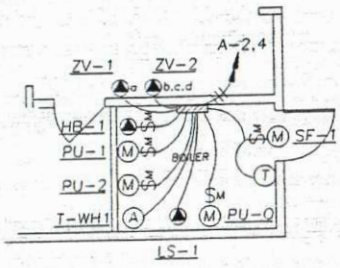


1 FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH

NOTE:
 1. PROVIDE 2' CONDUIT FOR TELEPHONE SERVICE. 2' X 4' 3/4" PLYWOOD TELEPHONE TERMINAL BOARD. #6 COPPER GROUND FOR WIRING BY OWNER. VERIFY SERVICE REQUIREMENTS WITH UTILITY CO. RUN 3/4" C FROM EACH TELEPHONE OUTLET TO THE TTB.

STATION AND .TER.

- WORK NOTES:
- 1 RADIAL ARM SAW OUTLET. PROVIDE WP RECEPTACLE MATCHING CORD CAP ON OWNER'S EQUIPMENT.
 - 2 WELDER OUTLET. PROVIDE RECEPTACLE MATCHING CORD CAP ON OWNER'S EQUIPMENT.
 - 3 VERIFY OVERHEAD DOOR OPERATOR LOCATION AND REQUIREMENTS WITH EQUIPMENT SUPPLIER.
 - 4 PROVIDE NEW UNDERGROUND FEEDER FROM NEW BUILDING TO EXISTING POLE MOUNTED LIFT STATION DISCONNECT, STARTER AND CIRCUIT BREAKERS. PROVIDE NEW GROUND FOR EQUIPMENT PER NEC.
 - 5 ALL OUTLETS IN SHOP AREA SHALL BE GFI PROTECTED AND MOUNTED 44" AFF. AREA FROM FLOOR UP 18" IS CLASSIFIED AS CLASS 1, DIVISION 2. ALL WIRING AND EQUIPMENT INSTALLED OR USED IN THIS AREA SHALL BE RATED AND APPROVED FOR HAZARDOUS LOCATION USE. COMPLY WITH NEC ARTICLE 500 REQUIREMENTS FOR CONDUIT SEALS, GRC, ETC. MOUNT AT 44" AFF.
 - 6 OWNER SUPPLIED AIR COMPRESSOR. VERIFY CONNECTIONS WITH OWNER PRIOR TO ROUGH-IN.



2 PARTIAL FLOOR PLAN
 MECH ROOM POWER
 SCALE: 1/8"=1'-0"
 NORTH

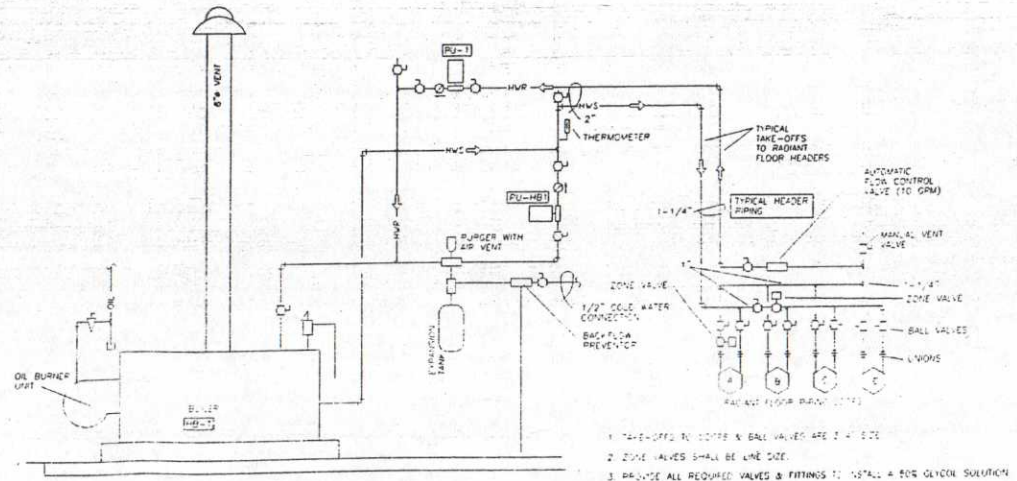
NOTE:
 1. SEE CONTROL WIRING DIAGRAMS. ALSO SEE MECHANICAL PLANS FOR THERMOSTAT LOCATIONS.

SPECIFICATIONS

CODES & PERMITS:
ALL WORK SHALL CONFORM TO APPLICABLE CODES INCLUDING THE UNIFORM BUILDING CODE, UNIFORM FIRE ALARMS CODE, UNIFORM MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER APPLICABLE RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.

DRAWING & MEAS. REMARKS:
THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDENSATE PIPING, SIZES AND LOCATIONS. SEE ANY SCALE DRAWINGS TO OBTAIN EXACT DIMENSIONS.

ITEM	DESCRIPTION
BURNER (MB-1)	EQUAL TO LOCKHART MODEL NO. 98L 331-49 PROPANE WITH 5500 BTU/H & MODULATING GAS VALVE, 228 MBH IN 154.0 VENT OUT & AUTOMATIC VENT DAMPER. PROVIDE & INSTALL 2 AIR-GAS SENSOR IN BOILER ROOM WITH OUTSIDE MOTOR-DRIVE SHUT-OFF VALVE.
DOMESTIC WATER HEATER	EQUAL TO AMTRAC MODEL NO. WH70, 41 GALLONS, PRESSURE RELIEF VALVE, 104 GPM @ 90F RISE WITH 50CM OF 150F BOILER WATER. INITIAL SETTING SHALL BE 125F.
DOMESTIC WATER STORAGE TANK	EQUAL TO CRANFORD NO. 82724, 80 GAL. WITH-OUT ELECTRICAL ELEMENTS CONNECTED TO POWER. PROVIDE T & P RELIEF VALVE & CONNECTION TO THE OWNER PROVIDED SOLAR HEAT EXCHANGER.
EXPANSION TANK & AIR PURGER	EQUAL TO AMTRAC EXTROL MODEL NO. 112 (TANK WITH FILL-TRO.) & NO. 445 - 1-1/2" PURGER WITH #700 AUTOMATIC AIR VENT.
PUMP (PU-1)	EQUAL TO GRUNDOS NO. UP26-96F, 17 GPM @ 11' HEAD, 1/2" HP - 2450 RPM, 120V, 2 AMPS.
PUMP (PU-2)	EQUAL TO GRUNDOS NO. UP26-96F, 14 GPM @ 15' HEAD, 1/2" HP - 2450 RPM, 120V, 2 AMPS.
PUMP (PU-3)	EQUAL TO GRUNDOS NO. UP15-189S, 2 GPM @ 6' HEAD, 1/25 HP, 2050 RPM, 120V, 1 AMPS.
MIXING VALVE	EQUAL TO WATTS NO. N170-M1, 1-1/2" SIZE, 130F - 180F RANGE. INITIAL SETTING SHALL BE 140F.
TEMPERING VALVE	EQUAL TO WATTS NO. N170-M1, 3/4" SIZE, 130F - 180F RANGE. INITIAL SETTING SHALL BE 130F.
BACKFLOW PREVENTER	EQUAL TO WATTS NO. 0090T-1/2" SIZE.
AUTOMATIC FLOW CONTROL VALVE	EQUAL TO GRISWOLD MODEL NO. 3551L, COPPER SHEAT, 3/4" SIZE.
ZONE VALVES & THERMOSTATS	EQUAL TO HONEYWELL NO. V8043F1036-3/4" & V8043F1051-1" WITH END SWITCH & T873855 T-STAT, 24 VOLT. PROVIDE TRANSFORMER CAPACITY FOR VALVES & THERMOSTATS.
FIN RADIATION	EQUAL TO HEATIRN-AMERICAN, 370 BTU/H/FT @ 150F OF LENGTHS WITH ACCESSORIES AS SHOWN ON DRAWINGS.
HEATING PIPING & INSULATION	ALL HEATING PIPING OUT OF SLAB SHALL BE TYPE TM COPPER. RADIANT FLOOR PIPING LOOPS SHALL BE EQUAL TO VANGUARD POLYETHYLENE, 1/2" SIZE. LOOP 0 (FOR GARAGE) SHALL BE 3/4" SIZE. INSULATE ALL PIPING IN BOILER ROOM.
BOILER & PUMP CONTROL SEQUENCE	THE OPENING OF ANY HEATING ZONE VALVE (THRU THE VALVE END SWITCH) SHALL CAUSE PUMP PU-1, PU-2 & THE BOILER TO OPERATE. THE OPENING OF THE DOMESTIC WATER HEATER ZONE VALVE SHALL CAUSE PUMP PU-1 & THE BOILER TO OPERATE. WHEN THE BOILER IS ENABLED IT SHALL OPERATE TO MAINTAIN THE BOILER SET POINT.



1
M HEATING SYSTEM PIPING DIAGRAM
NO SCALE

SPECIFICATIONS

CODES & PERMITS:
ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING THE UNIFORM BUILDING CODE, UNIFORM PLUMBING CODE, UNIFORM MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER ATTENDING RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.

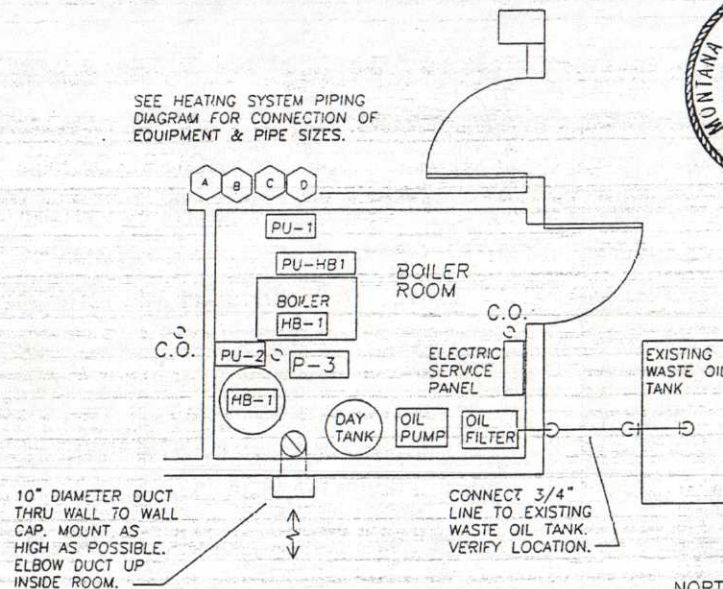
DRAWINGS & MEASUREMENTS:
THE DRAWINGS INDICATE GENERAL ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDUITS, PIPING, SIZES AND LOCATIONS. DO NOT SCALE DRAWINGS TO OBTAIN EXACT DIMENSIONS. PROVIDE ALL NECESSARY PARTS & COMPONENTS FOR A COMPLETE INSTALLATION EVEN IF NOT SPECIFICALLY SHOWN OR SPECIFIED.

ITEM	DESCRIPTION
BOILER (HB-1)	EQUAL TO BUDERUS MODEL NO. 2.04, SIZE 40, WITH WEDCO WASTE OIL BURNER, 150 WHP OUTPUT, 120 VOLT, 15 AMPS & PRESSURE RELIEF VALVE. PROVIDE ALL COMPONENTS & CONTROLS FOR THE INSTALLATION & OPERATION OF THE UNIT. PROVIDE 7" DIAMETER TYPE "L" VENT THRU ROOF & TERMINATE @ 24" ABOVE FINISHED FLOOR WITH CAP. SUPPORT FROM WALL ABOVE.
DOMESTIC WATER HEATER (WH-1)	EQUAL TO AMTROL MODEL NO. WH6, 26 GALLONS, PRESSURE RELIEF VALVE, 85 GPM @ 90F RISE WITH 50PM OF 150F BOILER WATER. INITIAL SETTING SHALL BE 125F.
WASTE OIL DAY TANK, FILTER & FLOAT SWITCH	TANK: GRANGER NO. 29307, 15 GALLON POLYETHYLENE. PROVIDE ANY ADDITIONAL OPENINGS & FITTINGS FOR CONNECTIONS. FILTER: GRANGER NO. 28995 WITH NO. 28986 EXTRA REPLACEMENT CARTRIDGE. FLOAT SWITCH: GRANGER NO. 24553, 60 WATTS, .5 AMPS @ 110 VAC.
EXPANSION TANK & AIR PURGER	EQUAL TO AMTROL EXTROL MODEL NO. 112 (TANK WITH FILL-TROL) & NO. 445 - 1-1/2" PURGER WITH #700 AUTOMATIC AIR VENT.
PUMP (PU-HB1)	EQUAL TO GRUNDOS NO. UP26-95F, 15 GPM @ 12' HEAD, 1/12 HP, 2452 RPM, 120V, 2 AMPS.
PUMP (PU-1)	EQUAL TO GRUNDOS NO. UP43-75F, 15 GPM @ 19' HEAD, 1/8 HP, 3150 RPM, 120V, 2 AMPS.
PUMP (PU-2)	EQUAL TO GRUNDOS NO. UP15-42F, 5 GPM @ 12' HEAD, 1/25 HP, 1600 RPM, 120V, 1 AMP.
EXHAUST FAN (EF-1)	EQUAL TO BIRAN NO. 509, WALL FAN, 180 CFM @ 120V, 1.5 AMPS.
EXHAUST FAN (EF-2 & 3)	EQUAL TO GRANGER NO. 4C363, 3350 CFM @ .25" S.P., 12V, 1/3 HP, 5.3 AMPS, 24" DIAMETER, PROVIDE NO. 3C308 DAMPER WITH NO. 2C331 DAMPER MOTOR.
SUPPLY FAN (SF-1)	EQUAL TO GRANGER NO. 3C579, 490 CFM @ .5" S.P., 1100 RPM, 1/8 HP, 120V. PROVIDE NO. 2E158 COOLING THERMOSTAT.
BACKFLOW PREVENTER	EQUAL TO WATTS NO. 0090T-1/2" SIZE.
ZONE VALVES & THERMOSTATS	EQUAL TO HONEYWELL NO. VB04JF1038-3/4" & VB04JF1051-1" WITH END SWITCH & 787F3855 T-STAT, 24 VOLT. PROVIDE TRANSFORMER CAPACITY FOR VALVES & THERMOSTATS.
WASTE OIL PUMP	EQUAL TO SUNTEC INDUSTRIES MODEL NO. A2RA-7736, 2.5 GPM @ 30 PSL 1/8 HP, 120V. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS WITH FLOATING PICK-UP IN THE EXISTING WASTE OIL TANK.
HEATING PIPING & INSULATION	ALL HEATING PIPING OUT OF SLAB SHALL BE TYPE "M" COPPER. RADIANT FLOOR PIPING LOOPS SHALL BE EQUAL TO VANGUARD POLYBUTYLENE, 3/4" SIZE. INSULATE ALL PIPING IN BOILER ROOM.
BOILER & PUMP CONTROL SEQUENCE	THE OPENING OF ANY HEATING ZONE VALVE (THRU THE VALVE END SWITCH) SHALL CAUSE PUMP PU-1, PU-HB1 & ENABLE THE BOILER TO OPERATE. THE OPERATION OF THE DOMESTIC WATER HEATER PUMP PU-2 SHALL CAUSE PUMP PU-HB1 & ENABLE THE BOILER TO OPERATE. WHEN THE BOILER IS ENABLED IT SHALL OPERATE TO MAINTAIN THE BOILER SET POINT.

PLUMBING FIXTURE SCHEDULE

PLAN CODE	ITEM	MFG. & MODEL NO.	MATERIAL & FINISH	TRIM	ROUGH-IN SIZE			REMARKS
					CW	HW	VENT	
P-1	WATER CLOSET	AM. STO. / 2174.139	VITREOUS CHINA	FLUSH TANK 1.6 GPF	1/2"	-	2"	WHITE / OPEN FRONT SEAT
P-2	LAVATORY	AM. STO. / 0221.028	VITREOUS CHINA	FAUCET / 2305.449	1/2"	1/2"	1-1/4"	WHITE / GRID DRAIN
P-3	FLOOR DRAIN	SCHEDULE 40	PVC	STRAINER / NO TRAP	-	-	2"	CONNECT TO INLET OF INTERCEPTOR
P-4	OIL INTERCEPTOR	J.R. SMITH 8510	COATED CAST IRON	FLOW CONTROL FITTING	-	-	2"	MOUNT WITH 1" OIL DRAW-OFF LINE
P-5	HOSE BIBB	CHICAGO 305 VB	ROUGH	VACUUM BREAKER	1/2"	1/2"	-	MOUNT @ 48" ABOVE FLOOR

SEE HEATING SYSTEM PIPING DIAGRAM FOR CONNECTION OF EQUIPMENT & PIPE SIZES.

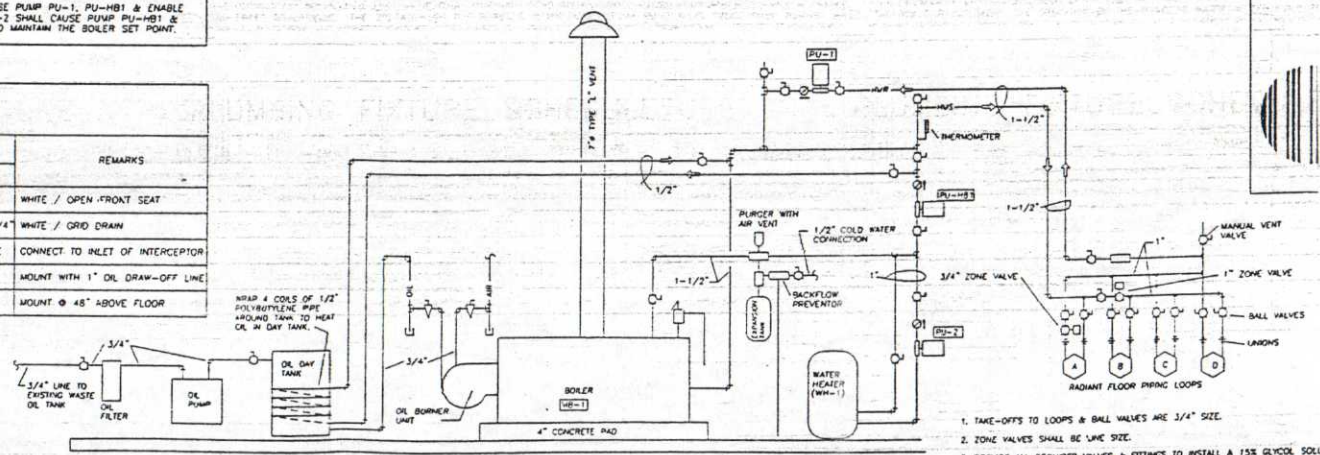


1 LARGE SCALE BOILER ROOM PLAN
SCALE 1/4" = 1'-0"



© 1995

TIMBERWELD TRUCK SHOP



2 HEATING SYSTEM PIPING DIAGRAM
NO SCALE

- TAKE-OFFS TO LOOPS & BALL VALVES ARE 3/4" SIZE.
- ZONE VALVES SHALL BE 1/2" SIZE.
- PROVIDE ALL REQUIRED VALVES & FITTINGS TO INSTALL A 15% GLYCOL SOLN.

SPECIFICATIONS

CODES & PERMITS:
ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING THE UNIFORM BUILDING CODE, UNIFORM PLUMBING CODE, UNIFORM MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER ATTENDING RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.

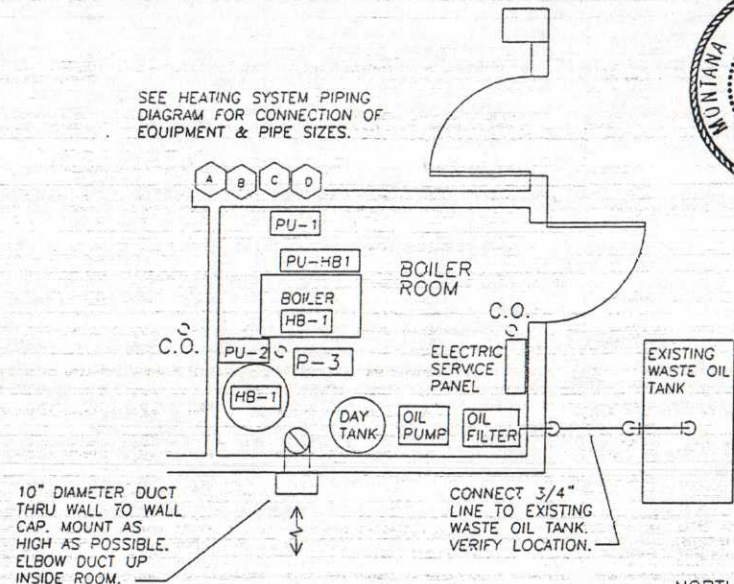
DRAWINGS & MEASUREMENTS:
THE DRAWINGS INDICATE GENERAL ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDUITS, PIPING, SIZES AND LOCATIONS. DO NOT SCALE DRAWINGS TO OBTAIN EXACT DIMENSIONS. PROVIDE ALL NECESSARY PARTS & COMPONENTS FOR A COMPLETE INSTALLATION EVEN IF NOT SPECIFICALLY SHOWN OR SPECIFIED.

ITEM	DESCRIPTION
BOILER (HB-1)	EQUAL TO BUDERUS MODEL NO. 2.04, SIZE 40, WITH WEDCO WASTE OIL BURNER, 150 WPM OUTPUT, 120 VOLT, 15 AMPS & PRESSURE RELIEF VALVE. PROVIDE ALL COMPONENTS & CONTROLS FOR THE INSTALLATION & OPERATION OF THE UNIT. PROVIDE 7" DIAMETER TYPE "I" VENT THRU ROOF & TERMINATE @ 24" ABOVE FINISHED FLOOR WITH CAP. SUPPORT FROM WALL ABOVE.
DOMESTIC WATER HEATER (WH-1)	EQUAL TO AMTROL MODEL NO. WHS, 26 GALLONS, PRESSURE RELIEF VALVE, 85 GPM @ 90° RISE WITH 50PM OF 150F BOILER WATER. INITIAL SETTING SHALL BE 125F.
WASTE OIL DAY TANK, FILTER & FLOAT SWITCH	TANK: GRANGER NO. 2P307, 15 GALLON POLYETHYLENE. PROVIDE ANY ADDITIONAL OPENINGS & FITTINGS FOR CONNECTIONS. FILTER: GRANGER NO. 2P895 WITH NO. 2P888 EXTRA REPLACEMENT CARTRIDGE. FLOAT SWITCH: GRANGER NO. 2A553, 60 WATTS, .5 AMPS @ 110 VAC.
EXPANSION TANK & AIR PURGER	EQUAL TO AMTROL EXTROL MODEL NO. 112 (TANK WITH FILL-TROL) & NO. 445 - 1-1/2" PURGER WITH #700 AUTOMATIC AIR VENT.
PUMP (PU-HB1)	EQUAL TO GRUNDFOS NO. UP26-95F, 15 GPM @ 12' HEAD, 1/12 HP, 2452 RPM, 120V, 2 AMPS.
PUMP (PU-1)	EQUAL TO GRUNDFOS NO. UP43-75F, 15 GPM @ 19' HEAD, 1/8 HP, 3150 RPM, 120V, 2 AMPS.
PUMP (PU-2)	EQUAL TO GRUNDFOS NO. UP15-42T, 5 GPM @ 12' HEAD, 1/25 HP, 1600 RPM, 120V, 1 AMPS.
EXHAUST FAN (EF-1)	EQUAL TO BROAD NO. 509, WALL FAN, 180 CFM, 120V, 1.5 AMPS.
EXHAUST FAN (EF-2 & 3)	EQUAL TO DRANGER NO. 4C363, 3350 CFM @ .25" S.P., 12V, 1/3 HP, 5.3 AMPS, 24" DIAMETER. PROVIDE NO. 3C308 DAMPER WITH NO. 2C831 DAMPER MOTOR.
SUPPLY FAN (SF-1)	EQUAL TO GRANGER NO. 3C579, 490 CFM @ .5" S.P., 1100 RPM, 1/8 HP, 120V. PROVIDE NO. 2E158 COOLING THERMOSTAT.
BACKFLOW PREVENTER	EQUAL TO WATTS NO. 0090T-1/2" SIZE.
ZONE VALVES & THERMOSTATS	EQUAL TO HONEYWELL NO. V8043F1036-3/4" & V8043F1051-1" WITH END SWITCH & 787F3855 T-STAT, 24 VOLT. PROVIDE TRANSFORMER CAPACITY FOR VALVES & THERMOSTATS.
WASTE OIL PUMP	EQUAL TO SUNTEC INDUSTRIES MODEL NO. A2RA-7736, 2.5 GPM @ 30 PSL, 1/8 HP, 120V. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS WITH FLOATING PICK-UP IN THE EXISTING WASTE OIL TANK.
HEATING PIPING & INSULATION	ALL HEATING PIPING OUT OF SLAB SHALL BE TYPE "M" COPPER. RADIANT FLOOR PIPING LOOPS SHALL BE EQUAL TO VANGUARD POLYBUTYLENE, 3/4" SIZE. INSULATE ALL PIPING IN BOILER ROOM.
BOILER & PUMP CONTROL SEQUENCE	THE OPENING OF ANY HEATING ZONE VALVE (THRU THE VALVE END SWITCH) SHALL CAUSE PUMP PU-1, PU-HB1 & ENABLE THE BOILER TO OPERATE. THE OPERATION OF THE DOMESTIC WATER HEATER PUMP PU-2 SHALL CAUSE PUMP PU-HB1 & ENABLE THE BOILER TO OPERATE. WHEN THE BOILER IS ENABLED IT SHALL OPERATE TO MAINTAIN THE BOILER SET POINT.

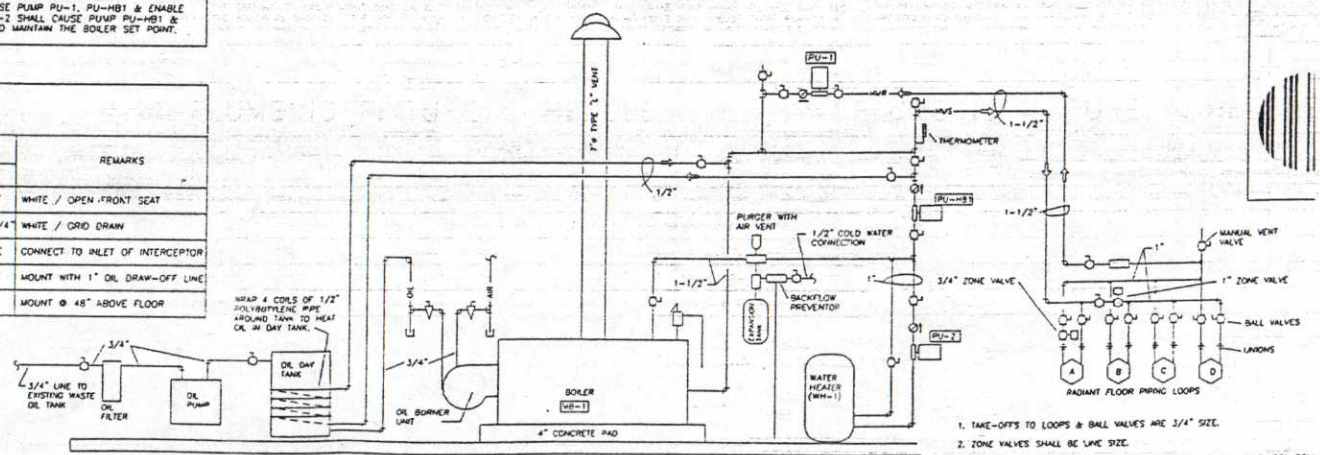
PLUMBING FIXTURE SCHEDULE

PLAN CODE	ITEM	MFG. & MODEL NO.	MATERIAL & FINISH	TRIM	ROUGH-IN SIZE			REMARKS
					CW	HW	VENT	
P-1	WATER CLOSET	AM. STD. / 217A.139	VITREOUS CHINA	FLUSH TANK 1.6 GPF	1/2"	-	2"	WHITE / OPEN FRONT SEAT
P-2	LAVATORY	AM. STD. / 0321.026	VITREOUS CHINA	FAUCET / 2385.449	1/2"	1/2"	1-1/4"	WHITE / GRID DRAIN
P-3	FLOOR DRAIN	SCHEDULE 40	PVC	STRAINER / NO TRAP	-	-	2"	CONNECT TO INLET OF INTERCEPTOR
P-4	OIL INTERCEPTOR	J.R. SMITH 8510	COATED CAST IRON	FLOW CONTROL FITTING	-	-	2"	MOUNT WITH 1" OIL DRAW-OFF LINE
P-5	HOSE BIBB	CHICAGO 305 VB	ROUGH	VACUUM BREAKER	1/2"	1/2"	-	MOUNT @ 48" ABOVE FLOOR

SEE HEATING SYSTEM PIPING DIAGRAM FOR CONNECTION OF EQUIPMENT & PIPE SIZES.



1 LARGE SCALE BOILER ROOM PLAN
SCALE: 1/4" = 1'-0"



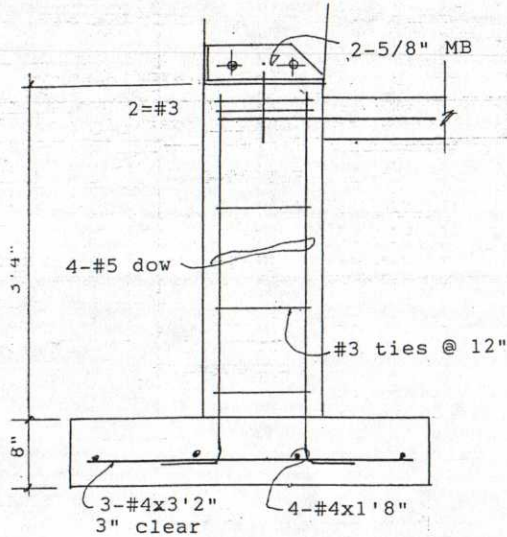
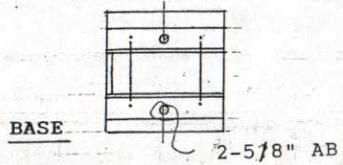
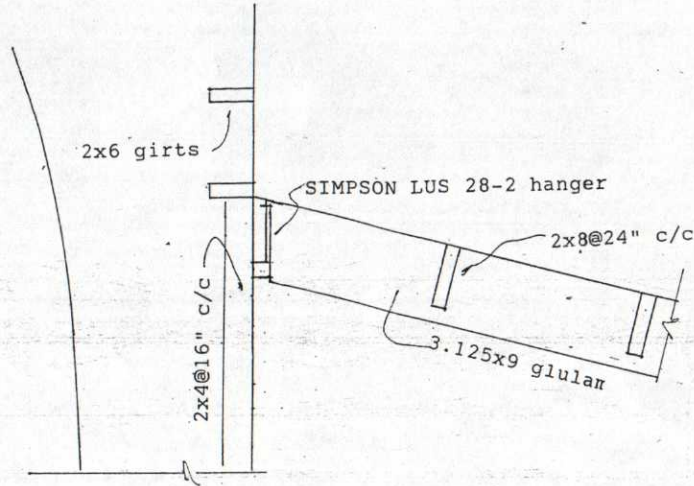
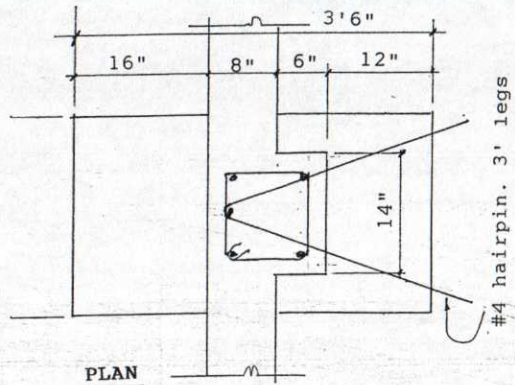
2 HEATING SYSTEM PIPING DIAGRAM
NO SCALE



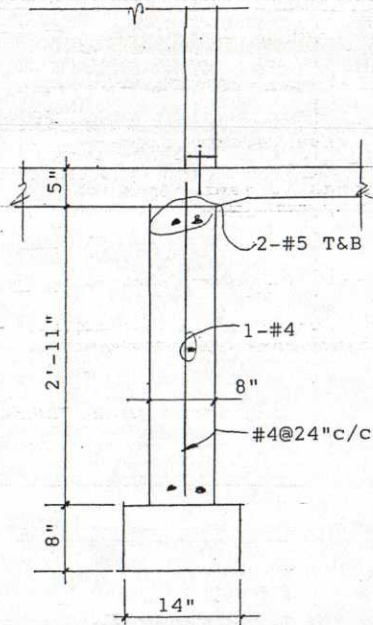
© 1995

TIMBERWELD TRUCK SHOP

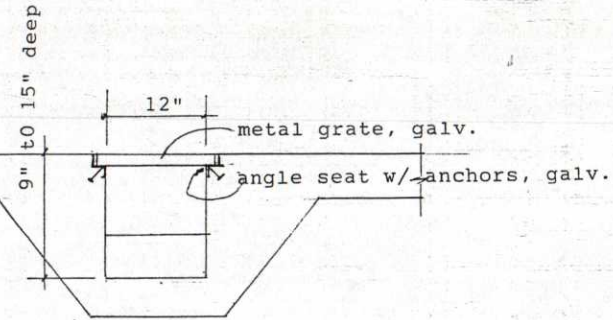




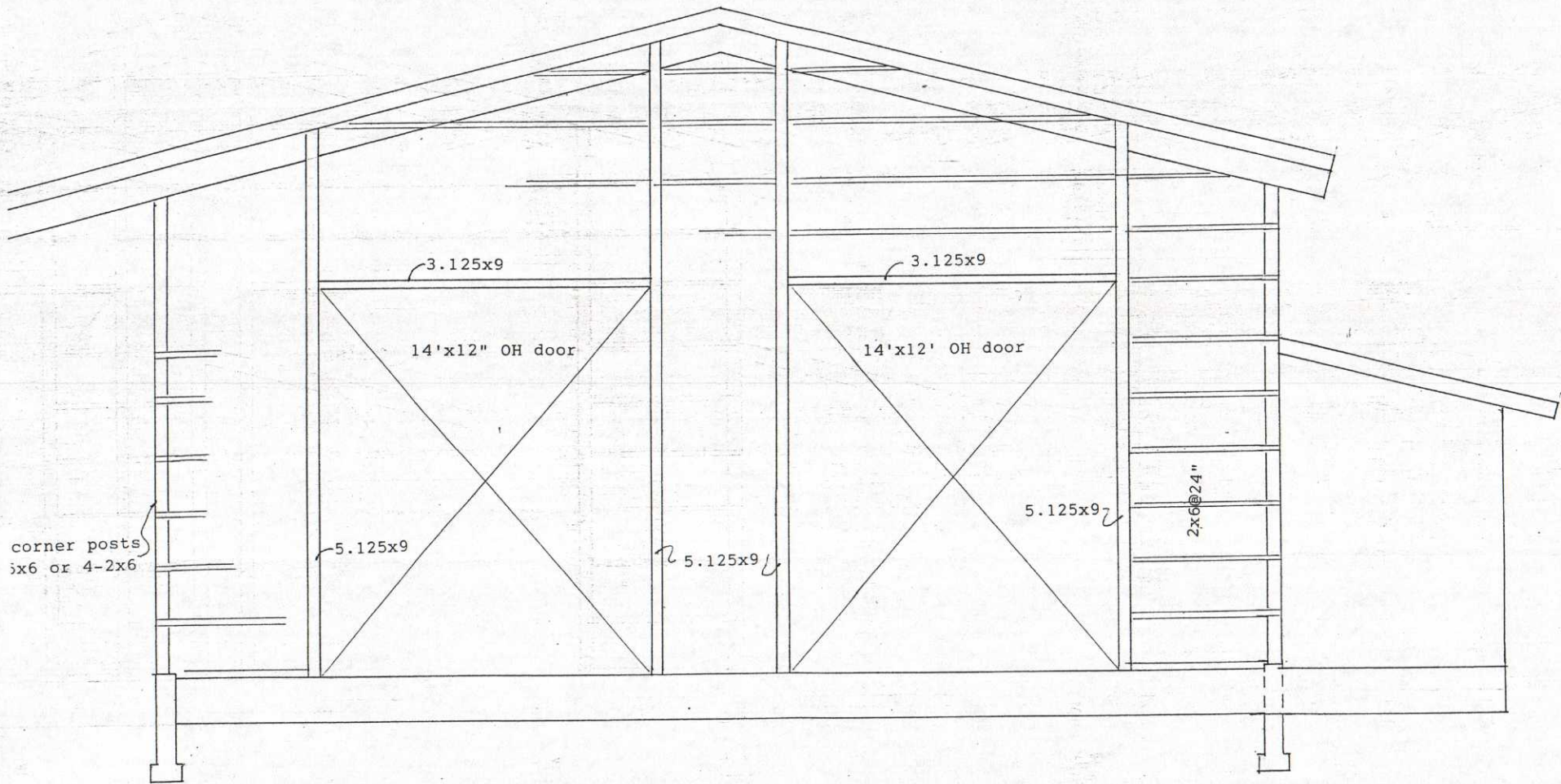
FRAME FOUNDATION



LOW ROOF SECTION
3/4"=1'0"



TRENCH DRAIN
3/4"=1'0"



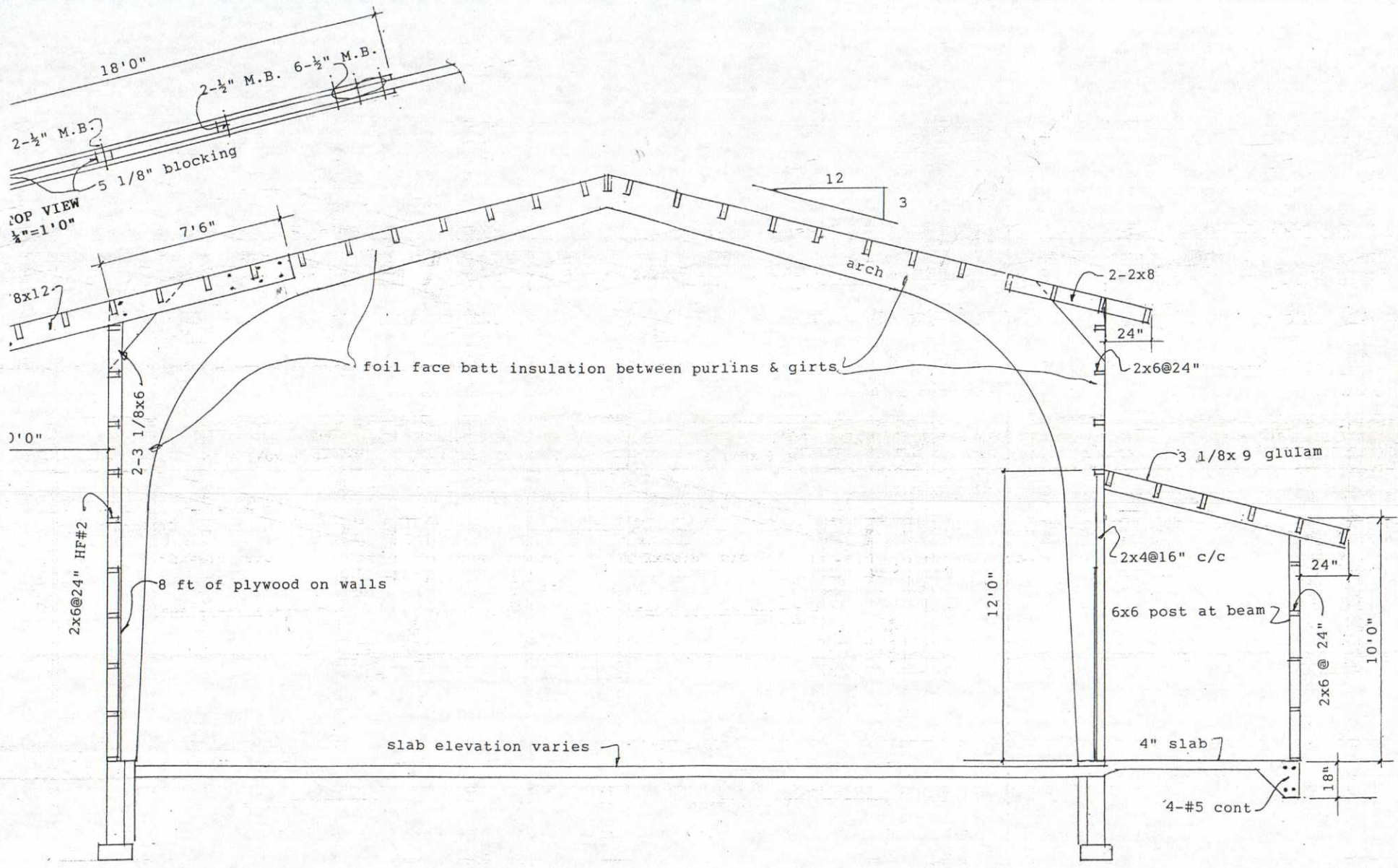
END WALL ELEVATION
 $\frac{1}{8}'' = 1'0''$

date
 4/13/95
 revised

HURLBUT ENGINEERING
 718 RIMROCK ROAD
 BILLINGS, MONTANA
 (406) 252-5087

sheet
 FIVE

TIMBERWELD TRUCK SHOP
 COLUMBUS MONTANA
 project S029501



BUILDING SECTION
 $\frac{1}{4}''=1'0''$

sheet
 FOUR

HURLBUT ENGINEERING
 719 RIMROCK ROAD
 BILLINGS, MONTANA
 (406) 252-5997

date
 4/13/95
 revised

TIMBERWELD TRUCK SHOP
 COLUMBUS, MONTANA
 project S029501

72'

2-3.125x12 glulams

3.125x12

ridge

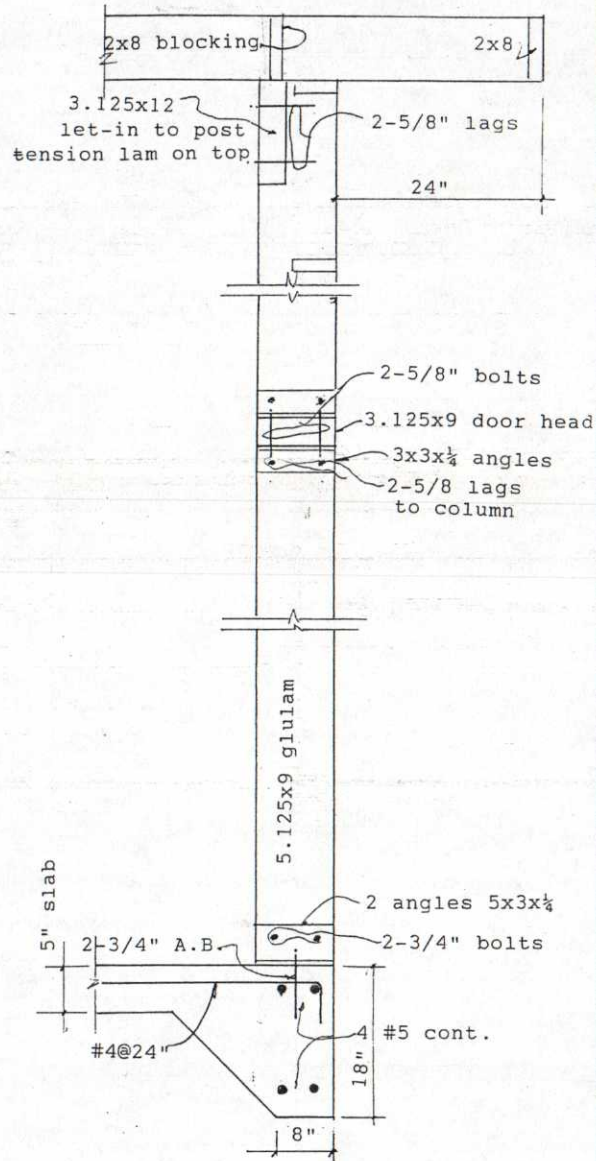
glulam frame

2x8@24" DFL#2

3.1215x9 glulam

ROOF FRAMING PLAN

1/8"=1'0"



END WALL SECTION

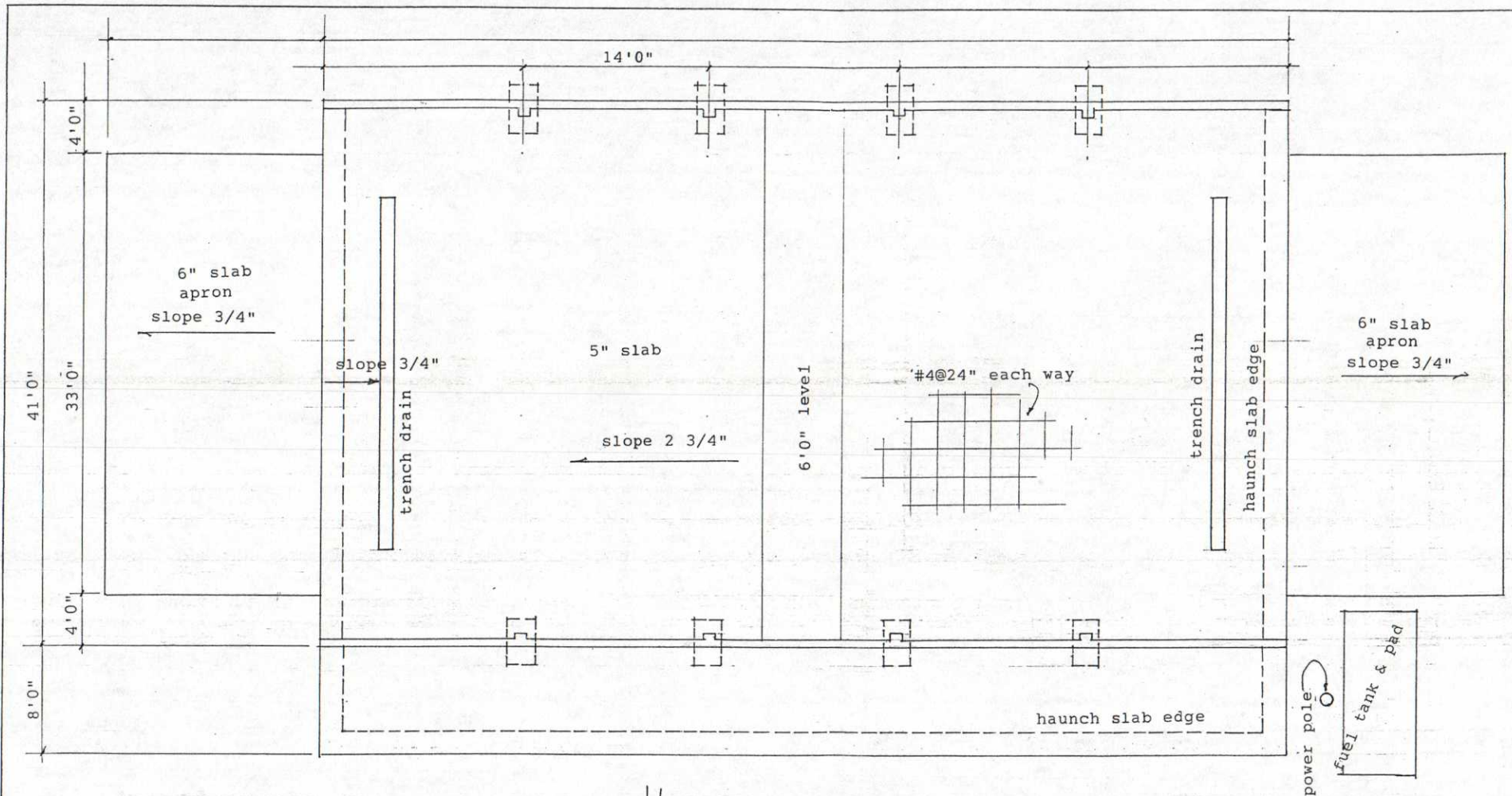
3/4"=1'0"

sheet THREE

MURLEUT ENGINEERING
719 RIMROCK ROAD
BILLINGS, MONTANA
(406) 232-5667

date 4/13/95
revised

TIMBERWELD TRUCK SHOP
COLUMBUS, MONTANA
project S029501



FOUNDATION PLAN

1/8"=1'0"

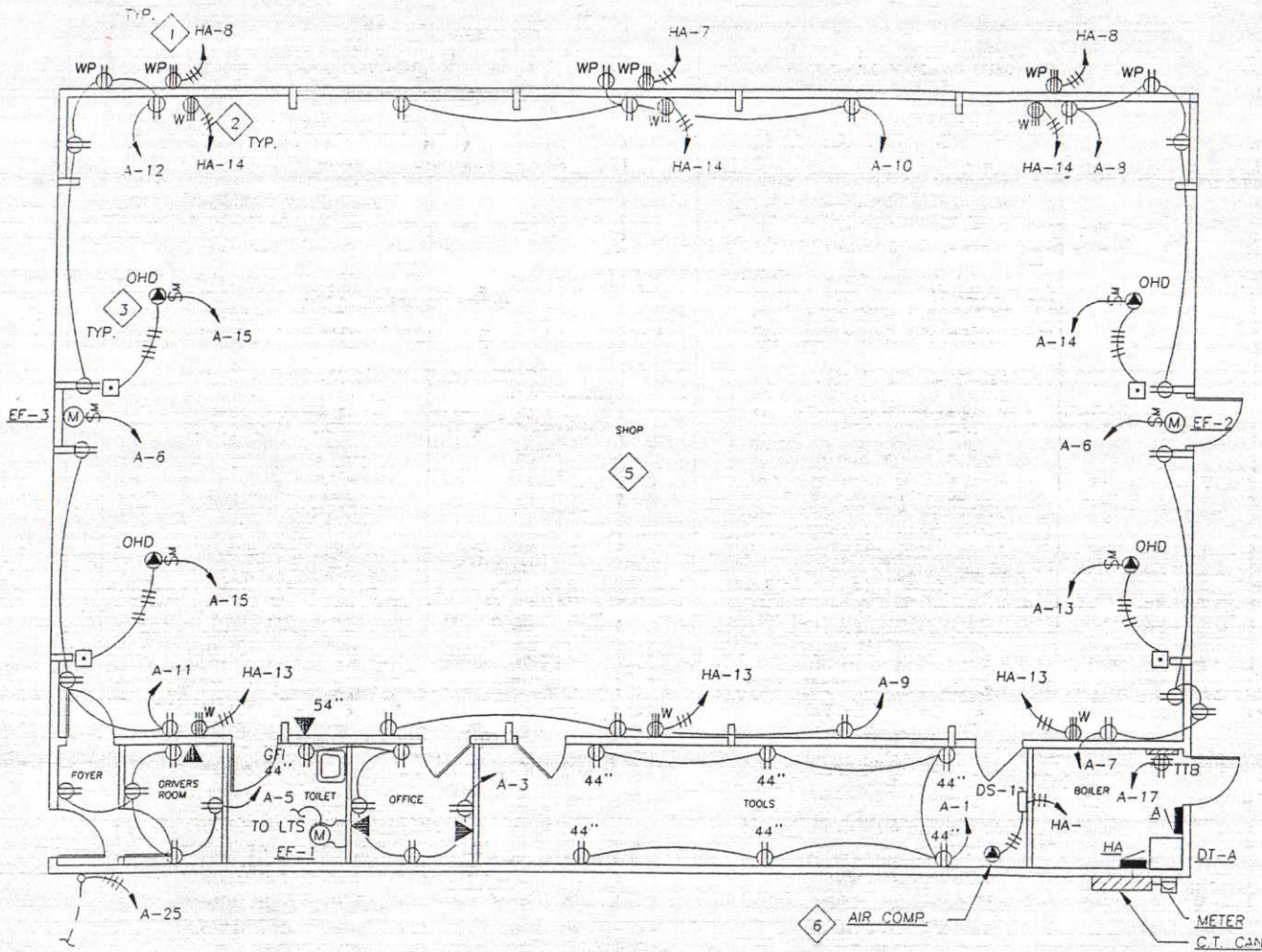
see sheet ONE for elevations
fire hydrant BM.

assume elevation 100.00 top bolt on cap



WORK NOTES:

- 1 RADIAL ARM SAW OUTLET. PROVIDE WP RECEPTACLE MATCHING CORD CAP ON OWNER'S EQUIPMENT.
- 2 WELDER OUTLET. PROVIDE RECEPTACLE MATCHING CORD CAP ON OWNER'S EQUIPMENT.
- 3 VERIFY OVERHEAD DOOR OPERATOR LOCATION AND REQUIREMENTS WITH EQUIPMENT SUPPLIER.
- 4 PROVIDE NEW UNDERGROUND FEEDER FROM NEW BUILDING TO EXISTING POLE MOUNTED LIFT STATION DISCONNECT, STARTER AND CIRCUIT BREAKERS. PROVIDE NEW GROUND FOR EQUIPMENT PER NEC.
- 5 ALL OUTLETS IN SHOP AREA SHALL BE GFI PROTECTED AND MOUNTED 44" AFF. AREA FROM FLOOR UP 18" IS CLASSIFIED AS CLASS 1, DIVISION 2. ALL WIRING AND EQUIPMENT INSTALLED OR USED IN THIS AREA SHALL BE RATED AND APPROVED FOR HAZARDOUS LOCATION USE. COMPLY WITH NEC ARTICLE 500 REQUIREMENTS FOR CONDUIT SEALS, GRC, ETC. MOUNT AT 44" AFF.
- 6 OWNER SUPPLIED AIR COMPRESSOR. VERIFY CONNECTIONS WITH OWNER PRIOR TO ROUGH-IN.

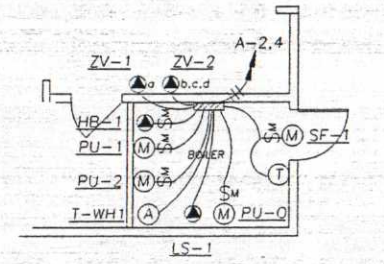


1 FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH

NOTE:

1. PROVIDE 2" CONDUIT FOR TELEPHONE SERVICE. 2' X 4' 3/4" PLYWOOD TELEPHONE TERMINAL BOARD. #6 COPPER GROUND FOR WIRING BY OWNER. VERIFY SERVICE REQUIREMENTS WITH UTILITY CO. RUN 3/4" C FROM EACH TELEPHONE OUTLET TO THE TTB.

STATION AND TER.



2 PARTIAL FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH

NOTE:

1. SEE CONTROL WIRING DIAGRAMS. ALSO SEE MECHANICAL PLANS FOR THERMOSTAT LOCATIONS.

Timberweld TRUCK SHOP

May 22, 1995

MATERIALS AND PROCEDURES SPECIFICATION:

1. Concrete: All concrete for foundations to be 3000 psi
All slabs on grade to be 4000 psi
Rebar to be grade 60
2. Lumber: All glulam material & hardware furnished by
TIMBERWELD

All framing lumber to be DF&L #2 or better
Use standard joist hangers. Nailing per UBC table "Nailing
Schedule".

Plywood wall sheathing to be 1/2" CDX or OSB. This is to
cover all walls of the shop area up to 8 feet above floor.
3. Metal siding and roofing: These to be of a standard
manufacture for intended use. 26 gage, 36" wide lay-up,
80,000 psi yield strength, galvanized, color coated. A
product such as Granite City, Alumax including all fasteners,
ridge cap, rake, eave trim, base guard, drip cap or other
items to produce a complete exterior weather protected cover.
Color to be selected by TIMBERWELD. Eave gutters and down
spouts to be provided on the north and south eaves.
4. Site preparation: Vegetation will be removed and compacted
granular fill placed over the building site and graded away
from the wall lines at a slope of about 1" per foot. Assume
that fill will be 12" under floor slab.
5. Plumbing, heating and electrical by others. Radiant heat
tubes will be placed in the concrete floor slab. This should
be allowed for in the cost of the slab work. Tubes will be
furnished and installed by others.
6. Gypsum board sheathing to be installed on all walls and
ceilings in the north 8 ft. wide appendage. This includes the
foyer, driver room, toilet, tools, office and boiler room.
Thickness to be 5/8". Furnished by TIMBERWELD.
7. Doors and windows are not yet defined. Overhead doors to
be Overhead door company or similar overhead doors. Exterior
personnel doors to be 30x68 metal. Interior doors to be 30x68
industrial quality doors. Allow for one window each in toilet
and office. These to be set high in the exterior wall.
8. Obtain all permits necessary to construct building.
Comply with Montana Energy Code for R-values and foundation
and floor slab insulation around perimeter.

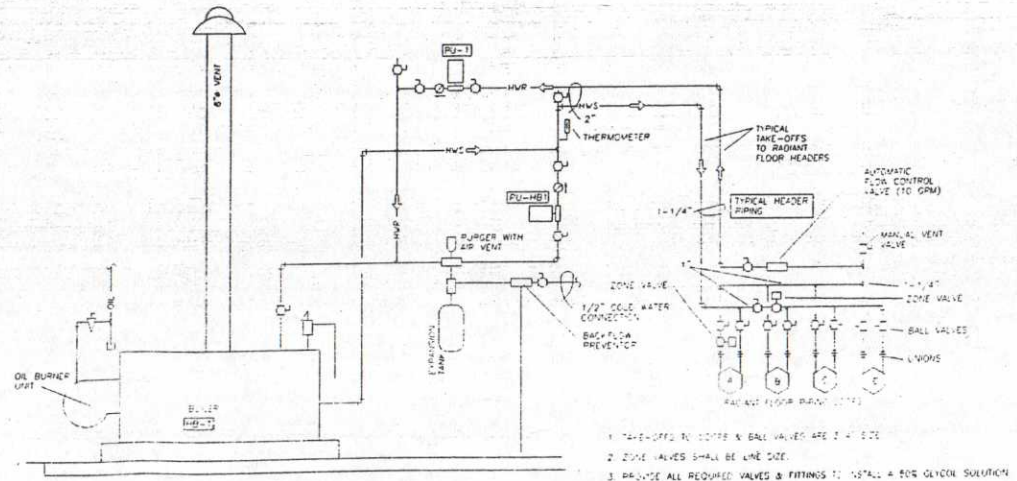
Note: R20 roof insulation is required.

SPECIFICATIONS

CODES & PERMITS:
ALL WORK SHALL CONFORM TO APPLICABLE CODES INCLUDING THE UNIFORM BUILDING CODE, UNIFORM FIRE ALARMS CODE, UNIFORM MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER APPLICABLE RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.

DRAWING & MEAS. REMARKS:
THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDENSATE PIPING, SIZES AND LOCATIONS. SEE ANY SCALE DRAWINGS TO OBTAIN EXACT SIZES.

ITEM	DESCRIPTION
BURNER (MB-1)	EQUAL TO LOCKHART MODEL NO. 98L 331-49 PROPANE WITH 5744Y 1" NOD & MODULATING GAS VALVE, 228 MBH IN 154.0 VEH. OUT & AUTOMATIC VENT DAMPER. PROVIDE & INSTALL 2" AIR-GAS SENSOR IN BOILER ROOM WITH OUTSIDE MOTOR-DRIVE SHUT-OFF VALVE.
DOMESTIC WATER HEATER	EQUAL TO AMTRON MODEL NO. WH70, 41 GALLONS, PRESSURE RELIEF VALVE, 104 GPM @ 99F RISE WITH 505M @ 150F BOILER WATER. INITIAL SETTING SHALL BE 125F.
DOMESTIC WATER STORAGE TANK	EQUAL TO CRANFORD NO. 82724, 80 GAL. WITH-OUT ELECTRICAL ELEMENTS CONNECTED TO POWER. PROVIDE T & P RELIEF VALVE & CONNECTION TO THE OWNER PROVIDED SOLAR HEAT EXCHANGER.
EXPANSION TANK & AIR PURGER	EQUAL TO AMTRON EXTROL MODEL NO. 112 (TANK WITH FILL-TRO.) & NO. 445 - 1-1/2" PURGER WITH #700 AUTOMATIC AIR VENT.
PUMP (PU-1)	EQUAL TO GRUNDOS NO. UP28-96F, 17 GPM @ 11' HEAD, 1/2" HP - 2450 RPM, 120V, 2 AMPS.
PUMP (PU-2)	EQUAL TO GRUNDOS NO. UP28-96F, 14 GPM @ 15' HEAD, 1/2" HP - 2450 RPM, 120V, 2 AMPS.
PUMP (PU-3)	EQUAL TO GRUNDOS NO. UP15-189S, 2 GPM @ 6' HEAD, 1/25 HP, 2050 RPM, 120V, 1 AMPS.
MIXING VALVE	EQUAL TO WATTS NO. N170-M1, 1-1/2" SIZE, 130F - 180F RANGE. INITIAL SETTING SHALL BE 140F.
TEMPERING VALVE	EQUAL TO WATTS NO. N170-M1, 3/4" SIZE, 130F - 180F RANGE. INITIAL SETTING SHALL BE 130F.
BACKFLOW PREVENTER	EQUAL TO WATTS NO. 0090T-1/2" SIZE.
AUTOMATIC FLOW CONTROL VALVE	EQUAL TO GRISWOLD MODEL NO. 3551L, COPPER SHEAT, 3/4" SIZE.
ZONE VALVES & THERMOSTATS	EQUAL TO HONEYWELL NO. V8043F1036-3/4" & V8043F1051-1" WITH END SWITCH & T873855 T-STAT, 24 VOLT. PROVIDE TRANSFORMER CAPACITY FOR VALVES & THERMOSTATS.
FIN RADIATION	EQUAL TO HEATIRN-AMERICAN, 370 BTUH/FT @ 150F OF LENGTHS WITH ACCESSORIES AS SHOWN ON DRAWINGS.
HEATING PIPING & INSULATION	ALL HEATING PIPING OUT OF SLAB SHALL BE TYPE 7M COPPER. RADIANT FLOOR PIPING LOOPS SHALL BE EQUAL TO VANGUARD POLYETHYLENE, 1/2" SIZE. LOOP 0 (FOR GARAGE) SHALL BE 3/4" SIZE. INSULATE ALL PIPING IN BOILER ROOM.
BOILER & PUMP CONTROL SEQUENCE	THE OPENING OF ANY HEATING ZONE VALVE (THRU THE VALVE END SWITCH) SHALL CAUSE PUMP PU-1, PU-2 & THE BOILER TO OPERATE. THE OPENING OF THE DOMESTIC WATER HEATER ZONE VALVE SHALL CAUSE PUMP PU-1 & THE BOILER TO OPERATE. WHEN THE BOILER IS ENABLED IT SHALL OPERATE TO MAINTAIN THE BOILER SET POINT.



1
M
HEATING SYSTEM PIPING DIAGRAM
 NO SCALE



SPECIFICATIONS

CODES & PERMITS:
ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING THE UNIFORM BUILDING CODE, UNIFORM PLUMBING CODE, UNIFORM MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER ATTENDING RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.

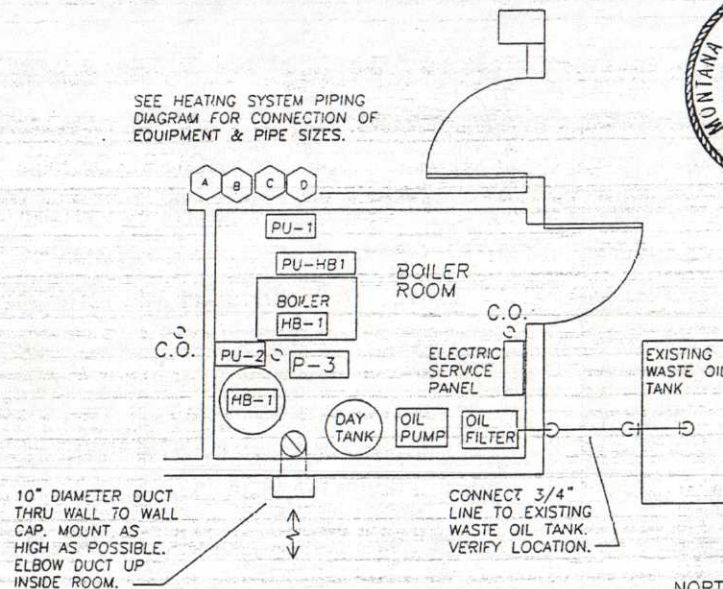
DRAWINGS & MEASUREMENTS:
THE DRAWINGS INDICATE GENERAL ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDUITS, PIPING, SIZES AND LOCATIONS. DO NOT SCALE DRAWINGS TO OBTAIN EXACT DIMENSIONS. PROVIDE ALL NECESSARY PARTS & COMPONENTS FOR A COMPLETE INSTALLATION EVEN IF NOT SPECIFICALLY SHOWN OR SPECIFIED.

ITEM	DESCRIPTION
BOILER (HB-1)	EQUAL TO BUDERUS MODEL NO. 2.04, SIZE 40, WITH WEDCO WASTE OIL BURNER, 150 WHP OUTPUT, 120 VOLT, 15 AMPS & PRESSURE RELIEF VALVE. PROVIDE ALL COMPONENTS & CONTROLS FOR THE INSTALLATION & OPERATION OF THE UNIT. PROVIDE 7" DIAMETER TYPE "L" VENT THRU ROOF & TERMINATE @ 24" ABOVE FINISHED FLOOR WITH CAP. SUPPORT FROM WALL ABOVE.
DOMESTIC WATER HEATER (WH-1)	EQUAL TO AMTROL MODEL NO. WH6, 26 GALLONS, PRESSURE RELIEF VALVE, 85 GPM @ 90F RISE WITH 50PM OF 150F BOILER WATER. INITIAL SETTING SHALL BE 125F.
WASTE OIL DAY TANK, FILTER & FLOAT SWITCH	TANK: GRANGER NO. 29307, 15 GALLON POLYETHYLENE. PROVIDE ANY ADDITIONAL OPENINGS & FITTINGS FOR CONNECTIONS. FILTER: GRANGER NO. 28995 WITH NO. 28986 EXTRA REPLACEMENT CARTRIDGE. FLOAT SWITCH: GRANGER NO. 24553, 60 WATTS, .5 AMPS @ 110 VAC.
EXPANSION TANK & AIR PURGER	EQUAL TO AMTROL EXTROL MODEL NO. 112 (TANK WITH FILL-TROL) & NO. 445 - 1-1/2" PURGER WITH #700 AUTOMATIC AIR VENT.
PUMP (PU-HB1)	EQUAL TO GRUNDOSF NO. UP26-95F, 15 GPM @ 12' HEAD, 1/12 HP, 2452 RPM, 120V, 2 AMPS.
PUMP (PU-1)	EQUAL TO GRUNDOSF NO. UP43-75F, 15 GPM @ 19' HEAD, 1/8 HP, 3150 RPM, 120V, 2 AMPS.
PUMP (PU-2)	EQUAL TO GRUNDOSF NO. UP15-42F, 5 GPM @ 12' HEAD, 1/25 HP, 1600 RPM, 120V, 1 AMPS.
EXHAUST FAN (EF-1)	EQUAL TO BIRAN NO. 509, WALL FAN, 180 CFM @ 120V, 1.5 AMPS.
EXHAUST FAN (EF-2 & 3)	EQUAL TO GRANGER NO. 4C363, 3350 CFM @ .25" S.P., 12V, 1/3 HP, 5.3 AMPS, 24" DIAMETER, PROVIDE NO. 3C308 DAMPER WITH NO. 2C331 DAMPER MOTOR.
SUPPLY FAN (SF-1)	EQUAL TO GRANGER NO. 3C579, 490 CFM @ .5" S.P., 1100 RPM, 1/8 HP, 120V. PROVIDE NO. 2E158 COOLING THERMOSTAT.
BACKFLOW PREVENTER	EQUAL TO WATTS NO. 0090T-1/2" SIZE.
ZONE VALVES & THERMOSTATS	EQUAL TO HONEYWELL NO. VB04JF1038-3/4" & VB04JF1051-1" WITH END SWITCH & 787F3855 T-STAT, 24 VOLT. PROVIDE TRANSFORMER CAPACITY FOR VALVES & THERMOSTATS.
WASTE OIL PUMP	EQUAL TO SUNTEC INDUSTRIES MODEL NO. A2RA-7736, 2.5 GPM @ 30 PSL 1/8 HP, 120V. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS WITH FLOATING PICK-UP IN THE EXISTING WASTE OIL TANK.
HEATING PIPING & INSULATION	ALL HEATING PIPING OUT OF SLAB SHALL BE TYPE "M" COPPER. RADIANT FLOOR PIPING LOOPS SHALL BE EQUAL TO VANGUARD POLYBUTYLENE, 3/4" SIZE. INSULATE ALL PIPING IN BOILER ROOM.
BOILER & PUMP CONTROL SEQUENCE	THE OPENING OF ANY HEATING ZONE VALVE (THRU THE VALVE END SWITCH) SHALL CAUSE PUMP PU-1, PU-HB1 & ENABLE THE BOILER TO OPERATE. THE OPERATION OF THE DOMESTIC WATER HEATER PUMP PU-2 SHALL CAUSE PUMP PU-HB1 & ENABLE THE BOILER TO OPERATE. WHEN THE BOILER IS ENABLED IT SHALL OPERATE TO MAINTAIN THE BOILER SET POINT.

PLUMBING FIXTURE SCHEDULE

PLAN CODE	ITEM	MFG. & MODEL NO.	MATERIAL & FINISH	TRIM	ROUGH-IN SIZE			REMARKS
					CW	HW	VENT	
P-1	WATER CLOSET	AM. STO. / 2174.139	VITREOUS CHINA	FLUSH TANK 1.6 GPF	1/2"	-	2"	WHITE / OPEN FRONT SEAT
P-2	LAVATORY	AM. STO. / 0221.028	VITREOUS CHINA	FAUCET / 2305.449	1/2"	1/2"	1-1/4"	WHITE / GRID DRAIN
P-3	FLOOR DRAIN	SCHEDULE 40	PVC	STRAINER / NO TRAP	-	-	2"	CONNECT TO INLET OF INTERCEPTOR
P-4	OIL INTERCEPTOR	J.R. SMITH 8510	COATED CAST IRON	FLOW CONTROL FITTING	-	-	2"	MOUNT WITH 1" OIL DRAW-OFF LINE
P-5	HOSE BIBB	CHICAGO 305 VB	ROUGH	VACUUM BREAKER	1/2"	1/2"	-	MOUNT @ 48" ABOVE FLOOR

SEE HEATING SYSTEM PIPING DIAGRAM FOR CONNECTION OF EQUIPMENT & PIPE SIZES.

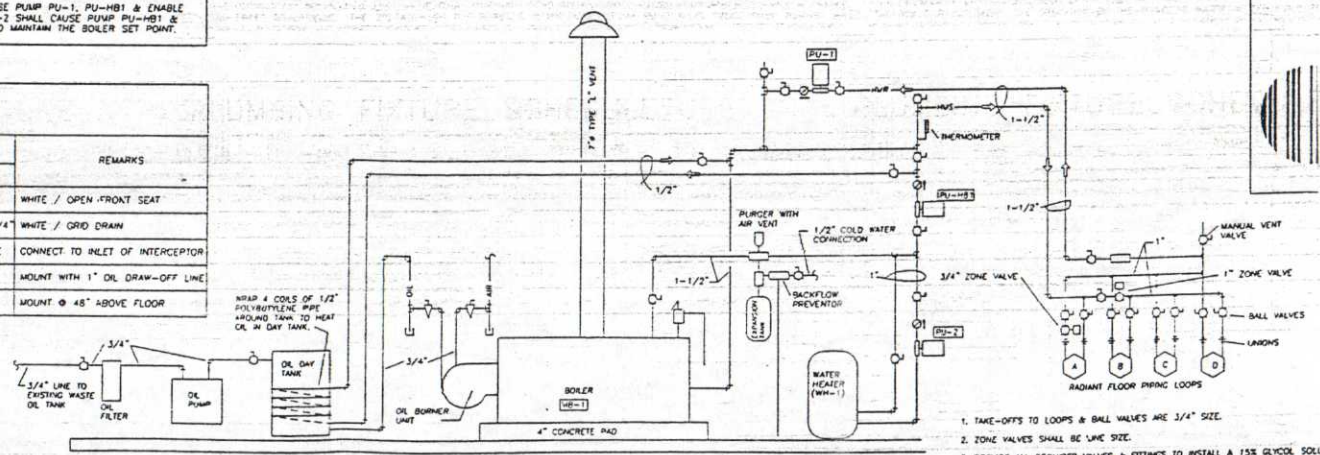


1 LARGE SCALE BOILER ROOM PLAN
SCALE 1/4" = 1'-0"



© 1995

TIMBERWELD TRUCK SHOP



2 HEATING SYSTEM PIPING DIAGRAM
NO SCALE

SPECIFICATIONS

CODES & PERMITS:
ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING THE UNIFORM BUILDING CODE, UNIFORM PLUMBING CODE, UNIFORM MECHANICAL CODE AND NATIONAL GAS CODE. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH LOCAL, STATE AND OTHER ATTENDING RULES AND REGULATIONS AND BE SUBJECT TO THE INSPECTIONS OF THESE DEPARTMENTS. OBTAIN ALL REQUIRED PERMITS.

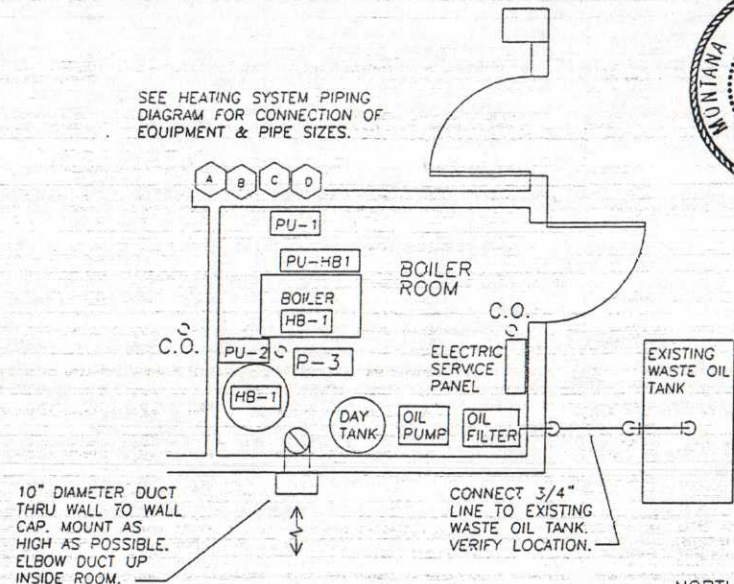
DRAWINGS & MEASUREMENTS:
THE DRAWINGS INDICATE GENERAL ARRANGEMENTS OF EQUIPMENT, DUCTS, CONDUITS, PIPING, SIZES AND LOCATIONS. DO NOT SCALE DRAWINGS TO OBTAIN EXACT DIMENSIONS. PROVIDE ALL NECESSARY PARTS & COMPONENTS FOR A COMPLETE INSTALLATION EVEN IF NOT SPECIFICALLY SHOWN OR SPECIFIED.

ITEM	DESCRIPTION
BOILER (HB-1)	EQUAL TO BUDERUS MODEL NO. 2.04, SIZE 40, WITH WEDCO WASTE OIL BURNER, 150 WPM OUTPUT, 120 VOLT, 15 AMPS & PRESSURE RELIEF VALVE. PROVIDE ALL COMPONENTS & CONTROLS FOR THE INSTALLATION & OPERATION OF THE UNIT. PROVIDE 7" DIAMETER TYPE "I" VENT THRU ROOF & TERMINATE @ 24" ABOVE FINISHED FLOOR WITH CAP. SUPPORT FROM WALL ABOVE.
DOMESTIC WATER HEATER (WH-1)	EQUAL TO AMTROL MODEL NO. WHS, 26 GALLONS, PRESSURE RELIEF VALVE, 85 GPM @ 90° RISE WITH 50PM OF 150F BOILER WATER. INITIAL SETTING SHALL BE 125F.
WASTE OIL DAY TANK, FILTER & FLOAT SWITCH	TANK: GRANGER NO. 2P307, 15 GALLON POLYETHYLENE. PROVIDE ANY ADDITIONAL OPENINGS & FITTINGS FOR CONNECTIONS. FILTER: GRANGER NO. 2P695 WITH NO. 2E88 EXTRA REPLACEMENT CARTRIDGE. FLOAT SWITCH: GRANGER NO. 2A553, 60 WATTS, .5 AMPS @ 110 VAC.
EXPANSION TANK & AIR PURGER	EQUAL TO AMTROL EXTROL MODEL NO. 112 (TANK WITH FILL-TROL) & NO. 445 - 1-1/2" PURGER WITH #700 AUTOMATIC AIR VENT.
PUMP (PU-HB1)	EQUAL TO GRUNDFOS NO. UP26-95F, 15 GPM @ 12' HEAD, 1/12 HP, 2452 RPM, 120V, 2 AMPS.
PUMP (PU-1)	EQUAL TO GRUNDFOS NO. UP43-75F, 15 GPM @ 19' HEAD, 1/8 HP, 3150 RPM, 120V, 2 AMPS.
PUMP (PU-2)	EQUAL TO GRUNDFOS NO. UP15-42T, 5 GPM @ 12' HEAD, 1/25 HP, 1600 RPM, 120V, 1 AMPS.
EXHAUST FAN (EF-1)	EQUAL TO BROAN NO. 509, WALL FAN, 180 CFM, 120V, 1.5 AMPS.
EXHAUST FAN (EF-2 & 3)	EQUAL TO DRANGER NO. 4C363, 3350 CFM @ .25" S.P., 12V, 1/3 HP, 5.3 AMPS, 24" DIAMETER. PROVIDE NO. 3C308 DAMPER WITH NO. 2C831 DAMPER MOTOR.
SUPPLY FAN (SF-1)	EQUAL TO GRANGER NO. 3C579, 490 CFM @ .5" S.P., 1100 RPM, 1/8 HP, 120V. PROVIDE NO. 2E158 COOLING THERMOSTAT.
BACKFLOW PREVENTER	EQUAL TO WATTS NO. 0090T-1/2" SIZE.
ZONE VALVES & THERMOSTATS	EQUAL TO HONEYWELL NO. V8043F1036-3/4" & V8043F1051-1" WITH END SWITCH & 787F3855 T-STAT, 24 VOLT. PROVIDE TRANSFORMER CAPACITY FOR VALVES & THERMOSTATS.
WASTE OIL PUMP	EQUAL TO SUNTEC INDUSTRIES MODEL NO. A2RA-7736, 2.5 GPM @ 30 PSI, 1/8 HP, 120V. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS WITH FLOATING PICK-UP IN THE EXISTING WASTE OIL TANK.
HEATING PIPING & INSULATION	ALL HEATING PIPING OUT OF SLAB SHALL BE TYPE "M" COPPER. RADIANT FLOOR PIPING LOOPS SHALL BE EQUAL TO VANGUARD POLYBUTYLENE, 3/4" SIZE. INSULATE ALL PIPING IN BOILER ROOM.
BOILER & PUMP CONTROL SEQUENCE	THE OPENING OF ANY HEATING ZONE VALVE (THRU THE VALVE END SWITCH) SHALL CAUSE PUMP PU-1, PU-HB1 & ENABLE THE BOILER TO OPERATE. THE OPERATION OF THE DOMESTIC WATER HEATER PUMP PU-2 SHALL CAUSE PUMP PU-HB1 & ENABLE THE BOILER TO OPERATE. WHEN THE BOILER IS ENABLED IT SHALL OPERATE TO MAINTAIN THE BOILER SET POINT.

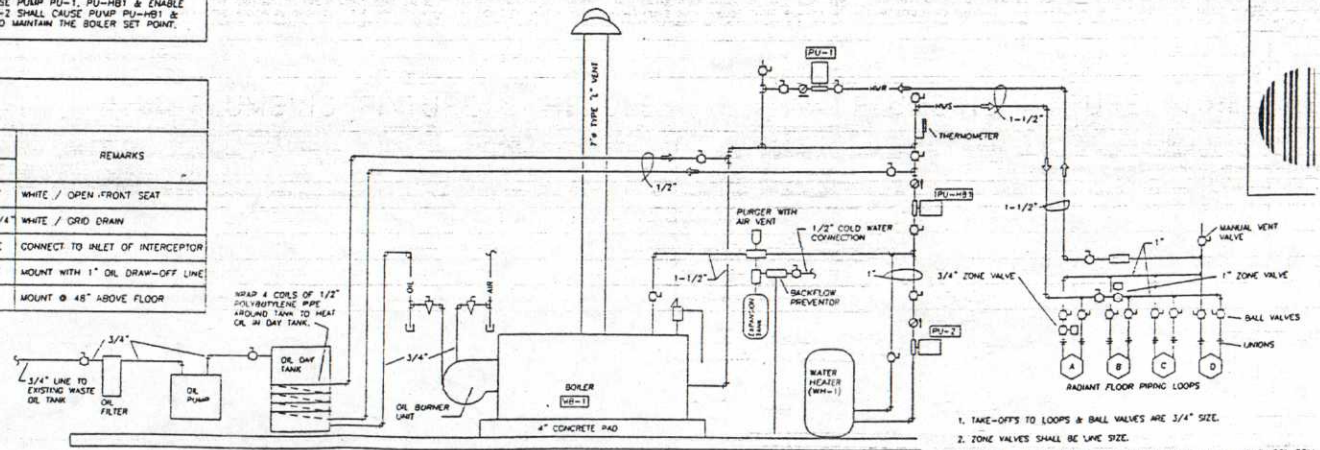
PLUMBING FIXTURE SCHEDULE

PLAN CODE	ITEM	MFG. & MODEL NO.	MATERIAL & FINISH	TRIM	ROUGH-IN SIZE			REMARKS
					CW	HW	VENT	
P-1	WATER CLOSET	AM. STD. / 2174.139	VITREOUS CHINA	FLUSH TANK 1.6 GPF	1/2"	-	2"	WHITE / OPEN FRONT SEAT
P-2	LAVATORY	AM. STD. / 0321.026	VITREOUS CHINA	FAUCET / 2385.449	1/2"	1/2"	1-1/4"	WHITE / GRID DRAIN
P-3	FLOOR DRAIN	SCHEDULE 40	PVC	STRAINER / NO TRAP	-	-	2"	CONNECT TO INLET OF INTERCEPTOR
P-4	OIL INTERCEPTOR	J.R. SMITH 8510	COATED CAST IRON	FLOW CONTROL FITTING	-	-	2"	MOUNT WITH 1" OIL DRAW-OFF LINE
P-5	HOSE BIBB	CHICAGO 305 VB	ROUGH	VACUUM BREAKER	1/2"	1/2"	-	MOUNT @ 48" ABOVE FLOOR

SEE HEATING SYSTEM PIPING DIAGRAM FOR CONNECTION OF EQUIPMENT & PIPE SIZES.



1 LARGE SCALE BOILER ROOM PLAN
SCALE: 1/4" = 1'-0"



2 HEATING SYSTEM PIPING DIAGRAM
NO SCALE

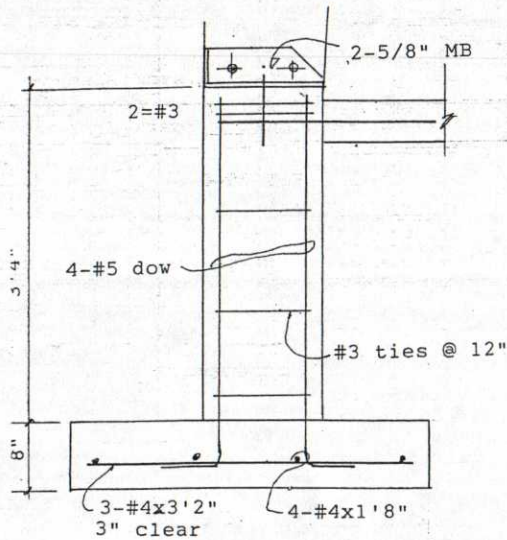
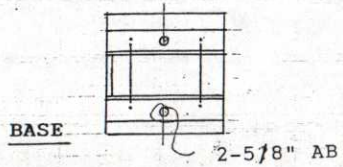
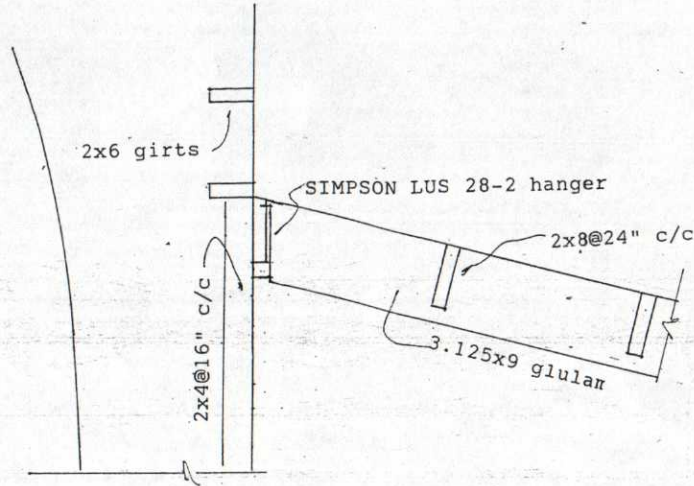
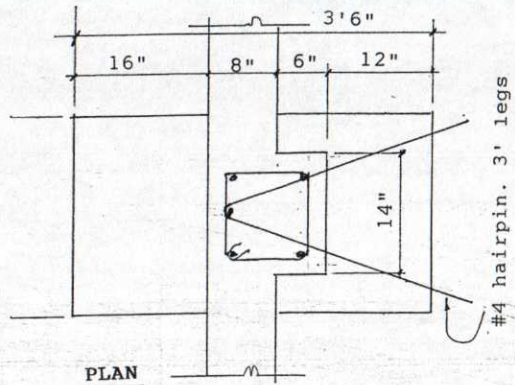
- TAKE-OFFS TO LOOPS & BALL VALVES ARE 3/4" SIZE.
- ZONE VALVES SHALL BE LARGEST SIZE.
- PROVIDE ALL REQUIRED VALVES & FITTINGS TO INSTALL A 15% GLYCOL SOL.



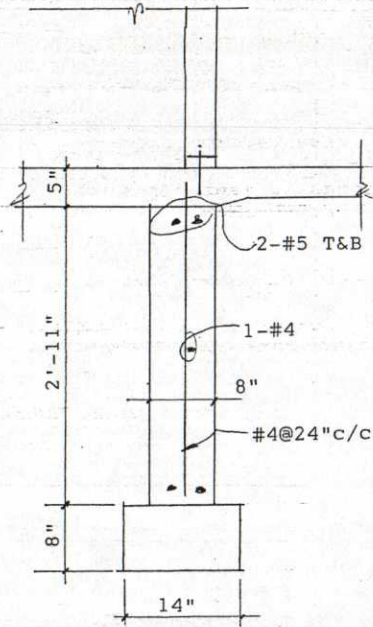
© 1995

TIMBERWELD TRUCK SHOP

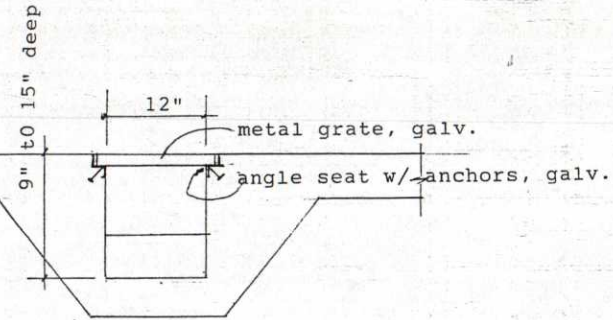




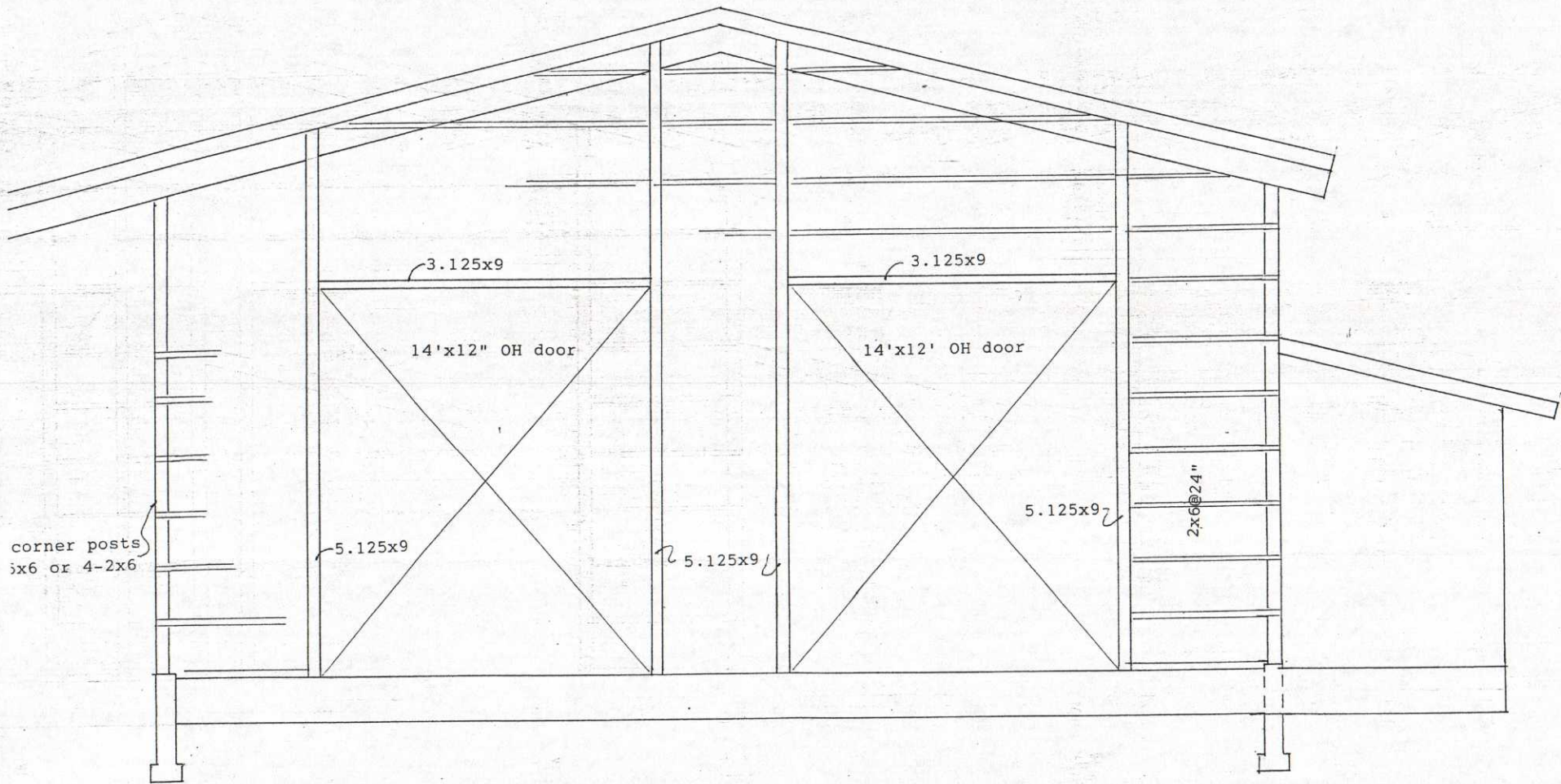
FRAME FOUNDATION



LOW ROOF SECTION
3/4"=1'0"



TRENCH DRAIN
3/4"=1'0"



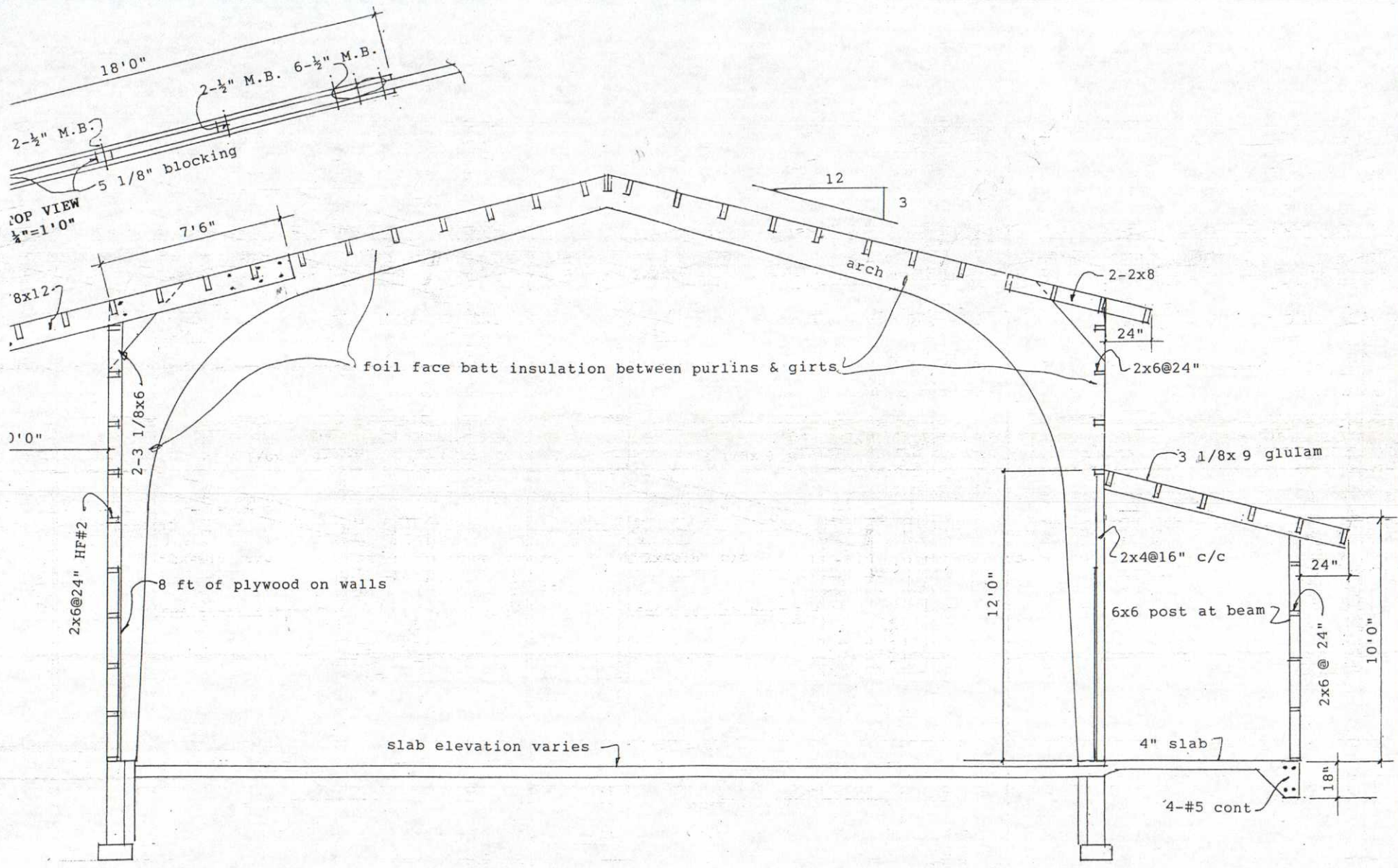
END WALL ELEVATION
 $\frac{1}{8}'' = 1'0''$

date
 4/13/95
 revised

HURLBUT ENGINEERING
 718 RIMROCK ROAD
 BILLINGS, MONTANA
 (406) 252-5087

sheet
 FIVE

TIMBERWELD TRUCK SHOP
 COLUMBUS MONTANA
 project S029501



BUILDING SECTION
1/4"=1'0"

sheet
FOUR

HURLBUT ENGINEERING
719 RIMROCK ROAD
BILLINGS, MONTANA
(406) 252-5887

date
4/13/95
revised

TIMBERWELD TRUCK SHOP
COLUMBUS, MONTANA
project S029501

72'

2-3.125x12 glulams

3.125x12

ridge

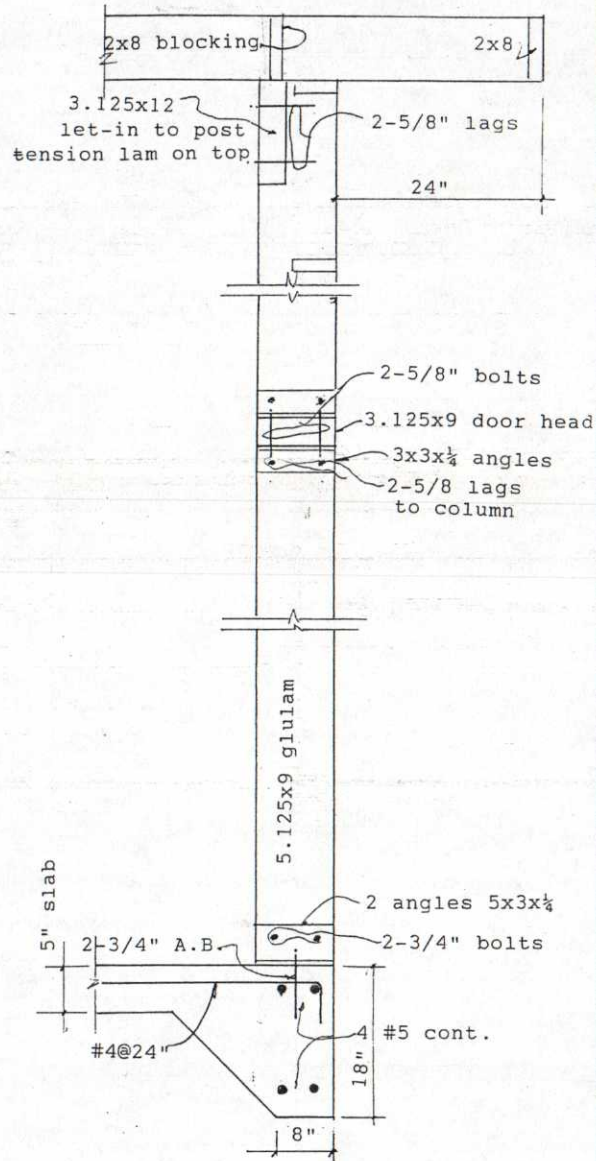
glulam frame

2x8@24" DFL#2

3.1215x9 glulam

ROOF FRAMING PLAN

1/8"=1'0"



END WALL SECTION

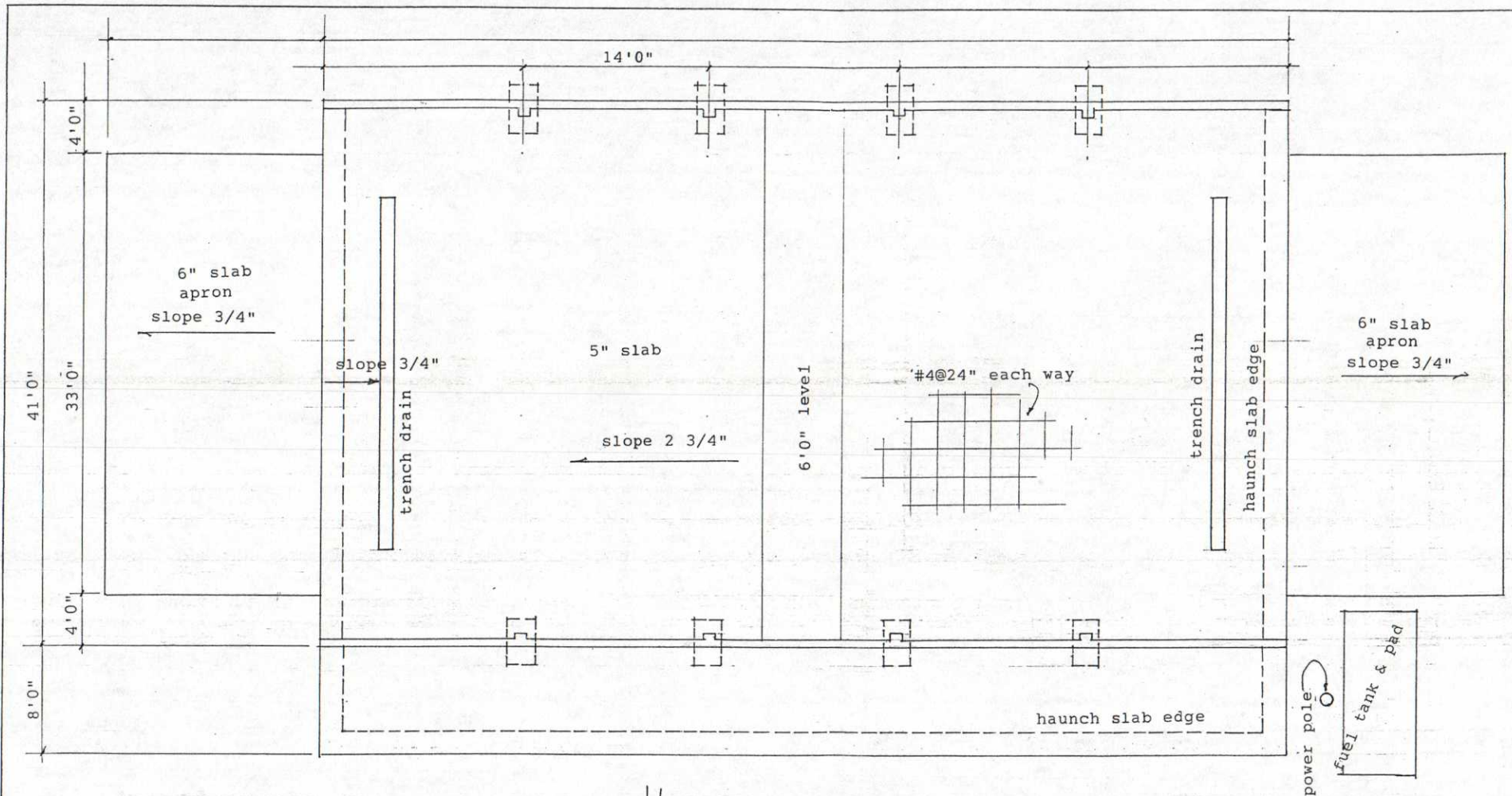
3/4"=1'0"

sheet
THREE

MURLEUT ENGINEERING
719 RIMROCK ROAD
BILLINGS, MONTANA
(406) 232-5667

date
4/13/95
revised

TIMBERWELD TRUCK SHOP
COLUMBUS, MONTANA
project S029501



FOUNDATION PLAN

1/8"=1'0"

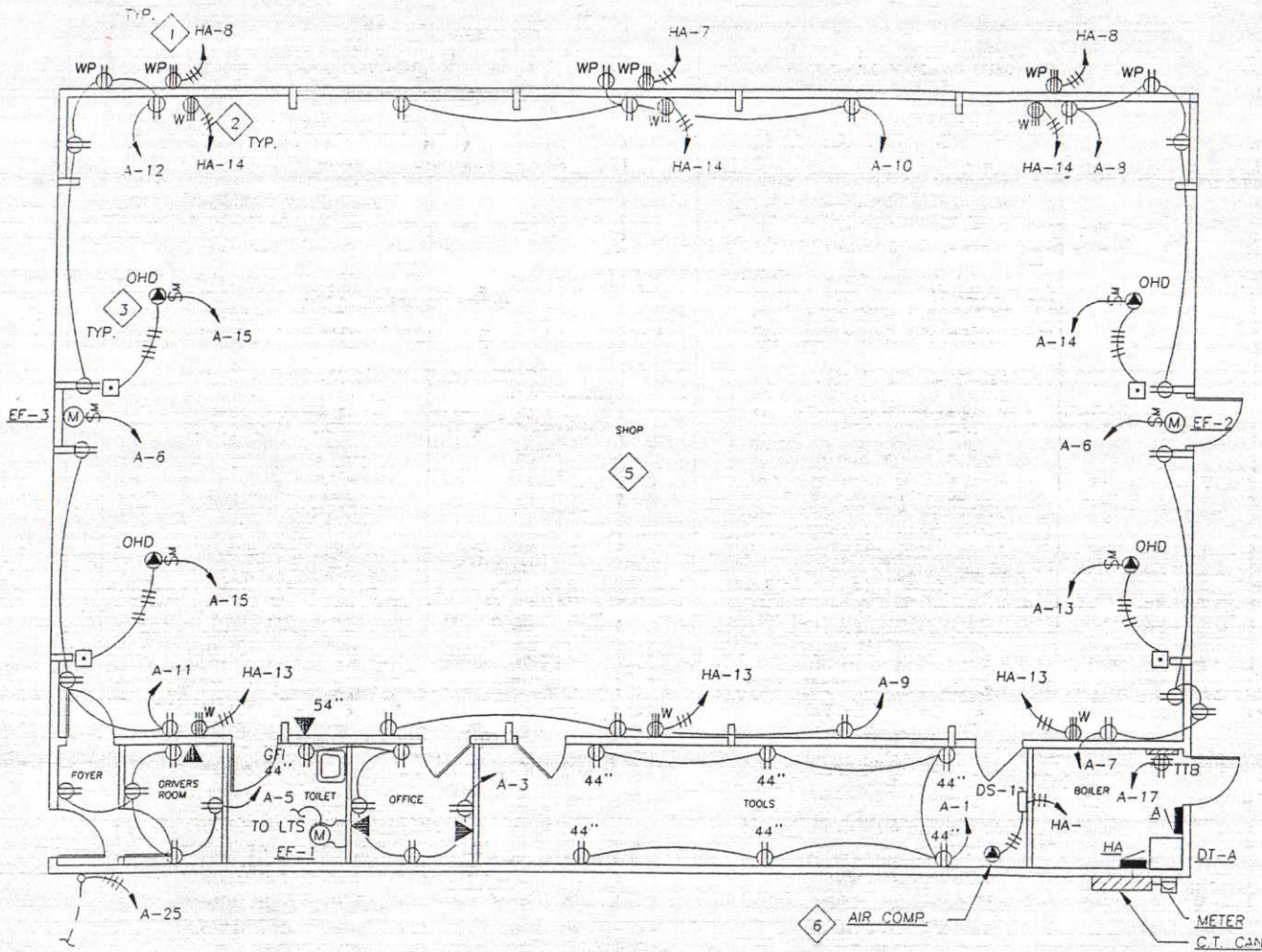
see sheet ONE for elevations
fire hydrant BM.

assume elevation 100.00 top bolt on cap



WORK NOTES:

- 1 RADIAL ARM SAW OUTLET. PROVIDE WP RECEPTACLE MATCHING CORD CAP ON OWNER'S EQUIPMENT.
- 2 WELDER OUTLET. PROVIDE RECEPTACLE MATCHING CORD CAP ON OWNER'S EQUIPMENT.
- 3 VERIFY OVERHEAD DOOR OPERATOR LOCATION AND REQUIREMENTS WITH EQUIPMENT SUPPLIER.
- 4 PROVIDE NEW UNDERGROUND FEEDER FROM NEW BUILDING TO EXISTING POLE MOUNTED LIFT STATION DISCONNECT, STARTER AND CIRCUIT BREAKERS. PROVIDE NEW GROUND FOR EQUIPMENT PER NEC.
- 5 ALL OUTLETS IN SHOP AREA SHALL BE GFI PROTECTED AND MOUNTED 44" AFF. AREA FROM FLOOR UP 18" IS CLASSIFIED AS CLASS 1, DIVISION 2. ALL WIRING AND EQUIPMENT INSTALLED OR USED IN THIS AREA SHALL BE RATED AND APPROVED FOR HAZARDOUS LOCATION USE. COMPLY WITH NEC ARTICLE 500 REQUIREMENTS FOR CONDUIT SEALS, GRC, ETC. MOUNT AT 44" AFF.
- 6 OWNER SUPPLIED AIR COMPRESSOR. VERIFY CONNECTIONS WITH OWNER PRIOR TO ROUGH-IN.

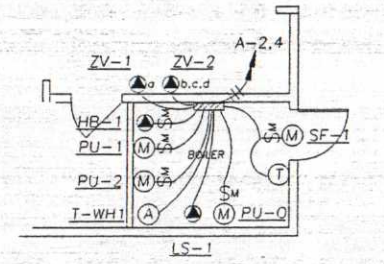


1 FLOOR PLAN
 E-2 POWER
 SCALE: 1/8"=1'-0"
 NORTH

NOTE:

1. PROVIDE 2" CONDUIT FOR TELEPHONE SERVICE. 2' X 4' 3/4" PLYWOOD TELEPHONE TERMINAL BOARD. #6 COPPER GROUND FOR WIRING BY OWNER. VERIFY SERVICE REQUIREMENTS WITH UTILITY CO. RUN 3/4" C FROM EACH TELEPHONE OUTLET TO THE TTB.

STATION AND TER.



2 PARTIAL FLOOR PLAN
 E-2 MECH ROOM POWER
 SCALE: 1/8"=1'-0"
 NORTH

NOTE:

1. SEE CONTROL WIRING DIAGRAMS. ALSO SEE MECHANICAL PLANS FOR THERMOSTAT LOCATIONS.

ELECTRICAL SPECIFICATIONS

UL site and make allowances in bid for field conditions.

AND PERMITS:
 All shall be in strict accordance with applicable codes including National Electrical Code and Uniform Building Code. Execute work in accordance with local, state, Federal, and other attending rules and regulations. The work shall be subject to the inspections of the departments. Contractor shall obtain all required permits. The work shall be performed in the best of trade practices.

AYS:
 All shall be concealed and approved for use and location.
 Dry locations - GRC, IMC, EMT.
 Wet locations - PVC.
 Underground - PVC, Schedule 40 or 80 (2 1/2" below grade minimum).
 Hazardous locations - GRC.

RINGS AND CONNECTORS:
 SRC - threaded IMC - threaded EMT - compression PVC - cement joint type. Provide approved conduit seals for all hazardous raceways.

ON AND PULL BOXES:
 Dry locations - Steel with covers.
 Wet locations - Cast aluminum.
 Size per NEC. HAZARDOUS LOCATION APPROVED WHERE REQUIRED.

HEIGHTS (except where noted otherwise or required):
 RECEPTACLES 18"; SWITCHES 48"; PANELS 72" TO TOP, OR AS NOTED.

DEVICES AND PLATES:
 Duplex outlets - Hubbell #5360 Series, 20 amp.
 FCI outlets - Hubbell #GF-5362 Series, 20 amp.
 IC switches - Hubbell #200 Series, 20 amp.
 Device color - Ivory.
 Plates - Brushed Stainless Steel.
 Shop/Work Area - Galvanized Steel.

only with THHN/THWN type installation. No aluminum conductors.
 UL listed lugs and connectors. NEC approved color coding.

ING:
 In accordance with the IEEE, Utility and Telephone Company requirements.
 Provide copper equipment grounding conductor in all recesses.

TS AND HANGERS:
 All and hangers must be UL listed and approved by local inspectors.

5:
 Hollow Masonry - toggle bolt.
 Solid Masonry - expansion bolt.
 Metal - machine screws, bolts, welding rods.
 Wood - wood screws.

LATES:
 All on all panels, disconnects. 3/16" high letters engraved with stenciling color. Fill. Device plate engraving shall be 1/8" high in white with contrasting color fill.

ECTS, TRANSFORMERS:
 All transformers, style, etc. as scheduled. Complete with type-written nameplate, circuit breakers, fusible-link internal trip, dead front, doors, UL listing, etc.

E AND METRING:
 Provide overhead service including meter base to Utility Company Standards.

IXTURES:
 All new light fixtures as scheduled complete with trims, lamps, gaskets, ballasts, etc. as scheduled.

ICAL EQUIPMENT:
 Provide connections for connection of mechanical equipment. Provide flexible connection at all motors with ground wire.

SS AND MEASUREMENTS:
 All drawings for electrical work are in part diagrammatic, in part descriptive, to convey the scope of work and indicate general arrangement of equipment, conduit, and approximate sizes and locations of equipment. Electrical trades shall follow these drawings in laying out their work, consult general construction drawings to familiarize themselves with all conditions affecting their work, and shall verify in which their work will be installed. Coordinate work with other trades as job conditions reasonably require.

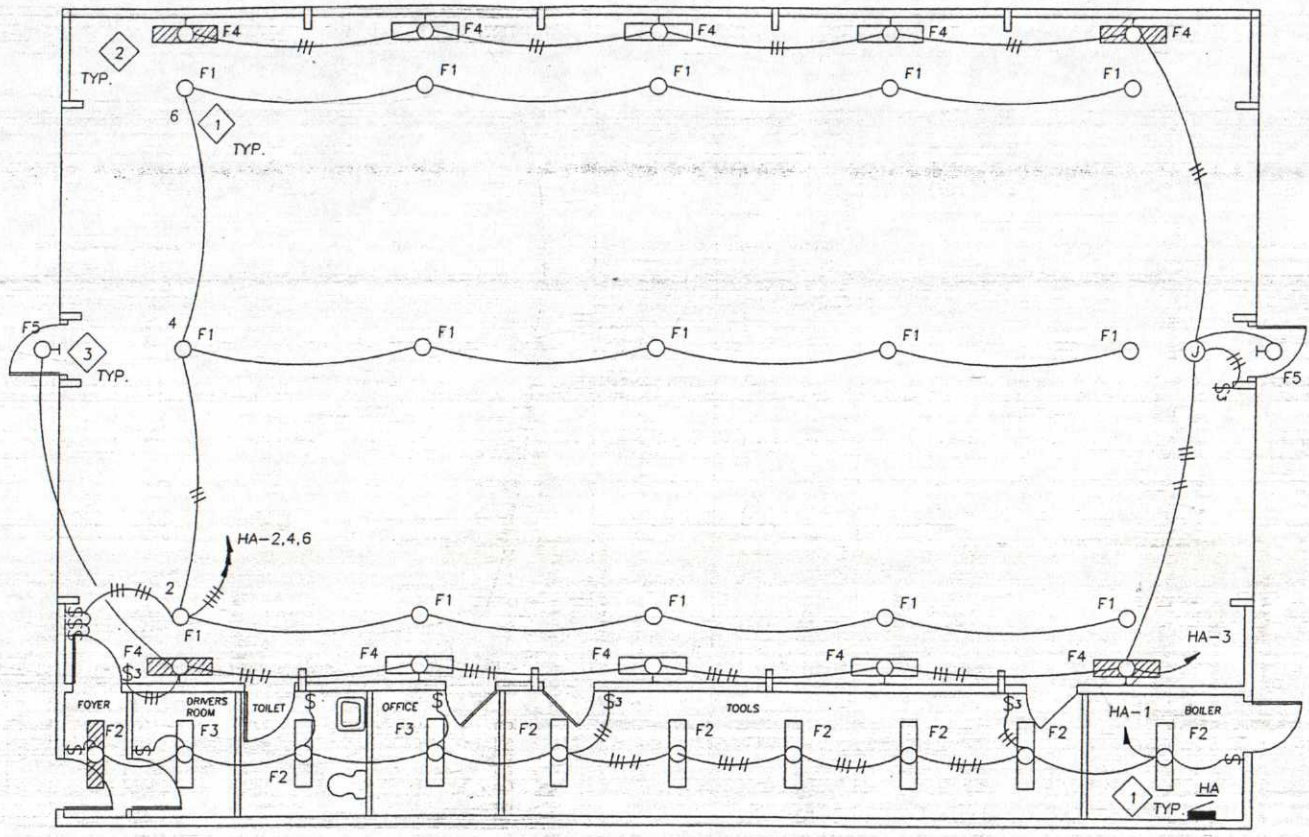
Job conditions require reasonable changes in indicated locations and arrangements, make such changes without extra cost to owner.

Drawings are not intended to be scaled for roughing in measurements and not to serve as shop drawings.

Installation details, instructions and recommendations of the manufacturer of the products used, modified to obtain the best end result, shall form the basis of attending installation of the products specified on this project except where definite and specific instructions are shown on the plans.

SUPPLIES EQUIPMENT:
 Provide electrical connections for Dener supplier equipment with Owner's specifications to be approved by Dener and Engineer.

UTILITIES:
 Connections to be approved by Dener and Engineer.



1 FLOOR PLAN
 E-1 LIGHTING SCALE: 1/8"=1'-0" NORTH

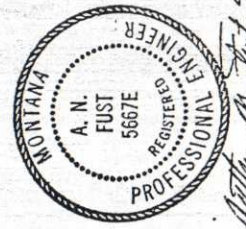
LEGEND		LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
○	CEILING OUTLET	S	SINGLE POLE SWITCH
○	WALL OUTLET	S1	THREE WAY SWITCH
□	SURFACE OR PENDANT FLUORESCENT FIXTURE	□	BRANCH CIRCUIT PANEL
⊕	JUNCTION BOX	S ₁ ○	SUBSCRIPTS INDICATE SWITCH CONTROL
⊕	DUPLEX CONVENIENCE RECEPTACLE	—	ABOVE FLOOR CIRCUIT CONCEALED AS SPECIFIED
⊕	DOUBLE DUPLEX CONVENIENCE RECEPTACLE	—	GROUND CONNECTION
⊕	SPLIT WIRED DUPLEX CONVENIENCE RECEPTACLE	—	NAME PLATE TO PANEL, NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS WITH NUMBER OF WIRES INDICATED AS FOLLOWS: ○ = 1 WIRE, ○ = 2 WIRE, ○ = 3 WIRE, ○ = 4 WIRE, ○ = 5 WIRE, ○ = 6 WIRE, ○ = 7 WIRE, ○ = 8 WIRE, ○ = 9 WIRE, ○ = 10 WIRE, ○ = 11 WIRE, ○ = 12 WIRE, ○ = 13 WIRE, ○ = 14 WIRE, ○ = 15 WIRE, ○ = 16 WIRE, ○ = 17 WIRE, ○ = 18 WIRE, ○ = 19 WIRE, ○ = 20 WIRE, ○ = 21 WIRE, ○ = 22 WIRE, ○ = 23 WIRE, ○ = 24 WIRE, ○ = 25 WIRE, ○ = 26 WIRE, ○ = 27 WIRE, ○ = 28 WIRE, ○ = 29 WIRE, ○ = 30 WIRE, ○ = 31 WIRE, ○ = 32 WIRE, ○ = 33 WIRE, ○ = 34 WIRE, ○ = 35 WIRE, ○ = 36 WIRE, ○ = 37 WIRE, ○ = 38 WIRE, ○ = 39 WIRE, ○ = 40 WIRE, ○ = 41 WIRE, ○ = 42 WIRE, ○ = 43 WIRE, ○ = 44 WIRE, ○ = 45 WIRE, ○ = 46 WIRE, ○ = 47 WIRE, ○ = 48 WIRE, ○ = 49 WIRE, ○ = 50 WIRE, ○ = 51 WIRE, ○ = 52 WIRE, ○ = 53 WIRE, ○ = 54 WIRE, ○ = 55 WIRE, ○ = 56 WIRE, ○ = 57 WIRE, ○ = 58 WIRE, ○ = 59 WIRE, ○ = 60 WIRE, ○ = 61 WIRE, ○ = 62 WIRE, ○ = 63 WIRE, ○ = 64 WIRE, ○ = 65 WIRE, ○ = 66 WIRE, ○ = 67 WIRE, ○ = 68 WIRE, ○ = 69 WIRE, ○ = 70 WIRE, ○ = 71 WIRE, ○ = 72 WIRE, ○ = 73 WIRE, ○ = 74 WIRE, ○ = 75 WIRE, ○ = 76 WIRE, ○ = 77 WIRE, ○ = 78 WIRE, ○ = 79 WIRE, ○ = 80 WIRE, ○ = 81 WIRE, ○ = 82 WIRE, ○ = 83 WIRE, ○ = 84 WIRE, ○ = 85 WIRE, ○ = 86 WIRE, ○ = 87 WIRE, ○ = 88 WIRE, ○ = 89 WIRE, ○ = 90 WIRE, ○ = 91 WIRE, ○ = 92 WIRE, ○ = 93 WIRE, ○ = 94 WIRE, ○ = 95 WIRE, ○ = 96 WIRE, ○ = 97 WIRE, ○ = 98 WIRE, ○ = 99 WIRE, ○ = 100 WIRE.
⊕	THREE PHASE POWER OUTLET (WELDER - W)	⊕	MOTOR STARTER
⊕	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE	⊕	HORSE POWER RATED DISCONNECT SWITCH
⊕	SPECIAL PURPOSE OUTLET	⊕	MOTOR
⊕	TELEPHONE OUTLET	⊕	THERMOSTAT FURNISHED UNDER DIVISION 15
⊕	METER	⊕	WEATHERPROOF
⊕	PUSH BUTTON OR CONTROL STATION	⊕	ADJUSTAT
⊕	NOTE OR WORK SYMBOL		

WORK NOTES

1 COORDINATE EXACT LOCATION TO MISS OVERHEAD DOOR RAILS, PIPES, DUCTS, ETC.

2 CROSS HATCHED LIGHT FIXTURES TO HAVE EMERGENCY BATTERY PACKS. SEE LIGHT FIXTURE SCHEDULE.

3 TYPE "F5" LIGHT FIXTURES TO OPERATE 'DUSK TO DAWN' UNDER PHOTOCELL CONTROL. ADJUST AS REQUIRED FOR PROPER OPERATION.



Arthur H. Fust 5/17/95

TIMBERWELD TRUCK SHOP
 PROJECT NO. 95-2-20
 DRAWN: HPL
 DESIGNED: HPL
 DATE: MAY 17, 1995
 REVISED: E-1

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Timberweld TRUCK SHOP

May 22, 1995

MATERIALS AND PROCEDURES SPECIFICATION:

1. Concrete: All concrete for foundations to be 3000 psi
All slabs on grade to be 4000 psi
Rebar to be grade 60
2. Lumber: All glulam material & hardware furnished by
TIMBERWELD

All framing lumber to be DF&L #2 or better
Use standard joist hangers. Nailing per UBC table "Nailing
Schedule".

Plywood wall sheathing to be 1/2" CDX or OSB. This is to
cover all walls of the shop area up to 8 feet above floor.
3. Metal siding and roofing: These to be of a standard
manufacture for intended use. 26 gage, 36" wide lay-up,
80,000 psi yield strength, galvanized, color coated. A
product such as Granite City, Alumax including all fasteners,
ridge cap, rake, eave trim, base guard, drip cap or other
items to produce a complete exterior weather protected cover.
Color to be selected by TIMBERWELD. Eave gutters and down
spouts to be provided on the north and south eaves.
4. Site preparation: Vegetation will be removed and compacted
granular fill placed over the building site and graded away
from the wall lines at a slope of about 1" per foot. Assume
that fill will be 12" under floor slab.
5. Plumbing, heating and electrical by others. Radiant heat
tubes will be placed in the concrete floor slab. This should
be allowed for in the cost of the slab work. Tubes will be
furnished and installed by others.
6. Gypsum board sheathing to be installed on all walls and
ceilings in the north 8 ft. wide appendage. This includes the
foyer, driver room, toilet, tools, office and boiler room.
Thickness to be 5/8". Furnished by TIMBERWELD.
7. Doors and windows are not yet defined. Overhead doors to
be Overhead door company or similar overhead doors. Exterior
personnel doors to be 30x68 metal. Interior doors to be 30x68
industrial quality doors. Allow for one window each in toilet
and office. These to be set high in the exterior wall.
8. Obtain all permits necessary to construct building.
Comply with Montana Energy Code for R-values and foundation
and floor slab insulation around perimeter.

Note: R20 roof insulation is required.