

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	3-10-10	REVISED	DCA	SEW

Honeywell

Sealed Only When Signed in Blue Ink
 STEVE WOPATA
 082-04436
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF ILLINOIS
 EXP. DATE 11-30-2011

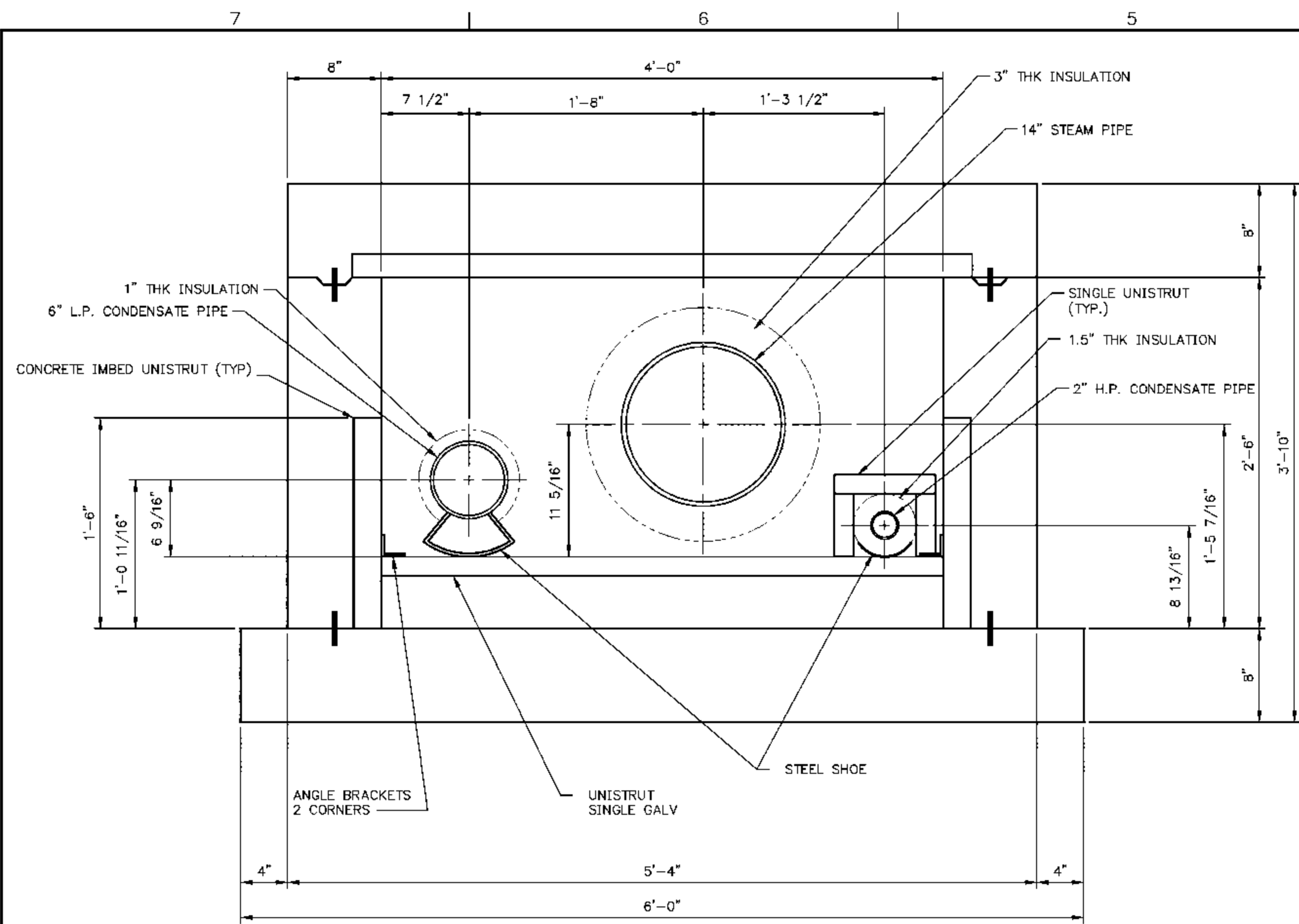
Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
 EIU PROJECT #: 10-4535

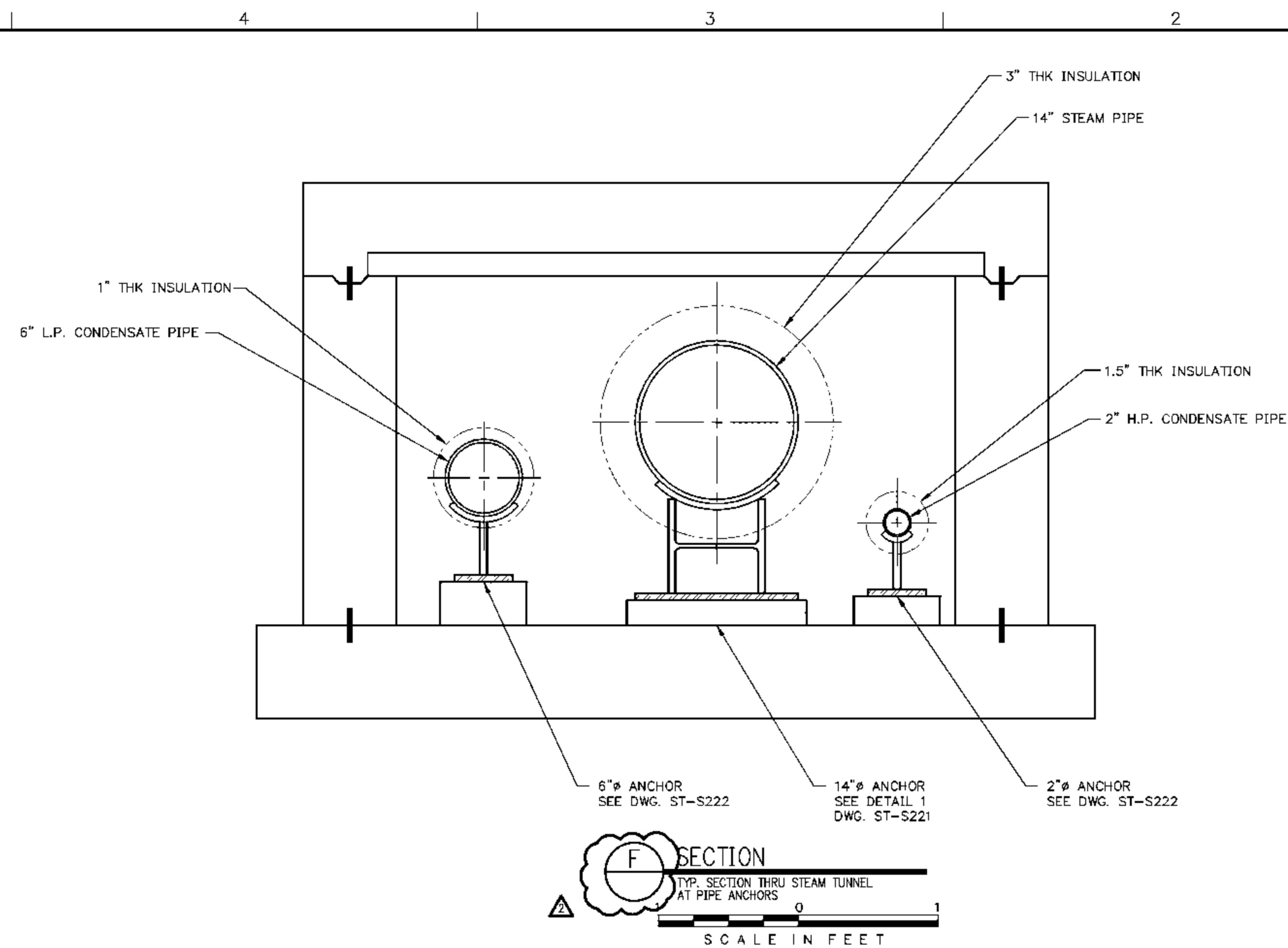
EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING
 TYPICAL SECTIONS

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 10-15-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

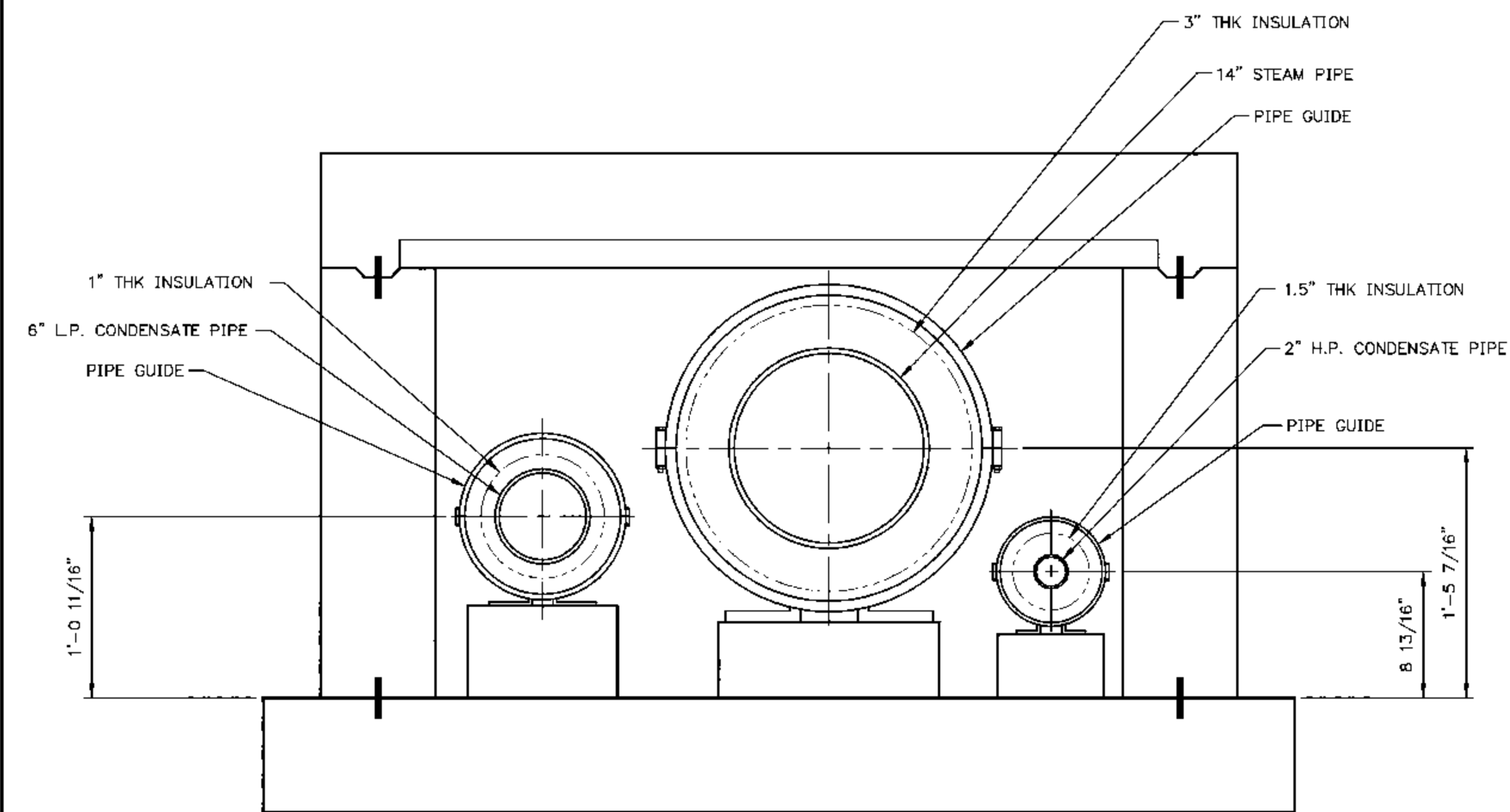
CADD FILE NAME: 090140-ST-P010
 DRAWING NO. ST-P010
 REV. 1



E SECTION
 TYP. SECTION THRU STEAM TUNNEL
 AT 2" AND 6" PIPE SUPPORTS
 SCALE IN FEET



F SECTION
 TYP. SECTION THRU STEAM TUNNEL
 AT PIPE ANCHORS
 SCALE IN FEET



1 PIPE GUIDE DETAIL
 TYP. SECTION THRU STEAM TUNNEL
 AT PIPE GUIDES
 SCALE IN FEET

NOTE:
 ACTUAL GUIDE PLACEMENT IS SHOWN
 ON DWGS. ST-P101 THRU ST-P113.

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	3-10-10	REVISED	DCA	SEW
2	5-11-10	REVISED	CMH	SEW

Sealed Only When Signed in Blue Ink



EXP. DATE 11-30-2011



Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881

16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823



EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY

EIU RENEWABLE ENERGY CENTER

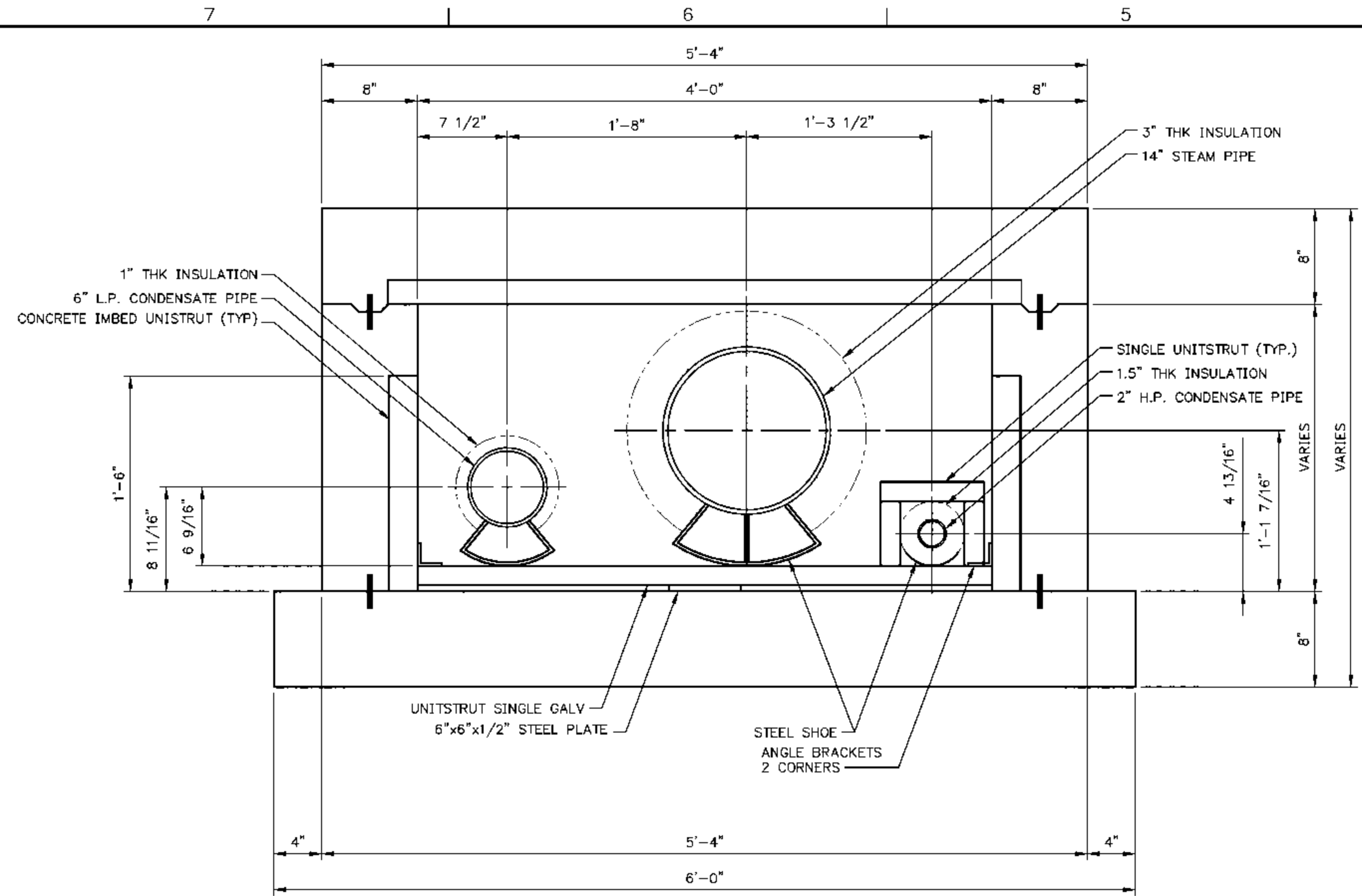
STEAM TUNNEL PIPING

TYPICAL SECTIONS - SHT. 2

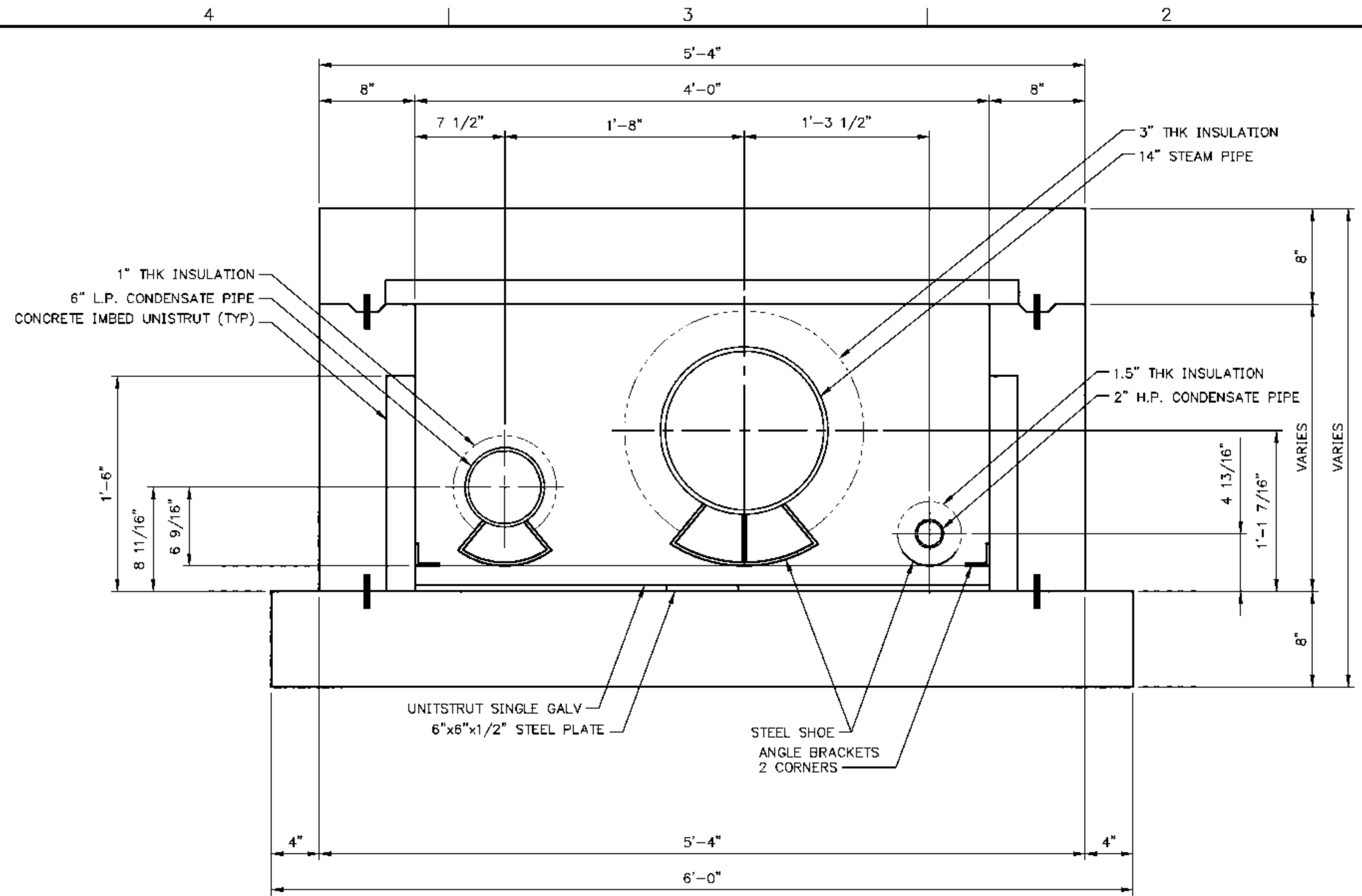
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 10-15-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P011

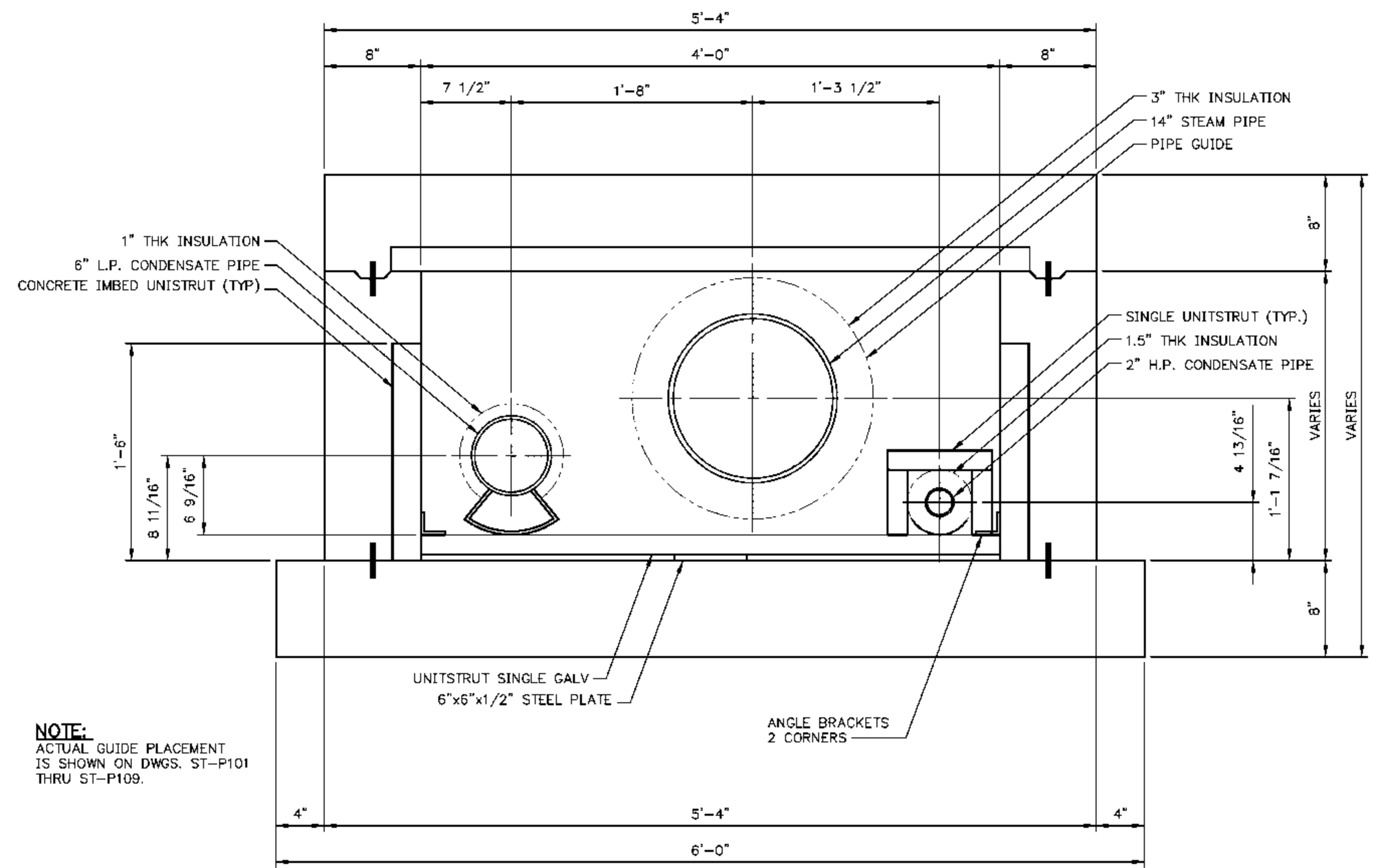
DRAWING NO. ST-P011	REV. 2
-------------------------------	------------------



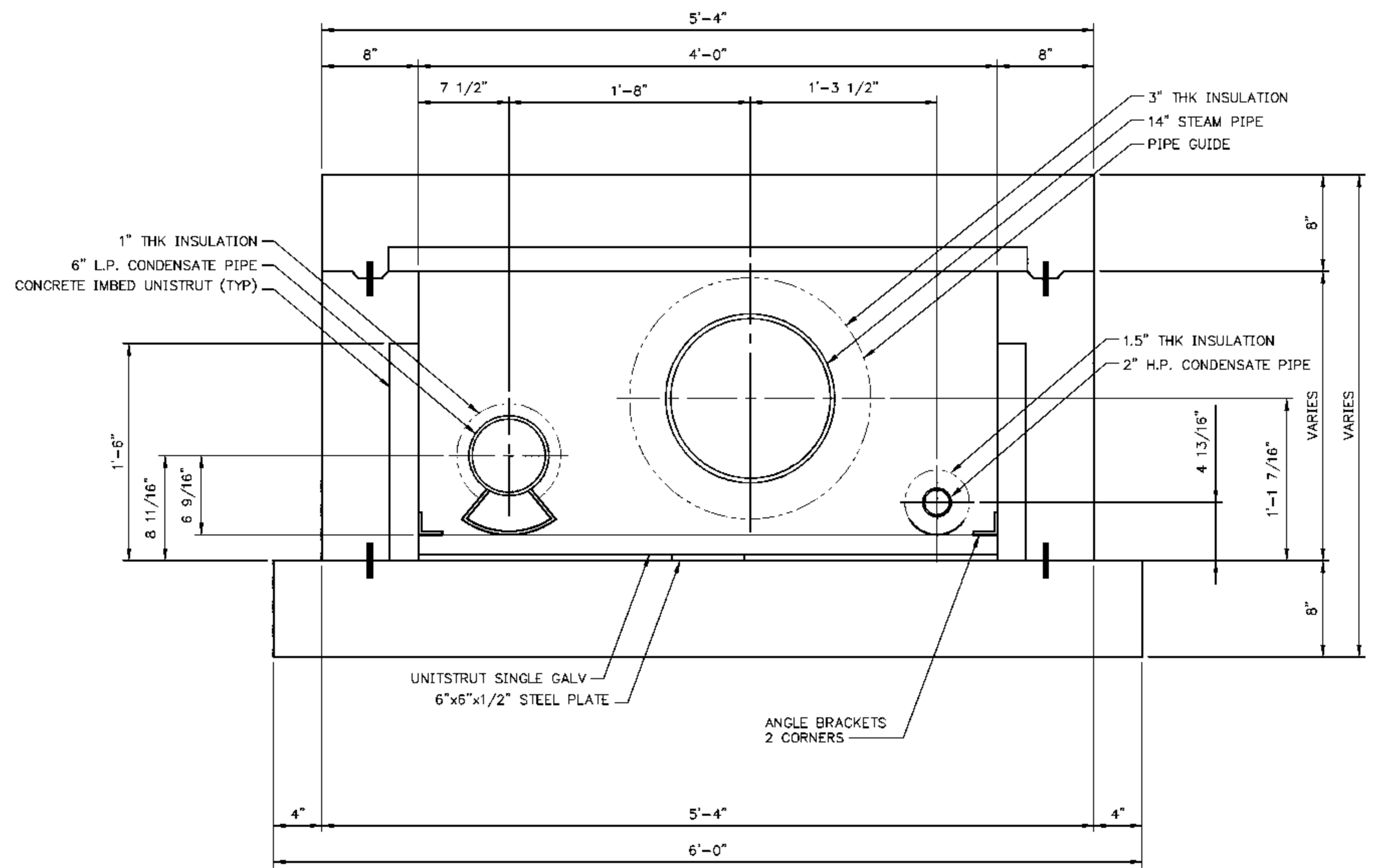
G SECTION
 TYP. SECTION THRU SHALLOW STEAM TUNNEL
 AT PIPE SUPPORTS
 SCALE IN FEET



H SECTION
 TYP. SECTION THRU SHALLOW STEAM TUNNEL
 AT PIPE SUPPORTS
 SCALE IN FEET



I SECTION
 TYP. SECTION THRU SHALLOW STEAM TUNNEL
 AT PIPE SUPPORTS
 SCALE IN FEET



J SECTION
 TYP. SECTION THRU SHALLOW STEAM TUNNEL
 AT PIPE SUPPORTS
 SCALE IN FEET

NOTE:
 ACTUAL GUIDE PLACEMENT
 IS SHOWN ON DWGS. ST-P101
 THRU ST-P109.

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW

Sealed Only When Signed in Blue Ink

EXP. DATE 11-30-2011

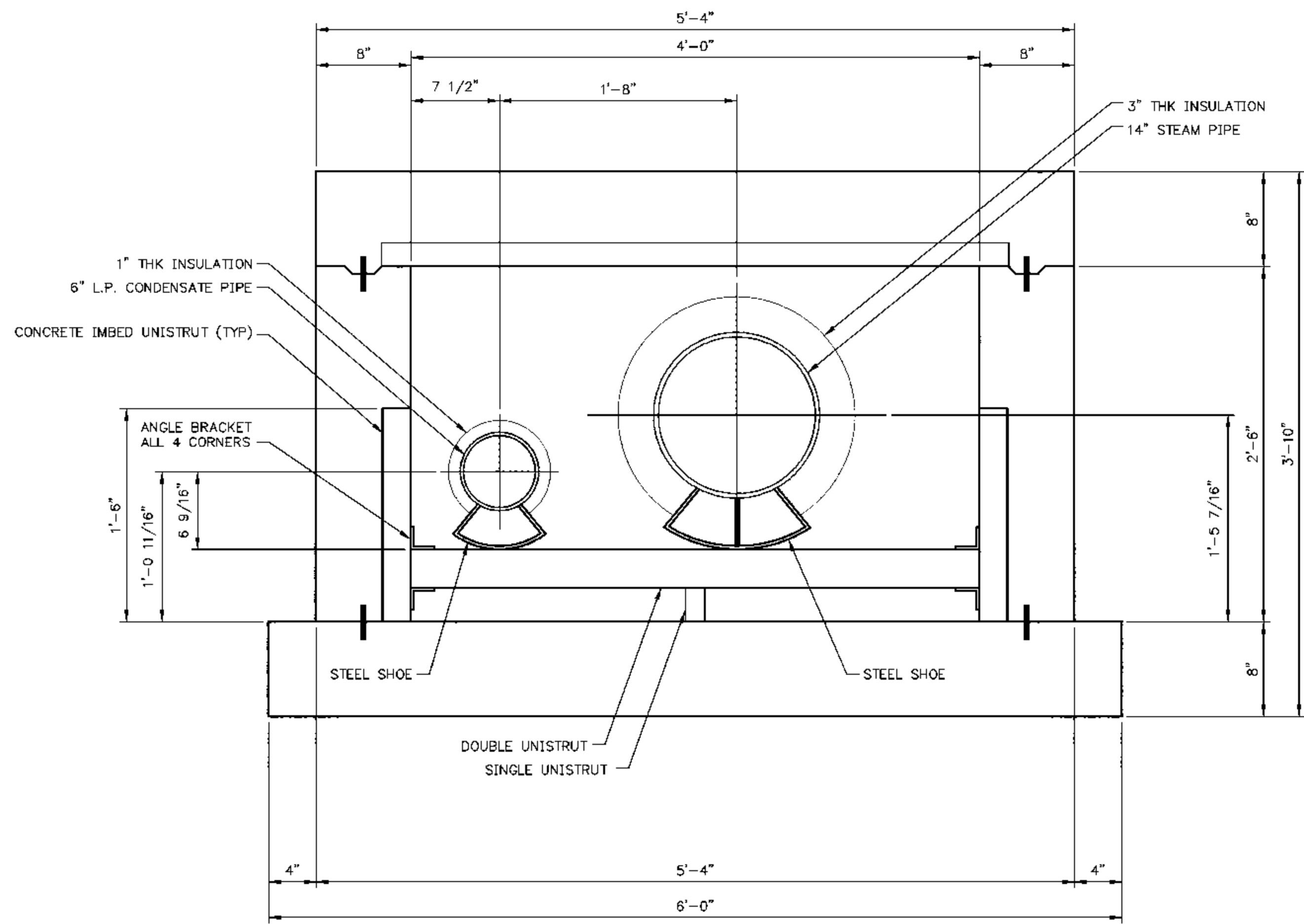
Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
 EIU PROJECT #: 10-4535

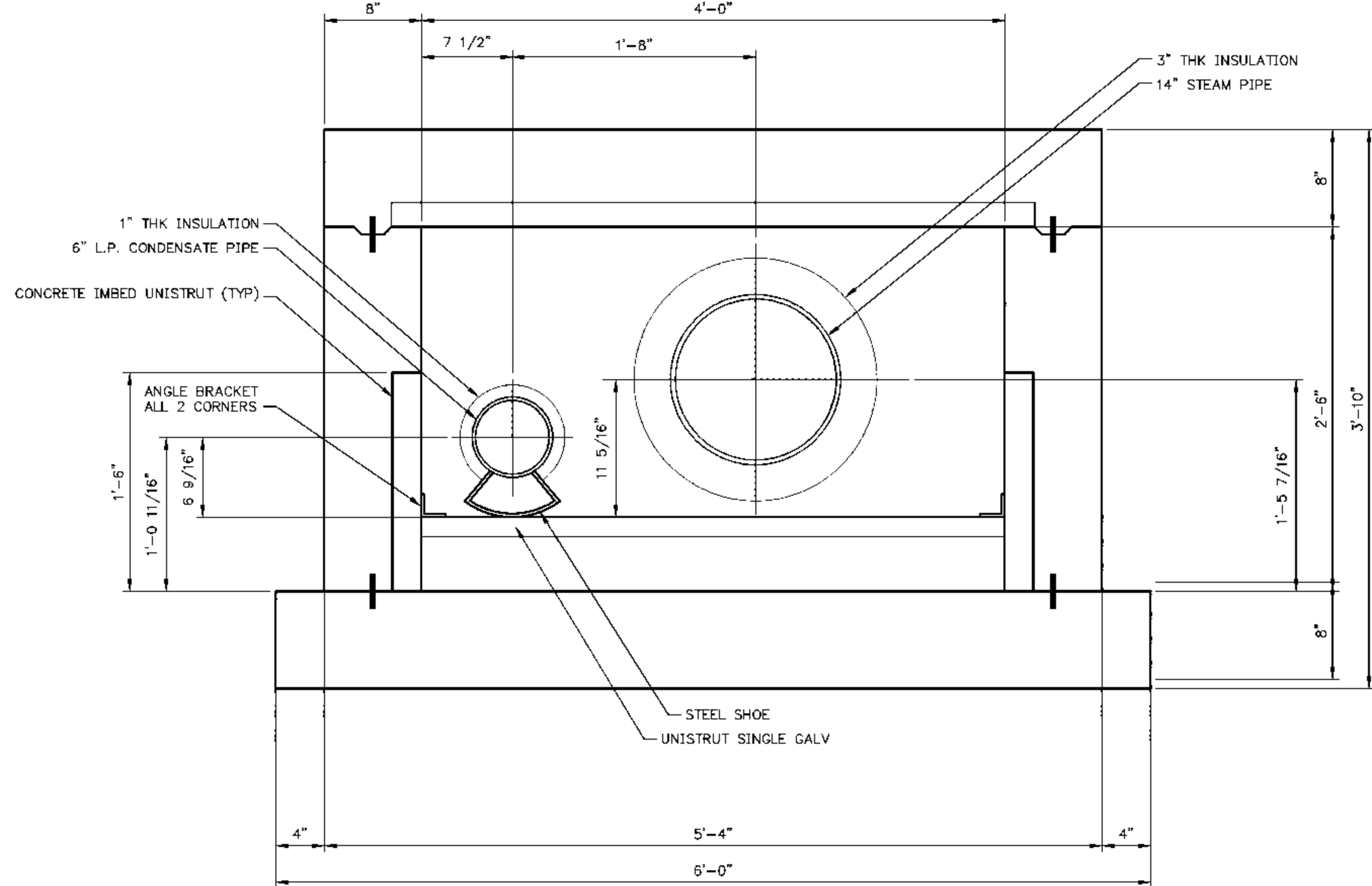
EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING
 TYPICAL SECTIONS - SHT. 3

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 10-15-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P012
 DRAWING NO. **ST-P012**
 REV. **A**



SECTION K
 TYP. SECTION THRU STEAM TUNNEL
 AT PIPE SUPPORTS PAST VAULT 13
 SCALE IN FEET
 1" = 4'-0"



SECTION L
 TYP. SECTION THRU STEAM TUNNEL
 AT 6\"/>

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW

Sealed Only When Signed in Blue Ink

Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

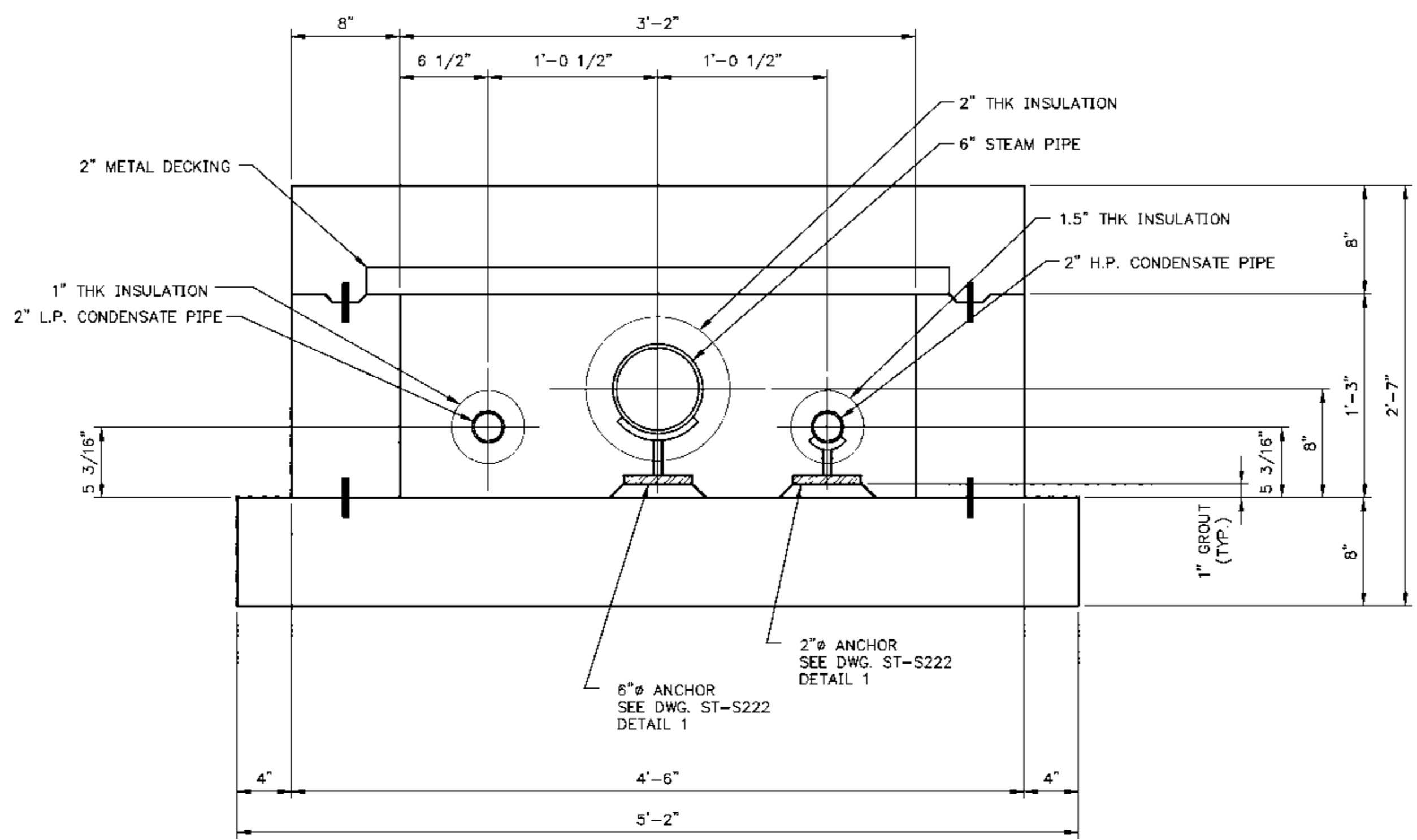
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING
 TYPICAL SECTIONS

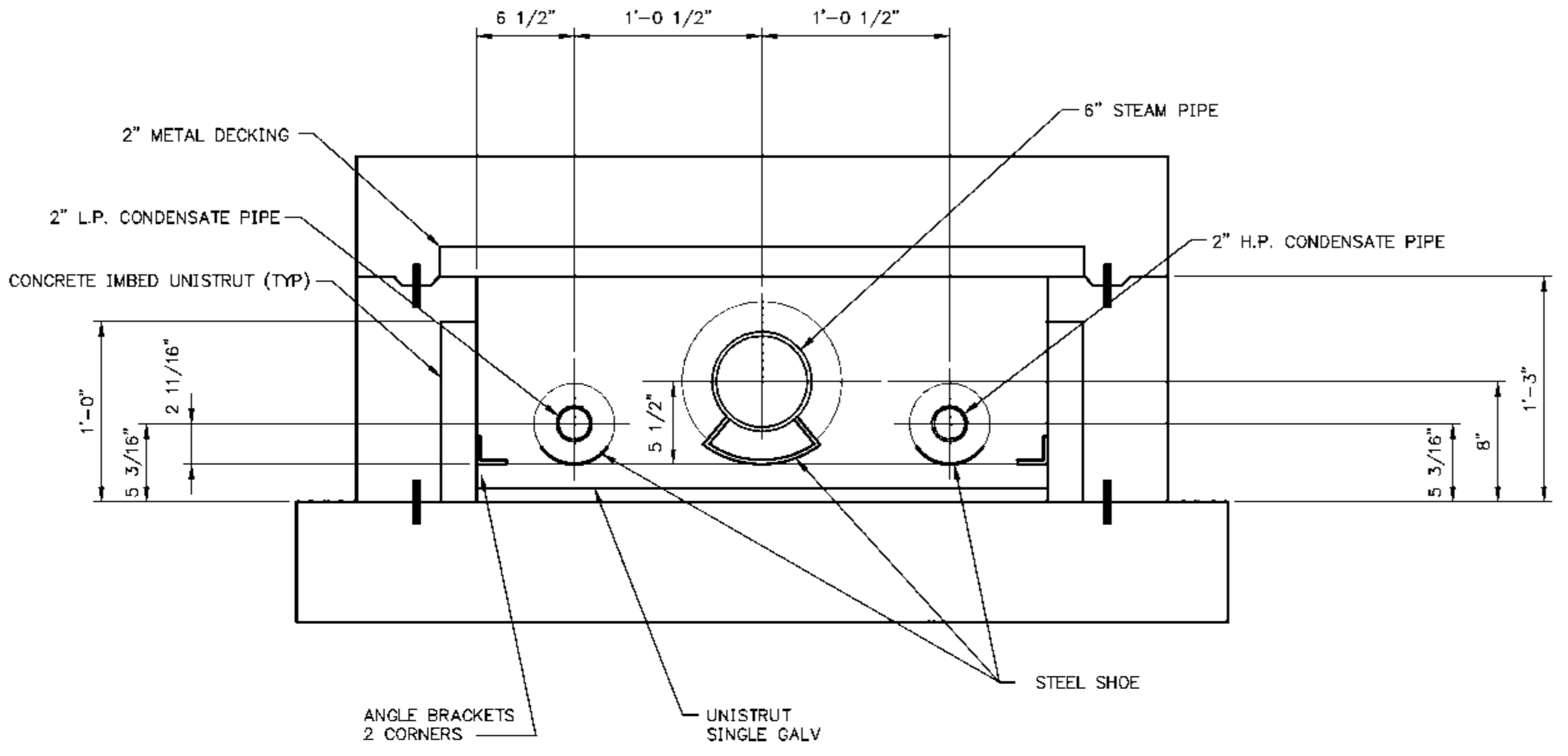
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 10-15-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140-ST-P013	REV. A
DRAWING NO. ST-P013	

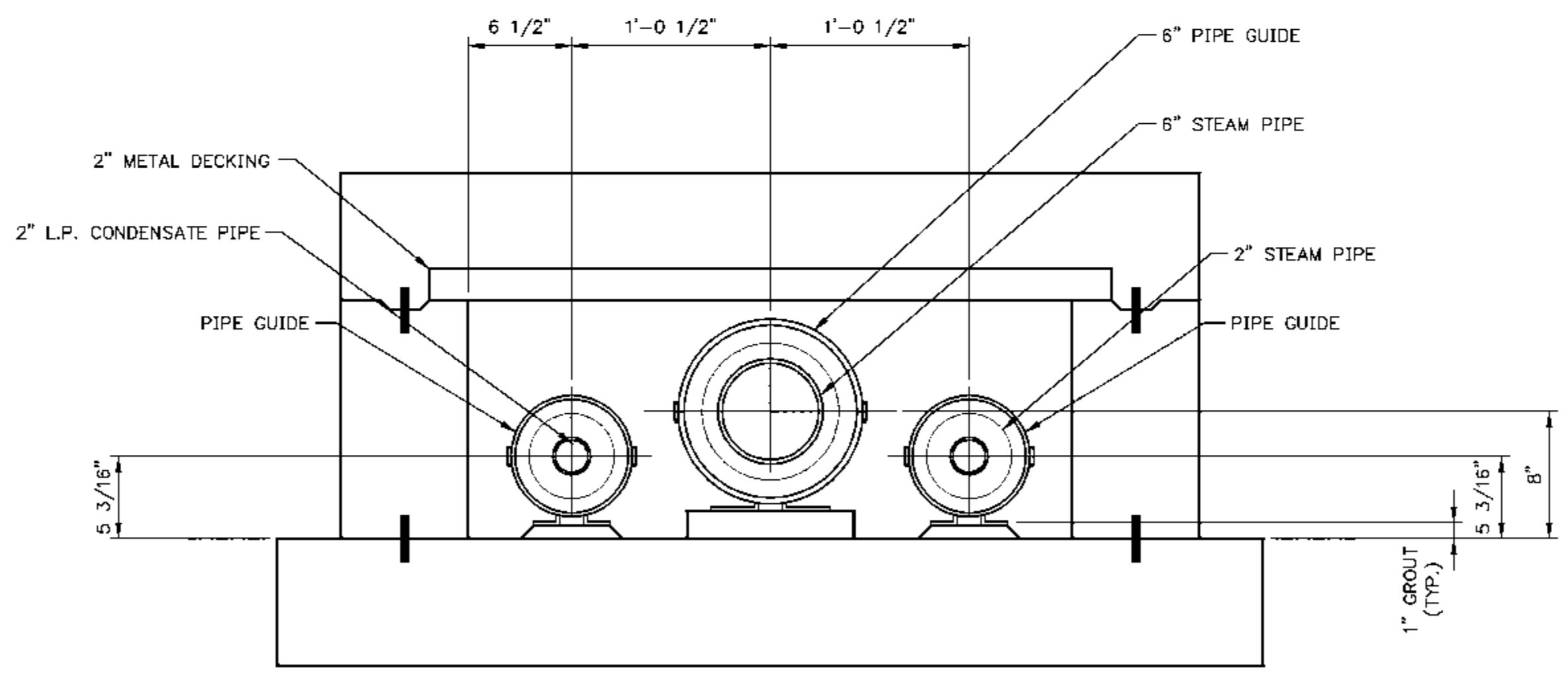
REV.	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	DCA	SEW
B	6-07-10	REVISED	DCA	SEW



A SECTION
 TYP. SECTION THRU CARMEN STEAM TUNNEL
 AT PIPE ANCHORS
 SCALE IN FEET

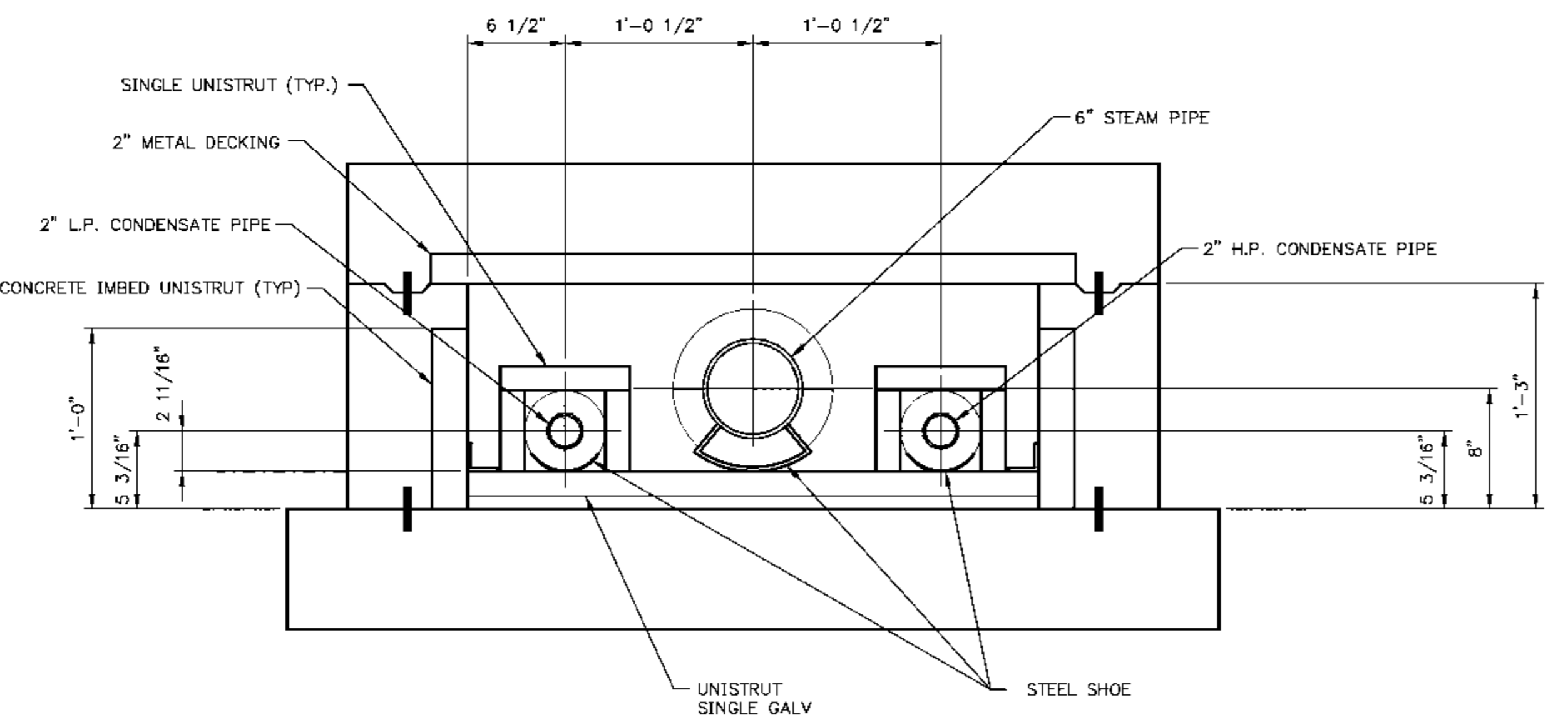


B SECTION
 TYP. SECTION THRU CARMEN STEAM TUNNEL
 AT PIPE SUPPORTS
 SCALE IN FEET



C SECTION
 TYP. SECTION THRU CARMEN STEAM TUNNEL
 AT PIPE GUIDES
 SCALE IN FEET

NOTE:
 ACTUAL GUIDE PLACEMENT IS SHOWN
 ON DWGS. ST-P150 AND ST-P151.




D SECTION
 TYP. SECTION THRU CARMEN STEAM TUNNEL
 AT PIPE SUPPORTS
 SCALE IN FEET

D

C

B

Sealed Only When Signed in Blue Ink



Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823



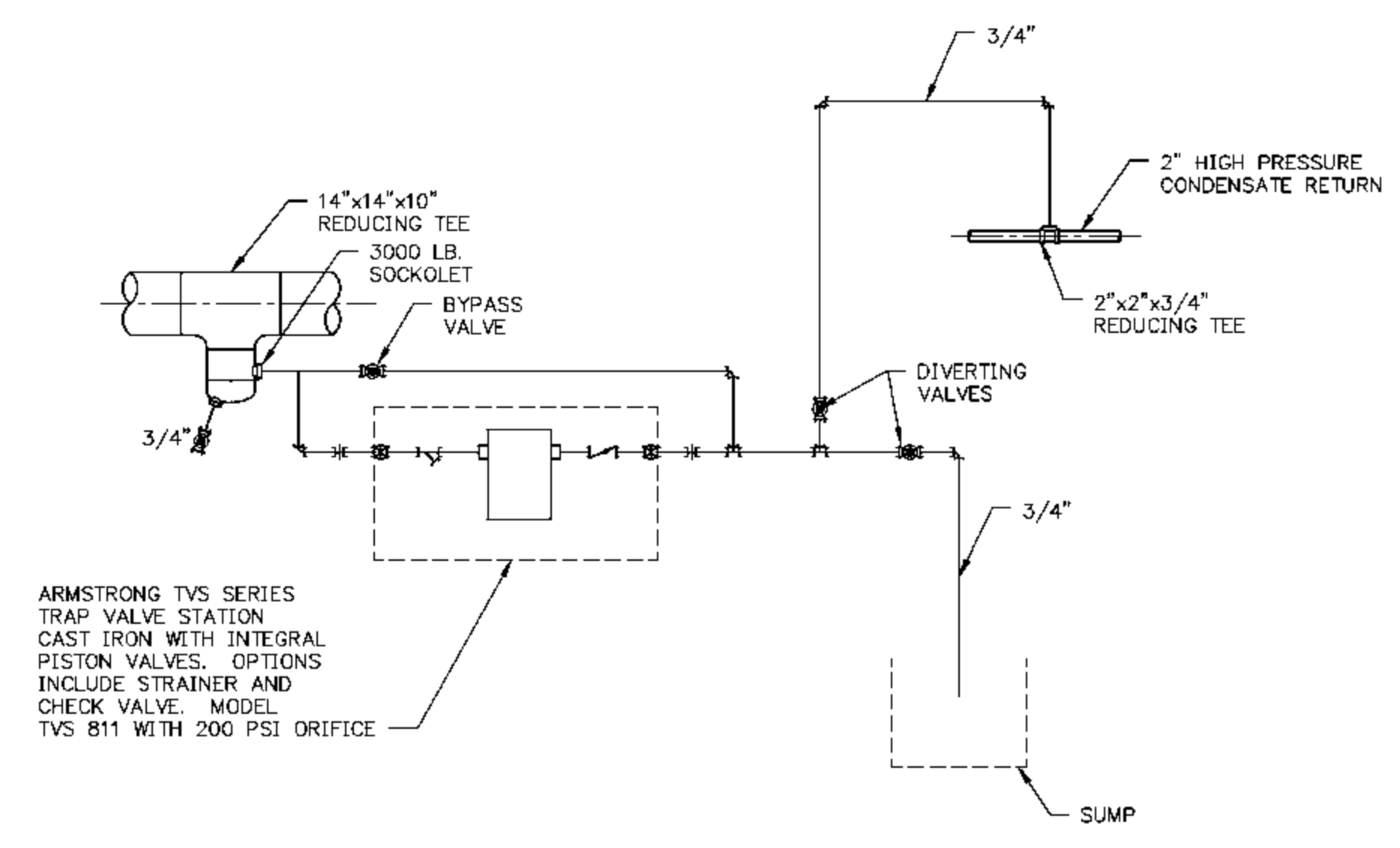
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 CARMEN HALL STEAM TUNNEL PIPING
 SECTIONS

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 1-18-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

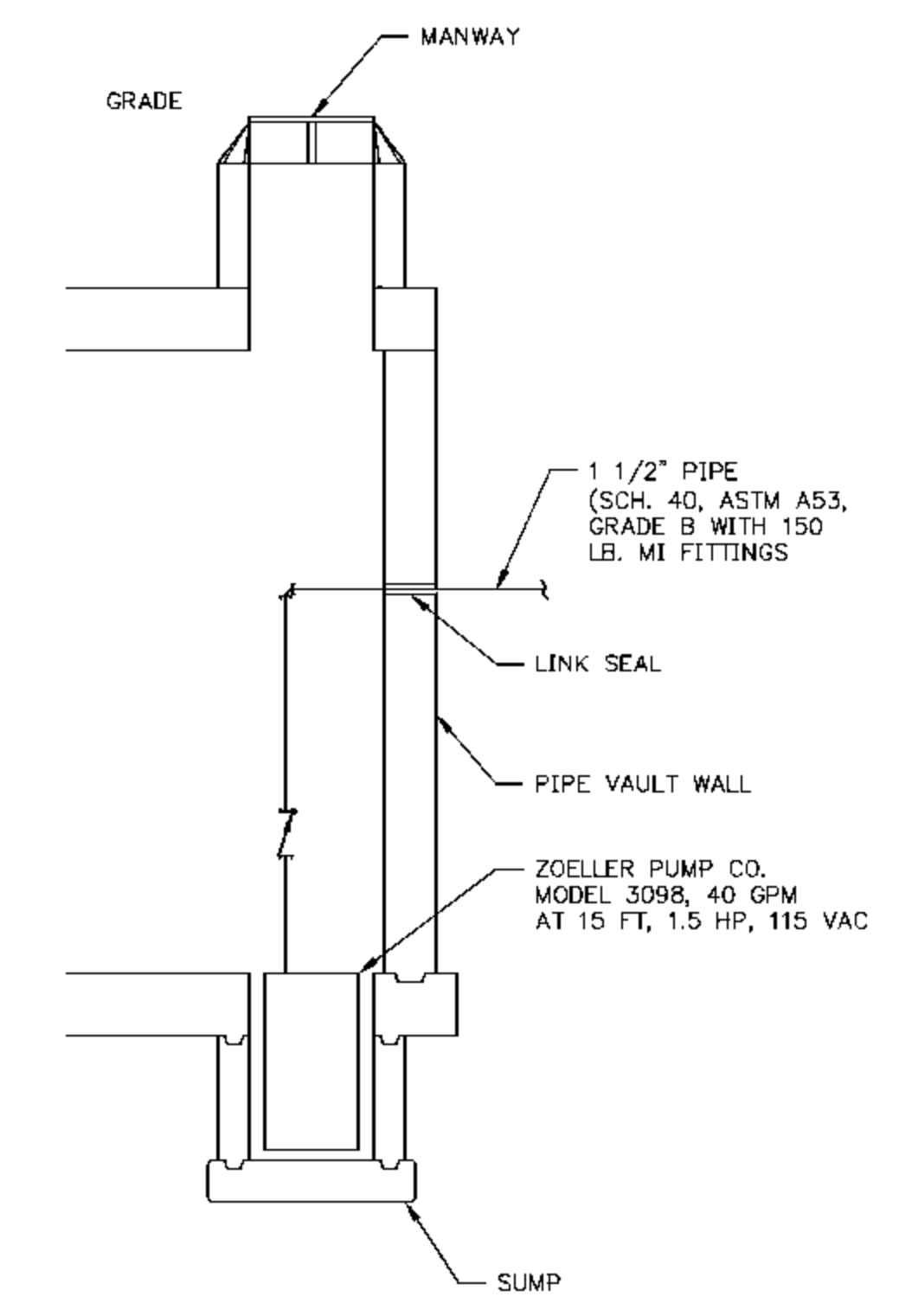
CADD FILE NAME: 090140-ST-P015	
DRAWING NO. ST-P015	REV. B

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	3-10-10	REVISED	DCA	SEW
2	5-11-10	REVISED	CMH	SEW

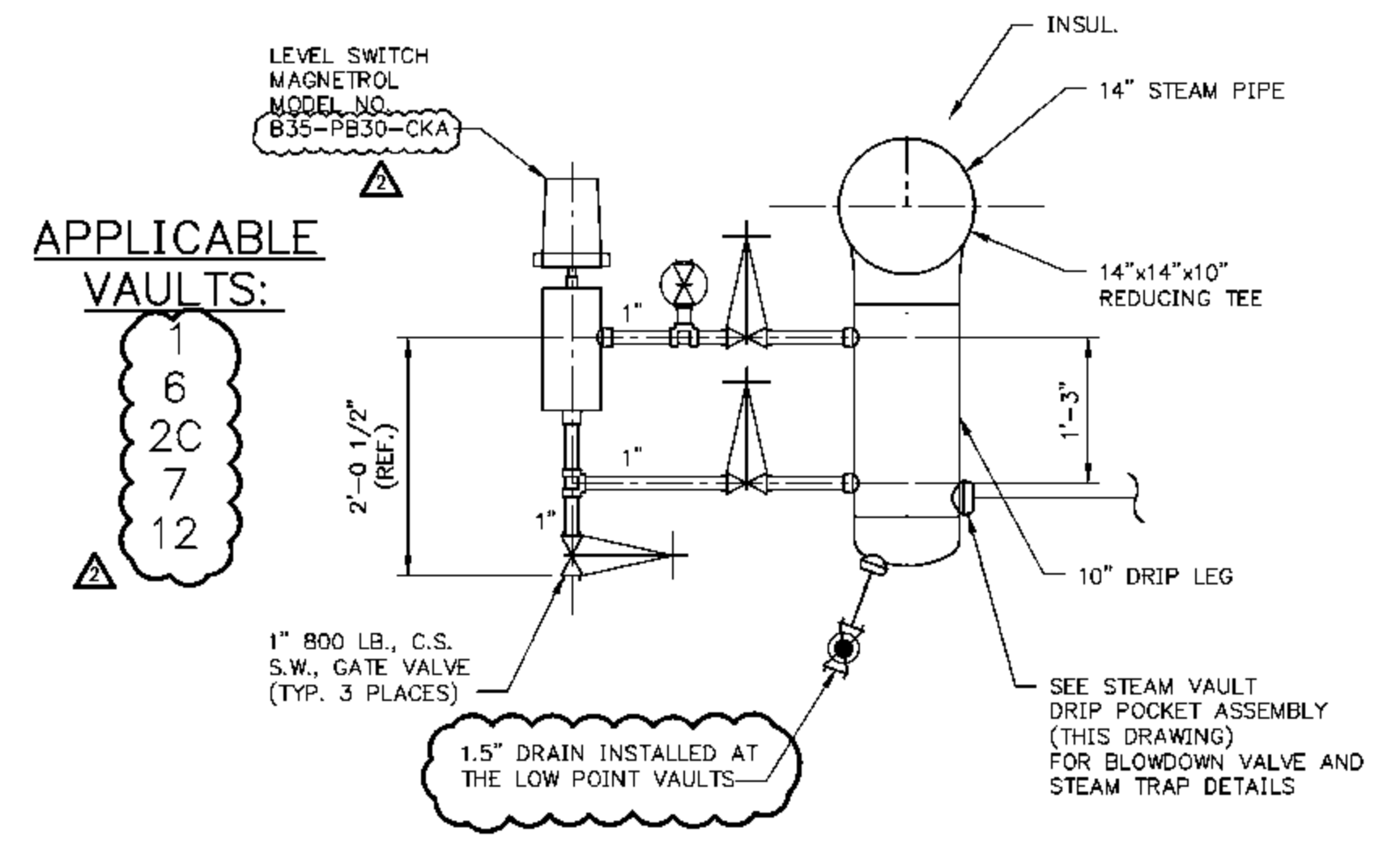


- NOTES:**
1. REFER TO PIPE SPEC AB1, DWG. ST-P300, FOR STEAM AND CONDENSATE PIPE MATERIAL.
 2. CONDENSATE PIPE INSULATION IS 1.5 IN. THICK MINERAL WOOL.

STEAM VAULT DRIP POCKET ASSEMBLY FOR STEAM TUNNEL
NOT TO SCALE



STEAM VAULT SUMP PUMP DETAIL
NOT TO SCALE



TYP. DRIP POCKET LEVEL SWITCH DETAIL



NOTE: INTENT IS TO INSTALL LEVEL SWITCHES AT LOW POINT VAULTS OF STEAM PIPING SYSTEM. DRAIN VALVES AT THESE LOW POINT VAULTS WILL BE INCREASED TO 1.5\"/>

Sealed Only When Signed in Blue Ink

EXP. DATE 11-30-2011

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING
TYPICAL DETAILS

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 12-29-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P020	DRAWING NO. ST-P020	REV. 2
-------------------------------	-------------------------------	------------------

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	5-11-10	REVISED	CMH	SEW

SEE MATCHLINE A-A BELOW FOR CONTINUATION

TUNNEL PIPE SUPPORT METHOD:

14" STEAM

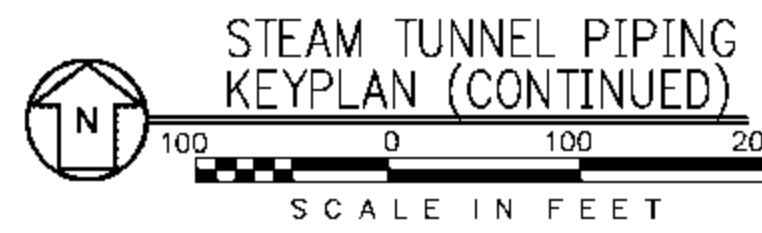
PIPING SHALL BE SUPPORTED BY DOUBLE UNISTRUT AND PIPE SHOE EVERY 30 FEET. PIPE GUIDES SHALL BE POSITIONED A MAXIMUM OF 70 FEET APART.

6" CONDENSATE

PIPING SHALL BE SUPPORTED BY SINGLE UNISTRUT AND PIPE SHOE EVERY 10 FEET AND DOUBLE UNISTRUT EVERY 30 FEET. PIPE GUIDES SHALL BE POSITIONED A MAXIMUM OF 60 FEET APART.

2" CONDENSATE

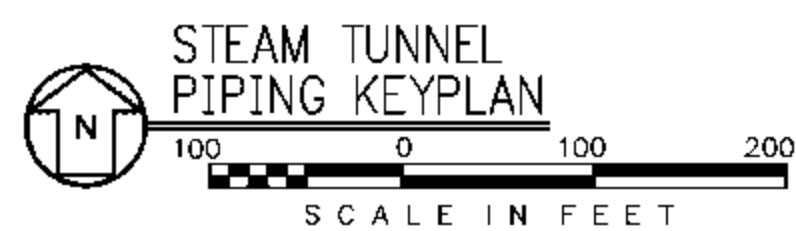
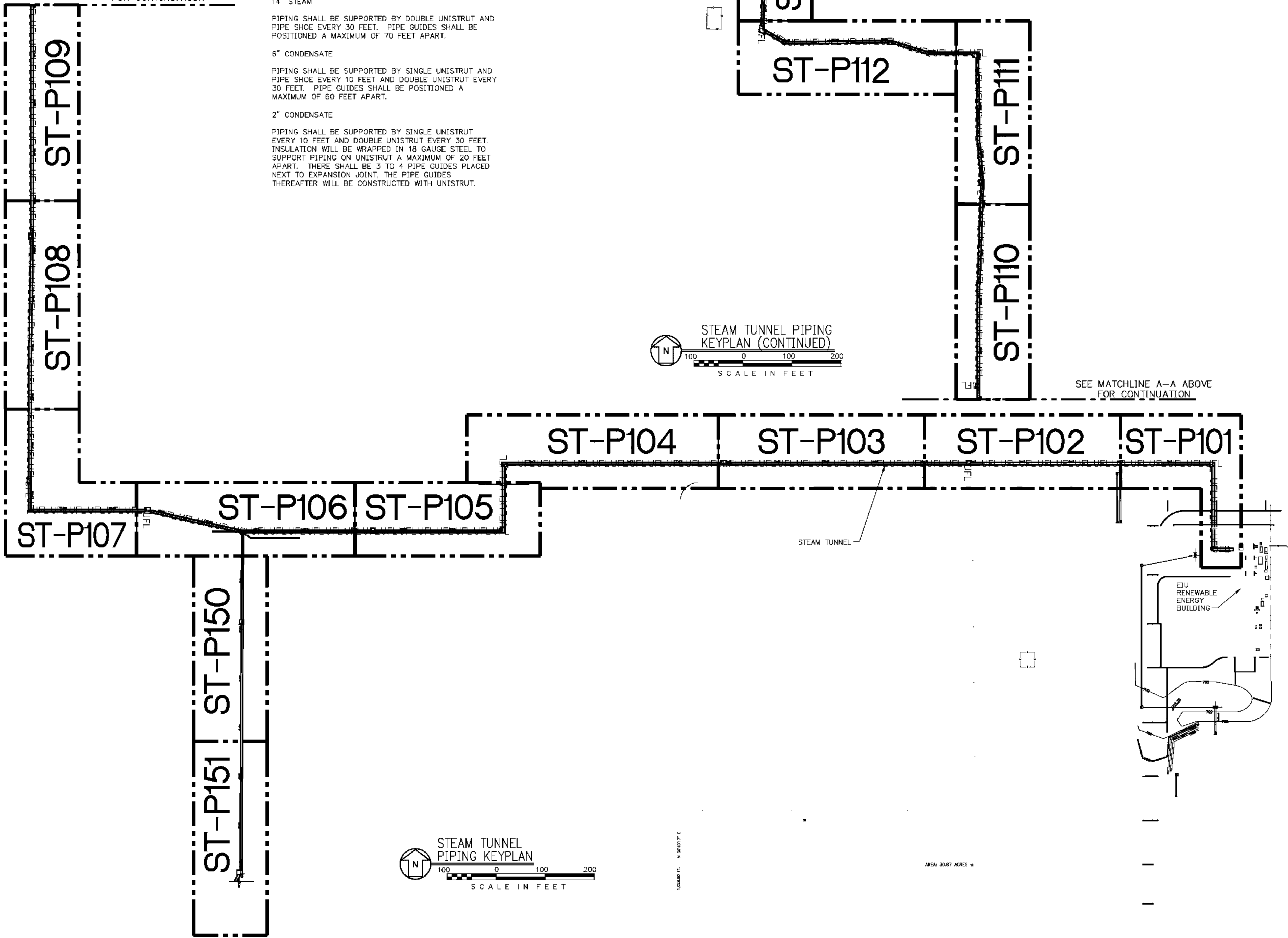
PIPING SHALL BE SUPPORTED BY SINGLE UNISTRUT EVERY 10 FEET AND DOUBLE UNISTRUT EVERY 30 FEET. INSULATION WILL BE WRAPPED IN 18 GAUGE STEEL TO SUPPORT PIPING ON UNISTRUT A MAXIMUM OF 20 FEET APART. THERE SHALL BE 3 TO 4 PIPE GUIDES PLACED NEXT TO EXPANSION JOINT, THE PIPE GUIDES THEREAFTER WILL BE CONSTRUCTED WITH UNISTRUT.



STEAM TUNNEL PIPING KEYPLAN (CONTINUED)

SCALE IN FEET

SEE MATCHLINE A-A ABOVE FOR CONTINUATION



STEAM TUNNEL PIPING KEYPLAN

SCALE IN FEET

Sealed Only When Signed in Blue Ink



EXP. DATE 11-30-2011



Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823



EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY

EIU RENEWABLE ENERGY CENTER

STEAM TUNNEL

PIPING KEYPLAN

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-9-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P100

DRAWING NO. ST-P100	REV. 1
------------------------	-----------

REV	DATE	DESCRIPTION	DRAWN	CHECKED
0	1-22-10	ISSUED FOR CONSTRUCTION	DOA	SEW

LEGEND:

- X PIPE ANCHOR LOCATION
- = PIPE GUIDE LOCATION
- I PIPE SUPPORT/UNISTRUT LOCATION
- # PIPE SUPPORT WITH UNISTRUT GUIDE

Sealed Only When Signed in Blue Ink

SEGAL

11-2-10

EXP. DATE 11-30-2011

Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 881-2881

16041 Foster
 P.O. Box 1000
 Stillwell, Kansas 66085-1000
 Illinois Licence # 184-000823

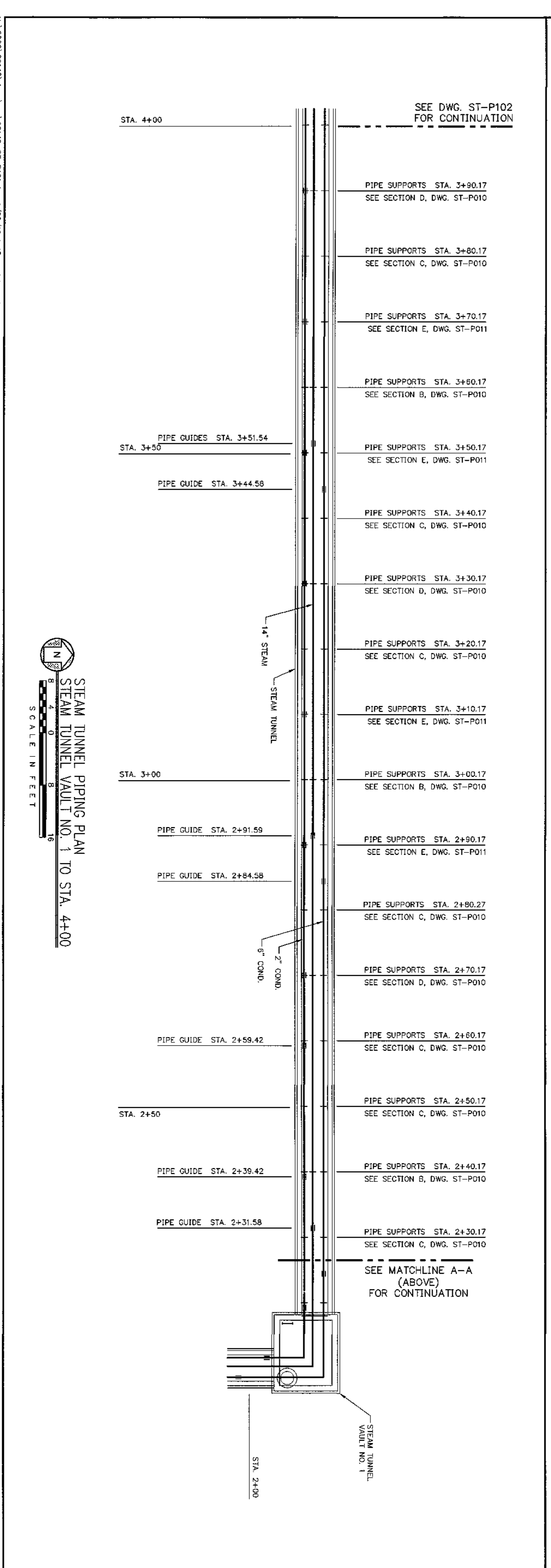
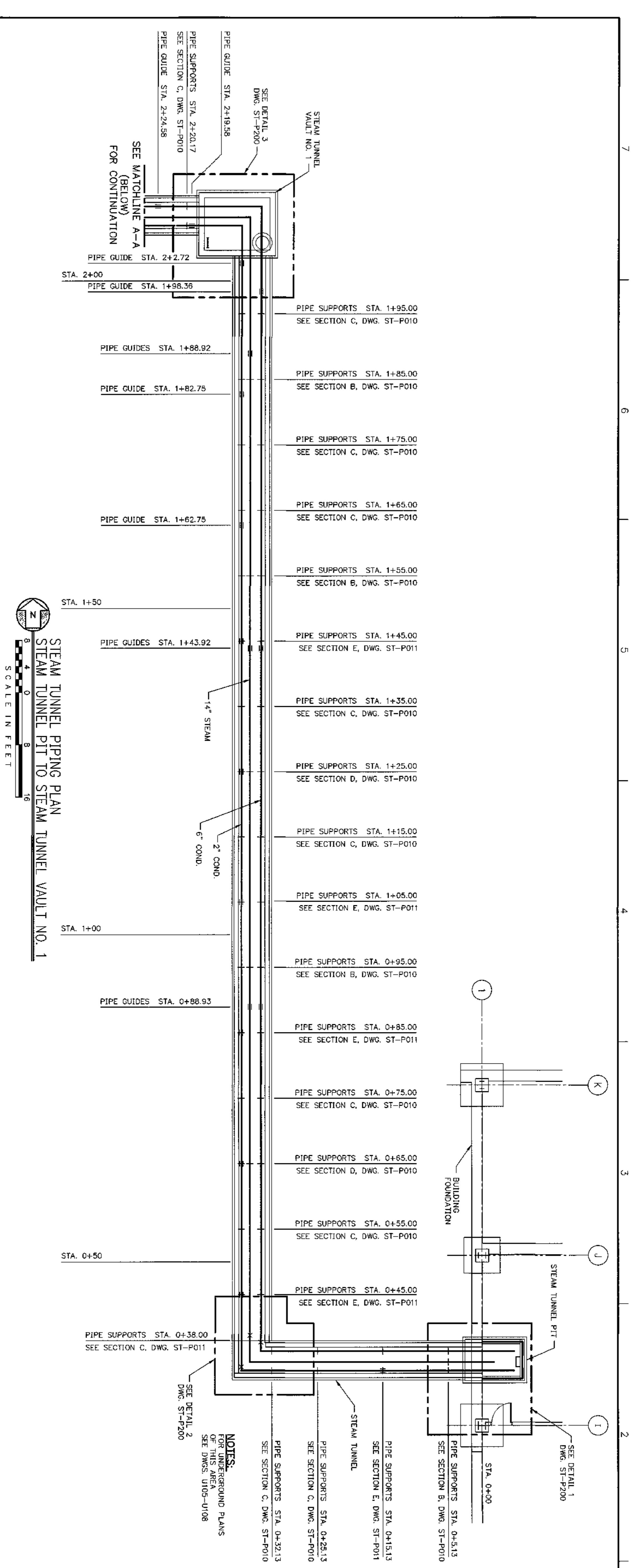
EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING PLAN
 STEAM TUNNEL PIT TO STA. 4+00

DESIGNED BY: S. WOPATA
 CHECKED BY: S. WOPATA
 DATE: 12-08-09

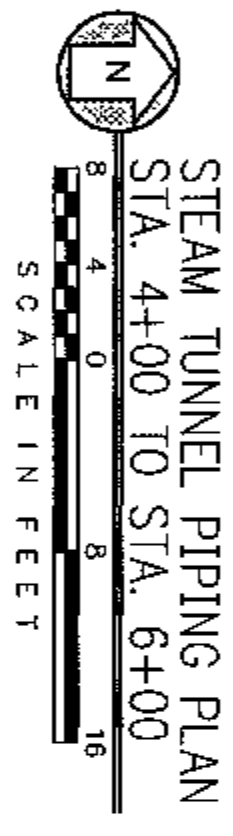
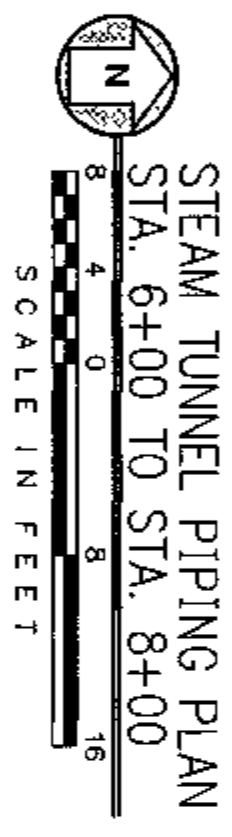
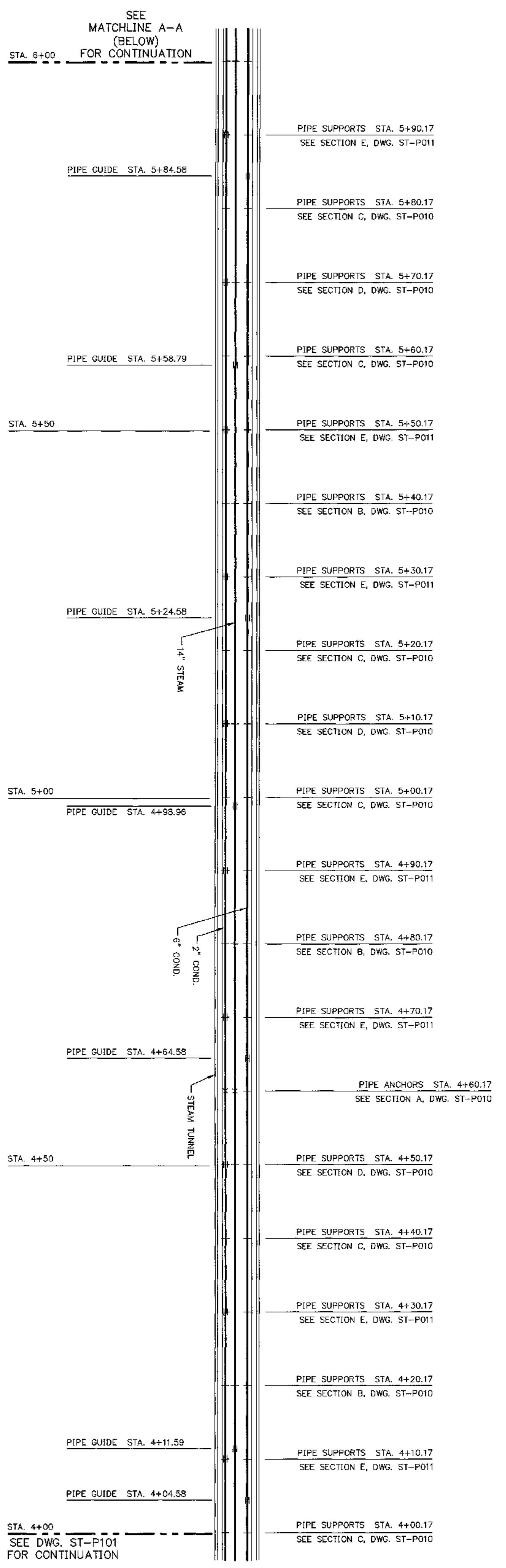
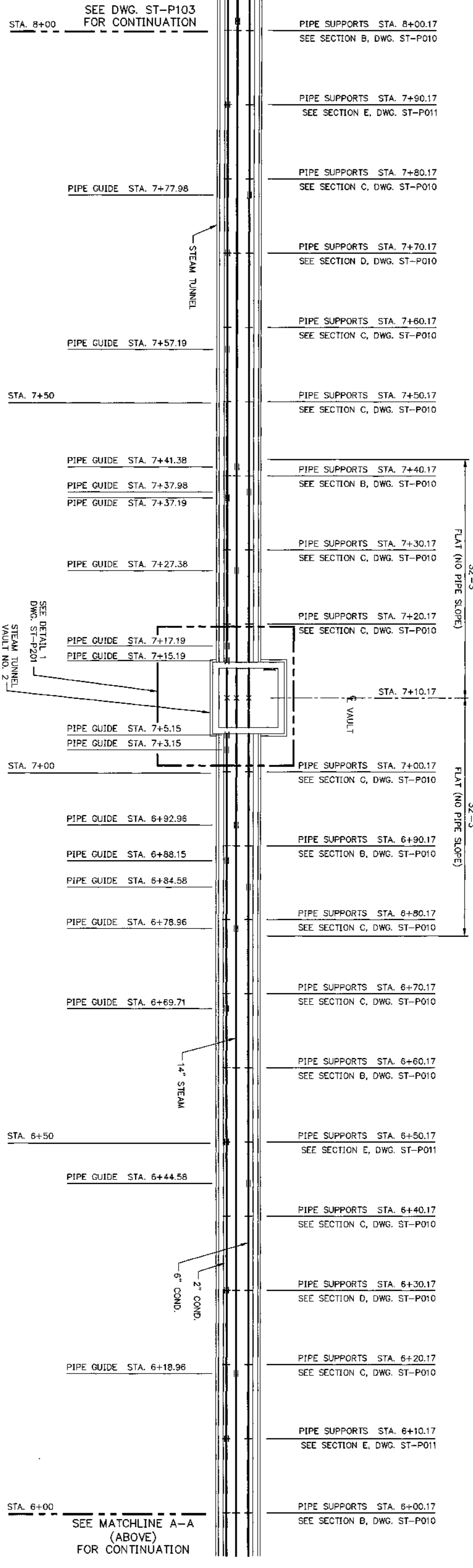
DRAWN BY: D. ALEXANDER
 CLIENT T.D.: SEGA PROJECT NO.: 090140
 CAD FILE NAME: 09140_ST-P101

DRAWING NO. **ST-P101**

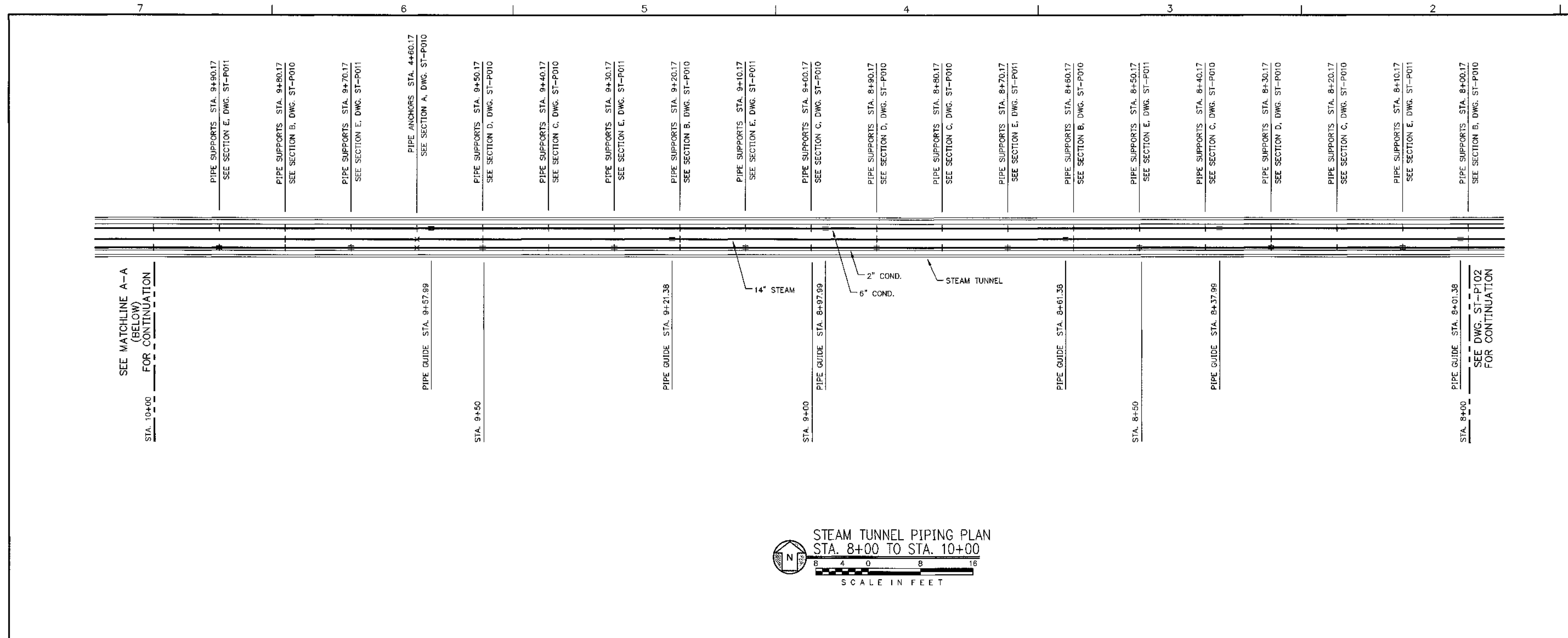
REV: **0**



N:\2009\09140\dwg\me\09140-ST-P102.dwg 1/22/10 1:45pm ddelavander

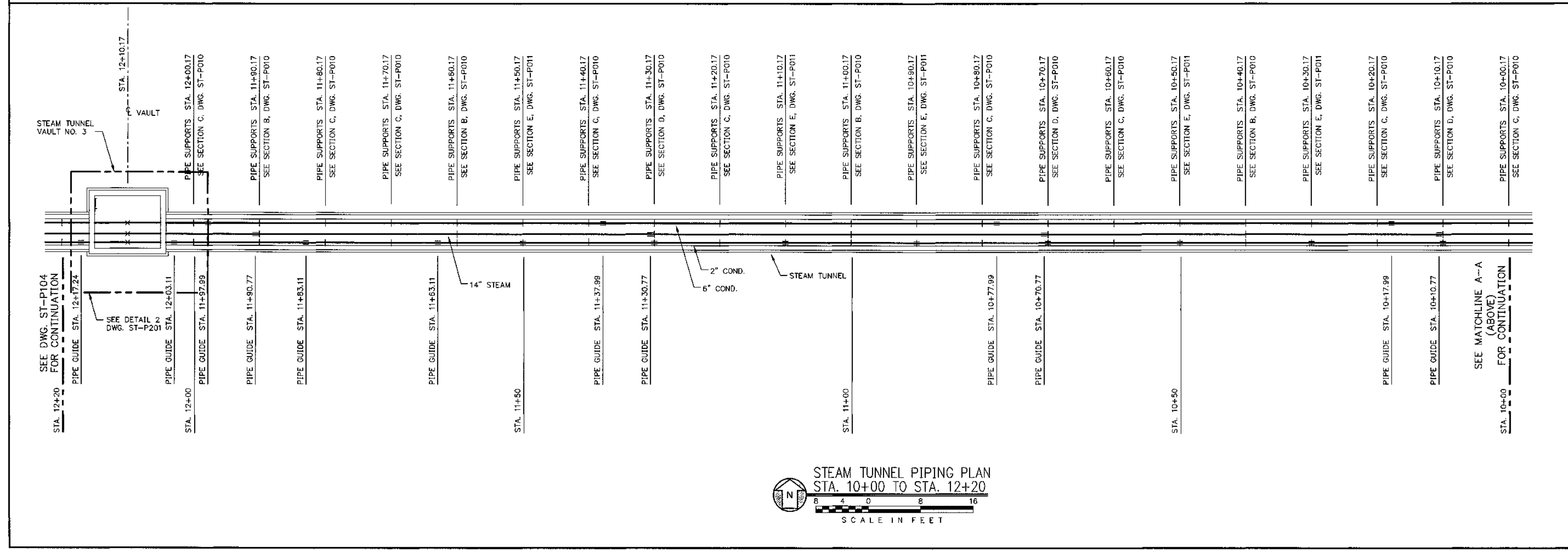


<p>REV. DATE DESCRIPTION</p> <p>0 1-22-10 ISSUED FOR CONSTRUCTION DCA/SEW</p>	<p>DNV/CHK</p>	<p>ENGINEERS - ARCHITECTS - TECHNICIANS DESIGN - CONSTRUCTION - FIELD SERVICE (913) 681-2881</p> <p>16041 Foster P.O. Box 1000 Stilwell, Kansas 66085-1000 Illinois License # 184-000823</p>	<p>SEAL</p> <p>STATE OF KANSAS REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS</p> <p>EXPIRES 11-30-2011</p> <p>1/22/10</p>	<p>Eastern Illinois University ETU RENEWABLE ENERGY CENTER STEAM TUNNEL PIPING PLAN</p> <p>STA. 4+00 TO STA. 8+00</p>	<p>DESIGN BY: S. WOPATA CHECKED BY: S. WOPATA DATE: 12-9-09</p> <p>DRAWN BY: D. ALEXANDER DATE: 12-9-09</p> <p>CLIENT: HONOLULU PROJECT NO: 090140</p> <p>CADD FILE NAME: 09140-ST-P102</p>	<p>DRAWING NO. ST-P102</p>	<p>REV.</p>
							0



STEAM TUNNEL PIPING PLAN
STA. 8+00 TO STA. 10+00

SCALE IN FEET

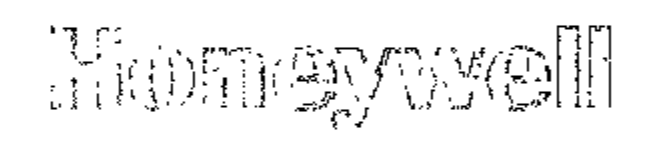


STEAM TUNNEL PIPING PLAN
STA. 10+00 TO STA. 12+20

SCALE IN FEET

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW

- LEGEND:**
- X PIPE ANCHOR LOCATION
 - PIPE GUIDE LOCATION
 - I PIPE SUPPORT/UNISTRUT LOCATION
 - ± PIPE SUPPORT WITH UNISTRUT GUIDE



Scaled Only When Signed in Blue Ink

Steve Wopata
1/22/10

EXP. DATE 11-30-2011



Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois Licence # 184-000823



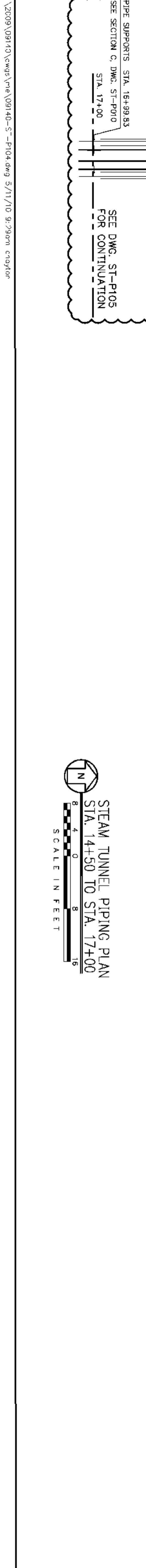
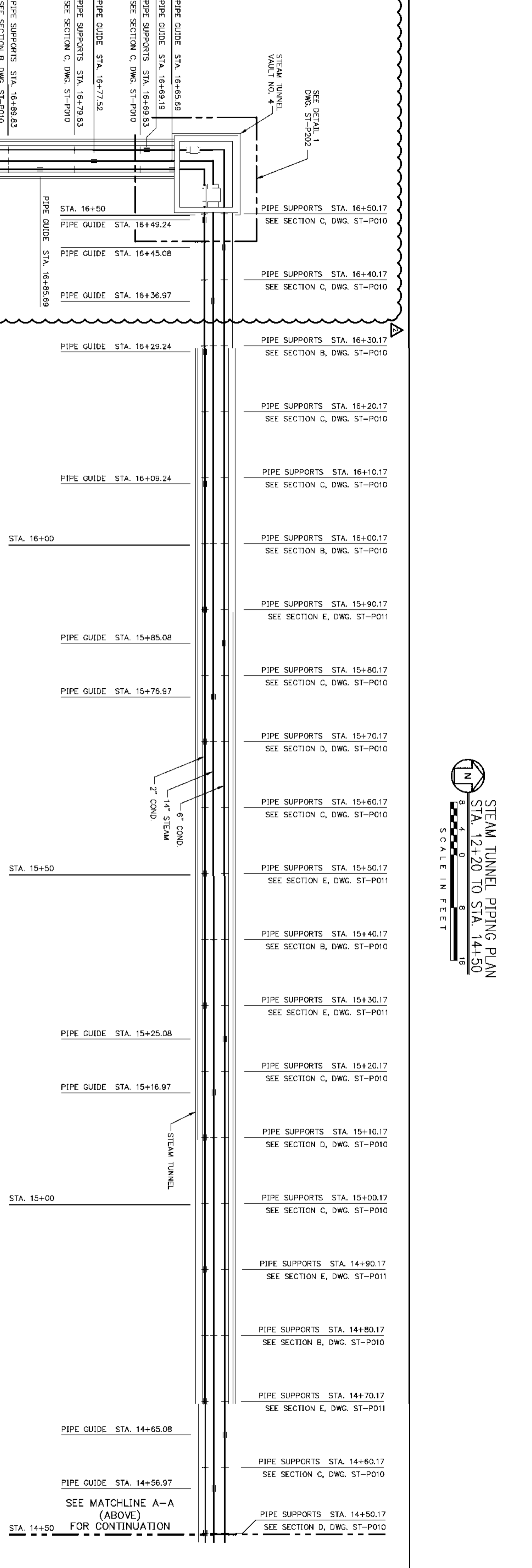
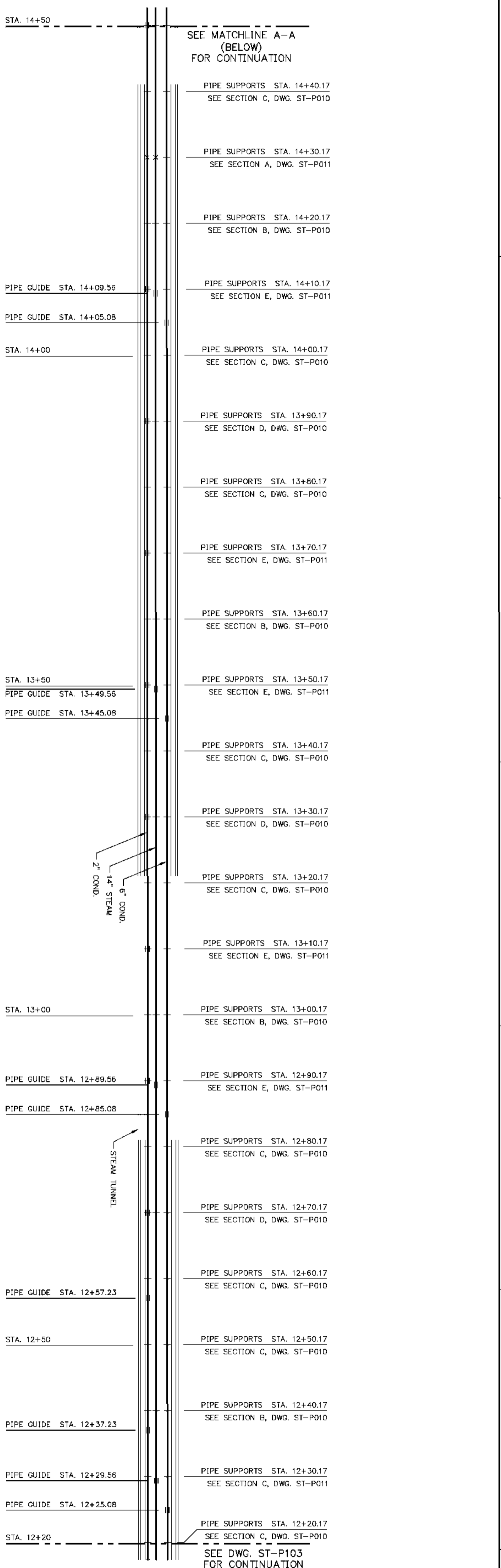
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 8+00 TO STA. 12+20

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-9-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140_ST-P103
DRAWING NO.
ST-P103

REV.
0

7
6
5
4
3
2



REV	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	2-18-10	HOLD REMOVED	DCA	SEW
2	5-11-10	REVISED	CWH	SEW

LEGEND:
 x PIPE ANCHOR LOCATION
 = PIPE GUIDE LOCATION
 | PIPE SUPPORT/INSTRUCT LOCATION
 ± PIPE SUPPORT WITH INSTRUCT GUIDE

Sealed Only When Signed in Blue Ink

Exp. DATE 11-30-2011

Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING PLAN
 STA. 12+20 TO STA. 17+00

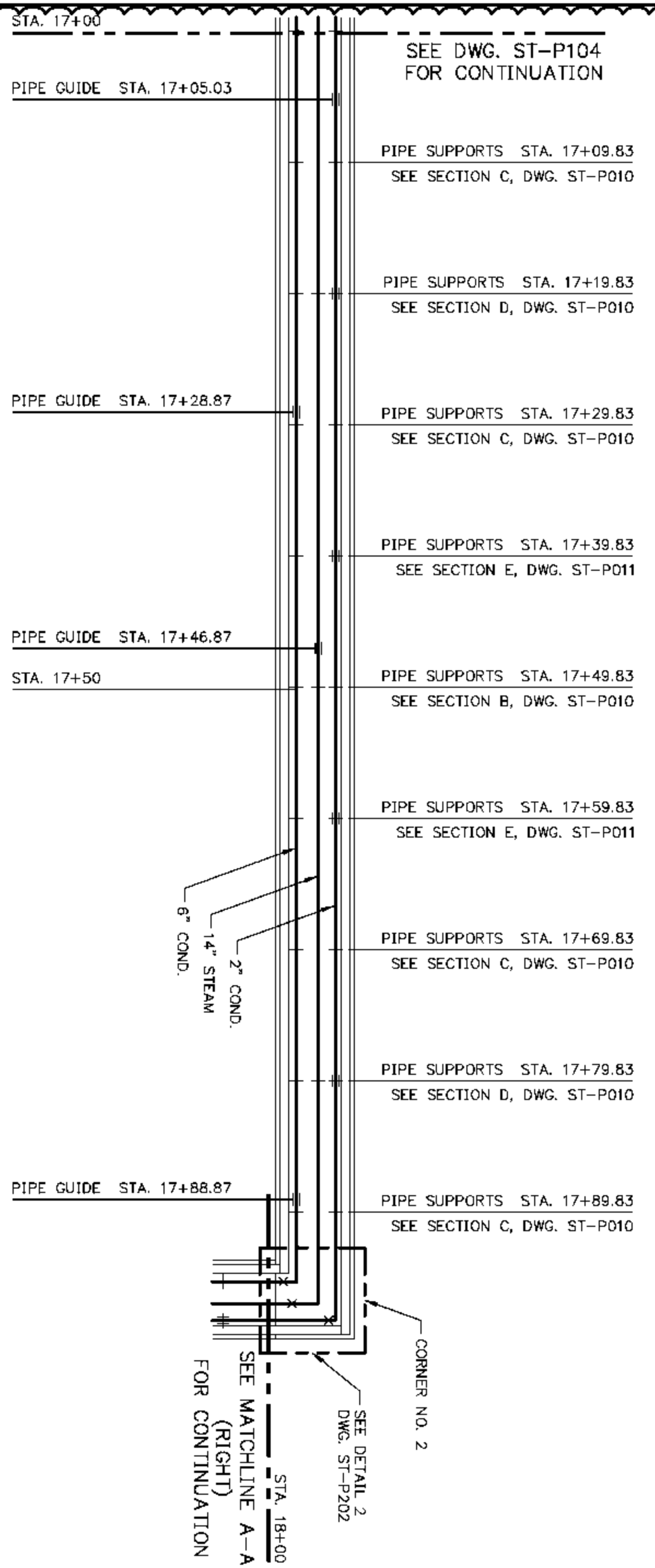
DESIGN BY: C. WARD
 CHECKED BY: S. WOPATA
 DRAWN BY: D. ALEXANDER
 CLIENT ID: HON00103
 DATE: 12-9-09
 SEGA PROJECT NO: 090140
 CADD FILE NAME: 09140_ST-P104

ST-P104

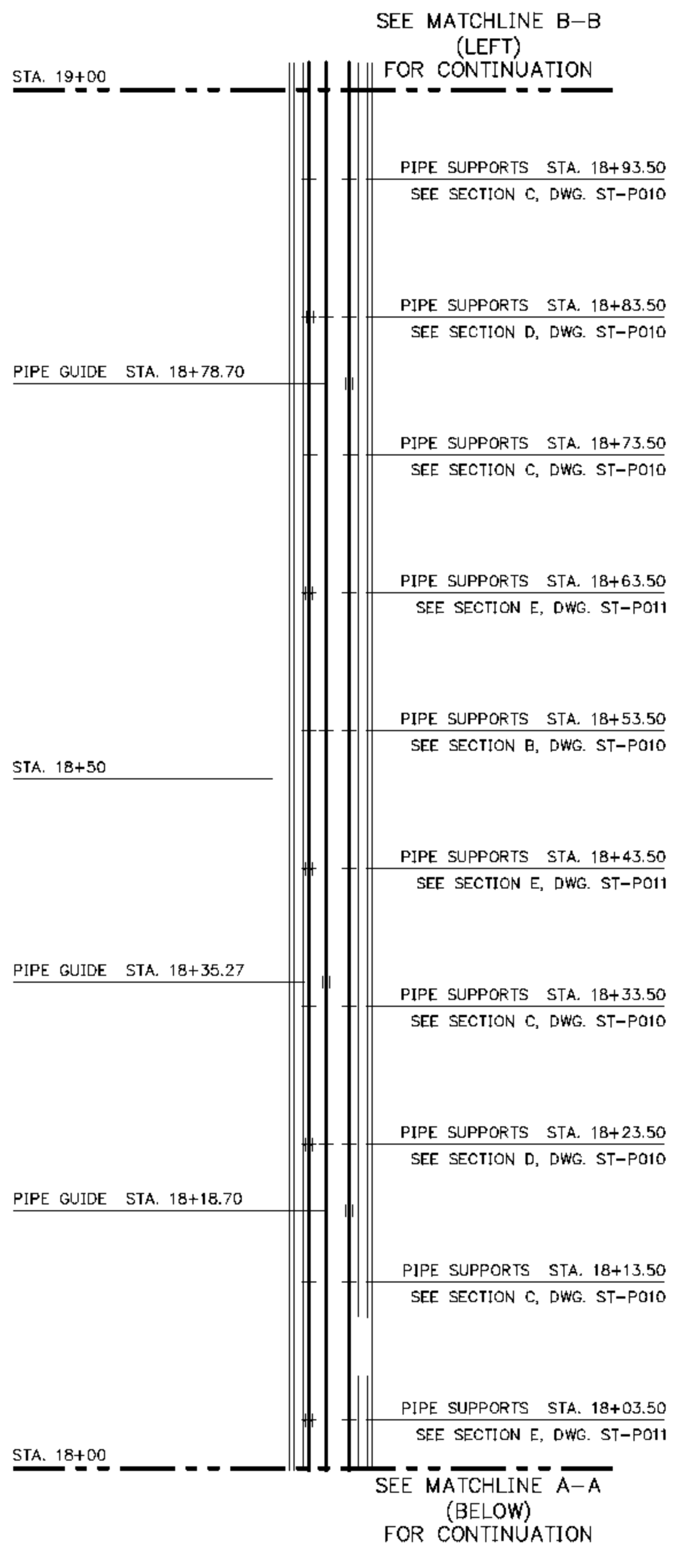
DRAWING NO. 2

N:\2009\09140\segs\p104\09140-ST-P104.dwg 5/11/10 8:29am cswyler

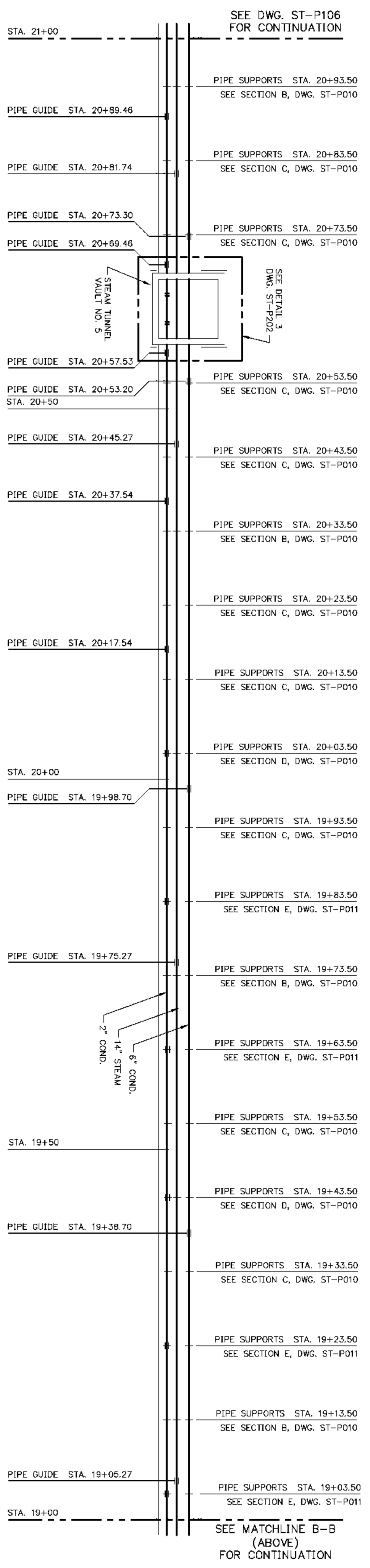
REV	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	MCB	SEW
B	5-11-10	REVIEW	OMH	SEW



STEAM TUNNEL PIPING PLAN
STA. 17+00 TO STA. 18+00
SCALE IN FEET



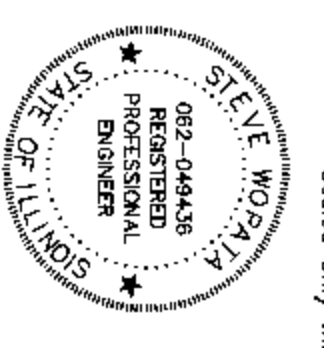
STEAM TUNNEL PIPING PLAN
STA. 18+00 TO STA. 19+00
SCALE IN FEET



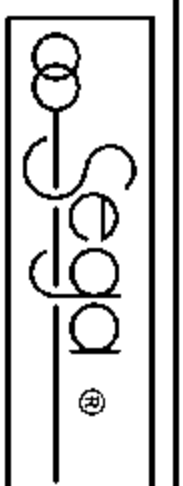
STEAM TUNNEL PIPING PLAN
STA. 19+00 TO STA. 21+00
SCALE IN FEET

I:\2009\09140\dwg\19e\09140-S-17-03.dwg 5/11/10 1:51pm csh/xdn

- LEGEND:**
- x PIPE ANCHOR LOCATION
 - PIPE GUIDE LOCATION
 - I PIPE SUPPORT/UNISTRUT LOCATION
 - # PIPE SUPPORT WITH UNISTRUT GUIDE



Sealed Only When Signed in Blue Ink
EXP. DATE 11-30-2011



Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stillwell, Kansas 66085-1000
Illinois License # 184-000823

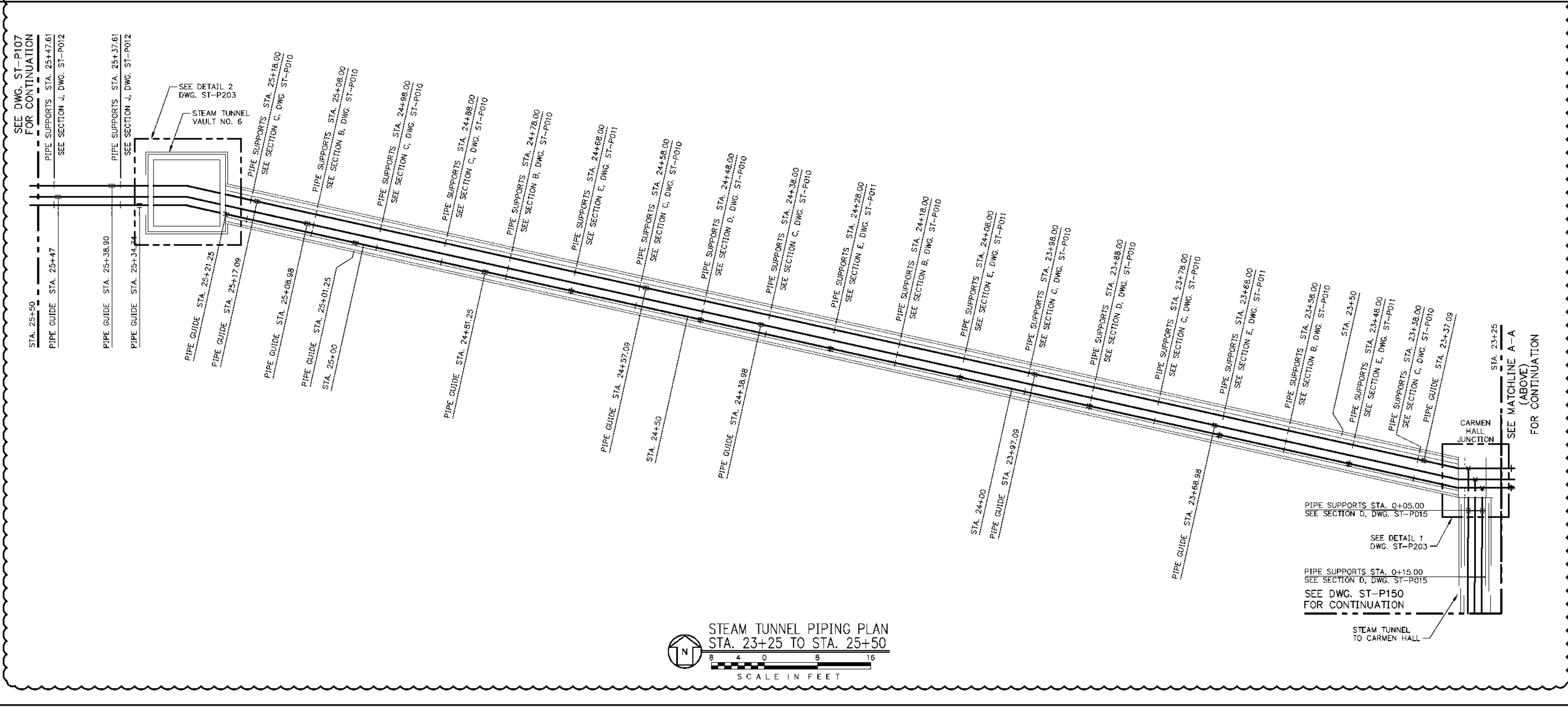
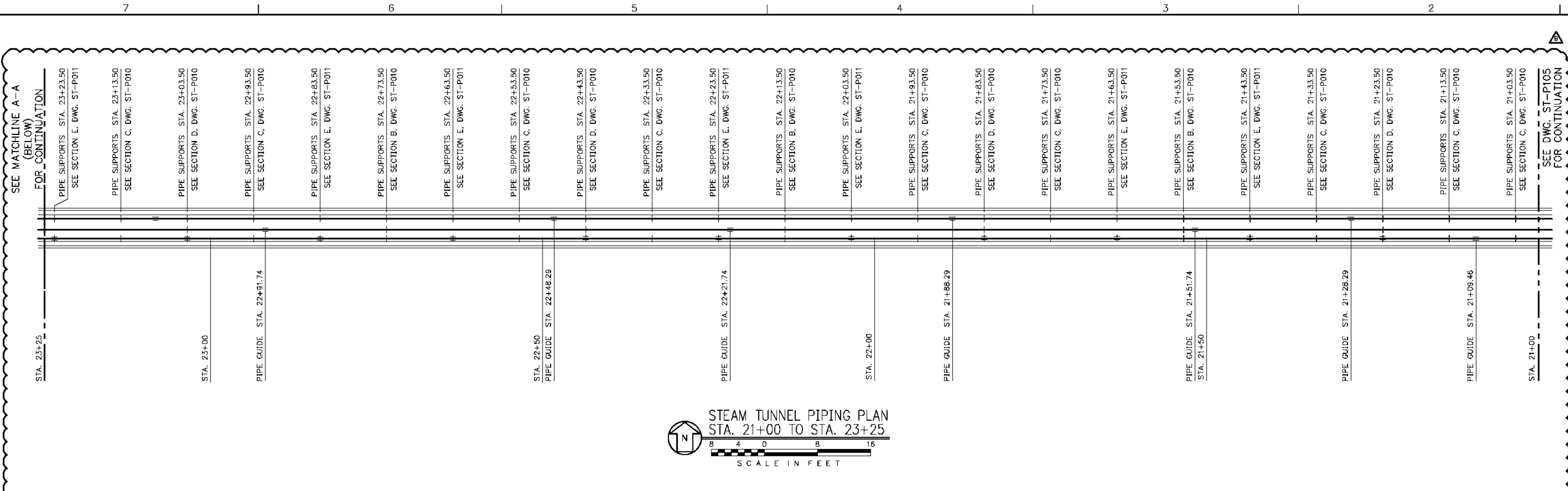


EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY

EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 17+20 TO STA. 21+00

DESIGN BY:	CHEKED BY:	DATE:
C. WARD	S. WOPATA	12-9-09
DRAWN BY:	DATE:	
D. ALEXANDER		
CLIENT ID:	SEGA PROJECT NO.	
HONO0103	090140	
CADD FILE NAME:		
09140_ST-P105		
DRAWING NO.		
ST-P105		
REV.		
B		



REV.	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	MCB	SEW
B	5-11-10	REVISED	CMH	SEW

SEE MATCHLINE A-A (BELOW) FOR CONTINUATION

SEE DWG. ST-P105 FOR CONTINUATION

- LEGEND:**
- X PIPE ANCHOR LOCATION
 - = PIPE GUIDE LOCATION
 - | PIPE SUPPORT/UNISTRUT LOCATION
 - ± PIPE SUPPORT WITH UNISTRUT GUIDE

Sealed Only When Signed in Blue Ink

STEVE WOPATA
062-04436
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS
EXP. DATE 11-30-2011

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 21+00 TO STA. 25+50

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-9-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

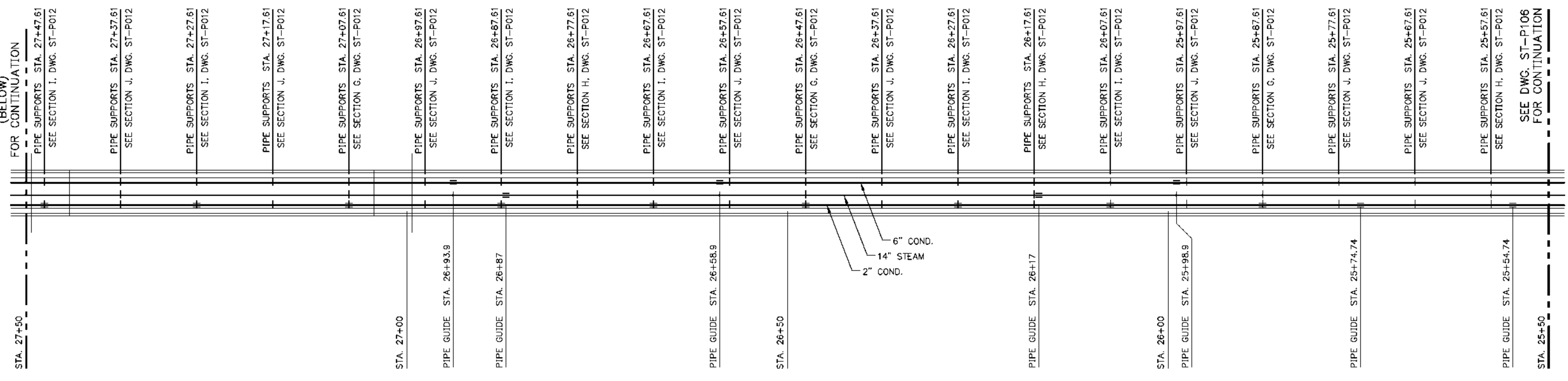
CADD FILE NAME: 09140_ST-P106

DRAWING NO. **ST-P106**

REV. **B**

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW

SEE MATCHLINE A-A
(BELOW)
FOR CONTINUATION

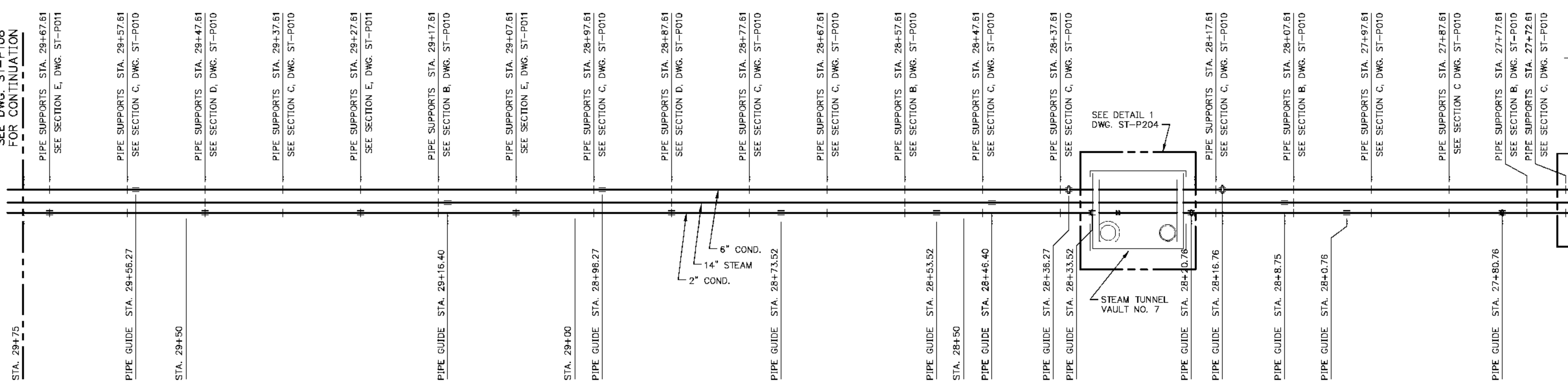


STEAM TUNNEL PIPING PLAN
STA. 25+50 TO STA. 27+50

SCALE IN FEET

- LEGEND:**
- X PIPE ANCHOR LOCATION
 - PIPE GUIDE LOCATION
 - I PIPE SUPPORT/UNISTRUT LOCATION
 - ± PIPE SUPPORT WITH UNISTRUT GUIDE

SEE DWG. ST-P108
FOR CONTINUATION



STEAM TUNNEL PIPING PLAN
STA. 27+50 TO STA. 29+75

SCALE IN FEET

SEE MATCHLINE A-A
(ABOVE)
FOR CONTINUATION

PIPE GUIDE STA. 27+53.9
PIPE GUIDE STA. 27+57
PIPE SUPPORTS STA. 27+57.61
SEE SECTION H, DWG. ST-P012
PIPE SUPPORTS STA. 27+62.61
SEE SECTION I, DWG. ST-P012

CORNER NO. 3

SEE DETAIL 3
DWG. ST-P203

Sealed Only When Signed in Blue Ink

EXP. DATE 11-30-2011

Sega

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823



EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 25+50 TO STA. 29+75

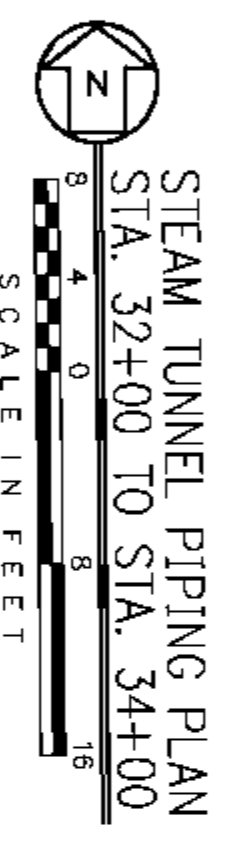
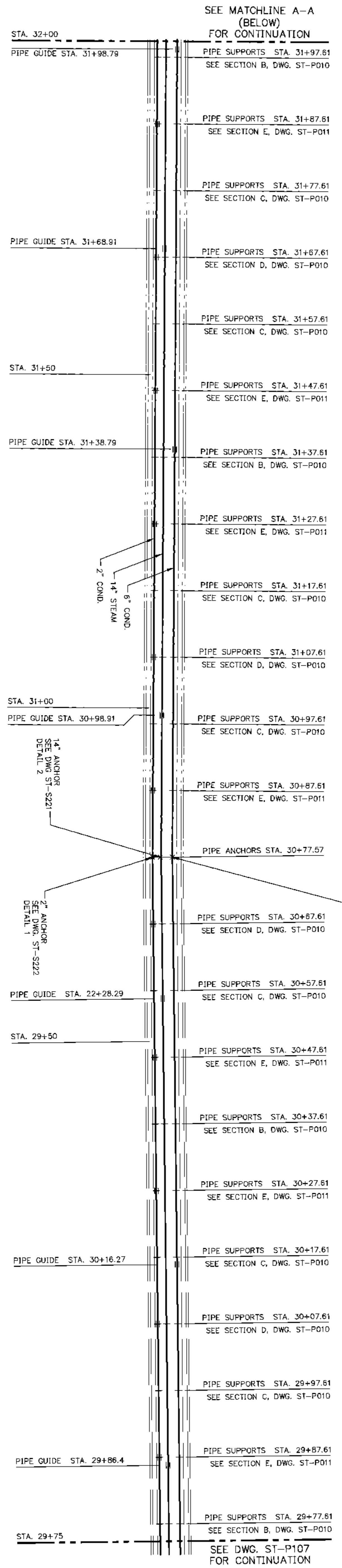
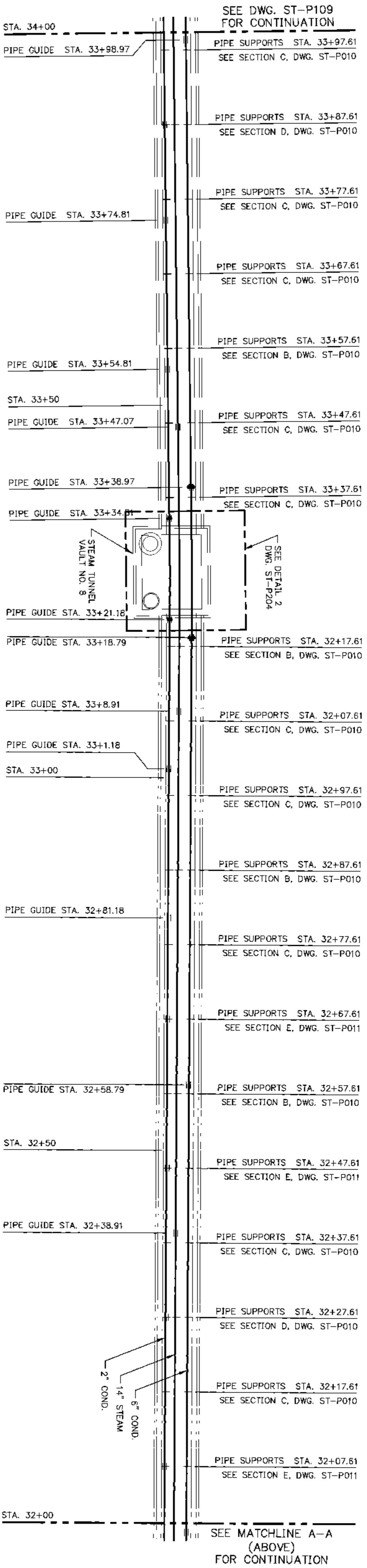
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 2-10-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P107

DRAWING NO.
ST-P107

REV.
A

C:\2009\09140\09140-15-1-108.dwg 6/7/10 4:24pm ddesliver



REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW

EU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING PLAN
 STA. 29+75 TO STA. 34+00

DESIGN BY: C. WARD
 CHECKED BY: S. WOPATA
 DRAWN BY: C. HAYTON
 CLIENT T.D. HON00103
 SECT. PROJECT NO. 090140
 CAD FILE NAME: 09140-ST-P108

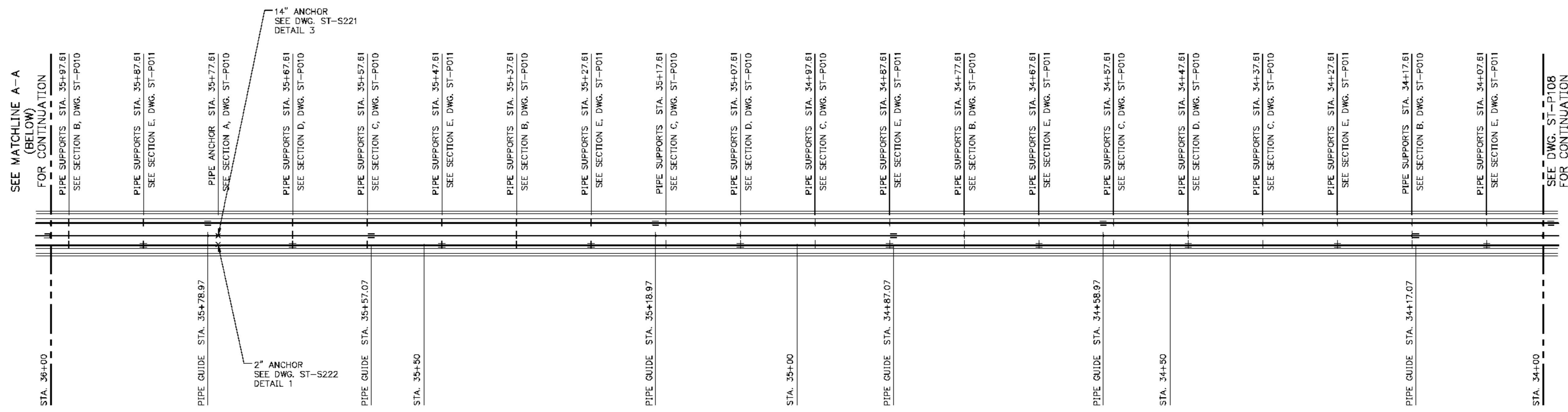
ENGINEERS - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

Sega
 STATE OF ILLINOIS
 PROFESSIONAL ENGINEER
 STATE OF ILLINOIS
 EXPI. DATE 11-30-2011

Sealed Only When Signed in Blue Ink

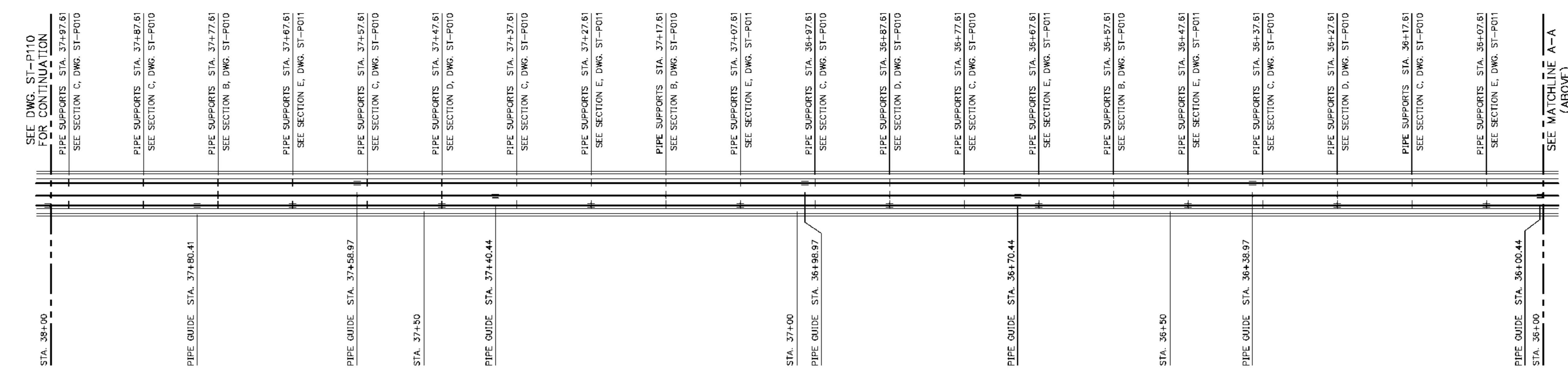
ST-P108

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW



STEAM TUNNEL PIPING PLAN
STA. 34+00 TO STA. 36+00

SCALE IN FEET



STEAM TUNNEL PIPING PLAN
STA. 36+00 TO STA. 38+00

SCALE IN FEET

SEE MATCHLINE A-A (BELOW) FOR CONTINUATION

SEE DWG. ST-P108 FOR CONTINUATION

Sealed Only When Signed in Blue Ink

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

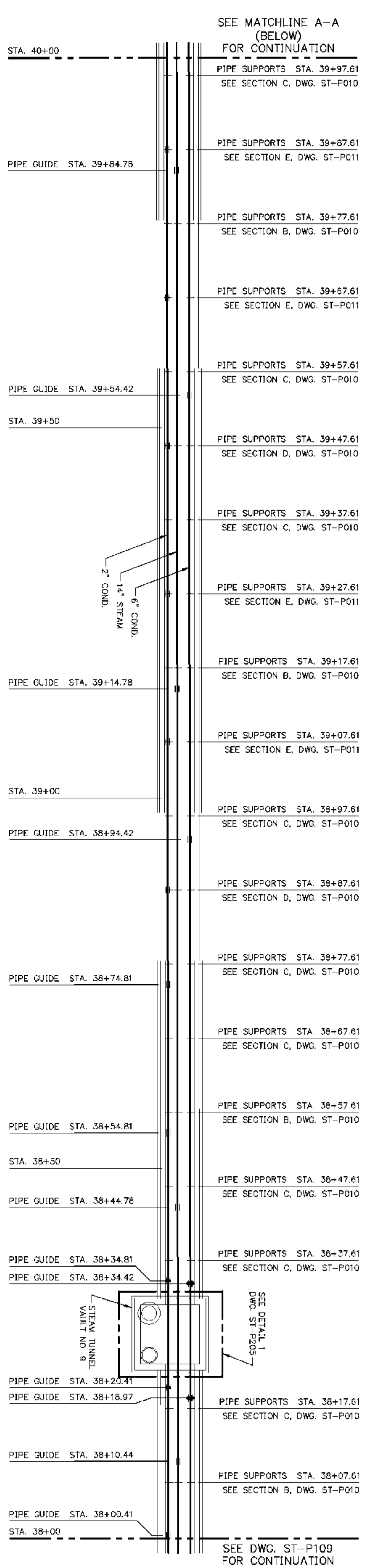
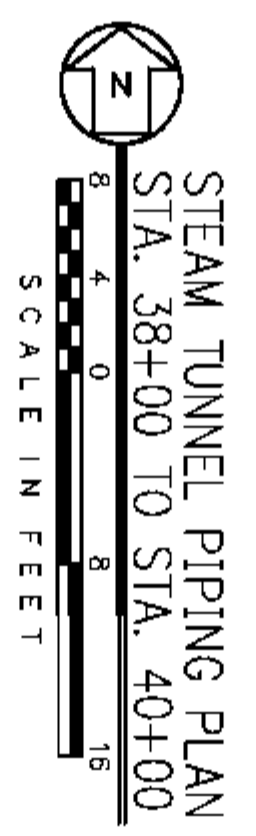
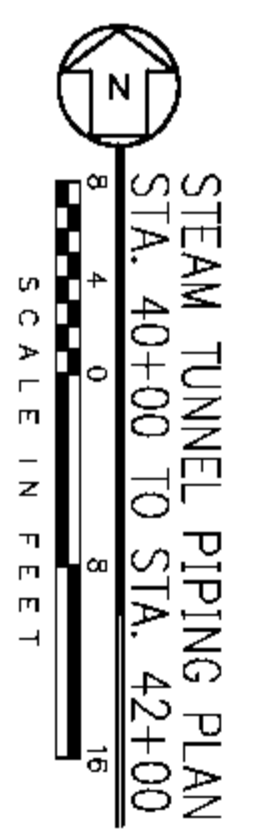
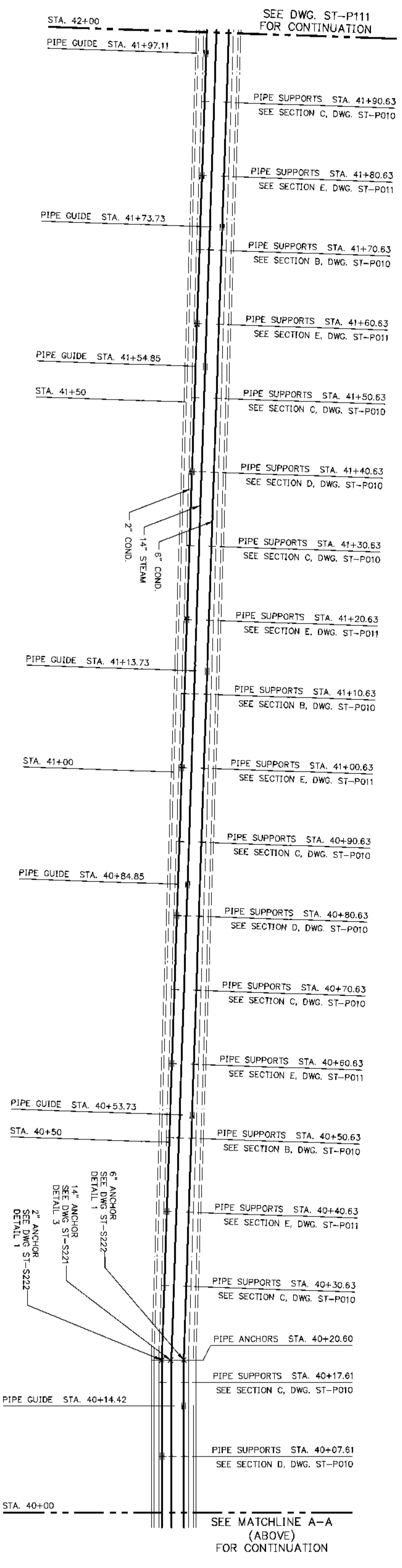
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 34+00 TO STA. 38+00

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. HAYTON	DATE: 4-8-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P109	
DRAWING NO. ST-P109	REV. B

N:\2009\09140\DWG\ST-P110.dwg 6/7/10 4:56pm ddesai



REV.	DATE	DESCRIPTION	DWN CHK
A	5-11-10	ISSUED FOR REVIEW	CMH/SEW
B	6-7-10	REVISED	CMH/SEW

Sealed Only When Signed in Blue Ink

EXPIRE DATE 11-30-2011

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

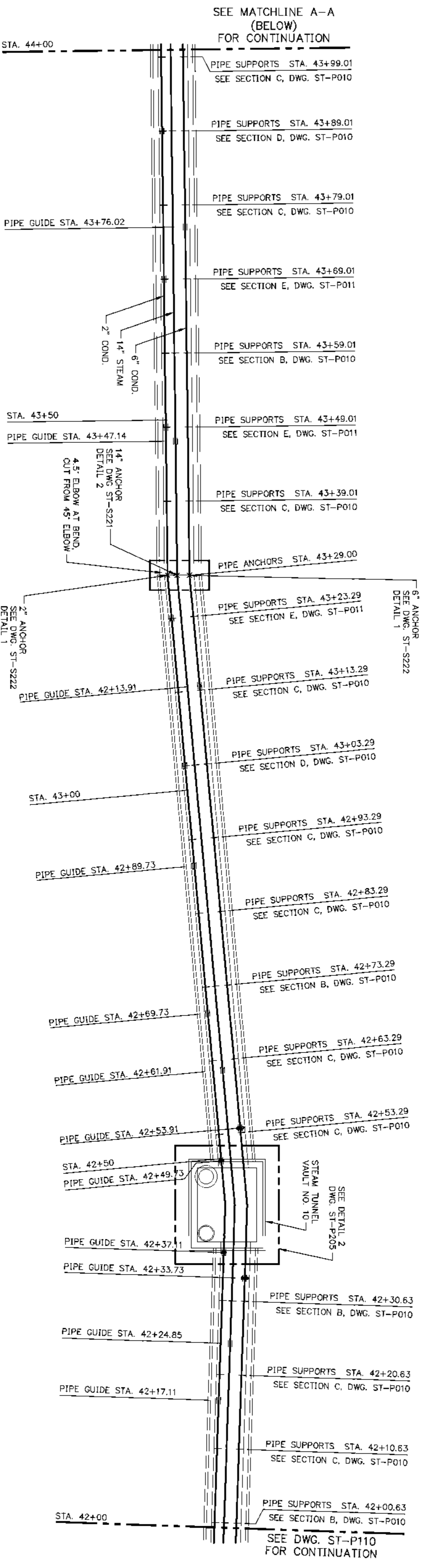
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY

EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 38+00 TO STA. 42+00

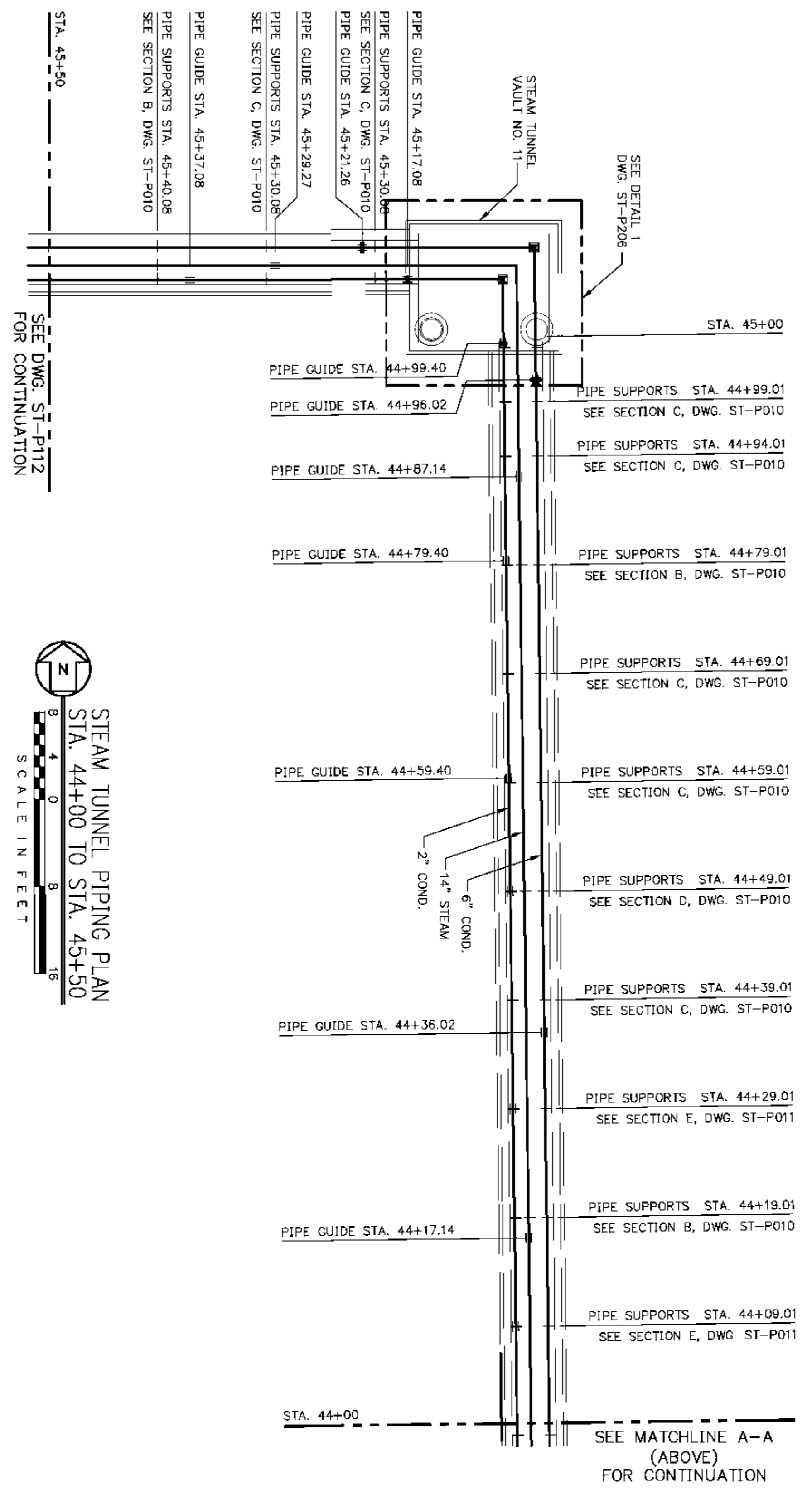
DESIGN BY:	C. WARD	CHECKED BY:	S. WOPATA
DRAWN BY:	C. HAYTON	DATE:	4-8-10
CLIENT I.D.	HON00103	SEGAL PROJECT NO.	090140
CADD FILE NAME:	09140-ST-P110		
DRAWING NO.	ST-P110		
REV.	B		

REV	DATE	DESCRIPTION	DWG CHK
A	5-11-10	ISSUED FOR REVIEW	CMH/SEW
B	6-7-10	REVISED	CMH/SEW



STEAM TUNNEL PIPING PLAN
STA. 42+00 TO STA. 44+00

SCALE IN FEET



STEAM TUNNEL PIPING PLAN
STA. 44+00 TO STA. 45+50

SCALE IN FEET

Noted Only When Signed in Blue Ink

EXP. DATE 11-30-2011

Segal

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stillwell, Kansas 66085-1000
Illinois License # 184-000823

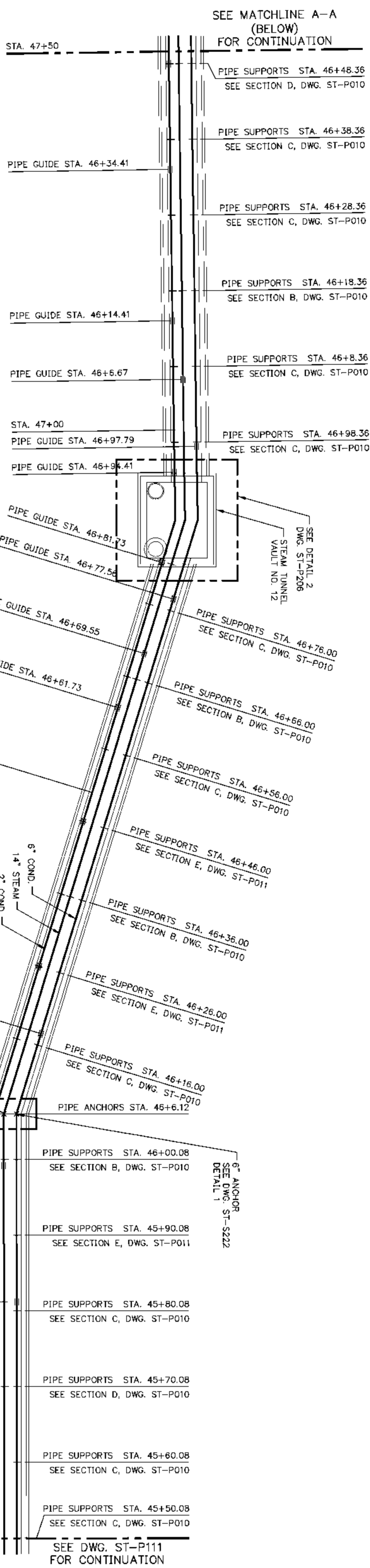
EUI PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN
STA. 42+00 TO STA. 45+50

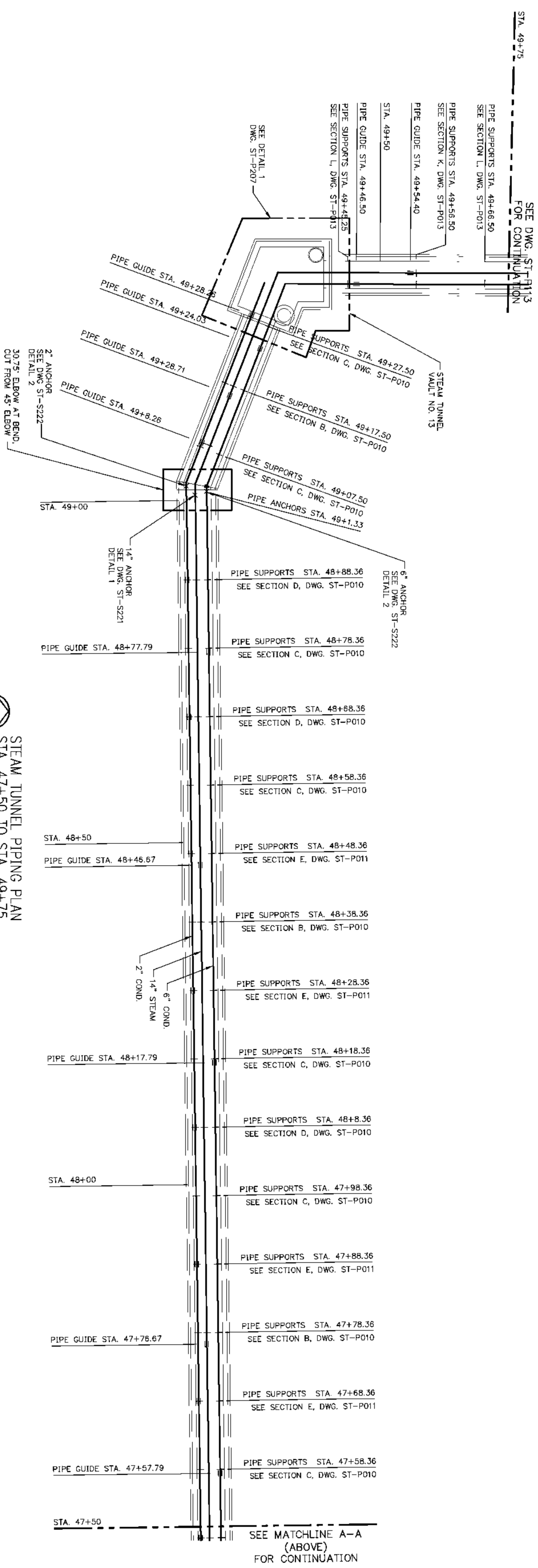
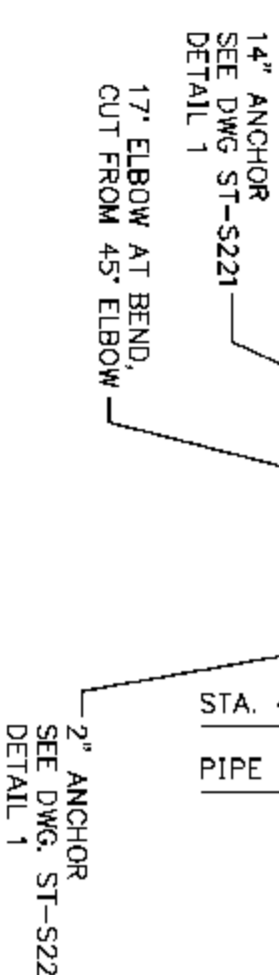
DESIGN BY: C. WOPATA
CHECKED BY: S. WOPATA
DATE: 4-8-10
DRAWN BY: C. HAYTON
CLIENT ID: HON00103
SIGA PROJECT NO: 090140
CADD FILE NAME: 09140-ST-P111

DRAWING NO. **ST-P111**

REV **B**

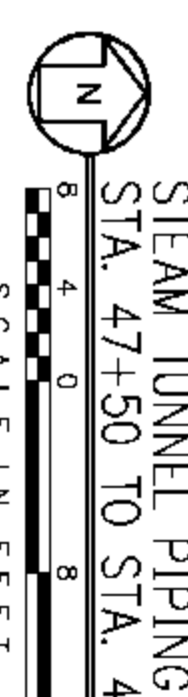


STEAM TUNNEL PIPING PLAN
 STA. 45+50 TO STA. 47+50
 SCALE IN FEET



SEE DWG. ST-P113
 FOR CONTINUATION

STEAM TUNNEL PIPING PLAN
 STA. 47+50 TO STA. 49+75
 SCALE IN FEET



REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW

Sealed Only When Signed in Blue Ink

STEVE WOPAT
 PROFESSIONAL ENGINEER
 STATE OF ILLINOIS
 EXPI. DATE 11-30-2011

Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881

16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

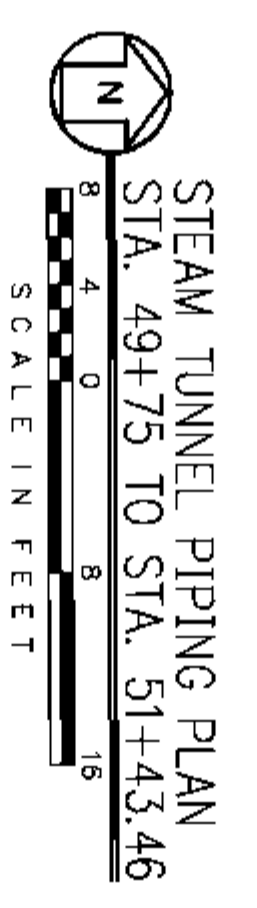
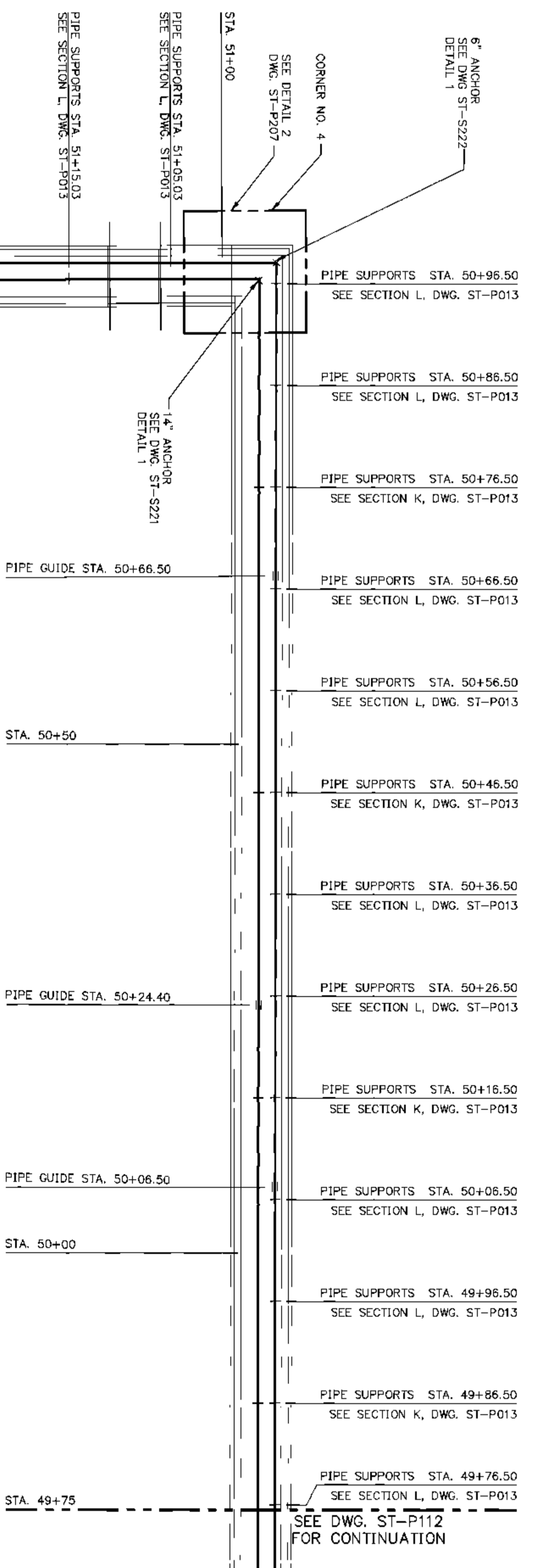
EUI PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING PLAN
 STA. 45+50 TO STA. 49+75

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. HAYTON	DATE: 4-8-10
CLIENT ID: HONO0103	SEGAs PROJECT NO. 090140
CADD FILE NAME: 09140-ST-P112	REV.
DRAWING NO. ST-P112	B

N:\2009\09140\mwp\09140-ST-P112.dwg 6/7/10 4:27pm ddesider

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW



Sealed Only When Signed in Blue Ink

EXP. DATE 11-30-2011

Sega

Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881

16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

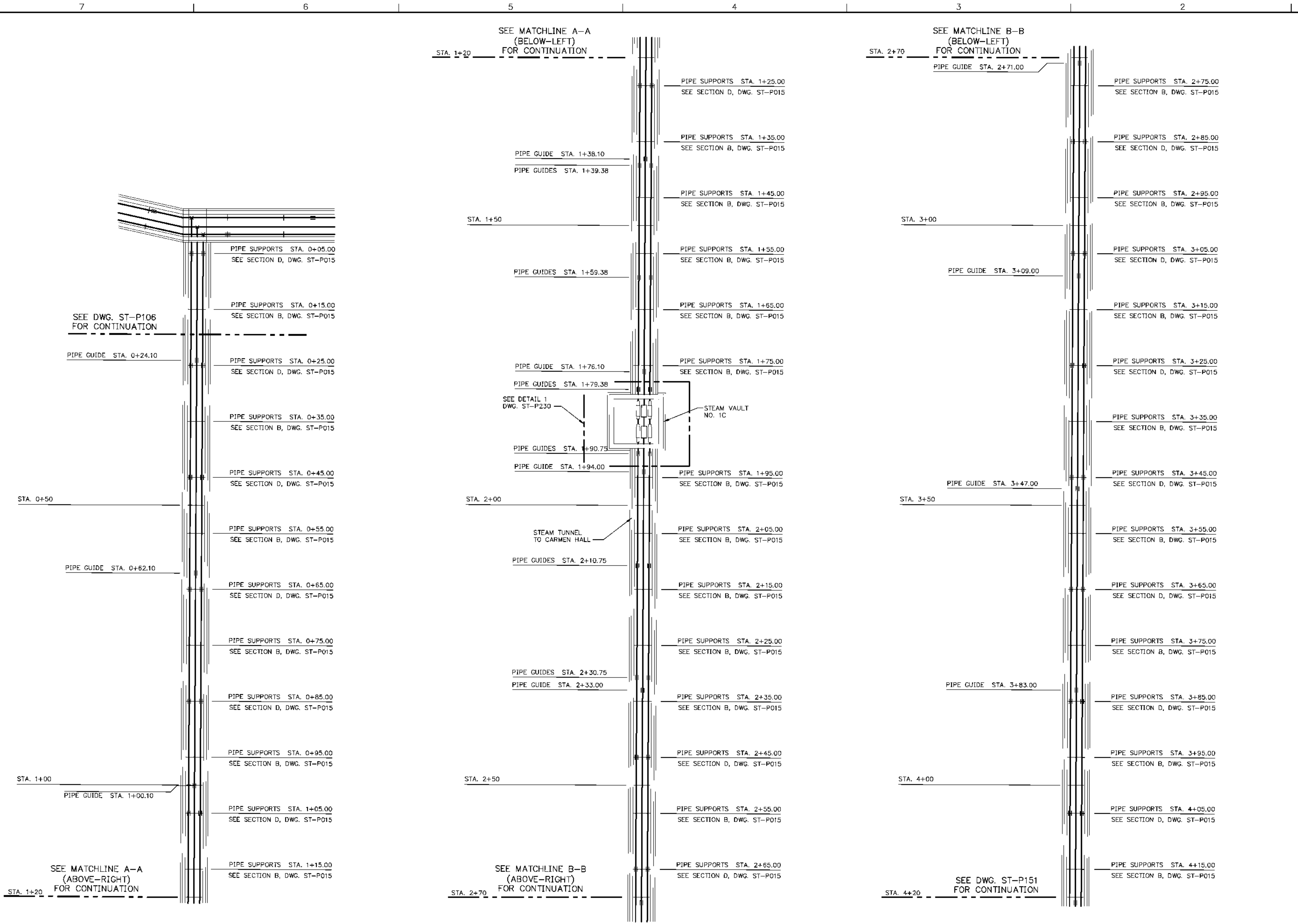
EASTERN ILLINOIS UNIVERSITY

EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL PIPING PLAN
 STA. 49+75 TO STA. 51+43.46

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA	DATE: 4-8-10
DRAWN BY: C. HAYTON	SEGA PROJECT NO. HONO0103	
CAD FILE NAME: 09140-ST-P113		
DRAWING NO. ST-P113		REV. B

REV.	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	MCB	SEW
B	5-11-10	REVISED	CMH	SEW



LEGEND:

- x PIPE ANCHOR LOCATION
- = PIPE GUIDE LOCATION
- | PIPE SUPPORT/UNISTRUT LOCATION
- ± PIPE SUPPORT WITH UNISTRUT GUIDE

Sealed Only When Signed in Blue Ink

STEVE WOPATA
052-049436
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS
EXP. DATE 11-30-2011

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN TO CARMEN HALL
STA. 0+45 TO STA. 5+00

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-10-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140_ST-P150
DRAWING NO. **ST-P150** REV. **B**

STEAM TUNNEL PIPING PLAN
TO CARMEN HALL
STA. 0+00 TO STA. 1+20

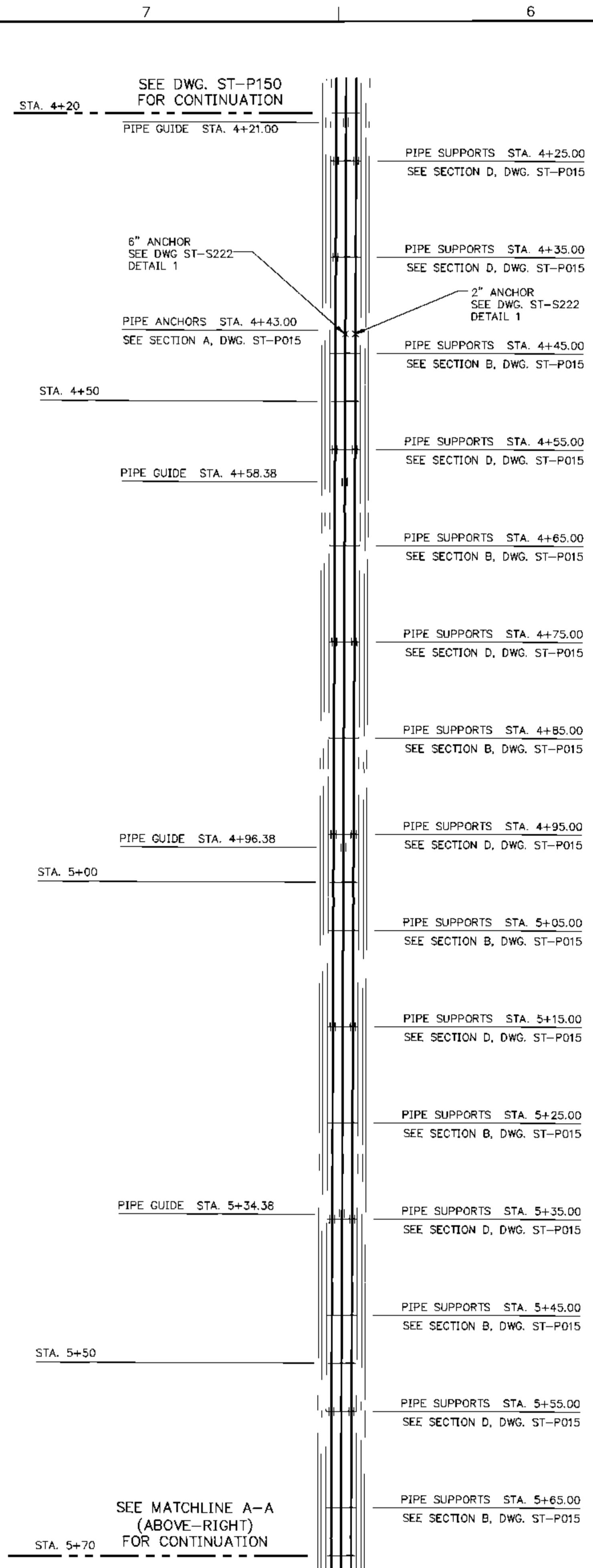
SCALE IN FEET

STEAM TUNNEL PIPING PLAN
TO CARMEN HALL
STA. 1+20 TO STA. 2+70

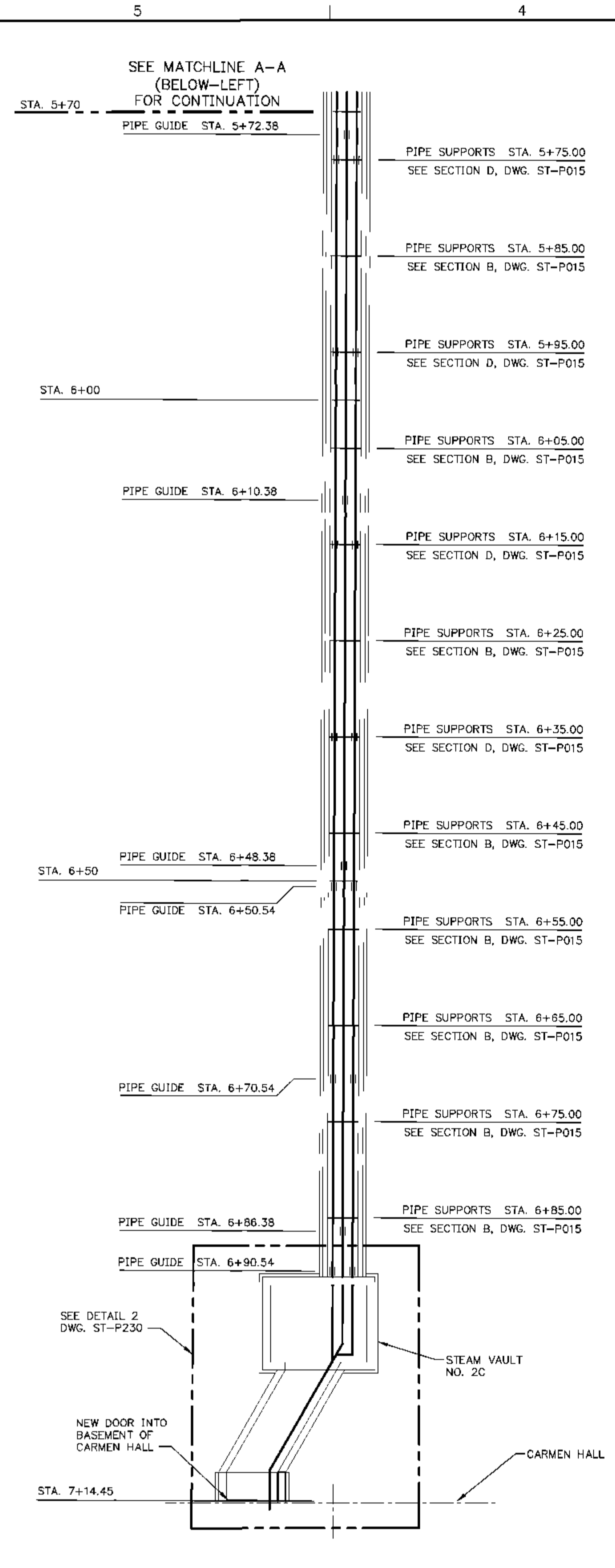
SCALE IN FEET

STEAM TUNNEL PIPING PLAN
TO CARMEN HALL
STA. 2+70 TO STA. 4+20

SCALE IN FEET



STEAM TUNNEL PIPING PLAN
TO CARMEN HALL
STA. 4+20 TO STA. 5+70



STEAM TUNNEL PIPING PLAN
TO CARMEN HALL
STA. 5+70 TO STA. 7+14.45

REV.	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	MCB	SEW
B	5-11-10	REVISED	CMH	SEW
C	6-7-10	REVISED	CMH	SEW

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

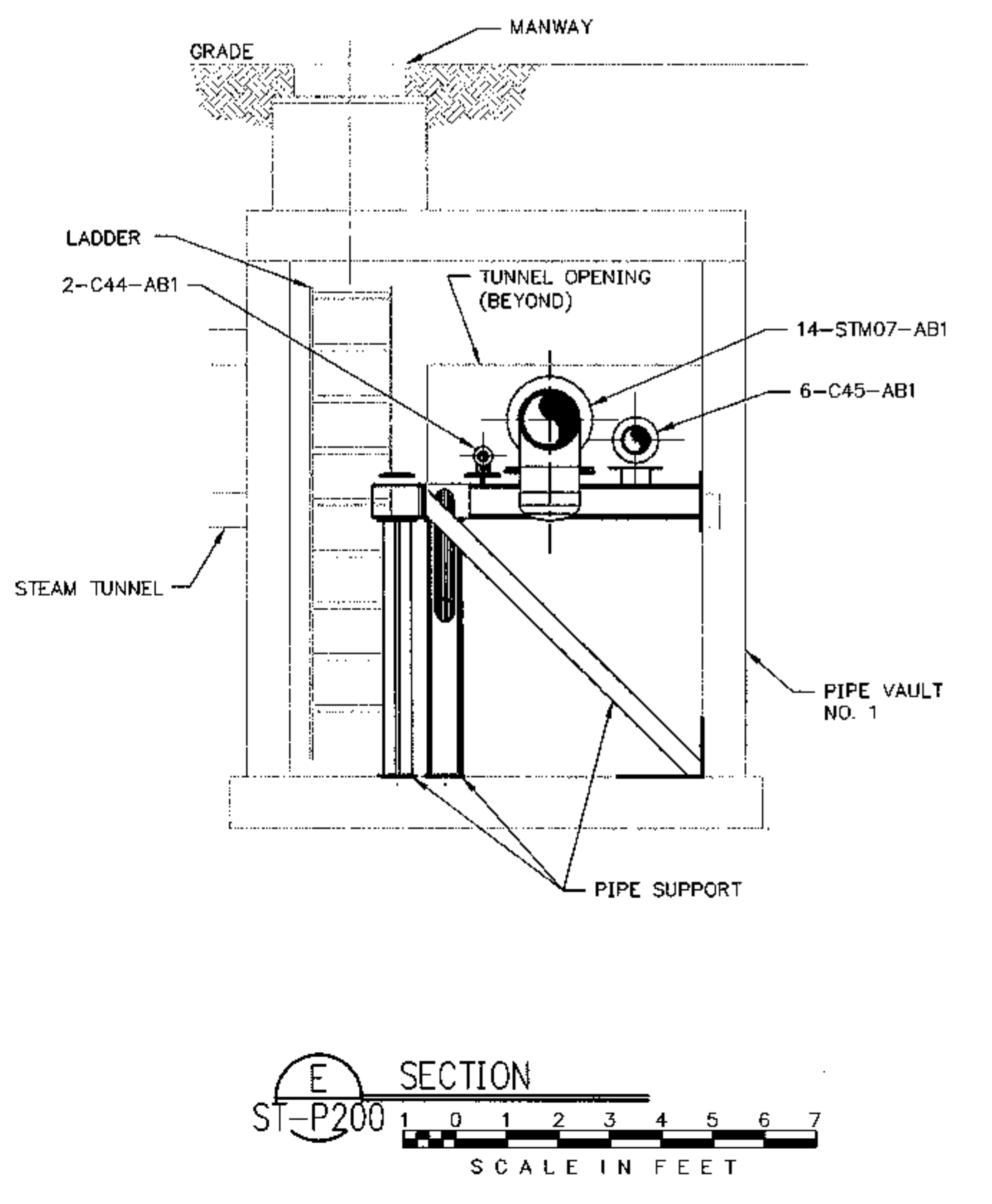
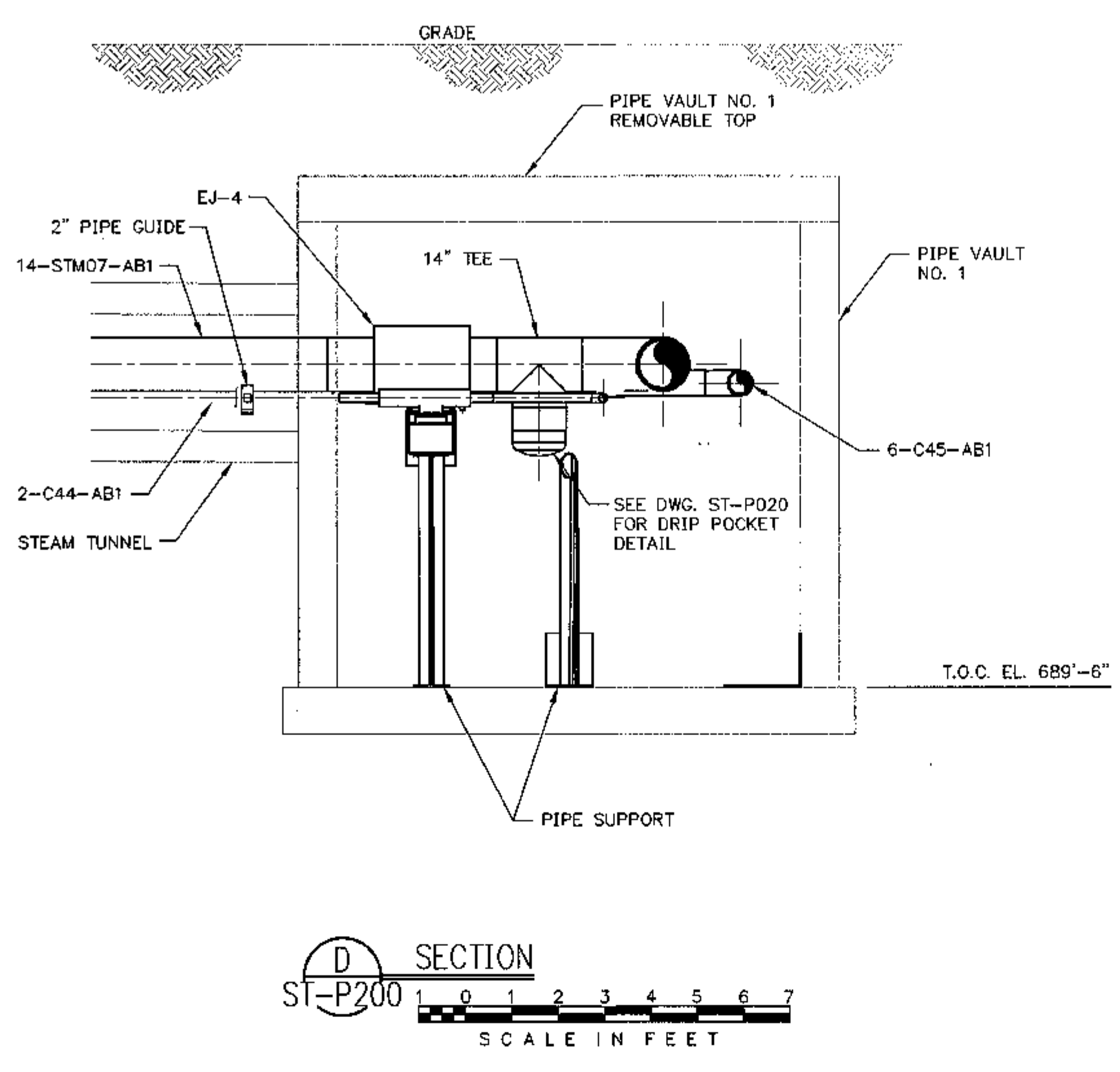
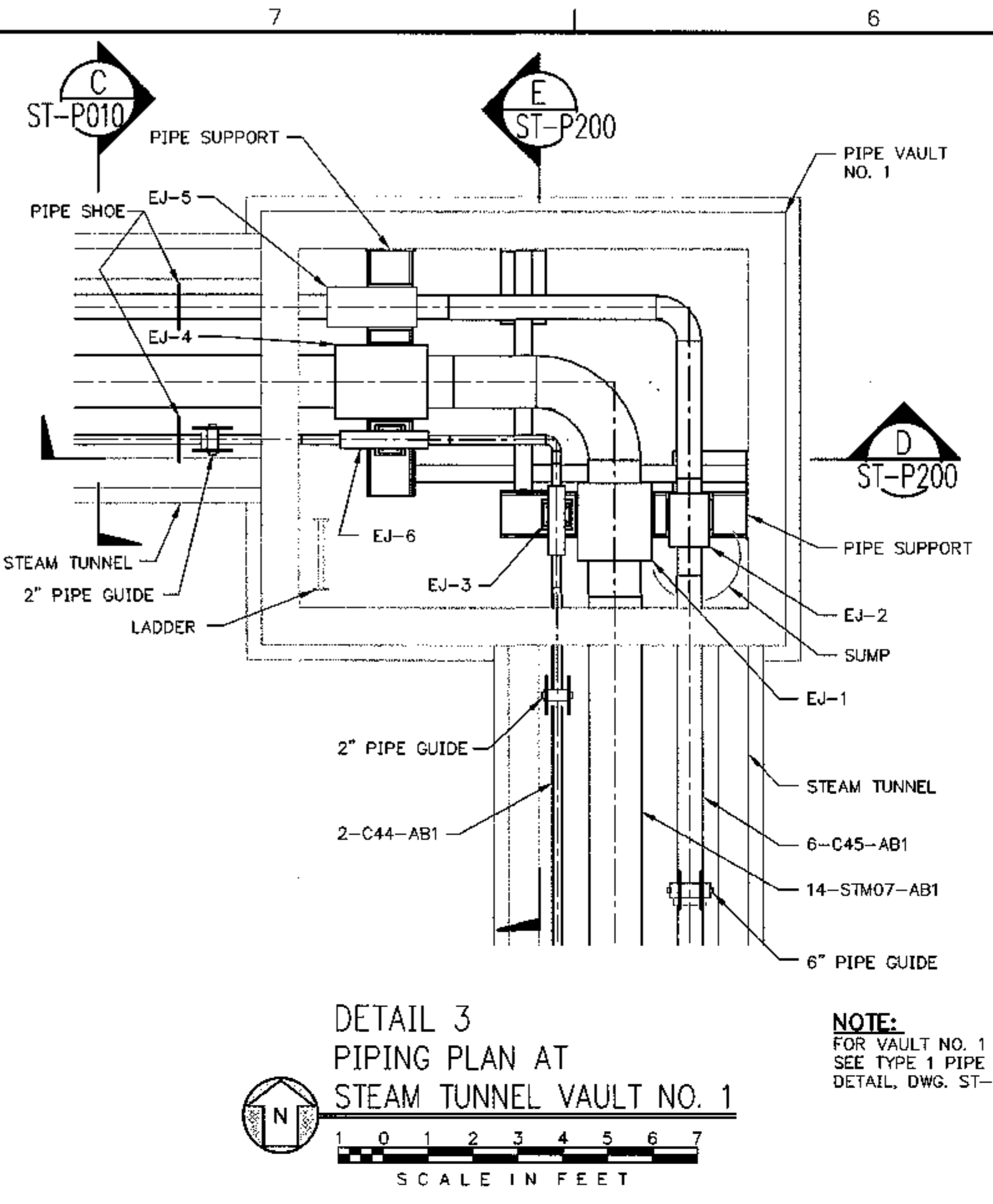
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIPING PLAN TO CARMEN HALL
STA. 4+20 TO STA. 7+94.45

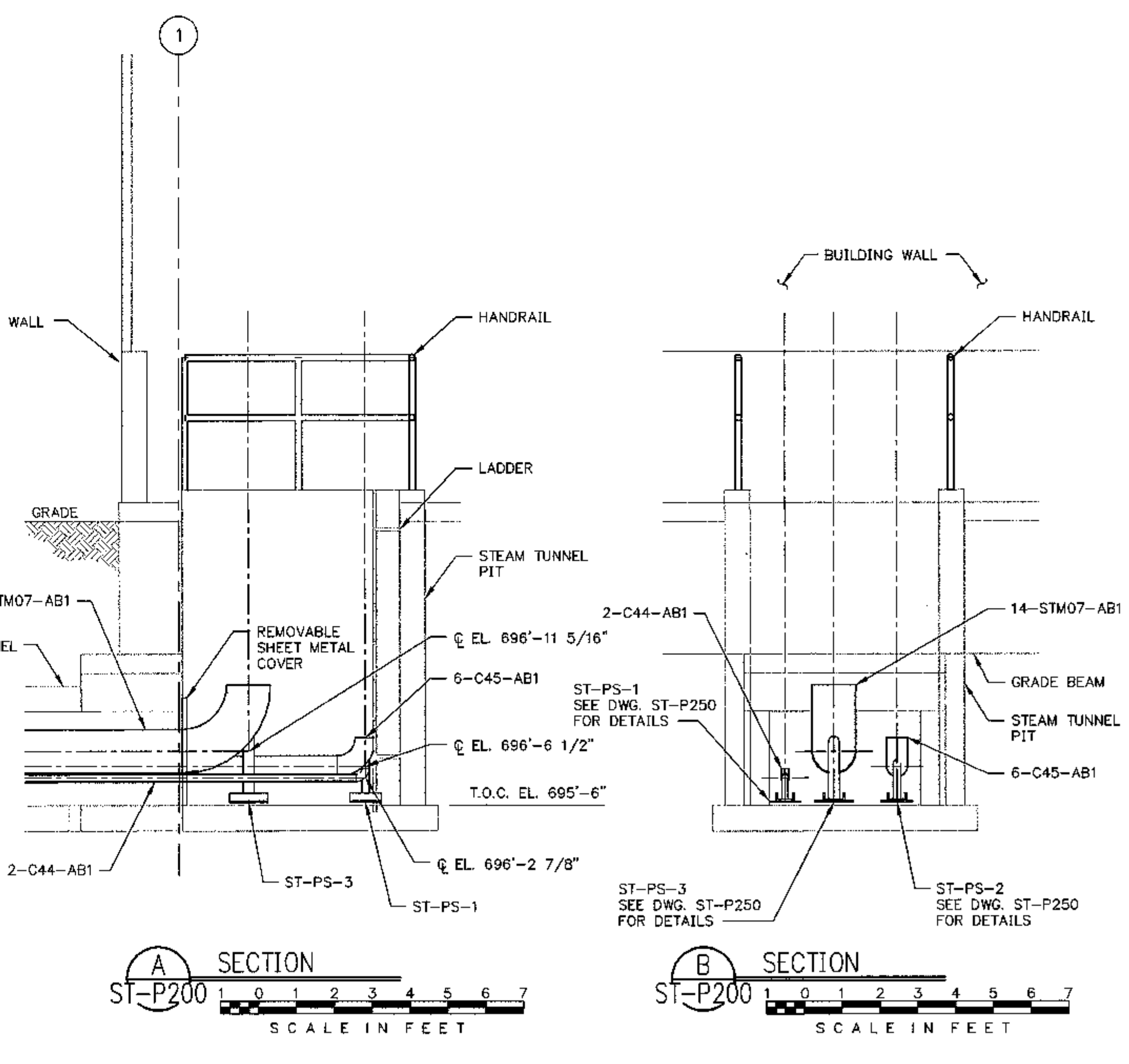
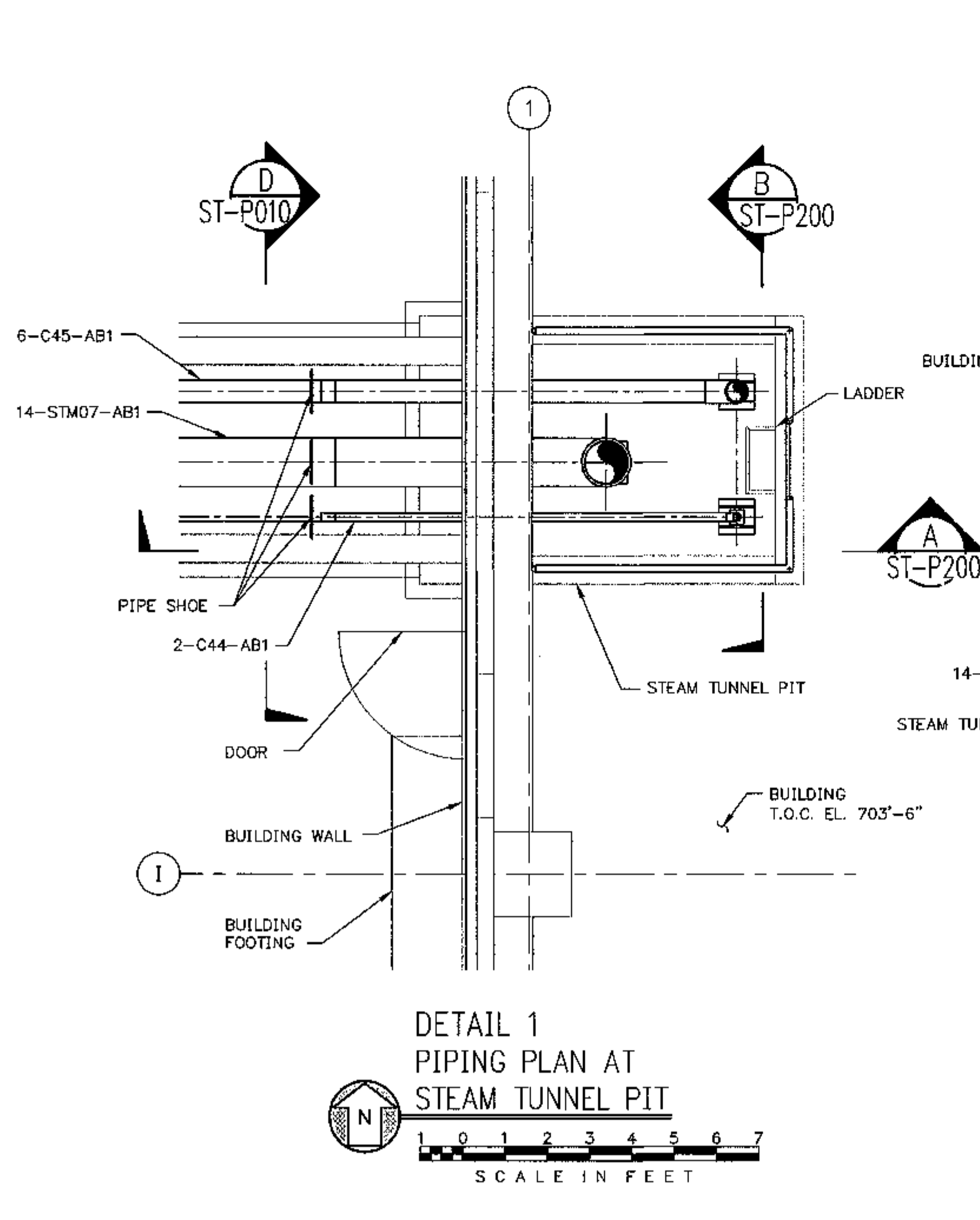
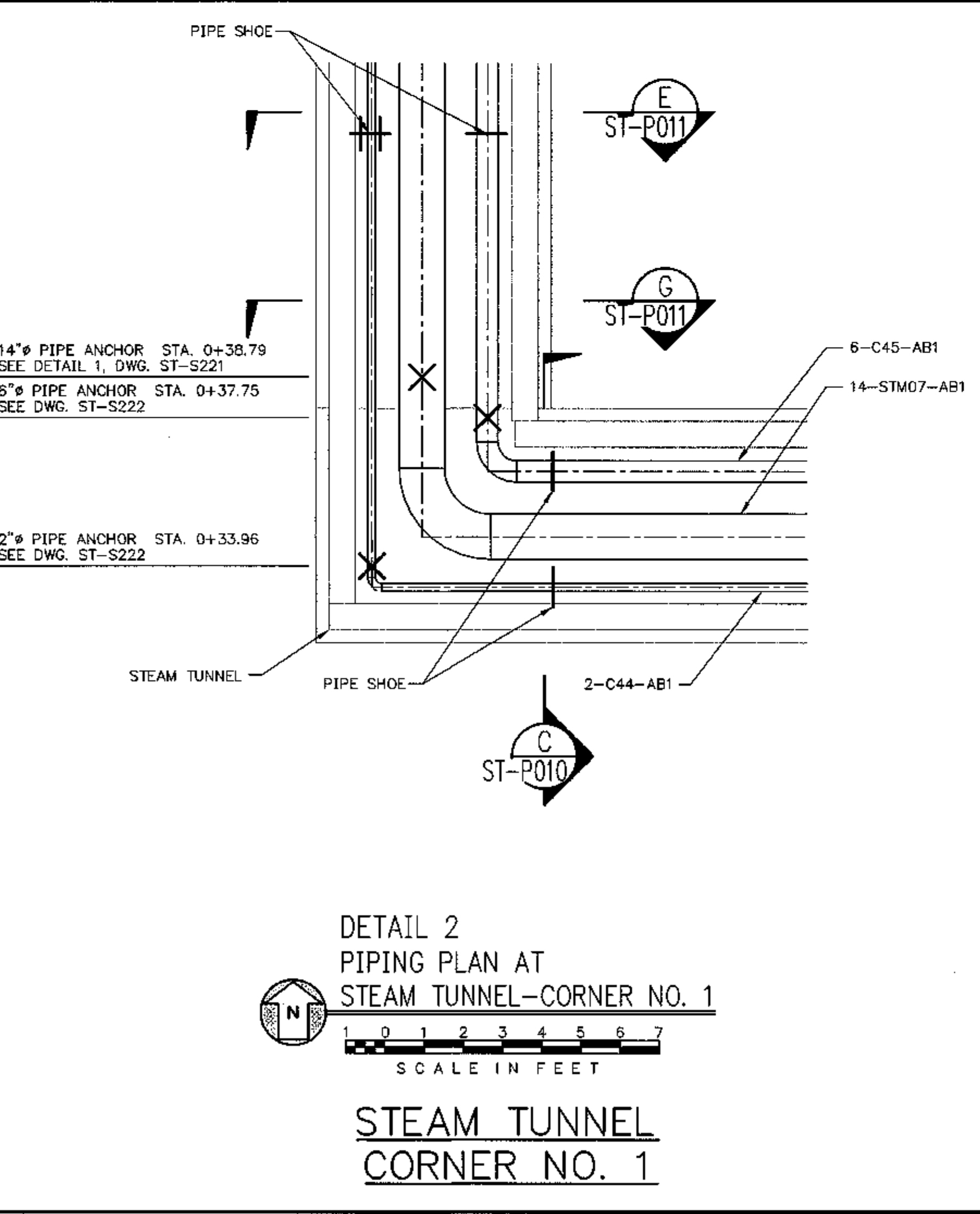
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-10-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140_ST-P151

DRAWING NO. ST-P151	REV. C
-------------------------------	------------------



STEAM TUNNEL VAULT NO. 1

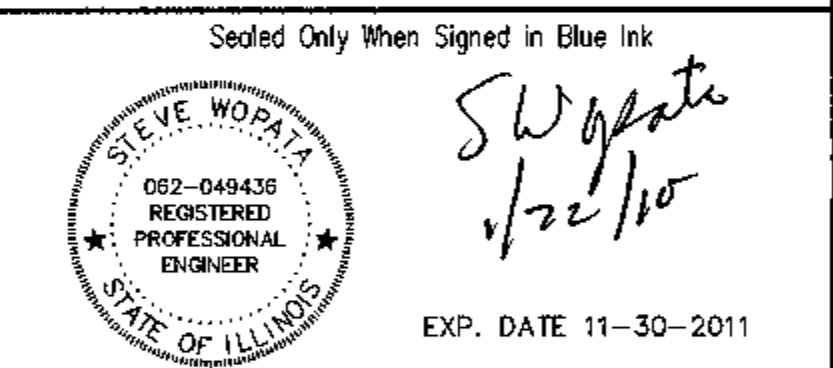


STEAM TUNNEL PIT

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW

NOTES:
 1. PIPE INSULATION NOT SHOWN FOR CLARITY.

LEGEND:
 x PIPE ANCHOR LOCATION
 = PIPE GUIDE LOCATION
 I PIPE SUPPORT/UNISTRUT LOCATION
 † PIPE SUPPORT WITH UNISTRUT GUIDE



Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois Licence # 184-000823

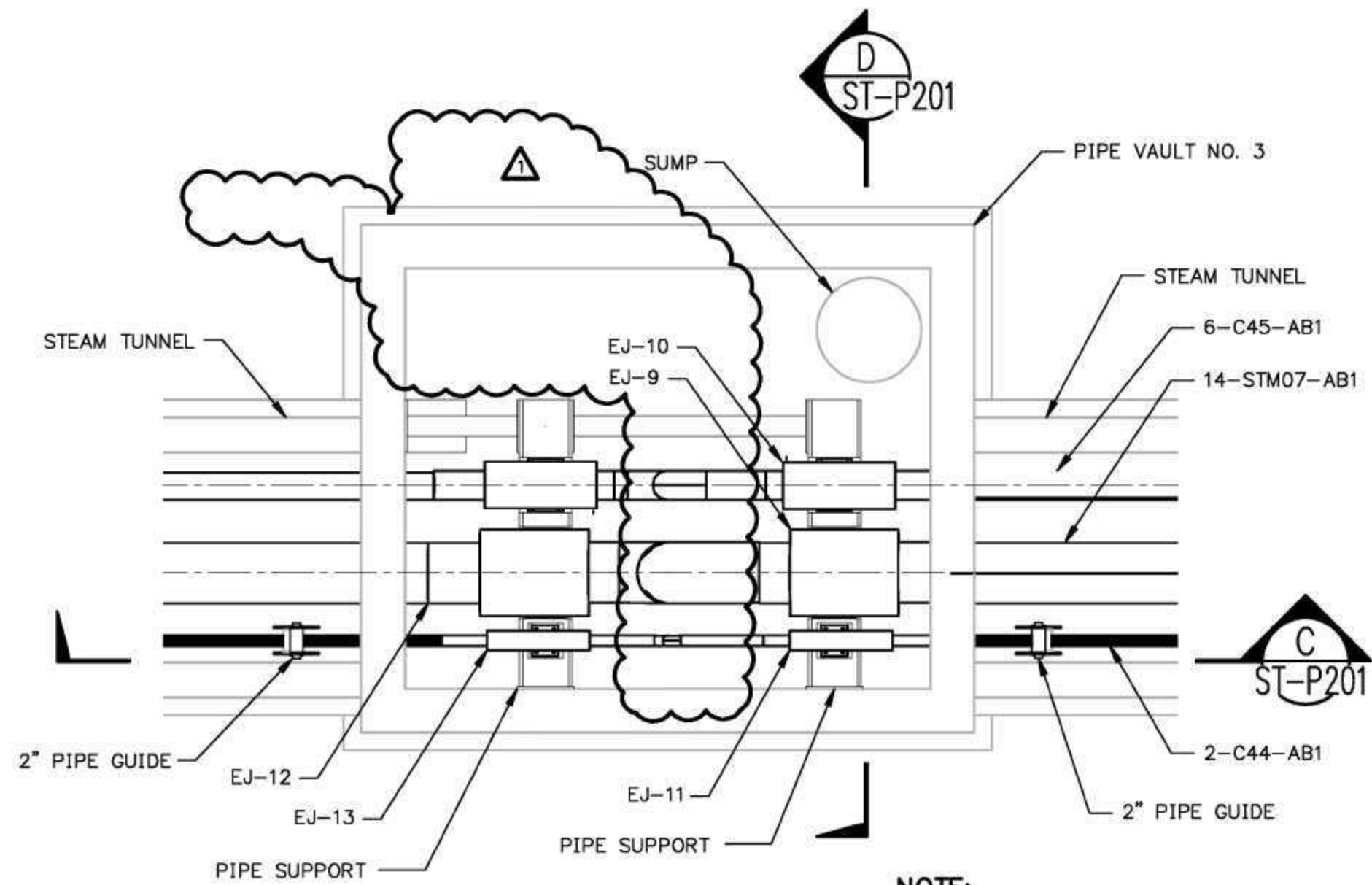


EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL/VAULT PIPING
 STEAM TUNNEL PIT, VAULT NO. 1 AND CORNER NO. 1

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. WARD	DATE: 12-8-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

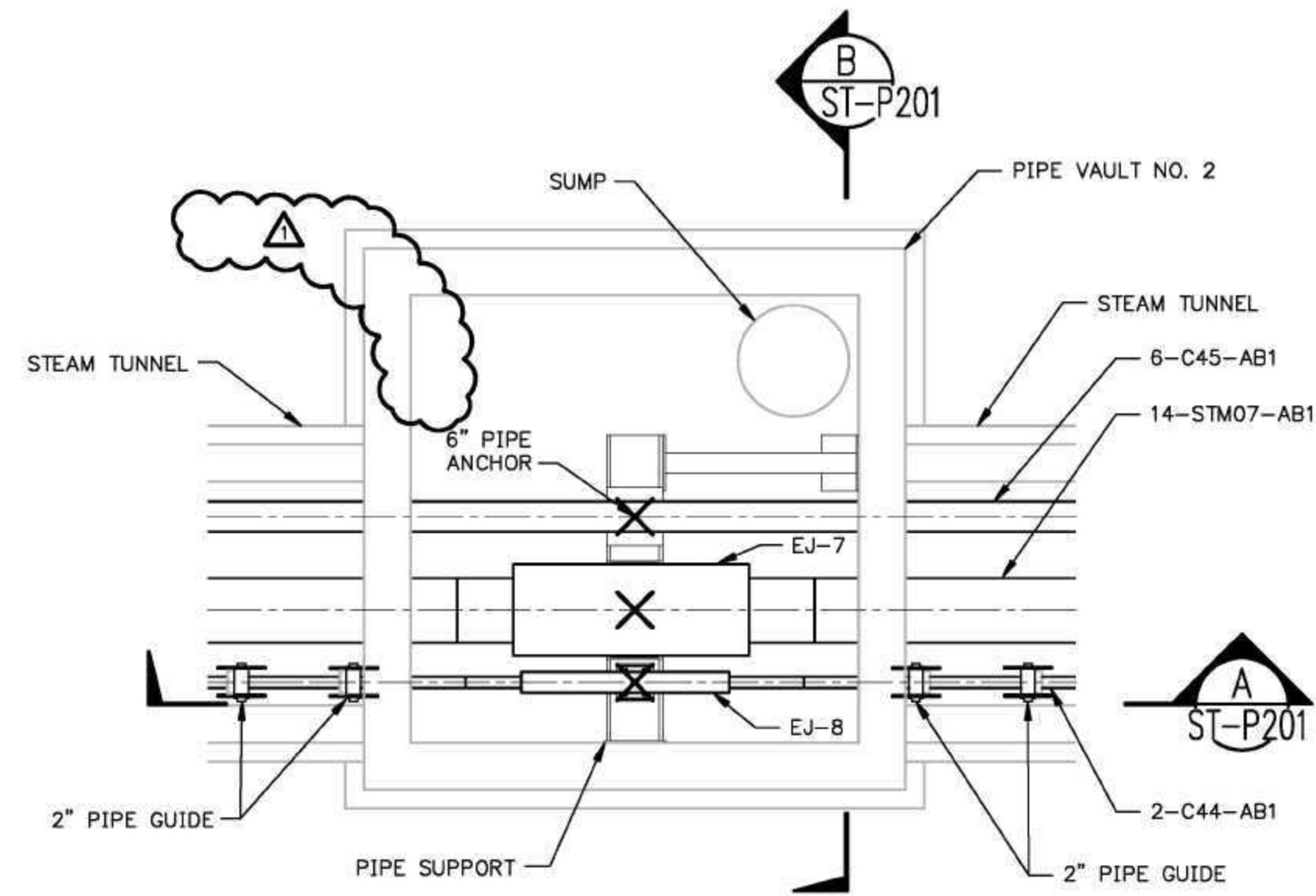
CADD FILE NAME: 09140-ST-P200	DRAWING NO. ST-P200	REV. 0
-------------------------------	-------------------------------	------------------

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	10-26-10	REVISED	OCA	SEW



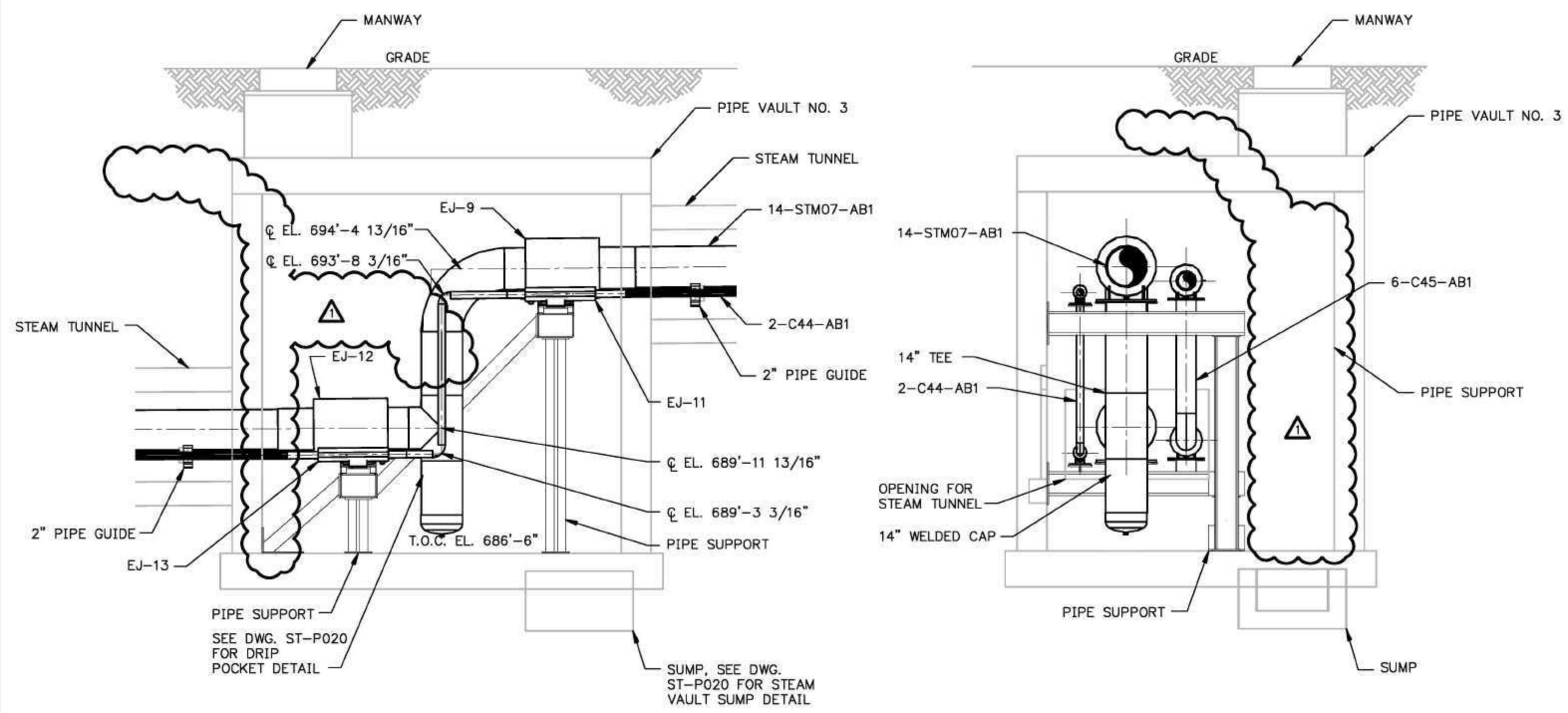
NOTE:
FOR VAULT NO. 3
SEE TYPE 3 PIPE SUPPORT
DETAIL, DWG. ST-S202

DETAIL 2
PIPING PLAN
STEAM TUNNEL VAULT NO. 3



NOTE:
FOR VAULT NO. 2
SEE TYPE 2 PIPE SUPPORT
DETAIL, DWG. ST-S201

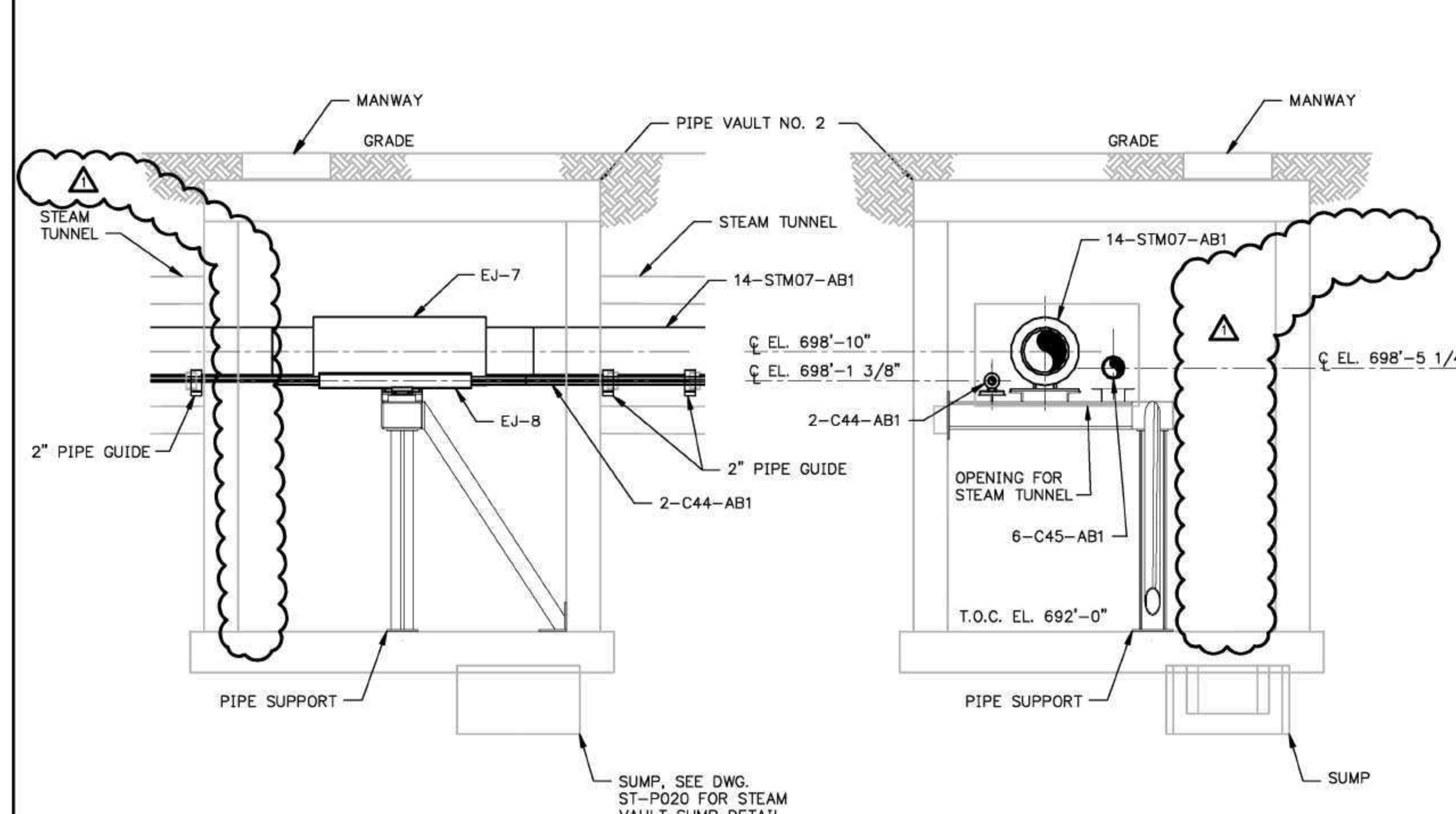
DETAIL 1
PIPING PLAN
STEAM TUNNEL VAULT NO. 2



C SECTION
ST-P201

D SECTION
ST-P201

STEAM TUNNEL
VAULT NO. 3



A SECTION
ST-P201

B SECTION
ST-P201

STEAM TUNNEL
VAULT NO. 2

NOTES:
1. PIPE INSULATION NOT SHOWN FOR CLARITY.

Honeywell

Signed Only When Signed in Blue Ink



EXP. DATE 11-30-2011



Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

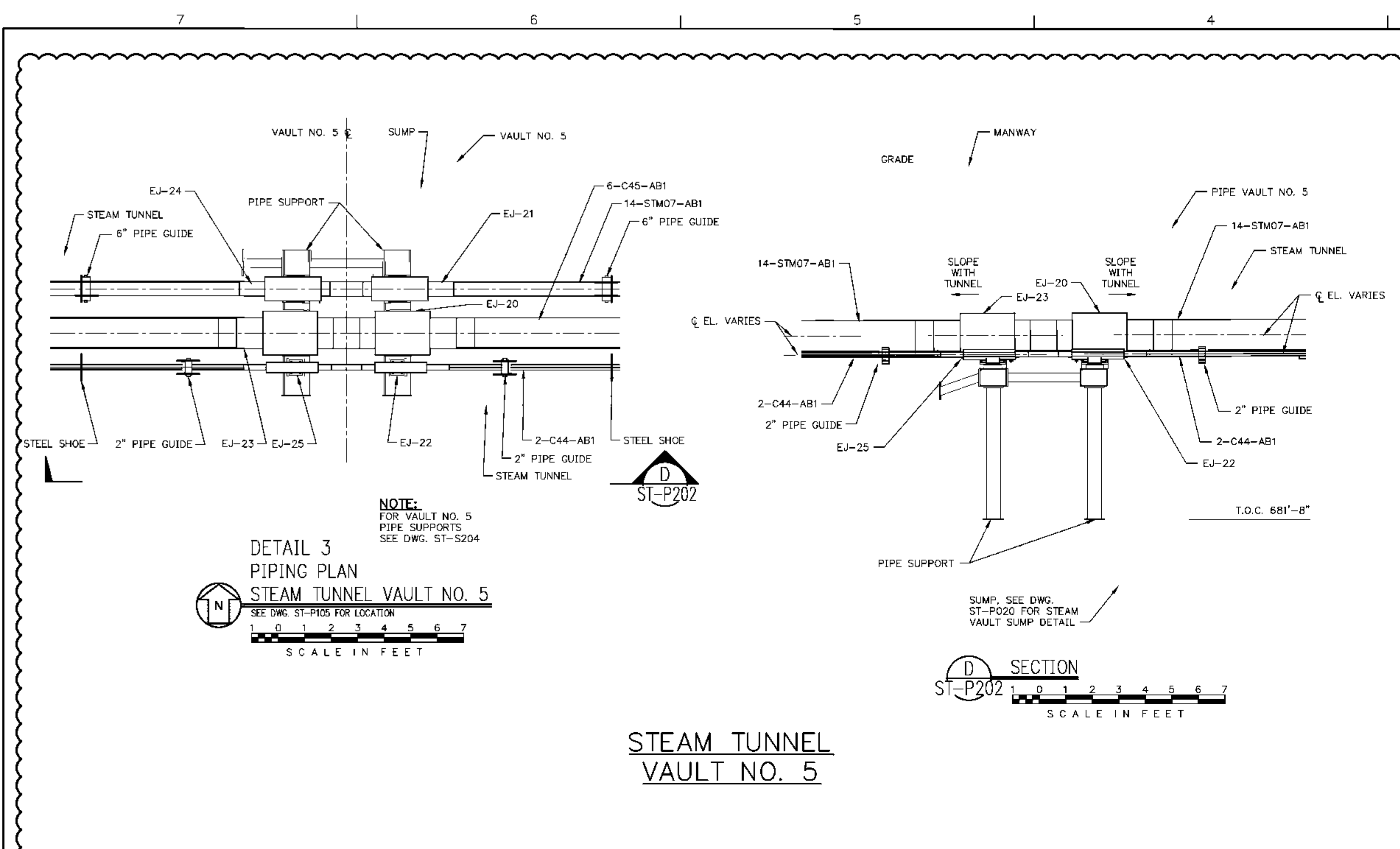


EIU PROJECT # 10-4535

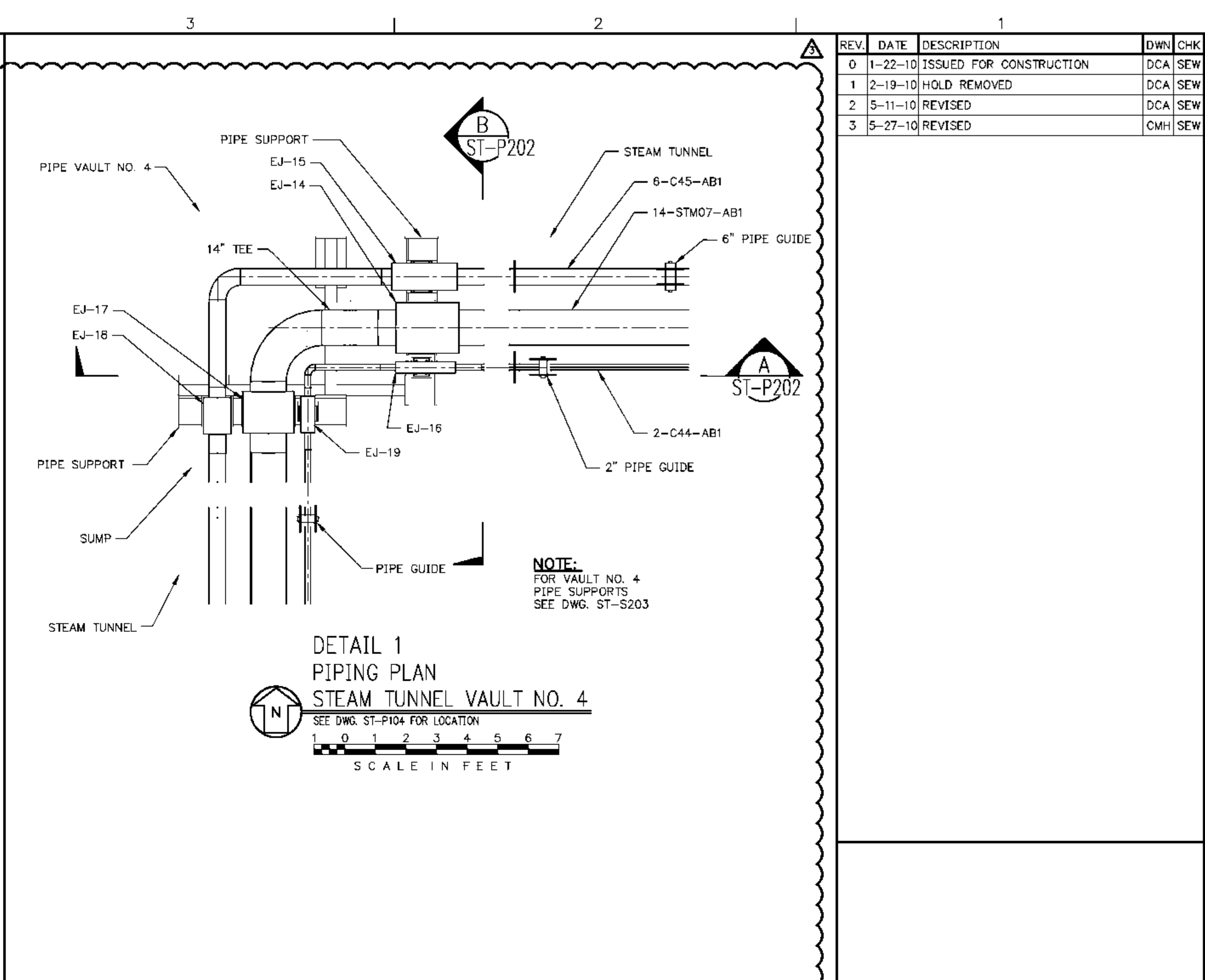
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL/VAULT PIPING
VAULTS NO. 2 AND 3

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-8-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

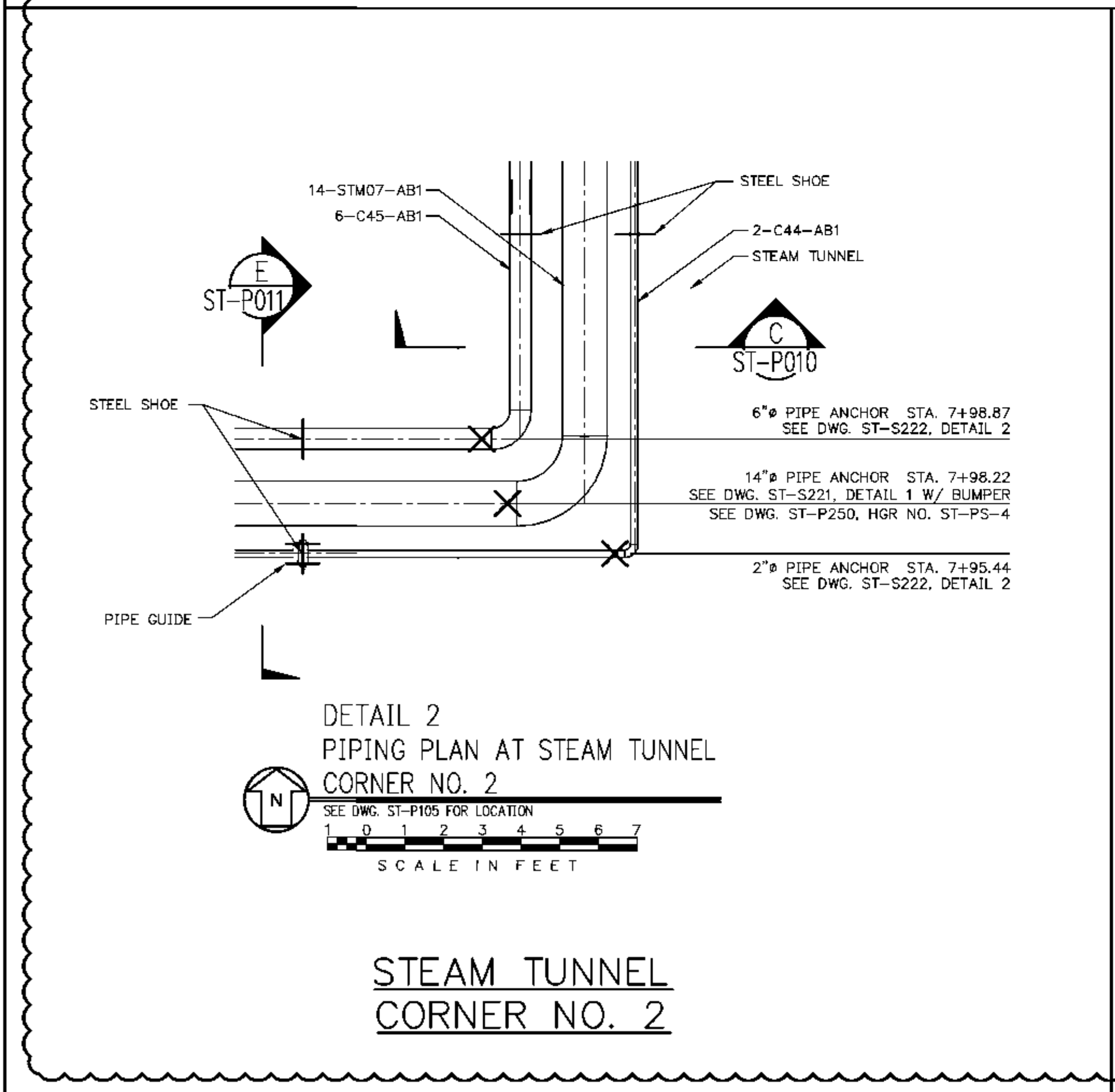
CADD FILE NAME: 09140-ST-P201	REV. 1
DRAWING NO. ST-P201	



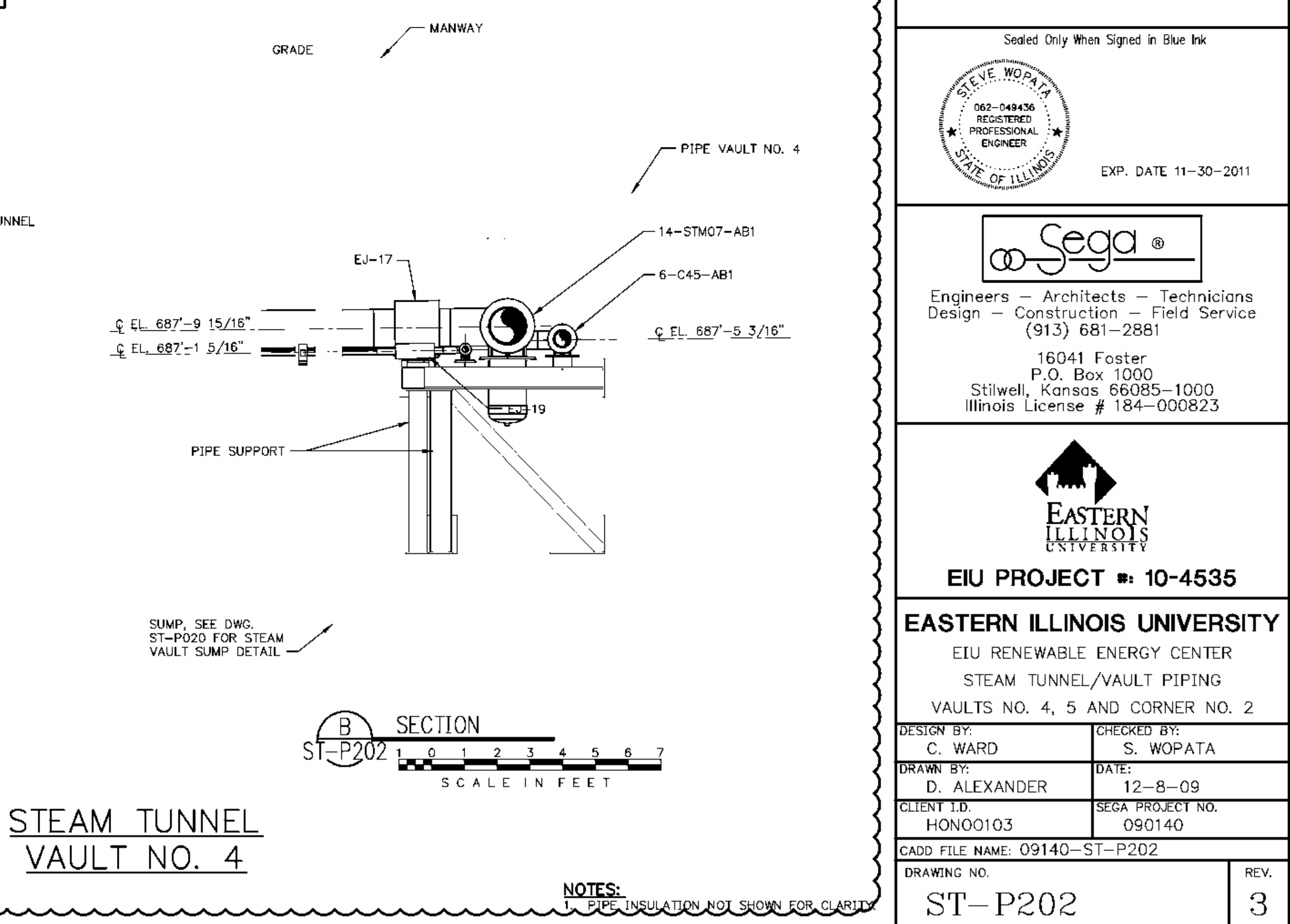
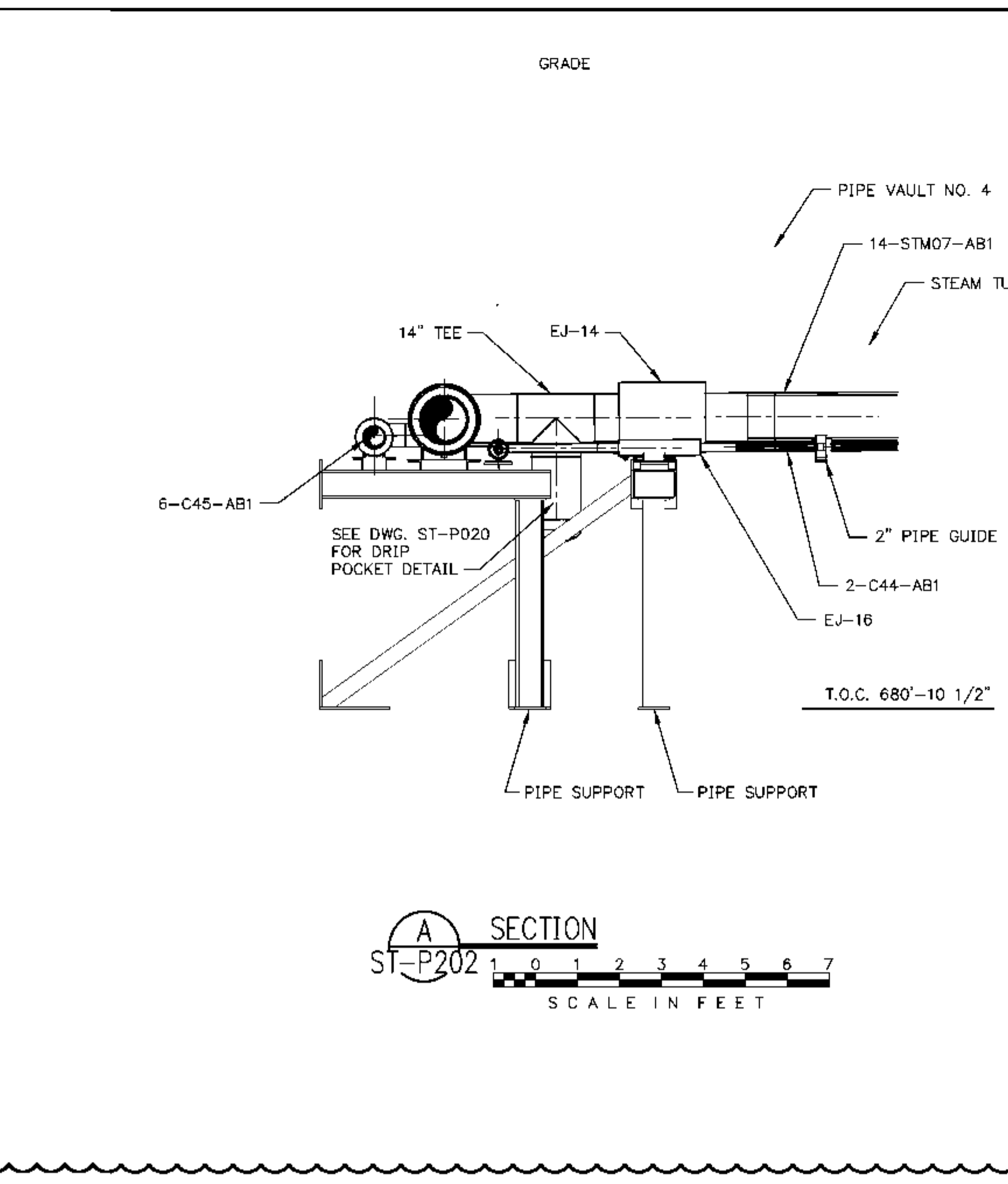
STEAM TUNNEL
VAULT NO. 5



STEAM TUNNEL
VAULT NO. 4



STEAM TUNNEL
CORNER NO. 2



REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	2-19-10	HOLD REMOVED	DCA	SEW
2	5-11-10	REVISED	DCA	SEW
3	5-27-10	REVISED	CMH	SEW

Sealed Only When Signed in Blue Ink

STEVE WOPATA
062-049436
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS
EXP. DATE 11-30-2011

Sega®
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

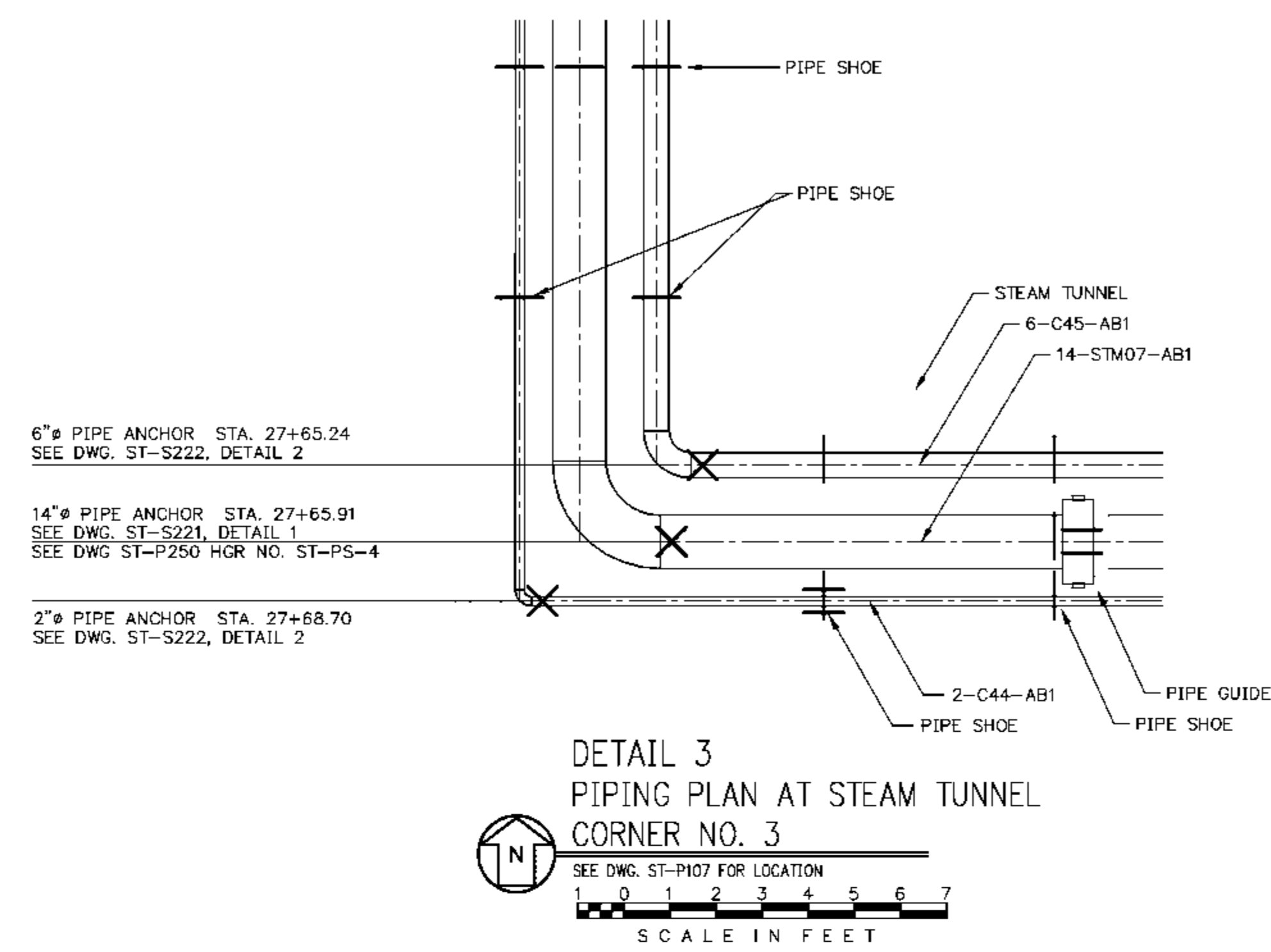
EASTERN ILLINOIS UNIVERSITY
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL/VAULT PIPING
VAULTS NO. 4, 5 AND CORNER NO. 2

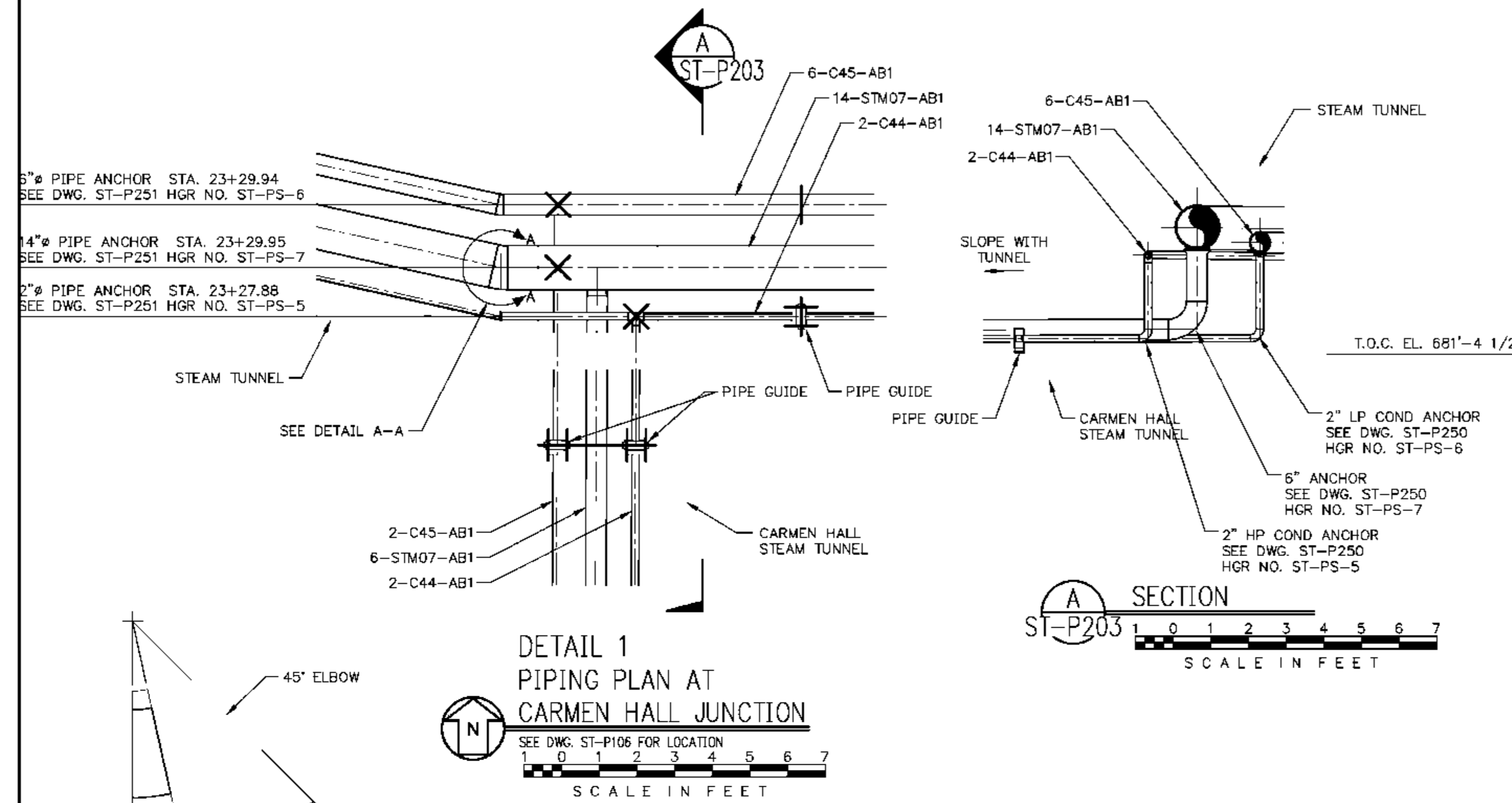
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 12-8-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P202
DRAWING NO.
ST-P202
REV.
3

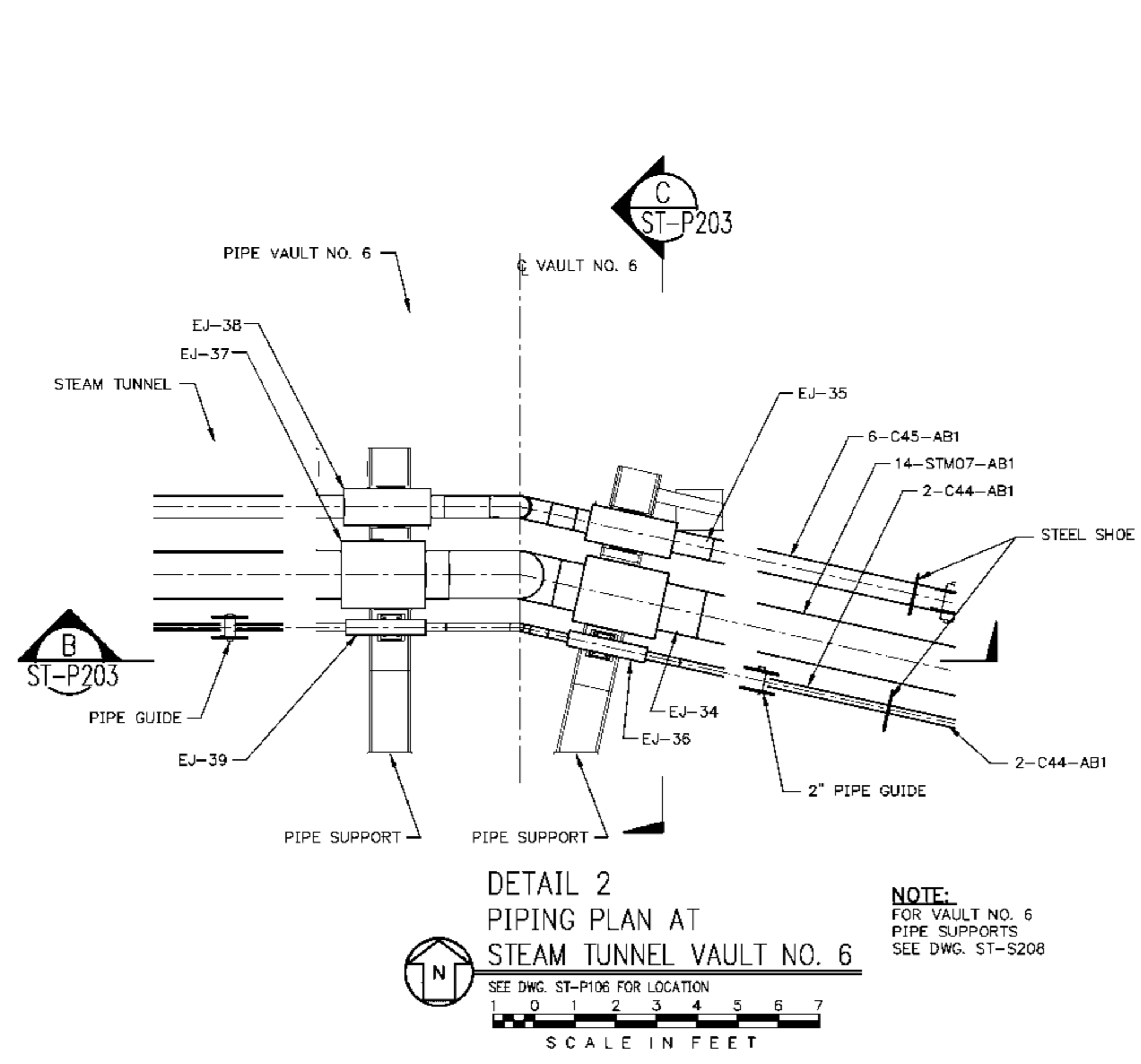
REV.	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	DCA	SEW
B	5-11-10	REVISED	CMH	SEW
C	6-7-10	REVISED	CMH	SEW



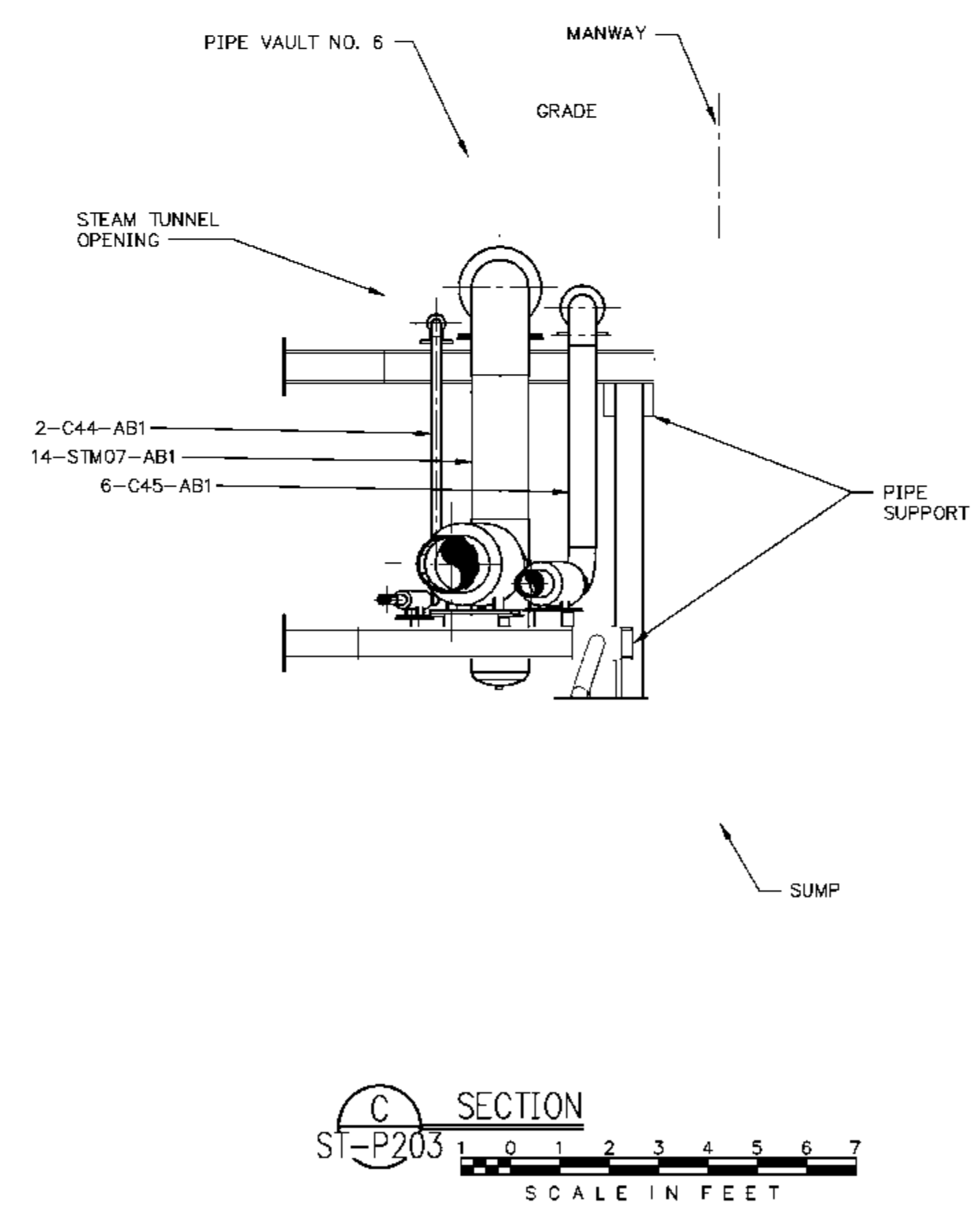
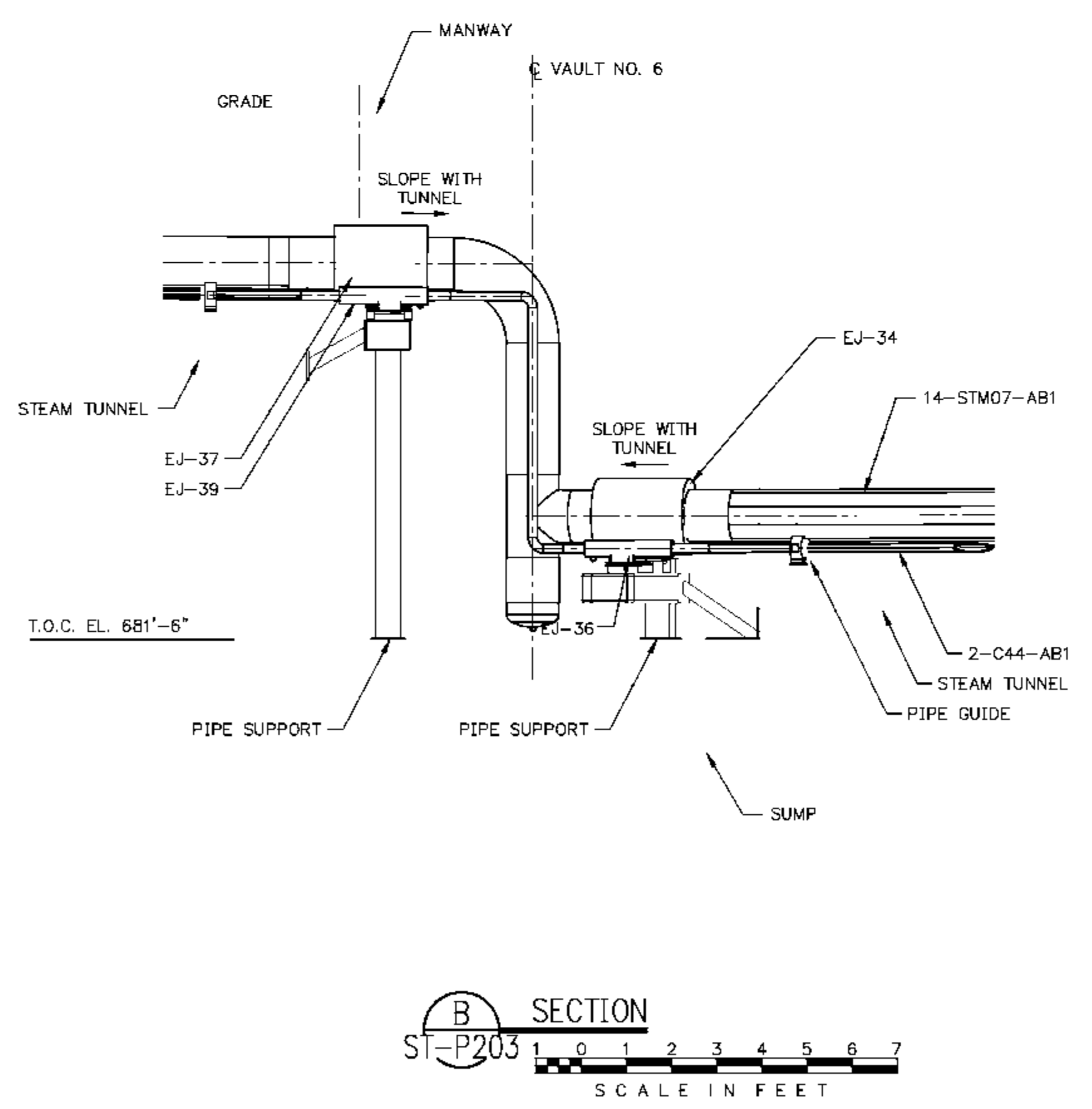
**STEAM TUNNEL
CORNER NO. 3**



CARMEN HALL JUNCTION



**STEAM TUNNEL
VAULT NO. 6**



Sealed Only When Signed in Blue Ink

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL/VAULT PIPING
CARMEN HALL JUNCTION, CORNER NO. 3 AND VAULT NO. 6

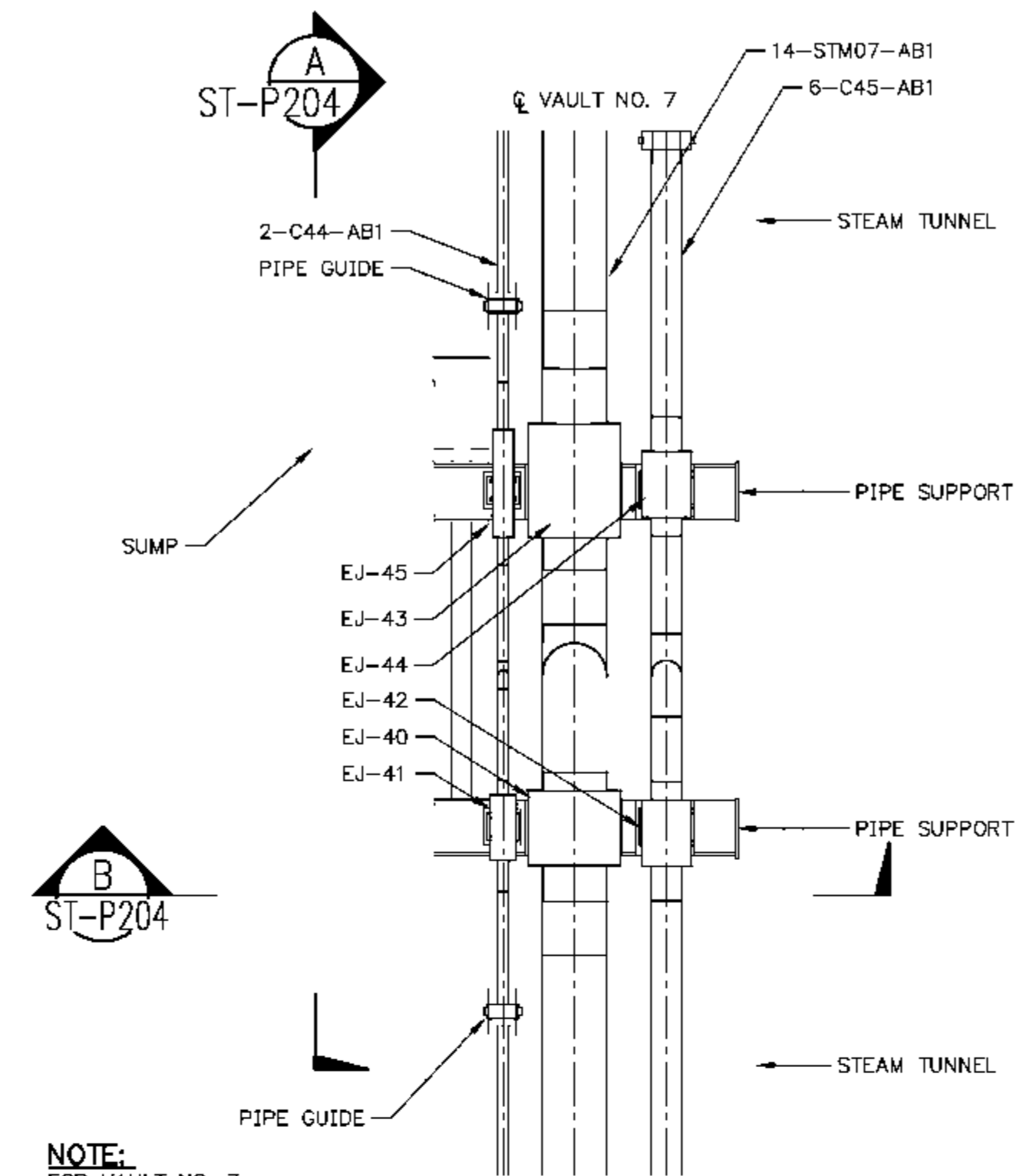
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 2-10-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P203
DRAWING NO. **ST-P203**

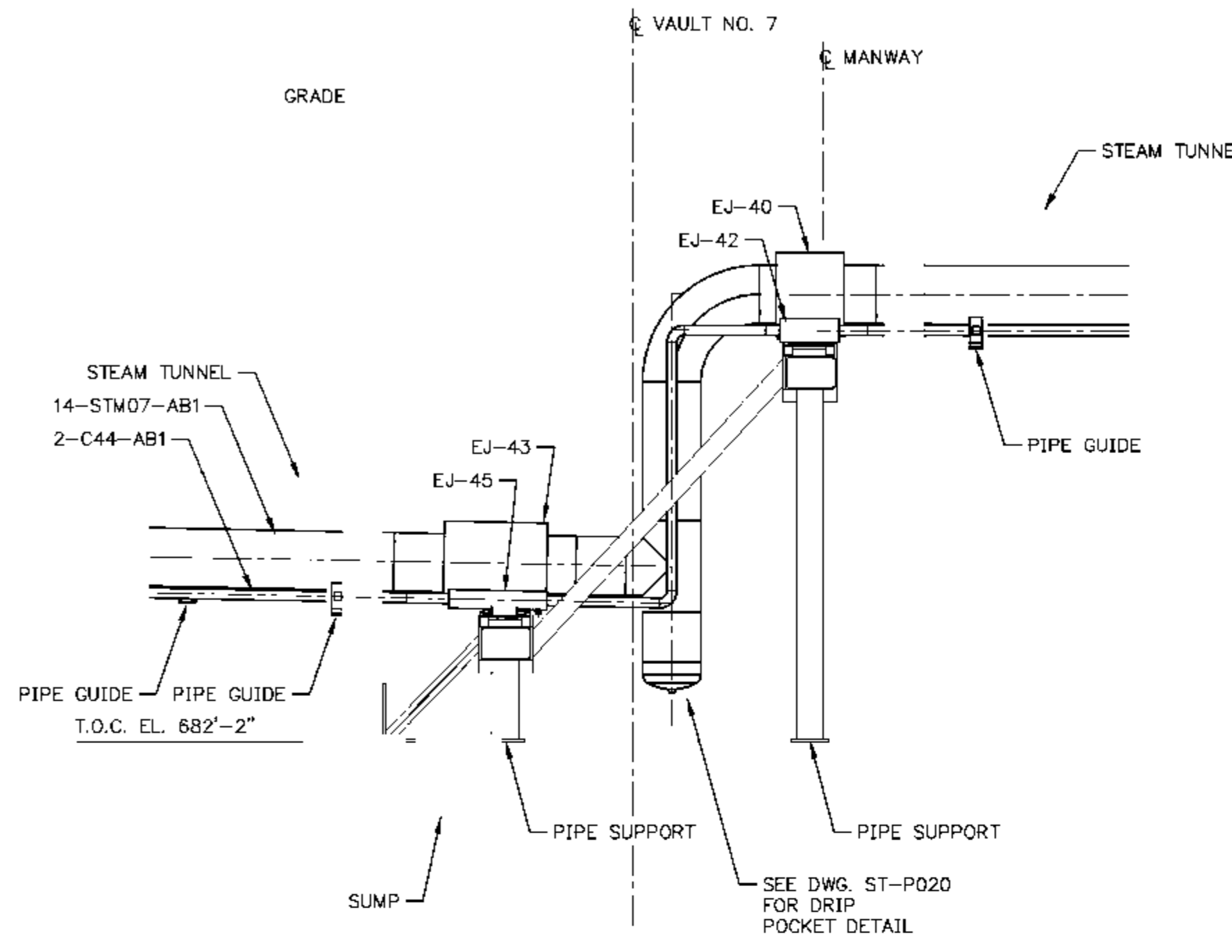
NOTES:
1. PIPE INSULATION NOT SHOWN FOR CLARITY.

REV. **C**

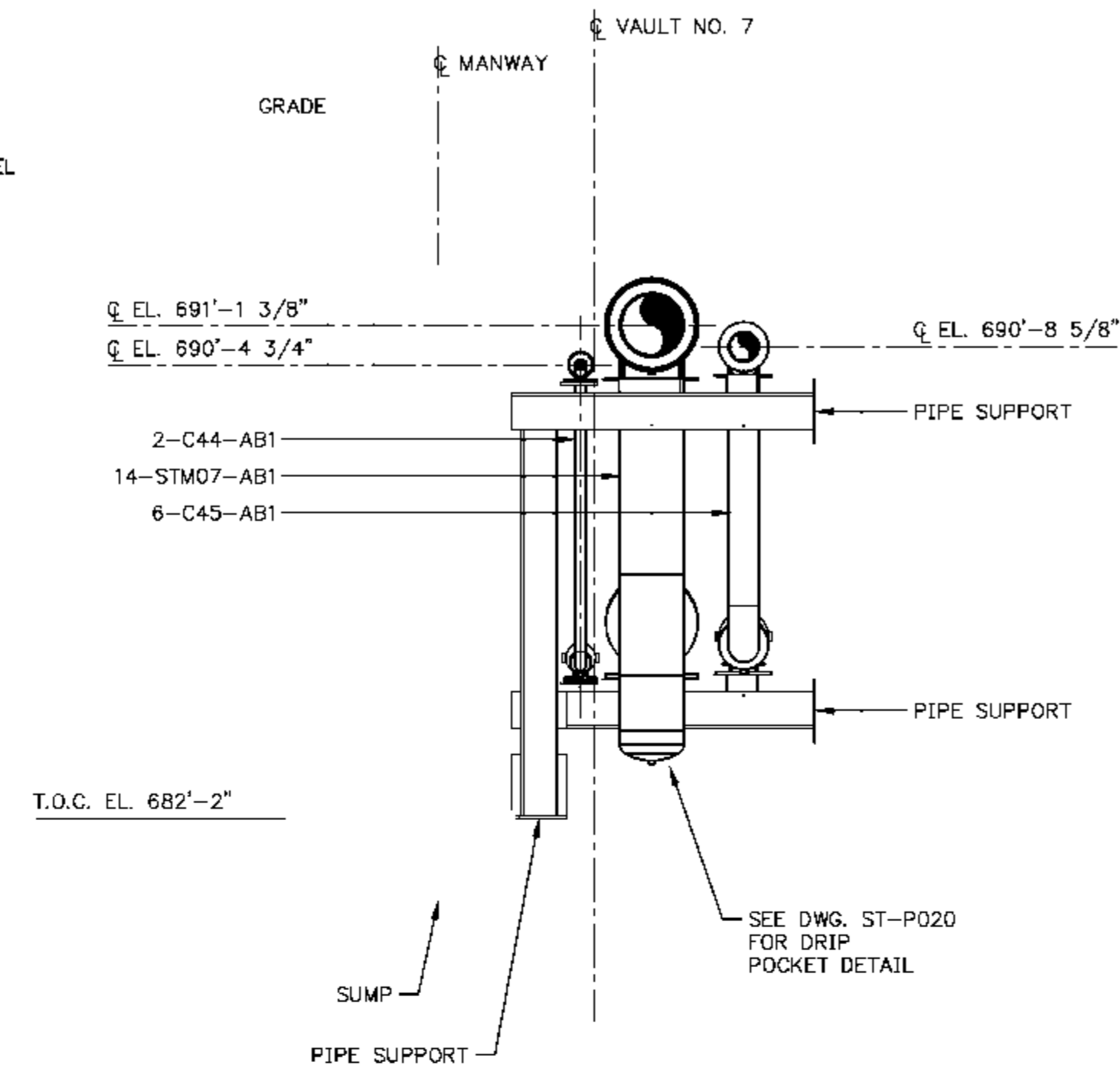
REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW



DETAIL 1
PIPING PLAN
STEAM TUNNEL VAULT NO. 7
 SEE DWG. ST-P107 FOR LOCATION
 SCALE IN FEET

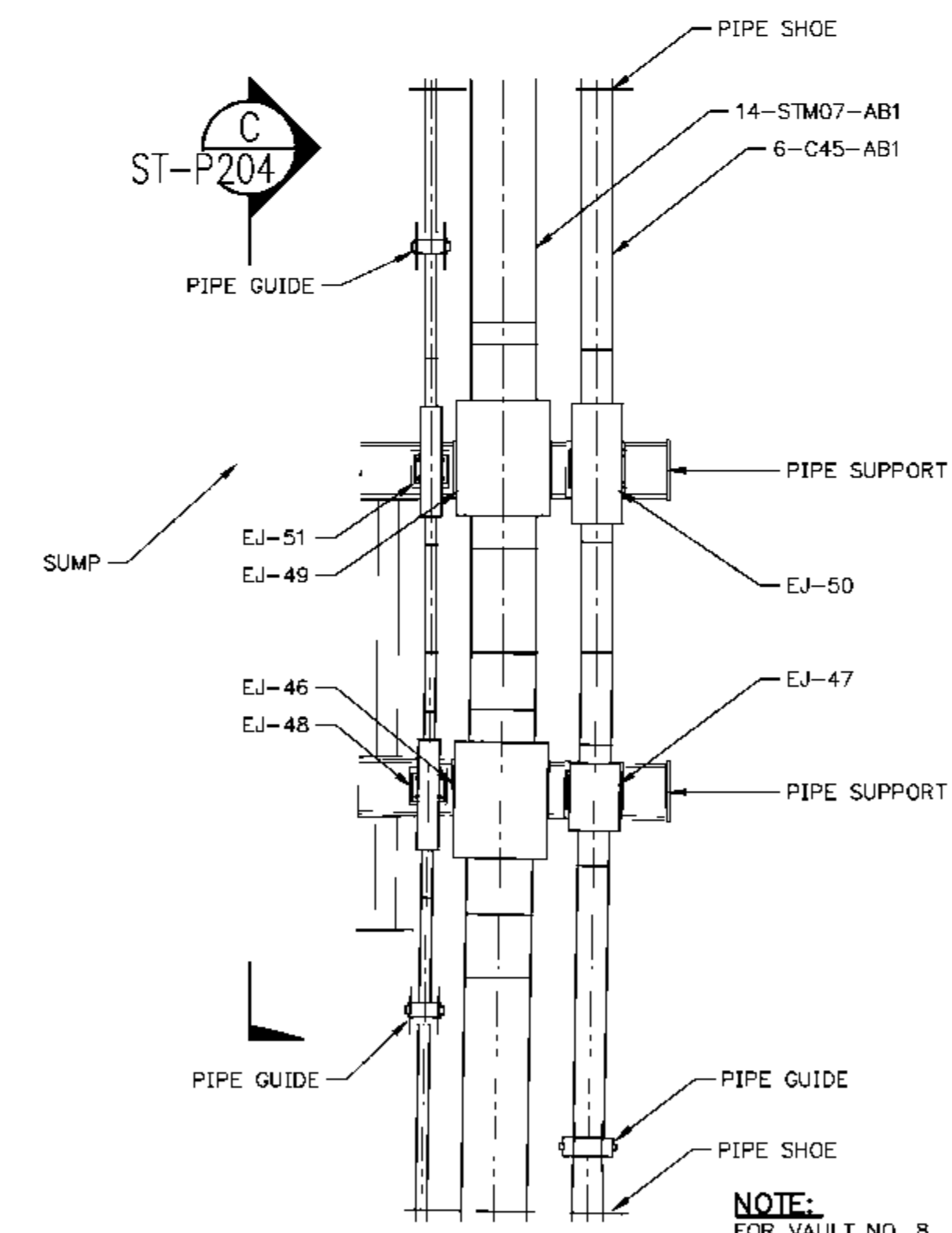


SECTION A
 ST-P204
 SCALE IN FEET

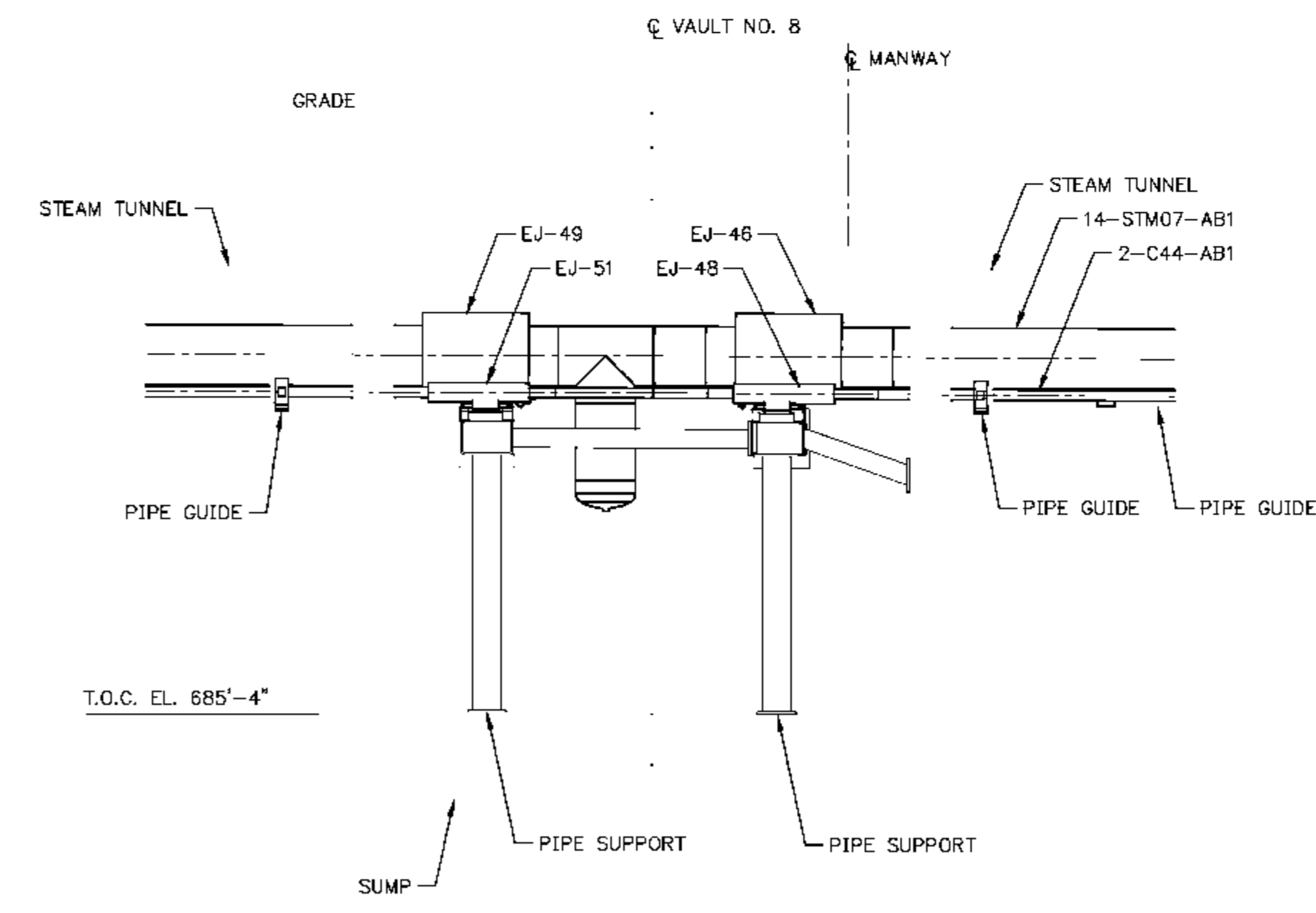


SECTION B
 ST-P204
 SCALE IN FEET

STEAM TUNNEL VAULT NO. 7



DETAIL 2
PIPING PLAN
STEAM TUNNEL VAULT NO. 8
 SEE DWG. ST-P108 FOR LOCATION
 SCALE IN FEET



SECTION C
 ST-P204
 SCALE IN FEET

STEAM TUNNEL VAULT NO. 8

NOTES:
 1. PIPE INSULATION NOT SHOWN FOR CLARITY.

Sealed Only When Signed in Blue Ink

Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

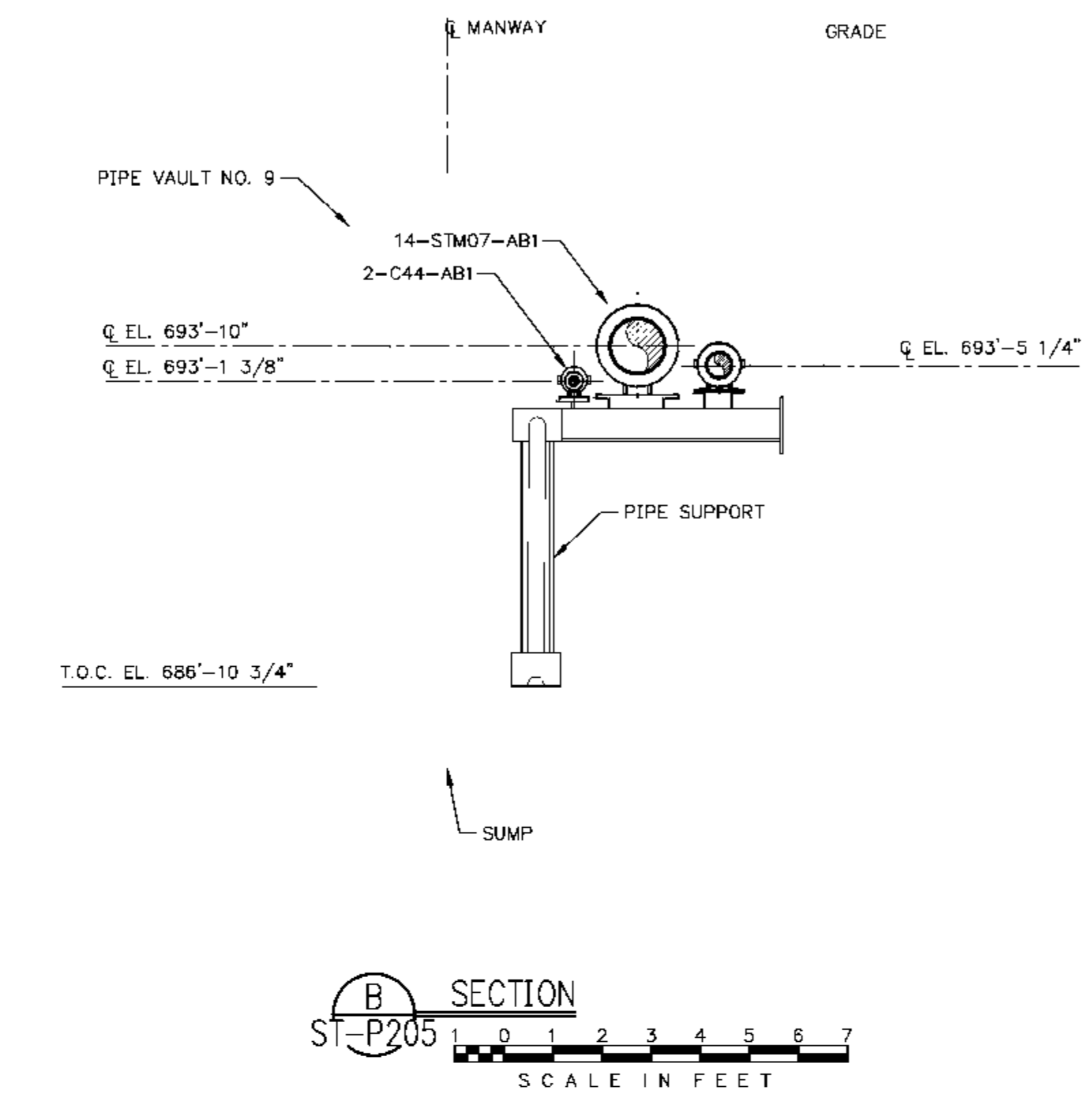
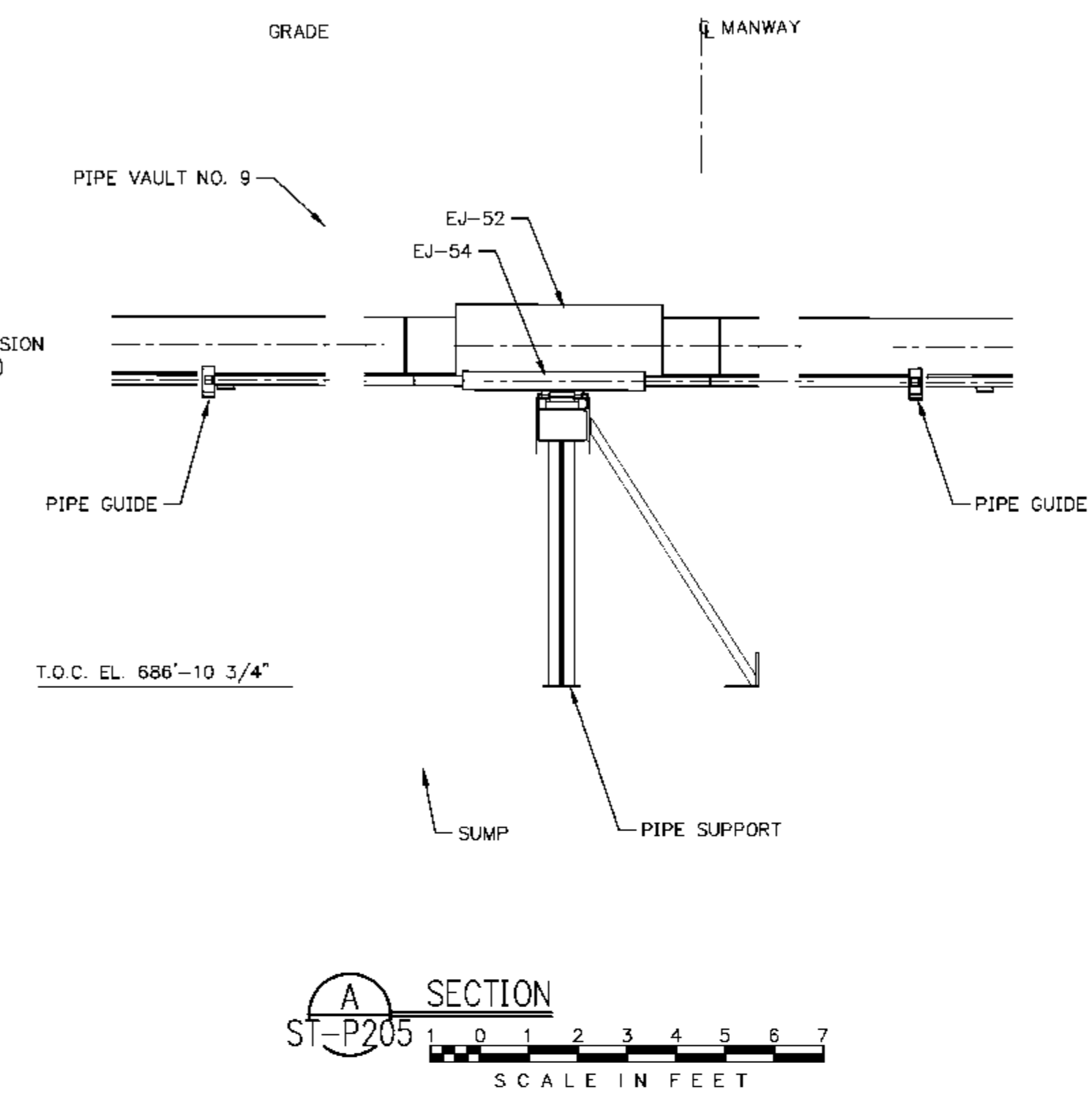
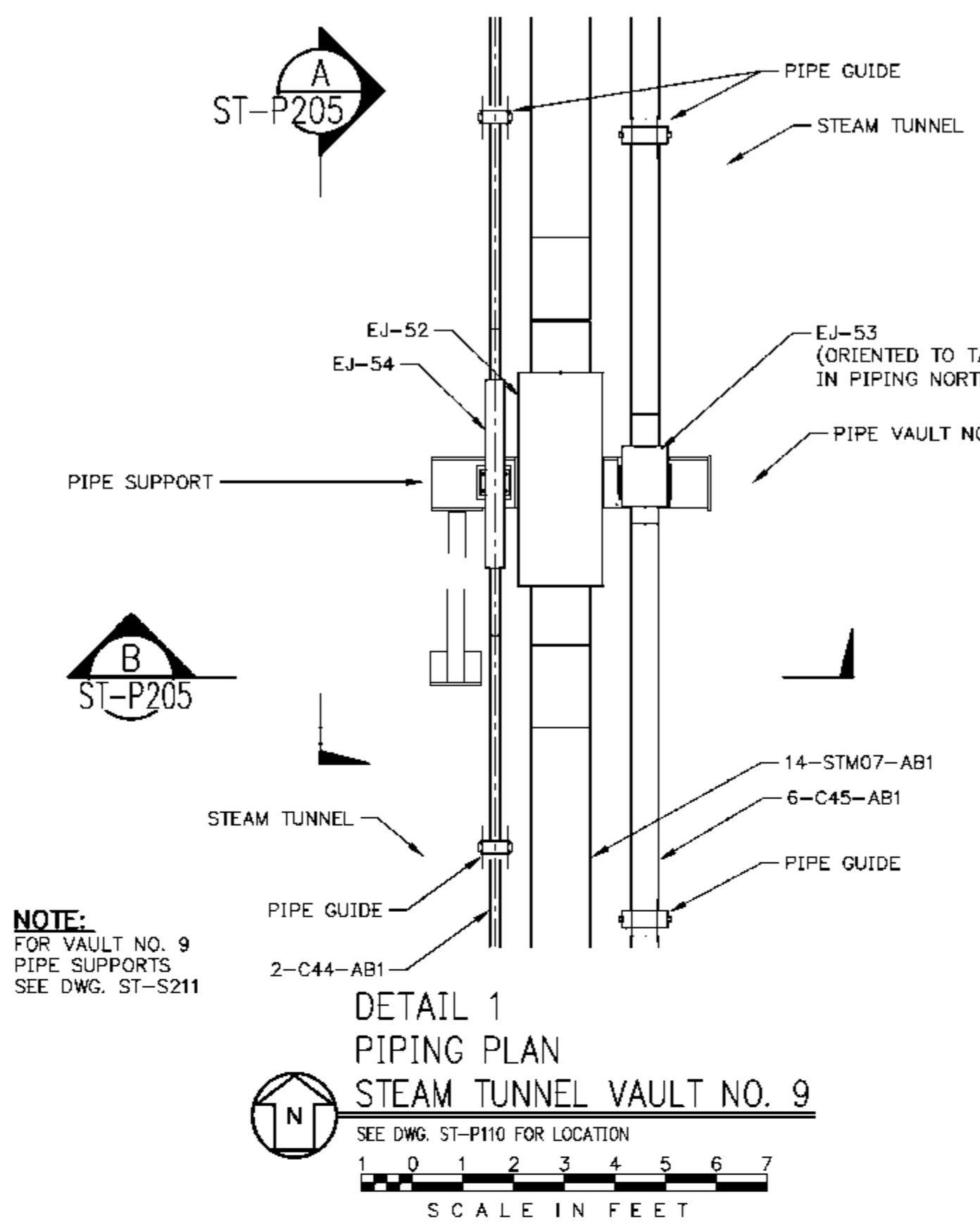
EASTERN ILLINOIS UNIVERSITY
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL/VAULT PIPING
 VAULT NO. 7 & VAULT NO. 8

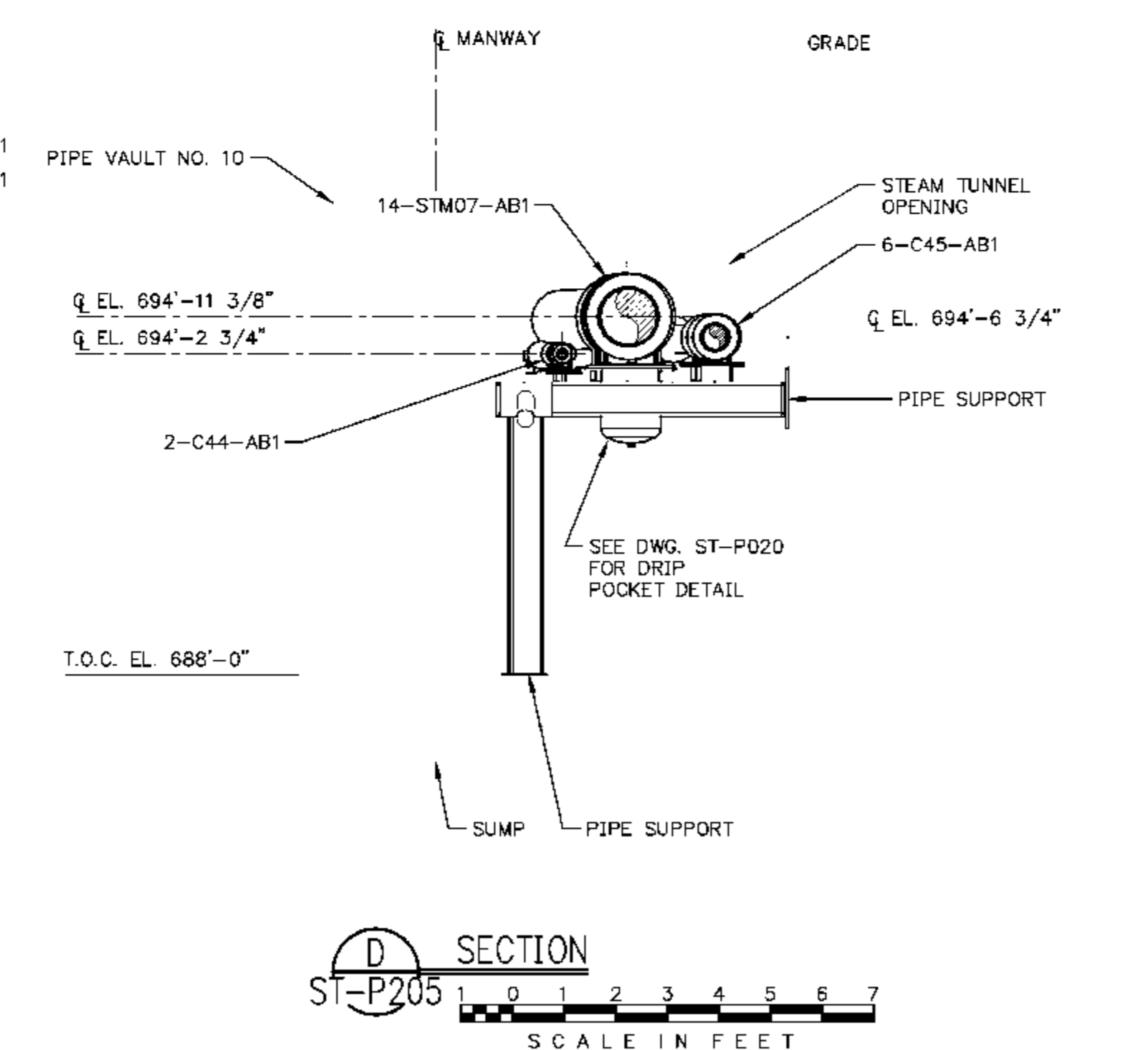
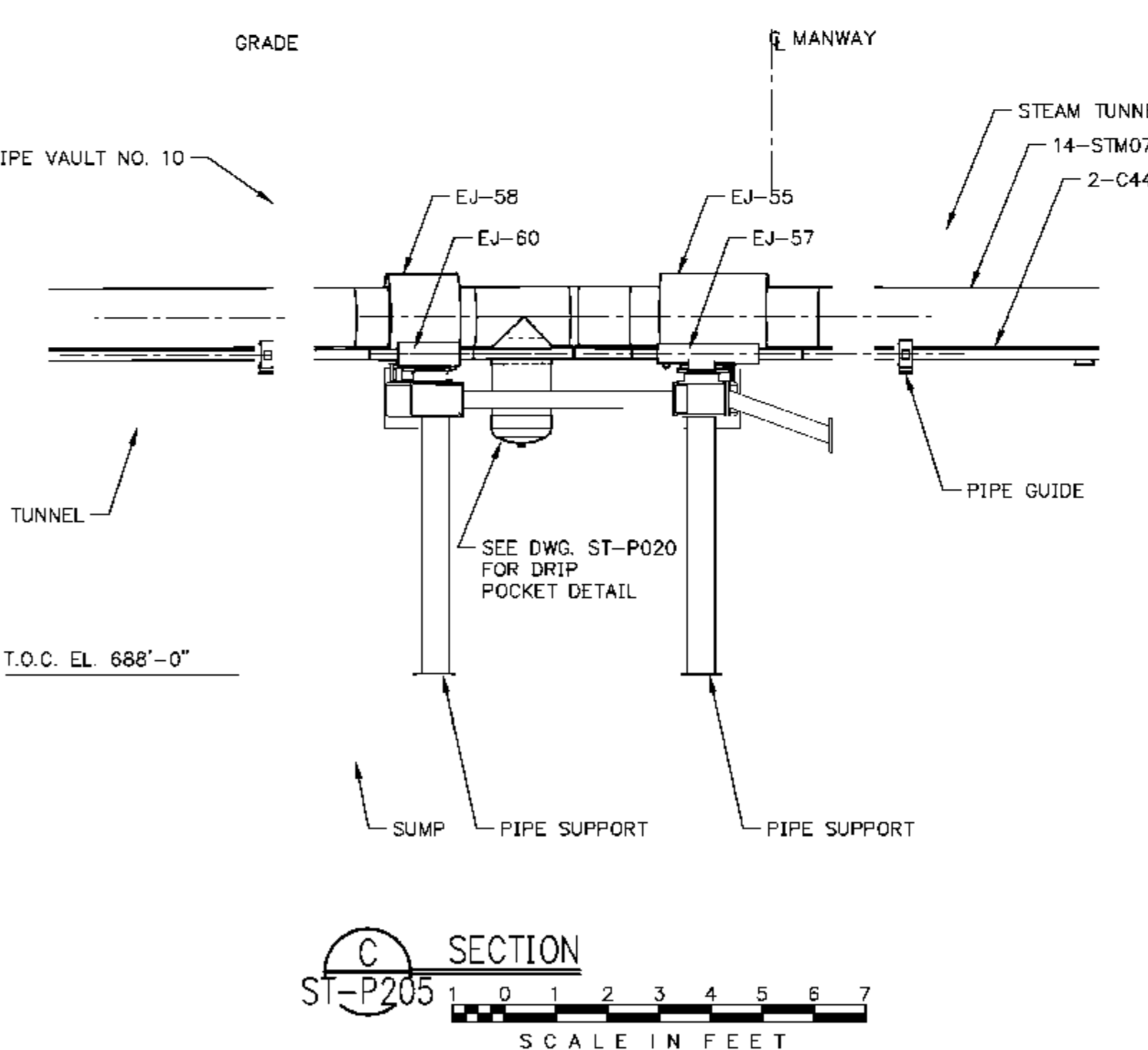
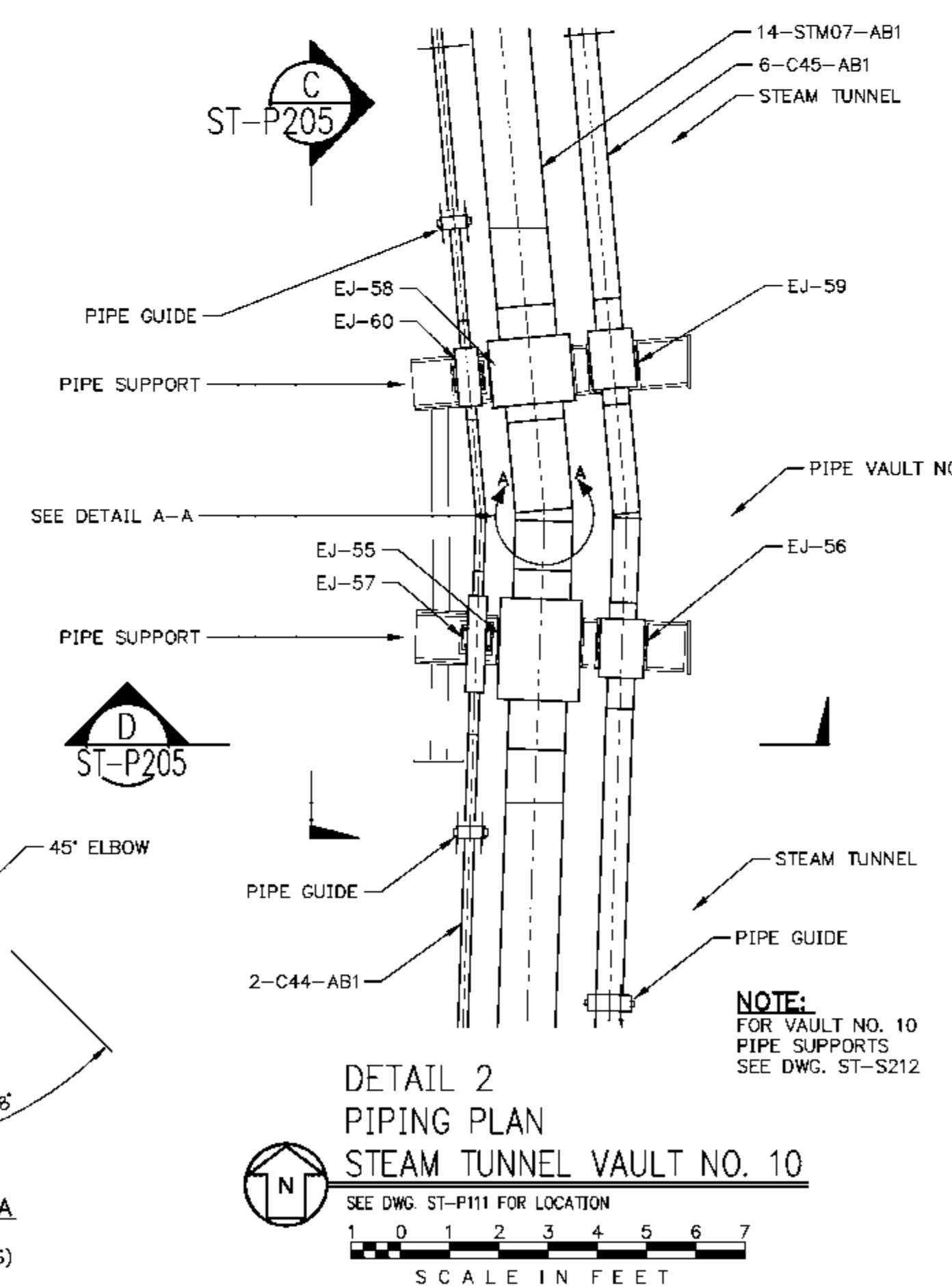
DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. HAYTON	DATE: 4-9-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P204	DRAWING NO. ST-P204	REV. B
-------------------------------	-------------------------------	------------------

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW



STEAM TUNNEL VAULT NO. 9



STEAM TUNNEL VAULT NO. 10

Sealed Only When Signed in Blue Ink

Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
 IUI PROJECT #: 10-4535

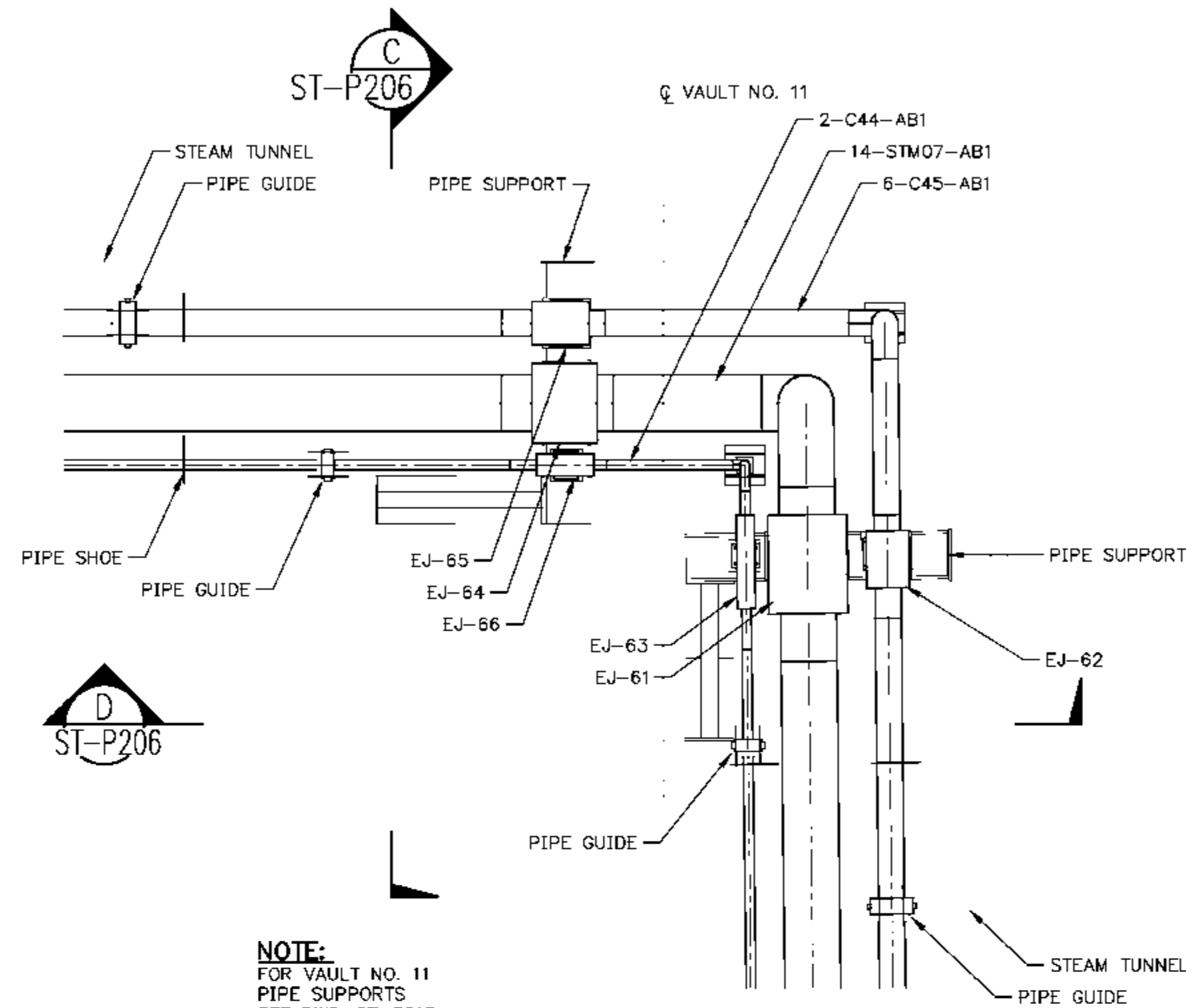
EASTERN ILLINOIS UNIVERSITY
 IUI RENEWABLE ENERGY CENTER
 STEAM TUNNEL/VAULT PIPING
 VAULT NO. 9 & VAULT NO. 10

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. HAYTON	DATE: 4-9-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P205	REV. B
DRAWING NO. ST-P205	

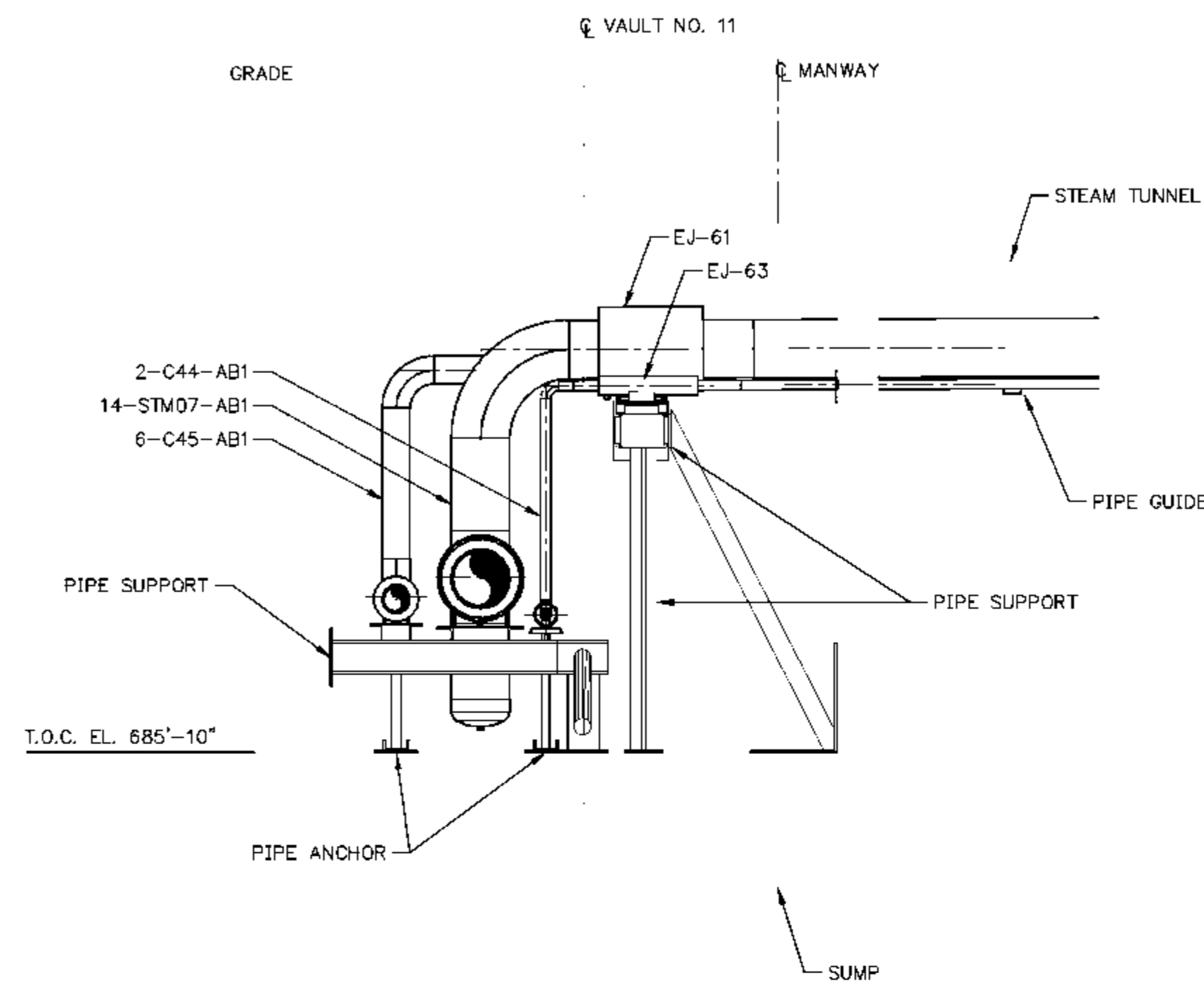
NOTES:
 1. PIPE INSULATION NOT SHOWN FOR CLARITY.

REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW

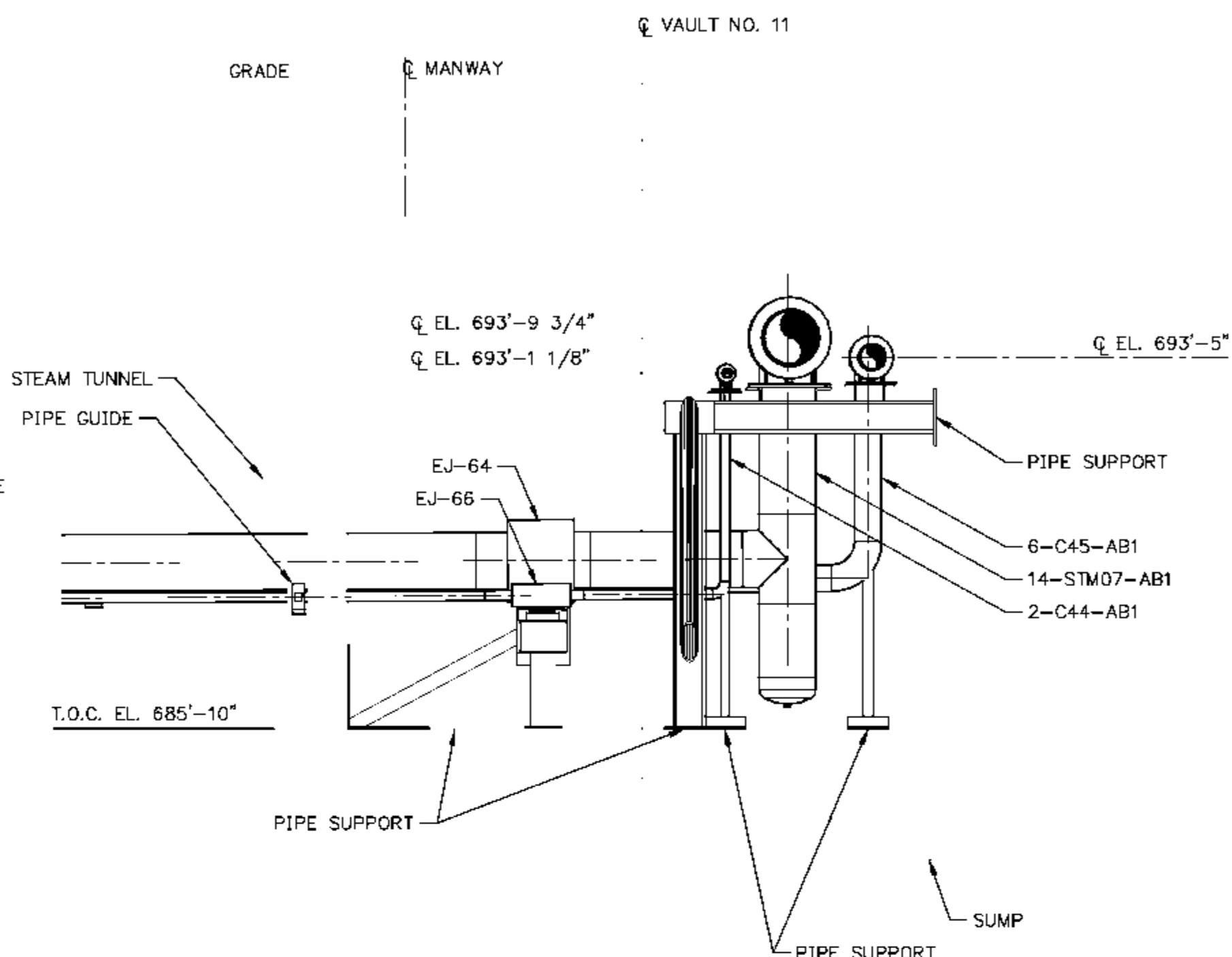


NOTE:
FOR VAULT NO. 11
PIPE SUPPORTS
SEE DWG. ST-S213

DETAIL 1
PIPING PLAN
STEAM TUNNEL VAULT NO. 11
SEE DWG. ST-P111 FOR LOCATION
SCALE IN FEET

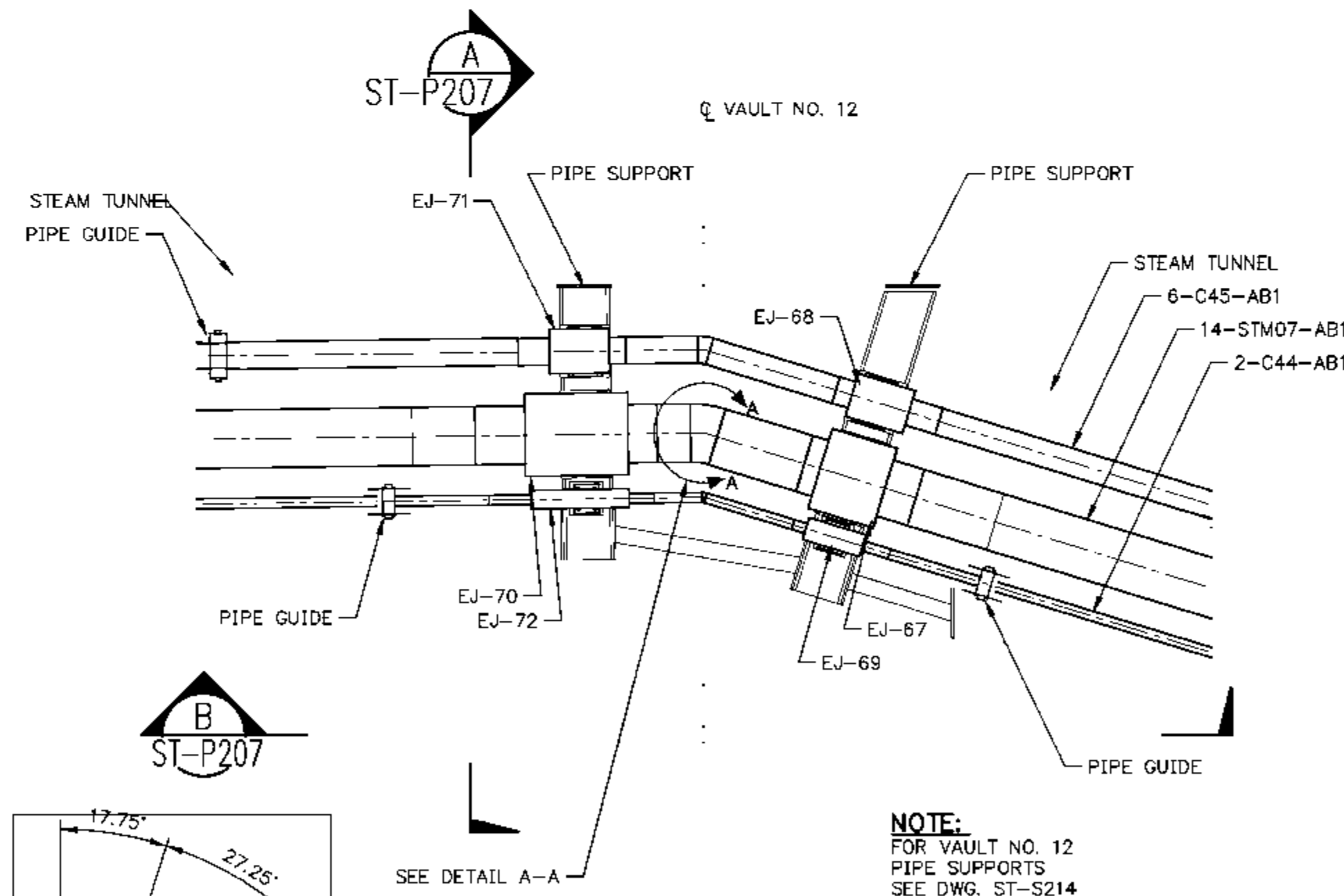


SECTION C
ST-P206
SCALE IN FEET



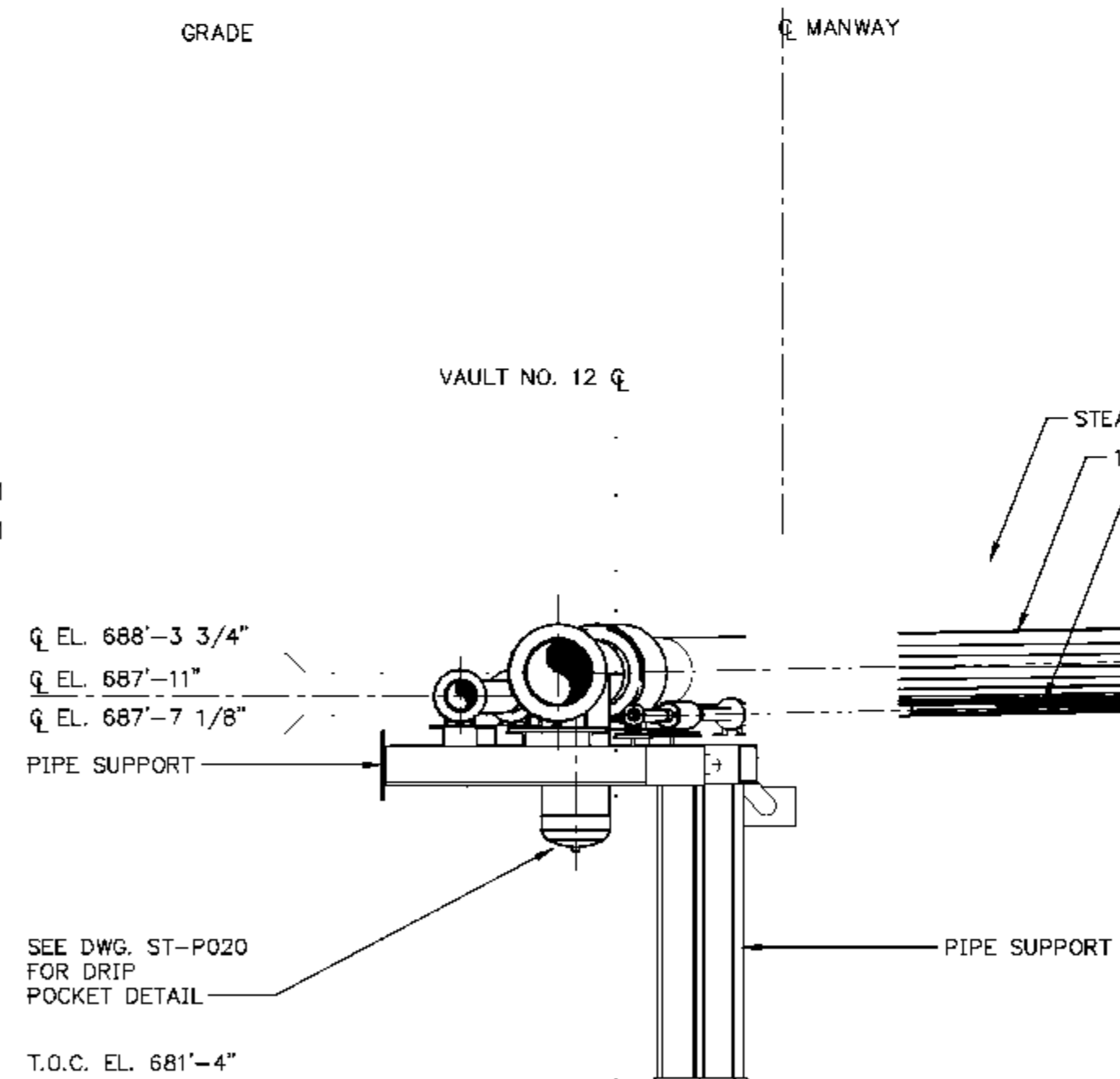
SECTION D
ST-P206
SCALE IN FEET

STEAM TUNNEL VAULT NO. 11

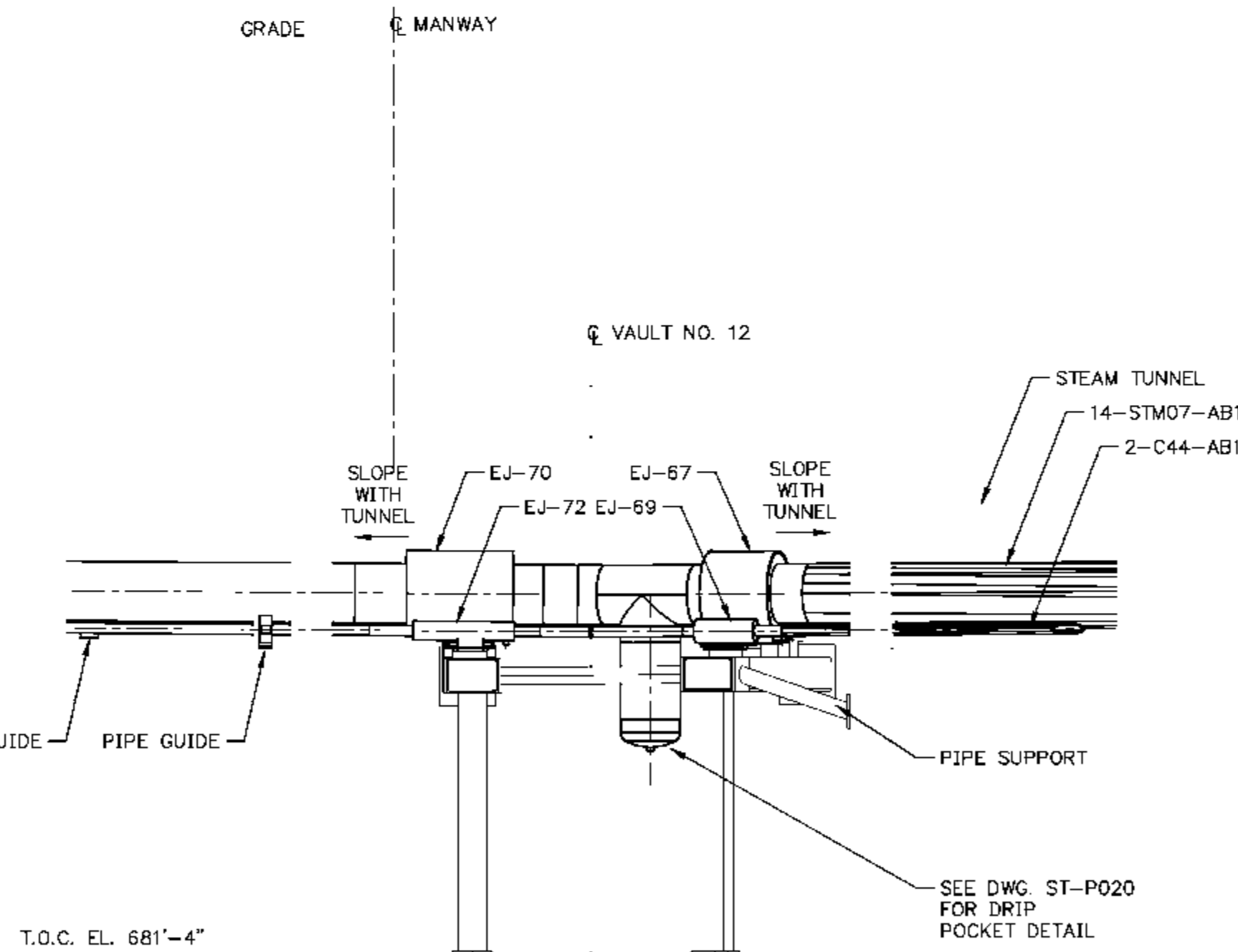


NOTE:
FOR VAULT NO. 12
PIPE SUPPORTS
SEE DWG. ST-S214

DETAIL 2
PIPING PLAN
STEAM TUNNEL VAULT NO. 12
SEE DWG. ST-P112 FOR LOCATION
SCALE IN FEET

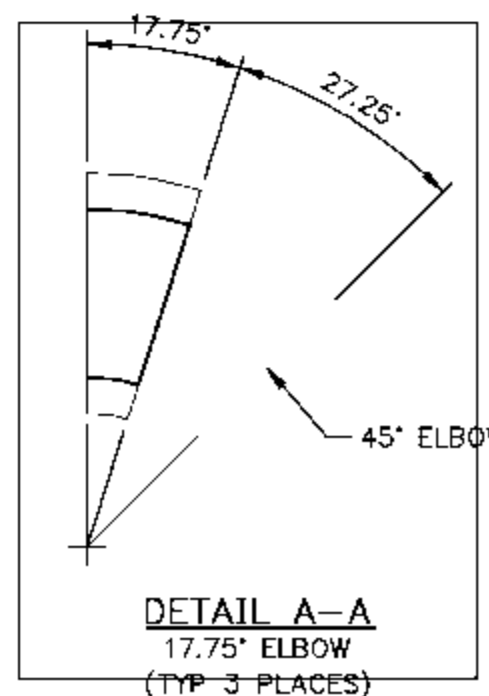


SECTION A
ST-P207
SCALE IN FEET



SECTION B
ST-P207
SCALE IN FEET

STEAM TUNNEL VAULT NO. 12



DETAIL A-A
17.75" ELBOW
(TYP. 3 PLACES)

NOTES:
1. PIPE INSULATION NOT SHOWN FOR CLARITY.

Sealed Only When Signed in Blue Ink

Sealed Only When Signed in Blue Ink

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
EIU PROJECT #: 10-4535

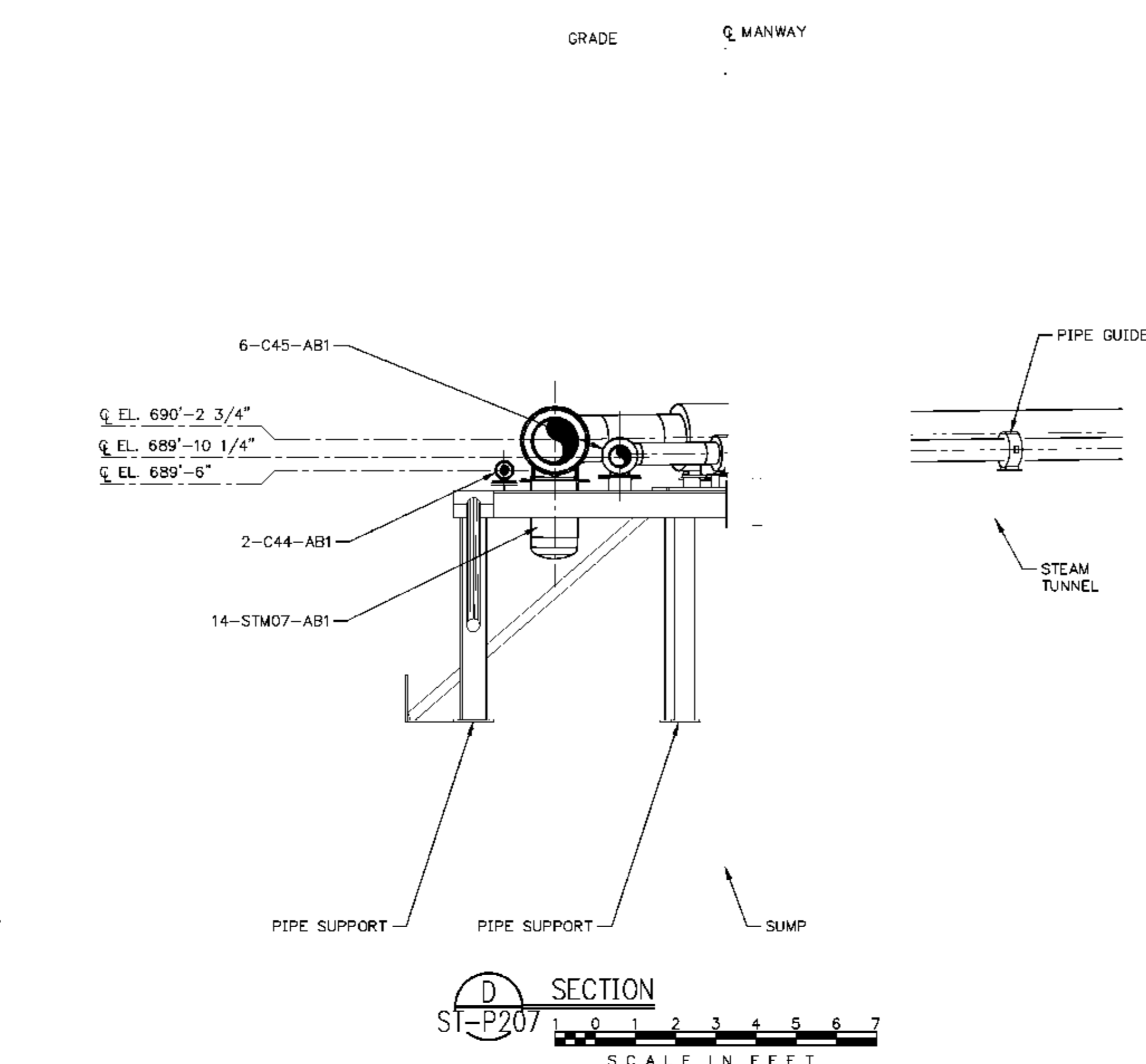
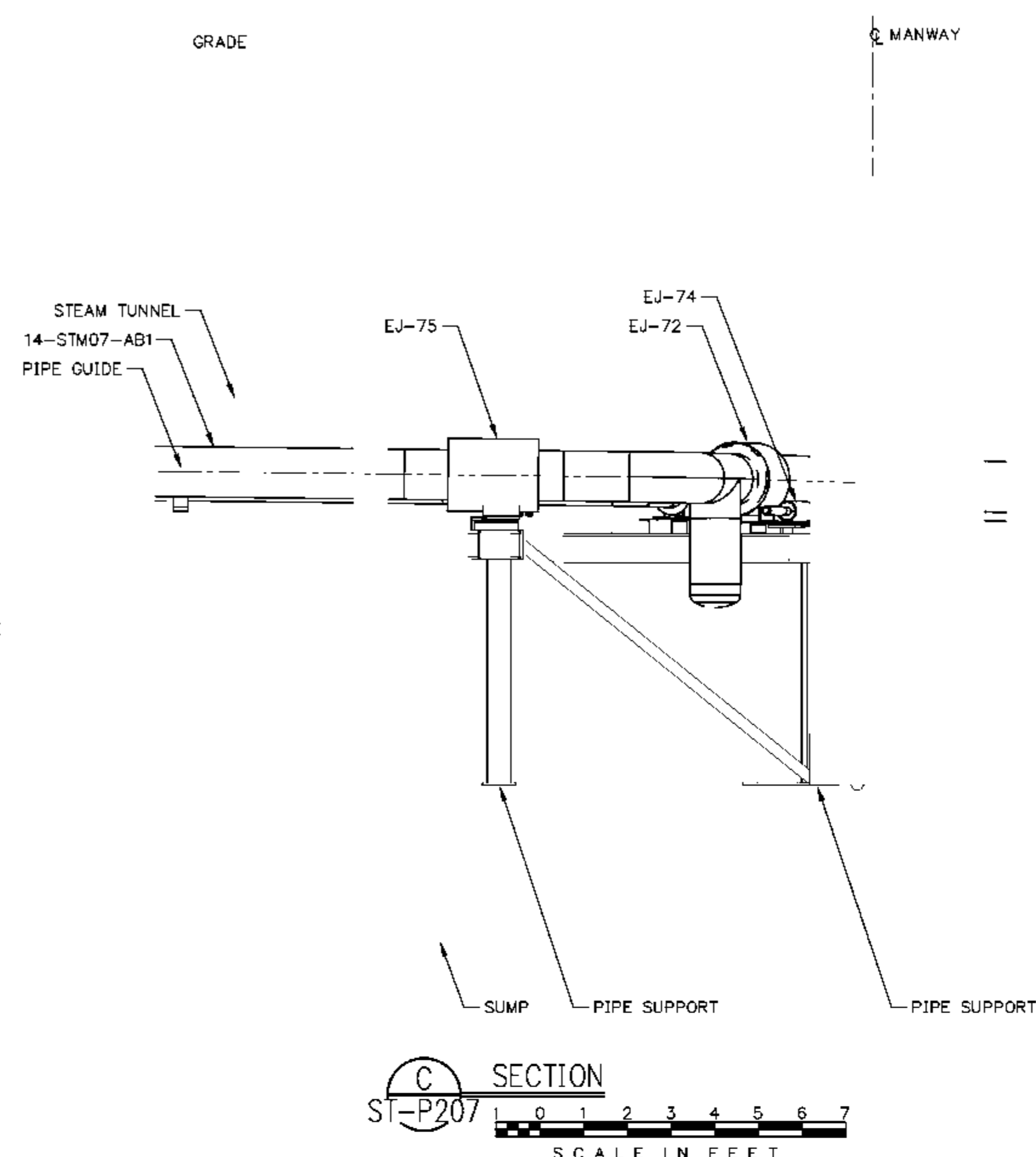
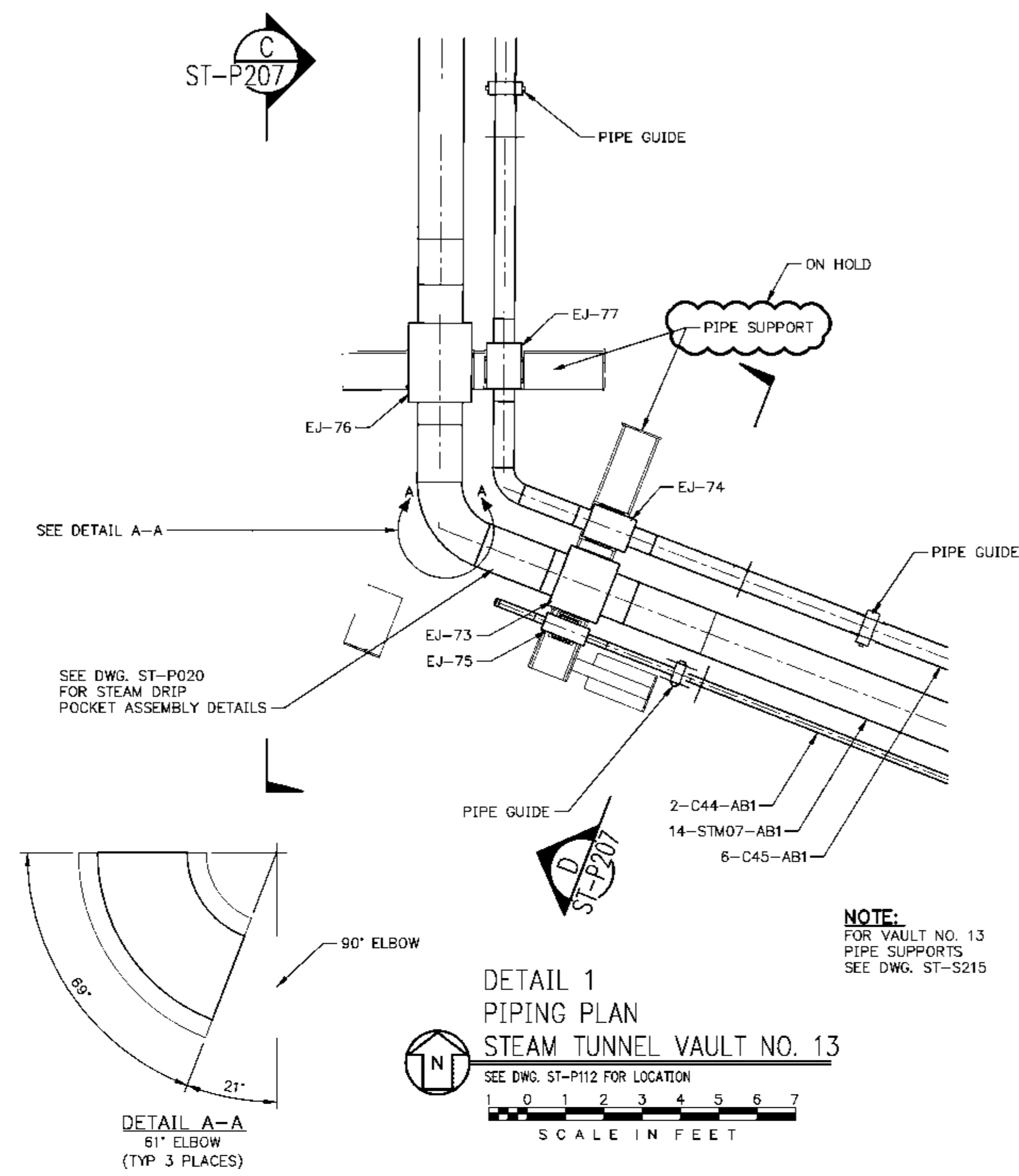
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL/VAULT PIPING
VAULT NO. 11 & VAULT NO. 12

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. HAYTON	DATE: 4-12-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P206

DRAWING NO. ST-P206	REV. B
-------------------------------	------------------

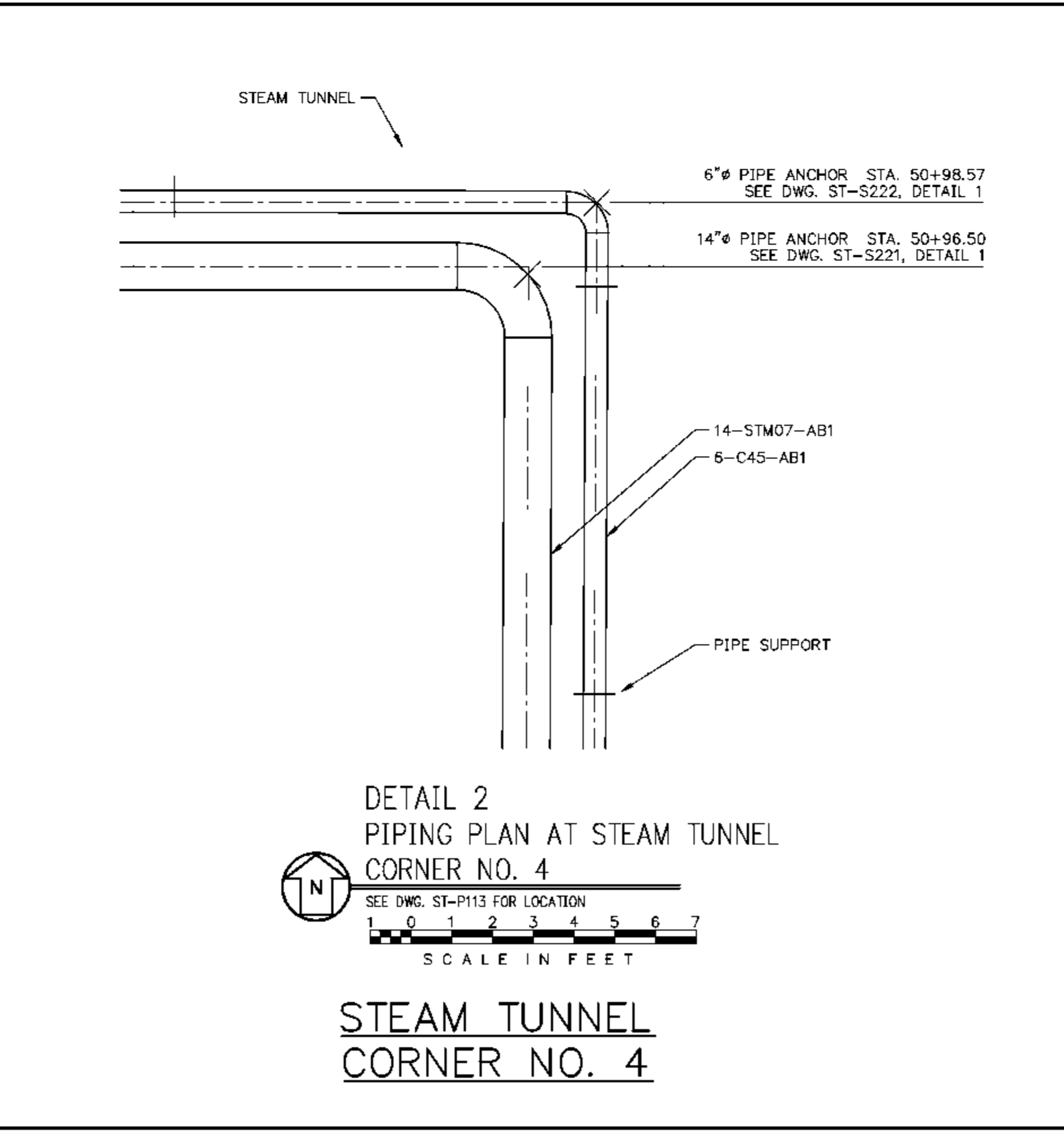
REV.	DATE	DESCRIPTION	DWN	CHK
A	5-11-10	ISSUED FOR REVIEW	CMH	SEW
B	6-7-10	REVISED	CMH	SEW



SECTION C
ST-P207
SCALE IN FEET

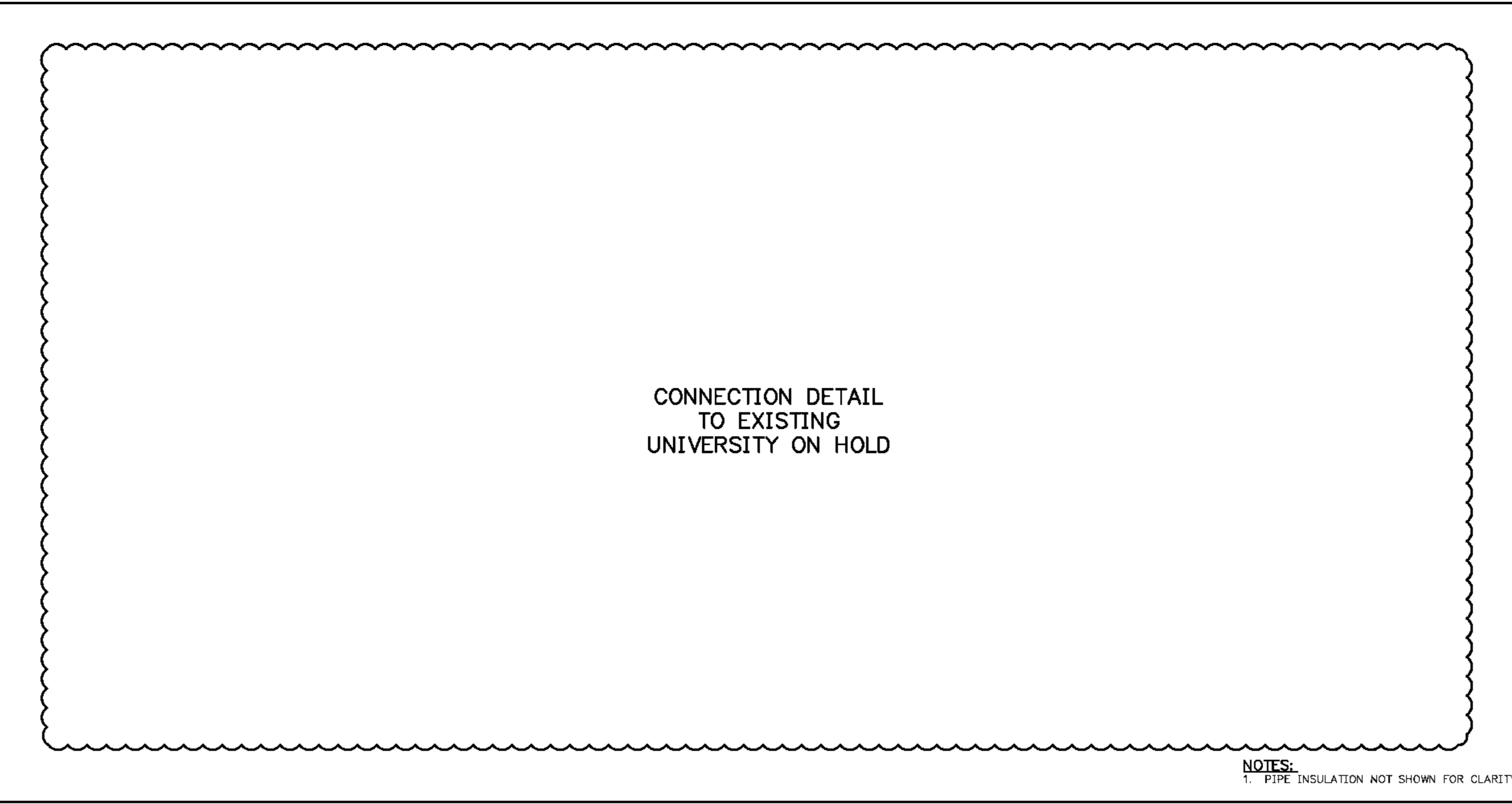
SECTION D
ST-P207
SCALE IN FEET

STEAM TUNNEL VAULT NO. 13



DETAIL 2
PIPING PLAN AT STEAM TUNNEL
CORNER NO. 4
SEE DWG. ST-P113 FOR LOCATION

STEAM TUNNEL CORNER NO. 4



CONNECTION DETAIL
TO EXISTING
UNIVERSITY ON HOLD

NOTES:
1. PIPE INSULATION NOT SHOWN FOR CLARITY.

Sealed Only When Signed in Blue Ink

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

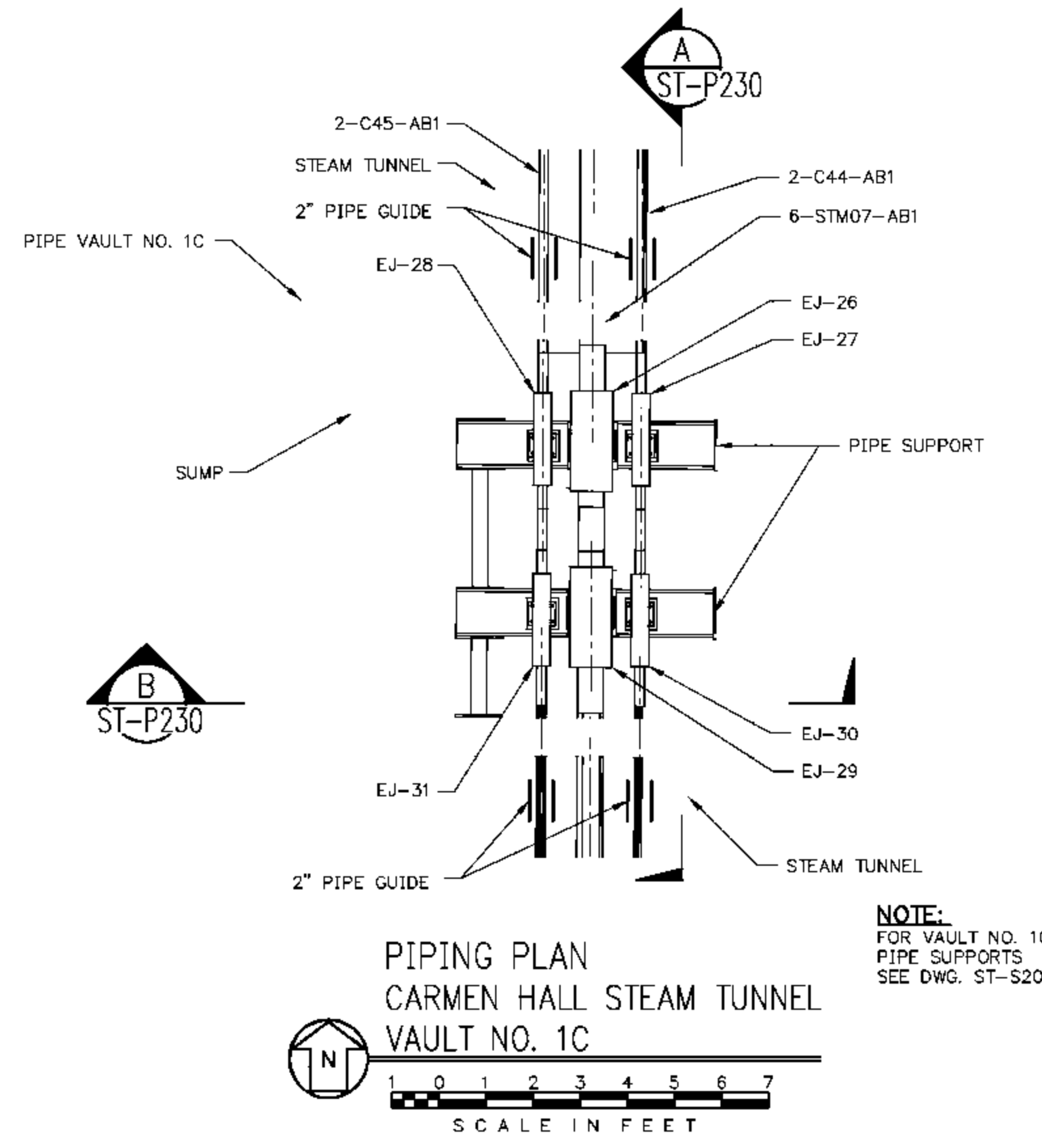
EASTERN ILLINOIS UNIVERSITY
EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL/VAULT PIPING
VAULT NO. 13, CORNER NO. 4, AND UNIVERSITY CONNECTION

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: C. HAYTON	DATE: 4-12-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P207	
DRAWING NO. ST-P207	REV. B

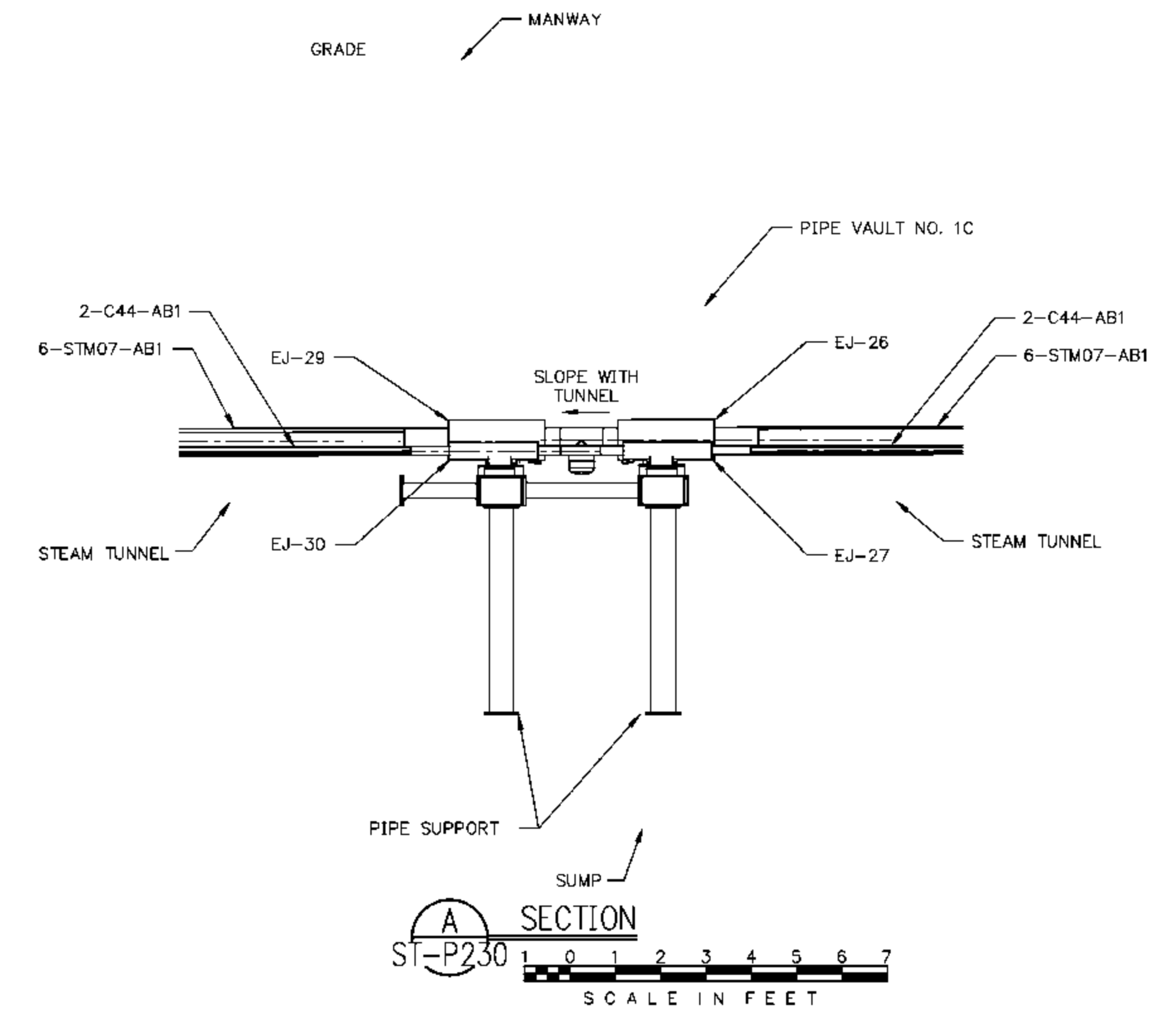
REV.	DATE	DESCRIPTION	DWN	CHK
A	2-19-10	ISSUED FOR REVIEW	DCA	SEW
B	5-11-10	REVISED	CMH	SEW



PIPING PLAN
CARMEN HALL STEAM TUNNEL
VAULT NO. 1C

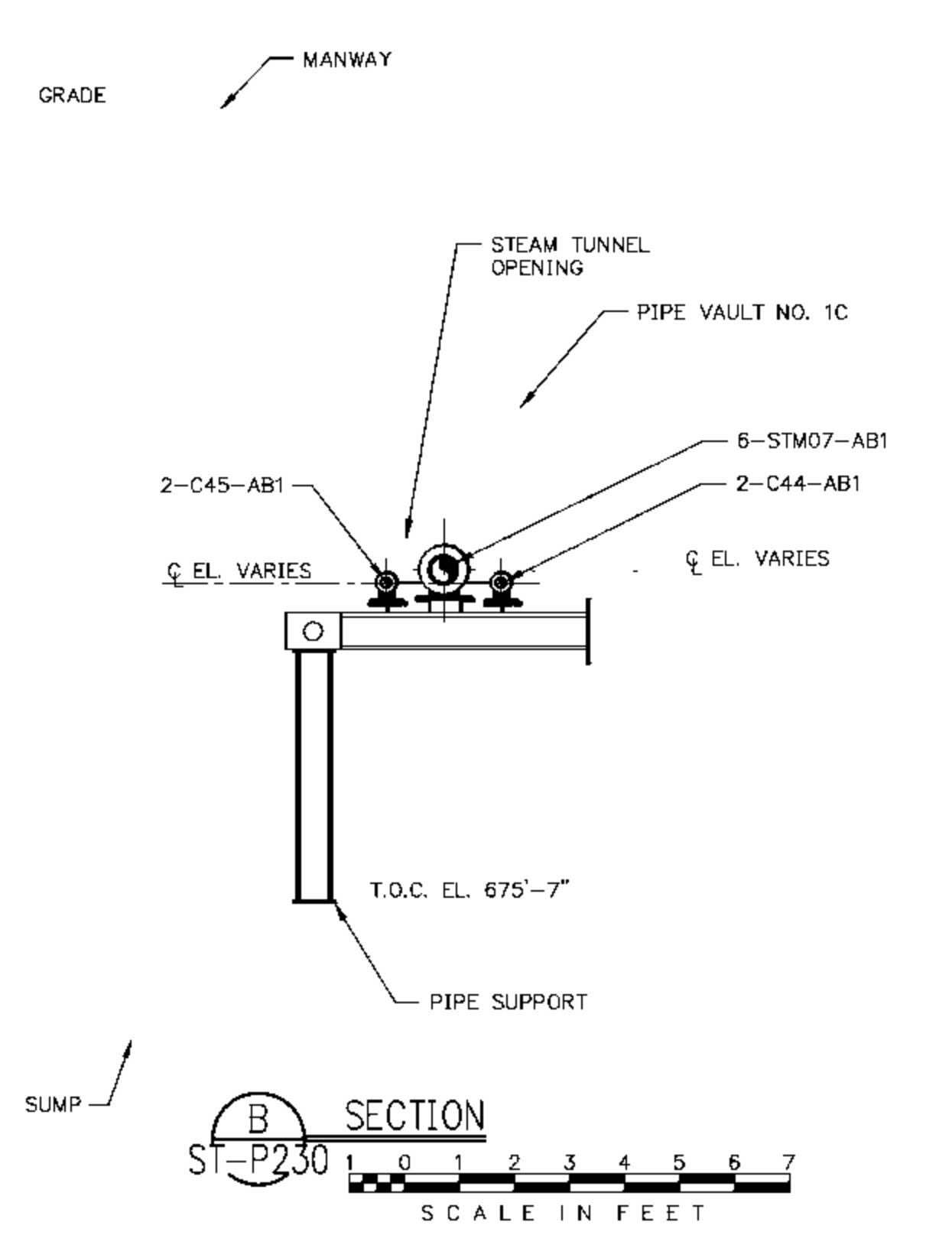
SCALE IN FEET

NOTE:
FOR VAULT NO. 1C
PIPE SUPPORTS
SEE DWG. ST-S206



CARMEN HALL STEAM TUNNEL
VAULT NO. 1C

SCALE IN FEET

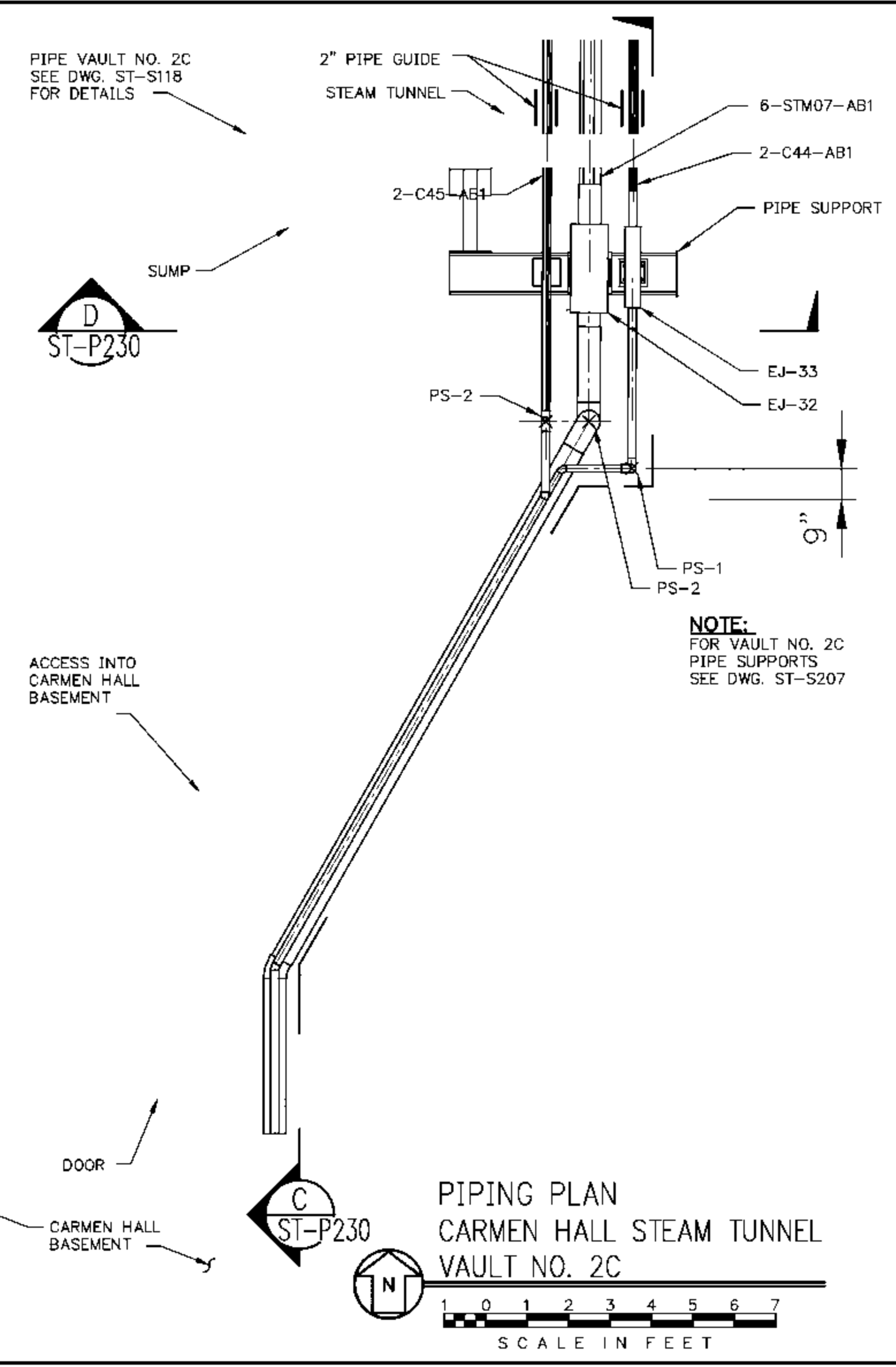


CARMEN HALL STEAM TUNNEL
VAULT NO. 1C

SCALE IN FEET

NOTES:
1. PIPE INSULATION NOT SHOWN FOR CLARITY.

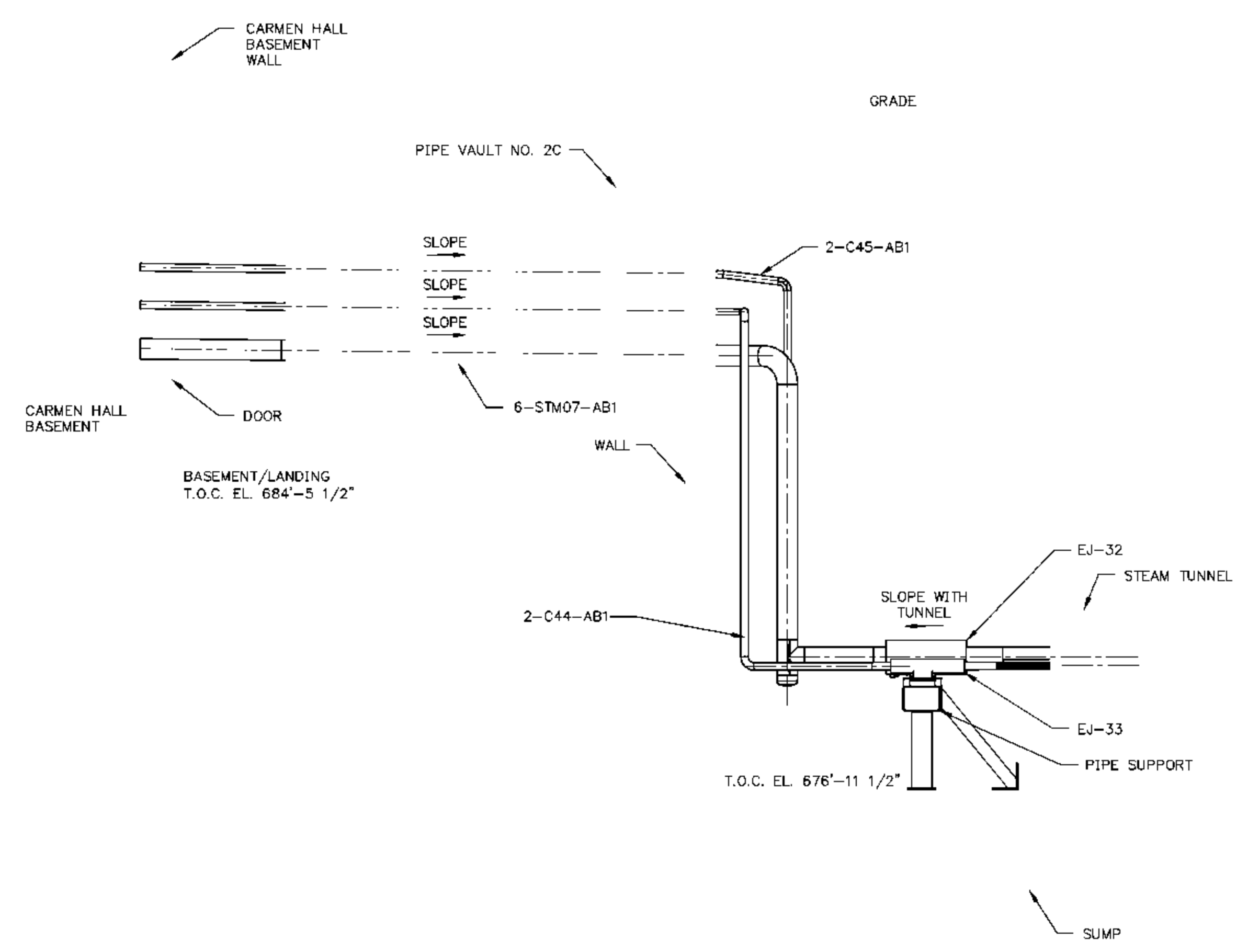
- LEGEND:
- X PIPE ANCHOR LOCATION
 - = PIPE GUIDE LOCATION
 - I PIPE SUPPORT/UNISTRUT LOCATION
 - ± PIPE SUPPORT WITH UNISTRUT GUIDE



PIPING PLAN
CARMEN HALL STEAM TUNNEL
VAULT NO. 2C

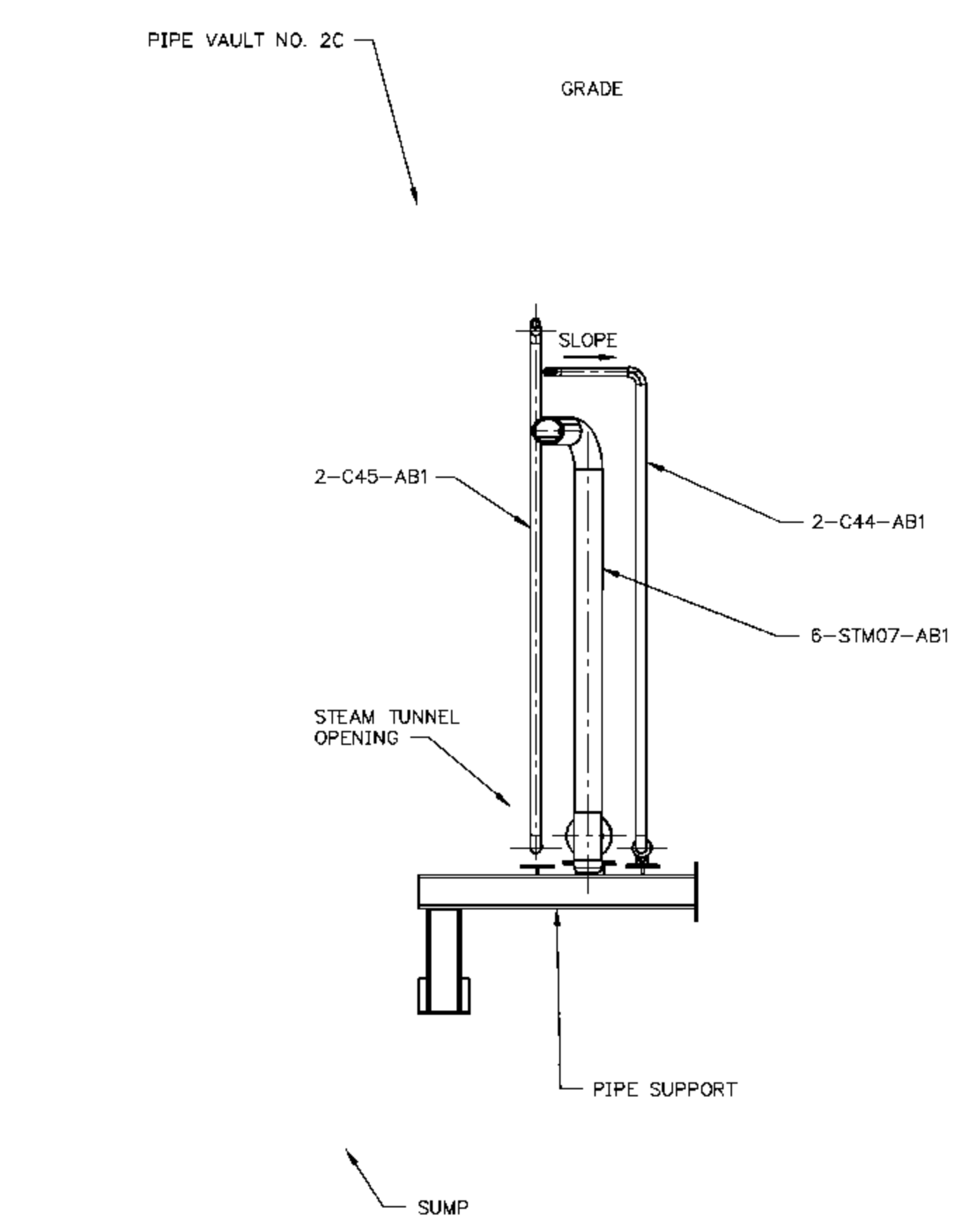
SCALE IN FEET

NOTE:
FOR VAULT NO. 2C
PIPE SUPPORTS
SEE DWG. ST-S207



CARMEN HALL STEAM TUNNEL
VAULT NO. 2C

SCALE IN FEET



CARMEN HALL STEAM TUNNEL
VAULT NO. 2C

SCALE IN FEET

Sealed Only When Signed in Blue Ink

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stillwell, Kansas 66085-1000
Illinois License # 184-000823



EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
CARMEN HALL STEAM TUNNEL/VAULT PIPING
VAULT NO. 1C AND VAULT NO. 2C

DESIGN BY: C. WARD	CHECKED BY: S. WOPATA
DRAWN BY: D. ALEXANDER	DATE: 2-19-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 09140-ST-P230	DRAWING NO. ST-P230	REV. B
-------------------------------	------------------------	-----------

PIPE HANGER SKETCH

EASTERN ILLINOIS UNIVERSITY EIU RENEWABLE ENERGY CENTER		Client ID : HON00103
		Job No. : 09-140
		Contract No. :

REV. NO.	QTY.	FIG. NO./ CODE NO.	MATERIAL DESCRIPTION
1	1		1.5" STD PIPE
2	1		4"x4"x1/2" CARBON STEEL PLATE
3	4		1/2" CINCH ANCHOR x3 3/4" LONG HILTI KWIK
4	1		10"x10"x1/2" CARBON STEEL PLATE
5	2		10"x2"x1/2" CARBON STEEL PLATE

	REF. DWGS.	TEMP.	SPEC-	INSUL. THK.	PIPE SIZE 2"
	1.	REV. 0	1	2 3	PIPING SYSTEM
	2.	DATE			HGR. NO. ST-PS-1
	3.	BY			SHEET 1 REV. NO. A
4.	CHK.			OF 1	

PIPE HANGER SKETCH

EASTERN ILLINOIS UNIVERSITY EIU RENEWABLE ENERGY CENTER		Client ID : HON00103
		Job No. : 09-140
		Contract No. :

REV. NO.	QTY.	FIG. NO./ CODE NO.	MATERIAL DESCRIPTION
1	1		3" STD PIPE
2	1		4"x4"x1/2" CARBON STEEL PLATE
3	4		1/2" CINCH ANCHOR x3 3/4" LONG HILTI KWIK
4	1		10"x10"x1/2" CARBON STEEL PLATE
5	2		10"x2"x1/2" CARBON STEEL PLATE

	REF. DWGS.	TEMP.	SPEC-	INSUL. THK.	PIPE SIZE 6"
	1.	REV. 0	1	2 3	PIPING SYSTEM
	2.	DATE			HGR. NO. ST-PS-2
	3.	BY			SHEET 1 REV. NO. A
4.	CHK.			OF 1	

PIPE HANGER SKETCH

EASTERN ILLINOIS UNIVERSITY EIU RENEWABLE ENERGY CENTER		Client ID : HON00103
		Job No. : 09-140
		Contract No. :

REV. NO.	QTY.	FIG. NO./ CODE NO.	MATERIAL DESCRIPTION
1	1		4" STD PIPE
2	1		5"x5"x1/2" CARBON STEEL PLATE
3	4		1/2" CINCH ANCHOR x3 3/4" LONG HILTI KWIK
4	1		12"x12"x1/2" CARBON STEEL PLATE
5	2		0.375"x1/2" CARBON STEEL PLATE

	REF. DWGS.	TEMP.	SPEC-	INSUL. THK.	PIPE SIZE 14"
	1.	REV. 0	1	2 3	PIPING SYSTEM
	2.	DATE			HGR. NO. ST-PS-3
	3.	BY			SHEET 1 REV. NO. A
4.	CHK.			OF 1	

PIPE HANGER SKETCH

EASTERN ILLINOIS UNIVERSITY EIU RENEWABLE ENERGY CENTER		Client ID : HON00103
		Job No. : 09-140
		Contract No. :

REV. NO.	QTY.	FIG. NO./ CODE NO.	MATERIAL DESCRIPTION
1	1		6" STD PIPE
2	4		1/2" ST. PLATE @ 1/4 PIS.
3	1		18"x18"x3/4" CARBON STEEL PLATE
4	1		10"x10"x1/2" CARBON STEEL PLATE
5	4		3/4" HILTI KWIK BOLT TZ

	REF. DWGS.	TEMP.	SPEC-	INSUL. THK.	PIPE SIZE 14"
	1.	REV. 0	1	2 3	PIPING SYSTEM
	2.	DATE			HGR. NO. ST-PS-4
	3.	BY			SHEET 1 REV. NO. A
4.	CHK.			OF 1	

REV.	DATE	DESCRIPTION	DWN	CHK
0	1-22-10	ISSUED FOR CONSTRUCTION	DCA	SEW
1	5-27-10	ISSUED FOR CONSTRUCTION	CMH	SEW

Sealed Only When Signed in Blue Ink

EXP. DATE 11-30-2011

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EIU PROJECT # 10-4535

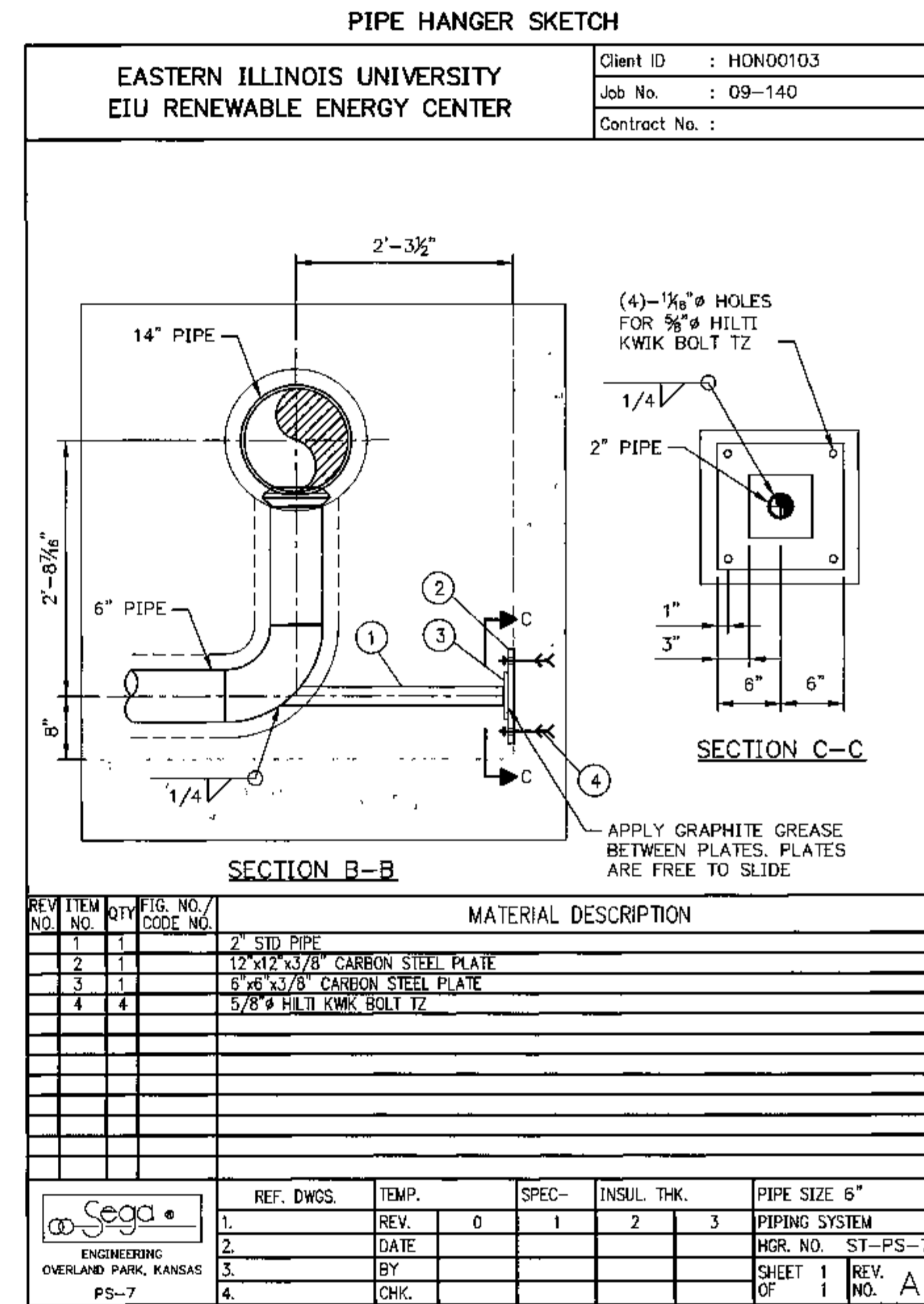
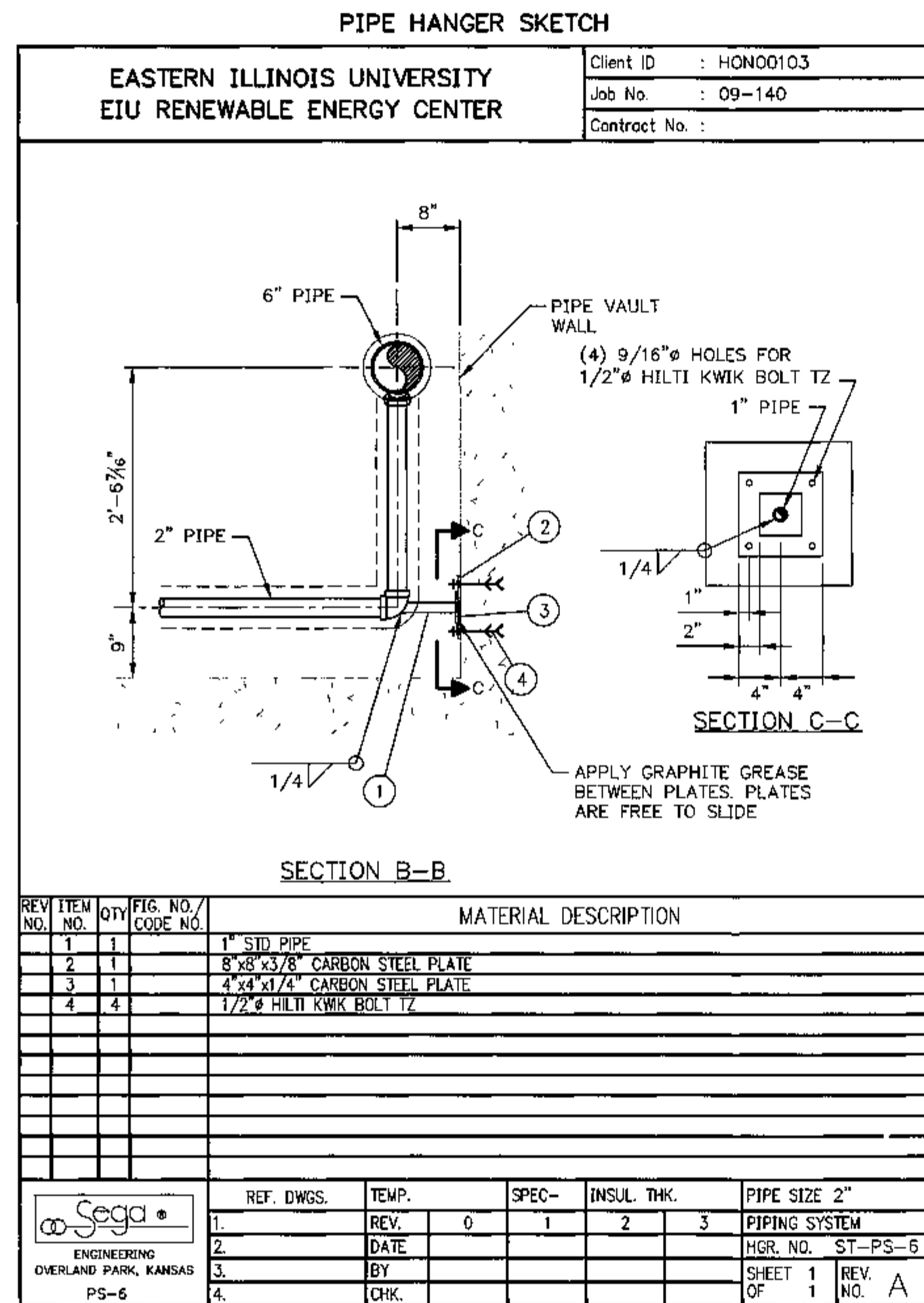
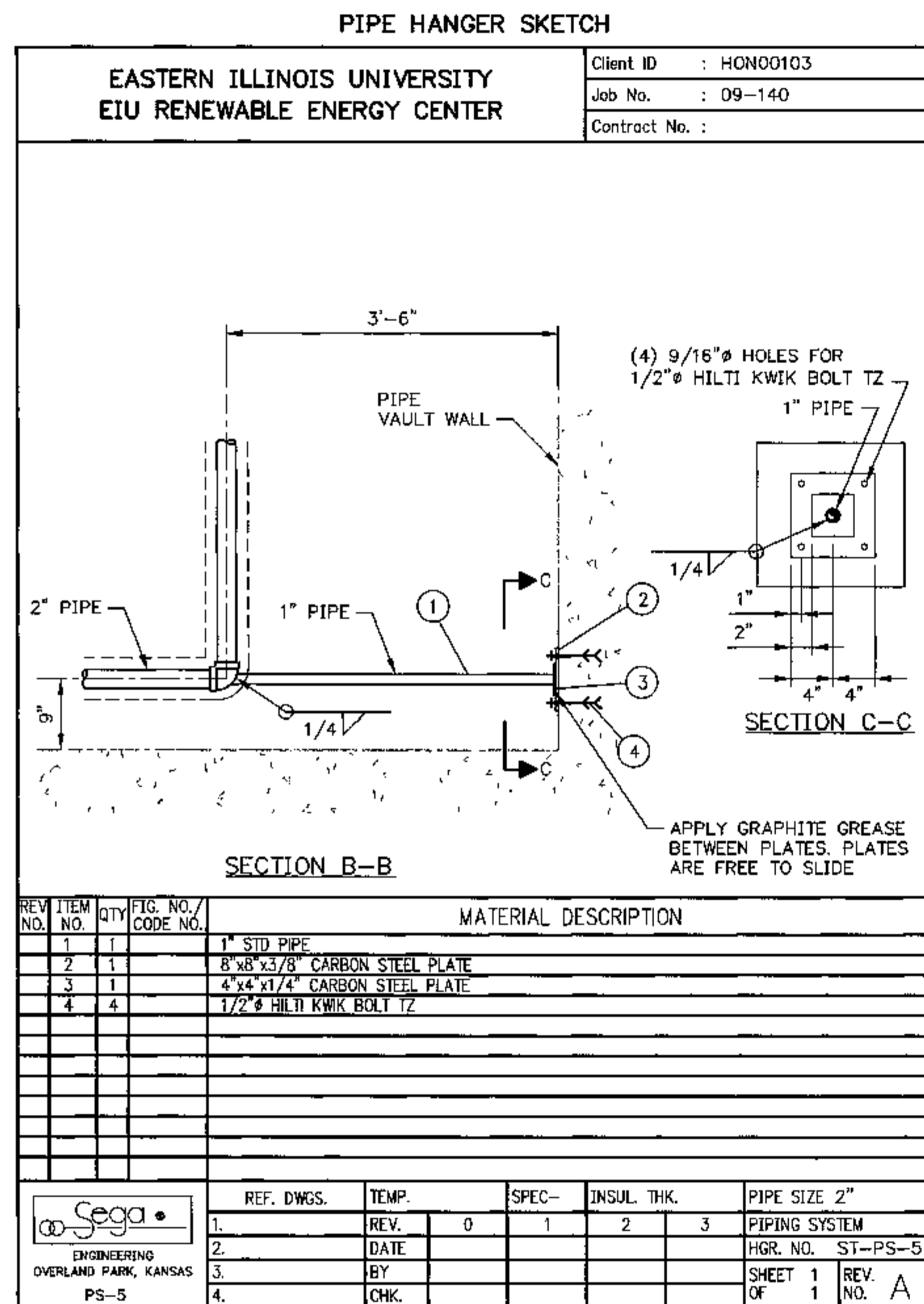
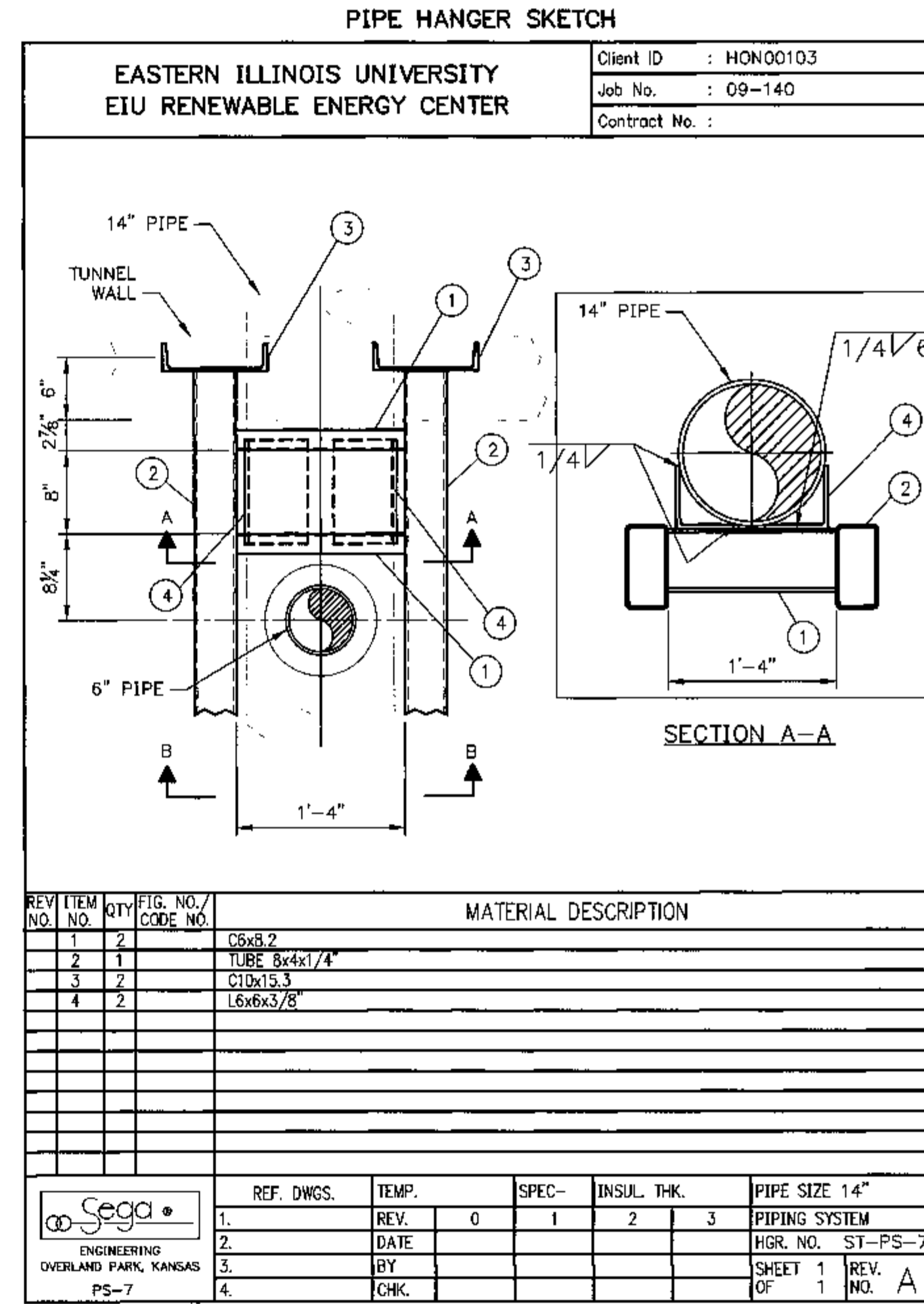
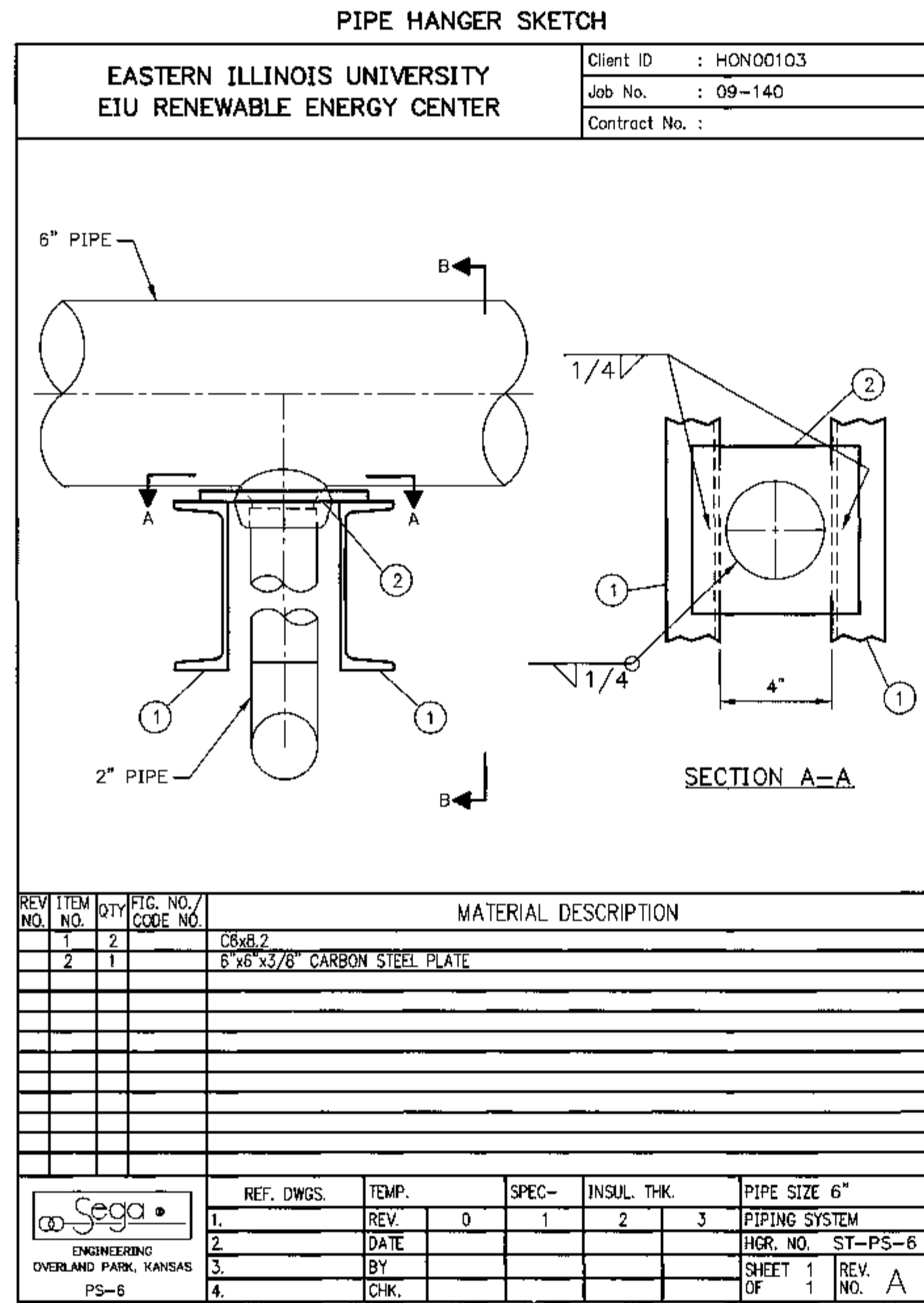
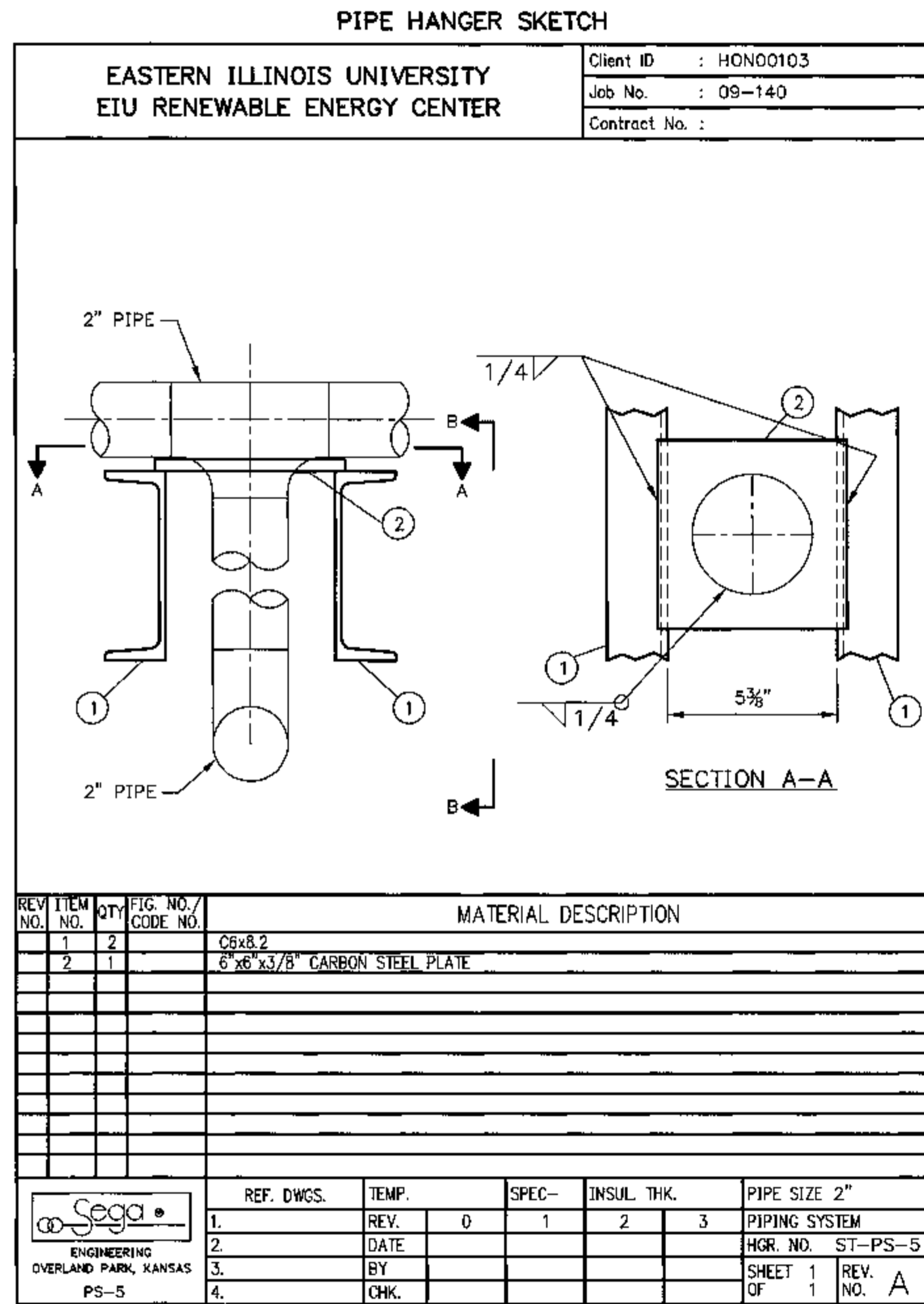
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL
PIPE SUPPORT DETAILS

DESIGN BY: S. WOPATA	CHECKED BY: S. WOPATA
DRAWN BY: L. WEST	DATE: 12-18-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 09-140

CADD FILE NAME: 09140-ST-P250

DRAWING NO. ST-P250	REV. 1
-------------------------------	------------------

REV.	DATE	DESCRIPTION	DWN	CHK
0	5-27-10	ISSUED FOR CONSTRUCTION	CMH	SEW



Sealed Only When Signed in Blue Ink

Sega

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL
PIPE SUPPORT DETAILS

DESIGN BY: S. WOPATA	CHECKED BY: S. WOPATA
DRAWN BY: M. BESCHNETT	DATE: 05-19-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 09-140
CADD FILE NAME: 09140-ST-P251	
DRAWING NO. ST-P251	REV. 0

GENERAL NOTES

- PRIOR TO FABRICATION, CONTRACTOR SHALL FIELD MEASURE EXISTING CONDITIONS TO ASSURE PROPER FITUP OF NEW WORK. ALL FIELD REWORK OF IMPROPER FITUP SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THESE NOTES OUTLINE THE STRUCTURAL SYSTEM PROVIDED AND ARE INTENDED TO COMPLEMENT THE OTHER SPECIFICATIONS, DRAWINGS AND CONTRACT DOCUMENTS ASSOCIATED WITH THIS PROJECT.
- WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE APPLICABLE NATIONAL, LOCAL, BUILDING, CONSTRUCTION, HEALTH AND SAFETY CODES AT THE PROJECT LOCATION.
- SYMBOLS AND ABBREVIATIONS:

E	EXISTING
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
UON	UNLESS OTHERWISE NOTED
- REFERENCE SPECIFICATIONS:
 - THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S (AISC) "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", AND ITS "CODE OF STANDARD PRACTICE". (13TH EDITION).
 - THE AMERICAN WELDING SOCIETY. (AWS).
 - THE AMERICAN CONCRETE INSTITUTE. (ACI).
 - THE AMERICAN SOCIETY OF CIVIL ENGINEERS. (ASCE).
 - THE AMERICAN NATIONAL STANDARD INSTITUTE. (ANSI).
 - THE AMERICAN SOCIETY FOR TESTING AND MATERIALS. (ASTM).
 - THE STEEL STRUCTURES PAINTING COUNCIL. (SSPC).
 - THE OCCUPATIONAL SAFETY AND HEALTH ACT. (OSHA).
 - THE INTERNATIONAL BUILDING CODE (IBC-2003), CHAPTER 16 "STRUCTURAL DESIGN".
 - ILLINOIS ACCESSIBILITY CODE AMERICANS WITH DISABILITIES ACT. (1957).
 - ILLINOIS ENERGY CONSERVATION CODE (2006).
- LOADS:
 - DEAD LOADS CONSIST OF ANYTHING PERMANENTLY ATTACHED TO THE STRUCTURES.
- EXCAVATION:
 - PROTECT ABOVE AND BELOW GRADE UTILITIES AND STRUCTURES THAT ARE TO REMAIN.
 - PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING OR OTHER METHODS AS REQUIRED TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO EXCAVATION.
 - UNDERPIN ADJACENT STRUCTURES THAT MAY BE DAMAGED BY EXCAVATION WORK INCLUDING BUILDING FOUNDATIONS AND SURFACE TRENCHES.
- BACKFILL:
 - SUBGRADE SURFACES SHALL BE COMPACTED TO 90% MAXIMUM DENSITY AND OPTIMUM MOISTURE IN COMPARISON WITH ASTM D698. COMPACT TO 95% MAXIMUM DENSITY UNDER ANY ROADWAY CROSSINGS.
 - CUTOUT SOFT AREAS OF SUBGRADE NOT CAPABLE OF IN-SITE COMPACTION.
 - BACKFILL WITH SUITABLE SUBSOIL.
 - FLOWABLE FILL (500 PSI MINIMUM COMPRESSION) MAY BE USED AS BACKFILL UNDER ROADWAY CROSSINGS.
- CONCRETE MATERIALS:
 - CONCRETE MIX:
 - MINIMUM 28-DAY COMPRESSIVE STRENGTH: 4000 PSI.
 - MAXIMUM WATER CEMENT RATIO: 0.50.
 - SUMP: 4 INCHES +/- 1 INCH.
 - AIR ENTRAINMENT: 6% +/- 1%.
 - CONCRETE REINFORCING STEEL:

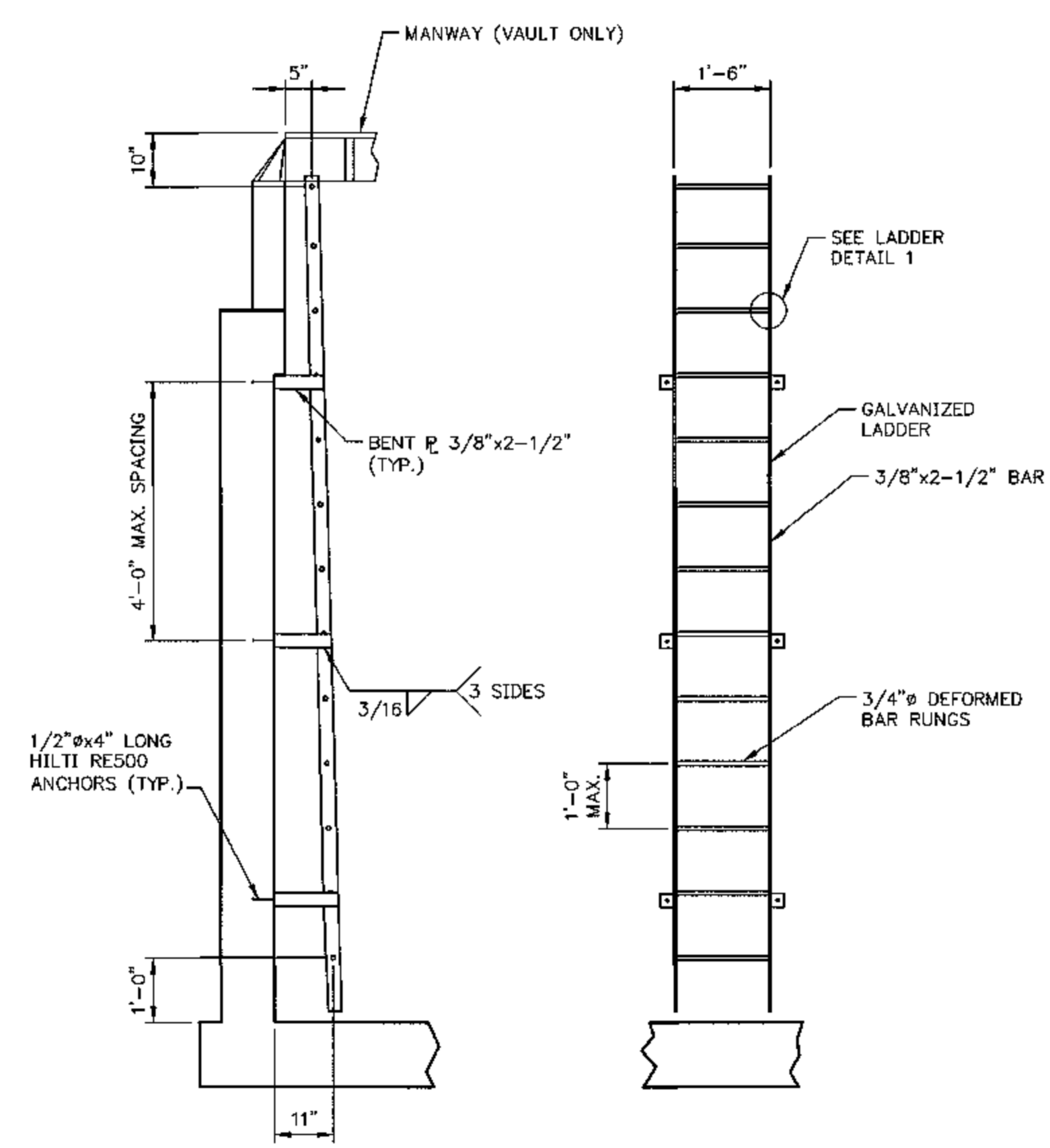
BAR	TOP BAR	OTHER BAR
#3	25"	19"
#4	33"	25"
#5	41"	31"
#6	49"	37"
#7	57"	43"
#8	65"	49"
#9	73"	55"
#10	81"	61"
#11	89"	67"

 WHERE A TOP BAR IS DEFINED AS ANY HORIZONTAL BAR HAVING MORE THAN 12 INCHES OF CONCRETE DEPTH UNDER THE BAR.

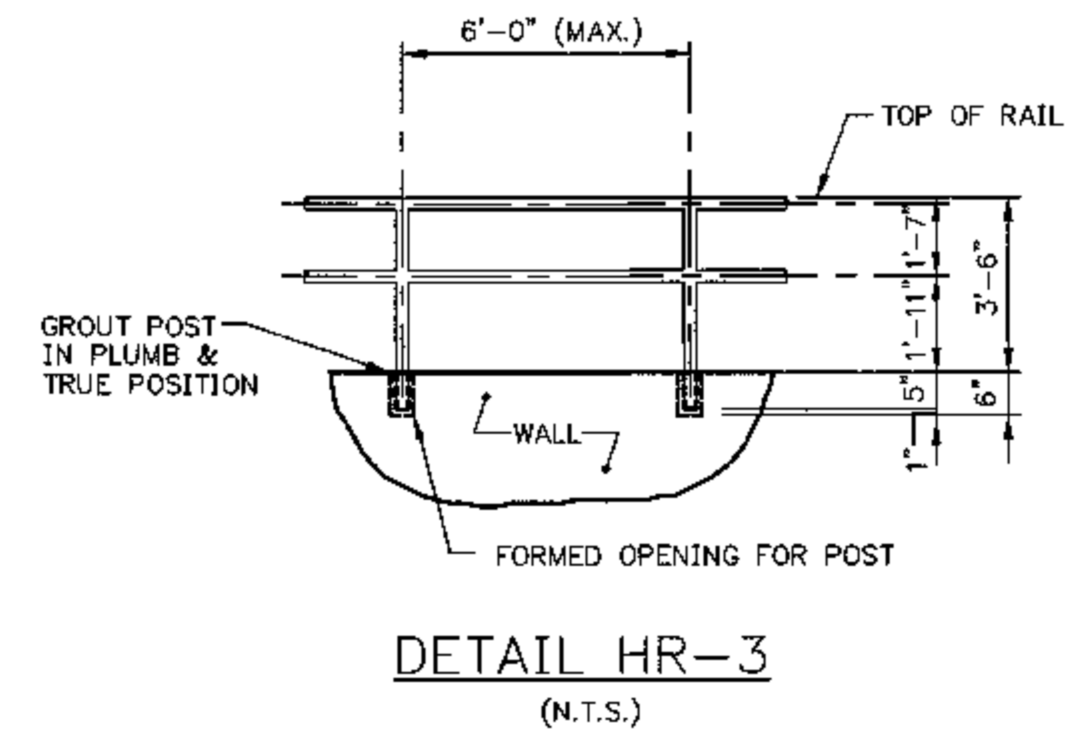
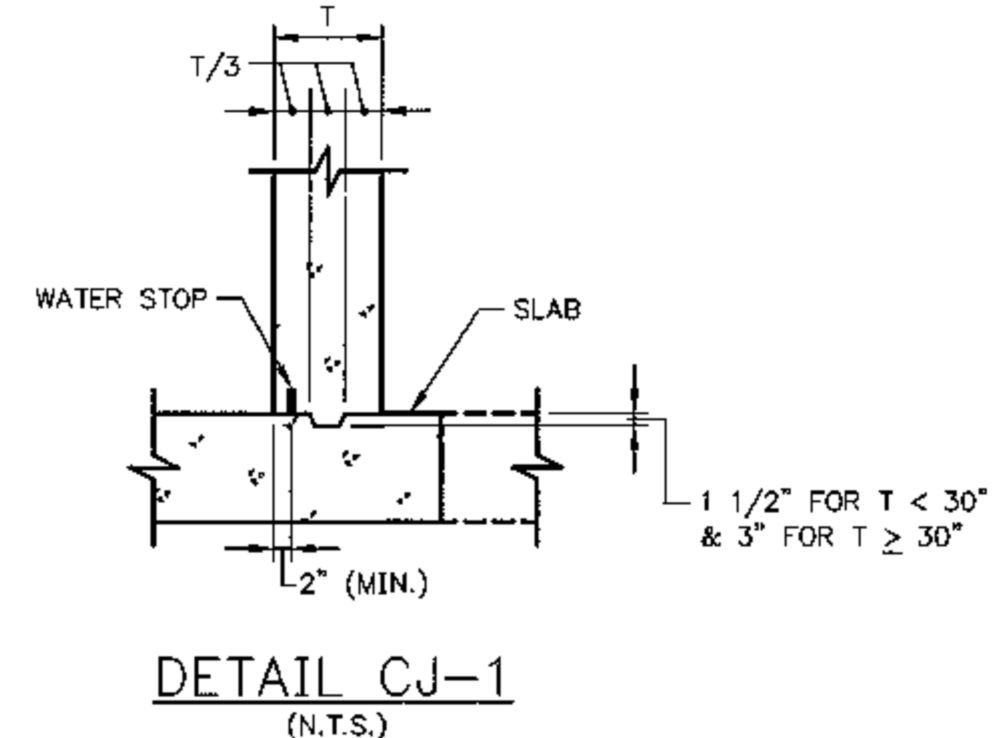
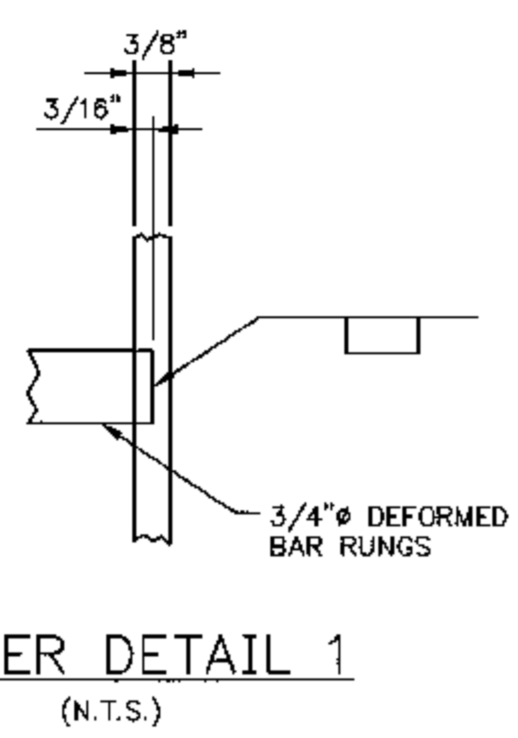
- CONCRETE CONSTRUCTION:
 - CONSTRUCT FORMWORK AND PLACE CONCRETE IN ACCORDANCE WITH ACI 301 "SPECIFICATIONS OF STRUCTURAL CONCRETE FOR BUILDINGS."
 - CONCRETE COVER SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

DESCRIPTION	COVER
BEAMS	1-1/2"
SLABS	3/4"
COLUMNS & PIERS	1-1/2"
WALLS	2"
CAST AGAINST EARTH	3"
 - PLACE CONCRETE REINFORCEMENT IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE WITH COVER AS IDENTIFIED IN PARAGRAPH B ABOVE.
 - PROVIDE 3/4-INCH CHAMFER EDGE ON ALL EXPOSED CONCRETE EDGES.
 - INSTALL WATERSTOPS WITH 2-INCH MINIMUM COVER.
 - APPLY BONDING AGENT AT ALL CONSTRUCTION JOINT SURFACES.
 - SLAB FINISHES:
 - ALL INTERIOR SLABS SHALL HAVE A TROWELED FINISH.
 - ALL EXTERIOR SLABS SHALL HAVE A BROOM FINISH.
 - SURFACE FLATNESS SHALL BE 1/4 INCH IN 10 FEET.
- STRUCTURAL STEEL MATERIALS:
 - STRUCTURAL STEEL SHAPES: ASTM A36 OR ASTM A992, GRADE 50.
 - PLATE & BAR: ASTM A36.
 - PIPE: ASTM A53 (TYPE E OR S, GRADE B)
 - HOLLOW STRUCTURAL SECTIONS (HSS): ASTM A500
 - HANDRAIL: 1.90-INCH OD PIPE CONFORMING TO ASTM A53.
 - CONNECTION BOLTS: ASTM A325.
 - ANCHOR BOLTS: ASTM A307. SHOP COATING SHALL BE GALVANIZED.
 - WELDING ELECTRODES: E70 SERIES.
 - EXPANSION BOLTS:
 - MANUALLY EXPANDED TYPE. SELF-DRILLING TYPES ARE NOT ACCEPTABLE.
 - ACCEPTABLE MANUFACTURERS ARE HILTI FASTENING SYSTEMS INC. OR APPROVED EQUAL.
 - EMBEDMENT DEPTH SHALL BE 8 DIAMETERS UNLESS OTHERWISE NOTED.
 - FINISH SHALL BE STAINLESS STEEL.
 - EPOXY BOLTS:
 - BOLTS SHALL BE HILTI FASTENING SYSTEMS INC. RE500 OR APPROVED EQUAL.
 - EMBEDMENT DEPTH SHALL BE 8 DIAMETERS UNLESS OTHERWISE NOTED.
 - FINISH SHALL BE STAINLESS STEEL.
- STRUCTURAL STEEL FABRICATION:
 - STEEL FABRICATION SHALL BE IN PERFORMED IN ACCORDANCE WITH AISC MANUAL, "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
 - SHOP WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL."
 - SHOP WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED PER AWS STANDARD QUALIFICATION PROCEDURE OR OTHER TESTS AS ACCEPTED BY THE OWNER.
 - STEEL CONNECTIONS SHALL CONFORM TO DETAILS AS INDICATED. ALL CONNECTIONS NOT DETAILED SHALL BE DETERMINED BY THE CONTRACTOR AND SHALL BE DESIGNED IN ACCORDANCE WITH REQUIREMENTS OF THE AISC MANUAL.
 - UNLESS OTHERWISE NOTED, CONNECTION BOLTS AND NUTS SHALL BE 3/4-INCH DIAMETER.
 - UNLESS OTHERWISE NOTED, ALL BOLTED CONNECTIONS SHALL BE SHEAR BEARING TYPE WITH THREADS PERMITTED IN THE SHEAR PLANE AND SHALL BE INSTALLED AS FULLY PRETENSIONED.
 - MAXIMUM HANDRAIL POST SPACING: 6 FT.
 - SHOP PRIME ALL STEEL SURFACES WITH ALKYO LATEX PRIMER. SURFACE PREPARATION SHALL BE SSPC-SP 6.
- STRUCTURAL STEEL CONSTRUCTION:
 - ERECT ALL STEEL IN ACCORDANCE WITH AISC MANUAL "CODE OF STANDARD PRACTICE."
 - ALL BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC MANUAL "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."
 - FIELD WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL."
 - ALL FIELD WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED PER AWS STANDARD QUALIFICATION PROCEDURE OR BY OTHER TESTS AS ACCEPTED BY THE OWNER.
 - WELD ALL HANDRAIL SPLICES. GRIND WELDS SMOOTH AND FLUSH WITH ADJACENT SURFACES.
 - INSTALL ALL EXPANSION BOLTS AND EPOXY BOLTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

- GROUT FOR BASE PLATES SHALL BE FLOWABLE CEMENTITIOUS NONSHRINK TYPE. INSTALL GROUT IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. COMPRESSIVE STRENGTH = 5,000 PSI @ 28 DAY.
- JOB SAFETY AND FIRE SAFETY:
 - CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SAFETY INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - COMPLY WITH ALL OWNER SAFETY PRACTICES AND REQUIREMENTS AND OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES.
 - PROVIDE PROPER SHORING, BRACING, BARRICADES, SCAFFOLDING, NETTING AND SAFETY LINES AS REQUIRED TO PROTECT WORKERS AND OTHERS IN THE WORK AREA AND TO PREVENT DAMAGE TO EXISTING CONDITIONS.
 - CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN CUTTING OR WELDING TO PREVENT FIRE FROM SPARKS OR HOT METAL ON ADJACENT COMBUSTIBLE MATERIALS.
- CONTRACTOR SHALL ADHERE TO ALL GUIDELINES OUTLINED IN "SUBSURFACE EXPLORATION AND GEOTECHNICAL EVALUATION" AS PROVIDED BY MIDWEST ENGINEERING SERVICES, DATED SEPTEMBER 16, 2008.



VAULT AND PIT
TYPICAL LADDER DETAIL
SCALE IN FEET



REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM

Sealed Only When Signed in Blue Ink

GARY L. VOGEL
081-004836
LICENSED
STRUCTURAL
ENGINEER
STATE OF ILLINOIS

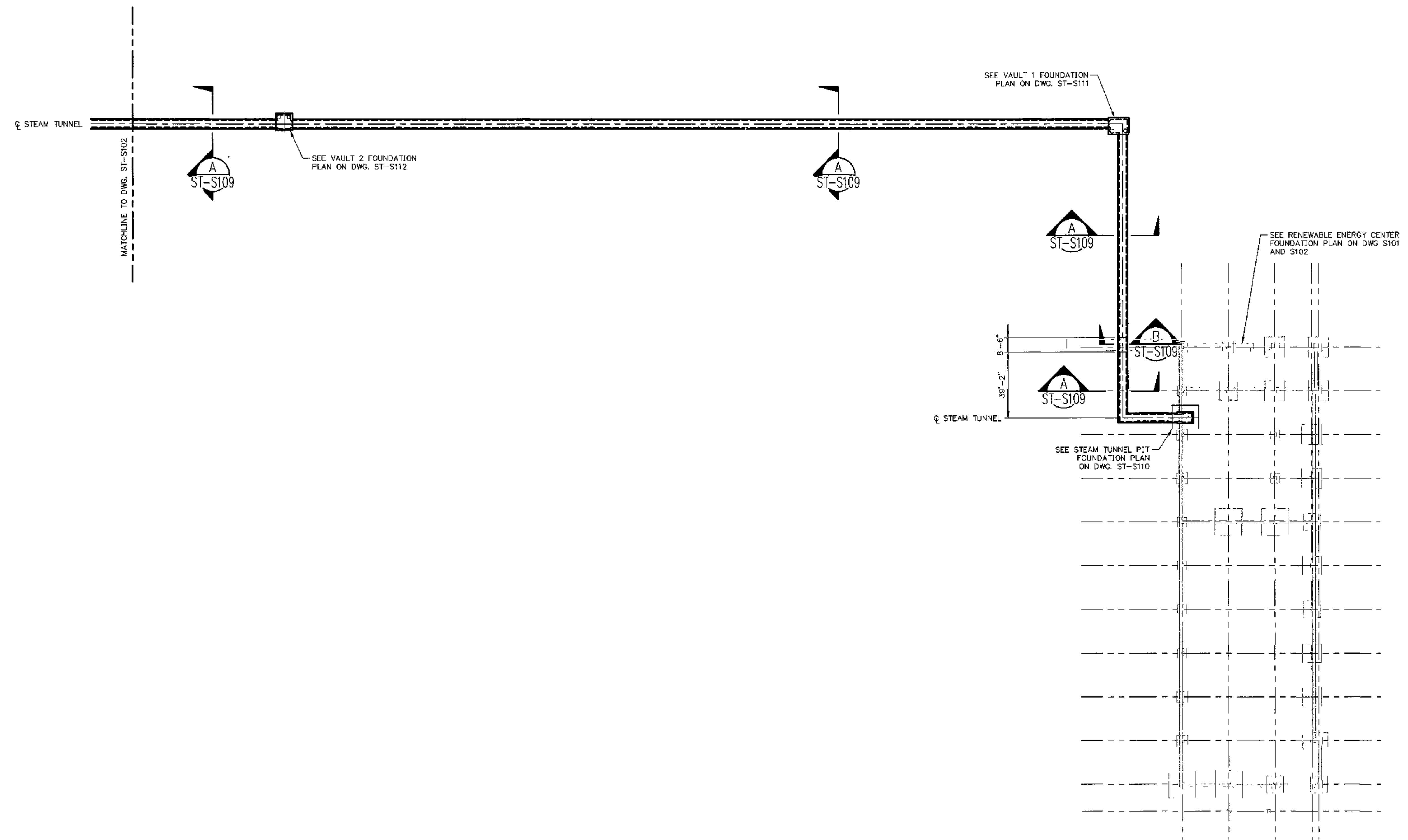
Gary L. Vogel
1/25/10
EXP. DATE 11-30-2010

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois Licence # 184-000823

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION
GENERAL NOTES AND DETAILS

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-24-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140
CADD FILE NAME: 090140_ST-S100	
DRAWING NO. ST-S100	REV. 0

REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM



STEAM TUNNEL FOUNDATION LAYOUT PLAN - SHEET 1

SCALE IN FEET

Sealed Only When Signed in Blue Ink

GARY L. VOGEL
081-004936
LICENSED
STRUCTURAL
ENGINEER
STATE OF ILLINOIS

Gary L. Vogel
1/25/10
EXP. DATE 11-30-2010

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois Licence # 184-000823

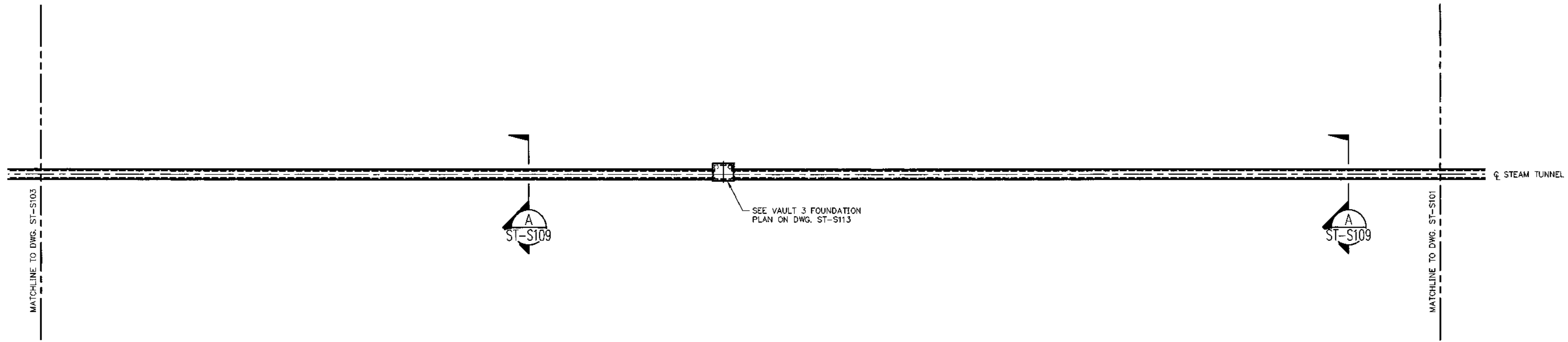
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION PLAN
SHEET 1

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-20-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S101

DRAWING NO. ST-S101	REV. 0
-------------------------------	------------------

REV	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM



Thuneywell

Scaled Only When Signed in Blue Ink

Gary L. Vogel
 1/25/10
 EXP. DATE 11-30-2010

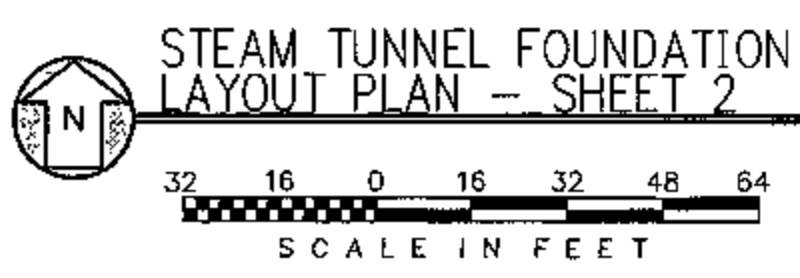
Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois Licence # 184-000823

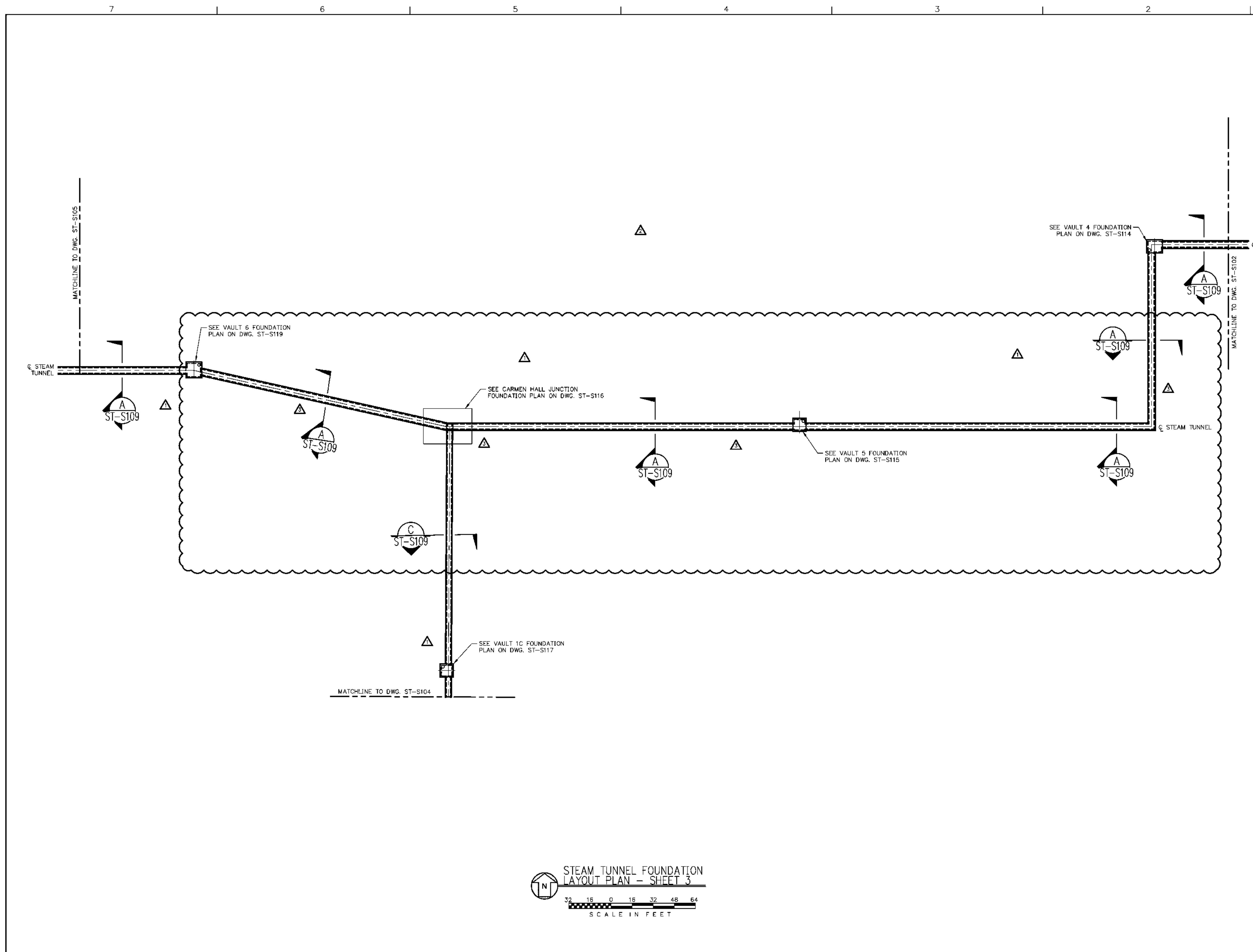
EASTERN ILLINOIS UNIVERSITY

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL FOUNDATION PLAN
 SHEET 2

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-20-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S102	
DRAWING NO. ST-S102	REV. 0





REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	02-19-10	ISSUED FOR REVIEW - VAULT 4-6	MCB	TEM
2	03-31-10	REMOVED HOLD	MCB	TEM
3	04-23-10	RE-ISSUED FOR CONSTRUCTION	MCB	TEM

Signed Only When Signed in Blue Ink

EXP. DATE 11-30-2010

Sega
 Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

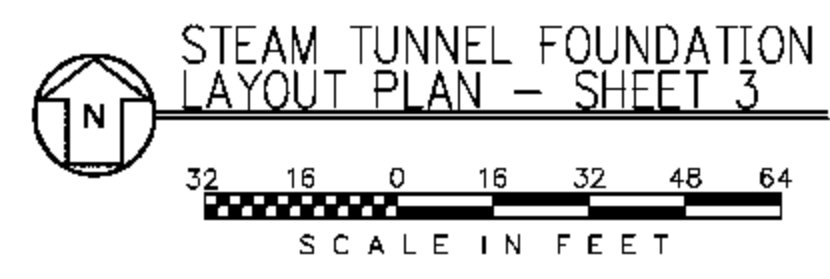
EASTERN ILLINOIS UNIVERSITY
 EIU PROJECT # 10-4535

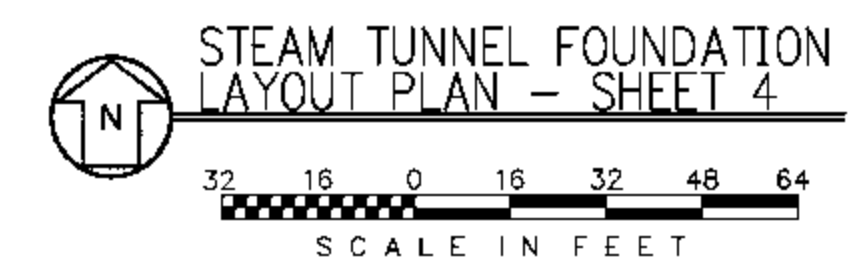
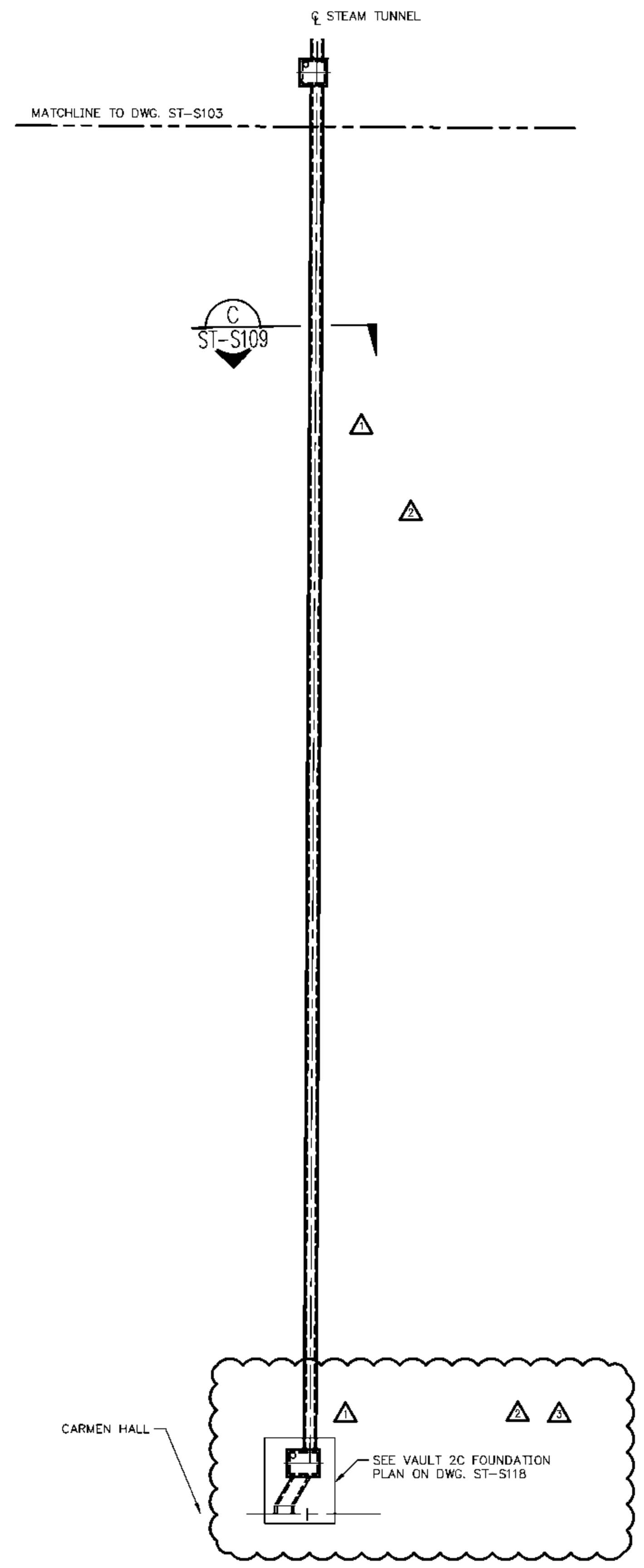
EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 STEAM TUNNEL FOUNDATION PLAN
 SHEET 3

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-24-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S103

DRAWING NO. ST-S103	REV. 3
-------------------------------	------------------





STEAM TUNNEL FOUNDATION
LAYOUT PLAN - SHEET 4

REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	02-19-10	ISSUED FOR REVIEW - VAULT 4-6	MCB	TEM
2	03-31-10	REMOVED HOLD	MCB	TEM
3	04-23-10	RE-ISSUED FOR CONSTRUCTION	MCB	TEM

Scaled Only When Signed in Blue Ink

EXP. DATE 11-30-2010

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION PLAN
SHEET 4

DESIGN BY: T. MONTAG	CHECKED BY: C. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-24-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S104	
DRAWING NO. ST-S104	REV. 3

MATCHLINE TO DWG. ST-S106

A
ST-S109

SEE VAULT 8 FOUNDATION
PLAN ON DWG. ST-S121

A
ST-S109

SEE VAULT 7 FOUNDATION
PLAN ON DWG. ST-S120

A
ST-S109

SEE TUNNEL DETAIL 1
ON DWG. ST-S109

SEE TUNNEL DETAIL 1
ON DWG. ST-S109

MATCHLINE TO DWG. ST-S104

A
ST-S109

D
ST-S109

A
ST-S109

STEAM TUNNEL

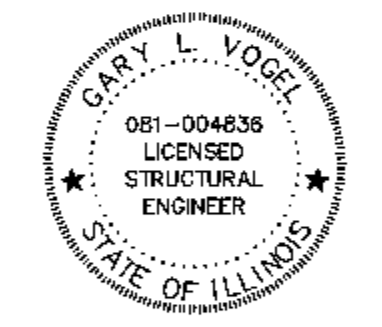
STEAM TUNNEL FOUNDATION
LAYOUT PLAN - SHEET 5



REV.	DATE	DESCRIPTION	DWN	CHK
0	04-23-10	ISSUED FOR CONSTRUCTION	MCB	TEM

Honeywell

Sealed Only When Signed in Blue Ink



Gary L. Vogel
4/23/10
EXP. DATE 11-30-2010



Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823



EIU PROJECT # 10-4535

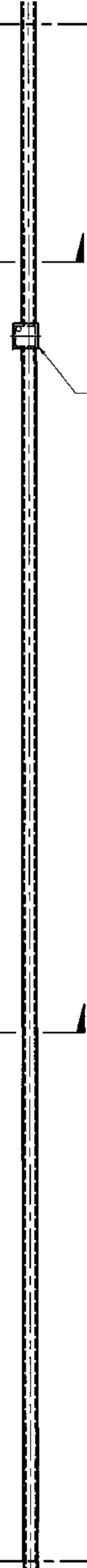
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION PLAN
SHEET 5

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 03-31-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S105	
DRAWING NO. ST-S105	REV. 0

MATCHLINE TO DWG. ST-S107

A
ST-S109



SEE VAULT 9 FOUNDATION
PLAN ON DWG. ST-S122

A
ST-S109

MATCHLINE TO DWG. ST-S105

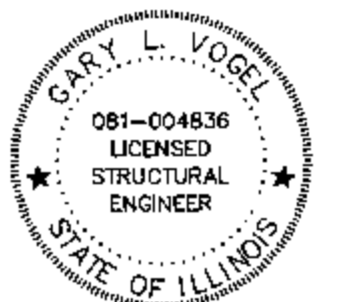
STEAM TUNNEL FOUNDATION
LAYOUT PLAN - SHEET 6

SCALE IN FEET

REV.	DATE	DESCRIPTION	DWN	CHK
0	04-23-10	ISSUED FOR CONSTRUCTION	MCB	TEM

Honeywell

Sealed Only When Signed in Blue Ink



Gary L. Vogel
4/23/10

EXP. DATE 11-30-2010



Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

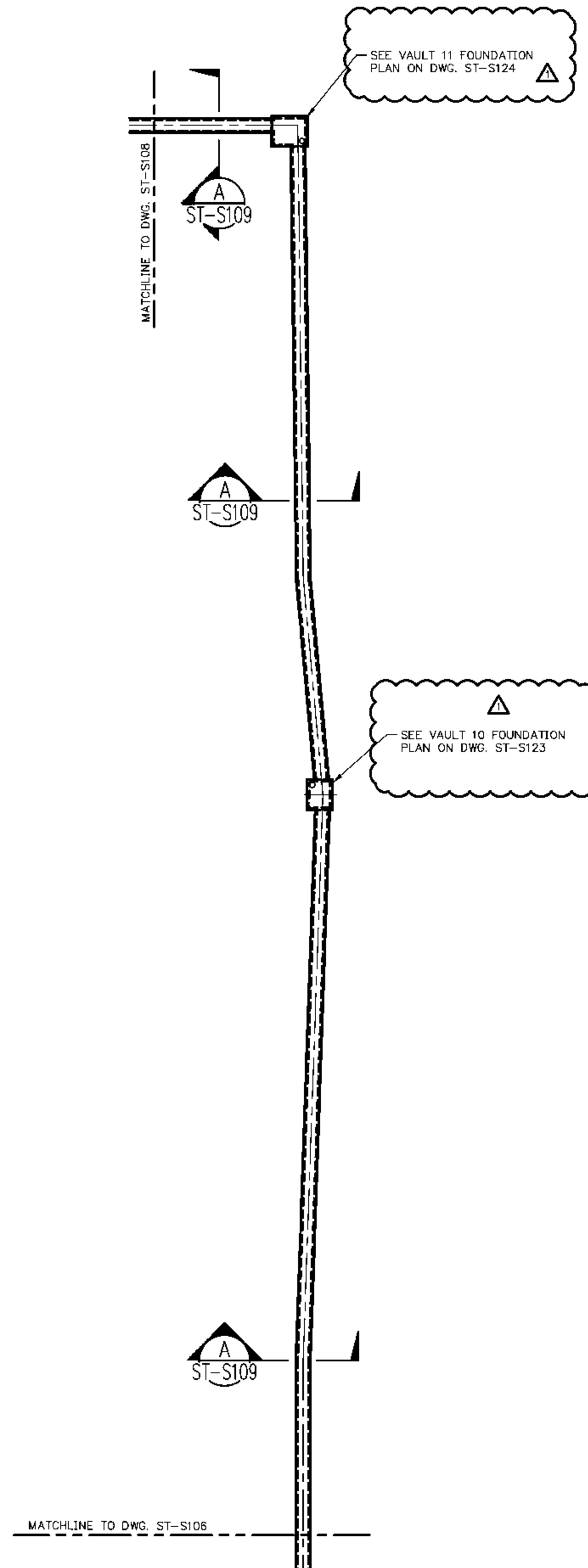


EIU PROJECT #: 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION PLAN
SHEET 6

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 03-31-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S106	
DRAWING NO. ST-S106	REV. 0



STEAM TUNNEL FOUNDATION
LAYOUT PLAN - SHEET 7

SCALE IN FEET

REV.	DATE	DESCRIPTION	DWN	CHK
0	04-23-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	05-07-10	ISSUED FOR CONSTRUCTION	MCB	TEM

Signed Only When Signed in Blue Ink

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

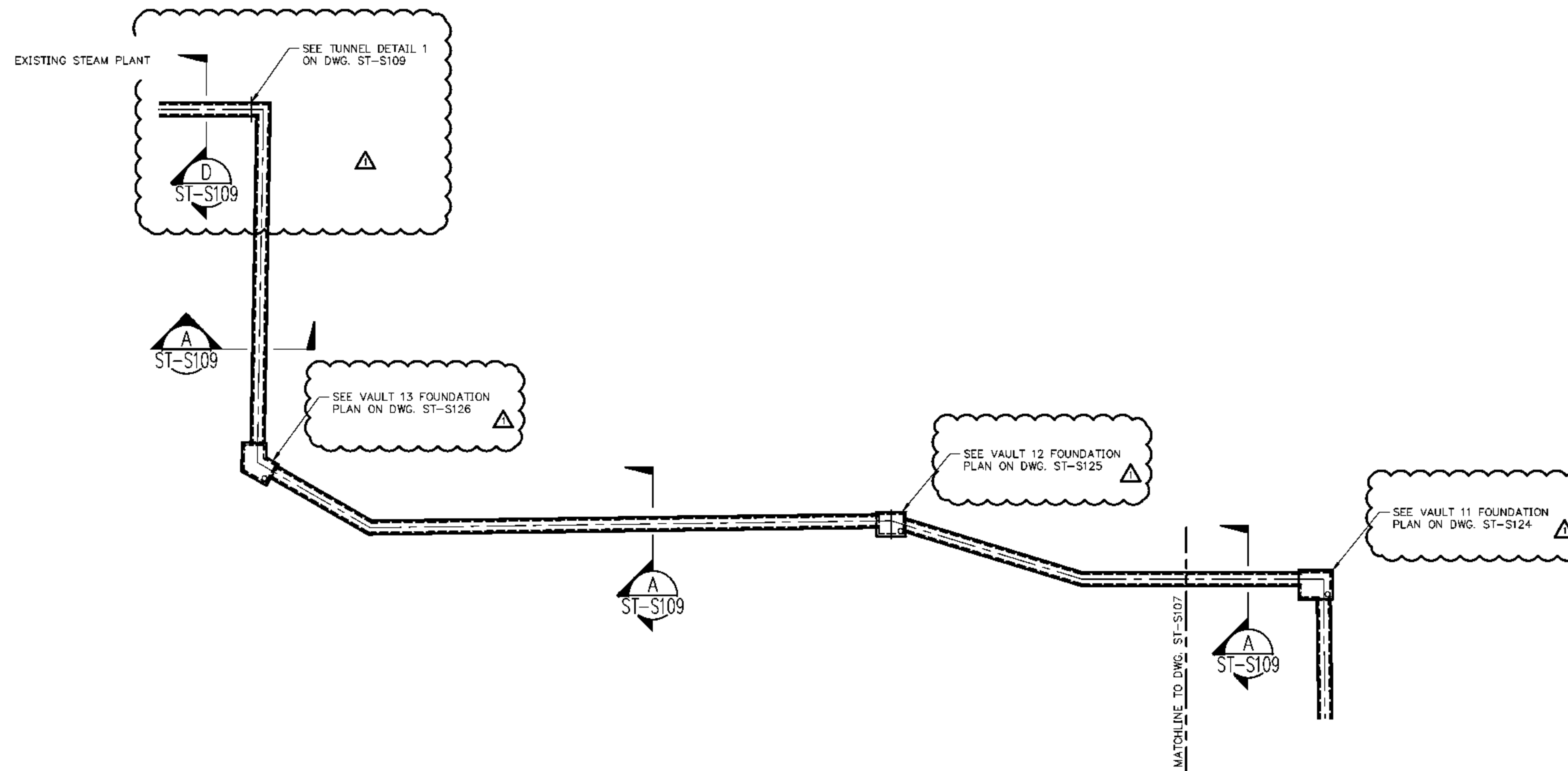
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION PLAN
SHEET 7

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 03-31-10
CLIENT I.D. HONO0103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S107	
DRAWING NO. ST-S107	REV. 1

REV.	DATE	DESCRIPTION	DWN	CHK
0	04-23-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	05-07-10	ISSUED FOR CONSTRUCTION	MCB	TEM



STEAM TUNNEL FOUNDATION LAYOUT PLAN - SHEET 8

SCALE IN FEET

32 16 0 16 32 48 64

Signed Only When Signed in Blue Ink

GARY L. VOGEL
081-004836
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

EXP. DATE 11-30-2010

Sega

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY

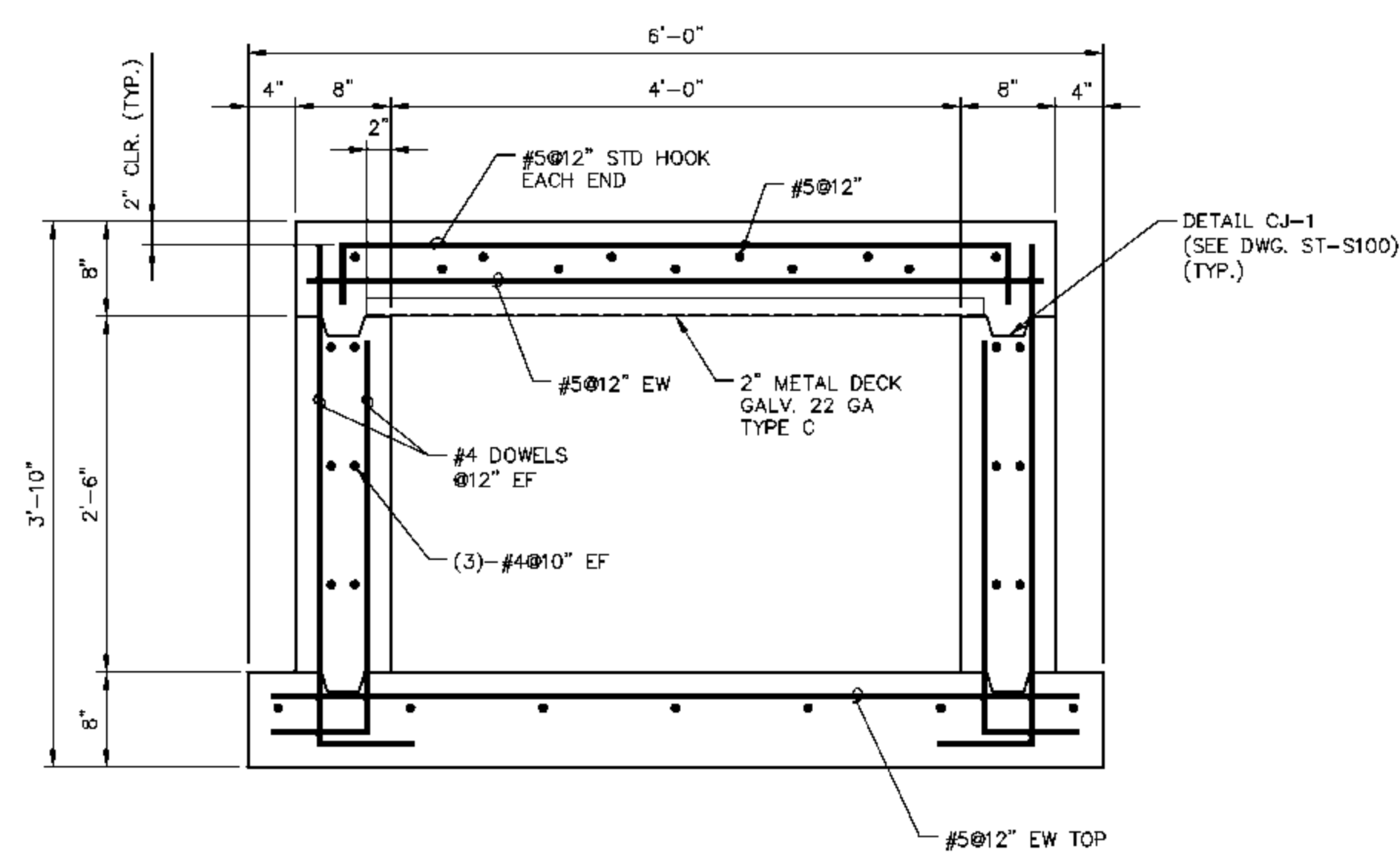
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION PLAN
SHEET 8

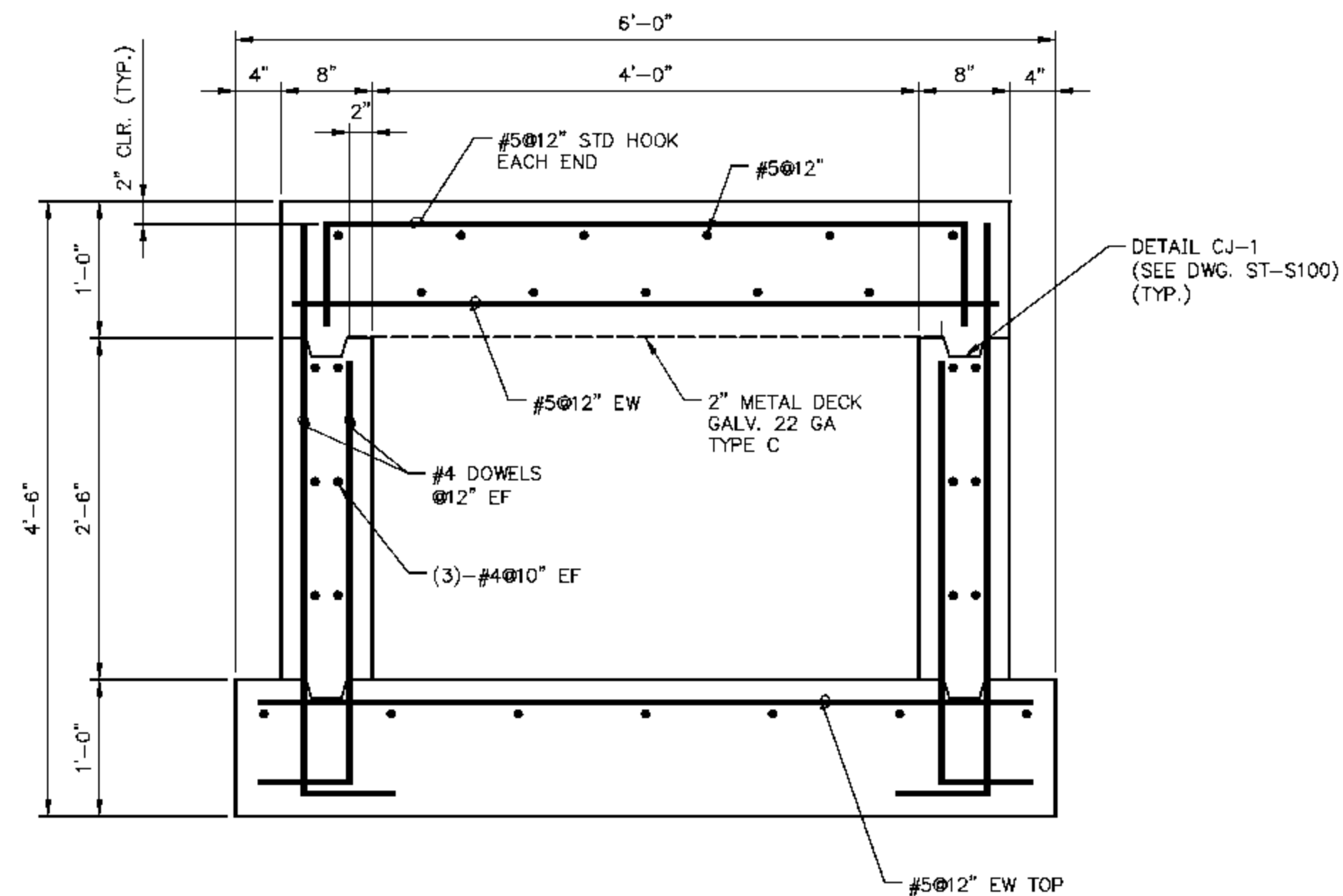
DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 03-31-10
CLIENT I.D. HONO0103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S108	
DRAWING NO. ST-S108	REV. 1

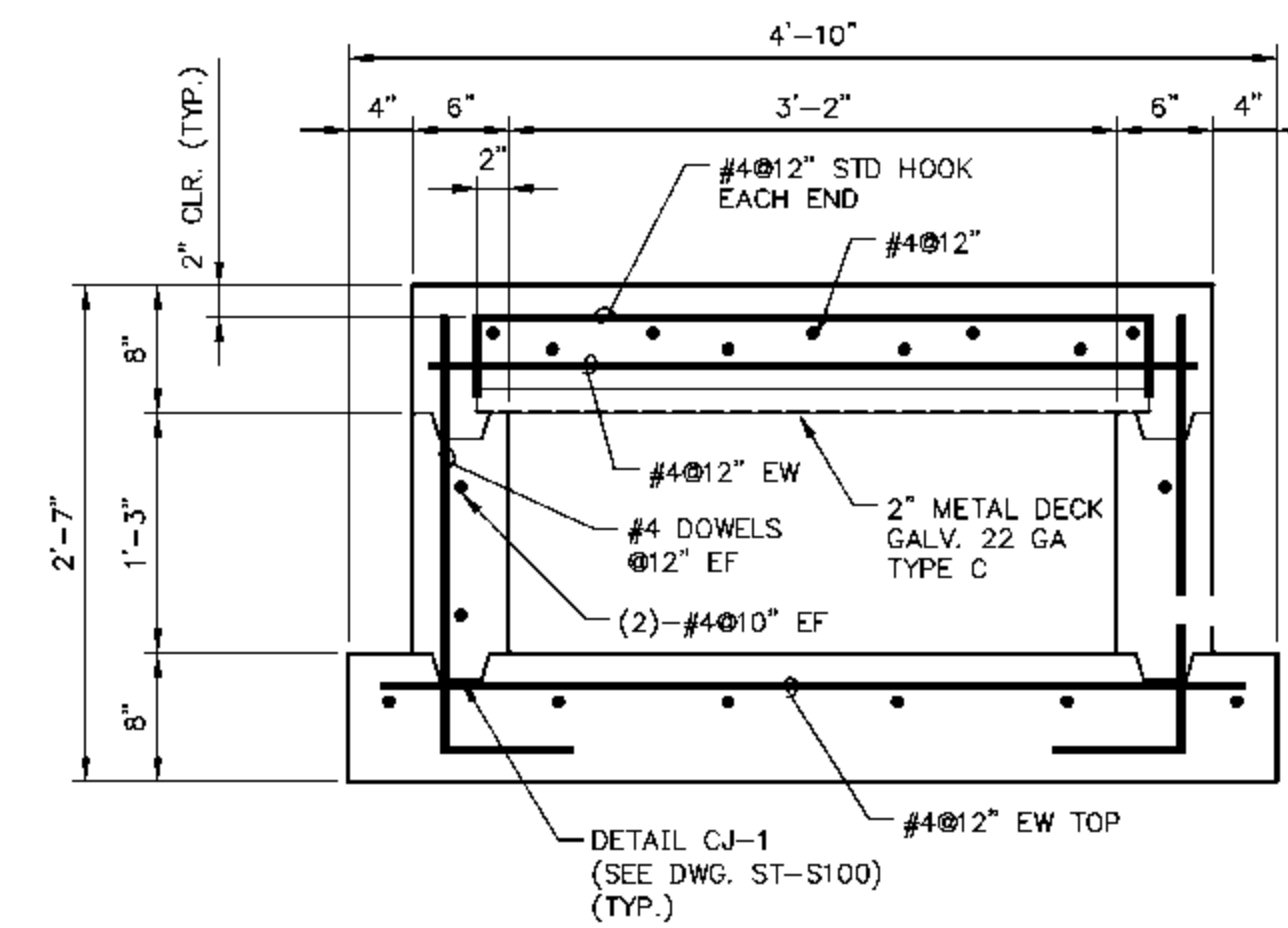
REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	04-23-10	RELEASED HOLD	MCB	TEM



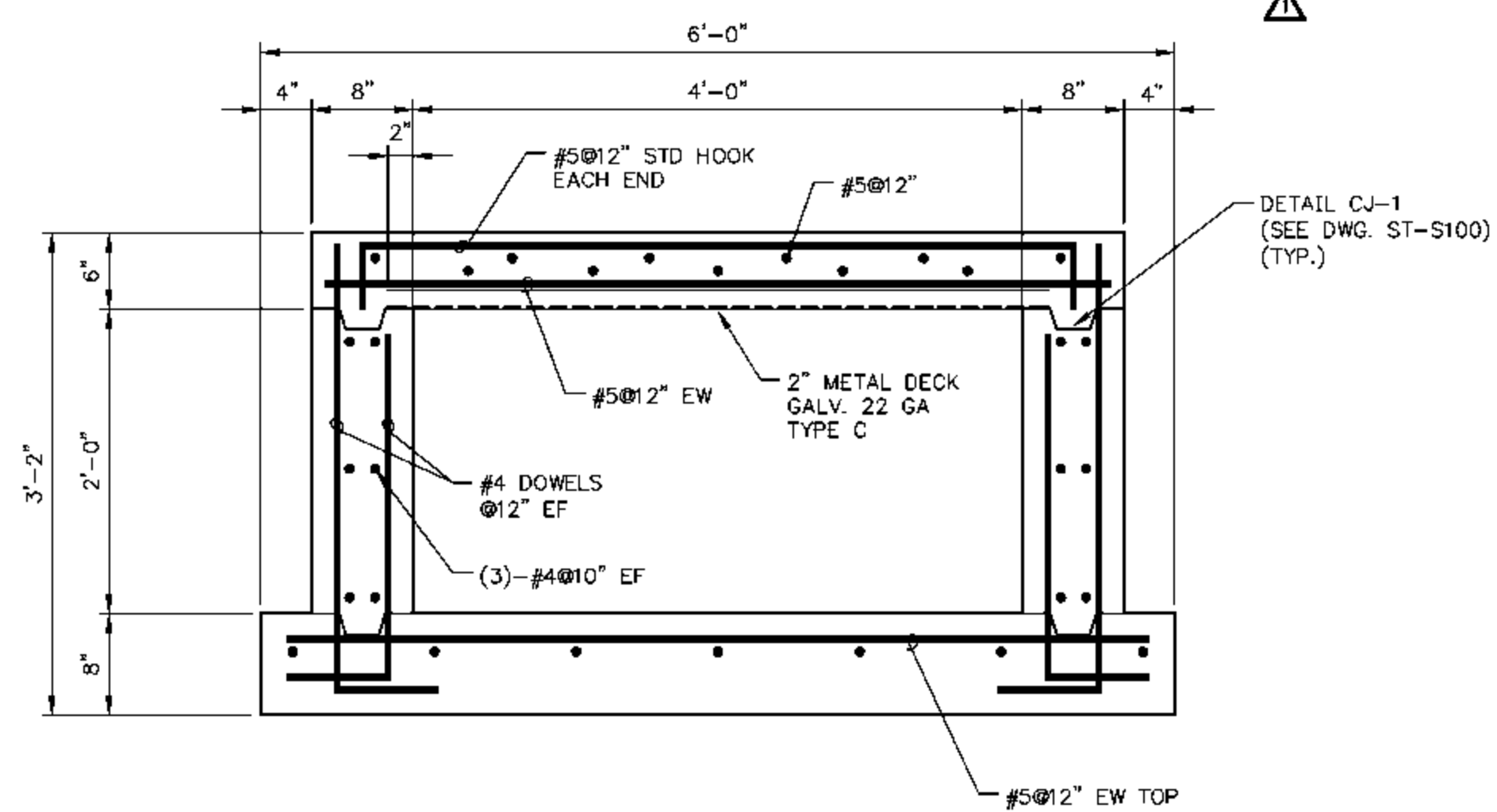
SECTION A
STANDARD
SCALE IN FEET



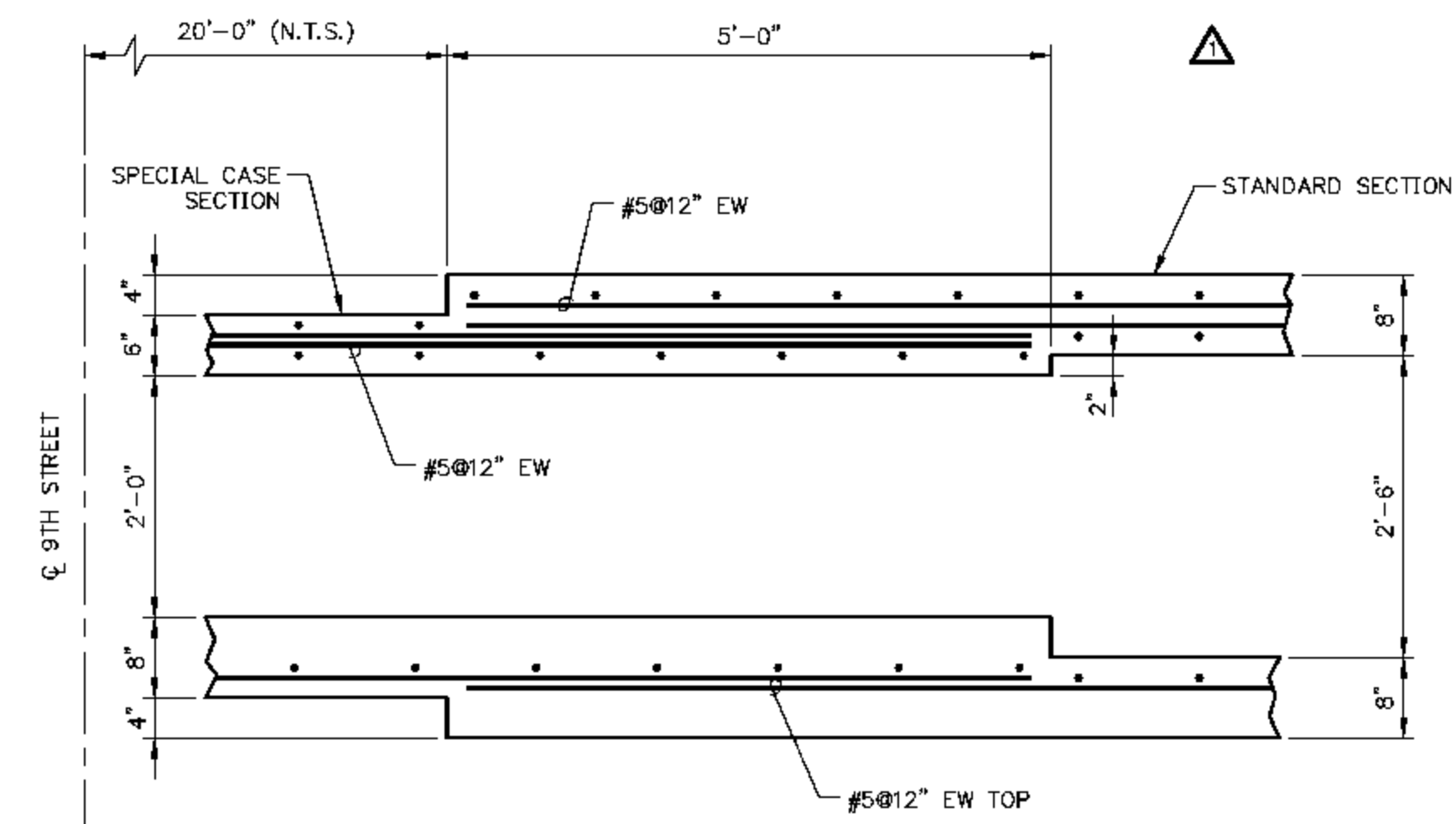
SECTION B
UNDER FOUNDATION
SCALE IN FEET



SECTION C
CARMEN HALL
SCALE IN FEET



SECTION D
SPECIAL CASE
SCALE IN FEET



TUNNEL DETAIL 1
(TYP. 2 PLCS)
SCALE IN FEET

Signed Only When Signed in Blue Ink

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

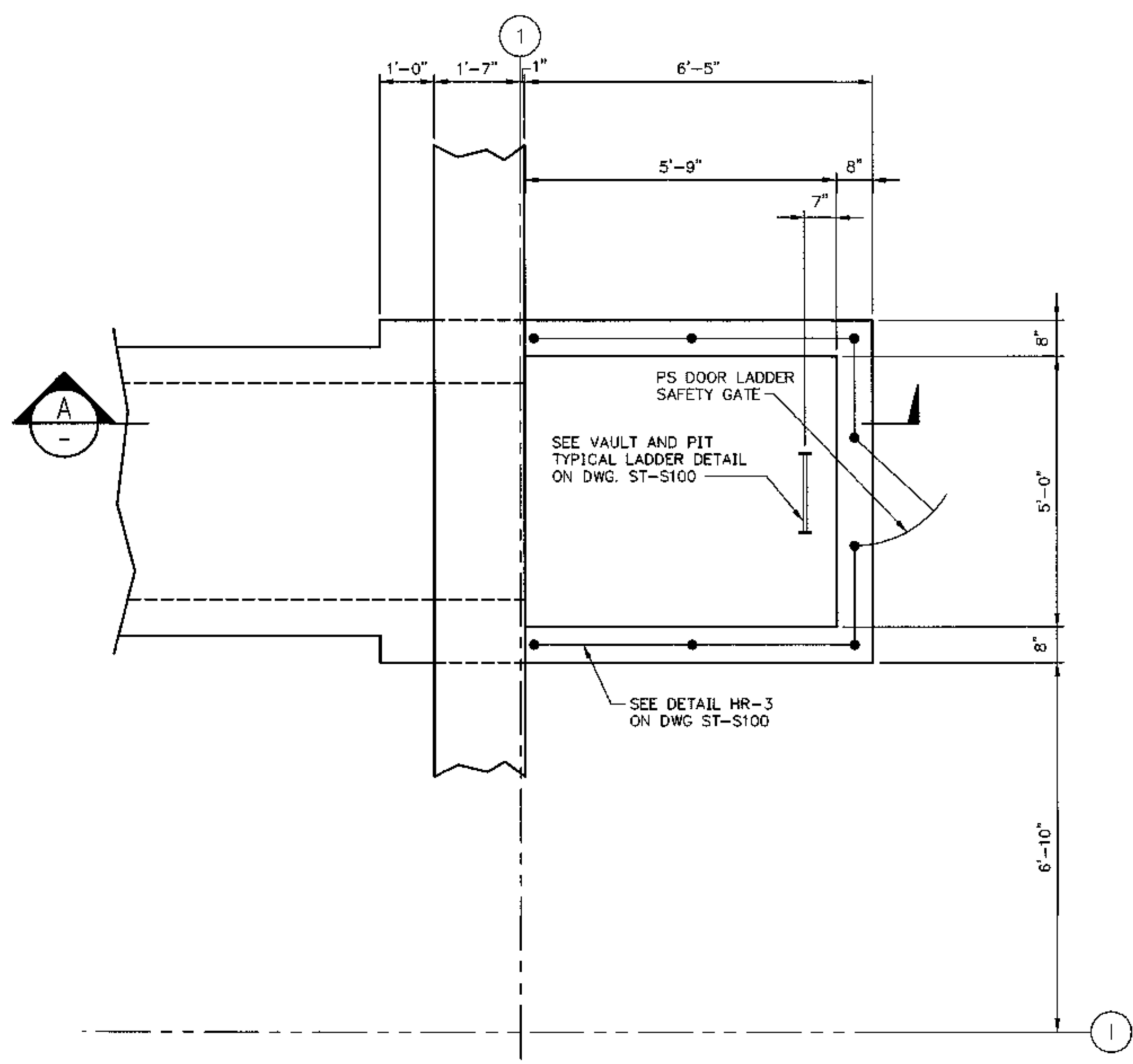
EASTERN ILLINOIS UNIVERSITY
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL FOUNDATION
SECTIONS AND DETAILS

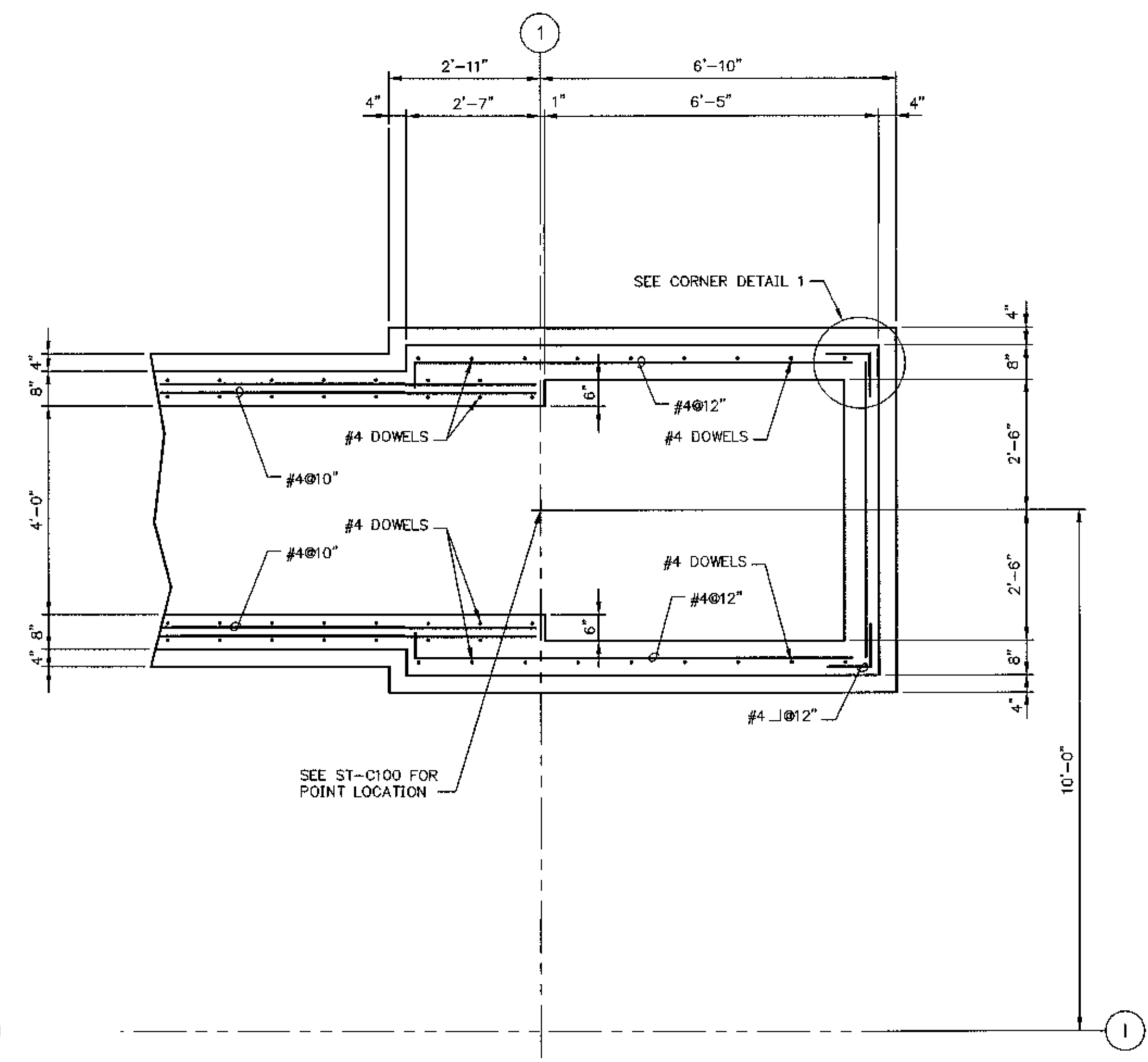
DESIGN BY: T. MONTAG	CHECKED BY: C. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-20-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S109	REV. 1
DRAWING NO. ST-S109	

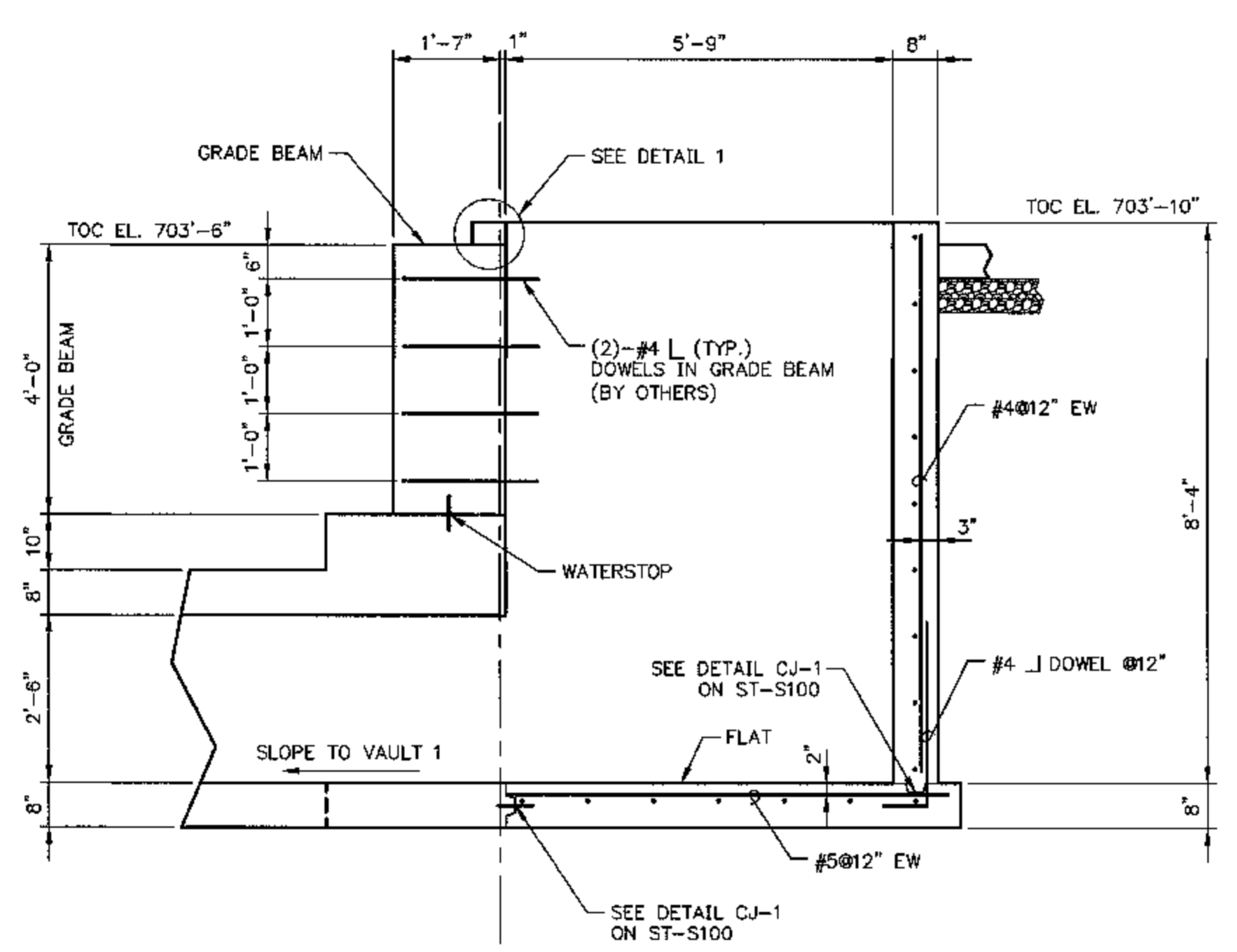
NOTES:
1. FOR SECTION AND DETAIL CALLOUTS SEE DWG ST-S101 THRU ST-S108.



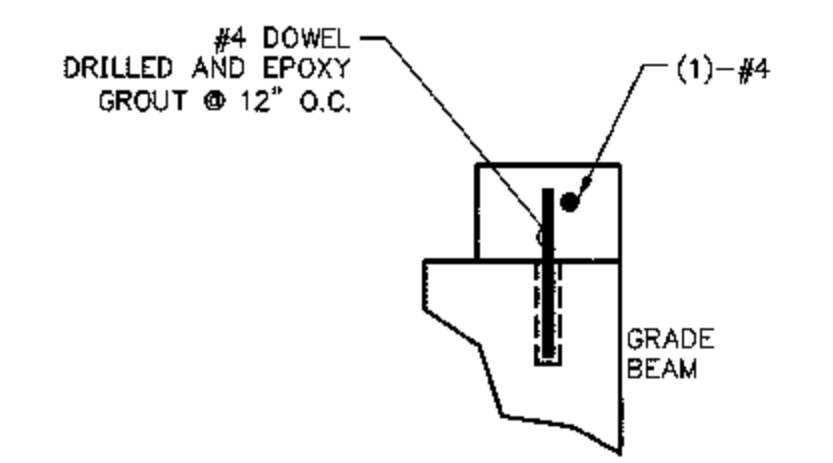
STEAM TUNNEL PIT FOUNDATION PLAN
SCALE IN FEET



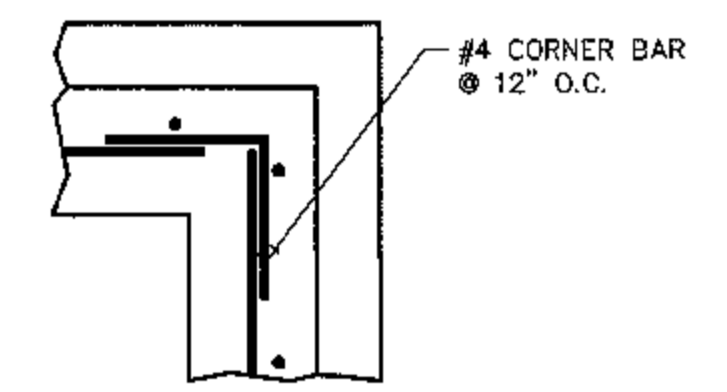
STEAM TUNNEL PIT FOUNDATION BASE PLAN
SCALE IN FEET



SECTION A
SCALE IN FEET



DETAIL 1
SCALE IN FEET



CORNER DETAIL 1
SCALE IN FEET

REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM

Professional Engineer Seal

Sealed Only When Signed in Blue Ink

CARY L. VOGEL
081-004836
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

Cary L. Vogel
1/25/10
EXP. DATE 11-30-2010

Sega

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881

16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois Licence # 184-000823

EASTERN ILLINOIS UNIVERSITY

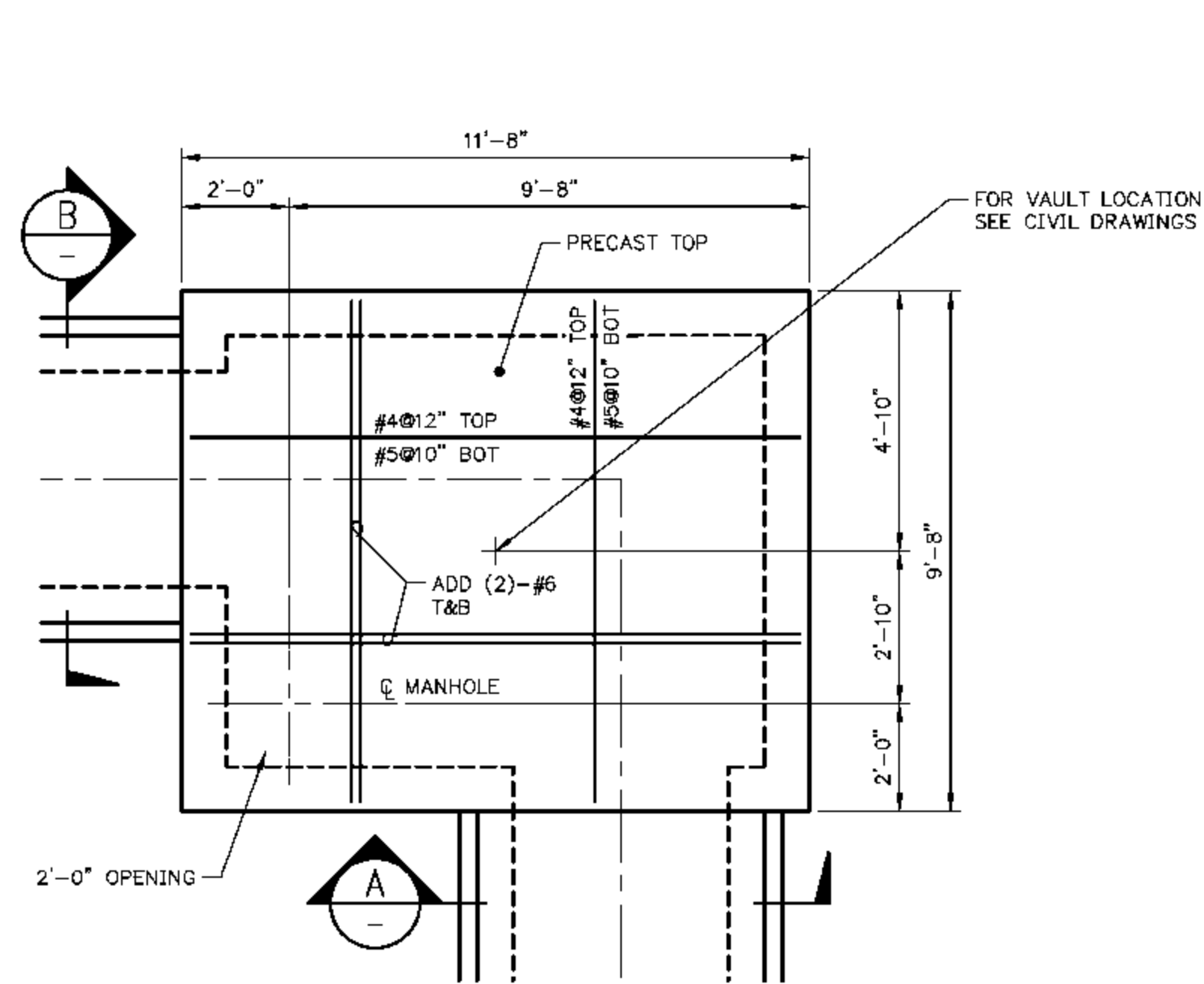
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
STEAM TUNNEL PIT FOUNDATION PLAN
SECTIONS AND DETAILS

DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 12-04-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

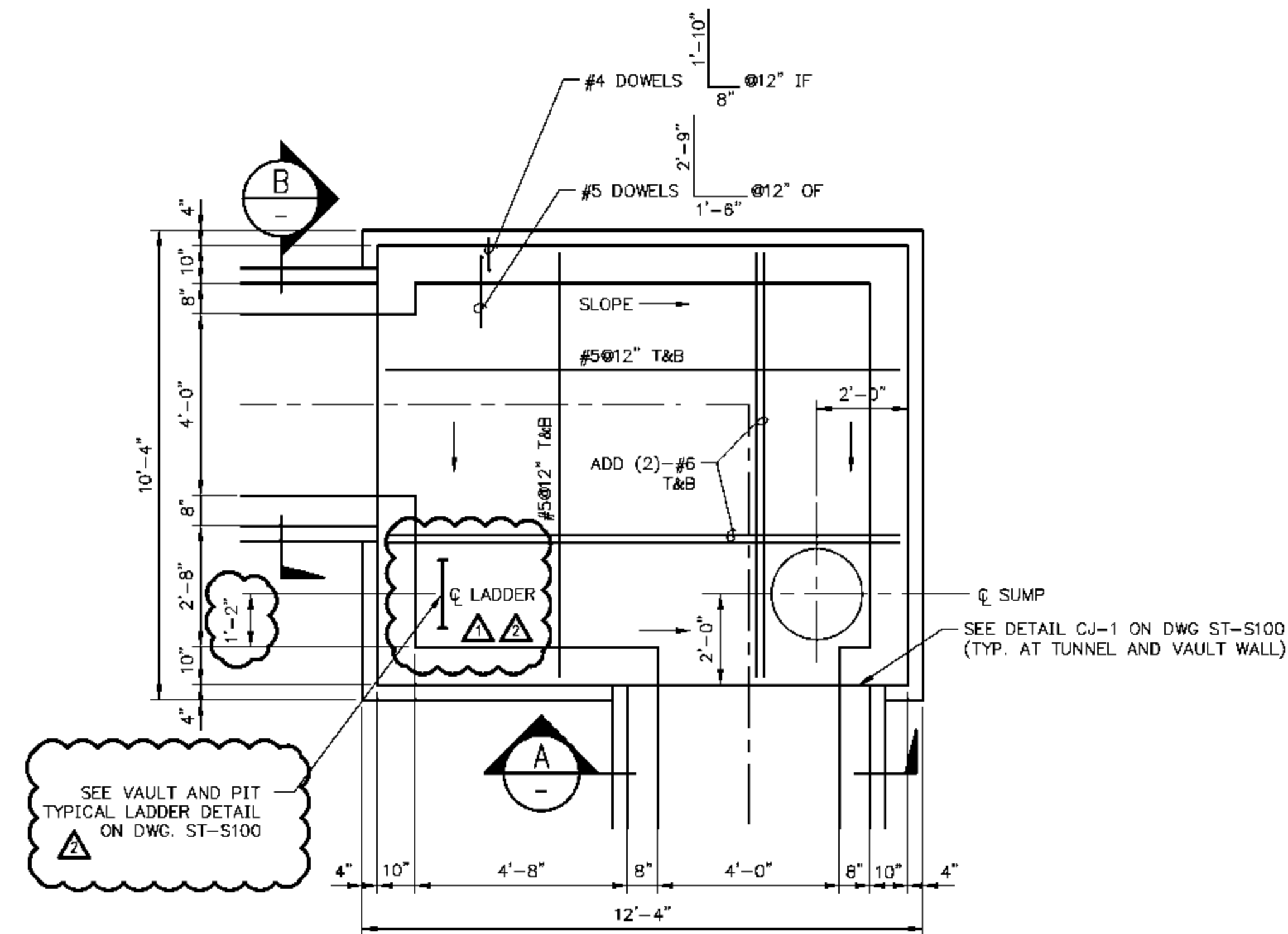
CADD FILE NAME: 090140_ST-S110	REV.
DRAWING NO. ST-S110	0

NOTES:
1. FOR STEAM TUNNEL PIT FOUNDATION LOCATION SEE DWG. ST-S101.

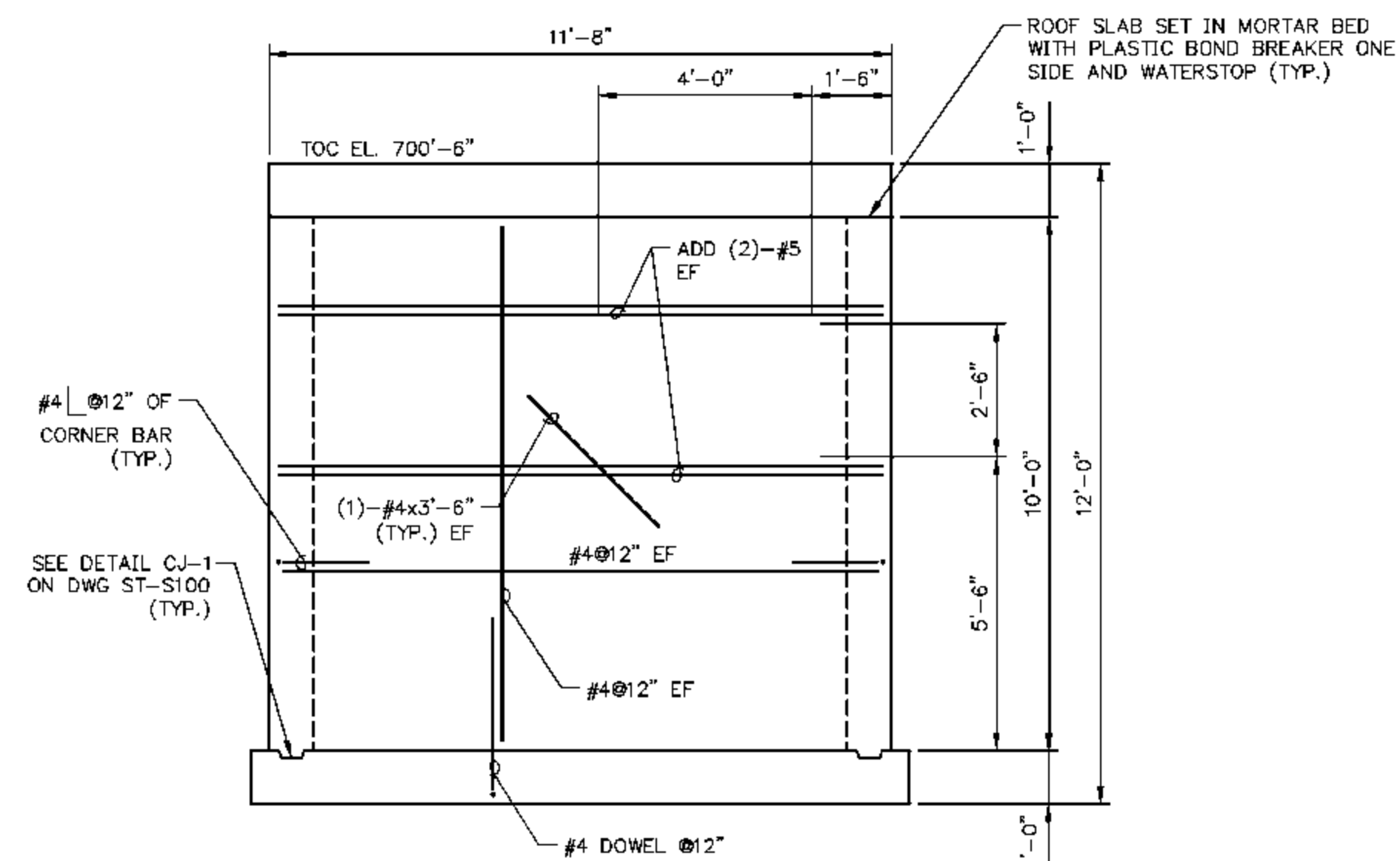
REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	02-19-10	REMOVED LADDER DETAIL	MCB	TEM
2	03-31-10	ADDED LADDER DETAIL	MCB	TEM



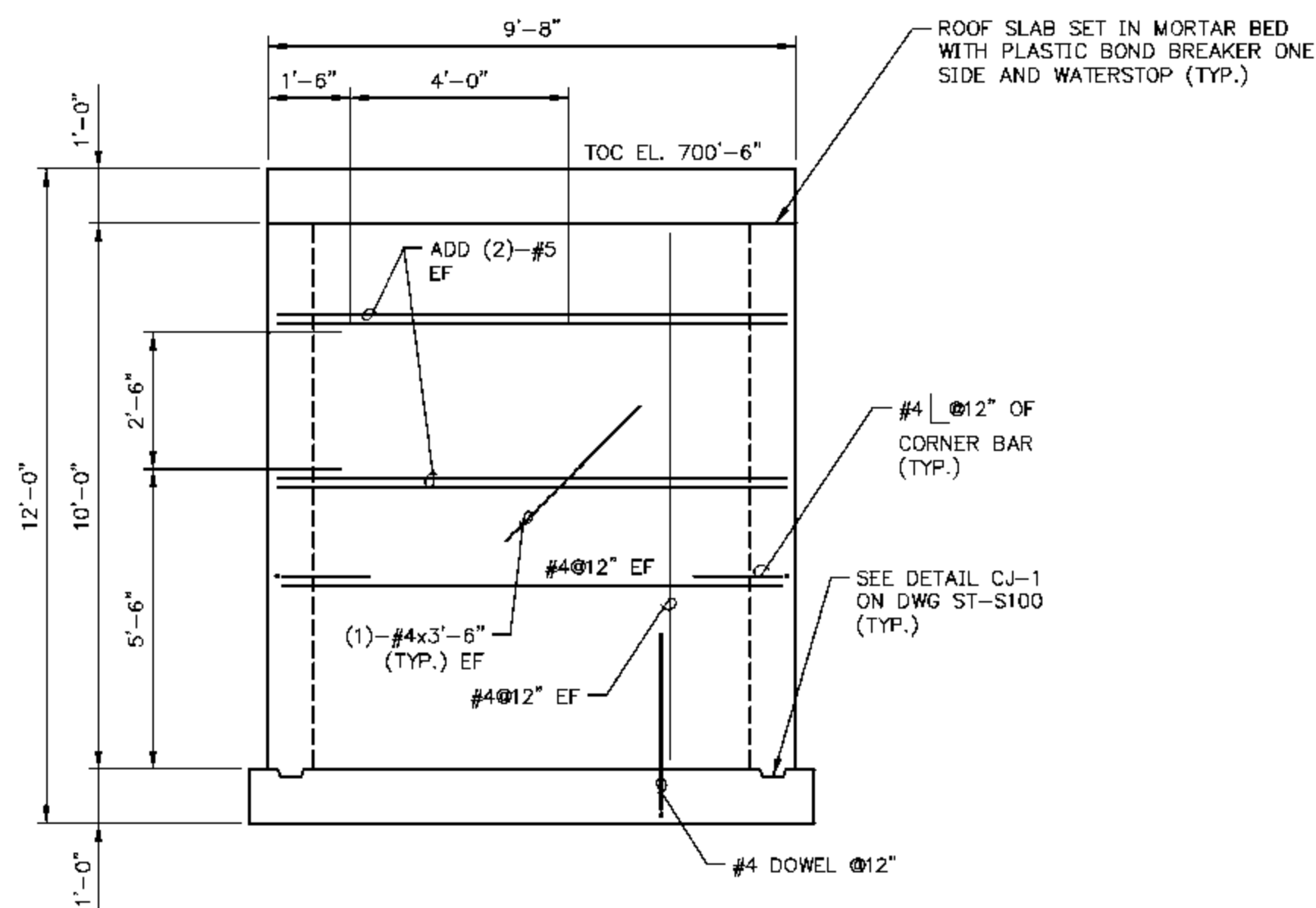
FOUNDATION PLAN - VAULT 1
SCALE IN FEET



BASE FOUNDATION PLAN - VAULT 1
SCALE IN FEET

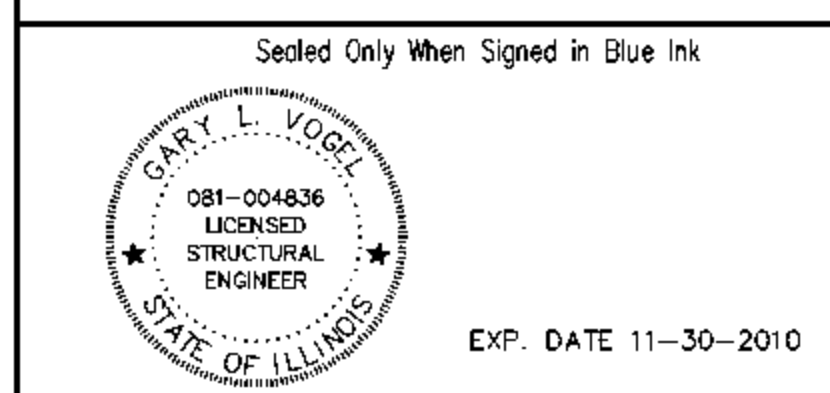


SECTION A
SCALE IN FEET



SECTION B
SCALE IN FEET

NOTES:
1. FOR VAULT FOUNDATION CALLOUTS SEE DWG. ST-S101 THRU ST-S108.
2. FOR TYPICAL VAULT FOUNDATION DETAILS SEE DWG. ST-S130.



Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

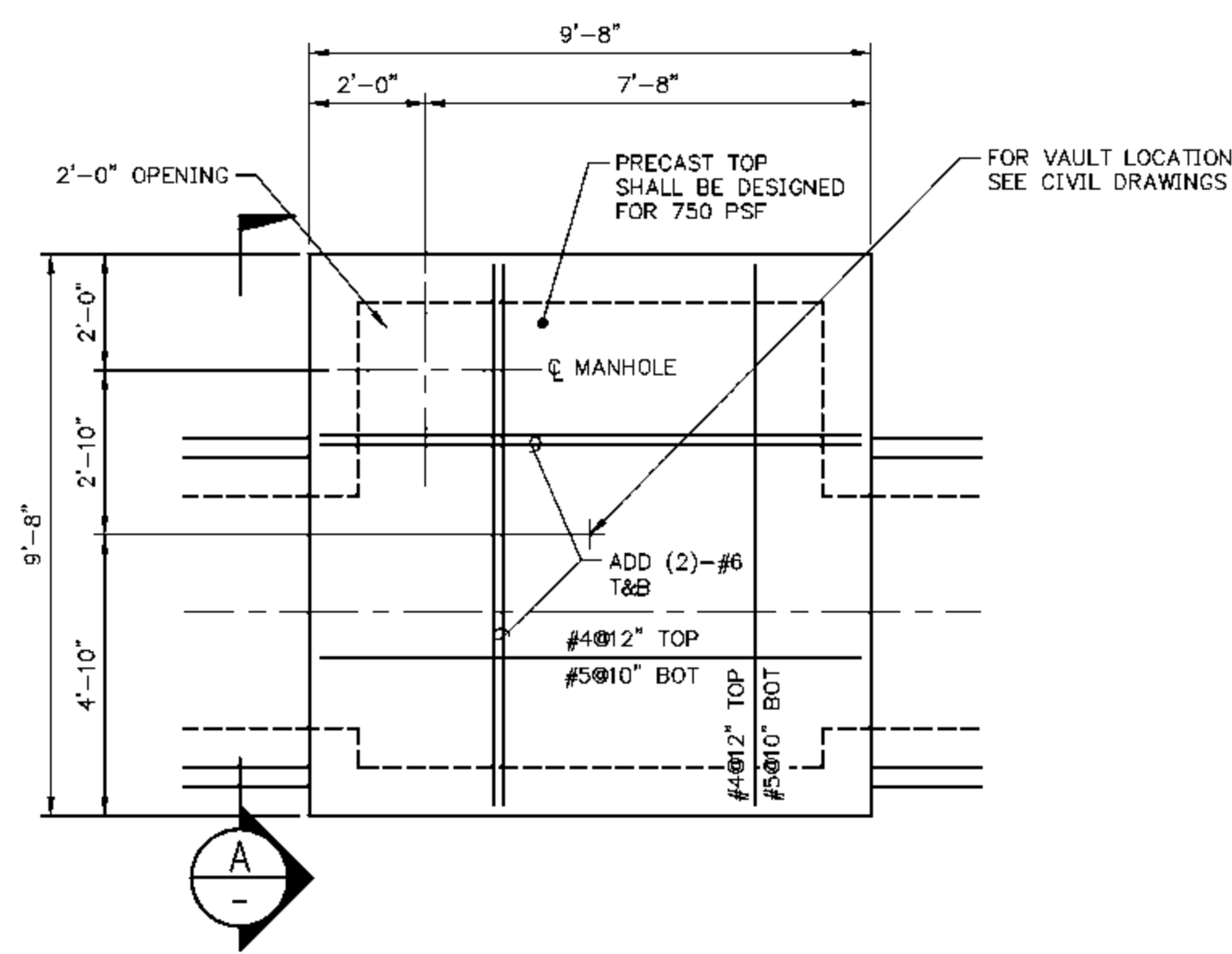


EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
FOUNDATION PLAN - VAULT 1
SECTIONS AND DETAILS

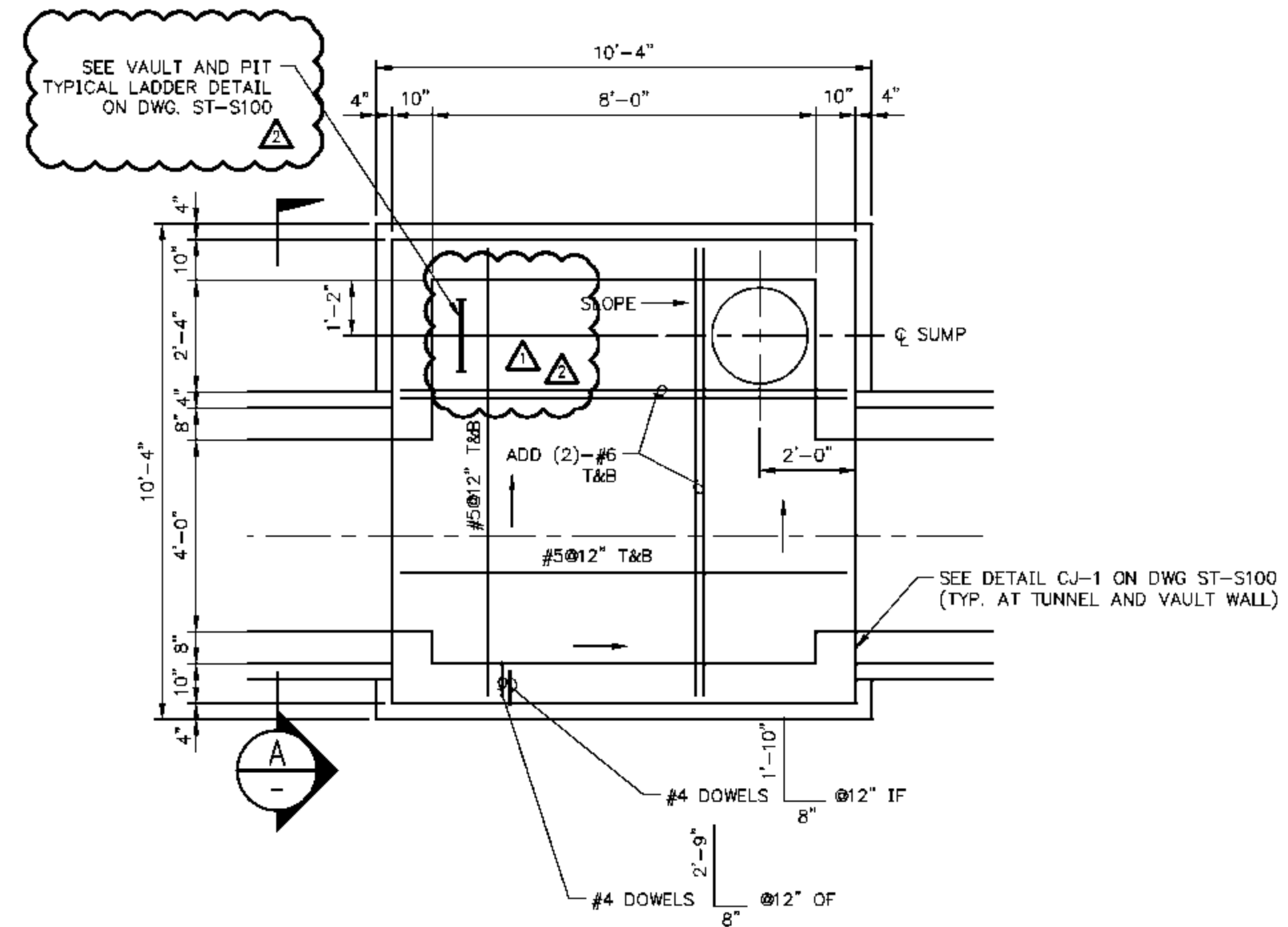
DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 11-20-09
CLIENT I.D. HONO0103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S111	DRAWING NO. ST-S111	REV. 2
--------------------------------	-------------------------------	------------------

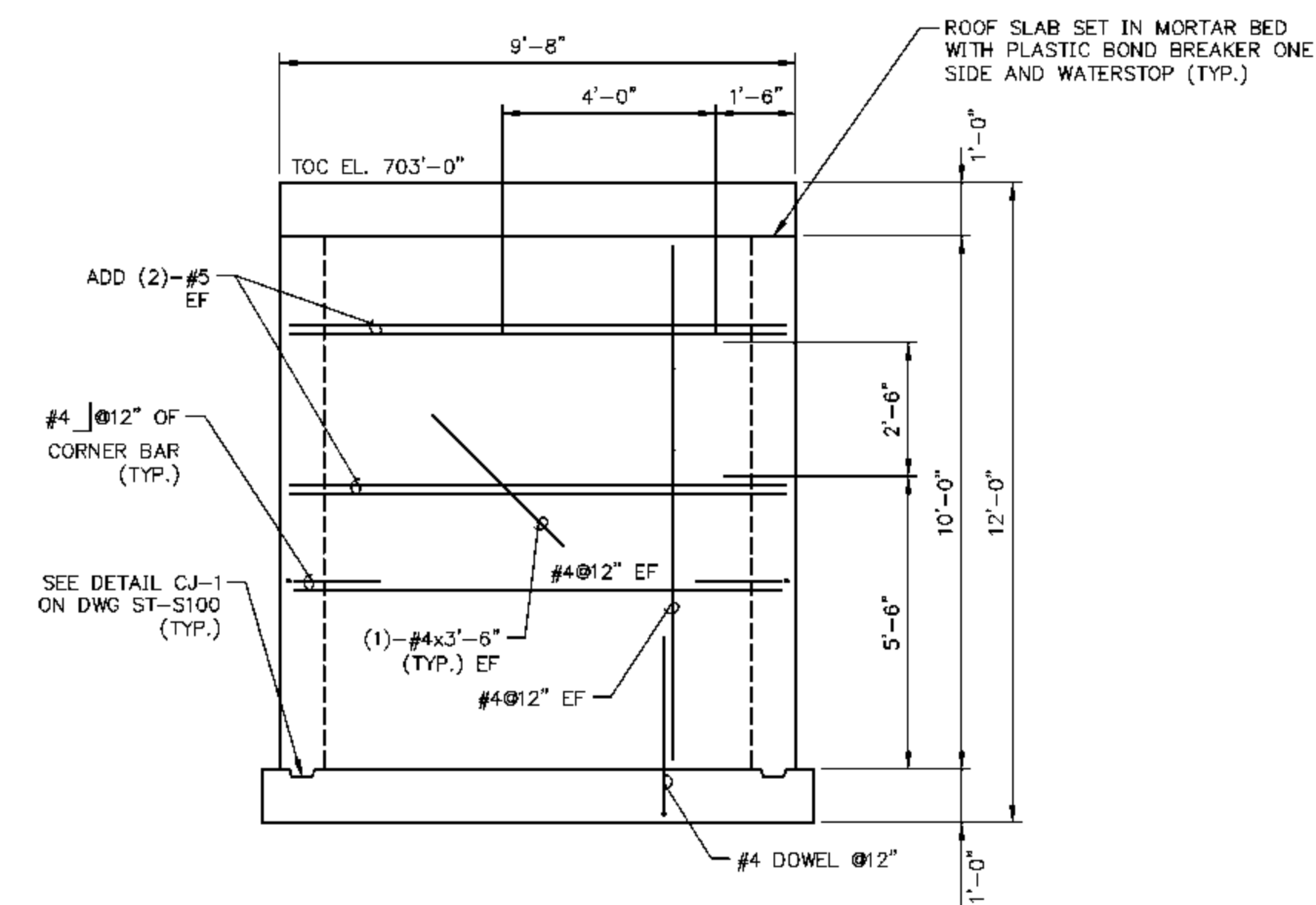
REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	02-19-10	REMOVED LADDER DETAIL	MCB	TEM
2	03-31-10	ADDED LADDER DETAIL	MCB	TEM



FOUNDATION PLAN - VAULT 2
 SCALE IN FEET



BASE FOUNDATION PLAN - VAULT 2
 SCALE IN FEET



SECTION A
 SCALE IN FEET

- NOTES:**
 1. FOR VAULT FOUNDATION CALLOUTS SEE DWG. ST-S101 THRU ST-S108.
 2. FOR TYPICAL VAULT FOUNDATION DETAILS SEE DWG. ST-S130.

Signed Only When Signed in Blue Ink

Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

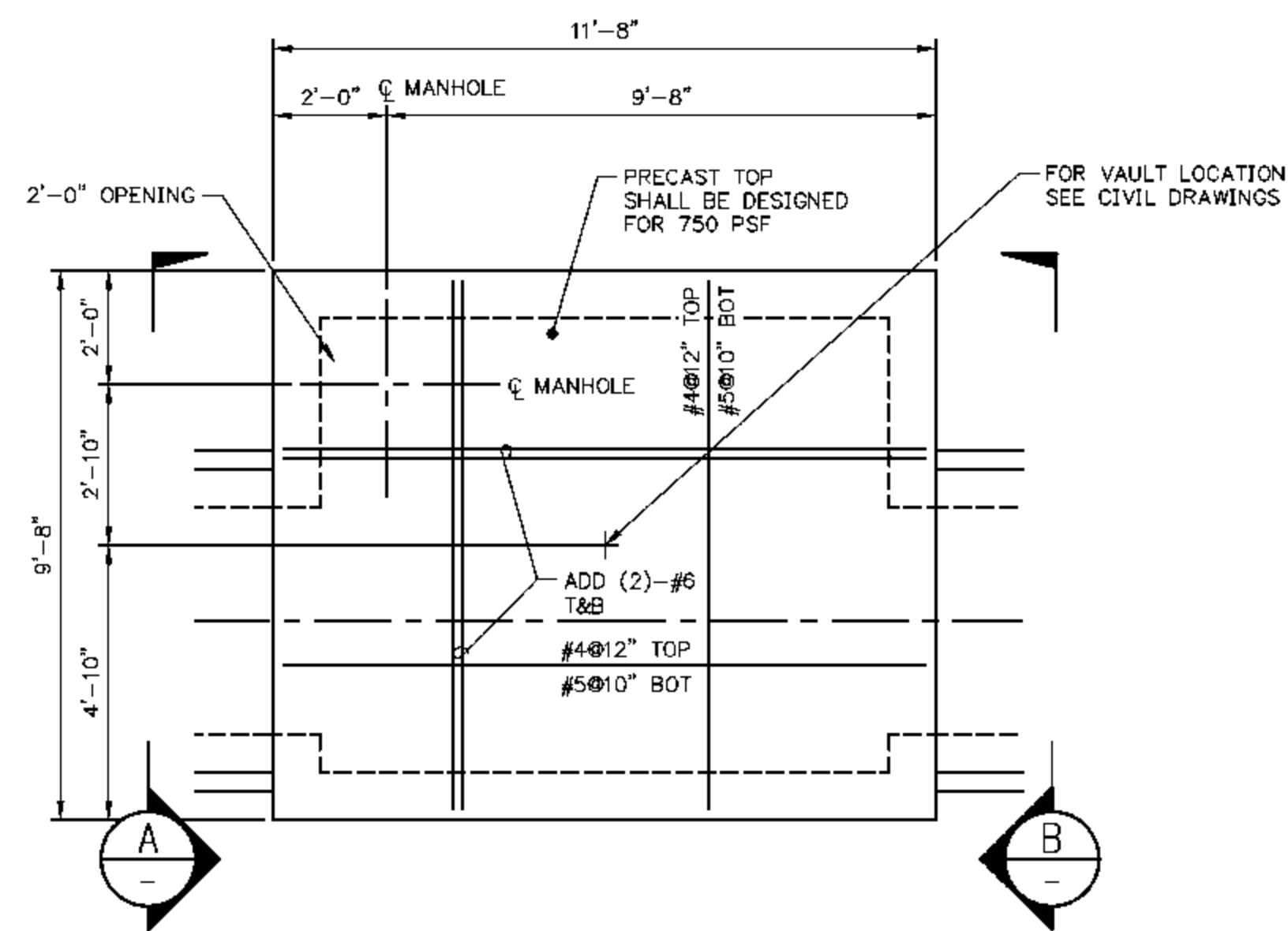
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 FOUNDATION PLAN - VAULT 2
 SECTIONS AND DETAILS

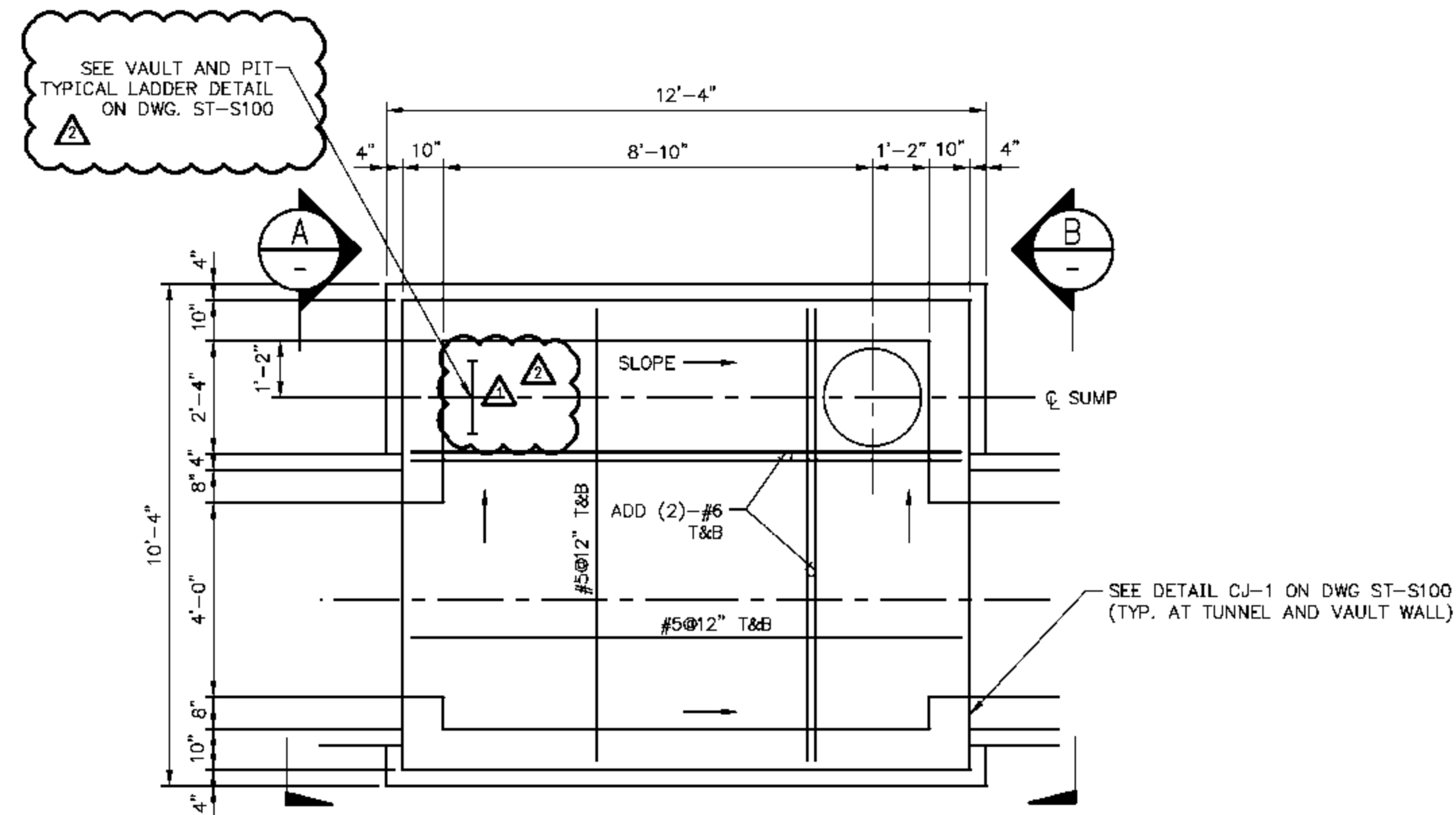
DESIGN BY: T. MONTAG	CHECKED BY: C. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 12-11-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S112	DRAWING NO. ST-S112	REV. 2
--------------------------------	-------------------------------	------------------

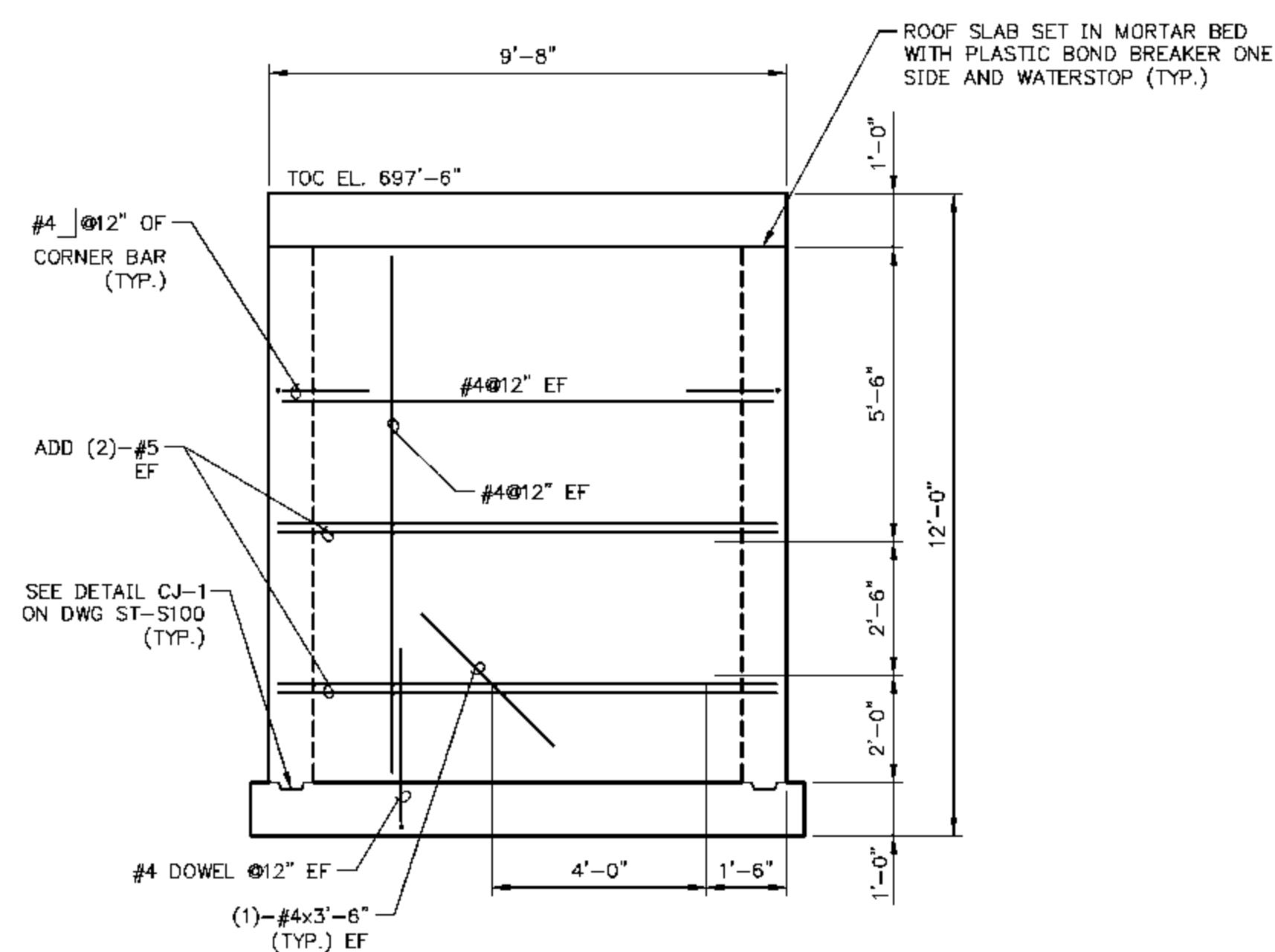
REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	02-19-10	REMOVED LADDER DETAIL	MCB	TEM
2	03-31-10	ADDED LADDER DETAIL	MCB	TEM



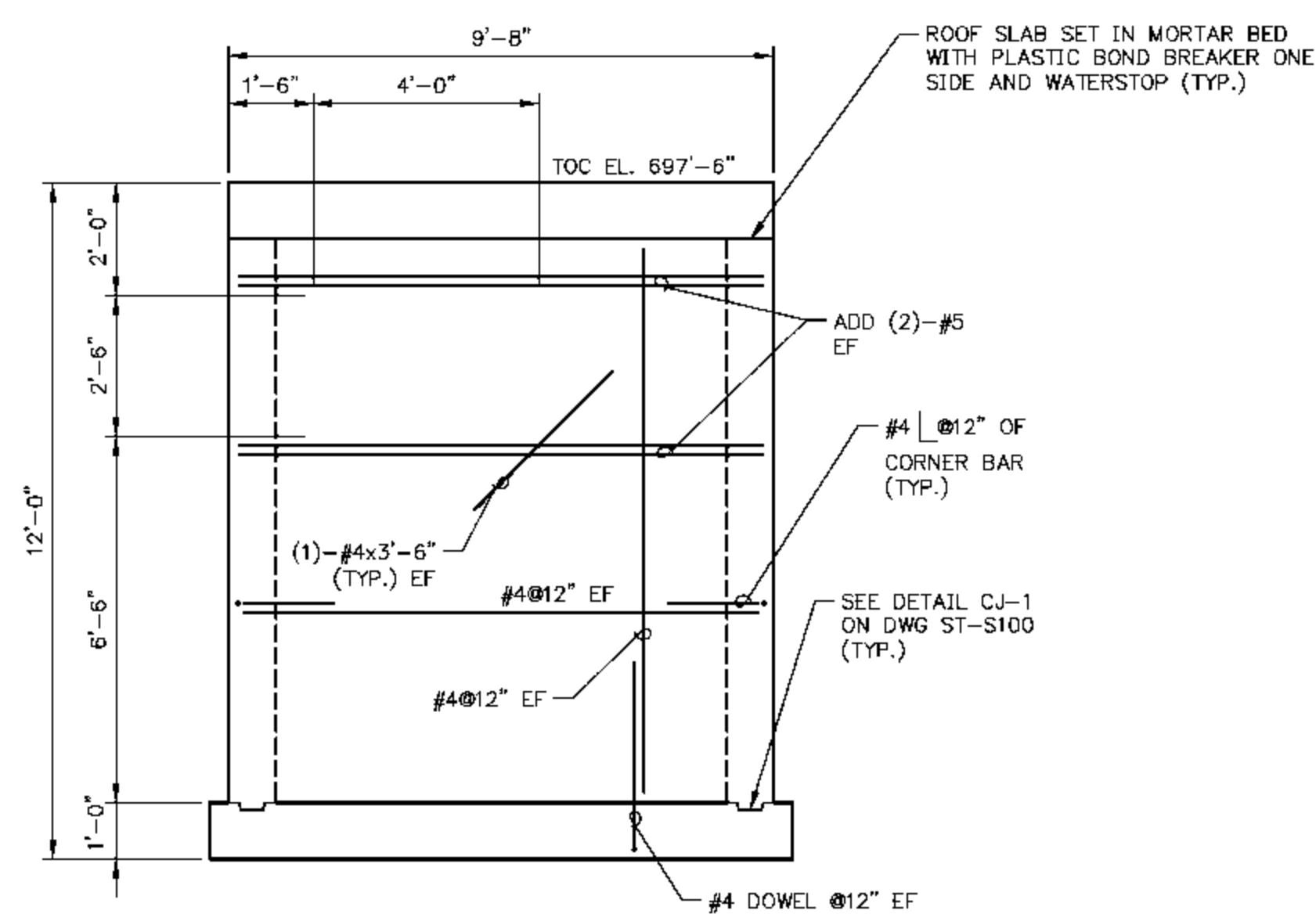
FOUNDATION PLAN - VAULT 3
SCALE IN FEET



BASE FOUNDATION PLAN - VAULT 3
SCALE IN FEET



SECTION A
SCALE IN FEET



SECTION B
SCALE IN FEET

NOTES:
1. FOR VAULT FOUNDATION CALLOUTS SEE DWG. ST-S101 THRU ST-S108.
2. FOR TYPICAL VAULT FOUNDATION DETAILS SEE DWG. ST-S130.

Signed Only When Signed in Blue Ink

Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

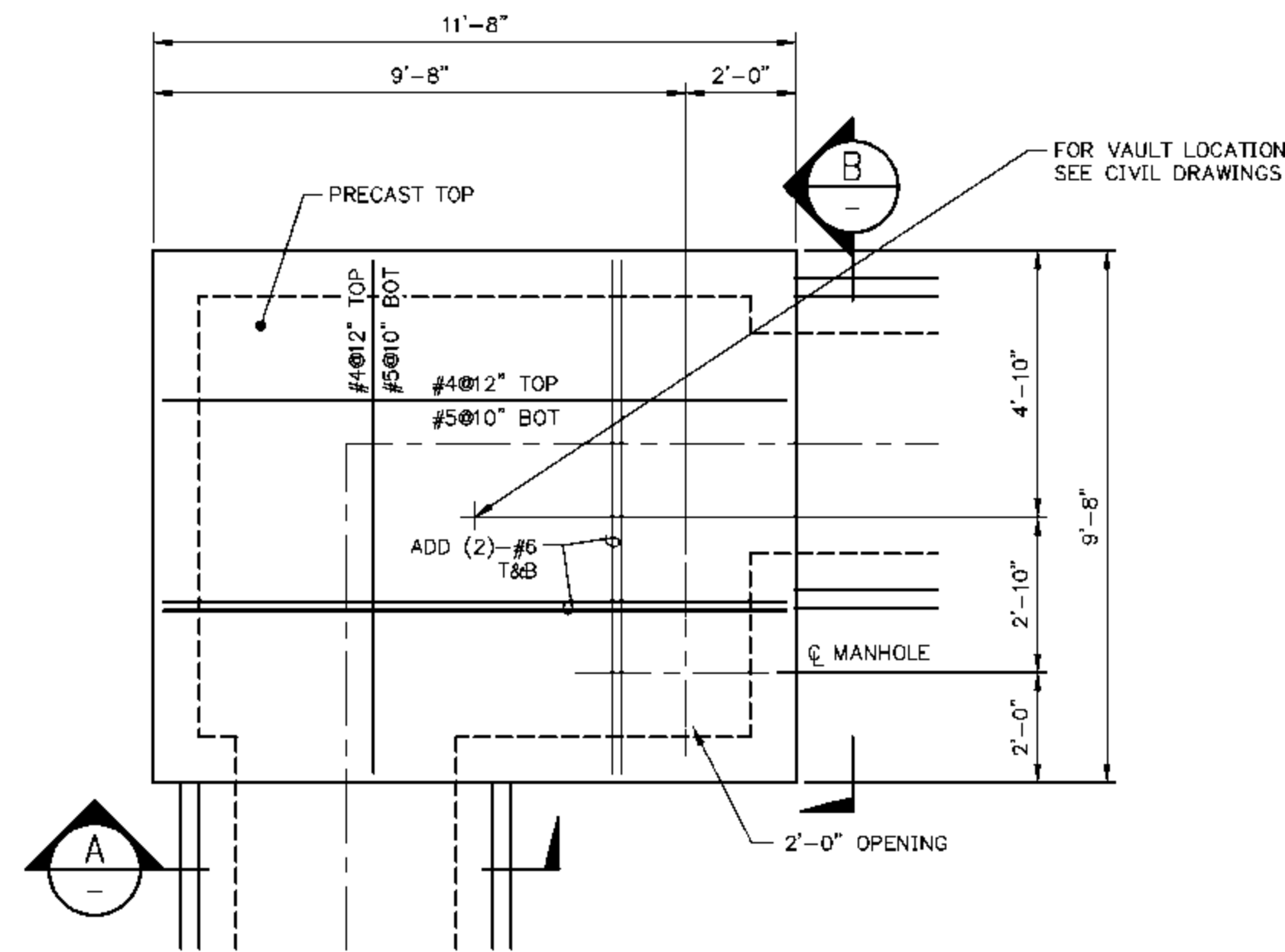
EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
FOUNDATION PLAN - VAULT 3
SECTIONS AND DETAILS

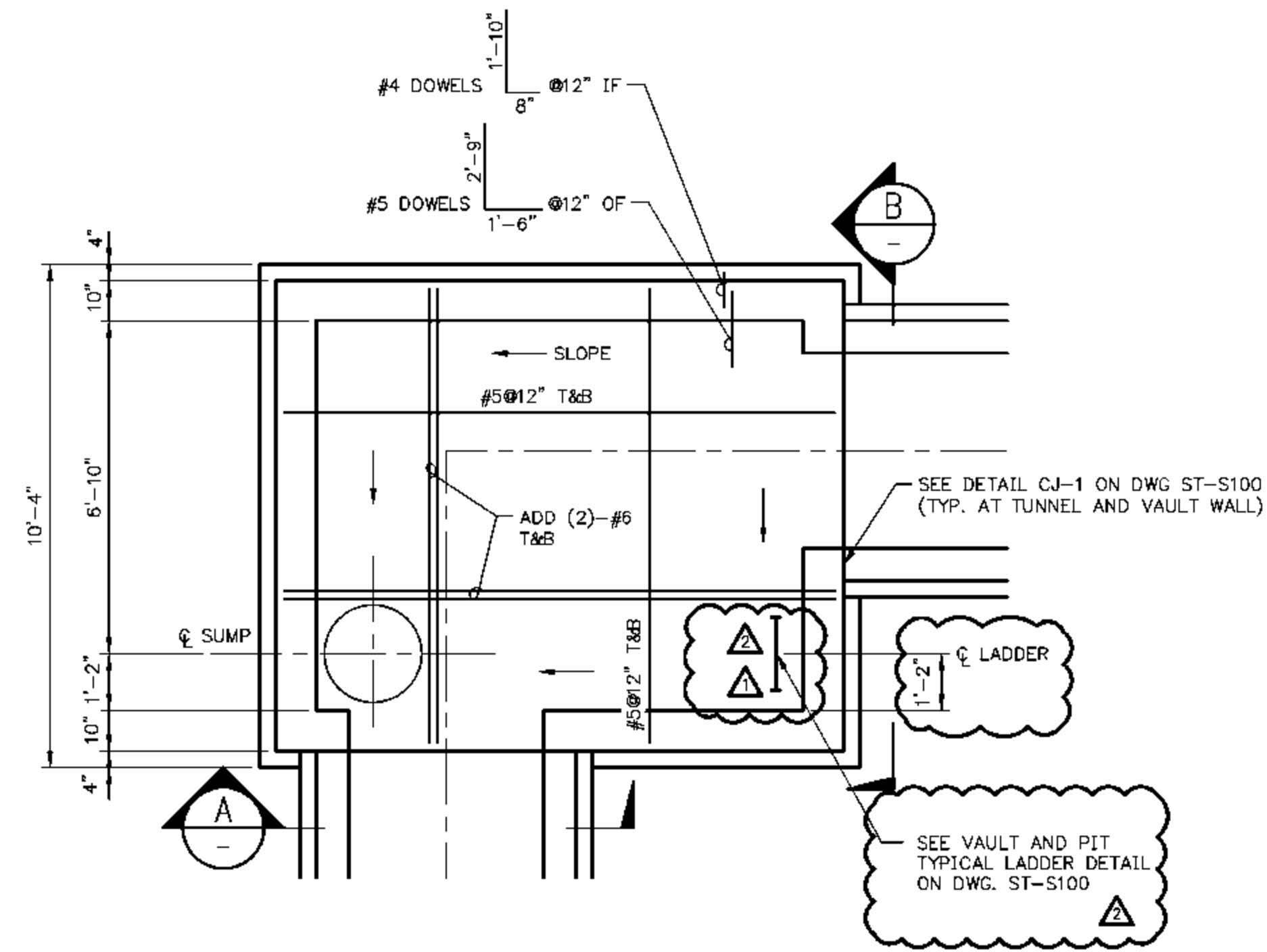
DESIGN BY: T. MONTAG	CHECKED BY: G. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 12-11-09
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S113	DRAWING NO. ST-S113	REV. 2
--------------------------------	-------------------------------	------------------

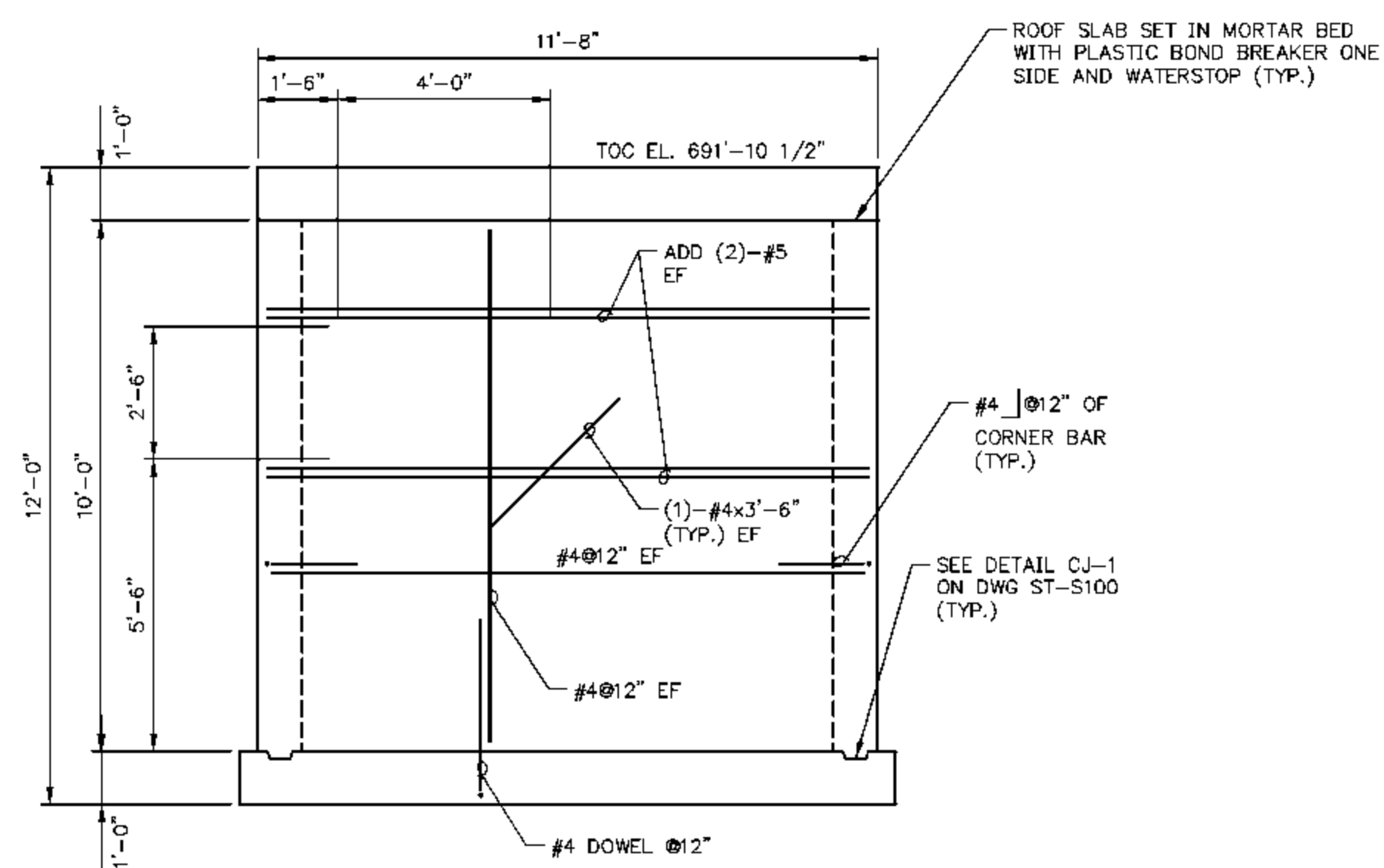
REV.	DATE	DESCRIPTION	DWN	CHK
0	01-25-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	02-19-10	REMOVED LADDER DETAIL	MCB	TEM
2	03-31-10	ADDED LADDER DETAIL	MCB	TEM



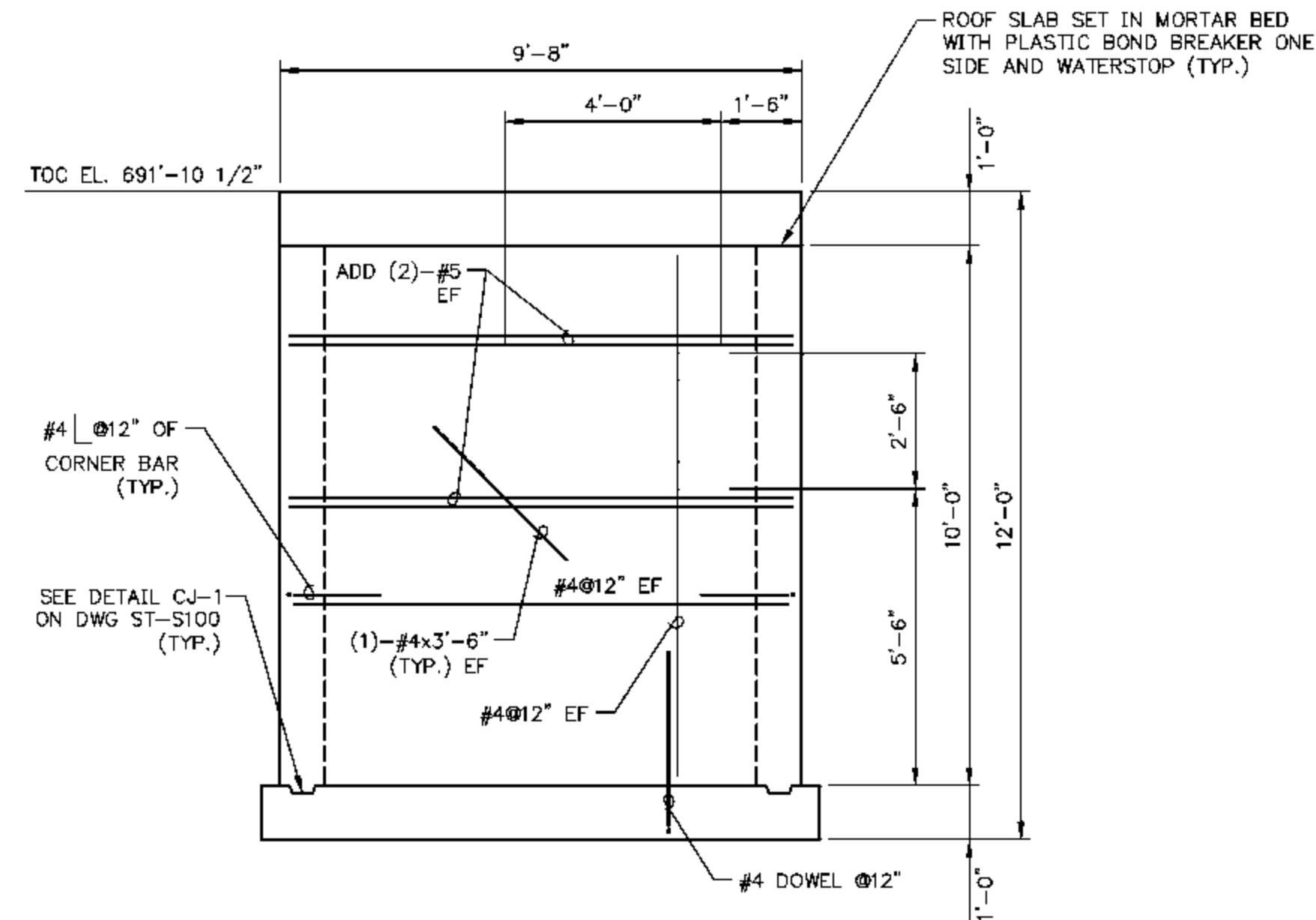
FOUNDATION PLAN - VAULT 4
SCALE IN FEET



BASE FOUNDATION PLAN - VAULT 4
SCALE IN FEET



SECTION A
SCALE IN FEET



SECTION B
SCALE IN FEET

Signed Only When Signed in Blue Ink

Sega
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster
P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
EIU PROJECT # 10-4535

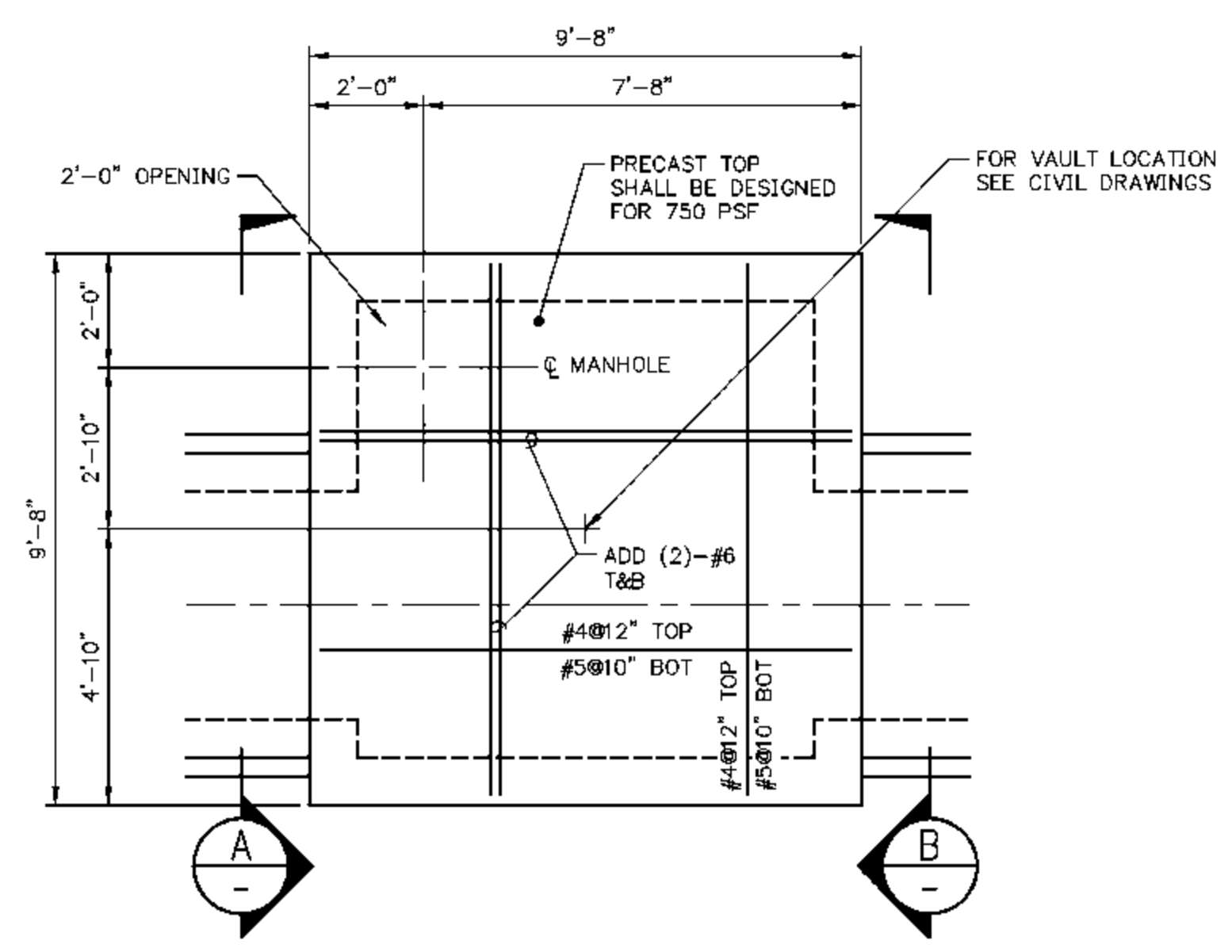
EASTERN ILLINOIS UNIVERSITY
EIU RENEWABLE ENERGY CENTER
FOUNDATION PLAN - VAULT 4
SECTIONS AND DETAILS

DESIGN BY: T. MONTAG	CHECKED BY: C. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 01-12-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

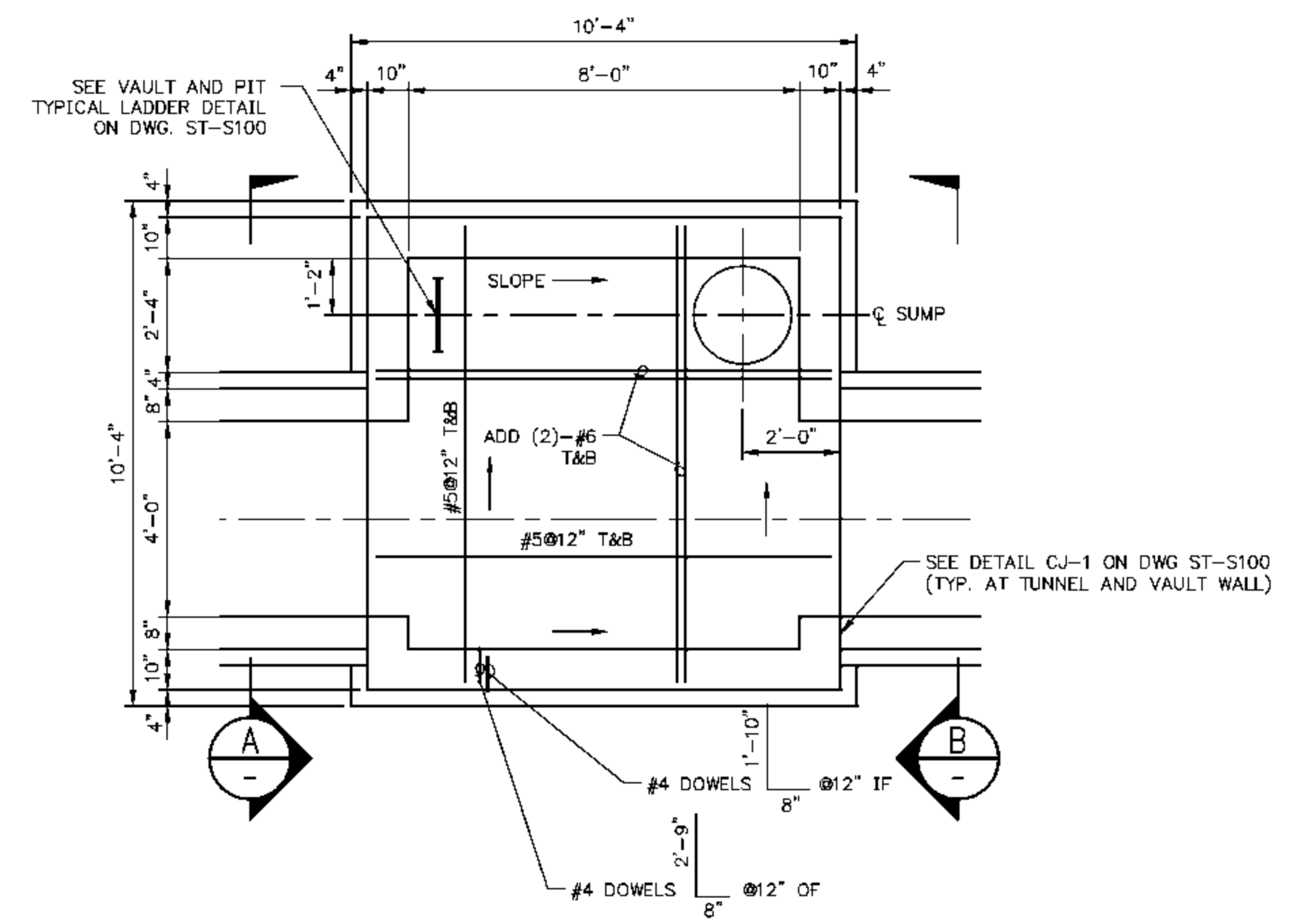
CADD FILE NAME: 090140_ST-S114	DRAWING NO. ST-S114	REV. 2
--------------------------------	-------------------------------	------------------

NOTES:
1. FOR VAULT FOUNDATION CALLOUTS SEE DWG. ST-S101 THRU ST-S108.
2. FOR TYPICAL VAULT FOUNDATION DETAILS SEE DWG. ST-S130.

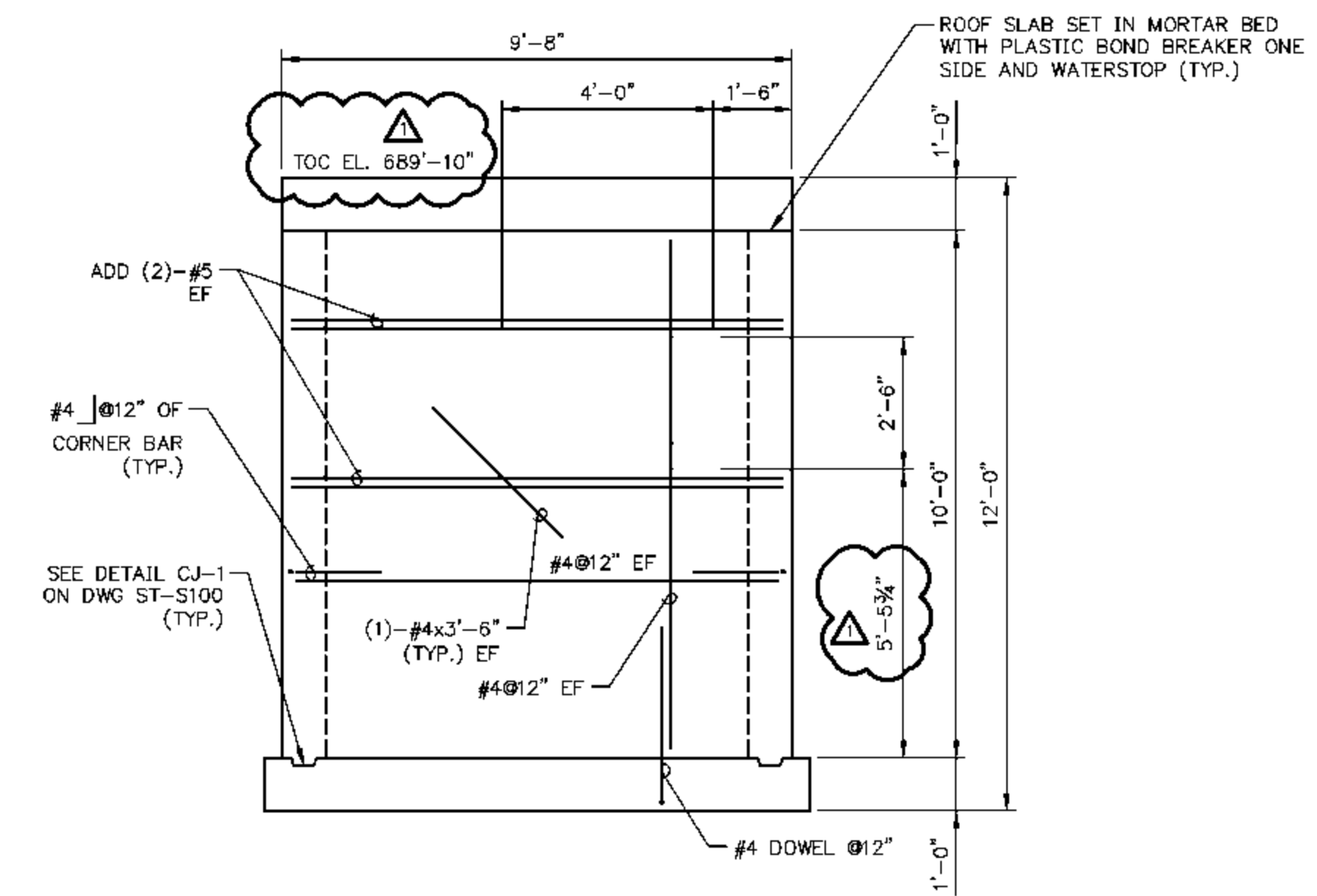
REV.	DATE	DESCRIPTION	DWN	CHK
0	03-31-10	ISSUED FOR CONSTRUCTION	MCB	TEM
1	04-23-10	RE-ISSUED FOR CONSTRUCTION	MCB	TEM



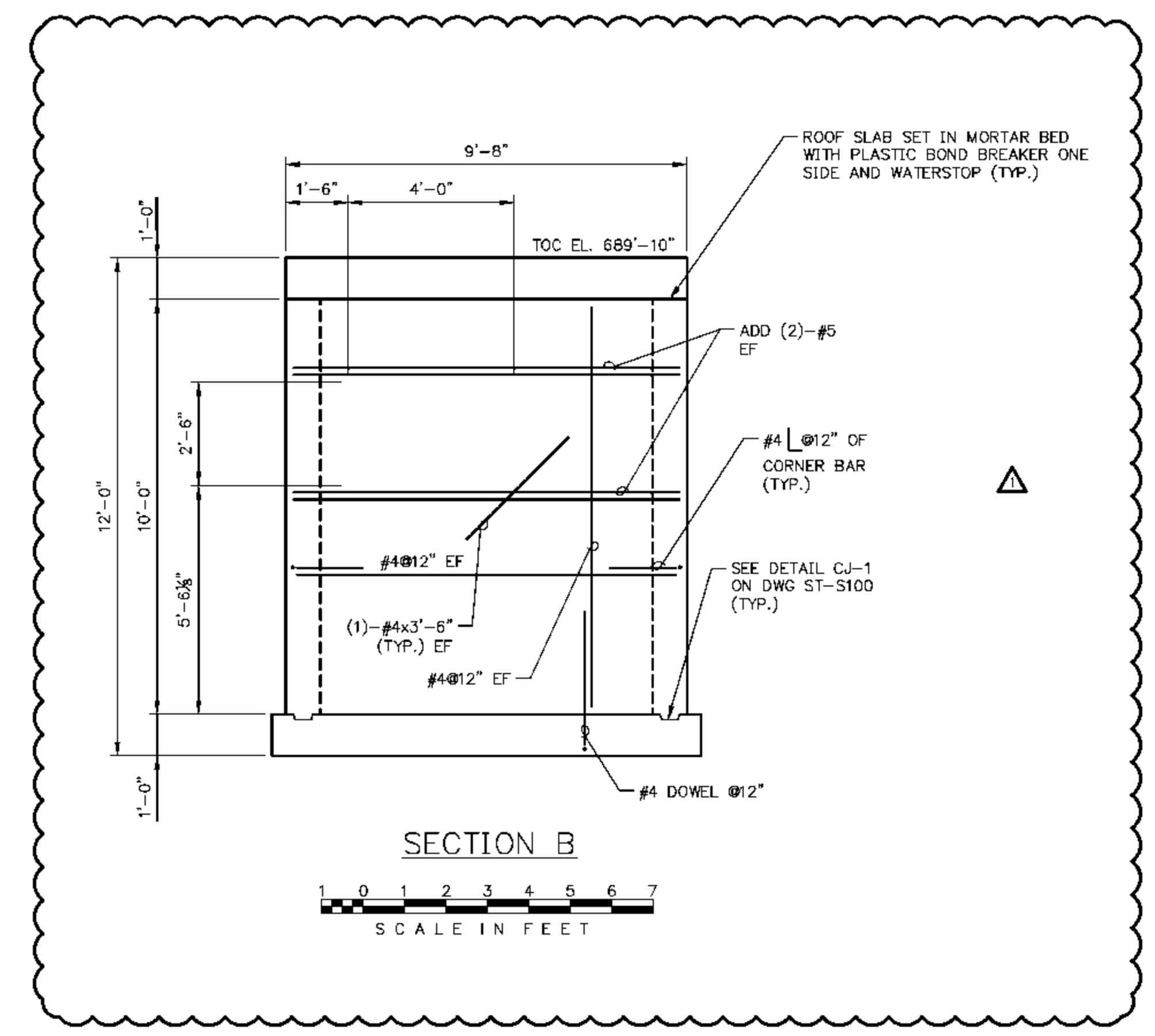
FOUNDATION PLAN - VAULT 5
 SCALE IN FEET



BASE FOUNDATION PLAN - VAULT 5
 SCALE IN FEET



SECTION A
 SCALE IN FEET



SECTION B
 SCALE IN FEET

NOTES:
 1. FOR VAULT FOUNDATION CALLOUTS SEE DWG. ST-S101 THRU ST-S108.
 2. FOR TYPICAL VAULT FOUNDATION DETAILS SEE DWG. ST-S130.

Signed Only When Signed in Blue Ink

Engineers - Architects - Technicians
 Design - Construction - Field Service
 (913) 681-2881
 16041 Foster
 P.O. Box 1000
 Stilwell, Kansas 66085-1000
 Illinois License # 184-000823

EIU PROJECT # 10-4535

EASTERN ILLINOIS UNIVERSITY
 EIU RENEWABLE ENERGY CENTER
 FOUNDATION PLAN - VAULT 5
 SECTIONS AND DETAILS

DESIGN BY: T. MONTAG	CHECKED BY: C. VOGEL
DRAWN BY: M. BESCHNETT	DATE: 02-10-10
CLIENT I.D. HON00103	SEGA PROJECT NO. 090140

CADD FILE NAME: 090140_ST-S115	DRAWING NO. ST-S115	REV. 1
--------------------------------	-------------------------------	------------------