City of Aurora
Building Codes Division
15151 E Alameda Pkwy
Aurora, CO 80012
(303) 739-7420

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City of Aurora Plan Review
Project: Municipal Center of Aurora
Contractor: Linbeck Group LLC
Address: 15151 E Alameda Pkwy
RSN: 2520183
Permit Number: 07-192368
Date: APPROVED AUG 18 2007

46-1-A

BUILDING DIVISION
COPY

2008281765
Revised Bldg 1/25-08

Date 1/17/08

PLAN REVIEW REVISION SUBMITTAL

This form should be completed and submitted with all building plan revisions. All changes from the previously approved drawings must be clearly shown by clouding, circling, etc.

Project address 1501 So Potomac St
Unit # _____
Project name Medical Center of Aurora
Valuation $ Included in Contract
Contractor Ludvik Elec Co
Contractor License 843
Contact Name Stephen G Fiddleman
Phone # 303-781-9601
Fax 303-783-6329
Email STEVEE@LudvikCo.com
Owner Medical Center of Aurora
Phone # 303-781-9601
Address 1501 So. Potomac St
Fax 303-783-6329

Have there been any permits issued for this job? Yes X No _____

If yes, what is the permit number? 07-192368

What type of work is being proposed in the attached plans being submitted?

Temporary Power for Construction Down Size From 600A to 400 Amps (1 Set As Proposed 3 Changes)

---------- THIS SPACE FOR OFFICE USE ONLY ----------

Reviews

Review time DLH ok'd 1/25-08 Our Copy Initialed → 46-1-A

___	Mechanical	+ _____
___	Plumbing	+ _____
X	Electrical	+ 2 HRS
___	Structural	+ _____
___	Life Safety	+ _____

Additional review time greater than (>) two hour minimum.

Plan Location
Parent RSN ~~251448~~ 270189
Permit Number
Permit Type Limited (LT)
Subtype Plan Revisions
Intake by SWB (P.E.)

Minimum plan fee $ 200.00

Additional plan review fee: $ _____

RSN 357584

08-281765

BOARD OF APPEALS
The City of Aurora has created a Building Code and Contractor's Appeals and Standards Board. Applicants have the right to have the board hear appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of the building code. Any application for appeal to the board shall be based on a claim that the true intent of the code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of the building code do not fully apply or an equally good or better form of construction is proposed.

Revised: 12/27/2007

PLANS RECEIVED BY

Print: RON SCHULKE

Sign: Ron Schulke

Representing company: LUDVIK ELECTRIC

Telephone: 303-781-9601

Upstream Device			Downstream Device			Interrupting Rating RMS		
	Device			Breaker		Symmetrical	V	
Type	Amps	Poles	Type	Amps	Poles	Amps	ac	PH
FCH	100	2,3	TED	15-100	2, 3	100,000	480	1,3
FCH	100	2,3	THED	20-100	2, 3	100,000	480	1,3
FCH	100	2,3	SED	15-100	2, 3	100,000	480	1,3
FCH	100	2,3	TEY	15-100	2, 3	100,000	480	1,3
FCH	15-100	2,3	TEYRC	15-30	2	100,000	480Y/277	1,3
FCH	100	2,3	FCS, FCV, FCN	15-100	2, 3	100,000	480	1,3
FGH	175-600	2,3	FCS, FCV,FCN,FCH	15-100	2,3	100,000	480	1,3
FGH	175-600	2,3	FGV.FGN	175-600	2,3	100,000	480	1,3
FGH	175-600	2,3	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
FGH	175-600	2,3	SFH,SFL	70-250	2,3	100,000	480	1,3
FGH	175-600	2,3	SGH,SGL	125-600	2,3	100,000	480	1,3
FGH	175-600	2,3	TEL	15-150	3	100,000	480	1,3
FGH	175-600	2,3	TFL	70-225	3	100,000	480	1,3
FGH	175-600	2,3	TJJ,TJK,THJK	150-600	2,3	100,000	480	3
J FUSE	800	---	FCS, FCV, FCN	15-100	2, 3	100,000	480	1,3
J or L fuse	1200 Max	—	TKM	300-800	2, 3	100,000	480	1, 3
J or T FUSE	400 Max	—	TEYRC	15-30	2	100,000	480Y/277	1,3
J or T FUSE	200	—	TEYRC	15-30	2	100,000	480Y/277	1,3
J or T FUSE	400	—	SFH,SFL	70-250	2,3	100,000	480	3
J or T Fuse	400	—	SFH,SFL	70-250	2,3	100,000	480	1,3
J or T FUSE	400	—	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
J or T FUSE	600	—	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
J or T FUSE	400	—	SGH,SGL	125-600	2,3	100,000	480	1,3
J or T Fuse	600 Max	—	TEY	15-100	2.3	100,000	480	1.3
J or T fuse	400	—	TED, THED	15-100	2, 3	100,000	480	1, 3
J or T fuse	400	—	TFJ, TFK, THFK,TFC,	70-225	2, 3	100,000	480	1, 3
J or T fuse	400	—	TJJ, TJK	125-400	2, 3	100,000	480	1, 3
J or T FUSE	400	—	FGV.FGN	175-400	2,3	100,000	480	1,3
L FUSE	2000MAX	—	SKH,SKL	300-1200	2,3	100,000	480	1,3
L FUSE	1200	—	SGH,SGL	125-600	2,3	100,000	480	1,3
L FUSE	1600	—	SGH,SGL	125-600	2,3	100,000	480	1,3
L FUSE	2000	—	SGH,SGL	125-600	2,3	100,000	480	1,3
L fuse	1200	—	TJJ	125-400	2, 3	100,000	480	1, 3
L fuse	1200	—	TJK	125-600	2, 3	100,000	480	1, 3
L fuse	1200	—	THJK	125-600	2, 3	100,000	480	1, 3
L fuse	2000	—	TKM	300-1200	2, 3	100,000	480	1, 3
L fuse	2000	—	THKM	300-1200	2, 3	100,000	480	1, 3
L FUSE	1200	—	FGV FGN	175-600	2,3	100,000	480	1,3
L FUSE	1600	—	FGV FGN	175-600	2,3	100,000	480	1,3
L FUSE	2000	—	FGV.FGN	175-600	2,3	100,000	480	1,3
R FUSE	100	—	SED,SHED,SEL	15-150	2,3	100,000	480	1,3
R FUSE	200	—	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
R Fuse	200 Max	—	TEY	15-100	2.3	100,000	480	1.3
R FUSE	200	---	FCS, FCV, FCN	15-100	2, 3	100,000	480	1,3
SEP	15-150	2,3	TED,THED	15-50	2,3	100,000	480	1,3
SEP	15-150	2,3	TED,THED	150	3	100,000	480	1,3
SEP	150	2,3	FCS, FCV, FCN	15-100	2, 3	100,000	480	1,3
SEP	15-150	2,3	TEYRC	15-30	2	100,000	480Y/277	1,3
SFP	70-250	2,3	SFH,SFL	70-250	2,3	100,000	480	1,3
SFP	70-250	2,3	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
SFP	70-250	2,3	TED,THED	15-100	2,3	100,000	480	1,3
SFP	70-250	2,3	TED,THED	150	3	100,000	480	1,3
SFP	70-250	2,3	TEY	15-100	2,3	100,000	480	1,3
SFP	70-250	2,3	TFJ,TFK,THFK,TFC	70-225	2,3	100,000	480	1,3
SFP	250	2,3	FCS, FCV, FCN	15-100	2, 3	100,000	480	1,3
SGP	125-600	2,3	TJJ,TJK,THJK	150-600	2,3	100,000	480	3
SGP	125-600	2,3	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
SGP	125-600	2,3	SGH,SGL	125-600	2,3	100,000	480	1,3
SGP	125-600	2,3	SFH,SFL	70-250	2,3	100,000	480	1,3
SGP	600	2,3	FCS, FCV, FCN	15-100	2, 3	100,000	480	1,3
SKP	300-1200	2,3	SFH,SFL	70-250	2,3	100,000	480	1,3
SKP	300-1200	2,3	SED,SEH,SEL	15-150	2,3	100,000	480	1,3
SKP	300-1200	2,3	SGH,SGL	125-600	2,3	100,000	480	1,3

Upstream Device			Downstream Device			Interrupting Rating RMS		
	Device			Breaker		Symmetrical	V	
Type	Amps	Poles	Type	Amps	Poles	Amps	ac	PH
TPV	200-3000	3	THJK	400	2, 3	100,000	240	1, 3
TPV	200-3000	3	THJK	250-600	2, 3	100,000	240	1, 3
TPV	200-3000	3	TJ4V	150-600	3	100,000	240	1, 3
TPV	200-3000	3	THJ4V	150-600	3	100,000	240	1, 3
TPV	200-3000	3	THJ9V	150-600	3	100,000	240	1, 3
TPV	200-3000	3	TKM	800-1200	2, 3	100,000	240	1, 3
TPV	200-3000	3	TK4V	400-1200	3	100,000	240	1, 3
TPV	200-3000	3	THK4V	400-1200	3	100,000	240	1, 3
TPV	200-3000	3	THK9V	400-1200	3	100,000	240	1, 3
TPV	200-3000	3	SKH	300-1200	2,3	100,000	240	1,3
TPV	3000	3	FBV	15-100	2,3	100,000	240	1,3
TPV	3000	3	FCS, FCV	15-100	2,3	100,000	240	1,3
TPV/THPV	4000	3	FBV	15-100	2,3	100,000	240	1,3
TPV/THPV	4000	3	FCS, FCV	15-100	2,3	100,000	240	1,3
FCN	15-100	2,3	TEYRC	15-30	1	100,000	240	1
FBH	100	1,2,3	TED	15-50	1	100,000	277	1
FCH	100	2,3	TED	15-50	1	100,000	277	1
FBH	100	2,3	TEY	15-100	1	100,000	277	1
FCH	100	2,3	TEY	15-100	1	100,000	277	1
FCH	15-100	2,3	TEYRC	15-30	1	100,000	277	1
FCH	15-100	2,3	TEYRC	15-30	2	100,000	277	1
FGP	175-600	3	THED	15-30	1	100,000	277	1
J FUSE	600	—	FBV	15-100	1,2,3	100,000	277	1,3
J FUSE	600	—	FCS, FCV, FCN	15-100	2,3	100,000	277	1
J or T FUSE	400	—	SED,SEH,SEL	15-150	2,3	100,000	277	1
J or T FUSE	600	—	SED,SEH,SEL	15-150	2,3	100,000	277	1,3
J or T FUSE	400	—	TEYRC	15-30	1	100,000	277	1
J or T FUSE	400	—	TEYRC	15-30	2	100,000	277	1
J or T FUSE	200	—	TEYRC	15-30	1	100,000	277	1
J or T FUSE	200	—	TEYRC	15-30	2	100,000	277	1
J or T Fuse	600 Max	—	TEY	15-100	1	100,000	277	1
J or T fuse	400	—	TED , THED	15-50	1	100,000	277	1
R FUSE	100	—	SED,SEH,SEL	15-150	2,3	100,000	277	1
R FUSE	200	—	SED,SEH,SEL	15-150	2,3	100,000	277	1
R Fuse	200 Max	—	TEY	15-100	1	100,000	277	1
R Fuse	200	—	TED , THED	15-50	1	100,000	277	1
R FUSE	200	—	FBV	15-100	1,2,3	100,000	277	1,3
R FUSE	200	—	FCS, FCV, FCN	15-100	2,3	100,000	277	1
SEP	15-150	2,3	TED,THED	15-50	1	100,000	277	1
SEP	15-150	2,3	TEY	15-100	1	100,000	277	1
SEP	15-150	2,3	TEYRC	15-30	1	100,000	277	1
SEP	15-150	2,3	TED,	15-50	1	100,000	277	1,3
SEP	15-150	2,3	THED	15-50	1	100,000	277	1,3
SFL	70-250	2,3	TEY	15-100	1,2	100,000	277	1
SFP	70-250	2,3	TED,THED	15-50	1	100,000	277	1
SFP	70-250	2,3	TEY	15-100	1	100,000	277	1
SFP	70-250	2,3	TEYRC	15-30	1	100,000	277	1
SFP	70-250	2,3	TEYRC	15-30	2	100,000	277	1
Switch w/ class J or R fuse	100 Max	2, 3	TED	15-30	1	100,000	277	1
Switch w/ class J or T fuse	400 Max	—	TED	15-50	1	100,000	277	1
Switch w/ class J or T fuse	400 Max	—	THED	15-30	1	100,000	277	1
Switch w/ class J, R or T fuse	100 Max	—	TED	15-50	1	100,000	277	1
Switch w/ class J, R or T fuse	100 Max	—	THED	15-30	1	100,000	277	1
T FUSE	600	—	FBV	15-100	1,2,3	100,000	277	1,3
T FUSE	600	—	FCS, FCV, FCN	15-100	2,3	100,000	277	1
TB4	125-250	3	TED	15-50	1	100,000	277	1
TB4	125-250	3	THED	15-30	1	100,000	277	1
THLC4	225-400	3	TEY	15-100	1	100,000	277	1
THLC4	400	3	FBV	15-100	1,2,3	100,000	277	1,3
THLC4	400	3	FCS, FCV, FCN	15-100	2,3	100,000	277	1
THLC4	225-400	3	SED,SEH,SEL,	15-150	2,3	100,000	277	1
THLC4	225-400	3	TED	15-50	1	100,000	277	1
THLC4	225-400	3	THED	15-50	1	100,000	277	1

PANEL: HT 2

MLO	200 A			SURFACE	X				
MCB				RECESSED					
AMPACITY =	200			200% NTRL					
AIC =	14000			GRND BAR	X				
VOLTAGE =	480/277	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
2500	Lighting	1	20	1	A	2			Space	
2500	Lighting	1	20	3	B	4			Space	
	Space	1	20	5	C	6			Space	
	Space	1	20	7	A	8	70	3	Panel LT 2	23667
	Space	1	20	9	B	10				17000
	Space	1	20	11	C	12				17000

Load Type	Connected Load (VA)/(kVA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)/(kVA)
Lighting	5000	1.0	5000	1.25	6250/6.25
Power 1st 10 KVA	0	1.0	0	1.0	0
Power Remaining	0	0.5	0	1.0	0
Largest Motors		1.0	0	1.25	0
Remaining Motors		1.0	0	1.0	0
Other	97500	1.0	97500	1.0	97500/97.5
TOTAL VA			102,500		103,750/103.75
			102.5 kVA		103.75 kVA
Phase Totals	A= 16,727	B= 16,727	C= 13,967		D.D.LOAD (AMPS)= 288.58

PANEL: HT 4

MLO	200 A			SURFACE	X				
MCB				RECESSED					
AMPACITY =	200			200% NTRL					
AIC =	14000			GRND BAR	X				
VOLTAGE =	480/277	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
2760	Lighting	1	20	1	A	2			Space	
2760	Lighting	1	20	3	B	4			Space	
	Spare	1	20	5	C	6			Space	
	Spare	1	20	7	A	8	70	3	Panel LT 4	23667
	Spare	1	20	9	B	10				13667
	Spare	1	20	11	C	12				18000

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	22,080	1.0	22,080	1.25	27,600
Power 1st 10 KVA	0	1.0	0	1.0	0
Power Remaining	0	0.5	0	1.0	0
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	20,000	1.0	20,000	1.0	20,000
TOTAL VA			42,080		47,600
Phase Totals	A= 16,327	B= 16,327	C= 13,567		D.D.LOAD (AMPS)= 167.35

PANEL: LT

MLO				SURFACE	X				
MCB	150 A			RECESSED					
AMPACITY =	225			200% NTRL					
AIC =	10000			GRND BAR	X				
VOLTAGE =	208/120	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
2340	Lighting First floor	1	20	5	C	6	20	1	Spare	
1040	Lighting First floor	1	20	7	A	8	20	1	Spare	
1040	Lighting First floor	1	20	9	B	10	30	2	Spare	
	Space			11	C	12			Space	
5300	Panel LT-1 (2) 1ST	3	50	13	A	14	50	3	Panel LT-1 (1) 1ST	2650
5300				15	B	16				2650
5300				17	C	18				2650
	Space			19	A	20	50	3		
	Spare	2	30	21	B	22				
				23	C	24				

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	5460	1.0	13,300	1.25	16,625
Power 1st 10 KVA	10000	1.0	10,000	1.0	10000
Power Remaining	4660	0.5	3,250	1.0	3250
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA			26,550		29,875
Phase Totals	A= 11,290	B= 11,290	C= 9,790		D.D.LOAD (AMPS)= 124.48

PANEL: LT-1

MLO	100 A			SURFACE	X				
MCB				RECESSED					
AMPACITY =	100			200% NTRL					
AIC =	10000			GRND BAR	X				
VOLTAGE =	208/120	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
750	Power	1	20	5	C	6	20	1	Power	750
2300	Lighting	1	20	7	A	8			Space	
2300	Lighting	1	20	9	B	10			Space	
2300	Space		20	11	C	12			Space	
	Space			13	A	14			Space	
	Space			15	B	16			Space	
	Space			17	C	18			Space	
	Space			19	A	20			Space	
	Space			21	B	22			Space	
	Space			23	C	24			Space	

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	2300	1.0	2300	1.25	2875
Power 1st 10 KVA	2300	1.0	2300	1.0	2300
Power Remaining	0	0.5	0	1.0	0
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA			4,600		5,175
Phase Totals	A= 2,880	B= 2,880	C= 1,500		D.D.LOAD (AMPS)= 22.07

PANEL: LT 2

MLO				SURFACE	X				
MCB	150 A			RECESSED					
AMPACITY =	225			200% NTRL					
AIC =	10000			GRND BAR	X				
VOLTAGE =	208/120	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
	Spare	1	20	5	C	6	20	1	Spare	
5300	Panel LT-1 (2) 3RD	3	50	7	A	8	20	1	Spare	
5300				9	B	10	30	2	Spare	
5300				11	C	12				
2640	Lighting	1	20	13	A	14	50	3	Panel LT-1 (1) 3RD	2650
1040	Lighting	1	20	15	B	16				2650
1040	Lighting	1	20	17	C	18				2650
	Space			19	A	20	50	3	Panel LT-1 (2) 2ND	5300
	Spare	2	30	21	B	22				5300
				23	C	24				5300

Load Type	Connected Load (VA)/(kVA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	5460	1.0	15,300	1.25	19,125
Power 1st 10 KVA	10000	1.0	10,000	1.0	10000
Power Remaining	4200	0.5	7,750	1.0	7750
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA			33,050		36,875
Phase Totals	A= 16,590	B= 16,590	C= 15,000		D.D.LOAD (AMPS)= 286.30

PANEL: LT 4

MLO				SURFACE	X				
MCB	150 A			RECESSED					
AMPACITY =	225			200% NTRL					
AIC =	10000			GRND BAR	X				
VOLTAGE =	208/120	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
	Spare	1	20	5	C	6	20	1	Spare	
5300	PNL LT-1 (2) 5.PTH	3	50	7	A	8	20	1	Spare	
5300				9	B	10	30	2	Spare	
5300				11	C	12				
	Space			13	A	14	50	3	Panel LT-1 (2) 5TH	5300
	Space			15	B	16				5300
	Space			17	C	18				5300
	Space			19	A	20	50	3	Panel LT-1 (2) 4TH	5300
	Spare	2	30	21	B	22				5300
				23	C	24				5300

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	5460	1.0	15,960	1.25	20,000
Power 1st 10 KVA	10000	1.0	10,000	1.0	10000
Power Remaining	4200	0.5	10,000	1.0	10000
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA			35,960		40,700
Phase Totals	A= 17,400	B= 17,400	C= 15,900		D.D.LOAD (AMPS)= 312.97

PANEL: HT 1

MLO	200 A			SURFACE	X				
MCB				RECESSED					
AMPACITY =	200			200% NTRL					
AIC =	14000			GRND BAR	X				
VOLTAGE =	480/277	3PH	4W						

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
2500	Lighting	1	20	1	A	2			Space	
2500	Lighting	1	20	3	B	4			Space	
	Spare	1	20	5	C	6			Space	
	Spare	1	20	7	A	8	70	3	Panel LT	23667
	Spare	1	20	9	B	10				23667
	Spare	1	20	11	C	12				23667

Load Type	Connected Load (VA)/(kVA)	Demand Factor	Demand Load (VA)/(kVA)	Code Factor	Derated Demand Load (VA)/(kVA)
Lighting	5000	1.0	5000	1.25	6250/6.25
Power 1st 10 KVA	0	1.0	0	1.0	0
Power Remaining	0	0.5	0	1.0	0
Largest Motors		1.0	0	1.25	0
Remaining Motors		1.0	0	1.0	0
Other	92500	1.0	92500	1.0	92500/92.5
TOTAL VA			97,500		98,750/98.75
			97.5 kVA		98.75 kVA
Phase Totals	A= 12,927	B= 12,927	C= 10,167		D.D.LOAD (AMPS)= 171.59

LOAD STUDY

Item	TOTAL VA
ELEV # 3 OR # 4 (40HP)	43,160
SKIP	75,000 (2) 35HP, 33KW
HT-1	97,500
HT-2	103,750
HT-4	47,600
25% of largest motor	10,790
Total VA	276,800 VA
Total Amps @ 480V, 3PH	333 Amps

POINT A

Point to Point Method — Three Phase 480/277

$I_{sc} = \frac{1.732 \times L \times I}{N \times C \times E_{L\text{-}N}}$

Length (distance) (ASCH): L = 250 — Aluminum in Nonmetallic Raceway
conductors per phase: N = 2
Phase conductor constant: C = 26400 — Phase Conductor 250 kcmil
Volt Line to Line: $E_{L\text{-}L}$ = 480 Volt
f = 2.888
Neutral conductor constant: C = 26400 — Neutral Conductor 250 kcmil
Volt Line to Neutral: $E_{L\text{-}N}$ = 277 Volt
f = 4.999
Multiplier = 2.888
I_{sc} = 60,200A

POINT B

Point to Point Method — Three Phase 480/277

$I_{sc} = \frac{1.732 \times L \times I}{N \times C \times E_{L\text{-}N}}$

Length (distance) (ASCH): L = 75 — Aluminum in Nonmetallic Raceway
conductors per phase: N = 1
Phase conductor constant: C = 8240 — Phase Conductor 6
Volt Line to Line: $E_{L\text{-}L}$ = 480 Volt
f = 8.660
Neutral conductor constant: C = 8240 — Neutral Conductor 6
Volt Line to Neutral: $E_{L\text{-}N}$ = 277 Volt
f = 15.011
Multiplier = 8.660
I_{sc} = 4,268A

POINT C

Point to Point Method — Three Phase 480/277

$I_{sc} = \frac{1.732 \times L \times I}{N \times C \times E_{L\text{-}N}}$

Length (distance) (ASCH): L = 35 — Copper in Nonmetallic Raceway
conductors per phase: N = 1
Phase conductor constant: C = 13300 — Phase Conductor 3/0
Volt Line to Line: $E_{L\text{-}L}$ = 480 Volt
f = 17.321
Neutral conductor constant: C = 13300 — Neutral Conductor 3/0
Volt Line to Neutral: $E_{L\text{-}N}$ = 277 Volt
f = 30.022
Multiplier = 17.321
I_{sc} = 9,462A

POINT D

Point to Point Method — Three Phase 480/277

$I_{sc} = \frac{1.732 \times L \times I}{N \times C \times E_{L\text{-}N}}$

Length (distance) (ASCH): L = 55 — Copper in Nonmetallic Raceway
conductors per phase: N = 1
Phase conductor constant: C = 13300 — Phase Conductor 3/0
Volt Line to Line: $E_{L\text{-}L}$ = 480 Volt
f = 17.321
Neutral conductor constant: C = 13300 — Neutral Conductor 3/0
Volt Line to Neutral: $E_{L\text{-}N}$ = 277 Volt
f = 30.022
Multiplier = 17.321
I_{sc} = 7,663A

POINT E

Point to Point Method — Three Phase 480/277

$I_{sc} = \frac{1.732 \times L \times I}{N \times C \times E_{L\text{-}N}}$

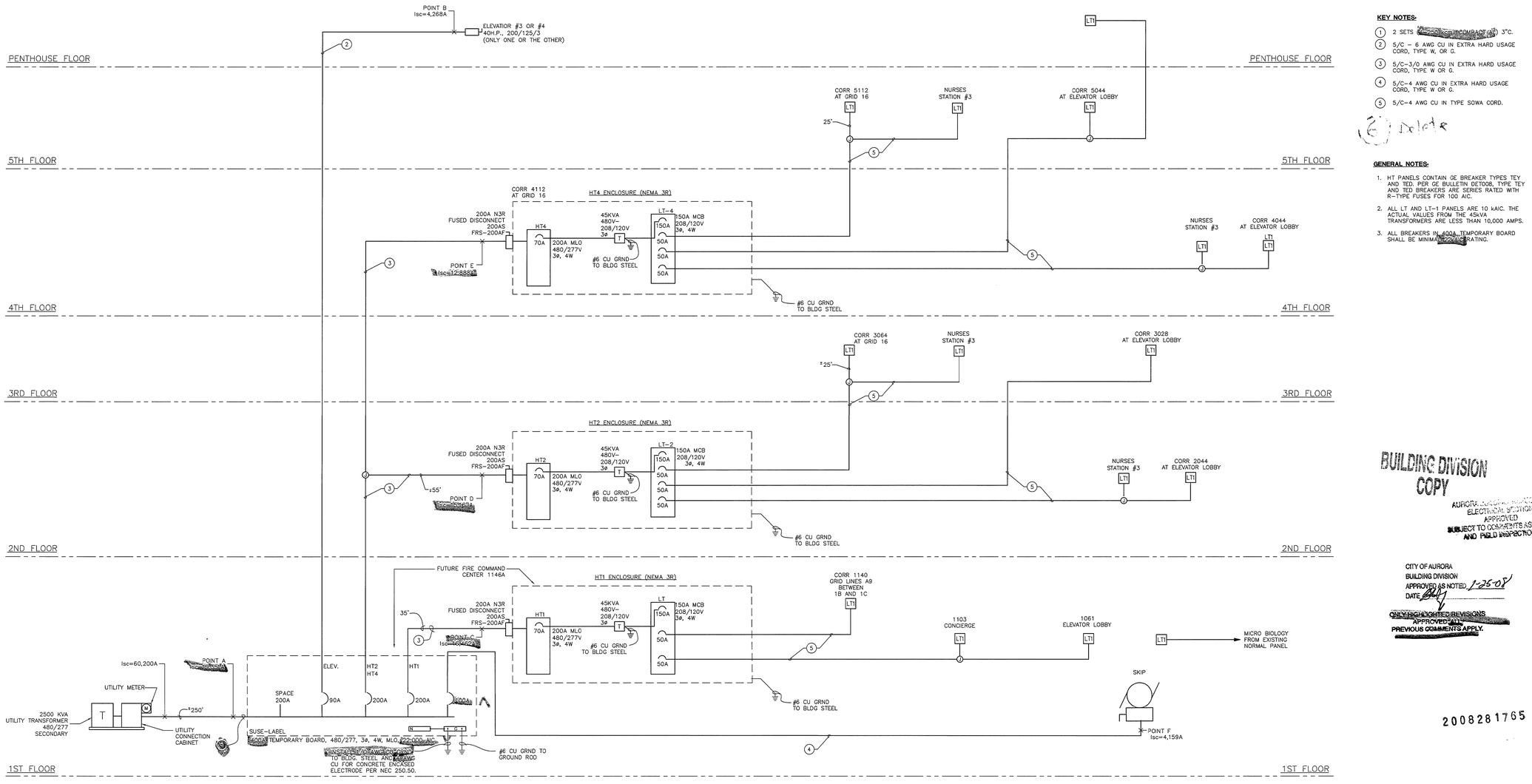
Length (distance) (ASCH): L = 105 — Copper in Nonmetallic Raceway
conductors per phase: N = 1
Phase conductor constant: C = 13300 — Phase Conductor 3/0
Volt Line to Line: $E_{L\text{-}L}$ = 480 Volt
f = 17.321
Neutral conductor constant: C = 13300 — Neutral Conductor 3/0
Volt Line to Neutral: $E_{L\text{-}N}$ = 277 Volt
f = 30.022
Multiplier = 17.321
I_{sc} = 12,888A

POINT F

Point to Point Method — Three Phase 480/277

$I_{sc} = \frac{1.732 \times L \times I}{N \times C \times E_{L\text{-}N}}$

Length (distance) (ASCH): L = 205 — Copper in Nonmetallic Raceway
conductors per phase: N = 1
Phase conductor constant: C = 26400 — Phase Conductor 4
Volt Line to Line: $E_{L\text{-}L}$ = 480 Volt
f = 34.641
Neutral conductor constant: C = 26400 — Neutral Conductor 4
Volt Line to Neutral: $E_{L\text{-}N}$ = 277 Volt
f = 60.044
Multiplier = 34.641
I_{sc} = 4,159A



MEDICAL CENTER OF AURORA TEMPORARY ONE-LINE DIAGRAM

KEY NOTES:

1. 2 SETS #2 CU COMPACT (4) 3"C.
2. 5/C – 6 AWG CU IN EXTRA HARD USAGE CORD, TYPE W, OR G.
3. 5/C–3/0 AWG CU IN EXTRA HARD USAGE CORD, TYPE W OR G.
4. 5/C–4 AWG CU IN EXTRA HARD USAGE CORD, TYPE W OR G.
5. 5/C–4 AWG CU IN TYPE SOWA CORD.

Delete

GENERAL NOTES:

1. HT PANELS CONTAIN GE BREAKER TYPES TEY AND TED. PER GE BULLETIN GET008, TYPE TEY AND TED BREAKERS ARE SERIES RATED WITH R-TYPE FUSES FOR 100 AIC.
2. ALL LT AND LT-1 PANELS ARE 10 kAIC. THE ACTUAL VALUES FROM THE 45kVA TRANSFORMERS ARE LESS THAN 10,000 AMPS.
3. ALL BREAKERS IN 400A TEMPORARY BOARD SHALL BE MINIMA 22kAIC RATING.

BUILDING DIVISION COPY

AURORA BUILDING INSPECTION ELECTRICAL SECTION APPROVED SUBJECT TO COMMENTS AS NOTED AND FIELD INSPECTIONS

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED 1-25-08
DATE
ONLY HIGHLIGHTED REVISIONS APPROVED. ALL PREVIOUS COMMENTS APPLY.

2008281765

MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC
AURORA, CO 80309
CONSTRUCTION TEMPORARY SERVICE

LUDVIK ELECTRIC
3900 SOUTH TELLER
LAKEWOOD, COLORADO 80235
(303) 781-9601

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REVIEW	04-05-07
PERMIT	05-24-07
FOR PERMIT	08-15-07
FOR PERMIT	01-14-08

DFT.	CJM	DATE 4-5-07
DSGN.	AL	SCALE
CK.	TD	CAD FILE

COLORADO JERED TIMOTHY DAMON PARKER 33383 REGISTERED PROFESSIONAL ENGINEER 1-14-08

PROJECT
MEDICAL CENTER OF AURORA
AURORA COLORADO
400A TEMPORARY POWER

DRAWING TITLE
TEMPORARY ONE-LINE DIAGRAM

PROJECT NUMBER
6310

SHEET NUMBER
TMPPWR-001

PANEL: HT 2

MLO 200 A | SURFACE X | MCB | RECESSED | AMPACITY = 200 | 200% NTRL | AIC = 14000 | GRND BAR X | VOLTAGE = 480/277 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
3680	Lighting 2ND FL	1	20	1	A	2	20	3	Motor for Temporary Heaters (two total)	3875
3680	Lighting 2ND FL	1	20	3	B	4				3875
3680	Lighting 2ND FL	1	20	5	C	6				3875
3680	Lighting 3RD FL	1	20	7	A	8	70	3	Panel LT2	5920
3680	Lighting 3RD FL	1	20	9	B	10				5920
3680	Lighting 3RD FL	1	20	11	C	12				5920

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	22,080	1.0	22,080	1.25	27,600
Power 1st 10 KVA	0	1.0	0	1.0	0
Power Remaining	0	0.5	0	1.0	0
Largest Motors	5,813	1.0	5,813	1.25	7,266
Remaining Motors	5,813	1.0	5,813	1.0	5,813
Other	17,760	1.0	17,760	1.0	17,760
TOTAL VA					58,439

Phase Totals A= 17,155 B= 17,155 C= 17,155 — D D LOAD (AMPS)= 70.29

PANEL: HT 1

MLO 200 A | SURFACE X | MCB | RECESSED | AMPACITY = 200 | 200% NTRL | AIC = 14000 | GRND BAR X | VOLTAGE = 480/277 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
3680	Lighting 1ST	1	20	1	A	2	20	3	Motor for Temporary Heaters (two total)	3875
3680	Lighting 1ST	1	20	3	B	4				3875
3680	Lighting 1ST	1	20	5	C	6				3875
3680	Lighting 1ST	1	20	7	A	8	70	3	Panel LT1	6670
3680	Lighting 1ST	1	20	9	B	10				6670
	Spare	1	20	11	C	12				6670

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	18,400	1.0	18,400	1.25	23,000
Power 1st 10 KVA	0	1.0	0	1.0	0
Power Remaining	0	0.5	0	1.0	0
Largest Motors	5,813	1.0	5,813	1.25	7,266
Remaining Motors	5,813	1.0	5,813	1.0	5,813
Other	13,260	1.0	13,260	1.0	13,260
TOTAL VA					49,338

Phase Totals A= 15,655 B= 15,655 C= 11,975 — D D LOAD (AMPS)= 59.34

PANEL: HT 4

MLO 200 A | SURFACE X | MCB | RECESSED | AMPACITY = 200 | 200% NTRL | AIC = 14000 | GRND BAR X | VOLTAGE = 480/277 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
3680	Lighting 4TH FL	1	20	1	A	2	20	3	Motor for Temporary Heaters (two total)	3875
3680	Lighting 4TH FL	1	20	3	B	4				3875
3680	Lighting 5TH FL	1	20	5	C	6				3875
3680	Lighting 5TH FL	1	20	7	A	8	70	3	Panel LT 4	6670
3680	Lighting PNTHS	1	20	9	B	10				6670
	Spare	1	20	11	C	12				6670

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	18,400	1.0	18,400	1.25	23,000
Power 1st 10 KVA	0	1.0	0	1.0	0
Power Remaining	0	0.5	0	1.0	0
Largest Motors	5,813	1.0	5,813	1.25	7,266
Remaining Motors	5,813	1.0	5,813	1.0	5,813
Other	20,010	1.0	20,010	1.0	20,010
TOTAL VA					56,088

Phase Totals A= 17,905 B= 17,905 C= 14,225 — D D LOAD (AMPS)= 67.40

PANEL: LT

MLO | SURFACE X | MCB 150 A | RECESSED | AMPACITY = 225 | 200% NTRL | AIC = 10000 | GRND BAR X | VOLTAGE = 208/120 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
	Space	1	20	5	C	6	20	1	Spare	
	Space	1	20	7	A	8	20	1	Spare	
	Space			9	B	10	30	2	Spare	
	Space			11	C	12				
3000	Panel LT-1 (2) 1ST	3	50	13	A	14	50	3	Panel LT-1 (1) 1ST	1500
3000				15	B	16				1500
3000				17	C	18				1500
	Space			19	A	20	50	3		
	Spare	2	30	21	B	22				
				23	C	24				

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	0	1.0	0	1.25	0
Power 1st 10 KVA	10,000	1.0	10,000	1.0	10,000
Power Remaining	6,500	0.5	3,250	1.0	3,250
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA					13,250

Phase Totals A= 6,000 B= 6,000 C= 4,500 — D D LOAD (AMPS)= 36.78

PANEL: LT-1

MLO: 100 A | SURFACE X | MCB | RECESSED | AMPACITY = 100 | 200% NTRL | AIC = 10000 | GRND BAR X | VOLTAGE = 208/120 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
750	Power	1	20	5	C	6	20	1	Power	750
	Space			7	A	8			Space	
	Space			9	B	10			Space	
	Space			11	C	12			Space	
	Space			13	A	14			Space	
	Space			15	B	16			Space	
	Space			17	C	18			Space	
	Space			19	A	20			Space	
	Space			21	B	22			Space	
	Space			23	C	24			Space	

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	0	1.0	0	1.25	0
Power 1st 10 KVA	4,500	1.0	4,500	1.0	4,500
Power Remaining	0	0.5	0	1.0	0
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA					4,500

Phase Totals A= 1,500 B= 1,500 C= 1,500 — D D LOAD (AMPS)= 12.49

PANEL: LT 2

MLO | SURFACE X | MCB 150 A | RECESSED | AMPACITY = 225 | 200% NTRL | AIC = 10000 | GRND BAR X | VOLTAGE = 208/120 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
	Spare	1	20	5	C	6	20	1	Spare	
3000	Panel LT-1 (2) 3RD	3	50	7	A	8	20	1	Spare	
3000				9	B	10	30	2	Spare	
3000				11	C	12				
	Space			13	A	14	50	3	Panel LT-1 (1) 3RD	1500
	Space			15	B	16				1500
	Space			17	C	18				1500
	Space			19	A	20	50	3	Panel LT-1 (2) 2ND	2000
	Spare	2	30	21	B	22				2000
				23	C	24				2000

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	0	1.0	0	1.25	0
Power 1st 10 KVA	10,000	1.0	10,000	1.0	10,000
Power Remaining	15,500	0.5	7,750	1.0	7,750
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA					17,750

Phase Totals A= 9,000 B= 9,000 C= 7,500 — D D LOAD (AMPS)= 49.27

PANEL: LT 4

MLO | SURFACE X | MCB 150 A | RECESSED | AMPACITY = 225 | 200% NTRL | AIC = 10000 | GRND BAR X | VOLTAGE = 208/120 3PH 4W

VA	DESCRIPTION	P	CB	CKT	PH	CKT	CB	P	DESCRIPTION	VA
750	Power	1	20	1	A	2	20	1	Power	750
750	Power	1	20	3	B	4	20	1	Power	750
	Spare	1	20	5	C	6	20	1	Spare	
3000	PNL LT-1 (2) 5 PTH	3	50	7	A	8	20	1	Spare	
3000				9	B	10	20	2	Spare	
3000				11	C	12				
	Space			13	A	14	50	3	Panel LT-1 (2) 5TH	3000
	Space			15	B	16				3000
	Space			17	C	18				3000
	Space			19	A	20	50	3	Panel LT-1 (2) 4TH	3000
	Spare	2	30	21	B	22				3000
				23	C	24				3000

Load Type	Connected Load (VA)	Demand Factor	Demand Load (VA)	Code Factor	Derated Demand Load (VA)
Lighting	0	1.0	0	1.25	0
Power 1st 10 KVA	10,000	1.0	10,000	1.0	10,000
Power Remaining	20,000	0.5	10,000	1.0	10,000
Largest Motors	0	1.0	0	1.25	0
Remaining Motors	0	1.0	0	1.0	0
Other	0	1.0	0	1.0	0
TOTAL VA					20,000

Phase Totals A= 10,500 B= 10,500 C= 9,000 — D D LOAD (AMPS)= 55.51

LOAD STUDY

Item	QTY	METAL HALIDE WATTS	VA EACH	TOTAL VA
ELEV # 3 OR # 4 (40HP)				43,160
SKIP				75,000 (2) 35HP, 33KW
HT-1				49,338
HT-2				58,438
HT-4				56,088
25% of largest motor				10,790
Total VA				292,814 VA
Total Amps @ 480V, 3PH				353 Amps

POINT A

Point to Point Method — Three Phase 480/277 — Aluminum in Nonmetallic Raceway

T° factor = 1.732 x L x I / N x C x E L-N (ASD)

Length (distance) L = 255 — Isc = 26,527A
conductors per phase N = 2
Phase conductor constant C = 21,285 — Phase Conductor 500 kcmil
Volt Line to Line E L-L = 480 Volt — f = 0.288
Neutral conductor constant C = 21,285 — Neutral Conductor 500 kcmil
Volt Line to Neutral E L-N = 277 Volt — f = 0.549

Multiplier

Isc = 26,527A

POINT B

Point to Point Method — Three Phase 480/277 — Aluminum in Nonmetallic Raceway

T° factor = 1.732 x L x I / N x C x E L-N (ASD)

Length (distance) L = 75 — Isc = 4,538A
conductors per phase N = 1
Phase conductor constant C = 12,482 — Phase Conductor 6
Volt Line to Line E L-L = 480 Volt — f = 0.768
Neutral conductor constant C = 12,482 — Neutral Conductor 6
Volt Line to Neutral E L-N = 277 Volt — f = 0.894

Multiplier

Isc = 4,538A

POINT C

Point to Point Method — Three Phase 480/277 — Copper in Nonmetallic Raceway

T° factor = 1.732 x L x I / N x C x E L-N (ASD)

Length (distance) L = 30 — Isc = 21,382A
conductors per phase N = 1
Phase conductor constant C = 13,900 — Phase Conductor 3/0
Volt Line to Line E L-L = 480 Volt — f = 0.659
Neutral conductor constant C = 13,900 — Neutral Conductor 3/0
Volt Line to Neutral E L-N = 277 Volt — f = 0.881

Multiplier

Isc = 21,382A

POINT D

Point to Point Method — Three Phase 480/277 — Copper in Nonmetallic Raceway

T° factor = 1.732 x L x I / N x C x E L-N (ASD)

Length (distance) L = 60 — Isc = 19,249A
conductors per phase N = 1
Phase conductor constant C = 13,900 — Phase Conductor 3/0
Volt Line to Line E L-L = 480 Volt — f = 0.659
Neutral conductor constant C = 13,900 — Neutral Conductor 3/0
Volt Line to Neutral E L-N = 277 Volt — f = 0.881

Multiplier

Isc = 19,249A

POINT E

Point to Point Method — Three Phase 480/277 — Copper in Nonmetallic Raceway

T° factor = 1.732 x L x I / N x C x E L-N (ASD)

Length (distance) L = 100 — Isc = 15,720A
conductors per phase N = 1
Phase conductor constant C = 13,900 — Phase Conductor 3/0
Volt Line to Line E L-L = 480 Volt — f = 0.659
Neutral conductor constant C = 13,900 — Neutral Conductor 3/0
Volt Line to Neutral E L-N = 277 Volt — f = 0.878

Multiplier

Isc = 15,720A

POINT F

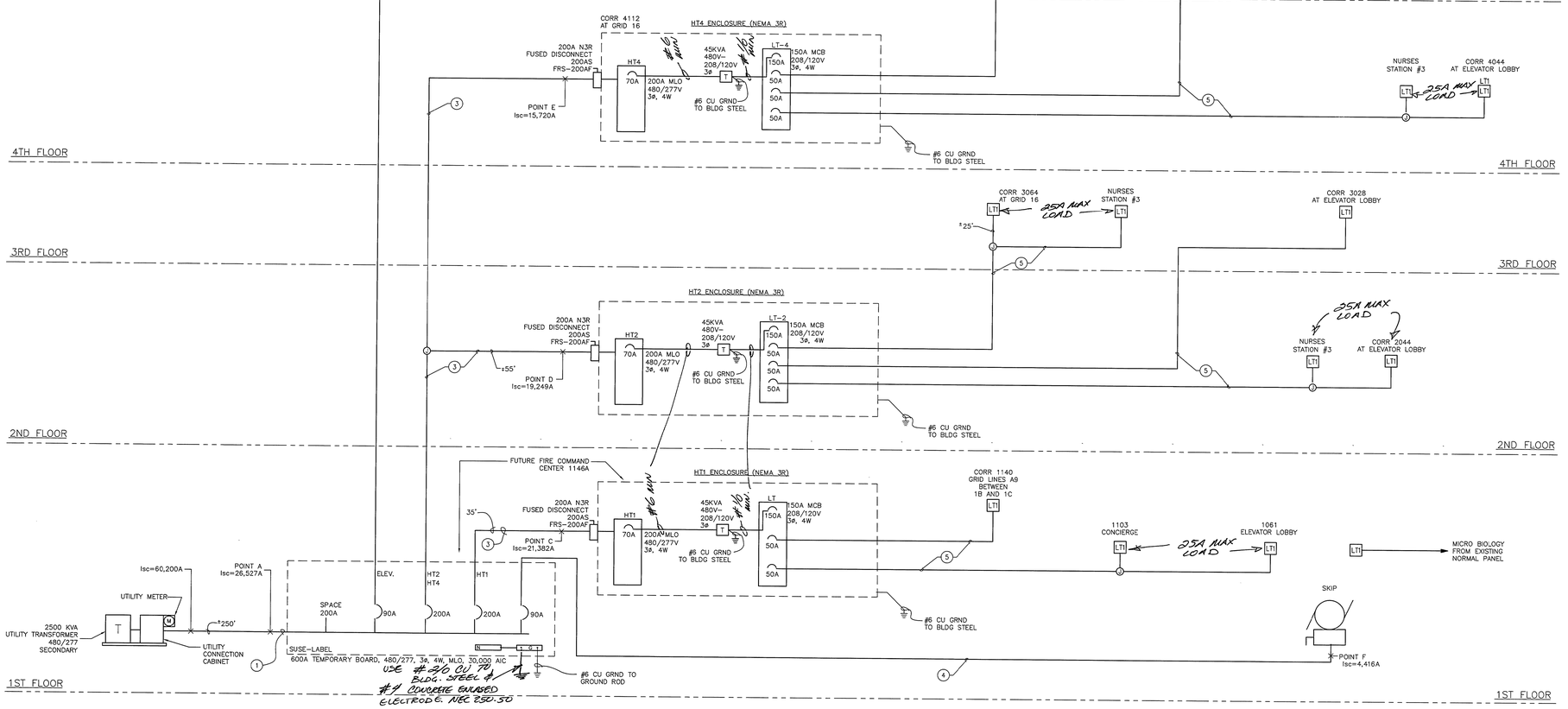
Point to Point Method — Three Phase 480/277 — Copper in Nonmetallic Raceway

T° factor = 1.732 x L x I / N x C x E L-N (ASD)

Length (distance) L = 205 — Isc = 4,416A
conductors per phase N = 1
Phase conductor constant C = 3,900 — Phase Conductor 4
Volt Line to Line E L-L = 480 Volt — f = 0.005
Neutral conductor constant C = 3,900 — Neutral Conductor 4
Volt Line to Neutral E L-N = 277 Volt — f = 0.010

Multiplier

Isc = 4,416A



MEDICAL CENTER OF AURORA TEMPORARY ONE-LINE DIAGRAM

KEY NOTES:

1. 2 SETS (4-500 kcmil COMPACT AL) 3"C.
2. 5/C – 6 AWG CU IN EXTRA HARD USAGE CORD, TYPE W, OR G.
3. 5/C-3/0 AWG CU IN EXTRA HARD USAGE CORD, TYPE SO, W, OR G.
4. 5/C-4 AWG CU IN EXTRA HARD USAGE CORD, TYPE SO, W, OR G.
5. SOWA CORD 5-4 AWG.
6. 3 SETS (4-400 kcmil COMPACT AL, 1-250 kcmil COMPACT AL) 3"C.

GENERAL NOTES:

1. HT PANELS CONTAIN GE BREAKER TYPES TEY AND TED. PER GE BULLETIN DET008, TYPE TEY AND TED BREAKERS ARE SERIES RATED WITH R-TYPE FUSES FOR 100 AIC.
2. ALL LT AND LT-1 PANELS ARE 10 kAIC. THE ACTUAL VALUES FROM THE 45kVA TRANSFORMERS ARE LESS THAN 10,000 AMPS.
3. ALL BREAKERS IN 600A TEMPORARY BOARD SHALL BE MINIMAL 30kAIC RATING.

1-14-08

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED AUG 16 2007

07-192368

City of Aurora Plan Review
Project: Medical Center of Aurora
Contractor: Hoyt's Elec.
Address: 1501 S Potomac
RSN: 290189
Permit Number: 07-192368
Date: APPROVED AUG 16 2007

MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC
AURORA, CO 80309
CONSTRUCTION TEMPORARY SERVICE

3900 SOUTH TELLER
LAKEWOOD, COLORADO 80235
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FOR PERMIT	08-15-07

DFT.	CJM	DATE 4-5-07
DSGN.	AL	SCALE
CK.	YD	CAD FILE

COLORADO REGISTERED PROFESSIONAL ENGINEER — 33383 — 8-15-07

PROJECT
MEDICAL CENTER OF AURORA
AURORA COLORADO
TEMPORARY POWER

DRAWING TITLE
TEMPORARY ONE-LINE DIAGRAM

PROJECT NUMBER
6310

SHEET NUMBER
TMPPWR-001