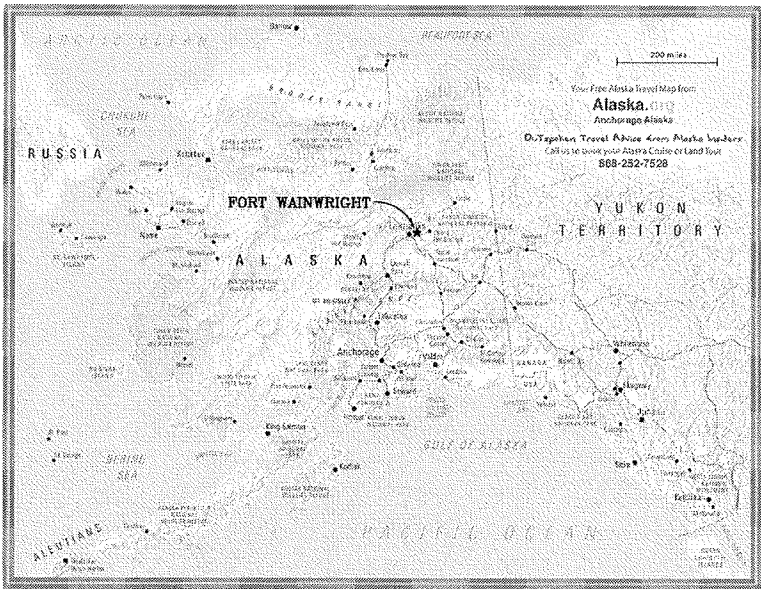


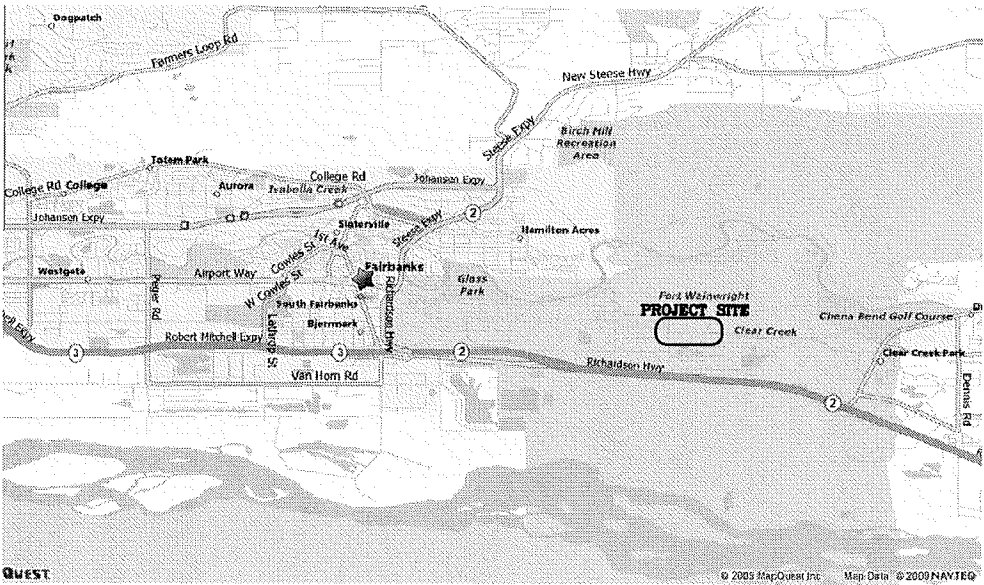
PROJECT NO. J101395, J101396, J101397

# UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE - FTW336A FORT WAINWRIGHT, ALASKA

AREA MAP



LOCATION MAP



SHT. NO.	SHEET NAME	SHT. NO.	SHEET NAME
COVER	COVER SHEET	E-07	UTILIDOR SERVICE CONNECTION DETAILS
G-01	SITE PLAN	E-08	DUCT BANK DETAIL
X-01	SYMBOLS, ABBREVIATIONS & GENERAL NOTES	PC-01	EXISTING VAULT H6-3-3 & NEW VAULT G6-9-3
X-02	SYMBOLS, ABBREVIATIONS & GENERAL NOTES	PC-02	EXISTING VAULT H6-3-3 & NEW VAULT G6-9-3
X-03	SYMBOLS, ABBREVIATIONS & GENERAL NOTES	PC-03	EXISTING VAULT H6-3-3 & NEW VAULT G6-9-3
M-01	EXISTING VAULT H6-3-3 LOWER LEVEL PLAN	PC-04	NEW VAULT G6-9-3
M-02	EXISTING VAULT H6-3-3 UPPER LEVEL PLAN	PC-05	DIRECT BURIED DUCT PLAN
M-03	EXISTING VAULT H6-3-3 ADJACENT TO BLDG 2080	PC-06	BUILDING METER INTERFACE DETAIL
M-04	NEW VAULT G6-9-3	PC-07	MISCELLANEOUS UTILITY MONITORING DETAILS
M-05	DIRECT BURIED PIPING PLAN	PC-08	UTILITY MONITORING
M-06	SCHEMATICS & DETAILS	PC-09	UTILITY MONITORING
M-07	ISOMETRIC STEAM AND CONDENSATE SCHEMATICS	PC-10	UTILITY MONITORING
E-01	EXISTING VAULT H6-3-3 & UTILIDOR	S-1	GENERAL NOTES
E-02	EXISTING VAULT H6-3-3 & UTILIDOR	S-2	ACCESS VAULT G6-9-3 PLANS AND SECTIONS
E-03	EXISTING VAULT H6-3-3 & UTILIDOR	S-3	ENTRY HATCH & LADDER DETAILS
E-04	NEW VAULT G6-9-3	S-4	VENTILATION & PROTECTION DETAILS
E-05	DIRECT BURIED CONDUIT PLAN	S-5	ACCESS VAULT G6-9-3 TEMPORARY/PERMANENT PIPE ANCHORS
E-06	PP-G693 (PANELBOARD SCHEDULE)		

**RECORD DRAWING  
AS-BUILT**

**Tunista Arctic Rim/  
TBI Construction, LLC**

Prepared For

Jimmy Huntington Building  
714 Fourth Avenue, Suite 201  
Fairbanks, Alaska 99701



907-455-1500 Phone  
907-455-6788 fax  
PO Box 74040  
Fairbanks, Alaska 99701

Prepared By

**FOSDICK & HILMER  
ENERGY GROUP**

Fosdick & Hilmer Inc  
309 Vine Street, Suite 50  
Cincinnati, Ohio 45202

513-241-5640 Phone  
513-241-3659 Fax  
[www.fheng.com](http://www.fheng.com)

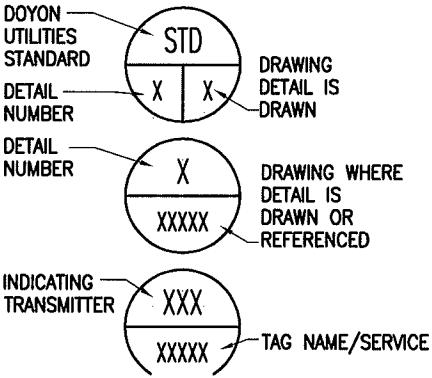


ABBREVIATIONS:

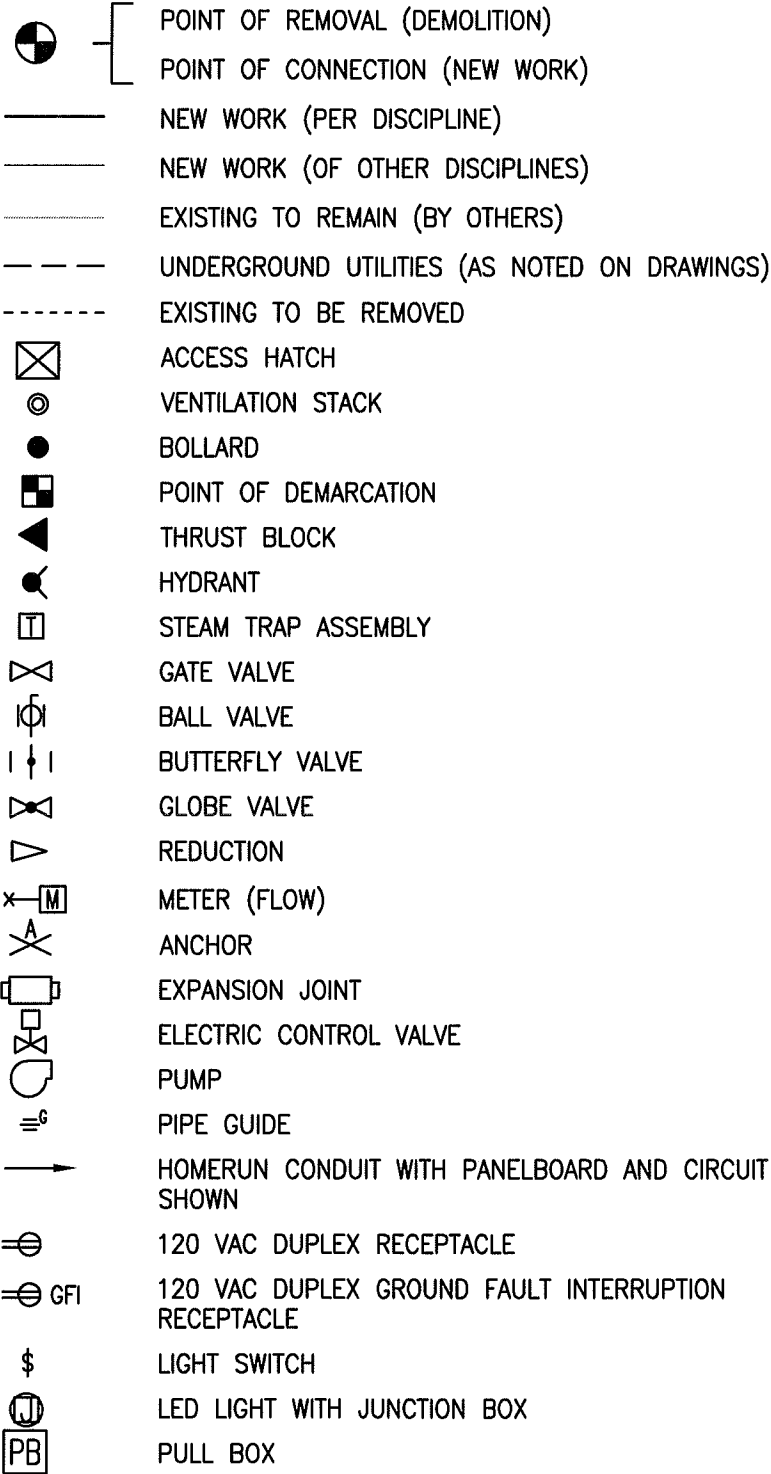
A	ANCHOR
ACM	ASBESTOS CONTAINING MATERIAL
C	RIGID STEEL CONDUIT
CMP	CORRUGATED METAL PIPE
CP	CONTROL PANEL
CV	CONTROL VALVE
DCW	DOMESTIC COLD WATER
DIP	DUCTILE IRON PIPE
DIP@50%	DUCTILE IRON PIPE WITH SLOPE
DLG	DELUGE
DU	DOYON UTILITIES
(E)GRD	EXISTING GRADE
EJ	EXPANSION JOINT
FH	FIRE HYDRANT
FM	FORCED MAIN
G	GROUND
GCO	GRADE CLEAN OUT
GFI	GROUND FAULT INTERRUPTER
H5-1-1S	SANITARY MANHOLE NO.
H5-1-1F	EXISTING FIRE HYDRANT NO.
H5-1-1H	NEW FIRE HYDRANT NO.
H5-1-1	VAULT NO.
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
INV	INVERT
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
MH	ACCESS VAULT
MPR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM
(N)GRD	NEW GRADE
NRS	NON-RISING STEM VALVE
PCR	PUMPED CONDENSATE RETURN
PP	POWER PANEL
RECIR	RECIRCULATION OF DCW MAINS
SAN	GRAVITY SEWER
SFM	SANITARY FORCE MAIN
TOL	TOP OF LID

UDMS	UTILITY DISTRIBUTION MONITORING SYSTEM
UG	NO DIRECT VAULT ACCESS
V	VALVE
VAC	VOLTS - ALTERNATING CURRENT
VDC	VOLTS - DIRECT CURRENT
VLT	VAULT

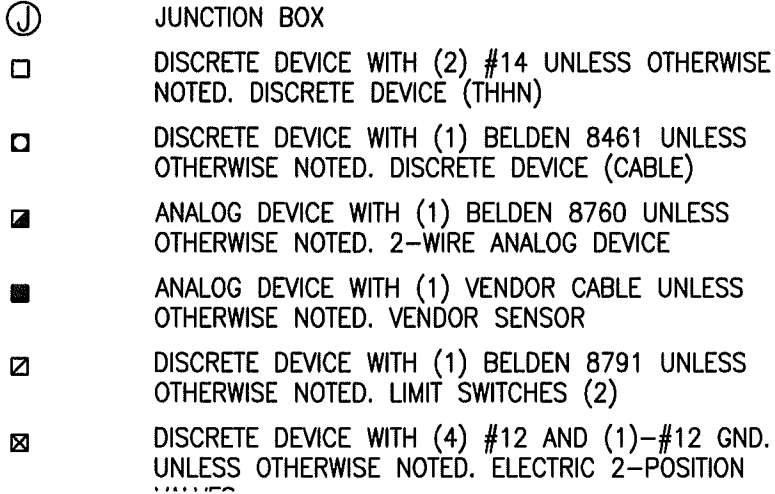
STANDARD SYMBOLS:




SYMBOLS:



SYMBOLS:



AS-BUILT


REV. NO.	DATE	DESCRIPTION	FOSDICK & WILMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5640			Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788		Date: 19 FEB 2010	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE SYMBOLS, ABBREVIATIONS & GENERAL NOTES		Drawing No.
	04/09/10	ISSUED FOR CONSTRUCTION				Scale: NTS			FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, 101396, 101397	X-01	
1	03/31/11	AS-BUILT				Designed By: DLW					
						Drawn By: CDH					
						Checked By: NEM					

## VALVES

## INSTRUMENT TAGNAME MATRIX

	FIRST-LETTER		SUCCEEDING-LETTERS		
	BASE	MODIFIER	PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS	---	ALARM	---	---
C	---	---	---	CONTROL	CLOSED
D	---	DIFFERENTIAL	---	---	---
E	VOLTAGE	---	ELEMENT	---	---
F	FLOW	RATIO	---	---	---
G	---	---	GLASS	---	---
H	HAND	---	---	---	HIGH
I	CURRENT	---	INDICATE	---	---
J	POWER	---	---	---	---
K	TIME	RATE OF CHANGE	---	---	---
L	LEVEL	---	LIGHT	---	LOW
M	HUMIDITY	MOMENTARY	---	---	MIDDLE
O	---	---	ORIFICE	---	OPEN
P	PRESSURE	---	---	---	---
Q	QUANTITY	TOTALIZE	---	---	---
S	SPEED , FREQUENCY	---	---	SWITCH	---
T	TEMPERATURE	---	---	TRANSMITTER	---
V	VIBRATION	---	---	VALVE	---
Y	EVENT, STATE	---	---	---	---

AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK EHLER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5640 WWW.FHENG.COM		Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 19 FEB 2010	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE SYMBOLS, ABBREVIATIONS & GENERAL NOTES FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397	Drawing No.  X-02
	04/09/10	ISSUED FOR CONSTRUCTION				Scale: NTS		
1	03/31/11	AS-BUILT				Designed By: JRS		
						Drawn By: JRS		
						Checked By: EAE		

### GENERAL INSTALLATION NOTES (M SERIES DRAWINGS):

- B. PROVIDE ALL EARTHWORK, EXCAVATION, BACKFILL, AND RESTORATION OF SURFACE CONDITIONS AS REQUIRED TO ACCOMPLISH THE WORK SHOWN IN THE CONTRACT DOCUMENTS.
- C. CONTRACTOR SHALL ASSUME THAT ALL EXISTING UTILIDOR LIDS ARE REMOVABLE UNLESS OTHERWISE NOTED ON DRAWINGS.
- D. PROVIDE UTILIDOR INSULATION AS DESCRIBED IN SPECIFICATIONS FOR UTILIDORS EXPOSED AS PART OF THIS CONTRACT.
- E. AN ATTEMPT HAS BEEN MADE FOR DU TO FURNISH ALL MAJOR PIPING AND EQUIPMENT ASSOCIATED WITH NEW WORK. IN THE EVENT THAT ALL REQUIRED MATERIALS HAVE NOT BEEN FURNISHED, CONTRACTOR SHALL PROVIDE ALL REMAINING MATERIALS. SEE LIST OF DU FURNISHED MATERIALS IN THE CONTRACT DOCUMENTS.
- F. PROVIDE STRUCTURAL DESIGN FOR ALL NEW VAULTS SHOWN ON DRAWINGS. DESIGN SHALL BE OF SIZE SHOWN, CONFORM TO ALL STATE AND LOCAL CODES, AND BEAR A PROFESSIONAL ENGINEERING STAMP FOR THE STATE OF ALASKA.
- G. INSTALL ALL DU FURNISHED MATERIALS AS DESCRIBED IN CONTRACT DOCUMENTS. REFER TO PC-SERIES DRAWINGS FOR FIELD DEVICE INSTALLATION LOCATIONS.
- H. PROVIDE ALL SUPPORTS, ANCHORS, GUIDES, AND INSULATION ASSOCIATED WITH ALL NON-DIRECT BURIED PIPING INSTALLED ON THIS PROJECT.
- I. ALL NEW AND EXISTING VAULT ACCESS HATCHES SHALL BE INSTALLED WITH DU FURNISHED ACCESS HATCH WITH FINAL ELEVATION AT A MINIMUM OF 18 INCHES ABOVE GRADE.
- J. REPLACE ALL EXISTING VAULT LADDERS THAT DO NOT MEET CURRENT OSHA STANDARDS. MODIFY EXISTING LADDERS AS NECESSARY TO COORDINATE WITH ACCESS HATCHES AND ALL PIPING.
- K. REPLACE ALL EXISTING VAULT VENTS AND BOLLARDS.

**GENERAL INSTALLATION NOTES (E SERIES DRAWINGS):**


- A. PROVIDE ALL EARTHWORK, EXCAVATION, BACKFILL, AND RESTORATION OF SURFACE CONDITIONS AS REQUIRED TO ACCOMPLISH THE WORK SHOWN IN THE CONTRACT DOCUMENTS.
- B. PROVIDE CONNECTIONS FROM POLE MOUNTED METERS TO POWER PANELBOARDS AS SHOWN ON DRAWINGS. DU WILL PROVIDE PRIMARY POLE-MOUNTED TRANSFORMERS, SECONDARY SERVICE FEEDS, AND METERING.
- C. PROVIDE POWER PANELBOARDS, LOAD PANELBOARDS AND SERVICE DISCONNECTS AS SHOWN ON DRAWINGS.
- D. INSTALL DU FURNISHED PANELS AS SHOWN ON DRAWINGS.
- E. PROVIDE EACH ACCESS VAULT WITH SWITCHED LED LIGHTING AND CONVENIENCE RECEPTACLES. RECEPTACLES SHALL BE MOUNTED A MINIMUM OF 48" FROM VAULT FLOORS UNLESS INDICATED OTHERWISE.
- F. PROVIDE 120 VAC POWER TO EACH ACCESS VAULT FROM PANELBOARDS TO LIGHTING, RECEPTACLES, CONTROL PANELS, AND SUMP PUMPS AS SHOWN ON DRAWINGS. ALL CONDUIT AND WIRING SHALL BE INSTALLED AT AN ELEVATION NO LESS THAN 18" FROM TOP OF WALL OF VAULT.
- G. INSTALL FIBER CABLE IN 2" CONDUIT BETWEEN PATCH PANELS. FIBER CABLES SHALL BE TERMINATED IN PATCH PANELS BY A TECHNICIAN QUALIFIED IN FIBER OPTIC

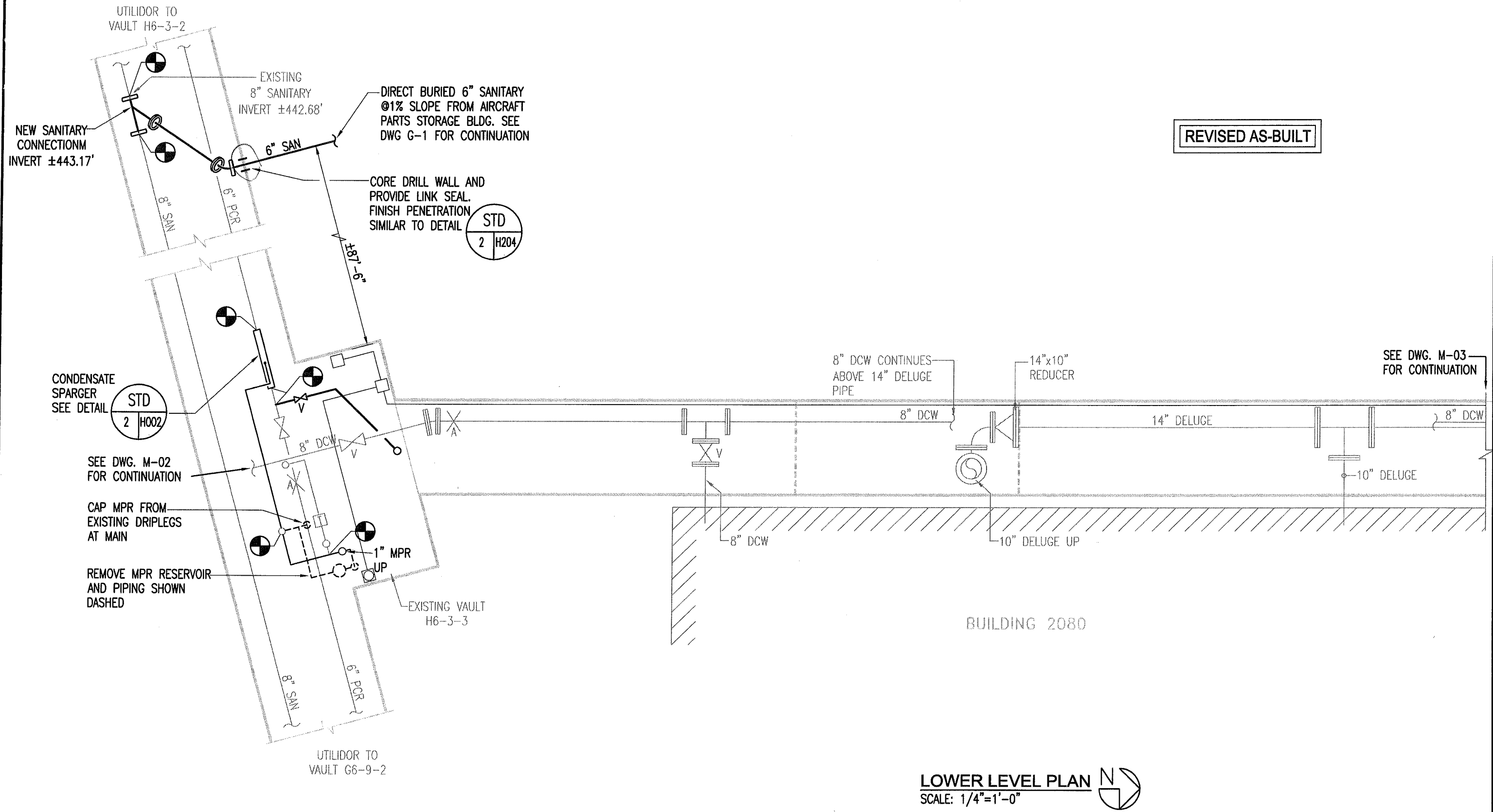
OR FIBERGLASS REINFORCED POLYESTER VAPOR TIGHT FIXTURE WITH CLEAR GLASS OR POLYCARBONATE GLOBE AND ALUMINUM OR FIBERGLASS GUARD. FIXTURE MUST BE UL LISTED FOR DAMP LOCATIONS. LAMP SHALL BE EARTHLED EVOLUX S-E27/26 (COOL WHITE). FIXTURE SHALL BE CANLET MODEL NO. 6802IWF01-0G-09 OR EQUIVALENT.

### GENERAL INSTALLATION NOTES (PC SERIES DRAWINGS):

- A. PROCESS CONTROLS DRAWINGS REFERENCE WORK TO BE DONE BY BOTH THE CONTRACTORS.
- B. ALL INSTRUMENTS, FIELD DEVICES AND CONTROL PANELS WILL BE FURNISHED BY THE OWNER, UNLESS OTHERWISE SPECIFIED.
- C. PROVIDE CABLING AND CONDUIT FOR PROCESS CONTROLS INSTRUMENTATION IN UTILIDORS PER SYMBOL LEGEND. MINIMUM CONDUIT SIZE: 3/4". CONDUIT FILL SHALL NOT EXCEED 50%. LOW VOLTAGE CONTROLS CABLING SHALL BE RUN IN SEPARATE CONDUIT FROM 120VAC.
- D. SEE CONTROL PANEL REFERENCE DRAWINGS FOR WIRING TERMINATIONS.

AS-BUILT

REV. NO.	DATE	DESCRIPTION	<b>FOSDICK &amp; WILMER</b> CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5640 WWW.FHENG.COM	 <b>DOYON UTILITIES</b> Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 19 FEB 2010 Scale: NTS Designed By: JRS Drawn By: JRS Checked By: EAE	<b>UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE</b> SYMBOLS, ABBREVIATIONS & GENERAL NOTES FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397	Drawing No.  <b>X-03</b>
1	04/09/10	ISSUED FOR CONSTRUCTION					
	03/31/11	AS-BUILT					



REVISED AS-BUILT

LOWER LEVEL PLAN  
SCALE: 1/4"=1'-0"

REV. NO.	DATE	DESCRIPTION
1	04/09/10	ISSUED FOR CONSTRUCTION
	03/31/11	AS-BUILT REVISIONS

FOSDICK & LILMER  
CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5840  
CINCINNATI, OHIO 45202  
WWW.FHENG.COM

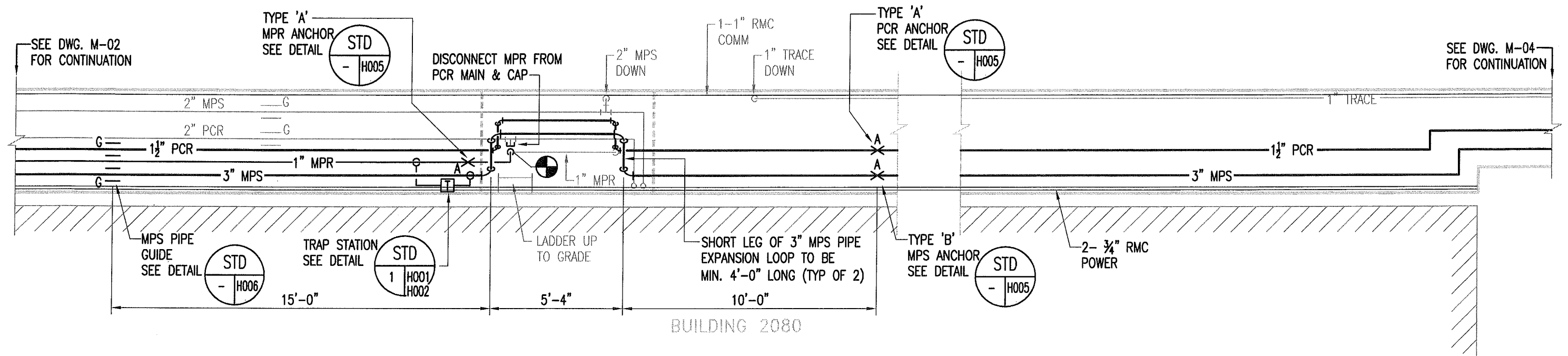


Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 19 FEB 2010  
Scale: 1/4"=1'-0"  
Designed By: JRS  
Drawn By: JRS  
Checked By: EAE

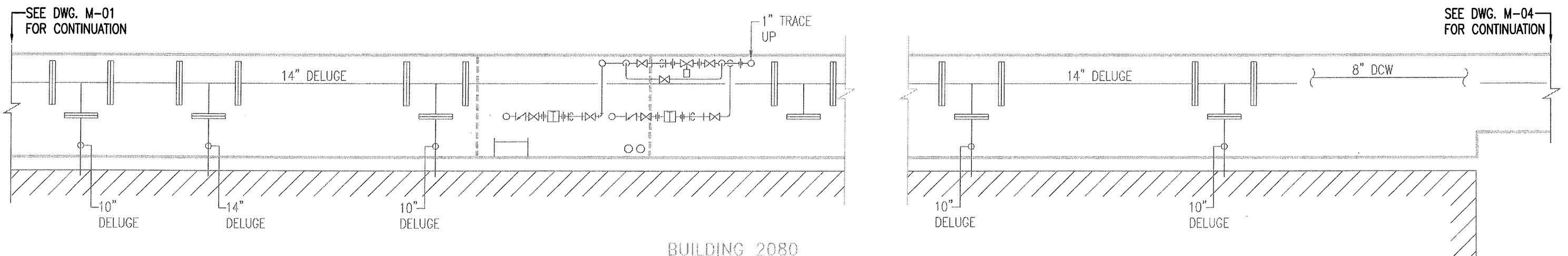
UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
EXISTING VAULT H6-3-3 LOWER LEVEL PLAN  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, J101396, J101397

Drawing No.  
M-01




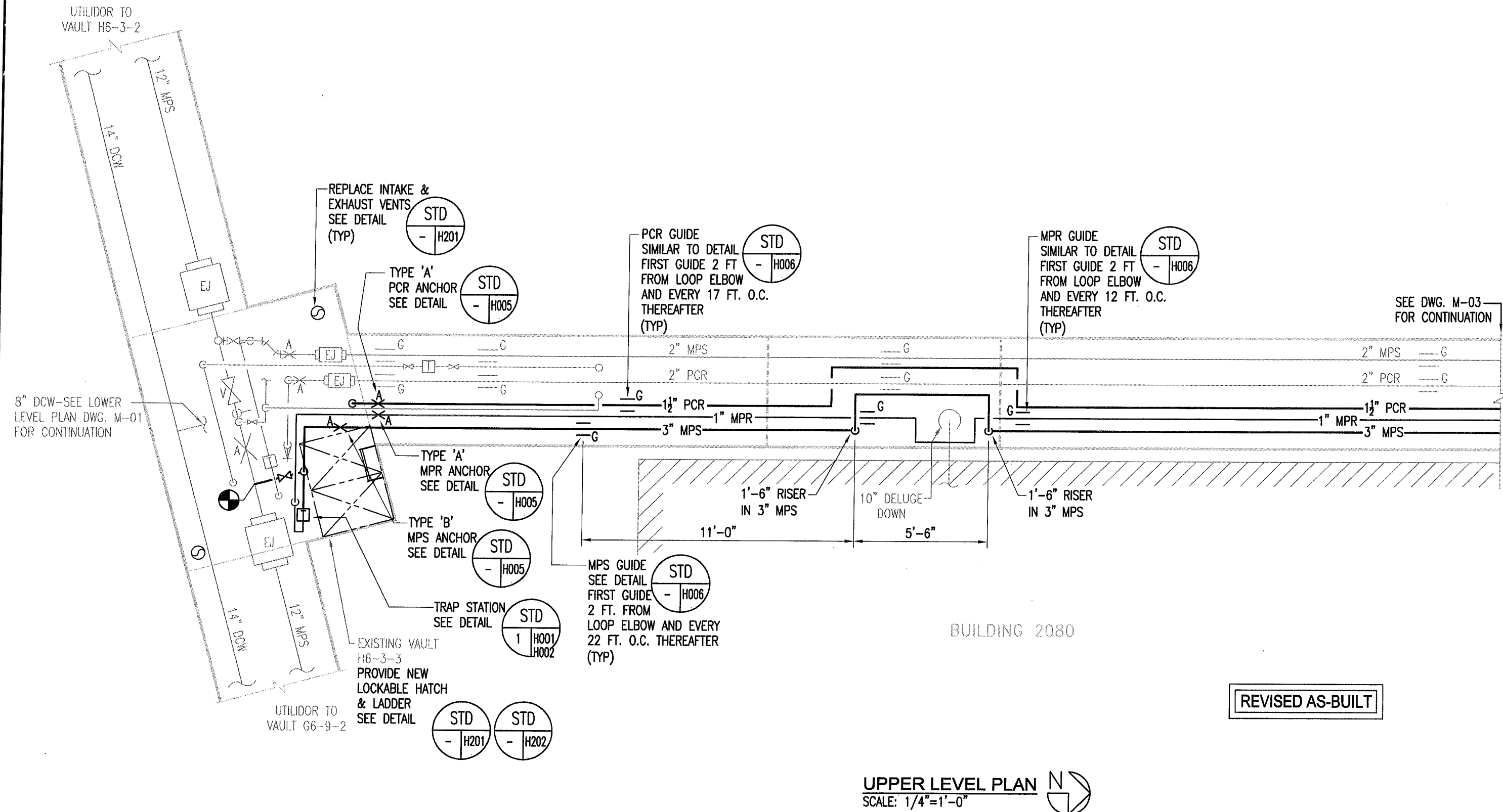
**UPPER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

REVISED AS-BUILT




**LOWER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

REV. NO.	DATE	DESCRIPTION	FOSDICK WILMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5640 WWW.FHENG.COM		Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 19 FEB 2010 Scale: 1/4"=1'-0" Designed By: JRS Drawn By: JRS Checked By: EAE	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE EXISTING VAULT H6-3-3 ADJACENT TO BLDG 2080	Drawing No.  M-03
1	04/09/10	ISSUED FOR CONSTRUCTION						
	03/31/11	AS-BUILT REVISIONS						

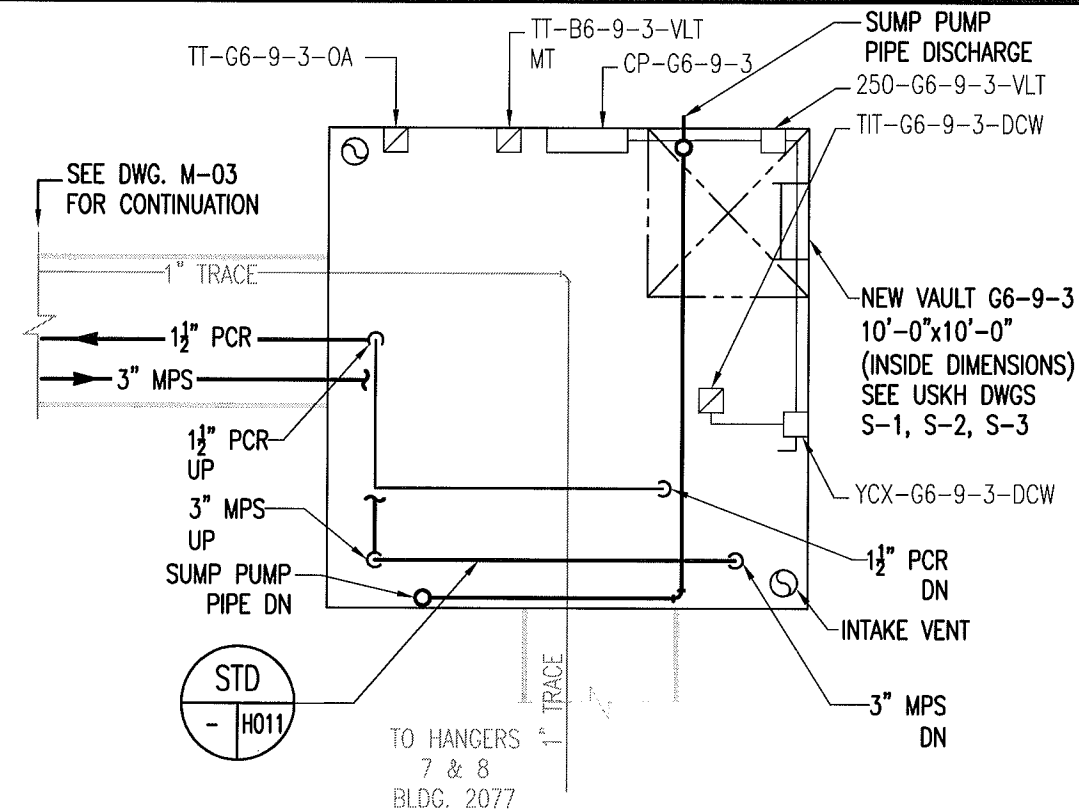


UPPER LEVEL PLAN   
 SCALE: 1/4"=1'-0"

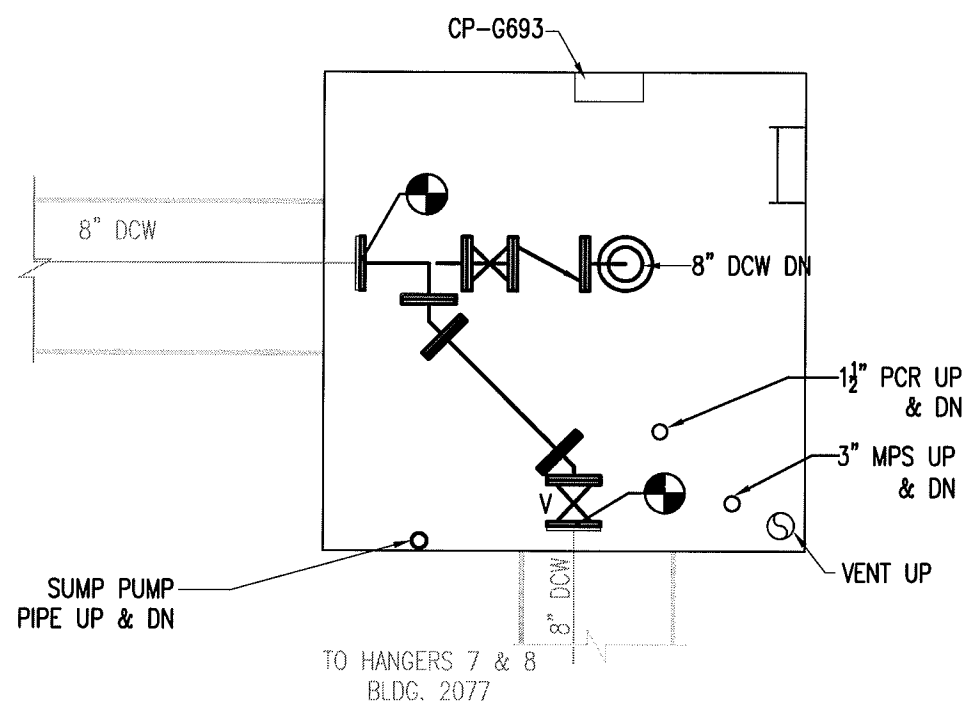
REVISED AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK & BILMER CONSULTING ENGINEERS			Jimmy Huntington Building	Date: 19 FEB 2010	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE EXISTING VAULT H6-3-3 UPPER LEVEL PLAN FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397	Drawing No.  M-02
1	04/09/10	ISSUED FOR CONSTRUCTION	309 VINE STREET, SUITE 50 TELEPHONE (513)241-5640	CINCINNATI, OHIO 45202 WWW.FHENG.COM		714 Fourth Avenue, Suite 20	Scale: 1/4"=1'-0"		
	03/31/11	AS-BUILT REVISIONS				Fairbanks, Alaska 99701	Designed By: JRS		
						Telephone (907) 455-1500	Drawn By: JRS		
					Fax (907) 455-6788	Checked By: EAE			

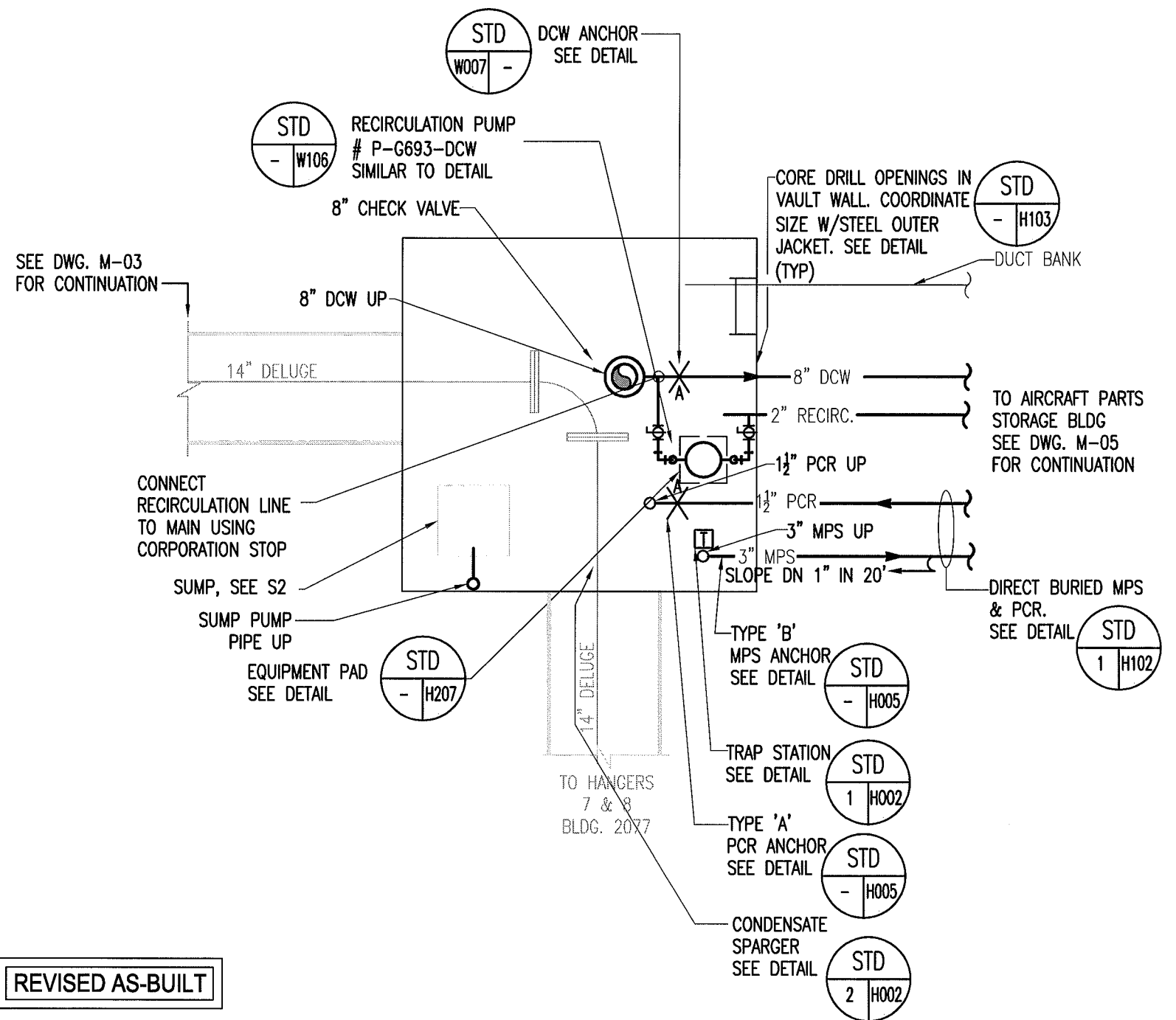




**UPPER LEVEL PLAN**  
SCALE: 1/4"=1'-0"



**MID LEVEL PLAN**  
SCALE: 1/4"=1'-0"



**LOWER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

REVISED AS-BUILT

REV. NO.	DATE	DESCRIPTION
	04/09/10	ISSUED FOR CONSTRUCTION
1	03/31/11	AS-BUILT REVISIONS

FOSDICK WILMER CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
CINCINNATI, OHIO 45202  
TELEPHONE (513)241-5640  
WWW.FHENG.COM

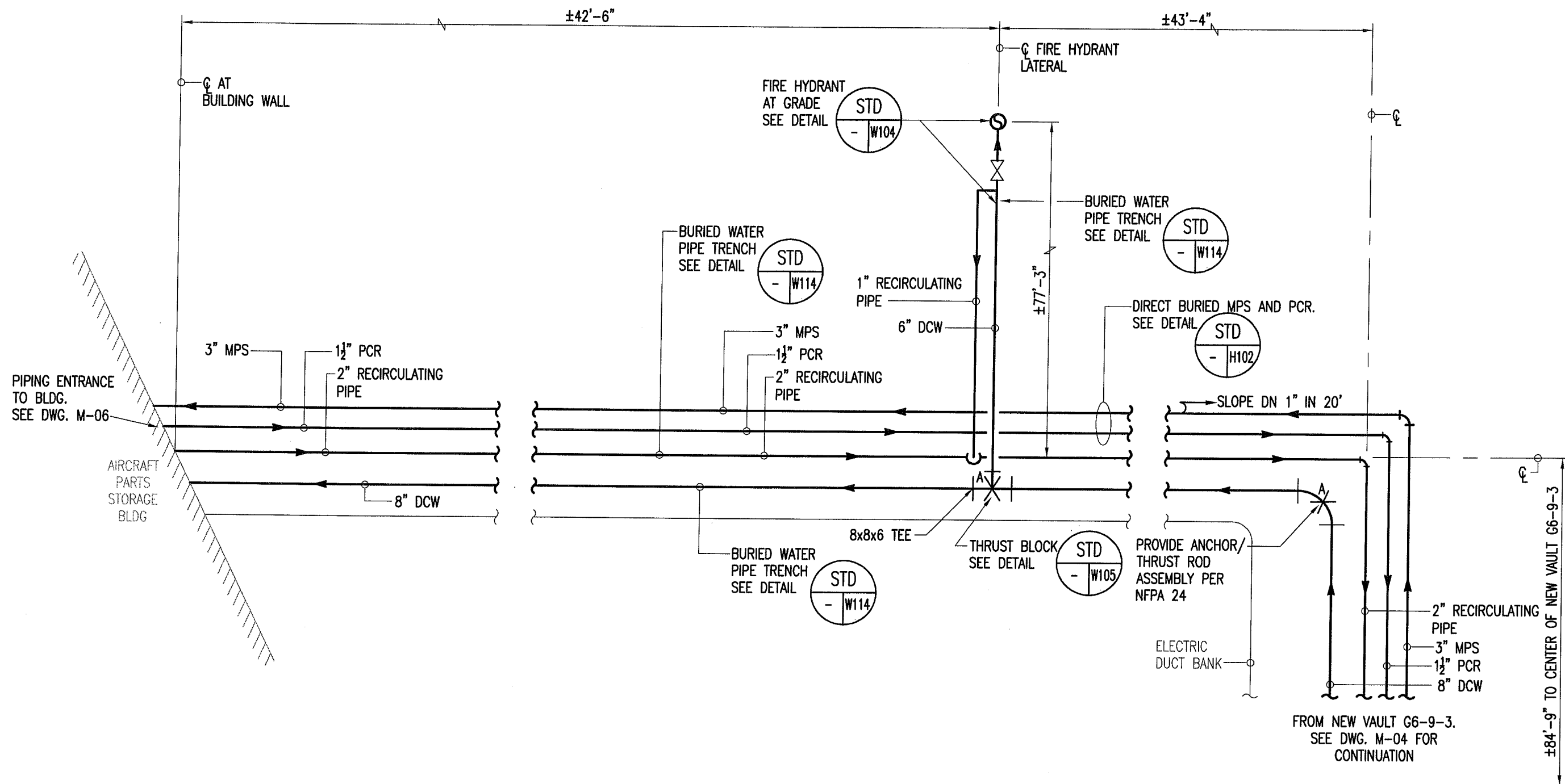


Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 19 FEB 2010  
Scale: 1/4"=1'-0"  
Designed By: JRS  
Drawn By: JRS  
Checked By: EAE

**UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE**  
**NEW VAULT G6-9-3**  
**FORT WAINWRIGHT, AK.**  
DU PROJECT NO. J101395, J101396, J101397

Drawing No.  
**M-04**




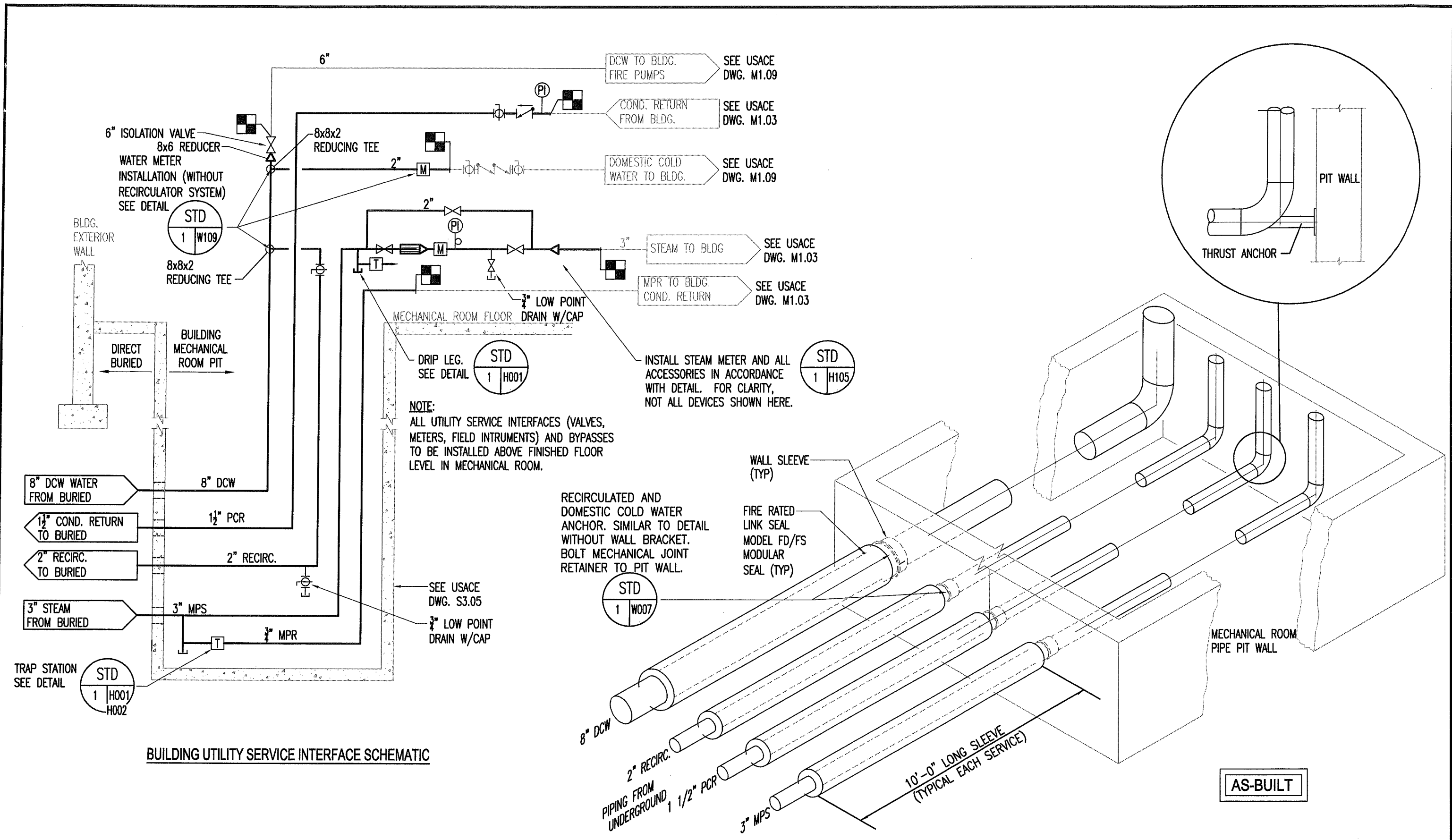
PLAN

SCALE: 1/4"=1'-0"

ND

AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK WILMER CONSULTING ENGINEERS			Jimmy Huntington Building	Date: 19 FEB 2010	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE DIRECT BURIED PIPING PLAN FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397	Drawing No.  M-05
1	04/09/10	ISSUED FOR CONSTRUCTION	309 VINE STREET, SUITE 50	CINCINNATI, OHIO 45202		714 Fourth Avenue, Suite 20	Scale: 1/4"=1'-0"		
	03/31/11	AS-BUILT	TELEPHONE (513)241-5840	WWW.FHENG.COM		Fairbanks, Alaska 99701	Designed By: JRS		
						Telephone (907) 455-1500	Drawn By: JRS		
						Fax (907) 455-6788	Checked By: EAE		



REV. NO.	DATE	DESCRIPTION
1	04/09/10	ISSUED FOR CONSTRUCTION
	03/31/11	AS-BUILT

FOSDICK & WILMER  
CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5640

CINCINNATI, OHIO 45202  
WWW.FHENG.COM

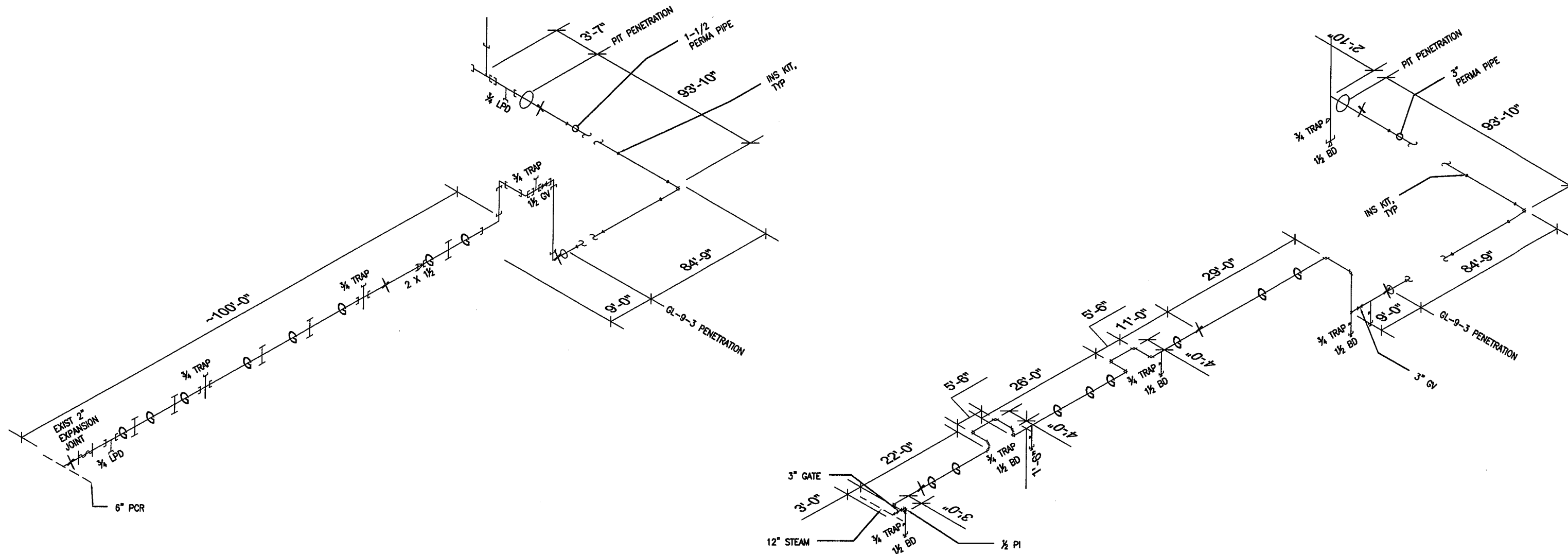


Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 19 FEB 2010  
Scale: NTS  
Designed By: JRS  
Drawn By: JRS  
Checked By: EAE

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
SCHEMATICS & DETAILS  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, J101396, J101397

Drawing No.  
M-06




# CONDENSATE ISOMETRIC LEGEND:

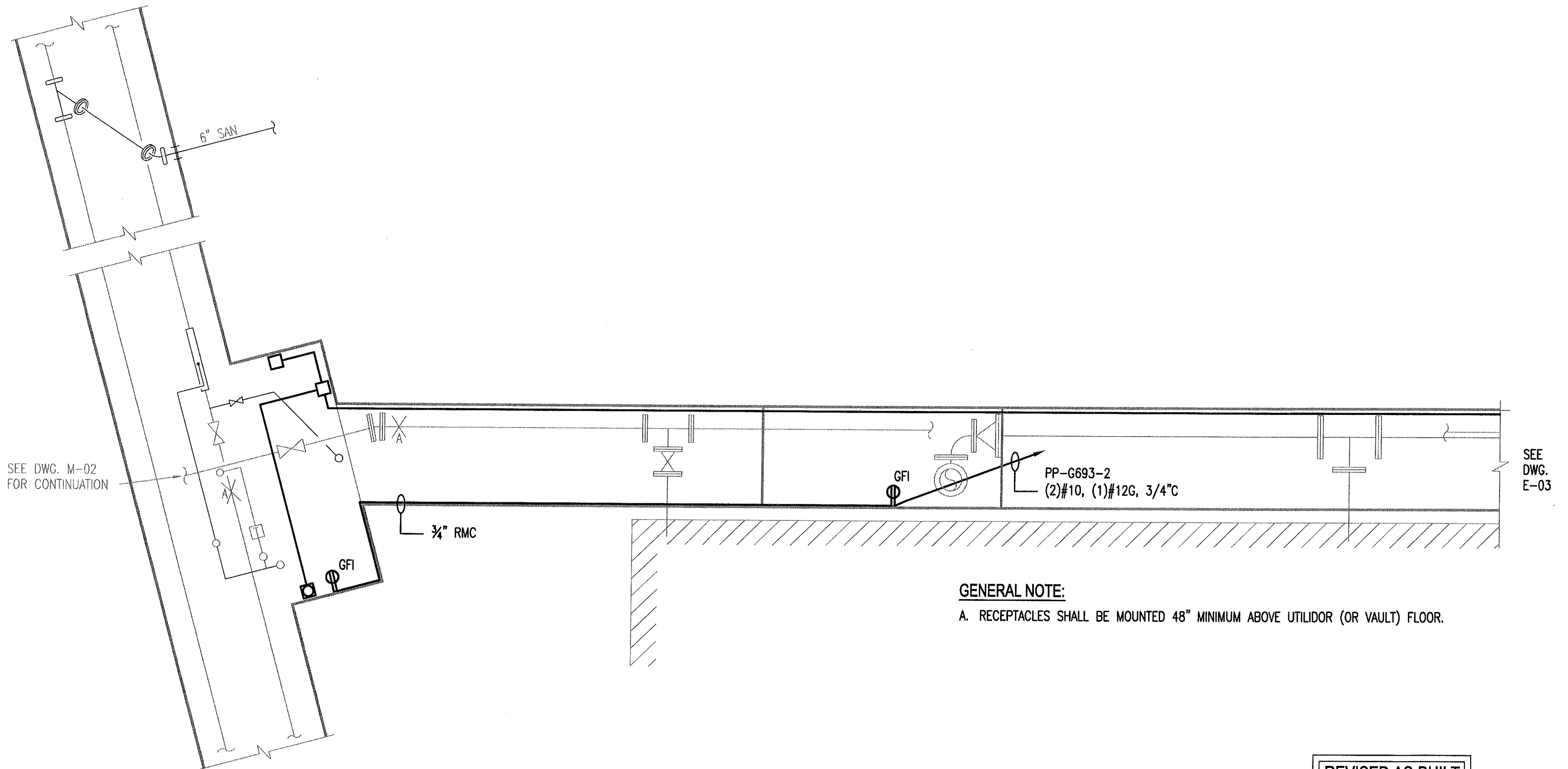
[ SOCKET WELD  
 G GUIDE  
 X ANCHOR  
 LPD LOW POINT DRAIN  
 INSKIT PERMA-PIPE INSTALLATION KIT

# STEAM ISOMETRIC LEGEND:

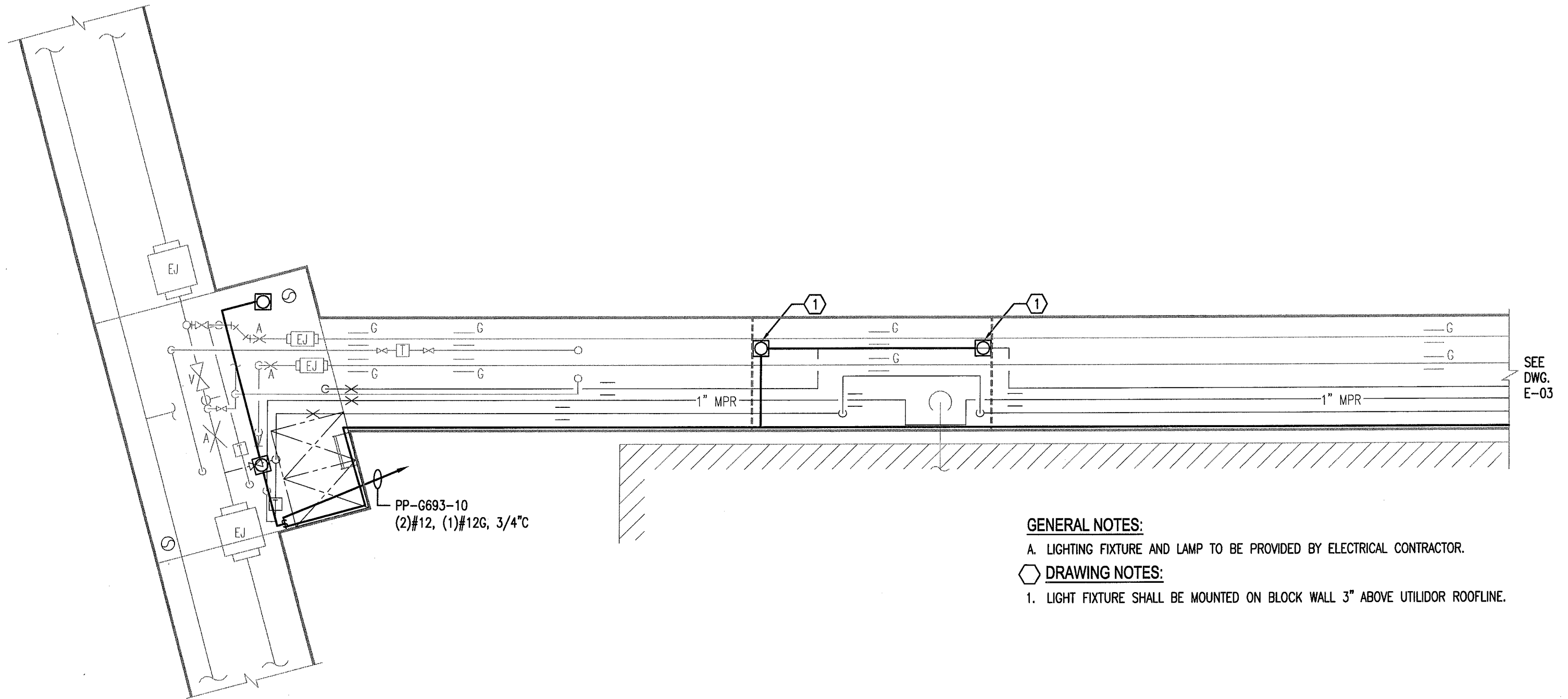
G GUIDE  
 X ANCHOR  
 BD BLOWDOWN  
 PI PRESSURE GAUGE  
 INSKIT PERMA-PIPE INSTALLATION KIT

REVISED AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK BULMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5840 CINCINNATI, OHIO 45202 WWW.FHENG.COM			Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788		Date: 19 FEB 2010 Scale: NTS Designed By: JRS Drawn By: JRS Checked By: EAE	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE ISOMETRIC STEAM & CONDENSATE FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397		Drawing No.  M-07
1	03/31/11	AS-BUILT REVISIONS									



REV. NO.	DATE	DESCRIPTION			Date:			Drawing No.  E-01
	04/09/10	ISSUED FOR CONSTRUCTION	FOSDICK & WILMER 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5640	CONSULTING ENGINEERS CINCINNATI, OHIO 45202 WWW.FHENG.COM	19 FEB 2010	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE EXISTING VAULT H6-3-3 & UTILIDOR FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397		
	03/31/11	AS-BUILT REVISIONS			Scale: 1/4"=1'-0"			
					Designed By: JRS			
					Drawn By: JRS			
					Checked By: EAE			



SEE  
DWG.  
E-03

**GENERAL NOTES:**

A. LIGHTING FIXTURE AND LAMP TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

**DRAWING NOTES:**

1. LIGHT FIXTURE SHALL BE MOUNTED ON BLOCK WALL 3" ABOVE UTILIDOR ROOFLINE.

**UPPER LEVEL PLAN**  
SCALE: 1/4"=1'-0"



**REVISED AS-BUILT**

REV. NO.	DATE	DESCRIPTION
	04/09/10	ISSUED FOR CONSTRUCTION
2	03/31/11	AS-BUILT REVISIONS

**FOSDICK WILMER** CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5840  
CINCINNATI, OHIO 45202  
WWW.FHENG.COM



Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

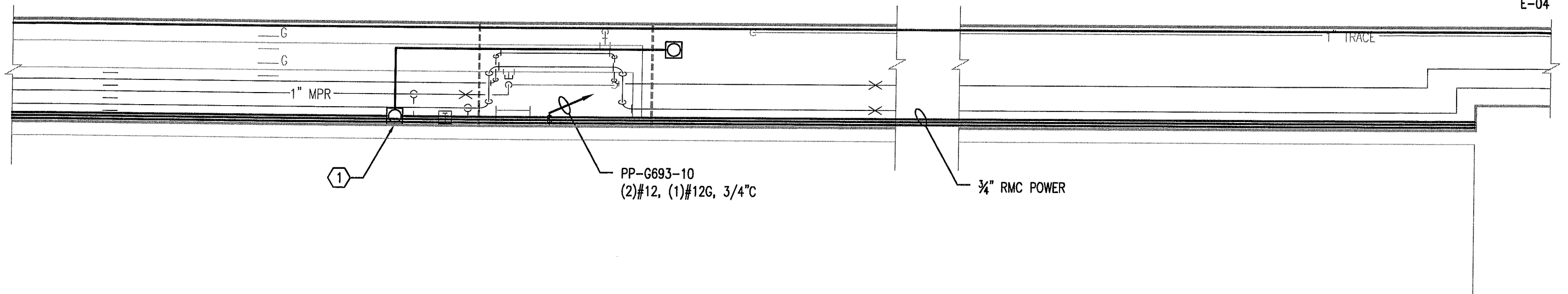
Date: 19 FEB 2010  
Scale: 1/4"=1'-0"  
Designed By: JRS  
Drawn By: RHW  
Checked By: EAE

**UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE**  
EXISTING VAULT H6-3-3 & UTILIDOR  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, J101396, J101397

Drawing No.  
**E-02**

SEE  
DWG.  
E-02

SEE  
DWG.  
E-04

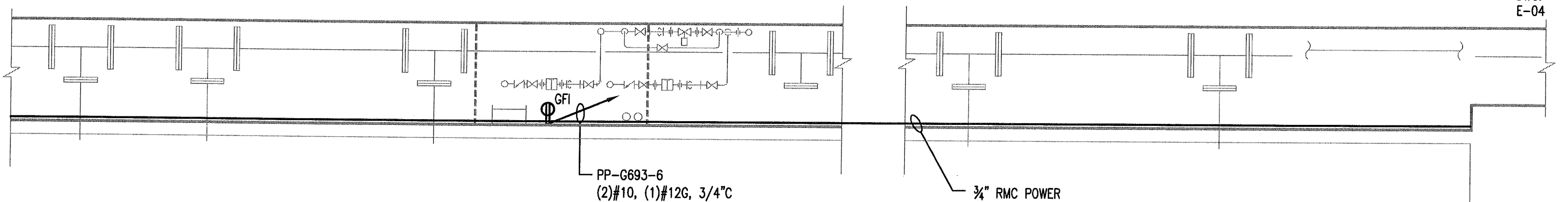


**UPPER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

REVISED AS-BUILT

SEE  
DWG.  
E-01

SEE  
DWG.  
E-04



**LOWER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

**GENERAL NOTES:**

A. RECEPTACLES SHALL BE MOUNTED 48" MINIMUM ABOVE UTILIDOR (OR VAULT) FLOOR.

**DRAWING NOTES:**

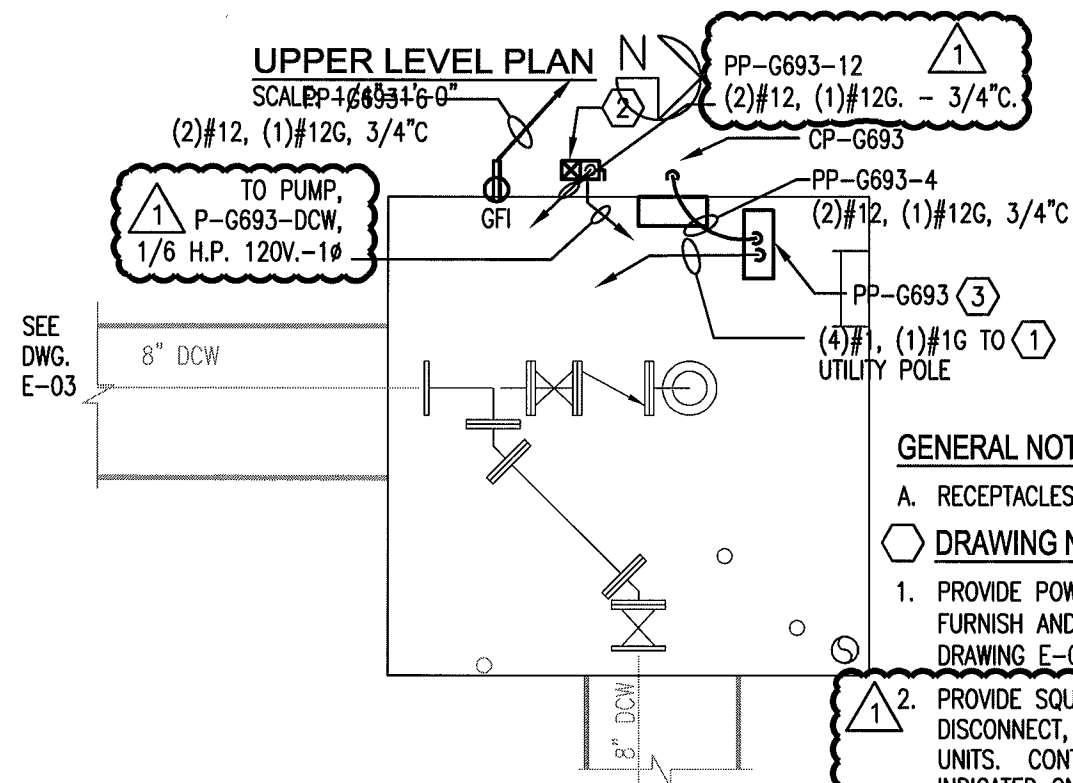
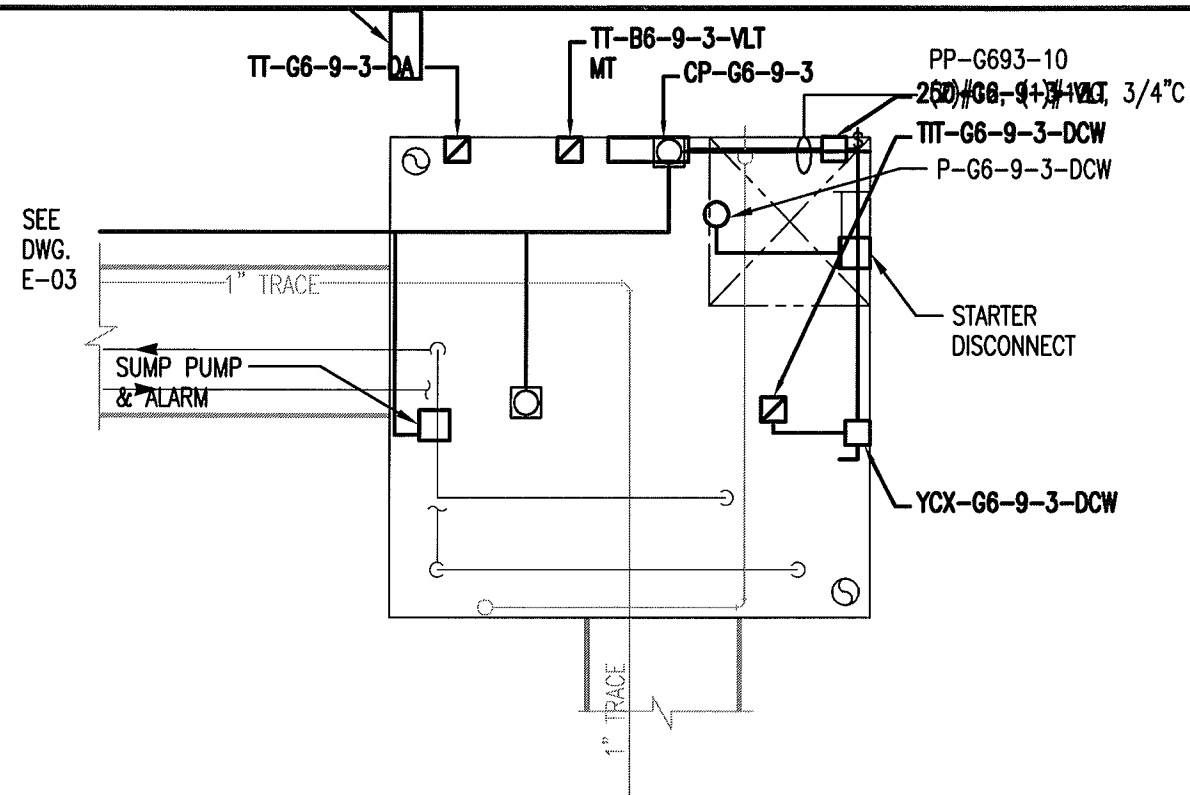
1. LIGHT FIXTURE SHALL BE MOUNTED ON UTILIDOR WALL 6" BELOW MPS PIPING.

REV. NO.	DATE	DESCRIPTION			Date:			UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE EXISTING VAULT H6-3-3 & UTILIDOR FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397	Drawing No.  E-03		
2	04/09/10	ISSUED FOR CONSTRUCTION	FOSDICK WILMER 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5640	CONSULTING ENGINEERS CINCINNATI, OHIO 45202 WWW.FHENG.COM	19 FEB 2010						
	03/31/11	AS-BUILT REVISIONS			Scale: 1/4"=1'-0"						
					Designed By: JRS						
					Drawn By: RHW						
					Checked By: EAE						

<



Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788



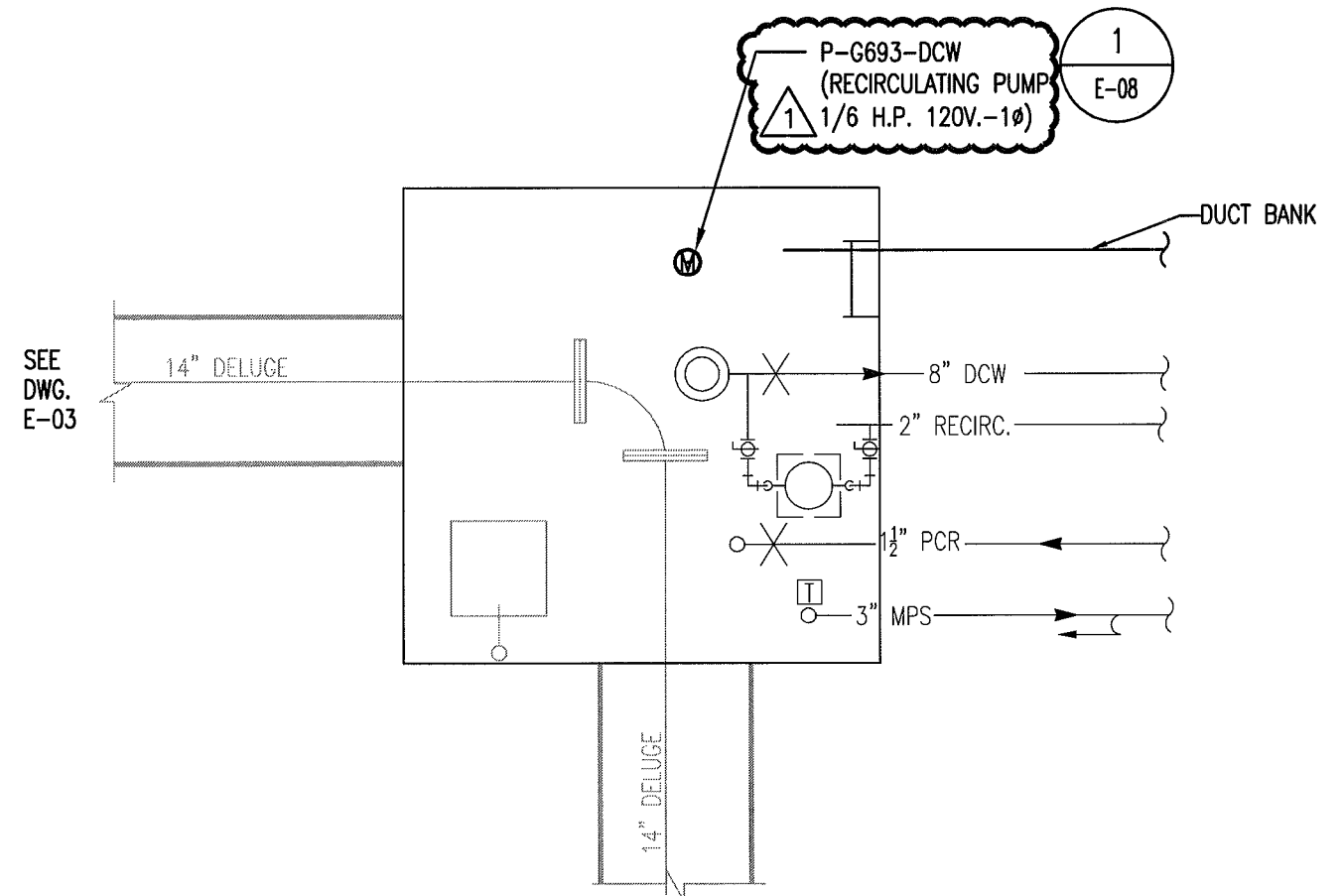
**MID LEVEL PLAN**  
SCALE: 1/4"=1'-0"

**GENERAL NOTES:**

A. RECEPTACLES SHALL BE MOUNTED 48" MINIMUM ABOVE UTILIDOR (OR VAULT) FLOOR.


**DRAWING NOTES:**

1. PROVIDE POWER TO PANELBOARD FROM UTILITY POLE (TO BE DETERMINED, SEE DRAWING G-01). FURNISH AND INSTALL ELECTRICAL SERVICE PER UTILIDOR SERVICE CONNECTION DETAIL (REFERENCE DRAWING E-07).
2. PROVIDE SQUARE D MODEL 8539SBW61V02CS COMBINATION STARTER WITH CIRCUIT BREAKER-TYPE DISCONNECT, N.O./N.C. AUXILIARY CONTACTS (P/N: 9999-SX15), AND STANDARD TRIP THERMAL UNITS. CONTRACTOR SHALL WIRE TO RECIRCULATION PUMP, PROVIDING POWER TO STARTER AS INDICATED ON DRAWINGS.
3. FURNISH PANELBOARD PP-G693 WITH NEMA 4X ENCLOSURE AND CIRCUIT BREAKERS AS INDICATED ON PANELBOARD SCHEDULE (SEE DRAWING E-06).

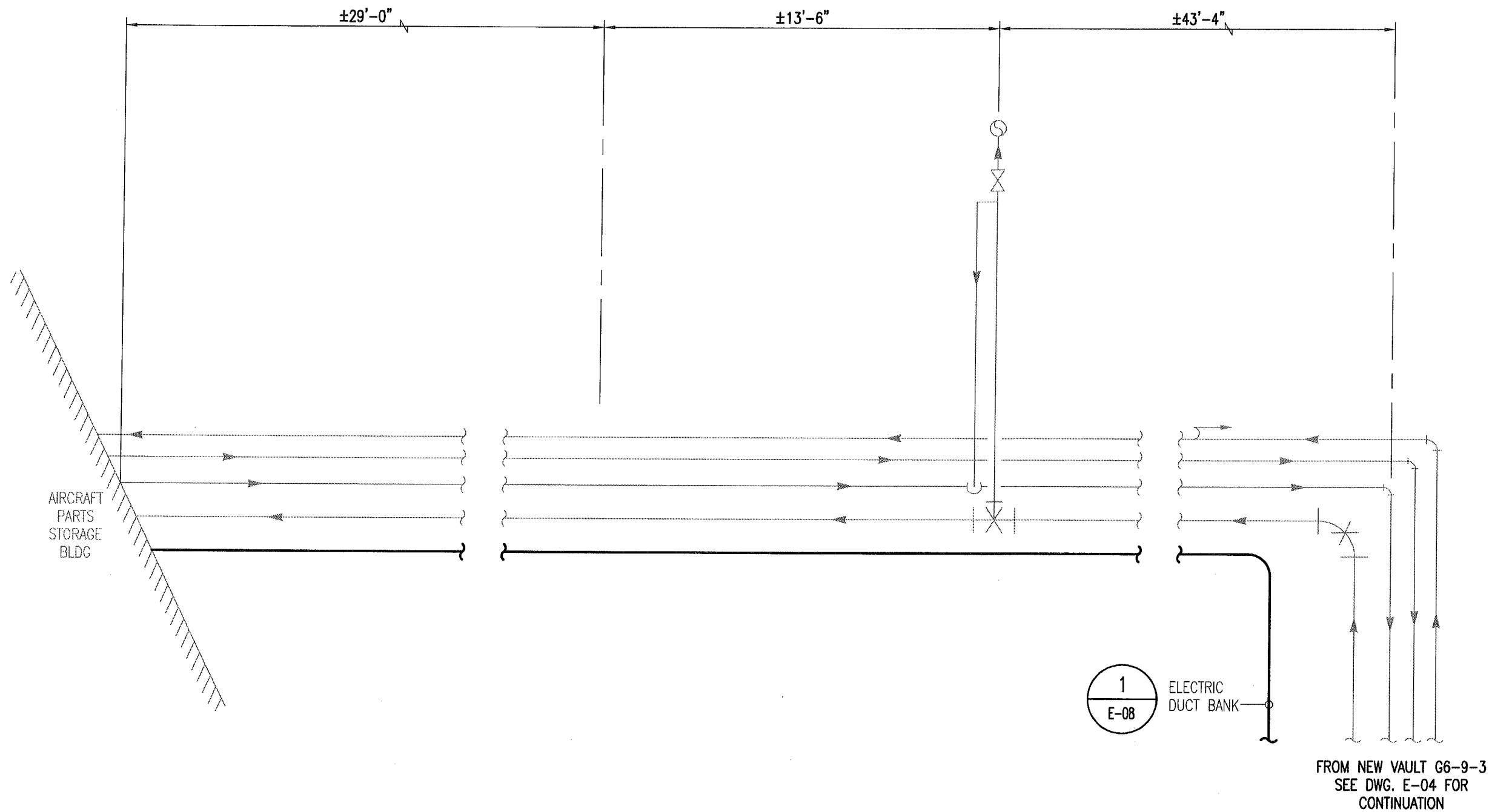


**LOWER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

REVISED AS-BUILT


REV. NO.	DATE	DESCRIPTION	FOSDICK WILMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5840 CINCINNATI, OHIO 45202 WWW.FHENG.COM			Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788		Date: 19 FEB 2010 Scale: 1/4"=1'-0" Designed By: JRS Drawn By: RHW Checked By: EAE	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE NEW VAULT G6-9-3 FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397		Drawing No.  E-04		
1	04/09/10	ISSUED FOR CONSTRUCTION											
2	09/10/10	BULLETIN											
	03/31/11	AS-BUILT REVISIONS											






PLAN  
SCALE: 1/4"=1'-0"

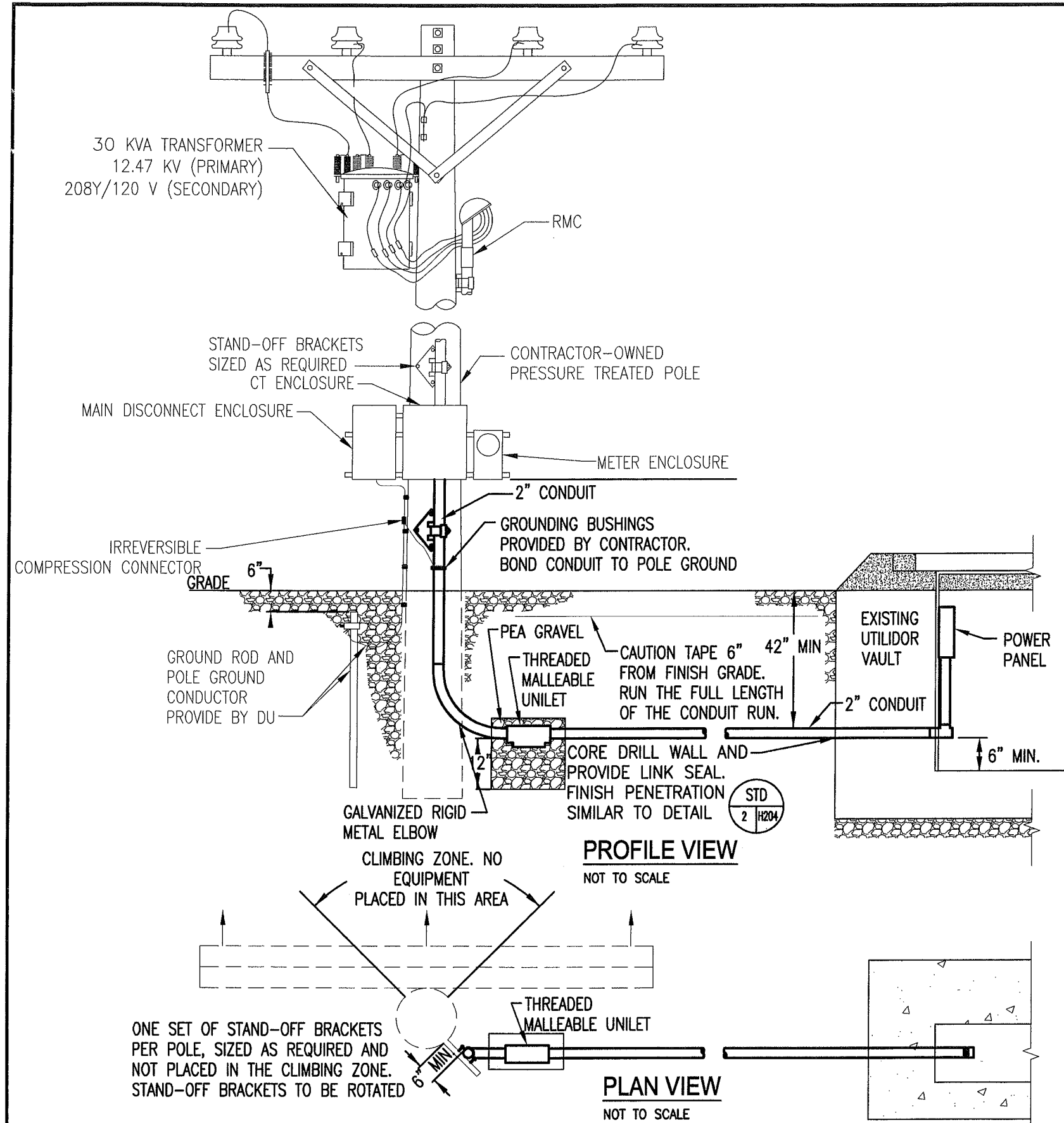
AS-BUILT

REV. NO.	DATE	DESCRIPTION	<b>FOSDICK &amp; WILMER</b> CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5840 WWW.FHENG.COM	 <b>DOYON UTILITIES</b> Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 19 FEB 2010	<b>UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE</b> <b>DIRECT BURIED CONDUIT PLAN</b> <b>FORT WAINWRIGHT, AK.</b> DU PROJECT NO. J101395, J101396, J101397	Drawing No.  <b>E-05</b>
	04/09/10	ISSUED FOR CONSTRUCTION			Scale: 1/4"=1'-0"		
1	03/31/11	AS-BUILT			Designed By: JRS		
					Drawn By: RHW		
					Checked By: EAE		

PANELBOARD SCHEDULE								PP-G693			
				DEMAND LOAD				PANELBOARD DESIGNATION			
*	LOAD SUMMARY	CL	DF	A	B	C	TOTAL				
L	Lighting	1.5	1		1.5		1.5	VOLTAGE	208Y/120V		
R	Convenience Recept	1.8	1	0.9		0.9	1.8	PHASING	3PH, 4W		
H	Heating							SYSTEM	NORMAL		
C	Cooling							BUS SIZE	125A		
A	HVAC							MAINS	125A ML; 100A backfed		
P	Process	0.6	1		0.6		0.6	FEEDER NO			
O	Other Continuous	1.6	1	0.8		0.8	1.6	FEEDER SIZE	(4)#1, (1)#1G		
N	Other Noncontinuous							FEEDER PROT			
	Total	5.5		1.7	2.1	1.7	5.5	FEEDER LENGTH			
	Min. Feeder Ampacity	21.9		Square D QO320L125G Load Center in Hoffman A24H2006SS6LP3PT enclosure				FEEDER V. DROP			
								FAULT CURRENT			
								ENCLOSURE	NEMA 4X		
								MOUNTING/FEED	SURFACE/TOP		
DESCRIPTION		*	CB	KVA	A	B	C	KVA	CB	DESCRIPTION	*
1	Main Breaker		100A-3P		0.9			0.9	20A-1P	Convenience Receptacles (North)	R
3						0.6		0.6	20A-1P	CP-G693 (Control Panel)	P
5							0.9	0.9	20A-1P	Convenience Receptacles (South)	R
7	(space)				0.8			0.8	20A-1P	P-G693-VLT (Sump Pump - 1/2 HP)	O
9	(space)					1.5		1.5	20A-1P	Utilidor Lighting	L
11	(space)						0.8	0.8	20A-1P	P-G693-DCW (Recirculation Pump - 1/6 HP)	O
13	(space)									(space)	
15	(space)									(space)	
17	(space)									(space)	
19	(space)									(space)	
SUB-FEED PANEL(S) KVA											
Total Connected Load					1.7	2.1	1.7				

AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK & BLUMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5840 WWW.FHENG.COM			Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788		Date: 19 FEB 2010 Scale: 1/4"=1'-0" Designed By: LBG Drawn By: LBG Checked By: LBG	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE PP-G693 (PANELBOARD SCHEDULE) FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, 101396, 101397		Drawing No.  E-06			
1	04/09/10	ISSUED FOR CONSTRUCTION												
2	09/10/10	BULLETIN												
	03/31/11	AS-BUILT												



# **GENERAL DETAIL NOTES:**

- A. RISER CONDUIT DETAIL APPLICABLE TO SINGLE-PHASE POWER INSTALLATIONS.
- B. ITEMS IN BOLD ARE TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
- C. USE ADDITIONAL COUPLINGS AND NIPPLES AS REQUIRED FOR 42" CONDUIT DEPTH AND POSITIONING.
- D. CREATE A 12" DEEP GRAVEL SUMP AT UNILET CONNECTION. (USE PEA GRAVEL AFTER WRAPPING CONNECTION WITH TYPAR) PLACE UNILET AT LOWEST POINT IN CONDUIT RUN. AT DU'S DISCRETION, UNILET MAY BE OMITTED IF HDPE CONDUIT IS USED AND CONDUIT RUN DRAINS TOWARDS UTILIDOR VAULT. IF ANY CONDUIT ENTERS VAULT FROM THE SIDE, THEN THE BOTTOM OUTSIDE EDGE OF THE CONDUIT SHALL BE A MINIMUM OF 6" ABOVE THE VAULT FLOOR. THIS INSTALLATION SHALL BE INSPECTED BY DU BEFORE BACKFILLING.
- E. LEAVE COVER OFF UNILET TO ALLOW MOISTURE TO DRAIN FROM CONDUIT INTO SURROUNDING PEA GRAVEL.
- F. SLOPE ALL UNDERGROUND CONDUITS 1/4" PER FOOT MINIMUM TOWARDS UNILET.
- G. ALL SWEEPS, ELBOWS ABOVE OR BELOW GRADE, AND CONDUIT ABOVE GRADE SHALL BE GALVANIZED RIGID METAL CONDUIT. PVC CONDUIT SHALL NOT BE ACCEPTED IN PRIMARY RUNS.
- H. INSTALL FIRST SECTION OF CONDUIT ON POLE FOR INSPECTION. CONDUITS WHICH ARE NOT PLUMB SHALL NOT BE ACCEPTED.
- I. CONTRACTOR SHALL PROVIDE A TENTED AND HEATED AREA FOR PULLING AND TERMINATING CABLES FOR UNDERGROUND INSTALLATIONS AFTER SEPTEMBER 15TH.
- J. FOR CONNECTIONS TO EXISTING SERVICE LINES, CONTRACTOR SHALL DRESS CABLES, GROUP, JOIN WITH COMPRESSION FITTINGS, AND INSULATE.
- K. USE OF SPLIT BOLTS IS NOT ALLOWED.
- L. CONTRACTOR SHALL PROVIDE AND MAINTAIN A MINIMUM 4' WIDE CLEARANCE BETWEEN THE SERVICE ENTRANCE AND THE DU POLE.
- M. CONDUCTOR INSULATION SHALL BE TYPE XHHW OR RHW.
- N. SERVICE EQUIPMENT WITH MAIN DISCONNECT, CT AND METER ENCLOSURE ON UNISTRUT SHALL MEET ALL REQUIREMENTS PER: "TYPICAL METERED SERVICE" & "GROUNDING DETAIL" ELECTRICAL SERVICE LINE STANDARDS, PP. 19-21, DOYON UTILITIES, INC., MARCH 2008.

**AS-BUILT**

REV. NO.	DATE	DESCRIPTION
	04/09/10	ISSUED FOR CONSTRUCTION
1	03/31/11	AS-BUILT

FOSDICK WILMER  
CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5640  
CINCINNATI, OHIO 45202  
WWW.FHENG.COM



Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

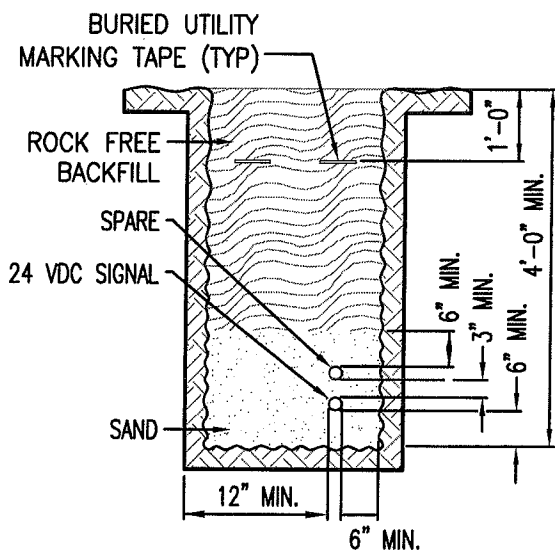
Date:	23 FEB 2010
Scale:	NTS
Designed By:	LBG
Drawn By:	EMS
Checked By:	NEM

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE UTILIDOR SERVICE CONNECTION DETAILS FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397
--

Drawing No.  
**E-07**


GENERAL DETAIL NOTES:

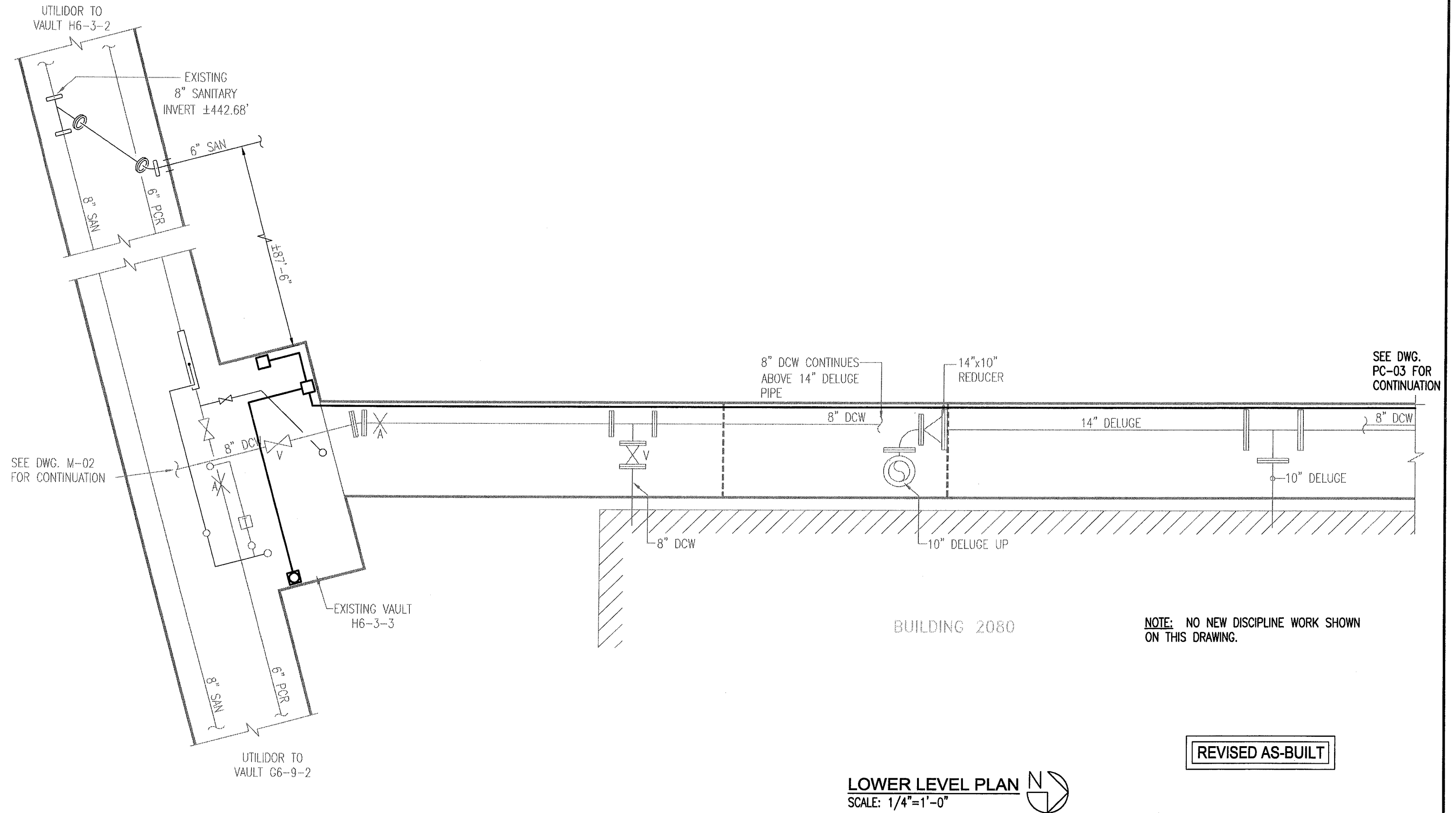
- A. BACKFILL MATERIAL ABOVE THE CONDUIT BEDDING MATERIAL SHALL BE NATIVE MATERIAL IF IT COMPLIES WITH ALASKA DOT SECTION 204 – 2.01, TYPE C.
- B. BACKFILL COMPACTION SHALL COMPLY WITH ALASKA DOT SECTION 301 – 3.03. MOISTURE/DENSITY RELATIONS OF SOILS SHALL BE CALCULATED IN ACCORDANCE WITH AASHTO T 99 OR T 180.
- C. PROVIDE (2) 2" SCHEDULE 40 HDPE CONDUITS.
- D. PROVIDE SPACERS AT A MINIMUM OF EVERY 8'-0".




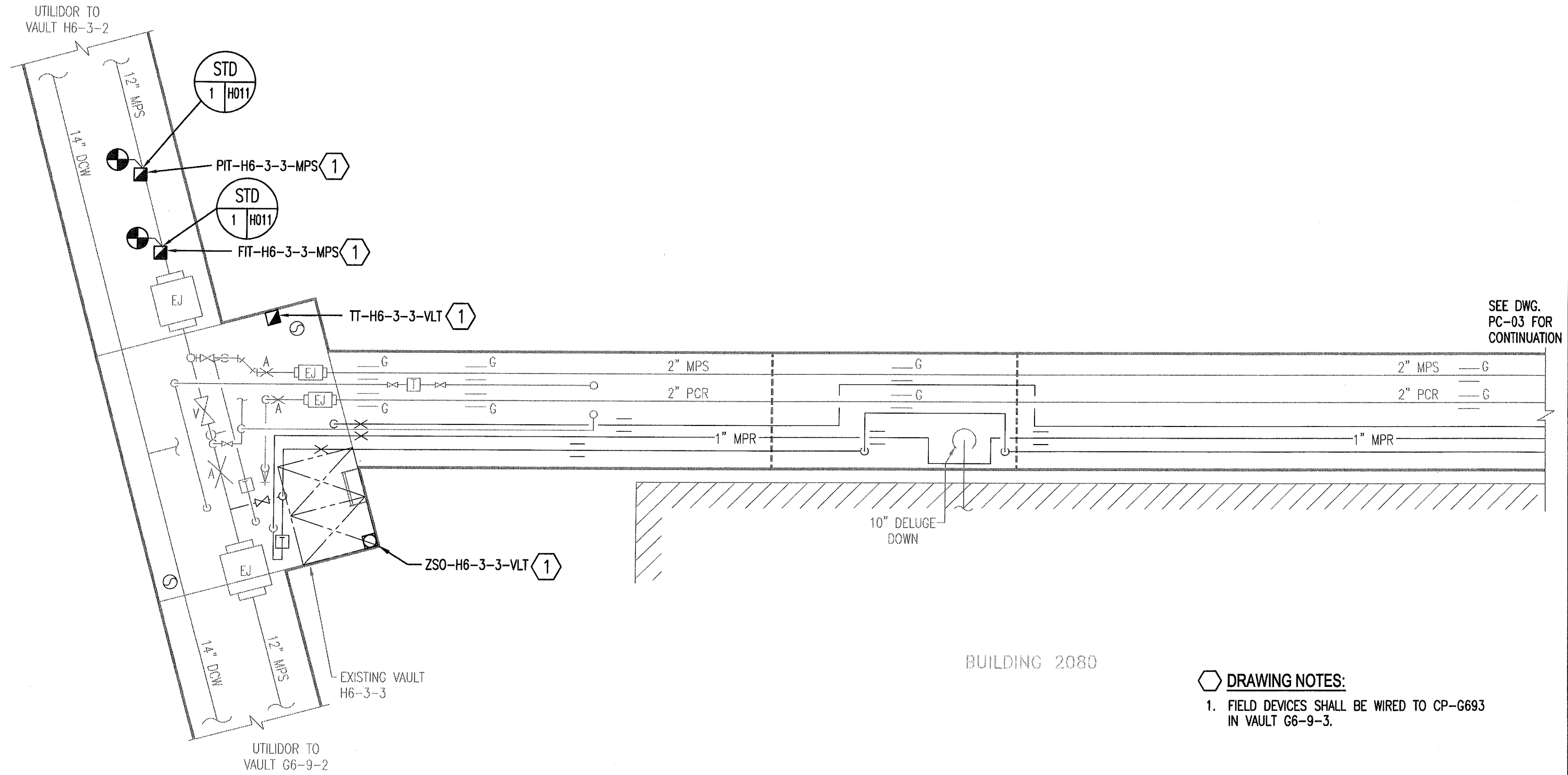
DETAIL 1 DUCT BANK  
N.T.S.  
E-04  
E-05

AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK WILMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5840 CINCINNATI, OHIO 45202 WWW.FHENG.COM		Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 23 FEB 2010 Scale: NTS Designed By: LBG Drawn By: EMS Checked By: NEM	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE DUCT BANK DETAIL FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, J101396, J101397	Drawing No.  E-08
1	04/09/10	ISSUED FOR CONSTRUCTION						
	03/31/11	AS-BUILT						



REV. NO.	DATE	DESCRIPTION	FOSDICK & WILMER CONSULTING ENGINEERS			Date: 19 FEB 2010		UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE EXISTING VAULT H6-3-3 & NEW VAULT G6-9-3	Drawing No.  PC-01
1	03/31/11	AS-BUILT REVISIONS	309 VINE STREET, SUITE 50 TELEPHONE (513)241-5640	CINCINNATI, OHIO 45202 WWW.FHENG.COM		Scale: 1/4"=1'-0"	Designed By: JRS		
						Drawn By: JRS	Checked By: EAE	FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, 101396, 101397	

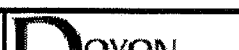


SEE DWG.  
PC-03 FOR  
CONTINUATION

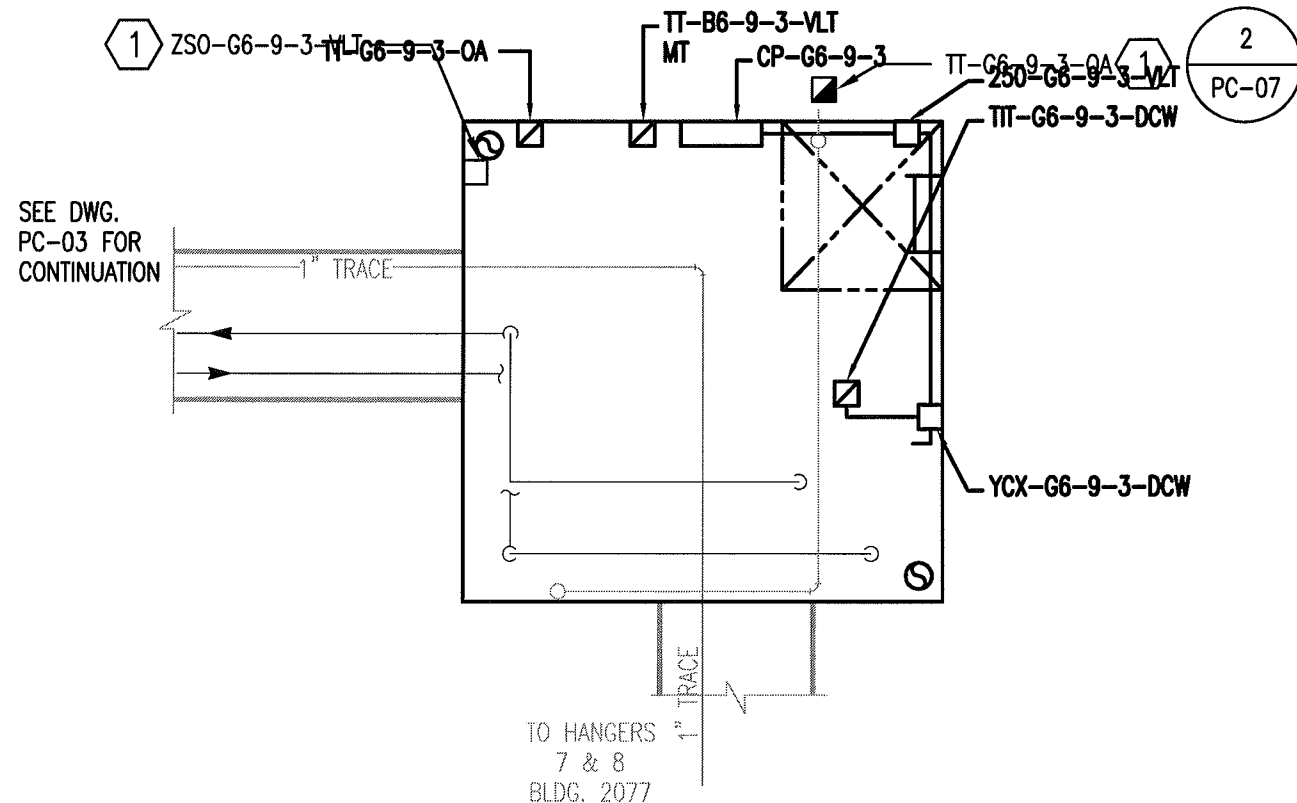
- DRAWING NOTES:**
1. FIELD DEVICES SHALL BE WIRED TO CP-G693 IN VAULT G6-9-3.

REVISED AS-BUILT

**UPPER LEVEL PLAN**  
SCALE: 1/4"=1'-0"

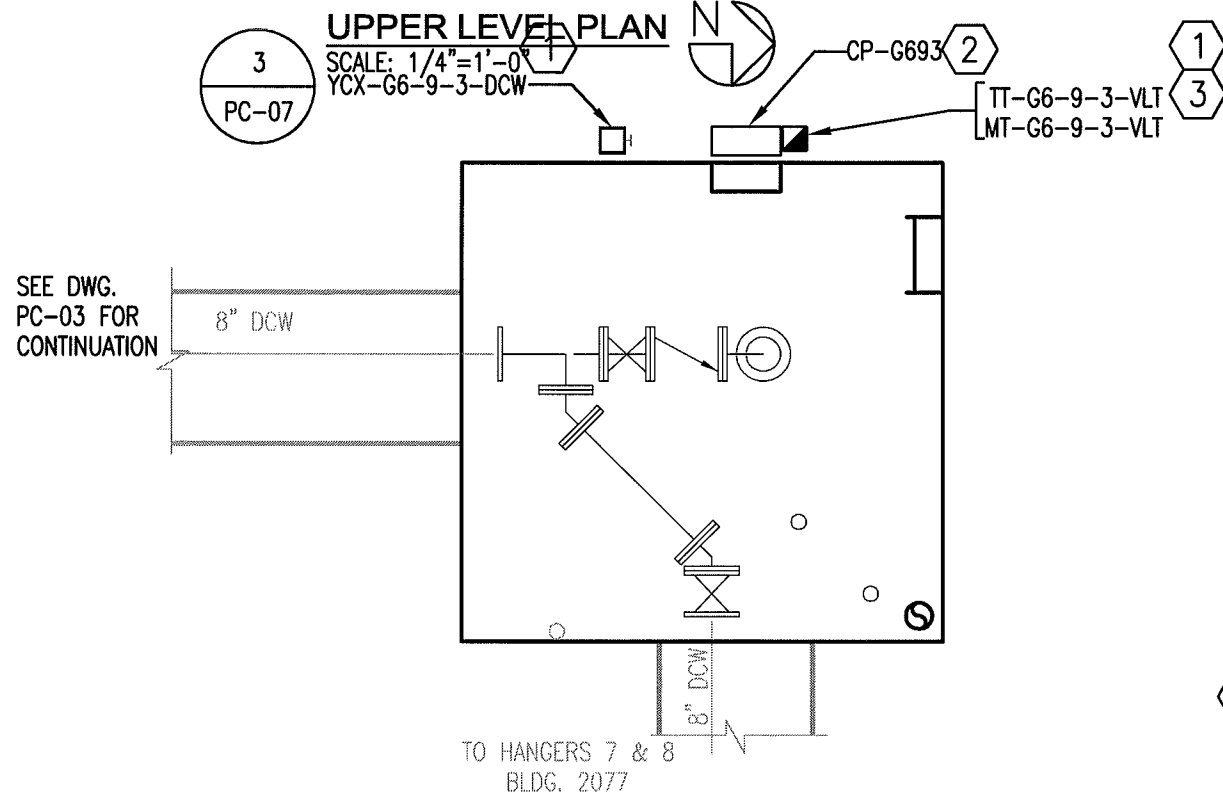
REV. NO.	DATE	DESCRIPTION	FOSDICK & WILMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5640 WWW.FHENG.COM		Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 19 FEB 2010	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE EXISTING VAULT H6-3-3 & NEW VAULT G6-9-3 FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, 101396, 101397	Drawing No.  PC-02
1	04/09/10	ISSUED FOR CONSTRUCTION				Scale: 1/4"=1'-0"		
	03/31/11	AS-BUILT REVISIONS				Designed By: JRS		
						Drawn By: RHW		
						Checked By: EAE		





### UPPER LEVEL PLAN

SCALE: 1/4"=1'-0"

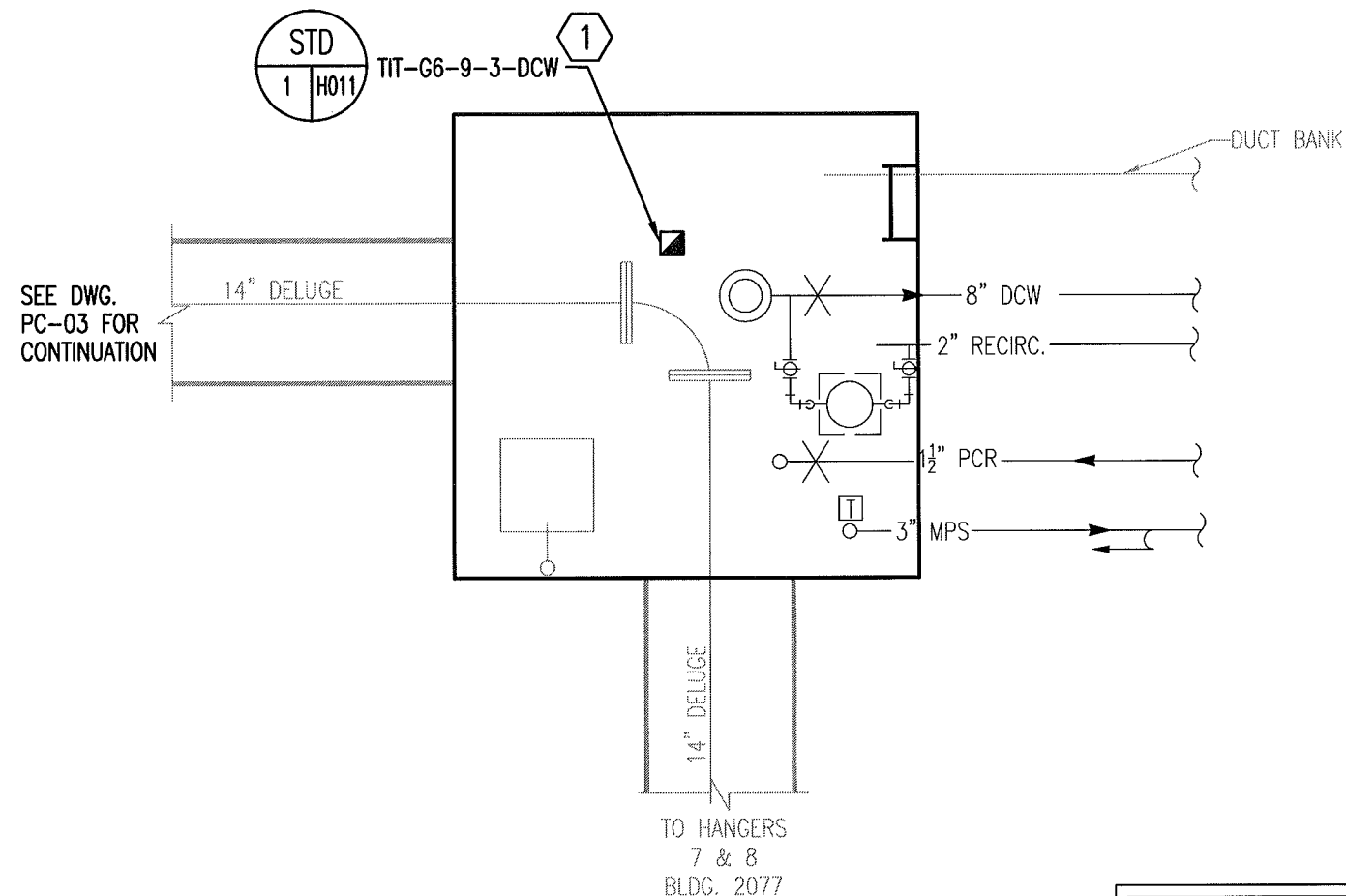


### MID LEVEL PLAN

SCALE: 1/4"=1'-0"

### DRAWING NOTES:

1. FIELD DEVICES SHALL BE WIRED TO CP-G693 IN VAULT G6-9-3.
2. CONTROL PANEL SHALL BE WALL-MOUNTED BY ELECTRICAL CONTRACTOR, 36" A.F.F.
3. THIS FIELD DEVICES REQUIRES (3) BELDEN 8760 CABLES.



### LOWER LEVEL PLAN

SCALE: 1/4"=1'-0"

REVISED AS-BUILT

REV. NO.	DATE	DESCRIPTION
	04/09/10	ISSUED FOR CONSTRUCTION
1	03/31/11	AS-BUILT REVISIONS

FOSDICK WILMER CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5840

CINCINNATI, OHIO 45202  
WWW.FHENG.COM



Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 17 FEB 2010  
Scale: 1/4"=1'-0"  
Designed By: JRS  
Drawn By: RHW  
Checked By: EAE

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
NEW VAULT G6-9-3  
FORT GREELY, AK.  
DU PROJECT NO. J101395, 101396, 101397

Drawing No.  
PC-04



1  
PC-06

SEE DETAIL FOR  
WATER AND STEAM  
METER ELECTRICAL  
CONNECTIONS.

AIRCRAFT  
PARTS  
STORAGE  
BLDG

3" MPS  
1 1/2" PCR  
2" RECIRCULATING  
PIPE

8" DCW

BURIED WATER  
PIPE TRENCH  
SEE DETAIL

STD  
W114

1" RECIRCULATING  
PIPE

6" DCW

3" MPS  
1 1/2" PCR  
2" RECIRCULATING  
PIPE

ELECTRIC  
DUCT BANK

2" RECIRCULATING  
PIPE  
3" MPS  
1 1/2" PCR  
8" DCW

FROM NEW VAULT G6-9-3  
SEE DWG. PC-04 FOR  
CONTINUATION.

PLAN

SCALE: 1/4"=1'-0"



AS-BUILT

REV. NO.	DATE	DESCRIPTION
1	04/09/10	ISSUED FOR CONSTRUCTION
	03/31/11	AS-BUILT

FOSDICK WILMER  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5840

CONSULTING ENGINEERS  
CINCINNATI, OHIO 45202  
WWW.FHENG.COM

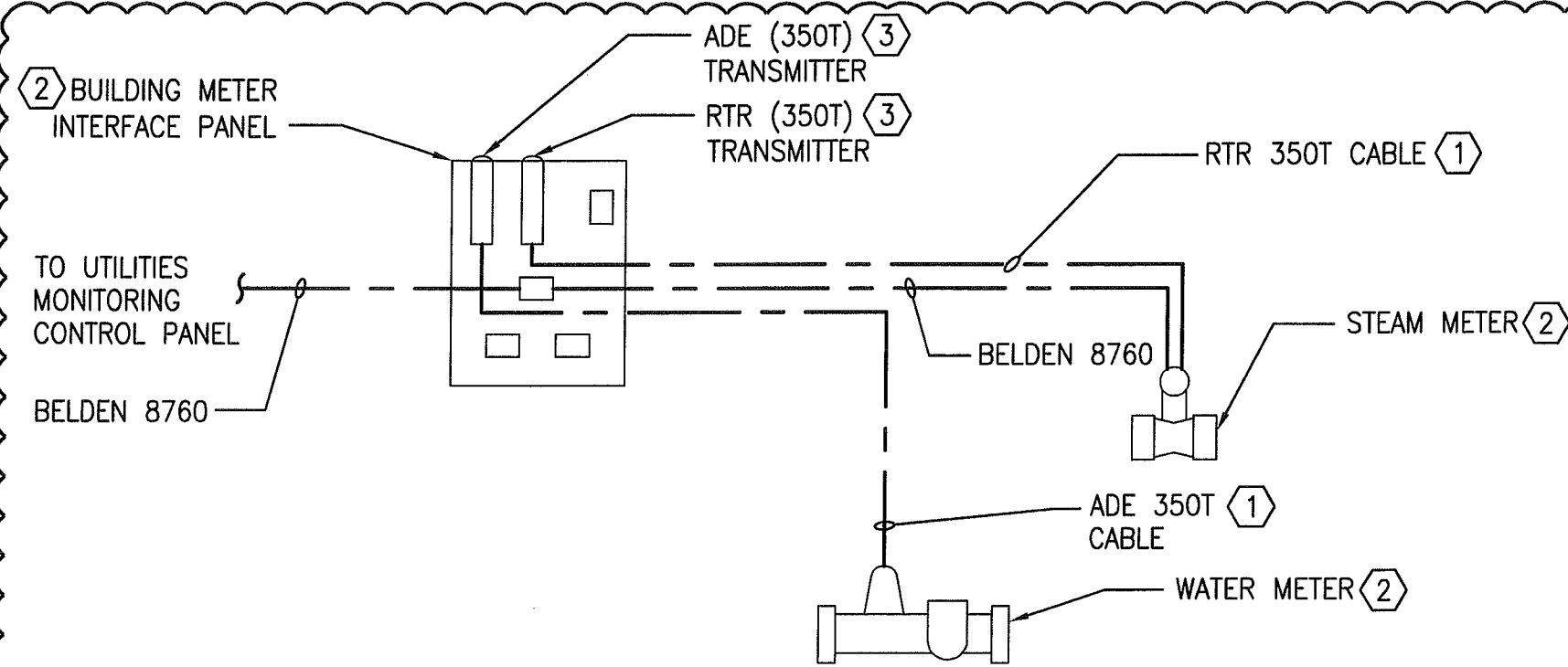


Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 19 FEB 2010  
Scale: 1/4"=1'-0"  
Designed By: JRS  
Drawn By: RHW  
Checked By: EAE

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
DIRECT BURIED DUCT PLAN  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, 101396, 101397

Drawing No.  
PC-05

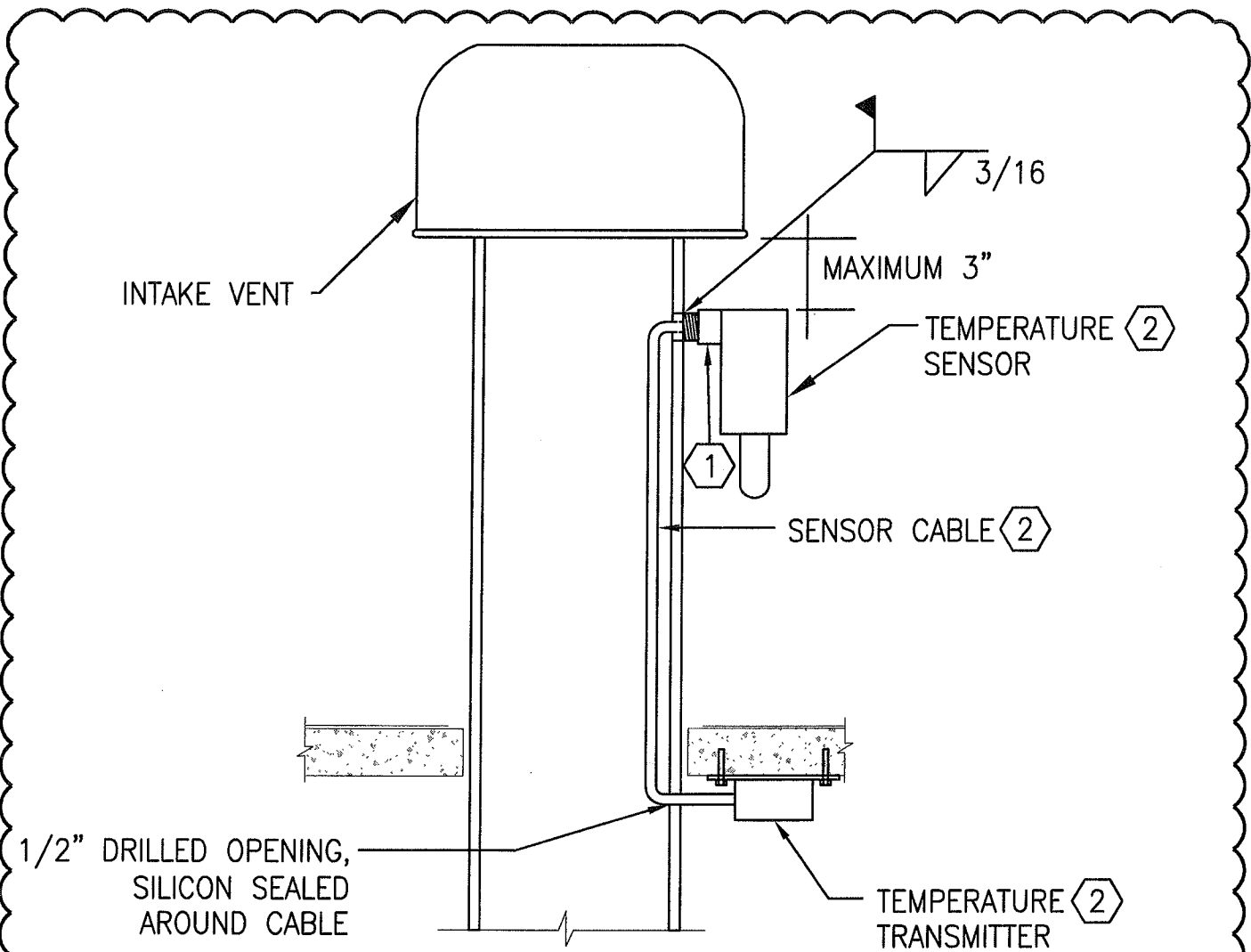


- DETAIL NOTES:**
- 1. FURNISHED BY DOYON UTILITIES, INSTALLED BY ELECTRICAL CONTRACTOR. LEAVE REMAINING LENGTH COILED AT ONE END. DO NOT CUT TO FIT.
  - 2. FURNISHED BY DOYON UTILITIES, INSTALLED BY ELECTRICAL CONTRACTOR. PANEL TO BE MOUNTED A MINIMUM OF 36" A.F.F.
  - 3. FURNISHED BY DOYON UTILITIES, INSTALLED BY ELECTRICAL CONTRACTOR.
  - 4. EXACT LOCATION OF THE BUILDING INTERFACE CONTROL PANEL SHALL BE ITERATIVELY DETERMINED (IE., TEST, RELOCATE IF NECESSARY, RETEST), AS THE POINT AT WHICH RECEPTION BY THE TANTALUS ELECTRIC METER IS OPTIMALLY ACHIEVED. IF FINAL LOCATION IS NOT ACCEPTABLE TO THE ENGINEER, TRANSMITTERS CAN BE REMOTE MOUNTED FROM THE PANEL.

DEVICE TAGS						
BUILDING CODE	BUILDING NAME	BUILDING METER INTERFACE PANEL	STEAM METER	WATER METER	PUMP	UTILITIES MONITORING CONTROL PANEL
336A	AIRCRAFT PARTS STORAGE	CP-336AM	FIT-336A-MPS	FT-336A-DCW	NONE	CP-G693

AS-BUILT

**1** **DETAIL 1 BUILDING METER INTERFACE**  
N.T.S. **PC-05**



**DETAIL GENERAL NOTES:**

A. SEE DOYON UTILITIES STANDARD DRAWING UES-DD-H206 FOR VENT INSTALLATION DETAILS.

**DETAIL NOTES:**

1. WELD 1/2" HALF NIPPLE TO VENT PIPE FOR SENSOR INSTALLATION.
2. FURNISHED BY DOYON UTILITIES, INSTALLED BY ELECTRICAL CONTRACTOR.

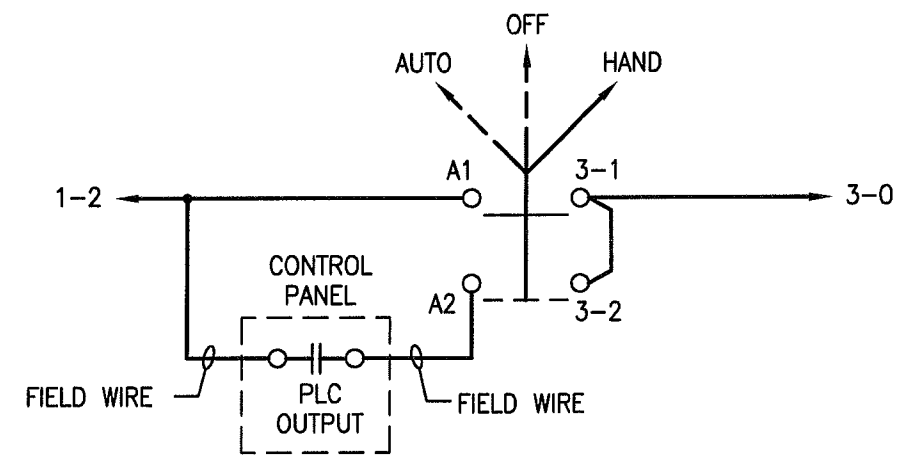
**1** **DETAIL 2 OUTDOOR AIR TEMPERATURE TRANSMITTER**  
N.T.S. **PC-04**

**DETAIL GENERAL NOTE:**

A. SEE DOYON UTILITIES STANDARD DRAWING UES-DD-H206 FOR VENT INSTALLATION DETAILS.

**DETAIL NOTES:**

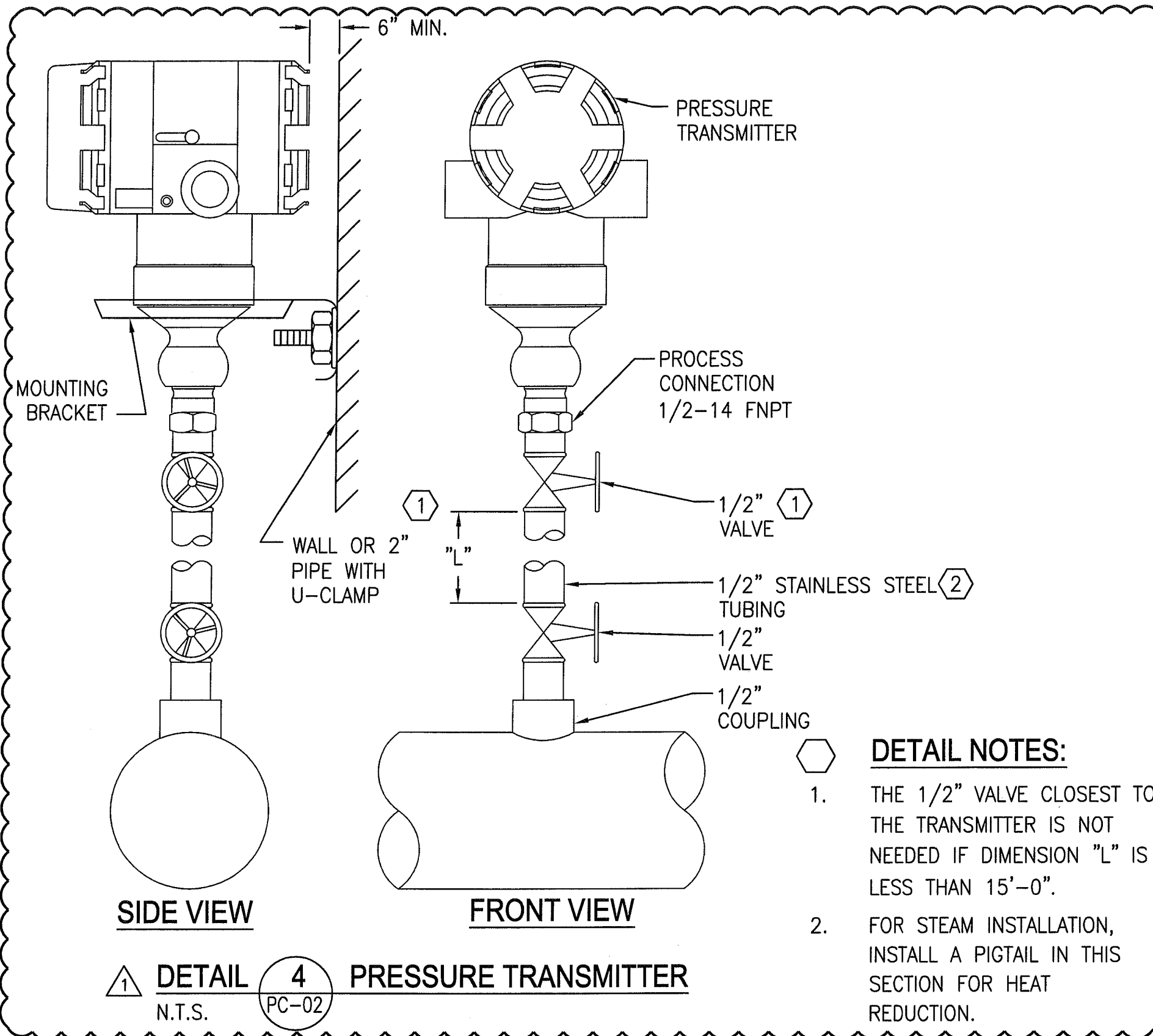
1. DRILL AND TAP INTAKE VENT PIPE FOR CONNECTION OF DEVICE.



**DETAIL 3 HYDRANT WATER RECIRCULATING PUMP**  
N.T.S. **PC-04** **H-O-A CONTROL**

**AS-BUILT**

REV. NO.	DATE	DESCRIPTION	FOSDICK BILMER 309 VINE STREET, SUITE 50 TELEPHONE (513)241-5640	CONSULTING ENGINEERS CINCINNATI, OHIO 45202 WWW.FHENG.COM	DOYON UTILITIES	Jimmy Huntington Building 714 Fourth Avenue, Suite 20 Fairbanks, Alaska 99701 Telephone (907) 455-1500 Fax (907) 455-6788	Date: 04/09/10 Scale: NTS Designed By: J.T. Drawn By: G.N. Checked By: J.T.	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE MISCELLANEOUS UTILITY MONITORING DETAILS FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, 101396, 101397	Drawing No.  PC-07
1	4/09/10	ISSUED FOR CONSTRUCTION							
2	7/21/10	AMENDMENT NO. 1							
3	03/31/11	AS-BUILT							



AS-BUILT

REV. NO.	DATE	DESCRIPTION
1	7/21/10	AMENDMENT NO. 1
1	03/31/11	AS-BUILT

FOSDICK BULMER CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5640

CINCINNATI, OHIO 45202  
WWW.FHENG.COM

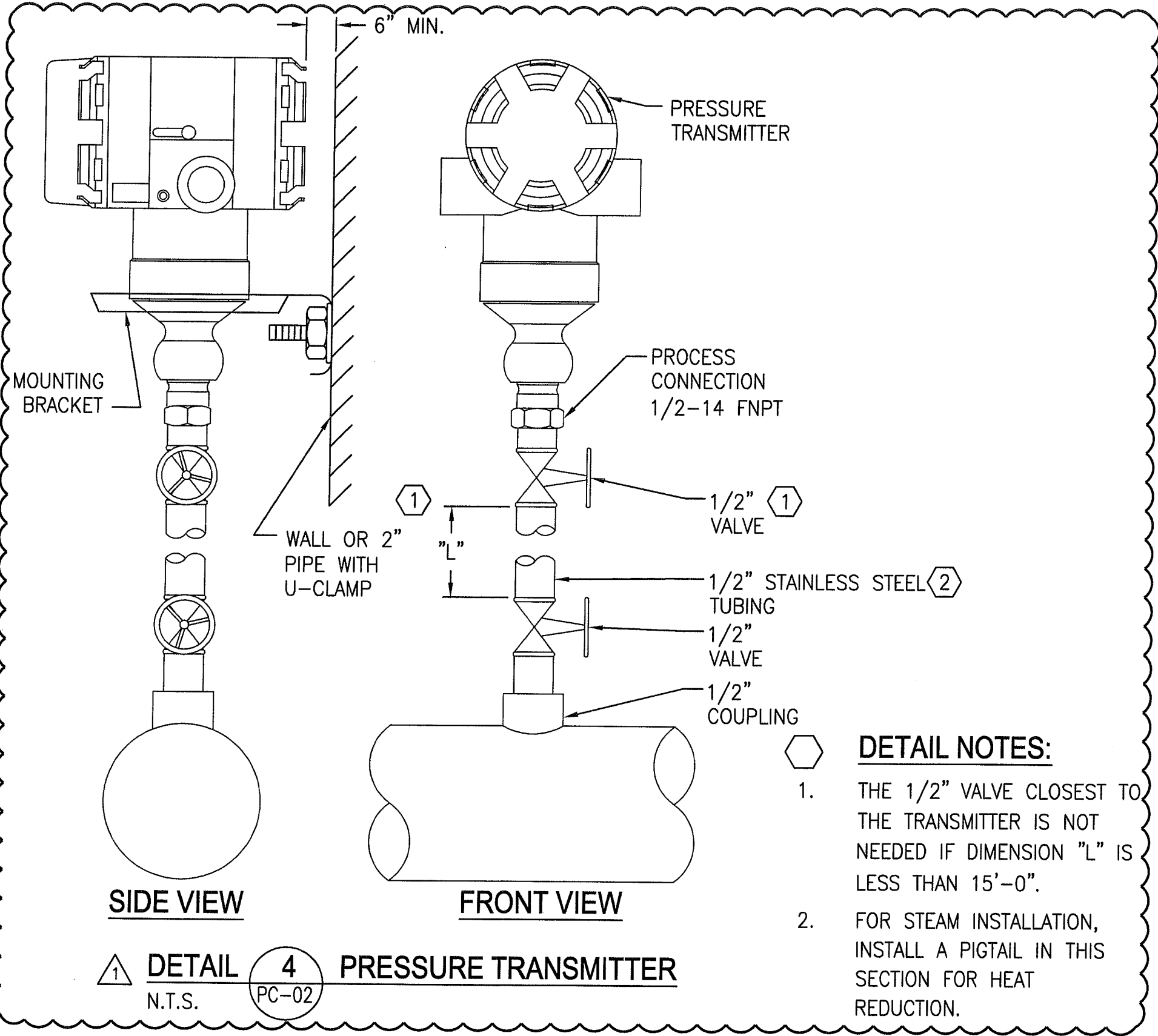


Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 7/21/10  
Scale: NTS  
Designed By: J.T.  
Drawn By: G.N.  
Checked By: J.T.

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
UTILITY MONITORING  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, 101396, 101397

Drawing No.  
PC-08



AS-BUILT

REV. NO.	DATE	DESCRIPTION
1	7/21/10	AMENDMENT NO. 1
1	03/31/11	AS-BUILT

FOSDICK WILMER CONSULTING ENGINEERS  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5640

CINCINNATI, OHIO 45202  
WWW.FHENG.COM



Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

Date: 7/21/10  
Scale: NTS  
Designed By: J.T.  
Drawn By: G.N.  
Checked By: J.T.

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
UTILITY MONITORING  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, 101396, 101397

Drawing No.

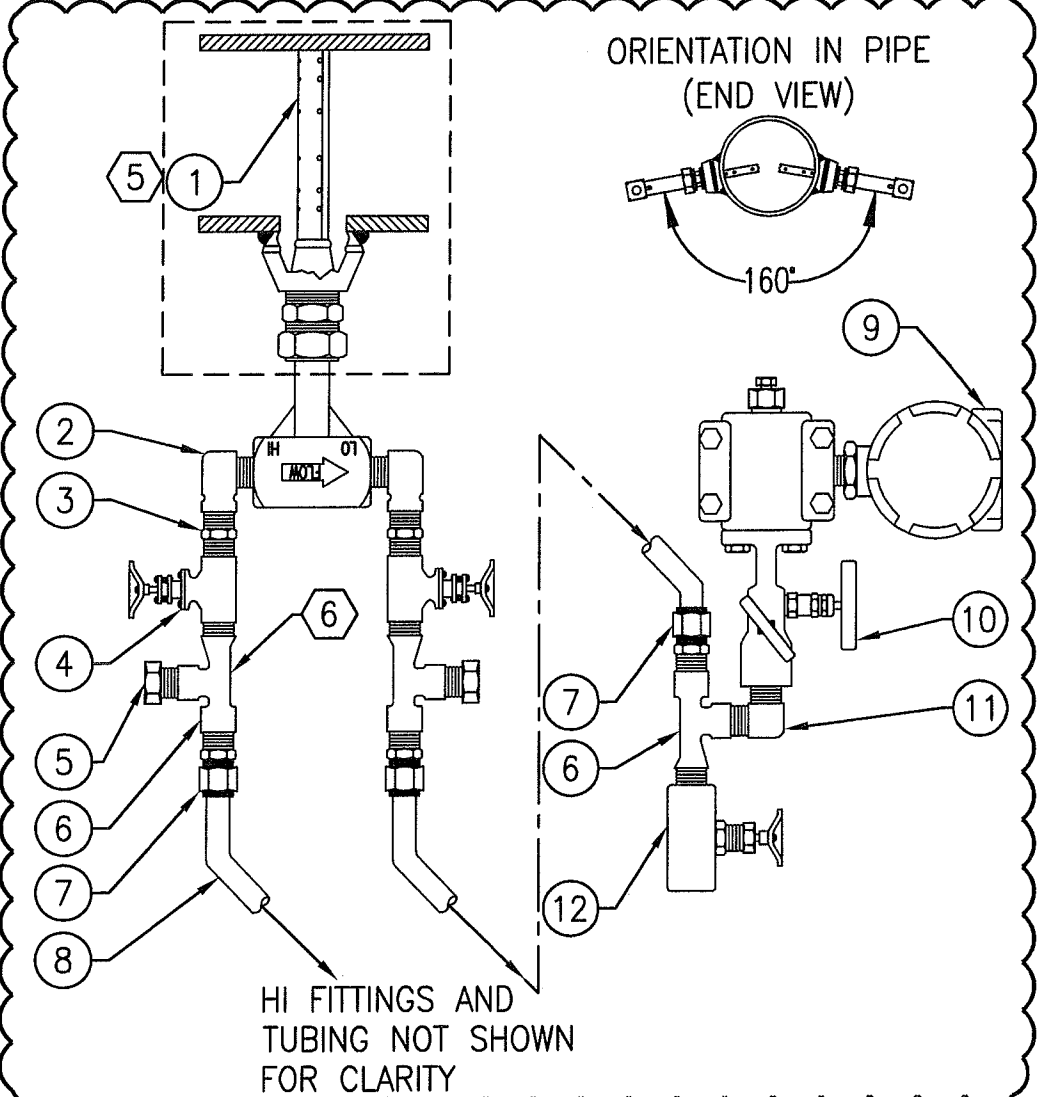
PC-08

## ITEM DESCRIPTION:

- |     |              |   |
|-----|--------------|---|
| 1.  | QTY: 1       | FLOW SENSOR WITH PIPE MOUNTING HARDWARE               |
| 2.  | QTY: 2       | 1/2" STREET ELBOW                                     |
| 3.  | QTY: 2       | 1/2" NPT HEX NIPPLE                                   |
| 4.  | QTY: 2       | 1/2" FNPT GATE VALVE (FULL PORT)                      |
| 5.  | QTY: 2       | 1/2" MNPT PLUG  |
| 6.  | QTY: 4       | 1/2" STREET TEE                                       |
| 7.  | QTY: 4       | 1/2" MNPT X 1/2" OD TUBE FILLING                      |
| 8.  | QTY: AS REQ. | 1/2" OD TUBING  |
| 9.  | QTY: 1       | DIFFERENTIAL PRESSURE TRANSMITTER, TRADITIONAL STYLE. |
| 10. | QTY: 1       | 3 OR 5 VALVE MANIFOLD (1/2" FNPT X FLANGED)           |
| 11. | QTY: 2       | 1/2" MALE ELBOW                                       |
| 12. | QTY: 2       | 1/2" FNPT NEEDLE VALVE                                |

## DRAWING NOTES:

1. MOUNTING ON THE BOTTOM OF THE PIPE AS SHOWN IS RECOMMENDED. CONTACT VERIS IF AN ALTERNATE INSTALLATION IS REQUIRED.
2. DP TRANSMITTER TO BE LOCATED AT SUFFICIENT DISTANCE TO ALLOW FOR COOLING TO MEET TRANSMITTER SPECIFICATION. TYPICAL COLLING RATE IS 100°F PER FOOT (55°C PER 300MM). DP TRANSMITTER TO BE LOCATED AT LEAST 18IN. (450MM) BELOW THE FILL TEES. THE VENT VALVES ARE TO POINT UP IF TRADITIONAL STYLE TRANSMITTER.
3. TUBING TO SLOPE CONTINUOUSLY DOWNWARD TO THE DP TRANSMITTER AT LEAST 4IN. (100MM) PER FOOT (300MM) AND SHALL BE FREE OF PEAKS, DIPS, OR SHARP BENDS THAT WOULD ALLOW ENTRAPPED AIR TO ACCUMULATE.
4. TUBING BENDS TO BE MADE WITH A TUBE BENDER AND SHALL HAVE A MINIMUM RADIUS OF THREE TIMES THE TUBING OD.
5. VERABAR MODEL V100 SHOWN, OTHER MODELS AVAILABLE.
6. FILL TEES TO BE AT THE SAME HEIGHT.



DETAIL

5

FLOW TRANSMITTER

N.T.S.

PC-02

AS-BUILT

REV. NO.	DATE	DESCRIPTION
1	7/21/10	AMENDMENT NO. 1
1	03/31/11	AS-BUILT

FOSDICK BILMER  
309 VINE STREET, SUITE 50  
TELEPHONE (513)241-5640

CONSULTING ENGINEERS  
CINCINNATI, OHIO 45202  
WWW.FHENG.COM

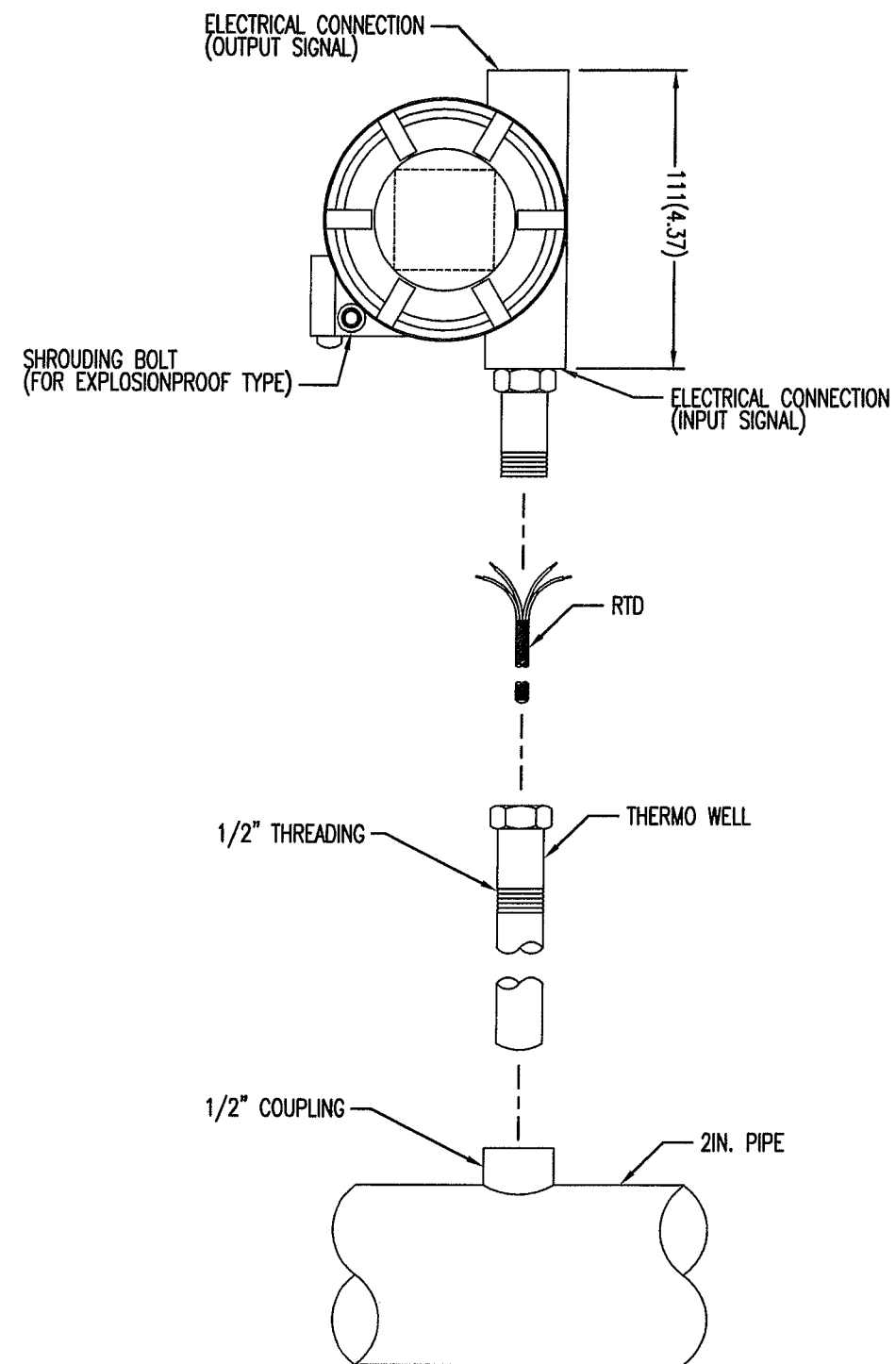


Jimmy Huntington Building  
714 Fourth Avenue, Suite 20  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

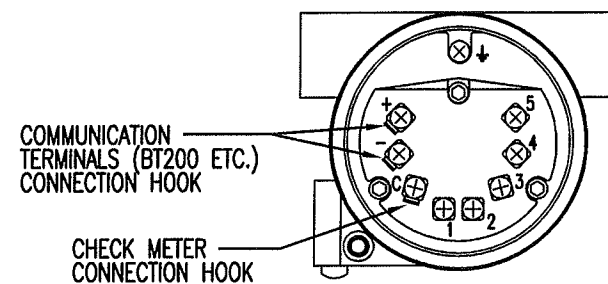
Date: 7/21/10  
Scale: NTS  
Designed By: J.T.  
Drawn By: G.N.  
Checked By: J.T.

UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE  
UTILITY MONITORING  
FORT WAINWRIGHT, AK.  
DU PROJECT NO. J101395, 101396, 101397

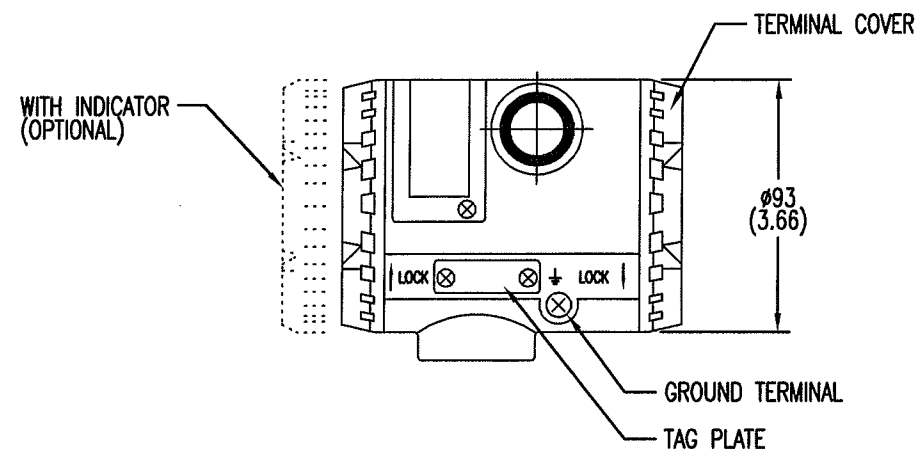
Drawing No.  
PC-09



BACK VIEW

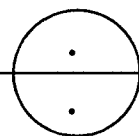


TERMINAL WIRING



SIDE VIEW

TEMPERATURE TRANSMITTER



AS-BUILT

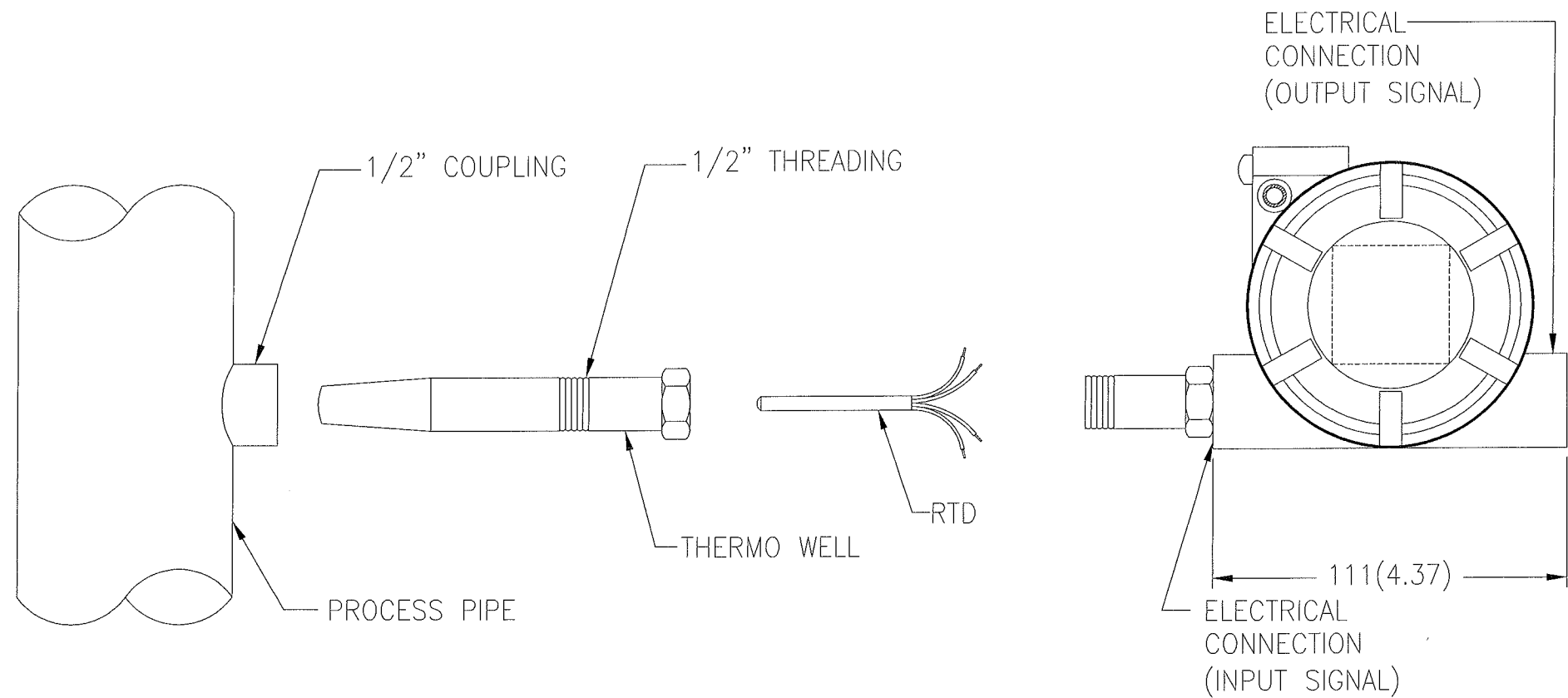
**FOSDICK & HILMER** CONSULTING ENGINEERS  
 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202  
 TELEPHONE (513)241-5640 FAX (513)241-3659

DWG. NAME: YTA110

NEW SPEC:


DATE: 7/23/10 SCALE: NTS

REV: REV BY:



1 **DETAIL 6** TEMPERATURE TRANSMITTER  
N.T.S. PC-04

AS-BUILT

REV. NO.	DATE	DESCRIPTION	FOSDICK WILMER CONSULTING ENGINEERS 309 VINE STREET, SUITE 50 CINCINNATI, OHIO 45202 TELEPHONE (513)241-5640 WWW.FHENG.COM			Jimmy Huntington Building	Date: 7/21/10	UTILITY SERVICE EXTENSION TO AIRCRAFT PARTS STORAGE UTILITY MONITORING FORT WAINWRIGHT, AK. DU PROJECT NO. J101395, 101396, 101397	Drawing No.  PC-10
1	7/21/10	AMENDMENT NO. 1				714 Fourth Avenue, Suite 20	Scale: NTS		
2	03/31/11	AS-BUILT				Fairbanks, Alaska 99701	Designed By: J.T.		
						Telephone (907) 455-1500	Drawn By: G.N.		
						Fax (907) 455-6788	Checked By: J.T.		



## GENERAL STRUCTURAL NOTES

## A. DESIGN CRITERIA

1. ACCESS VAULT DESIGN STANDARDS..... ACI 318-05, AISC LATEST EDITION
2. ACCESS VAULT LOADS:  
LIVE LOAD ..... 100 PSF
3. SEISMIC LOADS:  
OCCUPANCY CATEGORY..... II  
S<sub>e</sub>..... 0.784  
S<sub>s</sub>..... 0.37  
SITE CLASS ..... D

B. FOUNDATION

1. AT ACCESS VAULTS, DO NOT BACK FILL WALLS UNTIL ACCESS VAULT LIDS ARE IN PLACE AND CONCRETE HAS ACHIEVED DESIGN STRENGTH. BRING GRADE UP EVENLY (WITH MAXIMUM 8" LIFTS) ON ALL SIDES TO FINAL ELEVATIONS.

C. CONCRETE

1. ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH (f'c) OF 4000 PSI.
2. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60, UNLESS OTHERWISE NOTED, EXCEPT #3 BARS WHICH MAY BE GRADE 40.
3. DETAIL REINFORCING BARS IN ACCORDANCE WITH THE ACI DETAILING MANUAL AND THE ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITION.
4. CONCRETE SHALL MEET ALL REQUIREMENTS OF ACI 301 SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS.
5. HORIZONTAL FOUNDATION AND WALL REINFORCING SHALL BE CONTINUOUS AROUND CORNERS AND INTERSECTIONS; PROVIDE CORNER BARS.
6. LAP ALL REINFORCING 61 BAR DIAMETERS.
7. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING AT POSITIONS SHOWN ON THE DRAWINGS. PROVIDE SUFFICIENT TIE BARS TO SUPPORT ALL REINFORCING.
8. PROVIDE REINFORCEMENT COVER AS FOLLOWS, UNLESS NOTED OTHERWISE ON DRAWINGS:
 

CONCRETE POURED AGAINST EARTH .....	1 1/2" TYPICAL EXCEPT AS NOTED BELOW
CONCRETE POURED IN FORMS .....	1 1/2" TYPICAL EXCEPT AS NOTED BELOW
CONCRETE POURED IN FORMS .....	2" IF FACE OF CONCRETE IS IN CONTACT WITH EARTH
CONCRETE SLABS ON GRADE .....	PLACE REINFORCING AT SLAB MID-DEPTH

#### D. STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WELD FLANGE MEMBERS SHALL BE ASTM A992 GRADE 50 ( $F_y = 50$  KSI).
2. SQUARE/ RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500 GRADE B ( $F_y = 46$  KSI).
3. ROUND HSS (PIPPLES) SHALL CONFORM TO ASTM A53 GRADE B ( $F_y = 35$  KSI).
4. ANGLES, CHANNELS, AND PLATES SHALL BE ASTM A36 ( $F_y = 36$  KSI).
5. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.
6. WELDS SHALL BE PERFORMED WITH E70XX ELECTRODES. WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL CONFORM TO THE LATEST EDITION OF THE AWS CODE. ALL WELDS ARE INTENDED TO BE CONTINUOUS UNLESS NOTED OTHERWISE.
7. FIELD WELDS NOTED THROUGHOUT THE CONTRACT DOCUMENTS ARE ACCEPTABLE LOCATIONS FOR FIELD WELDING. AT THE CONTRACTOR'S OPTION, FIELD WELDS MAY BE PERFORMED IN THE SHOP.

### E. GENERAL

1. CONTRACTOR IS TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS TO MATCH NEW CONSTRUCTION TO EXISTING CONSTRUCTION.

AS-BUILT

Date Stamped: 8/20/2010

By

Revision

Date \_\_\_\_\_

1

1

1/91

ULT



**SHARED VISION. UNIFIED APPROACH.**  
Architecture • Engineering • Surveying  
Planning • Environmental Services

2515 'A' Street  
Anchorage, Alaska 99503  
(907) 276-4245

544 4th Avenue,  
Suite 102  
Fairbanks, Alaska 99701  
(907) 452-2128

3017 Clinton Drive  
Suite 201  
Juneau, Alaska 99801  
(907) 780-2901

351 W. Parks Highway  
Suite 200  
Wasilla, Alaska 99654  
(907) 376-7815

441 W 5th Avenue,  
Suite 200  
Anchorage, Alaska 99501  
(907) 276-5885

[www.USKH.com](http://www.USKH.com)

**Project:**

TUNISTA/  
FTW 336A

TUNISTA  
FT. WAINWRIGHT, ALASKA

Project Mgr.

Drawn

Checked

Date \_\_\_\_\_

**Sheet Contents:**

## GENERAL NOTES

Sheet No.:

S1

USKH W.O. 1267800

Technical drawing of a rectangular structure, likely a foundation or retaining wall, showing reinforcement details and dimensions. The structure is shown in cross-section, with a top view and a side view.

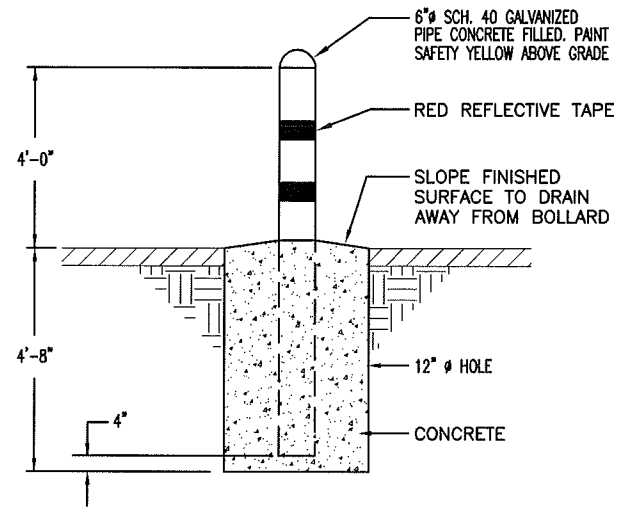
Labels and dimensions include:

- ACCESS HATCH
- HYDROPHILIC WATERSTOP
- 3'-6"
- 8"
- #5 @ 10" O.C. VERT.
- #4 @ 16" O.C. HORIZ.
- #5 x 3'-6" @ 10" O.C. 12"
- LADDER
- HYDROPHILIC WATERSTOP
- #4 @ 16" O.C.
- #6 @ 6" O.C.
- (5) #8 CONT.
- #5 x 24" @ 12" O.C.
- 9'-0"
- HYDROPHILIC WATERSTOP
- (2) #5 CONT. TOP AND BOTTOM
- HYDROPHILIC WATERSTOP
- #5 @ 12" O.C. EA. WAY

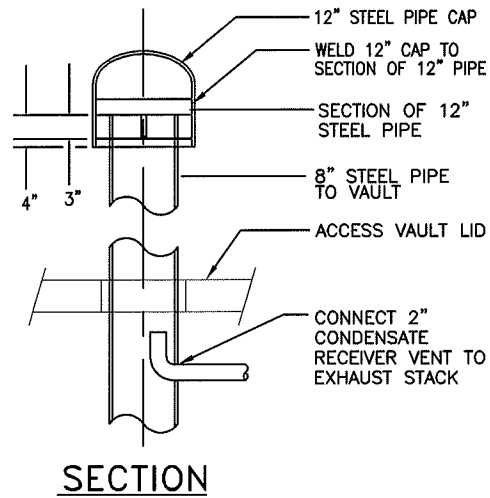
USKH W.O. 1267800

Drawing No.  
**HDS-302**  
Previous: UES-DD-H202  
14 FEB 2010

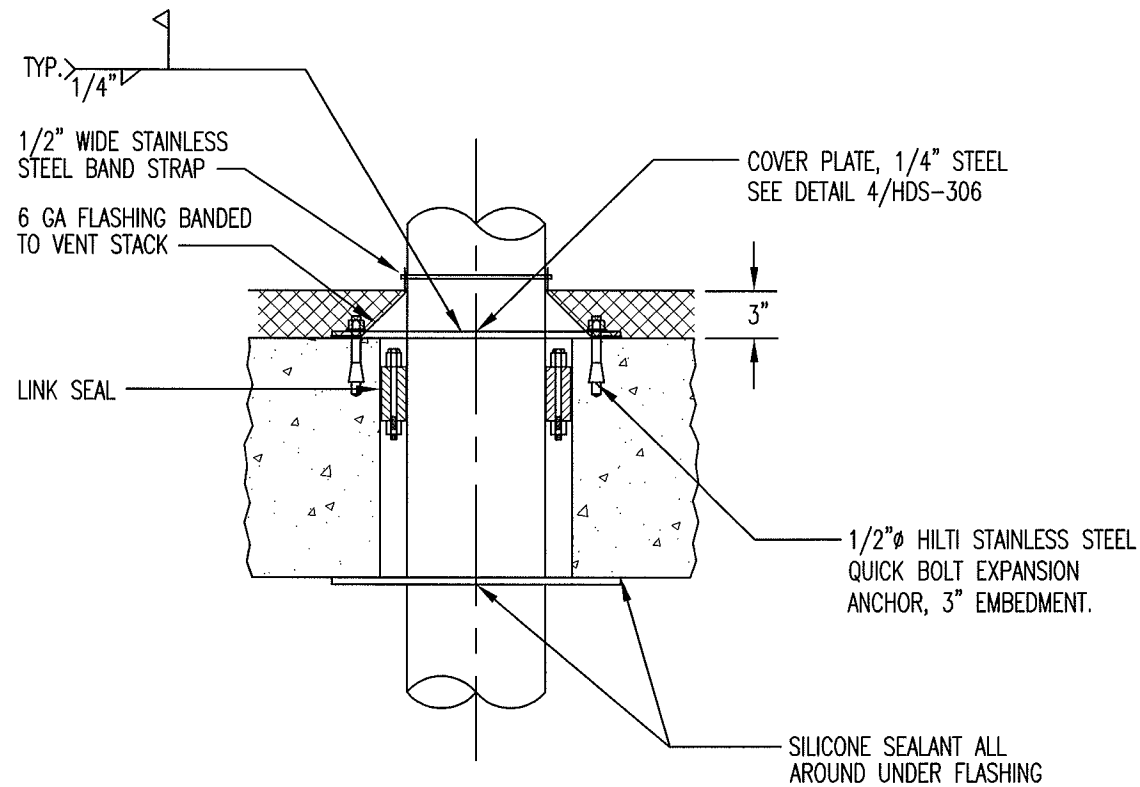
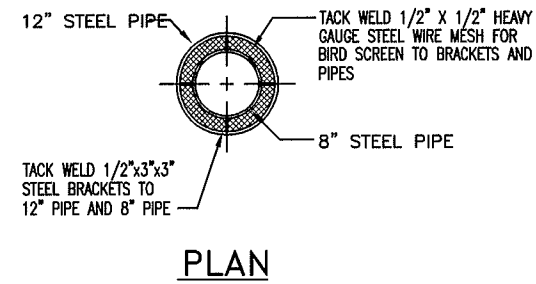
FILE: C:\USERS\CLEAVE\DOCUMENTS\APS 336A\DU CONNECTION\AUTOCAD DRAWINGS\1267800\_S4.DWG PLOTTED: Apr 12, 2011 - 10:51:28 AM (Cleave)



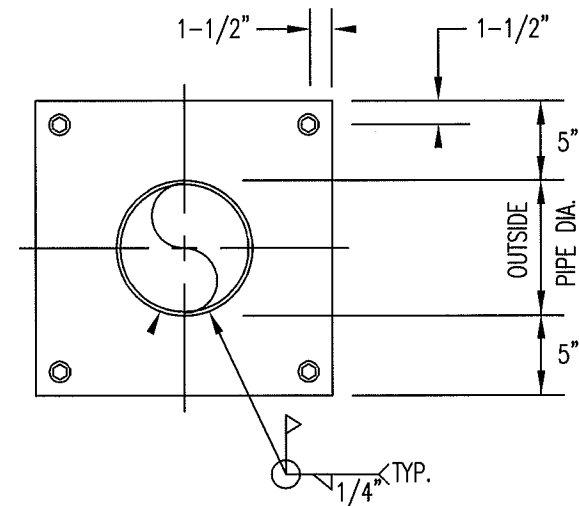
1 FILLED BOLLARD DETAIL  
HDS-306 NTS NTS



2 ACCESS HATCH VENTILATION PIPE DETAIL  
HDS-306 NTS NTS



3 ROOF SLAB PENETRATION DETAIL  
HDS-306 NTS NTS



4 COVER PLATE DETAIL VIEW LOOKING DOWN  
HDS-306 NTS NTS

Date Stamped: 8/6/2010

By	
Revision	
Date	

**USKH**  
SHARED VISION. UNIFIED APPROACH.  
Architecture • Engineering • Surveying  
Planning • Environmental Services

2515 'A' Street  
Anchorage, Alaska 99503  
(907) 276-4245

544 4th Avenue,  
Suite 102  
Fairbanks, Alaska 99701  
(907) 452-2128

3017 Clinton Drive  
Suite 201  
Juneau, Alaska 99801  
(907) 790-2501

351 W. Parks Highway  
Suite 200  
Wasilla, Alaska 99654  
(907) 376-7815

441 W 5th Avenue,  
Suite 200  
Anchorage, Alaska 99501  
(907) 276-5885

www.uskh.com

Project:

TUNISTA/  
FTW 336A

TUNISTA  
FT. WAINWRIGHT, ALASKA

Project Mgr.

Drawn

FST

Checked

GL

Date

Sheet Contents:

VENTILATION &  
PROTECTION  
DETAILS

Sheet No.:

S4

Drawing No.

HDS-306

Previous: UES-DD-H206  
14 FEB 2010

USKH W.O. 1267800

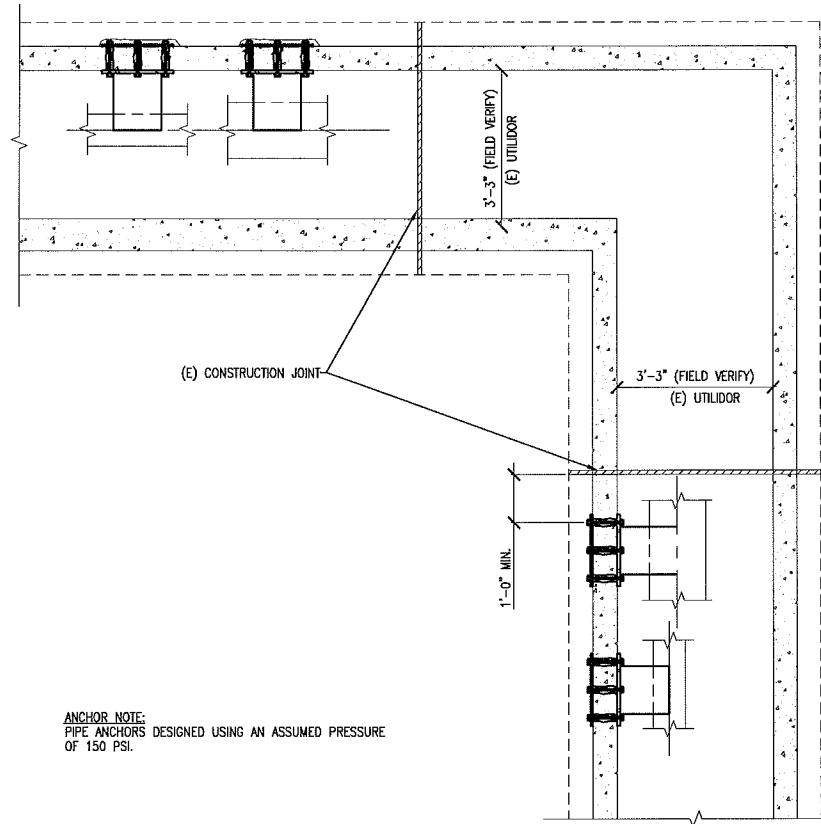


Jimmy Huntington Building  
714 Fourth Avenue, Suite 201  
Fairbanks, Alaska 99701  
Telephone (907) 455-1500  
Fax (907) 455-6788

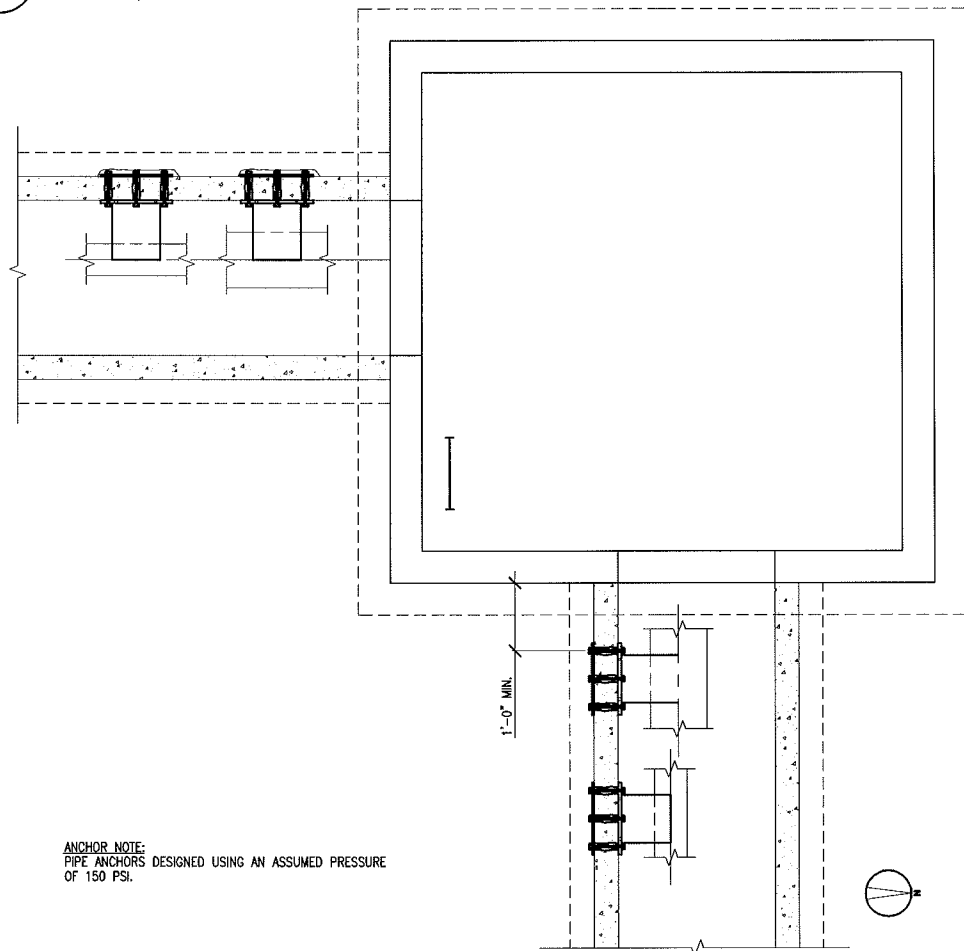
Date: 30 APR 2010  
Scale: AS NOTED  
Designed By: NEM  
Drawn By: MMC/GSF  
Checked By: NEM

**VENTILATION & PROTECTION DETAILS**  
**DESIGN & CONSTRUCTION STANDARDS**  
**UTILIDORS AND VAULTS**

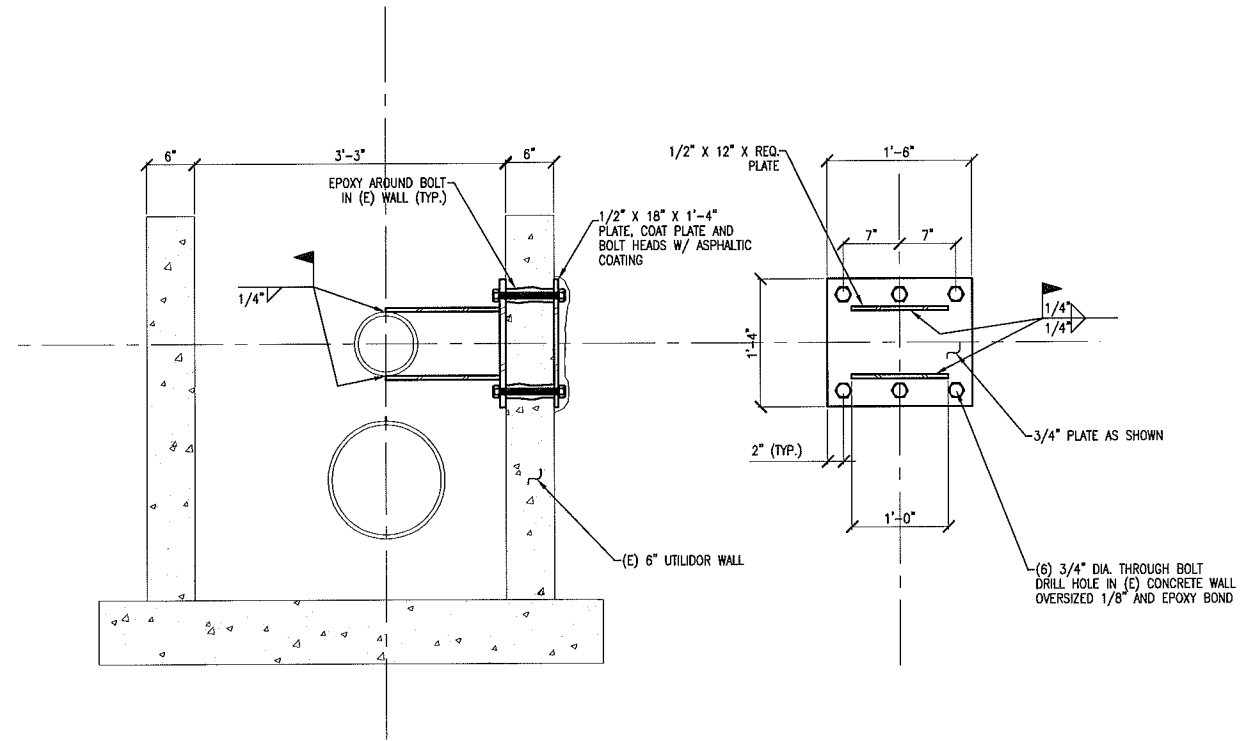
FILE: C:\USERS\CLEAVE\DOCUMENTS\APS 336A\DU CONNECTION\AUTOCAD DRAWINGS\1267800\_S5.DWG PLOTTED: Apr 12, 2011 - 10:49:59 AM (Cleave)



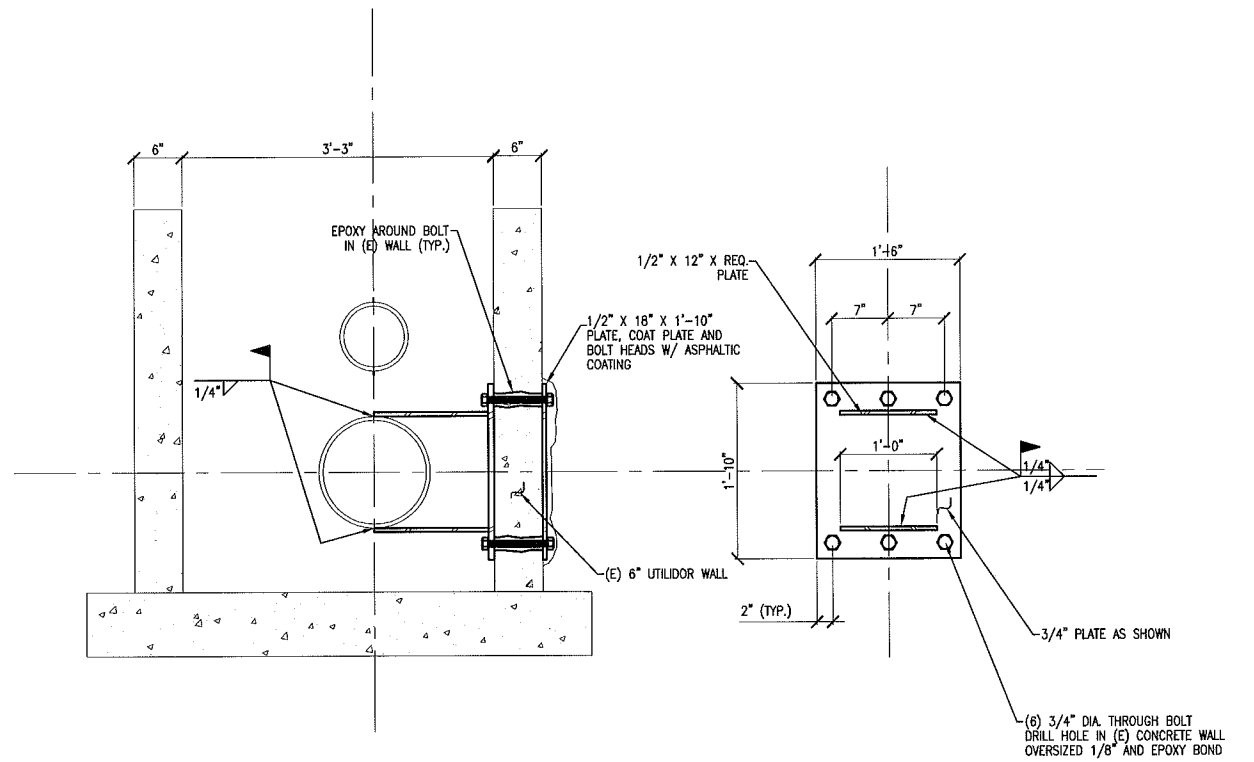
1 TEMPORARY ANCHOR PLAN  
S5 1:24 1/2" = 1'-0"



2 PERMANENT ANCHOR PLAN  
S5 1:24 1/2" = 1'-0"



3 8" DIAMETER WATER ANCHOR SECTIONS  
S5 1:12 1" = 1'-0"



4 14" DIAMETER DELUGE ANCHOR SECTIONS  
S5 1:12 1" = 1'-0"

Date Stamped: 8/6/2010

By	
Revision	
Date	

**USKH**  
SHARED VISION. UNITED APPROACH.  
Architecture • Engineering • Surveying  
Planning • Environmental Services  
2615 'A' Street  
Anchorage, Alaska 99503  
(907) 276-4245  
544 4th Avenue,  
Suite 102  
Fairbanks, Alaska 99701  
(907) 452-2128  
3017 Clinton Drive  
Suite 201  
Juneau, Alaska 99801  
(907) 700-2901  
351 W. Parks Highway  
Suite 200  
Wasilla, Alaska 99554  
(907) 376-7815  
441 W 5th Avenue,  
Suite 200  
Anchorage, Alaska 99501  
(907) 276-5885  
www.USKH.com

Project:  
TUNISTA/  
FTW 336A

TUNISTA  
FT. WAINWRIGHT, ALASKA

Project Mgr.	
Drawn	FST
Checked	GL
Date	

Sheet Contents:  
ACCESS VAULT  
G6-9-3  
TEMPORARY/  
PERMANENT  
PIPE ANCHORS

Sheet No.:

S5

USKH W.O. 1267800