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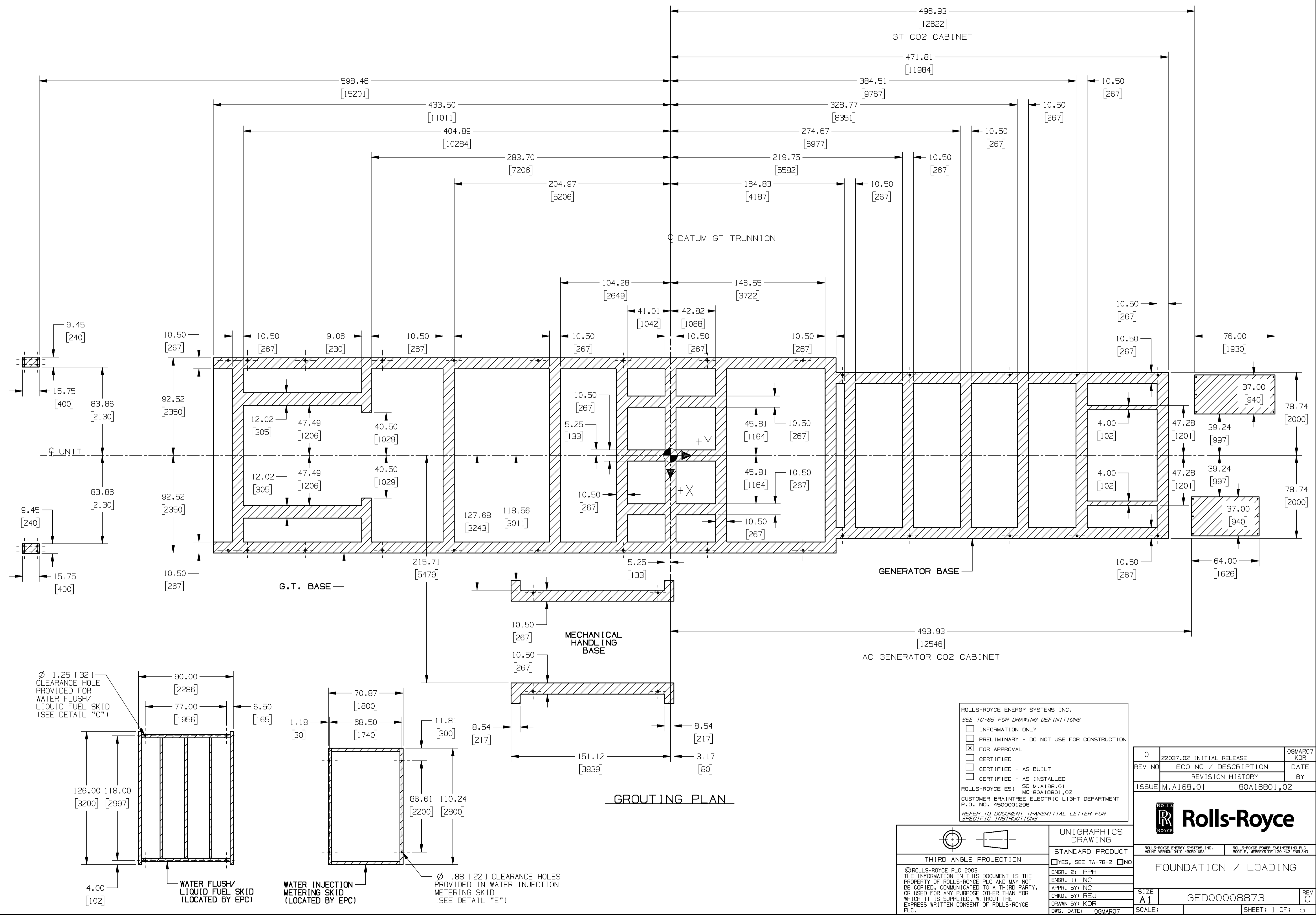
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 SEE TC-65 FOR DRAWING DEFINITIONS
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 ROLLS-ROYCE ES1 50-M.A168-01
 MO-80A16801-02
 CUSTOMER BRAINTREE ELECTRIC LIGHT DEPARTMENT
 P.O. NO. 4500001296
 REFER TO DOCUMENT TRANSMITTAL LETTER FOR SPECIFIC INSTRUCTIONS

0	22037.02 INITIAL RELEASE	09MAR07
REV NO	ECO NO / DESCRIPTION	DATE
REVISION HISTORY		
ISSUE	M.A168.01	80A16801.02



THIRD ANGLE PROJECTION
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UNIGRAPHICS DRAWING
 STANDARD PRODUCT
 YES, SEE TA-78-2 NO
 ENGR. 2: PPH
 ENGR. 1: NC
 APPR. BY: NC
 CHKD. BY: REJ
 DRAWN BY: KDF
 DWG. DATE: 09MAR07

FOUNDATION / LOADING	
SIZE A1	REV 0
GED00008873	
SCALE:	SHEET: 1 OF: 5

ALL SHEETS ARE THE SAME REVISION STATUS

12 11 10 9 8 7 6 5 4 3 2 1

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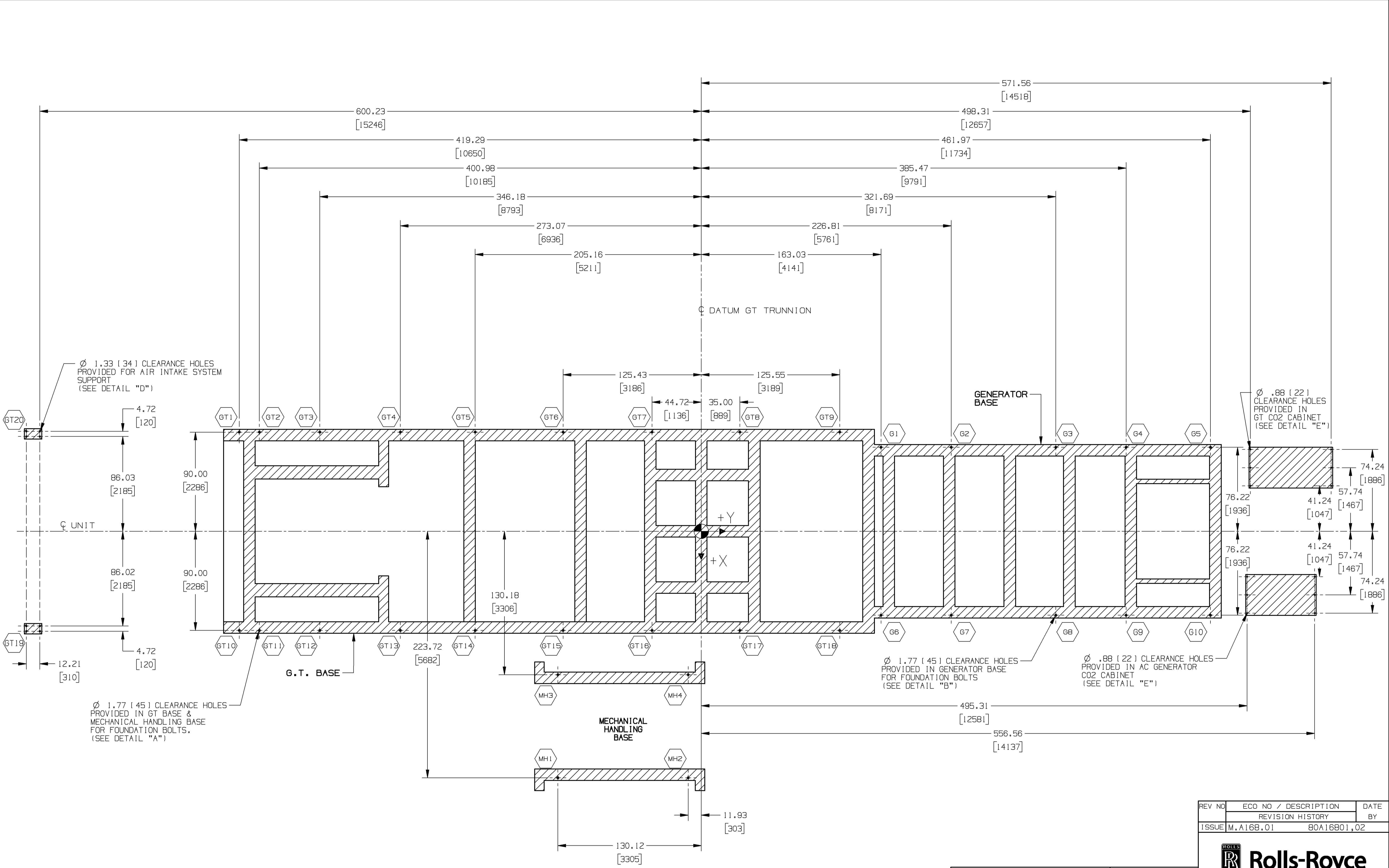
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BOLTING PLAN

Ø 1.33 [34] CLEARANCE HOLES PROVIDED FOR AIR INTAKE SYSTEM SUPPORT (SEE DETAIL "D")

Ø 1.77 [45] CLEARANCE HOLES PROVIDED IN GT BASE & MECHANICAL HANDLING BASE FOR FOUNDATION BOLTS. (SEE DETAIL "A")

Ø .88 [22] CLEARANCE HOLES PROVIDED IN GT CO2 CABINET (SEE DETAIL "E")

Ø 1.77 [45] CLEARANCE HOLES PROVIDED IN GENERATOR BASE FOR FOUNDATION BOLTS (SEE DETAIL "B")

Ø .88 [22] CLEARANCE HOLES PROVIDED IN AC GENERATOR CO2 CABINET (SEE DETAIL "E")

THIRD ANGLE PROJECTION

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UNIGRAPHICS DRAWING

STANDARD PRODUCT

YES, SEE TA-7B-2 NO

ENGR. 2: PPH
ENGR. 1: NC
APPR. BY: NC
CHKD. BY: RE-J
DRAWN BY: KDFR
DWG. DATE: 09MAR07

REV NO	ECO NO / DESCRIPTION	DATE
ISSUE	M.A168.01	80A16801.02



ROLLS-ROYCE ENERGY SYSTEMS, INC. MOUNT VERNON OHIO 43050 USA		ROLLS-ROYCE POWER ENGINEERING PLC BOULLEV. MERCIERISE L30 ALZ ENGLAND	
FOUNDATION / LOADING			
SIZE	GED00008873	REV	0
SCALE:		SHEET:	2 OF 5

ALL SHEETS ARE THE SAME REVISION STATUS.

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12 11 10 9 8 7 6 5 4 3 2 1



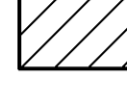
AIR INTAKE SYSTEM SUPPORT APPROXIMATE LOADS IN KIPS
NEG. VALUES ARE A COMPRESSIVE LOAD ON FOUNDATION

LOAD	GT19	GT20
DEAD / AXIAL	19.11	19.11
ACCESS / AXIAL	7.87	4.27
SNOW / AXIAL	3.15	3.15
WIND +/-X AXIAL	-/+23.83	+/-23.83
WIND +/-X SHEAR	4.50	4.50
WIND +/-Y AXIAL	+/-17.31	+/-17.31
WIND +/-Y SHEAR	-	-
SEISMIC +/-X AXIAL	-/+26.30	+/-26.30
SEISMIC +/-X SHEAR	4.95	4.95
SEISMIC +/-Y AXIAL	+/-12.81	+/-12.81
SEISMIC +/-Y SHEAR	-	-

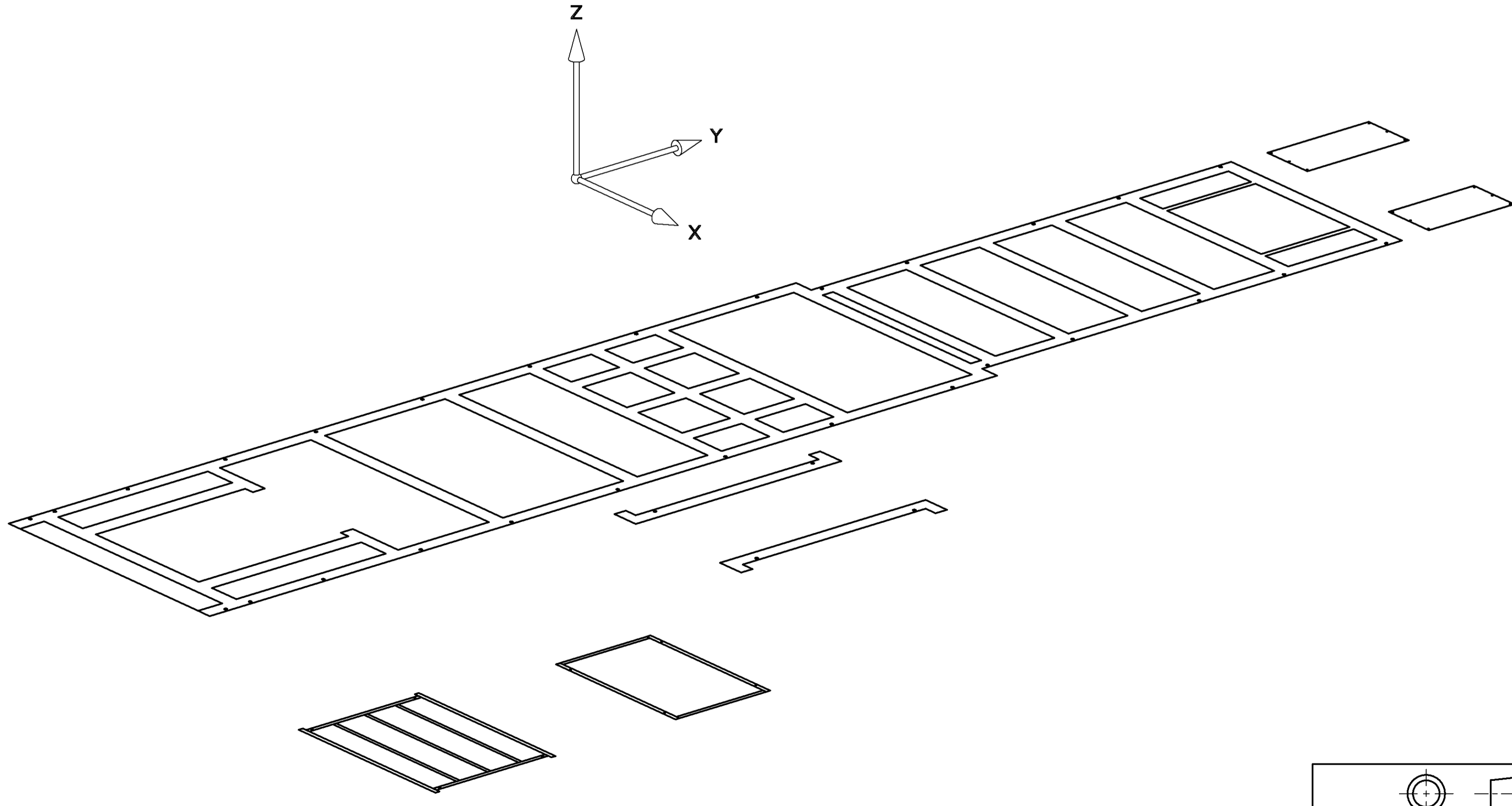
STATIC LOADS FOR ENGINE REMOVAL
SKID HOLD DOWN BOLTS

POSITION NUMBER	MH1	MH2	MH3	MH4	TOTAL
TOTAL (KN)	8.72	9.71	8.72	9.71	36.86

NOTES:

-  DENOTES UNIT DATUM
-  DENOTES LOAD LOCATION
- SEISMIC LOADS BASED ON UBC ZONE (LATER).
- WIND LOADS BASED ON 160 kph STEADY WITH 200 kph GUSTS.
- FOUNDATION BOLTS AND CIVILS BY OTHERS.
- MINIMUM STRENGTH OF C30/37 UNCRACKED CONCRETE REQUIRED.
-  DENOTES MINIMUM AREA TO BE GROUTED.
- FOR LEVELING PROCEDURES REFER TO GEM 0045.
- AREA ADJACENT TO MECHANICAL HANDLING SKID TO BE DESIGNED FOR ADDITIONAL ENGINE AND TRANSPORTATION STAND AND TRANSPORTATION WAGON / CRANE.
- FOR GROUTING PROCEDURES AND REQUIREMENTS REFER TO GEM 0033.
- EXTRA NUTS MAYBE USED TO POSITION EQUIP. BEFORE GROUTING.

- NOTES:
- ALL LOADS ARE IN KIPS AND UNFACTORED.
 - LOADS ARE FOR AAF SUPPLIED EQUIPMENT ONLY.
 - BASIC WIND SPEED 200 km/hr (155.6 m/s), DESIGN CODE UBC-1997. $q=3.63 \text{ kN/m}^2$
 - ACCESS LOADING ALLOWS 2.5 kN/m^2 EXTERNAL & 1.5 kN/m^2 INTERNAL.
 - SEISMIC LOADING UBC ZONE 4, $V=0.25 W$.
 - SNOW LOADS ALLOW 146 KG/M^2 FOR FLAT SURFACES. SLOPING SURFACES FACTORED IN ACCORDANCE WITH UBC 1997.
 - SUCTION LOAD IS BASED UPON A DIFFERENTIAL PRESSURE OF 200mm WG. ACTING AT CENTER OF GT AIR INTAKE.
 - NOTE - MAX POINT LOAD AT UDL 1 FROM MAINTENANCE CRANEAGE = 2.70 KIPS.



REV NO	ECO NO / DESCRIPTION	DATE
	REVISION HISTORY	BY
ISSUE	M.A168.01	80A16801.02



UNIGRAPHICS DRAWING

STANDARD PRODUCT

YES, SEE TA-7B-2 NO

ENGR. 2: PPH

ENGR. 1: NC

APPR. BY: NC

CHKD. BY: REJ

DRAWN BY: KDF

DWG. DATE: 09MAR07

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ROLLS-ROYCE ENERGY SYSTEMS, INC. MOUNT VERNON OHIO 43050 USA		ROLLS-ROYCE POWER ENGINEERING PLC BOOTLEBY, MERGETSIDE L30 ALZ ENGLAND	
FOUNDATION / LOADING			
SIZE	A1	GED00008873	REV 0
SCALE:			SHEET: 3 OF: 5

12 11 10 9 8 7 6 5 4 3 2 1

ALL SHEETS ARE THE SAME REVISION STATUS.

12 11 10 9 8 7 6 5 4 3 2 1

GT BASE APPROXIMATE LOADS IN KIPS - NEGATIVE VALUES ARE A COMPRESSIVE LOAD ON FOUNDATION

LOAD	GT1	GT2	GT3	GT4	GT5	GT6	GT7	GT8	GT9	GT10	GT11	GT12	GT13	GT14	GT15	GT16	GT17	GT18
DW -Z (DRY)	-32.85	-37.37	-14.94	-11.52	-13.50	-16.33	-12.83	-14.78	-17.78	-32.85	-37.37	-14.94	-11.45	-13.69	-18.05	-13.89	-15.80	-17.78
DW -Z (WET)	-32.85	-38.25	-15.82	-51.24	-13.57	-16.40	-12.84	-14.79	-17.78	-32.85	-38.25	-15.82	-11.52	-13.76	-18.13	-13.99	-16.02	-17.78
SNOW -Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WIND +X	-38.55	-59.35	-4.32	-8.99	-43.70	-7.71	-8.16	-9.15	-7.71	38.55	59.35	4.32	8.99	43.70	7.71	8.16	9.15	7.71
WIND -X	38.55	59.35	4.32	8.99	43.70	7.71	8.16	9.15	7.71	-38.55	-59.35	-4.32	-8.99	-43.70	-7.71	-8.16	-9.15	-7.71
WIND +Y	1.28	1.78	0.04	0.09	2.99	0.09	0.09	0.22	0.54	1.28	1.78	0.04	0.09	2.99	0.09	0.09	0.22	0.54
WIND -Y	-1.28	-1.78	-0.04	-0.09	-2.99	-0.09	-0.09	-0.22	-0.53	-1.28	-1.78	-0.04	-0.09	-2.99	-0.09	-0.09	-0.22	-0.54
SEISMIC +X	-13.96	-21.31	-1.73	-2.61	-12.36	3.12	-7.01	-4.18	-2.65	13.96	21.31	1.73	2.61	12.36	-3.12	7.01	4.18	2.65
SEISMIC -X	13.96	21.31	1.73	2.61	12.36	-3.12	7.01	4.18	2.65	-13.96	-21.31	-1.73	-2.61	-12.36	3.12	-7.01	-4.18	-2.65
SEISMIC +Y	-8.34	-11.53	0.20	0.92	14.84	5.46	-3.46	-2.77	4.68	-8.34	-11.53	0.20	0.92	14.84	5.46	-3.46	-2.77	4.68
SEISMIC -Y	8.34	11.53	-0.20	-0.92	-14.84	-5.46	3.46	2.77	-4.68	8.34	11.53	-0.20	-0.92	-14.84	-5.46	3.46	2.77	-4.68

GT BASE APPROXIMATE SHEAR LOADS IN KIPS

LOAD	GT1	GT2	GT3	GT4	GT5	GT6	GT7	GT8	GT9	GT10	GT11	GT12	GT13	GT14	GT15	GT16	GT17	GT18
WIND +X	11.69	11.69	4.05	4.34	10.96	4.78	4.78	4.78	4.78	11.69	11.69	4.05	4.34	10.96	4.78	4.78	4.78	4.78
WIND -X	-11.69	-11.69	-4.05	-4.34	-10.96	-4.78	-4.78	-4.78	-4.78	-11.69	-11.69	-4.05	-4.34	-10.96	-4.78	-4.78	-4.78	-4.78
WIND +Y	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09
WIND -Y	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09	-4.09
SEISMIC +X	9.87	9.87	2.23	2.27	3.30	2.23	2.23	2.23	8.97	9.87	9.87	2.23	2.27	3.30	2.23	2.23	2.23	8.97
SEISMIC -X	-9.87	-9.87	-2.22	-2.27	-3.30	-2.23	-2.23	-2.23	-8.97	-9.87	-9.87	-2.22	-2.27	-3.30	-2.23	-2.23	-2.23	-8.97
SEISMIC +Y	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33
SEISMIC -Y	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33	-5.33

BEDPLATE FOUNDATION BOLT PRE-LOAD - 33070 lbf [15000 kgf]
 TRANSVERSE LOCATION LOAD (FOUNDATION KEY) - 12567 lbs [5700 kg]
 JACKING LOAD - 66139 lbs [30000 kg] AT ANY JACKING POINT

AC GENERATOR BASE APPROXIMATE LOADS IN KIPS

LOAD	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
DRY DEADWEIGHT	-28.80	-28.80	-29.41	-31.47	-10.61	-28.28	-28.28	-28.21	-31.99	-11.11
WET DEADWEIGHT	-28.84	-28.84	-29.45	-32.10	-11.24	-28.28	-28.28	-28.21	-32.89	-11.98
TOTAL UBC 4 LOADS	-12.86	-15.62	-14.86	-15.69	-1.62	11.85	15.62	14.86	15.69	1.62
WIND	-6.88	-6.88	-6.88	-6.88	-6.88	-6.88	-6.88	-6.88	-6.88	-6.88
SNOW	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80	-1.80
NORMAL DYNAMIC	-3.06	-3.84	-3.12	-3.96	0.36	-3.06	-3.84	-3.12	-3.96	0.36
FAULT DYNAMIC	76.12	95.95	78.08	98.80	8.92	-76.12	-95.95	-78.08	-98.80	-8.92
MAXIMUM TENSION	66.36	89.61	70.37	89.27	7.15	66.93	90.17	70.93	88.48	6.41
MAXIMUM COMPRESSIVE	-125.85	-149.09	-131.06	-155.28	-31.43	-125.29	-148.53	-130.50	-156.06	-32.17

ALL LOADS ARE IN KIPS.
 SEISMIC LOADS ARE WORST CASE OF EACH OF THE INDIVIDUAL LOAD CASES.
 WIND, SEISMIC AND DYNAMIC FAULT LOADS ARE PLUS OR MINUS THE LOAD SETS ABOVE.
 WIND AND SNOW LOADS ARE WITH SNOW HOOD.
 LOADS GIVEN ARE ACTING ON THE FOUNDATION ASSUMING NO GROUT AND NEGATIVE LOADS IN THE Z DIRECTION ARE COMPRESSIVE.
 THE MAXIMUM TENSION AND COMPRESSION LOADS REPRESENT THE ABSOLUTE MAXIMUM LOAD THAT COULD POSSIBLY OCCUR AT EACH LOCATION INDEPENDENTLY, NOT SIMULTANEOUSLY. MAXIMUM TENSILE LOADS DO NOT INCLUDE THE SNOW LOAD.

REV NO	ECO NO / DESCRIPTION	DATE
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ISSUE	M.A168.01	80A16801.02



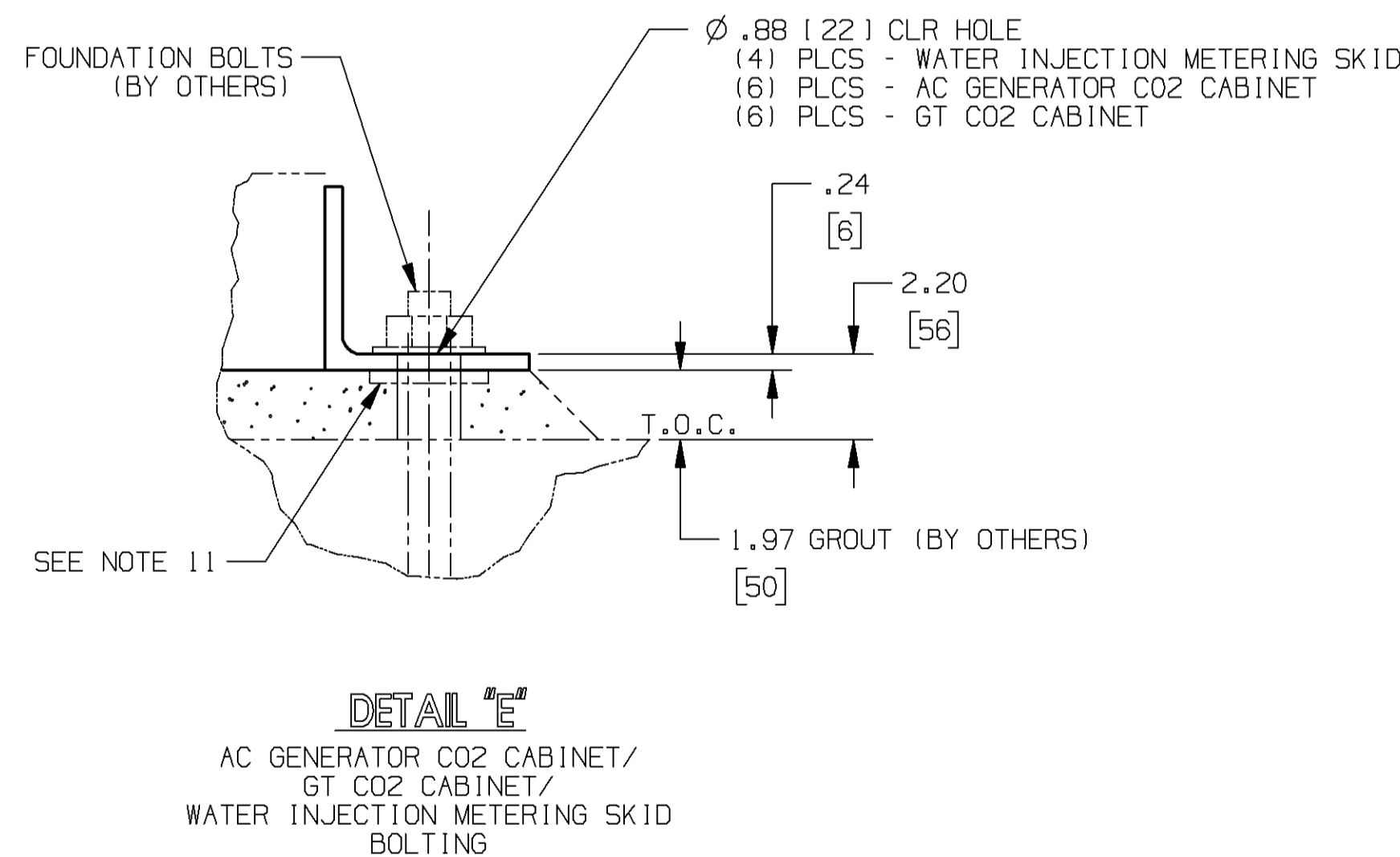
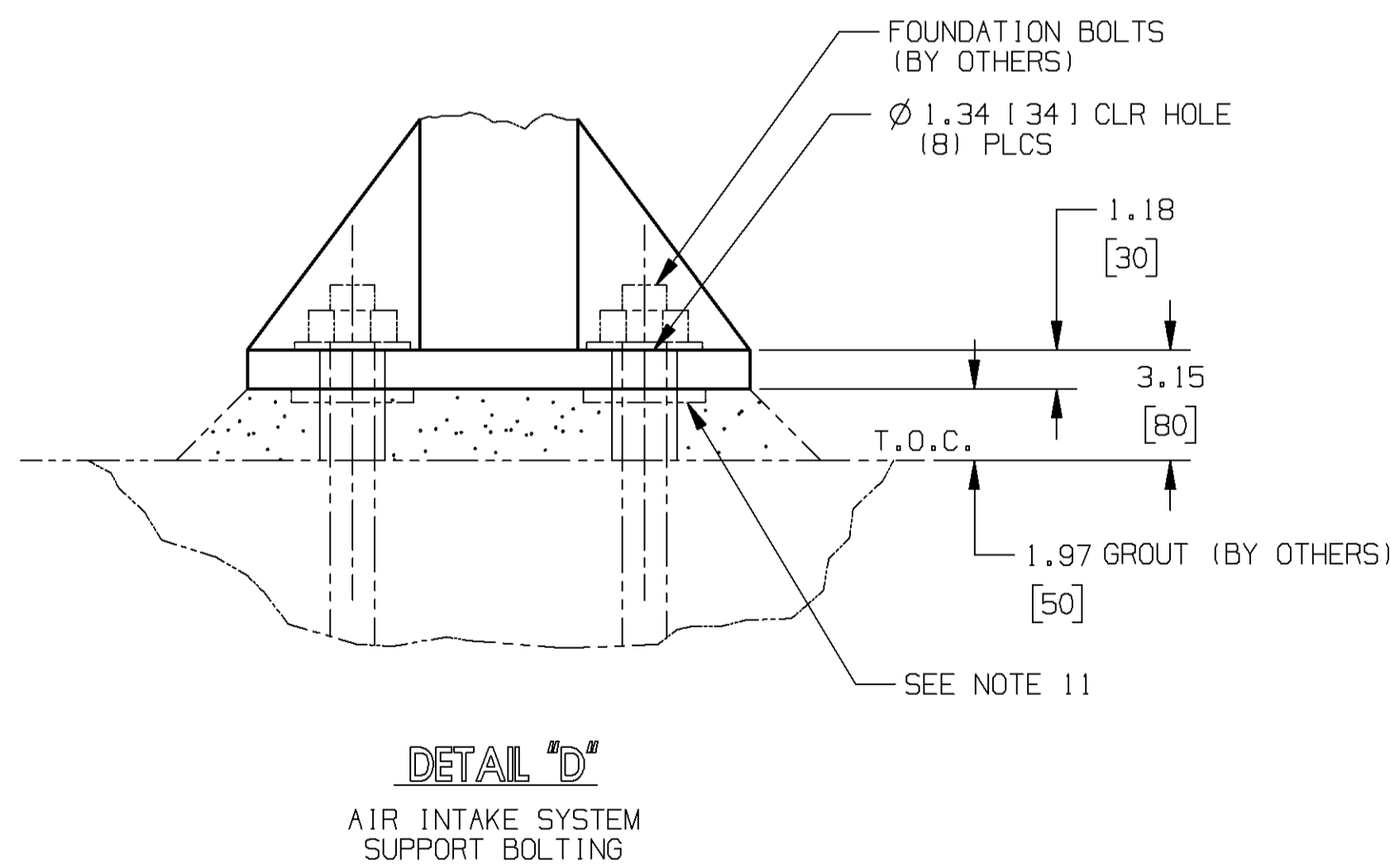
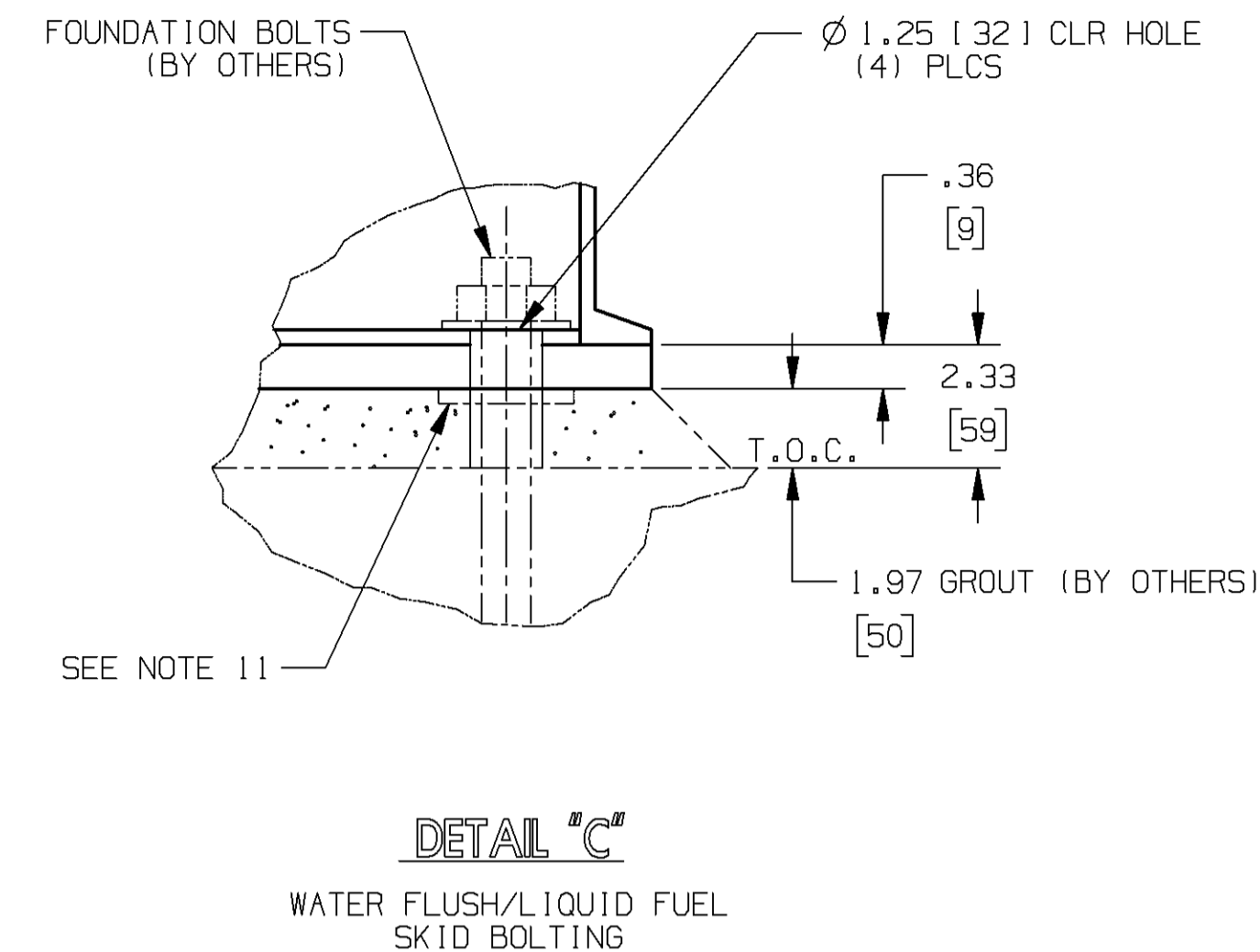
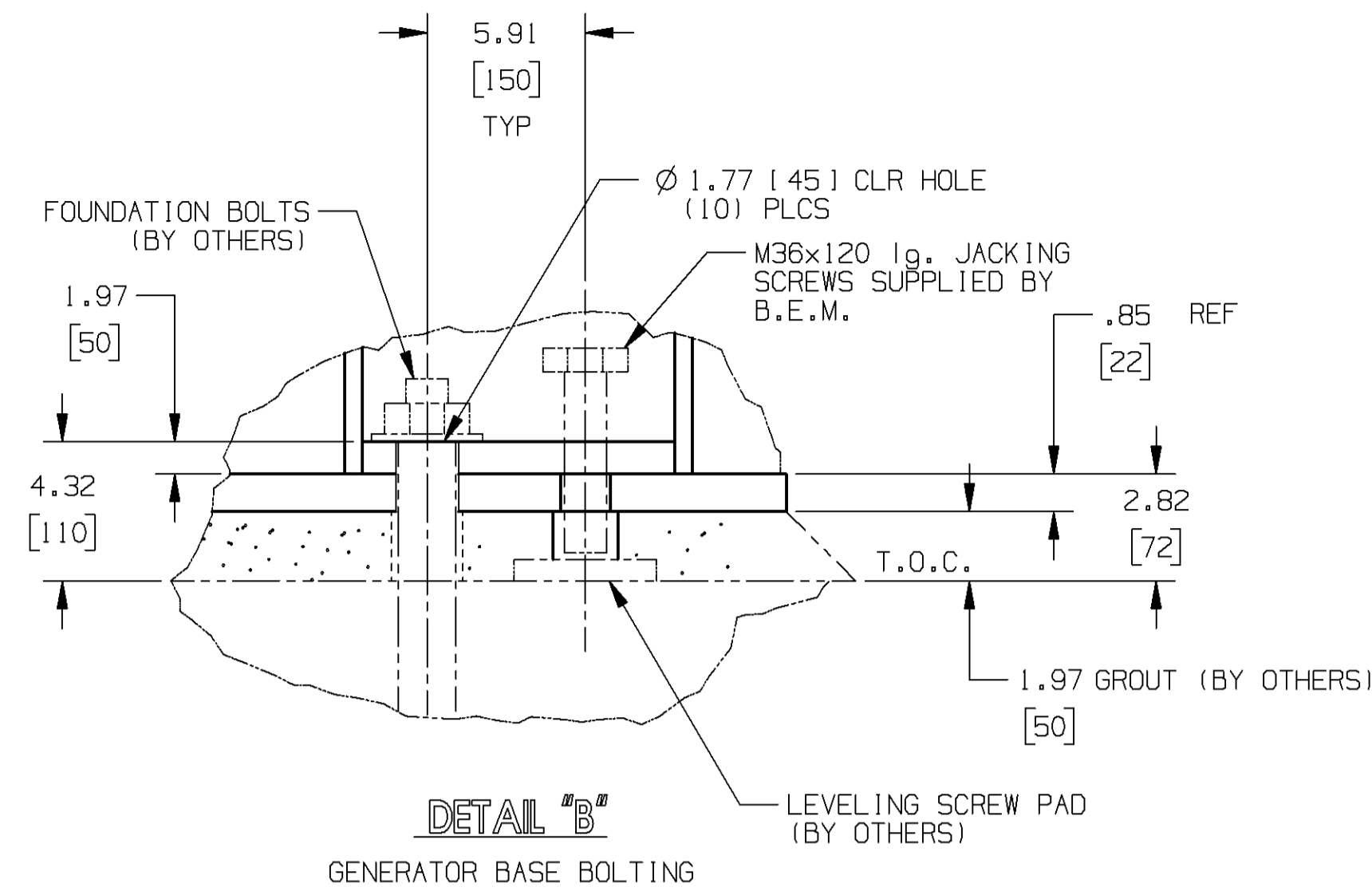
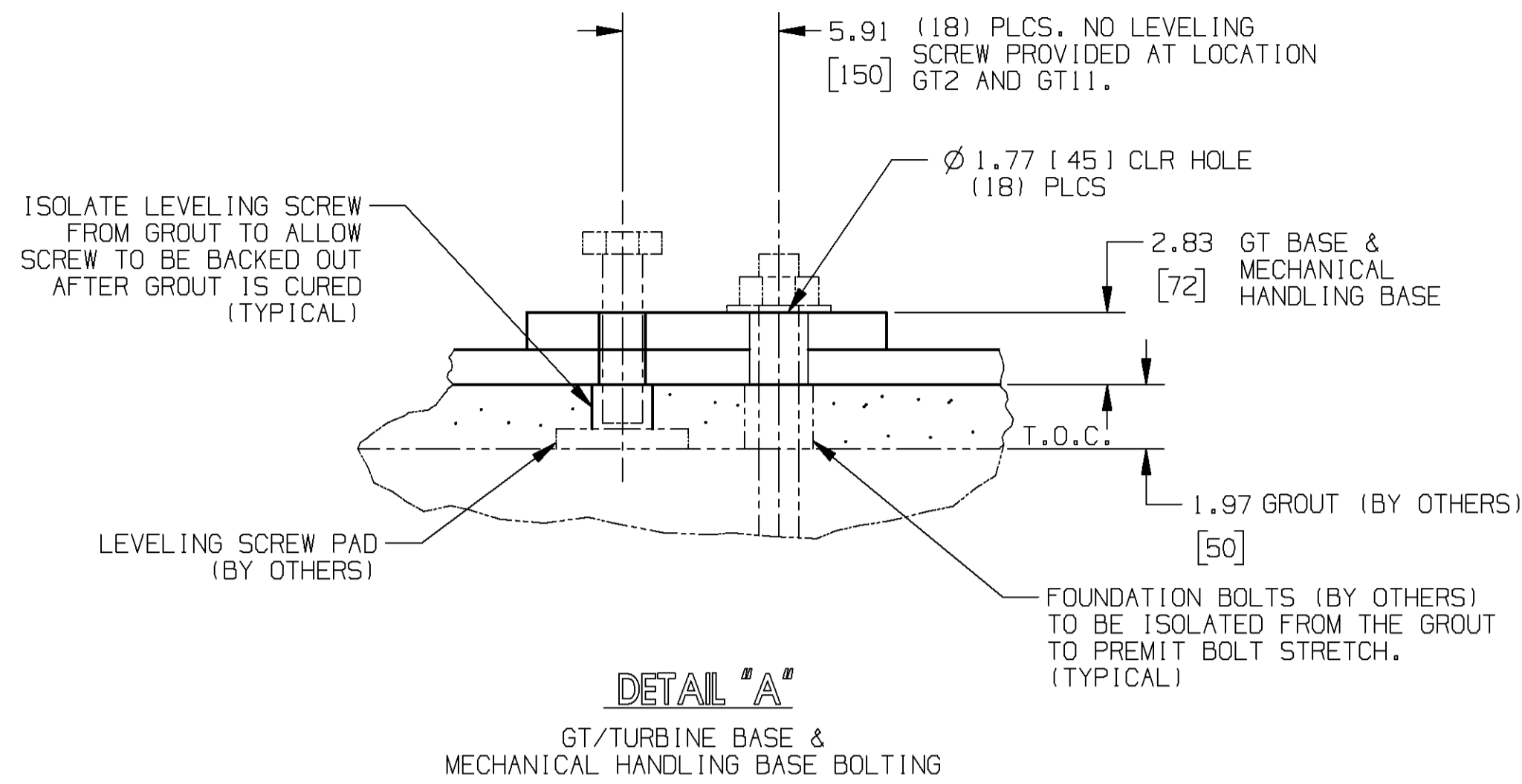
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	STANDARD PRODUCT	FOUNDATION / LOADING	
<input type="checkbox"/> YES, SEE TA-7B-2 <input type="checkbox"/> NO	ENGR. 2: PPH	SIZE	REV
	ENGR. 1: NC	A1	0
	APPR. BY: NC	GED00008873	
	CHKD. BY: REJ	SCALE:	SHEET: 4 OF: 5
	DRAWN BY: KDR		
	DWG. DATE: 09MAR07		

12 11 10 9 8 7 6 5 4 3 2 1

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UNIGRAPHICS DRAWING

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ENGR. 1: NC
APPR. BY: NC
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DRAWN BY: KDF
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Rolls-Royce

ROLLS-ROYCE ENERGY SYSTEMS, INC.
MOUNT VERNON OHIO 43050 USA

ROLLS-ROYCE POWER ENGINEERING PLC
BOULLEV. MERCEYSE L30 ALZ ENGLAND

FOUNDATION / LOADING

SIZE: A1
GED00008873
REV: 0
SCALE: SHEET: 5 OF: 5

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