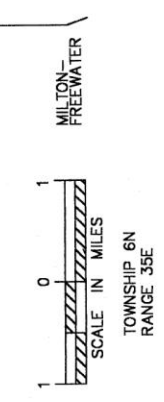
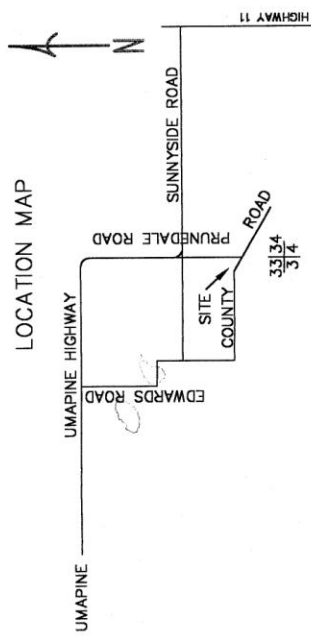


DATE _____
 DESIGNED BY HEWES
 PLOTTED 4/03
 APPROVED _____

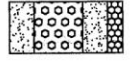
HUDSON BAY AQUIFER RECHARGE PROJECT

SITE PLAN & LOCATION MAP

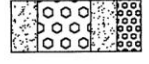
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 SHEET 1
 OF 4



TEST PIT #1
 0-12" SANDY LOAM
 12"-36" GRAVELLY SANDY LOAM, APPROX. 50% OF THE VOLUME IS GRAVEL SIZE PARTICLES WITH AN ESTIMATED D_{60} SIZE OF ABOUT 0.75".
 36"-48" SANDY LOAM
 48"-? GRAVELLY SANDY LOAM APPROX. 20% OF THE VOLUME IS GRAVEL SIZE PARTICLES.

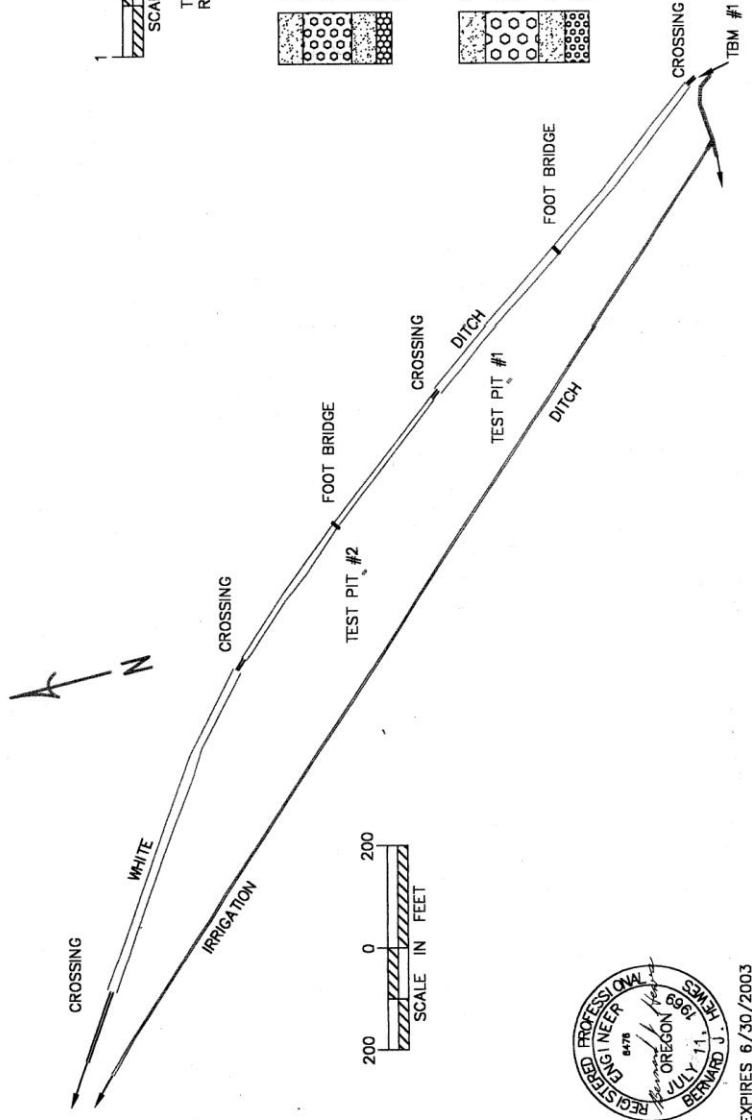


TEST PIT #2
 0-13" GRAVELLY SANDY LOAM
 13"-39" COBBLY SANDY LOAM, THE D_{60} OF THE GRAVEL IS APPROXIMATELY 1"
 39"-52" GRAVELLY SANDY LOAM
 52"-? SAND GRAVEL MIX D_{60} ESTIMATED TO BE ABOUT 0.25".



TBM #1 LOCATION IS AT THE TOP OF THE WALL ON THE NORTH WEST CORNER OF A CONCRETE TURNOUT BOX ON THE LEFT SIDE OF WHITE DITCH NEAR THE UPSTREAM END OF A 44"x72" CMP. PAINTED RED SPOT, ELEVATION 100.00.

SITE PLAN VIEW



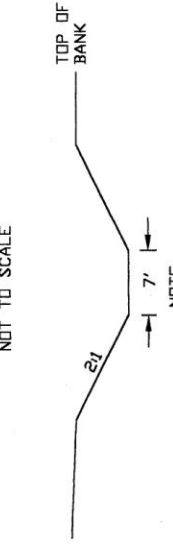
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DESIGNED B. HEWES
 PLOTTED
 4/03
 DATE

HUDSON BAY AQUIFER RECHARGE PROJECT SITE PLAN

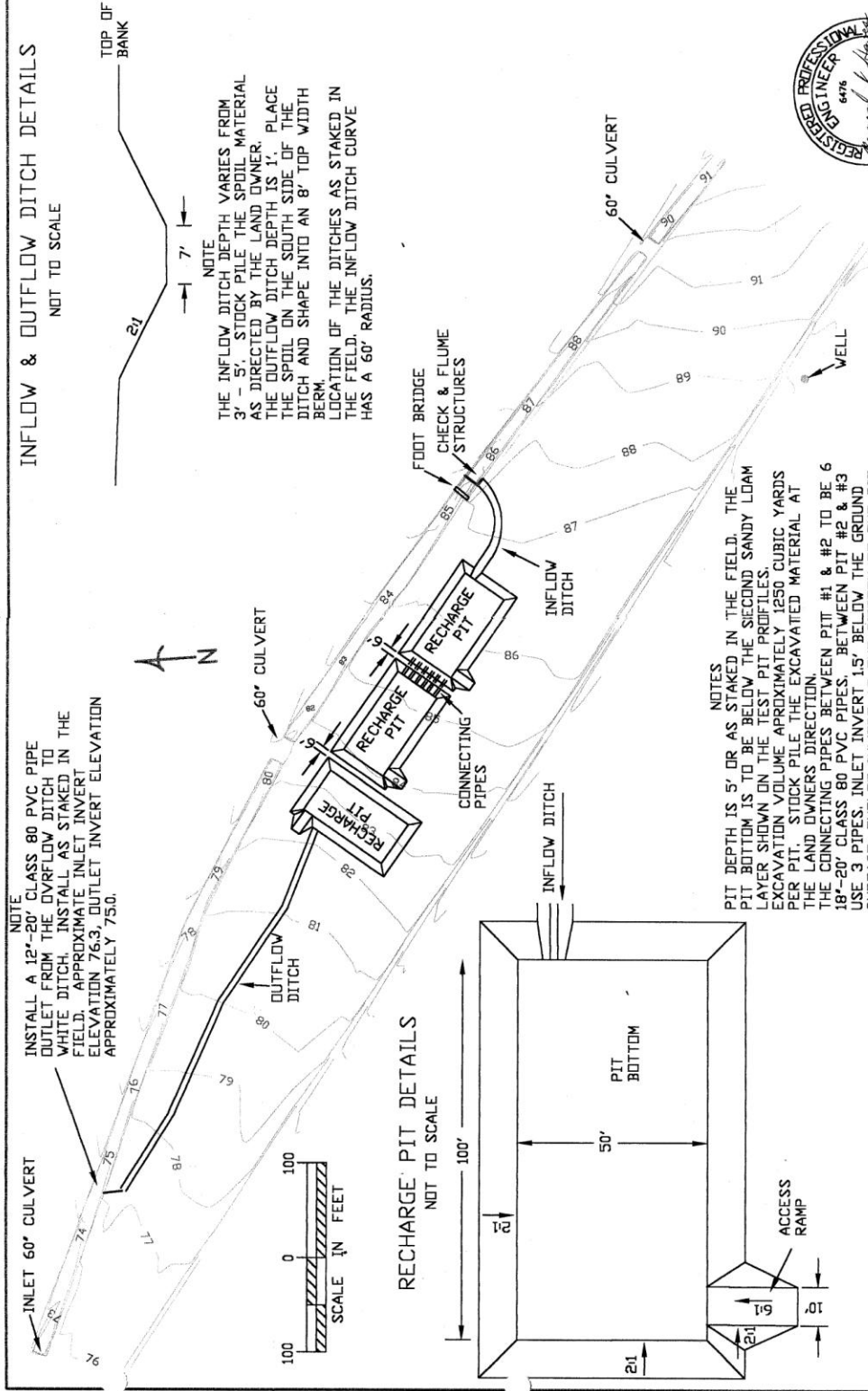
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 SHEET 2
 OF 4

INFLOW & OUTFLOW DITCH DETAILS NOT TO SCALE

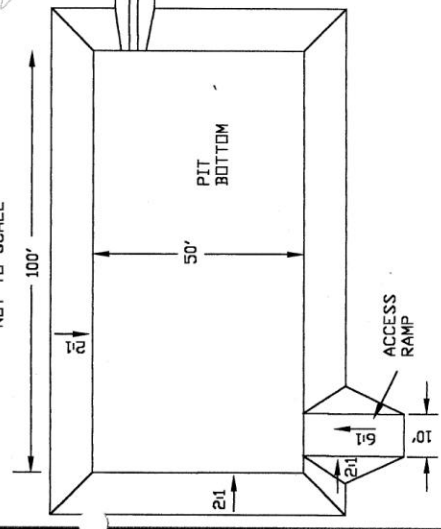


NOTE
 THE INFLOW DITCH DEPTH VARIES FROM 3' - 5'. STOCK PILE THE SPOIL MATERIAL AS DIRECTED BY THE LAND OWNER. THE OUTFLOW DITCH DEPTH IS 1'. PLACE THE SPOIL ON THE SOUTH SIDE OF THE DITCH AND SHAPE INTO AN 8' TOP WIDTH BERM. LOCATION OF THE DITCHES AS STAKED IN THE FIELD. THE INFLOW DITCH CURVE HAS A 60' RADIUS.

NOTE
 INSTALL A 12"-20' CLASS 80 PVC PIPE OUTFLET FROM THE OUTFLOW DITCH TO WHITE DITCH. INSTALL AS STAKED IN THE FIELD. APPROXIMATE INLET INVERT ELEVATION 76.3, OUTFLET INVERT ELEVATION APPROXIMATELY 75.0.



RECHARGE PIT DETAILS NOT TO SCALE



NOTES
 PIT DEPTH IS 5' OR AS STAKED IN THE FIELD. THE PIT BOTTOM IS TO BE BELOW THE SECOND SANDY LOAM LAYER SHOWN ON THE TEST PIT PROFILES. EXCAVATION VOLUME APPROXIMATELY 1250 CUBIC YARDS PER PIT. STOCK PILE THE EXCAVATED MATERIAL AT THE LAND OWNERS DIRECTION. THE CONNECTING PIPES BETWEEN PIT #1 & #2 TO BE 6 1/2" CLASS 80 PVC PIPES. BETWEEN PIT #2 & #3 USE 3 PIPES. INLET INVERT 1.5' BELOW THE GROUND SURFACE; OUTFLET INVERT AT THE BOTTOM OF THE PIT. COMPACT BACKFILL OF ROCK FREE SOIL FOR THE FIRST 5' FROM THE INLET END. USE A VIBRATING PLATE COMPACTOR WITH 2 PASSES OVER 4" THICK, LOOSE LAYERS. SOIL MOISTURE TO BE SUCH THAT THE MATERIAL DOES NOT FORM LAYERS. MIDR FLOWS FROM UNDER THE ACTION OF THE COMPACTOR.



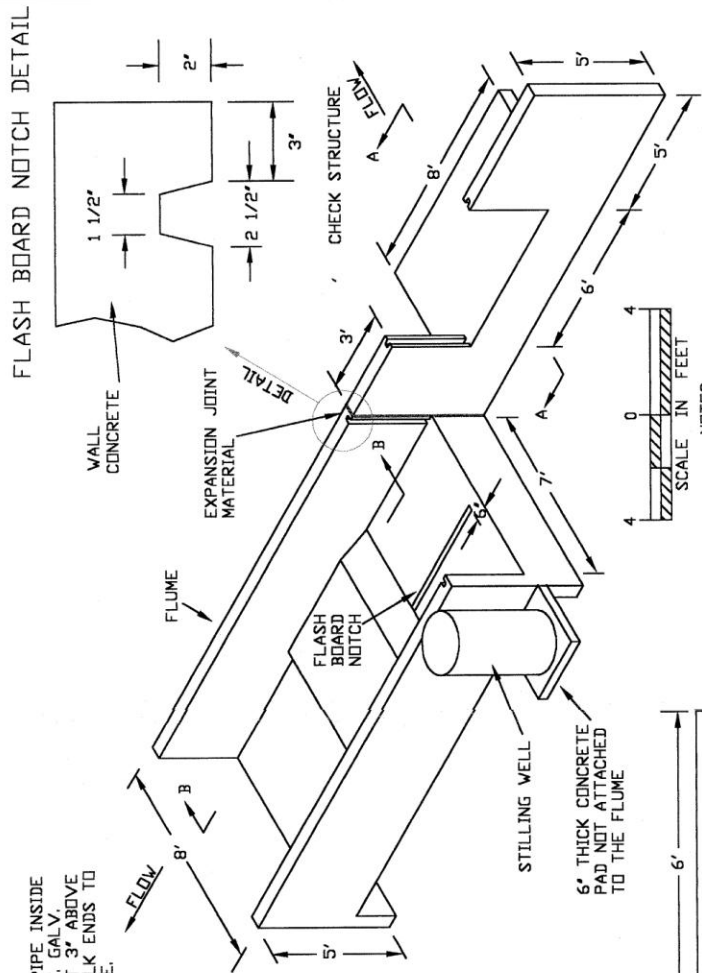
EXPIRES 6/30/2003

DATE _____
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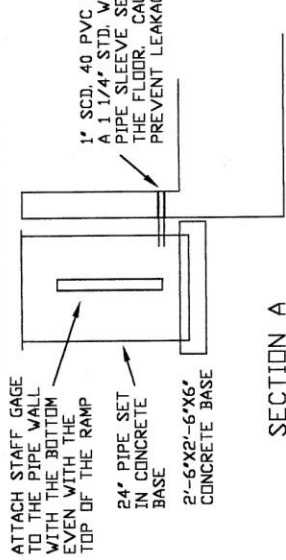
HUDSON BAY AQUIFER RECHARGE PROJECT
STRUCTURE DETAILS

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 SHEET 3
 OF 4

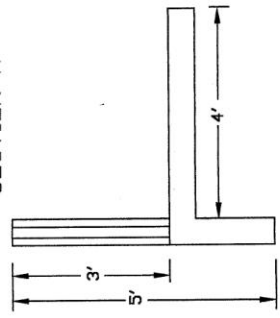
CHECK STRUCTURE & FLUME STRUCTURE PERSPECTIVE VIEW



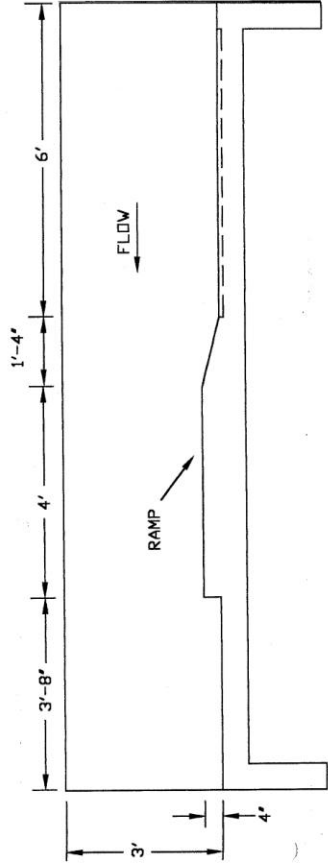
STILLING WELL DETAIL



SECTION A



SECTION B



EXPIRES 6/30/2003

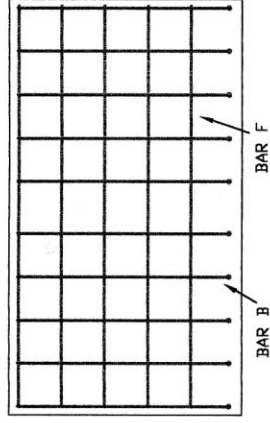
NOTES
 INSTALL THE CONCRETE IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION 42, ATTACHED.
 ALL WALLS AND FLOORS TO BE 6" THICK.
 USE 4000 PSI STRENGTH CONCRETE. 1.6 CUBIC YARDS NEEDED FOR THE CHECK STRUCTURE AND 4.9 CUBIC YARDS NEEDED FOR THE FLUME. SEPARATE THE TWO STRUCTURES USING A 6'X 1/2'X 5' STRIP OF ASPHALT EXPANSION JOINT FILLER.
 THE STILLING WELL PIPE MAY BE CORRUGATED METAL OR CLASS 80, MINIMUM, PVC PIPE.
 THE FLASH BOARD NOTCH IN THE BOTTOM OF THE FLUME IS TO HOLD THE BOTTOM OF A SPLITTER WALL. USE 2 PIECES OF 3/4" MARINE PLYWOOD. HOLD THE TOP AT THE DOWNSTREAM END WITH A 2'X8'X8' WITH 2-2'X4'X8' CLEATS. AT THE UPSTREAM END USE 2-2'X12'X8' WITH 2-2'X4'X24' CLEATS.

DATE _____
 DESIGNED B. HEWES
 PLOTTED _____
 APPROVED _____

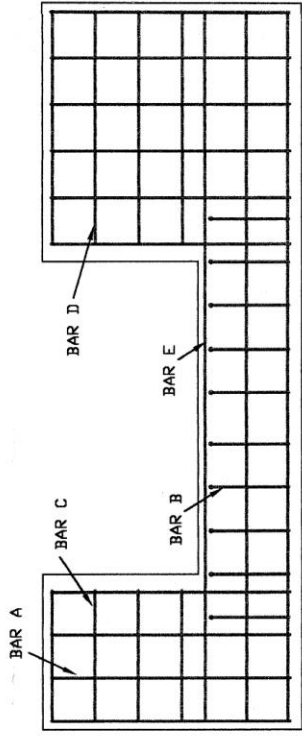
HUDSON BAY AQUIFER RECHARGE PROJECT
STRUCTURE REINFORCING STEEL

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 SHEET 4 OF 4

APRON PLAN VIEW



CHECK STRUCTURE ELEVATION VIEW



REINFORCING STEEL SCHEDULE

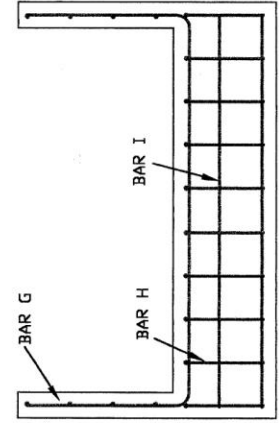
BAR NO.	SHAPE	A	B	C
A	10 STRAIGHT	4'-7"	-	-
B	10 ALB	1'-7"	4'-1"	-
C	4 STRAIGHT	2'-6"	-	-
D	4 STRAIGHT	4'-6"	-	-
E	3 STRAIGHT	13'-8"	-	-
F	5 STRAIGHT	7'-8"	-	-
FLUME				
G	19 ALB	3'-1"	7'-6"	3'-1"
H	20 ALB	1'-6"	8'-1"	-
I	4 STRAIGHT	7'-6"	-	-
J	8 STRAIGHT	14'-6"	-	-

NOTES
 ALL BARS TO BE NUMBER 4.
 BARS TO BE PLACED IN THE CENTER OF THE WALLS AND FLOOR.
 NEED 820 LINEAL FEET OF REINFORCING BARS WITHOUT ANY WASTE.

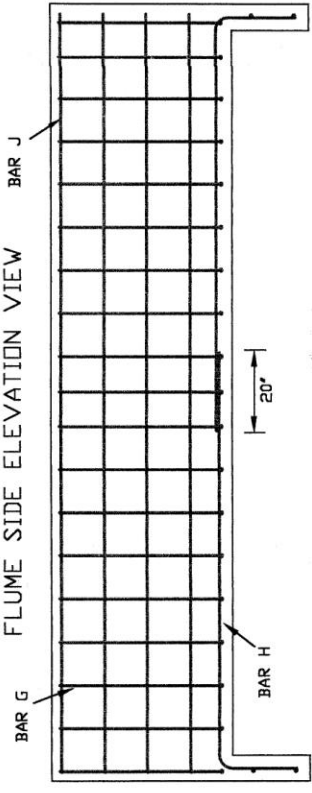


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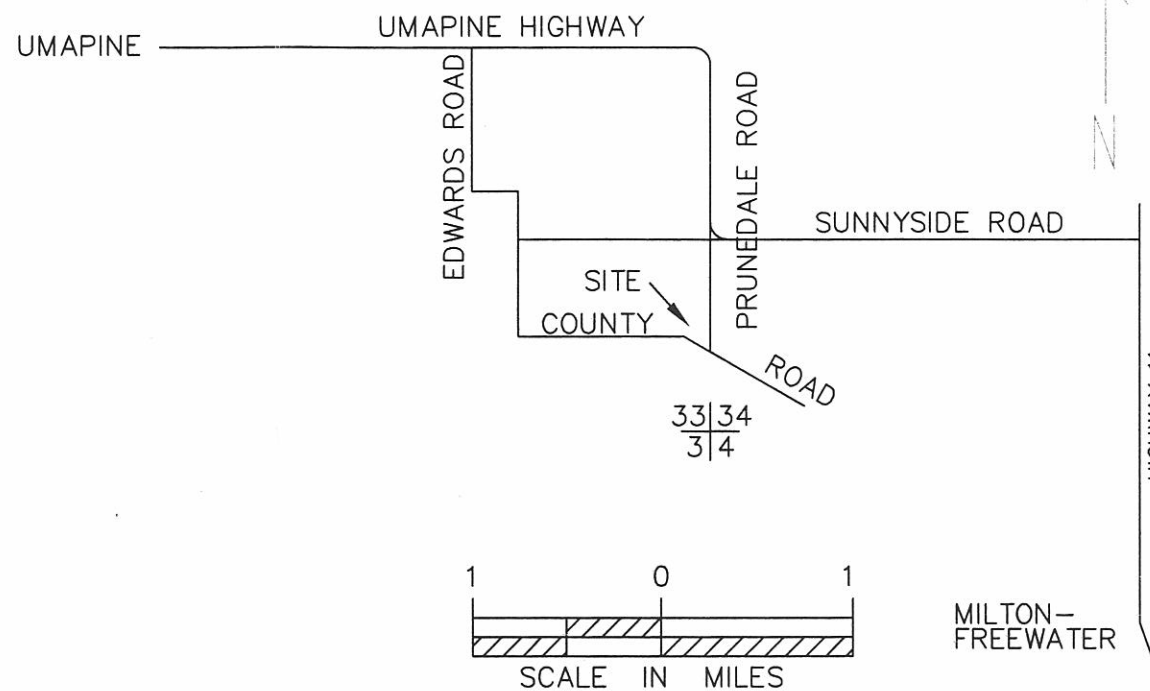
FLUME END WALL ELEVATION VIEW



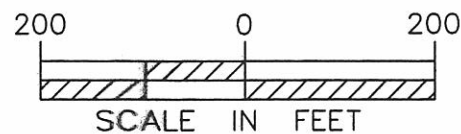
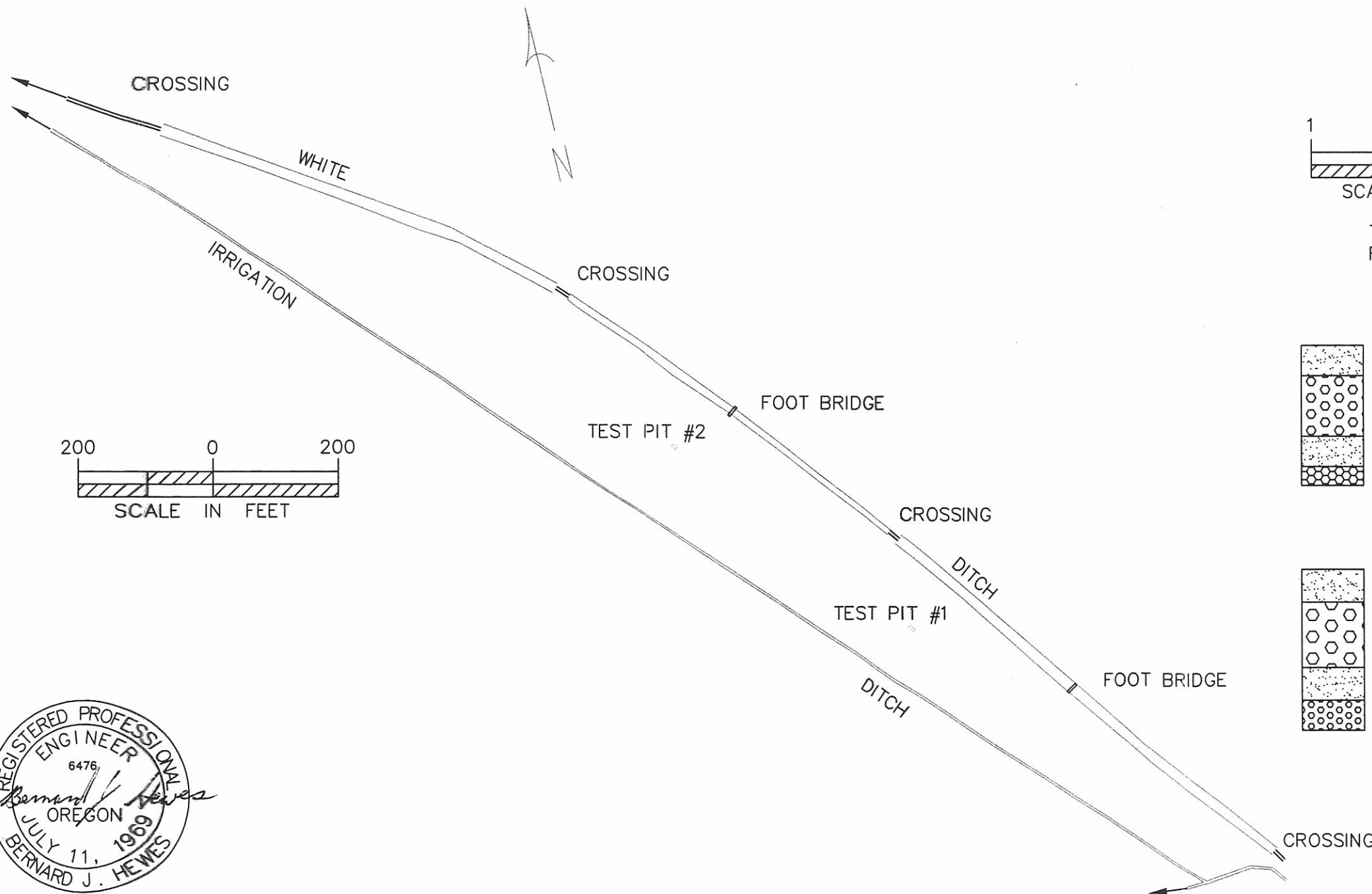
FLUME SIDE ELEVATION VIEW



LOCATION MAP



SITE PLAN VIEW



- TEST PIT #1
- 0-12" SANDY LOAM
 - 12"-36" GRAVELY SANDY LOAM, APPROX. 50% OF THE VOLUME IS GRAVEL SIZE PARTICLES WITH AN ESTIMATED D₅₀ SIZE OF ABOUT 0.75".
 - 36"-48" SANDY LOAM
 - 48"-? GRAVELY SANDY LOAM APPROX. 20% OF THE VOLUME IS GRAVEL SIZE PARTICLES.
- TEST PIT #2
- 0-13" GRAVELY SANDY LOAM
 - 13"-39" COBBLY SANDY LOAM, THE D₅₀ OF THE GRAVEL IS APPROXIMATELY 1"
 - 39"-52" GRAVELY SANDY LOAM
 - 52"-? SAND GRAVEL MIX D₅₀ ESTIMATED TO BE ABOUT 0.25".

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DATE	4/03
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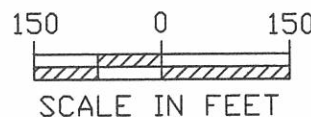
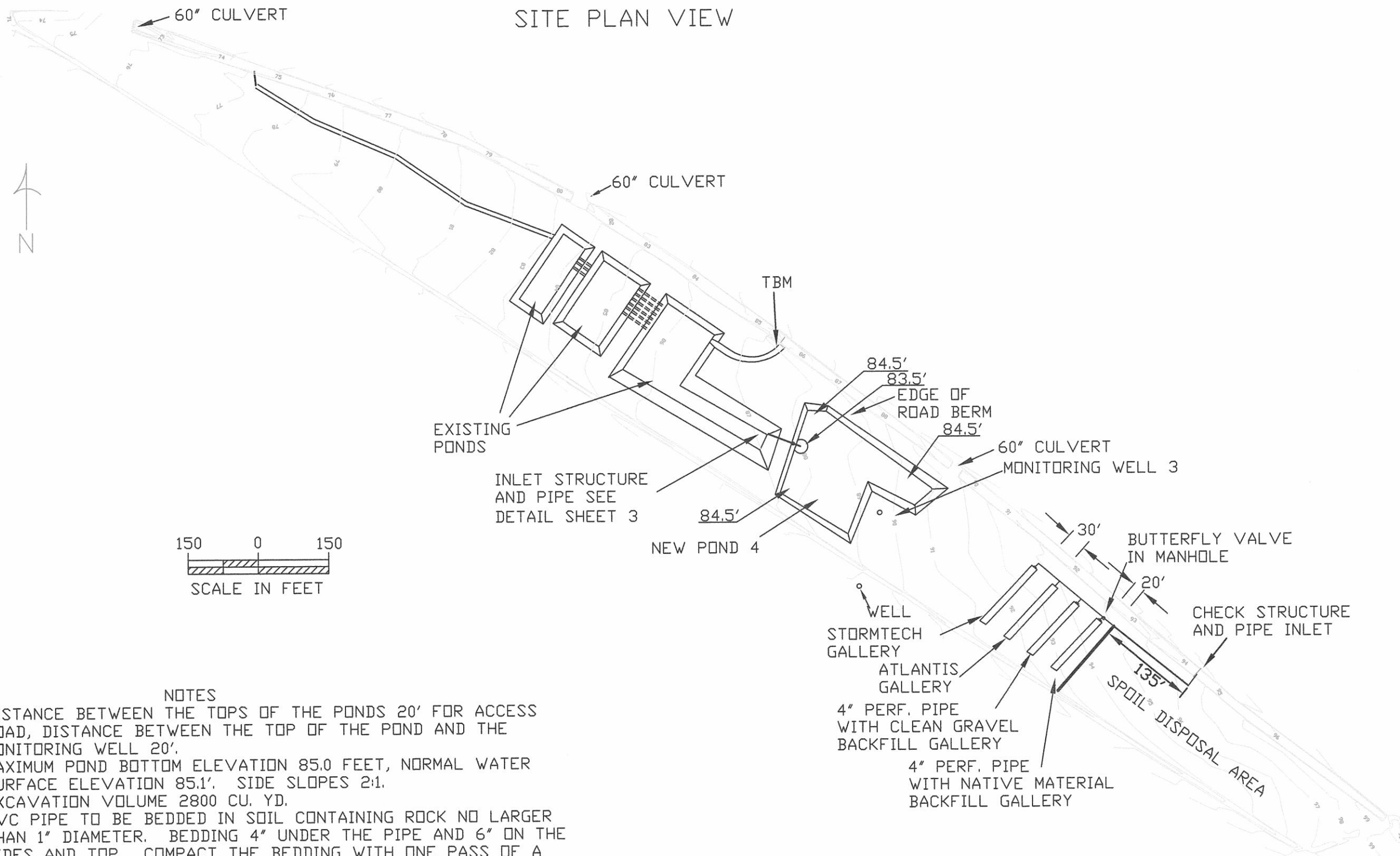
WWBWC/HBDC UPPER RECHARGE PROJECT
SITE PLAN & LOCATION MAP
UMATILLA COUNTY, OREGON

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SHEET 1	OF 7



EXPIRES 6/30/2009

SITE PLAN VIEW



NOTES
 DISTANCE BETWEEN THE TOPS OF THE PONDS 20' FOR ACCESS ROAD, DISTANCE BETWEEN THE TOP OF THE POND AND THE MONITORING WELL 20'.
 MAXIMUM POND BOTTOM ELEVATION 85.0 FEET, NORMAL WATER SURFACE ELEVATION 85.1'. SIDE SLOPES 2:1.
 EXCAVATION VOLUME 2800 CU. YD.
 PVC PIPE TO BE BEDDED IN SOIL CONTAINING ROCK NO LARGER THAN 1" DIAMETER. BEDDING 4" UNDER THE PIPE AND 6" ON THE SIDES AND TOP. COMPACT THE BEDDING WITH ONE PASS OF A VIBRATING PLATE COMPACTOR OVER 6" LOOSE LIFTS.
 CONSIDER FLOW METERS: AQUA MASTER MODEL 900R FROM JENNINGS INC.
 McCROMETER MODEL ED300 PROPELLER STYLE METER.
 CHECK FOR COMPATIBILITY WITH YOUR EXISTING RECORDING AND CONTROL EQUIPMENT.
 SPACE THE DIFFERENT KIND OF GALLERIES 30'.
 TBM IS AT THE TOP OF THE RIGHT SIDE WALL, DOWNSTREAM END OF THE FLUME. ELEVATION 88.7 FEET.



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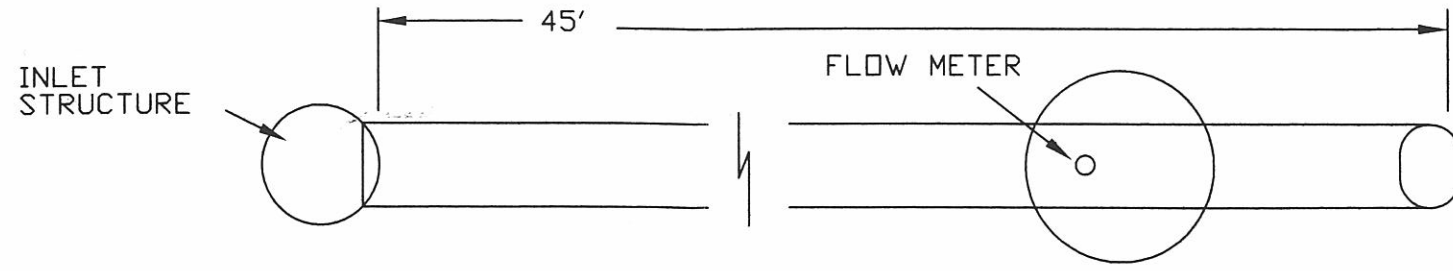
DATE _____
 DESIGNED B. HEWES 11/07
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WWBWC/HBDC UPPER RECHARGE PROJECT
 SITE PLAN
 UMATILLA COUNTY, OREGON

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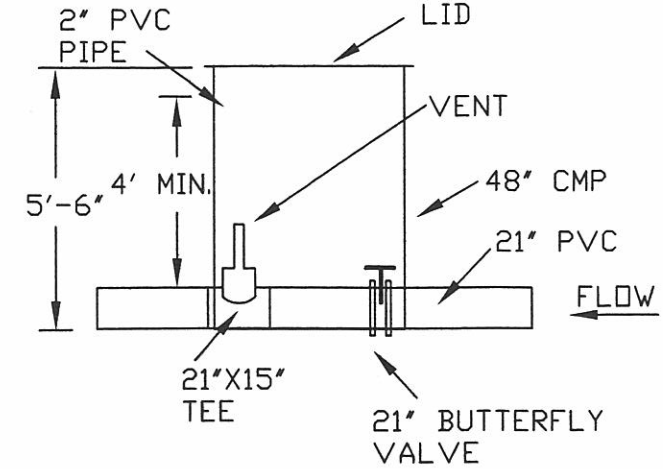
SHEET 2 OF 7

SUPPLY PIPE TO POND 4 PLAN VIEW

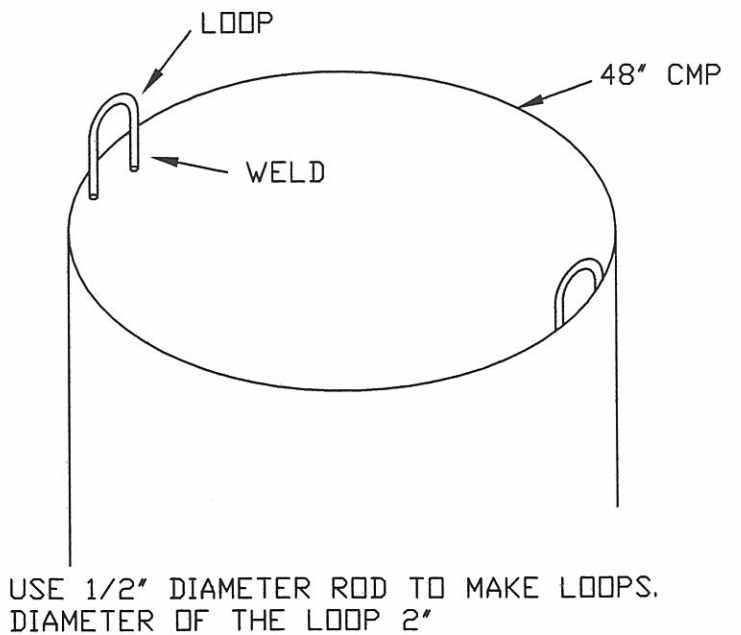


NOTES
 CUT THE HOLE IN THE INLET STRUCTURE TO CLOSELY FIT AROUND THE SUPPLY PIPE. FILL THE SPACE BETWEEN THE STRUCTURE AND PIPES WITH CAULKING ON BOTH SIDES.
 THE BOTTOM LIP OF THE 45° ELBOW CAN BE NO LESS THAN 0.2' BELOW THE TOP OF THE 21" PIPE.
 LID FOR THE CMP MANHOLE TO BE GALVANIZED $\frac{1}{8}$ " THICK STEEL.
 SLIDE GATE TO BE A WATERMAN C-8-4 OR EQUIVALENT. INSTALL A CATWALK FOR ACCESS TO THE SLIDE GATE.

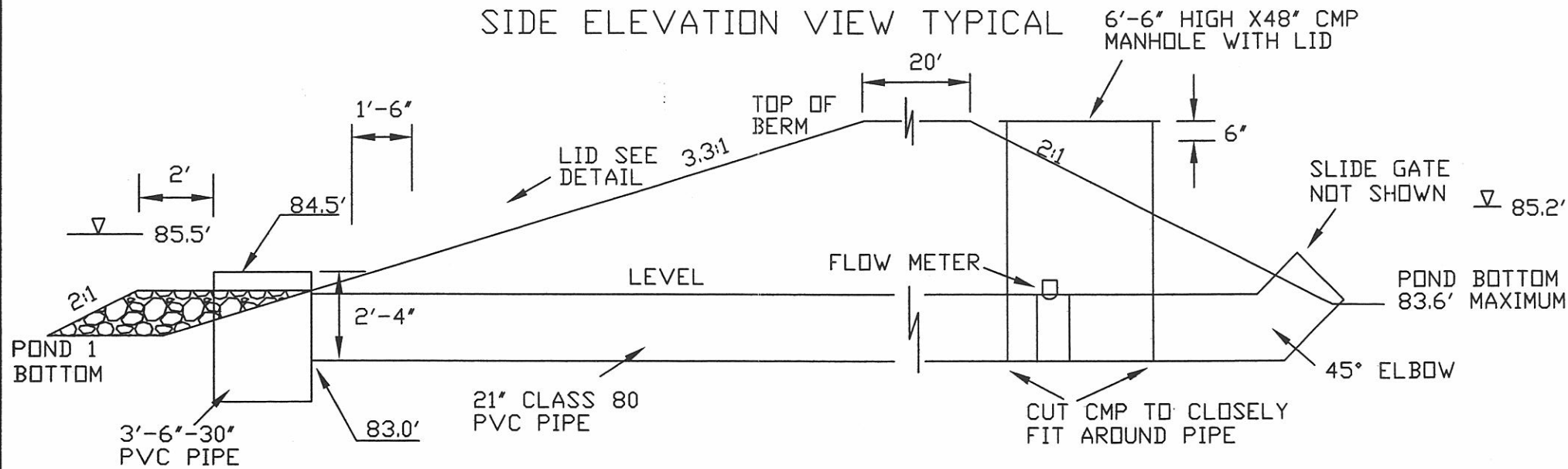
GALLERY SUPPLY PIPE VALVE DETAILS ELEVATION VIEW



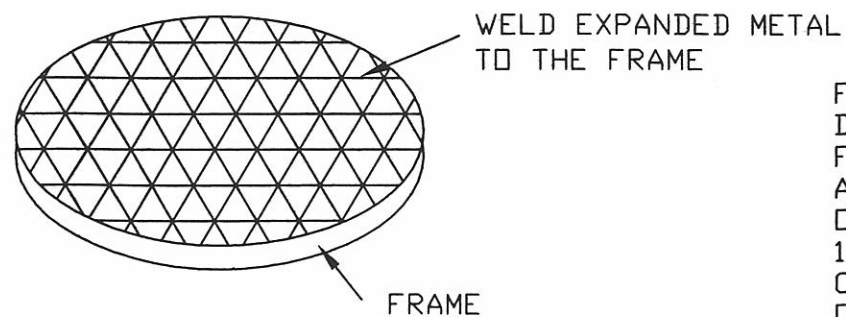
MANHOLE LID HOLD DOWN PERSPECTIVE VIEW



SIDE ELEVATION VIEW TYPICAL



INLET STRUCTURE TRASH RACK DETAIL PERSPECTIVE VIEW



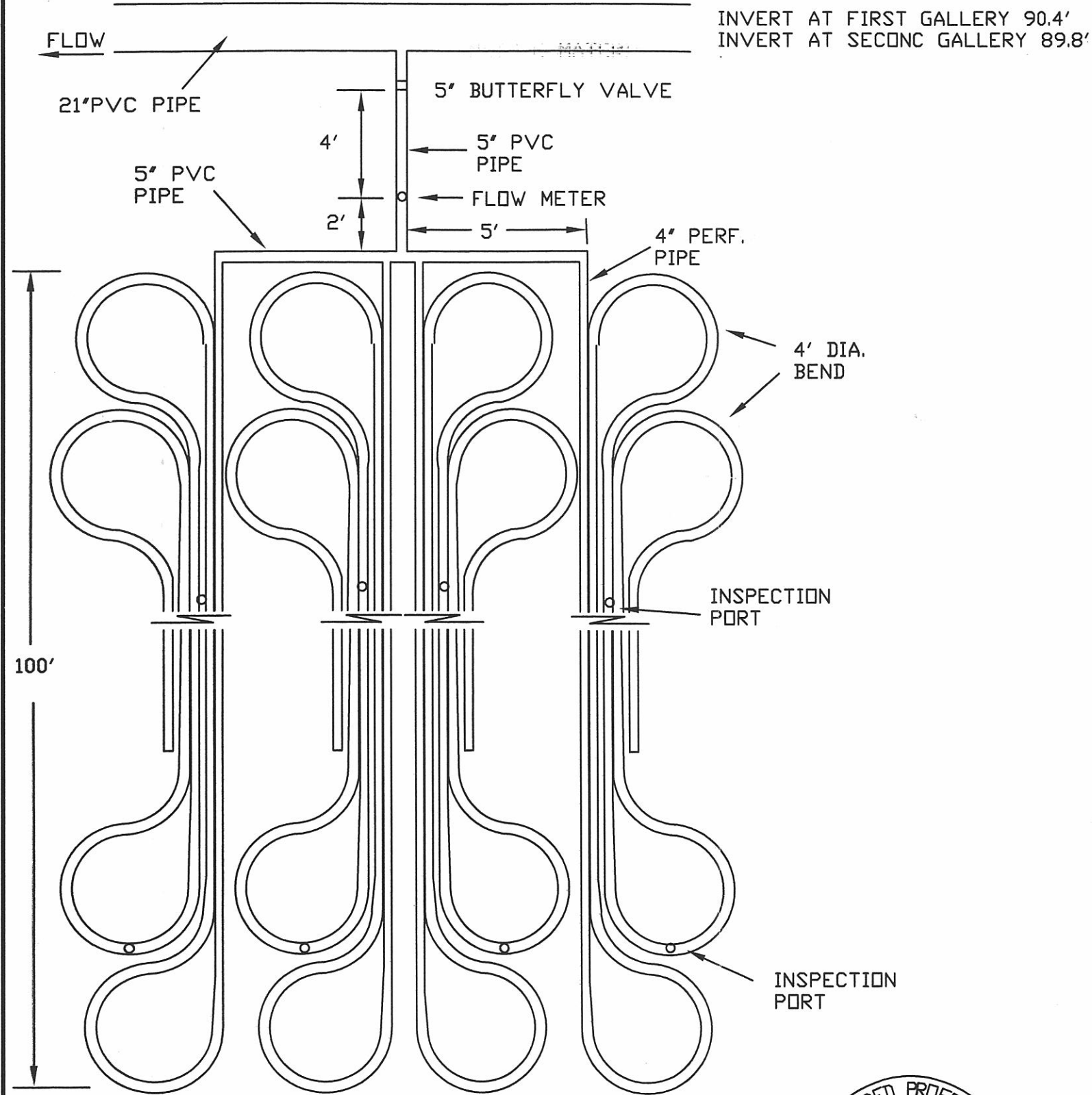
FRAME IS $\frac{1}{8}$ " X 3" STEEL, INSIDE DIAMETER 32". COVER TO BE FLATTENED EXPANDED METAL APPROXIMATELY 0.120" THICK; OPENINGS APPROXIMATELY $1\frac{1}{2}$ " X $1\frac{5}{8}$ ".
 CLEAN AND PAINT WITH 2 COATS OF HIGH ZINC COLD GALVANIZING PAINT.

WWBWC/HBDC UPPER RECHARGE PROJECT MISCELLANEOUS DETAILS UMATILLA COUNTY, OREGON B H ENGINEERING	DATE 11/07 DESIGNED B. HEWES CHECKED APPROVED
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	SHEET 3 OF 7



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TYPICAL 4" PERFORATED PIPE GALLERY
PLAN VIEW

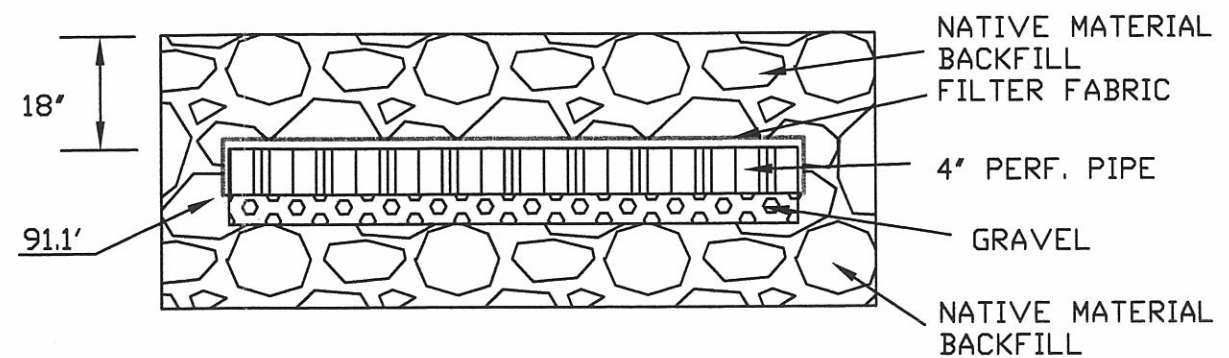


NOTE: ON THIS SIDE THE PERF. PIPE CHANGED TO SMOOTH DRAIN FIELD PIPE WITH A TEE FOR EACH PIPE ROW, 20 ROWS.



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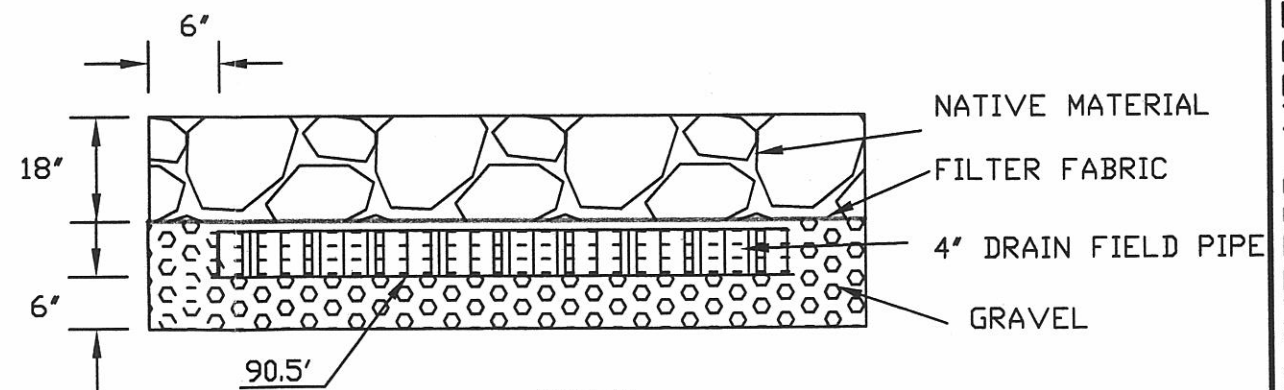
4" PERFORATED PIPE WITH
NATIVE MATERIAL BACKFILL
ELEVATION VIEW



NOTES

NEED 2000' OF ADS 4" SINGLE WALL, PERFORATED, CORRUGATED POLYETHYLENE PIPE OR EQUIVALENT. CONNECT THE 4" TO THE 5" PIPE USING A MAR-MAC POLYSEAL PIPE COUPLER OR EQUIVALENT. USE ONLY ENOUGH GRAVEL BEDDING TO PROVIDE A SMOOTH SURFACE TO LAY THE PIPE ON OR REMOVE ALL ROCK GREATER THAN 2" IN DIAMETER FROM CONTACTING THE PIPE. THE INSPECTION PORT TO BE INSTALLED WHERE THE TWO PIPE ROLLS CONNECT AND NEAR THE END AS SHOWN. CONNECT THE ROLLS WITH A 4" TEE, USE 2' OF VERTICAL 4" PERF. PIPE WRAPPED WITH FILTER FABRIC FOR AN INSPECTION PORT. INSTALL A 4" CAP ON THE END OF THE PIPE AND INSPECTION PORT. THE FILTER FABRIC TO BE ADS 4000 NONWOVEN OR EQUIVALENT. ABOUT 75 SQ. YD. NEEDED.

4" DRAIN FIELD PIPE WITH
GRAVEL BEDDING
ELEVATION VIEW



NOTES

NEED 2000' OF 4" PVC DRAIN FIELD PIPE. CONNECT THE 4" TO THE 5" PIPE USING A MAR-MAC POLYSEAL PIPE COUPLER OR EQUIVALENT. THE INSPECTION PORTS TO BE INSTALLED NEAR THE MIDDLE OF ONE OF THE ROWS AND NEAR THE END. USE 2' OF VERTICAL 4" PIPE WRAPPED WITH FILTER FABRIC FOR AN INSPECTION PORT. INSTALL A 4" CAP ON THE END OF THE PIPE AND INSPECTION PORT. THE FILTER FABRIC TO BE ADS 4000 NONWOVEN OR EQUIVALENT. ABOUT 75 SQ. YD. NEEDED. GRAVEL TO BE ANGULAR CRUSHED ROCK WITH THE MAJORITY BEING 3/4"-2", ABOUT 60 CU. YD. NEEDED.

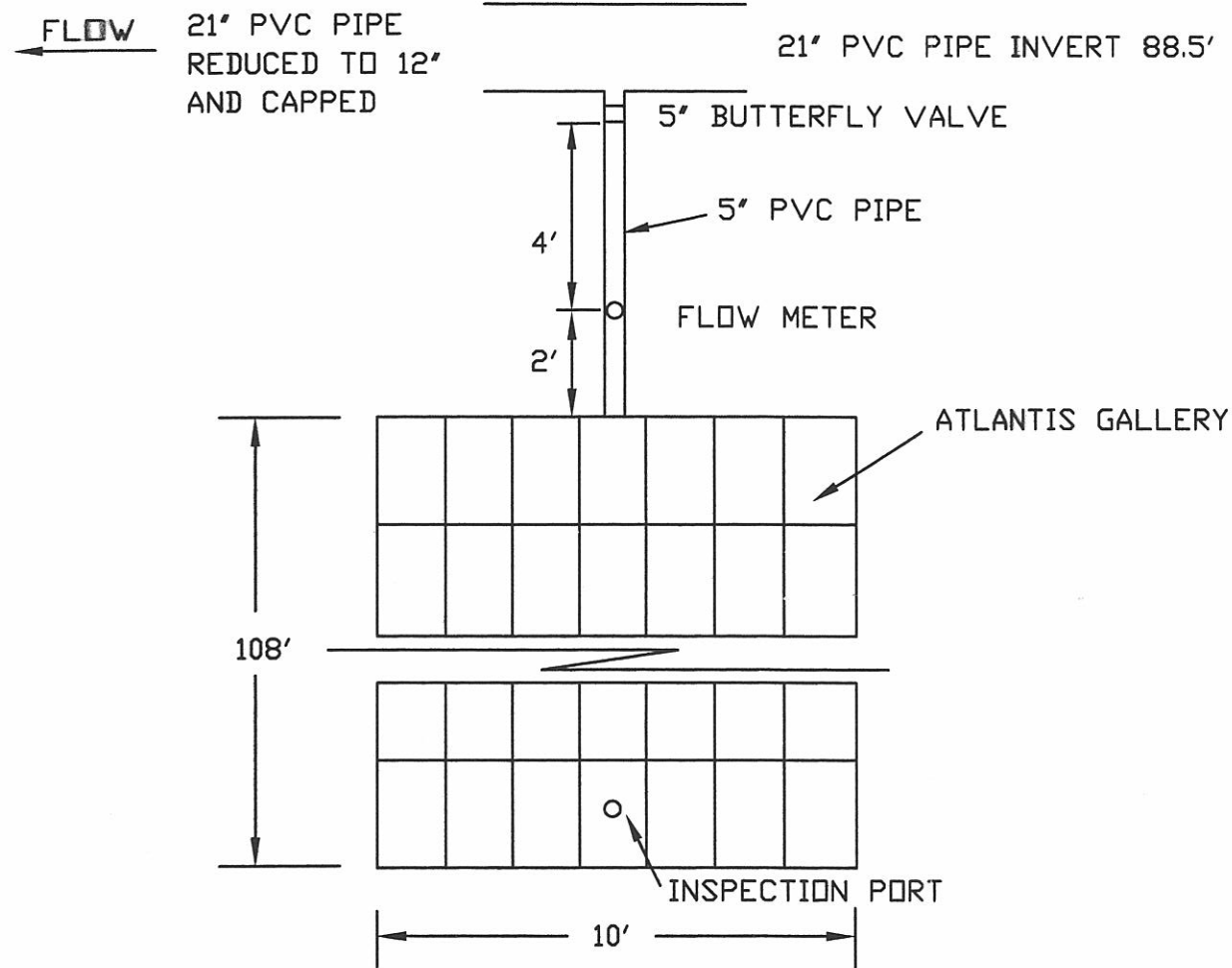
DATE	12/07
DESIGNED	B. HEWES
CHECKED	
APPROVED	

WWBWC/HBDC UPPER RECHARGE PROJECT
 4" PERF. & DRAIN FIELD PIPE DETAILS
 UMATILLA COUNTY, OREGON
 B H ENGINEERING

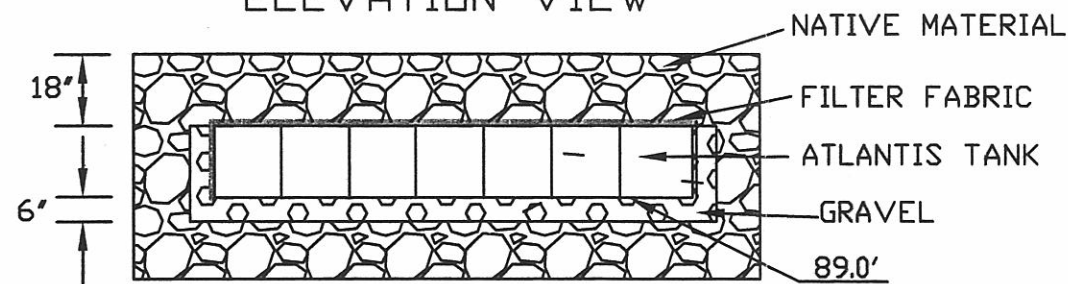
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SHEET 4
OF 7

ATLANTIS RAIN TANK DETAIL PLAN VIEW



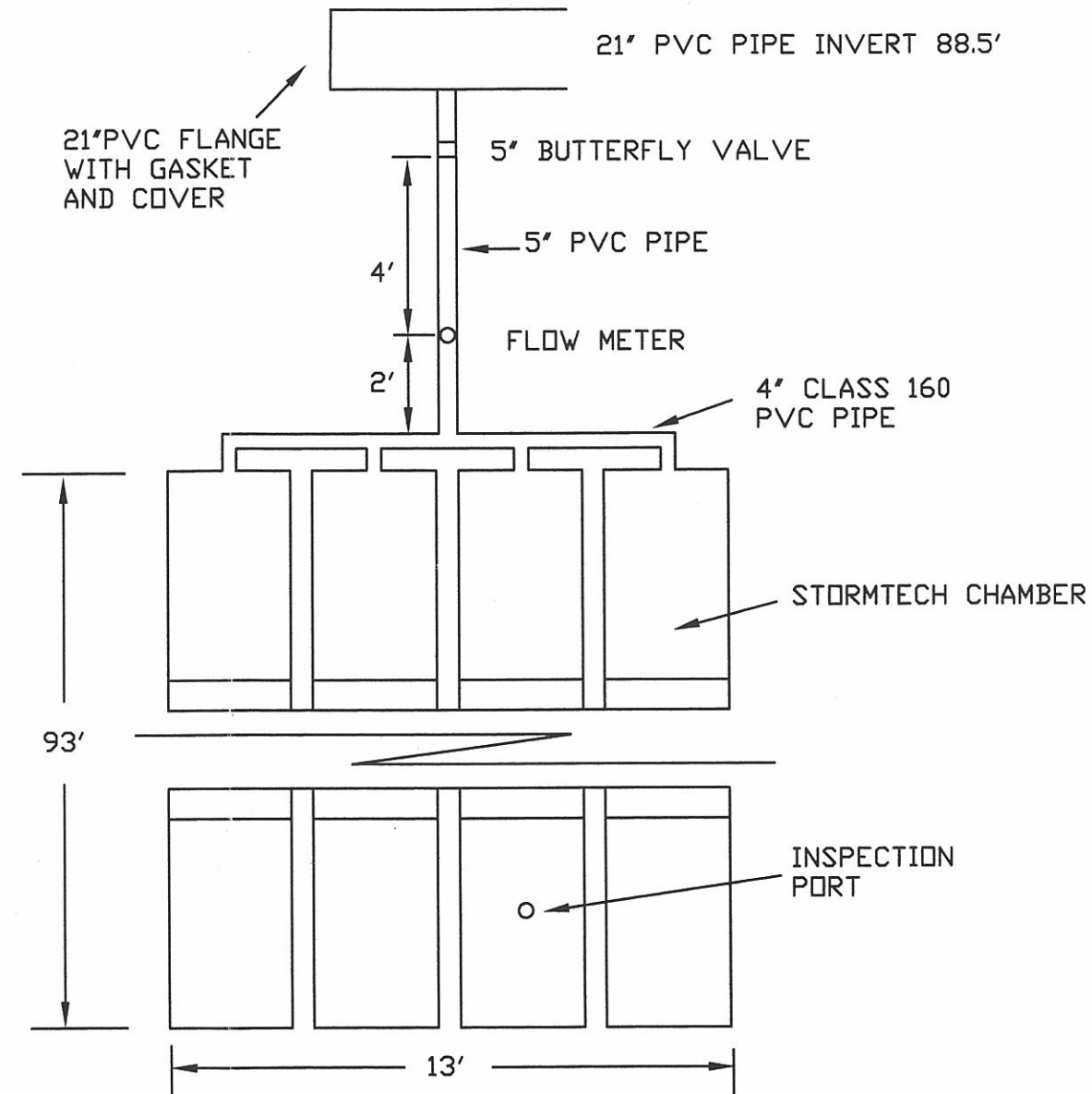
ELEVATION VIEW



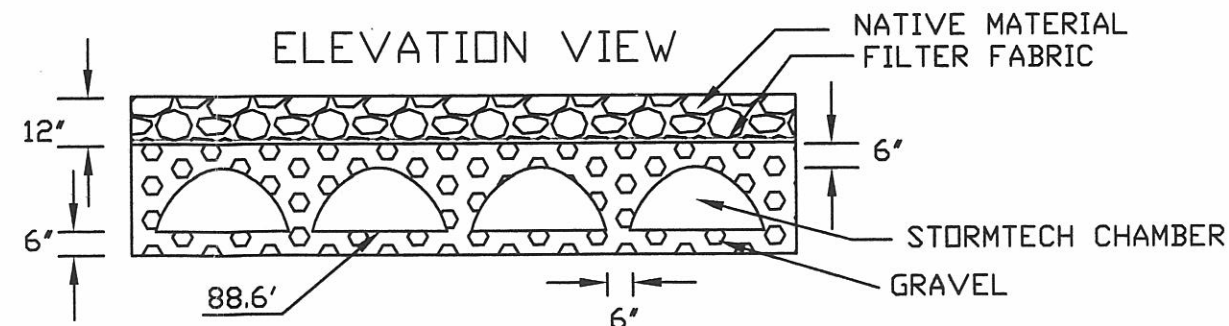
NOTES

ASSEMBLE AND INSTALL RAIN TANKS AND INSPECTION PORT AS DESCRIBED IN THE MANUFACTURERS LITERATURE. TANKS ARE 16" WIDE, 27" LONG AND 17 3/4" HIGH, NEED 336 TANKS FOR H-10 LOADING. USE 4" PVC PIPE FOR THE PORT, EXTEND 1' ABOVE GROUND AND PROTECT WITH A FENCE POST AND END CAP. FILTER FABRIC TO BE ADS 4000 OR EQUIVALENT, NEED 160 SQ. YD. FOLD AND TAPE THE CORNERS AS SHOWN IN THE LITERATURE. GRAVEL TO BE ANGULAR CRUSHED ROCK WITH THE MAJORITY OF PARTICLES BETWEEN 3/4"-2", NEED ABOUT 25 CU. YD.

STORMTECH CHAMBER PLAN VIEW

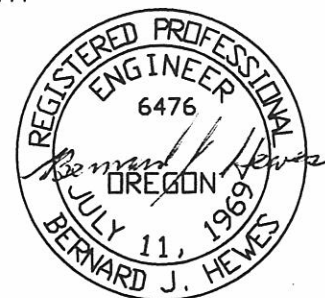


ELEVATION VIEW



NOTES

ASSEMBLE AND INSTALL CHAMBERS AND INSPECTION PORT AS SHOWN IN THE MANUFACTURERS LITERATURE. TANKS ARE 34" WIDE, 7'-2" LONG AND 16" HIGH, NEED 50 CHAMBERS. IN LIEU OF THE SUBSURFACE PORT SHOWN IN THE LITERATURE EXTEND THE PORT 1' ABOVE GROUND AND PROTECT WITH A FENCE POST AND END CAP. FILTER FABRIC TO BE ADS 4000 OR EQUIVALENT, NEED 190 SQ. YD. GRAVEL TO BE ANGULAR CRUSHED ROCK WITH THE MAJORITY OF PARTICLES BETWEEN 3/4"-2", NEED ABOUT 115 CU. YD.



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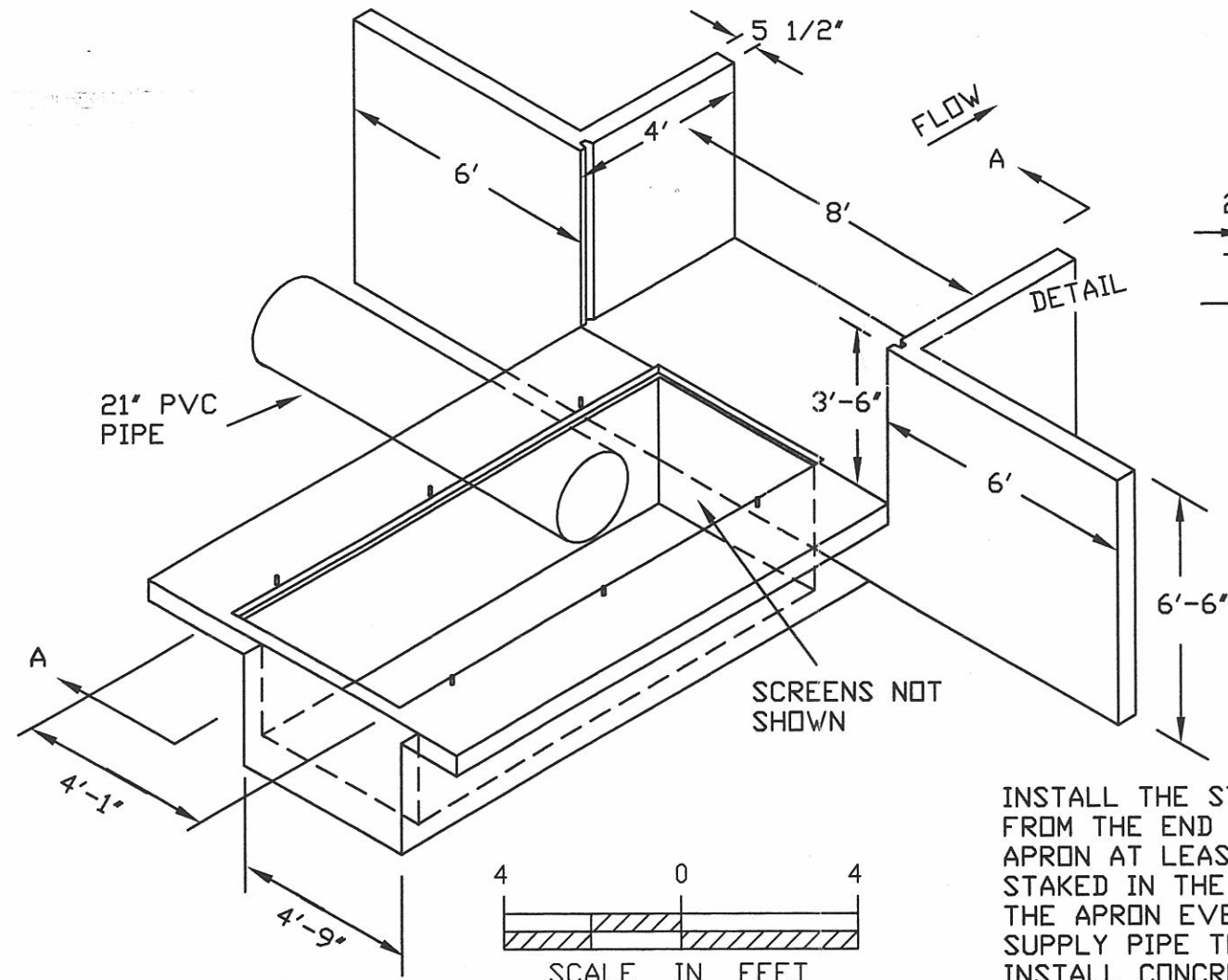
DATE 12/07
DESIGNED B. HEWES
CHECKED

WWBWC/HBDC UPPER RECHARGE PROJECT
ATLANTIS & STORMTECH CHAMBERS DETAILS
UMATILLA COUNTY, OREGON

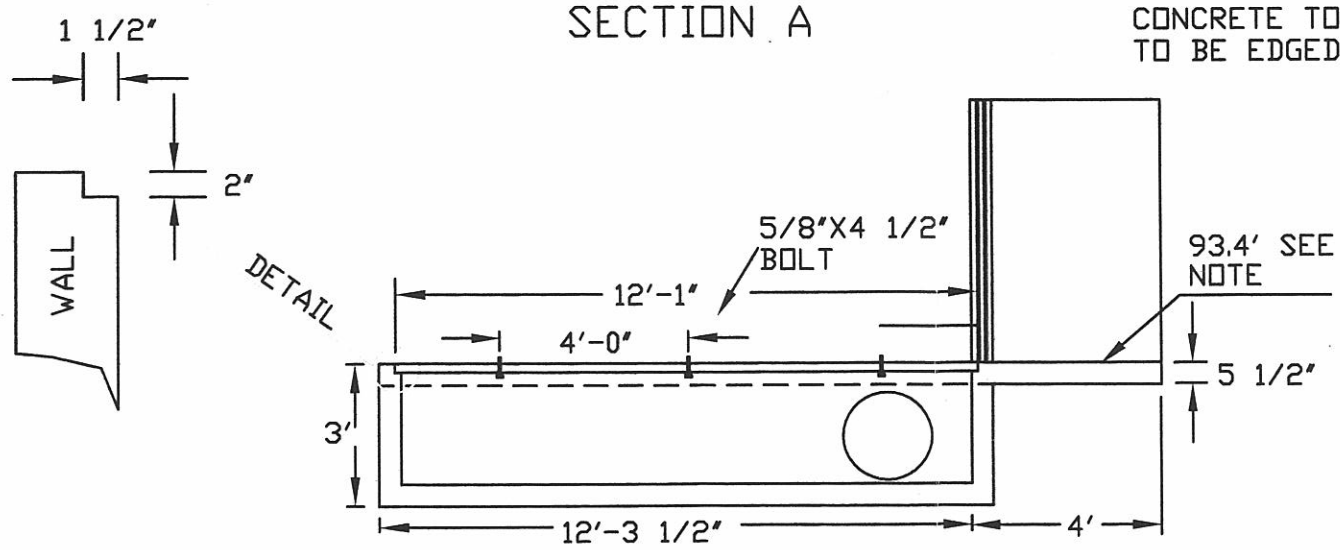
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SHEET 5
OF 7

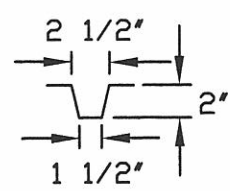
STRUCTURE PERSPECTIVE VIEW



SECTION A

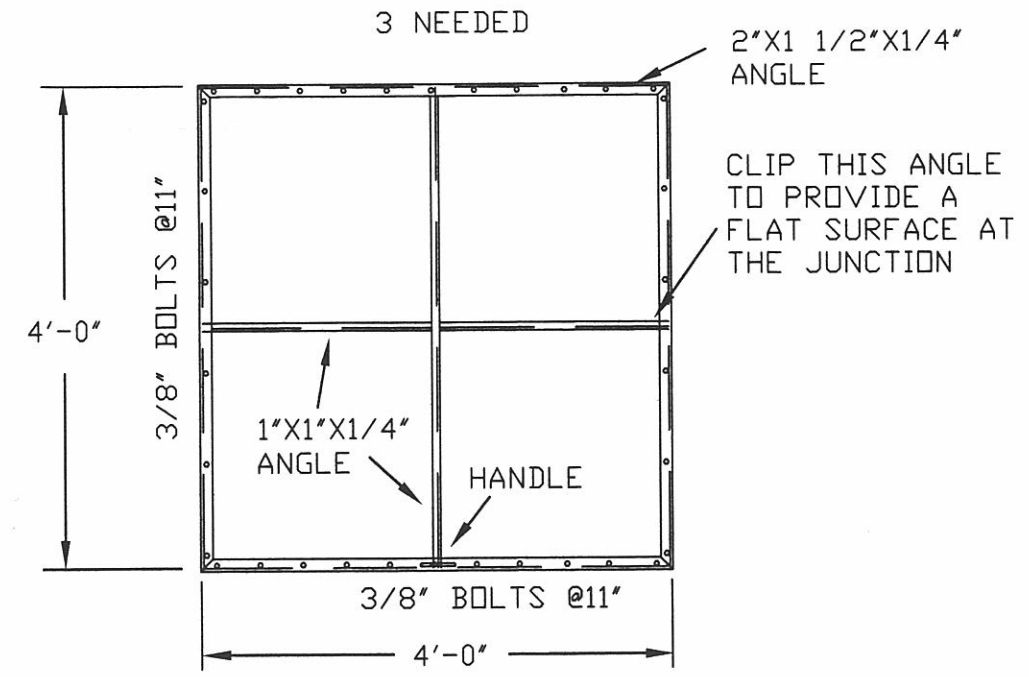


NOTE
NOTCH IS ON ALL 4 SIDES OF THE BOX.
BOLTS ARE TO HOLD DOWN THE SCREEN, USE A 1"X4"X1/2" BAR WITH A 3/4" DIAMETER HOLE 1" FROM ONE END.

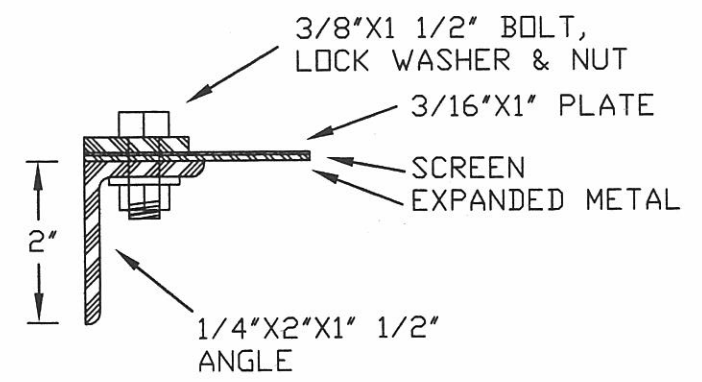


NOTES
INSTALL THE STRUCTURE ABOUT 135' UPSTREAM FROM THE END OF THE SPOIL PILE WITH THE APRON AT LEAST AT AN ELEVATION OF 93.4' AS STAKED IN THE FIELD. SET THE ELEVATION OF THE APRON EVEN WITH THE CHANNEL BOTTOM. SUPPLY PIPE TO BE 260'-21" CLASS 100 PVC. INSTALL CONCRETE ACCORDING TO NATURAL RESOURCES CONSERVATION SERVICE SPECIFICATION 42, REINFORCED CONCRETE FOR MINOR STRUCTURES. USE 4000 PSI STRENGTH CONCRETE, NEED 5.4 CU. YD. CONCRETE TO BE VIBRATED, ALL EXPOSED EDGES TO BE EDGED WITH AN EDGING TOOL.

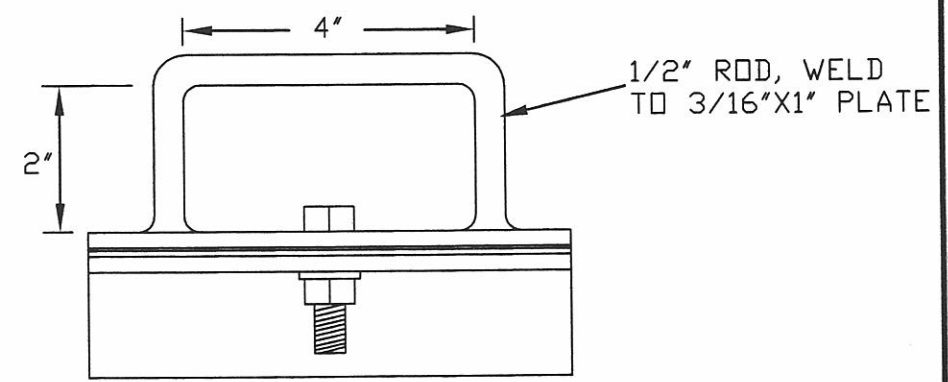
SCREEN FRAME DETAIL



SCREEN FRAME DETAIL ELEVATION VIEW



FRAME HANDLE DETAIL ELEVATION VIEW



NOTES
EXPANDED METAL TO BE CARBON STEEL, FLATTENED, 13 GAGE, 3/4" SHORT OPENING WIDTH.
SCREEN TO BE TYPE 304 STAINLESS STEEL, 20 GAGE MINIMUM WITH 3/32" HOLES SPACED 5/32" STAGGERED.



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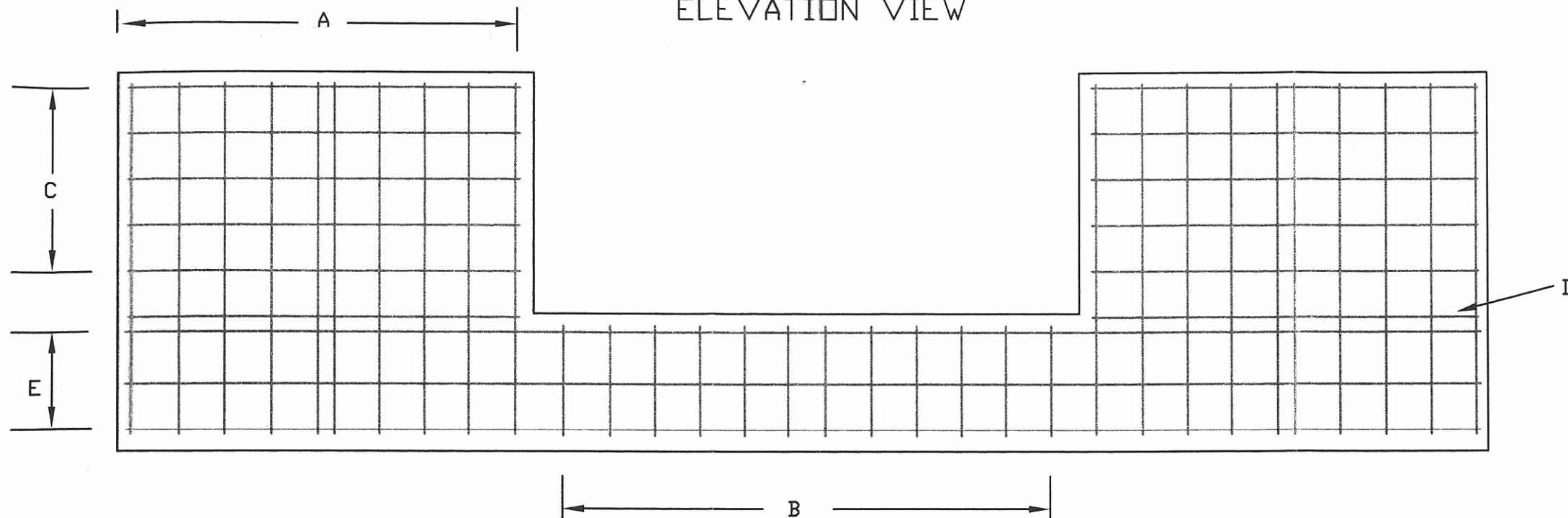
DATE	12/07
DESIGNED	B. HEWES
CHECKED	
APPROVED	

WBWC/HBDC UPPER RECHARGE PROJECT
CHECK & SCREEN STRUCTURE
UMATILLA COUNTY, OREGON
R H ENGINEERING

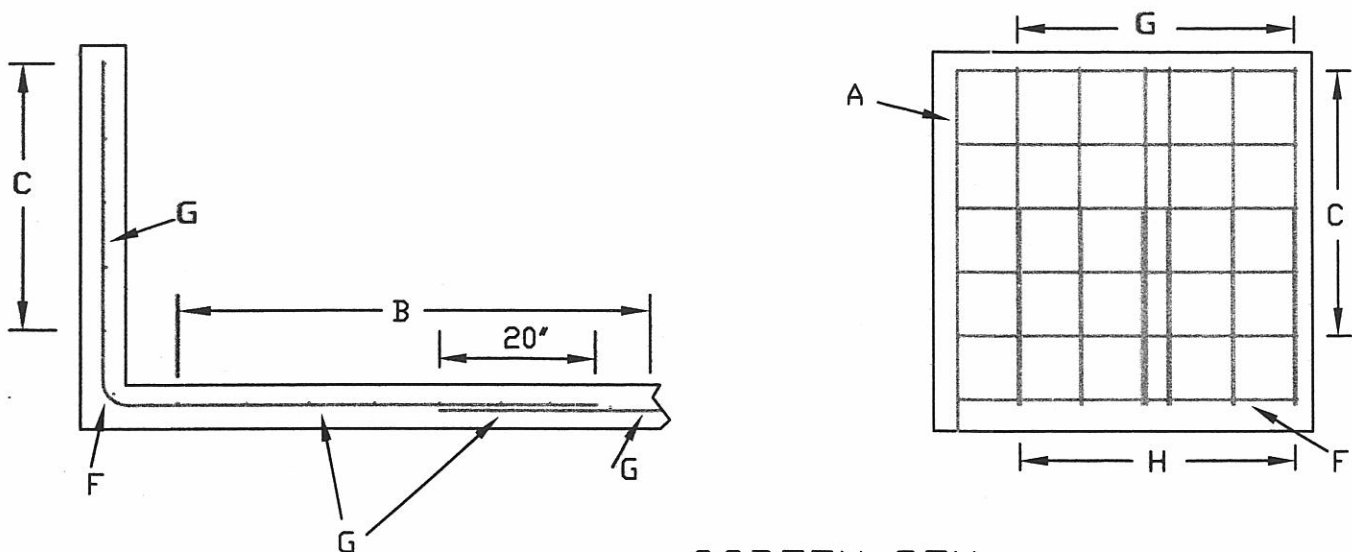
CAD FILE
whitescreen

SHEET 6
OF 7

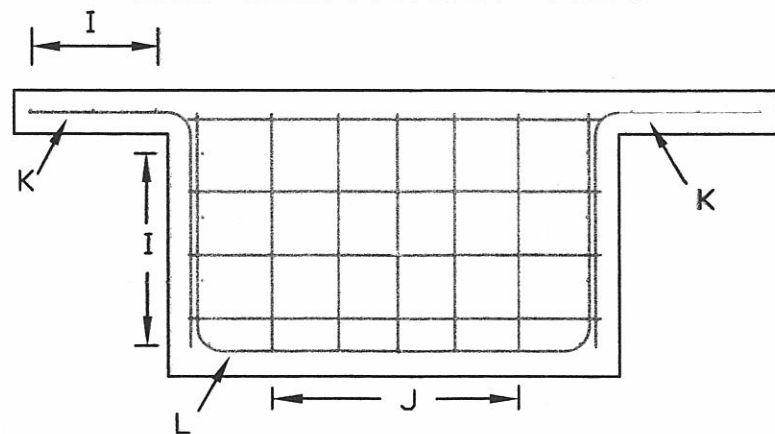
HEADWALL LOOKING DOWNSTREAM
ELEVATION VIEW



DOWNSTREAM SIDE WALL AND APRON
END ELEVATION VIEW SIDE ELEVATION VIEW



SCREEN BOX
END ELEVATION VIEW



REINFORCING STEEL SCHEDULE
ALL NUMBER 4 BARS, 8" NOMINAL SPACING

BAR NO.	SHAPE	A	B	C
A	20 STRAIGHT	6'-1"	--	--
B	12 A B	2'-7"	3'-7"	--
C	10 A B	5'-7"	3'-9"	--
D	2 STRAIGHT	5'-8"	--	--
E	3 STRAIGHT	19'-8"	--	--
F	2 STRAIGHT	3'-7"	--	--
G	12 A B	3'-7"	5'-1"	--
H	12 A B	2'-0"	2'-0"	--
I	14 STRAIGHT	12'-0"	--	--
J	5 A B	2'-6"	3'-8"	--
K	38 A B	1'-9"	2'-6"	--
L	19 A B C	2'-6"	4'-3"	2'-6"

1080 FEET NEEDED WITHOUT ANY WASTE



EXPIRES 6/30/2009

B. Hewes 6/21/2008 11:11 AM whiterebar.dwg

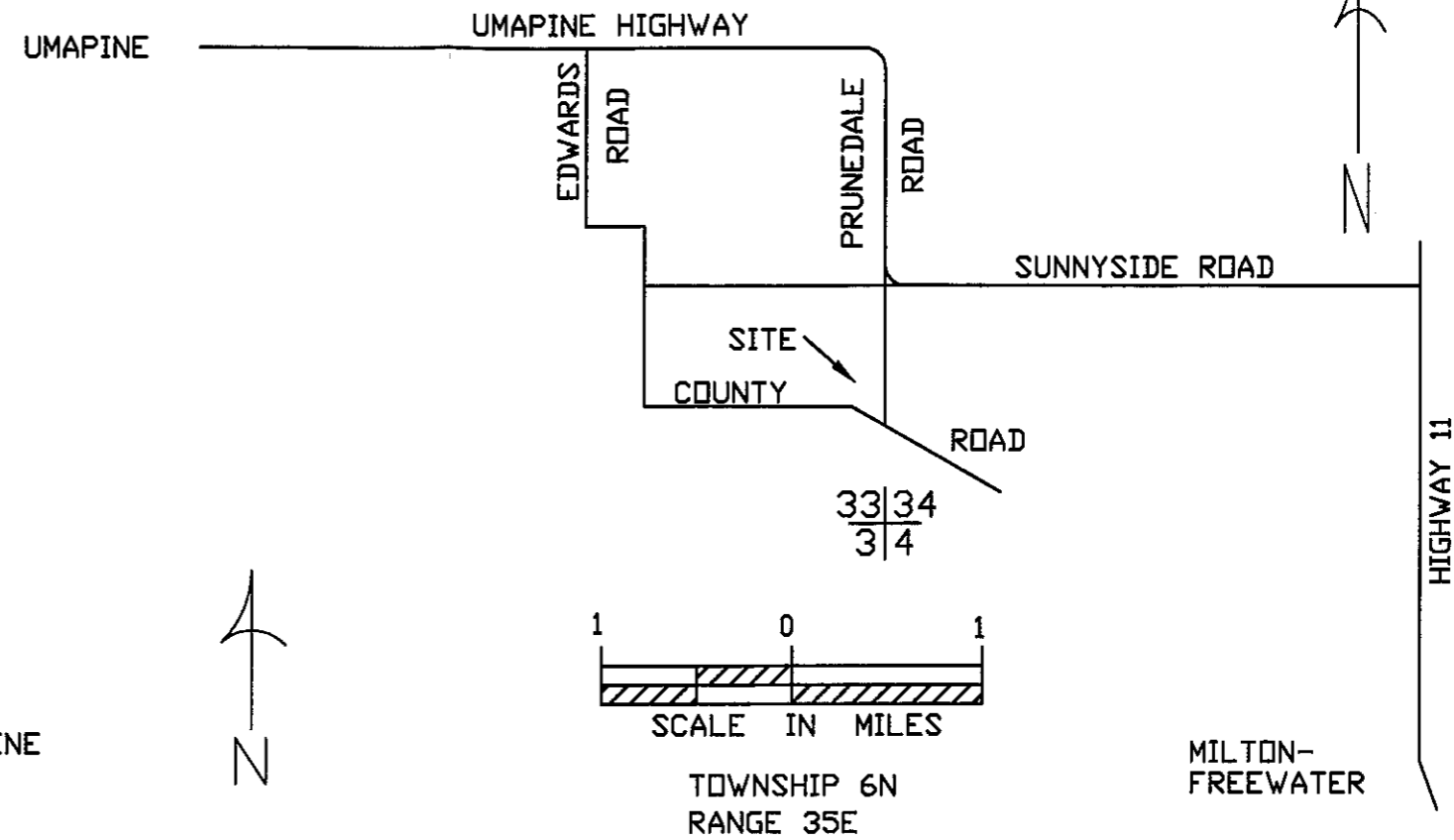
DESIGNED B. HEWES
CHECKED
APPROVED

WBWC/HBDC UPPER RECHARGE PROJECT
REINFORCING STEEL DETAILS
UMATILLA COUNTY, OREGON
B H ENGINEERING

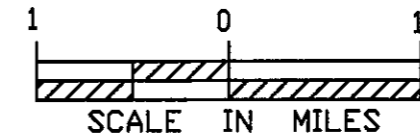
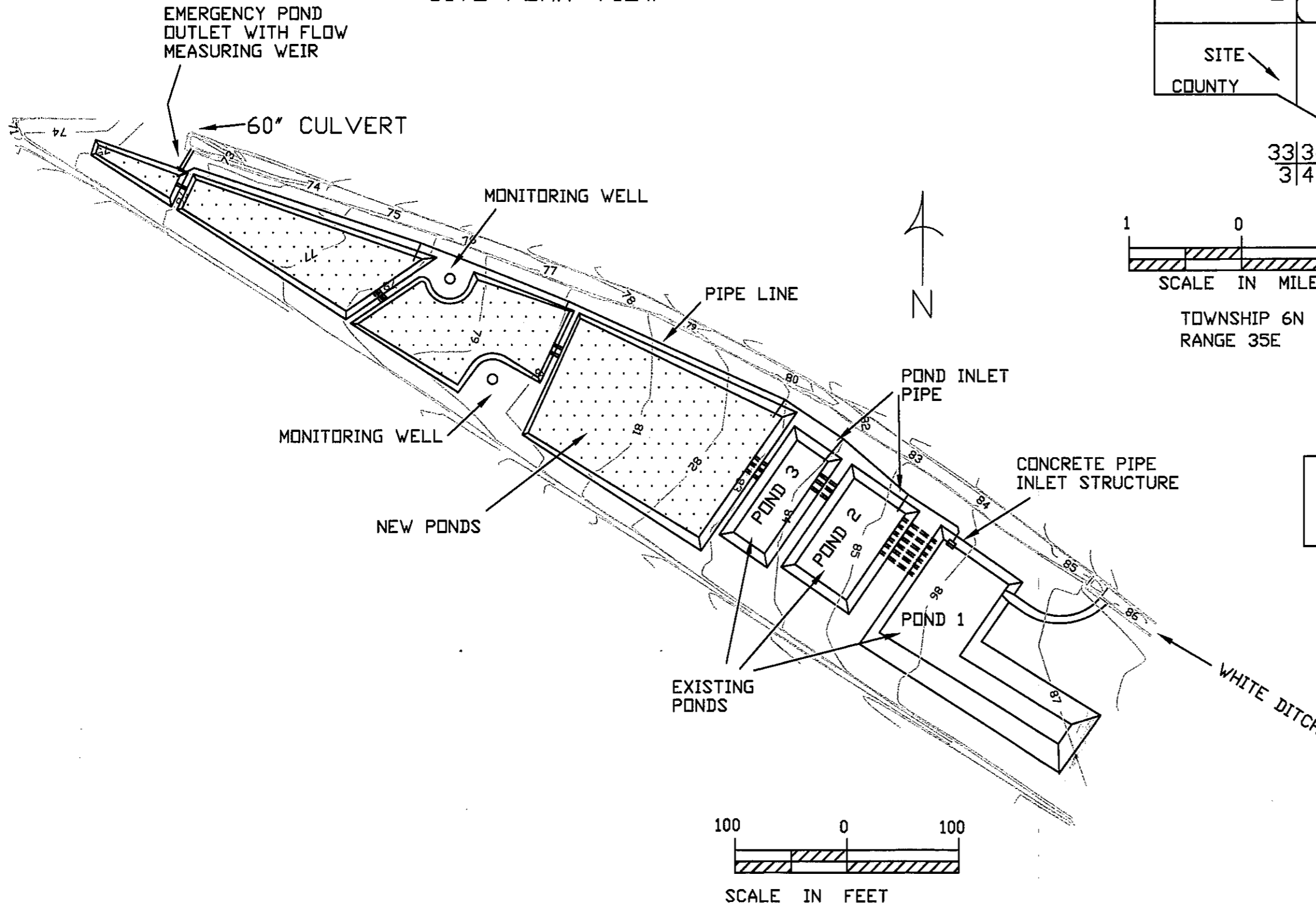
CAD FILE
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SHEET 7
OF 7

LOCATION MAP



SITE PLAN VIEW



TOWNSHIP 6N
RANGE 35E

PRELIMINARY SUBJECT TO REVISION



EXPIRES 6/30/2011

DATE	9/09
DESIGNED	B. HEWES
CHECKED	
APPROVED	

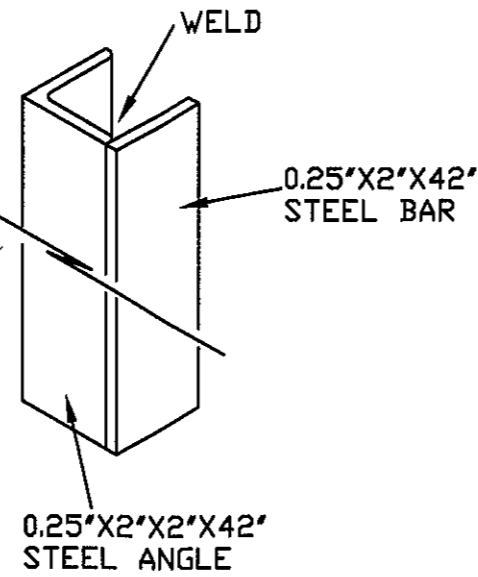
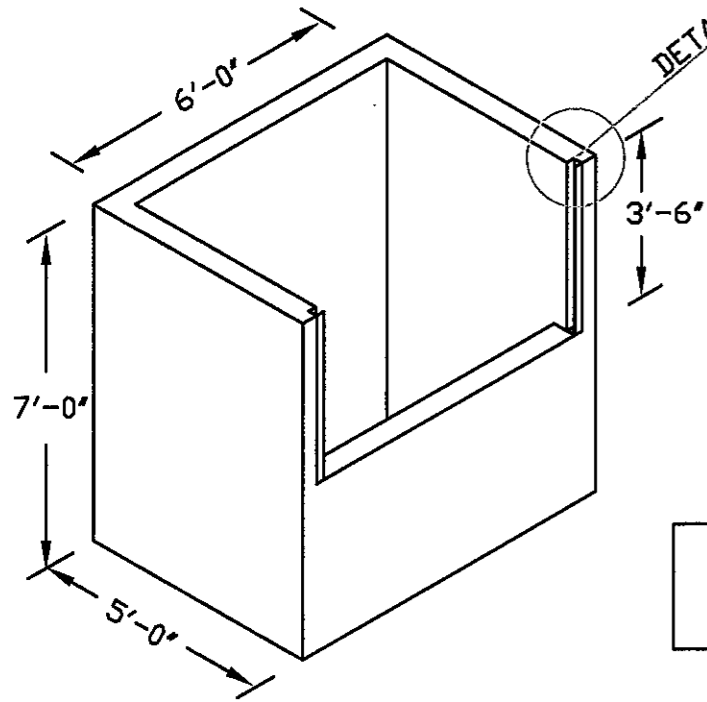
WWBWC/HBDIC LOWER RECHARGE PROJECT
LOCATION MAP & SITE MAP
UMATILLA COUNTY, OREGON

B H ENGINEERING

CAD FILE whitelowext

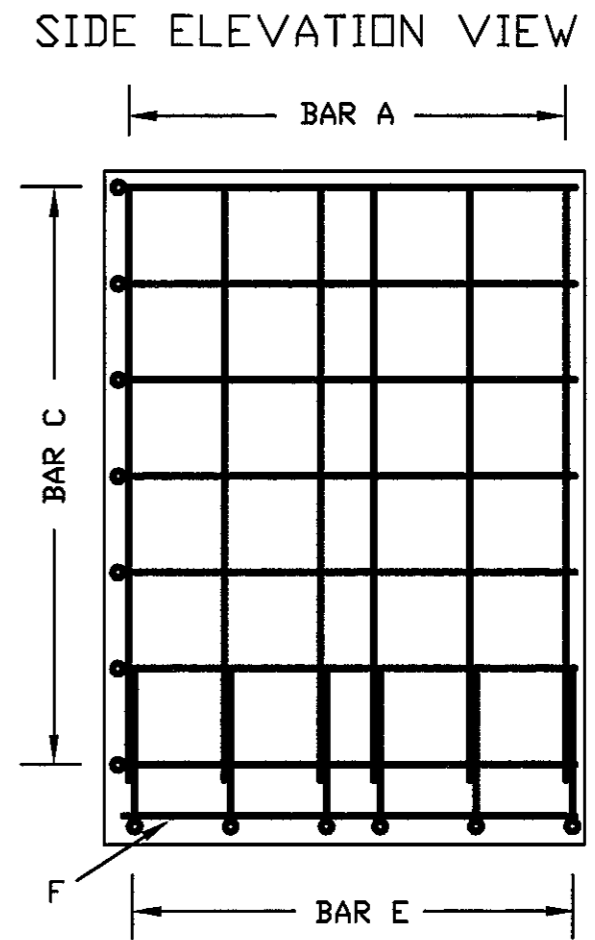
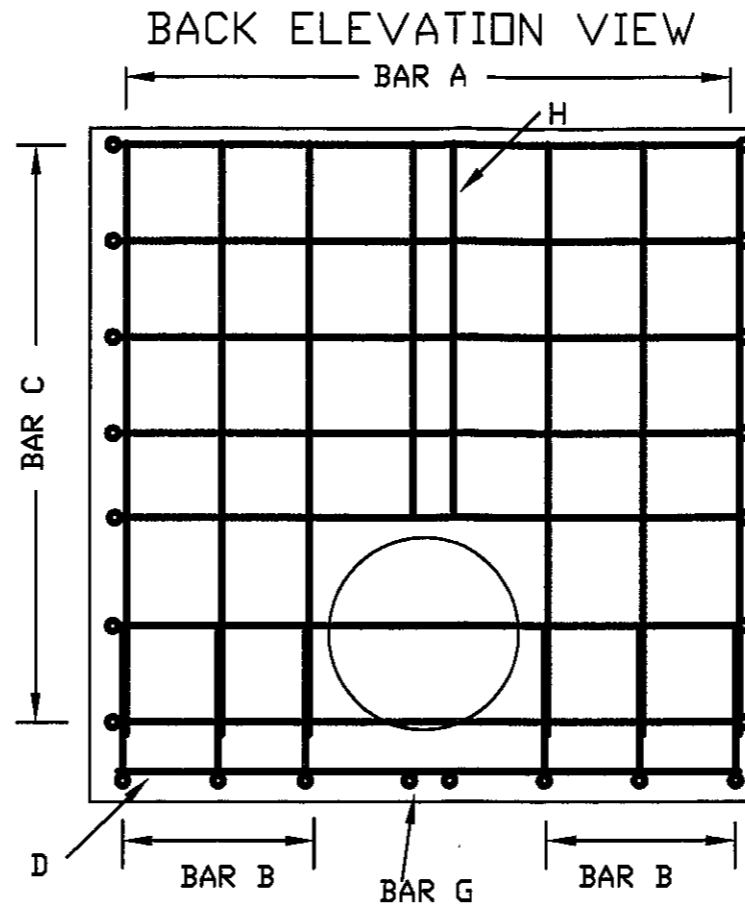
SHEET 1 OF 4

PIPE INLET STRUCTURE
PERSPECTIVE VIEW
SLIDE GATE AND TRASH RACK NOT SHOWN

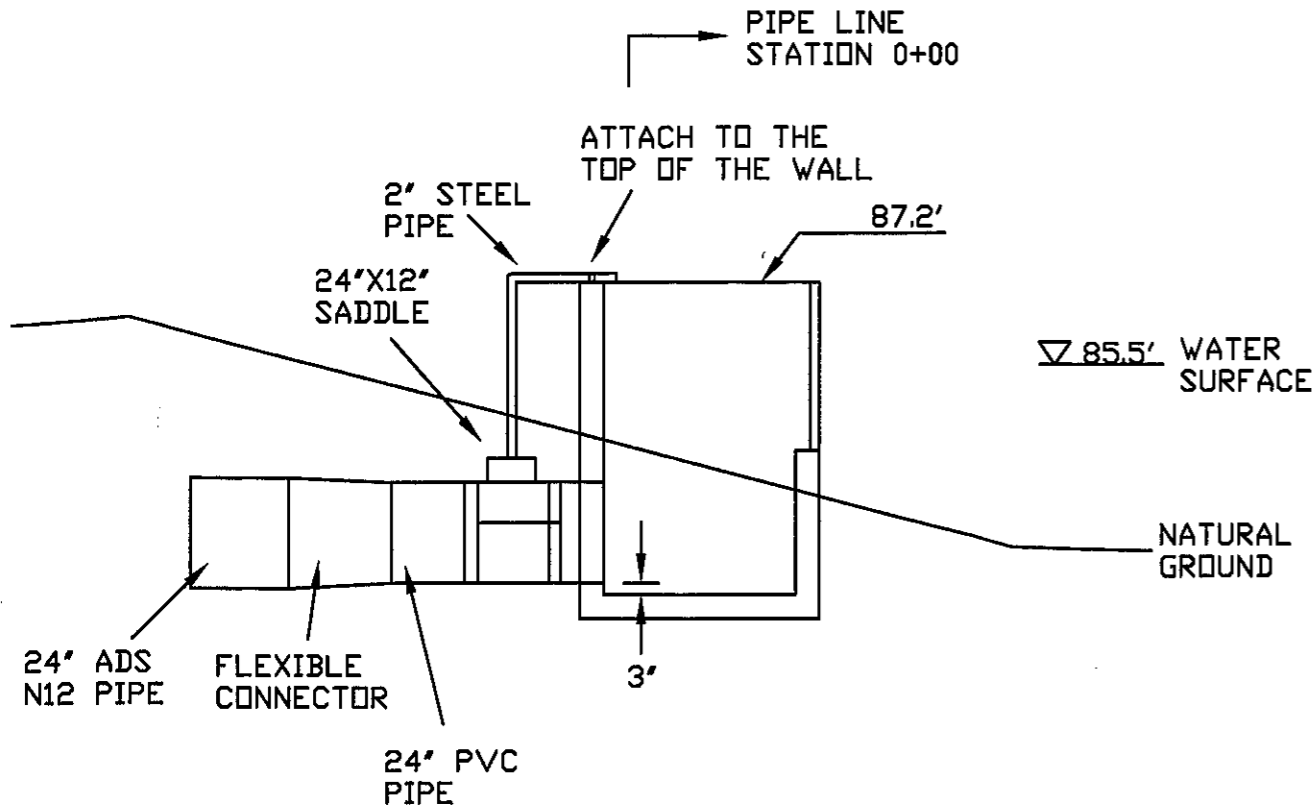


PRELIMINARY SUBJECT TO REVISION

REINFORCING STEEL DETAILS



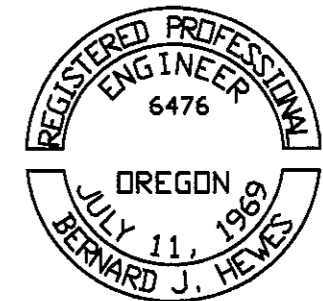
CROSS SECTION VIEW
SLIDE GATE AND TRASH RACK NOT SHOWN



REINFORCING STEEL SCHEDULE
ALL NUMBER 4 BARS, 12" NOMINAL SPACING

BAR NO.	SHAPE	A	B	C
A	18 straight	6'-2"	--	--
B	6 A B C	1'-7"	6'-6"	3'-1"
C	7 A B C	4'-7"	6'-6"	4'-7"
D	2 straight	6'-6"	--	--
E	6 A B C	1'-7"	6'-6"	1'-7"
F	2 straight	4'-6"	--	--
G	2 A B	6'-6"	3'-1"	--
H	2 straight	3'-11"	--	--

NOTES
INSTALL THE PIPE INLET STRUCTURE ACCORDING TO CONSTRUCTION SPECIFICATION 42, REINFORCED CONCRETE FOR MINOR STRUCTURES, USE 4000 PSI STRENGTH CONCRETE, APPROXIMATELY 3.0 CU. YD. NEEDED, REINFORCING STEEL TO BE #4 BARS, NEED 400 FEET ASSUMING NO WASTE.



EXPIRES 6/30/2011

DATE 10/09
DESIGNED B. HEWES
CHECKED
APPROVED

WWBWC/HBDC LOWER RECHARGE PROJECT
PIPE INLET STRUCTURE
UMATILLA COUNTY, OREGON
B. H. ENGINEERING

CAD FILE
whitelowstruc

SHEET 2
OF 4

0+00 PIPE INLET
 0+05 FLEXIBLE COUPLER
 0+10-24'-45° ELBOW
 0+15-24'-45° ELBOW

0+70-24'X24'X15' TEE
 0+80-24'X18' REDUCER

1+50-18'X18'X12' TEE
 1+60-18'X15' REDUCER

2+05-15'X15'X15' TEE
 2+20-15'X12' REDUCER

4+15-12'X12'X10' TEE
 4+20-12'X10' REDUCER

5+55-10'X10'X10' TEE
 5+60-10'X6' REDUCER

7+65-45° ELBOW
 7+85 END OF PIPE
 AT POND 9

20'-15" PIPE TO POND 2

20'-12" PIPE TO POND 3

20'-15" PIPE TO POND 6

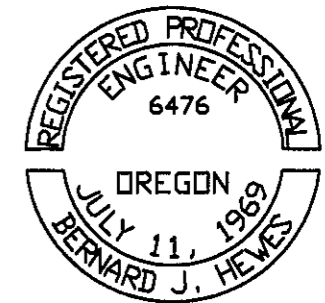
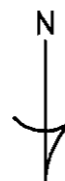
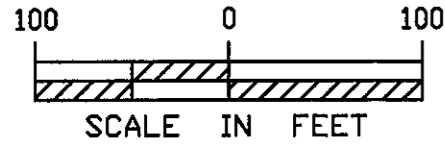
20'-10" PIPE TO POND 7

20'-10" PIPE TO POND 8

NOTES

PIPE NEEDS:
 5'-24" CLASS 80 PVC PIPE
 80'-24" ADS N12 CORRUGATED POLYETHYLENE PIPE
 80'-18" "
 60'-15" "
 200'-12" "
 140'-10" "
 220'-6" "

PRELIMINARY SUBJECT
 TO REVISION

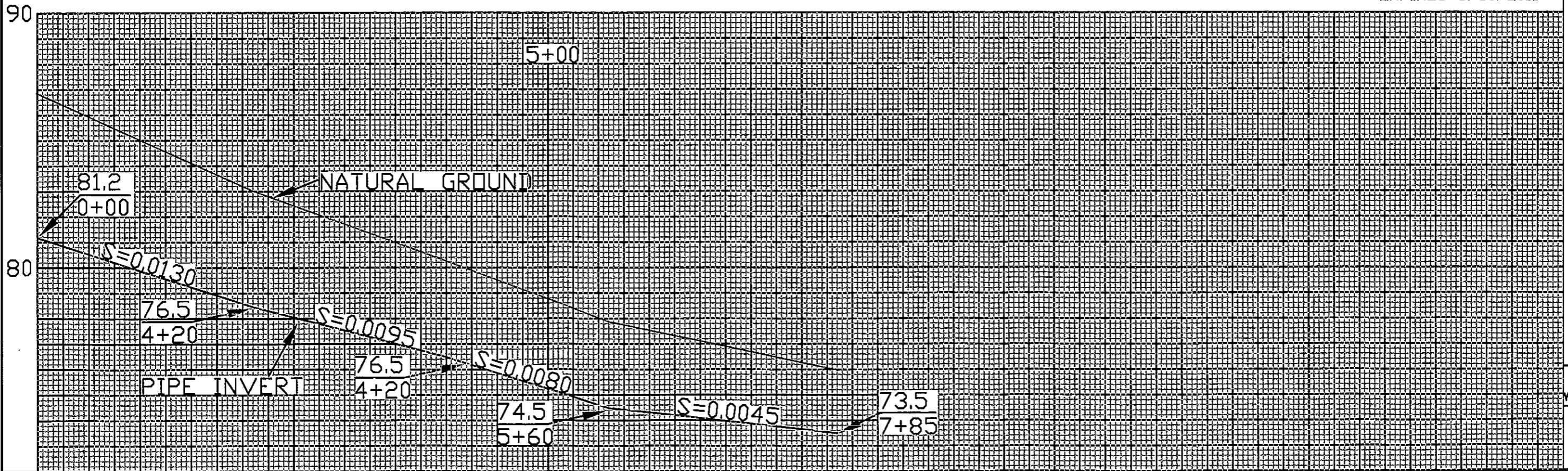


EXPIRES 6/30/2011

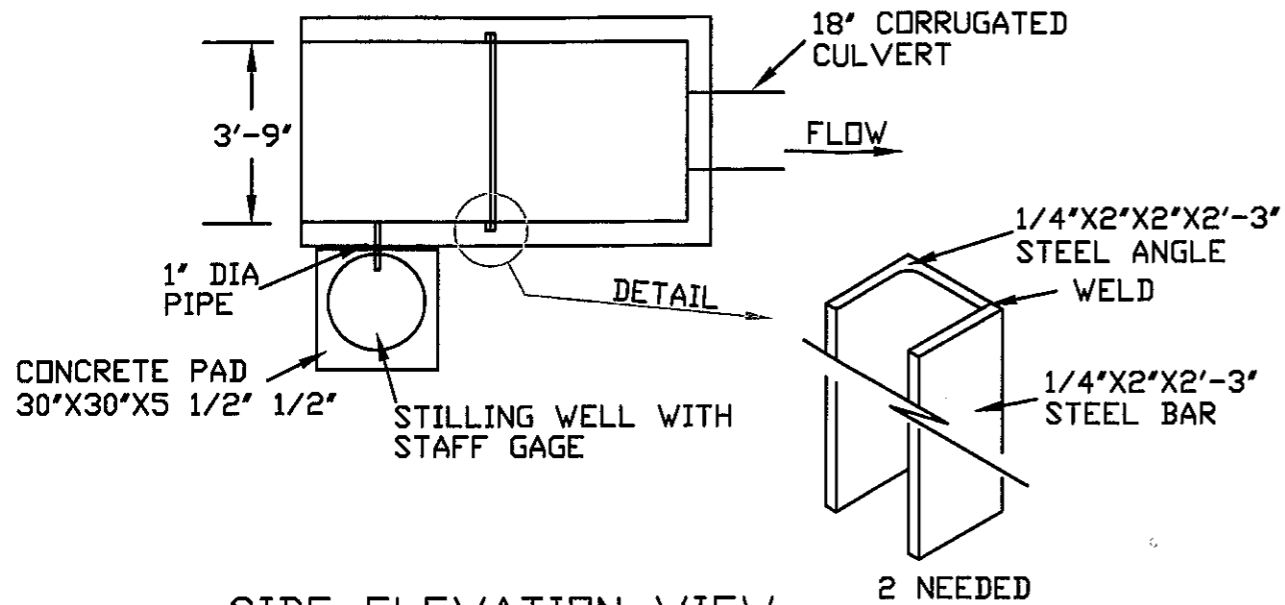
DATE _____
 DESIGNED B. HEWES
 PLOTTED _____
 APPROVED _____

WUBWC/HBDC RECHARGE PROJECT
 POND SUPPLY PIPE PLAN & PROFILE
 UMATILLA COUNTY, OREGON

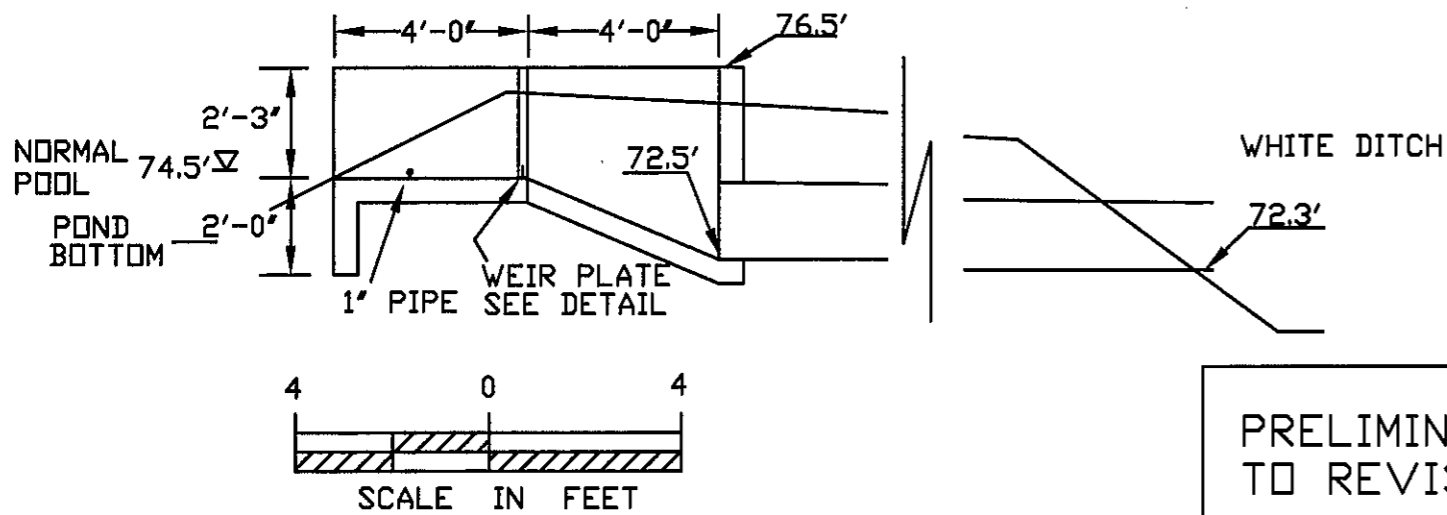
CAD FILE
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 SHEET 3
 OF 4



POND EMERGENCY OUTLET
PLAN VIEW



SIDE ELEVATION VIEW
STILLING WELL NOT SHOWN

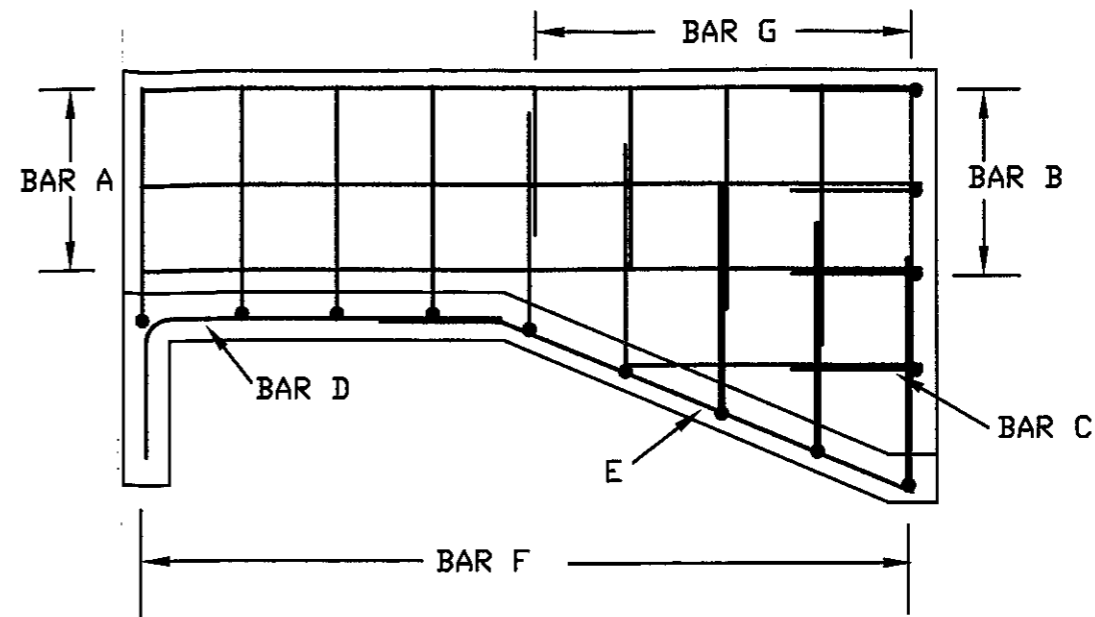


PRELIMINARY SUBJECT
TO REVISION

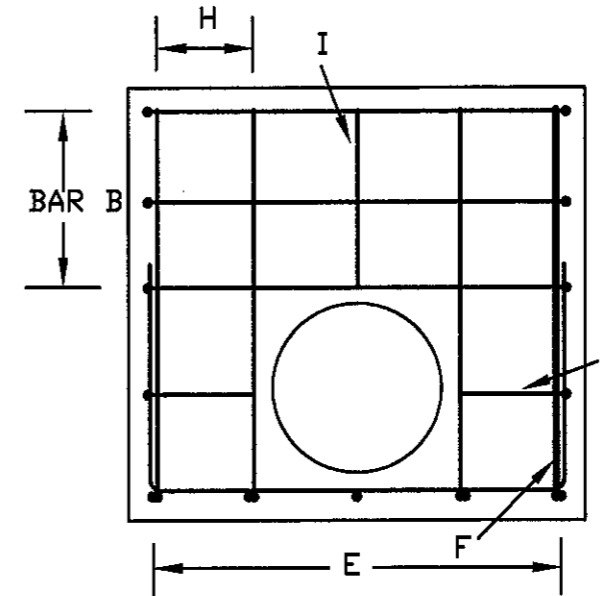
NOTES

INSTALL CONCRETE IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION 42, 'REINFORCED CONCRETE FOR MINOR STRUCTURES'. USE 4000 PSI STRENGTH CONCRETE, NEED ABOUT 2.2 CU. YD.
REINFORCING STEEL ALL #4 BARS, NEED 260 FEET WITH NO WASTE.
CULVERT PIPE MAY BE STEEL OR HIGH DENSITY POLYETHYLENE.
SET THE WEIR PLATE IN A RABBET CUT INTO A 1 1/2' X 1 3/4' BOARD AND SET INTO THE SOCKETS. THE WEIR PLATE TO BE STEEL 1/8' X 3' X 48'.
SET THE STILLING WELL AT LEAST 2' INTO THE CONCRETE BASE. USE A MINIMUM PIPE DIAMETER OF 18" EITHER PVC OR STEEL.
SET THE STAFF GAGE ZERO POINT IN THE STILLING WELL LEVEL WITH THE CREST OF THE WEIR PLATE. INSTALL THE 1' PIPE TO THE STILLING WELL WITH 1' BETWEEN THE FLOOR AND PIPE.

REINFORCING STEEL DETAILS
SIDE ELEVATION VIEW



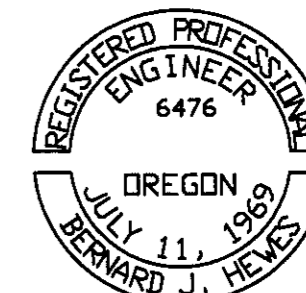
PIPE INLET END
ELEVATION VIEW



REINFORCING STEEL SCHEDULE

ALL #4 BARS, 12" NOMINAL SPACING

BAR NO.	SHAPE	A	B	C
A	6 straight	7'-8"	--	--
B	3 AL B C	1'-3"	4'-3"	1'-3"
C	2 AL B	1'-3"	1'-1"	--
D	5 AL B	1'-6"	4'-0"	--
E	5 A B	1'-3"	4'-8"	--
F	9 AL B C	2'-4"	4'-3"	2'-4"
G	10 straight	varies	--	--
H	4 AL B	1'-3"	4'-1"	--
I	1 straight	1'-10"	--	--



EXPIRES 6/30/2011

DATE 10/09
DESIGNED B. HEWES
CHECKED
APPROVED

WBWC/HBDC LOWER RECHARGE PROJECT
EMERGENCY SPILLWAY WEIR
UMATILLA COUNTY, OREGON
B H ENGINEERING

CAD FILE
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SHEET 4
OF 4