THAT OCCUPIES A LOCATION FROM 1 TO 12 HOURS.
 - SHORT-DURATION WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
 - MOBILE-WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

Typical Transition Lengths and Suggested Maximum Spacing of Devices							
Posted Speed KPH (MPH)	Formula	Minimum Desirable Taper Lengths (L) Meters (Feet)			Suggested Max. Device Spacing		Suggested Sign Spacing Meters (Feet)
		3.0(10) Offset Meters (feet)	3.3(11) Offset Meters (feet)	3.6(12) Offset Meters (feet)	On a taper Meters (feet)	On a tangent Meters (feet)	
50 (30)	L=WS ² 60	45 (150)	50 (165)	55 (180)	9 (30)	15-20 (60-75)	40 (120)
55 (35)		65 (205)	70 (225)	75 (245)	10 (35)	25-25 (70-90)	50 (160)
65 (40)		80 (265)	90 (295)	100 (320)	12 (40)	25-30 (80-100)	75 (240)
70 (45)	L=WS	135 (450)	165 (495)	185 (540)	13 (45)	25-30 (90-110)	100 (320)
80 (50)		150 (500)	165 (550)	180 (600)	15 (50)	30-35 (100-125)	120 (400)
90 (55)		165 (550)	185 (605)	200 (660)	16 (55)	35-40 (110-140)	150 (500)
100 (60)		180 (600)	200 (660)	220 (720)	18 (60)	40-45 (120-150)	180 (600)
105 (65)		195 (650)	215 (715)	235 (780)	19 (65)	40-50 (130-165)	210 (700)
115 (70)		215 (700)	235 (770)	255 (840)	21 (70)	45-55 (140-175)	240 (800)

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	GENERAL TRAFFIC CONTROL NOTES
 ADOPTED	STANDARD NO. 804S-5 13 OF 13 THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

NOTE:
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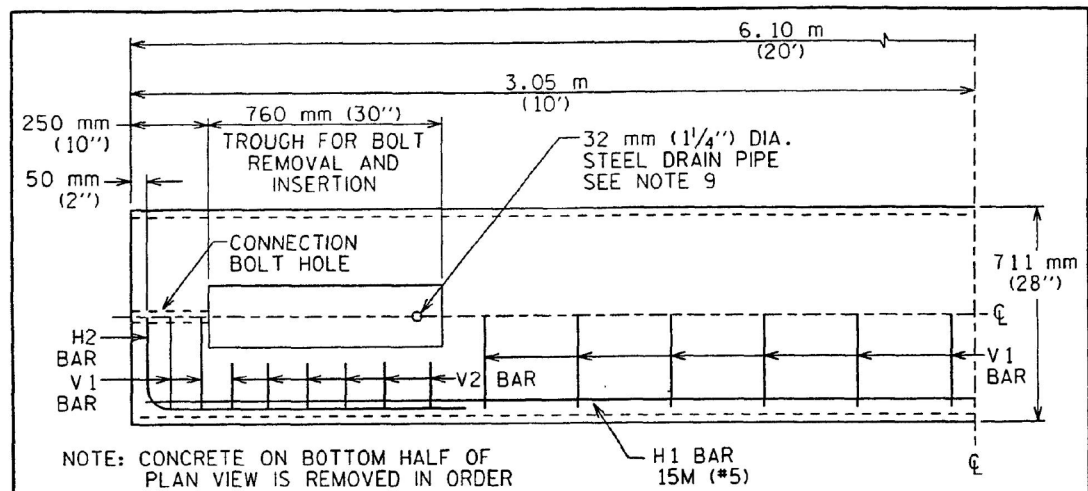
 mobility 35
CAPITAL AREA

 Texas Department of Transportation

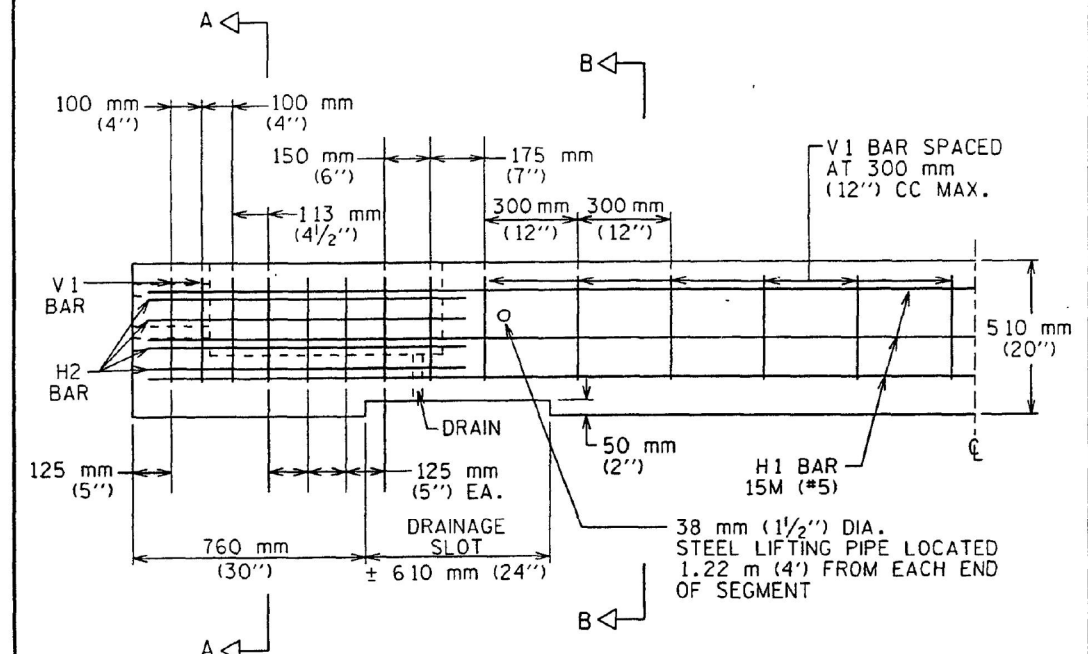
CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS SHEET 8 OF 12

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		

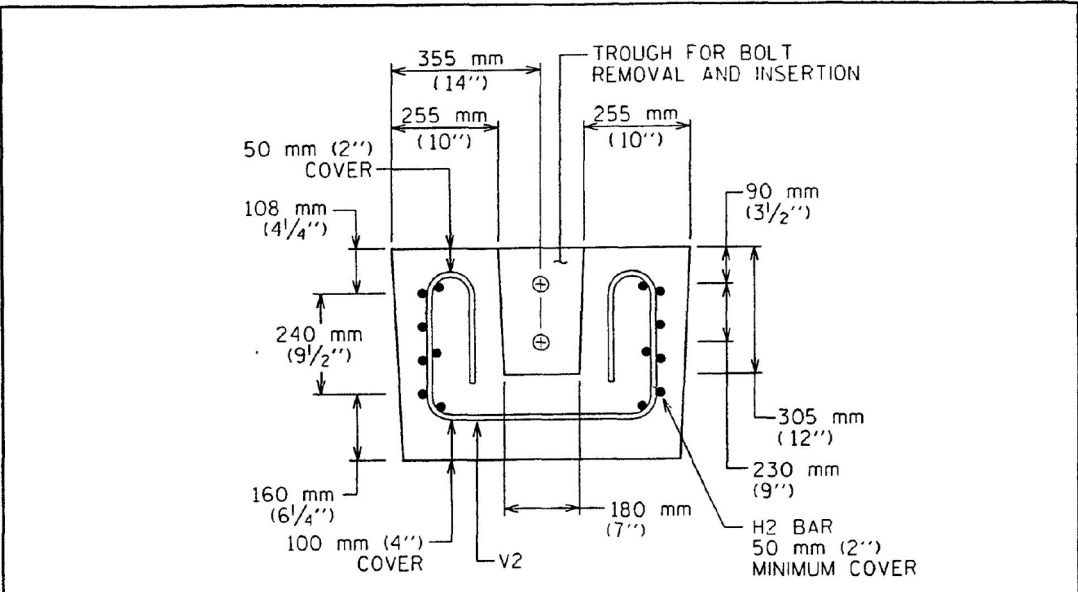


NOTE: CONCRETE ON BOTTOM HALF OF PLAN VIEW IS REMOVED IN ORDER TO SHOW DETAILS.
PLAN VIEW
(SYMMETRICAL ABOUT CENTERLINES)

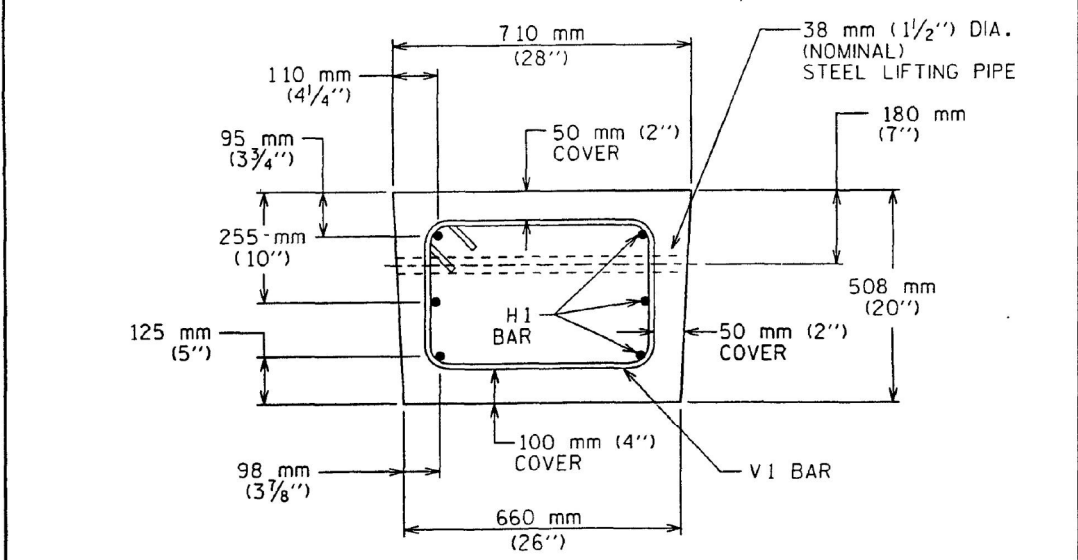


ELEVATION VIEW
(SYMMETRICAL ABOUT CENTERLINES)

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 1 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6A 1 OF 4
<i>Sean Barber, P.E.</i> 2/21/01 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	



SECTION A-A



SECTION B-B

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 1 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6A 2 OF 4
<i>Sean Barber, P.E.</i> 2/21/01 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

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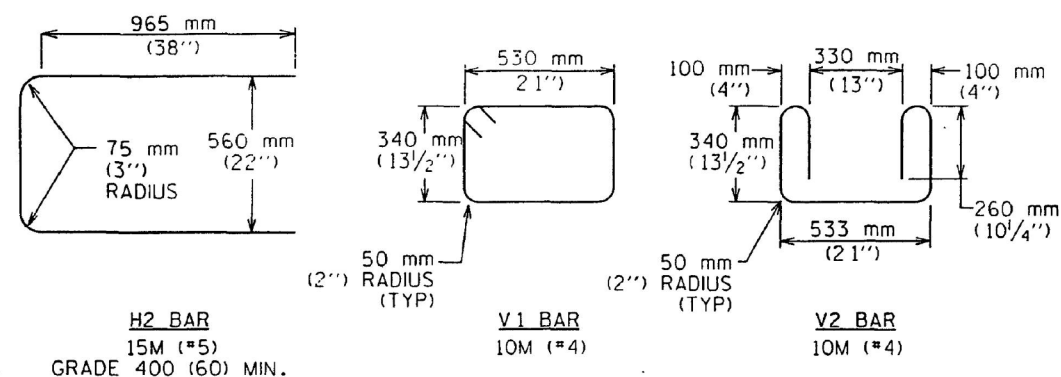
mobility CAPITAL AREA 35

Texas Department of Transportation

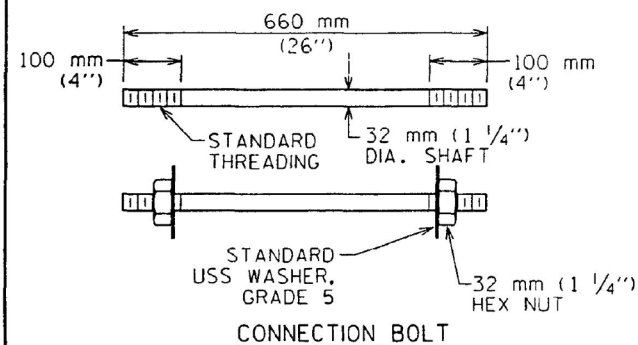
CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS SHEET 9 OF 12

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



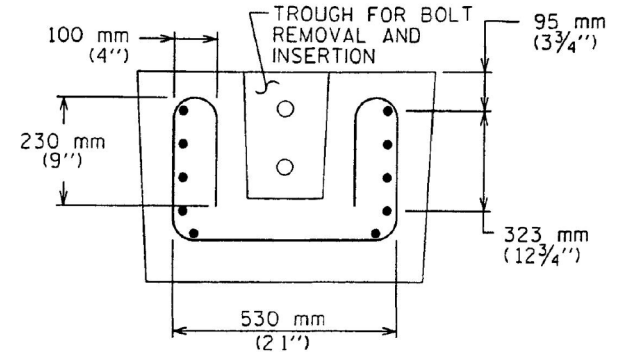
REINFORCING STEEL DETAILS



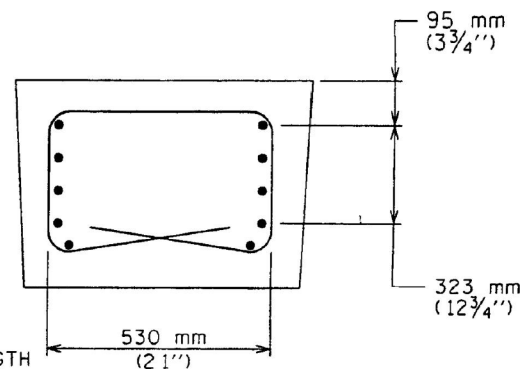
APPROX. QUANTITIES TYPE 1 BARRIER 6.1 m (20') SECTION		
CONCRETE	m ³	2.0
	CY	2.6
REINF. STEEL	kg	150
	LBS	330
TOTAL MASS (WEIGHT)	kg	4990
	LBS	11,000

- NOTES:**
- BARRIER LENGTH SHALL BE 6.1 m (20') ± 25 mm (1"), UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - ALL CONCRETE, REINFORCEMENT, ANCHOR BOLTS, BLOCKING, ETC., AS SHOWN ON THE DRAWINGS SHALL BE CONSIDERED PART OF THE BARRIER FOR PAYMENT.
 - ALL CONCRETE (ITEM 403) SHALL BE CLASS A, C, OR H, UNLESS SPECIFIED OTHERWISE.
 - ALL REINFORCING STEEL (ITEM 406) SHALL BE GRADE 300 (40), UNLESS SPECIFIED OTHERWISE.
 - CHAMFER ALL EDGES 20 mm (3/4") AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
 - STEEL PIPE SHALL BE HOT DIP GALVANIZED IN CONFORMANCE WITH ASTM DESIGNATION A123/A123M. BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO ASTM DESIGNATION A153/A153M.
 - BOLTS SHALL CONFORM TO ASTM A36. NUTS SHALL CONFORM TO ASTM A307 AND SHALL BE TAPPED OR CHASED AFTER GALVANIZING. BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT TOLERANCES.
 - THE BARRIER SHOULD BE LIGHT IN COLOR AND SHOULD BE SUPPLEMENTED BY DELINEATION AS DETAILED ELSEWHERE IN THE DRAWINGS.
 - THE DRAIN PIPE HOLES SHALL EXTEND TO THE DRAINAGE SLOT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 1 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6A 3 OF 4
<i>Leon Bula, P.E.</i> 2/21/01 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

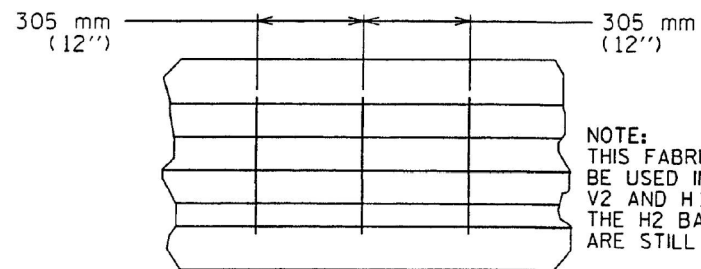


SECTION A-A
WELDED WIRE FABRIC OPTIONAL REINFORCING*



*WELDED WIRE FABRIC:
76x305-DMW 130xDMW 130
(3x12-D20xD20)
400 kPa MINIMUM YIELD STRENGTH
(60 ksi MINIMUM YIELD STRENGTH)
ASTM A497

SECTION B-B
WELDED WIRE FABRIC OPTIONAL REINFORCING*



NOTE:
THIS FABRIC OPTION CAN BE USED IN PLACE OF V1, V2 AND H1 BARS. THE H2 BARS SPECIFIED ARE STILL REQUIRED.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 1 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6A 4 OF 4
<i>Leon Bula, P.E.</i> 2/21/01 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	

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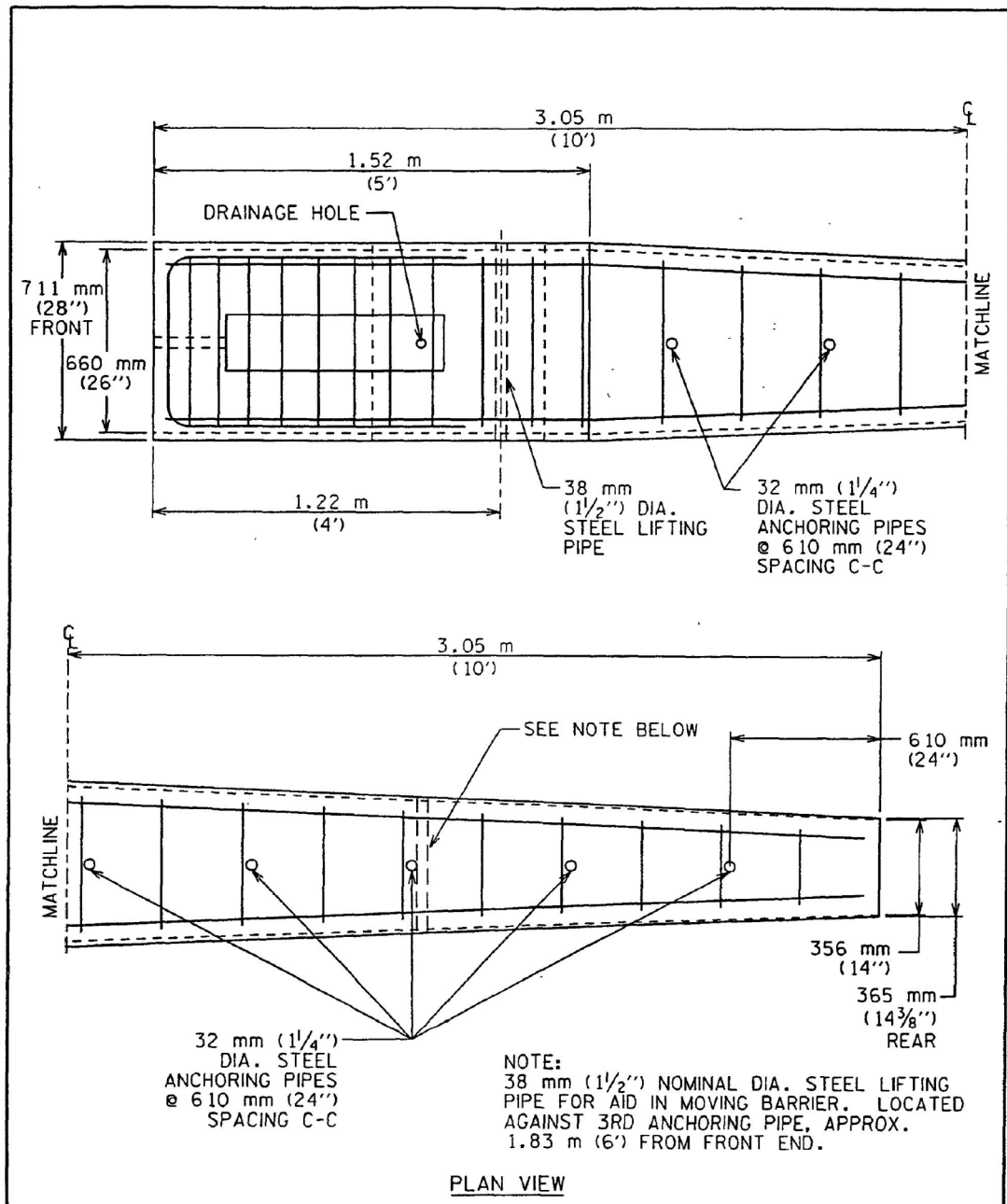
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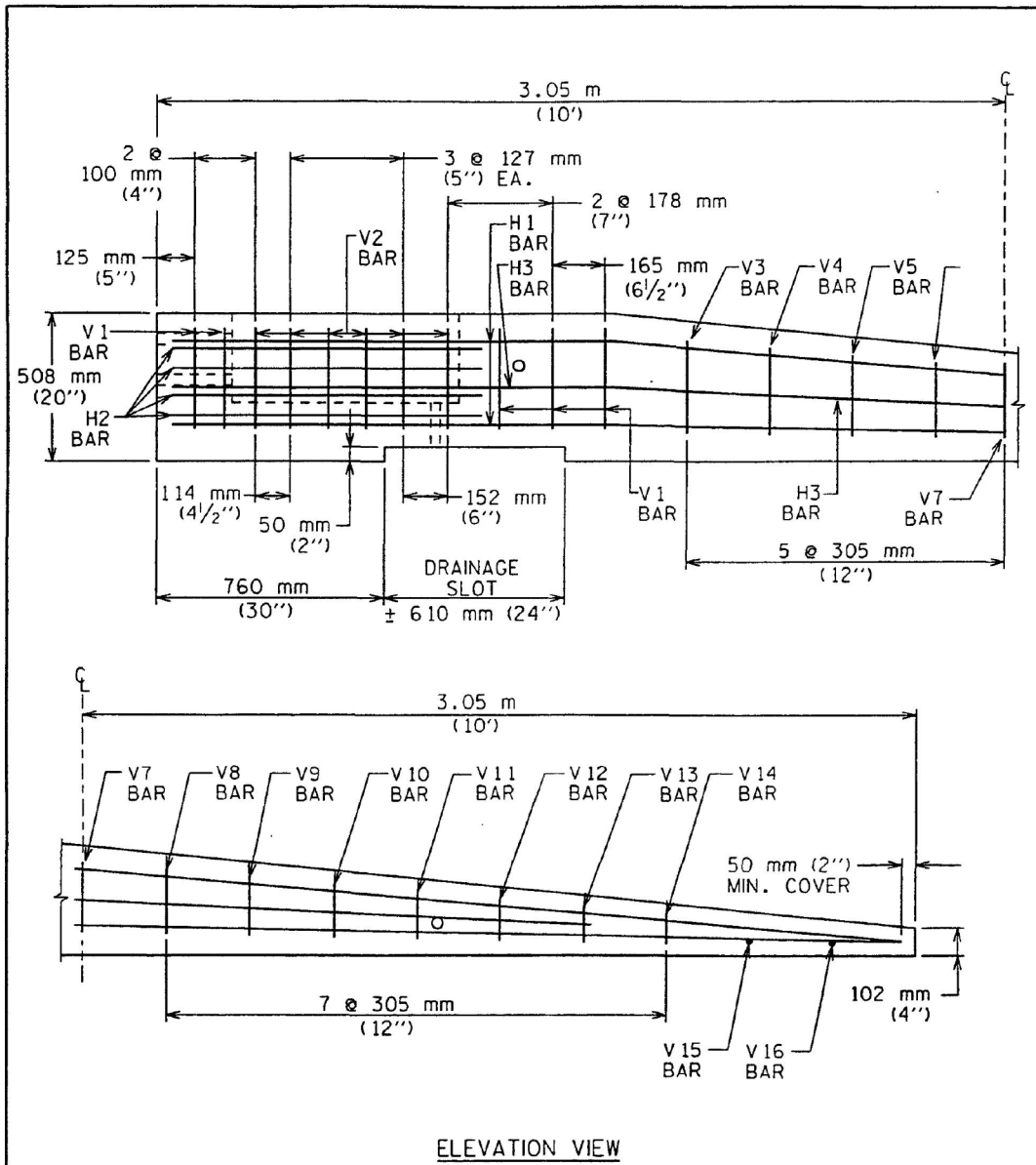
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CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

SCALE: NTS		SHEET 10 OF 12	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 2 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6B 1 OF 4	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
<i>Leon Barba, P.E. 2/21/01</i> ADOPTED			



NOTES:
1. ANCHORING PIPES ARE NOT SHOWN IN THE ELEVATION VIEW.
2. REINFORCING STEEL DETAILS ARE SHOWN ON SHEET 4 OF 4.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 2 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6B 2 OF 4	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
<i>Leon Barba, P.E. 2/21/01</i> ADOPTED			

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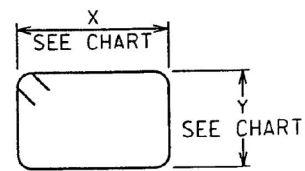
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
CITY OF AUSTIN DETAILS

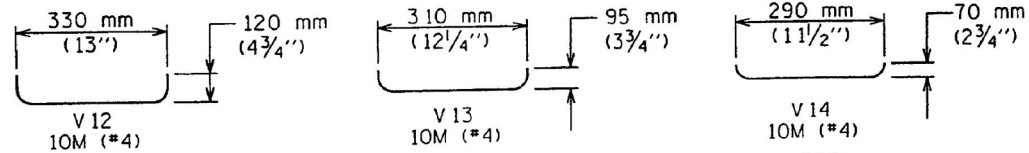
SCALE: NTS SHEET 11 OF 12

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	



BAR 10M (#4)	X	Y
v3	515 mm (20 1/4")	370 mm (14 1/2")
v4	495 mm (19 1/2")	345 mm (13 1/2")
v5	470 mm (18 1/2")	310 mm (12 1/4")
v6	445 mm (17 1/2")	285 mm (11 1/4")
v7	432 mm (17")	260 mm (10 1/4")
v8	413 mm (16 1/4")	230 mm (9")
v9	395 mm (15 1/2")	205 mm (8")
v10	370 mm (14 1/2")	180 mm (7")
v11	350 mm (13 3/4")	150 mm (6")

NOTE: ALL BENDING OF SHEAR REBAR IS AT A 50 mm (2") RADIUS, UNLESS SPECIFIED OTHERWISE.

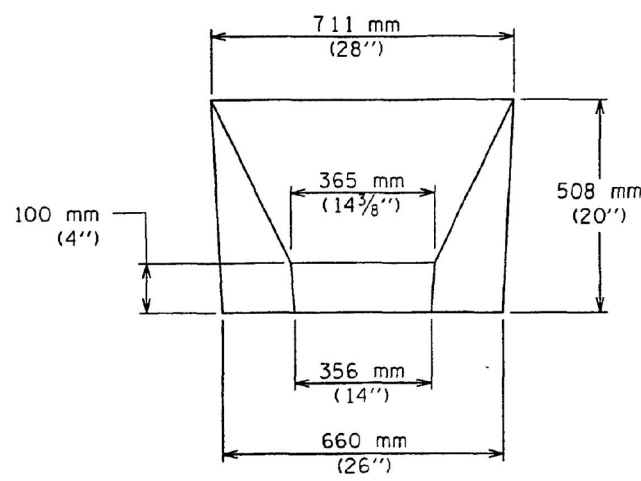


10M (#4) STRAIGHT BARS: 15M (#5) GRADE 400 (60) STRAIGHT BARS:
 V15- 275 mm (10 3/4") H1- 6 m (19'-8")
 V16- 255 mm (10") H3- 4.98 m (16'-4")

H2 BAR
 15M (#5) GRADE 400 (60) MIN.

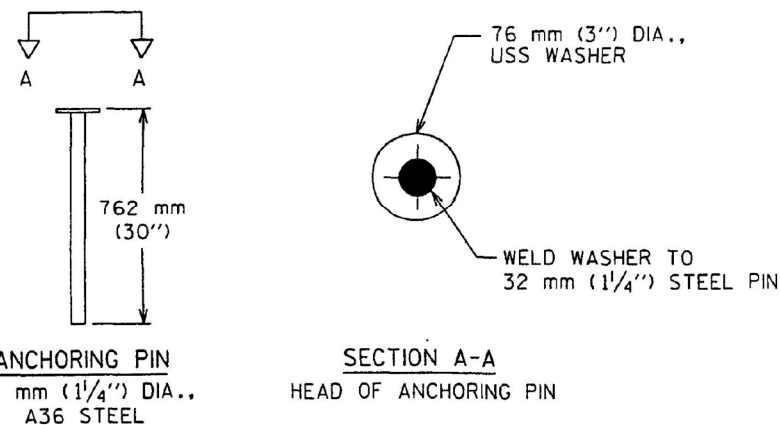
- NOTES:
- TYPE 2 BARRIER SHALL BE USED AS AN END TREATMENT FOR TYPE 1 BARRIER WHEN APPROPRIATE.
 - THE ANCHORAGE PINS SHALL ALL BE THE SAME LENGTH AND ARE INTENDED TO BE DRIVEN FLUSH WITH THE TOP OF THE BARRIER SURFACE.
 - THE BENDS IN THE H1 AND H3 BARS ARE SLIGHT, NO FORMAL BEND IS NECESSARY.
 - TYPE 2 BARRIER MUST BE LIFTED FROM REAR (SMALL END) FIRST TO PREVENT CRACKING OF SLOPED SECTION.
 - BARRIER LENGTH SHALL BE 6.1 m (20') + 25 mm (1"), UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS.
 - ALL CONCRETE, REINFORCEMENT, ANCHOR BOLTS, BLOCKING, ETC., AS SHOWN ARE CONSIDERED AS PART OF THE BARRIER FOR PAYMENT.
 - ALL CONCRETE (ITEM 403) SHALL BE CLASS A, C, OR H, UNLESS OTHERWISE SPECIFIED.
 - ALL REINFORCING STEEL (ITEM 406) SHALL BE GRADE 300 (40), UNLESS OTHERWISE SPECIFIED.
 - CHAMFER ALL EDGES 20 mm (3/4") AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
 - STEEL PIPE SHALL BE HOT DIP GALVANIZED IN CONFORMANCE TO ASTM DESIGNATION A123. BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO ASTM DESIGNATION A153.
 - BOLTS SHALL CONFORM TO ASTM A36. NUTS SHALL CONFORM TO ASTM A307 AND SHALL BE TAPPED OR CHASED AFTER GALVANIZING. BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT TOLERANCES.
 - THE BARRIER SHOULD BE LIGHT IN COLOR AND SHOULD BE SUPPLEMENTED BY DELINEATION AS DETAILED ELSEWHERE IN THE DRAWINGS.
 - THE DRAIN PIPE HOLES SHALL EXTEND TO THE DRAINAGE SLOT.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 2 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6B 3 OF 4
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		ADOPTED Leon Bula, P.E. 2/21/01



APPROACH VIEW

APPROX. QUANTITIES TYPE 2 BARRIER 6.1 m (20') SECTION		
CONCRETE	m ³	1.26
	CY	1.65
REINF. STEEL	kg	109
	LBS	240
TOTAL MASS (WEIGHT)	kg	3,175
	LBS	7,000



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	LOW PROFILE CONCRETE BARRIER TYPE 2 (PORTABLE AND PRECAST)	STANDARD NO. 804S-6B 4 OF 4
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		ADOPTED Leon Bula, P.E. 2/21/01

NOTE:
 STANDARDS APPLY TO
 CESAR CHAVES ONLY

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 THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW AND IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMITTING PURPOSES.
 Supervised By: JASON J. GRANADO
 P.E. Serial No. 124689
 Date: 6/12/2023

LAMB-STAR ENGINEERING, L.L.C.
 3801 PARKWOOD BOULEVARD, SUITE 550
 PRISCO, TEXAS 75034 (214) 440-3600
 TEXAS REGISTERED ENGINEERING FIRM F-9073

HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA 35

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 CITY OF AUSTIN DETAILS

SCALE: NTS		SHEET 12 OF 12	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		

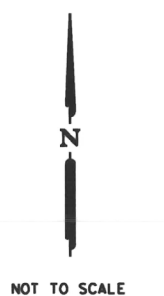
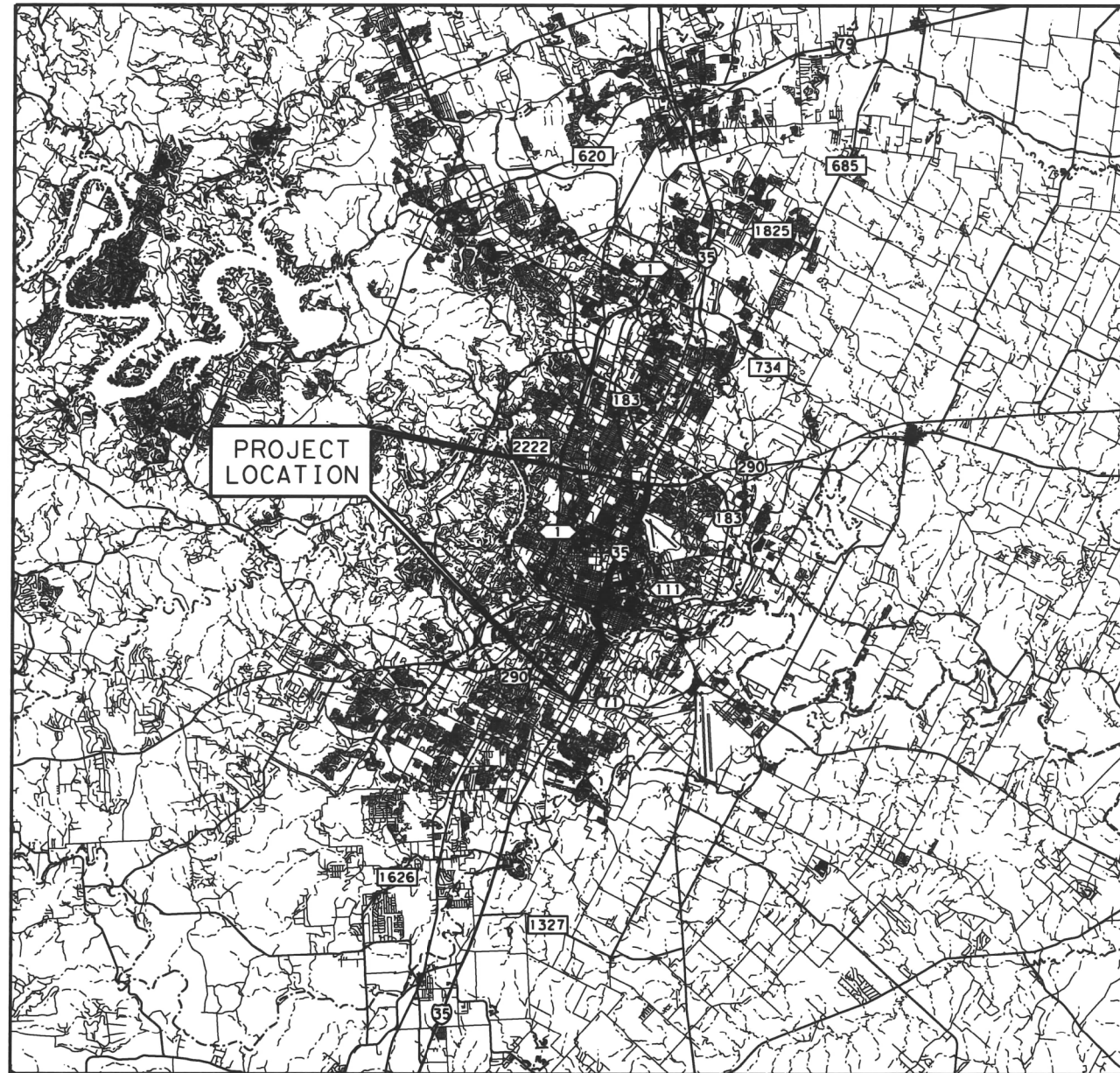
STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

IH 35 SEGMENT 3 CONTROL LAYOUT

IH 35 CAPITAL EXPRESS
TRAVIS COUNTY

CCSJ NO. 5000-00-106
LIMITS: FROM SH 45 NORTH
TO HAYS COUNTY LINE

NET LENGTH OF PROJECT = 7.95 MILES (41,995 FEET)

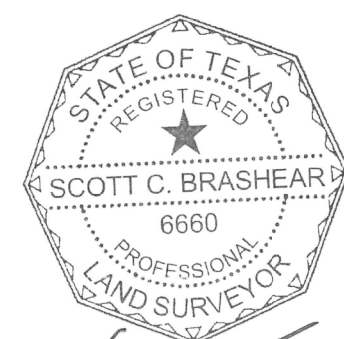


NOT TO SCALE

Survey Date: November, 2019

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Scott C. Brashear
11/15/19

**SURVEY CONTROL
COVER SHEET**

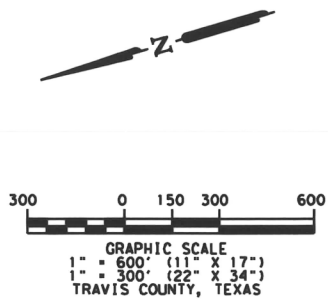
FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.	SHEET NO.	
		1 OF 9	
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35

- NOTES:
1. ALL PROJECT COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, TEXAS CENTRAL ZONE, NAD 83 (2011) / NAVD 88. ALL SURFACE COORDINATES MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00011. ELEVATIONS ARE BASED ON GEOID 12B. UNITS: U.S. SURVEY FEET
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 3. A CALIBRATION SHOULD BE PERFORMED WHEN USING THE CONTROL SHOWN HEREON.

THIS MAP IS AN INTERNAL TxDOT DOCUMENT. IT'S CONTENTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.

FILE: \\101002371901\Survey\GIS\Bases\Control_Bases\IH35_Capital_Express_Segment_3_Control_01.gpr

HORIZONTAL AND VERTICAL CONTROL - GRID COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1038	10,088,586.88	3,124,873.62	651.26'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1061	10,090,491.71	3,125,480.52	688.56'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
136	10,090,039.56	3,125,316.10	688.52'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
137	10,087,380.36	3,124,634.20	636.85'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
138	10,085,822.37	3,124,274.04	643.75'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
139	10,084,567.51	3,123,558.16	623.52'	5/8" IR W/SAM CONTROL CAP IN CONCRETE



Survey Date: November, 2019

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SURVEY CONTROL LAYOUT SHEET

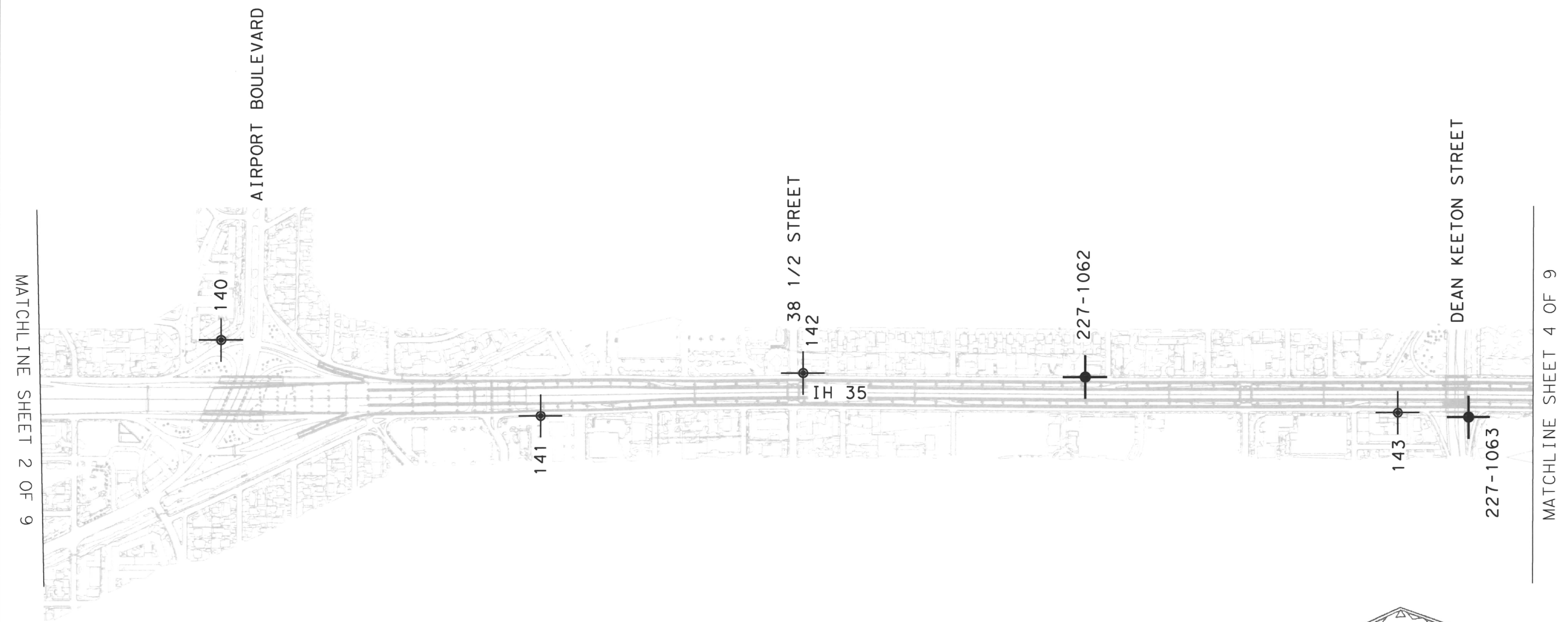
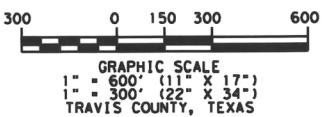
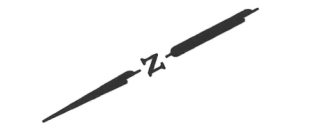
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HORIZONTAL AND VERTICAL CONTROL - SURFACE COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1038	10,089,696.63	3,125,217.36	651.26'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1061	10,091,601.66	3,125,824.32	688.56'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
136	10,091,149.48	3,125,659.93	688.51'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
137	10,088,489.98	3,124,977.91	636.85'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
138	10,086,931.81	3,124,617.71	643.75'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
139	10,085,676.81	3,123,901.75	623.52'	5/8" IR W/SAM CONTROL CAP IN CONCRETE

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.	SHEET NO.
		2 OF 9
STATE	DISTRICT	COUNTY
TEXAS	AUS	TRAVIS
CONTROL	SECTION	JOB
5000	00	106
		HIGHWAY NO.
		IH 35

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HORIZONTAL AND VERTICAL CONTROL - GRID COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1062	10,079,275.54	3,120,778.60	595.65'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1063	10,077,601.96	3,119,667.66	611.69'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
140	10,083,177.85	3,123,033.70	603.13'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
141	10,081,886.24	3,121,911.96	600.90'	MAG NAIL W/SAM SHINER
142	10,080,569.32	3,121,476.98	606.89'	MAG NAIL W/SAM SHINER
143	10,077,922.52	3,119,861.30	608.16'	MAG NAIL W/SAM SHINER



MATCHLINE SHEET 2 OF 9

MATCHLINE SHEET 4 OF 9



- NOTES:
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HORIZONTAL AND VERTICAL CONTROL - SURFACE COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1062	10,080,384.26	3,121,121.89	595.65'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1063	10,078,710.50	3,120,010.82	611.69'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
140	10,084,287.00	3,123,377.24	603.13'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
141	10,082,995.25	3,122,255.37	600.90'	MAG NAIL W/SAM SHINER
142	10,081,678.21	3,121,820.35	606.93'	MAG NAIL W/SAM SHINER
143	10,079,031.08	3,120,204.49	608.14'	MAG NAIL W/SAM SHINER

Survey Date: November, 2019

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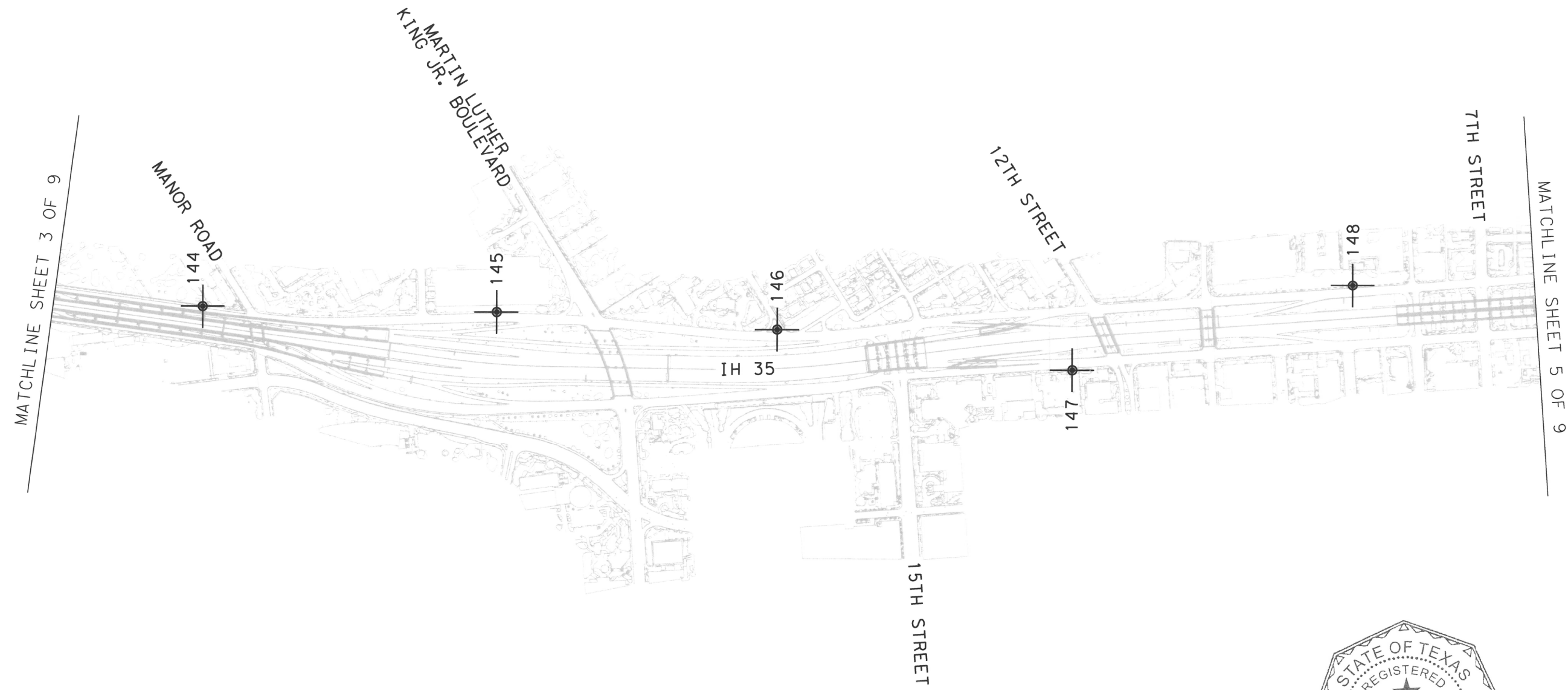
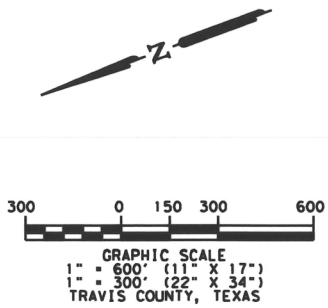


SURVEY CONTROL LAYOUT SHEET

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			3 OF 9
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35

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HORIZONTAL AND VERTICAL CONTROL - GRID COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
144	10,076,530.19	3,119,333.66	608.28'	MAG NAIL W/SAM SHINER
145	10,075,114.90	3,118,776.58	592.75'	MAG NAIL W/SAM SHINER
146	10,073,783.63	3,118,187.66	533.96'	MAG NAIL W/SAM SHINER
147	10,072,426.72	3,117,464.04	523.33'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
148	10,070,912.64	3,117,370.89	502.82'	5/8" IR W/SAM CONTROL CAP IN CONCRETE



Survey Date: November, 2019

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SURVEY CONTROL LAYOUT SHEET

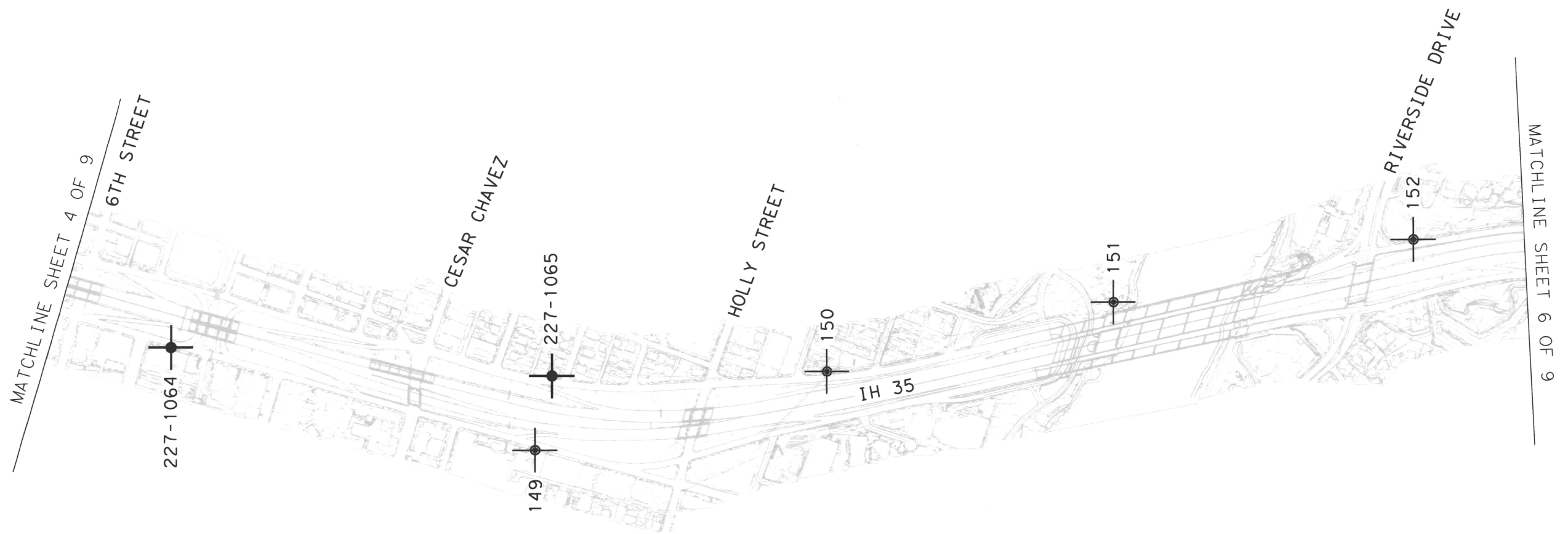
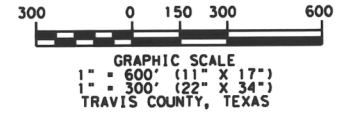
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HORIZONTAL AND VERTICAL CONTROL - SURFACE COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
144	10,077,638.57	3,119,676.76	608.26'	MAG NAIL W/SAM SHINER
145	10,076,223.16	3,119,119.64	592.70'	MAG NAIL W/SAM SHINER
146	10,074,891.75	3,118,530.66	533.98'	MAG NAIL W/SAM SHINER
147	10,073,534.68	3,117,806.97	523.39'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
148	10,072,020.44	3,117,713.80	502.82'	5/8" IR W/SAM CONTROL CAP IN CONCRETE

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.	SHEET NO.	
		4 OF 9	
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35

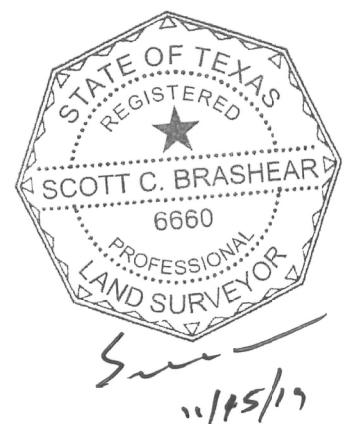
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HORIZONTAL AND VERTICAL CONTROL - GRID COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1064	10,069,534.87	3,116,617.01	464.61'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1065	10,067,608.60	3,116,442.26	468.13'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
149	10,067,698.69	3,116,065.91	467.84'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
150	10,066,209.62	3,116,442.38	458.17'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
151	10,064,748.49	3,116,769.41	437.50'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
152	10,063,219.41	3,117,061.07	474.70'	5/8" IR W/SAM CONTROL CAP IN CONCRETE



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Survey Date: November, 2019

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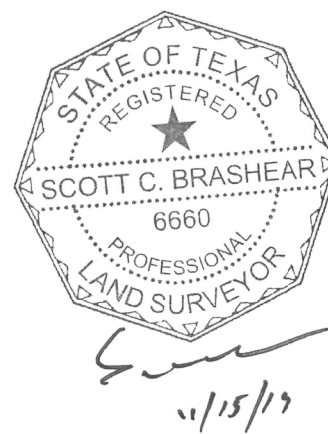
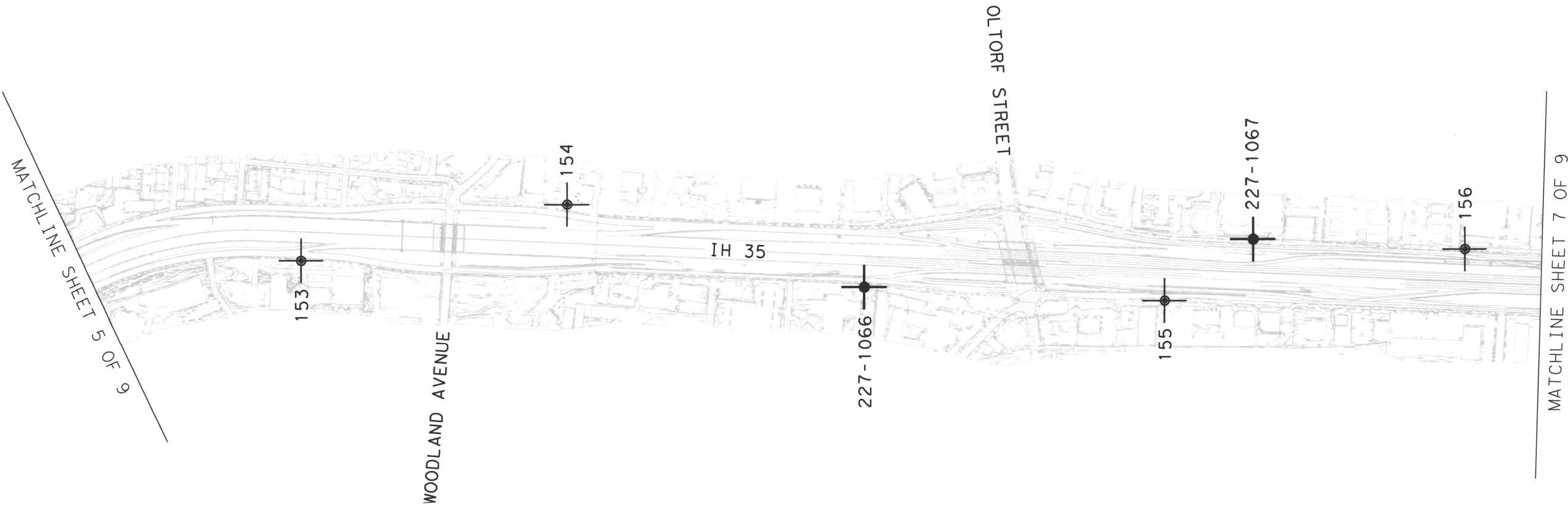
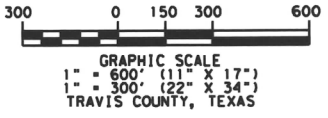


SURVEY CONTROL LAYOUT SHEET

HORIZONTAL AND VERTICAL CONTROL - SURFACE COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1064	10,070,642.52	3,116,959.84	464.61'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1065	10,068,716.04	3,116,785.06	468.13'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
149	10,068,806.14	3,116,408.68	467.84'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
150	10,067,316.90	3,116,785.19	458.17'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
151	10,065,855.64	3,117,112.22	437.50'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
152	10,064,326.36	3,117,403.95	474.70'	5/8" IR W/SAM CONTROL CAP IN CONCRETE

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			5 OF 9
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	1H 35

HORIZONTAL AND VERTICAL CONTROL - GRID COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1066	10,059,064.24	3,115,322.64	602.86'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1067	10,057,157.57	3,114,758.96	607.31'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
153	10,061,632.28	3,116,582.85	515.10'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
154	10,060,284.25	3,116,308.64	536.73'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
155	10,057,694.99	3,114,653.88	621.59'	MAG NAIL W/SAM SHINER
156	10,056,189.72	3,114,283.51	583.83'	5/8" IR W/SAM CONTROL CAP IN CONCRETE



Survey Date: November, 2019

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SURVEY CONTROL LAYOUT SHEET

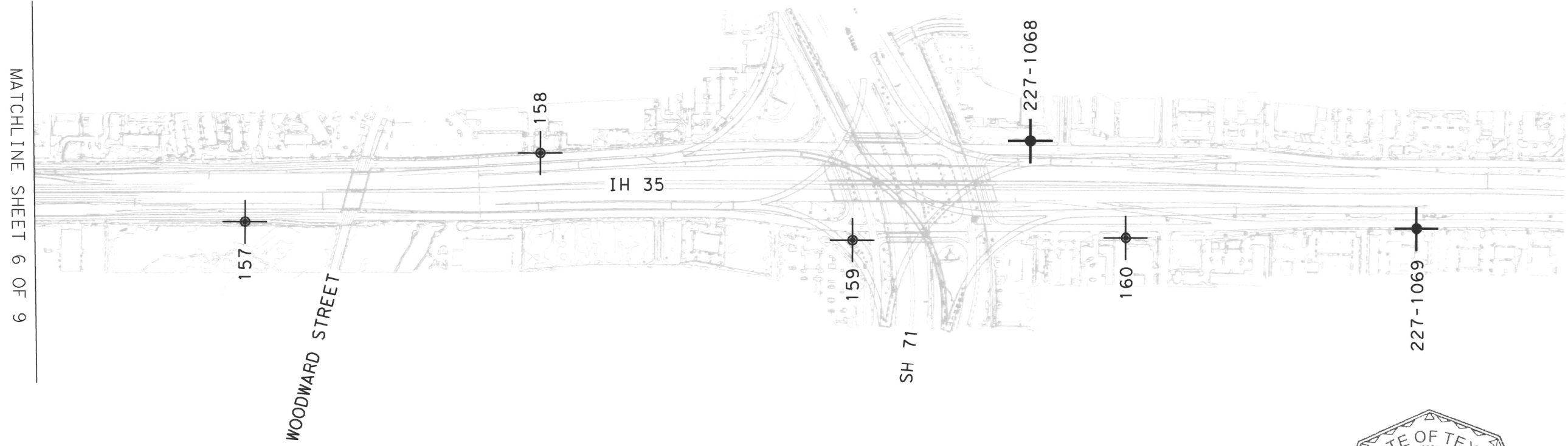
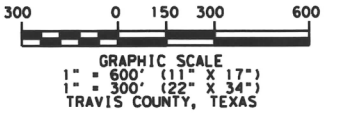
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HORIZONTAL AND VERTICAL CONTROL - SURFACE COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1066	10,060,170.74	3,115,665.32	602.86'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1067	10,058,263.86	3,115,101.59	607.31'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
153	10,062,739.06	3,116,925.67	515.10'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
154	10,061,390.88	3,116,651.43	536.73'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
155	10,058,801.37	3,114,996.49	621.58'	MAG NAIL W/SAM SHINER
156	10,057,295.90	3,114,626.09	583.83'	5/8" IR W/SAM CONTROL CAP IN CONCRETE

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			6 OF 9
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35

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HORIZONTAL AND VERTICAL CONTROL - GRID COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1068	10,051,194.33	3,111,958.34	659.57'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1069	10,049,608.34	3,110,682.72	649.57'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
157	10,055,001.69	3,113,352.28	633.97'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
158	10,053,485.44	3,113,005.60	658.57'	X IN CONCRETE
159	10,052,241.99	3,111,900.88	665.53'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
160	10,050,972.24	3,111,295.31	661.37'	5/8" IR W/SAM CONTROL CAP IN CONCRETE

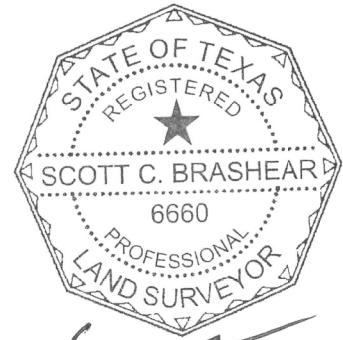


MATCHLINE SHEET 6 OF 9

FILE C:\101002918\101002918\Survey\Utilities\Control_Sheets\Segment_3_Control_01.dwg

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3. A CALIBRATION SHOULD BE PERFORMED WHEN USING THE CONTROL SHOWN HEREON.



Survey Date: November, 2019

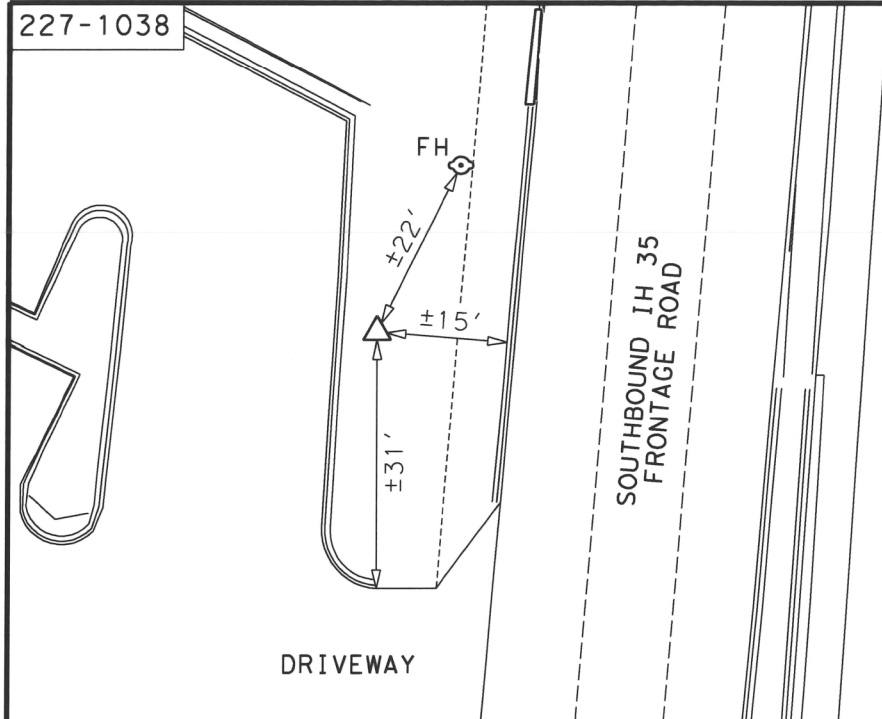
SAM 4801 Southwest Parkway
Building Two, Suite 100
Austin, Texas 78735
(512) 447-0575
Fax: (512) 326-3029
Texas Firm Registration No. 10064300



SURVEY CONTROL LAYOUT SHEET

HORIZONTAL AND VERTICAL CONTROL - SURFACE COORDINATES				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
227-1068	10,052,299.96	3,112,300.66	659.57'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
227-1069	10,050,713.80	3,111,024.89	649.57'	5/8" IR W/TXDOT ALUMINUM CAP IN CONCRETE
157	10,056,107.74	3,113,694.75	633.97'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
158	10,054,591.33	3,113,348.03	658.57'	X IN CONCRETE
159	10,053,347.74	3,112,243.19	665.53'	5/8" IR W/SAM CONTROL CAP IN CONCRETE
160	10,052,077.85	3,111,637.55	661.37'	5/8" IR W/SAM CONTROL CAP IN CONCRETE

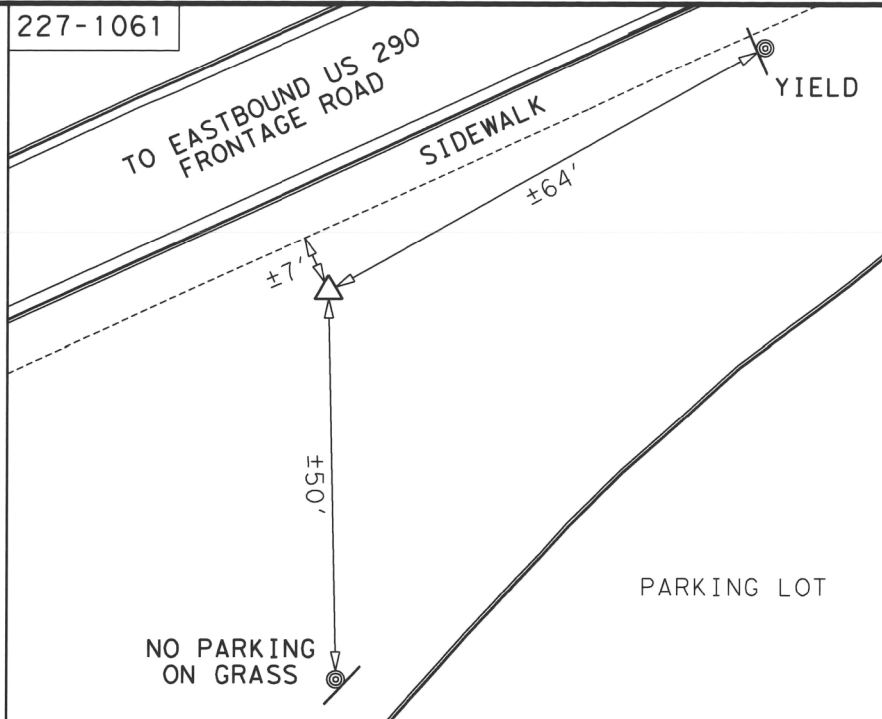
FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			7 OF 9
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35



POINT 227-1038 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 0.35 MILES SOUTH OF US 290, ON THE SOUTHBOUND SIDE OF IH 35.

SURFACE COORDINATES
N = 10,089,696.63
E = 3,125,217.36
ELEV. = 651.26'

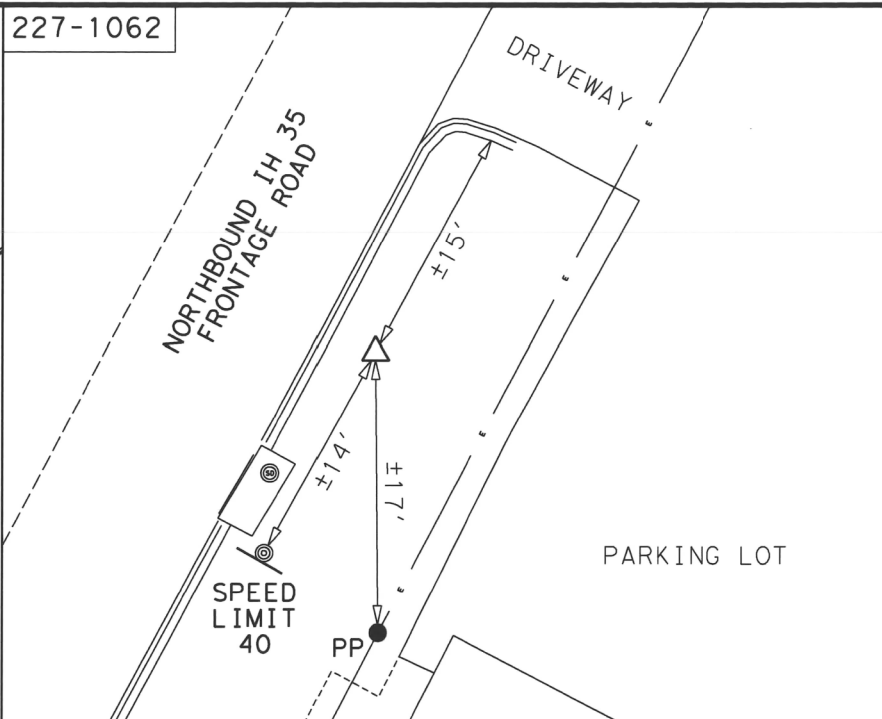
GRID COORDINATES
N = 10,088,586.88
E = 3,124,873.62



POINT 227-1061 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, IN THE SOUTHEAST QUADRANT OF THE INTERSECTION OF US 290 AND IH 35.

SURFACE COORDINATES
N = 10,091,601.66
E = 3,125,824.32
ELEV. = 688.56'

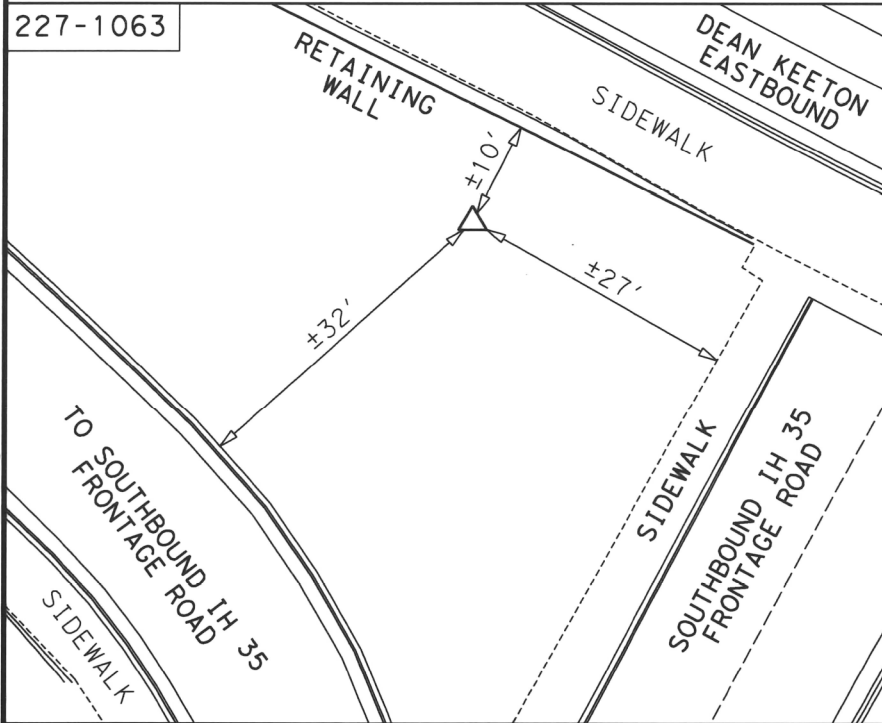
GRID COORDINATES
N = 10,090,491.71
E = 3,125,480.52



POINT 227-1062 IS A MAG NAIL WITH A SAM SHINER SET IN THE SIDEWALK, APPROXIMATELY 111 FEET NORTH OF EDGEWOOD AVENUE, ON THE NORTHBOUND SIDE OF IH 35.

SURFACE COORDINATES
N = 10,080,384.26
E = 3,121,121.89
ELEV. = 595.65'

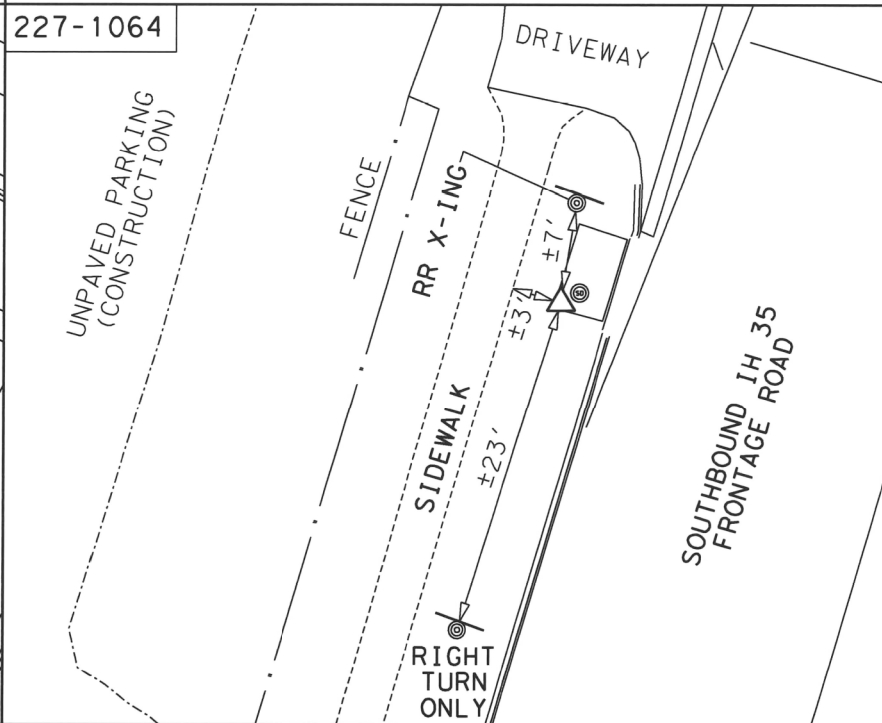
GRID COORDINATES
N = 10,079,275.54
E = 3,120,778.60



POINT 227-1063 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, IN THE SOUTHWEST QUADRANT OF THE INTERSECTION OF DEAN KEETON STREET AND IH 35.

SURFACE COORDINATES
N = 10,078,710.50
E = 3,120,010.82
ELEV. = 611.69'

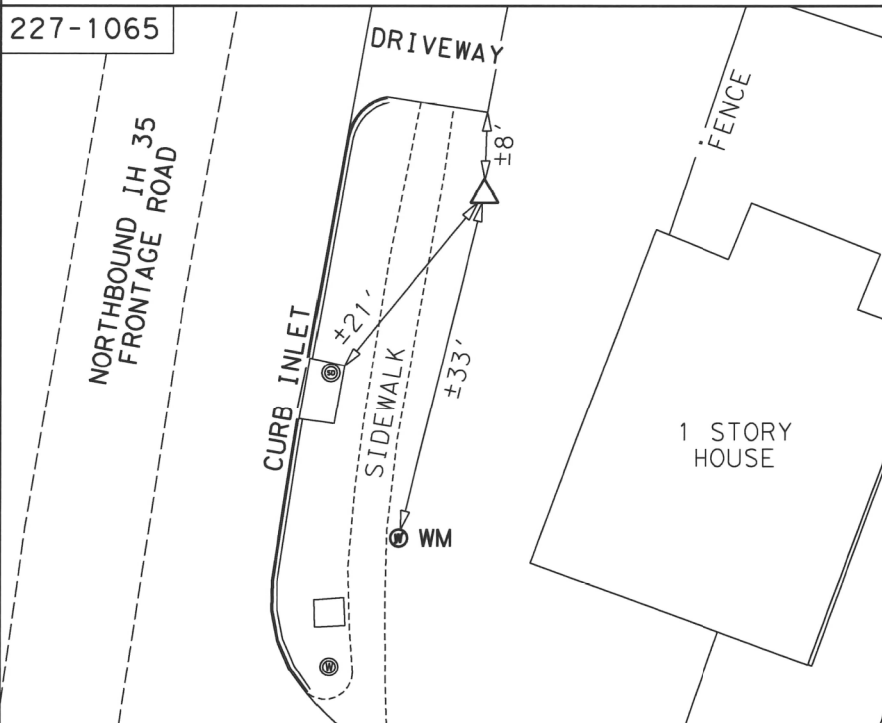
GRID COORDINATES
N = 10,077,601.96
E = 3,119,667.66



POINT 227-1064 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 144 FEET SOUTH OF 5TH STREET, ON THE SOUTHBOUND SIDE OF IH 35.

SURFACE COORDINATES
N = 10,070,642.52
E = 3,116,959.84
ELEV. = 464.61'

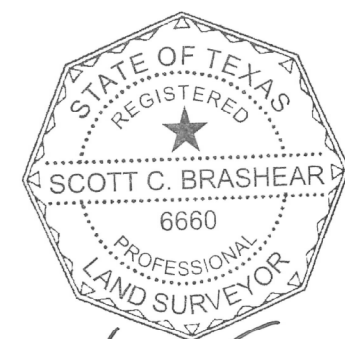
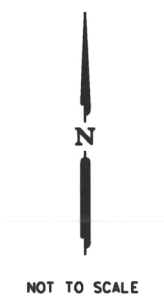
GRID COORDINATES
N = 10,069,534.87
E = 3,116,617.01



POINT 227-1065 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 69 FEET NORTH OF SPENCE STREET, ON THE NORTHBOUND SIDE OF IH 35.

SURFACE COORDINATES
N = 10,068,716.04
E = 3,116,785.06
ELEV. = 468.13'

GRID COORDINATES
N = 10,067,608.60
E = 3,116,442.26



11/15/19

Survey Date: November, 2019

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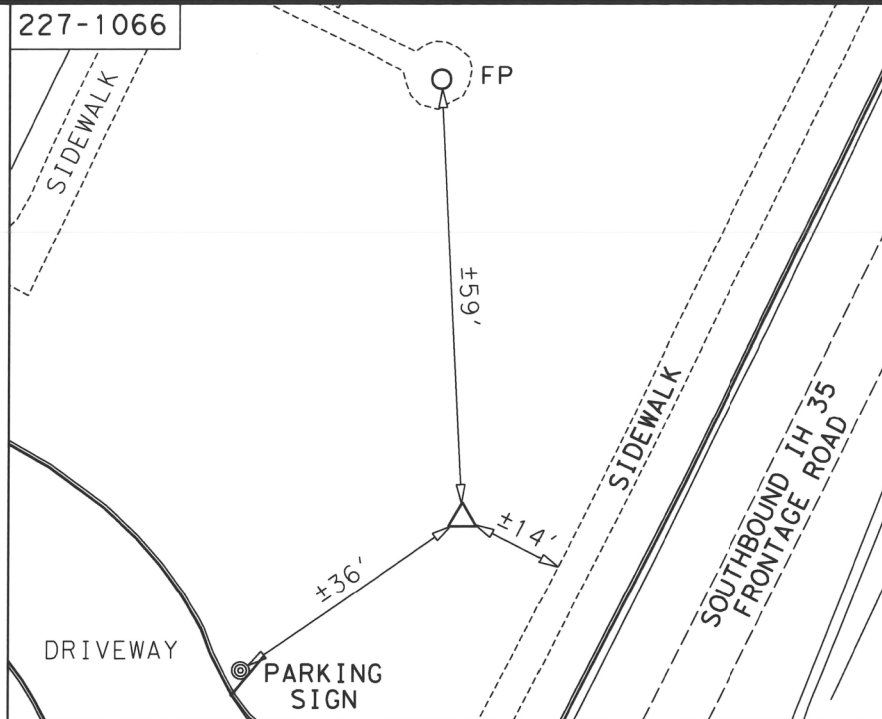


HORIZONTAL / VERTICAL CONTROL SHEET

NOTES:

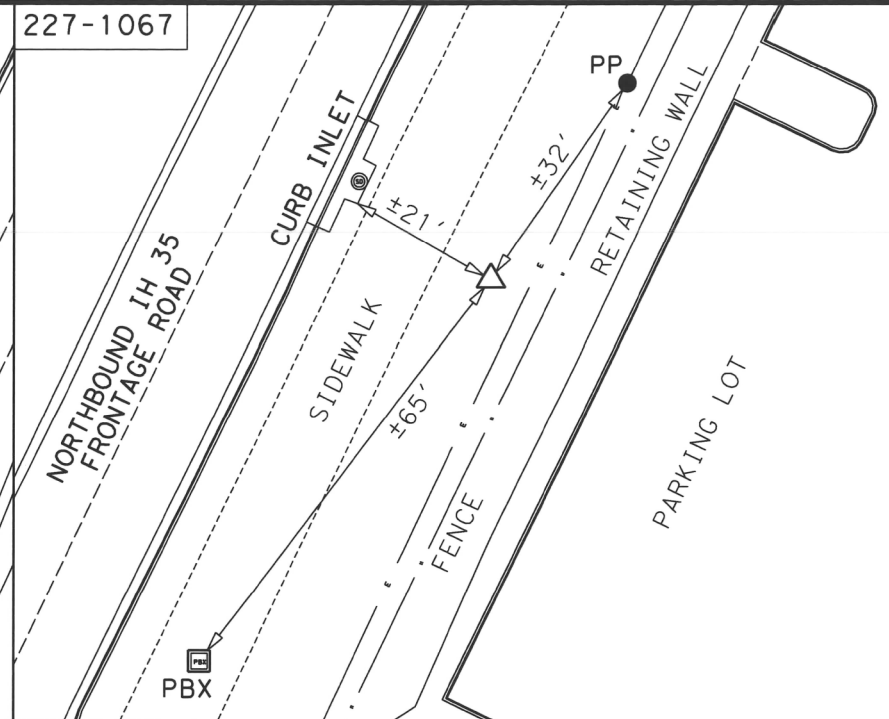
1. ALL PROJECT COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, TEXAS CENTRAL ZONE, NAD 83 (2011) / NAVD 88. ALL SURFACE COORDINATES MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00011. ELEVATIONS ARE BASED ON GEOID 12B. UNITS: U.S. SURVEY FEET
2. ALL PROJECT COORDINATES WERE DERIVED UTILIZING STATIC AND GPS OBSERVATIONS PROCESSED TO CORS STATIONS TXBU, TXTA, TXBS, TXSM, TXJC AND TXAU.
3. A CALIBRATION SHOULD BE PERFORMED WHEN USING THE CONTROL SHOWN HEREON.

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			8 OF 9
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35



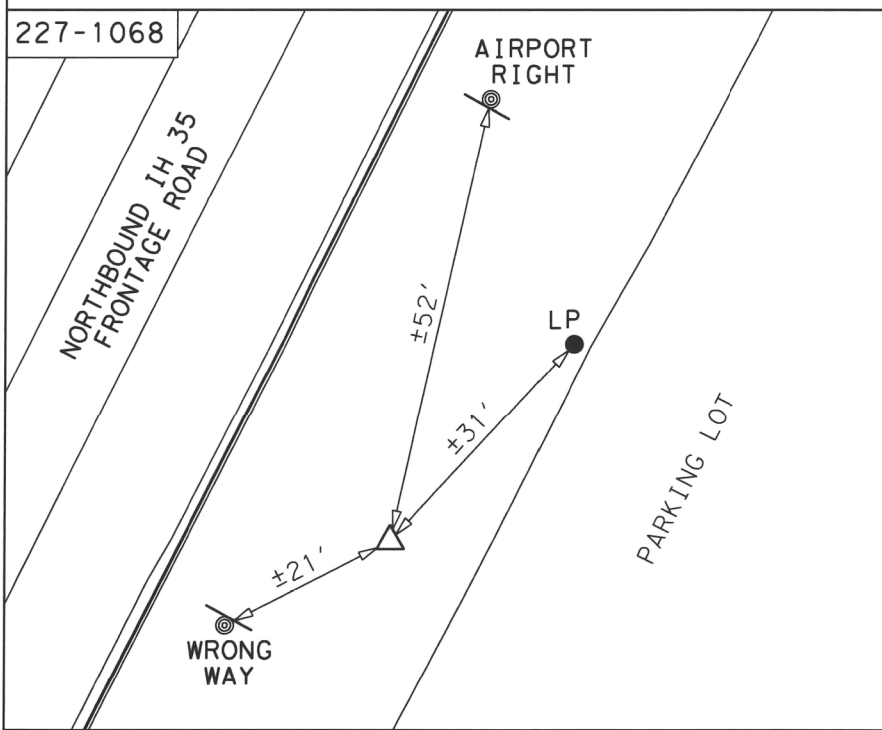
POINT 227-1066 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 381 FEET SOUTH OF ALGARITA STREET, ON THE SOUTHBOUND SIDE OF IH 35.

SURFACE COORDINATES N = 10,060,170.74 E = 3,115,665.32 ELEV. = 602.86'	GRID COORDINATES N = 10,059,064.24 E = 3,115,322.64
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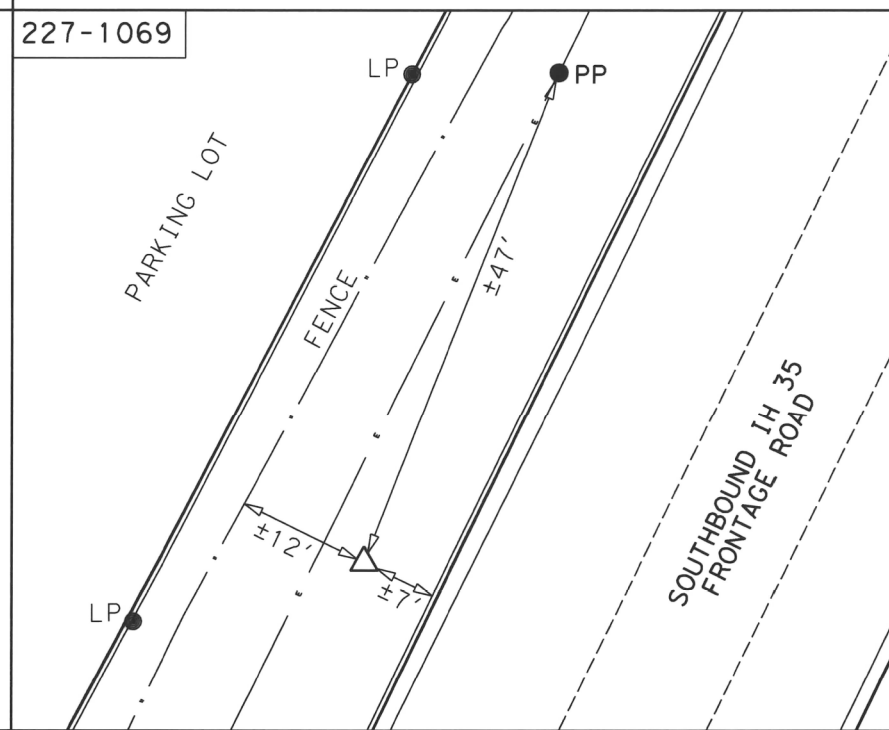
POINT 227-1067 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 0.19 MILES NORTH OF ROYAL HILL DRIVE, ON THE NORTHBOUND SIDE OF IH 35.

SURFACE COORDINATES N = 10,058,263.86 E = 3,115,101.59 ELEV. = 607.31'	GRID COORDINATES N = 10,057,157.57 E = 3,114,758.96
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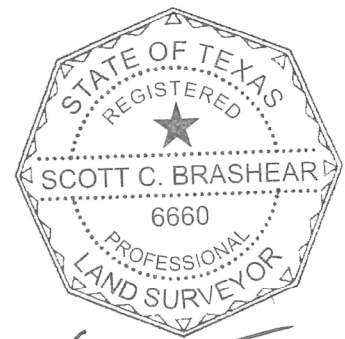
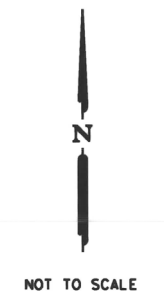
POINT 227-1068 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 146 FEET NORTH OF DIRECTORS BOULEVARD, ON THE NORTHBOUND SIDE OF IH 35.

SURFACE COORDINATES N = 10,052,299.96 E = 3,112,300.66 ELEV. = 659.57'	GRID COORDINATES N = 10,051,194.33 E = 3,111,958.34
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POINT 227-1069 IS A 5/8 INCH IRON ROD WITH A TXDOT ALUMINUM CONTROL CAP SET IN CONCRETE, APPROXIMATELY 0.24 MILES SOUTH OF ST. ELMO ROAD, ON THE SOUTHBOUND SIDE OF IH 35.

SURFACE COORDINATES N = 10,050,713.80 E = 3,111,024.89 ELEV. = 649.57'	GRID COORDINATES N = 10,049,608.34 E = 3,110,682.72
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Scott C. Brashear
11/15/19

Survey Date: November, 2019



HORIZONTAL / VERTICAL CONTROL SHEET

FHWA TEXAS DIVISION	FEDERAL AID PROJECT NO.		SHEET NO.
			9 OF 9
STATE	DISTRICT	COUNTY	
TEXAS	AUS	TRAVIS	
CONTROL	SECTION	JOB	HIGHWAY NO.
5000	00	106	IH 35

- NOTES:
- ALL PROJECT COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, TEXAS CENTRAL ZONE, NAD 83 (2011) / NAVD 88. ALL SURFACE COORDINATES MAY BE CONVERTED TO GRID BY DIVIDING BY A SURFACE ADJUSTMENT FACTOR OF 1.00011. ELEVATIONS ARE BASED ON GEOID 12B. UNITS: U.S. SURVEY FEET
 - ALL PROJECT COORDINATES WERE DERIVED UTILIZING STATIC AND GPS OBSERVATIONS PROCESSED TO CORS STATIONS TXBU, TXTA, TXBS, TXSM, TXJC AND TXAU.
 - A CALIBRATION SHOULD BE PERFORMED WHEN USING THE CONTROL SHOWN HEREON.

FILE: \\D:\01\04\2019\100\SURVEY\02\BASE\CONTROL_SHEET\1066_1067_1068_1069_Control_08-09.dwg

AIRPORT BL

Element: Circular
 Station Northing Easting
 PC 50+00.000 R1 10084931.95 3122803.249
 PI 50+74.812 R1 10084858.22 3122815.941
 CC 10084833.1 3122229.004
 PT 51+48.810 R1 10084783.68 3122809.596
 Radius: 582.691
 Delta: 14°37'56.675" Right
 Degree of Curvature (Arc): 09°49'58.636"
 Length: 148.81
 Tangent: 74.812
 Chord: 148.406
 Middle Ordinate: 4.744
 External: 4.783
 Back Tangent Direction: S09°46'02.439"E
 Back Radial Direction: S80°13'57.561"W
 Chord Direction: S02°27'04.102"E
 Ahead Radial Direction: N85°08'05.764"W
 Ahead Tangent Direction: S04°51'54.236"W
 Element: Linear
 PT 51+48.810 R1 10084783.68 3122809.596
 PI 55+56.888 R1 10084377.07 3122774.987
 Tangential Direction: S04°51'54.236"W
 Tangential Length: 408.078
 Element: Linear
 PI 55+56.888 R1 10084377.07 3122774.987
 PC 59+52.149 R1 10083983.31 3122740.629
 Tangential Direction: S04°59'12.185"W
 Tangential Length: 395.261
 Element: Circular
 PC 59+52.149 R1 10083983.31 3122740.629
 PI 60+87.024 R1 10083848.94 3122728.905
 CC 10084045.18 3122031.478
 PT 62+18.738 R1 10083728.18 3122668.842
 Radius: 711.846
 Delta: 21°27'26.993" Right
 Degree of Curvature (Arc): 08°02'56.055"
 Length: 266.589
 Tangent: 134.875
 Chord: 265.034
 Middle Ordinate: 12.443
 External: 12.665
 Back Tangent Direction: S04°59'12.185"W
 Back Radial Direction: N85°00'47.815"W
 Chord Direction: S15°42'55.681"W
 Ahead Radial Direction: N63°33'20.822"W
 Ahead Tangent Direction: S26°26'39.178"W
 Element: Linear
 PT 62+18.738 R1 10083728.18 3122668.842
 POT 62+64.074 R1 10083687.59 3122648.652
 Tangential Direction: S26°26'39.178"W
 Tangential Length: 45.336

DK- IH35NBFR BL

Element: Linear
 Station Northing Easting
 POT 50+00.000 R1 10078515 3120555.251
 PC 50+29.008 R1 10078540.98 3120568.143
 Tangential Direction: N26°23'17.810"E
 Tangential Length: 29.008
 Element: Circular
 PC 50+29.008 R1 10078540.98 3120568.143
 PI 50+96.596 R1 10078601.53 3120598.183
 CC 10078605.21 3120438.69
 PT 51+55.448 R1 10078663.4 3120570.97
 Radius: 144.512
 Delta: 50°07'50.982" Left
 Degree of Curvature (Arc): 39°38'52.366"
 Length: 126.44
 Tangent: 67.588
 Chord: 122.445
 Middle Ordinate: 13.609
 External: 15.024
 Back Tangent Direction: N26°23'17.810"E
 Back Radial Direction: S63°36'42.190"E
 Chord Direction: N01°19'22.318"E
 Ahead Radial Direction: N66°15'26.827"E
 Ahead Tangent Direction: N23°44'33.173"W
 Element: Linear
 PT 51+55.448 R1 10078663.4 3120570.97
 PC 51+83.225 R1 10078688.82 3120559.787
 Tangential Direction: N23°44'33.173"W
 Tangential Length: 27.776
 Element: Circular
 PC 51+83.225 R1 10078688.82 3120559.787
 PI 52+82.908 R1 10078780.07 3120519.651
 CC 10078166.76 3119372.889
 PT 53+82.200 R1 10078864.11 3120466.041
 Radius: 1296.641
 Delta: 08°47'32.241" Left
 Degree of Curvature (Arc): 04°25'07.630"
 Length: 198.975
 Tangent: 99.683
 Chord: 198.78
 Middle Ordinate: 3.815
 External: 3.826
 Back Tangent Direction: N23°44'33.173"W
 Back Radial Direction: N66°15'26.827"E
 Chord Direction: N28°08'19.293"W
 Ahead Radial Direction: N57°27'54.586"E
 Ahead Tangent Direction: N32°32'05.414"W
 Element: Linear
 PT 53+82.200 R1 10078864.11 3120466.041
 PC 54+78.536 R1 10078945.33 3120414.23
 Tangential Direction: N32°32'05.414"W
 Tangential Length: 96.336
 Element: Circular
 PC 54+78.536 R1 10078945.33 3120414.23
 PI 55+20.936 R1 10078981.07 3120391.427
 CC 10079013.07 3120520.428
 PT 55+60.335 R1 10079023.33 3120394.88
 Radius: 125.966
 Delta: 37°12'21.956" Right
 Degree of Curvature (Arc): 45°29'05.917"
 Length: 81.799
 Tangent: 42.4
 Chord: 80.369
 Middle Ordinate: 6.582
 External: 6.944
 Back Tangent Direction: N32°32'05.414"W
 Back Radial Direction: N57°27'54.586"E
 Chord Direction: N13°55'54.436"W
 Ahead Radial Direction: S85°19'43.459"E
 Ahead Tangent Direction: N04°40'16.541"E

IH35NBFR-DK BL

Element: Linear
 Station Northing Easting
 POT 50+00.000 R1 10078520.94 3120546.352
 PC 50+27.077 R1 10078545.23 3120558.312
 Tangential Direction: N26°12'40.558"E
 Tangential Length: 27.077
 Element: Circular
 PC 50+27.077 R1 10078545.23 3120558.312
 PI 50+91.392 R1 10078602.93 3120586.718
 CC 10078605.5 3120435.888
 PT 51+47.279 R1 10078661.57 3120560.293
 Radius: 136.455
 Delta: 50°28'16.755" Left
 Degree of Curvature (Arc): 41°59'19.694"
 Length: 120.202
 Tangent: 64.315
 Chord: 116.353
 Middle Ordinate: 13.023
 External: 14.397
 Back Tangent Direction: N26°12'40.558"E
 Back Radial Direction: S63°47'19.442"E
 Chord Direction: N00°58'32.181"E
 Ahead Radial Direction: N65°44'23.803"E
 Ahead Tangent Direction: N24°15'36.197"W
 Element: Linear
 PT 51+47.279 R1 10078661.57 3120560.293
 PC 51+94.855 R1 10078704.94 3120540.745
 Tangential Direction: N24°15'36.197"W
 Tangential Length: 47.576
 Element: Circular
 PC 51+94.855 R1 10078704.94 3120540.745
 PI 52+35.994 R1 10078742.45 3120523.842
 CC 10078331.01 3119711.037
 PT 52+77.077 R1 10078778.27 3120503.623
 Radius: 910.077
 Delta: 05°10'35.261" Left
 Degree of Curvature (Arc): 06°17'44.542"
 Length: 82.222
 Tangent: 41.139
 Chord: 82.194
 Middle Ordinate: 0.928
 External: 0.929
 Back Tangent Direction: N24°15'36.197"W
 Back Radial Direction: N65°44'23.803"E
 Chord Direction: N26°50'53.827"W
 Ahead Radial Direction: N60°33'48.543"E
 Ahead Tangent Direction: N29°26'11.457"W
 Element: Linear
 PT 52+77.077 R1 10078778.27 3120503.623
 PC 52+78.907 R1 10078779.87 3120502.724
 Tangential Direction: N29°26'11.457"W
 Tangential Length: 1.83
 Element: Circular
 PC 52+78.907 R1 10078779.87 3120502.724
 PI 53+38.544 R1 10078831.81 3120473.415
 CC 10078722.41 3120400.9
 PCC 53+89.201 R1 10078838.57 3120414.164
 Radius: 116.918
 Delta: 54°02'59.018" Left
 Degree of Curvature (Arc): 49°00'18.235"
 Length: 110.294
 Tangent: 59.637
 Chord: 106.25
 Middle Ordinate: 12.766
 External: 14.331
 Back Tangent Direction: N29°26'11.457"W
 Back Radial Direction: N60°33'48.543"E
 Chord Direction: N56°27'40.966"W
 Ahead Radial Direction: N06°30'49.525"E
 Ahead Tangent Direction: N83°29'10.475"W
 Element: Circular
 PCC 53+89.201 R1 10078838.57 3120414.164
 PI 54+55.111 R1 10078846.05 3120348.679
 CC 10078664.42 3120394.279
 PT 55+15.288 R1 10078808.52 3120294.492
 Radius: 175.281
 Delta: 41°12'54.145" Left
 Degree of Curvature (Arc): 32°41'16.404"
 Length: 126.087
 Tangent: 65.91
 Chord: 123.386
 Middle Ordinate: 11.216
 External: 11.982
 Back Tangent Direction: N83°29'10.475"W
 Back Radial Direction: N06°30'49.525"E
 Chord Direction: S75°54'22.452"W
 Ahead Radial Direction: N34°42'04.621"W
 Ahead Tangent Direction: S55°17'55.379"W

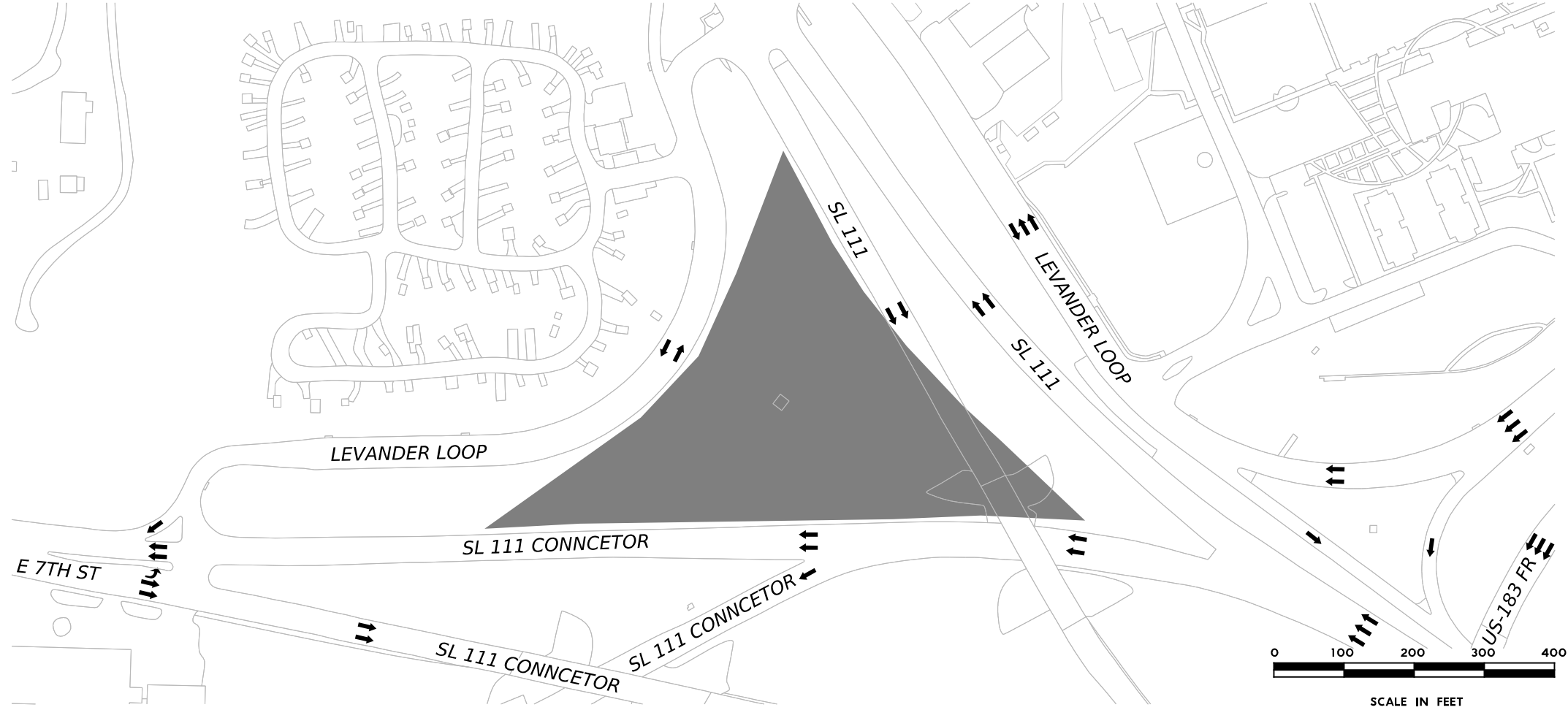
BRUSHY BL

Element: Linear
 Station Northing Easting
 POT 50+00.000 R1 10069300.3 3117099.415
 PC 50+63.575 R1 10069324.32 3117040.554
 Tangential Direction: N67°47'40.895"W
 Tangential Length: 63.575
 Element: Circular
 PC 50+63.575 R1 10069324.32 3117040.554
 PI 50+94.790 R1 10069336.12 3117011.654
 CC 10069353.95 3117052.648
 PT 51+13.046 R1 10069365.3 3117022.73
 Radius: 32
 Delta: 88°34'36.845" Right
 Degree of Curvature (Arc): 179°02'57.520"
 Length: 49.471
 Tangent: 31.215
 Chord: 44.689
 Middle Ordinate: 9.093
 External: 12.703
 Back Tangent Direction: N67°47'40.895"W
 Back Radial Direction: N22°12'19.105"E
 Chord Direction: N23°30'22.473"W
 Ahead Radial Direction: S69°13'04.050"E
 Ahead Tangent Direction: N20°46'55.950"E
 Element: Linear
 PT 51+13.046 R1 10069365.3 3117022.73
 PC 51+23.059 R1 10069374.67 3117026.283
 Tangential Direction: N20°46'55.950"E
 Tangential Length: 10.013
 Element: Circular
 PC 51+23.059 R1 10069374.67 3117026.283
 PI 51+62.632 R1 10069411.66 3117040.324
 CC 10071717.26 3110853.572
 PT 52+02.204 R1 10069448.83 3117053.92
 Radius: 6602.282
 Delta: 00°41'12.605" Left
 Degree of Curvature (Arc): 00°52'04.144"
 Length: 79.145
 Tangent: 39.573
 Chord: 79.145
 Middle Ordinate: 0.119
 External: 0.119
 Back Tangent Direction: N20°46'55.950"E
 Back Radial Direction: S69°13'04.050"E
 Chord Direction: N20°26'19.647"E
 Ahead Radial Direction: S69°54'16.655"E
 Ahead Tangent Direction: N20°05'43.345"E
 Element: Linear
 PT 52+02.204 R1 10069448.83 3117053.92
 POT 53+16.533 R1 10069556.07 3117093.55
 Tangential Direction: N20°16'52.452"E
 Tangential Length: 114.329

11TH-ST BL

Element: Linear
 Station Northing Easting
 POT 50+00.000 R1 10072910.46 3117381.368
 PI 54+80.504 R1 10072775.19 3117842.439
 Tangential Direction: S73°38'59.023"E
 Tangential Length: 480.504
 Element: Linear
 PI 54+80.504 R1 10072775.19 3117842.439
 PC 55+49.816 R1 10072758.05 3117909.598
 Tangential Direction: S75°40'58.672"E
 Tangential Length: 69.312
 Element: Circular
 PC 55+49.816 R1 10072758.05 3117909.598
 PI 56+63.072 R1 10072730.05 3118019.338
 CC 10070848.87 3117422.35
 PT 57+76.080 R1 10072689.65 3118125.145
 Radius: 1970.377
 Delta: 06°34'45.983" Right
 Degree of Curvature (Arc): 02°54'28.289"
 Length: 226.264
 Tangent: 113.257
 Chord: 226.14
 Middle Ordinate: 3.247
 External: 3.252
 Back Tangent Direction: S75°40'58.672"E
 Back Radial Direction: S14°19'01.328"W
 Chord Direction: S72°23'35.681"E
 Ahead Radial Direction: S20°53'47.311"W
 Ahead Tangent Direction: S69°06'12.689"E
 Element: Linear
 PT 57+76.080 R1 10072689.65 3118125.145
 POT 57+82.194 R1 10072687.47 3118130.857
 Tangential Direction: S69°06'12.689"E
 Tangential Length: 6.115

NO.	DATE	REVISION	APPR BY
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HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681			
<p>CAPITAL EXPRESS CENTRAL</p> <p>ROADWAY</p> <p>HORIZONTAL ALIGNMENTS</p>			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		52



LEGEND

	PROPERTY LINE
	EXISTING ROW
	POSSIBLE STAGING AREAS
	TRAVEL LANE

NOTES:

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HDR HDR Engineering, Inc.
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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

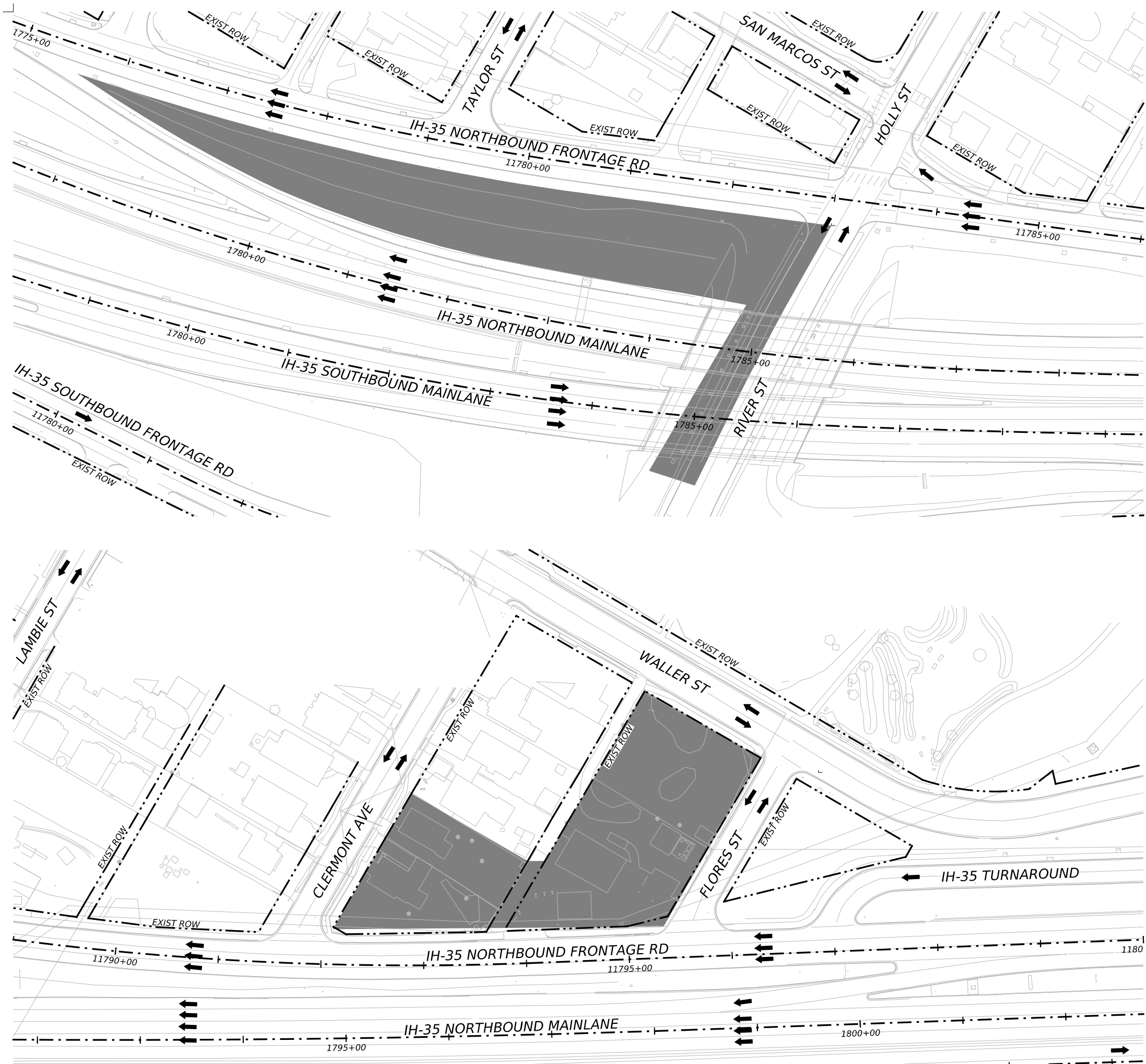
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

POSSIBLE STAGING AREAS
 HANCOCK CENTER & US-183

SHEET 1 OF 1

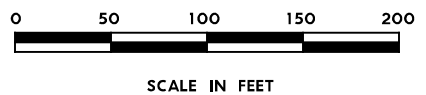
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	53	



LEGEND

	PROPERTY LINE
	EXISTING ROW
	POSSIBLE STAGING AREAS
	TRAVEL LANE

NOTES:



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 P.E. Serial No. 89252
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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

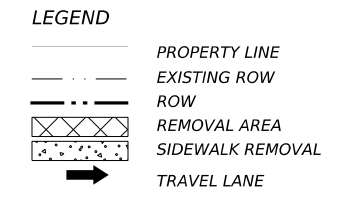
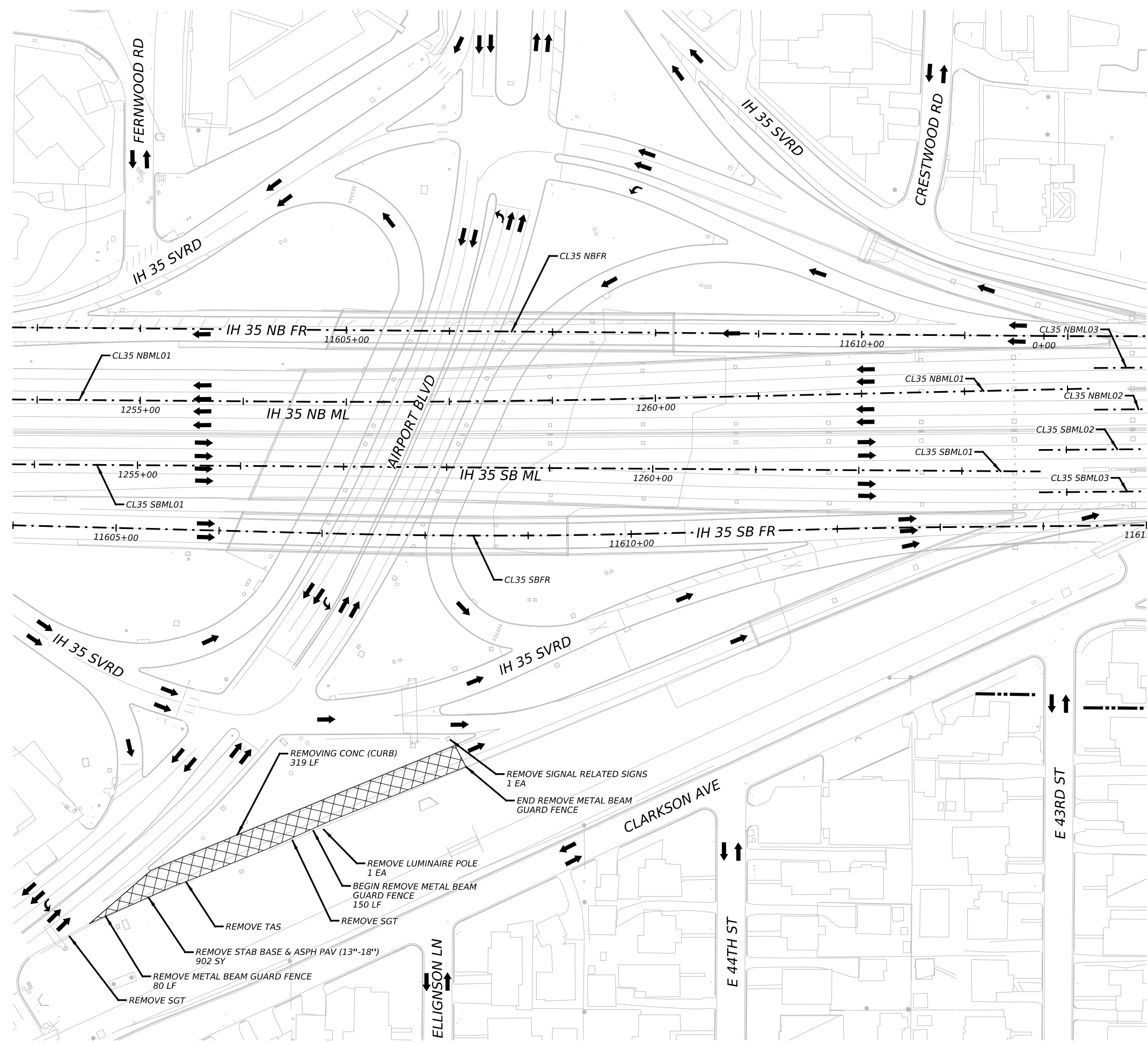


Texas Department of Transportation

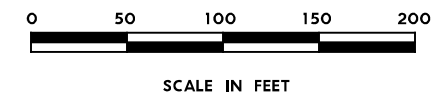
CAPITAL EXPRESS CENTRAL
POSSIBLE STAGING AREAS
RIVER ST & FLORES ST

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	54	



NOTES:
 1. REMOVING FLAG POLE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE 100-6001 (PREPARING ROW) ITEM



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HDR HDR Engineering, Inc.
 Firm Registration No. F-754
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 Round Rock, Texas 78681

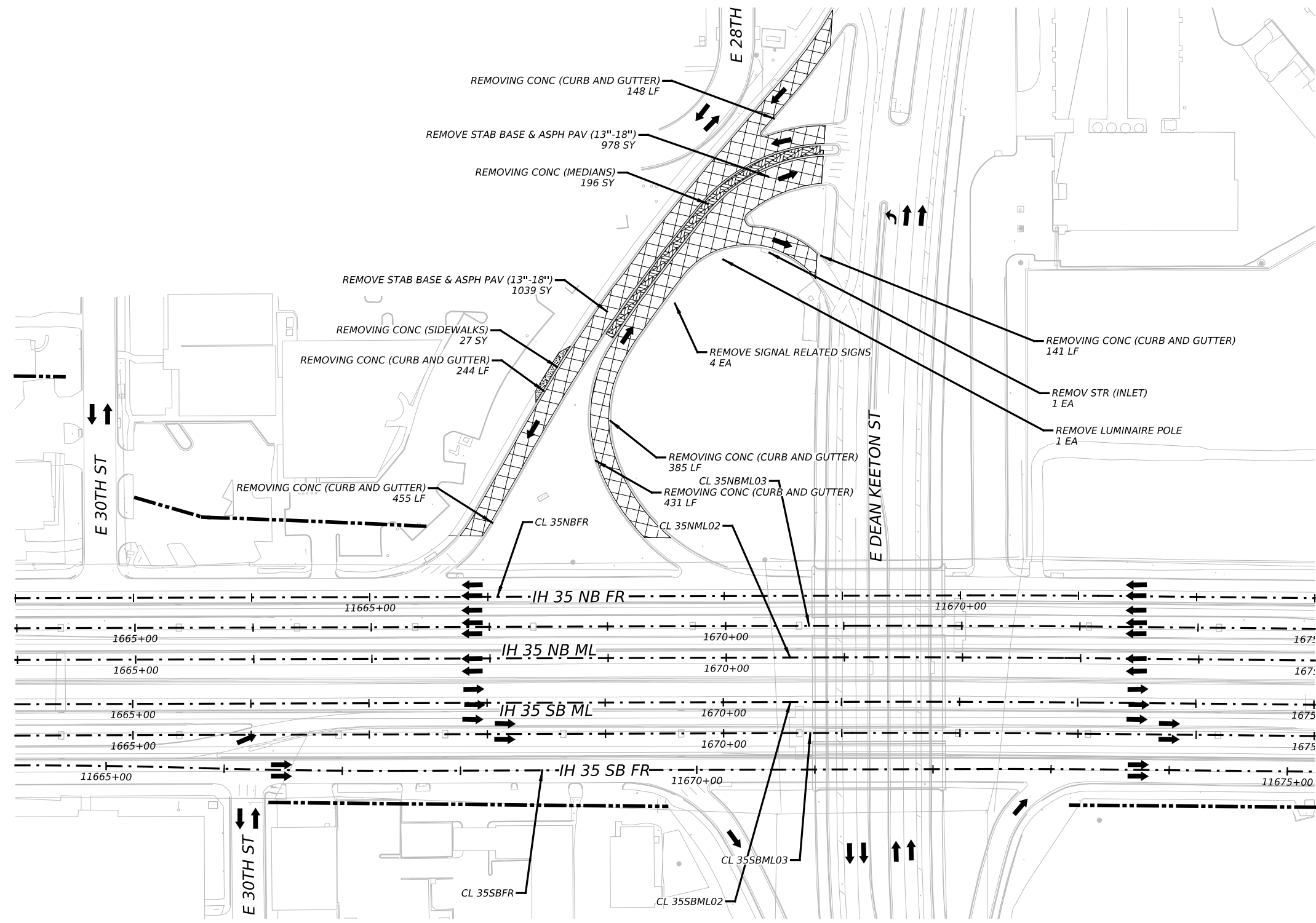
mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
REMOVAL PLAN
AIRPORT BOULEVARD

SCALE: 1"=100' SHEET 1 OF 1

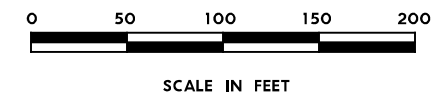
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	55	



LEGEND

	PROPERTY LINE
	EXISTING ROW
	ROW
	REMOVAL AREA
	SIDEWALK REMOVAL
	TRAVEL LANE

NOTES:
 1. REMOVING FLAG POLE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE 100-6001 (PREPARING ROW) ITEM



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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 REMOVAL PLAN
 DEAN KEETON ST

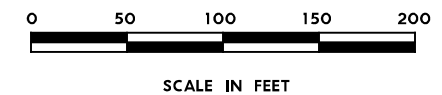
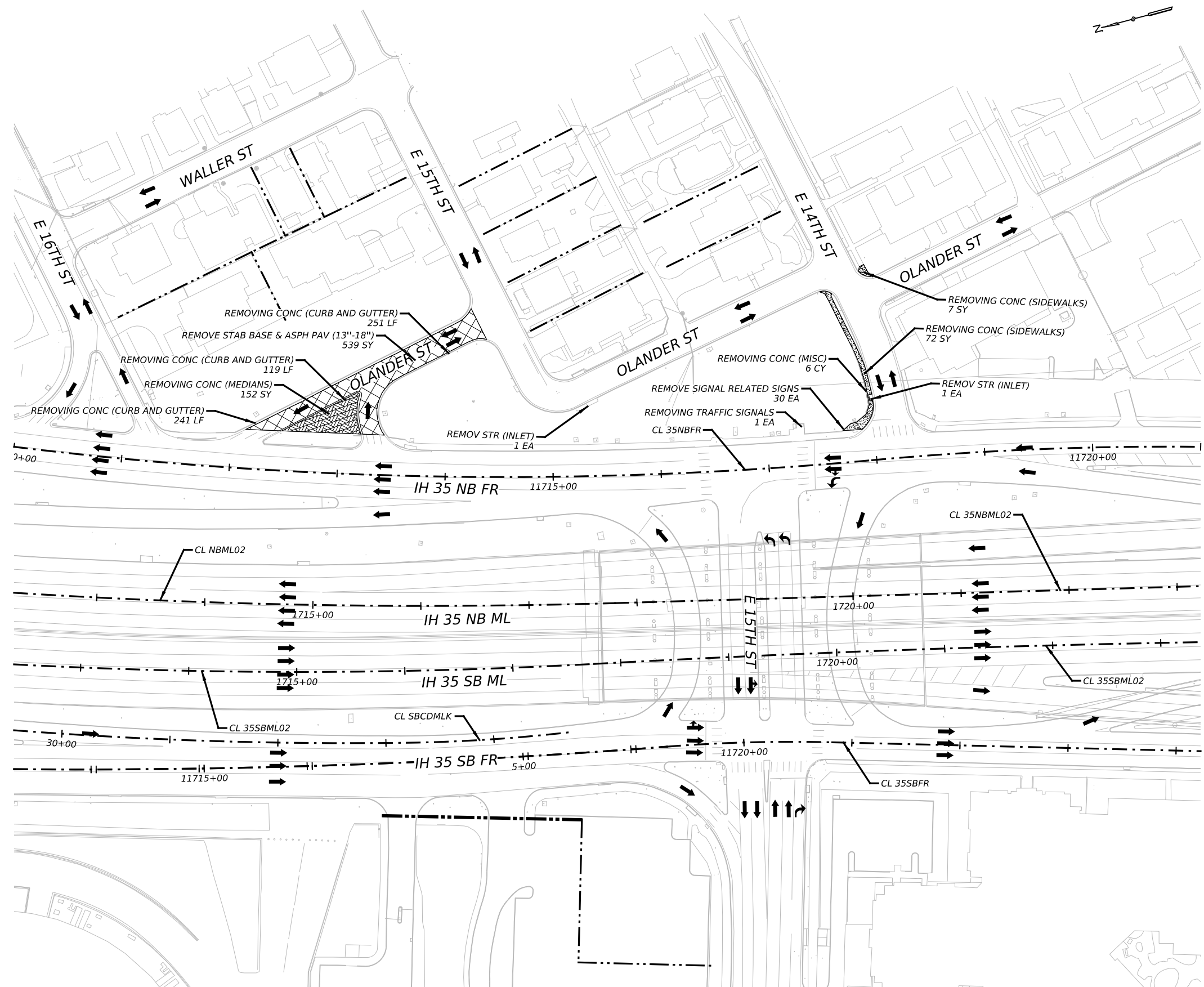
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	56	

LEGEND

	PROPERTY LINE
	EXISTING ROW
	ROW
	REMOVAL AREA
	SIDEWALK REMOVAL
	TRAVEL LANE

NOTES:
 1. REMOVING FLAG POLE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE 100-6001 (PREPARING ROW) ITEM



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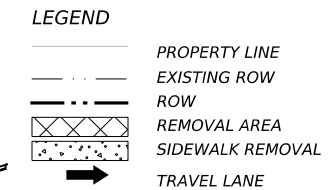
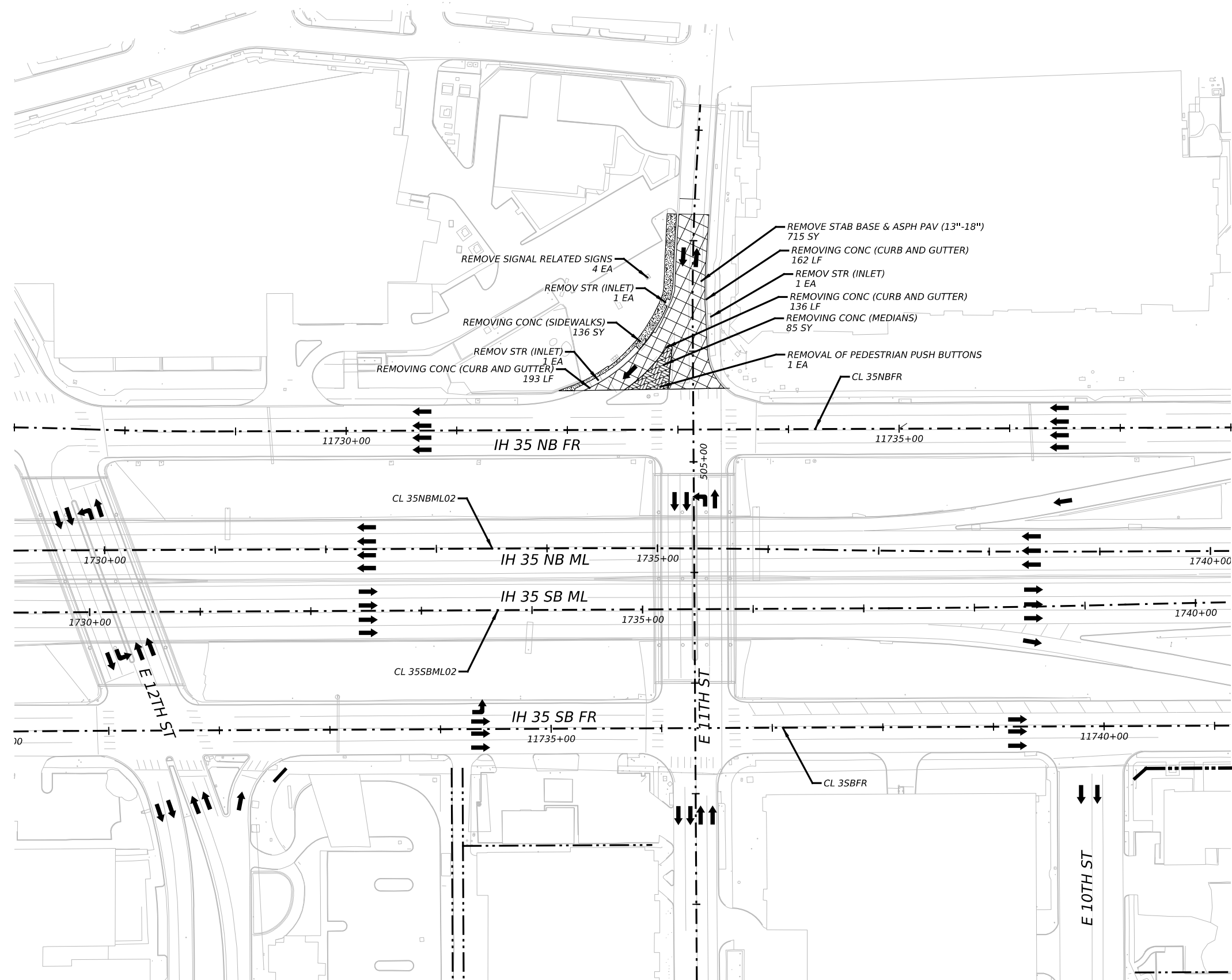


Texas Department of Transportation

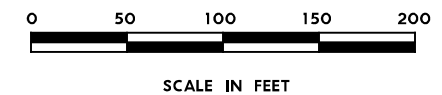
CAPITAL EXPRESS CENTRAL
REMOVAL PLAN
EAST 15TH STREET

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	57	



NOTES:
 1. REMOVING FLAG POLE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE 100-6001 (PREPARING ROW) ITEM



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 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

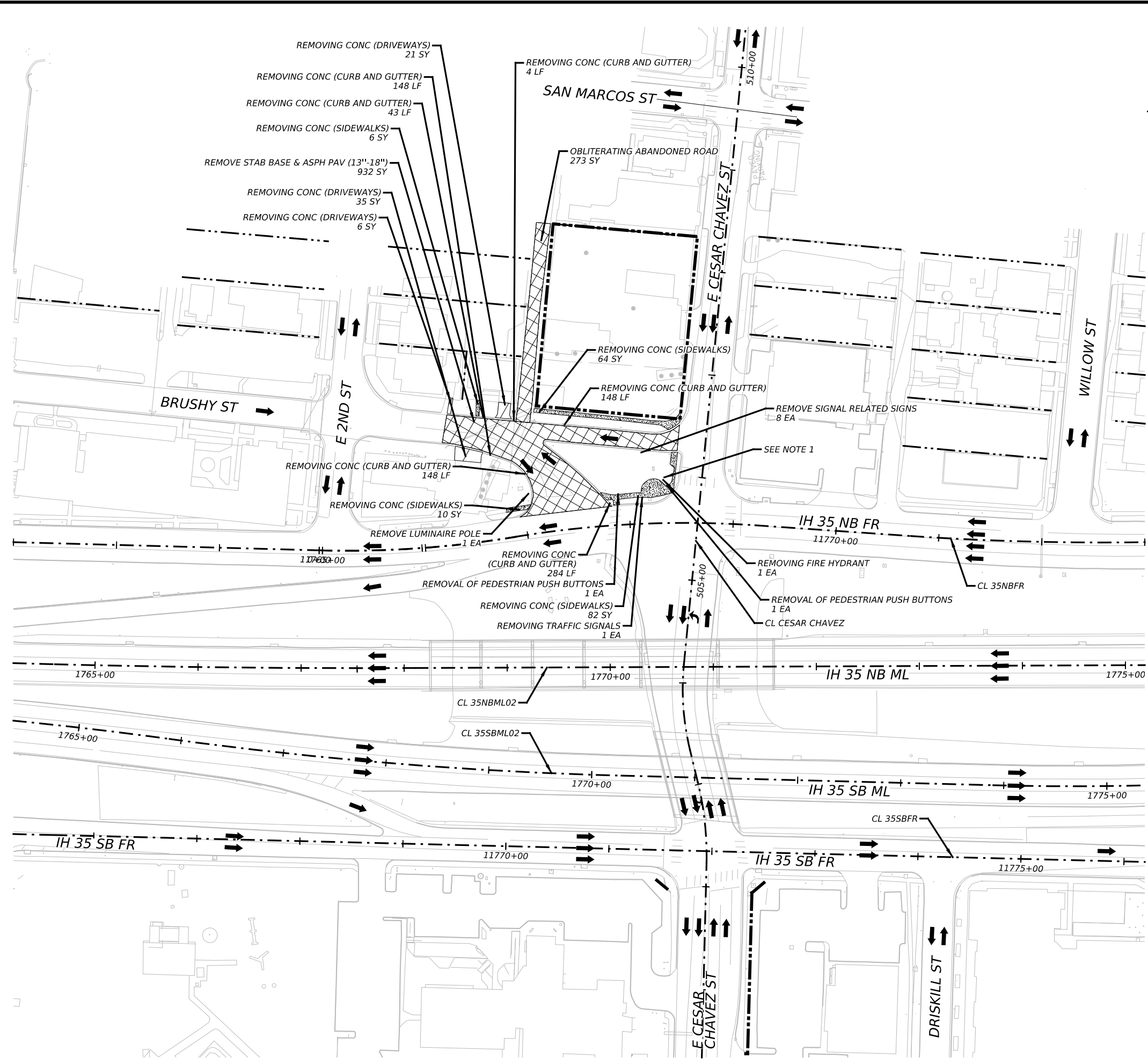
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

REMOVAL PLAN
EAST 11TH STREET

SCALE: 1"=100' SHEET 1 OF 1

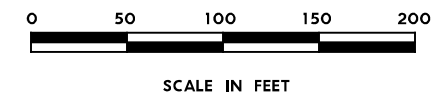
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	58	



LEGEND

- PROPERTY LINE
- EXISTING ROW
- ROW
- REMOVAL AREA
- SIDEWALK REMOVAL
- TRAVEL LANE

NOTES:
 1. REMOVING FLAG POLE WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE 100-6001 (PREPARING ROW) ITEM



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 Firm Registration No. F-754
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 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

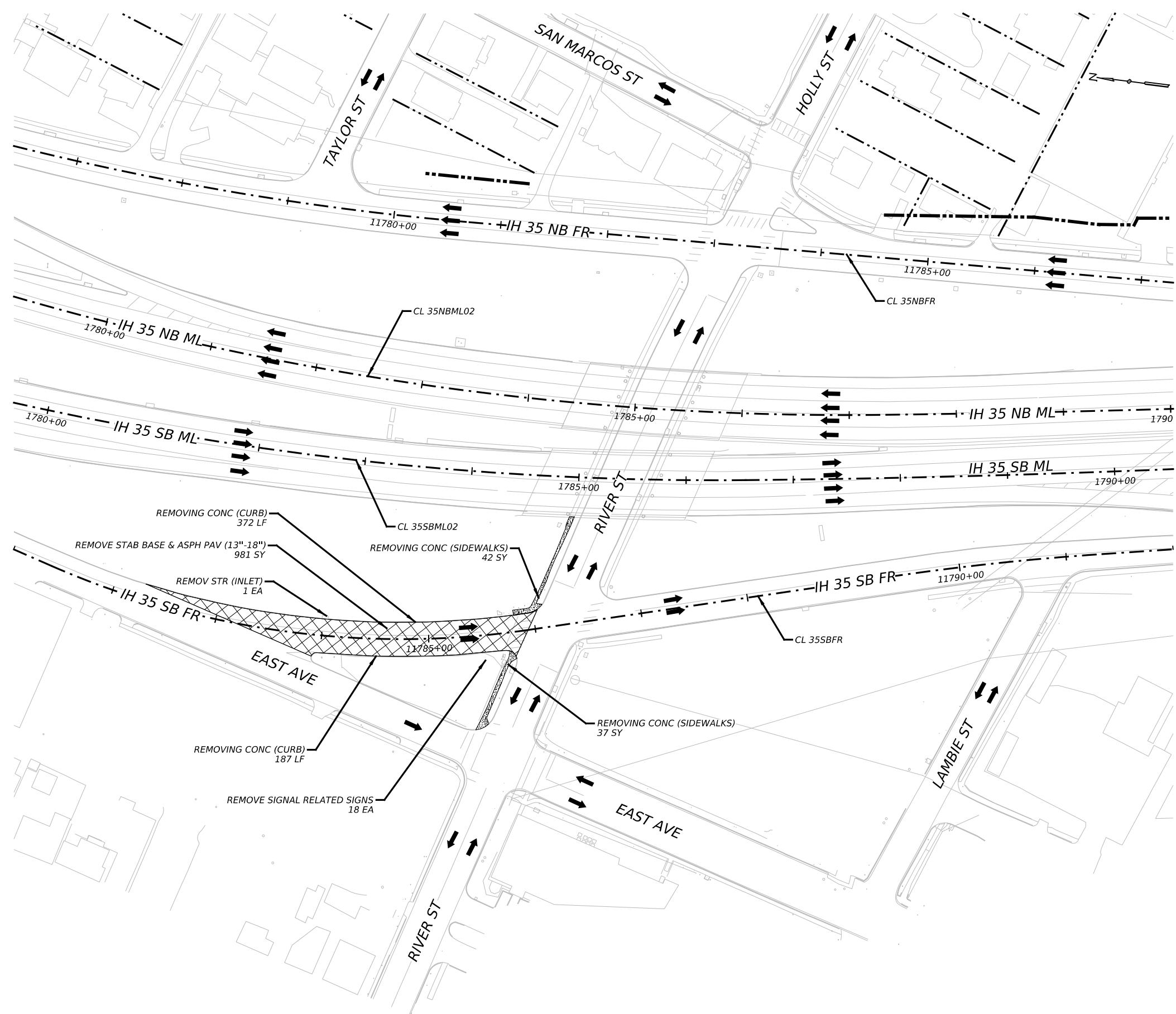
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

**REMOVAL PLAN
 BRUSHY STREET**

SCALE: 1"=100' SHEET 1 OF 1

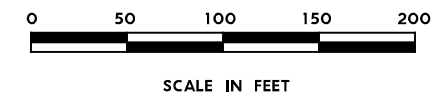
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	59	



LEGEND

	PROPERTY LINE
	EXISTING ROW
	ROW
	REMOVAL AREA
	SIDEWALK REMOVAL
	TRAVEL LANE

NOTES:
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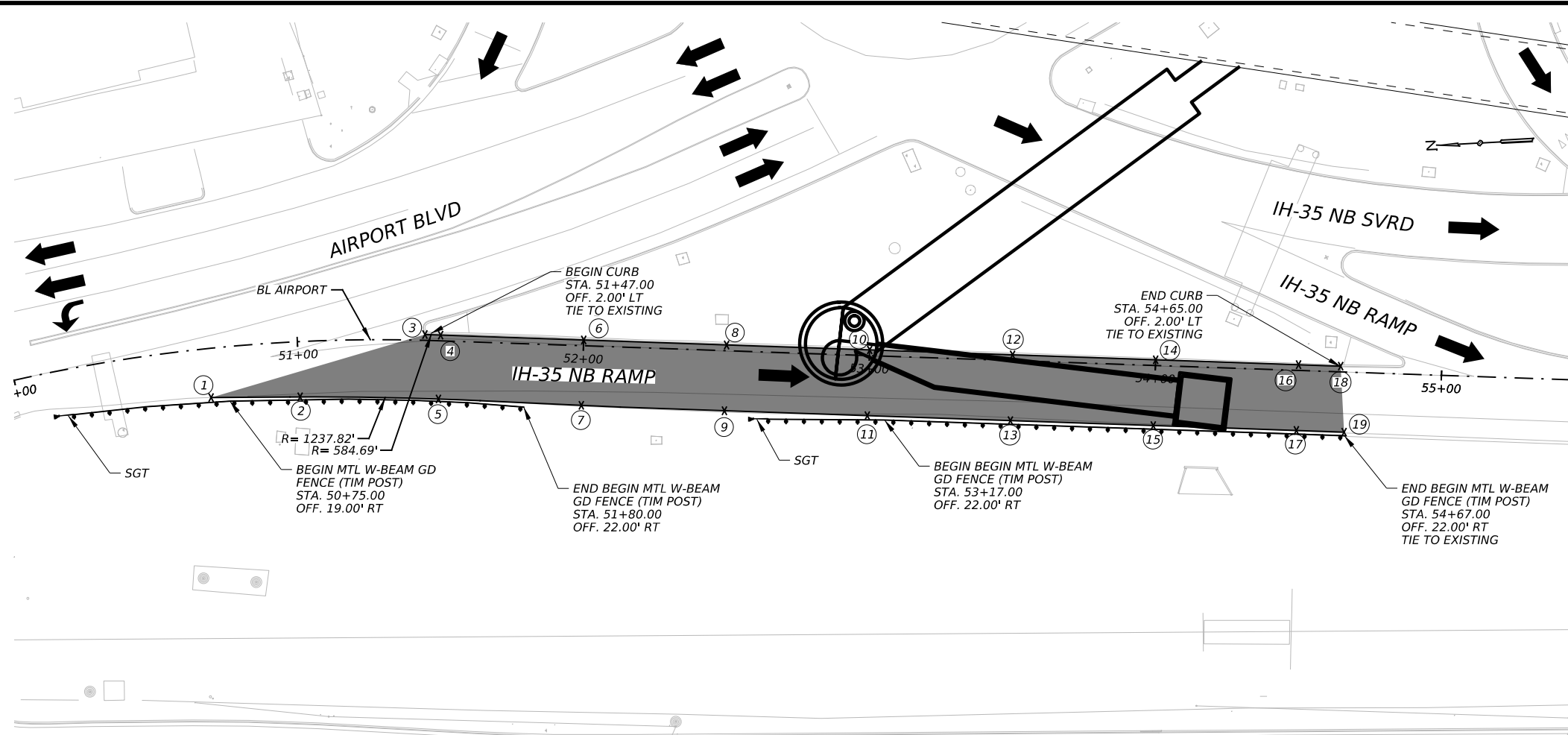


Texas Department of Transportation

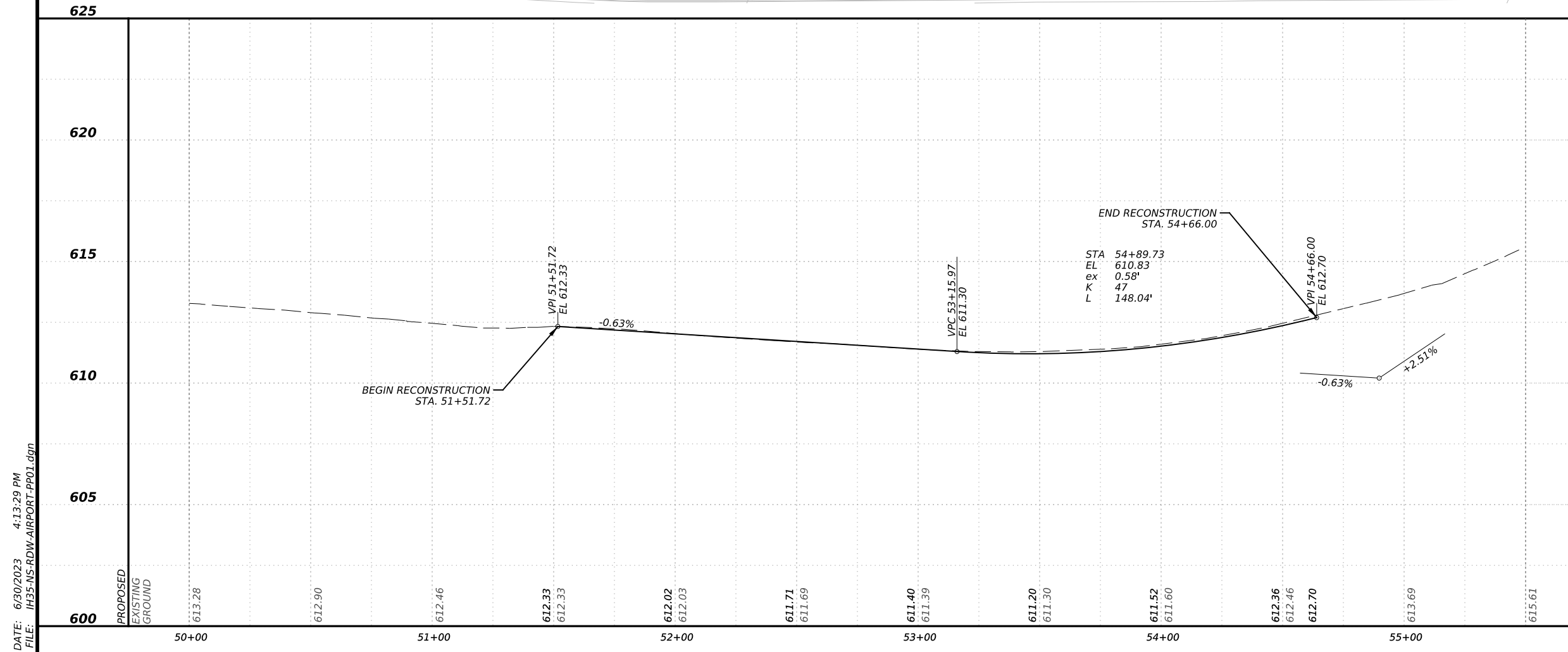
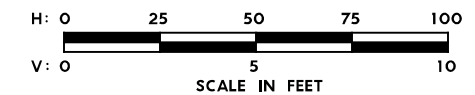
CAPITAL EXPRESS CENTRAL
 REMOVAL PLAN
 RIVER STREET

SCALE: 1"=100' SHEET 1 OF 1

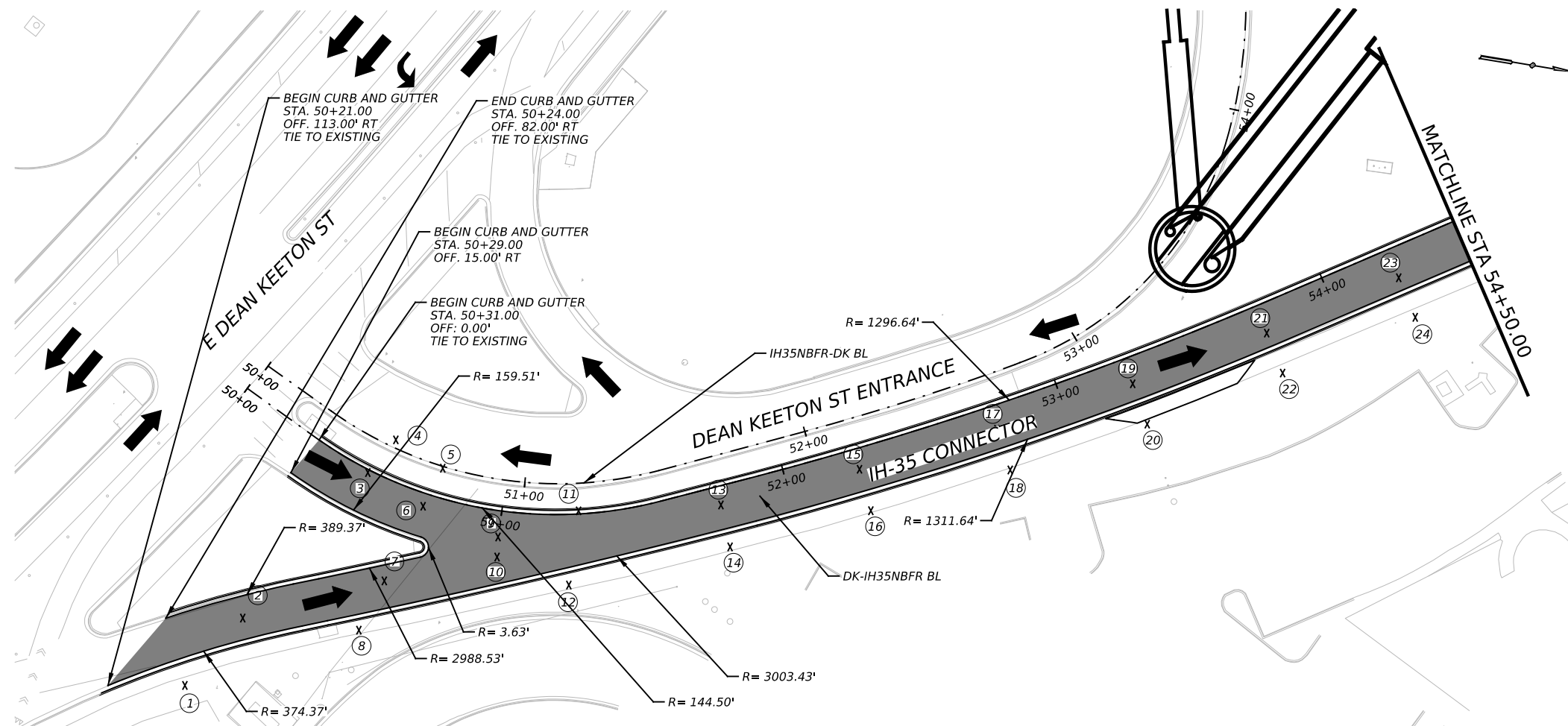
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	60	



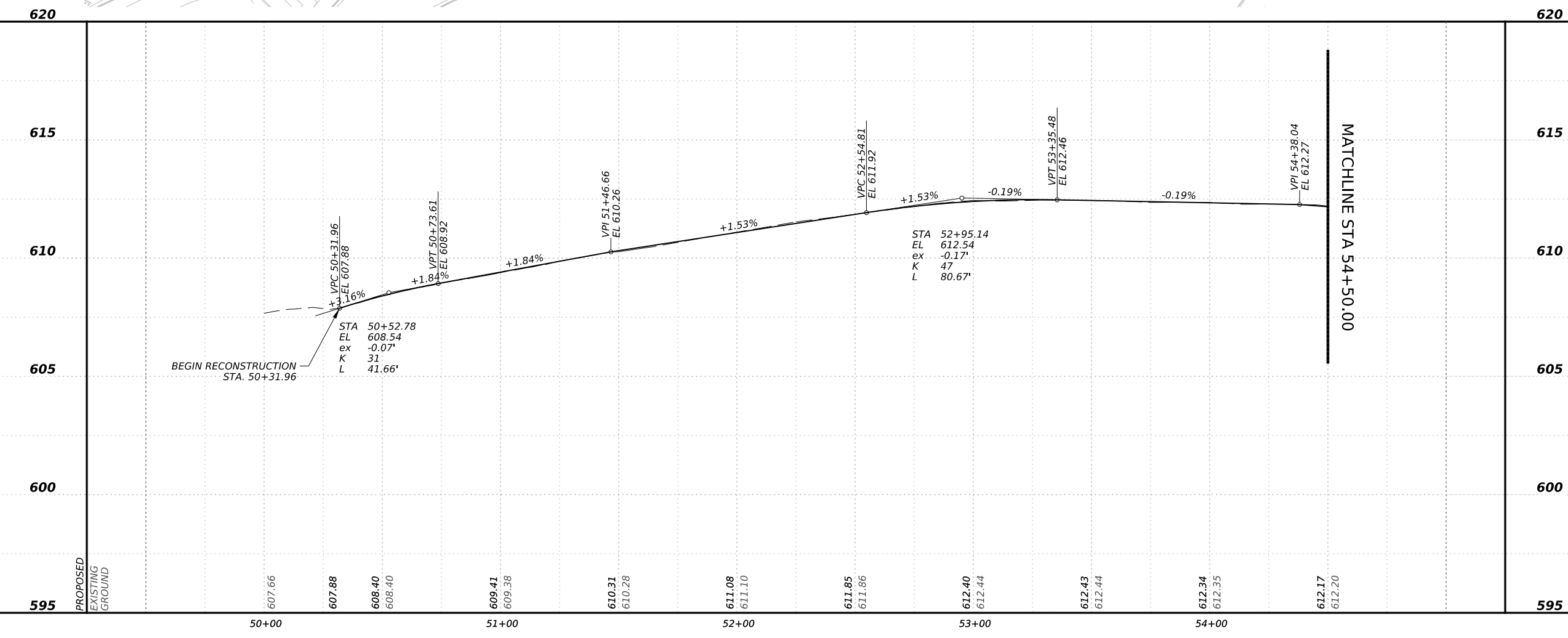
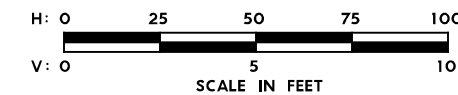
POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
1	AIRPORT_BL	50+67.96	17.12' RT	612.74
2	AIRPORT_BL	51+00.00	19.29' RT	612.46
3	AIRPORT_BL	51+44.51	2.00' LT	612.34
4	AIRPORT_BL	51+50.00	2.00' LT	612.67
5	AIRPORT_BL	51+50.00	20.33' RT	611.92
6	AIRPORT_BL	52+00.00	2.00' LT	612.12
7	AIRPORT_BL	52+00.00	20.84' RT	611.48
8	AIRPORT_BL	52+50.00	2.00' LT	611.77
9	AIRPORT_BL	52+50.00	21.00' RT	611.08
10	AIRPORT_BL	53+00.00	2.00' LT	611.47
11	AIRPORT_BL	53+00.00	21.00' RT	610.87
12	AIRPORT_BL	53+50.00	2.00' LT	611.40
13	AIRPORT_BL	53+50.00	21.00' RT	610.77
14	AIRPORT_BL	54+00.00	2.00' LT	611.86
15	AIRPORT_BL	54+00.00	21.00' RT	611.09
16	AIRPORT_BL	54+50.00	2.00' LT	612.89
17	AIRPORT_BL	54+50.00	21.00' RT	611.79
18	AIRPORT_BL	54+64.70	2.00' LT	613.28
19	AIRPORT_BL	54+66.70	21.00' RT	612.14



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 HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681			
 CAPITAL AREA			
 Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL AIRPORT BOULEVARD ROADWAY RECONSTRUCTION PLAN & PROFILE			
SCALE: 1"=50'-H		SHEET 1 OF 1	
1"=5'-V			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	61	

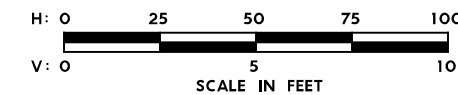
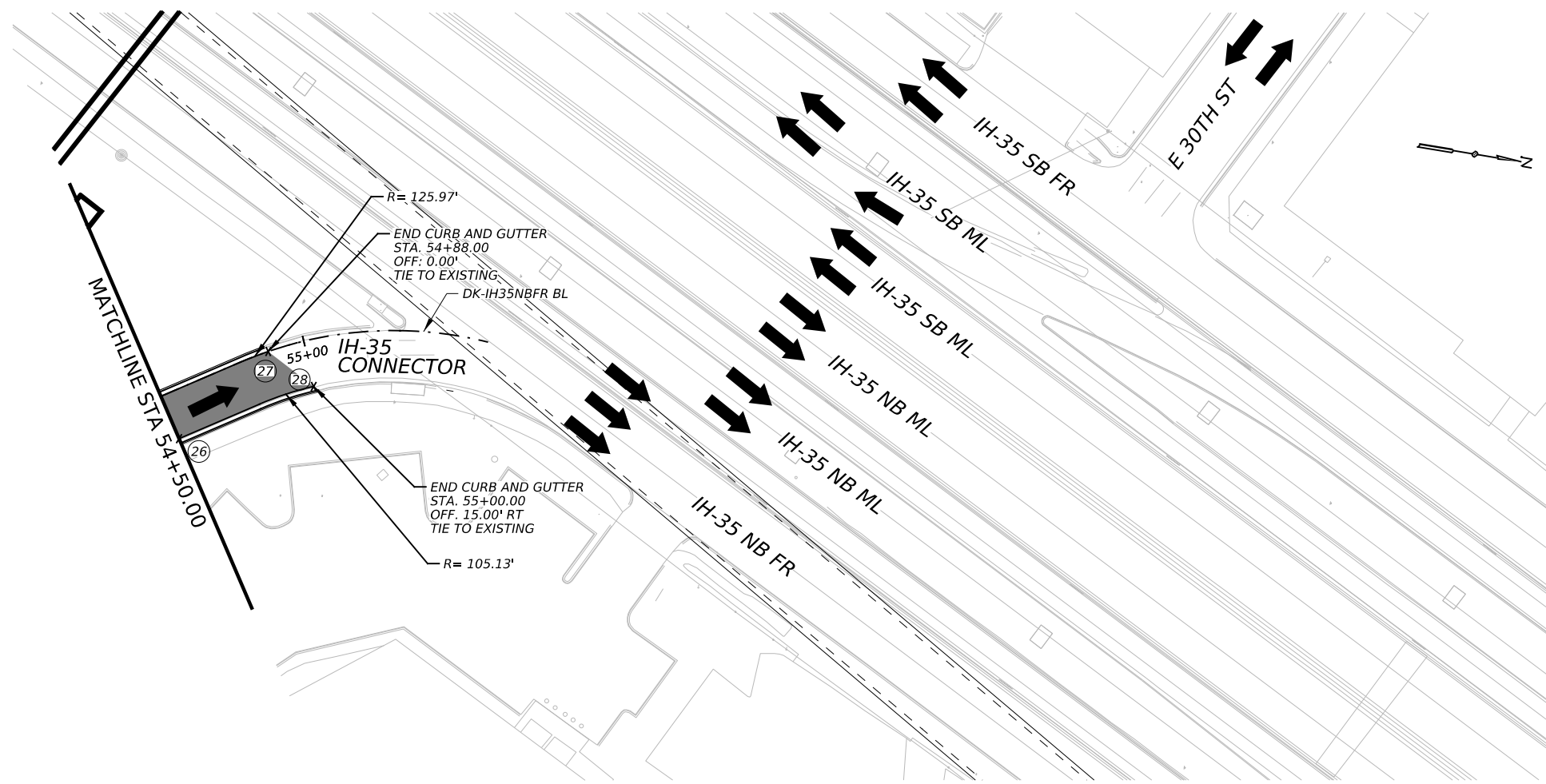


POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
①	CL BL-14	50+21.05	112.71' RT	610.00
②	CL BL-14	50+23.73	81.80' RT	609.96
③	CL BL-14	50+29.49	15.00' RT	608.65
④	CL BL-14	50+30.85	0.00'	607.88
⑤	CL BL-14	50+50.00	0.00'	608.41
⑥	CL BL-14	50+50.00	15.00' RT	609.01
⑦	CL BL-14	50+50.00	44.36' RT	609.71
⑧	CL BL-14	50+50.00	63.75' RT	609.49
⑨	CL BL-14	50+75.66	15.00' RT	609.47
⑩	CL BL-14	50+77.21	21.79' RT	609.80
⑪	CL BL-14	51+00.00	0.00'	609.39
⑫	CL BL-14	51+00.00	26.14' RT	609.91
⑬	CL BL-14	51+50.00	0.00'	610.28
⑭	CL BL-14	51+50.00	14.97' RT	610.71
⑮	CL BL-14	52+00.00	0.00'	611.10
⑯	CL BL-14	52+00.00	15.00' RT	611.44
⑰	CL BL-14	52+50.00	0.00'	611.86
⑱	CL BL-14	52+50.00	15.00' RT	612.30
⑲	CL BL-14	53+00.00	0.00'	612.44
⑳	CL BL-14	53+00.00	15.00' RT	612.69
㉑	CL BL-14	53+50.00	0.00'	612.44
㉒	CL BL-14	53+50.00	15.00' RT	612.71
㉓	CL BL-14	54+00.00	0.00'	612.35
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㉕	CL BL-14	54+50.00	0.00'	612.20



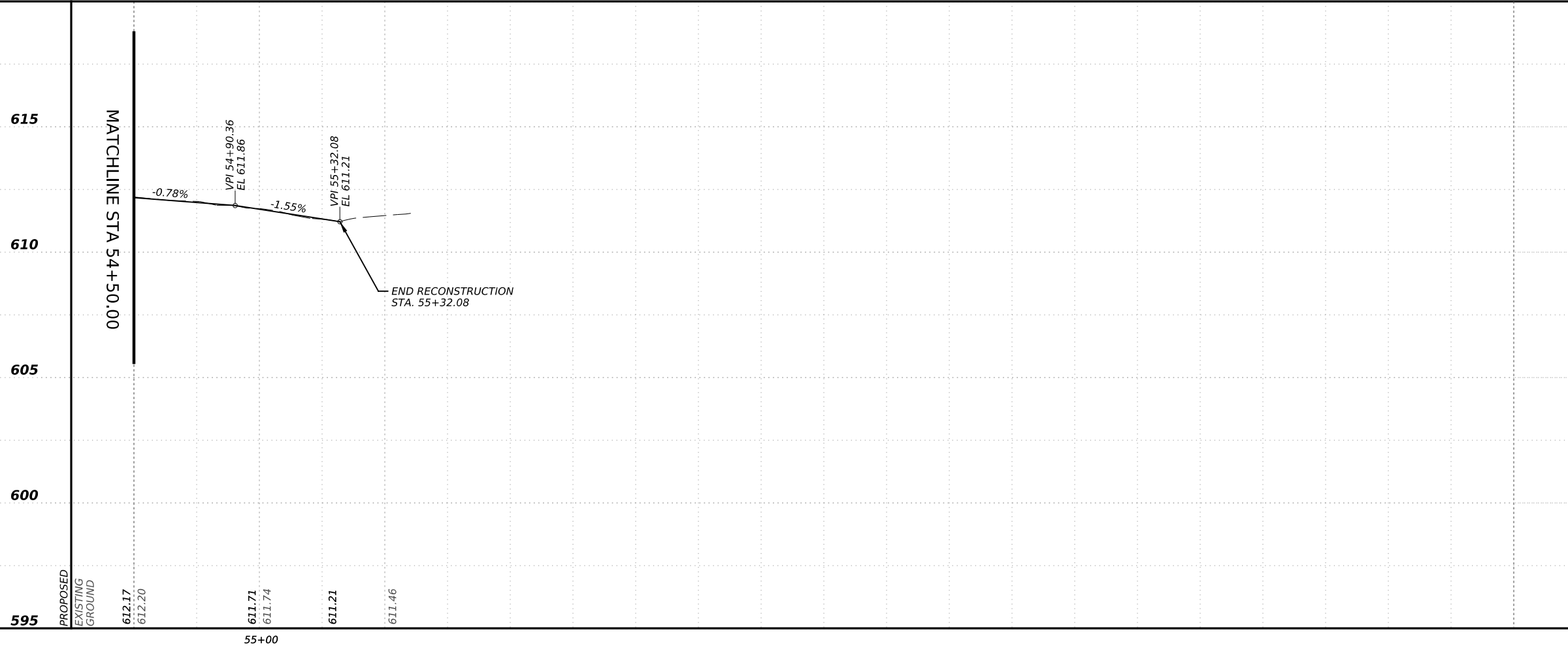
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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>DEAN KEETON ST EXIT ROADWAY RECONSTRUCTION PLAN & PROFILE BEGIN TO STA 54+50</p>			
<p>SCALE: 1"=50'-H 1"=5'-V</p> <p>SHEET 1 OF 2</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	62	

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
26	CL BL-14	54+50.00	15.00' RT	611.99
27	CL BL-14	54+87.90	0.00'	611.74
28	CL BL-14	54+99.61	15.12' RT	611.43

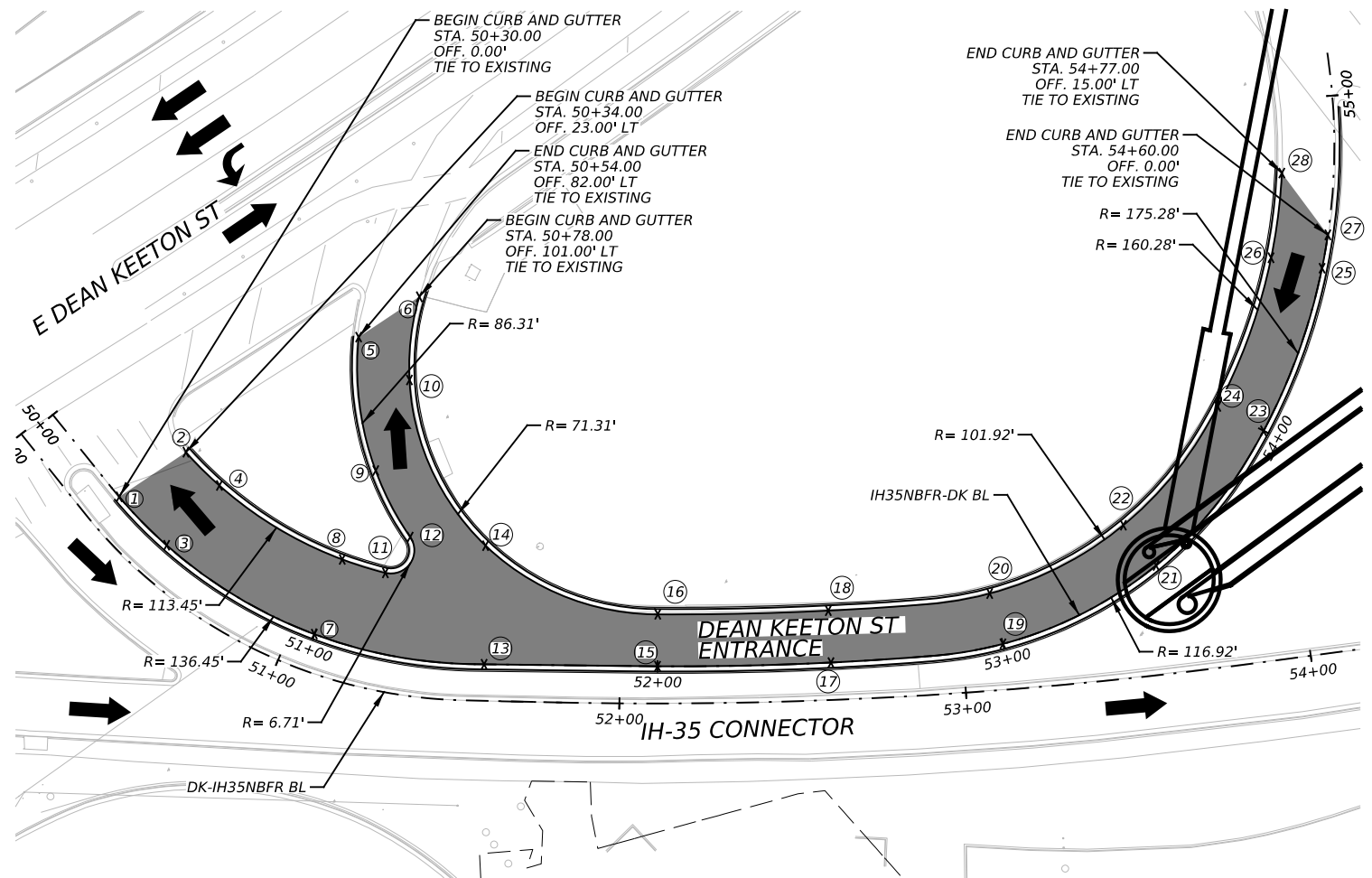


620

620



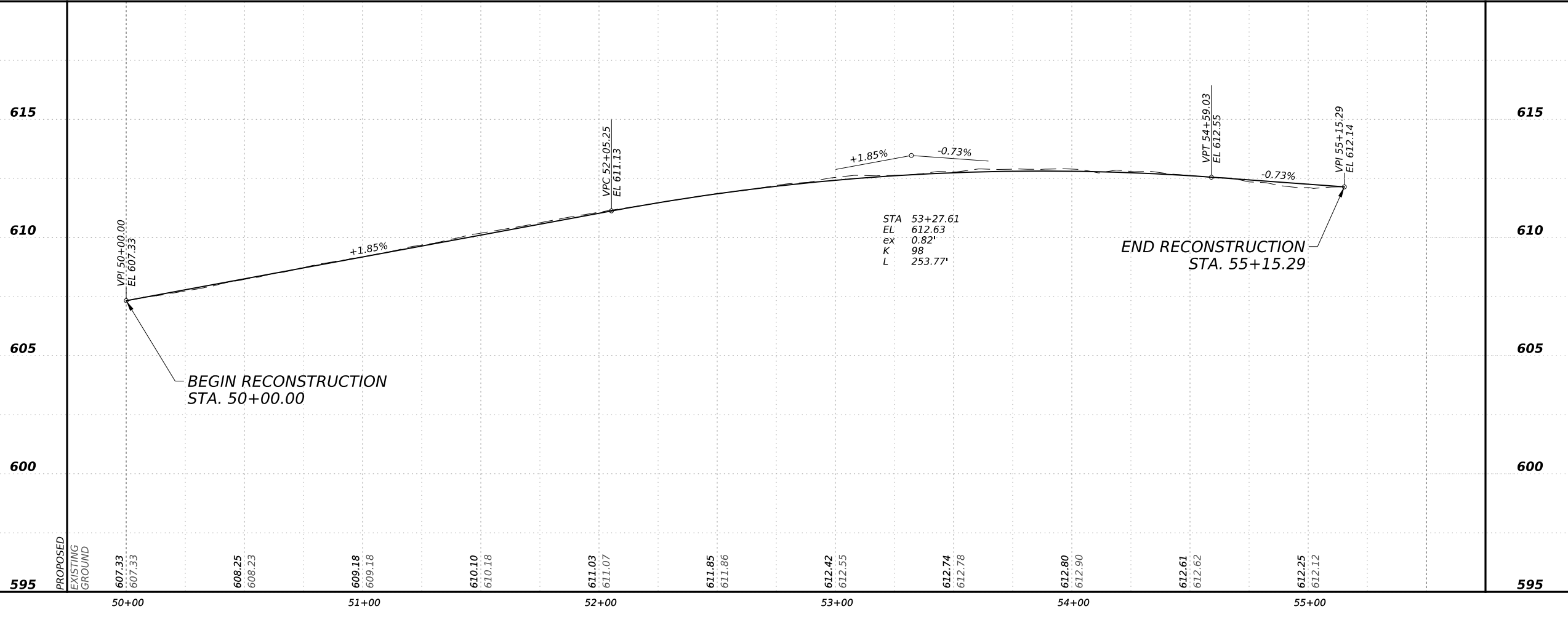
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<p>HDR HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>mobility CAPITAL AREA 35</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p>			
<p>DEAN KEETON ST EXIT ROADWAY RECONSTRUCTION PLAN & PROFILE STA 54+50 TO END</p>			
<p>SCALE: 1"=50'-H 1"=5'-V</p>			
CONT		SECT	JOB
0015		13	433, ETC.
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	63






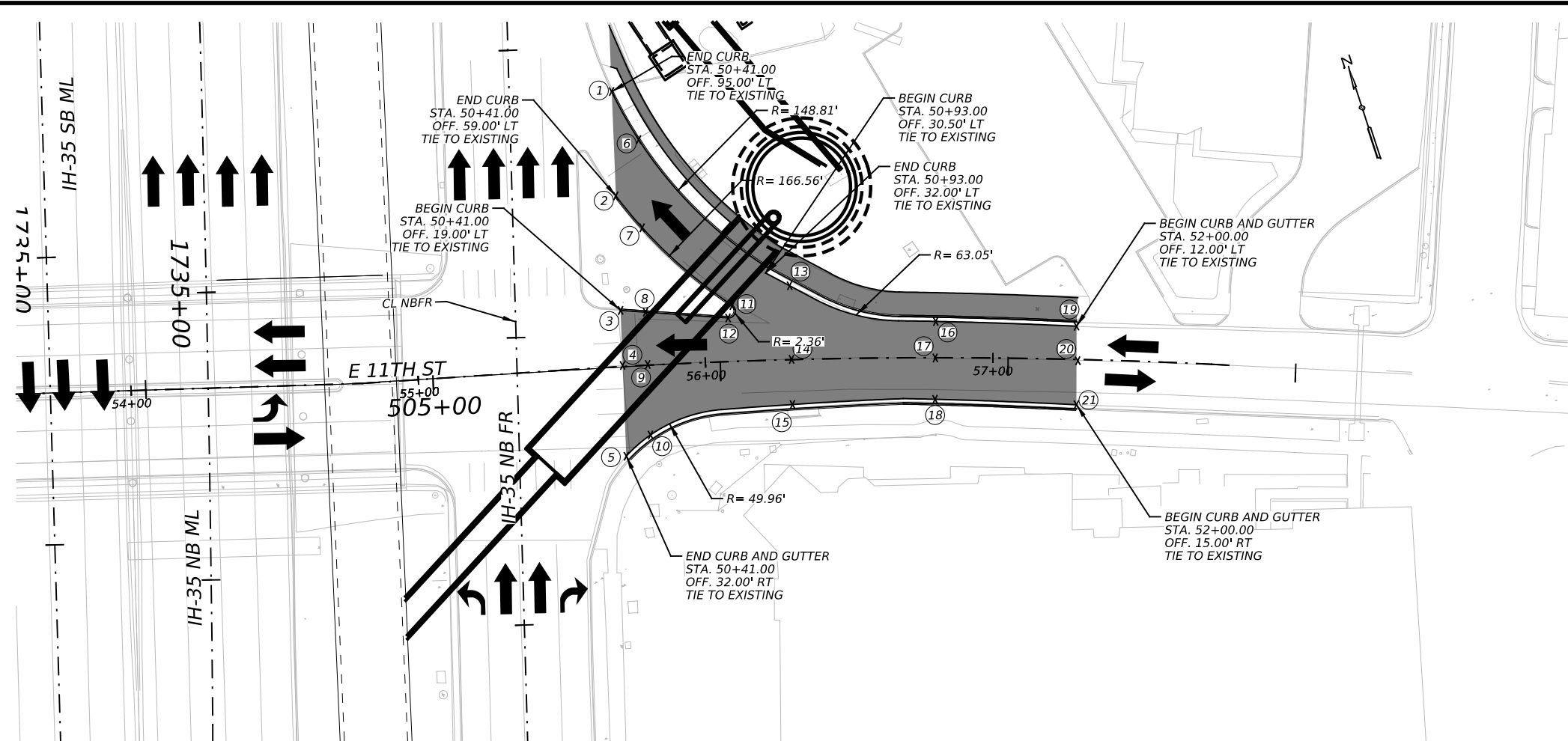
POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
①	IH35NBFR-DK_BL	50+30.43	0.00'	607.83
②	IH35NBFR-DK_BL	50+33.61	23.00' LT	607.13
③	IH35NBFR-DK_BL	50+50.00	0.00'	608.23
④	IH35NBFR-DK_BL	50+50.00	23.00' LT	607.50
⑤	IH35NBFR-DK_BL	50+54.15	81.62' LT	604.61
⑥	IH35NBFR-DK_BL	50+77.50	101.29' LT	603.60
⑦	IH35NBFR-DK_BL	51+00.00	0.00'	609.18
⑧	IH35NBFR-DK_BL	51+00.00	23.00' LT	608.53
⑨	IH35NBFR-DK_BL	51+00.00	50.39' LT	606.86
⑩	IH35NBFR-DK_BL	51+00.00	78.24' LT	605.10
⑪	IH35NBFR-DK_BL	51+15.66	23.00' LT	610.18
⑫	IH35NBFR-DK_BL	51+21.61	34.64' LT	608.84
⑬	IH35NBFR-DK_BL	51+50.00	0.00'	608.22
⑭	IH35NBFR-DK_BL	51+50.00	34.20' LT	608.66
⑮	IH35NBFR-DK_BL	52+00.00	0.00'	611.07
⑯	IH35NBFR-DK_BL	52+00.00	15.00' LT	610.77
⑰	IH35NBFR-DK_BL	52+50.00	0.00'	611.86
⑱	IH35NBFR-DK_BL	52+50.00	15.00' LT	611.48
⑲	IH35NBFR-DK_BL	53+00.00	0.00'	612.55
⑳	IH35NBFR-DK_BL	53+00.00	15.00' LT	611.89
㉑	IH35NBFR-DK_BL	53+50.00	0.00'	612.78
㉒	IH35NBFR-DK_BL	53+50.00	15.00' LT	612.42
㉓	IH35NBFR-DK_BL	54+00.00	0.00'	612.90
㉔	IH35NBFR-DK_BL	54+00.00	15.00' LT	612.45
㉕	IH35NBFR-DK_BL	54+50.00	0.00'	612.62
㉖	IH35NBFR-DK_BL	54+50.00	15.00' LT	612.25
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620

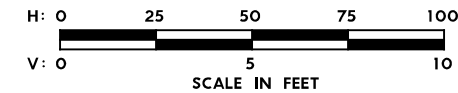
620



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 <p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
 <p>CAPITAL AREA MOBILITY</p>			
 <p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>DEAN KEETON ST ENTRANCE ROADWAY RECONSTRUCTION PLAN & PROFILE</p>			
<p>SCALE: 1"=50'-H 1"=5'-V</p>			
<p>SHEET 1 OF 1</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	64	

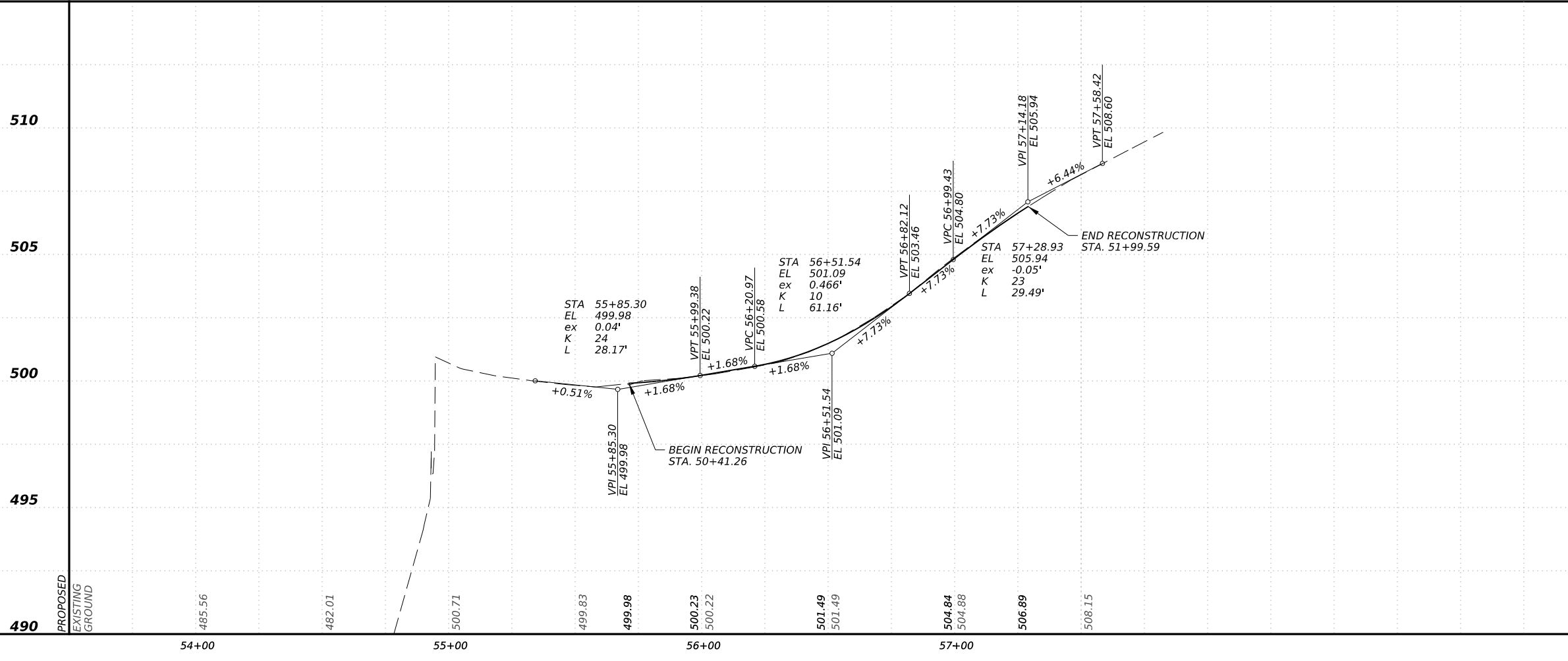


POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
1	CL 11TH ST	50+41.27	95.39' LT	499.90
2	CL 11TH ST	50+41.26	59.05' LT	499.90
3	CL 11TH ST	50+41.28	19.20' LT	499.90
4	CL 11TH ST	50+41.26	0.00'	499.90
5	CL 11TH ST	50+41.29	31.57' RT	499.90
6	CL 11TH ST	50+50.00	78.24' LT	499.96
7	CL 11TH ST	50+50.00	47.57' LT	499.96
8	CL 11TH ST	50+50.00	18.24' LT	499.96
9	CL 11TH ST	50+50.00	0.00'	499.96
10	CL 11TH ST	50+50.00	19.52' RT	499.96
11	CL 11TH ST	50+80.13	19.35' LT	500.37
12	CL 11TH ST	50+78.51	15.10' LT	500.34
13	CL 11TH ST	51+00.00	25.61' LT	500.76
14	CL 11TH ST	51+00.00	0.00'	500.76
15	CL 11TH ST	51+00.00	15.73' RT	500.76
16	CL 11TH ST	51+50.00	12.71' LT	503.34
17	CL 11TH ST	51+50.00	0.00'	503.34
18	CL 11TH ST	51+50.00	14.40' RT	503.34
19	CL 11TH ST	51+98.80	12.00' LT	506.91
20	CL 11TH ST	51+99.59	0.00'	506.96
21	CL 11TH ST	51+99.59	15.30' RT	506.96



515

515



510

505

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495

490

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 P.E. Serial No. 89252
 Date: 6/30/2023

HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

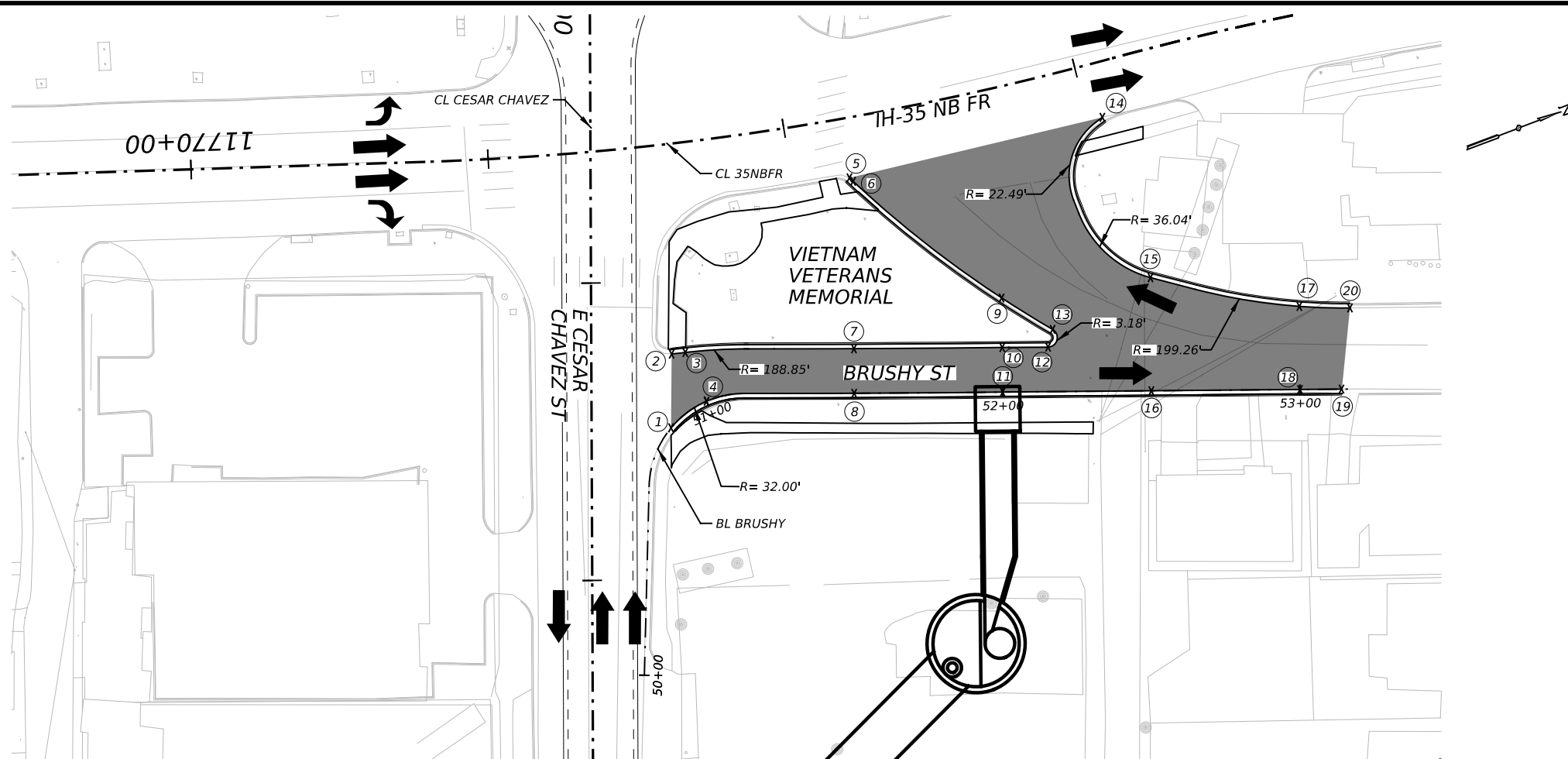


Texas Department of Transportation

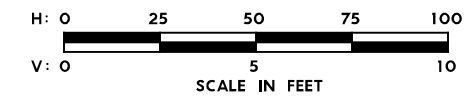
CAPITAL EXPRESS CENTRAL
 11TH ST
 ROADWAY RECONSTRUCTION
 PLAN & PROFILE

SCALE: 1"=50'-H
 1"=5'-V
 SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	65	

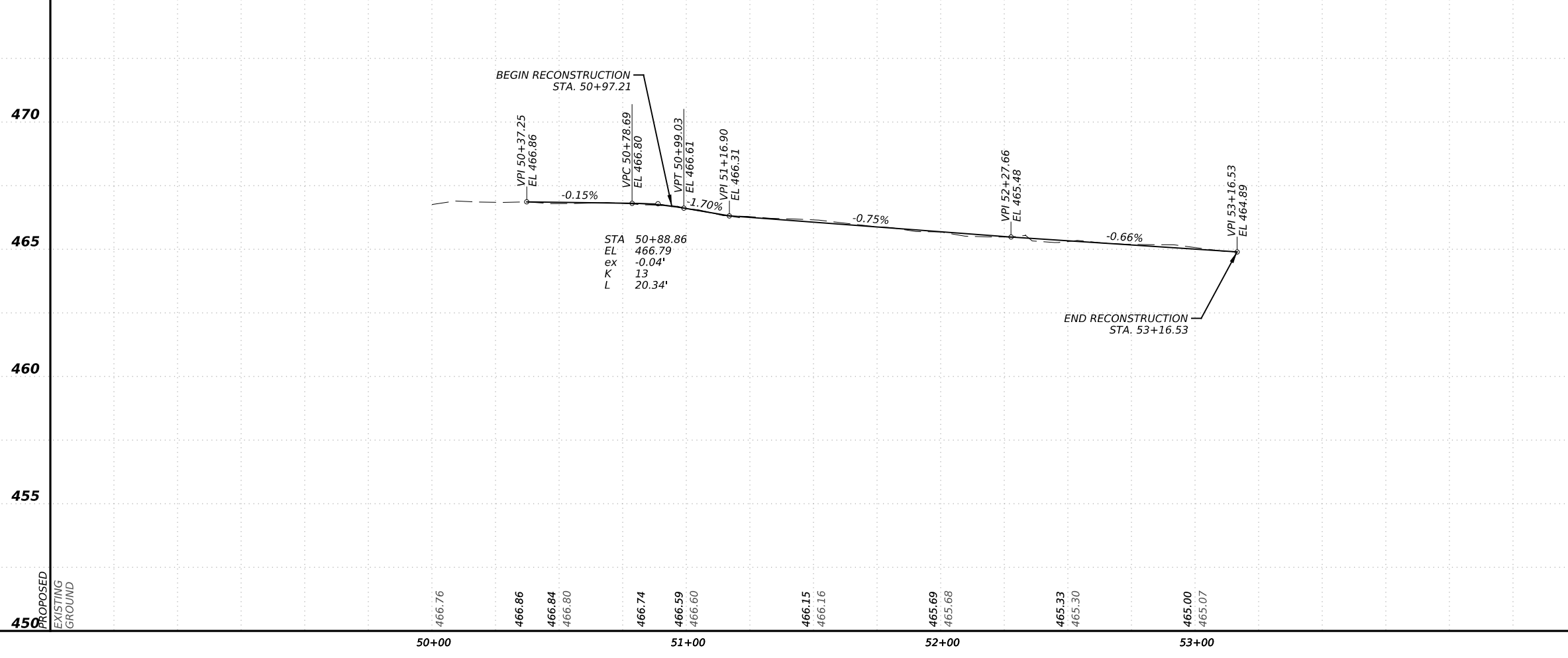


POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
1	BL BRUSHY	50+84.95	0.00'	466.74
2	BL BRUSHY	50+97.21	19.42' LT	467.06
3	BL BRUSHY	51+00.00	17.90' LT	467.02
4	BL BRUSHY	51+00.00	0.00'	466.60
5	BL BRUSHY	51+48.73	72.47' LT	466.07
6	BL BRUSHY	51+50.00	71.27' LT	466.06
7	BL BRUSHY	51+50.00	15.00' LT	466.06
8	BL BRUSHY	51+50.00	0.00'	466.06
9	BL BRUSHY	52+00.00	31.65' LT	465.69
10	BL BRUSHY	52+00.00	15.00' LT	465.69
11	BL BRUSHY	52+00.00	0.00'	465.69
12	BL BRUSHY	52+15.34	15.00' LT	465.57
13	BL BRUSHY	52+16.96	20.93' LT	465.56
14	BL BRUSHY	52+34.34	92.10' LT	465.44
15	BL BRUSHY	52+50.00	38.05' LT	465.26
16	BL BRUSHY	52+50.00	0.00'	465.33
17	BL BRUSHY	53+00.00	27.96' LT	465.00
18	BL BRUSHY	53+00.00	0.00'	465.00
19	BL BRUSHY	53+13.94	0.00'	464.91
20	BL BRUSHY	53+16.53	27.29' LT	464.89



475

475



475

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470

465

460

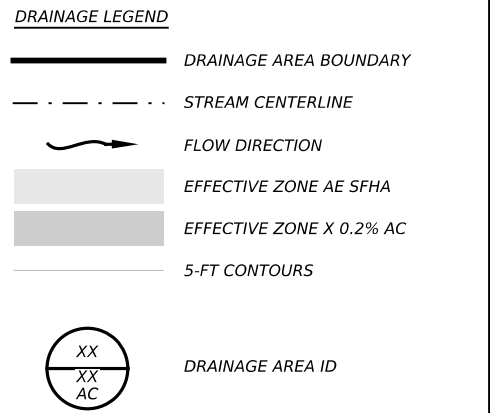
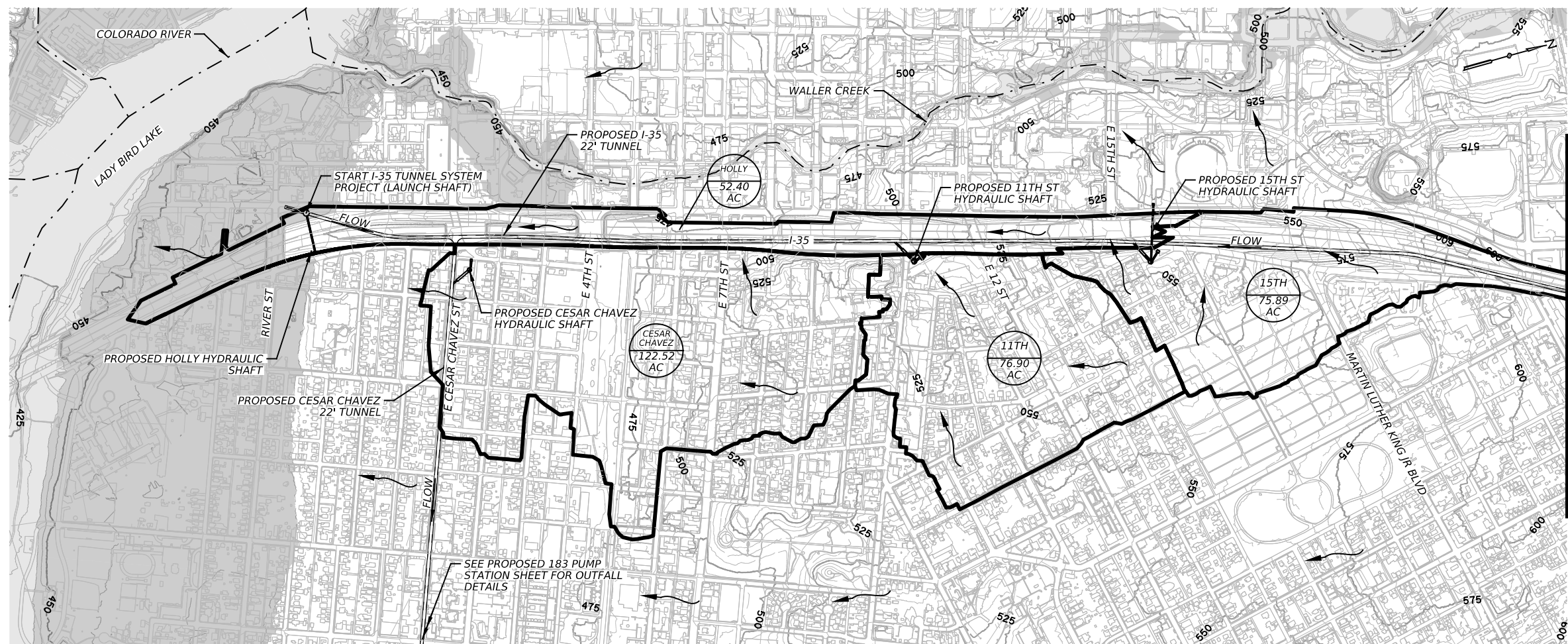
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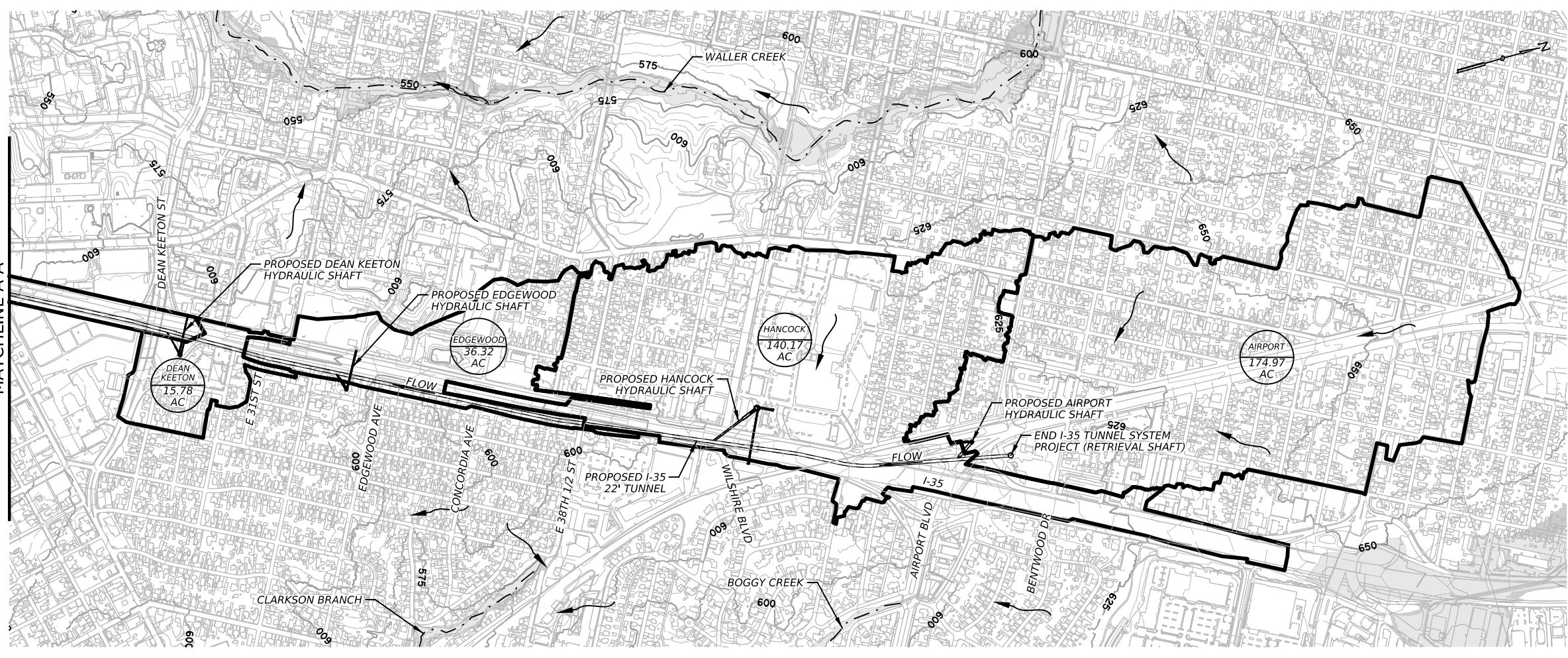
450

450

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	66



- NOTES:**
- FOR DRAINAGE AREA CALCULATIONS REFER TO EXTERNAL DRAINAGE AREA HYDROLOGIC DATA SHEETS.
 - EFFECTIVE FLOODPLAIN SOURCE FEMA FIRM PANEL 48453C0465K, 48453C0605K, AND 48453C0445K EFFECTIVE JANUARY 22, 2020.
 - INITIAL COORDINATION TO INFORM THE CITY OF AUSTIN FLOODPLAIN ADMINISTRATOR OF THE PROJECT COMPLETED ON 12/28/2022.
 - REFER TO CAPITAL EXPRESS I-35 CENTRAL TUNNEL SYSTEM DRAINAGE REPORT FOR ADDITIONAL INFORMATION ON HYDROLOGIC ASSUMPTIONS AND METHODOLOGIES.



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HR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

I-35 TUNNEL

PROPOSED DRAINAGE AREA MAP

SCALE: 1"=1000' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	67	

Proposed Cumulative CN Loss Method Hydrologic Computations (Hydraulic Structures)				
Junction ID	Contributing Subbasin(s)	Area (ACRES)	Area (SQ MI)	Q50 (CFS)
N35_1.07_11th	11th	76.90	0.1202	712
N35_1.11_15TH	15th	75.89	0.1186	721
N35_1.33_Air	Airport	174.97	0.2734	1032
CT.28	CesarChavez	122.52	0.1914	810
N35_1.21_DK	DeanKeeton	15.78	0.0247	113
N35_1.23_Edge	Edgewood	36.32	0.0568	349
N35_1.31_Han	Hancock	140.17	0.2190	838
N35_2.02_Holly	Holly	52.40	0.0819	459

REFER TO HYDRAULIC DATA SHEET FOR SWMM MODEL LAYOUT AND JUNCTION LOCATIONS.

REFER TO CAPITAL EXPRESS I-35 CENTRAL TUNNEL SYSTEM DRAINAGE REPORT FOR ADDITIONAL INFORMATION ON DETAILED BASIN PARAMETERS CONTRIBUTING TO EACH TUNNEL HYDRAULIC STRUCTURE.

Proposed Cumulative CN Loss Method Hydrologic Computations				
Junction ID	Contributing Subbasin(s)	Area (ACRES)	Area (SQ MI)	Q50
CC_L100.00	11th, 15th, Airport, CesarChavez, DeanKeeton, Edgewood, Hancock, Holly	694.96	1.09	5034

PEAK FLOWS REFER TO TOTAL CONTRIBUTING CONVEYANCE FLOW IN PROPOSED DRAINAGE SYSTEM AT REFERENCE JUNCTION ID LOCATION.

DESIGN REQUIREMENTS:

1. DRAINAGE TUNNEL: 50-YEAR DESIGN STORM EVENT CAPACITY.
2. LOCAL STORM DRAINS WITHIN ROW: 50-YEAR DESIGN STORM EVENT CAPACITY. 100-YEAR CHECK STORM SURFACE INUNDATION DEPTHS TO NOT EXCEED DEPTHS THAT WOULD INDUCE OVERLAND SPILL FLOW INTO IH 35 DEPRESSED LANES.
3. LOCAL STORM DRAINS OUTSIDE ROW: ASSUMED ULTIMATE CONDITIONS DEVELOPMENT. EXISTING STORM DRAIN SYSTEM ARTIFICIALLY UPSIZED AS NECESSARY TO CONTAIN DESIGN EVENT.

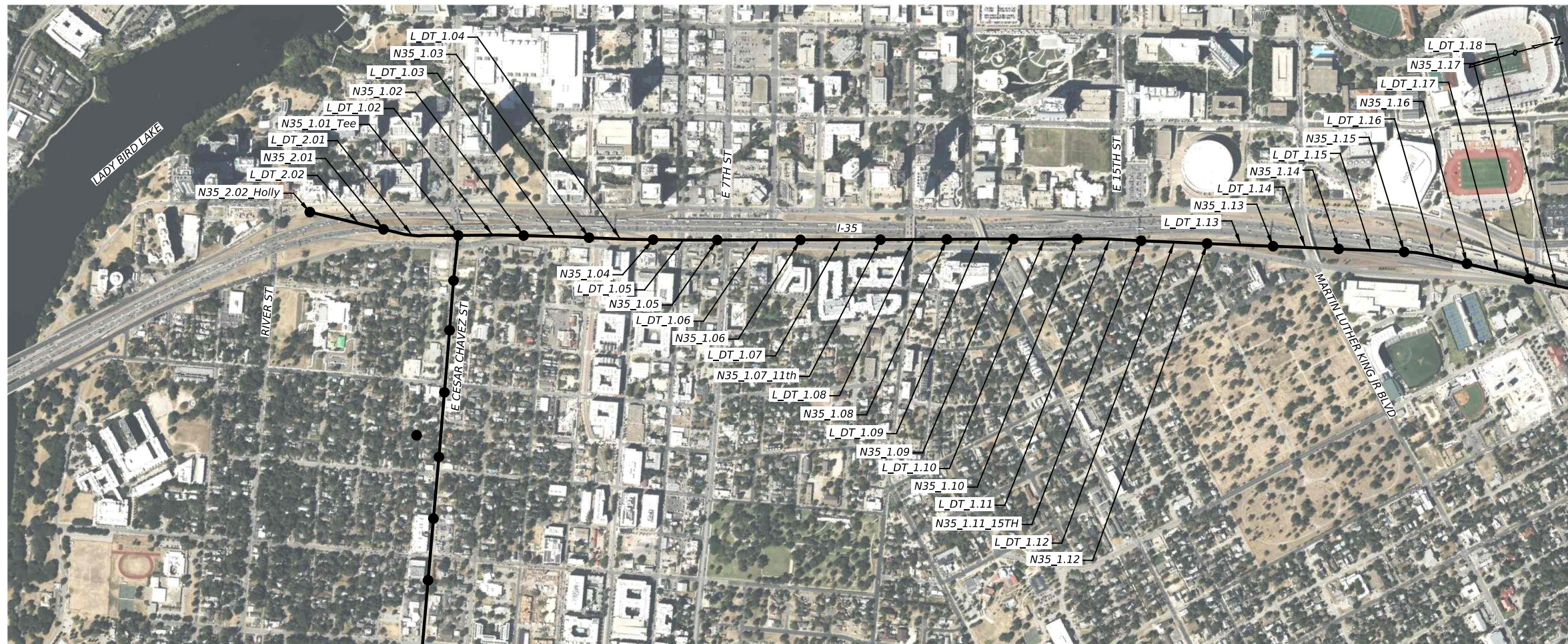
HYDROLOGIC ANALYSIS DESIGN METHOD:

1. TxDOT HYDRAULIC DESIGN MANUAL (HDM) SEPTEMBER 2019, WAS USED TO DETERMINE HYDROLOGIC DATA.
2. BASE COMPOSITE CN DEVELOPED USING SSURGO HYDROLOGIC SOILS GROUPS AND OPEN SPACE (UNDEVELOPED) LAND USE CURVE NUMBERS WITH ANTECEDENT MOISTURE CONDITION (AMC) II.
3. PEAK FLOWS DEVELOPED USING PRECIPITATION DEPTHS ESTABLISHED IN THE JANUARY 2019 MOBILITY 35 WHITE PAPER, APPLICATION OF ATLAS 14 RAINFALL DATA TO THE CAPITAL EXPRESS PROJECT PROVIDED BY TxDOT.

NOTES:

1. EFFECTIVE FLOODPLAIN SOURCE FEMA FIRM PANEL 48453C0465K, 48453C0605K, AND 48453C0445K EFFECTIVE JANUARY 22, 2020.
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<div style="display: flex; justify-content: space-between; font-size: 8px; margin-top: 5px;"> HDR Engineering, Inc. Firm Registration No. F-754 </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-top: 5px;"> 710 Hester Crossing, Suite 150 Round Rock, Texas 78681 </div>			
<p style="margin: 0;">CAPITAL EXPRESS CENTRAL</p> <p style="margin: 0;">PROPOSED HYDROLOGIC DATA SHEET</p>			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	68



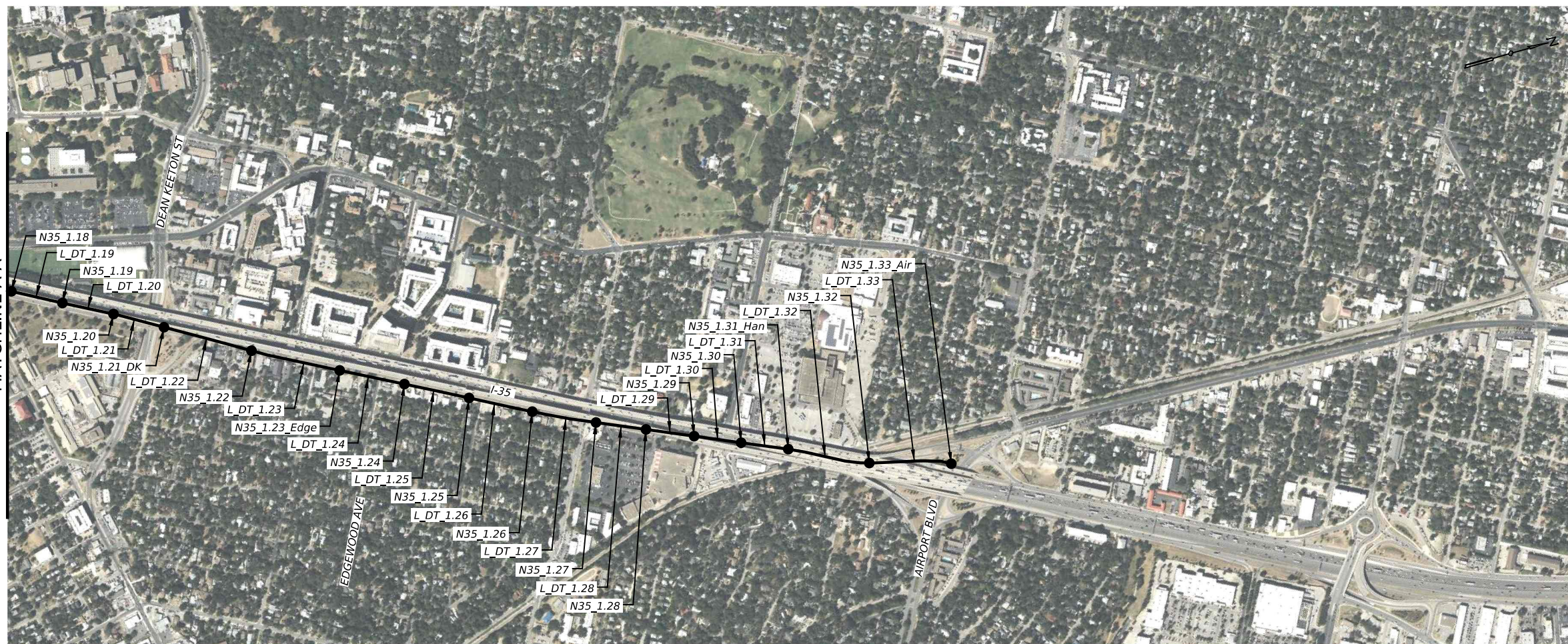
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3. LOCAL STORM DRAINS OUTSIDE ROW: ASSUMED ULTIMATE CONDITIONS DEVELOPMENT. EXISTING STORM DRAIN SYSTEM ARTIFICIALLY UPSIZED AS NECESSARY TO CONTAIN DESIGN EVENT.




NOTES:

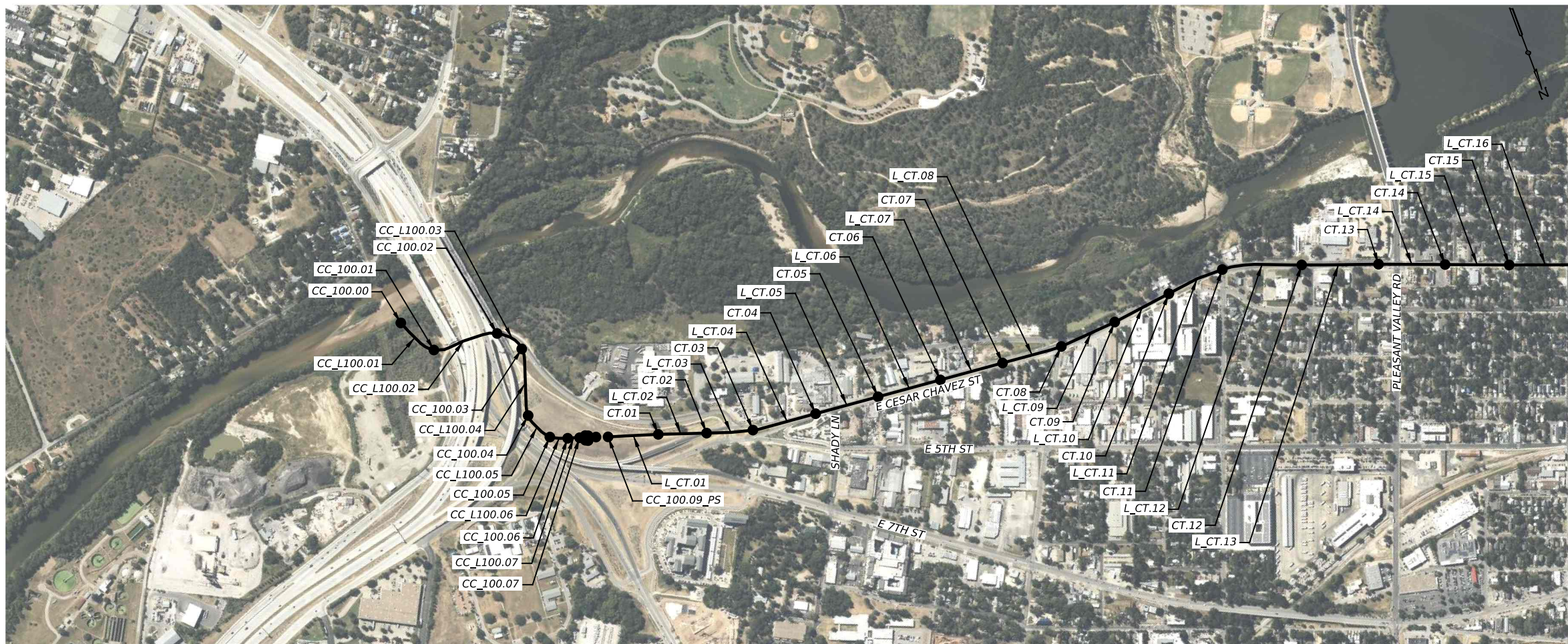
1. INFLOW HYDROGRAPHS COMPUTED IN HYDROLOGIC/HYDRAULIC MODEL USING THE UNIT HYDROGRAPH METHOD. REFER TO THE HYDROLOGIC DATA SHEET FOR ADDITIONAL INFORMATION.
2. XPSWMM 2021.3 USED FOR FULLY-DYNAMIC HYDRAULIC ANALYSIS.
3. A 5-YEAR STORM EVENT FIXED TAILWATER ELEVATION CONDITIONS WITHIN THE COLORADO RIVER (EL. 419.70') FOR DOWNSTREAM BOUNDARY CONDITIONS ASSOCIATED WITH THE 50-YEAR DESIGN STORM SCENARIO. REFER TO THE CAPITAL EXPRESS I-35 CENTRAL TAILWATER ANALYSIS MEMORANDUM PROVIDED WITH THE TUNNEL SYSTEM DRAINAGE REPORT.
4. HYDRAULIC GEOMETRIES BASED ON LIDAR (2021), TOPOGRAPHIC SURVEY WITH TXDOT ROW, AND AS-BUILTS.
5. VERTICAL DATUM IS NAVD 88.
6. REFER TO CAPITAL EXPRESS I-35 CENTRAL TUNNEL SYSTEM DRAINAGE REPORT FOR ADDITIONAL INFORMATION ON HYDRAULIC ASSUMPTIONS AND METHODOLOGIES.

MATCHLINE STA A-A



MATCHLINE A-A

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 <p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
			
			
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL</p> <p>SWMM-LINK AND NODE</p> <p>STRUCTURE LAYOUT</p>			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	69



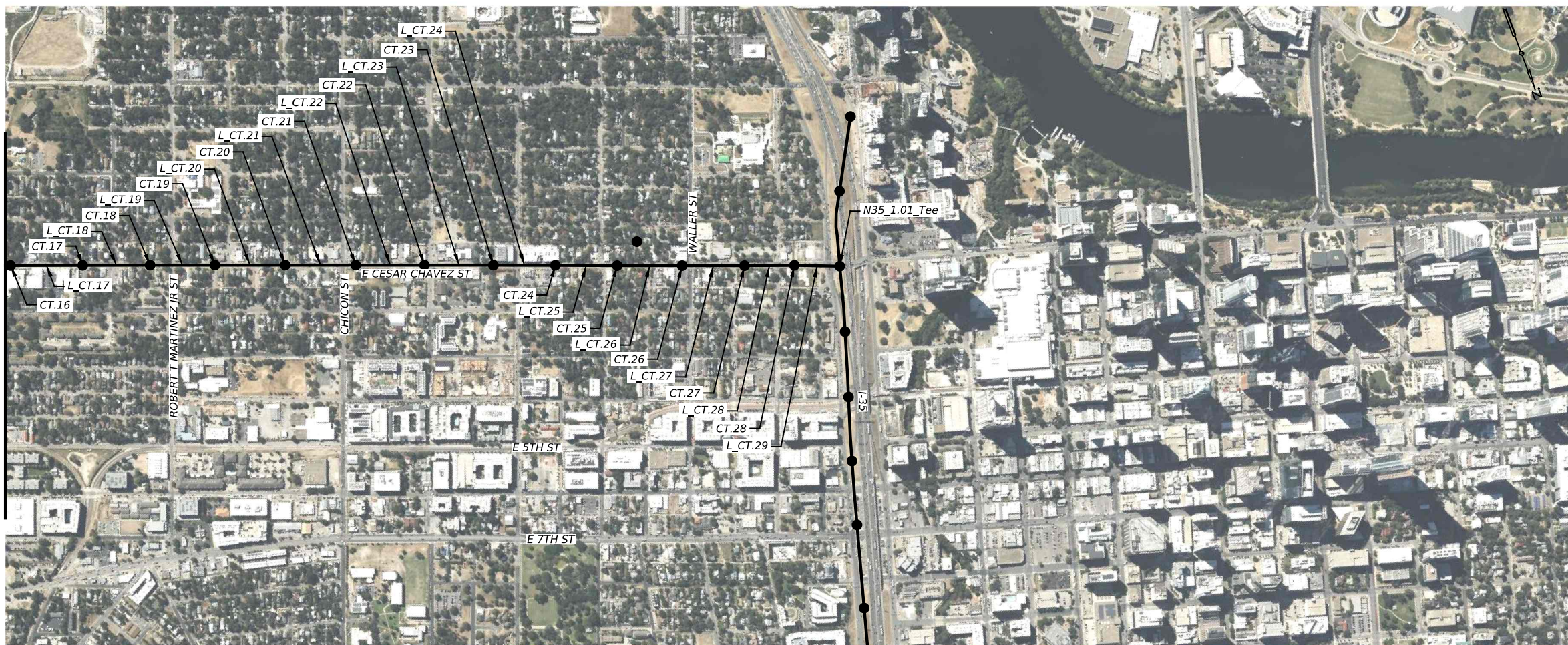
DESIGN REQUIREMENTS:

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3. LOCAL STORM DRAINS OUTSIDE ROW: ASSUMED ULTIMATE CONDITIONS DEVELOPMENT. EXISTING STORM DRAIN SYSTEM ARTIFICIALLY UPSIZED AS NECESSARY TO CONTAIN DESIGN EVENT.

NOTES:

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 P.E. Serial No. 112938
 Date: 6/29/2023

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681



CAPITAL EXPRESS CENTRAL
 CESAR CHAVEZ TUNNEL
 SWMM-LINK AND NODE
 STRUCTURE LAYOUT

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	70	

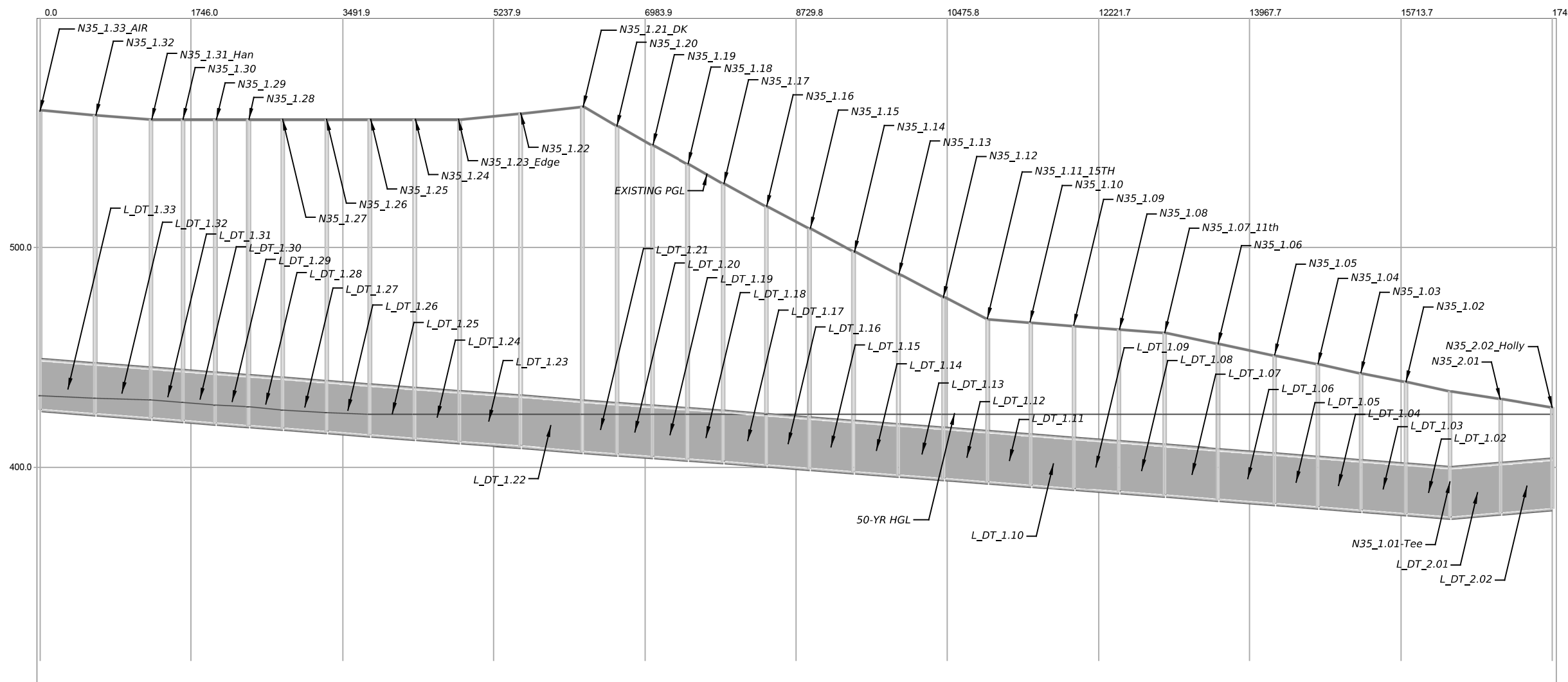
I-35 TUNNEL STRUCTURE

DESIGN REQUIREMENTS:

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2. LOCAL STORM DRAINS WITHIN ROW: 50-YEAR DESIGN STORM EVENT CAPACITY. 100-YEAR CHECK STORM SURFACE INUNDATION DEPTHS TO NOT EXCEED DEPTHS THAT WOULD INDUCE OVERLAND SPILL FLOW INTO IH 35 DEPRESSED LANES.
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 Round Rock, Texas 78681



Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
I-35 TUNNEL
PROPOSED HYDRAULIC
XP PROFILE
DATA SHEET

SHEET 1 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	73	

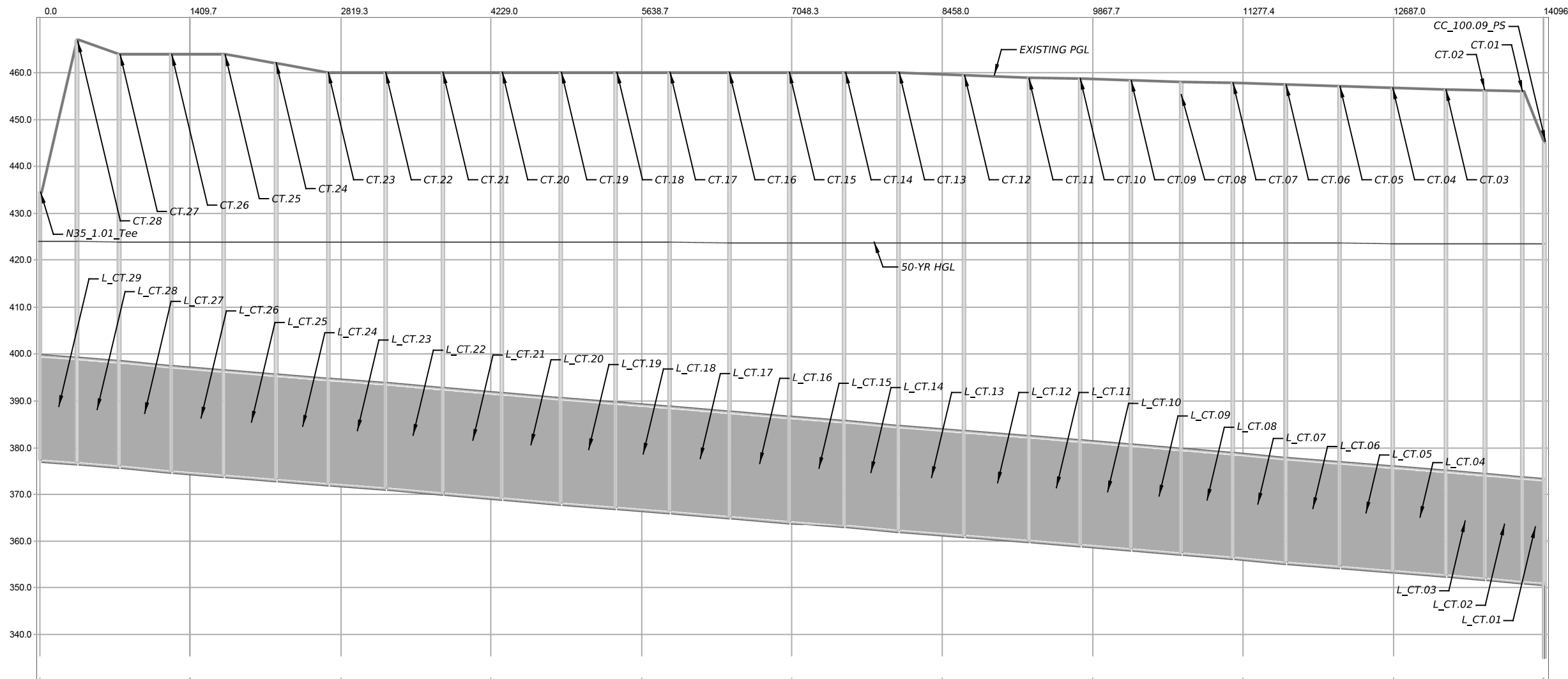
CESAR CHAVEZ TUNNEL STRUCTURE

DESIGN REQUIREMENTS:

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 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PROPOSED HYDRAULIC
 XP PROFILE
 DATA SHEET

SHEET 2 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	74	

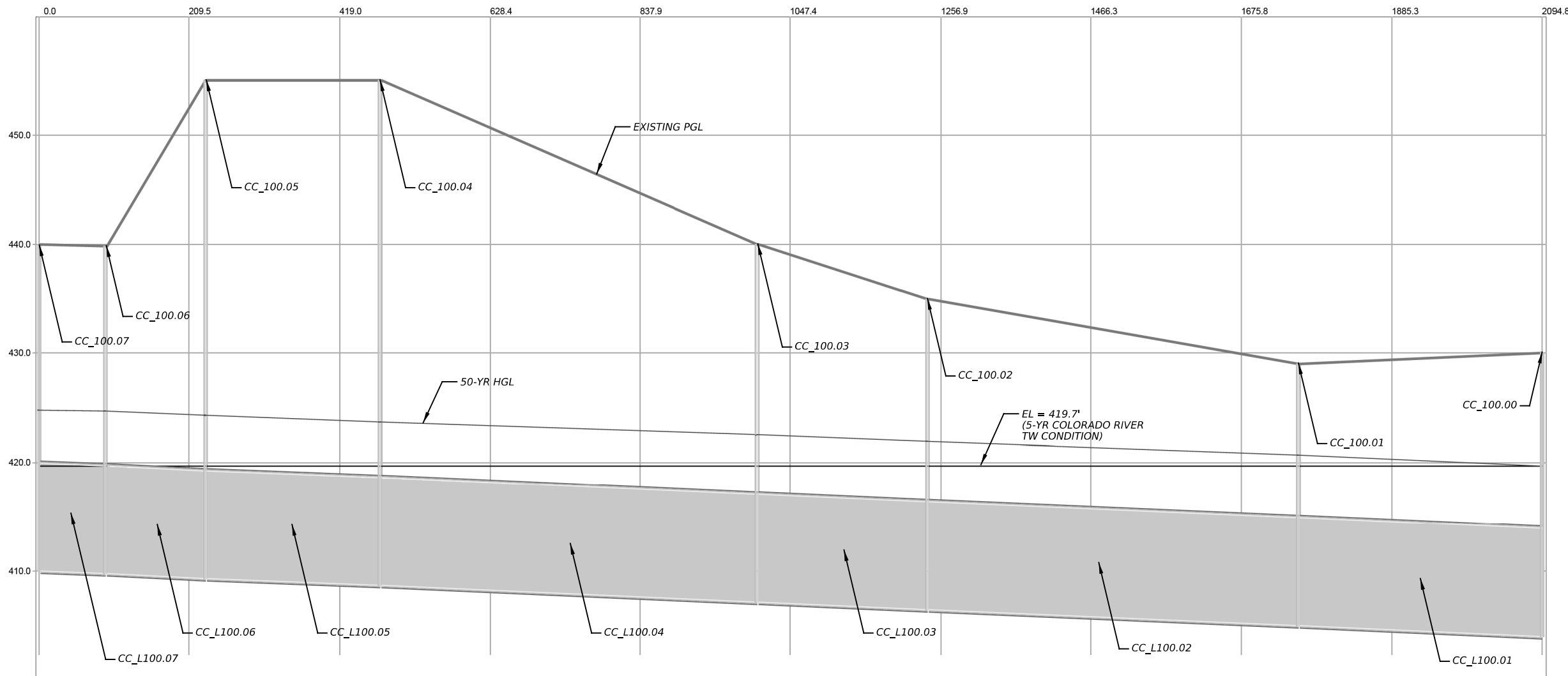
PUMP STATION OUTLET STRUCTURE

DESIGN REQUIREMENTS:

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2. XPSWMM 2021.3 USED FOR FULLY-DYNAMIC HYDRAULIC ANALYSIS.
3. A 5-YEAR STORM EVENT FIXED TAILWATER ELEVATION CONDITIONS WITHIN THE COLORADO RIVER (EL. 419.70') FOR DOWNSTREAM BOUNDARY CONDITIONS ASSOCIATED WITH THE 50-YEAR DESIGN STORM SCENARIO. REFER TO THE CAPITAL EXPRESS I-35 CENTRAL TAILWATER ANALYSIS MEMORANDUM PROVIDED WITH THE TUNNEL SYSTEM DRAINAGE REPORT.
4. HYDRAULIC GEOMETRIES BASED ON LIDAR (2021), TOPOGRAPHIC SURVEY WITH TXDOT ROW, AND AS-BUILTS.
5. VERTICAL DATUM IS NAVD 88.
6. REFER TO CAPITAL EXPRESS I-35 CENTRAL TUNNEL SYSTEM DRAINAGE REPORT FOR ADDITIONAL INFORMATION ON HYDRAULIC ASSUMPTIONS AND METHODOLOGIES.



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 Supervised By: BRANDON E. HILBRICH
 P.E. Serial No. 112938
 Date: 6/29/2023

HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681



CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PROPOSED HYDRAULIC
 XP PROFILE
 DATA SHEET

SHEET 3 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	75	

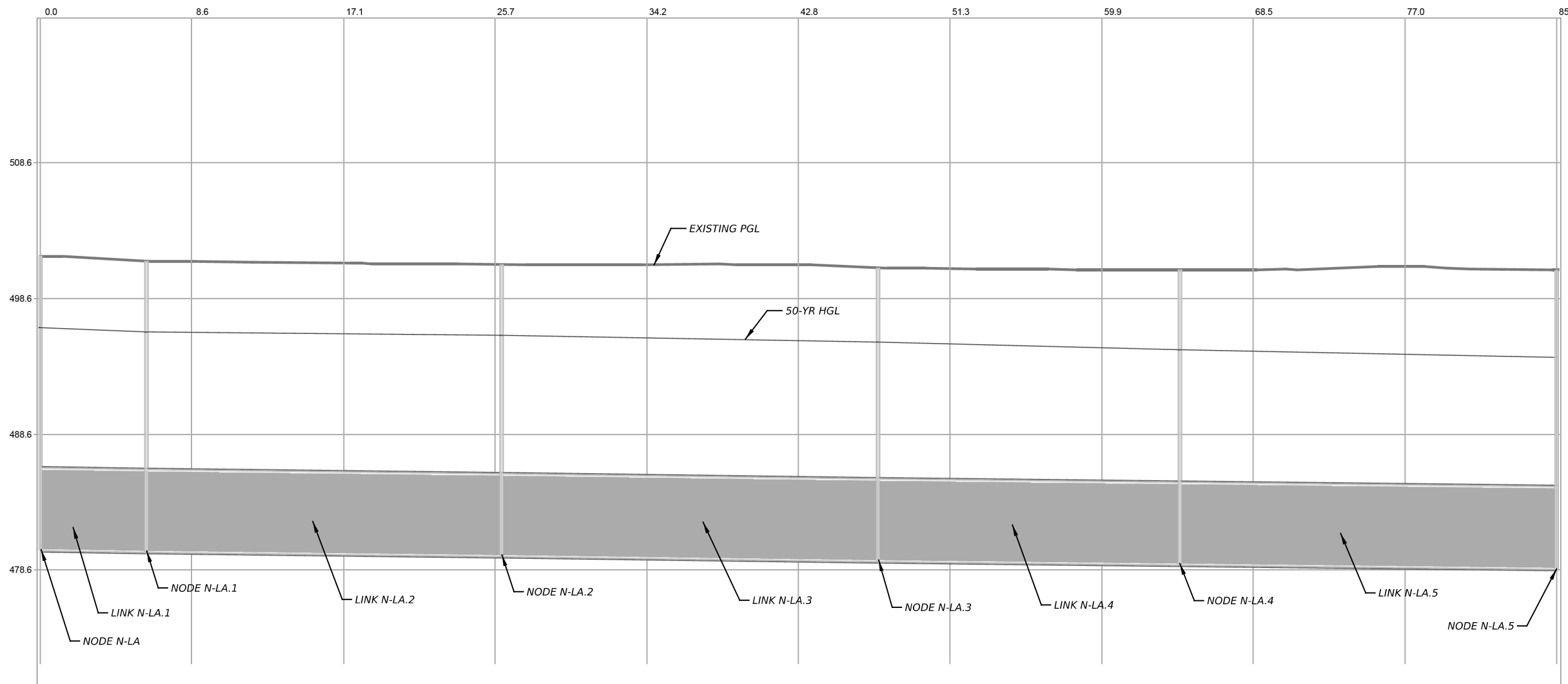
INTERIM 11TH ST LOOP AROUND STRUCTURE

DESIGN REQUIREMENTS:

1. DRAINAGE TUNNEL: 50-YEAR DESIGN STORM EVENT CAPACITY.
2. LOCAL STORM DRAINS WITHIN ROW: 50-YEAR DESIGN STORM EVENT CAPACITY. 100-YEAR CHECK STORM SURFACE INUNDATION DEPTHS TO NOT EXCEED DEPTHS THAT WOULD INDUCE OVERLAND SPILL FLOW INTO IH 35 DEPRESSED LANES.
3. LOCAL STORM DRAINS OUTSIDE ROW: ASSUMED ULTIMATE CONDITIONS DEVELOPMENT. EXISTING STORM DRAIN SYSTEM ARTIFICIALLY UPSIZED AS NECESSARY TO CONTAIN DESIGN EVENT.

NOTES:

1. INFLOW HYDROGRAPHS COMPUTED IN HYDROLOGIC/HYDRAULIC MODEL USING THE UNIT HYDROGRAPH METHOD. REFER TO THE HYDROLOGIC DATA SHEET FOR ADDITIONAL INFORMATION.
2. XPSWMM 2021.3 USED FOR FULLY-DYNAMIC HYDRAULIC ANALYSIS.
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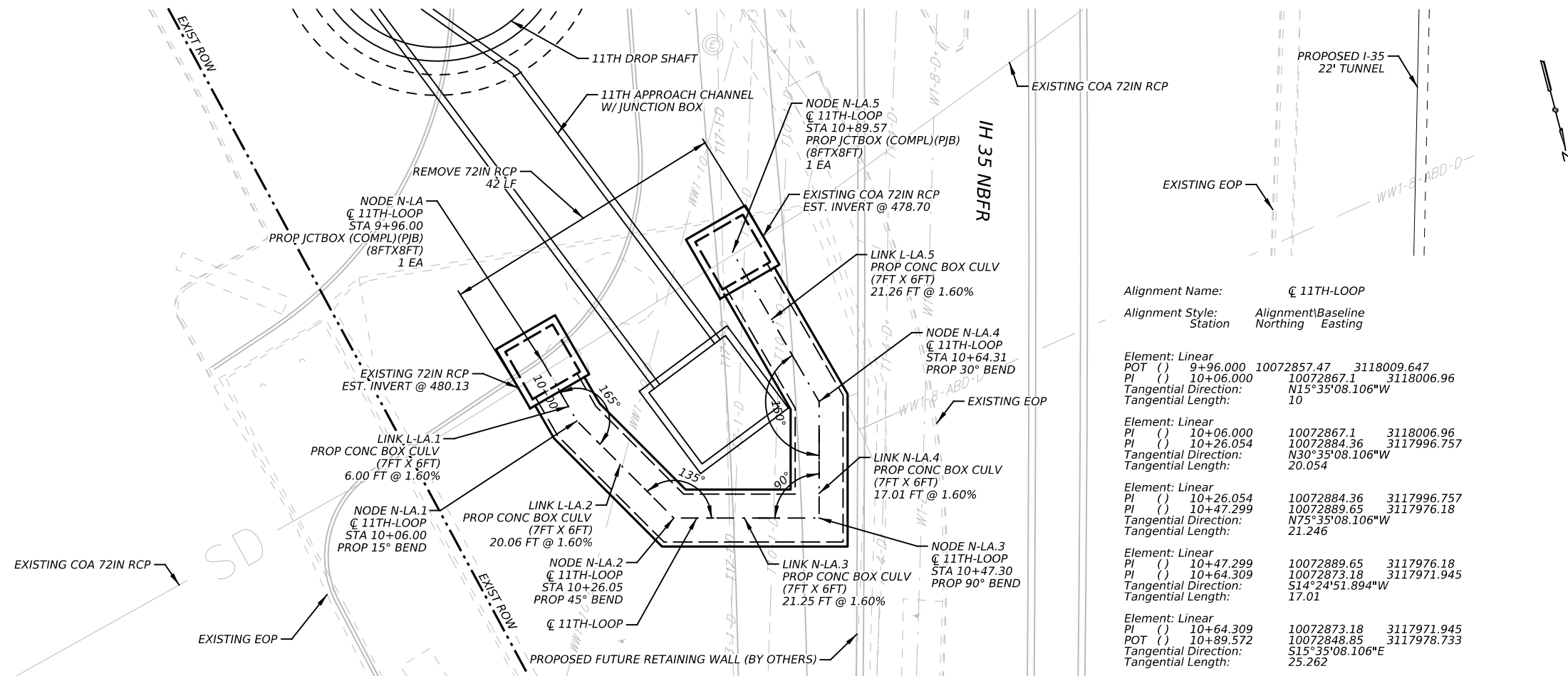
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

**I-35 TUNNEL
PROPOSED HYDRAULIC
XP PROFILE
DATA SHEET**

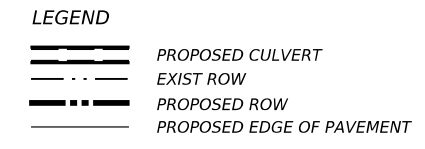
SHEET 4 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	76	

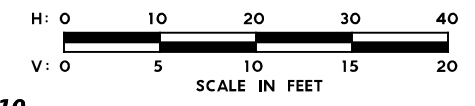


Alignment Name: **11TH-LOOP**
 Alignment Style: Alignment(Baseline)
 Station: Northing Easting

Element: Linear	POT ()	9+96.000	10072857.47	3118009.647
PI ()	10+06.000	10072867.1	3118006.96	
Tangential Direction:		N15°35'08.106"W		
Tangential Length:		10		
Element: Linear	PI ()	10+06.000	10072867.1	3118006.96
PI ()	10+26.054	10072884.36	3117996.757	
Tangential Direction:		N30°35'08.106"W		
Tangential Length:		20.054		
Element: Linear	PI ()	10+26.054	10072884.36	3117996.757
PI ()	10+47.299	10072889.65	3117976.18	
Tangential Direction:		N75°35'08.106"W		
Tangential Length:		21.246		
Element: Linear	PI ()	10+47.299	10072889.65	3117976.18
PI ()	10+64.309	10072873.18	3117971.945	
Tangential Direction:		S14°24'51.894"W		
Tangential Length:		17.01		
Element: Linear	PI ()	10+64.309	10072873.18	3117971.945
POT ()	10+89.572	10072848.85	3117978.733	
Tangential Direction:		S15°35'08.106"E		
Tangential Length:		25.262		

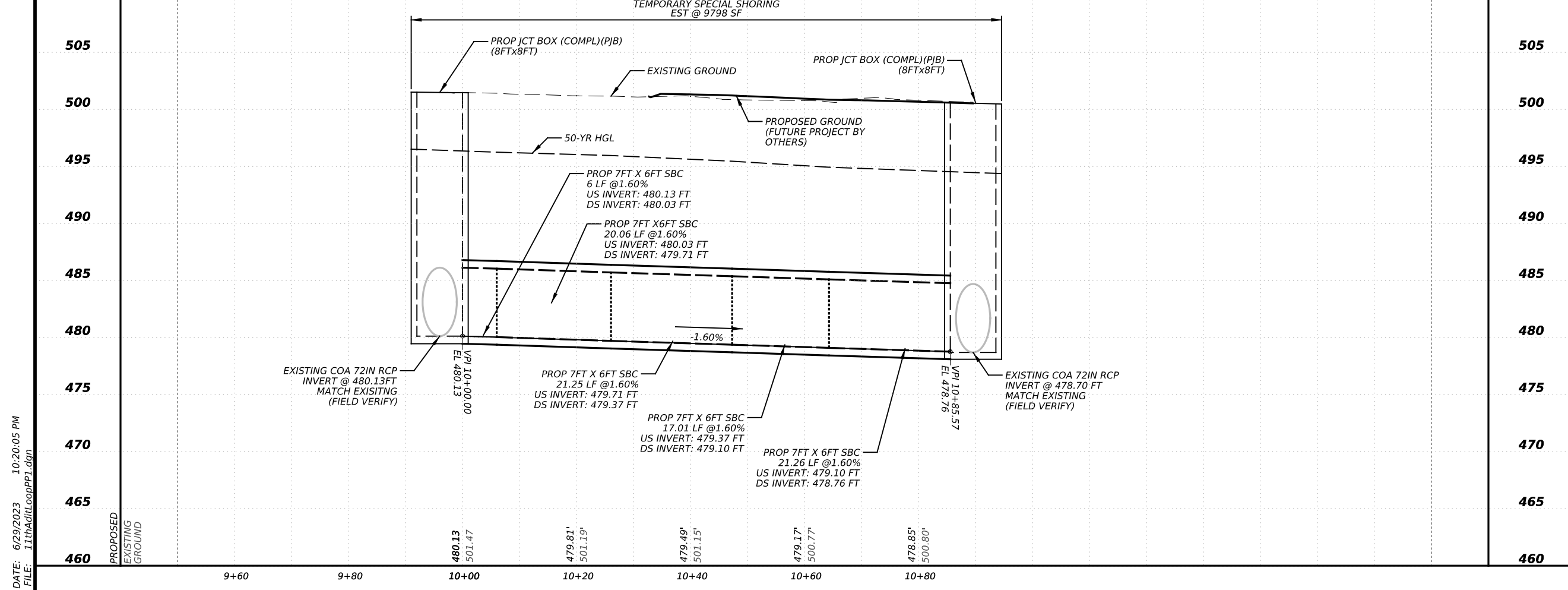


- NOTES:**
- ALL STATION AND OFFSETS ARE FROM C 11TH-LOOP UNLESS NOTED OTHERWISE.
 - CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS PRIOR TO CONSTRUCTION OF STORM DRAINS.
 - CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT THE PROJECT.
 - SEE STRUCTURAL DRAWINGS FOR PIPE OUTFALL AND DROP SHAFT/ADIT STRUCTURE DETAILS.
 - NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



510

510



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HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681			
CAPITAL AREA MOBILITY			
Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL I-35 TUNNEL INTERIM 11TH ST ADIT LOOP BEGIN TO END			
SCALE: 1"=20'-H 1"=10'-V			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	77	

CC-TUNNEL

Station Northing Easting
 Element: Linear
 POT 87+92.480 R1 10065390.67 3130837.855
 PC 92+53.644 R1 10065756.68 3130557.31
 Tangential Direction: N37°28'10.812"W
 Tangential Length: 461.164
 Element: Circular
 PC 92+53.644 R1 10065756.68 3130557.31
 PI 93+90.343 R1 10065865.18 3130474.15
 CC 10065513.35 3130239.84
 PT 95+17.088 R1 10065900.08 3130341.982
 Radius: 400
 Delta: 37°44'08.525" Left
 Degree of Curvature (Arc): 14°19'26.202"
 Length: 263.445
 Tangent: 136.7
 Chord: 258.709
 Middle Ordinate: 21.493
 External: 22.714
 Back Tangent Direction: N37°28'10.812"W
 Back Radial Direction: N52°31'49.188"E
 Chord Direction: N56°20'15.074"W
 Ahead Radial Direction: N14°47'40.663"E
 Ahead Tangent Direction: N75°12'19.337"W
 Element: Linear
 PT 95+17.088 R1 10065900.08 3130341.982
 PC 98+47.243 R1 10065984.39 3130022.773
 Tangential Direction: N75°12'19.337"W
 Tangential Length: 330.154
 Element: Circular
 PC 98+47.243 R1 10065984.39 3130022.773
 PI 99+30.685 R1 10066005.7 3129942.097
 CC 10065017.54 3129767.418
 PT 100+13.742 R1 10066013.34 3129859.005
 Radius: 1000
 Delta: 09°32'22.968" Left
 Degree of Curvature (Arc): 05°43'46.481"
 Length: 166.499
 Tangent: 83.443
 Chord: 166.307
 Middle Ordinate: 3.463
 External: 3.475
 Back Tangent Direction: N75°12'19.337"W
 Back Radial Direction: N14°47'40.663"E
 Chord Direction: N79°58'30.821"W
 Ahead Radial Direction: N05°15'17.695"E
 Ahead Tangent Direction: N84°44'42.305"W
 Element: Linear
 PT 100+13.742 R1 10066013.34 3129859.005
 PC 128+72.456 R1 10066275.16 3127012.306
 Tangential Direction: N84°44'42.305"W
 Tangential Length: 2858.714
 Element: Circular
 PC 128+72.456 R1 10066275.16 3127012.306
 PI 129+54.262 R1 10066282.65 3126930.844
 CC 10065279.37 3126920.719
 PT 130+35.705 R1 10066276.81 3126849.247
 Radius: 1000
 Delta: 09°21'12.424" Left
 Degree of Curvature (Arc): 05°43'46.481"
 Length: 163.249
 Tangent: 81.806
 Chord: 163.067
 Middle Ordinate: 3.329
 External: 3.341
 Back Tangent Direction: N84°44'42.305"W
 Back Radial Direction: N05°15'17.695"E
 Chord Direction: N89°25'18.517"W
 Ahead Radial Direction: N04°05'54.729"W
 Ahead Tangent Direction: S85°54'05.271"W
 Element: Linear
 PT 130+35.705 R1 10066276.81 3126849.247
 PC 133+98.359 R1 10066250.89 3126487.52
 Tangential Direction: S85°54'05.271"W
 Tangential Length: 362.655
 Element: Circular
 PC 133+98.359 R1 10066250.89 3126487.52
 PI 134+23.266 R1 10066249.11 3126462.677
 CC 10065253.45 3126558.992
 PT 134+48.162 R1 10066246.09 3126437.954
 Radius: 1000
 Delta: 02°51'12.474" Left
 Degree of Curvature (Arc): 05°43'46.481"
 Length: 49.802

CC-TUNNEL (CONT.)

Station Northing Easting
 Tangent: 24.906
 Chord: 49.797
 Middle Ordinate: 0.31
 External: 0.31
 Back Tangent Direction: S85°54'05.271"W
 Back Radial Direction: N04°05'54.729"W
 Chord Direction: S84°28'29.034"W
 Ahead Radial Direction: N06°57'07.203"W
 Ahead Tangent Direction: S83°02'52.797"W
 Element: Linear
 PT 134+48.162 R1 10066246.09 3126437.954
 PC 141+44.470 R1 10066161.81 3125746.765
 Tangential Direction: S83°02'52.797"W
 Tangential Length: 696.308
 Element: Circular
 PC 141+44.470 R1 10066161.81 3125746.765
 PI 143+89.284 R1 10066132.18 3125503.751
 CC 10067154.46 3125625.727
 PT 146+24.653 R1 10066218.16 3125274.531
 Radius: 1000
 Delta: 27°30'44.884" Right
 Degree of Curvature (Arc): 05°43'46.481"
 Length: 480.183
 Tangent: 244.814
 Chord: 475.583
 Middle Ordinate: 28.684
 External: 29.531
 Back Tangent Direction: S83°02'52.797"W
 Back Radial Direction: N06°57'07.203"W
 Chord Direction: N83°11'44.761"W
 Ahead Radial Direction: N20°33'37.681"E
 Ahead Tangent Direction: N69°26'22.319"W
 Element: Linear
 PT 146+24.653 R1 10066218.16 3125274.531
 PC 235+75.844 R1 10069361.78 3116893.512
 Tangential Direction: N69°26'22.319"W
 Tangential Length: 8951.191
 Element: Circular
 PC 235+75.844 R1 10069361.78 3116893.512
 PI 236+20.909 R1 10069377.61 3116851.318
 CC 10069408.59 3116911.072
 PT 236+49.197 R1 10069421.21 3116862.69
 Radius: 50
 Delta: 84°03'22.650" Right
 Degree of Curvature (Arc): 114°35'29.612"
 Length: 73.353
 Tangent: 45.065
 Chord: 66.95
 Middle Ordinate: 12.859
 External: 17.311
 Back Tangent Direction: N69°26'22.319"W
 Back Radial Direction: N20°33'37.681"E
 Chord Direction: N27°24'40.994"W
 Ahead Radial Direction: S75°22'59.669"E
 Ahead Tangent Direction: N14°37'00.331"E
 Element: Linear
 PT () 236+49.197 R1 10069421.21 3116862.69
 POT () 236+56.958 R1 10069428.72 3116864.649
 Tangential Direction: N14°37'00.331"E
 Tangential Length: 7.76

NO.	DATE	REVISION	APPR BY

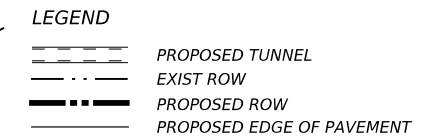
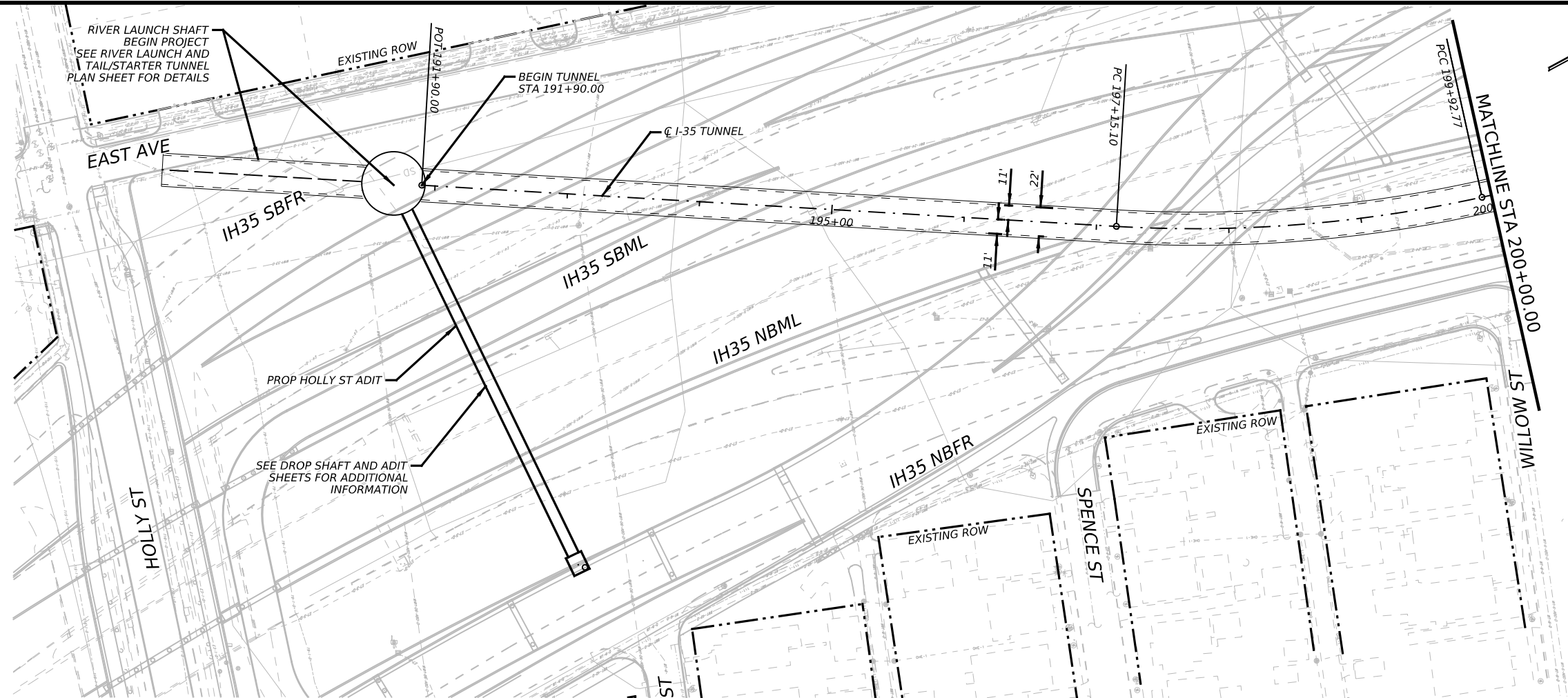
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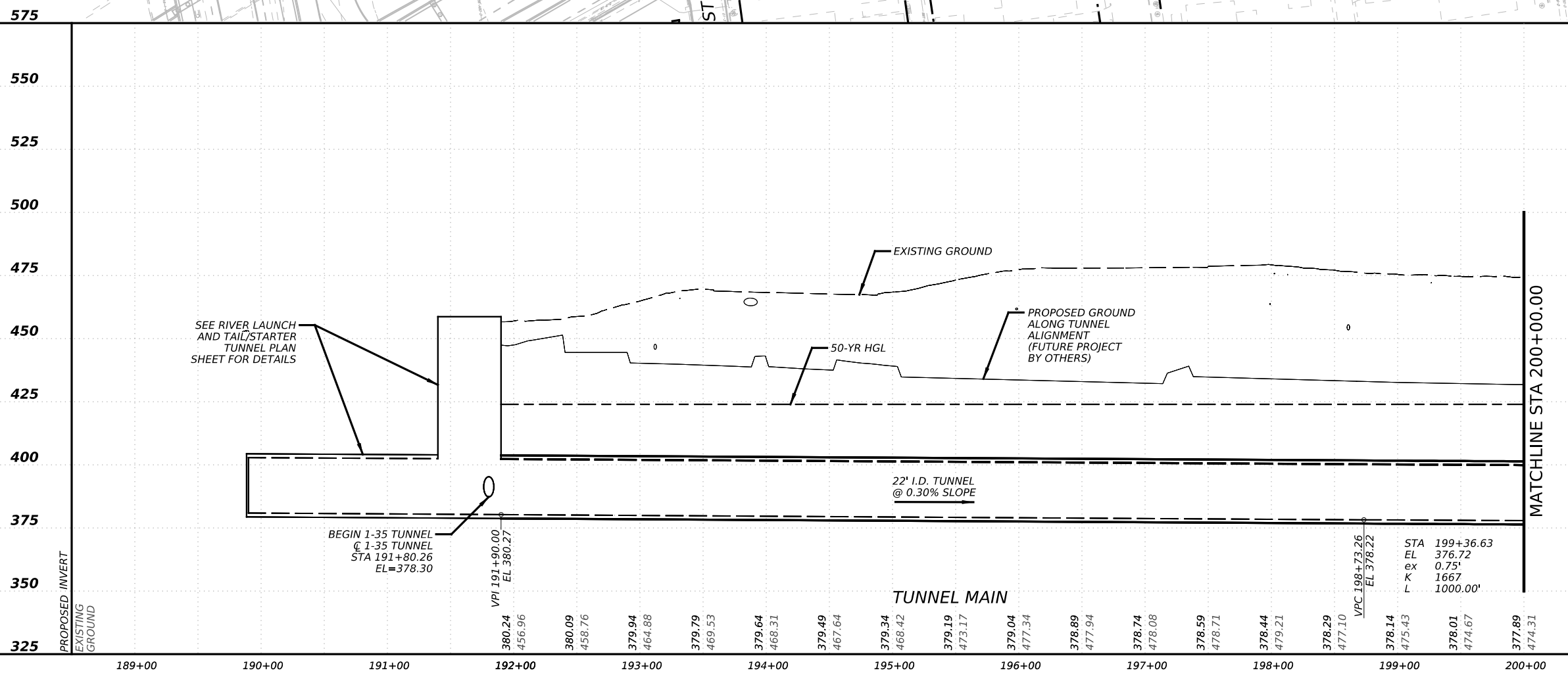
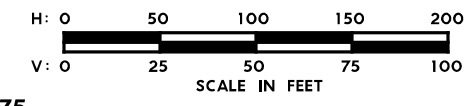


CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ TUNNEL
HORIZONTAL ALIGNMENT DATA

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	79	



- NOTES:
- REFER TO BORING LOGS, GEOLOGIC PROFILE, GEOTECHNICAL BASELINE REPORT, AND GEOTECHNICAL DATA REPORT FOR ADDITIONAL INFORMATION REGARDING EXISTING SUBSURFACE CONDITIONS.
 - ALL STATIONS, CURVE DATA AND LENGTHS ARE ALONG THE TUNNEL CENTERLINE. SEE "HORIZONTAL ALIGNMENT DATA" SHEET FOR HORIZONTAL ALIGNMENT INFORMATION.
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 - CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT THE PROJECT.
 - SEE STRUCTURAL DRAWINGS FOR PIPE, OUTFALL AND DROP SHAFT/ADITS STRUCTURE DETAILS.
 - NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



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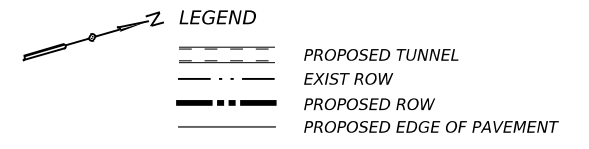
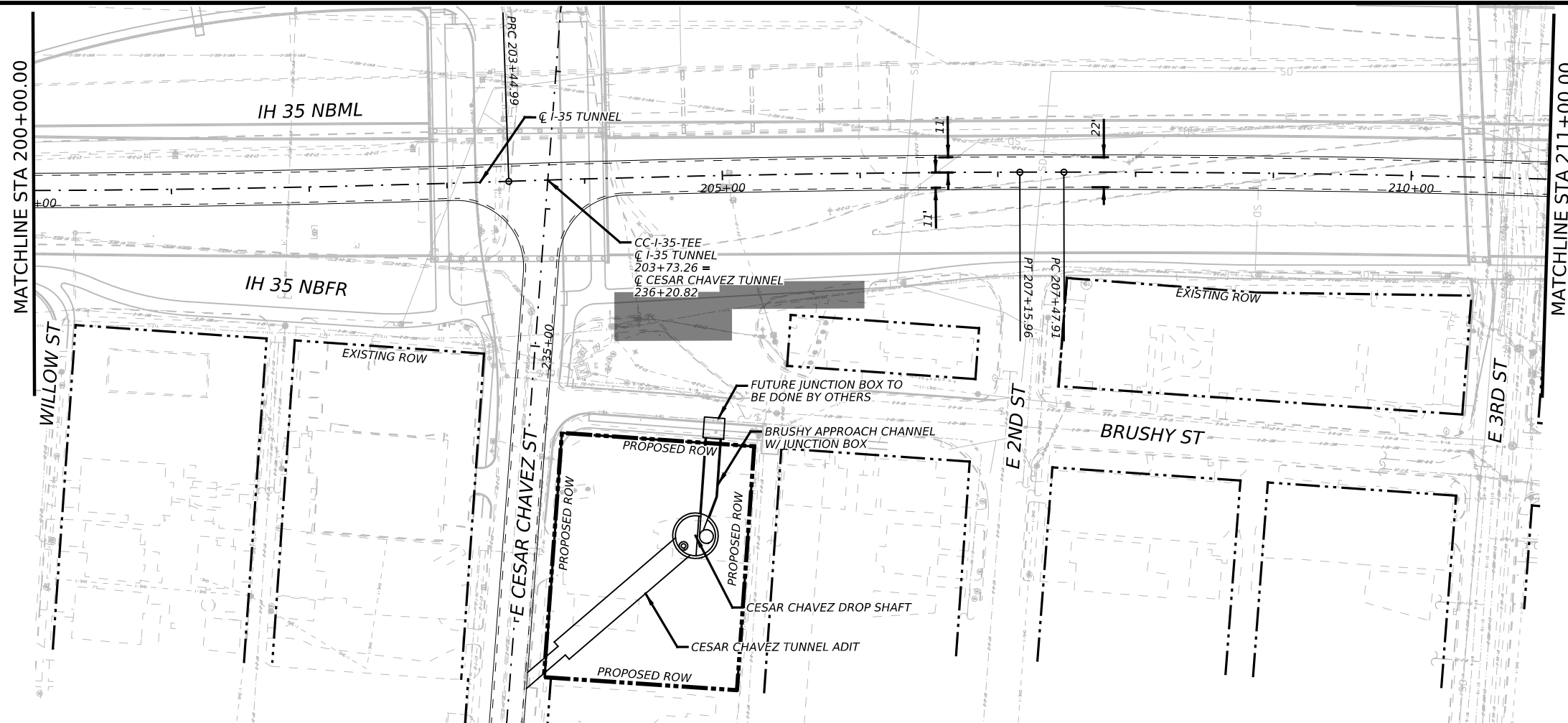
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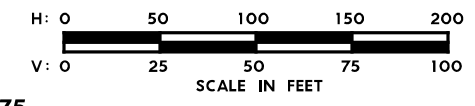
CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PLAN AND PROFILE
 BEGIN TO STA 200+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 1 OF 17

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	80	

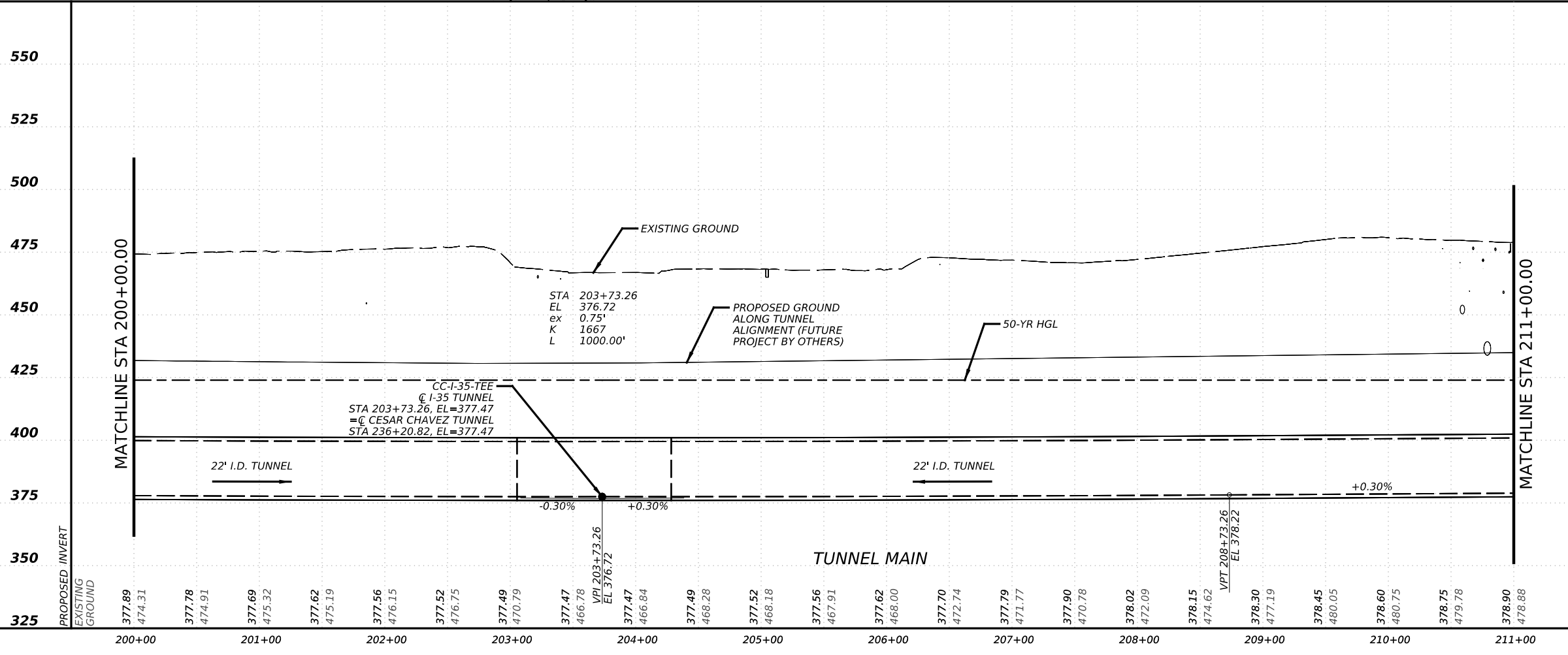


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575

575



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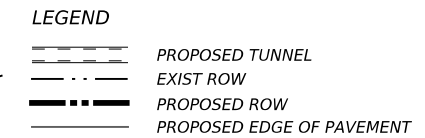
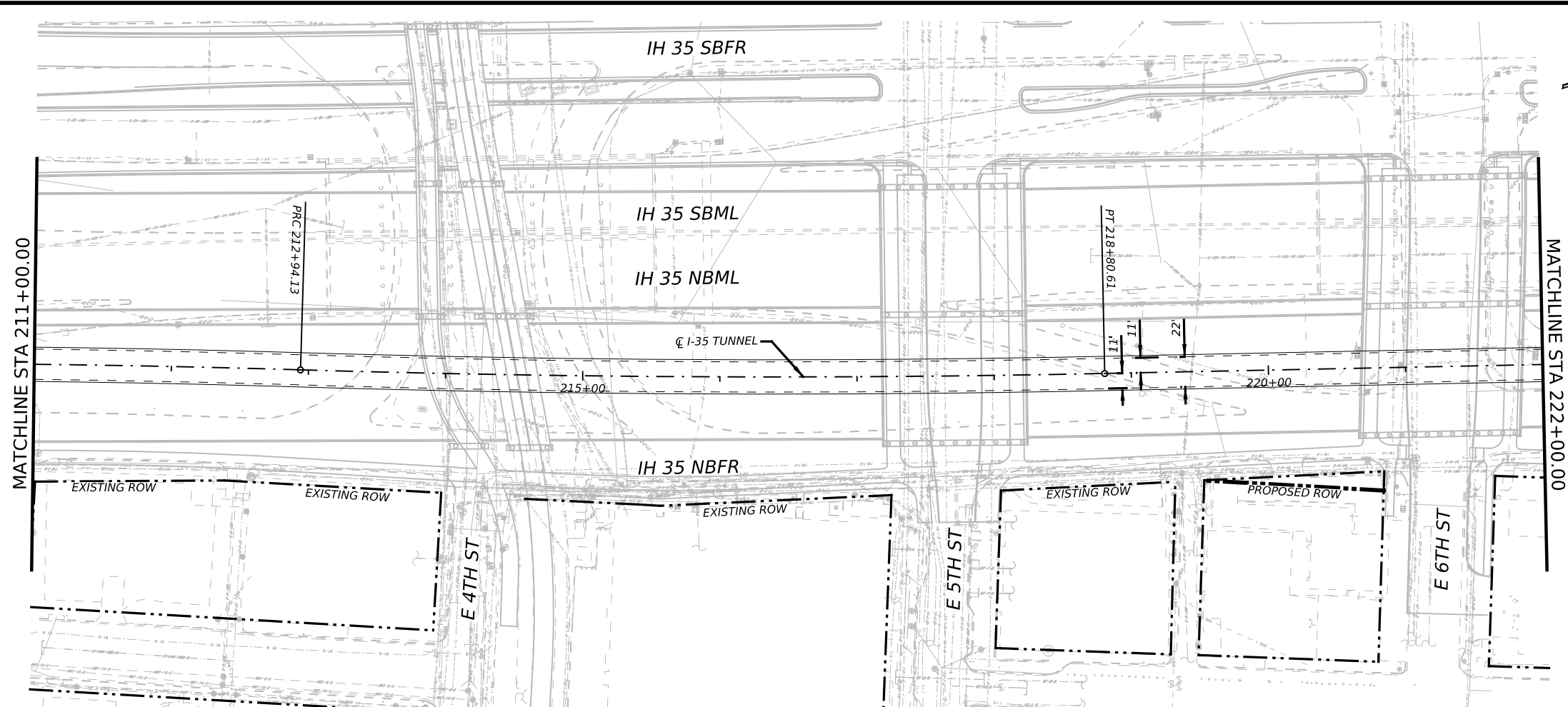
mobility CAPITAL AREA **35**

Texas Department of Transportation

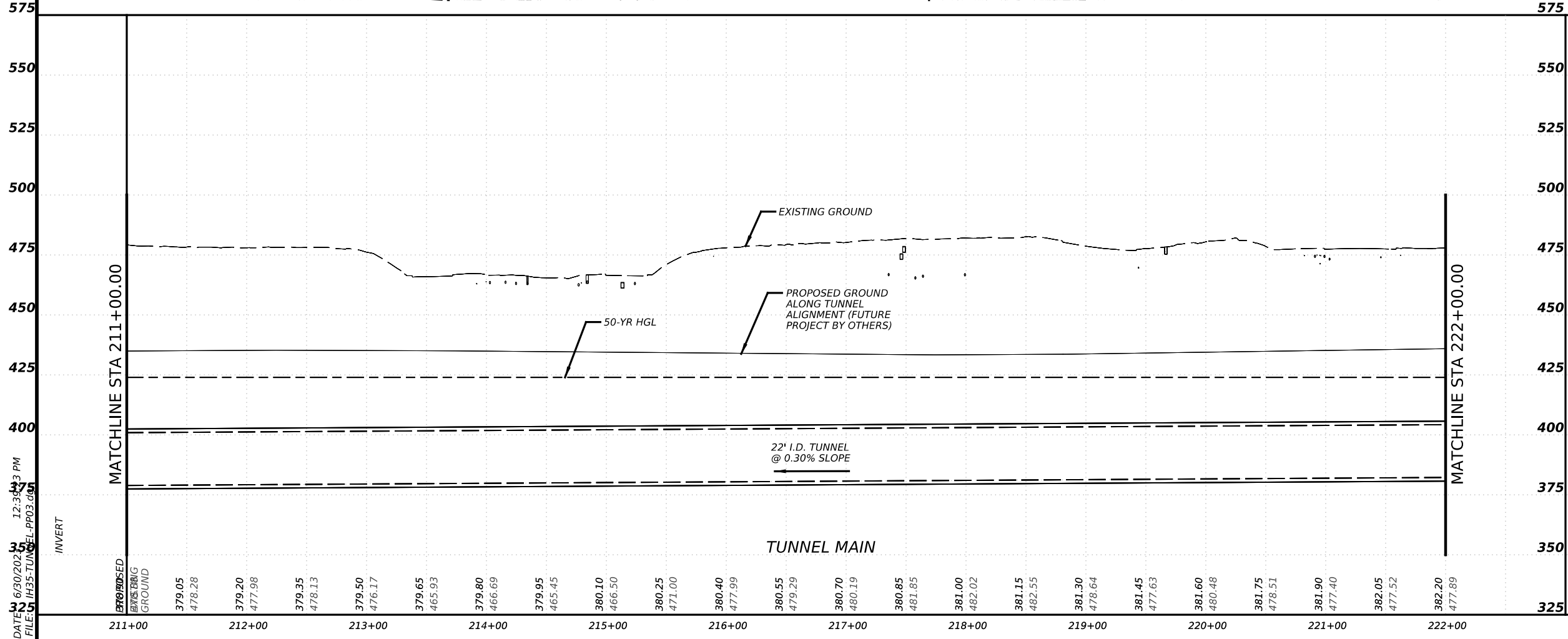
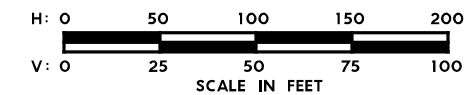
CAPITAL EXPRESS CENTRAL
I-35 TUNNEL
PLAN AND PROFILE
STA 200+00 TO STA 211+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 2 OF 17

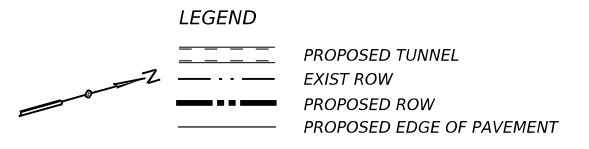
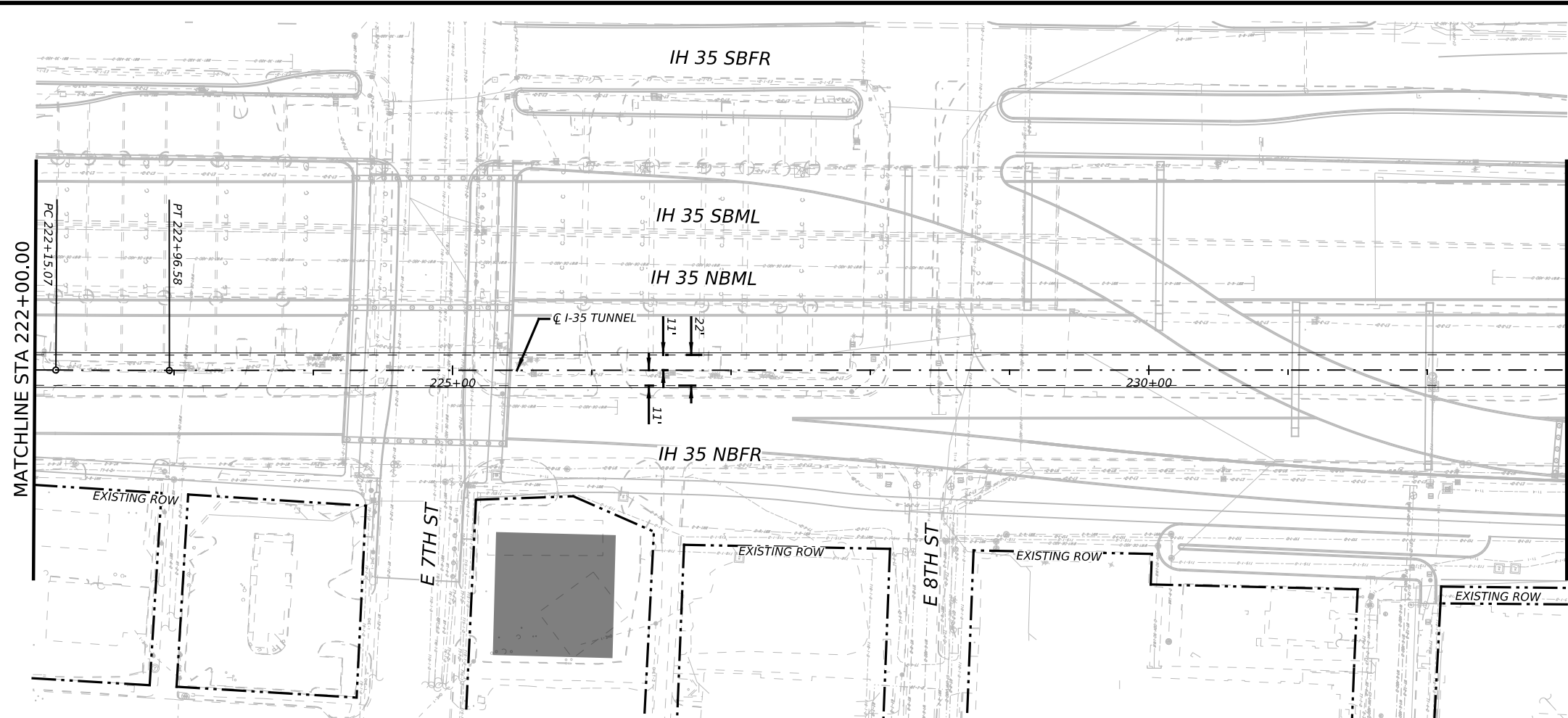
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	81	



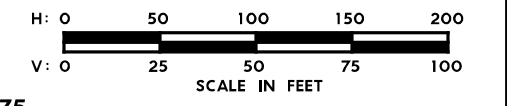
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 5. SEE STRUCTURAL DRAWINGS FOR PIPE, OUTFALL AND DROP SHAFT/ADITS STRUCTURE DETAILS.
 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



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		HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681	
		CAPITAL AREA	
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL</p> <p>PLAN AND PROFILE</p> <p>STA 211+00 TO STA 222+00</p>			
SCALE: 1"=100'-H		SHEET 3 OF 17	
1"=50'-V			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	82	

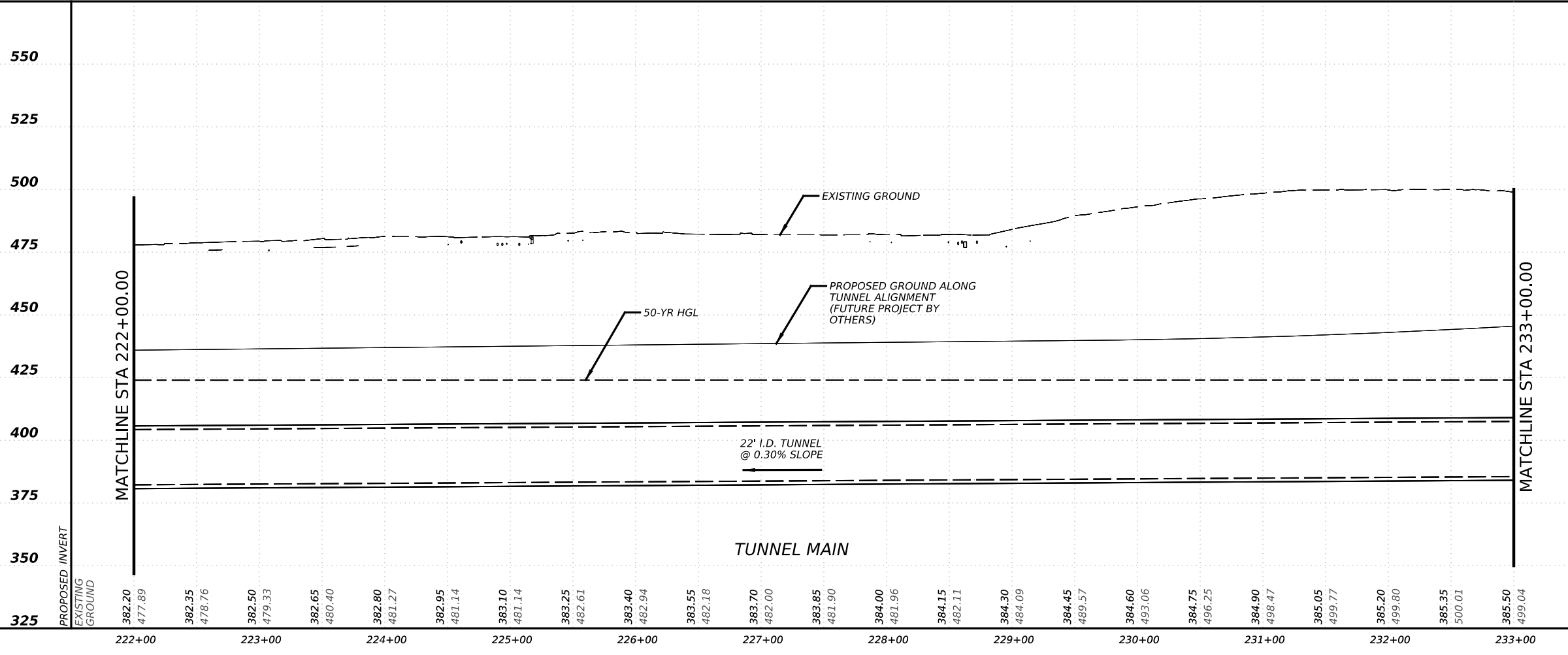


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575

575



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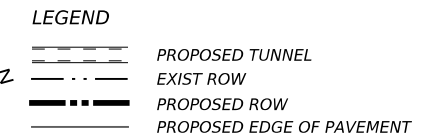
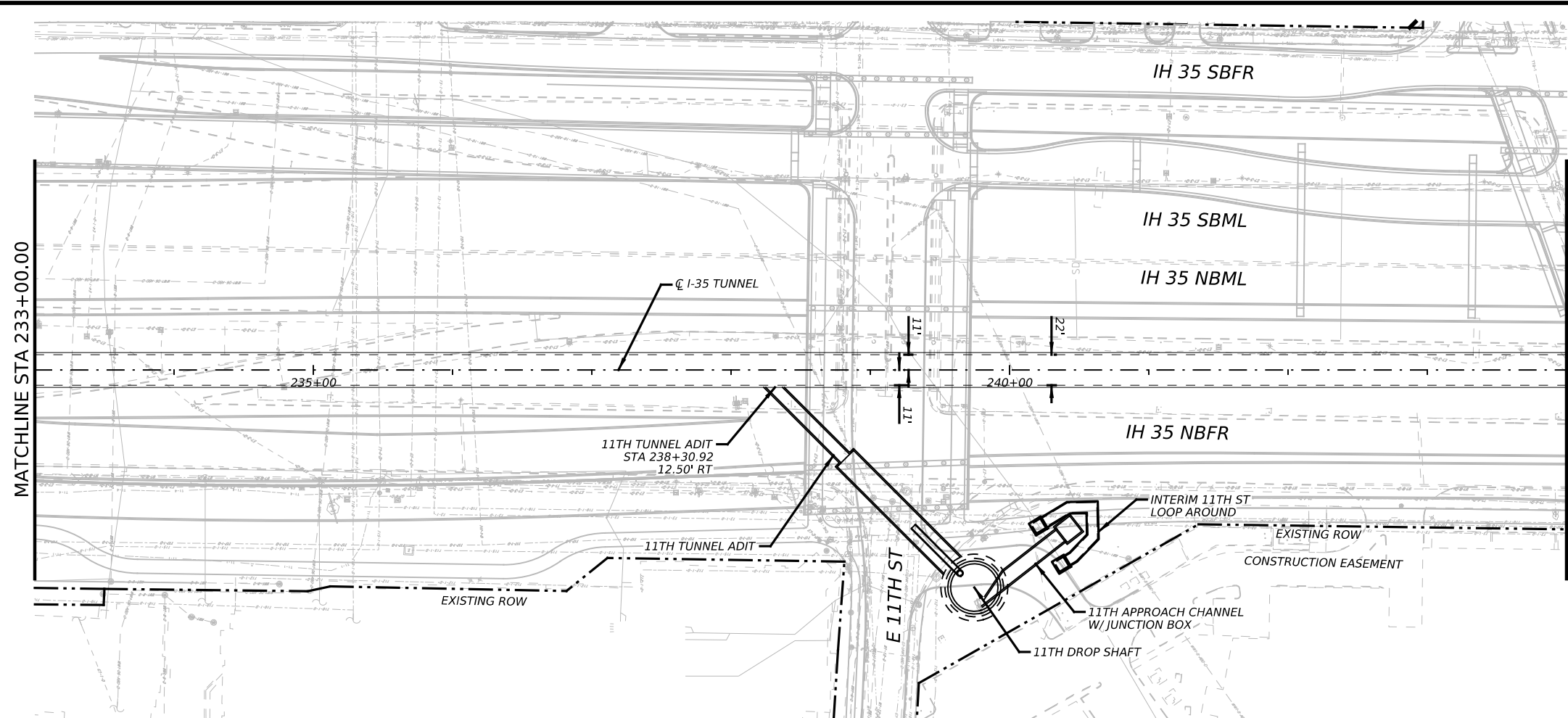
mobility CAPITAL AREA **35**

Texas Department of Transportation

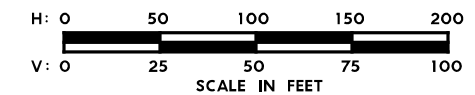
CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PLAN AND PROFILE
 STA 222+00 TO STA 233+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 4 OF 17

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	83	

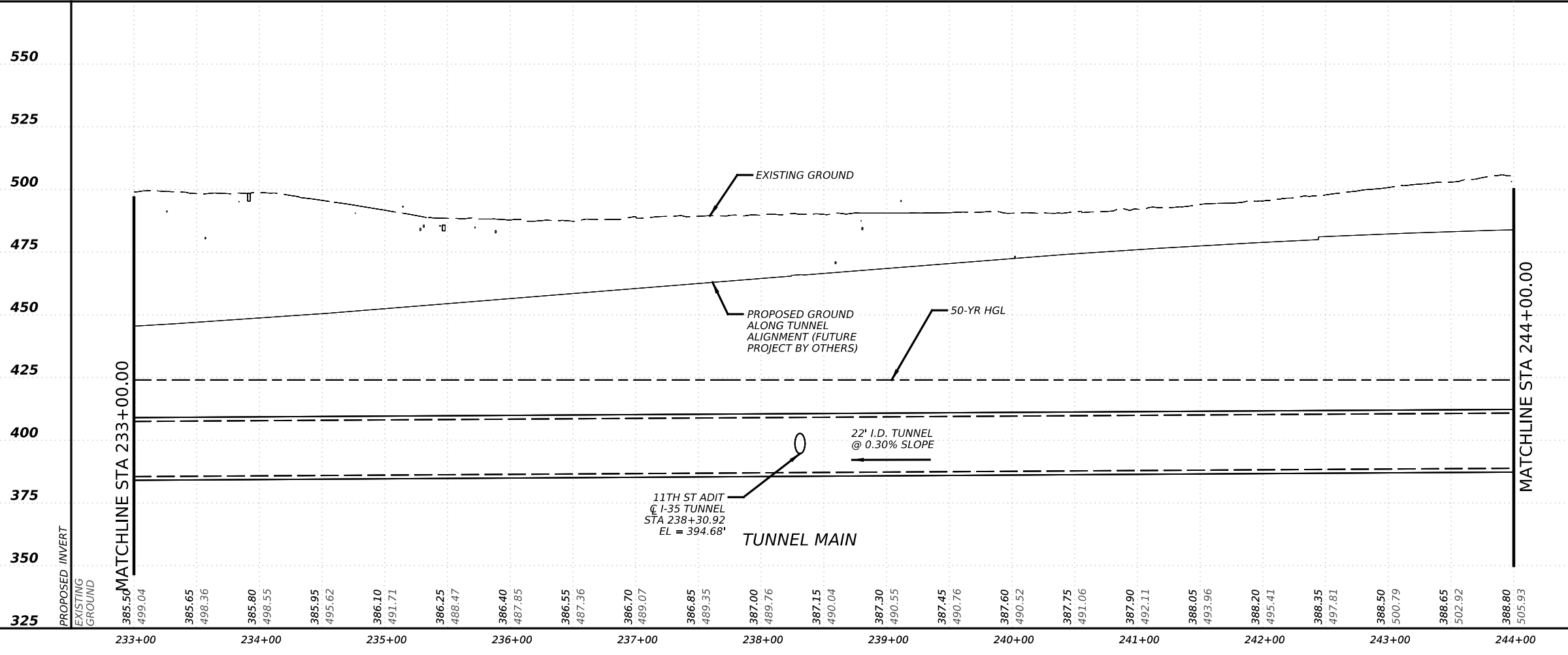


- NOTES:
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 3. CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS PRIOR TO CONSTRUCTION OF STORM DRAINS.
 4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT THE PROJECT.
 5. SEE STRUCTURAL DRAWINGS FOR PIPE, OUTFALL AND DROP SHAFT/ADITS STRUCTURE DETAILS.
 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.

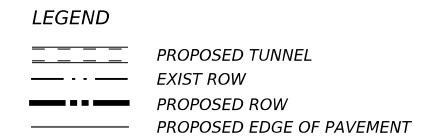
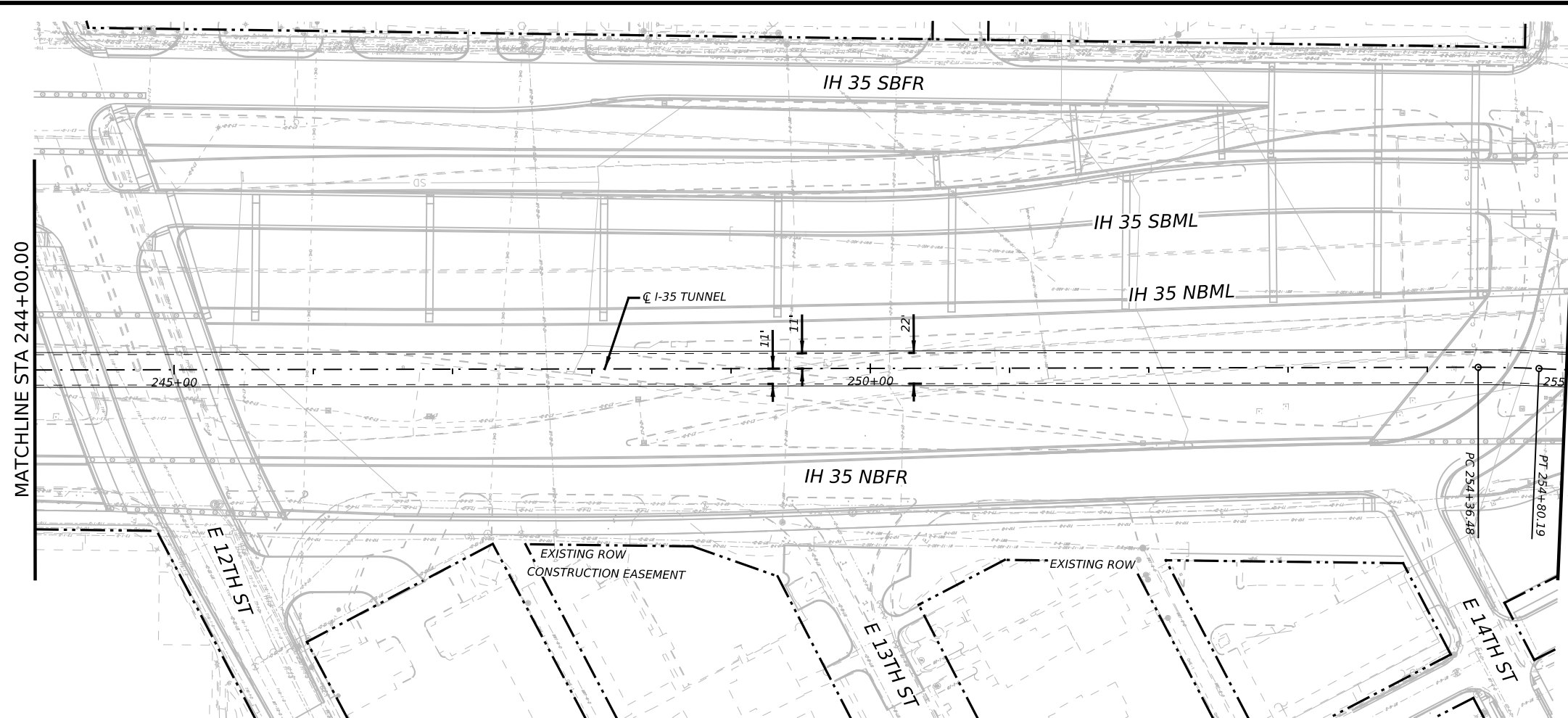


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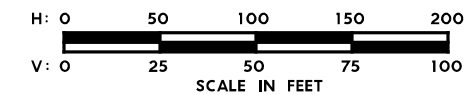
575



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		HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681	
		CAPITAL AREA	
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL</p> <p>PLAN AND PROFILE</p> <p>STA 233+00 TO STA 244+00</p>			
SCALE: 1"=100'-H 1"=50'-V		SHEET 5 OF 17	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		84

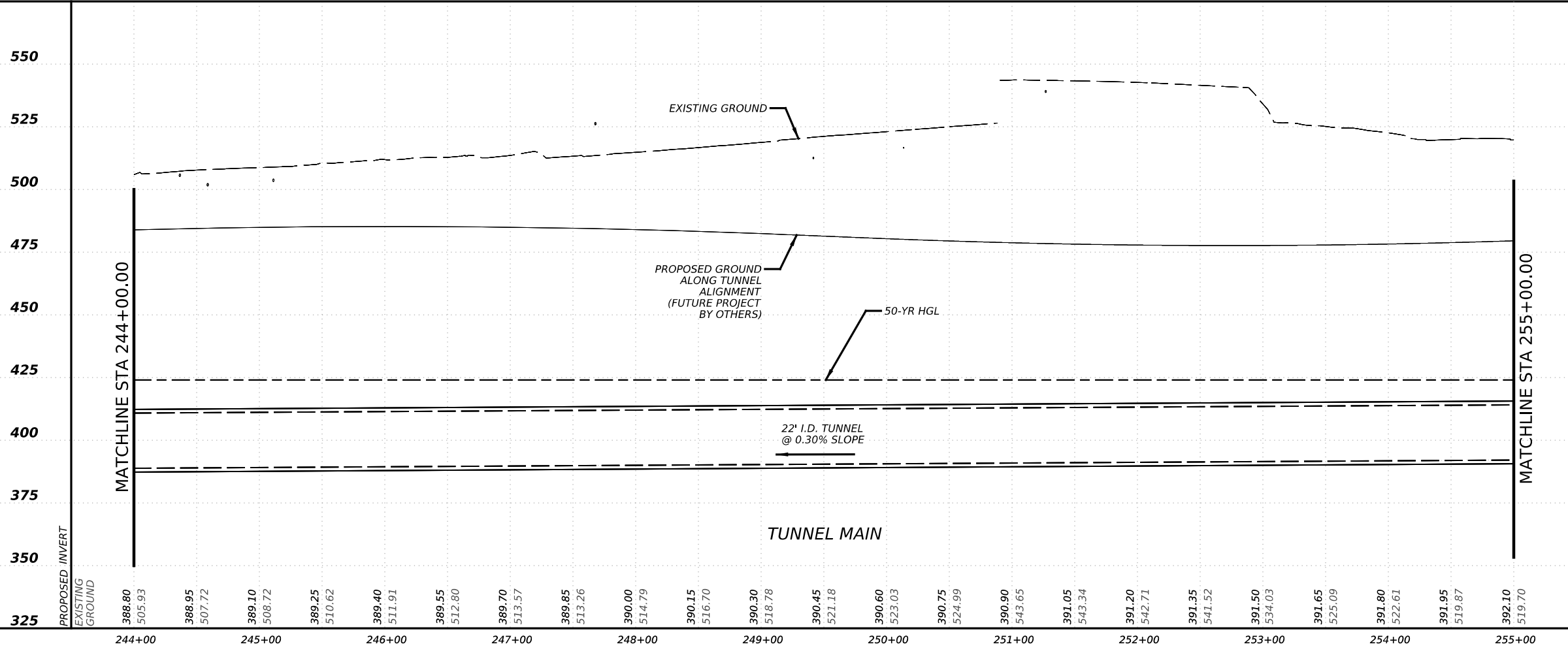


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575

575



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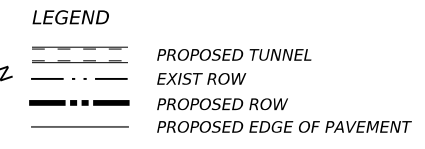
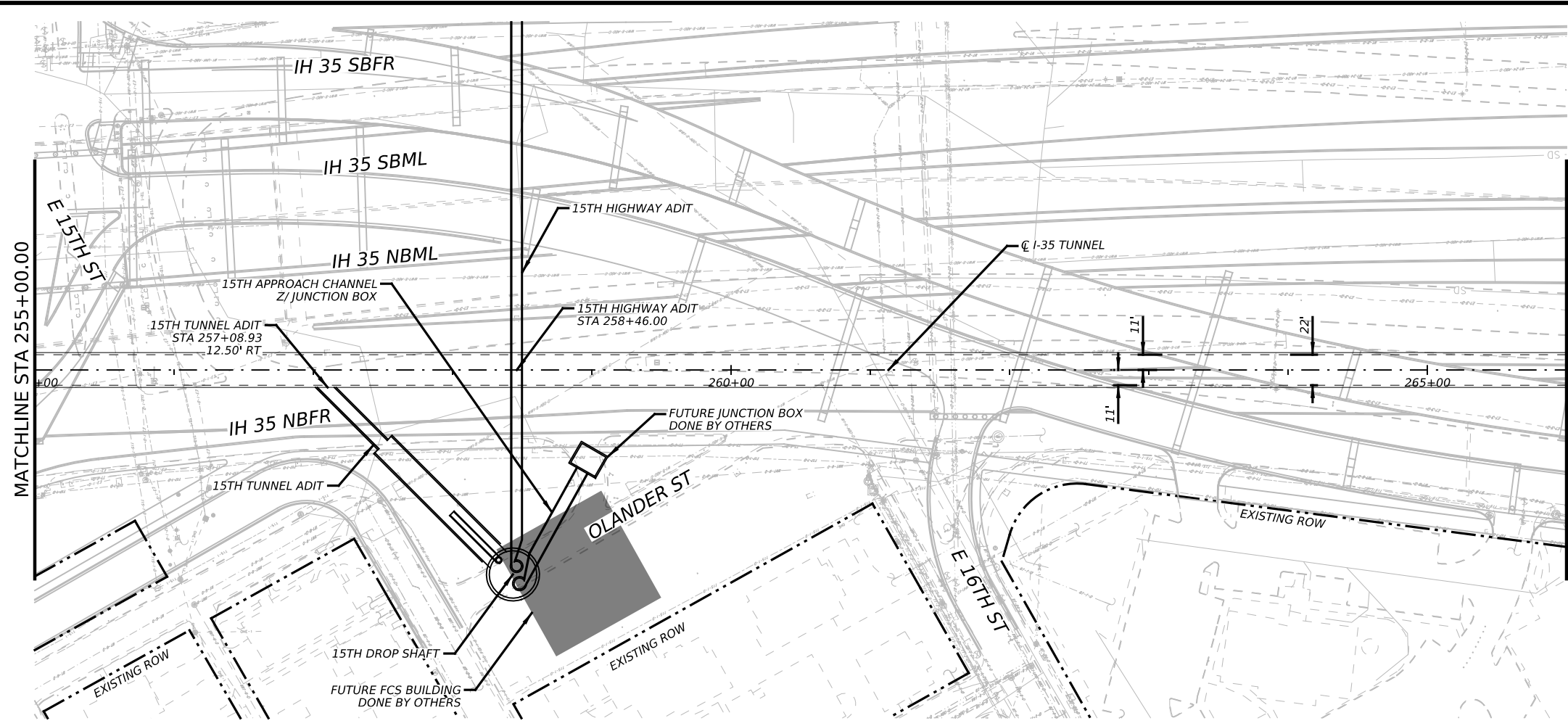
mobility CAPITAL AREA **35**

Texas Department of Transportation

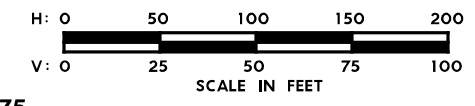
CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PLAN AND PROFILE
 STA 244+00 TO STA 255+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 6 OF 17

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	85	

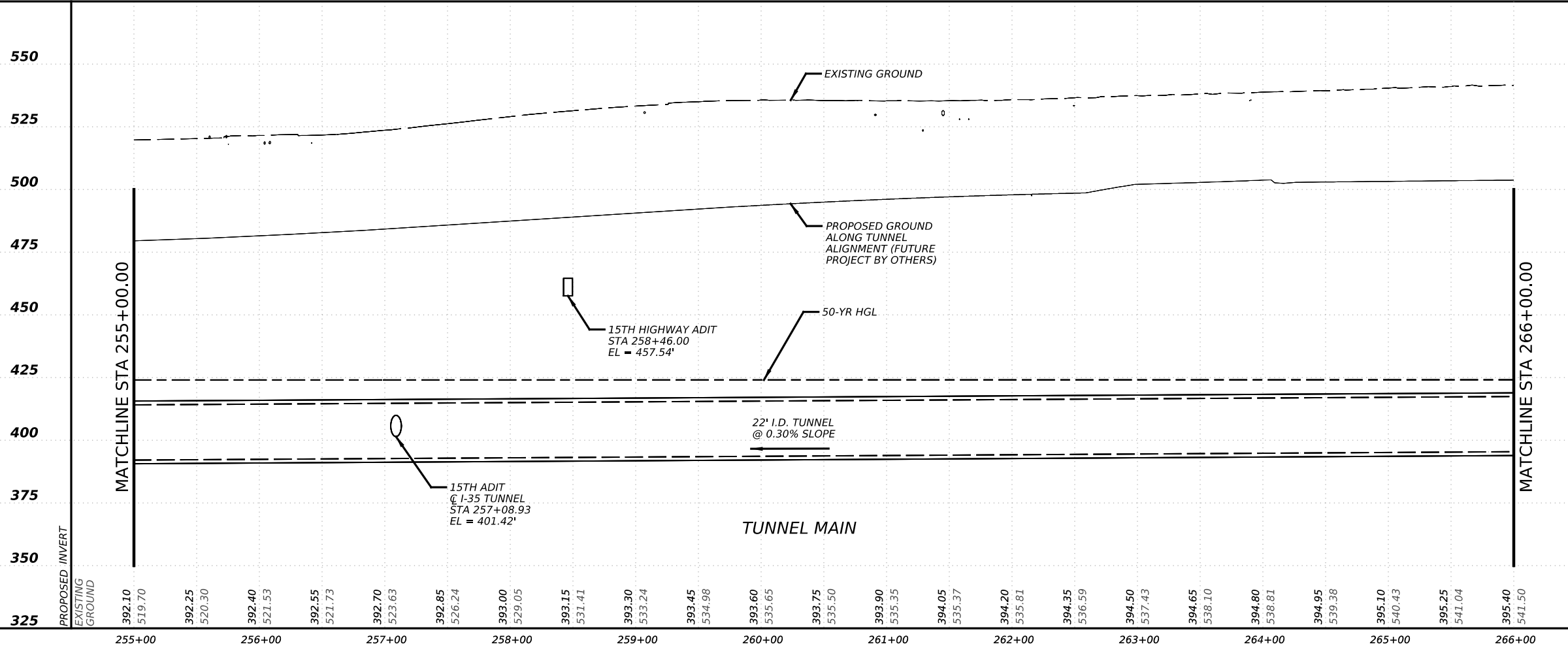


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575

575



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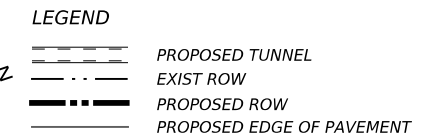
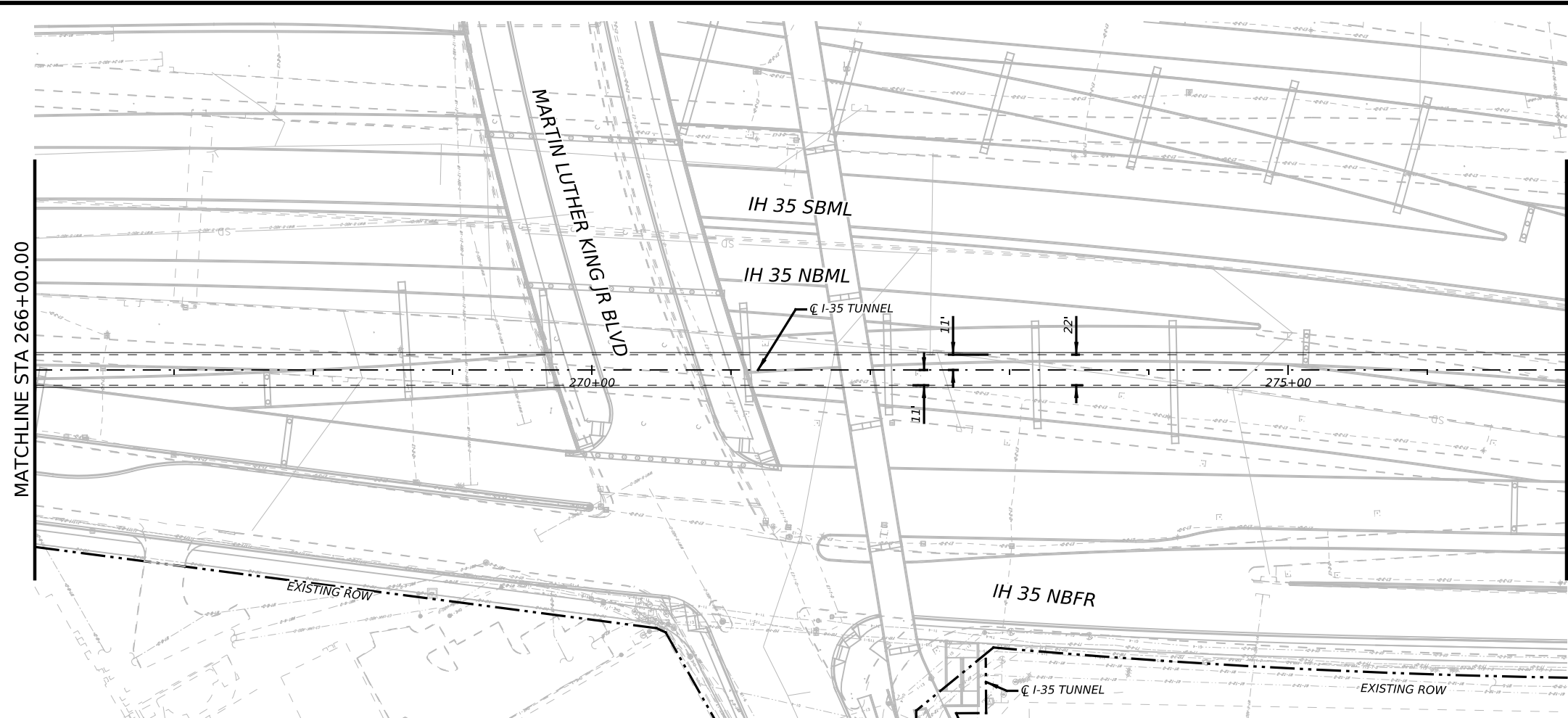
mobility CAPITAL AREA **35**

Texas Department of Transportation

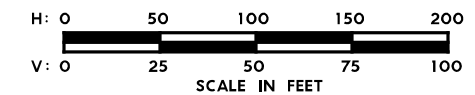
CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PLAN AND PROFILE
 STA 255+00 TO STA 266+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 7 OF 17

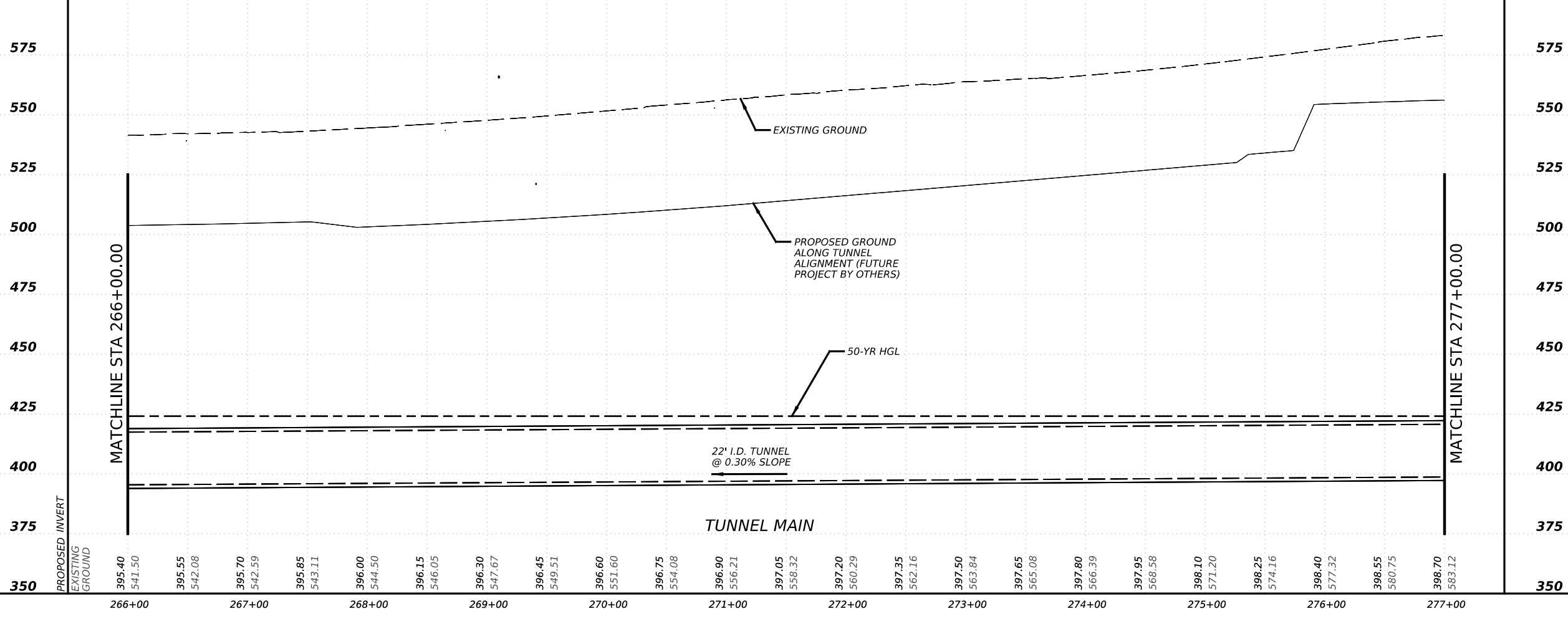
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	86	



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600



NO.	DATE	REVISION	APPR BY

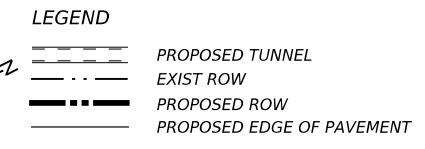
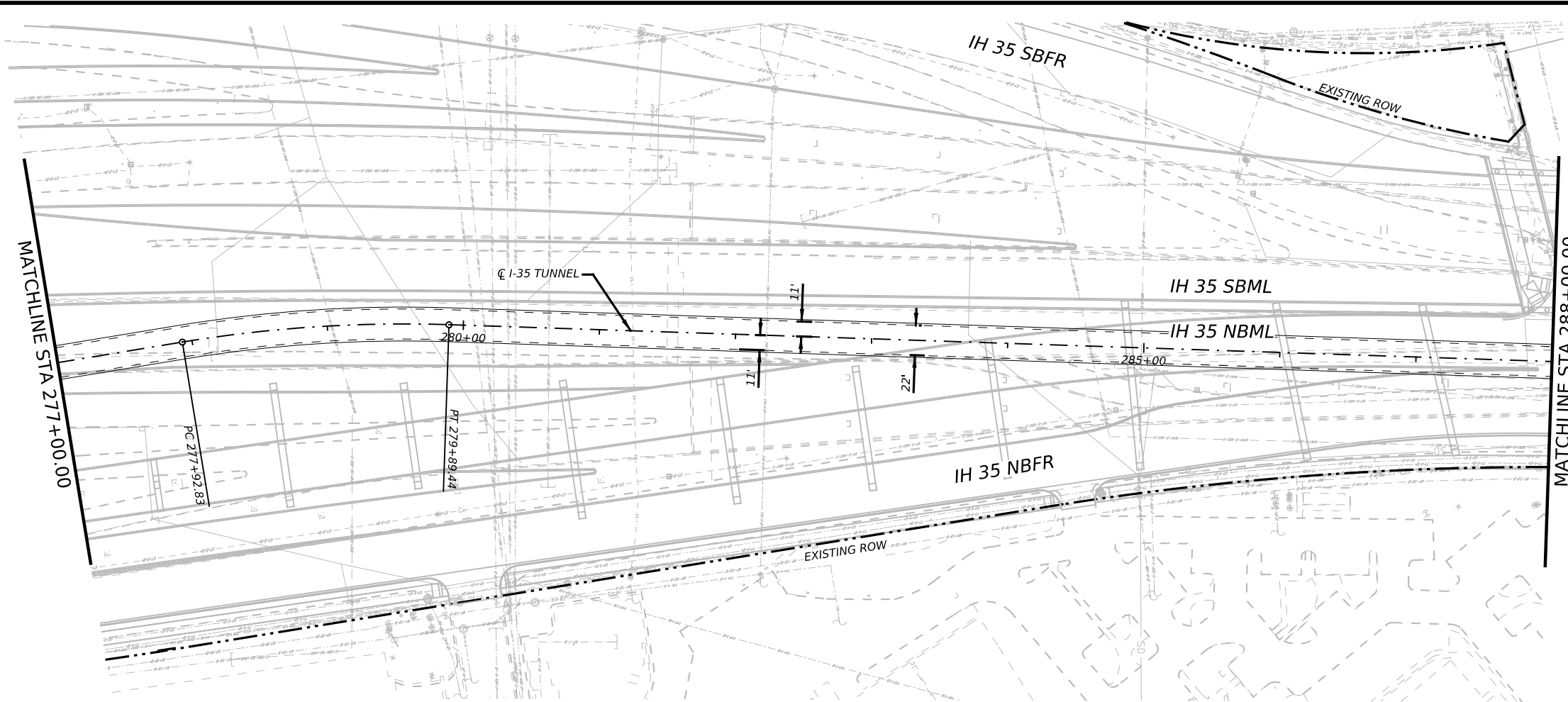
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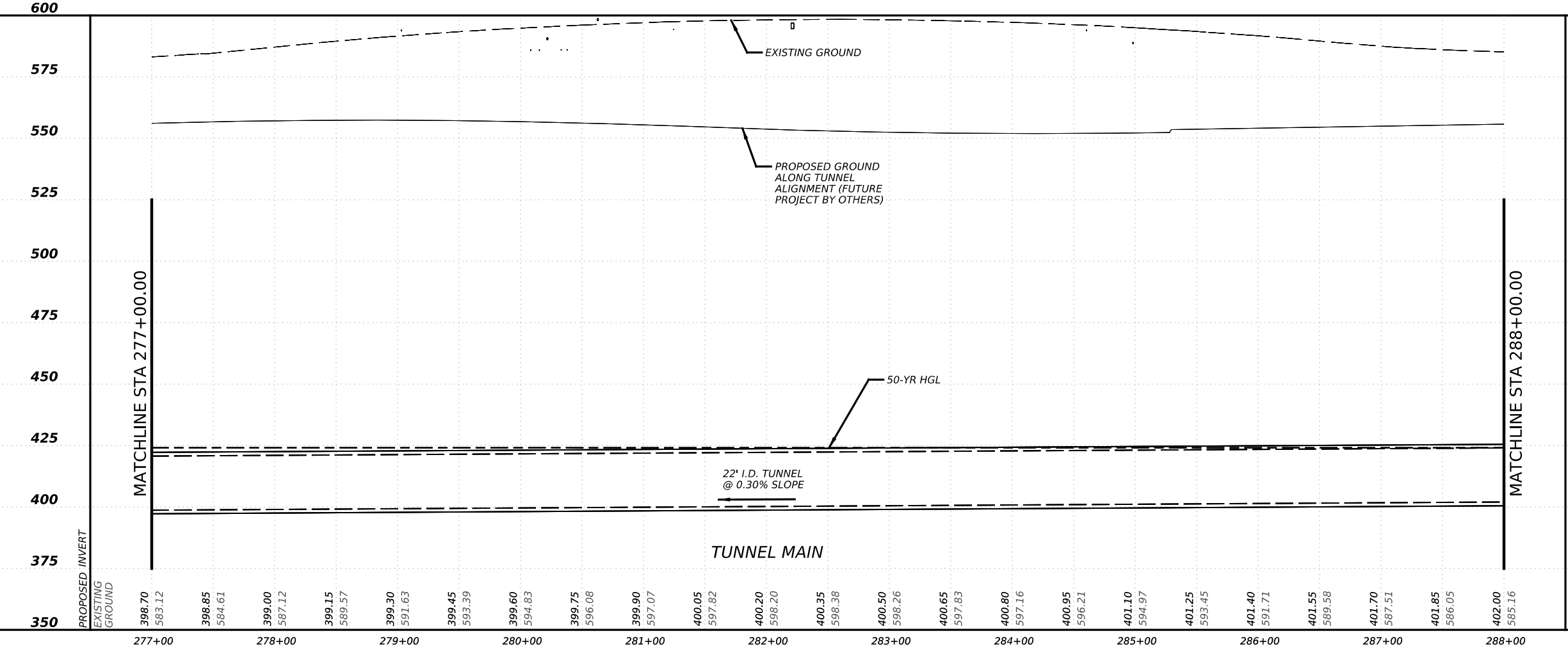
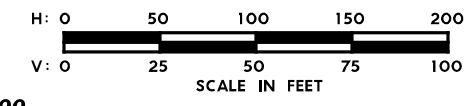
CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PLAN AND PROFILE
 STA 266+00 TO STA 277+00

SCALE: 1"=100'-H
 1"=50'-V

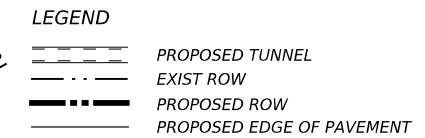
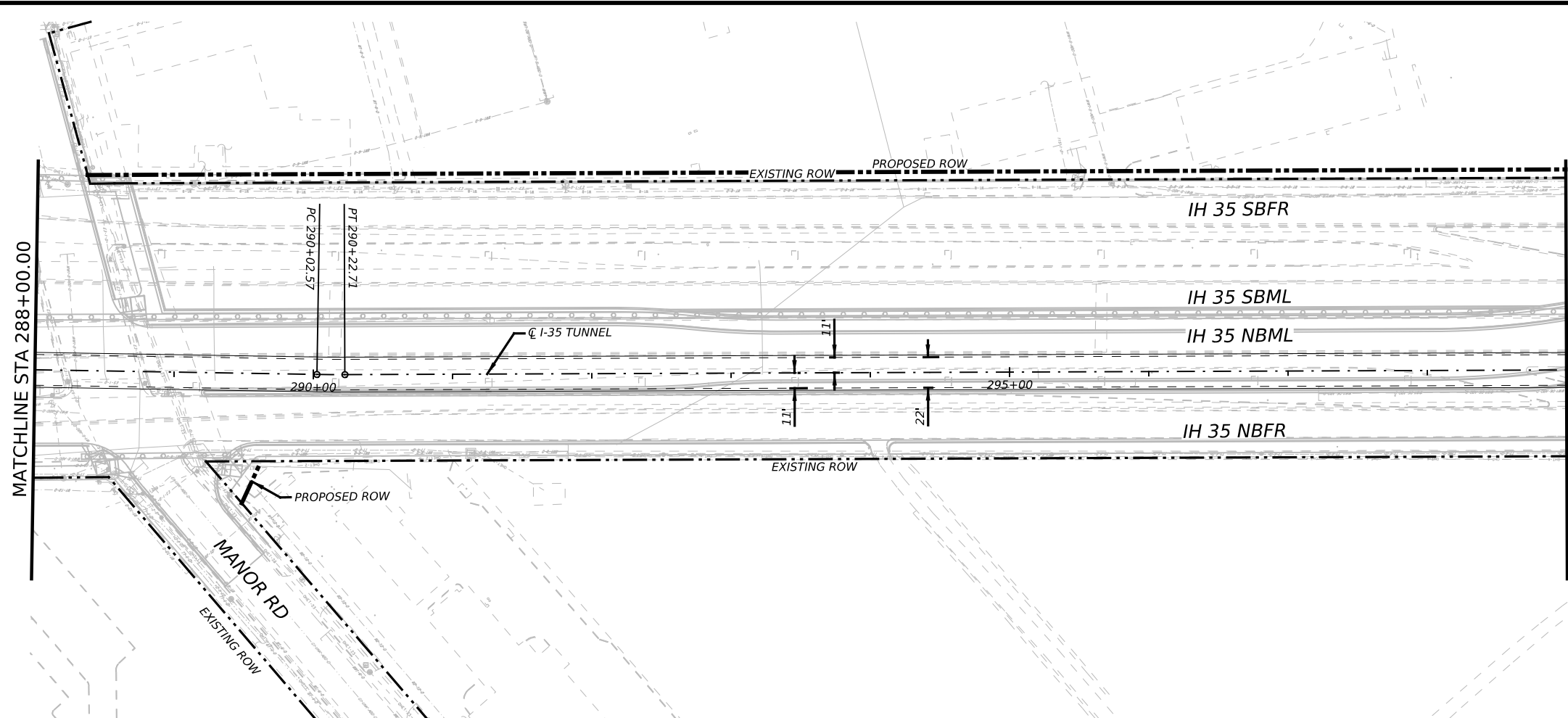
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	87	



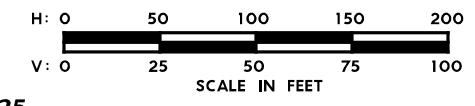
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 - NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



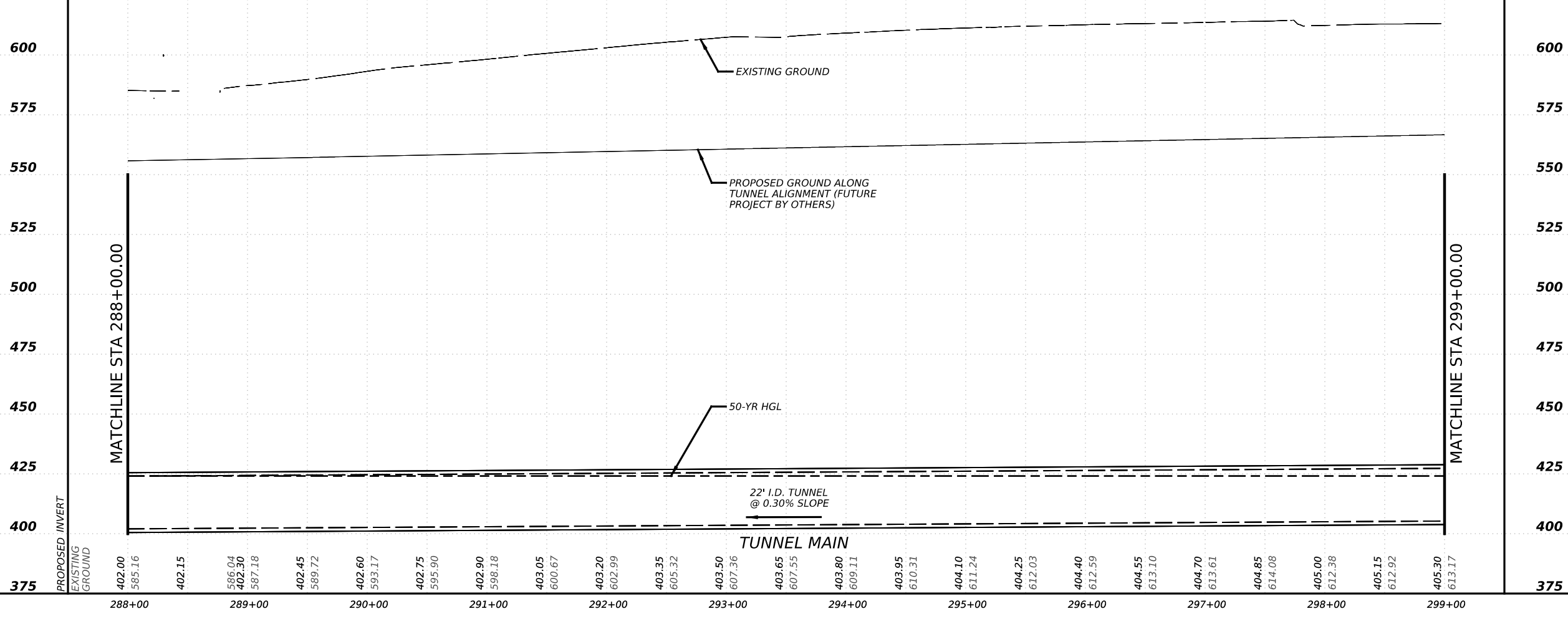
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HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681			
CAPITAL AREA			
Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL I-35 TUNNEL PLAN AND PROFILE STA 277+00 TO STA 288+00			
SCALE: 1"=100'-H 1"=50'-V			
CONT			SHEET NO.
0015	13	JOB 433, ETC.	88
DIST AUS		COUNTY TRAVIS	



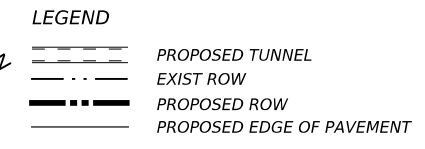
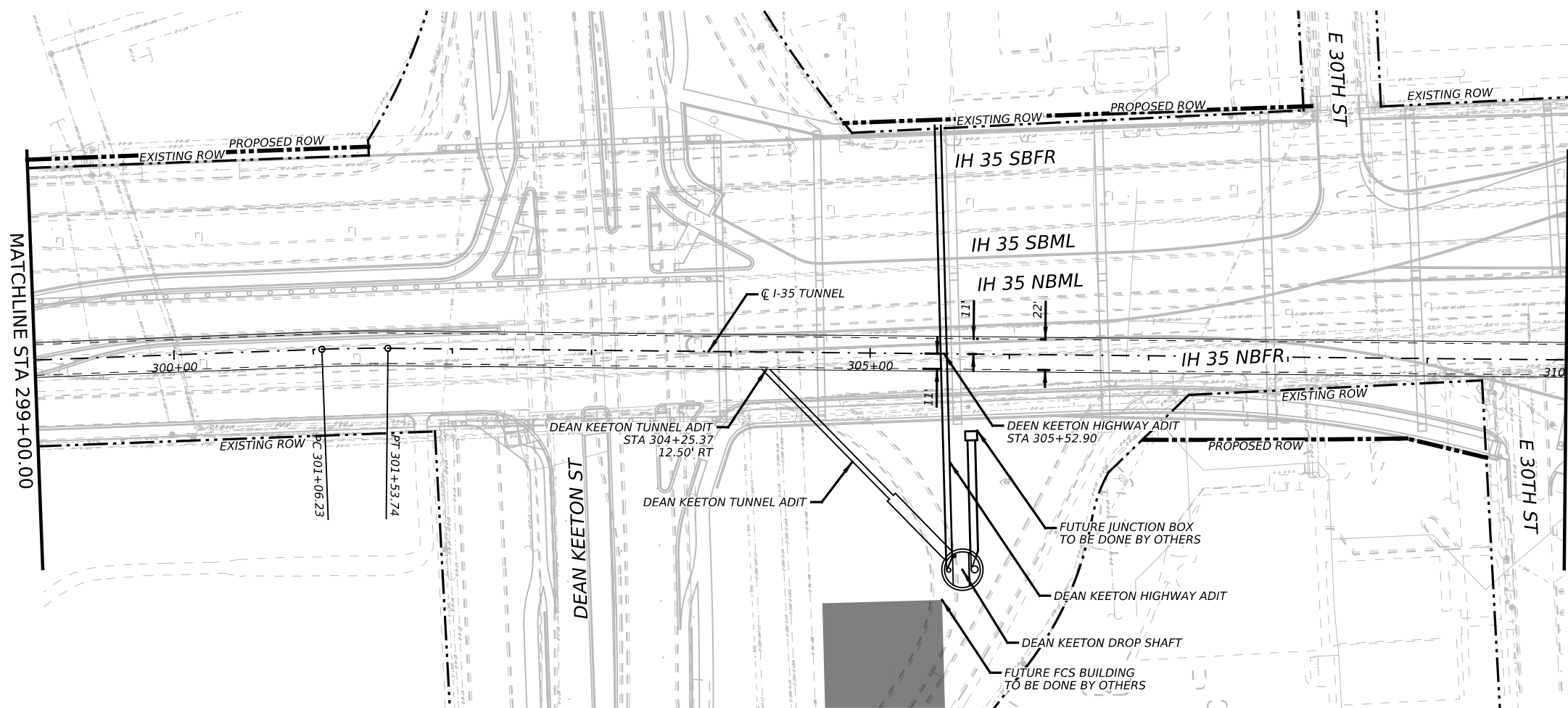
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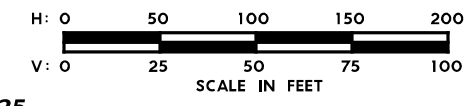
625 MATCHLINE STA 288+00.00 MATCHLINE STA 299+00.00 625



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<p>CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL PLAN AND PROFILE STA 288+00 TO STA 299+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 10 OF 17</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	89	

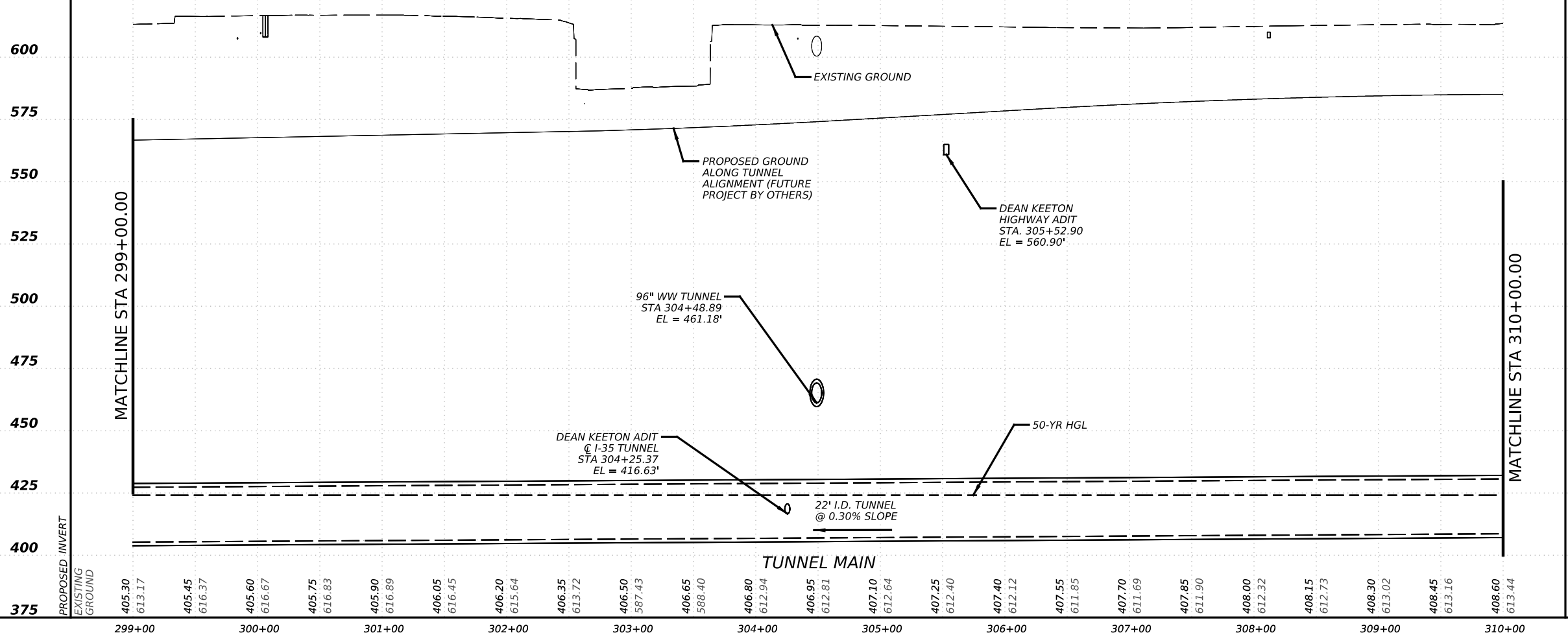


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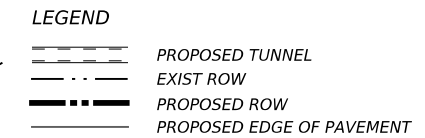
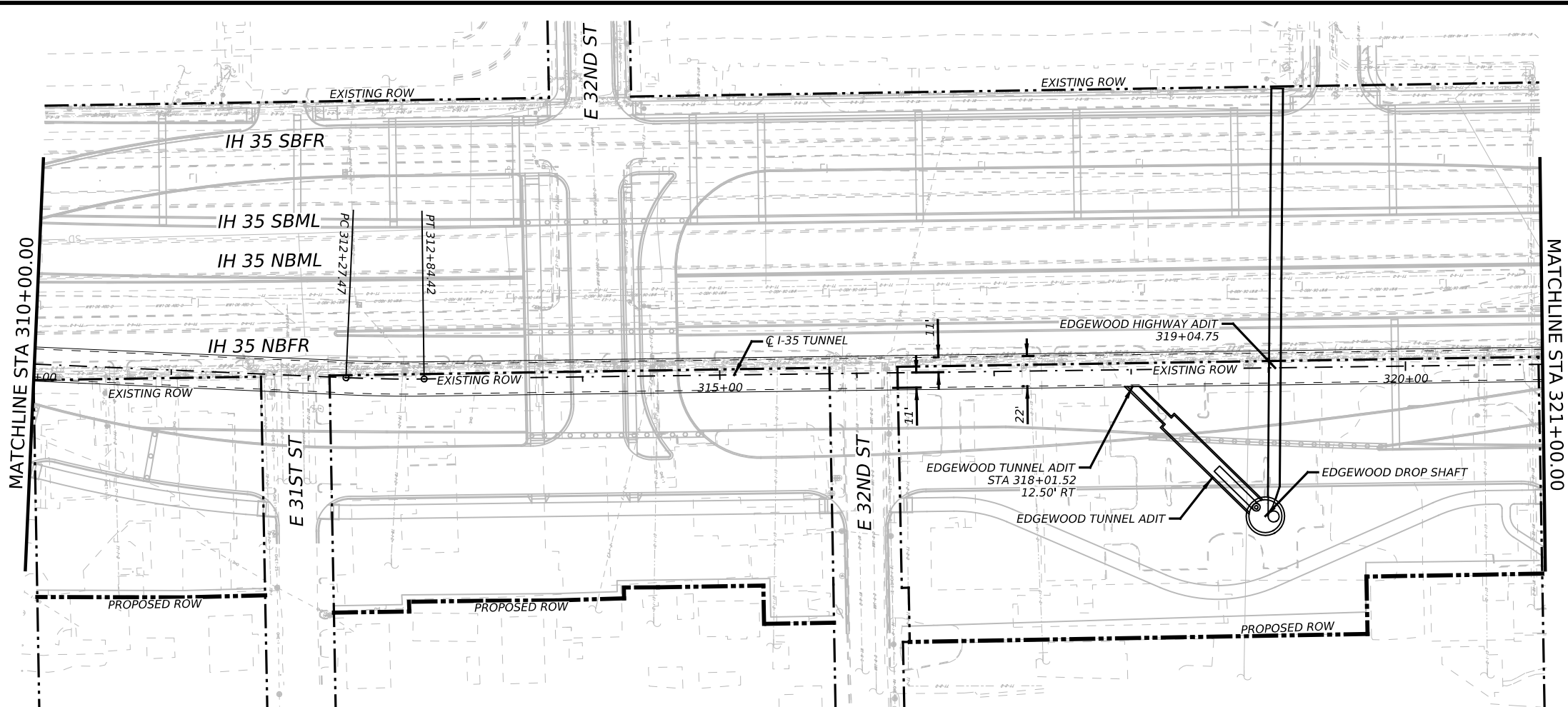
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625

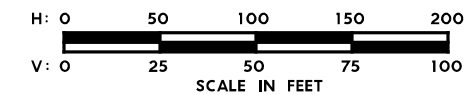


600
575
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425
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375

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<p>CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL PLAN AND PROFILE STA 299+00 TO STA 310+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 11 OF 17</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	90	

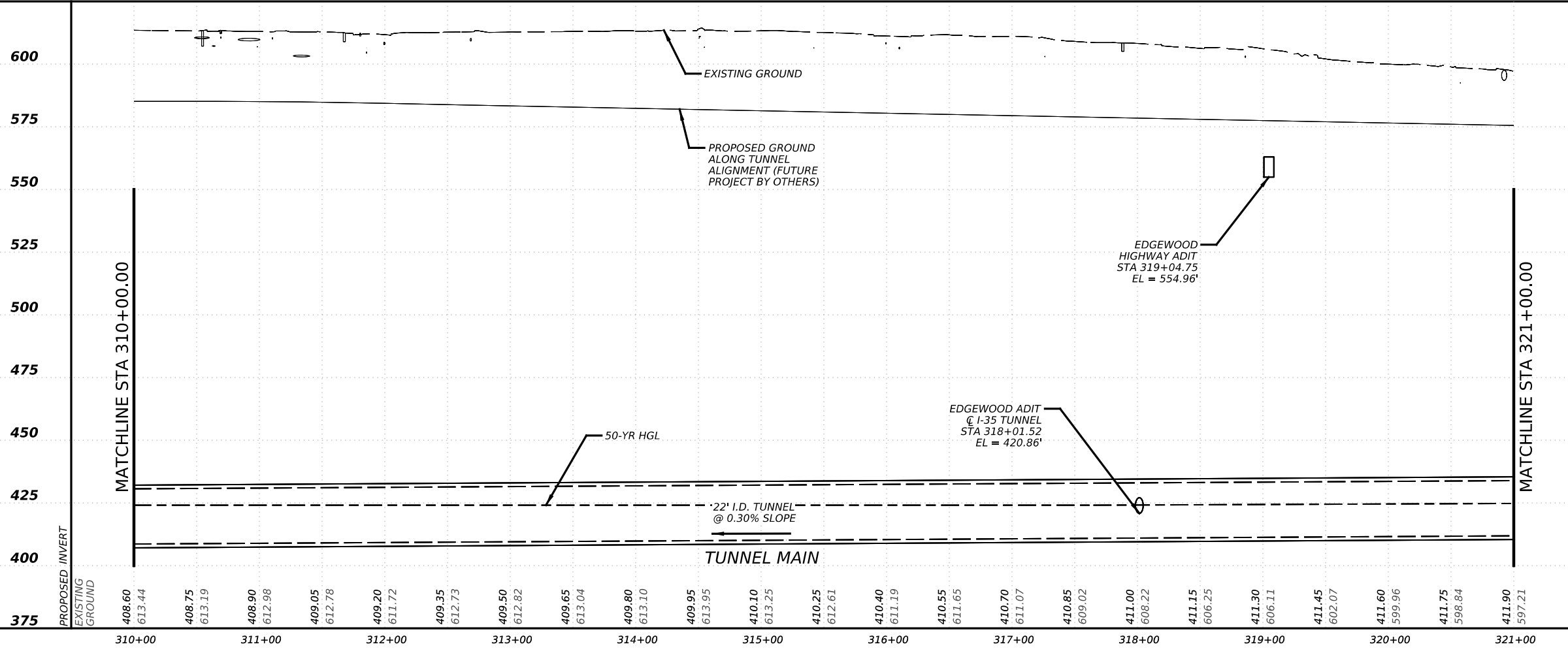


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625

625



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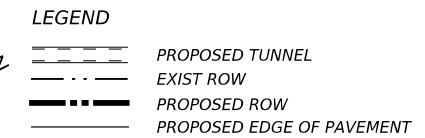
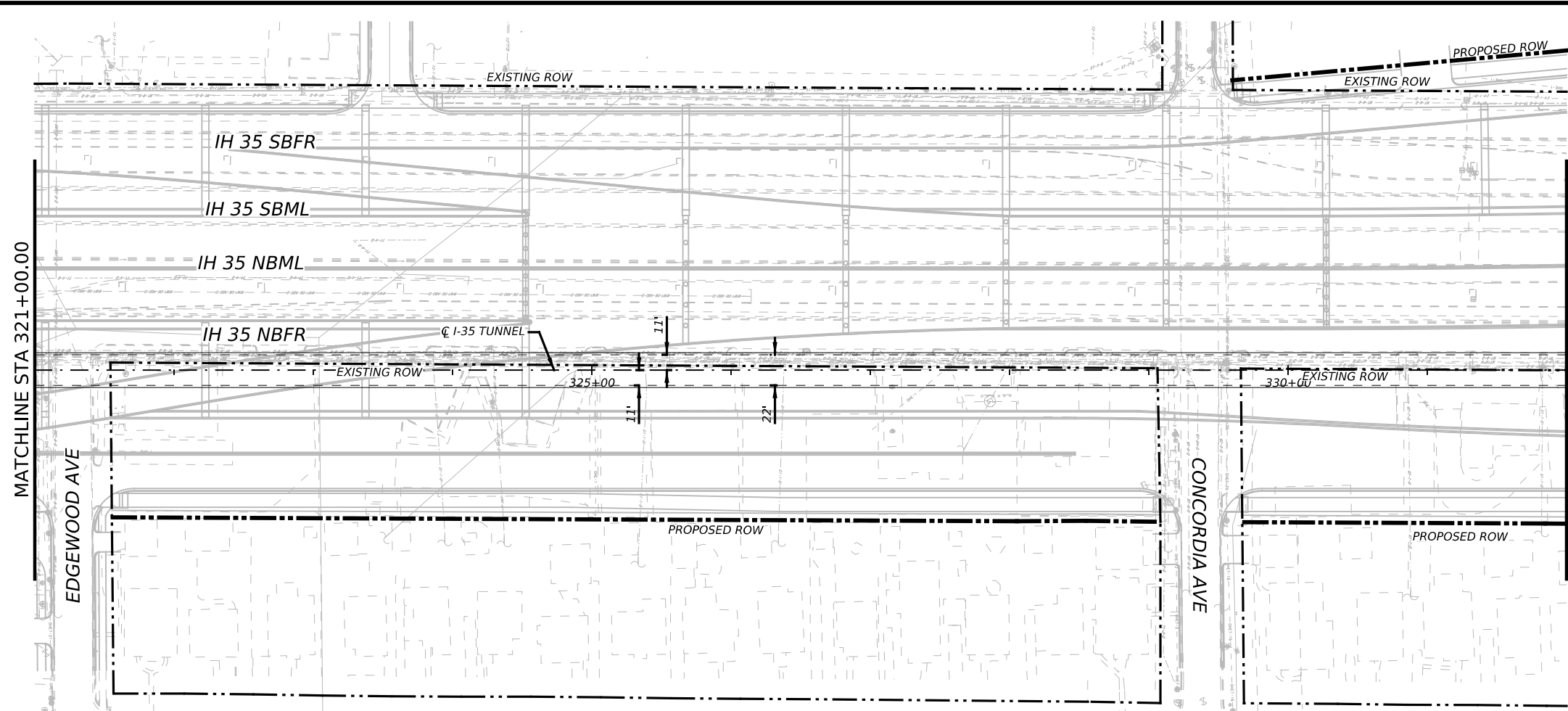
mobility CAPITAL AREA

Texas Department of Transportation

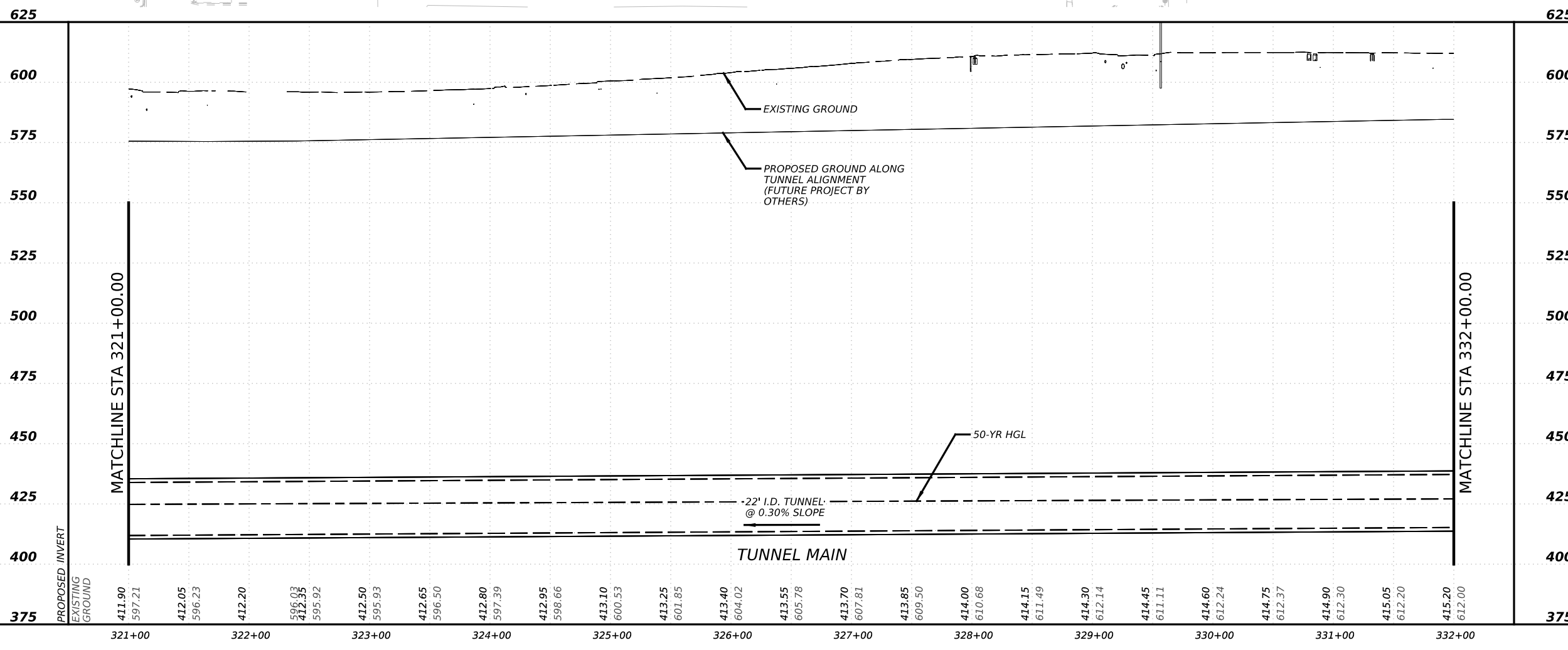
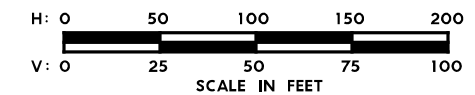
CAPITAL EXPRESS CENTRAL
 I-35 TUNNEL
 PLAN AND PROFILE
 STA 310+00 TO STA 321+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 12 OF 17

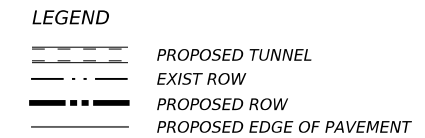
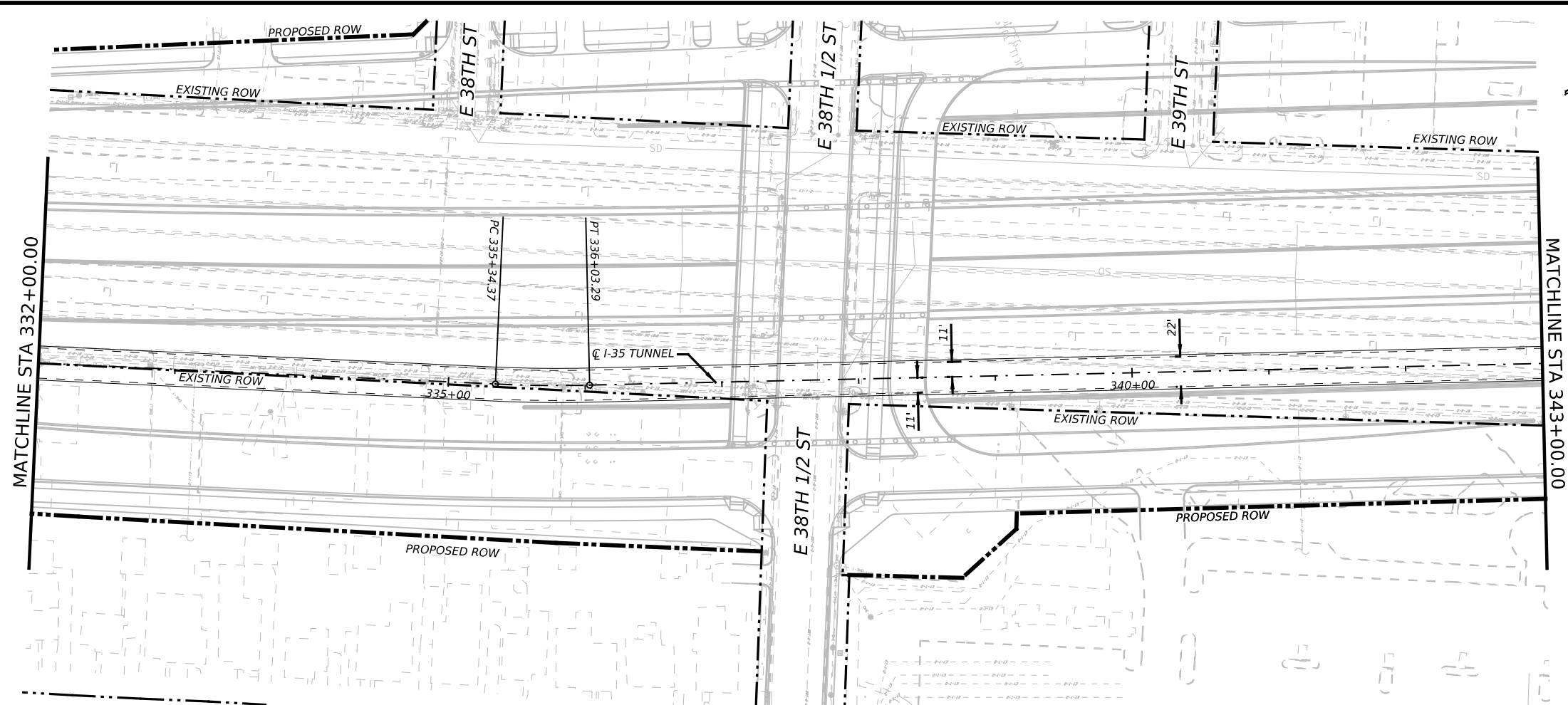
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	91	



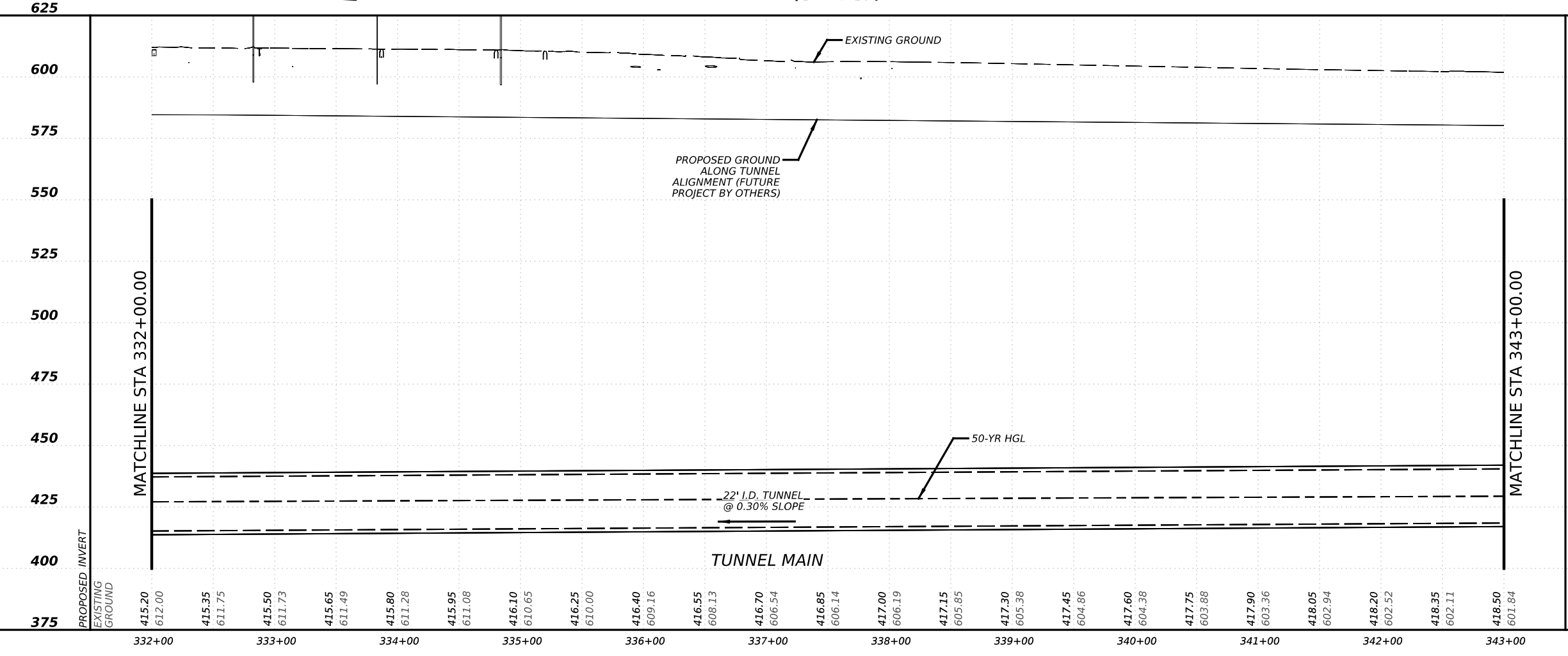
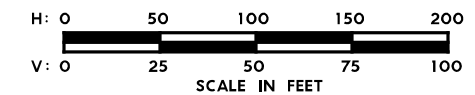
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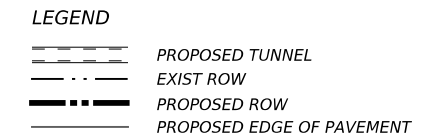
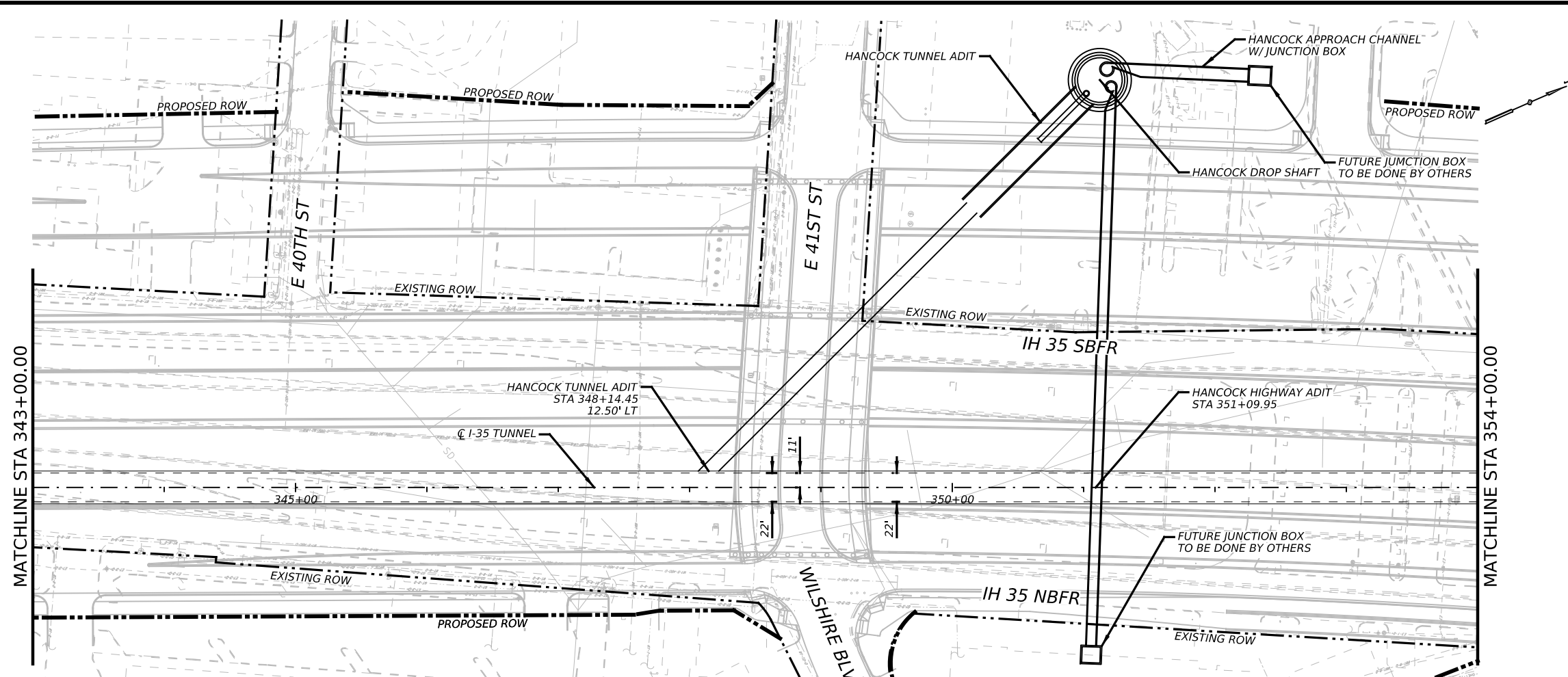
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<p>CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL PLAN AND PROFILE STA 321+00 TO STA 332+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
			SHEET 13 OF 17
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		92



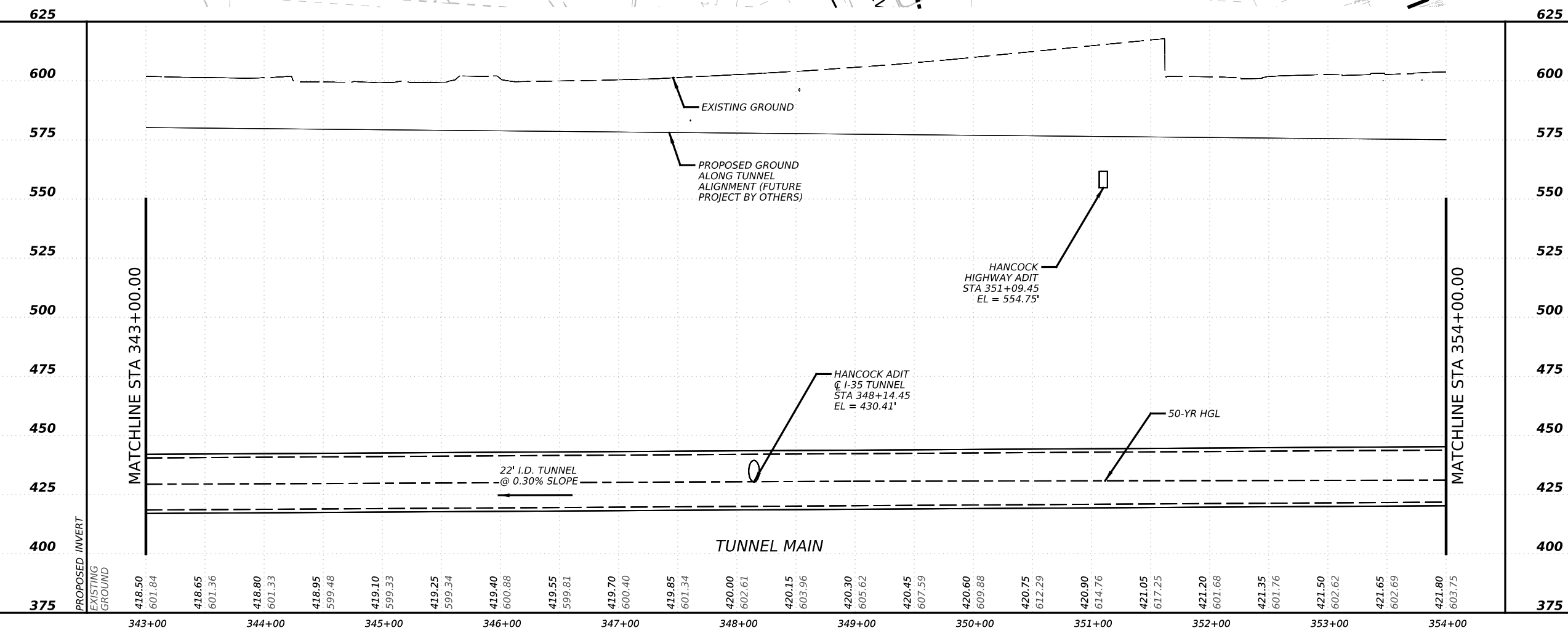
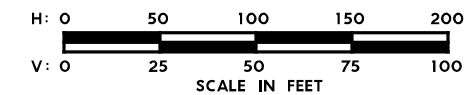
- NOTES:
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 3. CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS PRIOR TO CONSTRUCTION OF STORM DRAINS.
 4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT THE PROJECT.
 5. SEE STRUCTURAL DRAWINGS FOR PIPE, OUTFALL AND DROP SHAFT/ADITS STRUCTURE DETAILS.
 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



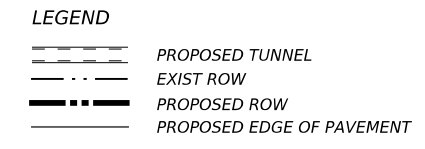
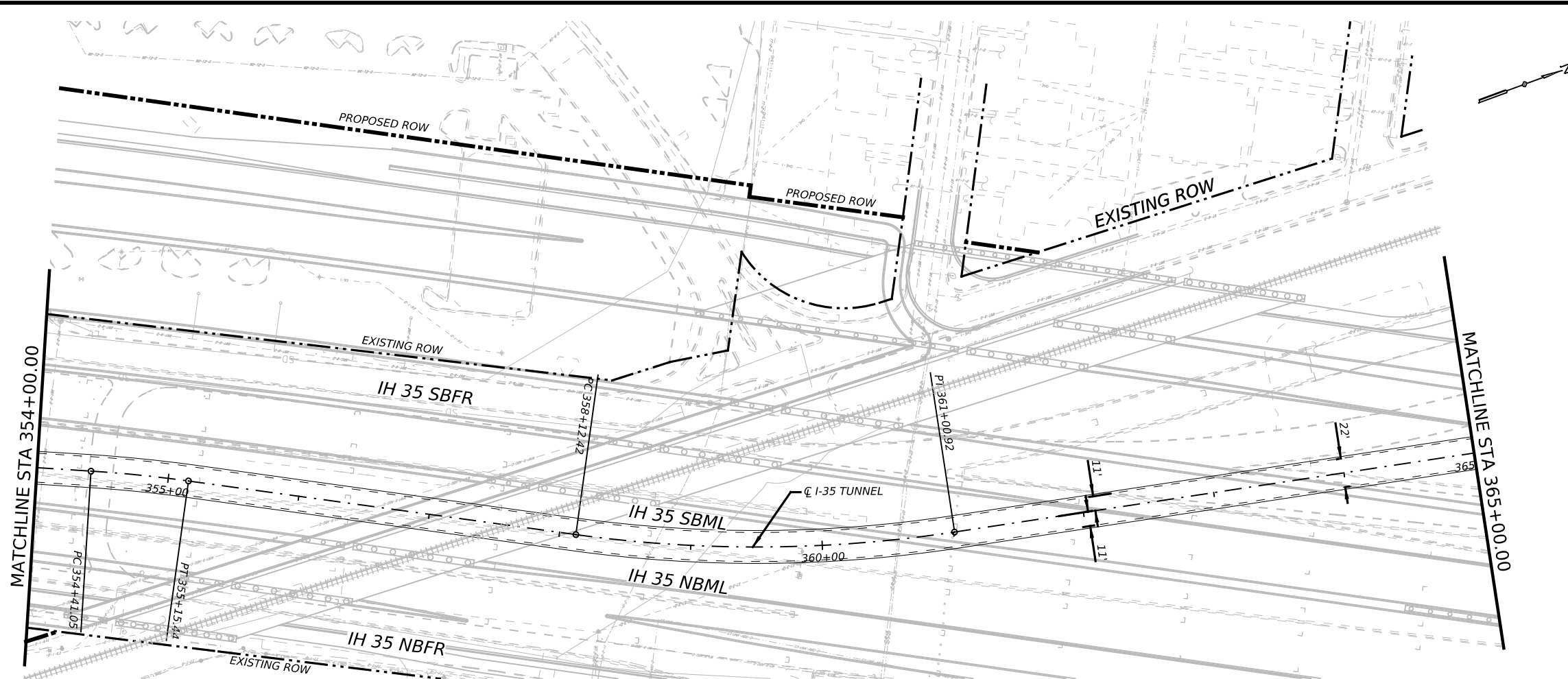
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 HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681			
 CAPITAL AREA			
 Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL I-35 TUNNEL PLAN AND PROFILE STA 332+00 TO STA 343+00			
SCALE: 1"=100'-H 1"=50'-V			
			SHEET 14 OF 17
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		93



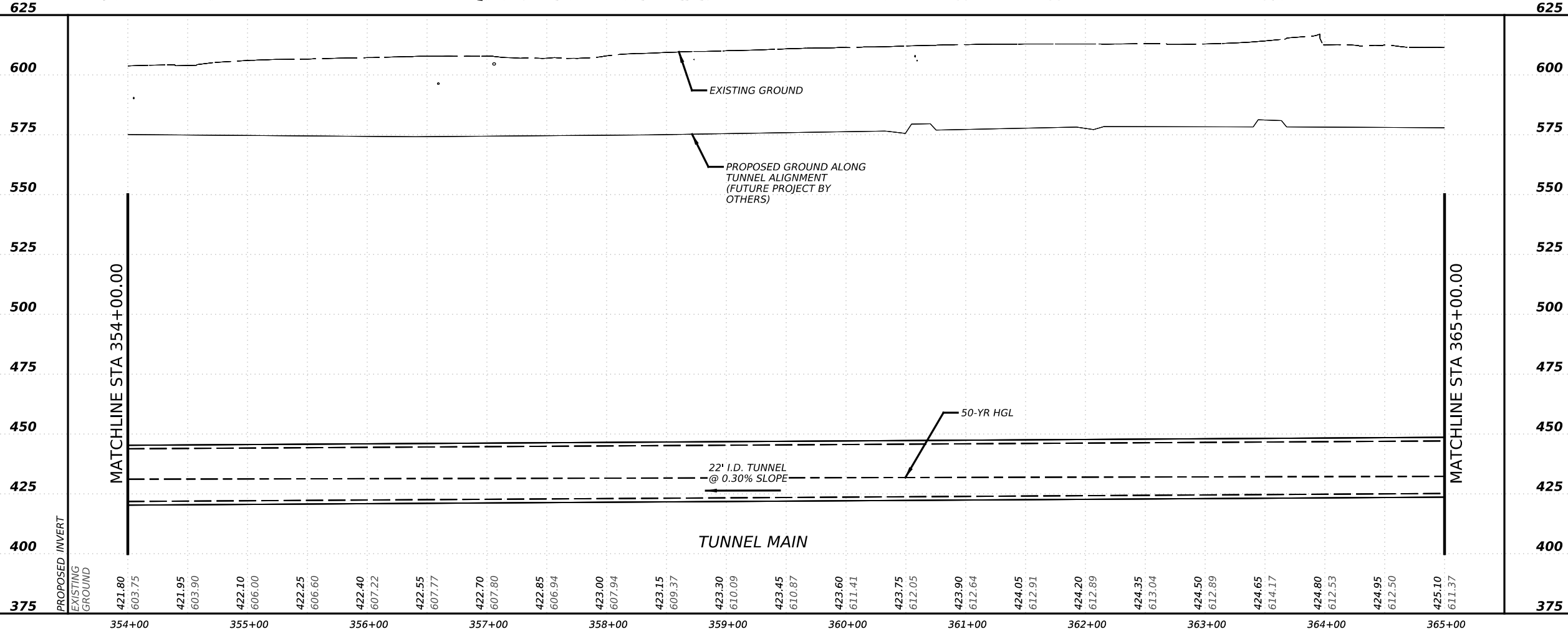
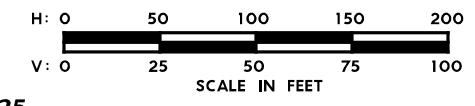
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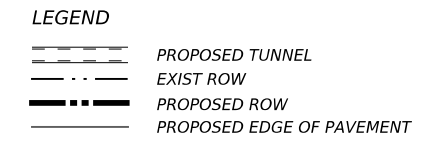
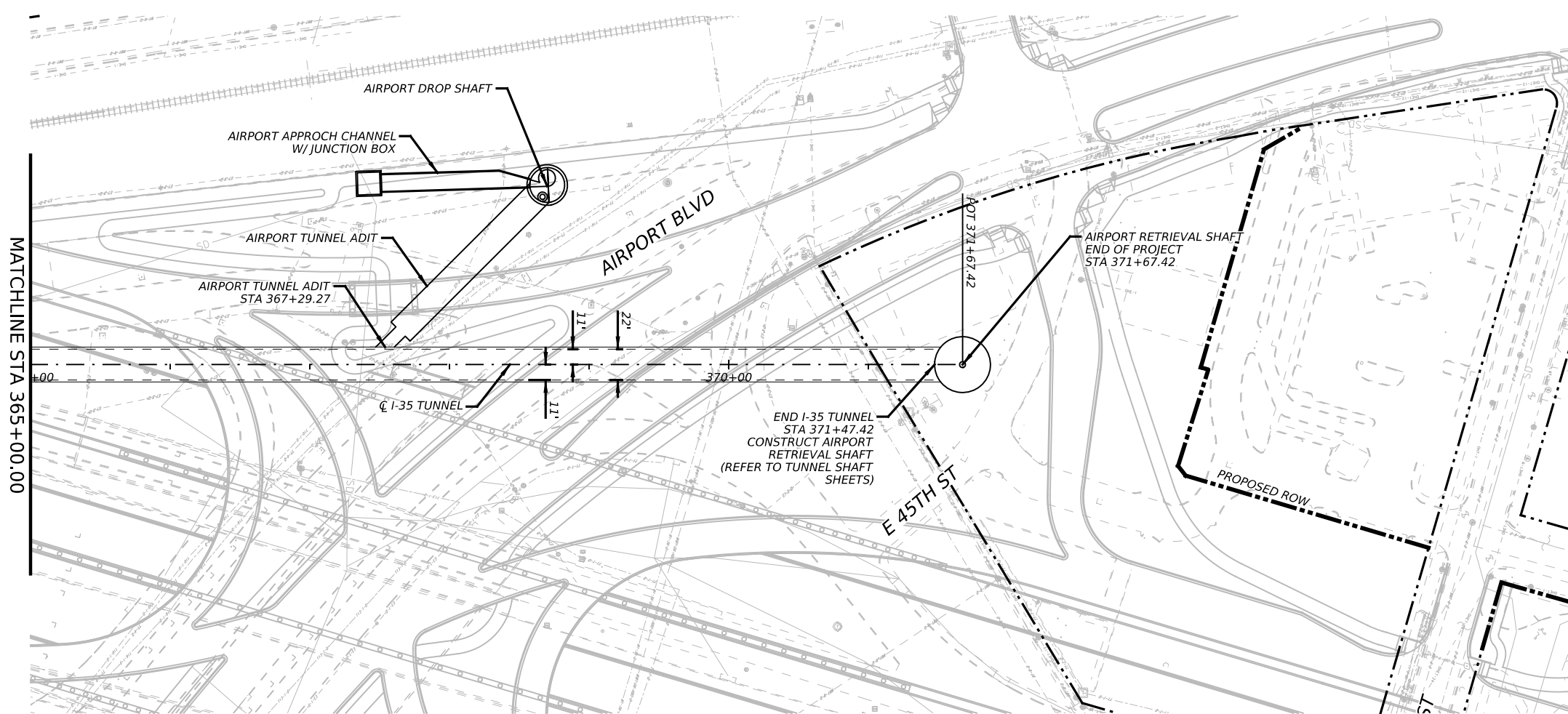
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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL PLAN AND PROFILE STA 343+00 TO STA 354+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 15 OF 17</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		94



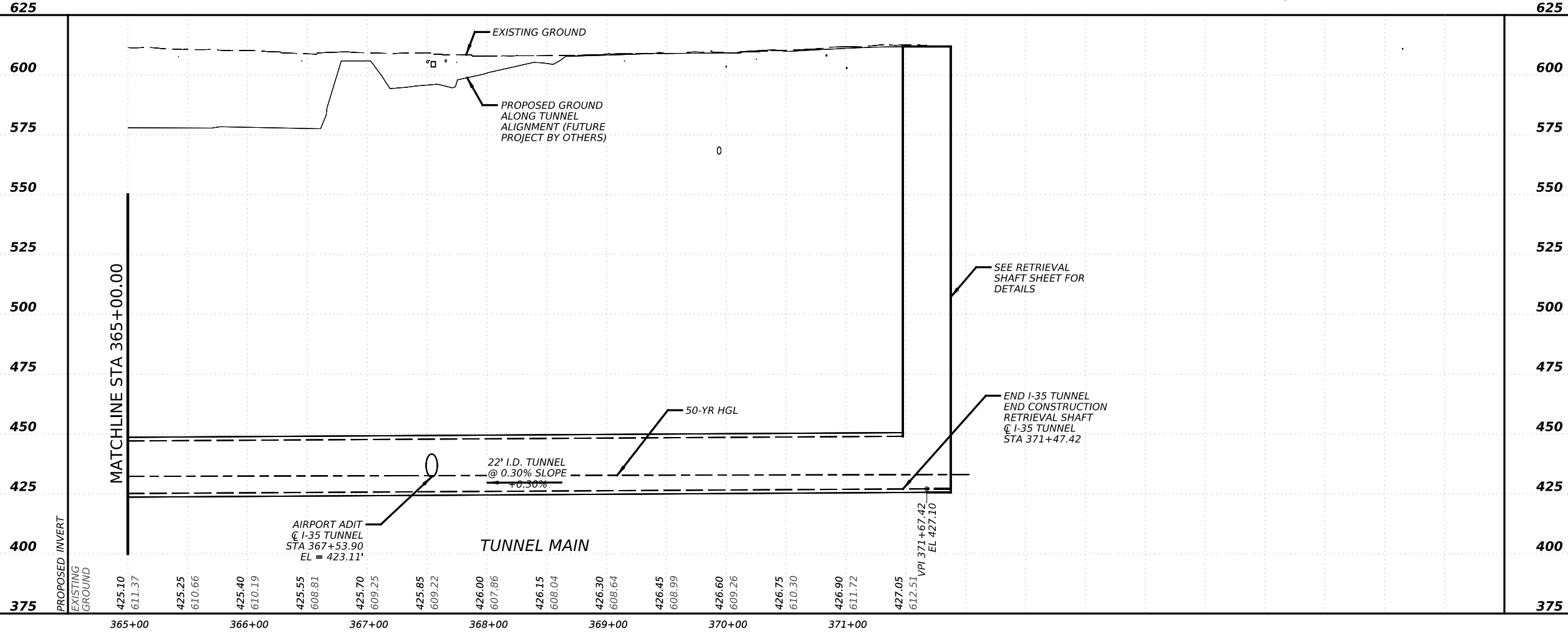
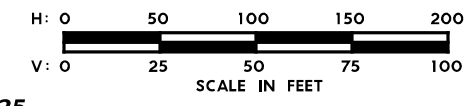
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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>I-35 TUNNEL PLAN AND PROFILE STA 354+00 TO STA 365+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p> <p>SHEET 16 OF 17</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	95	



- NOTES:**
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 - NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.

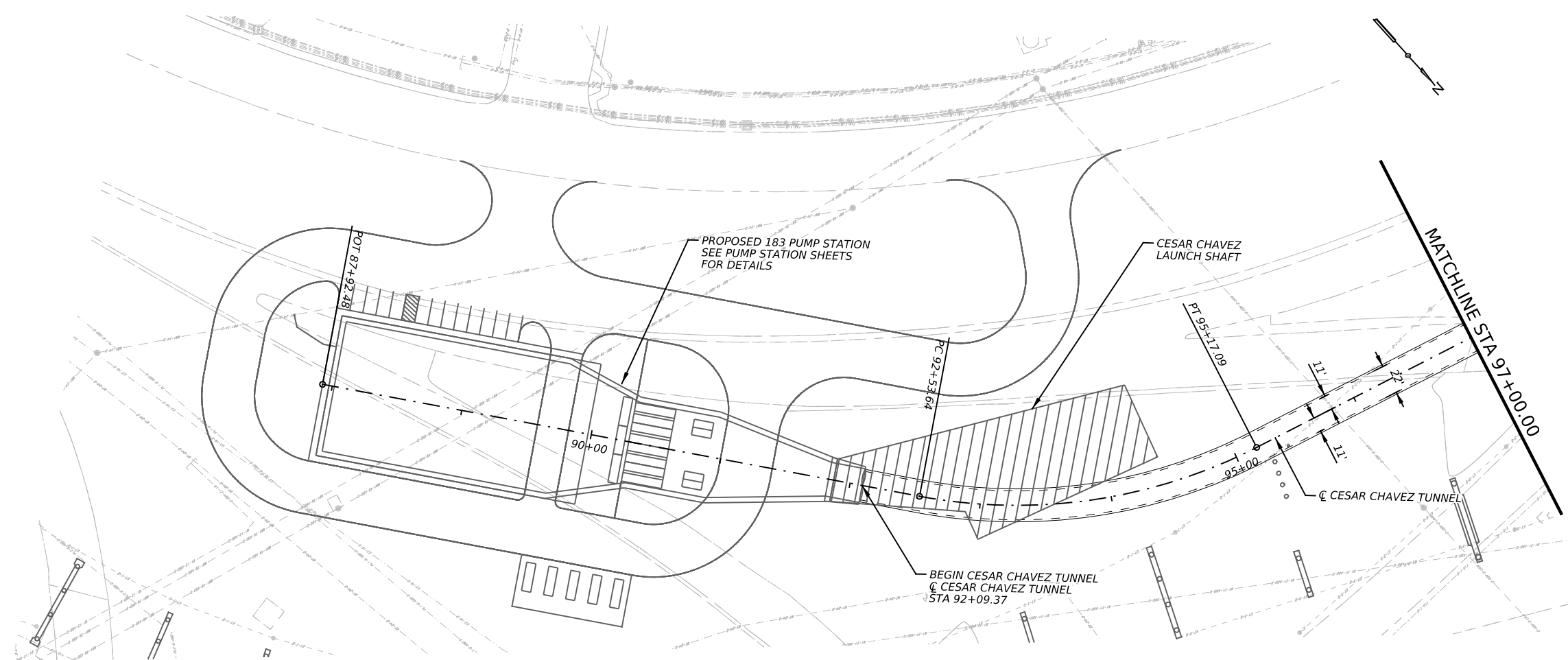
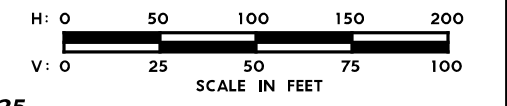


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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>mobility 35 CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p>			
<p>I-35 TUNNEL PLAN AND PROFILE STA 365+00 TO END</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 17 OF 17</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		96

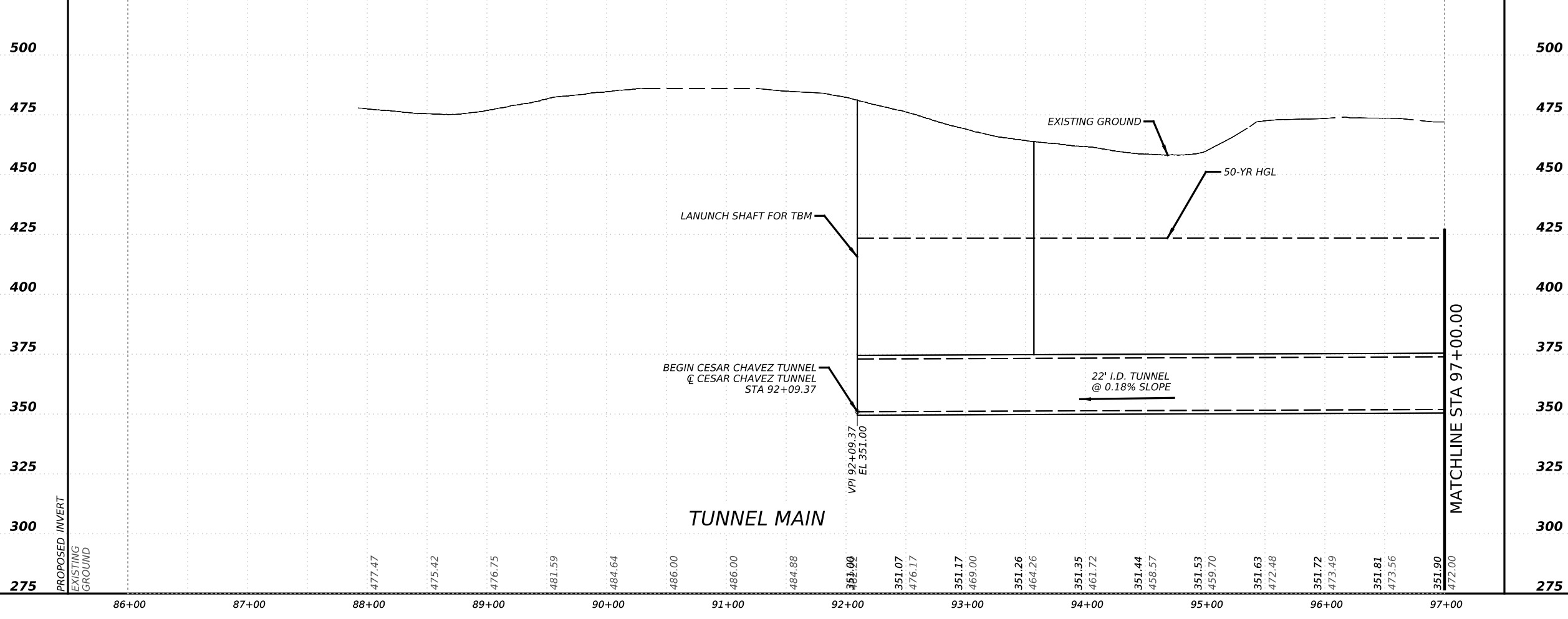
LEGEND

- PROPOSED TUNNEL
- EXIST ROW
- PROPOSED ROW
- PROPOSED EDGE OF PAVEMENT

- NOTES:**
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 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



525



NO.	DATE	REVISION	APPR BY

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Supervised By: **BRANDON E. HILBRICH**
 P.E. Serial No. **112938**
 Date: **6/30/2023**

HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

Texas Department of Transportation

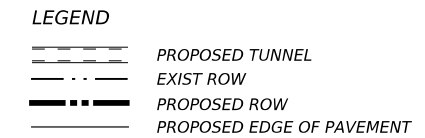
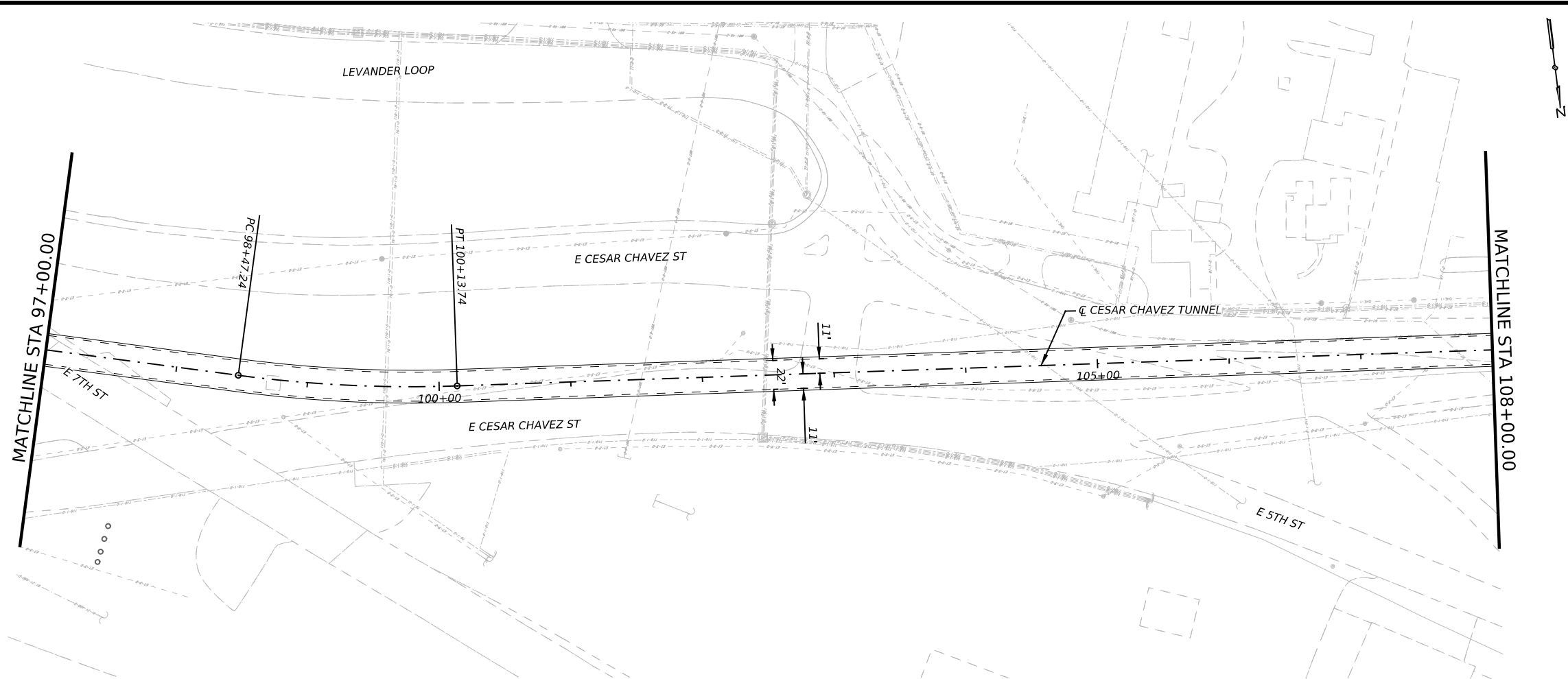
CAPITAL EXPRESS CENTRAL

**CESAR CHAVEZ TUNNEL
 PLAN AND PROFILE
 BEGIN TO STA 97+00**

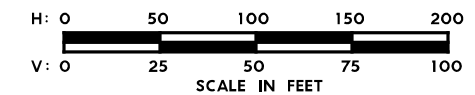
SCALE: 1"=100'-H
 1"=50'-V

SHEET 1 OF 14

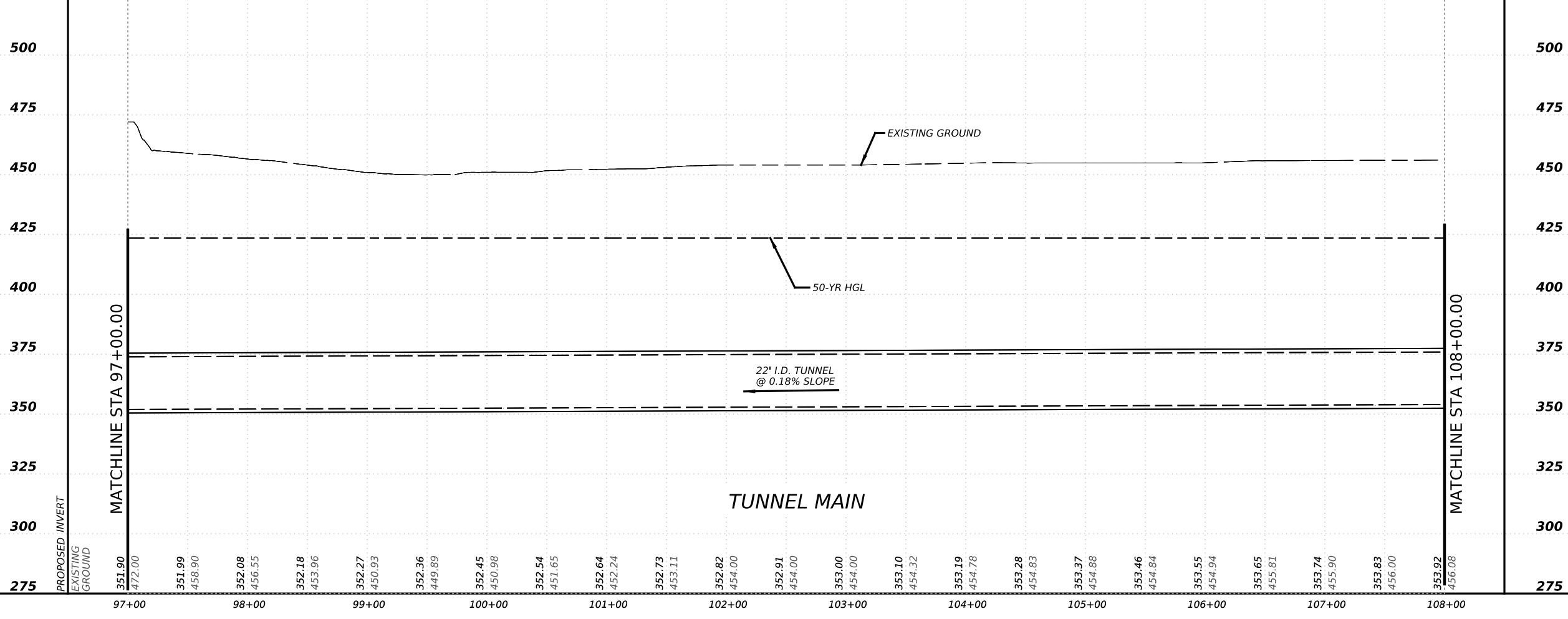
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	97	



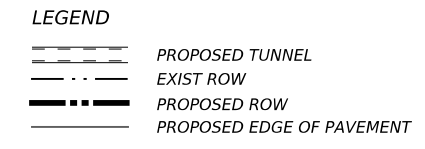
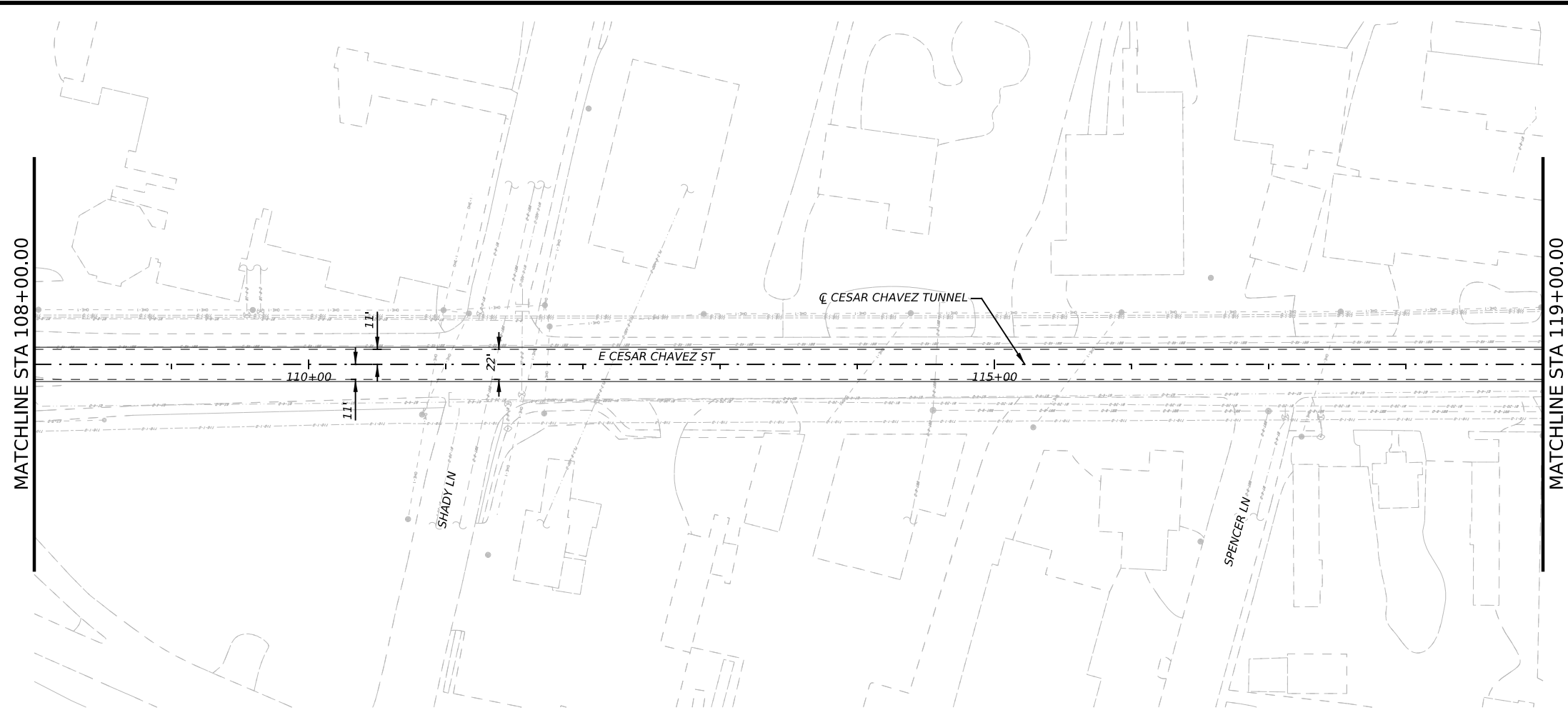
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 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



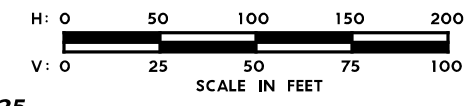
525 MATCHLINE STA 97+00.00 MATCHLINE STA 108+00.00 525



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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 97+00 TO STA 108+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
CONT		JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	98

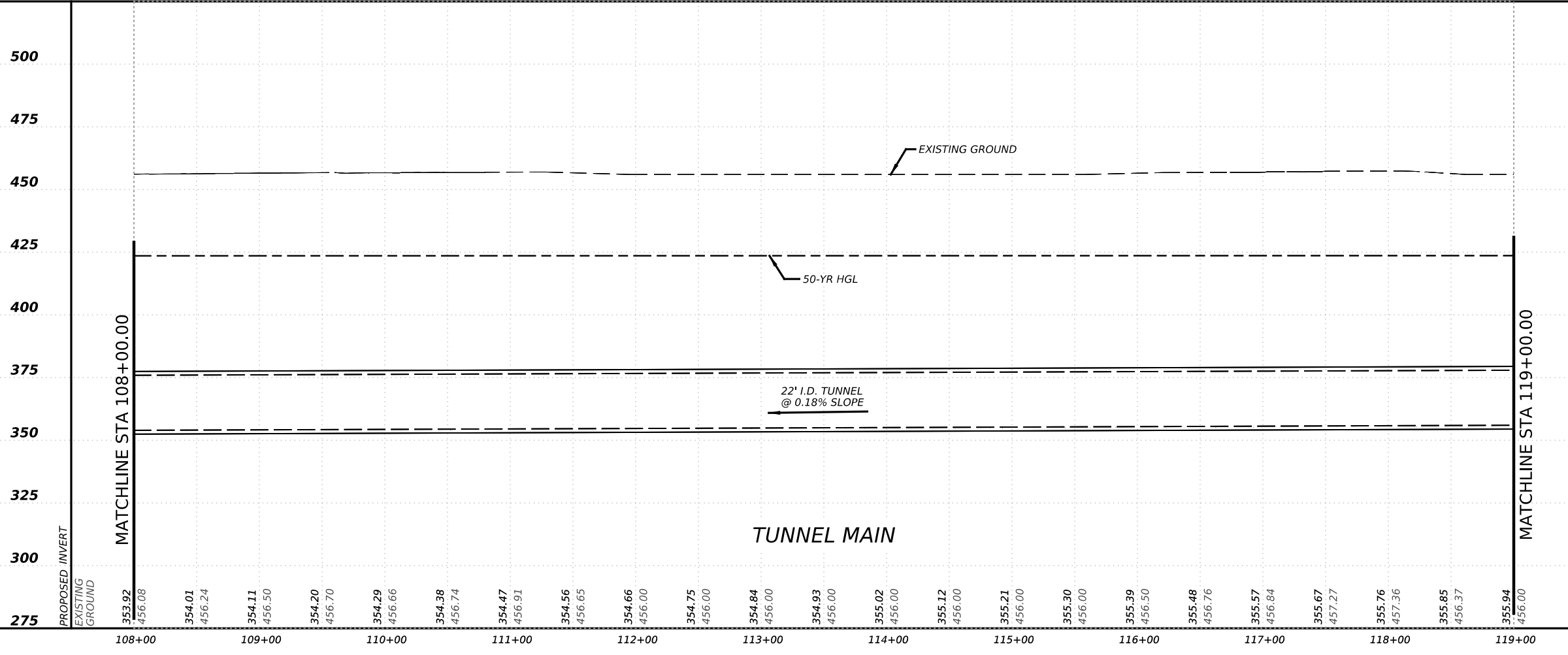


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525

525



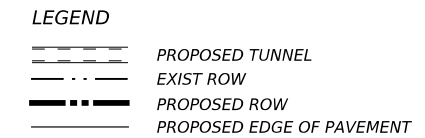
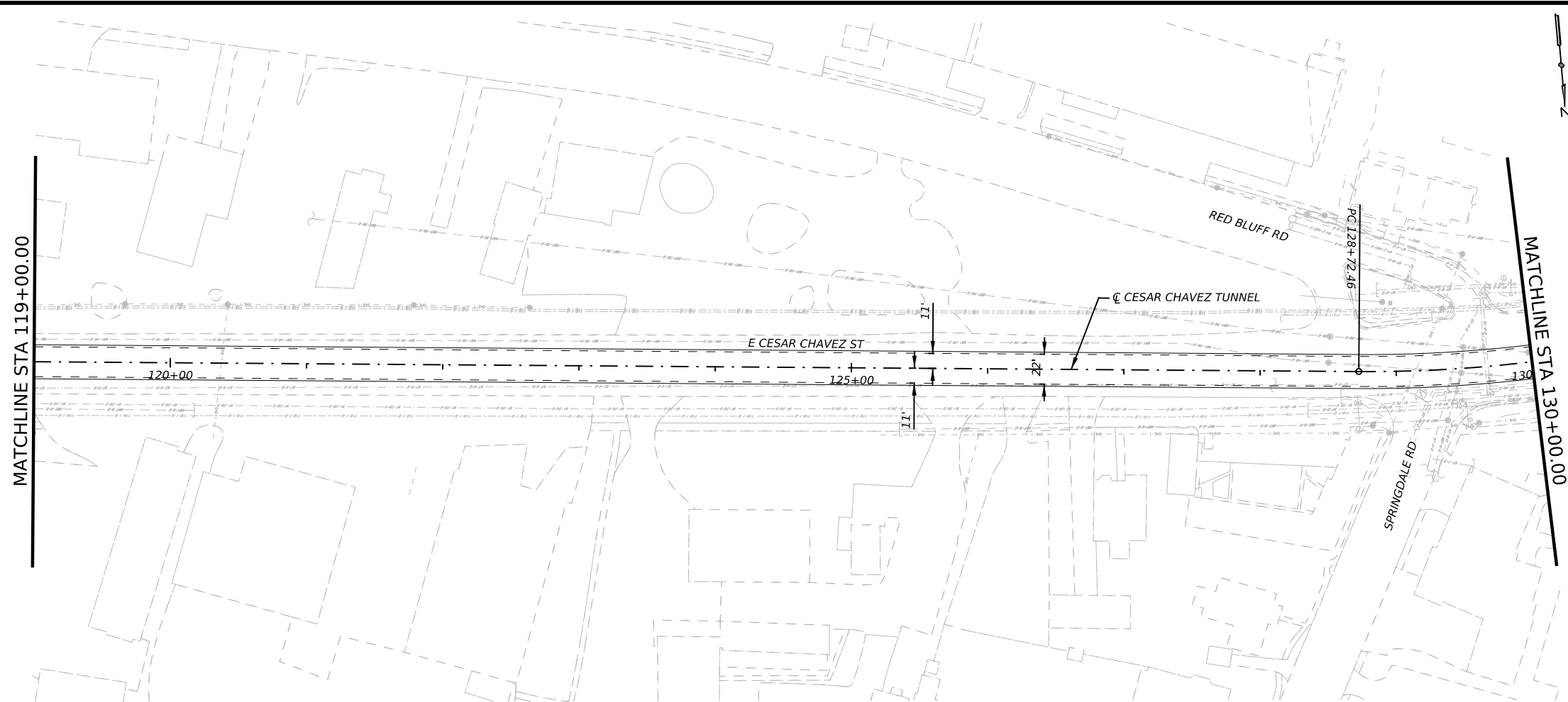
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<p>CAPITAL EXPRESS CENTRAL</p> <p>CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 108+00 TO STA 119+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 3 OF 14</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		99

MATCHLINE STA 108+00.00

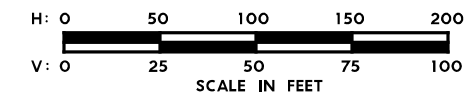
MATCHLINE STA 119+00.00

TUNNEL MAIN

353.92	354.01	354.11	354.20	354.29	354.38	354.47	354.56	354.66	354.75	354.84	354.93	355.02	355.12	355.21	355.30	355.39	355.48	355.57	355.67	355.76	355.85	355.94
456.08	456.24	456.50	456.70	456.66	456.74	456.91	456.65	456.00	456.00	456.00	456.00	456.00	456.00	456.00	456.00	456.50	456.76	456.84	457.27	457.36	456.37	456.00
108+00		109+00		110+00		111+00		112+00		113+00		114+00		115+00		116+00		117+00		118+00		119+00

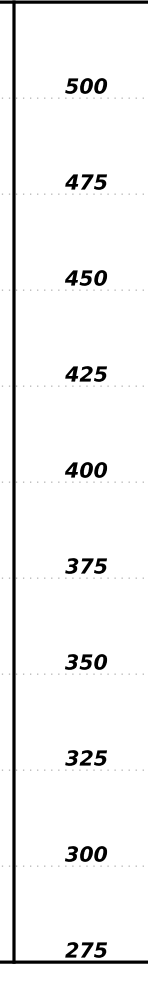
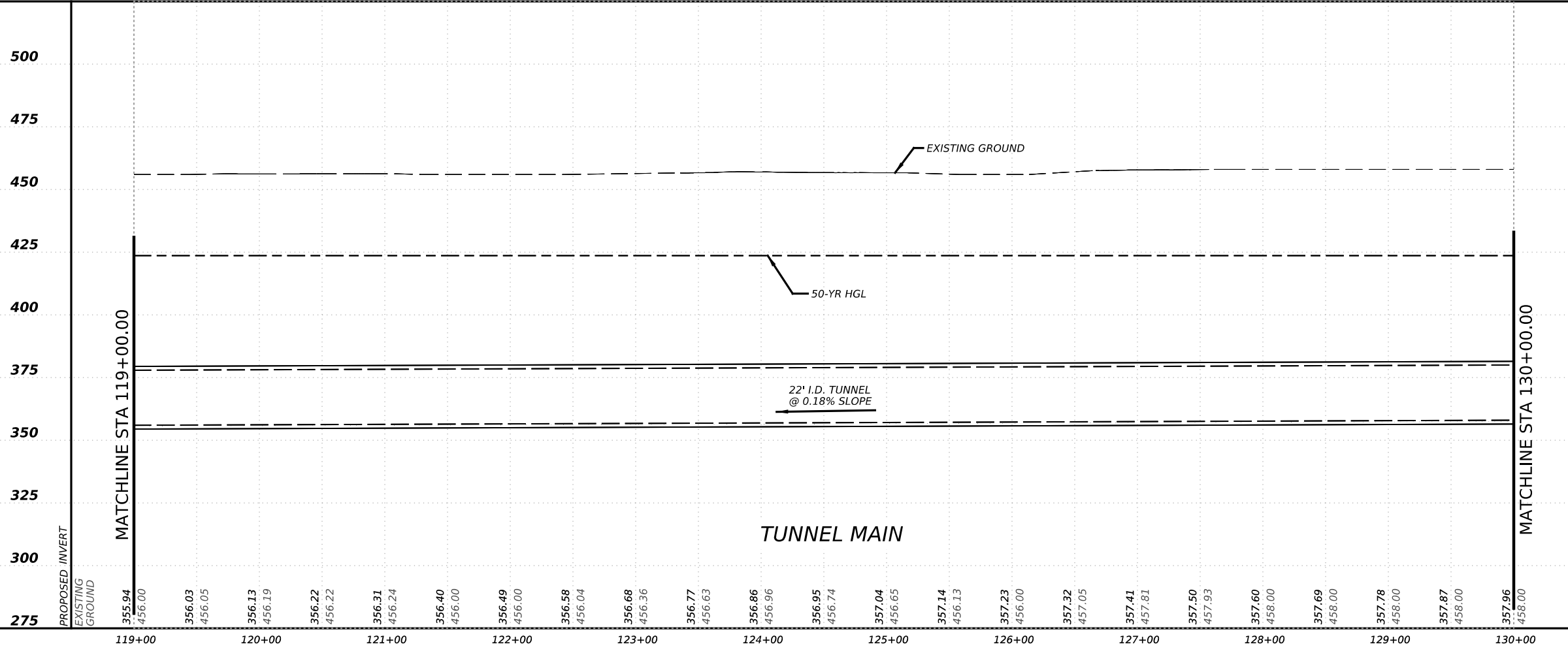


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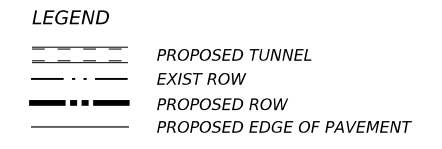
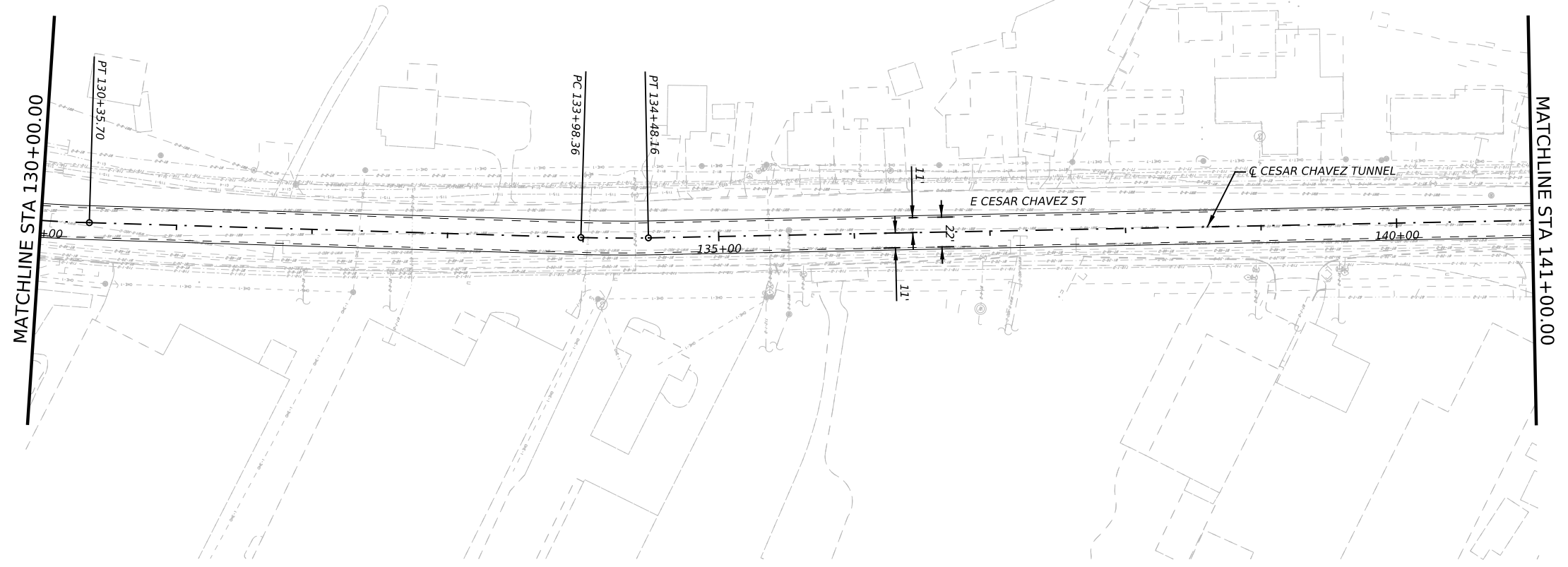


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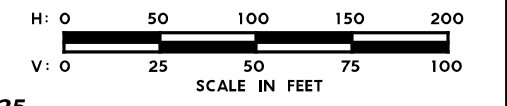
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<p>Texas Department of Transportation</p>			
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<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 4 OF 14</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		100

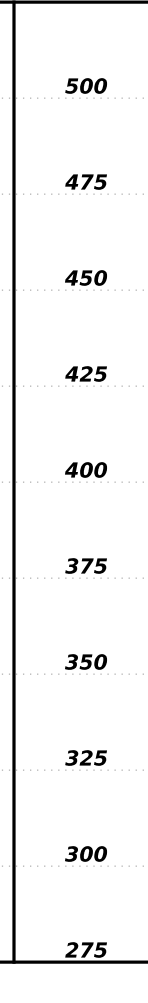
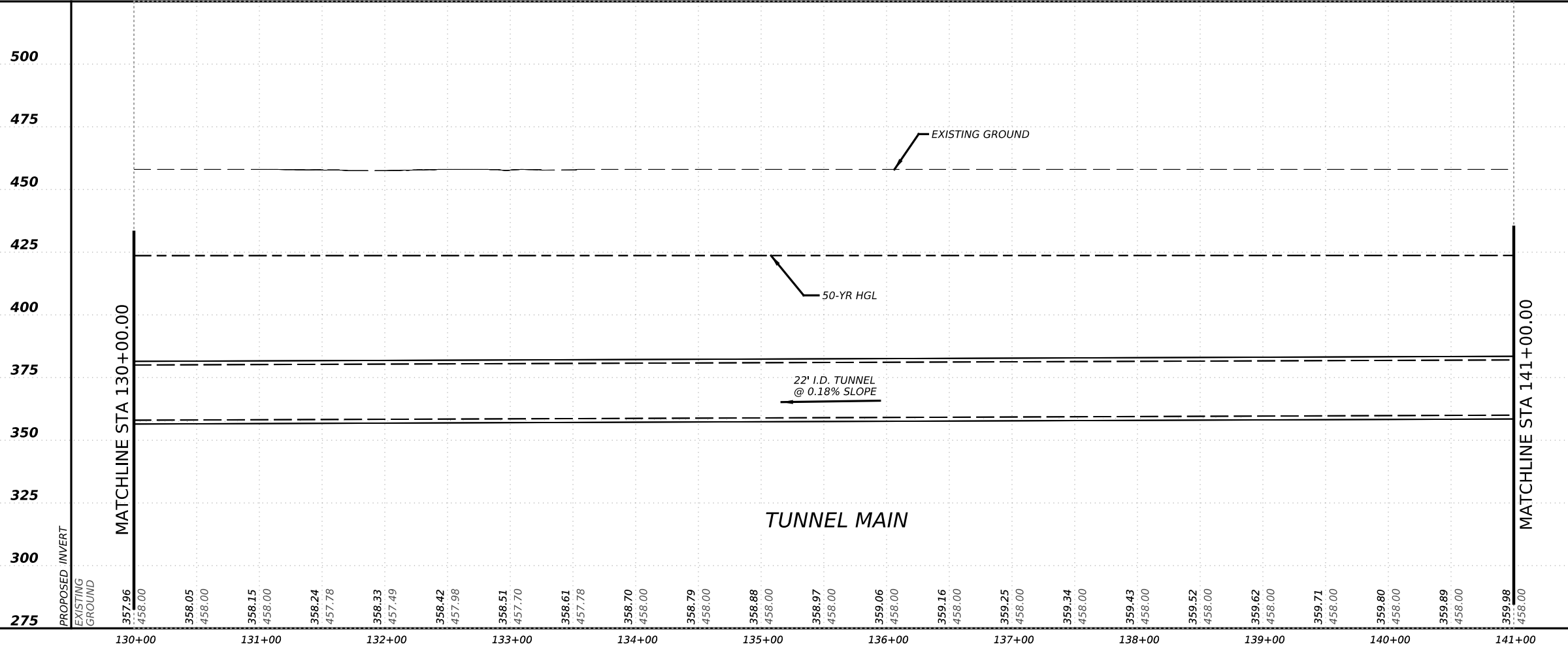


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525

525

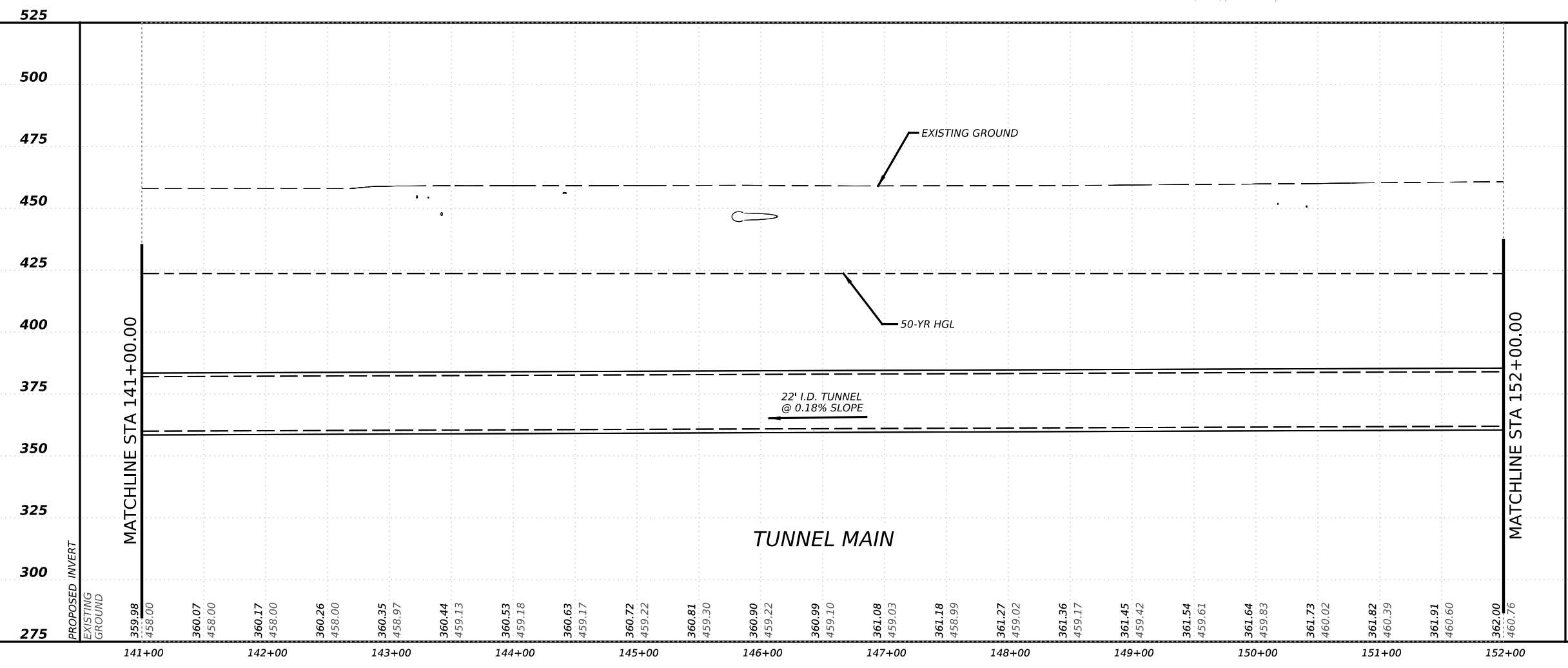
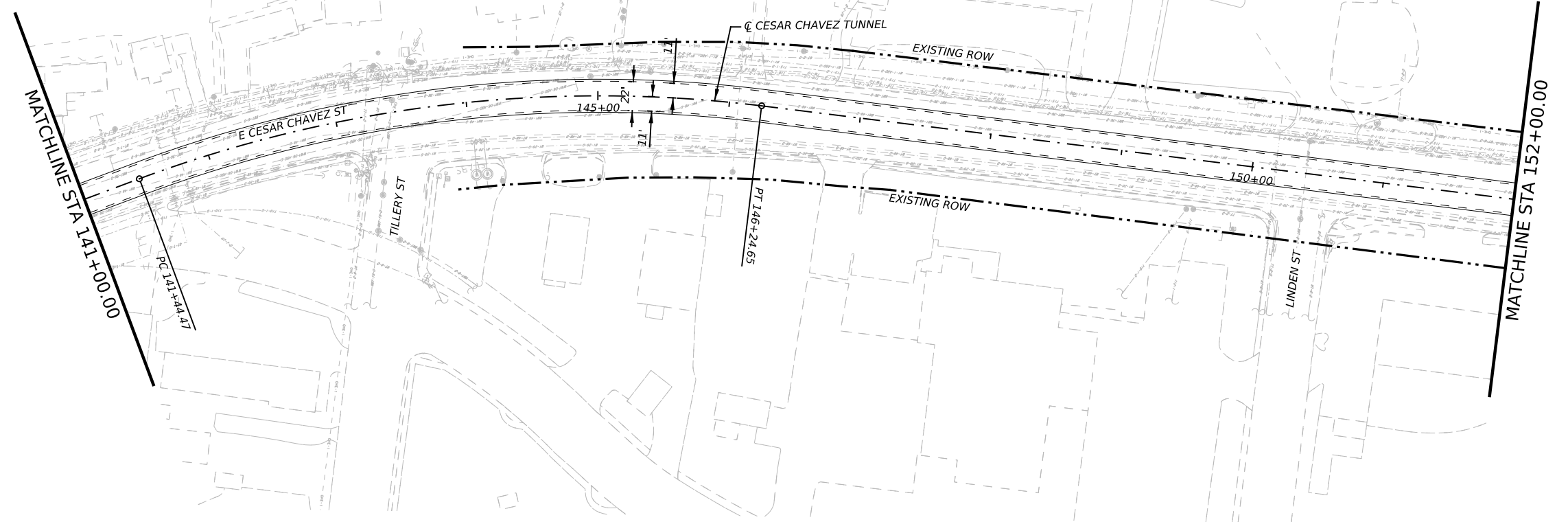
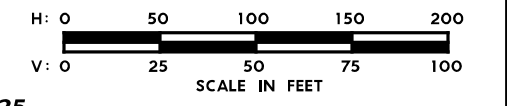


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<p>mobility 35 CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 130+00 TO STA 141+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
<p>SHEET 5 OF 14</p>			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		101

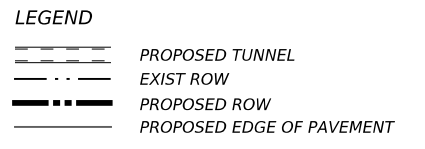
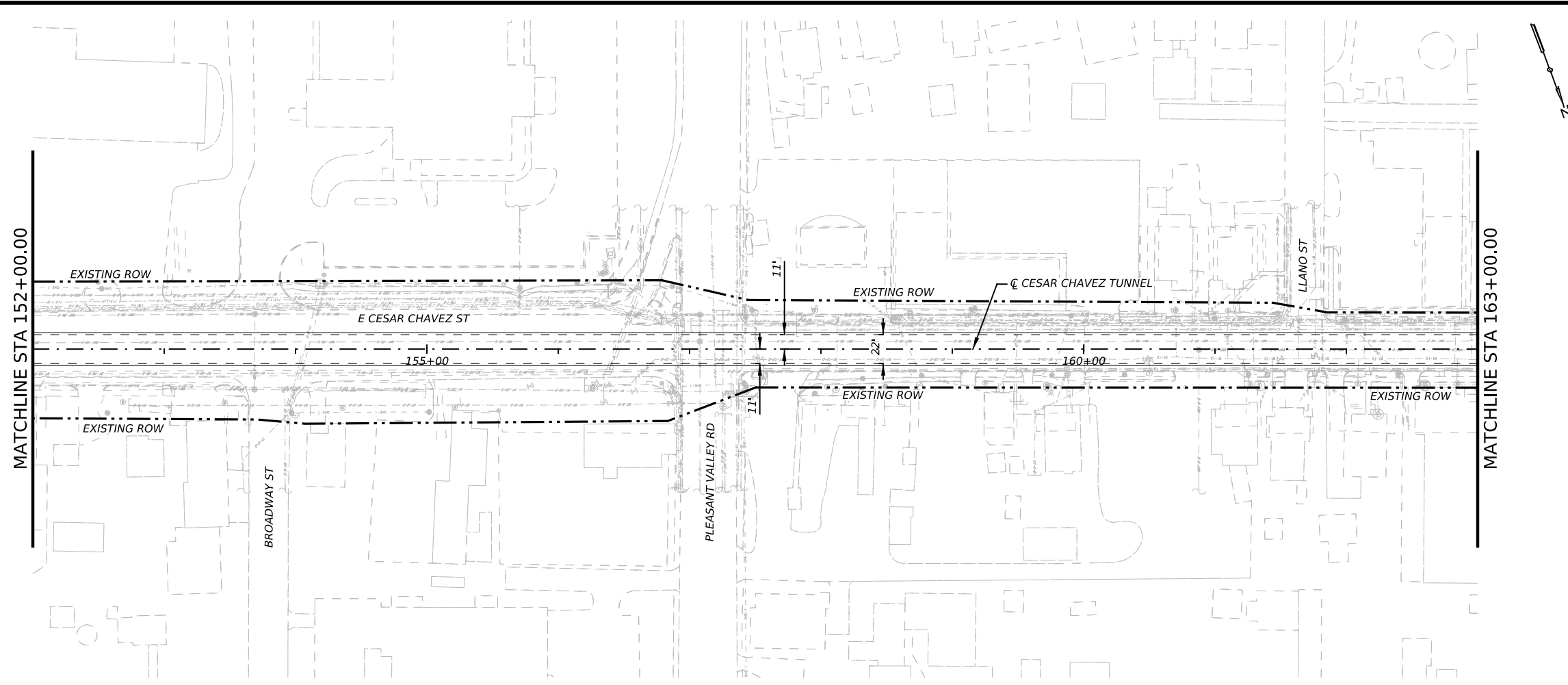
LEGEND

- PROPOSED TUNNEL
- EXIST ROW
- PROPOSED ROW
- PROPOSED EDGE OF PAVEMENT

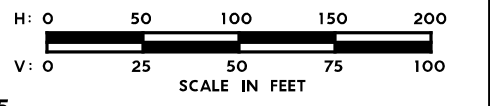
- NOTES:**
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 - CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE THROUGHOUT THE PROJECT.
 - SEE STRUCTURAL DRAWINGS FOR PIPE, OUTFALL AND DROP SHAFT/ADITS STRUCTURE DETAILS.
 - NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



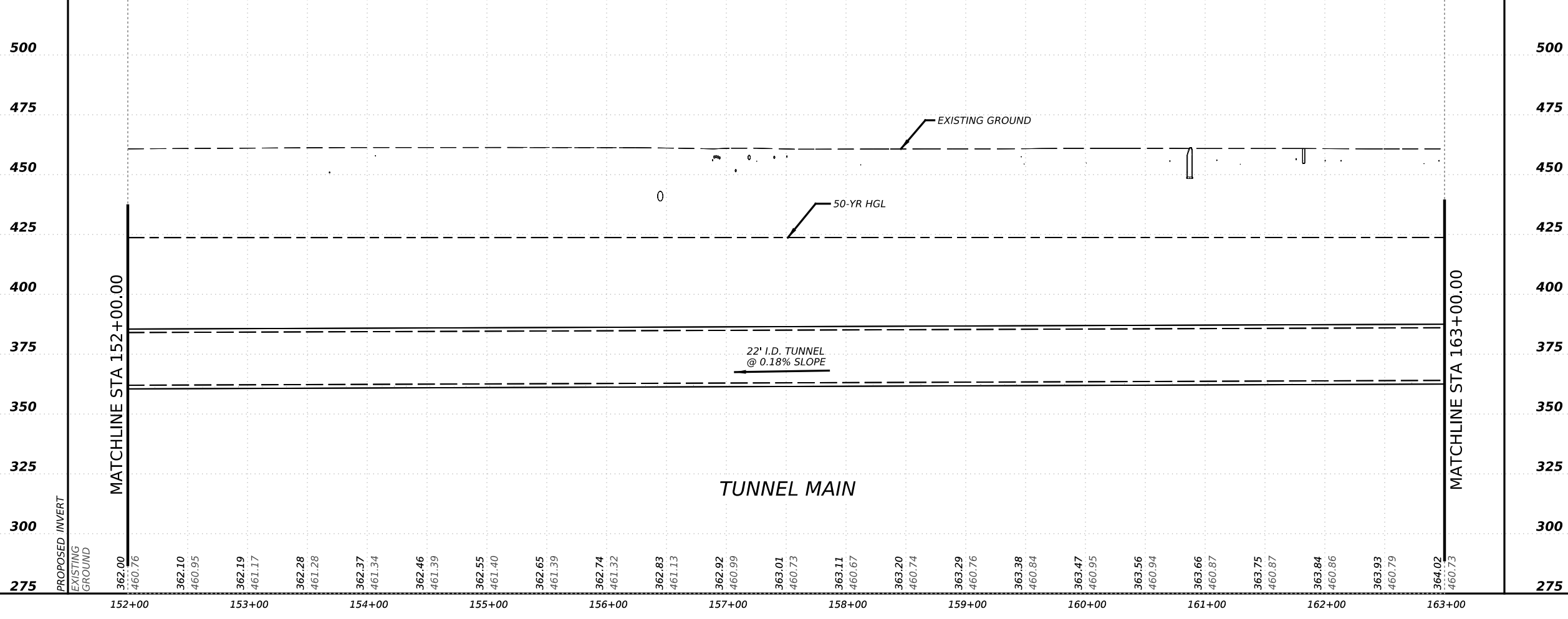
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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 141+00 TO STA 152+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
SHEET 6 OF 14			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		102



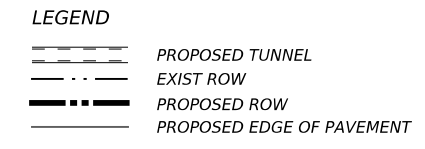
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 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



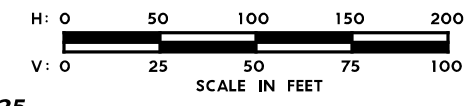
525 MATCHLINE STA 152+00.00 MATCHLINE STA 163+00.00 525



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 HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681			
 CAPITAL AREA			
 Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 152+00 TO STA 163+00			
SCALE: 1"=100'-H			
1"=50'-V			
			SHEET 7 OF 14
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		103

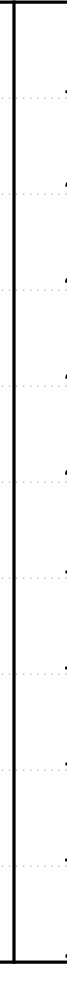
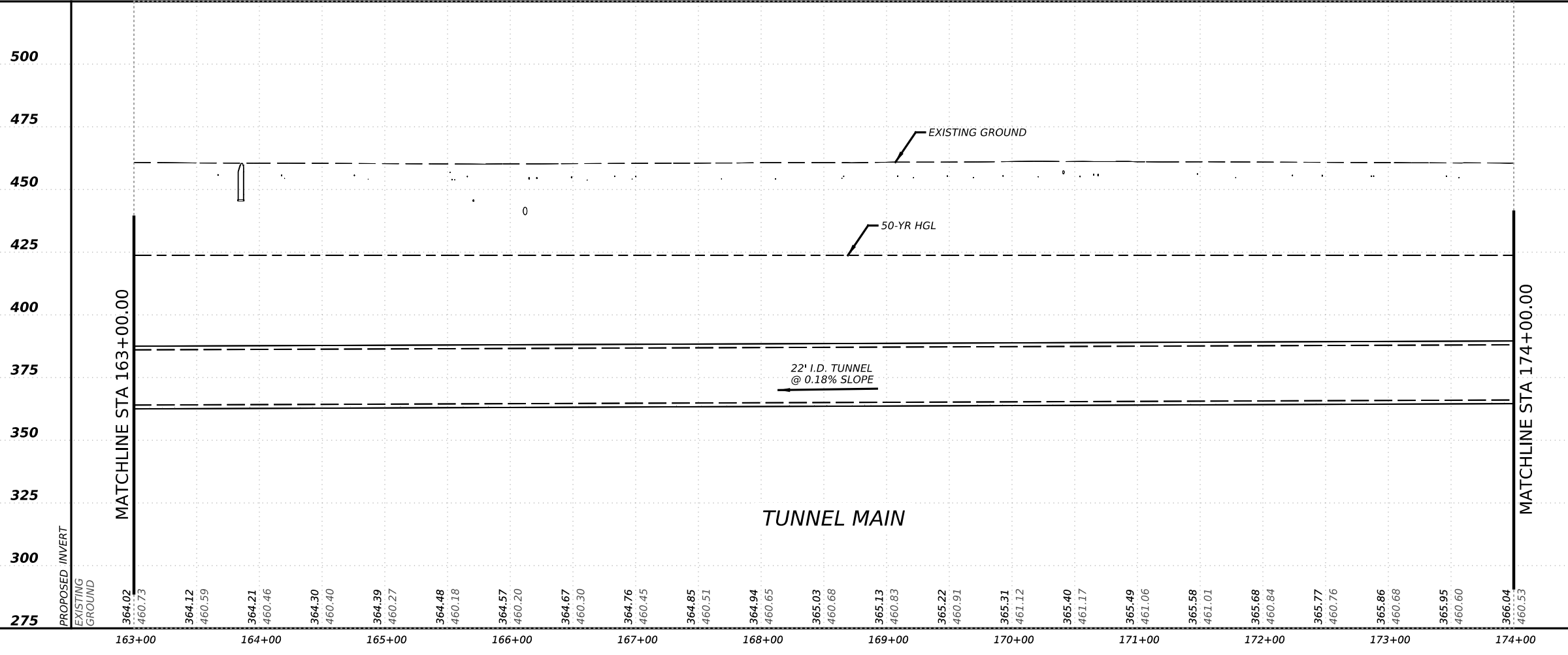


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 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



525

525



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 Date: 6/30/2023

HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

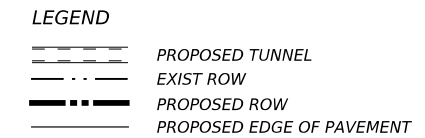
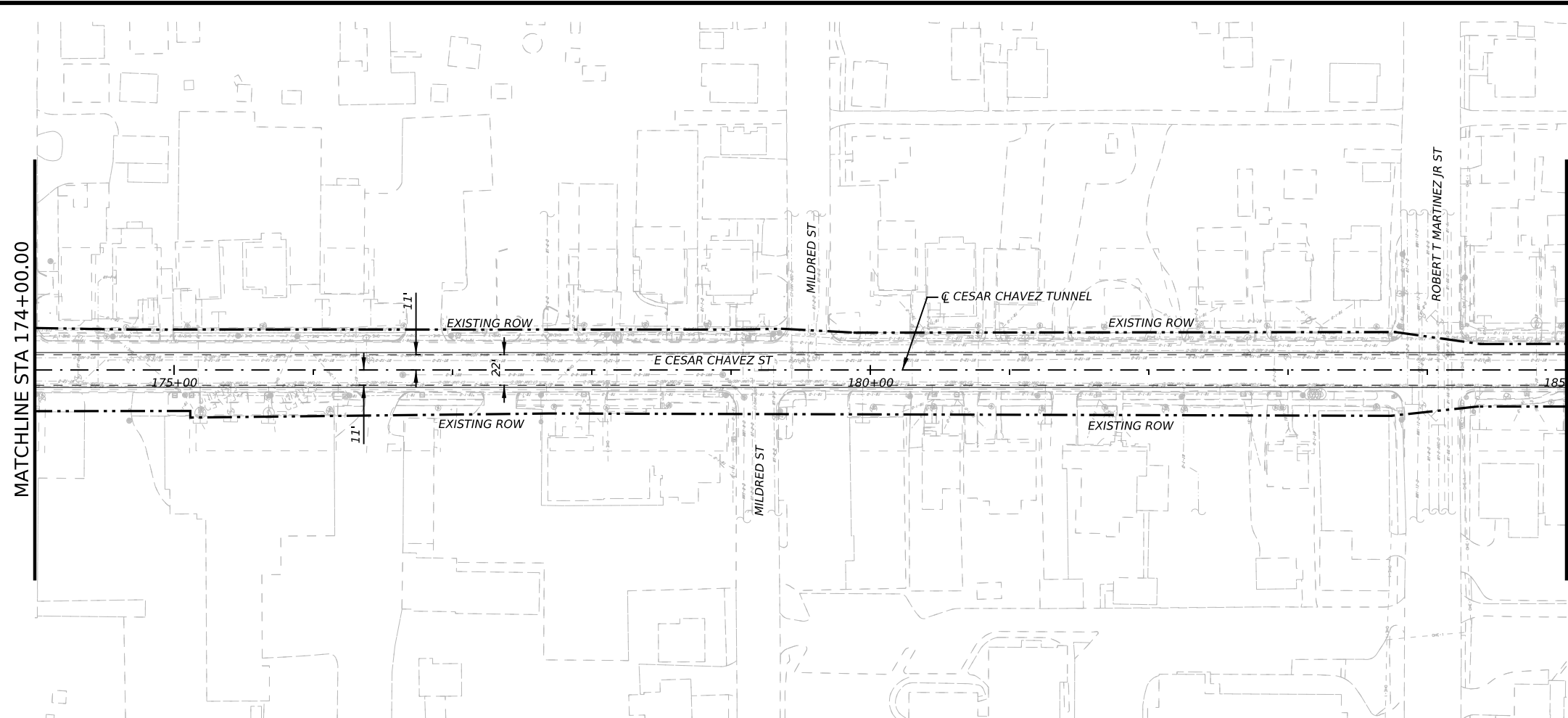
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

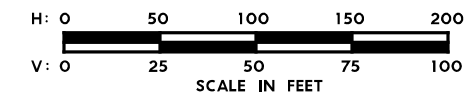
**CESAR CHAVEZ TUNNEL
 PLAN AND PROFILE
 STA 163+00 TO STA 174+00**

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 8 OF 14

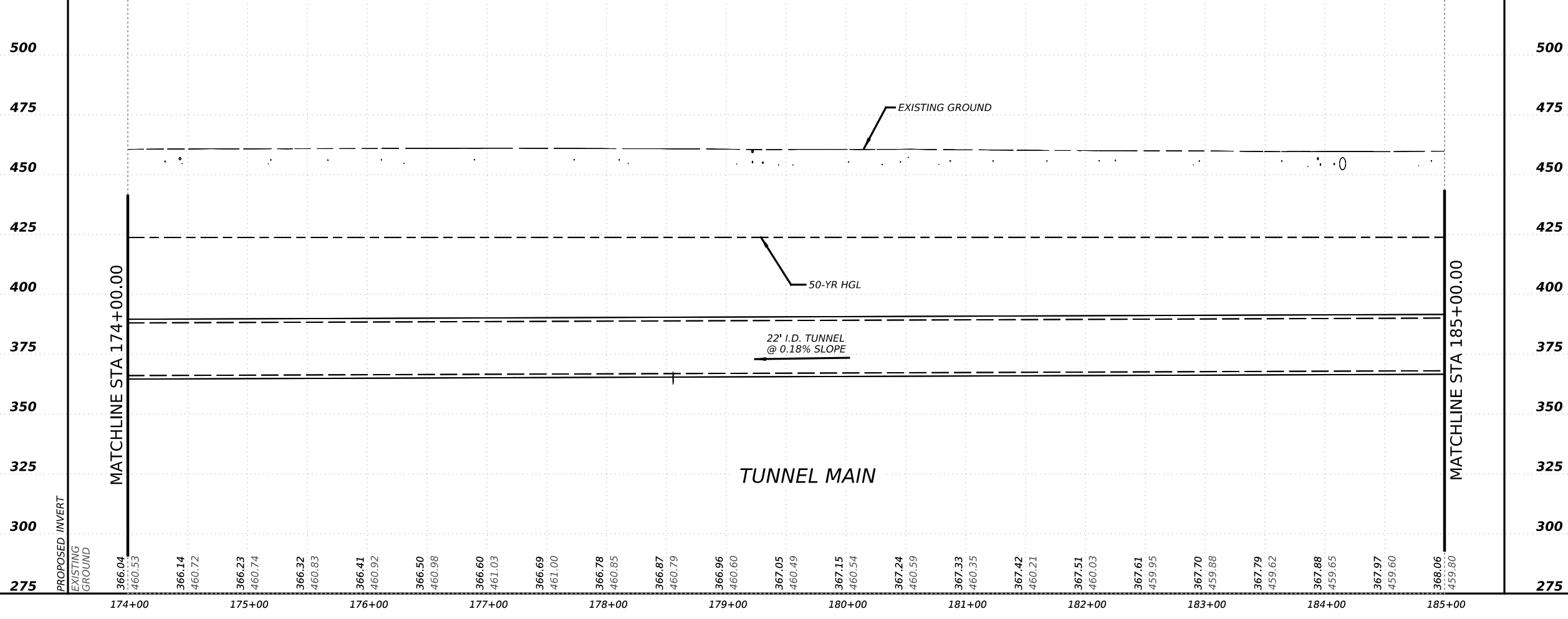
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	104	



- NOTES:
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525 MATCHLINE STA 174+00.00 525 MATCHLINE STA 185+00.00



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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

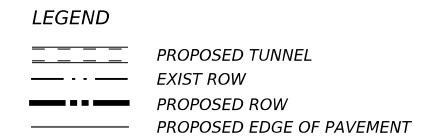
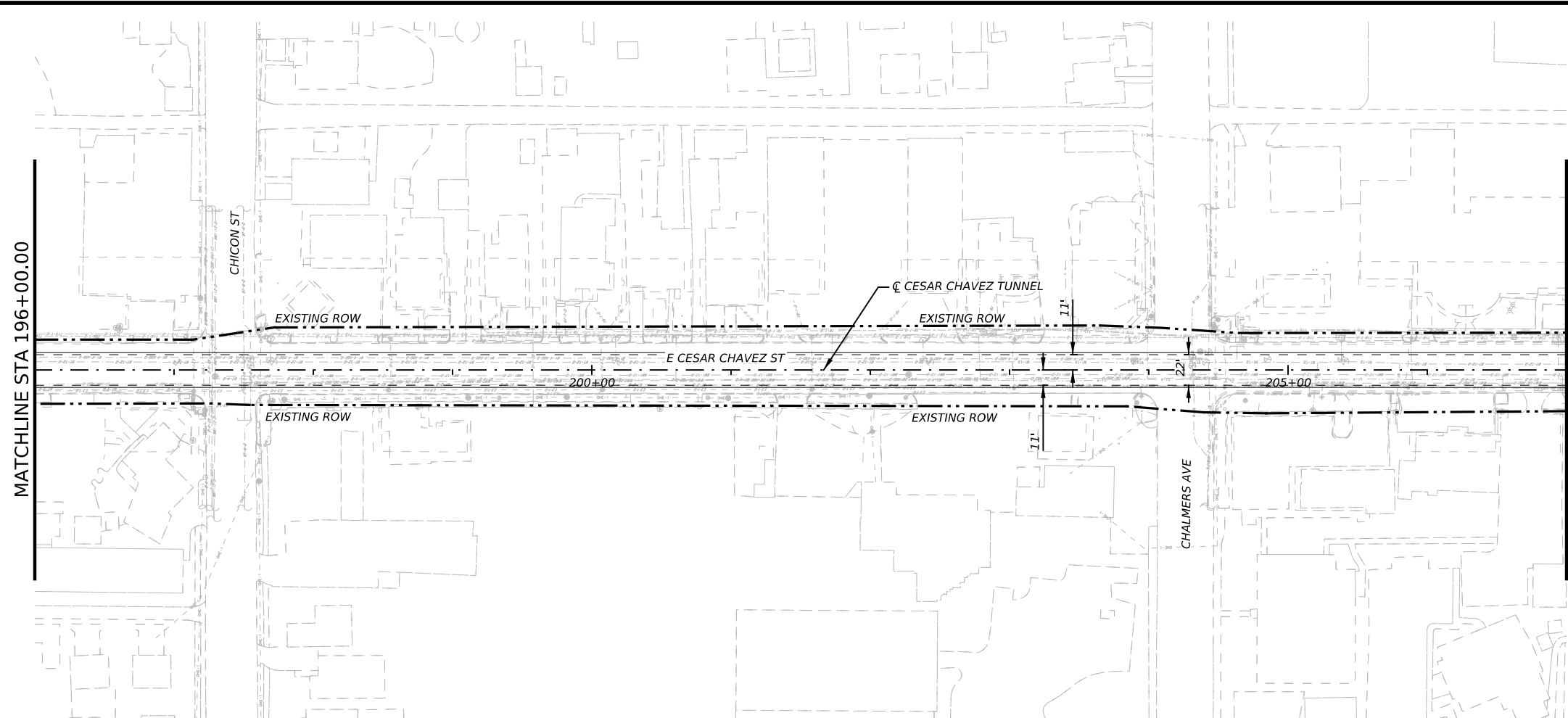
mobility 35
 CAPITAL AREA

Texas Department of Transportation

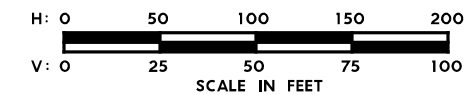
CAPITAL EXPRESS CENTRAL
 CESAR CHAVEZ TUNNEL
 PLAN AND PROFILE
 STA 174+00 TO STA 185+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 9 OF 14

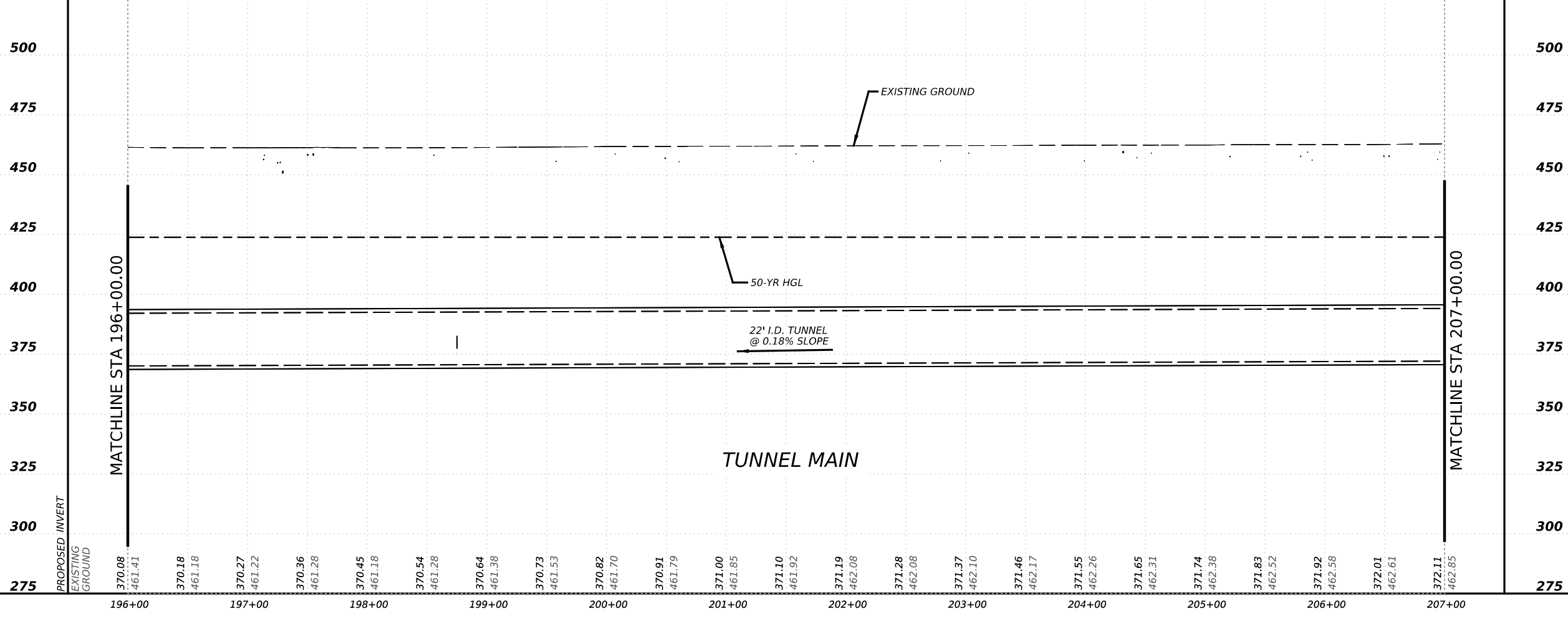
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	105	



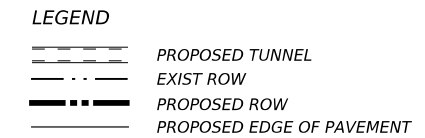
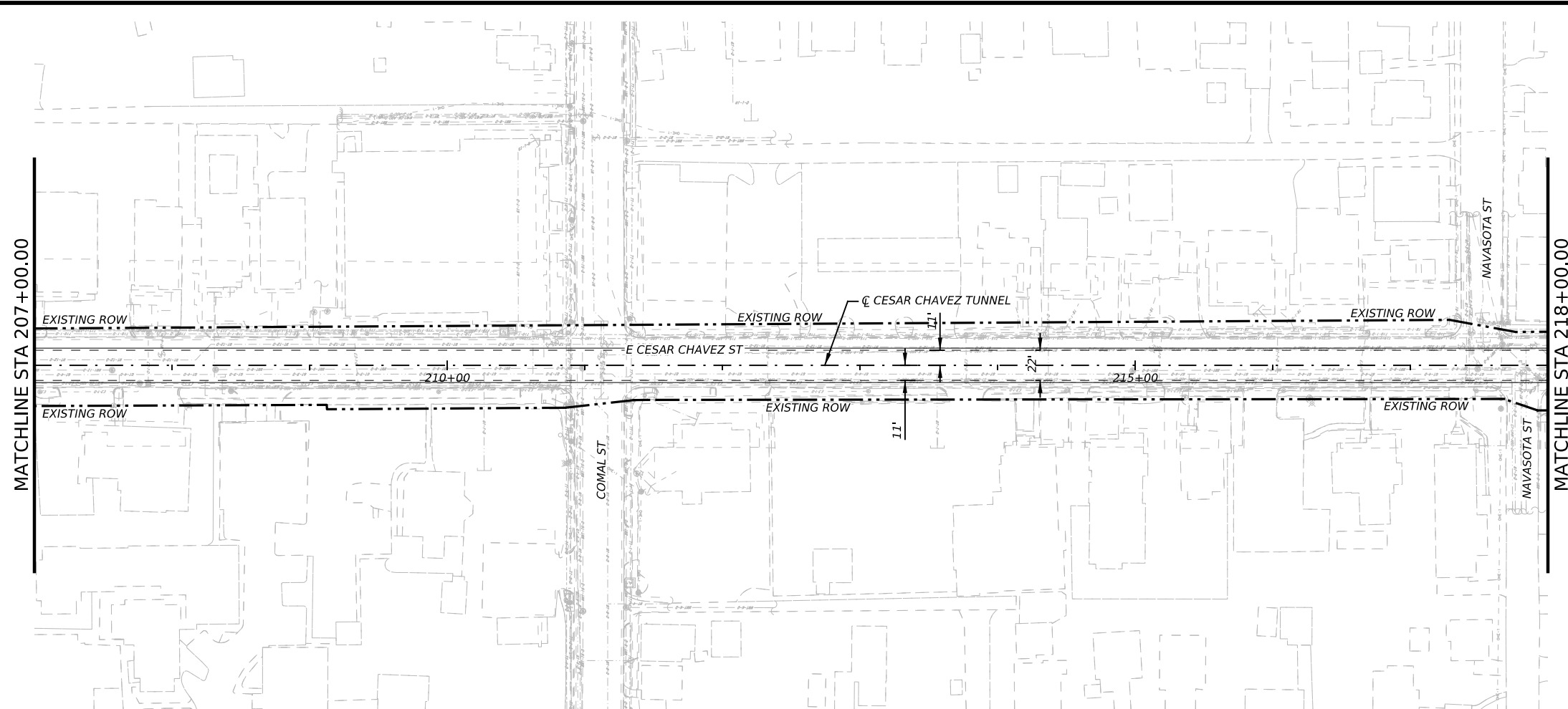
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 6. NO STOCKPILING IN FEMA DESIGNATED FLOODPLAIN.



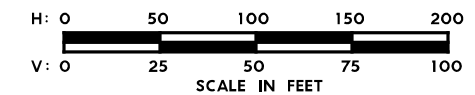
525 MATCHLINE STA 196+00.00 MATCHLINE STA 207+00.00 525



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<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>mobility 35 CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 196+00 TO STA 207+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
SHEET 11 OF 14			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		107

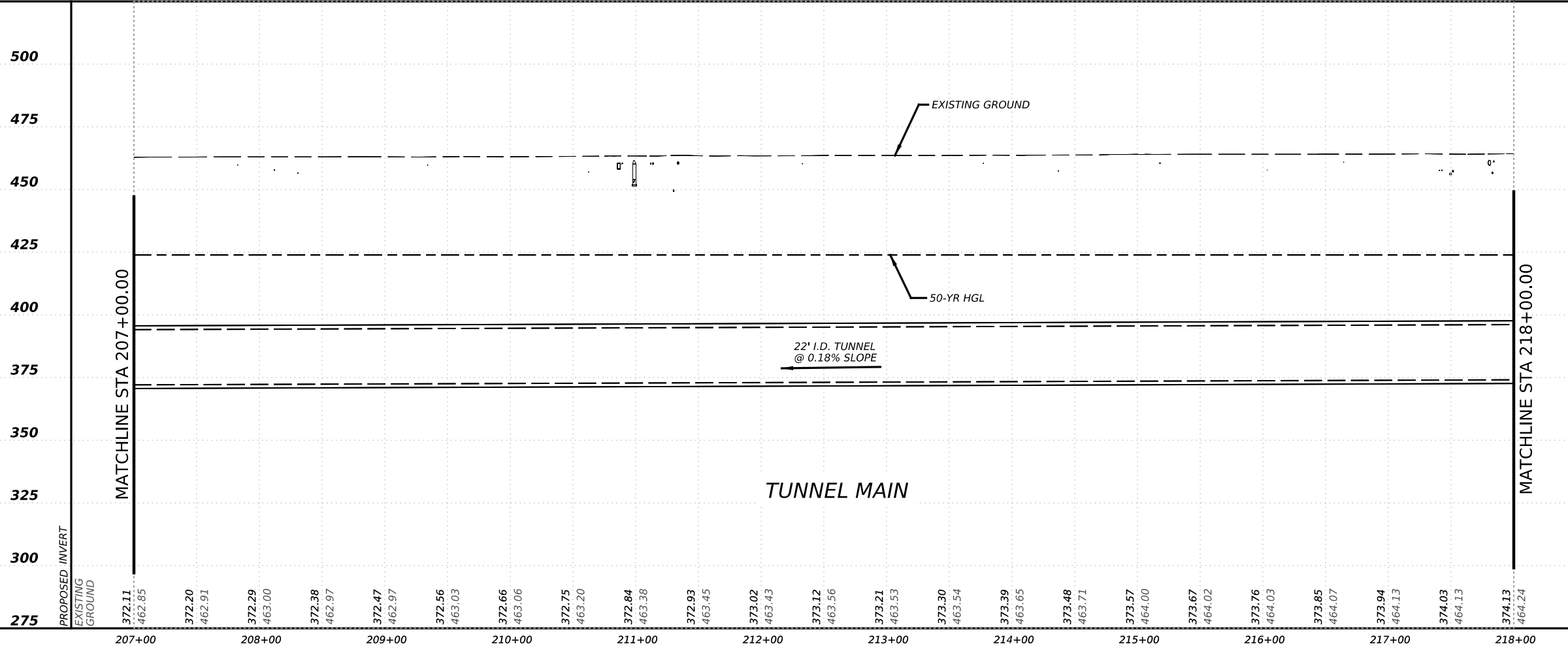


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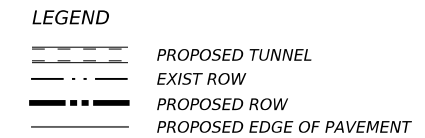
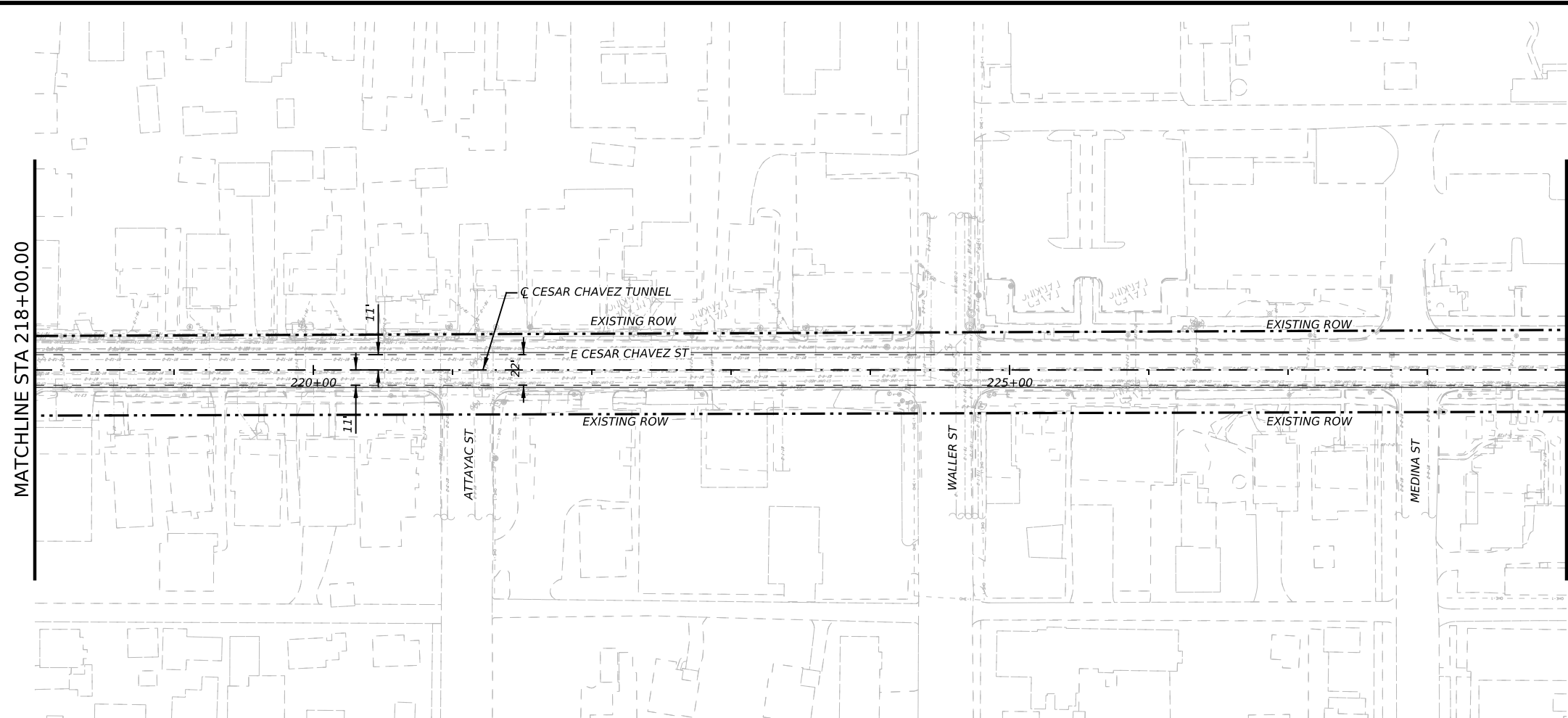


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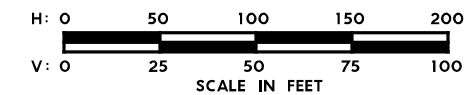
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<p>mobility 35 CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>CESAR CHAVEZ TUNNEL PLAN AND PROFILE STA 207+00 TO STA 218+00</p>			
<p>SCALE: 1"=100'-H 1"=50'-V</p>			
			SHEET 12 OF 14
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	108

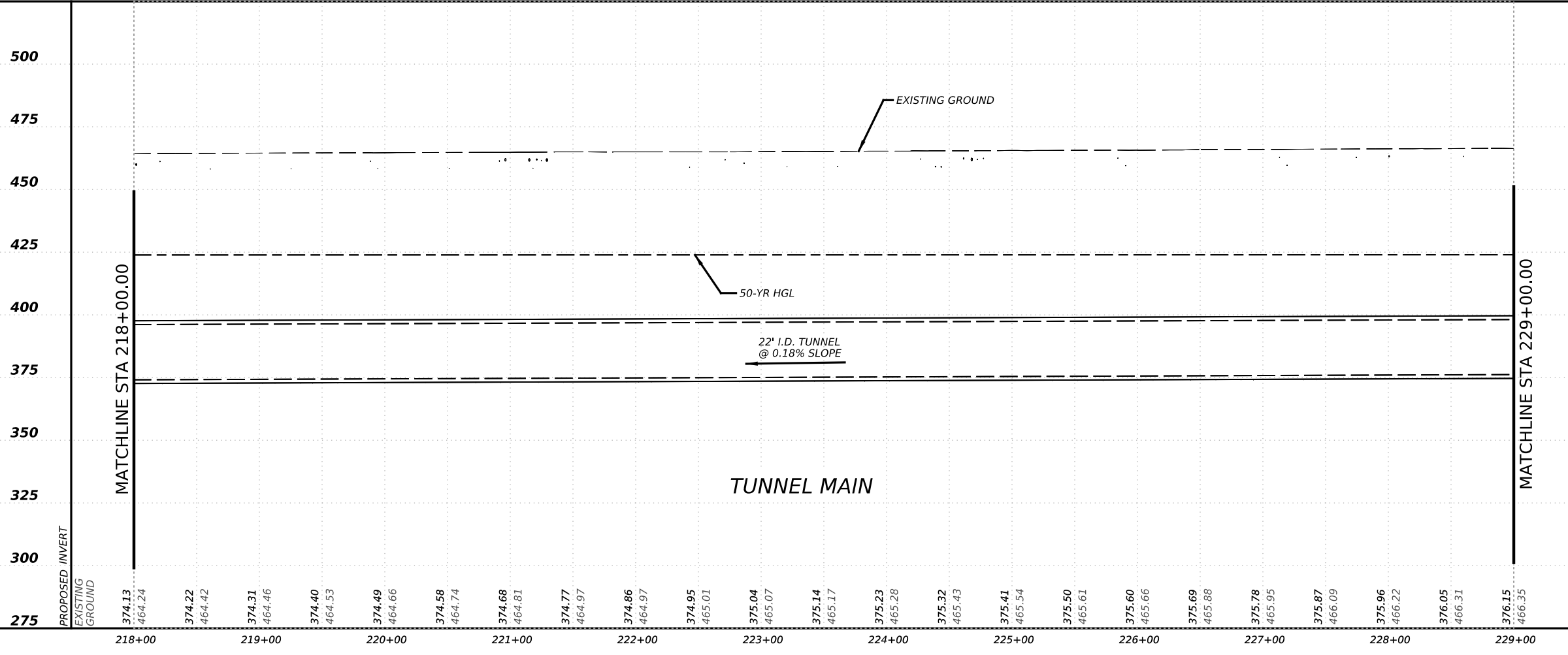


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525

525



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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

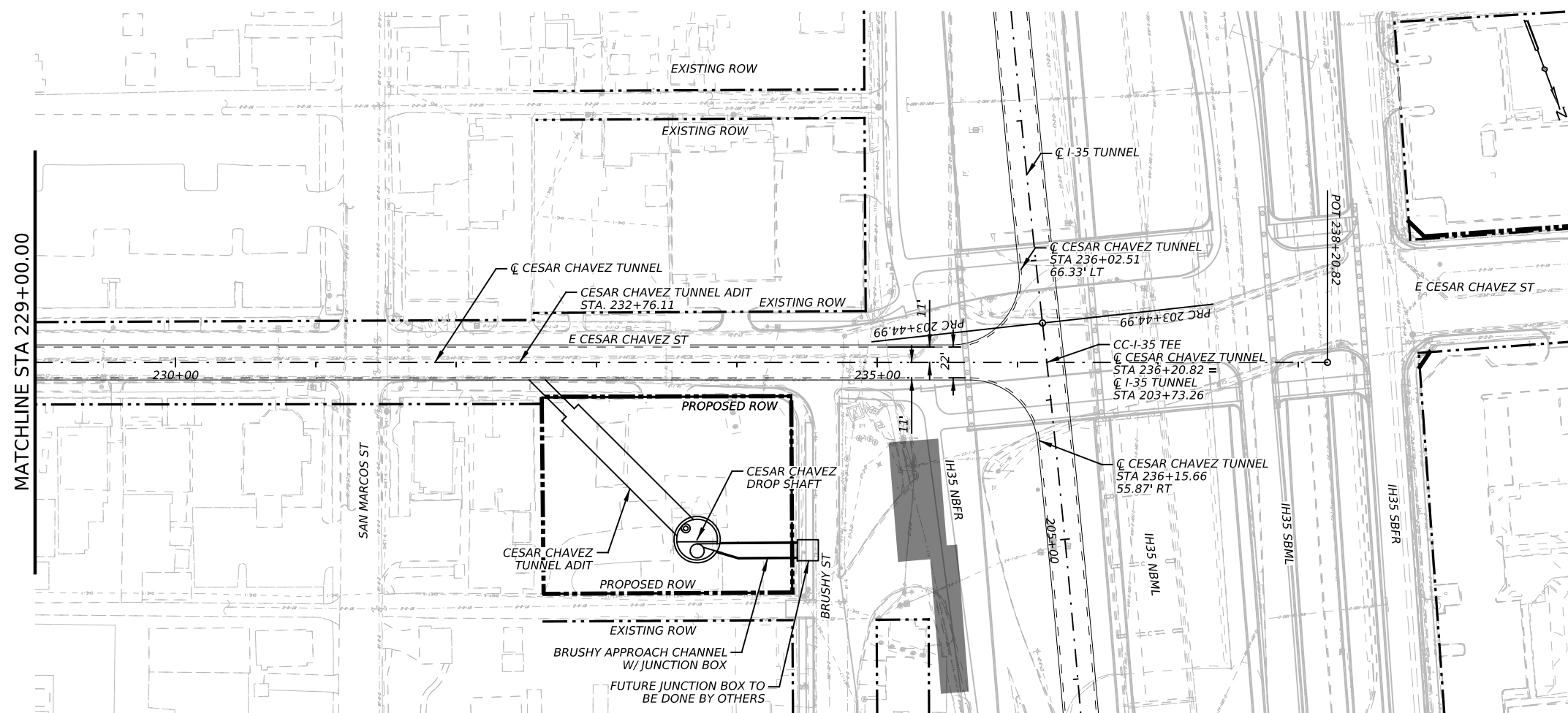
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 CESAR CHAVEZ TUNNEL
 PLAN AND PROFILE
 STA 218+00 TO STA 229+00

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 13 OF 14

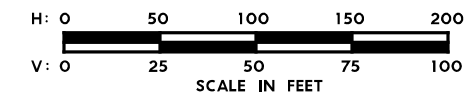
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	109	



LEGEND

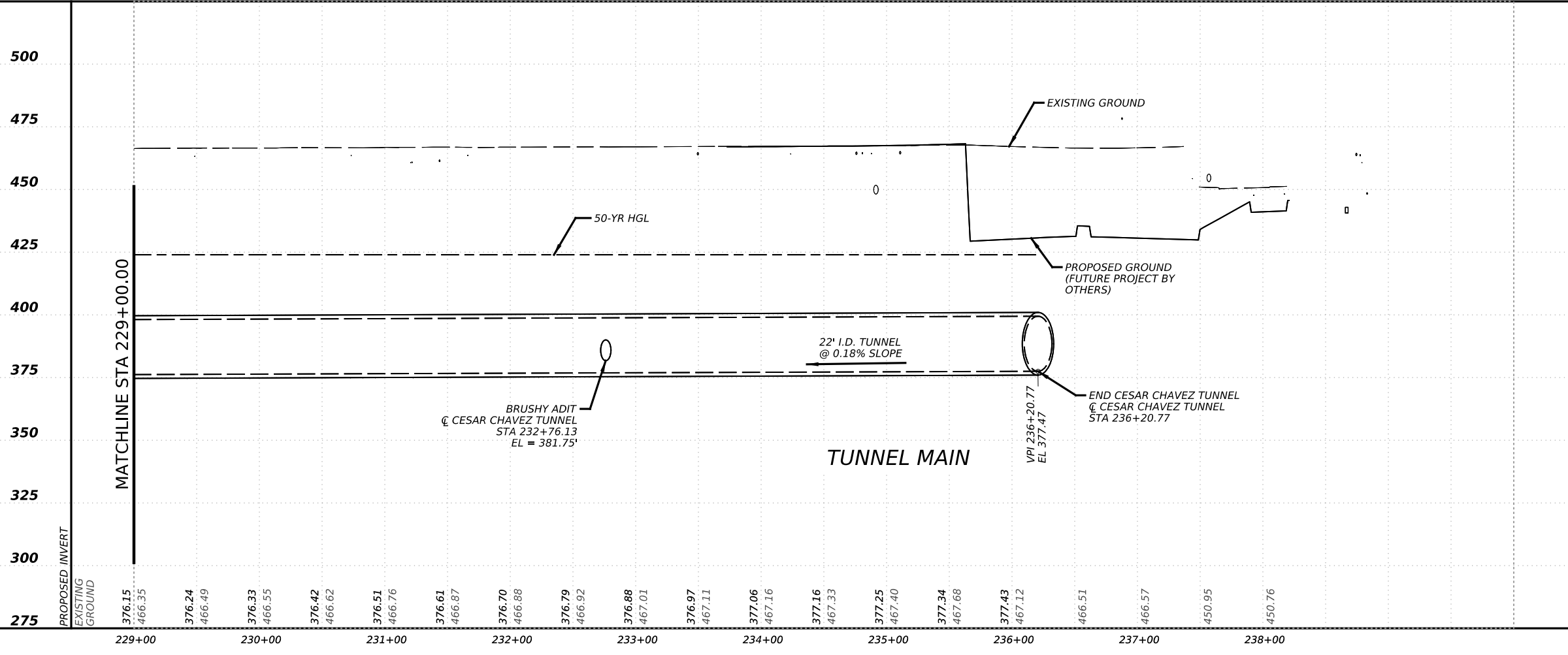
	PROPOSED TUNNEL
	EXIST ROW
	PROPOSED ROW
	PROPOSED EDGE OF PAVEMENT

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA **35**

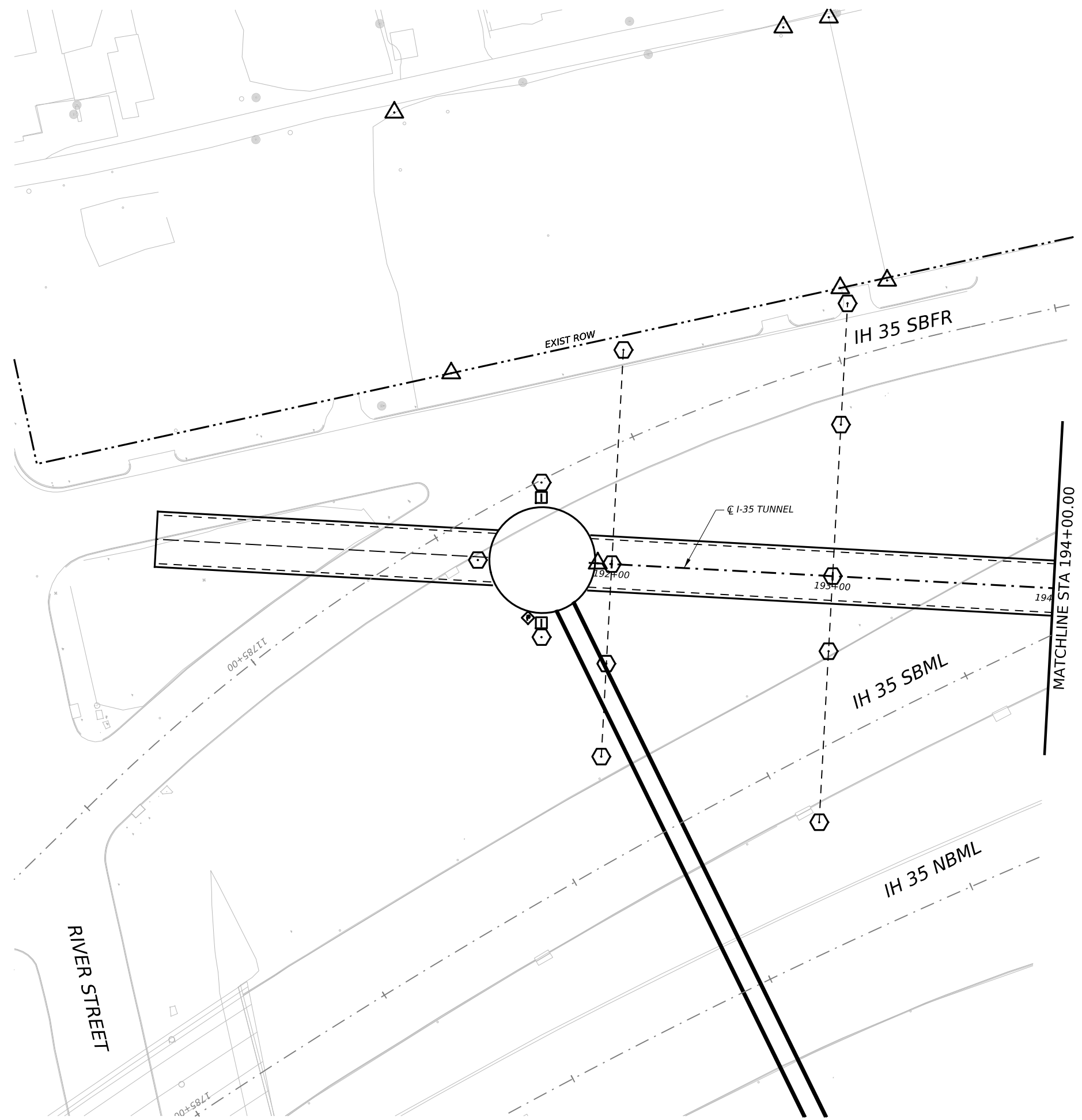
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL







**CESAR CHAVEZ TUNNEL
 PLAN AND PROFILE
 STA 229+00 TO END**

SCALE: 1"=100'-H
 1"=50'-V
 SHEET 14 OF 14

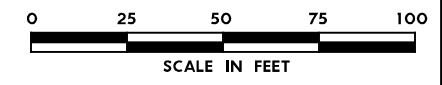
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	110	



INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

- GENERAL NOTE:**
 1. UTILITY INFORMATION NOT PROVIDED IN THIS DRAWING SET, UTILITY MONITORING TO BE DEVELOPED AT NEXT DESIGN STAGE.
- NOTES:**
1. INSTRUMENTATION SHOWN ON THIS DRAWING IS TO BE USED IN CONJUNCTION WITH INSTRUMENTATION INSTALLED UNDER CONTRACT 1252 FOR BUILDING AND UTILITY MONITORING DURING STATION CONSTRUCTION.
 2. LOCATIONS OF INSTRUMENT POINTS ARE SHOWN AS APPROXIMATE ONLY. UMP AND SSP FOR UTILITY MONITORING TO BE INSTALLED DIRECTLY ABOVE CORRESPONDING UTILITY. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD BY CONTRACTOR IN ACCORDANCE WITH SCHEDULE IN DWG BP-011, SPECIFICATION SECTION 31 09 13, GEOTECHNICAL INSTRUMENTATION AND MONITORING AND SECTION 31 09 15, STRUCTURAL INSTRUMENTATION AND MONITORING, SUBJECT TO APPROVAL BY THE ENGINEER.
 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



NO.	DATE	REVISION	APPR BY

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 1701 Directors Blvd., Suite 1000, Austin, TX 78744
 Tel: 512-879-0400 • www.bgeinc.com
 TBPE Registration No. F-1046

HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA 

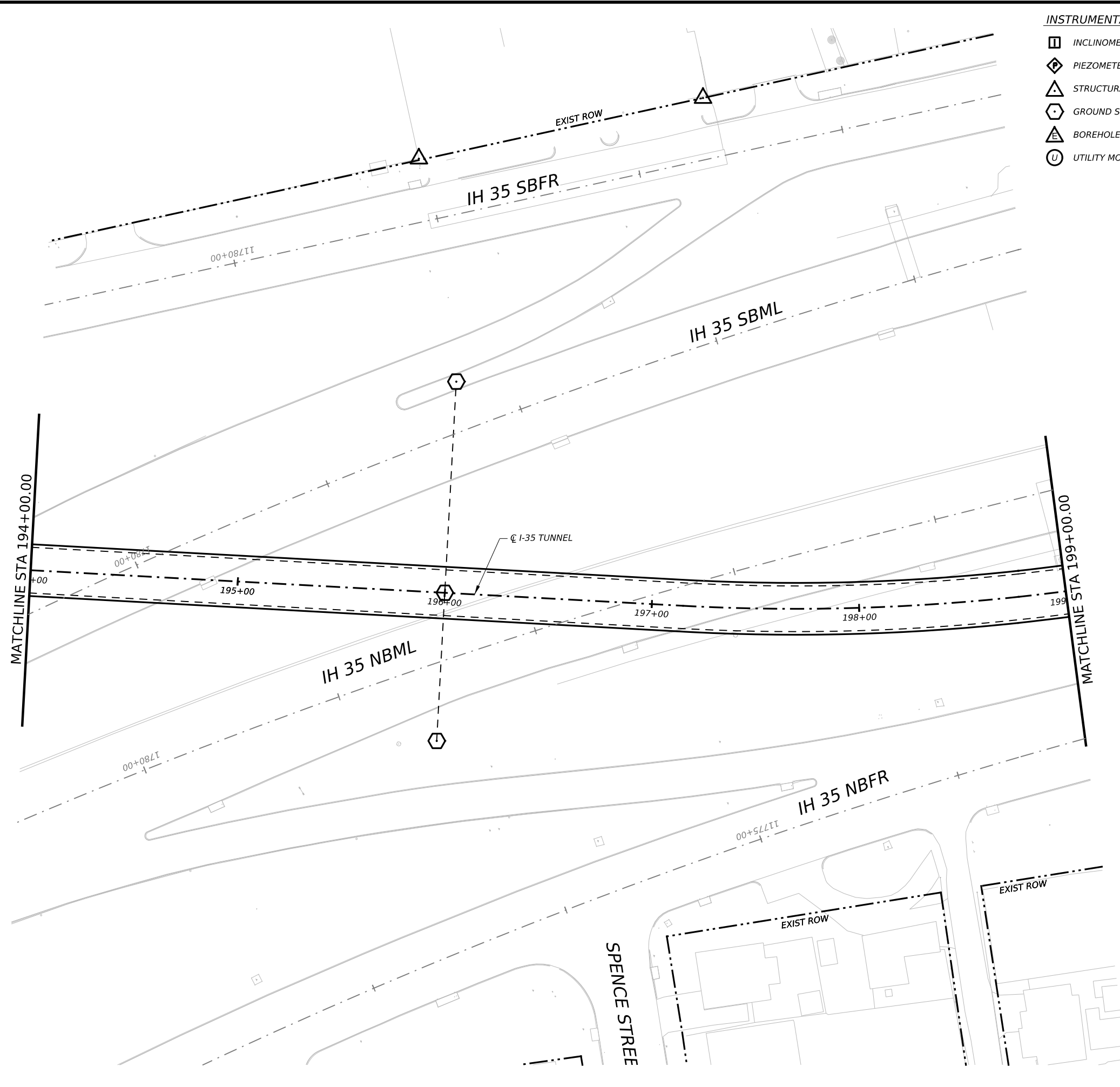
 **Texas Department of Transportation**

CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING
 BEGIN TO STA 194+00.00

SCALE: 1"=50' SHEET 1 OF 1

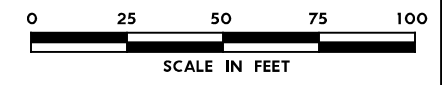
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	111	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT

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mobility CAPITAL AREA

Texas Department of Transportation

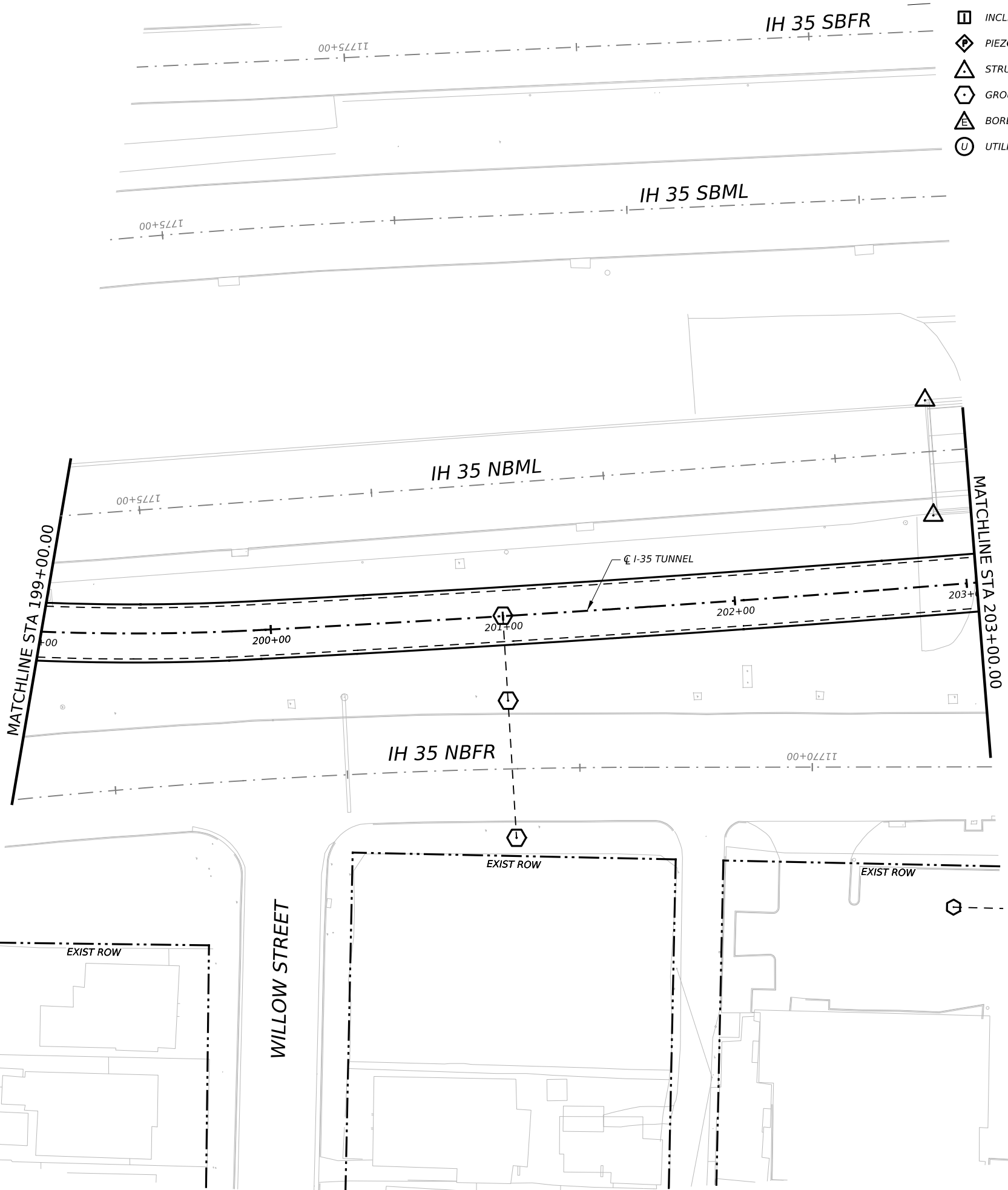
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 194+00.00 TO STA 199+00.00

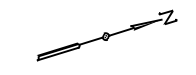
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	112	



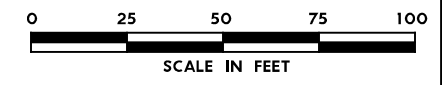
INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT



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 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA

Texas Department of Transportation

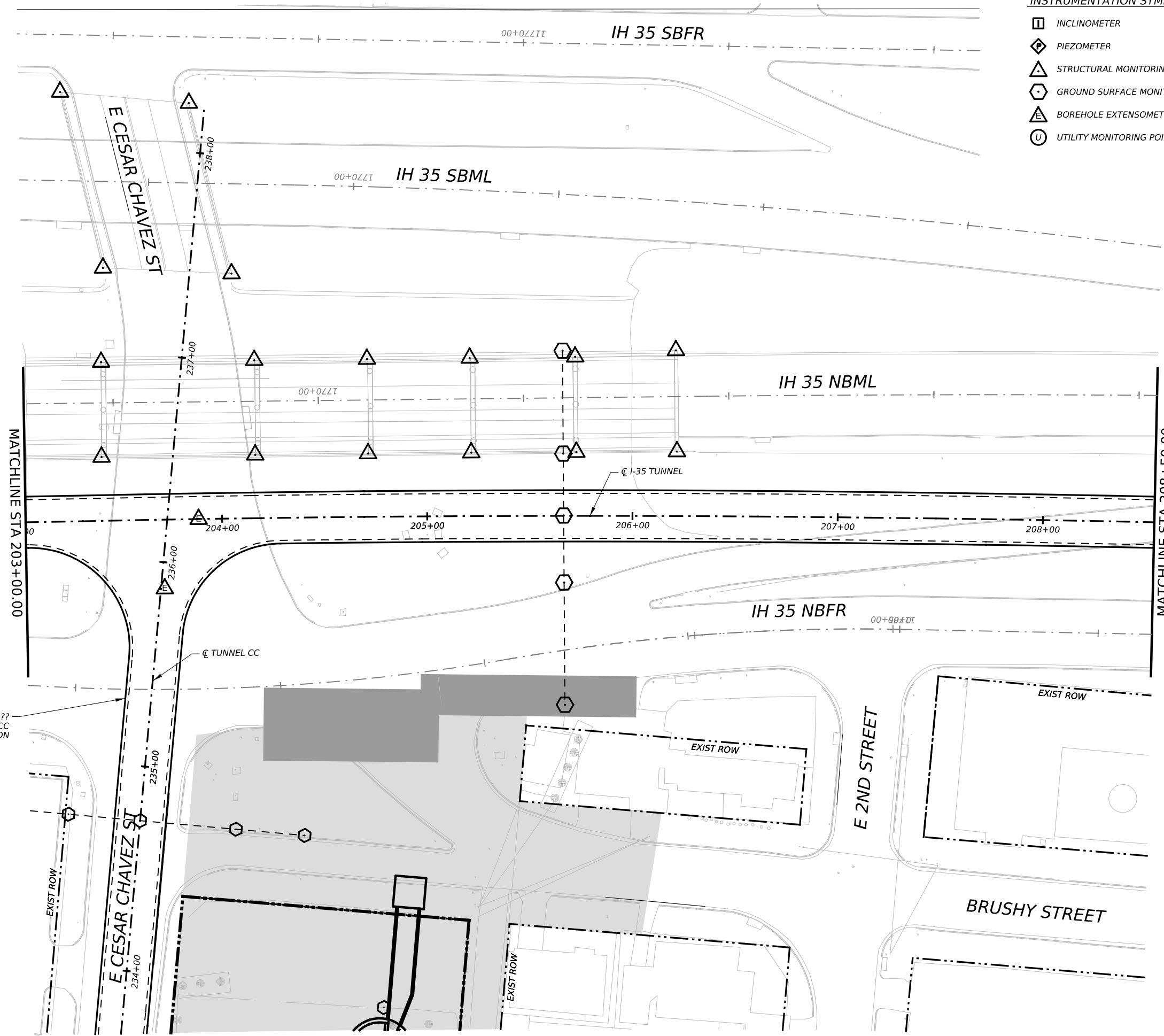
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

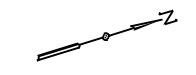
STA 199+00.00 TO STA 203+00.00

SCALE: 1"=50' SHEET 1 OF 1

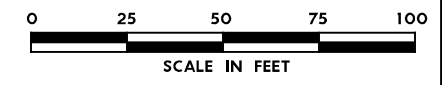
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	113	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
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REFER TO SHEET ??
 FOR TUNNEL CC
 INSTRUMENTATION

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 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

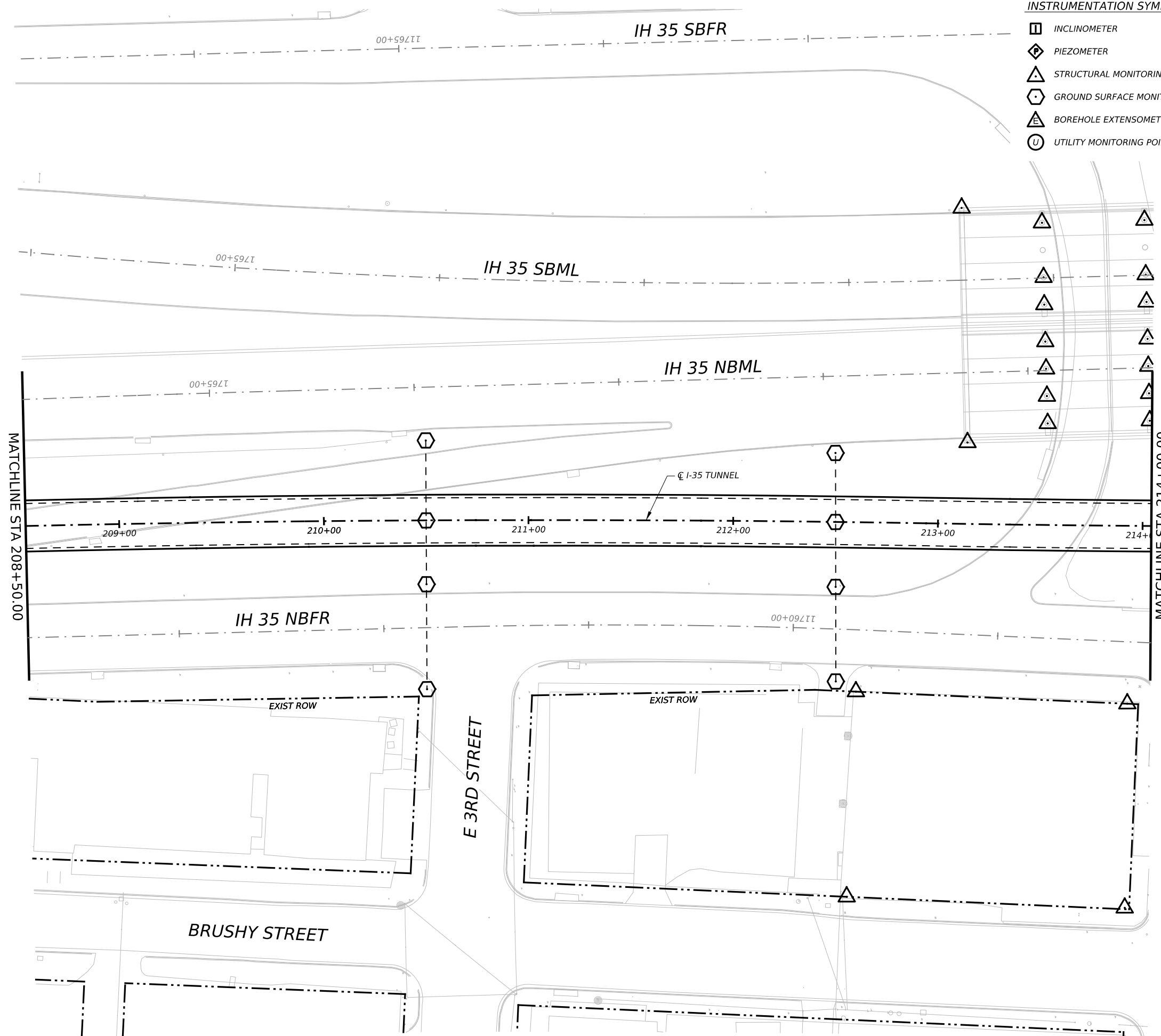
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 203+00.00 TO STA 208+50.00

SCALE: 1"=50' SHEET 1 OF 1

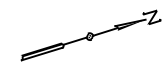
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	114



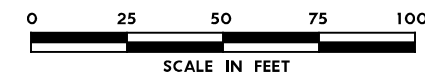
INSTRUMENTATION SYMBOLOGY

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- PIEZOMETER
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 CAPITAL AREA

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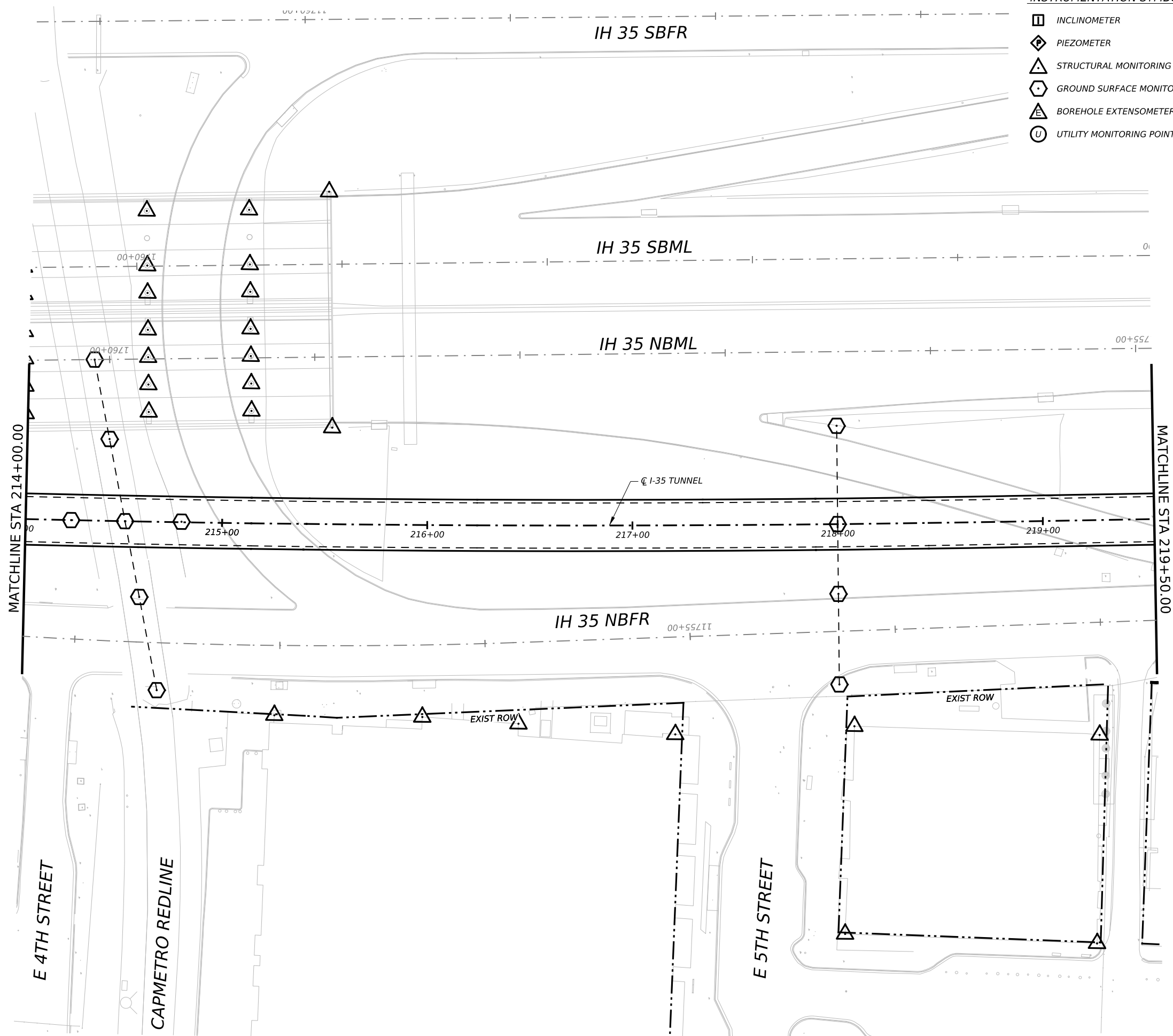
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 208+50.00 TO STA 214+00.00

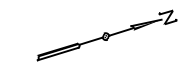
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	IH35-INSTR-05.dgn	

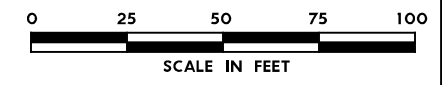


INSTRUMENTATION SYMBOLOGY

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- PIEZOMETER
- STRUCTURAL MONITORING POINT
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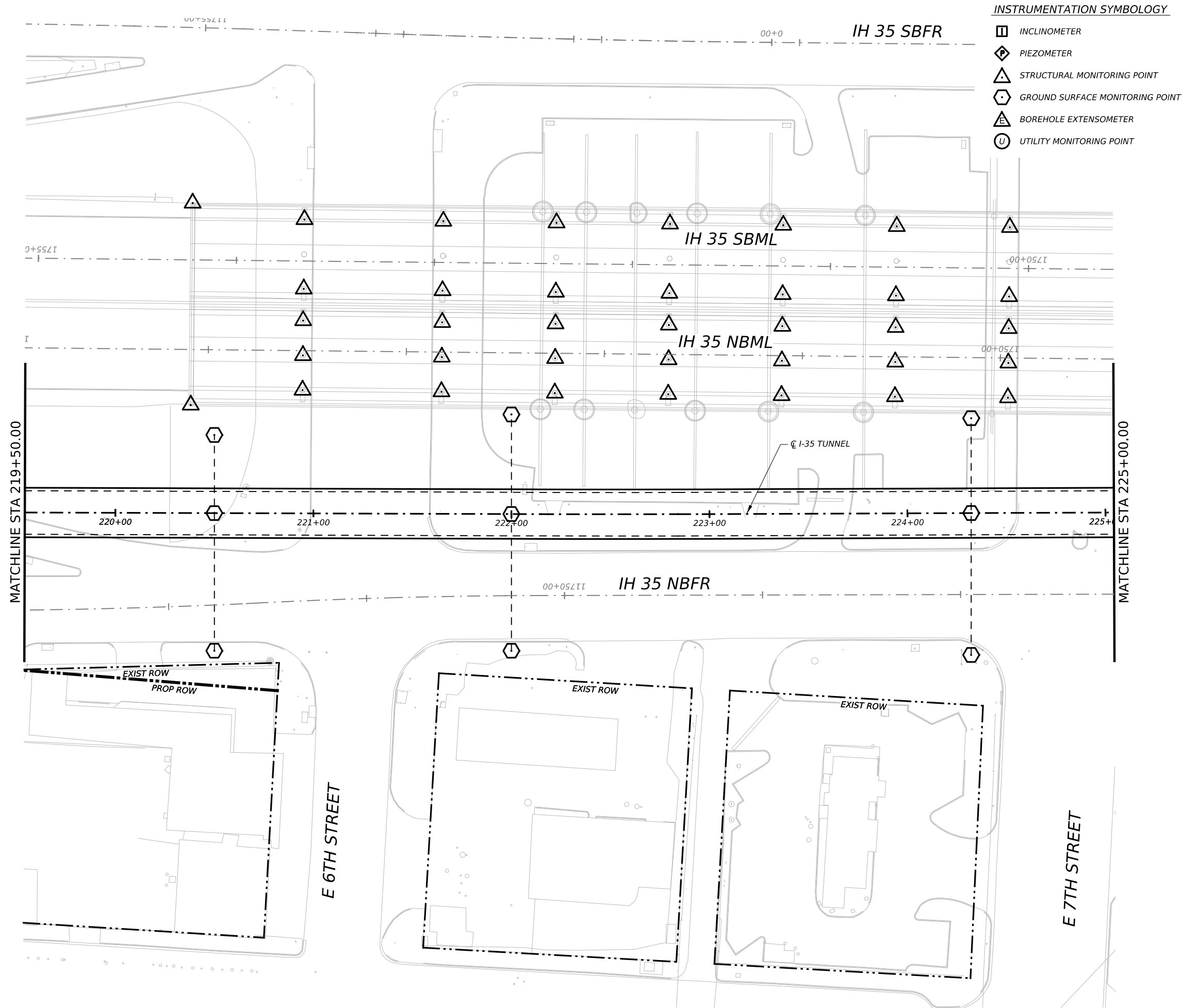
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 214+00.00 TO STA 219+50.00

SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	116	

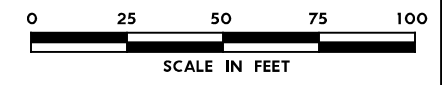


INSTRUMENTATION SYMBOLOGY

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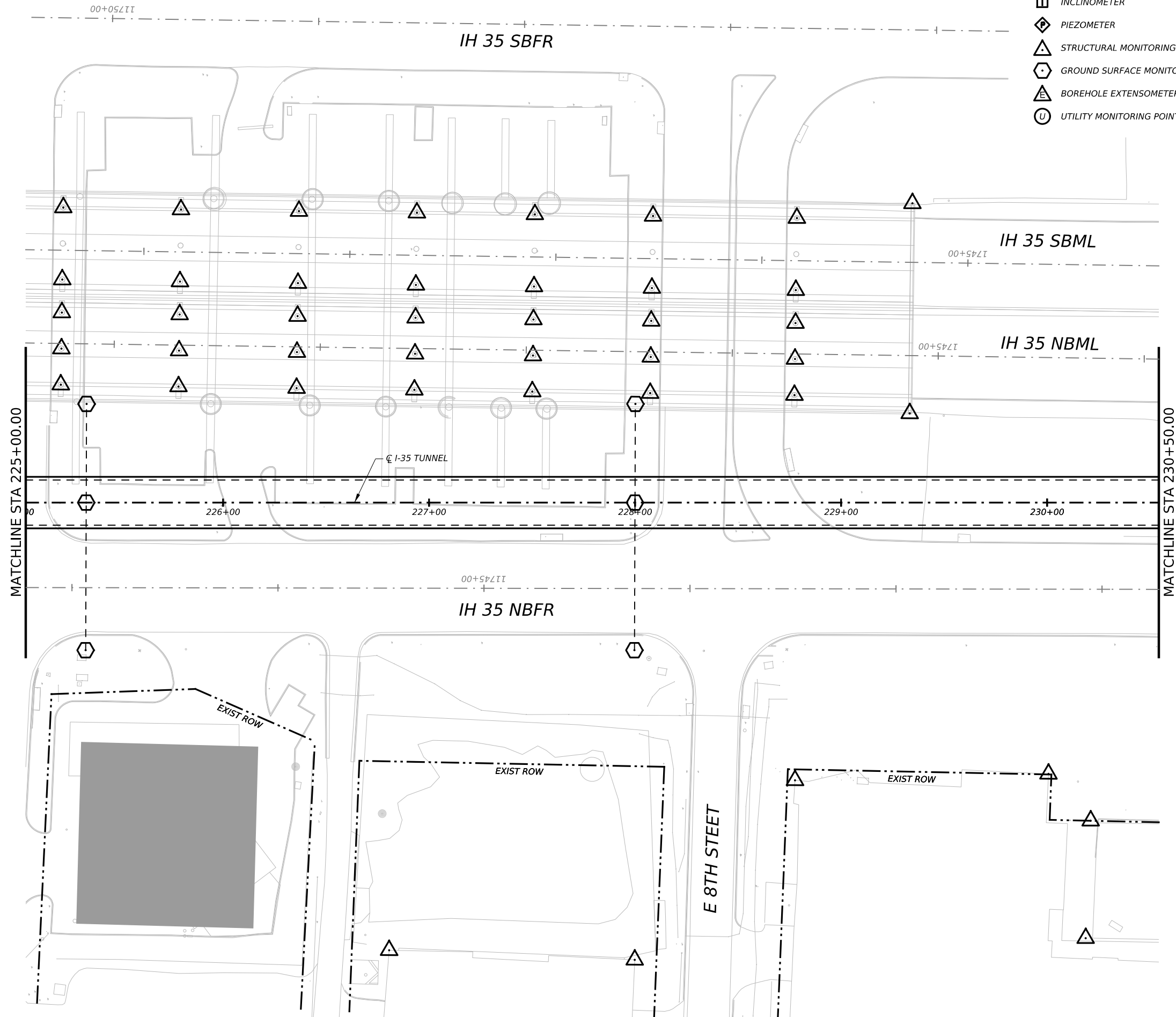
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 219+50.00 TO STA 225+00.00

SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	IH35-INSTR-07.dgn



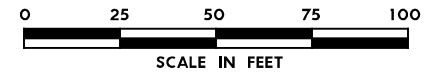
INSTRUMENTATION SYMBOLOGY

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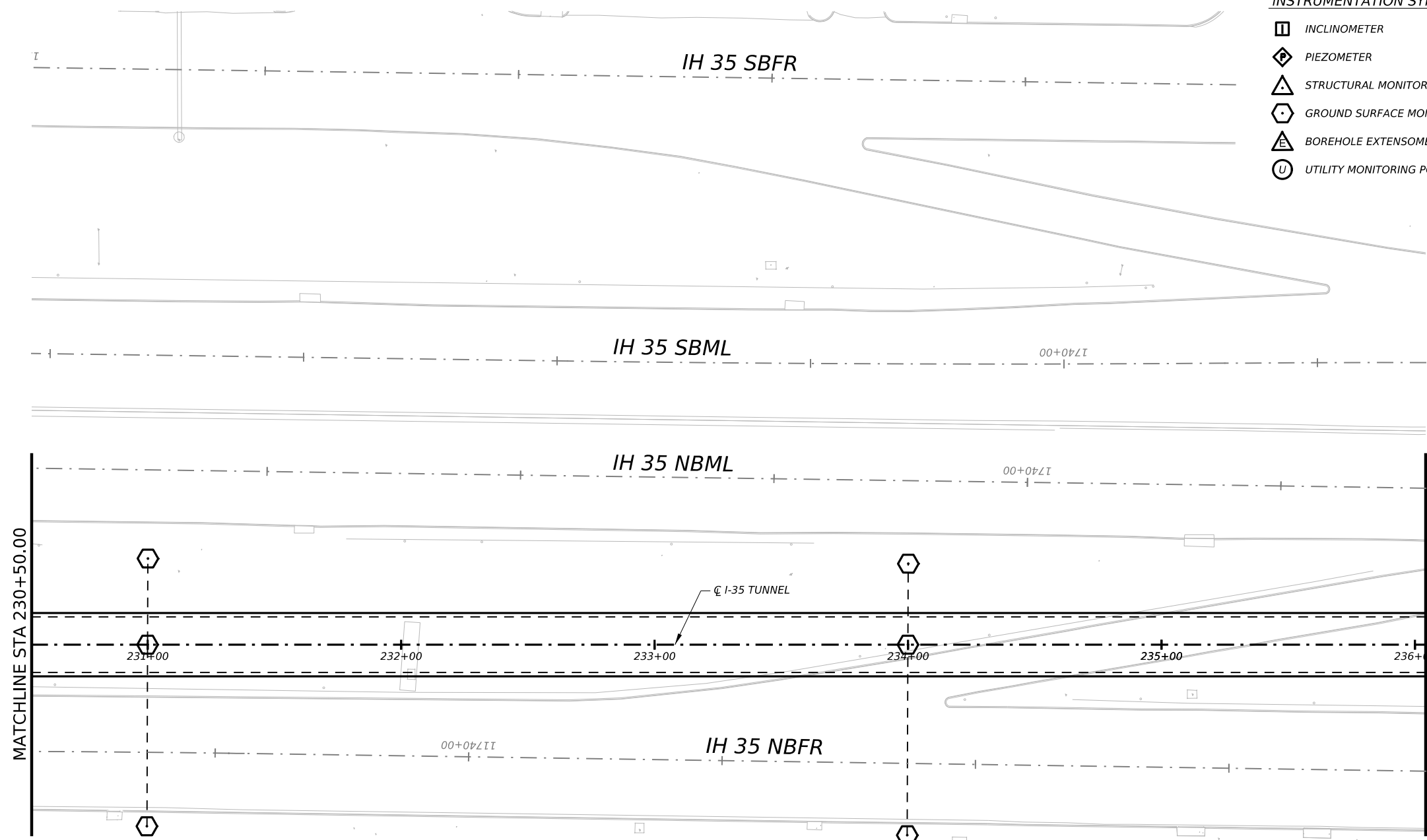


CAPITAL EXPRESS CENTRAL

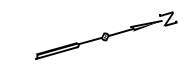
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 225+00.00 TO STA 230+50.00

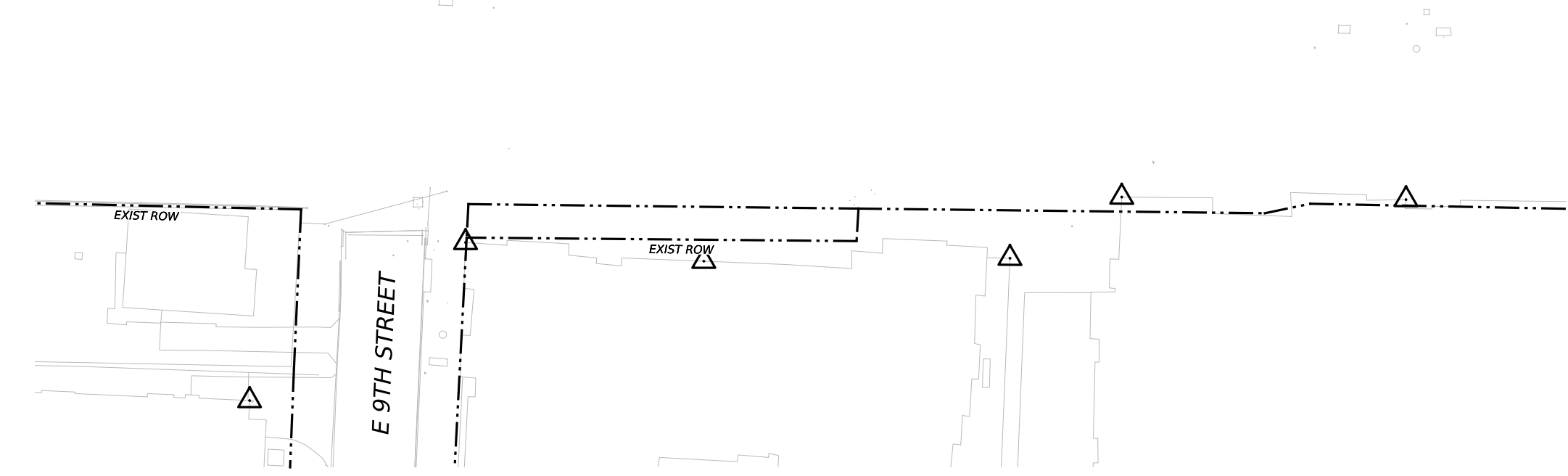
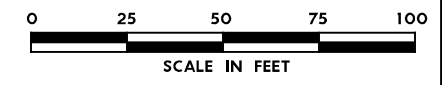
SCALE: 1"=50'			SHEET OF	
CONT	SECT	JOB	HIGHWAY	
0015	13	433, ETC.	I-35	
DIST		COUNTY	SHEET NO.	
AUS		TRAVIS	118	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
 - UTILITY MONITORING POINT



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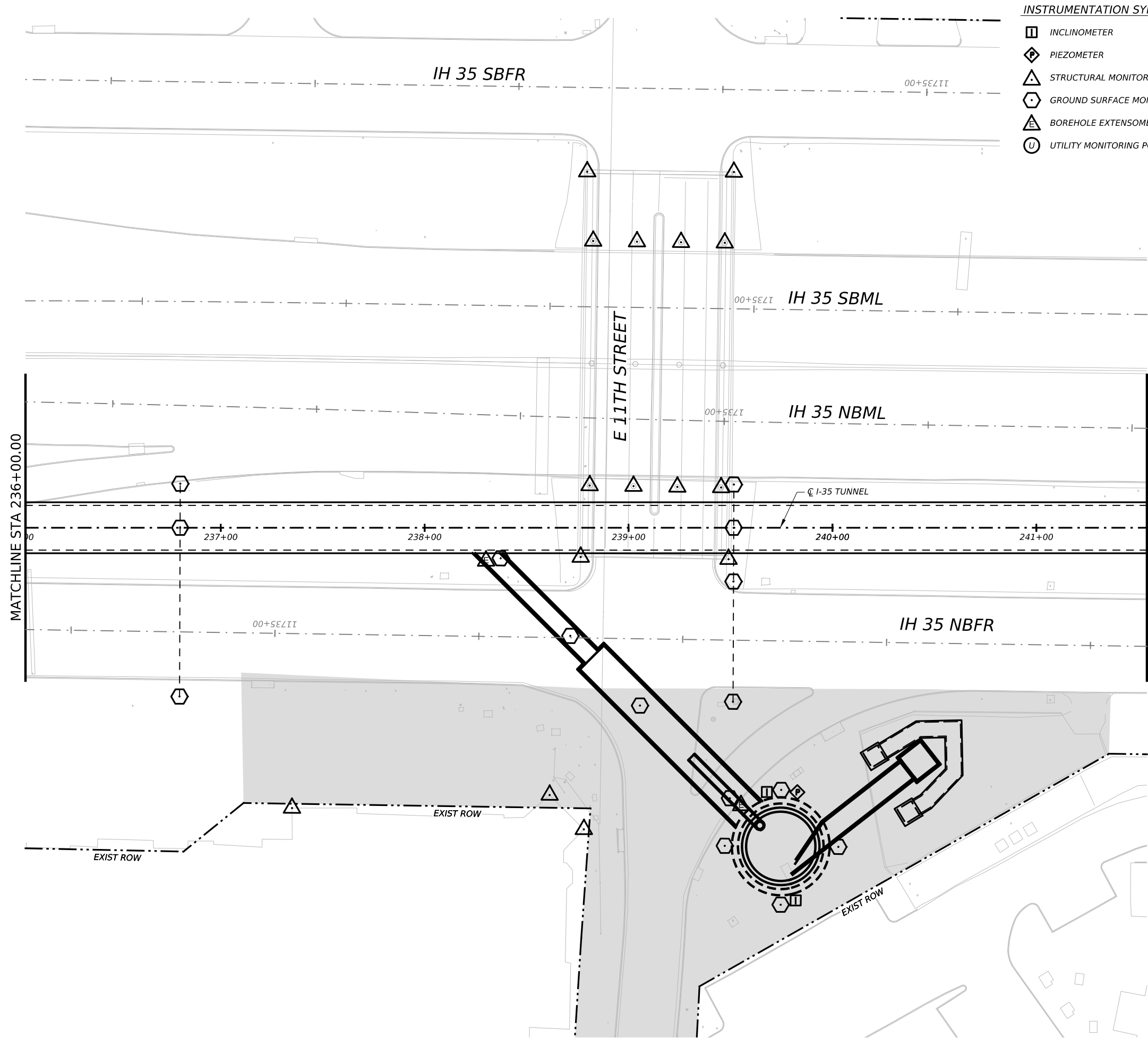
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

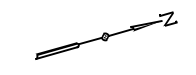
STA 230+50.00 TO STA 236+00.00

SCALE: 1"=50' SHEET 1 OF 1

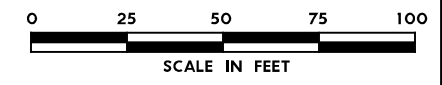
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	119	



- INSTRUMENTATION SYMBOLOGY**
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 - PIEZOMETER
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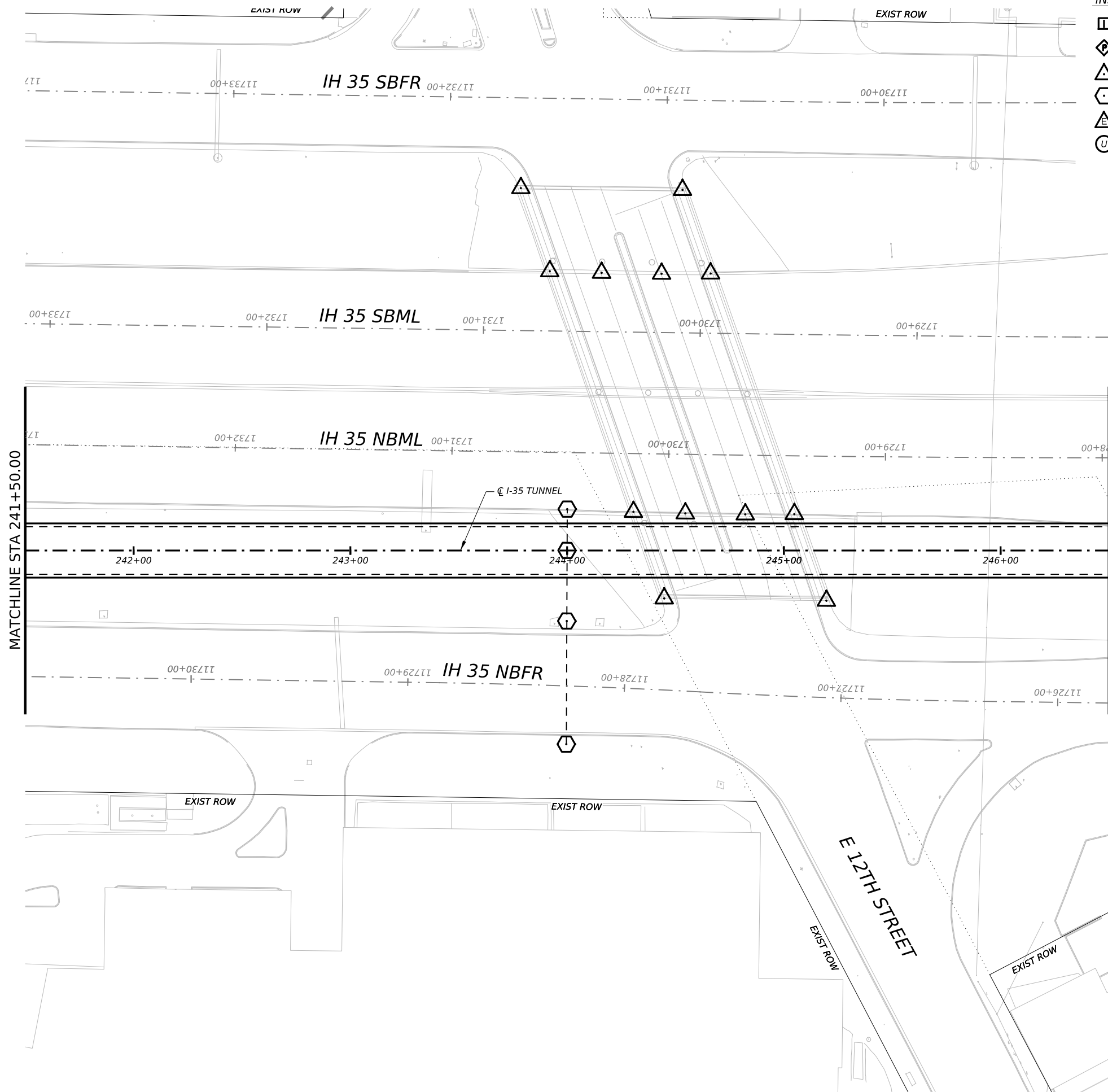
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 236+00.00 TO STA 241+50.00

SCALE: 1"=50' SHEET 1 OF 1

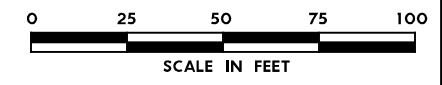
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	120	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
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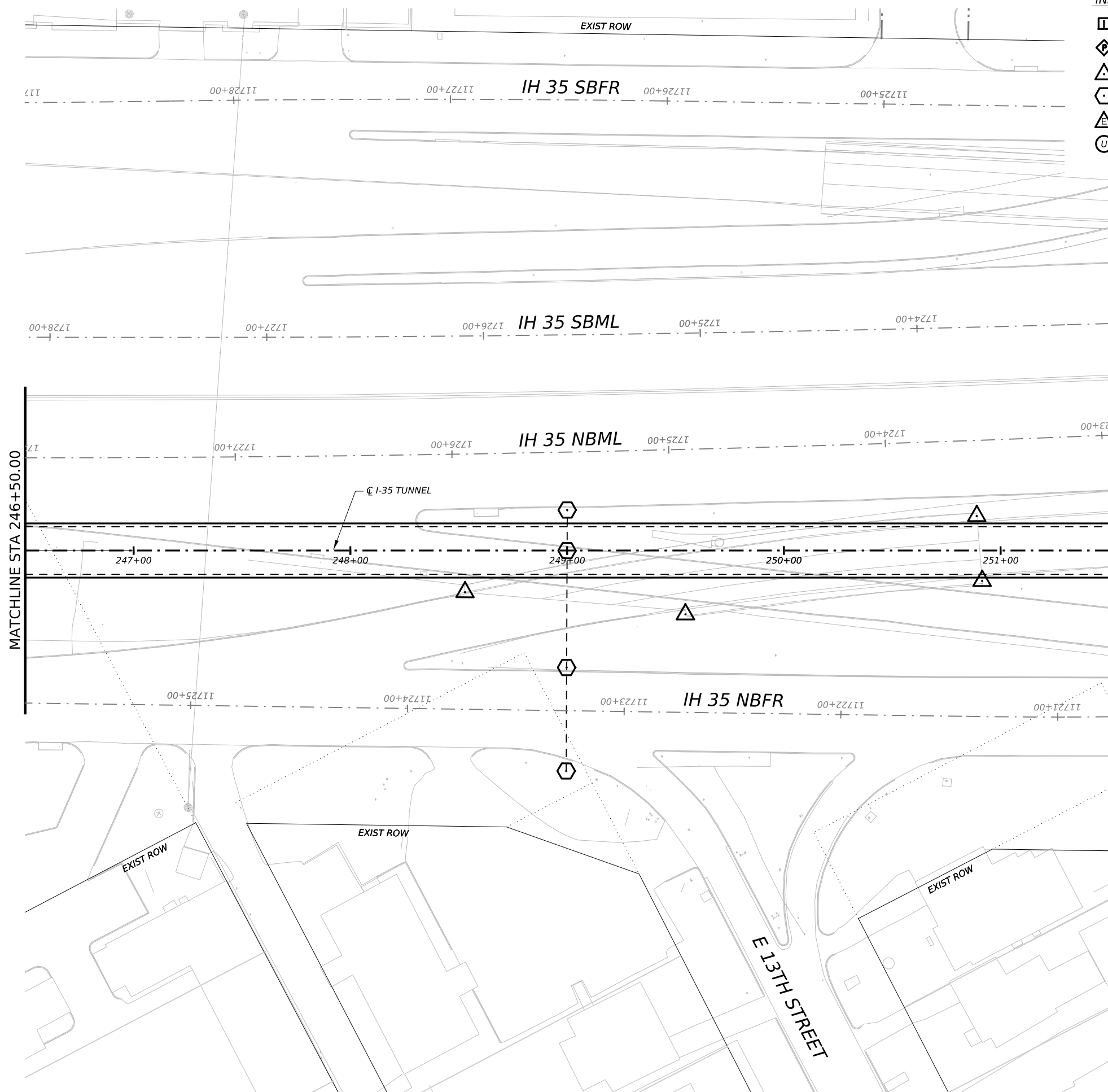
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 241+50.00 TO STA 246+50.00

SCALE: 1"=50' SHEET OF

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS		



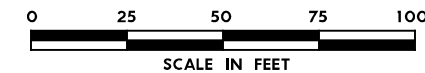
INSTRUMENTATION SYMBOLOGY

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Texas Department of Transportation

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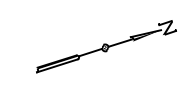
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 246+50.00 TO STA 251+50.00

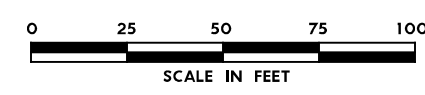
SCALE: 1"=50'		SHEET OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
 - UTILITY MONITORING POINT



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 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



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mobility CAPITAL AREA

Texas Department of Transportation

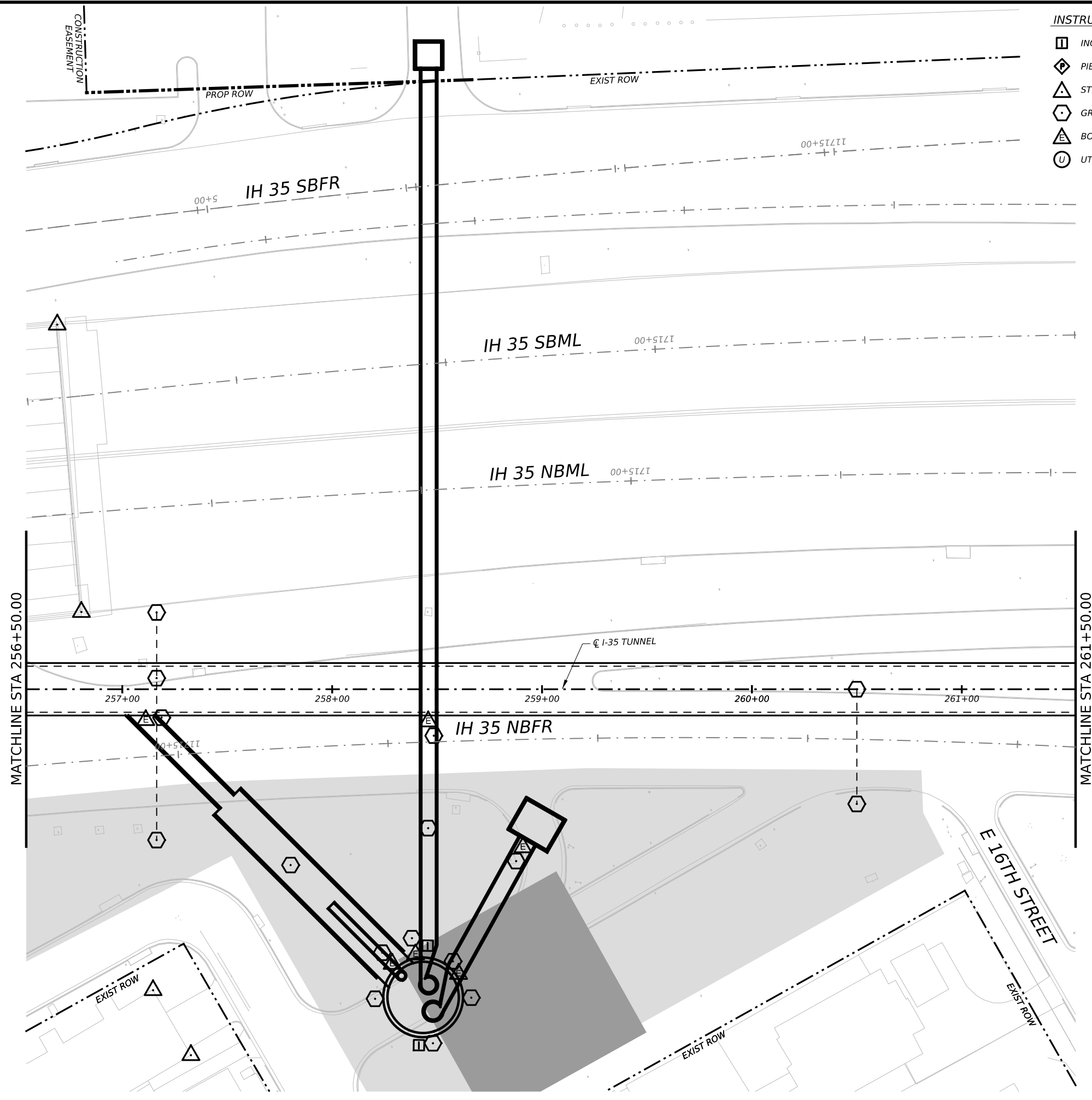
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 251+50.00 TO STA 256+50.00

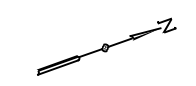
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	123	

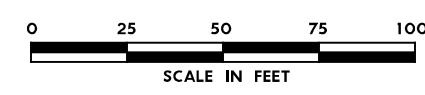


INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
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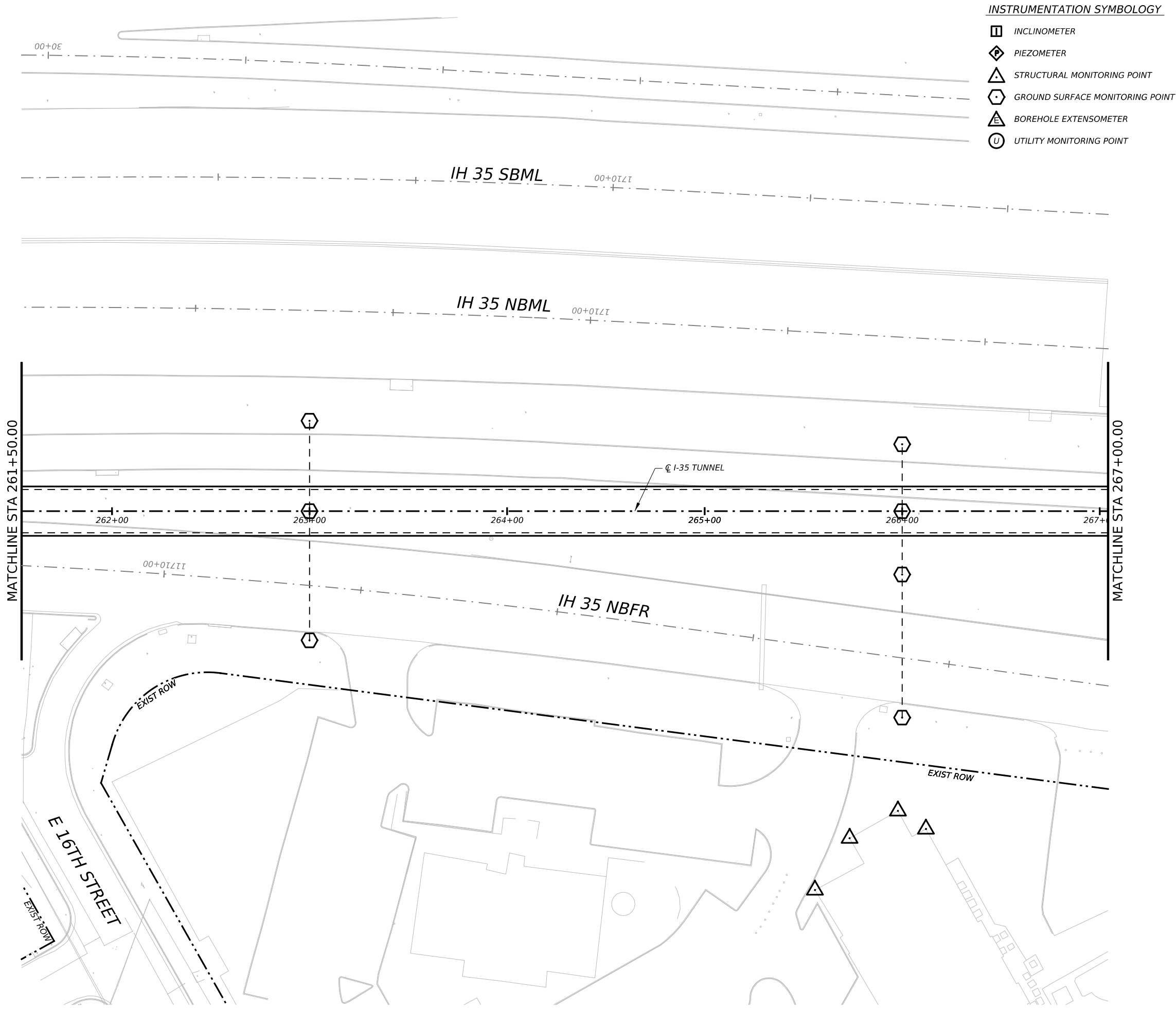
Texas Department of Transportation

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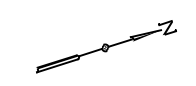
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

SCALE: 1"=50' SHEET 1 OF 1

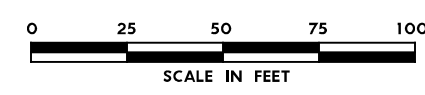
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	124	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
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mobility 35
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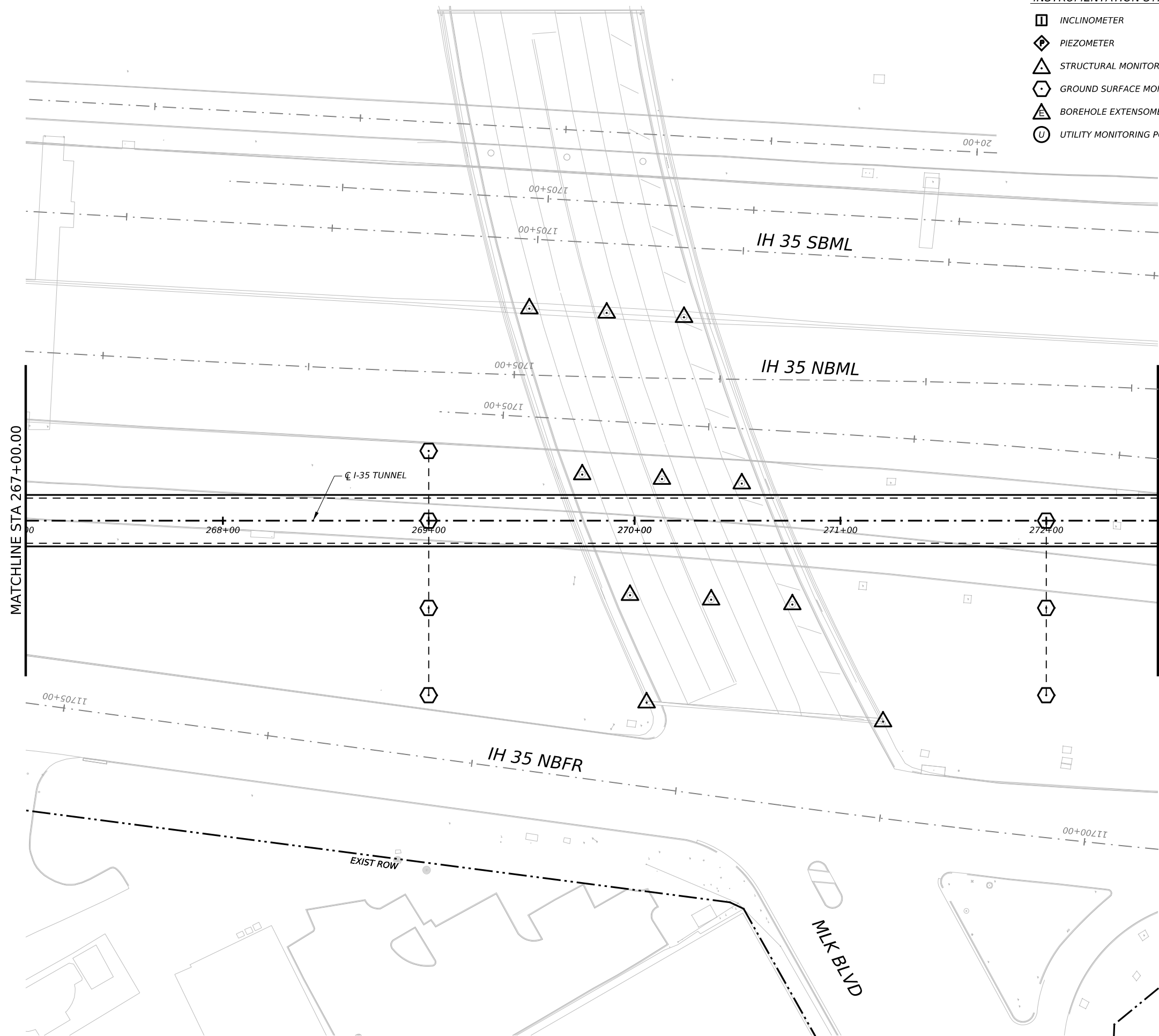
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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

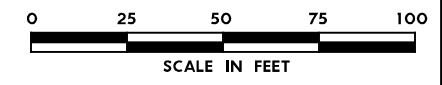
DIST	COUNTY	SHEET NO.
AUS	TRAVIS	125



INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

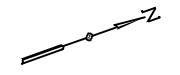
STA 267+00.00 TO STA 272+50.00

SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	126	

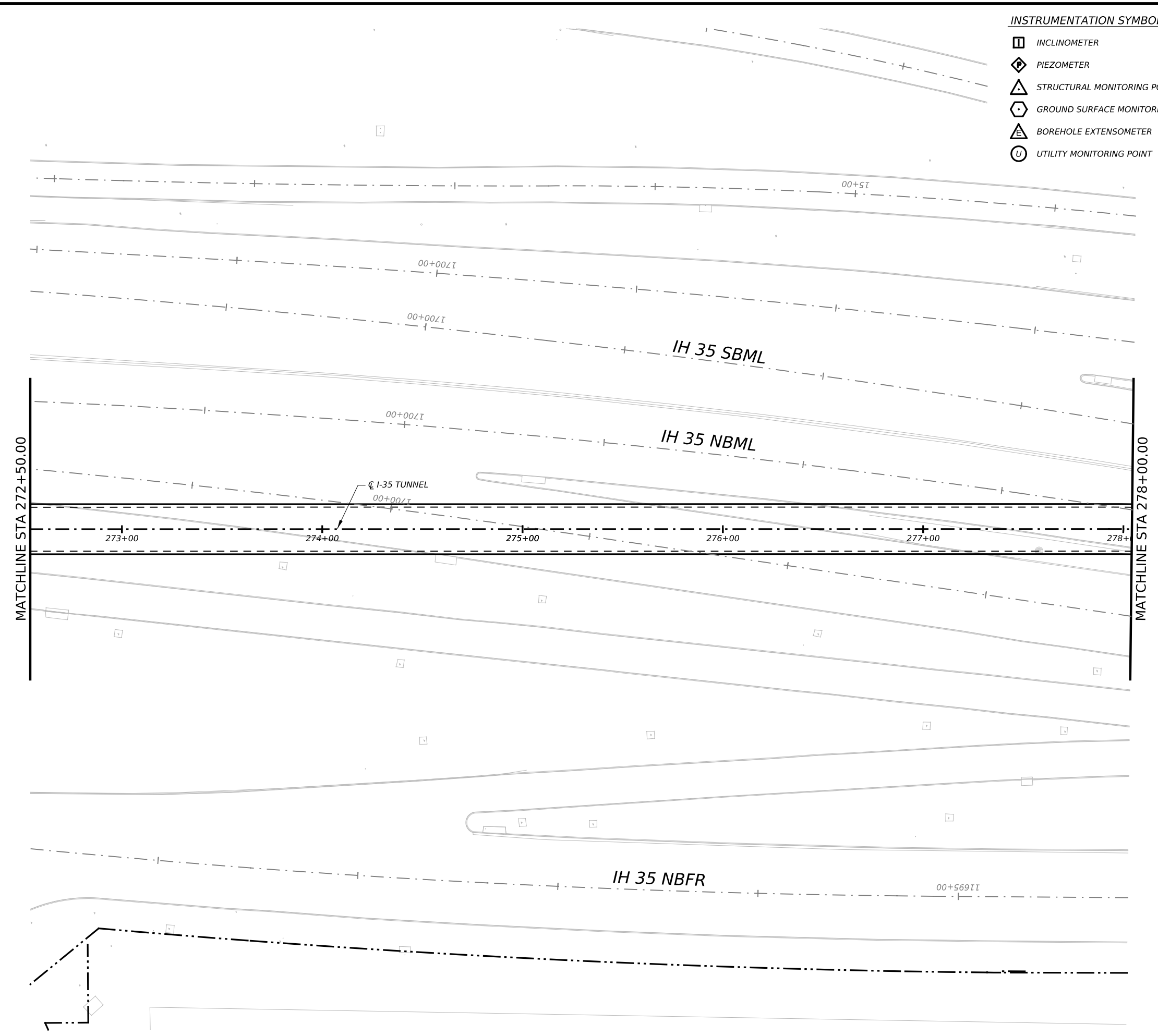
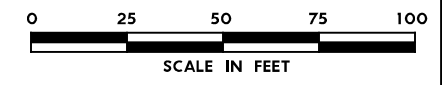
INSTRUMENTATION SYMBOLOGY

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-  PIEZOMETER
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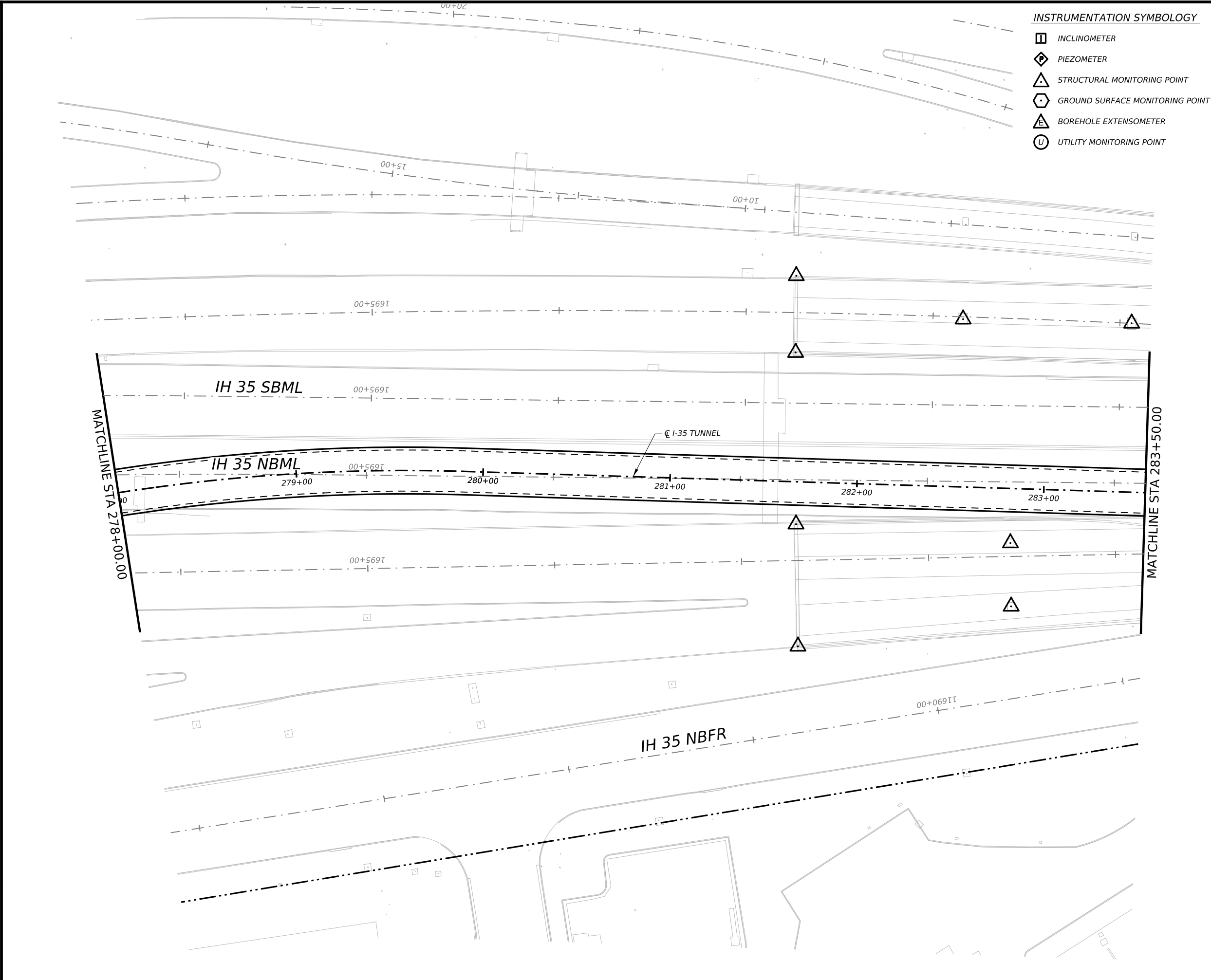
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

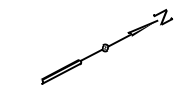
STA 272+50.00 TO STA 278+00.00

SCALE: 1"=50' SHEET OF 1

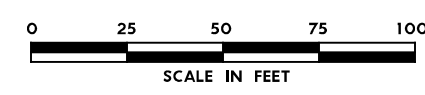
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	127	



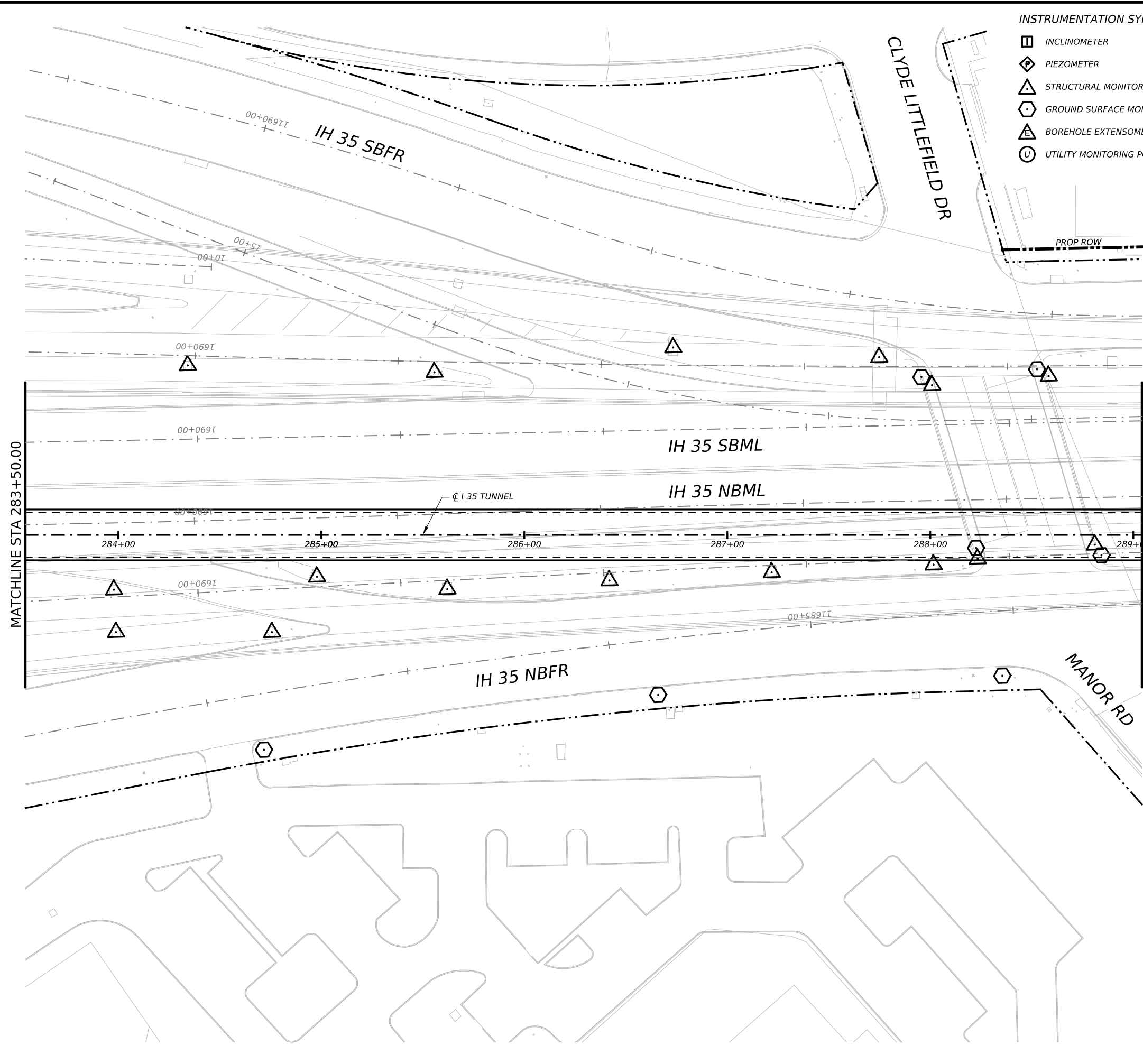
- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
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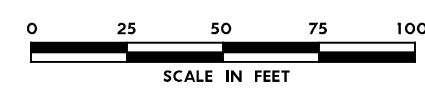
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<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p> <p>GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING</p> <p>STA 278+00.00 TO STA 283+50.00</p>			
SCALE: 1"=50'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	128



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
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mobility **35**
 CAPITAL AREA

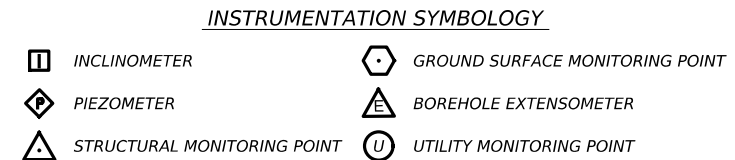
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

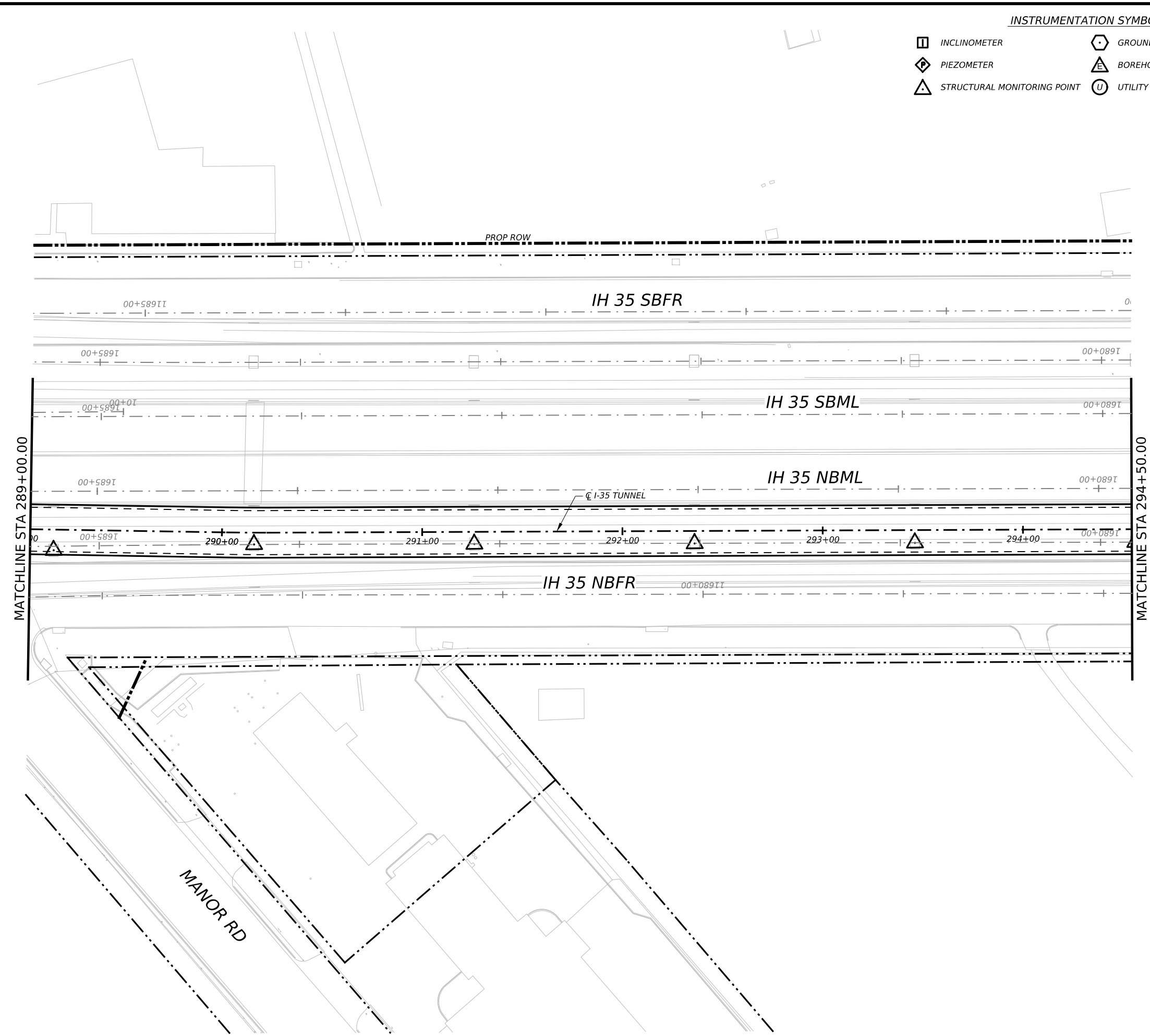
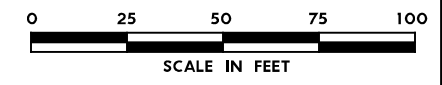
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 283+50.00 TO STA 289+00.00

SCALE: 1"=50'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	129



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mobility 35
 CAPITAL AREA

Texas Department of Transportation

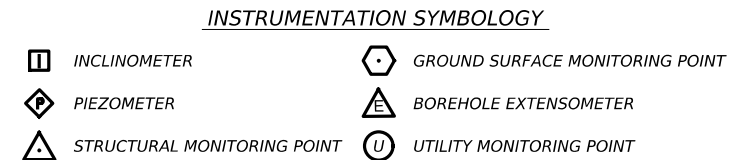
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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

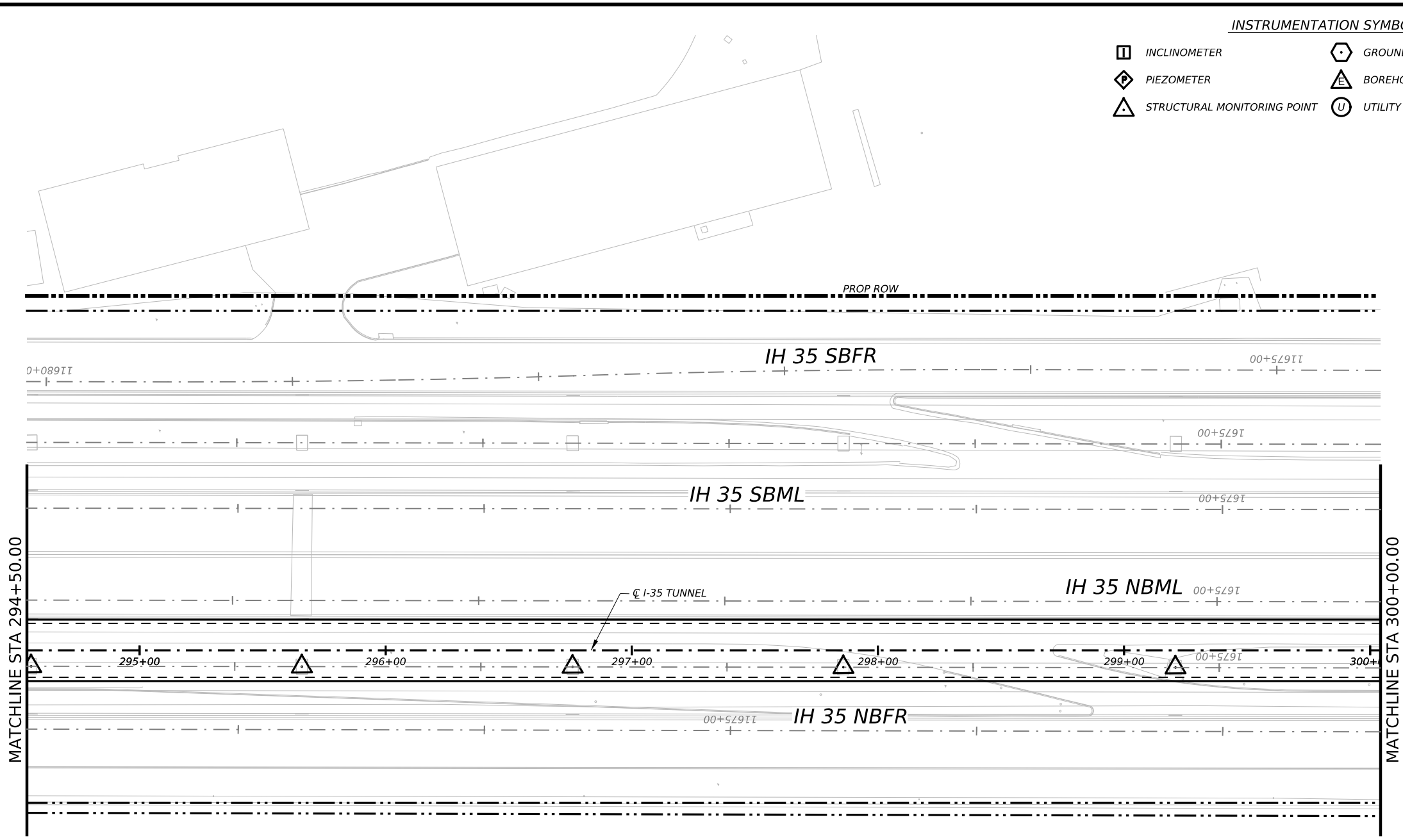
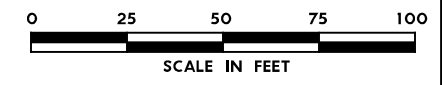
STA 289+00.00 TO STA 294+50.00

SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	IH35-INSTR-20	



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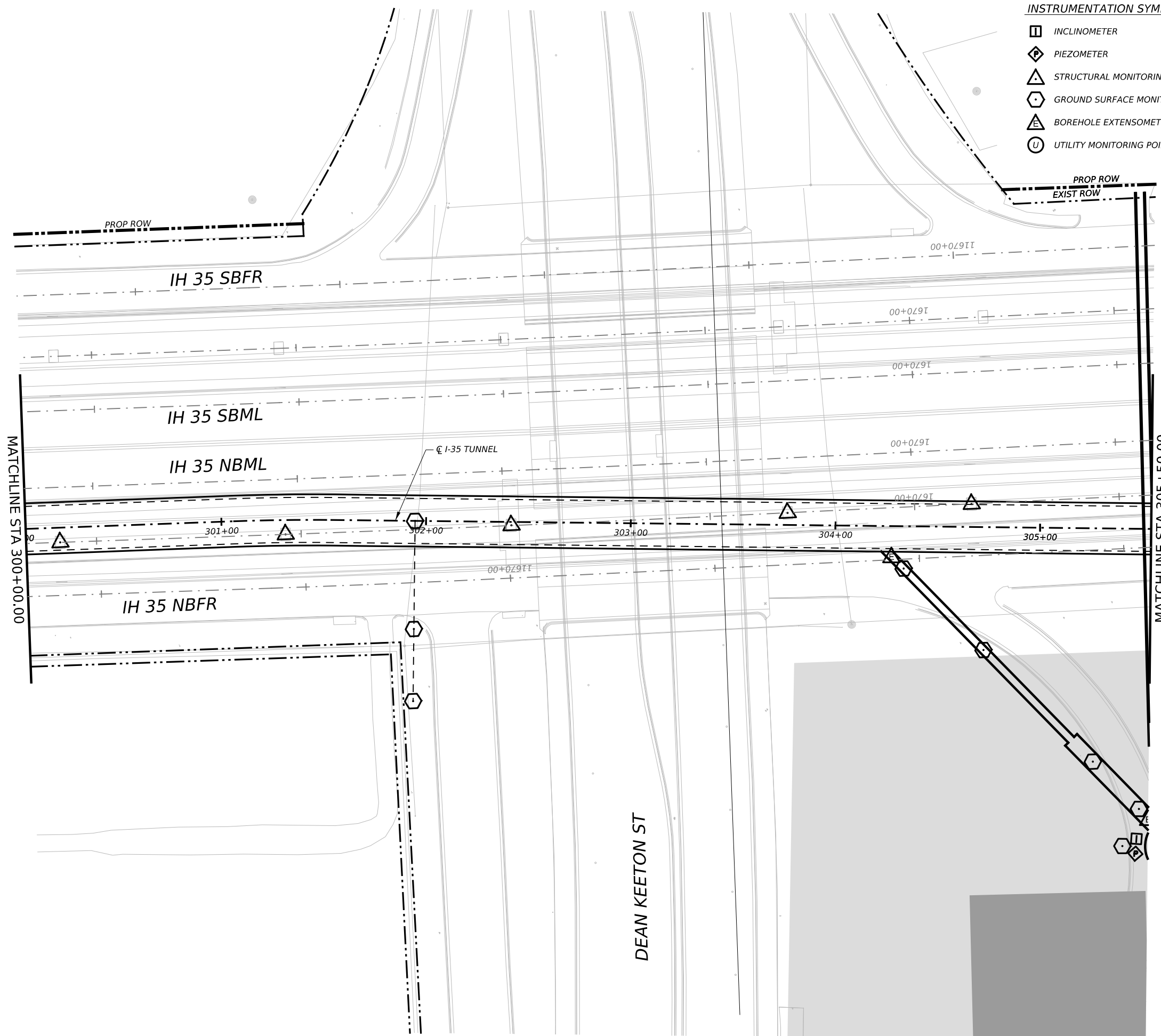
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 294+50.00 TO STA 300+00.00

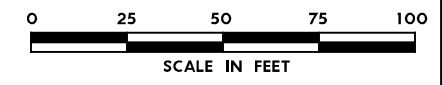
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	131	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
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 - GROUND SURFACE MONITORING POINT
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CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING
 STA 300+00.00 TO STA 305+50.00

SCALE: 1"=50' SHEET 1 OF 1

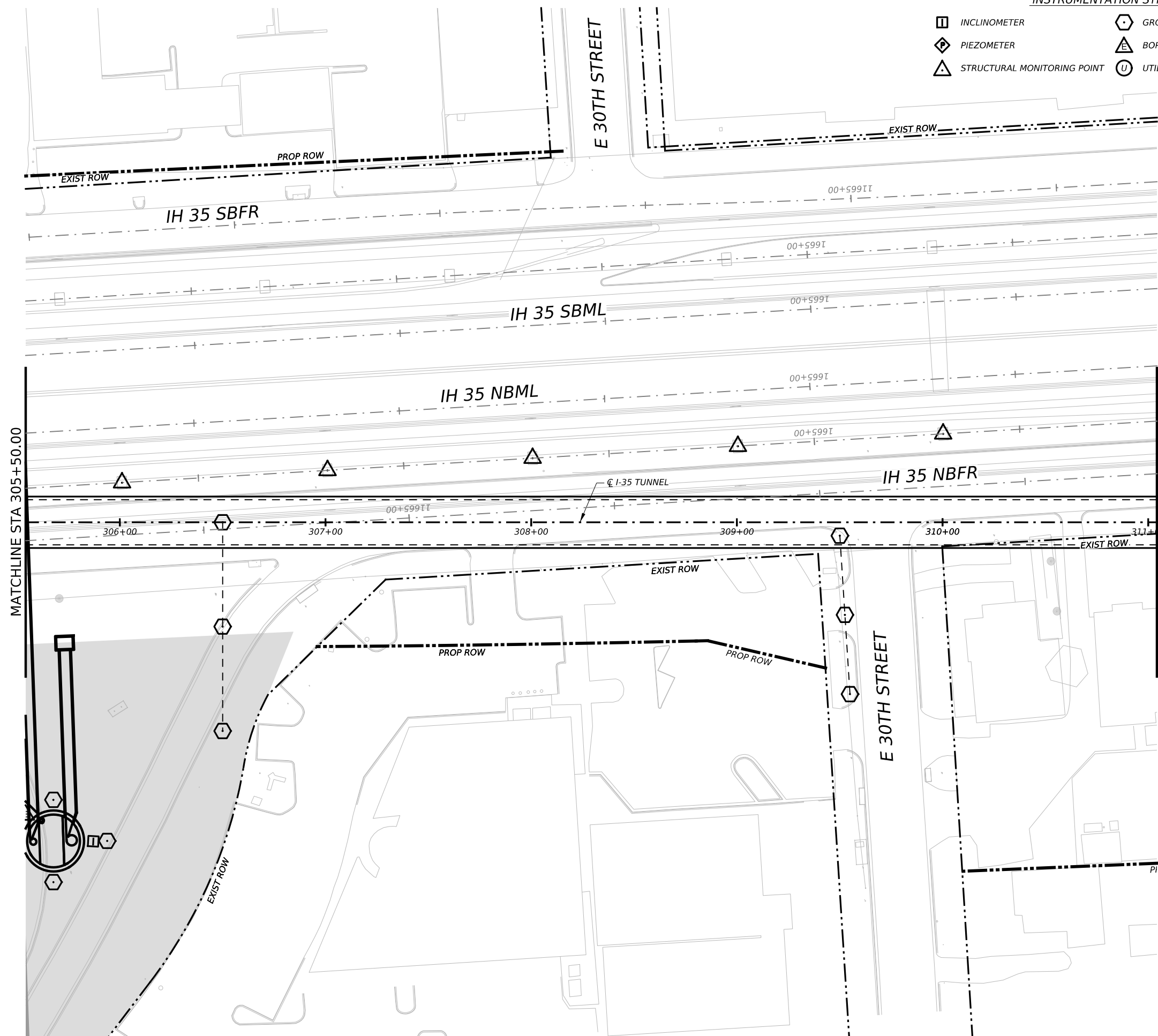
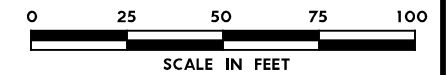
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	132	

INSTRUMENTATION SYMBOLOLOGY


-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

GENERAL NOTE:
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 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



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CAPITAL EXPRESS CENTRAL

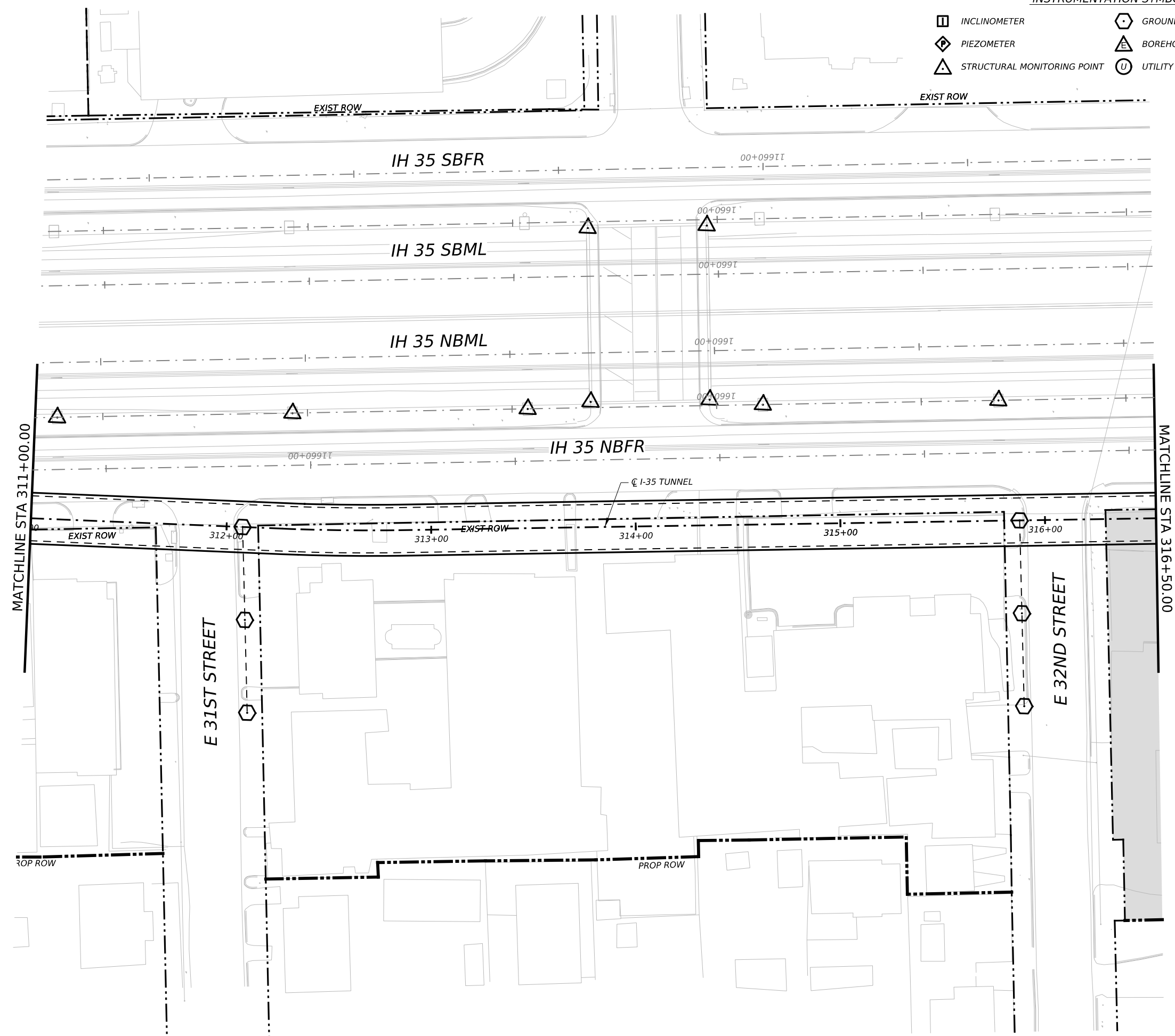
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 305+50.00 TO STA 311+00.00

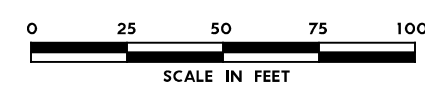
SCALE: 1"=50'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	133




INSTRUMENTATION SYMBOLOGY

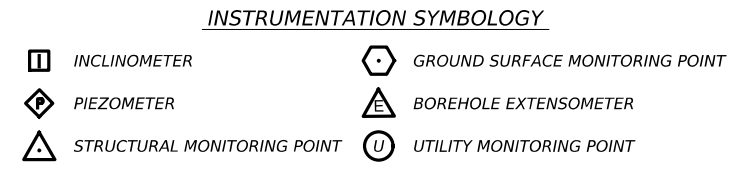
-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT



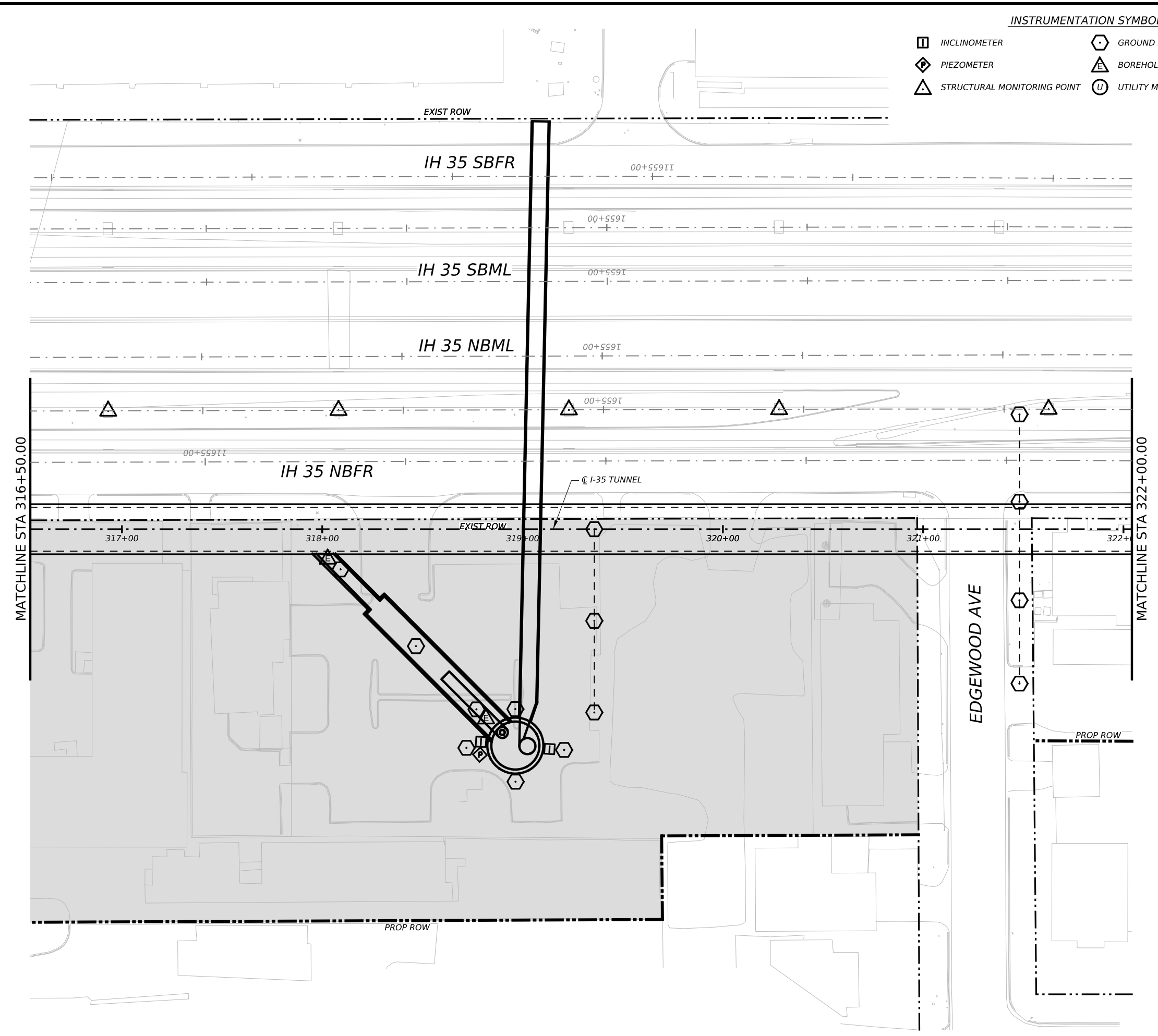
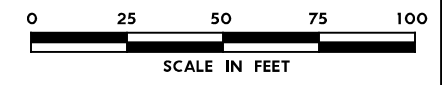
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 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



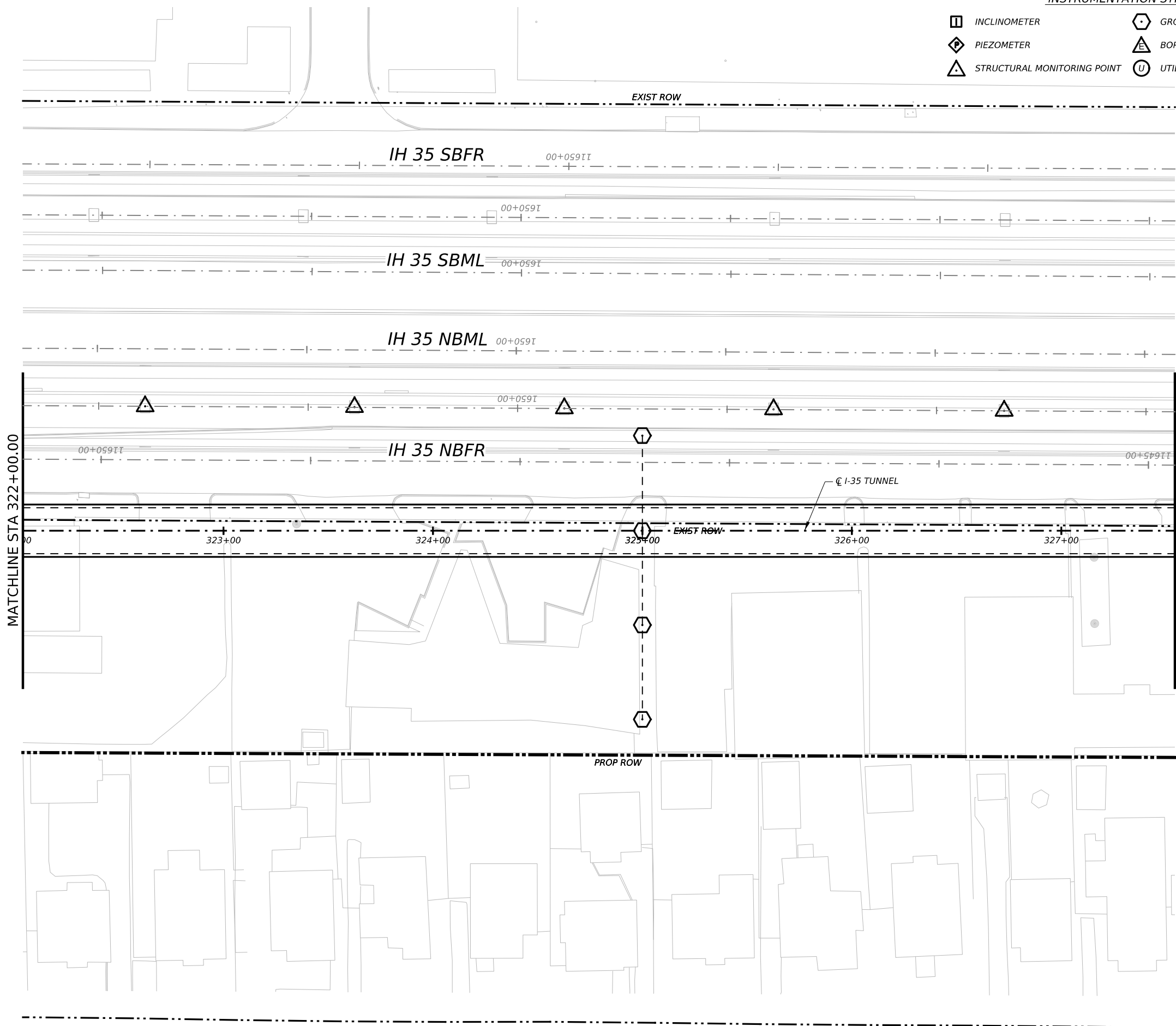
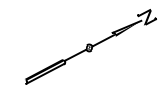
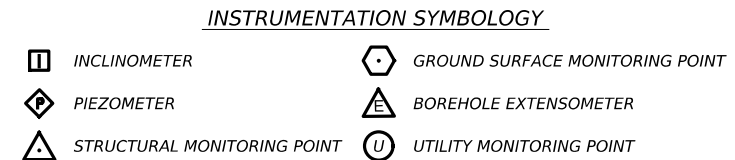
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CAPITAL EXPRESS CENTRAL GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING STA 311+00.00 TO STA 316+50.00			
SCALE: 1"=50'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	134	



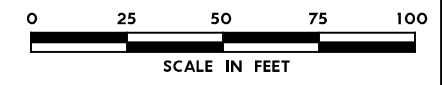
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<p>Texas Department of Transportation</p>			
<p>CAPITAL EXPRESS CENTRAL</p>			
<p>GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING</p>			
<p>STA 316+50.00 TO STA 322+00.00</p>			
SCALE: 1"=50'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	135	



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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

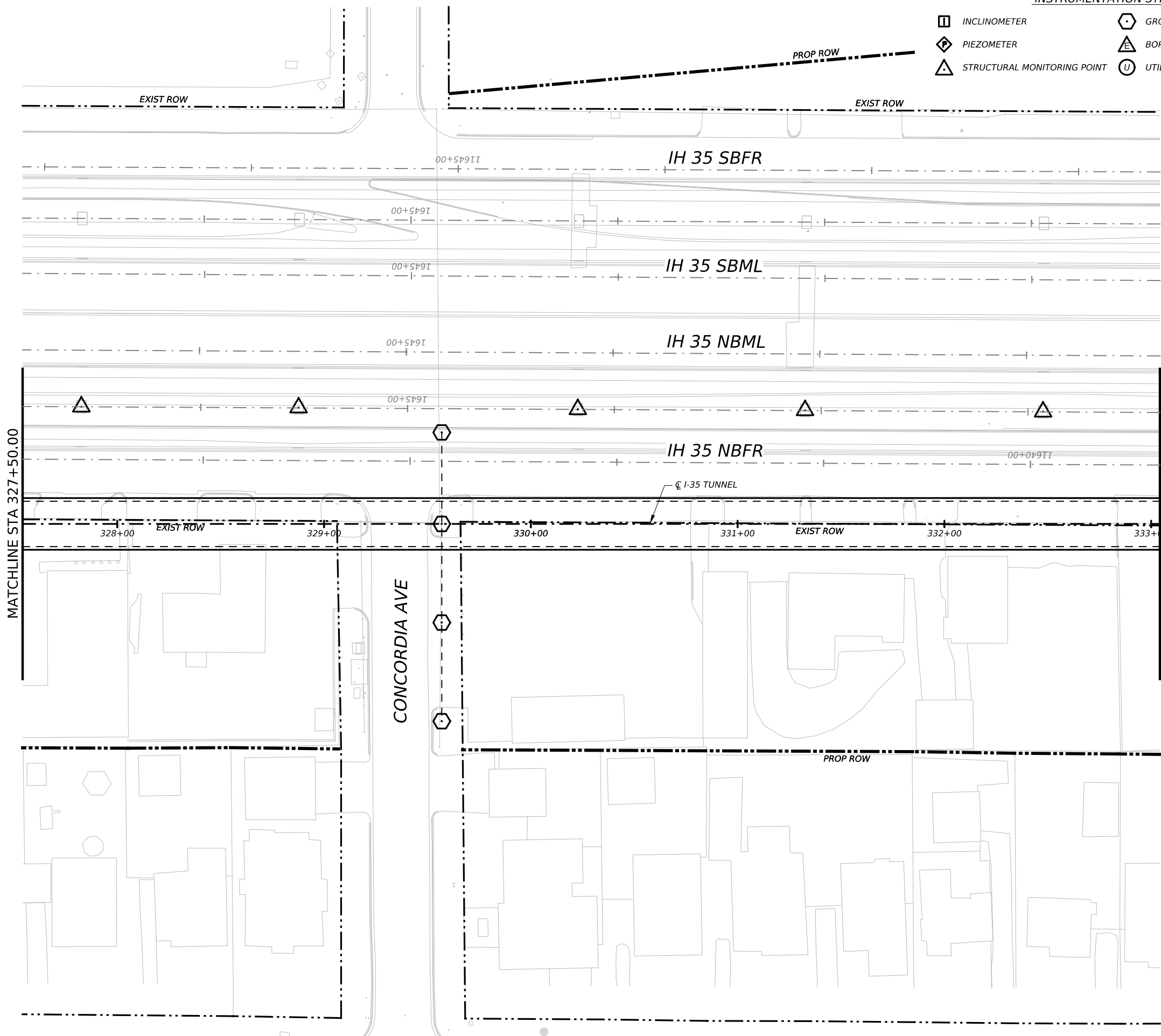
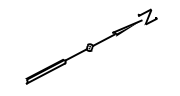
STA 322+00.00 TO STA 327+50.00

SCALE: 1"=50' SHEET 1 OF 1

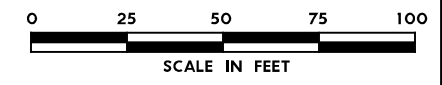
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	IH35-INSTR-26.dgn	

INSTRUMENTATION SYMBOLOGY

 INCLINOMETER	 GROUND SURFACE MONITORING POINT
 PIEZOMETER	 BOREHOLE EXTENSOMETER
 STRUCTURAL MONITORING POINT	 UTILITY MONITORING POINT



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Texas Department of Transportation

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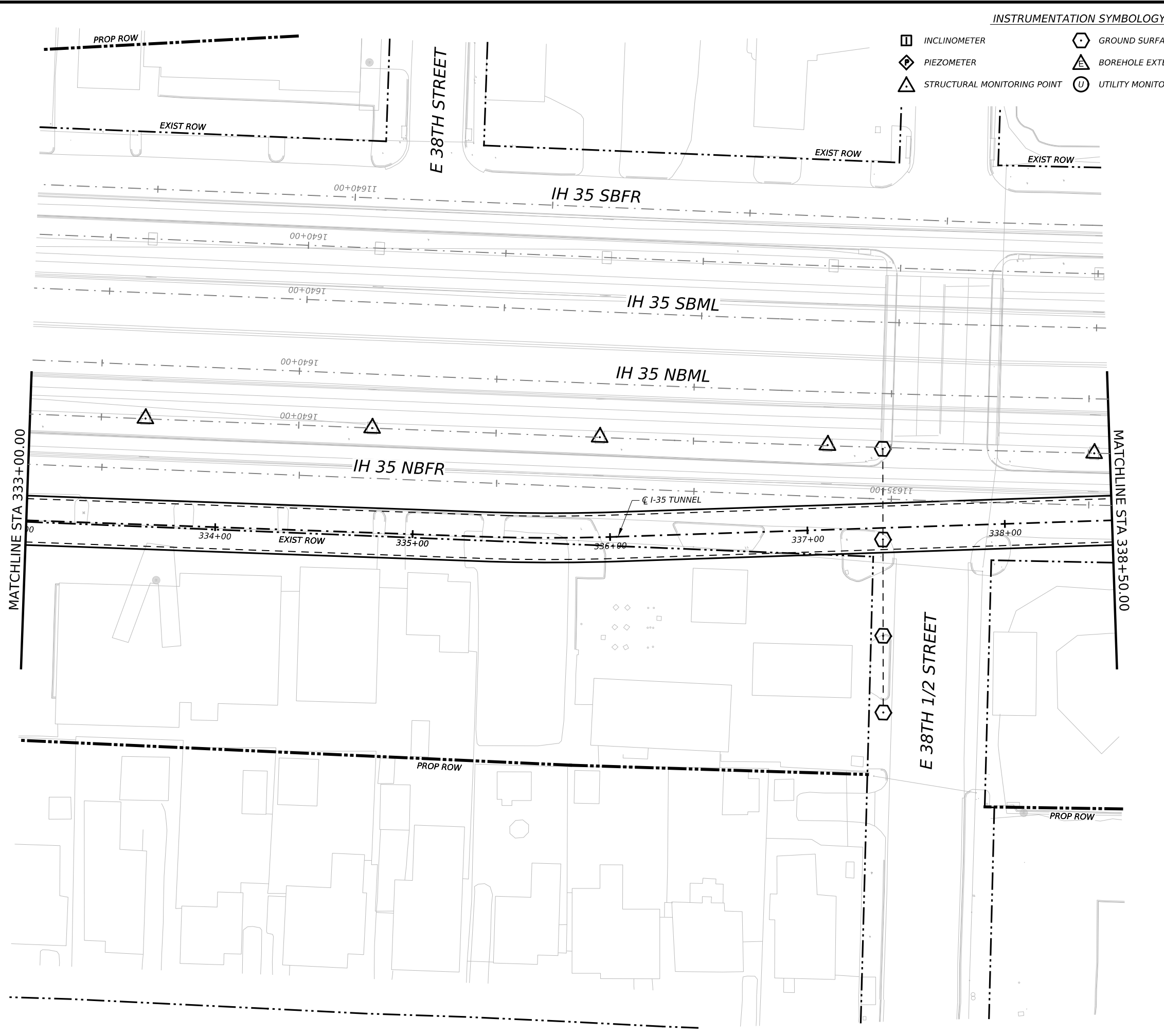
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 327+50.00 TO STA 333+00.00







SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

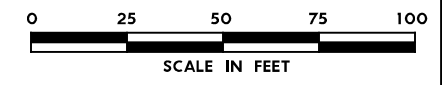
DIST	COUNTY	SHEET NO.
AUS	TRAVIS	137



INSTRUMENTATION SYMBOLOLOGY


-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

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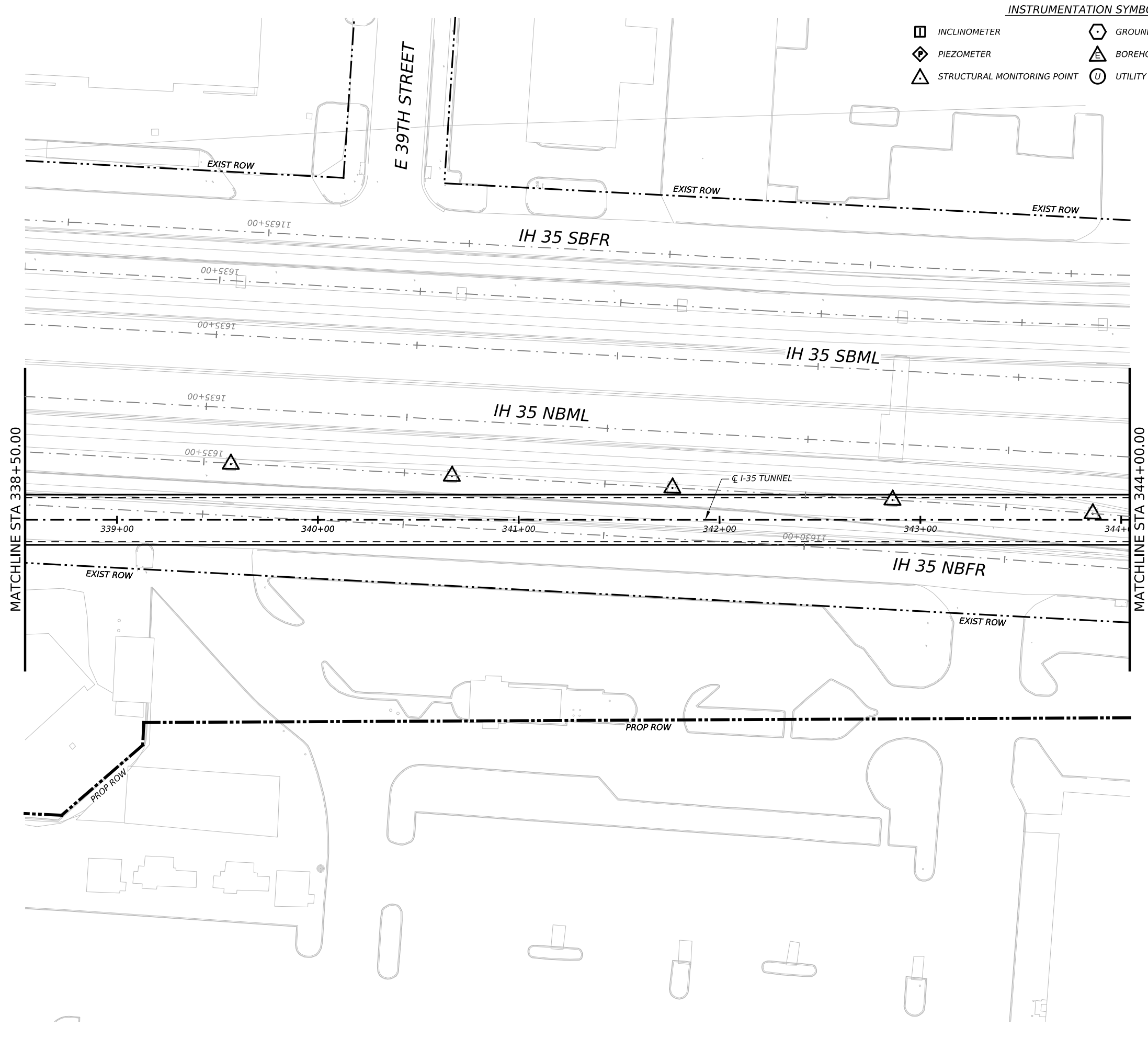
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 333+00.00 TO STA 338+50.00

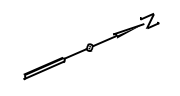
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	138	

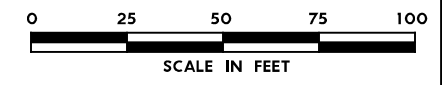


INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT



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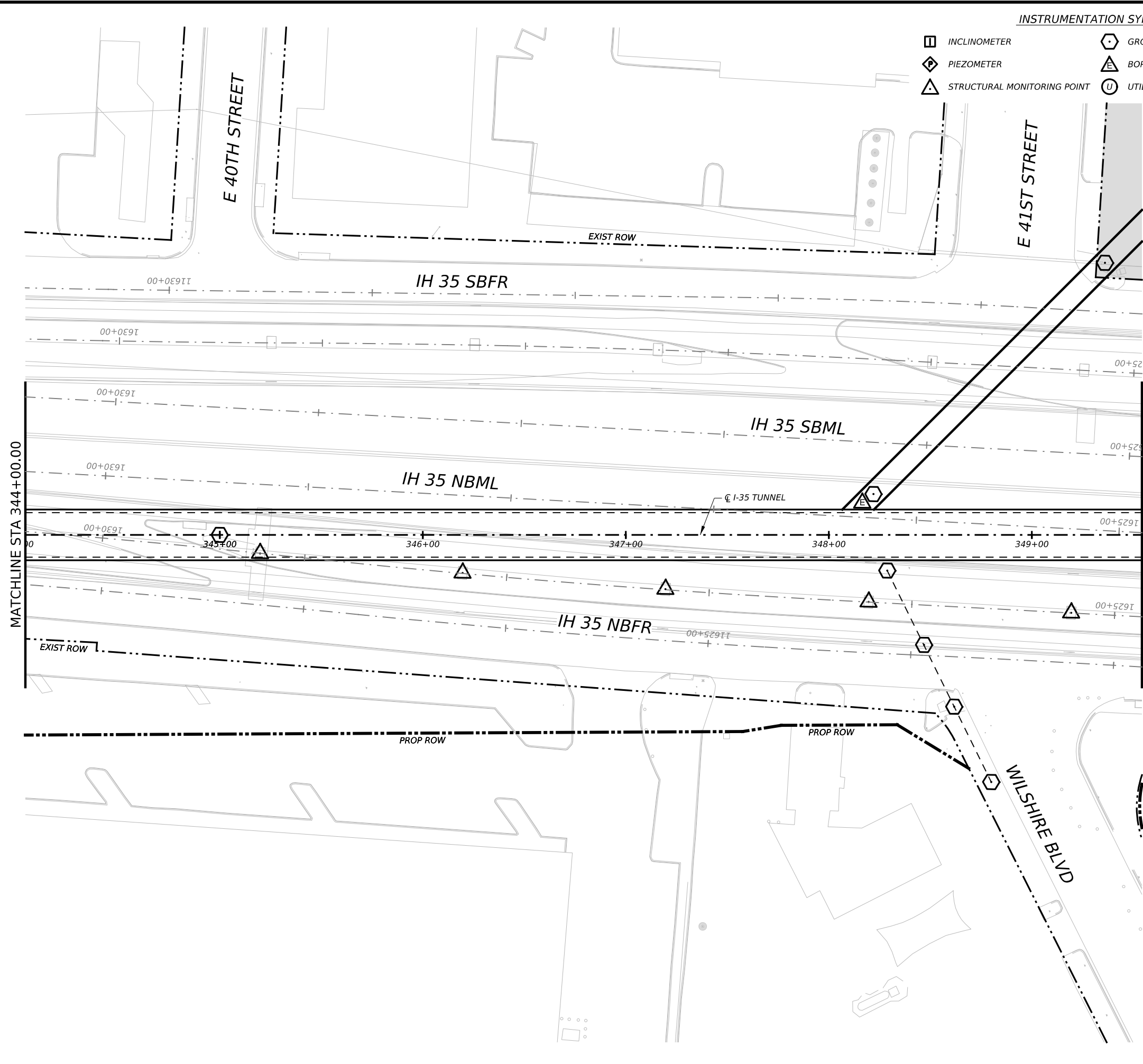
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 338+50.00 TO STA 344+00.00

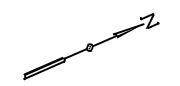
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	139

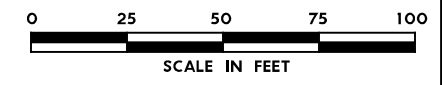


INSTRUMENTATION SYMBOLOGY

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-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
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 **Texas Department of Transportation**

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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 344+00.00 TO STA 349+50.00

SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST COUNTY			SHEET NO.
AUS TRAVIS			140

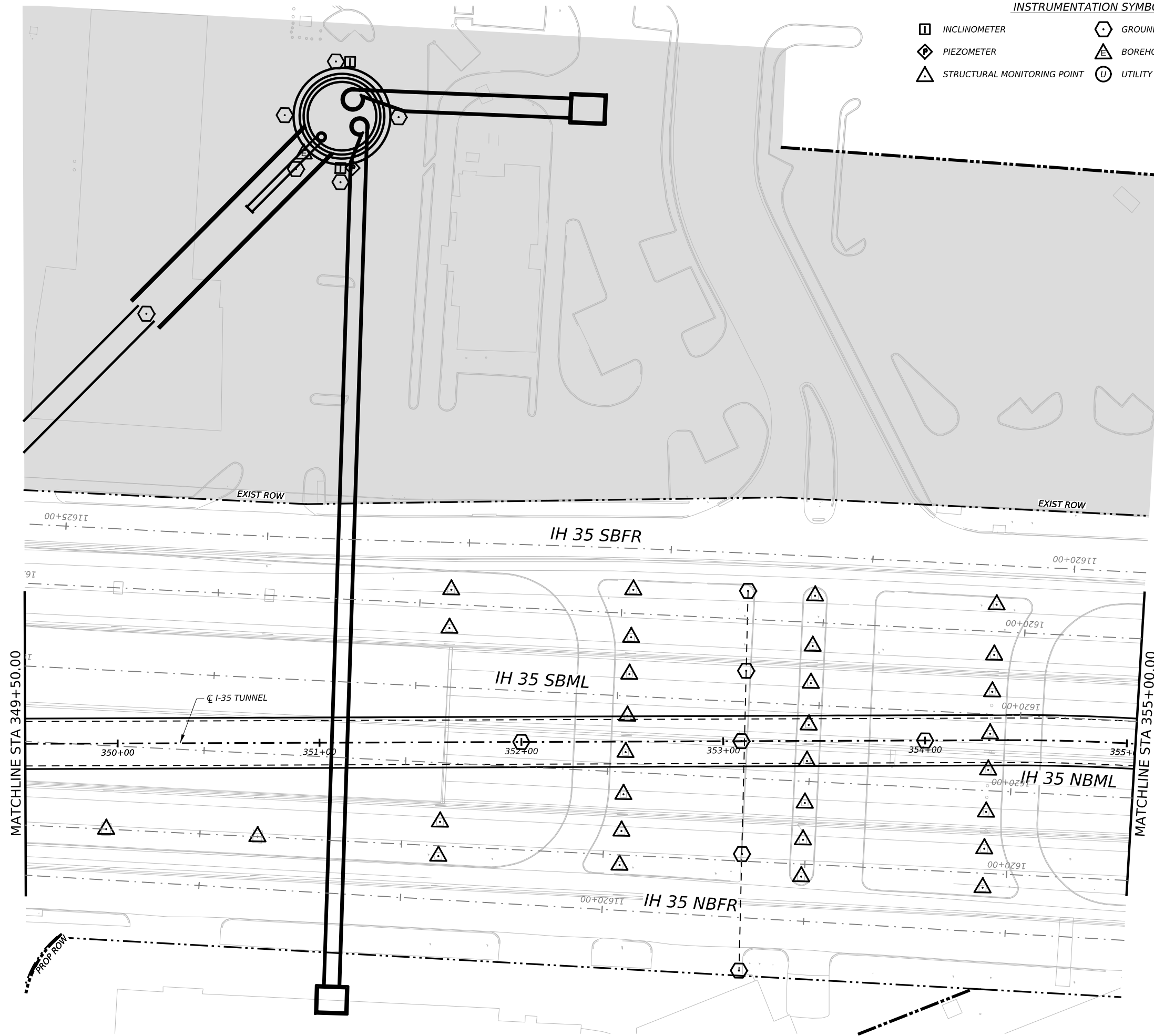
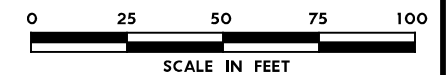
INSTRUMENTATION SYMBOLOGY

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-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

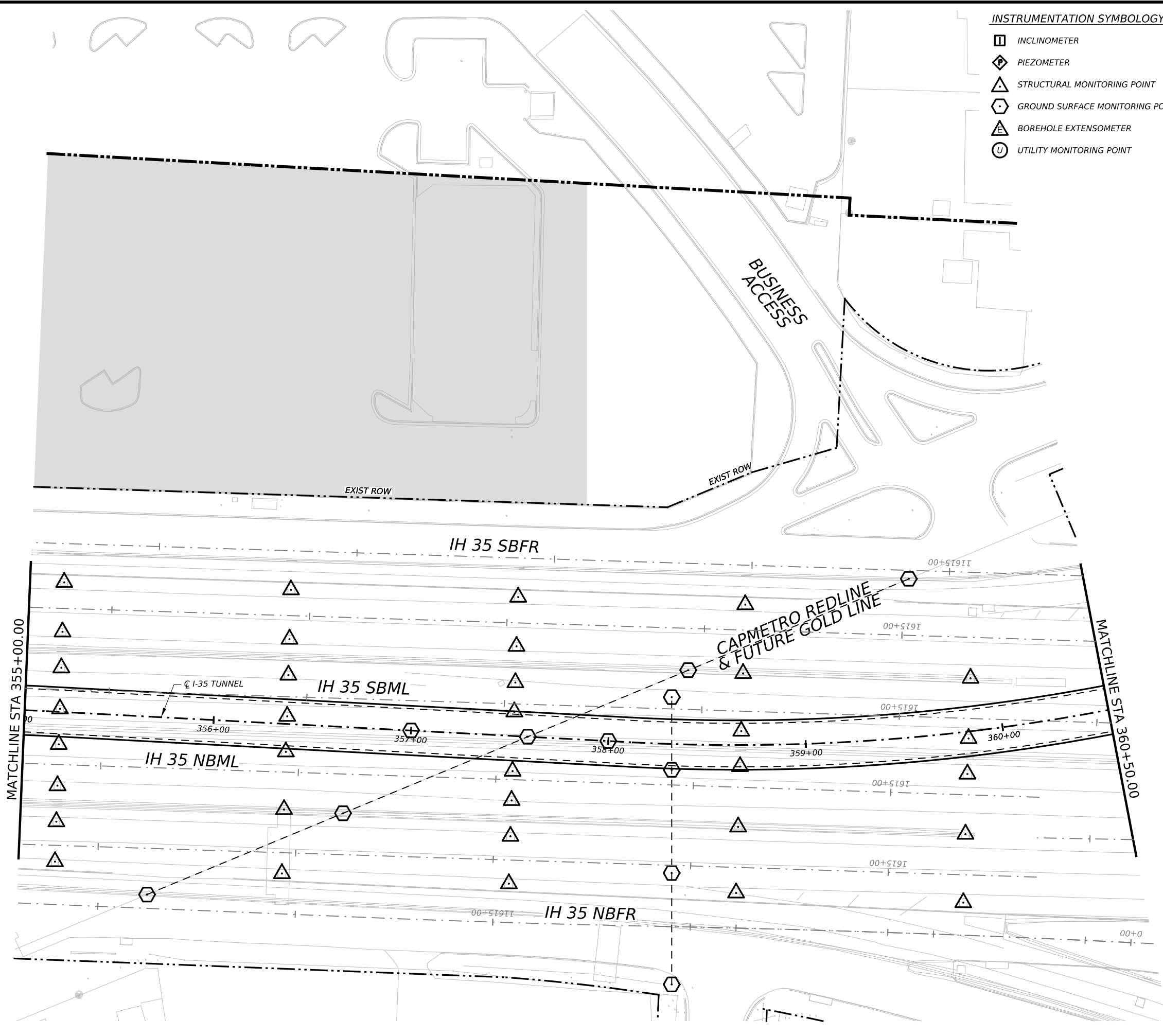


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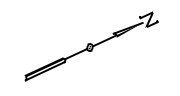


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CAPITAL EXPRESS CENTRAL GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING STA 349+50.00 TO STA 355+00.00			
SCALE: 1"=50'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	141

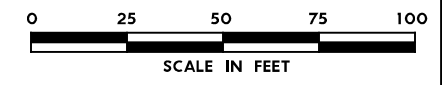


INSTRUMENTATION SYMBOLOGY

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- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
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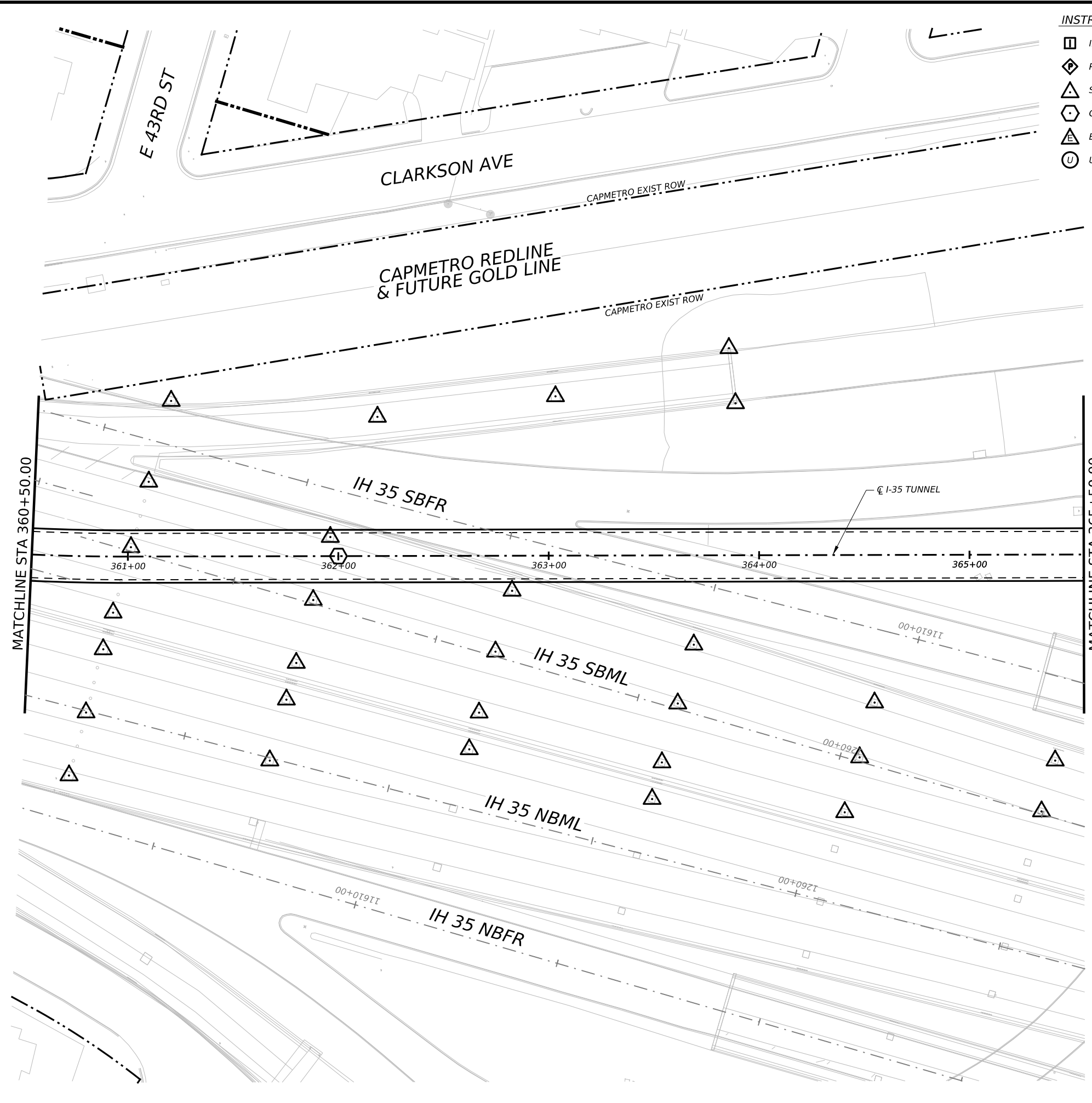
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 355+00.00 TO STA 360+00.00

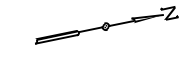
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	142	

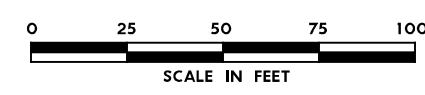


INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT



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 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



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mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

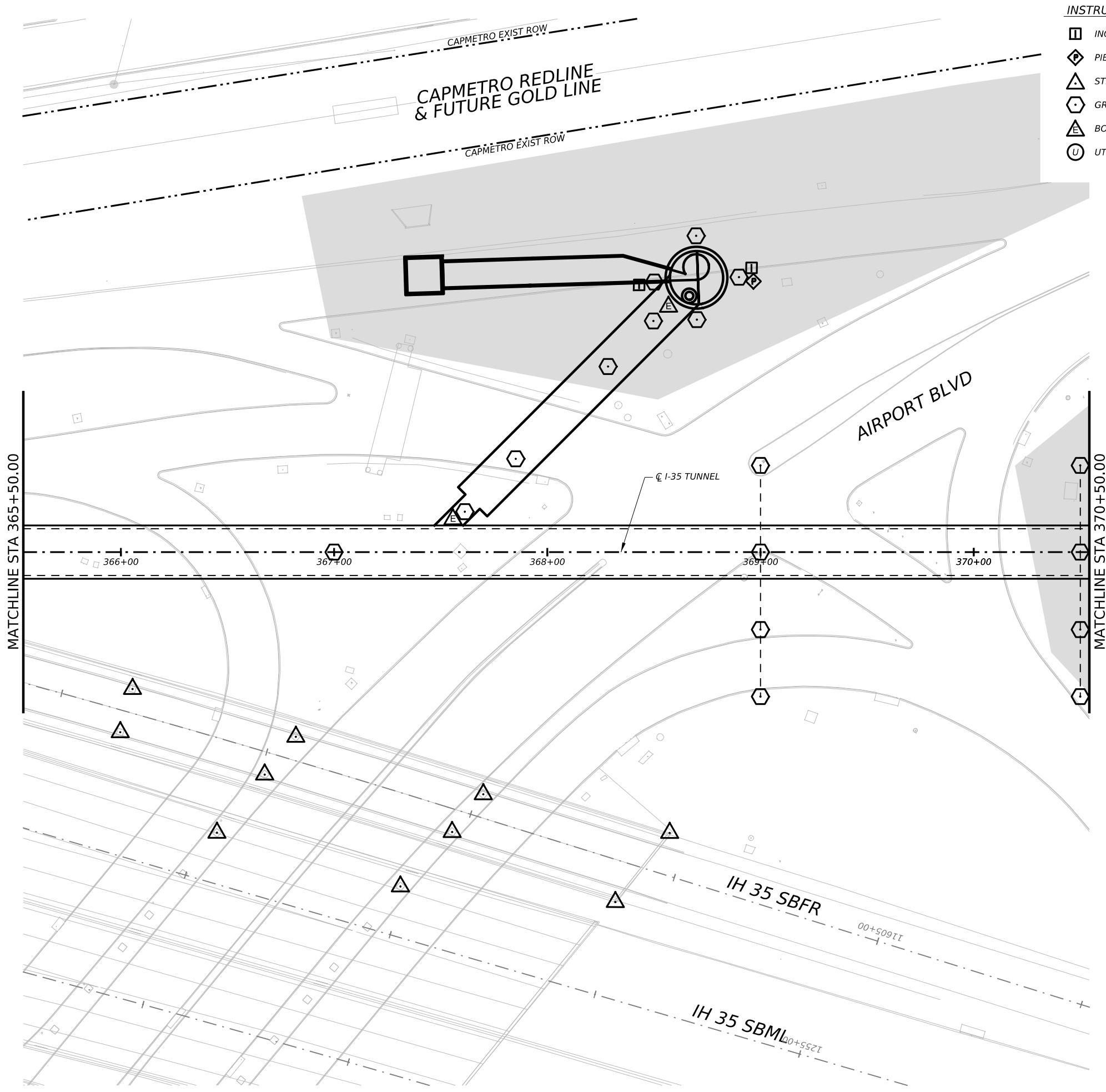
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 360+00.00 TO STA 365+50.00

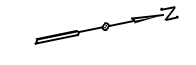
SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

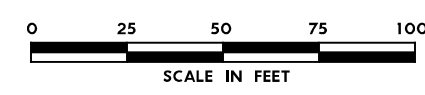
DIST	COUNTY	SHEET NO.
AUS	TRAVIS	143



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
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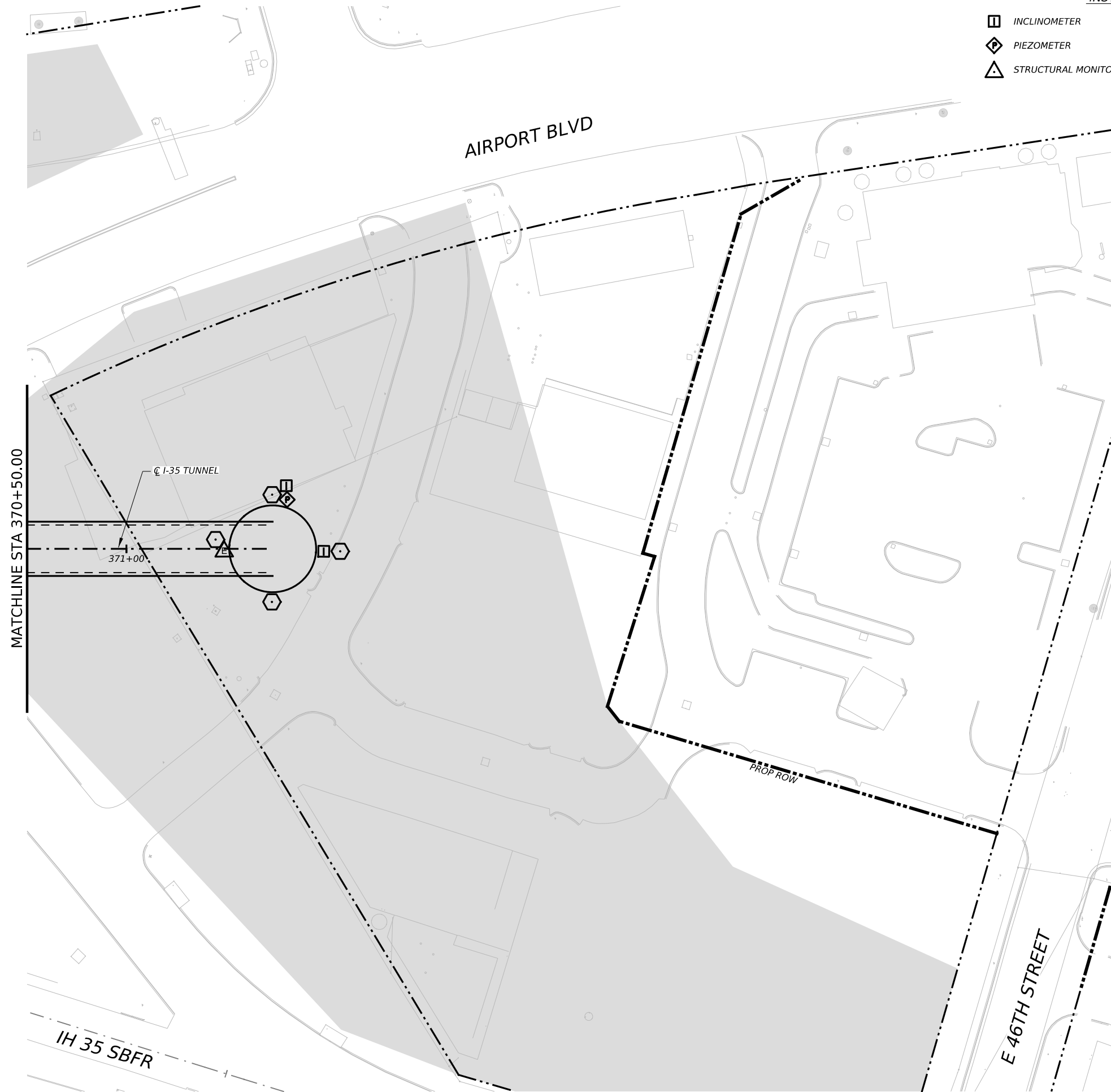
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 365+50.00 TO STA 370+50.00

SCALE: 1"=50' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	144	



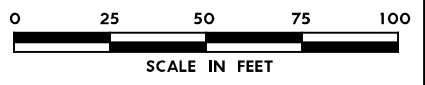
INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT



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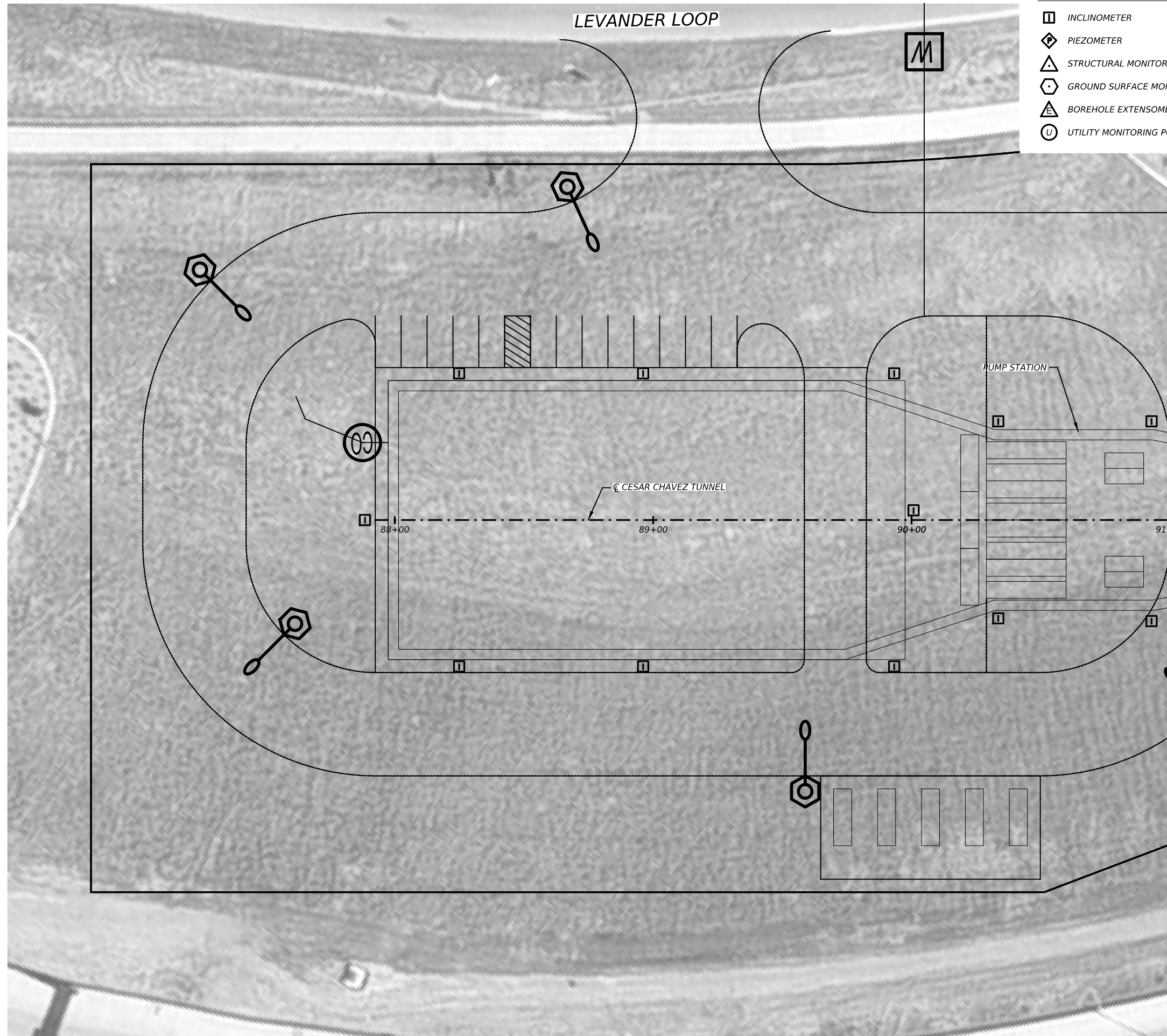
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 370+50.00 TO END

SCALE: 1"=50' SHEET OF

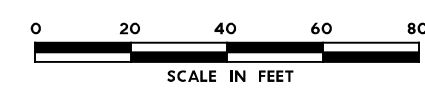
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT

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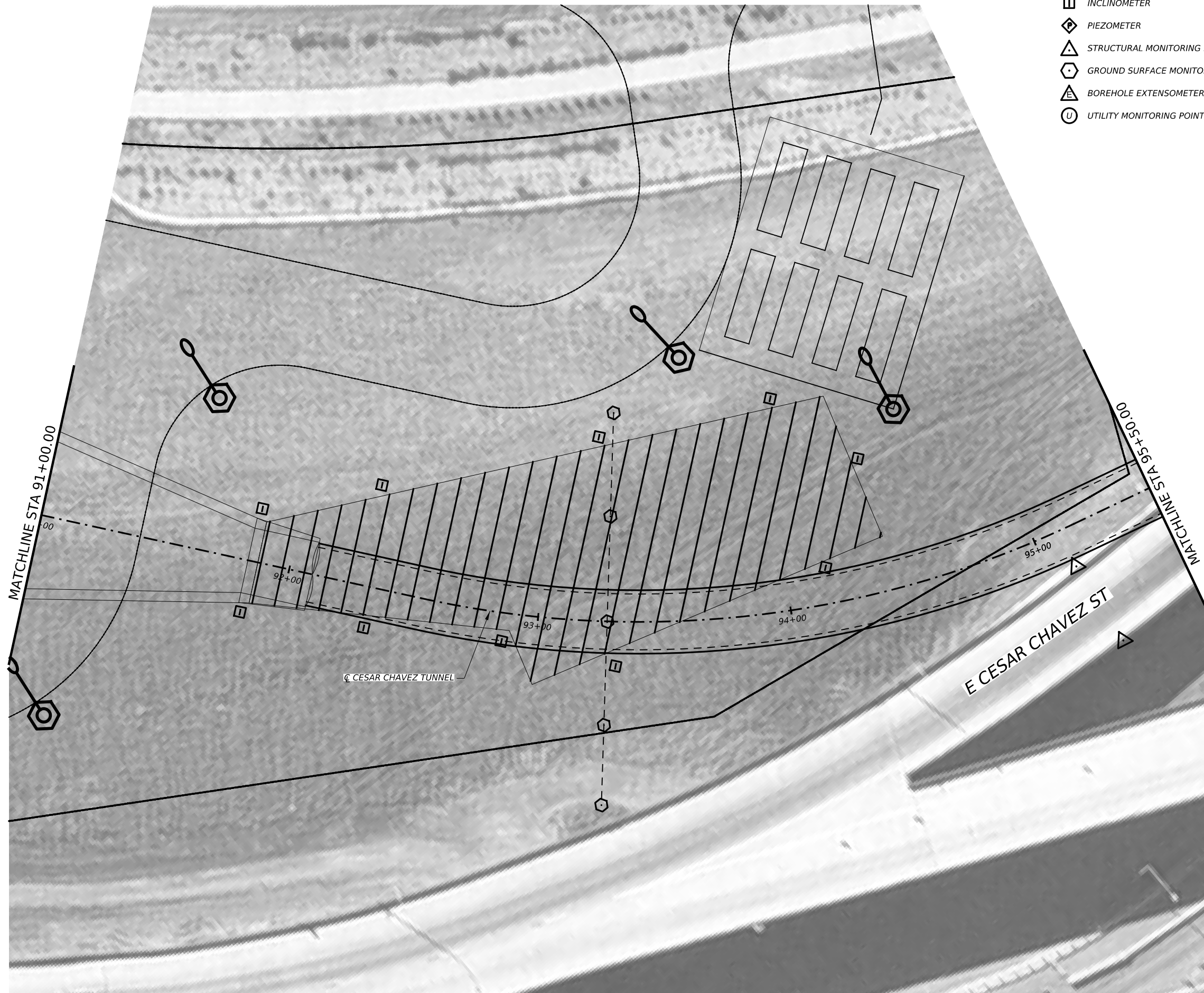
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

BEGIN TO STA 91+00.00

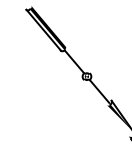
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	146	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT



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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 91+00.00 TO 95+50.00

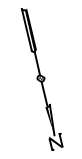
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	147	



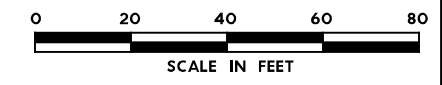
INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
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CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 95+50.00 TO STA 100+00.00

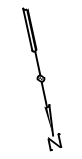
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	148	



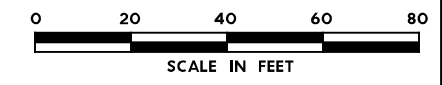
INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
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CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 100+00.00 TO STA 104+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	149	



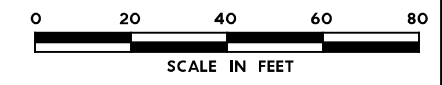
INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
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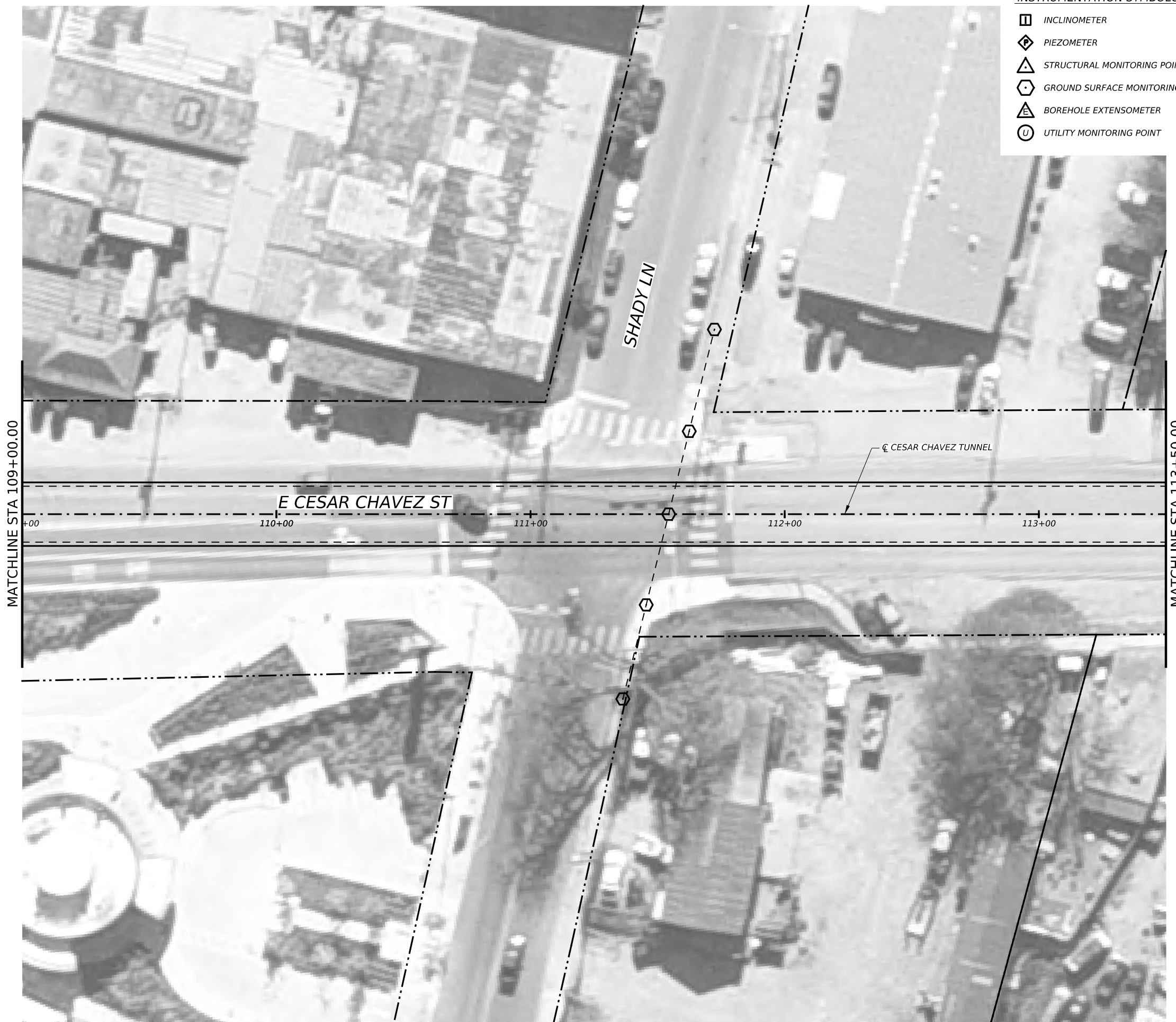
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 104+50.00 TO STA 109+00.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	150	



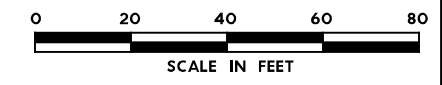
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- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
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Texas Department of Transportation

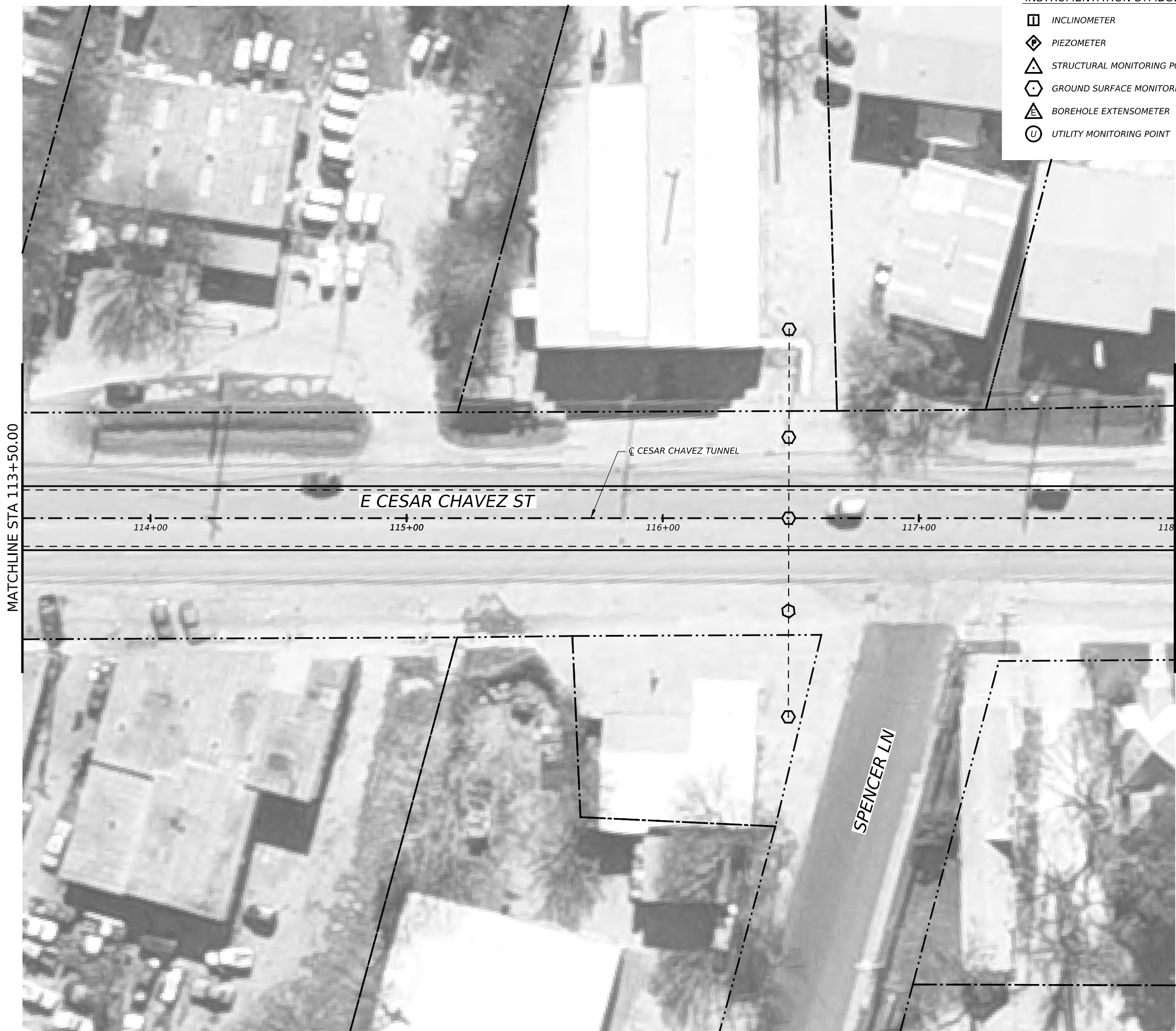
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 109+00.00 TO STA 113+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	151	



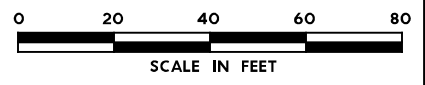
INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
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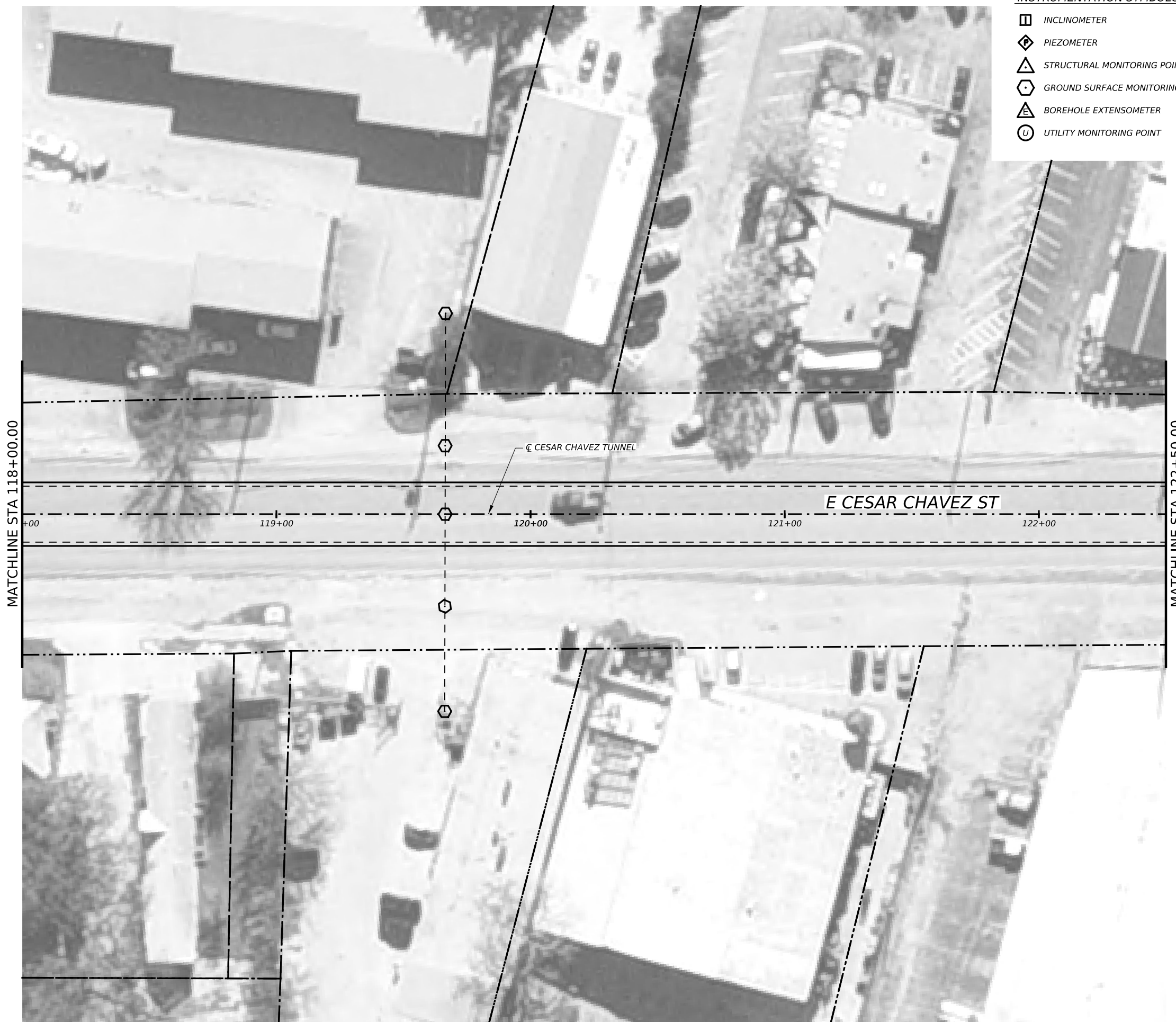
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 113+50.00 TO STA 118+00.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	152	



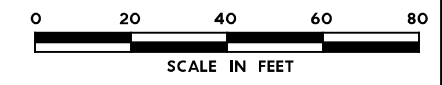
INSTRUMENTATION SYMBOLOGY

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-  PIEZOMETER
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Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 118+00.00 TO STA 122+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	153	

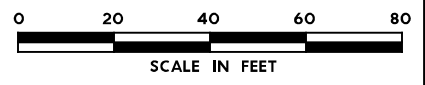


INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

GENERAL NOTE:
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 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



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HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

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CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 122+50.00 TO STA 127+00.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	154	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT



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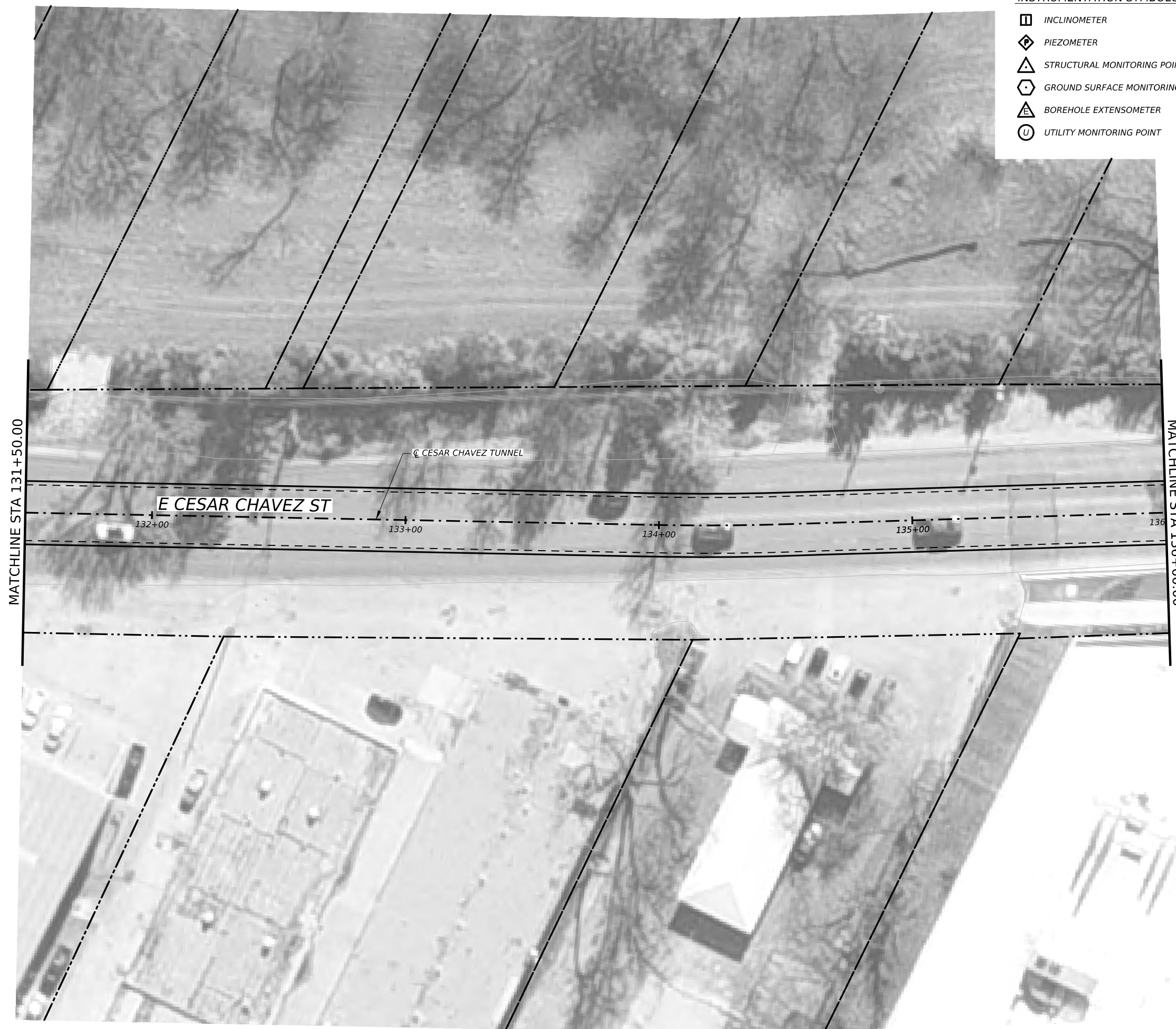


CAPITAL EXPRESS CENTRAL







GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING
 STA 127+00.00 TO STA 131+50.00

SCALE: 1"=40' SHEET 1 OF 1

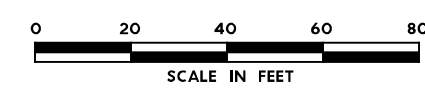
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	155	



INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

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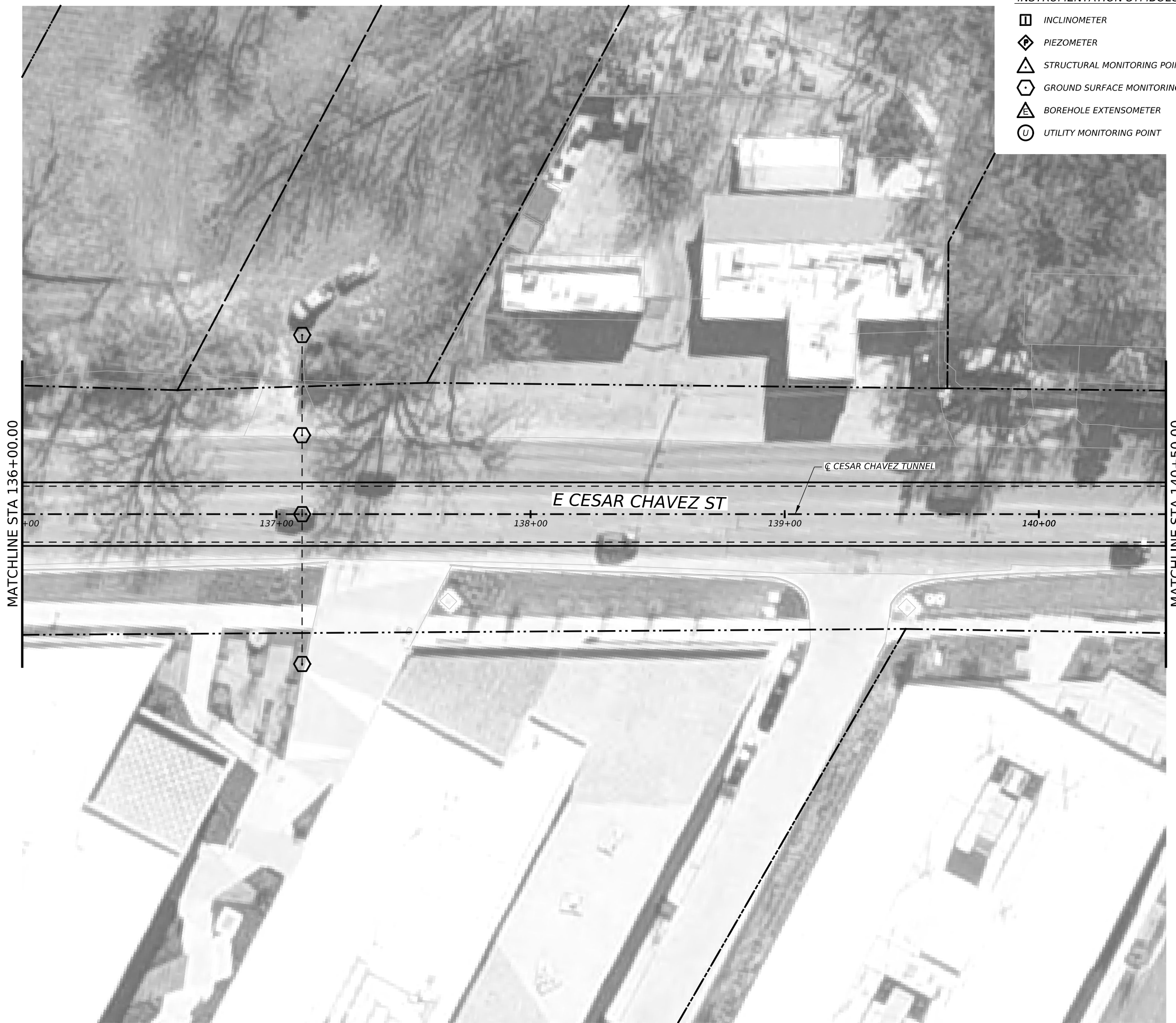
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 131+50.00 TO STA 136+00.00

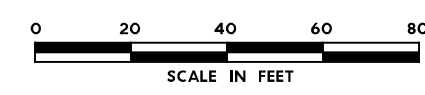
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	156	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - ◇ P PIEZOMETER
 - △ S STRUCTURAL MONITORING POINT
 - ⬡ G GROUND SURFACE MONITORING POINT
 - △ E BOREHOLE EXTENSOMETER
 - U UTILITY MONITORING POINT

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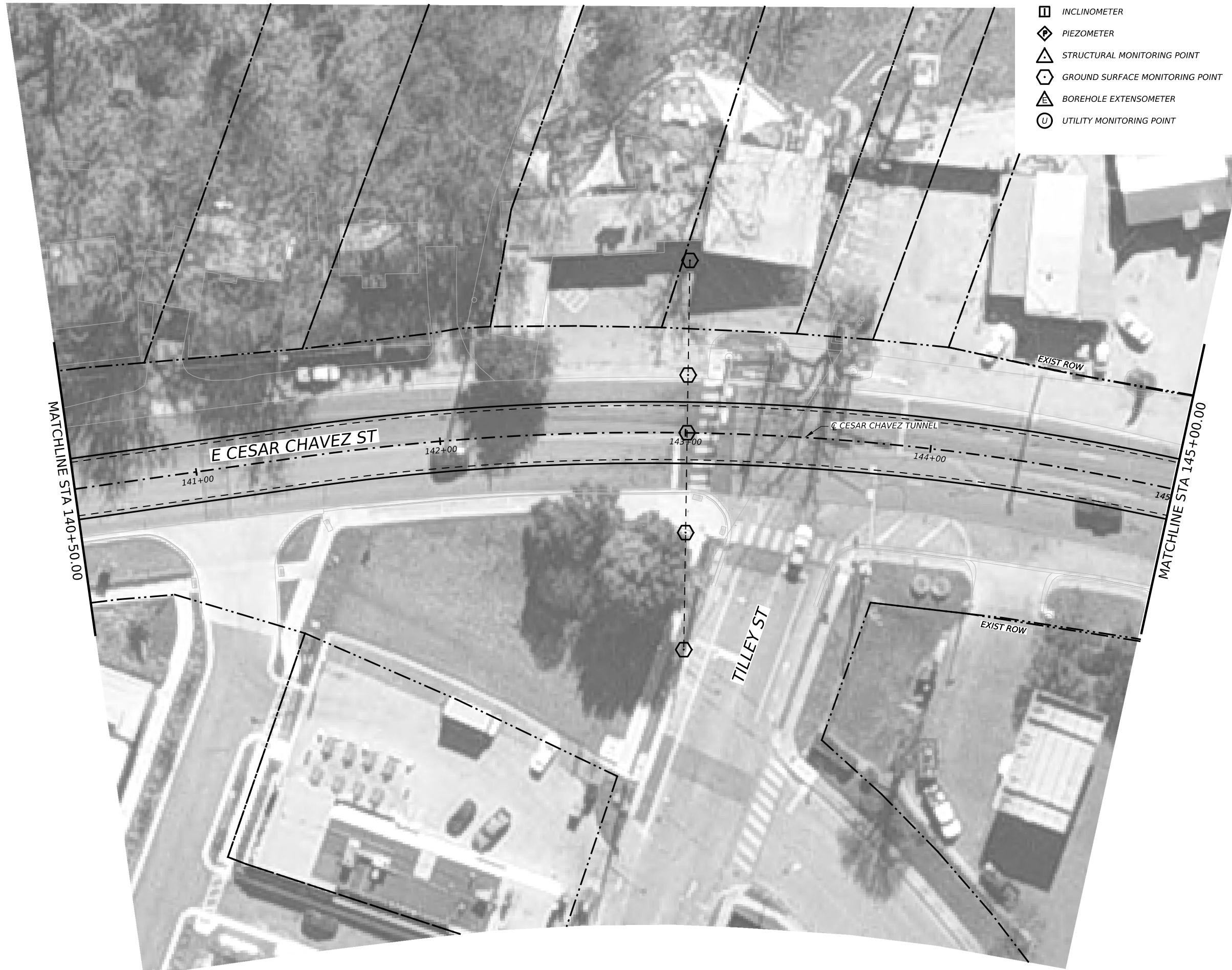
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 136+00.00 TO STA 140+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	157



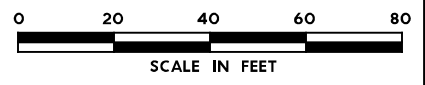
INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
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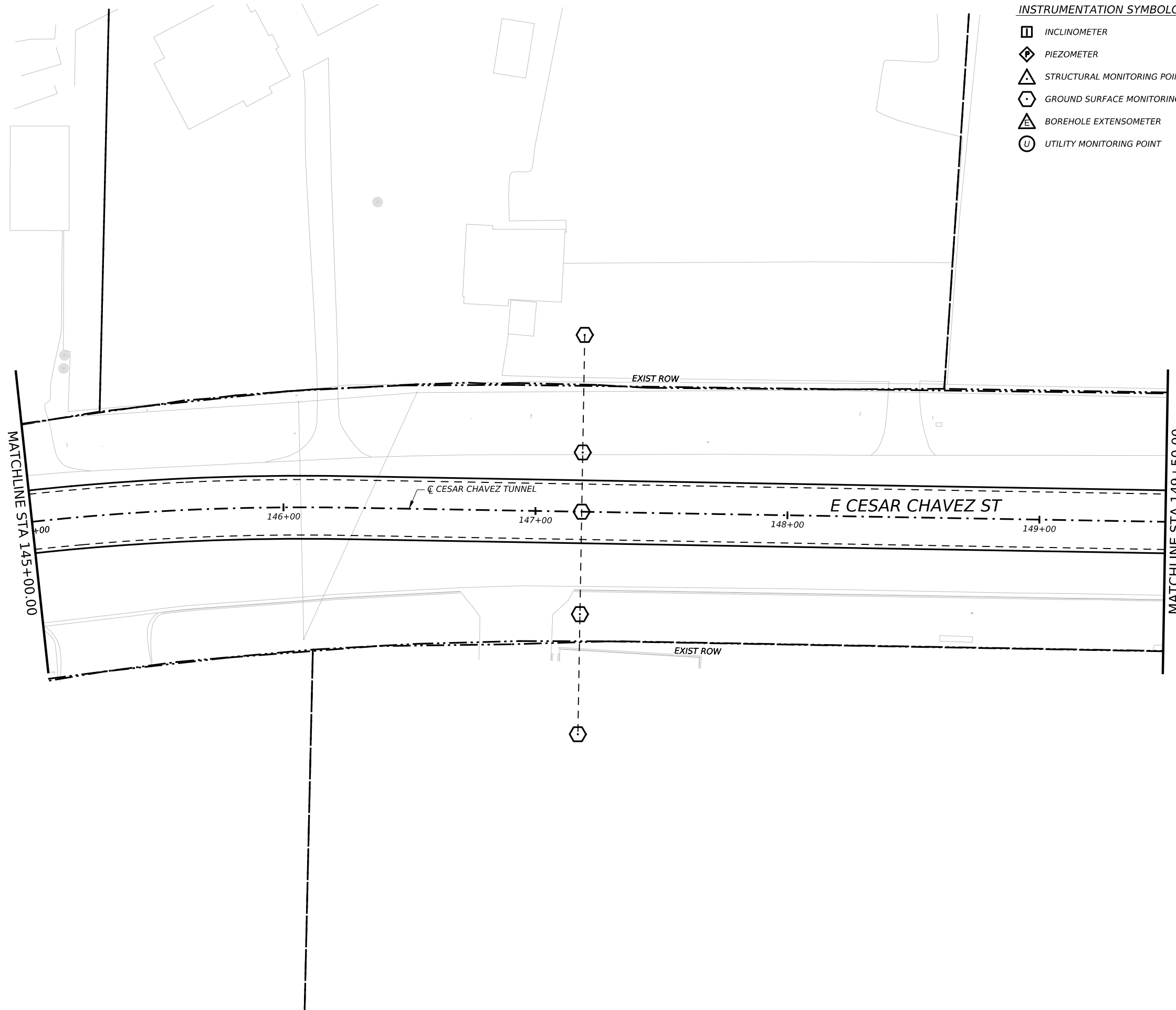


CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING
 STA 140+50.00 TO STA 145+00.00

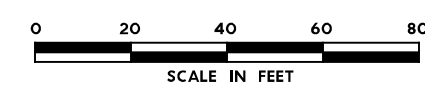
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	158	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
 - UTILITY MONITORING POINT

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HDR HDR Engineering, Inc.
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 Round Rock, Texas 78681

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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 145+00.00 TO STA 149+50.00

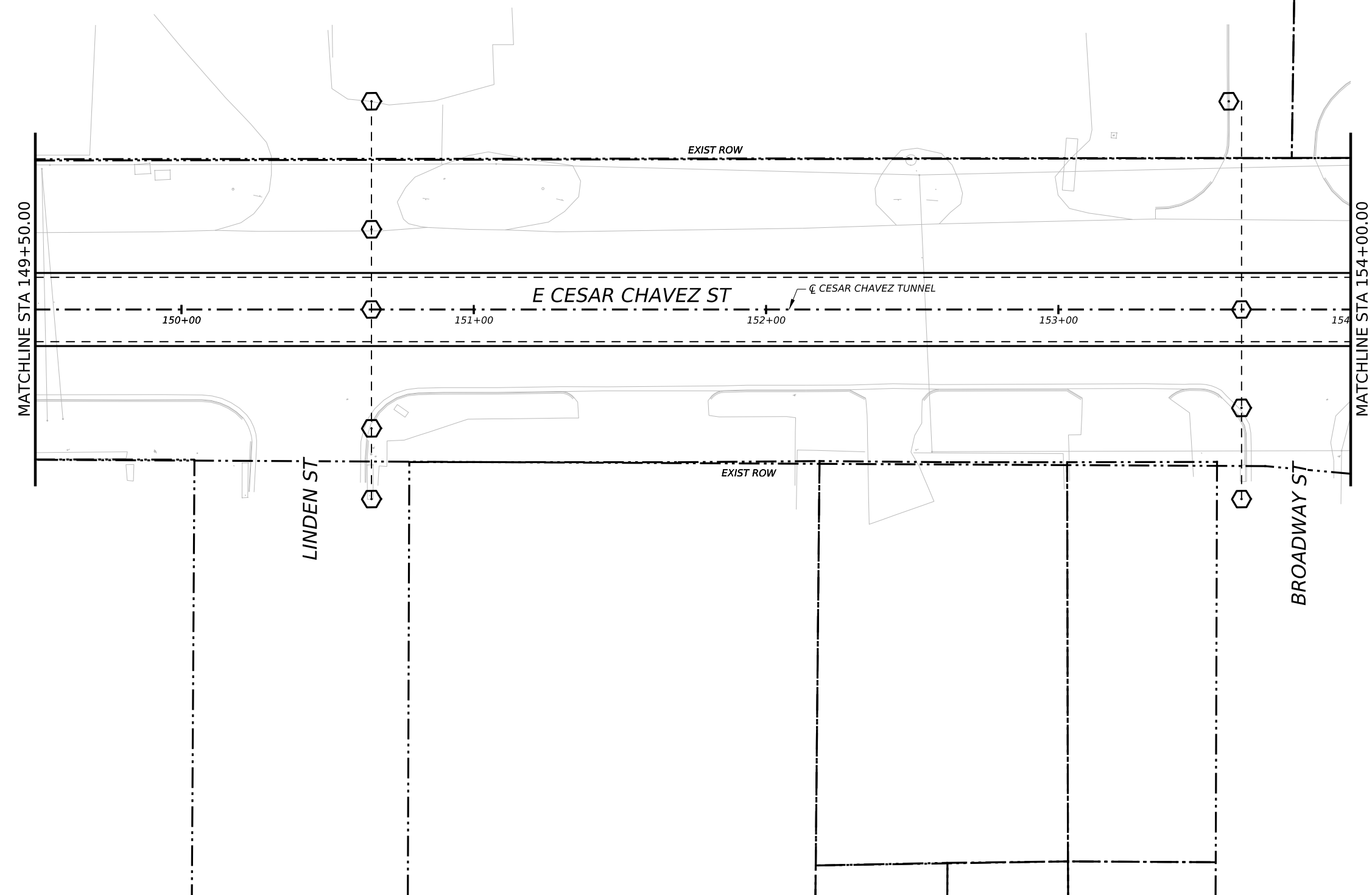
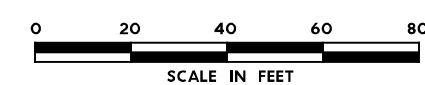
SCALE: 1"=40' SHEET 1 OF 1




CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	159	

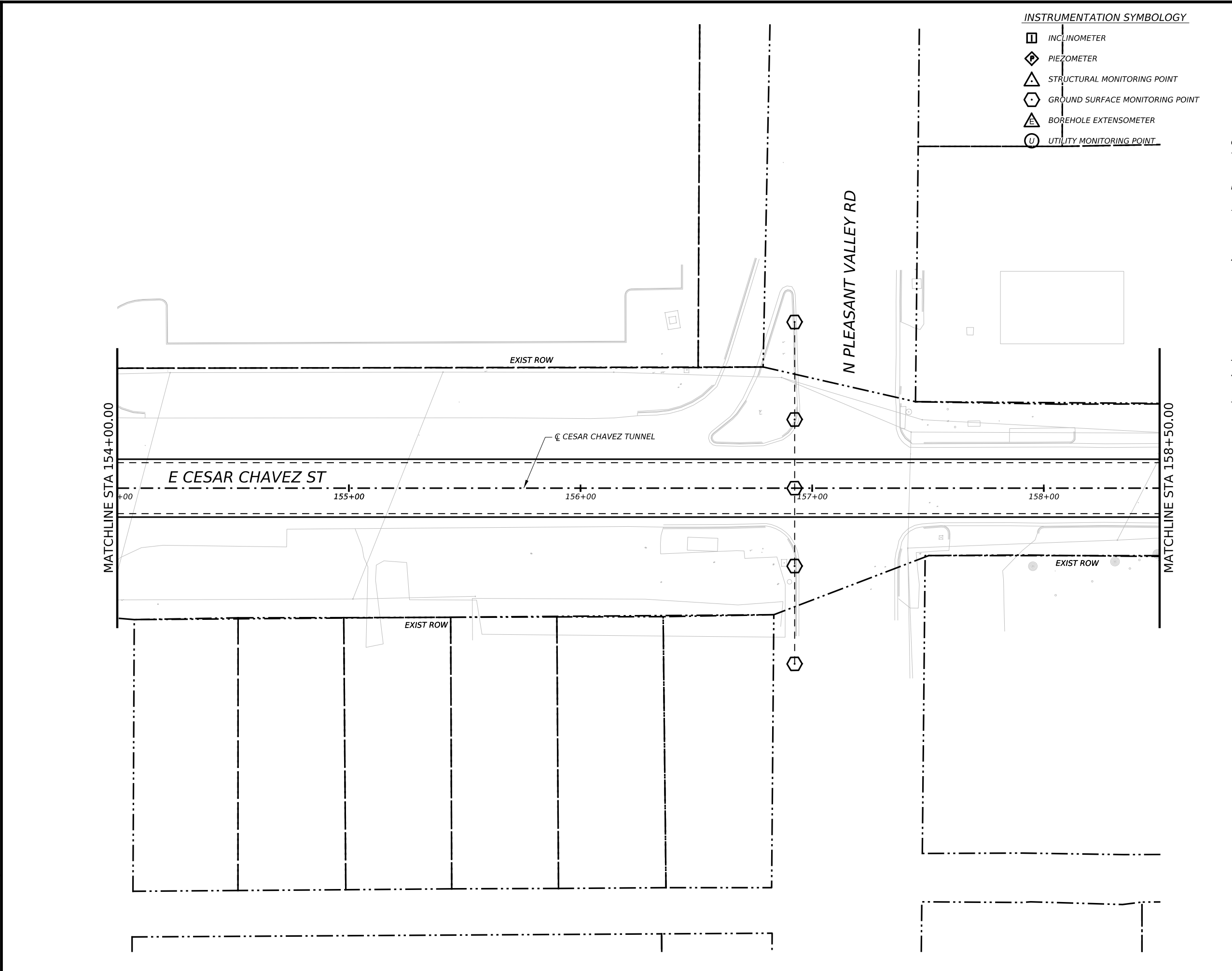
INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
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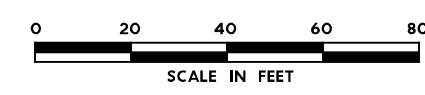


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PRELIMINARY-FOR INFORMATION ONLY THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW AND IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMITTING PURPOSES. Supervised By: PHAISARN CWATANAPHOL P.E. Serial No. 89252 Date: 6/29/2023			
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 CAPITAL AREA			
 Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING STA 149+50.00 TO STA 154+00.00			
SCALE: 1"=40'		SHEET 1 OF 1	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	160	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
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Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

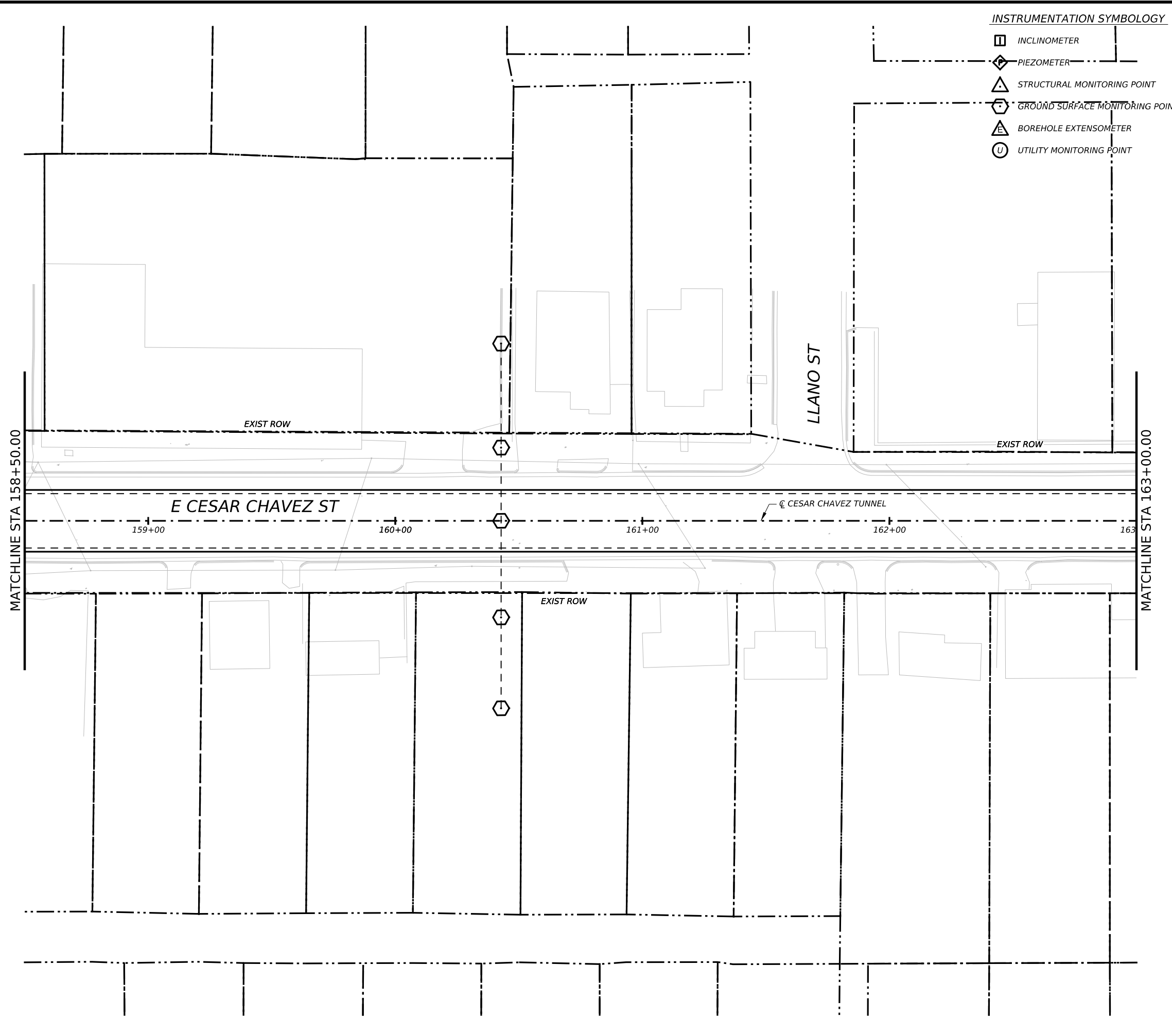
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 154+00.00 TO STA 158+50.00







SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	161

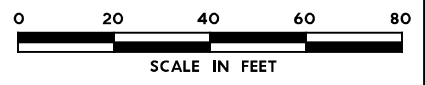


INSTRUMENTATION SYMBOLOGY

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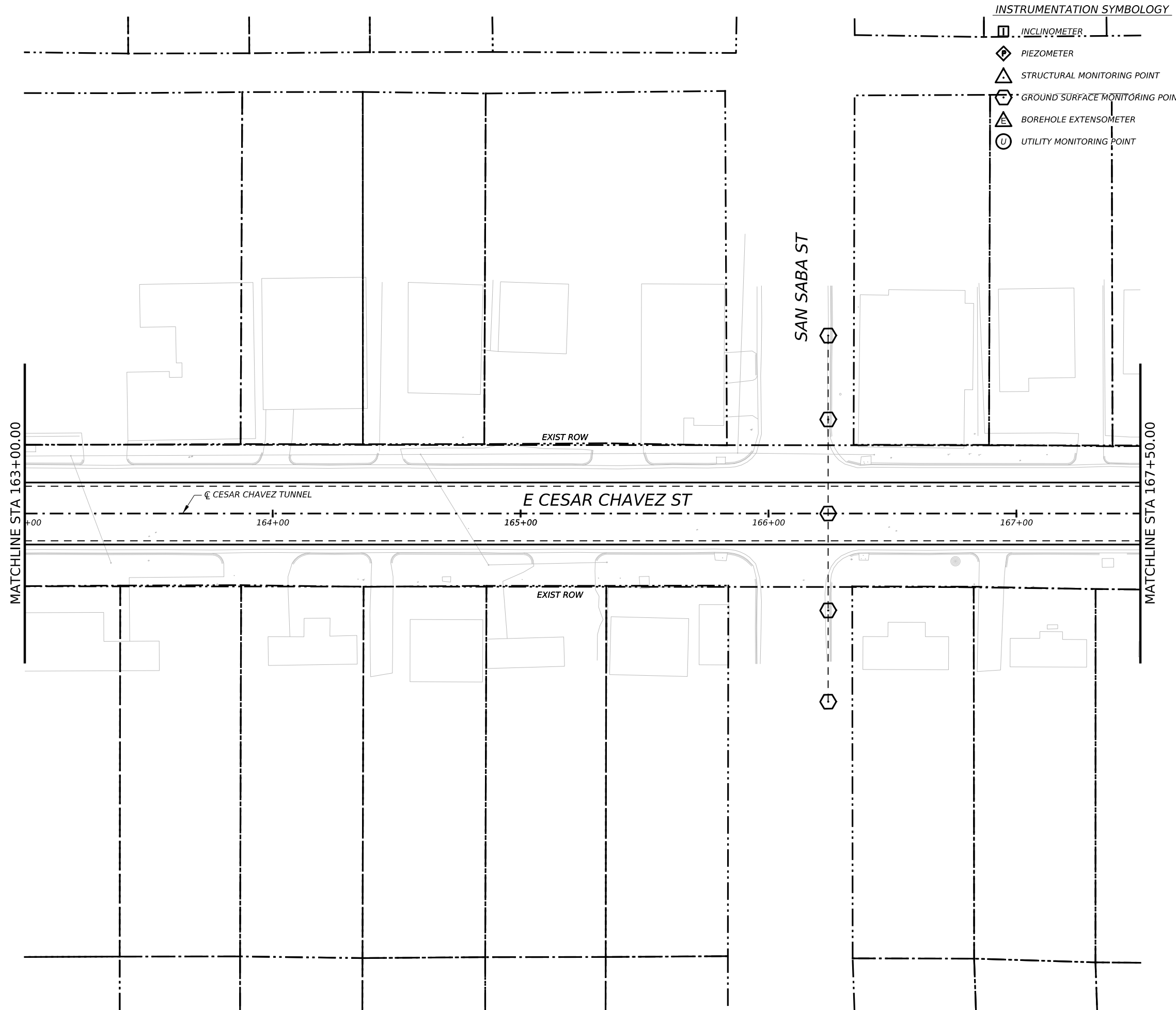
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 158+50.00 TO STA 163+00.00

SCALE: 1"=40' SHEET 1 OF 1

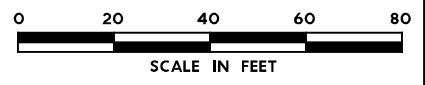
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	162	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
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 - ADDITIONAL NOTES PER SCHNABEL REQUEST.



2	0402	REVISION 2	JMD
1	0408	REVISION 1	JMD
NO.	DATE	REVISION	APPR BY

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 TBPE Registration No. F-1046



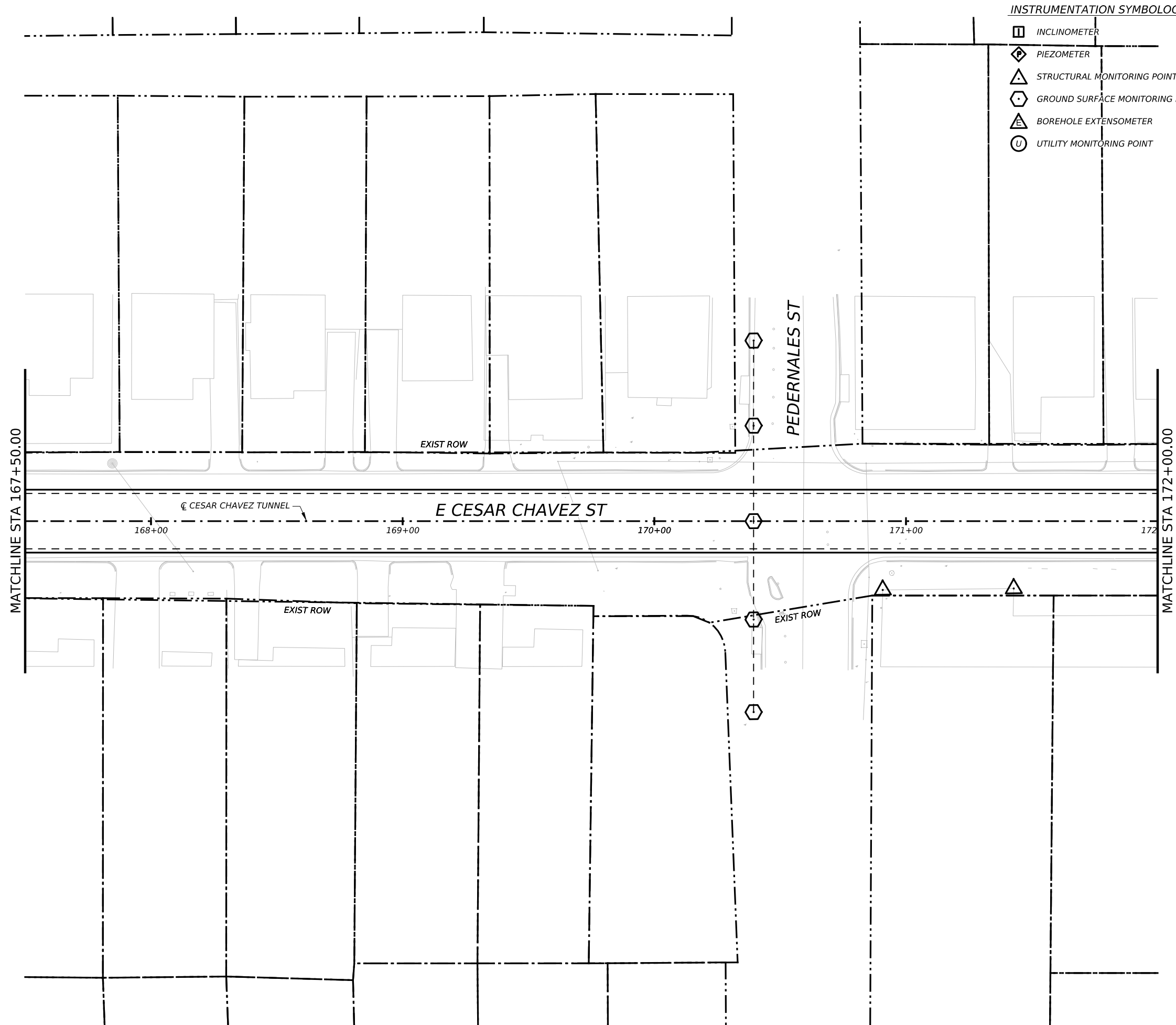
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 163+00.00 TO STA 167+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	163	

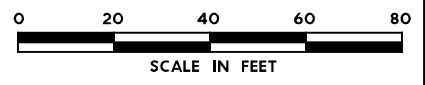


INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
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 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



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Texas Department of Transportation

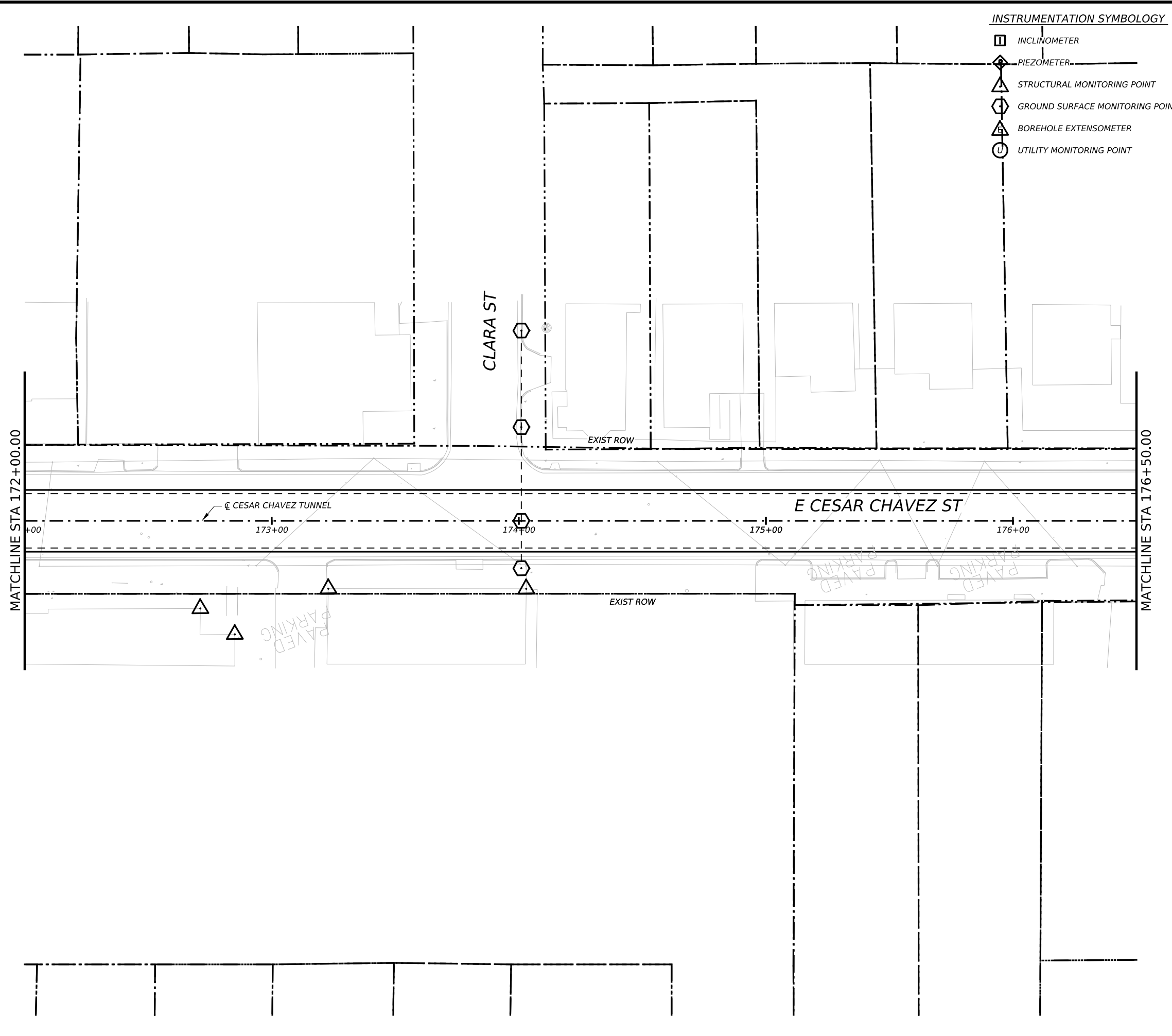
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 167+00.00 TO STA 172+00.00

SCALE: 1"=40' SHEET 1 OF 1

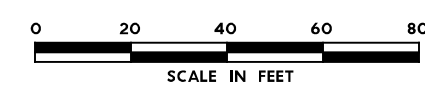
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	164	



INSTRUMENTATION SYMBOLOGY


-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT


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mobility 
 CAPITAL AREA

 **Texas Department of Transportation**

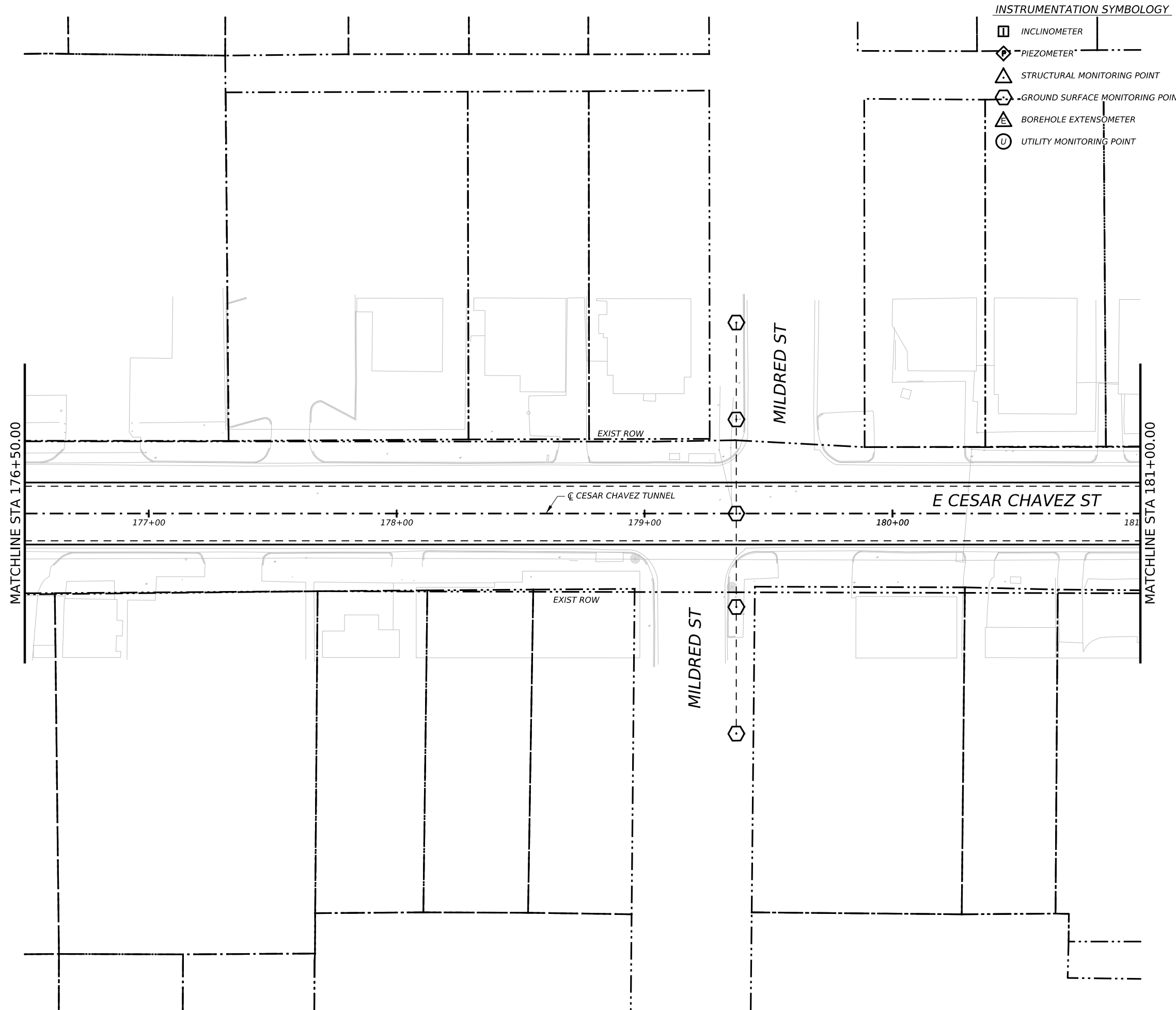
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 172+00.00 TO STA 176+50.00

SCALE: 1"=40' SHEET 1 OF 1

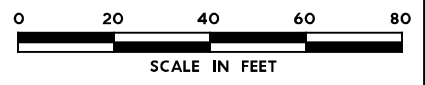
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	IH35-INSTR-58



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER*
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT

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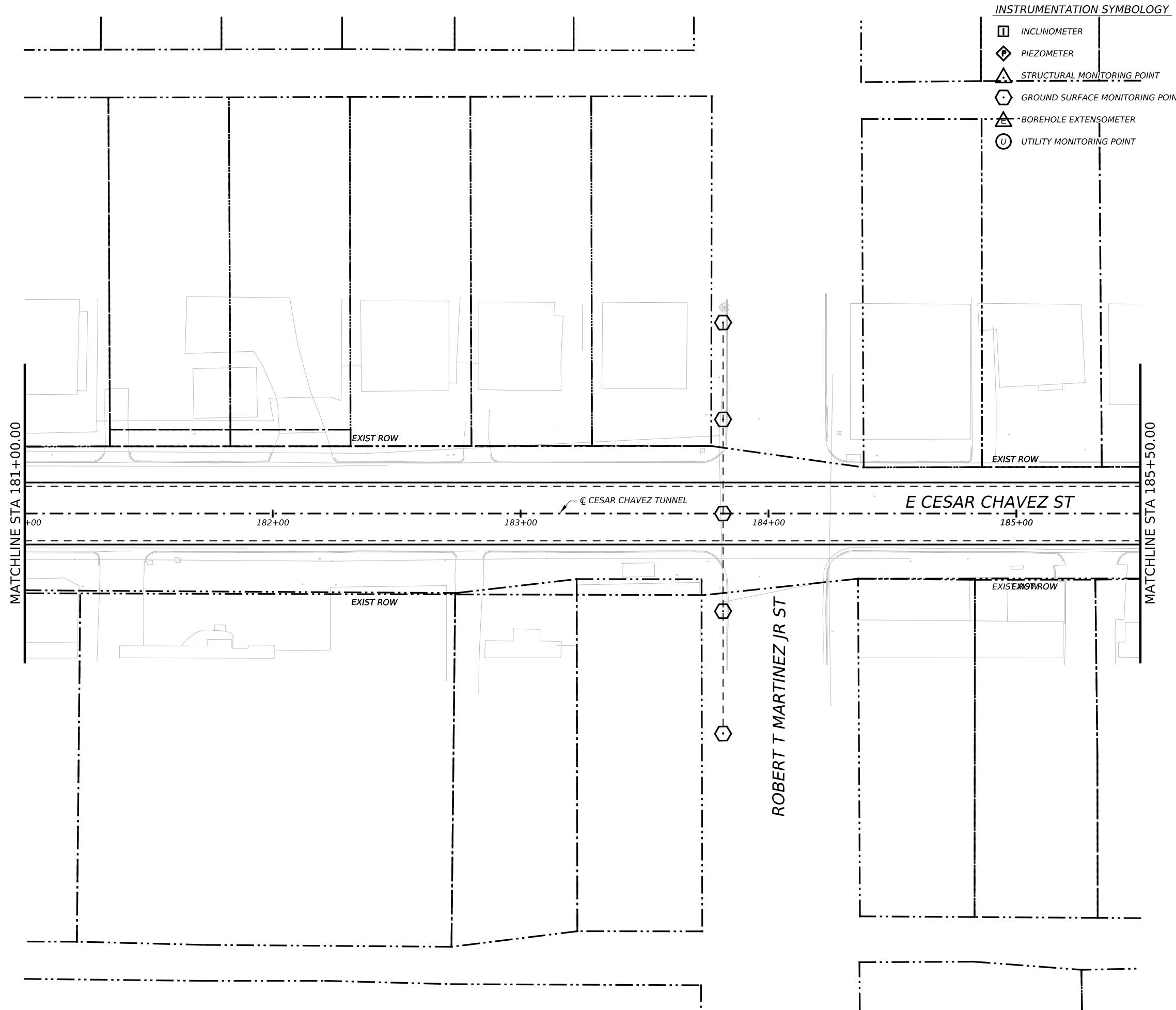
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 176+50.00 TO STA 181+00.00

SCALE: 1"=40' SHEET OF 1

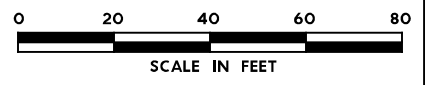
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	166	



INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

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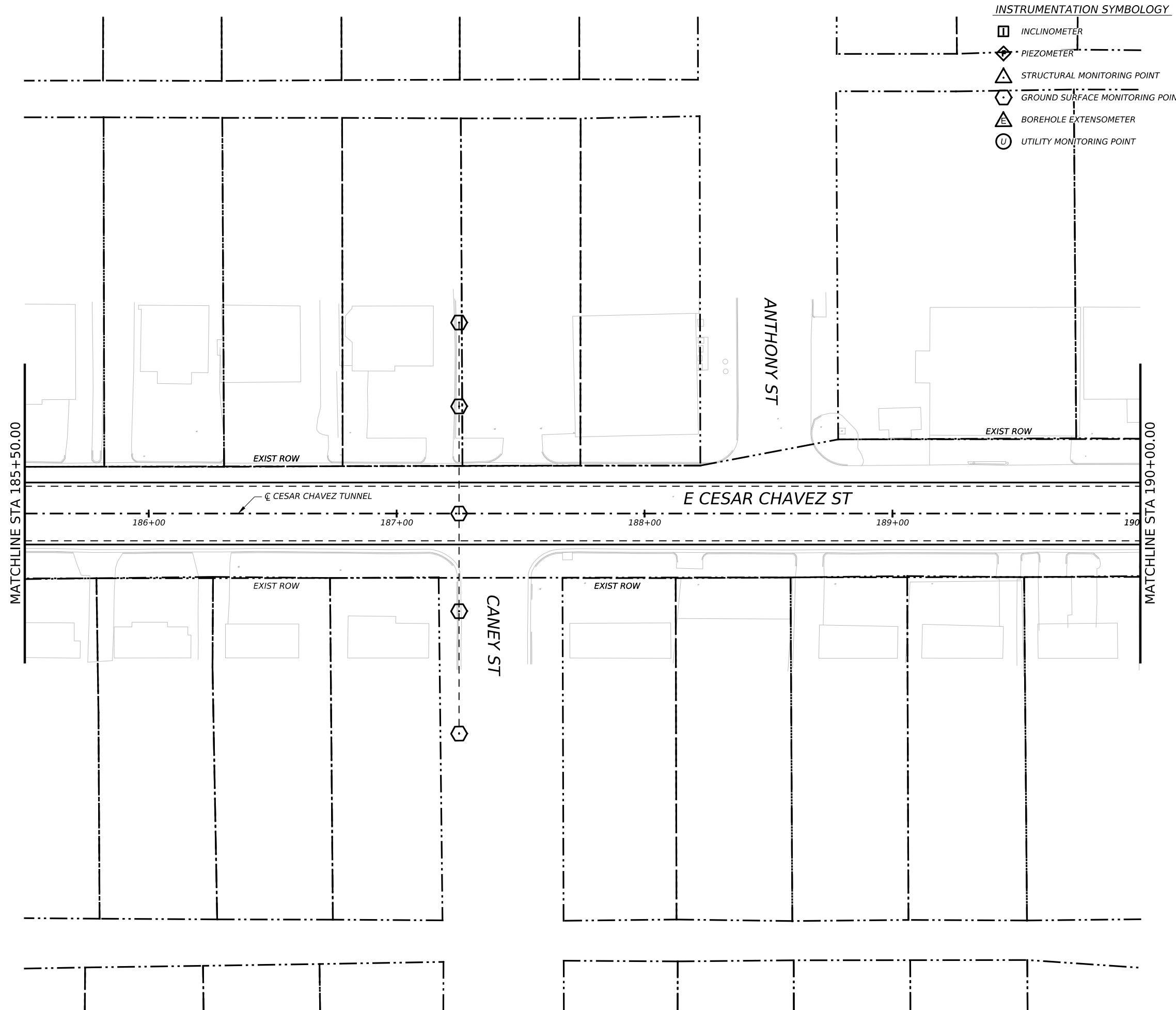
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 181+00.00 TO STA 185+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	167	

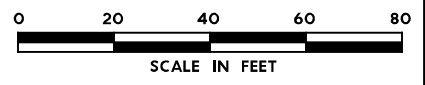


INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
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2	0402	REVISION 2	JMD
1	0408	REVISION 1	JMD
NO.	DATE	REVISION	APPR BY

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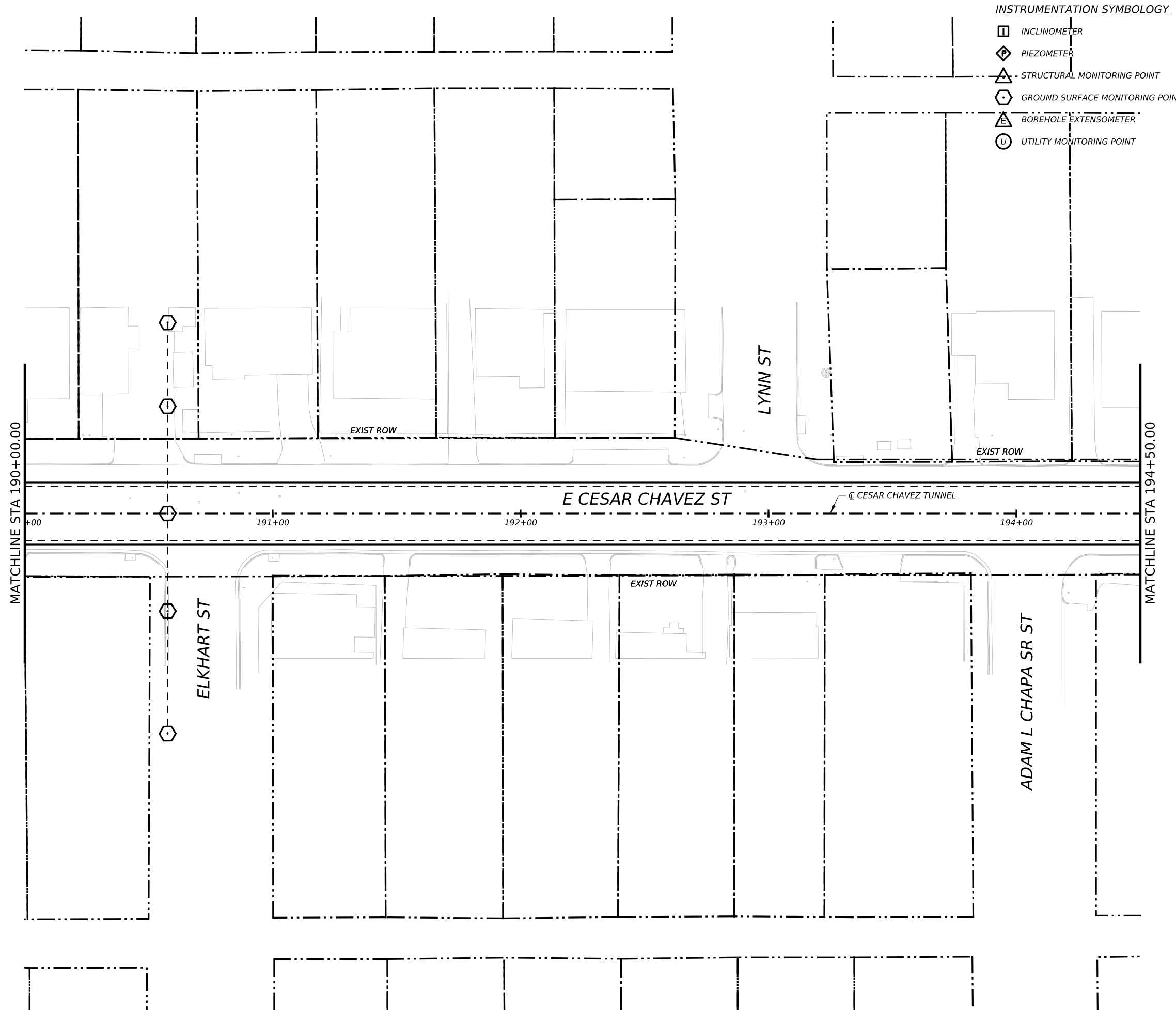
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 185+50.00 TO STA 190+00.00

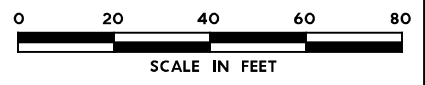
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	168	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
 - UTILITY MONITORING POINT

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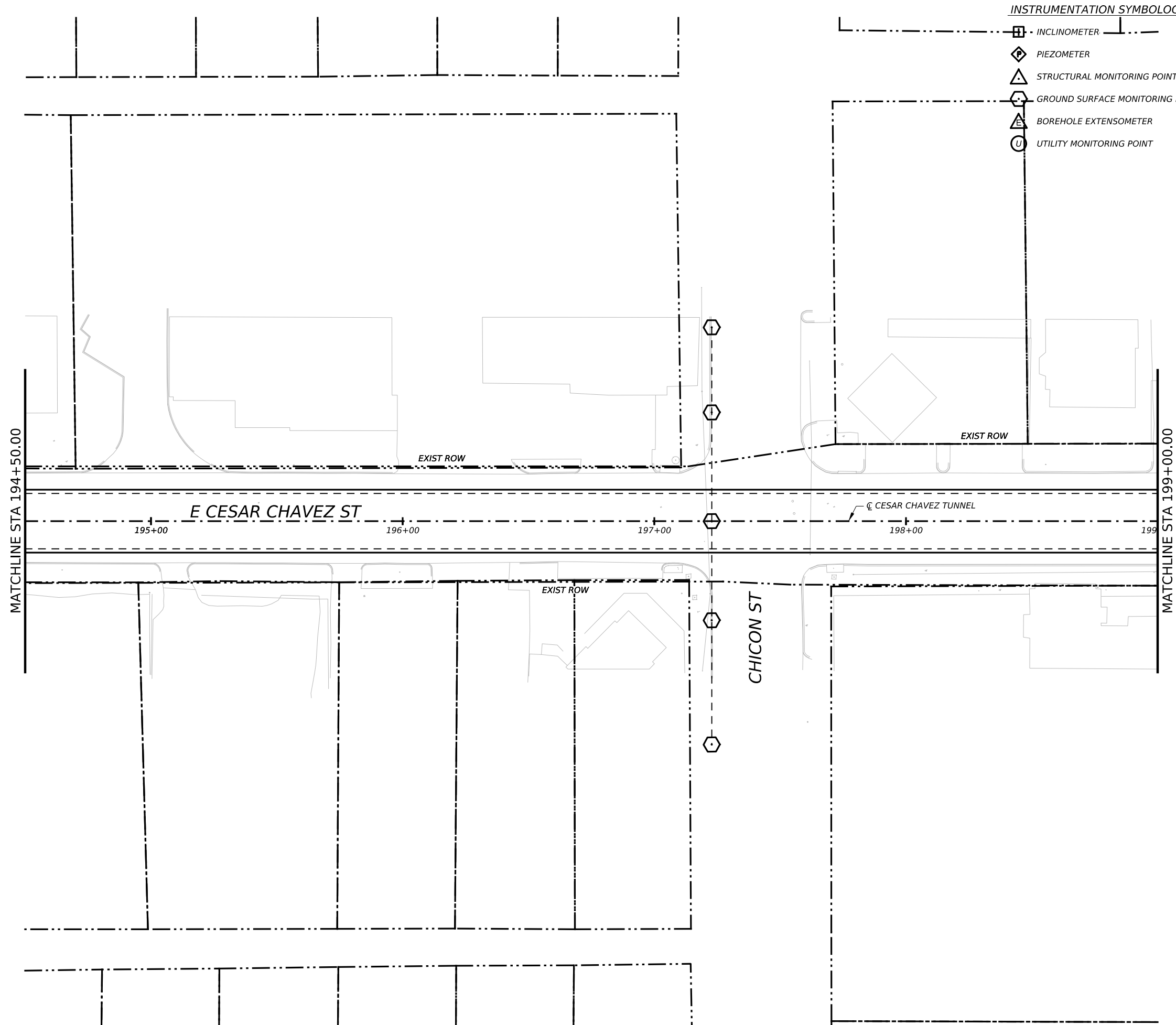
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 190+00.00 TO STA 194+50.00

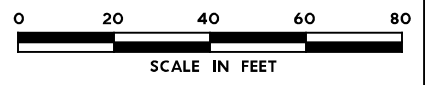
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	169	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
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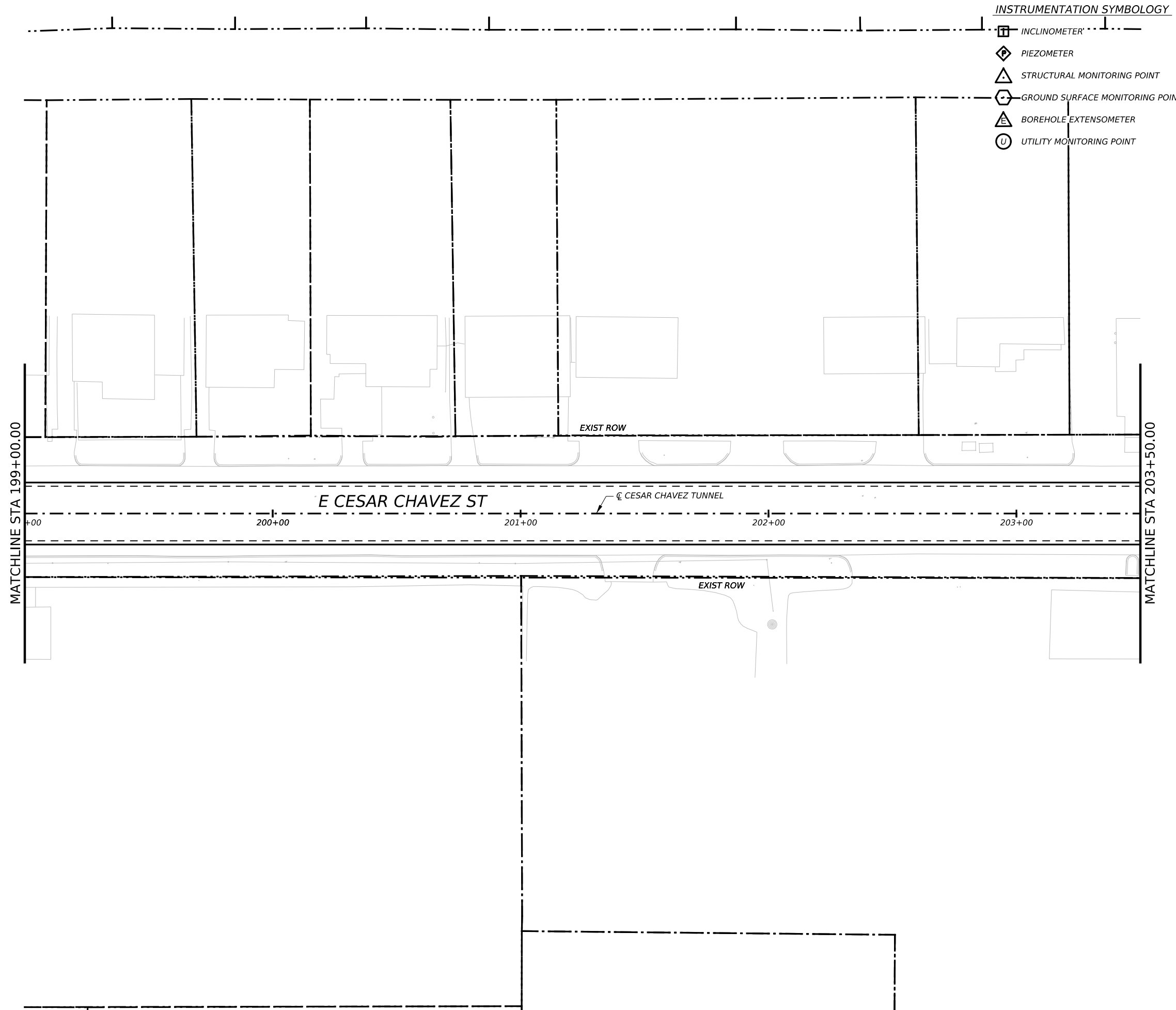
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 194+50.00 TO STA 199+00.00

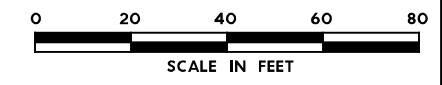
SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	IH35-INSTR-63	



- INSTRUMENTATION SYMBOLOGY**
- INCLINOMETER
 - PIEZOMETER
 - STRUCTURAL MONITORING POINT
 - GROUND SURFACE MONITORING POINT
 - BOREHOLE EXTENSOMETER
 - UTILITY MONITORING POINT

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mobility **35**
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

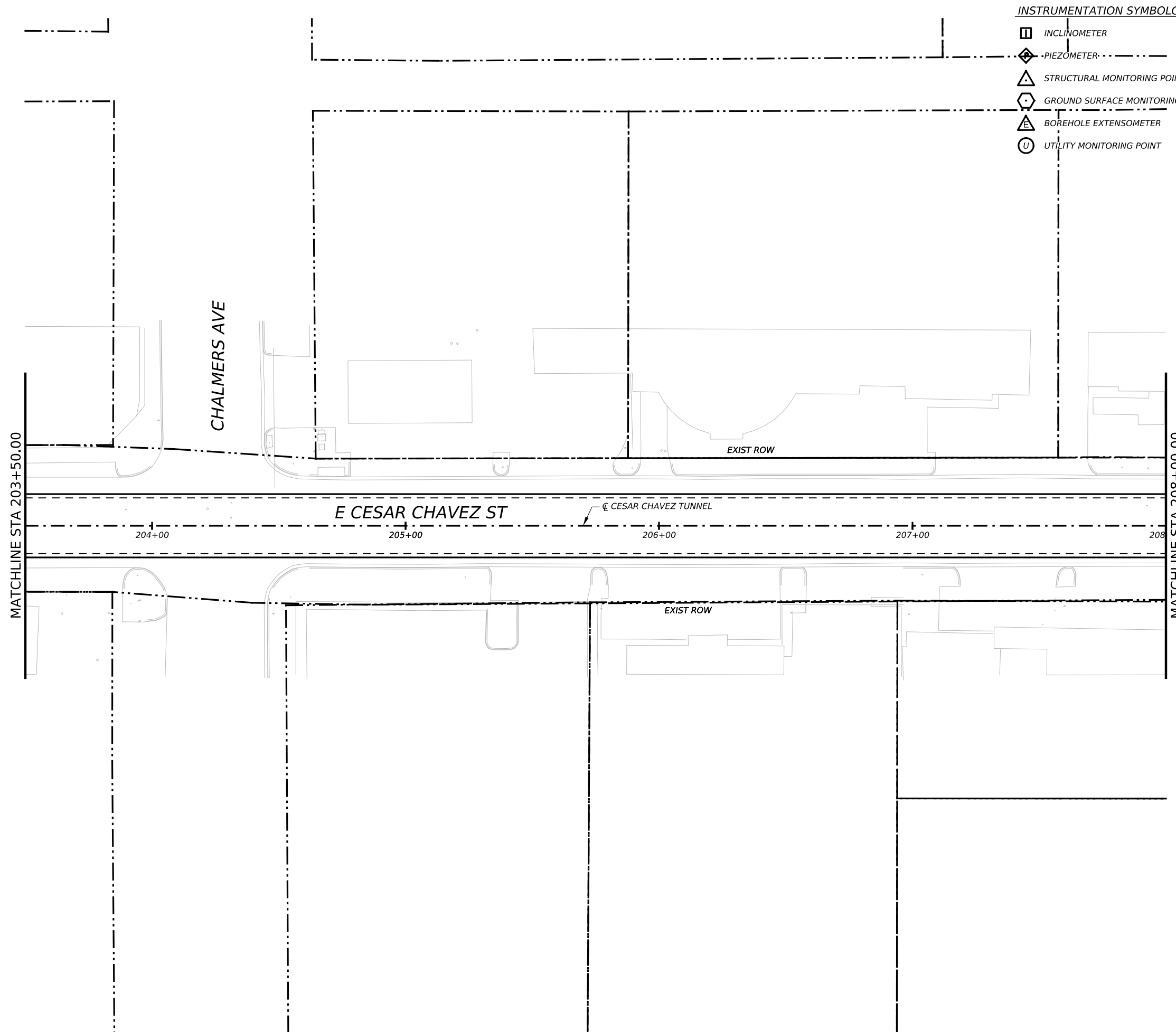
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 199+00.00 TO 203+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	171

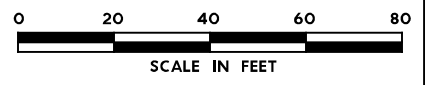


INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
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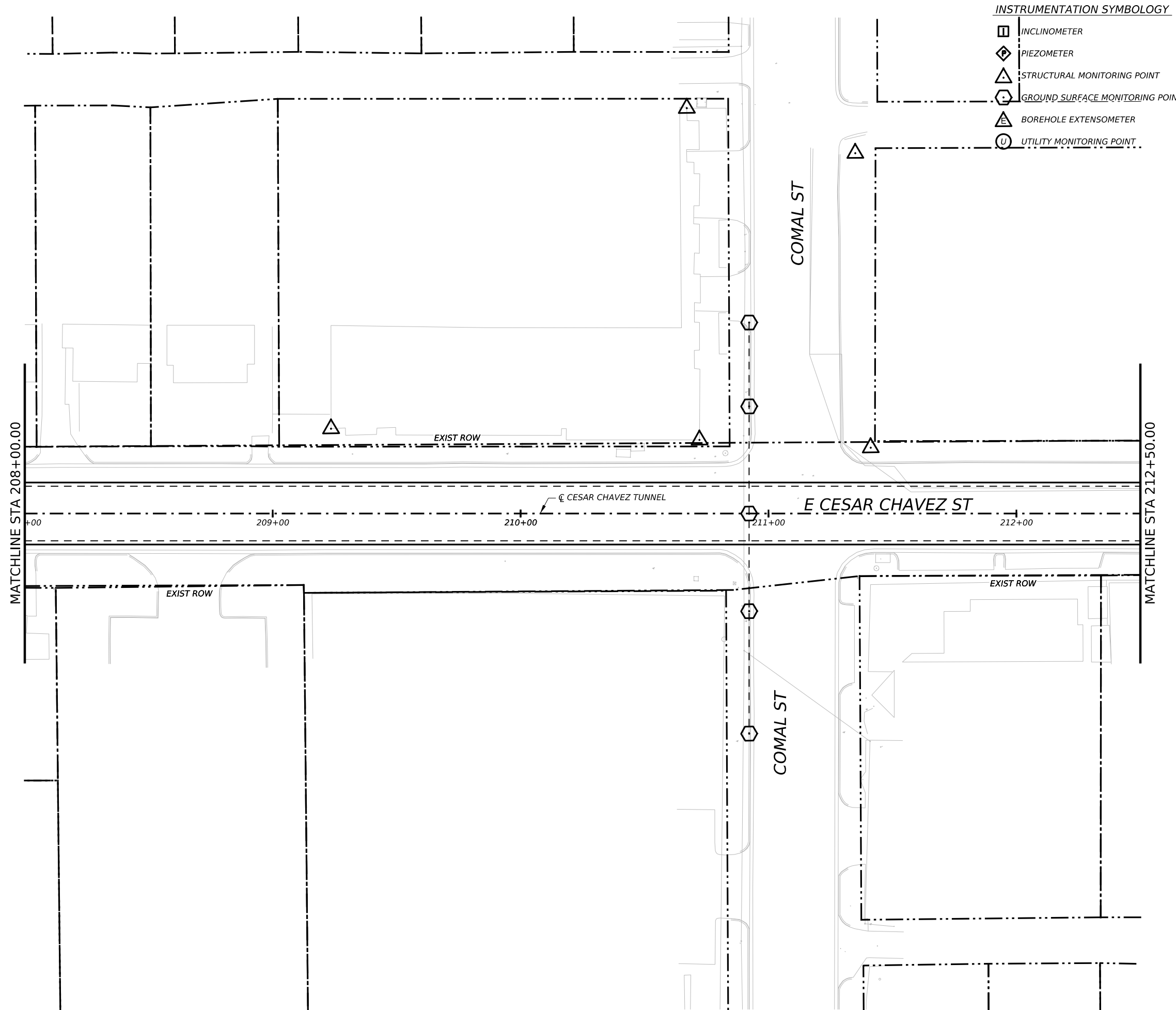
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 203+50.00 TO STA 208+00.00

SCALE: 1"=40' SHEET 1 OF 1

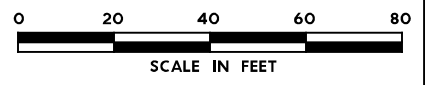
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	IH35-INSTR-65	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
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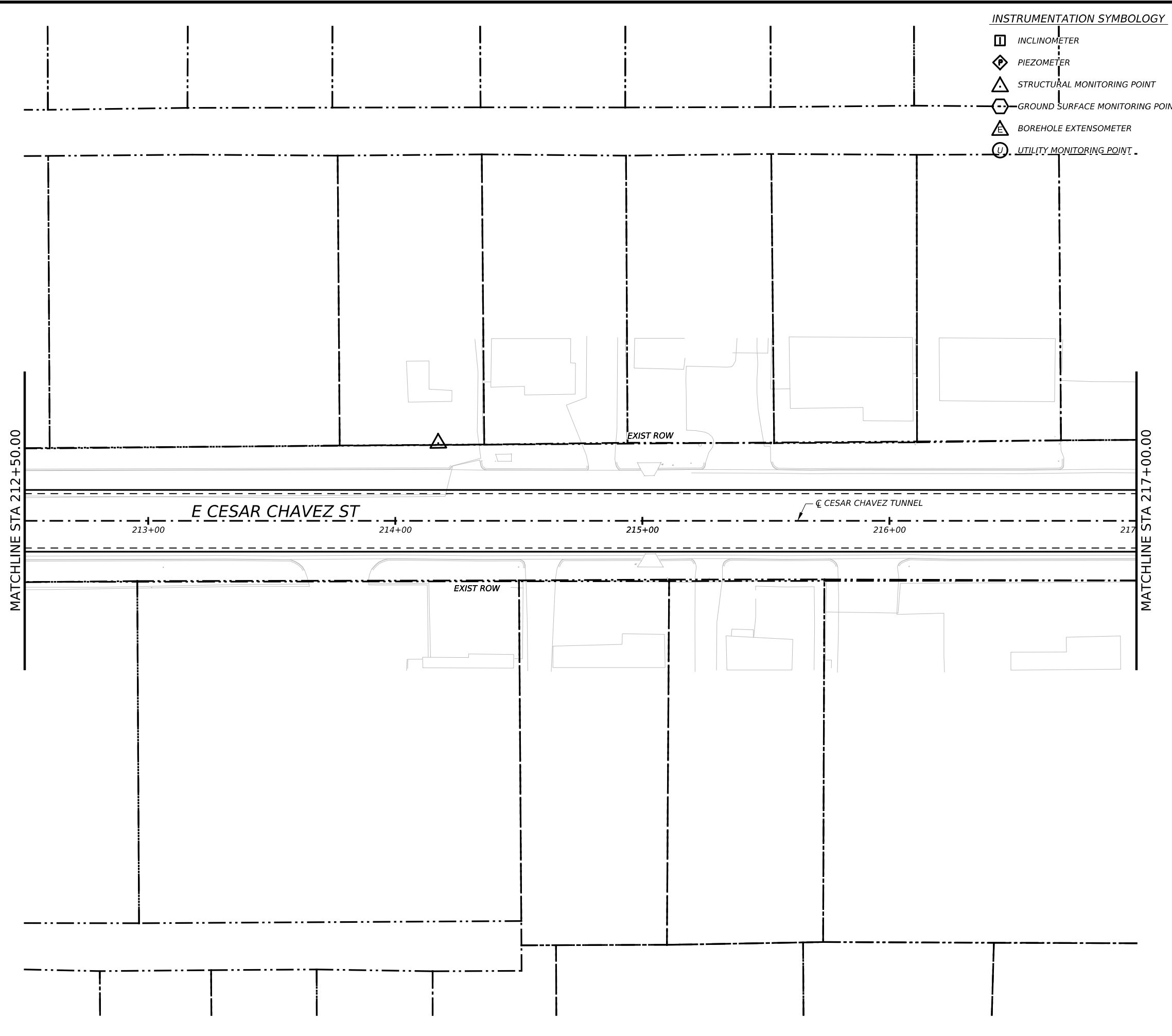
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 208+00.00 TO STA 212+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	173	

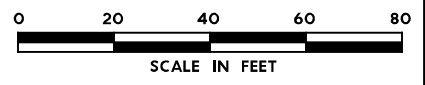


INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
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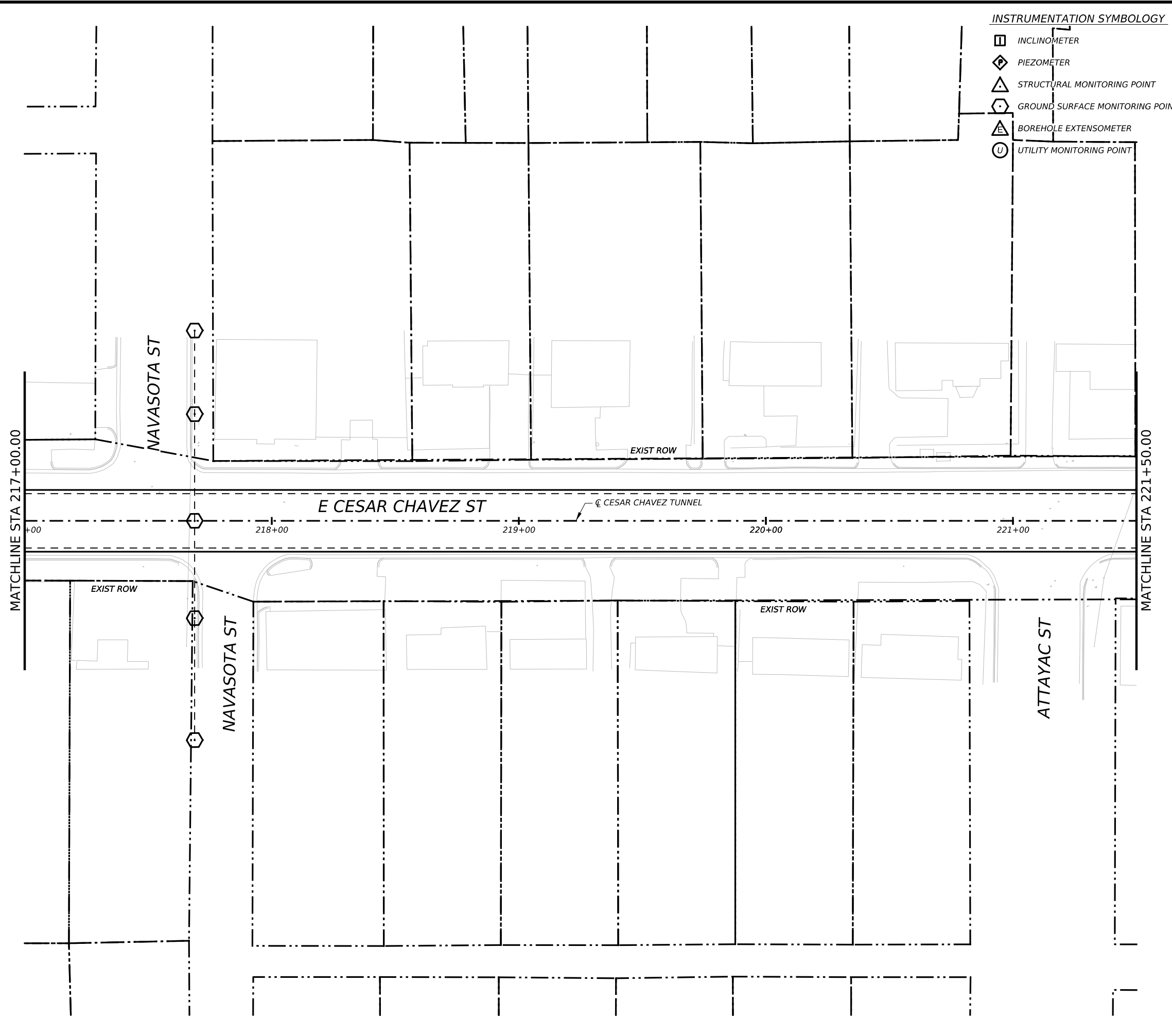
CAPITAL EXPRESS CENTRAL

GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 212+50.00 TO STA 217+00.00

SCALE: 1"=40' SHEET 1 OF 1

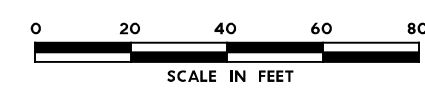
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	174	



INSTRUMENTATION SYMBOLOGY

- INCLINOMETER
- PIEZOMETER
- STRUCTURAL MONITORING POINT
- GROUND SURFACE MONITORING POINT
- BOREHOLE EXTENSOMETER
- UTILITY MONITORING POINT

- GENERAL NOTE:**
 1. UTILITY INFORMATION NOT PROVIDED IN THIS DRAWING SET, UTILITY MONITORING TO BE DEVELOPED AT NEXT DESIGN STAGE.
- NOTES:**
1. INSTRUMENTATION SHOWN ON THIS DRAWING IS TO BE USED IN CONJUNCTION WITH INSTRUMENTATION INSTALLED UNDER CONTRACT 1252 FOR BUILDING AND UTILITY MONITORING DURING STATION CONSTRUCTION.
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 3. SEE NOTES ON DWG BP-011.
 4. FOR CTS CAVERN EXCAVATION SURFACE MONITORING PLAN, REFER TO DWGS ES-991 AND ES-992.
 5. ADDITIONAL NOTES PER SCHNABEL REQUEST.



NO.	DATE	REVISION	APPR BY

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 1701 Directors Blvd., Suite 1000, Austin, TX 78744
 Tel: 512-879-0400 • www.bgeinc.com
 TBPE Registration No. F-1046

mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

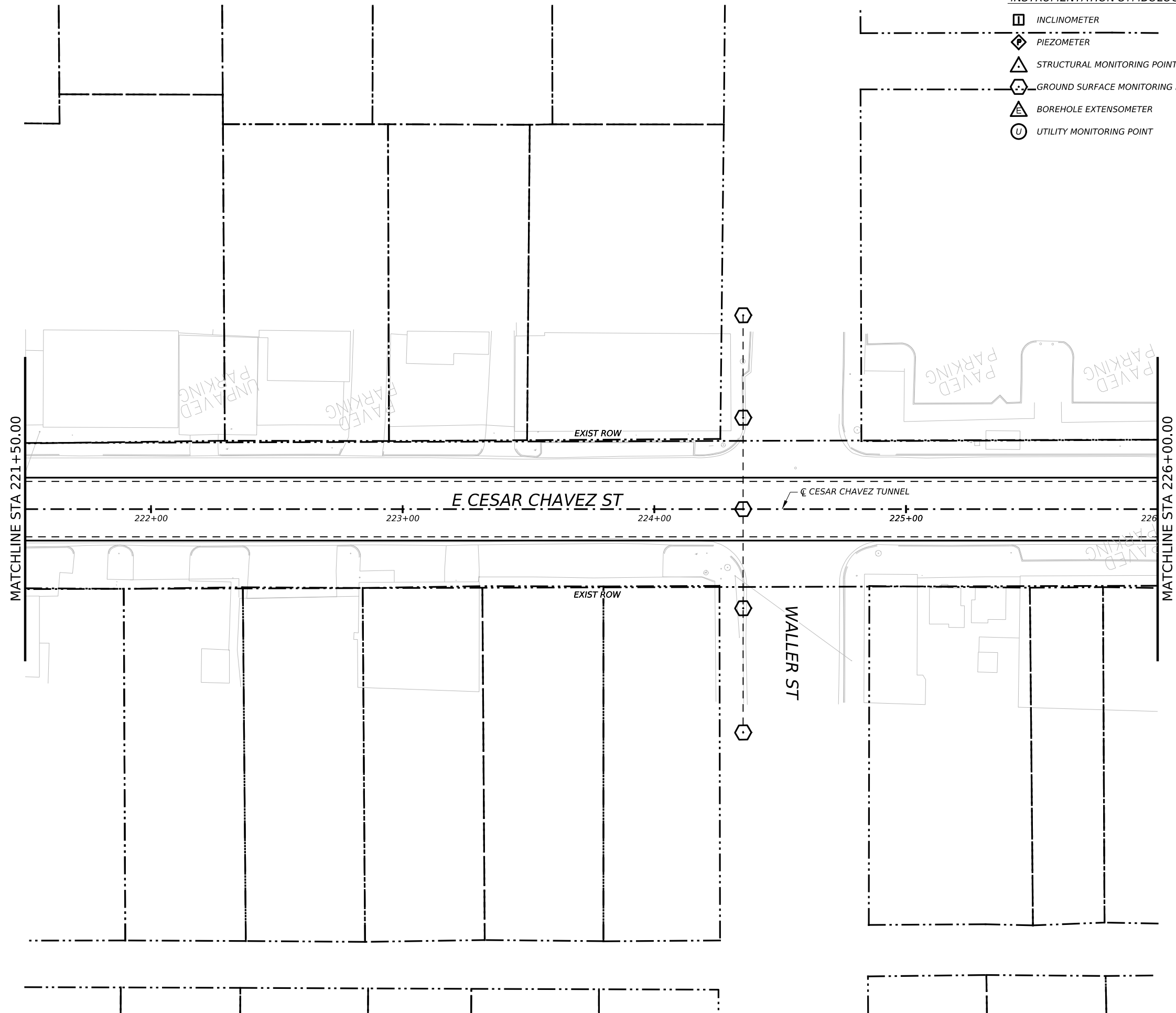
GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING

STA 217+00.00 TO 221+50.00







SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35

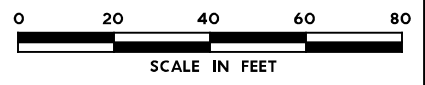
DIST	COUNTY	SHEET NO.
AUS	TRAVIS	175



INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

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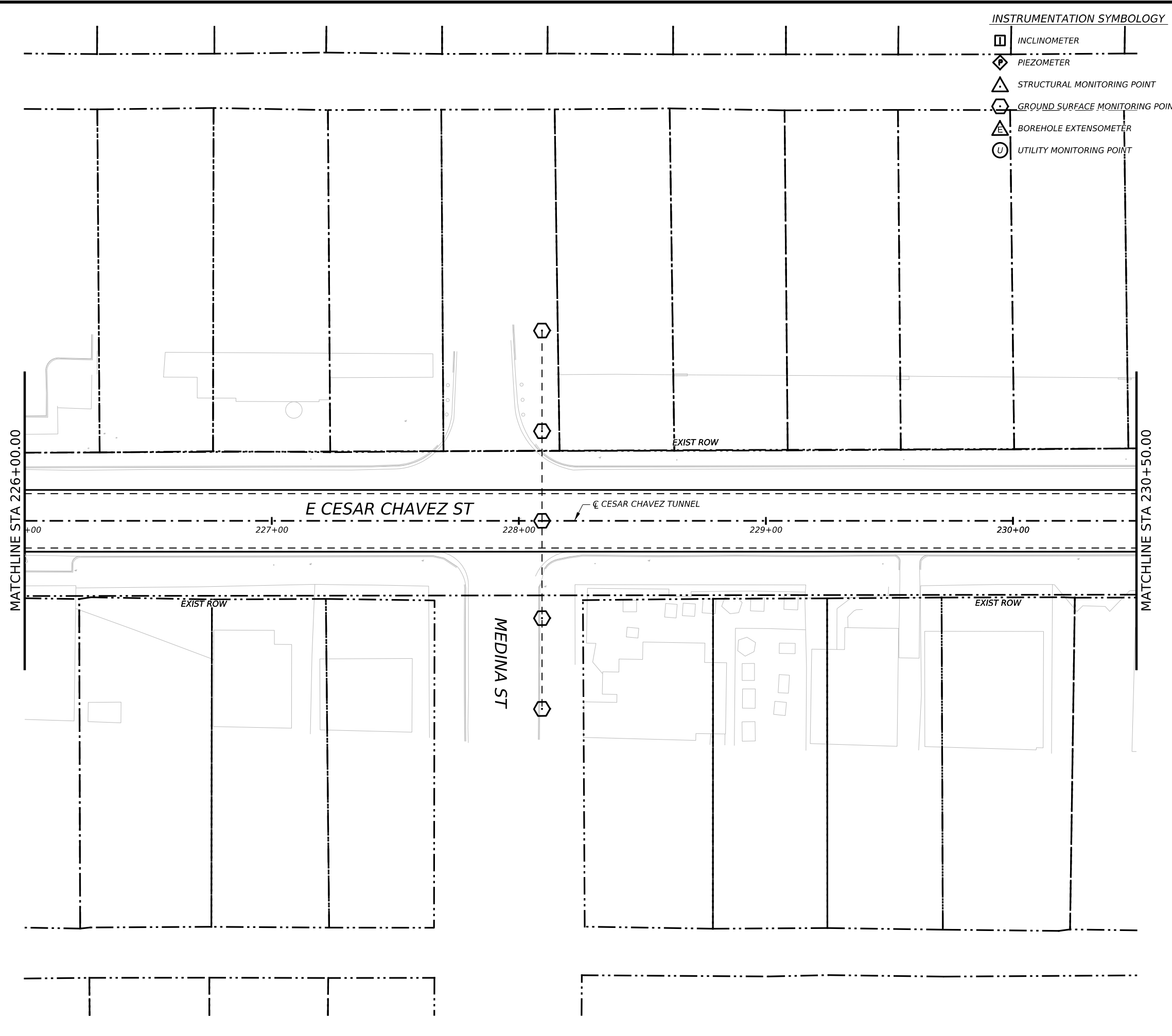
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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 221+50.00 TO STA 226+00.00

SCALE: 1"=40' SHEET 1 OF 1

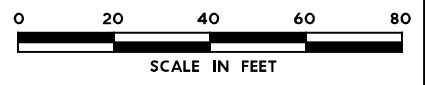
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	176	



INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

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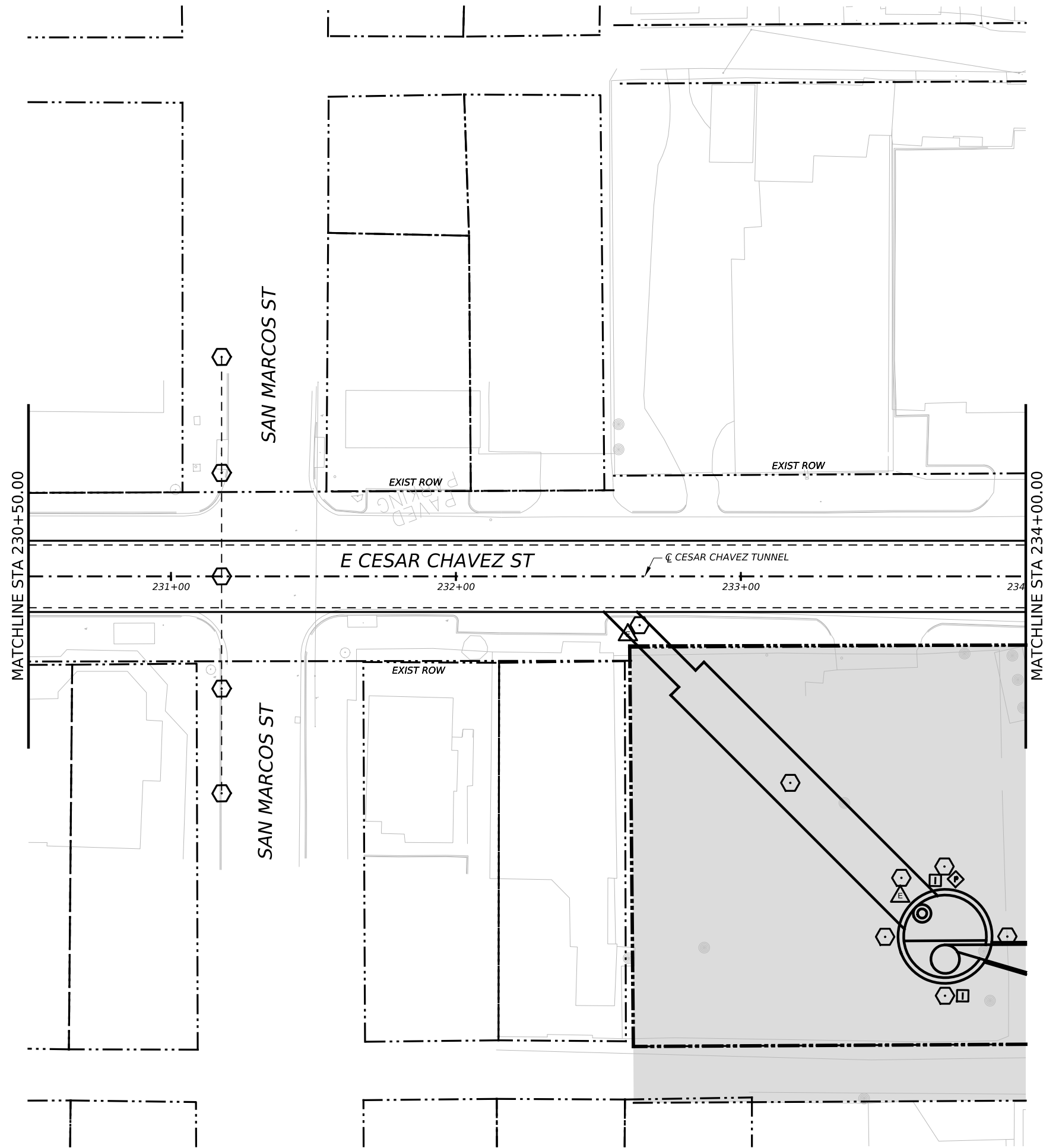
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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 226+00.00 TO STA 230+50.00

SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	177	



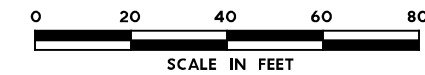
INSTRUMENTATION SYMBOLOGY

-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
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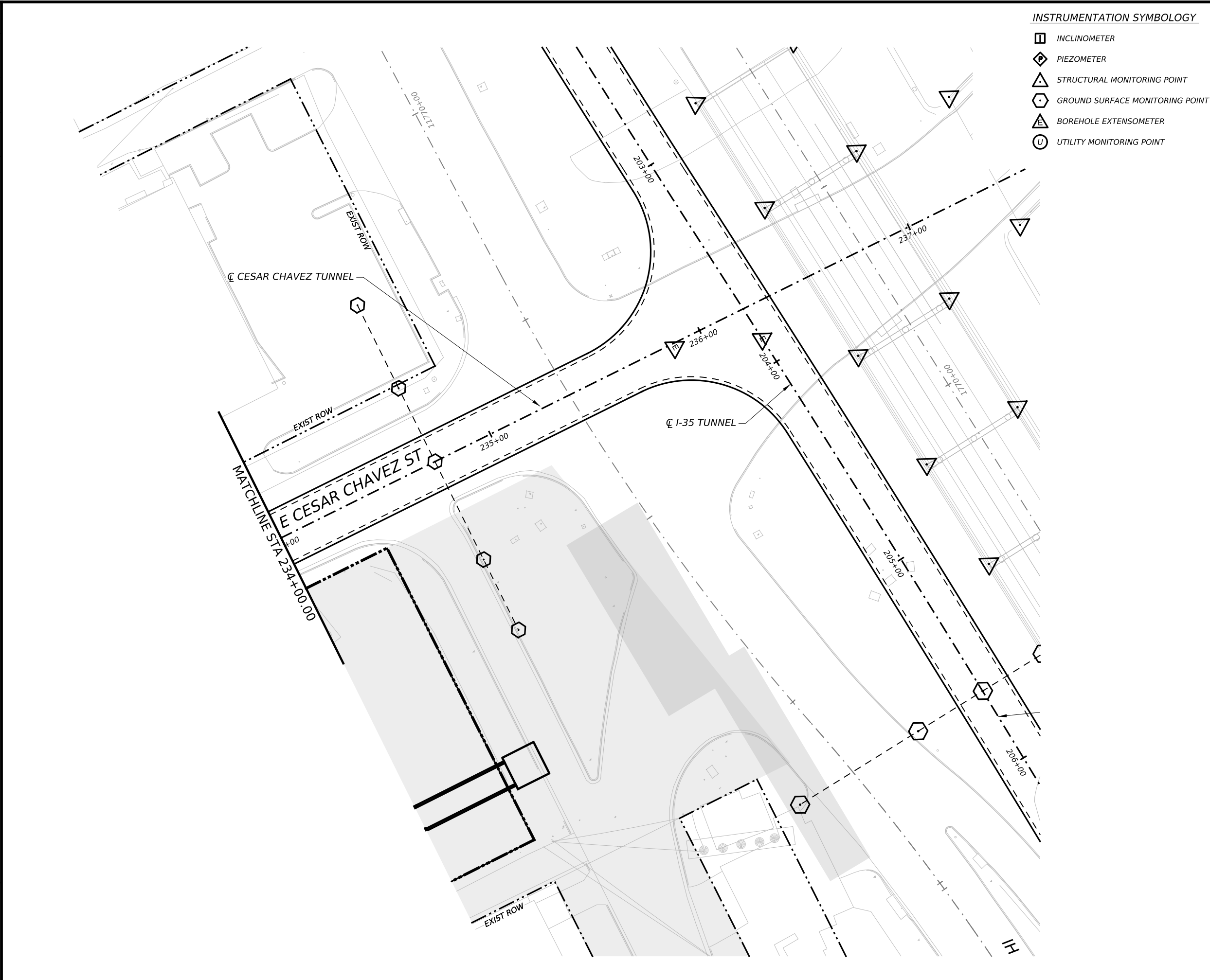
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GEOTECHNICAL AND STRUCTURAL INSTRUMENTATION AND MONITORING







STA 230+50.00 TO STA 234+00.00

SCALE: 1"=40' SHEET 1 OF 1

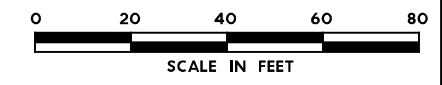
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	178	



INSTRUMENTATION SYMBOLOGY


-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
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CAPITAL EXPRESS CENTRAL

**GEOTECHNICAL AND
 STRUCTURAL
 INSTRUMENTATION
 AND MONITORING**

STA 234+00.00 TO I-35 TUNNEL







SCALE: 1"=40' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	179

INSTRUMENTATION NOTES:

1. LOCATIONS OF ALL INSTRUMENTS INDICATED ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE POSITIONS OF ALL EXISTING UTILITIES AND FOUNDATIONS AND RELOCATE ANY INSTRUMENTS THAT ARE IN CONFLICT WITH INDICATED LOCATIONS, UPON AGREEMENT OF THE ENGINEER.
2. SIGNAL CABLES, TUBING, ETC. NOT SHOWN ON DRAWINGS, ROUTE AS CONVENIENT, SUBJECT TO MANUFACTURERS RECOMMENDATIONS AND CAPABILITY OF PROTECTION.
3. FOR INSTRUMENT INSTALLATION DETAILS SEE SPECIFICATIONS.
4. UTILITY SETTLEMENT MONITORING POINTS TO BE LOCATED TO AVOID OTHER UTILITIES. SEE T86-JCP SERIES DRAWINGS.
5. ADEQUATE MEASURES SHALL BE TAKEN TO PROTECT ALL MONITORING INSTRUMENTS AND DEVICES.
6. FOR EXCAVATION AND SUPPORT SEQUENCES SEE DRAWINGS T86-SSX200 THRU T86-SSX214, T86-SSX250, AND T86-SSX251
7. MONITORING TO BE PERFORMED AT FREQUENCIES DEFINED IN THE SPECIFICATIONS.
8. INSTRUMENTS SHOWN SCHEMATICALLY ONLY. CONTRACTOR SHALL SUBMIT MANUFACTURER'S SPECIFICATION AND PRODUCT DESCRIPTION FOR APPROVAL.
9. PRIOR TO COMMENCING TUNNEL EXCAVATION DRILL ALL BORINGS TO REQUIRED DEPTHS, UNLESS INDICATED OTHERWISE, SAMPLE AND INSTALL GROUND MONITORING INSTRUMENTS.
10. EXTENSOMETER CASINGS SHALL BE LOCATED IN BORINGS OVER THE LENGTH OF THE TUNNEL AS INDICATED. THE INSTRUMENT CASING SHALL EXTEND TO WITHIN 3 FEET OF THE CROWN OF THE TUNNEL. EXTENSOMETERS WILL BE USED TO MONITOR VERTICAL DEFORMATIONS IN THE SOILS OVER THE TUNNEL CROWN PRIOR TO, DURING AND AFTER EXCAVATION AND THE CLOSING OF THE INITIAL SHOTCRETE LINING.
11. INCLINOMETER CASINGS SHALL BE LOCATED IN BORINGS OVER THE LENGTH OF THE TUNNEL AS INDICATED. THE INSTRUMENT CASING SHALL EXTEND TO A DEPTH OF 10 FEET BELOW THE TUNNEL OR SHAFT INVERT. INCLINOMETERS SHALL BE USED TO MONITOR HORIZONTAL DEFORMATIONS IN THE SOILS AHEAD OF AND TO THE SIDES OF THE EXCAVATION FACE.
12. INSTRUMENTATION LOCATED IN AREAS OF PROPOSED GROUND IMPROVEMENT OR REPLACEMENT, SHALL BE INSTALLED AFTER COMPLETION OF THE GROUND IMPROVEMENT OR REPLACEMENT.
13. ALL INSTRUMENT ARRAY LOCATIONS ARE BASED ON EB TRACK STATIONING, UNLESS NOTED OTHERWISE.
14. UTILITIES TO BE INSTRUMENTED ARE NOT SHOWN ON INSTRUMENTATION PLANS. UTILITY SETTLEMENT MONITORING LOCATIONS WILL BE IDENTIFIED AFTER 30% DESIGN.

INSTRUMENTATION SYMBOLOGY

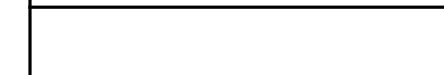
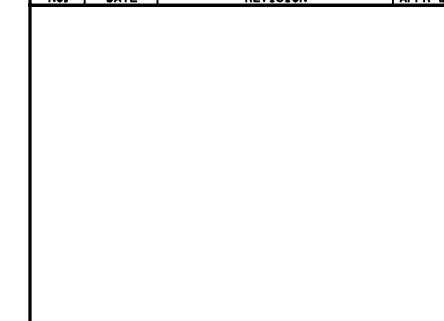
-  INCLINOMETER
-  PIEZOMETER
-  STRUCTURAL MONITORING POINT
-  GROUND SURFACE MONITORING POINT
-  BOREHOLE EXTENSOMETER
-  UTILITY MONITORING POINT

AIRPORT RETRIEVAL SHAFT					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
AR-GMP-01	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-02	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-03	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-04	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-05	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-06	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-07	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-08	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-09	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-10	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-11	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-12	GROUND MONITORING POINT	--	--	RETRIEVAL SHAFT	--
AR-GMP-13	GROUND MONITORING POINT	--	--	I-35 TUNNEL	--
AR-I-01	INCLINOMETER	--	--	RETRIEVAL SHAFT	--
AR-I-02	INCLINOMETER	--	--	RETRIEVAL SHAFT	--

RIVER LAUNCH SHAFT					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
RL-GMP-01	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-02	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-03	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-04	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-05	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-06	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-07	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-08	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-09	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-10	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-11	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-12	GROUND MONITORING POINT	--	--	DROP SHAFT	--
RL-GMP-13	GROUND MONITORING POINT	--	--	I-35 TUNNEL	--
RL-I-01	INCLINOMETER	--	--	DROP SHAFT	--
RL-I-02	INCLINOMETER	--	--	DROP SHAFT	--

CESAR CHAVEZ LAUNCH SHAFT					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
CC-GMP-01	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-02	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-03	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-04	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-05	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-06	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-07	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-08	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-09	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-10	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-11	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-12	GROUND MONITORING POINT	--	--	DROP SHAFT	--
CC-GMP-13	GROUND MONITORING POINT	--	--	I-35 TUNNEL	--
CC-I-01	INCLINOMETER	--	--	DROP SHAFT	--
CC-I-02	INCLINOMETER	--	--	DROP SHAFT	--

NO.	DATE	REVISION	APPR BY



HDR HDR Engineering, Inc.
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681



CAPITAL EXPRESS CENTRAL
INSTRUMENTATION NOTES,
SYMBOLGY AND TBM LAUNCH/
RETRIEVAL SHAFT
INSTRUMENTATION SCHEDULE

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	180	

CESAR CHAVEZ TUNNEL					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
CC-GMP-01	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-02	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-03	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-04	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-05	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-06	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-07	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-08	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-09	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-10	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-11	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-12	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-13	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-14	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-GMP-15	GROUND MONITORING POINT	-	-	CC TUNNEL	-
CC-I-01	INCLINOMETER	-	-	CC TUNNEL	-
CC-I-02	INCLINOMETER	-	-	CC TUNNEL	-
CC-I-03	INCLINOMETER	-	-	CC TUNNEL	-
CC-I-04	INCLINOMETER	-	-	CC TUNNEL	-
CC-E-01	EXTENSOMETER	-	-	CC TUNNEL	-
CC-E-02	EXTENSOMETER	-	-	CC TUNNEL	-


I-35 TUNNEL					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
35-GMP-01	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-02	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-03	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-04	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-05	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-06	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-07	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-08	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-09	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-10	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-11	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-12	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-13	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-14	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-GMP-15	GROUND MONITORING POINT	-	-	I-35 TUNNEL	-
35-I-01	INCLINOMETER	-	-	I-35 TUNNEL	-
35-I-02	INCLINOMETER	-	-	I-35 TUNNEL	-
35-I-03	INCLINOMETER	-	-	I-35 TUNNEL	-
35-I-04	INCLINOMETER	-	-	I-35 TUNNEL	-
35-E-01	EXTENSOMETER	-	-	I-35 TUNNEL	-
35-E-02	EXTENSOMETER	-	-	I-35 TUNNEL	-

CESAR CHAVEZ TUNNEL					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
CC-SMP-01	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-02	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-03	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-04	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-05	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-06	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-07	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-08	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-09	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-10	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-11	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-12	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-13	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-14	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
CC-SMP-15	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-



I-35 TUNNEL					
INSTRUMENT ID	INSTRUMENT TYPE	STATION LOCATION	OFFSET	MONITORED STRUCTURE	DRAWING REFERENCE
35-SMP-01	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
35-SMP-02	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
35-SMP-03	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
35-SMP-04	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
35-SMP-05	STRUCTURAL MONITORING POINT	-	-	ADJACENT BUILDING	-
35-SMP-06	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-07	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-08	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-09	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-10	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-11	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-12	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-13	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-14	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-
35-SMP-15	STRUCTURAL MONITORING POINT	-	-	I-35 HIGHWAY	-

NO.	DATE	REVISION	APPR BY





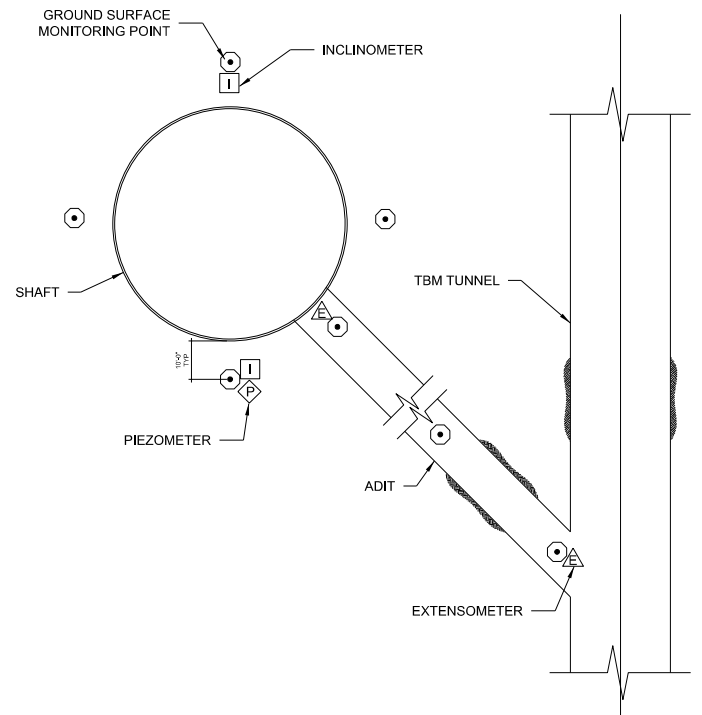
HDR Engineering, Inc.
Firm Registration No. F-754
710 Hester Crossing, Suite 150
Round Rock, Texas 78681

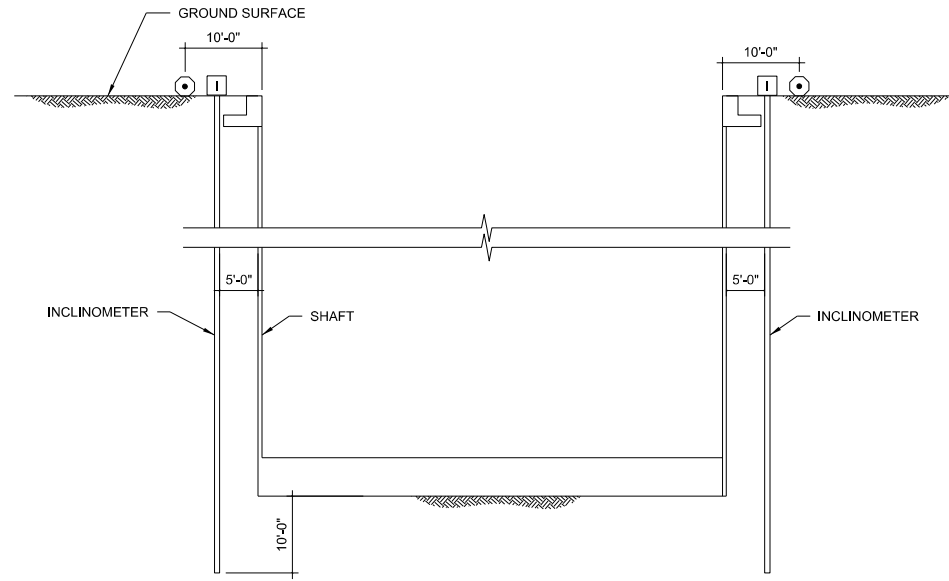
CAPITAL EXPRESS CENTRAL
TUNNELS
INSTRUMENTATION SCHEDULE

SHEET 1 OF 1

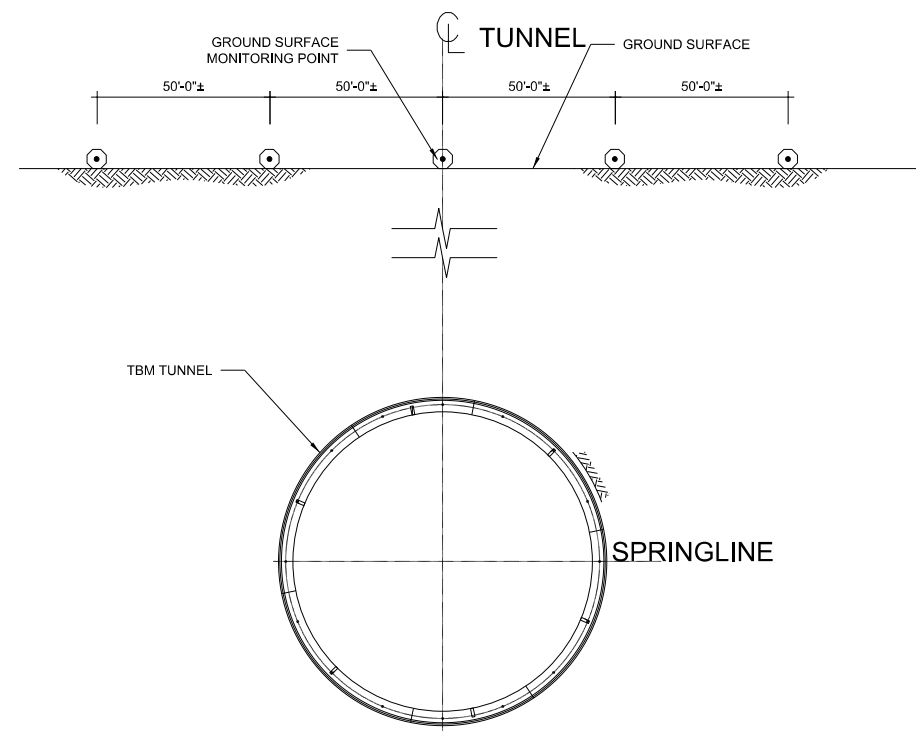
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0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	182



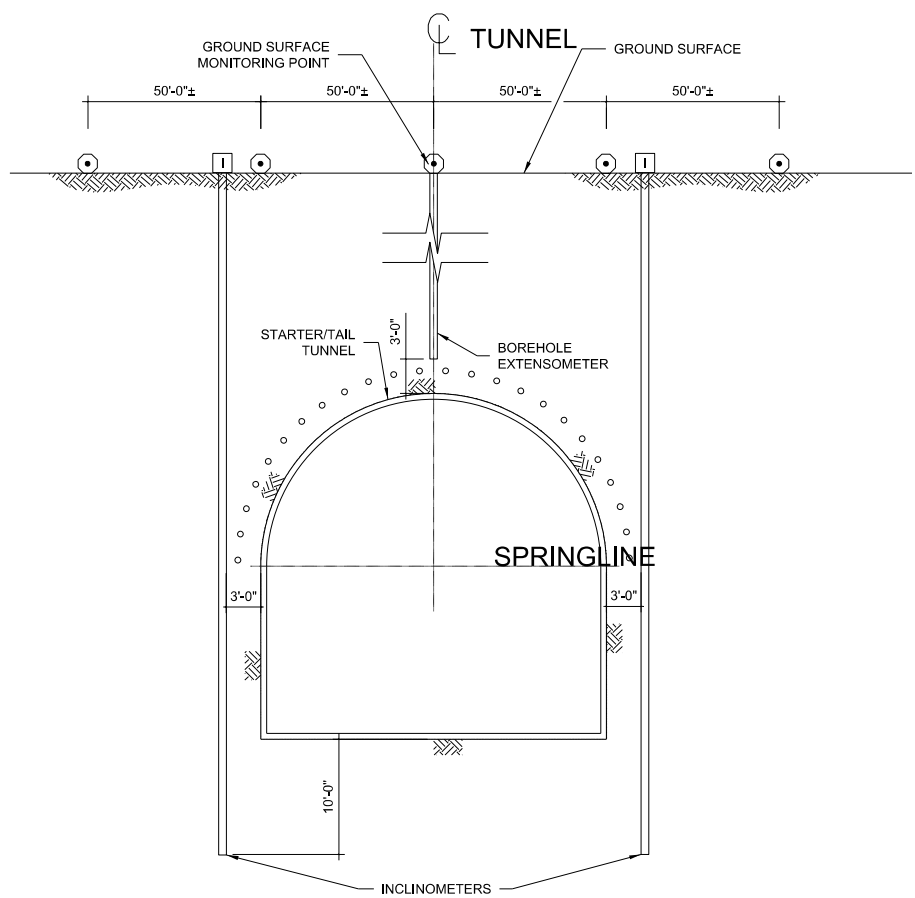
1
 NTS
 SHAFT INSTRUMENTATION PLAN DETAIL



A
 NTS
 SHAFT FULLY INSTRUMENTED SECTION



B
 NTS
 TBM TUNNEL SECTION VIEW



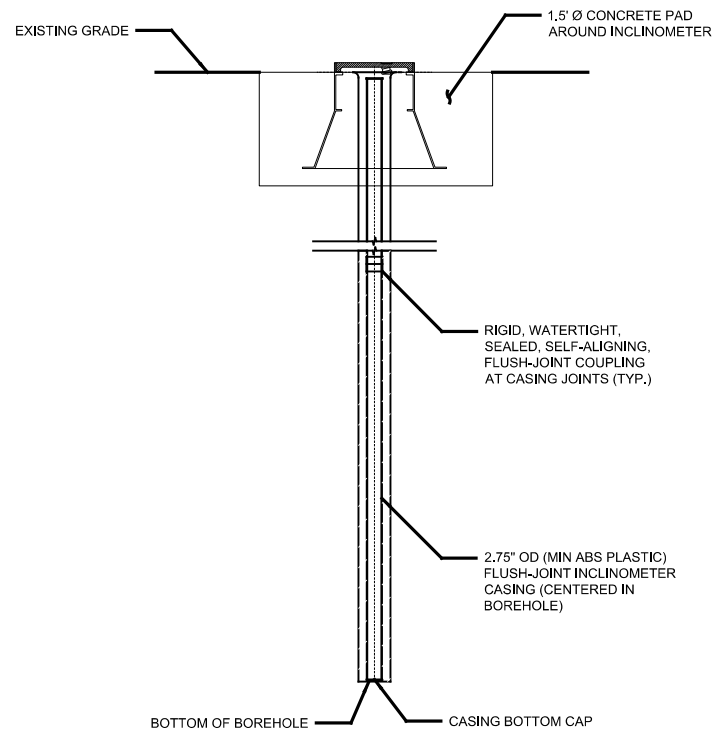
C
 NTS
 STARTER/TAIL TUNNEL SECTION

NO.	DATE	REVISION	APPR BY

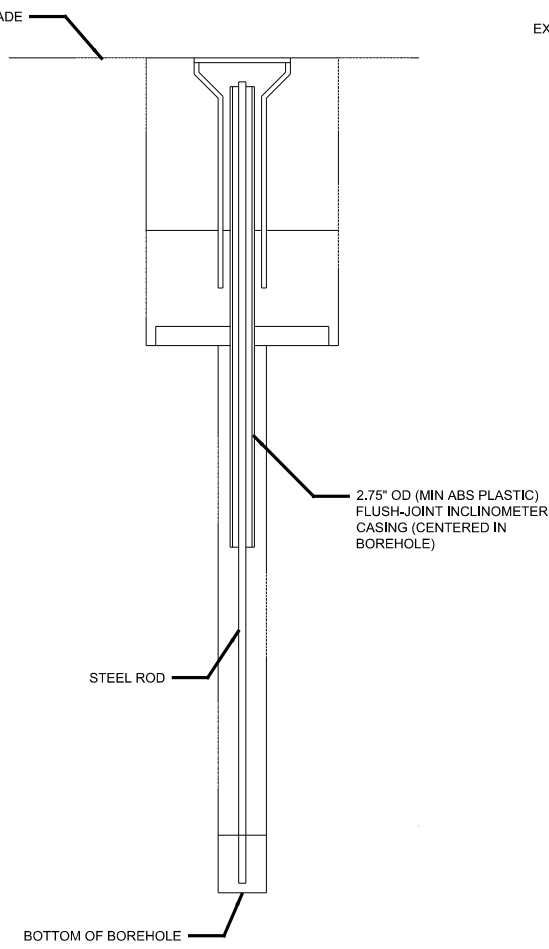


CAPITAL EXPRESS CENTRAL
SHAFT AND TUNNEL
INSTRUMENTATION SCHEDULE

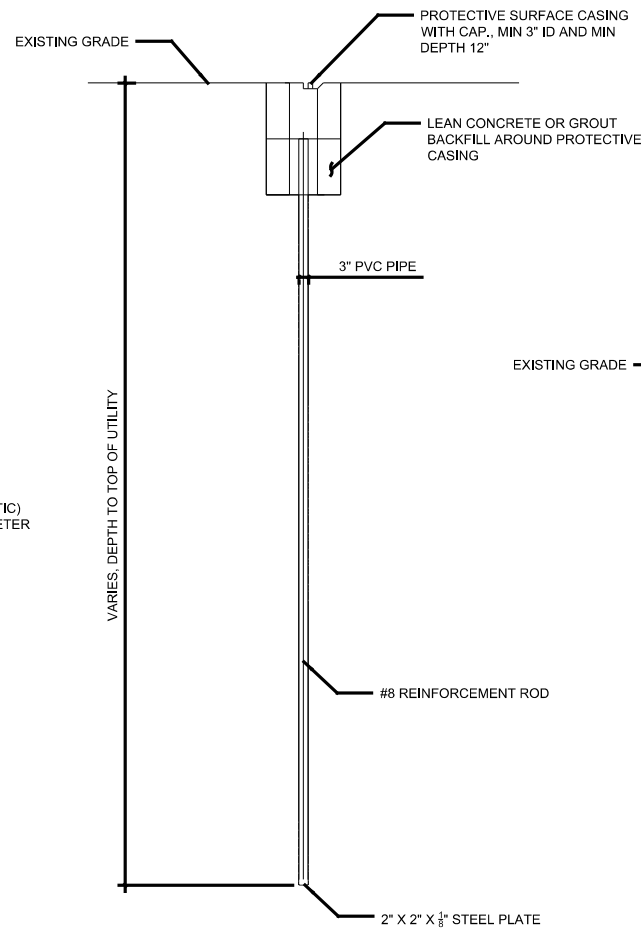
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		183



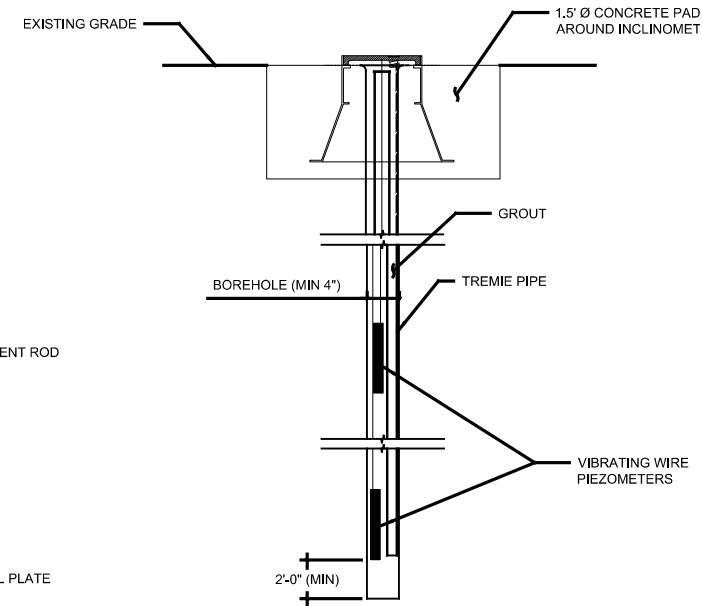
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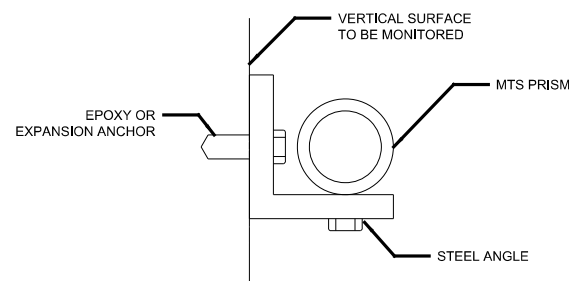
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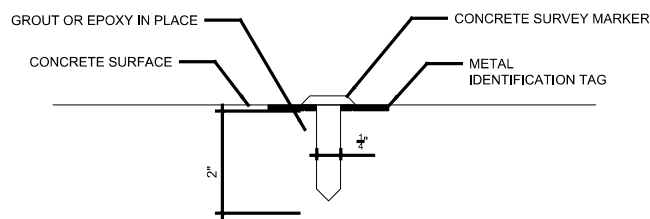
3 - UTILITY MONITORING POINT
 NTS



4 - GROUTED PIEZOMETER DETAIL
 NTS



5 - STRUCTURAL MONITORING POINT DETAIL
 NTS



6 - GROUT MONITORING POINT DETAIL (IN CONCRETE)
 NTS

NO.	DATE	REVISION	APPR BY

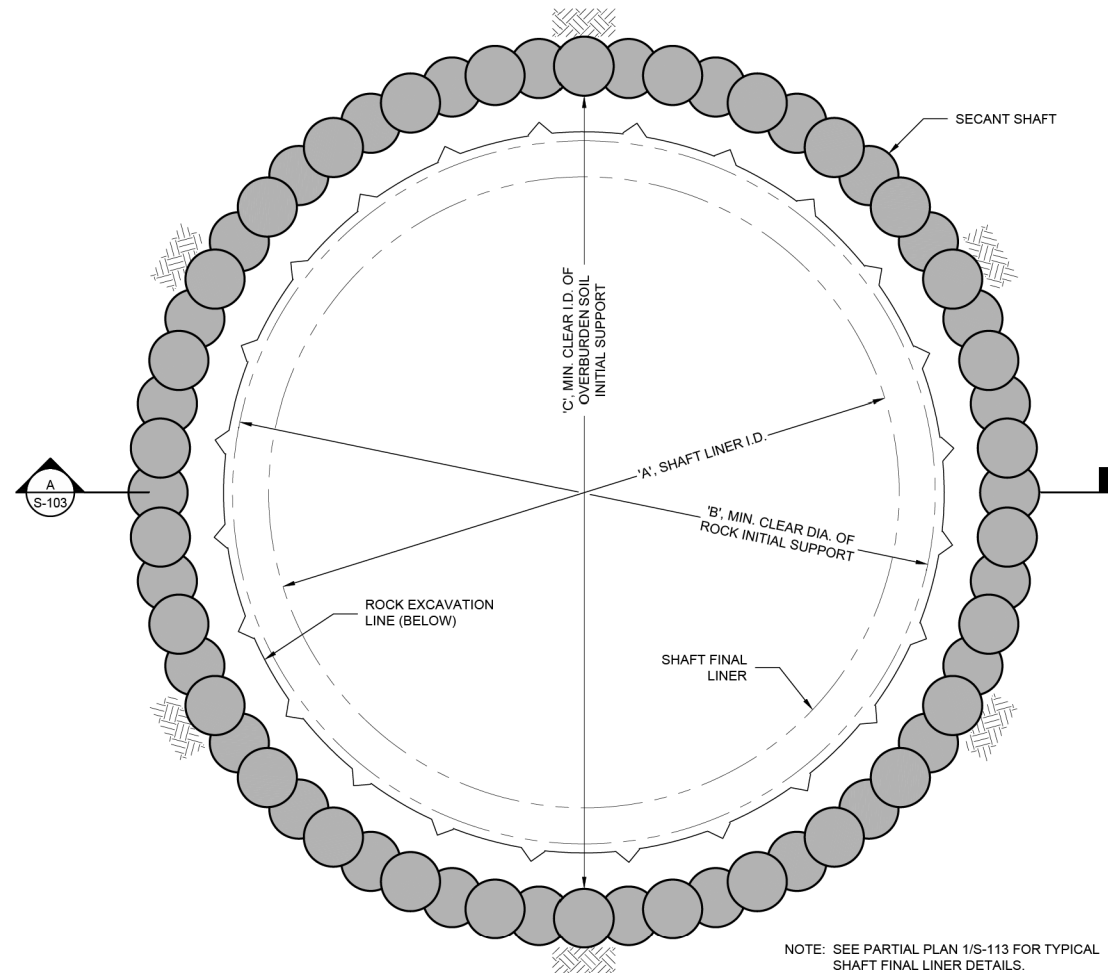
HDR Engineering, Inc.
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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681



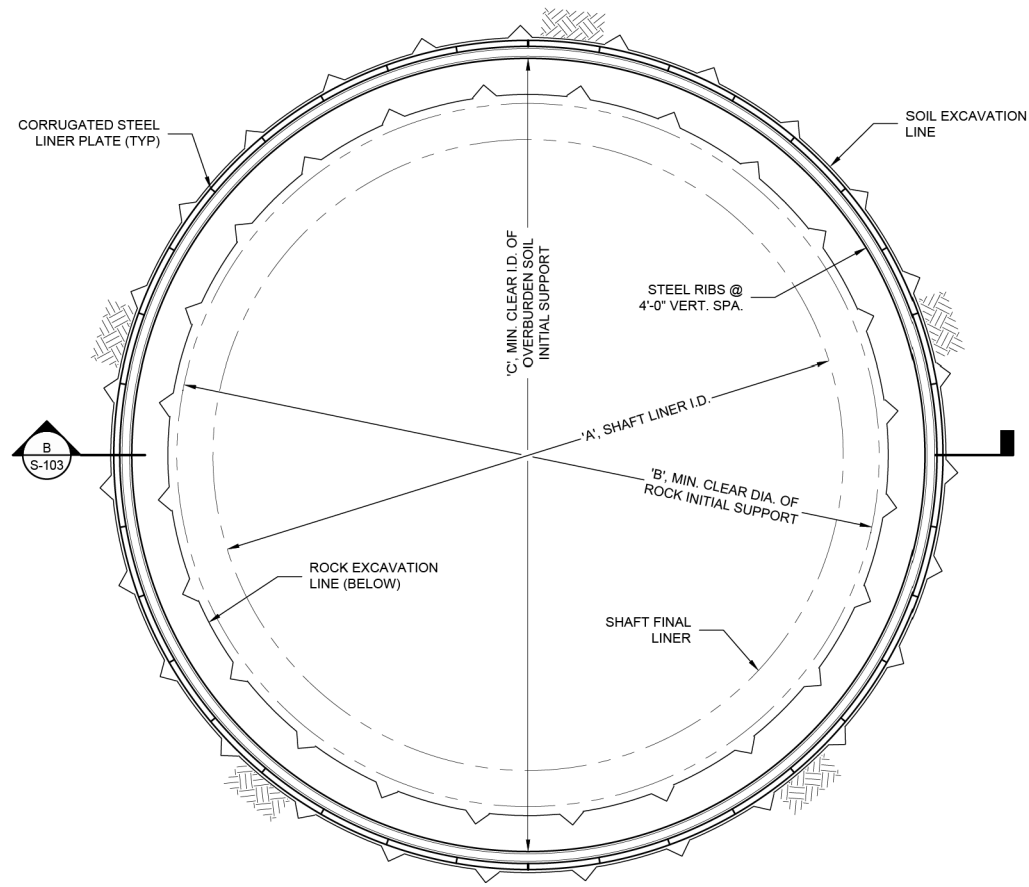
**CAPITAL EXPRESS CENTRAL
 TUNNEL INSTRUMENTATION
 DETAILS**

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	184	



1 SHAFT OVERBURDEN SOIL INITIAL SUPPORT PLAN - TYPE 1 (SECANT SHAFT)
NOT TO SCALE



2 SHAFT OVERBURDEN SOIL INITIAL SUPPORT PLAN - TYPE 2 (LINER PLATE)
NOT TO SCALE

NOTE: SEE PARTIAL PLAN 1/S-113 FOR TYPICAL SHAFT FINAL LINER DETAILS.

NOTES:

- THIS DRAWING SHOWS TYPICAL SHAFT INITIAL SUPPORT LAYOUT IN OVERBURDEN SOIL AND APPLIES TO ALL CIRCULAR SHAFT LOCATIONS. SEE THE SHAFT INITIAL SUPPORT SCHEDULE FOR SHAFT DIMENSIONS, INITIAL SUPPORT TYPE, AND SIZES AT EACH LOCATION. SHAFT CONNECTIONS TO TUNNEL ADITS, STARTER/TAILOFF TUNNELS, OR THE MAIN TUNNEL ARE NOT SHOWN IN PLAN VIEW ON THIS DRAWING.

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SHAFT INITIAL SUPPORT PLAN VIEWS

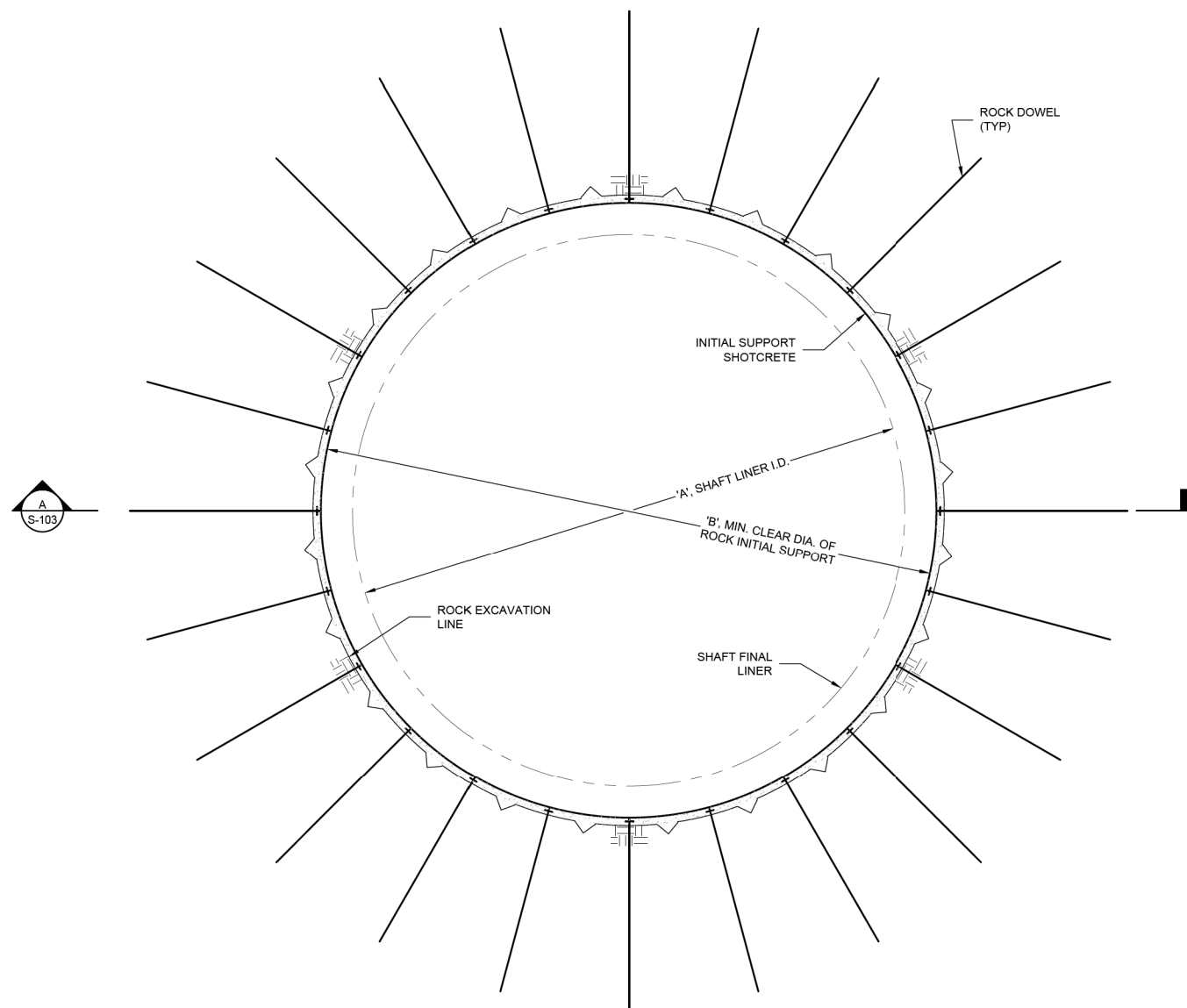
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ENGINEERING

SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-101.PDF.dgn	

SHAFT SCHEDULE					
SHAFT	'A' SHAFT LINER I.D.	'B' MIN. CLEAR DIA. OF ROCK INITIAL SUPPORT	'C' MIN. CLEAR I.D. OF OVERBURDEN SOIL INITIAL SUPPORT	OVERBURDEN SOIL INITIAL SUPPORT TYPE	SHAFT INITIAL ROCK SUPPORT
AIRPORT RETRIEVAL SHAFT	40'-0"	44'-0"	49'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
AIRPORT DROP SHAFT	60'-0"	64'-0"	69'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
HANCOCK DROP SHAFT	50'-0"	54'-0"	59'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
EDGEWOOD DROP SHAFT	40'-0"	44'-0"	49'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
DEAN KEETON DROP SHAFT	36'-0"	40'-0"	45'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
15TH DROP SHAFT	40'-0"	44'-0"	49'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
11TH DROP SHAFT	36'-0"	40'-0"	45'-0"	TYPE 2 LINER PLATE (SEE DETAIL 2/S-101) 'X' LINER PLATE WITH W8 STEEL RIBS @ 4' VERT. SPA.	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
RIVER LAUNCH SHAFT	40'-0"	44'-0"	49'-0"	TYPE 1 SECANT SHAFT (SEE DETAIL 1/S-101) (XX) 39.4" DIA. SECANT PILES	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
BRUSHY DROP SHAFT	36'-0"	40'-0"	45'-0"	TYPE 1 SECANT SHAFT (SEE DETAIL 1/S-101) (XX) 39.4" DIA. SECANT PILES	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE
CESAR CHAVEZ LAUNCH SHAFT	40'-0"	44'-0"	49'-0"	TYPE 1 SECANT SHAFT (SEE DETAIL 1/S-101) (XX) 39.4" DIA. SECANT PILES	#8 ROCK DOWELS (X' LONG) @ X SPA. WITH 6" THK. SHOTCRETE



3 SHAFT INITIAL SUPPORT PLAN IN ROCK
 S-103 NOT TO SCALE

NOTES:

1. THIS DRAWING SHOWS TYPICAL SHAFT INITIAL SUPPORT LAYOUT IN ROCK AND APPLIES TO ALL CIRCULAR SHAFT LOCATIONS. SEE THE SHAFT INITIAL SUPPORT SCHEDULE ON DRAWING S-101 FOR SHAFT DIMENSIONS, INITIAL SUPPORT TYPE, AND SIZES AT EACH LOCATION. SHAFT CONNECTIONS TO TUNNEL ADITS, STARTER/TAIL TUNNELS, OR THE MAIN TUNNEL ARE NOT SHOWN IN PLAN VIEW ON THIS DRAWING.

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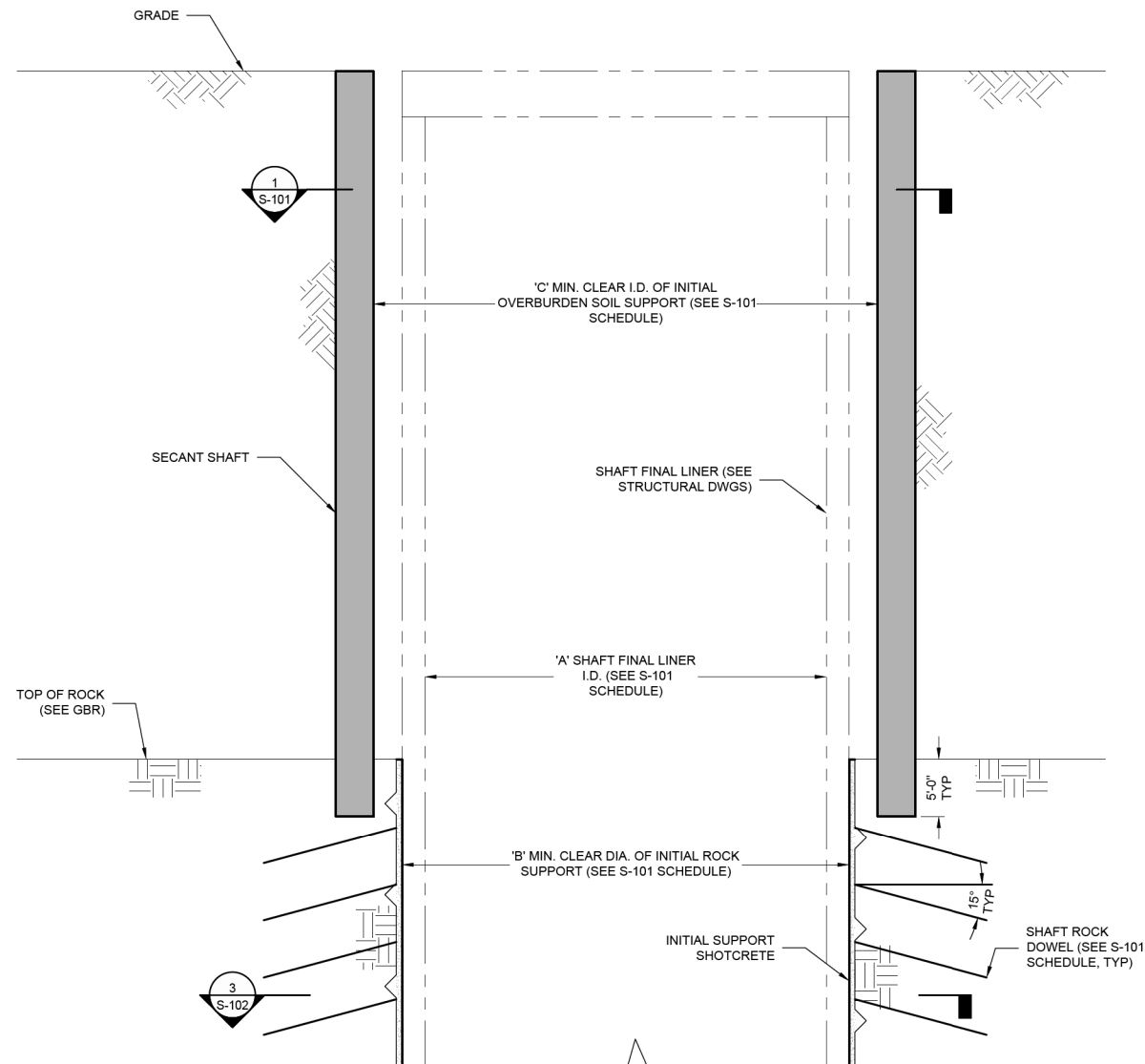
SHAFT INITIAL SUPPORT
 PLAN VIEWS

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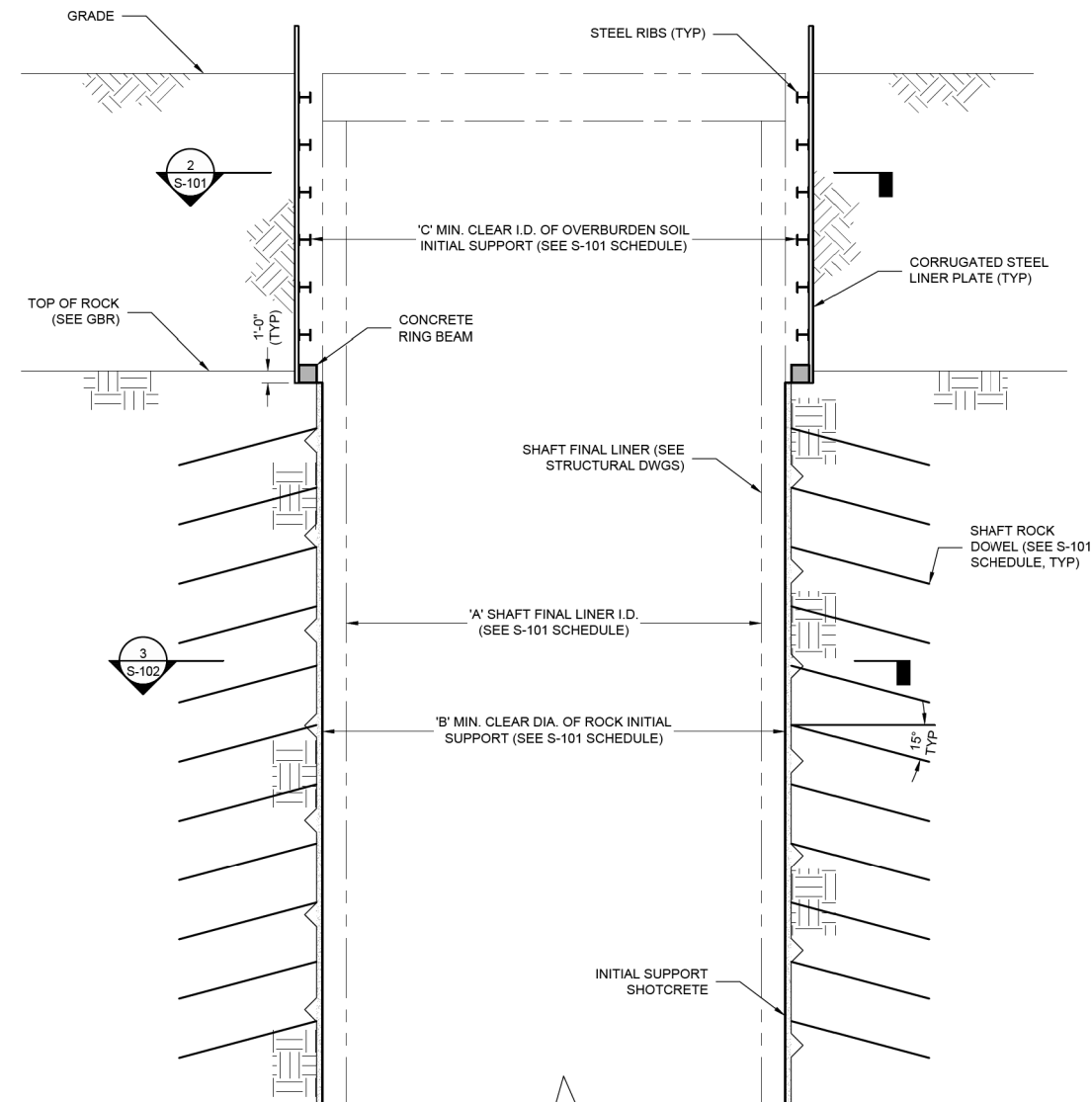
SHEET 2 OF 2

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-102.PDF.dgn	



A SECTION VIEW
 S-101
 S-102
 NOT TO SCALE

SEE SHAFT TO TUNNEL CONNECTION DRAWINGS



B SECTION VIEW
 S-101
 S-102
 NOT TO SCALE

SEE SHAFT TO TUNNEL CONNECTION DRAWINGS

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2			
1			

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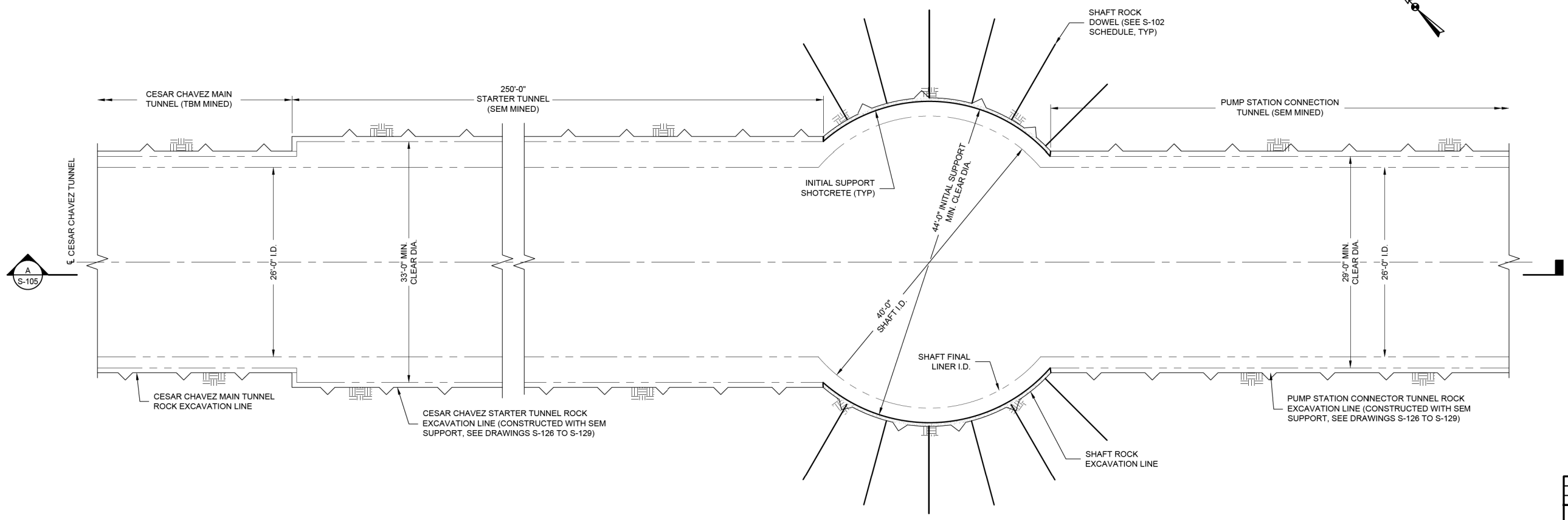
CAPITAL EXPRESS CENTRAL

SHAFT INITIAL SUPPORT
 SECTION VIEW

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-103 PDF.dgn	

NOTES:
1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.



1
S-105 CESAR CHAVEZ LAUNCH SHAFT PLAN
SCALE: 1/8"=1'-0"

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CAPITAL EXPRESS CENTRAL
CESAR CHAVEZ
LAUNCH SHAFT PLAN

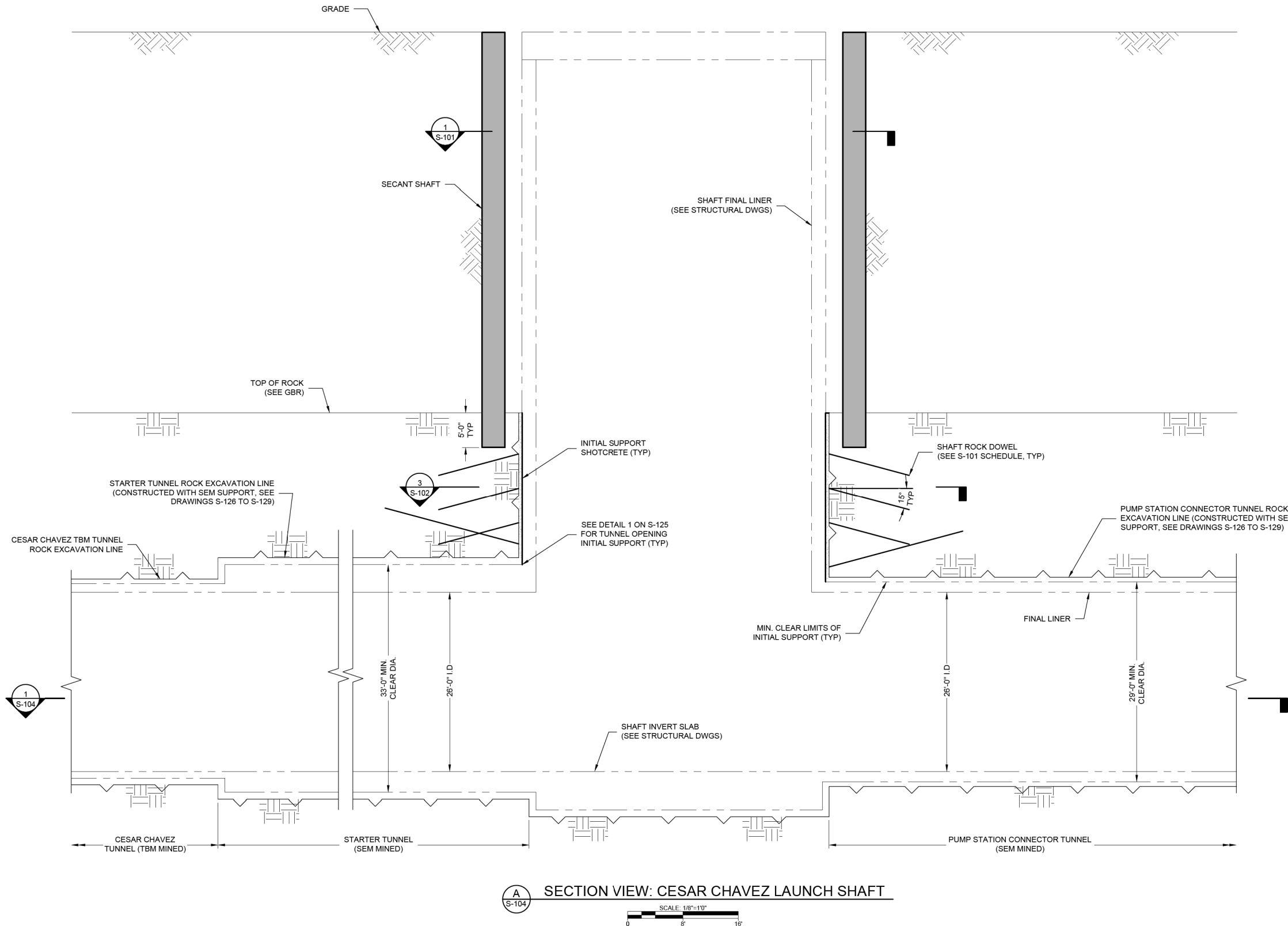
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SHEET 1 OF 1


CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-104.PDF.dgn	

NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.

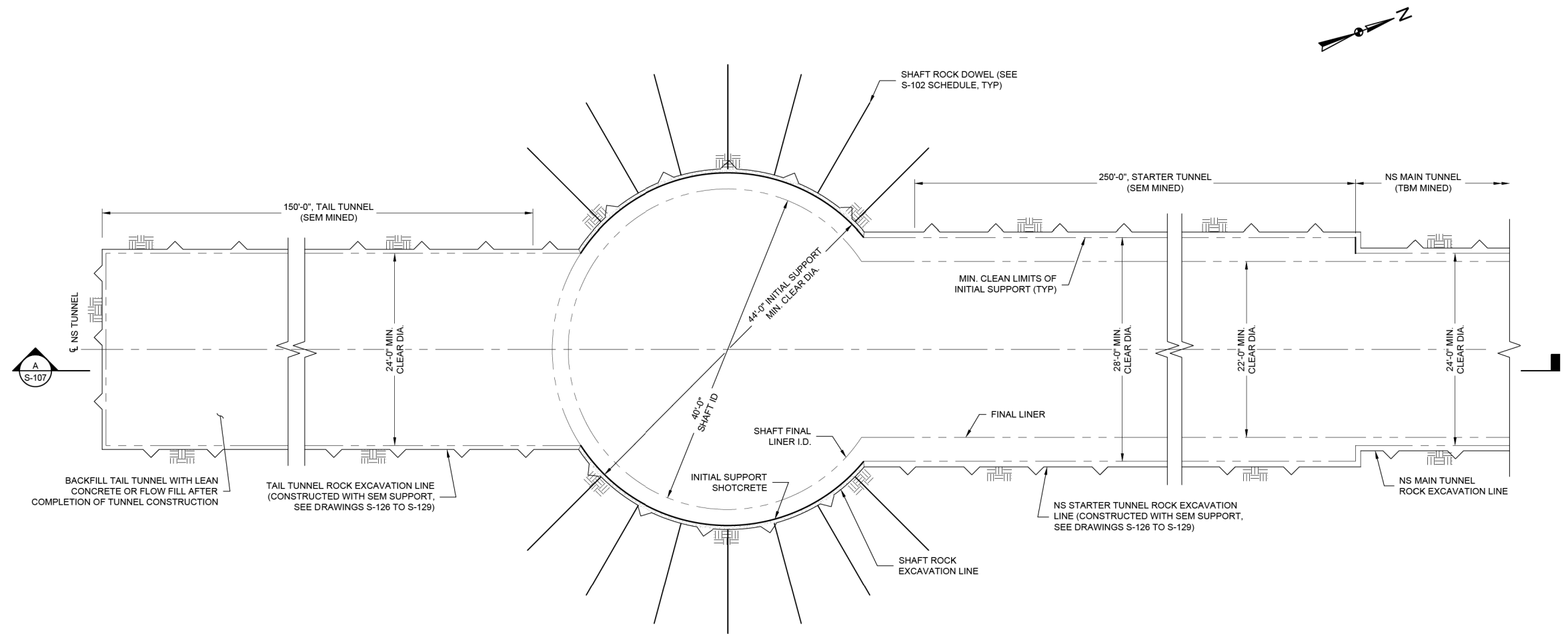


SECTION VIEW: CESAR CHAVEZ LAUNCH SHAFT
 SCALE: 1/8"=1'-0"
 0 8 16

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CAPITAL EXPRESS CENTRAL CESAR CHAVEZ LAUNCH SHAFT CROSS SECTIONS			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-105 PDF.dgn	

30% DESIGN
 NOT FOR CONSTRUCTION


NOTES:
1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.



5 RIVER LAUNCH SHAFT AND TAIL/STARTER TUNNEL PLAN
SCALE: 1/8"=10'

NO.	DATE	REVISION	APPR BY
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RIVER LAUNCH SHAFT PLAN

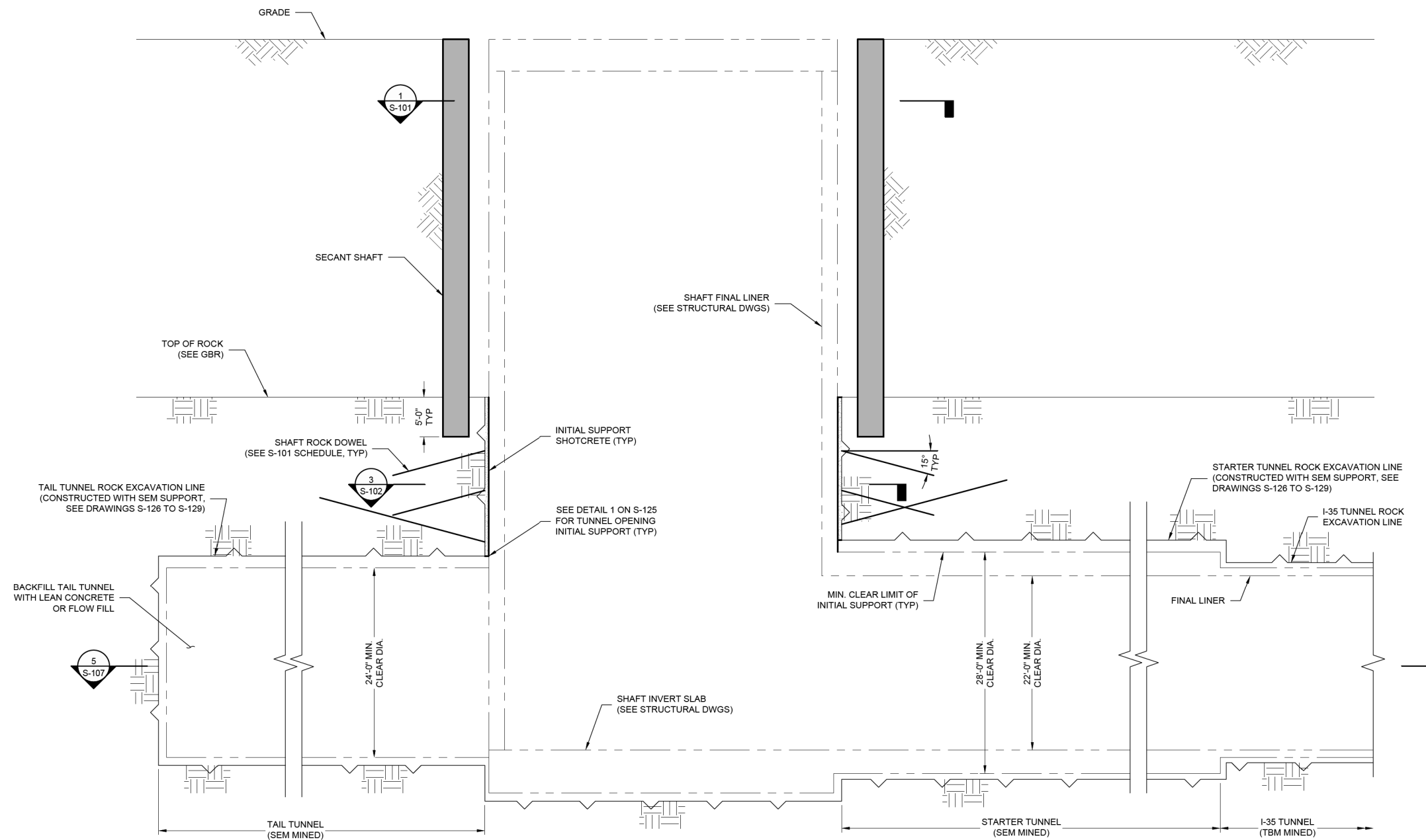
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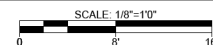
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-106 PDF.dgn	

- NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.



A SECTION VIEW: RIVER LAUNCH SHAFT



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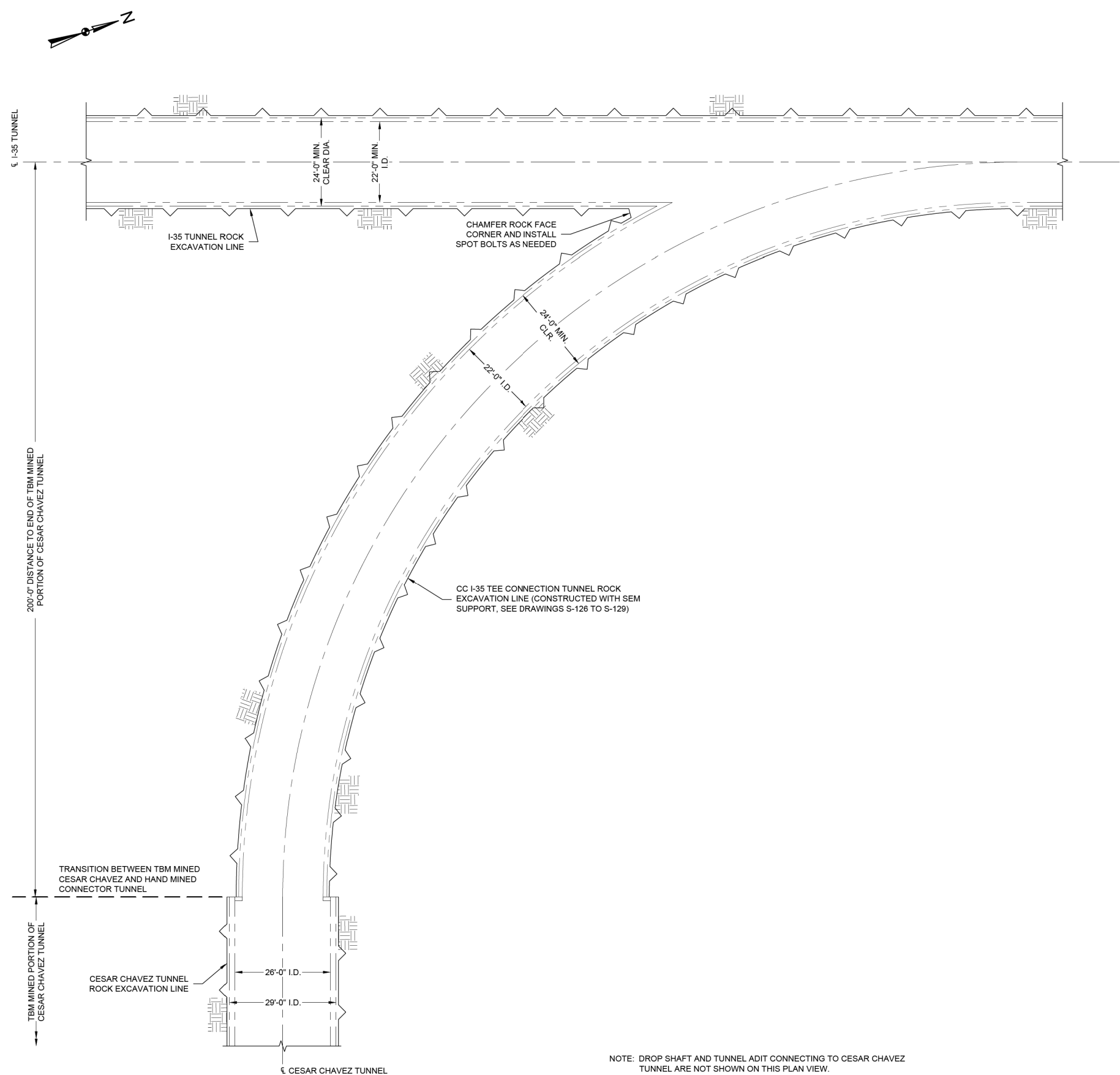
**RIVER LAUNCH SHAFT
 INITIAL SUPPORT
 SECTION VIEW**

30% DESIGN
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SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-107 PDF.dgn	



- NOTES:
- TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.

200'-0" DISTANCE TO END OF TBM MINED PORTION OF CESAR CHAVEZ TUNNEL

TRANSITION BETWEEN TBM MINED CESAR CHAVEZ AND HAND MINED CONNECTOR TUNNEL

TBM MINED PORTION OF CESAR CHAVEZ TUNNEL

1 CC I-35 TEE CONNECTION TUNNEL PLAN



NOTE: DROP SHAFT AND TUNNEL ADIT CONNECTING TO CESAR CHAVEZ TUNNEL ARE NOT SHOWN ON THIS PLAN VIEW.

30% DESIGN
 NOT FOR CONSTRUCTION



NO.	DATE	REVISION	APPR BY
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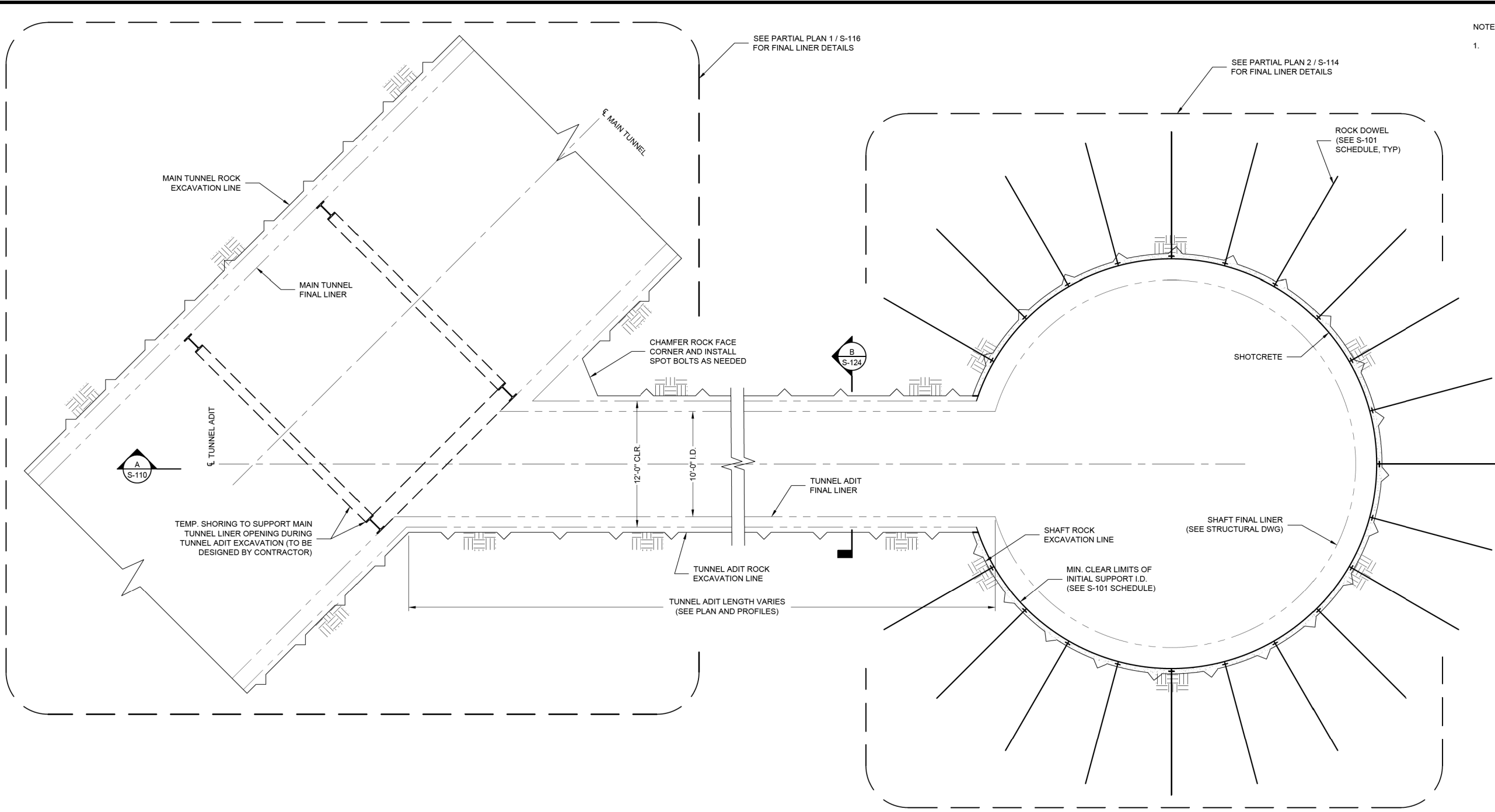
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CAPITAL EXPRESS CENTRAL

CC I-35 TEE CONNECTION TUNNEL PLAN

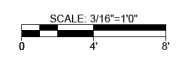
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-108 PDF.dgn	



NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.

5 TYPICAL DROP SHAFT AND TUNNEL ADIT INITIAL SUPPORT PLAN



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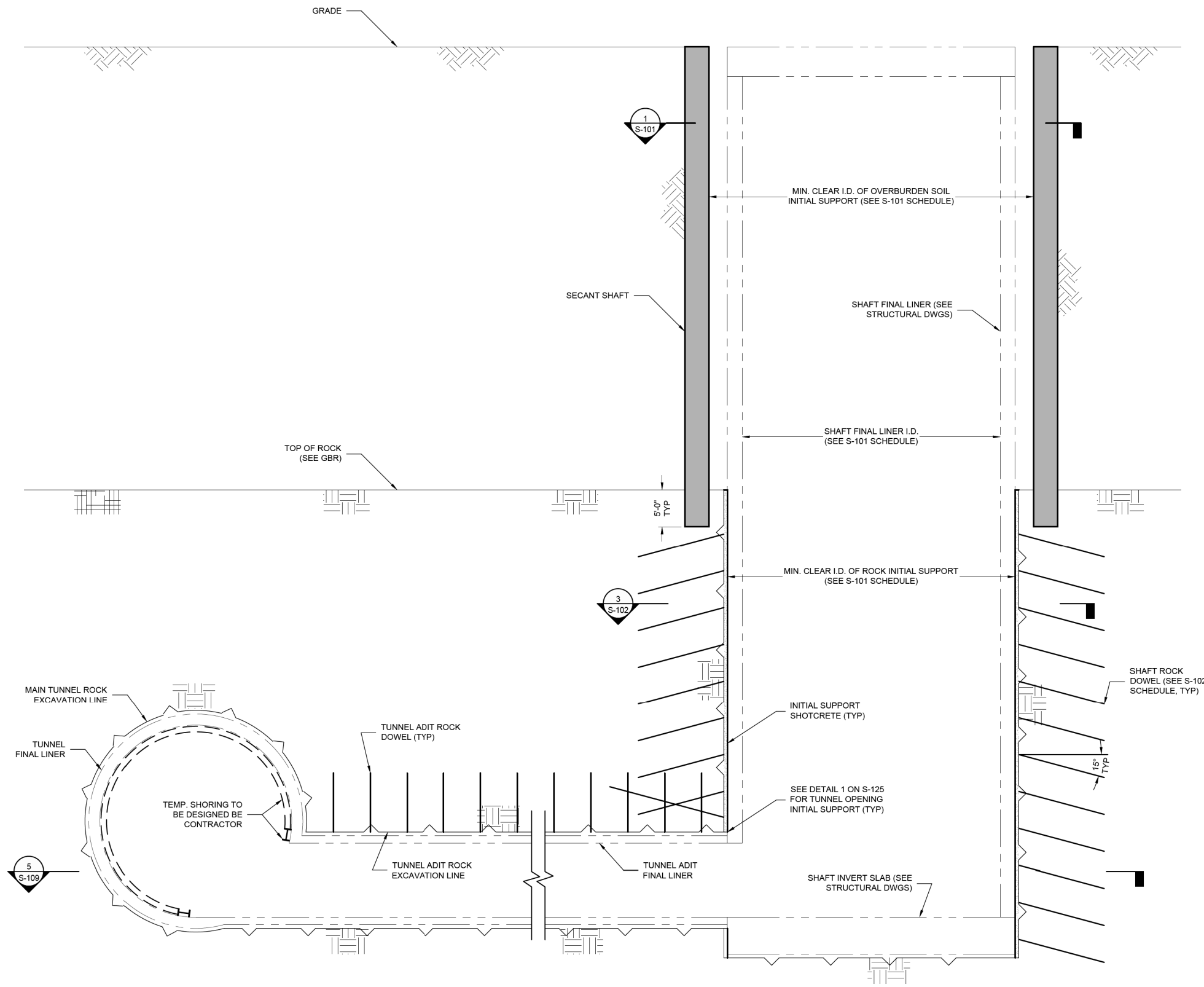
TYPICAL DROP SHAFT
 AND TUNNEL ADIT
 INITIAL SUPPORT PLAN VIEW

30% DESIGN
 NOT FOR CONSTRUCTION



SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	S-109 PDF.dgn



A SECTION VIEW: DROP SHAFT AND TUNNEL ADIT

SCALE: 1/8"=1'-0"

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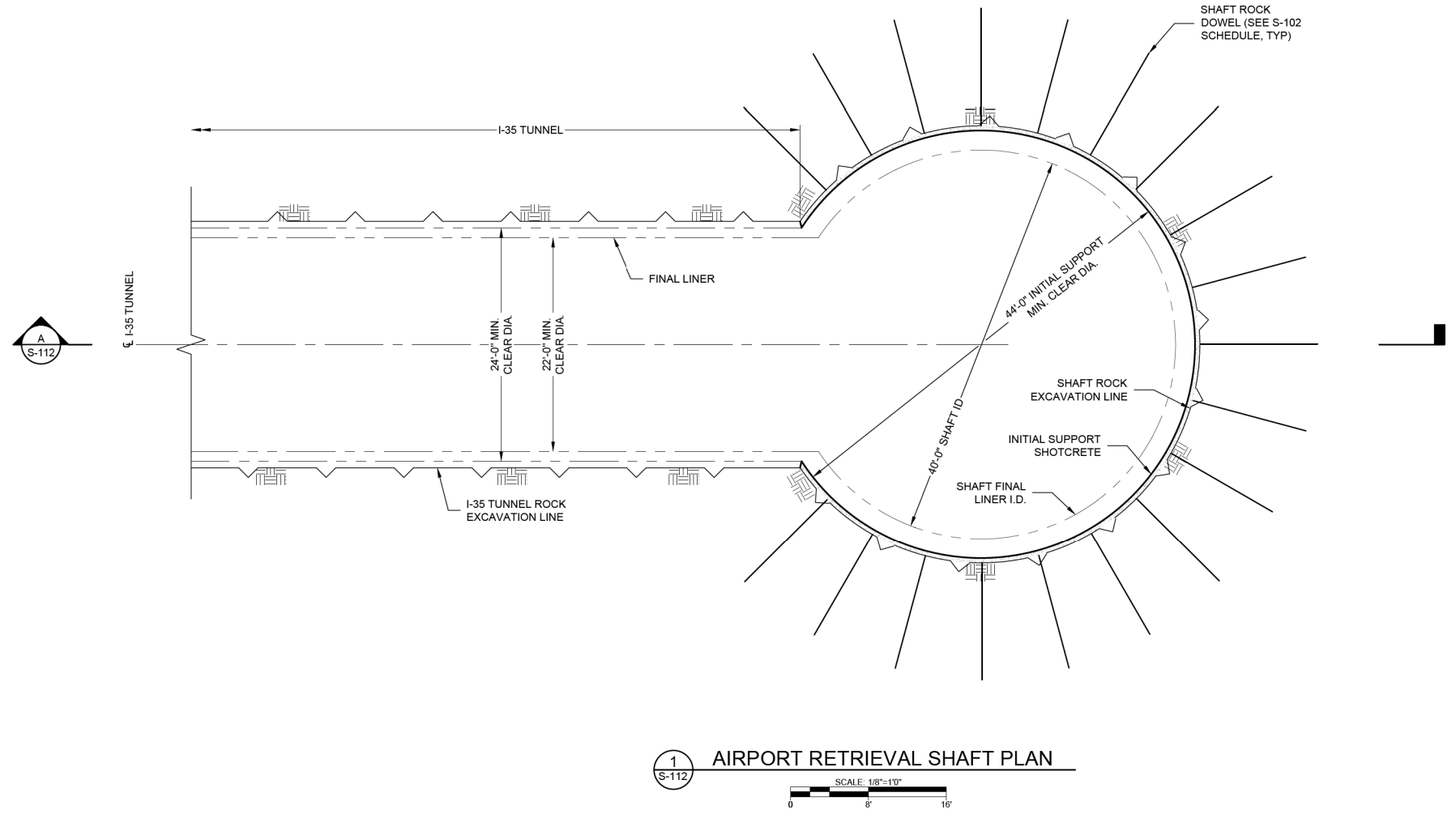
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**DROP SHAFT
 INITIAL SUPPORT
 SECTION VIEW**

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-110 PDF.dgn	

NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.



1 AIRPORT RETRIEVAL SHAFT PLAN
 S-112
 SCALE: 1/8"=1'-0"

NO.	DATE	REVISION	APPR BY
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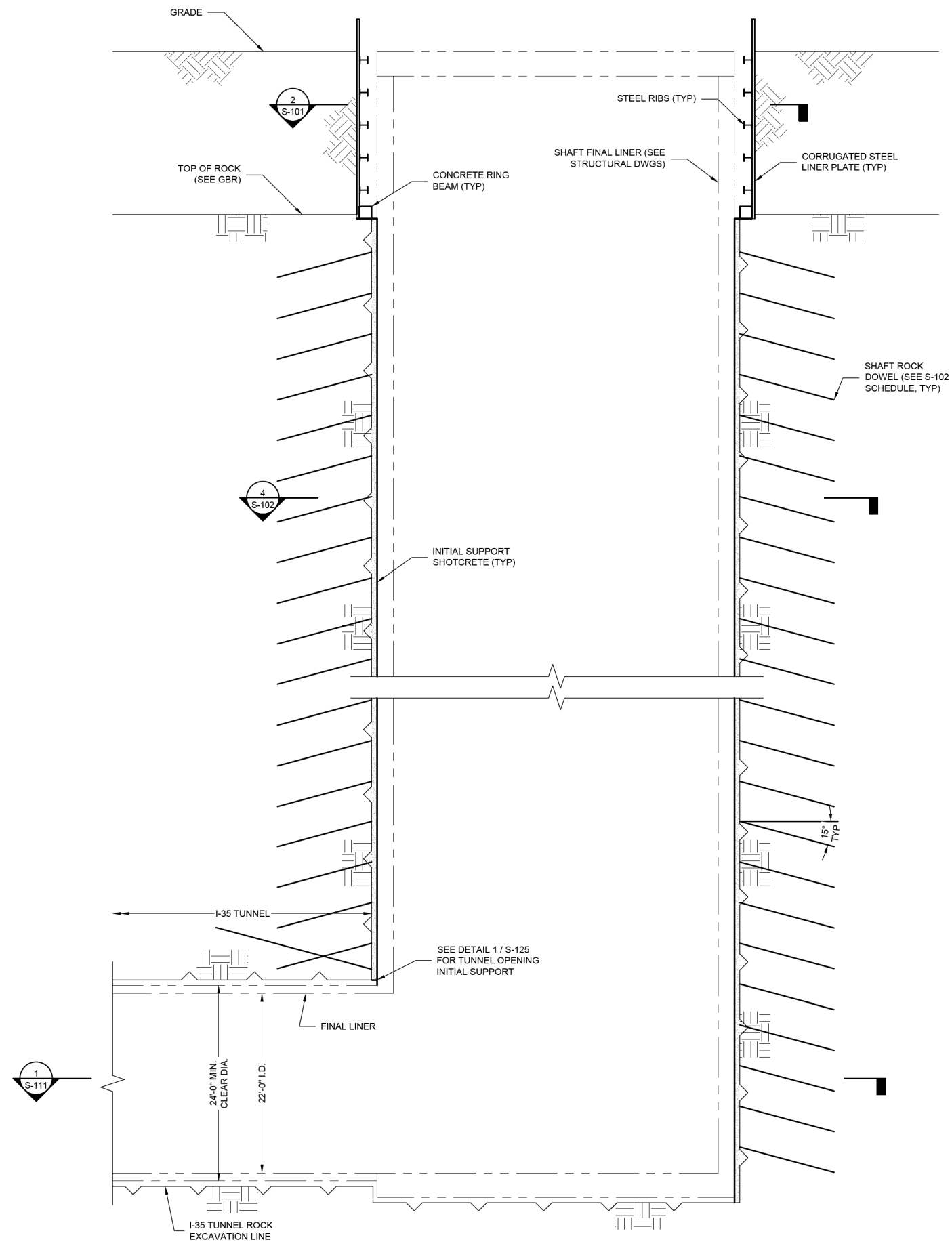
CAPITAL EXPRESS CENTRAL
AIRPORT RETRIEVAL SHAFT
INITIAL SUPPORT
PLAN

30% DESIGN
 NOT FOR CONSTRUCTION



SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-111.PDF.dgn	



NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.

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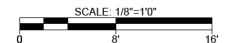
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
AIRPORT RETRIEVAL SHAFT
INITIAL SUPPORT
SECTION VIEW

30% DESIGN
 NOT FOR CONSTRUCTION

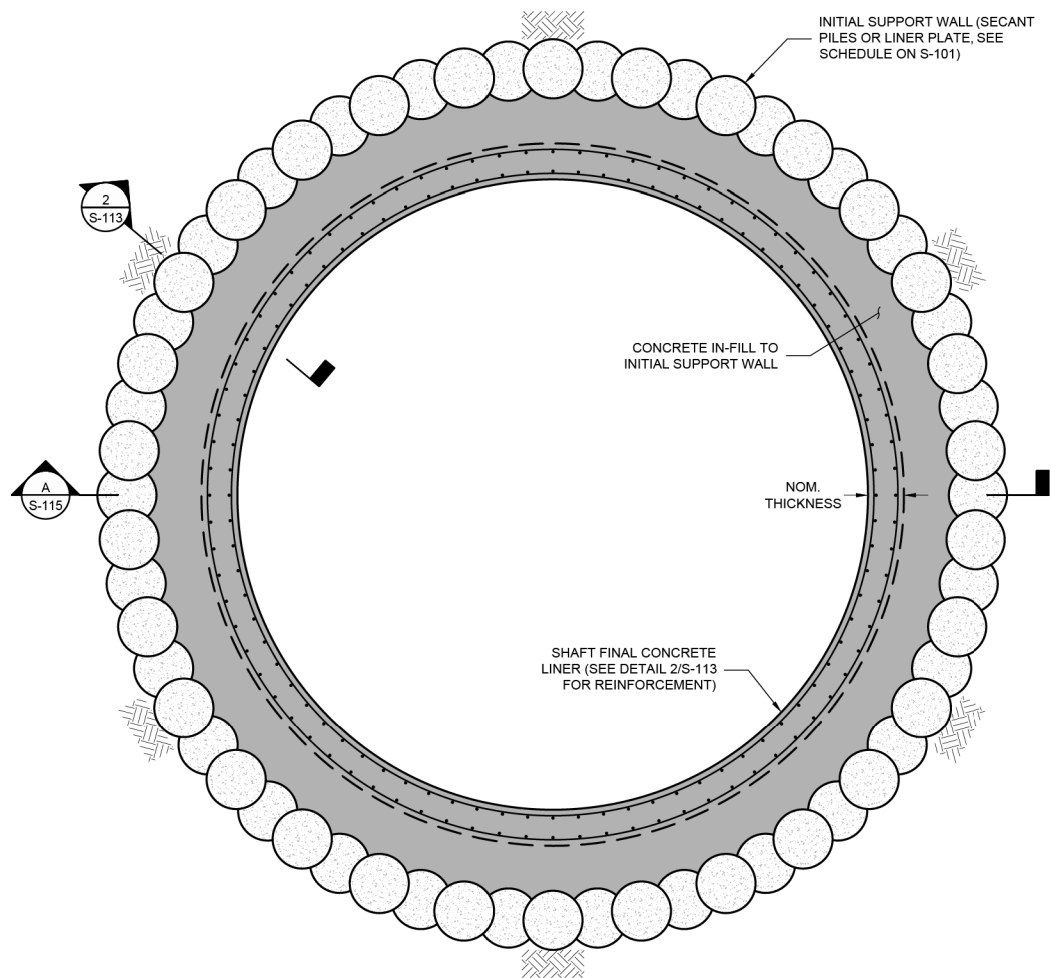


SECTION VIEW: AIRPORT RETRIEVAL SHAFT

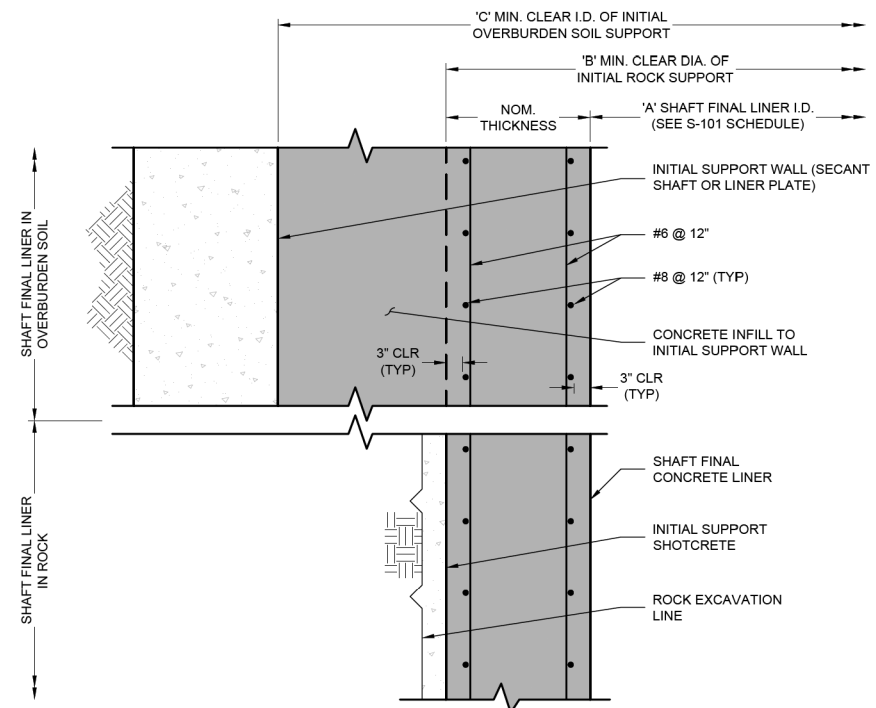


SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-112 PDF.dgn	



1 TYPICAL SHAFT FINAL LINER PLAN IN OVERBURDEN SOIL
 NOT TO SCALE



2 TYPICAL SHAFT FINAL LINER DETAIL
 SCALE: 3/4"=1'0"

- NOTES:
- THIS DRAWING SHOWS THE TYPICAL SHAFT FINAL LINER LAYOUT AND APPLIES TO CIRCULAR SHAFT LOCATIONS. SEE THE SHAFT SCHEDULE ONS-101 FOR SHAFT DIMENSIONS.

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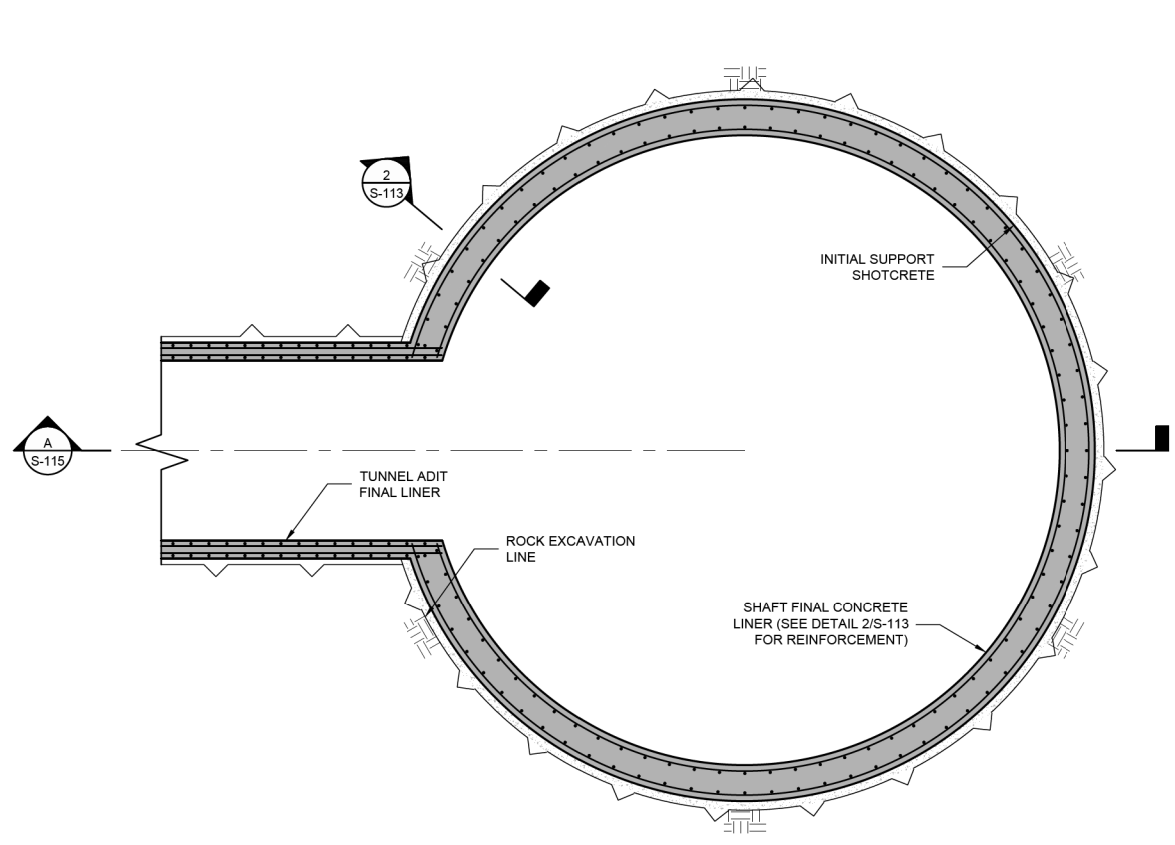
SHAFT
 FINAL LINER
 PLAN VIEWS

30% DESIGN
 NOT FOR CONSTRUCTION

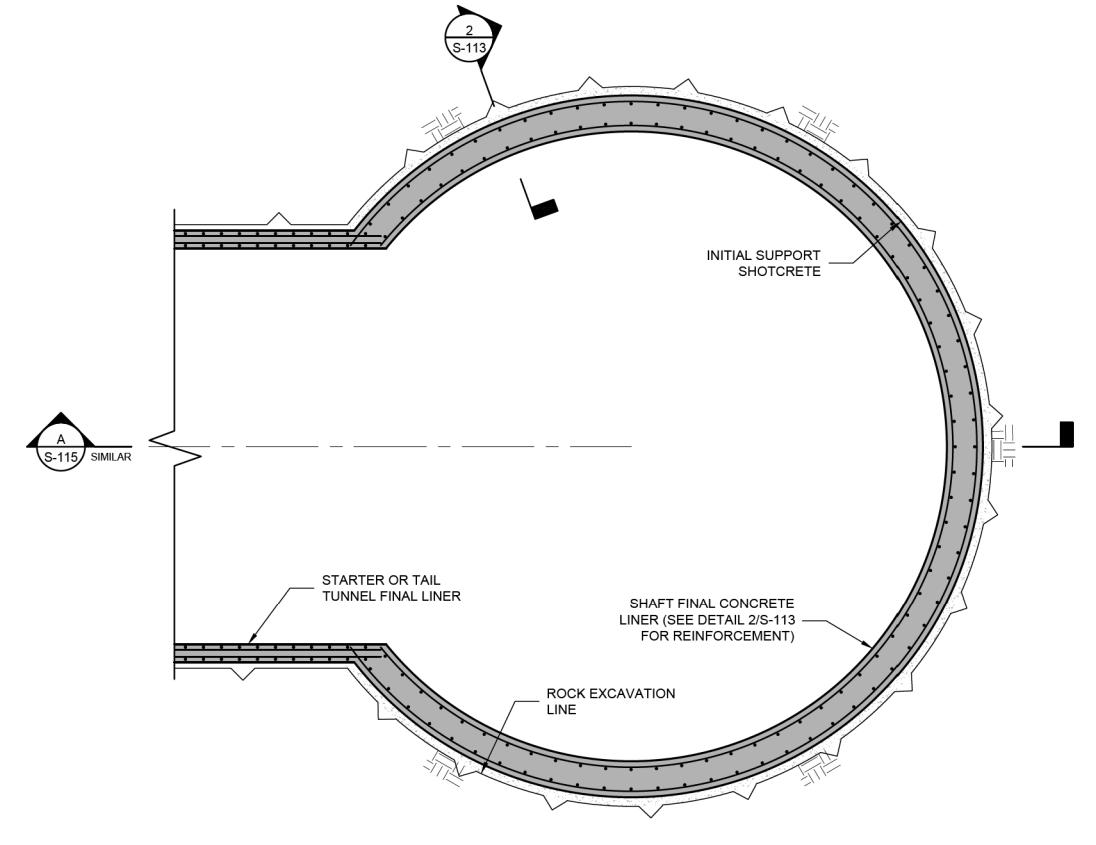


SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-113 PDF.dgn	



2 TYPICAL SHAFT FINAL LINER PLAN AT TUNNEL ADIT CONNECTION
 NOT TO SCALE



3 TYPICAL SHAFT FINAL LINER PLAN AT STARTER/TAIL TUNNEL CONNECTION
 NOT TO SCALE

- NOTES:
1. THIS DRAWING SHOWS THE TYPICAL SHAFT FINAL LINER LAYOUT AND APPLIES TO CIRCULAR SHAFT LOCATIONS. SEE THE SHAFT SCHEDULE ON S-101 FOR SHAFT DIMENSIONS.
 2. INITIAL SUPPORT ROCK DOWELS ARE NOT SHOWN ON THESE FINAL LINER DRAWINGS FOR CLARITY.

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 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681



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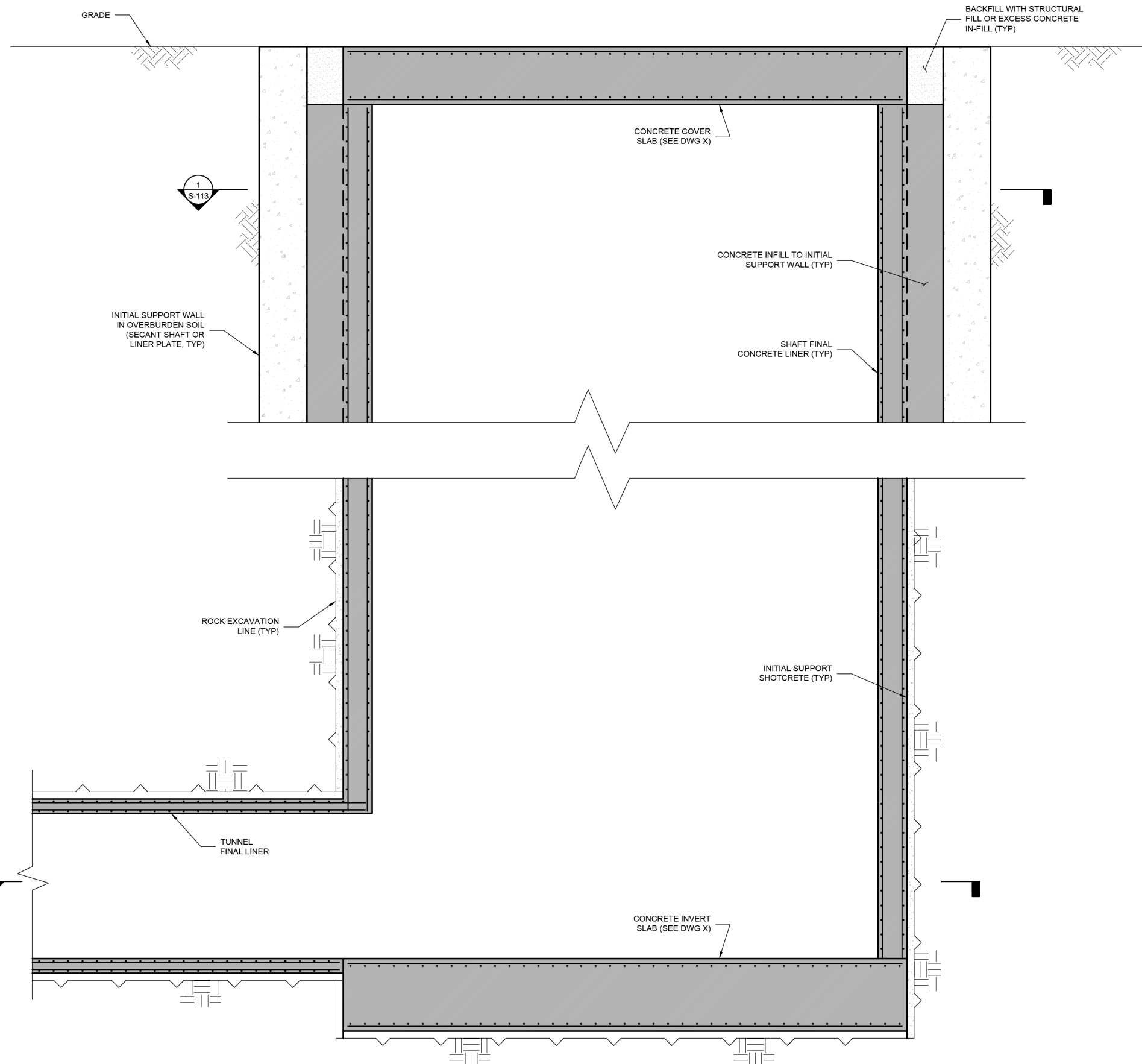
SHAFT
 FINAL LINER
 PLAN VIEWS

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CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-114.PDF.dgn	




NOTE: THIS SECTION VIEW SHOWS THE TYPICAL SHAFT CONNECTION TO TUNNEL ADITS. THE SHAFT CONNECTION TO STARTER/TAIL TUNNELS IS SIMILAR.

A SECTION VIEW
 NOT TO SCALE

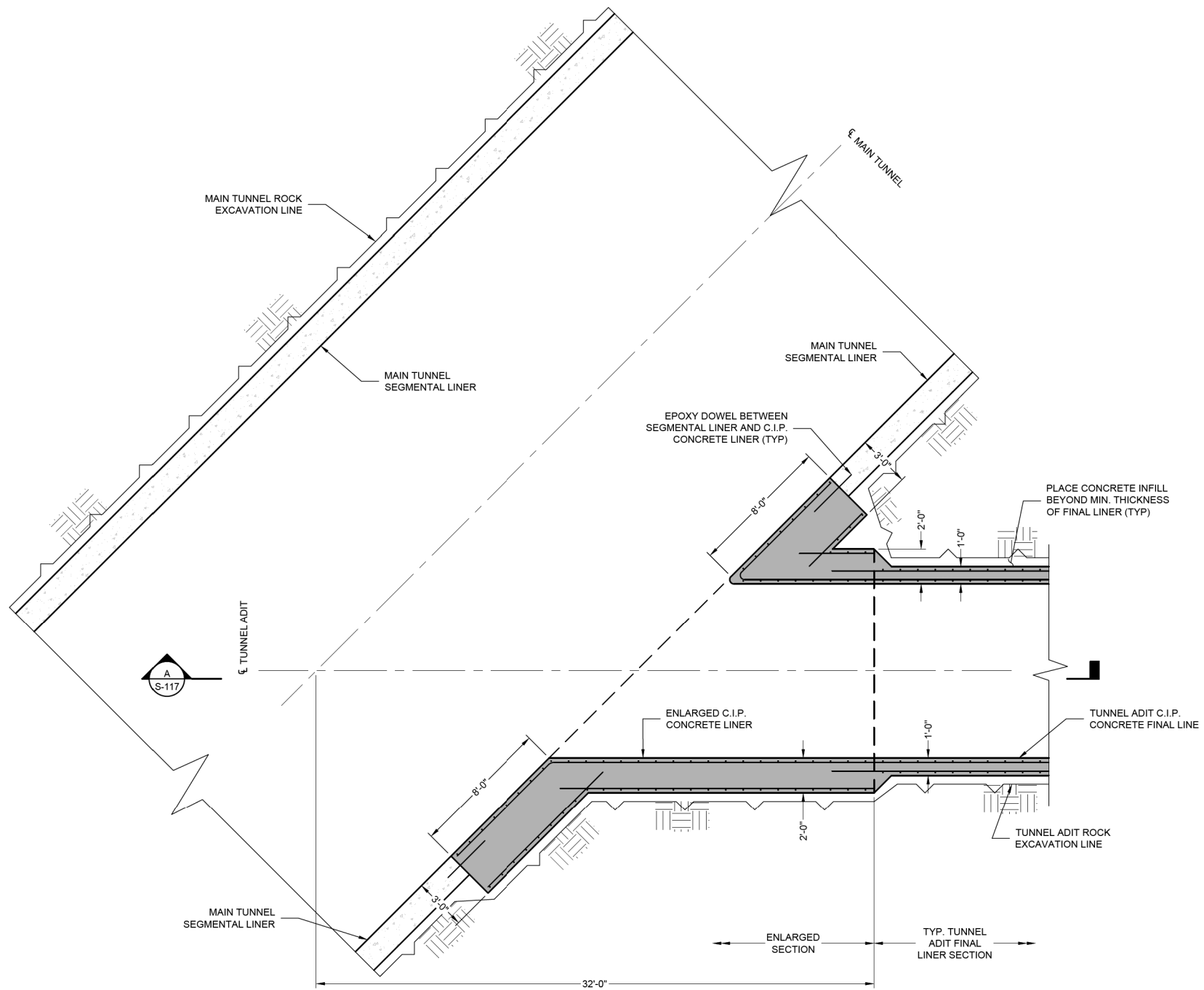
- NOTES:
1. THIS DRAWING SHOWS THE TYPICAL SHAFT FINAL LINER LAYOUT AND APPLIES TO CIRCULAR SHAFT LOCATIONS. SEE THE SHAFT SCHEDULE ON S-101 FOR SHAFT DIMENSIONS.
 2. INITIAL SUPPORT ROCK DOWELS ARE NOT SHOWN ON THESE FINAL LINER DRAWINGS FOR CLARITY.

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CAPITAL EXPRESS CENTRAL			
SHAFT FINAL LINER SECTION VIEW			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-115 PDF.dgn	

30% DESIGN
 NOT FOR CONSTRUCTION



- NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.



1 PARTIAL PLAN: TUNNEL ADIT CONNECTION FINAL LINER PLAN
 SCALE: 1/4"=1'-0"

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mobility CAPITAL AREA **35**

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CAPITAL EXPRESS CENTRAL
TUNNEL ADIT CONNECTION
FINAL LINER
DETAILS

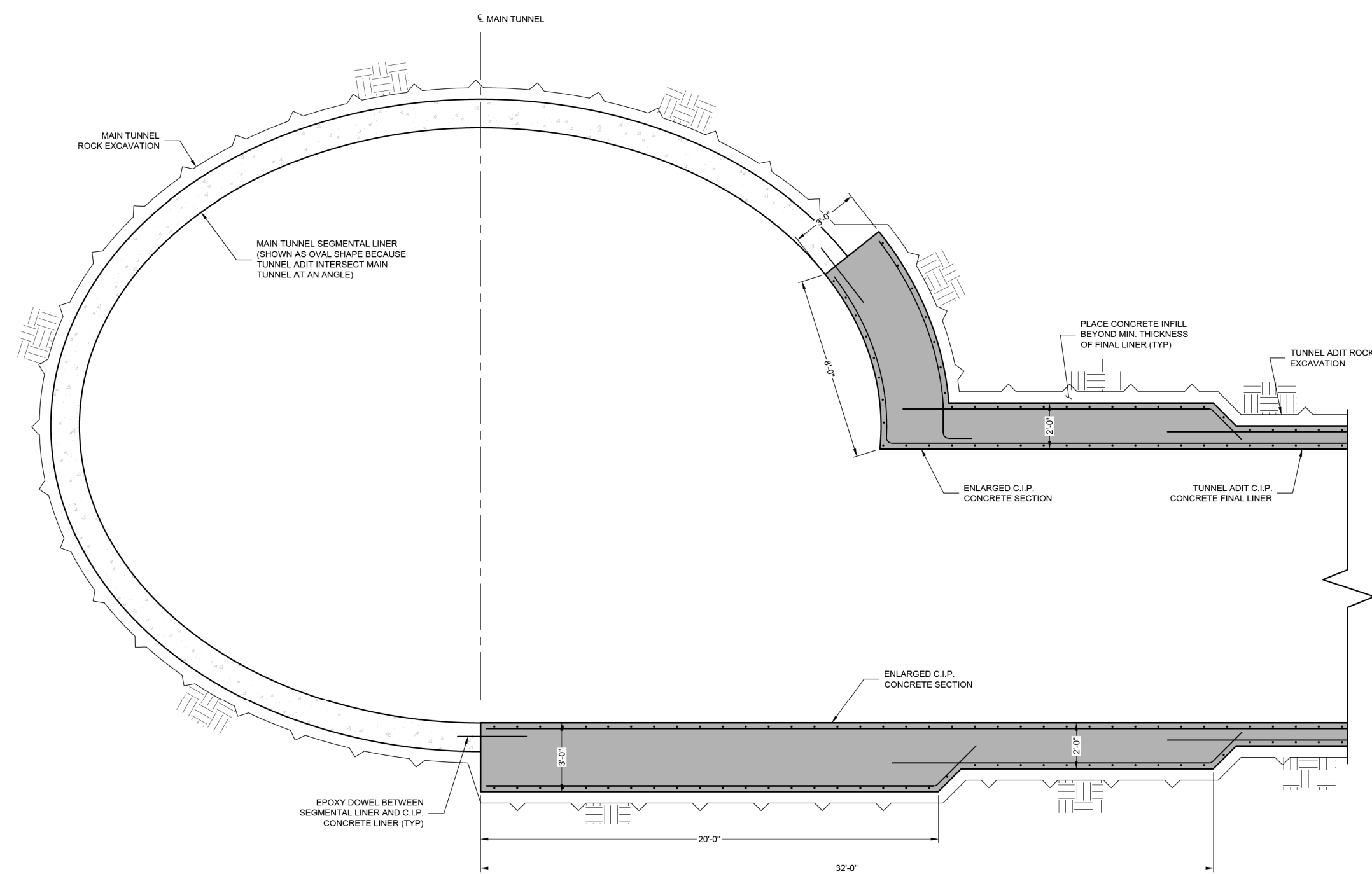
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 NOT FOR CONSTRUCTION

Schnabel
 ENGINEERING

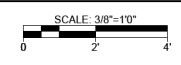
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-116 PDF.dgn	

- NOTES:
 1. TUNNEL INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.



A SECTION VIEW: TUNNEL ADIT CONNECTION



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**CAPITAL EXPRESS CENTRAL
 TUNNEL ADIT CONNECTION
 FINAL LINER
 DETAILS**

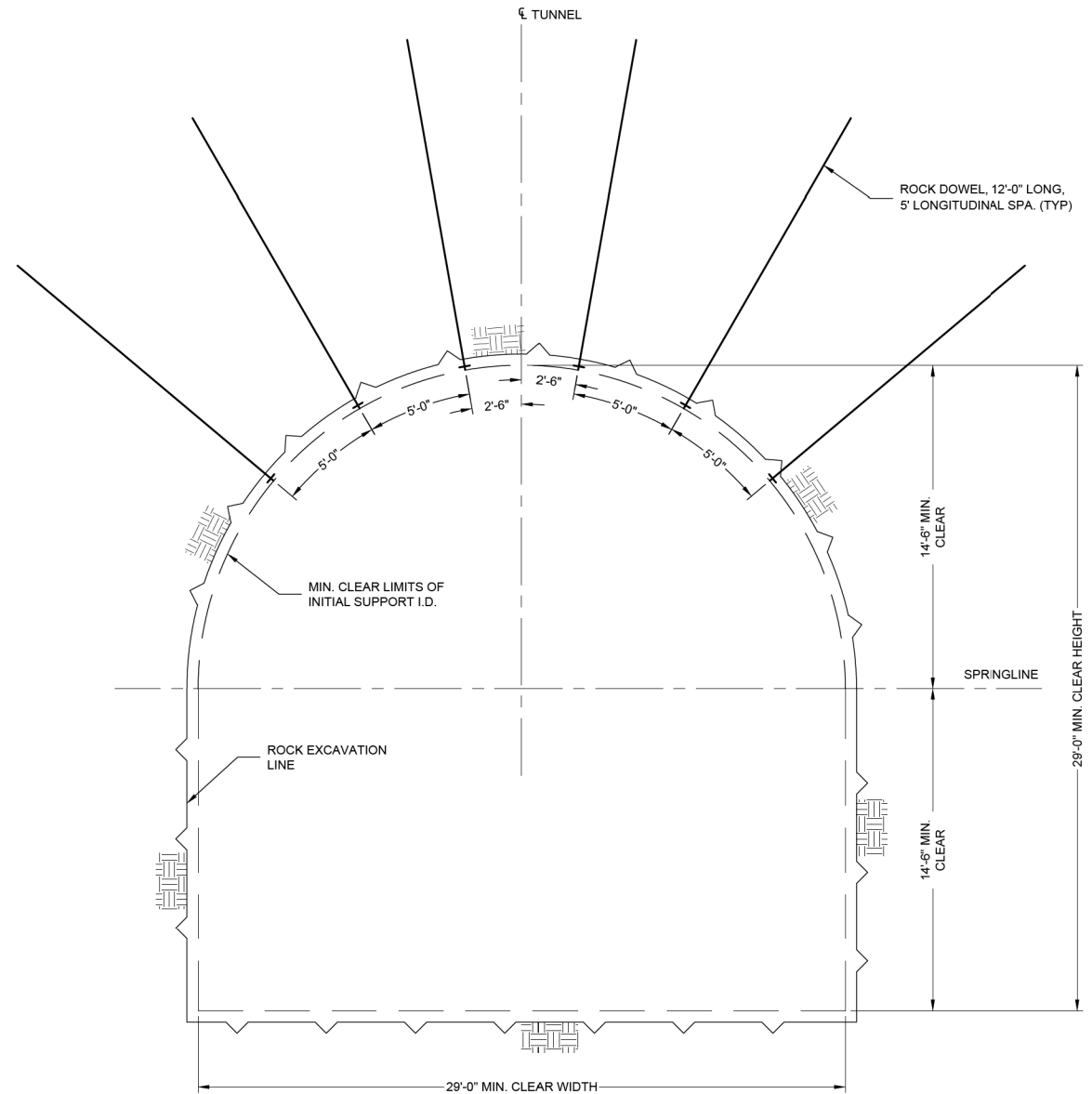
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SHEET 1 OF 1

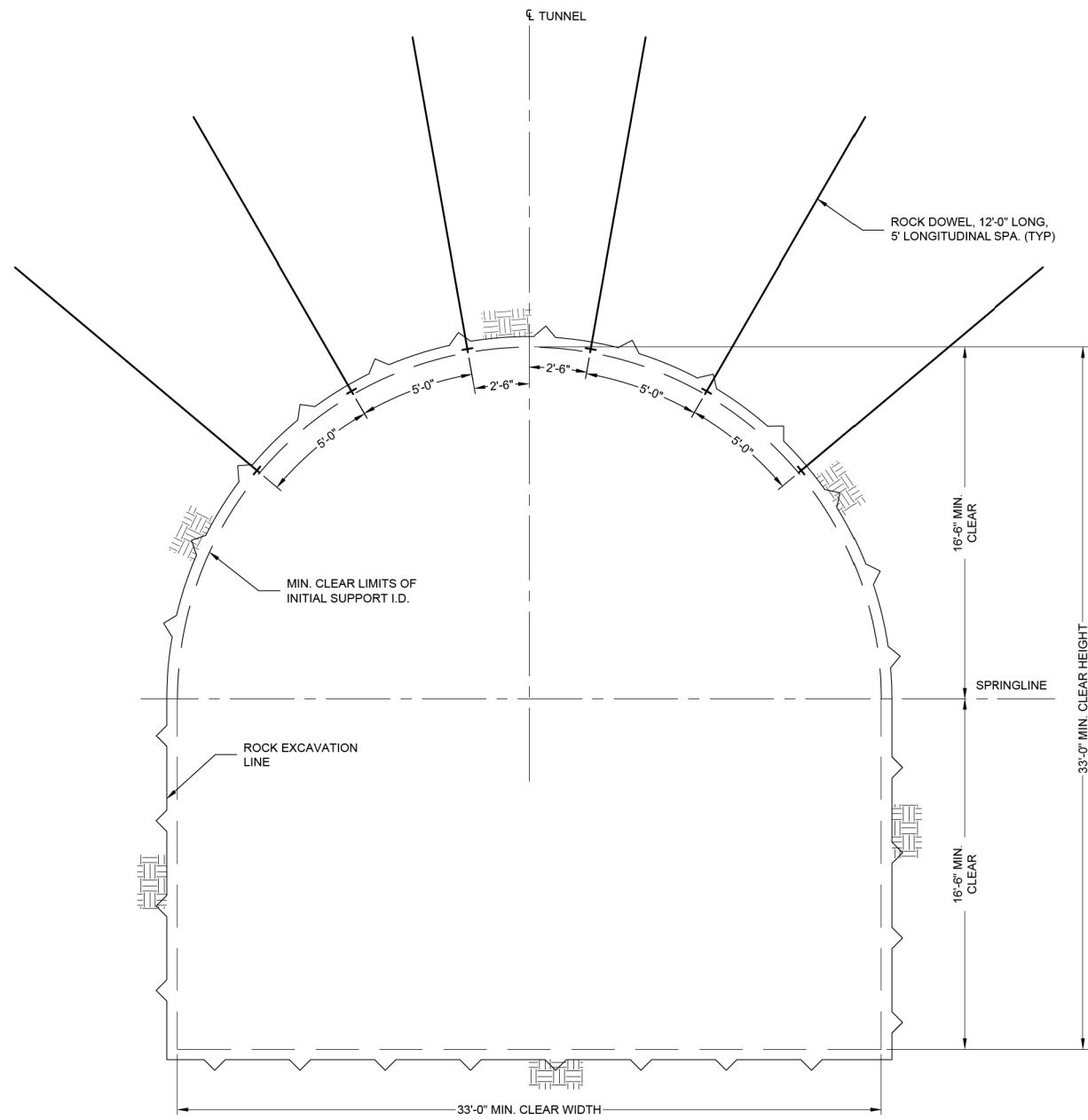
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	S-117 PDF.dgn

NOTES:
 1. THESE INITIAL SUPPORT DETAILS ARE SHOWN AS POTENTIAL OPTIONS AT 30% DESIGN LEVEL. THESE DETAILS WILL BE FURTHER REFINED AS DESIGN PROGRESSES.



NOTE: CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND SHALL INSTALL ROCK FALL PROTECTION INCLUDING WELDED WIRE MESH AS NEEDED.

A CESAR CHAVEZ TAIL TUNNEL INITIAL SUPPORT DETAIL
 SCALE: 1/4"=10'



NOTE: CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND SHALL INSTALL ROCK FALL PROTECTION INCLUDING WELDED WIRE MESH AS NEEDED.

B CESAR CHAVEZ STARTER TUNNEL INITIAL SUPPORT DETAIL
 SCALE: 1/4"=10'

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mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 CESAR CHAVEZ STARTER
 AND TAIL TUNNEL
 INITIAL SUPPORT DETAILS

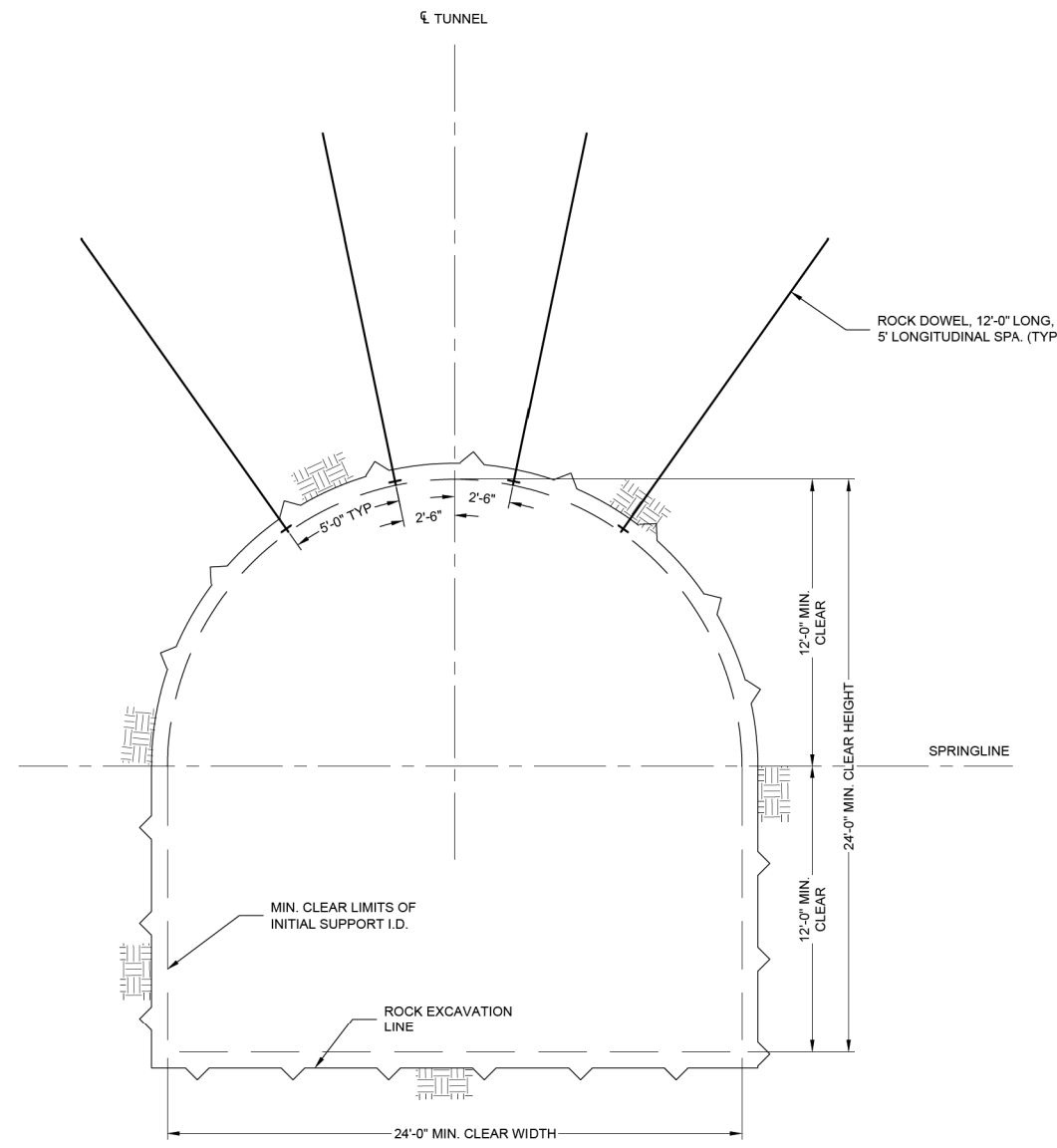
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 NOT FOR CONSTRUCTION



SHEET 1 OF 1

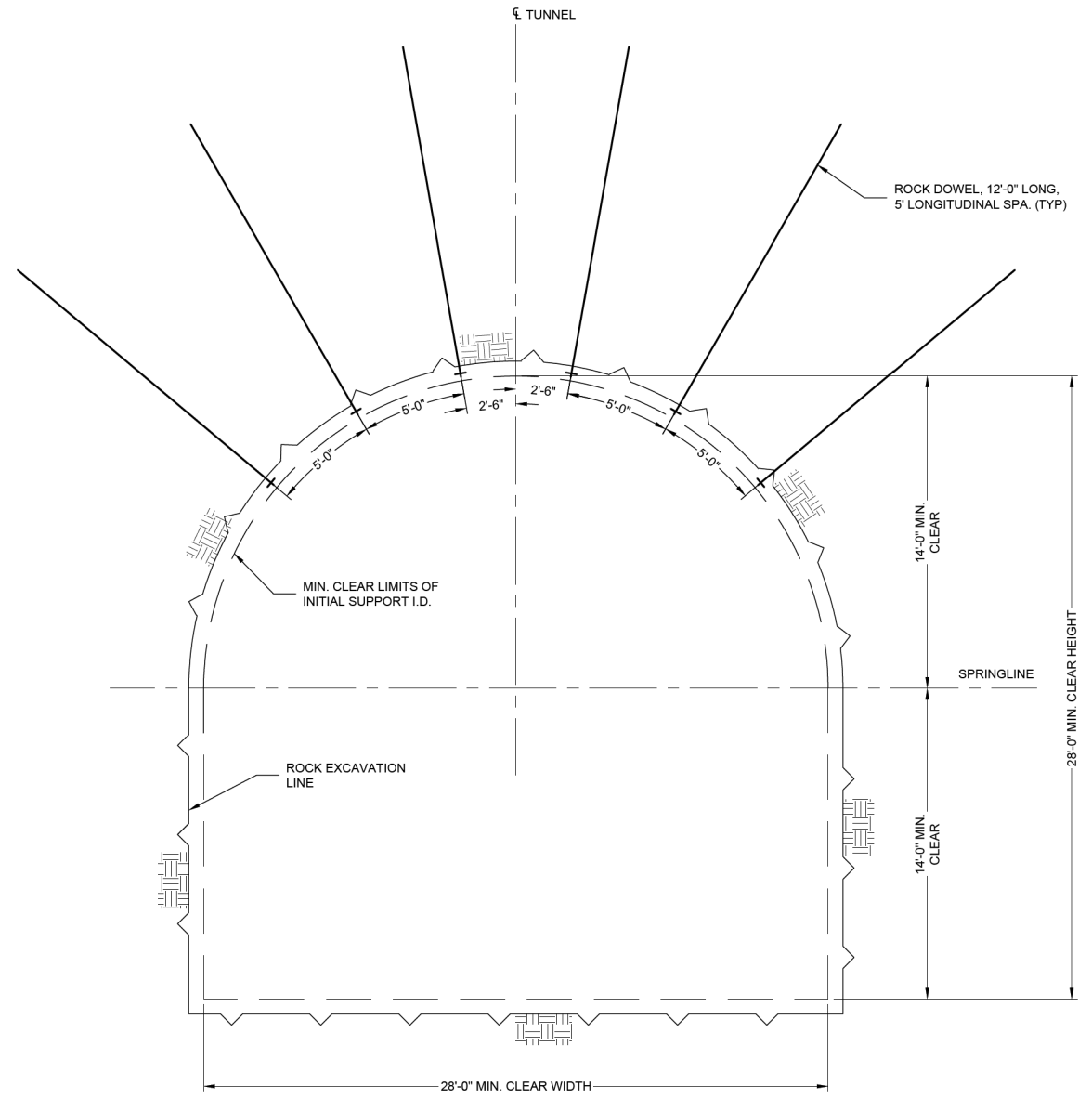
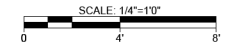
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-122 PDF.dgn	

- NOTES:
- THESE INITIAL SUPPORT DETAILS ARE SHOWN AS POTENTIAL OPTIONS AT 30% DESIGN LEVEL. THESE DETAILS WILL BE FURTHER REFINED AS DESIGN PROGRESSES.



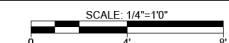
NOTE: CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND SHALL INSTALL ROCK FALL PROTECTION INCLUDING WELDED WIRE MESH AS NEEDED.

A I-35 TAIL TUNNEL INITIAL SUPPORT DETAIL



NOTE: CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND SHALL INSTALL ROCK FALL PROTECTION INCLUDING WELDED WIRE MESH AS NEEDED.

B I-35 STARTER TUNNEL INITIAL SUPPORT DETAIL



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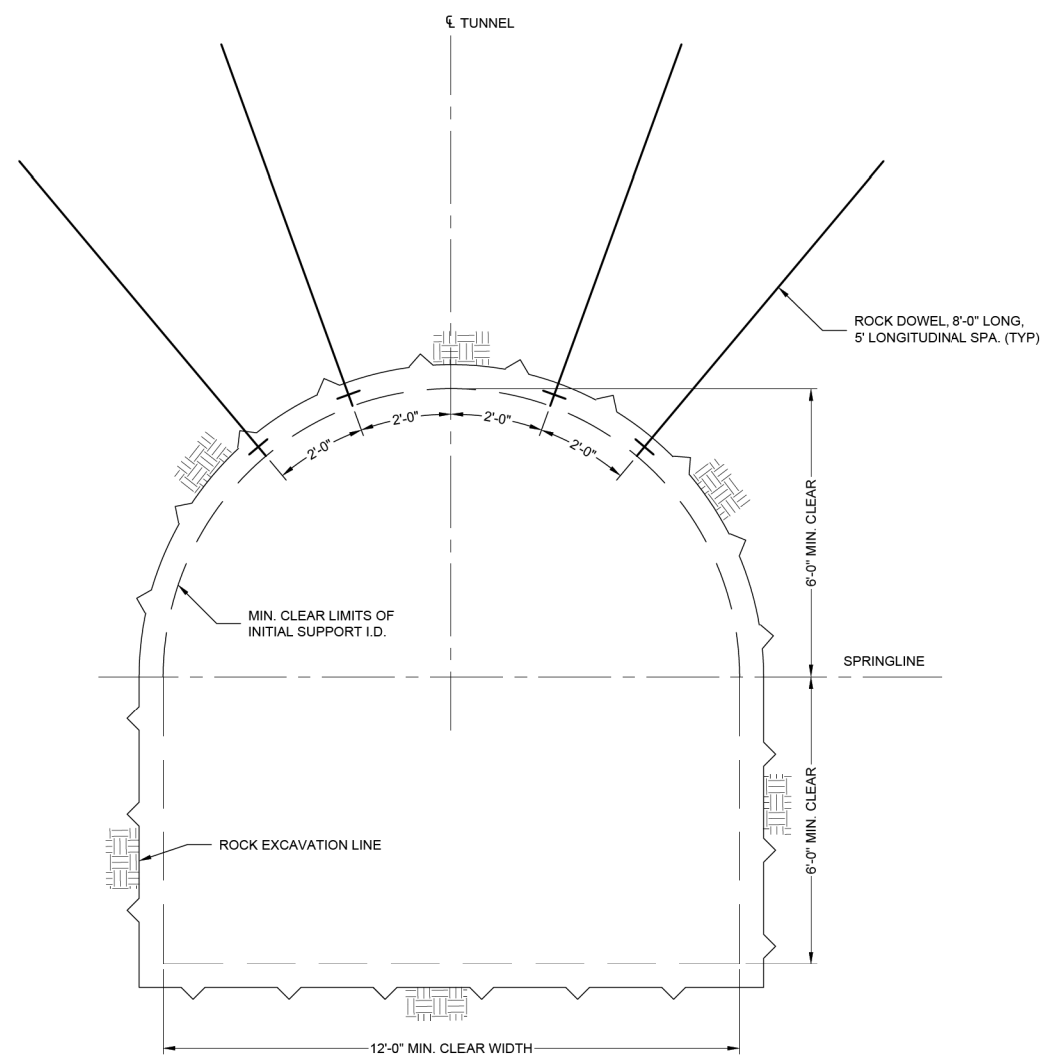


Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
I-35 STARTER AND ADIT TUNNEL
INITIAL SUPPORT
DETAILS

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-123 PDF.dgn	



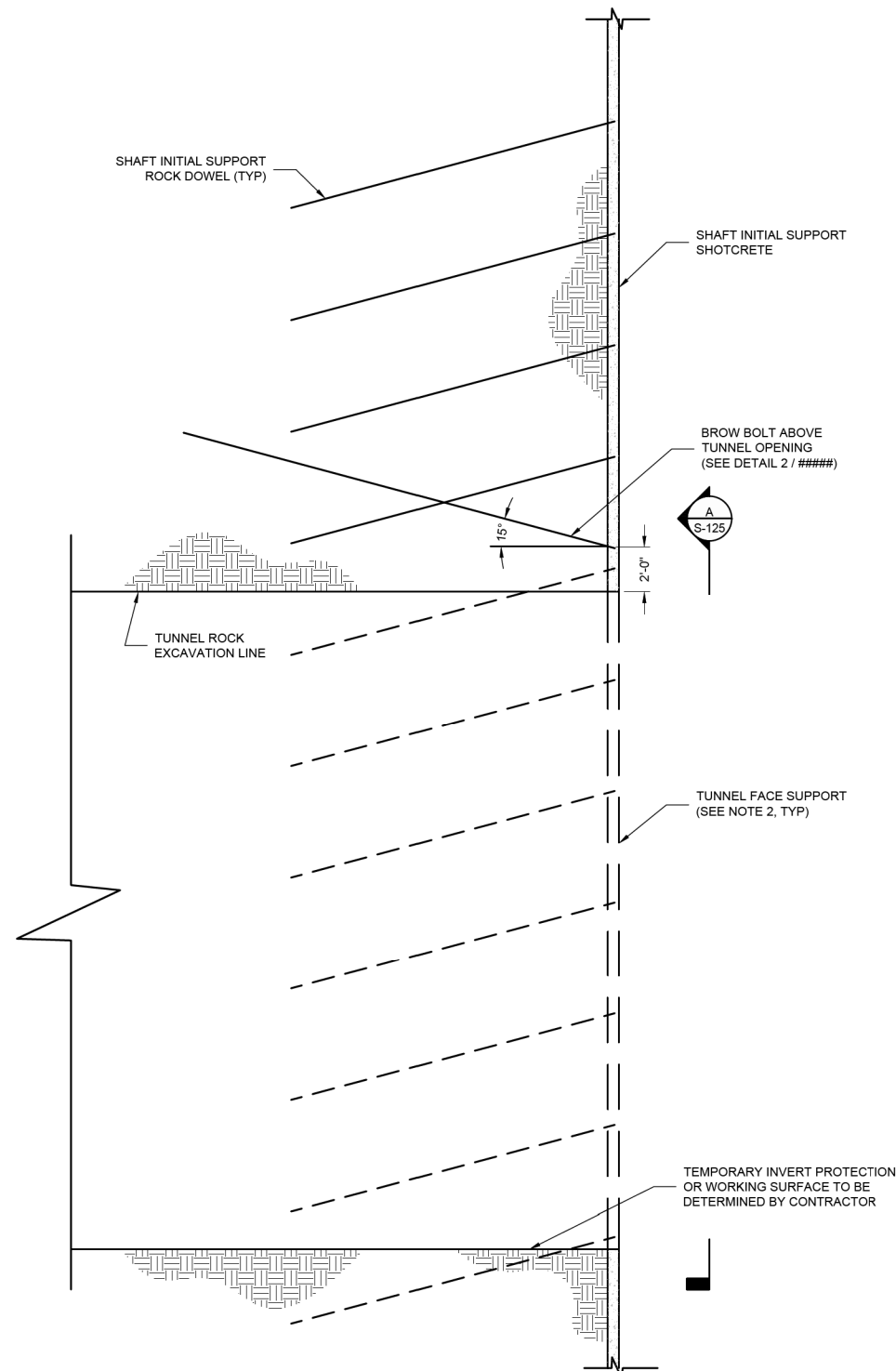
NOTE: CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND SHALL INSTALL ROCK FALL PROTECTION INCLUDING WELDED WIRE MESH AS NEEDED.

B SECTION VIEW: TUNNEL ADIT INITIAL SUPPORT
SCALE: 1/4"=10'
0 4 8

- NOTES:
1. THESE INITIAL SUPPORT DETAILS ARE SHOWN AS POTENTIAL OPTIONS AT 30% DESIGN LEVEL. THESE DETAILS WILL BE FURTHER REFINED AS DESIGN PROGRESSES.

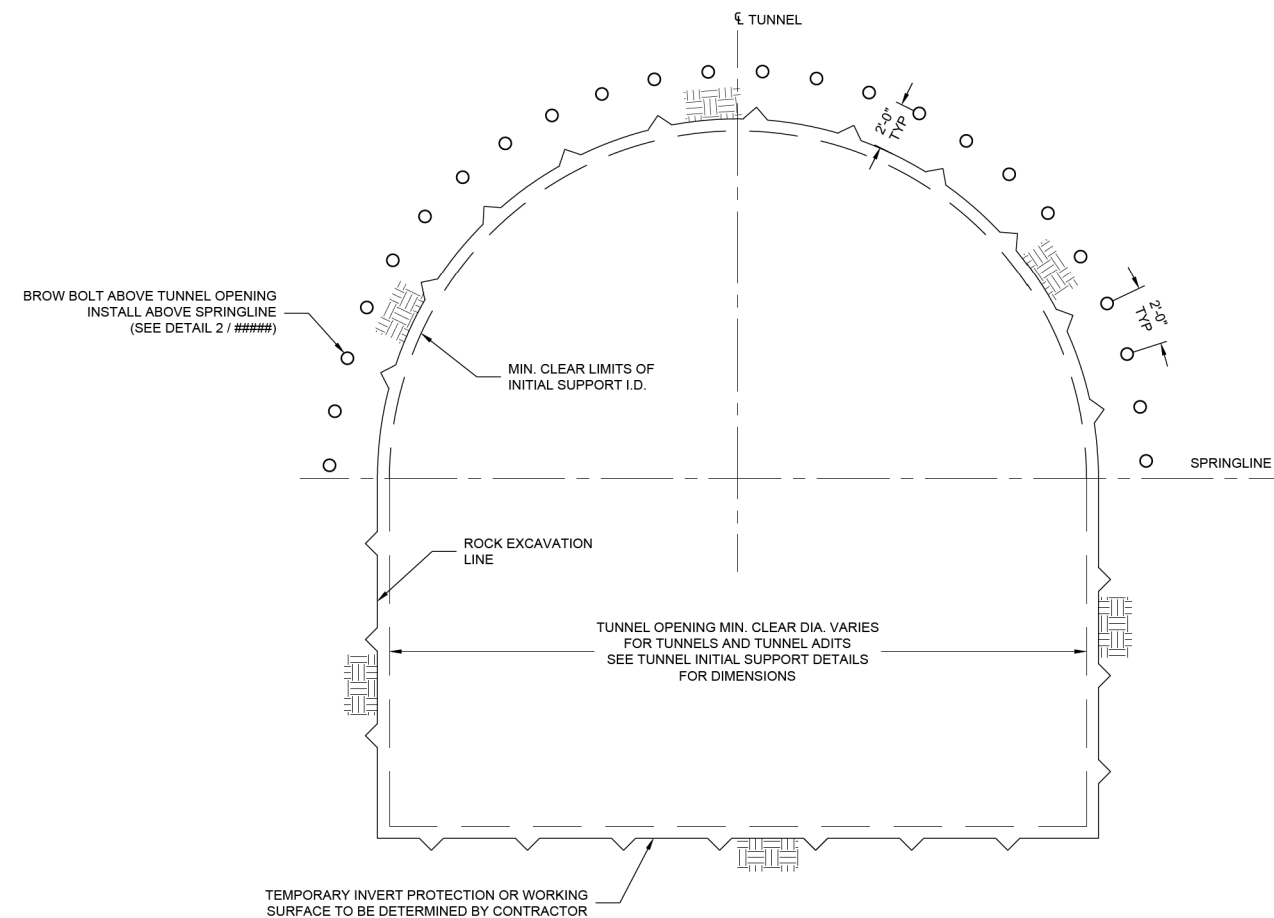
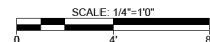
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CAPITAL AREA			
Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL TUNNEL INITIAL SUPPORT DETAILS			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-124.PDF.dgn	

30% DESIGN
NOT FOR CONSTRUCTION

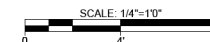


NOTES: TUNNEL INITIAL SUPPORT IS NOT SHOWN ON THIS DETAIL FOR CLARITY.

1 TYPICAL SHAFT TUNNEL OPENING INITIAL SUPPORT DETAIL (SECTION VIEW)



A ELEVATION VIEW
 S-125



NOTES:

1. INITIAL ROCK SUPPORT SHOWN IS PRELIMINARY AND IS CONSIDERED THE MINIMUM REQUIRED SUPPORT. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING THE FINAL DESIGN ON THE INITIAL ROCK SUPPORT IN ACCORDANCE WITH THE SPECIFICATIONS.
2. SHAFT INITIAL SUPPORT WITHIN TUNNEL OPENING AREA SHALL USE GFRP DOWELS INSTEAD OF STEEL DOWELS AS REQUIRED FOR CONTRACTIBILITY.
3. INSTALL INITIAL ROCK SUPPORT FOR SHAFT, INCLUDING PRE-SUPPORT SPILES OVER THE TUNNEL CROWN AND INITIAL ROCK SUPPORT IN TUNNEL FACE PRIOR TO START OF EXCAVATION OF TUNNEL.
4. COORDINATE INSTALLATION OF TUNNEL CROWN DOWELS TO AVOID INTERFERENCE WITH SHAFT DOWELS. DOWELS IN THE TUNNEL CROWN MAY BE OFFSET OR SLIGHTLY ANGLED TO AVOID INTERSECTION WITH DOWELS FOR INITIAL SHAFT SUPPORT.

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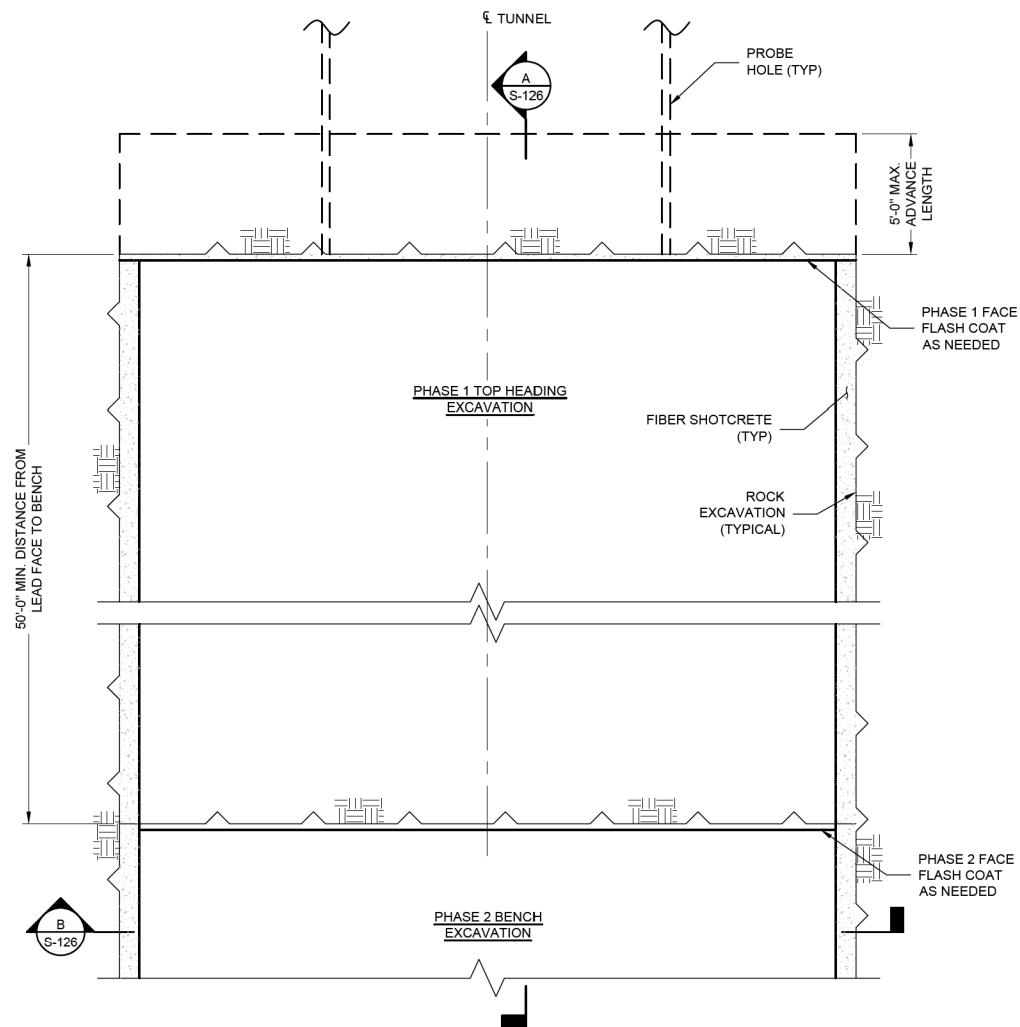
SHAFT
 INITIAL ROCK SUPPORT TUNNEL
 OPENING DETAILS

30% DESIGN
 NOT FOR CONSTRUCTION

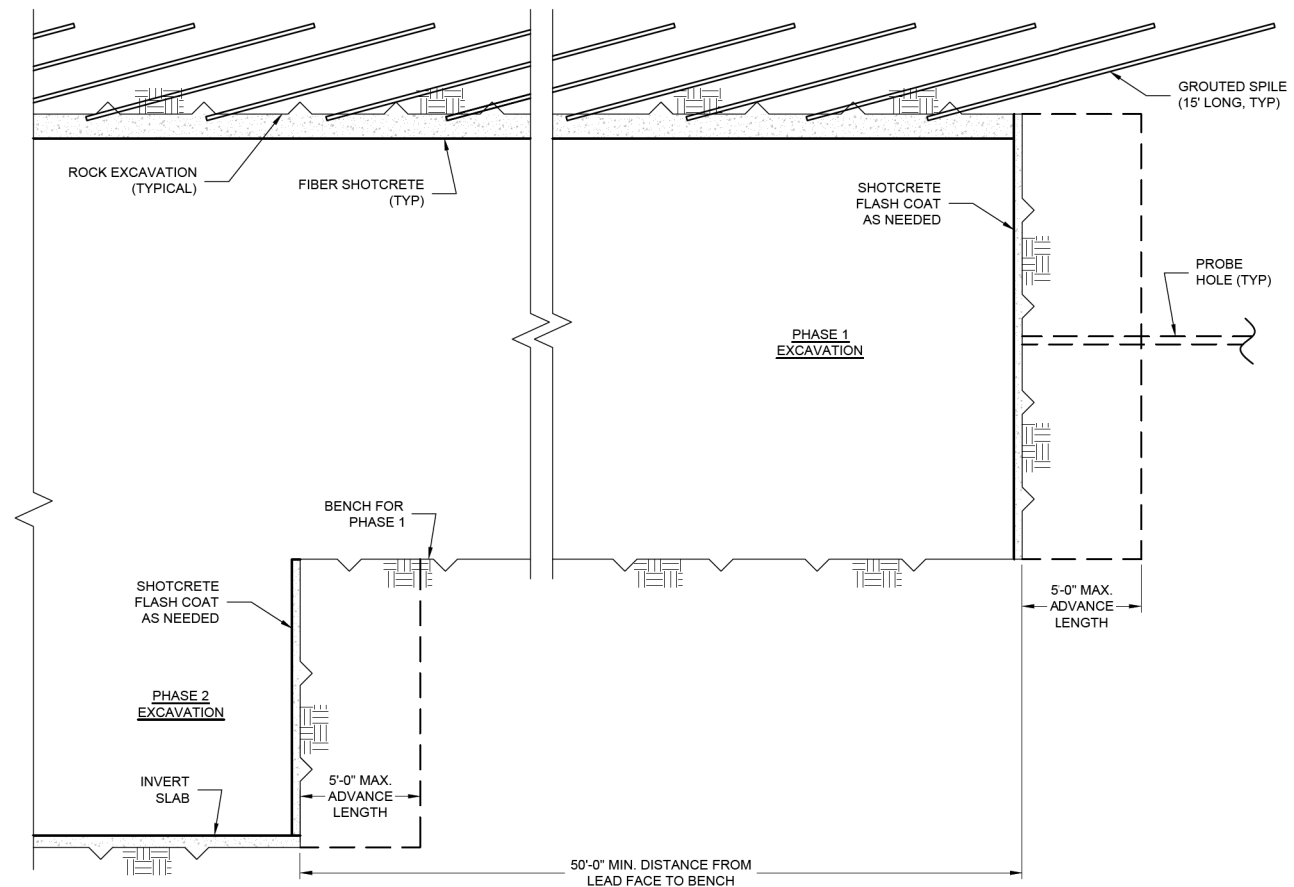


SHEET 1 OF 1

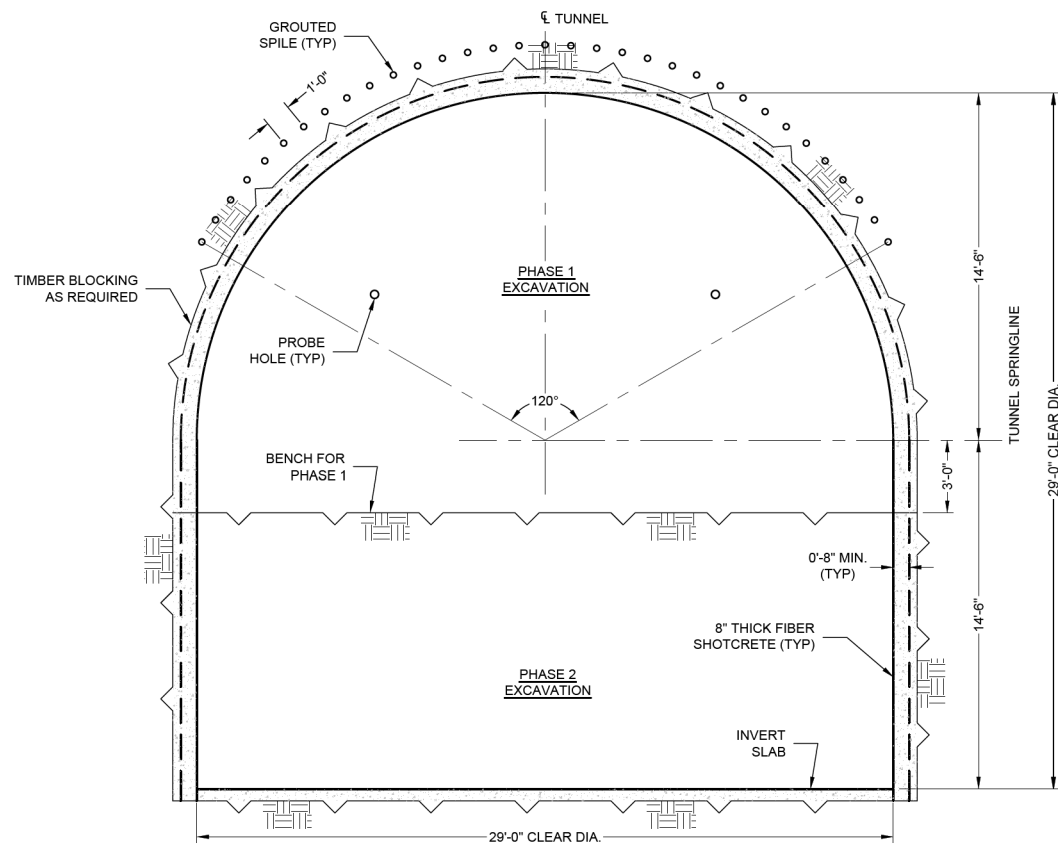
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-125 PDF.dgn	



1 PLAN VIEW SEM SUPPORT CLASS I
 SCALE: 1/4"=1'0"
 0 4 8



A SECTION
 SCALE: 1/4"=1'0"
 0 4 8



B SECTION
 SCALE: 1/4"=1'0"
 0 4 8

30% DESIGN
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1			

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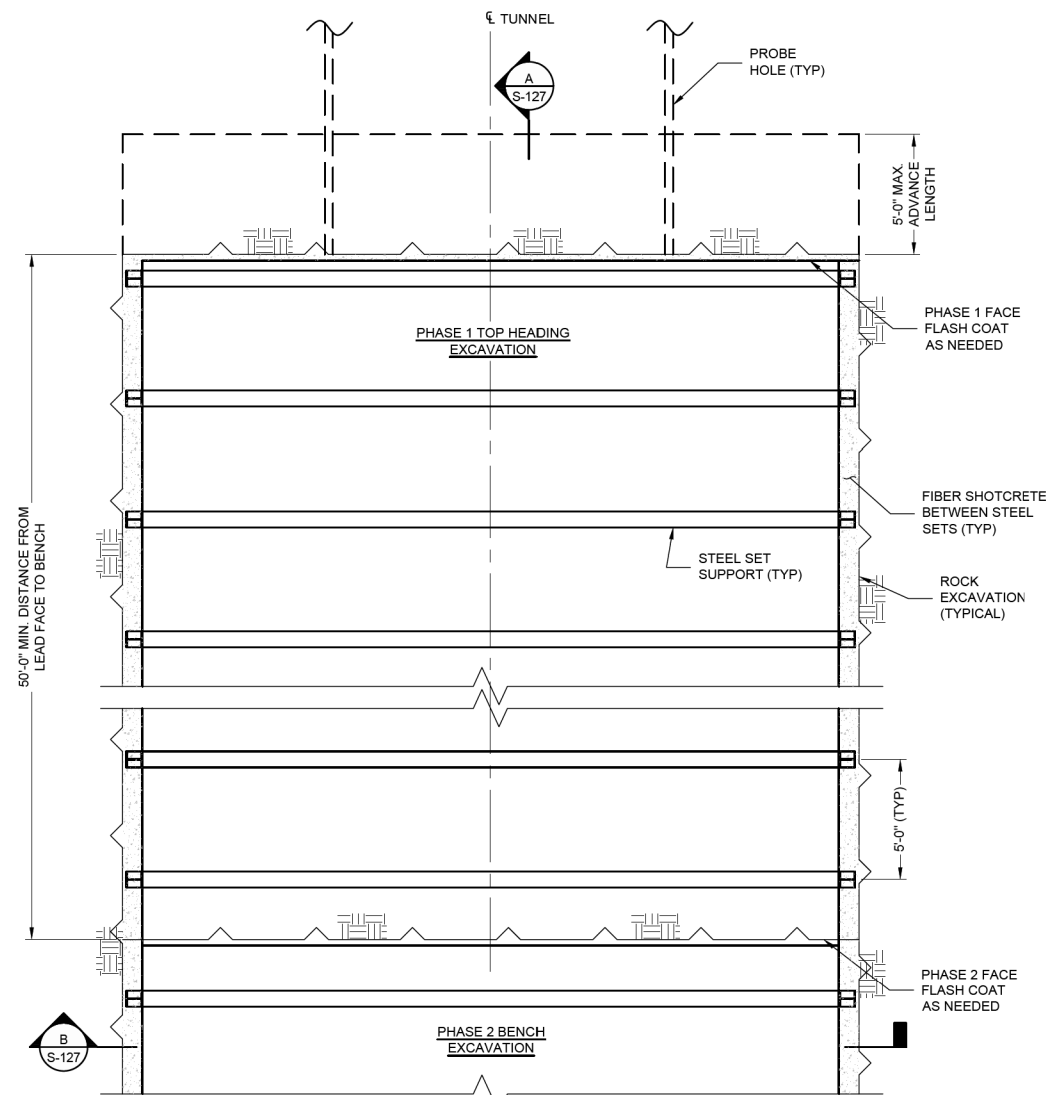
Texas Department of Transportation

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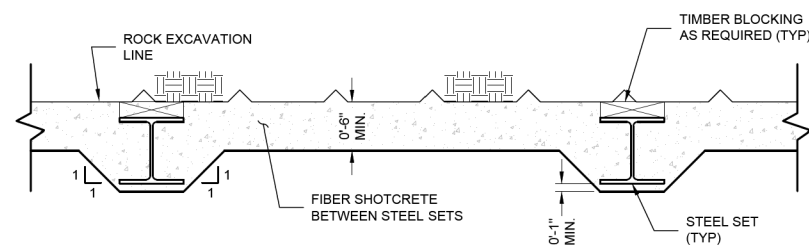
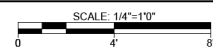
SEM INITIAL SUPPORT
 CLASS I DETAILS

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-126 PDF.dgn	

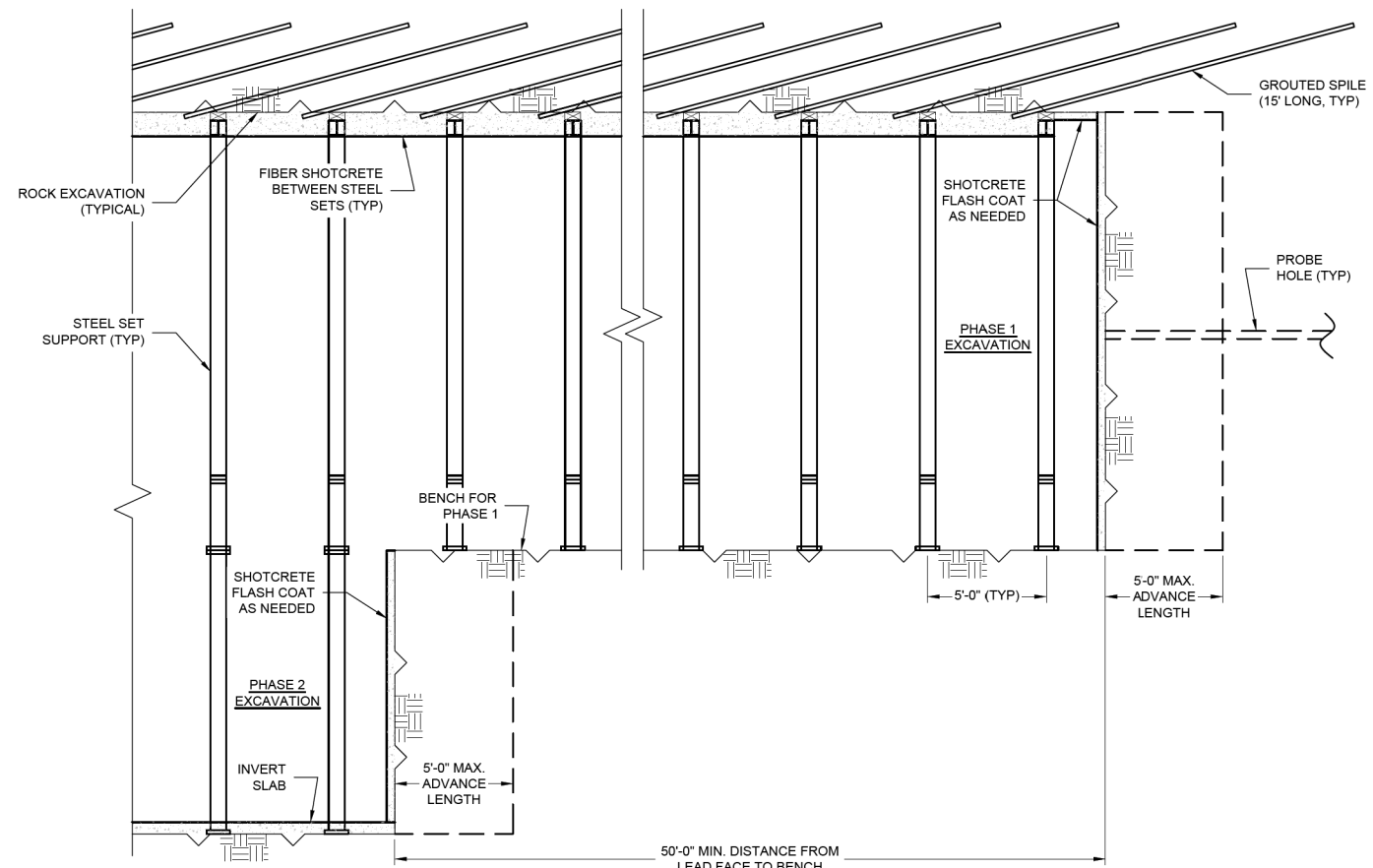
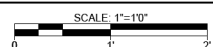
SHEET 1 OF 1



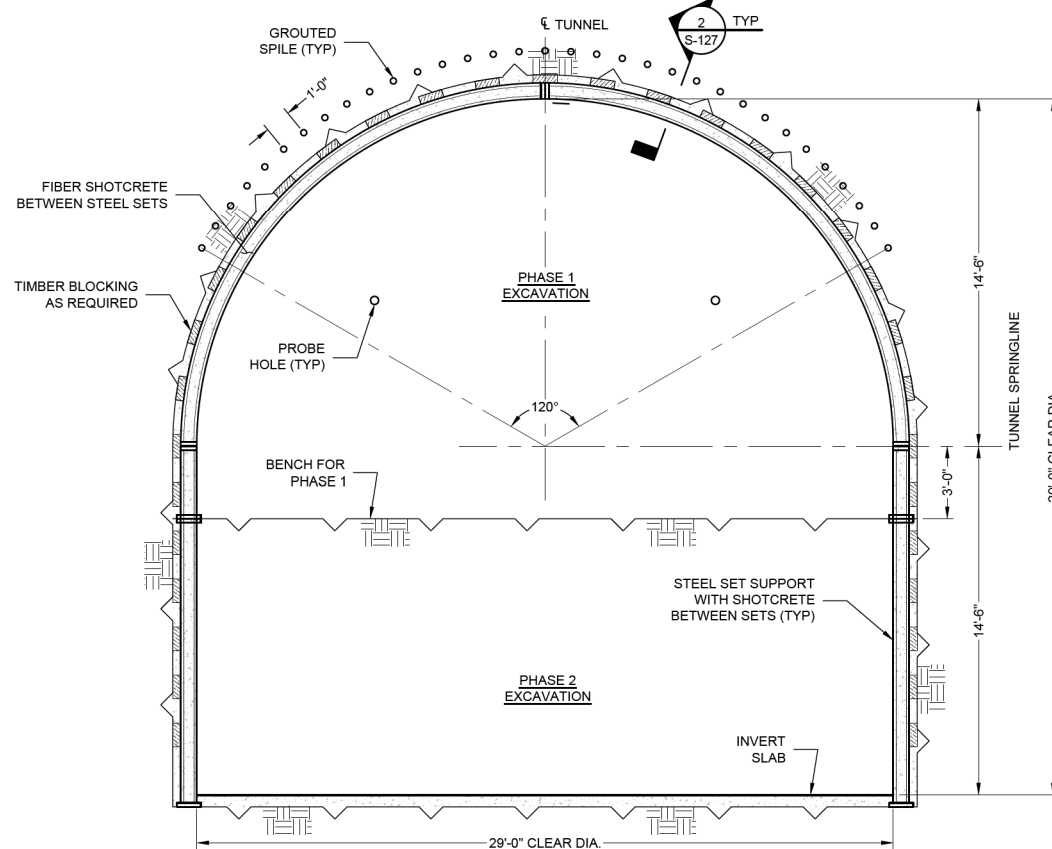
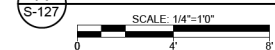
1 PLAN VIEW SEM SUPPORT CLASS II



2 DETAIL - SHOTCRETE FOR CLASS II, IIIA, AND IIIB



A SECTION



B SECTION



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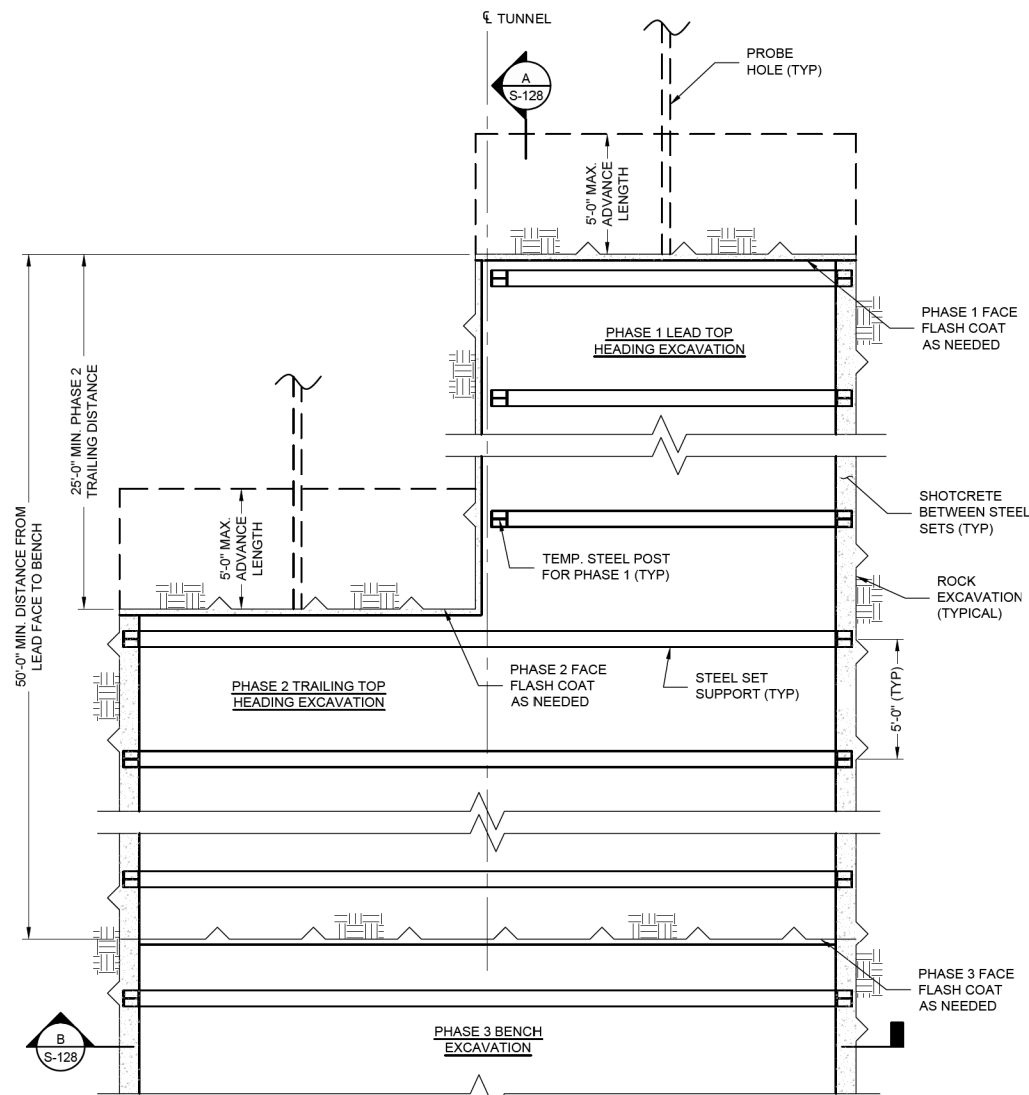


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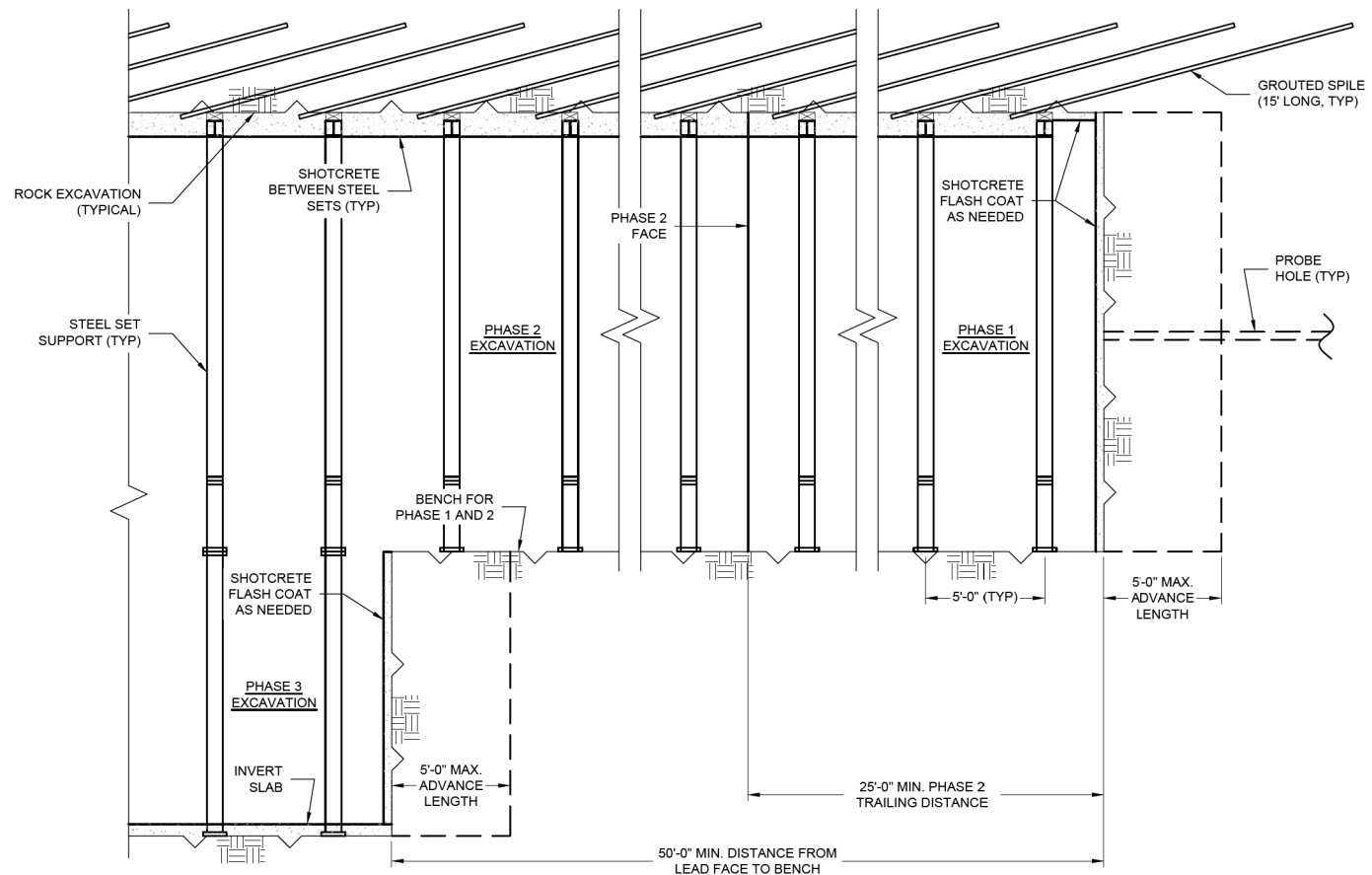
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SEM INITIAL SUPPORT
 CLASS II DETAILS

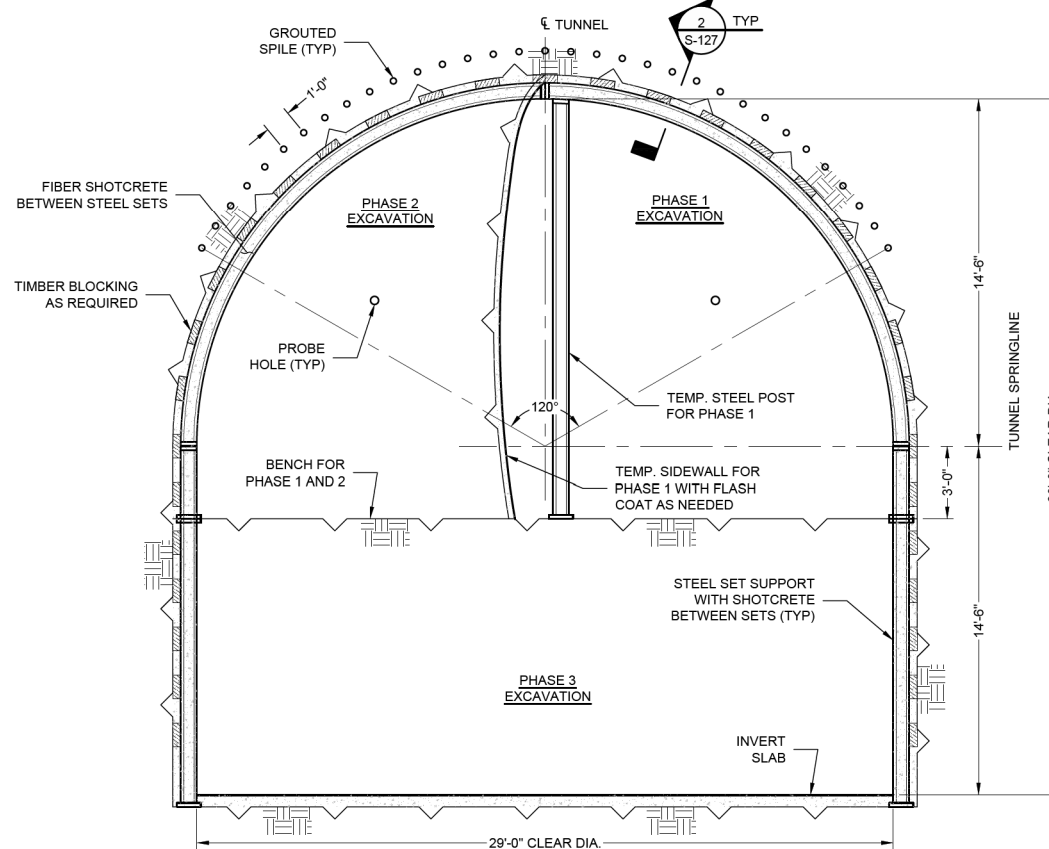
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-127 PDF.dgn	



1 PLAN VIEW SEM SUPPORT CLASS IIIA
SCALE: 1/4"=1'-0"



A SECTION
SCALE: 1/4"=1'-0"



B SECTION
SCALE: 1/4"=1'-0"

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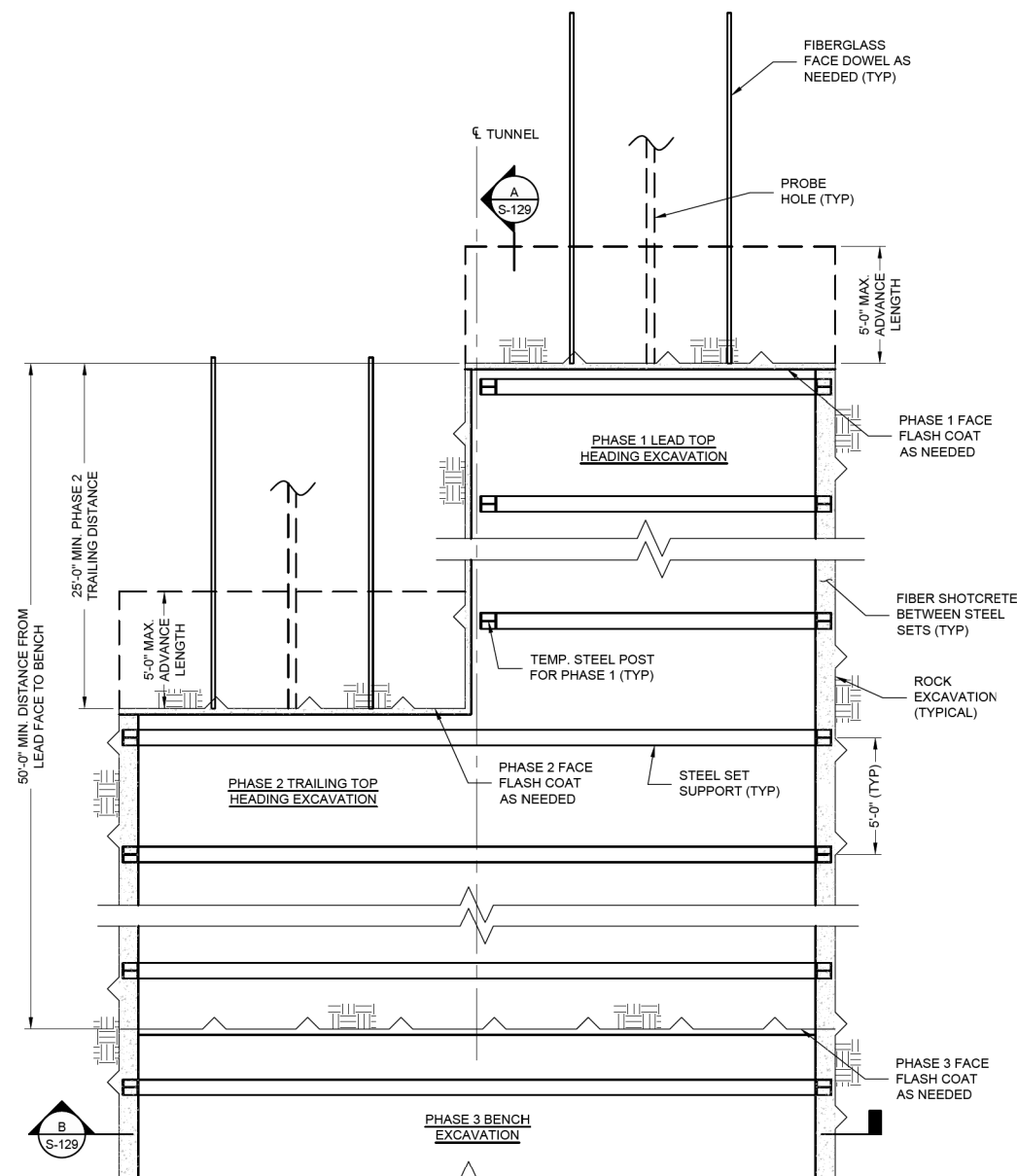


Texas Department of Transportation

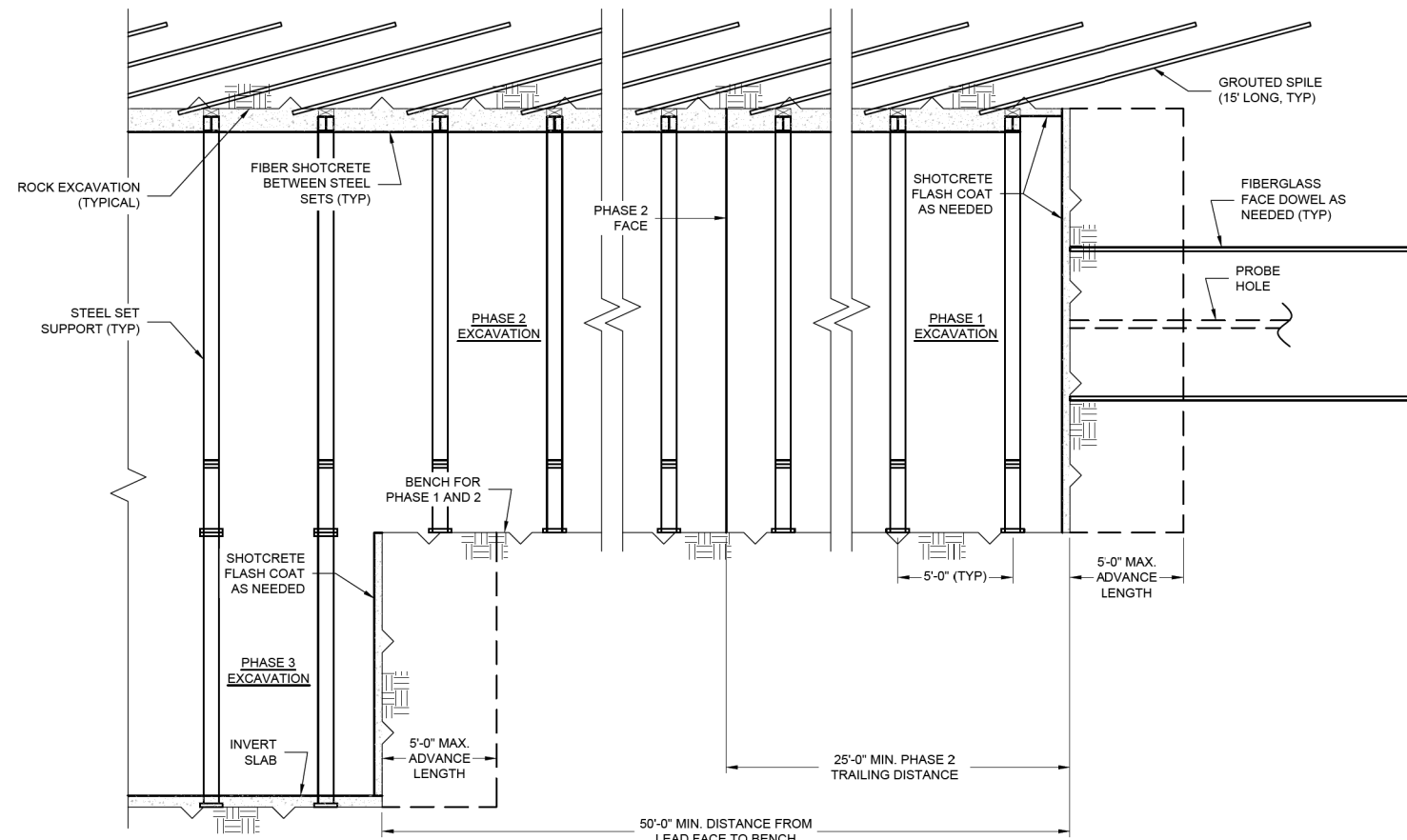
CAPITAL EXPRESS CENTRAL

**SEM INITIAL SUPPORT
CLASS IIA DETAILS**

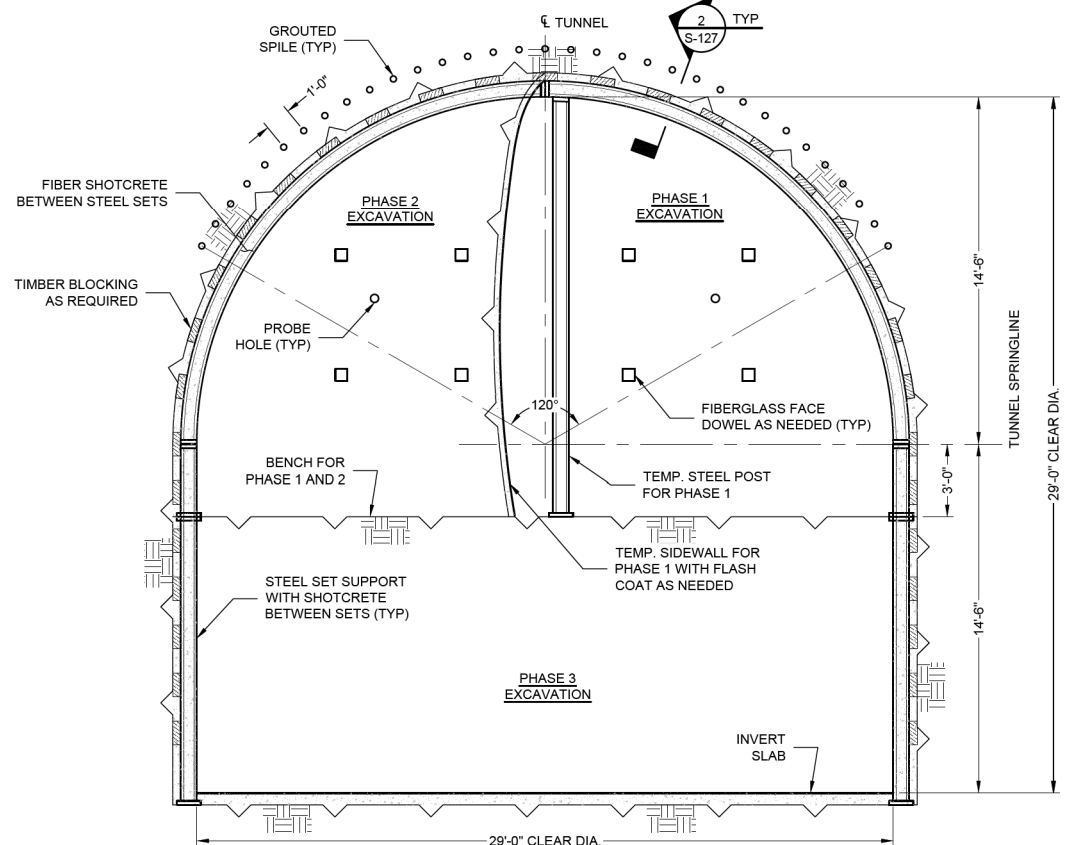
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	S-128 PDF.dgn



1 PLAN VIEW SEM SUPPORT CLASS IIIB
 SCALE: 1/4"=1'-0"



A SECTION
 S-129
 SCALE: 1/4"=1'-0"



B SECTION
 S-129
 SCALE: 1/4"=1'-0"

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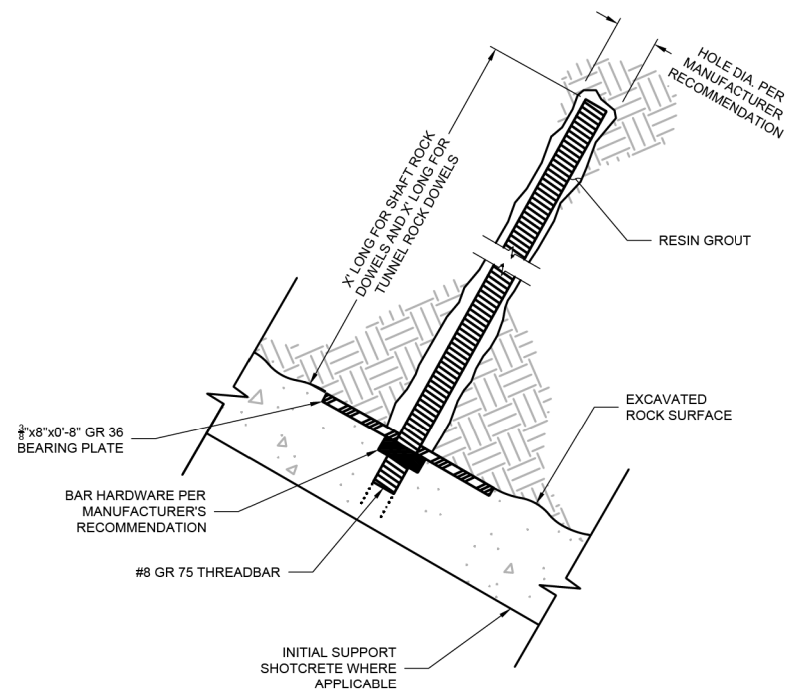


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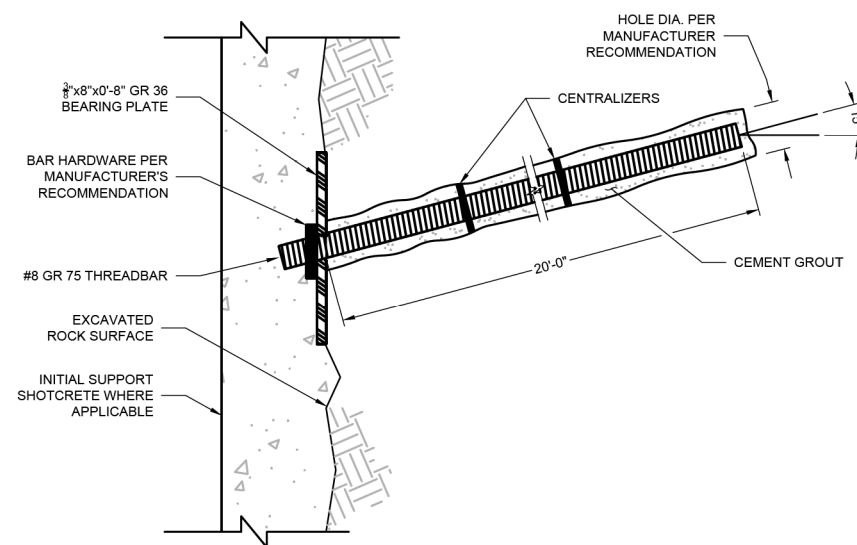
CAPITAL EXPRESS CENTRAL

SEM INITIAL SUPPORT
 CLASS IIB DETAILS

SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	S-129.PDF.dgn



1 - DETAIL - RESIN GROUTED ROCK DOWEL
 NOT TO SCALE



2 - DETAIL - BROW BOLT ABOVE TUNNEL OPENINGS
 NOT TO SCALE

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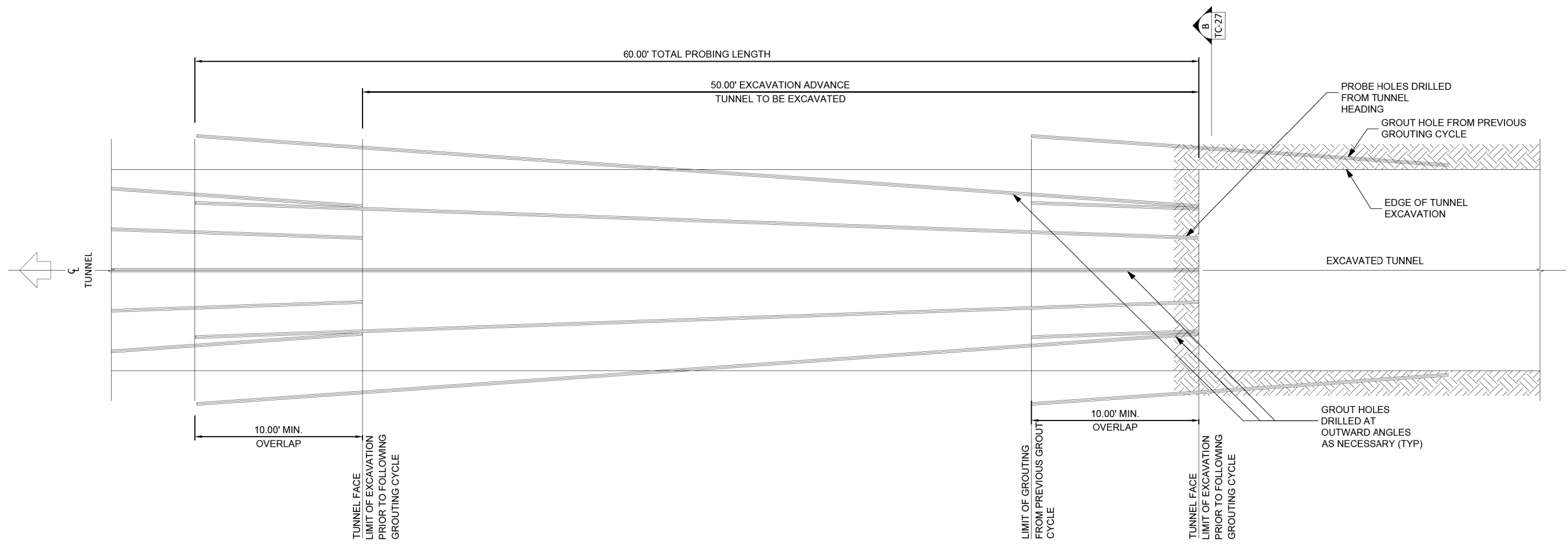
CAPITAL EXPRESS CENTRAL
 INITIAL ROCK SUPPORT
 DETAILS

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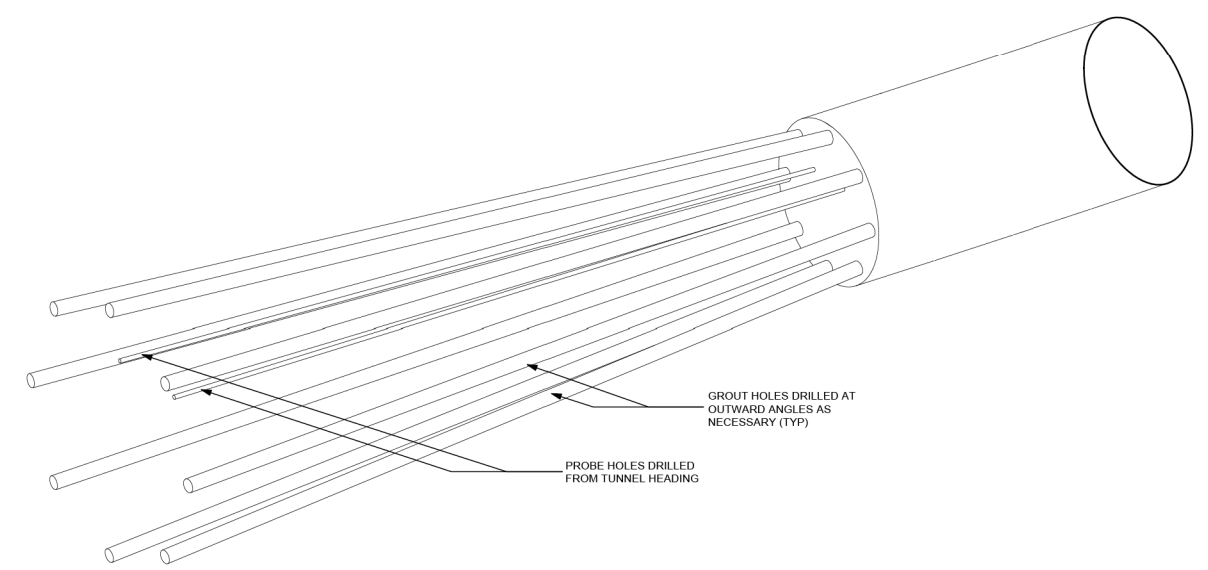
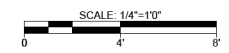


SHEET 1 OF 1

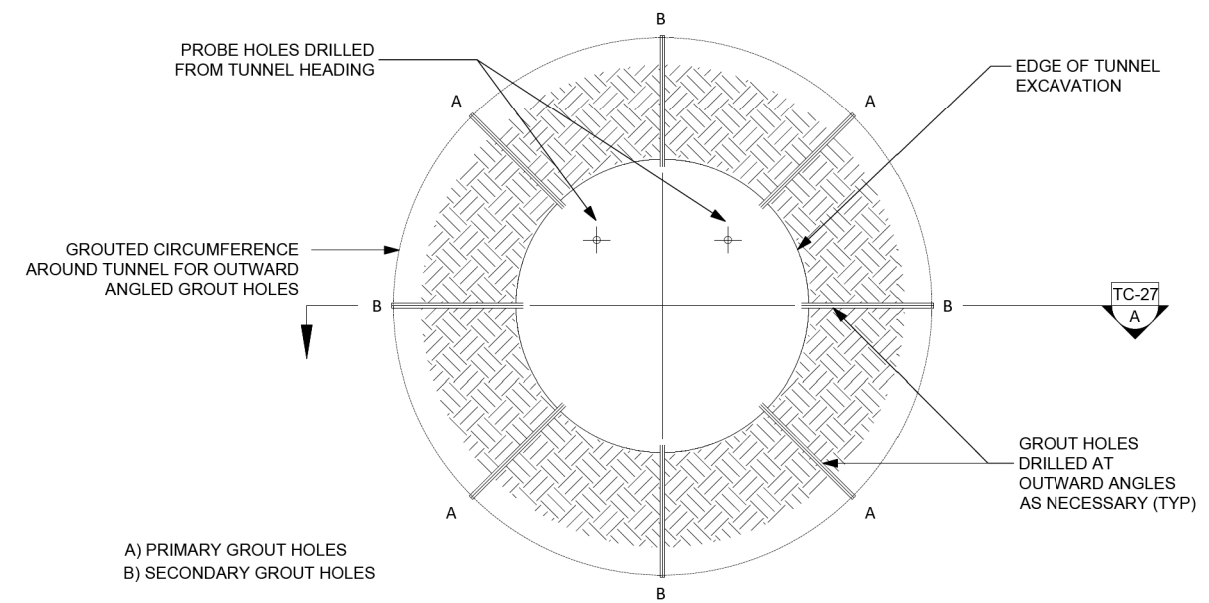
CONT	SECT	JOB	HIGHWAY
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DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-130.PDF.dgn	



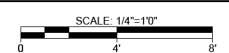
A TUNNEL PRE-STABILIZATION PROFILE



1 TUNNEL PRE-STABILIZATION 3-D SCHEMATIC



B TUNNEL PRE-STABILIZATION DETAIL



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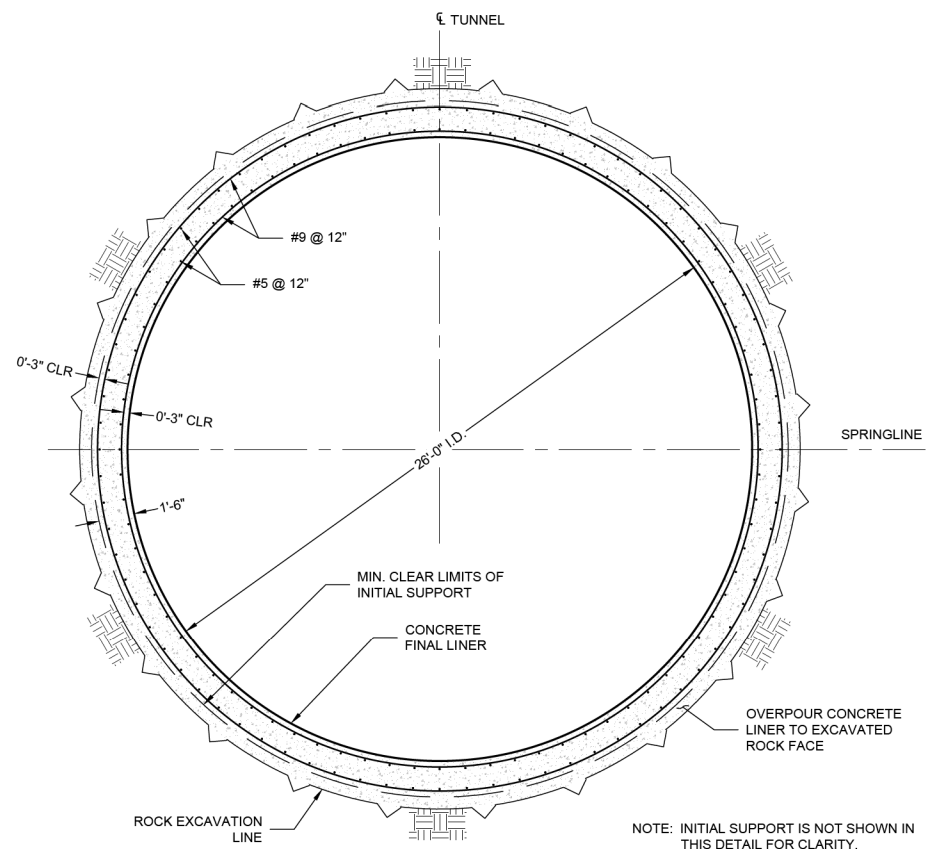
<p>HDR Engineering, Inc. Firm Registration No. F-754 710 Hester Crossing, Suite 150 Round Rock, Texas 78681</p>			
<p>CAPITAL AREA</p>			
<p>Texas Department of Transportation</p>			

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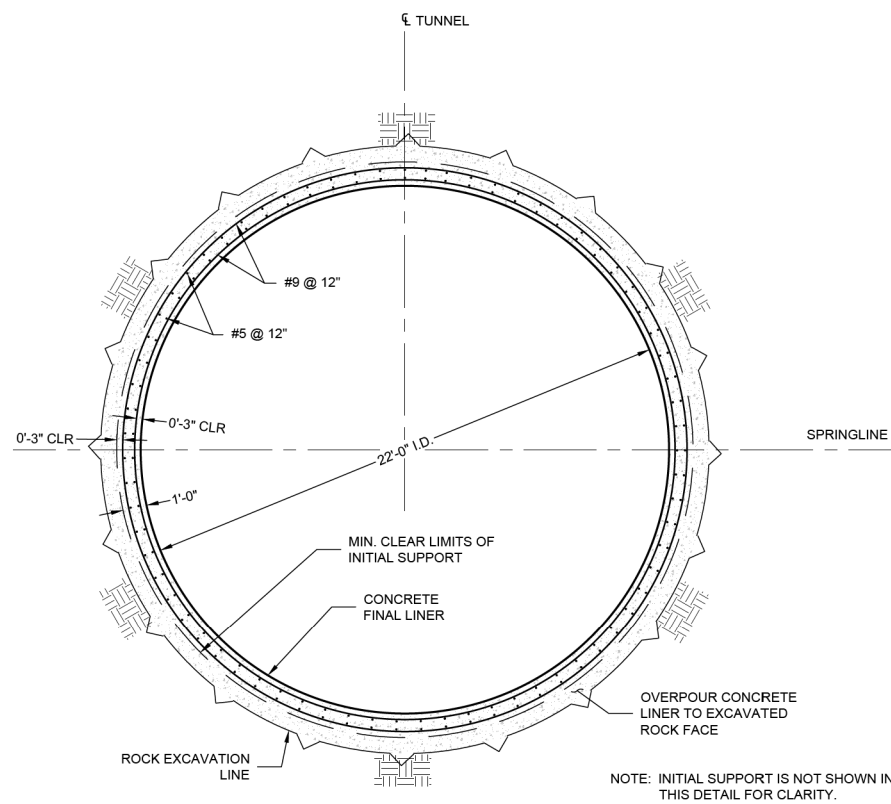
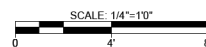
TUNNEL
PRE-STABILIZATION
GROUTING DETAILS

SHEET 1 OF 1

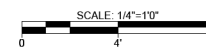
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-131 PDF.dgn	



1 CESAR CHAVEZ MAIN TUNNEL FINAL LINER DETAIL



2 I-35 MAIN TUNNEL FINAL LINER DETAIL



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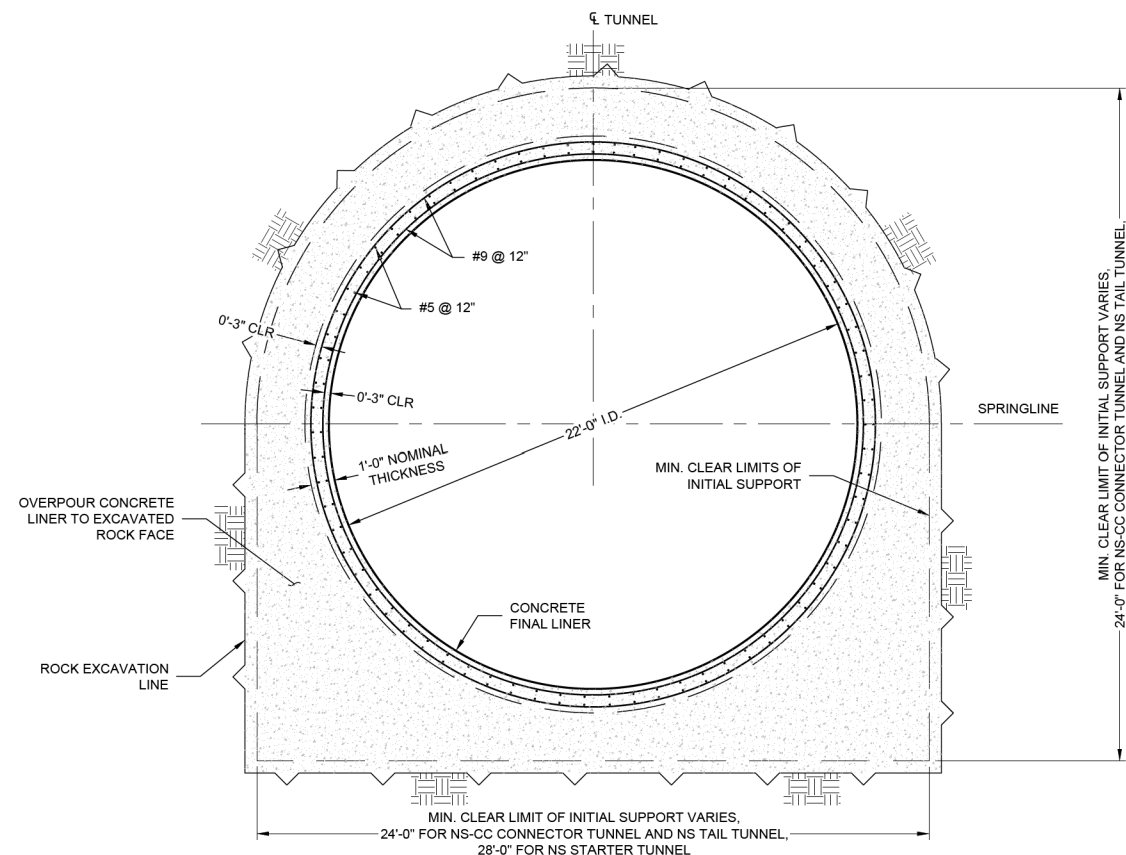
TUNNEL
FINAL LINER
DETAILS

30% DESIGN
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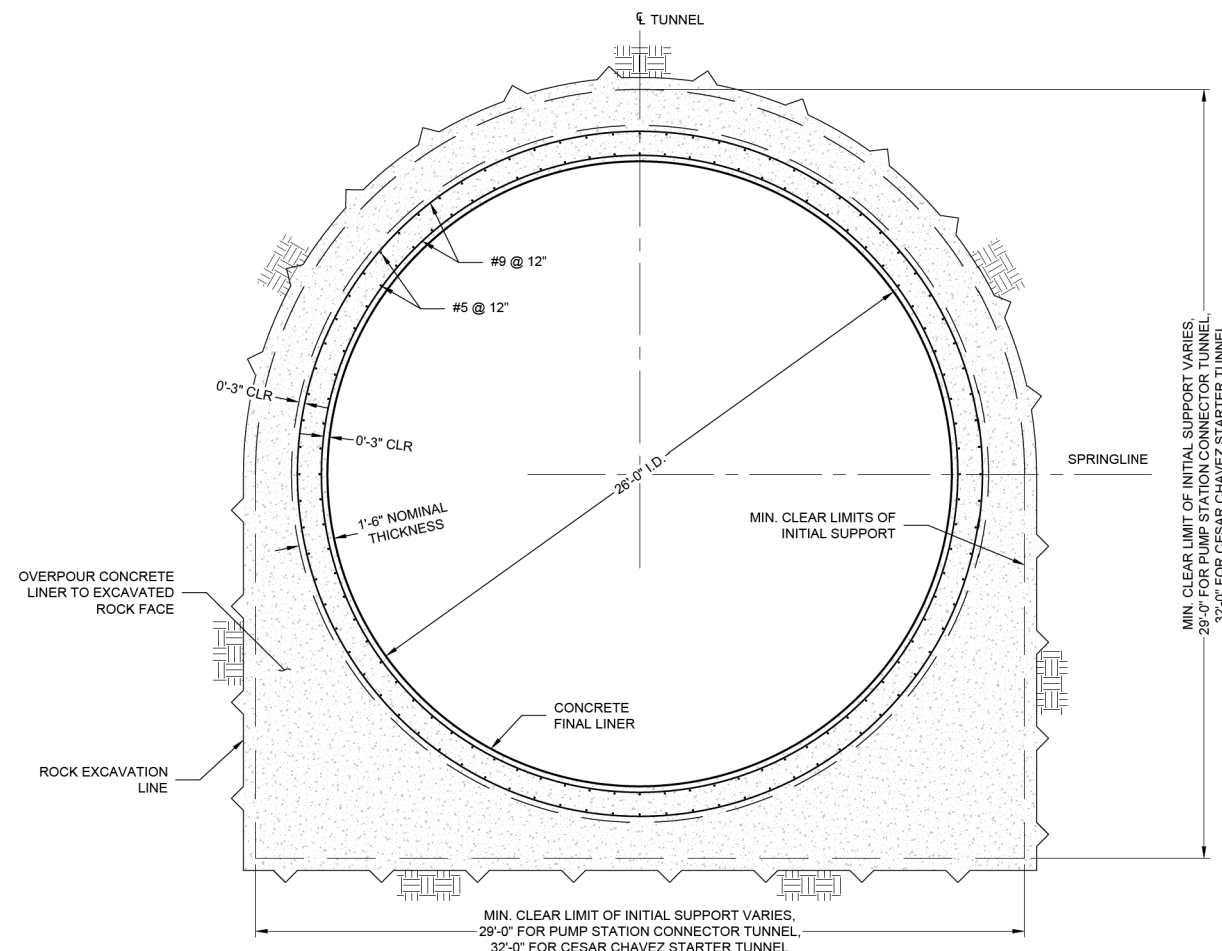
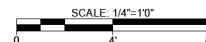
SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-132.PDF.dgn	



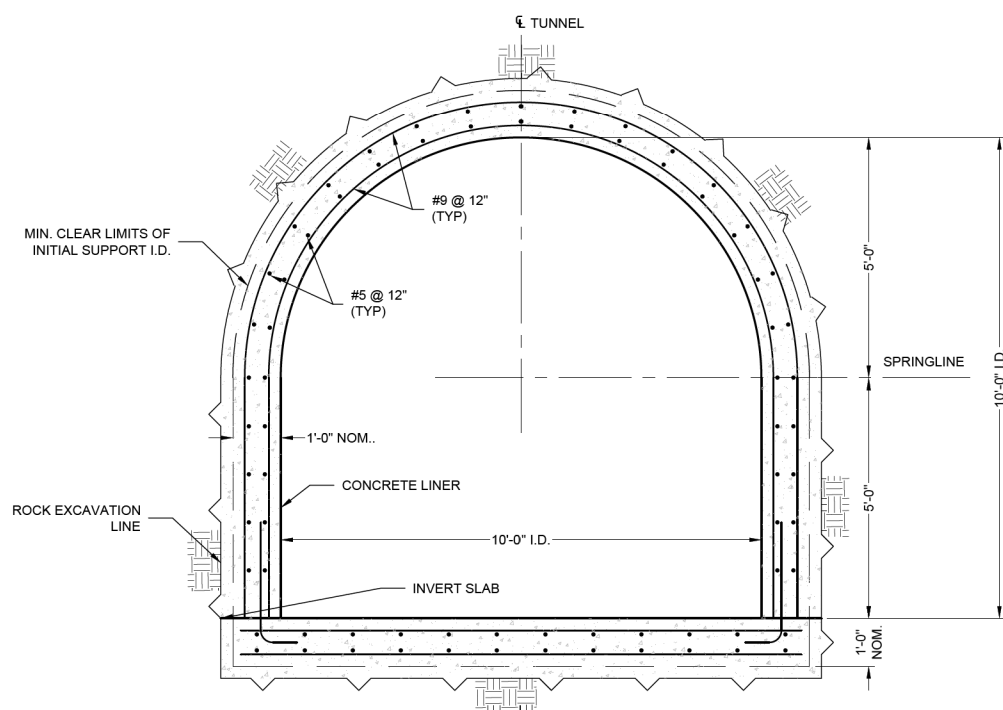
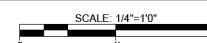
- NOTES:
1. THIS DETAIL APPLIES TO THE NS-CC CONNECTOR TUNNEL, THE NS STARTER TUNNEL, AND NS TAIL TUNNEL.
 2. INITIAL SUPPORT IS NOT SHOWN IN THIS DETAIL FOR CLARITY.

1 TUNNEL FINAL LINER DETAIL - TYPE 1



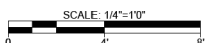
- NOTES:
1. THIS DETAIL APPLIES TO THE PUMP STATION CONNECTOR TUNNEL AND THE CESAR CHAVEZ STARTER TUNNEL.
 2. INITIAL SUPPORT IS NOT SHOWN IN THIS DETAIL FOR CLARITY.

2 TUNNEL FINAL LINER DETAIL - TYPE 2



NOTE: INITIAL SUPPORT IS NOT SHOWN FOR CLARITY.

3 TUNNEL ADIT FINAL LINER DETAIL



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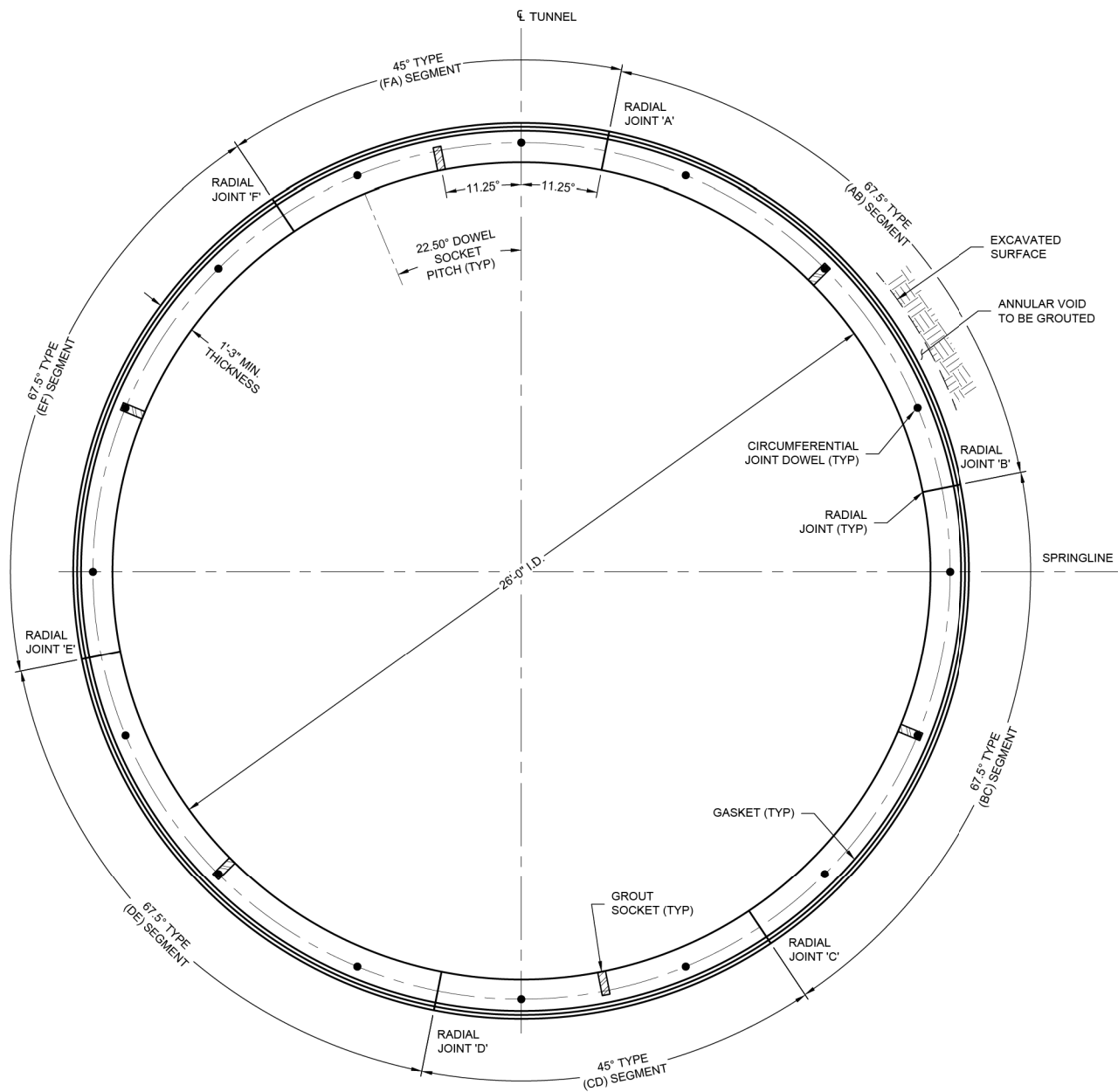


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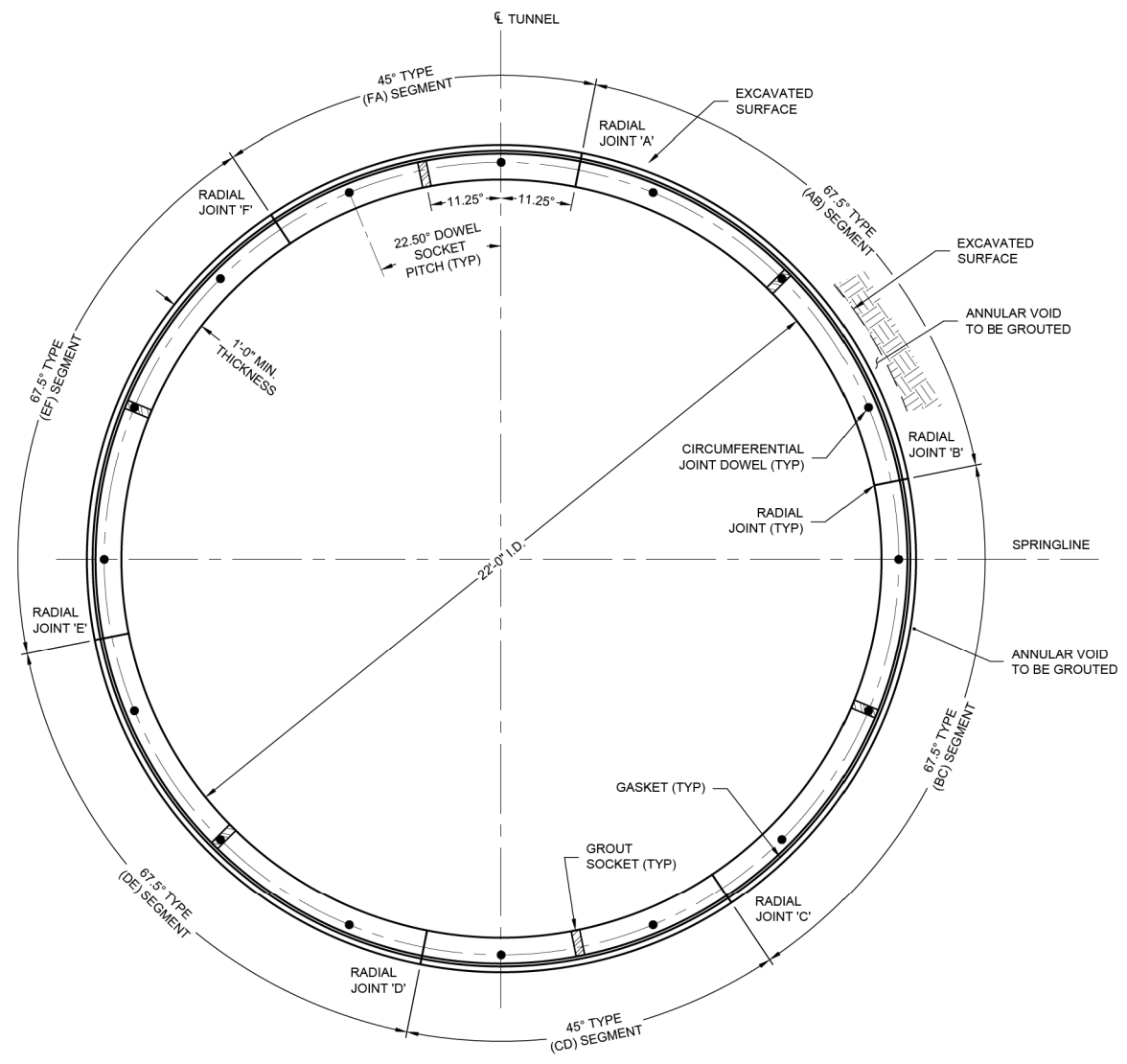
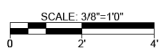
CAPITAL EXPRESS CENTRAL

TUNNEL
FINAL LINER
DETAILS

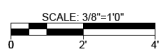
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-133 PDF.dgn	



1 CESAR CHAVEZ TUNNEL SEGMENTAL LINER - TYPICAL CROSS SECTION



2 NS TUNNEL SEGMENTAL LINER - TYPICAL CROSS SECTION



NOTES:

1. THE DRAWINGS AND SPECIFICATIONS PROVIDE THE MINIMUM PRECAST TUNNEL LINER SEGMENT DESIGN REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FINALIZING THE SEGMENT DESIGN. THE CONTRACTOR'S SEGMENT DESIGN SHALL HAVE THE MINIMUM LINING THICKNESS AND REINFORCEMENT REQUIREMENTS INDICATED ON THESE DRAWINGS AND IN THE SPECIFICATIONS. THE REQUIREMENTS FOR THE CONTRACTOR SEGMENT DESIGN ARE INCLUDED IN THE SPECIFICATIONS.
2. THESE DRAWINGS SHOW ONE POSSIBLE SEGMENT LINER CONFIGURATION. THE CONTRACTOR MAY PROPOSE ALTERNATIVE SEGMENT LAYOUTS FOR REVIEW BY THE OWNER. ALTERNATIVE CONFIGURATIONS SHALL PROVE THE MINIMUM SEGMENT THICKNESS SHOWN ON THESE DRAWINGS.
3. IN ADDITION TO FINALIZING THE SEGMENT DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN OF RADIAL JOINT BOLTS, CIRCUMFERENTIAL JOINT DOWELS, VACUUM LIFT SHEAR POCKETS, GASKETS, GASKET GROOVES, GROUTING SOCKET, AND SEGMENT RING TAPER.

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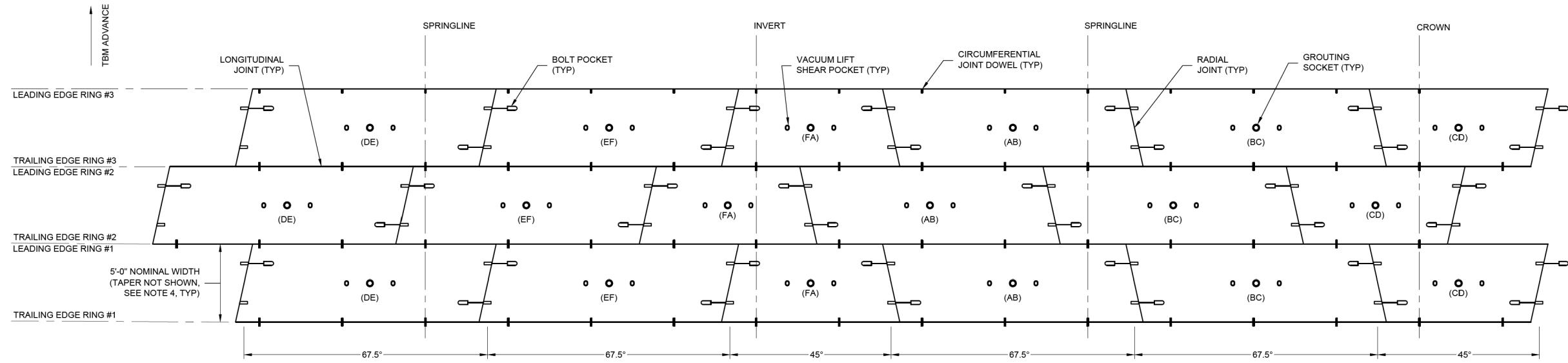
**CAPITAL EXPRESS CENTRAL
 TUNNEL
 SEGMENTAL LINER
 TYPICAL CROSS SECTIONS**

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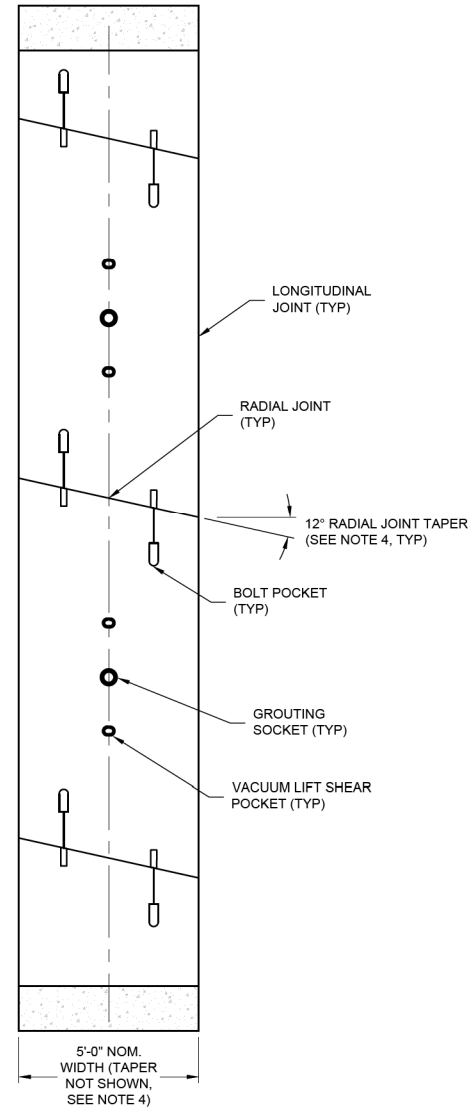


SHEET 1 OF 1

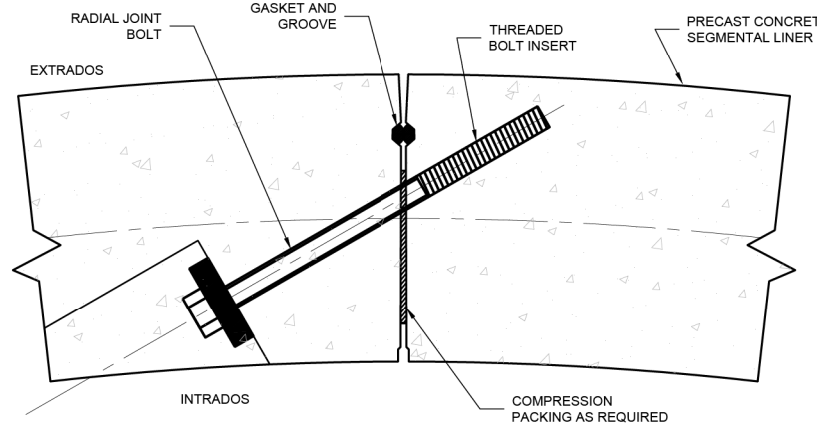
CONT	SECT	JOB	HIGHWAY
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DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-134.PDF.dgn	



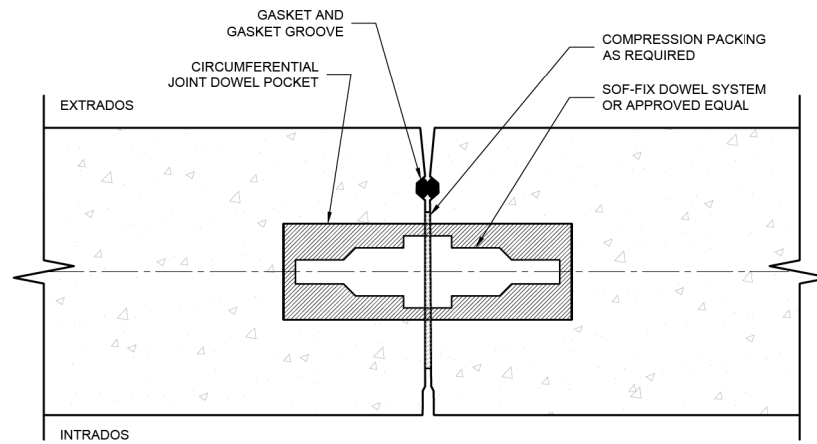
1 SEGMENTAL TUNNEL LINER LAYOUT DETAIL
 NOT TO SCALE



2 SEGMENT RING SECTION ALONG CENTERLINE
 NOT TO SCALE



3 TYPICAL RADIAL JOINT BOLT DETAIL
 NOT TO SCALE



4 TYPICAL CIRCUMFERENTIAL JOINT DOWEL DETAIL
 NOT TO SCALE

- NOTES:
- SEE NOTES ON DRAWING XXXX.
 - LEADING AND TRAILING EDGES REFER TO THE CIRCUMFERENTIAL FACES OF THE SEGMENTS THAT FACE TOWARD AND AWAY FROM THE DIRECTION OF ADVANCE, RESPECTIVELY.
 - DEVELOPED VIEW ANGLES PRESENTED IN THIS SHEET ARE AT MIDDLE OF SEGMENT.
 - RING TAPER SHALL BE DETERMINED BY CONTRACTOR TO ACHIEVE REQUIRED MINIMUM DESIGN RADIUS CURVES ALONG ALIGNMENT AS WELL AS REQUIRED TAPERS INTO AND OUT OF CURVES (SEE PLAN AND PROFILE ON CIVIL SHEETS). THE EXACT RING TAPER SHALL BE DETERMINED BY THE CONTRACTOR.

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**TUNNEL
 SEGMENTAL LINER
 TYPICAL DETAILS**

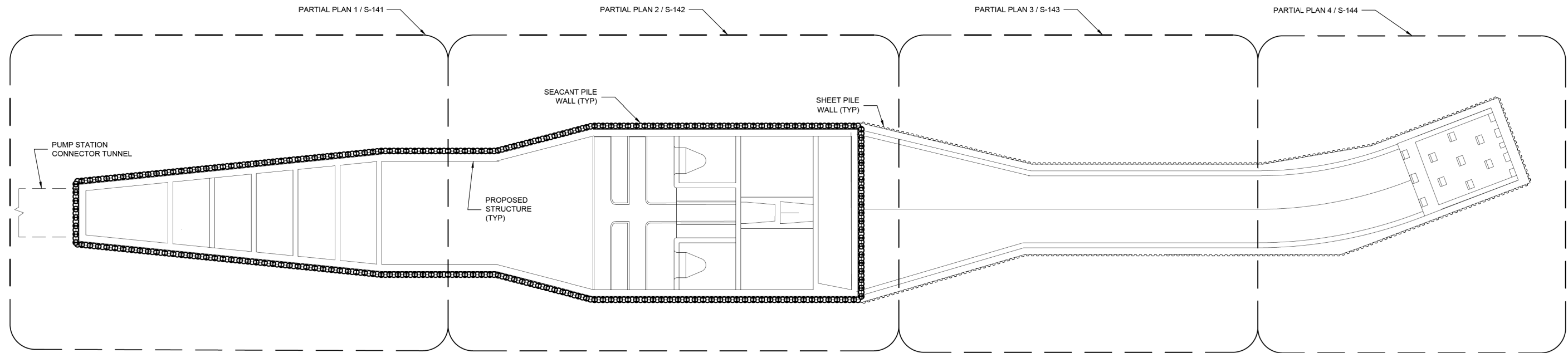
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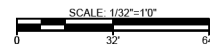
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-135 PDF.dgn	

NOTES:
 1. XXXXXXXXXXXXXXXX.



1 PUMP STATION SOE LAYOUT PLAN



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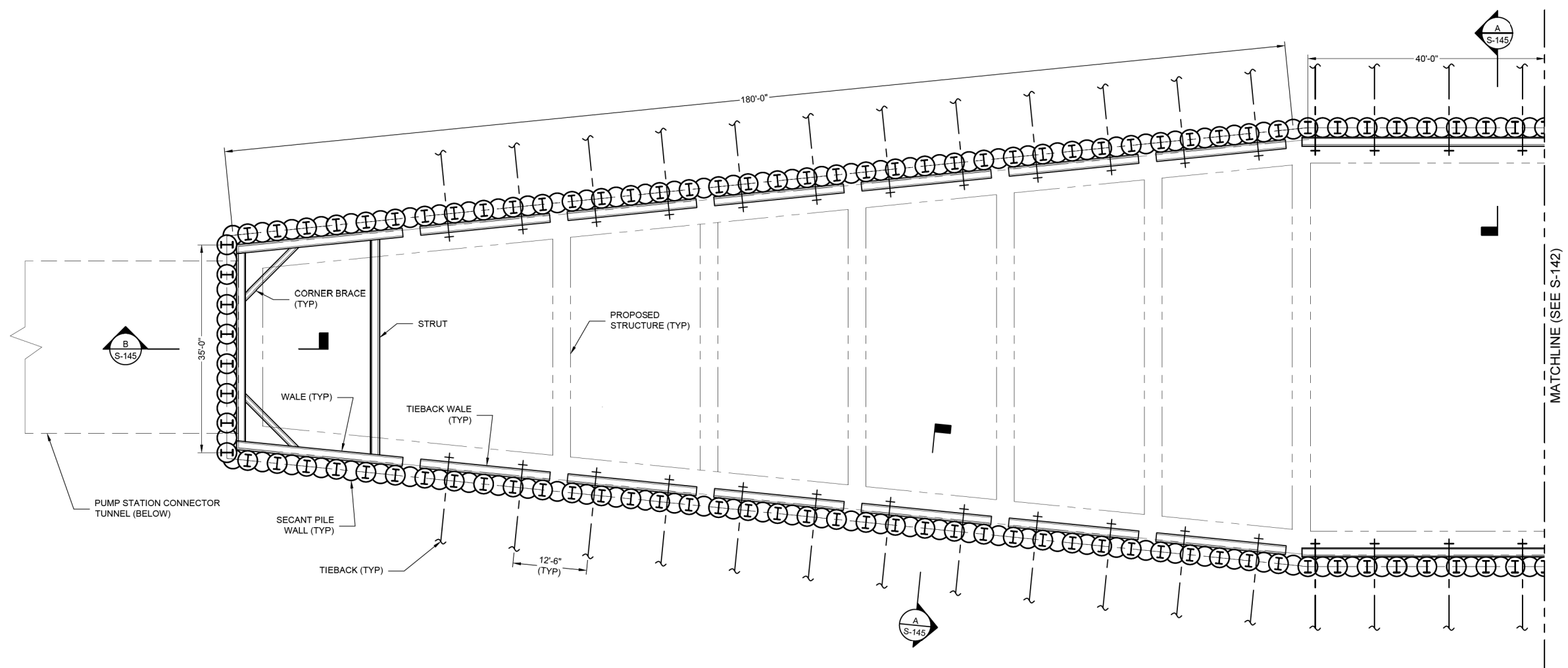
CAPITAL EXPRESS CENTRAL
 PUMP STATION SOE
 PLAN VIEWS

30% DESIGN
 NOT FOR CONSTRUCTION



SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-140 PDF.dgn	



1 PUMP STATION SOE PARTIAL PLAN
 SCALE: 3/32"=1'-0"
 0 8 16'

NOTES:
 1. XXXXXXXXXXXXXXXXX.

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**PUMP STATION
 SUPPORT OF EXCAVATION
 PLAN VIEW 1**

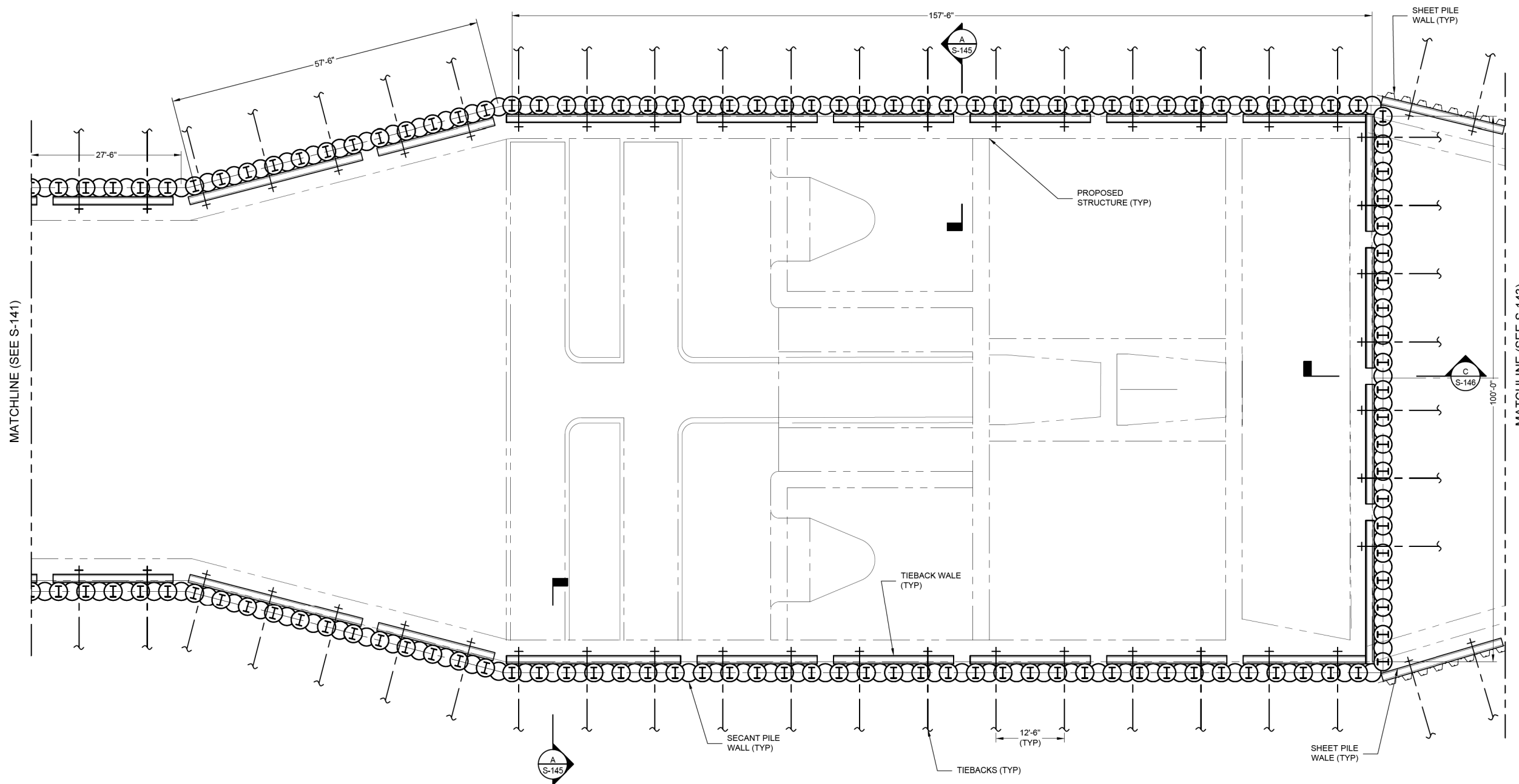
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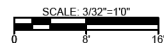
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-141 PDF.dgn	

NOTES:
 1. XXXXXXXXXXXXXXXX.



2 PUMP STATION SOE PARTIAL PLAN

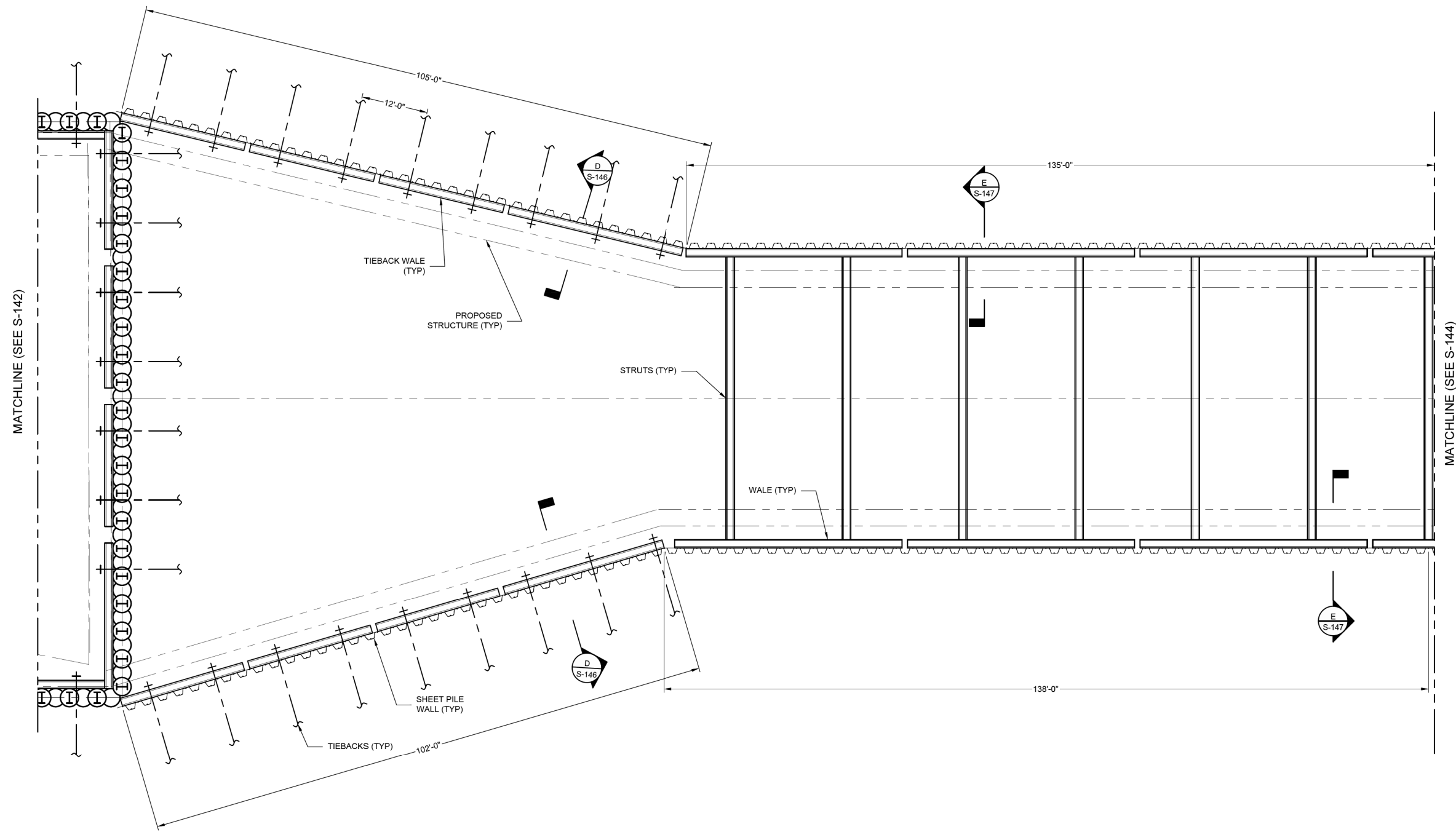


30% DESIGN
 NOT FOR CONSTRUCTION

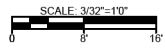


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CAPITAL EXPRESS CENTRAL PUMP STATION SUPPORT OF EXCAVATION PLAN VIEW 2			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		S-142 PDF.dgn

NOTES:
 1. XXXXXXXXXXXXXXXX.



3 PUMP STATION SOE PARTIAL PLAN



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CAPITAL EXPRESS CENTRAL
PUMP STATION
SUPPORT OF EXCAVATION
PLAN VIEW 3

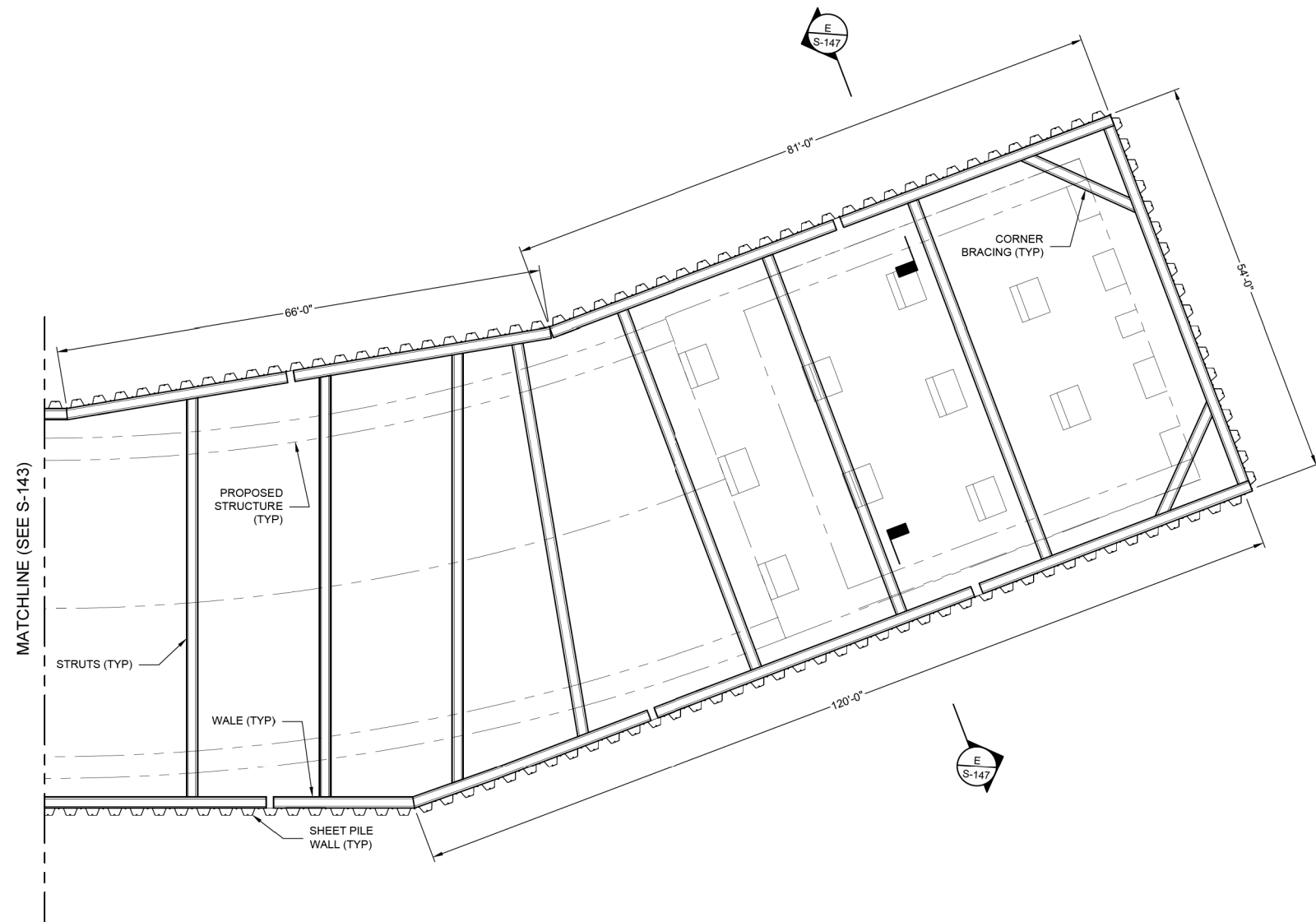
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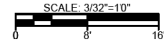
SHEET 1 OF 1




CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-143 PDF.dgn	

NOTES:
 1. XXXXXXXXXXXXXXXX.



4 PUMP STATION SOE PARTIAL PLAN

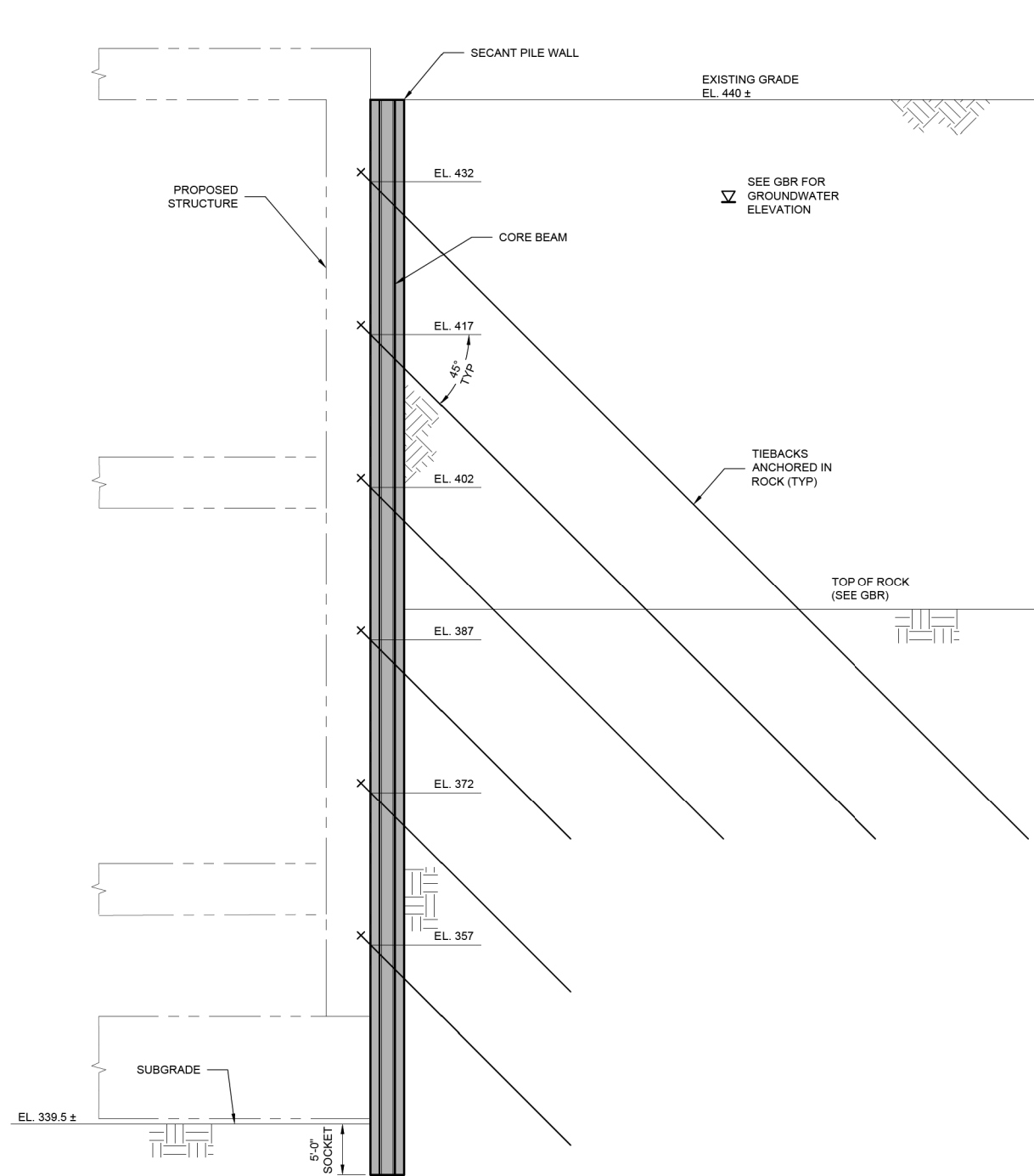


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 Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL PUMP STATION SUPPORT OF EXCAVATION PLAN VIEW 4			
SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		S-144.PDF.dgn

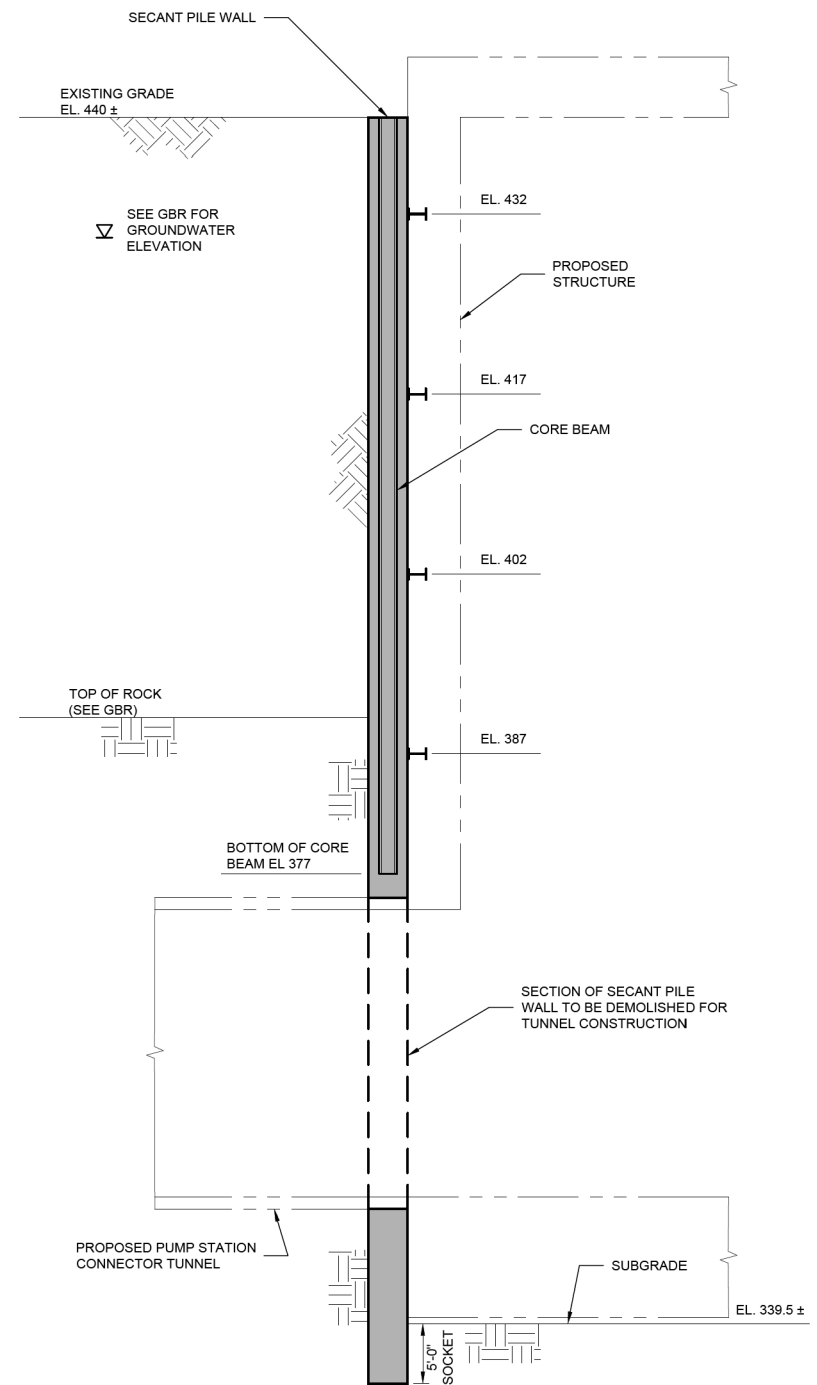
30% DESIGN
 NOT FOR CONSTRUCTION



NOTES:
1. XXXXXXXXXXXXXXXX.






A SECTION VIEW
S-141
SCALE: 1/8"=1'-0"



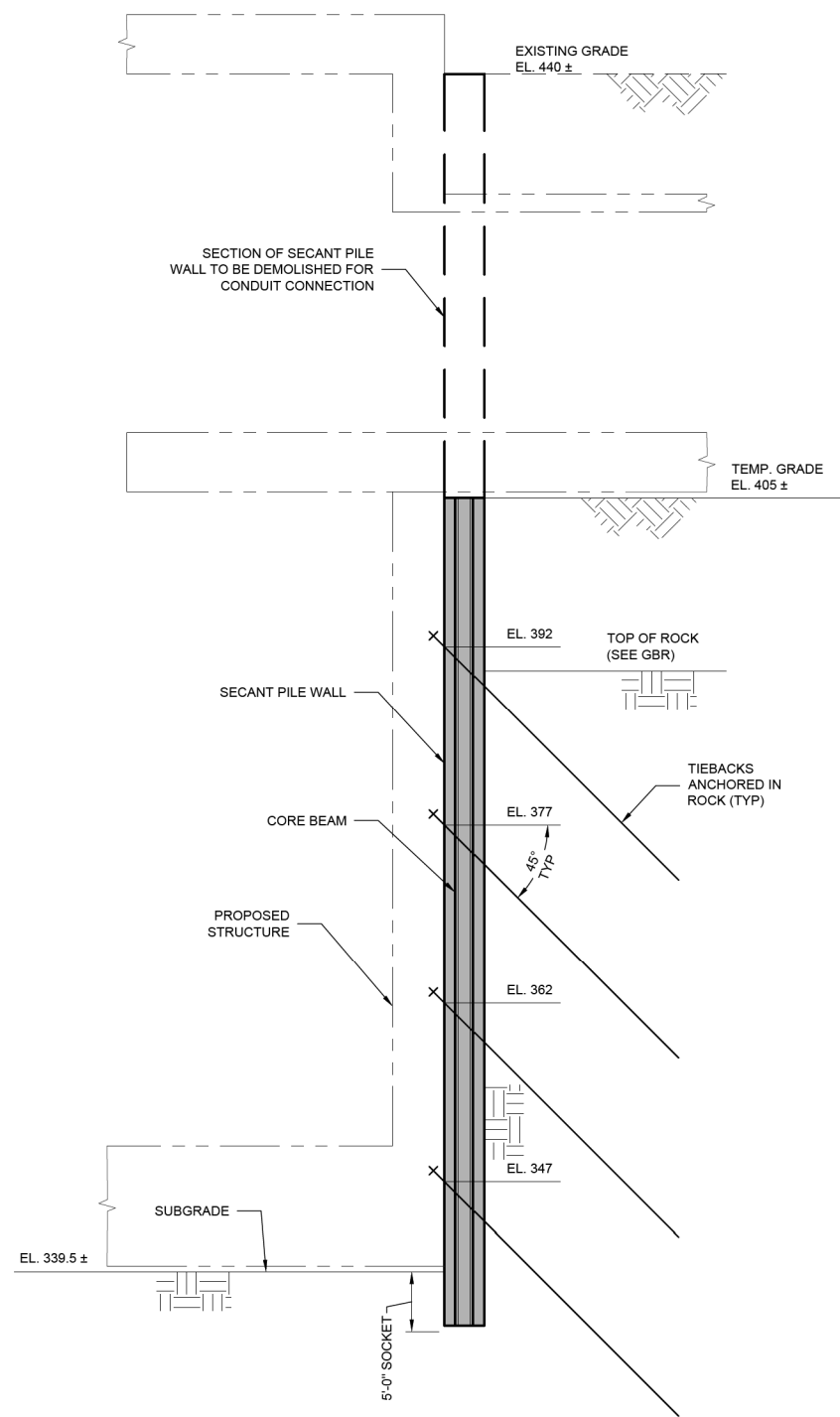
B SECTION VIEW
S-141
SCALE: 1/8"=1'-0"

30% DESIGN
NOT FOR CONSTRUCTION

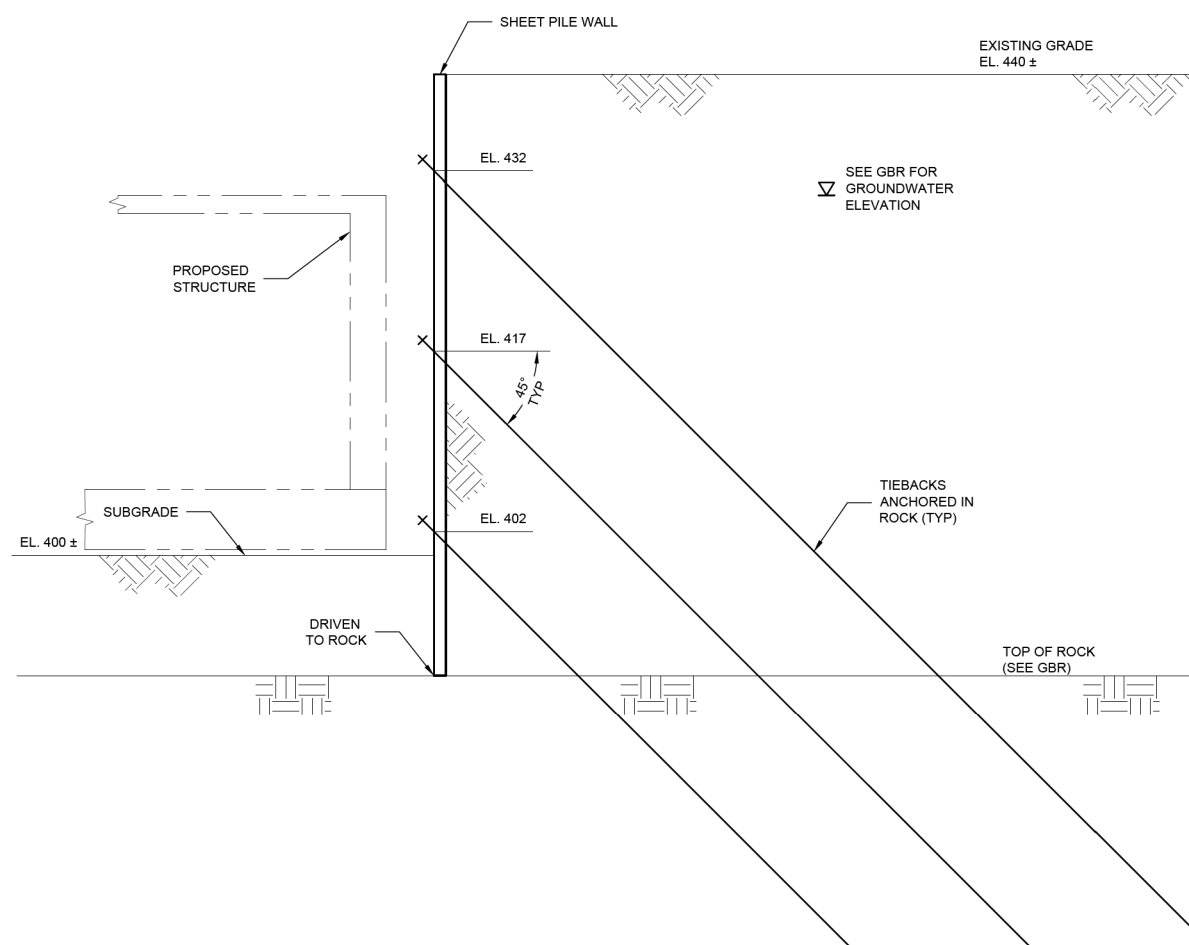


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 Texas Department of Transportation			
CAPITAL EXPRESS CENTRAL PUMP STATION SUPPORT OF EXCAVATION SECTIONS			
SHEET 1 OF 3			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		S-145 PDF.dgn

NOTES:
 1. XXXXXXXXXXXXXXXX.



C SECTION VIEW
 SCALE: 1/8"=1'-0"
 0 5 10



D SECTION VIEW
 SCALE: 1/8"=1'-0"
 0 5 10

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**PUMP STATION
 SUPPORT OF EXCAVATION
 SECTIONS**

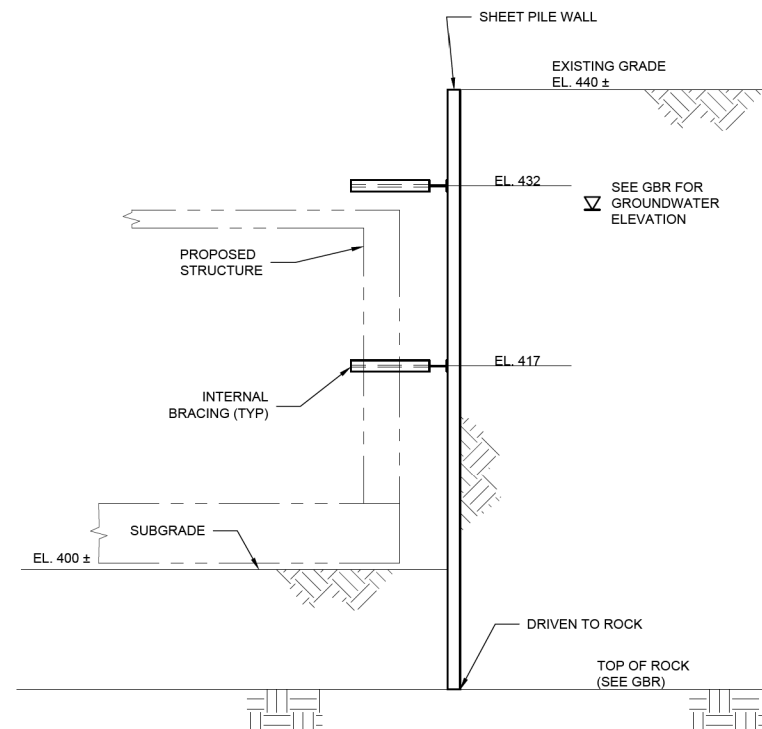
SHEET 2 OF 3

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CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	222	

NOTES:
1. XXXXXXXXXXXXXXXX.



E SECTION VIEW
S-143
SCALE: 1/8"=1'-0"

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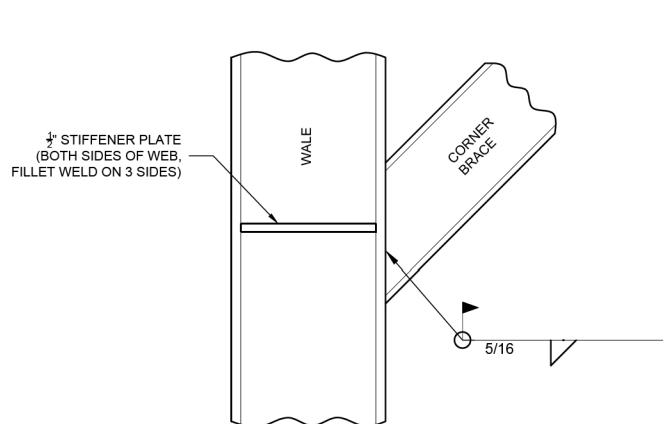
**CAPITAL EXPRESS CENTRAL
PUMP STATION
SUPPORT OF EXCAVATION
SECTIONS**

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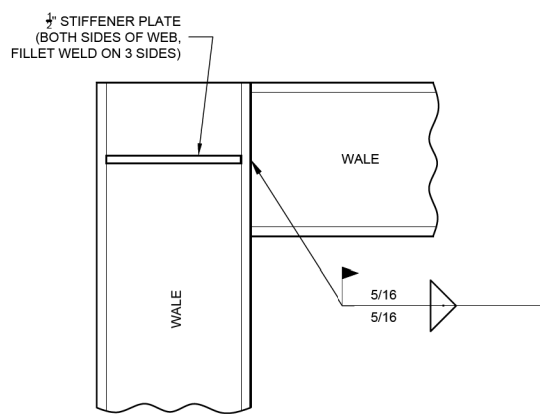
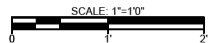
SHEET 3 OF 3

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	S-147 PDF.dgn	



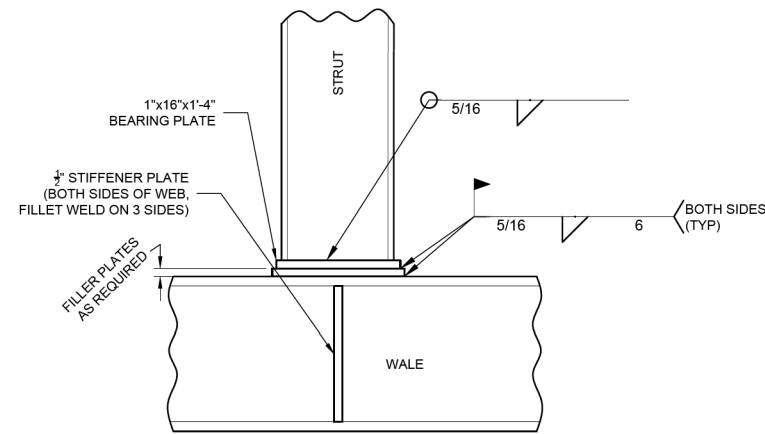
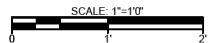
NOTE: SECANT PILES NOT SHOWN FOR CLARITY.

1 TYPICAL WALE-TO-CORNER BRACE DETAIL



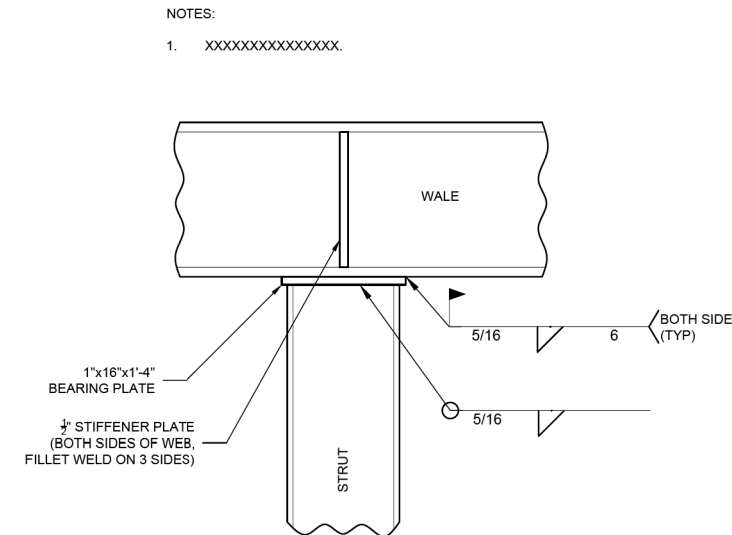
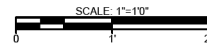
NOTE: SECANT PILES NOT SHOWN FOR CLARITY.

2 TYPICAL WALE-TO-WALE DETAIL



NOTES:
 1. SECANT PILES NOT SHOWN FOR CLARITY
 2. SUPPORT STRUTS WITH TEMPORARY HANGERS CONNECTED TO WALE CAPABLE OF SUPPORTING WEIGHT OF STRUT.
 3. BOTH ENDS OF STRUT SHALL BE IN FULL FLUSH BEARING WITH WALE PRIOR TO INSTALLING WELDS.

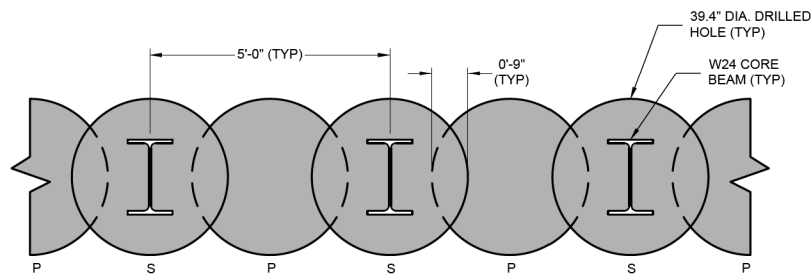
3 TYPICAL WALE-TO-STRUT DETAIL 1



NOTES:
 1. XXXXXXXXXXXXXXXXX.

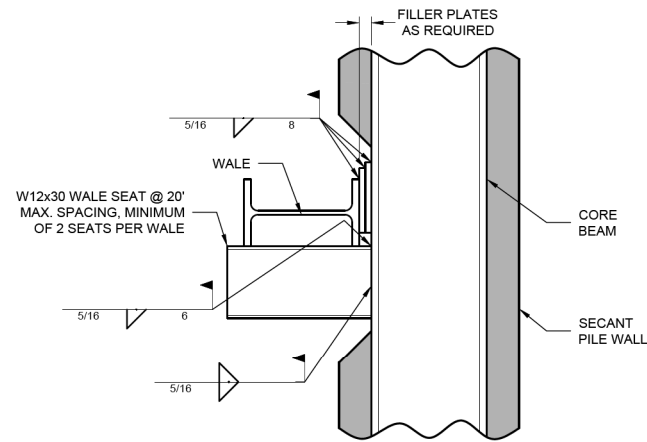
NOTES:
 1. SECANT PILES NOT SHOWN FOR CLARITY
 2. SUPPORT STRUTS WITH TEMPORARY HANGERS CONNECTED TO WALE CAPABLE OF SUPPORTING WEIGHT OF STRUT.
 3. BOTH ENDS OF STRUT SHALL BE IN FULL FLUSH BEARING WITH WALE PRIOR TO INSTALLING WELDS.

4 TYPICAL WALE-TO-STRUT DETAIL 2

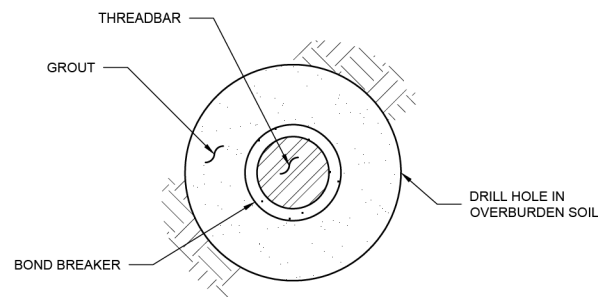
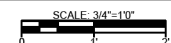


LEGEND:
 P - PRIMARY SECANT PILE
 S - SECONDARY SECANT PILE

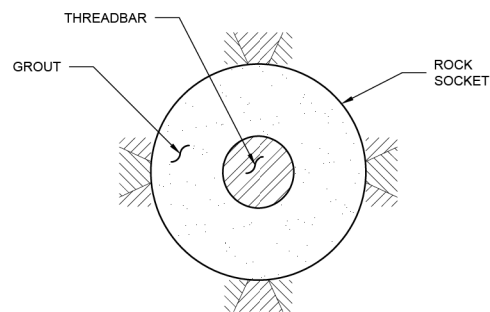
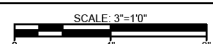
5 SECANT PILE WALL LAYOUT



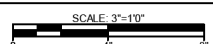
6 TYPICAL SECANT PILE-TO-STRUT DETAIL



7 TIEBACK FREE LENGTH DETAIL



8 TIEBACK ROCK SOCKET DETAIL



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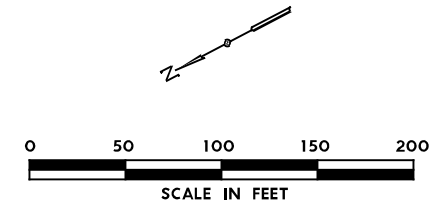
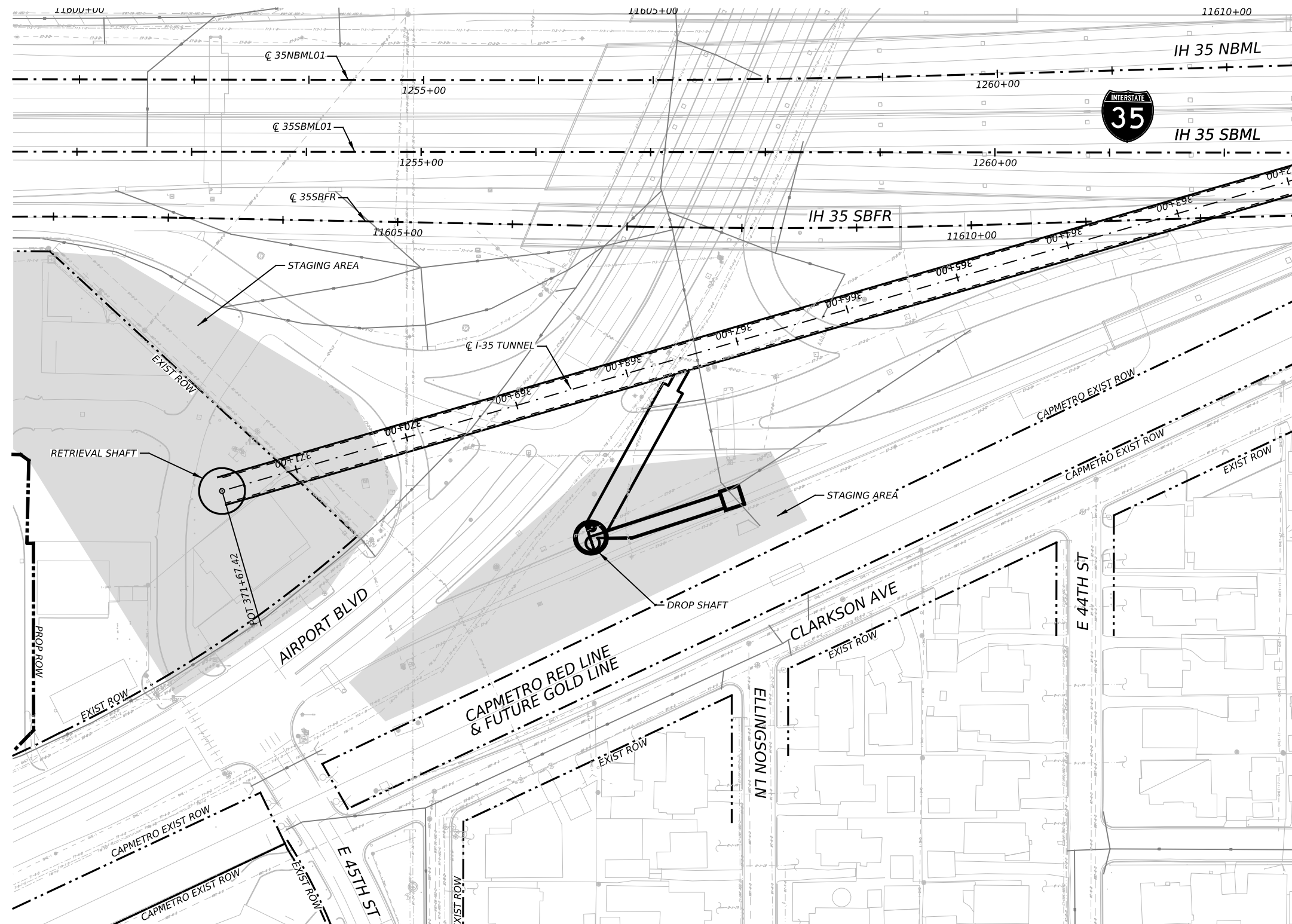
CAPITAL EXPRESS CENTRAL

PUMP STATION
 SUPPORT OF EXCAVATION
 DETAILS

30% DESIGN
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Schnabel
 ENGINEERING

SHEET 1 OF 1			
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		S-148 PDF.dgn



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 P.E. Serial No. 144722
 Date: 6/29/2023

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 TBPE Registration No. F-1046

HDR HDR Engineering, Inc.
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 Round Rock, Texas 78681

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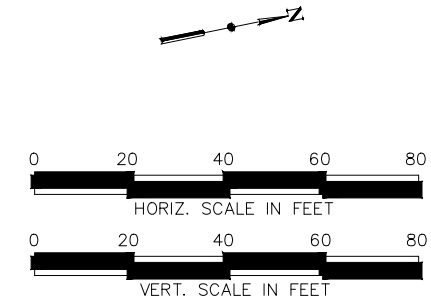
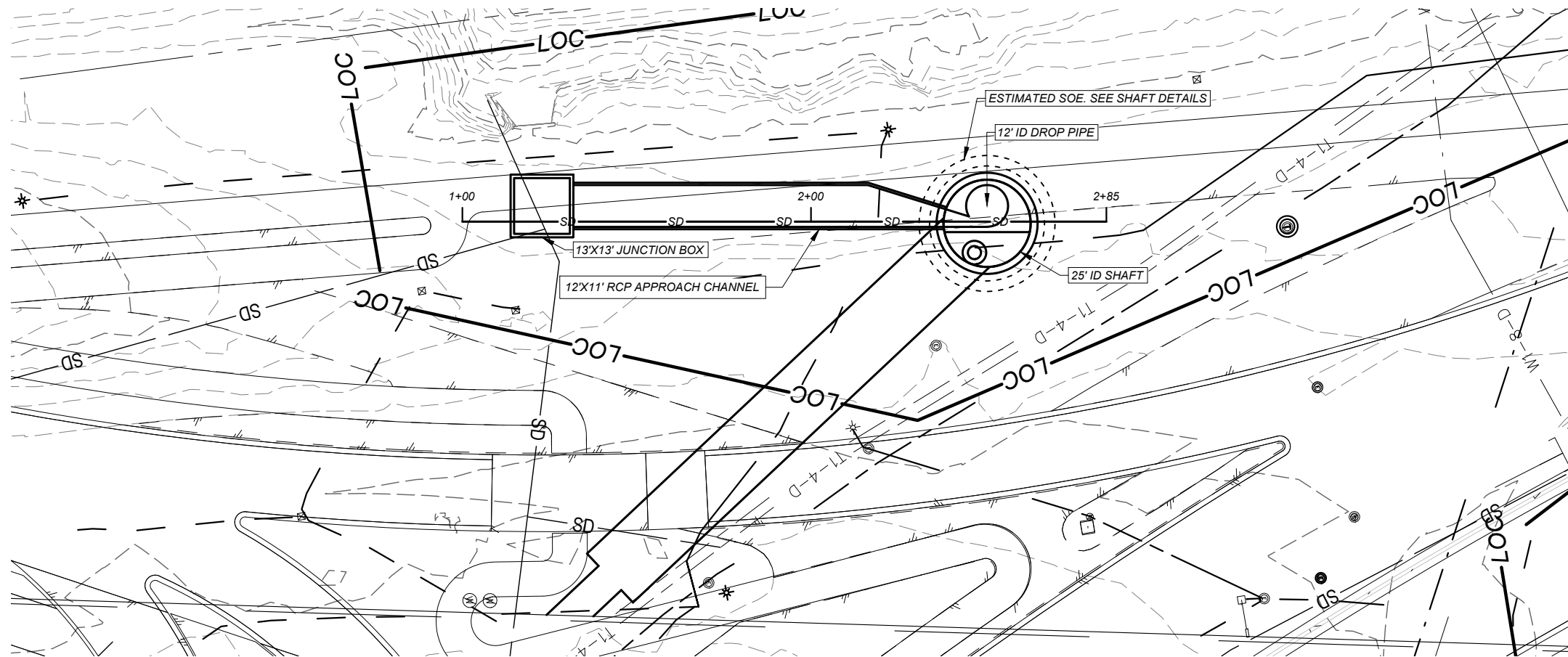
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

AIRPORT BLVD
 DROP SHAFT
 SITE PLAN

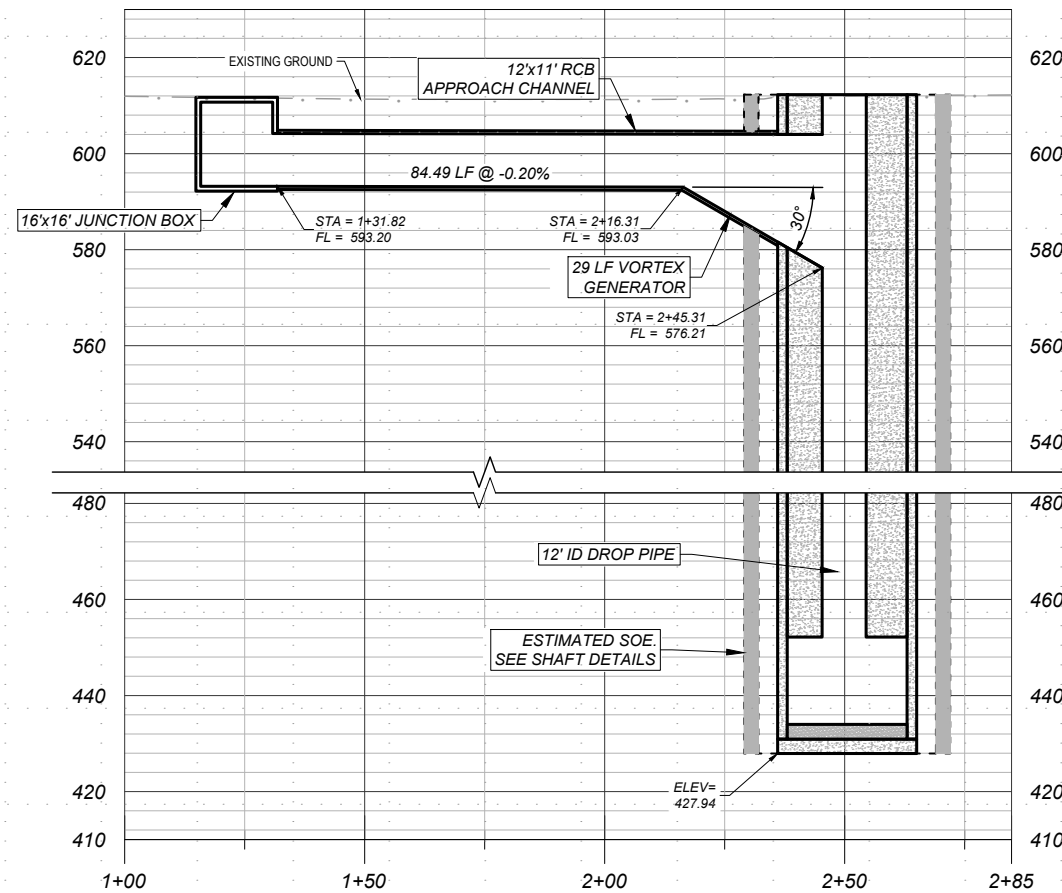
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	225	



AIRPORT APPROACH CHANNEL PROFILE

1" = 40' HORIZ. - 1" = 40' VERT.



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 BGE, Inc., TBPE Firm No. 1046

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mobility 35
 CAPITAL AREA

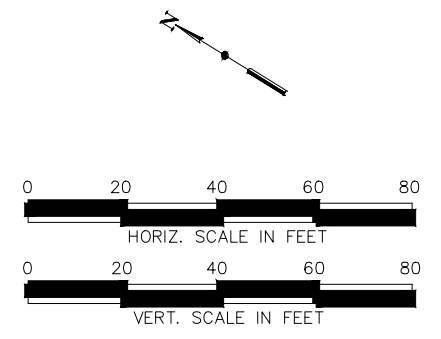
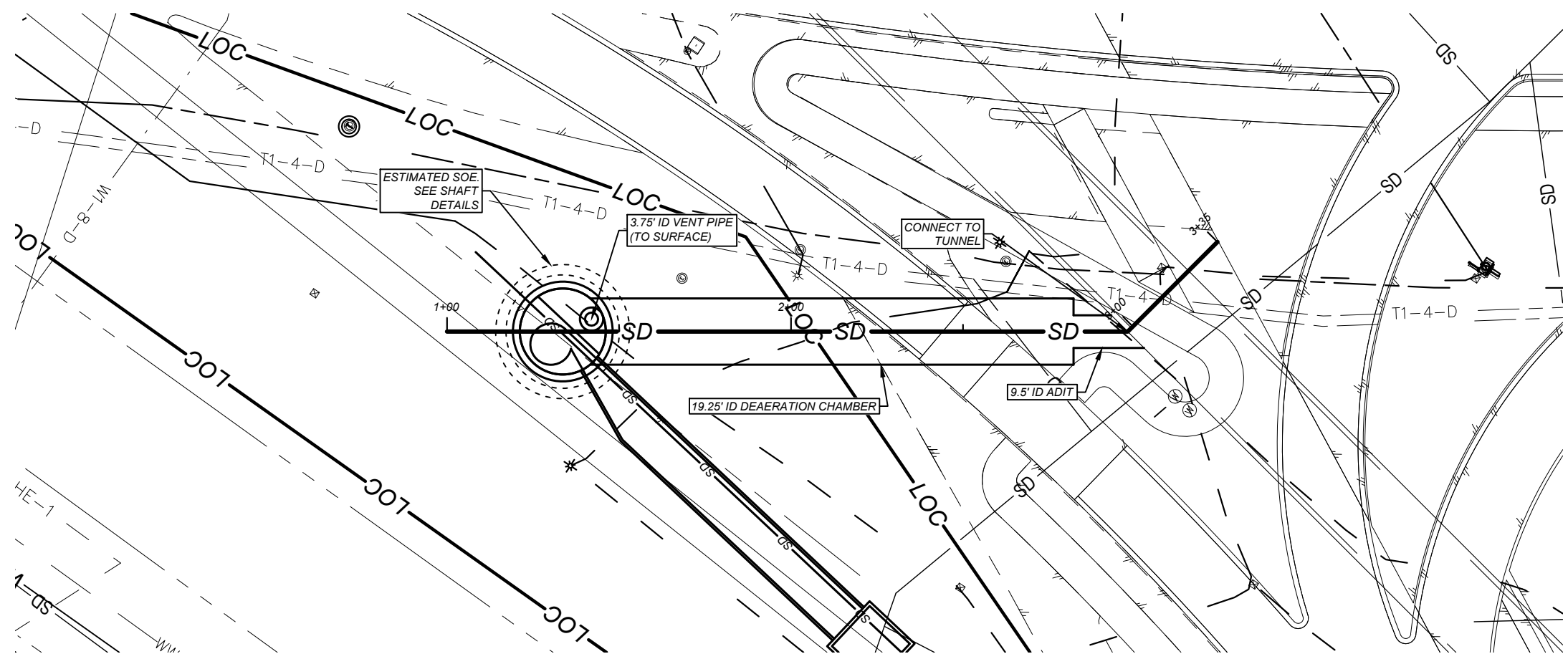
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

AIRPORT DROP SHAFT APPROACH CHANNEL

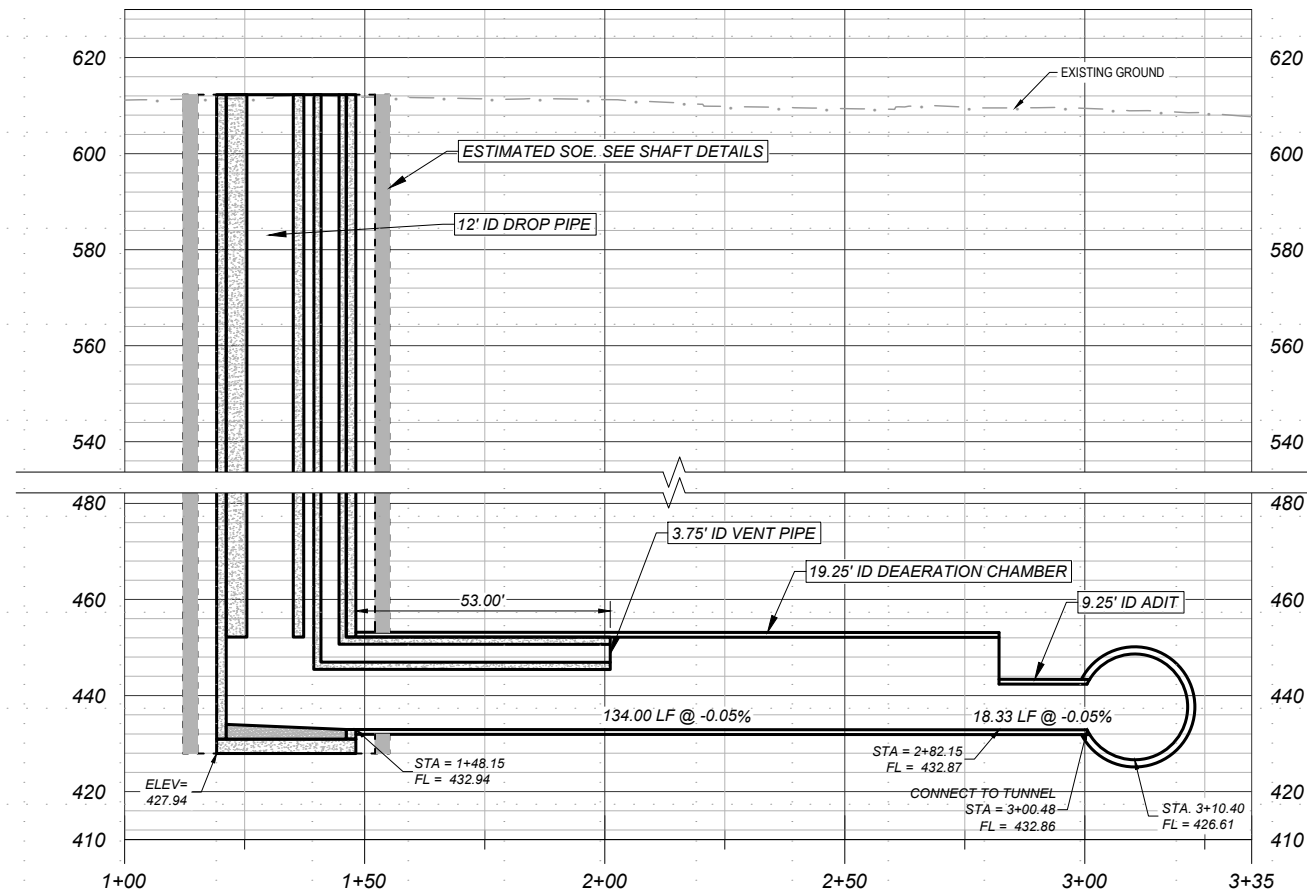
SHEET OF

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	226	



AIRPORT ADIT PROFILE

1" = 40' HORZ. - 1" = 40' VERT.



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 Round Rock, Texas 78681

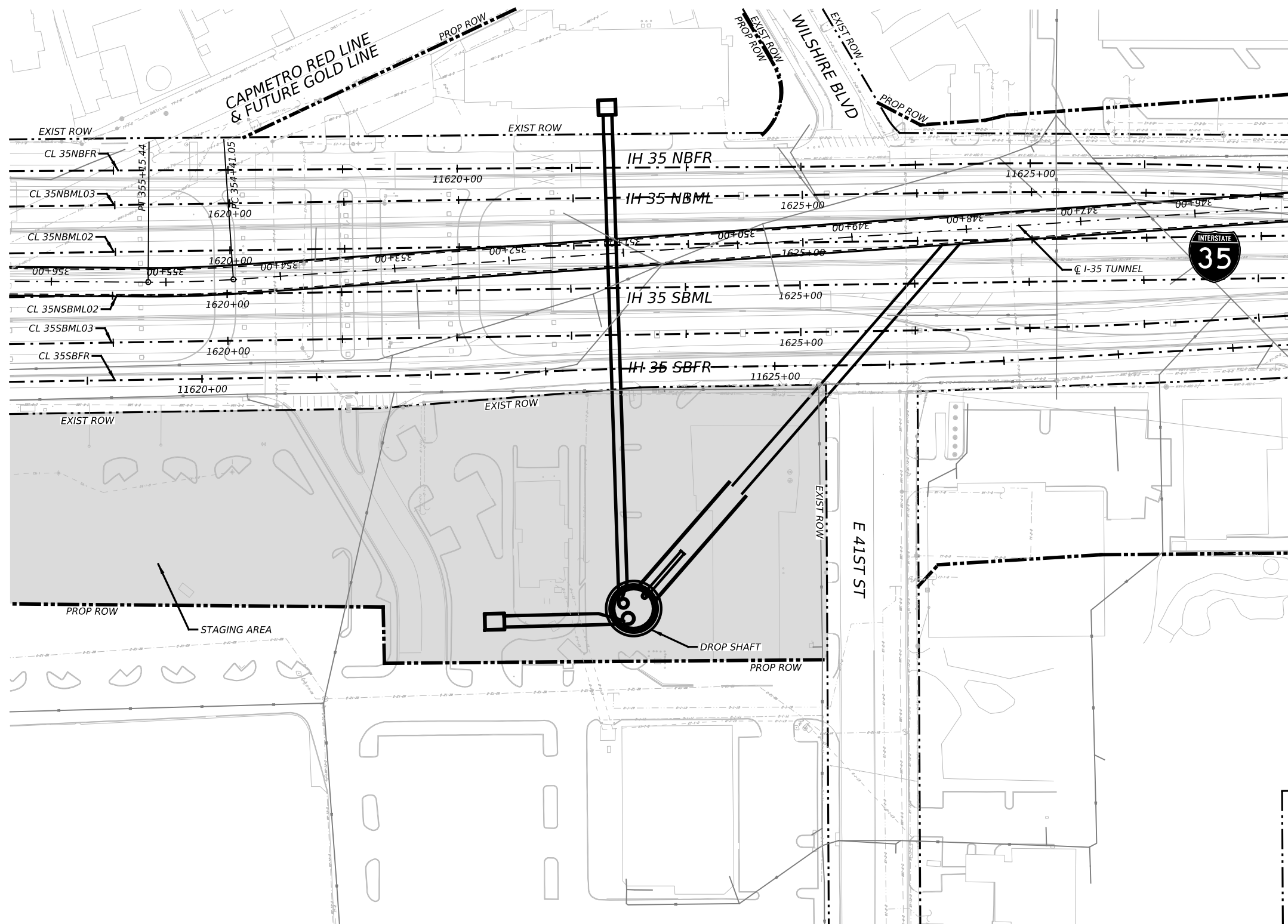
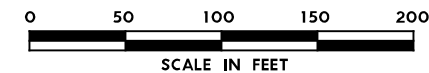
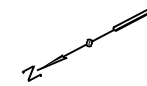
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

AIRPORT DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	227



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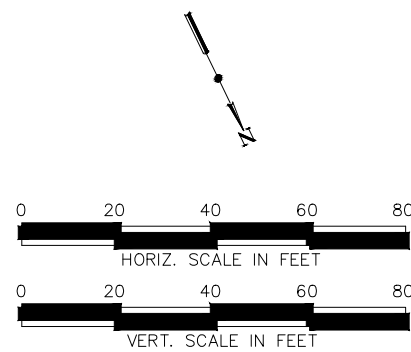
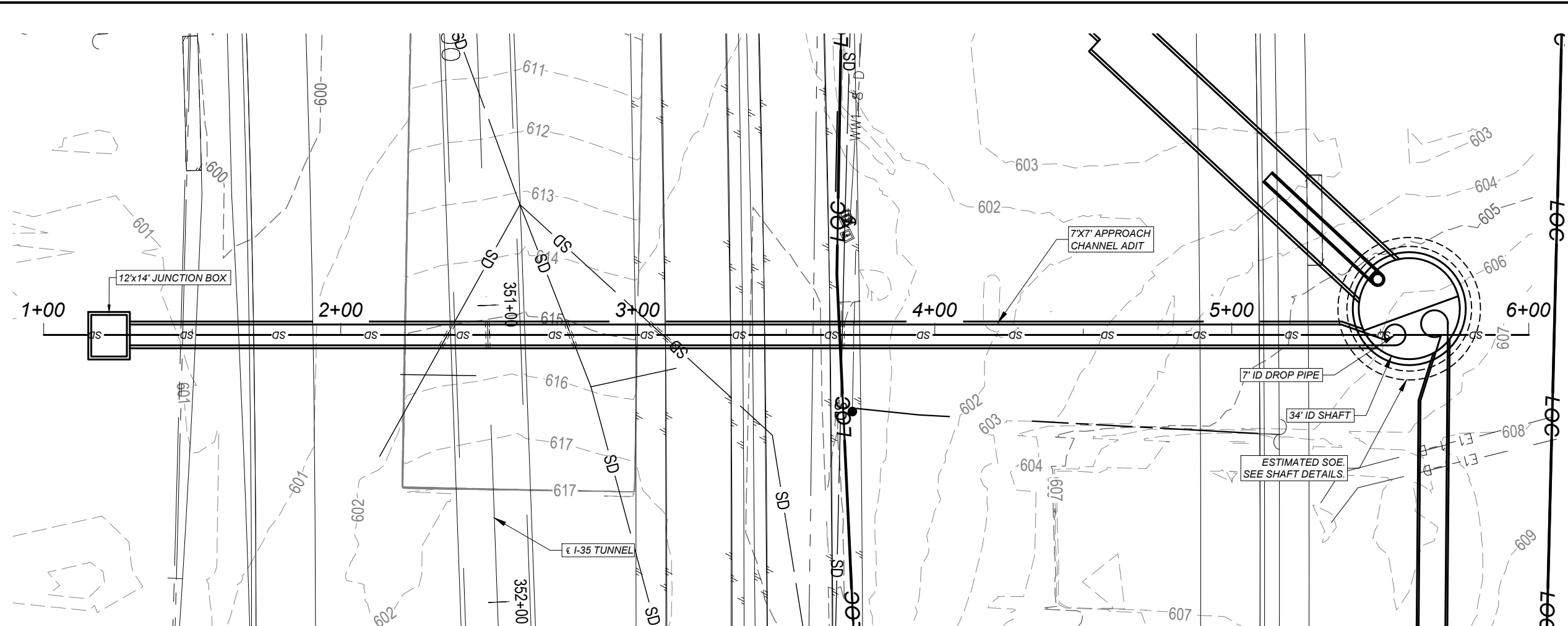
mobility CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 HANCOCK CENTER
 DROP SHAFT
 SITE PLAN

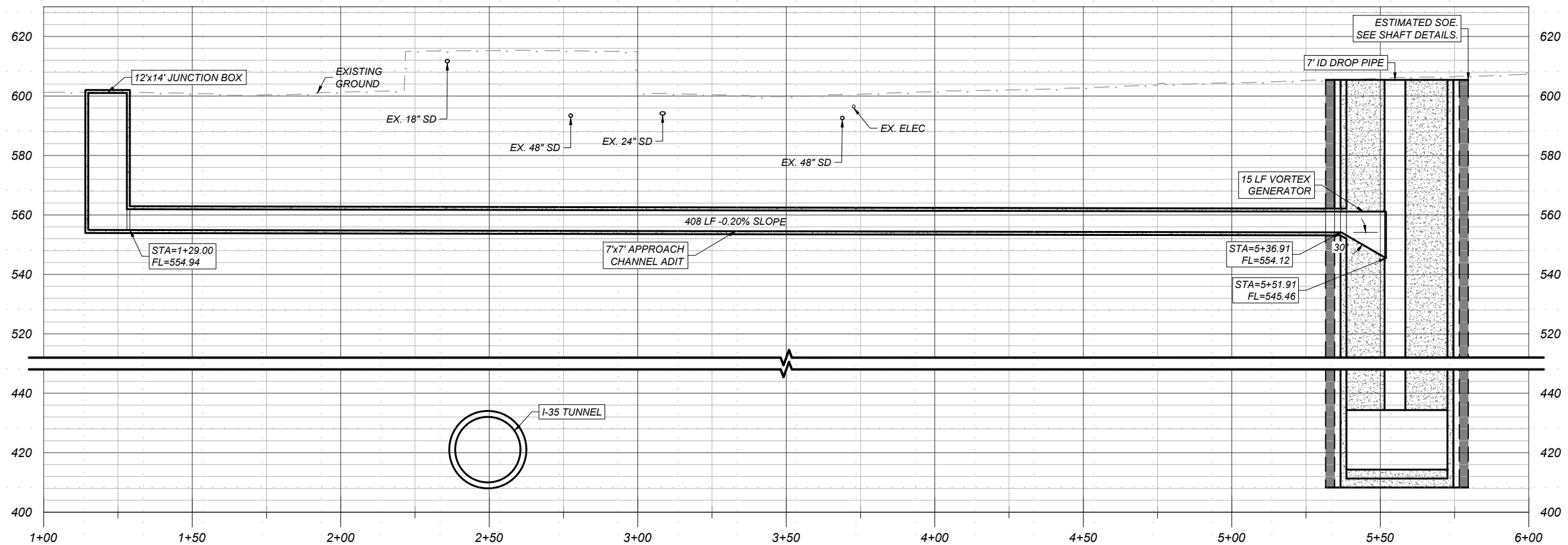
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CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	228	



HANCOCK-ONSITEAPPCH PROFILE

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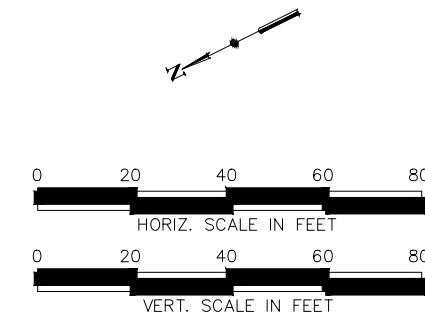
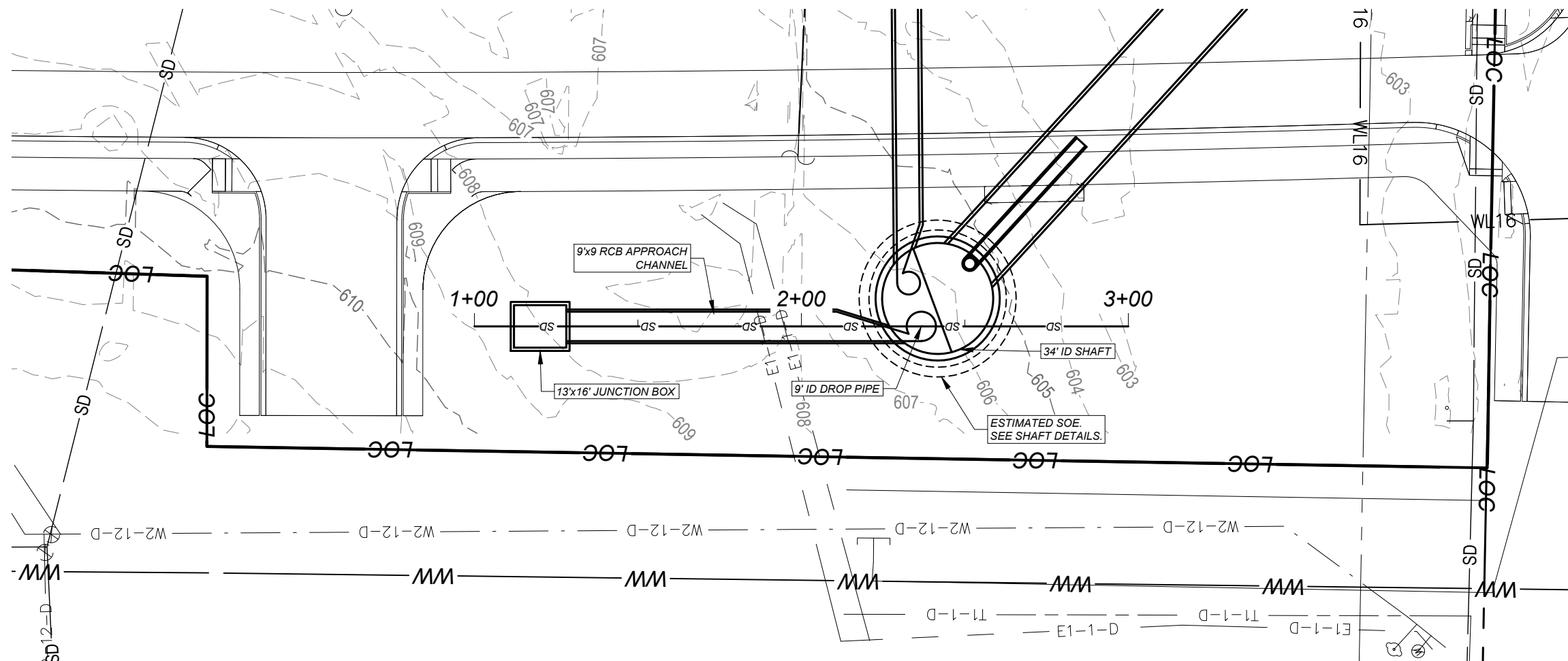
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

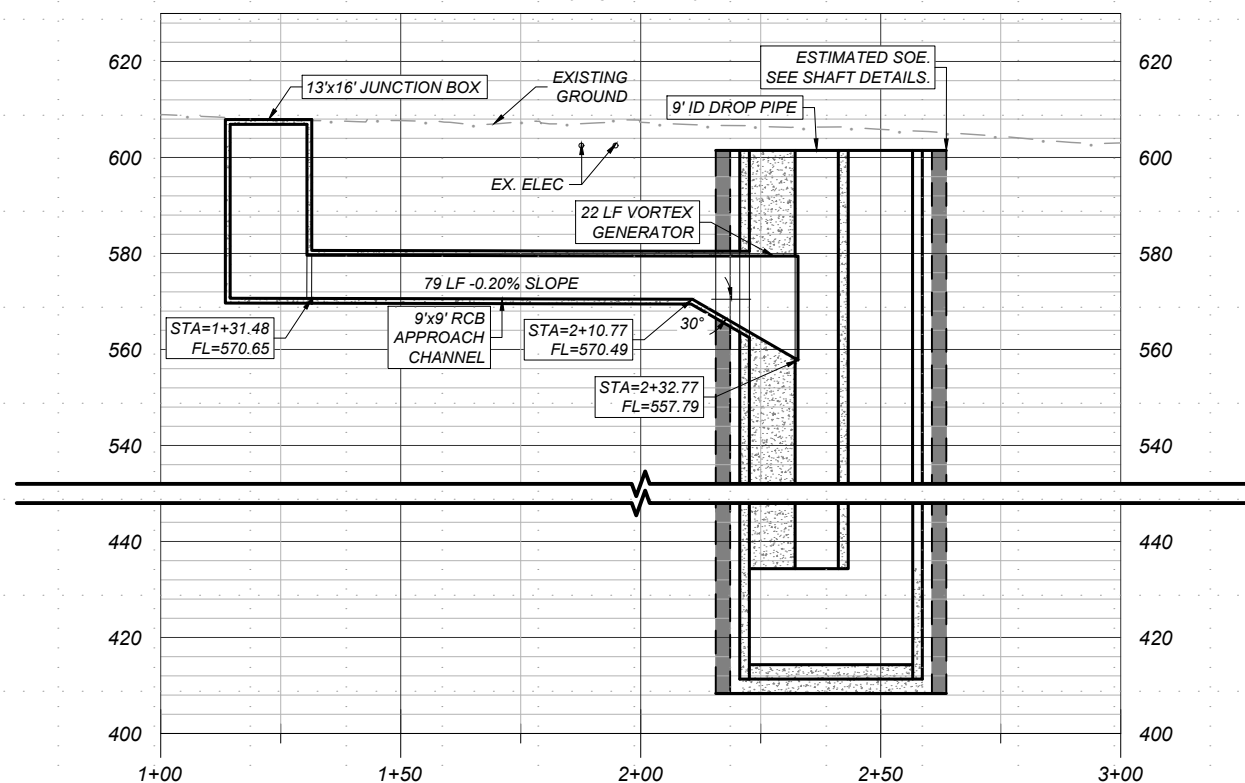
HANCOCK DROP SHAFT ONSITE
 APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	229



HANCOCK-OFFSITE APPCH PROFILE

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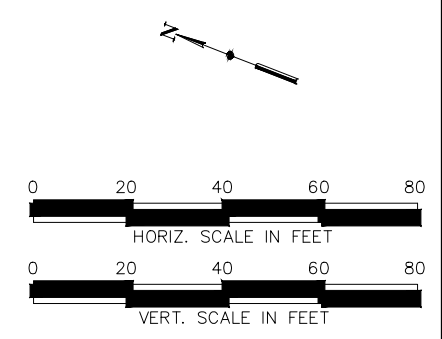
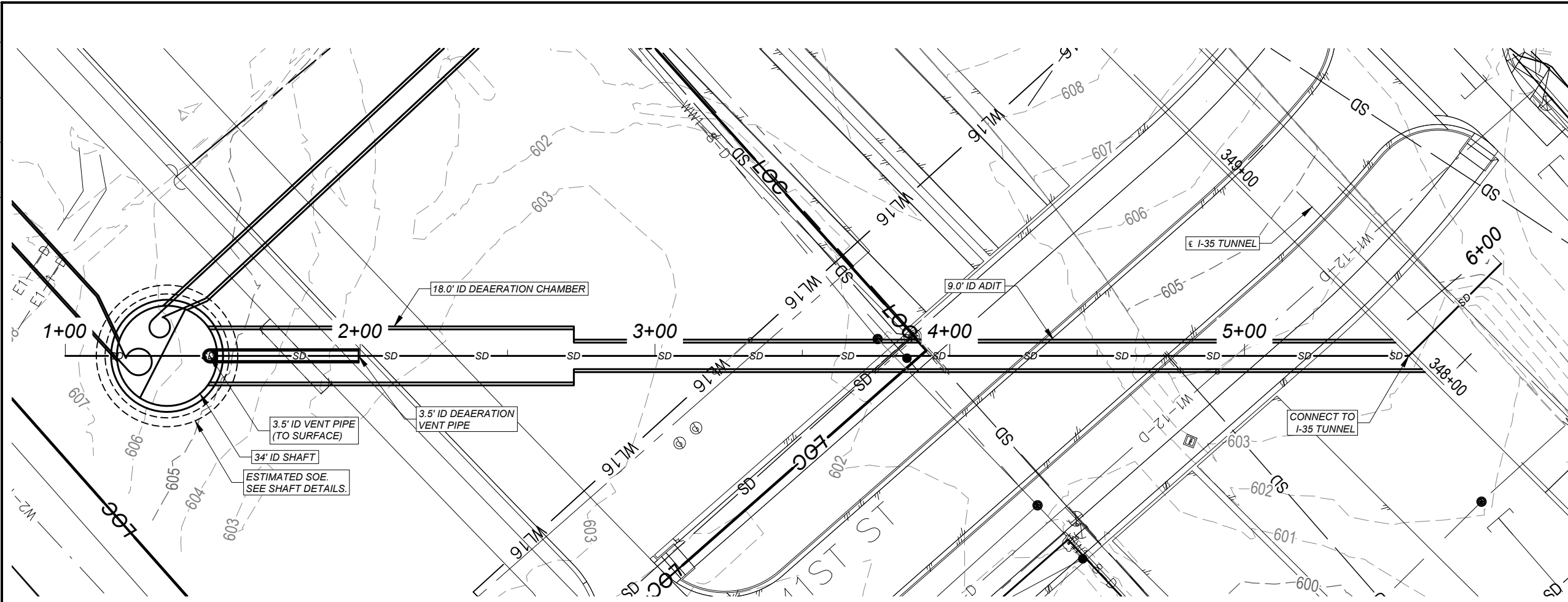
mobility 35
 CAPITAL AREA

Texas Department of Transportation

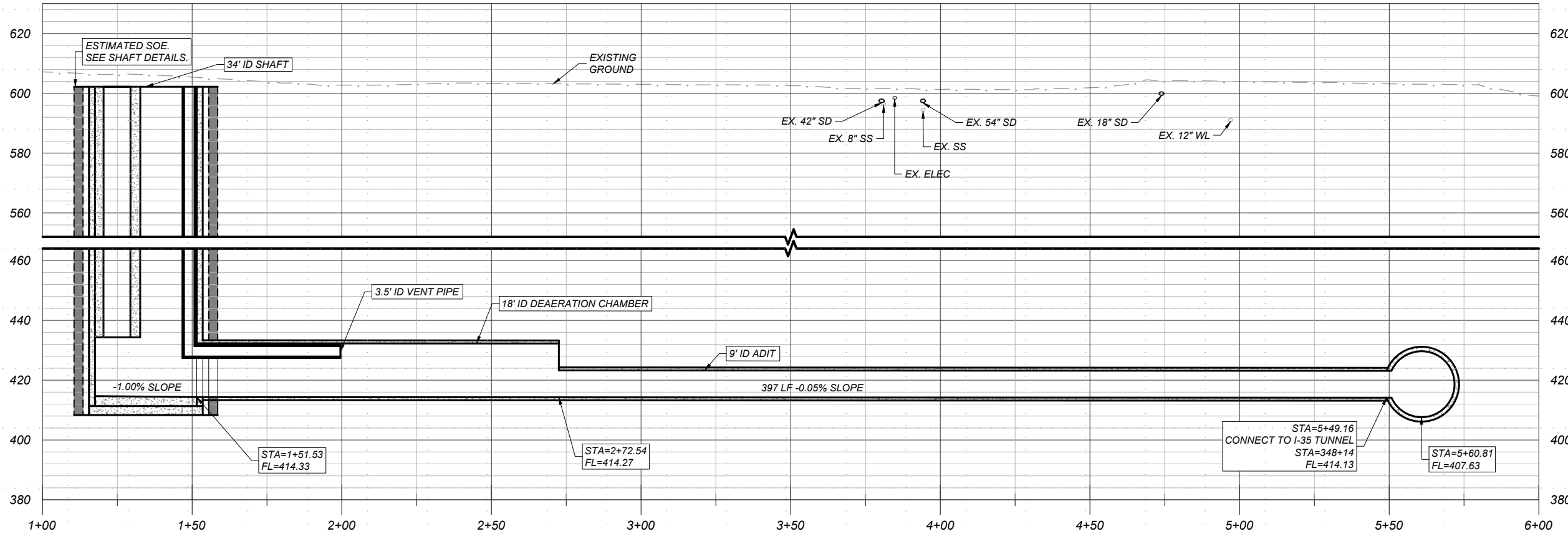
CAPITAL EXPRESS CENTRAL

HANCOCK DROP SHAFT OFFSITE APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	230



HANCOCK-ADIT PROFILE
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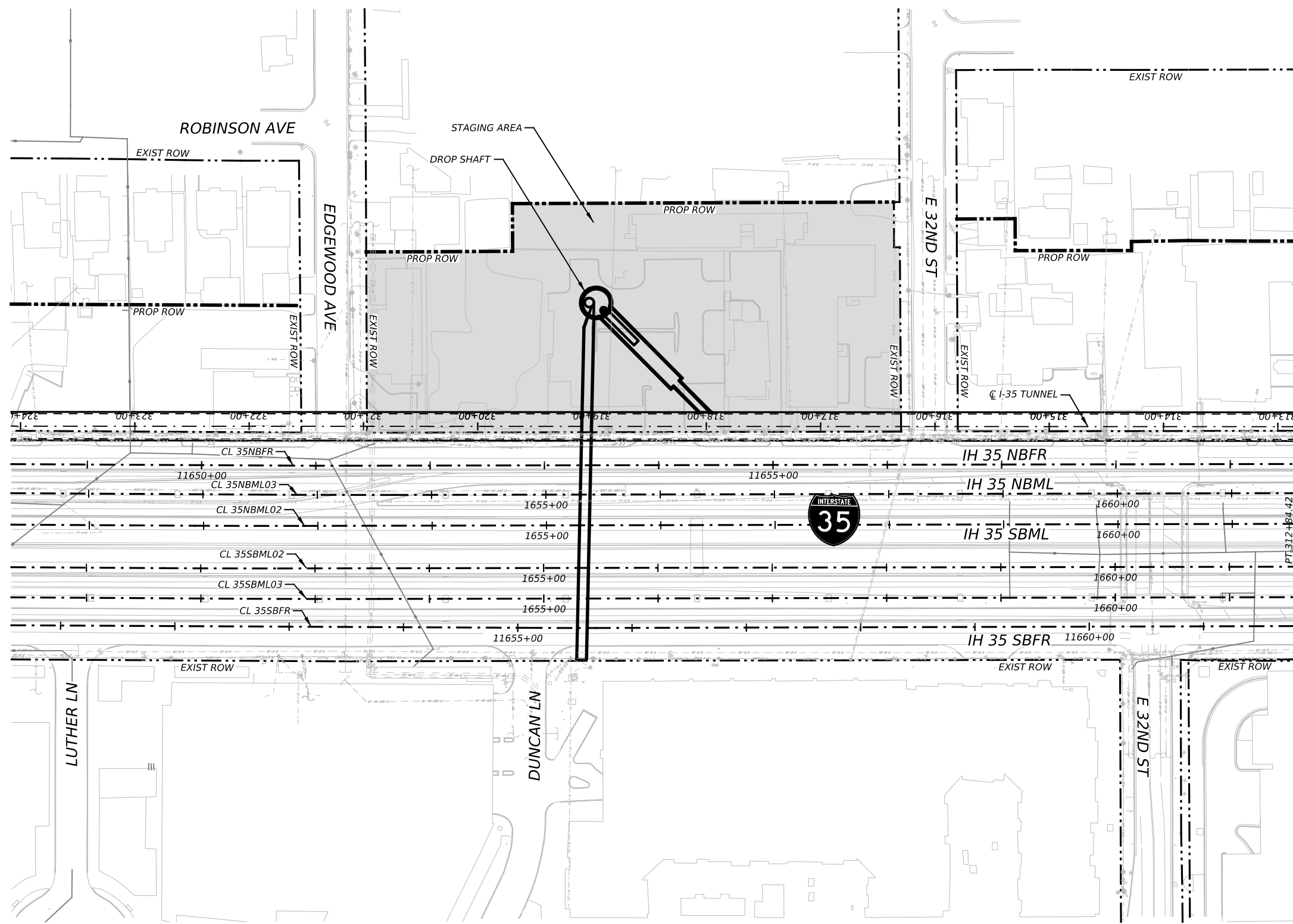
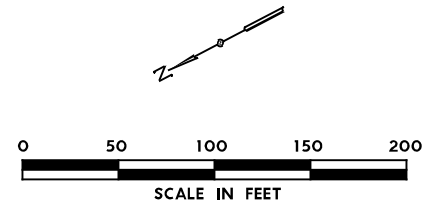
HDR Engineering, Inc.
 Firm Registration No. F-754
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 Round Rock, Texas 78681



CAPITAL EXPRESS CENTRAL

HANCOCK DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	231



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2			
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 Round Rock, Texas 78681

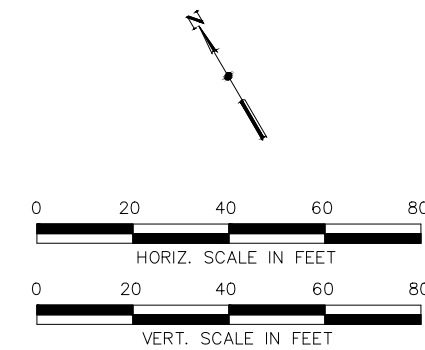
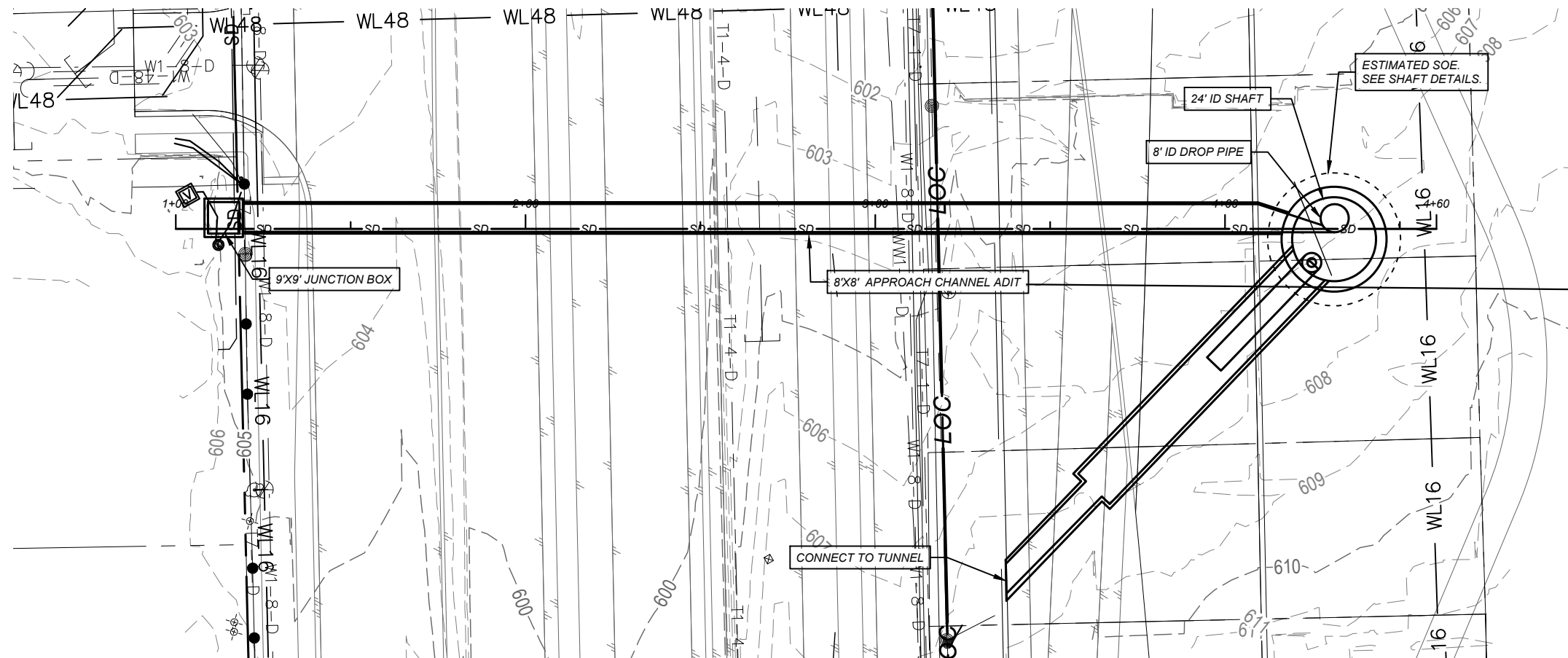
mobility CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 EDGEWOOD AVE
 DROP SHAFT
 SITE PLAN

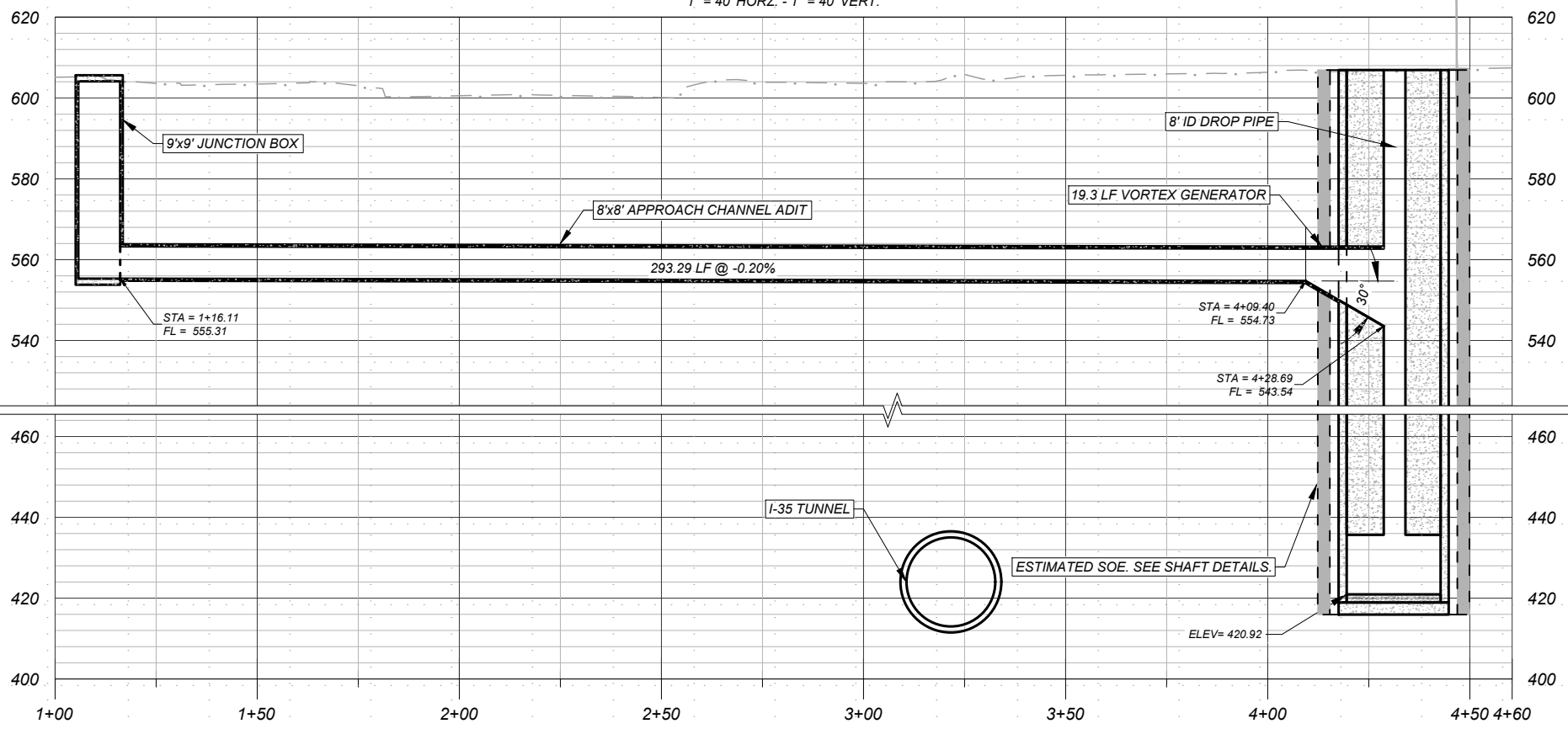
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	232	



EDGEWOOD APPROACH CHANNEL PROFILE

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 Round Rock, Texas 78681

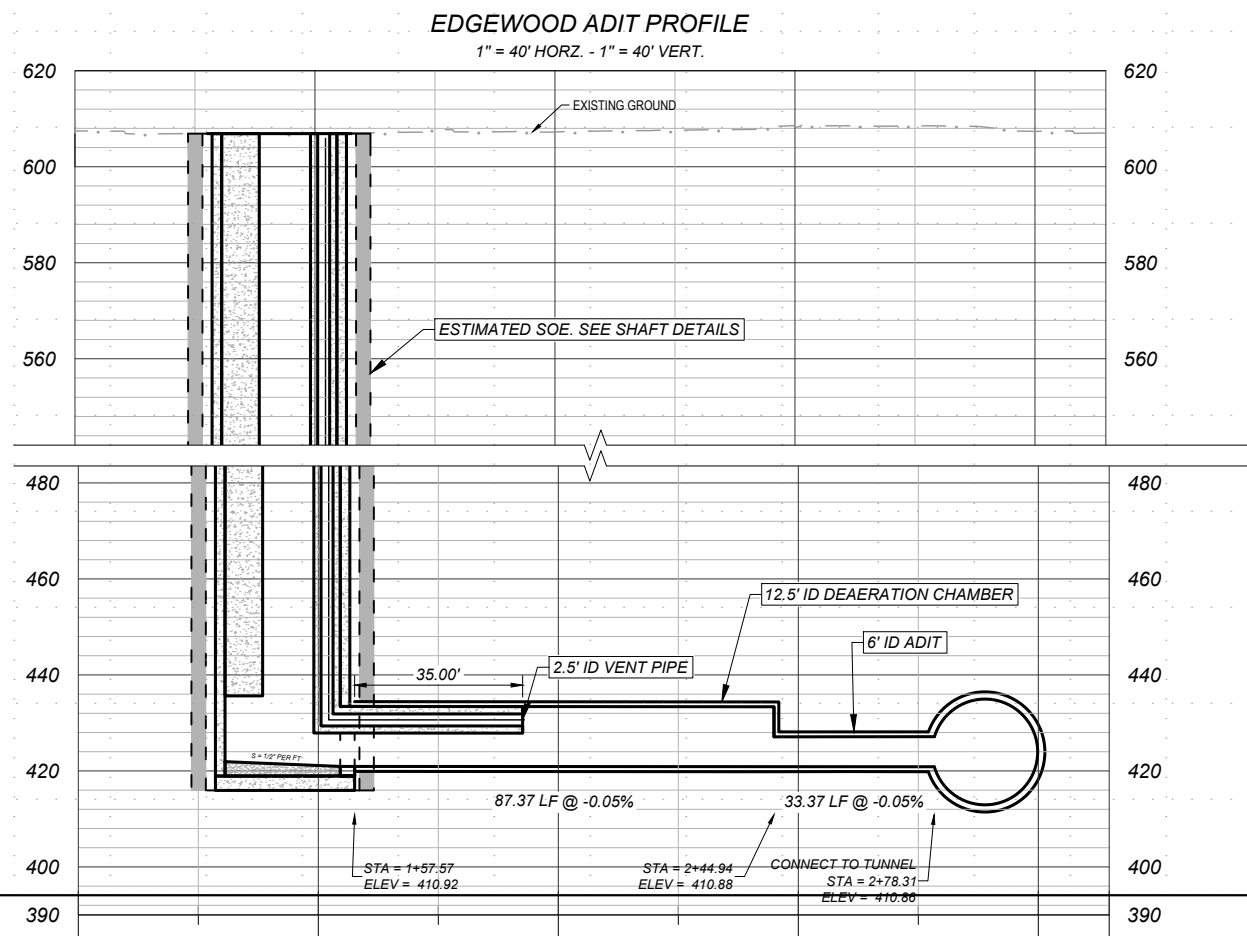
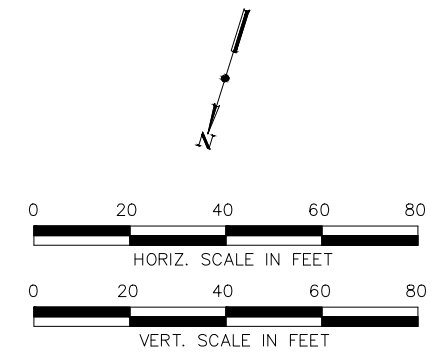
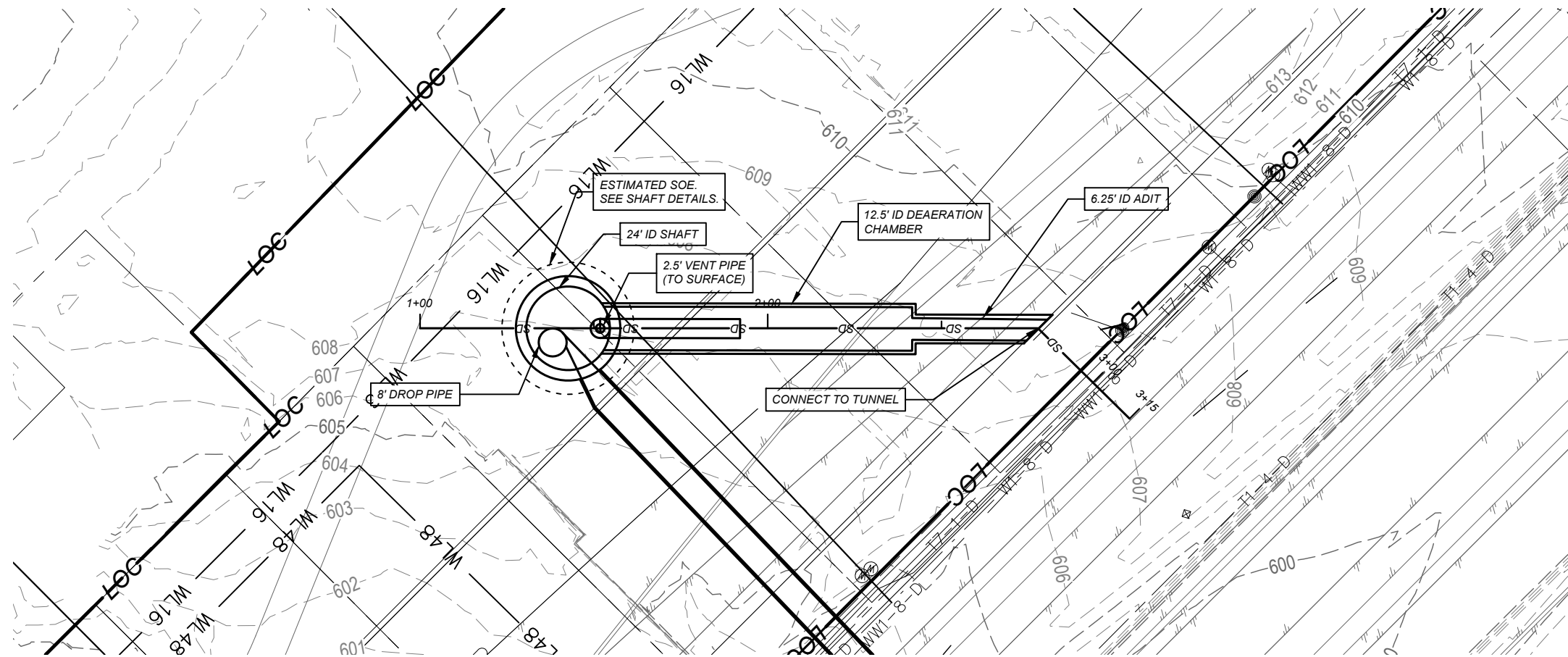
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

EDGEWOOD DROP SHAFT APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	233



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HDR
 HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

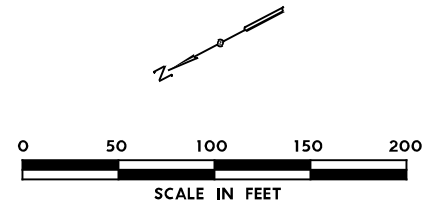
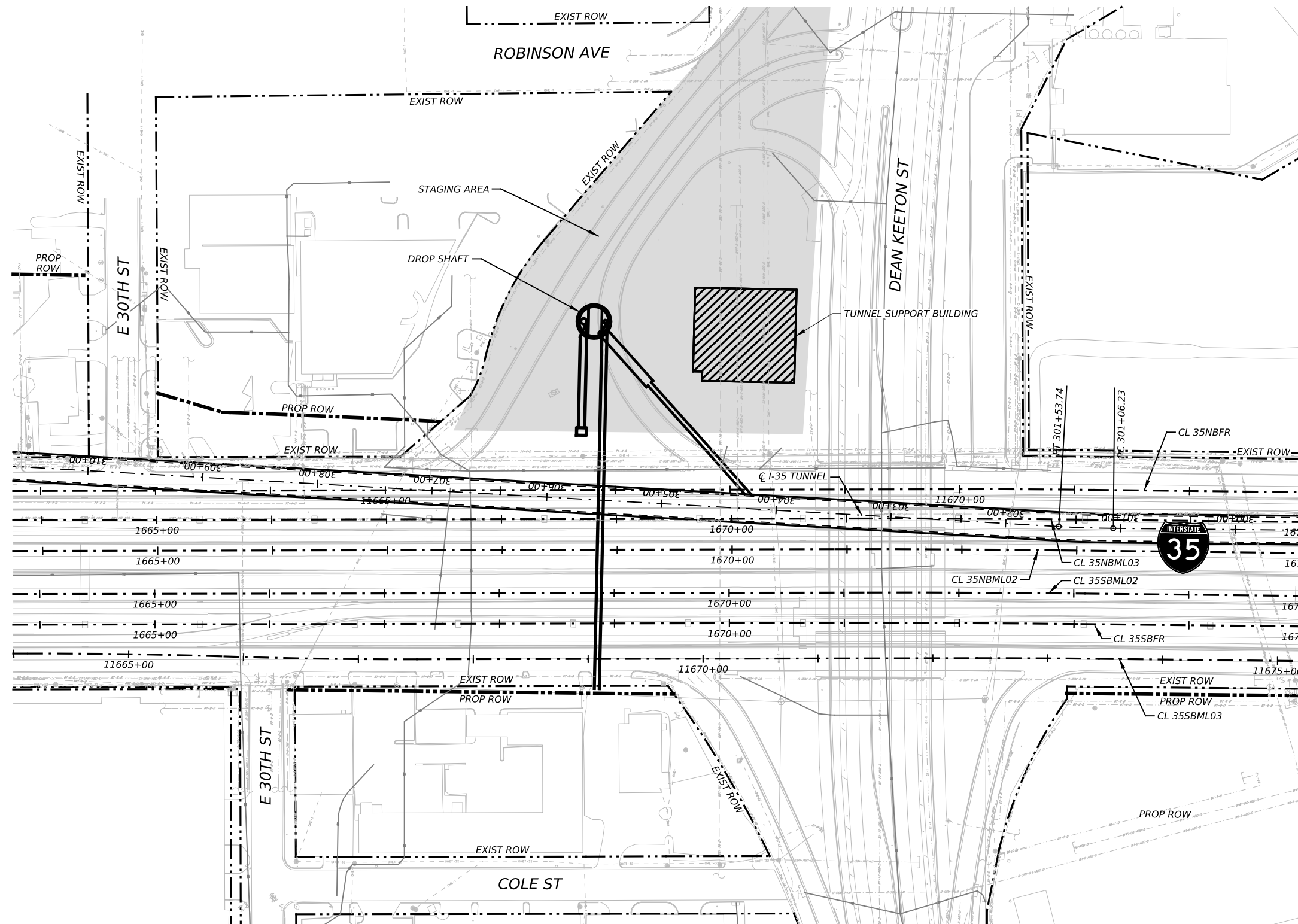
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

EDGEWOOD DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	234



2			
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 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

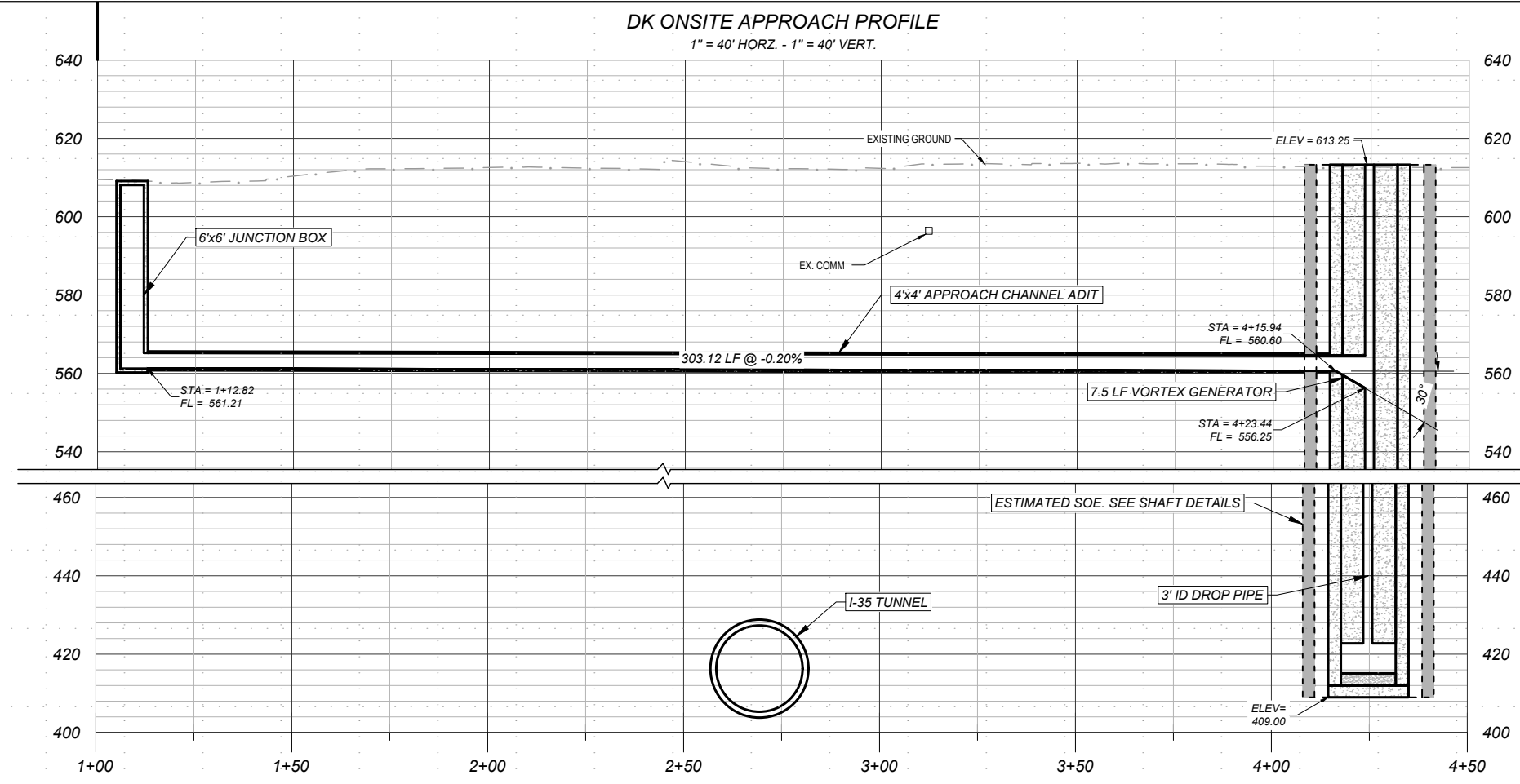
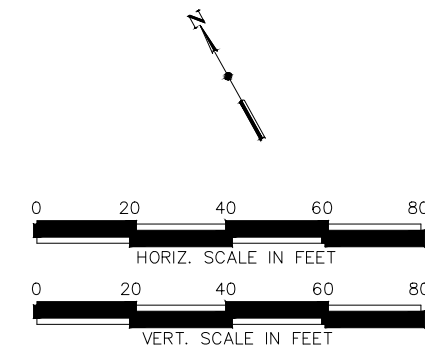
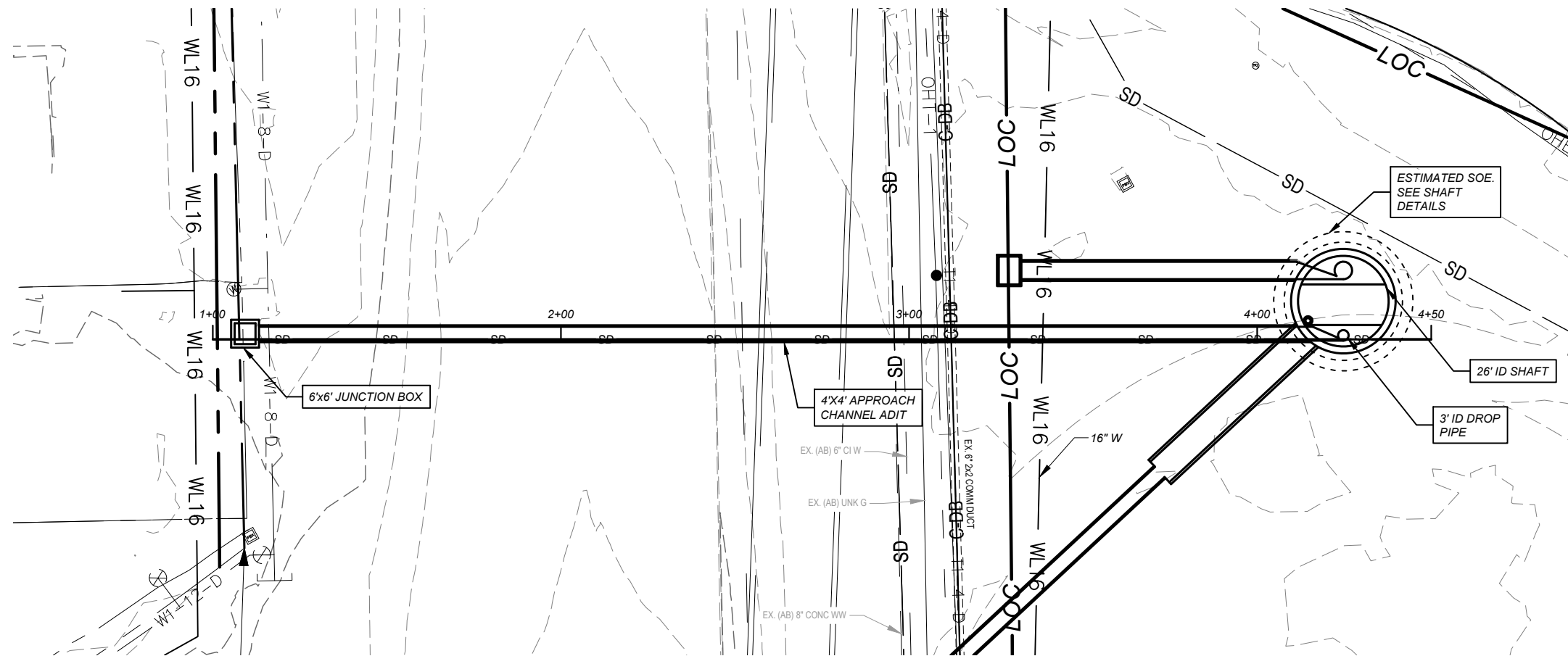
mobility CAPITAL AREA **35**

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 DEAN KEETON STREET
 DROP SHAFT
 SITE PLAN

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	235	



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 Round Rock, Texas 78681

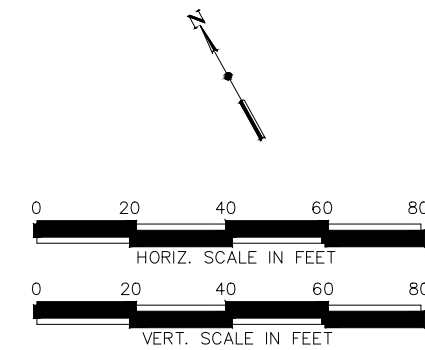
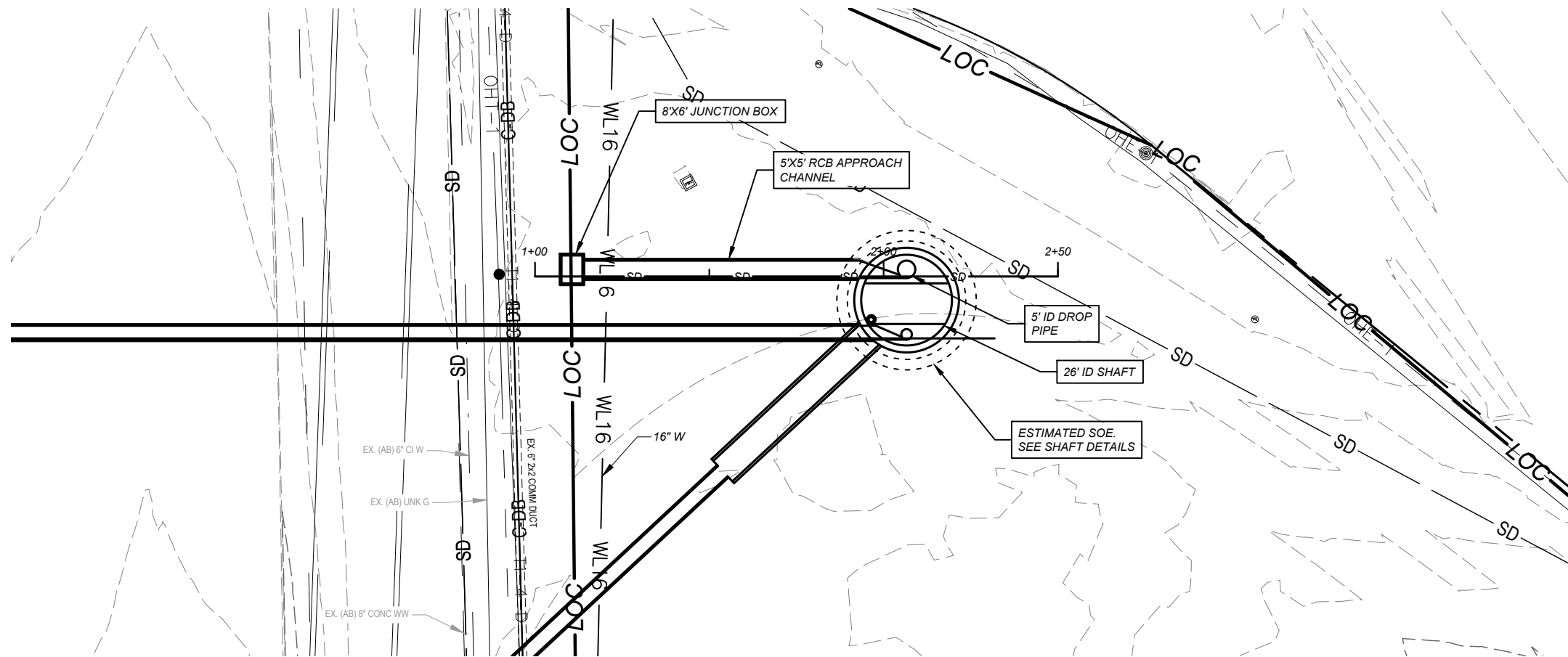
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

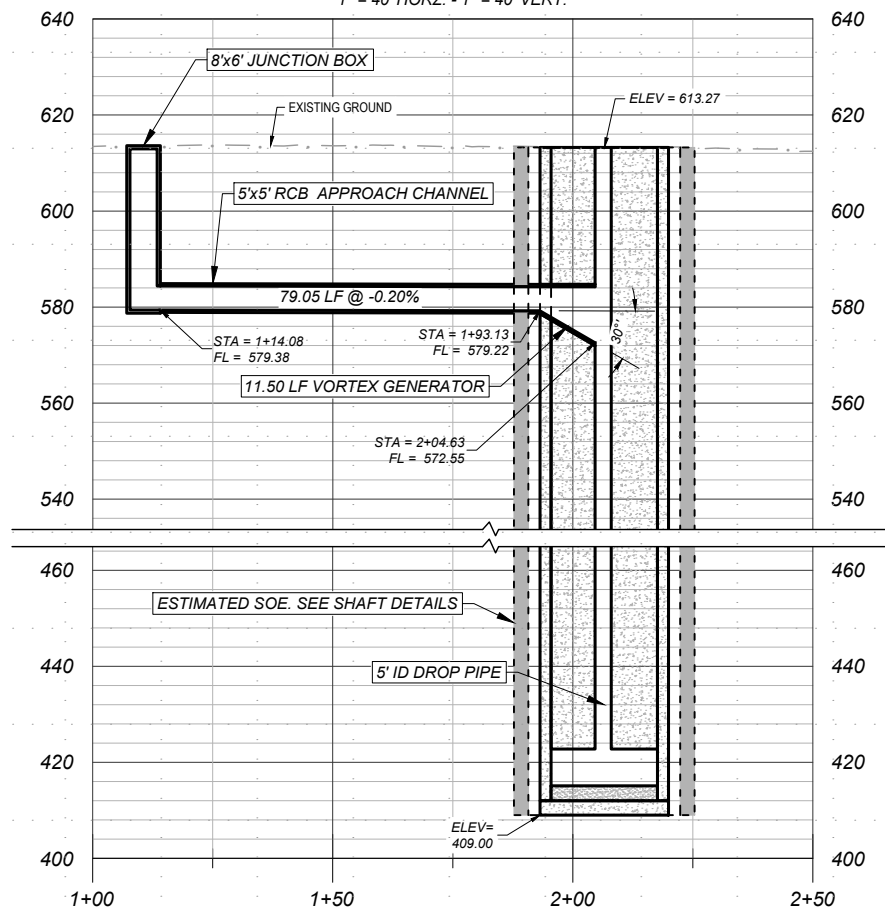
DEAN KEETON DROP SHAFT ONSITE APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	236



DK OFFSITE APPROACH PROFILE

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 Round Rock, Texas 78681

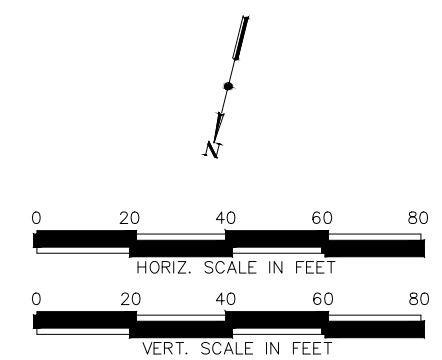
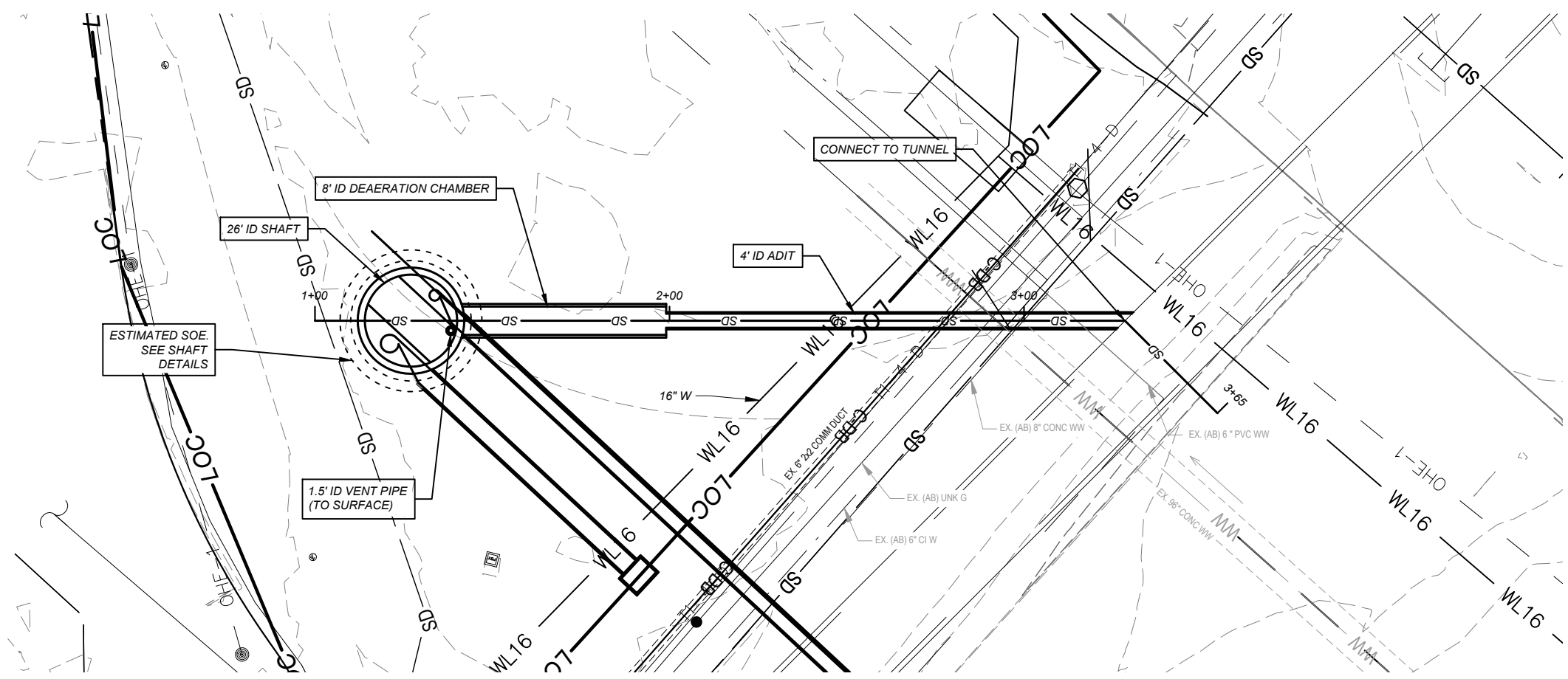
mobility 35
 CAPITAL AREA

Texas Department of Transportation

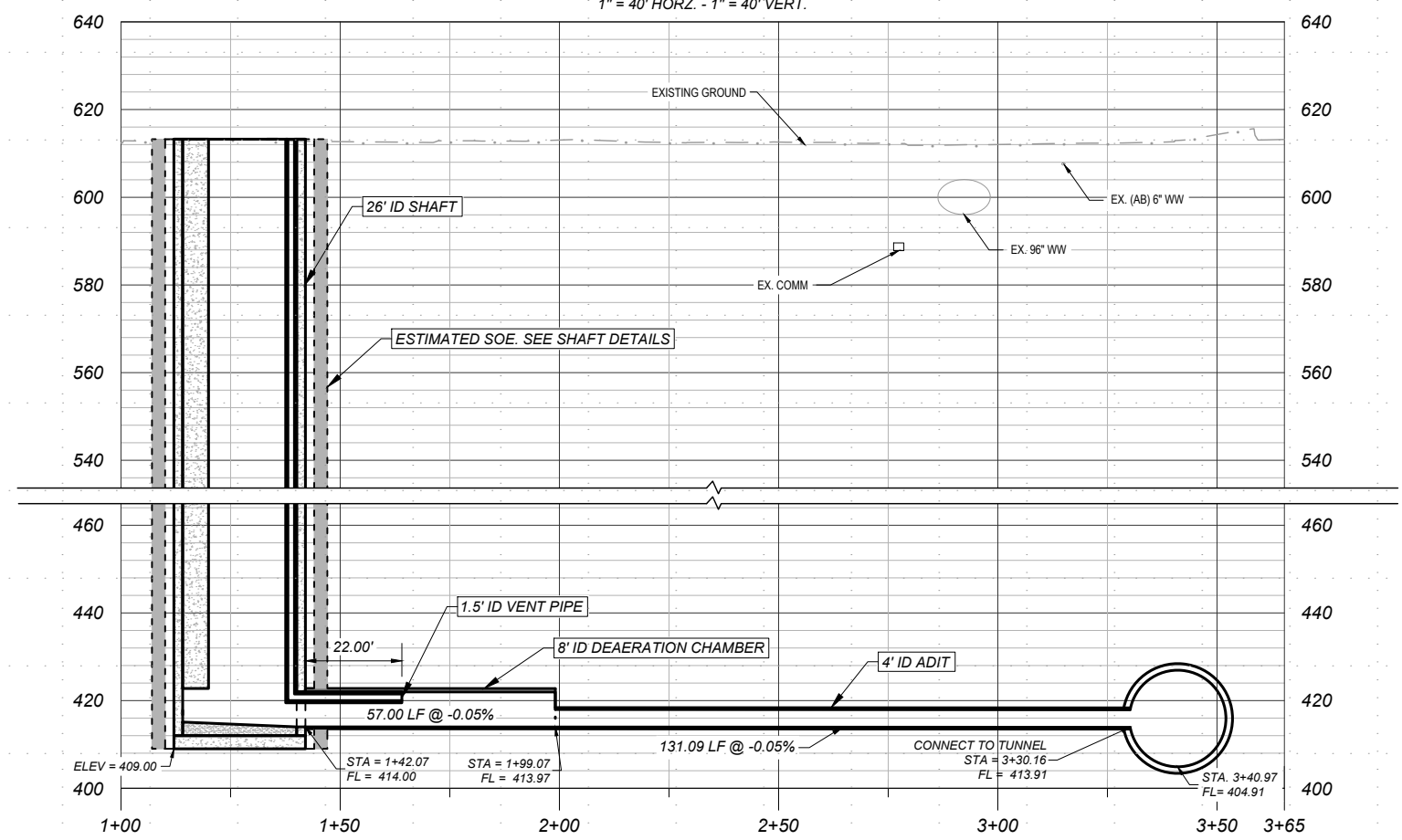
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DEAN KEETON DROP SHAFT OFFSITE APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	237



DK ADIT PROFILE
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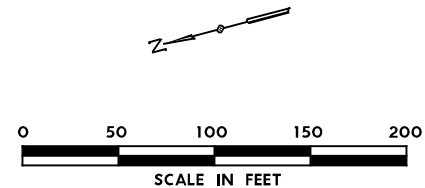
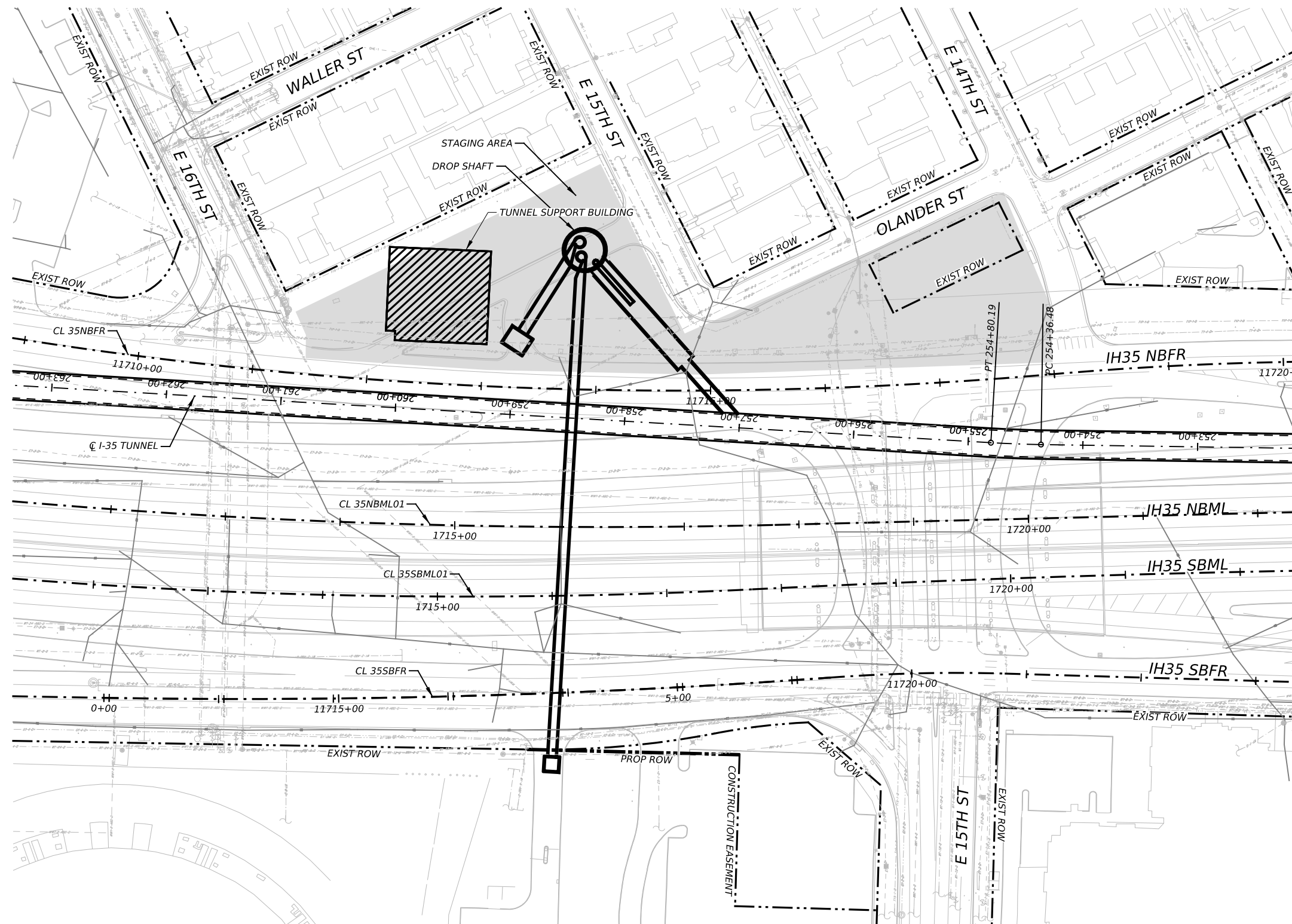
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

DEAN KEETON DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	238



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 Round Rock, Texas 78681

mobility 35
 CAPITAL AREA

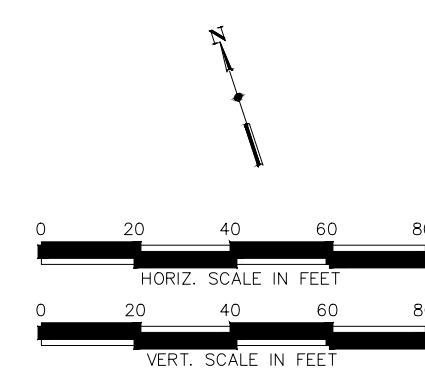
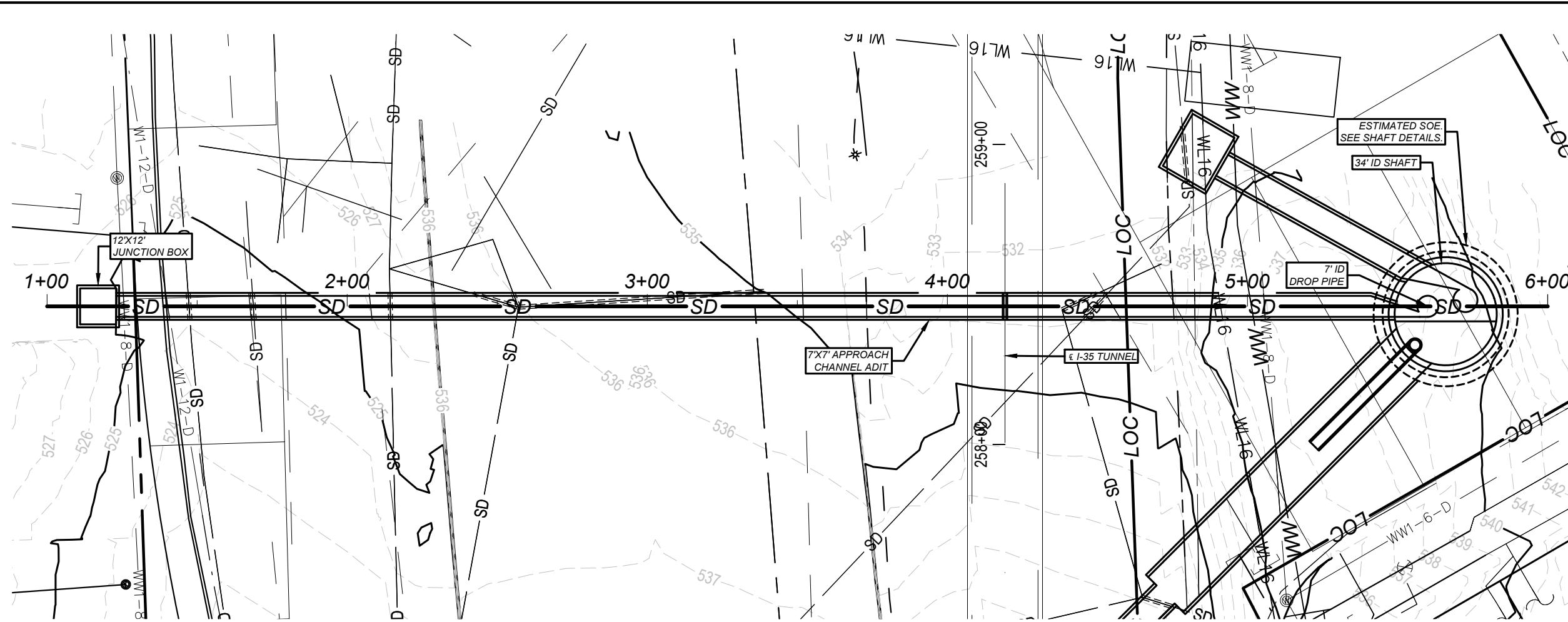
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

**15TH STREET
 DROP SHAFT
 SITE PLAN**

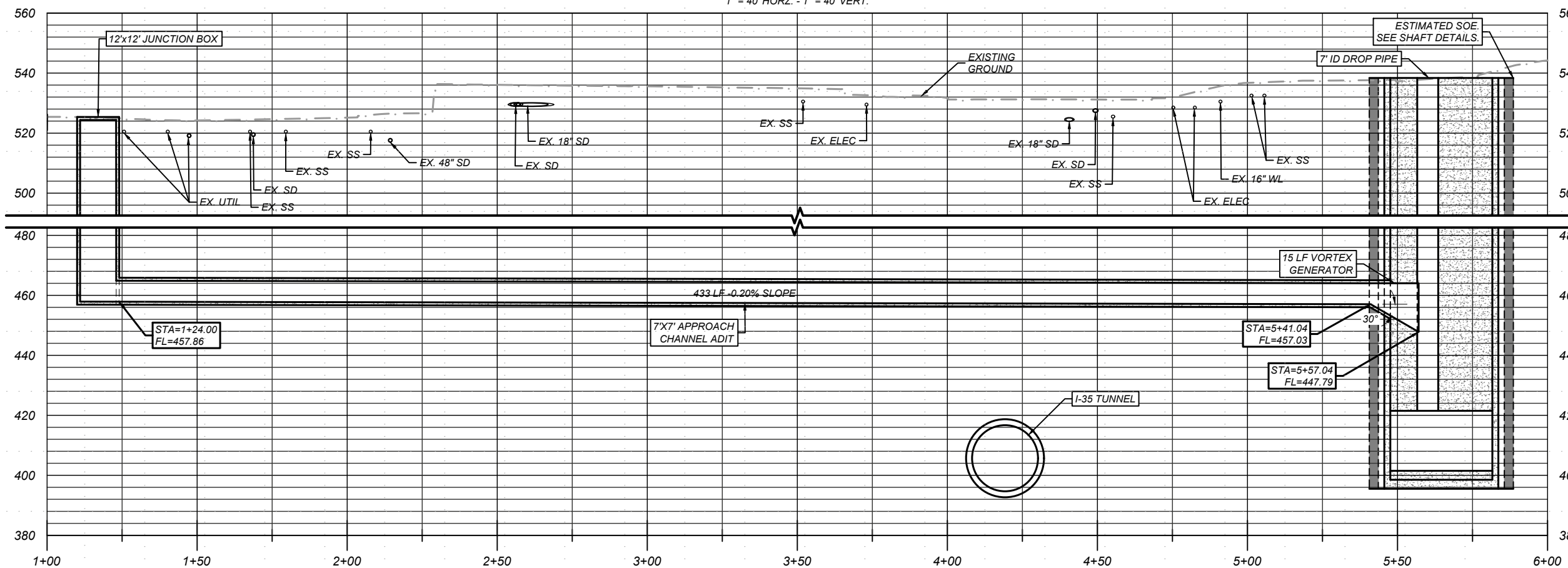
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	239	



15th-ONSITEAPPCH PROFILE

1" = 40' HORIZ. - 1" = 40' VERT.



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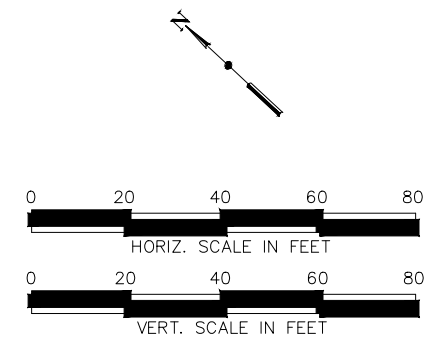
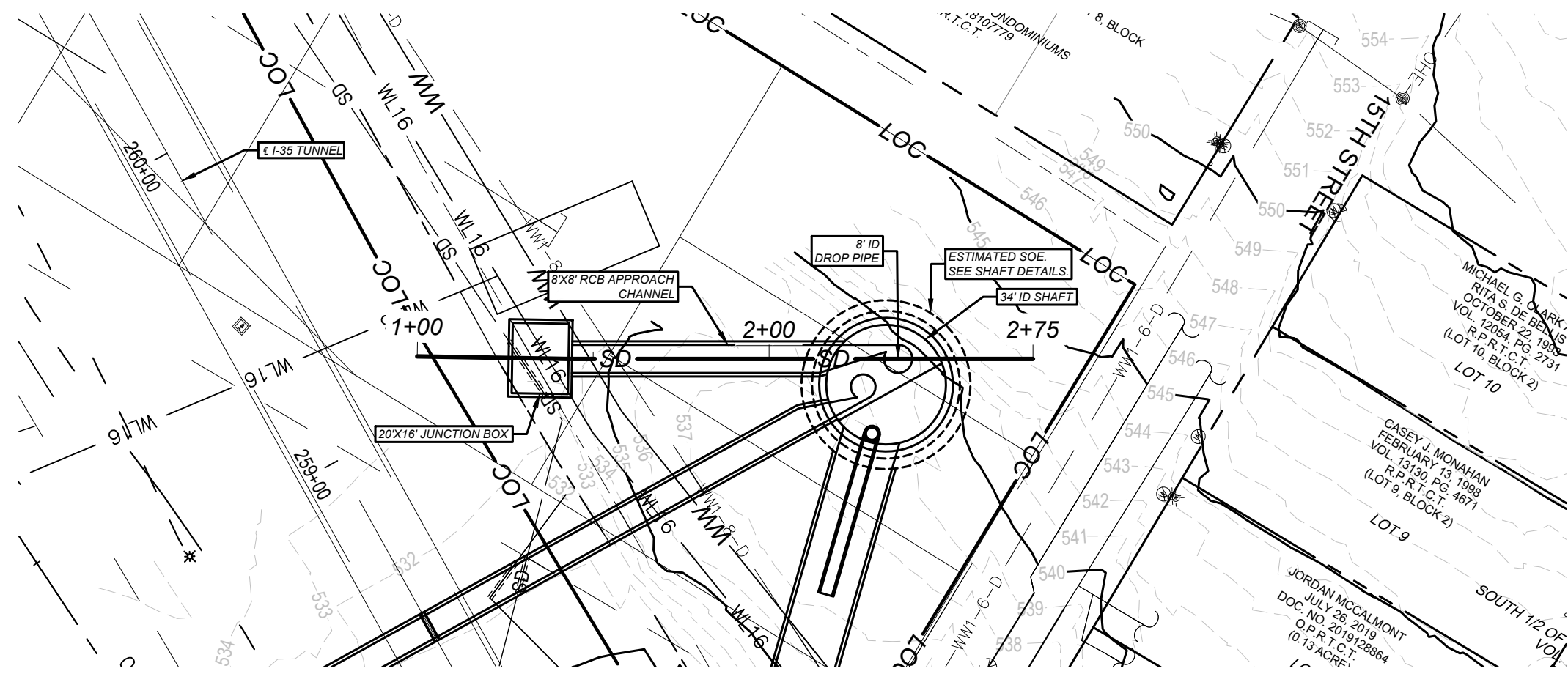
mobility CAPITAL AREA 35

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

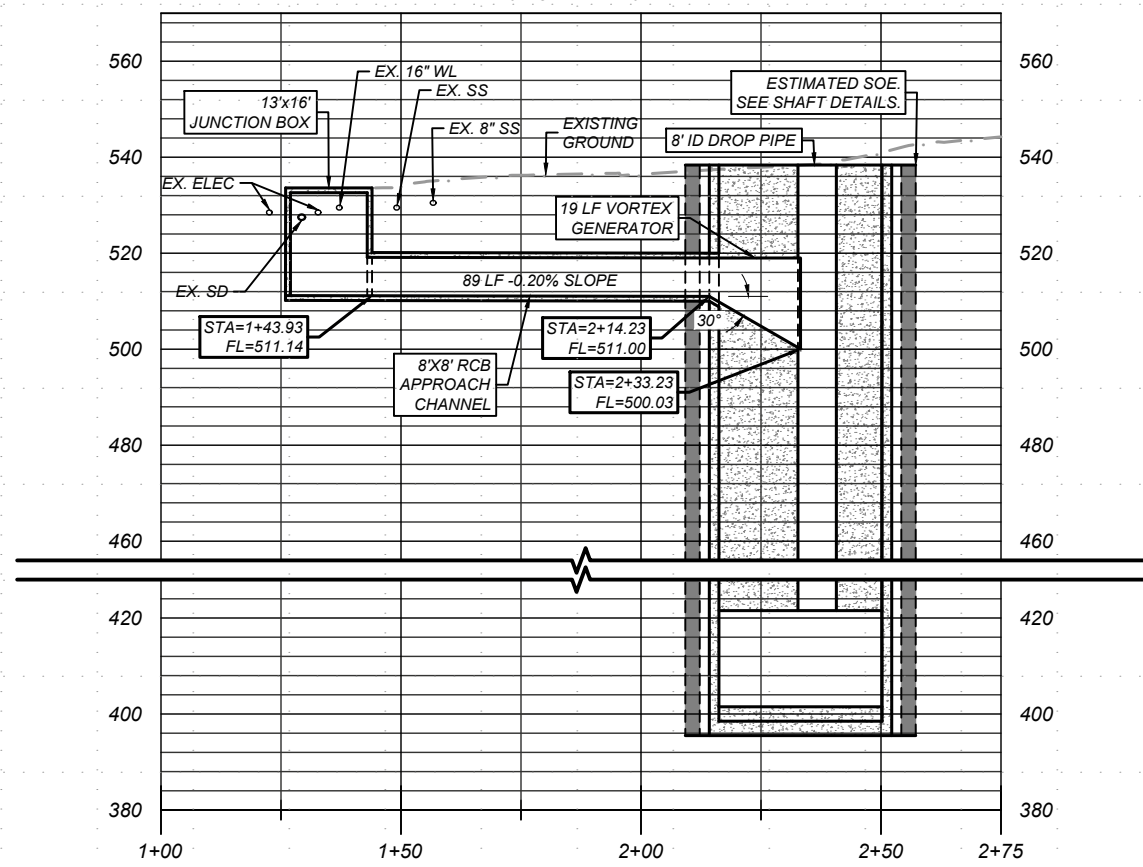
15TH DROP SHAFT ONSITE APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	240



15th-OFFSITEAPPCH PROFILE

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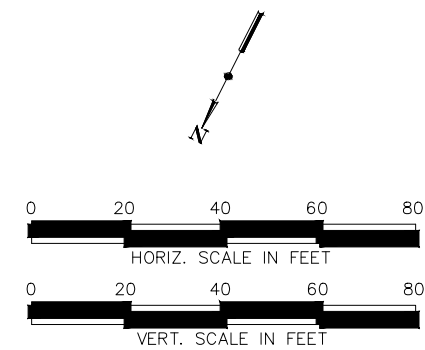
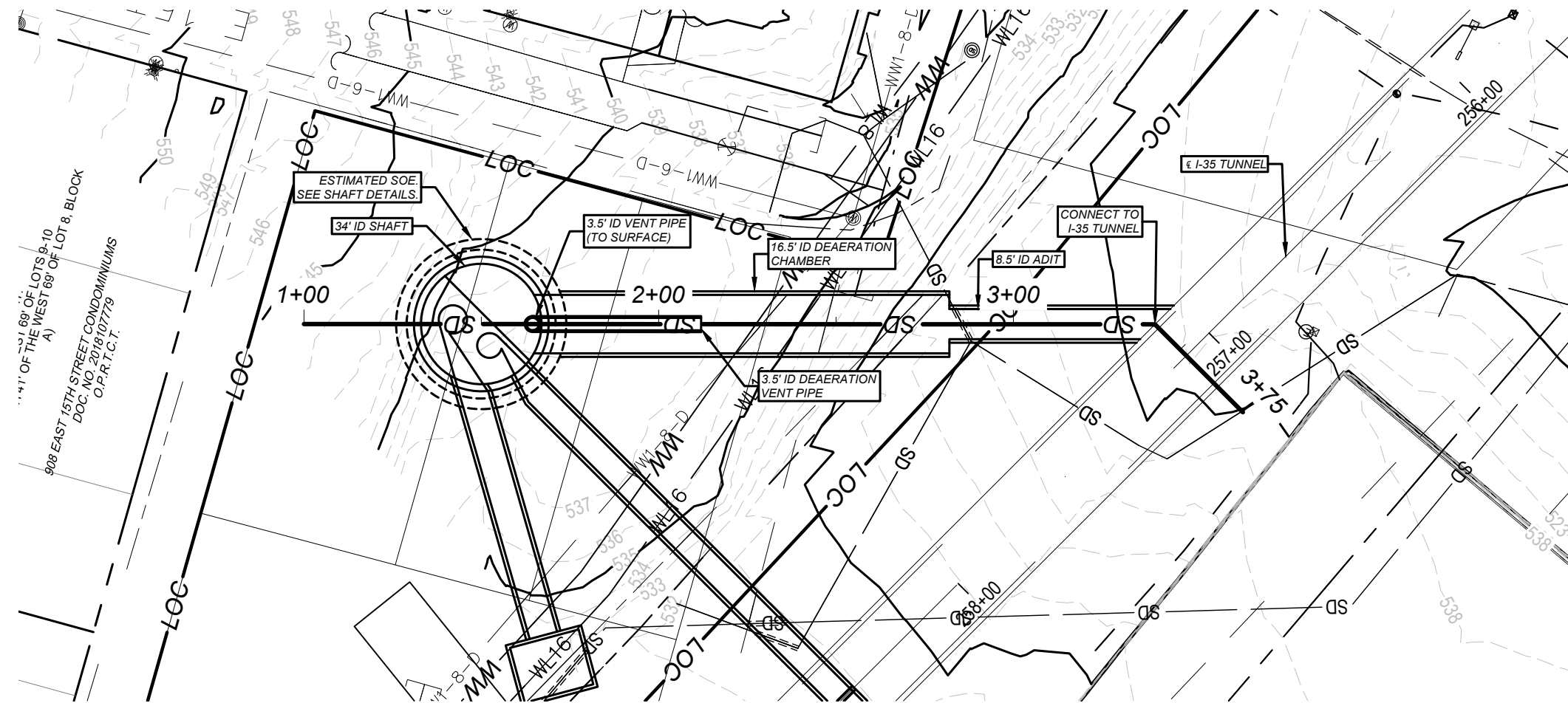
mobility 35
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Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

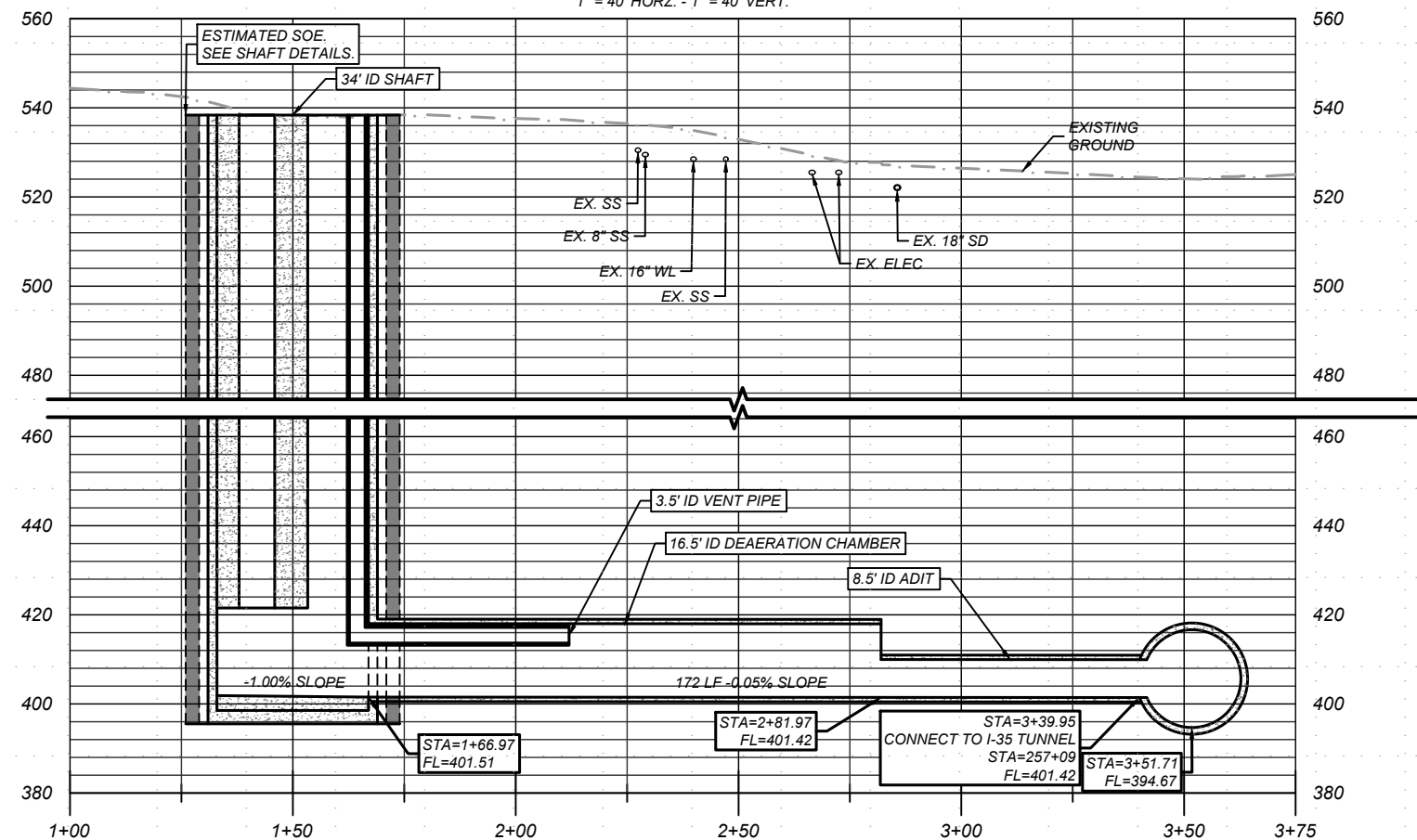
15TH DROP SHAFT OFFSITE APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	241



15th-ADIT PROFILE

1" = 40' HORZ. - 1" = 40' VERT.



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 Round Rock, Texas 78681

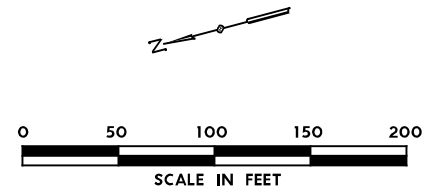
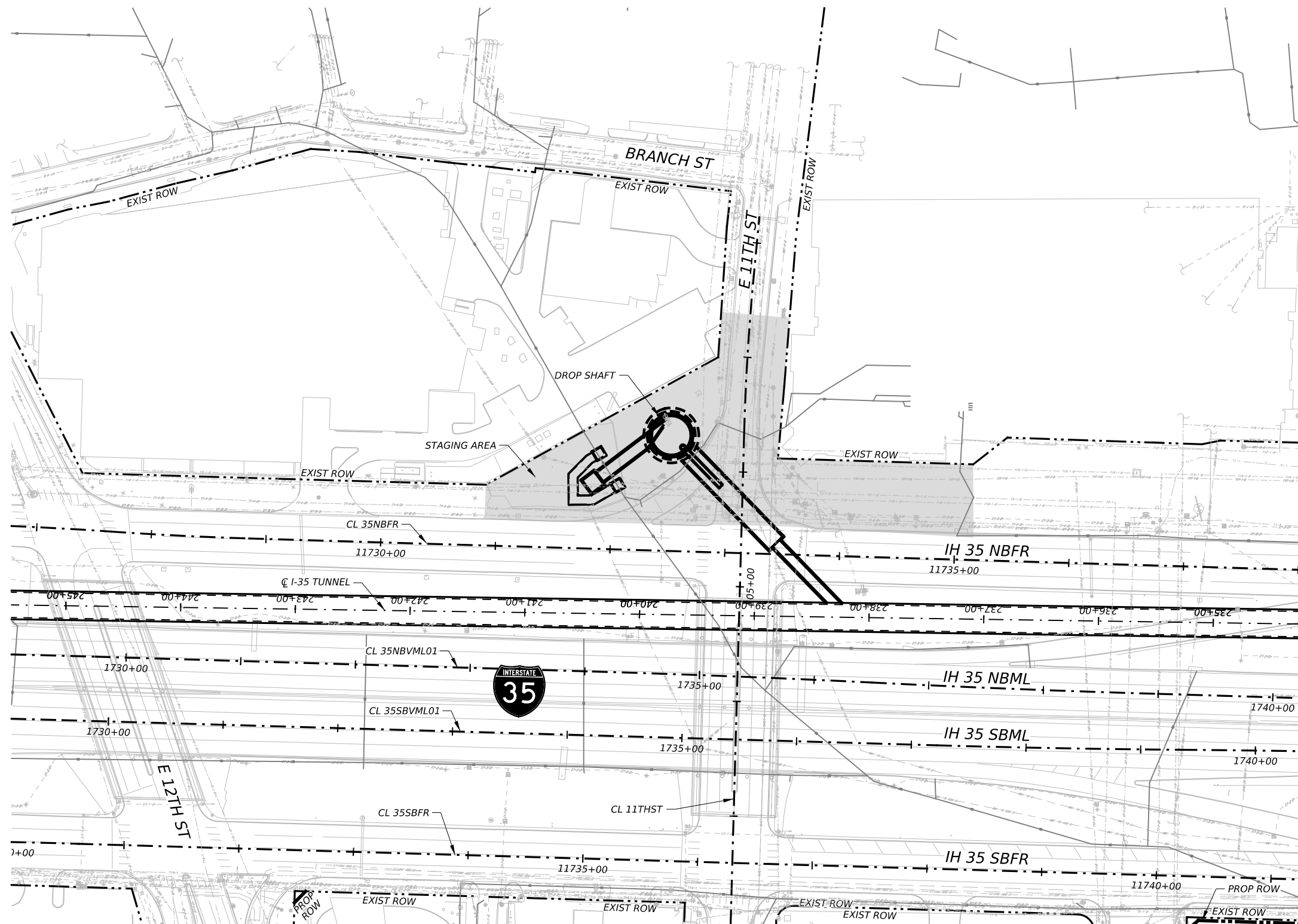
mobility CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

15TH DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	242



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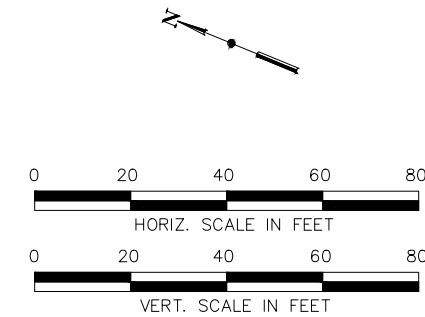
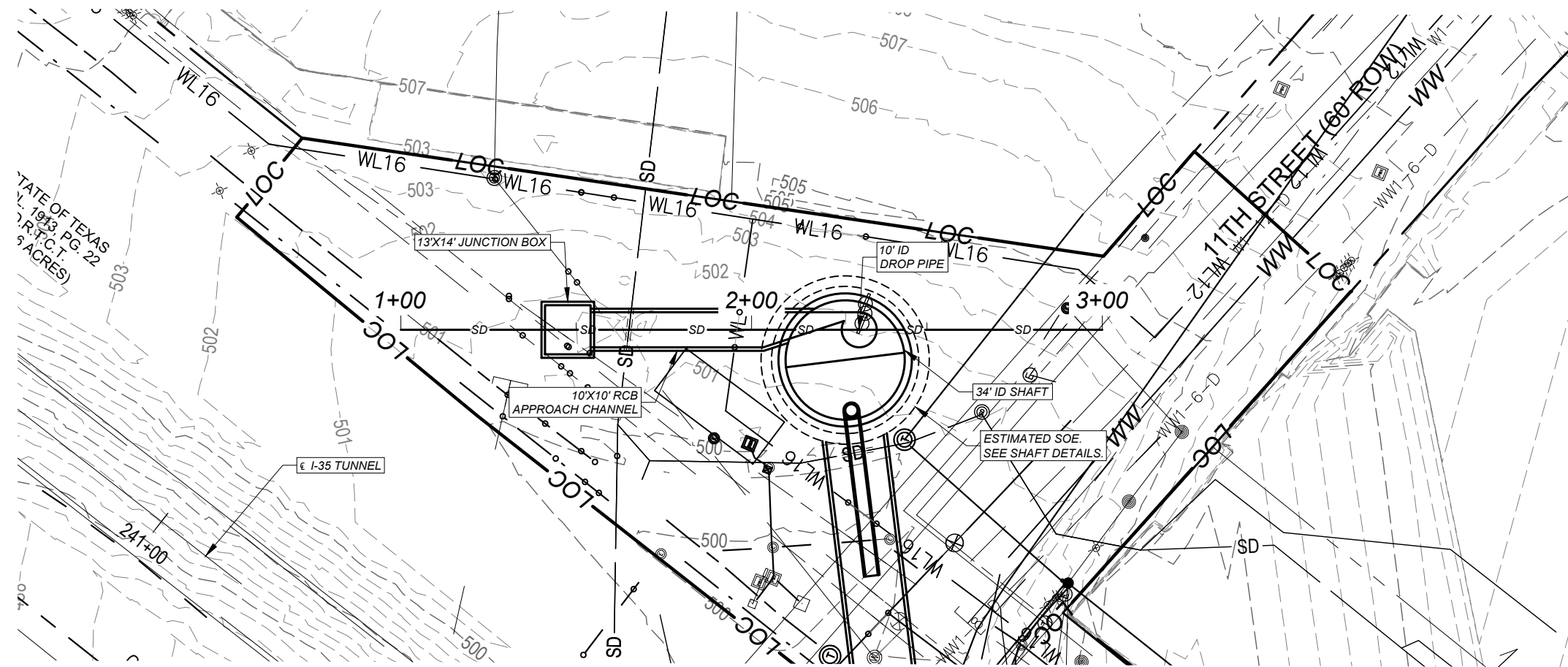
mobility CAPITAL AREA **35**

Texas Department of Transportation

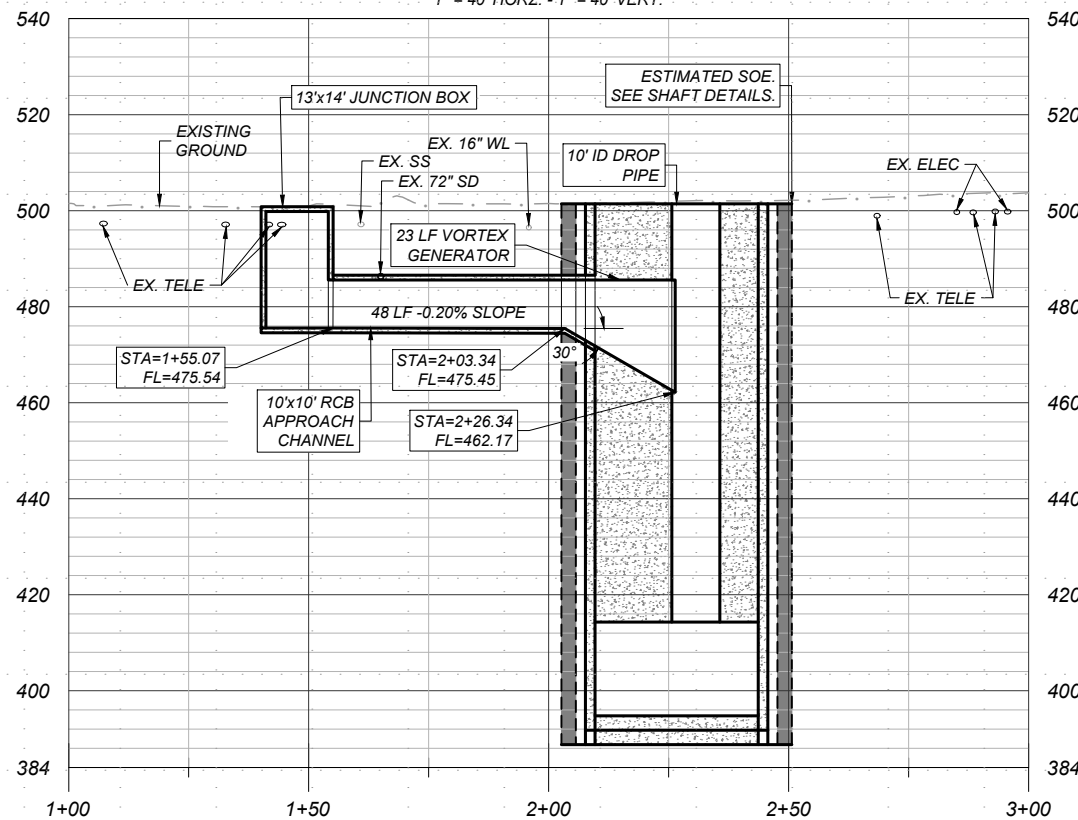
CAPITAL EXPRESS CENTRAL
11TH STREET
DROP SHAFT
SITE PLAN

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	243	



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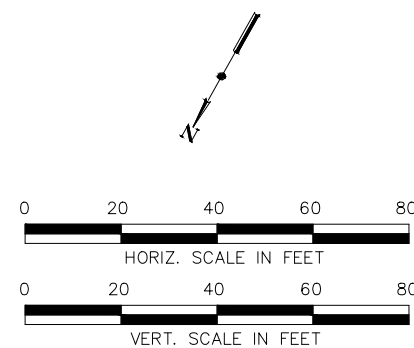
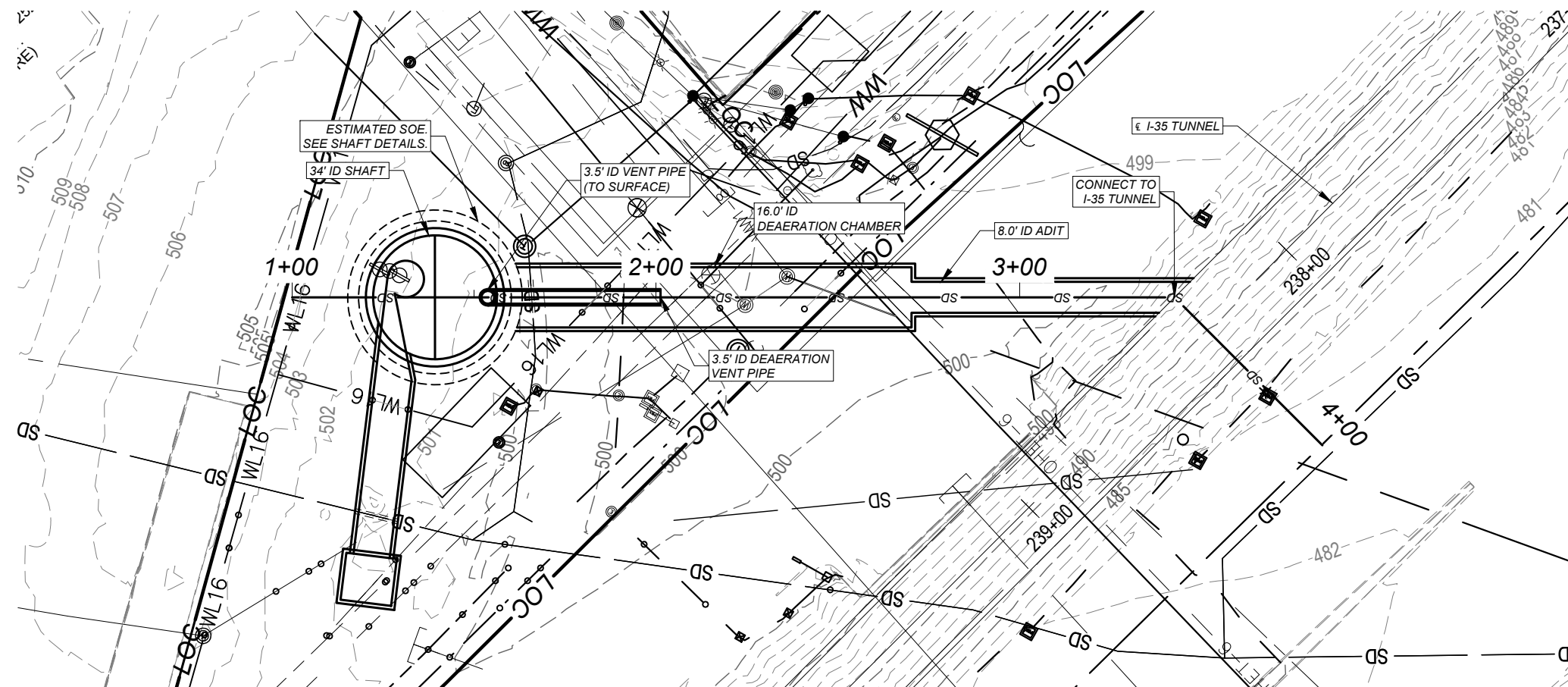
mobility 35
 CAPITAL AREA

Texas Department of Transportation

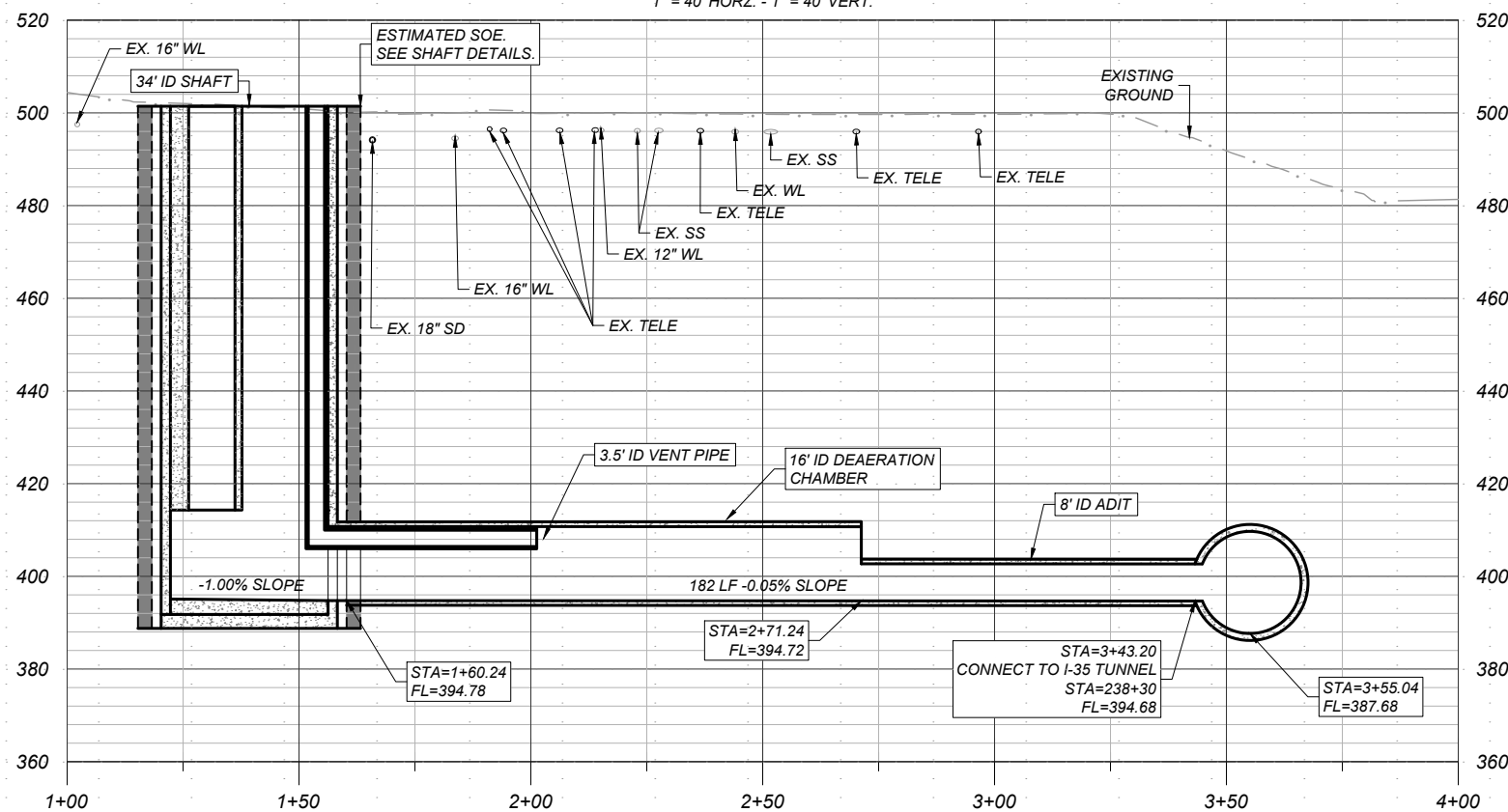
CAPITAL EXPRESS CENTRAL

11TH DROP SHAFT APPROACH CHANNEL

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	244



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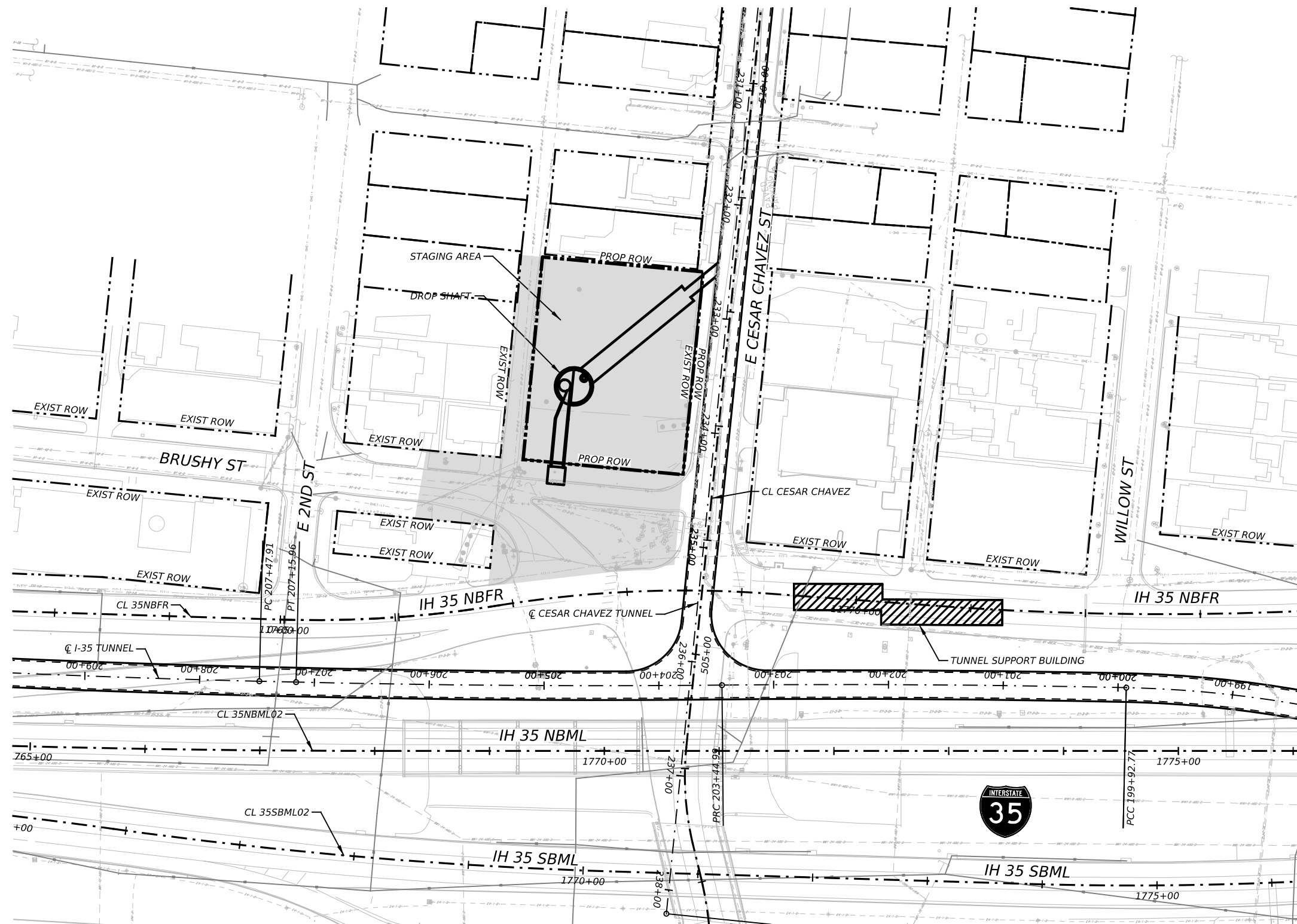
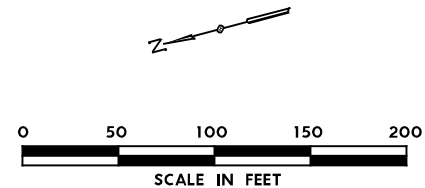
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

11TH DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	245



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2			
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mobility CAPITAL AREA

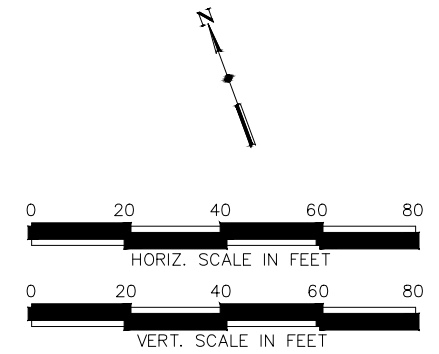
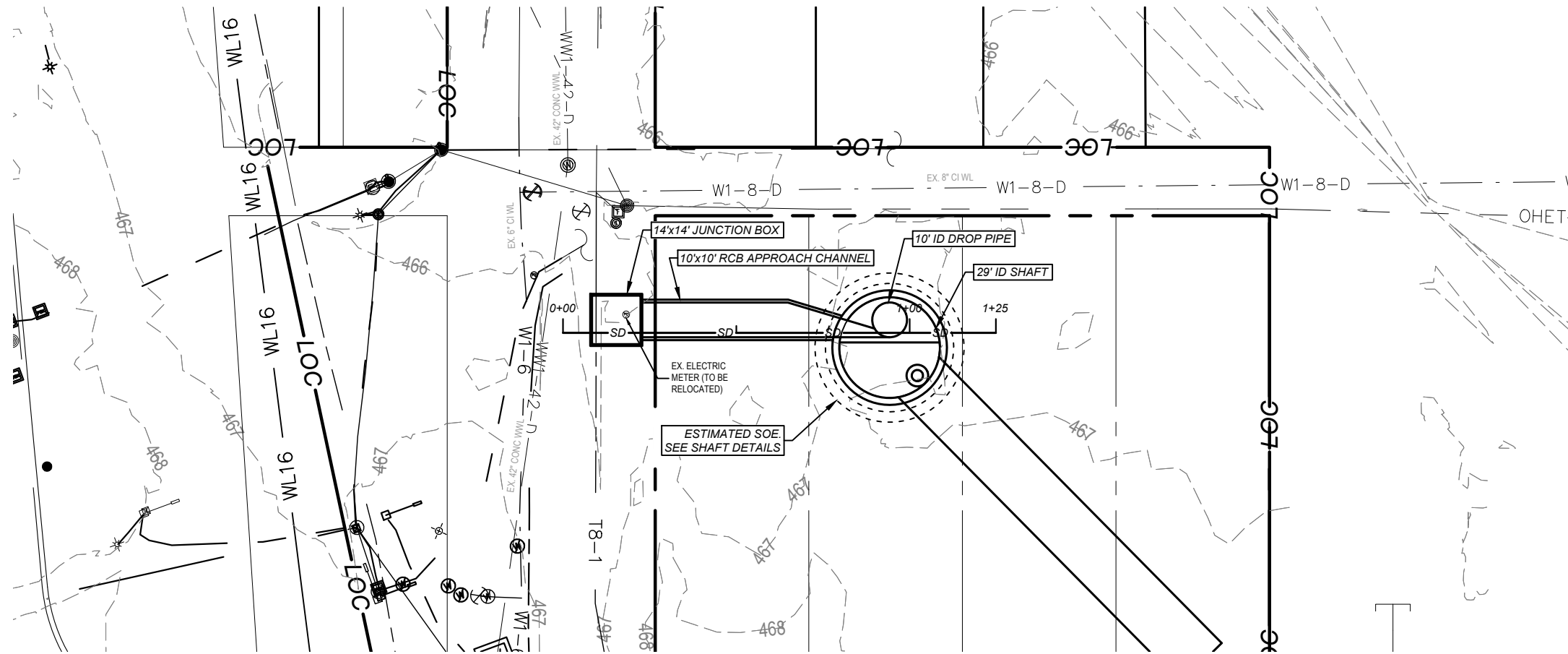
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CAPITAL EXPRESS CENTRAL

BRUSHY STREET
 DROP SHAFT
 SITE PLAN

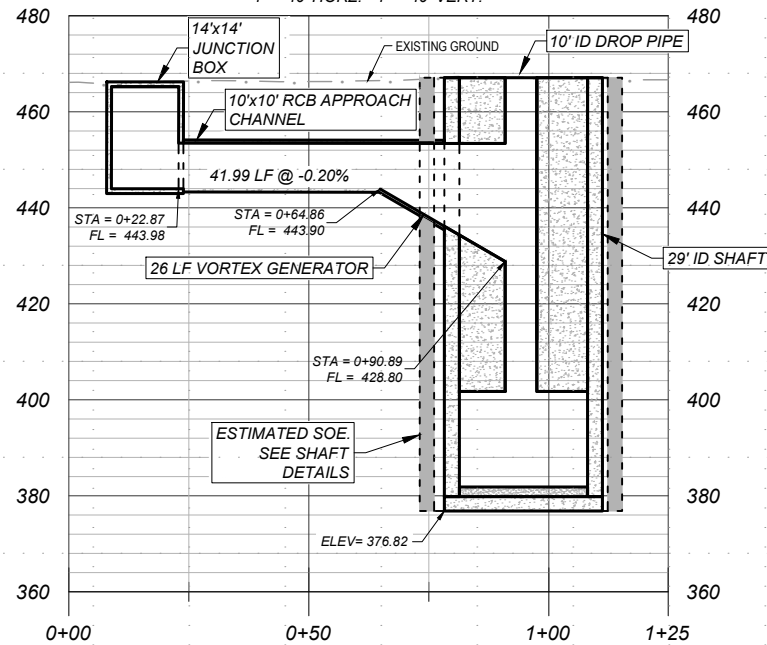
SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	246	



BRUSHY APPROACH PROFILE

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mobility 35
 CAPITAL AREA

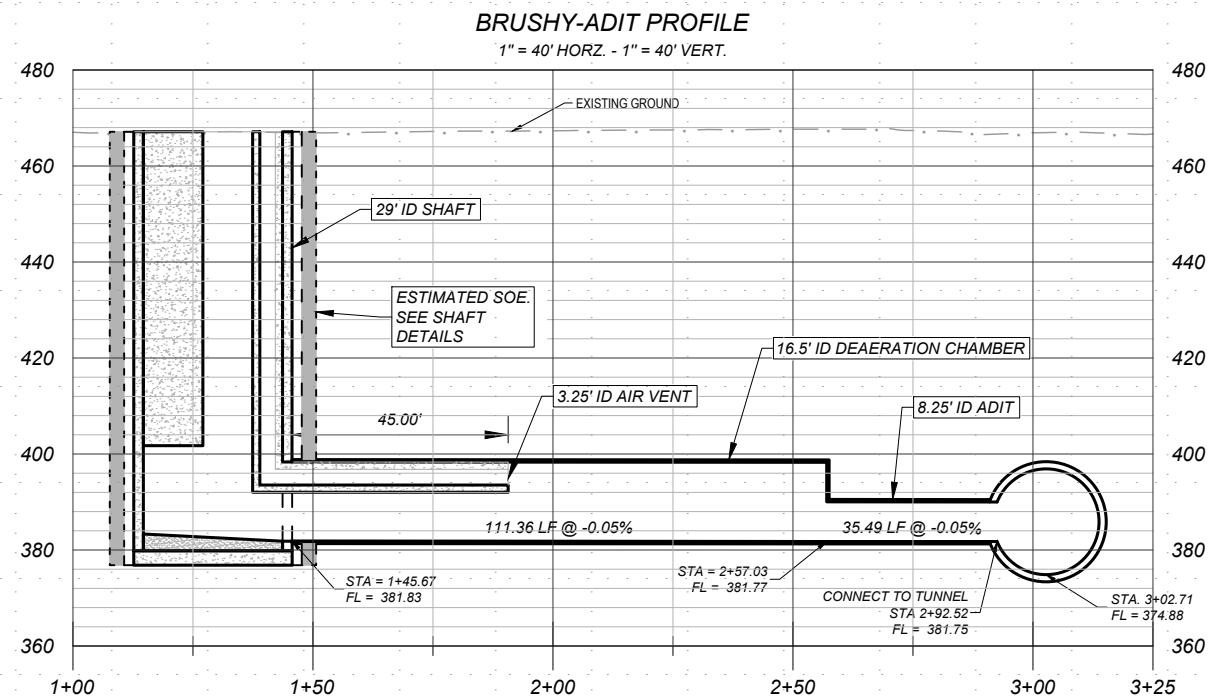
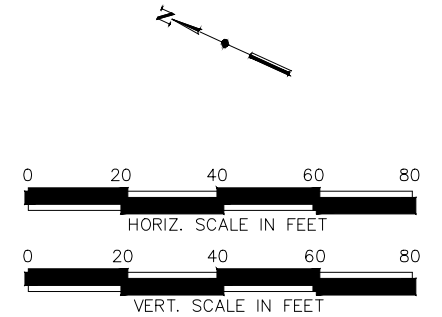
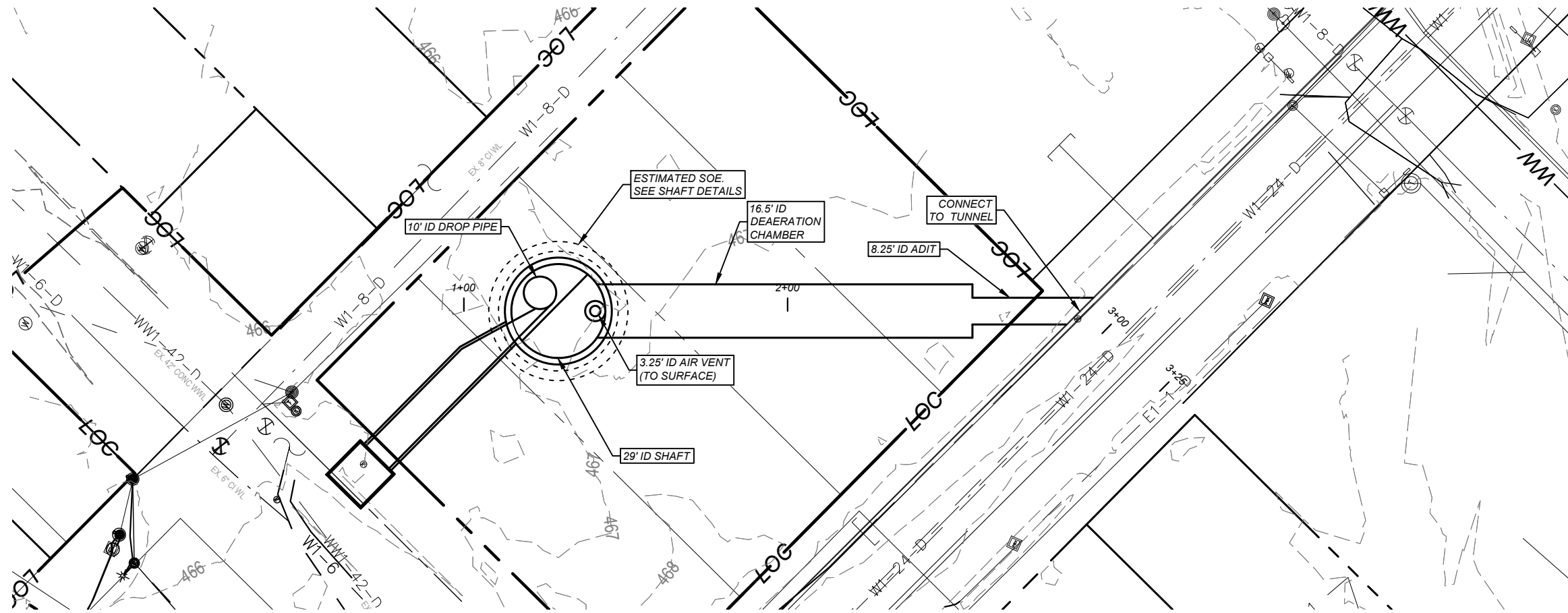
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CAPITAL EXPRESS CENTRAL

BRUSHY DROP SHAFT APPROACH CHANNEL

SHEET OF

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	247	



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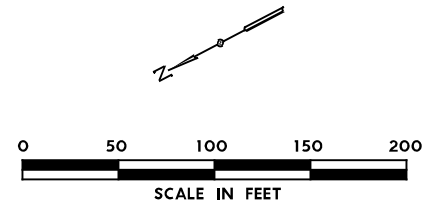
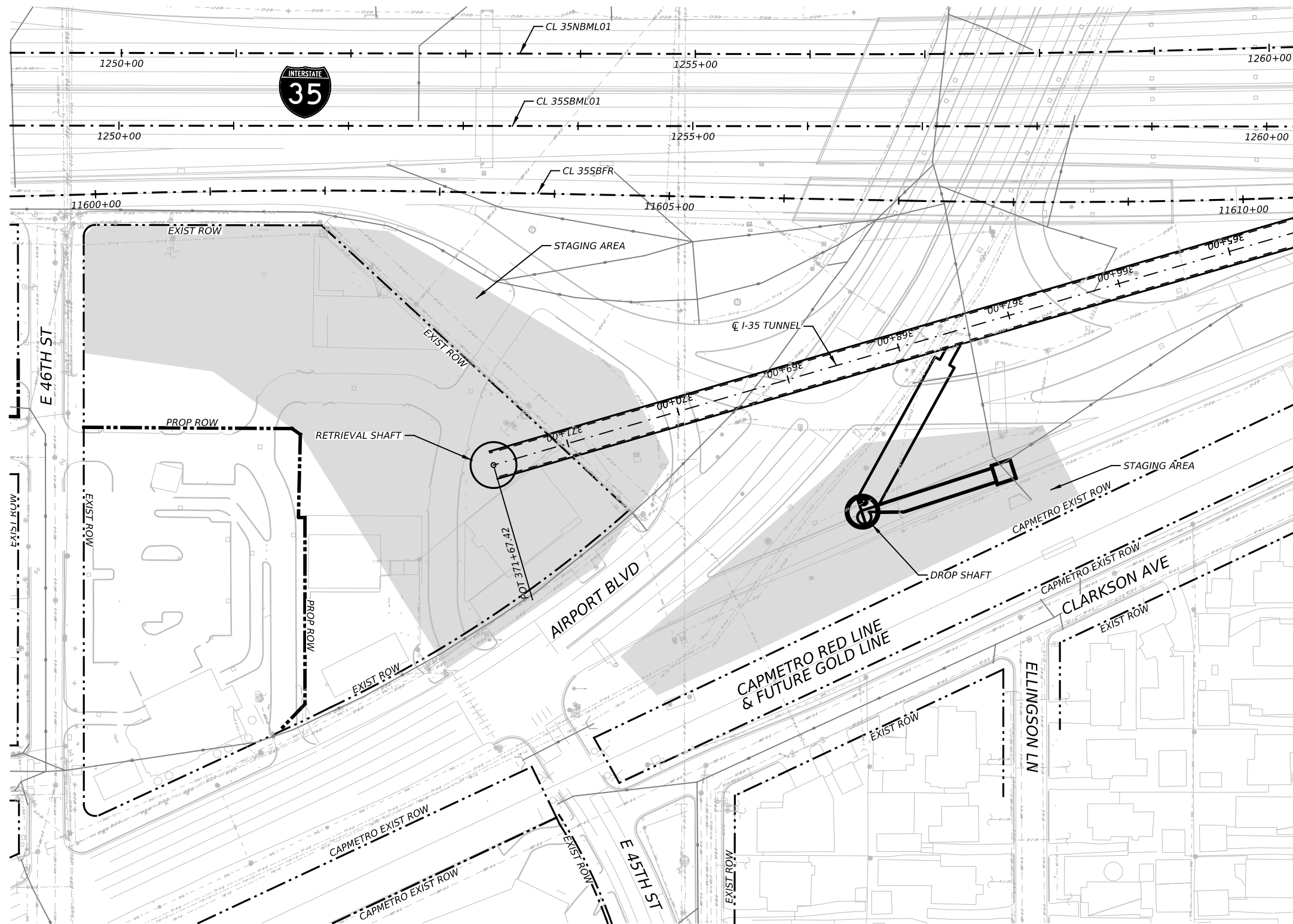
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

BRUSHY DROP SHAFT ADIT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	248



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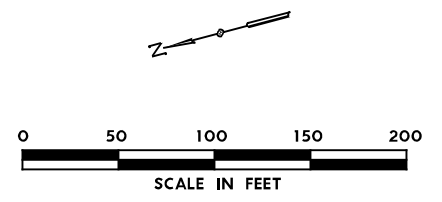
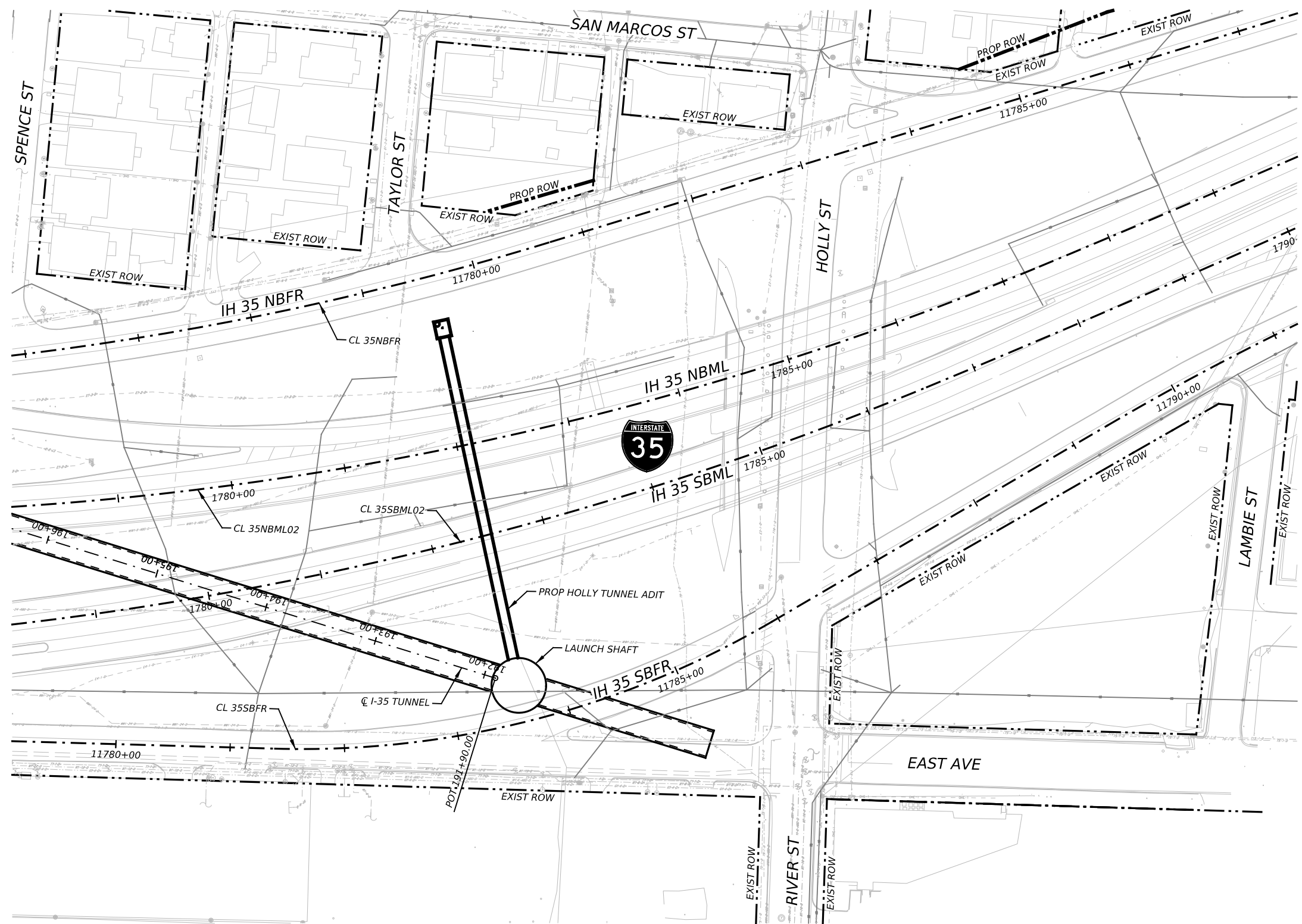
mobility CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
TUNNEL
RETRIEVAL SHAFT
AT AIRPORT BLVD

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	249	



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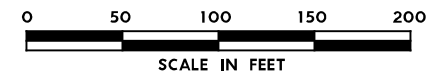
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL
 TUNNEL
 LAUNCHING SHAFT
 AT RIVER STREET

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	250	

Sheet In Development



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mobility CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

TUNNEL
 LAUNCHING SHAFT
 AT US 183

SCALE: 1"=100' SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	251	

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept in the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0015-13-433, ETC

1.2 PROJECT LIMITS:

From: AIRPORT BLVD ON IH 35 / IH 35 ON CESAR CHAVEZ

To: RIVER ST ON IH 35 / US-183 ON CESAR CHAVEZ

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 30.25755 N / 30.26110 N, (Long) 97.73814W / 97.73616W

END: (Lat) 30.30296 N / 30.24766N, (Long) 97.71457W / 97.69111W

1.4 TOTAL PROJECT AREA (Acres): _____

1.5 TOTAL AREA TO BE DISTURBED (Acres): 33.16876

1.6 NATURE OF CONSTRUCTION ACTIVITY:

FOR THE CONSTRUCTION OF THE DRAINAGE TUNNEL, CONSISTING OF
 DROP SHAFTS, ROADWAY RECONSTRUCTION AT MINOR CROSS STREETS AND
 DRAINAGE, RAMPS, TRAFFIC CONTROL, SIGNING AND STRIPING,
 SIGNALIZATION, ILLUMINATION, SWP3, ETC

1.7 MAJOR SOIL TYPES:

Soil Type	Description

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- PSLs determined during preconstruction meeting
- PSLs determined during construction
- No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- Mobilization
- Install sediment and erosion controls
- Blade existing topsoil into windrows, prep ROW, clear and grub
- Remove existing pavement
- Grading operations, excavation, and embankment
- Excavate and prepare subgrade for proposed pavement widening
- Remove existing culverts, safety end treatments (SETs)
- Remove existing metal beam guard fence (MBGF), bridge rail
- Install proposed pavement per plans
- Install culverts, culvert extensions, SETs
- Install mow strip, MBGF, bridge rail
- Place flex base
- Rework slopes, grade ditches
- Blade windrowed material back across slopes
- Revegetation of unpaved areas
- Achieve site stabilization and remove sediment and erosion control measures
- Other: _____
- Other: _____
- Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- Sediment laden stormwater from stormwater conveyance over disturbed area
- Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- Solvents, paints, adhesives, etc. from various construction activities
- Transported soils from offsite vehicle tracking
- Construction debris and waste from various construction activities
- Contaminated water from excavation or dewatering pump-out water
- Sanitary waste from onsite restroom facilities
- Trash from various construction activities/receptacles
- Long-term stockpiles of material and waste
- Other: _____
- Other: _____
- Other: _____

1.11 RECEIVING WATERS:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
COLORADO RIVER	USGS 08158000

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- Development of plans and specifications
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Perform SWP3 inspections
- Maintain SWP3 records and update to reflect daily operations
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years
- Other: _____
- Other: _____
- Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- Day To Day Operational Control
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Maintain schedule of major construction activities
- Install, maintain and modify BMPs
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years
- Other: _____
- Other: _____
- Other: _____

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity

STORMWATER POLLUTION PREVENTION PLAN (SWP3)



Sheet 1 of 2

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
	0015 - 13 - 433			252
STATE	STATE DIST.	COUNTY		
TEXAS	AUS	TRAVIS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0015	13	433	I - 35	

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- Protection of Existing Vegetation
- Vegetated Buffer Zones
- Soil Retention Blankets
- Geotextiles
- Mulching/ Hydromulching
- Soil Surface Treatments
- Temporary Seeding
- Permanent Planting, Sodding or Seeding
- Biodegradable Erosion Control Logs
- Rock Filter Dams/ Rock Check Dams
- Vertical Tracking
- Interceptor Swale
- Riprap
- Diversion Dike
- Temporary Pipe Slope Drain
- Embankment for Erosion Control
- Paved Flumes
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- Biodegradable Erosion Control Logs
- Dewatering Controls
- Inlet Protection
- Rock Filter Dams/ Rock Check Dams
- Sandbag Berms
- Sediment Control Fence
- Stabilized Construction Exit
- Floating Turbidity Barrier
- Vegetated Buffer Zones
- Vegetated Filter Strips
- Other: _____
- Other: _____
- Other: _____
- Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

T / P

- Sediment Trap
 - Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
 - 3,600 cubic feet of storage per acre drained
- Sedimentation Basin
 - Not required (<10 acres disturbed)
 - Required (>10 acres) and implemented.
 - Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
 - 3,600 cubic feet of storage per acre drained
 - Required (>10 acres), but not feasible due to:
 - Available area/Site geometry
 - Site slope/Drainage patterns
 - Site soils/Geotechnical factors
 - Public safety
 - Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- Excess dirt/mud on road removed daily
- Haul roads dampened for dust control
- Loaded haul trucks to be covered with tarpaulin
- Stabilized construction exit
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- Chemical Management
- Concrete and Materials Waste Management
- Debris and Trash Management
- Dust Control
- Sanitary Facilities
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- Fire hydrant flushings
- Irrigation drainage
- Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- Potable water sources
- Springs
- Uncontaminated groundwater
- Water used to wash vehicles or control dust
- Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3 .

2.9 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

STORMWATER POLLUTION PREVENTION PLAN (SWP3)



FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
	0015 - 13 - 433			253
STATE	STATE DIST.	COUNTY		
TEXAS	AUS	TRAVIS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0015	13	433	I-35	

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DATE: FILE:

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1.
2.
 No Action Required Required Action

Action No.

- Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
- Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
- Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
- When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

- No Permit Required
 Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
 Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
 Individual 404 Permit Required
 Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

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The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
<input checked="" type="checkbox"/> Temporary Vegetation	<input type="checkbox"/> Silt Fence	<input type="checkbox"/> Vegetative Filter Strips
<input type="checkbox"/> Blankets/Matting	<input type="checkbox"/> Rock Berm	<input type="checkbox"/> Retention/Irrigation Systems
<input type="checkbox"/> Mulch	<input type="checkbox"/> Triangular Filter Dike	<input type="checkbox"/> Extended Detention Basin
<input checked="" type="checkbox"/> Sodding	<input type="checkbox"/> Sand Bag Berm	<input type="checkbox"/> Constructed Wetlands
<input type="checkbox"/> Interceptor Swale	<input type="checkbox"/> Straw Bale Dike	<input type="checkbox"/> Wet Basin
<input type="checkbox"/> Diversion Dike	<input type="checkbox"/> Brush Berms	<input type="checkbox"/> Erosion Control Compost
<input checked="" type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Mulch Filter Berm and Socks
<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks
<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Vegetation Lined Ditches
	<input type="checkbox"/> Stone Outlet Sediment Traps	<input type="checkbox"/> Sand Filter Systems
	<input type="checkbox"/> Sediment Basins	<input type="checkbox"/> Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

- No Action Required Required Action

Action No.

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IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

- No Action Required Required Action

Action No.

1.
2.
3.
4.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

- No Action Required Required Action

Action No.

1.
2.
3.
4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

BMP: Best Management Practice	SPCC: Spill Prevention Control and Countermeasure
CGP: Construction General Permit	SW3P: Storm Water Pollution Prevention Plan
DSHS: Texas Department of State Health Services	PCN: Pre-Construction Notification
FHWA: Federal Highway Administration	PSL: Project Specific Location
MOA: Memorandum of Agreement	TCEQ: Texas Commission on Environmental Quality
MOU: Memorandum of Understanding	TPDES: Texas Pollutant Discharge Elimination System
MS4: Municipal Separate Stormwater Sewer System	TPWD: Texas Parks and Wildlife Department
MBTA: Migratory Bird Treaty Act	TxDOT: Texas Department of Transportation
NOT: Notice of Termination	T&E: Threatened and Endangered Species
NWP: Nationwide Permit	USACE: U.S. Army Corps of Engineers
NOI: Notice of Intent	USFWS: U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used. Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act. Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- * Dead or distressed vegetation (not identified as normal)
- * Trash piles, drums, canister, barrels, etc.
- * Undesirable smells or odors
- * Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

- Yes No

If "No", then no further action is required.

If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

- Yes No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

- No Action Required Required Action

Action No.

1.
2.
3.


VII. OTHER ENVIRONMENTAL ISSUES

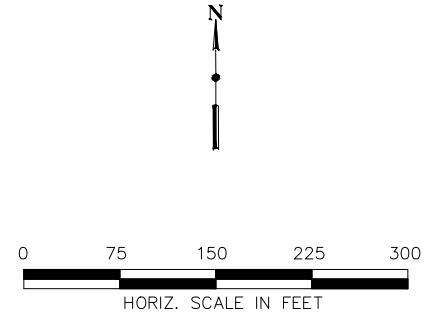
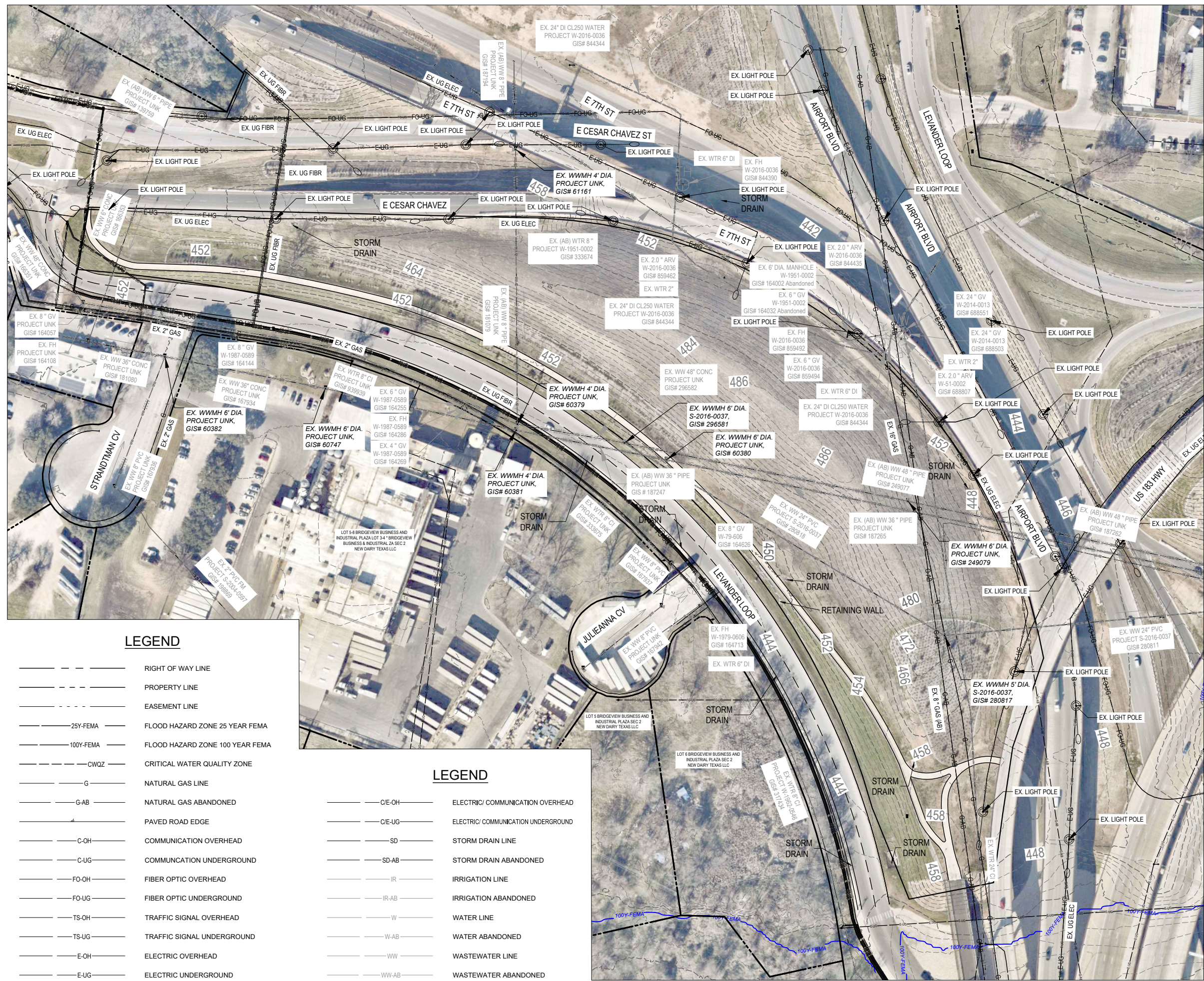
(includes regional issues such as Edwards Aquifer District, etc.)

- No Action Required Required Action

Action No.

1.
2.
3.

 Texas Department of Transportation		Design Division Standard		
<p>ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC</p>				
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
12-12-2011 (DS) REVISIONS	0015	13	433	I-35
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY	SHEET NO.	
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	AUS	TRAVIS	254	



LEGEND

- RIGHT OF WAY LINE
- PROPERTY LINE
- EASEMENT LINE
- 25Y-FEMA FLOOD HAZARD ZONE 25 YEAR FEMA
- 100Y-FEMA FLOOD HAZARD ZONE 100 YEAR FEMA
- CWQZ CRITICAL WATER QUALITY ZONE
- G NATURAL GAS LINE
- G-AB NATURAL GAS ABANDONED
- C-OH COMMUNICATION OVERHEAD
- C-UG COMMUNICATION UNDERGROUND
- FO-OH FIBER OPTIC OVERHEAD
- FO-UG FIBER OPTIC UNDERGROUND
- TS-OH TRAFFIC SIGNAL OVERHEAD
- TS-UG TRAFFIC SIGNAL UNDERGROUND
- E-OH ELECTRIC OVERHEAD
- E-UG ELECTRIC UNDERGROUND

LEGEND

- C/E-OH ELECTRIC/ COMMUNICATION OVERHEAD
- C/E-UG ELECTRIC/ COMMUNICATION UNDERGROUND
- SD STORM DRAIN LINE
- SD-AB STORM DRAIN ABANDONED
- IR IRRIGATION LINE
- IR-AB IRRIGATION ABANDONED
- W WATER LINE
- W-AB WATER ABANDONED
- WW WASTEWATER LINE
- WW-AB WASTEWATER ABANDONED

NO.	DATE	REVISION	APPR BY

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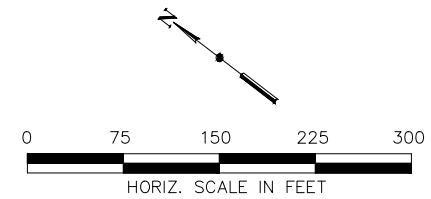
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - EXISTING CONDITIONS

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	252



LEGEND

- LOC — LIMITS OF CONSTRUCTION
- ▨ DEMOLITION AREA

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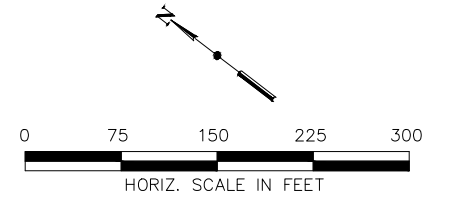
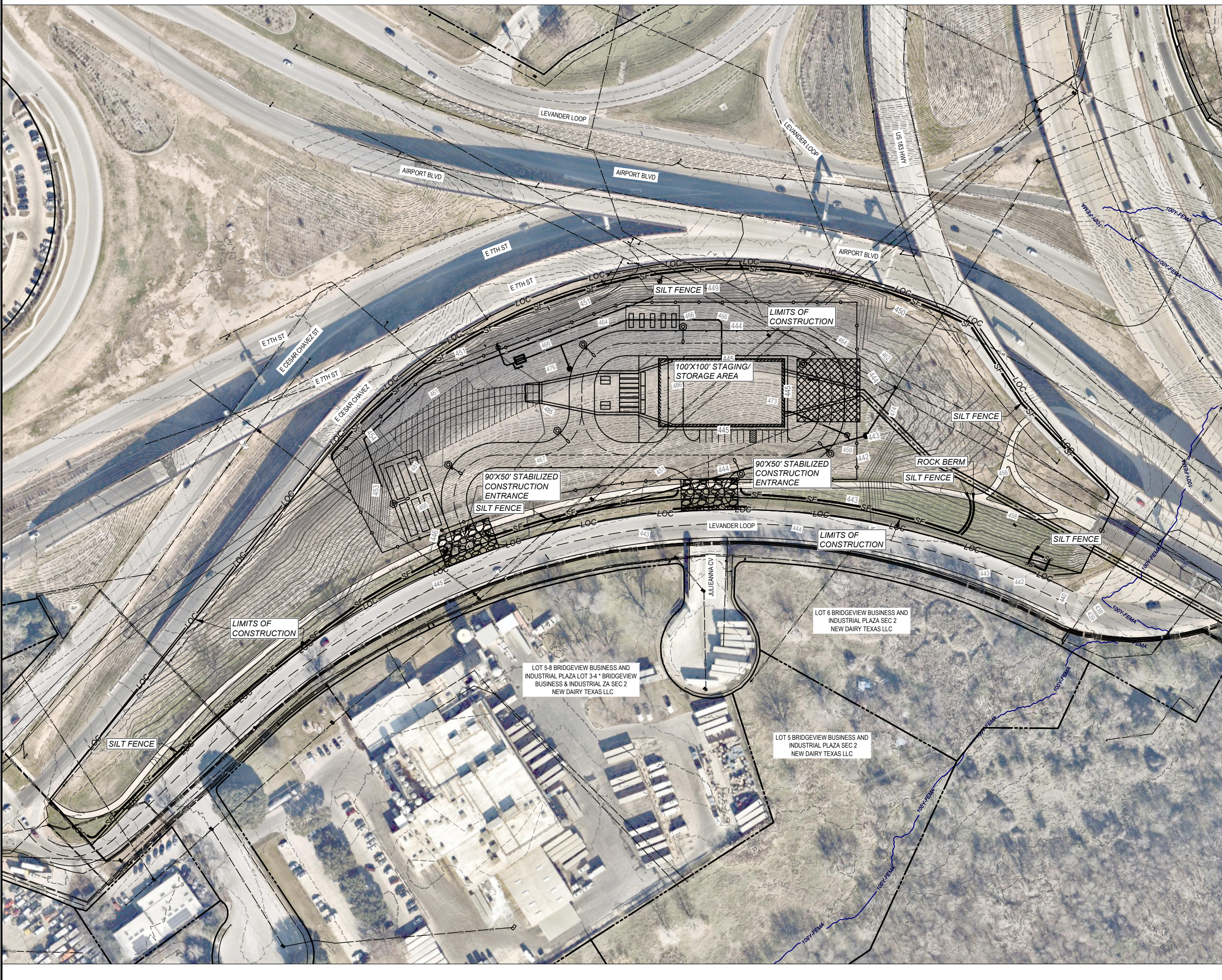
mobility 35
 CAPITAL AREA

Texas Department of Transportation

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PUMP STATION SITE - DEMOLITION PLAN

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	253



LEGEND

- RB EROSION ROCK BERM
- EROSION DIVERSION DIKE
- MS EROSION MULCH SOCK
- SF EROSION SILT FENCE
- TFD EROSION TRI-FILTER DIKE
- TP EROSION TREE PROTECTION
- LOC LIMITS OF CONSTRUCTION
- STAGING/ STORAGE AREA
- STABILIZED CONSTRUCTION ENTRANCE

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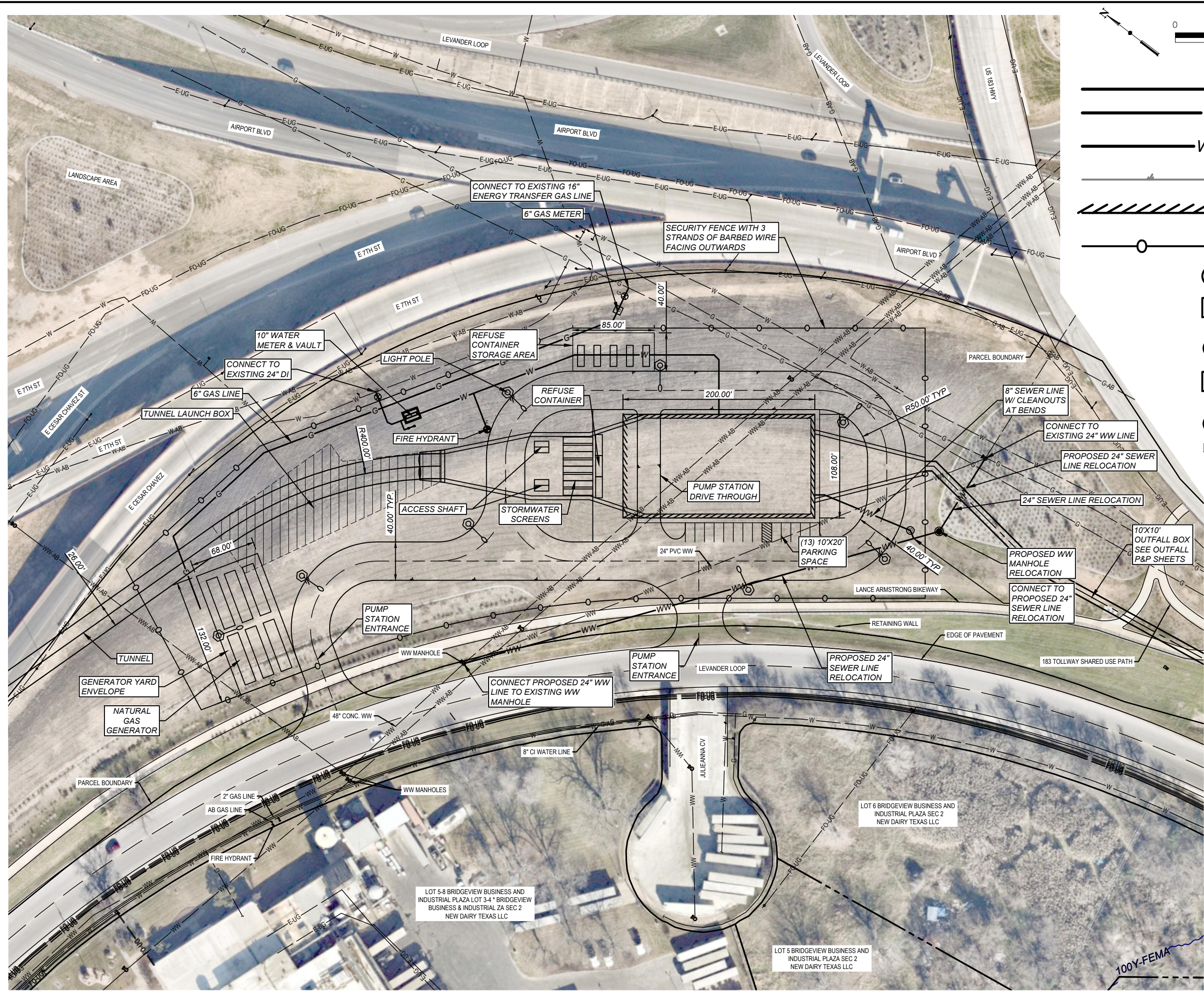
mobility 35
 CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - SWPPP & STAGING AREA

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	254



HORIZ. SCALE IN FEET

- NATURAL GAS LINE
- WATER LINE
- WASTEWATER LINE
- PAVED ROAD EDGE
- BUILDING LINE
- SECURITY FENCE

- WASTEWATER CLEANOUT
- NATURAL GAS METER
- NATURAL GAS VALVE
- WATER METER
- WATER VALVE
- ELECTRIC LIGHT POLE

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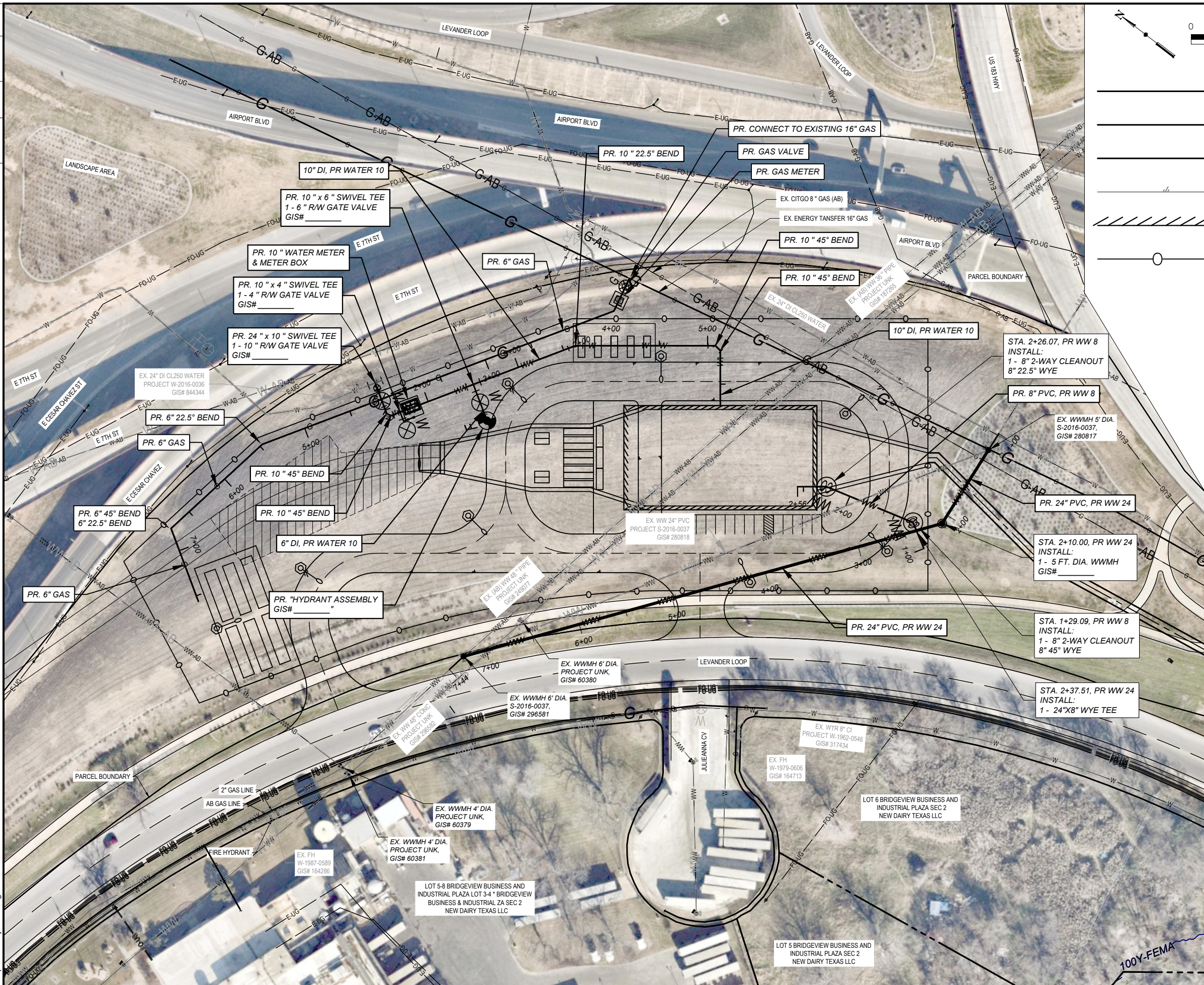
m35 CAPITAL AREA

Texas Department of Transportation

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PUMP STATION SITE - SITE LAYOUT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	255



HORIZ. SCALE IN FEET

- G NATURAL GAS LINE
- W WATER LINE
- WW WASTEWATER LINE
- PAVED ROAD EDGE
- / / / / / BUILDING LINE
- SECURITY FENCE
- ⊙ WASTEWATER CLEANOUT
- ⊠ NATURAL GAS METER
- ⊗ NATURAL GAS VALVE
- ⊞ WATER METER
- ⊘ WATER VALVE

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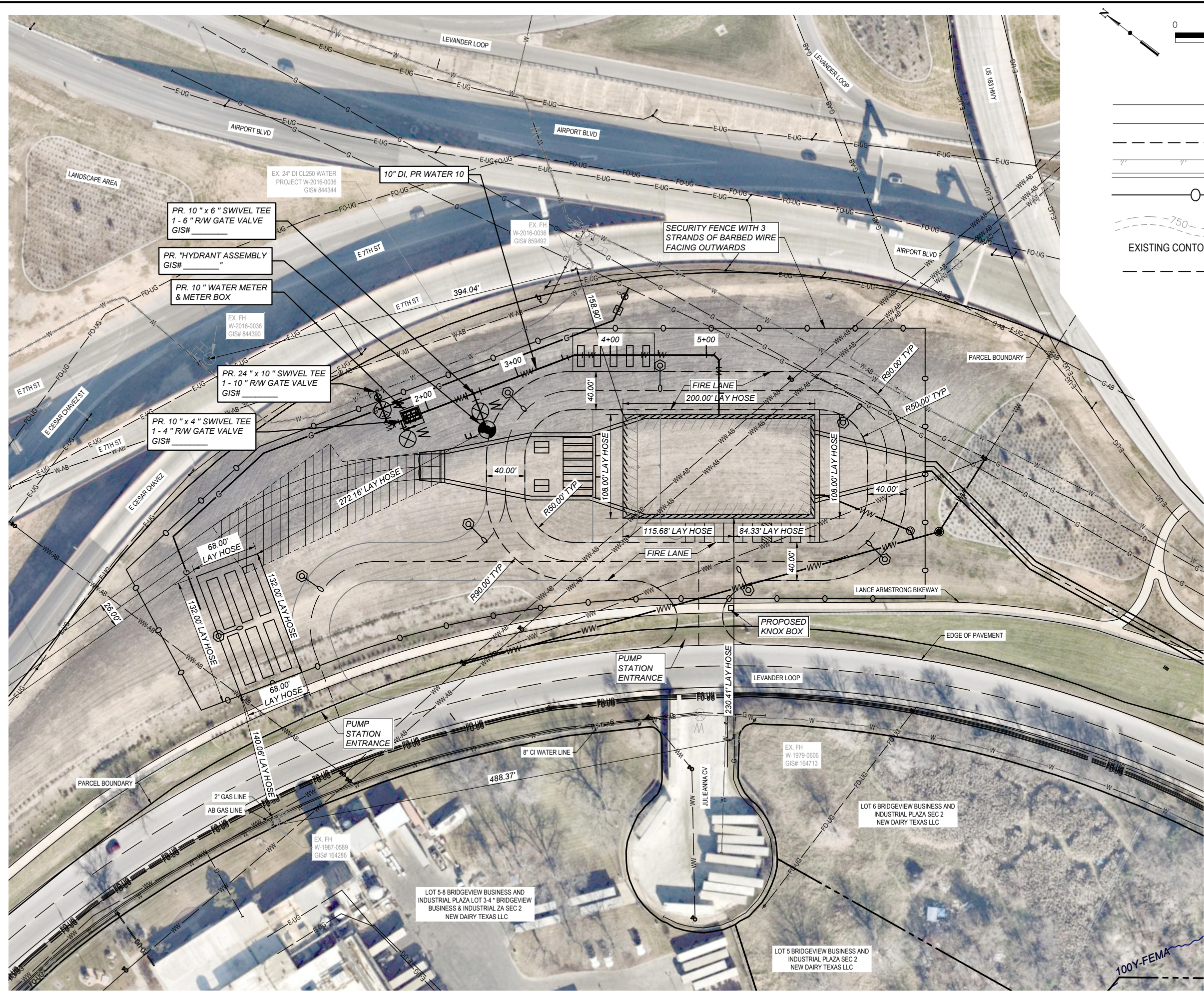
CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - UTILITY PLAN

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	256

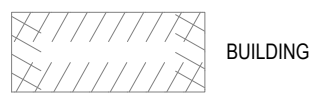


FIRE LEGEND

- PROPOSED PROPERTY/ PROJECT BOUNDARY LINE
- EXISTING R.O.W./PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING PAVEMENT
- PROPOSED CURB & GUTTER
- CHAIN LINK SECURITY FENCE

- EXISTING CONTOURS
- PROPOSED CONTOURS

FIRE ZONE MARKINGS:
 FIRE LANES TO BE MARKED BY PAINTING THE CURB RED WITH WHITE STENCILING READING "FIRE ZONE/TOW-AWAY ZONE" WITH LETTERING AT LEAST 3 INCHES IN HEIGHT. SUCH STENCILING SHALL BE AT INTERVALS OF 35 FEET OR LESS. IN ADDITION, SIGNS SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE, REFER TO C.O.A. STANDARD DETAILS 901S-5 & 901S-6.



BUILDING

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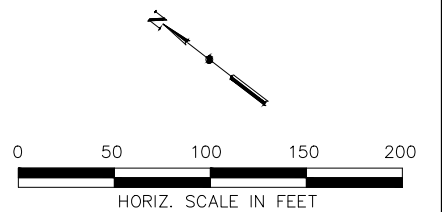
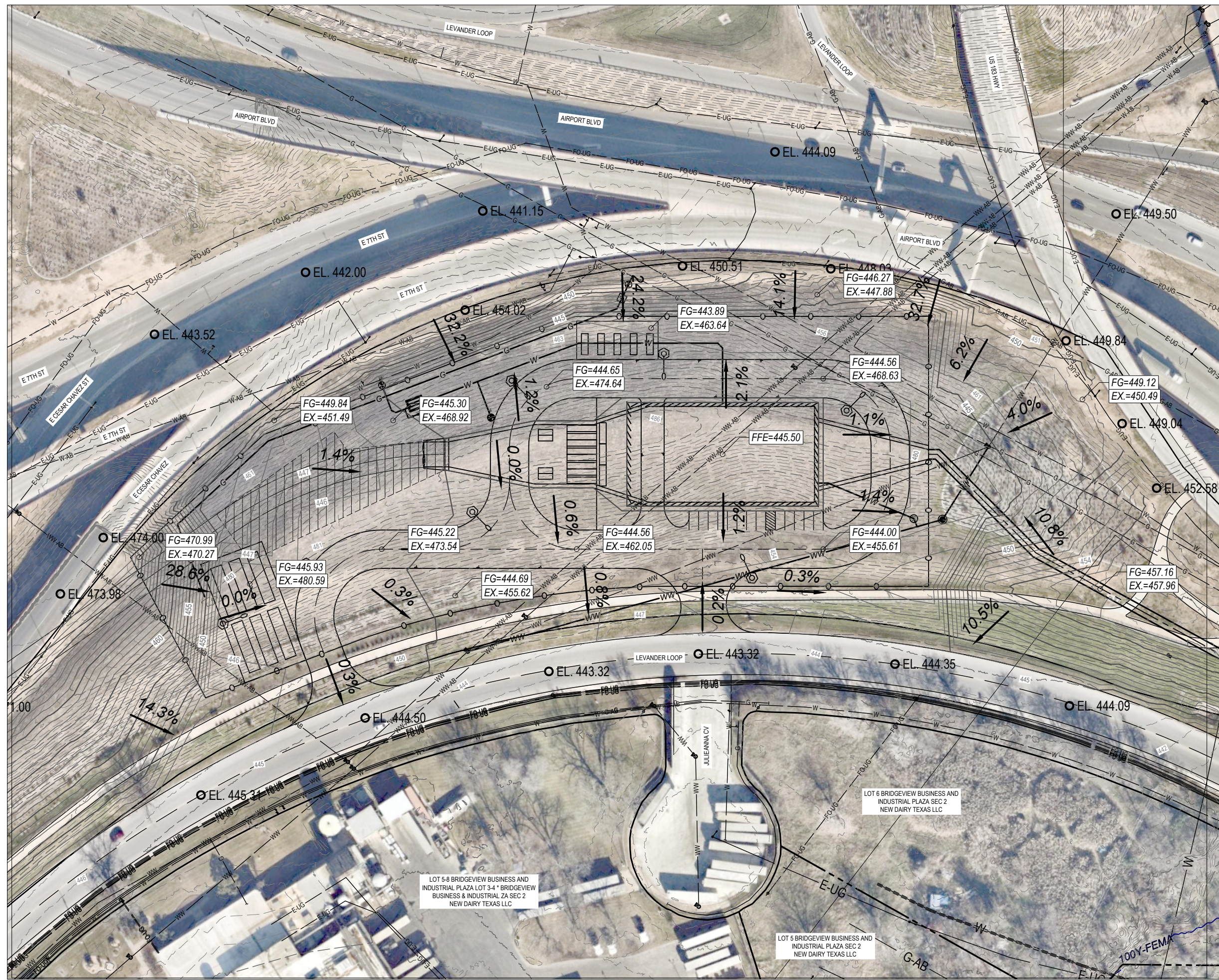
mobility 35
 CAPITAL AREA

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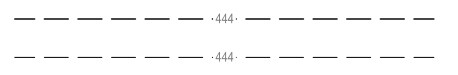
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PUMP STATION SITE - FIRE DEPARTMENT PLAN

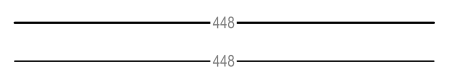
SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	257



EXISTING CONTOURS



PROPOSED CONTOURS



4.0% PROPOSED GRADE

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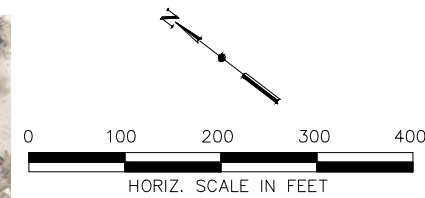
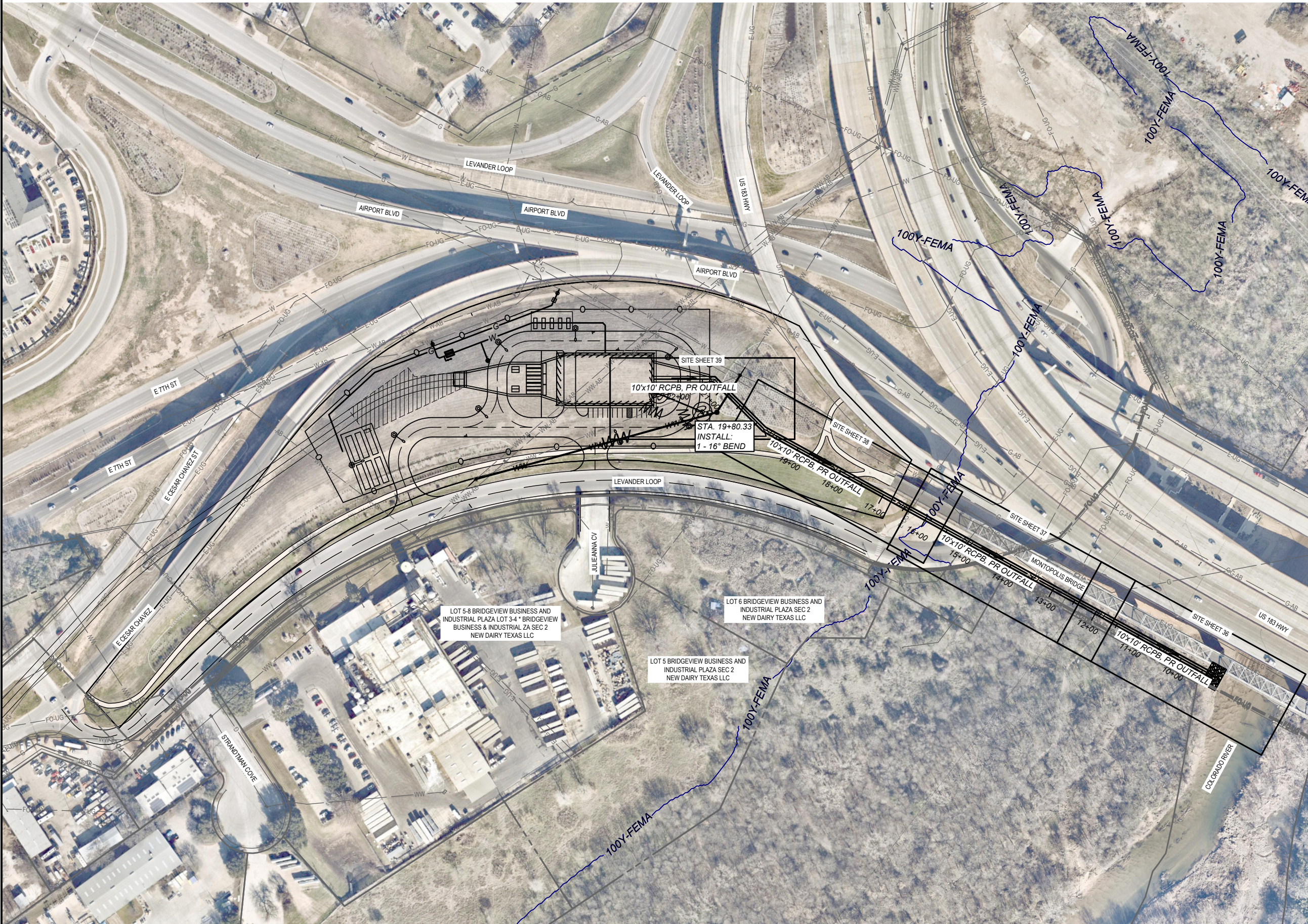
m35 CAPITAL AREA

Texas Department of Transportation

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PUMP STATION SITE - GRADING PLAN

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	258



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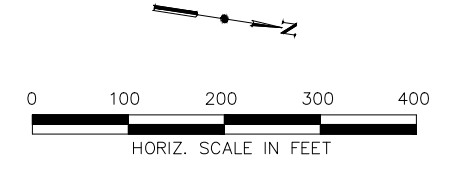
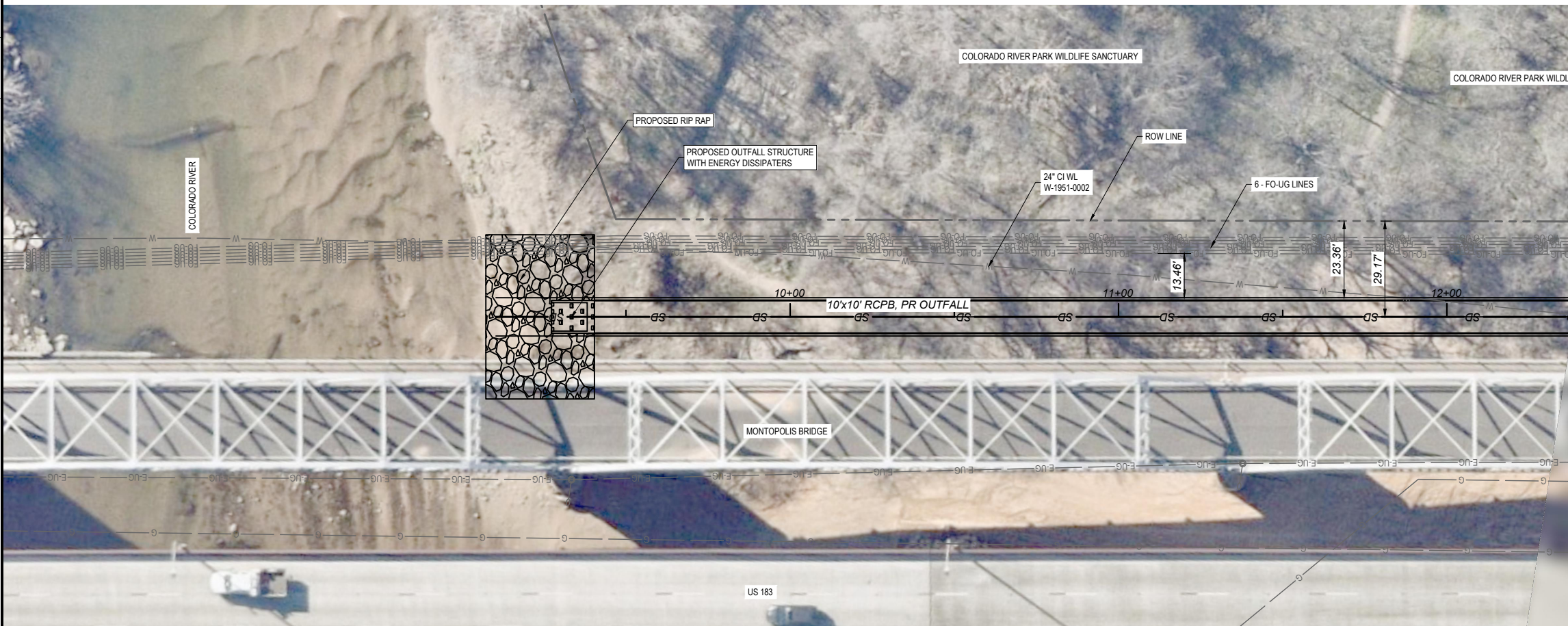
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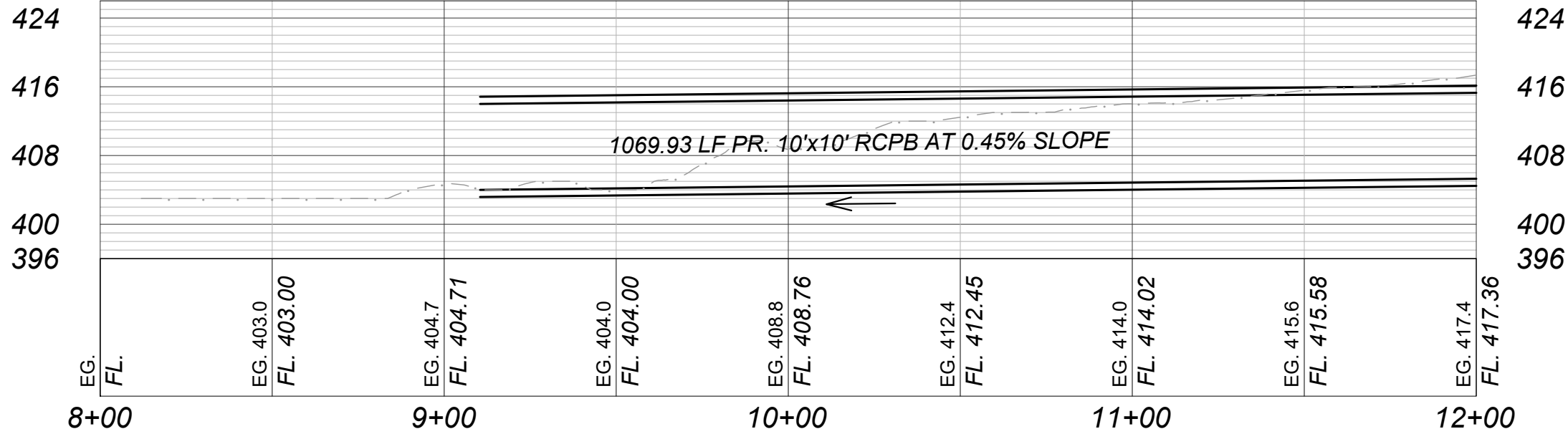
CAPITAL EXPRESS CENTRAL

**PUMP STATION SITE - OVERALL
 OUTFALL PLAN AND PROFILE LAYOUT**

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	259



PR OUTFALL PROFILE
 1" = 40' HORZ. - 1" = 8' VERT.



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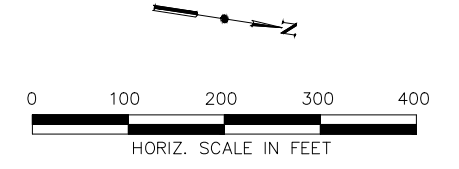
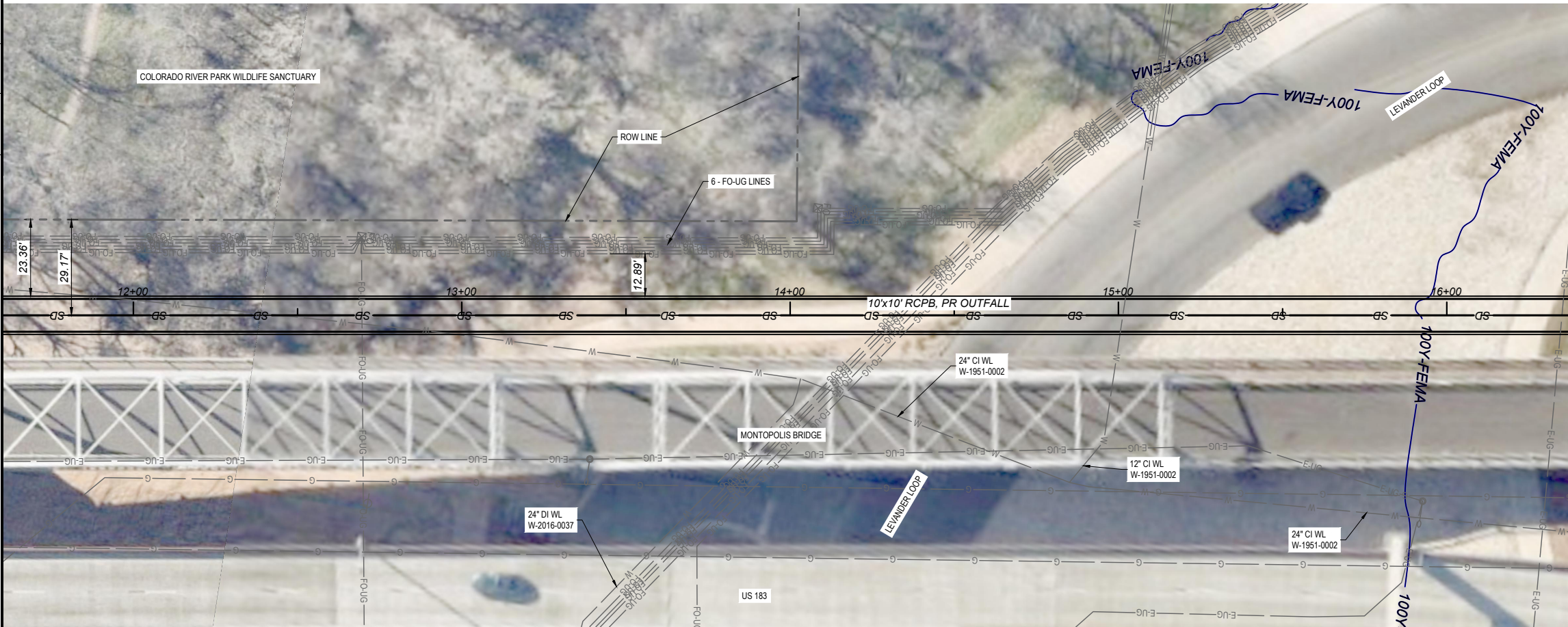
HDR HDR Engineering, Inc.
 Firm Registration No. F-754
 710 Hester Crossing, Suite 150
 Round Rock, Texas 78681

mobility CAPITAL AREA 35

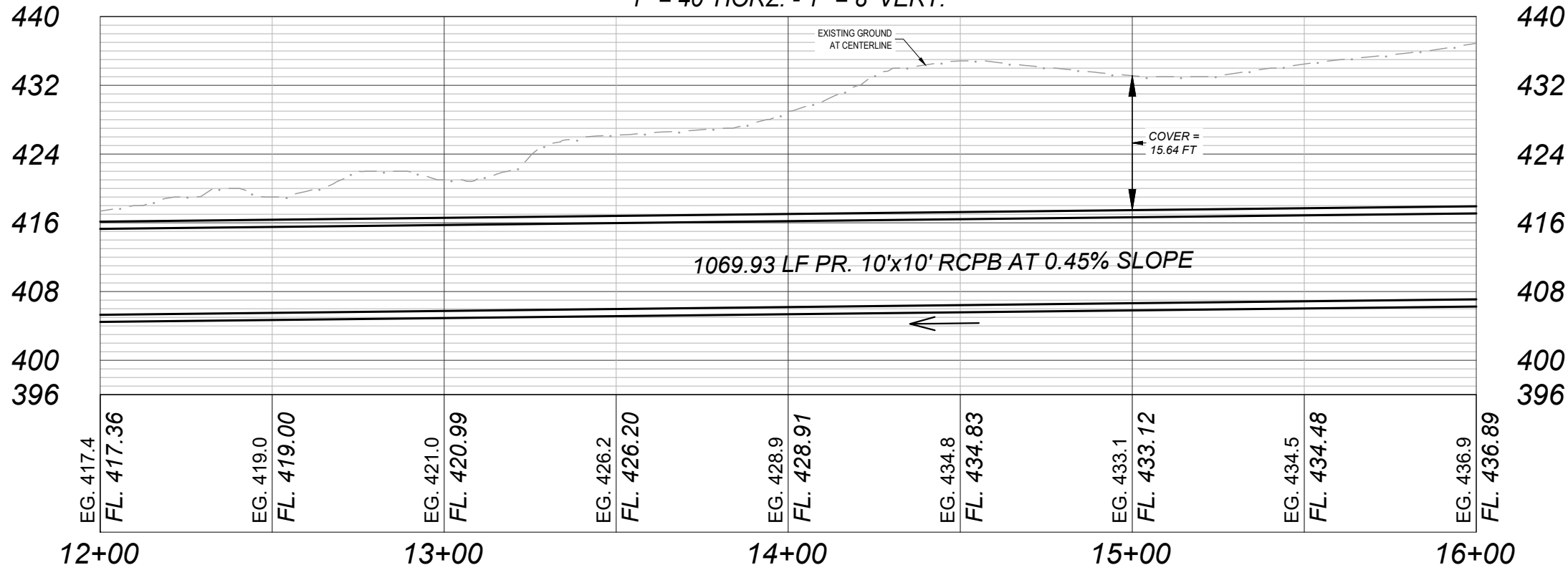
Texas Department of Transportation
 CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - OUTFALL PLAN & PROFILE STA. BEGIN - 12+00

SHEET			OF
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	260



PR OUTFALL PROFILE
1" = 40' HORZ. - 1" = 8' VERT.



NO.	DATE	REVISION	APPR BY

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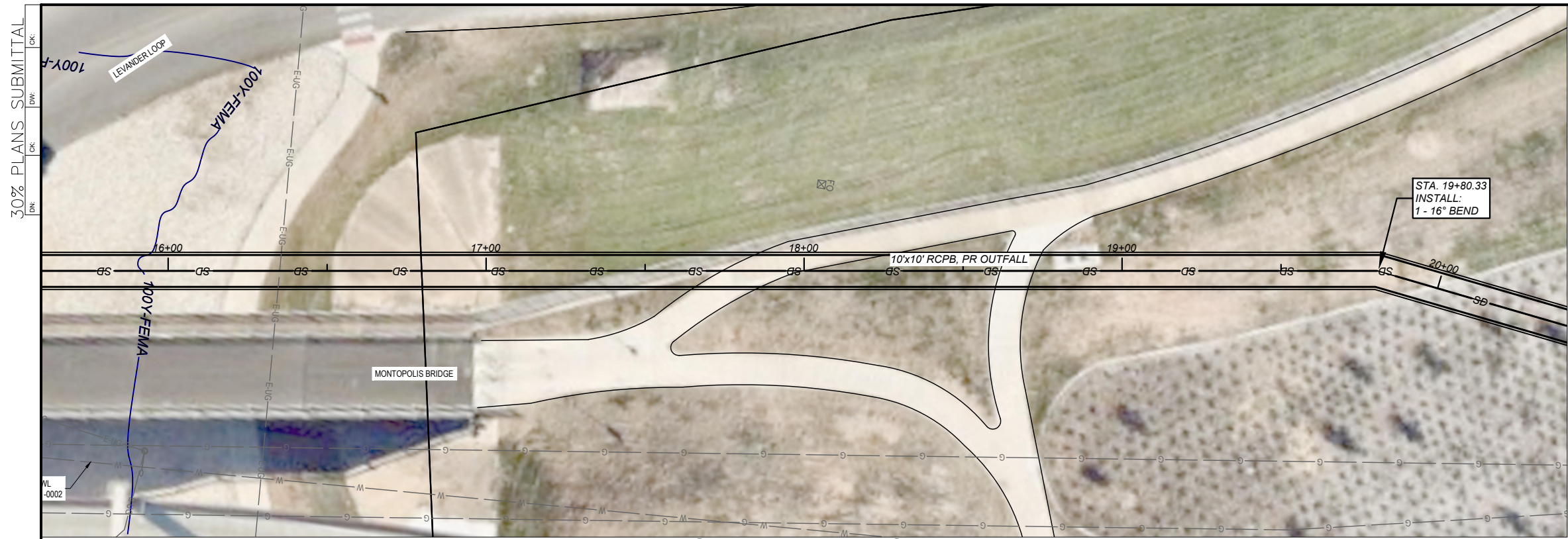
mobility CAPITAL AREA 35

Texas Department of Transportation

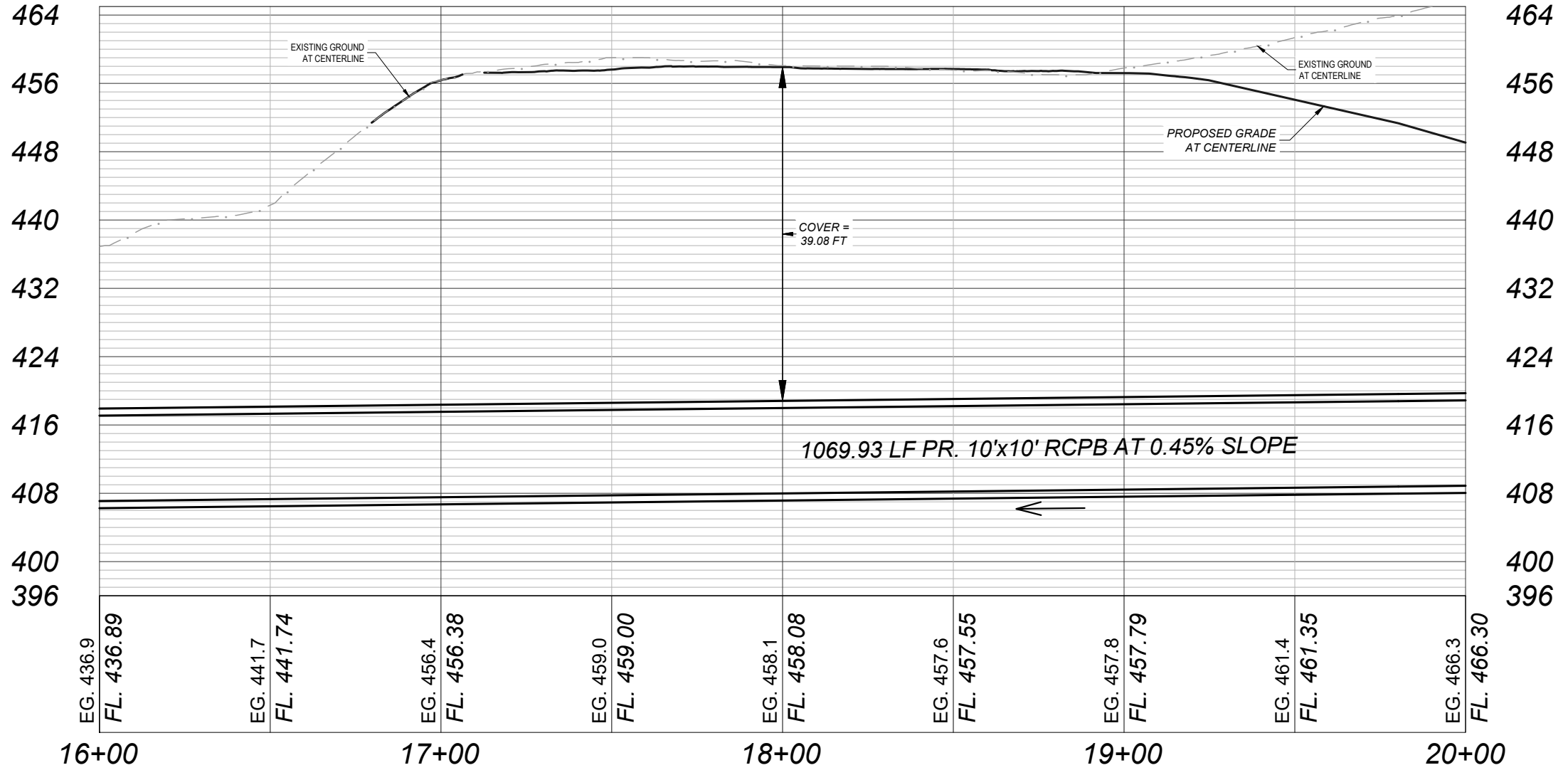
CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - OUTFALL PLAN & PROFILE STA. 12+00 - 16+00

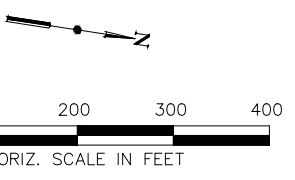
SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	261



PR OUTFALL PROFILE
 1" = 40' HORZ. - 1" = 8' VERT.



DATE: Thursday, June 29, 2023 11:23:24 AM
 FILE: CapEx - Outfall P&P.dwg



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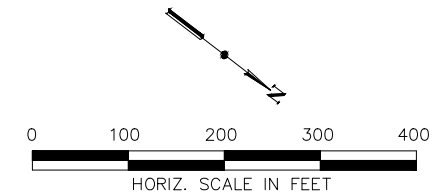
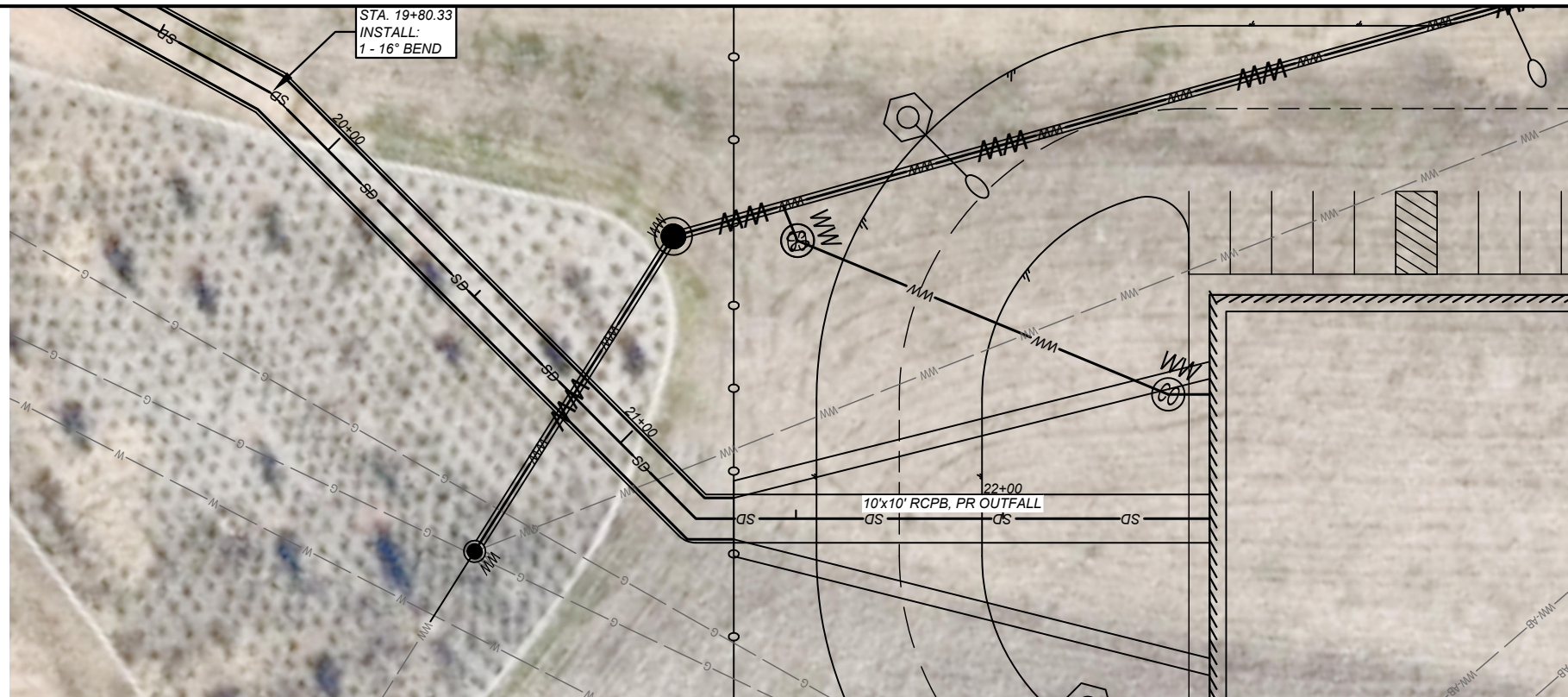
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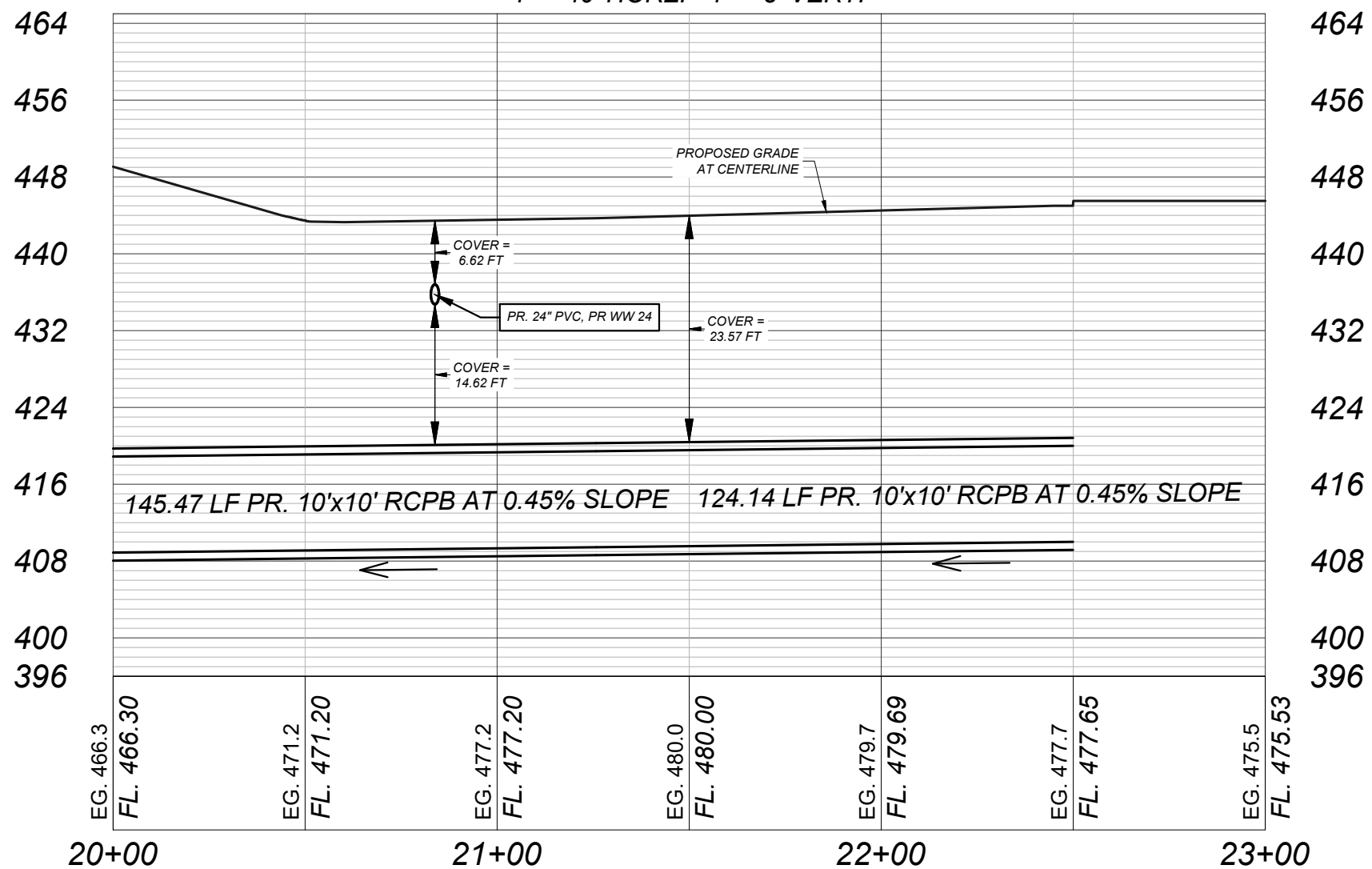
CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - OUTFALL PLAN & PROFILE STA. 16+00 - 20+00

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
SHEET NO.		SHEET NO.	
AUS		TRAVIS	
262		262	



PR OUTFALL PROFILE
 1" = 40' HORZ. - 1" = 8' VERT.



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mobility 35
 CAPITAL AREA

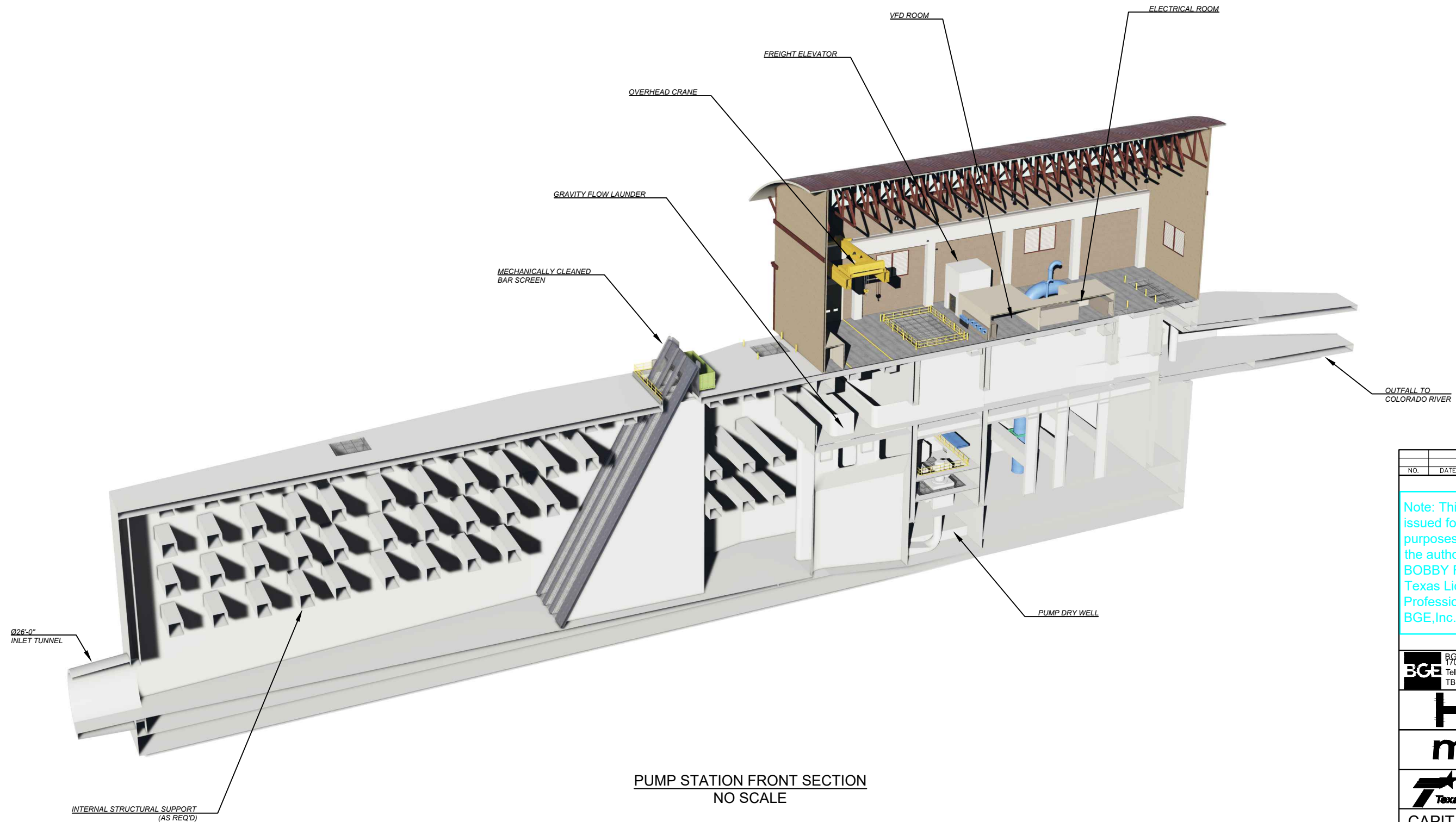
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION SITE - OUTFALL PLAN & PROFILE STA. 20+00 - END

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	263

NOTES:
1. PUMP STATION SUPPORT BUILDING CONCEPTUAL DESIGN AS SHOWN BY BGE FOR ILLUSTRATIVE PURPOSES ONLY. BUILDING DESIGN BY OTHERS. ARCHITECTURAL DETAILS TBD.



**PUMP STATION FRONT SECTION
NO SCALE**

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mobility CAPITAL AREA

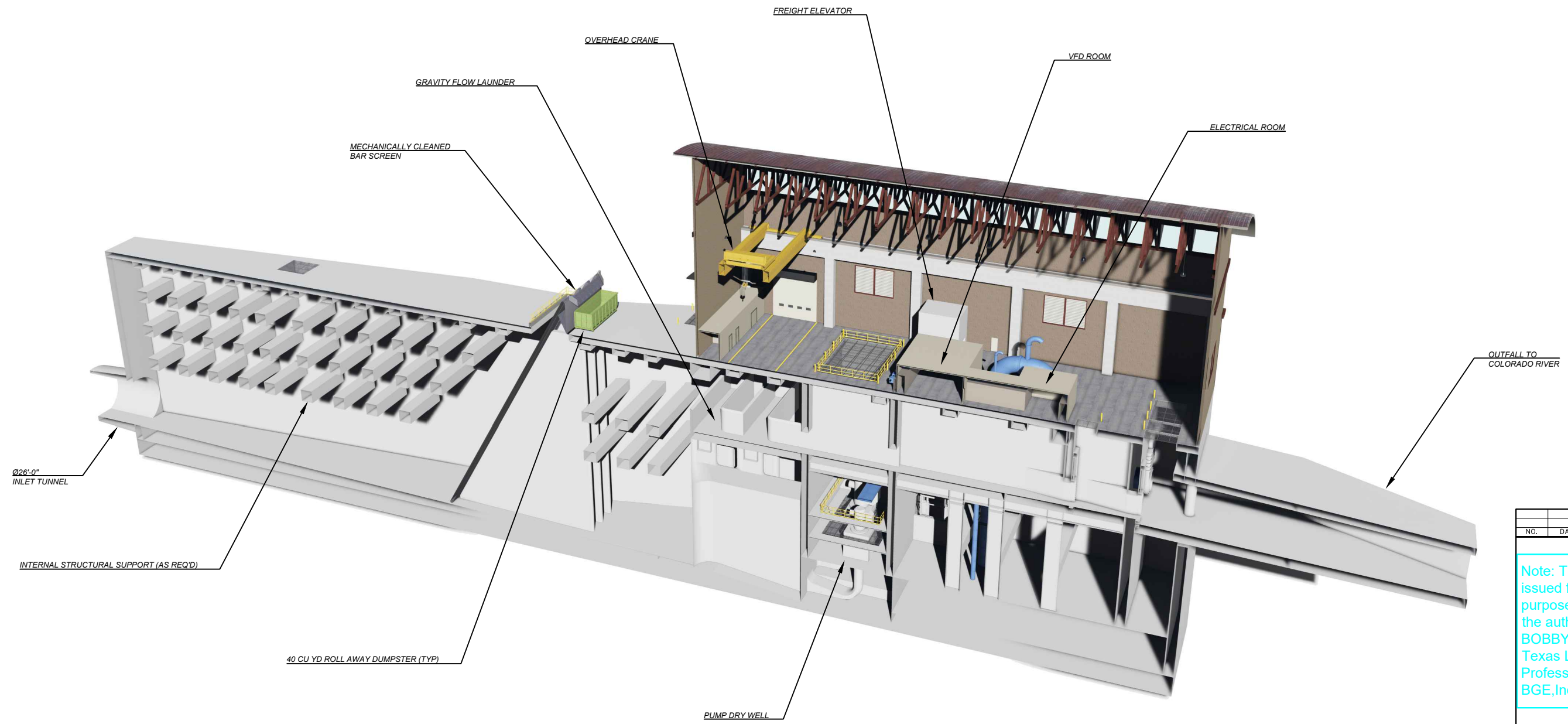
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - PUMP STATION FRONT SECTION

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	1

NOTES:
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PUMP STATION BACK SECTION
NO SCALE

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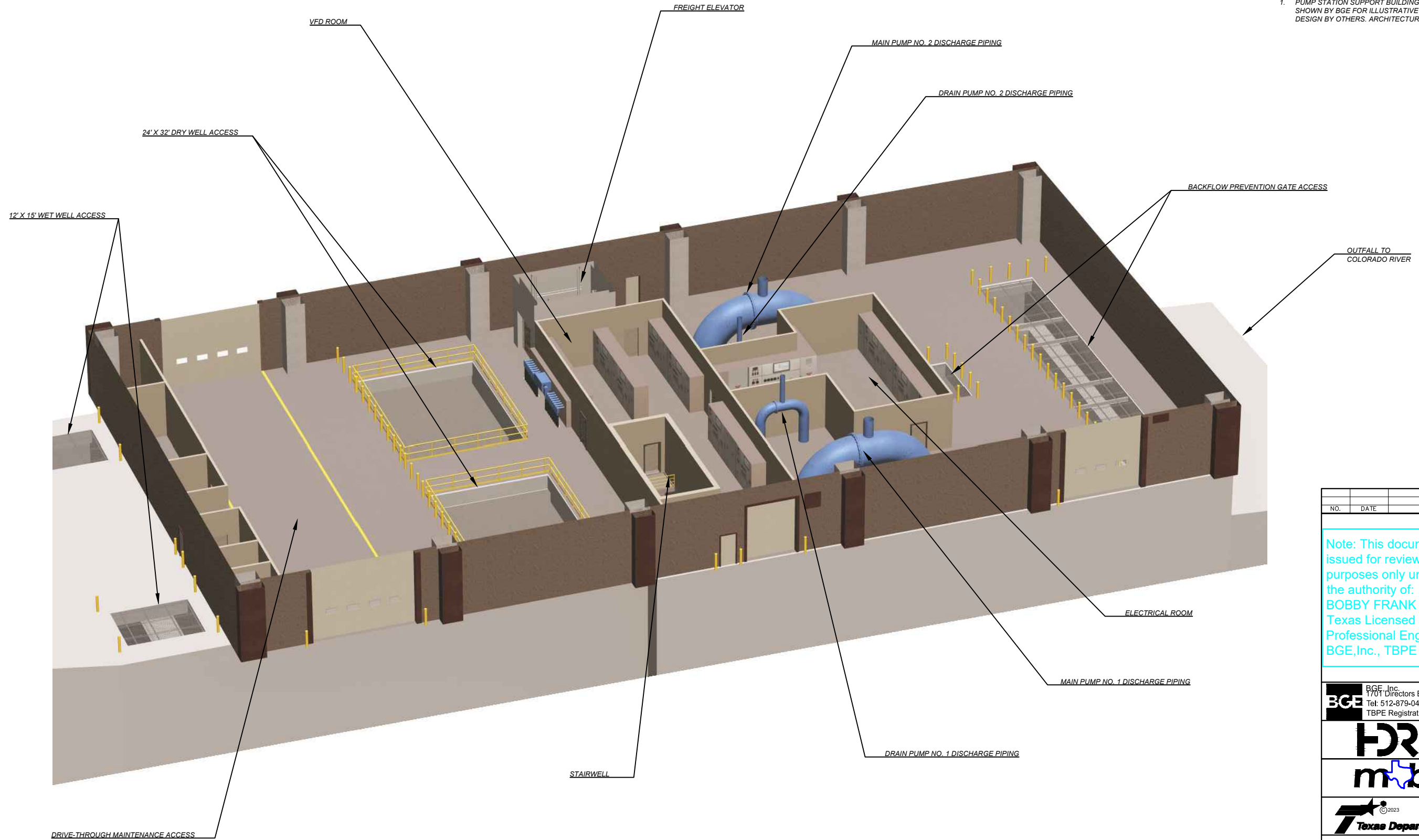
mobility CAPITAL AREA 35

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - PUMP STATION BACK SECTION

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	2



NOTES:
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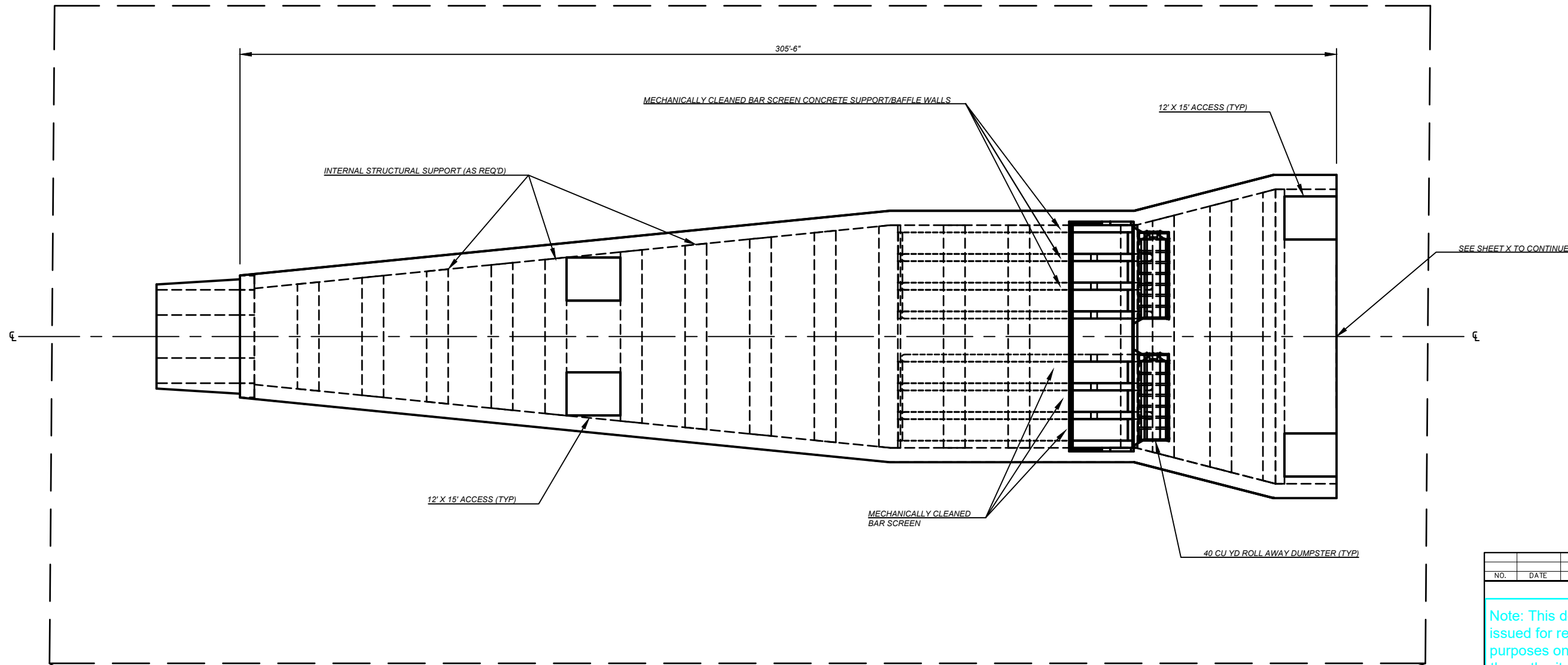


CAPITAL EXPRESS CENTRAL

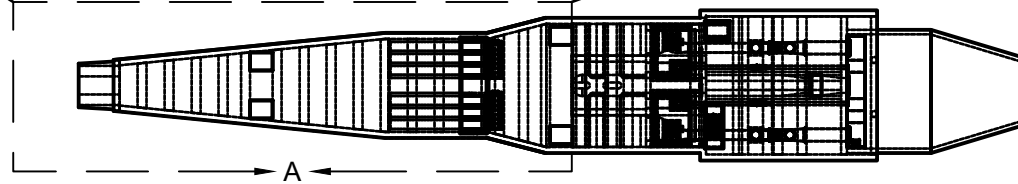
PUMP STATION - OPERATING FLOOR PLAN IMAGE

PUMP STATION SUPPORT BUILDING OPERATING FLOOR PLAN
NO SCALE

SHEET			OF
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	3



DETAIL A - INFLOW CHAMBER AND MECHANICAL SCREEN
SCALE 1/32" = 1'-0"



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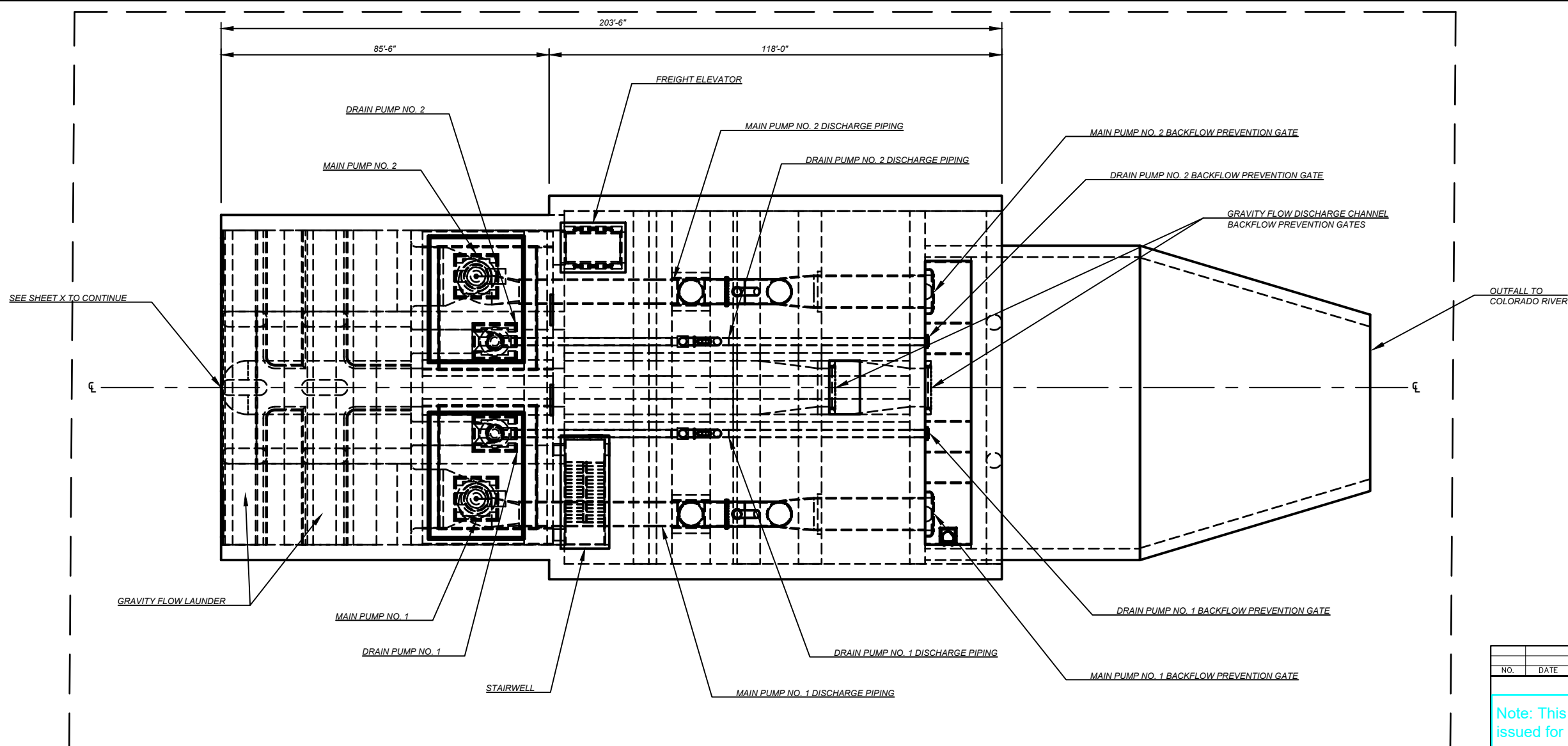
mobility CAPITAL AREA 35

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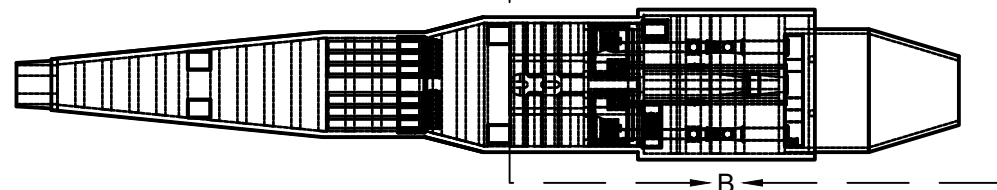
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PUMP STATION - PLAN VIEW DETAIL A

SHEET OF		JOB		HIGHWAY	
CONT	SECT	433, ETC.		I-35	
0015 13					
DIST			COUNTY	SHEET NO.	
AUS			TRAVIS	4	



DETAIL B - GRAVITY LAUNDER AND PUMP CHAMBERS
SCALE 1/32" = 1'-0"



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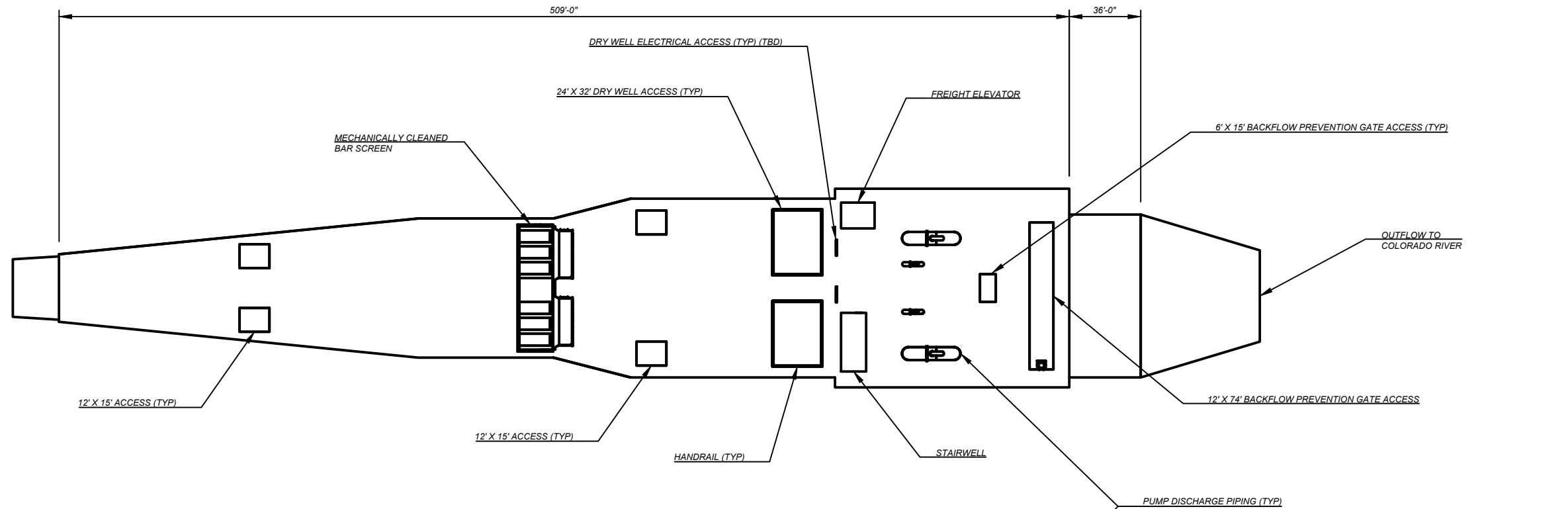
mobility 35
CAPITAL AREA

Texas Department of Transportation

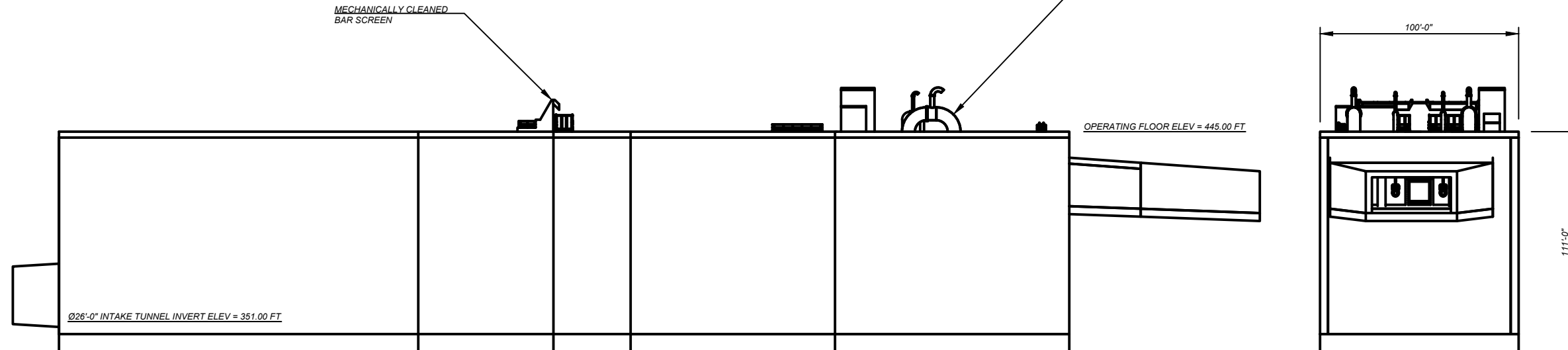
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PUMP STATION - PLAN VIEW DETAIL B

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	5



PLAN VIEW
SCALE 1/32" = 1'-0"



SIDE VIEW
SCALE 1/32" = 1'-0"

END VIEW
SCALE 1/32" = 1'-0"

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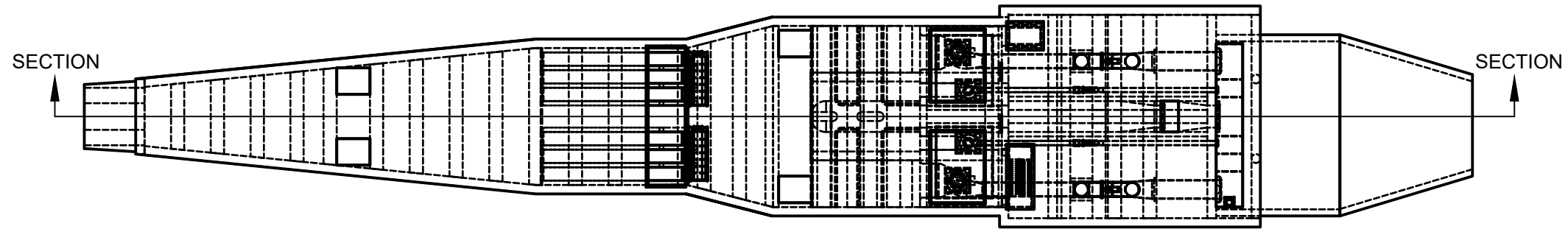
mobility CAPITAL AREA 35

Texas Department of Transportation

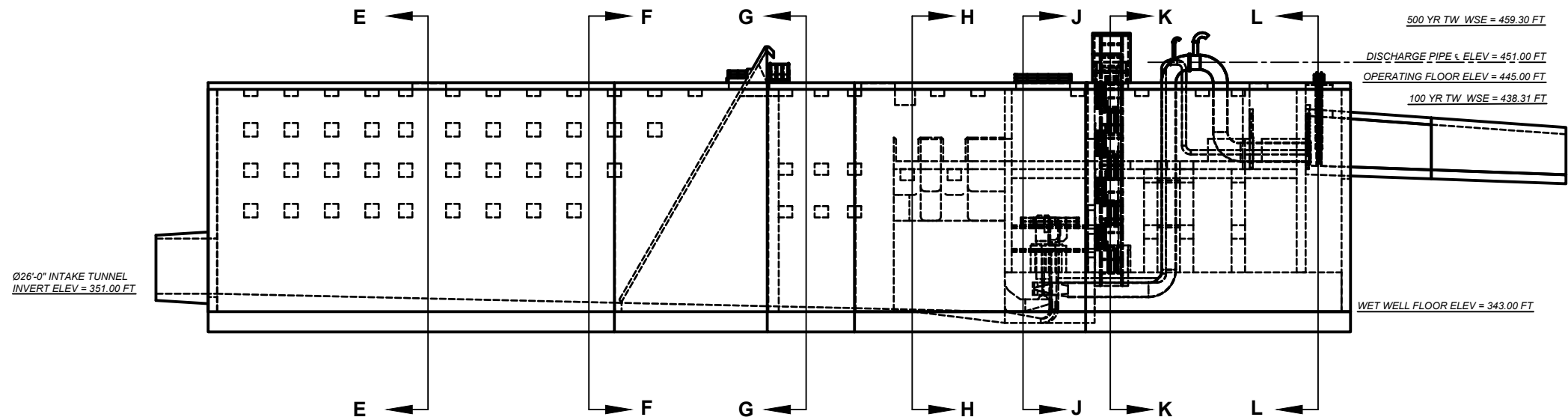
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PUMP STATION - ORTHO VIEWS

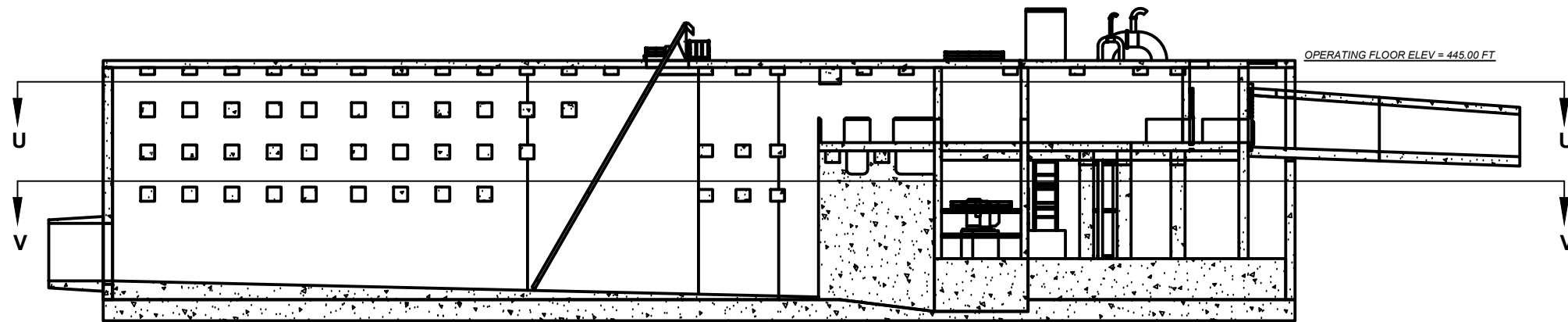
SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	6



PLAN VIEW
SCALE 1/64" = 1'-0"



VERTICAL SECTION KEY
SCALE 1/64" = 1'-0"



HORIZONTAL SECTION KEY
SCALE 1/64" = 1'-0"

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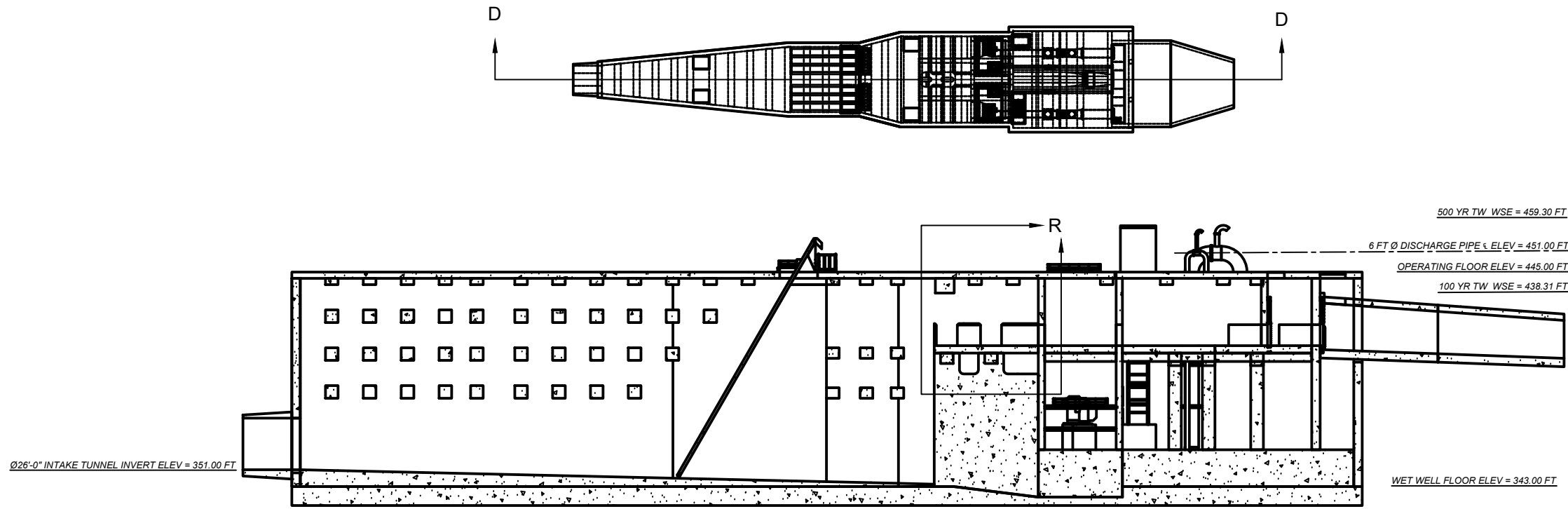
mobility CAPITAL AREA 35

Texas Department of Transportation

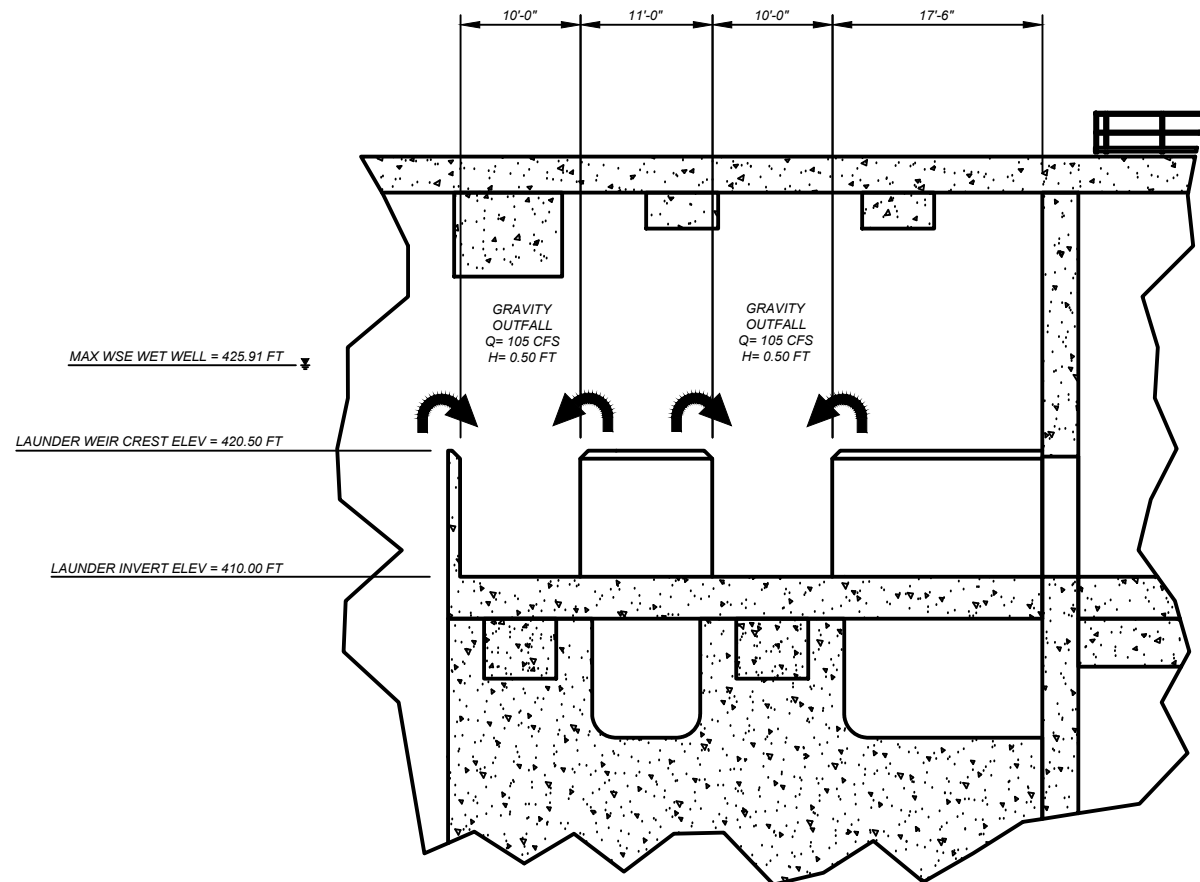
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PUMP STATION - SECTION KEY

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	7



SECTION D-D - PUMP STATION
SCALE 1/64" = 1'-0"



DETAIL R
SCALE 1/16" = 1'-0"

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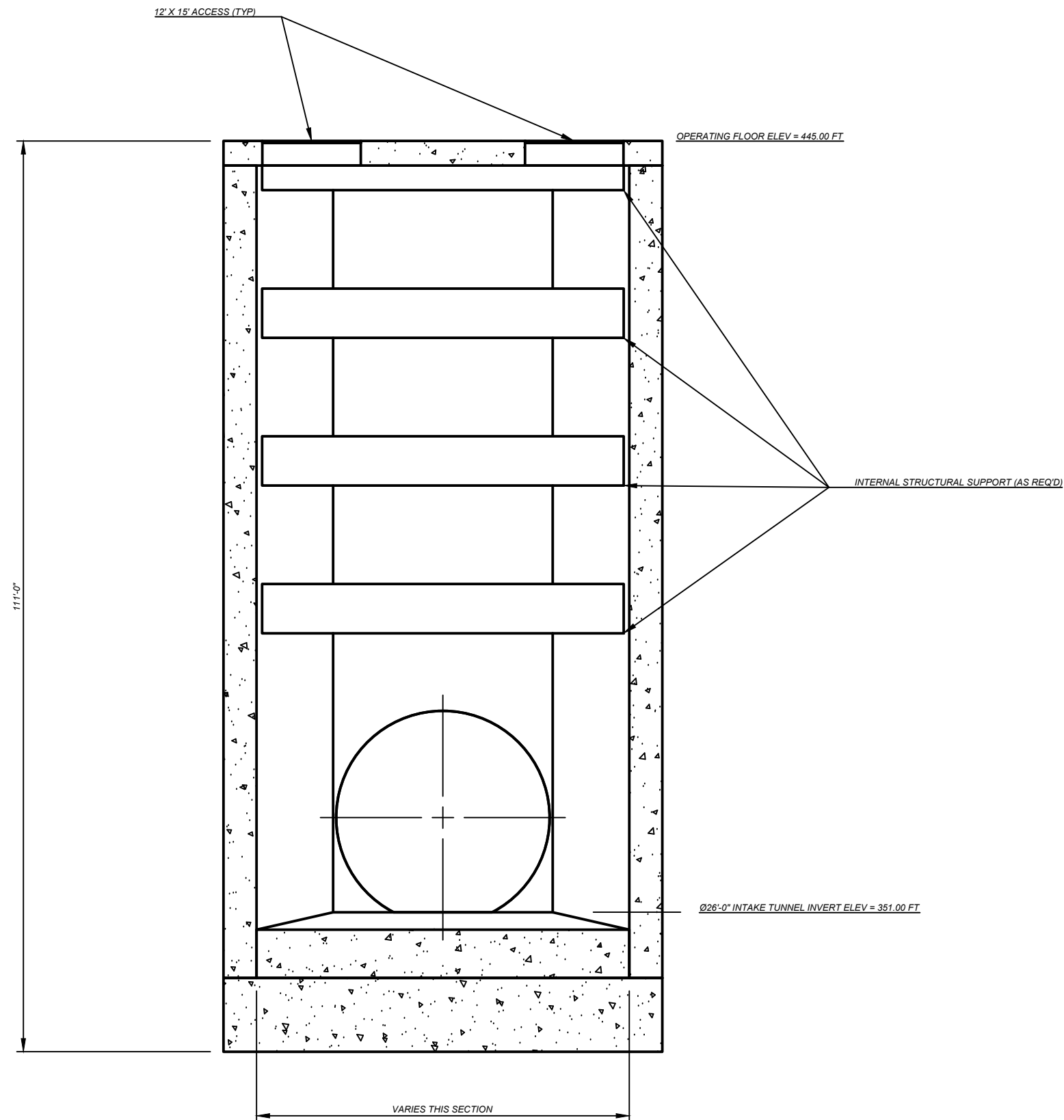
mobility 35
 CAPITAL AREA

Texas Department of Transportation

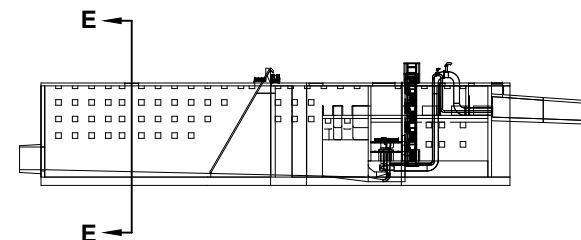
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PUMP STATION - SECTION D-D - PUMP STATION

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	8



SECTION E-E - INLET CHAMBER
SCALE 1/16" = 1'-0"



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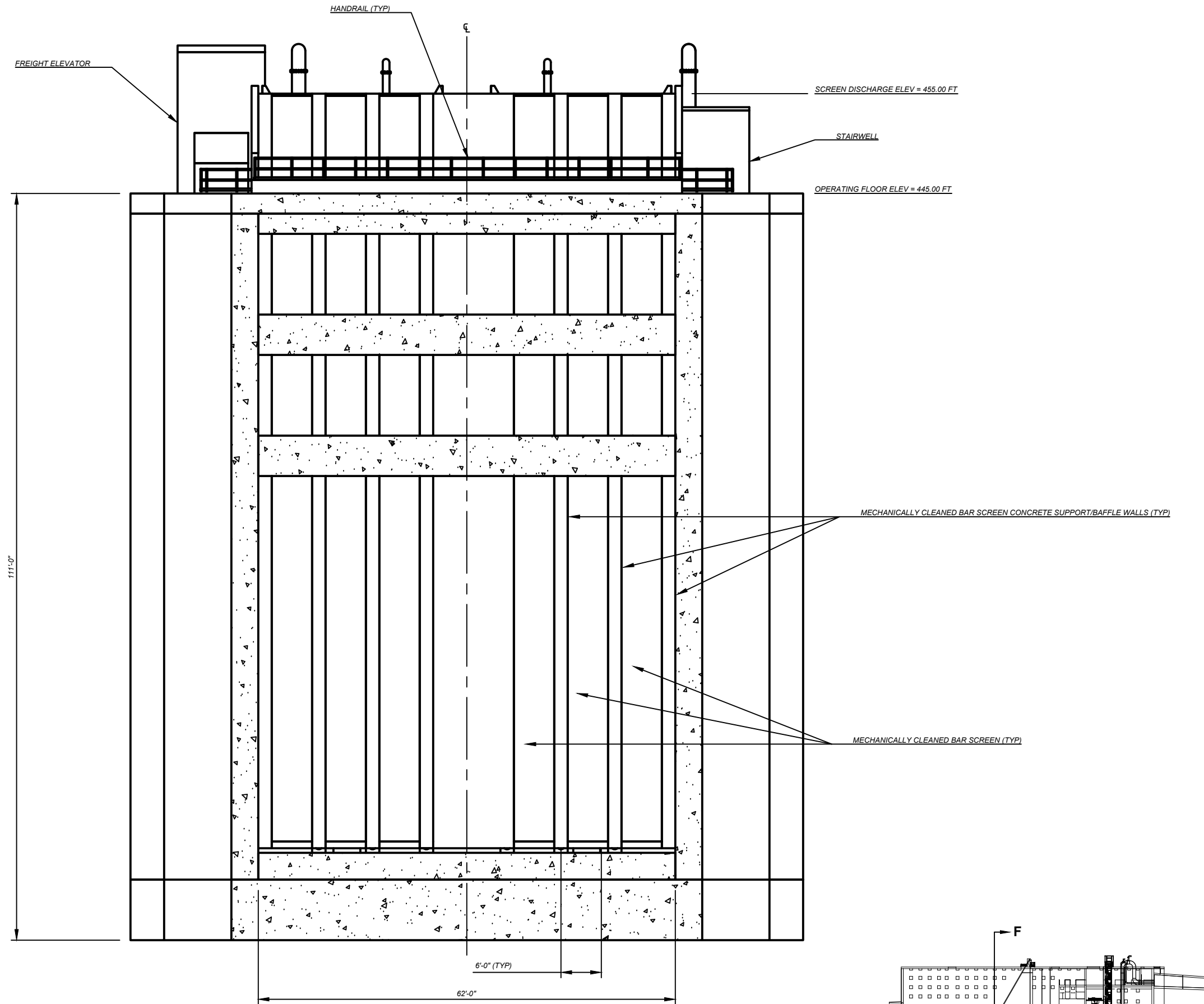
mobility 35
 CAPITAL AREA

Texas Department of Transportation

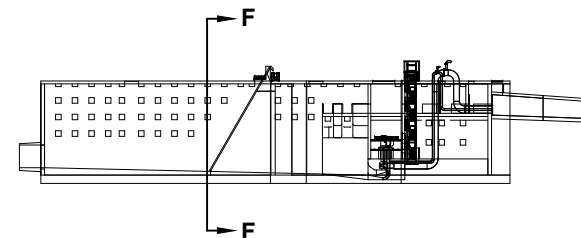
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PUMP STATION - SECTION E-E - INLET CHAMBER

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	9



SECTION F-F - BAR SCREEN FRONT
SCALE 1/16" = 1'-0"



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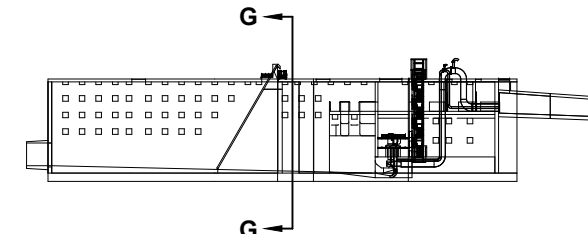
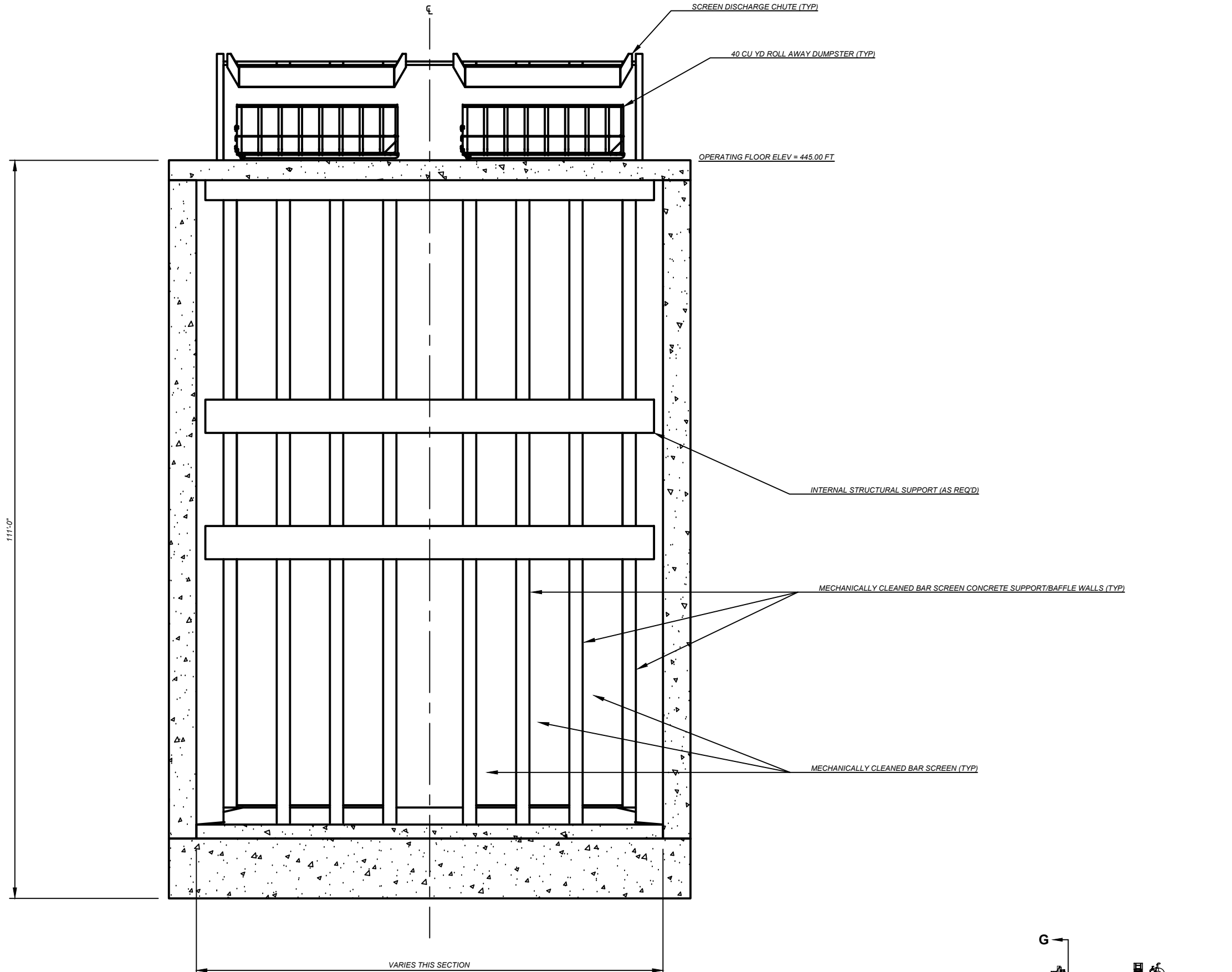
m35 CAPITAL AREA

Texas Department of Transportation

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PUMP STATION - SECTION F-F - BAR SCREEN FRONT

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	10



SECTION G-G - BAR SCREEN BACK
SCALE 1/16" = 1'-0"

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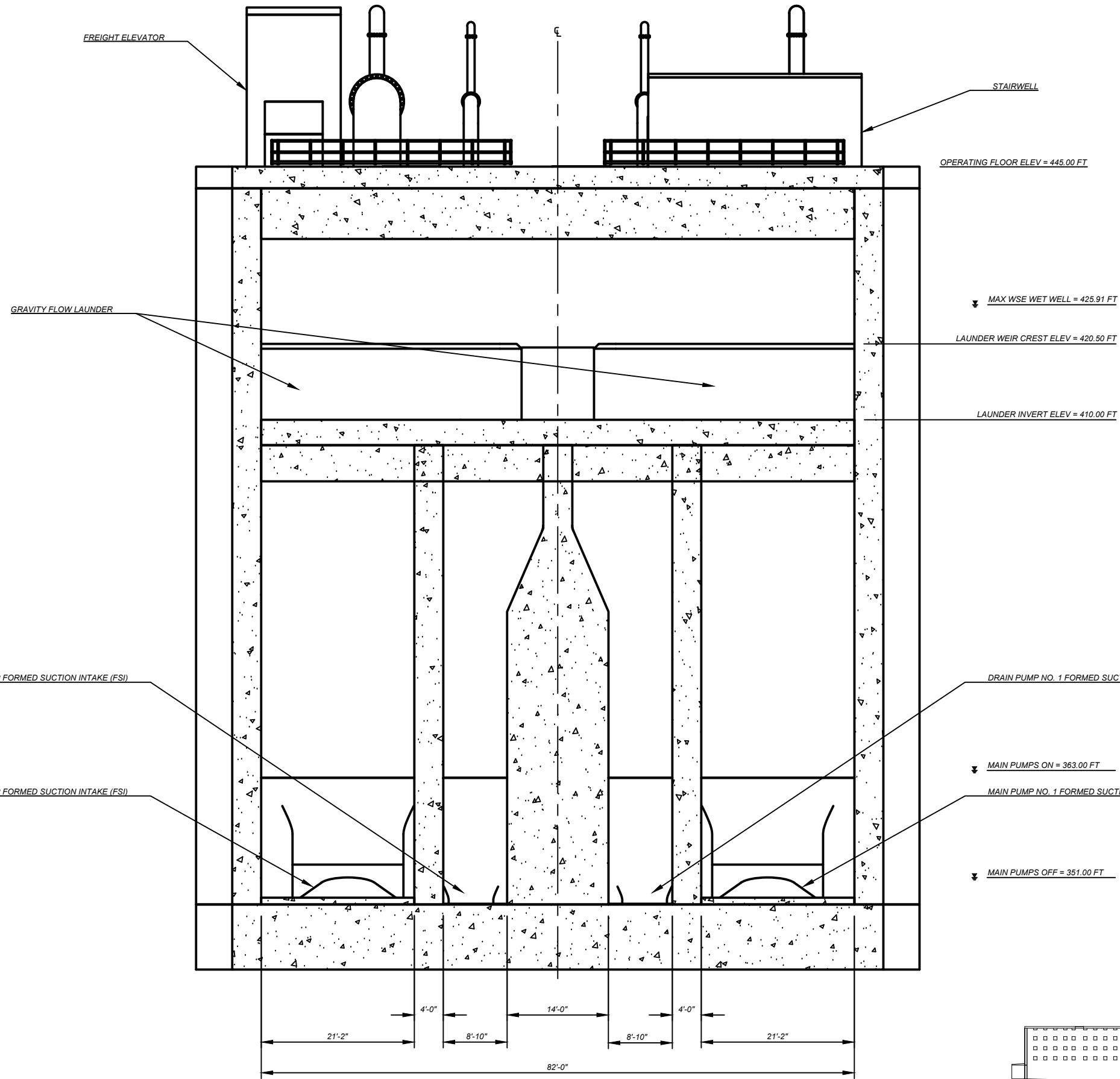
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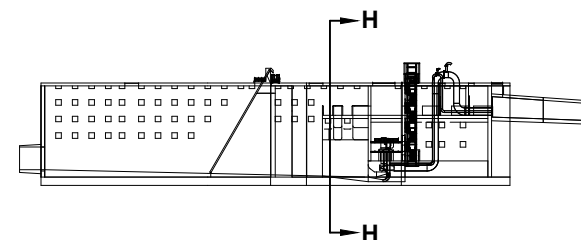
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PUMP STATION - SECTION G-G - BAR SCREEN BACK

CONT		SECT	JOB	HIGHWAY
0015		13	433, ETC.	I-35
DIST			COUNTY	SHEET NO.
AUS			TRAVIS	11



SECTION H-H PUMP INTAKE BAFFLES
SCALE 1/16" = 1'-0"



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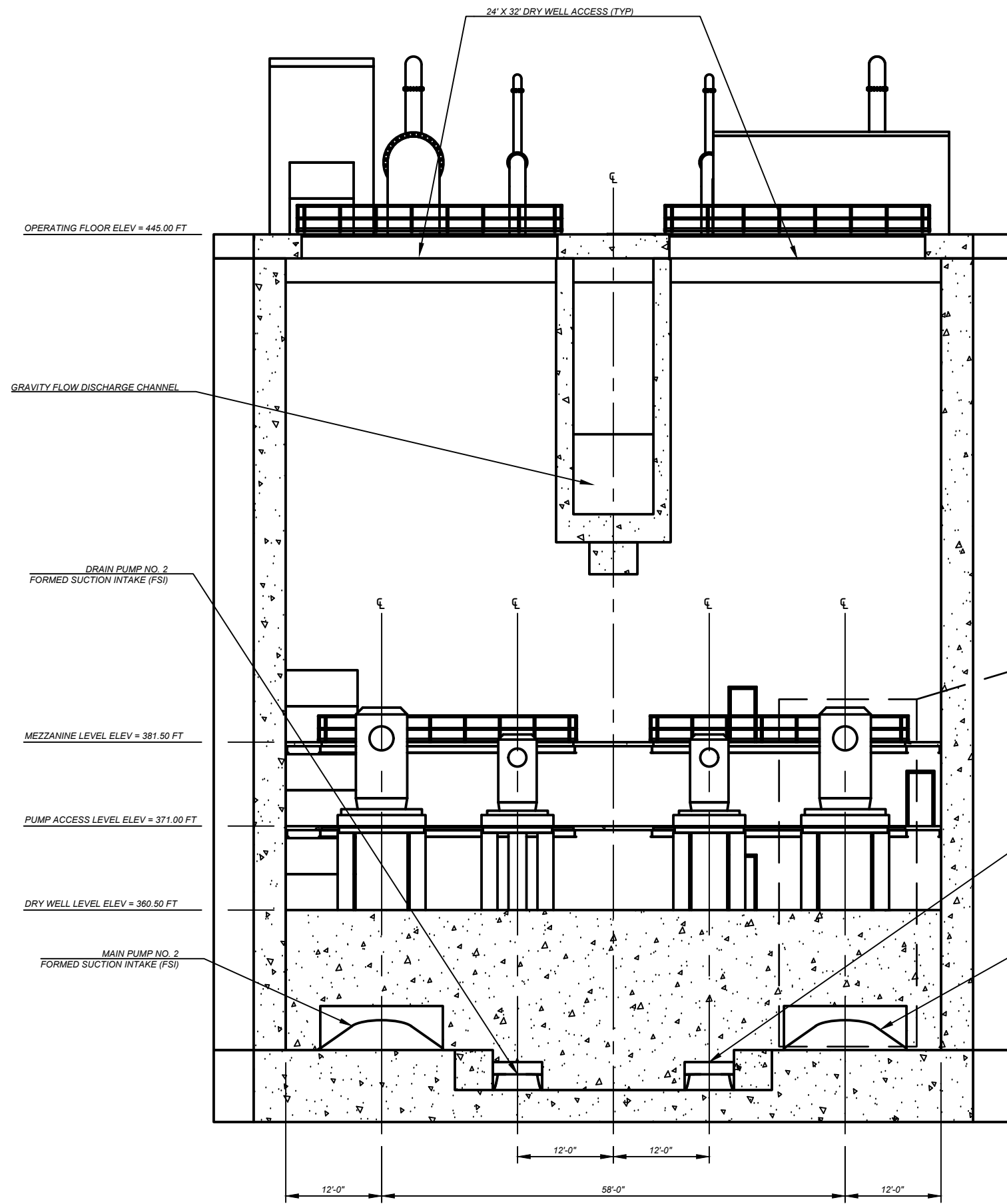
mobility 35
CAPITAL AREA

Texas Department of Transportation

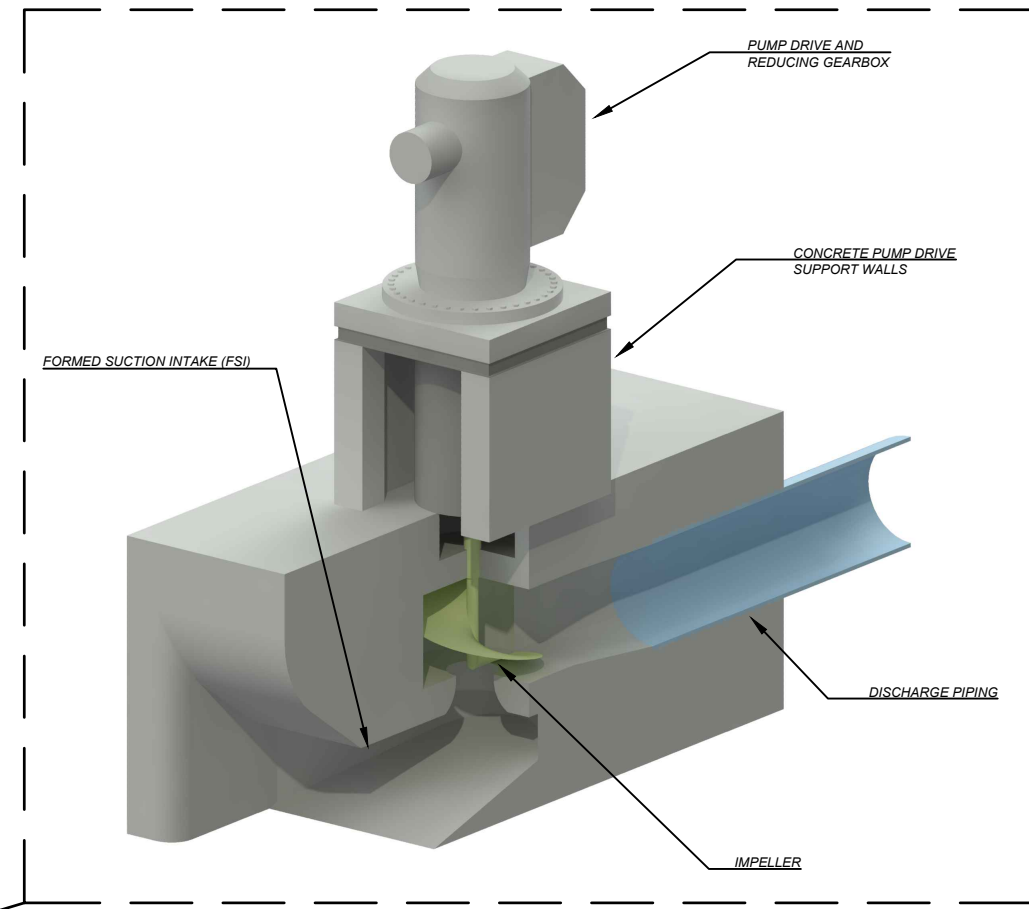
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PUMP STATION - SECTION H-H - PUMP INTAKE BAFFLES

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	12



SECTION J-J - DRY WELL ELEVATION
SCALE 1/16" = 1'-0"



VOLUTE PUMP ILLUSTRATION
(NO SCALE)

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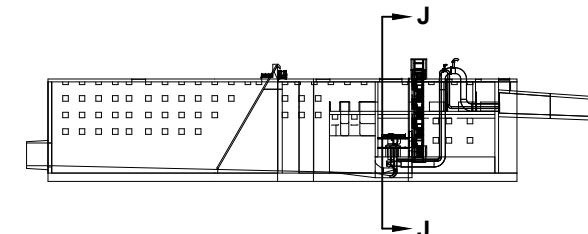
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Round Rock, Texas 78681

mobility 35
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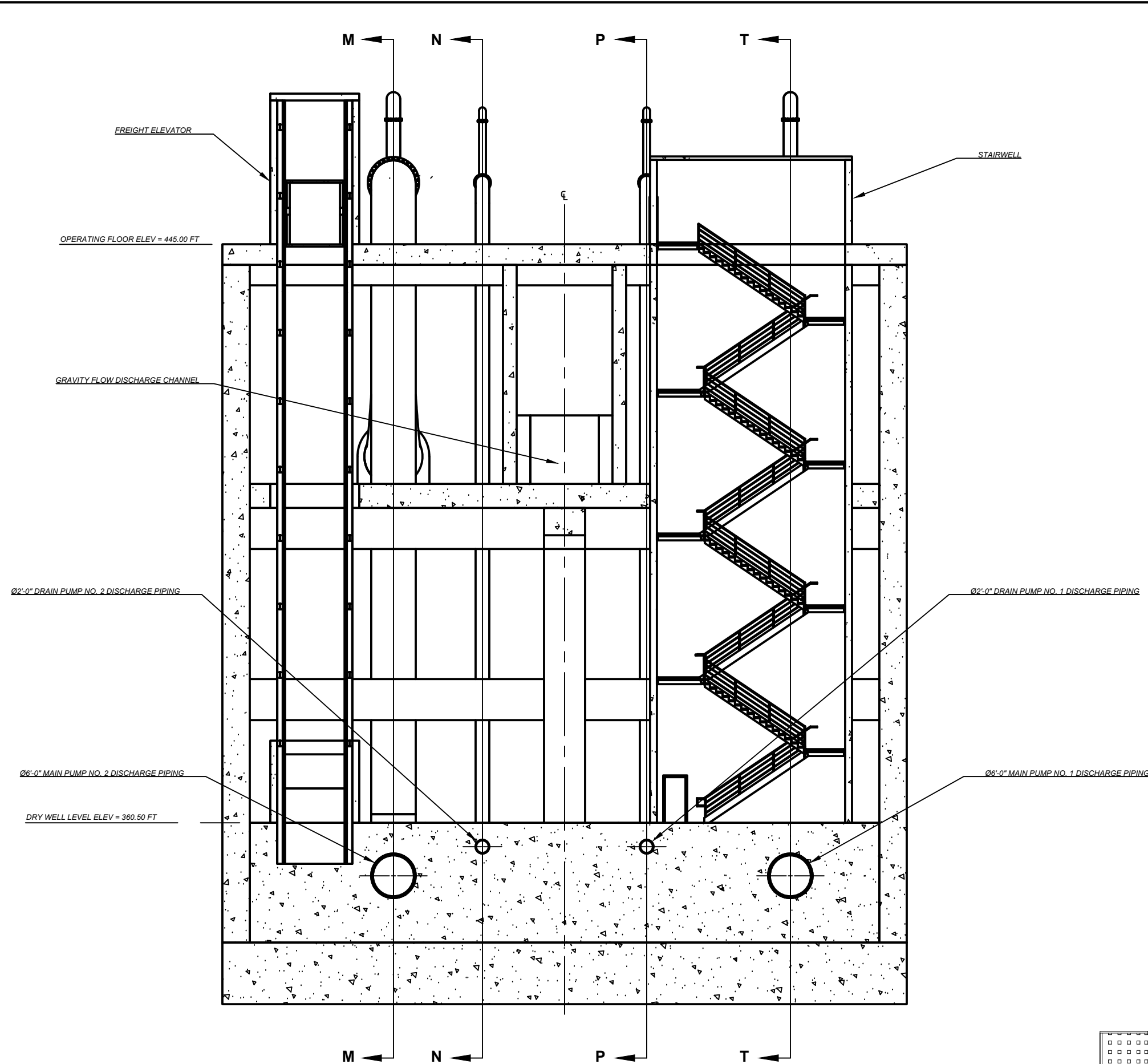
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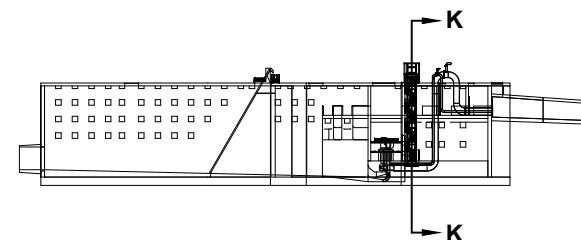
PUMP STATION - SECTION J-J - DRY WELL ELEVATION



SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	13



SECTION K-K - STAIR AND ELEVATOR ELEVATION
SCALE 1/16" = 1'-0"



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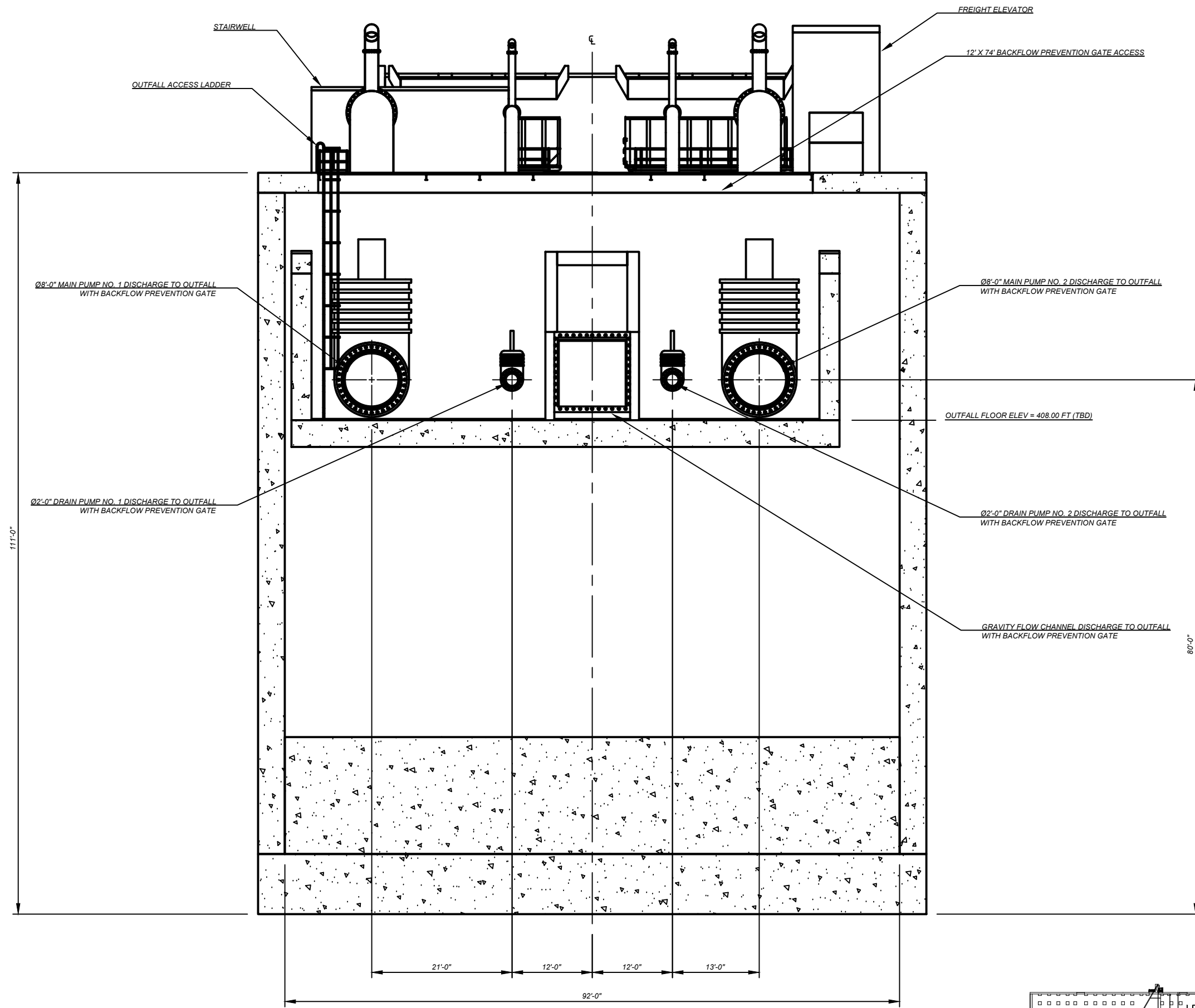
mobility 35
CAPITAL AREA

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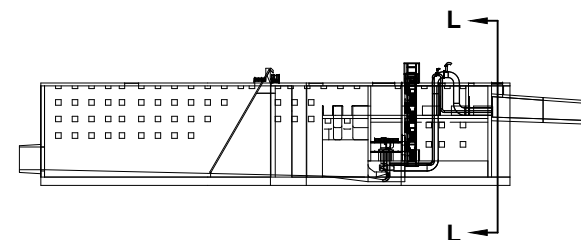
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PUMP STATION - SECTION K-K - STAIR AND ELEVATOR ELEVATION

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	14



SECTION L-L - OUTFALL ELEVATION
SCALE 1/16" = 1'-0"



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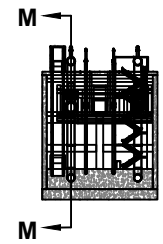
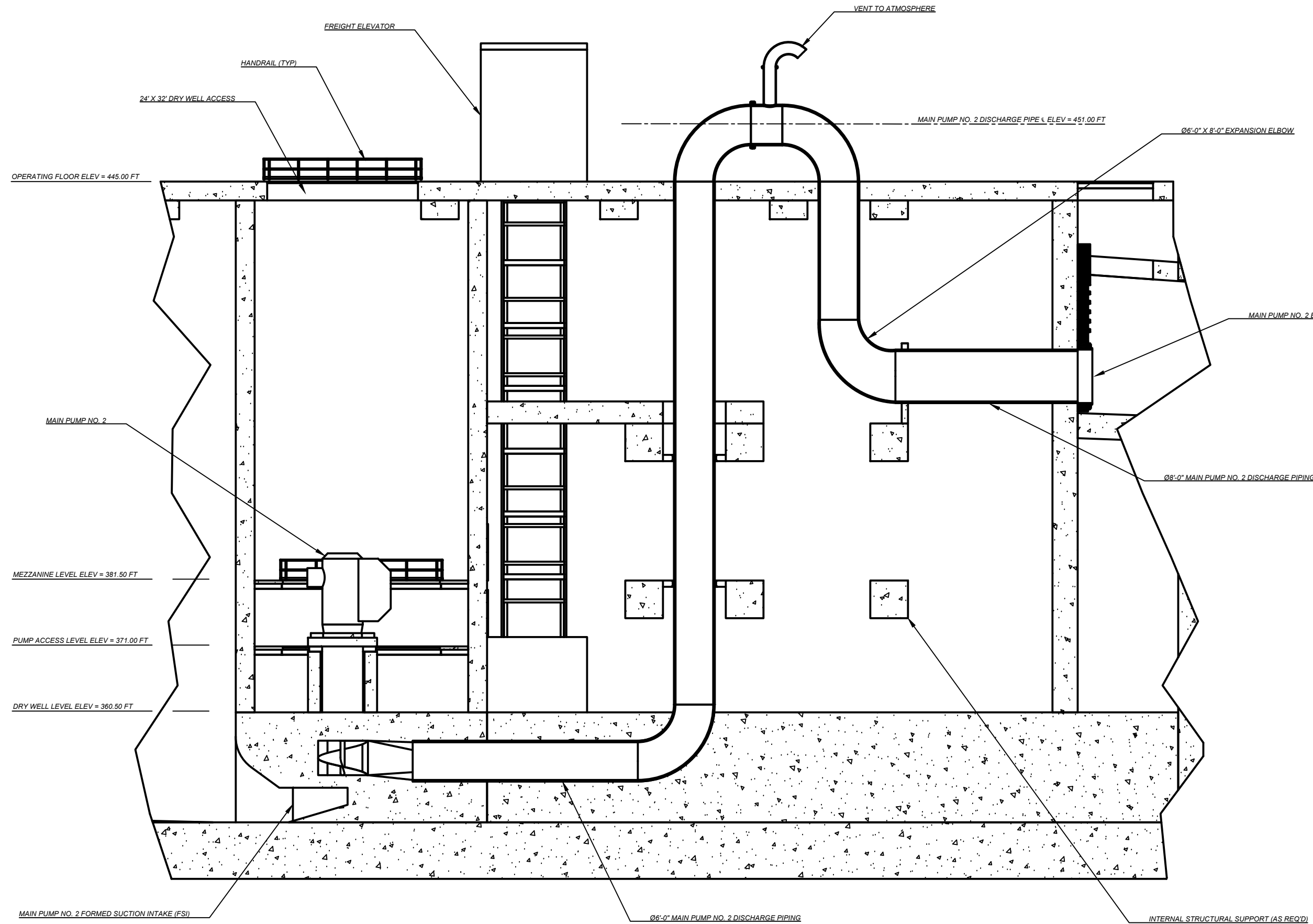
mobility 35
CAPITAL AREA

Texas Department of Transportation

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PUMP STATION - SECTION L-L -
OUTFALL ELEVATION

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
SHEET NO.		SHEET NO.	
AUS		TRAVIS	
		15	



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CAPITAL AREA

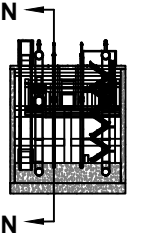
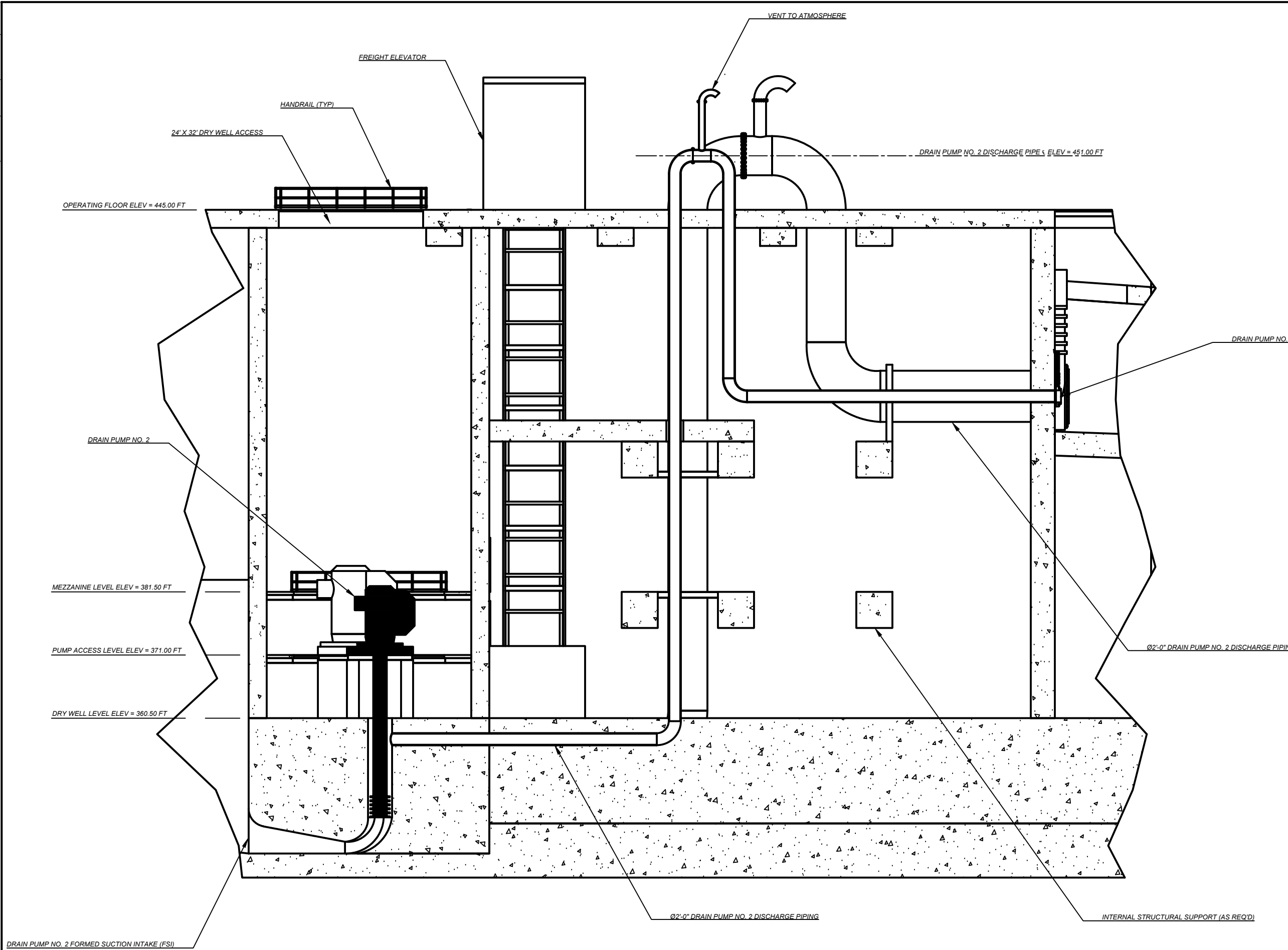
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - SECTION M-M - MAIN PUMP NO. 2

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	16	

SECTION M-M - MAIN PUMP NO. 2
SCALE 1/16" = 1'-0"



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mobility 35
 CAPITAL AREA

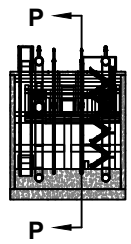
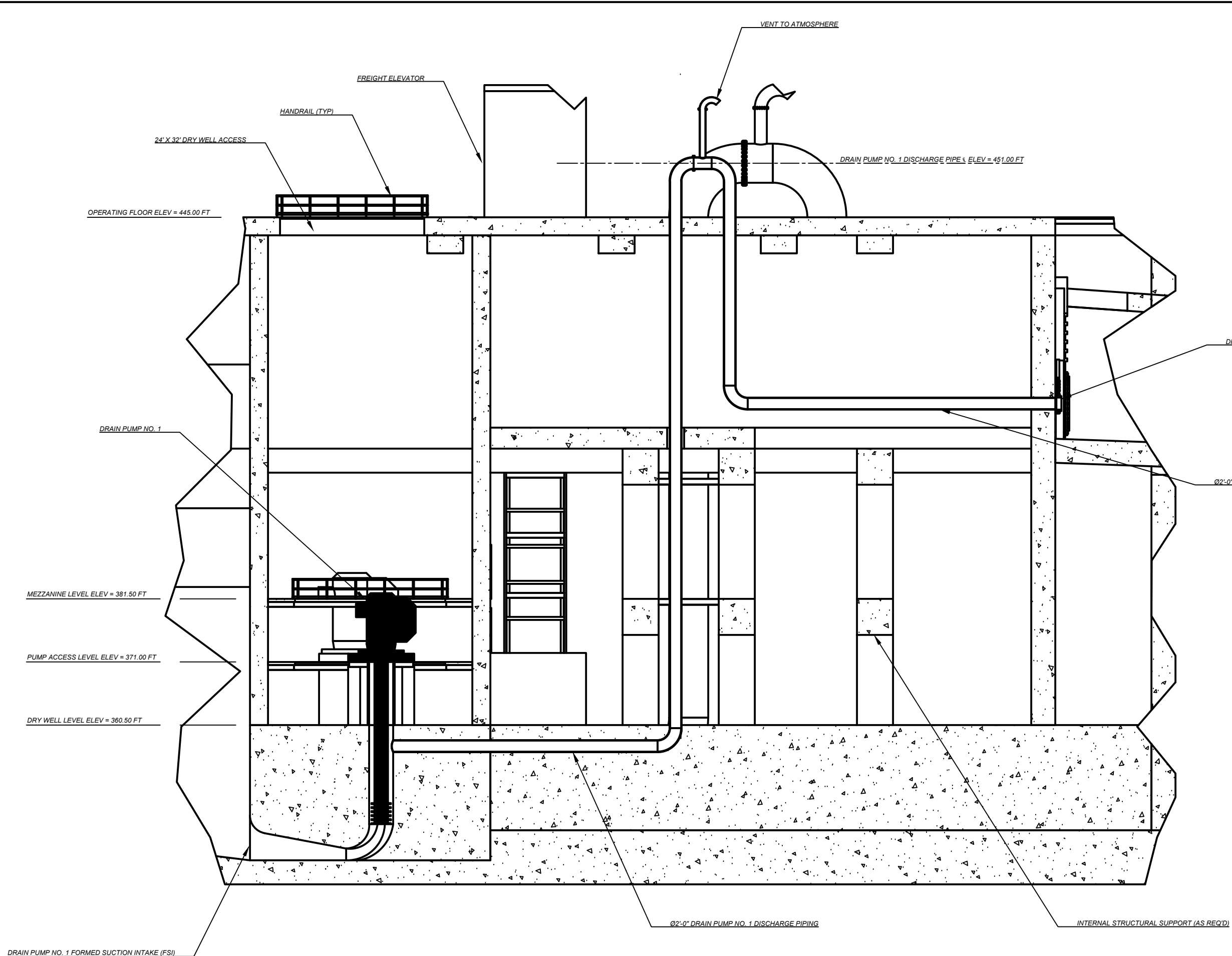
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - SECTION N-N - DRAIN PUMP NO. 2

CONT		JOB		SHEET OF	
0015	13	433, ETC.	I-35		
DIST		COUNTY		SHEET NO.	
AUS		TRAVIS		17	

SECTION N-N - DRAIN PUMP NO. 2
 SCALE 1/16" = 1'-0"



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mobility CAPITAL AREA 35

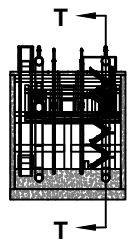
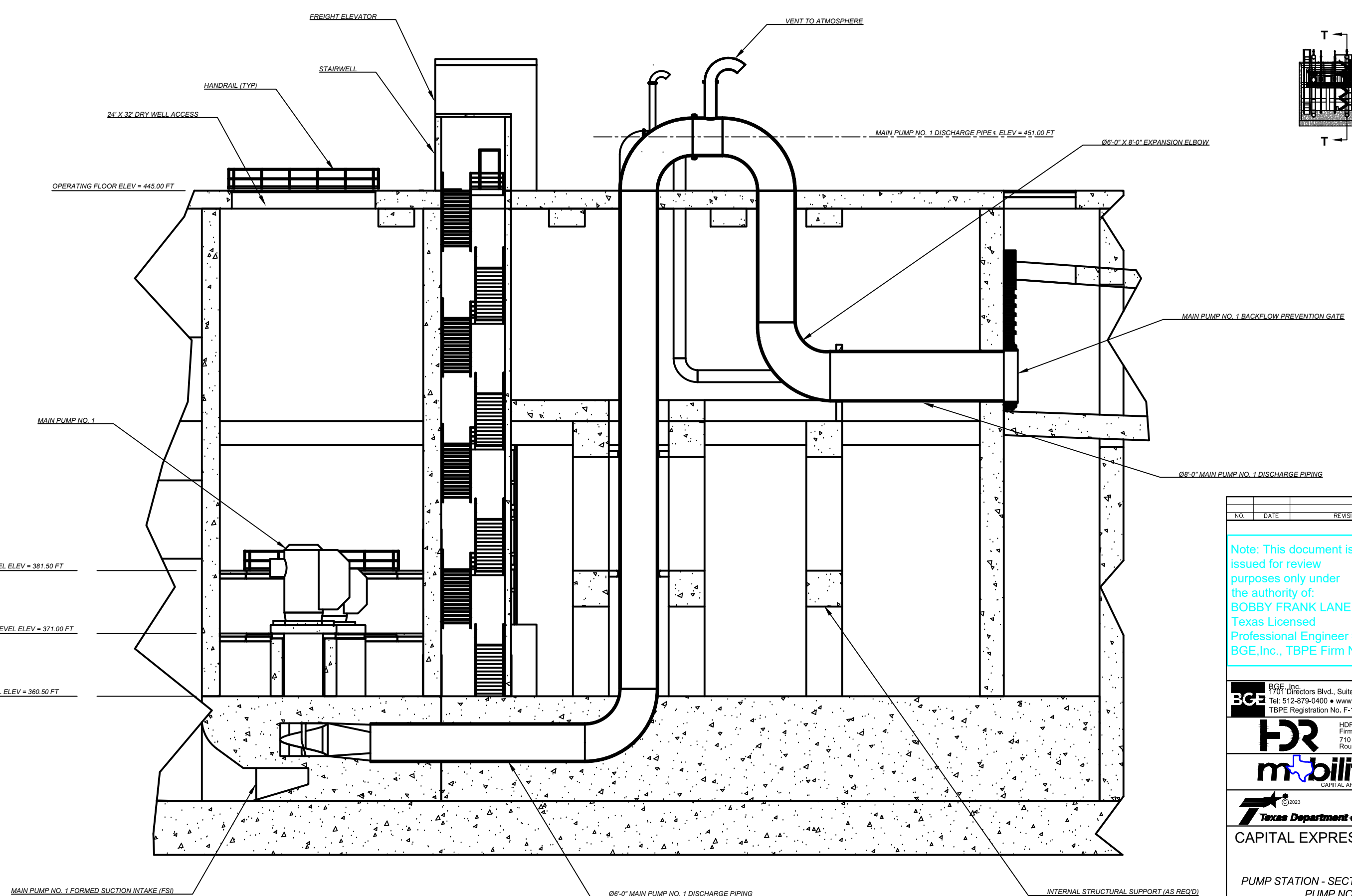
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - SECTION P-P - DRAIN PUMP NO. 1

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	18	

SECTION P-P - DRAIN PUMP NO. 1
SCALE 1/16" = 1'-0"



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m35 CAPITAL AREA

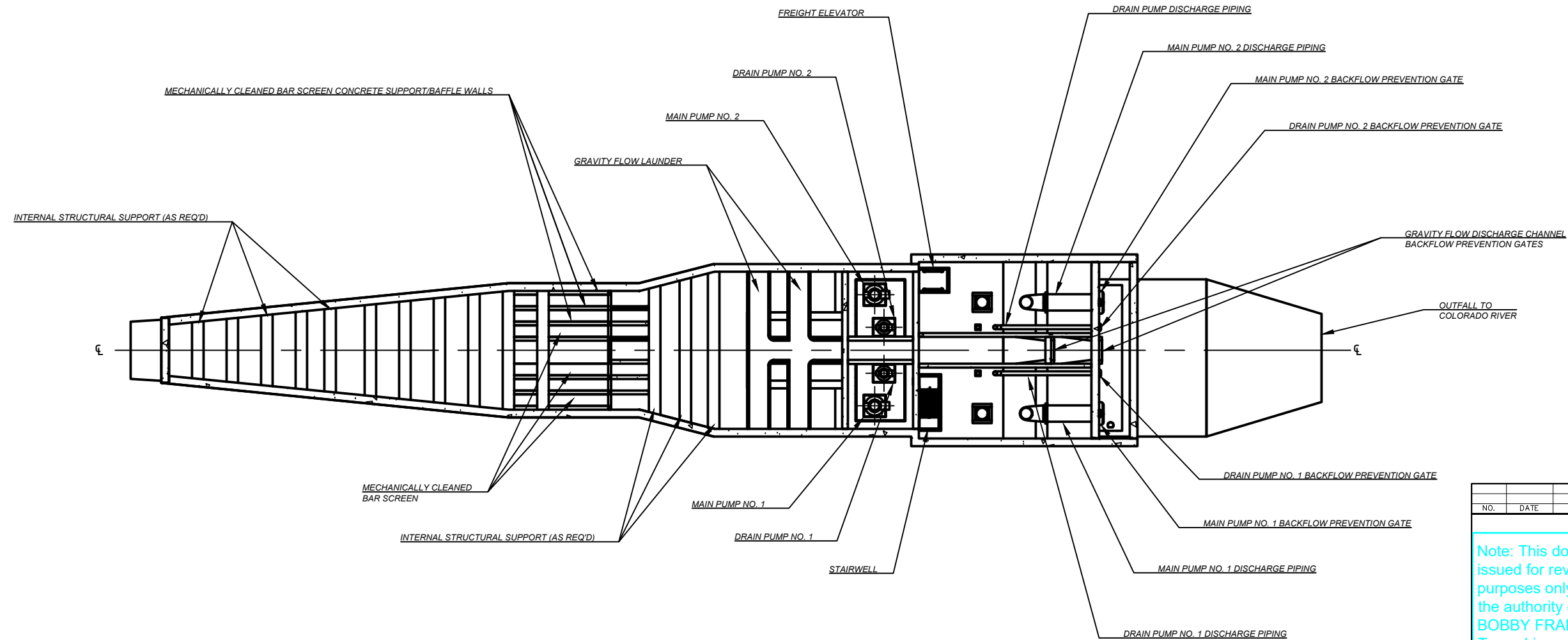
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CAPITAL EXPRESS CENTRAL

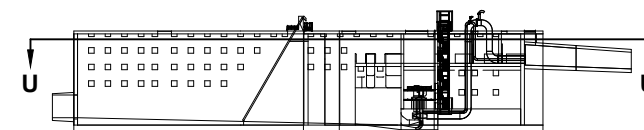
PUMP STATION - SECTION T-T - MAIN PUMP NO. 1

SECTION T-T - MAIN PUMP NO. 1
 SCALE 1/16" = 1'-0"

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	19



SECTION U-U - UPPER SECTION
SCALE 1/64" = 1'-0"



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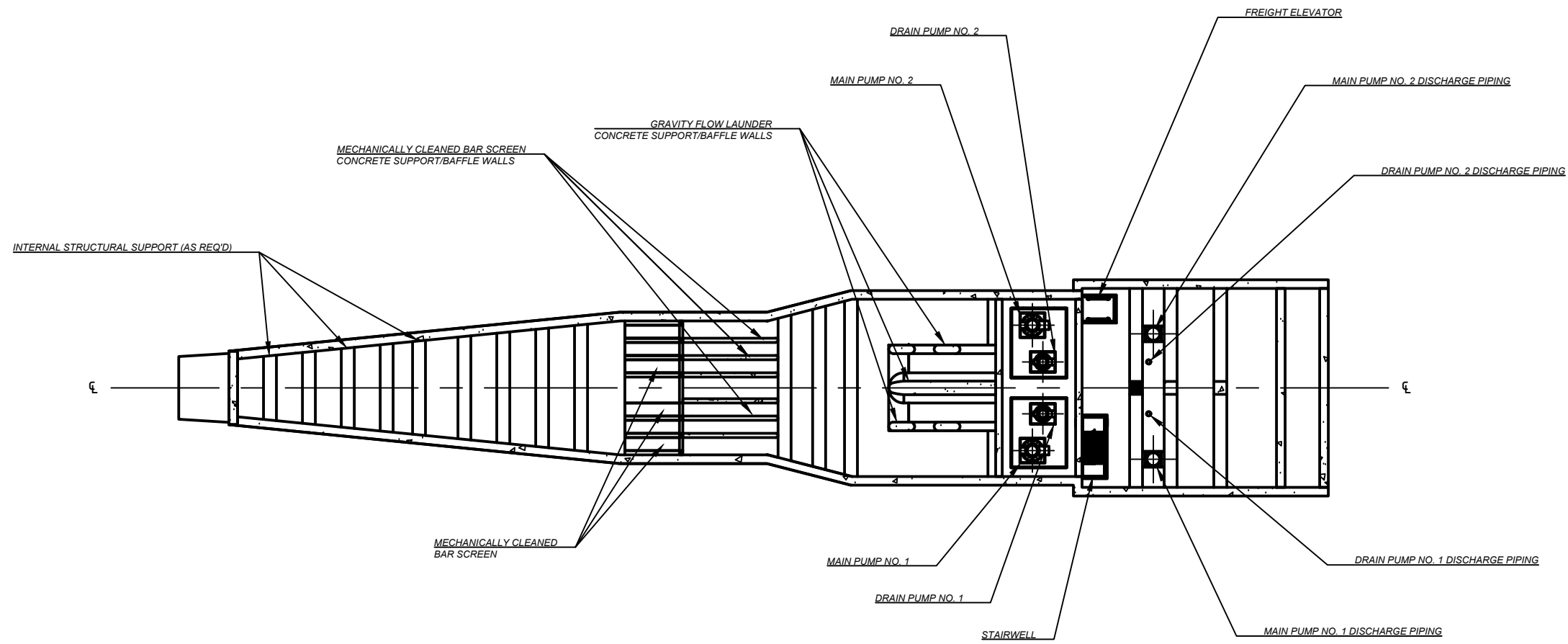
mobility 35
CAPITAL AREA

Texas Department of Transportation

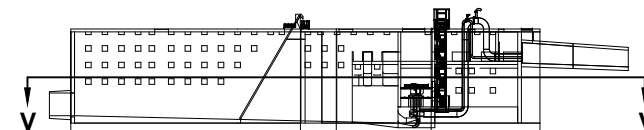
CAPITAL EXPRESS CENTRAL

PUMP STATION - SECTION U-U - UPPER SECTION

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	20



SECTION V-V - LOWER SECTION
SCALE 1/64" = 1'-0"



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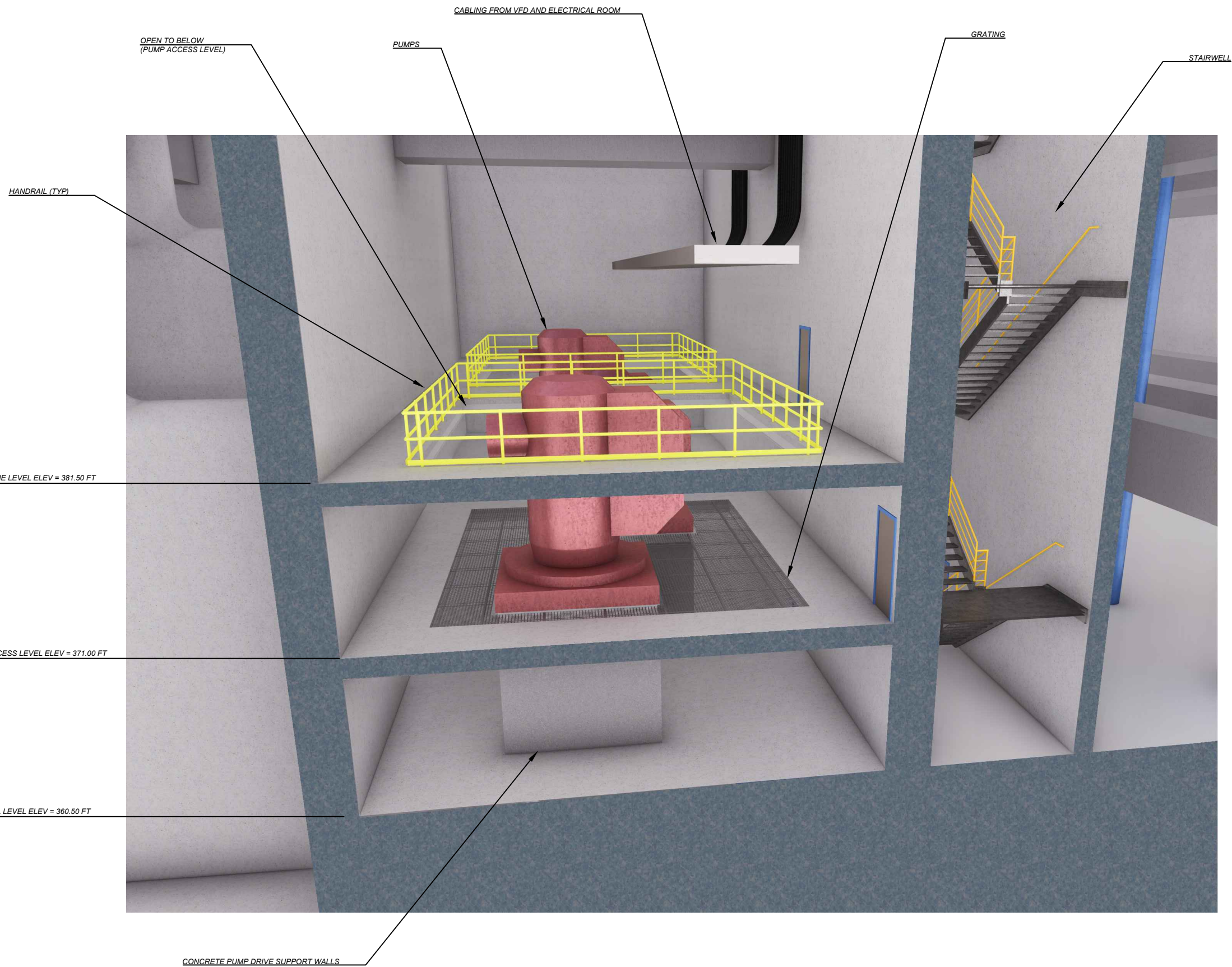
mobility 35
CAPITAL AREA

Texas Department of Transportation

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PUMP STATION - SECTION V-V - LOWER SECTION

CONT		SECT	JOB	HIGHWAY
0015		13	433, ETC.	I-35
DIST			COUNTY	SHEET NO.
AUS			TRAVIS	21



DRY WELL ILLUSTRATION
NO SCALE

NO.	DATE	REVISION	APPR BY

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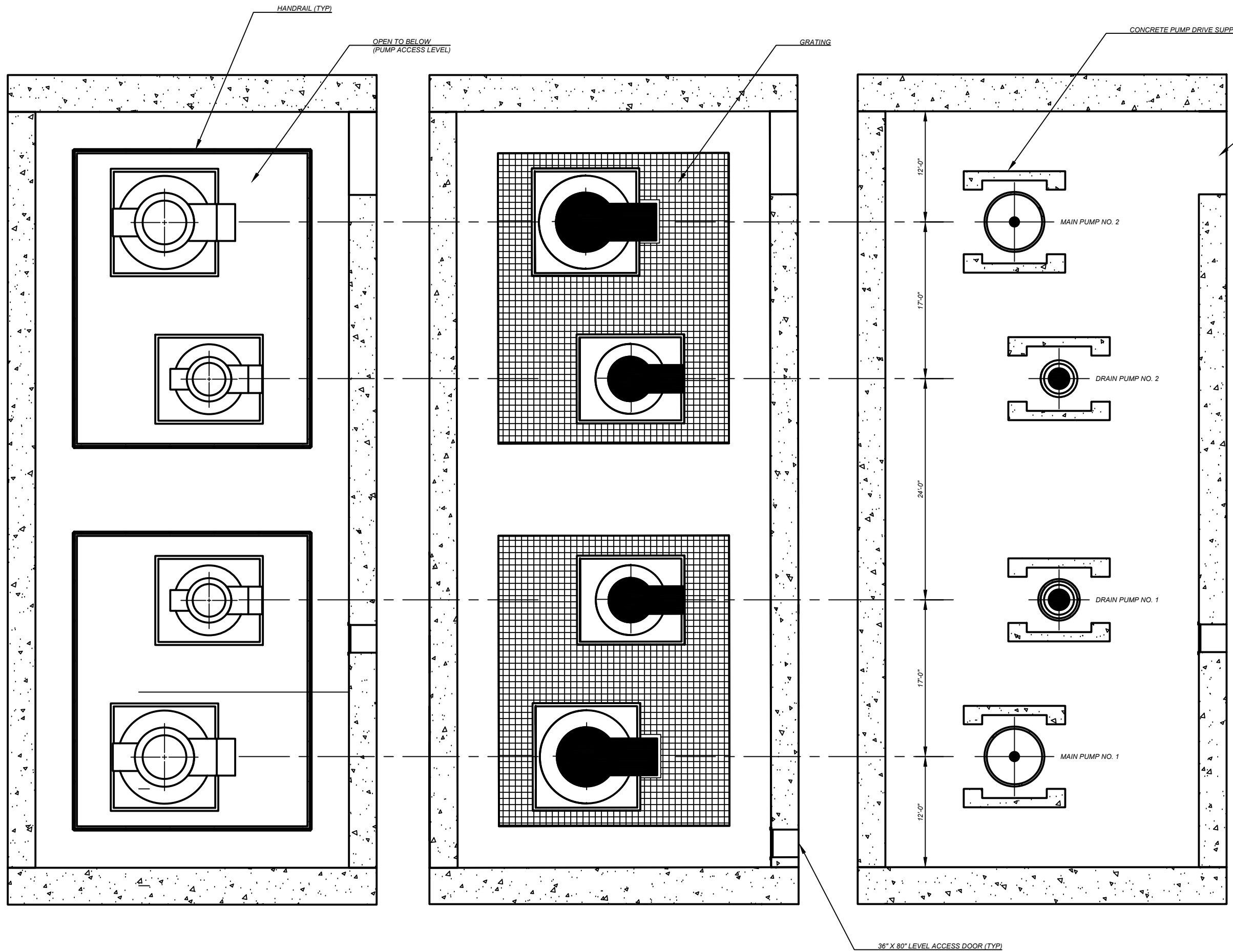
mobility CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - DRY WELL ILLUSTRATION

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	22



MEZZANINE LEVEL 381.50 FT
SCALE 3/32" = 1'-0"

PUMP ACCESS LEVEL 371.00 FT
SCALE 3/32" = 1'-0"

DRY WELL LEVEL EVEL 360.50
SCALE 3/32" = 1'-0"

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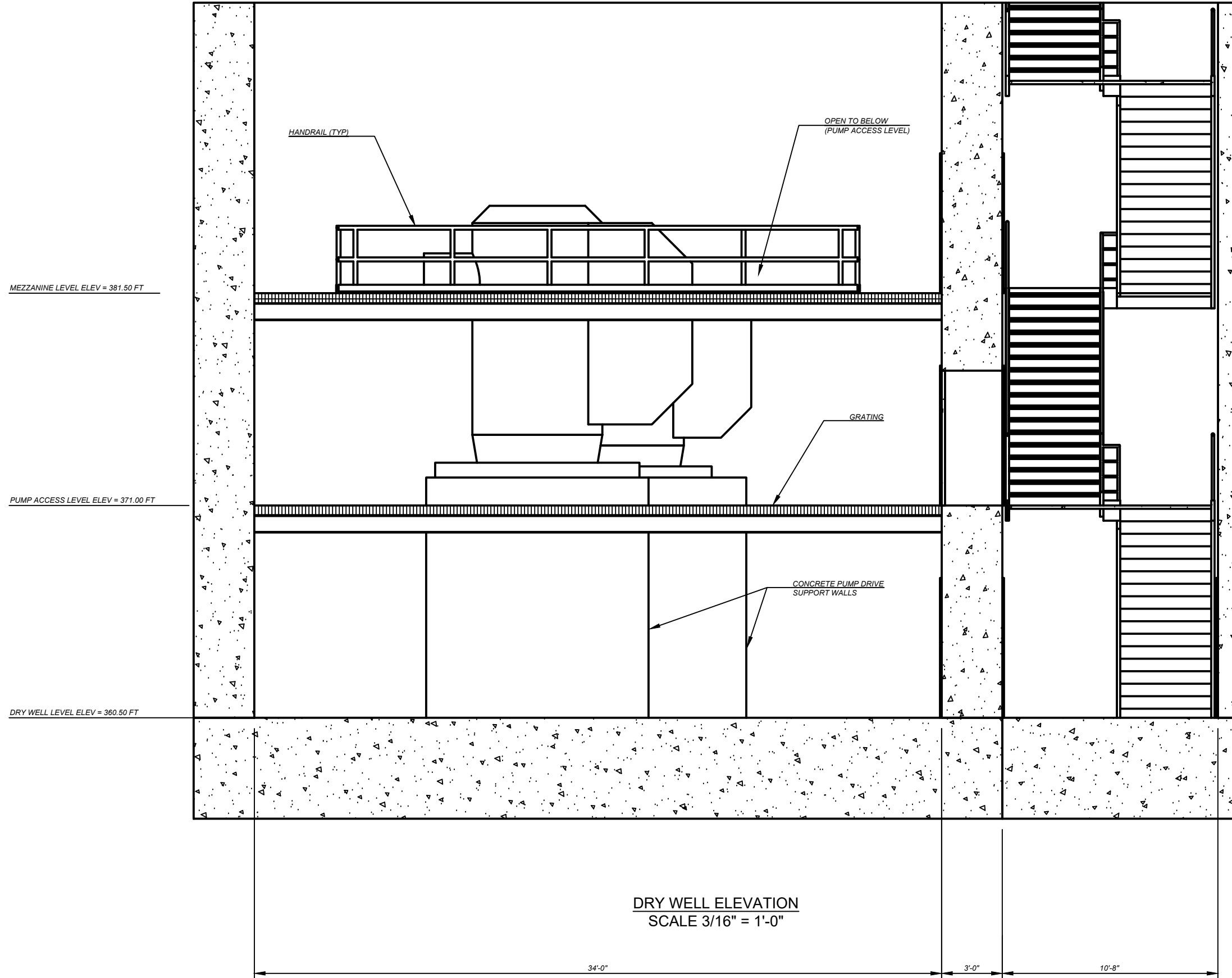
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PUMP STATION - DRY WELL LEVELS

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	23



DRY WELL ELEVATION
SCALE 3/16" = 1'-0"

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PUMP STATION - DRY WELL ELEVATION

SHEET			OF
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	24

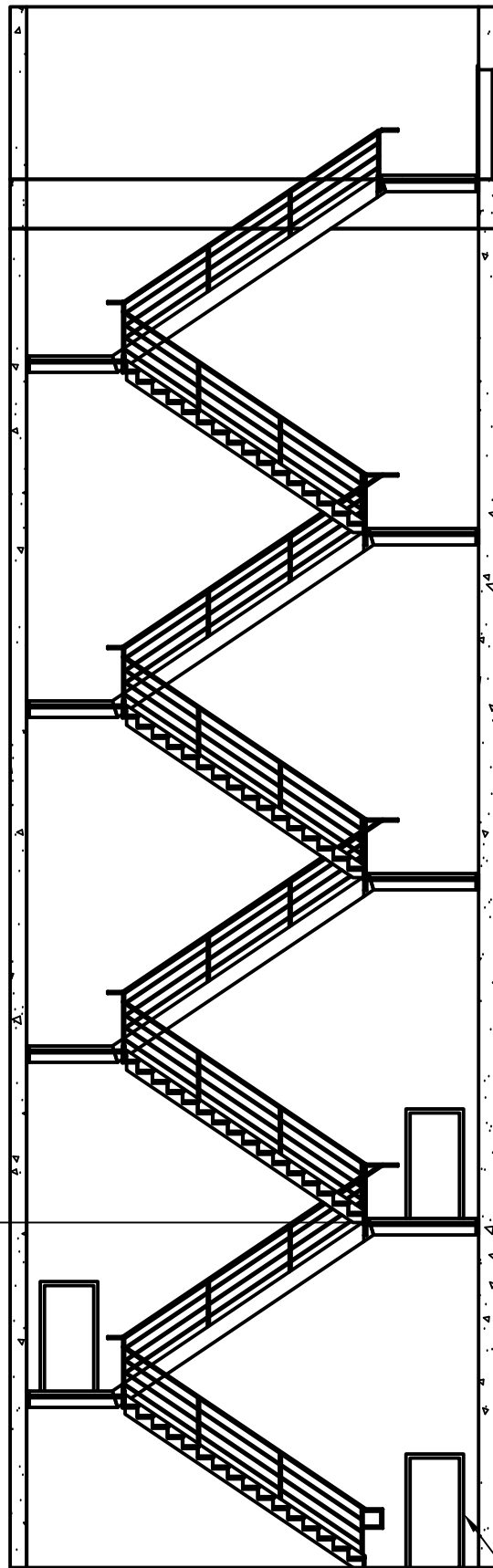
TOP OF STAIRWELL ELEV = 455.50 FT

OPERATING FLOOR ELEV = 445.00 FT

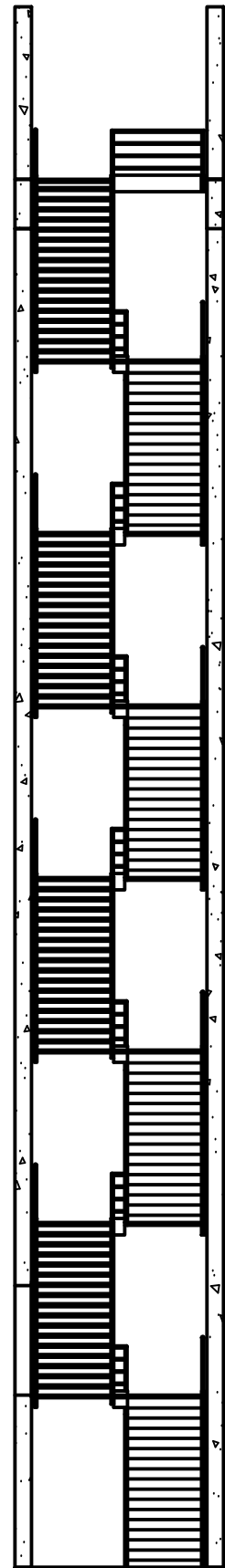
MEZZANINE LEVEL ELEV = 381.50 FT

PUMP ACCESS LEVEL ELEV = 371.00 FT

DRY WELL LEVEL ELEV = 360.50 FT

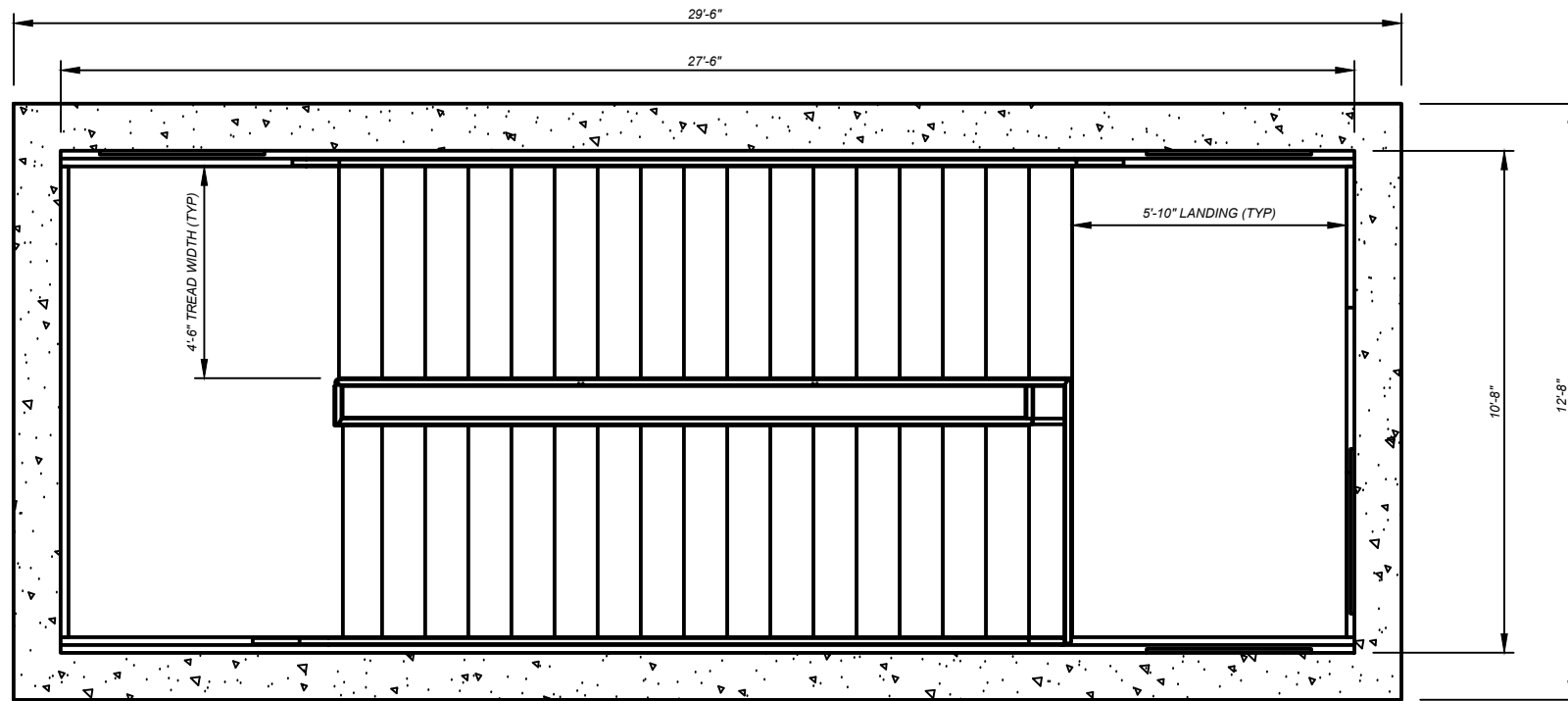


STAIRWELL SIDE VIEW
SCALE 3/32" = 1'-0"

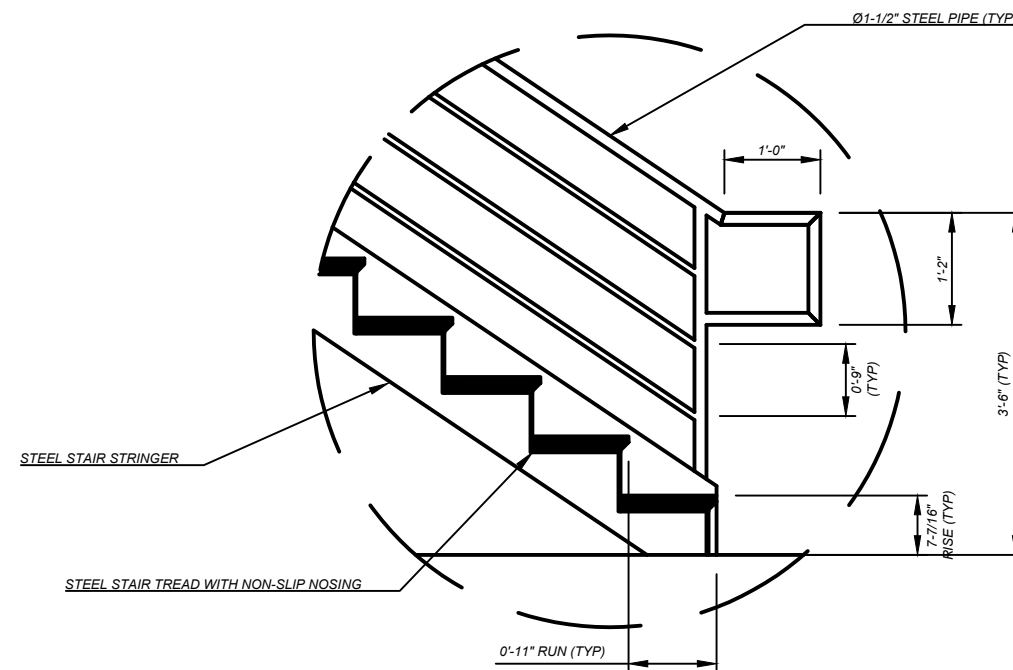


STAIRWELL END VIEW
SCALE 3/32" = 1'-0"

36" X 80" LEVEL ACCESS DOOR (TYP)



STAIRWELL PLAN VIEW
SCALE 1/4" = 1'-0"



STAIR DETAILS
SCALE 1/2" = 1'-0"

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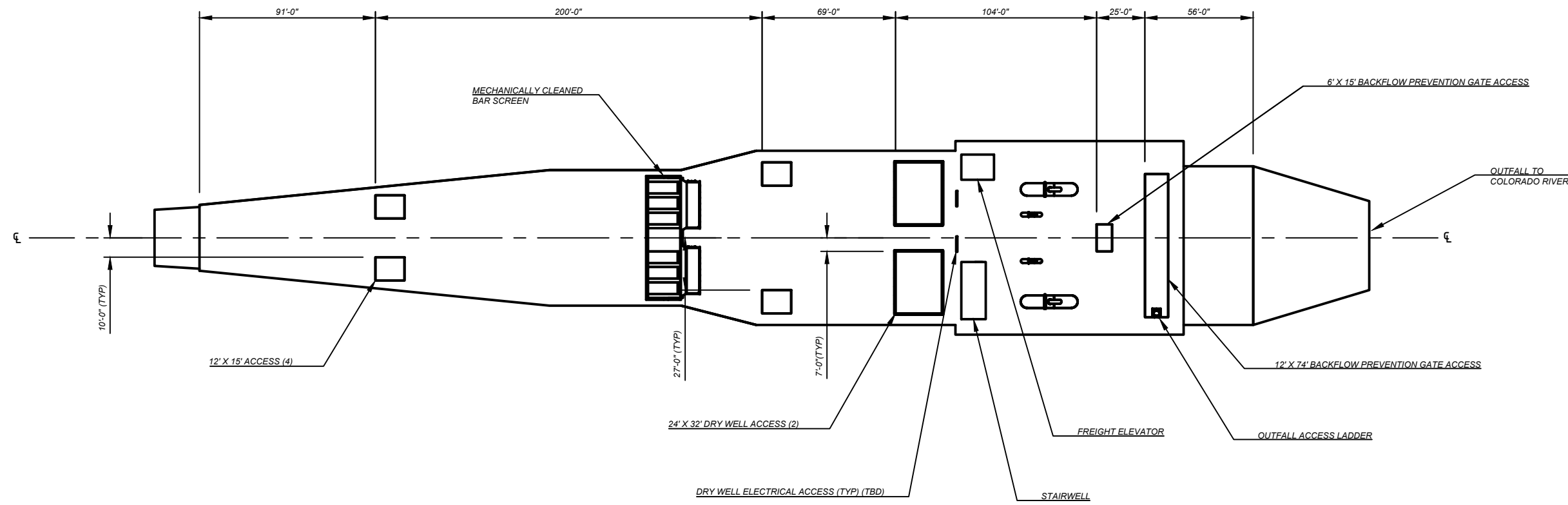
mobility 35
CAPITAL AREA

Texas Department of Transportation

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PUMP STATION - STAIRS

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	25



ACCESS AND GRATING PLAN
SCALE 1/64" = 1'-0"

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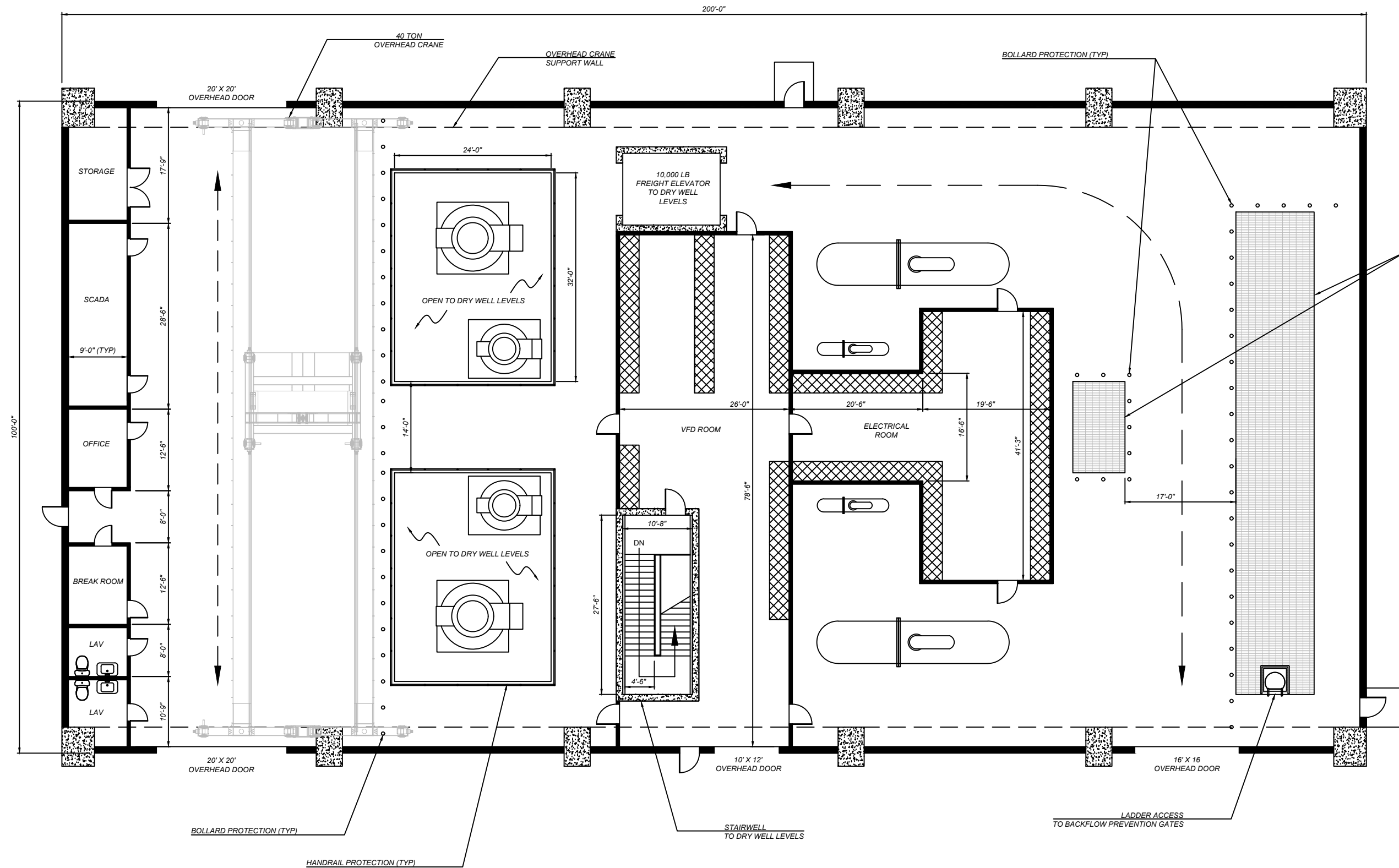
mobility 35
CAPITAL AREA

Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

PUMP STATION - ACCESS AND GRATING PLAN

SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST		COUNTY	SHEET NO.
AUS		TRAVIS	26



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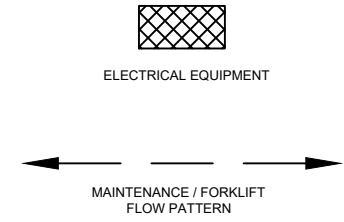
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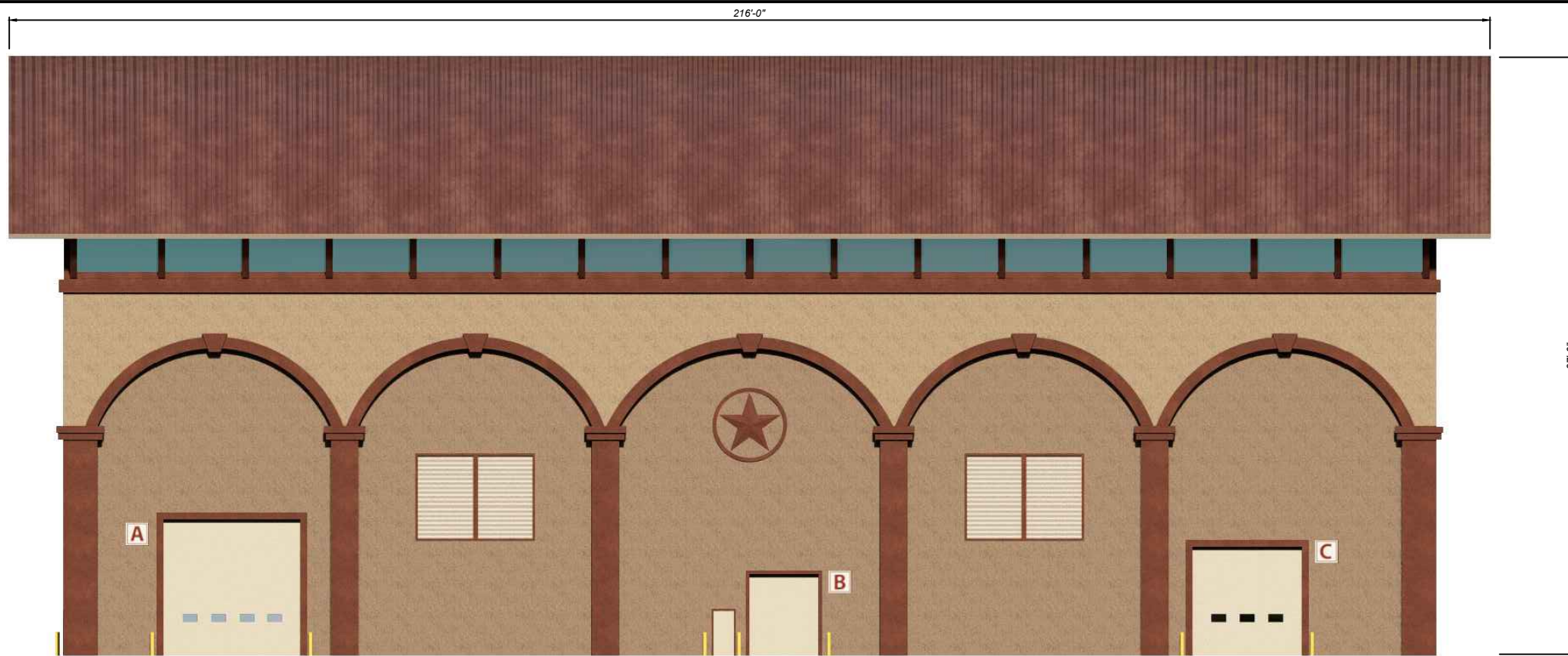
PUMP STATION SUPPORT BUILDING - FLOOR PLAN

PUMP STATION SUPPORT BUILDING OPERATING FLOOR PLAN
SCALE: 1/16" = 1'-0"

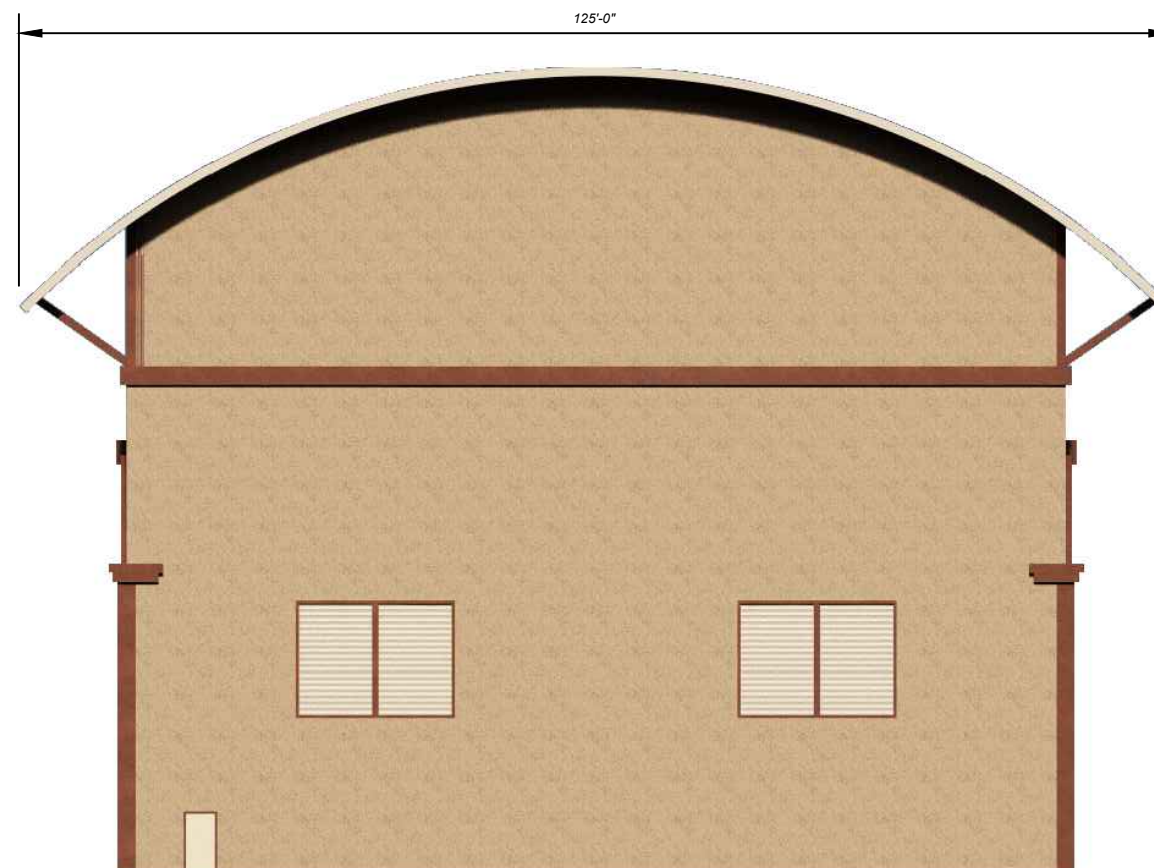
- NOTES:**
- PUMP STATION SUPPORT BUILDING CONCEPTUAL DESIGN AS SHOWN BY BGE FOR ILLUSTRATIVE PURPOSES ONLY. BUILDING DESIGN BY OTHERS. ARCHITECTURAL DETAILS TBD.



SHEET		OF	
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
SHEET NO.		SHEET NO.	
AUS		TRAVIS	
27		27	



PUMP STATION SUPPORT BUILDING ELEVATION SW
No Scale



PUMP STATION SUPPORT BUILDING ELEVATION SE
No Scale

- NOTES:**
1. PUMP STATION SUPPORT BUILDING CONCEPTUAL DESIGN AS SHOWN BY BGE FOR ILLUSTRATIVE PURPOSES ONLY. BUILDING DESIGN BY OTHERS. ARCHITECTURAL DETAILS TBD.

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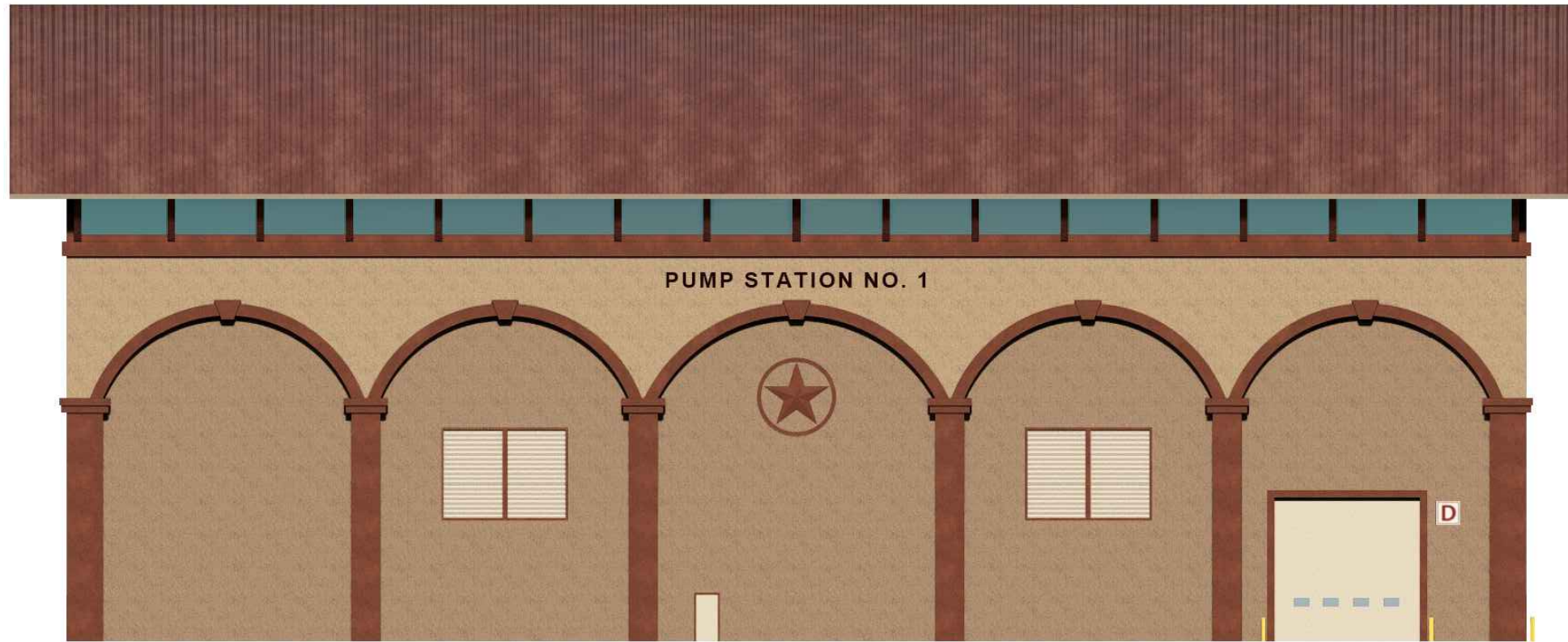
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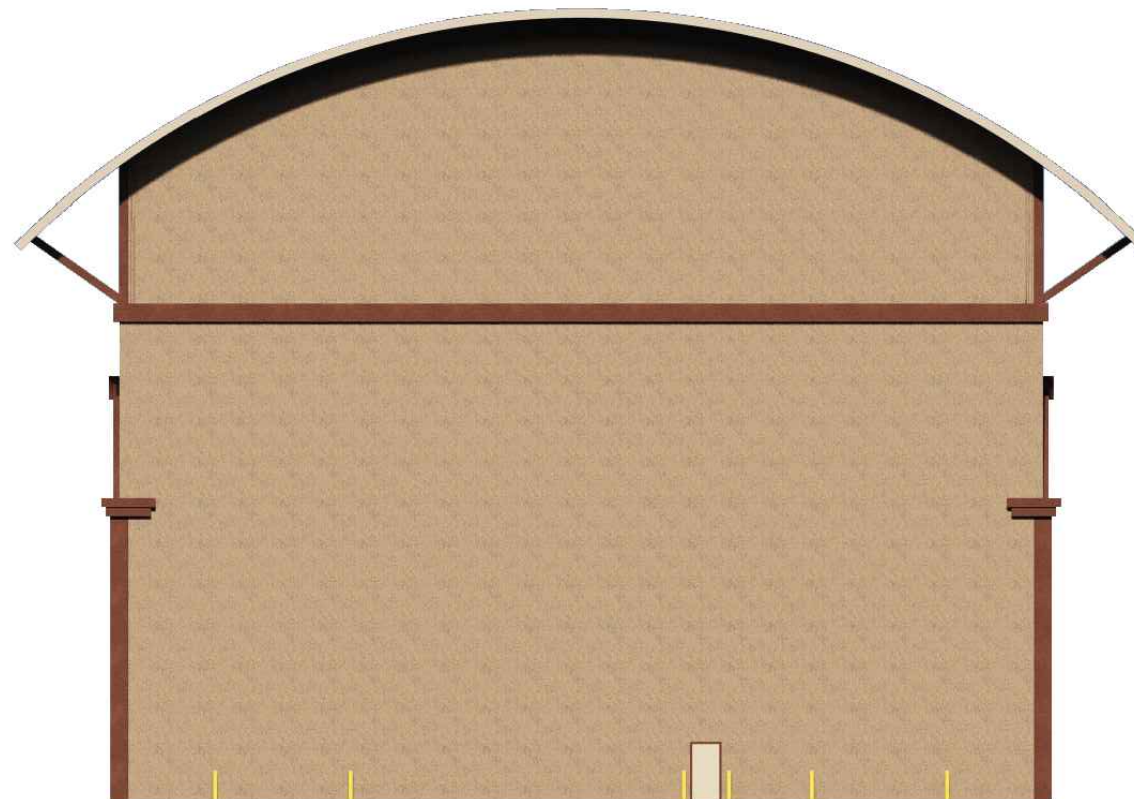
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PUMP STATION SUPPORT BUILDING -
 ELEVATIONS SW SE

CONT		SECT	JOB	SHEET OF
0015		13	433, ETC.	I-35
DIST			COUNTY	SHEET NO.
AUS			TRAVIS	28



PUMP STATION SUPPORT BUILDING ELEVATION NE
No Scale



PUMP STATION SUPPORT BUILDING ELEVATION NW
No Scale

- NOTES:**
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*PUMP STATION SUPPORT BUILDING -
 ELEVATIONS NE NW*

CONT		SECT	JOB	SHEET OF
0015		13	433, ETC.	I-35
DIST			COUNTY	SHEET NO.
AUS			TRAVIS	29



EXTERIOR RENDERING: LOOKING SW FROM U.S. 183 HIGHWAY INTERCHANGE
No Scale

- NOTES:**
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PUMP STATION SUPPORT BUILDING - EXTERIOR RENDERING

CONT		SECT	JOB	HIGHWAY
0015		13	433, ETC.	I-35
DIST			COUNTY	SHEET NO.
AUS			TRAVIS	30



INTERIOR RENDERING
 No Scale

NOTES:

1. PUMP STATION SUPPORT BUILDING CONCEPTUAL DESIGN AS SHOWN BY BGE FOR ILLUSTRATIVE PURPOSES ONLY. BUILDING DESIGN BY OTHERS. ARCHITECTURAL DETAILS TBD.

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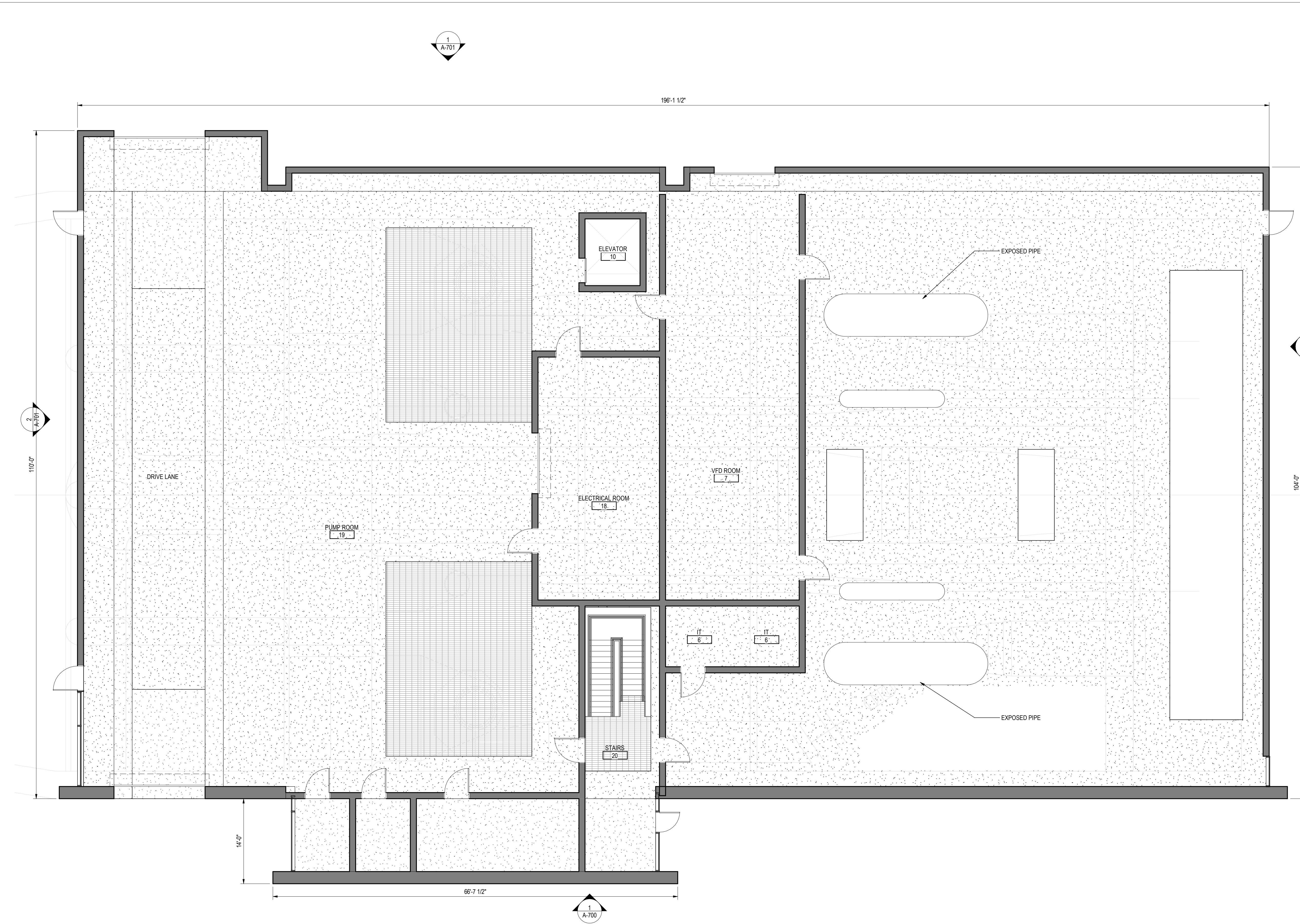
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*PUMP STATION SUPPORT BUILDING -
 INTERIOR RENDERING*

CONT		SECT	JOB	HIGHWAY
0015		13	433, ETC.	I-35
DIST			COUNTY	SHEET NO.
AUS			TRAVIS	31



1 FLOOR PLAN - LEVEL 1
A-201 1/8" = 1'-0"

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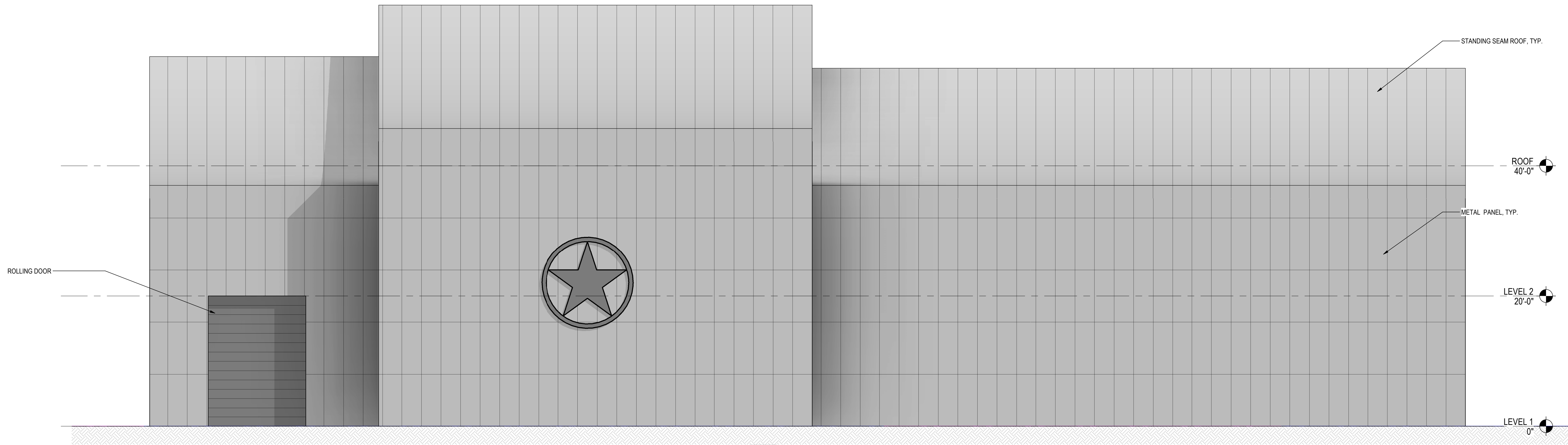
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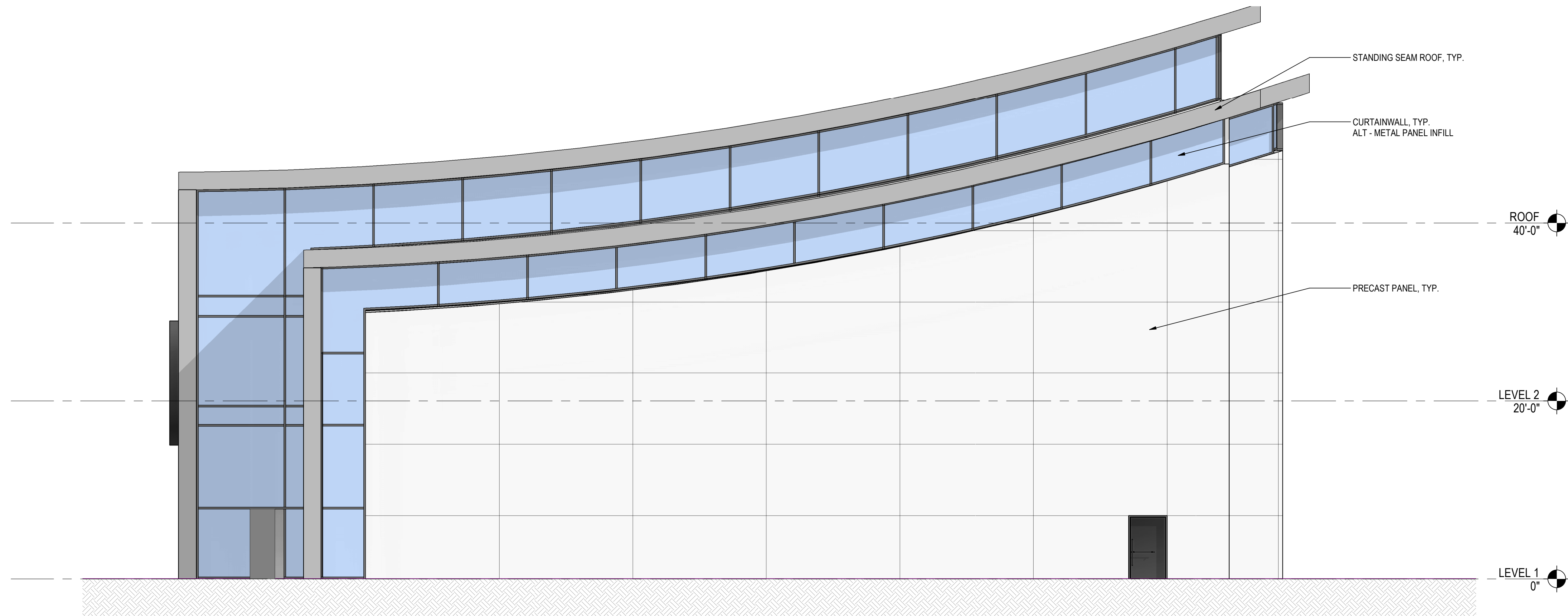
Texas Department of Transportation
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FLOOR PLAN - LEVEL 1

Project No. 177311825	SHEET	OF
CONT 0015	SECT 13	JOB 433, ETC.
DIST AUS	COUNTY TRAVIS	HIGHWAY I-35
SHEET NO.		A-201



1 EXTERIOR ELEVATION - SOUTH
A-700 1/8" = 1'-0"



2 EXTERIOR ELEVATION - EAST
A-700 1/8" = 1'-0"

NO.	DATE	REVISION	APPR BY

Permit/Seal

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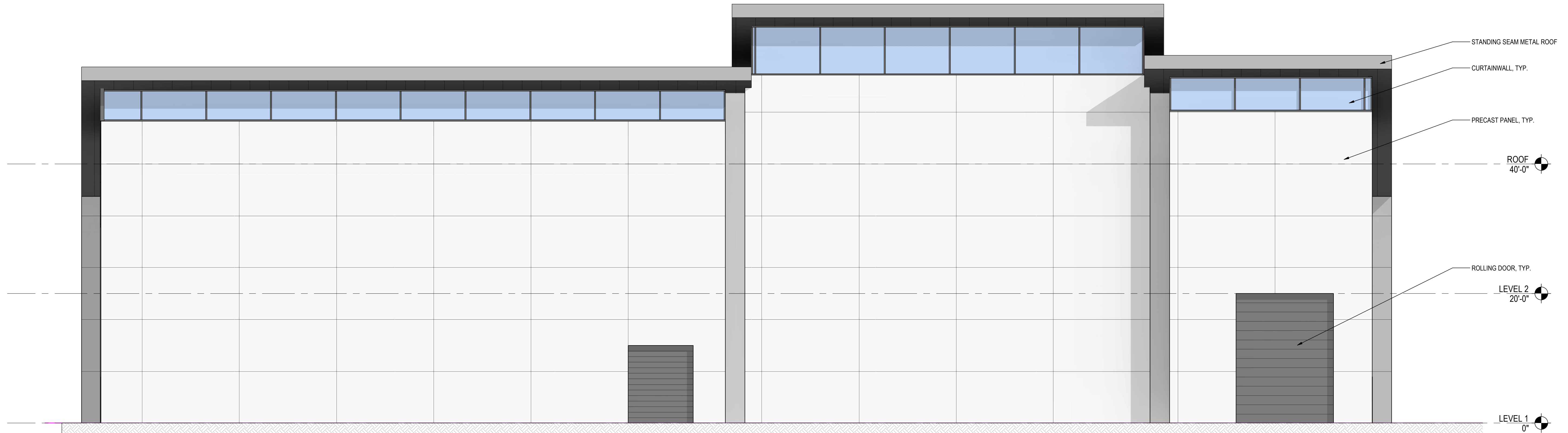
Texas Department of Transportation

CAPITAL EXPRESS CENTRAL

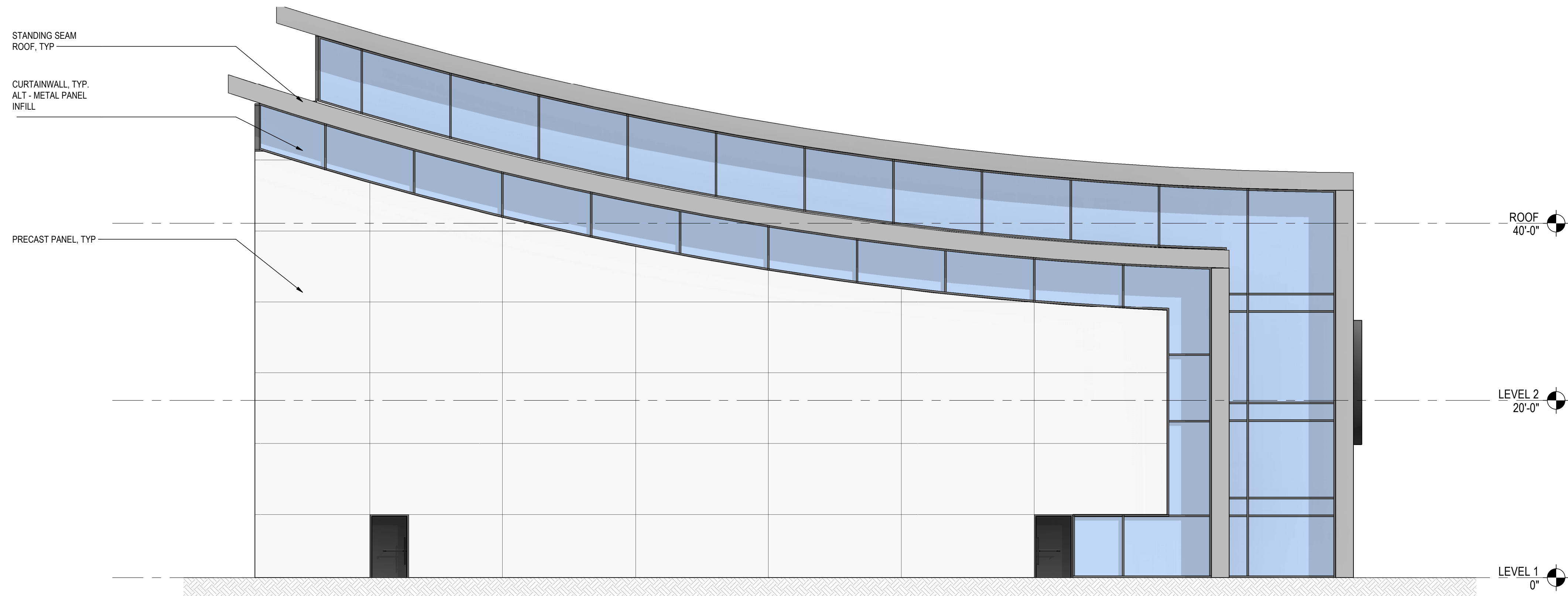
BUILDING ELEVATIONS

Project No. 177311825 SHEET OF

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	A-700	



1 EXTERIOR ELEVATION - NORTH
A-701 1/8" = 1'-0"




2 EXTERIOR ELEVATION - WEST
A-701 1/8" = 1'-0"

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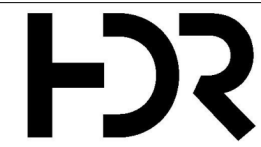
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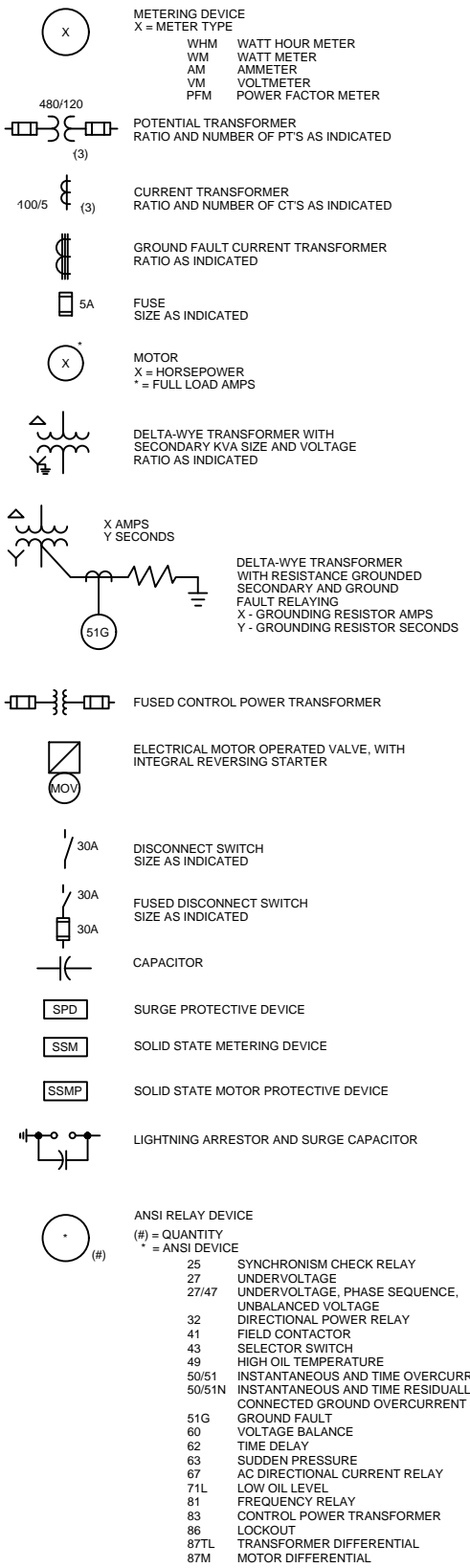
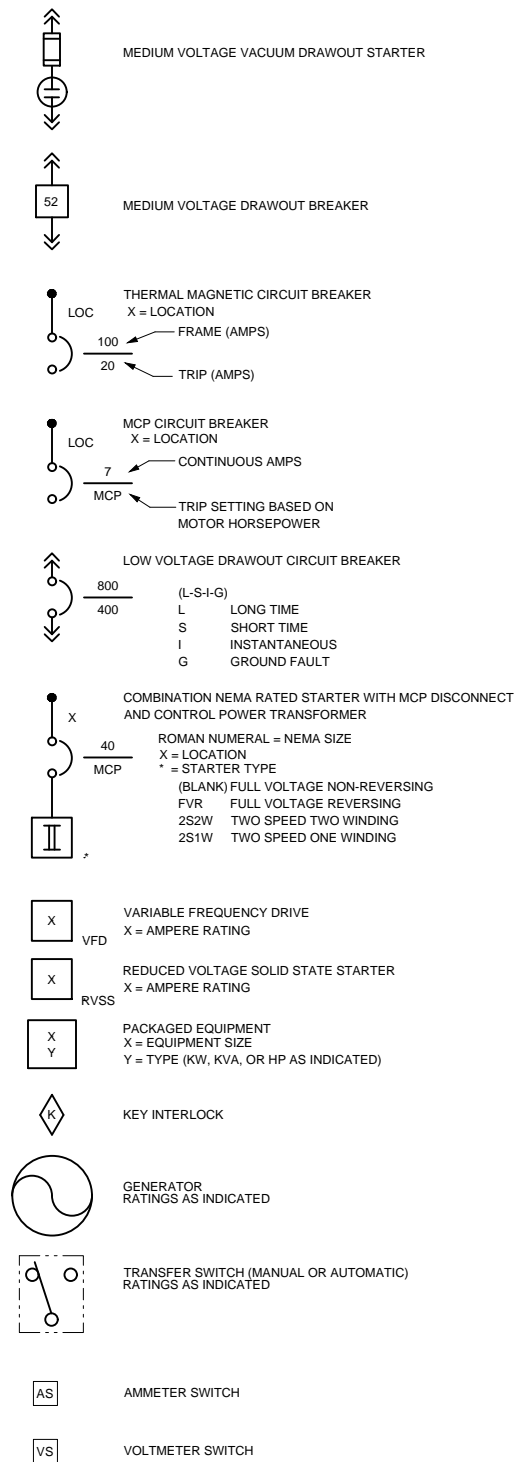
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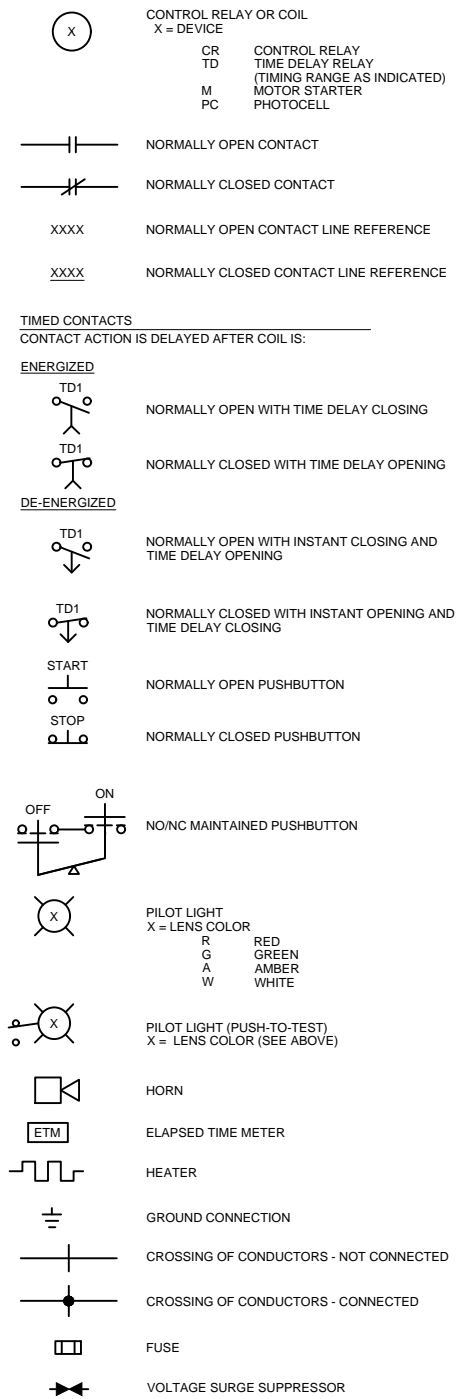
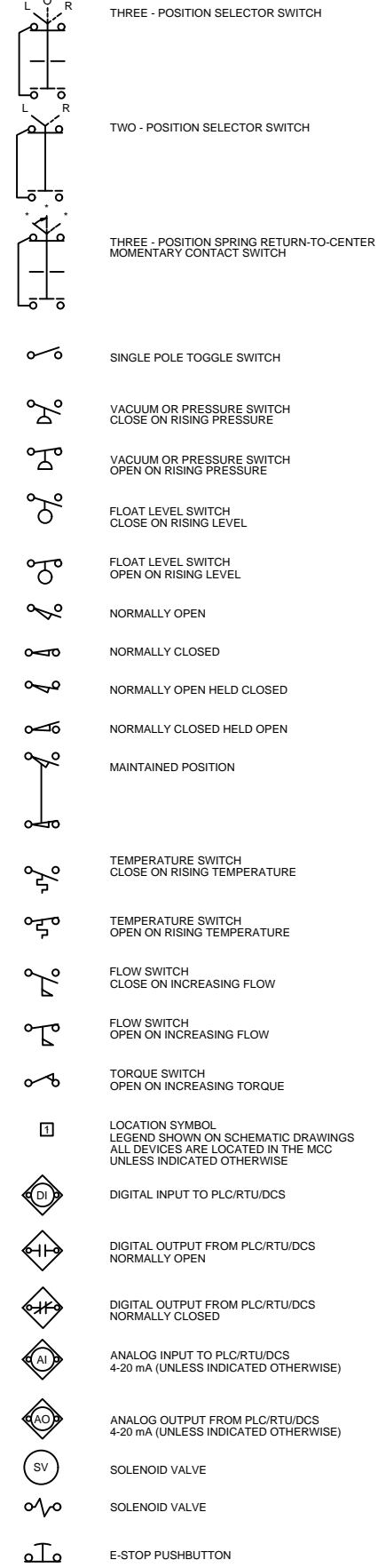
BUILDING ELEVATIONS

Project No. 177311825		SHEET	OF
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SINGLE LINE DIAGRAM SYMBOLOGY



SCHEMATIC DIAGRAM SYMBOLOGY



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GENERAL ELECTRICAL SYMBOLS

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PLAN SYMBOLOGY

RECEPTACLES

- X-#
120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R (WALL MOUNT)
X = PANELBOARD DESIGNATION
= CIRCUIT DESIGNATION
* = TYPE
WP WEATHERPROOF
XP EXPLOSION PROOF
GFCI GROUND FAULT CIRCUIT INTERRUPTER
- 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R (FLOOR MOUNT)
- X
SINGLE SPECIAL PURPOSE RECEPTACLE, 240V 1 PHASE
X = AMPERAGE
- X
WELDING RECEPTACLE
X = AMPERAGE
- X
SPECIAL PURPOSE RECEPTACLE, 480 VAC
X = AMPERAGE
- TELEPHONE OUTLET - FLOOR TYPE
- TELEPHONE OUTLET - WALL TYPE
- COMPUTER/DATA OUTLET - FLOOR TYPE
- COMPUTER/DATA OUTLET - WALL TYPE

CONDUIT AND RACEWAY SYMBOLOGY

- EXPOSED OR CONCEALED CONDUIT
- CONDUIT RUN (UNDERGROUND OR IN CONCRETE)
- CONDUIT RUN (CHANGE IN ELEVATION)
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUITS GROUPED TOGETHER BUT SHOWN AS A SINGLE LINE FOR CLARITY
- CONDUIT FROM FLOOR ABOVE TO FLOOR BELOW
- CONDUIT CAPPED, OR SEALED
- HOMERUN TO EQUIPMENT INDICATED (3/4" CONDUIT, 2 #12, 1 #12 GND UNLESS INDICATED OTHERWISE)
- X
RACEWAY BOX
X = BOX TYPE
MH MANHOLE
HH HANDHOLE
PB PULLBOX
- J
JUNCTION BOX OR FITTING

MISCELLANEOUS ELECTRICAL SYMBOLOGY

- POWER PANEL
- DISCONNECT SWITCH
- MOTOR
- T
THERMOSTAT
- HORN
- COMBINATION STARTER
- S_M
MANUAL MOTOR STARTER

REV 010119

FIRE PROTECTION SYMBOLOGY

- FIRE ALARM HORN WITH STROBE
- A F
FIRE ALARM LOUDSPEAKER WITH AMPLIFIER
- FA
FIRE ALARM PULL STATION
- F
FIRE ALARM STROBE
- F
FIRE ALARM BELL WITH STROBE
- FS
FIRE SUPPRESSION SWITCH
- ER
END-OF-LINE TERMINATOR
- X = TYPE
DETECTOR
SD SMOKE DETECTOR
HD HEAT DETECTOR
CD COMBINATION DETECTOR

SECURITY & COMM SYSTEMS SYMBOLOGY

- I
INTERCOM SPEAKER
* = TYPE (REFER TO SPECIFICATIONS)
- I
INTERCOM SPEAKER WITH STROBE LIGHT
* = TYPE (REFER TO SPECIFICATIONS)
- I
INTERCOM WALL JACK
- HS
INTERCOM HANDSET - WALL MOUNTED
- VC
VIDEO CAMERA
* = TYPE
F FIXED
PTZ PAN-TILT-ZOOM
- * = TYPE
SECURITY ACCESS DEVICE
CR CARD READER
KS KEY SWITCH
PS DIGITAL KEYPAD

LIGHTING SYMBOLOGY

- A
X-#a
PENDANT OR CEILING MOUNT LUMINAIRE
A = LUMINAIRE TYPE
X = LIGHTING PANEL DESIGNATION
= CIRCUIT NUMBER
a = SWITCH DESIGNATION
- PENDANT OR CEILING MOUNT LUMINAIRE - UNSWITCHED (NIGHT LIGHT)
- WALL MOUNTED LUMINAIRE
- POLE, BRACKET, ARM, AND STREETLIGHT
- LINEAR LUMINAIRE
- LINEAR LUMINAIRE - UNSWITCHED
- EMERGENCY LUMINAIRE BATTERY OPERATED
- EXIT LIGHT, ARROW INDICATE DIRECTION OF EXIT, SHADING INDICATES FACE
- A
LUMINAIRE CALLOUT
A = LUMINAIRE TYPE
* = APPROXIMATE MOUNTING HEIGHT AFF
CLG = CEILING MOUNT
(SEE LUMINAIRE SCHEDULE FOR MORE DETAILS)
- X-#a
LIGHT SWITCH
X = LIGHTING PANEL DESIGNATION
= CIRCUIT DESIGNATION
a = SWITCH DESIGNATION
* = SWITCH TYPE
3 3-WAY
4 4-WAY
D DIMMER
M MANUAL MOTOR STARTER
- LIGHTING PANEL

GROUNDING SYMBOLOGY

- GROUND ROD AND GROUND WELL
- GROUND ROD (3/4" X 10'-0")
- GROUND CONNECTION - BOLTED TYPE
- GROUND CONNECTION - EXOTHERMIC TYPE
- BARE COPPER GROUND TO GROUND WIRE IN SLAB, OR UNDERGROUND GROUND GRID, SIZE AS NOTED
- EARTH GROUNDING
- NEUTRAL GROUNDING RESISTOR

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**GENERAL ELECTRICAL
SYMBOLS**

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ELECTRICAL ABBREVIATIONS

A	AMPERE, AUTOMATIC
AC	ALTERNATING CURRENT
AF	CIRCUIT BREAKER FRAME SIZE
AM	AMMETER
ANN	ANNUNCIATOR
AS	ADJUSTABLE SPEED
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BC	BARE COPPER
BKR	BREAKER
C	CONDUIT, CLOSED
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
COM	COMMON
COMM	COMMUNICATIONS
COMP	COMPARTMENT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY, CARD READER
CT	CURRENT TRANSFORMER
DCS	DISTRIBUTED CONTROL SYSTEM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
E	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ETM	ELAPSED TIME METER
F	FREQUENCY, FUSE, FIXED
FDR	FEEDER
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FM	FREQUENCY METER
FO	FIBER OPTIC
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
H	HAND
HD	HEAT DETECTOR
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
HZ	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT
INCAND	INCANDESCENT
IND	INDICATION
INST	INSTANTANEOUS
I/O	INPUT/OUTPUT
Isc	SHORT CIRCUIT CURRENT, AMPS
ISO	ISOLATION
J, JB	JUNCTION BOX
KA	KILO AMPERES
KAIC	KILO AMP INTERRUPTING CURRENT
KCMIL	KILO CIRCULAR MILS
KVA	KILOVOLT AMPERE
L	LOCAL
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LOC	LOCAL
LOR	LOCAL-OFF-REMOTE
LOS	LOCKOUT STOP PUSHBUTTON
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPS
LS	LEVEL SWITCH
LTG	LIGHTING
LTS	LIGHTS

M	MOTOR CONTACTOR COIL
mA	MILLIAMPERE
MCP	MOTOR CIRCUIT PROTECTOR
MLO	MAIN LUGS ONLY
MOV	MOTOR OPERATED VALVE
MS	MANUAL MOTOR STARTER
MTS	MANUAL TRANSFER SWITCH
NEUT	NEUTRAL
NP	NAMEPLATE
O	OPEN, OFF
OL	OVERLOAD
PA	PUBLIC ADDRESS
PB	PUSHBUTTON, PULLBOX
PC	PHOTOCELL
PCM	PROCESS CONTROL MODULE
PF	POWER FACTOR
PFM	POWER FACTOR METER
PH	PHASE
PL	PILOT LIGHT
PNLBD	PANELBOARD
PP	POWER PANELBOARD
POS	POSITION
POT	POTENTIOMETER
PT	POTENTIAL TRANSFORMER
PTZ	PAN-TILT-ZOOM
PWR	POWER
R	REMOTE
RECP	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
RTU	REMOTE TERMINAL UNIT
RVSS	REDUCED VOLTAGE SOLID STATE
SEL SW	SELECTOR SWITCH
SEQ	SEQUENCE
SHLD	SHIELDED
SIG	SIGNAL
SP	SPARE
SP HTR	SPACE HEATER
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SSM	SOLID STATE METER
SSMP	SOLID STATE MOTOR PROTECTOR
ST, SH	SHUNT TRIP
STR	STARTER
SSTU	SOLID STATE TRIP UNIT
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TACH	TACHOMETER
TB	TERMINAL BOX
TERM	TERMINAL
TM	REPEAT CYCLE TIMER
TD	TIME DELAY RELAY
TS	TEMPERATURE SWITCH
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE, VOLTS
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
VP	VAPOR PROOF
W	WATTS, WIRE
WM	WATT METER
WP	WEATHERPROOF
XFMR	TRANSFORMER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF

GENERAL ELECTRICAL NOTES

- ALL RACEWAYS AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE [XXXX] EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST APPROVED SHOP DRAWINGS BEFORE STUBBING UP CONDUITS.
- REFER TO SPECIFICATION SECTION 260533 FOR REQUIREMENTS RELATED TO FLEXIBLE CONDUIT INSTALLATION
CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT OR STRUCTURAL CONDITIONS. EXPOSED CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS. REFER TO SPECIFICATION SECTION 260533.
- CONDUIT STUB-UPS SHALL NOT BE MORE THAN 6 INCHES FROM THE CENTERLINE OF TERMINAL BOXES.
- IN THE EVENT OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AND THE ENGINEER SHALL APPROVE PROPOSED CHANGES BEFORE THEY ARE MADE.
- ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INTERIOR OF EXTERIOR WALLS ABOVE GRADE OR IN OTHER LOCATIONS CONSIDERED DAMP OR WET SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4" INCH (MINIMUM) AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
- LOCATION OF PULLBOXES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH MECHANICAL PIPING AND SHALL BE 6 INCHES (MINIMUM) AWAY FROM MECHANICAL PIPING FLOW LINES.
- ONLY MAJOR PULLBOXES ARE SHOWN. THE CONTRACTOR SHALL PROVIDE ADDITIONAL PULLBOXES WHERE REQUIRED TO MAKE A WORKABLE INSTALLATION.
- THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILS WHETHER OR NOT THEY ARE REFERENCED ON THE DRAWINGS.
- ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS. FOR LOCATIONS OF EXPANSION JOINTS, REFER TO THE STRUCTURAL DWGS.
- LUMINAIRES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS, WITH THE DISTANCE BEING MEASURED FROM THE BOTTOM OF THE LUMINAIRE TO THE FINISHED FLOOR. THE APPROPRIATE MOUNTING BRACKETS AND HARDWARE SHALL BE SUPPLIED.
- ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE CENTERLINE OF THE TOP CIRCUIT BREAKER OPERATING HANDLE IN THE UPPERMOST POSITION TO THE FINISHED FLOOR SHALL NOT EXCEED 6'-7".
- THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
- CONNECTIONS BETWEEN RIGID CONDUIT AND MOTOR TERMINAL BOXES OR SIMILAR EQUIPMENT SUBJECT TO VIBRATION SHALL BE FLEXIBLE LIQUID-TIGHT CONDUIT.
- CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTION TO MOTORS AND OTHER EQUIPMENT.
- CONDUITS FOR FUTURE EQUIPMENT OR EXTENSIONS SHALL BE TERMINATED AS SHOWN IN DETAIL OR AS SPECIFIED.
- MCC AND SWITCHGEAR COMPARTMENT DESIGNATIONS SHALL BE AS FOLLOWS:

BLANK/SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS.

SPARE: CONTAINS A COMPLETE INSTALLED BREAKER OR STARTER AVAILABLE FOR FUTURE USE.
- ALL MOTOR STARTER CONTROL POWER TRANSFORMERS SHALL BE SIZED TO PROVIDE SUFFICIENT VOLT-AMPERE CAPACITY FOR OPERATING ALL LOCAL AND REMOTE ELECTRICAL DEVICES ASSOCIATED WITH CONTROL OF THE MOTOR IN ADDITION TO THE STARTER COIL.
- MOTOR CONTROL CENTERS AND ALL FREE STANDING PANELS SHALL BE SET ON CONCRETE HOUSEKEEPING PADS WITH LEVELING CHANNELS EMBEDDED IN THE PAD.
- ALL RECEPTACLES IN OUTDOOR AND ANTICIPATED WET AREAS SHALL BE GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES WITH WEATHERPROOF COVERS.
- ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO VERIFY THE SCOPE OF WORK WITH FIELD CONDITIONS. PARTICULAR ATTENTION SHOULD BE GIVEN TO NEW CONDUIT RUNS IN EXISTING BUILDINGS.
- EQUIPMENT LOCKOUTS SHALL BE IN STRICT ACCORDANCE WITH OWNER'S REQUIREMENTS.
- FOR LIGHTING AND RECEPTACLE SYSTEMS, ONLY CIRCUIT NUMBERS ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUITS, WIRES, FITTINGS, JUNCTION BOXES AND ALL NECESSARY COMPONENTS SHOWN OR NOT SHOWN ON THE DRAWINGS, TO MAKE THE ELECTRICAL INSTALLATION COMPLETE AND OPERATIONAL. ALL CONDUIT RUNS SHALL BE CONCEALED UNLESS INDICATED OTHERWISE. CIRCUIT LOADING SHALL BE AS INDICATED IN THE PANEL SCHEDULES. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL INCLUDE GROUND WIRE.
- HVAC TEMPERATURE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE TEMPERATURE CONTROLS SUBCONTRACTOR UNDER DIVISION 23, AND IS NOT SHOWN ON THE ELECTRICAL DRAWINGS. 120, 208, AND 420 VOLT POWER WIRING SHALL BE PROVIDED AS INDICATED AND AS A PART OF THE ELECTRICAL DIVISION 28 WORK.

LIGHTNING PROTECTION NOTES


- GENERAL**
A SYSTEM OF LIGHTNING PROTECTION SHALL BE PROVIDED AND INSTALLED IN COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITION OF NFPA 780 LIGHTNING PROTECTION CODE AS ADOPTED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.
- AIR TERMINALS**
AIR TERMINALS SHALL BE 1/2IN x 24IN SOLID COPPER AND SHALL EXTEND AT LEAST 18 INCHES ABOVE THE TOP OF THE TANK. AIR TERMINALS BASES SHALL BE CAST BRONZE WITH STAINLESS STEEL BOLT PRESSURE CABLE CONNECTIONS.
- CONDUCTORS**
CONDUCTORS SHALL CONSIST OF U.L. LISTED 29 STRANDS OF 17 GAUGE COPPER WIRE WEIGHING 190 LBS. PER 1000 FEET AND INSTALLED IN ACCORDANCE WITH THE U.L. CODE. (CLASS 1)
- GROUND TERMINALS**
ALL GROUNDING TERMINALS (RODS) SHALL BE NO LESS THAN 3/4 IN DIA AND 10 FT LONG, AND SHALL BE COPPER-CLAD STEEL OR SOLID COPPER. GROUND TERMINALS SHALL BE DRIVEN TO A MINIMUM DEPTH OF 10 FT. GROUNDING TERMINALS SHALL BE LOCATED AT THE BASE OF THE STRUCTURE AND GROUND CONNECTIONS SHALL BE MADE AROUND THE PERIMETER OF THE STRUCTURE AND IN NO CASE SHALL AVERAGE OVER 100 FT APART.
- CABLE CONNECTORS**
ALL CABLE CONNECTORS SHALL BE CAST BRONZE WITH SCREW TYPE STAINLESS STEEL BOLTS AND NUTS. CONDUCTOR FASTENERS SHALL BE AN APPROVED TYPE OF NON-CORROSIVE METAL, HAVE AMPLE STRENGTH TO SUPPORT CONDUCTORS AND SHALL BE SPACED 3 FT ON CENTERS.
- INTERCONNECTION OF METALS**
ALL METAL BODIES WITHIN 6 FT OF THE CONDUCTOR SHALL BE BONDED TO THE SYSTEM WITH APPROVED FITTINGS AND CONDUCTORS. CONNECTIONS BETWEEN DISSIMILAR METALS SHALL BE MADE WITH APPROVED BIMETALLIC CONNECTIONS. PRIMARY BONDS FOR CONDUCTING METAL BODIES SHALL BE BONDED WITH APPROPRIATE FITTINGS AND FULL SIZE CONDUCTORS, AND SHALL CONSIST OF, BUT NOT LIMITED TO THE FOLLOWING: LADDER AND RAIL SYSTEMS, TANK VENTS AND PIPING. ALUMINUM TO COPPER CONNECTIONS SHALL BE MADE WITH BIMETALLIC CONNECTORS.
- COMMON GROUNDING**
ALUMINUM TO COPPER CONNECTIONS SHALL BE MADE WITH BIMETALLIC CONNECTORS. GROUNDS FOR ELECTRICAL AND TELEPHONE SERVICES, AND LIGHTNING GROUNDS SHALL BE TIED TOGETHER TO FORM A COMMON GROUND.
- MATERIALS**
ALL LIGHTNING PROTECTION EQUIPMENT SHALL BE MANUFACTURED BY HEARY BROTHERS LIGHTNING PROTECTION CO., THOMPSON LIGHTNING PROTECTION CO., CAPITAL LIGHTNING PROTECTION CO., OR EQUAL.
- LOCATION**
INSTALL LIGHTNING PROTECTION AT THE FOLLOWING FACILITIES:

A. [xx]
B. [xx]
C. [xx]

ELECTRICAL DEMOLITION NOTES

- BIDDING CONTRACTORS SHALL VISIT THE SITE TO ASSESS THE SCOPE OF DEMOLITION, REMOVAL AND MODIFICATION WORK.
- ELECTRICAL CONTRACTOR AND THE OWNER SHALL DE-ENERGIZE ALL WIRING PRIOR TO REMOVAL OF EQUIPMENT, DEVICES, MOTORS INSTRUMENTATION, CONTROL PANELS, ETC. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE OWNER.
- EXPOSED RACEWAYS: REMOVE CONDUIT, WIRES, AND BOXES. PATCH TO MATCH EXISTING. FINISH-ALL OPENINGS IN WALLS AND FLOORS
- CONCEALED CONDUITS IN THE SLAB: REMOVE EXISTING WIRES TO THE EXTENT POSSIBLE AND ABANDON CONDUITS IN THE SLAB. CUT CONDUIT FLUSH AND PATCH THE FLOOR TO MATCH EXISTING
- CONTROL PANEL: ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUIT AND WIRE AS DESCRIBED IN NOTE 2. CONTRACTOR SHALL REMOVE PANELS AS NOTED ON THE CONTRACT DRAWINGS. REFER TO NOTE 4 ABOVE FOR DISPOSITION OF ENCASED CONDUITS.
- MOTOR CONTROL CENTERS: DISCONNECT AND REMOVE ALL CONDUITS AND WIRING TO EXISTING STARTERS AND/OR BREAKERS, PANELBOARDS, BRANCH CIRCUITS, INTERLOCKS AND STATUS WIRING WITHIN MCC. REFER TO SECTION 260000 FOR ADDITIONAL ELECTRICAL DEMOLITION AND REMOVAL REQUIREMENTS.

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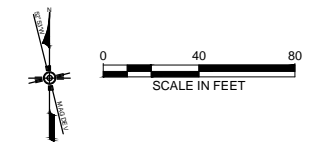


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GENERAL ELECTRICAL ABBREVIATION AND NOTES

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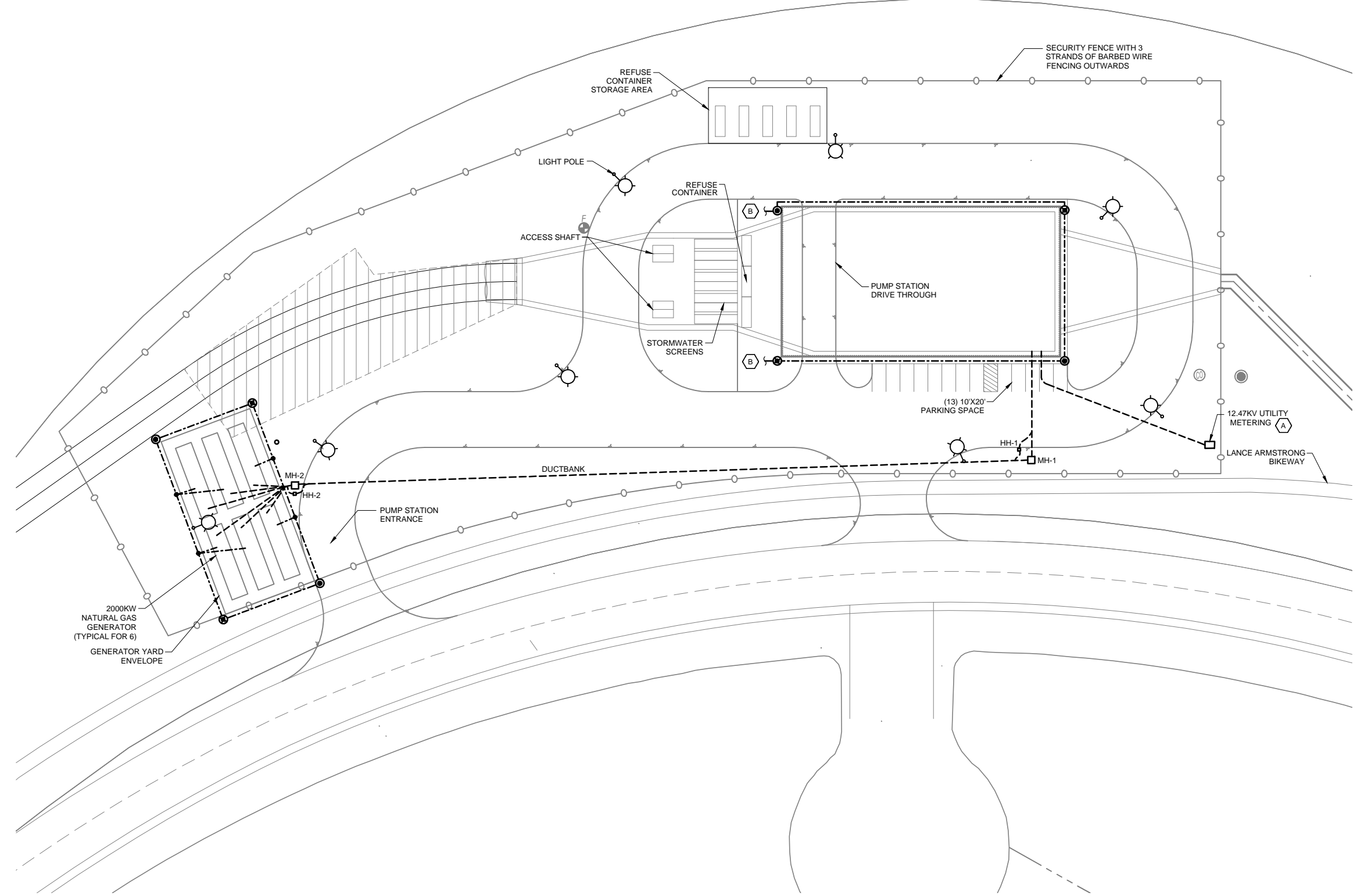


SHEET KEYNOTES

- A. UTILITY SERVICE ENTRANCE IS SHOWN TENTATIVELY. TO BE CONFIRMED AT LATER.
- B. CONNECT TO GROUND GRID FOR THE ACCESS STRUCTURE. CONTRACTOR TO COORDINATE WITH OTHER SHEETS FOR DETAILS.

GENERAL SHEET NOTES

1. ALL GROUNDING CABLES SHALL BE #4/0 SOFT DRAWN BARE STRANDED COPPER CONDUCTOR UNLESS OTHERWISE NOTED.
2. INSTALL GROUND CABLE AT THE BOTTOM OF THE GRADE BEAM OR A MINIMUM 36" BELOW GRADE.
3. GROUNDING CABLE SHALL BE INSTALLED WITH SUFFICIENT SLACK SO AS TO AVOID DAMAGE TO THE CONDUCTORS.
4. ANY GROUNDING CONDUCTOR EMERGING FROM BELOW GRADE SHALL BE PROTECTED BY PVC SCHEDULE 80 SLEEVE.
5. RESISTANCE TO GROUND MUST BE MEASURED AT 5 OHMS OR LESS. ADDITIONAL GROUND RODS SHALL BE DRIVEN TO OBTAIN THIS VALUE. MEASUREMENT SHALL BE TAKEN IN DRY WEATHER CONDITION, A MINIMUM 48 HOURS AFTER RAIN FALL.
6. CONNECT ALL DUCTBANK GROUND CONDUCTORS TO BUILDING GROUND LOOP.
7. PROVIDE BONDING CONNECTION TO ALL UNDERGROUND WATER PIPES (NOT SHOWN).
8. EXTEND THE GROUND CONDUCTORS INTO THE STRUCTURE AND INSTALL ADDITIONAL CONNECTIONS AS REQUIRED BY THE NEC AND THE CONTRACT DOCUMENTS. THESE CONNECTIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING :
 - METALLIC PIPING
 - METALLIC EQUIPMENT/ FRAMES
 - STRUCTURAL STEEL
 - STAIRS AND LADDER
 - ACCESS HATCHES
 - MCC'S
 - VFD'S
 - LIGHTING AND POWER PANELS
 - INSTRUMENTATION AND COMMUNICATION SYSTEMS
 - ISOLATED GROUND(S) FOR PLC AND CONTROL PANELS.
 - STORMWATER SCREENS
9. CONNECTION CABLES SHALL BE SIZED AS REQUIRED BY THE NEC.
10. GROUNDING SYSTEM SHALL BE COORDINATED WITH THE LIGHTNING PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 70 AND NFPA 780.



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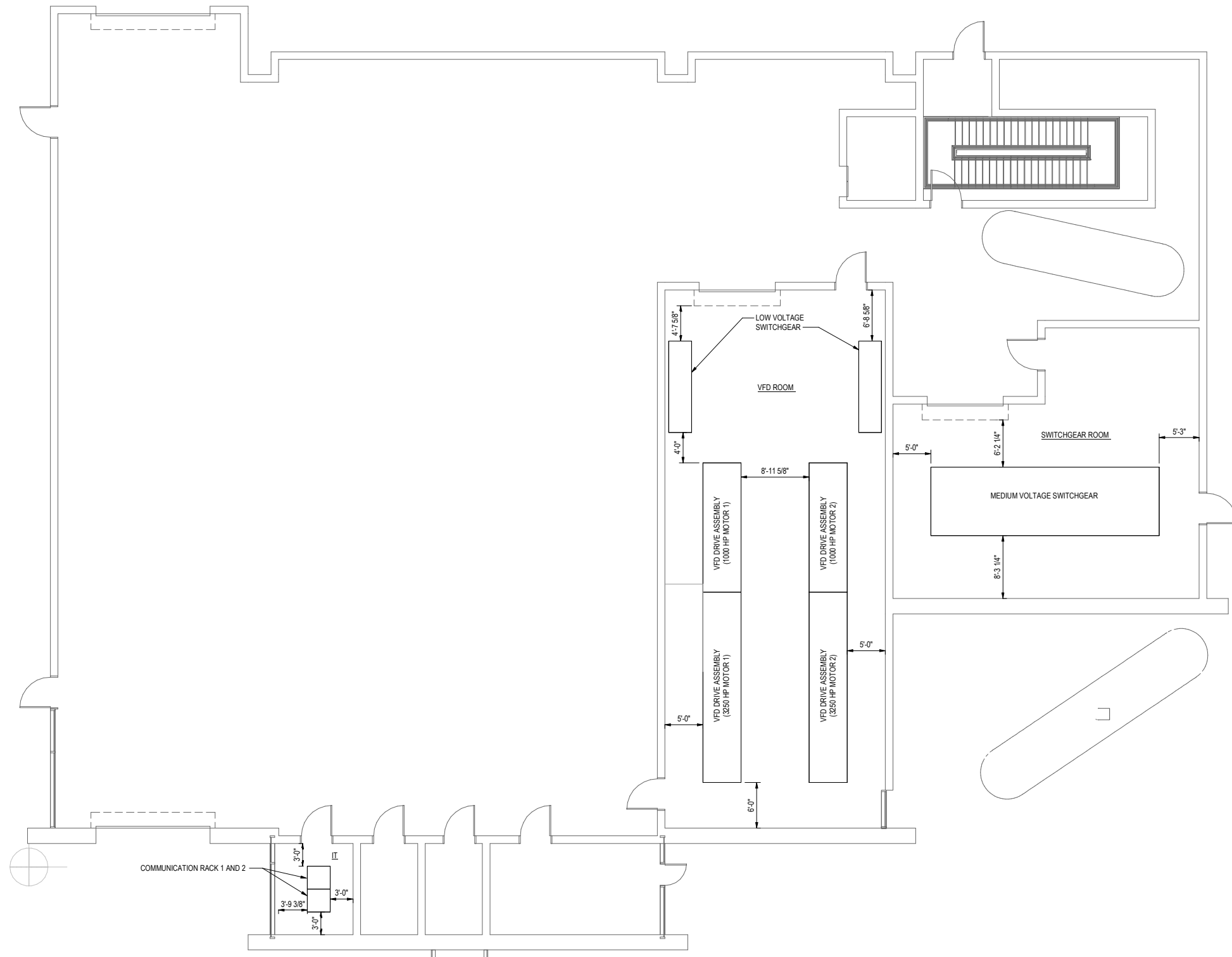
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CAPITAL EXPRESS CENTRAL
 SITE PLAN - ELECTRICAL

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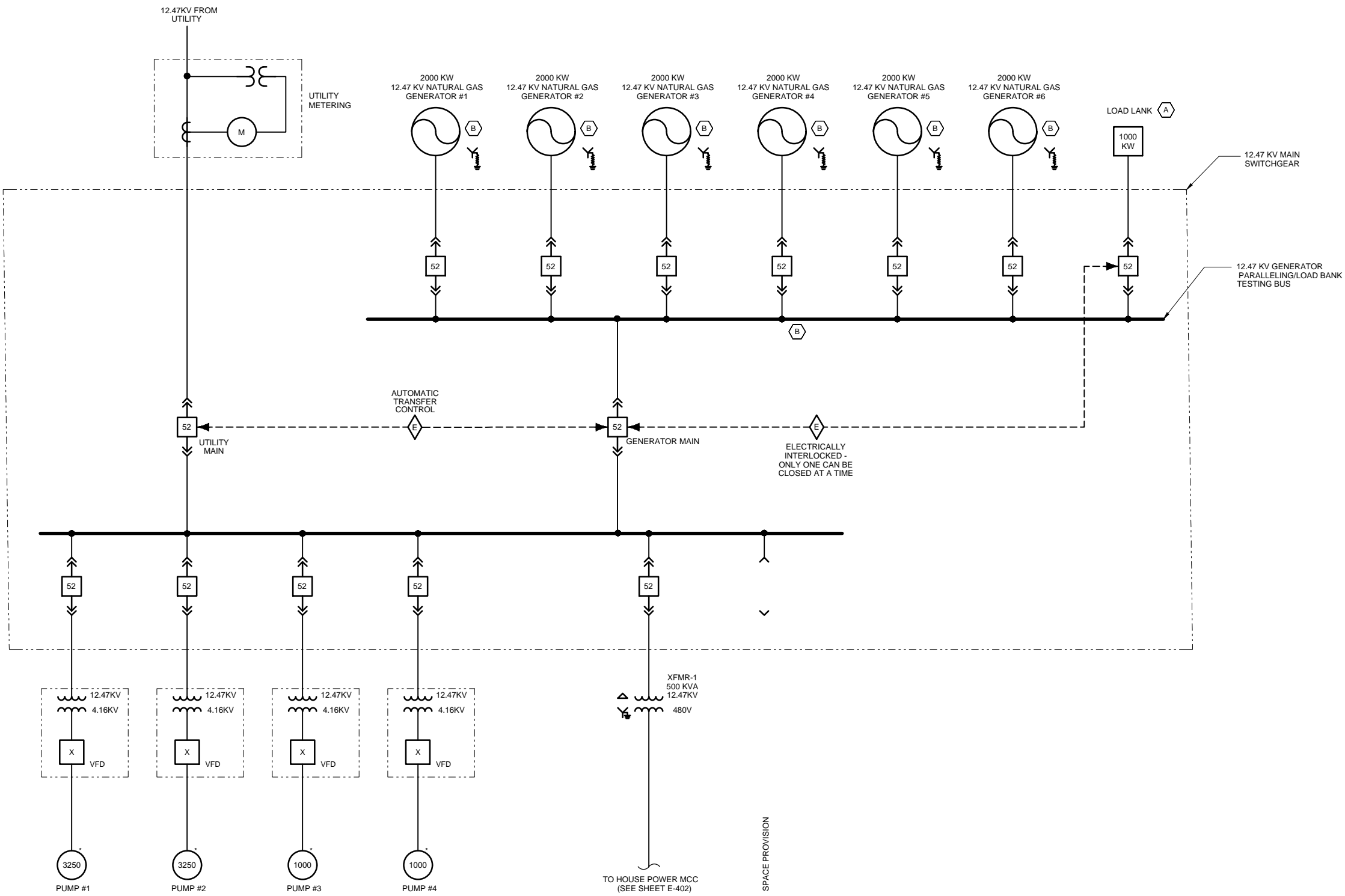
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LEVEL 1 -
EQUIPMNET PLAN

Project No. 177311825		SHEET	OF
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		E-301



SHEET KEYNOTES

A. EXACT SIZE OF LOAD BANK TO BE DETERMINED DURING FINAL DESIGN.

B. QUANTITY AND SIZE OF GENERATORS AND GENERATOR PARALLELING CIRCUIT BREAKERS TO BE DETERMINED BASED ON TOTAL QUANTITY AND SIZE OF PUMP MOTORS AND ASSOCIATED FACILITY LOADS TO BE OPERATED UNDER UTILITY POWER FAILURE CONDITIONS.

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 Date: 11/20/23

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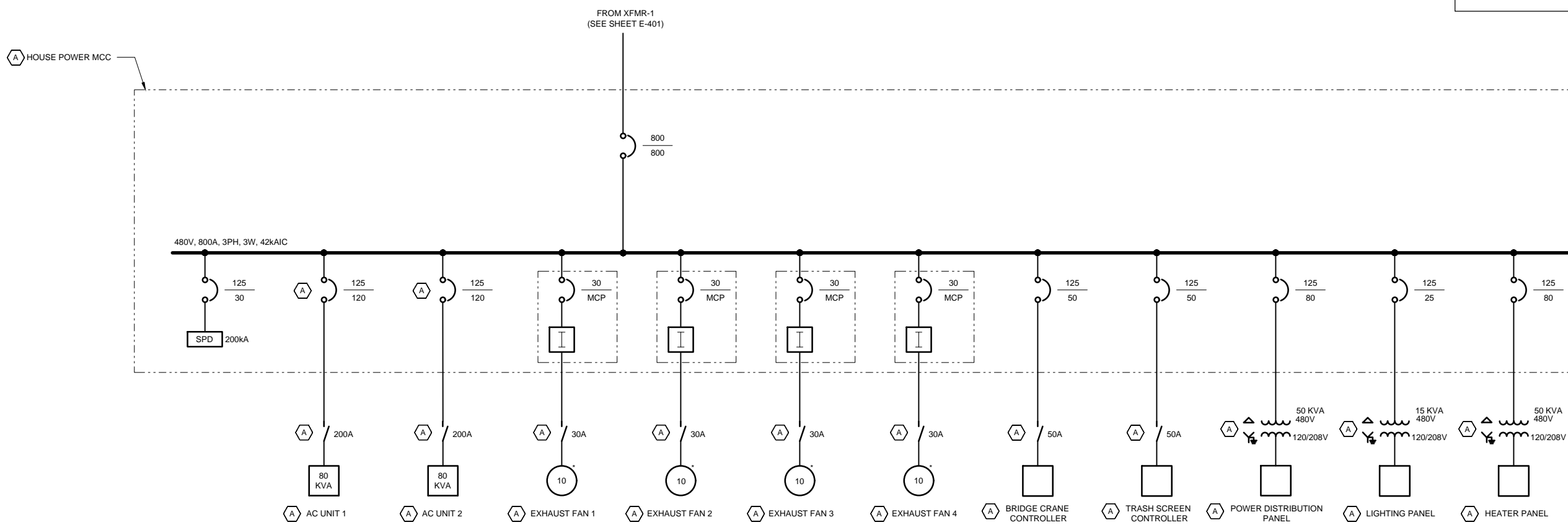
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**15 KV MAIN SWITCHGEAR
 SINGLE LINE DIAGRAM**

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	E-401	

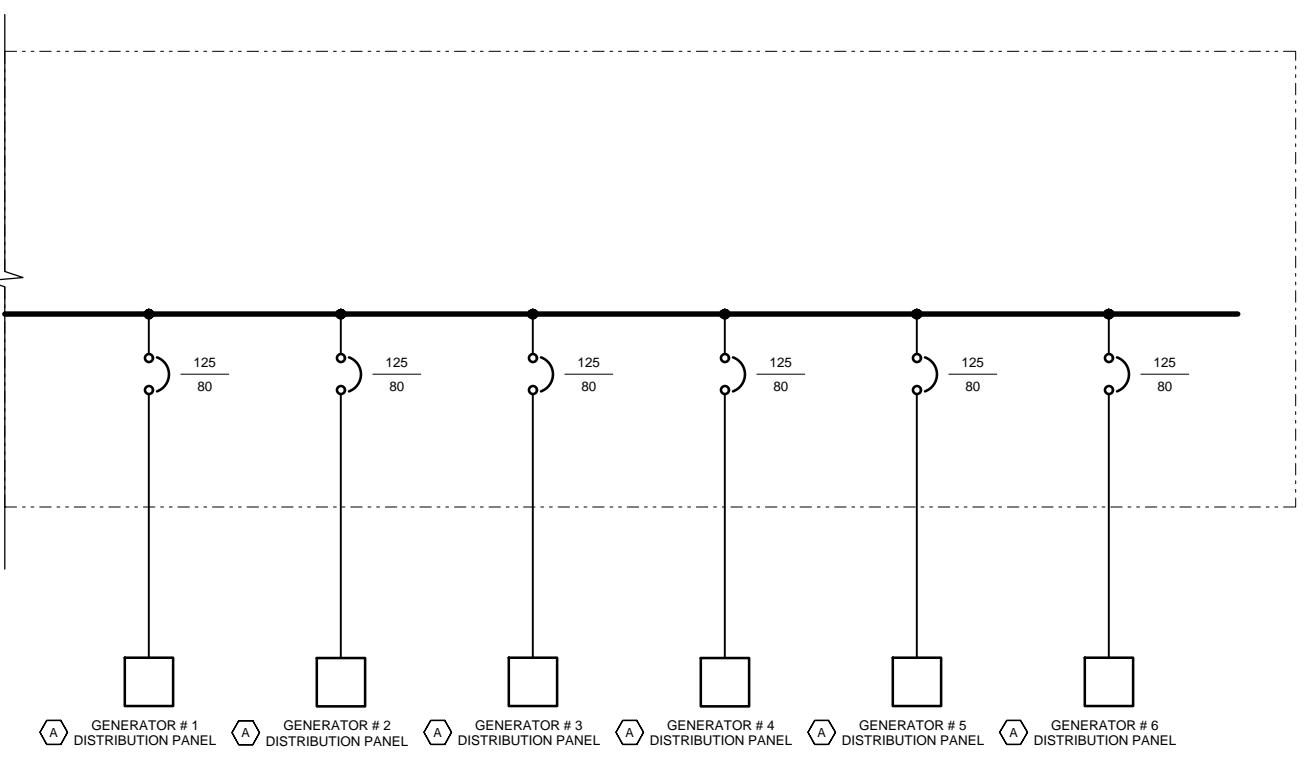
SHEET KEYNOTES

A. QUANTITY AND SIZE OF ELECTRICAL EQUIPMENT TO BE DETERMINED BASED ON TOTAL QUANTITY AND SIZE OF ELECTRICAL LOADS INCLUDING MOTORS AND ASSOCIATED FACILITY LOADS.



SEE BELOW FOR CONTINUATION

SEE ABOVE FOR CONTINUATION



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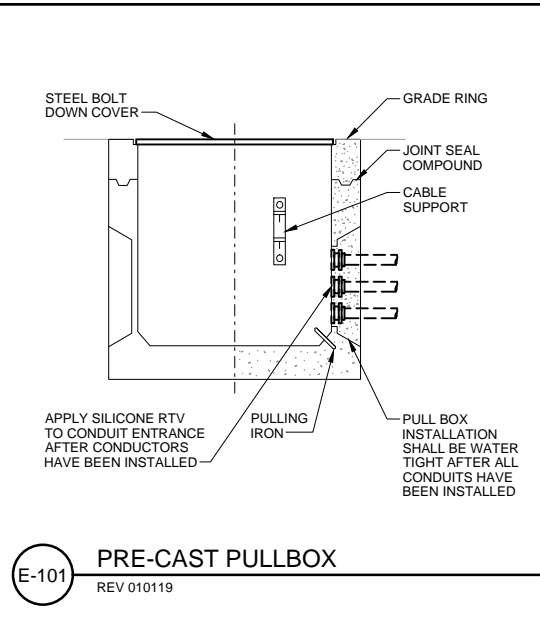
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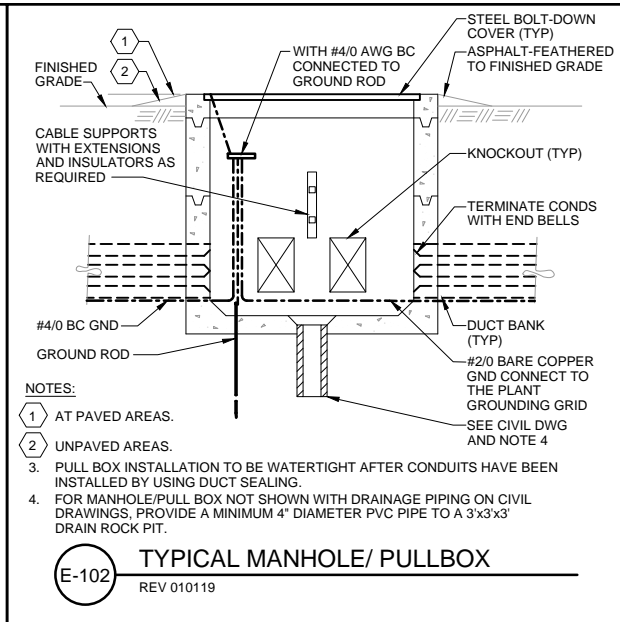
480V MCC SINGLE LINE
 DIAGRAM

SHEET 1 OF 1

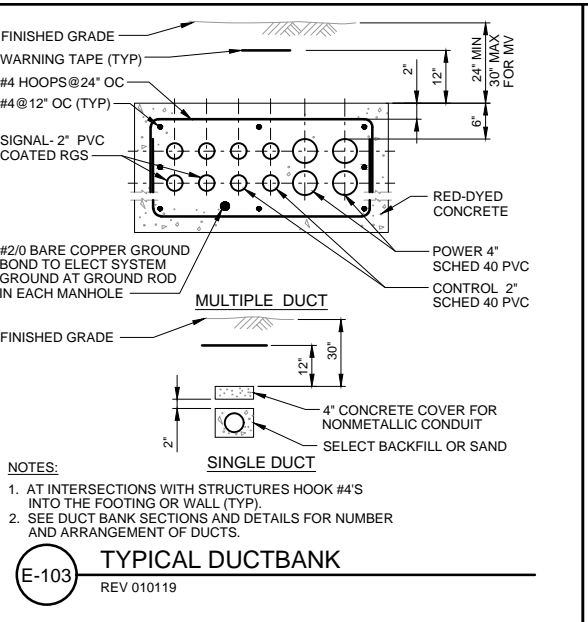
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0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	E-402	



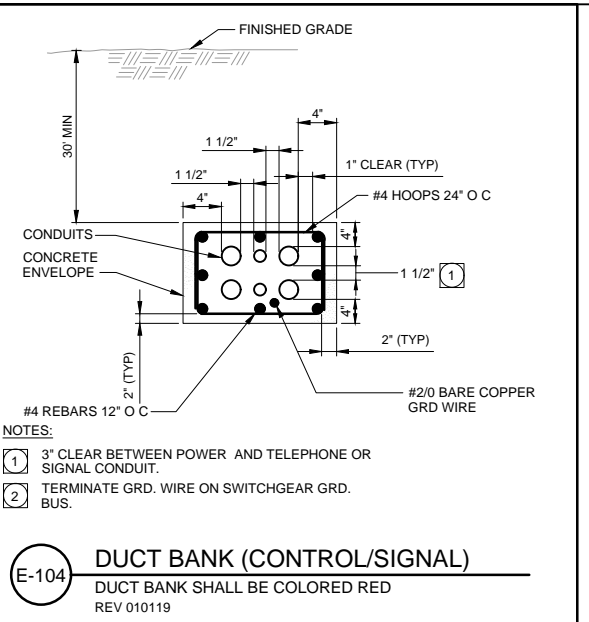
E-101 PRE-CAST PULLBOX
 REV 010119



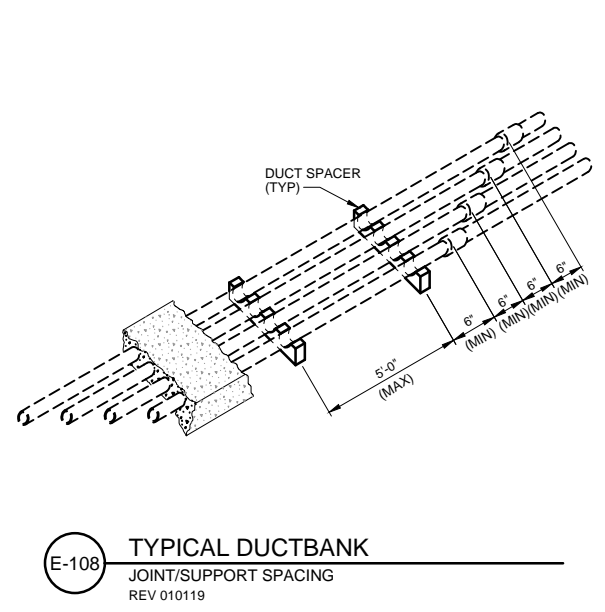
E-102 TYPICAL MANHOLE/ PULLBOX
 REV 010119



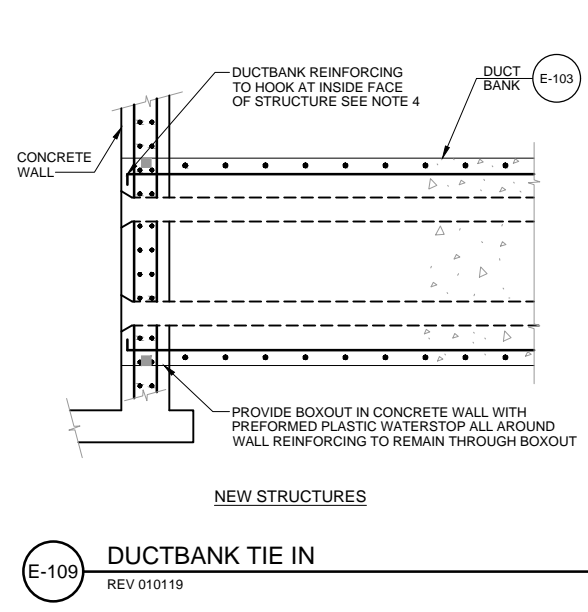
E-103 TYPICAL DUCTBANK
 REV 010119



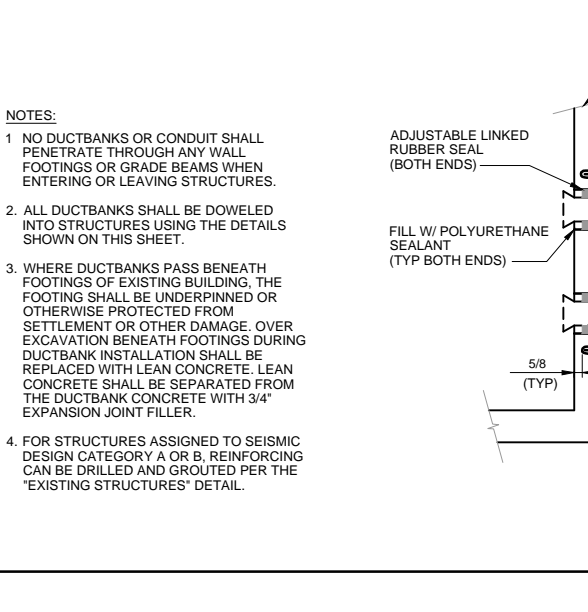
E-104 DUCT BANK (CONTROL/SIGNAL)
 DUCT BANK SHALL BE COLORED RED
 REV 010119



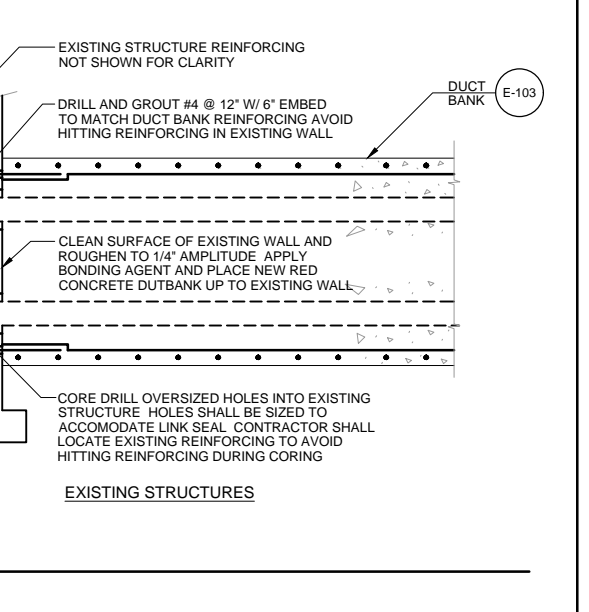
E-108 TYPICAL DUCTBANK JOINT/SUPPORT SPACING
 REV 010119



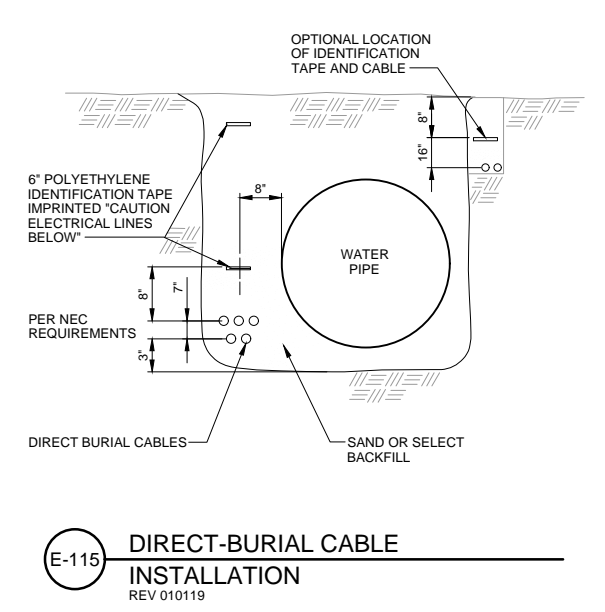
E-109 DUCTBANK TIE IN
 REV 010119



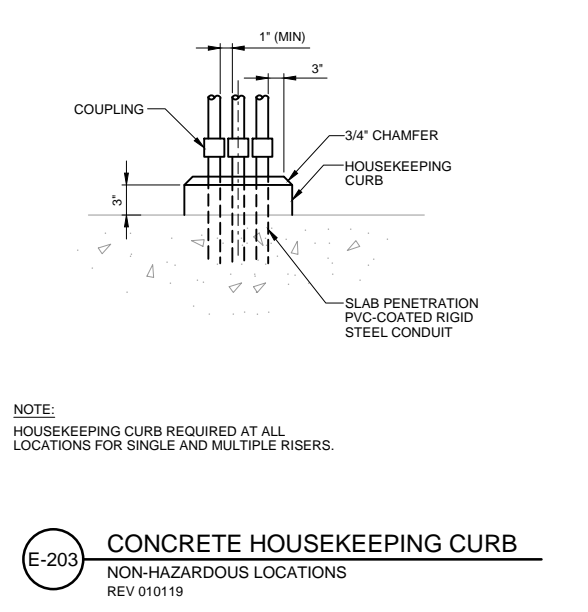
E-103 EXISTING STRUCTURES



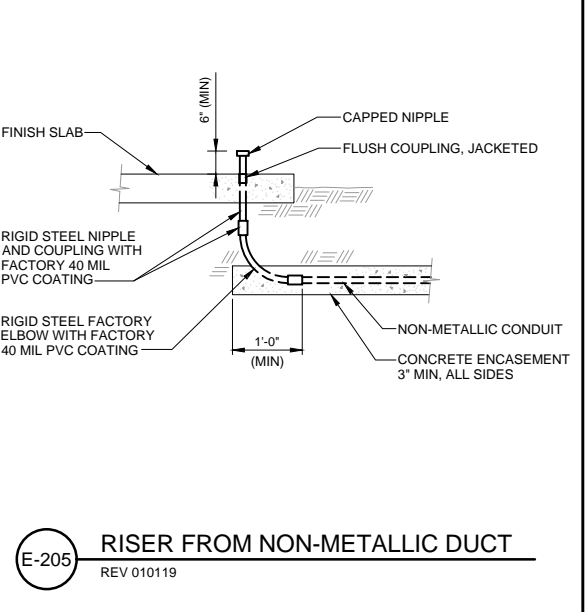
E-104 EXISTING STRUCTURES



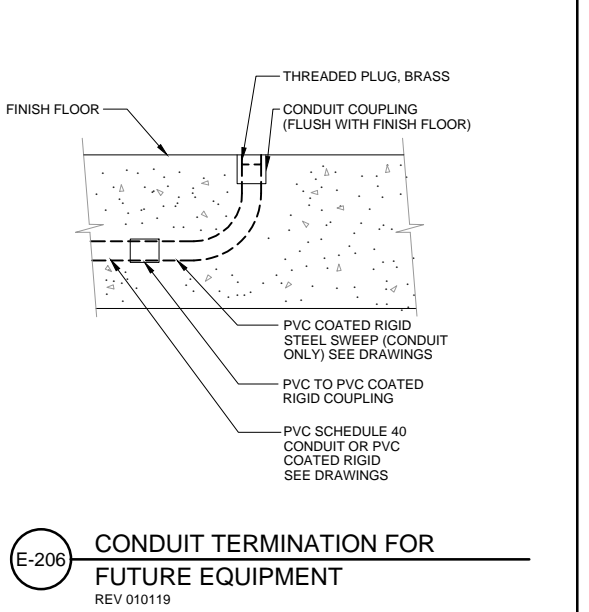
E-115 DIRECT-BURIAL CABLE INSTALLATION
 REV 010119



E-203 CONCRETE HOUSEKEEPING CURB
 NON-HAZARDOUS LOCATIONS
 REV 010119



E-205 RISER FROM NON-METALLIC DUCT
 REV 010119



E-206 CONDUIT TERMINATION FOR FUTURE EQUIPMENT
 REV 010119

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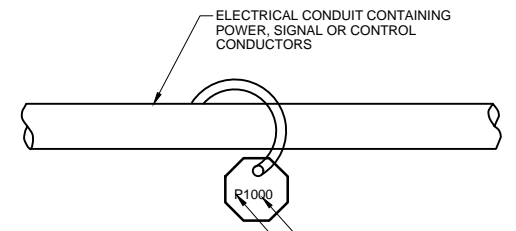
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CAPITAL EXPRESS CENTRAL
ELECTRICAL DETAILS

SHEET 1 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	E-501	



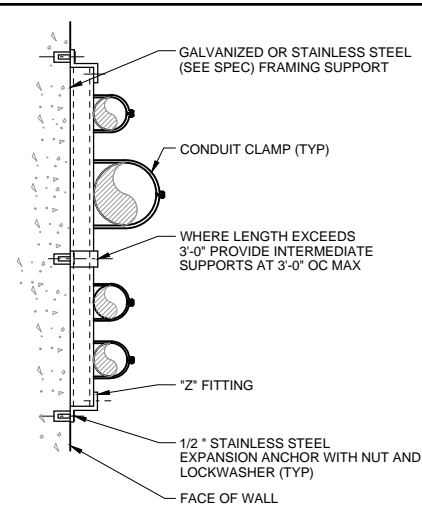
CONDUCTOR TYPES:
 P - POWER
 C - CONTROL OR DIGITAL STATUS
 S - SIGNAL (ANALOG)

CONDUIT NUMBERS ARE LISTED ON THE CONDUIT / CABLE SCHEDULE

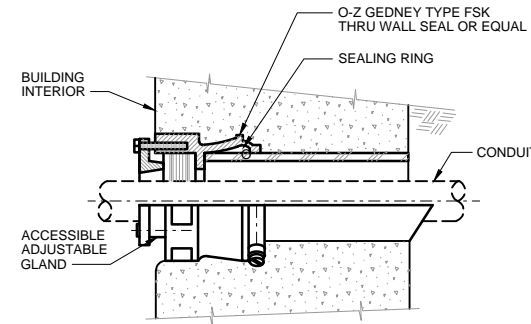
NOTE:
 1. CONDUIT TAGS SHALL BE AFFIXED TO CONDUITS:

- A. AFTER ALL WORKING DRAWINGS ARE APPROVED AND ALL FIELD MODIFICATIONS HAVE BEEN MADE.
- B. BEFORE FINAL ACCEPTANCE TESTING HAS STARTED.

E-210 CONDUIT IDENTIFICATION TAG
 REV 010119

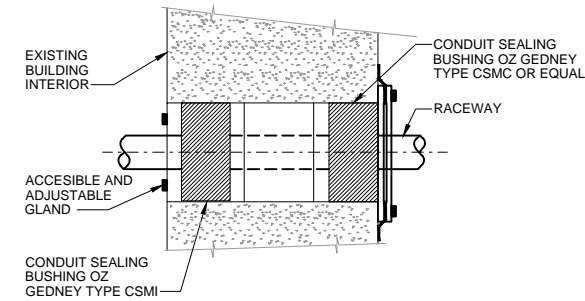


E-212 CONDUIT SUPPORT
 FLUSH MOUNT
 REV 010119

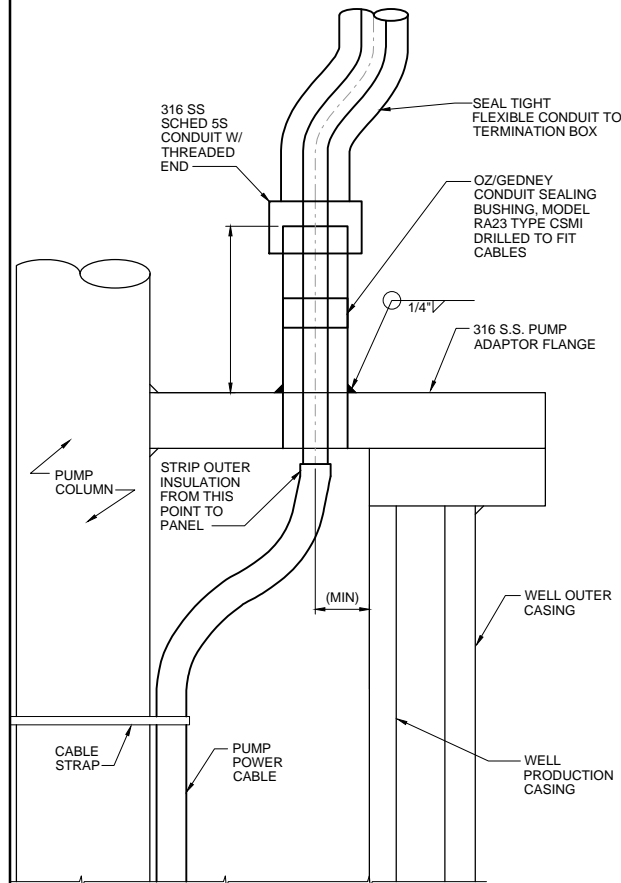


NOTE:
 USE WATERTIGHT CONDUIT SEAL WHERE CONDUIT PENETRATIONS OF EXTERIOR WALLS ARE BELOW GRADE.

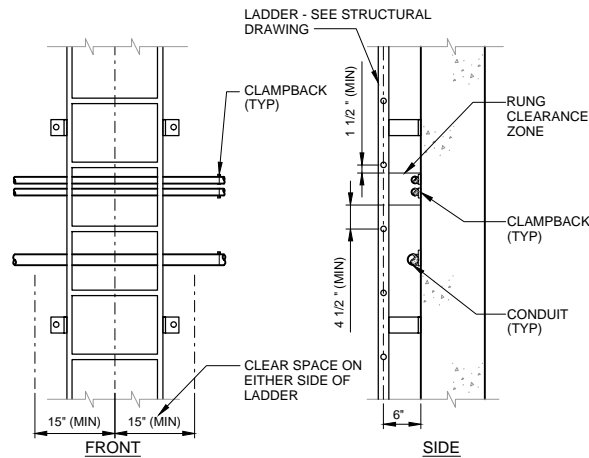
E-213 WATERTIGHT CONDUIT SEAL
 BELOW GRADE EXTERIOR WALLS
 REV 010119



E-214 WATERTIGHT CONDUIT SEAL
 REV 010119

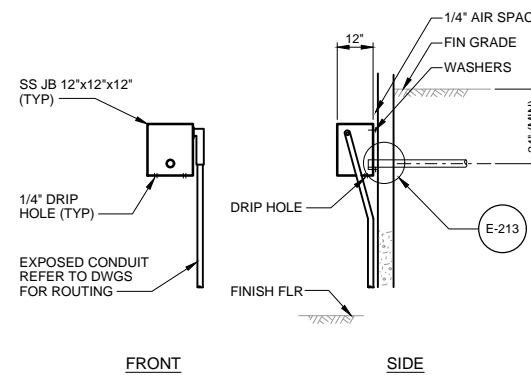


E-218 SUBMERSIBLE PUMP POWER
 CABLE TRANSITION AT WELL HEAD
 REV 010119

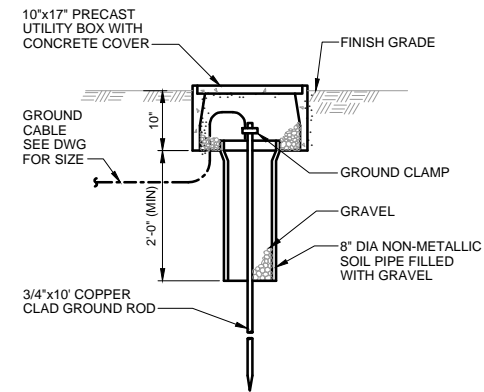


NOTE:
 1/2" CLAMPBACK - DAMP OR BELOW GRADE
 1/4" CLAMPBACK - DRY AND ABOVE GRADE

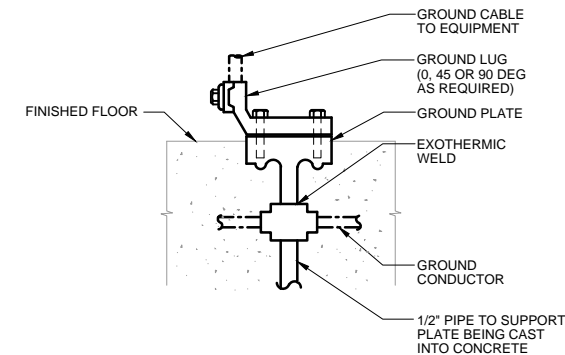
E-220 MINIMUM LADDER CLEARANCES
 REV 010119



E-226 CONDUIT ENTRANCE
 BELOW GRADE
 REV 010119

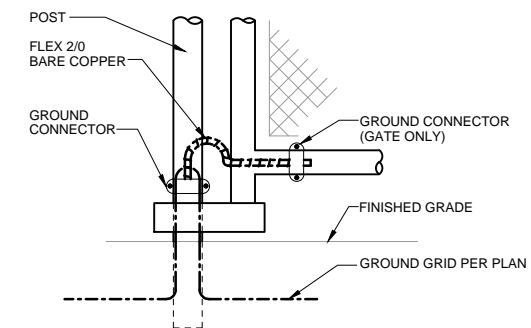


E-303 GROUND ROD AND WELL
 REV 010119

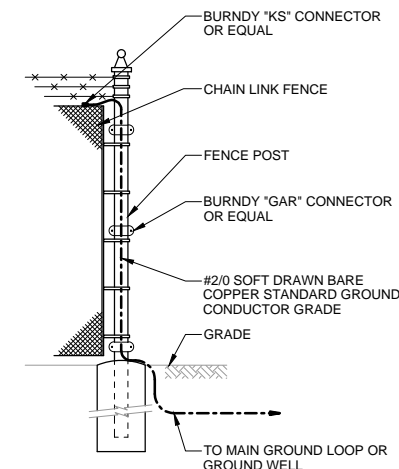


NOTE:
 1. ALL BOLTS SHALL BE INSERTED IN BOLT HOLES BEFORE THE INSERT IS EMBEDDED.

E-308 GROUNDING INSERT
 REV 010119



E-315 PERIMETER GROUND BUS TO
 SUBSTATION
 REV 010119



E-316 FENCE GROUNDING
 REV 010119

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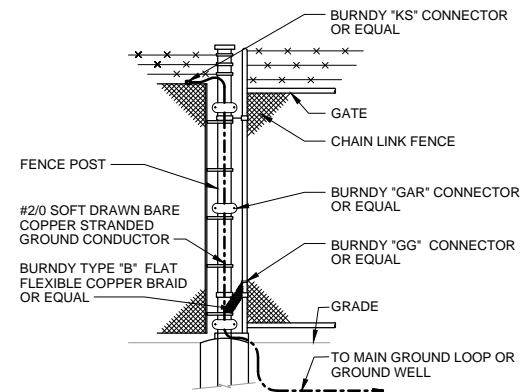
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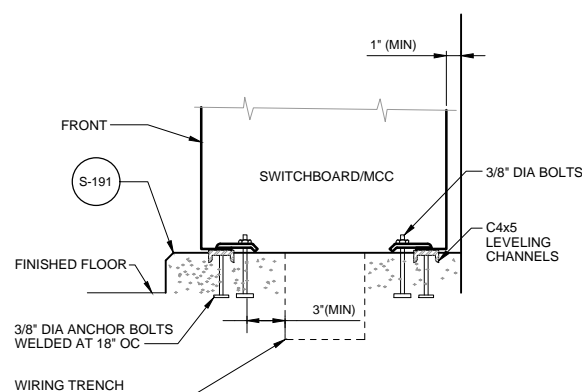
ELECTRICAL DETAILS

SHEET 2 OF 4

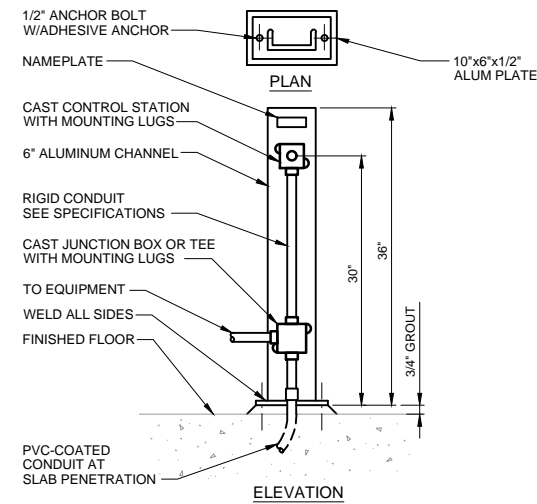
CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	E-502	



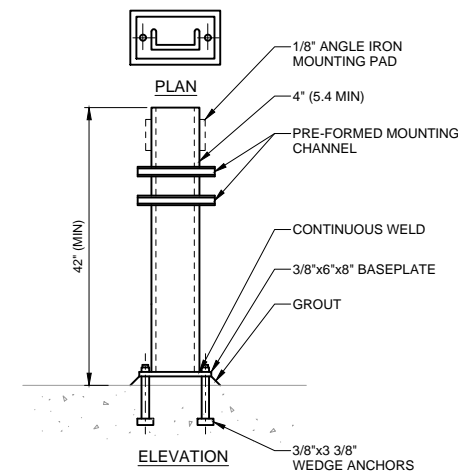
E-317 GATE-TO-FENCE GROUNDING
REV 010119



E-400 SWITCHBOARD/MCC MOUNTING
REV 010119

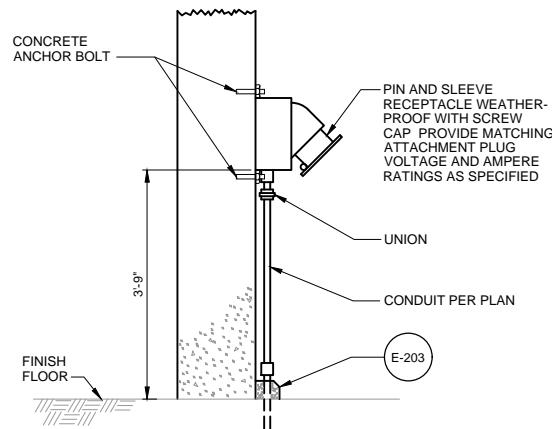


E-406 PEDESTAL MOUNTED CONTROL STATION
REV 010119

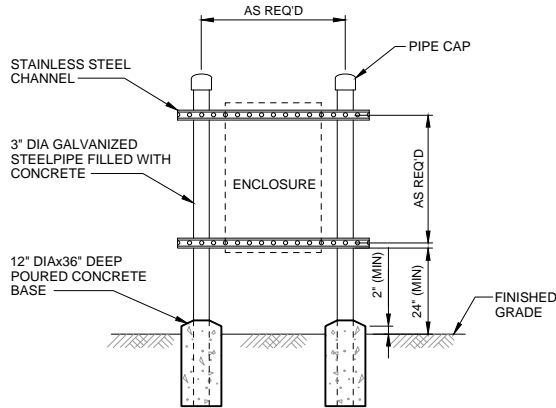


- NOTES:**
- ALUMINIUM CONSTRUCTION.
 - PROVIDE MOUNTING ACCESSORY TO SUIT EQUIPMENT.

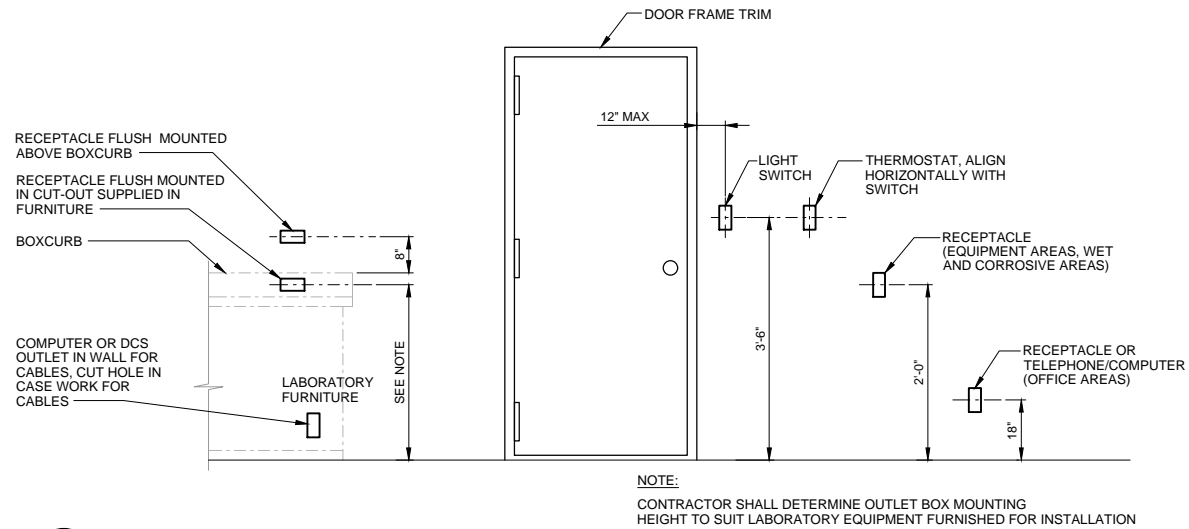
E-407 PEDESTAL FOR PANEL
REV 010119



E-419 RECEPTACLE INSTALLATION
REV 010119

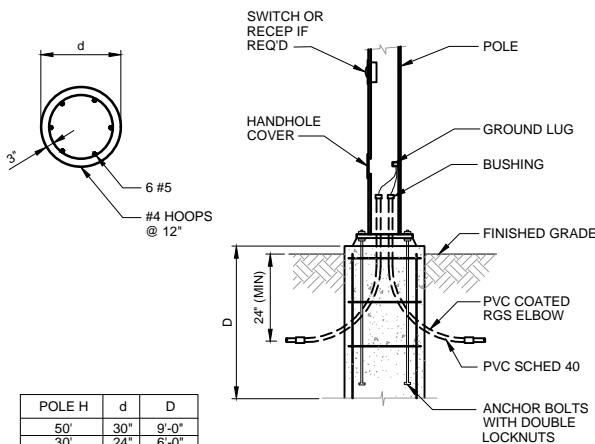


E-420 ENCLOSURE MOUNTING STAND
REV 010119



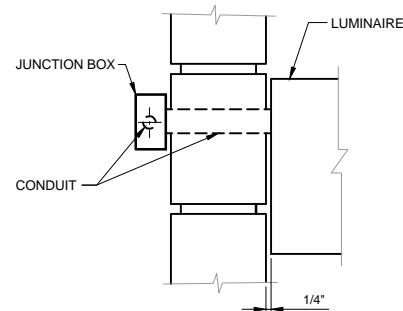
- NOTE:**
- CONTRACTOR SHALL DETERMINE OUTLET BOX MOUNTING HEIGHT TO SUIT LABORATORY EQUIPMENT FURNISHED FOR INSTALLATION

E-450 OUTLET BOX MOUNTING
REV 010119



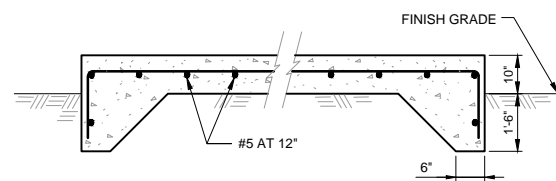
POLE H	d	D
50'	30"	9'-0"
30'	24"	6'-0"
20'	20"	5'-6"
15'	20"	4'-8"

E-600 POLE FOUNDATION
REV 010119



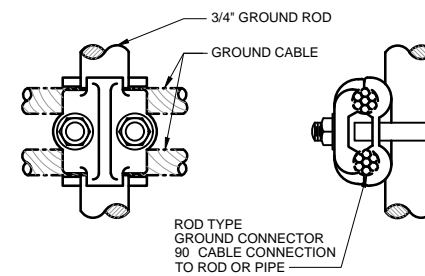
- NOTES:**
- PROVIDE GASKET BETWEEN LUMINAIRE AND CONDUIT.
 - INSTALLATION SHALL BE WATERTIGHT.

E-605 WALL MOUNT LUMINAIRE
EXTERIOR WALL
REV 010119



- NOTES:**
- OVERALL PAD DIMENSIONS SHALL BE DETERMINED FROM ELECTRICAL DRAWING AND ADJUSTED AS REQ'D TO SUIT EQUIPMENT FURNISHED.
 - COORDINATE WITH STRUCTURAL DRAWINGS.

E-617 ELECTRICAL EQUIPMENT PAD
REV 010119



- NOTE:**
- ELECTRICAL SAMPLE DETAIL.

ES355 CABLE -TO- ROD CONNECTION
REV 010119

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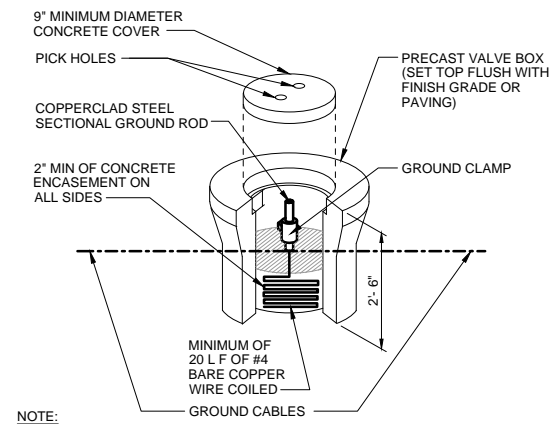
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ELECTRICAL DETAILS

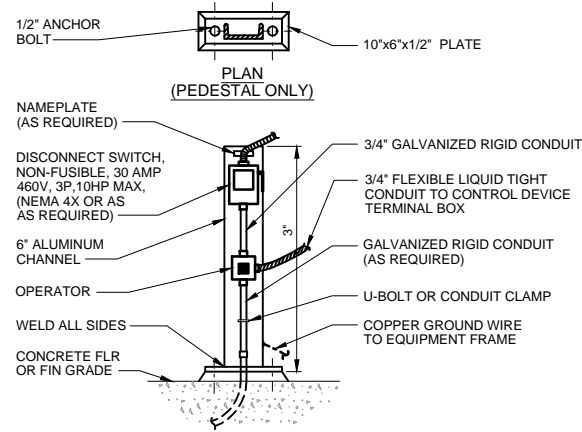
SHEET 3 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	E-503	



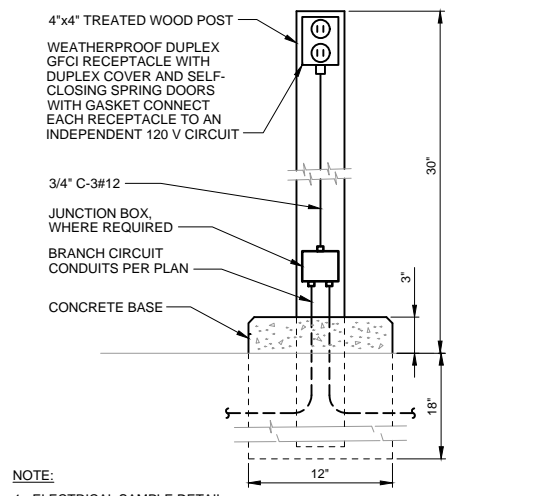
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES356 GROUND ELECTRODE INSTALLATION
REV 010119



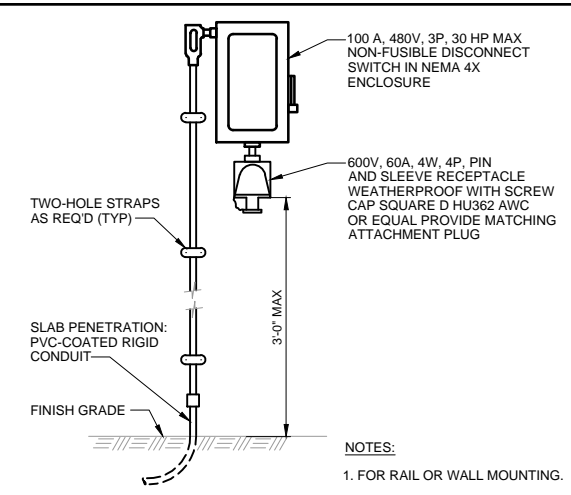
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES461 CONTROL STATION
REV 010119



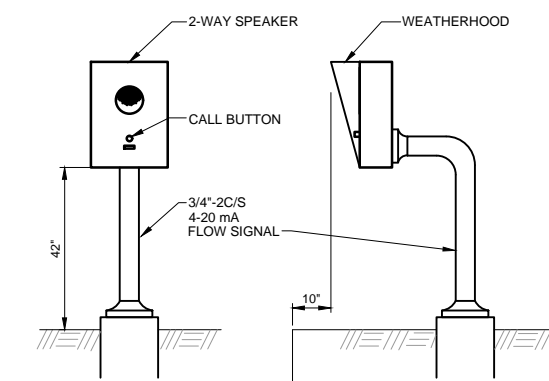
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES466 PARKING LOT RECEPTACLE DETAIL
REV 010119



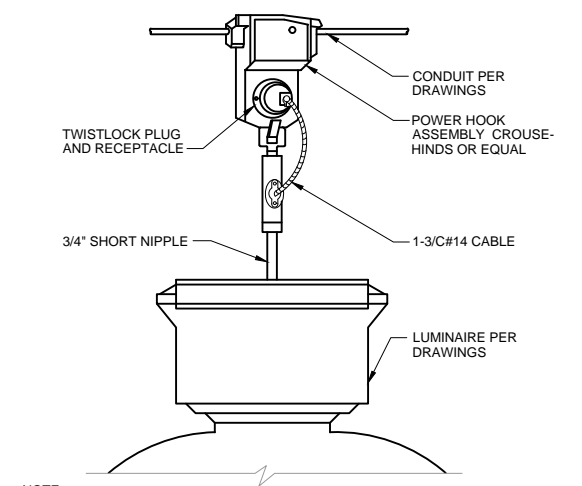
NOTES:
1. FOR RAIL OR WALL MOUNTING.
2. ELECTRICAL SAMPLE DETAIL.

ES467 POWER CONNECTION TO 480V RECEPTACLE
REV 010119



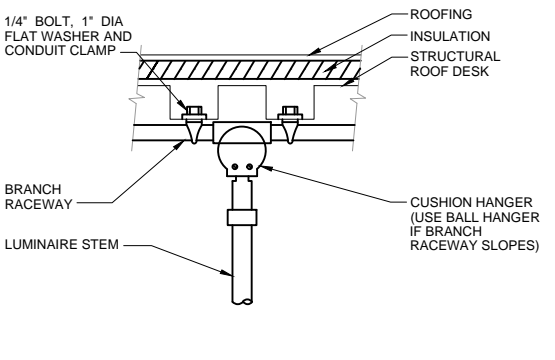
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES480 GATE INTERCOM STATION
REV 010119



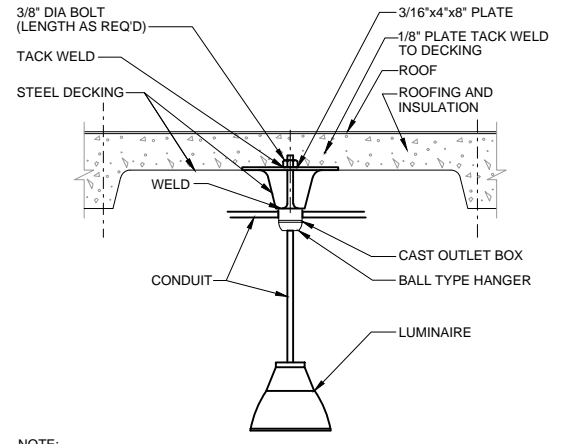
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES650 PENDANT-MOUNTED HID LUMINAIRE
REV 010119



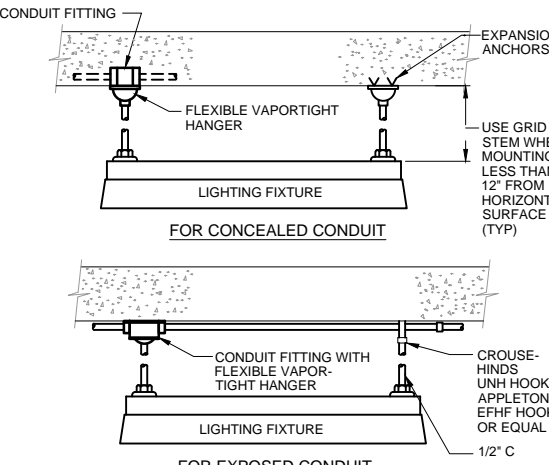
NOTES:
1. APPLY DETAIL ONLY WHERE RACEWAY MUST BE HUNG FROM ROOF. FIXTURES AND RACEWAY SHALL BE SUPPORTED FROM STRUCTURAL FRAMING WHERE FEASIBLE.
2. ELECTRICAL SAMPLE DETAIL.

ES651 LUMINAIRE HANGER
REV 010119



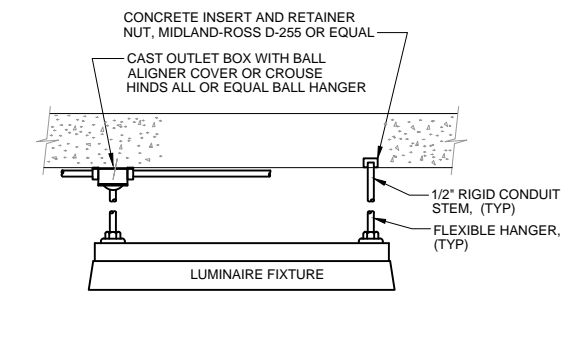
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES652 LUMINAIRE HANGING FROM STEEL DECK
REV 010119



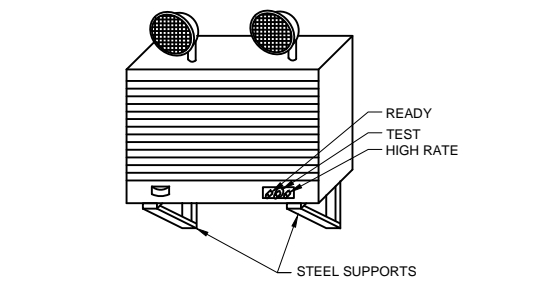
NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES653 LUMINAIRE MOUNTING
REV 010119



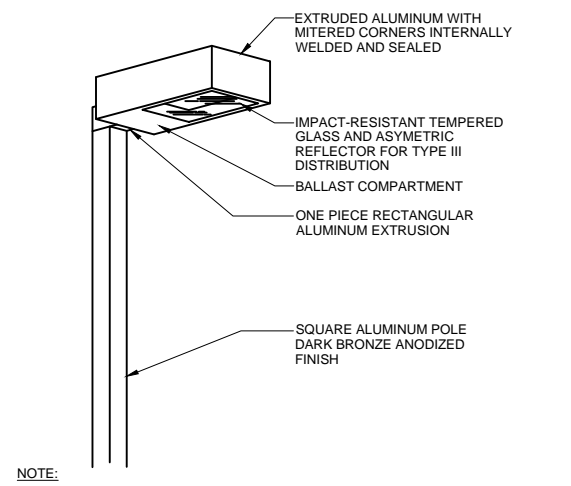
NOTES:
1. FLEXIBLE HANGERS NOT REQUIRED IF STEM LENGTH IS LESS THAN 12".
2. ELECTRICAL SAMPLE DETAIL.

ES654 LUMINAIRE MOUNTING (FOR EXPOSED CONDUIT SURFACE MOUNTED TO CONCRETE)
REV 010119



NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES661 EMERGENCY LUMINAIRE
REV 010119



NOTE:
1. ELECTRICAL SAMPLE DETAIL.

ES665 AREA LUMINAIRE
REV 010119

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ELECTRICAL DETAILS

SHEET 4 OF 4

CONT	SECT	JOB	HIGHWAY
0015	13	433, ETC.	I-35
DIST	COUNTY	SHEET NO.	
AUS	TRAVIS	E-504	