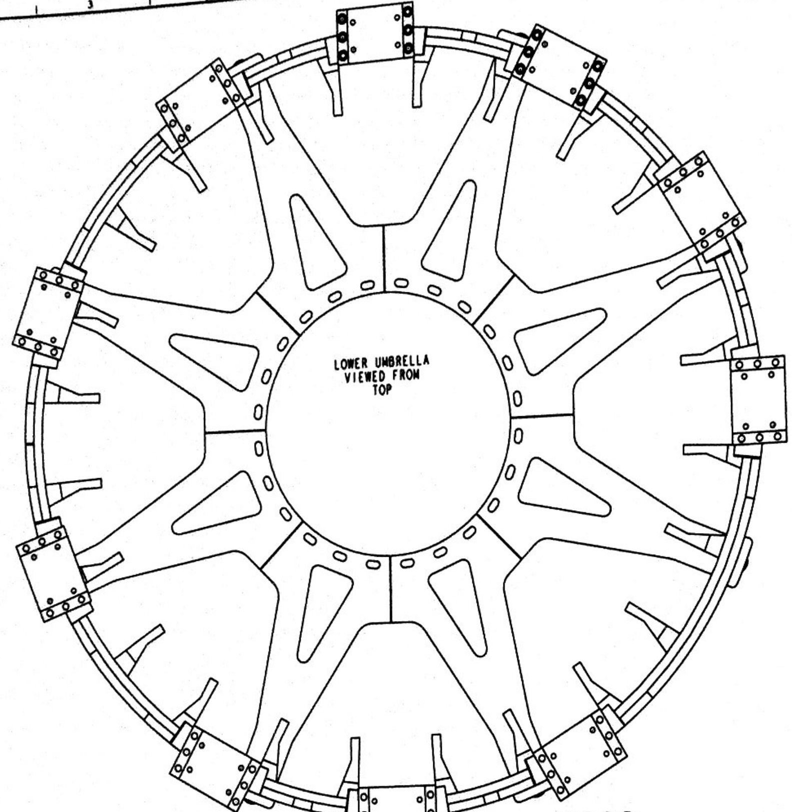
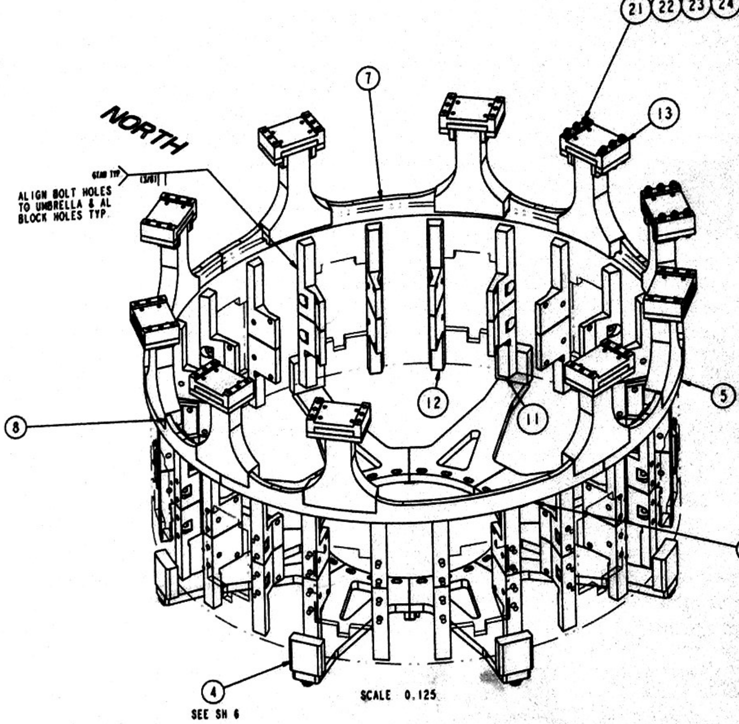
NOTES:

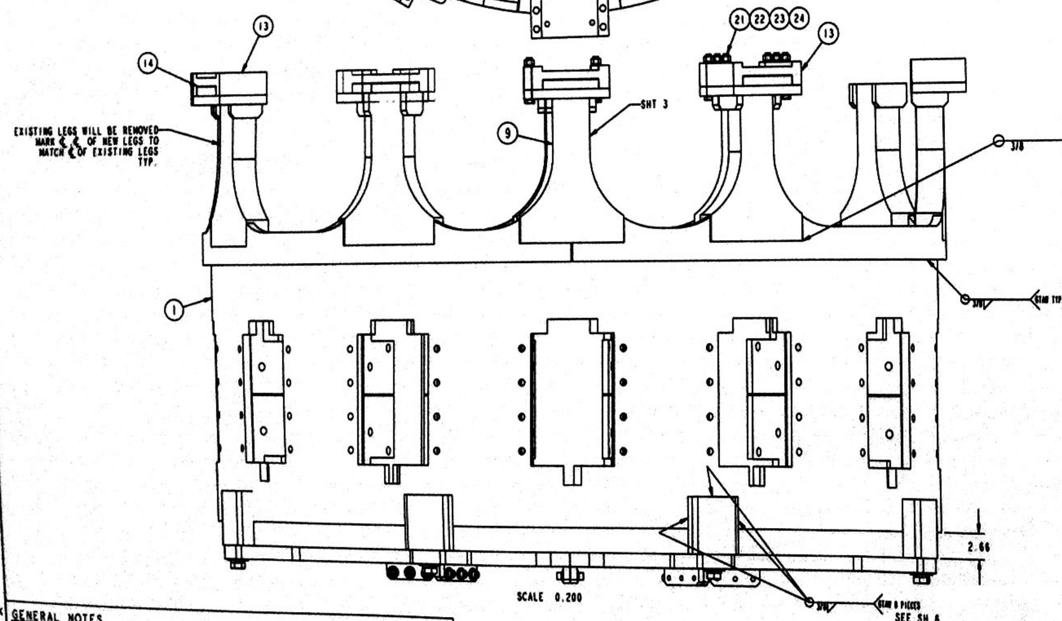
1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.
3. WELDING SHALL BE CONFORMED IN ACCOEDANCE WITH THR REQUIREMENTS OF PPPL PROCEDURE ENG-037. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY D.

09/30/11

NORTH







24	COMM	5/8-11 HEX NUT	INCONEL	48
23	COMM	5/8" FLAT LOCK WASHER	INCONEL	48
22	COMM	5/8" SPLIT LOCK WASHER	INCONEL	48
21	COMM	5/8-11UNC-2A X 4 1/2 LG HEX HD BOLT	INCONEL	48
20	COMM	1-8UNC-2A X 3 1/2 LG HEX HD BOLT	304 SS	8
19	COMM	1" SPLIT LOCK WASHER	304 SS	8
18	COMM	1" FLAT WASHER	304 SS	8
17	COMM	1/2-13UNCX 1 3/4 LG HEX SOC HD CAP SCR	304 SS	24
16	COMM	1/2 SPLIT LOCK WASHER	304 SS	24
15	COMM	1/2 FLAT WASHER	304 SS	24
14	E-DC1149-3	UMBRELLA FOOT SPACER	INCONEL	24
13	E-DC1149	UMBRELLA FOOT REINFORCEMENT WELDMENT	INCONEL	10
12	E-DC1579-12	INTERNAL LOWER UMBRELLA STIFFENER	304 SS	12
11	E-DC1579-11	INTERNAL LOWER UMBRELLA STIFFENER	304 SS	12
10	--------		--------	
9	E-DC1579-9	UMBRELLA LEG	304 SS	10
8	E-DC1579-8	SPACER RING , UMBRELLA LEG	304 SS	1
7	E-DC1579-7	SPACER RING , UMBRELLA LEG	304 SS	1
6	E-DC1579-6	SPACER RING , UMBRELLA LEG	304 SS	1
5	E-DC1579-5	SPACER RING , UMBRELLA LEG	304 SS	1
4	E-DC1579-4	LOWER LID MOUNTING BLOCK	304 SS	8
3	E-DC1579-3	INTERFACE REINFORCEMENT	INCONEL	20
2	--------		--------	
1	E-DC1148	LOWER UMBRELLA	304 SS	1
ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD

PRELIMINARY

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED

Pro E

DO NOT VERIFY INFORMATION BY SCALING DRAWING

SCALE:

NEXT ASSEMBLY

CENTRAL FILES:

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES MACHINE SURFACES

BREAK SHARP EDGES .005/.020

TOLERANCES NON-CUMULATIVE

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT

CENTERSTACK UPGRADE
LOWER UMBRELLA WELDMENT ASSEMBLY
UMBRELLA REINFORCEMENTS

DIV: MECH. ENG.
ENG: M SMITH
DSN: G PALUZZI
CHK: M SMITH

DC1579

SHEET 1 OF 6

RELEASE LEVEL:

PRELIMINARY

WHEN MODELS ARE PROVIDED, ... CONFORM WITH PPPL APPROVED DRAWINGS PRI...

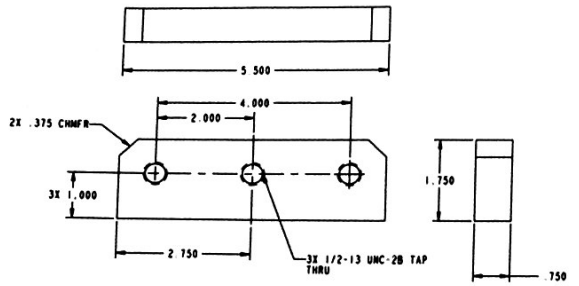
NO.	REVISION	BY	CH	SUP	APPROVED	DATE

NOTES:

1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.
3. WELDING SHALL BE CONFORMED IN ACCOEDANCE WITH THR REQUIREMENTS OF PPPL PROCEDURE ENG-037. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY D.

05/31/11

②



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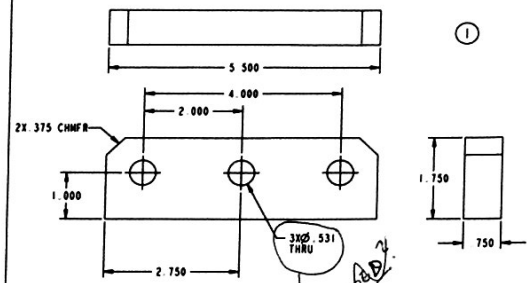
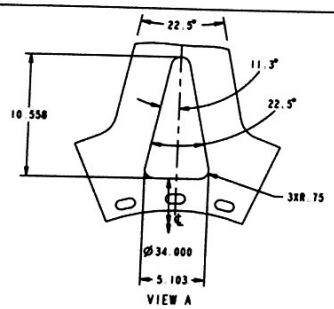
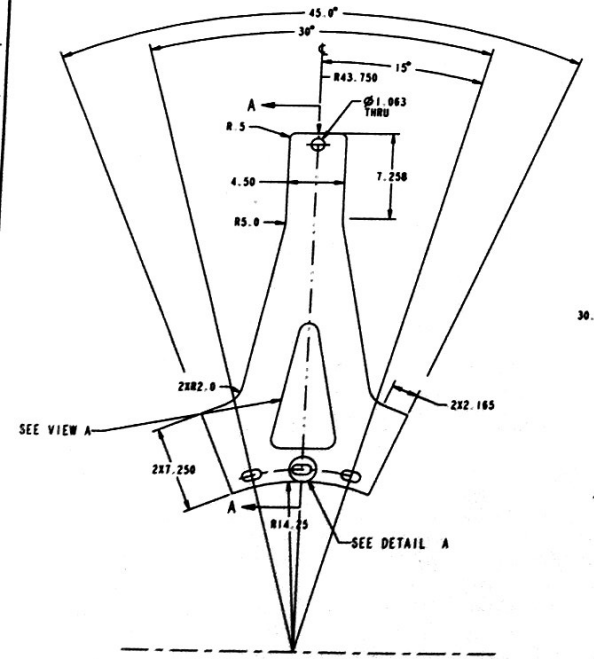


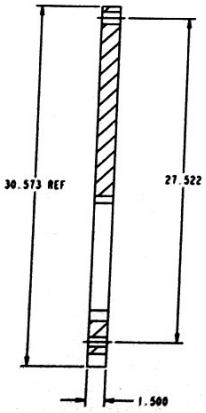
LOOKED OK

④

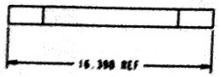


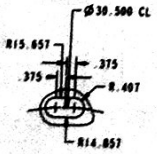
VIEW A



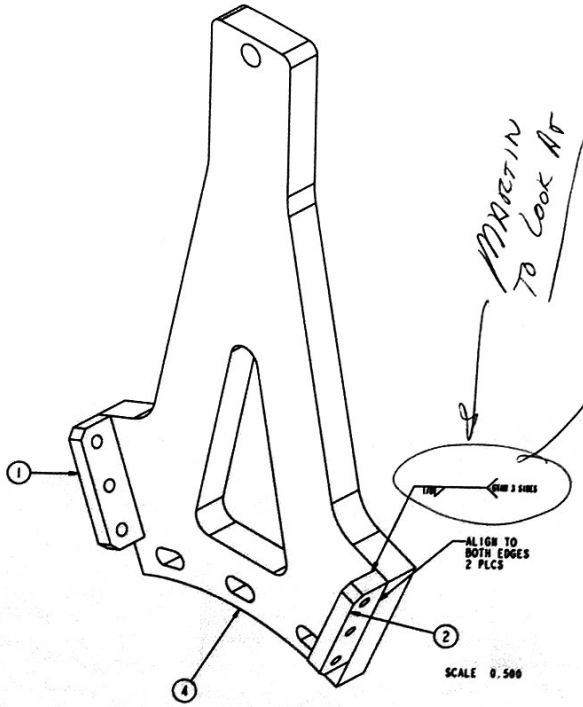


SECTION A-A





DETAIL A
SCALE 0.500
THRU 3 PLACES



SCALE 0.500

PRELIMINARY

ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY PER ASSY
4	E-DC1572-4	LOWER UMBRELLA LID SECTION	304 STN STL	8
3	--------	----------	----------	---
2	E-DC1572-2	LOWER LID JOINER PLATE 2	304 STN STL	1
1	E-DC1572-1	LOWER LID JOINER PLATE 1	304 STN STL	1

GENERAL NOTES

PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.

WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

RELEASE LEVEL: DWG VERSION NO.:

PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT
CENTERSTACK UPGRADE
VESSEL ASSEMBLY
LOWER LID SECTION WELD ASSEMBLY

DRN: H SMITH
DES: G PALMIERI
CHK:

E-DC1572

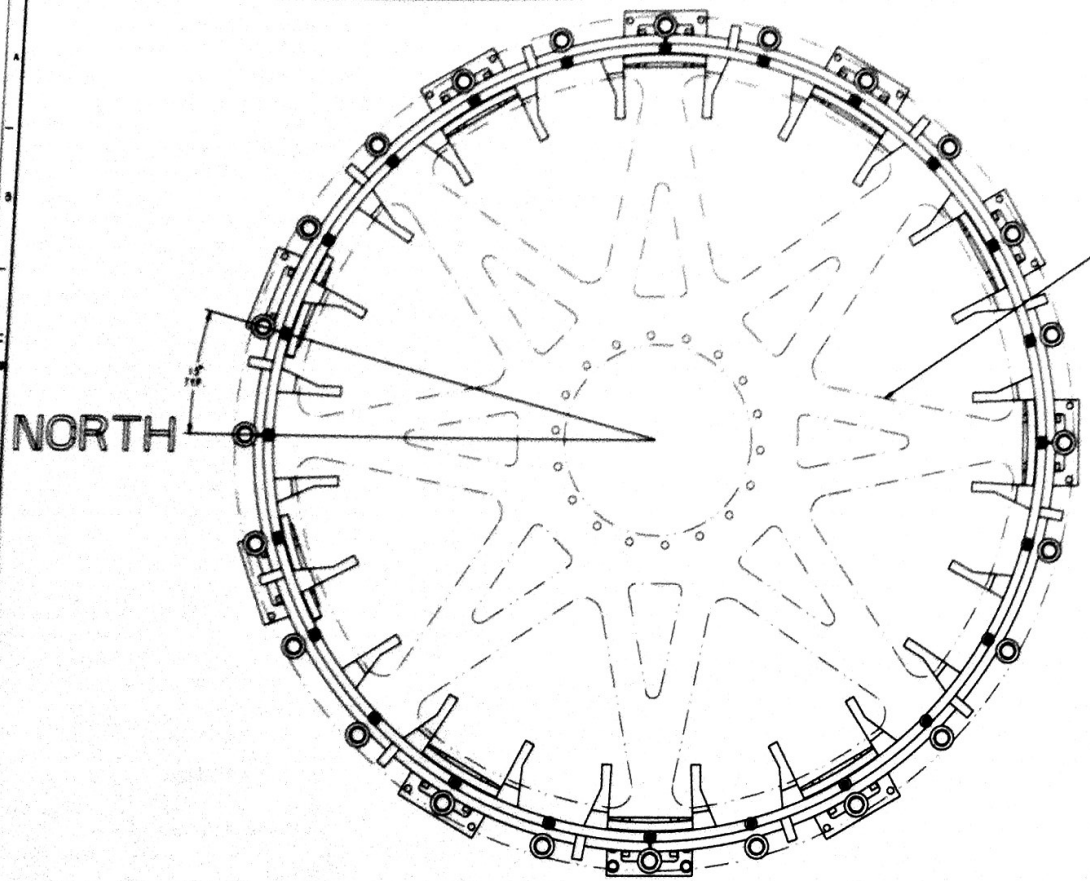
SHEET 1 OF 1

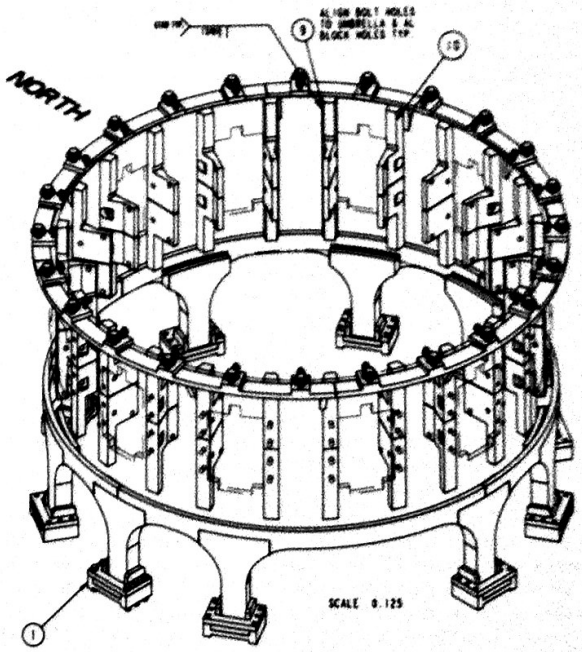
PRELIMINARY

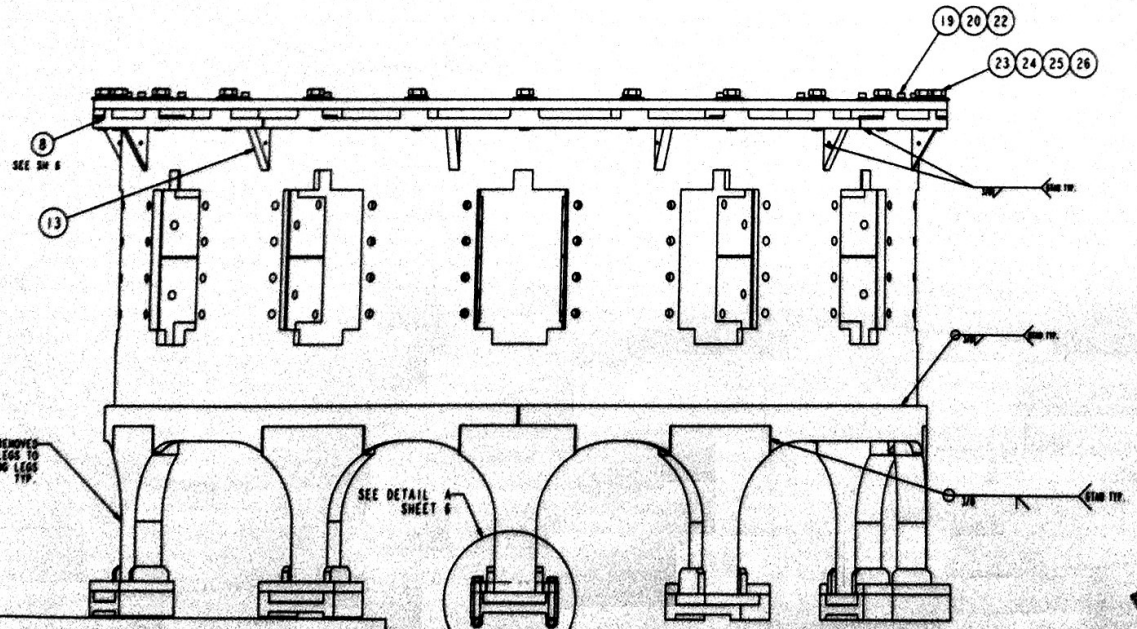
NO	REVISION	BY	CH	SUP	APPROVED	DATE

NOTES:
1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.
3. WELDING SHALL BE CONFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF PPPL PROCEDURE EMS-037. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY D

99/38/11







ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
26	COMM	1-8UNC HEX NUT	304 STN STL	12
25	COMM	1" FLAT WASHER	304 STN STL	24
24	COMM	1" SPLIT LOCK WASHER	304 STN STL	24
23	COMM	1-8UNC-2A X 4 1/2 LG HEX HD BOLT	304 STN STL	12
22	COMM	1/2-13UNC X 2 1/2 HD HD SOC CAP SCR	304 STN STL	24
21	COMM	1/2-13UNC X 3 1/2" HEX HD BOLT	304 STN STL	12
20	COMM	1/2 FLAT WASHER	304 STN STL	24
19	COMM	1/2 SPLIT LOCK WASHER	304 STN STL	24
18	COMM	1/2-13UNC HEX NUT	304 STN STL	12
17	COMM	5/8-11UNC&4 1/2 HHCS, MCMASTER 93190A601	INCONEL	60
16	COMM	5/8 FLAT WASHER, MCMASTER 98017A215	INCONEL	60
15	COMM	5/8 SPLIT LOCK WASHER	INCONEL	60
14	COMM	5/8-11 UNC HEX NUT	INCONEL	60
13	E-DC1570-9	UMBRELLA LEG	304 STN STL	10
12	E-DC1570-3	UMBRELLA FOOT REINFORCEMENT	INCONEL	10
11	E-DC1560-3	GUSSET	304 STN STL	10
10	E-DC1455-10	INNER TOP UMBRELLA VERTICAL STIFFENER	304 STN STL	12
9	E-DC1455-9	INNER TOP UMBRELLA VERTICAL STIFFENER	304 STN STL	12
8	E-DC1455-8	UPPER LID COLLAR	304 STN STL	4
7	E-DC1455-7	UMBRELLA STRUCTURE WELDMENT	304 STN STL	1
6	E-DC1455-6	SPACER RING , UMBRELLA LEG	304 STN STL	1
5	E-DC1455-5	SPACER RING , UMBRELLA LEG	304 STN STL	1
4	E-DC1455-4	SPACER RING , UMBRELLA LEG	304 STN STL	1
3	E-DC1455-3	SPACER RING , UMBRELLA LEG	304 STN STL	1
2	E-DC1149-3	UMBRELLA FOOT SPACER	INCONEL	10
1	E-DC1149	UMBRELLA FOOT WELDMENT	INCONEL	10

PRELIMINARY

GENERAL NOTES
1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

RELEASE LEVEL

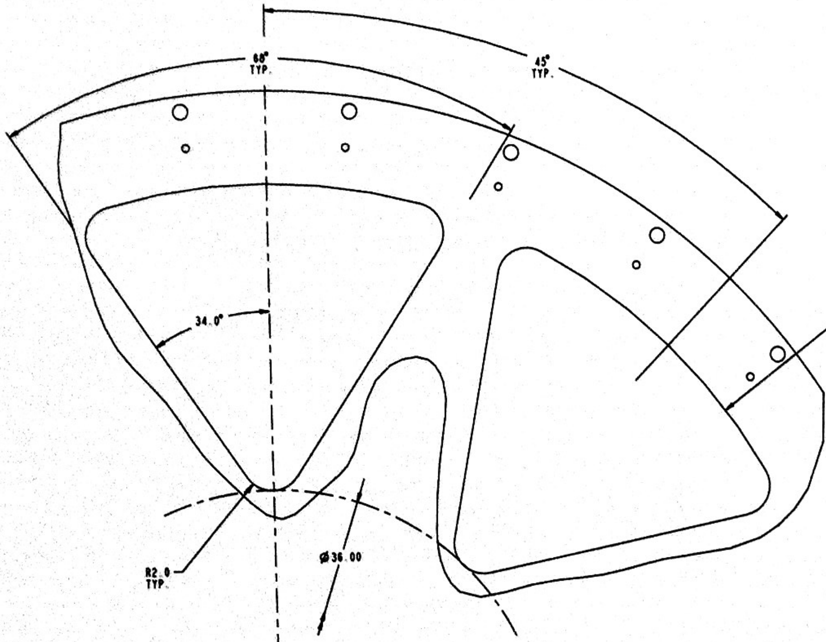
PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY NATIONAL SPHERICAL TORUS EXPERIMENT	
CENTERSTACK UPGRADE UPPER UMBRELLA WELDMENT ASSEMBLY UMBRELLA REINFORCEMENT	
SIZE: B	DRAWING NO. E-DC1455
SCALE: NOT ASSEMBLY	SHEET 1 OF 6

PRELIMINARY

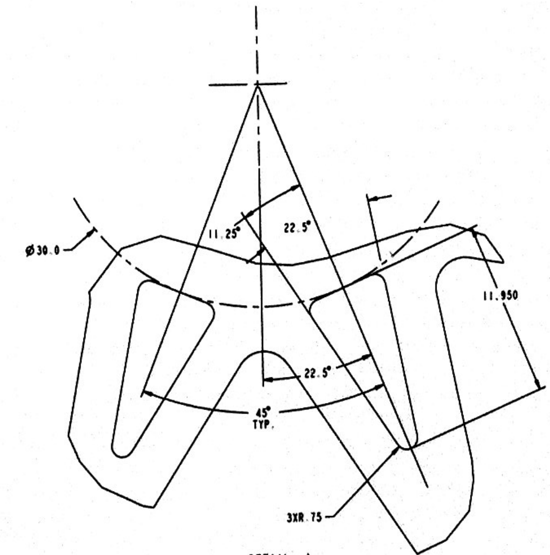
NSTX-E-DC1455

NOTES:
1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.

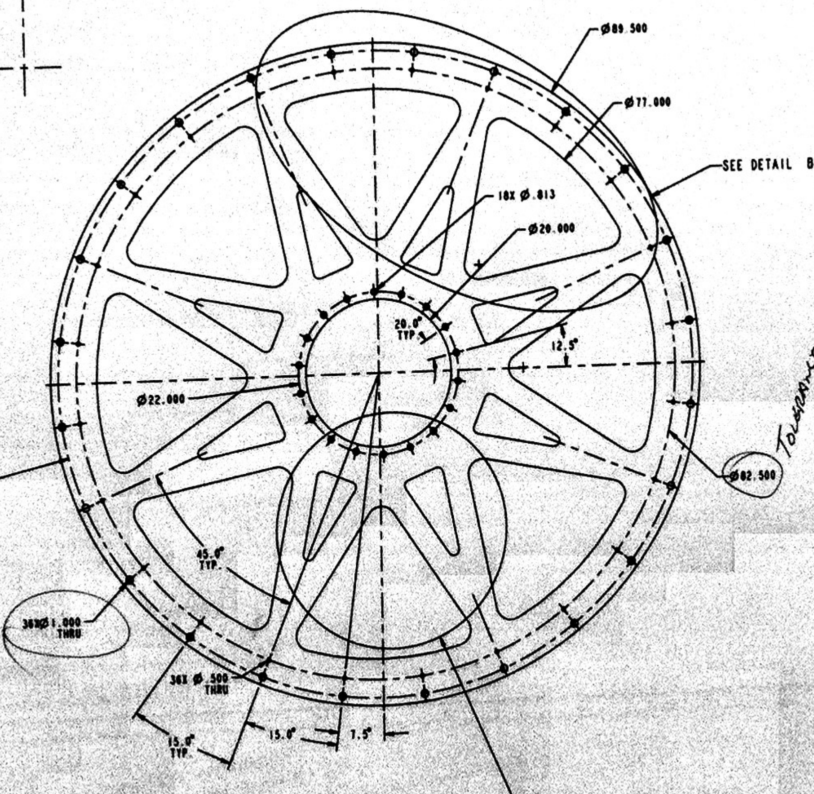
06/30/11

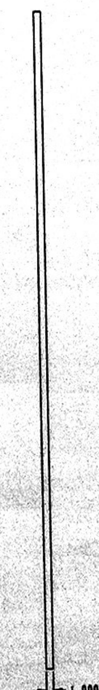


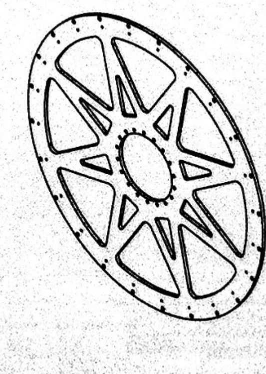
DETAIL B
SCALE 0.300
8 PLACES



DETAIL A
SCALE 0.300
8 PLACES







PRELIMINARY

ITEM NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
1	E-DC1571	UPPER UMBRELLA LID	304 STN STL	1

PARTS LIST

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED

Pro E

CENTRAL FILES:

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

MACHINE SURFACES

TOLERANCES NON-CUMULATIVE

SCALE:

NEXT ASSEMBLY

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT

CENTERSTACK UPGRADE
UPPER UMBRELLA ASSEMBLY
UPPER ONE PIECE LID

DIV: MECH. ENG.

ENG: M SMITH

DSN: G PALUZZI

CHK:

DATE:

E-DC1571

SHEET 1 OF 1

PRELIMINARY

RELEASE LEVEL:

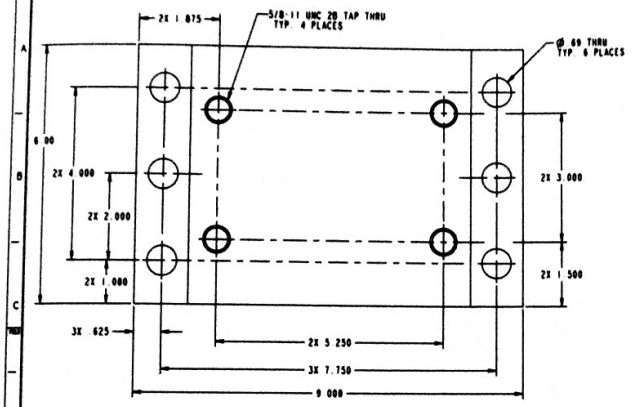
DWG VERSION NO.:

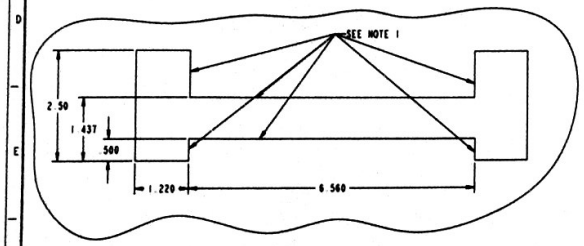
NSTX-E-DC1571

GENERAL NOTES
1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS ... APPROVED DRAWINGS PRIOR TO FABRICATION.

SCALE 0.150

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
1	CHANGED PER ECN	SLP	MS	LM		





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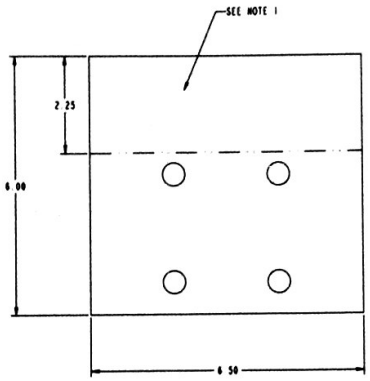

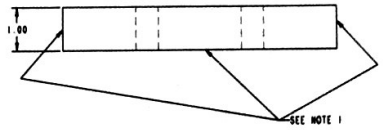

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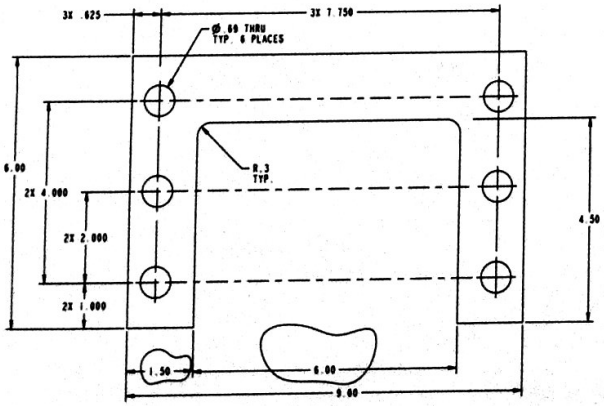

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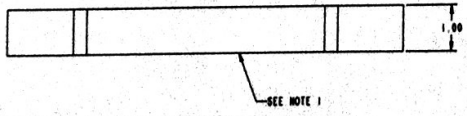
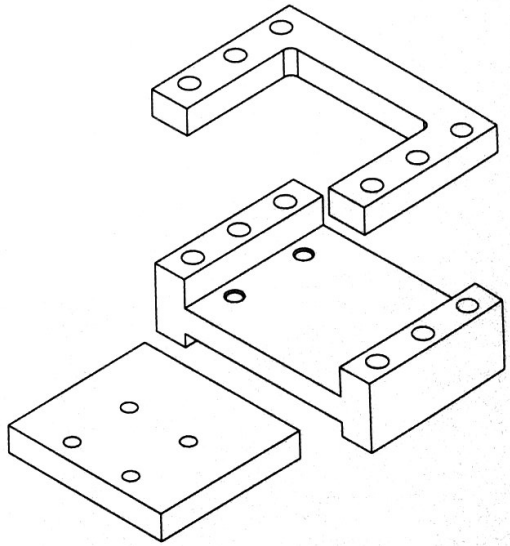


NOTES

1. MAGNAPLATE HNF (SYNERGISTIC COATING) IS TO BE APPLIED TO SURFACES INDICATED TO A THICKNESS OF .001-.002" AFTER ALL MACHING IS PERFORMED.
2. REMOVE ALL SHARP EDGES AND BURRS.
3. PART SHALL BE FREE OF DIRT AND OIL

05/31/11



SCALE 0.750

ITEM NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
3	E-DC1149-3	UMBRELLA FOOT SPACER	INCONEL	1
2	E-DC1149-2	CLOSURE PLATE	INCONEL	1
1	E-DC1149-1	BLOCK , RIB CHANNEL	INCONEL	1

PARTS LIST

PRELIMINARY

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT

UMBRELLA STRUCTURE
UMBRELLA STRUCTURE TO VACUUM VESSEL INTERFACE DETAILS

DWG NO. E-DC1149

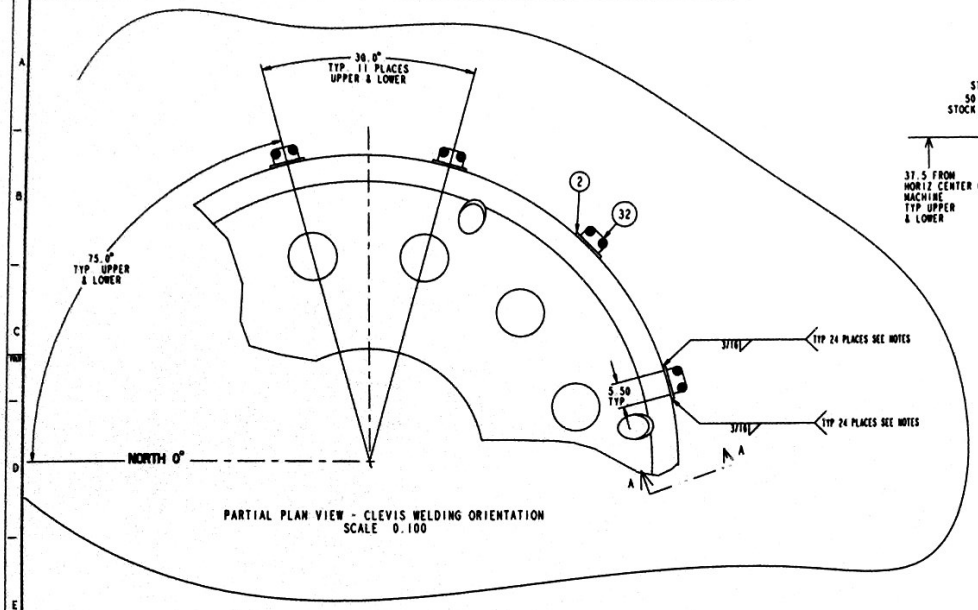
SHEET 1 OF 1

GENERAL NOTES

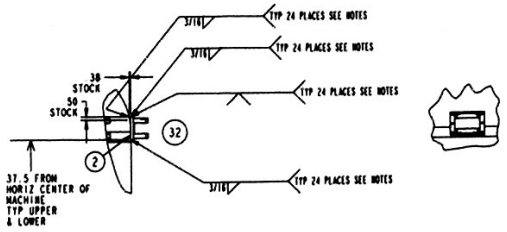
1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

RELEASE LEVEL:
DWG VERSION NO:

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
2	CHANGED PER ECR	SLP	MS	LM		



PARTIAL PLAN VIEW - CLEVIS WELDING ORIENTATION
SCALE 0.100

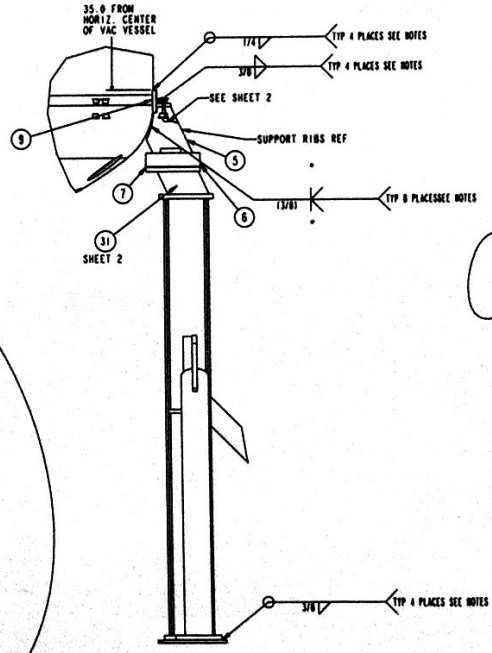


SCALE 0.100

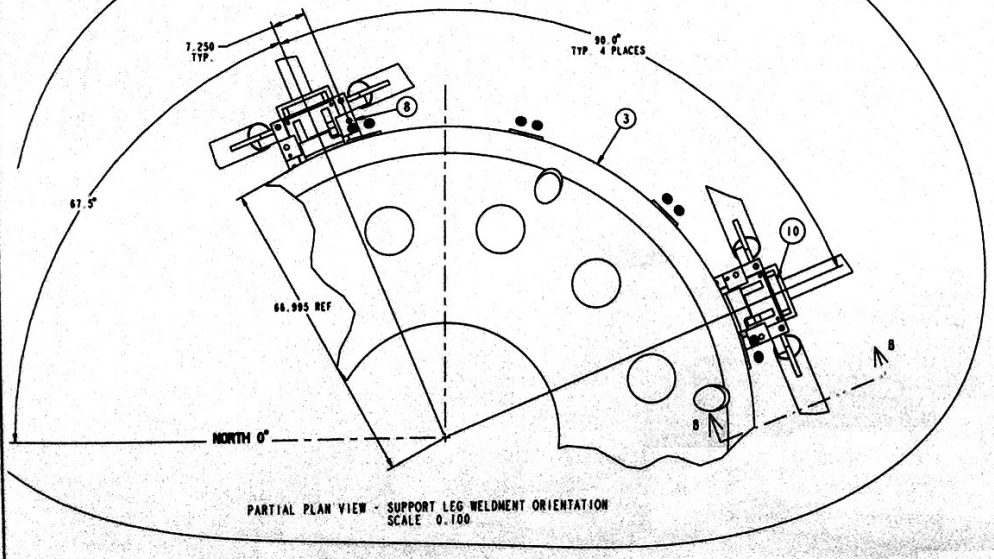
NOTES:

1. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH PPPL PROCEDURE EM-002
2. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY "D".
3. REFERENCE PERMEABILITY (USING SEVERN GAUGE):
   BASE MATERIAL 1.05
   FABRICATED PART 1.2
   WELD 2.0
4. BOTTOM PLATE OF VERTICAL SUPPORT LEG WELDMENT, PART ___ TO BE WELDED TO BASE PLATE (.50 THICK), PART ___ AFTER VACUUM VESSEL ASSEMBLY IS LOCATED IN ITS FINAL POSITION.
5. BASE PLATES, PARTS ___ AND ___ TO BE USED AS REQUIRED TO OBTAIN 156" HORIZONTAL CENTERLINE HEIGHT OF VACUUM VESSEL ABOVE TEST CELL FLOOR

08/18/2011



(REFERENCE PDF DRAWING E-DB1041 REV 0)
(REFERENCE PDF DRAWING E-DB1037 REV 1)



PARTIAL PLAN VIEW - SUPPORT LEG WELDMENT ORIENTATION
SCALE 0.100

ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
34	E-DB1037-34	REENFORCEMENT	316 SS	4
33	E-DB1037-33	REENFORCEMENT	316 SS	4
32	E-DC1570	TF CLEVIS ROD MOUNT	316 SS	24
31	E-DB1037-31	VERTICAL SUPPORT SIDE PLATES	316 SS	8
30	COMM	3/4-10UNC-2A x 4" H.H.C.S.	316 SS	16
29	COMM	3/4-10UNC-2B x 4" LG HILTI CONCRETE ANCHOR	316 SS	16
28	COMM	3/4-10UNC-2B HEX NUT	316 SS	24
27	COMM	3/4 SPLIT LOCK WASHER	316 SS	40
26	COMM	3/4 FLAT WASHER	316 SS	64
25	COMM	3/4-10UNC-2A x 7" LG H.H.C.S.	316 SS	8
24	COMM	3/4-10UNC-2A x 6" LG H.H.C.S.	316 SS	18
23	COMM	1/2 SPLIT LOCK WASHER	316 SS	24
22	COMM	1/2 FLAT WASHER	316 SS	24
21	COMM	1/2-13UNC-2A x 2" LG H.H.C.S.	316 SS	24
20	COMM	3/8 SPLIT LOCK WASHER	316 SS	144
19	COMM	3/8 FLAT WASHER	316 SS	144
18	COMM	3/8-16UNC-2A x 1" LG H.H.C.S.	316 SS	144
17	THIS DWG	SPACER BLOCK (3/8 x 1/2 x 5.0 LG)	304 SS	24
16	E-DB1042-11	BASE PLATE (.12 THICK)	SEE DWG	A/R
15	E-DB1042-10	BASE PLATE (.25 THICK)	SEE DWG	4
14	E-DB1042-9	BASE PLATE (.50 THICK)	SEE DWG	4
13	E-DB1042-8	INSULATOR WASHER	SEE DWG	48
12	E-DB1042-7	INSULATOR BUSHING - 5.25 LONG	SEE DWG	8
11	E-DB1042-6	INSULATOR BUSHING - 4.25 LONG	SEE DWG	16
10	E-DB1042-5	SLIDER PLATE	SEE DWG	4
9	E-DB1042-4	VACUUM VESSEL MOUNTING PLATE	SEE DWG	4
8	E-DB1042-3	LOCKING BAR	SEE DWG	8
7	E-DB1042-2	DIELECTRIC BREAK	SEE DWG	4
6	E-DB1042-1	SUPPORT CHANNEL	SEE DWG	4
5	E-DB1041-2	ANGLED SUPPORT LEG WELDMENT	SEE DWG	4
4	E-DB1041-1	VERTICAL SUPPORT LEG WELDMENT	SEE DWG	4
3	E-DB1036	VACUUM VESSEL FINAL MACHING	SEE DWG	1
2	C-DB1024	CLEVIS MOUNTING PLATE	SEE DWG	24
1	E-DB1003	CLEVIS WELDMENT	INCONEL 625	24
X	THIS DRAWING	WELDMENT ASSEMBLY	----------	---

PRELIMINARY

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

COMPUTER GENERATED DRAWING. MANUAL CHANGES NOT PERMITTED

CENTRAL FILES:

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES MACHINE SURFACES

BREAK SHARP EDGES .005/.010

TOLERANCES NON-CUMULATIVE

NEXT ASSEMBLY

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT
NSTX UPGRADE
VESSEL ASSEMBLY
VESSEL LEG ASSEMBLY

DIV: MECH. ENG.

DRAWN: L. MORRIS

CHK: J. CHRZANOWSKI

APP:

DWG: E-DB1037

SHEET 1 OF 2

RELEASE LEVEL:

DWG VERSION NO:

WELDING ENGINEER: APPVD: R. WOODLE DATE:

QUALITY CONTROL APPVD: R. WOODLE DATE:

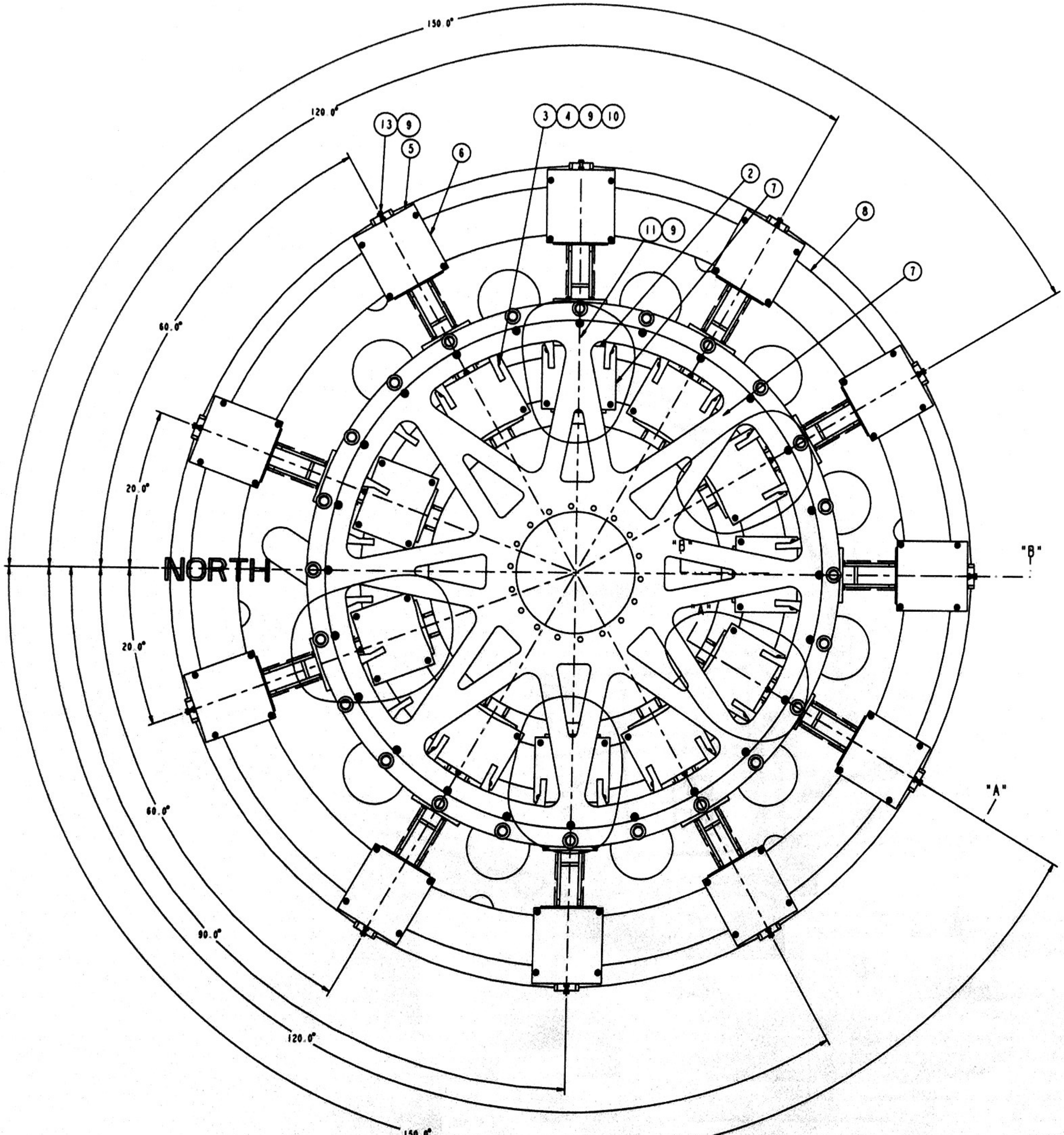
PRELIMINARY

1	REDRAWN PER ECN	DLP

NOTES:

1. POSITION COILS IF REQUIRED BY PLACING SHIMS BETWEEN COIL FACE AND BOTTOM SLIDING PLATES. 1/8" SHIM ALLOWANCE PROVIDED FOR PF COIL #2 AT CLAMPING AREAS.
2. UPPER AND LOWER COIL ASSEMBLIES TO BE CONCENTRIC TO VERTICAL CL OF VESSEL PER SPECIFICATIONS.
3. MATERIAL SHALL BE ASTM A193 B8M CLASS 2.

05/31/2011



(REF DRAWING EDB1032 REV 0)

03	02	01	ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL
	5	5	18	E-DC1166-6	SPACER PF2	
	88	88	17	COMM	1/2 LOCKWASHER	NOTE 3
	88	88	16	COMM	1/2-13 X 1 1/2 LG SOC HD CAP SCREW	NOTE 3
	11	11	15	EDB1029-3	PF 3 COIL SUPPORT PLATE	316 STN STL
	11	11	14	EDB1029-4	PF 2 COIL SUPPORT PLATE	316 STN STL
	11	11	13	COMM	1/2-13 X 3 1/2 LG HEX HD BOLT	NOTE 3
	17	17	12	COMM	6 X 6 3/8 THICK	316 STN STL
	6	6	11	COMM	1/2-13 X 2 LG HEX HD BOLT	NOTE 3
	136	136	10	COMM	1/2 LOCKWASHER	NOTE 3
	164	164	9	COMM	1/2-13 HEX NUT	NOTE 3
	1	1	8	XXXXXXXXX	PF3 COIL ASSEMBLY	SEE DT
	1	1	7	XXXXXXXXX	PF2 COIL ASSEMBLY	SEE DT
	11	11	6	EDC1167-2	PF3 BOTTOM SLIDIND PLATE	SEE DT
	11	11	5	EDC1167-01	PF3 RADIAL CLAMP ASSEMBLY	SEE DT
	68	68	4	EDC1166-5	TIE ROD SPACER	SEE DT
	68	68	3	EDC1166-4	CLAMP TIE ROD	NOTE 3
	6	6	2	EDC1166-01	PF2 RADIAL CLAMP ASSEMBLY	SEE DT
	6	6	1	EDC1166-1	PF2 TOP CLAMP PLATE	SEE DT
	X	---	---	THIS DWG	LOWER PF2 & PF3 COIL ASSEMBLY	----------
	---	X	---	THIS DWG	UPPER PF2 & PF3 COIL ASSEMBLY	----------

NSTX-E-DB1032

(01) UPPER PF COILS SHOWN
LOWER COILS OPPOSITE (MIRROR)

SCALE 0.150

PRELIMINARY

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED | CENTRAL FILES: | UNLESS OTHERWISE SPECIFIED | Pro E | DIMENSIONS ARE IN INCHES MACHINE SURFACES | SCALE: | TOLERANCES NON-CUMULATIVE | NEXT ASSEMBLY

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT

VACUUM VESSEL
PF COILS 2 & 3
INSTALLATION/CLAMPING ASSEMBLY

DIV: MECH. ENG. | DSN: J DUSHINSKI | SHEET 1 OF 1

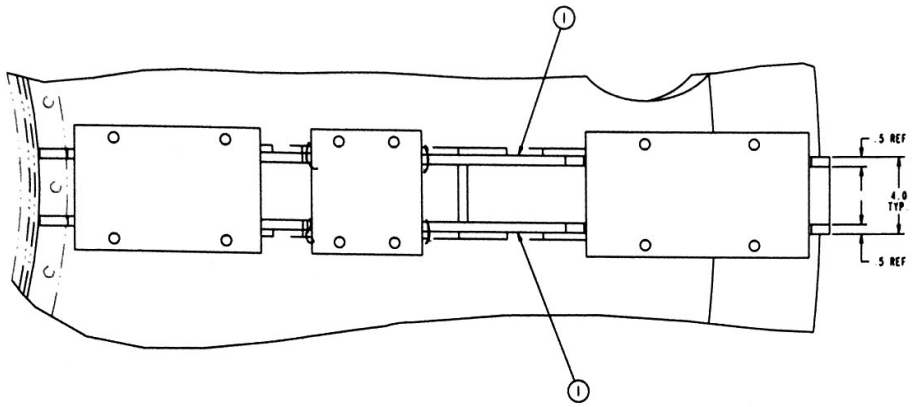
E-DB1032

PRELIMINARY

GENERAL NOTES
1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

RELEASE LEVEL:
DWG VERSION NO:

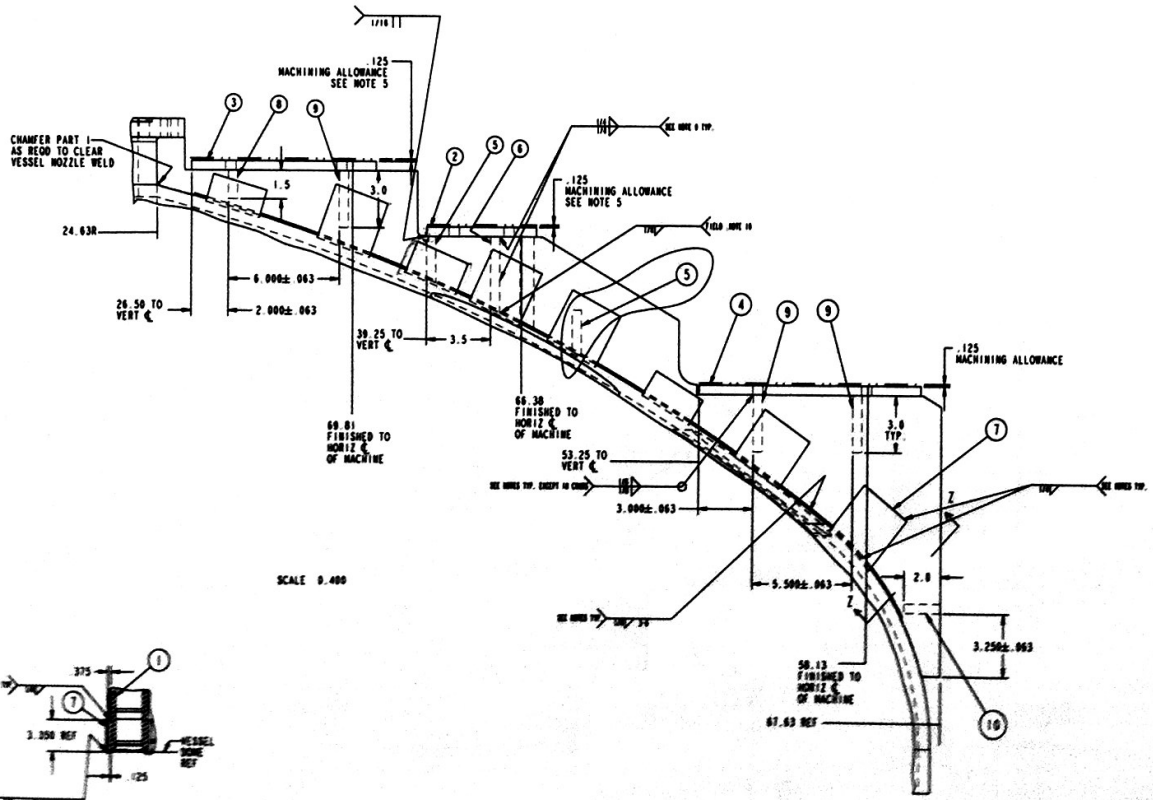
NO.	REVISION	BY	CH	SUP	APPROVED	DATE
1	REVISED PER CR # 27	JDR	JHC	JS	[illegible]	7/8/98
2	REVISED PER CR # 32	JDR	JHC	JS	[illegible]	8/4/98
3	REVISED PER CR-046	JDR	JHC	JS	[illegible]	12/16/99
4	REDRAWN PER ECN	GLP				

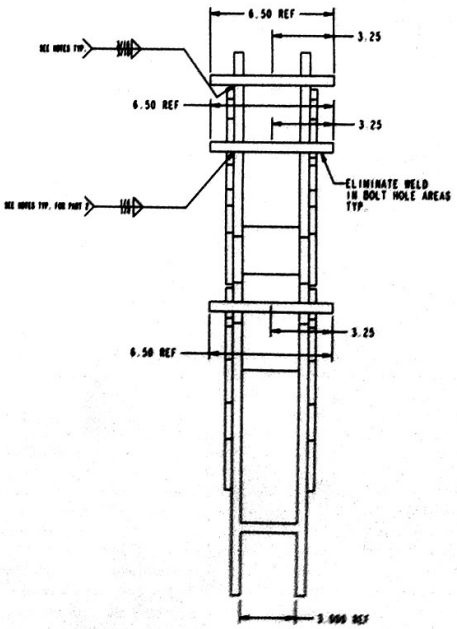


NOTES:

1. WELDERS MUST BE CERTIFIED TO SECTION IX OF ASME CODE.
2. WELDING SHALL BE PERFORMED IN AACCORDANCE WITH PPPL PROCEDURE EM-002.
3. REFERENCE PERMEABILITY:
   BASE MATERIAL 1.05 u
   FABRICATED PART 1.2 u
   WELD 3.0 u
4. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY "D".
5. FLATNESS BETWEEN PLATES TO BE WITHIN 1/32"
6. TABS (PART 7) TO BE INSTALLED WHERE GAPS EXIST BETWEEN VESSEL AND RIBS (PART 1), AS REQUIRED.
7. ALL WELDS TO BE 1/8 FILLET EXCEPT AS NOTED.
8. CONTINUOUS FILLET WELDS SHALL BE INTERRUPTED AT ALL OPPOSITE SIDES OF A COMMON PLANE OF CONTACT.
9. TYPICAL EXCEPT FOR OUTSIDE CORNER.
10. FIELD TO DETERMINE ACCESSIBILITY AND WELD WHERE POSSIBLE.

05/31/11





SECTION Z-Z
SEE NOTE 6

FOR RIM SEE DRAWING FOR1036

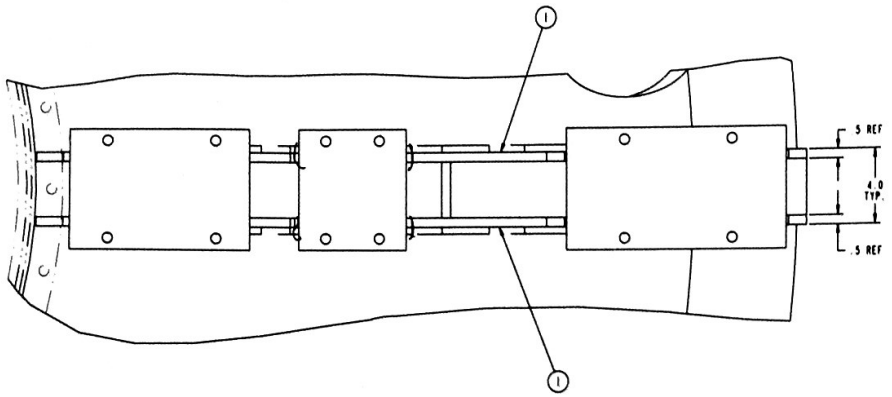
PRELIMINARY

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.

PRINCETON PLASMA PHYSICS LABORATORY

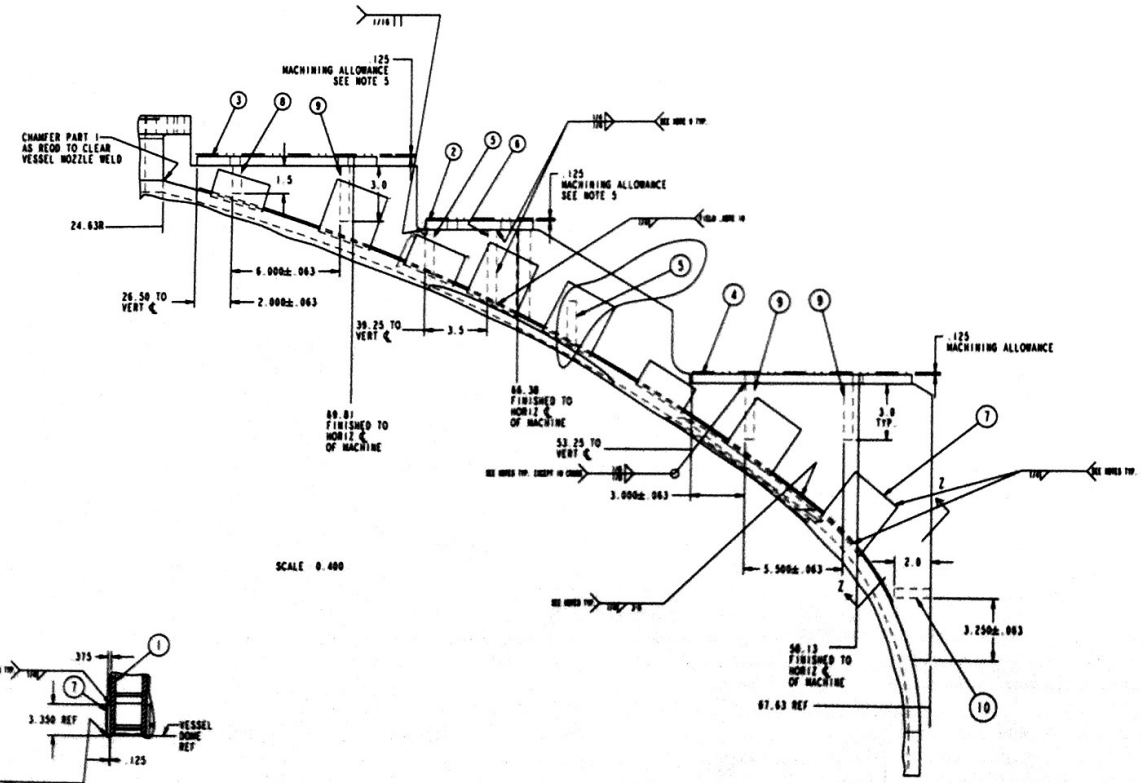
NO	REVISION					DATE
1	REVISED PER CR # 27	JDR	JHC	JS	P HEITZENROEDER	7/8/98
2	REVISED PER CR # 32	JDR	JHC	JS	P HEITZENROEDER	8/4/98
3	REVISED PER CR-046	JDR	JHC	JS	J CHRISMONDAY	12/10/99
4	REDRAWN PER ECN	GLP				

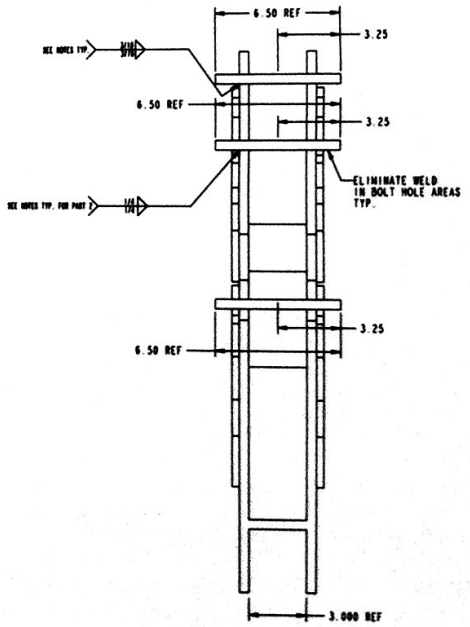


NOTES:

1. WELDERS MUST BE CERTIFIED TO SECTION IX OF ASME CODE.
2. WELDING SHALL BE PERFORMED IN AACCORDANCE WITH PPPL PROCEDURE EM-002.
3. REFERENCE PERMEABILITY:
   BASE MATERIAL 1.05 u
   FABRICATED PART 1.2 u
   WELD 3.0 u
4. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY "D".
5. FLATNESS BETWEEN PLATES TO BE WITHIN 1/32"
6. TABS (PART 7) TO BE INSTALLED WHERE GAPS EXIST BETWEEN VESSEL AND RIBS (PART 1), AS REQUIRED.
7. ALL WELDS TO BE 1/8 FILLET EXCEPT AS NOTED.
8. CONTINUOUS FILLET WELDS SHALL BE INTERRUPTED AT ALL OPPOSITE SIDES OF A COMMON PLANE OF CONTACT.
9. TYPICAL EXCEPT FOR OUTSIDE CORNER.
10. FIELD TO DETERMINE ACCESSIBILITY AND WELD WHERE POSSIBLE.

05/31/11





FOR R/M SEE DRAWING FDR1030

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

PRELIMINARY

RELEASE LEVEL:
DWG VERSION NO:

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT
CENTERSTACK UPGRADE
VACUUM VESSEL
PF2 & 3 SUPPORT STRUCTURE DETAIL

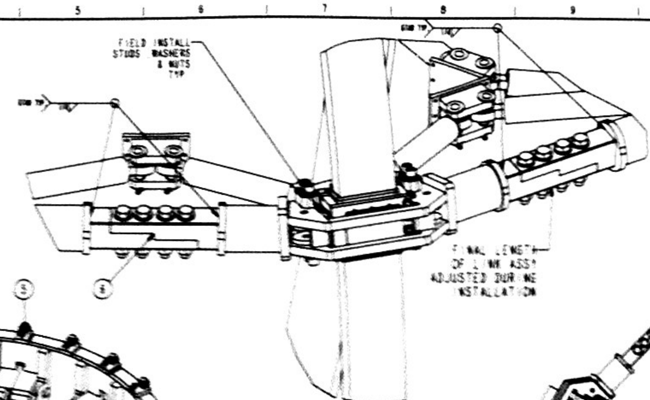
PRELIMINARY

SHEET 1 OF 1

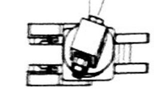
NSTX-E-081031

NOTES

1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.
3. WELDING SHALL BE CONFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF PPPL PROCEDURE ENG-837. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY D.

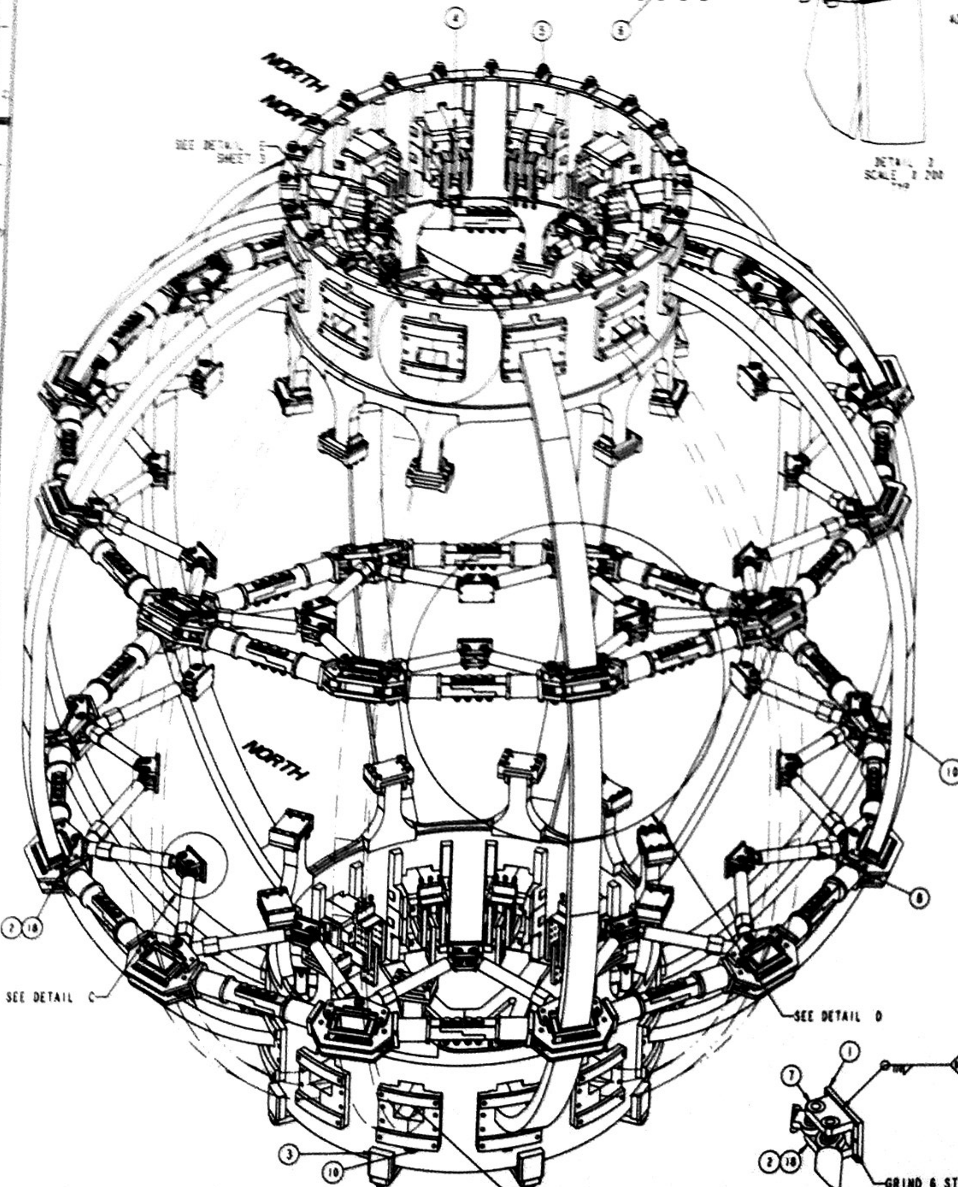


DETAIL D
SCALE 0.200
TYP

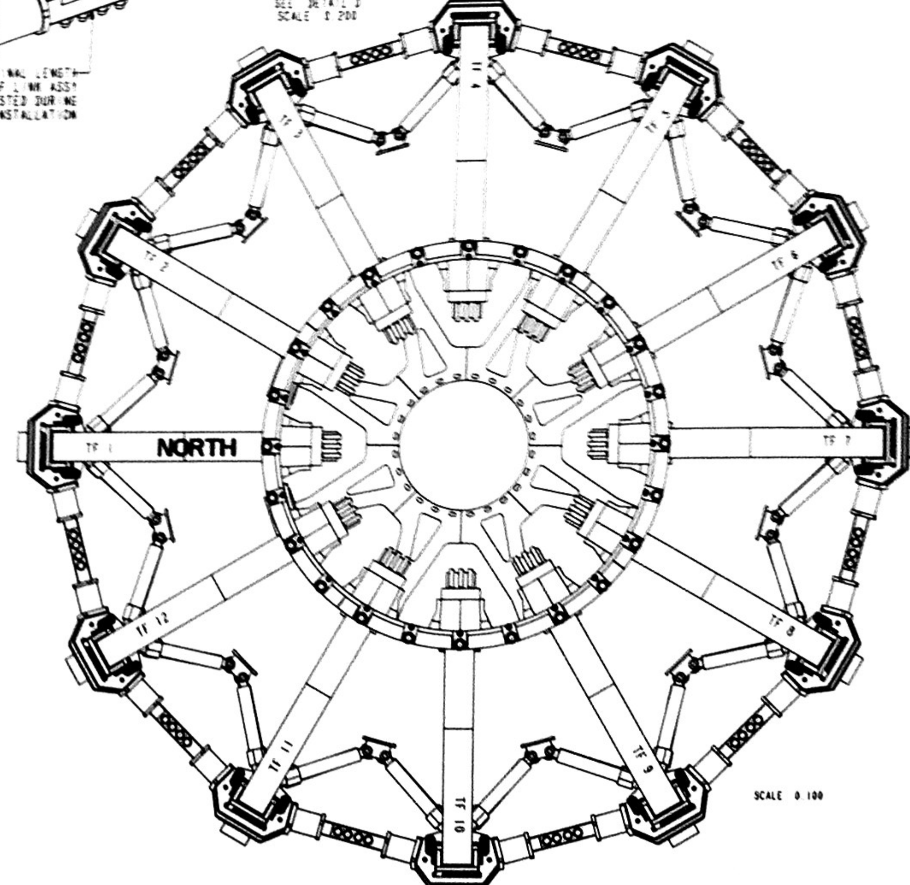


SEE DETAIL D
SCALE 0.200

08/23/11

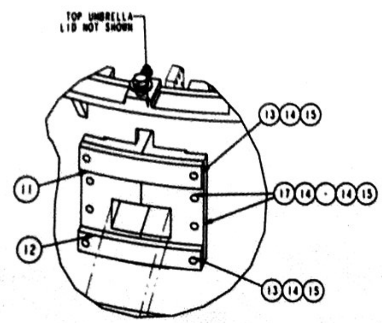


SCALE 0.100



SCALE 0.100

DETAIL C
SCALE 0.200
TYP.



DETAIL E
SCALE 0.200
TYP.

PRELIMINARY

ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
18	COMM	COTTER PIN, Ø1/8 X 1.25 LG	SS	36
17	COMM	3/4-10UNC-2A X 4 LG H H.H.C.S	316 SS	96
16	COMM	3/4-10 UNC-2B HEX NUT	316 SS	96
15	COMM	3/4 SPLIT LOCK WASHER	316 SS	384
14	COMM	3/4 NOMINAL FLAT WASHER	316 SS	480
13	COMM	3/4-10UNC-2A X 5 LG H H.H.C.S.	316 SS	96
12	E-DC1578-2	TF REINFORCEMENT STRAPS	304 SS	48
11	E-DC1578	TF REINFORCEMENT STRAPS	304 SS	48
10	E-DC1577	TF COIL (SINGLE) ASSY	304 SS	12
9				
8	E-DC1573	TF ROD ASSEMBLY	INCONEL 718	44
7	E-DC1570	TF ROD MOUNT WELDMENT	IN 625	24
6	E-DC1566	TF COIL LINK ASSEMBLY	304 SS	24
5	E-DC1455	UPPER UMBRELLA ASSEMBLY	304 SS	1
4	E-DC1157	TF MOUNTING BLOCK	304 SS	24
3	E-DC1148	LOWER UMBRELLA ASSEMBLY	304 SS	1
2	C-DC1156-02	CLEVIS PIN LG ASSY	INCONEL 718	36
1	C-DB1024	CLEVIS MOUNTING PLATE WELDMENT	INCONEL 625	24

NSTX-E-DC1577

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED
Pro E
CENTRAL FILES:
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES NON-CUMULATIVE
SCALE:
NEXT ASSEMBLY

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT

CENTERSTACK UPGRADE
TF MAGNET
OUTER LEG FINAL ASSEMBLY

DIV: MECH. ENG.
DATE:
ENG: M SMITH
DSN: OPALUZZI
CHK: M SMITH

PRELIMINARY

E-DC1577

SHEET 2 OF 3

D

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

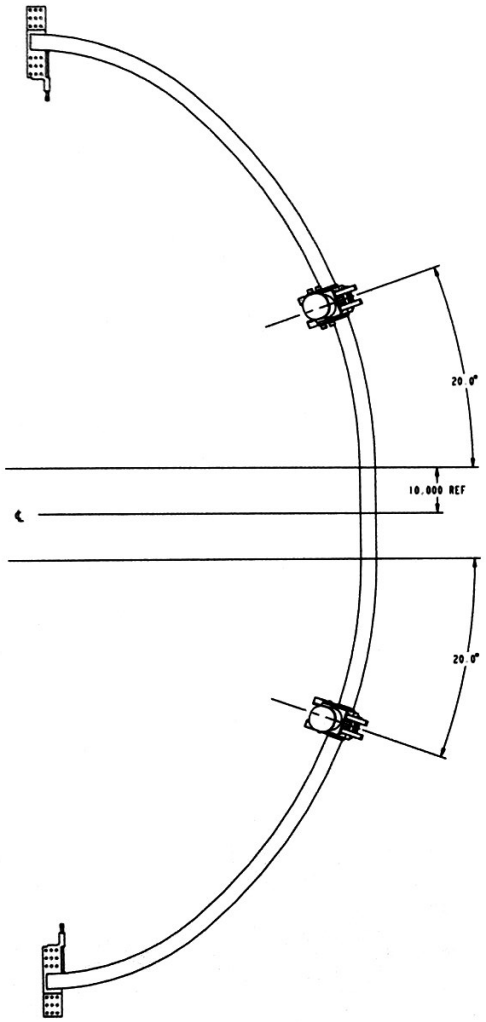
RELEASE LEVEL:
DWG VERSION NO:

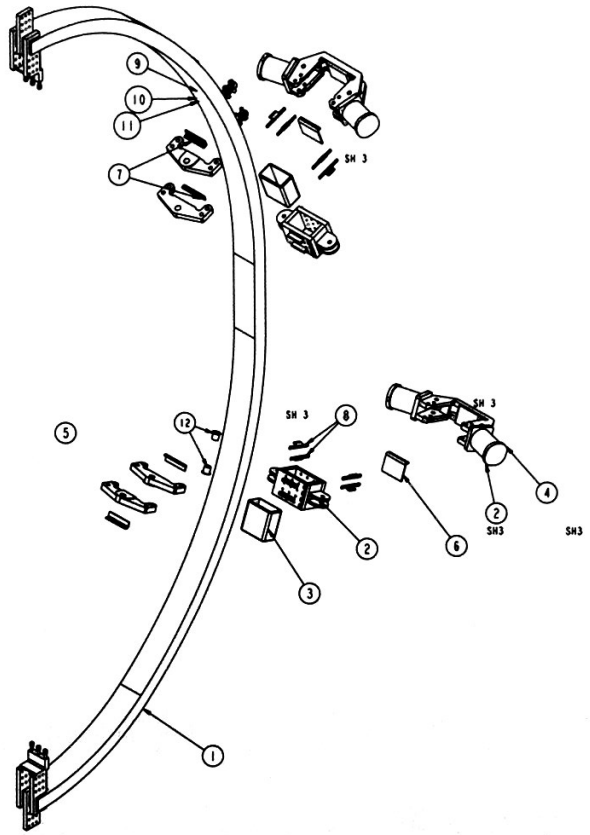
NO	REVISION	BY	CH	SUP	APPROVED	DATE

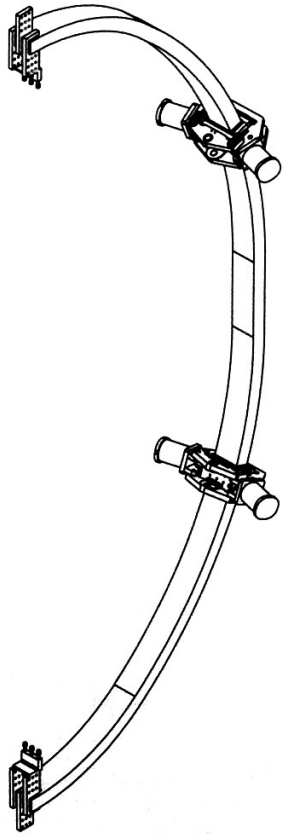
NO	REVISION	BY	CH	SUP	APPROVED	DATE

NOTES:
1 REMOVE ALL SHARP EDGES AND BURRS.
2 ASSEMBLY AND ITEM 5 SHALL BE FREE OF DIRT AND OIL.

08/23/11







ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
12	COMM	1" X 1.5LG ,BUSHING,AJB-16TFA-048,AURORA	440 SS	4
11	150777	3/4-10 UNC x 2 1/2 LG HEX SOC HD CAP SCR	316 SS	16
10	151335	3/4 SPLIT LOCK WASHER	316 SS	16
9	151323	3/4 FLAT WASHER	316 SS	16
8	E-DC1577-6	TF CROSS MEMBER SUPPORT SHIM	316 SS	8
7	E-DC1577-5	TF CROSS MEMBER SUPPORT SHIM	316 SS	4
6	E-DC1577-4	TF CROSS MEMBER SUPPORT SHIM	316 SS	2
5	E-DC1577	TF CROSS MEMBER SUPPORT CLAMP HOLD DOWN	316 SS	4
4	E-DC1562	TF CROSS MEMBER CLAMP WELDMENT	316 SS	2
3	E-DC1576	TF COIL EPOXY/FIBERGLASS WRAP	--	2
2	E-DC1101	TF COIL OUTER LEG SUPPORT CLAMP ASSY	--	2
1	E-DC1069-1	TF OUTER LEG	--	1

PRELIMINARY

GENERAL NOTES
1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED
CENTRAL FILE:
UNLESS OTHERWISE SPECIFIED
Pro E
DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994
BREAK SHARP EDGES .005/.020
SCALE:
TOLERANCES NON-CUMULATIVE
NEXT ASSEMBLY
DECIMAL (INCH) ANGULAR
FRACTIONAL
PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT
CENTERSTACK UPGRADE
TF COIL ASSEMBLY
TF COIL SUPPORT ASSEMBLY
DIV: MECH. ENG. DATE:
ENG: H SMITH
DES: G PALMIERI
CHK: H SMITH
PRELIMINARY
E-DC1577
SHEET 1 OF 3
0

MILEAGE LEVEL:
DWG VERSION NO: 1
DELETED SHEET(S)
APPROVED DATE

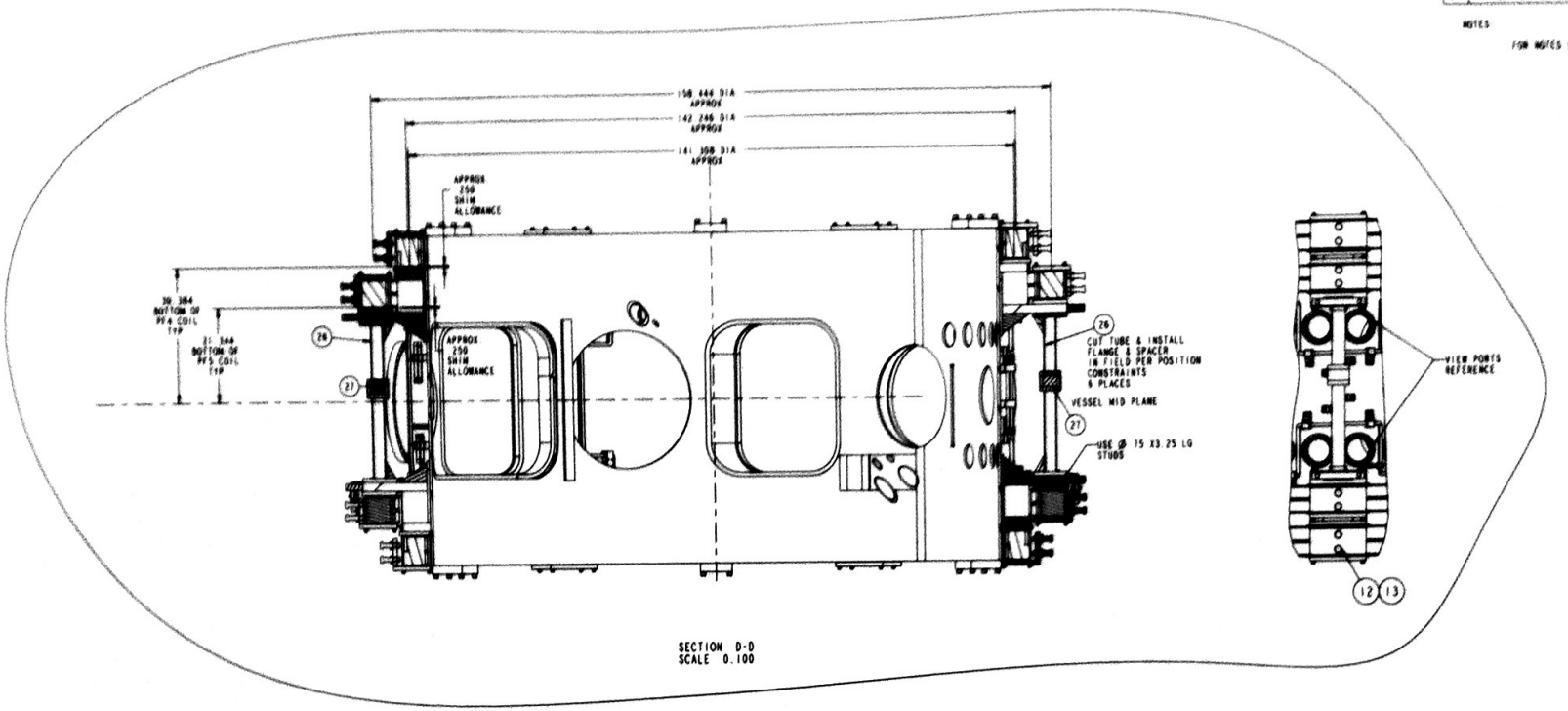
NSTX-E-DC1577

NO	REVISION	BY	CH	SUP	APPROVED	DATE
	REVISED PER ECN 628	JS	LM	JS	[illegible]	8/14/00
2	REVISED PER ECN 4576	LM	JS	JS	[illegible]	3/16/02
3	RESHAPE PER ECN	SLP				

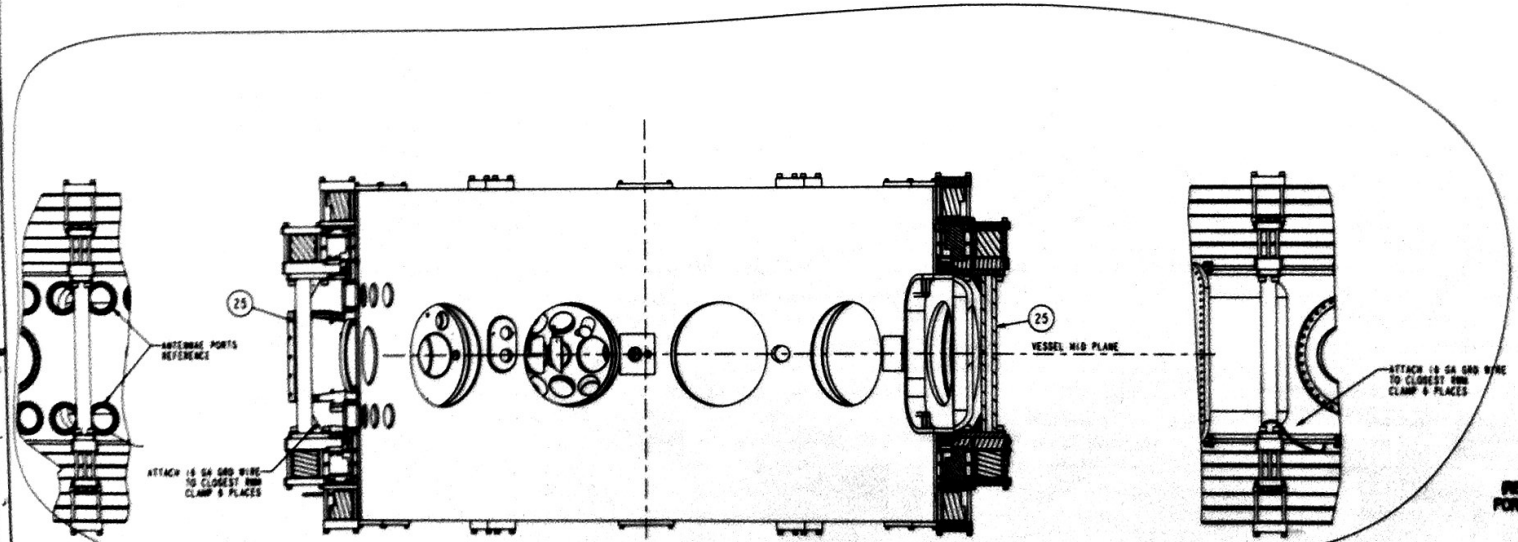
NOTES

FOR NOTES SEE DRAWING E-EX1934

05/31/2011



SECTION D-D
SCALE 0.100



SECTION 2SEC0003-2SEC0003
SCALE 0.100

REF DRAWING E-EX0035 REV 2
FOR B/M SEE DRAWING E-EX0034

PRELIMINARY

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

RELEASE LEVEL
DOD VERSION NO. -

PRINCETON PLASMA PHYSICS LABORATORY
PF COILS
PF4 & PF3 COIL SUPPORT
ASSEMBLY ON CRYOSTAT VESSEL
E-EX0035
SHEET 1 OF 1

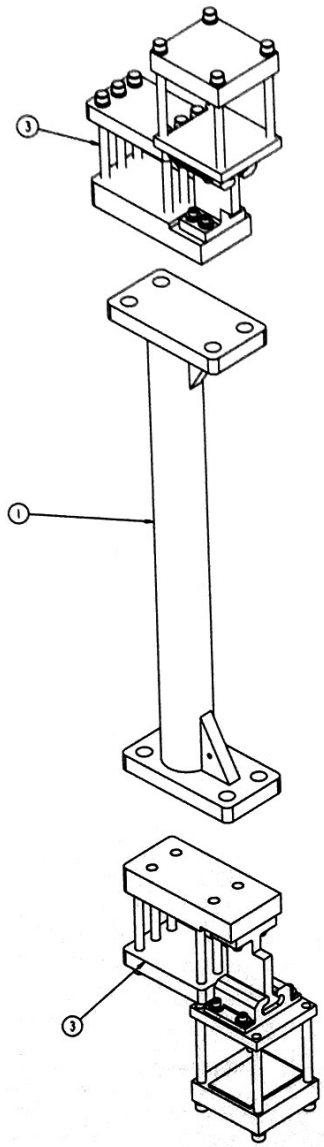
NO	REVISION	BY	CH	SUP	APPROVED	DATE

NOTES:

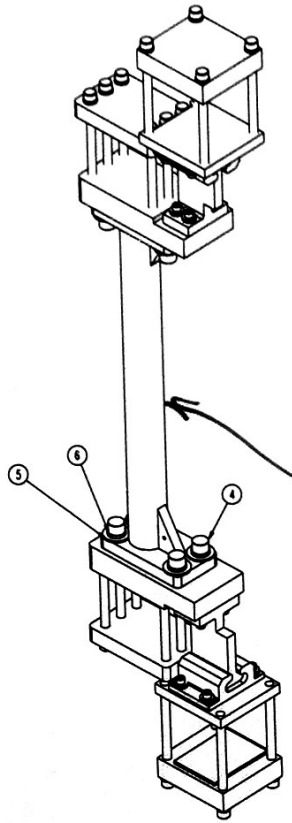
1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.
3. MATERIAL SHALL BE ASTM A193 B8M CLASS 2.

06/13/2011

SCALE 0.250



SCALE 0.250



ADJUSTABILITY.

PRELIMINARY

ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
6	COMM	1" SPLIT LOCK WASHER	NOTE 3	8
5	COMM	1" FLAT WASHER	NOTE 3	8
4	COMM	1-8 UNC x 3 LG HEX SOC HD CAP SCREW	NOTE 3	8
3	E-DC1589	PF4 / PF5 CLAMP ASSEMBLY	-------	2
2	E-DC1568-B OR C	SHIM	316 SS	AR
1	E-DC1568	PF COIL COLUMN WELDMENT	-------	1

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT

CENTERSTACK UPGRADE
PF SUPPRT ASSEMBLY
PF4 PF5 COLUMN SUPPORT ASSEMBLY

CENTRAL FILES:
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE TO BE APPLIED AFTER MACHINE SURFACES ARE FINISHED
BREAK SHARP EDGES .005/.010
TOLERANCES NON-CUMULATIVE
DECIMALS: 1 PLACE ±.100, 2 PLACES ±.010, 3 PLACES ±.005
FRACTIONS ±1/64
ANGULAR ±2°
SURFACE FINISH 125 MICRO INCH

DIV: MECH. ENG. DATE:
ENG: M SMITH
DES: G PALUZZI
CH: M SMITH

PRELIMINARY
NCSX-C-DC1567
SHEET 1 OF 1 REV 0

COMPUTER GENERATED DRAWING. MANUAL CHANGES NOT PERMITTED
Pro E
DO NOT SCALE DRAWING
SCALE:
NEXT ASSEMBLY

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.

RELEASE LEVEL:
DWG VERSION NO:
REVISION CONTROL
APPD DATE

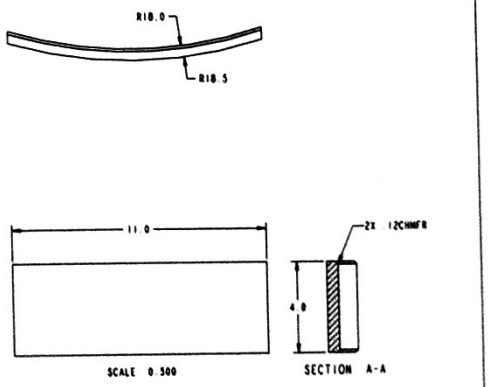
NCSX-C-DC1567

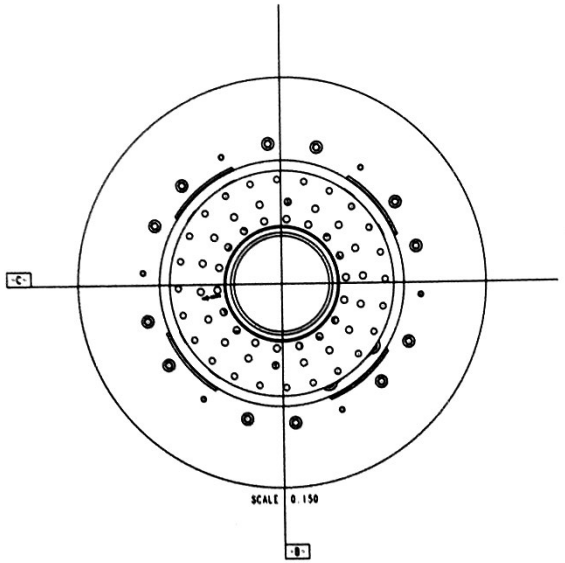
NO	REVISION	BY	CH	SUP	APPROVED	DATE

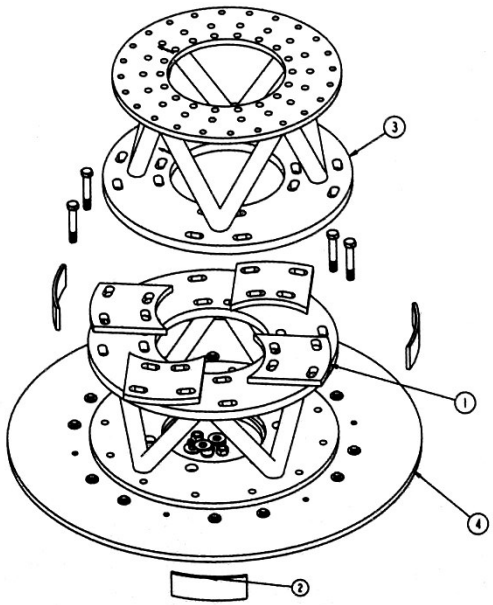
NOTES.

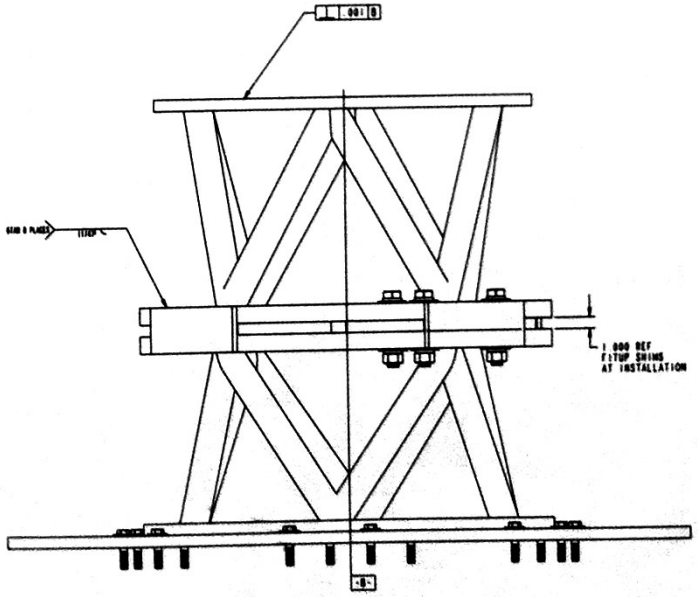
1. REMOVE ALL SHARP EDGES AND BURRS.
2. PART SHALL BE FREE OF DIRT AND OIL.
3. WELDING SHALL BE CONFORMED IN ACCOEDANCE WITH THR REQUIREMENTS OF PPPL PROCEDURE ENG-037 VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF ASME B31.3 CATEGORY D.

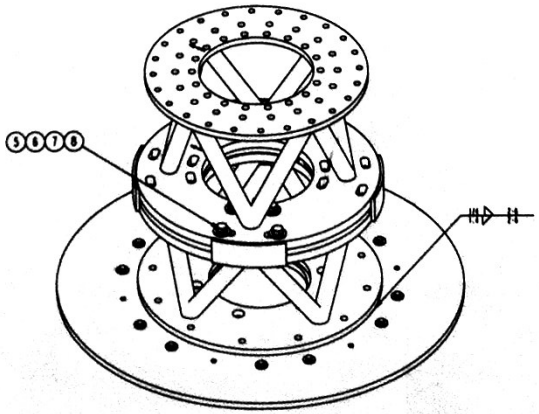
09/22/11











ITEM NO.	DRAWING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
8	COMM	1"-8 UNC-2A x 6 LG HEX HEAD BOLT	18-8 STN STL	16
7	COMM	1" SPLIT LOCK WASHER	STN STL	32
6	COMM	1 FLAT WASHER	STN STL	32
5	COMM	1"-8 UNC-2B HEX NUT	18-8 SS	16
4	E-DC1565	LOWER PEDESTAL BASE ASSEMBLY	--	1
3	E-DC1564	UPPER PEDESTAL ASSEMBLY	--	1
2	E-DC1563-2	WELD STRAP	316 SS	4
1	E-DC1563-1	PEDESTAL SHIM	316 SS	4

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL SPHERICAL TORUS EXPERIMENT
CENTERSTACK UPGRADE
VESSEL ASSEMBLY
TURNBUCKLE CENTERSTACK PEDESTAL ASSEMBLY
PRELIMINARY
E-DC1563
SHEET 1 OF 1

PRELIMINARY

RELEASE LEVEL
DWG VERSION NO. 1

GENERAL NOTES

1. PPPL APPROVED DRAWINGS TAKE PRECEDENCE OVER MODEL DIMENSIONS.
2. WHEN MODELS ARE PROVIDED, VENDOR MUST VERIFY THAT MODEL DIMENSIONS CONFORM WITH PPPL APPROVED DRAWINGS PRIOR TO FABRICATION.