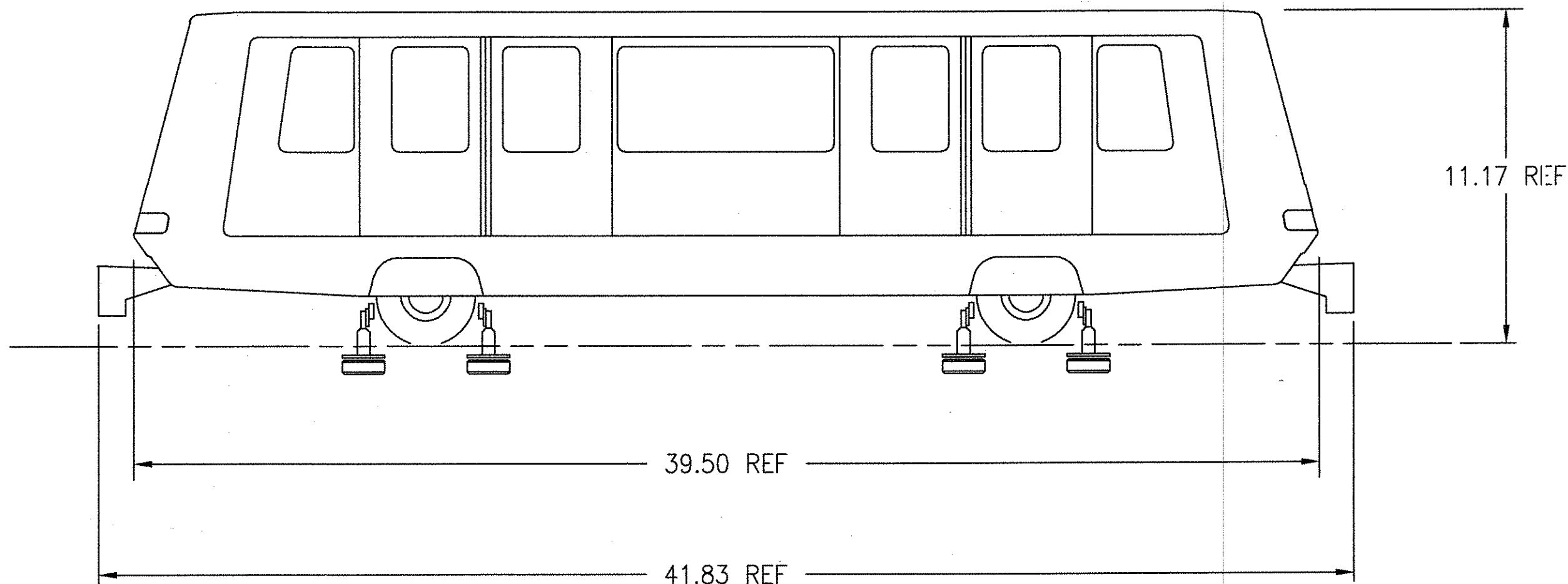


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SHEET	LATEST REV									
	1	2	3	4	5	6	7	8	9	10
1	X	X	X	X	X	X	X	X	X	
2	X	X			X				X	
3	X	X	X		X				X	
4	X	X					X		X	
5	X		X				X		X	
6	X								X	
7	X				X				X	
8	X								X	
9	X	X	X				X		X	
10	X	X							X	
11	X	X	X	X	X		X	X	X	
11A					X	X	X		X	
11B						X	X		X	
12	X	X	X	X			X	X	X	
12A					X		X		X	
13	X	X	X	X	X	X	X	X	X	
14	X	X	X	X			X		X	
14A					X	X	X		X	
14B						X	X		X	
15	X	X	X	X			X	X	X	
15A					X		X		X	
16	X	X	X	X	X		X		X	
17	X			X	X		X	X	X	
18	X		X	X			X	X	X	
19	X				X		X		X	
20	X	X	X	X	X		X	X	X	
21	X	X			X		X		X	
22	X	X	X				X		X	
23	X	X	X	X			X		X	
24	X	X	X	X	X		X	X	X	
25	X	X	X						X	
26	X	X	X	X					X	
27	X	X	X						X	
28	X		X	X					X	
29	X	X	X	X			X		X	
30	X	X	X	X					X	
31		X		X					X	
32		X	X	X					X	
33		X		X				X	X	
34					X				X	

GEORGE BUSH INTERCONTINENTAL AIRPORT/HOUSTON PHASE 2 SYSTEM MAP AND TRACK PLAN



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TCN HOAB-B2010	CHANGE	5	SIGNATURES ON FILE	6	TCN HOAB-B2010	7	REV' SHTS 1, 4, 5, 9, 11 THRU 24 & 29	F. BELMARES 3/30/04 R.BURNETT J.CARNEVALE	SIGNATURES ON FILE	8	REV' SHTS 11,12, 13,15,17,18,20, 24 & 33.	BTECI/SK 12/11/04 R.BURNETT J.CARNEVALE	SIGNATURES ON FILE	9	SHEETS 14,5,7 & 33 REVISED PER AS BUILT CONDITIONS. BASELINED ALL SHEETS PER FORMAT CHANGE	P. CARSON 7/31/05 A. ROMEO	J. CARNEVALE
----------------	--------	---	--------------------	---	----------------	---	---------------------------------------	--	--------------------	---	---	---	--------------------	---	--	-------------------------------	--------------

		THIRD ANGLE PROJECTION
	HOUSTON	
NEXT ASSY.	USED ON	

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

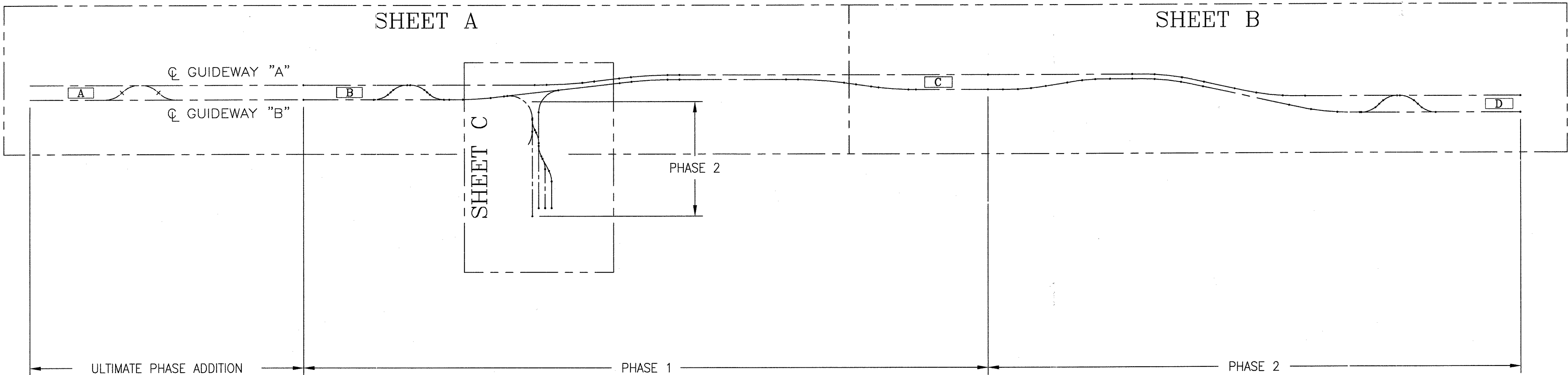
5D81167	DFTM. E.OLCZAK CHKR.	DATE 9-17-01
	ENGRG. C.ROIHERTS	
	MFG.	
	APPD.	
	DFTG. SUPV. J.CARNEVALE	

BOMBARDIER		
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2 SYSTEM MAP AND TRACK PLAN - COVER SHEET		
DIMENSIONS IN FEET		
SIZE D	DWG. NO. 6D60467	REV. 9
SCALE NTS	WT.	SHEET 1

F
E
D
C
B

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GEORGE BUSH INT. AIRPORT SYSTEM MAP AND TRACK PLAN - SHEET INDEX				
		A	B	C
COVER SHEET	1			
INDEX	2			
SYSTEM NOTES AND SYMBOLS	3			
CAR ORIENTATION AND CAR/WAYSIDE ANTENNAS	4			
PROGRAM STOP AND SWITCH GRAPHICS TAPES	5-6			
VEHICLE/WAYSIDE CODES	7			
SYSTEM PLAN AND CURVE DATA		8	9	10
SPEED PROFILE, NORMAL DIRECTION	11A-12A	11	12	13
SPEED PROFILE, REVERSE DIRECTION	14A-15A	14	15	16
SWITCH PROFILES NORMAL AND REVERSE		17	18	
PHASE 2 TX/RX INFORMATION		19	20	21
WAYSIDE EQUIPMENT, GUIDEWAY INTERFACE LOCATION PLAN		22	23	24
TRACK PDS AND RAIL INSTALLATION		25	26	
WAYSIDE EQUIPMENT, GUIDEWAY INTERFACE LOCATION PLAN (SWITCH DETAILS)		27	28	29-30
TRAFFIC SIGNAL LOCATION PLAN		31	32	33
STATION BERTHING LOCATIONS	34			



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AutoCAD

TCN HOAB-B2010	1	CHANGE	TCN HOAB-B2010	5	TCN HOAB-B2065	9
D. 7DS776-A			ECN-42935		WR 2001346	
			SHEETS 11A, 12A, 14A, 15A AND 34 ADDED TO INDEX		NO DRAWING CHANGE TO THIS SHEET; FORMAT CHANGE ONLY	
			E.OLCZAK 1-24-02		P. CARSON 7/31/05	
			J.GRADICH		A. ROMEO	
			J.CARNEVALE		J. CARNEVALE	

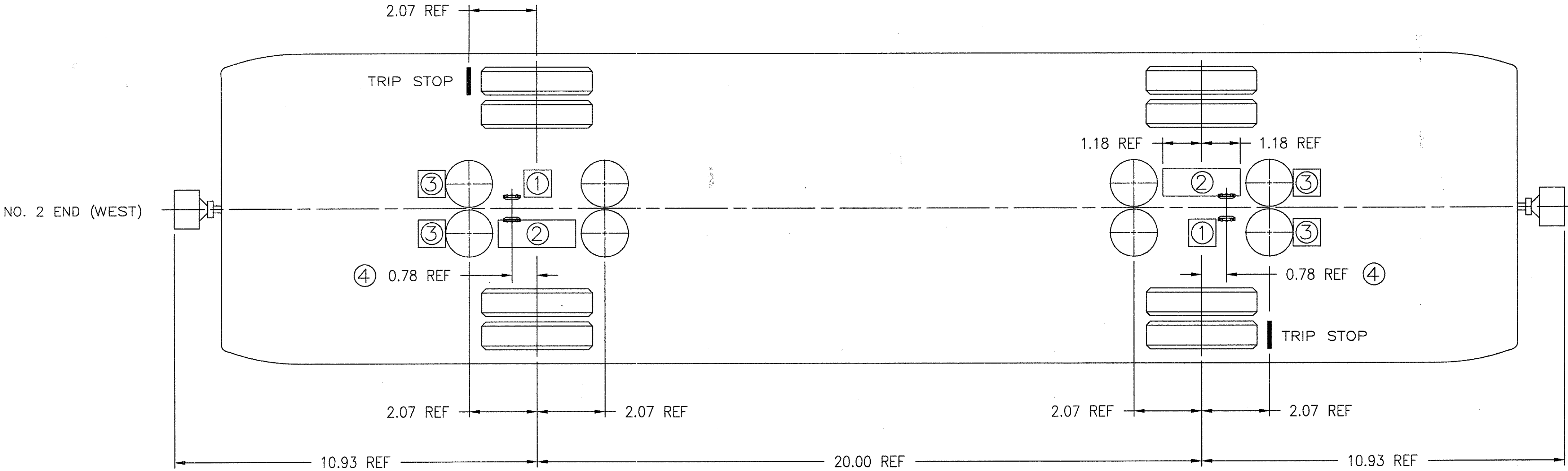
GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. SUPV.	J.CARNEVALE		

BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
INDEX			
DIMENSIONS IN FEET			
SIZE	D	DWG. NO.	6D60467
SCALE		WT.	
SHEET	2	REV.	9

VEHICLE ANTENNA LOCATIONS

(VEHICLE TOP VIEW)



- ① = INFORMATION TRANSMITTER ANTENNA.
- ② = PROGRAM STOP, DOOR/GRAPHICS RECEIVER ANTENNA.
- ③ = TRACK SIGNALLING RECEIVER ANTENNA.
- ④ = ATO/GND COLLECTOR SHOE. (SHOE LENGTH = 6.00 INCHES).

VEHICLE INFO TX FREQUENCY

O'S 1'S

8880 Hz 5920 Hz

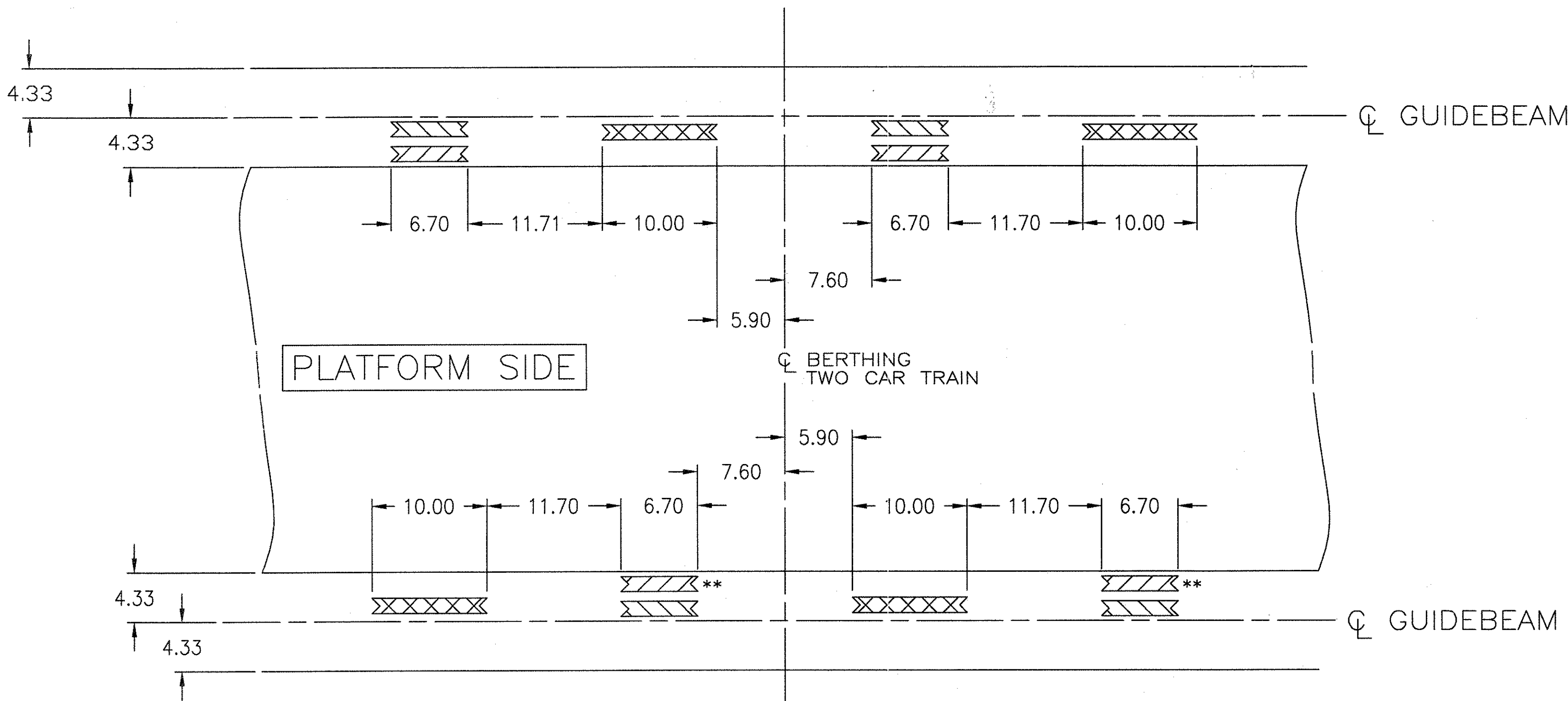
ANTENNA CURRENT 40 TURNS, 142 MA RMS FUNDAMENTAL +0/-10%.

NOTES:

1. ALL DIMENSIONS IN FEET.

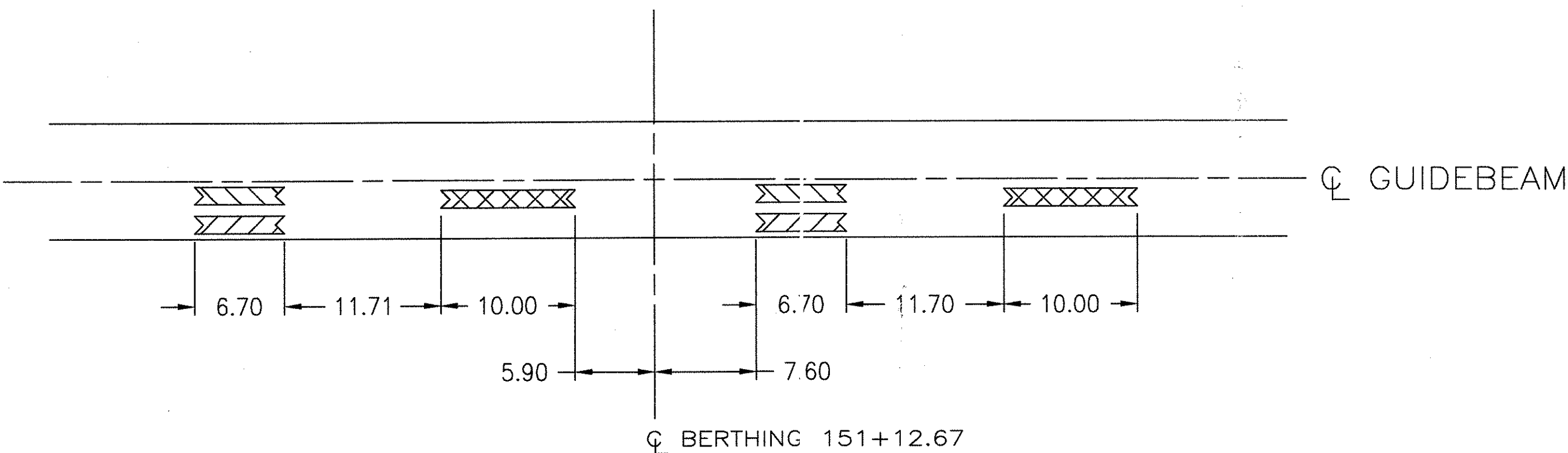
STATION * ANTENNA LOCATIONS (PLAN VIEW)

[* EXCEPT FOR STATIONS B AND D SOUTH GUIDEWAY GRAPHICS ANTENNA ONLY, SEE SHEETS 5 AND 6.]



MAINTENANCE AREA

DEPARTURE TEST ANTENNA CONFIGURATION



WAYSIDE

	O'S	1'S
=====	7992 Hz	5328 Hz
=====	9544 Hz	6362 Hz
=====	8880 Hz	5920 Hz

DOOR/GRAPHICS ANTENNA CURRENT SINE WAVE 350 MA RMS FUNDAMENTAL +0/- 10%

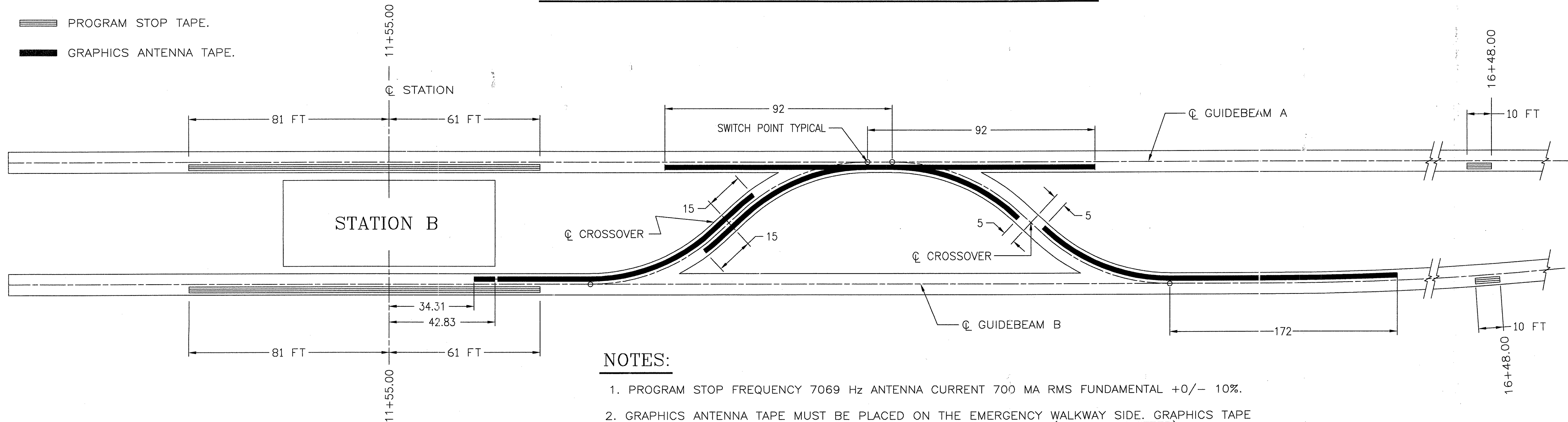
** GRAPHIC ANTENNA NOT USED FOR STATION B SOUTH

TCN HOAB-B2010 D. 7DS776-A 1		SIGNATURES ON FILE TCN-HOAB-B2010 WR-1030294 ATO/GND COLLECTOR SHOES ADDED [4] E.OLCZAK 1-24-02 J.CARNEVALE		SIGNATURES ON FILE TCN-HOAB-B20162 ECN 60220 BERTHING WAS 151+07.035 ADDED ** ADDED ** AND RELATED NOTE SEE SHTS 1, 5, 9, 11 THRU 24 & 29 FOR CHANGES F. BELMARES 3-30-04 R. BURNETT J.CARNEVALE		SIGNATURES ON FILE TCN HOAB-B2065 WR 2001346 SHEETS 1,4,5,7 & 33 REVISED PER AS BUILT CONDITIONS P. CARSON 7/31/05 A. ROMEO J. CARNEVALE		THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF BOMBARDIER INC. OR ITS SUBSIDIARIES. THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION. THE REPRODUCTION, DISTRIBUTION, UTILIZATION OR THE COMMUNICATION OF THIS DOCUMENT OR ANY PART THEREOF, WITHOUT EXPRESS AUTHORIZATION IS STRICTLY PROHIBITED. OFFENDERS WILL BE HELD LIABLE FOR THE PAYMENT OF DAMAGES.		GEOMETRIC CHARACTERISTIC SYMBOLS FLATNESS STRAIGHTNESS ROUNDNESS (CIRCULARITY) CYLINDRICITY PROFILE OF ANY LINE PROFILE OF ANY SURFACE PARALLELISM PERPENDICULARITY (SQUARENESS) ANGULARITY RUNOUT TRUE POSITION CONCENTRICITY SYMMETRY MAXIMUM MATERIAL CONDITION (MMC) REGARDLESS OF FEATURE SIZE		DFTM. E.OLCZAK CHKR. ENGRG. C.ROBERTS MFG. APPD. DFTG. SUPV. J.CARNEVALE		DATE 9-17-01 TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2 CAR ORIENTATION AND CAR/WAYSIDE ANTENNAS DIMENSIONS IN FEET SIZE D SCALE NTS WT. DWG. NO. 6D60467 SHEET 4 REV. 9		BOMBARDIER	
------------------------------------	--	---	--	---	--	--	--	---	--	--	--	--	--	--	--	------------	--

PROGRAM STOP AND WALKWAY SIDE GRAPHICS ANTENNA

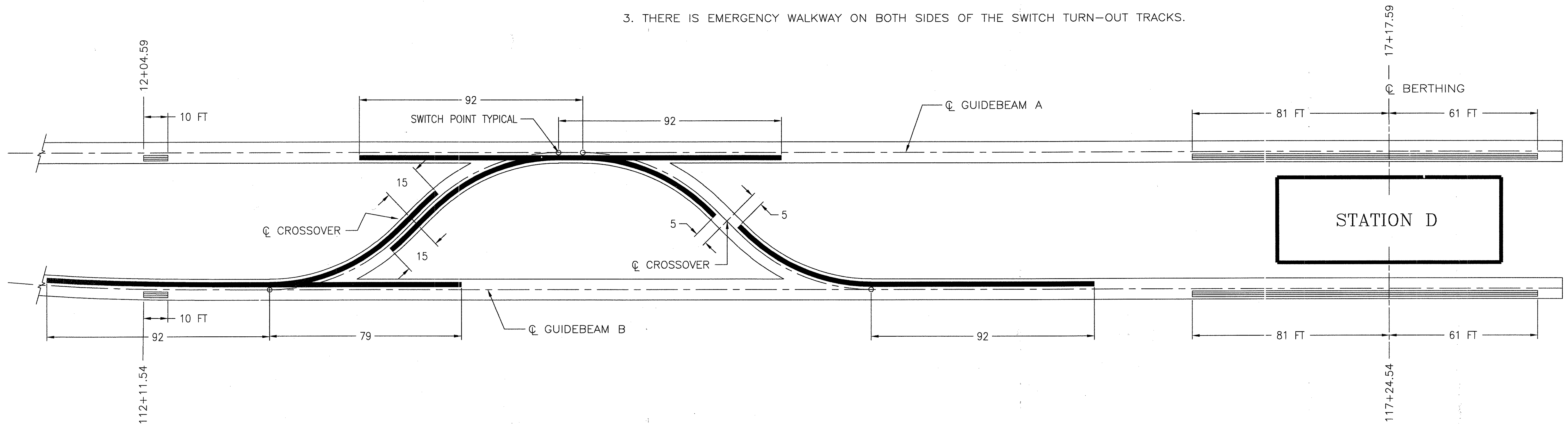
PROGRAM STOP TAPE.

GRAPHICS ANTENNA TAPE.



NOTES:

1. PROGRAM STOP FREQUENCY 7069 Hz ANTENNA CURRENT 700 MA RMS FUNDAMENTAL +0/- 10%.
2. GRAPHICS ANTENNA TAPE MUST BE PLACED ON THE EMERGENCY WALKWAY SIDE. GRAPHICS TAPE MUST BE WIRED SO IF ONE SECTION FAILS, ALL SECTIONS FAIL (ONE TRANSMITTER).
3. THERE IS EMERGENCY WALKWAY ON BOTH SIDES OF THE SWITCH TURN-OUT TRACKS.



TCN HOAB-B2010	1	SIGNATURES ON FILE	3	TCN HOAB-B2010	7	SIGNATURES ON FILE	9
D. 7DS776-A	CHANGE	TCN HOAB-B2010	ECN-42023	TCN HOAB-B2010	ECN-60220	TCN HOAB-B2065	WR 2001346
		GRAPHICS ANTENNA		REVISED ANTENNA		SHEETS 1, 4, 9, 11	THRU 24 & 29 FOR
		BETWEEN SWITCH POINTS		LAYOUT		CHANGES	
		ON GUIDEBEAM "B" AT		SEE SHTS 1, 4, 9, 11			
		STATIONS "B" AND D		THRU 24 & 29 FOR			
		DELETED		CHANGES			
		CENTERLINE STA "D"		F. BELMARES 3-30-04			
		WAS 17+17.28 AND		R. BURNETT			
		17+24.22		J. CARNEVALE			
		PROGRAM STOP TAPE					
		12+04.59 WAS 12+04.28					
		PROGRAM STOP TAPE					
		112+11.54 WAS 112+11.22					
		E. OLCZAK 5-20-02					
		C. CHATHAM					
		J. CARNEVALE					

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GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	—
STRAIGHTNESS	—
ROUNDNESS (CIRCULARITY)	—
CYLINDRICITY	—
PROFILE OF ANY LINE	—
PROFILE OF ANY SURFACE	—
PARALLELISM	—
PERPENDICULARITY (SQUARENESS)	—
ANGULARITY	—
RUNOUT	—
TRUE POSITION	—
CONCENTRICITY	—
SYMMETRY	—
MAXIMUM MATERIAL CONDITION (MMC)	—
REGARDLESS OF FEATURE SIZE	—

DFTM.	E. OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C. ROBERTS		
MFG.			
APPD.			
DFTG. & UPV.	J. CARNEVALE		

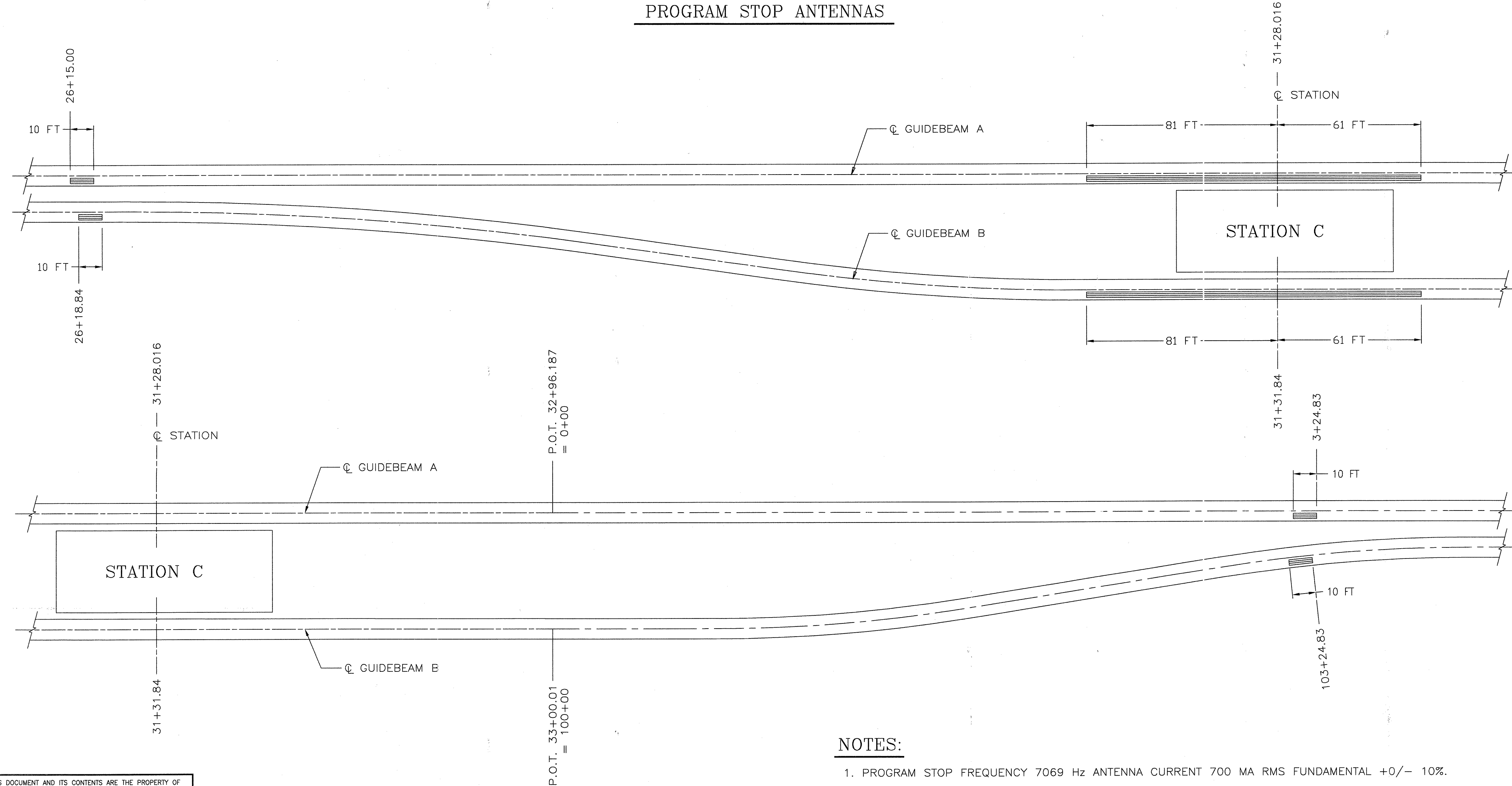
BOMBARDIER			
TITLE			
GEORGE BUSH INT, AIRPORT/HOUSTON PHASE 2			
PROGRAM STOP AND SWITCH GRAPHICS TAPES			
DIMENSIONS IN FEET			
SIZE	D	DWG. NO.	6D60467
SCALE		WT.	
SHEET	5	REV.	9

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TCN HOAB-B2010
D. 7DS776-A
1
CHANGE

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AutoCAD
SIGNATURES ON FILE
TCN HOAB-B2065
WR 2001346
NO DRAWING CHANGE TO THIS SHEET. FORMAT CHANGE ONLY
P. CARSON 7/31/05
A. ROMEO
J. CARNEVALE



- NOTES:**
- PROGRAM STOP FREQUENCY 7069 Hz ANTENNA CURRENT 700 MA RMS FUNDAMENTAL +0/- 10%.

GEOMETRIC CHARACTERISTIC SYMBOLS		DFTM.	DATE		BOMBARDIER		
FLATNESS	□	E.OLC ZAK	9-17-01				
STRAIGHTNESS	—	CHKR.			TITLE GEORGE BUSH INT, AIRPORT/HOUSTON PHASE 2 PROGRAM STOP AND SWITCH GRAPHICS TAPES		
ROUNDNESS (CIRCULARITY)	○	ENGRG.					
CYLINDRICITY	⊘	C.ROBERTS			DIMENSIONS IN FEET		
PROFILE OF ANY LINE	⌒	MFG.					
PROFILE OF ANY SURFACE	⌒	APPD.			SIZE	DWG. NO.	REV.
PARALLELISM	∥	DFTG. :UPV.	402		D	6D60467	9
PERPENDICULARITY (SQUARENESS)	⊥	J.CARNEVALE			SCALE	WT.	SHEET
ANGULARITY	∠						6
RUNOUT	⌒						
TRUE POSITION	⊕						
CONCENTRICITY	⊙						
SYMMETRY	⌒						
MAXIMUM MATERIAL CONDITION (MMC)	Ⓜ						
REGARDLESS OF FEATURE SIZE	Ⓜ						

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TCN HOAB-B2010
D. 7DS776-A
1
CHANGE
SIGNATURES ON FILE
TCN-HOAB-B2010
ECN-42935
5
PHASE 1 ADDED TO
SPEED CODE ASSIGNMENTS
& CODES 1~9 DELETED
TRACK SIG FREQUENCIES
LINE SPACES ADDED
E.OLCZAK 7-14-03
R.BURNETT
J.CARNEVALE
SIGNATURES ON FILE
TCN HOAB-B2065
WR 2001346
9
SHEETS 1,4,5,7 & 33
REVISED PER AS BUILT
CONDITIONS
P. CARSON 7/31/05
A. ROMEO
J. CARNEVALE

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VEHICLE TO WAYSIDE DOOR CONTROL CODES		
CODE NO.	CODE DESCRIPTION	BINARY—HEXADECIMAL
1	SMOKE	100000—20
2	HALT	100001—21
3	SMOKE AND HALT	100011—23
4	OPEN DOORS	100101—25
5	NO SMOKE, NO HALT	100111—27
6	CLOSE DOORS	101000—28
7	SPARE	101001—29
8	SPARE	101011—2B
9	RECYCLE DOORS	101111—2F

100 MA RMS NOT OCCUPIED ±10%
200 MA RMS OCCUPIED ±10%
VEHICLE THRESHOLD 130 MA RMS DIFFERENTIAL.

TRACK SIGNAL FREQUENCIES		
FREQUENCY PAIR	I'S	O'S
A	5184 Hz	7776 Hz
B	5842 Hz	8763 Hz
C	6624 Hz	9936 Hz
F	5600 Hz	8400 Hz

SPEED CODE ASSIGNMENTS		
CODE DESCRIPTION	BINARY—HEXADECIMAL	PHASE 1
ZERO MPH LIMIT (ZERO SPEED CODE)	100000—20	100000—20
ZERO MPH LIMIT, PERFORM REVERSE	100001—21	100001—21
8.0 MPH LIMIT	101000—28	N/A
10.0 MPH LIMIT WITH PROPULSION DISABLED	101001—29	101001—29
10.0 MPH LIMIT	100101—25	100101—25
17.0 MPH LIMIT	100011—23	100011—23
22.0 MPH LIMIT	101011—2B	101011—2B
29.0 MPH LIMIT	100111—27	100111—27
33.0 MPH LIMIT	101111—2F	101111—2F

CODE BITS ARE TRANSMITTED SEQUENTIALLY IN TIME FROM LEFT TO RIGHT.

DOOR AND GRAPHIC CODES MATRIX										
		DOOR CODES								
		DOOR OPEN/STATION ID			DOOR OPEN/ROUTE		DOOR CLOSE/NEXT STATION ID		SPECIAL	
		1	2	3	4	5	6	7	8	9
		1	2	3	4	5	6	7	8	9
GRAPHIC CODES	1	A					A			CLR RTE
	2	B					B			
	3	C					C			
	4	D					D			
	5									
	6									
	7									
	8									
	9			OOS		NRC			OOS	

MATRIX NOTES:

- 1. THOSE MATRIX POSITIONS NOT CONTAINING AN ENTRY ARE SPARE.
- 2. OOS — OUT OF SERVICE
- 3. CLR RTE — CLEARS PRESENTLY STORED ROUTE ON TRAINS.
- 4. NRC — DOOR OPEN/NO ROUTE CHANGE COMMAND.

WAYSIDE TO VEHICLE: DOOR CODES		
CODE NO.	DOOR FUNCTION	BINARY—HEXADECIMAL
1	OPEN DOORS	100000—20
2	OPEN DOORS	100001—21
3	OPEN DOORS	100011—23
4	OPEN DOORS	100101—25
5	OPEN DOORS	100111—27
6	CLOSE DOORS	101000—28
7	CLOSE DOORS	101001—29
8	CLOSE DOORS	101011—2B
9	RESERVED/SPECIAL	101111—2F

THE DOORS ANTENNA TAPE CONTROLS THE OPENING OF THE DOORS. THE SIDE OF THE TRAIN WHERE THE DOORS OPEN IS THE SIDE WHERE THE DOORS ANTENNA TAPE RESIDES.

WAYSIDE TO VEHICLE: GRAPHICS CODES		
CODE NO.		BINARY—HEXADECIMAL
1		100000—20
2		100001—21
3		100011—23
4		100101—25
5		100111—27
6		101000—28
7		101001—29
8		101011—2B
9		101111—2F

WAYSIDE TO VEHICLE COMMANDS SENT VIA RADIO		
CODE NO.		CODE DESCRIPTION
1		RESET COMMAND
2		SPARE

WAYSIDE CROSSOVER GRAPHICS CODE 55H

GEALOC WORST CASE STOPPING (WCS) TIME	
TRAIN VELOCITY	WCS TIME
8 MPH	9 SECONDS
10 MPH	11 SECONDS
17 MPH	15 SECONDS
22 MPH	18 SECONDS
29 MPH	22 SECONDS
33 MPH	24 SECONDS

GEALOC WCS TIME NOTES:

- 1. TRAIN IS ASSUMED TO BE AT OVERSPEED LIMIT.
- 2. GRADE IS ASSUMED TO BE AT —3.538% THROUGHOUT.
- 3. DECELERATION RATE IS 2.0 MPH/S.
- 4. JERK RATE IS 0.88 MPH/S².
- 5. THE WCS TIME IS THE ACTUAL SAFEPRO TIME PLUS 25%, ROUNDED UP TO THE NEXT WHOLE NUMBER. SAFEPRO USES ALL WORST CASE SYSTEM AND VEHICLE PARAMETERS.

GEOMETRIC CHARACTERISTIC SYMBOLS

FLATNESS

STRAIGHTNESS

ROUNDNESS (CIRCULARITY)

CYLINDRICITY

PROFILE OF ANY LINE

PROFILE OF ANY SURFACE

PARALLELISM

PERPENDICULARITY (SQUARENESS)

ANGULARITY

RUNOUT

TRUE POSITION

CONCENTRICITY

SYMMETRY

MAXIMUM MATERIAL CONDITION (MMC)

REGARDLESS OF FEATURE SIZE

DATE

9-17-01

CHKR.

ENGRG.

C.ROBERTS

MFG.

APPD.

DFTG. SUPV.

J.CARNEVALE

BOMBARDIER

TITLE

GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2

VEHICLE/WAYSIDE CODES

DIMENSIONS IN FEET

SIZE

D

SCALE

DWG. NO.

6D60467

REV.

9

SHEET

7

GUIDEWAY A	
CURVE A1	CURVE A2
TA = 6'-34'43"	TA = 6'-34'43"
R = 1400.00'	R = 1415.50'
LC = 120.749'	LC = 122.529'
LS1 = 40.00'	LS1 = 40.00'
LS2 = 40.00'	LS2 = 40.00'
S.E. = 0.00%	S.E. = 0.00%

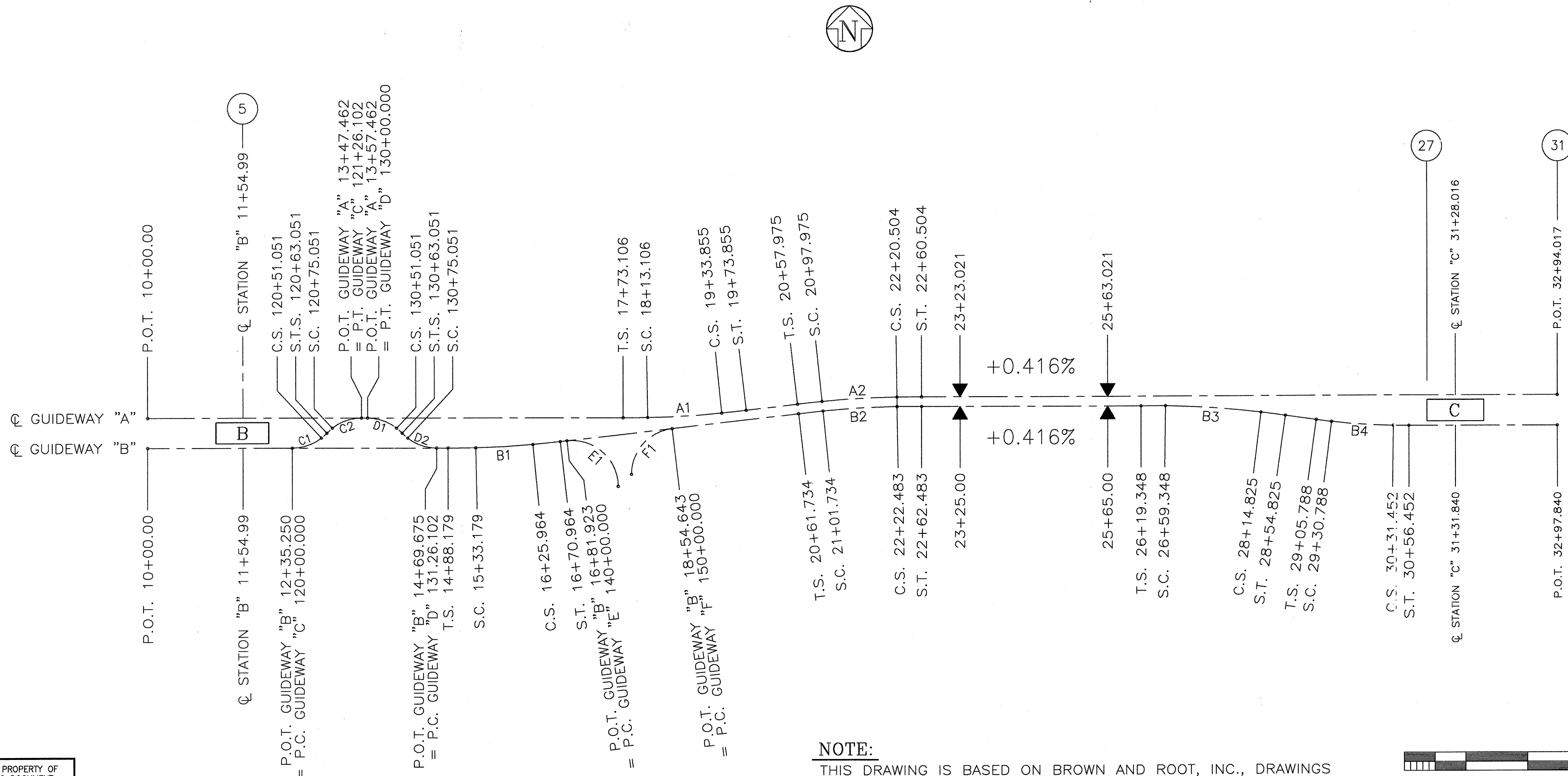
GUIDEWAY B			
CURVE B1	CURVE B2	CURVE B3	CURVE B4
TA = 6'-34'43"	TA = 6'-34'43"	TA = 8'-00'00"	TA = 8'-00'00"
R = 1200.00'	R = 1400.00'	R = 1400.00'	R = 900.00'
LC = 92.785'	LC = 120.749'	LC = 155.477'	LC = 100.664'
LS1 = 45.00'	LS1 = 40.00'	LS1 = 40.00'	LS1 = 25.00'
LS2 = 45.00'	LS2 = 40.00'	LS2 = 40.00'	LS2 = 25.00'
S.E. = 0.00%	S.E. = 0.00%	S.E. = 0.00%	S.E. = 0.00%

GUIDEWAY C	
CURVE C1	CURVE C2
TA = 4'-35'01"	TA = 4'-35'01"
R = 75.00'	R = 75.00'
LC = 51.05'	LC = 51.05'
LS1 = 0.00'	LS1 = 12.00'
LS2 = 12.00'	LS2 = 0.00'
S.E. = 0.00%	S.E. = 0.00%

GUIDEWAY D	
CURVE D1	CURVE D2
TA = 4'-35'01"	TA = 4'-35'01"
R = 75.00'	R = 75.00'
LC = 51.05'	LC = 51.05'
LS1 = 0.00'	LS1 = 12.00'
LS2 = 12.00'	LS2 = 0.00'
S.E. = 0.00%	S.E. = 0.00%

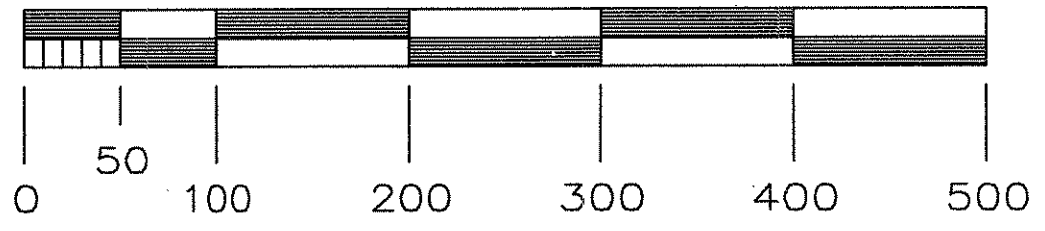
GUIDEWAY E
CURVE E1
TA = 96'-34'43"
R = 75.00'
LC = 126.421'
LS1 = 0.00'
LS2 = 0.00'
S.E. = 0.00%

GUIDEWAY F
CURVE F2
TA = 83'-25'17"
R = 75.00'
LC = 109.198'
LS1 = 0.00'
LS2 = 0.00'
S.E. = 0.00%



NOTE:

THIS DRAWING IS BASED ON BROWN AND ROOT, INC., DRAWINGS 5D80719, 5D80720 AND 5D80721, ALL DATED JULY 8, 1997.



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AutoCAD

TCN HOAB-B2010
D. 7DS776-A
1

CHANGE

SIGNATURES ON FILE

TCN HOAB-B2065
WR 2001346
9

NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY
F. CARSON 7/31/05
A. ROMEO
J. CARNEVALE

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. SUPV.	J.CARNEVALE		

BOMBARDIER

TITLE
GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2
SYSTEM PLAN AND CURVE DATA (PHASE 1)

DIMENSIONS IN FEET

SIZE
D

SCALE 1:100

DWG. NO.
6D60467

REV.
9

SHEET
8

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AutoCAD

TCN HOAB-B2010	1	CHANGE	7DS776-A	1	SIGNATURES ON FILE	TCN-HOAB-B2010	2	WR-1030294	CURVE A4 DATA	"R" WAS 765.50'	"LC" WAS 92.01'	E.OJCZAK 1-24-02	J.GRADICH	J.CARNEVALE	SIGNATURES ON FILE	TCN-HOAB-B2010	3	ECN-42023	GUIDEWAY AND CURVE DATA REVISED PER LATEST CONFIGURATION	P.O.T. GW "A" 32+96.00 WAS 32+96.187	P.O.T. GW "B" 32+96.82 WAS 32+96.001	E.OJCZAK 5-20-02	C.CHATHAM	J.CARNEVALE	SIGNATURES ON FILE	TCN-HOAB-B2010	7	ECN 60220	+3.0673% WAS	+3.538%	STA. 104+70 WAS	105+05	STA. 4+70 WAS 5+05	SEE SHTS 1, 4, 5, 11 THRU 24 & 29 FOR CHANGES	F. BELMARES 4-01-04	R. BURNETT	J.CARNEVALE	SIGNATURES ON FILE	TCN HOAB-B2065	9	WR 2001346	NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY	P. CARSON 7/31/05	A. ROMEO	J. CARNEVALE
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GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	□
STRAIGHTNESS	□
ROUNDNESS (CIRCULARITY)	○
CYLINDRICITY	○
PROFILE OF ANY LINE	—
PROFILE OF ANY SURFACE	—
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	⊥
ANGULARITY	∠
RUNOUT	⊕
TRUE POSITION	⊕
CONCENTRICITY	⊕
SYMMETRY	⊕
MAXIMUM MATERIAL CONDITION (MMC)	⊕
REGARDLESS OF FEATURE SIZE	⊕

DFTM.	E.OJCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. SUPV.	J.CARNEVALE		

BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
SYSTEM PLAN AND CURVE DATA			
DIMENSIONS IN FEET			
SIZE	D	DWG. NO.	6D60467
SCALE	1:80	WT.	
SHEET	9	REV.	9

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TCN HOAB-B2010		1	TCN HOAB-B2010		5	TCN HOAB-B2010		6	TCN HOAB-B2010		7	TCN HOAB-B2010		9
D. 7DS776-A		CHANGE	TCN-HOAB-B2010		ECN-42935	THIS SHEET ADDED		ECN 60115	REV'D PER ENG MARKED PRINT		ECN 60220	SEE OTHER SHEETS FOR CHNG'S		WR 2001346
E. OLZAK 7-14-03		R. BURNETT J. CARNEVALE	E. OLZAK 7-14-03		R. BURNETT J. CARNEVALE	SIGNATURES ON FILE		STA. 14+51.50 WAS 14+47.50	ADDED STA. 31+71.00		ADDED M SYMBOL	ADDED STA. 31+75.00		ADDED M SYMBOL
F. BELMARES 4-01-04		R. BURNETT J. CARNEVALE	F. BELMARES 4-01-04		R. BURNETT J. CARNEVALE	SIGNATURES ON FILE		SEE SHTS 1, 4, 5, 9, 11	11B THRU 24 & 29		FOR CHANGES	F. BELMARES 4-01-04		R. BURNETT J. CARNEVALE
G. CARSON 7/31/05		A. ROMEO	G. CARSON 7/31/05		A. ROMEO	SIGNATURES ON FILE		NO DRAWING CHANGE TO THIS SHEET. FORMAT CHANGE ONLY	NO DRAWING CHANGE TO THIS SHEET. FORMAT CHANGE ONLY			NO DRAWING CHANGE TO THIS SHEET. FORMAT CHANGE ONLY		

J. CARNEVALE

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AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DATE	
CHKR.	
ENGRG.	
MFG.	
APPD.	
DFTG. :UPV.	

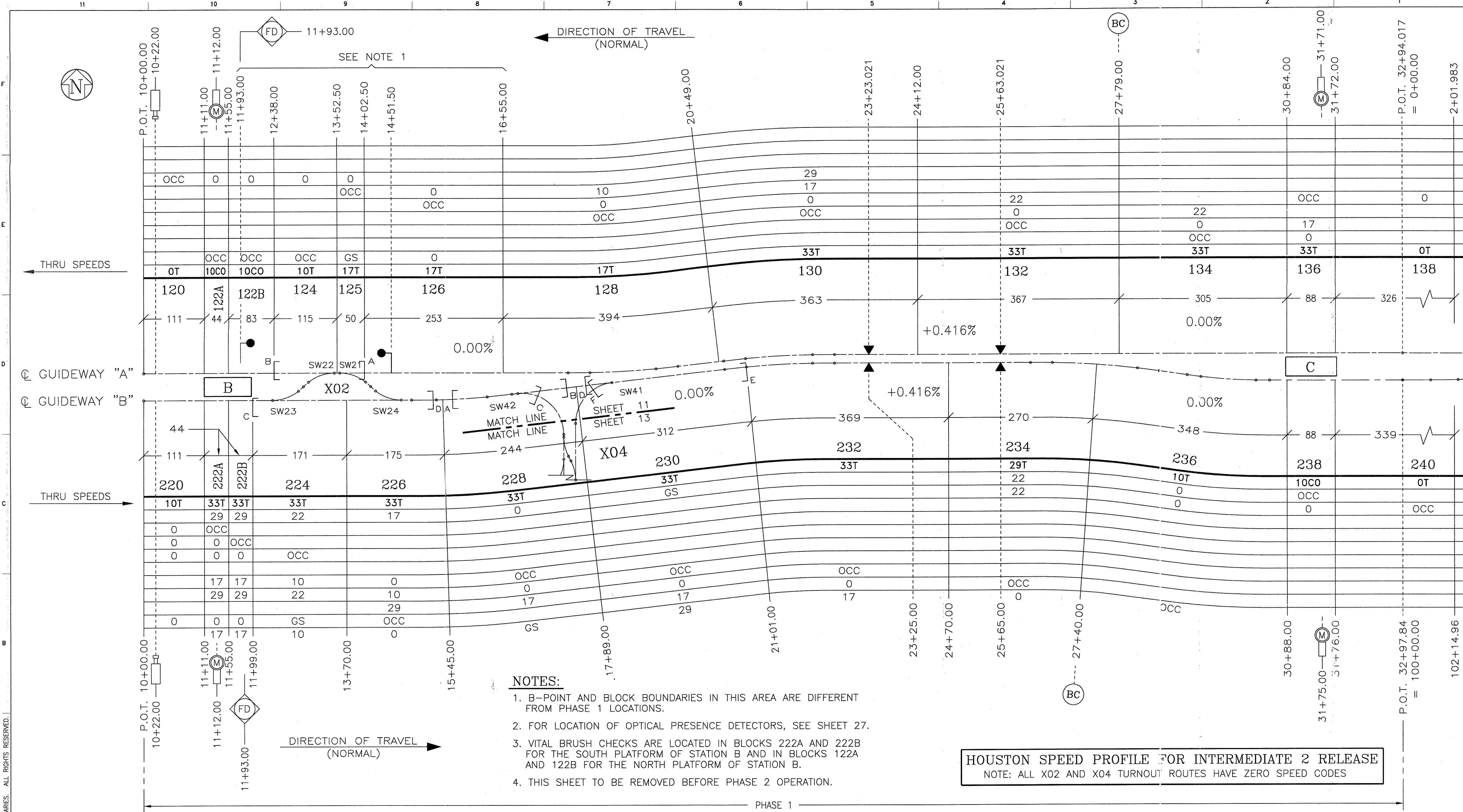
BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
SPEED PROFILE NORMAL DIRECTION			
DIMENSIONS IN FEET			
SIZE D	DWG. NO. 6D60467	REV. 9	
SCALE 1:80	WT.	SHEET 11A	

HOUSTON SPEED PROFILE FOR INTERMEDIATE 2 RELEASE

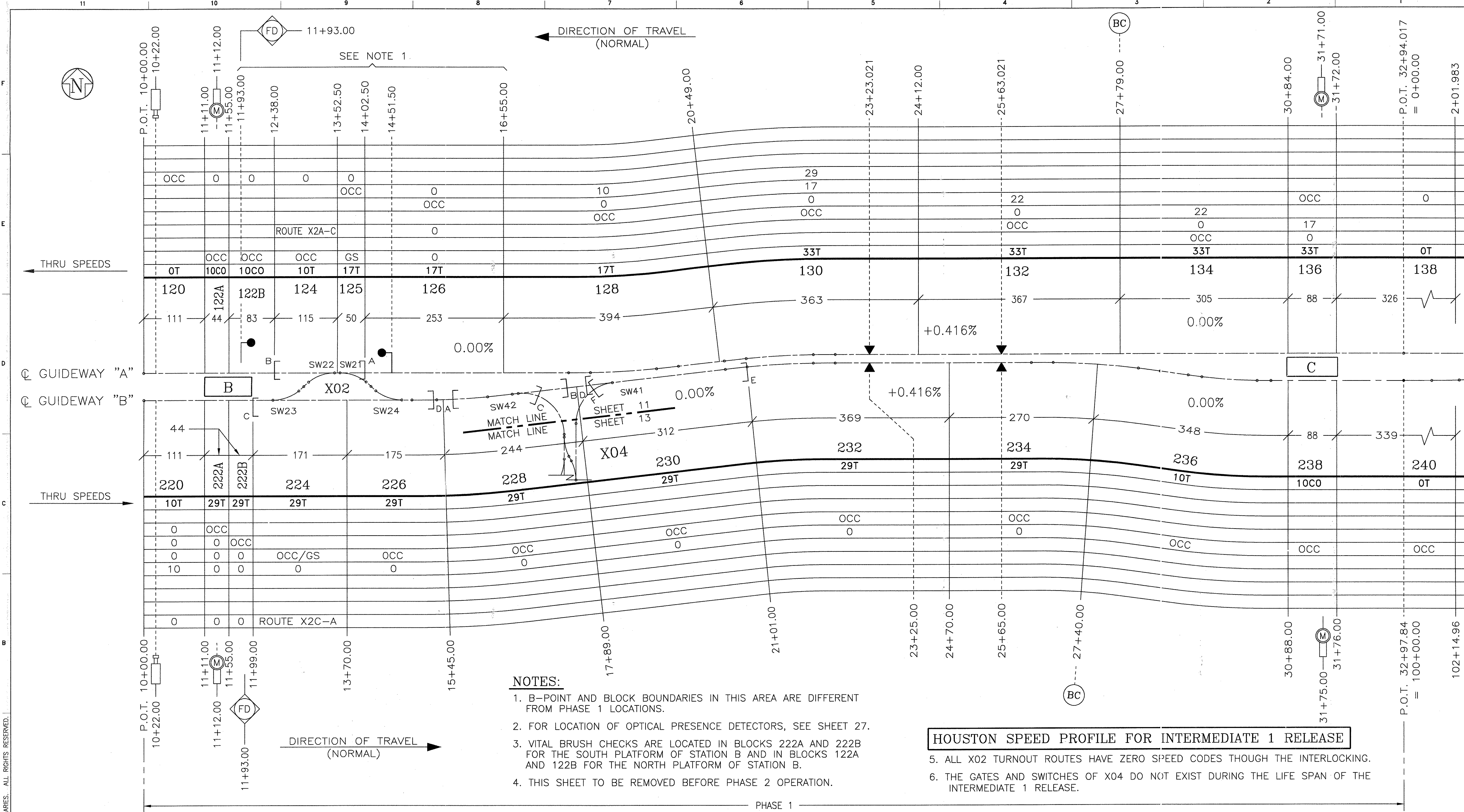
NOTE: ALL X02 AND X04 TURNOUT ROUTES HAVE ZERO SPEED CODES

NOTES:

1. B-POINT AND BLOCK BOUNDARIES IN THIS AREA ARE DIFFERENT FROM PHASE 1 LOCATIONS.
2. FOR LOCATION OF OPTICAL PRESENCE DETECTORS, SEE SHEET 27.
3. VITAL BRUSH CHECKS ARE LOCATED IN BLOCKS 222A AND 222B FOR THE SOUTH PLATFORM OF STATION B AND IN BLOCKS 122A AND 122B FOR THE NORTH PLATFORM OF STATION B.
4. THIS SHEET TO BE REMOVED BEFORE PHASE 2 OPERATION.



TCN	CHANGE	6
D.		
IT.		
TCN HOAB-B2010		
ECN 60115		
THIS SHEET ADDED		
SEE OTHER SHEETS		
FOR CHG'S		
J.STRAMAT 10/06/03		
R.BURNETT		
J.CARNEVALE		
SIGNATURES ON FILE		
TCN-HOAB-Z9162		
ECN 60220		
STA. 14+51.50 WAS		
14+47.50		
ADDED STA. 31+71.00		
ADDED SYMBOL M		
ADDED STA. 31+75.00		
ADDED SYMBOL M		
SEE SHTS 1, 4, 5, 9,		
11, 11A, 12 THRU 24		
& 29 FOR CHANGES		
F. BELMARES 4-01-04		
R. BURNETT		
J.CARNEVALE		
SIGNATURES ON FILE		
TCN HOAB-B2065		
WR 2001346		
NO DRAWING CHANGE TO		
THIS SHEET, FORMAT		
CHANGE ONLY		
P. CARSON 7/31/05		
A. ROMEO		
J. CARNEVALE		



TCN	CHANGE	6
D.		
IT.		
TCN HOAB-B2010		
ECN 60115		
THIS SHEET ADDED		
SEE OTHER SHEETS		
FOR CHG'S		
J.STRAMAT 10/06/03		
R.BURNETT		
J.CARNEVALE		
SIGNATURES ON FILE		
TCN-HOAB-Z9162		
ECN 60220		
STA. 14+51.50 WAS		
14+47.50		
ADDED STA. 31+71.00		
ADDED SYMBOL M		
ADDED STA. 31+75.00		
ADDED SYMBOL M		
SEE SHTS 1, 4, 5, 9,		
11, 11A, 12 THRU 24		
& 29 FOR CHANGES		
F. BELMARES 4-01-04		
R. BURNETT		
J.CARNEVALE		
SIGNATURES ON FILE		
TCN HOAB-B2065		
WR 2001346		
NO DRAWING CHANGE TO		
THIS SHEET, FORMAT		
CHANGE ONLY		
P. CARSON 7/31/05		
A. ROMEO		
J. CARNEVALE		

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DATE	
CHKR.	
ENGRG.	
MFG.	
APPD.	
DFTG. JUPV.	

BOMBARDIER	
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2	
SPEED PROFILE NORMAL DIRECTION	
DIMENSIONS IN FEET	
SIZE D	DWG. NO. 6D60467
SCALE 1:80	WT.
SHEET 11B	REV. 9

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TCN HOAB-B2010	1
D. 7DS776-A	CHANGE
IT.	4
SIGNATURES ON FILE	(R)
TCN-HOAB-Z9162	7
ECN 60220	
STA. 4+70 WAS 5+05	
STA. 104+70 WAS 105+05	
+3.0673% WAS	
+3.538%	
STA. 17+83.31 WAS 17+84.49	
STA. 117+90.35 WAS 117+91.45	
SEE SHTS 1, 5, 9, 11 THRU 11B, 13 THRU 24 & 29 FOR CHANGES	
F. BELMARES 4-01-04	
R. BURNETT	
J. CARNEVALE	(R)
SIGNATURES ON FILE	8
TCN-HOAB-B2010	
ECN-60497	
STA. 2+00.983 WAS 2+01.983	
STA. 5+46.983 WAS 5+47.983	
STA. 8+91.393 WAS 8+93.983	
BIEC/SK 12-11-04	
R. BURNETT	
J. CARNEVALE	(R)
SIGNATURES ON FILE	9
TCN HOAB-B2065	
WR 2001346	
NO DRAINING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY	
P. CARSON 7/31/05	
A. ROMEO	
J. CARNEVALE	

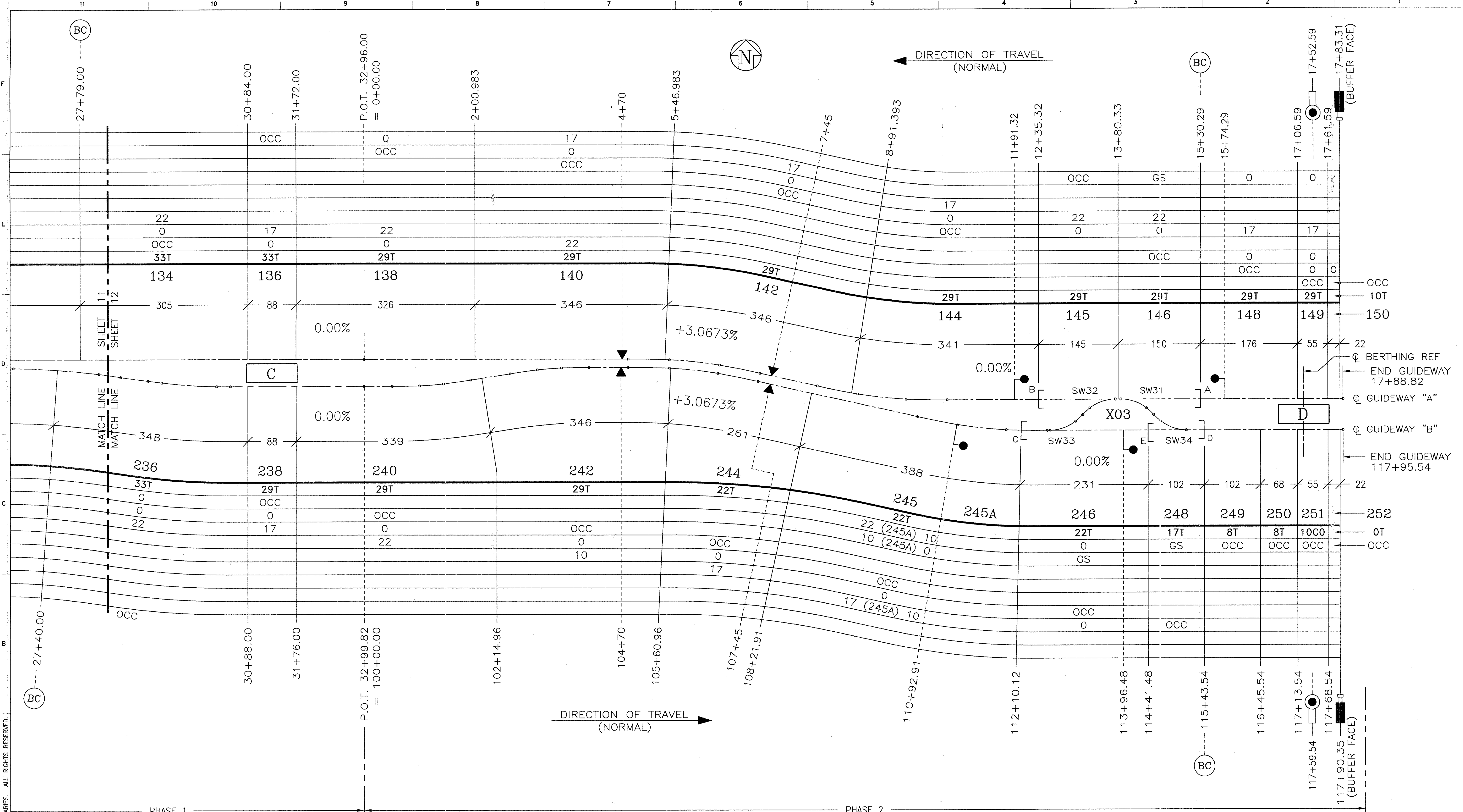
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AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

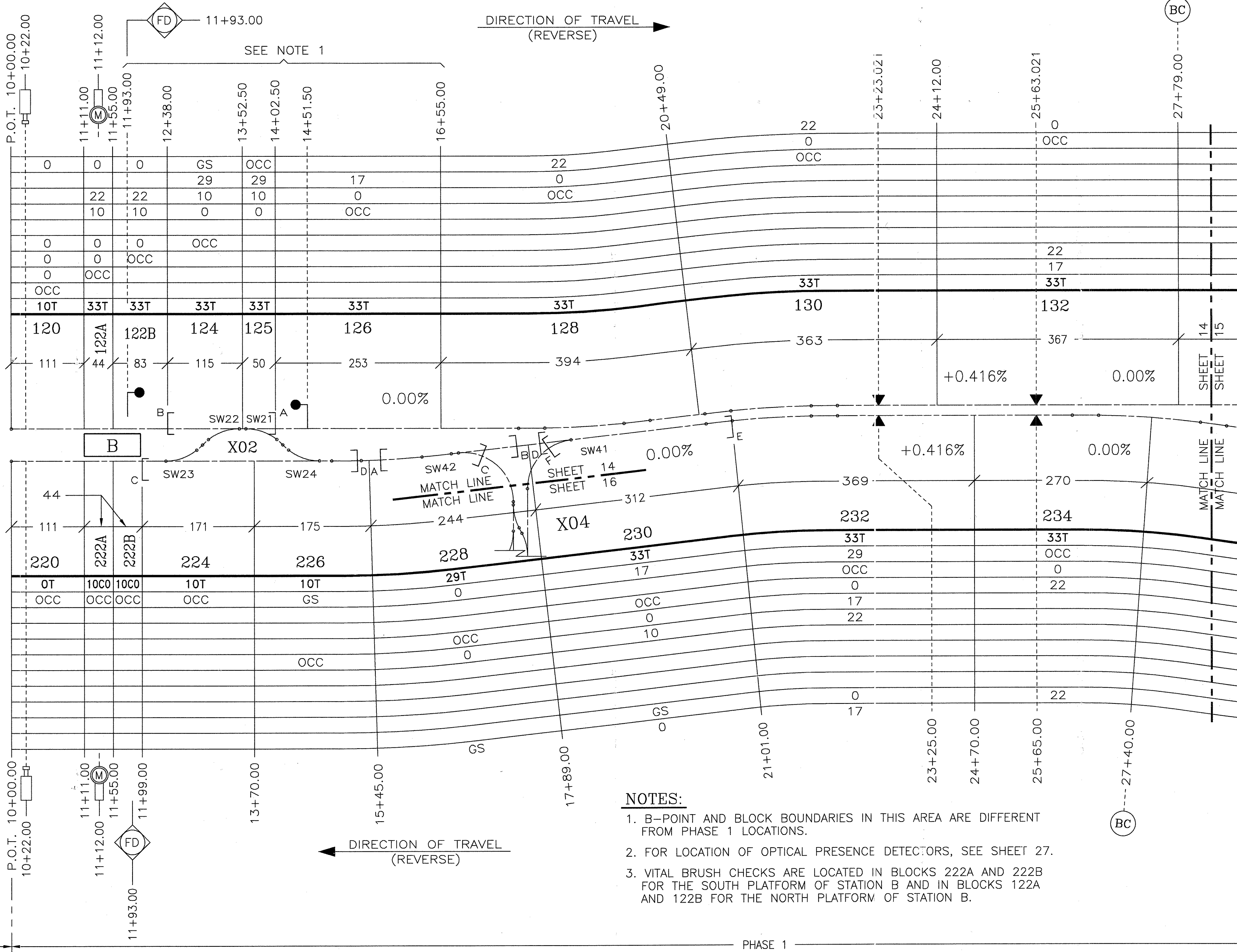
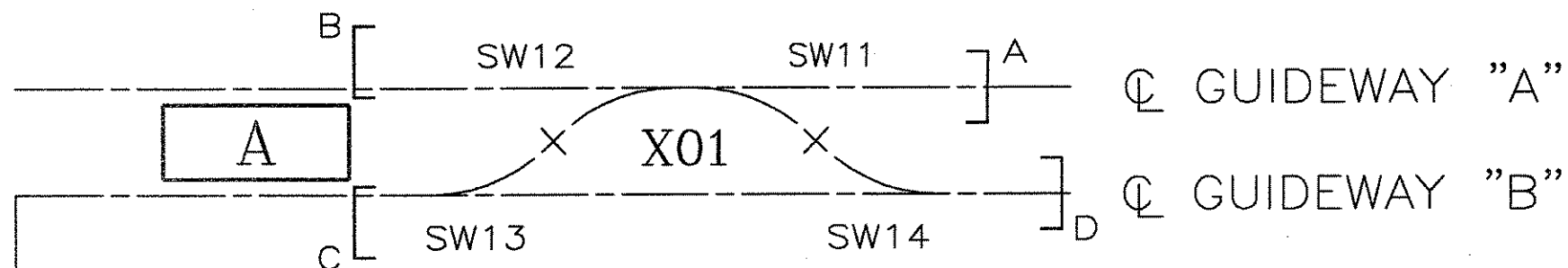
DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. SUPV.	J. CARNEVALE		

BOMBARDIER	
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2	
SPEED PROFILE NORMAL DIRECTION	
DIMENSIONS IN FEET	
SIZE D	DWG. NO. 6D60467
SCALE 1:80	WT.
SHEET 12	REV. 9



FOR SIMULATION USE ONLY	
GUIDEWAY "A"	BLOCK
2+01.983 = 34+96.00	138/140
5+47.983 = 38+42.00	140/142
8+93.983 = 41+88.00	142/144
12+35.013 = 45+29.03	144/145
13+80.013 = 46+74.03	145/146
15+29.983 = 48+24.00	146/148
17+06.283 = 50+00.30	148/149
17+61.283 = 50+55.30	149/150
17+84.183 = 50+78.20	150 (BUFFER)

FOR SIMULATION USE ONLY	
GUIDEWAY "B"	BLOCK
102+14.96 = 35+12.80	240/242
105+60.96 = 38+58.80	242/244
108+21.91 = 41+19.75	244/245
110+92.91 = 43+90.75	245/246
114+41.16 = 47+39.00	246/248
115+43.22 = 48+41.06	248/249
116+45.22 = 49+43.06	249/250
117+13.22 = 50+11.06	250/251
117+68.22 = 50+66.06	251/252
117+91.13 = 50+88.97	252 (BUFFER)



- NOTES:
- 1. B-POINT AND BLOCK BOUNDARIES IN THIS AREA ARE DIFFERENT FROM PHASE 1 LOCATIONS.
 - 2. FOR LOCATION OF OPTICAL PRESENCE DETECTORS, SEE SHEET 27.
 - 3. VITAL BRUSH CHECKS ARE LOCATED IN BLOCKS 222A AND 222B FOR THE SOUTH PLATFORM OF STATION B AND IN BLOCKS 122A AND 122B FOR THE NORTH PLATFORM OF STATION B.

1

TCN HOAB-B2010

7DS776-A

CHANGE

2

TCN HOAB-B2010

WR-1030294

FLAT TIRE DET (FD)

ADDED

E.OLCZAK 1-24-02

J.GRADICH

J.CARNEVALE

3

TCN HOAB-B2010

ECN-42023

BRUSH COUNTERS (BC)

27+79.00 WAS 30+84.00

27+40.00 WAS 30+88.00

MOVED FROM SHEET 15

NOTES 2 AND 3 ADDED

E.OLCZAK 5-20-02

C.CHATHAM

J.CARNEVALE

4

TCN HOAB-B2010

ECN-42693

SPEED CODES REVISED

BLOCKS 122A-126 AND 220-234

E.OLCZAK 1-21-03

C.CHATHAM

J.CARNEVALE

7

TCN HOAB-B2010

ECN 60220

STA. 14+151.50 WAS 14+147.50

SEE SHTS 1, 4, 5, 9, 11 THRU 13, 15, THRU 24 & 29 FOR CHANGES

F. BELMARES 4-02-04

R. BURNETT

J.CARNEVALE

9

TCN HOAB-B2065

WR 2001346

NO DRAWING CHANGE TO THIS SHEET. FORMAT CHANGE ONLY

P. CARSON 7/31/05

A. ROMEO

J. CARNEVALE

AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS

FLATNESS

STRAIGHTNESS

ROUNDNESS (CIRCULARITY)

CYLINDRICITY

PROFILE OF ANY LINE

PROFILE OF ANY SURFACE

PARALLELISM

PERPENDICULARITY (SQUARENESS)

ANGULARITY

RUNOUT

TRUE POSITION

CONCENTRICITY

SYMMETRY

MAXIMUM MATERIAL CONDITION (MMC)

REGARDLESS OF FEATURE SIZE

DFTM.

E.OLCZAK

CHKR.

ENGRG.

C.ROBERTS

MFG.

APPD.

DFTG. SUPV.

J.CARNEVALE

DATE

9-17-01

TITLE

GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2

SPEED PROFILE REVERSE DIRECTION

DIMENSIONS IN FEET

SCALE 1:80

WT.

DWG. NO.

6D60467

REV.

9

SHEET

14

BOMBARDIER

1

2

3

4

5

6

7

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9

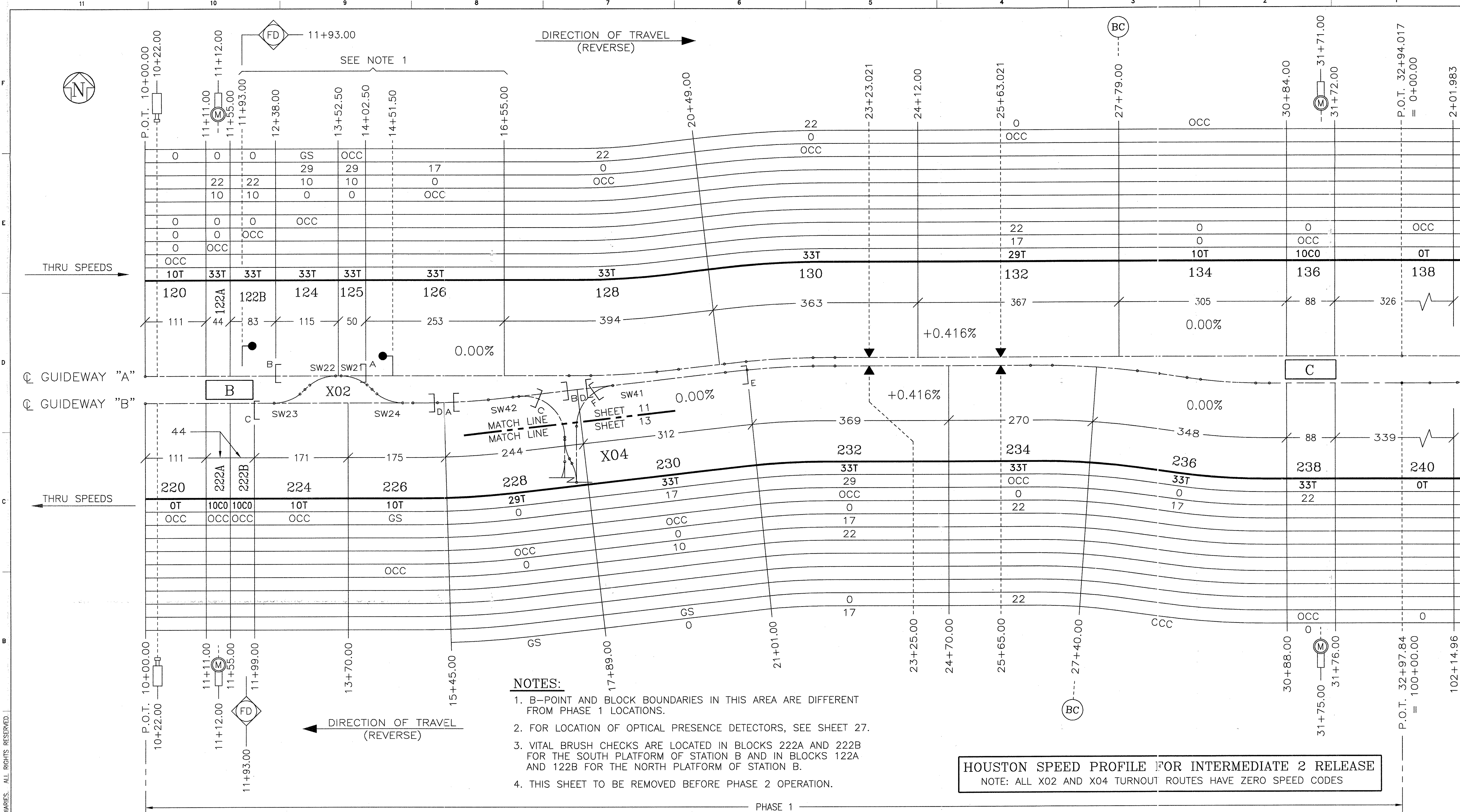
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11

Tue Jul 26 2005 Released by Bombardier Transportation

EDMS

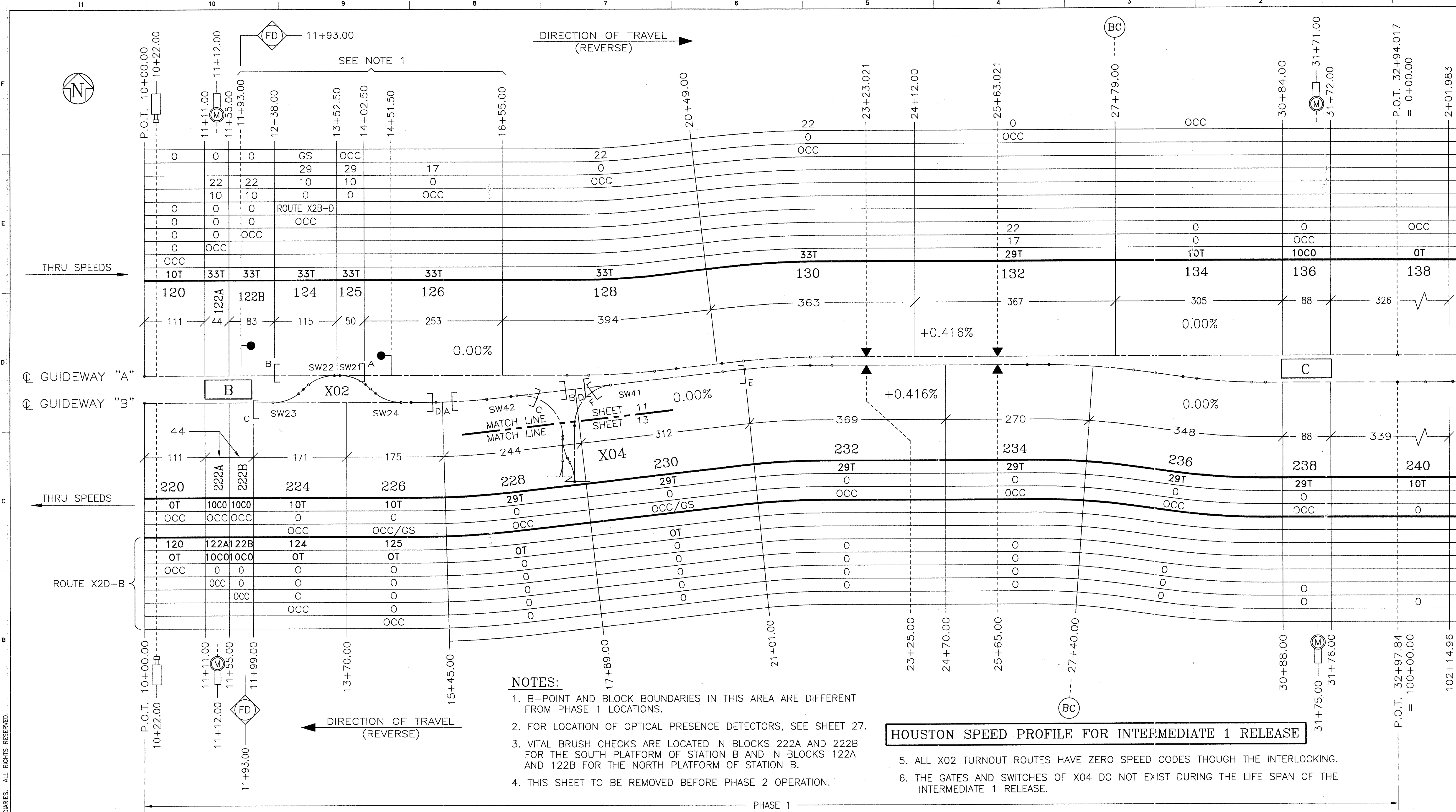
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- NOTES:**
1. B-POINT AND BLOCK BOUNDARIES IN THIS AREA ARE DIFFERENT FROM PHASE 1 LOCATIONS.
 2. FOR LOCATION OF OPTICAL PRESENCE DETECTORS, SEE SHEET 27.
 3. VITAL BRUSH CHECKS ARE LOCATED IN BLOCKS 222A AND 222B FOR THE SOUTH PLATFORM OF STATION B AND IN BLOCKS 122A AND 122B FOR THE NORTH PLATFORM OF STATION B.
 4. THIS SHEET TO BE REMOVED BEFORE PHASE 2 OPERATION.

HOUSTON SPEED PROFILE FOR INTERMEDIATE 2 RELEASE
NOTE: ALL X02 AND X04 TURNOUT ROUTES HAVE ZERO SPEED CODES

TCN D. IT.		CHANGE 1		TCN D. IT.		CHANGE 5		TCN D. IT.		CHANGE 6		TCN D. IT.		CHANGE 7		TCN D. IT.		CHANGE 8		TCN D. IT.		CHANGE 9		TCN D. IT.		CHANGE 10		TCN D. IT.		CHANGE 11		TCN D. IT.		CHANGE 12		TCN D. IT.		CHANGE 13		TCN D. IT.		CHANGE 14		TCN D. IT.		CHANGE 15		TCN D. IT.		CHANGE 16		TCN D. IT.		CHANGE 17		TCN D. IT.		CHANGE 18		TCN D. IT.		CHANGE 19		TCN D. IT.		CHANGE 20		TCN D. IT.		CHANGE 21		TCN D. IT.		CHANGE 22		TCN D. IT.		CHANGE 23		TCN D. IT.		CHANGE 24		TCN D. IT.		CHANGE 25		TCN D. IT.		CHANGE 26		TCN D. IT.		CHANGE 27		TCN D. IT.		CHANGE 28		TCN D. IT.		CHANGE 29		TCN D. IT.		CHANGE 30		TCN D. IT.		CHANGE 31		TCN D. IT.		CHANGE 32		TCN D. IT.		CHANGE 33		TCN D. IT.		CHANGE 34		TCN D. IT.		CHANGE 35		TCN D. IT.		CHANGE 36		TCN D. IT.		CHANGE 37		TCN D. IT.		CHANGE 38		TCN D. IT.		CHANGE 39		TCN D. IT.		CHANGE 40		TCN D. IT.		CHANGE 41		TCN D. IT.		CHANGE 42		TCN D. IT.		CHANGE 43		TCN D. IT.		CHANGE 44		TCN D. IT.		CHANGE 45		TCN D. IT.		CHANGE 46		TCN D. IT.		CHANGE 47		TCN D. IT.		CHANGE 48		TCN D. IT.		CHANGE 49		TCN D. IT.		CHANGE 50		TCN D. IT.		CHANGE 51		TCN D. IT.		CHANGE 52		TCN D. IT.		CHANGE 53		TCN D. IT.		CHANGE 54		TCN D. IT.		CHANGE 55		TCN D. IT.		CHANGE 56		TCN D. IT.		CHANGE 57		TCN D. IT.		CHANGE 58		TCN D. IT.		CHANGE 59		TCN D. IT.		CHANGE 60		TCN D. IT.		CHANGE 61		TCN D. IT.		CHANGE 62		TCN D. IT.		CHANGE 63		TCN D. IT.		CHANGE 64		TCN D. IT.		CHANGE 65		TCN D. IT.		CHANGE 66		TCN D. IT.		CHANGE 67		TCN D. IT.		CHANGE 68		TCN D. IT.		CHANGE 69		TCN D. IT.		CHANGE 70		TCN D. IT.		CHANGE 71		TCN D. IT.		CHANGE 72		TCN D. IT.		CHANGE 73		TCN D. IT.		CHANGE 74		TCN D. IT.		CHANGE 75		TCN D. IT.		CHANGE 76		TCN D. IT.		CHANGE 77		TCN D. IT.		CHANGE 78		TCN D. IT.		CHANGE 79		TCN D. IT.		CHANGE 80		TCN D. IT.		CHANGE 81		TCN D. IT.		CHANGE 82		TCN D. IT.		CHANGE 83		TCN D. IT.		CHANGE 84		TCN D. IT.		CHANGE 85		TCN D. IT.		CHANGE 86		TCN D. IT.		CHANGE 87		TCN D. IT.		CHANGE 88		TCN D. IT.		CHANGE 89		TCN D. IT.		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NOTES:

1. B-POINT AND BLOCK BOUNDARIES IN THIS AREA ARE DIFFERENT FROM PHASE 1 LOCATIONS.
2. FOR LOCATION OF OPTICAL PRESENCE DETECTORS, SEE SHEET 27.
3. VITAL BRUSH CHECKS ARE LOCATED IN BLOCKS 222A AND 222B FOR THE SOUTH PLATFORM OF STATION B AND IN BLOCKS 122A AND 122B FOR THE NORTH PLATFORM OF STATION B.
4. THIS SHEET TO BE REMOVED BEFORE PHASE 2 OPERATION.
5. ALL X02 TURNOUT ROUTES HAVE ZERO SPEED CODES THOUGH THE INTERLOCKING.
6. THE GATES AND SWITCHES OF X04 DO NOT EXIST DURING THE LIFE SPAN OF THE INTERMEDIATE 1 RELEASE.

HOUSTON SPEED PROFILE FOR INTERMEDIATE 1 RELEASE

TCN
D.

1

CHANGE

6

TCN HOAB-B2010
ECN 60115

THIS SHEET ADDED
SEE OTHER SHEETS
FOR CHG'S

J.STRAMAT
10/06/03
R.BURNETT

J.CARNEVALE

SIGNATURES ON FILE

TCN-HOAB-Z9162
ECN 60220

7

STA. 14+51.50 WAS
14+47.50

ADDED STA. 31+71.00
ADDED SYMBOL M

ADDED STA. 31+75.00
ADDED SYMBOL M

SEE SHTS 1, 4, 5, 9,
11 THRU 14A, 15 THRU
17, 19, 21, 22, 24 &
29 FOR CHANGES

F. BELMARES 4-02-04
R. BURNETT
J.CARNEVALE

SIGNATURES ON FILE

TCN HOAB-B2065
WR 2001346

9

NO DRAWING CHANGE TO
THIS SHEET. FORMAT
CHANGE ONLY

P. CARSON 7/31/05
A. ROMEO

J. CARNEVALE

AutoCAD

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GEOMETRIC CHARACTERISTIC SYMBOLS

FLATNESS

STRAIGHTNESS

ROUNDNESS (CIRCULARITY)

CYLINDRICITY

PROFILE OF ANY LINE

PROFILE OF ANY SURFACE

PARALLELISM

PERPENDICULARITY (SQUARENESS)

ANGULARITY

RUNOUT

TRUE POSITION

CONCENTRICITY

SYMMETRY

MAXIMUM MATERIAL CONDITION (MMC)

REGARDLESS OF FEATURE SIZE

DATE

CHKR.

ENGRG.

MFG.

APPD.

DFTG SUPV.

BOMBARDIER

TITLE

GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2

SPEED PROFILE REVERSE DIRECTION

DIMENSIONS IN FEET

SCALE 1:80

WT.

DWG. NO.

6D60467

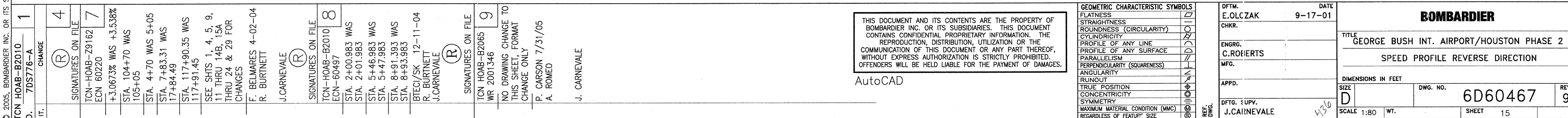
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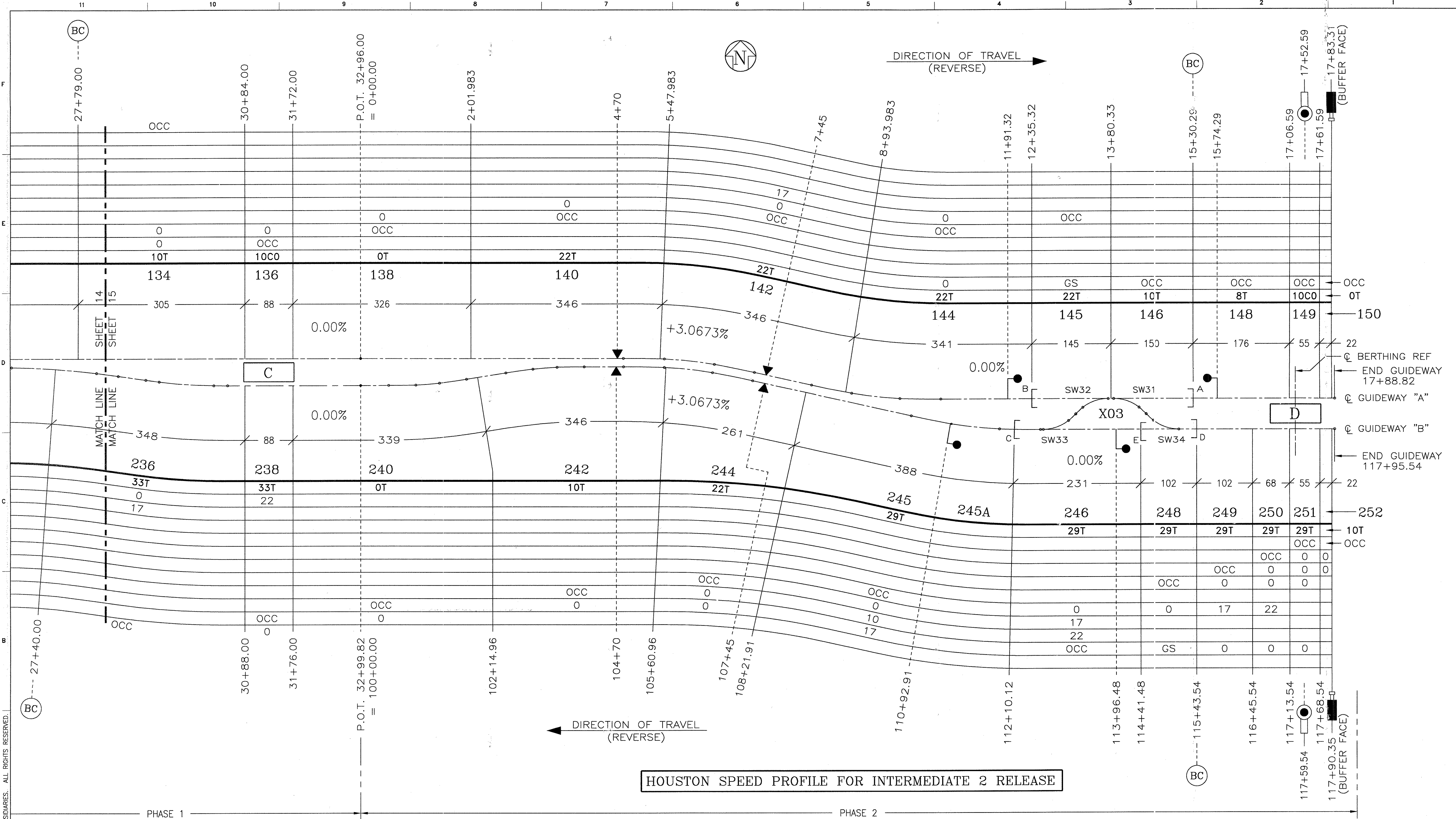
9

SHEET

148

Tue Jul 26 2005 Released by Bombardier Transportation EDMS. Sig. on file. Doc: 6D60467 Rev: 9





TCN
D.

CHANGE
IT.

1

5

TCN-HOAB-B2010
ECN-42935
THIS SHEET ADDED
EOLCZAK 7-14-03
R.BURINETT
J.CARNEVALE

SIGNATURES ON FILE

TCN-HOAB-Z9162
ECN 60220
+3.0673% WAS +3.538%
STA. 104+70 WAS
105+05
STA. 4+70 WAS 5+05
STA. 17+83.31 WAS
17+84.49
STA. 117+90.35 WAS
117+91.45
SEE SHTS 1, 4, 5, 9,
11 THRU 15, 16 THRU
24 & 29 FOR CHANGES
F. BELMARES 4-06-04
R. BURINETT
J.CARNEVALE

SIGNATURES ON FILE

TCN HOAB-B2065
WR 2001346
NO DRAWING CHANGE TO
THIS SHEET, FORMAT
CHANGE ONLY
P. CARSON 7/31/05
A. ROMEQ
J. CARNEVALE

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GEOMETRIC CHARACTERISTIC SYMBOLS

FLATNESS
STRAIGHTNESS
ROUNDNESS (CIRCULARITY)
CYLINDRICITY
PROFILE OF ANY LINE
PROFILE OF ANY SURFACE
PARALLELISM
PERPENDICULARITY (SQUARENESS)
ANGULARITY
RUNOUT
TRUE POSITION
CONCENTRICITY
SYMMETRY
MAXIMUM MATERIAL CONDITION (MMC)
REGARDLESS OF FEATURE SIZE

DATE

CHKR.

ENGRG.

MFG.

APPD.

DFTG. SUPV.

TITLE

GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2

SPEED PROFILE REVERSE DIRECTION

DIMENSIONS IN FEET

SCALE 1:80

WT.

DWG. NO.

6D60467

REV.

9

SHEET

15A

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TCN HOAB-B2010	1	CHANGE	5	SIGNATURES ON FILE	TCN HOAB-B2065	9	SIGNATURES ON FILE	TCN HOAB-B2065	9	NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY	P. CARSON 7/31/05	A. ROMEO	J. CARNEVALE
D. 7DS776-A				TCN-HOAB-Z9162	WR 2001346			ECN 60220					
				STA. 150+71.30 WAS				150+61.00					
				STA. 151+44.88 WAS				150+61.00					
				STA. 140+71.30 WAS				140+71.30					
				STA. 152+94.27 WAS				152+91.071					
				STA. 201+17.00 WAS				201+11.66					
				SEE SHITS 1, 4, 5, 9, 11 THRU 15A, 17 THRU 24 & 29 FOR CHANGES									
				R. BURNETT				J. CARNEVALE					
				F. BELMARES 4-07-04									

NOTES:

1. SEE GATE STOP GS04E ON SHEET 14 FOR SW41 IN TURNOUT POSITION AND GUIDEWAY B TRAFFIC IN REVERSE DIRECTION.

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	Ⓢ
STRAIGHTNESS	Ⓣ
ROUNDNESS (CIRCULARITY)	Ⓡ
CYLINDRICITY	Ⓢ
PROFILE OF ANY LINE	Ⓢ
PROFILE OF ANY SURFACE	Ⓢ
PARALLELISM	Ⓢ
PERPENDICULARITY (SQUARENESS)	Ⓢ
ANGULARITY	Ⓢ
RUNOUT	Ⓢ
TRUE POSITION	Ⓢ
CONCENTRICITY	Ⓢ
SYMMETRY	Ⓢ
MAXIMUM MATERIAL CONDITION (MMC)	Ⓢ
REGARDLESS OF FEATURE SIZE	Ⓢ

DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG.	JUPV.		
J. CARNEVALE			

BOMBARDIER	
TITLE GEORGE BUSH INT, AIRPORT/HOUSTON PHASE 2	
SPEED PROFILE REVERSE DIRECTION	
DIMENSIONS IN FEET	
SIZE D	DWG. NO. 6D60467
SCALE 1:20	WT.
SHEET 16	REV. 9

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TCN HOAB-B2010	1
D. 7DS776-A	CHANGE
SIGNATURES ON FILE	(R)
TCN-HOAB-B2010	4
ECN-42693	PROFILES REVISED TO ELIMINATE BLOCKS 130 AND 232
SPEED CODES REVISED BLOCKS 124, 228-230 NORTH TRACK (EAST)	
SPEED CODES REVISED BLOCKS 224, 124/125 SOUTH TRACK (EAST)	
E.OLCZAK 1-21-03	
C.CHATHAM	
J.CARNEVALE	
SIGNATURES ON FILE	(R)
TCN-HOAB-B2010	5
ECN-42935	PROFILES REVISED IN BLOCKS 228, 230, 124 AND 125
GATE C AT STATION B ADDED	
E.OLCZAK 7-14-03	
R.BURNETT	
J.CARNEVALE	
SIGNATURES ON FILE	(R)
TCN-HOAB-B2010	7
ECN-60220	STA. 14+50.50 WAS 14+47.50
SEE SHTS 1, 4, 5, 9, 11 THRU 16, 18 THRU 24 & 29 FOR CHANGES	
F. BELMARES 4-07-04	
R. BURNETT	
J.CARNEVALE	
SIGNATURES ON FILE	(R)
TCN-HOAB-B2010	8
ECN-60497	REVISED PER ENG'S MARKED PRINTS.
STA. 20+49.00 WAS 20+43.00	
BTEC/MV 12-11-04	
R. BURNETT	
J.CARNEVALE	
SIGNATURES ON FILE	(R)
TCN HOAB-B2065	9
WR 2001346	NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY
P. CARSON 7/31/05	
A. ROMEO	
J. CARNEVALE	

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AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	⏏
STRAIGHTNESS	⏏
ROUNDNESS (CIRCULARITY)	⊘
CYLINDRICITY	⊘
PROFILE OF ANY LINE	⏏
PROFILE OF ANY SURFACE	⏏
PARALLELISM	⏏
PERPENDICULARITY (SQUARENESS)	⏏
ANGULARITY	⏏
RUNOUT	⏏
TRUE POSITION	⏏
CONCENTRICITY	⏏
SYMMETRY	⏏
MAXIMUM MATERIAL CONDITION (MMC)	⏏
REGARDLESS OF FEATURE SIZE	⏏

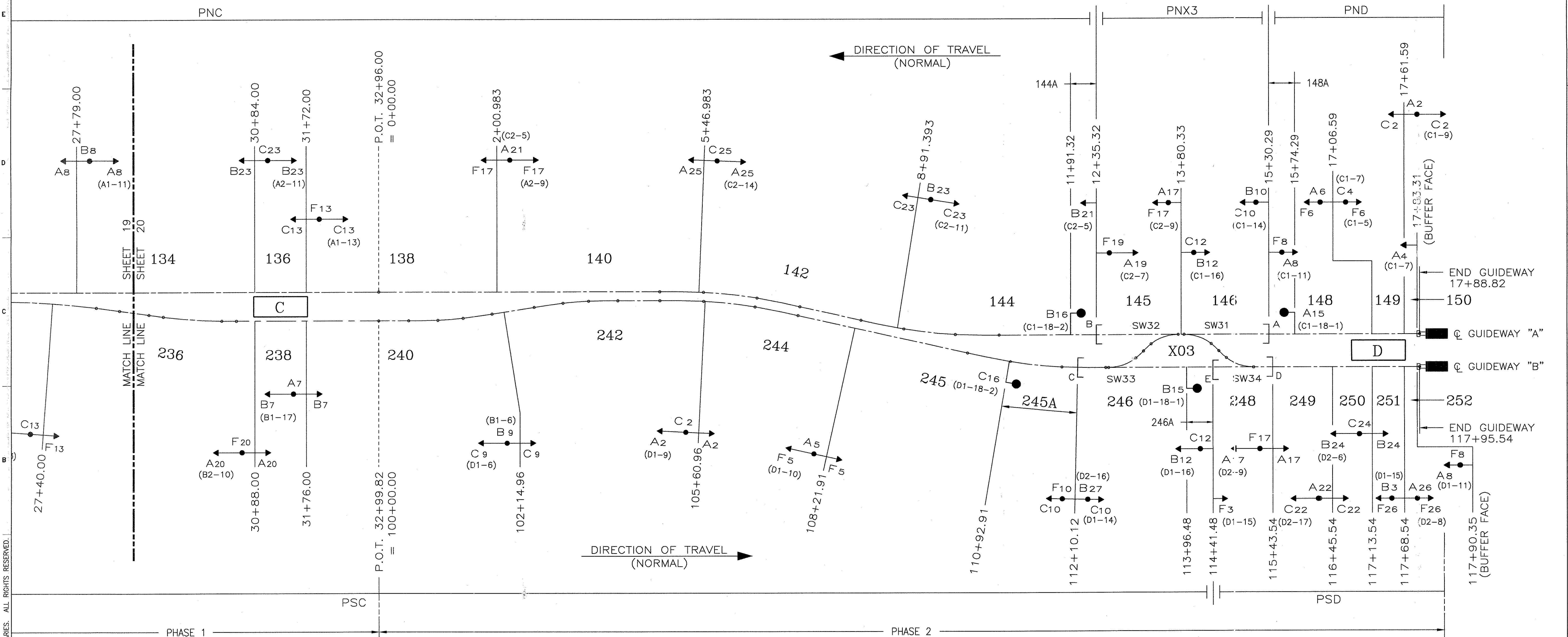
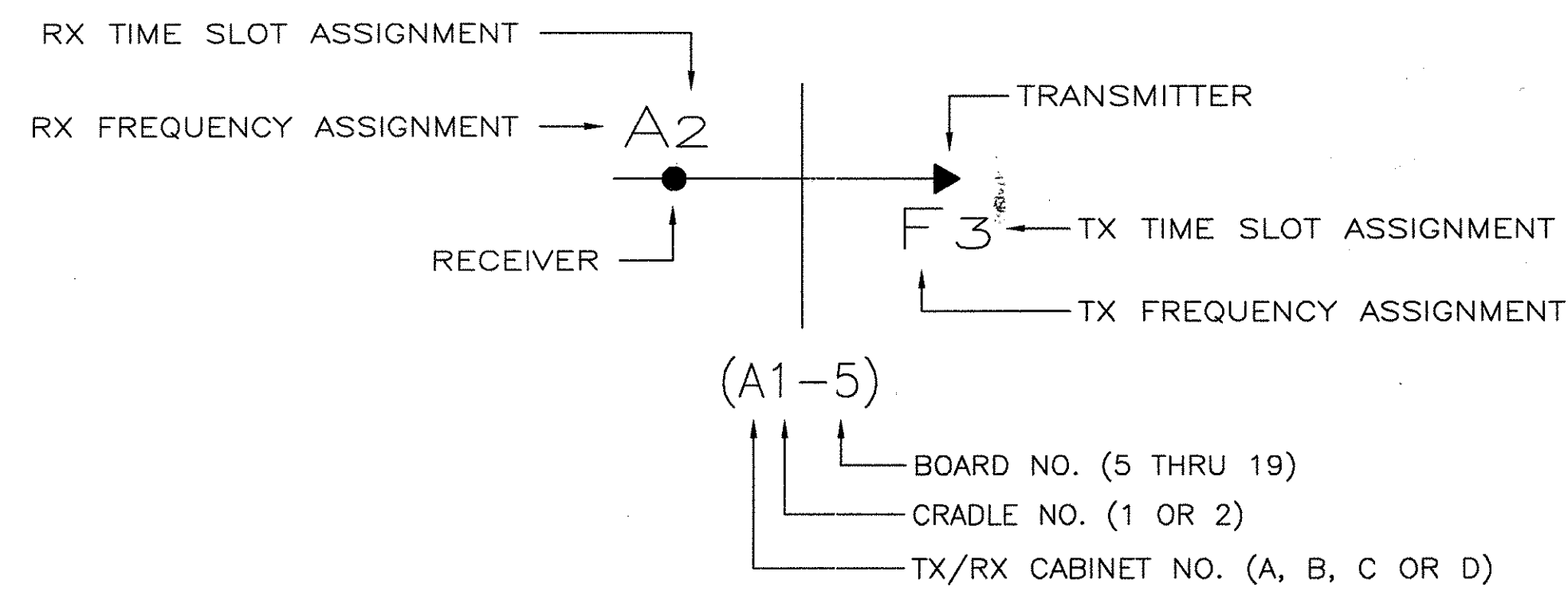
DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. & UPV.	J.CARNEVALE		

BOMBARDIER			
TITLE			
GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
SWITCH PROFILES NORMAL AND REVERSE			
DIMENSIONS IN FEET			
SIZE	D	DWG. NO.	6D60467
SCALE	NTS	WT.	
SHEET	17	REV.	9



- PHASE 1

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2004, BOMBARDIER INC. OR ITS D. 7DS776-A		TCN HOAB-B2010 ECN 60497	1
IT.	CHANGE		
	(R)	SIGNATURES ON FILE	
	(R)	5	
		SIGNATURES ON FILE	
		7	
		TCN-HOAB-Z9162 ECN 60220	
		STA. 17+83.31 WAS 17+84.49	
		STA. 117+90.35 WAS 117+91.45	
		SEE SHTS 1, 4, 5, 9, 11 THRU 19, 21 THRU 24 & 29 FOR CHANGES	
		F. BELMARES 4-06-04 R. BURNETT	
		J.CARNEVALE	
	(R)	SIGNATURES ON FILE	
		TCN-HOAB-B2010 ECN 60497	8
		STA. 2+00.983 WAS STA. 2+01.983	
		STA. 5+46.983 WAS STA. 5+47.983	
		STA. 8+91.393 WAS STA. 8+93.983	
		BTEC/AMV 12-11-04 R. BURNETT	
		J.CARNEVALE	
	(R)	SIGNATURES ON FILE	
		TCN HOAB-B2065 WR 2001346	9
		NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY	
		P. CARSON 7/31/05 A. ROMEO	
		J. CARNEVALE	

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AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUAREDNESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DFTM.	DATE
E.OLCZAK	9-17-01
CHKR.	
ENGRG.	
C.ROBERTS	
MFG.	
APPD.	
DFTG. & UPV.	
J.CARNEVALE	

BOMBARDIER			
TITLE			
GEORGE BUSH INT. AIRPORT/HOUSTON			
PHASE 2 TX/RX INFORMATION			
DIMENSIONS IN FEET			
SIZE	DWG. NO.	REV.	
D	6D60467	9	
SCALE	1:80	WT.	SHEET 20

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TCN HOAB-B2010		1	SIGNATURES ON FILE		2
D.	7DS776-A	CHANGE	TCN-HOAB-B2010		WR-1030294
IT.			GUIDEWAYS 1C-2~1C-4		STATIONING REVISED
			154+30.197 WAS		154+31.197 (GW 1C-2)
			202+12.002 WAS		211+67.334 (GW 1C-3)
			211+71.66 WAS		202+18.329 (GW 1C-4)
			GATE E WAS 210+41.992		GATE F WAS 200+97.00
			B-POINT IN BLOCK 1C31		WAS 210+65.992
			B-POINT IN BLOCK 1C41		WAS 201+21.00
			PROHIBIT ZONES ADDED		B-POINT IDENT 1C11A
			THRU 1C41A ADDED		BLOCK 1C24/1C25
			151+12.67 WAS		151+07.035
			E.OLCZAK 1-24-02		J.GRADICH
			J.CARNEVALE		
SIGNATURES ON FILE		5	TCN-HOAB-B2010		ECN-42935
B-POINTS AT END OF			MAINT 1C-2, 1C-3 AND		1C-4 ADDED
GATE VIOLATION TABLES			DELETED		
TYP BLOCK BOUNDARY,			CABINETS C & D ADDED		
RECEIVERS DELETED AT			152+67.071, 210+51.33		AND 200+87.66
TX/RX REVISED PER			ENGINEER MARKED PRINT		
E.OLCZAK 7-14-03			R.BURNETT		J.CARNEVALE
SIGNATURES ON FILE		7	TCN-HOAB-29162		ECN 60220
STA. 151+71.30 WAS			STA. 151+44.88 WAS		STA. 151+53.071
STA. 201+17.00 WAS			STA. 201+11.66		STA. 140+71.30 WAS
STA. 140+61.00			STA. 152+94.27 WAS		152+91.071
SEE SHTS 1, 4, 5, 9,			11 THRU 20, 22 THRU		24 & 29 FOR CHANGES
F. BELMARES 4-07-04			R. BURNETT		J.CARNEVALE
SIGNATURES ON FILE		9	TCN HOAB-B2065		WR 2001346
NO DRAWING CHANGE TO			THIS SHEET, FORMAT		CHANGE ONLY
P. CARSON 7/31/05			A. ROMEO		
J. CARNEVALE					

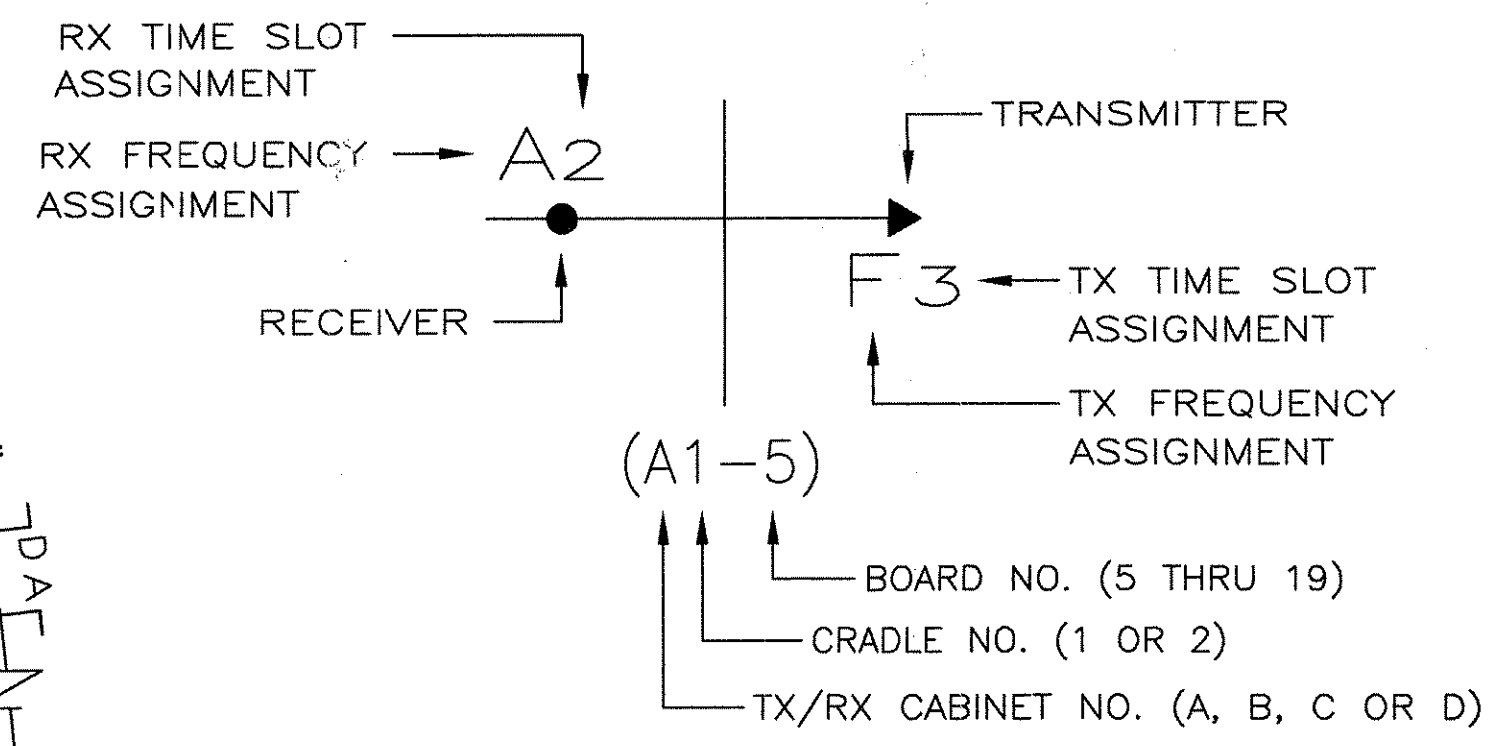
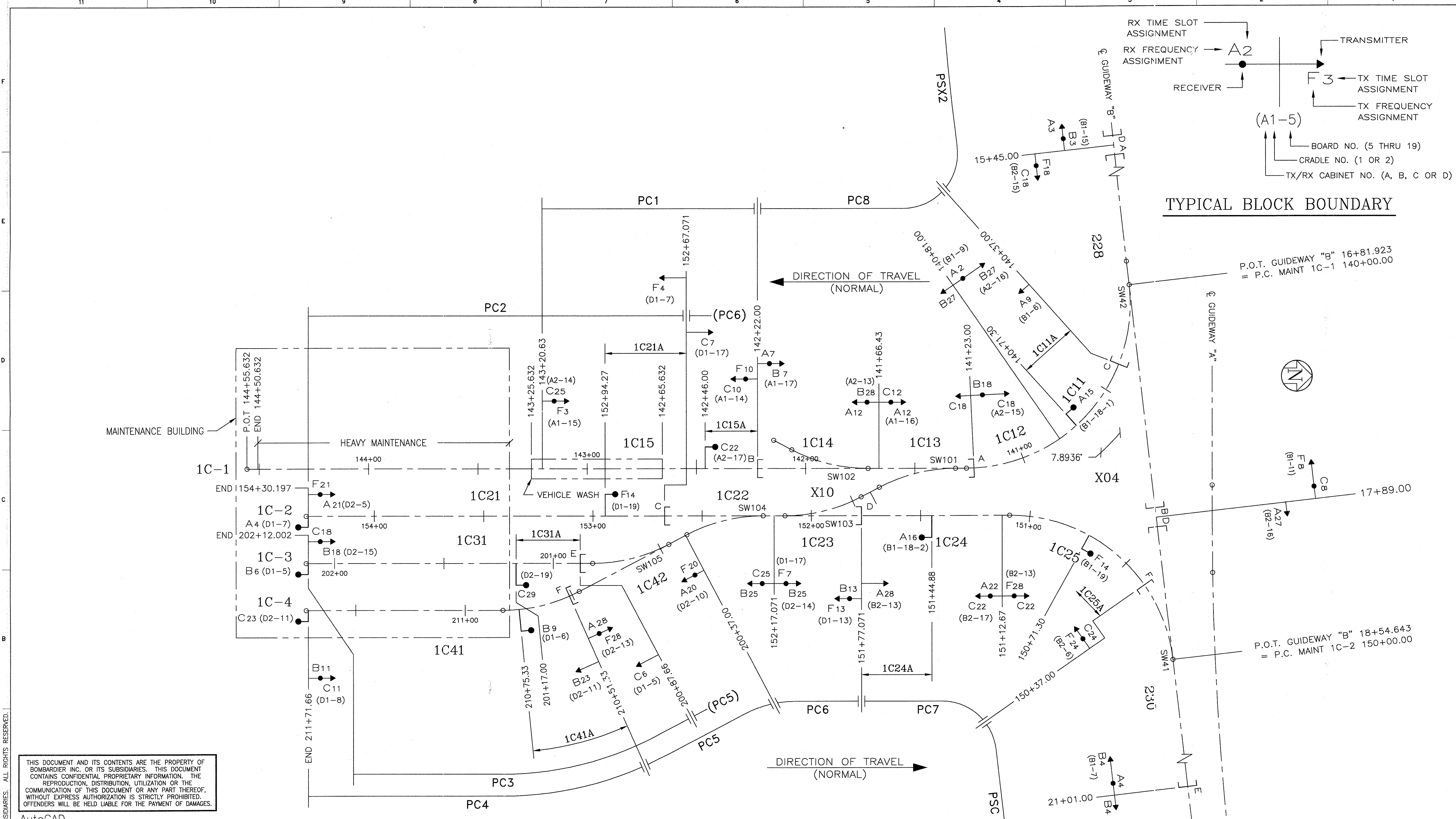
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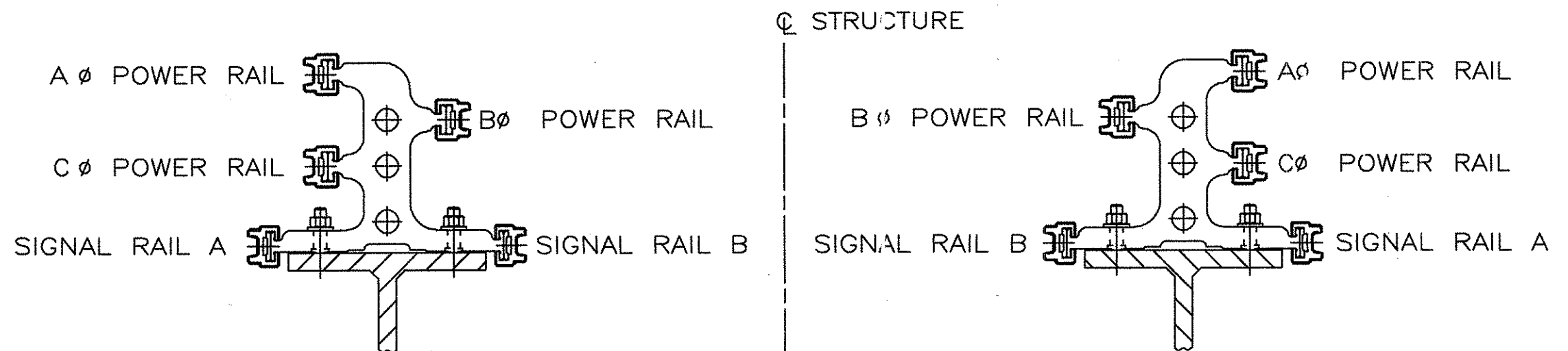
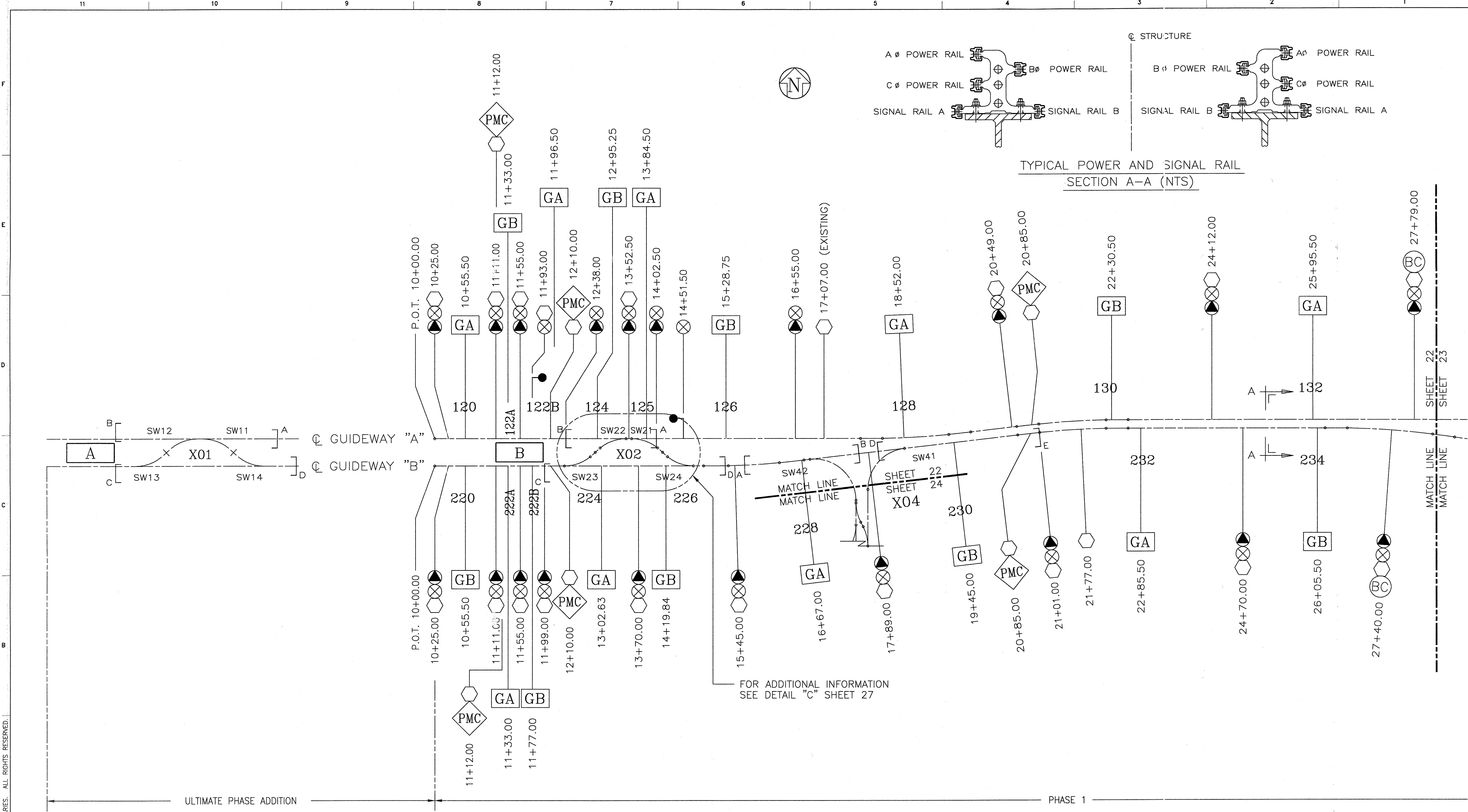
AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	⏊
STRAIGHTNESS	— —
ROUNDNESS (CIRCULARITY)	⊘
CYLINDRICITY	⊘ ⊘
PROFILE OF ANY LINE	— —
PROFILE OF ANY SURFACE	— —
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	⊥
ANGULARITY	∠
RUNOUT	⊖
TRUE POSITION	⊕
CONCENTRICITY	⊙
SYMMETRY	⊞
MAXIMUM MATERIAL CONDITION (MMC)	Ⓜ
REGARDLESS OF FEATURE SIZE	Ⓛ

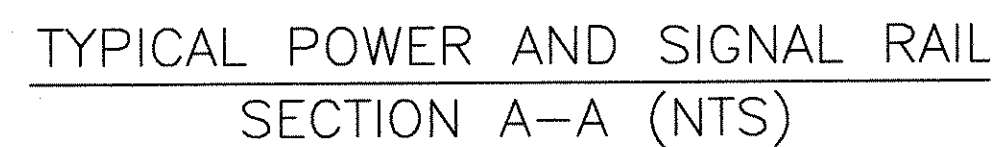
DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. SUPV.	J.CARNEVALE		

BOMBARDIER			
TITLE			
GEORGE BUSH INT, AIRPORT/HOUSTON PHASE 2			
PHASE 2 TX/RX INFORMATION			
DIMENSIONS IN FEET			
SIZE		DWG. NO.	
D		6D60467	REV. 9
SCALE	1:20	WT.	
		SHEET	21





TCN HOAB-B2010 D. 7DS776-A 1		SIGNATURES ON FILE TCN-HOAB-B2010 WR-1030294 2 ATO GUIDEBEAM INSERT 12+38.00, 14+02.50 AND 14+47.50 DELETED ATO GUIDEBEAM INSERT 17+07.00 WAS 16+55.00 E.OLCZAK 1-24-02 J.GRADICH J.CARNEVALE		SIGNATURES ON FILE TCN-HOAB-B2010 ECN-42023 3 POWER MONITOR (PM) REPLACED WITH (PMC) BRUSH COUNTERS (BC) ADDED ATO/ISO JOINT 10+25.00 WAS 10+00.00 GW A & B "Ga" BLOCK 125 WAS 13+77.50 E.OLCZAK 5-20-02 C.CHATHAM J.CARNEVALE		SIGNATURES ON FILE TCN-HOAB-29162 ECN 60220 7 STA. 14+51.50 WAS 14+47.50 SEE SHTS 1, 4, 5, 9, 11 THRU 21, 23, 24 & 29 FOR CHANGES F. BELMARES 4-07-04 R. BURNETT J.CARNEVALE		SIGNATURES ON FILE TCN HOAB-B2065 WR 2001346 9 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE		THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF BOMBARDIER INC. OR ITS SUBSIDIARIES. THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION. THE REPRODUCTION, DISTRIBUTION, UTILIZATION OR THE COMMUNICATION OF THIS DOCUMENT OR ANY PART THEREOF, WITHOUT EXPRESS AUTHORIZATION IS STRICTLY PROHIBITED. OFFENDERS WILL BE HELD LIABLE FOR THE PAYMENT OF DAMAGES. AutoCAD		GEOMETRIC CHARACTERISTIC SYMBOLS FLATNESS STRAIGHTNESS ROUNDNESS (CIRCULARITY) CYLINDRICITY PROFILE OF ANY LINE PROFILE OF ANY SURFACE PARALLELISM PERPENDICULARITY (SQUARENESS) ANGULARITY RUNOUT TRUE POSITION CONCENTRICITY SYMMETRY MAXIMUM MATERIAL CONDITION (MMC) REGARDLESS OF FEATURE SIZE		DFTM. E.OLCZAK CHKR. ENGRG. C.ROBERTS MFG. APPD. DFTG. SUPV. J.CARNEVALE DATE 9-17-01 DWG. NO. 6D60467 SHEET 22 REV. 9	
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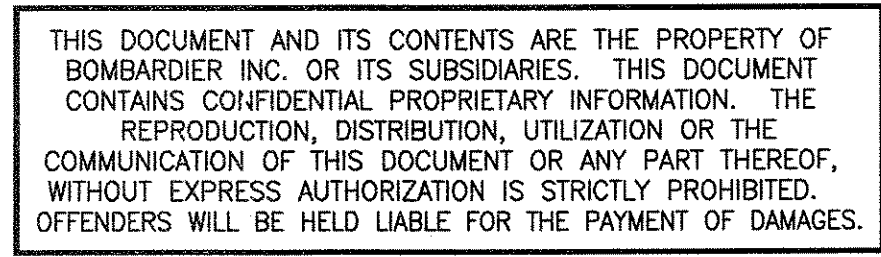
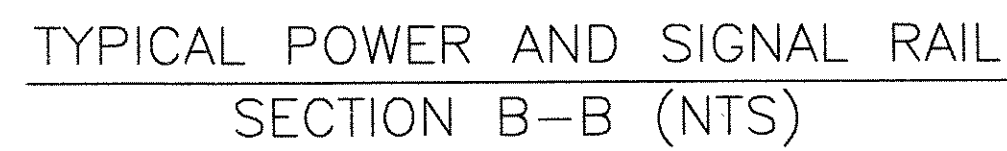
AutoCAD

PHASE 1

PHASE 2

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

BOMBARDIER				
TITLE				
GEORGE BUSH INT. AIRPORT/HOUSTON				
WAYSIDE EQUIP. GUIDEWAY INTERFACE LOCATION PLAN				
DIMENSIONS IN FEET				
SIZE		DWG. NO.		REV.
D		6D60467		9
SCALE	1:80	WT.	SHEET	23



FOR ADDITIONAL INFORMATION ON SWITCHES
SW101-102-103-104 AND SW105 SEE DETAIL "F"
SHEET 30

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TCN HOAB-B2010
D. 7DS776-A
CHANGE

1	SIGNATURES ON FILE
2	TCN-HOAB-B2010 WR-1030294 POWER ISO JOINTS 16+15.00 & 116+15.00 DELETED PDS 16+20.00 AND 116+20.00 DELETED BLUE LIGHTS (BL) 16+57.28 & 116+64.22 ADDED EOLCZAK 1-24-02 J.GRADICH J.CARNEVALE
3	SIGNATURES ON FILE
4	TCN-HOAB-B2010 ECN-42023 EXPANSION JOINTS (E) AND PIN JOINTS ADDED TO PHASE 2 BUFFERS CHANGED TO HYDRAULIC GUIDEWAY REVISED PER LATEST CONFIGURATION END GUIDEWAY A WAS 17+88.51 END GUIDEWAY B WAS 117+95.22 P.O.T. GW "A" 32+96.00 WAS 32+96.187 P.O.T. GW "B" 32+96.82 WAS 33+00.01 EOLCZAK 5-20-02 C.CHATHAM J.CARNEVALE

5	SIGNATURES ON FILE
6	TCN-HOAB-B2010 ECN-42065 GATE "F" AT X03 XOVER DELETED EOLCZAK 1-21-03 C.CHATHAM J.CARNEVALE
7	SIGNATURES ON FILE
8	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

9	SIGNATURES ON FILE
10	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

11	SIGNATURES ON FILE
12	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

13	SIGNATURES ON FILE
14	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

15	SIGNATURES ON FILE
16	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

17	SIGNATURES ON FILE
18	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

19	SIGNATURES ON FILE
20	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

21	SIGNATURES ON FILE
22	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

23	SIGNATURES ON FILE
24	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

25	SIGNATURES ON FILE
26	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

27	SIGNATURES ON FILE
28	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

29	SIGNATURES ON FILE
30	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

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AutoCAD

1	SIGNATURES ON FILE
2	TCN-HOAB-B2010 WR-1030294 POWER ISO JOINTS 16+15.00 & 116+15.00 DELETED PDS 16+20.00 AND 116+20.00 DELETED BLUE LIGHTS (BL) 16+57.28 & 116+64.22 ADDED EOLCZAK 1-24-02 J.GRADICH J.CARNEVALE
3	SIGNATURES ON FILE
4	TCN-HOAB-B2010 ECN-42023 EXPANSION JOINTS (E) AND PIN JOINTS ADDED TO PHASE 2 BUFFERS CHANGED TO HYDRAULIC GUIDEWAY REVISED PER LATEST CONFIGURATION END GUIDEWAY A WAS 17+88.51 END GUIDEWAY B WAS 117+95.22 P.O.T. GW "A" 32+96.00 WAS 32+96.187 P.O.T. GW "B" 32+96.82 WAS 33+00.01 EOLCZAK 5-20-02 C.CHATHAM J.CARNEVALE

5	SIGNATURES ON FILE
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25	SIGNATURES ON FILE
26	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

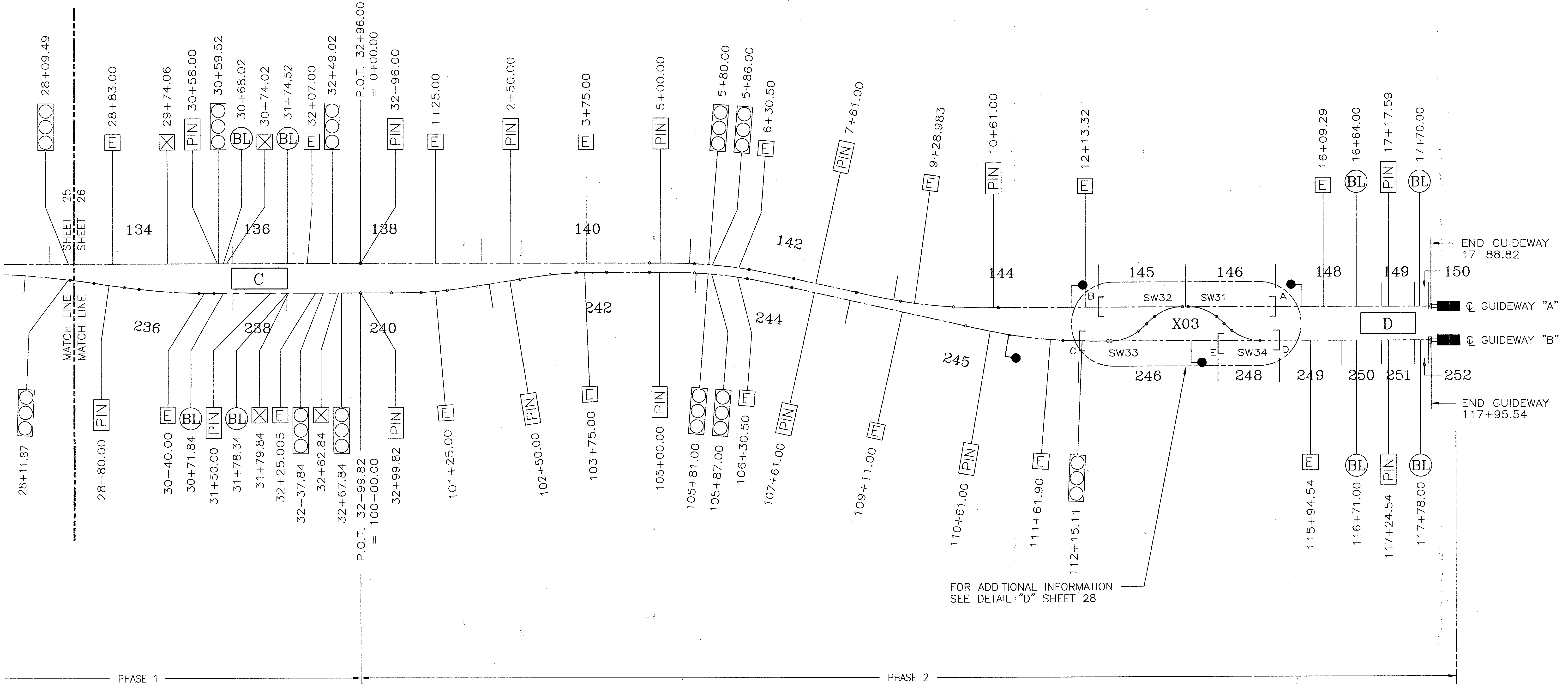
27	SIGNATURES ON FILE
28	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

29	SIGNATURES ON FILE
30	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

31	SIGNATURES ON FILE
32	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

33	SIGNATURES ON FILE
34	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE

35	SIGNATURES ON FILE
36	TCN HOAB-B2005 WR 2001346 NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY P. CARSON 7/31/05 A. ROMEO J. CARNEVALE





1. THE SMALL BEAM BETWEEN SW22 AND SW21 (AT 13+50.50) IS TO BE PINNED [PIN] IN THE CENTER SO THE RAIL CAN MOVE OUTWARD TOWARDS THE POINT OF SWITCH OF EACH SWITCH. THE ADJACENT ENDS OF RAIL THEREFORE ARE NOT PINNED, NOTICE THE [NOPIN] SYMBOLS.

-

(PHASE 1)
DETAIL C

TCN HOAB-B2010	1
D. 7DS776-A	
IT	CHANGE

<div style="text-align: center;">  </div> <div style="text-align: center;"> SIGNATURES ON FILE TCN-HOAB-B2010 WR-1030294 PDS 13+90.60 WAS 14+93.00 ATQ INSERT 11+99.00, 14+27.00 AND 14+93.00 ADDED E.OLCZAK J.GRADICH J.CARNEVALE </div>	<div style="text-align: center;">  </div> <div style="text-align: center;"> SIGNATURES ON FILE </div>
--	--

TCN-HOAB-B2010 ECN-42023	3
OPTICAL PRESENCE DET. 12+15.00 & 12+21.00 AND NOTE 4 ADDED	
E.OLCZAK 5-20-02 C.CHATHAM J.CARNEVALE	(R)
SIGNATURES ON FILE	

TCN HOAB-B2065 WR 2001346	9
NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY	
P. CARSON 7/31/05 A. ROMEO	
J. CARNEVALE	

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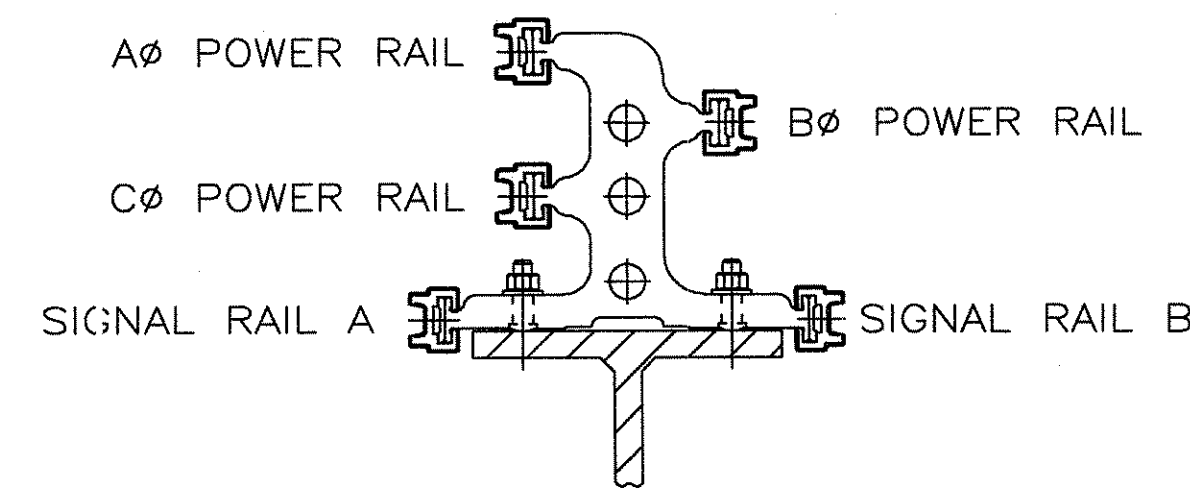
GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DFTM.	DATE
E.OLCZAK	9-17-01
CHKR.	
ENGRG.	
C.ROBERTS	
MFG.	
APPD.	
DFTG. 1UPV.	
J.CARNEVALE	4410

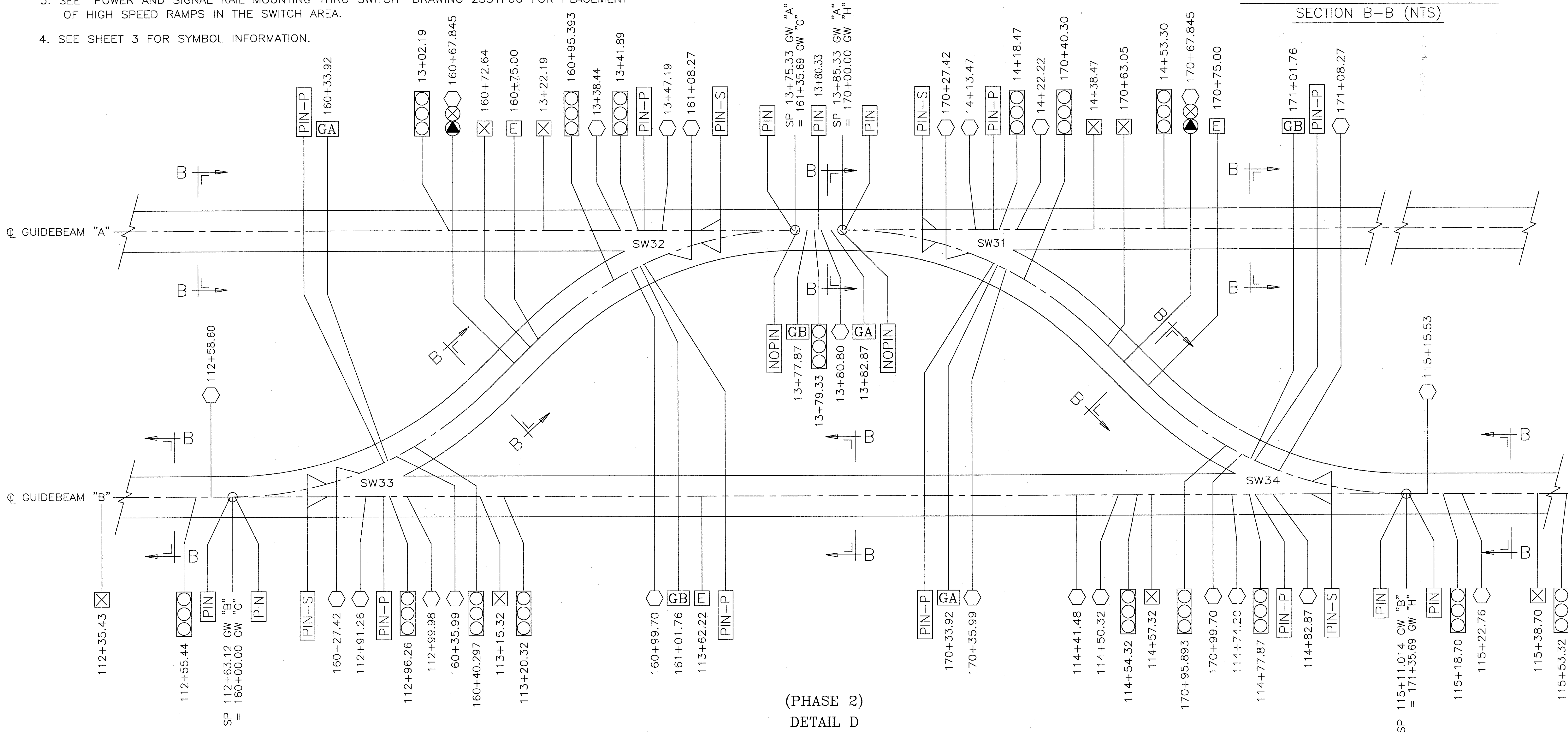
BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
WAYSIDE EQUIP. GUIDEWAY INTERFACE LOCATION PLAN			
DIMENSIONS IN FEET			
SIZE D		DWG. NO. 6D60467	REV. 9
SCALE 1:10	WT.	SHEET 27	

NOTES:

1. THE SMALL BEAM BETWEEN SW32 AND SW31 (AT 13+80.029) IS TO BE PINNED PIN IN THE CENTER SO THE RAIL CAN MOVE OUTWARD TOWARDS THE POINT OF SWITCH OF EACH SWITCH. THE ADJACENT ENDS OF RAIL THEREFORE ARE NOT PINNED, NOTICE THE NOPIN SYMBOLS.
2. THE B PHASE POWER RAIL IS ALWAYS ON THE EMERGENCY WALKWAY SIDE ON THE THROUGH TRACK (GUIDEBEAM "A" AND "B").
3. SEE "POWER AND SIGNAL RAIL MOUNTING THRU SWITCH" DRAWING 2531F06 FOR PLACEMENT OF HIGH SPEED RAMPS IN THE SWITCH AREA.
4. SEE SHEET 3 FOR SYMBOL INFORMATION.



TYPICAL POWER AND SIGNAL RAIL
SECTION B-B (NTS)



(PHASE 2)
DETAIL D

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TCN HOAB-B2010	1
D.	7DS776-A
IT.	CHANGE
SIGNATURES ON FILE	(R)
TCN-HOAB-B2010	3
ECN-42023	
POWER ISO JOINT AT 12+36.56 DELETED	
POWER ISO JOINT AT 113+15.32 WAS 113+30.00	
PDS AT 113+20.32 AND 113+33.00	
PDS AT 14+53.30 AND 115+53.32 ADDED	
EXPANSION JOINTS (E) 12+63.80, 13+47.57, 113+80.01, 160+82.59 AND 170+82.59 DELETED	
EXPANSION JOINTS (E) 160+75.00, 113+61.90 AND 170+75.00 ADDED	
PIN JOINT 13+80.33 WAS 13+80.013 145/146	
NOTE 4 ADDED	
SWITCH POINTS REVISED:	
SP 112+63.12 WAS 112+62.80	
SP 115+11.014 WAS 115+10.594	
SP 13+75.33 WAS 13+75.029	
SP 13+85.33 WAS 13+85.029	
PDS, ATO INSERTS ETC. REVISED RELATIVE TO LATEST CONFIGURATION	
"GA" AT 112+45.00 DELETED	
E.OLCZAK 5-20-02 C.CHATHAM J.CARNEVALE	
SIGNATURES ON FILE	(R)
TCN-HOAB-B2010	4
ECN-42693	
PDS 170+95.893 WAS 170+95.393	
E.OLCZAK 1-21-03 C.CHATHAM J.CARNEVALE	
SIGNATURES ON FILE	(R)
TCN HOAB-B2065	9
WR 2001346	
NO DRAWING CHANGE TO THIS SHEET, FORMAT CHANGE ONLY	
P. CARSON 7/31/05 A. ROMEO	
J. CARNEVALE	

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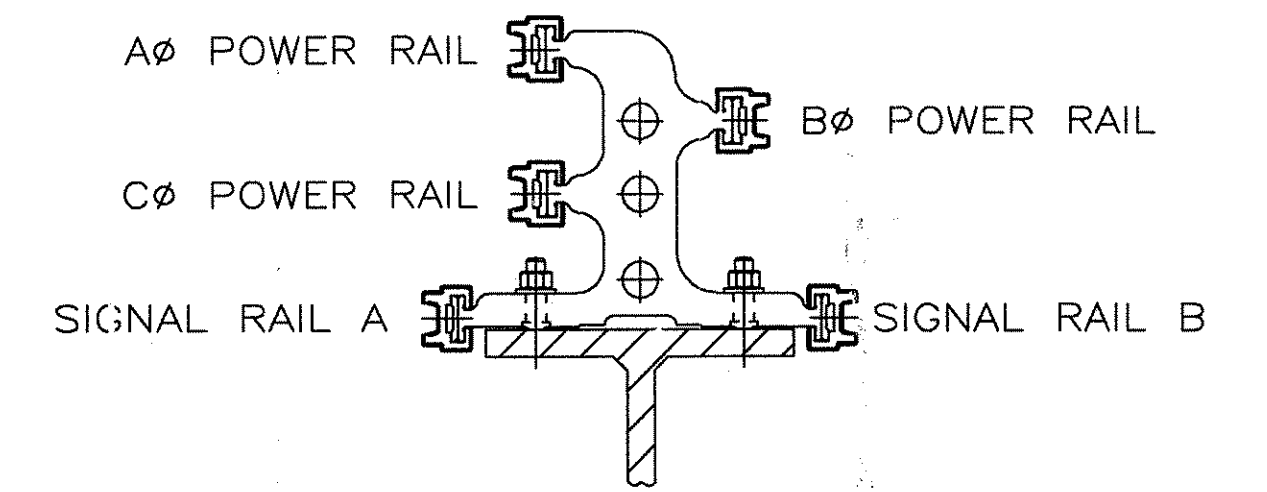
AutoCAD

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

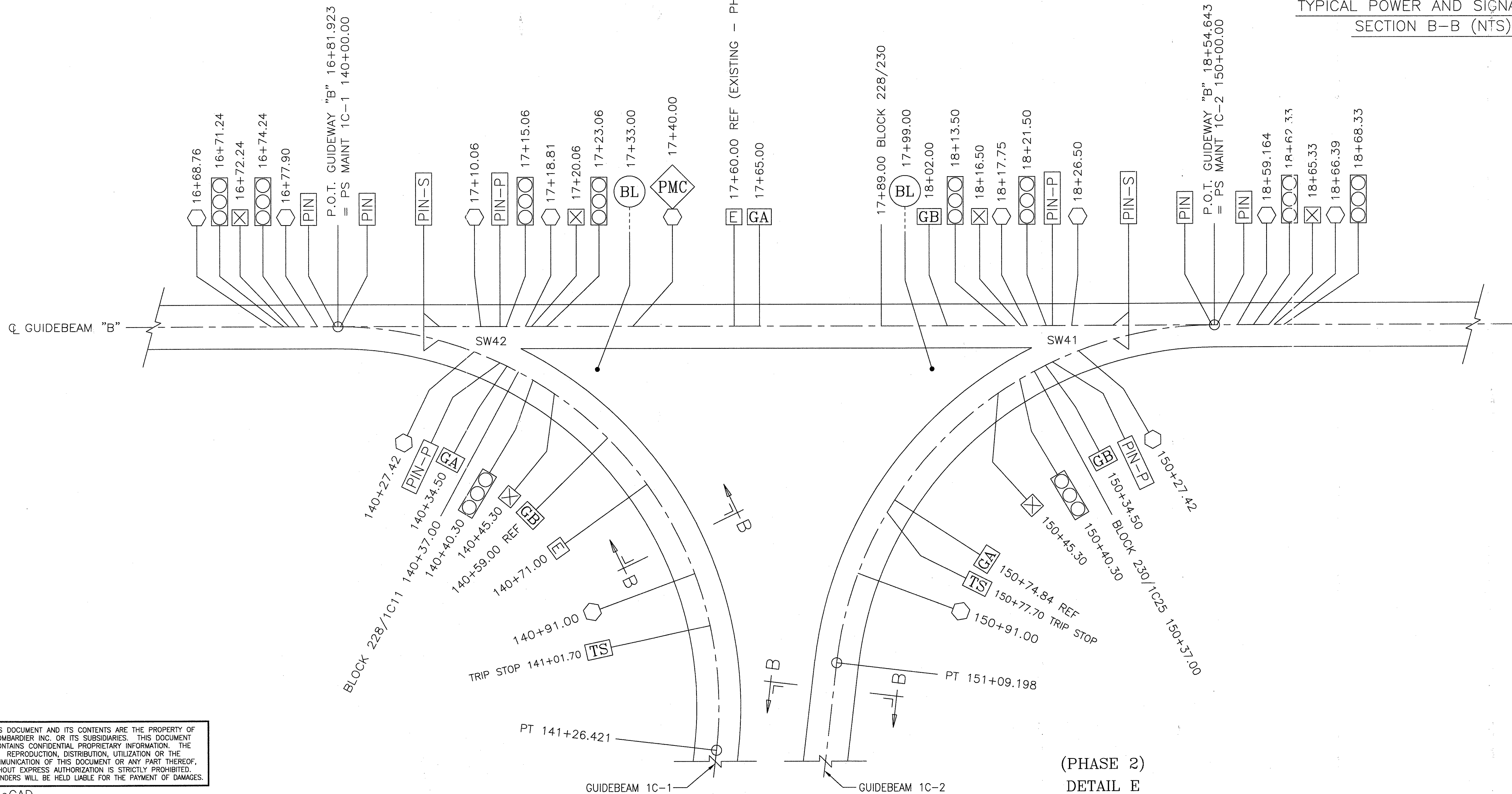
DFTM.	E.OLCZAK	DATE	9-17-01
CHKR.			
ENGRG.	C.ROBERTS		
MFG.			
APPD.			
DFTG. SUPV.	J.CARNEVALE		

BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
WAYSIDE EQUIP. GUIDEWAY INTERFACE LOCATION PLAN			
DIMENSIONS IN FEET			
SIZE D	DWG. NO. 6D60467	REV. 9	
SCALE 1:10	WT.	SHEET 28	

1. THE B PHASE POWER RAIL IS ALWAYS ON THE EMERGENCY WALKWAY SIDE ON THE THROUGH TRACK (GUIDEBEAM "1C-1 AND 1C-2").
2. SEE SHEET 3 FOR SYMBOL INFORMATION.
3. SEE "POWER AND SIGNAL RAIL MOUNTING THRU SWITCH" DRAWING 2531F06 FOR PLACEMENT OF HIGH SPEED RAMPS IN THE SWITCH AREA.



TYPICAL POWER AND SIGNAL RAIL
SECTION B-B (NTS)



(PHASE 2)
DETAIL E

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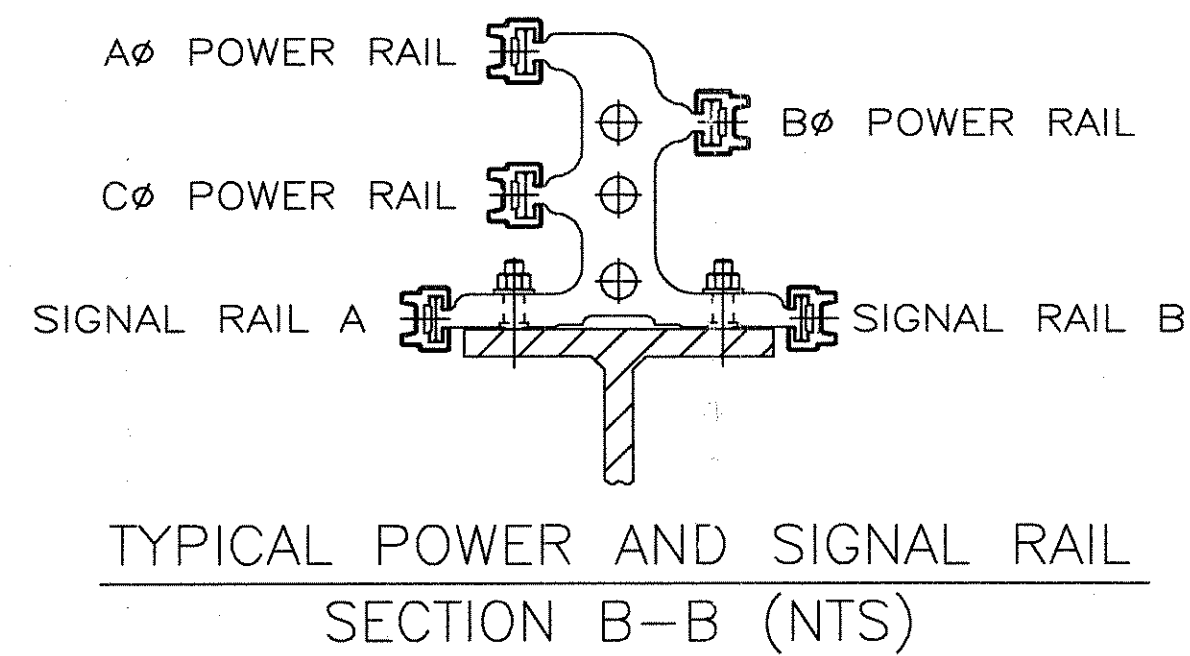
2	TCN HOAB-B2010	1
3	7DS776-A	
4	CHANGE	
5	(R)	
6	SIGNATURES ON FILE	
7	TCN-HOAB-B2010	2
8	WR-1030294	
9	TRIP STOPS ADDED:	
10	140+77.70 & 150+77.70	
11	E.OLCAZAK 1-24-02	
12	J.GRADICH	
13	J.CARNEVALE	
14	(R)	
15	SIGNATURES ON FILE	
16	TCN-HOAB-B2010	3
17	ECN-42023	
18	POWER MONITOR (PM)	
19	17+40.00 ADDED	
20	EXPANSION JOINT (E)	
21	140+71.00 ADDED	
22	ATO AT 140+35.99 AND	
23	150+35.99 DELETED	
24	ATO AT 140+91.00 WAS	
25	140+71.00	
26	ATO AT 150+91.00 WAS	
27	150+71.00	
28	TRIP STOP 141+01.70	
29	WAS 140+77.70	
30	NOTE 2 ADDED	
31	POWER MONITOR (PM)	
32	REPLACED WITH (PMC)	
33	ATO AT 16+68.76 WAS	
34	16+70.17	
35	ATO AT 16+77.90 WAS	
36	16+77.40	
37	E.OLCAZAK 5-20-02	
38	C.CHATHAM	
39	J.CARNEVALE	
40	(R)	
41	SIGNATURES ON FILE	
42	TCN-HOAB-B2010	4
43	ECN-42693	
44	GA 150+74.84 REF	
45	WAS 150+72.02 REF	
46	E.OLCAZAK 1-21-03	
47	C.CHATHAM	
48	J.CARNEVALE	
49	(R)	
50	SIGNATURES ON FILE	
51	TCN-HOAB-29162	7
52	ECN 60220	
53	ADDED STATIONS:	
54	CA 17+65.00	
55	GB 18+02.00	
56	GA 140+34.50	
57	GB 150+34.50	
58	BL 17+33.00	
59	BL 17+99.00	
60	SEE SHTS 1, 4, 5, 9,	
61	11 THRU 24 FOR	
62	CHANGES	
63	F. BELMARES 4-08-04	
64	R. BURNETT	
65	J.CARNEVALE	
66	(R)	
67	SIGNATURES ON FILE	
68	TCN HOAB-B2065	9
69	WR 2001346	
70	NO DRAWING CHANGE TO	
71	THIS SHEET, FORMAT	
72	CHANGE ONLY	
73	P. CARSON 7/31/05	
74	A. ROMEO	
75	J. CARNEVALE	

GEOMETRIC CHARACTERISTIC SYMBOL	
FLATNESS	\perp
STRAIGHTNESS	\parallel
ROUNDNESS (CIRCULARITY)	\bigcirc
CYLINDRICITY	$\text{---}\bigcirc\text{---}$
PROFILE OF ANY LINE	$\text{---}\bigcirc\text{---}$
PROFILE OF ANY SURFACE	$\text{---}\bigcirc\text{---}$
PARALLELISM	\parallel
PERPENDICULARITY (SQUARENESS)	\perp
ANGULARITY	\angle
RUNOUT	$\text{---}\bigcirc\text{---}$
TRUE POSITION	$\text{---}\bigcirc\text{---}$
CONCENTRICITY	$\text{---}\bigcirc\text{---}$
SYMMETRY	$\text{---}\bigcirc\text{---}$
MAXIMUM MATERIAL CONDITION (MMC)	$\text{---}\bigcirc\text{---}$
REGARDLESS OF FEATURE SIZE	$\text{---}\bigcirc\text{---}$

DFTM.	DATE
E.OLCZAK	9-17-0
CHKR.	
ENGR.	
C.ROIHERTS	
MFG.	
APPD.	
DFTG. SUPV.	
J.CARNEVALE	

BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
WAYSIDE EQUIP. GUIDEWAY INTERFACE LOCATION PLAN			
DIMENSIONS IN FEET			
SIZE D		DWG. NO. 6D60467	REV. 9
SCALE 1:10	WT.	SHEET 29	

1. THE B PHASE POWER RAIL IS ALWAYS ON THE EMERGENCY WALKWAY SIDE ON THE THROUGH TRACK (GUIDEBEAM "1C-1 THRU 1C-4").
2. SEE SHEET 3 FOR SYMBOL INFORMATION.
3. SEE "POWER AND SIGNAL RAIL MOUNTING THRU SWITCH" DRAWING 2531F06 FOR PLACEMENT OF HIGH SPEED RAMPS IN THE SWITCH AREA.



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AutoCAD

(PHASE 2)
DETAIL F

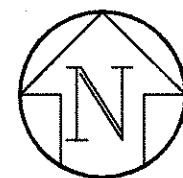
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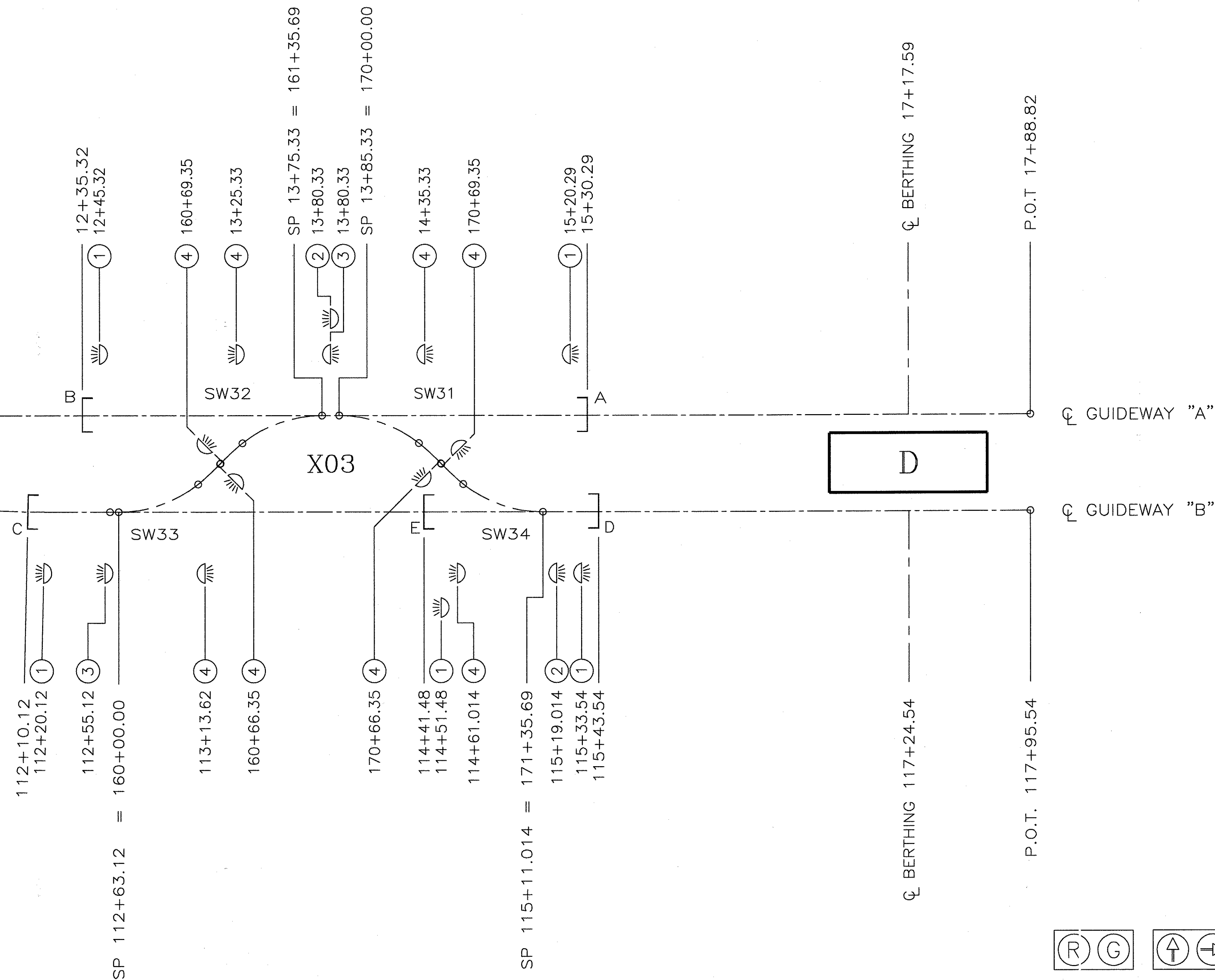
TCN HOAB-B2010	1
D. 7D5776-A	CHANGE
IT.	
TCN HOAB-B2010	2
WR-1030294	
THIS SHEET ADDED	
E.OLCZAK 1-24-02	
J.GRADICH	
J.CARNEVALE	
SIGNATURES ON FILE	
TCN HOAB-B2010	3
ECN-42023	
TRAFFIC SIGNALS (2) AT	
170+67.845 REVERSED	
GUIDEWAY REVISED PER	
LATEST CONFIGURATION	
END GUIDEWAY A WAS	
17+88.51	
END GUIDEWAY B WAS	
117+95.22	
GUIDEWAYS A AND B	
TRAFFIC SIGNALS, GATES,	
SWITCHES AND STATION D	
REVISED	
E.OLCZAK 5-20-02	
C.CHATHAM	
J.CARNEVALE	
SIGNATURES ON FILE	
TCN HOAB-B2010	4
ECN-42693	
TRAFFIC SIGNALS REVISED:	
113+13.62 WAS	
113+13.12	
160+66.35 WAS	
160+67.845	
160+69.35 WAS	
160+67.845	
170+69.35 WAS	
170+67.845	
170+66.35 WAS	
170+67.845	
SIGNAL AT 114+31.48	
DELETED	
SIGNAL AT 115+19.014	
2 (LEGEND) WAS 3	
E.OLCZAK 1-21-03	
C.CHATHAM	
J.CARNEVALE	
SIGNATURES ON FILE	
TCN HOAB-B2065	9
WR 2001346	
NO DRAWING CHANGE TO	
THIS SHEET, FORMAT	
CHANGE ONLY	
P. CARSON 7/31/05	
A. ROMEO	
J. CARNEVALE	

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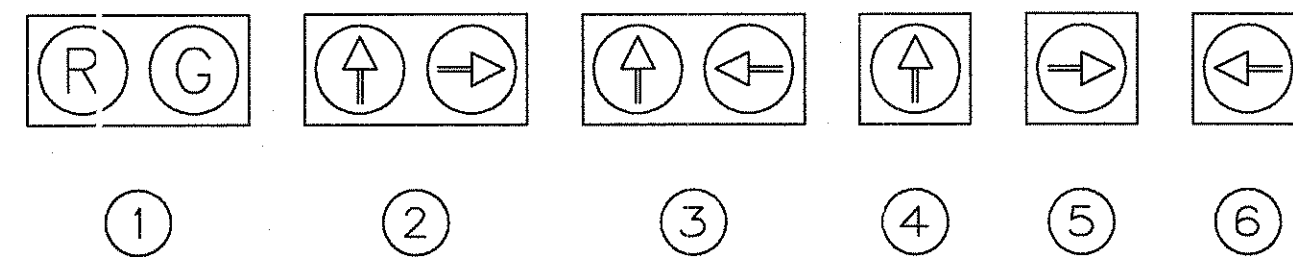
AutoCAD



NORMAL DIRECTION
OF TRAVEL



NORMAL DIRECTION
OF TRAVEL



TRAFFIC SIGNALS TO BE
LOCATED PER ELECTRICAL
INSTALLATION DRAWING

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	⏏
STRAIGHTNESS	⏏
ROUNDNESS (CIRCULARITY)	⏏
CYLINDRICITY	⏏
PROFILE OF ANY LINE	⏏
PROFILE OF ANY SURFACE	⏏
PARALLELISM	⏏
PERPENDICULARITY (SQUARENESS)	⏏
ANGULARITY	⏏
RUNOUT	⏏
TRUE POSITION	⏏
CONCENTRICITY	⏏
SYMMETRY	⏏
MAXIMUM MATERIAL CONDITION (MMC)	⏏
REGARDLESS OF FEATURE SIZE	⏏

REF. DWG.	DATE
CHKR.	
ENGRG.	
MFG.	
APPD.	
DFTG.	UPV.

BOMBARDIER			
TITLE			
GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
TRAFFIC SIGNAL LOCATION PLAN			
DIMENSIONS IN FEET			
SIZE	DWG. NO.	REV.	
D	6D60467	9	
SCALE 1:80	WT.	SHEET	32

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TCN HOAB-B2010	1
D. 705776-A	CHANGE
TCN HOAB-B2010	2
WR-1030294	THIS SHEET ADDED
EOLCZAK 1-24-02	
JGRADICH	
JCARNEVALE	

SIGNATURES ON FILE

TCN-HOAB-B2010

CON-42893

MANUAL LIGHT & HORN
RELOCATED TO 140+68.00
AND 150+68.00

TRAFFIC SIGNALS REVISED:
141+23.00 WAS
141+23.00

141+28.00 WAS
141+23.00

180+39.48 WAS
180+40.98

180+42.48 WAS
180+40.98

142+17.00 WAS
142+12.00

152+55.57 WAS
152+57.07

152+58.57 WAS
152+57.07

152+15.571 WAS
152+17.071

152+18.571 WAS
152+17.071

200+76.10 WAS
200+77.66

200+79.10 WAS
200+77.66

210+39.53 WAS
210+41.33

210+42.53 WAS
210+41.33

EOLCZAK 1-21-03

C.CHATHAM

JCARNEVALE

SIGNATURES ON FILE

TCN-HOAB-B2010

CON-60497

ADDED LIGHTS

BTEC/MV 12-11-04

R. BURNETT

JCARNEVALE

SIGNATURES ON FILE

TCN HOAB-B2065

WR 2001346

SHEETS 1 & 33
REVISED PER AS BUILT
CONDITIONS

P. CARSON 7/31/05

A. ROMEO

J. CARNEVALE

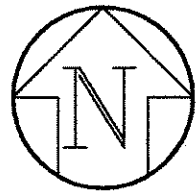
GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DATE	
CHKR.	
ENGRG.	
MFG.	
APPD.	
DFTG. SUPV.	

BOMBARDIER			
TITLE GEORGE BUSH INT. AIRPORT/HOUSTON PHASE 2			
TRAFFIC SIGNAL LOCATION PLAN			
DIMENSIONS IN FEET			
SIZE D	DWG. NO. 6D60467	REV. 9	
SCALE 1:20	WT.	SHEET 33	

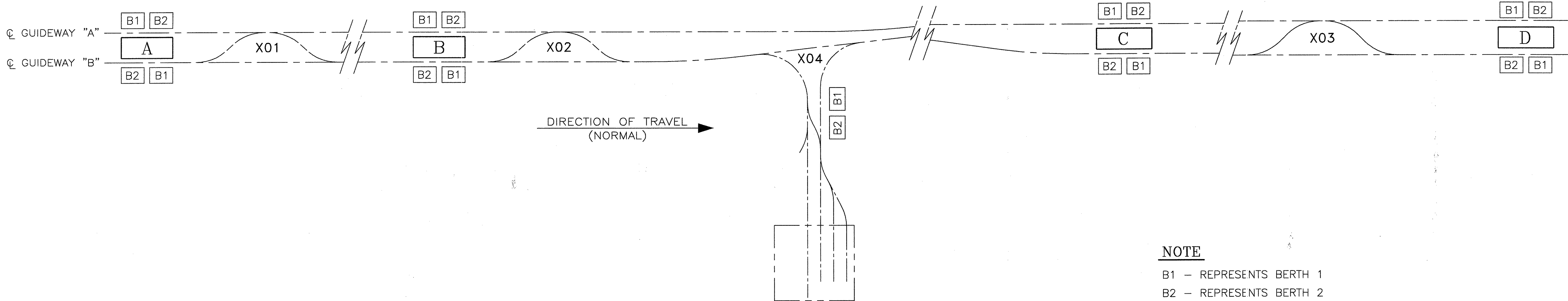
F
E
D
C
B

11 10 9 8 7 6 5 4 3 2 1



← DIRECTION OF TRAVEL
(NORMAL)

DIRECTION OF TRAVEL →
(NORMAL)



NOTE

B1 — REPRESENTS BERTH 1
B2 — REPRESENTS BERTH 2

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AutoCAD

TCN	1	CHANGE	5
D.			
IT:			
	TCN-HOAB-B2010		
	ECN-42935		
	THIS SHEET ADDED		
	E.OLCZAK 7-14-03		
	R.BURINETT		
	J.CARNEVALE		
	(R)		
	SIGNATURES ON FILE		
	TCN HOAB-B2065		9
	WR 2001346		
	NO DRAWING CHANGE TO		
	THIS SHEET, FORMAT		
	CHANGE ONLY		
	P. CARSON 7/31/05		
	A. ROMEO		
	J. CARNEVALE		

GEOMETRIC CHARACTERISTIC SYMBOLS	
FLATNESS	
STRAIGHTNESS	
ROUNDNESS (CIRCULARITY)	
CYLINDRICITY	
PROFILE OF ANY LINE	
PROFILE OF ANY SURFACE	
PARALLELISM	
PERPENDICULARITY (SQUARENESS)	
ANGULARITY	
RUNOUT	
TRUE POSITION	
CONCENTRICITY	
SYMMETRY	
MAXIMUM MATERIAL CONDITION (MMC)	
REGARDLESS OF FEATURE SIZE	

DATE	
CHKR.	
ENGRG.	
MFG.	
APPD.	
DFTG. SUPV.	

BOMBARDIER			
TITLE GEORGE BUSH INT, AIRPORT/HOUSTON PHASE 2			
STATION BERTHING LOCATIONS			
DIMENSIONS IN FEET			
SIZE D	DWG. NO. 6D60467	REV. 9	
SCALE 1:80	WT.	SHEET 34	

7 6 5 4 3 2 1