8 | 7 | 6 | 5 | 4 | 3 | 2 | NEXT ASS'Y: 1 FINAL ASS'Y:

PANEL CN-1DPC-1

SUPPLY: [ ] - BOTT. [X] - TOP [ ] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [X] - 3P4W [ ] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 1200 A 22,000 A.I.C. CN-1DPC-1 VOLTAGE: [X] -120 / 208 [ ] -277 / 480 [ ] /
1200 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1				6980			25146						2
3	225	3	PANEL CN-1PPC-1		8220			25486		PANEL CN-1PPC-2	3	225	4
5			(LPCVD)			4880			20386	(E-B RESIST & E-B LITHO)			6
7				33912			18952						8
9	400	3	PANEL CN-1PPC-4		30784			18612		PANEL CN-1PPC-3	3	225	10
11			(THIN FILM)			36416			19864	(E-B RESIST & E-B LITHO)			12
13				21312			27880						14
15	225	3	PANEL CN-1PPC-5		25704			27880		PANEL CN-1PPC-10	3	225	16
17			(PHOTO LITHO)			18712			27120	(PVD/CVD)			18
19				17040						SPACE			20
21	225	3	PANEL CN-1PPC-6		17456					SPACE			22
23			(PHOTO LITHO)			15856				SPACE			24
25			SPACE							SPACE			26
27			SPACE							SPACE			28
29			SPACE							SPACE			30
31			SPACE							SPACE			32
33			SPACE							SPACE			34
35			SPACE							SPACE			36
37			SPACE							SPACE			38
39			SPACE							SPACE			40
41			SPACE							SPACE			42

	A	B	C
PHASE TOTALS COL. #1	79244	82164	75864
PHASE TOTALS COL. #2	71978	71978	67370
PHASE TOTAL VA	151222	154142	143234

TOTAL 3 PHASE CONNECTED 449 KVA 1245 AMPS

PANEL CN-1DPB-1

SUPPLY: [ ] - BOTT. [X] - TOP [X] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [X] - 3P4W [X] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 600 A 42,000 A.I.C. CN-1DPB-1 VOLTAGE: [ ] -120 / 208 [X] -277 / 480 [ ] /
600 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1				16,667			75,000			XFMR CN-1T6, 225 KVA			2
3	100	3	PANEL CN-1PPB-9		16,667			75,000		(PNL CN-1DP6)	3	350	4
5			(NANO 2B)			16,667			75,000				6
7			SPACE							SPACE			8
9			SPACE							SPACE			10
11			SPACE							SPACE			12
13			SPACE							SPACE			14
15			SPACE							SPACE			16
17			SPACE							SPACE			18
19			SPACE							SPACE			20
21			SPACE							SPACE			22
23			SPACE							SPACE			24
25			SPACE							SPACE			26
27			SPACE							SPACE			28
29			SPACE							SPACE			30
31			SPACE							SPACE			32
33			SPACE							SPACE			34
35			SPACE							SPACE			36
37			SPACE							SPACE			38
39			SPACE							SPACE			40
41			SPACE							SPACE			42

	A	B	C
PHASE TOTALS COL. #1	16667	16667	16667
PHASE TOTALS COL. #2	75000	75000	75000
PHASE TOTAL VA	91667	91667	91667

TOTAL 3 PHASE CONNECTED 275 KVA 331 AMPS

PANEL CN-1DP1-1

SUPPLY: [X] - BOTT. [ ] - TOP [X] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [X] - 3P4W [X] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 600 A 42,000 A.I.C. CN-1DP1-1 VOLTAGE: [ ] -120 / 208 [X] -277 / 480 [ ] /
600 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1				33320			75,000			XFMR CN-1T1-1, 225 KVA			2
3	225	3	PANEL CN-1PP1-9		33320			75,000		(PNL CN-1DP1-2)	3	350	4
5			NANO 1A			33320			75,000				6
7				16660						SPACE	1	20	8
9	100	3	PANEL CN-1PP1-10		16660					SPACE	1	20	10
11			NANO 1C			16660				SPACE	1	20	12
13			SPACE							SPACE	1	20	14
15			SPACE							SPACE	1	20	16
17			SPACE							SPACE	1	20	18
19			SPACE							SPACE	1	20	20
21			SPACE							SPACE	1	20	22
23			SPACE							SPACE	1	20	24
25			SPACE							SPACE	1	20	26
27			SPACE							SPACE	1	20	28
29			SPACE							SPACE	1	20	30
31			SPACE							SPACE	1	20	32
33			SPACE							SPACE	1	20	34
35			SPACE							SPACE	1	20	36
37			SPACE							SPACE	1	20	38
39			SPACE							SPACE	1	20	40
41			SPACE							SPACE	1	20	42

	A	B	C
PHASE TOTALS COL. #1	49980	49980	49980
PHASE TOTALS COL. #2	75000	75000	75000
PHASE TOTAL VA	124980	124980	124980

TOTAL 3 PHASE CONNECTED 375 KVA 451 AMPS

PANEL CN-1DPC-2

SUPPLY: [ ] - BOTT. [X] - TOP [ ] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [X] - 3P4W [ ] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 1200 A 22,000 A.I.C. CN-1DPC-2 VOLTAGE: [X] -120 / 208 [ ] -277 / 480 [ ] /
1200 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1				69528			55284						2
3	400	3	PANEL CN-1PPC-7		69528			54384		PANEL CN-1PPC-9	3	400	4
5			(DRY ETCH)			30840			35040	(PVD/CVD)			6
7				50784			0			–			8
9	400	3	PANEL CN-1PPC-8		50784			0		–			10
11			(DRY ETCH)			31440			0	–			12
13				0			0			–			14
15	250	3			0			0		–			16
17						0			0	–			18
19			–	0			0			–			20
21			–		0			0		–			22
23			–			0			0	–			24
25			–	0			0			–			26
27			–		0			0		–			28
29			–			0			0	–			30
31			–	0			0			–			32
33			–		0			0		–			34
35			–			0			0	–			36
37			–	0			0			–			38
39			–		0			0		–			40
41			–			0			0	–			42

	A	B	C
PHASE TOTALS COL. #1	120312	120312	62280
PHASE TOTALS COL. #2	55284	54384	35040
PHASE TOTAL VA	175596	174696	97320

TOTAL 3 PHASE CONNECTED 448 KVA 1242 AMPS

PANEL CN-1DPB-2

SUPPLY: [ ] - BOTT. [X] - TOP [ ] - LUGS [ ] -MAIN BKR. [ ] - LTG. [X] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [4] - 3P4W [X] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 800 A 22000 A.I.C. CN-1DPB-2 VOLTAGE: [X] -120 / 208 [ ] -277 / 480 [ ] 480 /
800 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1			LAB N3C	9375			9375			LAB N3B			2
3	100	3	PANEL CN-1PPB-1		9375			9375		PANEL CN-1PPB-2	3	100	4
5						9375			9375				6
7			LAB N4D	9375			9375			LAB N4B			8
9	100	3	PANEL CN-1PPB-3		9375			9375		PANEL CN-1PPB-4	3	100	10
11						9375			9375				12
13			LAB SM3D	9375			9375			LAB N2B			14
15	100	3	PANEL CN-1PPB-5		9375			9375		PANEL CN-1PPB-6	3	100	16
17						9375			9375				18
19			LAB N2C	9375			9375			LAB N3D			20
21	100	3	PANEL CN-1PPB-7		9375			9375		PANEL CN-1PPB-8	3	100	22
23						9375			9375				24
25			SPACE							SPACE			26
27			SPACE							SPACE			28
29			SPACE							SPACE			30
31			SPACE							SPACE			32
33			SPACE							SPACE			34
35			SPACE							SPACE			36
37			SPACE							SPACE			38
39			SPACE							SPACE			40
41			SPACE							SPACE			42

NOTE: THIS PANEL REQUIRES DOUBLE NEUTRAL

	A	B	C
PHASE TOTALS COL. #1	37500	37500	37500
PHASE TOTALS COL. #2	37500	37500	37500
PHASE TOTAL VA	75000	75000	75000

TOTAL 3 PHASE CONNECTED 225 KVA 625 AMPS

PANEL CN-1DP1-2

SUPPLY: [ ] - BOTT. [X] - TOP [ ] - LUGS [ ] -MAIN BKR. [ ] - LTG. [X] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [4] - 3P4W [X] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 800 A 22000 A.I.C. CN-1DP1-2 VOLTAGE: [X] -120 / 208 [ ] -277 / 480 [ ] 480 /
800 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1			LAB N2A	9375			9375			LAB N1D			2
3	100	3	PANEL CN-1PP1-1		9375			9375		PANEL CN-1PP1-2	3	100	4
5						9375			9375				6
7			LAB N4C	9375			9375			LAB N1C			8
9	100	3	PANEL CN-1PP1-3		9375			9375		PANEL CN-1PP1-4	3	100	10
11						9375			9375				12
13			LAB N1B	9375			9375			LAB N1A			14
15	100	3	PANEL CN-1PP1-5		9375			9375		PANEL CN-1PP1-6	3	100	16
17						9375			9375				18
19			LAB N3A	9375			9375			LAB N2D			20
21	100	3	PANEL CN-1PP1-7		9375			9375		PANEL CN-1PP1-8	3	100	22
23						9375			9375				24
25			SPACE							SPACE			26
27			SPACE							SPACE			28
29			SPACE							SPACE			30
31			SPACE							SPACE			32
33			SPACE							SPACE			34
35			SPACE							SPACE			36
37			SPACE							SPACE			38
39			SPACE							SPACE			40
41			SPACE							SPACE			42

NOTE: THIS PANEL REQUIRES DOUBLE NEUTRAL

	A	B	C
PHASE TOTALS COL. #1	37500	37500	37500
PHASE TOTALS COL. #2	37500	37500	37500
PHASE TOTAL VA	75000	75000	75000

TOTAL 3 PHASE CONNECTED 225 KVA 625 AMPS

PANEL CN-1DPC-3

SUPPLY: [ ] - BOTT. [X] - TOP [ ] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [X] - 3P4W [ ] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 800 A 42,000 A.I.C. CN-1DPC-3 VOLTAGE: [ ] -120 / 208 [X] -277 / 480 [ ] /
800 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1			LPCVD	95500			95500			LPCVD			2
3	250	3	TYTAN TYSTAR		95500			95500		TYTAN TYSTAR	3	250	4
5			(FC01)			95500			95500	(FC02)			6
7			PHOTOLITHO	10800						SPACE			8
9	100	3	HEIDELBERG ELEC RACK		10800					SPACE			10
11			(XH01.01)			10800				SPACE			12
13			SPACE							SPACE			14
15			SPACE							SPACE			16
17			SPACE							SPACE			18
19			SPACE							SPACE			20
21			SPACE							SPACE			22
23			SPACE							SPACE			24
25			SPACE							SPACE			26
27			SPACE							SPACE			28
29			SPACE							SPACE			30
31			SPACE							SPACE			32
33			SPACE							SPACE			34
35			SPACE							SPACE			36
37			SPACE				15750						38
39			SPACE					15400		PANEL CN-1FFC-1	100	3	40
41			SPACE						12950	(SEM/STEM AREA)			42

	A	B	C
PHASE TOTALS COL. #1	106300	106300	106300
PHASE TOTALS COL. #2	111250	110900	108450
PHASE TOTAL VA	217550	217200	214750

TOTAL 3 PHASE CONNECTED 650 KVA 781 AMPS

PANEL CN-1DP2-1

SUPPLY: [X] - BOTT. [ ] - TOP [X] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [X] - 3P4W [X] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 600 A 42,000 A.I.C. CN-1DP2-1 VOLTAGE: [ ] -120 / 208 [X] -277 / 480 [ ] /
600 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1	20	1	SPARE	0			95,000			XFMR CN-1T2-1, 300 KVA			2
3	20	1	SPARE		0			95,000		(PNL CN-1DP2--2)	3	450	4
5	20	1	SPARE			0			95,000				6
7	20	1	SPARE	0			0			SPARE	1	20	8
9	20	1	SPARE		0			0		SPARE	1	20	10
11	20	1	SPARE			0			0	SPARE	1	20	12
13	20	1	SPARE	0			0			SPARE	1	20	14
15	20	1	SPARE		0			0		SPARE	1	20	16
17	20	1	SPARE			0			0	SPARE	1	20	18
19	20	1	SPARE	0			0			SPARE	1	20	20
21	20	1	SPARE		0			0		SPARE	1	20	22
23	20	1	SPARE			0			0	SPARE	1	20	24
25	20	1	SPARE	0			0			SPARE	1	20	26
27	20	1	SPARE		0			0		SPARE	1	20	28
29	20	1	SPARE			0			0	SPARE	1	20	30
31	20	1	SPARE	0			0			SPARE	1	20	32
33	20	1	SPARE		0			0		SPARE	1	20	34
35	20	1	SPARE			0			0	SPARE	1	20	36
37	20	1	SPARE	0			0			SPARE	1	20	38
39	20	1	SPARE		0			0		SPARE	1	20	40
41	20	1	SPARE			0			0	SPARE	1	20	42

	A	B	C
PHASE TOTALS COL. #1	0	0	0
PHASE TOTALS COL. #2	95000	95000	95000
PHASE TOTAL VA	95000	95000	95000

TOTAL 3 PHASE CONNECTED 285 KVA 343 AMPS

PANEL CN-1DP1-3

SUPPLY: [X] - BOTT. [ ] - TOP [ ] - LUGS [X] -MAIN BKR. [ ] - LTG. [ ] - RECEPT. [X] -POWER NEMA 1
TYPE: [ ] - 3P3W [4] - 3P4W [X] - WITH GRD. BAR PANEL MOUNTING [X] -SURFACE [ ] - FLUSH [ ] -COLUMN
MAINS: 1200 A 22000 A.I.C. CN-1DP1-3 VOLTAGE: [X] -120 / 208 [ ] -277 / 480 [ ] 480 /
1200 A. MAIN BKR. WITH: [ ] - SHUNT TRIP [ ] - ADJ. TRIP [ ] -G.F.P.

CKT. NO.	TRIP	NO. OF POLES	USED FOR	COL. #1 VOLT - AMPS A	B	C	COL. #2 VOLT - AMPS A	B	C	USED FOR	NO. OF POLES	TRIP	CKT. NO.
1			LAB N2D	29330			30000			LAB N1A			2
3	400	3	PANEL CN-1PP1-11		26663			40000		PANEL CN-1PP1-12	3	400	4
5						23997			30000				6
7			LAB N1C	42326						SPACE			8
9	400	3	PANEL CN-1PP1-13		42326					SPACE			10
11						39660				SPACE			12
13			SPACE							SPACE			14
15			SPACE							SPACE			16
17			SPACE							SPACE			18
19			SPACE							SPACE			20
21			SPACE							SPACE			22
23			SPACE							SPACE			24
25			SPACE							SPACE			26
27			SPACE							SPACE			28
29			SPACE							SPACE			30
31			SPACE							SPACE			32
33			SPACE							SPACE			34
35			SPACE							SPACE			36
37			SPACE							SPACE			38
39			SPACE							SPACE			40
41			SPACE							SPACE			42

	A	B	C
PHASE TOTALS COL. #1	71656	68989	63657
PHASE TOTALS COL. #2	30000	40000	30000
PHASE TOTAL VA	101656	108989	93657

TOTAL 3 PHASE CONNECTED 304 KVA 845 AMPS

KEY SCHEDULE

CN-1DPC-1	CN-1DPB-1	CN-1DP1-1
CN-1DPC-2	CN-1DPB-2	CN-1DP1-2
CN-1DPC-3	CN-1DP2-1	CN-1DP1-3

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THIS DOCUMENT CONTROLLED BY
CHANGE CONTROL SYSTEM ______
ENGINEERING PROCEDURE ______

AutoCAD
P:\ORNL\S0230.01-CNMS-Title-II\0700-cadd\0726-electrical\E9-23-40.dwg @ 1/20/03 - 4:38pm

REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE REQUEST NUMBER	DESCRIPTION	DSN	CHK	DEPT	DATE	PE	DATE	PJ	DATE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE	ST	CV	EC	EE	EM	IE	M	PD	SE	AR
0				CERTFIED FOR CONSTRUCTION 12/9/02	CR	VGS			CLG	1/03	JS	1/03	LJH	1/03			VGS	106009		RZ	AW	BWJ	AK	IM	DM	–	BWJ	–	TW

REVISION OR ISSUE PURPOSE | REVISION APPROVALS | SQUAD CHECK

RPE (seal: VICTOR G. STEFFEN, REGISTERED ENGINEER, AGRICULTURE, COMMERCE, No. 00106009, STATE OF TENNESSEE; signed 1-21-03)
REV. 0 DATE 12/9/02 UTB — DRAWING APPROVALS

DSN	C. RUNNG	12/09/02
DRW	L. MAKOVSKY	12/09/02
CHK	V. STEFFEN	12/09/02
DEPT		
PE	CLG	1/24/03
PJ	JS	1/23/03
REQ	L.J. Horton	1/24/03

ORNL DRAWING NUMBER:

Knight/Jacobs Joint Venture
701 Scarboro Road, MS 8253
Oak Ridge, TN 37830
865-241-9433
fax 865-241-3400

m+w zander
M+W Zander U.S. Operations, Inc.
549 West Randolph Street
Chicago, IL 60661
Telephone: (312) 577-3200
Fax: (312) 577-3525

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PROJECT NAME:
CENTER FOR NANOPHASE MATERIALS SCIENCES
PANELBOARD SCHEDULES CN-SS1

1	48	49	50	PLANT	BLDG	FL	SH.	OF	TYPE	CLASS
3	E	X	X	8	8610		1	1	S	U

51	52	53	A/E DRAWING NUMBER:	REV
NC	NA		E9.23.40	0