

REPLACE STEAM AND CONDENSATE PIPING

UNIVERSITY OF KENTUCKY

LEXINGTON, KENTUCKY

UK PROJECT NUMBER: 2145.0



ZBA INC. ENGINEERS AND CONSULTANTS
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ZBA PROJECT NO. 1827

SYMBOLS — MECHANICAL

— BFW —	BOILER FEED WATER PIPING
— TW —	CHEMICALLY TREATED WATER PIPING
— SC —	STEAM CONDENSATE PIPING
— D —	DRAIN PIPING
— HPS —	HIGH PRESSURE STEAM PIPING
— PDR —	PUMPED DRIP RETURN
— HPC —	HIGH PRESSURE CONDENSATE
— BV —	BALL VALVE
— BVF —	BUTTERFLY VALVE
— PRV —	PRESSURE REDUCING VALVE
— CV —	CONTROL VALVE, PNEUMATIC, 2-WAY
— CV3 —	CONTROL VALVE, PNEUMATIC, 3-WAY
— CV —	CHECK VALVE
— GV —	GATE VALVE
— GC —	GAGE COCK
— GV —	GLOBE VALVE
— PRV —	SAFETY VALVE, PRESSURE RELIEF VALVE (PRV)
— CA —	CONTROL VALVE — MOTOR ACTUATOR
— ST —	STRAINER (BLOW-OFF)
— PV —	PLUG VALVE
— E90 —	ELBOW 90°
— E45 —	ELBOW 45°
— EU —	ELBOW UP
— ED —	ELBOW DOWN
— TU —	TEE-OUTLET UP
— TD —	TEE-OUTLET DOWN
— CR —	CONCENTRIC REDUCER
— ER —	ECCENTRIC REDUCER
— DR —	DRIFICE
— UN —	UNION
— FL —	FLANGE
— CAP —	CAP
— PS —	PIPE SUPPORT
— P —	PUMP (INDICATE USE)
— T —	STEAM TRAP

ABBREVIATIONS

A	AIR (COMPRESSED)
AUX	AUXILIARY
B	BOILER
BD	BLOW DOWN
CBD	CONTINUOUS BLOWDOWN
CH	CHEMICAL FEED
CR	CONDENSATE RETURN
D	DRAIN
DA	DEAERATOR
DEG	DEGREES
DWG	DRAWING
EA	EACH
EXIST	EXISTING
FW	FEED WATER
F	DEGREES FAHRENHEIT
GPM	GALLONS PER MINUTE
HP	HIGH PRESSURE
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM (ABOVE 15 PSIG)
LCV	LEVEL CONTROL VALVE
LT	LEVEL TRANSMITTER
LP	LOW PRESSURE
LPS	LOW PRESSURE STEAM (15 PSIG AND LOWER)
M	MOTOR OR MOTOR ACTUATED
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PDR	PUMPED DRIP RETURN
POC	POINT OF CONNECTION (OF NEW WORK)
POR	POINT OF REMOVAL (OF DEMOLITION)
PRV	PRESSURE REDUCING VALVE
T	TANK OR TRAP
TW	TREATED WATER
TYP	TYPICAL
VTR	VENT THROUGH ROOF

SYMBOLS — ELECTRICAL

POWER & LIGHTING PLAN

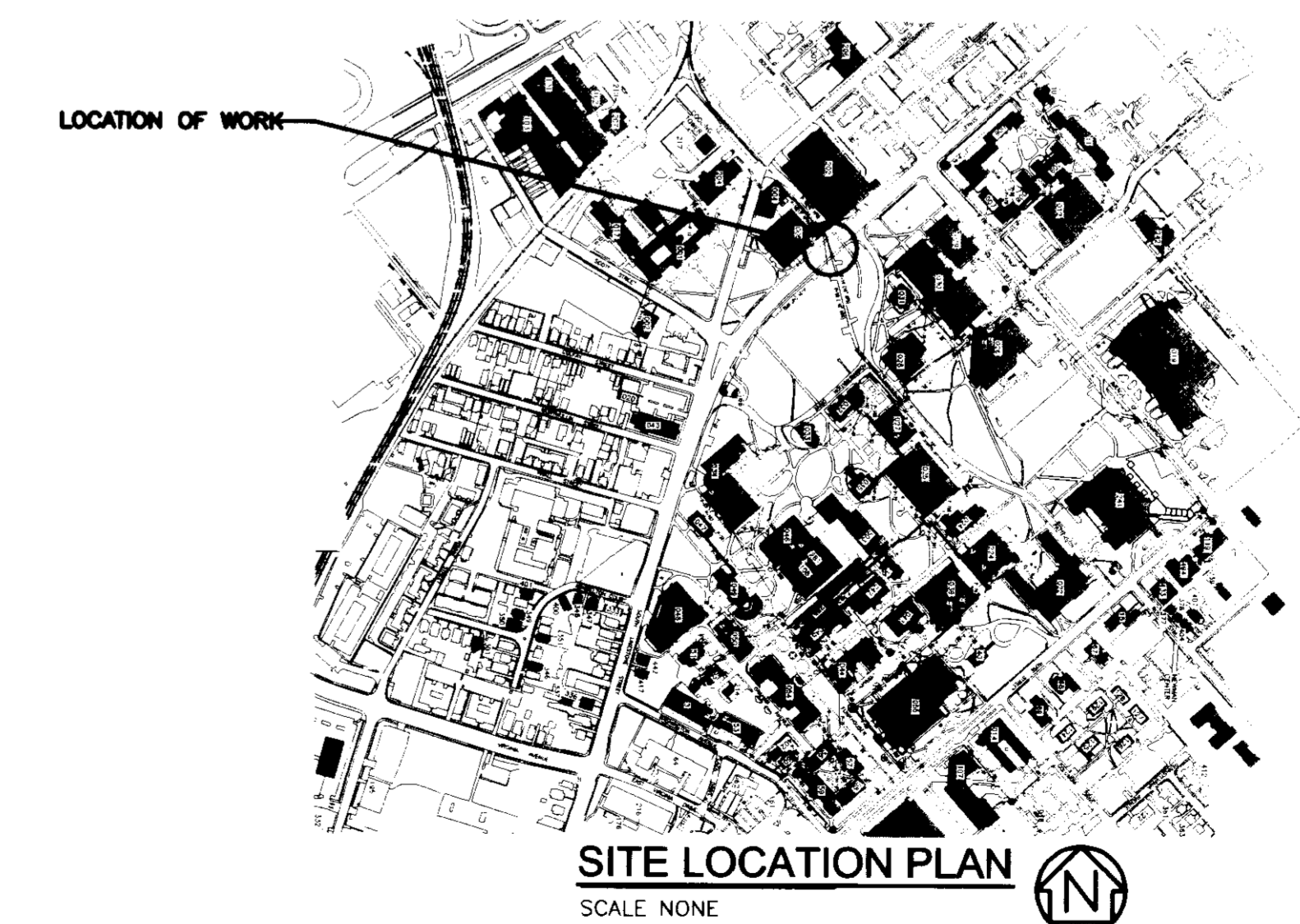
Ⓜ	MOTOR SINGLE PHASE NUMBER = HORSE POWER
—	CONDUIT EXPOSED
Ⓜ	JUNCTION BOX
—	HOMERUN TO PANEL — ARROW HEADS INDICATE NUMBER OF CIRCUITS
Ⓜ	TWIST LOCK RECEPTACLE 120 VAC
Ⓜ	DUPLEX RECEPTACLE 120 VAC
Ⓜ	MANUAL MOTOR STARTER
Ⓜ	SINGLE POLE SWITCH
Ⓜ	3 WAY SWITCH
Ⓜ	WALL MOUNTED LUMINARY
①	REFERENCE TO KEYED NOTE NUMBER 1

DRAWING LIST

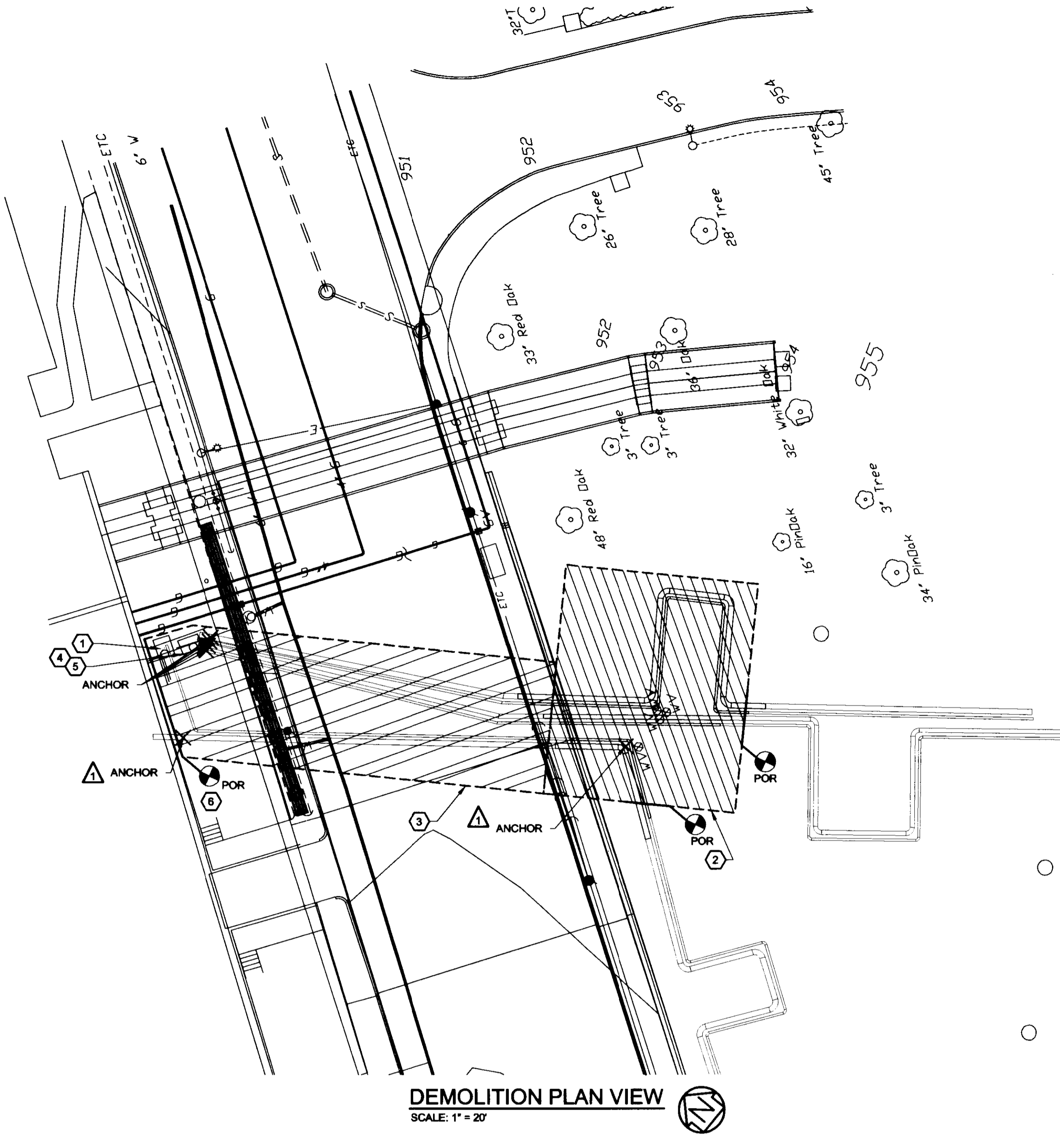
00	COVER SHEET
10-1	MECHANICAL DEMOLITION PLANS
20-1	STEAM TUNNEL ABOVEGROUND & UNDERGROUND PLANS & PROFILE
20-2	STRUCTURAL VAULT DETAILS
20-3	STEAM TUNNEL SECTIONS AND DETAILS
40-1	FLOW DIAGRAMS
40-2	STEAM TUNNEL PLANS
40-3	VAULT PLANS AND SECTIONS
40-4	MECHANICAL DETAILS
50-1	ELECTRICAL STEAM TUNNEL PLAN

SYMBOLS — GENERAL

Ⓜ	SECTION CUT (FRONT)	Ⓜ	NORTH ARROW
Ⓜ	SECTION CUT	LL	COLUMN REFERENCE LINE
Ⓜ	SECTION LINE END	#	ROOM NUMBER
ELEV. SCALE	ELEVATION VIEW HEADER	ELEV. FT-IN	ELEVATION DESIGNATION RIGHT SIDE
PLAN VIEW SCALE	PLAN VIEW HEADER	ELEV. FT-IN	ELEVATION DESIGNATION LEFT SIDE
DETAIL SCALE	DETAIL VIEW HEADER	Ⓜ	CONNECTION/REMOVAL POINT
SECTION SCALE	SECTION VIEW HEADER	A	MATCH LINE A-A
		#	DRAWING KEYNOTES
		////	DEMOLITION — EQUIPMENT TO BE REMOVED
		—	NEW WORK AND EQUIPMENT
		—	EXISTING



RECORD DRAWING



- KEYNOTES:**
1. CONTRACTOR TO DEMOLISH ELECTRICAL MANHOLE. OWNER TO RELOCATE MANHOLE AND ELECTRICAL SERVICE. CONTRACTOR SHALL COORDINATE DEMOLITION WITH OWNER.
 2. ALL STEAM AND CONDENSATE PIPING IN THIS AREA TO BE DEMOLISHED.
 3. STEAM AND CONDENSATE PIPING IN THIS AREA SHALL BE DEMOLISHED IF ALL ALTERNATES (A), (B), AND (C) ARE ACCEPTED. IF ALL THREE ALTERNATES ARE NOT ACCEPTED, STEAM AND CONDENSATE PIPING IN THIS AREA SHALL BE LEFT IN PLACE TO BE PUT BACK INTO SERVICE WHEN TUNNEL AND VAULT CONSTRUCTION ARE COMPLETE. SUPPORT PIPING IN PLACE AND REPAIR ANY DAMAGE TO PIPING THAT MAY OCCUR DURING CONSTRUCTION.
 4. STEAM MANHOLE TO BE DEMOLISHED.
 5. PIPING WITHIN STEAM MANHOLE SHALL BE DEMOLISHED ONLY IF ALL ALTERNATES (A), (B), AND (C) ARE ACCEPTED. IF ALL TREE ALTERNATES ARE NOT ACCEPTED, LEAVE STEAM AND CONDENSATE PIPING IN MANHOLE TO BE PUT BACK INTO SERVICE WHEN TUNNEL AND VAULT CONSTRUCTION IS COMPLETE.
 6. IF ALTERNATES (A), (B), AND (C) ARE ALL ACCEPTED, REMOVE PIPING AT PETERSON SERVICE BUILDING WALL. LEAVE ADEQUATE PIPE LENGTH (CONTRACTOR TO VERIFY) EXTENDING FROM FACE OF WALL TO ALLOW FOR VAULT CONSTRUCTION AND CONNECTION OF NEW PIPE. IF ALL THREE ALTERNATES ARE NOT ACCEPTED, LEAVE PIPING IN PLACE. SEE NOTE 5 THIS SHEET.

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LEXINGTON, KY
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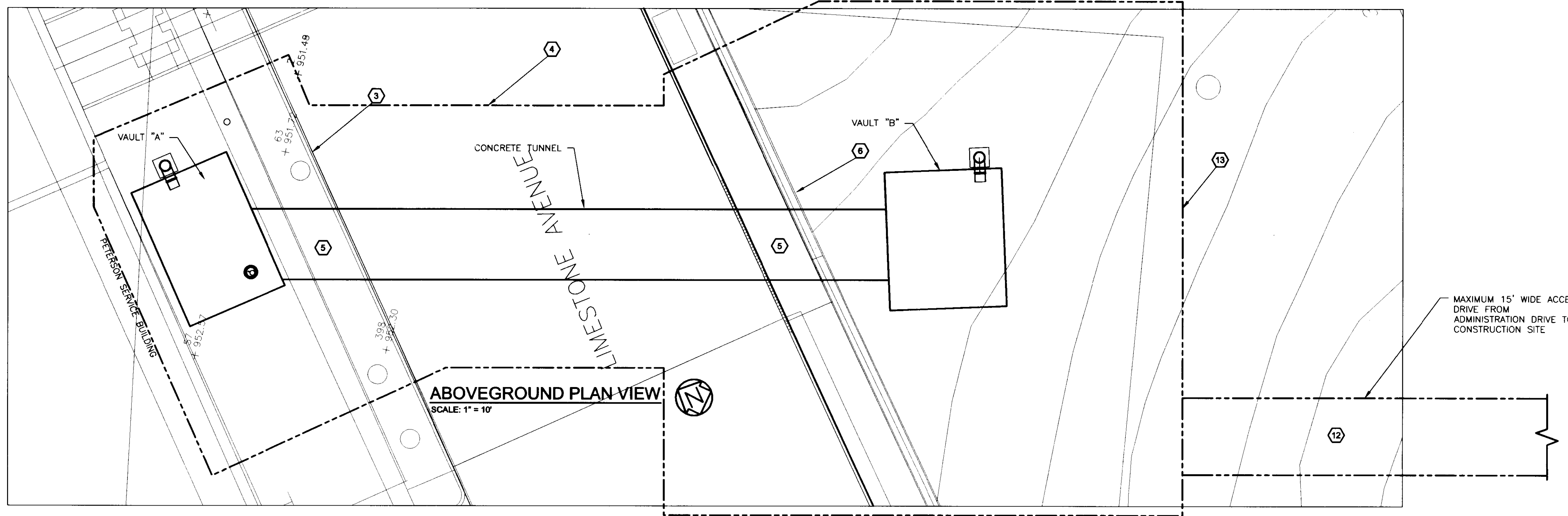


RECORD DRAWING

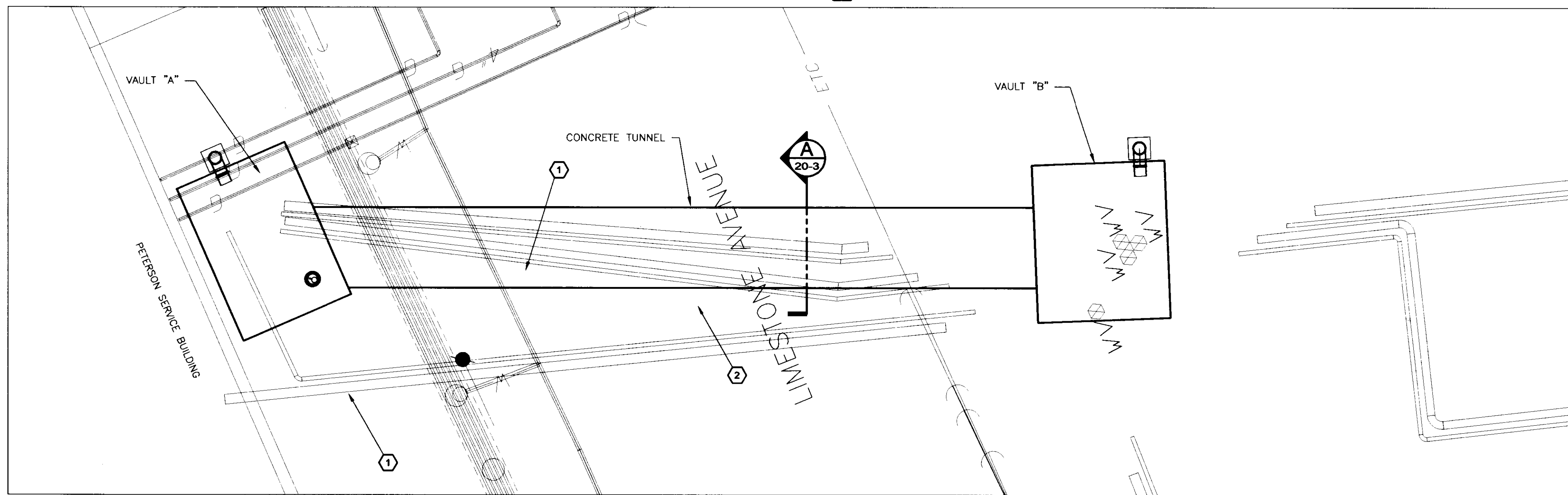
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SHEET TITLE MECHANICAL DEMOLITION PLANS			
REVISION RECORD DRAWING			

10-1

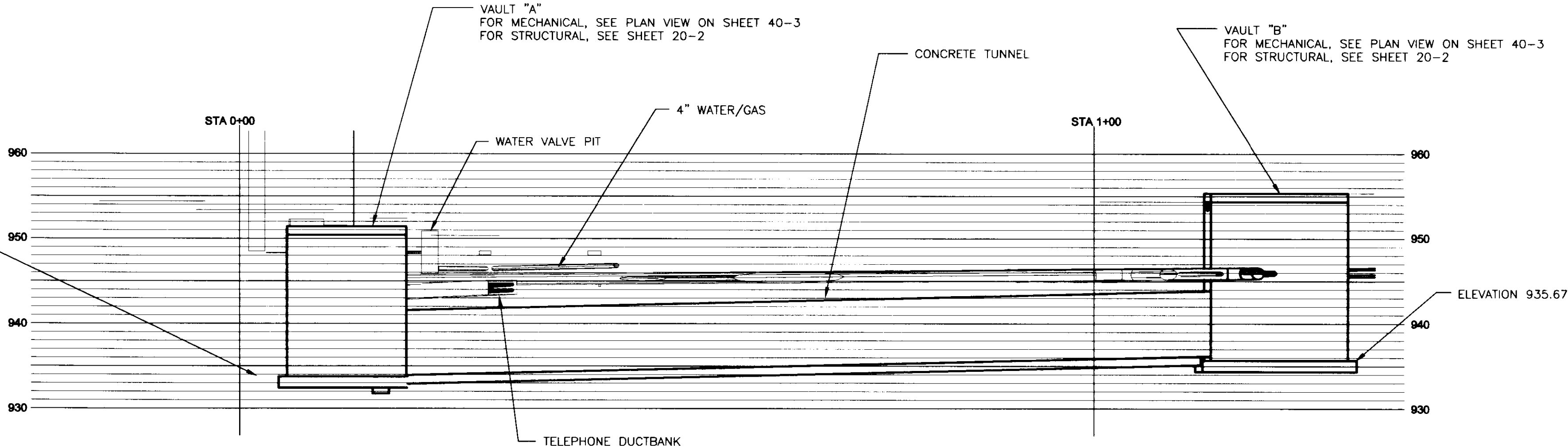
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ABOVEGROUND PLAN VIEW
SCALE: 1" = 10'



UNDERGROUND PLAN VIEW
SCALE: 1" = 10'



PROFILE
SCALE: 1" = 10'

- KEYNOTES:**
- EXISTING 16in. STEAM
 - EXISTING 12in. STEAM
 - REMOVE CONCRETE CURB OR COMBINATION CONCRETE CURB AND GUTTER. REPLACE SAME TO MATCH ADJACENT EXISTING DIMENSIONS, LINES, AND GRADES. SAW CUT CONCRETE CURB OR CONCRETE CURB AND GUTTER AS REQUIRED FOR CONSTRUCTION. PROVIDE EXPANSION JOINTS AT 50' INTERVALS MAX.
 - REMOVE ASPHALT PAVING AS REQUIRED FOR CONSTRUCTION. REPLACE ASPHALT PAVEMENT PER STATE OF KENTUCKY D.O.T. "HEAVY DUTY PAVEMENT" STANDARDS AND PROJECT SPECIFICATIONS. SAWCUT PAVEMENT FULL DEPTH AT LIMITS OF REMOVAL. REPLACE PAVEMENT TO MATCH EXISTING LINES AND GRADES. RE-STRIPE ROAD MARKINGS TO MATCH EXISTING.
 - REMOVE CONCRETE SIDEWALK. SAWCUT CONCRETE SIDEWALK FULL DEPTH AT POINT OF REMOVAL. REPLACE CONCRETE SIDEWALK TO MATCH ADJACENT EXISTING LINES, GRADES, AND FINISHES.
 - REMOVE STONE RETAINING WALL AS REQUIRED FOR CONSTRUCTION. REPLACE TO MATCH ADJACENT EXISTING STONE RETAINING WALL PER UNIVERSITY OF KENTUCKY GUIDELINES AND STANDARDS.
 - BASE BID SHALL INCLUDE THE CONSTRUCTION OF THE TUNNEL UNDER LIMESTONE AVENUE, TWO VAULTS AND VAULT ACCESSORIES, AND RESTORING ALL SITE WORK BACK TO ITS ORIGINAL CONDITION. BASE BID PIPING INCLUDES DIRECT BURY PIPING TO RECONNECT EXISTING STEAM AND CONDENSATE PIPES DESIGNATED TO BE DEMOLISHED ON THE EAST SIDE OF LIMESTONE AVENUE. BASE BID TUNNEL CONSTRUCTION SHALL ALSO INCLUDE ALL ELECTRICAL WORK, EXHAUST FAN, AND SLUMP PUMP.
 - ALTERNATE [A] - INSTALL 16" HPS, 6" PDR AND 2" HPC PIPING AND REQUIRED SUPPORT STEEL FROM PETERSON SERVICE BUILDING TO VAULT B AS INDICATED. DO NOT CONNECT THIS PIPING TO THE EXISTING STEAM AND CONDENSATE PIPING IN VAULT A OR VAULT B.
 - ALTERNATE [B] - INSTALL 12" HPS AND 6" PDR PIPING AND REQUIRED SUPPORT STEEL FROM PETERSON SERVICE BUILDING TO VAULT B AS INDICATED. DO NOT CONNECT THIS PIPING TO THE EXISTING STEAM AND CONDENSATE PIPING IN VAULT A OR VAULT B.
 - ALTERNATE [C] - INSTALL 16" HPS MANIFOLD LOCATED IN VAULT B. CONNECT 16" HPS AND 12" HPS INSTALLED UNDER ALTERNATES [A] AND [B]. INSTALL 6" PDR MANIFOLD AND CONNECT 6" PDR PIPING INSTALLED UNDER ALTERNATES [A] AND [B]. CONNECT ALL DRIP LEG TRAP ASSEMBLIES TO 2" HPC. CONNECT 16" HPS, 12" HPS, AND BOTH 6" PDR LINES TO EXISTING PIPING IN VAULT A AS INDICATED. INSTALL FLASH RECOVERY VESSEL AND DUPLEX CONDENSATE PUMP SET AS SHOWN IN THE DETAILS. CONNECT 2" HPC TO FLASH RECOVERY VESSEL.
 - DIRECT-BURIED STEAM AND CONDENSATE PIPING: PERMA-PIPE MULTI-THERM 500 (OR EQUAL) WITH SCHEDULE 40 A53 GRADE B SEAMLESS STEEL SERVICE PIPE. TO BE DRAINABLE, DRYABLE, TESTABLE. MINIMUM CONTINUOUS OPERATION REQUIREMENTS TO BE 300 PSIG AND 500°F.
 - ROUTE ACCESS DRIVE TO ADMINISTRATION DRIVE TO AVOID TREES. TREE DRIP LINES, AND PERMANENT STRUCTURES. RESTORE ALL DISTURBED WALKS, DRIVES, LANDSCAPING, AND GRASSES TO MATCH ADJACENT AREAS UPON COMPLETION OF THE PROJECT. OWNERS REPRESENTATIVE TO HAVE FINAL APPROVAL OF ACCESS DRIVE ROUTING PRIOR TO CONSTRUCTION.
 - 80' X 80' MAXIMUM CONSTRUCTION AREA AROUND VAULT 'B' LOCATION.

- GENERAL NOTES**
- TEMPORARILY SUPPORT ALL EXISTING UTILITIES DURING CONSTRUCTION.
 - CONTRACTOR SHALL FIELD VERIFY EXISTING PIPING ARRANGEMENTS AND NOTIFY ENGINEER OF ALL DISCREPANCIES WITH THE DRAWINGS.
 - REPLACE ALL SOD DISTURBED BY CONSTRUCTION MATCH ADJACENT EXISTING GRASS TYPE.
 - REMOVE PLANTINGS AS REQUIRED FOR CONSTRUCTION. REPLACE PLANTINGS TO MATCH EXISTING (TYPICAL).
 - PROTECT ALL TREES DURING CONSTRUCTION.

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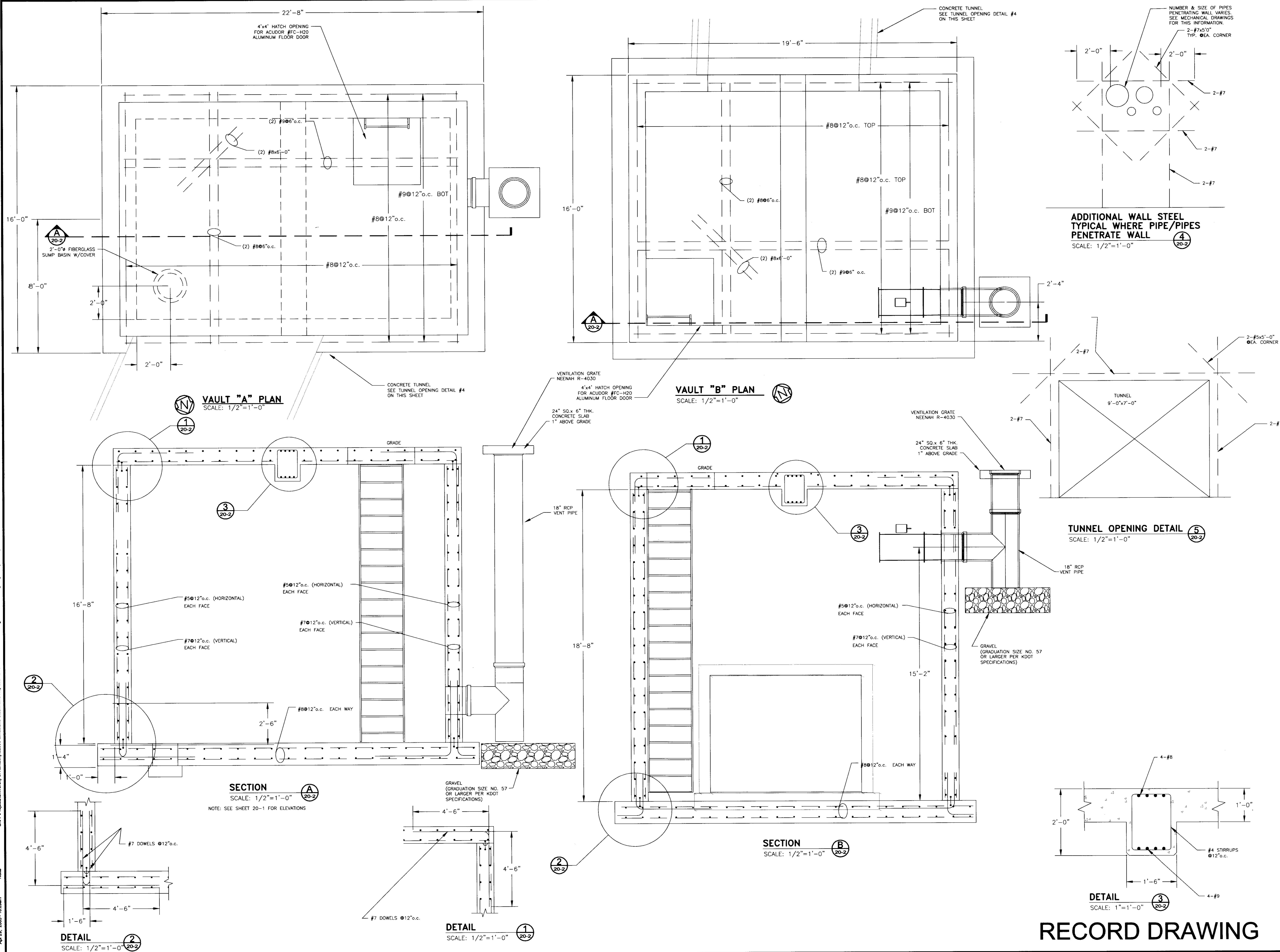
UK PROJECT NUMBER: 2145.0

SHEET TITLE
STEAM TUNNEL ABOVEGROUND UNDERGROUND PLANS & PROFILE
 PROJECT NO.
 04/15/05
 DRAWN BY
 IHS
 CHECKED BY
 KHR

20-1

RECORD DRAWING

Apr 28, 2005 - 10:28am
 Note
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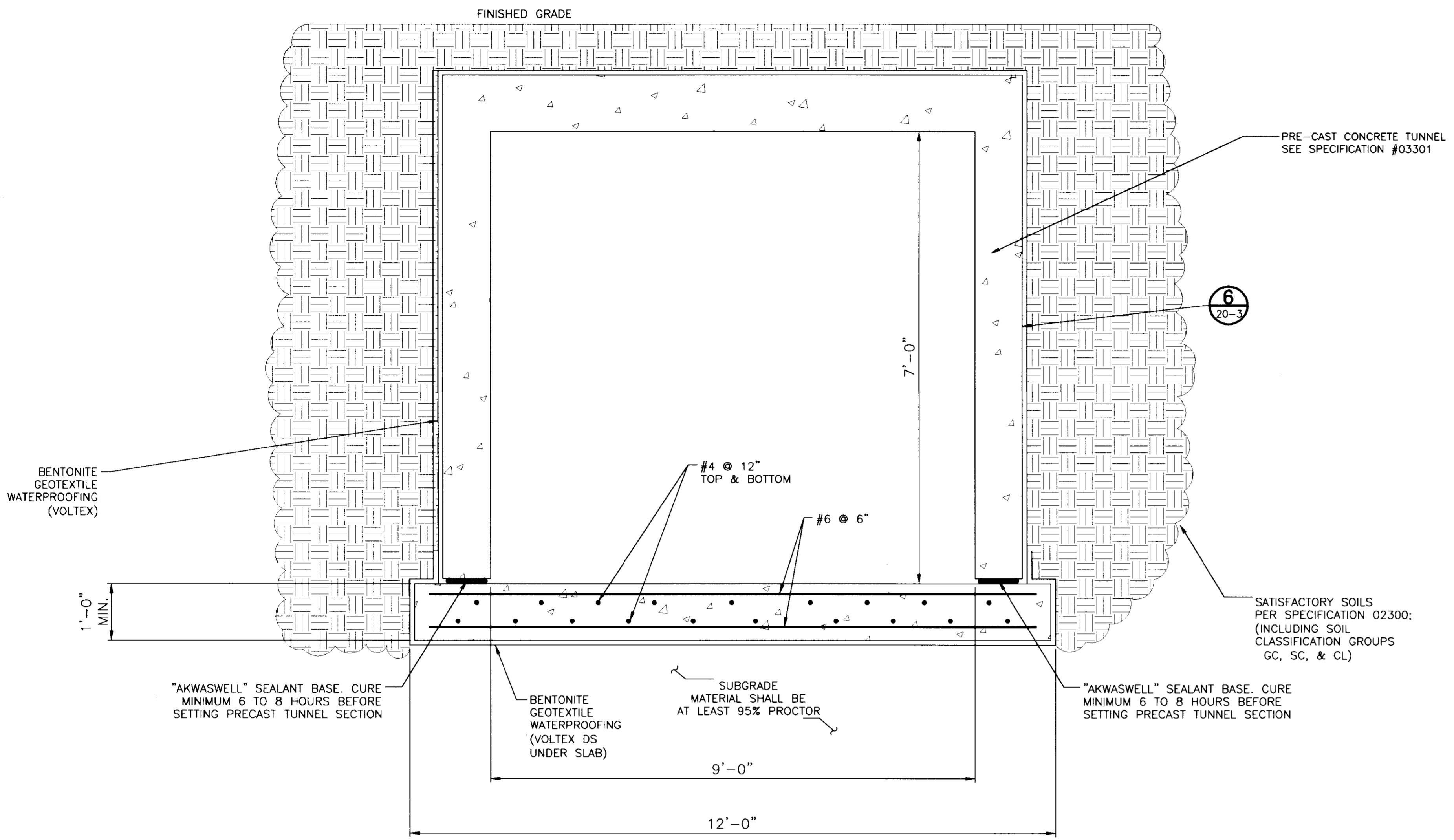


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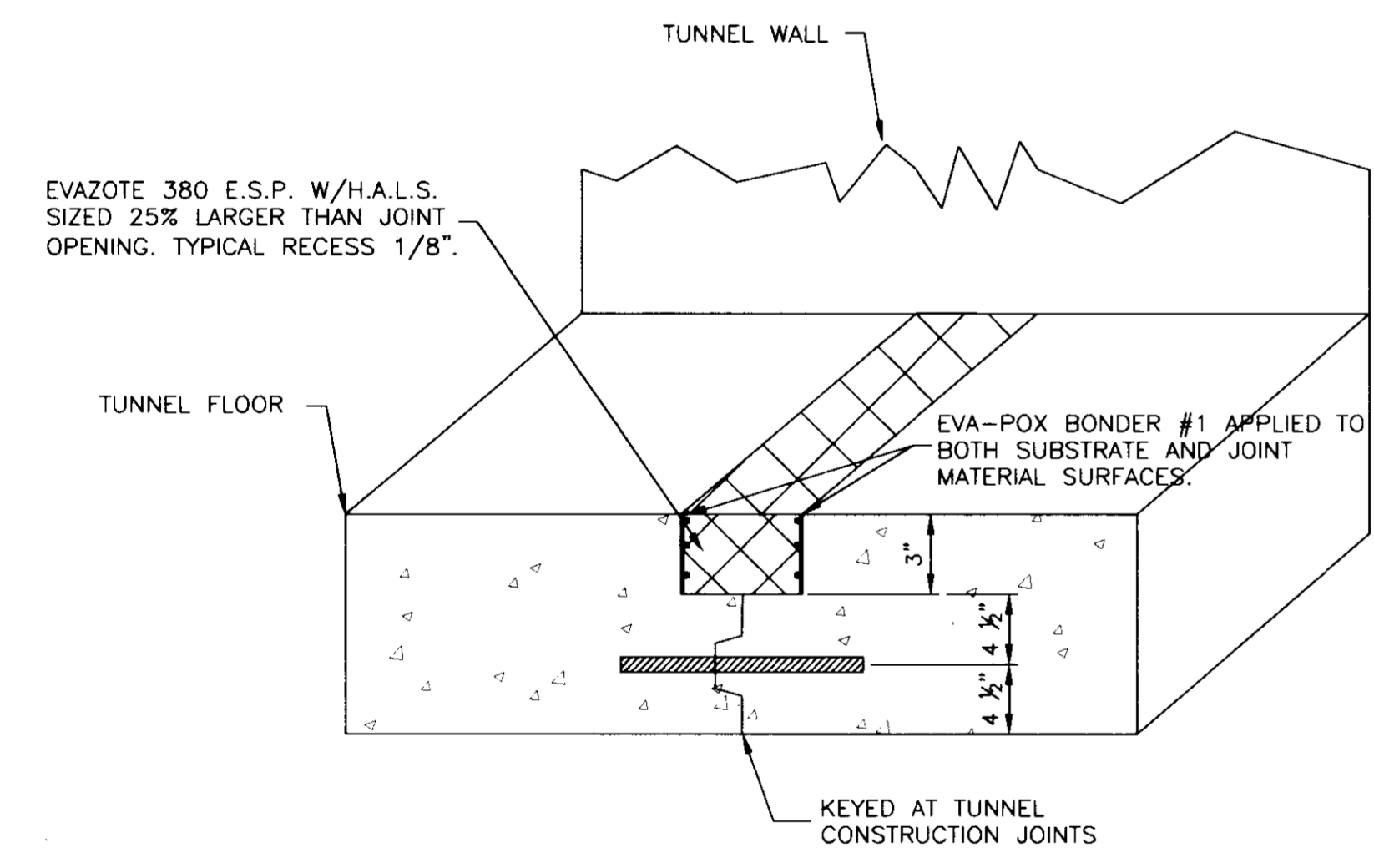
SHEET TITLE
STRUCTURAL VAULT DETAILS
 PROJECT NO.
 1927
 DATE
 04/15/05
 DRAWN BY
 ERM
 CHECKED BY
 KCR

SHEET NO.
20-2

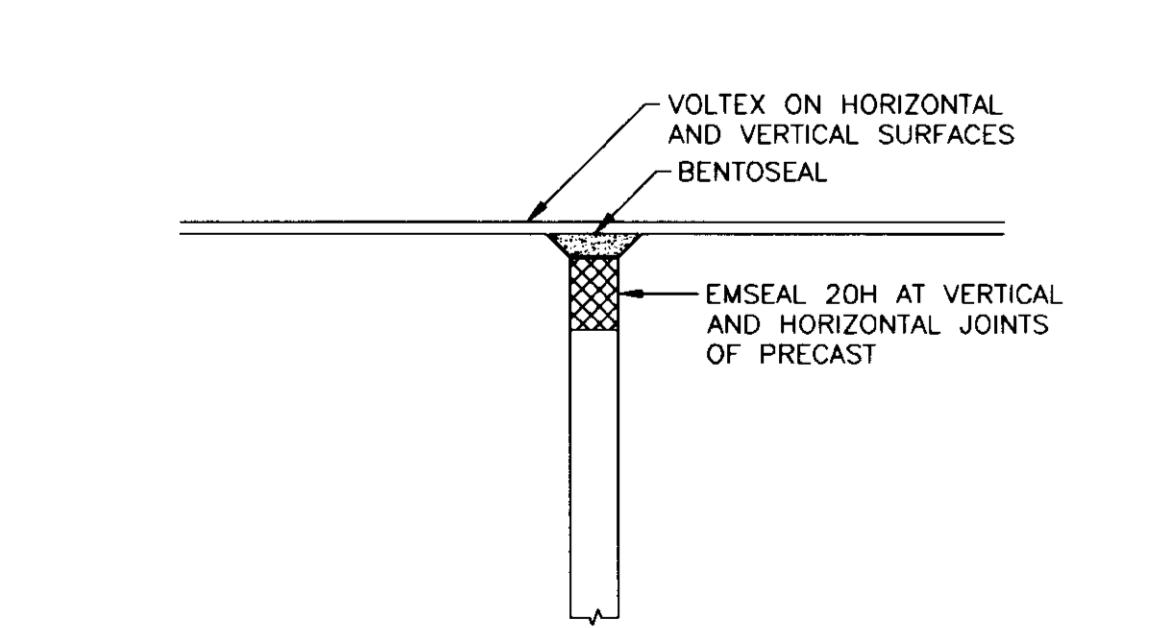
ZBA
 ZBA, INC.-ENGINEERS/CONSULTANTS
 100 WEST MAIN STREET, SUITE 200
 CINCINNATI, OHIO 45202
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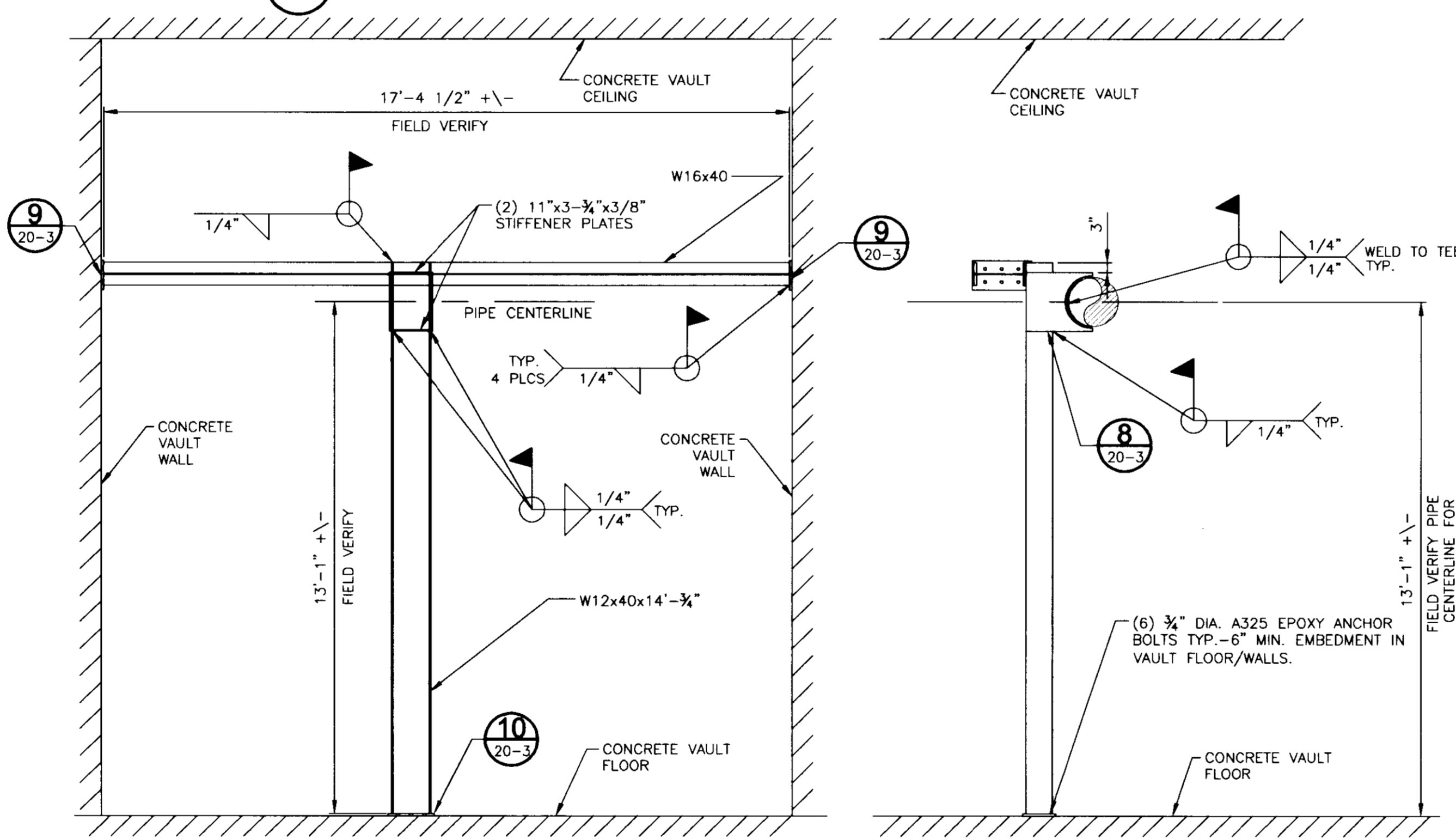
TYPICAL TUNNEL SECTION A
 SCALE: 3/4"=1'-0"
 20-1



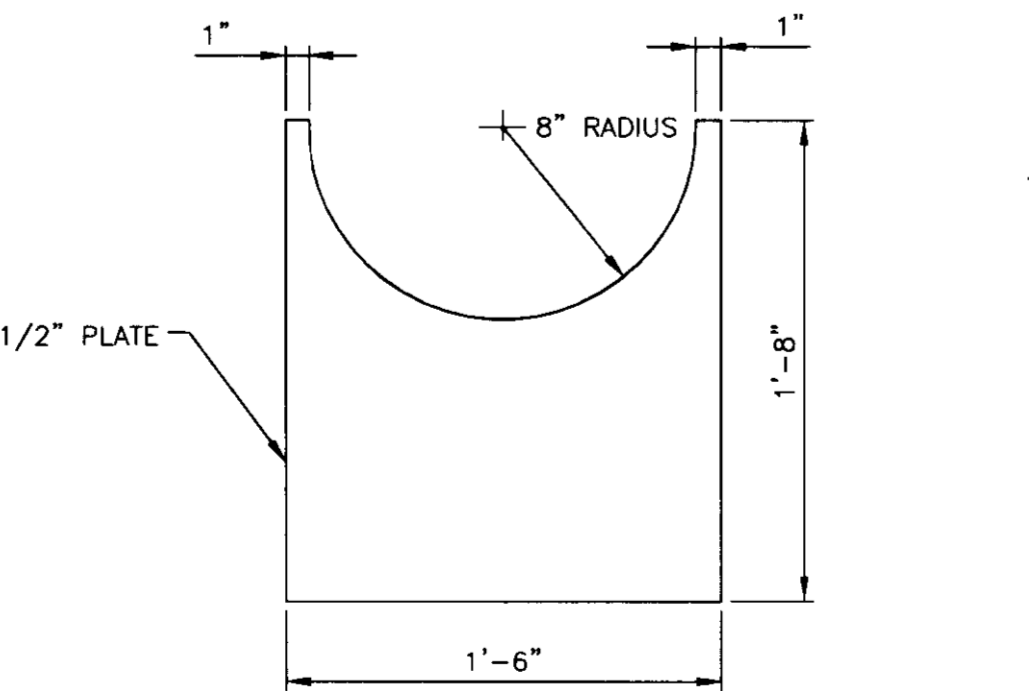
TYPICAL WATERSTOP CONSTRUCTION JOINT DETAIL 1
 SCALE: NOT TO SCALE
 20-3



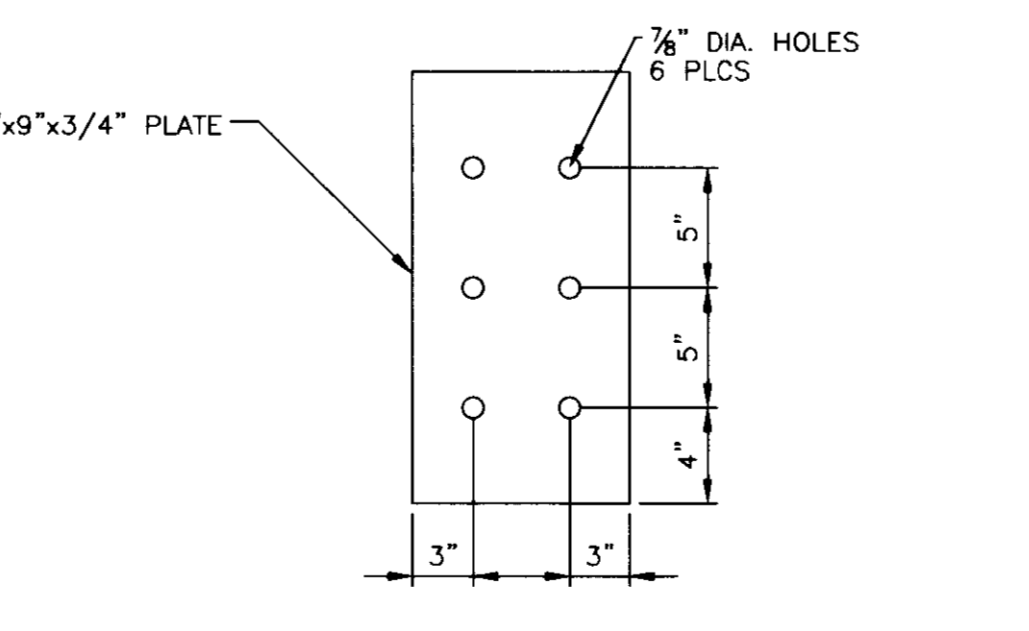
TUNNEL WATERPROOFING DETAIL 6
 SCALE: NONE
 20-3



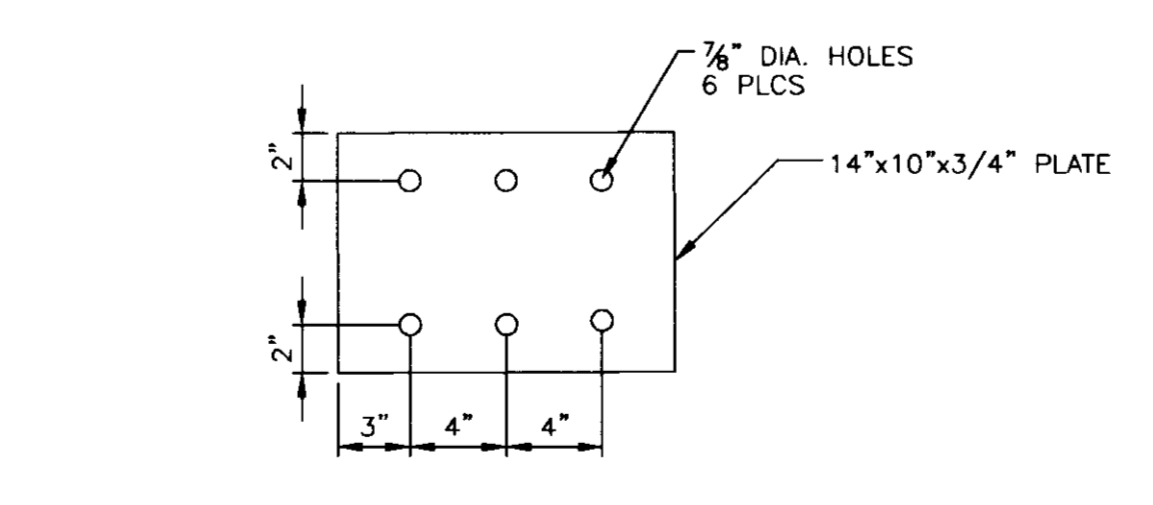
VAULT B STEAM LINE TEE ANCHOR DETAIL 7
 SCALE: 3/8"=1'-0"
 40-3



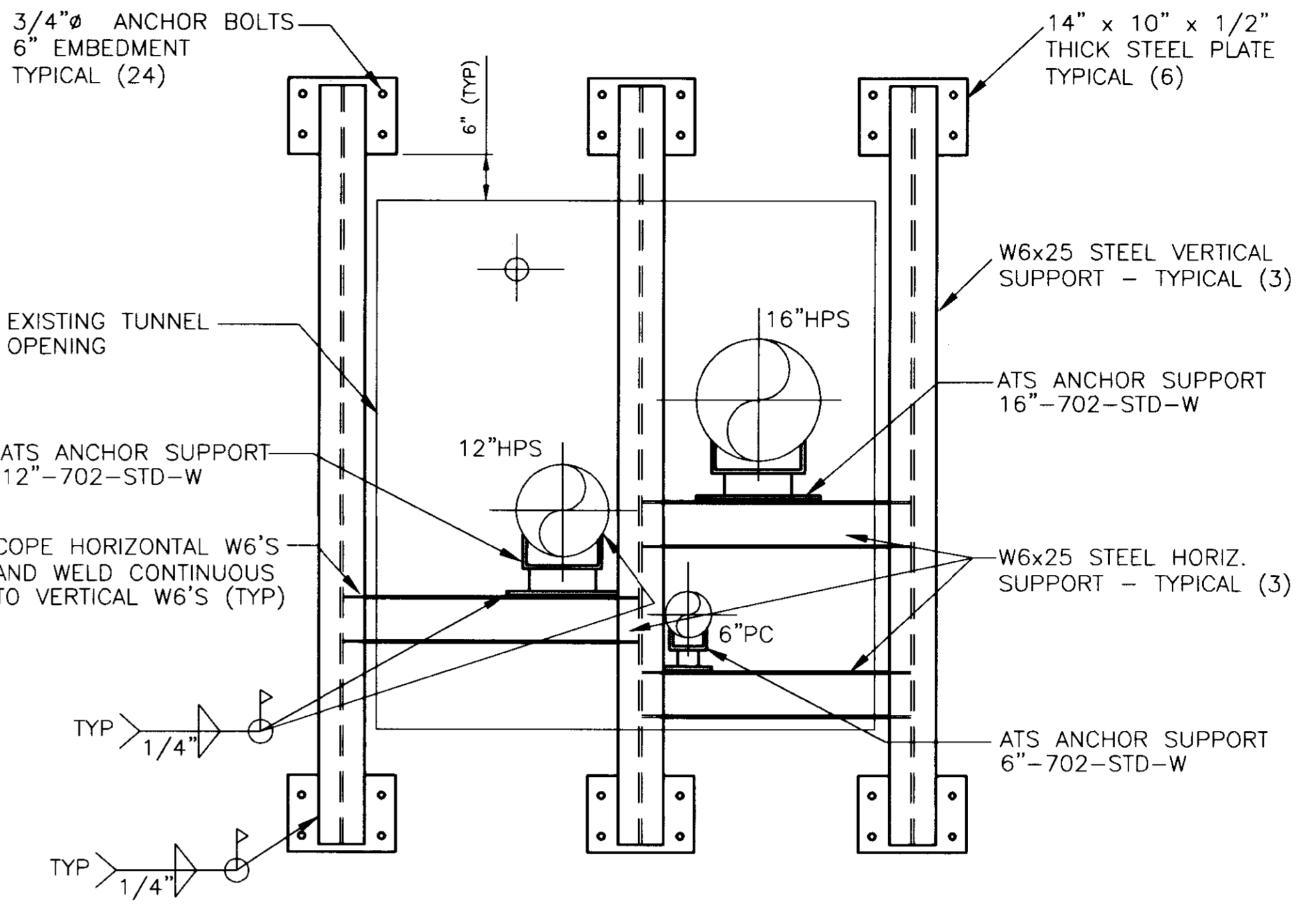
TEE ANCHOR PLATE DETAIL 8
 SCALE: 1-1/2"=1'
 20-3



ANCHOR WALL PLATE DETAIL 9
 SCALE: 1-1/2"=1'
 20-3



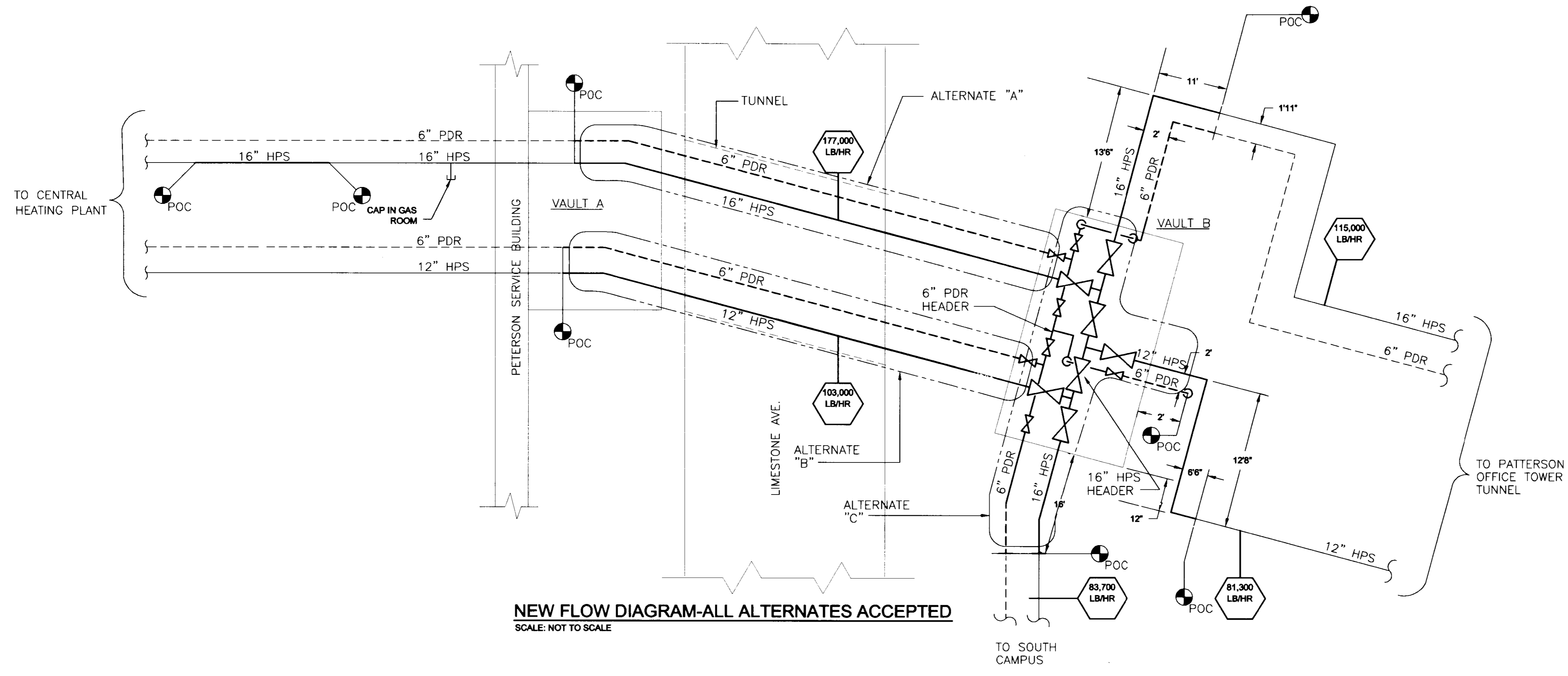
ANCHOR FLOOR PLATE DETAIL 10
 SCALE: 1-1/2"=1'
 20-3



VAULT A ANCHOR SUPPORT DETAIL 3
 SCALE: 3/4"=1'-0"
 40-3

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 Note
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RECORD DRAWING



RECORD DRAWING

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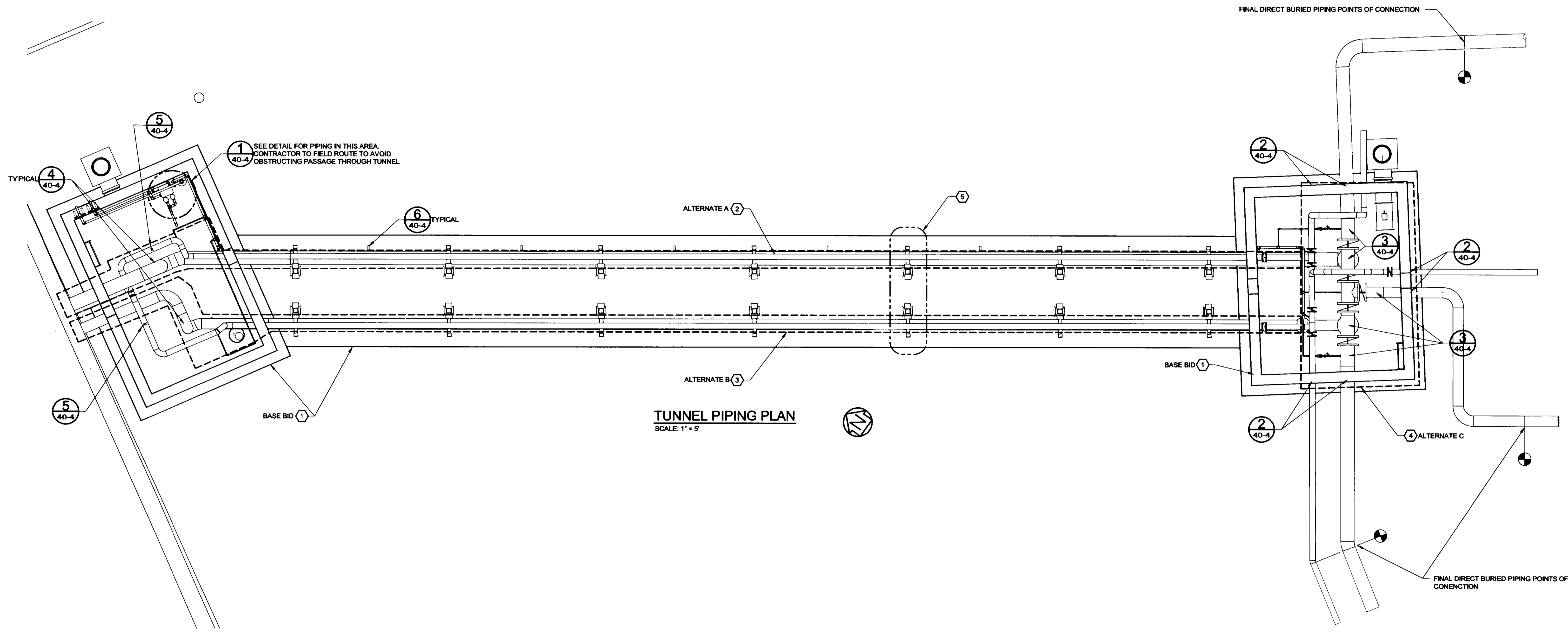
SHEET TITLE
 FLOW DIAGRAMS

PROJECT NO.
 1027
 DATE
 04/15/05
 DRAWN BY
 ERM
 CHECKED BY
 KHR

REVISION
 RECORD DRAWING

40-1





- KEYNOTES:**
1. BASE BID SHALL INCLUDE THE CONSTRUCTION OF THE TUNNEL UNDER LIMESTONE AVENUE, TWO VAULTS AND VAULT ACCESSORIES, AND RESTORING ALL SITE WORK BACK TO ITS ORIGINAL CONDITION. BASE BID PIPING INCLUDES DIRECT BURY PIPING TO RECONNECT EXISTING STEAM AND CONDENSATE PIPES DESIGNATED TO BE DEMOLISHED ON THE EAST SIDE OF LIMESTONE AVENUE. BASE BID TUNNEL CONSTRUCTION SHALL ALSO INCLUDE ALL ELECTRICAL WORK, EXHAUST FAN, AND SUMP PUMP. IF ALL ALTERNATES ARE ACCEPTED, REMOVE DIRECT BURIED PIPING FROM BASE BID.
 2. ALTERNATE (A) - INSTALL 16" HPS, 8" PDR AND 2" HPC PIPING AND REQUIRED SUPPORT STEEL FROM PETERSON SERVICE BUILDING TO VAULT B AS INDICATED. DO NOT CONNECT THIS PIPING TO THE EXISTING STEAM AND CONDENSATE PIPING IN VAULT A OR VAULT B.
 3. ALTERNATE (B) - INSTALL 12" HPS AND 6" PDR PIPING AND REQUIRED SUPPORT STEEL FROM PETERSON SERVICE BUILDING TO VAULT B AS INDICATED. DO NOT CONNECT THIS PIPING TO THE EXISTING STEAM AND CONDENSATE PIPING IN VAULT A OR VAULT B.
 4. ALTERNATE (C) - INSTALL 16" HPS MANIFOLD LOCATE D IN VAULT B. CONNECT 16" HPS AND 12" HPS INSTALLED UNDER ALTERNATES (A) AND (B). INSTALL 6" PDR MANIFOLD AND CONNECT 6" PDR PIPING INSTALLED UNDER ALTERNATES (A) AND (B). CONNECT ALL DRIP LEG TRAP ASSEMBLIES TO 2" HPC. CONNECT 16" HPS, 12" HPS, AND BOTH 6" PDR LINES TO EXISTING PIPING IN VAULT A AS INDICATED. INSTALL FLASH RECOVERY VESSEL AND DUPLEX CONDENSATE PUMP SET AS SHOWN IN THE DETAILS. CONNECT 2" HPC TO FLASH RECOVERY VESSEL.
 5. SUPPORT STEEL (TYPICAL) SEE DETAIL B, SHEET 20-1.
 6. DIRECT BURIED STEAM AND CONDENSATE PIPING: PERMA-PIPE MULTI-THERM 500 (OR EQUAL) WITH SCHEDULE 40 A53 GRADE B SEAMLESS STEEL SERVICE PIPE. TO BE DRAINABLE, DRYABLE, TESTABLE. MINIMUM CONTINUOUS OPERATION REQUIREMENTS TO BE 300 PSIG AND 500°F.
- GENERAL NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPING ARRANGEMENTS AND NOTIFY ENGINEER OF ALL DISCREPANCIES WITH THE DRAWINGS.

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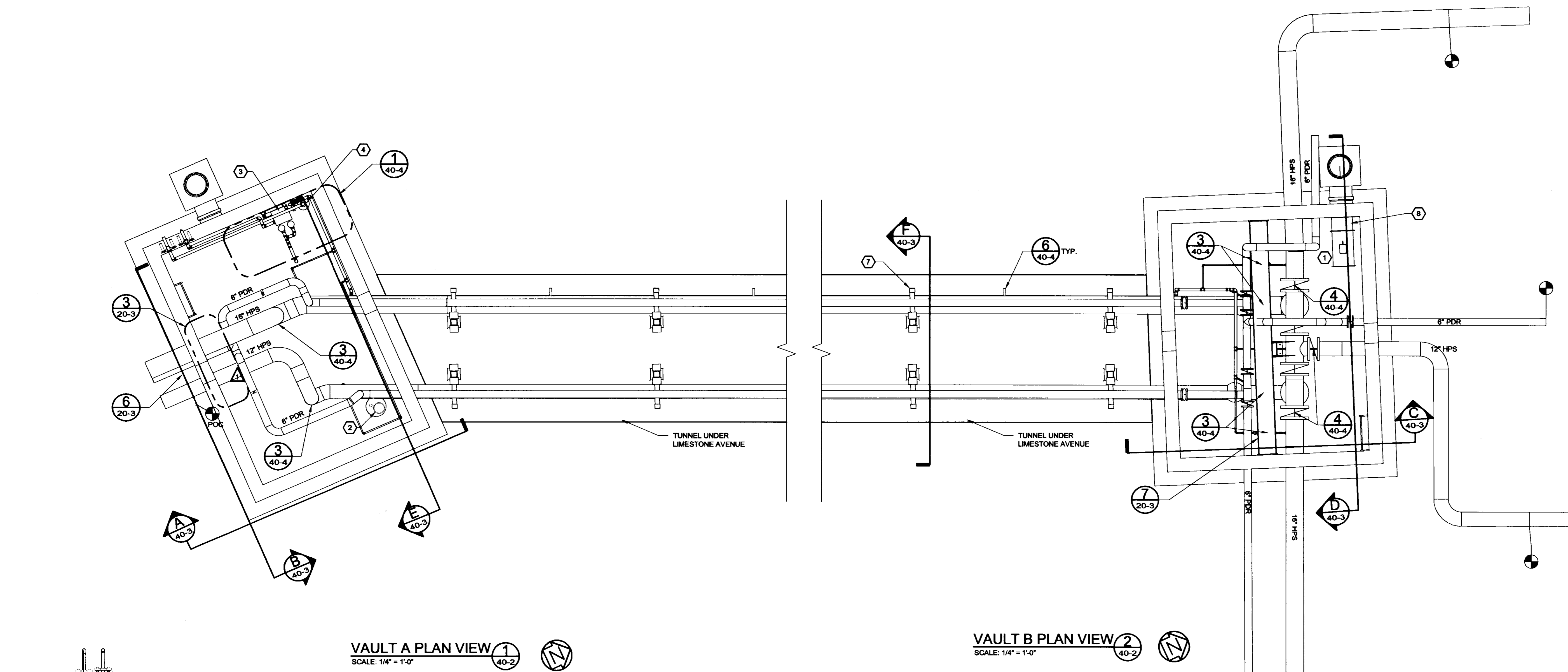
UK PROJECT NUMBER: 2145.0



PROJECT NO. 1827	DATE 04/15/05	DESIGNER IHS	CHECKED BY PKR
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REVISION RECORD DRAWING			
SHEET NO. 40-2			

RECORD DRAWING

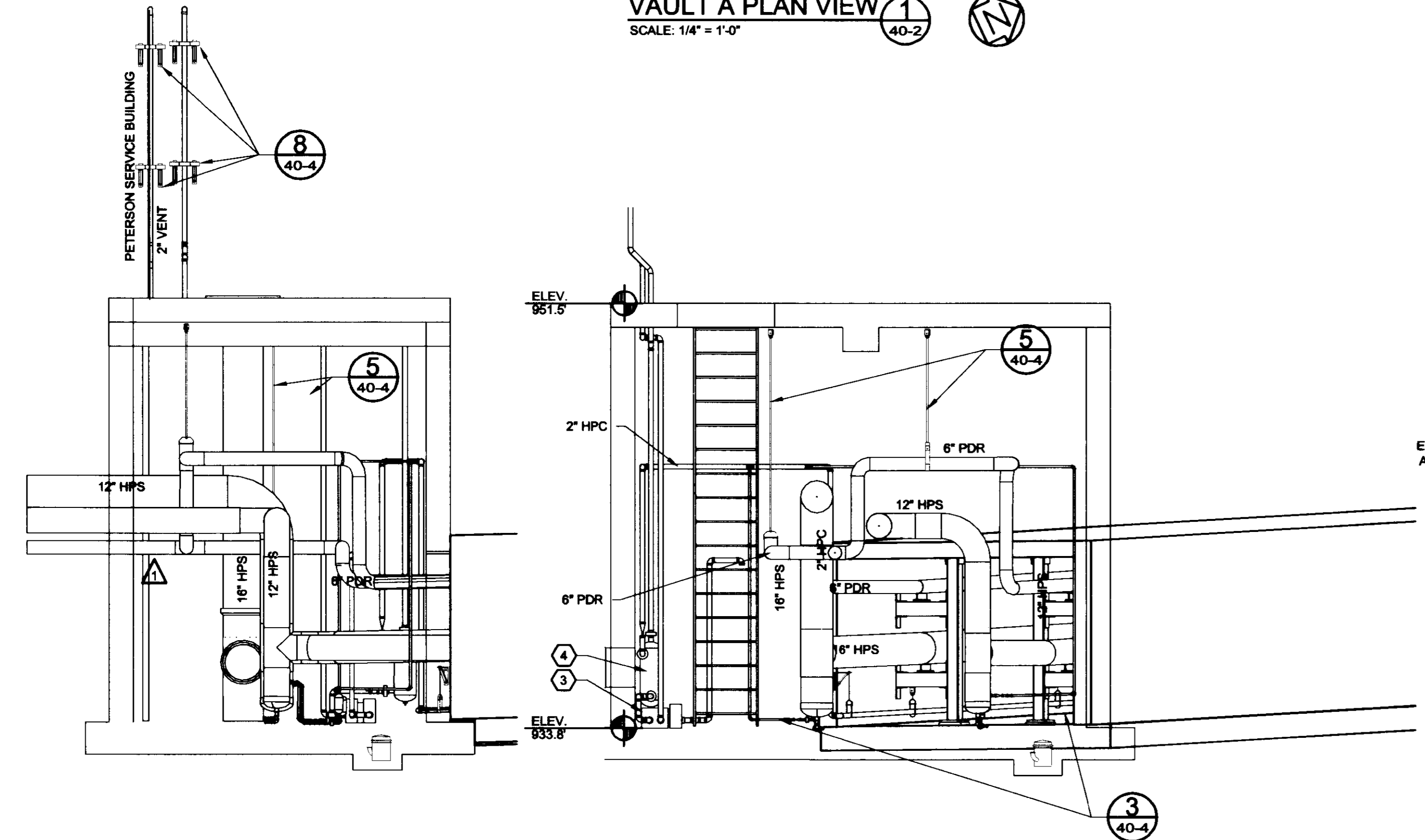
Apr 20, 2008 - 10:58am Note G:\PP\Projects\University of Kentucky\2008\2008-Limestone Steam Line Replacement\Drawings\Record\40-3 Record.dwg Layout_Layout1



VAULT A PLAN VIEW
SCALE: 1/4" = 1'-0"
1 40-2

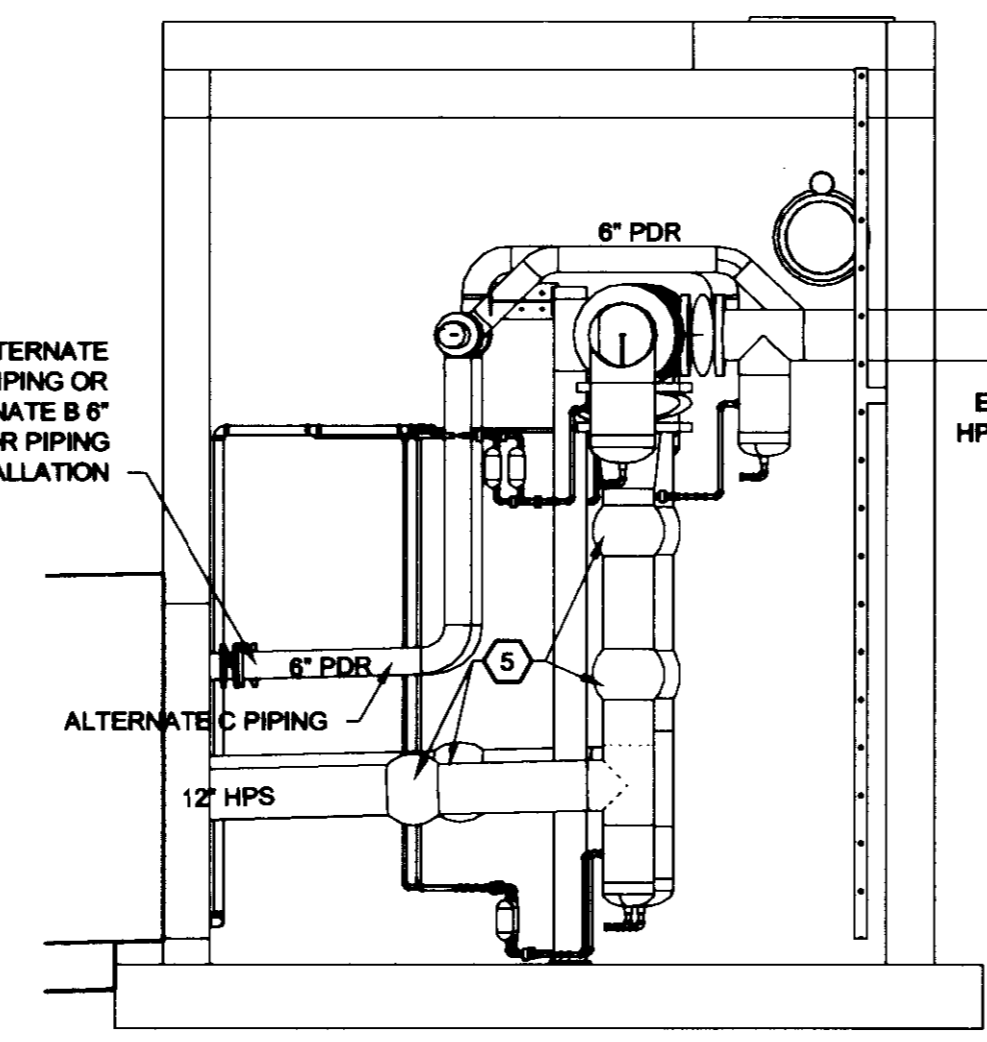
VAULT B PLAN VIEW
SCALE: 1/4" = 1'-0"
2 40-2

- KEYNOTES:**
1. VAULT EXHAUST FAN EF-1, GREENHECK (OR EQUAL) VANE AXIAL BELT DRIVE FAN, MODEL NO. VAB-18F14-I-0 75, 1800 CFM, 1" W.G. EXTERNAL STATIC PRESSURE. PROVIDE 3/4" HP TFC MOTOR, 115V/1-PHASE/60 HZ, 1725 RPM. MOTOR TO BE CAPACITOR START WITH THERMAL OVERLOADS AND A DRIVE SERVICE FACTOR OF 1.5. PROVIDE PRE-PUNCHED INLET AND OUTLET FLANGES, INLET GUARD, AND MOTOR COVER, 1 SPARE SET OF BELTS, EXTENDED LUBRICATION LINES, AND BRACKETS FOR SUSPENDED, HORIZONTAL MOUNTING.
 2. VAULT SUMP PUMP SMP-1, ZOELLER PUMP CO. (OR EQUAL) 284 SERIES Dewatering Pump, 20 GPM AT 15 FEET HEAD, 2" NPT DISCHARGE, FLOAT OPERATED SUBMERSIBLE 2-POLE SWITCH (NEMA 6) FOR AUTOMATIC CONTROL. MOTOR SHALL BE 4/10 HP, 115V, SINGLE PHASE, 80 HZ, FOR SUBMERSIBLE PUMP DUTY. FIELD VERIFY DISCHARGE POINT.
 3. CONDENSATE PUMP/RECEIVER CP-1. SEE SHEET 40-4 FOR SPECIFICATION.
 4. FLASH STEAM VESSEL T-1. SEE SHEET 40-4 FOR SPECIFICATION.
 5. BALL JOINTS SHALL BE LINE SIZED BASIS OF DESIGN HYSPAN BARCO TYPE N, STYLE III. BALL JOINT ENDS SHALL BE BUTT WELDED PER SPECIFICATIONS.
 6. TRIPLE-OFFSET ROTARY VALVE. SIZE TO MATCH FULL LINE SIZE.
 7. TUNNEL SUPPORT STEEL. SEE SECTION "F" AND DETAILS THIS SHEET.
 8. 18" DIAMETER X 12" LONG 18 GAGE GALVANIZED SHEET METAL TRANSITION PIECE, FLANGED TO MOUNT FAN TO VAULT WALL.

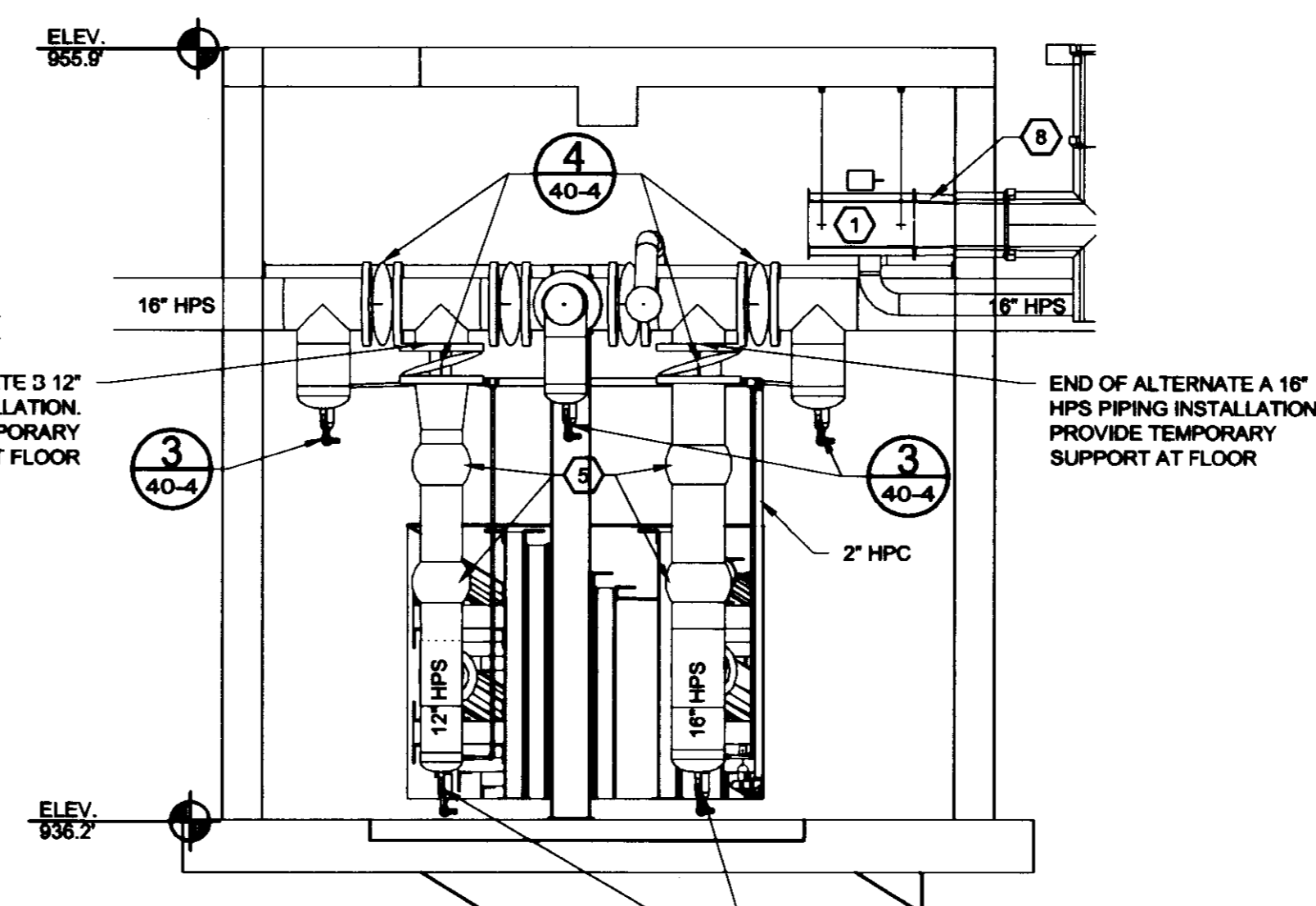


SECTION A
SCALE: 1/4" = 1'-0"
A 40-3

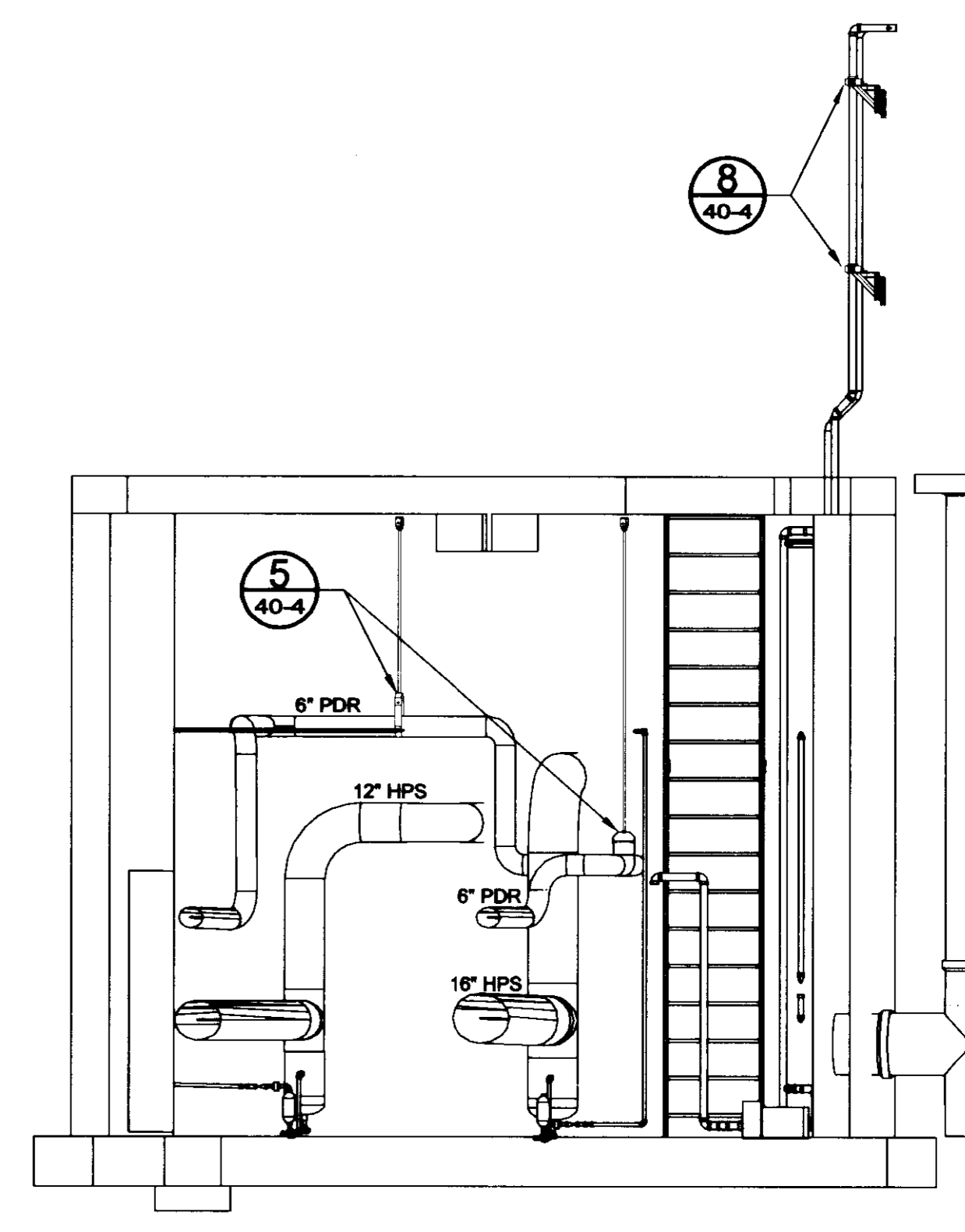
SECTION B
SCALE: 1/4" = 1'-0"
B 40-3



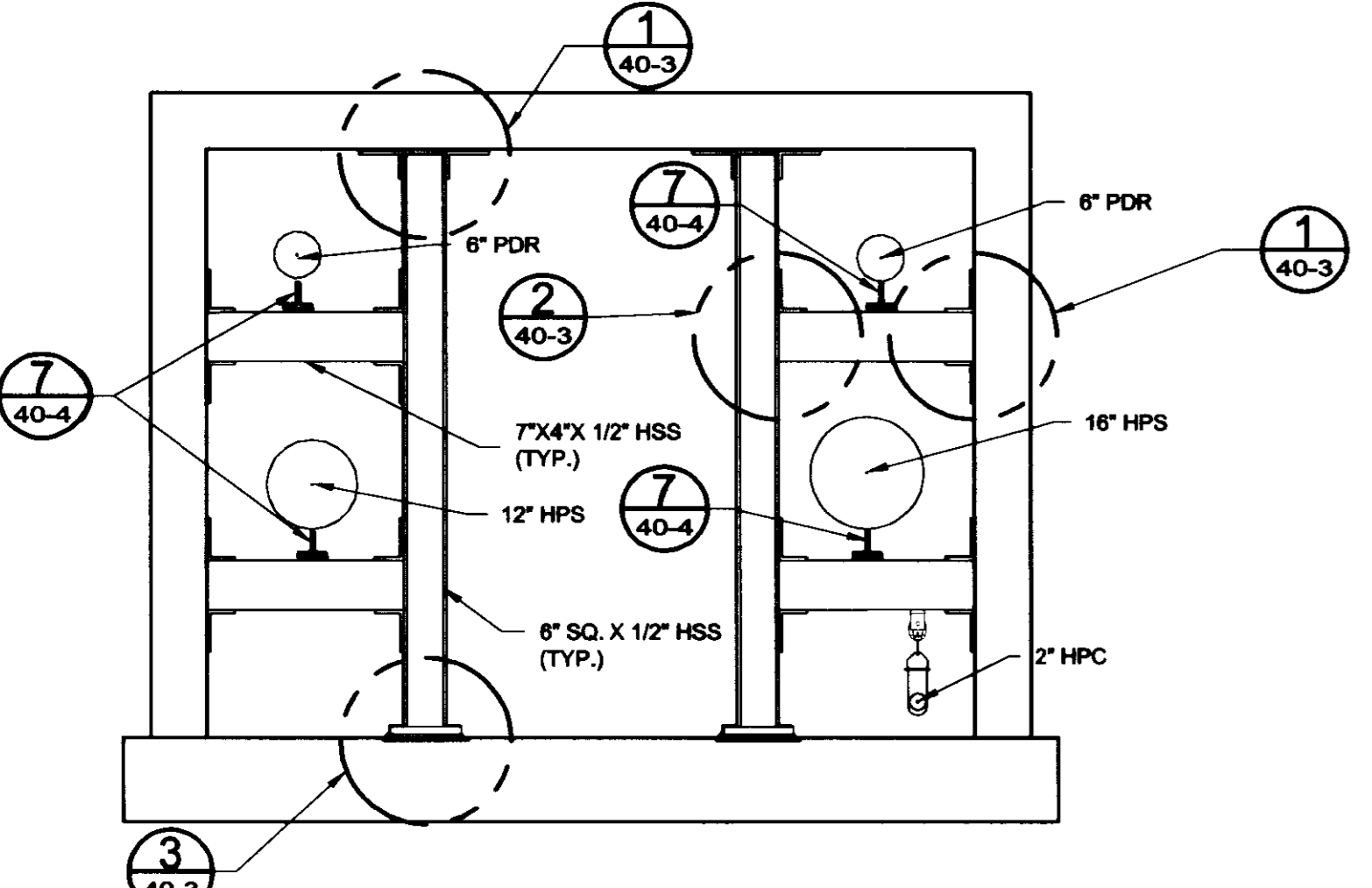
SECTION C
SCALE: 1/4" = 1'-0"
C 40-3



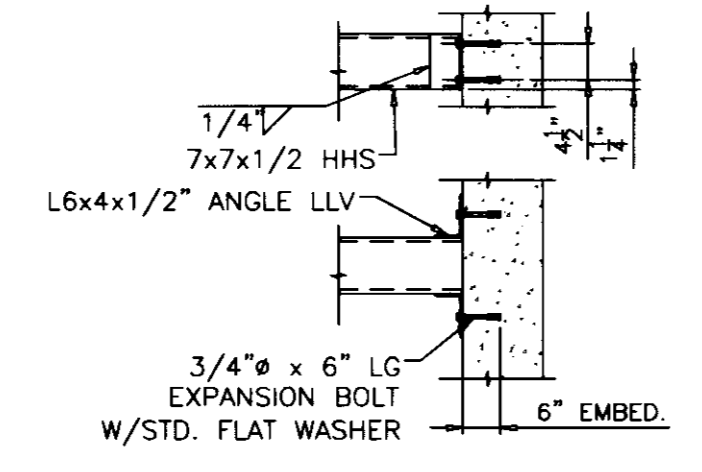
SECTION D
SCALE: 1/4" = 1'-0"
D 40-3



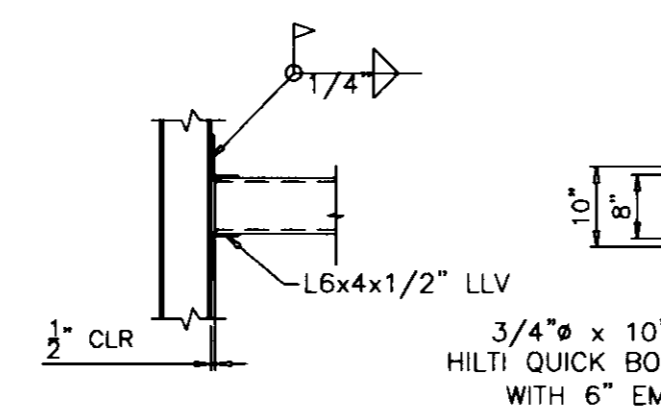
SECTION E
SCALE: 1/4" = 1'-0"
E 40-3



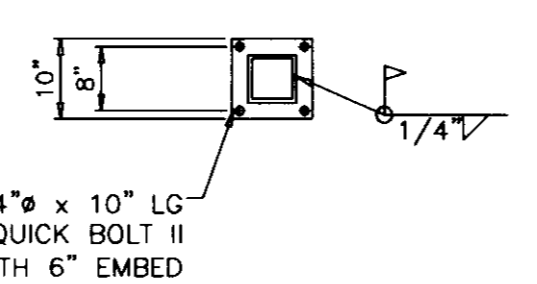
SECTION F
SCALE: 1/2" = 1'-0"
F 40-3



DETAIL 1
SCALE: 1/2" = 1'-0"
1 40-3



DETAIL 2
SCALE: 1/2" = 1'-0"
2 40-3



DETAIL 3
SCALE: 1/2" = 1'-0"
3 40-3

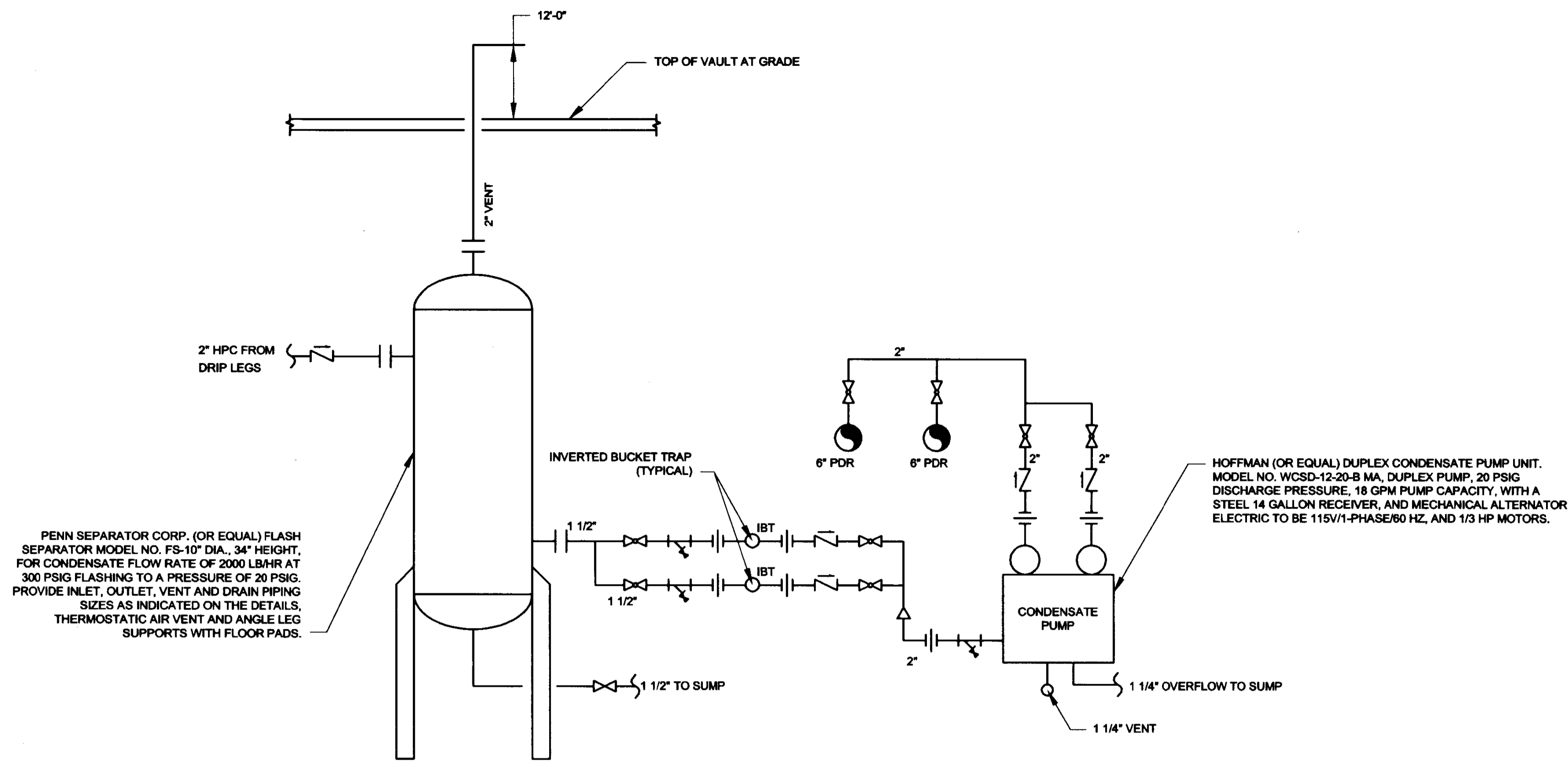
RECORD DRAWING

REPLACE STEAM AND CONDENSATE PIPING
 UNIVERSITY OF KENTUCKY
 LEXINGTON, KY
 UK PROJECT NUMBER: 2145.0

SHEET TITLE
VAULT PLANS AND SECTIONS
 PROJECT NO.
 1827
 DATE
 04/15/08
 DRAWN BY
 JHS
 CHECKED BY
 KFR
 SHEET NO.

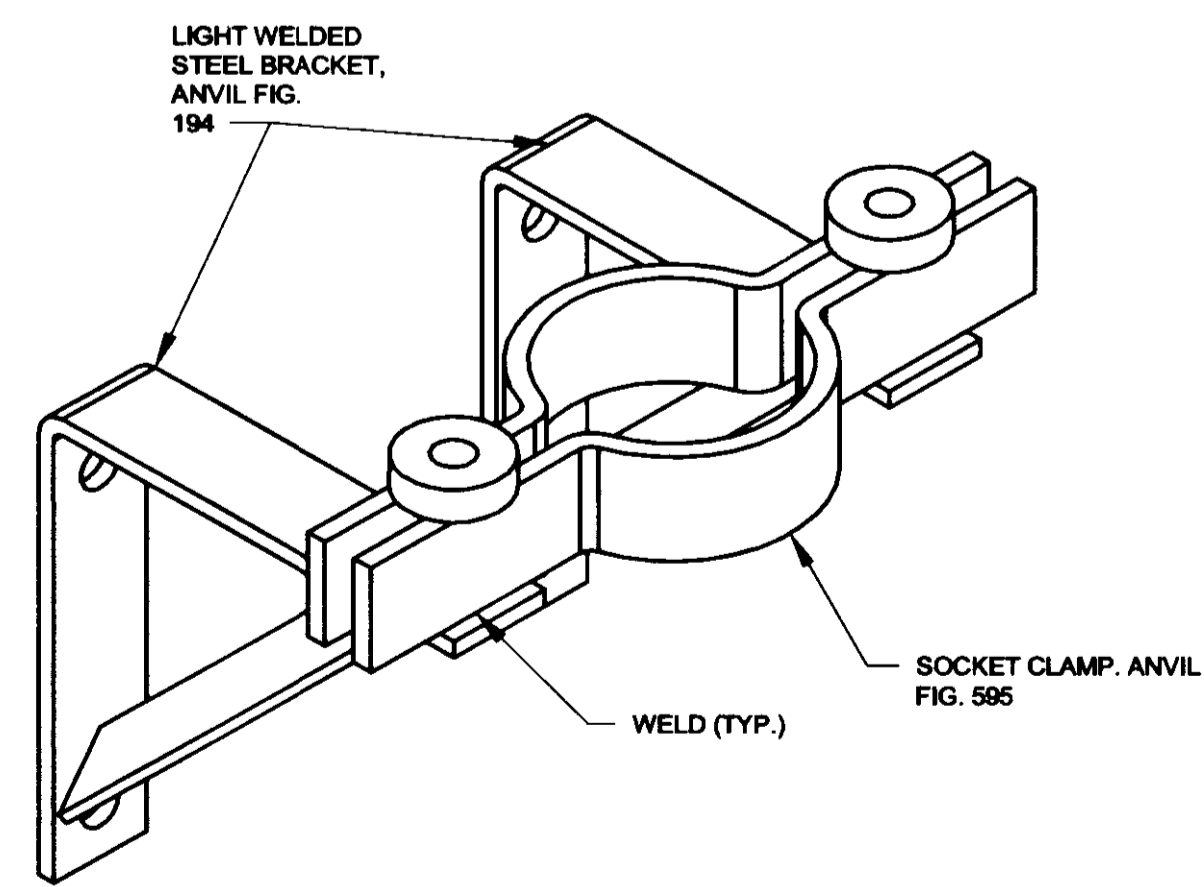
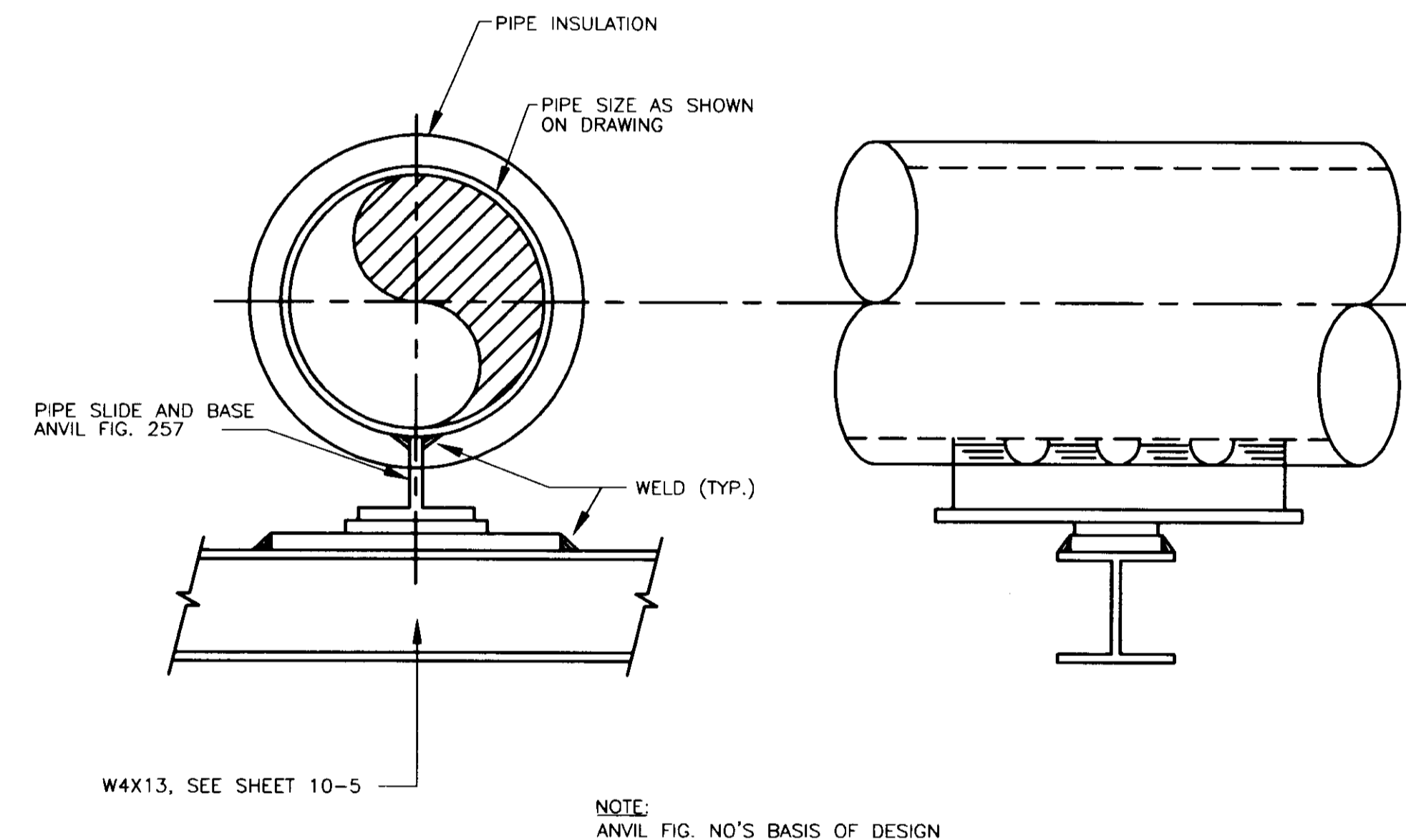
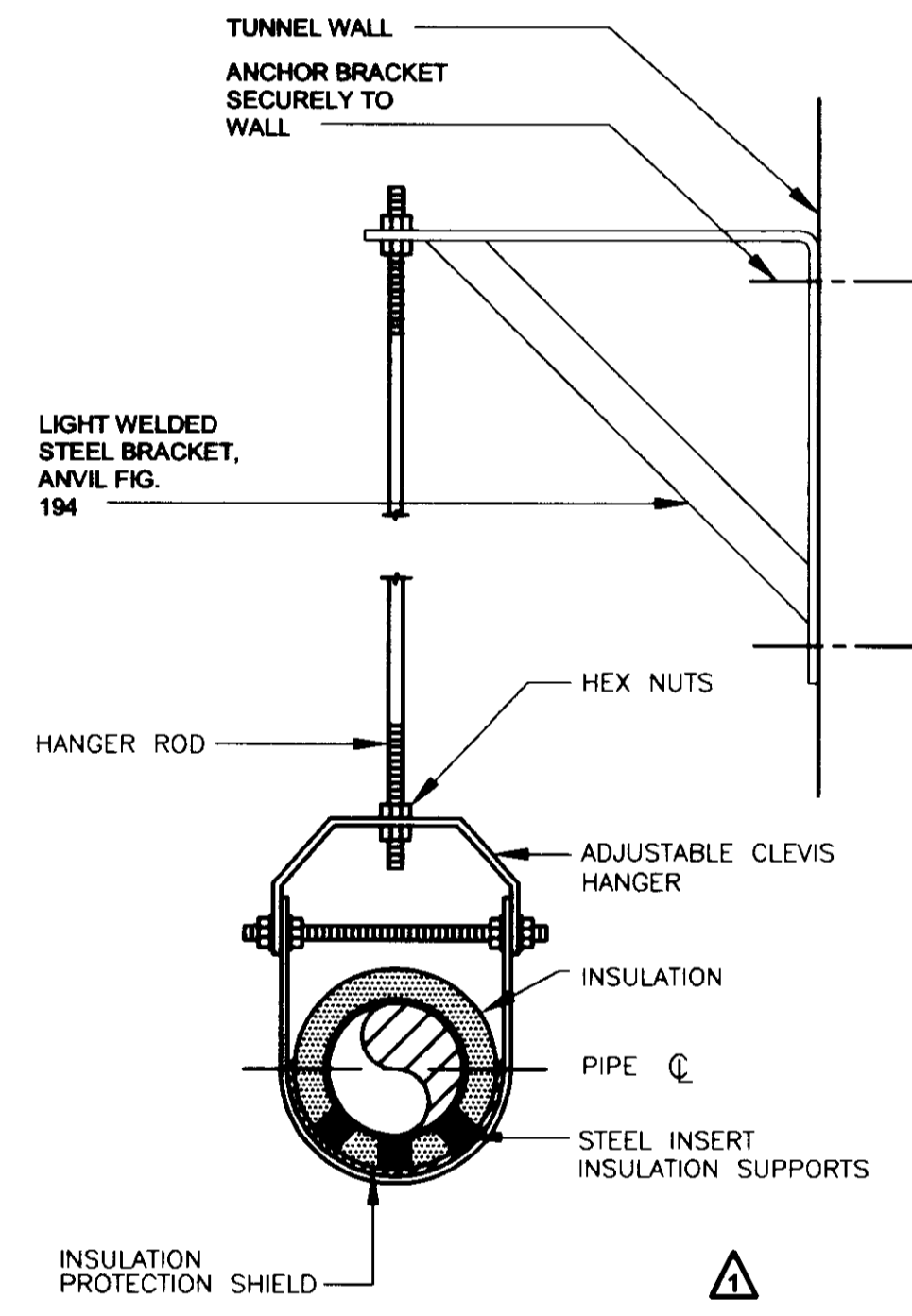
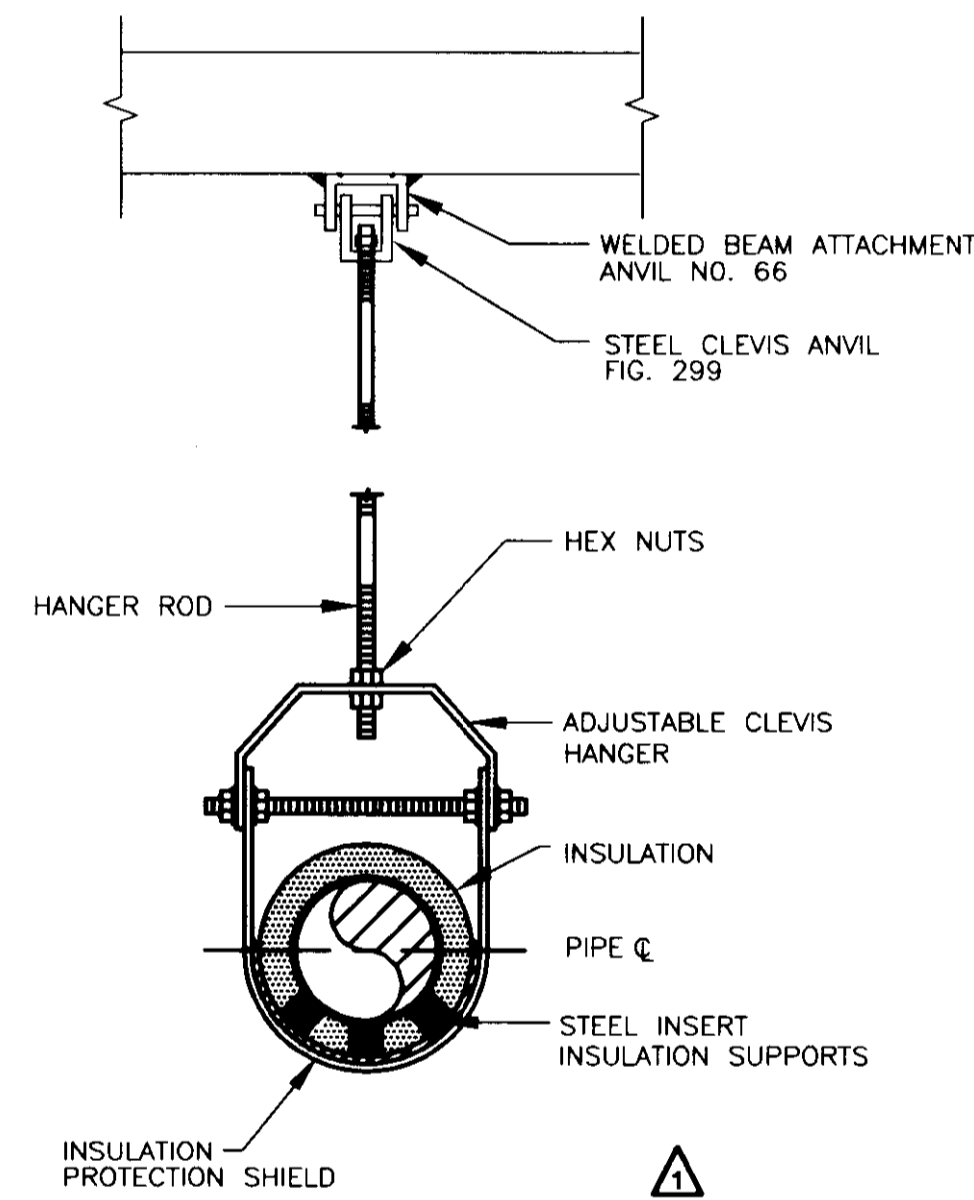
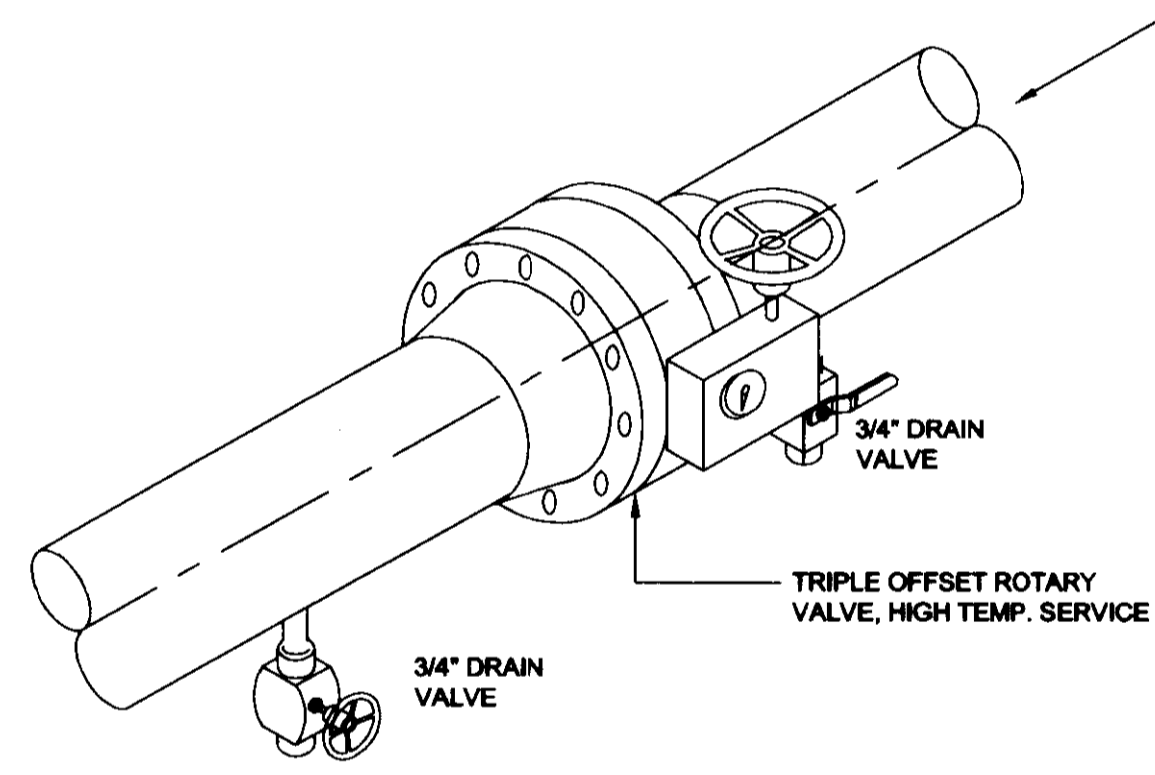
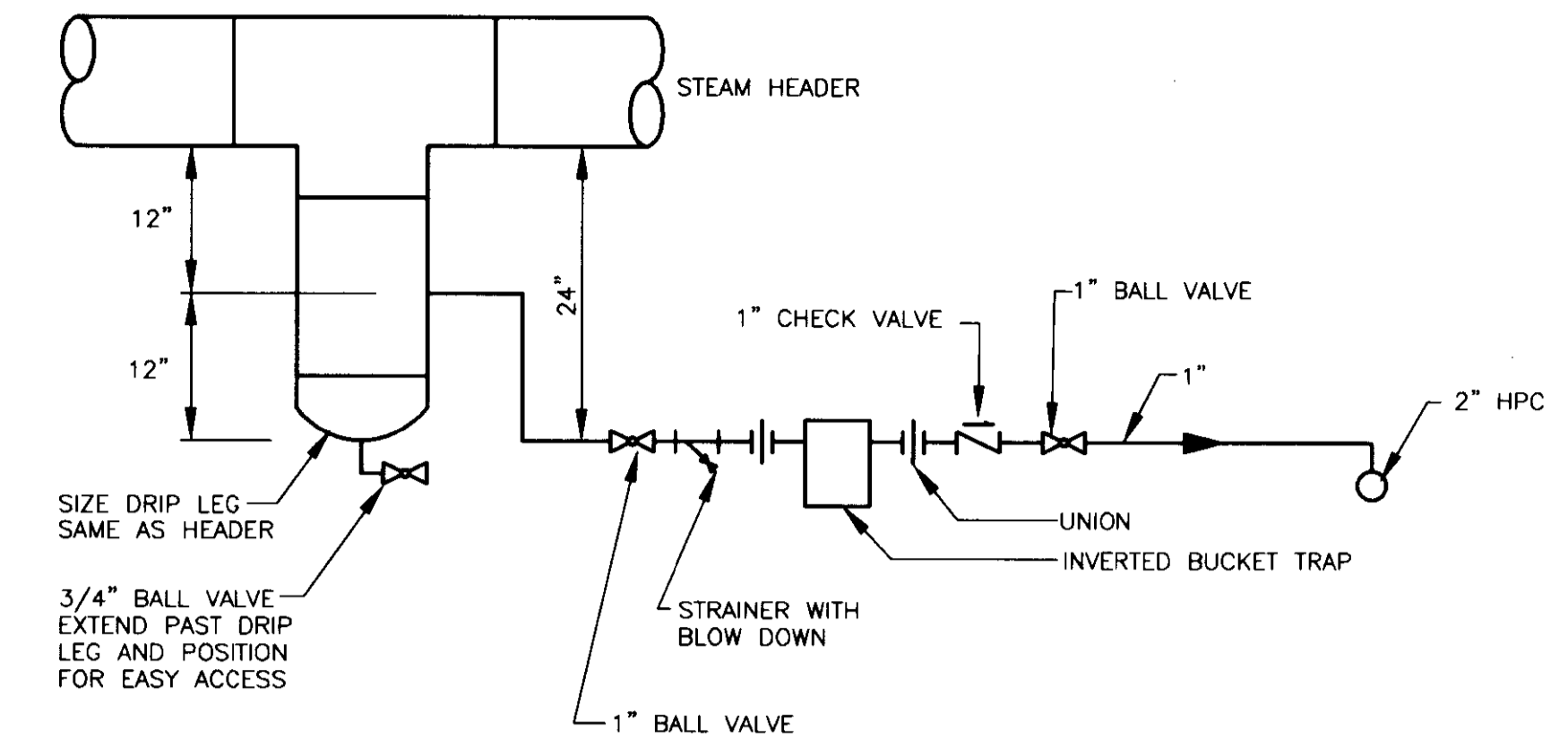
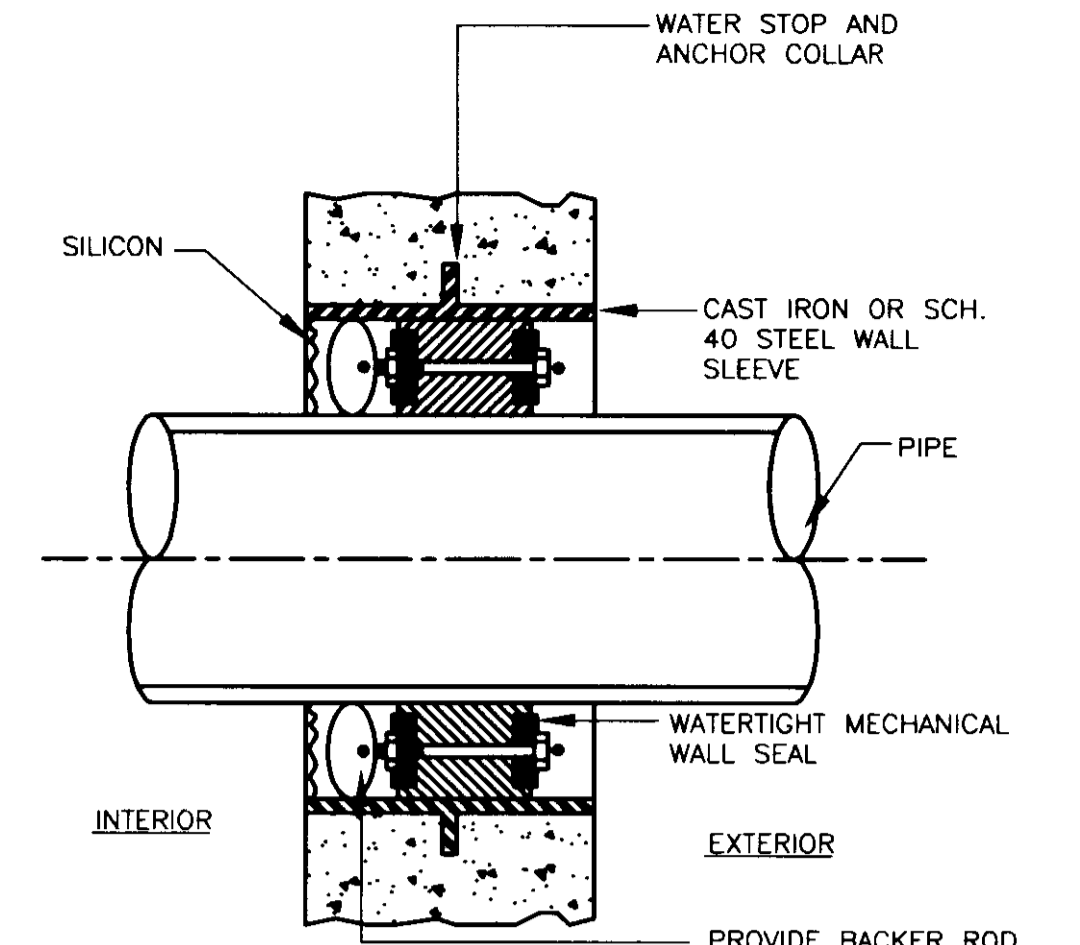
40-3

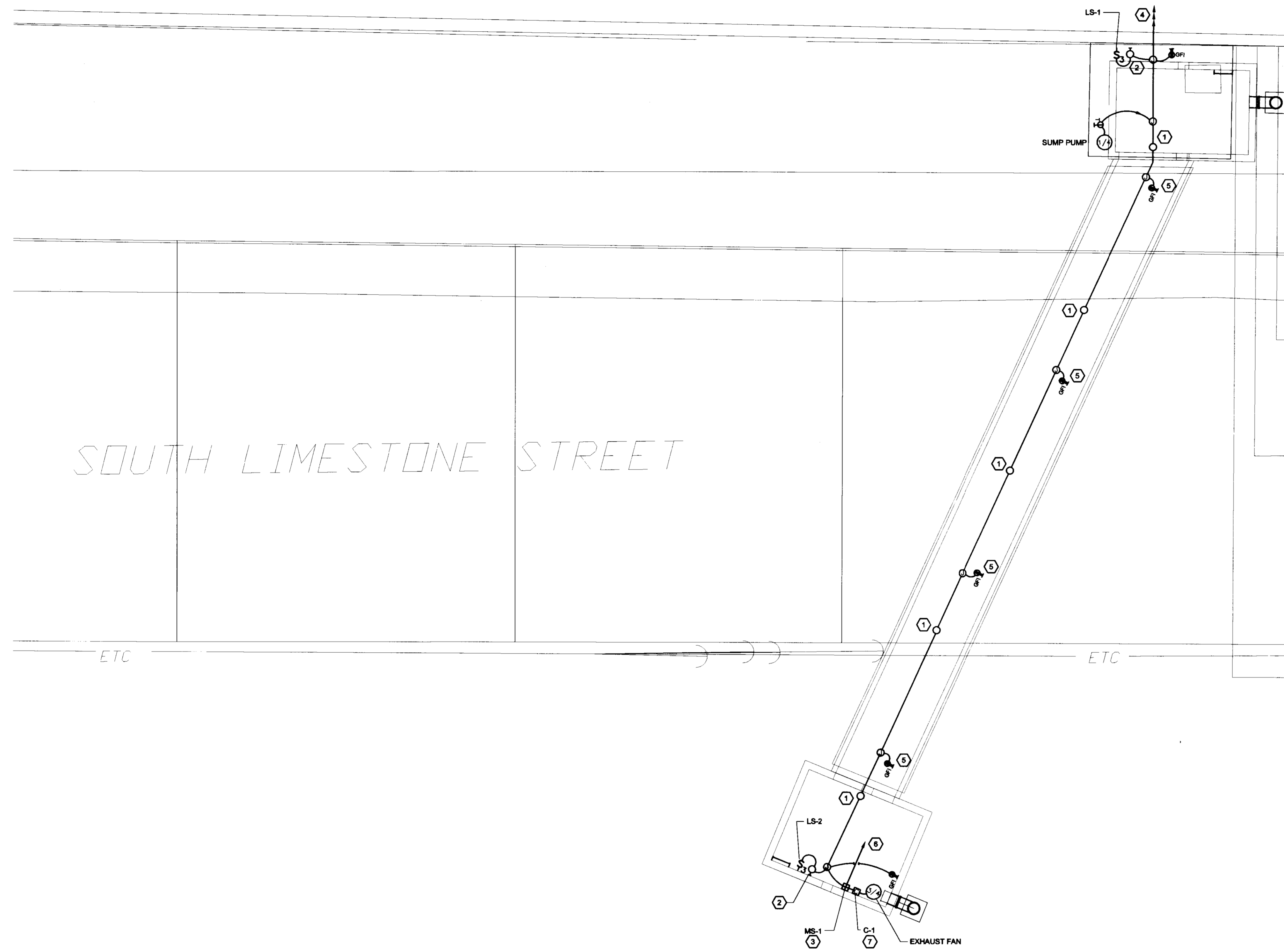




PENN SEPARATOR CORP. (OR EQUAL) FLASH SEPARATOR MODEL NO. FS-107 DIA. 34" HEIGHT, FOR CONDENSATE FLOW RATE OF 2000 LBHR AT 300 PSIG FLASHING TO A PRESSURE OF 20 PSIG. PROVIDE INLET, OUTLET, VENT AND DRAIN PIPING SIZES AS INDICATED ON THE DETAILS. THERMOSTATIC AIR VENT AND ANGLE LEG SUPPORTS WITH FLOOR PADS.

HOFFMAN (OR EQUAL) DUPLEX CONDENSATE PUMP UNIT. MODEL NO. WCSD-12-20-B MA, DUPLEX PUMP, 20 PSIG DISCHARGE PRESSURE, 18 GPM PUMP CAPACITY, WITH A STEEL 14 GALLON RECEIVER, AND MECHANICAL ALTERNATOR. ELECTRIC TO BE 115V/1-PHASE/60 HZ AND 1/3 HP MOTORS.





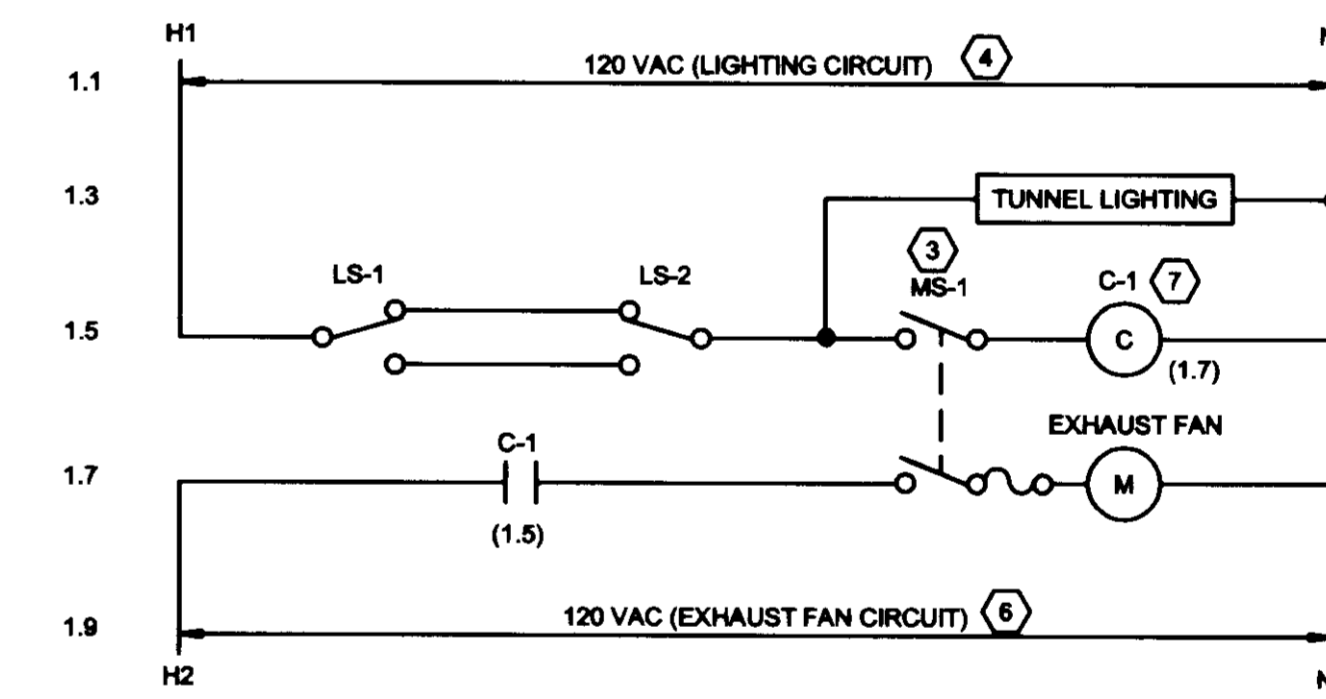
PLAN VIEW
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- IF PIPING AND SUPPORT BID PACKAGES ARE NOT ACCEPTED, CONDUIT SHALL BE MOUNTED TO THE TUNNEL CEILING IN A MANNER AS TO NOT INTERFERE WITH FUTURE PIPING AND SUPPORT INSTALLATION.

KEYNOTES

- LIGHTING FIXTURE TYPE C. CEILING MOUNTED FIXTURE WITH 100W INCANDESCENT LAMP, GLASS GLOBE AND GUARD CAGE.
- LIGHTING FIXTURE TYPE D. WALL-MOUNTED FIXTURE WITH 100W INCANDESCENT LAMP, GLASS GLOBE AND GUARD CAGE.
- MANUAL STARTER IN NEMA 4 ENCLOSURE PROVIDED BY ELECTRICAL CONTRACTOR.
- THREE 120V, 20 AMP CIRCUITS (1 EACH FOR LIGHTING, RECEPTACLES, SUMP PUMP) FROM NEAREST AVAILABLE PANELBOARD IN THE PETERSON SERVICE BUILDING. WIRING SHALL BE #10 AWG COPPER.
- MOUNT RECEPTACLES IN TUNNEL ON VERTICAL PIPE SUPPORTS.
- 120V, 20 AMP CIRCUIT FROM NEAREST AVAILABLE PANELBOARD IN THE PETERSON SERVICE BUILDING. WIRING SHALL BE #10 AWG COPPER.
- CONTACTOR RATED AT 1 HP, 120V., IN A NEMA 4 ENCLOSURE.



SCHEME 1 - TUNNEL EXHAUST FAN & LIGHTING

REMOVAL/REPLACEMENT OF PAVEMENT MARKINGS

Pavement markings shall be removed by either an abrasive or burning process to the satisfaction of the Engineer. If the abrasive method is used, the area affected is to be coated with black (or more precisely, a color similar to that of the adjacent pavement surface) traffic paint. Painting of existing markings with bituminous or other materials to obliterate the markings shall not be allowed.

Upon completion of the construction, the Contractor shall restore the original (currently existing) lane marking configuration to like-new condition.

TRAFFIC CONTROL DEVICES

All traffic control devices shall comply with the current Standard Drawings and the current Manual on Uniform Traffic Control Devices (MUTCD). Warning signs shall be 48-in. by 48-in. Advance warning arrow display panel shall meet the requirements of MUTCD Figure 6F-3, Panel Type B. The advance warning arrow display shall remain illuminated the entire time any lane closures and/or realignments are in effect.

CENTERLINE AND STATIONING

The centerline and stationing shown on this plan are solely for use in laying out the traffic control devices, and are not representative of any official roadway stationing.

UTILITIES

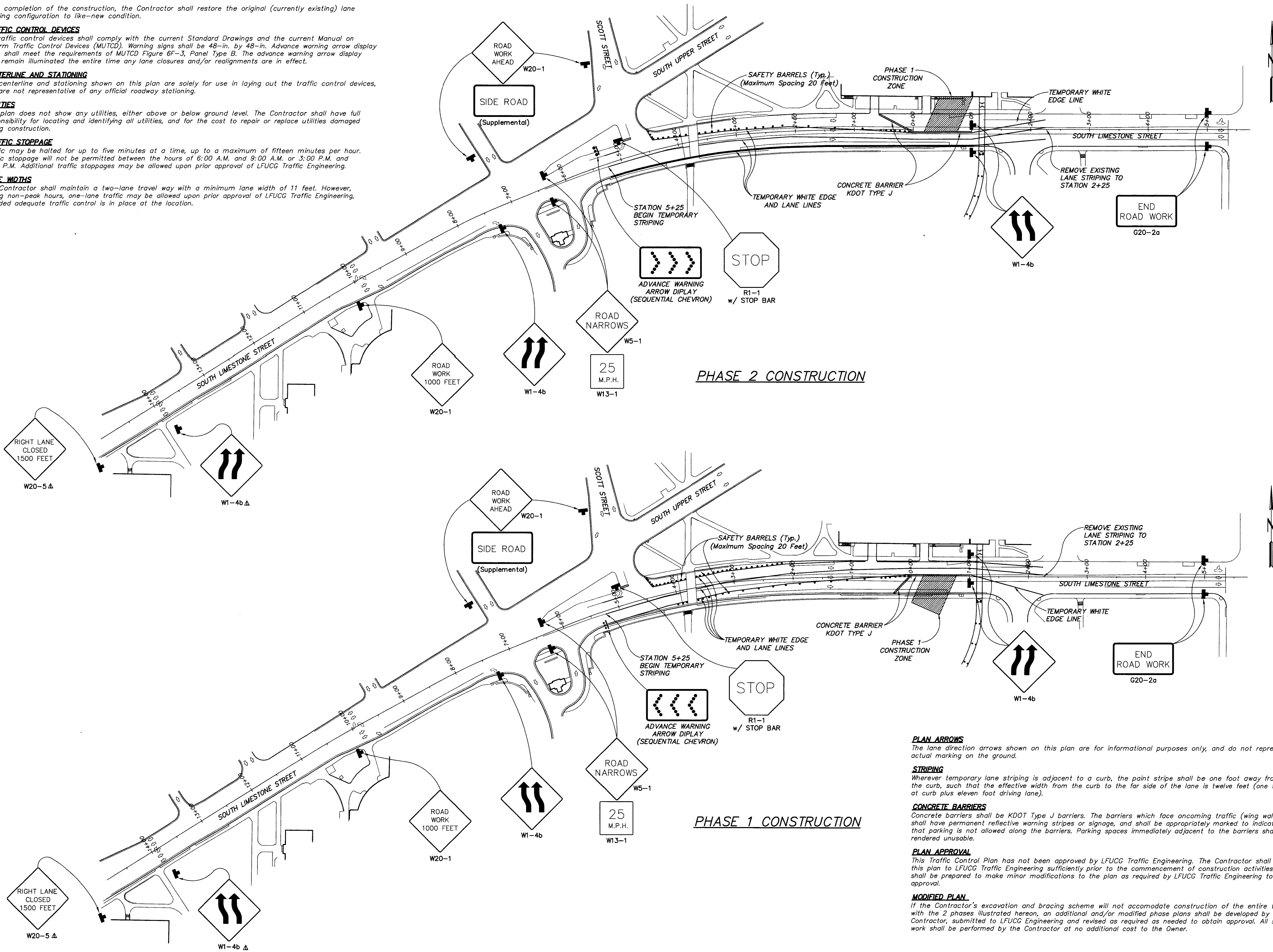
This plan does not show any utilities, either above or below ground level. The Contractor shall have full responsibility for locating and identifying all utilities, and for the cost to repair or replace utilities damaged during construction.

TRAFFIC STOPPAGE

Traffic may be halted for up to five minutes at a time, up to a maximum of fifteen minutes per hour. Traffic stoppage will not be permitted between the hours of 6:00 A.M. and 9:00 A.M. or 3:00 P.M. and 6:00 P.M. Additional traffic stoppages may be allowed upon prior approval of LFUCG Traffic Engineering.

LANE WIDTHS

The Contractor shall maintain a two-lane travel way with a minimum lane width of 11 feet. However, during non-peak hours, one-lane traffic may be allowed upon prior approval of LFUCG Traffic Engineering, provided adequate traffic control is in place at the location.



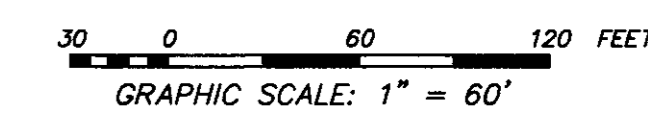
PLAN ARROWS
The lane direction arrows shown on this plan are for informational purposes only, and do not represent actual marking on the ground.

STRIPING
Whenever temporary lane striping is adjacent to a curb, the paint stripe shall be one foot away from the curb, such that the effective width from the curb to the far side of the lane is twelve feet (one foot at curb plus eleven foot driving lane).

CONCRETE BARRIERS
Concrete barriers shall be KDOT Type J barriers. The barriers which face oncoming traffic (wing walls) shall have permanent reflective warning stripes or signage, and shall be appropriately marked to indicate that parking is not allowed along the barriers. Parking spaces immediately adjacent to the barriers shall be rendered unusable.

PLAN APPROVAL
This Traffic Control Plan has not been approved by LFUCG Traffic Engineering. The Contractor shall submit this plan to LFUCG Traffic Engineering sufficiently prior to the commencement of construction activities, and shall be prepared to make minor modifications to the plan as required by LFUCG Traffic Engineering to receive approval.

MODIFIED PLAN
If the Contractor's excavation and bracing scheme will not accommodate construction of the entire tunnel with the 2 phases illustrated hereon, an additional and/or modified phase plans shall be developed by the Contractor, submitted to LFUCG Engineering and revised as required to obtain approval. All such work shall be performed by the Contractor at no additional cost to the Owner.



Fuller Mosbacher Scott & May
ENGINEERS
1409 N. Lenoir Rd.
Lexington, KY 40516-2650
606-253-3574

TRAFFIC CONTROL PLAN
LIMESTONE STEAM LINE REPLACEMENT
UNIVERSITY OF KENTUCKY
LEXINGTON, FAYETTE COUNTY, KENTUCKY

PROJECT NO. LY2003068
DATE: JUNE, 2003
DRAWN BY: BPS/EEL
CHECKED BY: EEL
CHECKED BY: DAB
SCALE: 1" = 60'
REVISED: 7/22/03

SHEET 11 OF 11
11 B-3 26349