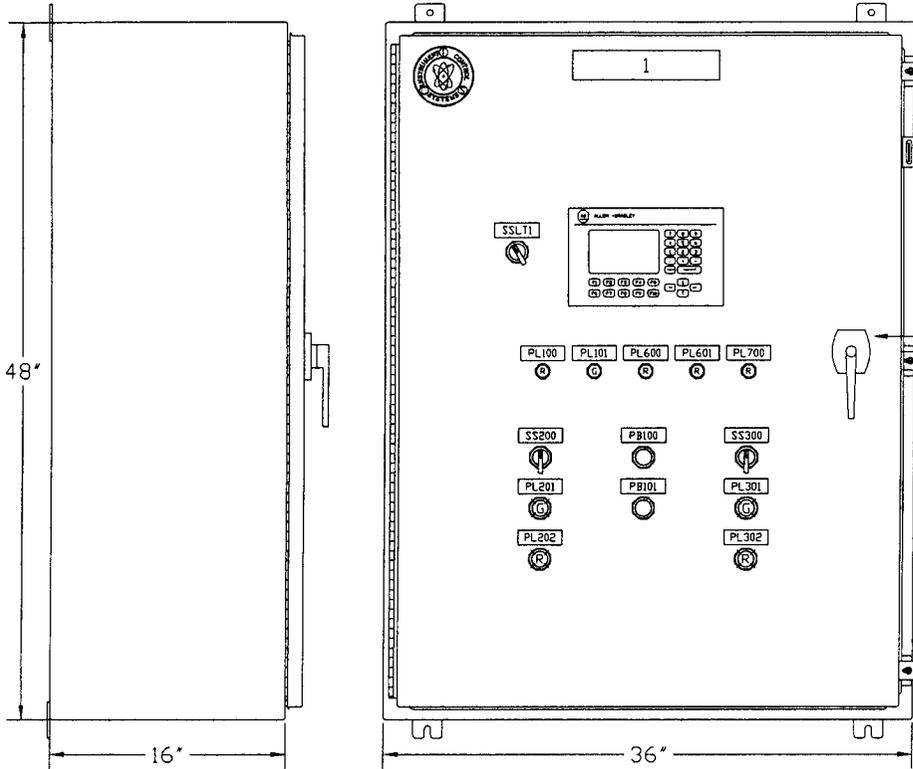


ATTACHMENT D

EXISTING CITY PUMPING CONTROL SYSTEMS

- I. B.** Drawings contained in this attachment are typical equipment configuration drawings from the City of Grand Forks. Typical equipment configuration drawings from the City of East Grand Forks are provided in a separate file attached to the solicitation, filename: "EGFsysAttD.pdf".

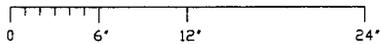


NAMEPLATE SCHEDULE					
TAG	LINE1	LINE2	LINE3	SIZE	REMARKS
I	STDRM WATER STATION	CONTROL PANEL		15X10	
PB100	LAMP TEST			1X3	YELLOW INSERT
PB101	RESET			1X3	BLACK INSERT
PL100	PHASE FAIL			1X3	
PL101	PROCESSOR RUNNING			1X3	
PL201	PUMP NO.1	RUNNING		1X3	
PL202	PUMP NO.1	OVERTEMP		1X3	
PL301	PUMP NO.2	RUNNING		1X3	
PL302	PUMP NO.2	OVERTEMP		1X3	
PL600	HIGH WETWELL	LEVEL ALARM		1X3	
PL601	LOW WETWELL	LEVEL ALARM		1X3	
PL700	DRYWELL FLOODED ALARM			1X3	
SS200	PUMP NO.1	HAND - OFF - AUTO		1X3	
SS300	PUMP NO.2	HAND - OFF - AUTO		1X3	
SSLT1	POWER	OFF - ON		1X3	ILLUMINATED

NOTES:

- ENCLOSURE IS A NEMA TYPE 4/12 WALL-MOUNT HOFFMAN A-483612LP WITH INNER PANEL HOFFMAN A-48P36.
- FINISH IS ANSI 61 GRAY.
- UL 508#

SCALE



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION

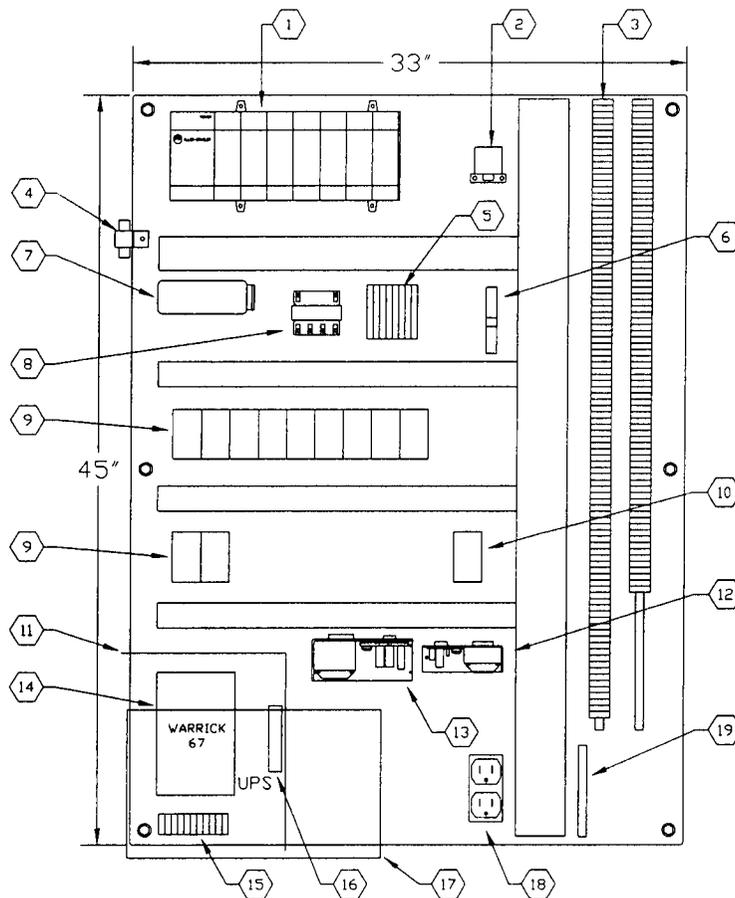


INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	01

PROJECT	GRAND FORKS, ND US CORP.
	STORM WATER STATION
	CONTROL PANEL
	ENCLOSURE DETAIL

PROJ. NO.	1224A
DWG. NO.	001

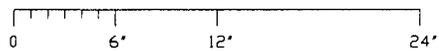


PART LIST

1. PLC RACK
2. LIGHTNING ARRESTOR
3. TERMINALS
4. ANTENNA LIGHTNING ARRESTOR
5. FUSES
6. CIRCUIT BREAKER
7. RADIO / MODEM
8. TRANSFORMER
9. RELAYS
10. TIMERS
11. ALUMINUM SHEILD
12. POWER SUPPLY 24VDC
13. POWER SUPPLY 12VDC
14. DIGITAL I.S. BARRIER
15. I.S. TERMINALS
16. ANALOG I.S. BARRIER
17. UNINTERRUPTIBLE POWER SUPPLY
18. UPS RECEPTACLE
19. GROUND BAR

PANEL LAYOUT

SCALE



DATE LAST EDITED: 09/21/00

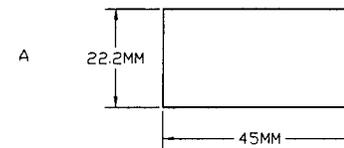
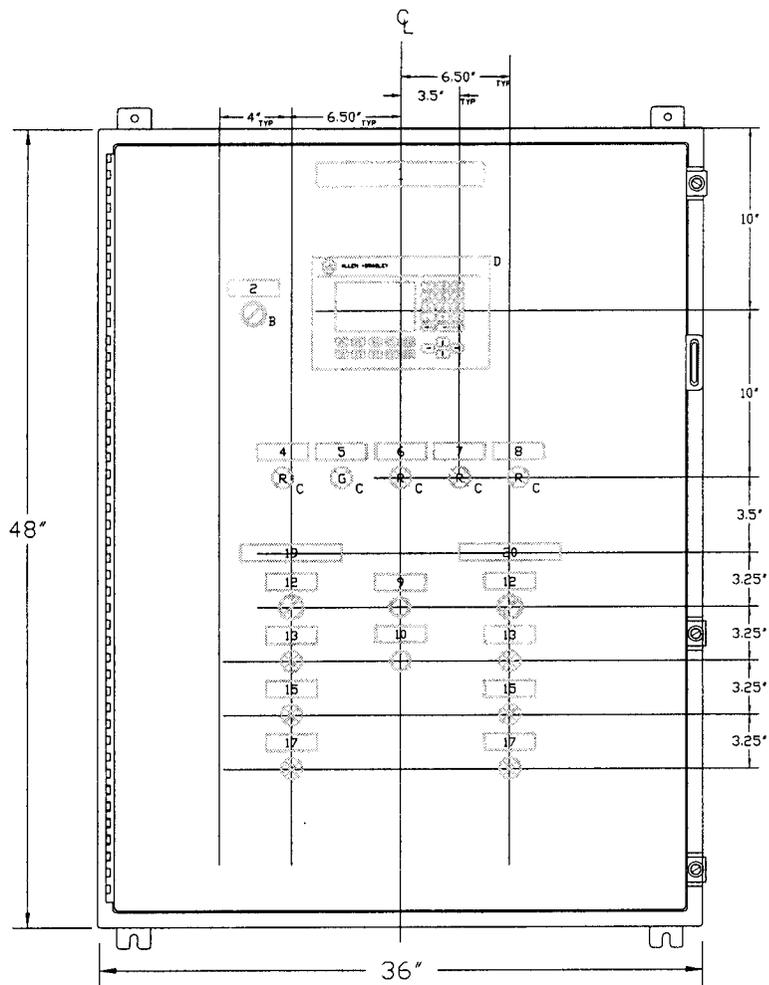
DATE	REVISION	DESCRIPTION



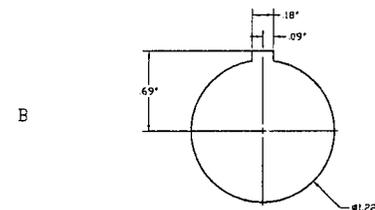
INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DVN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	01

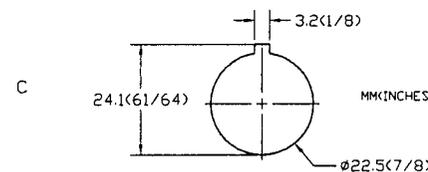
PROJECT	PROJ. NO.
GRAND FORKS, ND US CORP.	1224A
STORM WATER STATION CONTROL PANEL PANEL LAYOUT	DWG. NO. 002



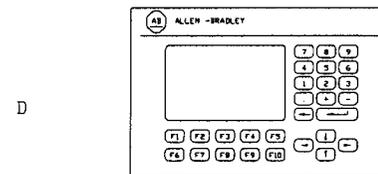
DMRON CONUTER
MODEL: H7ET



SQUARE D
MODEL: SK9001
30.5MM

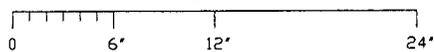


ALLEN BRADLEY
MODEL: 800E
22.5MM



ALLEN BRADLEY
MODEL: ABPV550
SEE ATTACHED

SCALE



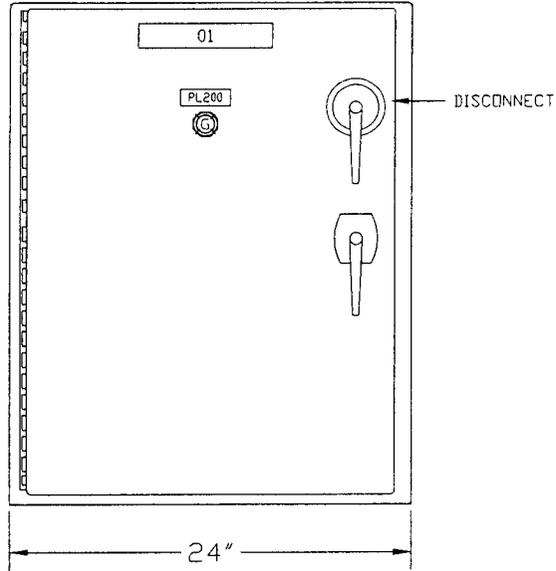
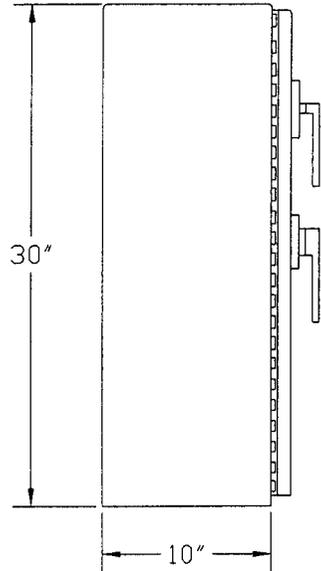
DATE LAST EDITED: 09/21/00

REVISION		DATE	PROJECT
DATE	DESCRIPTION		
		9/20/00	GRAND FORKS, ND US CORP.
		DWN JA	
		CKD GK	
		ENGR JL	
		ASSEM	
		SHEET CF	



INSTRUMENT CONTROL SYSTEMS
13003 16th Ave. North
Plymouth, Minnesota 55441

DATE	PROJECT	PROJL NO
9/20/00	GRAND FORKS, ND US CORP.	1224A
	STORM WATER STATION	
	CONTROL PANEL	
	PRODUCTION DETAIL	
		DWG. NO
		003

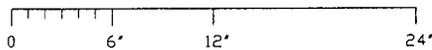


NAMEPLATE SCHEDULE					
TAG	LINE1	LINE2	LINE3	SIZE	REMARKS
01	PUMP NO.1 SMC			1.5x8	
PL200	RUN			1X3	

NOTES:

1. ENCLOSURE IS NEMA 1, CUSTOM
2. GALVANIZED BACKPANEL
3. 3 PT LATCH
4. COLOR IS ANSI 61 GRAY
5. INTERLOCKING CIRCUIT BREAKER/DISCONNECT
6. REFER TO DWG. 1065B-102 FOR WIRING DETAIL
7. UL 508#

SCALE



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION

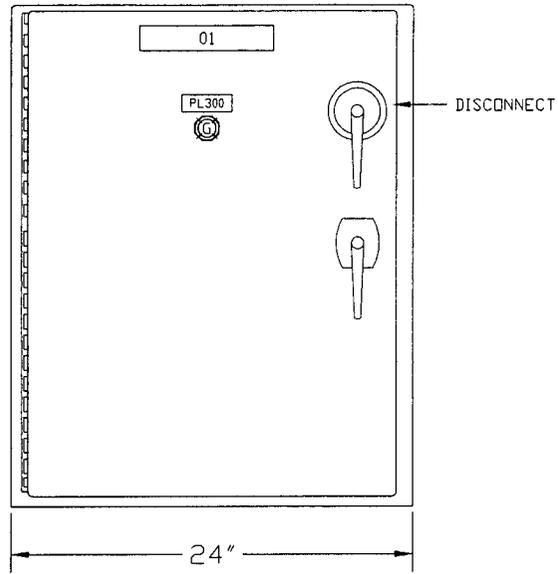
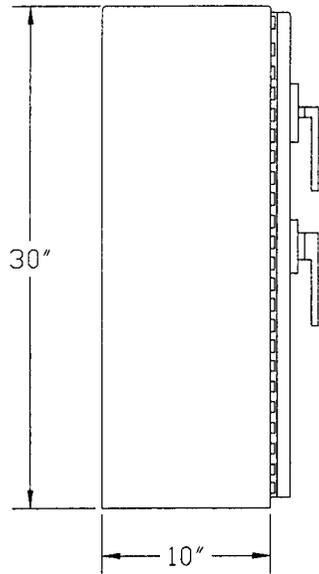


INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD	GK
ENGR.	JL
ASSEM.	
SHEET	OF

PROJECT GRAND FORKS, ND US CORP.
 STORM WATER STATION
 PUMP NO.1
 SMC ENCLOSURE DETAIL

PROJ. NO.
12241
 DWG. NO.
004

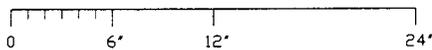


NAMEPLATE SCHEDULE					
TAG	LINE1	LINE2	LINE3	SIZE	REMARKS
01	PUMP NO.2 SMC			1.5x8	
PL300	RUN			1X3	

NOTES:

1. ENCLOSURE IS NEMA 1, CUSTOM
2. GALVANIZED BACKPANEL
3. 3 PT LATCH
4. COLOR IS ANSI 61 GRAY
5. INTERLOCKING CIRCUIT BREAKER/DISCONNECT
6. REFER TO DWG. 1065B-102 FOR WIRING DETAIL
7. UL 508#

SCALE



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION



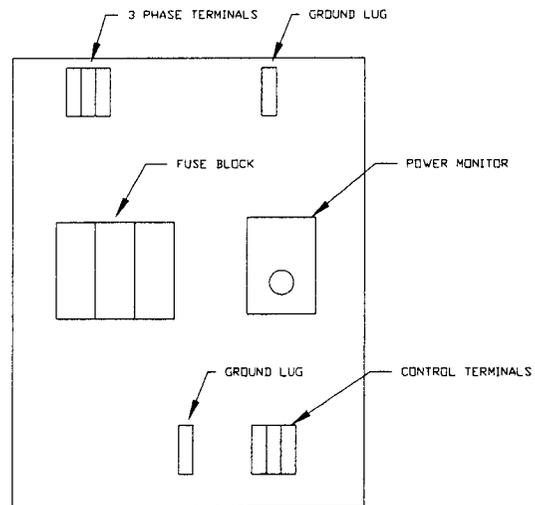
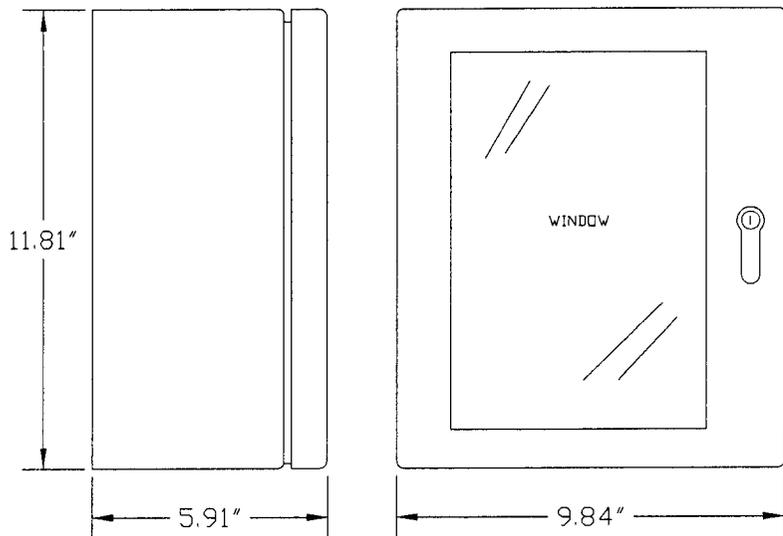
INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR.	JL
ASSIST.	JL
SHEET	05

PROJECT GRAND FORKS, ND US CORP.

STORM WATER STATION
 PUMP NO.2
 SMC ENCLOSURE DETAIL

PROJ. NO.
1224A2
 DVG. NO.
005

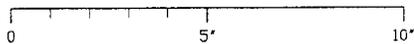


PANEL LAYOUT

NOTES:

1. ENCLOSURE IS A NEMA TYPE 4 HOFFMAN L-WC302515 WITH INNER PANEL L-P3025
2. FINISH IS TEXTURED LIGHT GRAY (RAL 7035)
3. REFER TO DWG. 1169B-101
4. UL 508#

SCALE



DATE LAST EDITED: 09/21/00

DATE	REVISION DESCRIPTION



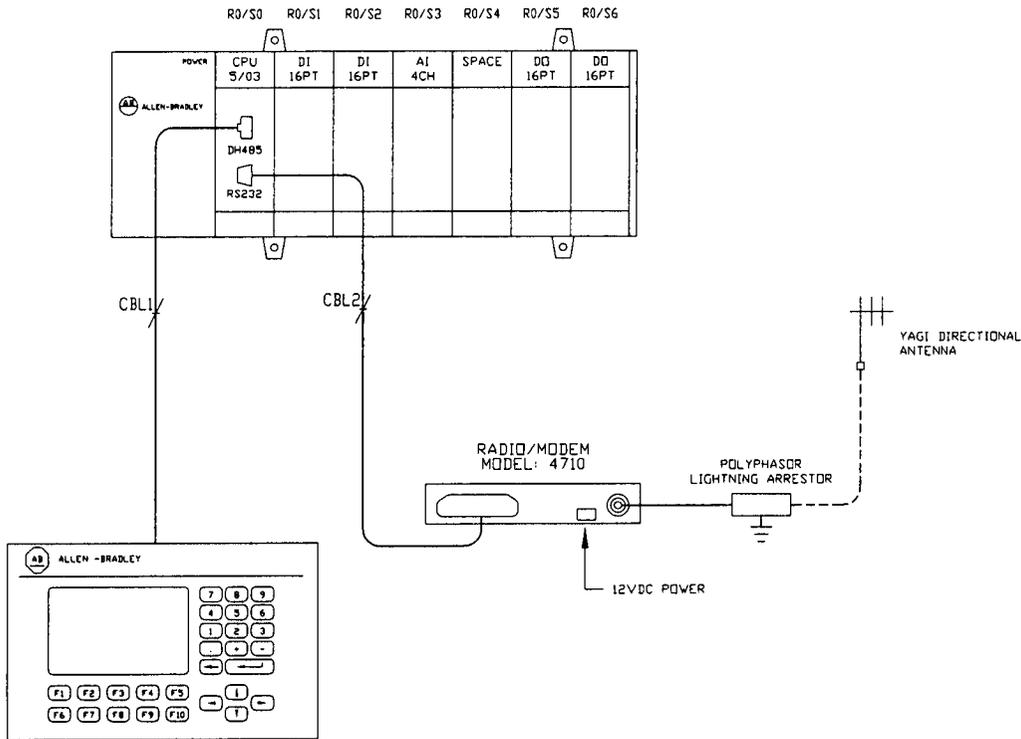
INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHKD.	GK
ENGR.	JL
ASSEN.	
SHEET	06

PROJECT
GRAND FORKS, ND US CORP.
STORM WATER STATION
POWER MONITOR
ENCLOSURE DETAIL

PROJ. NO.	1224A3
DWG. NO.	006

SLC500 I/O SCHEDULE



AB PANELVIEW PV550
MODEL: 2711-BSA2

QTY	TAGS	DESCRIPTION	MFG	CATALOG
1	R0	PLC POWER SUPPLY RACK POWER SUPPLY (5A @ 5VDC) 120/240V AC	AB	1746-P2
1	R0/S0	PLC PROCESSOR CPU 5/03 WITH 16K MEMORY	AB	1747-L532
2	R0/S1 R0/S2	PLC DIGITAL I/O MODULE 16 POINT INPUT - GENERAL PURPOSE 85-132V AC	AB	1746-IA16
1	R0/S3	PLC ANALOG I/O MODULE 4 ANALOG INPUTS (+/-10VDC; +/-20mA) 16 BIT RESOLUTION	AB	1746-NI4
2	R0/S5 R0/S6	PLC DIGITAL I/O MODULE 16 POINT RELAY CONTACT OUTPUT (N.O.) 1.5A @ 120V AC	AB	1746-DW16
1	CBL1	DH-485 COMMUNICATIONS CABLE DH-485 183M (6FT) DIU TO PLC/AIC	AB	1747-C10
1	CBL2	SERIAL COMMUNICATIONS CABLE DB9F TO DB25M 6' NON SHIELDED	GENERIC	417-058-006
1	R0/S4	SPACE	N/A	N/A
1	R0	PLC RACK 7 SLOT BASE RACK	AB	1746-A7

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13003 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CHK	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT
GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
PLC I/O SCHEDULE

PRJ. NO.	1224A
DWG. NO.	007

* DIGITAL INPUT/OUTPUT STATUS LIGHT
SHOWN AS NORMAL STATE ● ON ○ OFF

CPU 5/03		DIGITAL INPUT			DIGITAL INPUT			ANALOG INPUT		
SLOT 0		DI	SLOT 1		DI	SLOT 2		SLOT 3		
		0	○	PHASE FAIL	0	○	SPARE	0	WETWELL LEVEL 0-__FT	
		1	○	LAMP TEST	1	○	SPARE	1	SPARE	
		2	○	RESET	2	○	SPARE	2	SPARE	
		3	○	POWER FAIL	3	○	SPARE	3	SPARE	
		4	○	PUMP 1 IN AUTO	4	○	SPARE			
		5	○	PUMP 1 RUNNING	5	○	SPARE			
		6	○	PUMP 1 OVERLOAD TRIP	6	○	LOW LEVEL ALARM			
		7	○	PUMP 1 OVERTEMP	7	○	HIGH LEVEL ALARM			
		8	○	PUMP 2 IN AUTO	8	○	INTRUSION ALARM			
		9	○	PUMP 2 RUNNING	9	○	DRYWELL FLOODED			
		10	○	PUMP 2 OVERLOAD TRIP	10	○	SPARE			
		11	○	PUMP 2 OVERTEMP	11	○	SPARE			
		12	○	SPARE	12	○	SPARE			
		13	○	SPARE	13	○	SPARE			
		14	○	SPARE	14	○	SPARE			
		15	○	SPARE	15	○	SPARE			

SPACE		DIGITAL OUTPUT			DIGITAL OUTPUT		
SLOT 4		DO	SLOT 5		DO	SLOT 6	
		0	○	PHASE FAIL	0	○	WETWELL HIGH LEVEL
		1	○	PROCESSOR RUN	1	○	WETWELL LOW LEVEL
		2	○	PUMP 1 REQUIRED	2	○	DRYWELL FLOODED
		3	○	PUMP 1 RUNNING	3	○	SPARE
		4	○	PUMP 1 OVERTEMP	4	○	SPARE
		5	○	PUMP 2 REQUIRED	5	○	SPARE
		6	○	PUMP 2 RUNNING	6	○	SPARE
		7	○	PUMP 2 OVERTEMP	7	○	SPARE
		8	○	SPARE	8	○	SPARE
		9	○	SPARE	9	○	SPARE
		10	○	SPARE	10	○	SPARE
		11	○	SPARE	11	○	SPARE
		12	○	SPARE	12	○	SPARE
		13	○	SPARE	13	○	SPARE
		14	○	SPARE	14	○	SPARE
		15	○	SPARE	15	○	SPARE

NOTES:

* I. NORMAL STATE:
SYSTEM READY IN AUTOMATIC MODE
PUMPS NOT RUNNING
NO ALARMS

* OPEN = STATE NO/NC?
? = POSSIBLE STATE CONFLICT

REVISION	
DATE	DESCRIPTION



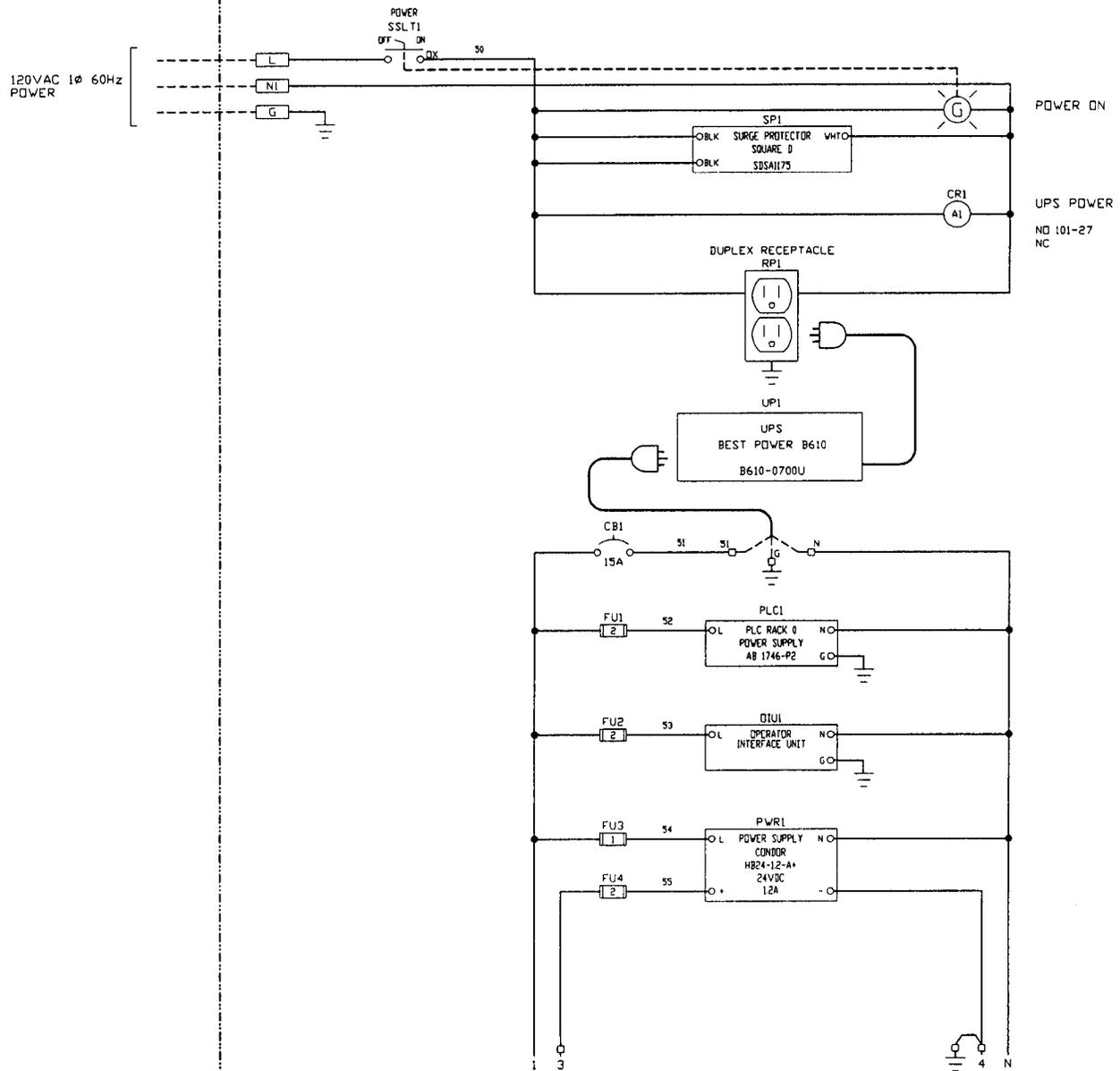
INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKL	GK
ENGR.	JL
ASSEM	
SHEET	08

PROJECT		PROJ. NO.
GRAND FORKS, ND US CORP.		1224A
STORM WATER STATION CONTROL PANEL PLC I/O TABLE		DWG. NO. 008

FIELD OR AS NOTED

CONTROL PANEL



REVISION	DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	BY	DESCRIPTION
9/20/00	JA	
	GK	
	JA	
	LP	
	DF	

PROJECT GRAND FORKS, ND US CORP.
 STORM WATER STATION
 CONTROL PANEL
 CONTROL POWER WIRING

PRD.J. NO.	1224A
DWG. NO.	100A

FIELD OR AS NOTED

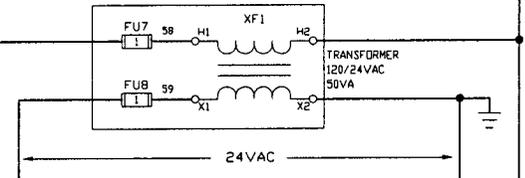
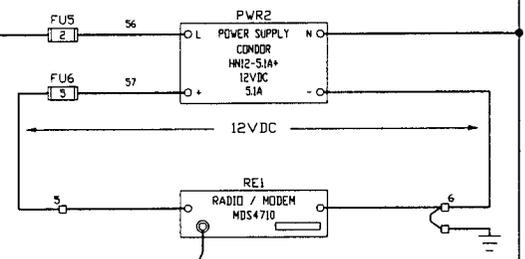
CONTROL PANEL

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RE3
ANTENNA
YAGI

ANTENNA
LIGHTNING ARRESTOR
RE2



REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEM	LP
SHEET	0F

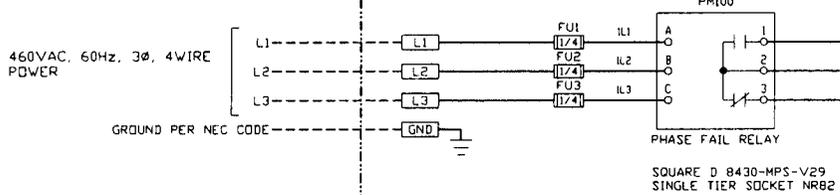
PROJECT
 GRAND FORKS, ND US CORP.
 STORM WATER STATION
 CONTROL PANEL
 CONTROL POWER WIRING

PROJ. NO.	1254A
DWG. NO.	100B

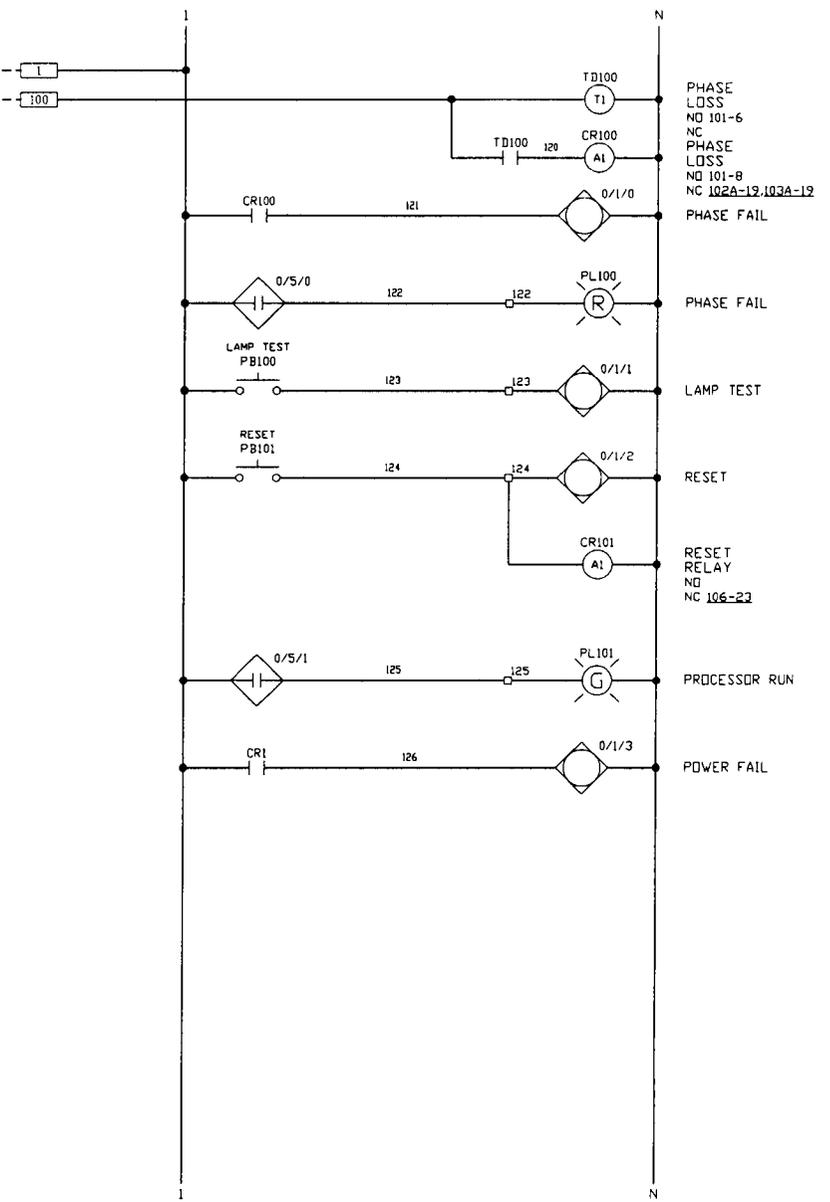
FIELD OR AS NOTED

POWER MONITOR PANEL DWG. 1224A3

CONTROL PANEL



- NOTES:
1. FUSE BLOCK: BUSSMAN BC6033P
 2. FUSES: LITTLE FNG-R-1/4
 3. TERMINALS: AB 1492-CA1, 1492-F1



DATE LAST EDITED: 09/20/00

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR.	JL
ASSEM.	GG
SHEET	0F

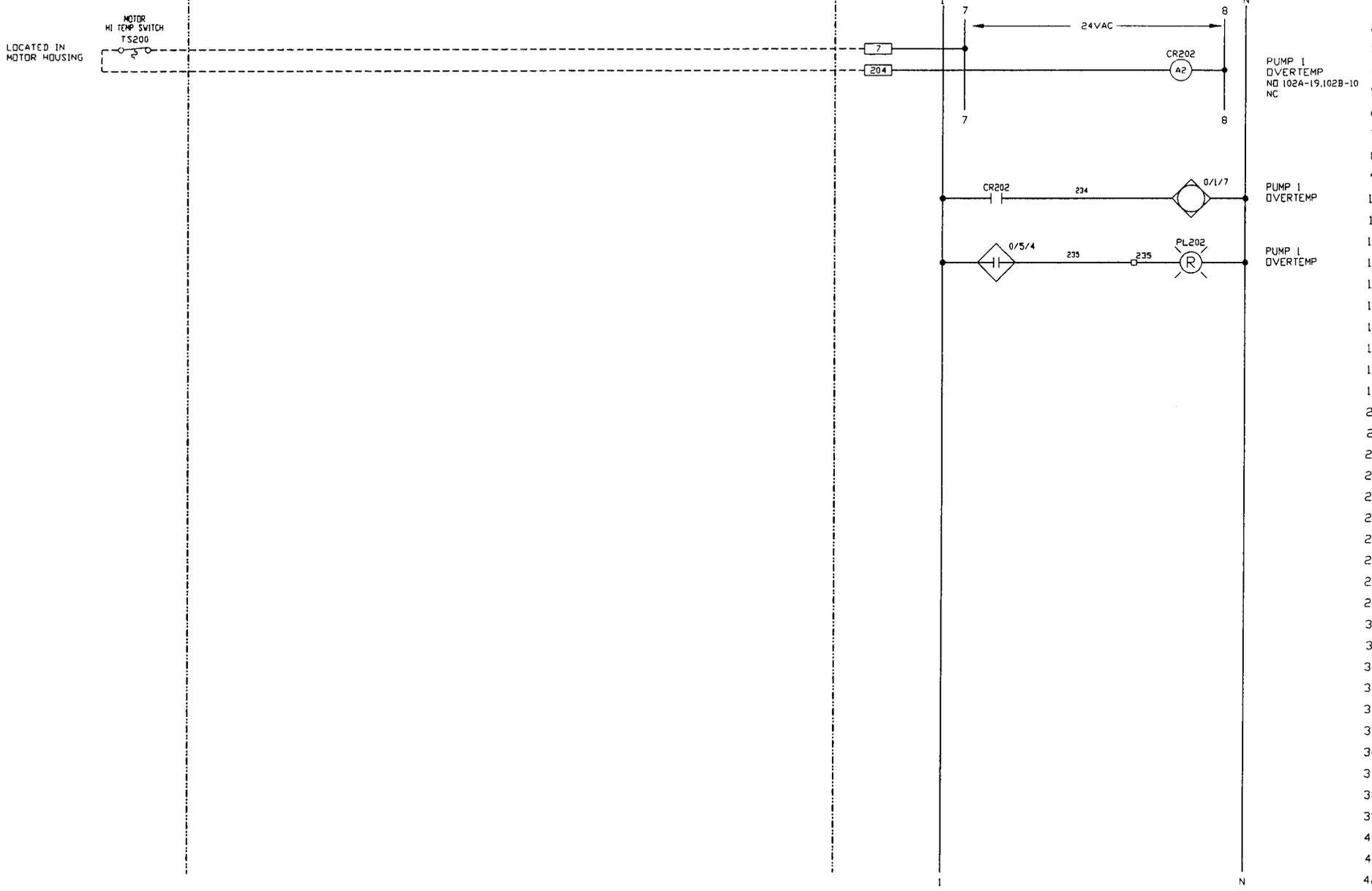
PROJECT
 GRAND FORKS, ND US CORP.
 STORM WATER STATION
 CONTROL PANEL
 POWER MONITOR WIRING

PROJ. NO.	1224A
DWG. NO.	101

FIELD OR AS NOTED

SMC ENCLOSURE 1224A1

CONTROL PANEL



DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
 13005 16th Ave. North
 Plymouth, Minnesota 55441

DATE	9/20/00
DWGN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	0F

PROJECT
 GRAND FORKS, ND US CORP.
 STORM WATER STATION
 CONTROL PANEL
 SMC PUMP NO.1 CONTROL WIRING

PRJ. NO.	1224A
DWG. NO.	102B

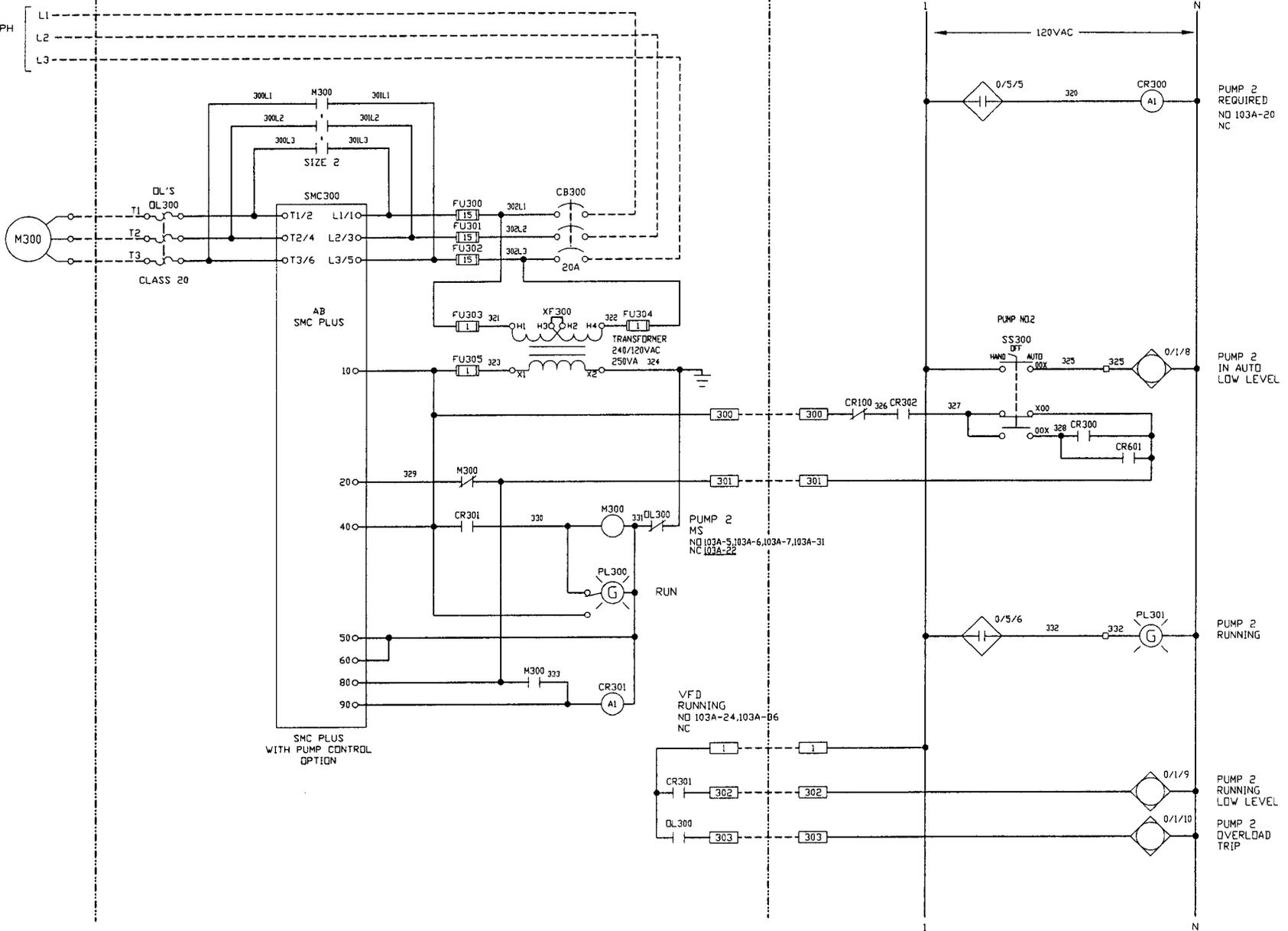
FIELD OR AS NOTED

SMC ENCLOSURE 1224A2

CONTROL PANEL

240VAC, 3PH
4W, 60HZ
POWER

PUMP
NO.2
32HP
96FLA
480V



DATE	REVISION	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

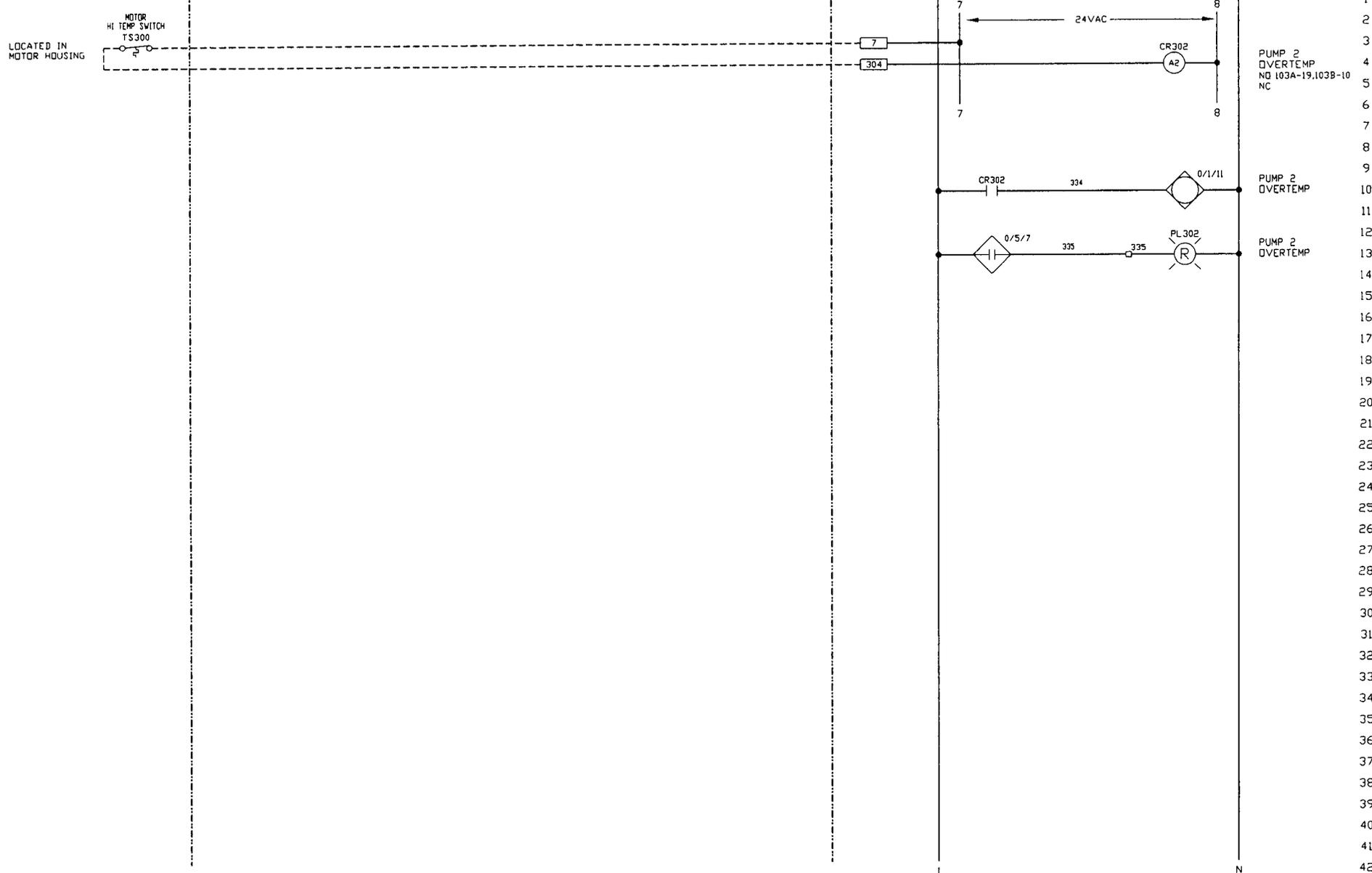
DATE	9/20/00	PROJECT	GRAND FORKS, ND US CORP
DWN	JA		
CKD	GK		
ENGR	JL		
ASSEM			
SHEET	0F		

PRJ. NO.
1224A
DWG. NO.
103A

FIELD OR AS NOTED

SMC ENCLOSURE 1224A2

CONTROL PANEL



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DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	9/20/00
DWN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	0F

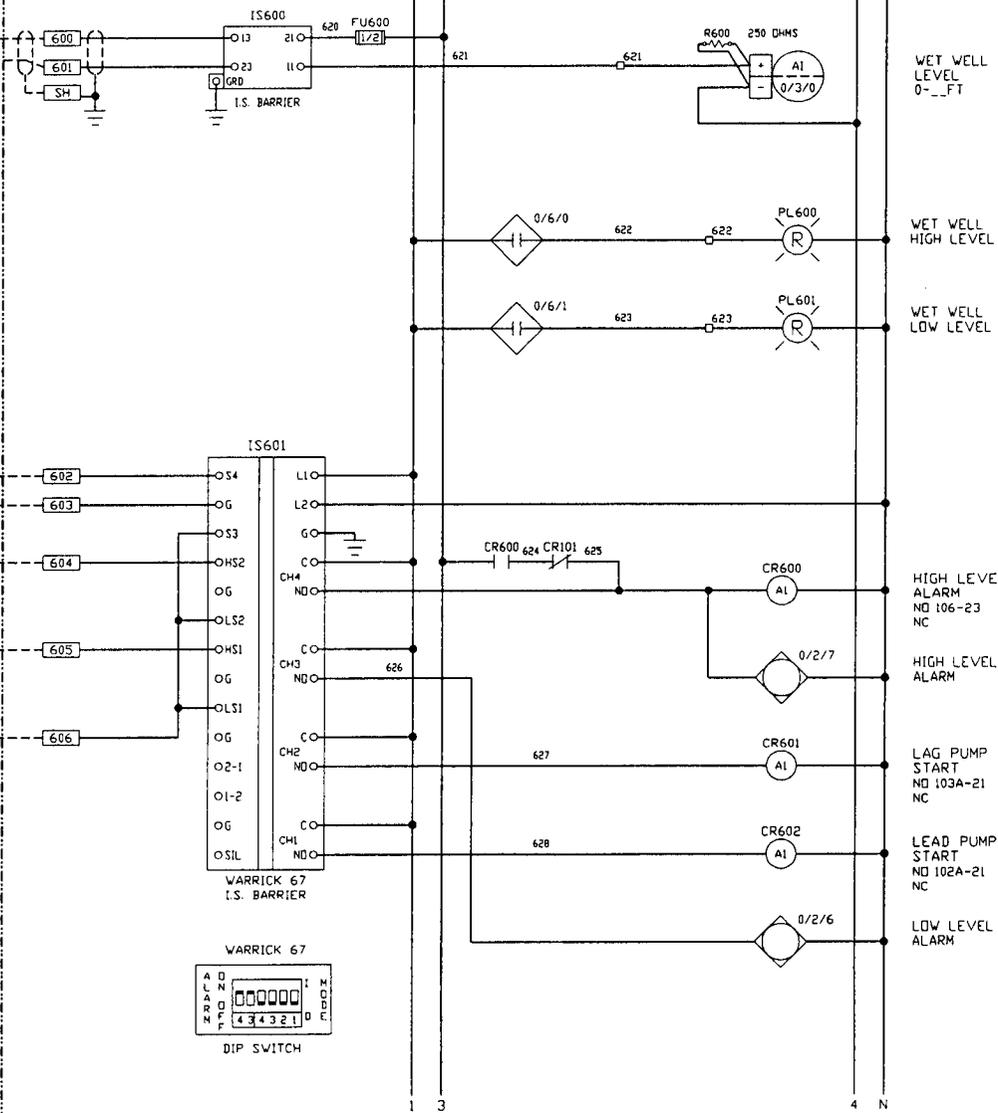
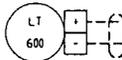
PROJECT GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
SMC PUMP NO2 CONTROL WIRING

PROJ. NO.	1224A
DWG. NO.	103B

FIELD OR AS NOTED

CONTROL PANEL

SUBMERSIBLE WETWELL LEVEL TRANSMITTER



DATE LAST EDITED: 09/21/00

REVISION		DATE	PROJECT
DATE	DESCRIPTION		
		9/20/00	GRAND FORKS, ND US CORP.
		J A	STORM WATER STATION
		G K	CONTROL PANEL
		J L	FLOAT BACKUP CONTROL WIRING
		D F	

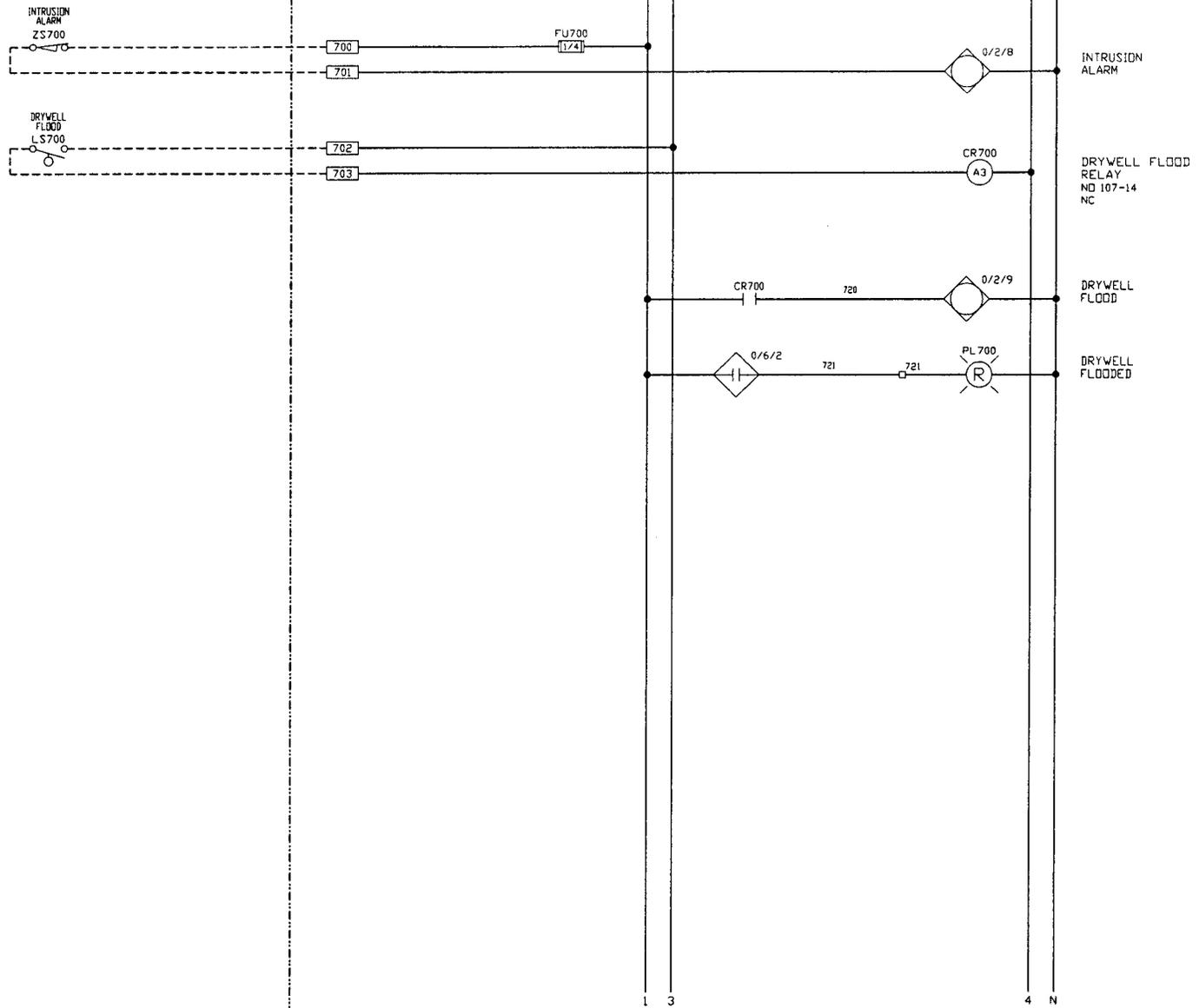
INSTRUMENT CONTROL SYSTEMS

13005 16th Ave. North
Plymouth, Minnesota 55441

PRJ. NO.	1224A
DWG. NO.	106

FIELD DR AS NOTED

CONTROL PANEL



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DATE LAST EDITED: 09/21/00

REVISION	
DATE	DESCRIPTION



INSTRUMENT CONTROL SYSTEMS
13005 16th Ave. North
Plymouth, Minnesota 55441

DATE	
9/20/00	JA
DVN	JA
CKD	GK
ENGR	JL
ASSEM	
SHEET	OF

PROJECT
GRAND FORKS, ND US CORP.
STORM WATER STATION
CONTROL PANEL
CONTROL WIRING

PROJ. NO.	1224A
DWG. NO.	107