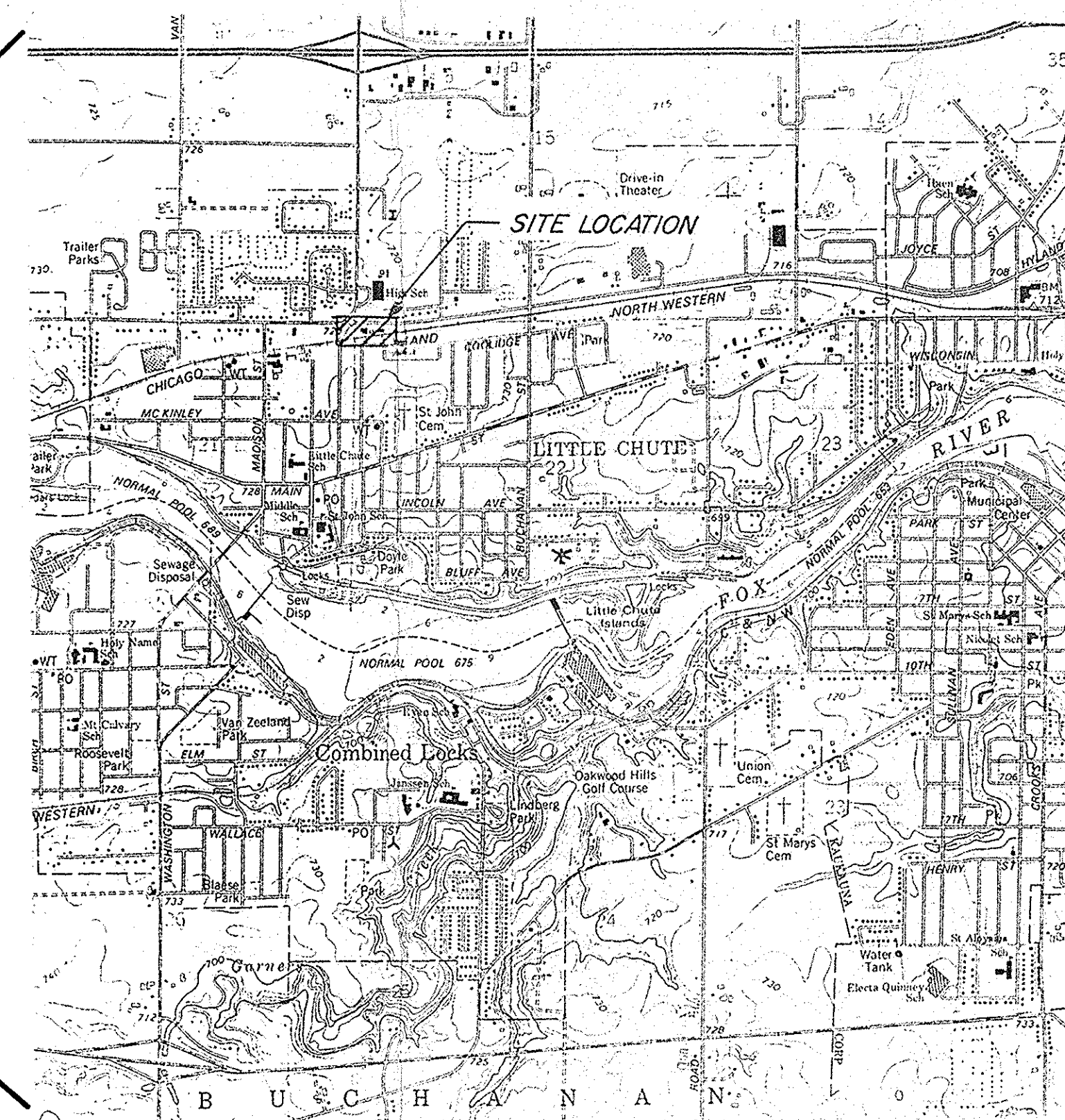


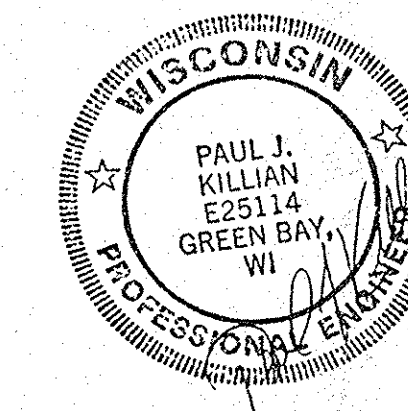
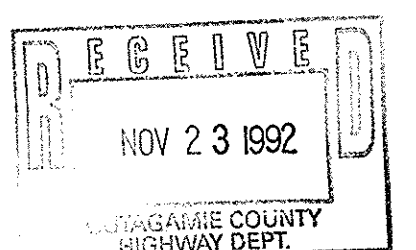
Van Zeeland Discount Tire and Auto Soil and Groundwater Corrective Action Design

309 E. North Avenue
Little Chute, Wisconsin
Outagamie County



Drawing Index

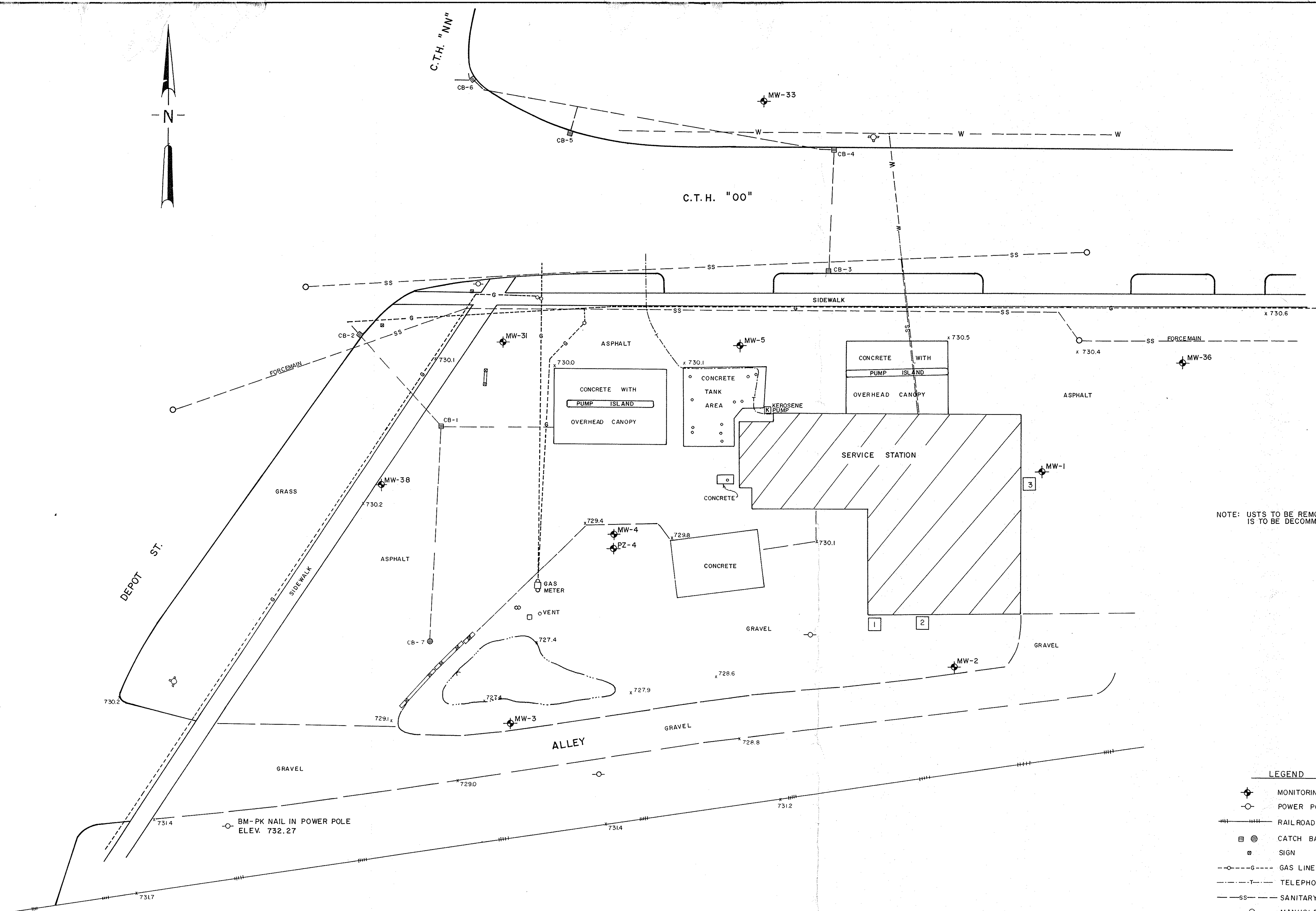
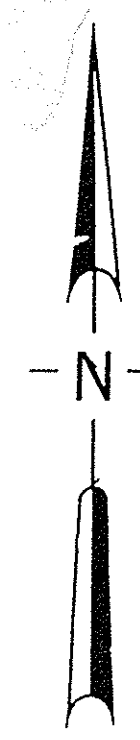
19110XP - 100	Title Sheet
19110XP - 101	Existing Site Conditions
19110XP - 102	Concentrations of BTEX and MTBE In Groundwater
19110XP - 103	Groundwater Contour Map
19110XP - 104	Groundwater and Vapor Collection System Design
19110XP - 105	Groundwater Discharge and Transfer Pipe System
19110XP - 106	Electrical Conduit and Compressed Air Supply Layout
19110XP - 107	Trench Cross-Sections
19110XP - 108	Treatment System Details
19110XP - 109	Equipment Building Details
19110XP - 110	Cleanout and Piezometer Details



Prepared by
STS Consultants Ltd.

N-24

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CONSTRUCTION



NOTE: USTS TO BE REMOVED AND MW-1 IS TO BE DECOMMISSIONED.

- LEGEND**
- MONITORING WELL
 - POWER POLE
 - RAILROAD TRACKS
 - CATCH BASIN
 - SIGN
 - GAS LINE & VALVE
 - TELEPHONE LINE
 - SANITARY SEWER
 - MANHOLE
 - WATER LINE
 - UNDERGROUND STORAGE TANK LOCATION
 - 1) USED OIL
 - 2) HEATING OIL
 - 3) DIESEL FUEL
 - SPOT ELEVATION

CATCH BASIN INVERT ELEVATIONS			
PIPE	DIRECTION	PIPE DIA.	INVERT ELEVATION
CB-1	SOUTH	18"	725.1'
	EAST	6"	727.2'
	NORTHWEST	24"	725.1'
CB-2	NORTHWEST & SOUTHEAST	—	724.6'
CB-3	NORTH	12"	727.0'
CB-4	WEST	15"	727.1'
CB-5	NORTH	8"	727.6'
CB-6	WEST	24"	728.4'
	SOUTHEAST	15"	728.9'
	NORTH	3"	727.5'
CB-7	NORTH & SOUTH	10"	725.9'

NOTES:
1) MAP COMPILED FROM SURVEY BY STS CONSULTANTS ON MAY 1, 1992.
2) BURIED ELECTRIC TO PUMPS AND SIGNS IS PRIVATELY OWNED BY VAN ZEELAND AND MUST BE LOCATED BY OWNER.

DATE: 5-15-92
DRAWN BY: K.J.C.
CHECKED BY: M.J.W.
APPROVED BY:
COPLE

DATE: 8-28-92

REVISION NO.

DESCRIPTION

BY

DATE

VAN ZEELAND DISCOUNT TIRE AND AUTO
LITTLE CHUTE, WISCONSIN

EXISTING SITE CONDITIONS, MAY 1992

STS Consultants Ltd.
Consulting Engineers

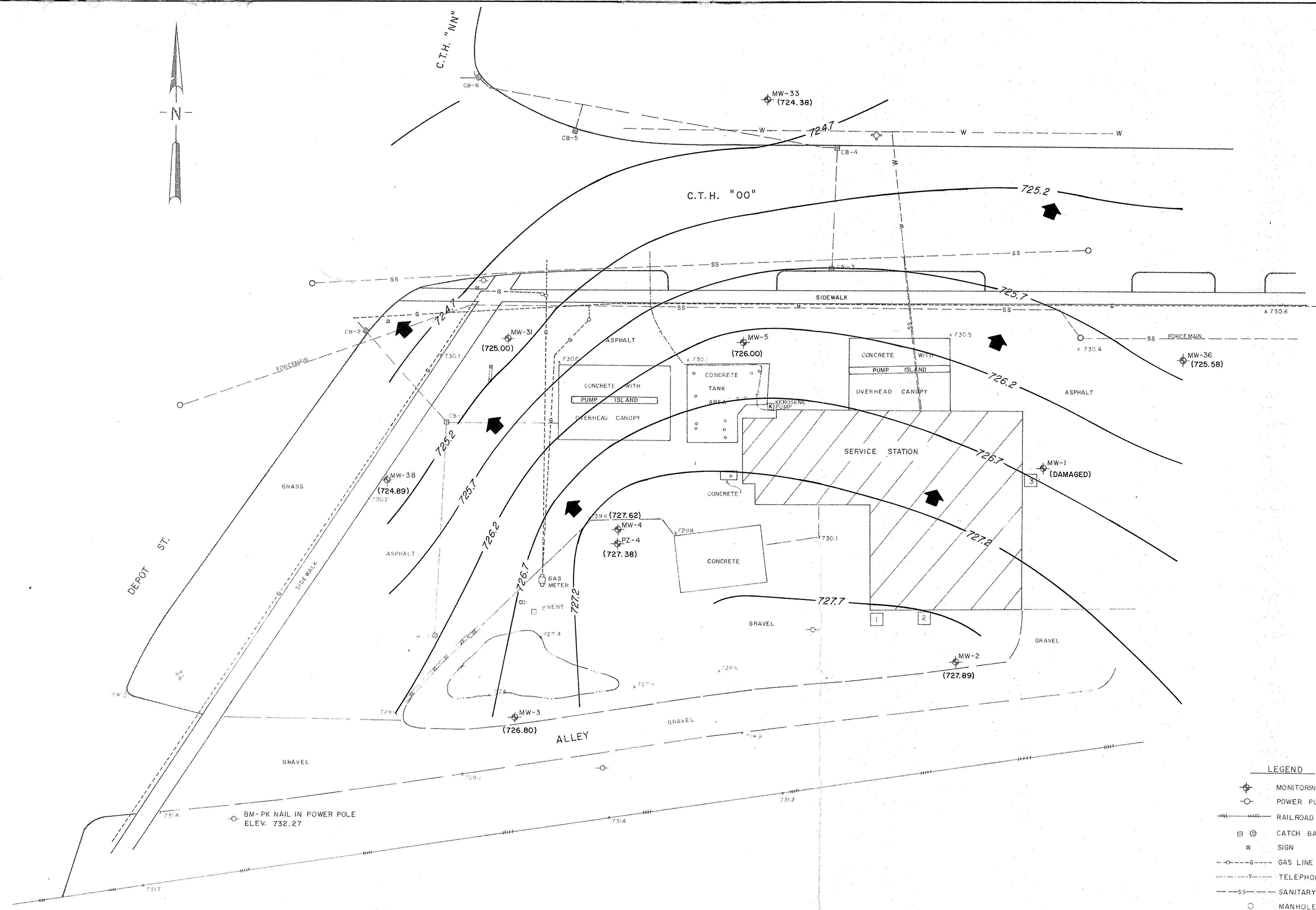
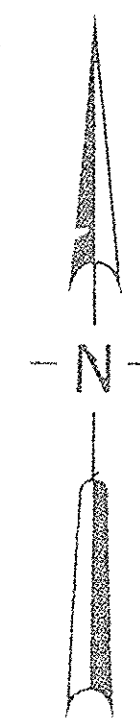
STS PROJECT NUMBER
19110 X P

STS PROJECT FILE

SCALE
1" = 20'

SHEET NUMBER
101

RELEASED FOR
CONSTRUCTION



CATCH BASIN INVERT ELEVATIONS			
CATCH BASIN	PIPE DIRECTION	PIPE DIA.	INVERT ELEVATION
CB-1	SOUTH	8"	725.1'
	EAST	8"	727.2'
	NORTHWEST	24"	725.1'
CB-2	NORTHWEST & SOUTHEAST	—	724.6'
CB-3	NORTH	8"	727.3'
CB-4	WEST	15"	727.1'
CB-5	NORTH	8"	727.0'
	SOUTHEAST	15"	725.4'
CB-6	WEST	24"	725.4'
	NORTH	3"	727.5'
CB-7	NORTH & SOUTH	10"	725.9"

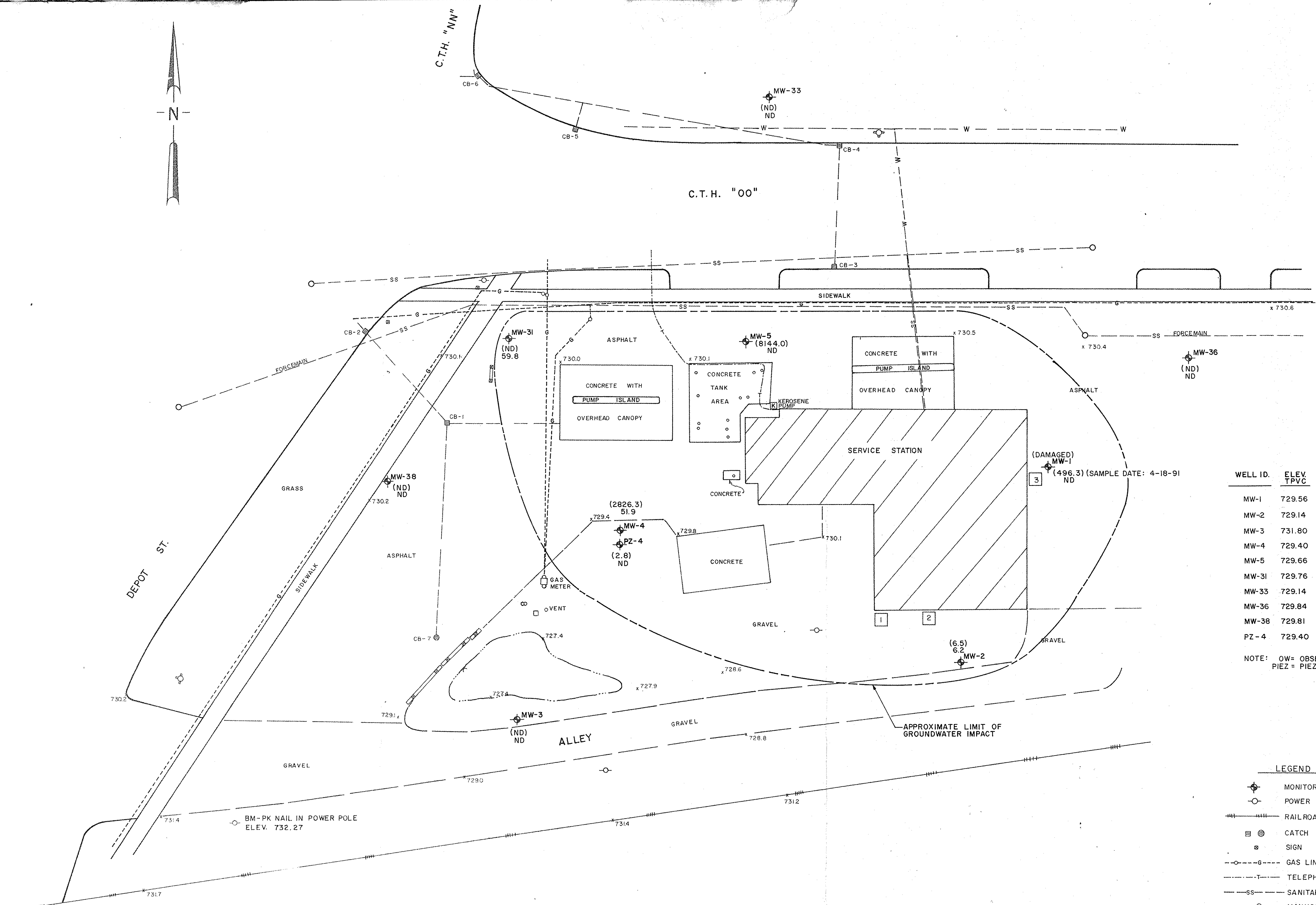
NOTES:
1) MAP COMPILED FROM SURVEY BY STS CONSULTANTS ON MAY 1, 1992.
2) BURIED ELECTRIC TO PUMPS AND SIGNS IS PRIVATELY OWNED BY VAN ZEELEND AND MUST BE LOCATED BY OWNER.

- LEGEND
- MONITORING WELL
 - POWER POLE
 - RAILROAD TRACKS
 - CATCH BASIN
 - SIGN
 - GAS LINE & VALVE
 - TELEPHONE LINE
 - SANITARY SEWER
 - MANHOLE
 - WATER LINE
 - UNDERGROUND STORAGE TANK LOCATION
 - 1) USED OIL
 - 2) HEATING OIL
 - 3) DIESEL FUEL
 - SPOT ELEVATION
 - WATER TABLE CONTOUR
 - WATER TABLE ELEVATION (7-20-92)
 - APPARENT GROUNDWATER FLOW DIRECTION

DATE	7-28-92	DATE	7-28-92	DATE		REVISION NO.		DESCRIPTION	BY
DRAWN BY	J. R. L.	CHECKED BY	M. J. W.	APPROVED BY		CAD FILE			
VAN ZEELEND DISCOUNT TIRE AND AUTO LITTLE CHUTE, WISCONSIN									
WATER TABLE CONTOUR MAP (7-20-92)									
STS PROJECT NUMBER 19110XP									
STS PROJECT FILE									
SCALE 1" = 20'									
SHEET NUMBER 102									

STS Consultants Ltd.
Consulting Engineers

RELEASED FOR
CONSTRUCTION



CATCH BASIN INVERT ELEVATIONS

PIPE DIRECTION	PIPE DIA.	INVERT ELEVATION
CB-1 SOUTH	18"	725.1'
CB-1 EAST	6"	727.2'
CB-1 NORTHWEST	24"	725.1'
CB-2 NORTHWEST & SOUTHEAST	—	724.6'
CB-3 NORTH	12"	727.0'
CB-4 WEST	15"	727.1'
CB-5 NORTH	8"	727.6'
CB-6 WEST	24"	725.4'
CB-6 SOUTHEAST	15"	725.9'
CB-6 NORTH	3"	727.5'
CB-7 NORTH & SOUTH	10"	725.9'

- NOTES:
- MAP COMPILED FROM SURVEY BY STS CONSULTANTS ON MAY 1, 1992.
 - BURIED ELECTRIC TO PUMPS AND SIGNS IS PRIVATELY OWNED BY VAN ZEELAND AND MUST BE LOCATED BY OWNER.
 - SAMPLING DATE FOR ALL WELLS EXCEPT MW-1 WAS 6-30-92. MW-1 SAMPLING DATE WAS 4-18-91.

WELL ID.	ELEV. PVC	SURFACE ELEV.	DEPTH FROM SURFACE TO TOP OF SCREEN	LENGTH OF SCREEN	WELL DIA. (I.D.)	TYPE OF WELL
MW-1	729.56	729.9	4.5 (FT.)	10.0 (FT.)	2.05 (IN.)	OW
MW-2	729.14	729.4	3.2	10.0	2.05	OW
MW-3	731.80	728.9	3.0	10.0	2.05	OW
MW-4	729.40	729.8	3.0	10.0	2.05	OW
MW-5	729.66	730.1	4.5	10.0	2.05	OW
MW-31	729.76	730.16	1.5	10.0	2.05	OW
MW-33	729.14	730.02	2.0	10.0	2.05	OW
MW-36	729.84	730.34	2.0	10.0	2.05	OW
MW-38	729.81	730.20	2.0	10.0	2.05	OW
PZ-4	729.40	729.71	23.0	2.0	2.05	PIEZ

NOTE: OW = OBSERVATION WELL
PIEZ = PIEZOMETER

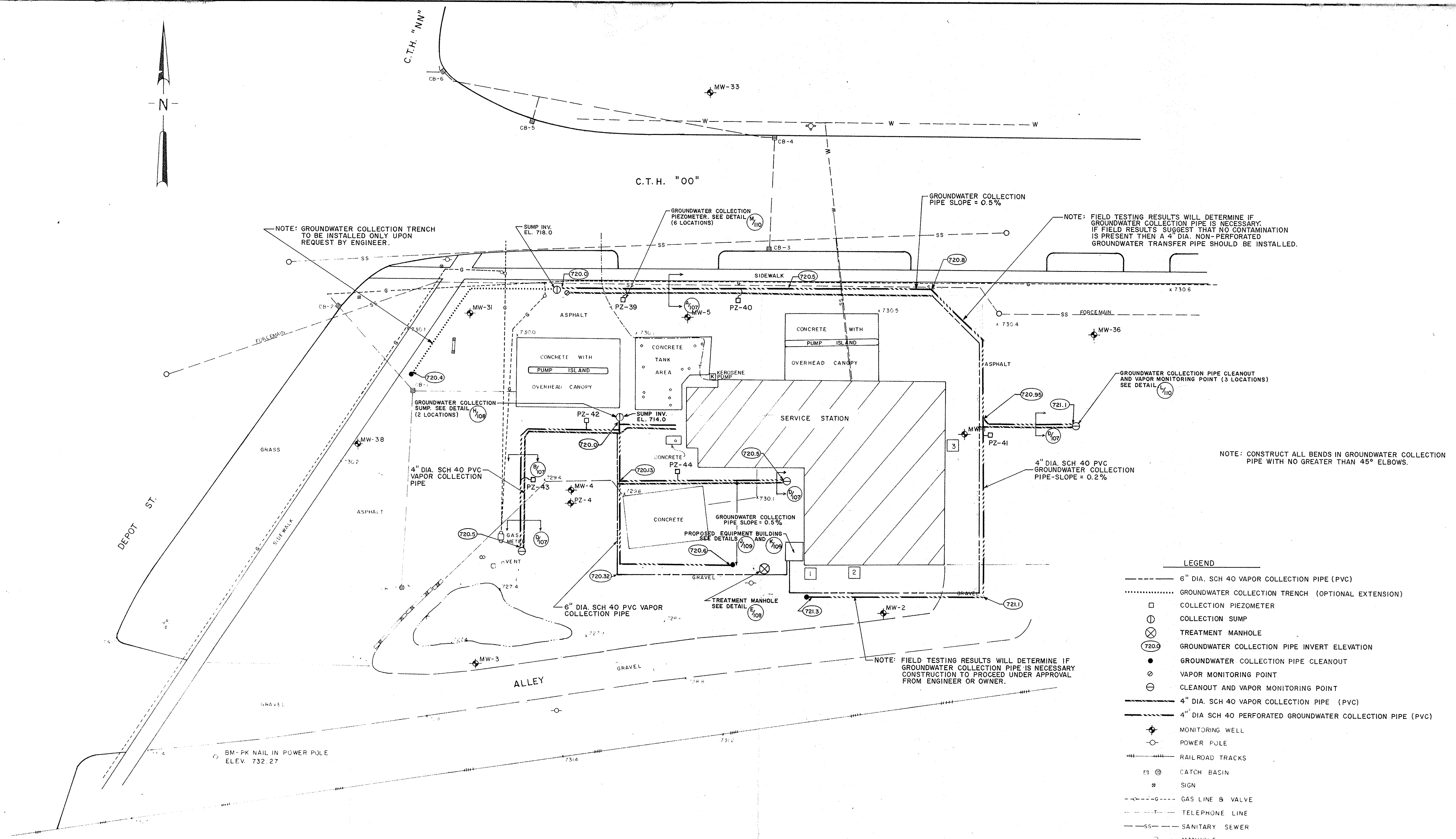
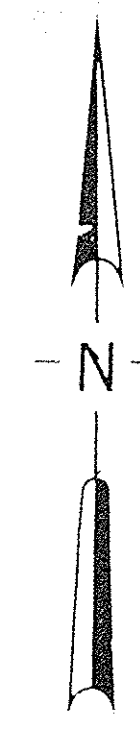
LEGEND

- MONITORING WELL
- POWER POLE
- RAILROAD TRACKS
- CATCH BASIN
- SIGN
- GAS LINE & VALVE
- TELEPHONE LINE
- SANITARY SEWER
- MANHOLE
- WATER LINE
- UNDERGROUND STORAGE TANK LOCATION
 - 1) USED OIL
 - 2) HEATING OIL
 - 3) DIESEL FUEL
- SPOT ELEVATION
- APPROXIMATE LIMIT OF GROUNDWATER IMPACT
- (6.5) BTX CONCENTRATION IN ug/l
- 6.2 MTBE CONCENTRATION IN ug/l
- ND NO DETECT

DATE	8-6-92	DATE	8-6-92	DATE		BY	
DRAWN BY	J. R. L.	CHECKED BY	M. J. M.	APPROVED BY		CAUTION	
VAN ZEELAND DISCOUNT TIRE AND AUTO				CONCENTRATIONS OF BTX AND MTBE IN GROUNDWATER			
LITTLE CHUTE, WISCONSIN							
STS PROJECT NUMBER				19110XP			
STS PROJECT FILE							
SCALE				1" = 20'			
SHEET NUMBER				103			



RELEASED FOR
CONSTRUCTION



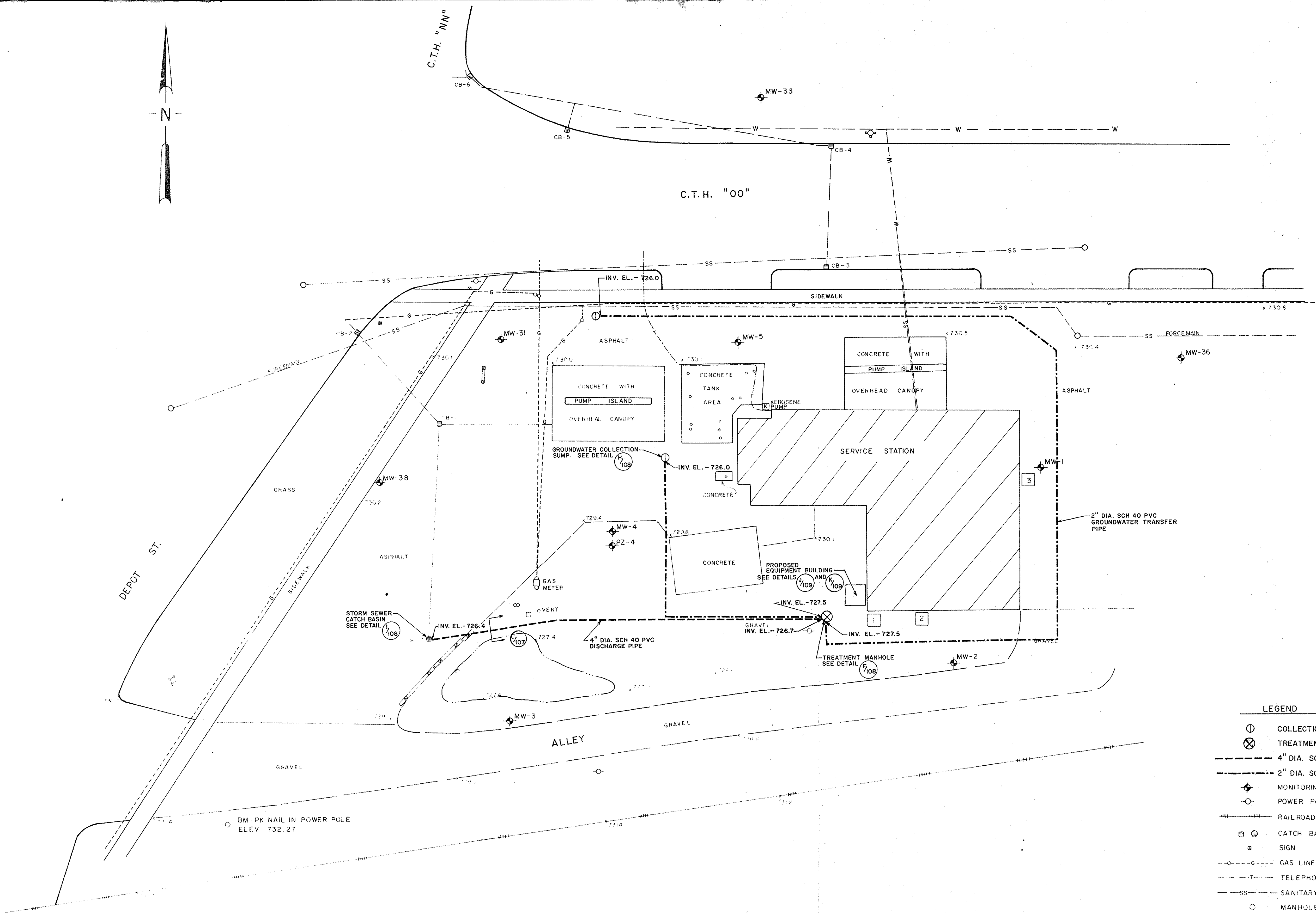
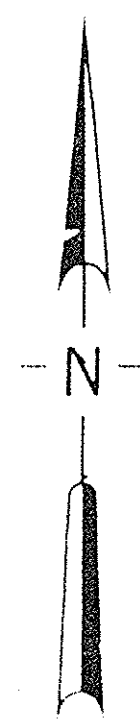
- LEGEND**
- 6" DIA. SCH 40 VAPOR COLLECTION PIPE (PVC)
 - GROUNDWATER COLLECTION TRENCH (OPTIONAL EXTENSION)
 - COLLECTION PIEZOMETER
 - COLLECTION SUMP
 - TREATMENT MANHOLE
 - GROUNDWATER COLLECTION PIPE INVERT ELEVATION
 - GROUNDWATER COLLECTION PIPE CLEANOUT
 - VAPOR MONITORING POINT
 - CLEANOUT AND VAPOR MONITORING POINT
 - 4" DIA. SCH 40 VAPOR COLLECTION PIPE (PVC)
 - 4" DIA SCH 40 PERFORATED GROUNDWATER COLLECTION PIPE (PVC)
 - MONITORING WELL
 - POWER POLE
 - RAILROAD TRACKS
 - CATCH BASIN
 - SIGN
 - GAS LINE & VALVE
 - TELEPHONE LINE
 - SANITARY SEWER
 - MANHOLE
 - WATER LINE
 - UNDERGROUND STORAGE TANK LOCATION
 - 1) USED OIL
 - 2) HEATING OIL
 - 3) DIESEL FUEL
 - SPOT ELEVATION

CATCH BASIN INVERT ELEVATIONS			
NO.	LOCATION	SIZE	INVERT ELEVATION
B-1	NORTH	8"	725.1
	EAST	8"	727.2
	NORTHWEST	24"	725.1
B-2	NORTHWEST & SOUTHEAST	—	724.6
B-3	NORTH	12"	727.0
B-4	WEST	15"	727.1
B-5	NORTH	8"	727.6
B-6	WEST	24"	725.4
	SOUTHEAST	15"	725.9
	NORTH	3"	727.5
B-7	NORTH & SOUTH	10"	725.9

- NOTES:**
- 1) MAP COMPILED FROM SURVEY BY STS CONSULTANTS ON MAY 1, 1992.
 - 2) BURIED ELECTRIC TO PUMPS AND SIGNS IS PRIVATELY OWNED BY VAN ZEELAND AND MUST BE LOCATED BY OWNER.

DRAWN BY J. R. L.		DATE 8-4-92	REVISION NO.	DESCRIPTION	BY	DATE
CHECKED BY M. J. M.		DATE 8-4-92				
APPROVED BY		DATE				
VAN ZEELAND DISCOUNT TIRE AND AUTO LITTLE CHUTE, WISCONSIN			GROUNDWATER AND VAPOR COLLECTION SYSTEM DESIGN			
STS Consultants Ltd. Consulting Engineers						
STS PROJECT NUMBER 19110X P						
STS PROJECT FILE						
SCALE 1" = 20'						
SHEET NUMBER 104						

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CONSTRUCTION**



CATCH BASIN INVERT ELEVATION

B-1	EAST	8"	727.2
B-2	NORTHWEST & SOUTHEAST	24"	724.6
B-3	NORTH	24"	727.2
B-4	WEST	8"	727.1
B-5	NORTH	8"	727.6
B-6	WEST	24"	725.4
	SOUTHEAST	15"	725.9
	NORTH	3"	727.5
B-7	NORTH & SOUTH	10"	725.9

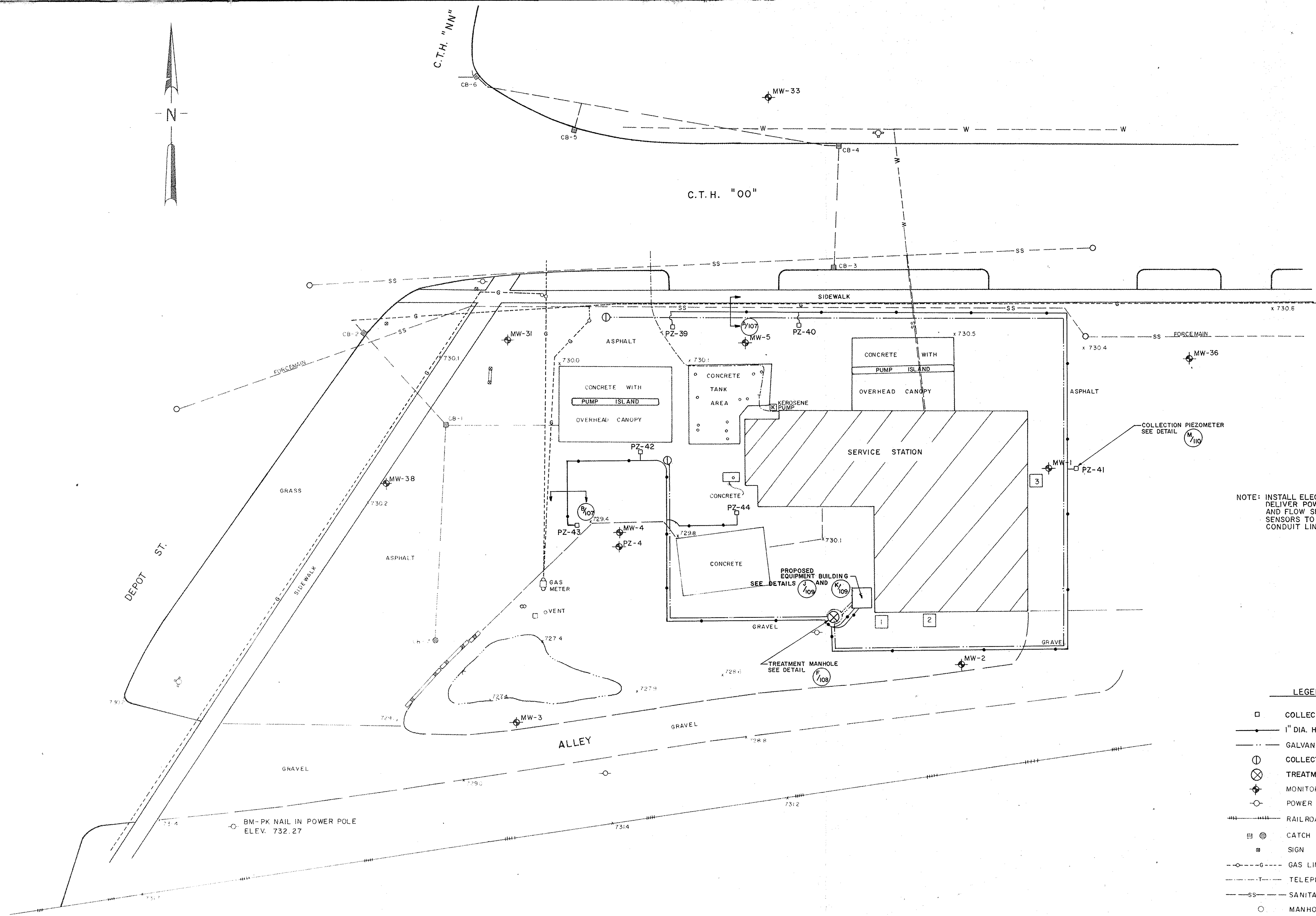
NOTES:
1) MAP COMPILED FROM SURVEY BY STS CONSULTANTS ON MAY 1, 1992.
2) BURIED ELECTRIC TO PUMPS AND SIGNS IS PRIVATELY OWNED BY VAN ZEELAND AND MUST BE LOCATED BY OWNER.

- LEGEND
- ⊙ COLLECTION SUMP
 - ⊗ TREATMENT MANHOLE
 - 4" DIA. SCH 40 GROUNDWATER DISCHARGE PIPE (PVC)
 - 2" DIA. SCH 40 GROUNDWATER TRANSFER PIPE (PVC)
 - ⊕ MONITORING WELL
 - POWER POLE
 - RAILROAD TRACKS
 - ⊕ CATCH BASIN
 - ⊕ SIGN
 - GAS LINE & VALVE
 - TELEPHONE LINE
 - SS --- SANITARY SEWER
 - MANHOLE
 - W --- WATER LINE
 - 1 UNDERGROUND STORAGE TANK LOCATION
 - 1) USED OIL
 - 2) HEATING OIL
 - 3) DIESEL FUEL
 - ⊕ SPOT ELEVATION

DATE	8-17-92	DATE	8-17-92	DATE		REVISION		DESCRIPTION	BY	DATE
DRAWN BY	J. R. L.	CHECKED BY	M. J. M.	APPROVED BY		CADFILE				
VAN ZEELAND DISCOUNT TIRE AND AUTO										
LITTLE CHUTE, WISCONSIN										
GROUNDWATER DISCHARGE AND TRANSFER PIPE SYSTEM										
STS PROJECT NUMBER 19110X P										
STS PROJECT FILE										
SCALE 1" = 20'										
SHEET NUMBER 105										

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CONSTRUCTION



NOTE: INSTALL ELECTRICAL CONDUIT AS NECESSARY TO DELIVER POWER TO PUMPS, FLOAT CONTROLS, AND FLOW SENSORS. SIGNAL LINE FROM FLOW SENSORS TO FLOW METER ALSO TO BE IN CONDUIT LINE.

LEGEND

- COLLECTION PIEZOMETER
- 1" DIA. HIGH DENSITY POLYETHYLENE AIR SUPPLY LINE
- GALVANIZED ELECTRICAL CONDUIT
- ⊙ COLLECTION SUMP
- ⊗ TREATMENT MANHOLE
- ⊕ MONITORING WELL
- POWER POLE
- RAILROAD TRACKS
- ⊕ CATCH BASIN
- ⊕ SIGN
- GAS LINE & VALVE
- TELEPHONE LINE
- SS — SANITARY SEWER
- MANHOLE
- W — WATER LINE
- 1) USED OIL
- 2) HEATING OIL
- 3) DIESEL FUEL
- 731.2 SPOT ELEVATION

CATCH BASIN INVERT ELEVATIONS

CATCH BASIN	PIPE DIRECTION	PIPE DIA.	INVERT ELEVATION
CB-1	SOUTH	8"	725.1'
	EAST	6"	727.2'
	NORTHWEST	24"	725.1'
CB-2	NORTHWEST & SOUTHEAST	—	724.6'
CB-3	NORTH	12"	727.0'
CB-4	WEST	15"	727.1'
CB-5	NORTH	8"	727.6'
CB-6	WEST	24"	725.4'
	SOUTHEAST	15"	725.9'
	NORTH	3"	727.5'
CB-7	NORTH & SOUTH	10"	725.9'

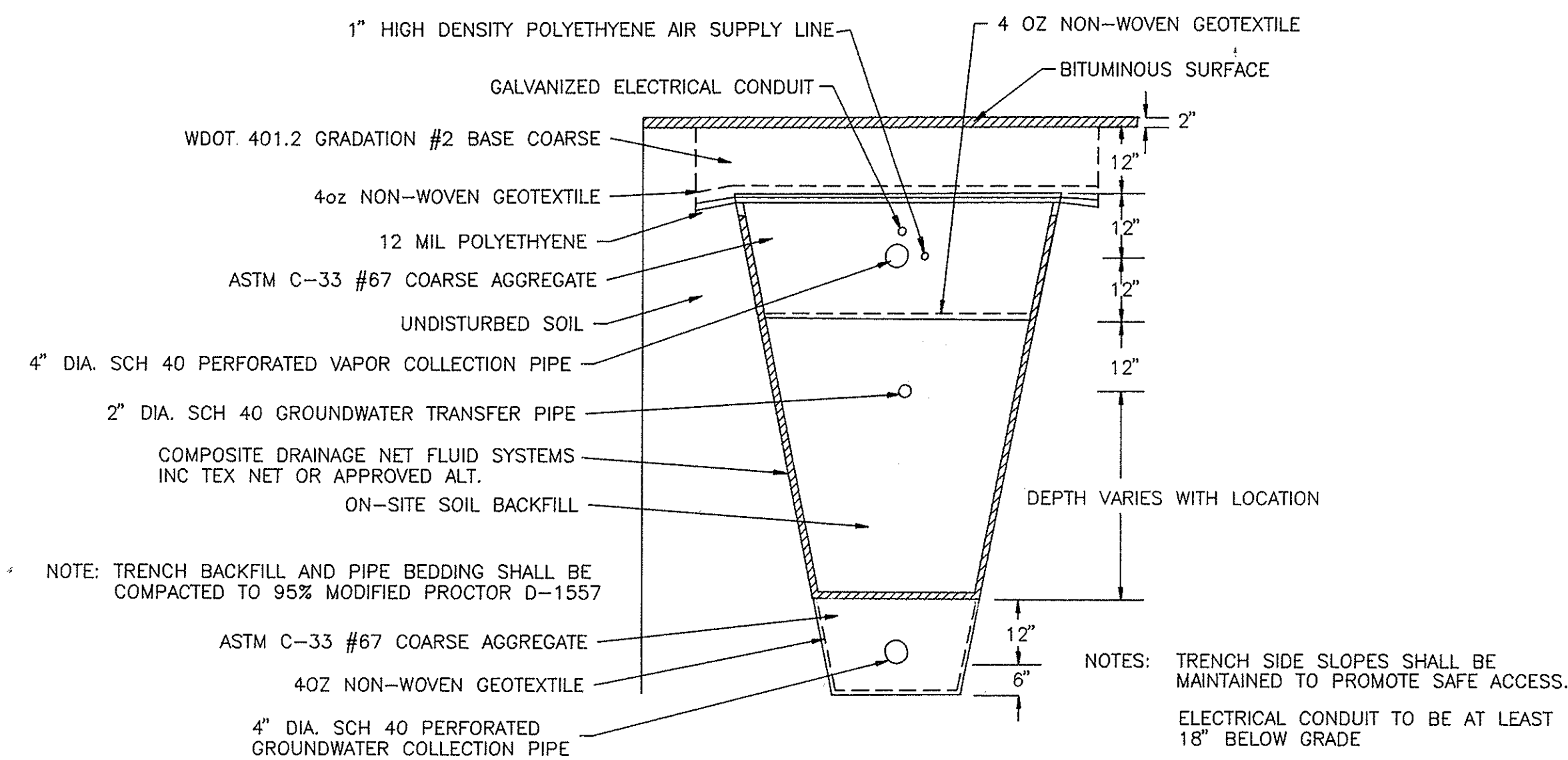
NOTES:
1) MAP COMPILED FROM SURVEY BY STS CONSULTANTS ON MAY 1, 1992.
2) BURIED ELECTRIC TO PUMPS AND SIGNS IS PRIVATELY OWNED BY VAN ZEELAND AND MUST BE LOCATED BY OWNER.

DATE	8-3-92	DATE	8-3-92	DATE		DATE	
DRAWN BY	J.R.L.	CHECKED BY	M.J.M.	APPROVED BY		CADFILE	
VAN ZEELAND DISCOUNT TIRE AND AUTO LITTLE CHUTE, WISCONSIN				ELECTRICAL CONDUIT AND COMPRESSED AIR SUPPLY LAYOUT			
STS PROJECT NUMBER 19110XP				STS PROJECT FILE			
SCALE 1" = 20'				SHEET NUMBER 106			

RELEASED FOR
CONSTRUCTION



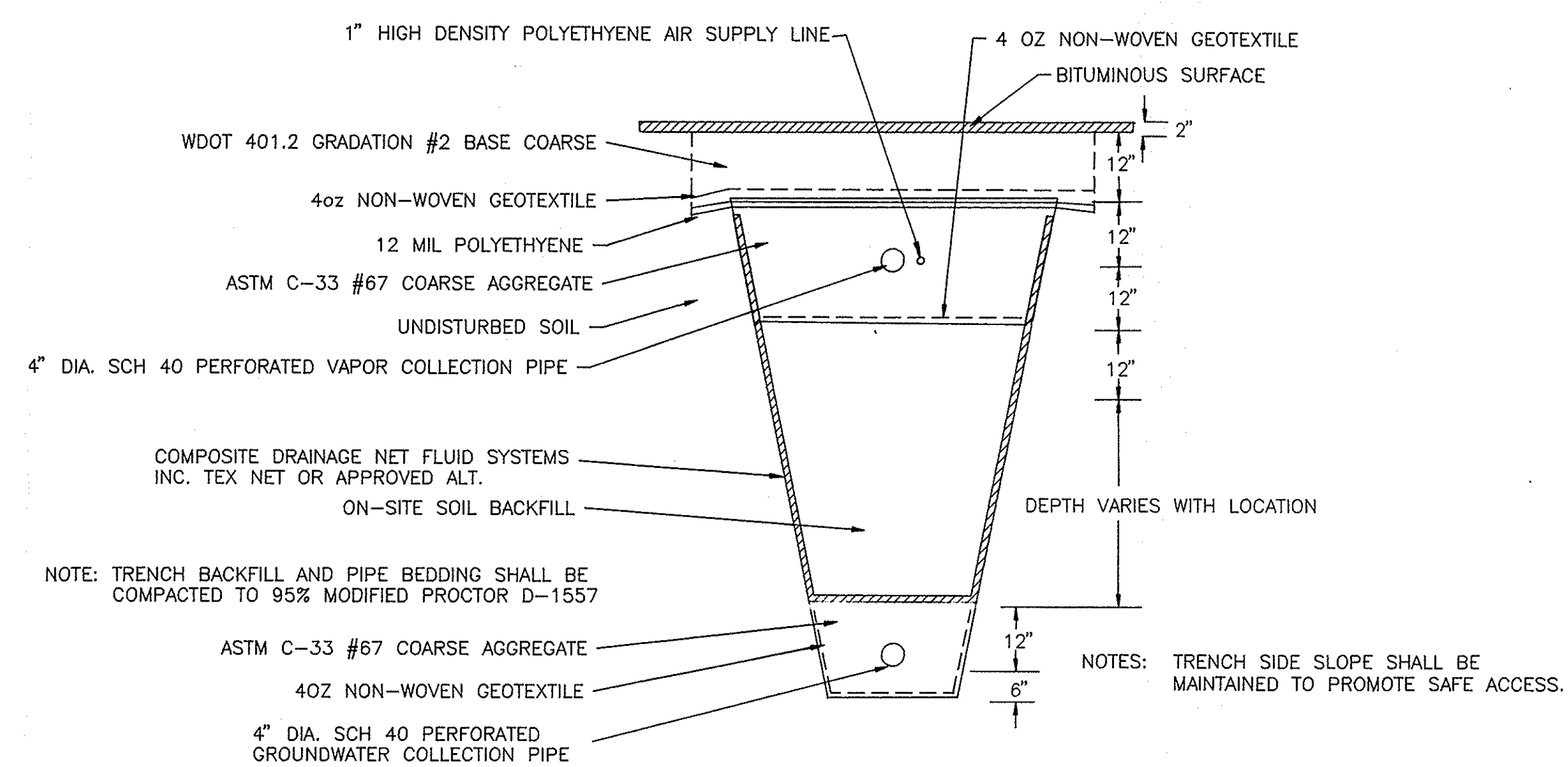
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Consulting Engineers



TYPICAL TRENCH WITH GROUNDWATER & VAPOR COLLECTION,
GROUNDWATER TRANSFER, AIR SUPPLY, AND ELECTRICAL CONDUIT

SCALE: 1"=2'

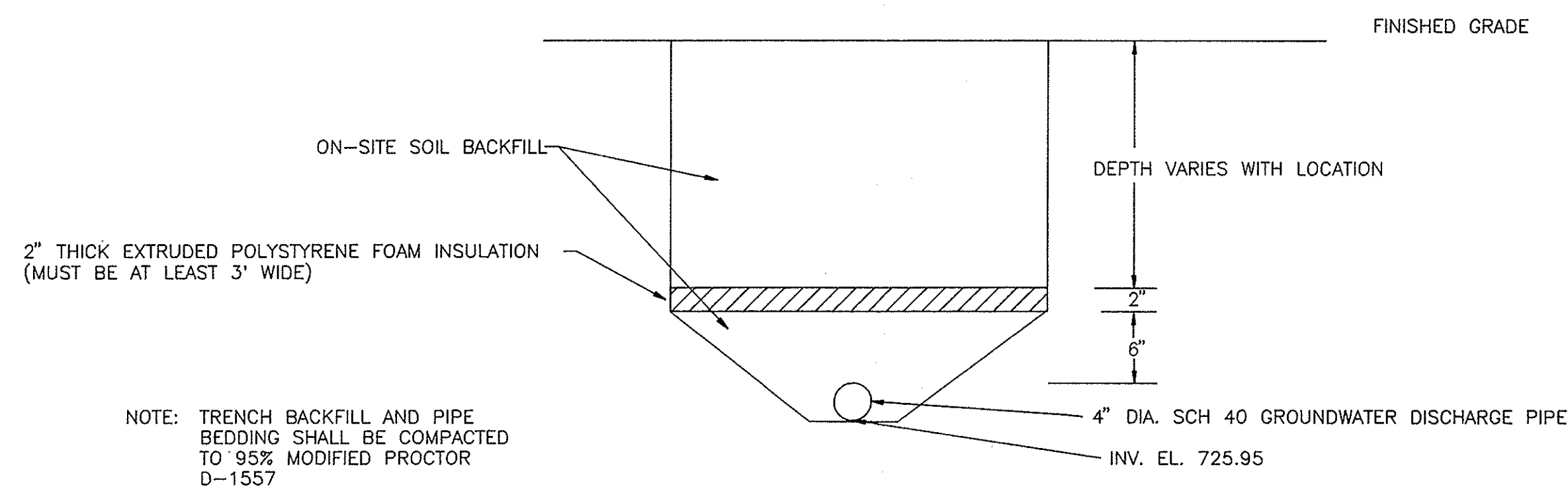
A
107



TYPICAL TRENCH WITH GROUNDWATER & VAPOR COLLECTION AND AIR SUPPLY

SCALE: 1"=2'

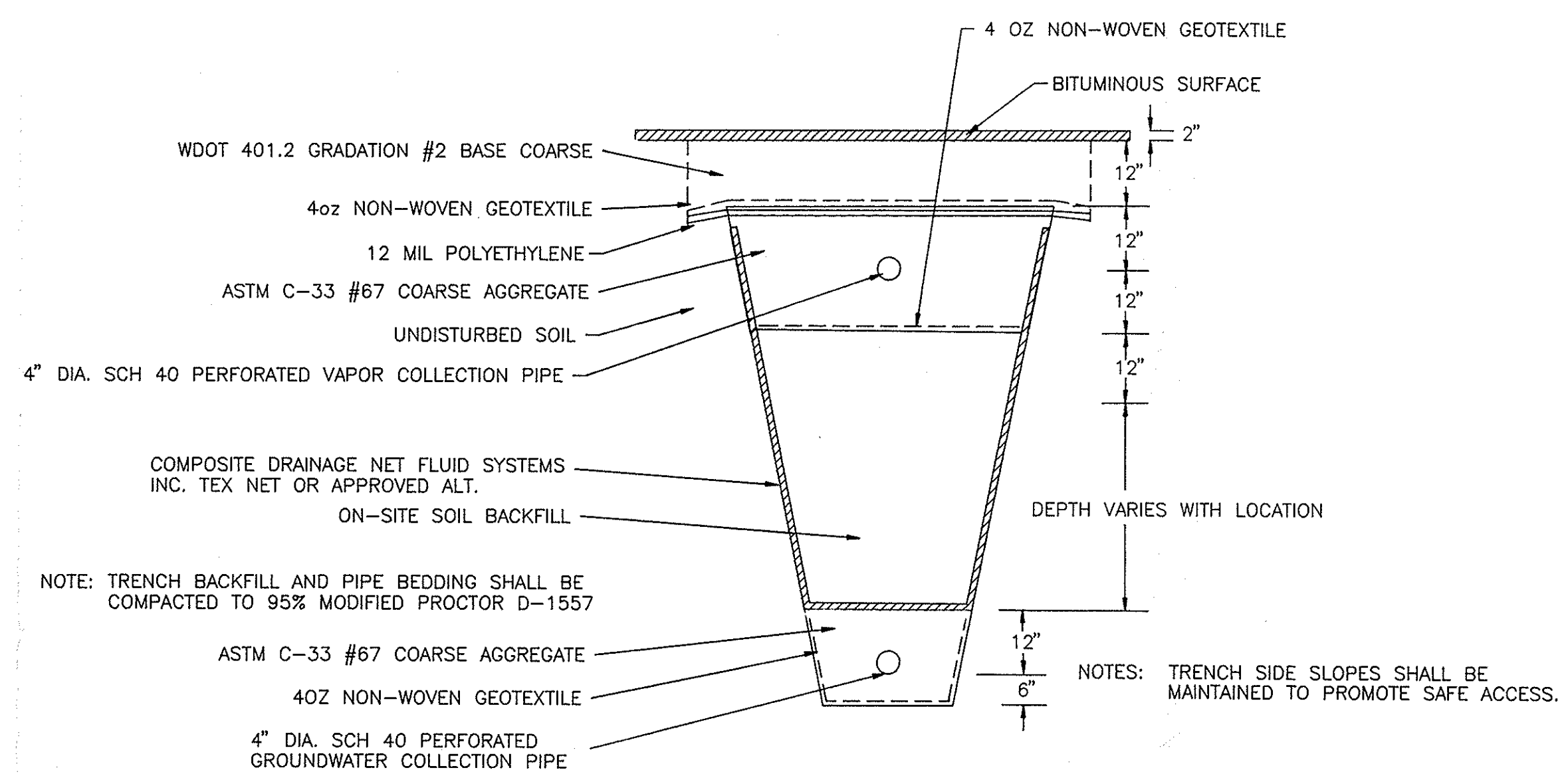
B
107



GROUNDWATER DISCHARGE PIPE TRENCH

SCALE: 1"=1'

C
107



TYPICAL TRENCH WITH GROUNDWATER & VAPOR COLLECTION

SCALE: 1"=2'

D
107

VAN ZEELAND DISCOUNT TIRE AND AUTO
LITTLE CHUTE, WISCONSIN
TRENCH CROSS - SECTIONS



STS PROJECT NUMBER

19110XP

STS PROJECT FILE

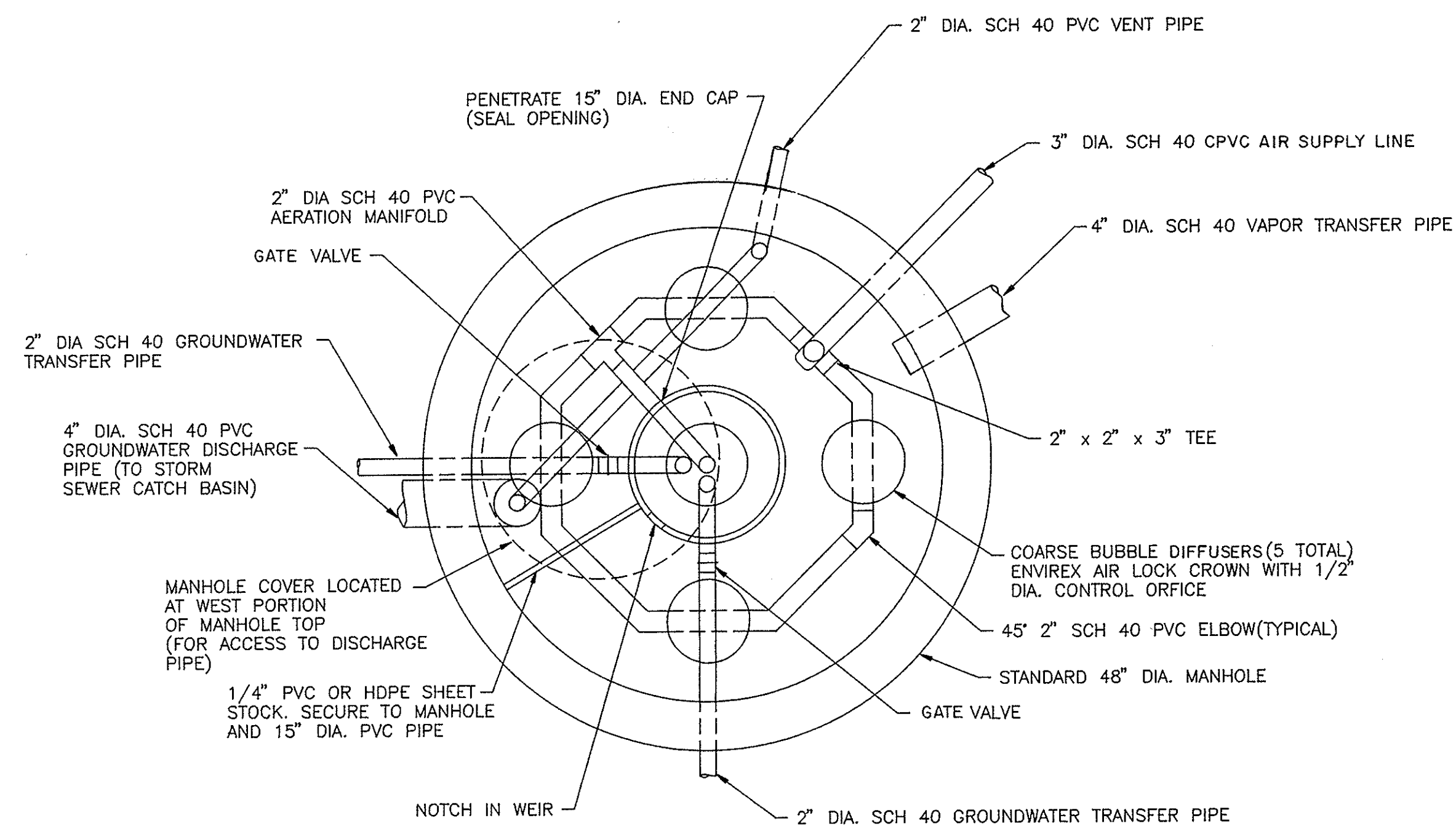
SCALE

1" = 2'

SHEET NUMBER

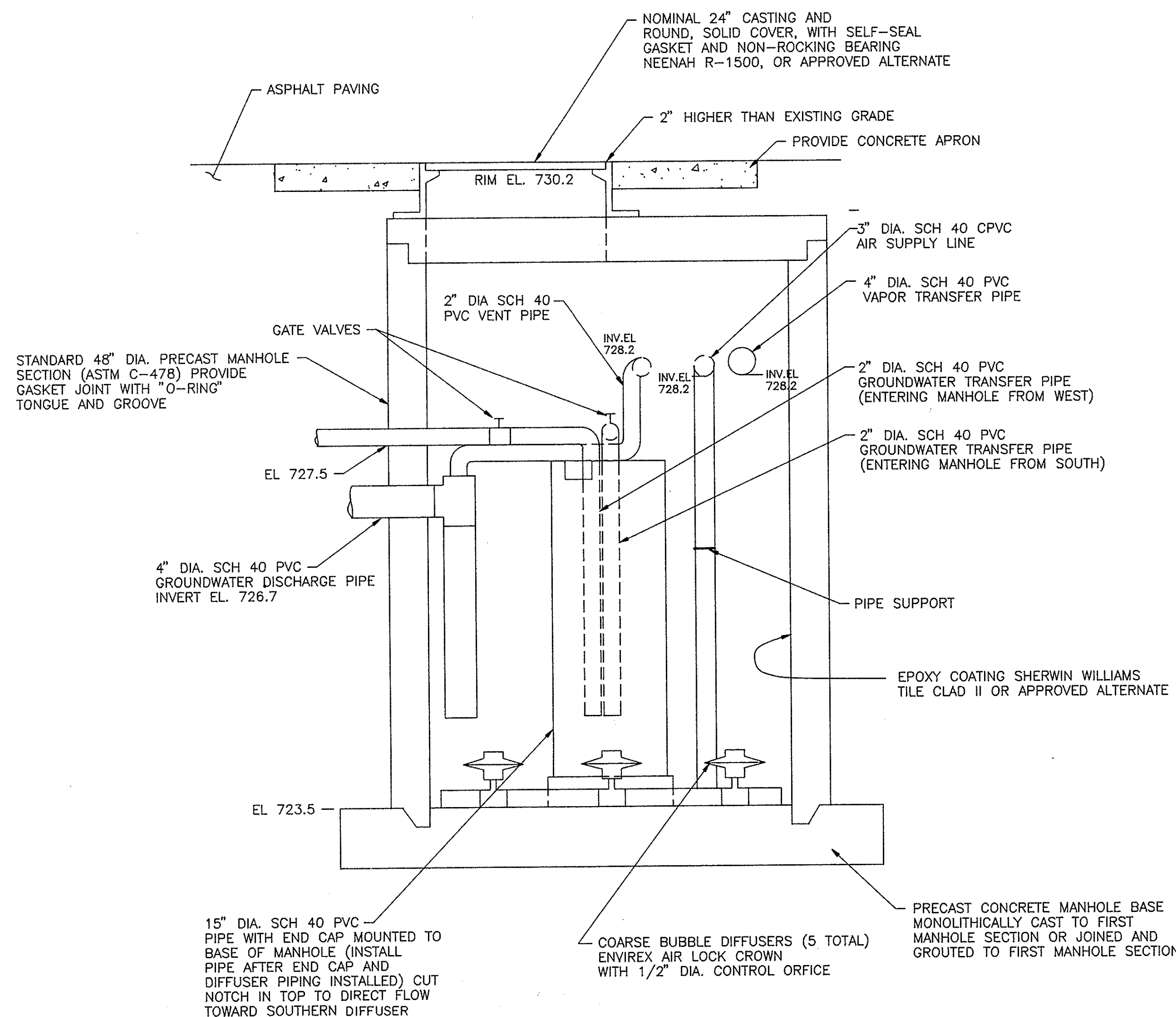
107

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CONSTRUCTION



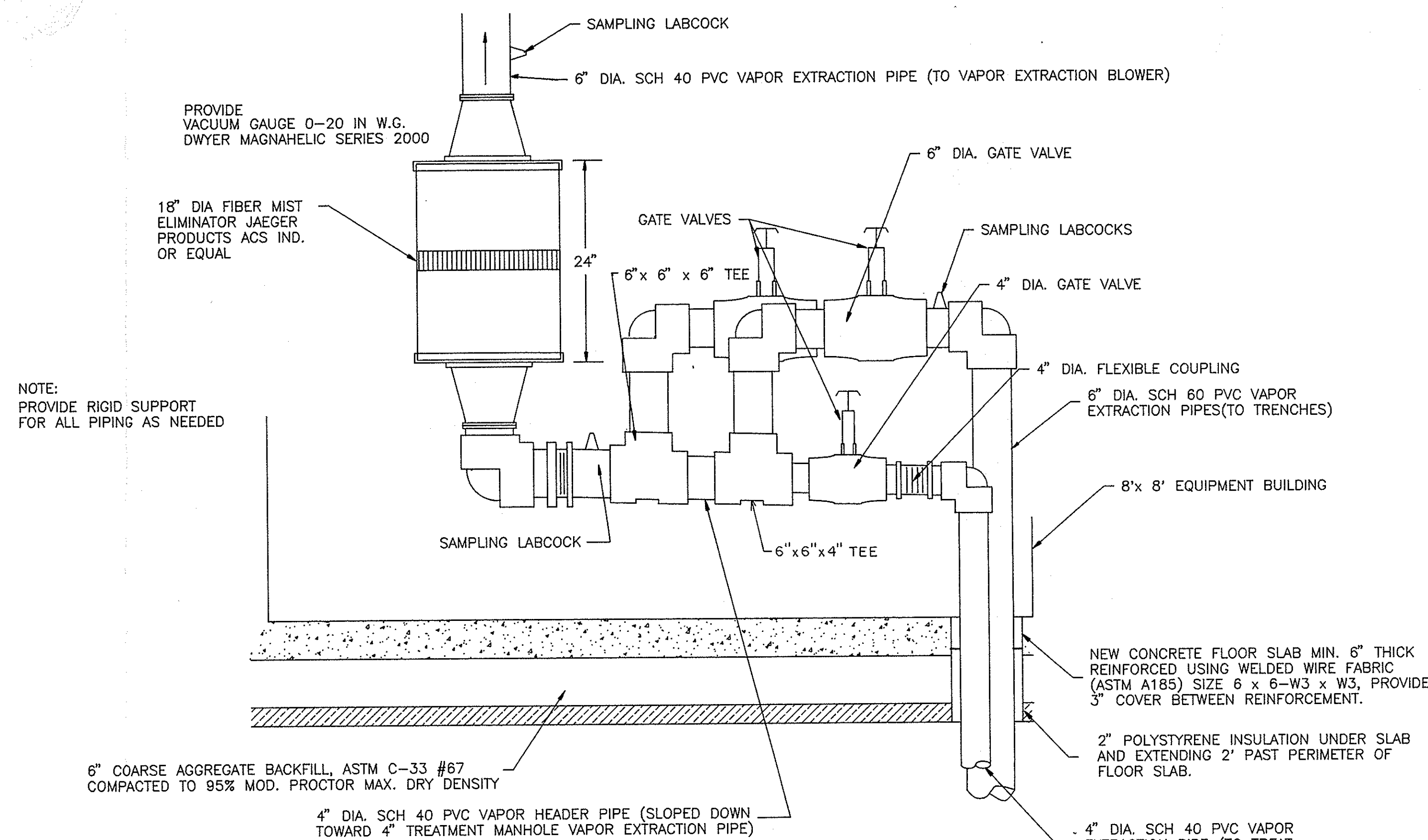
TREATMENT MANHOLE - TOP VIEW (E) 108

SCALE: 1"=1'



TREATMENT MANHOLE - PROFILE LOOKING NORTH (F) 108

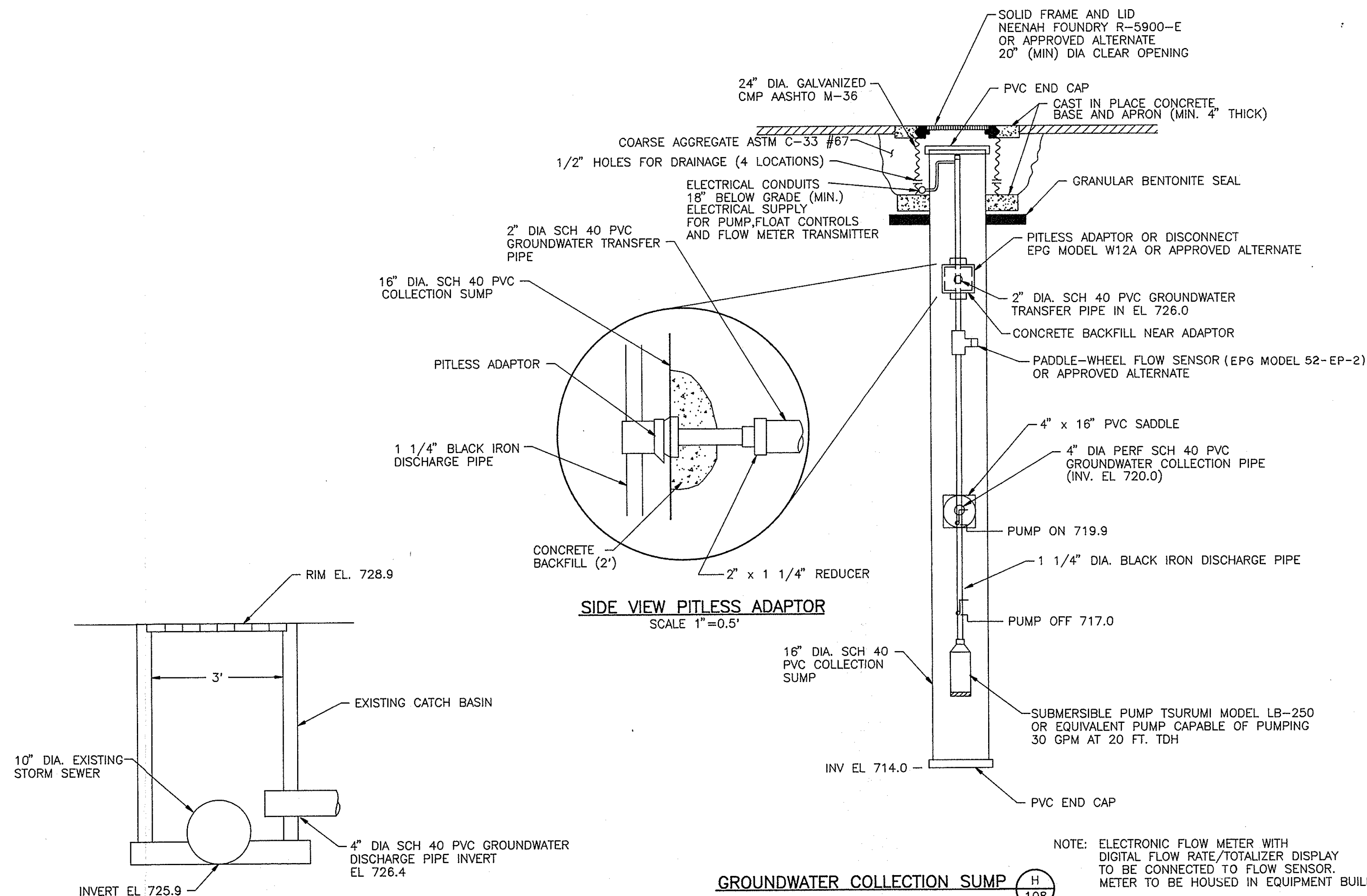
SCALE: 1"=1'



NOTE: PROVIDE RIGID SUPPORT FOR ALL PIPING AS NEEDED

CONDENSATE SEPARATOR (G) 108

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



SIDE VIEW PITLESS ADAPTOR (H) 108

SCALE: 1"=0.5'

GROUNDWATER COLLECTION SUMP (H) 108

SCALE: 1"=2'

NOTE: ELECTRONIC FLOW METER WITH DIGITAL FLOW RATE/TOTALIZER DISPLAY TO BE CONNECTED TO FLOW SENSOR. METER TO BE HOUSED IN EQUIPMENT BUILDING.

DISCHARGE PIPE CONNECTION TO EXISTING CATCH BASIN (LOOKING NORTH) (I) 108

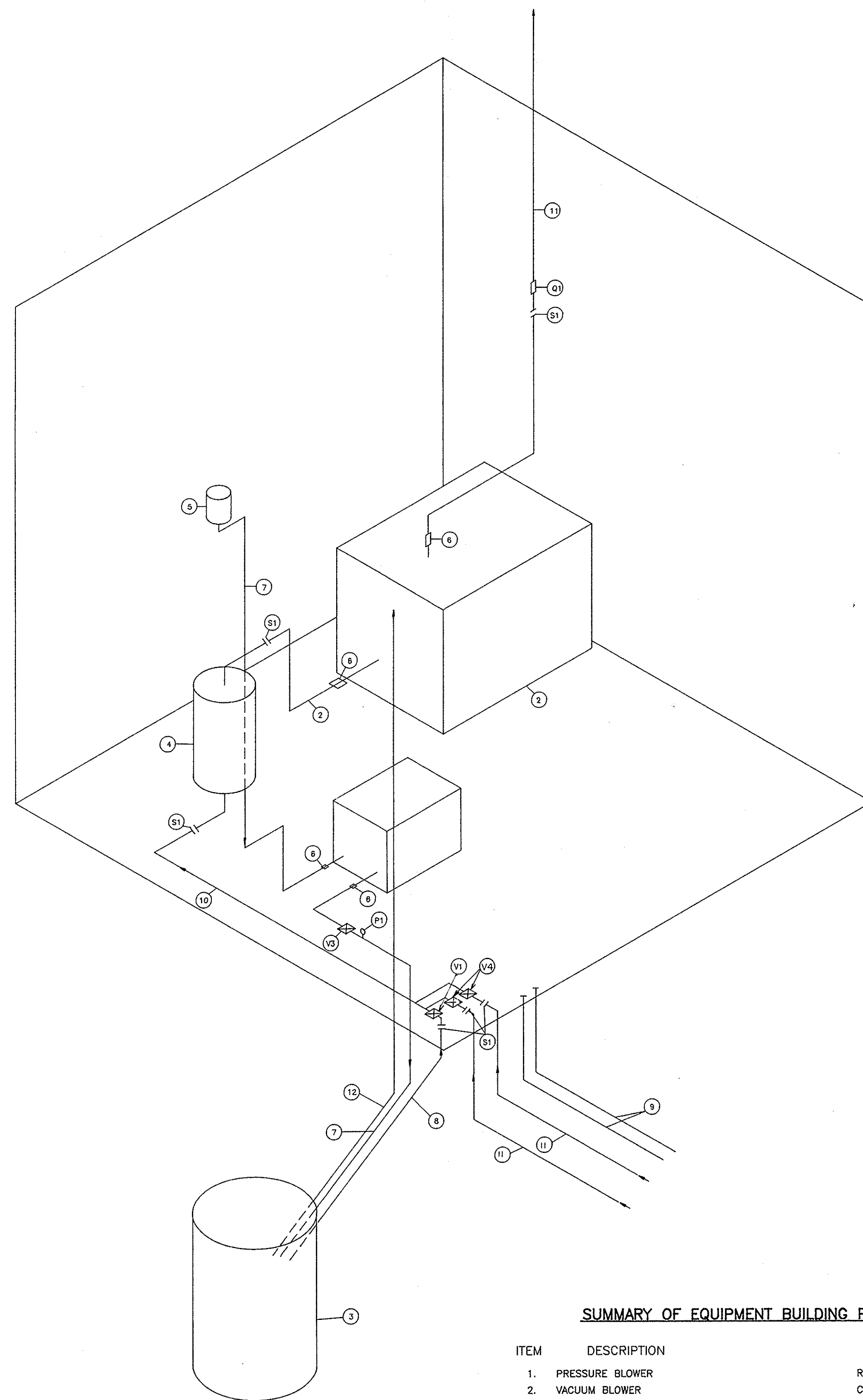
SCALE: 1"=1'

VAN ZEELAND DISCOUNT TIRE AND AUTO
LITTLE CHUTE, WI
TREATMENT SYSTEM DETAILS



STS PROJECT NUMBER
19110XP
STS PROJECT FILE
SCALE
AS NOTED
SHEET NUMBER
108

RELEASED FOR
CONSTRUCTION



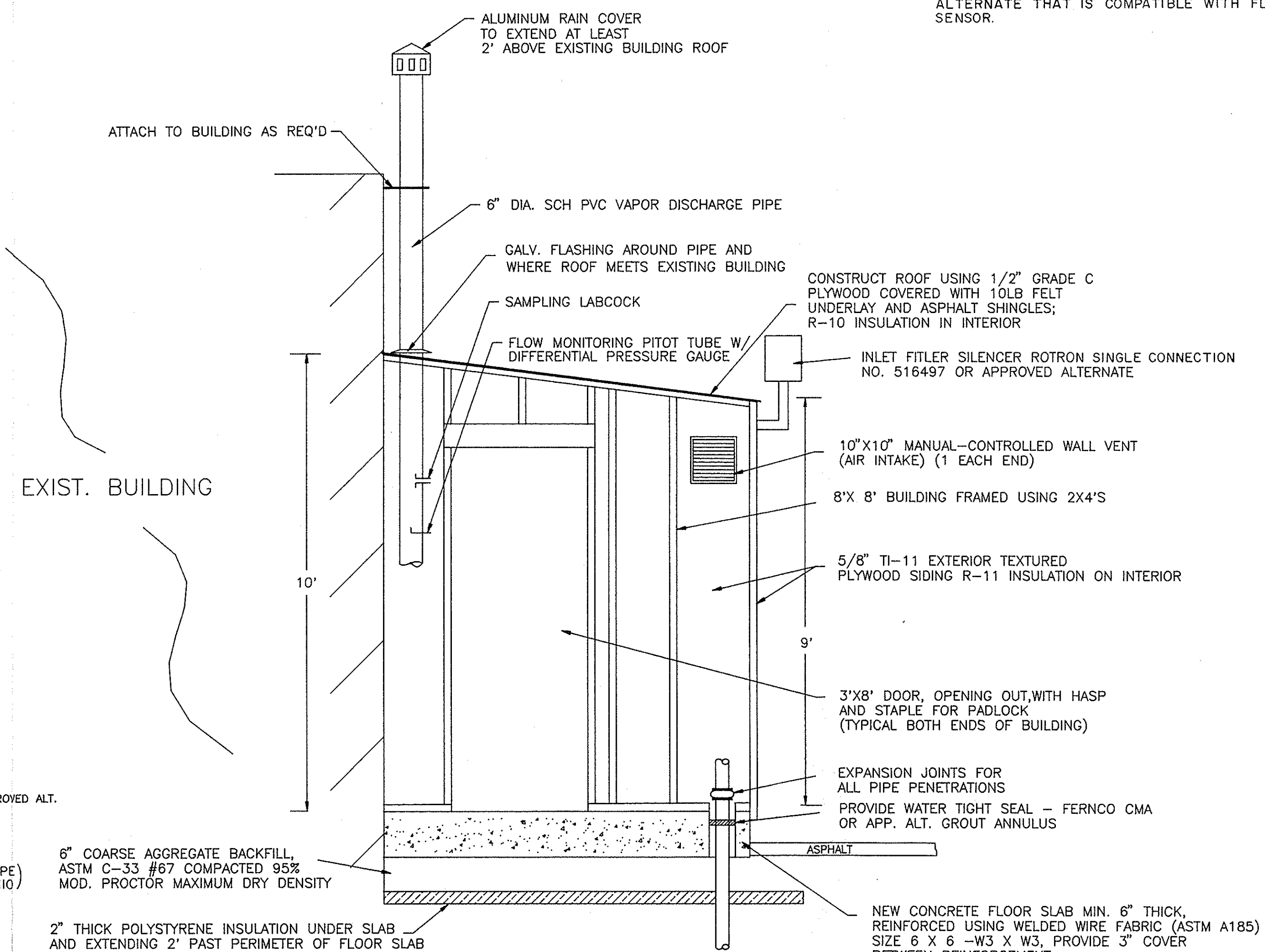
SUMMARY OF EQUIPMENT BUILDING PIPING

ITEM	DESCRIPTION	MATERIAL
1.	PRESSURE BLOWER	ROTRON DR 454W58
2.	VACUUM BLOWER	CINCINNATI PB-15 15 1/2 x 5BC
3.	TREATMENT MANHOLE	SEE DRAWING 19110XP -108
4.	CONDENSATE SEPARATOR	SEE DRAWING 19110XP -108
5.	AIR INLET FILTER/SILENCER	ROTRON - SINGLE CONNECTION NO. 516497 OR APPROVED ALT.
6.	FLEXIBLE INLET/OUTLET COUPLINGS	
7.	3" DIA. AIR SUPPLY PIPE	SCH 40 CPVC
8.	4" DIA. VAPOR TRANSFER PIPE	SCH 40 PVC
9.	1" DIA. AIR PRESSURE PIPE	HIGH DENSITY POLYETHYLENE (PHILLIPS DRISCOPIPE)
10.	4" DIA. VAPOR EXTRACTION HEADER PIPE	SCH 40 PVC
11.	6" DIA. VAPOR TRANSFER PIPE	SCH 40 PVC
12.	2" DIA. VAPOR VENT PIPE	SCH 40 PVC
P1	AIR PRESSURE FROM AIR SUPPLY PUMP	PRESSURE GAUGE 0-100" W.G.
Q1	AIR VELOCITY PITOT TUBE	DWYER 160-8 5/16" DIA.
V1	4" DIA. GATE VALVE (3)	PVC (VALTERRA OR APPROVED ALT.)
V2	3" DIA. GATE VALVE	PVC (VALTERRA OR APPROVED ALT.)
V3	PRESSURE RELIEF VALVE	PVC
V4	6" DIA. GATE VALVE	PVC (VALTERRA OR APPROVED ALT.)
S1	VAPOR SAMPLING LABCOCK	BRASS (3/4" HOSE BARB WITH VALVE)

VAPOR EXTRACTION BLOWER 3 HP EXPLOSION - PROOF
SINGLE PHASE CENTRIFUGAL CINCINNATI FAN
MODEL PB-15 15 1/2X5BC OR APPROVED EQUIVALENT
RATED FOR 830 CFM AT 12 IN. W.G.

EQUIPMENT BUILDING PLAN VIEW (1)

SCALE: 1" = 2' 108



6" COARSE AGGREGATE BACKFILL,
ASTM C-33 #67 COMPACTED 95%
MOD. PROCTOR MAXIMUM DRY DENSITY

2" THICK POLYSTYRENE INSULATION UNDER SLAB
AND EXTENDING 2' PAST PERIMETER OF FLOOR SLAB

NOTE: AT CONTRACTORS OPTION A PRE-FABRICATED
CONCRETE SLAB AND EQUIPMENT BUILDING
MAY BE CONSTRUCTED OFF-SITE AND INSTALLED
AT PROJECT SITE

EQUIPMENT BUILDING PROFILE LOOKING SOUTH (K)

SCALE 1" = 2' 109

NOTES:

1. INSTALL BUILDING EXHAUST FAN ON WEST WALL
CAPABLE OF BLOWING 320 CFM. (DAYTON FAN
#77448 OR EQUIVALENT)
2. INSTALL VIBRATION
ISOLATORS TO SUPPORT BLOWERS
3. ALL CONNECTIONS TO BLOWERS ARE
WITH FLEXIBLE COUPLINGS
4. INSTALL ELECTRONIC FLOW METER WITH DIGITAL
FLOW RATE/TOTALIZER DISPLAY. EPG MODEL OR
ALTERNATE THAT IS COMPATIBLE WITH FLOW
SENSOR.

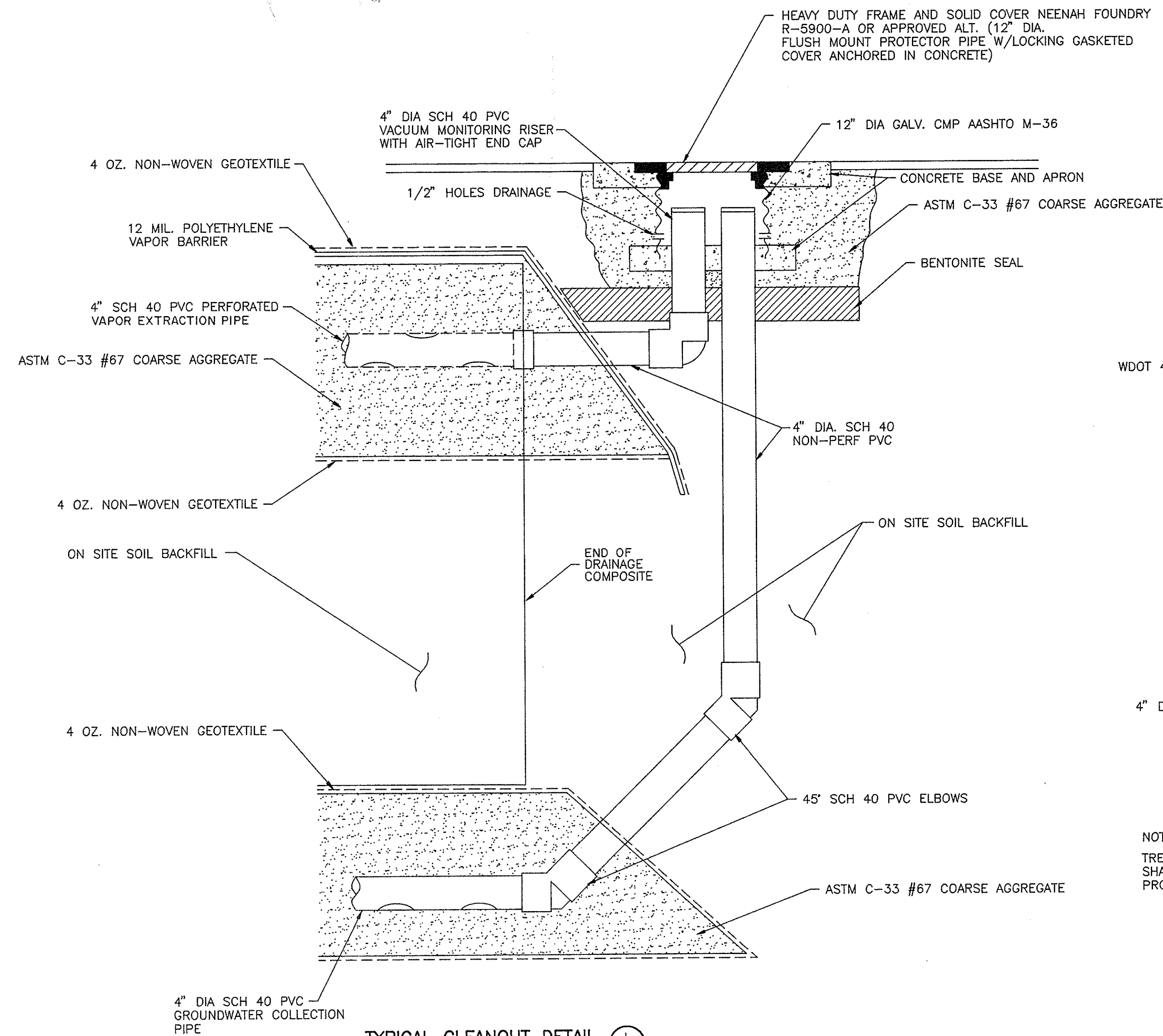
VAN ZEELAND DISCOUNT TIRE & AUTO
LITTLE CHUTE, WISCONSIN
EQUIPMENT BUILDING DETAILS



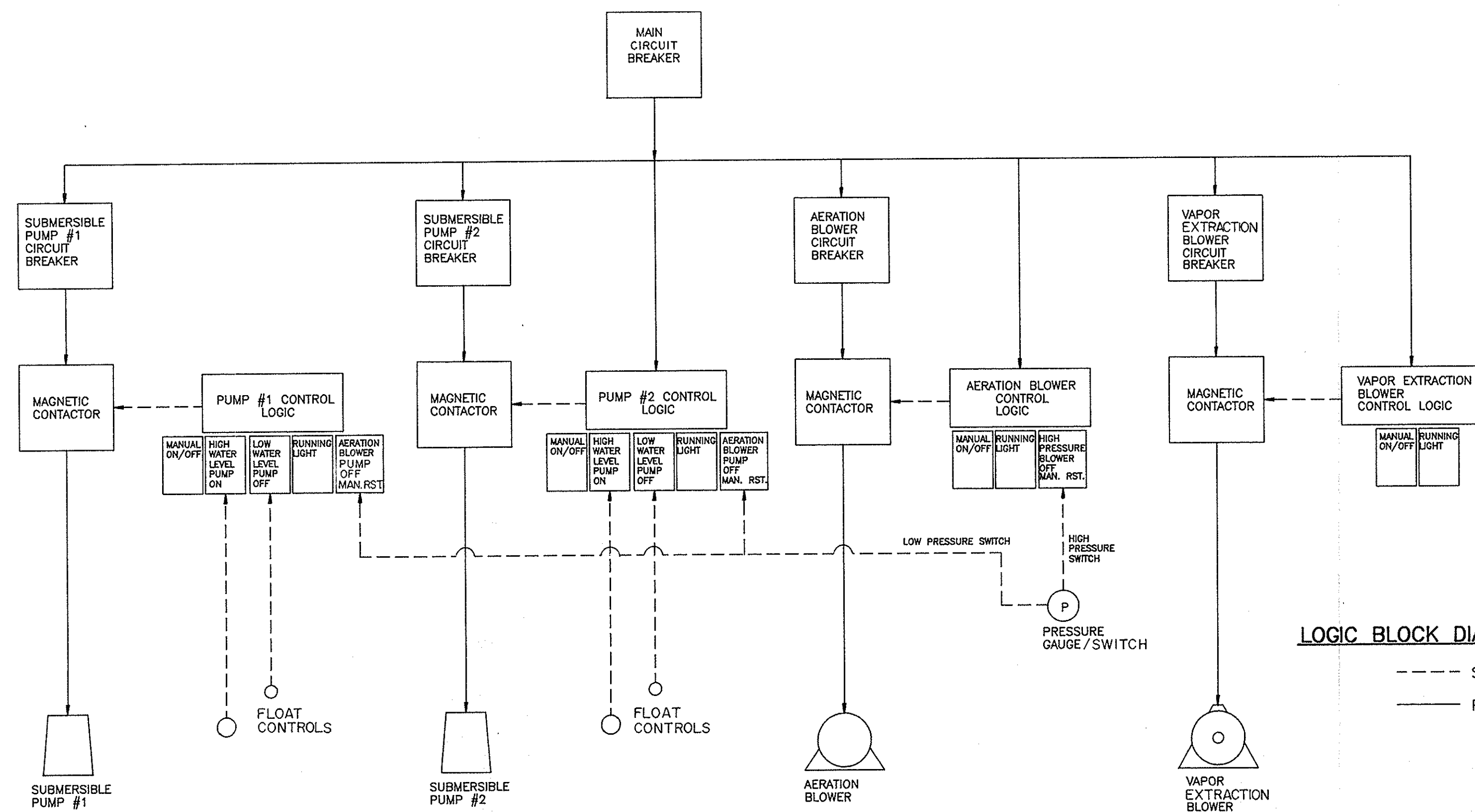
STS PROJECT NUMBER
19110XP
STS PROJECT FILE
SCALE
AS SHOWN
SHEET NUMBER

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CONSTRUCTION

- NOTES
1. PROVIDE BENTONITE SEAL AROUND PIPE PENETRATION OF POLYETHYLENE VAPOR BARRIER
 2. POLYETHYLENE VAPOR BARRIER TO EXTEND INTO ON-SITE SOIL BACKFILL

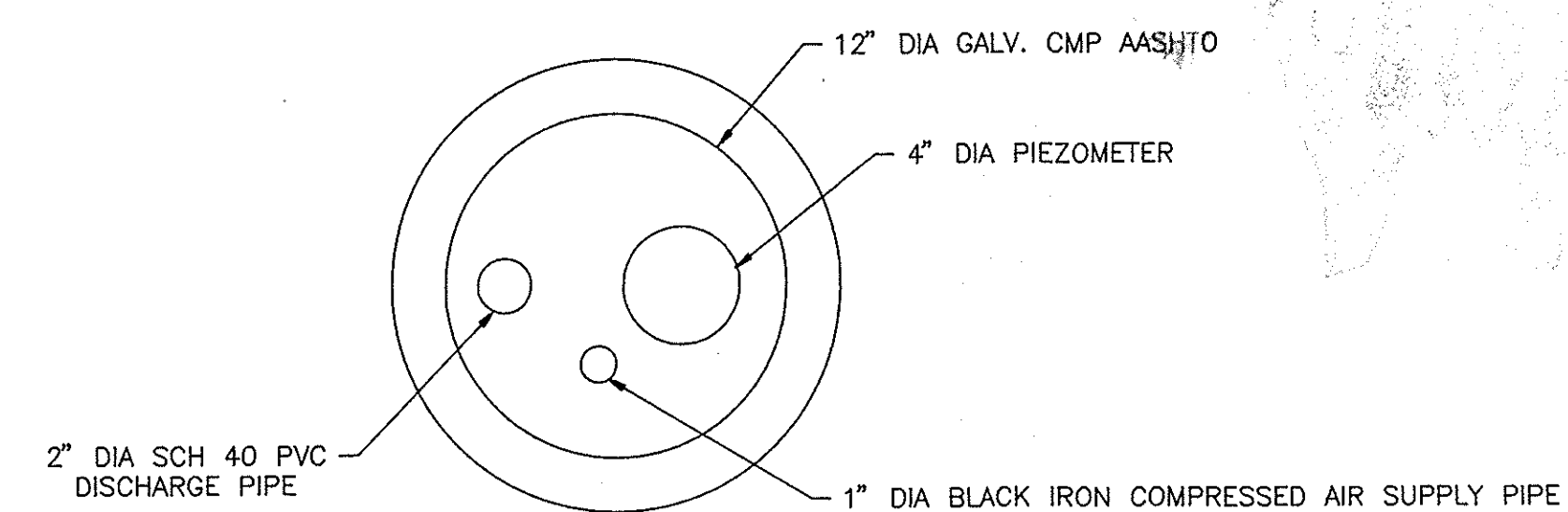


TYPICAL CLEANOUT DETAIL
SCALE 1"=1'

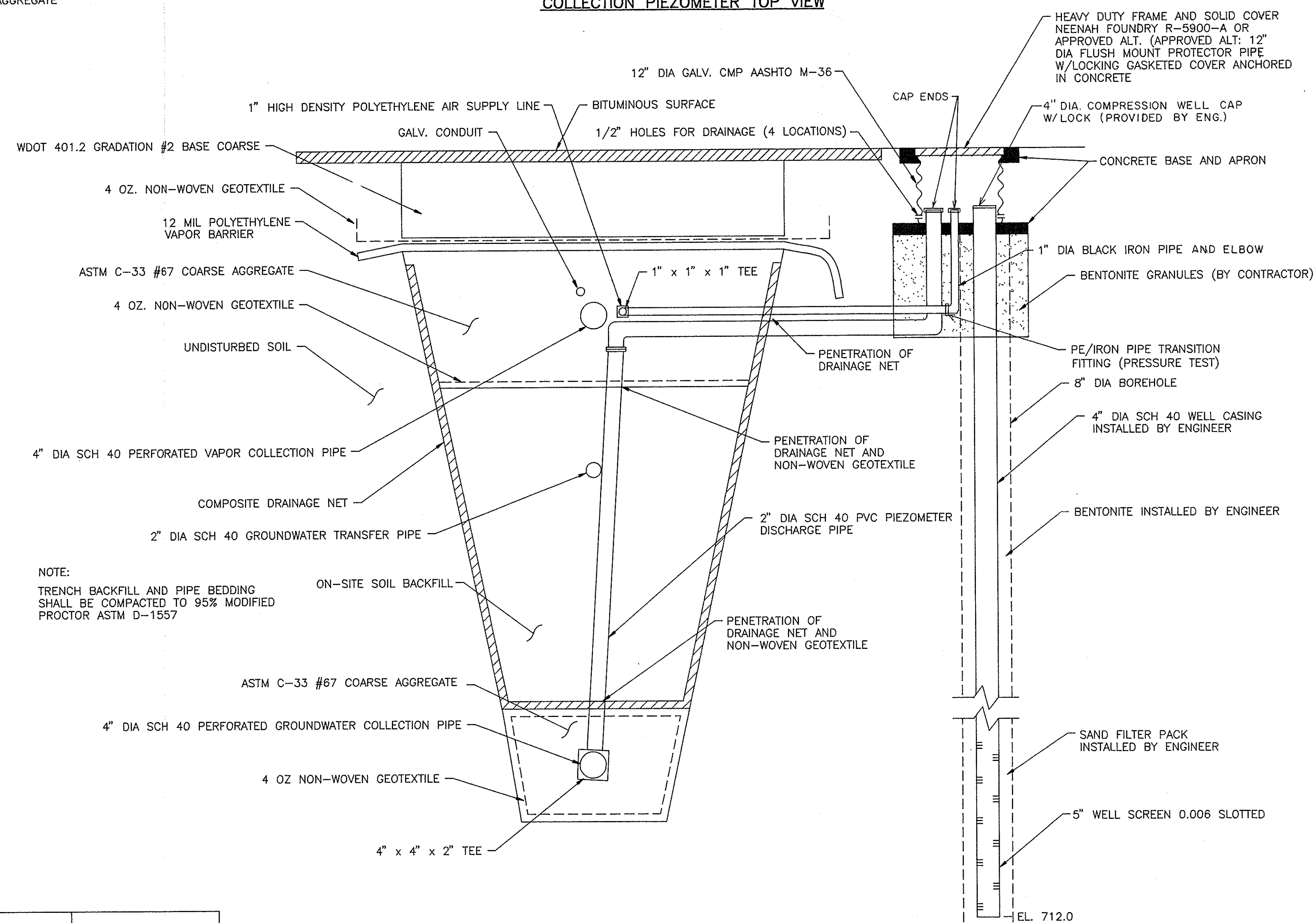


LOGIC BLOCK DIAGRAM FOR POWER PANEL SYSTEM

--- SIGNAL LINE
— POWER LINE



COLLECTION PIEZOMETER TOP VIEW



TYPICAL CONNECTIONS TO COLLECTION PIEZOMETER
SCALE 1"=1'

VAN ZEELAND DISCOUNT TIRE & AUTO
LITTLE CHUTE, WISCONSIN

CLEANOUT AND PIEZOMETER DETAILS



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