

As Constructed West/East EJMT 480 KV Switchgear

Oversight / NHS	
FHWA REGION VIII OVERSIGHT?	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES
NATIONAL HIGHWAY SYSTEM?	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES

DEPARTMENT OF TRANSPORTATION STATE OF COLORADO

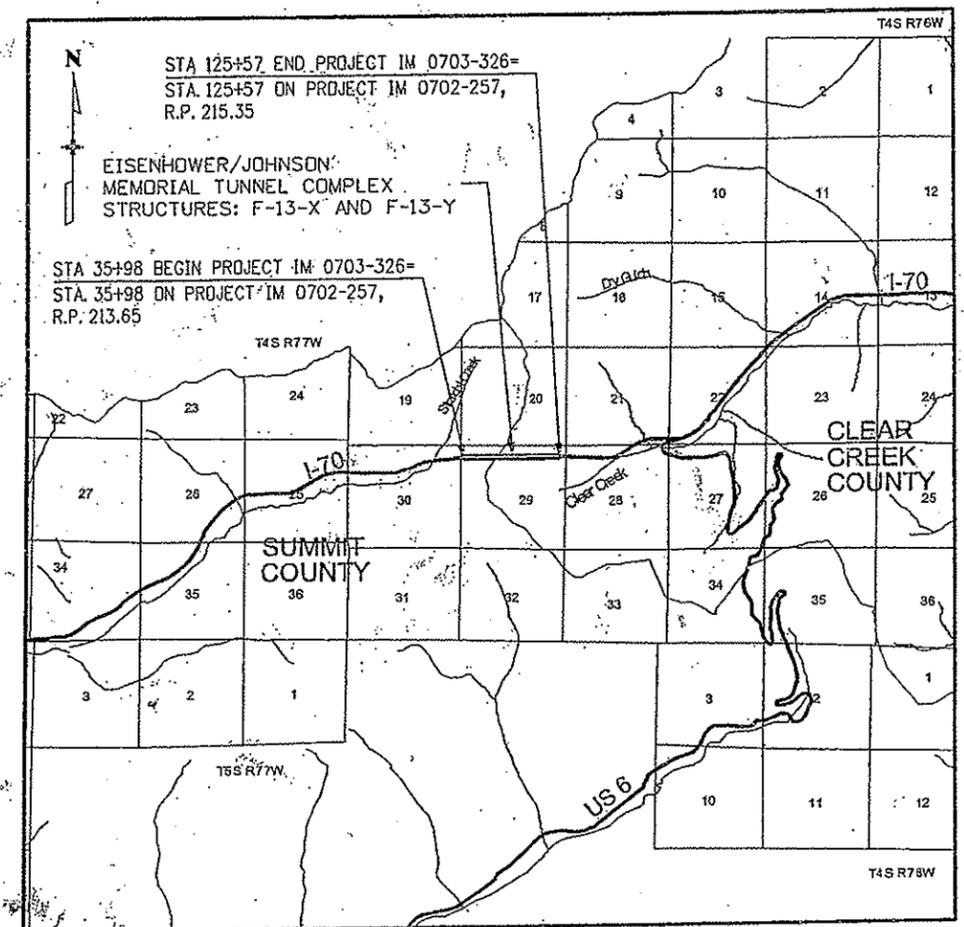
Related Projects: P. E. UNDER PROJECT: Project Number Project Code:
R.O.W. Projects: R.O.W. Project Description

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED FEDERAL AID PROJECT NO. IM 0703-326 INTERSTATE HIGHWAY NO. 70 CLEAR CREEK AND SUMMIT COUNTIES CONSTRUCTION PROJECT CODE NO. 16096

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31	POWER CONTROL BOARD LAYOUT AND DETAILS
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33	WEST MAINTENANCE BUILDING ROOM LAYOUT PLANS
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41	WEST LIGHTING CONTROL SYSTEM RELOCATION PLAN

TABULATION OF LENGTH & DESIGN DATA

STATION	FEET	
	ROADWAY	MAJOR STR.
BEGIN PROJECT IM 0703-326 = STA. 35+98 ON PROJECT IM 0702-257, R.P. 213.65 STA. 35+98 BEGIN STRUCTURE NO. F-13-X AND F-13-Y STA. 125+57 END STRUCTURE NO. F-13-X AND F-13-Y END PROJECT IM 0703-326 = STA. 125+57 ON PROJECT IM 0702-257, R.P. 215.35	0	8,959
TOTAL	0	8,959
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY (NET LENGTH)	0	0
MAJOR STRUCTURE	8,959	1.70
PROJECT GROSS LENGTH	8,959	1.70
DESIGN DATA	1.70	
MAXIMUM RADIUS OF CURVE	NA	
MAXIMUM GRADE	NA	
MINIMUM S.S.D. HORIZONTAL	NA	
MINIMUM S.S.D. VERTICAL	NA	
MAXIMUM DESIGN SPEED	NA	
2012 DESIGN TRAFFIC	NA	
DHV TRUCKS %	NA	
CLEAR ZONE DISTANCE (TANGENT)	NA	
CLEAR ZONE DISTANCE (370 M RADIUS)	NA	
CONSTRUCTION CLEAR ZONE (MIN 18')	NA	



PROJECT LOCATION MAP
0' 5,000' 10,000' 20,000'

NEW AND REVISED STANDARDS

Print Date: 11/15/2007	Sheet Revisions			Colorado Department of Transportation		As Constructed		Contract Information		Project No./Code	
File Name: 16096TITLESheet.dgn	Date:	Comments:	Init.	Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ		No Revisions:	Contractor:		IM 0703-326		
Horiz. Scale: 1:10000 Vert. Scale: As Noted	11/16/07	Rev-1 Sheets List	JBG			11/23/09	Resident Engineer: INESSA ZISMAN, P.E.		Project Engineer:		
Unit Information Unit Leader Initials							PROJECT STARTED: 3/31/08 ACCEPTED: 11/16/09		16096		
1660 Lincoln Street, Suite 2100 Denver, CO 80264 Phone: 303-390-5840 FAX: 303-832-9096						Void:	Comments:		Sheet Number 1		

PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> M-100-1	<input type="checkbox"/>	STANDARD SYMBOLS (3 SHEETS)	1-3	<input type="checkbox"/> M-607-1	<input type="checkbox"/>	WIRE FENCES AND GATES (3 SHEETS)	84-85	<input type="checkbox"/> S-612-1	<input type="checkbox"/>	DELINEATOR INSTALLATIONS (5 SHEETS)	131-135
<input type="checkbox"/> M-203-1	<input type="checkbox"/>	APPROACH ROADS	4	<input type="checkbox"/> M-607-2	<input type="checkbox"/>	CHAIN LINK FENCE (3 SHEETS)	87-89	<input type="checkbox"/> S-614-1	<input type="checkbox"/>	GROUND SIGN PLACEMENT (2 SHEETS)	136-137
<input type="checkbox"/> M-203-2	<input type="checkbox"/>	DITCH TYPES	5	<input type="checkbox"/> M-607-3	<input type="checkbox"/>	BARRIER FENCE	90	<input type="checkbox"/> S-614-2	<input type="checkbox"/>	CLASS I SIGN	138
<input type="checkbox"/> M-203-11	<input type="checkbox"/>	SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	6-8	<input type="checkbox"/> M-607-4	<input type="checkbox"/>	DEER FENCE AND GATES (2 SHEETS)	91-92	<input type="checkbox"/> S-614-3	<input type="checkbox"/>	CLASS II SIGN	139
<input type="checkbox"/> M-203-12	<input type="checkbox"/>	SUPERELEVATION STREETS (2 SHEETS)	9-10	<input type="checkbox"/> M-607-10	<input type="checkbox"/>	PICKET SNOW FENCE	93	<input type="checkbox"/> S-614-4	<input type="checkbox"/>	CLASS III SIGNS (3 SHEETS)	140-142
<input type="checkbox"/> M-206-1	<input type="checkbox"/>	EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	11-12	<input type="checkbox"/> M-607-15	<input type="checkbox"/>	ROAD CLOSURE GATE (9 SHEETS)	94-102	<input type="checkbox"/> S-614-5	<input type="checkbox"/>	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	143-144
<input type="checkbox"/> M-206-2	<input type="checkbox"/>	EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	13-14	<input type="checkbox"/> M-608-1	<input type="checkbox"/>	CURB RAMPS (4 SHEETS)	103-106	<input type="checkbox"/> S-614-6	<input type="checkbox"/>	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS)	145-146
<input type="checkbox"/> M-208-1	<input type="checkbox"/>	TEMPORARY EROSION CONTROL (7 SHEETS)	15-21	<input type="checkbox"/> M-609-1	<input type="checkbox"/>	CURBS, GUTTERS, AND SIDEWALKS (3 SHEETS)	107-109	<input type="checkbox"/> S-614-8	<input type="checkbox"/>	TUBULAR STEEL SIGN SUPPORT DETAILS (5 SHEETS)	147-151
<input type="checkbox"/> M-210-1	<input type="checkbox"/>	MAILBOX SUPPORTS (2 SHEETS)	22-23	<input type="checkbox"/> M-611-1	<input type="checkbox"/>	CATTLE GUARD (2 SHEETS)	110-111	<input type="checkbox"/> S-614-10	<input type="checkbox"/>	MARKER ASSEMBLY INSTALLATIONS	152
<input type="checkbox"/> M-214-1	<input type="checkbox"/>	PLANTING DETAILS	24	<input type="checkbox"/> M-613-1	<input type="checkbox"/>	ROADWAY LIGHTING (4 SHEETS)	112-115	<input type="checkbox"/> S-614-12	<input type="checkbox"/>	STRUCTURE NUMBER INSTALLATION	153
<input type="checkbox"/> M-412-1	<input type="checkbox"/>	CONCRETE PAVEMENT JOINTS (5 SHEETS)	25-29	<input type="checkbox"/> M-614-1	<input type="checkbox"/>	RUMBLE STRIPS (3 SHEETS)	116-118	<input type="checkbox"/> S-614-14	<input type="checkbox"/>	FLASHING BEACON AND SIGN INSTALLATION (3 SHEETS)	154-156
<input type="checkbox"/> M-510-1	<input type="checkbox"/>	STRUCTURAL PLATE PIPE H-20 LOADING	30	<input type="checkbox"/> M-614-2	<input type="checkbox"/>	SAND BARREL ARRAYS (2 SHEETS)	119-120	<input type="checkbox"/> S-614-20	<input type="checkbox"/>	TYPICAL POLE MOUNT SIGN INSTALLATIONS	157
<input type="checkbox"/> M-601-1	<input type="checkbox"/>	SINGLE CONCRETE BOX CULVERT (2 SHEETS)	31-32	<input type="checkbox"/> M-615-1	<input type="checkbox"/>	EMBANKMENT PROTECTOR, TYPE 3	121	<input type="checkbox"/> S-614-21	<input type="checkbox"/>	CONCRETE BARRIER SIGN POST INSTALLATIONS	158
<input type="checkbox"/> M-601-2	<input type="checkbox"/>	DOUBLE CONCRETE BOX CULVERT (2 SHEETS)	33-34	<input type="checkbox"/> M-615-2	<input type="checkbox"/>	EMBANKMENT PROTECTOR, TYPE 5	122	<input type="checkbox"/> S-614-22	<input type="checkbox"/>	TYPICAL MULTI-SIGN INSTALLATIONS	159
<input type="checkbox"/> M-601-3	<input type="checkbox"/>	TRIPLE CONCRETE BOX CULVERT (2 SHEETS)	35-36	<input type="checkbox"/> M-616-1	<input type="checkbox"/>	INVERTED SIPHON	123	<input type="checkbox"/> S-614-40	<input type="checkbox"/>	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (7 SHEETS)	160-166
<input type="checkbox"/> M-601-10	<input type="checkbox"/>	HEADWALL FOR PIPES	37	<input type="checkbox"/> M-620-1	<input type="checkbox"/>	FIELD LABORATORY, CLASS 1	124	<input type="checkbox"/> S-614-40A	<input type="checkbox"/>	ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS (5 SHEETS)	167-171
<input type="checkbox"/> M-601-11	<input type="checkbox"/>	TYPE "S" SADDLE HEADWALLS FOR PIPE	38	<input type="checkbox"/> M-620-2	<input type="checkbox"/>	FIELD LABORATORY, CLASS 2	125	<input type="checkbox"/> S-614-50	<input type="checkbox"/>	MONOTUBE OVERHEAD SIGNS (14 SHEETS)	172-185
<input type="checkbox"/> M-601-12	<input type="checkbox"/>	HEADWALLS AND PIPE OUTLET PAVING	39	<input type="checkbox"/> M-620-11	<input type="checkbox"/>	FIELD OFFICE, CLASS 1	126	<input type="checkbox"/> S-627-1	<input type="checkbox"/>	PAVEMENT MARKINGS (5 SHEETS)	186-190
<input type="checkbox"/> M-601-20	<input type="checkbox"/>	WINGWALLS FOR PIPE OR BOX CULVERTS	40	<input type="checkbox"/> M-620-12	<input type="checkbox"/>	FIELD OFFICE, CLASS 2	127	<input type="checkbox"/> S-630-1	<input type="checkbox"/>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (12 SHEETS)	191-202
<input type="checkbox"/> M-603-1	<input type="checkbox"/>	METAL AND PLASTIC PIPE (2 SHEETS)	41-42	<input type="checkbox"/> M-629-1	<input type="checkbox"/>	SURVEY MONUMENTS (2 SHEETS)	128-129	<input type="checkbox"/> S-630-2	<input type="checkbox"/>	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) AND VERTICAL PANELS	203
<input type="checkbox"/> M-603-2	<input type="checkbox"/>	REINFORCED CONCRETE PIPE	43					<input type="checkbox"/> S-630-3	<input type="checkbox"/>	FLASHING BEACON (PORTABLE) DETAILS	204
<input type="checkbox"/> M-603-3	<input type="checkbox"/>	PRECAST CONCRETE BOX CULVERT	44								
<input type="checkbox"/> M-603-10	<input type="checkbox"/>	CONCRETE AND METAL END SECTIONS (2 SHEETS)	45-46								
<input type="checkbox"/> M-604-10	<input type="checkbox"/>	INLET, TYPE C	47								
<input type="checkbox"/> M-604-11	<input type="checkbox"/>	INLET, TYPE D	48								
<input type="checkbox"/> M-604-12	<input type="checkbox"/>	CURB INLET, TYPE R (2 SHEETS)	49-50								
<input type="checkbox"/> M-604-13	<input type="checkbox"/>	CONCRETE INLET, TYPE 13	51								
<input type="checkbox"/> M-604-20	<input type="checkbox"/>	MANHOLES (3 SHEETS)	52-54								
<input type="checkbox"/> M-604-25	<input type="checkbox"/>	VANE GRATE INLET (5 SHEETS)	55-59								
<input type="checkbox"/> M-605-1	<input type="checkbox"/>	SUBSURFACE DRAINS	60								
<input type="checkbox"/> M-606-1	<input type="checkbox"/>	GUARDRAIL TYPE 3 W-BEAM (16 SHEETS)	61-76								
<input type="checkbox"/> M-606-13	<input type="checkbox"/>	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS)	77-80								
<input type="checkbox"/> M-606-14	<input type="checkbox"/>	PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS)	81-83								

THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

COLORADO
 DEPARTMENT OF TRANSPORTATION
STANDARD PLANS LIST
M&S STANDARDS
 July 04, 2006

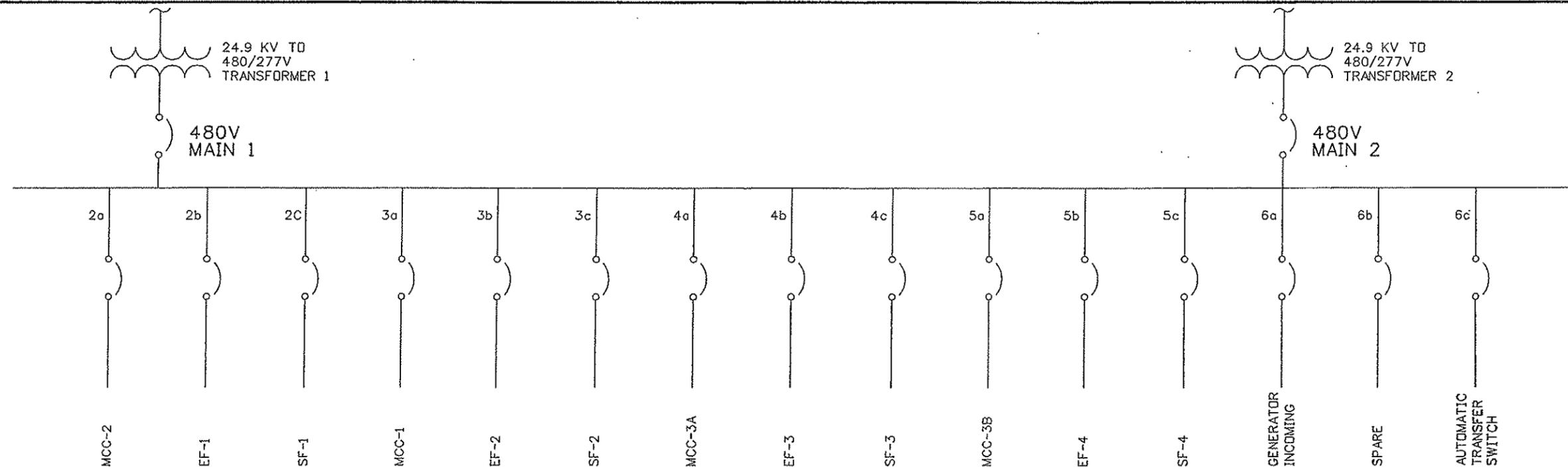
Print Date: 10/2/2007	<input checked="" type="checkbox"/> R-X <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Sheet Revisions			Colorado Department of Transportation			As Constructed		STANDARD PLANS LIST			Project No./Code	
Drawing File Name: 16096StdPlanList.dgn		Date:	Comments	Init.	 Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ			No Revisions: 11/23/09		Designer: J. SHELDON Detailer: R. KWONG Sheet Subset:			IM-0703-319	
Horiz. Scale: Vert. Scale:								Revised:					Structure Numbers	
Unit Information Unit Leader Initials								Void:					Subset Sheets:	

GENERAL NOTES

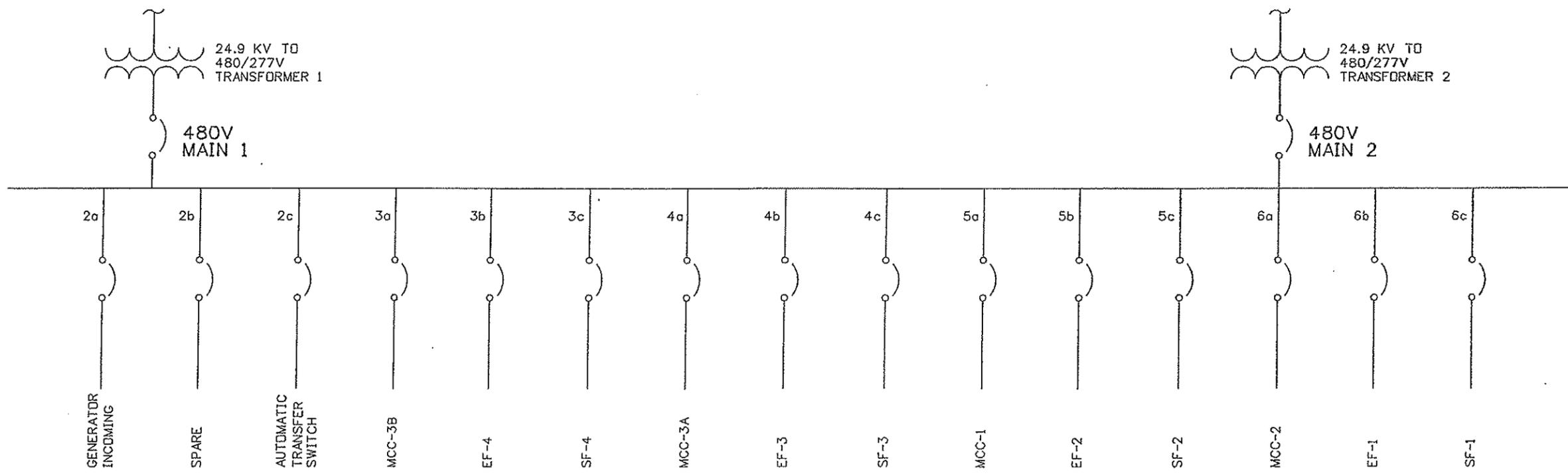
1. ELECTRICAL CONDUIT THAT IS INDICATED "TO BE REMOVED" SHALL BE REMOVED FROM THE SWITCHGEAR TO THE EQUIPMENT SERVED FOR EQUIPMENT LOCATED IN THE ELECTRICAL ROOM. FOR CONDUITS SUPPLYING EXHAUST FANS, CONDUIT SHALL BE REMOVED TO THE ELBOW AT THE FLOOR PENETRATION AND THE WIRE REMOVED TO THE MOTOR JUNCTION BOX. FOR CONDUITS SUPPLYING SUPPLY FANS, CONDUIT SHALL BE REMOVED TO A POINT WITHIN THE ELECTRICAL ROOM AND SPLICE BOXES INSTALLED, AS INDICATED ON THE DRAWINGS.
2. THE TUNNEL IS LOCATED AT APPROXIMATELY 11,000 FEET ABOVE SEA LEVEL. ALL EQUIPMENT RATINGS SPECIFIED IN THE DRAWINGS AND SPECIFICATIONS SHALL APPLY TO THE INSTALLATION LOCATION AT THAT ELEVATION.
3. ALL PROPOSED LOCATIONS FOR TEMPORARY FEEDERS, ETC. SHALL BE REVIEWED WITH THE ENGINEER PRIOR TO ACTUAL INSTALLATION.
4. ALL CONDUITS, JUNCTION BOXES, AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE, CDDT STANDARDS, AND APPLICABLE LOCAL CODES.
5. CONDUIT AND BUS DUCT RUNS ARE SHOWN DIAGRAMMATICALLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS WHENEVER POSSIBLE. SPARE CONDUITS SHALL HAVE NYLON PULL LINES RATED 200 LBS INSTALLED AND SHALL BE CAPPED.
6. ALL CONDUIT SHALL BE A MINIMUM OF 3/4" RGS UNLESS OTHERWISE NOTED AND ALL POWER AND CONTROL CONDUCTORS SHALL BE A MINIMUM OF NO.12 AWG UNLESS OTHERWISE NOTED. ALL WIRE INSULATION TYPE SHALL BE XHHW, UNLESS OTHERWISE NOTED.
7. LIGHT SWITCHES SHALL BE MOUNTED 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
8. ALL SURFACE MOUNTED BOXES, PANELBOARDS, CONDUITS, DISCONNECT SWITCHES, AND CONTROL PANELS SHALL BE MOUNTED SO AS TO MAINTAIN A 3/4" AIR SPACE BETWEEN THE DEVICE AND THE WALL UNLESS OTHERWISE NOTED.
9. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6".
10. ALL CONDUIT RUNS CROSSING STRUCTURAL EXPANSION JOINTS SHALL HAVE EXPANSION AND DEFLECTION TYPE FITTINGS AT THAT LOCATION.
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LAYOUTS FOR THE ELECTRICAL ROOMS BASED ON ACTUAL EQUIPMENT SIZE OF THE MANUFACTURER SELECTED. SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
12. PROVIDE PHENOLIC TAGS WITH BLACK LETTERS ON WHITE BACKGROUND FOR ALL SWITCHGEAR CUBICLES, TRANSFORMERS, PANELBOARDS, AND COMMUNICATION EQUIPMENT. APPLY WITH SCREWS. REFER TO SPECIAL PROVISIONS. NAMEPLATES ON POWER CONTROL BOARD SHALL BE APPLIED WITH ADHESIVE.
13. PRIOR TO INSTALLATION OF ALL CONDUITS, THE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATIONS WITH THE ENGINEER.
14. ALL CONDUITS SHALL BE TAGGED WITH BRASS TAGS AT ALL TERMINATIONS AND BOXES AS PER SPECIAL PROVISIONS.
15. ASBESTOS WILL BE ENCOUNTERED WHEN DRILLING INTO ELECTRIC ROOM CEILING. FOLLOW ABATEMENT PROCEDURES IN SPECIFICATIONS.
16. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN WITH PROCEDURES ON CROSSING TRAFFIC AND NOTIFICATION OF WORK OPERATIONS TO TUNNEL OPERATIONS PERSONNEL. COORDINATE WITH PROJECT ENGINEER.
17. CONTRACTOR SHALL PROVIDE PROTECTION FOR THE FACILITY AND ITS EQUIPMENT AND FURNISHINGS. ANY DAMAGE TO CDDT PROPERTY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE PROJECT ENGINEER AT NO COST TO CDDT.
18. THE CONTRACTOR SHALL PROVIDE EACH OF HIS WORK CREWS WITH A PORTABLE 2 WAY RADIO COMPATIBLE WITH CDDT REQUIREMENTS.
19. CONTRACTOR SHALL PROVIDE THREE SPARE CIRCUIT BREAKERS FOR THE NEW 480V SWITCHGEAR. ONE SHALL BE 3000A, SIMILAR TO THOSE USED FOR THE MAIN AND TIE CIRCUIT BREAKERS, ONE SHALL BE 1600A FRAME SIMILAR TO THE ATS FEEDER CIRCUIT BREAKER, AND ONE SHALL BE FUSED TYPE SIMILAR TO MCC1 AND MCC2 FEEDER CIRCUIT BREAKERS.
20. PRIOR TO DISCONNECTING ANY WIRING, THE CONTRACTOR SHALL ESTABLISH THE FUNCTION OF EACH EXISTING CONDUCTOR.
21. SUPPORT BUS DUCTS AT 5 FOOT INTERVALS AND AT BOTH SIDES OF EACH ELBOW FITTING.

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Drawing File Name: 16096GeneralNotes.dgn							No Revisions: 11/23/09				IM-0703-319	
Horiz. Scale: Vert. Scale:		 Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775			Revised:		Designer: J. SHELDON		Structure		16096	
Unit Information Unit Leader Initials					Void:		Detailer: R. KWONG		Numbers		Sheet Number	
					Region 1		INZ		Subset Sheets:			

LEGEND:
 EF - EXHAUST FAN
 SF - SUPPLY FAN



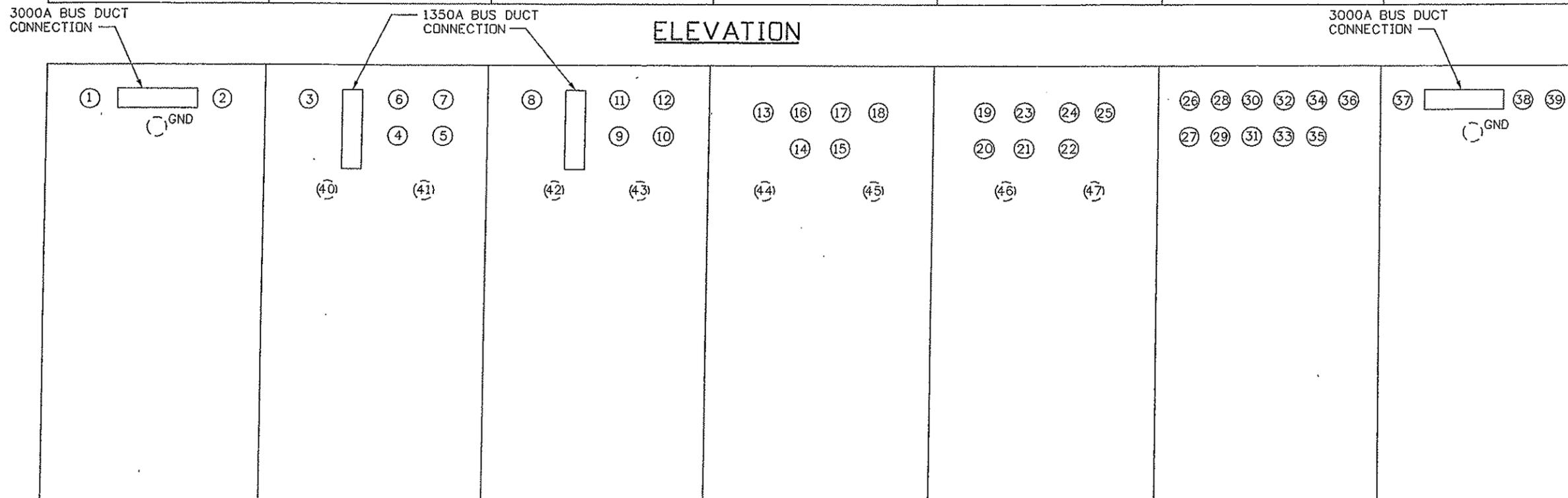
EXISTING EAST BLDG. 480V SWITCHGEAR CONFIGURATION



EXISTING WEST BLDG. 480V SWITCHGEAR CONFIGURATION

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Drawing File Name: 16096ELEDiagram03e.dgn		Date:	Comments:	Init.		No Revisions: 11/23/09			IM-0703-319		
Horiz. Scale: NTS Vert. Scale: NTS						Revised:	Designer: J. SHELDON	Structure Numbers:	16096		
Unit Information Unit Leader Initials						Void:	Detailer: R. KWONG	Subset Sheets:	Sheet Number 5		

METERING AND RELAYS	MCC2	MCC1	MCC3A	MCC3B	GENERATOR INCOMING	METERING AND RELAYS
TRANSFORMER 1	EF1	EF2	EF3	EF4	SPARE	TRANSFORMER 2
AUXILIARY COMPARTMENT	SF1	SF2	SF3	SF4	AUTOMATIC TRANSFER SWITCH	AUXILIARY COMPARTMENT



- NOTES:**
1. CONDUITS 1 THROUGH 39 ENTER THE TOP OF THE ENCLOSURE. CONDUITS 40 THROUGH 49 ENTER THE BOTTOM OF THE ENCLOSURE.
 2. GROUND CONDUCTORS ENTER THE BOTTOM OF THE ENCLOSURE.
 3. CONDUIT LOCATIONS ARE APPROXIMATE.
 4. CONTRACTOR SHALL VERIFY EXISTING CONDUIT ARRANGEMENTS.

PLAN

Print Date: 10/2/2007		Sheet Revisions			 Colorado Department of Transportation Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed		EAST VENTILATION BUILDING EXISTING SWITCHGEAR PLAN AND ELEVATION		Project No./Code	
Drawing File Name: 16096ELETABSH01e.dgn		Date:	Comments:	Init.:		No Revisions: 11/23/09			IM-0703-319		
Horiz. Scale: NTS Vert. Scale: NTS						Revised:	Designer: J. SHELDON	Structure Numbers:	16096		
Unit Information Unit Leader Initials						Void:	Detailer: R. KWONG	Subset Sheets:	Sheet Number 6		

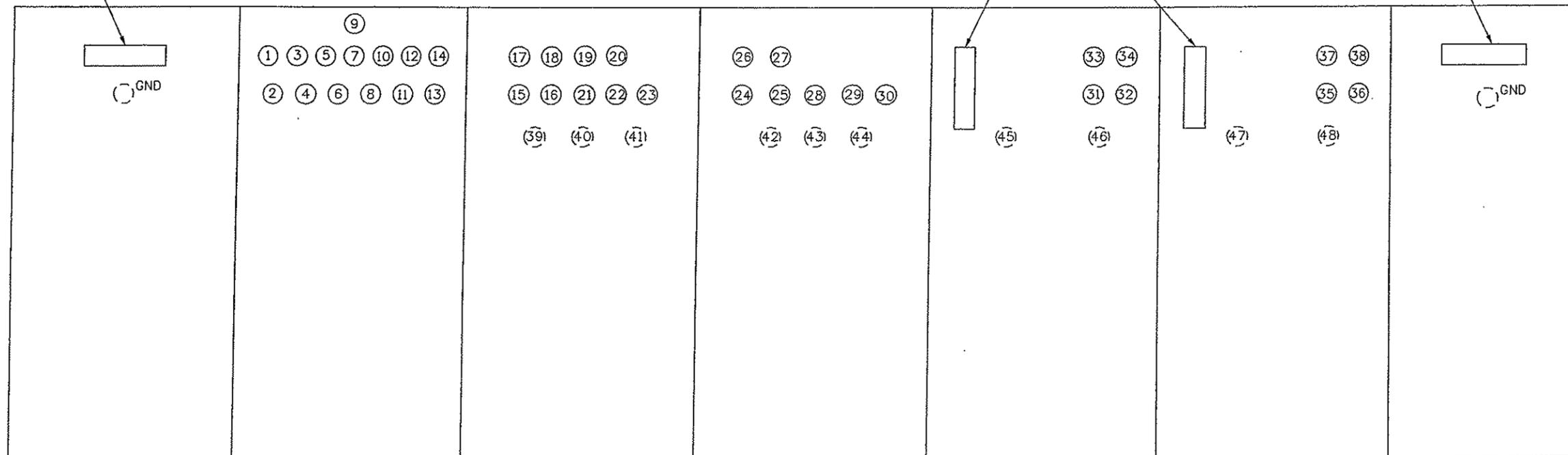
METERING AND RELAYS	GENERATOR INCOMING	MCC3B	MCC3A	MCC1	MCC2	METERING AND RELAYS
TRANSFORMER 1	SPARE	EF4	EF3	EF2	EF1	TRANSFORMER 2
AUXILIARY COMPARTMENT	AUTOMATIC TRANSFER SWITCH	SF4	SF3	SF2	SF1	AUXILIARY COMPARTMENT

ELEVATION

3000A BUS DUCT CONNECTION

1350A BUS DUCT CONNECTION

3000A BUS DUCT CONNECTION



NOTES:

1. CONDUITS 1 THROUGH 38 ENTER THE TOP OF THE ENCLOSURE. CONDUITS 39 THROUGH 48 ENTER THE BOTTOM OF THE ENCLOSURE.
2. GROUND CONDUCTORS ENTER THE BOTTOM OF THE ENCLOSURE.
3. CONDUIT LOCATIONS ARE APPROXIMATE.
4. CONTRACTOR SHALL VERIFY EXISTING CONDUIT ARRANGEMENTS.

PLAN

Print Date: 10/2/2007		Sheet Revisions			Colorado Department of Transportation Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1	As Constructed		WEST VENTILATION BUILDING EXISTING SWITCHGEAR PLAN AND ELEVATION		Project No./Code	
Drawing File Name: 16096ELETABSHD2w.dgn		Date:	Comments:	Init.		No Revisions: 11/23/09	IM-0703-319				
Horiz. Scale: NTS Vert. Scale: NTS						Revised:	Designer: J. SHELDON			Structure Numbers:	16096
Unit Information Unit Leader Initials						Void:	Detailer: R. KWONG			Sheet Subset: Subset Sheets:	Sheet Number 7

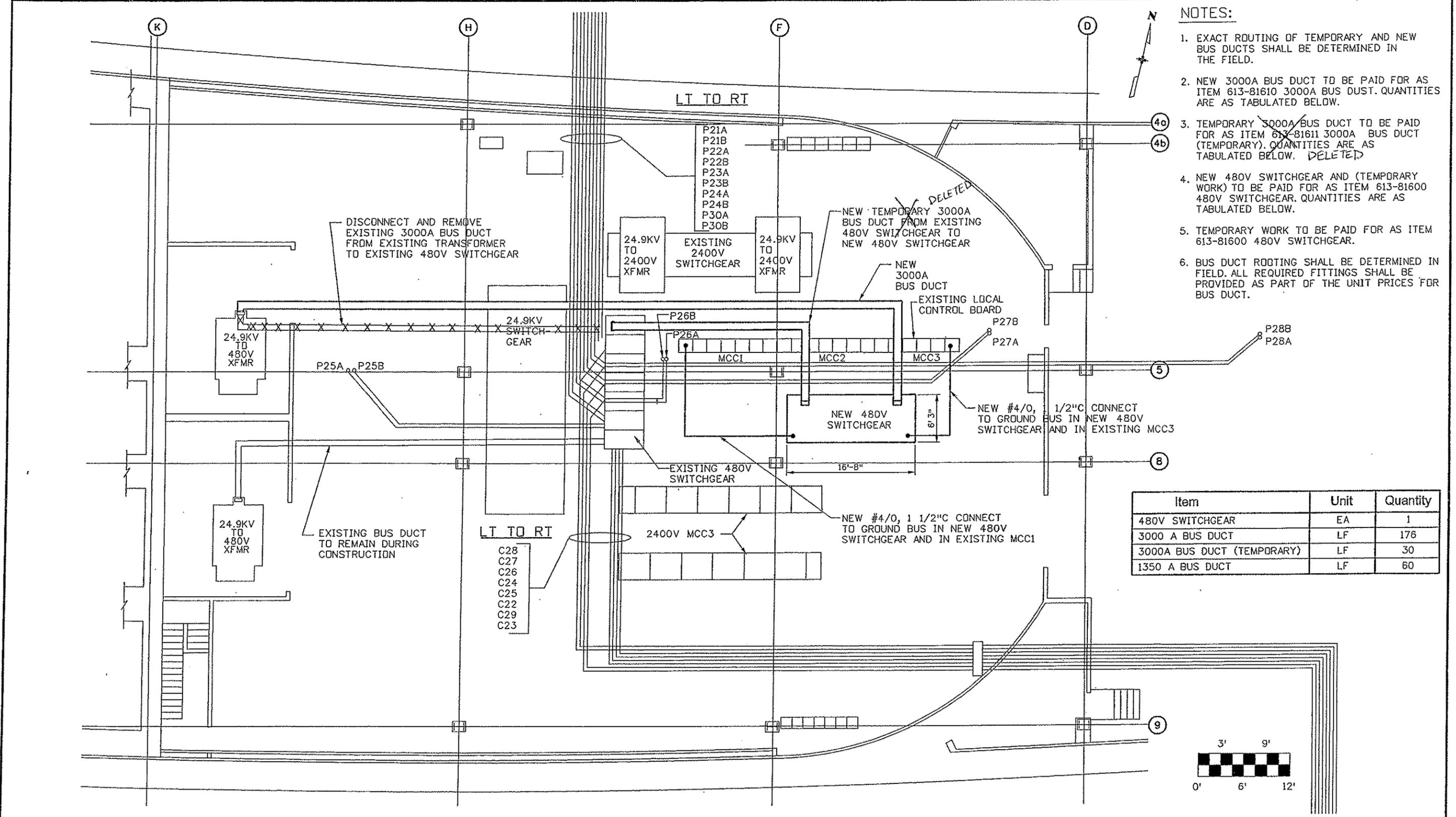
SEQUENCE OF WORK

1. IN WEST VENTILATION BUILDING ONLY, RELOCATE COMMUNICATION ROOM TO FAN ROOM FLOOR.
2. INSTALL NEW SWITCHGEAR IN EXISTING SPACE.
3. RUN NEW 3000A BUS DUCT B FROM NEW SWITCHGEAR TO VICINITY OF TRANSFORMER B
4. RUN NEW TEMPORARY 3000A BUS DUCT FROM NEW SWITCHGEAR TO VICINITY OF EXISTING SWITCHGEAR MAIN B.
5. DE-ENERGIZE TRANSFORMER B, DISCONNECT EXISTING BUS DUCT B FROM TRANSFORMER, CONNECT NEW BUS DUCT B TO TRANSFORMER B.
6. PROVIDE TEMPORARY POWER FOR MCCS 1, 2 AND 3. DE-ENERGIZE EXISTING SWITCHGEAR. DISCONNECT EXISTING BUS DUCT B FROM SWITCHGEAR. CONNECT NEW TEMPORARY BUS DUCT TO EXISTING SWITCHGEAR MAIN B.
7. CUT OVER FAN MOTOR FEEDERS FROM EXISTING SWITCHGEAR TO NEW SWITCHGEAR. NOT MORE THAN ONE SUPPLY AND ONE EXHAUST FAN SHALL BE OUT OF SERVICE AT ANY ONE TIME.
8. CUT OVER MCC1 FEEDER FROM EXISTING SWITCHGEAR TO NEW SWITCHGEAR. SUPPLY MCC1 FROM MCC1-2 TIE BREAKER.
9. CUT OVER MCC2 FEEDER FROM EXISTING SWITCHGEAR TO NEW SWITCHGEAR. SUPPLY MCC2 FROM MCC1-2 TIE BREAKER.
10. CUT OVER MCC3A FEEDER. SUPPLY MCC3 THROUGH MCC3B FEEDER.
11. CUT OVER MCC3B FEEDER. SUPPLY MCC3 THROUGH MCC3A FEEDER.
12. PROVIDE TEMPORARY EMERGENCY POWER TO GENERATOR INTERFACE BREAKER. CUTOVER GENERATOR FEEDER.
13. PROVIDE TEMPORARY POWER TO AUTOMATIC TRANSFER SWITCH. CUT OVER AUTOMATIC TRANSFER SWITCH FEEDER.
14. RUN NEW 3000A BUS DUCT A TO VICINITY OF TRANSFORMER A.
15. DE-ENERGIZE TRANSFORMER A, DISCONNECT EXISTING BUS DUCT A FROM TRANSFORMER, CONNECT NEW BUS DUCT A TO TRANSFORMER A.
16. DE-ENERGIZE EXISTING SWITCHGEAR. DISCONNECT EXISTING BUS DUCT A FROM SWITCHGEAR. CONNECT NEW BUS DUCT A TO EXISTING SWITCHGEAR MAIN A.
17. REMOVE TEMPORARY BUS DUCT.
18. REMOVE EXISTING SWITCHGEAR.

PHASING NOTES

1. AT NO TIME SHALL THE TUNNEL SYSTEMS BE WITHOUT POWER. TEMPORARY POWER THROUGH REDUNDANT GENERATORS SHALL BE PROVIDED TO SUPPLY POWER TO MOTOR CONTROL CENTERS MCC-1, MCC-2 AND MCC-3 DURING ANY CUTOVER PERIOD. TWO GENERATORS SHALL BE PROVIDED, EACH WITH 1200kw CAPACITY AT 11,000 FEET. THE GENERATORS SHALL BE CONFIGURED WITH EACH SUPPLYING AN AUTOMATIC TRANSFER SWITCH. ONE GENERATOR SHALL BE RUNNING TO SUPPLY POWER TO THE VENTILATION BUILDING; THE TRANSFER SWITCH SHALL BE ARRANGED TO AUTOMATICALLY START THE SECOND GENERATOR AND TRANSFER THE VENTILATION BUILDING LOAD IN THE EVENT OF A LOSS OF POWER FROM THE FIRST GENERATOR.
2. DURING THE TIME WHEN WORK ON THE FEEDER FROM THE EXISTING EMERGENCY GENERATOR PREVENTS IT FROM SUPPLYING THE SWITCHGEAR, A PORTABLE GENERATOR OF THE SAME CAPACITY (500KW) SHALL BE PROVIDED.
3. DURING THE TIME WHEN WORK ON THE FEEDER TO THE EXISTING AUTOMATIC TRANSFER SWITCH INTERRUPTS THE SUPPLY OF NORMAL POWER TO THE TRANSFER SWITCH. A PORTABLE GENERATOR SHALL BE PROVIDED TO SUPPLY NORMAL POWER TO THE TRANSFER SWITCH. THE PORTABLE GENERATOR SHALL HAVE THE SAME CAPACITY (500KW) AS THE BUILDING GENERATOR.
4. CONNECTIONS AND DISCONNECTIONS TO MCC-1 AND MCC-2 FEEDERS WILL REQUIRE SHUT DOWN OF BOTH MCCS DURING THE CONNECTIONS AND DISCONNECTIONS. SHUT DOWNS SHALL BE COORDINATED WITH CDDT PERSONNEL AND SHALL BE SCHEDULED AT LEAST 7 DAYS IN ADVANCE. SHUT DOWNS SHALL BE LIMITED TO 15 MINUTES MAXIMUM.
5. TEMPORARY CABLES RUNNING FROM GENERATORS TO SWITCHGEAR AND/OR MOTOR CONTROL CENTERS SHALL BE PROVIDED WITH PROTECTION FROM FOOT TRAFFIC, AND VEHICLE TRAFFIC IF LOCATION REQUIRES, PROTECTION MUST COMPLY WITH REQUIREMENTS OF NFPA 70 AND 70E AND ALL APPLICABLE CODES AND REGULATIONS TO THE SATISFACTION OF THE PROJECT ENGINEER.
6. AT NO TIME SHALL THE TUNNEL EMERGENCY GENERATORS BE USED TO SUPPLY TEMPORARY POWER TO THE TUNNEL.

Print Date: 10/2/2007		Sheet Revisions			Colorado Department of Transportation			As Constructed		PHASING PLAN			Project No./Code		
Drawing File Name: 16096PhasingPlan.dgn		Date:	Comments	Init.	 Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ			No Revisions: 11/23/09		Designer: J. SHELDON Detailer: R. KWONG Sheet Subset:			IM-0703-319		
Horiz. Scale:	Vert. Scale:							Revised:					Structure Numbers	16096	
Unit Information		Unit Leader Initials												8	
								Void:					Subset Sheets:		



- NOTES:**
1. EXACT ROUTING OF TEMPORARY AND NEW BUS DUCTS SHALL BE DETERMINED IN THE FIELD.
 2. NEW 3000A BUS DUCT TO BE PAID FOR AS ITEM 613-81610 3000A BUS DUCT. QUANTITIES ARE AS TABULATED BELOW.
 3. TEMPORARY 3000A BUS DUCT TO BE PAID FOR AS ITEM 613-81611 3000A BUS DUCT (TEMPORARY). QUANTITIES ARE AS TABULATED BELOW. ~~DELETED~~
 4. NEW 480V SWITCHGEAR AND (TEMPORARY WORK) TO BE PAID FOR AS ITEM 613-81600 480V SWITCHGEAR. QUANTITIES ARE AS TABULATED BELOW.
 5. TEMPORARY WORK TO BE PAID FOR AS ITEM 613-81600 480V SWITCHGEAR.
 6. BUS DUCT ROUTING SHALL BE DETERMINED IN FIELD. ALL REQUIRED FITTINGS SHALL BE PROVIDED AS PART OF THE UNIT PRICES FOR BUS DUCT.

Item	Unit	Quantity
480V SWITCHGEAR	EA	1
3000 A BUS DUCT	LF	176
3000A BUS DUCT (TEMPORARY)	LF	30
1350 A BUS DUCT	LF	60



Print Date: 10/2/2007
 Drawing File Name: 16096ELEPLAN08e.dgn
 Horiz. Scale: 3/16" Vert. Scale: 3/16"
 Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

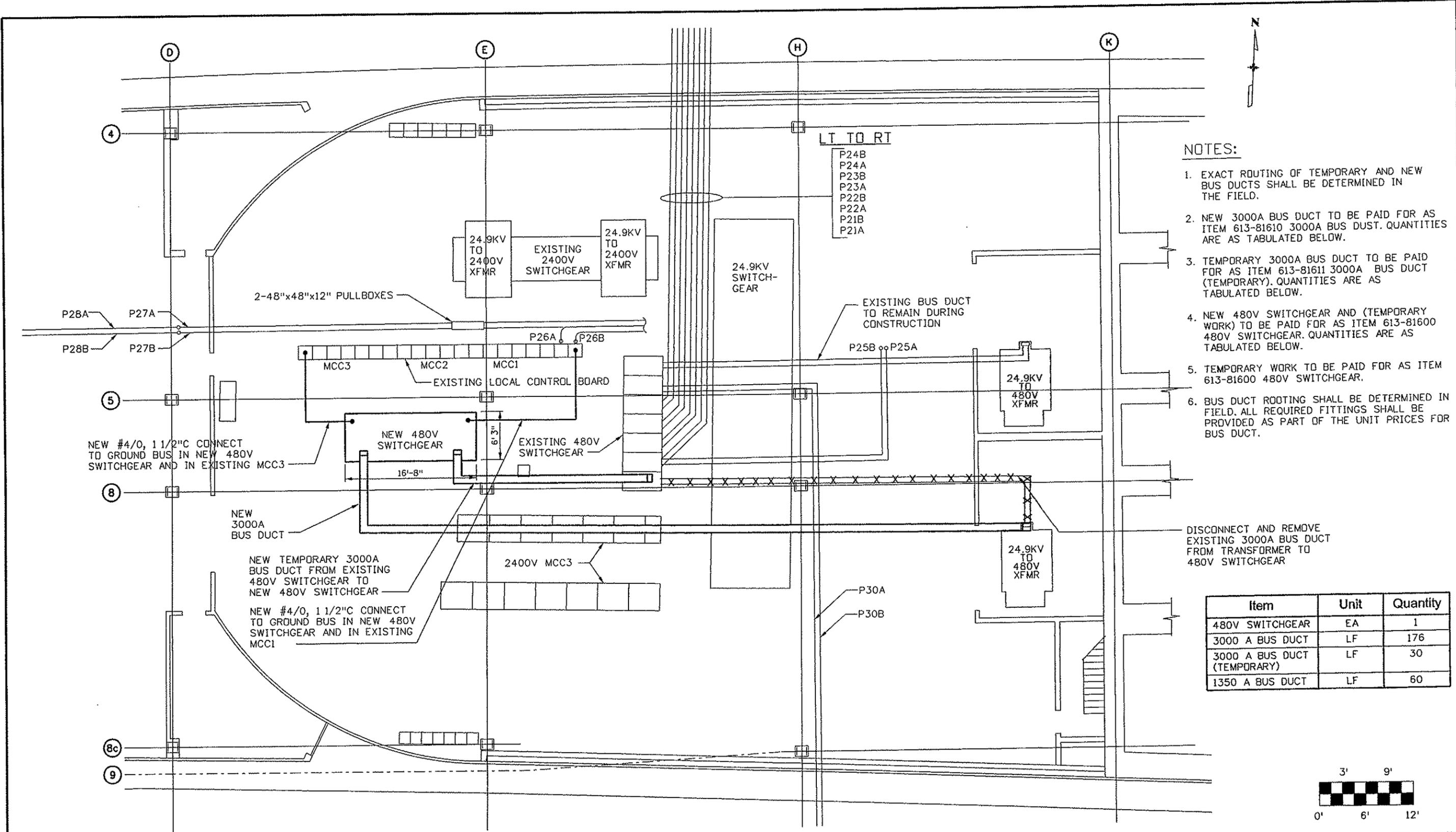
Colorado Department of Transportation

 Mountain Residency P.O. Box 399
 Dumont, CO 80436
 Phone: 303-512-5750 FAX: 303-512-5775
 Region 1 INZ

As Constructed
 No Revisions:
 Revised: 11/23/09
 Void:

**EAST VENTILATION BUILDING
 ELECTRIC ROOM PLAN - NORTH
 PHASING PLAN**
 Designer: J. SHELDON
 Detailer: R. KWONG
 Sheet Subset:
 Structure Numbers
 Subset Sheets:

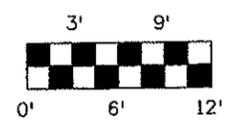
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 Sheet Number 9



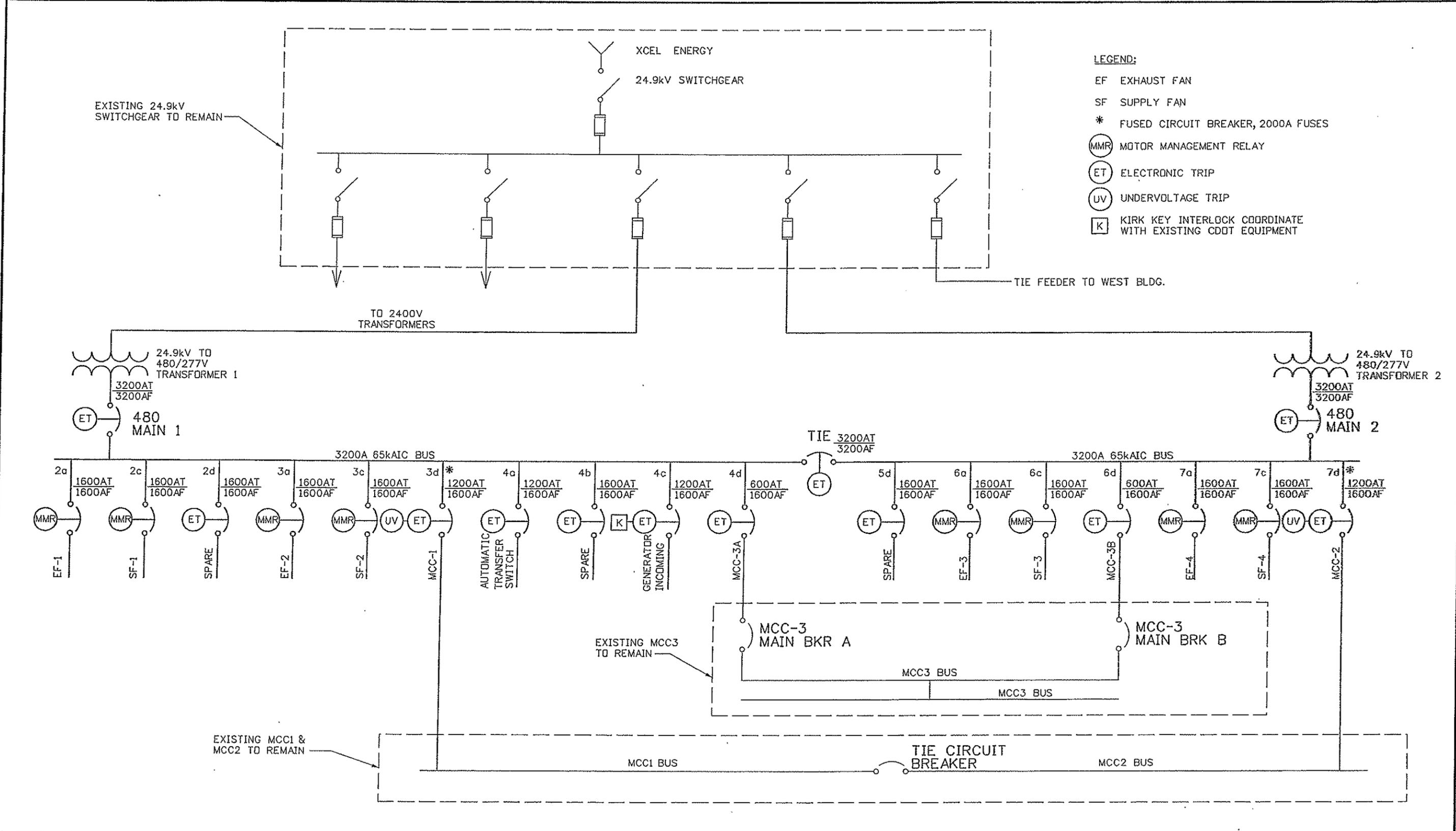
- NOTES:**
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 2. NEW 3000A BUS DUCT TO BE PAID FOR AS ITEM 613-81610 3000A BUS DUCT. QUANTITIES ARE AS TABULATED BELOW.
 3. TEMPORARY 3000A BUS DUCT TO BE PAID FOR AS ITEM 613-81611 3000A BUS DUCT (TEMPORARY). QUANTITIES ARE AS TABULATED BELOW.
 4. NEW 480V SWITCHGEAR AND (TEMPORARY WORK) TO BE PAID FOR AS ITEM 613-81600 480V SWITCHGEAR. QUANTITIES ARE AS TABULATED BELOW.
 5. TEMPORARY WORK TO BE PAID FOR AS ITEM 613-81600 480V SWITCHGEAR.
 6. BUS DUCT ROUTING SHALL BE DETERMINED IN FIELD. ALL REQUIRED FITTINGS SHALL BE PROVIDED AS PART OF THE UNIT PRICES FOR BUS DUCT.

DISCONNECT AND REMOVE EXISTING 3000A BUS DUCT FROM TRANSFORMER TO 480V SWITCHGEAR

Item	Unit	Quantity
480V SWITCHGEAR	EA	1
3000 A BUS DUCT	LF	176
3000 A BUS DUCT (TEMPORARY)	LF	30
1350 A BUS DUCT	LF	60

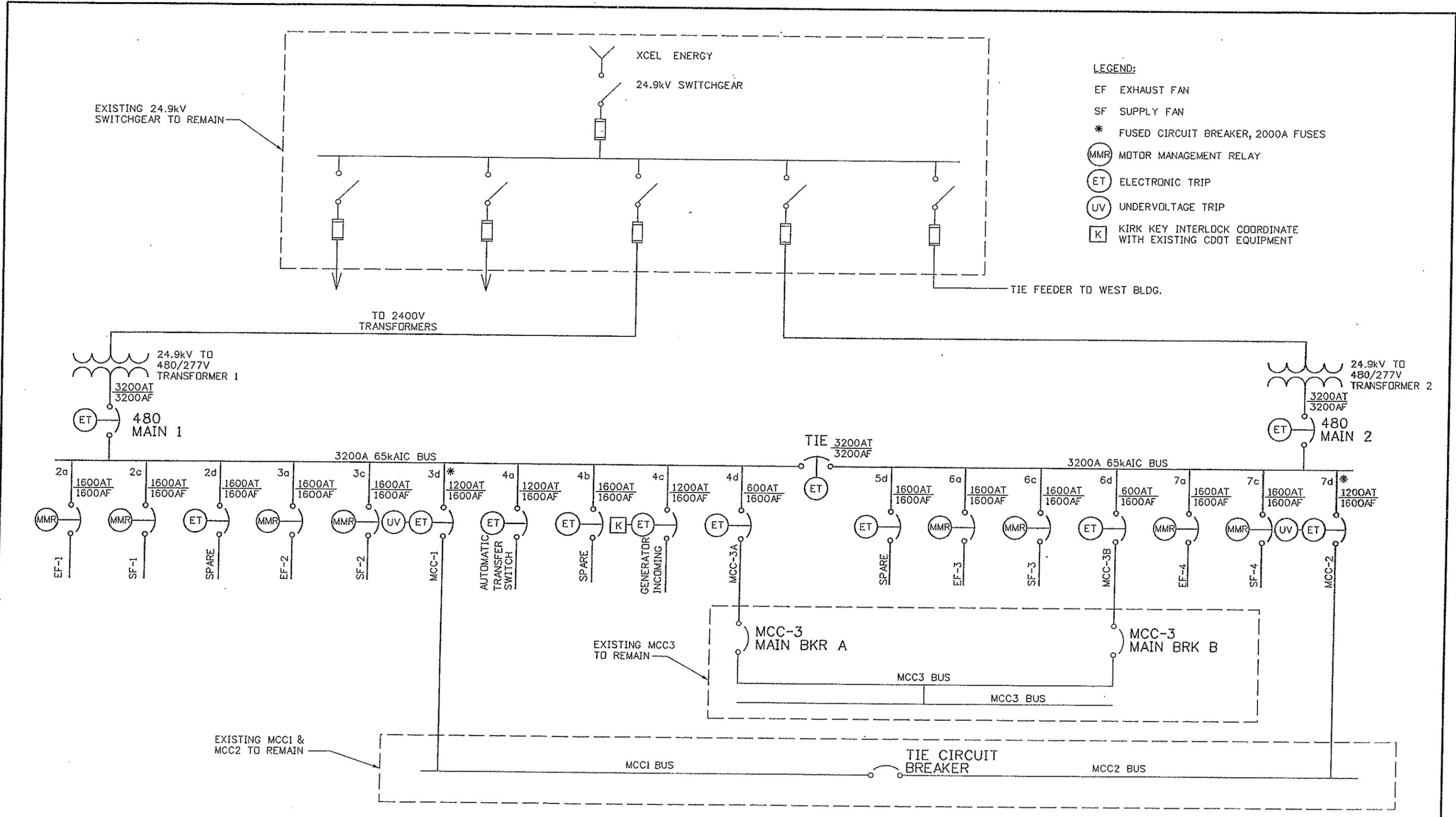


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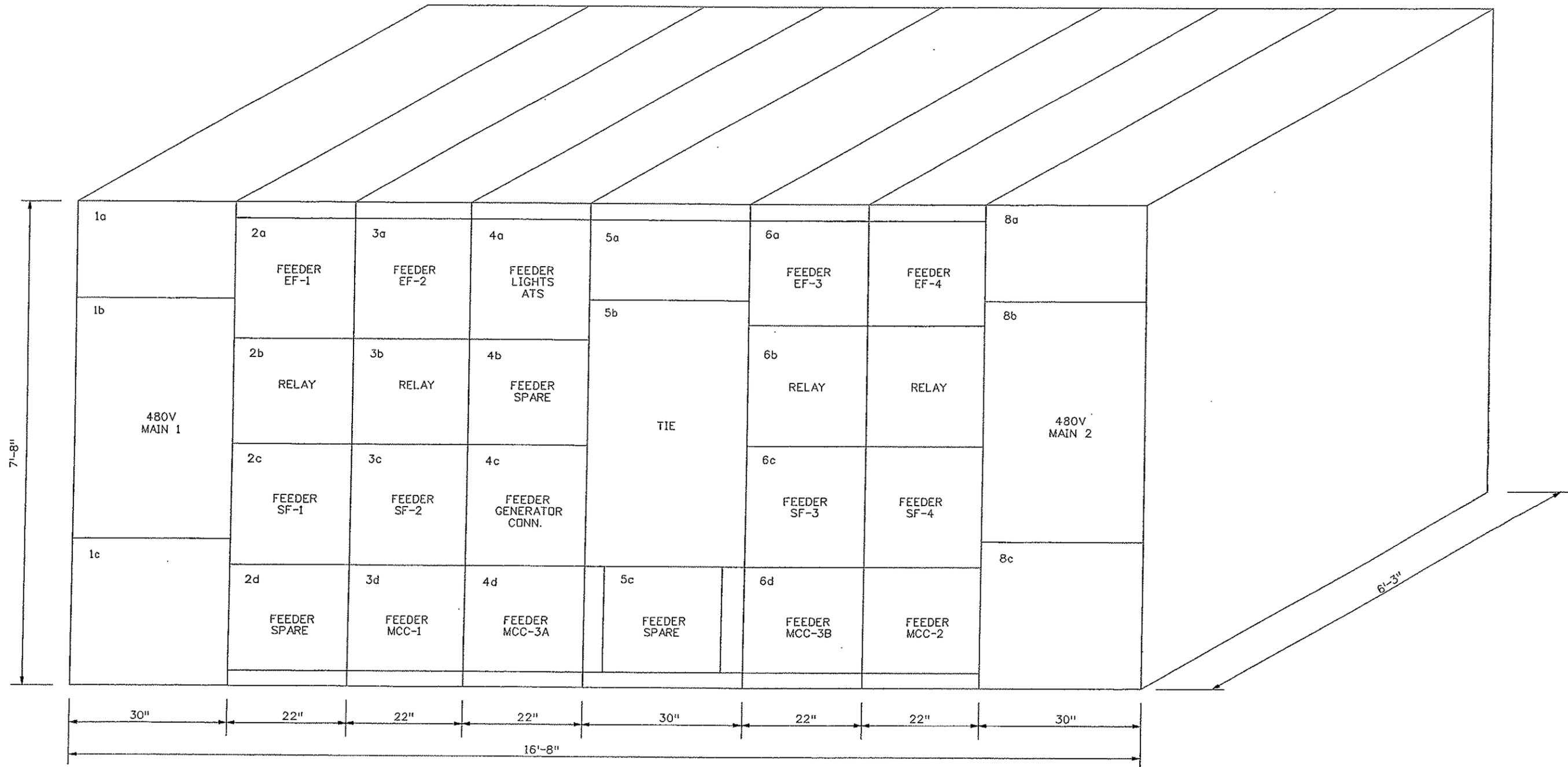


LEGEND:
 EF EXHAUST FAN
 SF SUPPLY FAN
 * FUSED CIRCUIT BREAKER, 2000A FUSES
 (MMR) MOTOR MANAGEMENT RELAY
 (ET) ELECTRONIC TRIP
 (UV) UNDERVOLTAGE TRIP
 (K) KIRK KEY INTERLOCK COORDINATE WITH EXISTING CDDT EQUIPMENT

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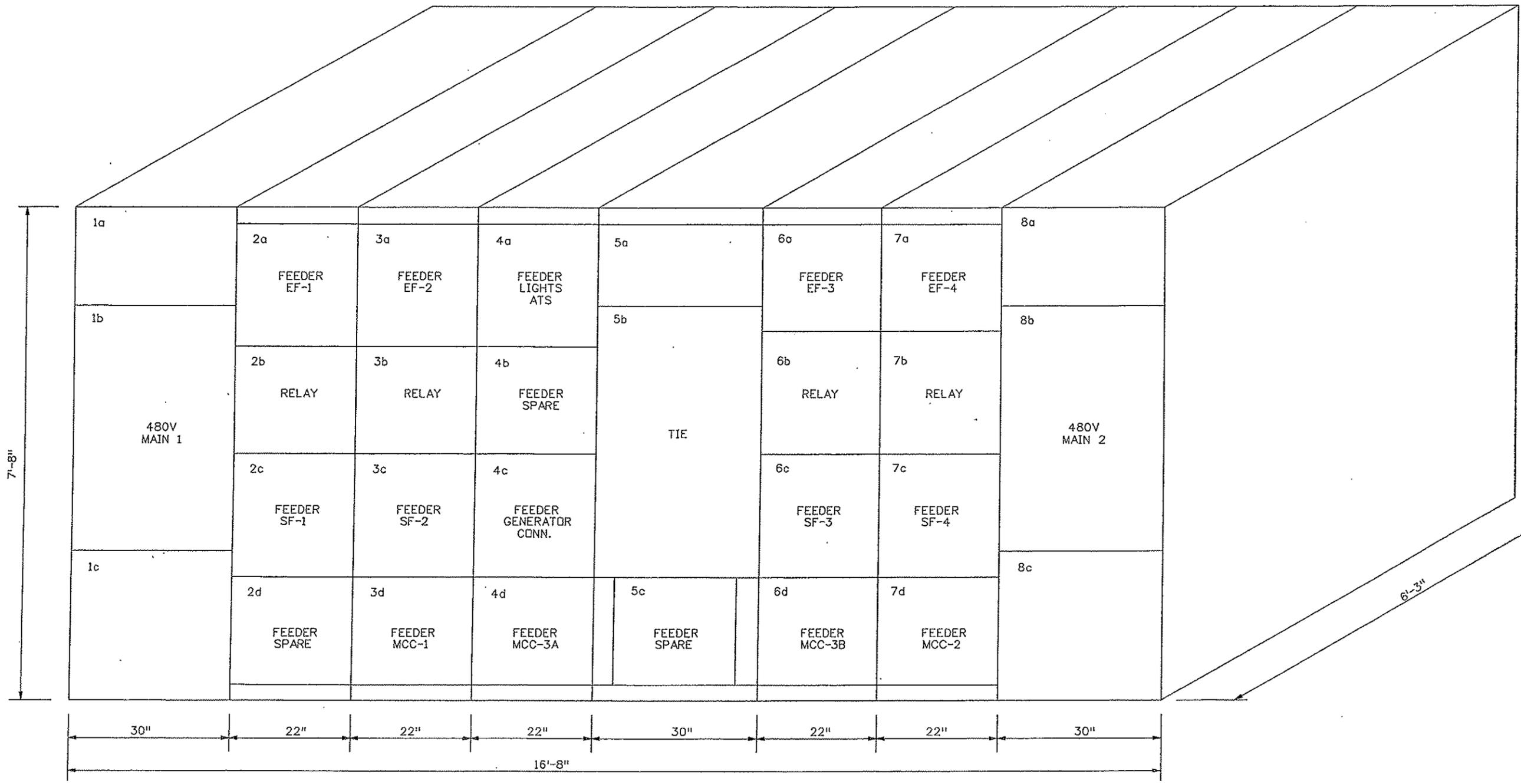


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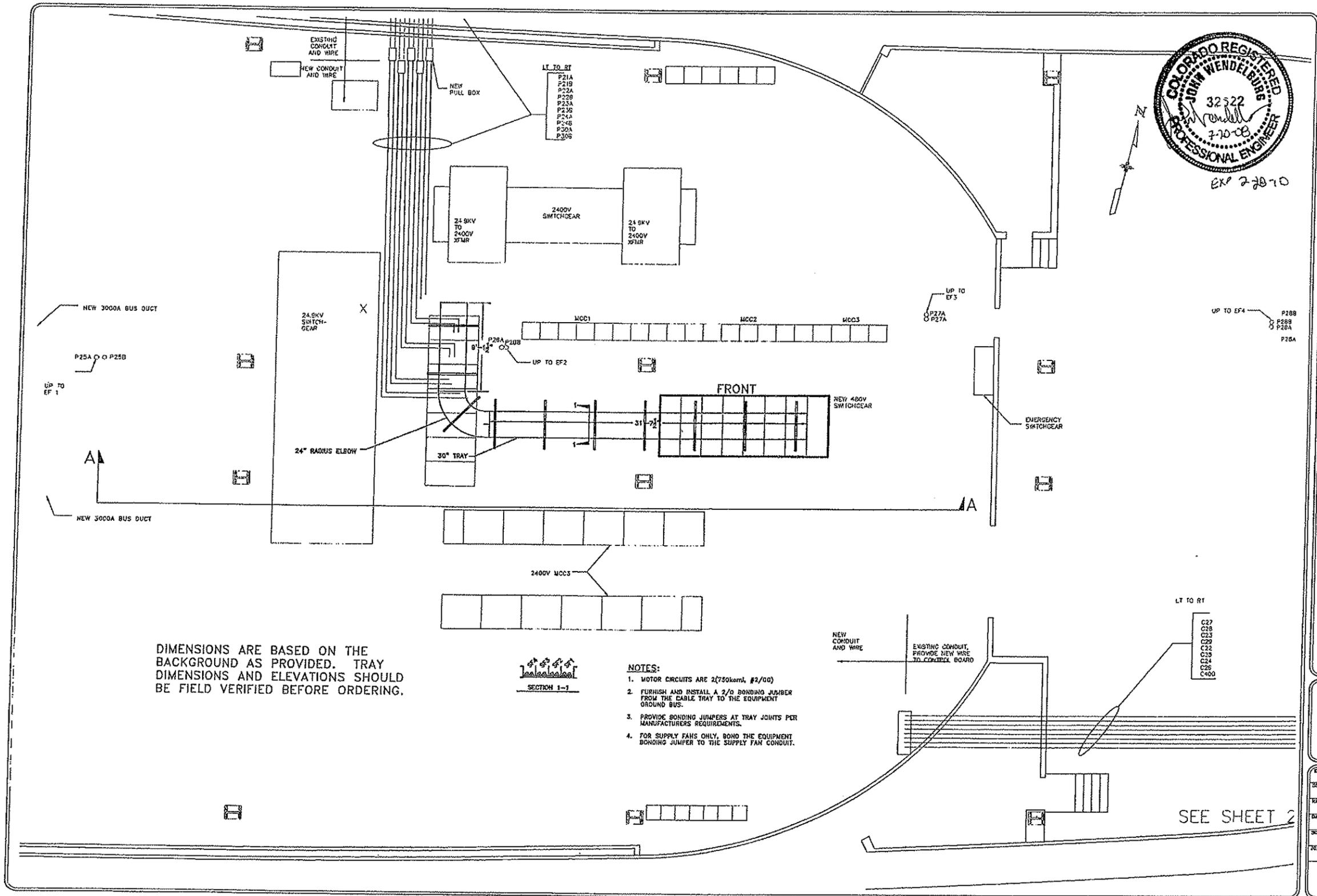
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N.T.S.

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					Sheet Subset:	Subset Sheets:					



NEW WEST BLDG. 480V SWITCHGEAR
N.T.S.

Print Date: 10/2/2007		Sheet Revisions			Colorado Department of Transportation Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed	WEST VENTILATION BUILDING		Project No./Code	
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Unit Information Unit Leader Initials						Void:	Detailer: R. KWONG	Subset Sheets:		Sheet Number 14



DIMENSIONS ARE BASED ON THE BACKGROUND AS PROVIDED. TRAY DIMENSIONS AND ELEVATIONS SHOULD BE FIELD VERIFIED BEFORE ORDERING.

SECTION 1-1

- NOTES:**
1. MOTOR CIRCUITS ARE 2(750kcmil, #2/00)
 2. FURNISH AND INSTALL A 2/0 BONDING JUMPER FROM THE CABLE TRAY TO THE EQUIPMENT GROUND BUS.
 3. PROVIDE BONDING JUMPERS AT TRAY JOINTS PER MANUFACTURERS REQUIREMENTS.
 4. FOR SUPPLY FANS ONLY, BOND THE EQUIPMENT BONDING JUMPER TO THE SUPPLY FAN CONDUIT.



DATE	
REVISION	
NO.	

electric power engineering

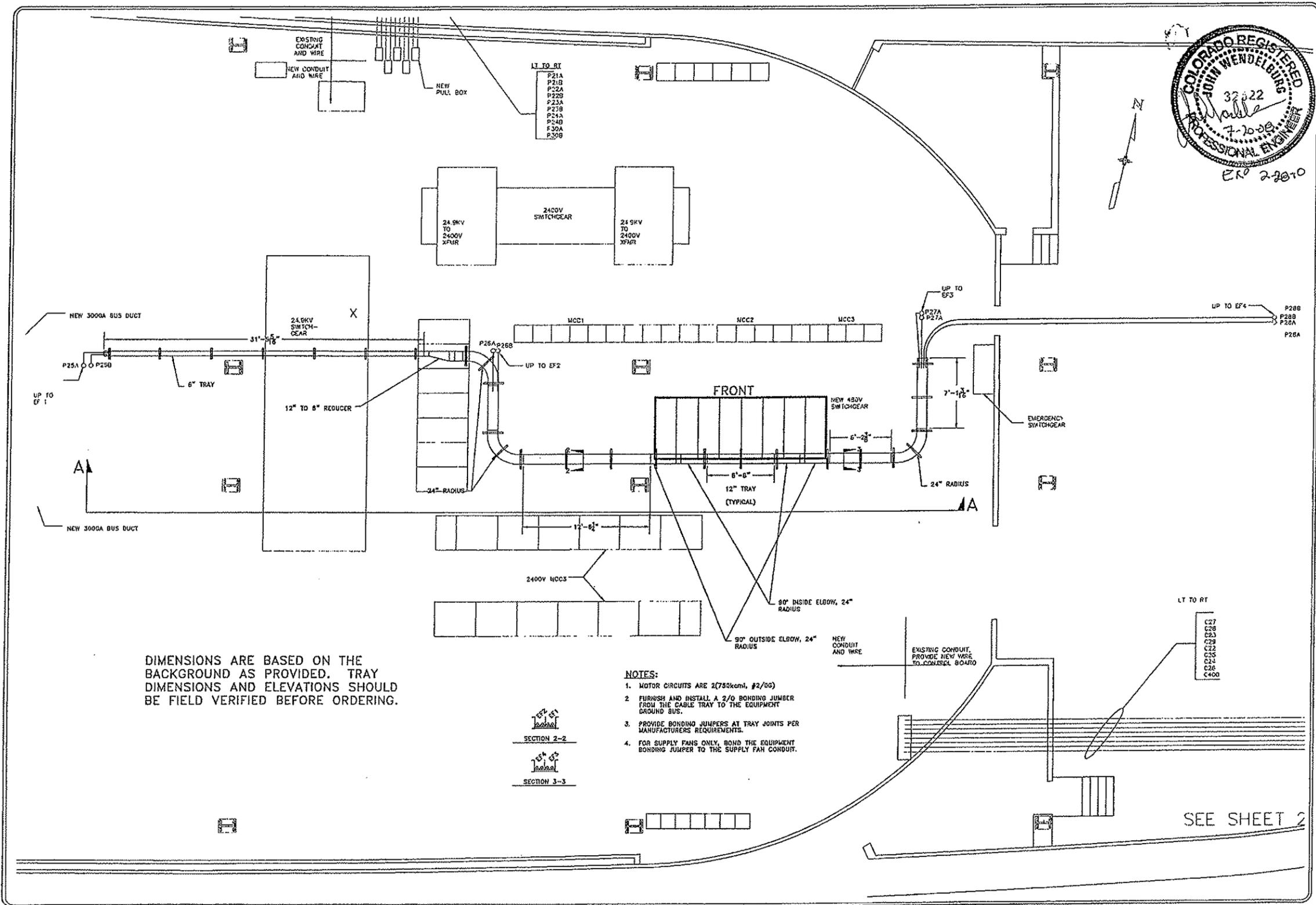
ICEF

200 S. Box 1255
 Arapahoe, CO 80001
 P.O. Box 431-7885
 (303) 431-7885

**INTERSTATE ELECTRICAL CONTRACTORS
 EAST PORTAL EISENHOWER TUNNEL
 SUPPLY FAN TRAY PLAN**

DESIGNED BY	DM
DRAWN BY	DM
CHECKED BY	DM
DATE	5/18/08
SCALE	1/4"=1'-0"
SHEET NO.	2146.001
E1-E1	

SEE SHEET 2



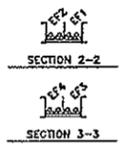
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REVISION	
NO.	

electric power engineering
 ANCHORAGE, ALASKA
 P.O. BOX 1285
 (907) 431-7895

INTERSTATE ELECTRICAL CONTRACTORS
 EAST PORTAL EISENHOWER TUNNEL
 EXHAUST FAN TRAY PLAN

DIMENSIONS ARE BASED ON THE BACKGROUND AS PROVIDED. TRAY DIMENSIONS AND ELEVATIONS SHOULD BE FIELD VERIFIED BEFORE ORDERING.

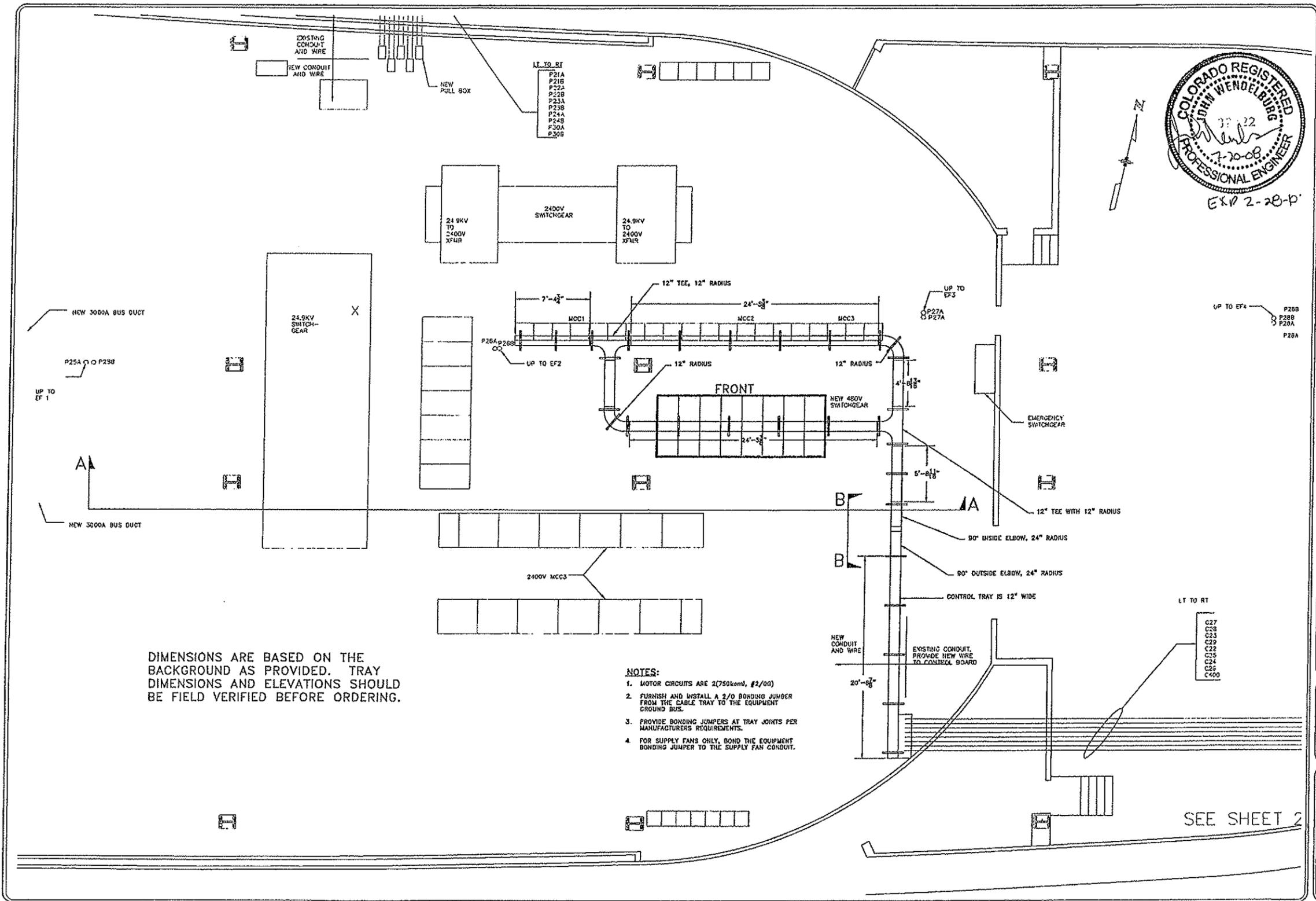
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 2. FURNISH AND INSTALL A 2/0 BONDING JUMPER FROM THE CABLE TRAY TO THE EQUIPMENT GROUND BUS.
 3. PROVIDE BONDING JUMPERS AT TRAY JOINTS PER MANUFACTURERS REQUIREMENTS.
 4. FOR SUPPLY FANS ONLY, BOND THE EQUIPMENT BONDING JUMPER TO THE SUPPLY FAN CONDUIT.



SEE SHEET 2

ENGINEERED BY	DAW
DRAWN BY	DAW
REVIEWED BY	
DATE	5/18/08
SCALE	1/4"=1'-0"
TITLE	2146.001

E1-E2



DIMENSIONS ARE BASED ON THE BACKGROUND AS PROVIDED. TRAY DIMENSIONS AND ELEVATIONS SHOULD BE FIELD VERIFIED BEFORE ORDERING.

- NOTES:**
1. MOTOR CIRCUITS ARE 2(750kcmil, #2/00)
 2. FURNISH AND INSTALL A 2/0 BONDING JUMPER FROM THE CABLE TRAY TO THE EQUIPMENT GROUND BUS.
 3. PROVIDE BONDING JUMPERS AT TRAY JOINTS PER MANUFACTURERS REQUIREMENTS.
 4. FOR SUPPLY FANS ONLY, BOND THE EQUIPMENT BONDING JUMPER TO THE SUPPLY FAN CONDUIT.



EXP 2-28-11

DATE	
REVISION	
NO.	

electric power engineering
 P.O. Box 1255
 Fort Collins, CO 80501
 (970) 431-7595
 FAX (970) 431-1036

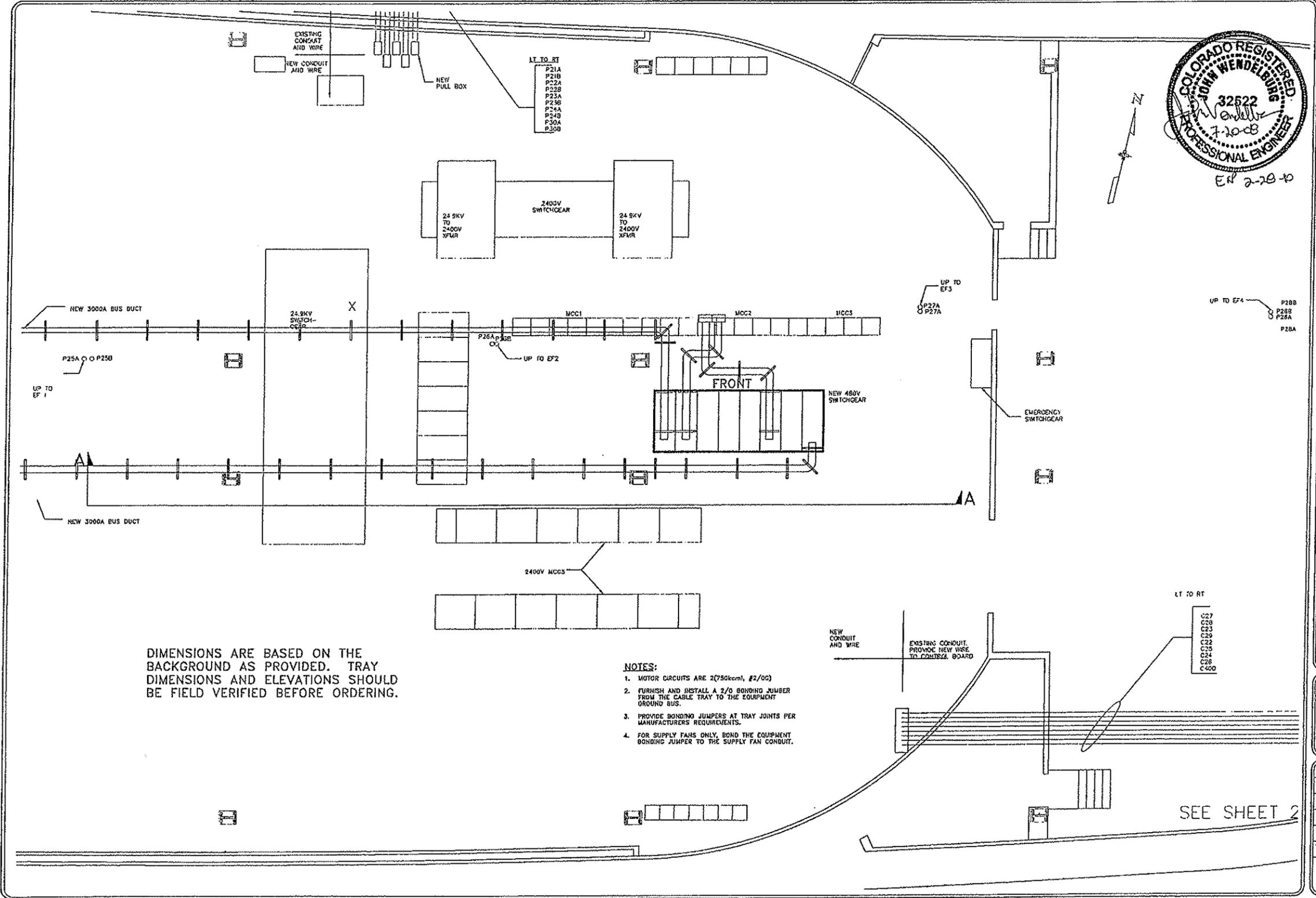
**INTERSTATE ELECTRICAL CONTRACTORS
 EAST PORTAL EISENHOWER TUNNEL
 CONTROL TRAY PLAN**

DESIGNED BY	GM
DRAWN BY	GM
CHECKED BY	

DATE	8/18/08
SCALE	1/4"=1'-0"
TGS NO.	2146.001

E1-E3

SEE SHEET 2



DIMENSIONS ARE BASED ON THE BACKGROUND AS PROVIDED. TRAY DIMENSIONS AND ELEVATIONS SHOULD BE FIELD VERIFIED BEFORE ORDERING.

- NOTES:**
1. MOTOR CIRCUITS ARE 2(750kcmil, #2/00)
 2. FURNISH AND INSTALL A 2/0 BONDING JUMPER FROM THE CABLE TRAY TO THE EQUIPMENT GROUND BUS.
 3. PROVIDE BONDING JUMPERS AT TRAY JOINTS PER MANUFACTURERS REQUIREMENTS.
 4. FOR SUPPLY FANS ONLY, BOND THE EQUIPMENT BONDING JUMPER TO THE SUPPLY FAN CONDUIT.



DATE	
REVISION	
NO.	

electric power engineering

EF

1200 S. BOX 1200
 P.O. BOX 431-7685
 ANCHORAGE, ALASKA 99501-1838
 PHONE (907) 431-7685
 FAX (907) 431-1838

**INTERSTATE ELECTRICAL CONTRACTORS
 EAST PORTAL EISENHOWER TUNNEL
 BUS DUCT**

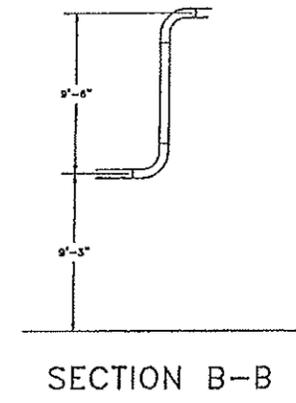
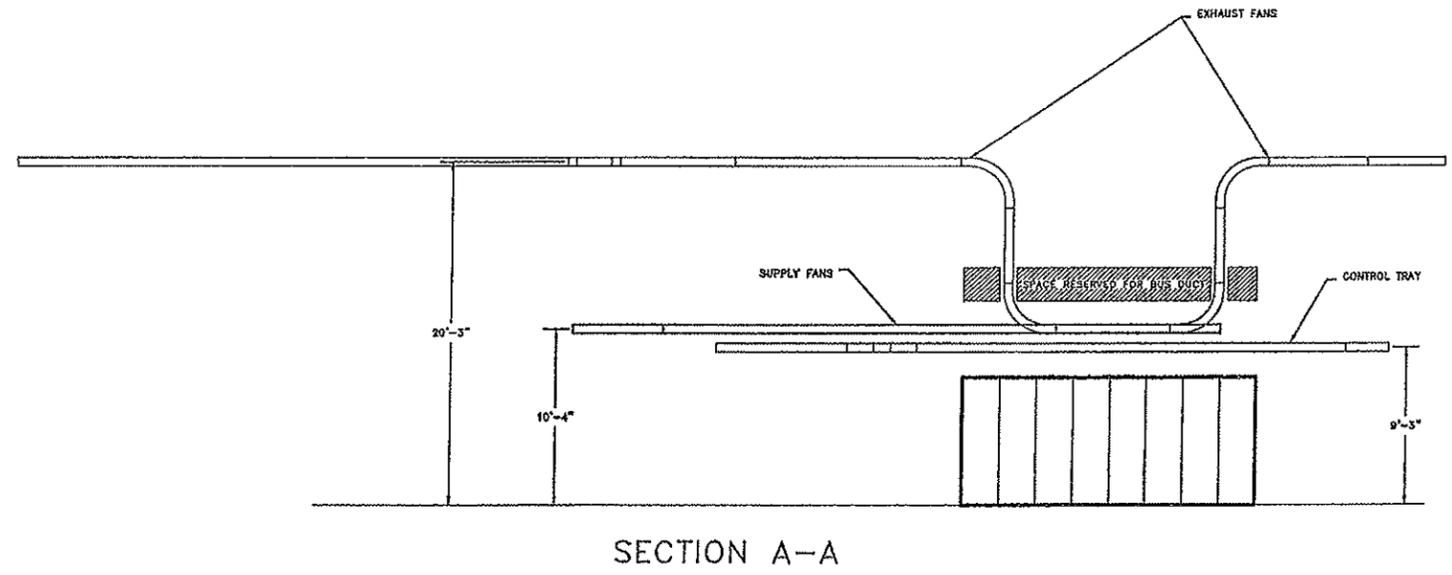
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CHECKED BY	DM
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SCALE	1/4"=1'-0"
JOB NO.	2146001
E1-E4	



EN 2-2B-10

DATE	
REVISION	

MEF
 electric power engineering
 P.O. Box 1265
 CO 80531-1265
 Address: CO 80001
 Fax (303) 431-1036

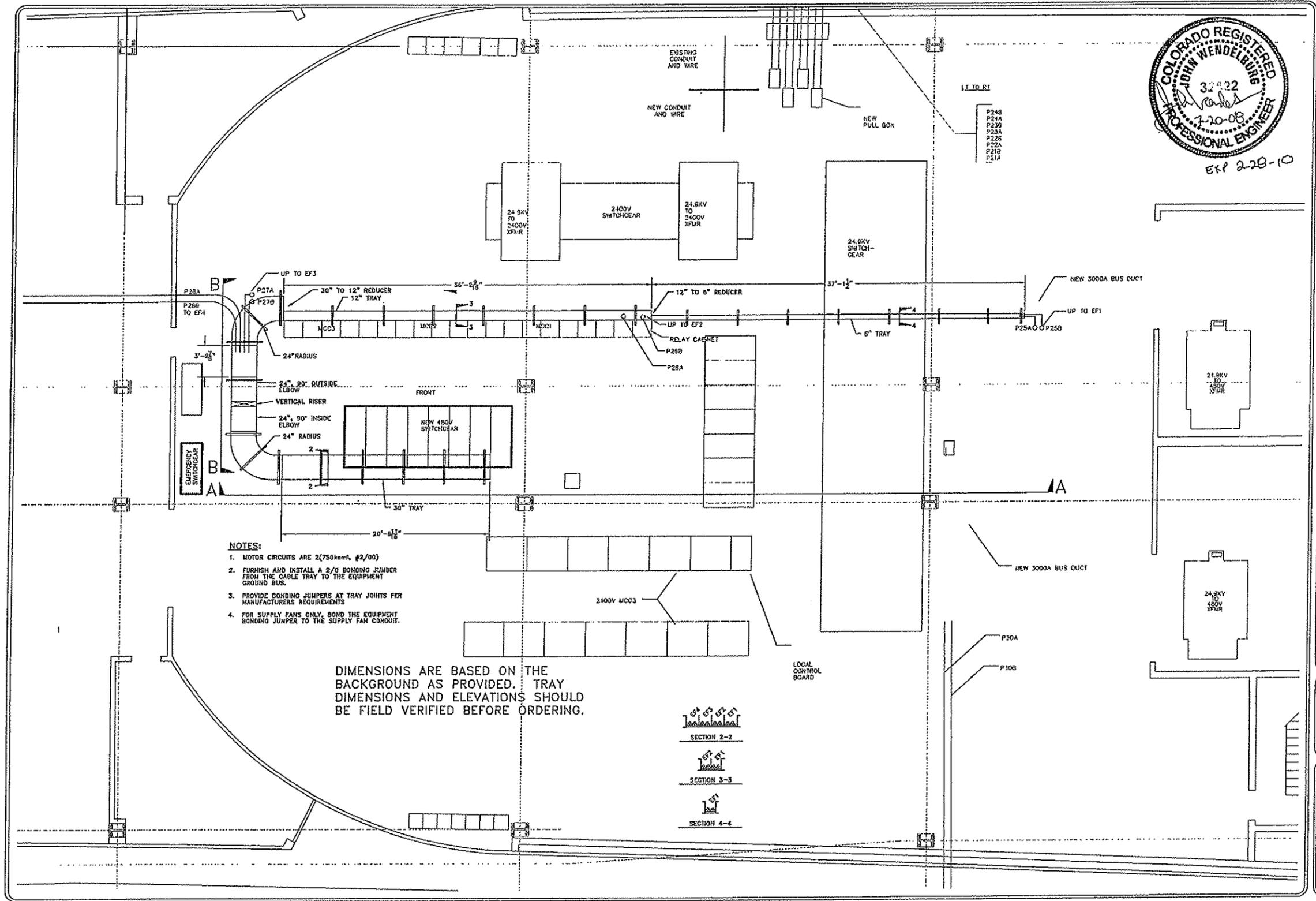


INTERSTATE ELECTRICAL CONTRACTORS
 EAST PORTAL EISENHOWER TUNNEL
 TRAY ELEVATIONS



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JOB NO.	2146.001

E1-E5



EXP 2-28-10

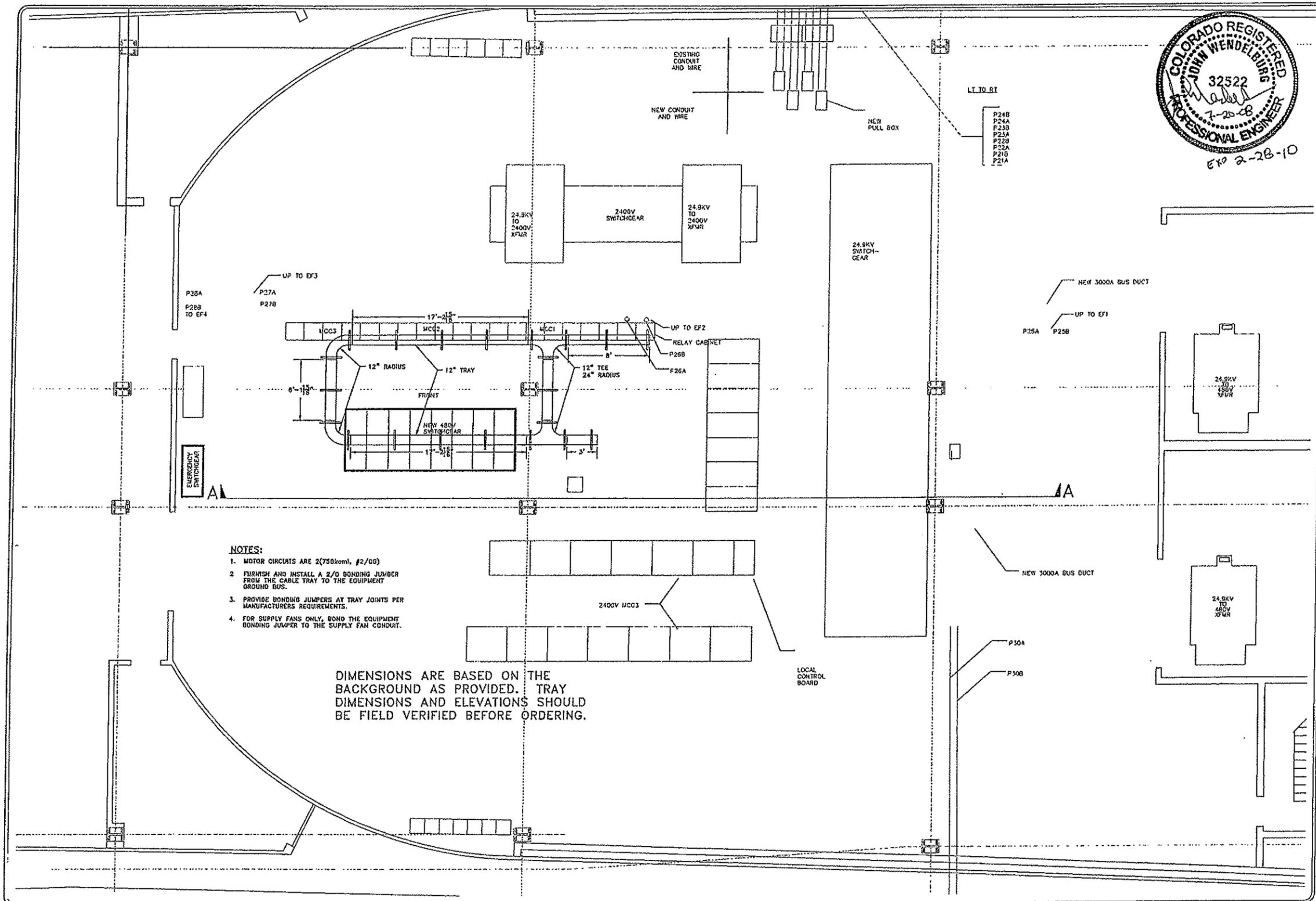
DATE
REVISION
BY

ICEF
 electric power engineering
 Denver, CO 80202
 P.O. Box 1295
 (303) 431-7865

**INTERSTATE ELECTRICAL CONTRACTORS
 WEST PORTAL EISENHOWER TUNNEL
 EXHAUST FAN TRAY**

APPROVED BY	
DRAWN BY	
REVIEWED BY	
DATE	5/18/08
SCALE	1/4"=1'-0"
FIG NO.	2145.001

E1-W2



COLORADO REGISTERED
 JOHN WENDELBURG
 32522
 7-20-08
 PROFESSIONAL ENGINEER
 EXP 2-28-10

DATE	REVISION

electric power engineering
 P.O. Box 1285
 (303) 431-7585
 FAY (303) 431-1835
 AVONDALE, CO 80001

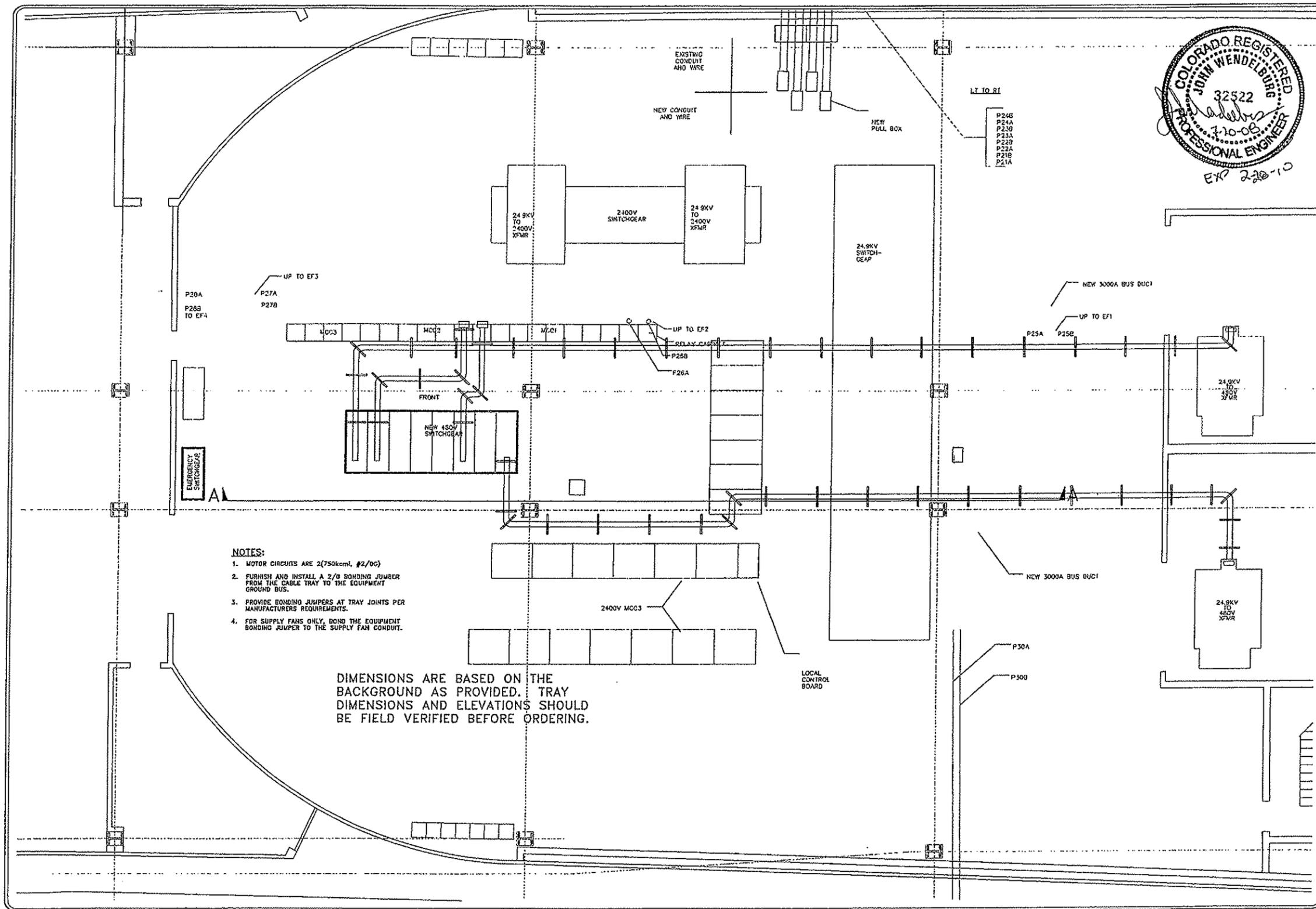
INTERSTATE ELECTRICAL CONTRACTORS
 WEST PORTAL EISENHOWER TUNNEL
 CONTROL TRAY

DESIGNED BY	DAI
DRAWN BY	DAI
REVIEWED BY	
DATE	8/18/08
SCALE	1/4"=1'-0"
TEN VAL	2146.001

E1-W3

- NOTES:
1. MOTOR CIRCUITS ARE 2(750kcmil, #2/00)
 2. FURNISH AND INSTALL A 2/D BONDING JUMPER FROM THE CABLE TRAY TO THE EQUIPMENT GROUND BUS.
 3. PROVIDE BONDING JUMPERS AT TRAY JOINTS PER MANUFACTURERS REQUIREMENTS.
 4. FOR SUPPLY FANS ONLY, BOND THE EQUIPMENT BONDING JUMPER TO THE SUPPLY FAN CONDUIT.

DIMENSIONS ARE BASED ON THE BACKGROUND AS PROVIDED. TRAY DIMENSIONS AND ELEVATIONS SHOULD BE FIELD VERIFIED BEFORE ORDERING.



DATE	
EXTENSION	
NO.	

electric power engineering

MEF

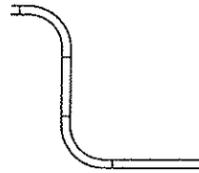
Assoc. CO #6981
P.O. Box 1285
CO 80537 431-7885

**INTERSTATE ELECTRICAL CONTRACTORS
WEST PORTAL EISENHOWER TUNNEL
BUS DUCT**

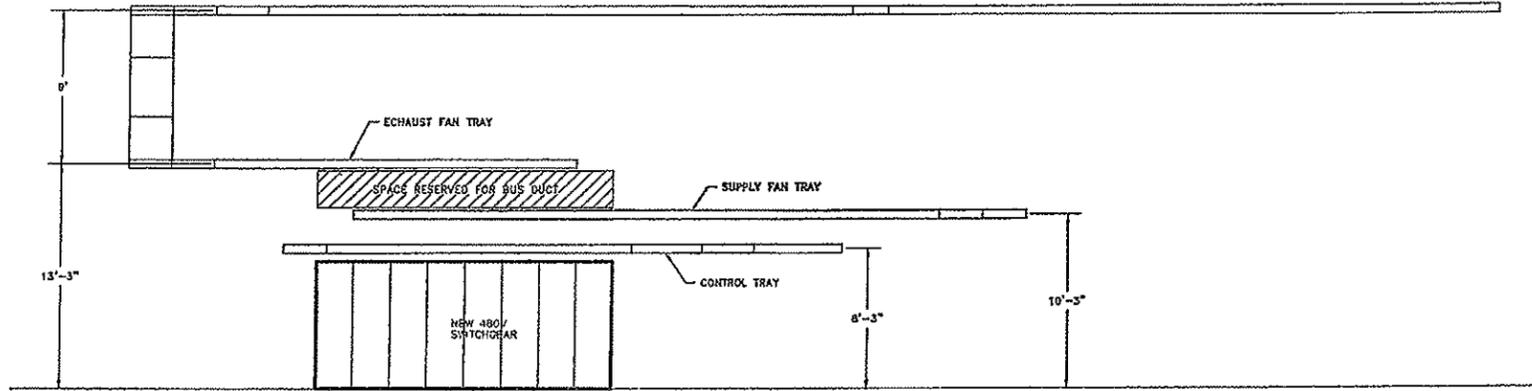
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REVIEWED BY	
DATE	8/18/08
SCALE	1/4"=1'-0"
JOB NO.	2146.001
E1-W4	



EM 2-28-10



ELEVATION B-B



ELEVATION A-A

DATE	
REVISION	
NO.	

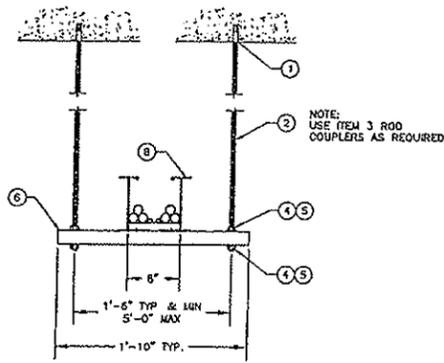
MEF
 electric power engineering
 P.O. Box 1265
 (303) 431-7885
 Arapahoe, CO 80001
 FAX (303) 431-1835

INTERSTATE ELECTRICAL CONTRACTORS
 WEST PORTAL EISENHOWER TUNNEL
 TRAY ELEVATIONS

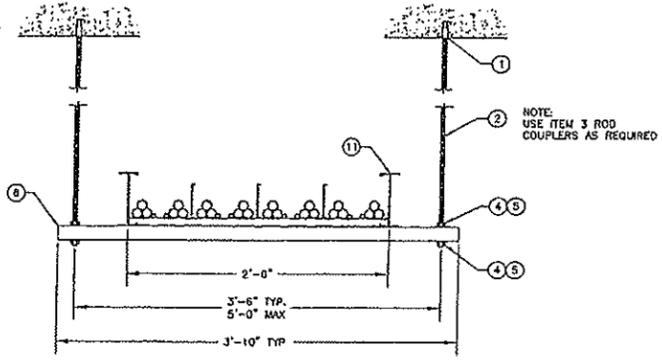


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CHECKED BY	
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JOB NO.	2146.001

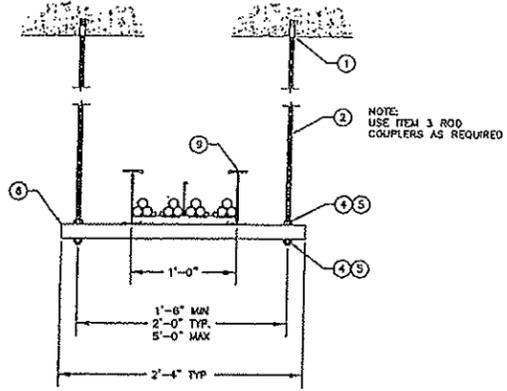
E1-W5



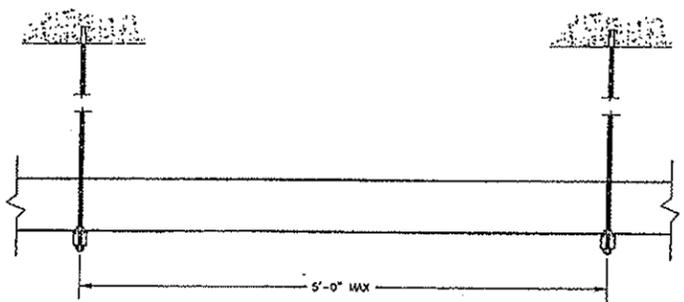
6" TRAY WITH ONE FAN



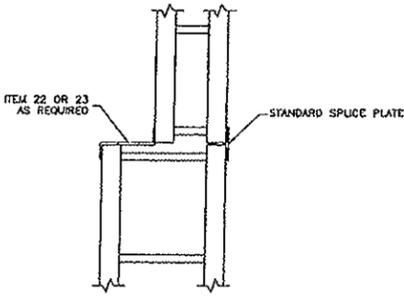
30" TRAY WITH FOUR FANS



12" TRAY WITH TWO FANS



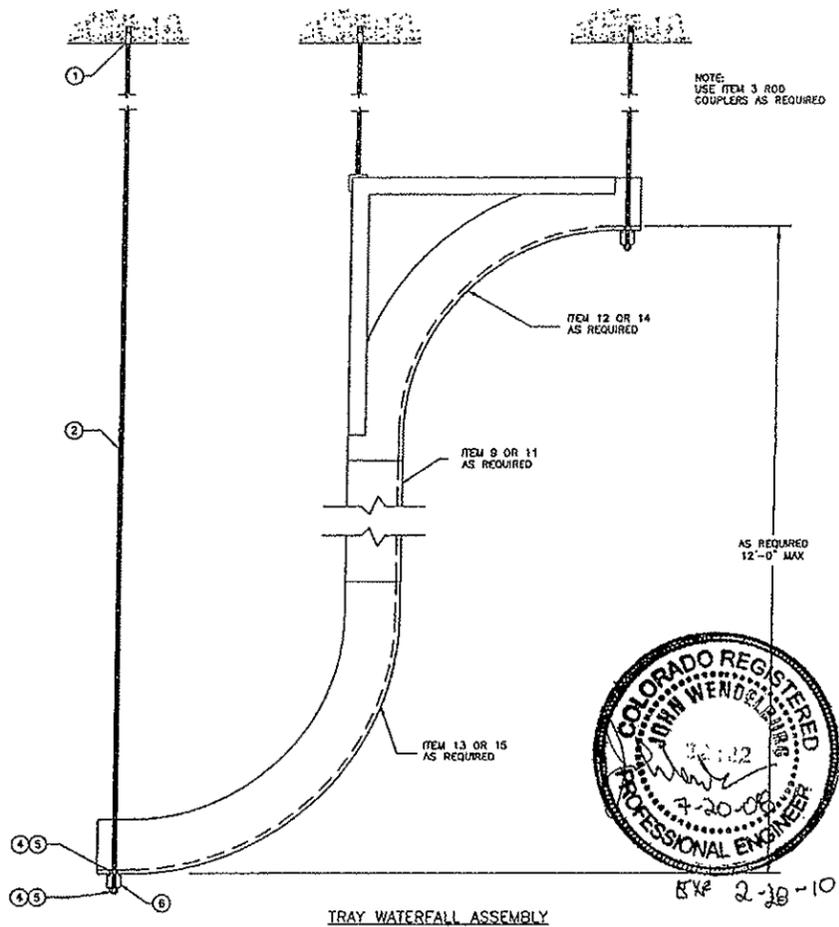
MAX SPAN IN ALL CASES



CABLE TRAY REDUCER

BILL OF MATERIAL			
ITEM NO	MANUFACTURER	DESCRIPTION	PART #
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2	HILT	1/2"-10" THREADED ROD -- ZINC	00305308
3	HILT	1/2" ROD COUPLER	00257905
4	HILT	HEX NUT -- HEAVY HEX 1/2"	00335551
5	HILT	WASHER -- USS 1/2"	00335554
6	HILT	12 GAUGE 1 5/8" x 1 5/8" STRUT	HS-150-12
7	HILT	12 GAUGE 1 5/8" x 2 7/16" STRUT	HS-2716-12

- NOTES:
1. ALL CABLE SPLICES MUST BE COVERED WITH CABLE TRAY COVER.
 2. ② REFERS TO BILL OF MATERIALS
 3. MAX SPAN TO BE NO LONGER THAN 5'-0" O/C BOTH DIRECTIONS, IF LONGER SPANS ARE NEEDED CONTACT DESIGN ENGINEER.
 4. TOTAL ALLOWABLE LOAD INCLUDING WEIGHT OF TRAY
 30" TRAY = 100 LBS/FT
 12" TRAY = 75 LBS/FT
 6" TRAY = 70 LBS/FT



TRAY WATERFALL ASSEMBLY

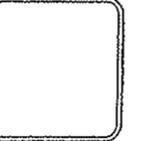


EX# 2-28-10

DATE	REVISION

electric power engineering
 1255
 P.O. Box 1255
 (303) 431-7885
 FAY (303) 431-1836
 ARVING, CO 80001

INTERSTATE ELECTRICAL CONTRACTORS
 EISENHOWER TUNNEL
 CABLE TRAY DETAILS

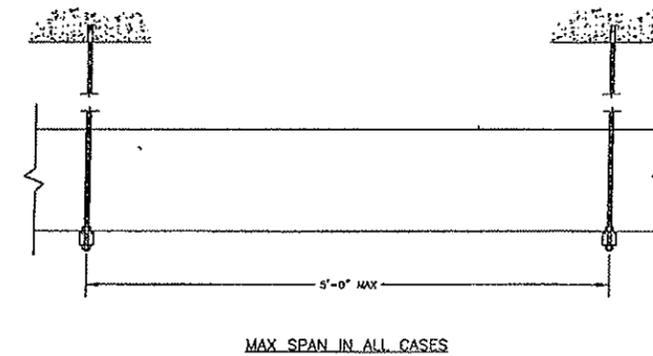
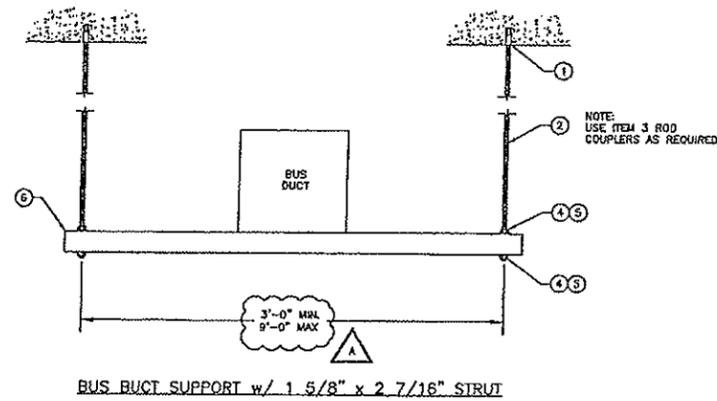
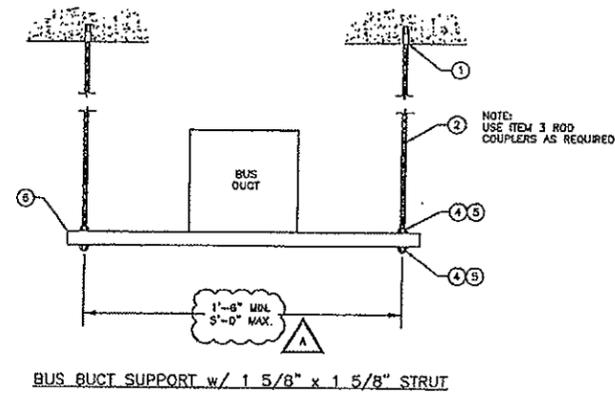


DESIGNED BY	AVM
CHECKED BY	AVM
APPROVED BY	
DATE	8/18/08
SCALE	1:1
WORK SHEET	2146.001

E1-D1

BILL OF MATERIAL			
ITEM NO.	MANUFACTURER	DESCRIPTION	PART #
1	HLLI	1/2" STAINLESS STEEL HEX DROP-IN ANCHOR	00336432
2	HLLI	1/2"-10' THREADED ROD - ZINC	00309388
3	HLLI	1/2" ROD COUPLER	00257985
4	HLLI	HEX NUT - HEAVY HEX 1/2"	00335551
5	HLLI	WASHER - USS 1/2"	00335554
6	HLLI	12 GAUGE 1 5/8" x 1 5/8" STRUT	HS-156-12
7	HLLI	12 GAUGE 1 5/8" x 2 7/16" STRUT	HS-2716-12

- NOTES:
- 1 ALL CABLE SPLICES MUST BE COVERED WITH CABLE TRAY COVER.
 2. (X) REFERS TO BILL OF MATERIALS.
 3. MAX SPAN TO BE NO LONGER THAN 5'-0" O/C BOTH DIRECTIONS, IF LONGER SPANS ARE NEEDED CONTACT DESIGN ENGINEER.



EX 2-10-10

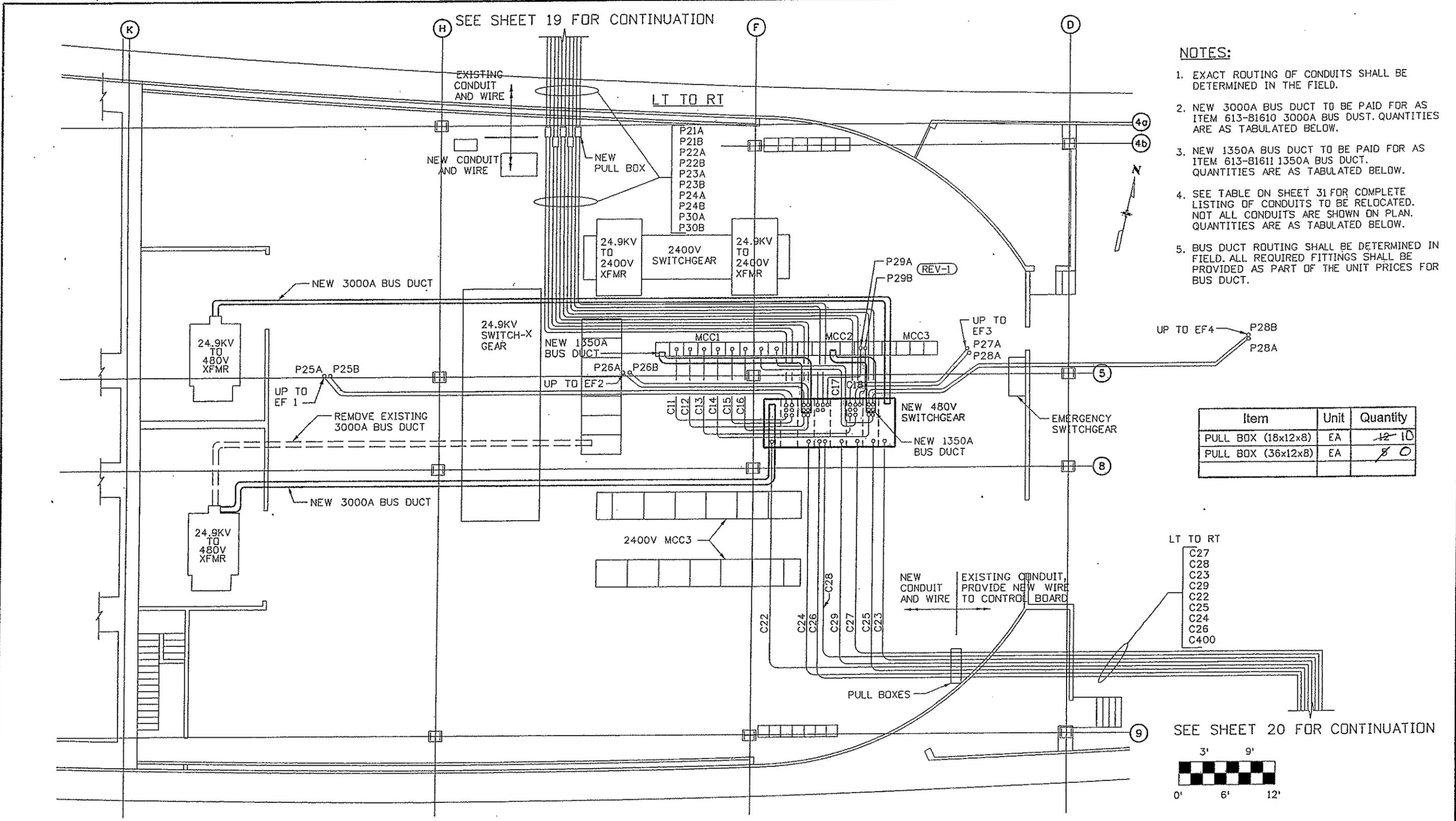
REVISIONS	DATE	BY	DESCRIPTION
1			AS PER DESIGN

electric power engineering
 P.E. BOB 1285
 (303) 431-7883
 FAX (303) 431-7883

INTERSTATE ELECTRICAL CONTRACTORS
 EISENHOWER TUNNEL
 BUS DUCT SUPPORT DETAILS

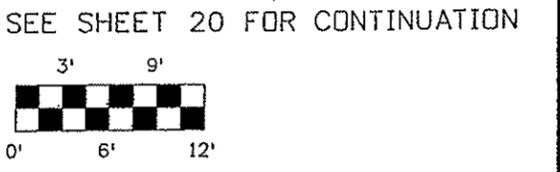
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DRAWN BY	AME
APPROVED BY	
DATE	6/18/08
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DWG NO.	2145.001

E1-D2



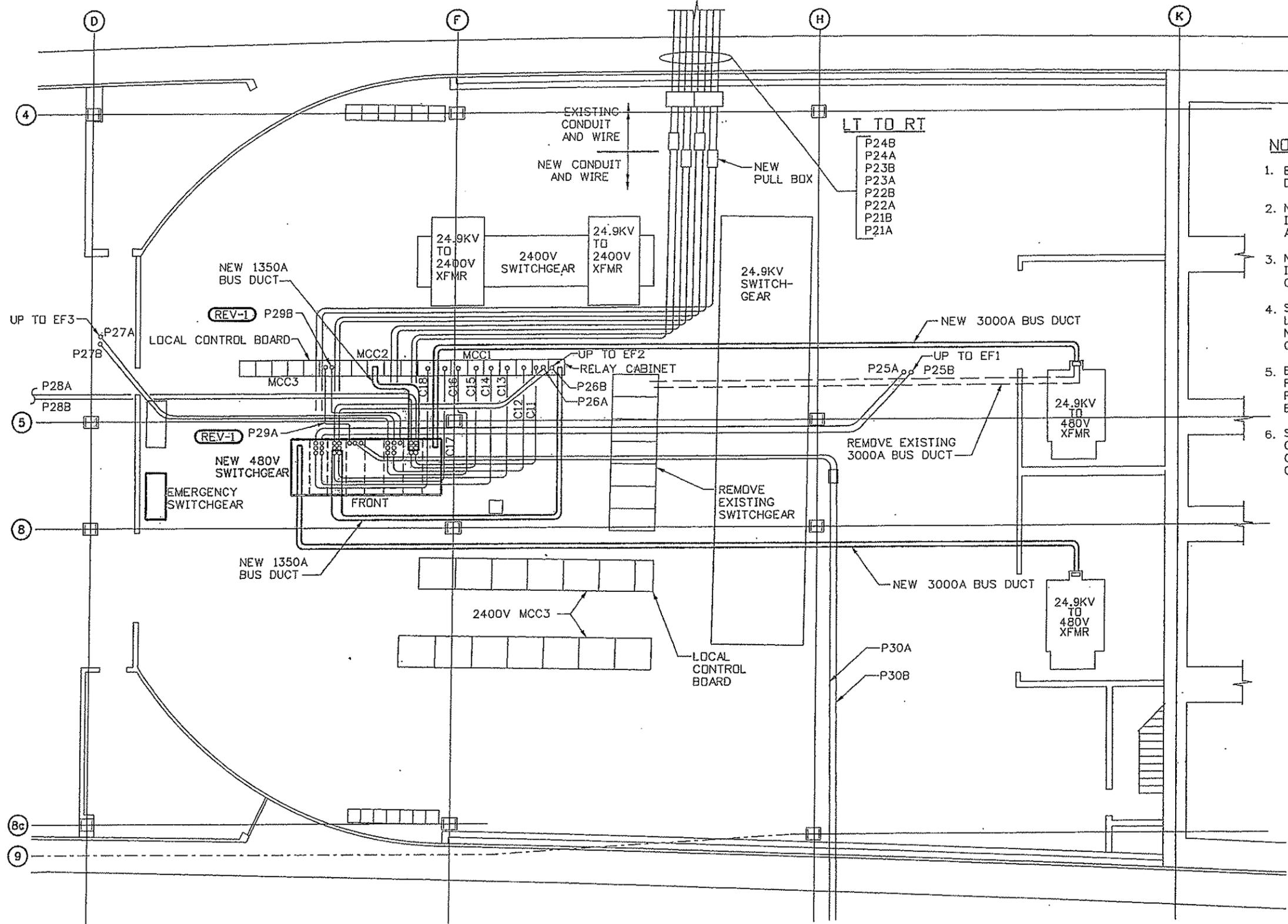
- NOTES:**
- EXACT ROUTING OF CONDUITS SHALL BE DETERMINED IN THE FIELD.
 - NEW 3000A BUS DUCT TO BE PAID FOR AS ITEM 613-81610 3000A BUS DUCT. QUANTITIES ARE AS TABULATED BELOW.
 - NEW 1350A BUS DUCT TO BE PAID FOR AS ITEM 613-81611 1350A BUS DUCT. QUANTITIES ARE AS TABULATED BELOW.
 - SEE TABLE ON SHEET 31 FOR COMPLETE LISTING OF CONDUITS TO BE RELOCATED. NOT ALL CONDUITS ARE SHOWN ON PLAN. QUANTITIES ARE AS TABULATED BELOW.
 - BUS DUCT ROUTING SHALL BE DETERMINED IN FIELD. ALL REQUIRED FITTINGS SHALL BE PROVIDED AS PART OF THE UNIT PRICES FOR BUS DUCT.

Item	Unit	Quantity
PULL BOX (18x12x8)	EA	12 10
PULL BOX (36x12x8)	EA	8 0



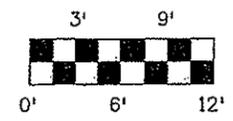
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Horiz. Scale: 3/16" Vert. Scale: 3/16"	11/16/07	Added P29 Conduit Runs	JPS	Region 1 INZ		Revised: 11/23/09	Designer: J. SHELDON	Structure Numbers	16096
Unit Information Unit Leader Initials	REV-1					Void:	Detailer: R. KWONG	Subset Sheets:	Sheet Number 17

SEE SHEET 23 FOR CONTINUATION

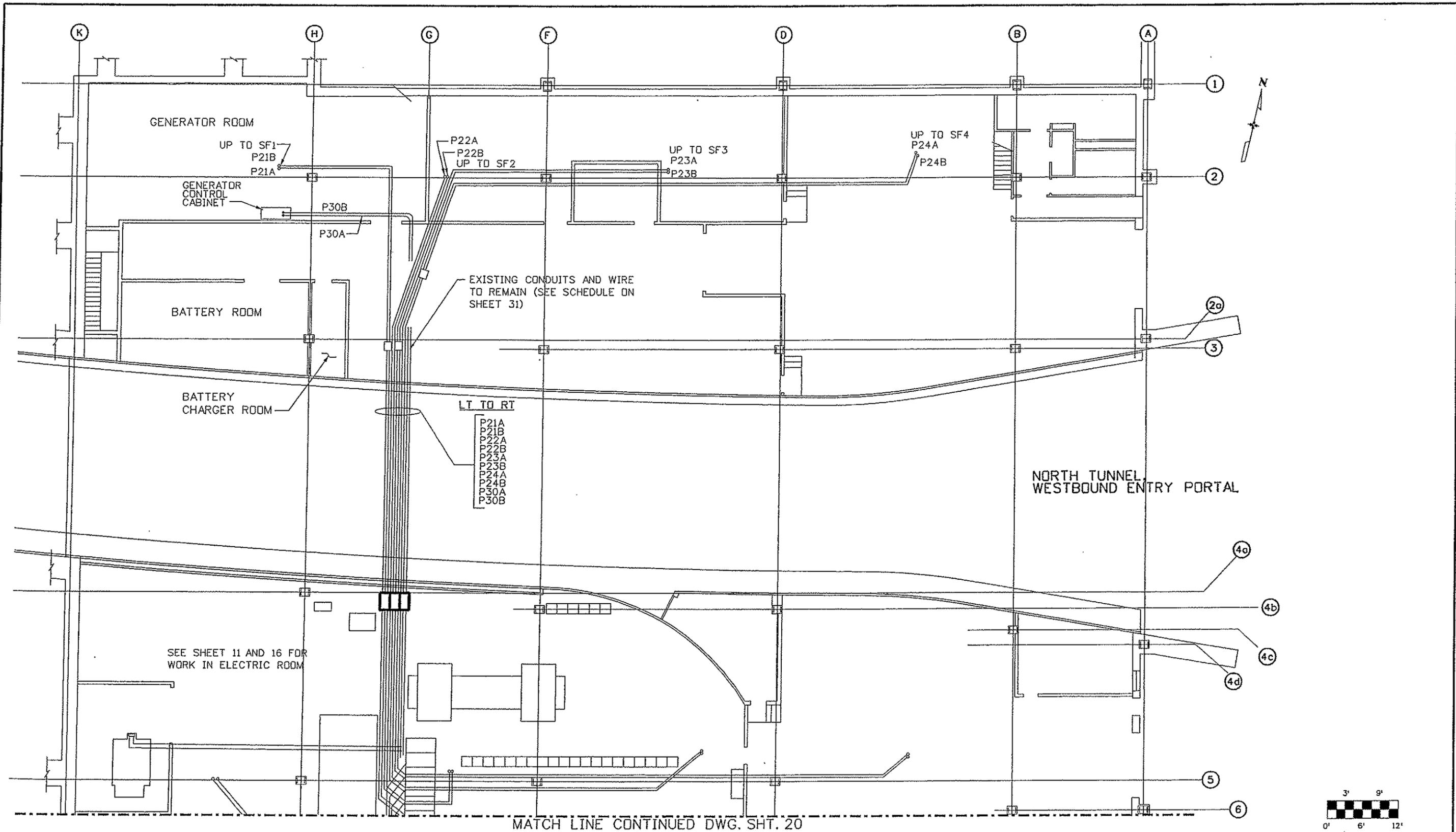


- NOTES:**
1. EXACT ROUTING OF CONDUITS SHALL BE DETERMINED IN THE FIELD.
 2. NEW 3000A BUS DUCT TO BE PAID FOR AS ITEM 613-81610 3000A BUS DUCT. QUANTITIES ARE AS TABULATED BELOW.
 3. NEW 1350A BUS DUCT TO BE PAID FOR AS ITEM 613-81611 1350A BUS DUCT. QUANTITIES ARE AS TABULATED BELOW.
 4. SEE TABLE ON SHEET 32 FOR COMPLETE LISTING OF CONDUITS TO BE RELOCATED. NOT ALL CONDUITS ARE SHOWN ON PLAN. QUANTITIES ARE AS TABULATED BELOW.
 5. BUS DUCT ROUTING SHALL BE DETERMINED IN FIELD. ALL REQUIRED FITTINGS SHALL BE PROVIDED AS PART OF THE UNIT PRICES FOR BUS DUCT.
 6. SEE CONDUIT SCHEDULE, SHEET 32, FOR CONDUITS BETWEEN SWITCHGEAR AND RELAY CABINET AND SWITCHGEAR AND LOCAL CONTROL BOARD.

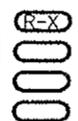
Item	Unit	Quantity
PULL BOX (18x12x8)	EA	12 10
PULL BOX (36x12x8)	EA	5 0

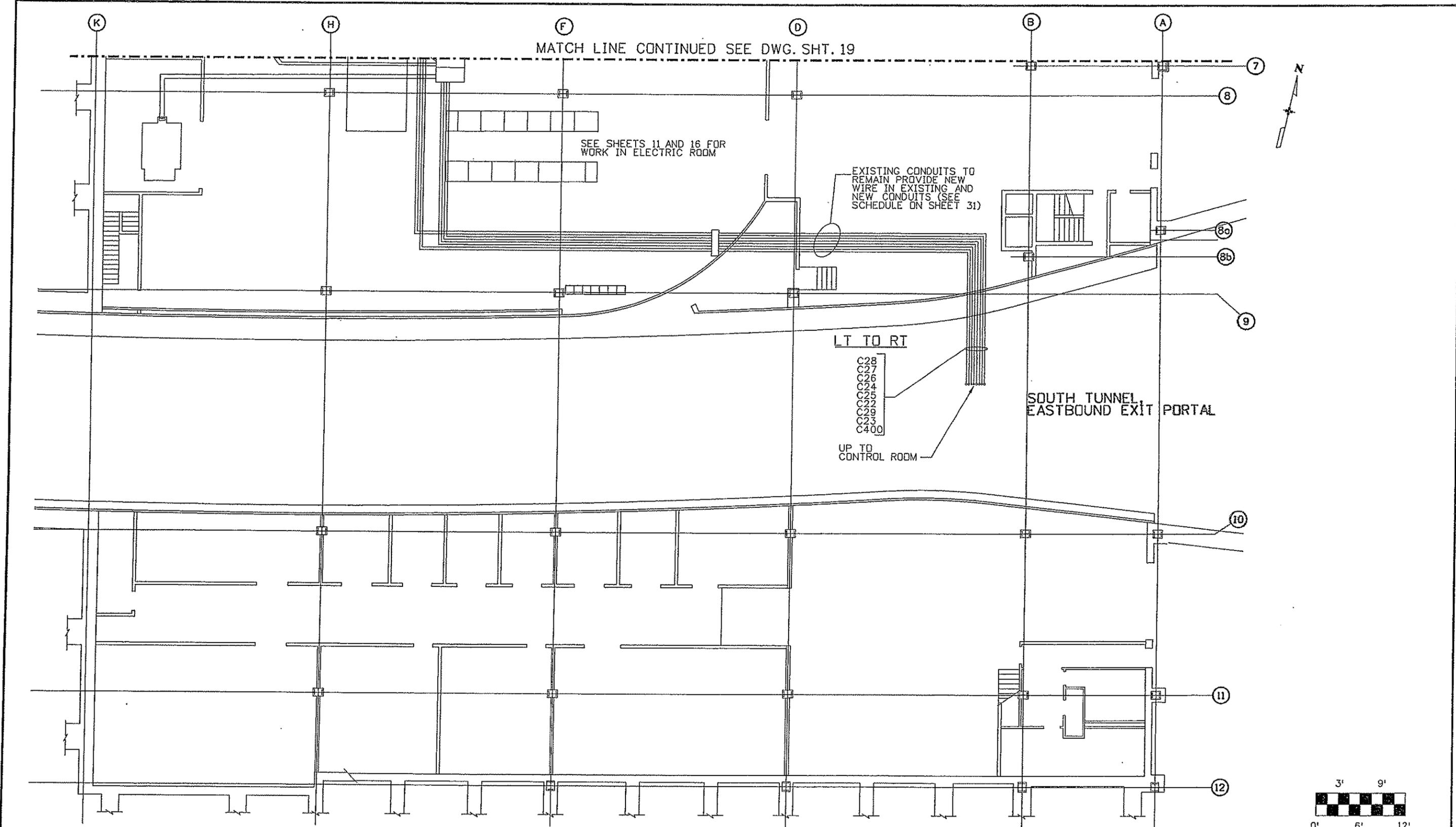


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Date		Comments	Init.								
11/16/07	Added P29 Conduit Runs	JPS									
Drawing File Name: 16096ELEPLAN017w.dgn	No Revisions: 11/23/09 Revised: Void:	Designer: J. SHELDON Detailer: R. KWONG Sheet Subset:	Structure Numbers Subset Sheets:	16096							
Unit Information	Unit Leader Initials				Sheet Number 18						



MATCH LINE CONTINUED DWG. SHT. 20

Print Date: 10/2/2007 Drawing File Name: 16096ELEPLANO18e.dgn Horiz. Scale: 1/8" Vert. Scale: 1/8" Unit Information Unit Leader Initials	Sheet Revisions Date: Comments Init.			Colorado Department of Transportation  Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed No Revisions: 11/23/09 Revised: Void:	EAST VENTILATION BUILDING GROUND FLOOR PLAN DEMOLITION AND NEW WORK-PT1		Project No./Code IM-0703-319
							Designer: J. SHELDON Structure Numbers Detailer: R. KWONG Numbers Sheet Subset: Subset Sheets:	16096 Sheet Number 19



Print Date: 10/2/2007
 Drawing File Name: 16096ELEPLAN019e.dgn
 Horiz. Scale: 1/8" Vert. Scale: 1/8"
 Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

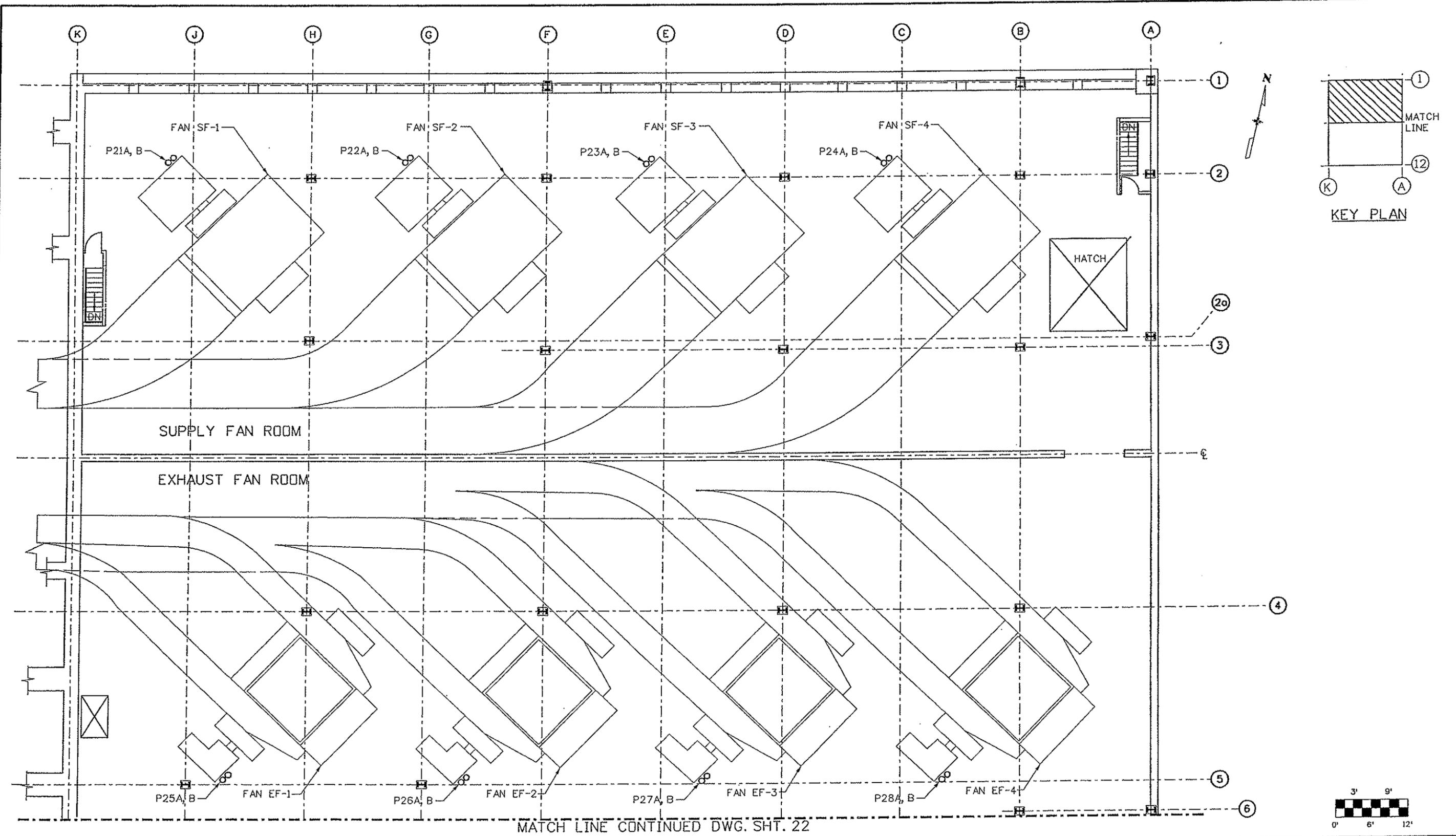
Colorado Department of Transportation
 Mountain Residency P.O. Box 399
 Dumont, CO 80436
 Phone: 303-512-5750 FAX: 303-512-5775
 Region 1 INZ

As Constructed
 No Revisions: 11/23/09
 Revised:
 Void:

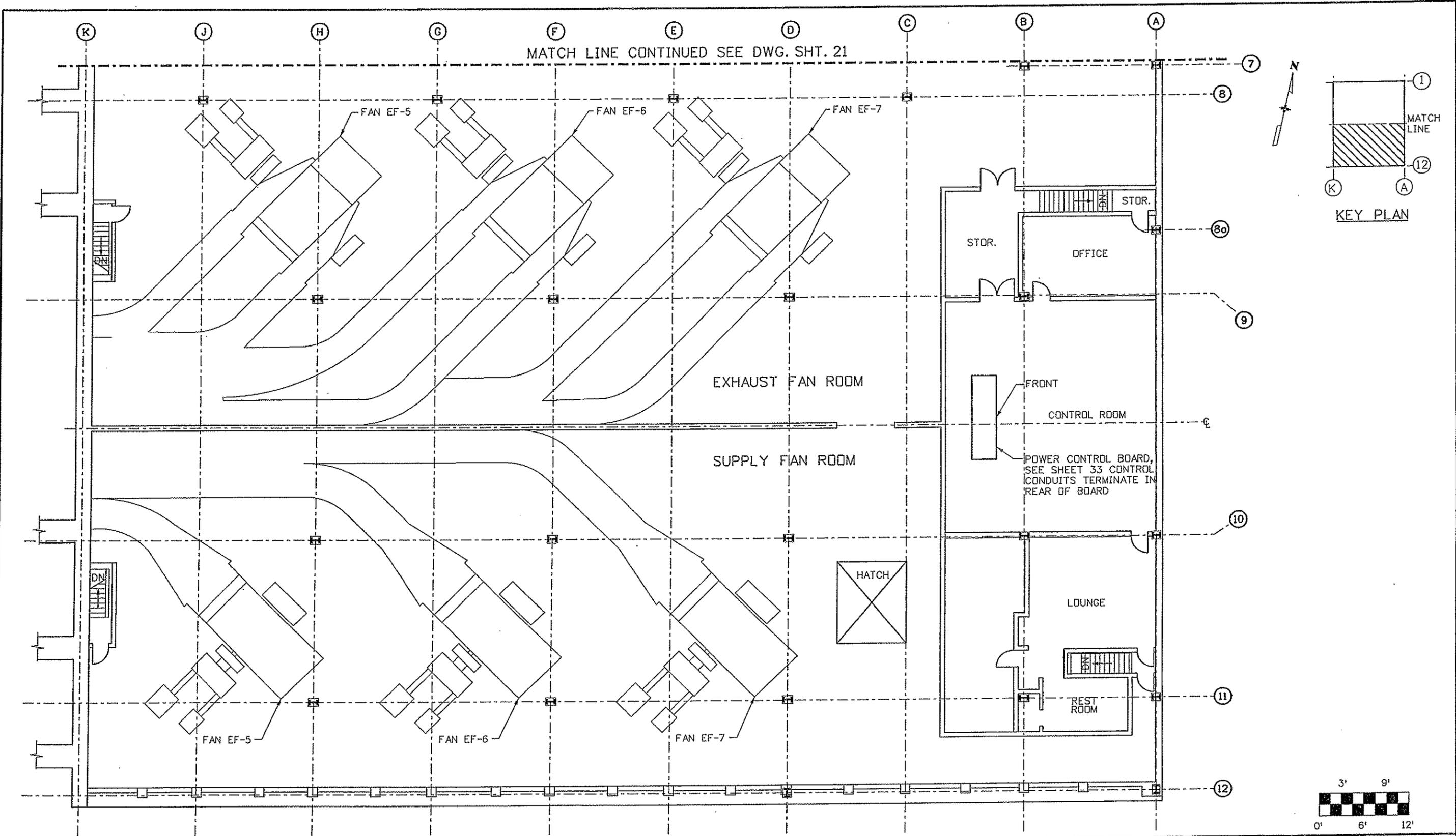
**EAST VENTILATION BUILDING
 GROUND FLOOR PLAN
 DEMOLITION AND NEW WORK-PT2**

Designer: J. SHELDON
 Detailer: R. KWONG
 Sheet Subset:
 Structure Numbers
 Subset Sheets:

Project No./Code
 IM-0703-319
 16096
 Sheet Number 20



Print Date: 10/2/2007	<table border="1"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sheet Revisions			Date:	Comments	Init.							Colorado Department of Transportation  Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed	EAST VENTILATION BUILDING FAN ROOM FLOOR PLAN - NORTH	Project No./Code
Sheet Revisions																	
Date:		Comments	Init.														
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Unit Information Unit Leader Initials	Void:	Sheet Number 21															
				Designer: J. SHELDON Detailer: R. KWONG Sheet Subset:	Structure Numbers Subset Sheets:												



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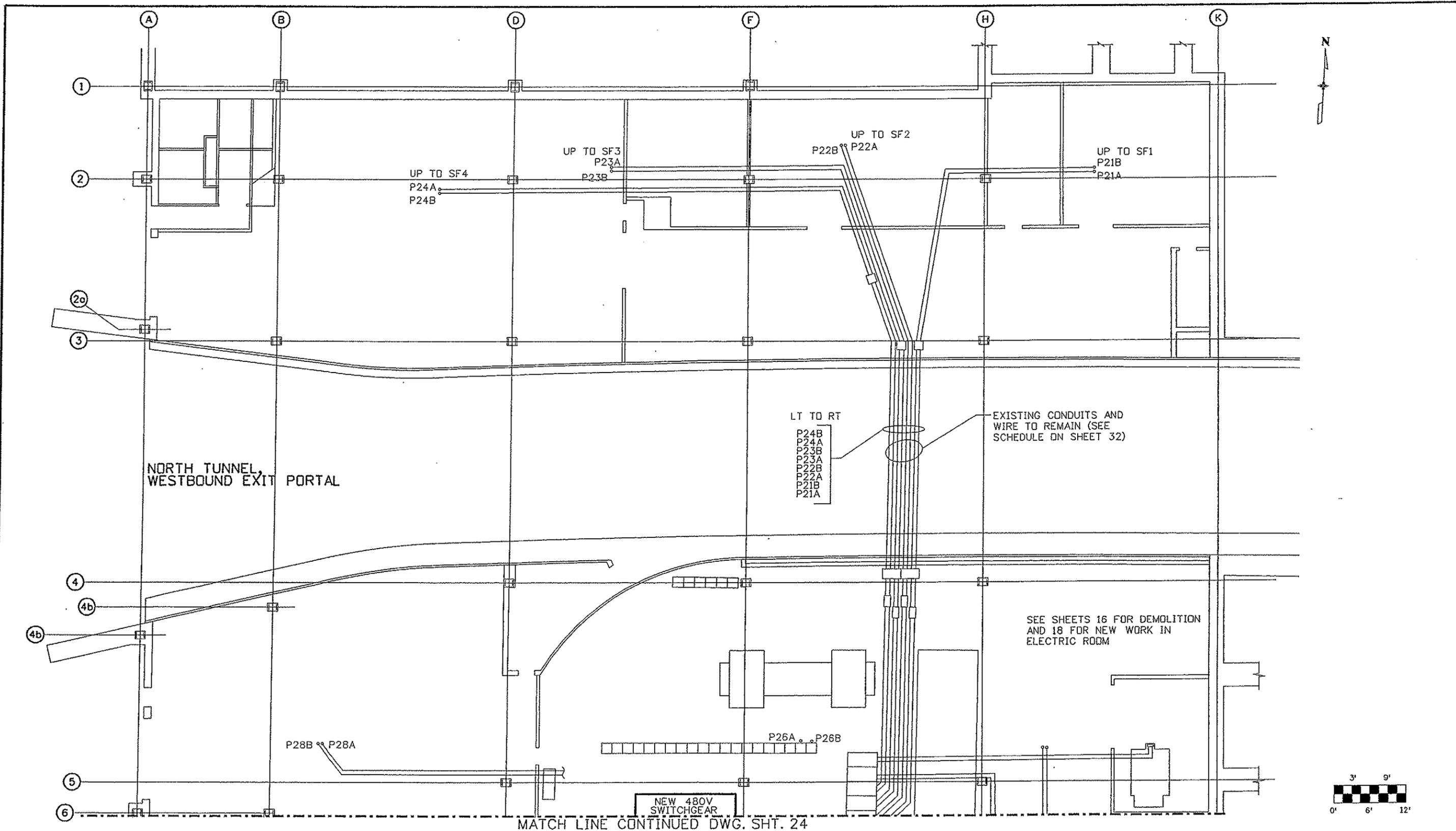
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Date:	Comments	Init.

Colorado Department of Transportation
 Mountain Residency P.O. Box 399
 Dumont, CO 80436
 Phone: 303-512-5750 FAX: 303-512-5775
 Region 1 INZ

As Constructed
 No Revisions: 11/23/09
 Revised:
 Void:

**EAST VENTILATION BUILDING
 FAN ROOM
 FLOOR PLAN - SOUTH**
 Designer: J. SHELDON
 Detailer: R. KWONG
 Sheet Subset:
 Structure Numbers:
 Subset Sheets:

Project No./Code
 IM-0703-319
 16096
 Sheet Number 22



Print Date: 10/2/2007
 Drawing File Name: 16096ELEPLAN021w.dgn
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 Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

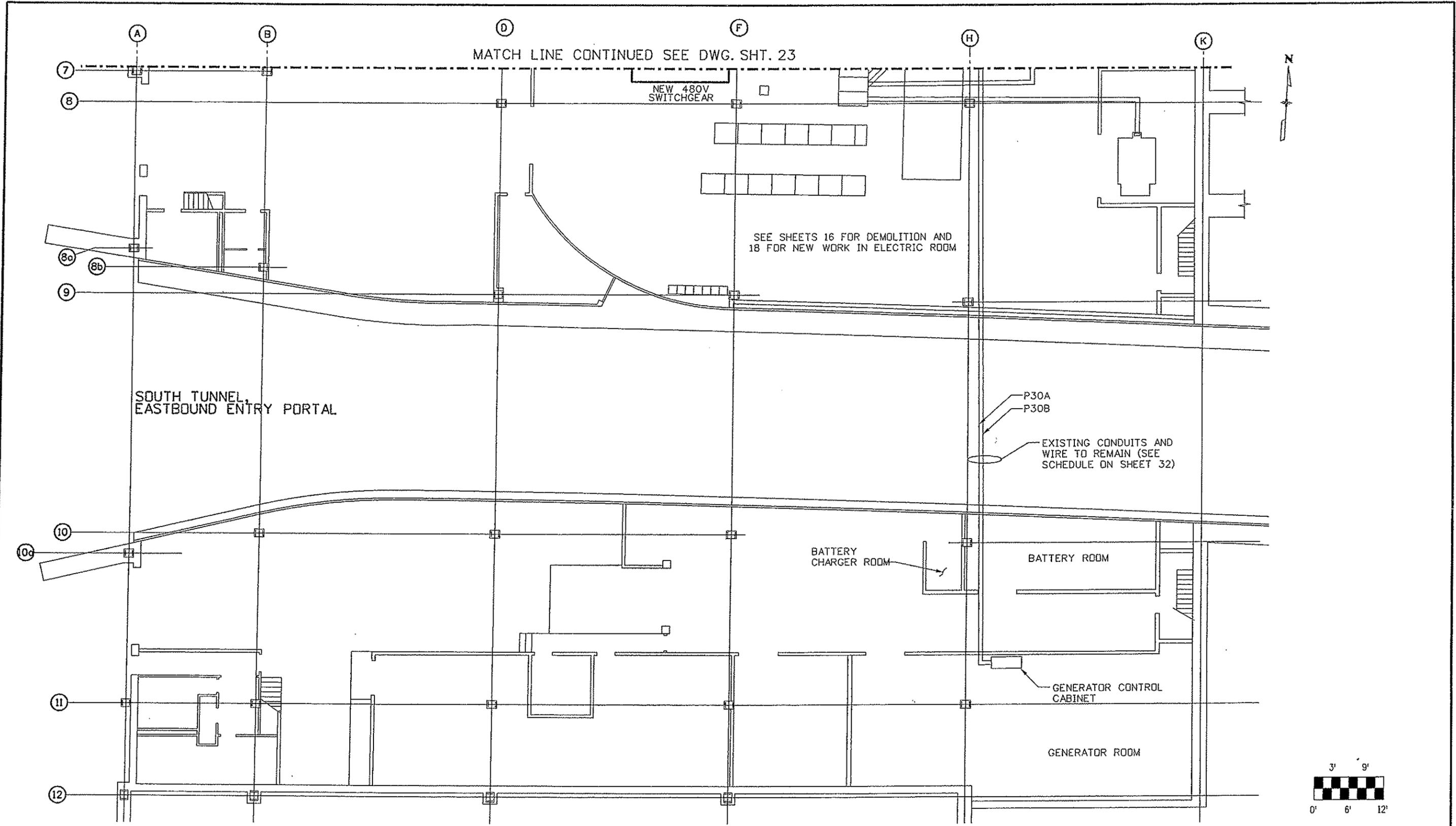
Colorado Department of Transportation

 Mountain Residency P.O. Box 399
 Dumont, CO 80436
 Phone: 303-512-5750 FAX: 303-512-5775
 Region 1 INZ

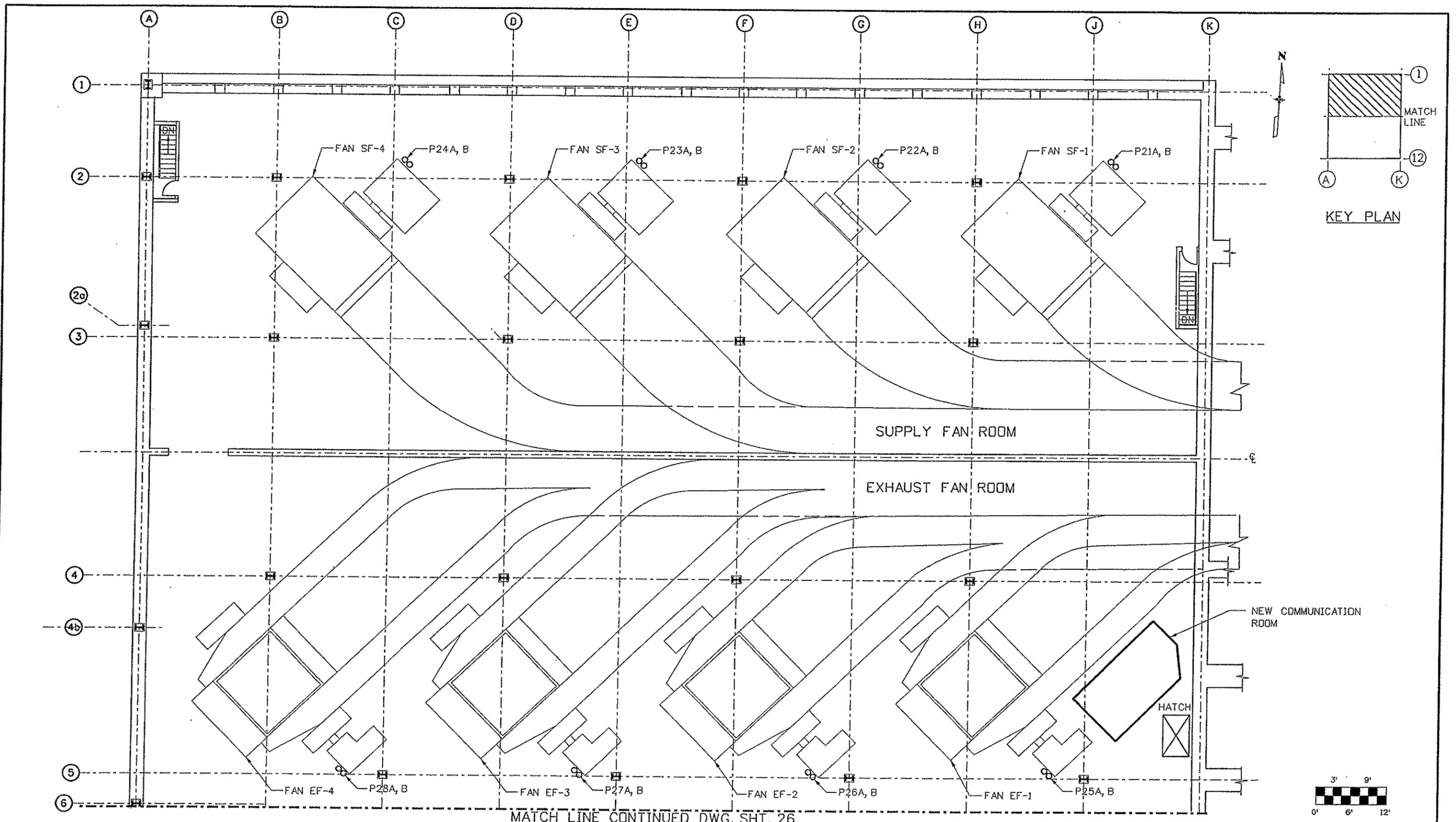
As Constructed
 No Revisions: 11/23/09
 Revised:
 Void:

**WEST VENTILATION BUILDING
 GROUND FLOOR PLAN
 DEMOLITION AND NEW WORK-PT1**
 Designer: J. SHELDON
 Detailer: R. KWONG
 Sheet Subset:
 Structure Numbers
 Subset Sheets:

Project No./Code
 IM-0703-319
 16096
 Sheet Number 23



Print Date: 10/2/2007	<table border="1"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sheet Revisions			Date:	Comments	Init.										Colorado Department of Transportation  Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed No Revisions: 11/23/09 Revised: Void:	WEST VENTILATION BUILDING GROUND FLOOR PLAN DEMOLITION AND NEW WORK-PT2 Designer: J. SHELDON Detailer: R. KWONG Sheet Subset:	Project No./Code IM-0703-319 16096 Sheet Number 24
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Date:	Comments	Init.																		
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 Drawing File Name: 16096ELEPLAN024w.dgn
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Sheet Revisions		
Date:	Comments	Init.

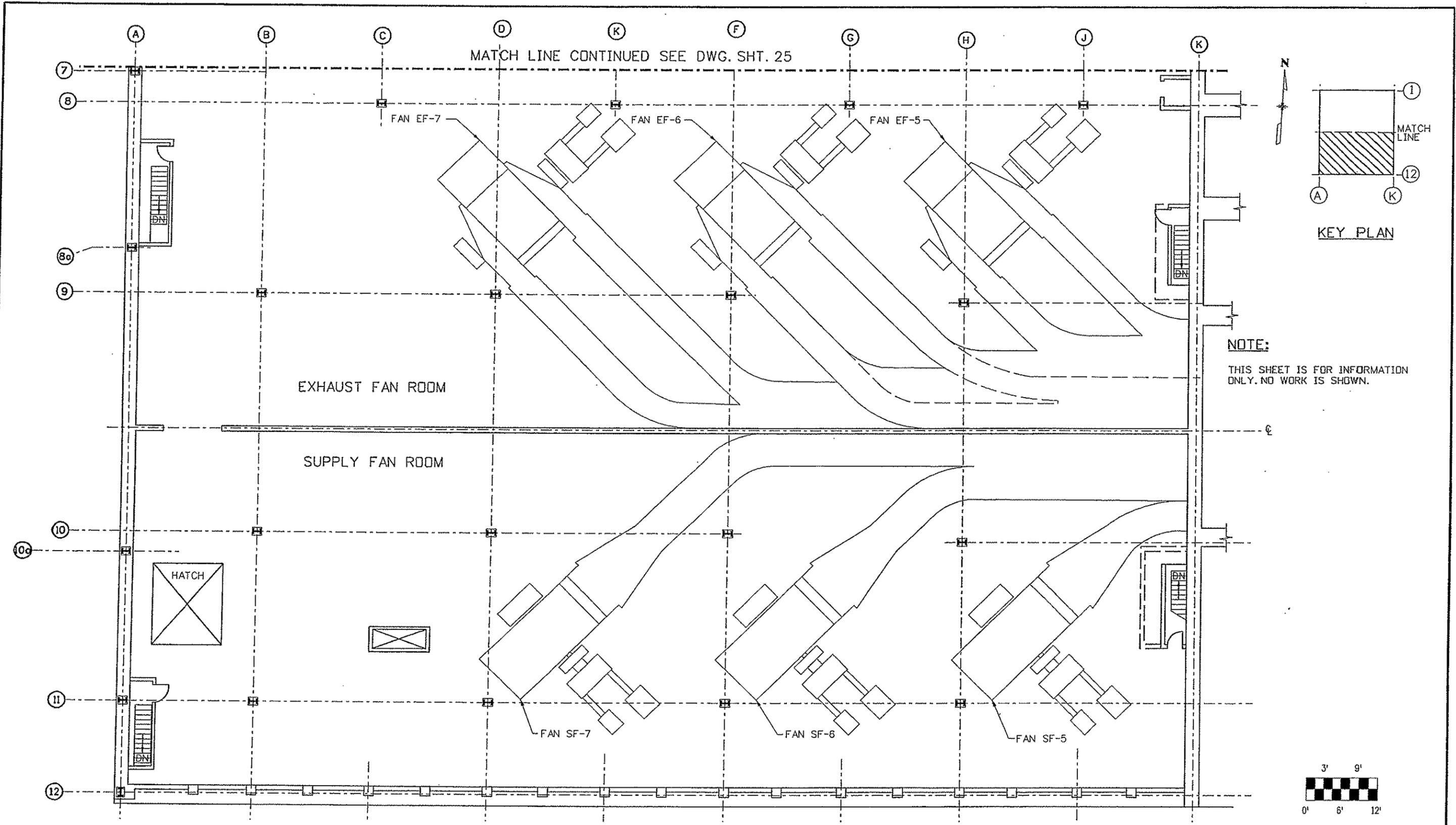
Colorado Department of Transportation
 Mountain Residency P.O. Box 399
 Dumont, CO 80436
 Phone: 303-512-5750 FAX: 303-512-5775
 Region 1 INZ

As Constructed
 No Revisions: 11/23/07
 Revised:
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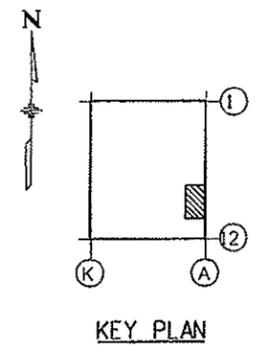
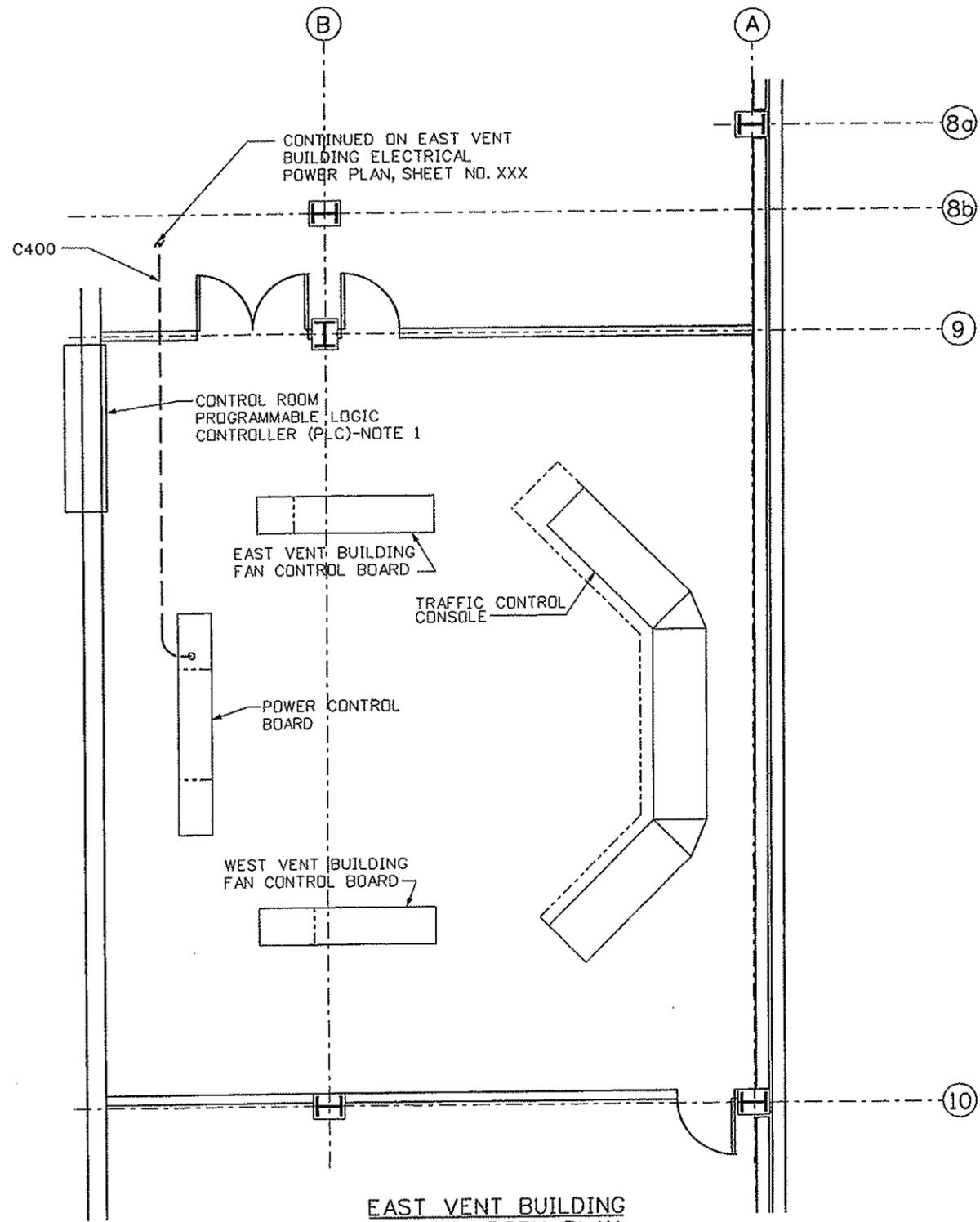
**WEST VENTILATION BUILDING
 FAN ROOM
 FLOOR PLAN - NORTH**

Designer: J. SHELDON Structure Numbers
 Detailer: R. KWONG
 Sheet Subset: Subset Sheets:

Project No./Code
 IM-0703-319
 16096
 Sheet Number 25



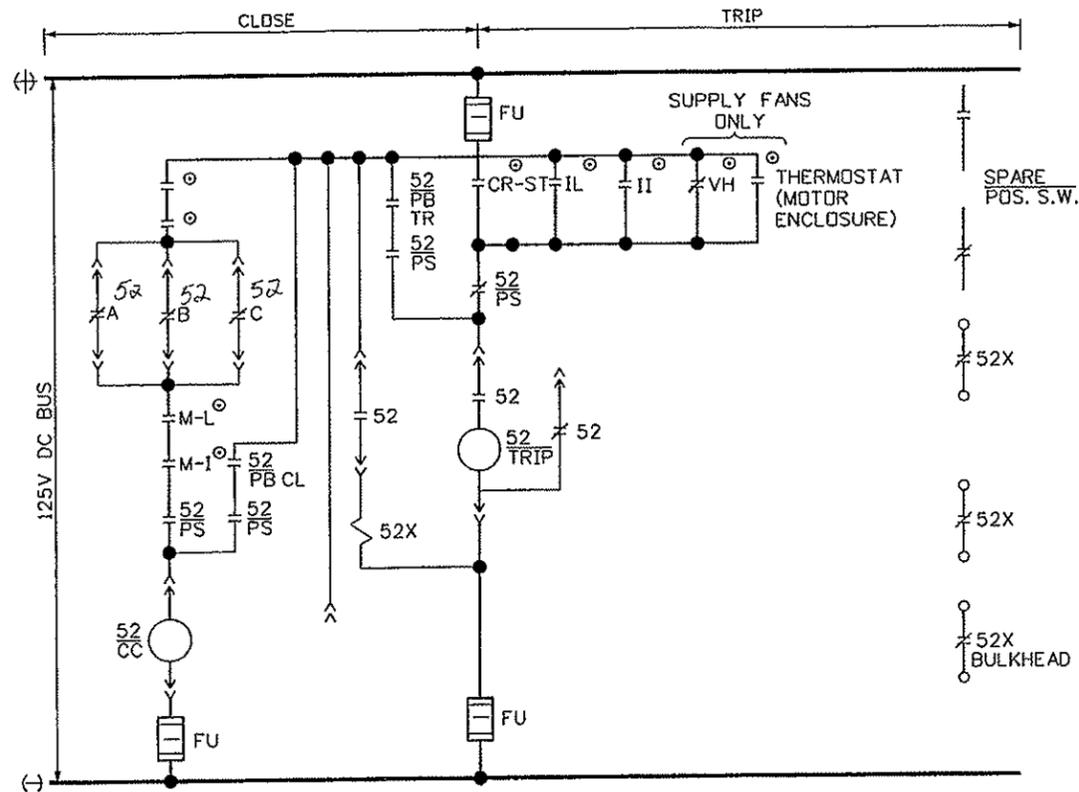
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Horiz. Scale: 1/8"		Init.		Dumont, CD 80436		Revised:		FLOOR PLAN - SOUTH		16096	
Unit Information				Phone: 303-512-5750 FAX: 303-512-5775		Void:		Designer: J. SHELDON		Structure Numbers	
Unit Leader Initials				Region 1		INZ		Detailer: R. KWONG		Subset Sheets:	
								Sheet Subset:		Sheet Number 26	



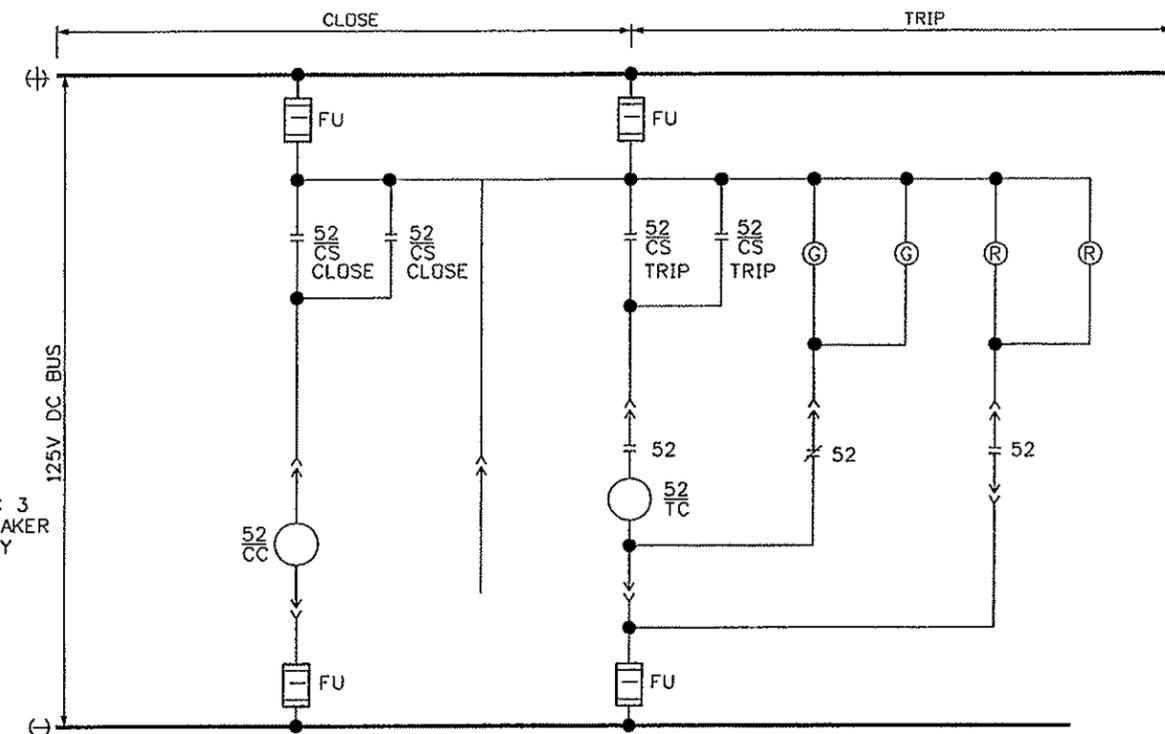
NOTE:
 1. PLC IN CONTROL ROOM COMMUNICATES WITH WEST VENT. BUILDING PLC WHICH IS LOCATED IN THE ELECTRICAL ROOM REMOTE SUPERVISORY CABINET

EAST VENT BUILDING CONTROL ROOM PLAN
 SCALE: 1/4" = 1'-0"

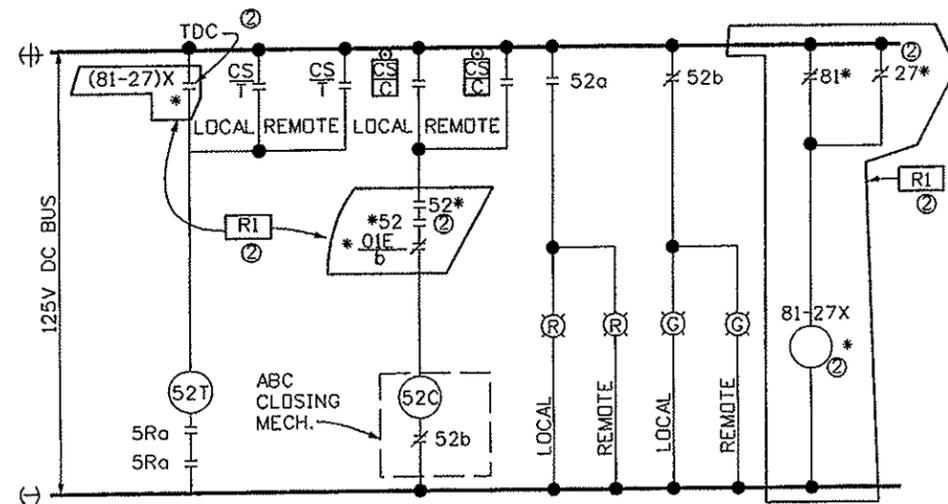
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Drawing File Name: 16096ELEPLAN023.dgn		Date:	Comments:	Init.		No Revisions: 11/23/09	IM-0703-319		
Horiz. Scale: Vert. Scale:						Revised:	Designer: J. SHELDON	Structure Numbers:	16096
Unit Information Unit Leader Initials						Void:	Detailer: R. KWONG	Subset Sheets:	Sheet Number 27



REMOTE CONTROL DIAGRAM
BREAKERS FOR EF, SF

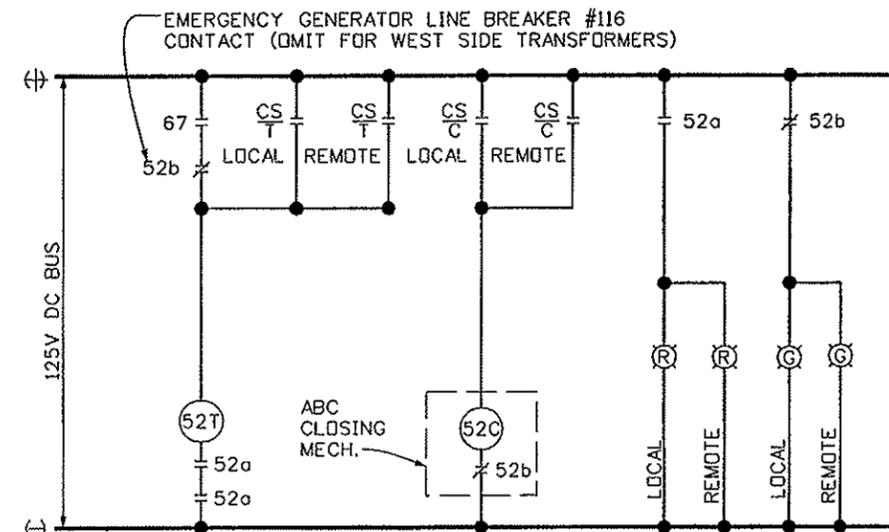


REMOTE CONTROL DIAGRAM
BREAKERS FOR MCC, ATS AND SPARES



EMERGENCY GENERATOR 460V BREAKER #116 CONTROL

TYPICAL FOR BREAKER #112, #113, #114, #115, #117 & #118
EXCEPT: OMIT RELAYS OR CONTACTS MARKED *, THEY ARE ONLY FOR
EMERGENCY GENERATOR BREAKER #116, 47, 27, 81 & 81-27X ARE LOCATED ②
IN EMERGENCY GENERATOR CONTROL BOARD.
⊙ KEY INTERLOCK SWITCHES ONLY FOR BREAKER #118.



2000 KVA TRANSFORMER
MAIN BREAKERS #101 & #103
CONTROL AND TIE BREAKER

Print Date: 10/2/2007
Drawing File Name: 16096ELEDiagram02.dgn
Horiz. Scale: Vert. Scale:
Unit Information Unit Leader Initials

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
Mountain Residency P.O. Box 399
Dumont, CO 80436
Phone: 303-512-5750 FAX: 303-512-5775
Region 1 INZ

As Constructed
No Revisions: 11/23/09
Revised:
Void:

CIRCUIT BREAKER SCHEMATIC DIAGRAM	
Designer: J. SHELDON	Structure Numbers
Detailer: R. KWONG	
Sheet Subset:	Subset Sheets:

Project No./Code
IM-0703-319
16096
Sheet Number 28

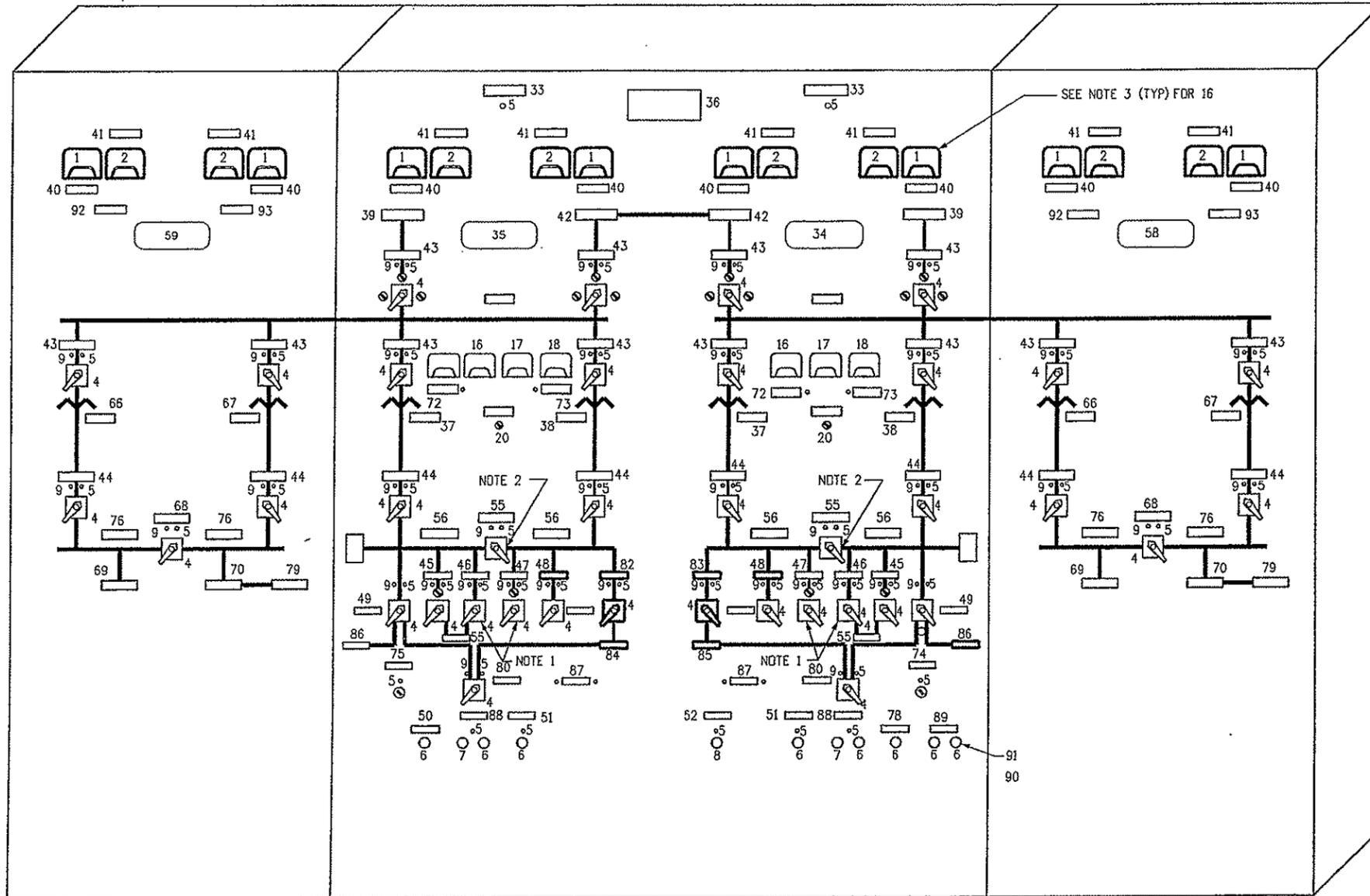
CONDUIT AND CABLE SCHEDULE - EAST BUILDING

CONDUIT NUMBER	CONDUIT / WIRE SCHEDULE NUMBER	EXISTING 480V SWGR SECTION	DESTINATION	EXISTING CONDUIT SIZE	NEW CONDUIT SIZE	WIRES	FUNCTION	CONDUIT (PAY ITEM NO. 613-) LENGTH (FT)					WIRE (PAY ITEM NO. 613-10000) LENGTH (FT)							
								00075 3/4 IN	00100 1 IN	00150 1 1/2 IN	00300 3 IN	00350 3 1/2 IN	NO. 12	NO. 10	NO. 1/0	NO. 4/0	350KCMIL	500KCMIL	750KCMIL	
1	C22	1	CONTROL ROOM	1 1/2	1 1/2	12-1/C #10 5-1/C #10	MAIN 1 CONTROL AND INDICATION METERING + BY RELAYS		80				800							
2	C25	1	CONTROL ROOM	1 1/2	1 1/2	12-1/C #12	LINES 1 AND 2 METERING FEAK SHAYE + PANEL RESET			60			1600							
3	C25	2	CONTROL ROOM	1 1/2	1 1/2	6-1/C #12 12-1/C #10	MCC2 CONTROL AND INDICATION		80				800							
4	P25A	2	EF-1	3 1/2	3 1/2	3-1/C 750KCMIL	EF-1 FEEDER					90								300
5	P25B	2	EF-1	3 1/2	3 1/2	3-1/C 750KCMIL	EF-1 FEEDER					90								300
6	P21A	2	SF-1	3 1/2	3 1/2	3-1/C 750KCMIL	SF-1 FEEDER					120								380
7	P21B	2	SF-1	3 1/2	3 1/2	3-1/C 750KCMIL	SF-1 FEEDER					120								380
8	C24	3	CONTROL ROOM	1 1/2	1 1/2	6-1/C #12 12-1/C #10	MCC1 CONTROL AND INDICATION		80				800							
9	P26A	3	EF-2	3 1/2	3 1/2	3-1/C 750KCMIL	EF-2 FEEDER					90								300
10	P26B	3	EF-2	3 1/2	3 1/2	3-1/C 750KCMIL	EF-2 FEEDER					90								300
11	P22A	3	SF-2	3 1/2	3 1/2	3-1/C 750KCMIL	SF-2 FEEDER					120								380
12	P22B	3	SF-2	3 1/2	3 1/2	3-1/C 750KCMIL	SF-2 FEEDER					120								380
13	C26	4	CONTROL ROOM	1 1/2	1	6-1/C #12 12-1/C #10	MCC3A CONTROL AND INDICATION		80				800							
14	P27A	4	EF-3	3 1/2	3 1/2	3-1/C 750KCMIL	EF-3 FEEDER					90								300
15	P27B	4	EF-3	3 1/2	3 1/2	3-1/C 750KCMIL	EF-3 FEEDER					90								300
16	P23A	4	SF-3	3 1/2	3 1/2	3-1/C 750KCMIL	SF-3 FEEDER					120								380
17	P23B	4	SF-3	3 1/2	3 1/2	3-1/C 750KCMIL	SF-3 FEEDER					120								380
18	P29A	4	MCC3	3	3	3-1/C 350KCMIL, 1-1/C #1/0 NEUT	MCC3A FEEDER				50						70			210
19	C27	5	CONTROL ROOM	1 1/2	1	6-1/C #12 12-1/C #10	MCC3B CONTROL AND INDICATION		80				800							
20	P29B	5	MCC3	3	3	3-1/C 350KCMIL, 1-1/C #1/0 NEUT	MCC3B FEEDER				50						70			210
21	P28A	5	EF-4	3 1/2	3 1/2	3-1/C 750KCMIL	EF-4 FEEDER					90								300
22	P28B	5	EF-4	3 1/2	3 1/2	3-1/C 750KCMIL	EF-4 FEEDER					90								300
23	P24A	5	SF-4	3 1/2	3 1/2	3-1/C 750KCMIL	SF-4 FEEDER					120								380
24	P24B	5	SF-4	3 1/2	3 1/2	3-1/C 750KCMIL	SF-4 FEEDER					120								380
25	P400A	5	ATS	3 1/2	3 1/2	4-1/C 500KCMIL, 1-1/C #1/0 GND	NORMAL POWER TO TRANSFER SWITCH					90					100			380
26	C400	6	CONTROL ROOM	1 1/2	1	7-1/C #12 12-1/C #10	ATS NORMAL BREAKER CONTROL AND INDICATION		80				800							
27	P422	6	ATS	3/4	3/4	2-1/C #10	D-C POWER FOR ATS													
28	C28	6	CONTROL ROOM	1 1/2	1	6-1/C #12 12-1/C #10	EMER GEN LINE BKR CONTROL AND INDICATION		80				800							
29	P30A	6	GENERATOR	3	3	3-1/C 500KCMIL, 1-1/C #4/0 NEUT	FEEDER FROM GENERATOR				120									130
30	P30B	6	GENERATOR	3	3	3-1/C 500KCMIL, 1-1/C #4/0 NEUT	FEEDER FROM GENERATOR				120									130
31	CPS-1	6	EMER SWGR	3/4	3/4	2-1/C #10	D-C POWER	100									120			380
32	P400B	6	ATS	3 1/2	3 1/2	4-1/C 500KCMIL, 1-1/C #1/0 GND	NORMAL POWER TO TRANSFER SWITCH					90					100			380
33	P401A	6	EMER SWGR	3	3	4-1/C 500KCMIL, 1-1/C #1/0 GND	EMERGENCY POWER FROM GENERATOR				90									440
34	C5	6	24KV SWGR	1 1/2	1 1/2	9-1/C #12	EMERGENCY GENERATOR INTERLOCK				90			900			110			
35	P401B	6	EMER SWGR	3	3	4-1/C 500KCMIL, 1-1/C #1/0 GND	EMERGENCY POWER FROM GENERATOR				90									440
36	C30	6	GENERATOR	1	1	5-1/C #12	EMERGENCY GENERATOR INTERLOCK					120								650
37	C23	7	CONTROL ROOM	1 1/2	1	6-1/C #12 12-1/C #10	MAIN 2 CONTROL AND INDICATION - METERING					80								800
38	D5	7	BATTERY ROOM	1	1	2-1/C #10	D-C POWER FOR SWITCHGEAR					120								260
39	D6	7	BATTERY ROOM	1	1	2-1/C #10	D-C POWER FOR SWITCHGEAR					120								260
40	C11	4	MCC1 SF-1	1 1/2	1 1/2	12-1/C #12 12-1/C #10 5-1/C #10	SF-1 CONTROL AND INTERLOCK				40									540
41	C15	4	MCC1 EF-1	1 1/2	1 1/2	10-1/C #12 12-1/C #10 5-1/C #10	EF-1 CONTROL AND INTERLOCK				40									440
42	C12	4	MCC1 SF-2	1 1/2	1 1/2	12-1/C #12 12-1/C #10 5-1/C #10	SF-2 CONTROL AND INTERLOCK				40									540
43	C16	4	MCC1 EF-2	1 1/2	1 1/2	10-1/C #12 12-1/C #10 5-1/C #10	EF-2 CONTROL AND INTERLOCK				40									440
44	C13	5	MCC1 SF-3	1 1/2	1 1/2	12-1/C #12 12-1/C #10 5-1/C #10	SF-3 CONTROL AND INTERLOCK				40									540
45	C17	5	MCC1 EF-3	1 1/2	1 1/2	10-1/C #12 12-1/C #10 5-1/C #10	EF-3 CONTROL AND INTERLOCK				40									440
46	C14	5	MCC1 SF-4	1 1/2	1 1/2	12-1/C #12 12-1/C #10 5-1/C #10	SF-4 CONTROL AND INTERLOCK				40									540
47	C18	5	MCC1 EF-4	1 1/2	1 1/2	10-1/C #12 12-1/C #10 5-1/C #10	EF-4 CONTROL AND INTERLOCK				40									440
48		1	MCC1	NEW	1 1/2	1-1/C #4/0	GROUND													120
49		8	MCC3	NEW	1 1/2	1-1/C #4/0	GROUND													120
	C 400B	1	CONTROL ROOM	1 1/2	1 1/2	23-1/C #12	TIE-BREAKER CONTROL + INDICATION													
	C 31	1	CONTROL ROOM	1 1/2	1 1/2	12-1/C #10														
TOTALS								100	1000	670	520	1860	13470	860	340	500	420	2400	5440	

NOTES:

1. WIRE LENGTHS ARE FOR INFORMATION ONLY. CONTRACTOR SHALL PROVIDE WIRE LENGTH ACTUALLY DETERMINED BY SITE CONDITIONS.
2. NOT ALL CONDUITS ARE SHOWN ON PLAN SHEETS.
3. WIRING INDICATED IN CONDUITS 40 THROUGH 51 IS ACTUALLY INSTALLED IN 8 - 2 IN. CONDUITS, SEE SHEET 6.

Print Date: 10/2/2007	Sheet Revisions			Colorado Department of Transportation		As Constructed		EAST VENTILATION BUILDING CONDUIT AND CABLE SCHEDULES			Project No./Code	
Drawing File Name: 16096ELETABSH03E.dgn	Date:	Comments	Init.	Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775		No Revisions:		Designer: J. SHELDON			IM-0703-319	
Horiz. Scale: NONE Vert. Scale: NONE				Region 1 INZ		Revised: 11/23/09		Detailer: R. KWONG			16096	
Unit Information Unit Leader Initials						Void:		Sheet Subset:			Sheet Number 29	



EQUIPMENT LIST

1. AMMETER TYPE 171-141-LSV3 0-3000 AMP. SEE NOTE 3.
2. VOLTMETER TYPE 171-031-SJSJ AC 0-600 VOLTS. SEE NOTE 3.
3. SWITCH TYPE S81, 2 STAGE WITH KIRK KEYLOCK, 55-185285P3, ON-OFF.
4. SWITCH TYPE S81, 2 STAGE 55-185285F6, ON-OFF.
5. INDICATING LIGHTS, TYPE ET 16, RED, 125 V.D.C.
6. CR2940UA202B PUSH BUTTON.
7. CR2940UA202C PUSH BUTTON.
8. CR2940UB202A SELECTOR SWITCH.
9. INDICATING LIGHT, TYPE ET-16 GREEN 125 V.D.C.
10. 0-5 MILLIAMMETER, TYPE 171-FXFX WITH 0-3000 AMP SCALE.
11. 0-5 MILLIAMMETER, TYPE 171-FXFX WITH 0-600 VOLT SCALE.
12. TERMINAL BOARD, (NOT SHOWN) CR151B26.
13. TRANSFORMER #1.
14. TRANSFORMER #2.
15. SWITCH, TYPE S81, WITH KIRK KEYLOCK, 55-188285P4.
16. AMP METER.
17. HERTZ METER.
18. VOLT METER.
19. APPROACH LOW OIL PRESSURE LIGHT.
20. GOVERNOR CONTROL.
21. APPROACH HIGH WATER TEMPERATURE.
22. AMMETER, AC 0-800AMP.
23. VOLTMETER, AC 0-3000 VOLT.
24. 0-5 MILLIAMMETER WITH 0-800 AMP SCALE.
25. 0-5 MILLIAMMETER WITH 0-3000 VOLT SCALE.
26. 0-5 MILLIAMMETER WITH 0-1000 AMP SCALE.
27. 0-5 MILLIAMMETER WITH 55-65 HERTZ SCALE.
28. 0-5 MILLIAMMETER WITH 0-600 VAC SCALE.
29. INDICATING LIGHT, RED 125 V.D.C.
30. PUSHBUTTON RESET.
31. SELECTOR SWITCH, SPRING RETURN TO CENTER FROM LEFT & RIGHT POSITIONS, FAST-OFF-SLOW.
32. SELECTOR SWITCH, START-STOP.

NAMEPLATE SCHEDULE

FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
33. POWER	ON		2
34. EAST BUILDING	BUILDING		1
35. WEST BUILDING	BUILDING		1
36. POWER CONTROL	CONTROL		1
37. TRANSFORMER NO. 2		BOARD	1
38. TRANSFORMER NO. 1		SECONDARY	1
39. PUBLIC SERVICE INCOMING		SECONDARY LINE	1
40. AMMETER			1
41. VOLTMETER			1
42. 24.9 K.V.			1
43. LDAD	EMERGENCY BREAK	TIE SWITCH	1
44. AIR CIRCUIT FEEDER	CIRCUIT FEEDER	BREAKER	1
45. MCC #1	MCC #1	BREAKER	1
46. MCC #2	MCC #2	BREAKER	1
47. MCC #3	MCC #3	BREAKER A	1
48. MCC #3	MCC #3	BREAKER B	1
49. EMERGENCY GENERATOR	GENERATOR	BREAKER	1
50. TUNNEL & BUILDING NORMAL LIGHTS	GENERATOR NORMAL LIGHTS	RESET	1
51. BUILDING POWER PANELS	GENERATOR POWER PANELS	RESET	1
52. SEDIMENTATION TANKS	GENERATOR TANKS	RESET	1
53. TUNNEL & BUILDING NORMAL LIGHTS	GENERATOR NORMAL LIGHTS	RESET	1
54. EMERGENCY TIE BREAKER	GENERATOR TIE BREAKER	CONTROL	1
55. 460 VOLT BUSS	460 VOLT BUSS		1
56. 460 VOLT BUSS	460 VOLT BUSS		1
57. 24.9 K.V. BUSS	24.9 K.V. BUSS		1
58. EAST BUILDING	EAST BUILDING		1
59. WEST BUILDING	WEST BUILDING		1
60. TRANSFORMER NO. 1A	TRANSFORMER NO. 1A	SOUTH TUNNEL SECONDARY	1
61. TRANSFORMER NO. 1B	TRANSFORMER NO. 1B	NORTH TUNNEL SECONDARY	1
62. AMMETER			1
63. VOLTMETER			1
64. LDAD	BREAK CIRCUIT	SWITCH BREAKER	1
65. AIR	AIR		1
66. TRANSFORMER NO. 1A	TRANSFORMER NO. 1A		1
67. TRANSFORMER NO. 1B	TRANSFORMER NO. 1B		1
68. 2400 VOLT TIE	2400 VOLT TIE	BREAKER	1
69. MCCIA	MCCIA		1
70. MCCIB	MCCIB		1
71. EMERGENCY SUPPLY	EMERGENCY SUPPLY	GENERATOR	1
72. APPROACHING LOW OIL	APPROACHING LOW OIL	BREAKER PRESS	1
73. APPROACHING HIGH WATER TEMP	APPROACHING HIGH WATER TEMP	GENERATOR GOVERNOR CONTROL	1
74. EMERGENCY GENERATOR	EMERGENCY GENERATOR	CONTROL	1
75. 2400 VOLT BUSS	2400 VOLT BUSS		1
76. WEST VENT BUILDING	WEST VENT BUILDING	EMERGENCY GENERATOR	1
77. NORTH TUNNEL BLDG & LIGHTS	NORTH TUNNEL BLDG & LIGHTS	NORMAL RESET	1
78. NORTH TUNNEL LIGHTS	NORTH TUNNEL LIGHTS		1
79. EAST TUNNEL	EAST TUNNEL		1
80. EAST PEAK SHAVING	EAST PEAK SHAVING	SWITCH	1
81. WEST PEAK SHAVING	WEST PEAK SHAVING	SWITCH	1
82. AUTOMATIC TRANSFER	AUTOMATIC TRANSFER	SWITCH	1
83. AUTOMATIC TRANSFER	AUTOMATIC TRANSFER	SWITCH	1
84. TRANSFER	TRANSFER	SWITCH	1
85. TRANSFER	TRANSFER	SWITCH	1
86. TRANSFER	TRANSFER	SWITCH	1
87. EMERGENCY GENERATOR	EMERGENCY GENERATOR	SWITCH	1
88. EAST D.C. UNDER VOLTAGE	EAST D.C. UNDER VOLTAGE	CONTROL ON	1
89. TUNNEL & BLDG. D.C. LIGHTS	TUNNEL & BLDG. D.C. LIGHTS	ENGAGE ONE ONLY	1
90. NORTH TUNNEL BROWN OUT	NORTH TUNNEL BROWN OUT		1
91. SOUTH (PUSHBUTTON)	SOUTH (PUSHBUTTON)		1
92. NORTH (PUSHBUTTON)	NORTH (PUSHBUTTON)		1
93. EXHAUST	EXHAUST		1
94. SUPPLY	SUPPLY		1

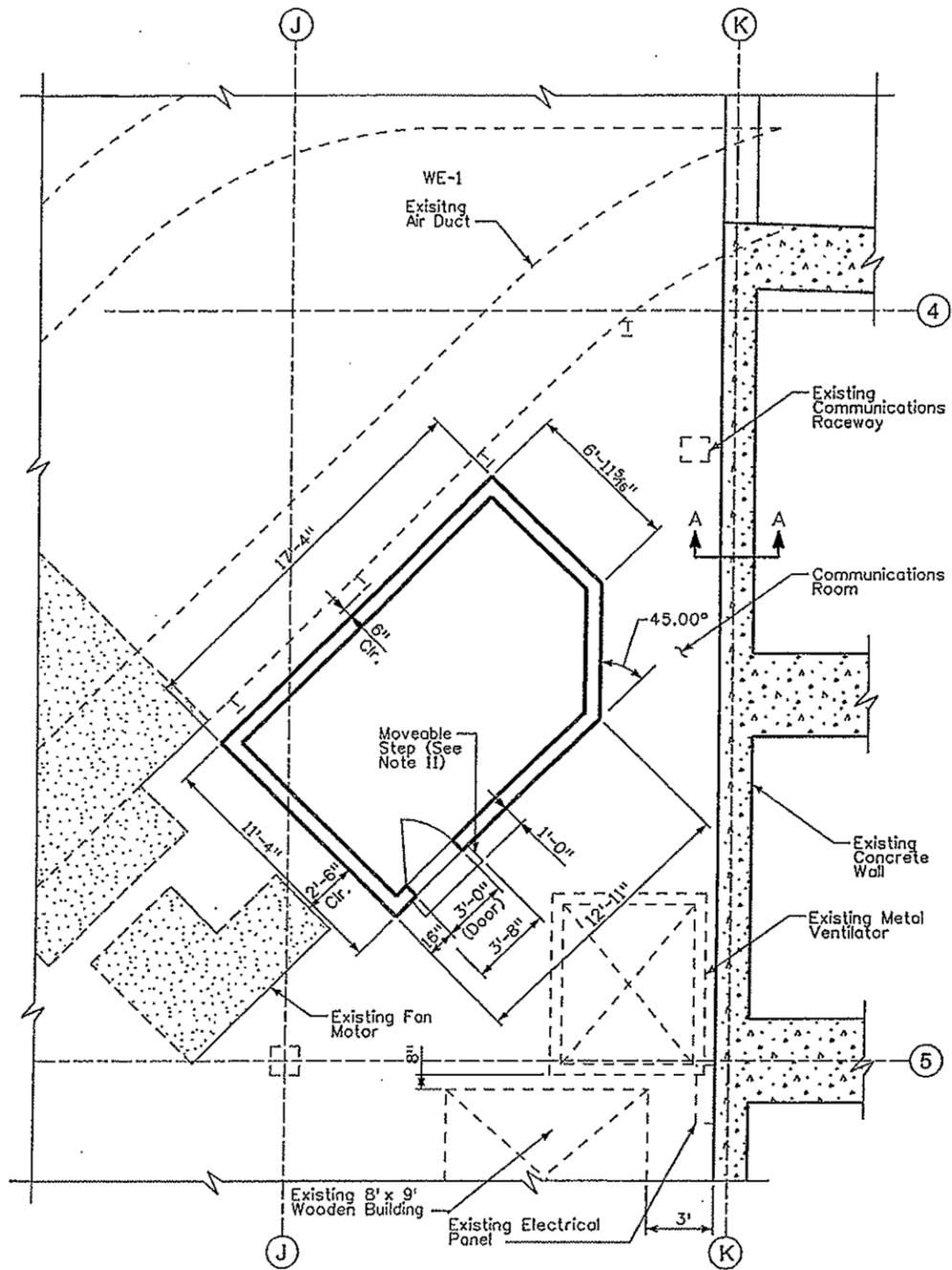
NOTES:

1. REWIRE TO EXCHANGE MCC#2 AND MCC #3 BREAKER CONTROL.
2. ADD NEW TIE BREAKER CONTROL SWITCH, TYPE 4.
3. PROVIDE NEW METER IN PLACE OF EXISTING METER.
4. NAMEPLATES SHALL BE ADHESIVE TYPE.
5. INDICATING LIGHTS SHALL BE MBI20 BULB TYPE, NOT LED TYPE.
6. ALL MODIFICATIONS TO POWER BOARD TO BE PAID FOR AS ITEM 210-00478, MODIFY POWER CONTROL BOARD WITH THE FOLLOWING QUANTITIES:

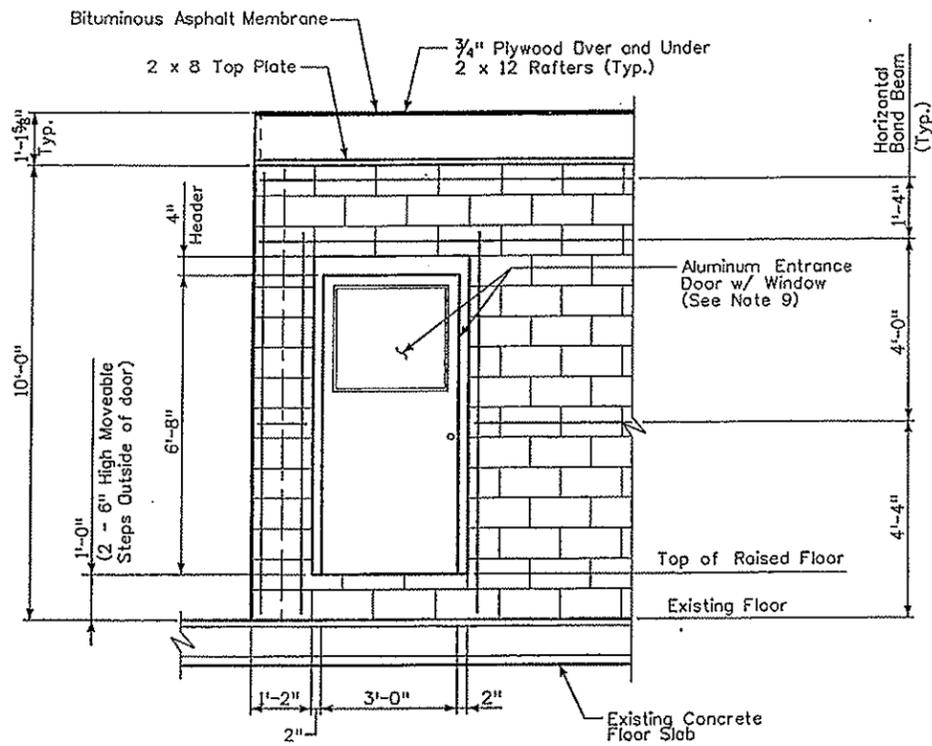
ITEM	QUANTITY	UNIT
MODIFY POWER CONTROL BOARD	1	LS

EXISTING POWER CONTROL BOARD
N.T.S.

Print Date: 10/2/2007	Sheet Revisions Date: Comments Init. 	Colorado Department of Transportation  Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed	POWER CONTROL BOARD LAYOUT AND DETAILS		Project No./Code
Drawing File Name: 16096LEDiagram01.dgn			No Revisions: 11/23/09			IM-0703-319
Horiz. Scale: Vert. Scale:			Revised:	Designer: J. SHELDON	Structure	16096
Unit Information Unit Leader Initials			Void:	Detailer: R. KWONG	Numbers	Sheet Number 31
			Sheet Subset:	Subset Sheets:		

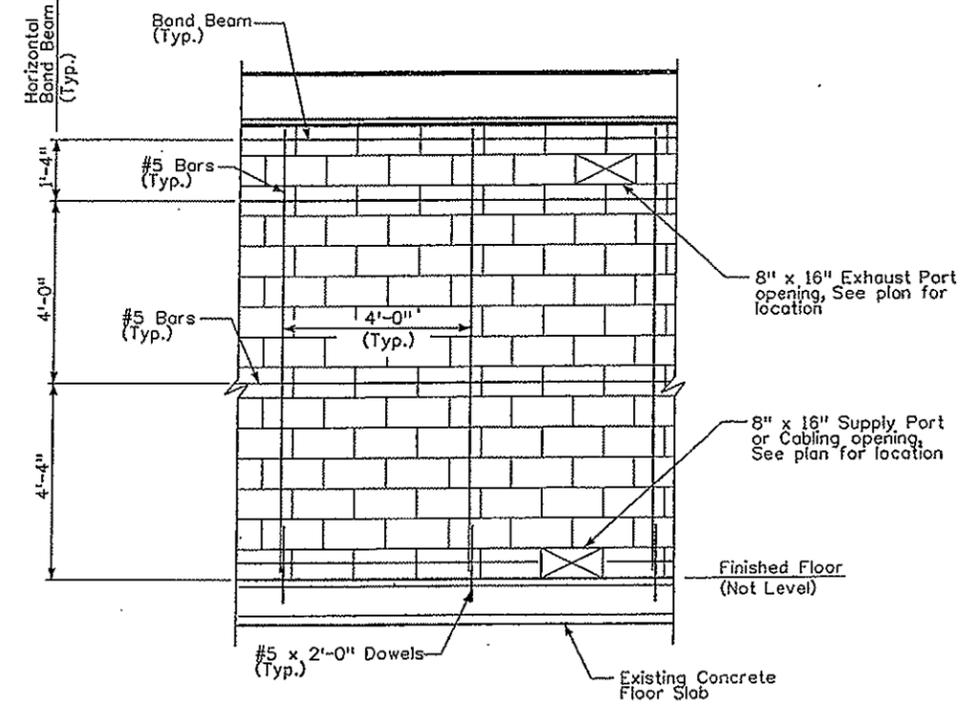


FLOOR PLAN

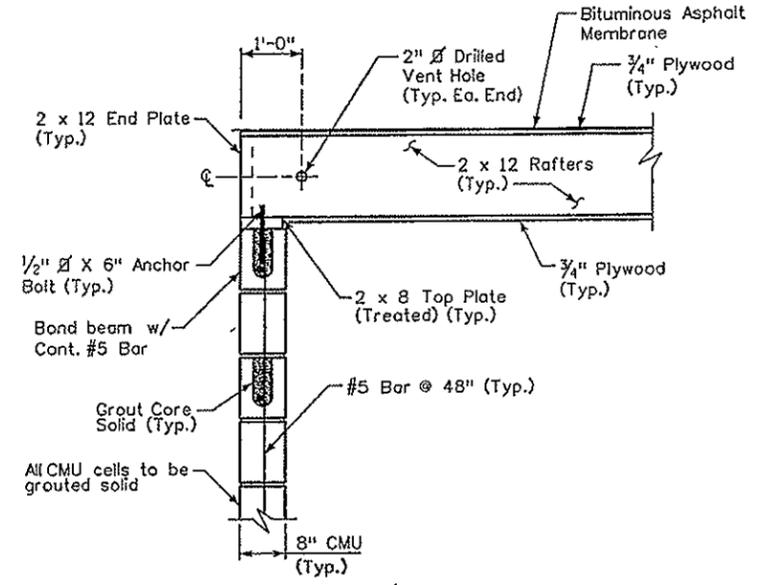


WEST WALL ELEVATION

(Removeable Step not Shown for Clarity)



TYPICAL WALL DETAIL



TYPICAL MASONRY WALL DETAIL

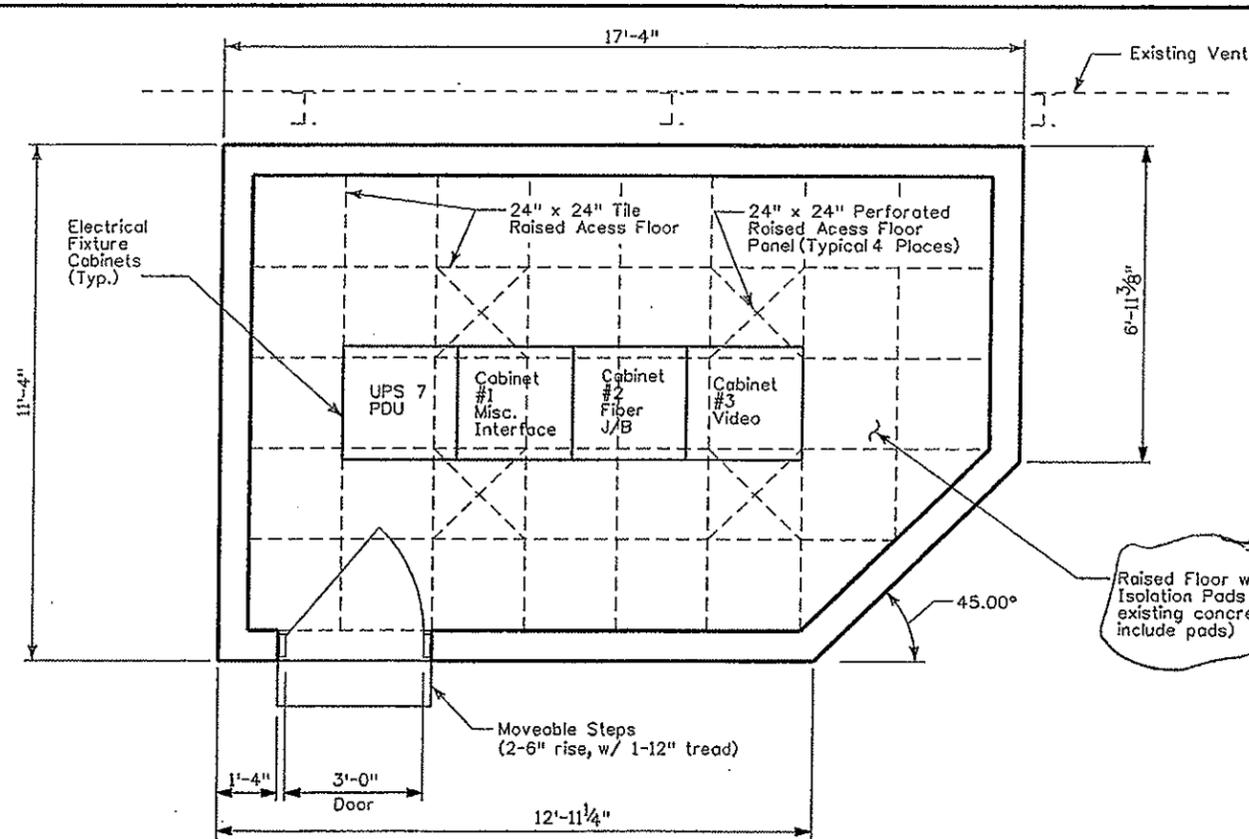
NOTES:

- All work this sheet shall be paid under item 622-11010; Maintenance Building.
- All top plates shall be secured to the CMU with 1/2" x 6" anchor bolts spaced at 4'-0" O.C. and one at each corner.
- Rafters shall be end nailed thru end plate and nailed securely to the top plate.
- Plywood shall be nailed every 8" along rafters and every 6" along perimeter at end plate. Plywood shall overlap end plates by a minimum of 1/2".
- Existing concrete floor is sloped to drain approximately 1/16" per 1'-0", Contractor shall install first course of CMU level with additional mortar bed as required.
- Communications room shall have a 12" raised floor above the existing concrete finished floor elevation. Existing floor may not be level so shim as required.
- All CMU cells shall be grouted full height of wall unless otherwise noted.
- Concrete masonry units to conform to astm C90, Type N-1 (F'M = 1500 psi).
- Entrance door shall be a half glass door with shatter proof glass.
- Top plywood shall be covered with a bituminized asphalt membrane, with 6" overlapping seems and 2" overhang on all exterior edges.
- Moveable step to be constructed of 2x12's with front and back risers and ends closed.

For Information Only

Item	Quantity	Unit
Reinforced CMU Wall	548.6	SF
2 x 12 Framing	0.37	MBF
Plywood	190	SF
Bituminous Asphalt Membrane	190	SF
Aluminum Door	1	EA
Reinforcing Dowels	10	EA
Access Flooring	190	SF
Removal of Abandon Communications room	1	EA
Removal of Abandon Fiber Optics	1	LS

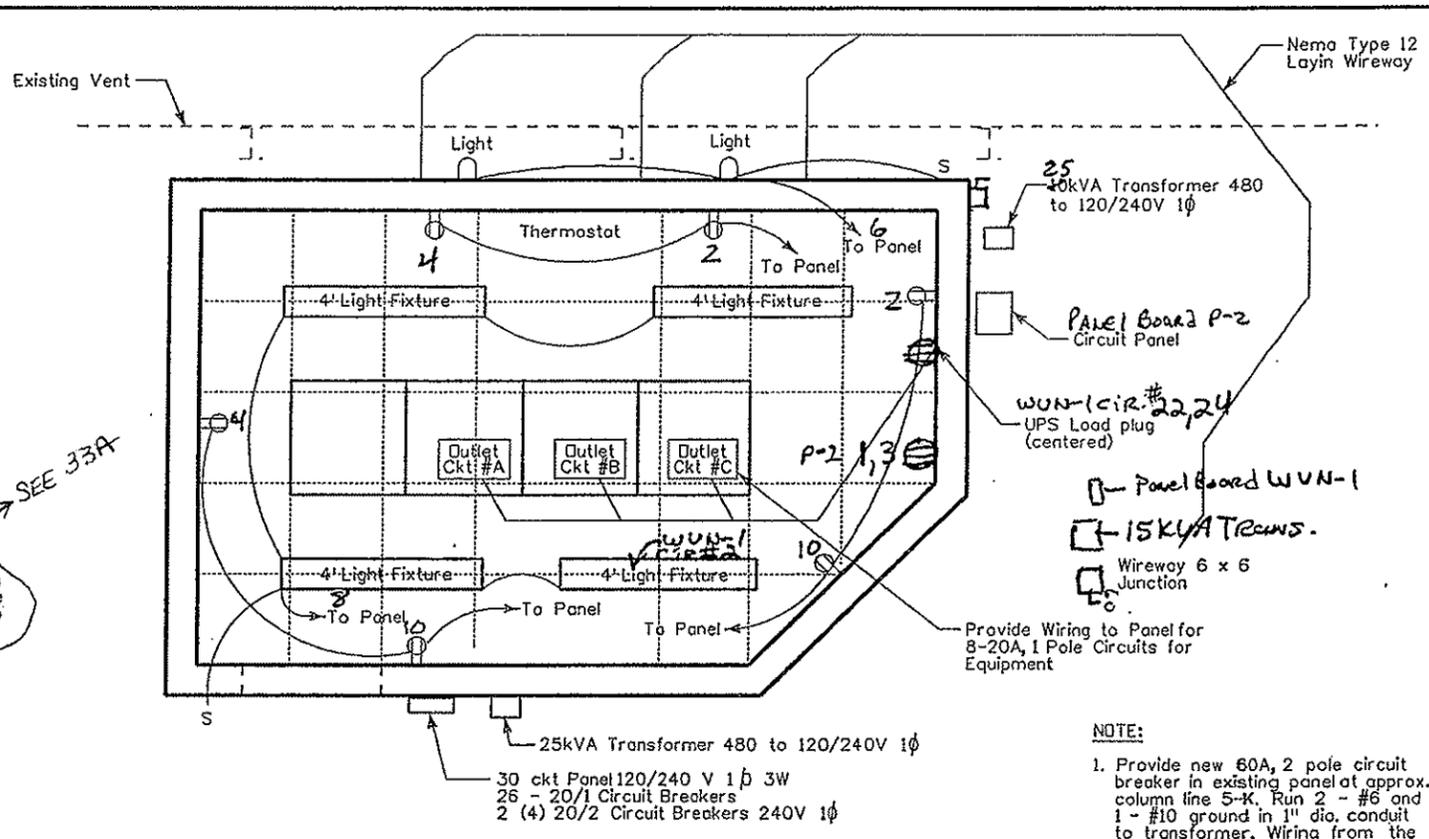
Print Date: 10/2/2007 Drawing File Name: 16096Plan_Sht1.dgn Horiz. Scale: Vert. Scale: Unit Information Unit Leader Initials	Sheet Revisions <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Date:	Comments	Init.										Colorado Department of Transportation Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1	As Constructed No Revisions: 11/23/09 Revised: Void:	WEST MAINTENANCE BUILDING PLAN AND DETAILS Designer: J. GUENTHER Detailer: K. PAVLICK Sheet Subset: GENERAL Subset Sheets: 1 of 2	Project No./Code IM-0703-319 16096 Sheet Number 32
Date:	Comments	Init.															



FINISHED FLOOR PLAN

SEE 33A

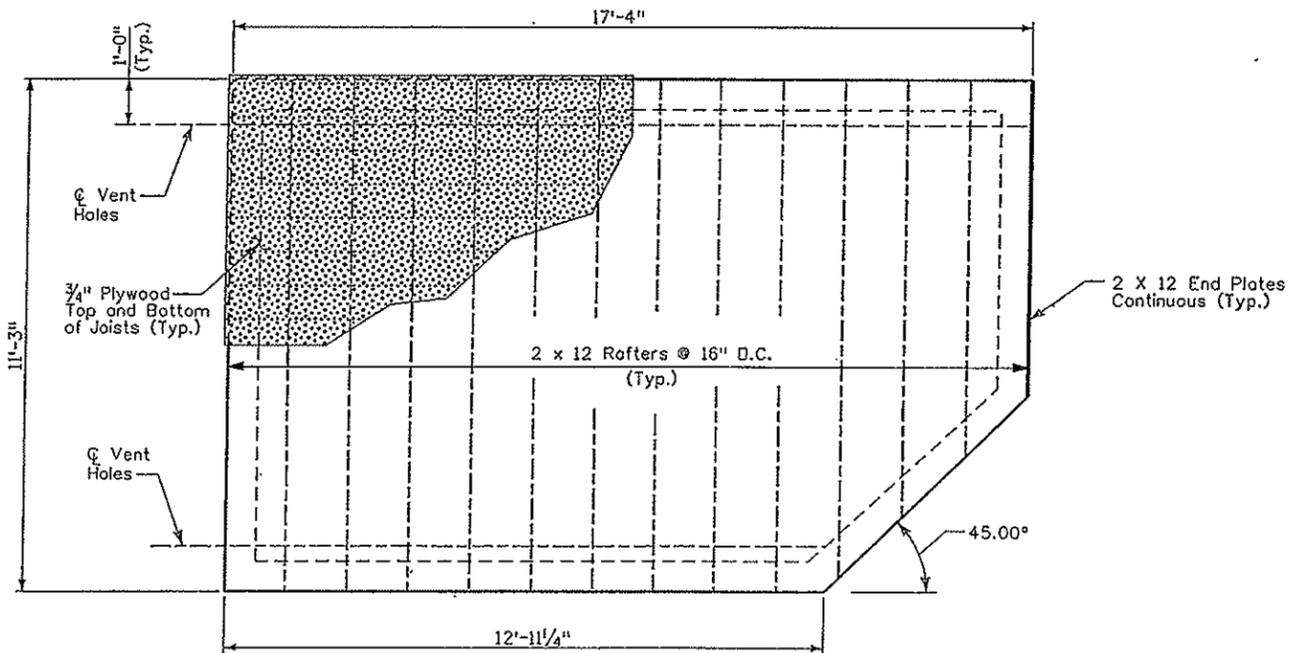
Raised Floor w/ Vibration Isolation Pads (12" above existing concrete floor to include pads)



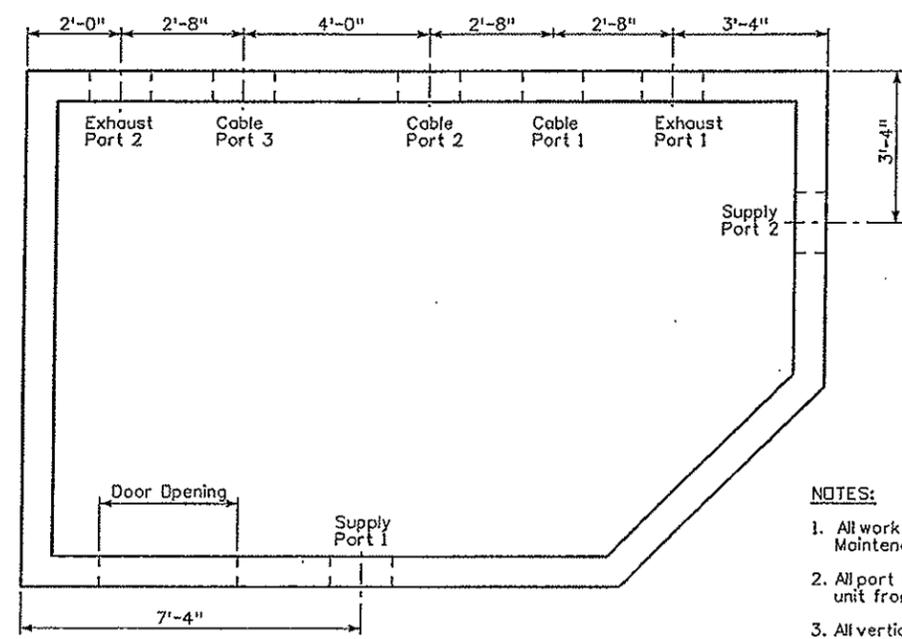
ELECTRICAL AND REFLECTED CEILING PLAN

NOTE:

1. Provide new 60A, 2 pole circuit breaker in existing panel at approx. column line 5-K. Run 2 - #6 and 1 - #10 ground in 1" dia. conduit to transformer. Wiring from the transformer to the panel shall be 3 - #1 and 1 - #6 ground in 1/2" dia. conduit.



ROOF FRAMING PLAN



UTILITY PORT OPENING LAYOUT

NOTES:

1. All work this sheet shall be paid under item 622-11010; Maintenance Building.

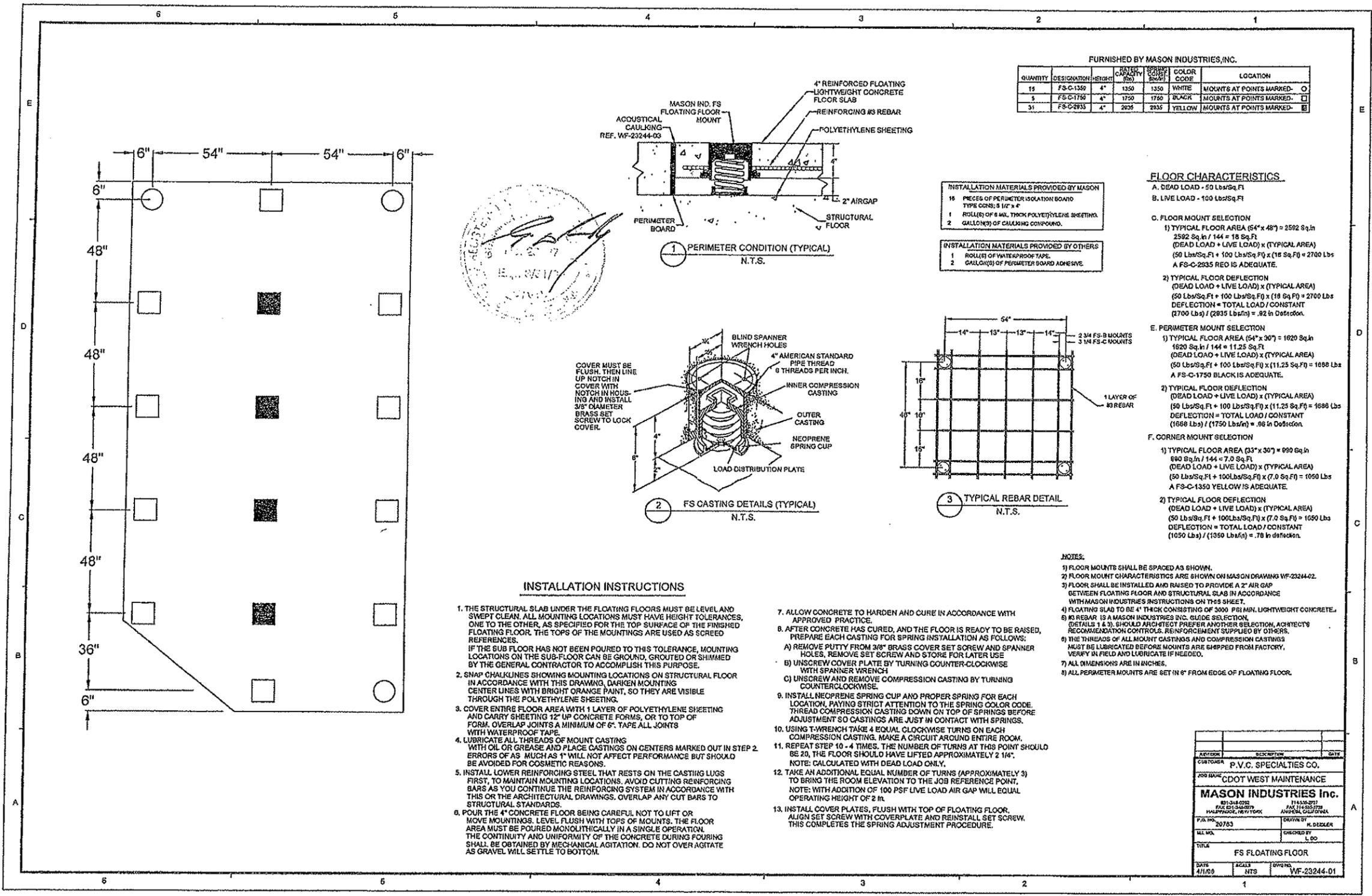
2. All port blockouts shall be the removal of a single CMU unit from the locations shown on the plans.

3. All vertical locations shall be designated by the equipment manufacturer unless otherwise noted.

4. Contractor shall fully grout all CMU cells.

Print Date: 10/2/2007		Sheet Revisions			Colorado Department of Transportation Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed		WEST MAINTENANCE BUILDING		Project No./Code	
Drawing File Name: 16096Plan_Sht2.dgn		Date:	Comments:	Init.		No Revisions:		ROOM LAYOUT PLANS		IM-0703-319	
Horiz. Scale: Vert. Scale:						Revised: 11/23/09		Designer: J. GUENTHER	Structure Numbers	16096	
Unit Information Unit Leader Initials						Void:		Detailer: K. PAVLICK	Sheet Subset: GENERAL	Subset Sheets: 2 of 2	Sheet Number 33

Panel Board WUN-1
UPS Load Emergency



FURNISHED BY MASON INDUSTRIES, INC.

QUANTITY	DESIGNATION	HEIGHT	COLOR	SPACING	COLOR CODE	LOCATION
15	FS-C-1350	4"	WHITE	1350	1350	MOUNTS AT POINTS MARKED - O
3	FS-C-1750	4"	BLACK	1750	1750	MOUNTS AT POINTS MARKED - □
31	FS-C-2935	4"	YELLOW	2935	2935	MOUNTS AT POINTS MARKED - ■

- INSTALLATION MATERIALS PROVIDED BY MASON**
- 15 PIECES OF PERIMETER ISOLATION BOARD TYPE CONS: 5 1/2" x 4"
 - 1 ROLL(S) OF 8 MIL THICK POLYETHYLENE SHEETING
 - 2 GALLON(S) OF CAULKING COMPOUND

- INSTALLATION MATERIALS PROVIDED BY OTHERS**
- 1 ROLL(S) OF WATERPROOF TAPE
 - 2 GALLON(S) OF PERIMETER BOARD ADHESIVE

FLOOR CHARACTERISTICS

A. DEAD LOAD - 50 Lbs/Sq Ft
 B. LIVE LOAD - 100 Lbs/Sq Ft

C. FLOOR MOUNT SELECTION

1) TYPICAL FLOOR AREA (54" x 48") = 2592 Sq ft
 2592 Sq ft / 144 = 18 Sq Ft
 (DEAD LOAD + LIVE LOAD) x (TYPICAL AREA)
 (50 Lbs/Sq Ft + 100 Lbs/Sq Ft) x (18 Sq Ft) = 2700 Lbs
 A FS-C-2935 RED IS ADEQUATE.

2) TYPICAL FLOOR DEFLECTION
 (DEAD LOAD + LIVE LOAD) x (TYPICAL AREA)
 (50 Lbs/Sq Ft + 100 Lbs/Sq Ft) x (18 Sq Ft) = 2700 Lbs
 DEFLECTION = TOTAL LOAD / CONSTANT
 (2700 Lbs) / (2935 Lbs/in) = .92 in Deflection

E. PERIMETER MOUNT SELECTION

1) TYPICAL FLOOR AREA (54" x 30") = 1620 Sq ft
 1620 Sq ft / 144 = 11.25 Sq Ft
 (DEAD LOAD + LIVE LOAD) x (TYPICAL AREA)
 (50 Lbs/Sq Ft + 100 Lbs/Sq Ft) x (11.25 Sq Ft) = 1688 Lbs
 A FS-C-1750 BLACK IS ADEQUATE.

2) TYPICAL FLOOR DEFLECTION
 (DEAD LOAD + LIVE LOAD) x (TYPICAL AREA)
 (50 Lbs/Sq Ft + 100 Lbs/Sq Ft) x (11.25 Sq Ft) = 1688 Lbs
 DEFLECTION = TOTAL LOAD / CONSTANT
 (1688 Lbs) / (1750 Lbs/in) = .96 in Deflection

F. CORNER MOUNT SELECTION

1) TYPICAL FLOOR AREA (33" x 30") = 990 Sq ft
 990 Sq ft / 144 = 7.0 Sq Ft
 (DEAD LOAD + LIVE LOAD) x (TYPICAL AREA)
 (50 Lbs/Sq Ft + 100 Lbs/Sq Ft) x (7.0 Sq Ft) = 1050 Lbs
 A FS-C-1350 YELLOW IS ADEQUATE.

2) TYPICAL FLOOR DEFLECTION
 (DEAD LOAD + LIVE LOAD) x (TYPICAL AREA)
 (50 Lbs/Sq Ft + 100 Lbs/Sq Ft) x (7.0 Sq Ft) = 1050 Lbs
 DEFLECTION = TOTAL LOAD / CONSTANT
 (1050 Lbs) / (1350 Lbs/in) = .78 in Deflection

- NOTES:**
- 1) FLOOR MOUNTS SHALL BE SPACED AS SHOWN.
 - 2) FLOOR MOUNT CHARACTERISTICS ARE SHOWN ON MASON DRAWING WF-23244-02.
 - 3) FLOOR SHALL BE INSTALLED AND RAISED TO PROVIDE A 2" AIR GAP BETWEEN FLOATING FLOOR AND STRUCTURAL SLAB IN ACCORDANCE WITH MASON INDUSTRIES INSTRUCTIONS ON THIS SHEET.
 - 4) FLOATING SLAB TO BE 4" THICK CONSISTING OF 3000 PSI MIN. LIGHTWEIGHT CONCRETE.
 - 5) #3 REBAR IS A MASON INDUSTRIES INC. GUIDE SELECTION. DETAILS 1 & 3, SHOULD ARCHITECT PREFER ANOTHER SELECTION, ARCHITECT'S RECOMMENDATION CONTROLS. REINFORCEMENT SUPPLIED BY OTHERS.
 - 6) THE THREADS OF ALL MOUNT CASTINGS AND COMPRESSION CASTINGS MUST BE LUBRICATED BEFORE MOUNTS ARE SHIPPED FROM FACTORY. VERIFY IN FIELD AND LUBRICATE IF NEEDED.
 - 7) ALL DIMENSIONS ARE IN INCHES.
 - 8) ALL PERIMETER MOUNTS ARE SET IN 6" FROM EDGE OF FLOATING FLOOR.



INSTALLATION INSTRUCTIONS

1. THE STRUCTURAL SLAB UNDER THE FLOATING FLOORS MUST BE LEVEL AND SWEPT CLEAN. ALL MOUNTING LOCATIONS MUST HAVE HEIGHT TOLERANCES, ONE TO THE OTHER, AS SPECIFIED FOR THE TOP SURFACE OF THE FINISHED FLOATING FLOOR. THE TOPS OF THE MOUNTINGS ARE USED AS SCREED REFERENCES. IF THE SUB FLOOR HAS NOT BEEN POURED TO THIS TOLERANCE, MOUNTING LOCATIONS ON THE SUB-FLOOR CAN BE GROUTED, GROUTED OR SHIMMED BY THE GENERAL CONTRACTOR TO ACCOMPLISH THIS PURPOSE.
2. SNAP CHALKLINES SHOWING MOUNTING LOCATIONS ON STRUCTURAL FLOOR IN ACCORDANCE WITH THIS DRAWING. MARKEN MOUNTING CENTER LINES WITH BRIGHT ORANGE PAINT, SO THEY ARE VISIBLE THROUGH THE POLYETHYLENE SHEETING.
3. COVER ENTIRE FLOOR AREA WITH 1 LAYER OF POLYETHYLENE SHEETING AND CARRY SHEETING 12" UP CONCRETE FORMS, OR TO TOP OF FORM. OVERLAP JOINTS A MINIMUM OF 6". TAPE ALL JOINTS WITH WATERPROOF TAPE.
4. LUBRICATE ALL THREADS OF MOUNT CASTINGS WITH OIL OR GREASE AND PLACE CASTINGS ON CENTERS MARKED OUT IN STEP 2. ERRORS OF AS MUCH AS 1" WILL NOT AFFECT PERFORMANCE BUT SHOULD BE AVOIDED FOR COSMETIC REASONS.
5. INSTALL LOWER REINFORCING STEEL THAT RESTS ON THE CASTING LUGS FIRST, TO MAINTAIN MOUNTING LOCATIONS. AVOID CUTTING REINFORCING BARS AS YOU CONTINUE THE REINFORCING SYSTEM IN ACCORDANCE WITH THIS OR THE ARCHITECTURAL DRAWINGS. OVERLAP ANY CUT BARS TO STRUCTURAL STANDARDS.
6. POUR THE 4" CONCRETE FLOOR BEING CAREFUL NOT TO LIFT OR MOVE MOUNTINGS. LEVEL FLUSH WITH TOPS OF MOUNTS. THE FLOOR AREA MUST BE POURED MONOLITHICALLY IN A SINGLE OPERATION. THE CONTINUITY AND UNIFORMITY OF THE CONCRETE DURING POURING SHALL BE OBTAINED BY MECHANICAL AGITATION. DO NOT OVER AGITATE AS GRAVEL WILL SETTLE TO BOTTOM.
7. ALLOW CONCRETE TO HARDEN AND CURE IN ACCORDANCE WITH APPROVED PRACTICE.
8. AFTER CONCRETE HAS CURED, AND THE FLOOR IS READY TO BE RAISED, PREPARE EACH CASTING FOR SPRING INSTALLATION AS FOLLOWS:
 - A) REMOVE PUTTY FROM 3/8" BRASS COVER SET SCREW AND SPANNER HOLES, REMOVE SET SCREW AND STORE FOR LATER USE
 - B) UNSCREW COVER PLATE BY TURNING COUNTER-CLOCKWISE WITH SPANNER WRENCH
 - C) UNSCREW AND REMOVE COMPRESSION CASTING BY TURNING COUNTERCLOCKWISE.
9. INSTALL NEOPRENE SPRING CUP AND PROPER SPRING FOR EACH LOCATION, PAYING STRICT ATTENTION TO THE SPRING COLOR CODE. THREAD COMPRESSION CASTING DOWN ON TOP OF SPRINGS BEFORE ADJUSTMENT SO CASTINGS ARE JUST IN CONTACT WITH SPRINGS.
10. USING T-WRENCH TAKE 4 EQUAL CLOCKWISE TURNS ON EACH COMPRESSION CASTING. MAKE A CIRCUIT AROUND ENTIRE ROOM.
11. REPEAT STEP 10 - 4 TIMES. THE NUMBER OF TURNS AT THIS POINT SHOULD BE 20, THE FLOOR SHOULD HAVE LIFTED APPROXIMATELY 2 1/4". NOTE: CALCULATED WITH DEAD LOAD ONLY.
12. TAKE AN ADDITIONAL EQUAL NUMBER OF TURNS (APPROXIMATELY 3) TO BRING THE ROOM ELEVATION TO THE JOB REFERENCE POINT. NOTE: WITH ADDITION OF 100 PSF LIVE LOAD AIR GAP WILL EQUAL OPERATING HEIGHT OF 2 in.
13. INSTALL COVER PLATES, FLUSH WITH TOP OF FLOATING FLOOR. ALIGN SET SCREW WITH COVERPLATE AND REINSTALL SET SCREW. THIS COMPLETES THE SPRING ADJUSTMENT PROCEDURE.

REVISION	DESCRIPTION	DATE
CUSTOMER	P.V.C. SPECIALTIES CO.	
JOB NAME	CDOT WEST MAINTENANCE	
MASON INDUSTRIES INC.		
801 S. 14th Street, Pompano Beach, FL 33062-2971		
P.O. Box 20753, Pompano Beach, FL 33062-0753		
P.O. NO.	20753	DRAWN BY P. DICKLER
ALL NO.		CHECKED BY L. BO
TITLE	FS FLOATING FLOOR	
DATE	4/1/00	SCALE N.T.S.

WEST SINGLE MODE TRUNK FIBER OPTIC CABLES
N/T 96 & S/T 48

NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. ZIRCON ST TERMINATIONS TO BE USED FOR THIS LOCATION.

NOTE: CABLE ARE RUN IN 4"X 4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM.

NOTE: THESE FIBEROPTIC CABLE RUNS DO NOT REQUIRE SPLICING AND EXTENDING THE CABLING.

FIBER WORK:

1. CONTRACTOR TO CUT THE 96 STRAND SINGLE MODE CABLE IN THE WEST COMM ROOM AND PULL BACK THROUGH 4"X 4" WIREWAY TO NEW COMM ROOM. THIS CABLE IS TERMINATED INTO TWO (2) ENCLOSURES, IDENTIFIED AS SINGLE MODE #1-96, (NORTH TUNNEL TRUNK).
2. CONTRACTOR TO CUT THE 48 STRAND SINGLE MODE CABLE IN THE WEST COMM ROOM AND PULL BACK THROUGH 4"X 4" WIREWAY THE NEW COMM ROOM. THIS CABLE IS IDENTIFIED AS SINGLE MODE #1-48, IN THE SINGLE MODE FIBER ENCLOSURE.
3. RUN BOTH (2) CABLES TO NEW COMMUNICATIONS ROOM AND RETERMINATE INTO IDENTIFIED FIBEROPTIC ENCLOSURES.
4. CONTRACTOR TO TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
5. TIME REQUIRED IS 4 STANDARD BUSINESS DAYS (4 SBD), 1 CALENDAR WEEK.

WEST FIBER TUNNEL "THRU RUNS"
NTRA, STRA, STRB, STRC, STRD

NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

NOTE: CABLES ARE RUN IN 4"X4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM.

NOTE: THESE FIBEROPTIC CABLE RUNS DO NOT REQUIRE SPLICING AND EXTENDING THE CABLING.

FIBER WORK:

1. CDDT TO RECORD FIBER JUMPERING FOR NTRA, STRA, STRB, STRC, STRD AND DISCONNECT FIBER JUMPERS IN WEST COMM ROOM.
2. CONTRACTOR TO CUT FIVE (5) FIBEROPTIC CABLES AT N/T THRURUN AND S/T THRURUN FIBER ENCLOSURES;
 - NTRA SLOT A & B (12 STRAND)
 - STRA SLOT B
 - STRB SLOT A
 - STRC SLOT D
 - STRD SLOT C
3. REPULL AND REROUTE THESE FIVE (5) CABLES TO NEW COMMUNICATIONS ROOM AND RETERMINATE INTO IDENTIFIED FIBEROPTIC ENCLOSURE.
4. IDENTIFY, OTDR TEST, AND REPORT RESULTS.
5. TIME DELAY REQUIRED IS 4 STANDARD BUSINESS DAYS (4 SBD).

WEST VIDEO FIBER CAMERAS & MTN RES MM
S/T 3, S/T 5, N/T 4, & RES.

NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

NOTE: CABLE ARE RUN IN 4"X4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM.

NOTE: THESE FIBEROPTIC CABLE RUNS DO NOT REQUIRE SPLICING AND EXTENDING THE CABLING.

FIBER WORK:

1. CDDT TO RECORD FIBER JUMPERING FOR S/T 3, S/T 5, N/T 4 AND DISCONNECT FIBER JUMPERS IN WEST COMM ROOM.
2. CONTRACTOR TO CUT FOUR (4) FIBEROPTIC CABLES AT WEST SIDE DEVICE FIBER ENCLOSURE;
 - S/T 5 SLOT G
 - S/T 3 SLOT H (CAUTION, CUT 1 OF 2 CABLES, NOT BOTH)
 - N/T 4 SLOT D (CAUTION, CUT 1 OF 2 CABLE, NOT BOTH)
 - MTN RES SLOT A (12 STRAND)
3. RUN FOUR (4) CABLES TO NEW COMMUNICATIONS ROOM AND RETERMINATE INTO IDENTIFIED FIBEROPTIC ENCLOSURE.
4. CONTRACTOR TO TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
5. CDDT TO RECONNECT FIBER JUMPERING AND REESTABLISH CONTROL OF THESE THREE VIDEO CAMERAS. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).

WEST VIDEO FIBER CAMERAS
N/T 3, N/T 5, S/T 4, & WEST CROSSCUT

FIBER WORK:

1. CDDT TO RECORD FIBER JUMPERING FOR N/T 3, N/T 5, N/T 4 AND DISCONNECT FIBER JUMPERS IN WEST COMM ROOM.
2. CONTRACTOR TO CUT THREE (3) FIBEROPTIC CABLES AT WEST SIDE DEVICE FIBER ENCLOSURE;
 - N/T 5 SLOT C
 - N/T 3 SLOT D (CAUTION, CUT 1 OF 2 CABLES, NOT BOTH)
 - S/T 4 SLOT H (CAUTION, CUT 1 OF 2 CABLE, NOT BOTH)
3. CONTRACTOR TO CUT FIBEROPTIC CABLE CONNECTED TO WEST X/CUT 12 STRABD CABINET PLUGIN.
4. RUN FOUR (4) CABLES TO NEW COMMUNICATIONS ROOM AND RETERMINATE INTO IDENTIFIED FIBEROPTIC ENCLOSURE.
5. CONTRACTOR TO TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
6. CDDT TO RECONNECT FIBER JUMPERING AND REESTABLISH CONTROL OF THESE THREE VIDEO CAMERAS.

WEST LAB FIBER
(12 STRAND, MM)

NOTE: IT IS SUGGESTED THIS TASK BE PERFORMED WITH THE WEST RESERVOIR FIBER RUN

NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

NOTE: CABLE IS TO BE RUN IN 4"X 4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM. BUNDLE WITH EXISTING WIRING TO ADJACENT TO CAB-EXT AND CROSS INTERSTITIAL SPACE USING EXISTING ABS CONDUIT TO CEILING ABOVE WEST LAB ROOM.

APPROXIMATELY 500 FEET.

FIBER WORK:

1. CDDT TO RECORD FIBER JUMPERING AND DISCONNECT FIBER JUMPERING IN WEST COMM. ROOM CDDT TO IDENTIFY CABLE. CDDT TO DISCONNECT FIBER CONNECTIONS IN "WEST LAB."
2. CONTRACTOR TO RUN A 12 STRAND MM CABLE FROM THE NEW COMM ROOM TO THE WEST LAB ROOM TOP. USE EXISTING CEILING ACCESS AND PULL 40' IN TO ROOM.
3. CONTRACTOR TO PROVIDE A WALL MOUNT 2 SLOT, 12 PORT AMP FIBER ENCLOSURE.
4. CONTRACTOR TO TERMINATE INTO THIS ENCLOSURE. IDENTIFY CABLE, OTDR TEST, REPORT RESULTS.
5. CONTRACTOR TO TERMINATE INTO NEW COMM ROOM IDENTIFIED FIBER ENCLOSURE. IDENTIFY CABLE, OTDR TEST, REPORT RESULTS
6. CDDT TO CONNECT JUMPERING AND REESTABLISH NETWORK SWITCH OPERATION. TIME REQUIRED IS 2 STANDARD BUSINESS DAYS (2 SBD).

Print Date: 10/2/2007		Sheet Revisions			Colorado Department of Transportation		As Constructed		WEST VENTILATION BUILDING COMMUNICATION SYSTEM RELOCATION PROCEDURE 1 OF 2		Project No./Code			
Drawing File Name: 16096ELERPLAN01w.dgn		Date:	Comments	Init.	 Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ		No Revisions: 11/23/09		Designer: J. SHELDON Detailer: R. KWONG Sheet Subset:		IM-0703-319			
Horiz. Scale: N.T.S. Vert. Scale: N.T.S.							Revised:				Structure Numbers		16096	
Unit Information Unit Leader Initials							Void:				Subset Sheets:		Sheet Number 34	

**WEST RESERVOIR FIBER
(12 STRAND, MM)**

NOTE: IT IS SUGGESTED THIS TASK BE PERFORMED WITH THE WEST LAB EXTENSION

NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

NOTE: CABLE ARE RUN IN 4"X 4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM. BUNDLY WITH EXISTING WIRING ADJACENT TO CAB-EXT AND CROSS INTERSTITIAL SPACE USING EXISTING ABS CONDUIT TO CEILING ABOVE WEST LAB ROOM.

NOTE: APPROXIMATELY 500 FEET OF FIBER AND 12 STRAND SPLICING REQUIRED.

FIBER WORK:

1. CONTRACTOR TO RUN A 12 STRAND MM CABLE FROM THE NEW COMM ROOM TO THE WEST LAB ROOM TOP.
2. CDDT TO RECORD FIBER JUMPERING FOR THIS CABLE AND DISCONNECT FIBER JUMPERS IN WEST COMM ROOM. CDDT TO IDENTIFY CABLE AS "ABANDONED".
3. CONTRACTOR TO ADVISE CDDT ONE (1) BUSINESS DAY PRIOR TO CUTTING EXISTING 12 STRAND CABLE FOR SPLICING. SPLICE NEW 12 STRAND CABLE TO EXISTING 12 STRAND CABLE FROM RESERVOIR, PROVIDE APPROPRIATE SPLICE ENCLOSURE.
4. CONTRACTOR TO IDENTIFY THIS CABLE AS "WAS RESERVOIR FIBER, ABANDONED"
5. CONTRACTOR TO TERMINATE INTO NEW COMM ROOM IDENTIFIED FIBER ENCLOSURE. IDENTIFY CABLE, OTDR TEST, REPORT RESULTS
6. CDDT TO CONNECT JUMPERING AT NEW LOCATION AND VERIFY FUNCTIONS. TIME REQUIRED IS 2 STANDARD BUSINESS DAYS (2 SBD).

**WEST VIDEO CAMERA MOVE
(REPULLS)**

NOTE: IT IS SUGGESTED THIS TASK BE PERFORMED PRIOR TO THE VIDEO CAMERA (COAX) EXTENSION

NOTE: CABLE ARE RUN IN 4"X 4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM.

NOTE: THESE COAXIAL CABLE RUNS DO NOT REQUIRE SPLICING AND EXTENDING THE CABLING.

NOTE: THE CAMERAS ARE DIVIDED INTO TWO (2) SEPARATE GROUPS. BECAUSE OF TRAFFIC SAFETY CONCERNS, THEY MAY NOT BE CUT AND REPULLED AS ONE GROUPING!

WEST CAMERA # CAMERA TITLE: GROUP "A"

- 1 NORTH TUNNEL ZONE #1
- 11 SOUTH TUNNEL ZONE #1
- 41 NORTH TUNNEL CBI
- 42 EAST INCH DOOR
- 43 NW LOOP ROAD

COAX WORK:

1. CDDT TO IDENTIFY AND MARK GROUP A COAXES FOR PHYSICAL MOVE BY CONTRACTOR. THESE ARE CURRENTLY CONNECTED TO THE VIDEO SWITCHER LOCATED IN THE WEST COMM ROOM.
2. CONTRACTOR TO CUT END BNC TERMINATIONS, REPULL, AND REROUTE TO NEW COMM ROOM.
3. TERMINATE INTO IDENTIFIED ENCLOSURE, AND IDENTIFY.
4. CDDT TO CONNECT COAX JUMPERING AND REESTABLISH CONTROL OF THESE VIDEO CAMERAS. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).

WEST CAMERA # CAMERA TITLE: GROUP "B"

- 2 NORTH TUNNEL ZONE #2
- 10 SOUTH TUNNEL ENTRANCE
- 12 SOUTH TUNNEL ZONE #2
- 44 SW LOOP ROAD

5. CDDT TO IDENTIFY AND MARK GROUP B COAXES FOR PHYSICAL MOVE AND BY CONTRACTOR. THESE ARE CURRENTLY CONNECTED TO THE VIDEO SWITCHER LOCATED IN THE WEST COMM ROOM.
6. CONTRACTOR TO CUT END BNC TERMINATIONS, REPULL, AND REROUTE TO NEW COMM ROOM.
7. TERMINATE INTO IDENTIFIED ENCLOSURE, AND IDENTIFY.
8. CDDT TO CONNECT COAX JUMPERING AND REESTABLISH CONTROL OF THESE VIDEO CAMERAS. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).

**WEST VIDEO CAMERA EXTENSION
(EXTENSION COAX)**

NOTE: IT IS SUGGESTED THIS TASK BE PERFORMED AFTER THE VIDEO CAMERA (COAX) MOVES

NOTE: CABLES ARE RUN IN 4"X 4" WIREWAY TO N/E CORNER OF CENTER WEST ELECTRICAL EQUIPMENT ROOM, OVER TUNNEL MECHANICS STOCK ROOM.

NOTE: THESE COAXIAL CABLE RUNS DO REQUIRE AN JUNCTION BOX AND EXTENSION CABLING TO THE NEW WEST COMM ROOM.

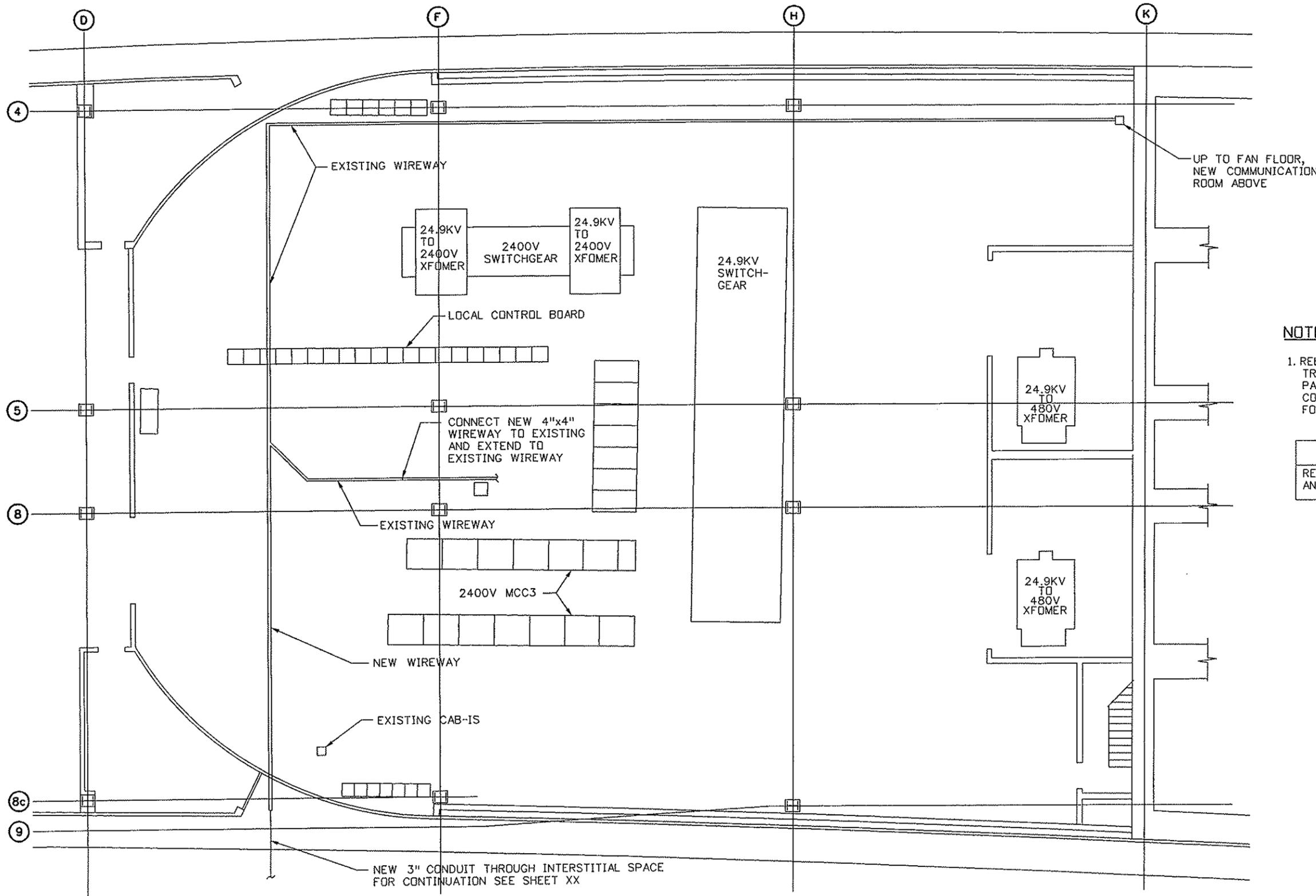
WEST CAMERA #	CAMERA TITLE:	TRUNK ID
16	NORTH WEST GARAGE	EXT-1
17	NORTH WEST OFFICE AREA	EXT-2
18	CENTER WEST GARAGE	EXT-3
19	CENTER WEST ELECTRICAL EQUIPMENT	EXT-4
20	CENTER WEST SWITCH GEAR	EXT-5
21	CENTER WEST TRANSFORMERS	EXT-6
22	SOUTH WEST GARAGE	EXT-7
23	SOUTH WEST SHOP	EXT-8
24	SOUTH WEST BOILER ROOM#1	EXT-9
25	SOUTH WEST BOILER ROOM #2	EXT-10
26	SOUTH WEST GENERATOR ROOM	EXT-11
35	NORTH WEST LOBBY	EXT-12
36	SOUTH WEST LOBBY	EXT-13
46	CW TOOL ROOM	EXT-14
7	WEST PORTAL STATION	EXT-15

COAX WORK:

1. INSTALL A VIDEO COAXIAL TRUNK CABLE ("SNAKE") FROM THIS ENCLOSURE TO THE NEW WEST COMM ROOM INTO THE IDENTIFIED PATCH PANEL. CABLE COUNT SHALL BE 20 MINIMUM, 24 MAXIMUM., CONTAINED IN ONE (1) OR TWO(2) SHEATHED CABLES. GEPCO #VS1020000, BELDEN 7798A, OR APPROVED EQUIVALENT SHALL BE USED.
2. CDDT TO INSTALL PRENUMBERED PATCH PANEL INTO ENCLOSURE.
3. CONTRACTOR TO TERMINATE TRUNK CABLE AT BOTH ENDS WITH MANUFACTURER SPECIFIED 3 PIECE BNC CONNECTORS. IDENTIFY INDIVIDUAL COAXIAL CABLES WITH INDUSTRY STANDARD NUMERIC COLOR CODES AND CORRESPONDING EXT-XX. IDENTIFY USING WRAP AROUND VINYL SELF-LAMINATING LABELS.

TEST ALL COAXIAL CABLES FOR OPENS & SHORTS, INFORMALLY REPORT RESULTS. TDR TESTING IS NOT REQUIRED UNLESS CABLE DAMAGE OR COMPROMISE IS SUSPECTED CONNECT TO IDENTIFIED PATCH PANELS.
4. CDDT TO IDENTIFY AND DISCONNECT COAXES PRIOR TO PHYSICAL MOVE. THESE ARE CURRENTLY CONNECTED TO THE VIDEO SWITCHER LOCATED IN THE WEST COMM ROOM.
5. CONTRACTOR TO CUT END BNC TERMINATIONS, PULL OUT OF EXISTING WIREWAY, AND REROUTE TO CEILING ENCLOSURE JB-COAXEXT.
6. SHORTEN COAXES AS REQUIRED TO PROVIDE A REASONABLE UTILITY LENGTH IN ENCLOSURE JB-COAXEXT. TERMINATE INTO IDENTIFIED ENCLOSURE. IDENTIFY WITH EXT-XX AND ABBREVIATED TEXT USING WRAP AROUND VINYL SELF-LAMINATING WIRING LABELS.
4. CDDT TO CONNECT COAX JUMPERING AND REESTABLISH CONTROL OF THESE VIDEO CAMERAS IN THE NEW COMM ROOM. TIME REQUIRED IS 3 STANDARD BUSINESS DAY (3 SBD).

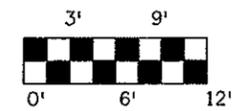
Print Date: 10/2/2007	 Colorado Department of Transportation Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775 Region 1 INZ	As Constructed	WEST VENTILATION BUILDING COMMUNICATION SYSTEM RELOCATION PROCEDURE 2 OF 2	Project No./Code												
Drawing File Name: 16096ELERPLAN02w.dgn		No Revisions: 11/23/07		IM-0703-319												
Horiz. Scale: N.T.S. Vert. Scale: N.T.S.		Revised:	Designer: J. SHELDON	Structure	16096											
Unit Information Unit Leader Initials		Void:	Detailer: R. KWONG	Numbers	Sheet Number 35											
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Date:	Comments	Init.														



NOTE:

1. RELOCATION OF COMMUNICATION AND TRAFFIC MANAGEMENT SYSTEMS TO BE PAID FOR AS ITEM 613-XXXXX, RELOCATE CONTROLS AND WIRING WITH THE FOLLOWING QUANTITIES:

Item	Unit	Quantity
RELOCATE CONTROLS AND WIRING	LS	1



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Sheet Revisions																					
Date:	Comments	Init.																			

MISCELLANEOUS WIREWAY AND CONDUIT INSTALLATION

NOTE:
ALL WIREWAY TURNS AND WYES MUST BE SLEEVED TO COMPLY WITH FIBEROPTIC CABLING BEND RADIUS REQUIREMENTS. CONDUIT BENDS REQUIRE LARGE RADIUS SWEEPS.

WARNING: USE EXTREME CAUTION TO AVOID DROPPING TOOLS OR METAL SHAVINGS INTO THE PLC ELECTRONIC OR POWER SUPPLY EQUIPMENT!

FIBEROPTIC AND COAXIAL CABLING IN WIREWAY BEING MODIFIED WILL REQUIRE TEMPORARY SUPPORT TO ALLOW REMOVAL OF EXISTING FITTINGS AND INSTALLATION OF TEE FITTINGS, ETC.

1. INSTALL 4" X 4" WYE AT WIREWAY, SOUTH WEST OF COMM ROOM ONTO EXISTING WIREWAY. WYE TO CONNECT WIREWAY EXTENSION TO SOUTH WALL ADJACENT TO CAB-IS, OTHER WYE CONNECTION TO CONNECT WIREWAY EXTENSION TO PLC CABINET.
2. INSTALL 4" X 4" WIREWAY, FROM WYE SOUTH TO WALL. LENGTH APPROXIMATELY 30 LIN. FT.
3. INSTALL 4" X 4" TYPE 12 LAY-IN WIREWAY FROM NEW WYE TO EXISTING WIREWAY. CONSTRUCT USING A COMBINATION OF 45 DEGREE ELBOWS, TELESCOPING OR CUT-OFF SECTION AND STRAIGHT SECTIONS AS REQUIRED. INSIDE AND OUTSIDE OPENING 45 DEGREE SECTIONS MAY BE USED TO TRANSITION BETWEEN THE DIFFERING WIREWAY ELEVATIONS.
4. INSTALL 3" CONDUIT FROM WIREWAY END THROUGH SOUTHWEST INTERSTITIAL SPACE (ATTIC) IN TO SOUTH WEST GARAGE. CONNECT CONDUIT AND WIREWAY WITH A FLAT PLAT "MEYERS" HUB CONNECTION.
5. CONNECT/INSTALL A 18" X 18" X 12" NEMA 4 JUNCTION BOX.
6. INSTALL 2" CONDUIT FROM JUNCTION BOX TO CAB-SWFO.
7. INSTALL 2" CONDUIT FROM JUNCTION BOX TO INTERIOR STORAGE ROOM.

ENCLOSURE WORK:

1. PROVIDE ONE NEMA TYPE 4 ENCLOSURE. CABINET SHALL HAVE INDUSTRY STANDARD 19" ANGLE RACK INSTALLED MIDWAY.
2. INSTALL CABINET ADJACENT TO EXISTING 4"X4" WIREWAY OVER EXISTING WEST COMM ROOM DOOR. CONNECT CABINET TO EXISTING WIREWAY WITH TWO 3" CONDUITS OR TYPE 12 LAY IN WIREWAY TEE FITTINGS. LENGTH OF EITHER TO BE APPROXIMATELY 6". IDENTIFY PROMINENTLY AS "JB-COAXEXT".

FOR INFORMATION ONLY

Item	Unit	Quantity
4" X 4" TYPE 12 LAY IN WIRE	55	LF
2" CONDUIT	150	LF
3" CONDUIT	50	LF

PLC CABINET TO COMM ROOM FIBER RELOCATION WORK

NOTE:
OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

FIBER WORK:

1. CONTRACTOR TO INSTALL 24 STRAND MM FIBEROPTIC CABLE FROM NEW COMM ROOM TO PLC CABINET VIA EXISTING WIREWAY AND THIS EXTENSION. APPROX. 300" FIBER REQUIRED.
2. TERMINATE FIBER CABLE INTO IDENTIFIED FIBER ENCLOSURE (NEW COMM ROOM)
3. CONTRACTOR TO PROVIDE ONE AMP WALL MOUNT ENCLOSURE P/N 1278323-2 AND INSTALL INTO PLC CABINET IN AVAILABLE SPACE. CDOT TO PROVIDE DUPLEX ST FIBER OPTIC ADAPTER PLATES.
4. TERMINATE FIBER CABLE INTO ENCLOSURE. IDENTIFY, OTDR TEST REPORT RESULTS.
5. CDOT TO COMPLETE THE PLC CONTROL NET COAXIAL COMMUNICATIONS LINK AND TRANSFER PLC COMMUNICATIONS TO NEW COMM ROOM. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).

SW TUNNEL MECHANICS SHOP

NOTE:
OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURERS INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

FIBER WORK:

1. CONTRACTOR TO INSTALL 12 STRAND MM FIBEROPTIC CABLE FROM NEW COMM ROOM TO SW TUNNEL MECHANICS STORAGE ROOM. ROUTE THROUGH NEW CONDUIT AND WIREWAY, COMPLETE ROUTE USING THIS 2" CONDUIT RUN. LENGTH APPROXIMATELY 300 LIN. FT.
2. CONTRACTOR TO PROVIDE A WALL MOUNT 12 PORT AMP FIBER ENCLOSURE. TERMINATE INTO THIS ENCLOSURE, IDENTIFY, OTDR TEST, REPORT RESULTS. CONTRACTOR TO TERMINATE NEW COMM ROOM END INTO IDENTIFIED FIBER ENCLOSURE.
3. CDOT TO TRANSFER TUNNEL MECHANICS COMPUTER NETWORK SWITCH.
4. CDOT TO VERIFY & IDENTIFY NOW "ABANDONED" FIBEROPTIC "JUMPER CABLES" FOR LATER REMOVAL. CDOT TO IDENTIFY AT BOTH ENDS. THIS RUNS FROM THE WEST COMM ROOM TO SW TUNNEL MECHANICS INTERIOR STORAGE ROOM.

NOTE: NO STANDARD BUSINESS DAY DELAYS ARE REQUIRED. (0 SBD).

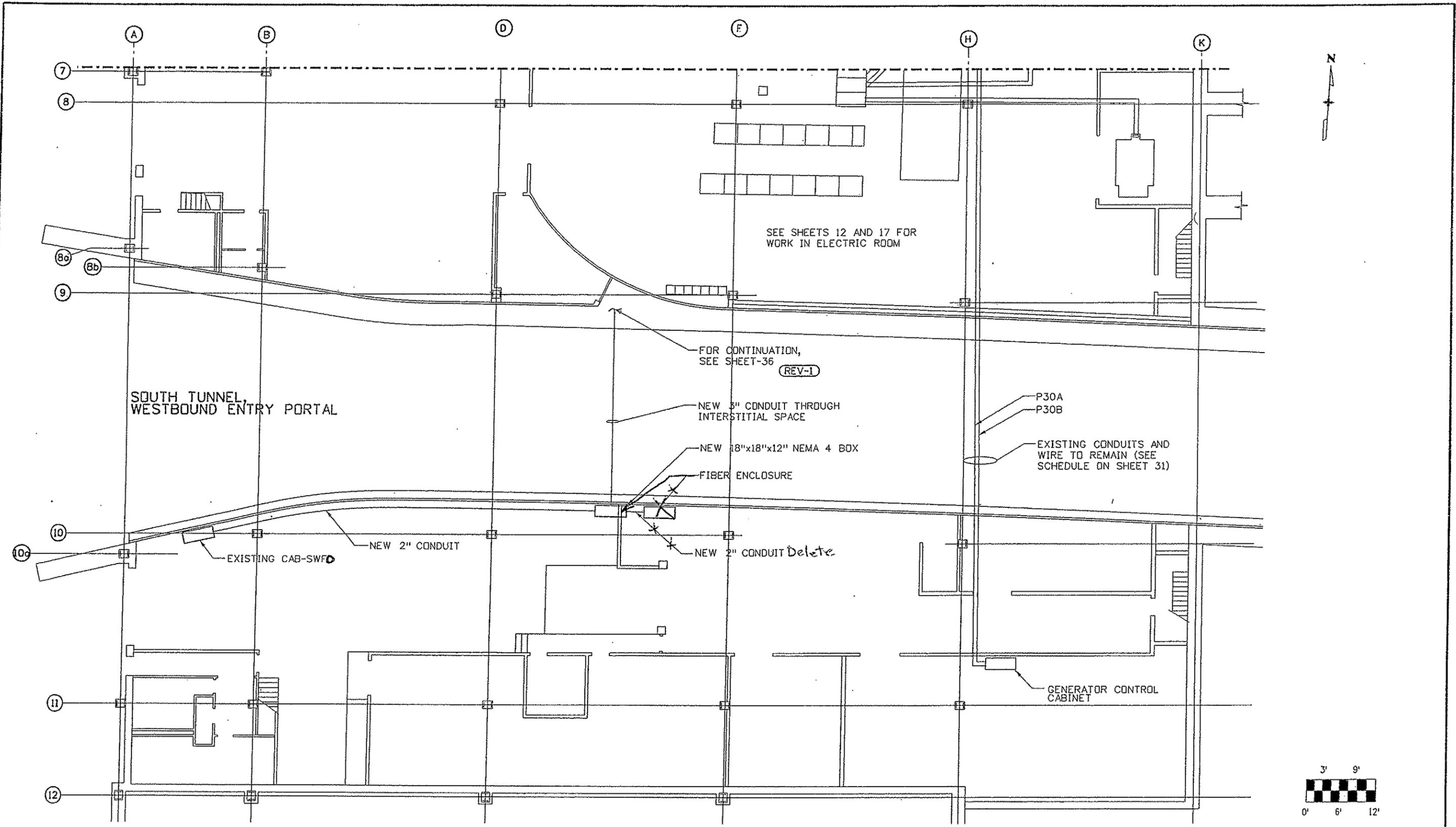
SW PORTAL CONTROL & VIDEO

NOTE:
OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

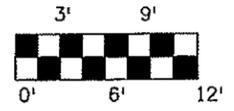
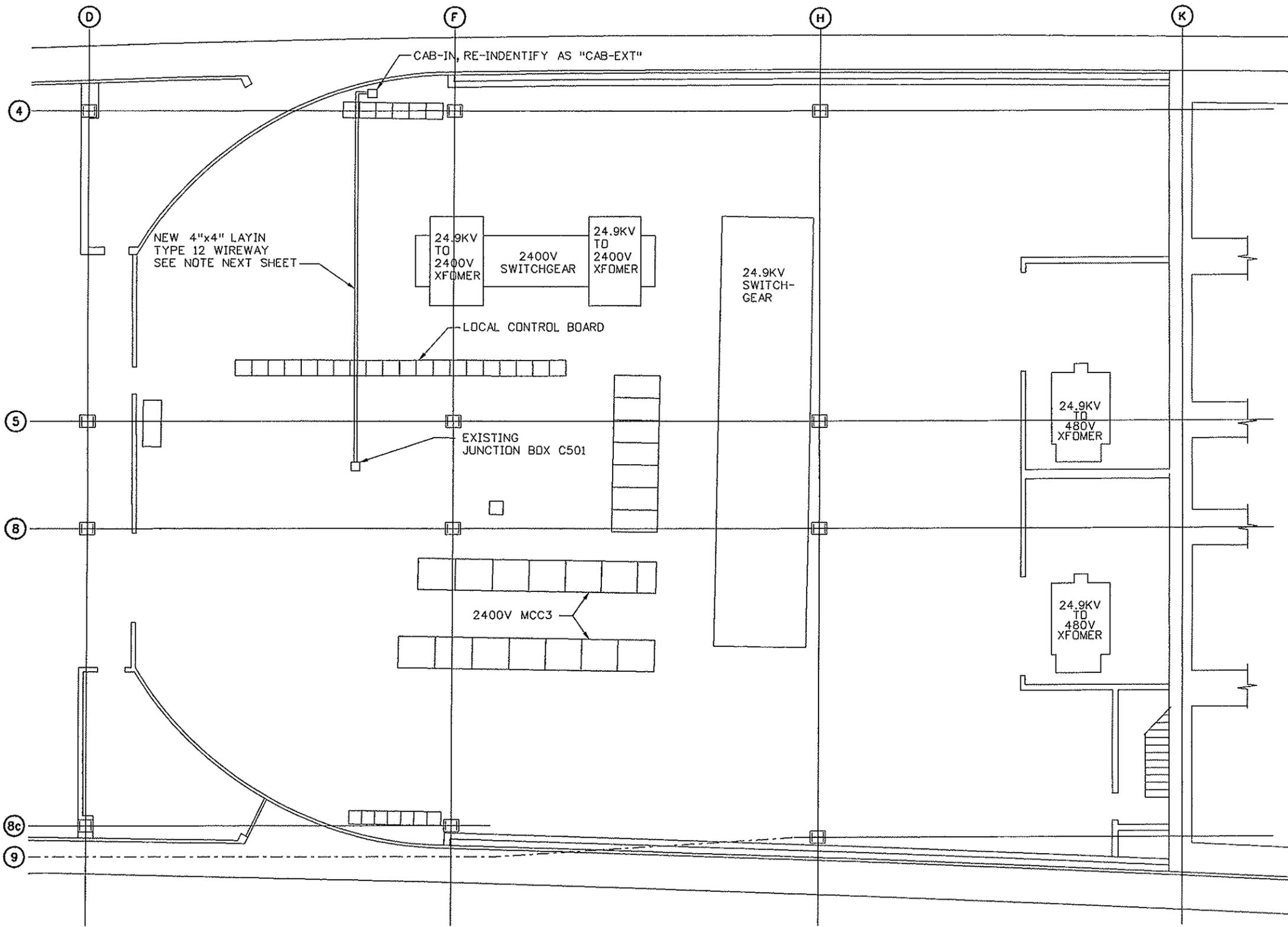
FIBER WORK:

1. CONTRACTOR TO INSTALL 24 STRAND MM FIBEROPTIC CABLE FROM CAB-SWFO TO NEW COMM ROOM. ROUTE THROUGH NEW CONDUIT AND WIREWAY, COMPLETE ROUTE USING EXISTING 4" X 4" WIREWAY TO NEW COMM ROOM.
 2. CONTRACTOR TO TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
 3. CDOT TO TRANSFER PORTAL CONTROL FIBER FUNCTIONS.
 4. CDOT TO TRANSFER PORTAL FIBER VIDEO FUNCTIONS.
- NOTE: TRANSFERS WILL REQUIRE 4 STANDARD BUSINESS DAYS (4 SBD).
5. CDOT TO VERIFY & IDENTIFY NOW "ABANDONED" FIBEROPTIC AND COPPER WIRE "JUMPER CABLES" FOR LATER REMOVAL. CDOT TO IDENTIFY AT BOTH ENDS. THESE TWO RUN FROM THE WEST COMM ROOM TO CAB-SWFO.

Print Date: 10/2/2007	Sheet Revisions			Colorado Department of Transportation	As Constructed	WEST VENTILATION BUILDING COMMUNICATION SYSTEM RELOCATION PLAN 2 OF 3		Project No./Code
Drawing File Name: 16096ELERPLAN04w.dgn	Date:	Comments	Init.		No Revisions: 11/23/09			IM-0703-319
Horiz. Scale: N.T.S. Vert. Scale: N.T.S.				 Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775	Revised:	Designer: J. SHELDON	Structure Numbers	16096
Unit Information Unit Leader Initials					Void:	Detailer: R. KWONG	Sheet Subset:	Subset Sheets:
				Region 1	INZ			



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Drawing File Name: 16096ELERPLAN05w.dgn		Date:	Comments	Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775		No Revisions:		Designer: J. SHELDON		IM-0703-319	
Unit Information		11/16/07	Revised Ref. Note	Region 1		Revised: 11/23/09		Detailer: R. KWONG		16096	
Unit Leader Initials				INZ		Void:		Sheet Subset:		Sheet Number 38	
REV-1								Structure Numbers			
								Subset Sheets:			



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Drawing File Name: 16096ELERPLAN06w.dgn		Date:	Comments	Init.	Mountain Residency P.O. Box 399 Dumont, CO 80436 Phone: 303-512-5750 FAX: 303-512-5775		No Revisions: 11/23/09		IM-0703-319		
Horiz. Scale: 3/16" Vert. Scale: 3/16"					Region 1 INZ		Revised:		Designer: J. SHELDON Structure Numbers		16096
Unit Information Unit Leader Initials							Void:		Detailer: R. KWONG		Sheet Number 39
									Sheet Subset:		Subset Sheets:

**TRAFFIC MANAGEMENT SYSTEM (TMS/VMS/LUS)
RELOCATION WORK**

NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

TYPE 12 WIREWAY:

1. RE-IDENTIFY CABINET "CAB-IN ABANDONED "AS" CAB-EXT".
2. INSTALL ONE 4" WIREWAY FROM JUNCTION BOX C501 TO CAB-EXT. COMBINE TWO 45 DEGREE FITTINGS AT TRANSITION(S) FROM HORIZONTAL TO VERTICAL, TOP OPENING. UTILIZE TRANSPOSITION FITTING (CW) TO MAKE WIREWAY ACCESSIBLE FROM NORTH EAST SIDE. SLEEVE OR LINE 45 DEGREE FITTINGS SMOOTHLY TO OBSERVE FIBEROPTIC CABLE BEND RADIUS". IDENTIFY AS WW/C501-EXT

APPROX. 50 COMBINED LINEAR FEET OF WIREWAY AND FITTING PIECES REQUIRED.

FIBER WORK: SOUTH TUNNEL TMS

1. CDOT TO TEST AND VERIFY TMS OPERATIONS. CDOT TO RECORD FIBER JUMPERING. CDOT TO DISCONNECT TRUNK EJB/EJB (3N/4N).
2. CDOT TO TEST AND VERIFY TMS OPERATIONS (SOUTH TUNNEL) PRIOR TO CONTINUING.
3. CONTRACTOR TO SPLICE/EXTEND EJB/WJB (3N/4N) THROUGH WW/C601-EXT TO CAB-EXT. WEST COMM ROOM VMS/LUS FIBER CABINET - SLOT E & SLOT F.
4. CONTRACTOR TO SPLICE/EXTEND S/T #1 VMS THROUGH WW/C601-EXT TO CAB-EXT. WEST COMM ROOM VMS/LUS FIBER CABINET - SLOT A.
5. CONTRACTOR TO SPLICE/EXTEND S/T #2 VMS THROUGH WW/C601-EXT TO CAB-EXT. WEST COMM ROOM VMS/LUS FIBER CABINET SLOT C.
6. CONTRACTOR TO TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
7. CDOT TO RECONNECT FIBER JUMPERING AT CABLES S/T #1 VMS TO EJB/WJB (4N) AND VERIFY OPERATION OF S/T VMS #1, 3, 5, 7, 9, 11.
8. CDOT TO RECONNECT FIBER JUMPERING AT CABLES S/T #2 VMS TO EJB/WJB (3N) AND VERIFY OPERATION OF S/T VMS #2, 4, 6, 8, 10.
9. CDOT TO VERIFY COMMUNICATIONS WITH THE WEST PORTAL FACE SIGNAGE. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).

FIBER WORK: NORTH TUNNEL TMS/WIM

- 1 CDOT TO TEST AND VERIFY TMS (NORTH TUNNEL) AND WIM OPERATIONS. CDOT TO RECORD FIBER JUMPERING. CDOT TO DISCONNECT CABLE CECWS1 AND CECWS2.
2. CDOT TO TEST AND VERIFY TMS (NORTH TUNNEL) OPERATIONS PRIOR TO CONTINUING.
3. CONTRACTOR TO SPLICE/EXTEND CECWS1 AND CECWS2 THROUGH WW/C601-EXT TO CAB-EXT. WEST COMM ROOM VMS/LUS FIBER CABINET - SLOT L & SLOT M.
4. CONTRACTOR TO SPLICE/EXTEND CABLE CAB2N AND CAB3N THROUGH WW/C601-EXT TO CAB-EXT. WEST COMM ROOM VMS/LUS FIBER CABINET - SLOT H & SLOT G.
5. CONTRACTOR TO SPLICE/EXTEND WIM A (STRANDS 1-6) THROUGH WW/C601-EXT. WEST COMM ROOM DEVICE FIBER CABINET SLOT A.
6. CONTRACTOR TO SPLICE/EXTEND WIM B (STRANDS 7-12) THROUGH WW/C601-EXT. WEST COMM ROOM DEVICE FIBER CABINET - SLOT B.
7. CDOT TO RECONNECT FIBER JUMPERING AT CABLES CAB2N AND CECWS2 AND VERIFY OPERATION OF N/T VMS ZONES 1, 3, 5, 7, 9, 11.
8. CDOT TO RECONNECT FIBER JUMPERING AT CABLES CAB3N TO CECWS1 AND VERIFY OPERATION OF N/T VMS ZONES 2, 6, 10.
9. CDOT TO RECONNECT FIBER JUMPERING AT CABLES CAB3N TO WIM A AND VERIFY OPERATION OF N/T VMS ZONES 4, 8, AND WIM VMS.
10. CDOT TO RECONNECT FIBER JUMPERING AT CABLES WIM B TO CECWS1 AND VERIFY FIBER COMMUNICATION RING IS OPERATING PROPERLY. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).

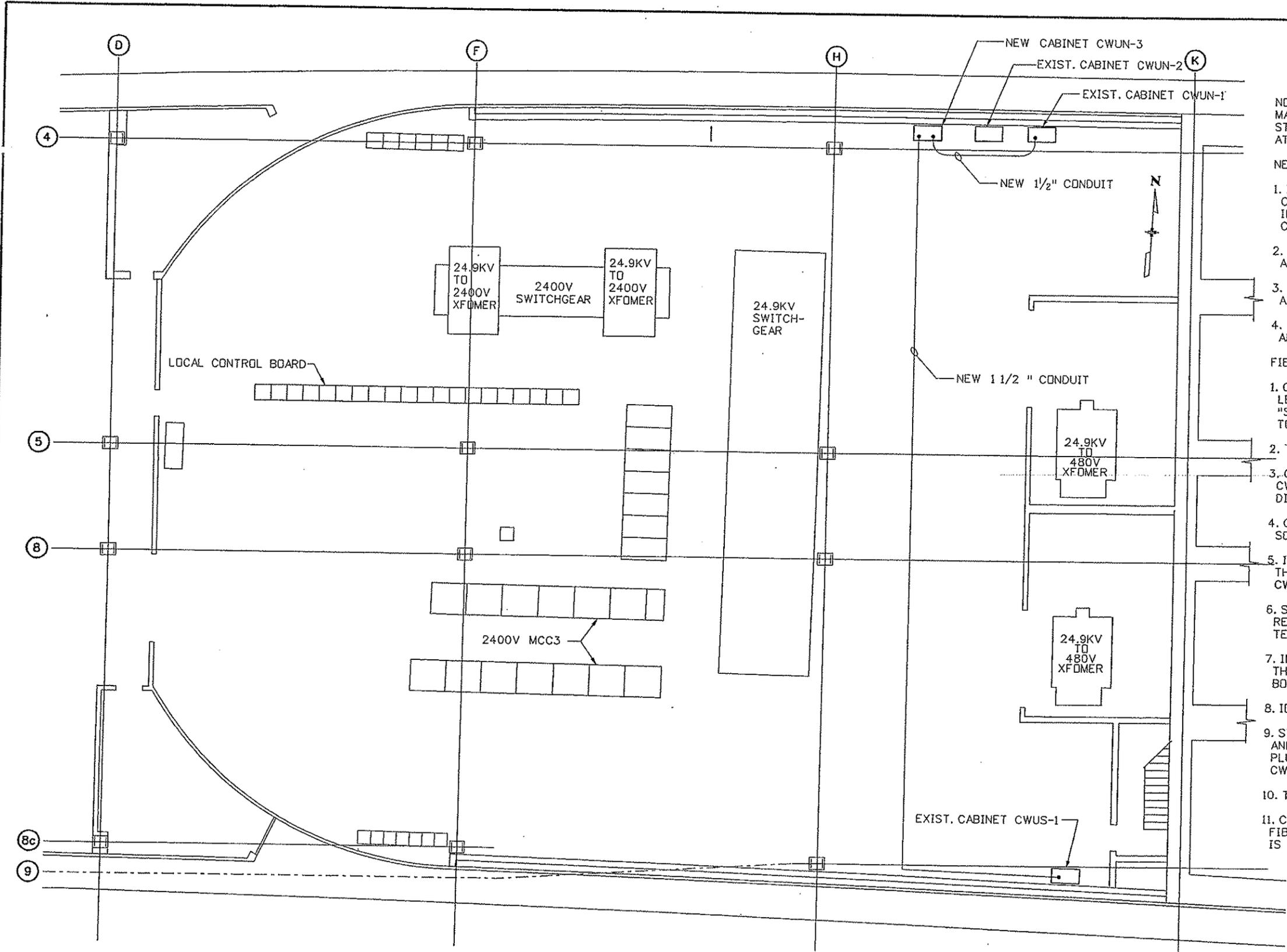
Print Date: 10/2/2007	Sheet Revisions			Colorado Department of Transportation	As Constructed	WEST VENTILATION BUILDING TRAFFIC MANAGEMENT SYSTEM RELOCATION PLAN 2 OF 2		Project No./Code
Drawing File Name: 16096ELERPLAN07w.dgn	Date:	Comments	Init.		No Revisions: 11/23/09	Designer: J. SHELDON	Structure	IM-0703-319
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					Void:	Sheet Subset:	Subset Sheets:	Sheet Number 40



Mountain Residency P.O. Box 399
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Region 1

INZ



**LIGHTING CONTROL SYSTEM (LCS)
RELOCATION WORK**

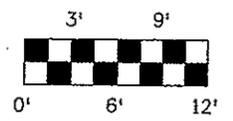
NOTE: OBSERVE ALL FIBER BEND RADIUS AND MANUFACTURER'S INSTALLATION REQUIREMENTS. STAINLESS STEEL ST TERMINATIONS TO BE USED AT ALL LOCATIONS.

NEW CABINET & CONDUIT INSTALLATION:

1. INSTALL HOFFMAN ENCLOSURE C-SD242416 ADJACENT TO CWVN-2 ON NORTH WALL. IDENTIFY AS "CWVN-3 LCS FIBER JBOX". INSTALL 19" CABINET RACK RAILS.
2. INSTALL 1-1/2" CONDUIT FROM CWVS-1 TO CWVN-3. APPROX. 110 LIN. FT.
3. INSTALL 1-1/2" CONDUIT FROM CWVN-1 TO CWVN-3. APPROX. 15 LIN. FT.
4. CDOT TO SUPPLY & INSTALL FIBER OPTIC ENCLOSURE, AND IDENTIFIED CONNECTOR INSERTS INTO CWVN-3.

FIBER WORK:

1. CONTRACTOR TO SUPPLY FIBER OPTIC EXTENSION CABLE. LENGTH 300', 125/62.5UM, 12 STRAND, STAINLESS STEEL "ST" CONNECTORS. RESULTS OF LOSS TEST TO BE PROVIDED TO CDOT PRIOR TO USE.
2. TEMPORARY RUN EXTENSION FIBER FROM CWVN-1 TO CWVS-1.
3. CDOT TO PERFORM OPTICAL CONTINUITY ON FIBER FROM CWVN-1 TO CWVS-1, VERIFY "AS BUILT" CONFIGURATION, DISCONNECT, AND CONNECT EXTENSION CABLE.
4. CDOT TO VERIFY LCS COMMUNICATIONS FOR NORTH AND SOUTH TUNNEL RINGS.
5. IN WEST COMM ROOM, CUT CWVN-1 (PANEL E). PULL BACK THROUGH JUNCTION BOX C501, CONDUIT C611F, AND OUT OF CWVN-1. CAUTION, PULL ONLY THIS ONE CABLE OUT.
6. STOW 20' UTILITY LENGTH IN CWVN-1, COILED. INSTALL REMAINDER OF CABLE IN NEW CONDUIT TO CWVN-3. TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
7. IN WEST COMM ROOM, CUT CWVS-1 (PANEL F). PULL BACK THROUGH JUNCTION BOX C501. PULL BACK THROUGH JUNCTION BOX, CONDUIT C511B, AND OUT OF CWVS-1.
8. IDENTIFY CONDUIT C511B AS "ABANDONED" AT EACH END.
9. STOW 20' UTILITY LENGTH IN CWVS-1, COILED. MEASURE AND VERIFY CABLE LENGTH IS SUFFICIENT TO REACH CWVN-3 PLUS ADEQUATE TERMINATION LENGTH. INSTALL CABLE FROM CWVS-1 TO CWVN-3.
10. TERMINATE, IDENTIFY, OTDR TEST, REPORT RESULTS.
11. CDOT TO DISCONNECT EXTENSION CABLE, RECONNECT LCS FIBER, AND VERIFY LCS COMMUNICATIONS. TIME REQUIRED IS 1 STANDARD BUSINESS DAY (1 SBD).



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**WEST VENTILATION BUILDING
LIGHTING CONTROL SYSTEM
RELOCATION PLAN**

Designer: J. SHELDON
 Detailer: R. KWONG
 Sheet Subset:

Project No./Code
 IM-0703-319
 16096
 Sheet Number 41