

Serial Number: IFB-FQ15096/ER  
Date of Issue: March 16, 2015  
Bid Due Date: **May 20, 2015**

Date of Issue: May 12, 2015

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY  
600 FIFTH STREET, N.W.  
WASHINGTON, D.C. 20001

AMENDMENT NO. 6  
TO  
INVITATION FOR BIDS  
FOR

**SUPPLY, DELIVERY AND INSTALLATION OF THE PORTABLE JACKS**

TO WHOM IT MAY CONCERN:

The Invitation for Bids for Bid Documents accompanying IFB FQ15096/ER requesting Bids for the above project are hereby changed in part as listed below.

1. **Volume 2 Technical Specifications, Pg 253**

<u>Delete</u>	<u>Substitute</u>	<u>Description</u>
Volume 2, Technical Specifications	Volume 2, Technical Specifications	<u>Revised</u>

2. **Volume 3 Drawings, Pg 254**

<u>Delete</u>	<u>Substitute</u>	<u>Description</u>
Volume 3, Drawings	Volume 3, Drawings and Pictures	<u>1. Portable Lift Control Cabinet Locations, capacity and Electrical Cable Length – P. 1</u> <u>2. End Jacking Pads and Side Lifting Pads end frame Ass-r End (B1-CAR) – P. 2 to 7</u> <u>3. End Jacking Pads and Side Lifting Pads End Underframe Assy-r End (B-CAR) – P. 8 to 13</u> <u>4. End Jacking Pads and Side Lifting Pads Jacking Pad Installation (A-CAR) – P. 14</u> <u>5. Picture: 8 Jacks lifting a Married Pair</u>

2. **Acknowledgment**

Offerors are required to acknowledge receipt of this amendment on Bid Form in the spaces provided. Failure to acknowledge all amendments may cause the Bid to be considered non-responsive to the invitation, which would require rejection of the Bid.



Richard Owens  
Procurement Manager/Contracting Officer, Office of Procurement



## VOLUME 2 TECHNICAL SPECIFICATIONS #####

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### Introduction

Portable train car lifts (portable jacks) are required for inspection and maintenance operations within the new West Falls Church Annex Service & Inspection (S&I) facility. The new S&I facility accounts for the capacity to provide maintenance to four (4) married pair Trains, two (2) married pairs by means of permanent lifts (existing in the facility) and two (2) additional married pairs by means of Portable Lifts or jacks (to procure hereby). As WMATA continue improving regional mobility and connecting communities through the new Silver Line project, the need to expand the existing Yard at West Falls Church is imperative in order to consistently deliver quality service to the Metro clients.

### Current Scope of Work

The Contractor shall supply, install (including interconnection, programming, calibration, and synchronization) and test the following:

- Two (2) sets (8 ea per set) 20 metric ton capacity mobile lifting jacks
- Two (2) control panels, one per each set of eight, to synchronize the operation of the eight (8) jacks.
- The Contractor shall also supply 4 ea, 20 metric tons capacity mobile lifting jacks with no control panel that will be used as spares.
- The Contractor shall provide heavy-duty screw type mobile lifts (jacks) to be controlled:
  1. singularly (each column)
  2. in sets of eight (8) by a remote hand held pendant
  3. in sets of eight (8), by a wireless central control console
  4. and any combination of the three above
- Lift operation in sets shall be synchronized such that variation in between any column shall not exceed four (4) millimeters maximum. Lifts shall be moveable by hand on concrete floor.

The Contractor shall supply the following equipment:

Equipment	Amount
Mobile lifting jacks (Portable Jacks)	16
Spares mobile lifting jacks (Portable Jacks)	4
Control panels to synchronize the operation of eight (8) jacks	2
Electrical requirements	The Contractor shall provide all electrical cable and plugs type HBL460P7W necessary to operate all the Jacks. <b>Reference Volume 3 Drawings for electrical infrastructure existing in the Facility and length of Cables.</b>



The Lifts shall meet the following requirements:

Lifting capacity per jack:	20 tons
Lifting capacity per set of eight jacks:	160 tons
Lowest position of cantilever (claw) above upper edge of rail (floor):	400 mm
Highest position of cantilever (claw) above upper edge of rail (floor):	not less than 1950mm
Vertical Stroke:	not less than 1565mm
Lifting/lowering speed:	12 to16 inch per minute
Control Panel Receptacle Voltage:	480 V AC, 3 ph, 60 Amps
Protection of electrical equipment:	IP 54 or higher
Lifting pads	Retractable/horizontally adjustable
Central Control Panel	Wireless remote controlled system
Synchronized precision for set	4 mm or .16 in
Noise Level	< 70 db (A)
Documentation:	Two fold each: GA drawing, Spare Parts List, Wiring Diagram, Lubrication Plan, Operation and Maintenance manual. Refer to Deliverables section.
Warranty	24 months from the day installed and tested, to include the replacement of all materials and components which becomes useless due to a defective material and incorrect manufacturing.
Coating:	Blast cleaning according to SIS 05 5900 Standard, SA grade 2-1/2. Color: Yellow, RAL 1007
Regulations:	EN 1493, ISO Standard, DIN Standard, IEC Regulations, VDE Regulations, and OSHA

## Deliverables

### A. OPERATION MANUALS AND MAINTENANCE MANUALS

The Contractor shall provide the following to the Project Manager:

- Five (5) hard copies (inserted in binders) and one (1) electronic copy (pdf format) of the Operation Manuals and Maintenance Manuals on the day of the delivery of the portable jacks.
- At least two (2) of the Manuals shall consist of laminated or similarly protected pages throughout.
- Operation and maintenance manuals shall include, but not necessarily be limited to, the following detailed information:
  1. Equipment function, normal operating characteristics, limiting operations.
  2. Demonstrate assembly, disassembly, and installation instructions of all equipment. Technical manuals shall include testing, troubleshooting charts with corrective action and scheduled maintenance instructions.
  3. Operating instructions for start-up, routine and normal operation, regulation and control, shutdown, and emergency conditions.
  4. Incorporate the equipment's lubrication and maintenance instructions.
  5. Parts list and predicted life of parts subject to wear.
  6. Outline, cross-section, and assembly drawings; engineering data; and electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, word description of wiring diagrams and interconnection diagrams.



7. Test data and performance curves.
  8. List of recommended spare parts with a price list and a list of spare parts provided under these specifications.
  9. Copies of installation instructions, parts lists or other documents packed with equipment when delivered.
  10. Product Technical Specifications.
- B. Equipment and component manufacturer's warranty of 24 months to include the replacement of all materials and components which becomes useless due to a defective material and incorrect manufacturing.

### Performance and Acceptance Criteria

- The Contractor shall perform an on-site training class in the maintenance and operation of the jacks within a week after the delivery of the Jacks to the Yard. Day and time will be coordinated closer to delivery date.
- The training shall include two sessions for two different shifts of a minimum duration of one day (7.5 hours) per each session. Training schedule to consist of 5 hours of maintenance related training and 2.5 hours of operational related training.
- The Contractor shall provide a presentation and materials (including computer or laptop computer, projector, etc.) to educate, train, and teach personnel (maximum of 16 students per session) thereby enabling the staff to operate, service, and maintain the equipment satisfactorily.
- The training shall include on-site instructions, twenty (20) handouts manuals per session, classroom aids, and all other items required to satisfactorily train each personnel.
- Practical training on equipment shall occupy a significant portion of all training classes.
- The training shall be held at the Lunch/Training Room and Shop areas of the WMATA's West Falls Church Yard Storage and Inspection Annex Building.
- Training must also include a demonstration of the operation of the jacks by means of lifting two (2) married pair trains.

### Technical Specifications

Development to meet the following standards;  
EN 1493, ISO Standard, DIN Standard, IEC Regulations, VDE Regulations, and OSHA

Product technical specifications shall be submitted as part of the Deliverables package

### Performance Schedules

The Contractor shall deliver the Work including but not limited to the training and installation within a period of 180 days after the Notice to Proceed

### Location of work and any constraints

The Contractor shall deliver the portable jacks (via FOB destination) to:

WMATA's West Falls Church S & I Yard  
Attention: Mr. Raúl Cintron, Project Manager (202) 527-1130 cell.  
7251 Idylwood Rd, Falls Church, VA 22043,

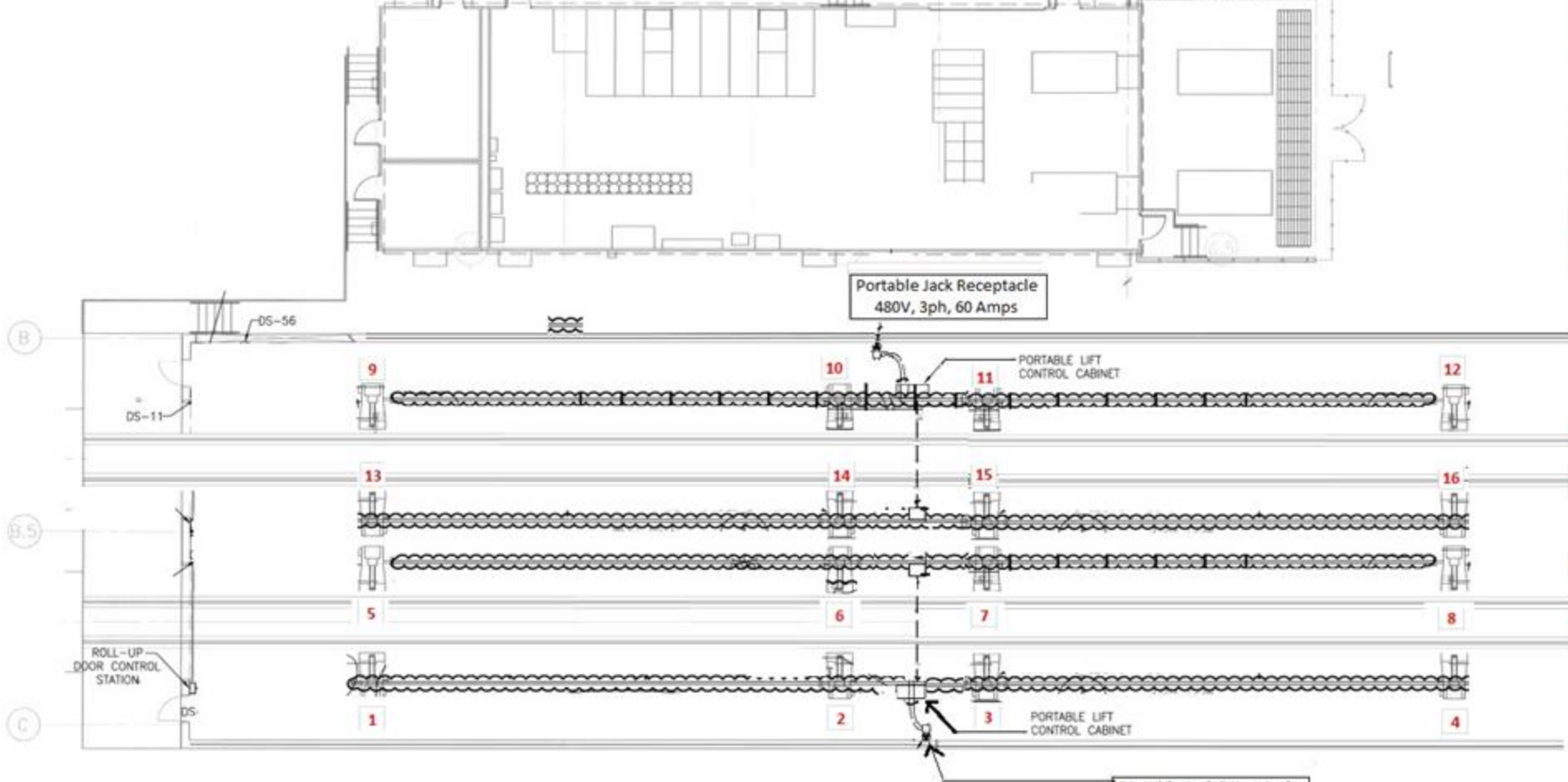
Delivery hours are between 6:30 am and 12:30pm. The Contractor shall contact Mr. Raul Cintron, via the above contact details, 2 calendar days prior to the delivery date. Any damage(s) incurred in shipping the equipment is the sole responsibility of the Contractor. #####

## DRAWING INDEX

DRAWING No.	TITLE	PAGE
1	PORTABLE LIFT CONTROL CABINET LOCATIONS, CAPACITY AND ELECTRICAL CABLE LENGTH	1
D4113-000424-b	END JACKING PADS AND SIDE LIFTING PADS END FRAME ASSY-R END (B1-CAR)	2 TO 7
D4113-000205-c	END JACKING PADS AND SIDE LIFTING PADS END UNDERFRAME ASSY-F END (B-CAR)	8 TO 13
D4112-000039-d	END JACKING PADS AND SIDE LIFTING PADS JACKING PAD INSTALLATION (A-CAR)	14

**PORTABLE LIFT CONTROL CABINET LOCATIONS,  
CAPACITY AND ELECTRICAL CABLE LENGHT**

VOLUME 3 [AMMENDED ON 4/15/15]



Portable Jack Receptacle  
480V, 3ph, 60 Amps



Cable length from Control Panel to Portable Lifts																
Port. Lift no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cable Length (ft)	80	20	20	80	100	30	30	100	80	20	20	80	100	30	30	100

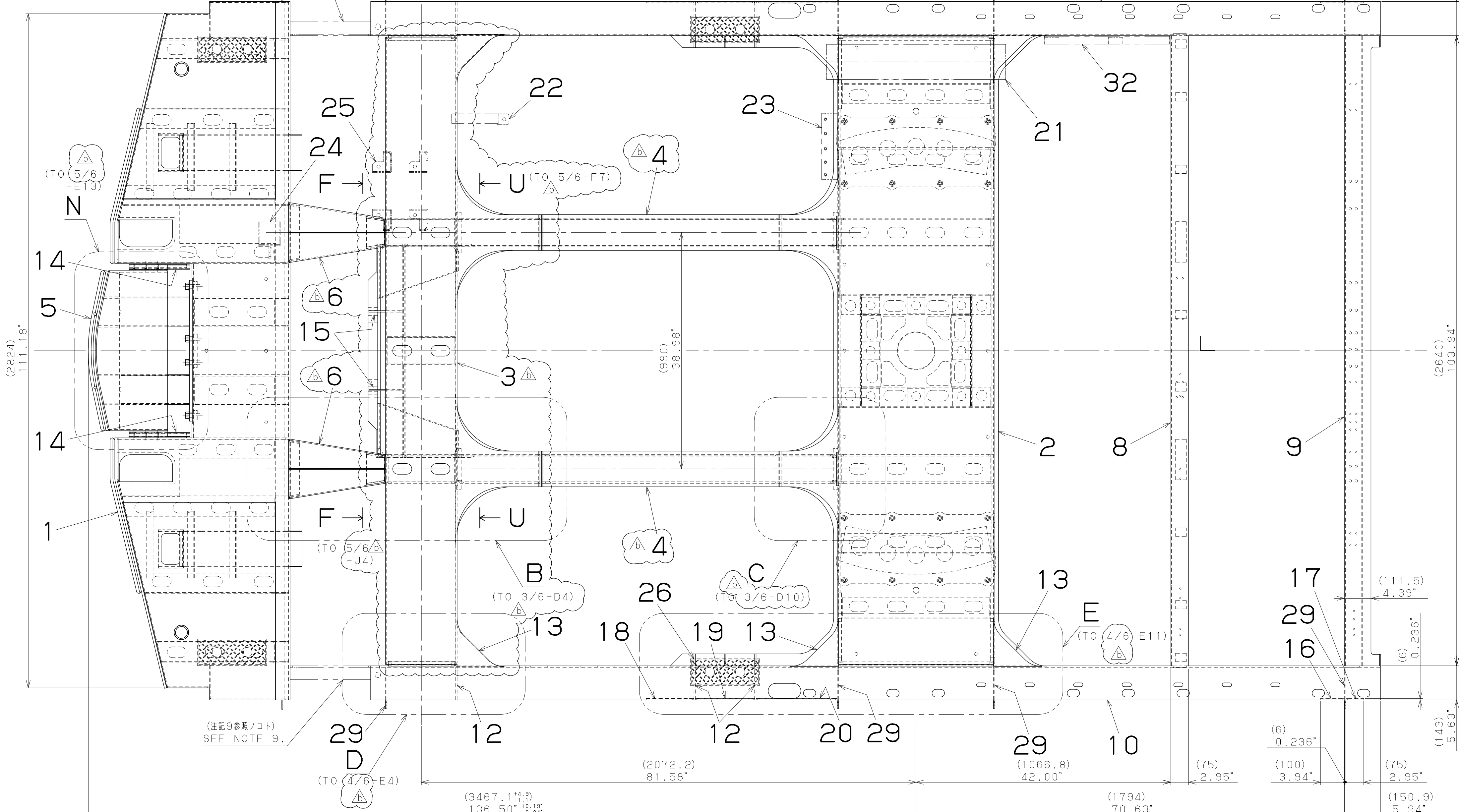
D4113-000424-b  
NEXT ASSEMBLY  
WMATA 7000

(注記9参照ノコト)  
SEE NOTE 9.

(4229.3)  
166.51"

(2284.4)  
89.94"

(143)  
5.63"

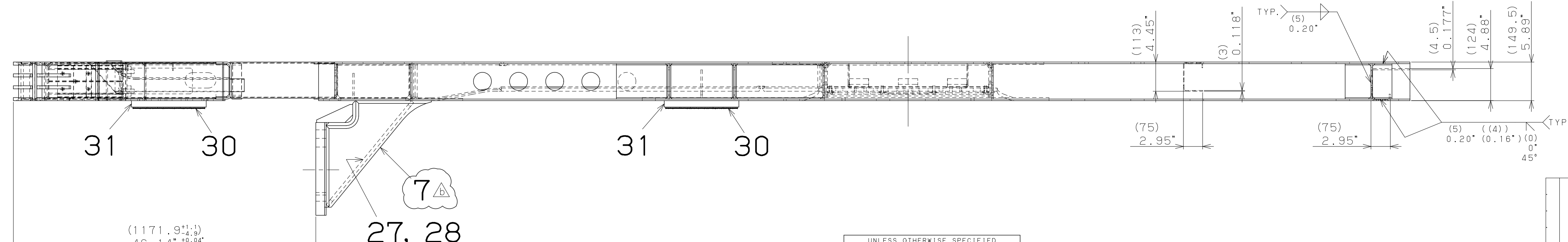


(注記9参照ノコト)  
SEE NOTE 9.

(注記9参照ノコト)  
SEE NOTE 9.

(注記9参照ノコト)  
SEE NOTE 9.

SECTION A-A  
(FROM G12)



PAGE 2

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS  
1.20" ( ) = 30 ±0.02" (0.5)  
1.20"-4.70" ( 30-120) ±0.05" (0.8)  
4.70"-12.5" ( 120-315) ±0.05" (1.2)  
12.5"-40.0" ( 315-1000) ±0.08" (2.0)  
40.0"-80.0" ( 1000-2000) ±0.12" (3.0)  
OVER 80.0" (2000- ) ±0.25" (6.0)

ANGLES ±1°

DRILLED HOLE DIA. TOLERANCES  
0.12"-0.24" ( 3-6) +0.006" (0.15), -0  
0.24"-0.47" ( 6-12) +0.010" (0.25), -0  
0.47"-0.98" (12-25) +0.012" (0.30), -0  
0.98"-1.97" (25-50) +0.018" (0.45), -0

TYPE	ITEM CODE	ASSY WEIGHT
種別	品目コード	組立重量

b	12E01043	CHANGED ITEM 3 AND 4, 5, 6, 7, CORRECTED ERRORS.	'12.03.22	K.I	Y.S	Y.T
a	12E00768	CHANGED TITLE.	'12.02.27	K.I	Y.S	Y.T
REV.	E.C.O. NO.	DESCRIPTION	DATE	DRW	CHKD	APP'D
職階	連絡票 NO.	改訂内容	改訂日付	担当	審査	承認
		REVISIONS				
		改訂				

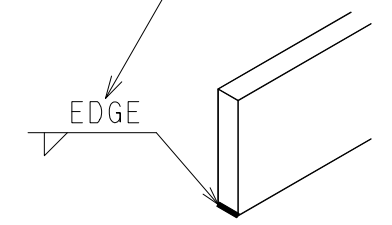
2012.02.10	承認 APPROVED	Y. Toya	Y. Toya	2012.02.10	K.I	Y.S	Y.T
2012.02.10	審査 CHECKED	Y. Seki	Y. Seki	2012.02.27	K.I	Y.S	Y.T
	作成 DRAWN	K. Ikushima	K. Ikushima				
	図番 DRG. NO.	D4113-000424-b-1/6		製品形式	WA7000Z	車種	WMATA7000
	図名 TITLE	END UNDERFRAME ASSY-R END		車種種別	B1	1再付	=
	図名 TITLE	Rエンド端部台枠組立 (B1-CAR)		製		製	
	図番 DRG. NO.	D4113-000424-b-1/6		製		製	
	図名 TITLE	END UNDERFRAME ASSY-R END		製		製	
	図名 TITLE	Rエンド端部台枠組立 (B1-CAR)		製		製	
	図番 DRG. NO.	D4113-000424-b-1/6		製		製	
	図名 TITLE	END UNDERFRAME ASSY-R END		製		製	
	図名 TITLE	Rエンド端部台枠組立 (B1-CAR)		製		製	
	図番 DRG. NO.	D4113-000424-b-1/6		製		製	
	図名 TITLE	END UNDERFRAME ASSY-R END		製		製	
	図名 TITLE	Rエンド端部台枠組立 (B1-CAR)		製		製	
	図番 DRG. NO.	D4113-000424-b-1/6		製		製	

尺 度 0 4 8 10 20 30  
SCALE 3"=32"

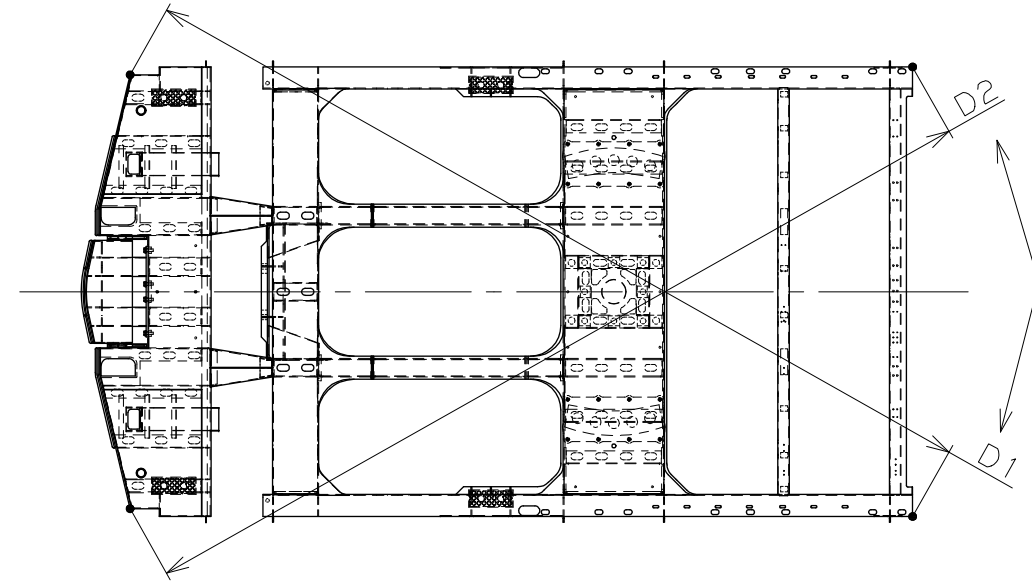
ANSI D 旧図番 - 装置名 台枠・連結装置 装置別コード 411 細番 026  
客先図番 関連図面 SYS UNDERFRAME/COUPLING DEVICE SYS. CODE SER. NO.

D4113-000424-b  
NEXT ASSEMBLY  
WMATA 7000

(注記10参照)  
SEE NOTE 10.



TYPICAL EDGE WELD



(注記6参照)  
D2 SEE NOTE 6.

NOTES

- 1. WELDING FOR LAHT STEEL SHALL BE ACCORDING TO WELDING PROCEDURE WM7-J-2101 (LATEST VERSION), UNLESS OTHERWISE SPECIFIED.
2. WELDING FOR STAINLESS STEEL OR STAINLESS STEEL AND OTHER MATERIAL SHALL BE ACCORDING TO WELDING PROCEDURE WM7-J-2201 (LATEST VERSION), UNLESS OTHERWISE SPECIFIED.
3. WELDING INSPECTION SHALL BE IN ACCORDANCE WITH THE INSPECTION MANUAL WM7-J-3701 (LATEST VERSION).
4. WELDED CARBON STEEL PART TO BE PAINTED IN DAI NIPPON TORYO CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000018 (WM7-J-1201) (DAI NIPPON) (LATEST VERSION) OR IN DUPONT CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000019 (WM7-J-1202) (DUPONT) (LATEST VERSION). AFTER WELDING, THE PAINTING AREA OF EACH COLOR SHALL BE ACCORDING TO END UNDERFRAME BLACK PAINT PROCEDURE D1600-000012.
5. EXPOSED SURFACE OF CARBON STEEL TO BE PAINTED IN DAI NIPPON TORYO CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000018 (WM7-J-1201) (DAI NIPPON) (LATEST VERSION) OR IN DUPONT CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000019 (WM7-J-1202) (DUPONT) (LATEST VERSION). THE PAINTING AREA OF EACH COLOR SHALL BE ACCORDING TO END UNDERFRAME BLACK PAINT PROCEDURE D1600-000012.
6. DIFFERENCE BETWEEN D1-D2 SHALL BE 0.20" OR LESS.
7. LOCKING AGENT IS THREE BOND TB1342N (BLUE). (X90101-0020).
8. GREASE IS SHELL ALVANIA GREASE S2 (W90121-0070).
9. THIS PART OF ITEM 10 AND 11 TO BE CUT OFF AFTER UNDERFRAME ASSY (D4111-000015).
10. UNLESS OTHERWISE SPECIFIED, EDGE TO BE WELDED AS SHOWN ON "TYPICAL EDGE WELD"

注記

- 1. 特記ナキLAHT鋼ノ溶接ハ溶接要領WM7-J-2101 (最新版) ニヨルコト。
2. 特記ナキステンレス鋼オヨビステンレス鋼ト異種金属ノ溶接ハ溶接要領WM7-J-2201 (最新版) ニヨルコト。
3. 溶接検査ハWM7-J-3701 (最新版) ニヨルコト。
4. 溶接後、炭素鋼材溶接部ヲ塗装仕様書M1800-000018 (WM7-J-1201) (大日本塗料) (最新版) ニヨリ、チャコールグレイ色オヨビ黒色マタハ、各色ノ塗装範囲ハ、黒バリ黒色塗装要領D1600-000012ニヨルコト。
5. 炭素鋼材露出部ハ、炭素鋼材M1800-000018 (WM7-J-1201) (大日本塗料) (最新版) ニヨリ、チャコールグレイ色オヨビ黒色マタハ、各色ノ塗装範囲ハ、黒バリ黒色塗装要領D1600-000012ニヨルコト。
6. D1-D2ハ5mm以下ナルコト。
7. ネジロックハ、スリーボンドTB1342N (青色)、(X90101-0020) トスル。
8. グリスハ、シェッ アルバニア グリース S2 (W90121-0070) トスル。
9. 照写10ト11ノコノ部分ハ台枠組立時 (D4111-000015) ニ切断スルコト。
10. 特記ナキ部材編組ハ溶接ノコト。



Table with 5 columns: APPLICABLE CAR, TYPE, SET/CAR, WT/CAR, EFFECTIVITY. It lists configurations for cars A, B1, and B2.

Table titled 'UNLESS OTHERWISE SPECIFIED' showing tolerance ranges for dimensions and angles.

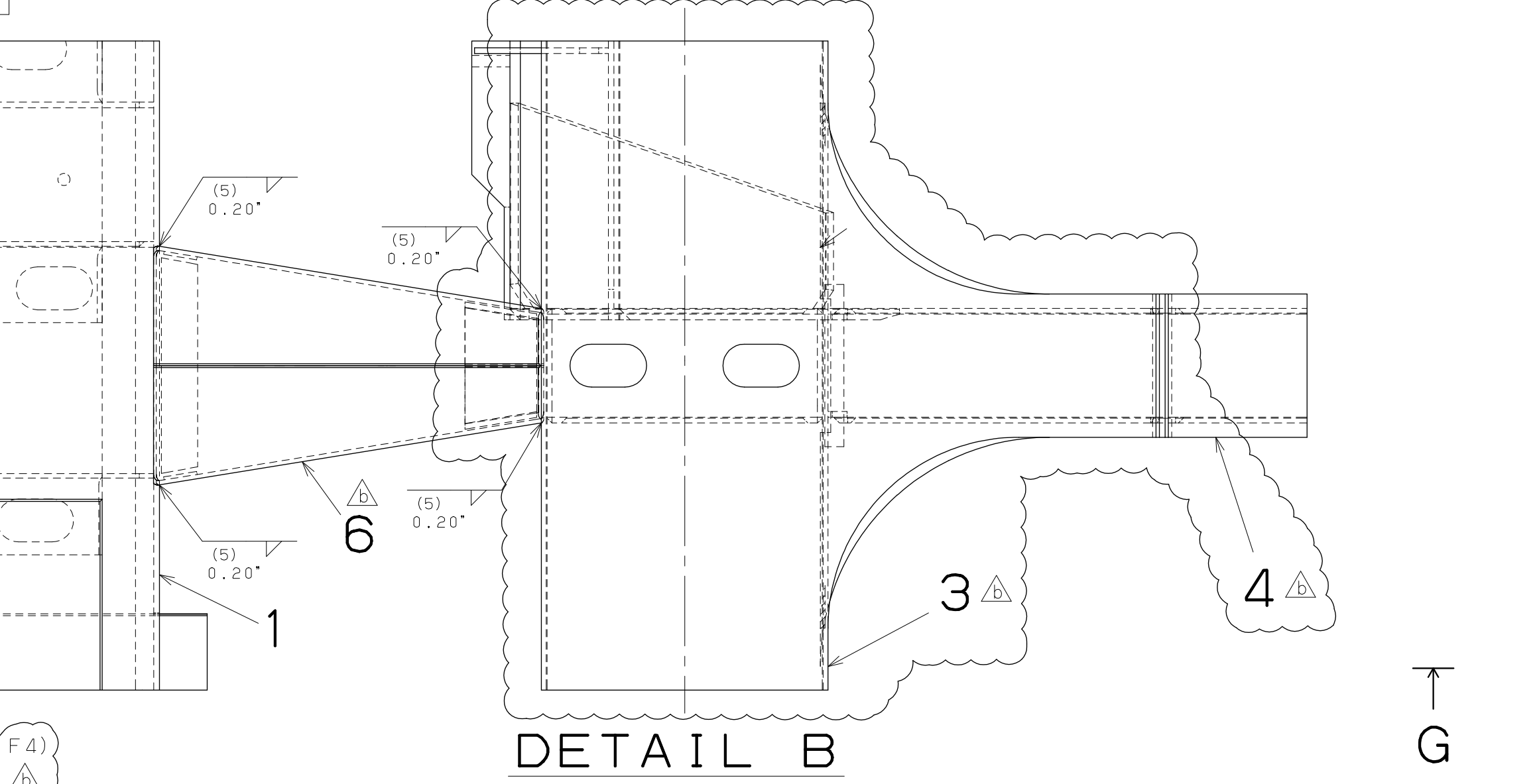
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Main parts list table with columns: QTY REQD, ITEM NO, ITEM CODE, ITEM NAME, DRG NO., MATERIAL, WEIGHT PER PC, DESCRIPTION, REV. MARK. Lists various components like END BEAM ASSY, BOLSTER ASSY, STIFFENER, etc.

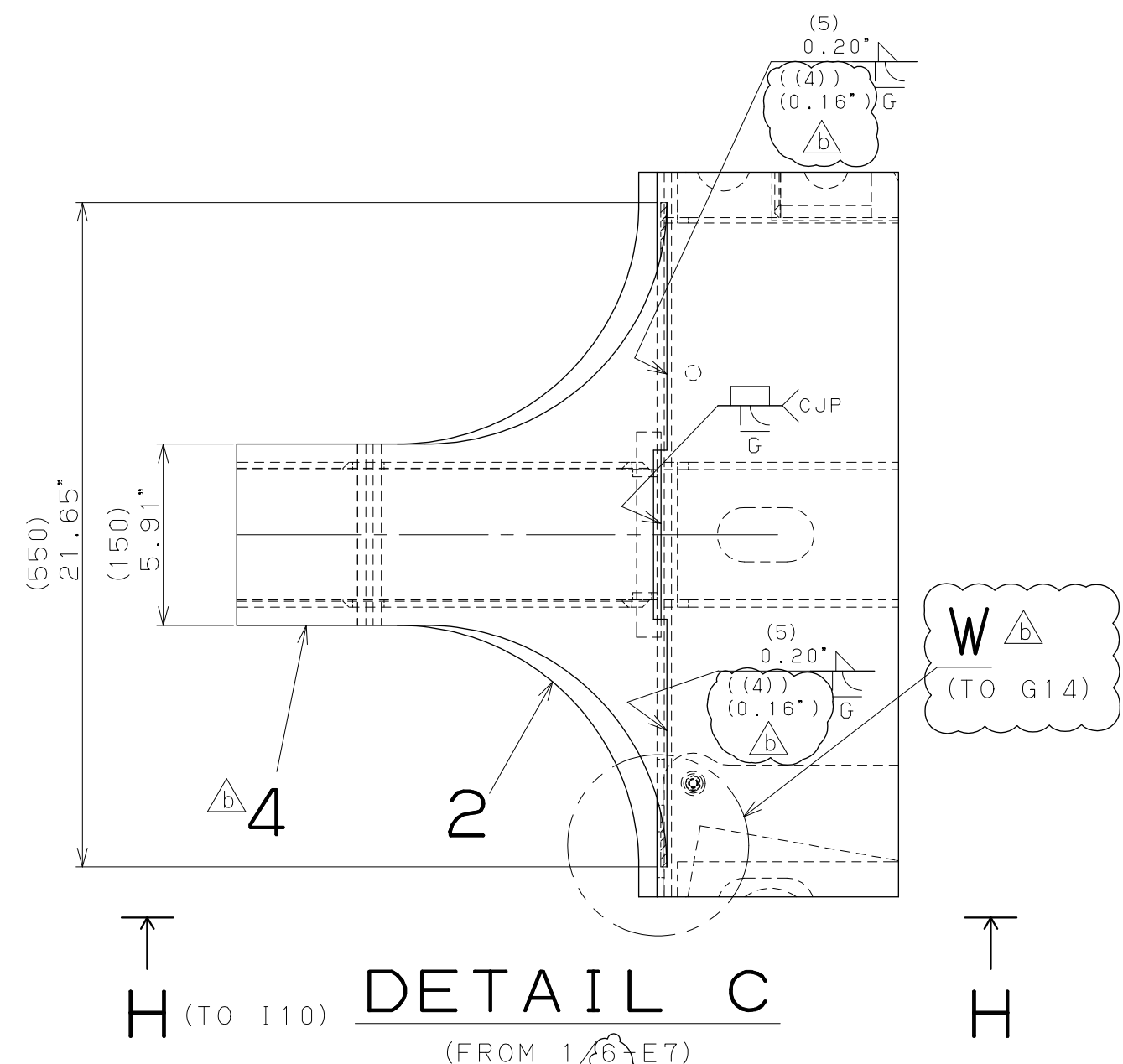
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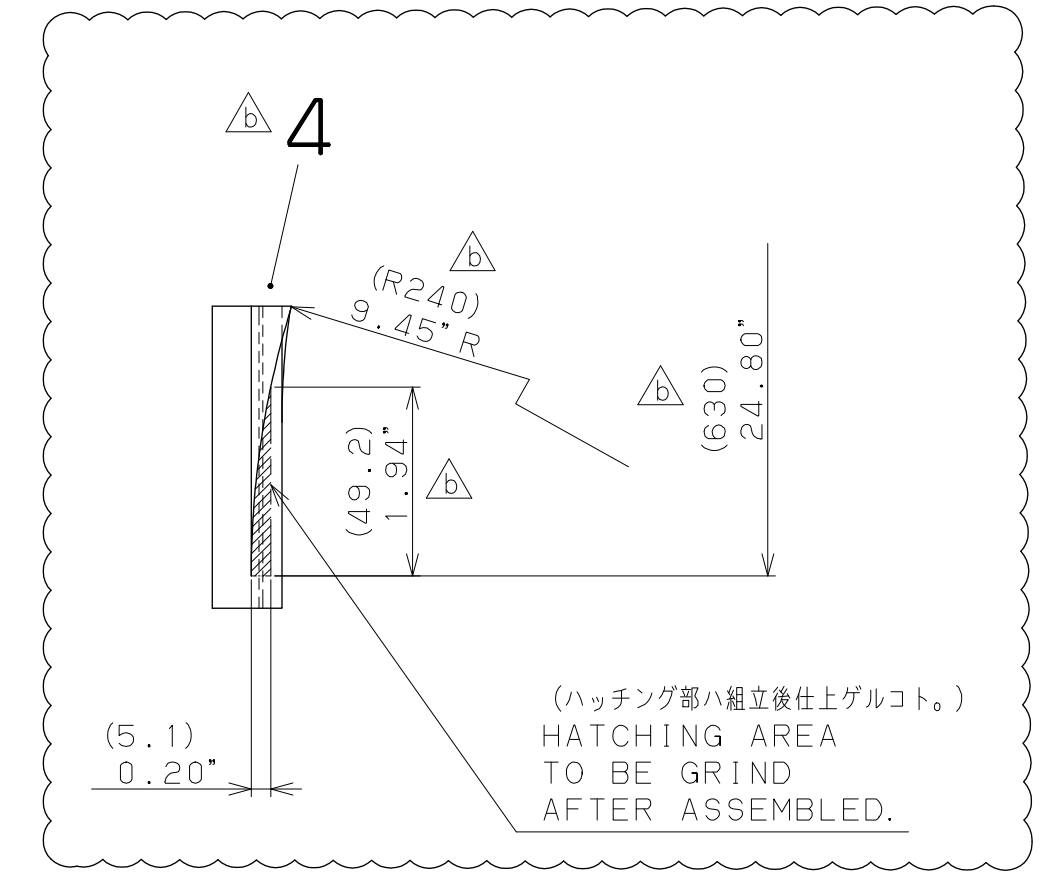
A  
B  
C  
D  
E  
F  
G  
H  
I  
J



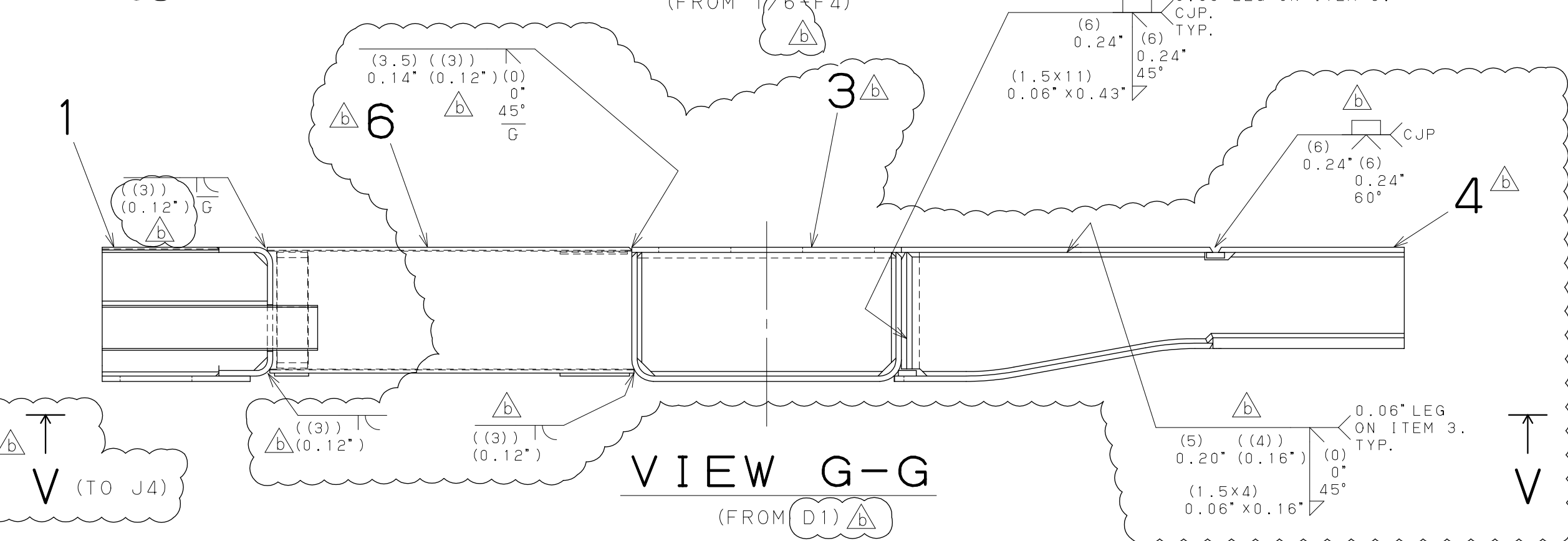
DETAIL B  
(FROM 1 (6 F4))



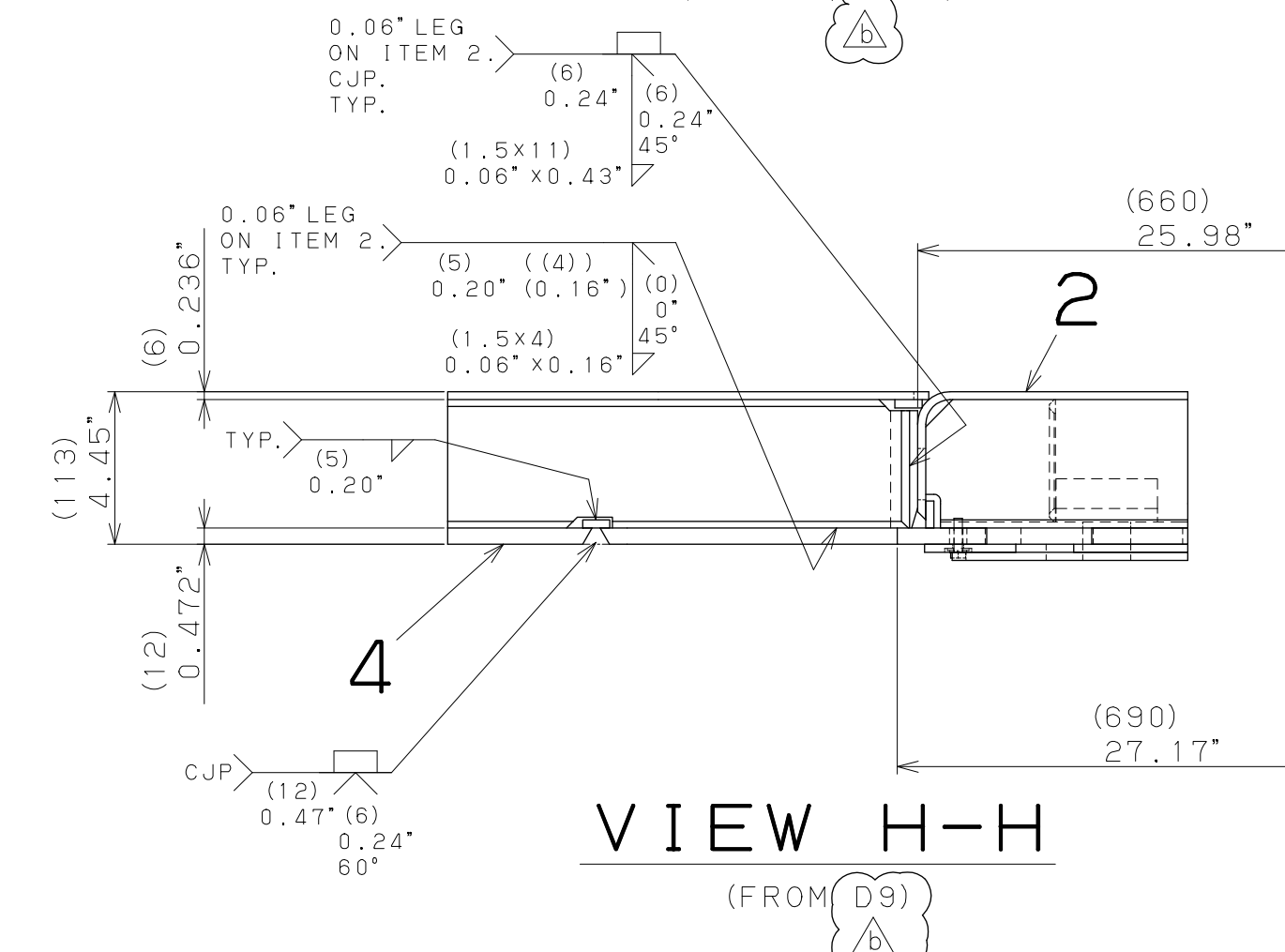
DETAIL C  
(FROM 1 (6 E7))



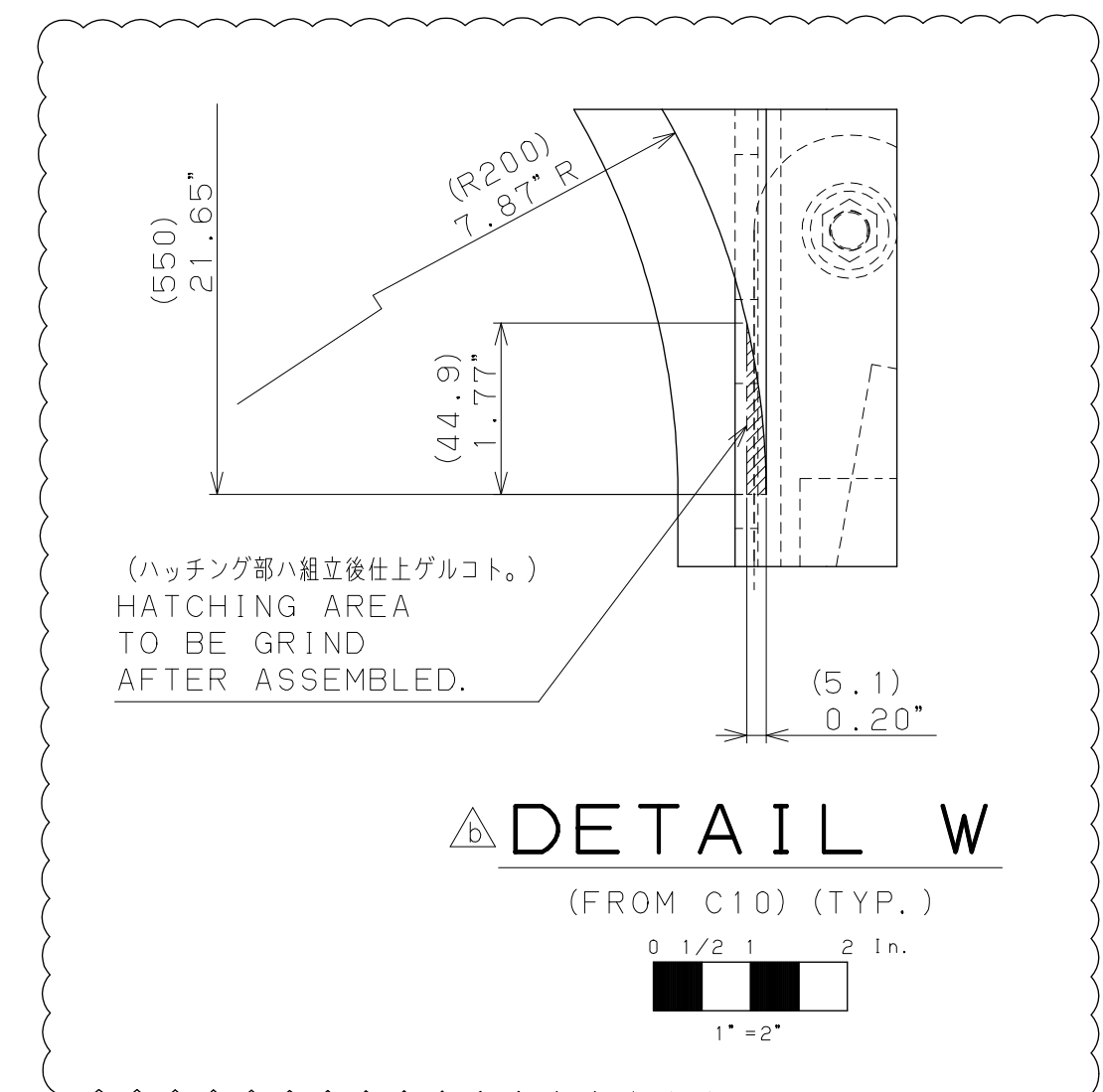
DETAIL Q  
(FROM 1 (4) (TYP.))



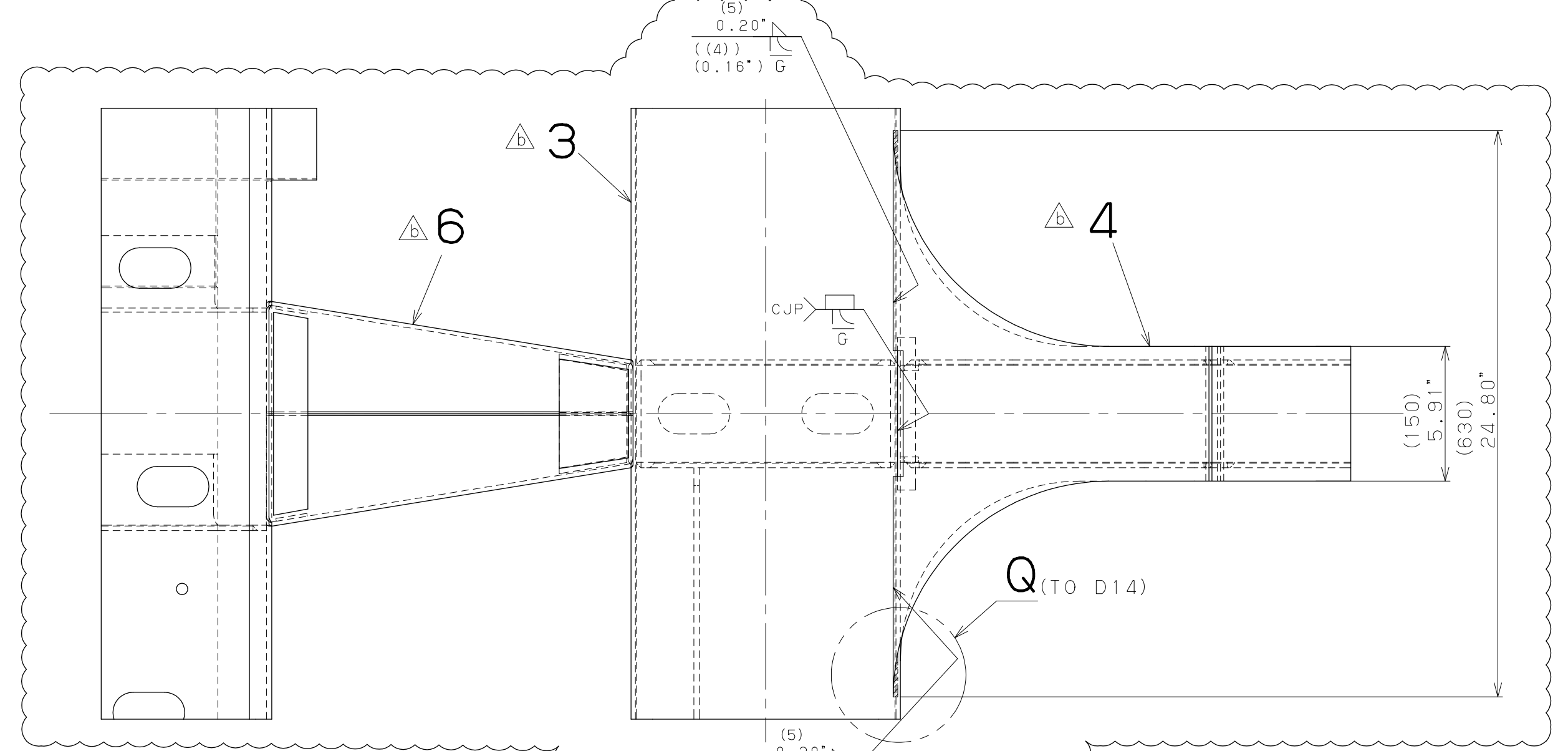
VIEW G-G  
(FROM (D1))



VIEW H-H  
(FROM (D9))



DETAIL W  
(FROM C10 (TYP.))



VIEW V-V  
WITHOUT ITEM 7 COUPLER ANCHOR  
(FROM F1)

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS
1.20" ( 30) ±0.02" (0.5)
1.20" - 4.70" ( 30 - 120) ±0.03" (0.8)
4.70" - 12.5" ( 120 - 315) ±0.05" (1.2)
12.5" - 40.0" ( 315 - 1000) ±0.08" (2.0)
40.0" - 80.0" (1000 - 2000) ±0.12" (3.0)
OVER 80.0" (2000 - ) ±0.25" (6.0)

ANGLES
±1°

DRILLED HOLE DIA. TOLERANCES
0.12" - 0.24" ( 3 - 6) +0.006" (0.15), -0
0.24" - 0.47" ( 6 - 12) +0.010" (0.25), -0
0.47" - 0.98" (12 - 25) +0.012" (0.30), -0
0.98" - 1.97" (25 - 50) +0.018" (0.45), -0

TYPE	ITEM CODE	ASSY WEIGHT
種類	品目コード	組立重量

REV.	E.C.O. NO.	DESCRIPTION	DATE	DRWN	CHKD	APPD
b	12E01043	CHANGED ITEM 3 AND 4, 5, 6, 7, ADDED VIEW V-V AND DETAIL W, CORRECTED ERRORS.	'12.03.22	K.I	Y.S	Y.T
a	12E00768	CHANGED TITLE.	'12.02.27	K.I	Y.S	Y.T

図番	DRG. NO.	製品形式	車種	種別	1再付	組数
	D4113-000424-b	WA7000Z WMATA7000	B1	-	1	1

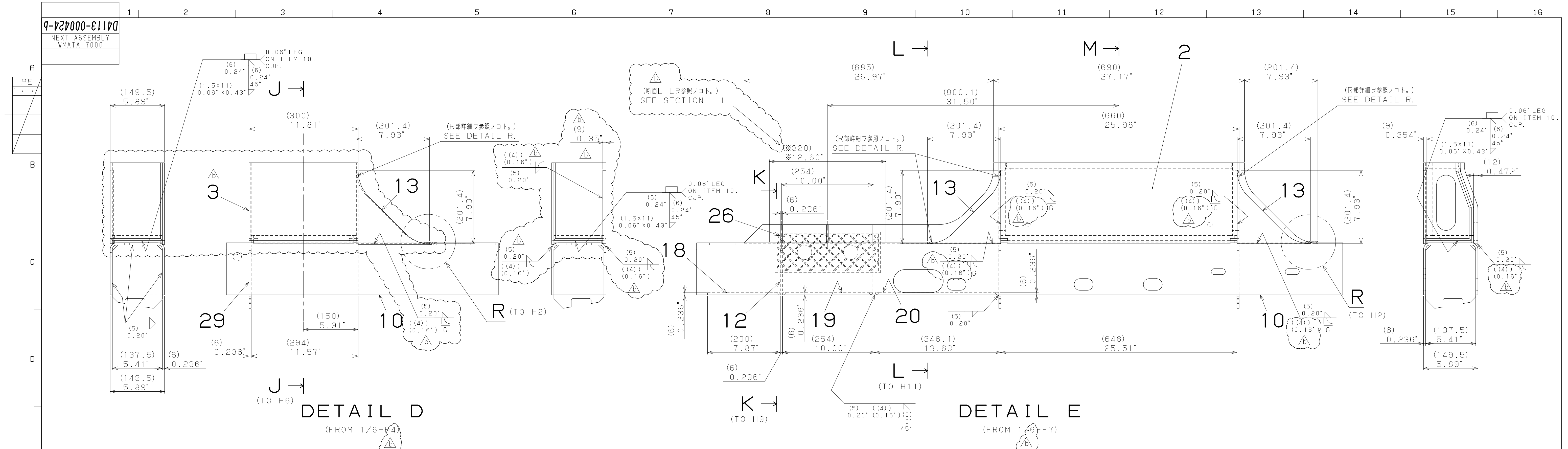
APPROVED  
CHECKED  
DRAWN

**川崎重工** KAWASAKI HEAVY INDUSTRIES, LTD.  
車両カンパニー KOBE, JAPAN  
R&L (R&L) COMPANY

名称 TITLE  
END UNDERFRAME ASSY-R END  
エンドフレーム台枠組立 (B1-CAR)

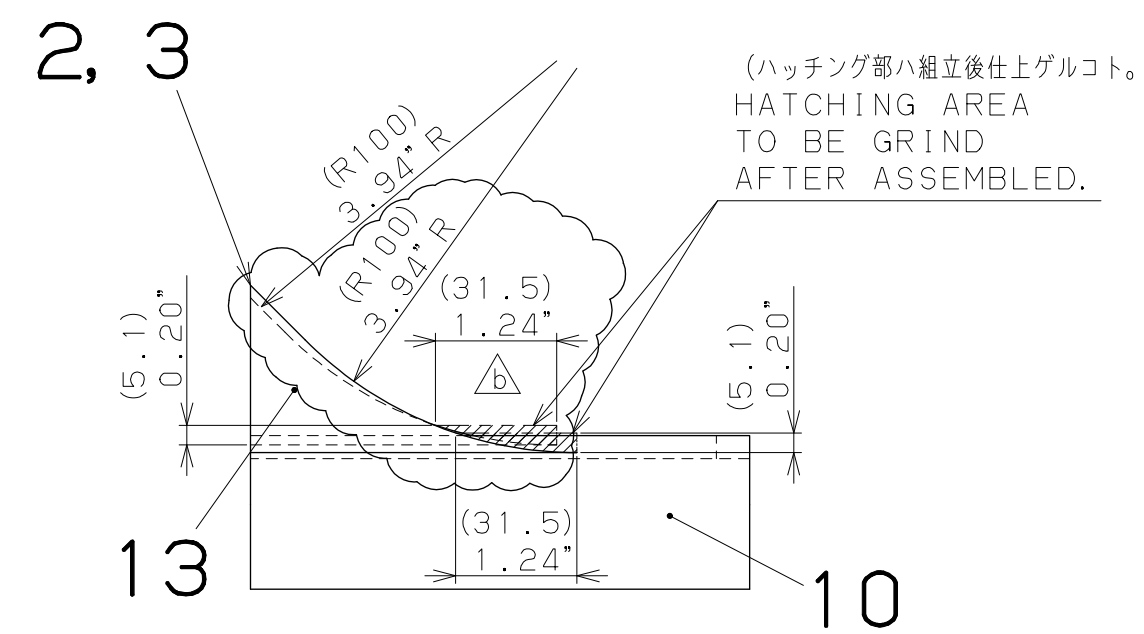
尺度 SCALE  
3 : 16

D4113-000424-b  
NEXT ASSEMBLY  
WMATA 7000

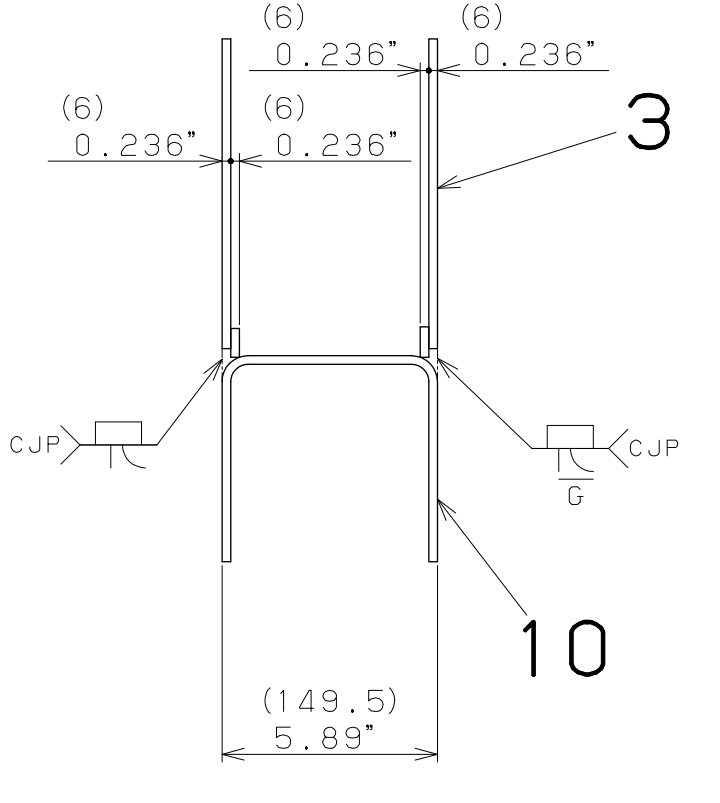
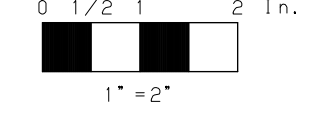


DETAIL D  
(FROM 1/6-F4)

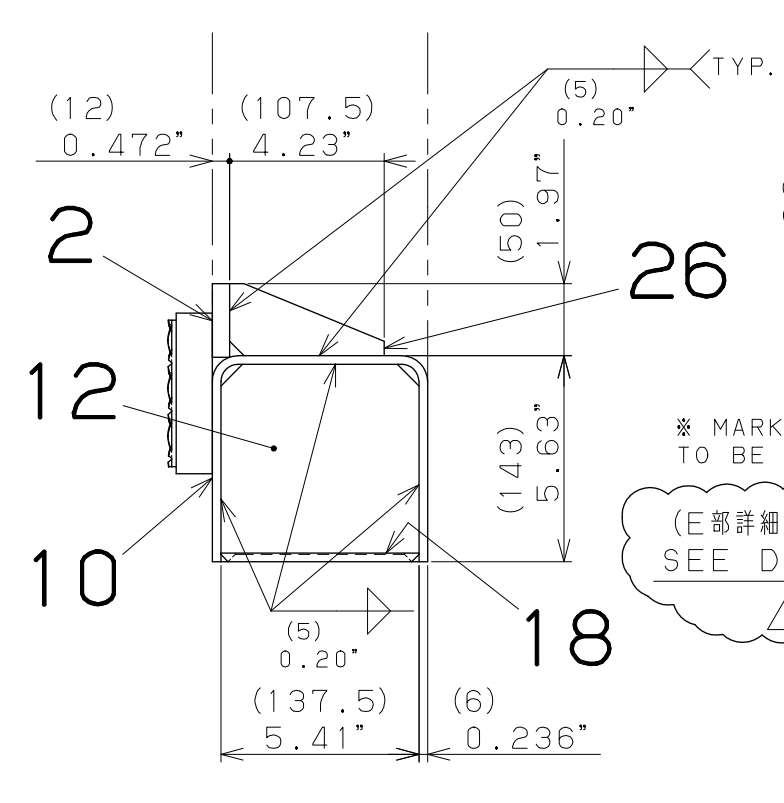
DETAIL E  
(FROM 1/6-F7)



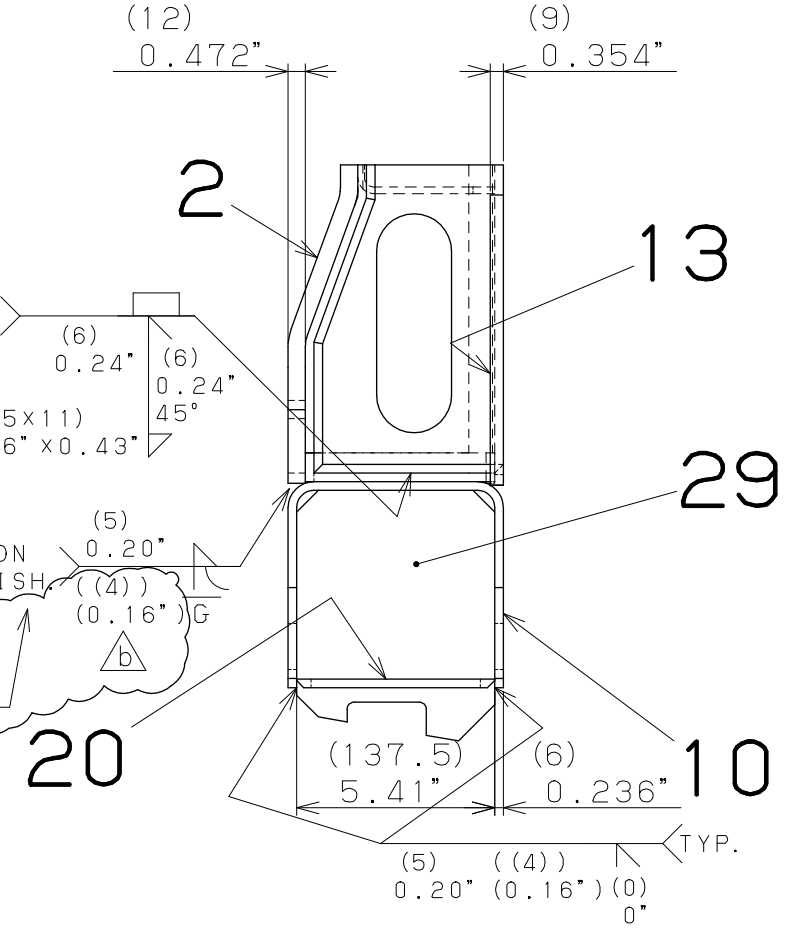
DETAIL R  
(FROM C5, C14) (TYP.)



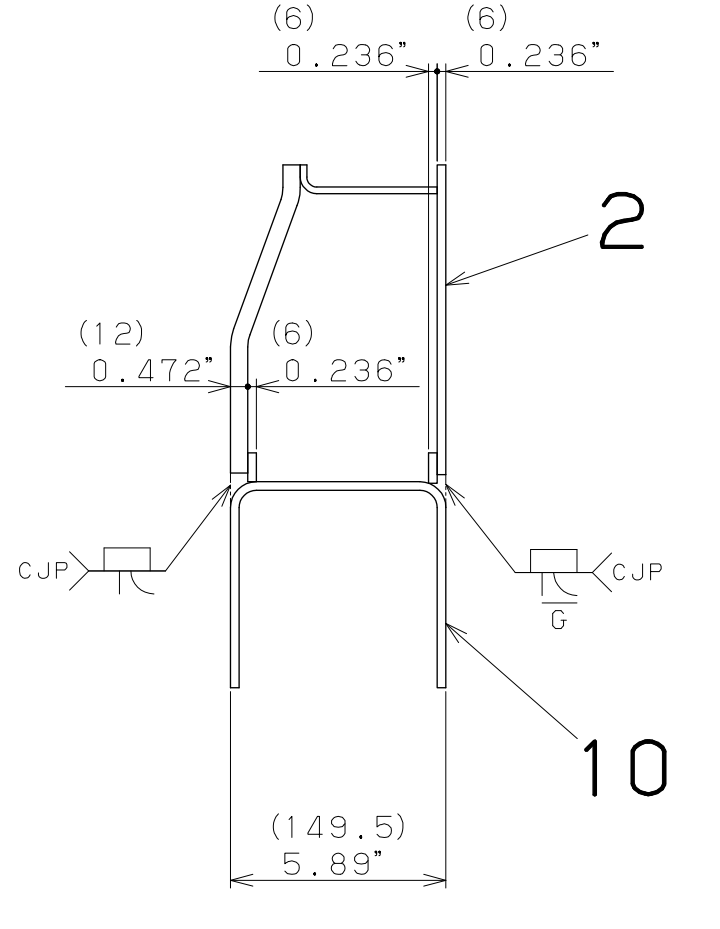
SECTION J-J  
(FROM D3)



SECTION K-K  
(FROM D8)



SECTION L-L  
(FROM D10)



SECTION M-M  
(FROM D12)

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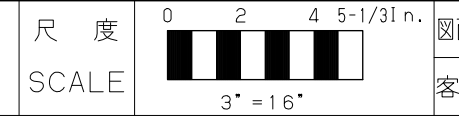
UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS	
1.20" (30)	±0.02" (0.5)
1.20" - 4.70" (30 - 120)	±0.03" (0.8)
4.70" - 12.5" (120 - 315)	±0.05" (1.2)
12.5" - 40.0" (315 - 1000)	±0.08" (2.0)
40.0" - 80.0" (1000 - 2000)	±0.12" (3.0)
OVER 80.0" (2000 - )	±0.25" (6.0)
ANGLES	
±1°	
DRILLED HOLE DIA. TOLERANCES	
0.12" - 0.24" (3 - 6)	+0.006" (0.15), -0
0.24" - 0.47" (6 - 12)	+0.010" (0.25), -0
0.47" - 0.98" (12 - 25)	+0.012" (0.30), -0
0.98" - 1.97" (25 - 50)	+0.018" (0.45), -0

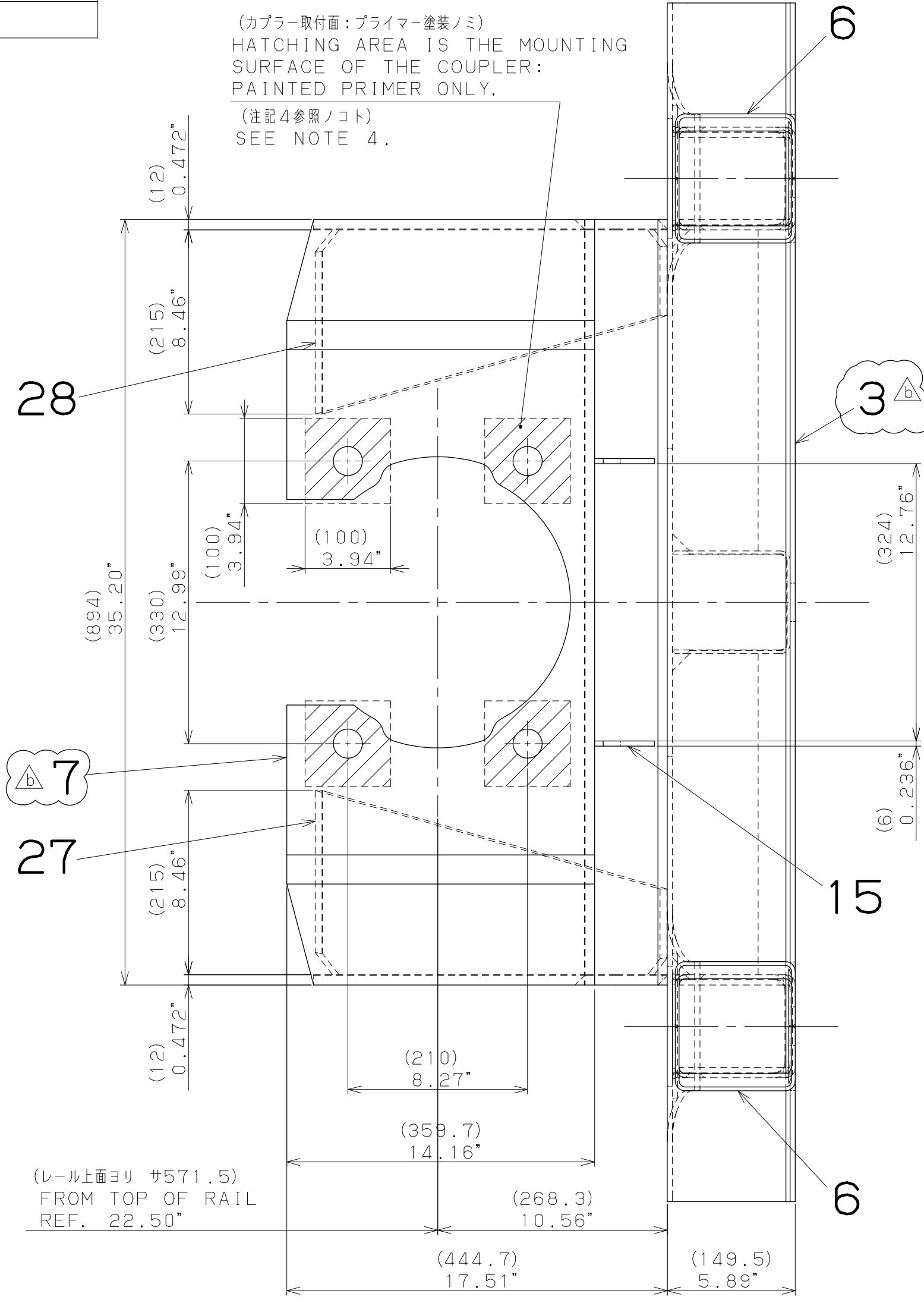
REV.	ECONO. NO.	DESCRIPTION	DATE	DRWN	CHKD	APPD
b	12E01043	CHANGED ITEM	'12.03.22	K.I	Y.S	Y.T
a	12E00768	CHANGED TITLE.	'12.02.27	K.I	Y.S	Y.T

REV.	ECONO. NO.	DESCRIPTION	DATE	DRWN	CHKD	APPD
b	12E01043	CHANGED ITEM	'12.03.22	K.I	Y.S	Y.T
a	12E00768	CHANGED TITLE.	'12.02.27	K.I	Y.S	Y.T

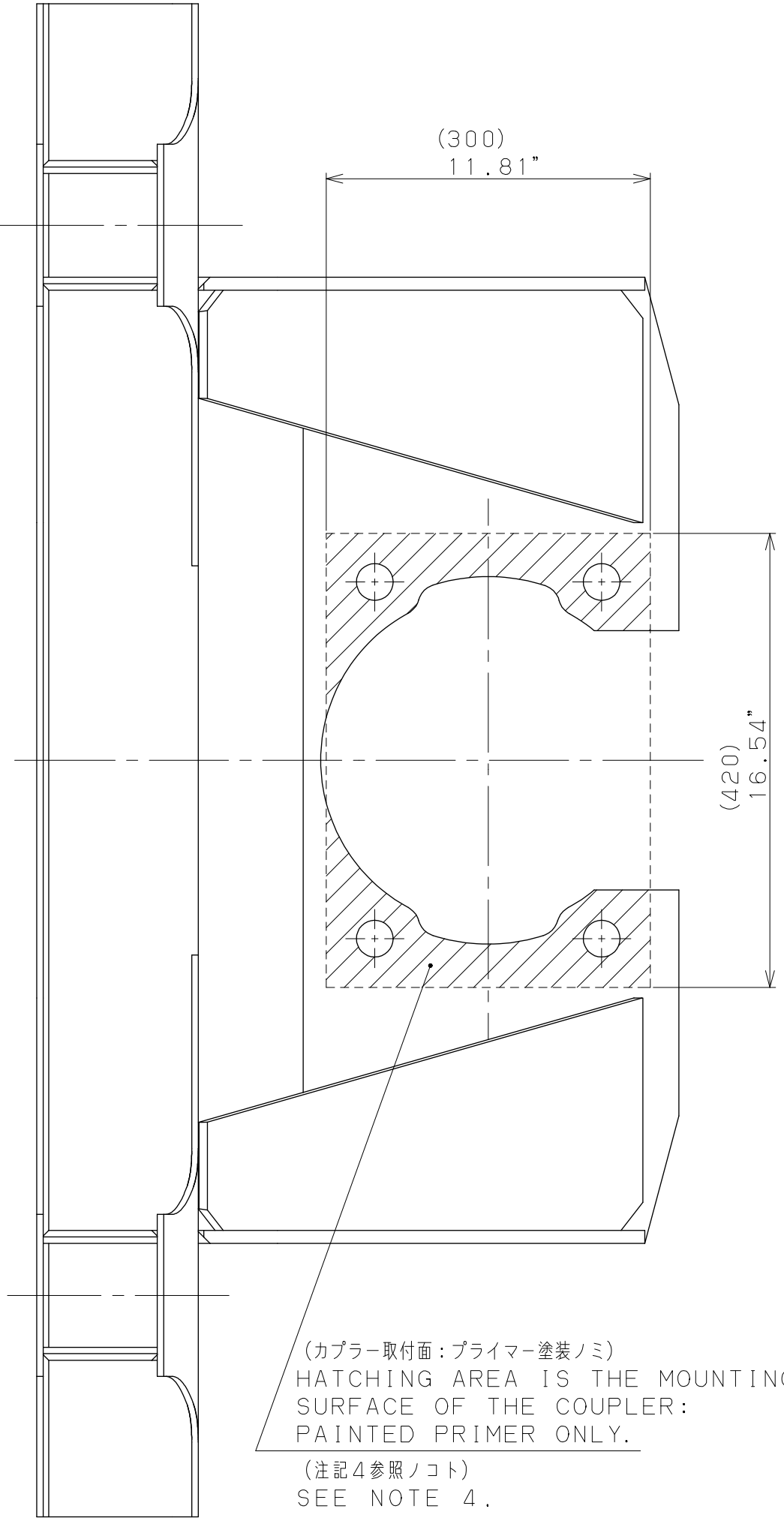
承認 APPROVED	川崎重工業株式会社 KAWASAKI HEAVY INDUSTRIES, LTD. KOBELINK STICK COMPANY	車両カンパニー KOBE, JAPAN
検査 CHECKED	END UNDERFRAME ASSY-R END エンドフレーム合組組立 (B1-CAR)	尺度 SCALE 3:16
作成 DRAWN	元図 DRG. NO. 411	図番 DRG. NO. D4113-000424-b-4
製品形式	WA7000Z WMATA7000 B1	車種種別
装置名	台枠・連結装置	装置別コード
SYS	UNDERFRAME/ COUPLING DEVICE	SYS. CODE
図番	411	細番
客先図番		SER. NO.
関連図番		026



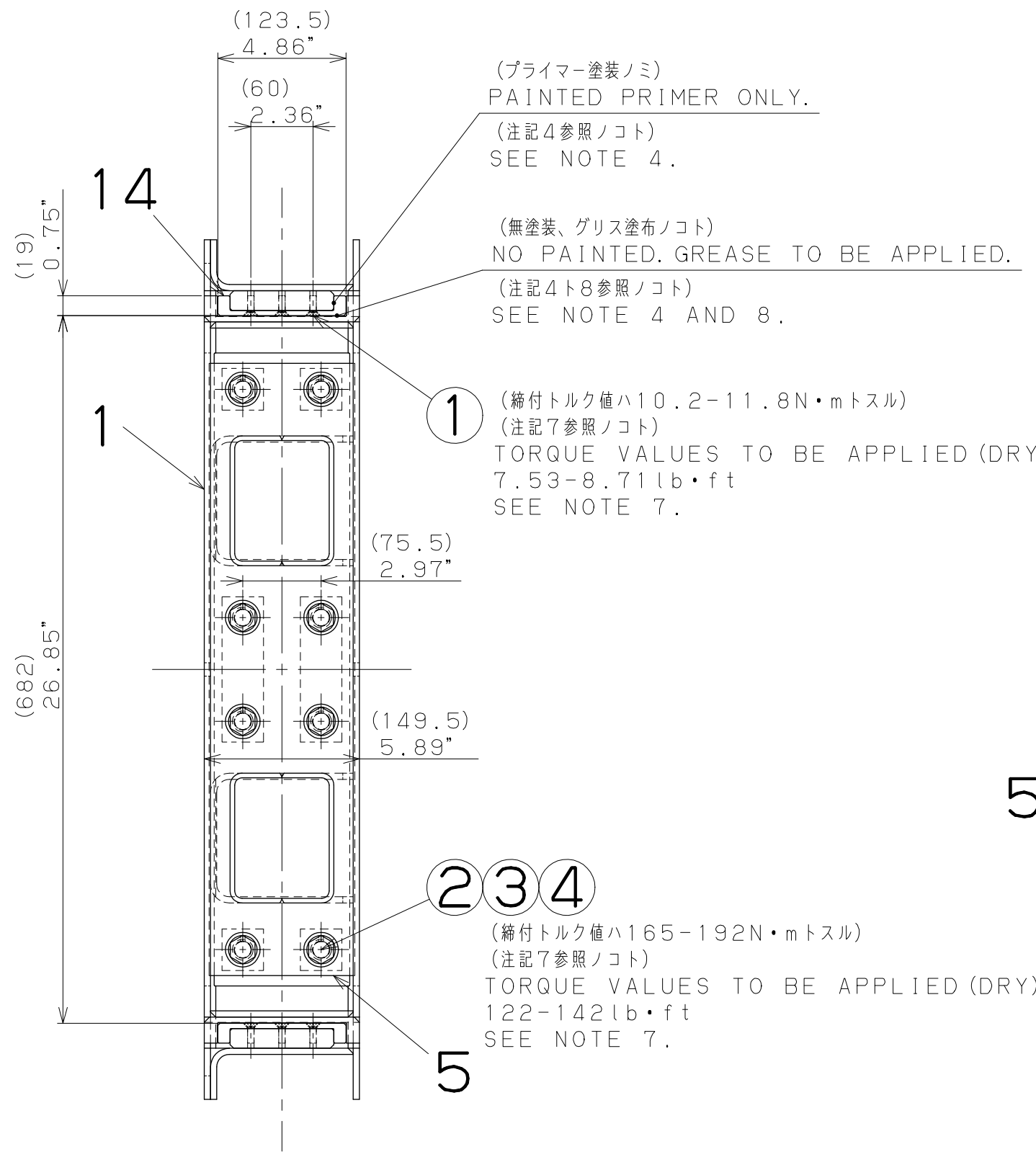
D4113-000424-b  
NEXT ASSEMBLY  
WMATA 7000



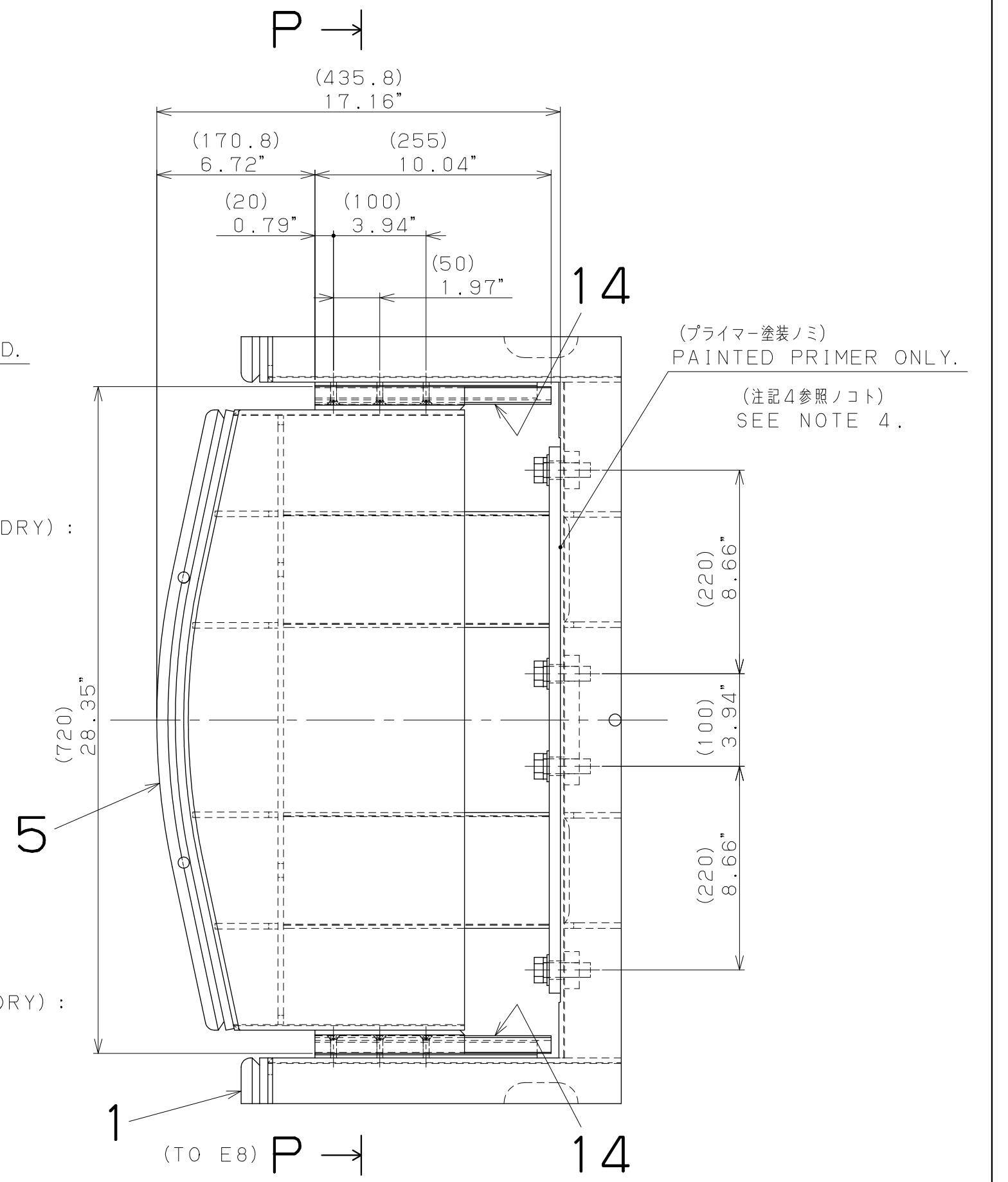
SECTION F-F  
(FROM 1/6 E4)



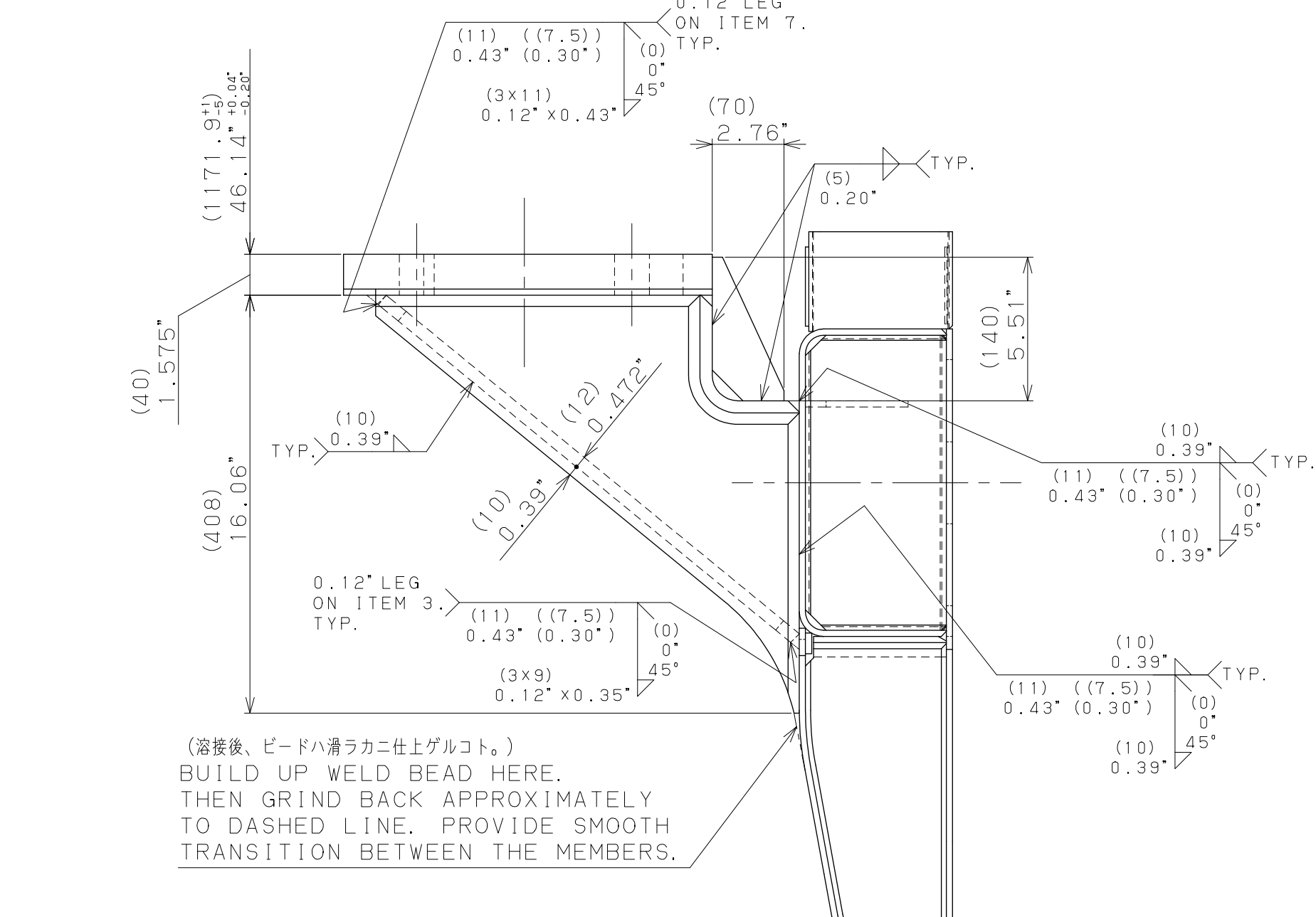
SECTION U-U  
(FROM 1/6 C5)



SECTION P-P  
(FROM E13)



DETAIL N  
(FROM 1/6 D2)



SECTION F-F  
(FROM 1/6 E4)

UNLESS OTHERWISE SPECIFIED  
TOLERANCE OF DIMENSIONS  
+1.20\* (- = 30) ±0.02\* (0.5)  
1.20\* -4.70\* (- 30 - 120) ±0.05\* (0.8)  
4.70\* -12.5\* (- 120 - 315) ±0.05\* (1.2)  
12.5\* -40.0\* (- 315 - 1000) ±0.08\* (2.0)  
40.0\* -80.0\* (1000 - 2000) ±0.12\* (3.0)  
OVER 80.0\* (2000 - ) ±0.25\* (6.0)  
ANGLES ±1°  
DRILLED HOLE DIA. TOLERANCES  
0.12\* -0.24\* (- 6 - 6) +0.006\* (0.15), -0  
0.24\* -0.47\* (- 6 - 12) +0.010\* (0.25), -0  
0.47\* -0.98\* (12 - 25) +0.012\* (0.30), -0  
0.98\* -1.97\* (25 - 50) +0.018\* (0.45), -0

TYPE	ITEM CODE	ASSY WEIGHT
種別	品目コード	組立重量
b	12E01043	CHANGED ITEM 3 AND 7.
a	12E00768	CHANGED TITLE.

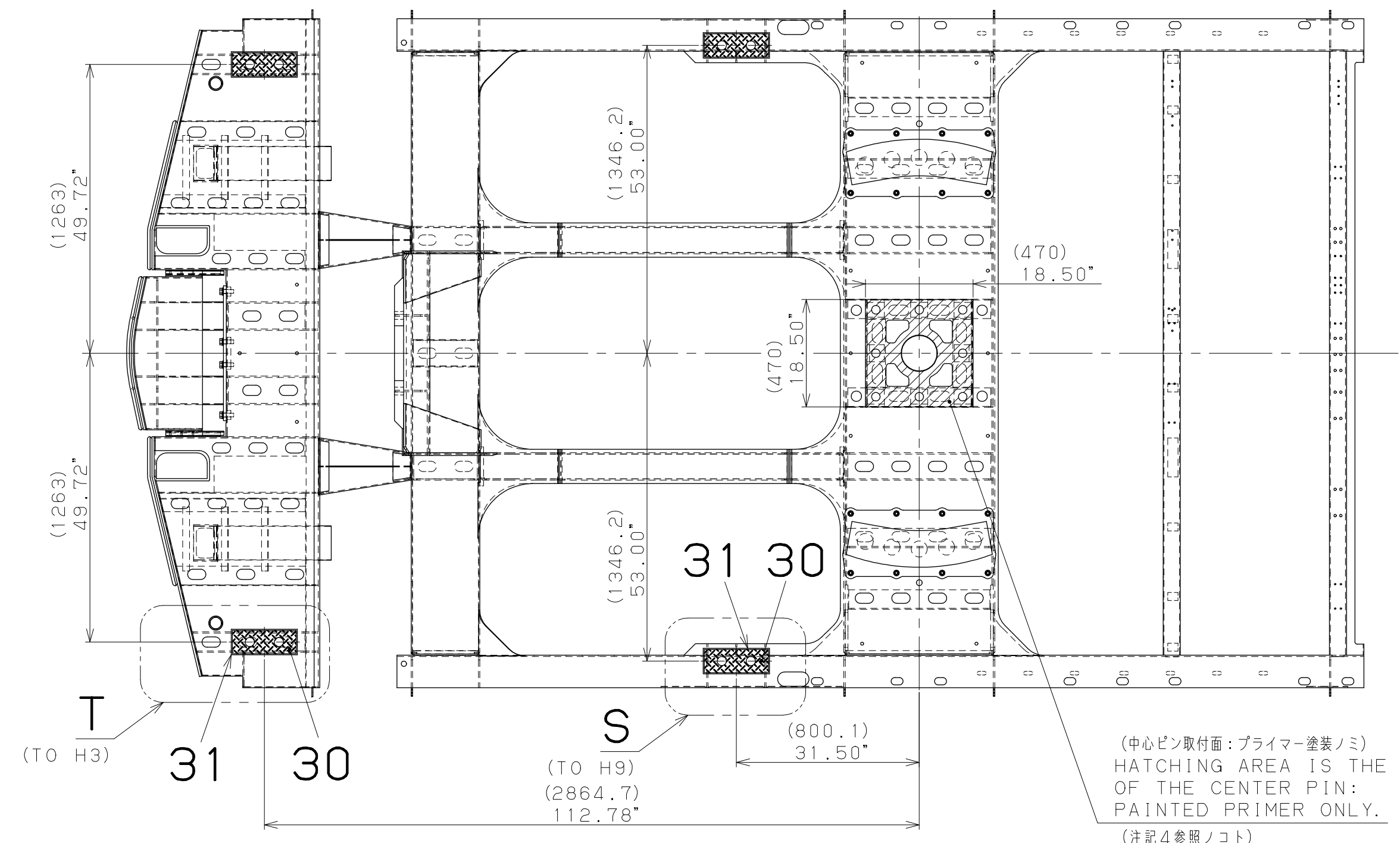
REV.	E.C.O. NO.	DESCRIPTION	DATE	DRWN	CHKD	APPD
改訂	建替票 NO.	改訂内容	改訂日付	担当	審査	承認
b	12E01043	CHANGED ITEM 3 AND 7.	'12.03.22	K.I	Y.S	Y.T
a	12E00768	CHANGED TITLE.	'12.02.27	K.I	Y.S	Y.T

承認 APPROVED	川崎重工	車両カンパニー
検査 CHECKED	KAWASAKI HEAVY INDUSTRIES, LTD.	KOBE, JAPAN
作成 DRAWN	END UNDERFRAME ASSY-R END	車種
	エンドフレーム台枠組立 (B1-CAR)	形式
		車種
		種別
		1用台
		組数
図番 DRG. NO.	D4113-000424-b	尺度 SCALE
		3:16

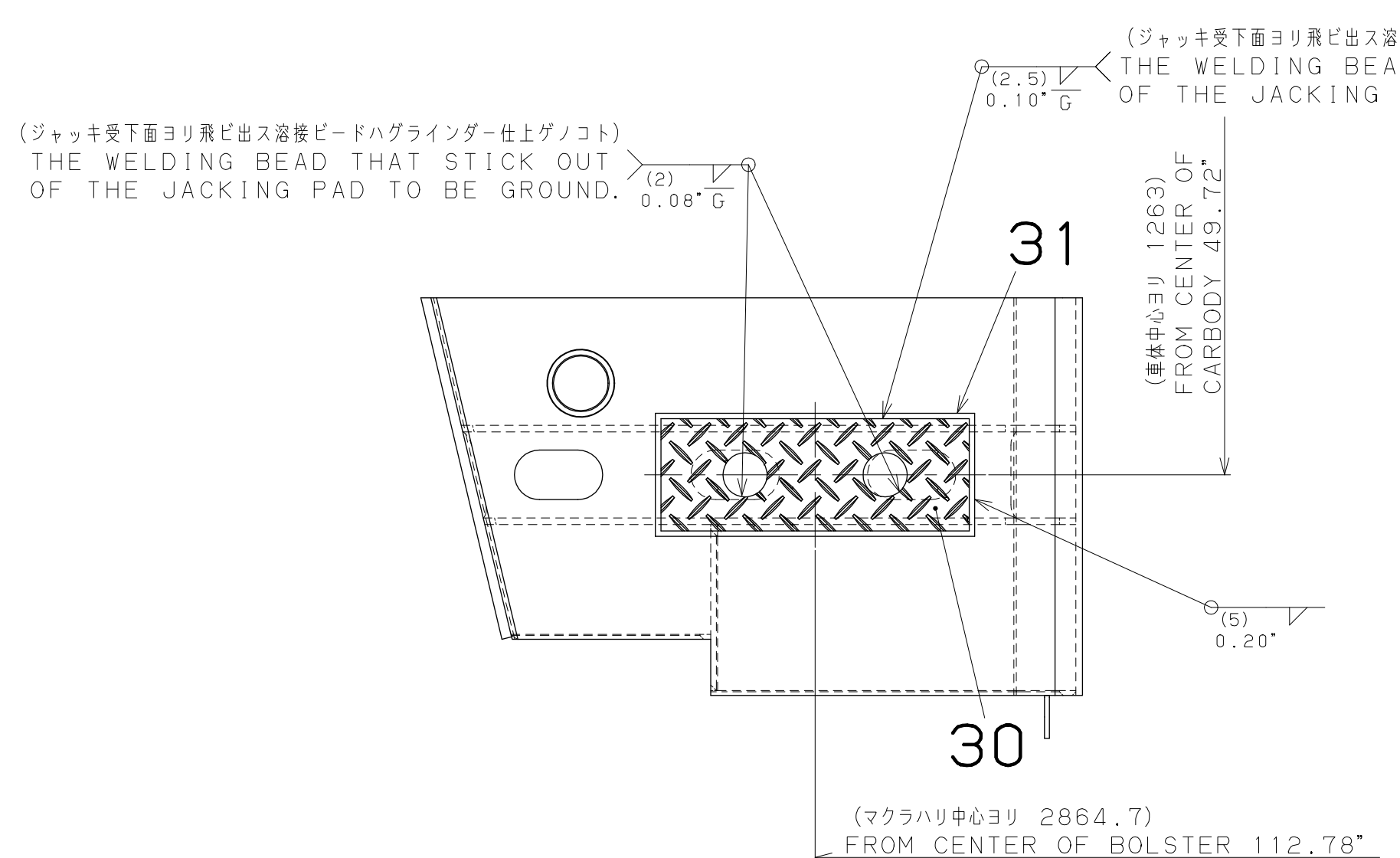
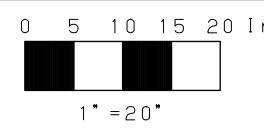
PAGE 6

尺度	0 2 4 5-1/31"	図面サイズ	ANSI D	旧図番	-	装置名	台枠・連結装置	装置別コード	411	細番	026
SCALE	3"=16"	客先図番	関連図面	SYS	UNDERFRAME/COUPLING DEVICE	SYS. CODE		SER. NO.			

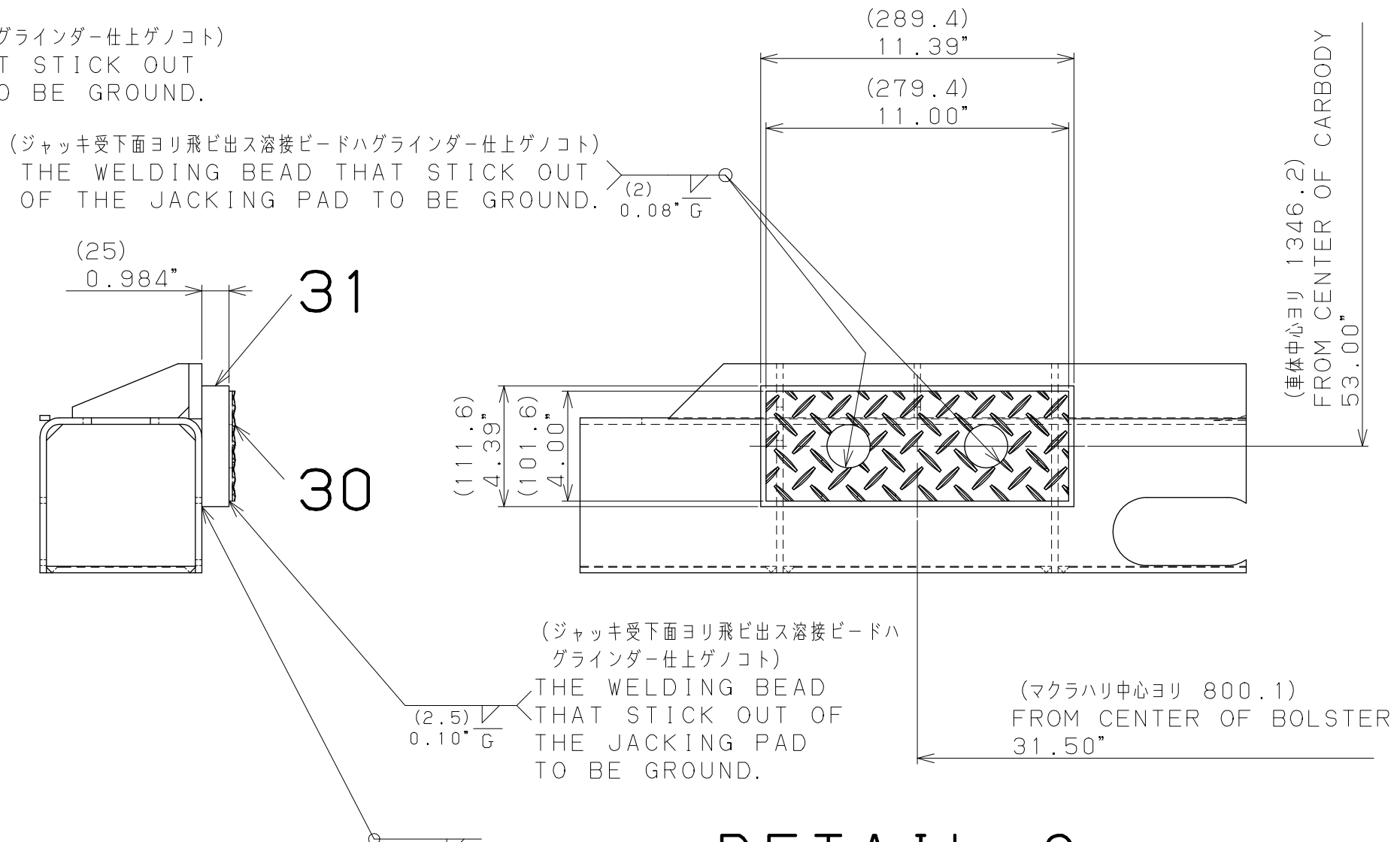
D4113-000424-b  
NEXT ASSEMBLY  
WMATA 7000



**BOTTOM VIEW**



**DETAIL T  
(FROM E2)**



**DETAIL S  
(FROM E5)**

UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS

1.20"	( 30 )	±0.02" (0.5)
1.20" - 4.70"	( 30 - 120 )	±0.03" (0.8)
4.70" - 12.5"	( 120 - 315 )	±0.05" (1.2)
12.5" - 40.0"	( 315 - 1000 )	±0.08" (2.0)
40.0" - 80.0"	( 1000 - 2000 )	±0.12" (3.0)
OVER 80.0"	( 2000 - )	±0.25" (6.0)

ANGLES ±1°

DRILLED HOLE DIA. TOLERANCES

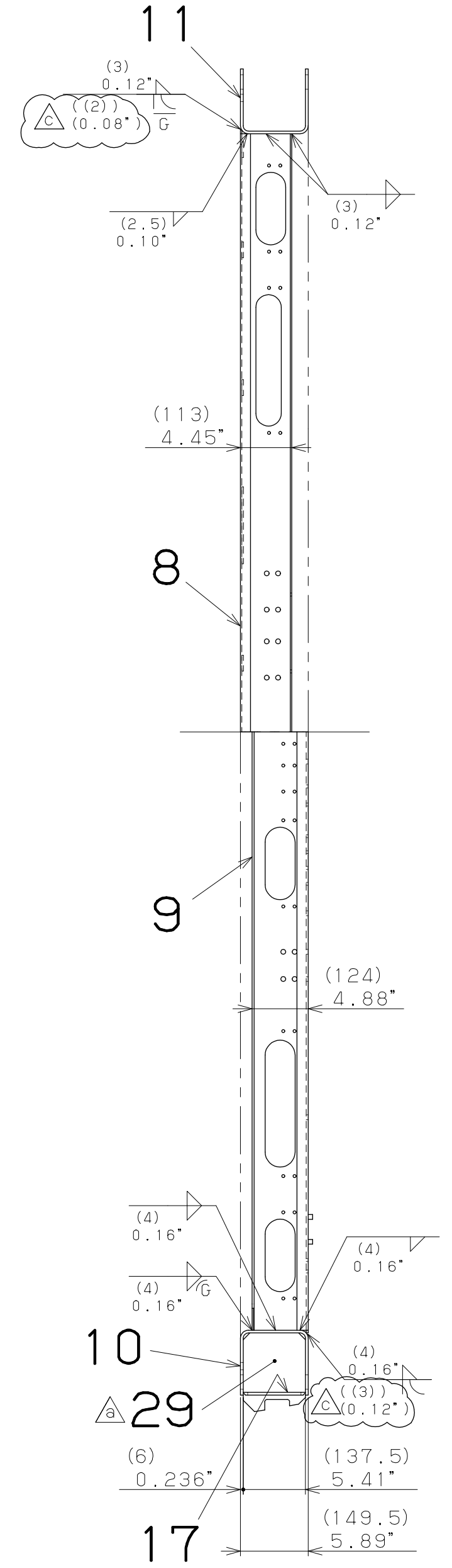
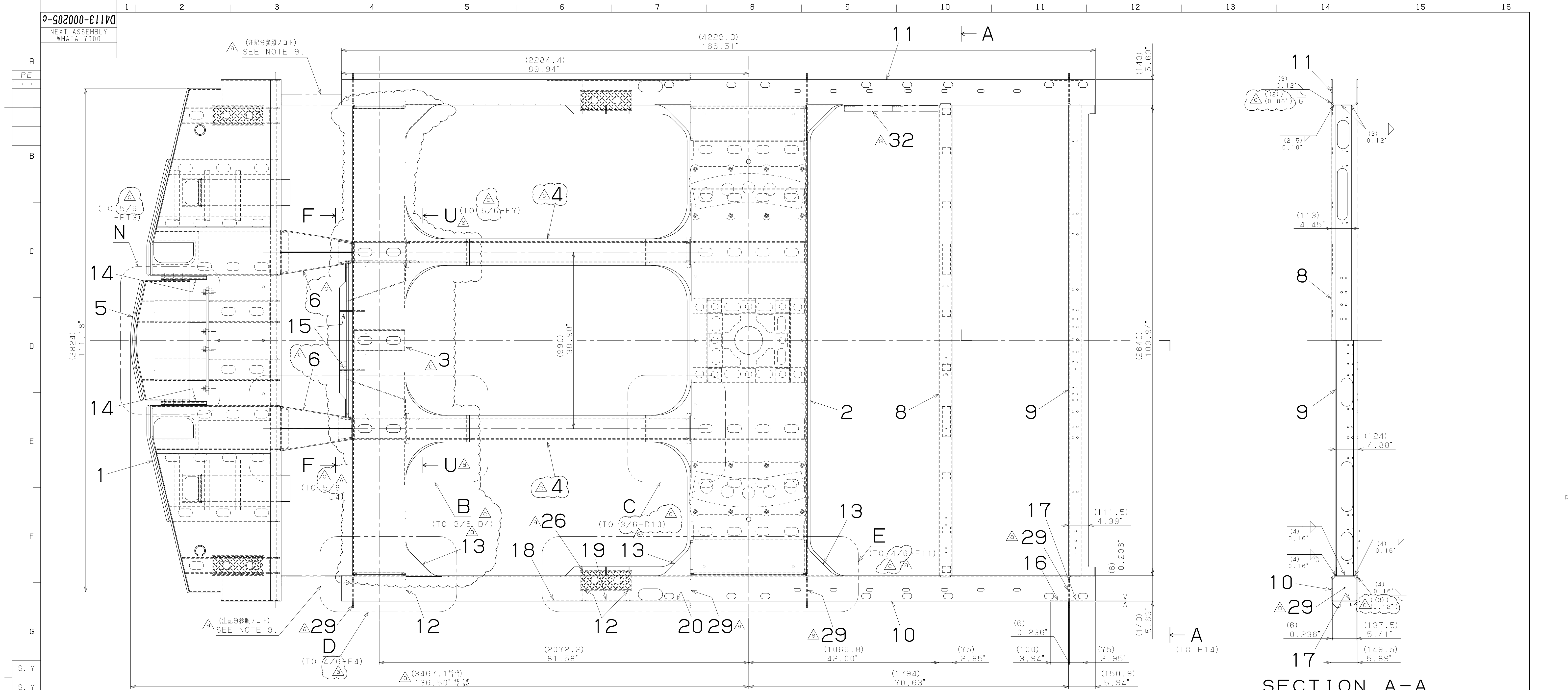
0.12" - 0.24"	( 3 - 6 )	+0.006" (0.15), -0
0.24" - 0.47"	( 6 - 12 )	+0.010" (0.25), -0
0.47" - 0.98"	( 12 - 25 )	+0.012" (0.30), -0
0.98" - 1.97"	( 25 - 50 )	+0.018" (0.45), -0

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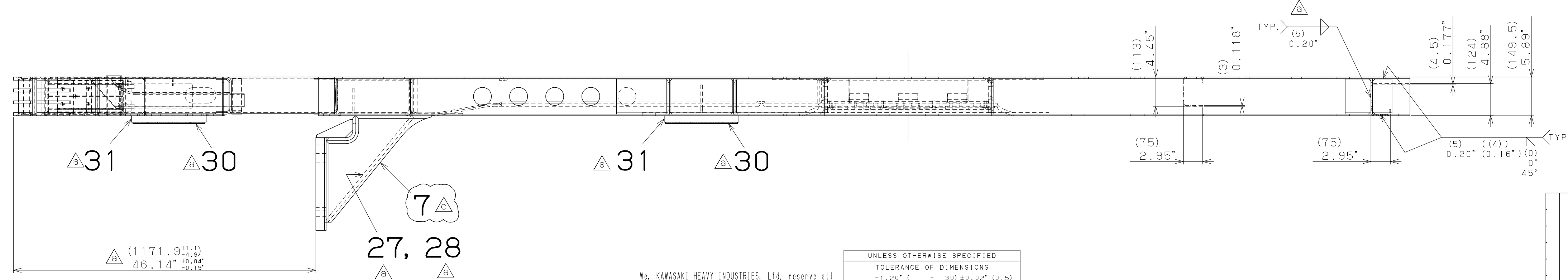
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APPROVED		川崎重工		車両カンパニー	
CHECKED		KAWASAKI HEAVY INDUSTRIES, LTD.		KOBE, JAPAN	
DRAWN		END UNDERFRAME ASSY-R END		尺貫 SCALE	
DRG. NO.		D4113-000424-b		3:16	
ITEM CODE		12E01043		1用枚	
DESCRIPTION		SEE OTHER SHEETS.		製 品 形 式 車 種 種 別	
DATE		'12.03.22		W A 7 0 0 0 W M A T A 7 0 0 0 B 1 - =	
REVISIONS		改訂内容		製 品 形 式 車 種 種 別	
TYPE		ITEM CODE		SYS	
ASSY WEIGHT		ASSEMBLY CODE		SYS	
SCALE		ANSI D		装 置 名	
客先図番		旧 図 番		台 枠・連結装置	
関連図番		装 置 別		4 1 1	
		細 番		0 2 6	
		SER. NO.			

0-00205-c  
NEXT ASSEMBLY  
WMATA 7000



SECTION A-A  
(FROM G12)



PAGE 8

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS

1.20" (30)	±0.02" (0.5)
1.20" - 4.70" (30 - 120)	±0.03" (0.8)
4.70" - 12.5" (120 - 315)	±0.05" (1.2)
12.5" - 40.0" (315 - 1000)	±0.08" (2.0)
40.0" - 80.0" (1000 - 2000)	±0.12" (3.0)
OVER 80.0" (2000 - )	±0.25" (6.0)

ANGLES ±1°

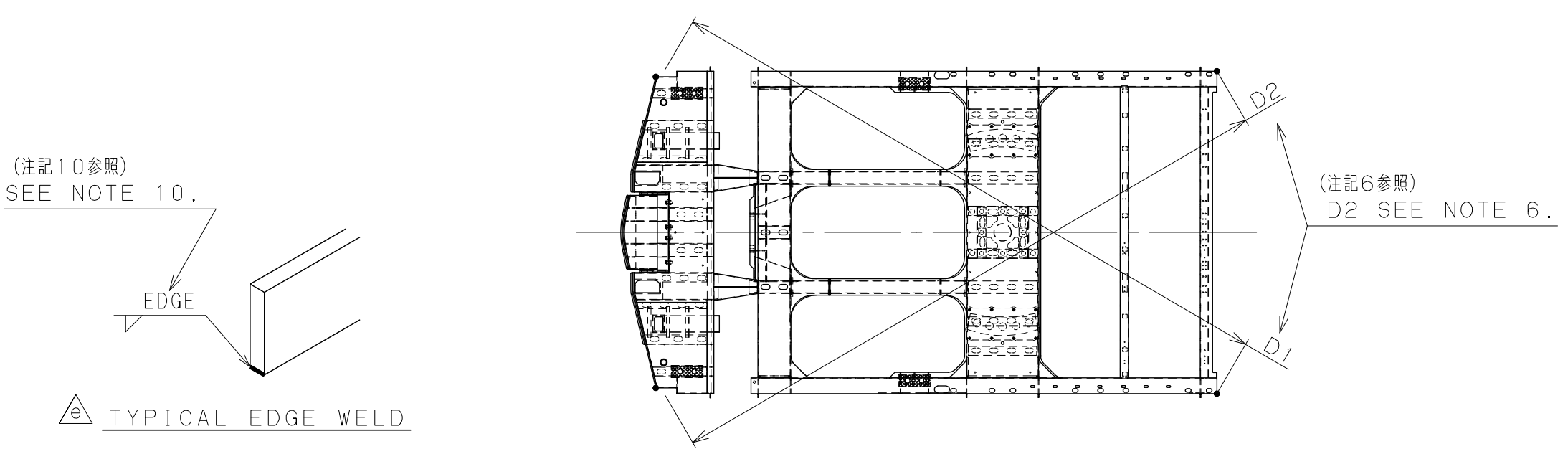
DRILLED HOLE DIA. TOLERANCES

0.12" - 0.24" (3 - 6)	+0.006" (0.15), -0
0.24" - 0.47" (6 - 12)	+0.010" (0.25), -0
0.47" - 0.98" (12 - 25)	+0.012" (0.30), -0
0.98" - 1.97" (25 - 50)	+0.018" (0.45), -0

REV.	ECO. NO.	DESCRIPTION	DATE	DRW	CHKD	APPD
c	12E01043	CHANGED ITEM 3 AND 4.5 & 7, CORRECTED ERRORS.	'12.02.21	K.I	Y.S	Y.T
b	12E00768	SEE OTHER SHEET.	'12.02.21	K.I	Y.S	Y.T
a		ADDED ITEM 26 THRU 32, ADDED NOTE 9 AND SECTION U-U, CHANGED WELDING AND TOLERANCE.	'12.02.10	K.I	Y.S	Y.T

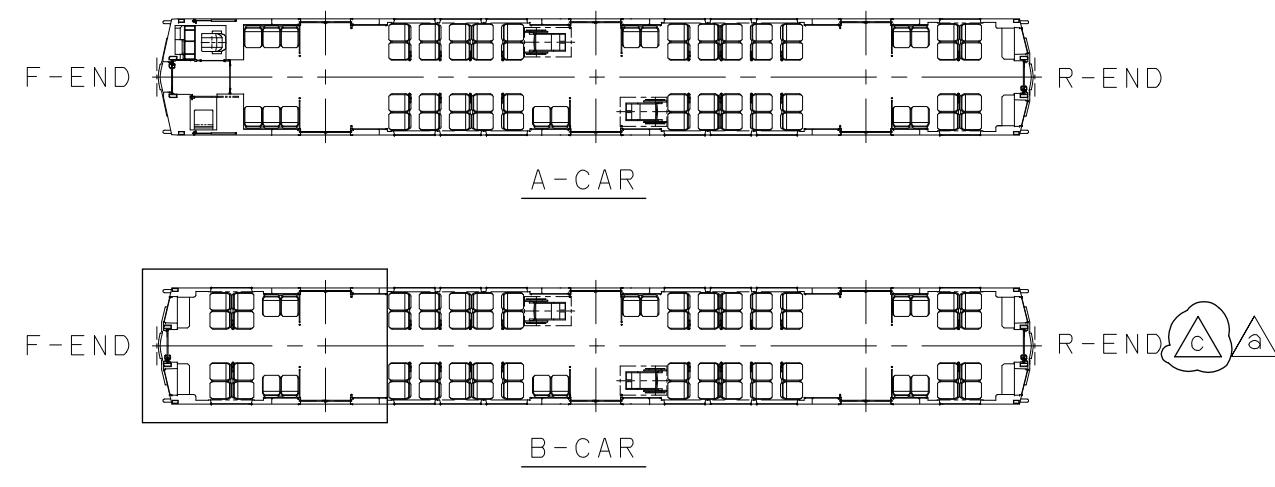
2011.06.30	承認 APPROVED	Y. Toya	川崎重工業株式会社	車両カンパニー	神戸、日本
作成 CHECKED	Y. Seki	川崎重工業株式会社	END UNDERFRAME ASSY-F END		
作成 DRAWN	K. Ikushima	川崎重工業株式会社	Fエンド部台枠組立 (B-CAR)		
製品形式	WA7000ZWMATA7000	車種	B	種別	=
図番	D4113-000205-c-16				
図名	台枠・連結装置				
図面コード	411				
図面サイズ	ANSI D				
縮尺	3" = 32"				
旧図番	-				
客先図番	-				
装置名	台枠・連結装置				
SYS	UNDERFRAME / COUPLING DEVICE				
装置別コード	411				
細番	025				

9-020200-01170  
NEXT ASSEMBLY  
WMATA 7000



- NOTES
1. WELDING FOR LAHT STEEL SHALL BE ACCORDING TO WELDING PROCEDURE WM7-J-2101 (LATEST VERSION), UNLESS OTHERWISE SPECIFIED.
  2. WELDING FOR STAINLESS STEEL OR STAINLESS STEEL AND OTHER MATERIAL SHALL BE ACCORDING TO WELDING PROCEDURE WM7-J-2201 (LATEST VERSION), UNLESS OTHERWISE SPECIFIED.
  3. WELDING INSPECTION SHALL BE IN ACCORDANCE WITH THE INSPECTION MANUAL WM7-J-3701 (LATEST VERSION).
  4. WELDED CARBON STEEL PART TO BE PAINTED IN DAI NIPPON TORYO CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000018 (WM7-J-1201) (DAI NIPPON) (LATEST VERSION) OR IN DUPONT CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000019 (WM7-J-1202) (DUPONT) (LATEST VERSION). AFTER WELDING, THE PAINTING AREA OF EACH COLOR SHALL BE ACCORDING TO END UNDERFRAME BLACK PAINT PROCEDURE D1600-000012. BUT THE LIGHTING SURFACE AND THE MOUNTING SURFACE THAT BE SHOWN IN DRAWING IS PAINTED ONLY PRIMER AND THE SLIDING SURFACE OF ITEM 5 AND 14 IS NO PAINTING.
  5. EXPOSED SURFACE OF CARBON STEEL TO BE PAINTED IN DAI NIPPON TORYO CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000018 (WM7-J-1201) (DAI NIPPON) (LATEST VERSION) OR IN DUPONT CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000019 (WM7-J-1202) (DUPONT) (LATEST VERSION). THE PAINTING AREA OF EACH COLOR SHALL BE ACCORDING TO END UNDERFRAME BLACK PAINT PROCEDURE D1600-000012.
  6. DIFFERENCE BETWEEN D1-D2 SHALL BE 0.20" OR LESS.
  7. LOCKING AGENT IS THREE BOND TB1342N (BLUE). (X90101-0020).
  8. GREASE IS SHELL ALVANIA GREASE S2 (W90121-0070).
  9. THIS PART OF ITEM 10 AND 11 TO BE CUT OFF AFTER UNDERFRAME ASSY (D4111-000010, 000015).
  10. UNLESS OTHERWISE SPECIFIED, EDGE TO BE WELDED AS SHOWN ON "TYPICAL EDGE WELD"

- 注記
1. 特記ナキLAHT鋼ノ溶接ハ溶接要領WM7-J-2101 (最新版) ニヨルコト。
  2. 特記ナキステンレス鋼オヨビステンレス鋼ト異種金属ノ溶接ハ溶接要領WM7-J-2201 (最新版) ニヨルコト。
  3. 溶接検査ハWM7-J-3701 (最新版) ニヨルコト。
  4. 溶接後、炭素鋼材溶接部ヲ塗装仕様書M1800-000018 (WM7-J-1201) (大日本塗料) (最新版) ニヨリ、チャコールグレイ色オヨビ黒色マタハ、各色ノ塗装範囲ハ、麻バリ黒色塗装要領D1600-000012ニヨルコト。
  5. 炭素鋼材溶接部ハ、麻バリ黒色塗装要領D1600-000012ニヨルコト。
  6. D1-D2ハ0.20インチ以下ナルコト。
  7. ネジロックハ、スリーボンドTB1342N (青色)、(X90101-0020) トスル。
  8. グリスハ、シェル アルバニア グリス S2 (W90121-0070) トスル。
  9. 照写10111ノ部分ハ台枠組立時 (D4111-000010, 000015) ニ切断スルコト。
  10. 特記ナキ部材端部ハ溶接ノコト。



APPLICABLE CAR	TYPE	SET/CAR	WT/CAR	EFFECTIVITY
A				
B		1	2901.73 lbs	ALL CARS

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS

1.20" ( ± 0.02" (0.5)
1.20"-4.70" ( ± 0.02" (0.5)
4.70"-12.5" ( ± 0.03" (0.8)
12.5"-40.0" ( ± 0.04" (1.0)
40.0"-80.0" ( ± 0.05" (1.3)
OVER 80.0" ( ± 0.06" (1.5)

ANGLES ±1°

DRILLED HOLE DIA. TOLERANCES

0.12"-0.24" ( ± 0.006" (0.15)
0.24"-0.47" ( ± 0.010" (0.25)
0.47"-0.99" ( ± 0.012" (0.30)
0.99"-1.97" ( ± 0.016" (0.40)



ITEM NO.	ITEM CODE	ITEM NAME	DRG NO.	MATERIAL	WEIGHT PER PC	DESCRIPTION	REV. MARK	
1	4113-000311	END BEAM ASSY	D4113-000311	ASSY	596.93			
1	4113-000324	BOLSTER ASSY	D4113-000324	ASSY	861.68			
1	4113-000461	SECONDARY END BEAM ASSY	D4113-000461	ASSY	288.10			
2	4113-000460	CENTER STILL ASSY	D4113-000460	ASSY	93.83			
1	4113-000122	ANTI CLIMBER ASSY	D4113-000122	ASSY	128.08			
2	4113-000459	ENERGY ABSORBER ASSY	D4113-000459	ASSY	21.29			
1	4113-000463	COUPLER ANCHOR ASSY	D4113-000463	ASSY	160.75			
1	4113-000356	CROSS BEAM ASSY	D4113-000356	ASSY	35.24			
1	4115-001156	CROSS BEAM	D4115-001156 (A1S1301L-MT)	SUS301L-MT	59.22	10.177' 14.5		
1	4115-001298	STIFFENER	D4115-001298	ASTM A710 CLASS 1	173.86	10.236' 16		
1	4115-001182	STIFFENER	D4115-001182	ASTM A710 CLASS 1	173.86	10.236' 16		
6	4115-000545	STIFFENER	D4115-000545	ASTM A710 CLASS 1	1.93	10.236' 16		
6	4115-000546	STIFFENER	D4115-000546	ASTM A710 CLASS 1	2.06	10.354' 19		
2	4115-000590	GUIDE PLATE	D4115-000590 (A1S1304)	SUS304	4.16	10.866' 122		
2	4115-001174	STIFFENER	D4115-001174	ASTM A710 CLASS 1	0.57	10.236' 16		
2	4115-001239	STIFFENER	D4115-001239	ASTM A710 CLASS 1	1.38	10.236' 16		
2	4115-001240	STIFFENER	D4115-001240	ASTM A710 CLASS 1	1.03	10.236' 16		
2	4115-000804	STIFFENER	D4115-000804	ASTM A710 CLASS 1	2.74	10.236' 16		
2	4115-000805	STIFFENER	D4115-000805	ASTM A710 CLASS 1	3.37	10.236' 16		
2	4115-001245	STIFFENER	D4115-001245	ASTM A710 CLASS 1	4.67	10.236' 16		
1	4112-000071	PARTS INSTL-END UNDERFRAME	D4112-000071	INSTL				
1	4112-000107	PARTS INSTL-END UNDERFRAME	D4112-000107	INSTL				
1	4112-000110	PARTS INSTL-END UNDERFRAME	D4112-000110	INSTL				
1	4112-000036	BRACKET INSTL FOR COUPLER (F-END)	D4112-000036	INSTL				
1	5112-000123	EQUIPMENT BRACKET INSTL-UNDERCAR	D5112-000123	INSTL				
6	4115-000702	STIFFENER	D4115-000702	ASTM A710 CLASS 1	0.35	10.236' 16		
1	27	4115-001113	STIFFENER	D4115-001113	ASTM A710 CLASS 1	16.95	10.472' 112	
1	28	4115-001114	STIFFENER	D4115-001114	ASTM A710 CLASS 1	16.95	10.472' 112	
8	29	4115-001238	STIFFENER	D4115-001238	ASTM A710 CLASS 1	2.20	10.236' 16	
4	30	4115-000535	JACKING PAD	D4115-000535	A1S1304 DIAMOND PLATE	1.56	10.126' 13.2	
4	31	4115-000764	JACKING PAD	D4115-000764	ASTM A710 CLASS 3	13.97	10.984' 125	
1	32	4112-000060	SUPPORT INSTL-SUBFLOOR (B-CAR F-END)	D4112-000060	INSTL			
10	1	A41S-025075	SCREW-CROSS REC FLAT HEAD				1/4" x 3/4" UNC ANSI/ASME B18.6.3	
8	2	A01S-062200	BOLT-HEX HEAD				5/8" x 2" UNC ASTM F 593	
8	3	C51S-062PWN	WASHER-PLAIN				5/8" NARROW ANSI/ASME B18.22.1	
8	4	C71S-062SWR	WASHER-SPRING				5/8" ANSI/ASME B18.21.1	

REV.	ECO. NO.	DESCRIPTION	DATE	DRW	CHKD	APPD
c	12E01043	CHANGED ITEM 3 AND 4 5, 6, 7, CHANGED NOTE 4 AND 5, CORRECTED ERROR REVISED WEIGHT.	'12.02.22	K.I.	Y.S.	Y.T.
b	12E00768	ADDED ITEM CODE, CHANGED NOTE 9.	'12.02.21	K.I.	Y.S.	Y.T.
a		ADDED ITEM 26 THRU 32, ADDED NOTE 9 AND 10, ADDED NOTE, ADDED WEIGHT, CHANGED ITEM CODE OF ITEM 6 10 16 17 20, CHANGED WELD SIZE.	'12.02.10	K.I.	Y.S.	Y.T.

4113-000205	2901.73 lbs	組立重量
-------------	-------------	------

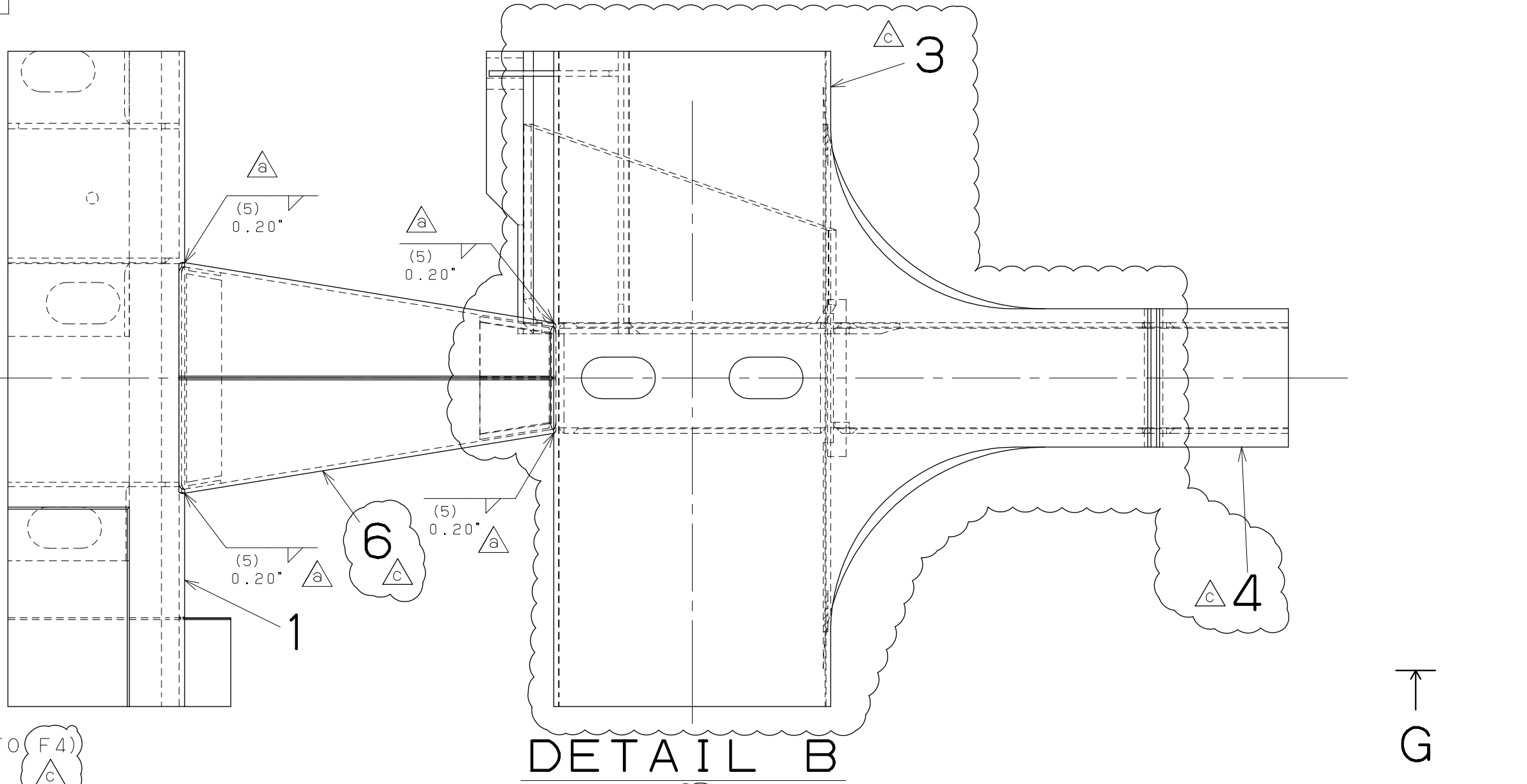
川崎重工 KAWASAKI HEAVY INDUSTRIES, LTD. 車両カンパニー KOBE, JAPAN

END UNDERFRAME ASSY-F END  
Fエンド部台枠組立 (B-CAR)

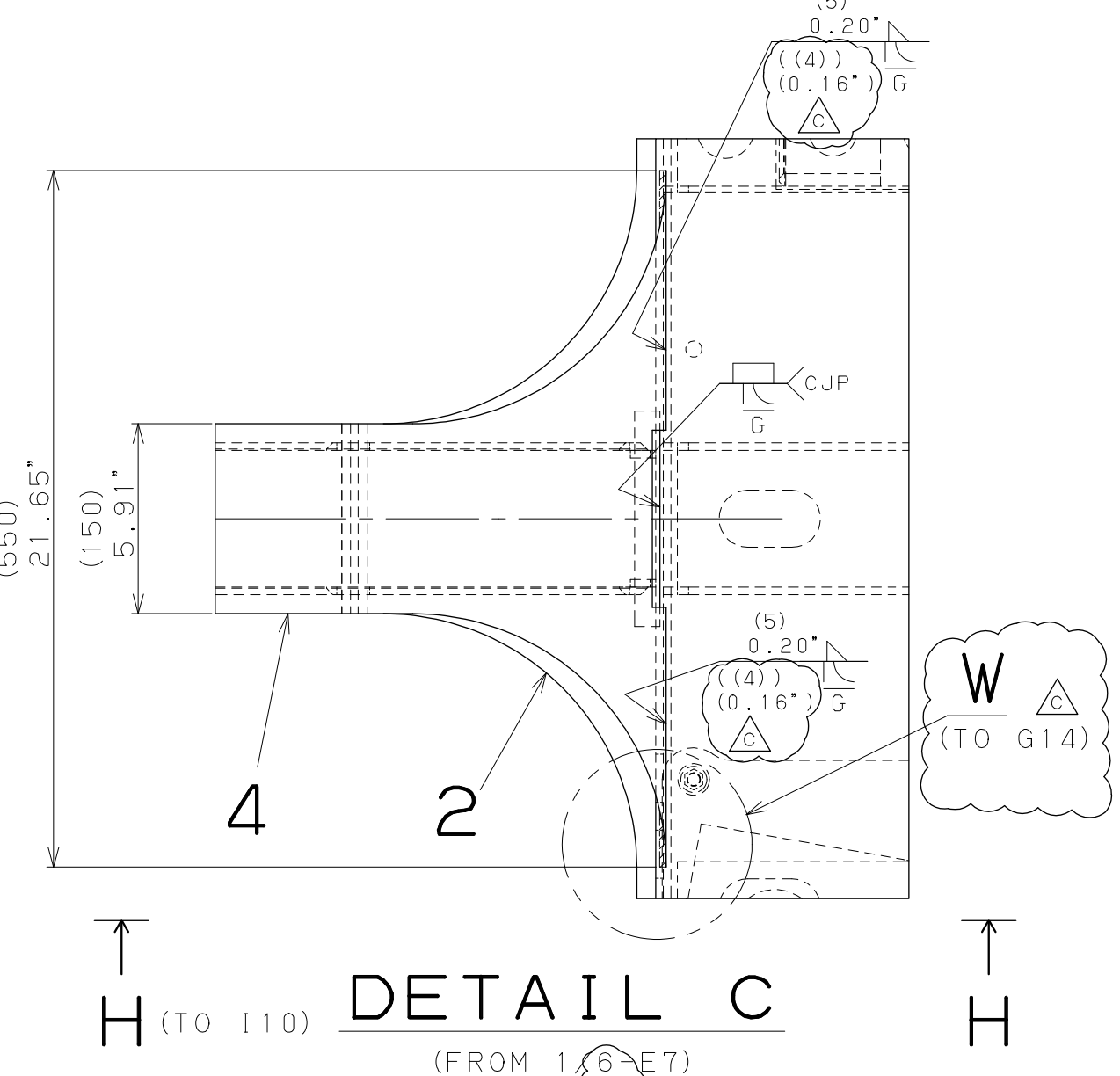
製品形式 車種 種別 1再付 組立重量

4113-000205-c-26

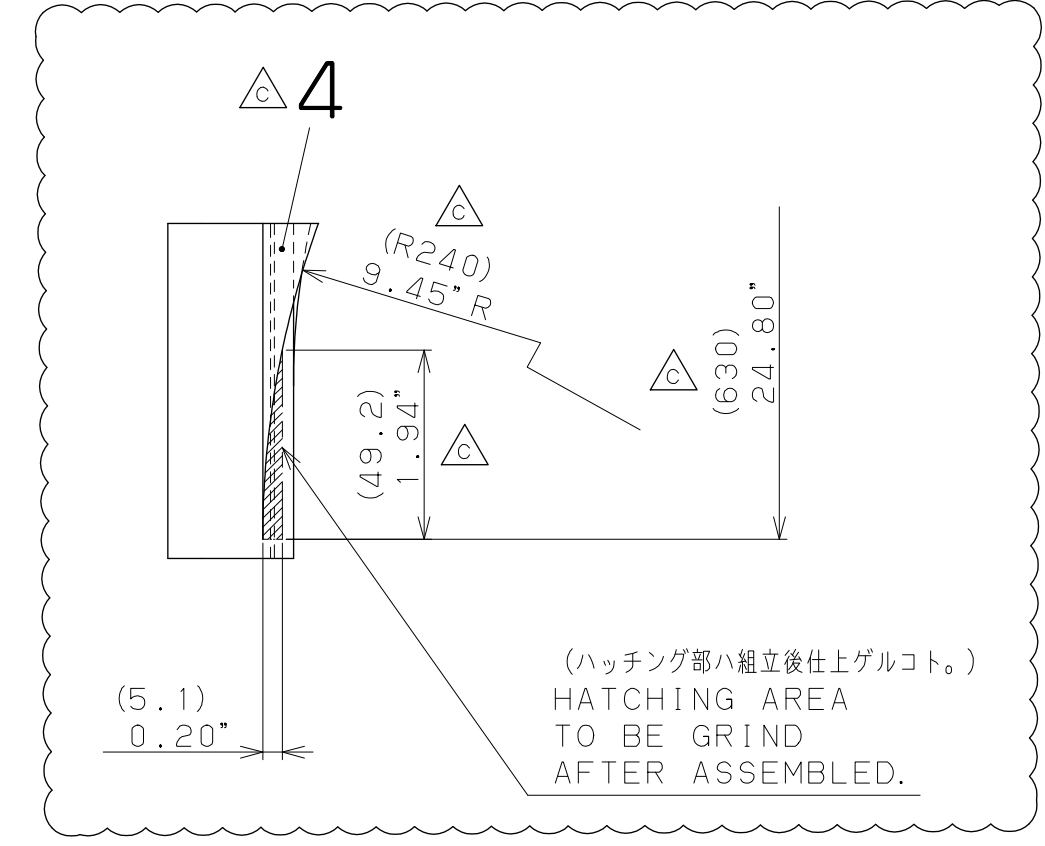
A  
B  
C  
D  
E  
F  
G  
H  
I  
J



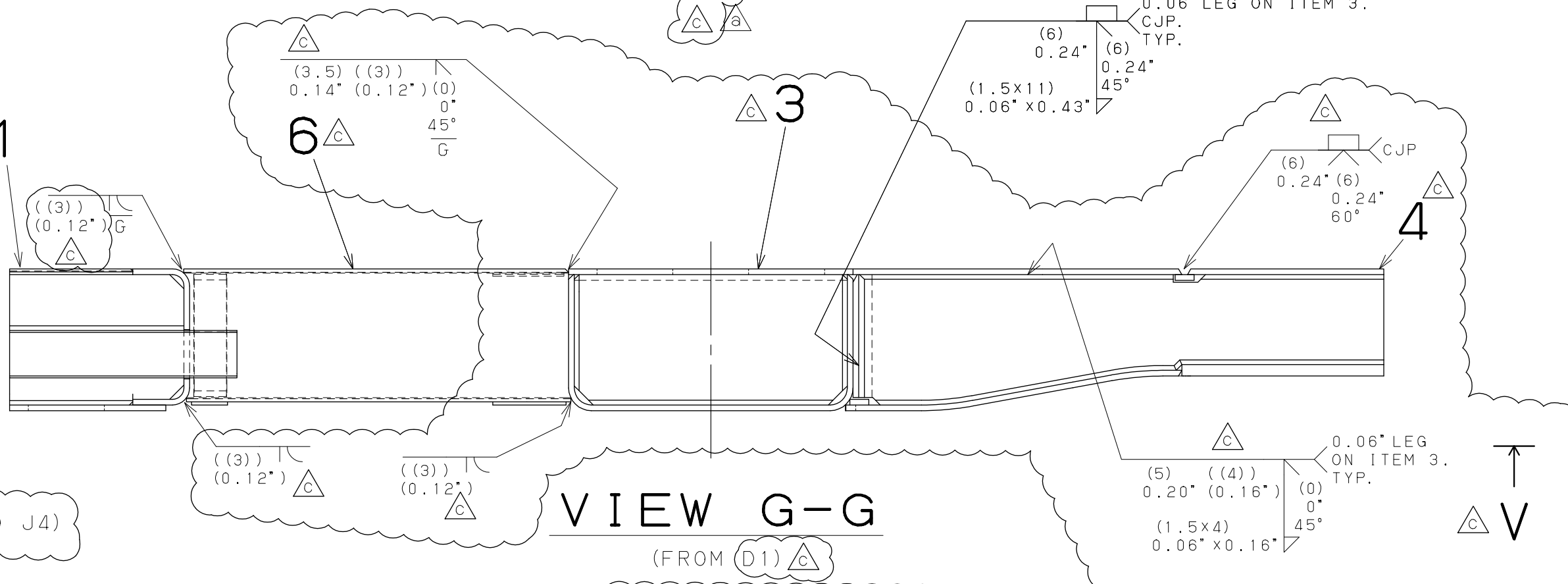
DETAIL B  
(FROM 1/6 E4)



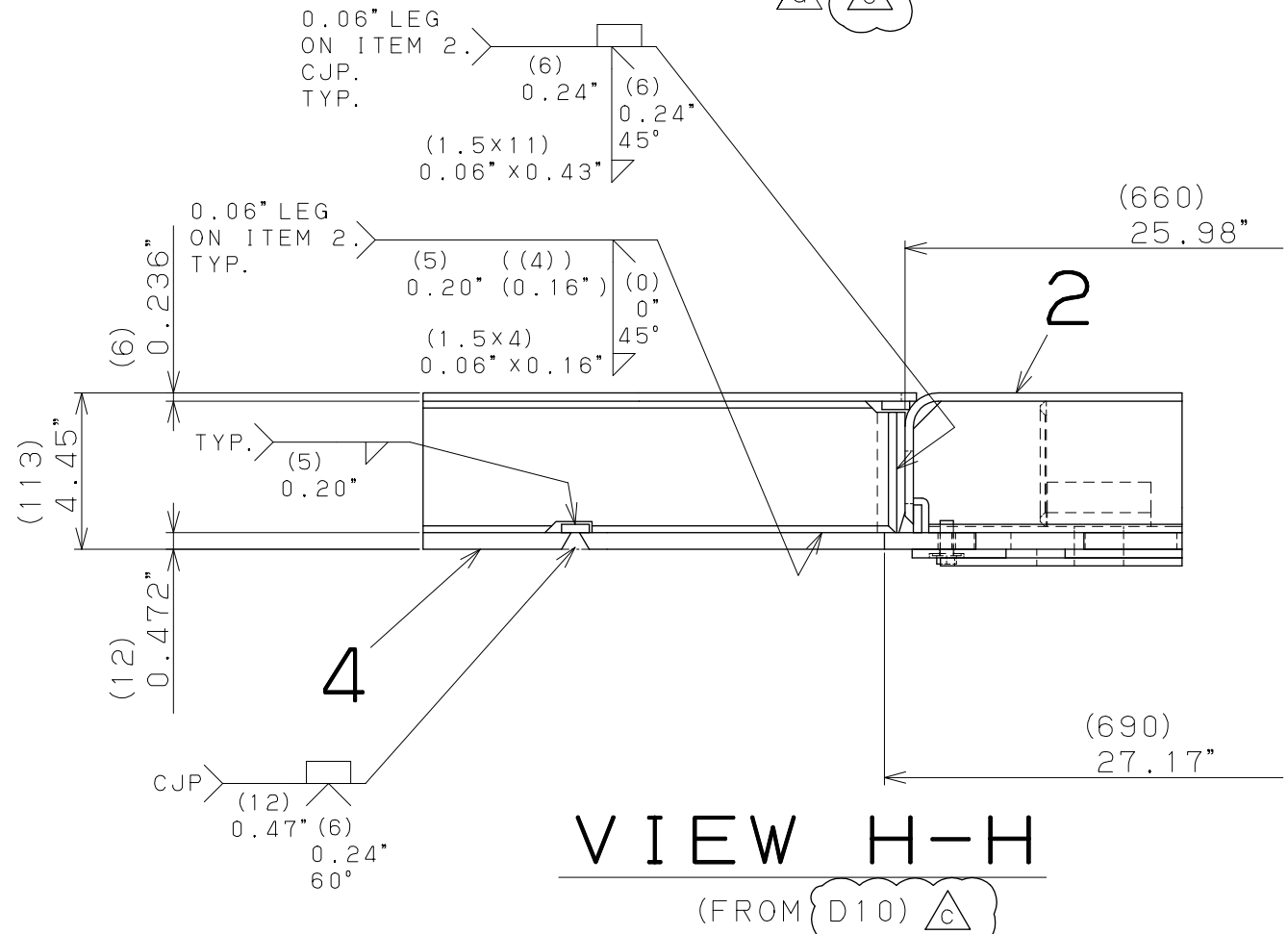
DETAIL C  
(FROM 1/6 E7)



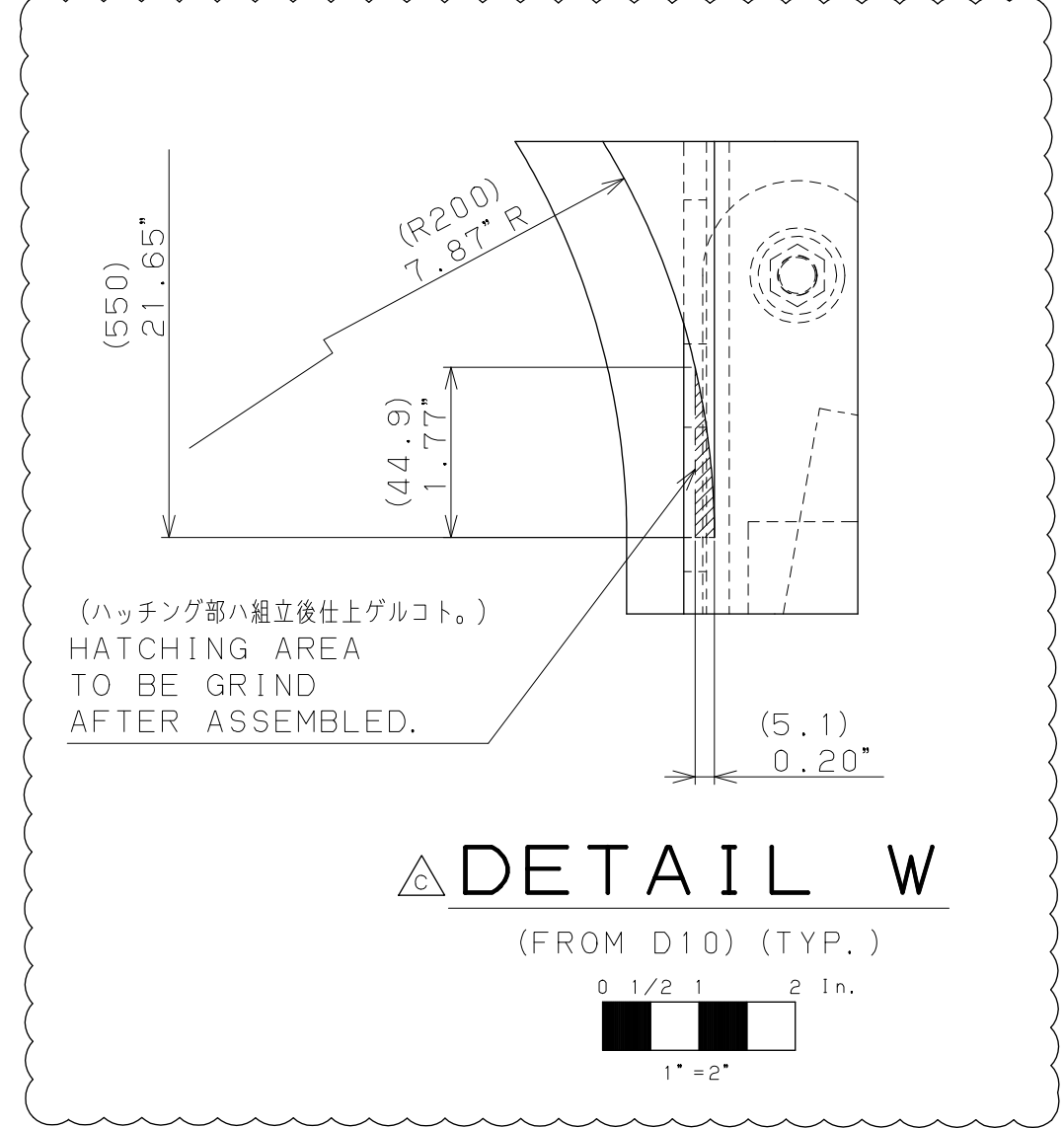
DETAIL Q  
(FROM 1/4 TYP.)



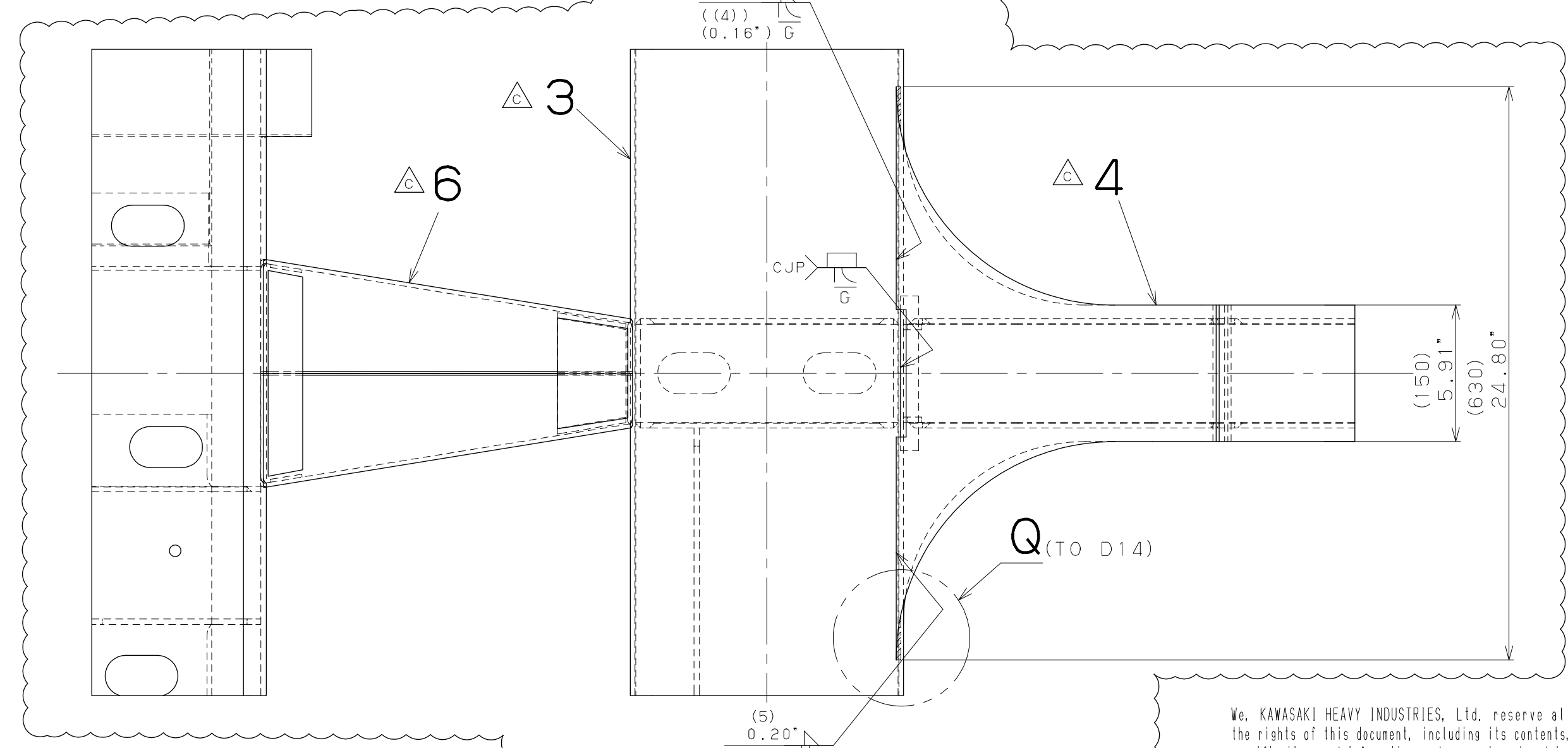
VIEW G-G  
(FROM D1)



VIEW H-H  
(FROM D10)



DETAIL W  
(FROM D10) (TYP.)



VIEW V-V  
WITHOUT ITEM 7 COUPLER ANCHOR  
(FROM F1)

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS

1.20" (30)	±0.02" (0.5)
1.20" - 4.70" (30 - 120)	±0.05" (0.8)
4.70" - 12.5" (120 - 315)	±0.05" (1.2)
12.5" - 40.0" (315 - 1000)	±0.08" (2.0)
40.0" - 80.0" (1000 - 2000)	±0.12" (3.0)
OVER 80.0" (2000 - )	±0.25" (6.0)

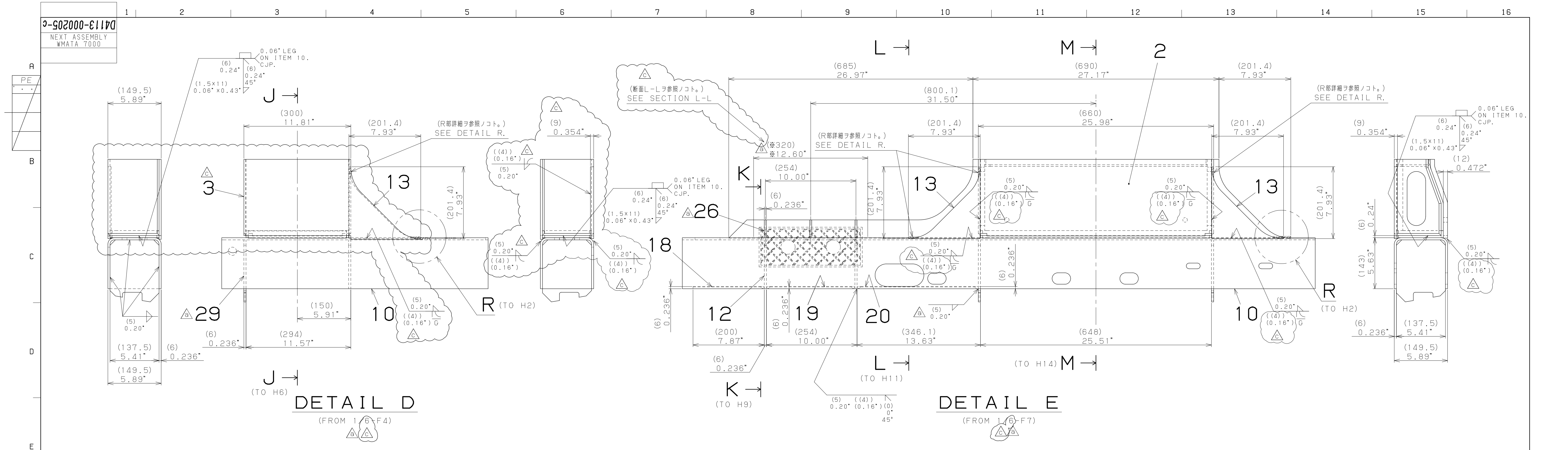
ANGLES ±1°

DRILLED HOLE DIA. TOLERANCES

0.12" - 0.24" (3 - 6)	+0.006" (0.15), -0
0.24" - 0.47" (6 - 12)	+0.010" (0.25), -0
0.47" - 0.98" (12 - 25)	+0.012" (0.30), -0
0.98" - 1.97" (25 - 50)	+0.018" (0.45), -0

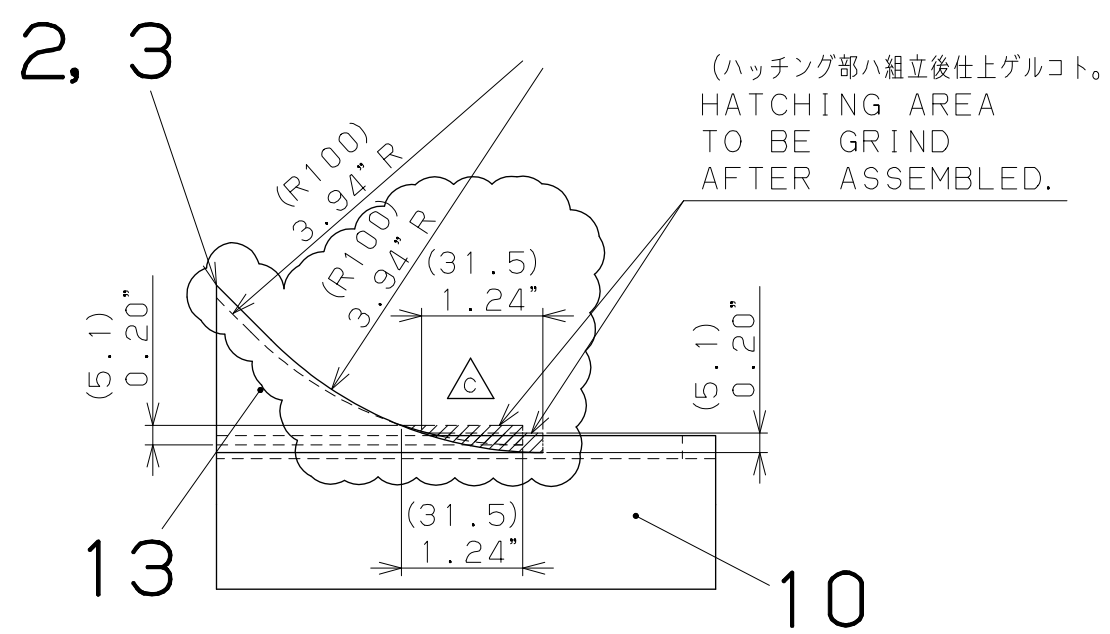
REV.	ECO. NO.	DESCRIPTION	DATE	DRW	CHKD	APPD
c	12E01043	CHANGED ITEM 3 AND 4 5, 6, 7, ADDED VIEW V-V AND DETAIL W, CORRECTED ERRORS.	'12.03.22	K.I.	Y.S.	Y.T.
b	12E00768	SEE OTHER SHEET.	'12.02.27	K.I.	Y.S.	Y.T.
a		ADDED GRINDING AREA ADDED ITEM 2& 29.	'12.02.10	K.I.	Y.S.	Y.T.

承認 APPROVED	川崎重工 KAWASAKI HEAVY INDUSTRIES, LTD. 車両カンパニー KOBE, JAPAN
検査 CHECKED	END UNDERFRAME ASSY-F END F エンド部台枠組立 (B-CAR)
作成 DRAWN	製品形式 車種 種別 1再付 組数
製図 DRG. NO.	D4113-000205-c
図面サイズ	ANSI D
旧図番	-
装置名	台枠・連結装置
装番別コード	411
細番	025

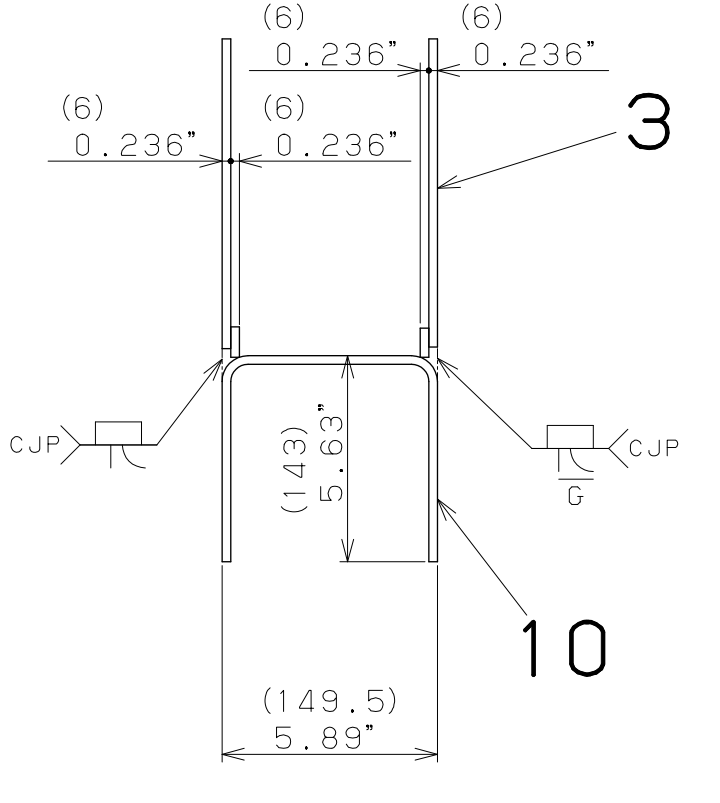
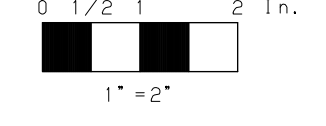


**DETAIL D**  
(FROM 1/6-F4)

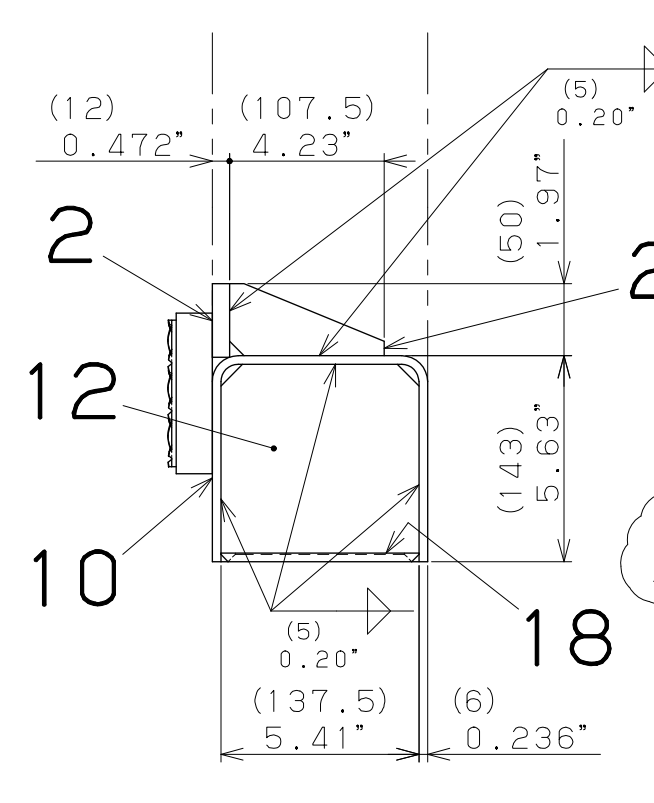
**DETAIL E**  
(FROM 1/6-F7)



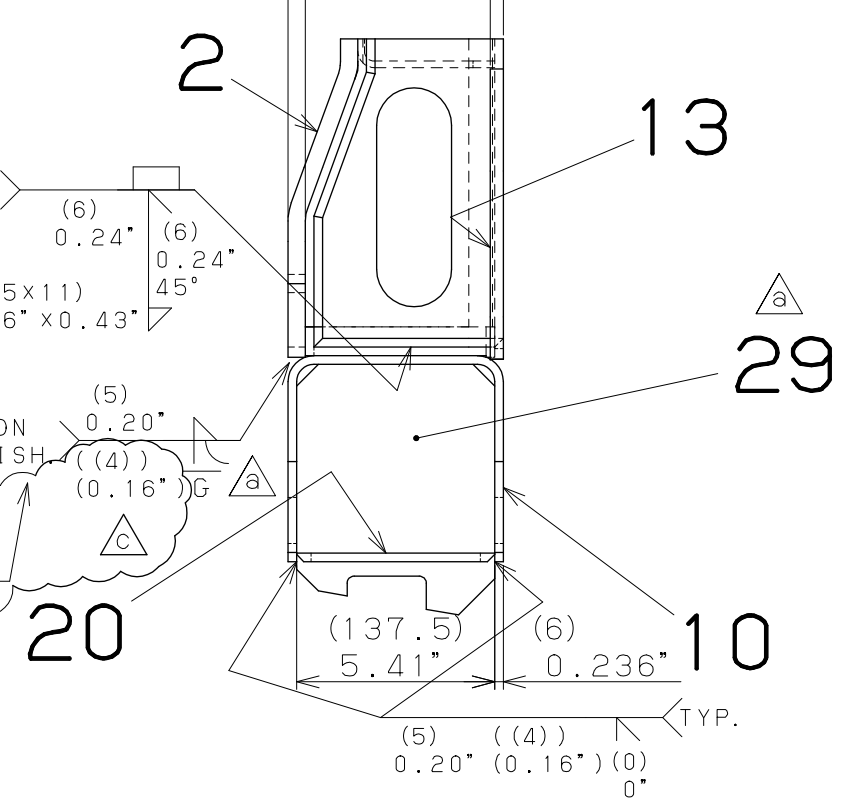
**DETAIL R**  
(FROM C5, C14) (TYP.)



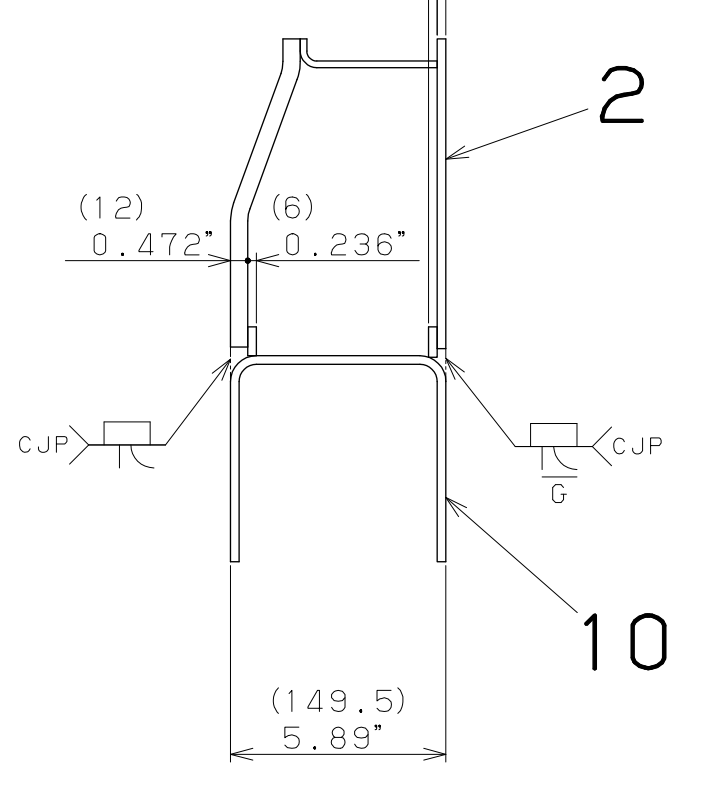
**SECTION J-J**  
(FROM D3)



**SECTION K-K**  
(FROM D8)



**SECTION L-L**  
(FROM D10)



**SECTION M-M**  
(FROM D12)

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UNLESS OTHERWISE SPECIFIED	
TOLERANCE OF DIMENSIONS	
1.20" ( 30)	±0.02" (0.5)
1.20"-4.70" ( 30-120)	±0.03" (0.8)
4.70"-12.5" (120-315)	±0.05" (1.2)
12.5"-40.0" (315-1000)	±0.08" (2.0)
40.0"-80.0" (1000-2000)	±0.12" (3.0)
OVER 80.0" (2000- )	±0.25" (6.0)
ANGLES ±1°	
DRILLED HOLE DIA. TOLERANCES	
0.12"-0.24" ( 3- 6)	+0.006" (0.15), -0
0.24"-0.47" ( 6-12)	+0.010" (0.25), -0
0.47"-0.98" (12-25)	+0.012" (0.30), -0
0.98"-1.97" (25-50)	+0.018" (0.45), -0

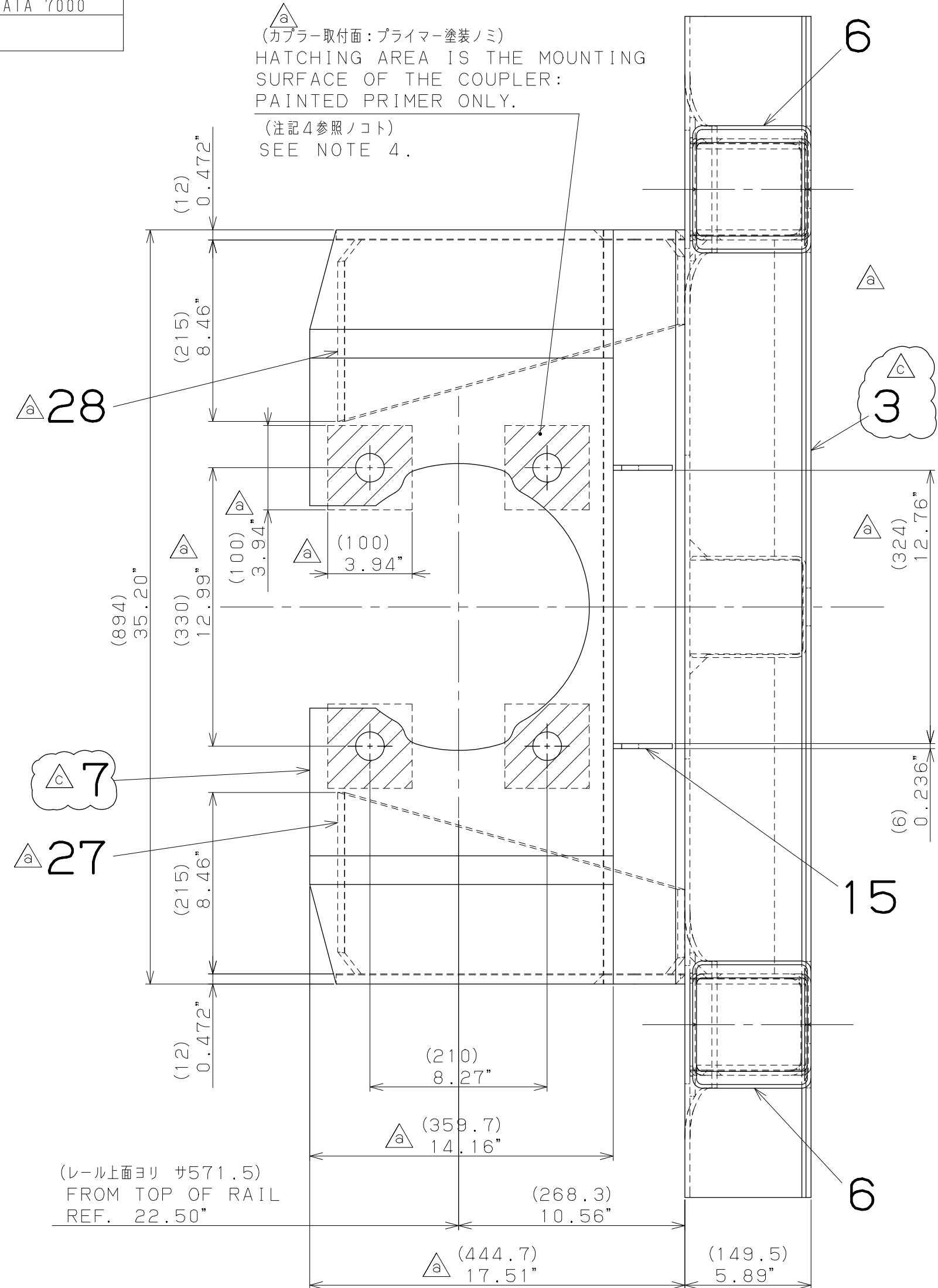
REV.	ECO. NO.	DESCRIPTION	DATE	DRWN	CHKD	APP'D
c	12E01043	CHANGED ITEM 3, CORRECTED ERRORS, ADDED NOTES.	'12.02.22	K.I	Y.S	Y.T
b	12E00768	SEE OTHER SHEET.	'12.02.27	K.I	Y.S	Y.T
a		ADDED SECTION U-LL NOTES, ADDED WELDING CHANGED DIMENSIONS.	'12.02.10	K.I	Y.S	Y.T

		川崎重工業株式会社 KAWASAKI HEAVY INDUSTRIES, LTD. KOBE, JAPAN	
END UNDERFRAME ASSY-F END フェンド端部台枠組立 (B-CAR)			
製品形式	車種	種別	1再台組
製品形式 車種 種別 1再台組			図番 DRG. NO. D4113-000205-c-4
尺 度	ANSI D	旧 図 番	-
SCALE	3" = 16"	装 置 名	台枠・連結装置
図面サイズ	ANSI D	装置別コード	411
客先図番	関連図面	SYS	UNDERFRAME/COUPLING DEVICE
細 番	025	SER. NO.	



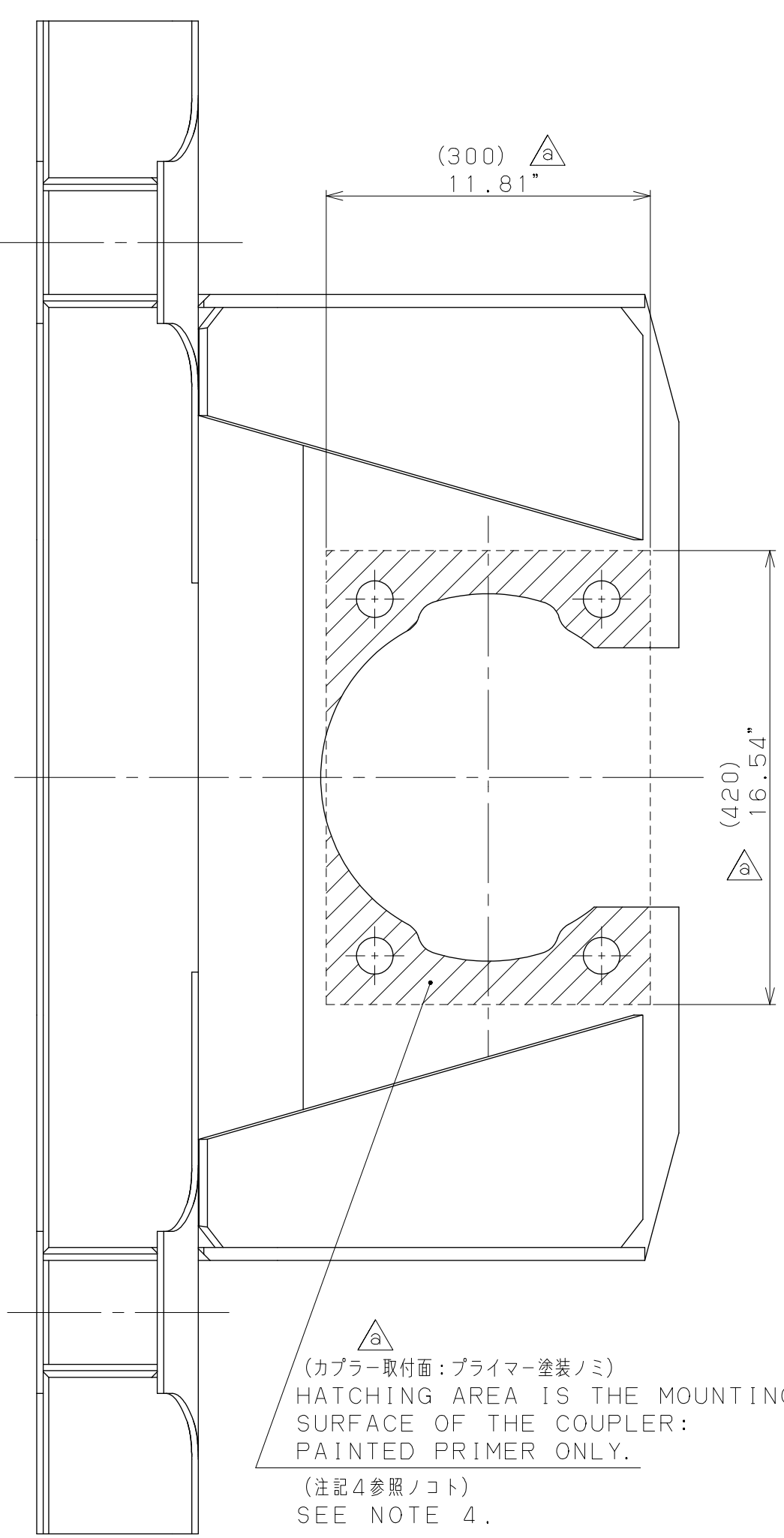
D4113-000205-c  
NEXT ASSEMBLY  
WMATA 7000

(カブラー取付面: プライマー塗装ノミ)  
HATCHING AREA IS THE MOUNTING SURFACE OF THE COUPLER: PAINTED PRIMER ONLY.  
(注記4参照ノコト)  
SEE NOTE 4.



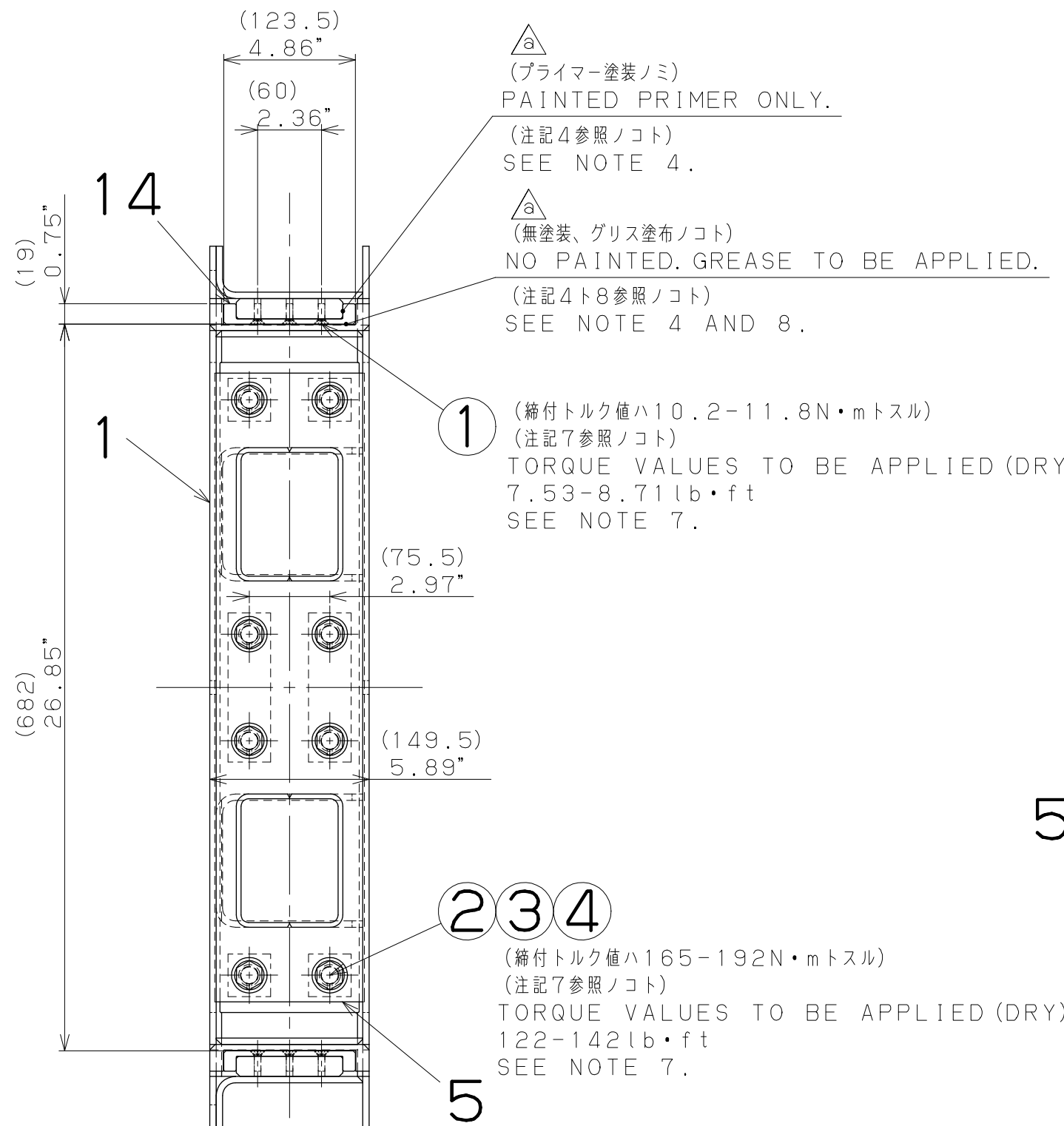
SECTION F-F  
(FROM 1/6 E4)

(溶接後、ビードハ滑らかに仕上げた後)  
BUILD UP WELD BEAD HERE.  
THEN GRIND BACK APPROXIMATELY TO DASHED LINE. PROVIDE SMOOTH TRANSITION BETWEEN THE MEMBERS.



SECTION U-U  
(FROM 1/6 C5)

(カブラー取付面: プライマー塗装ノミ)  
HATCHING AREA IS THE MOUNTING SURFACE OF THE COUPLER: PAINTED PRIMER ONLY.  
(注記4参照ノコト)  
SEE NOTE 4.



SECTION P-P  
(FROM E13)

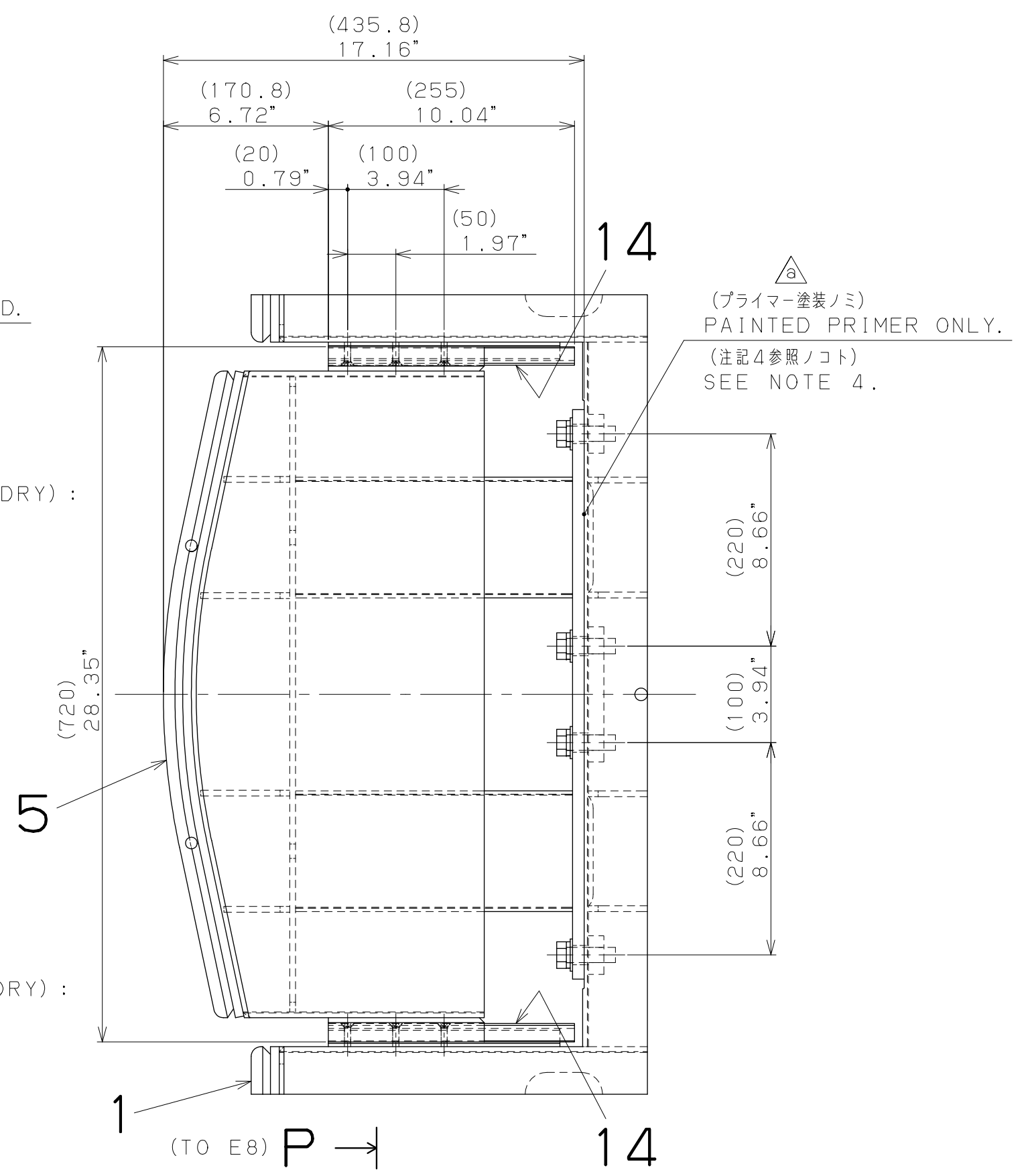
(プライマー塗装ノミ)  
PAINTED PRIMER ONLY.  
(注記4参照ノコト)  
SEE NOTE 4.

(無塗装、グリス塗布ノコト)  
NO PAINTED. GREASE TO BE APPLIED.  
(注記4ト8参照ノコト)  
SEE NOTE 4 AND 8.

(締付トルク値ハ10.2-11.8N・mトスル)  
(注記7参照ノコト)  
TORQUE VALUES TO BE APPLIED (DRY):  
7.53-8.71lb・ft  
SEE NOTE 7.

(締付トルク値ハ165-192N・mトスル)  
(注記7参照ノコト)  
TORQUE VALUES TO BE APPLIED (DRY):  
122-142lb・ft  
SEE NOTE 7.

P →



DETAIL N  
(FROM 1/6 D2)

(プライマー塗装ノミ)  
PAINTED PRIMER ONLY.  
(注記4参照ノコト)  
SEE NOTE 4.

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS

1.20" (30)	±0.02" (0.5)
1.20"-4.70" (30-120)	±0.05" (0.8)
4.70"-12.5" (120-315)	±0.05" (1.2)
12.5"-40.0" (315-1000)	±0.08" (2.0)
40.0"-80.0" (1000-2000)	±0.12" (3.0)
OVER 80.0" (2000- )	±0.25" (6.0)

ANGLES ±1°

DRILLED HOLE DIA. TOLERANCES

0.12"-0.24" (3-6)	+0.006" (0.15), -0
0.24"-0.47" (6-12)	+0.010" (0.25), -0
0.47"-0.98" (12-25)	+0.012" (0.30), -0
0.98"-1.97" (25-50)	+0.018" (0.45), -0

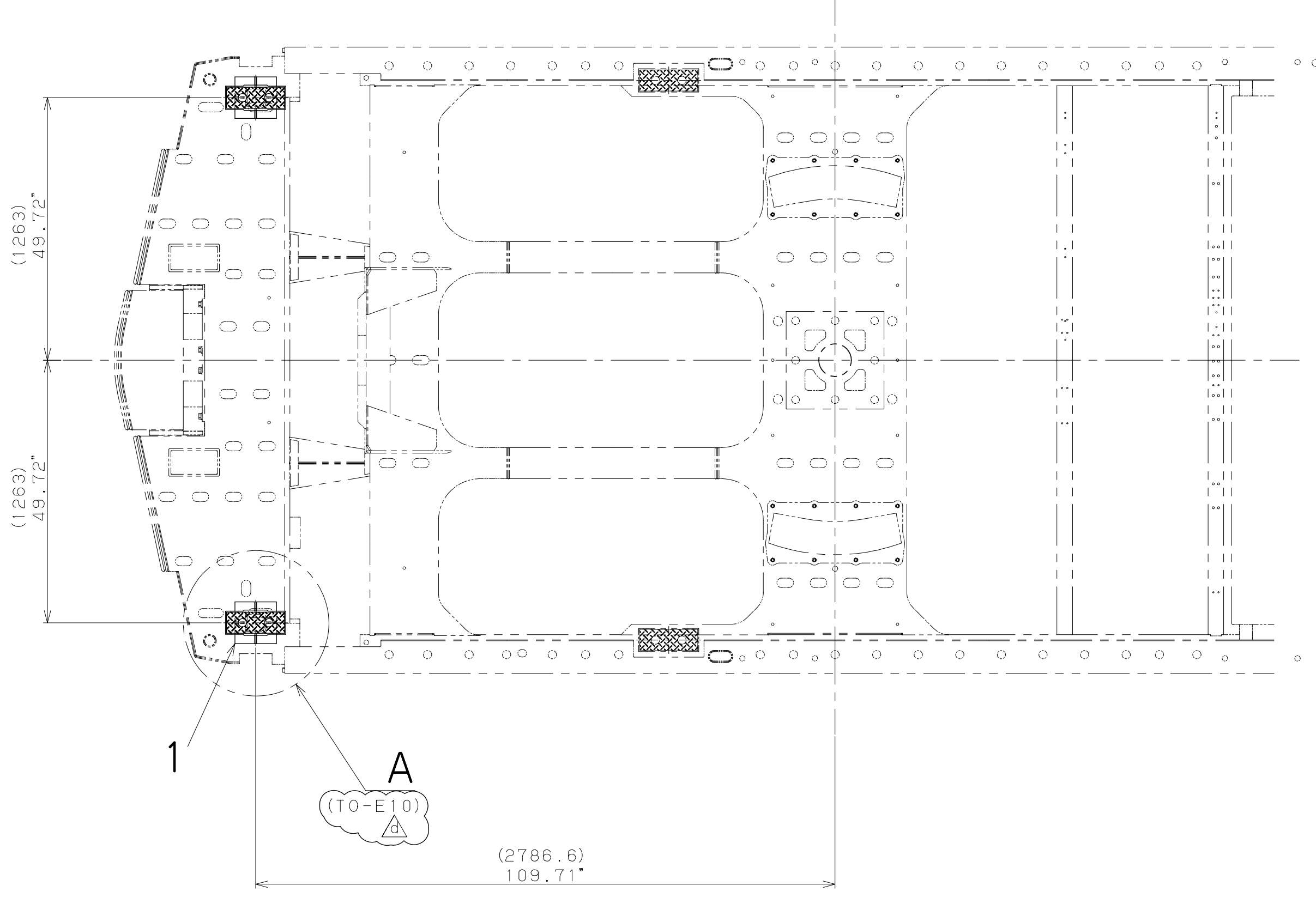
REV.	ECO. NO.	DESCRIPTION	DATE	DRWN	CHKD	APP'D
c	12E01043	CHANGED ITEM 3 AND 7.	'12.03.22	K.I.	Y.S.	Y.T.
b	12E00768	SEE OTHER SHEET.	'12.02.27	K.I.	Y.S.	Y.T.
a		ADDED THIS PAGE AND BOTTOM VIEW DETAILS. NOTES ADDED ITEM 30 AND 31.	'12.02.10	K.I.	Y.S.	Y.T.

承認 APPROVED	川崎重工 KAWASAKI HEAVY INDUSTRIES, LTD. 車両カンパニー KOBE, JAPAN
検査 CHECKED	名刺 TITLE
作成 DRAWN	END UNDERFRAME ASSY-F END Fエンド部台枠組立 (B-CAR)
製 品 形 式 車 種 種 別 1 再 台 組 装 数	WA7000ZWMATA7000 B - =
製 品 形 式 車 種 種 別 1 再 台 組 装 数	D4113-000205-c-56

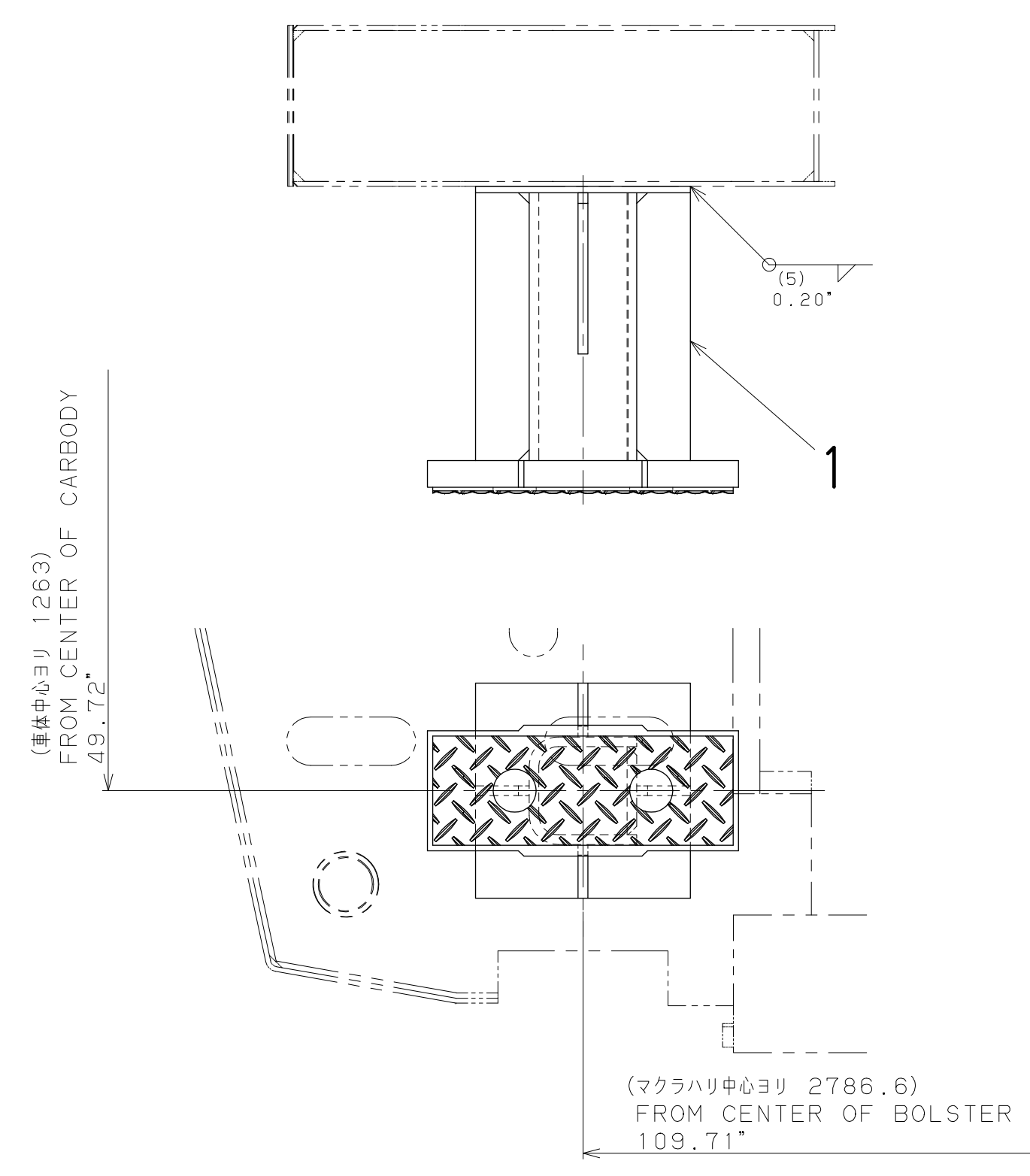


P-630000-21170  
NEXT ASSEMBLY  
WMATA 7000

QTY REVISION 種類	ITEM 品目	ITEM CODE 品目コード	ITEM NAME 名称	DRG NO. 図面番号	MATERIAL 材質	WEIGHT 重量 PER PC	DESCRIPTION 記号	REV. MARK 改訂記号
△	2	1	4113-000202	JACKING PAD ASSY ジャッキ受取付	D4113-000202	ASSY	クミタチン	38.58
		2		(次)				-
△		3		(次)				-
		4		(次)				-
△		5		(次)				-



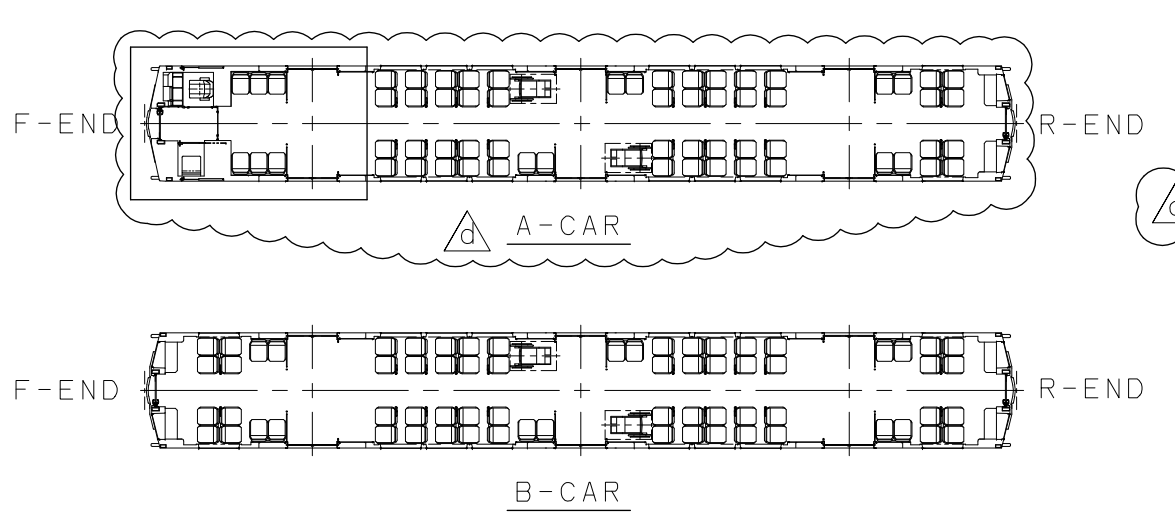
**BOTTOM VIEW (A-CAR)**



**DETAIL A**  
(FROM E2)

- NOTES
1. WELDING FOR LAHT STEEL SHALL BE ACCORDING TO WELDING PROCEDURE WM7-J-2101 (LATEST VERSION), UNLESS OTHERWISE SPECIFIED.
  2. WELDING FOR STAINLESS STEEL OR STAINLESS STEEL AND OTHER MATERIAL SHALL BE ACCORDING TO WELDING PROCEDURE WM7-J-2201 (LATEST VERSION), UNLESS OTHERWISE SPECIFIED.
  3. WELDING INSPECTION SHALL BE IN ACCORDANCE WITH THE INSPECTION MANUAL WM7-J-3701 (LATEST VERSION).
  4. WELDED CARBON STEEL PART TO BE PAINTED IN DAI NIPPON TORYO CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000018 (WM7-J-1201) (DAI NIPPON) (LATEST VERSION) OR IN DUPONT CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000019 (WM7-J-1202) (DUPONT) (LATEST VERSION) AFTER WELDING.
  5. EXPOSED SURFACE OF CARBON STEEL TO BE PAINTED IN DAI NIPPON TORYO CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000018 (WM7-J-1201) (DAI NIPPON) (LATEST VERSION) OR IN DUPONT CHARCOAL GRAY AND BLACK ACCORDING TO PAINTING SPECIFICATION M1800-000019 (WM7-J-1202) (DUPONT) (LATEST VERSION).

- 注記
1. 特記ナキLAHT鋼ノ溶接ハ溶接要領WM7-J-2101 (最新版)ニヨルコト。
  2. 特記ナキステンレス鋼オヨビステンレス鋼ト異種金属ノ溶接ハ溶接要領WM7-J-2201 (最新版)ニヨルコト。
  3. 溶接検査ハWM7-J-3701 (最新版)ニヨルコト。
  4. 溶接後、炭素鋼材溶接部ヲ塗装仕様書M1800-000018 (WM7-J-1201) (大日本塗料) (最新版)ニヨリ、チャコールグレイ色オヨビ黒色マタハ、塗装仕様書M1800-000019 (WM7-J-1202) (デュポン) (最新版)ニヨリ、チャコールグレイ色オヨビ黒色ニ塗装ノコト。
  5. 炭素鋼材露出部ハ、塗装要領M1800-000018 (WM7-J-1201) (大日本塗料) (最新版)ニヨリ、チャコールグレイ色オヨビ黒色マタハ、塗装仕様書M1800-000019 (WM7-J-1202) (デュポン) (最新版)ニヨリ、チャコールグレイ色オヨビ黒色ニ塗装ノコト。



APPLICABLE CAR	TYPE	SET/CAR	WT./CAR	EFFECTIVITY
A	-	1	77.15 lbs	ALL CARS
B	-	-	-	-

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UNLESS OTHERWISE SPECIFIED

TOLERANCE OF DIMENSIONS

-1.20° ( - 30) ±0.02° (0.5)
1.20°-4.70° ( 30-120) ±0.03° (0.8)
4.70°-12.5° ( 120-315) ±0.05° (1.2)
12.5°-40.0° ( 315-1000) ±0.08° (2.0)
40.0°-80.0° ( 1000-2000) ±0.12° (3.0)
OVER 80.0° (2000 - ) ±0.25° (6.4)

ANGLES ±1°

DRILLED HOLE DIA. TOLERANCES

0.12"-0.24" ( 3-6) +0.006" (0.15) -0
0.24"-0.47" ( 6-12) +0.010" (0.25) -0
0.47"-0.98" (12-25) +0.012" (0.30) -0
0.98"-1.97" (25-50) +0.016" (0.40) -0

TYPE	ITEM CODE	ASSY WEIGHT
-	4112-000039	77.15 lbs

REV.	ECO. NO.	DESCRIPTION	DATE	BY	CHK	APP
d	12E00558	DELETED ITEM 3 AND 5, DELETED PAGE 2 AND NOTE 6.	"12.02.10	K.I	Y.S	Y.T
c	11E00215	ADDED NOTE 6.	"11.12.27	K.I	Y.S	Y.T
b	11E00189	REVISED WEIGHT, CORRECTED ERROR.	"11.11.10	K.I	Y.S	Y.T
a	11E00095	CHANGED NOTE 4 AND 5.	"11.08.12	K.I	Y.S	Y.T

2011.06.30	承認 APPROVED	Y. Toya	川崎重工業 KAWASAKI HEAVY INDUSTRIES, LTD. ROLLING STOCK COMPANY	車両カンパニー KOBE, JAPAN
検査 CHECKED	作成 DRAWN	Y. Seki K. Ikushima	名称 TITLE JACKING PAD INSTL (A-CAR) ジャッキ受取付	
製 品	形 式	車 種	種 別	尺 寸 SCALE
WA7000Z	WMATA7000	A	-	1/20
製 品 形 式 車 種 種 別 尺 寸 SCALE				
DRG. NO. D4112-000039-d-1				