

APPENDIX E

WATER COLLECTION AREA DESIGN

This appendix depicts the design of a typical water collection box and a water collection without spring box that would be installed at collection points in the City of Monticello's water system. The design of individual collection areas will vary depending on the amount of water flow, width of the collection area (size of the spring), water depth, slope, and other factors. Basic components of each collection box would include a tank, drain (collection) field, inlet pipe, and outlet pipe. Similarly, water collection points without a box would include a drain (collection) field, inlet pipe, and outlet pipe.

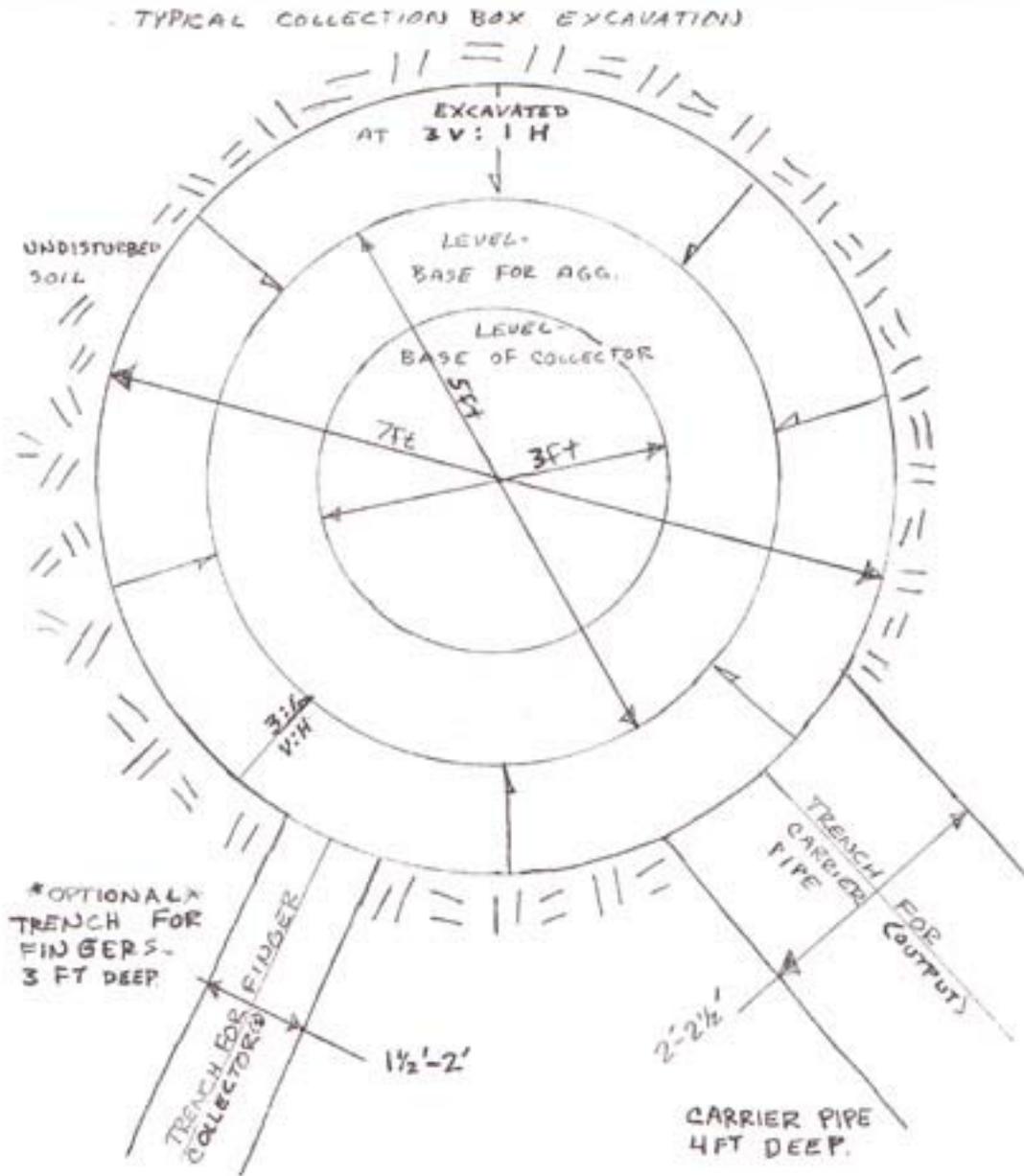
This is intended as a general depiction and is not detailed or considered to be an exact plan of any of the collection boxes that could be installed in the proposed water system. Each spring or collection point would be evaluated at the time of construction and the collection system would be configured according to the site/source need.

The collection box design supplied by Eugene Hawks and Glen Sanders, USDI Bureau of Reclamation (February 2002).

The water collection without spring box design supplied by the City of Monticello (September 2002).

Monticello and Blanding Municipal Watershed Improvement Projects Draft EIS
 Appendix E – Water Collection Area Design

COMPUTATION SHEET			
BY EH	DATE 15 FEB 2002	PROJECT MONTICELLO WATER LINE	SHEET 1 OF 5
CHKD BY	DATE	FEATURE SPRING COLLECTOR BOXES	
DETAILS EXCAVATION PLAN			

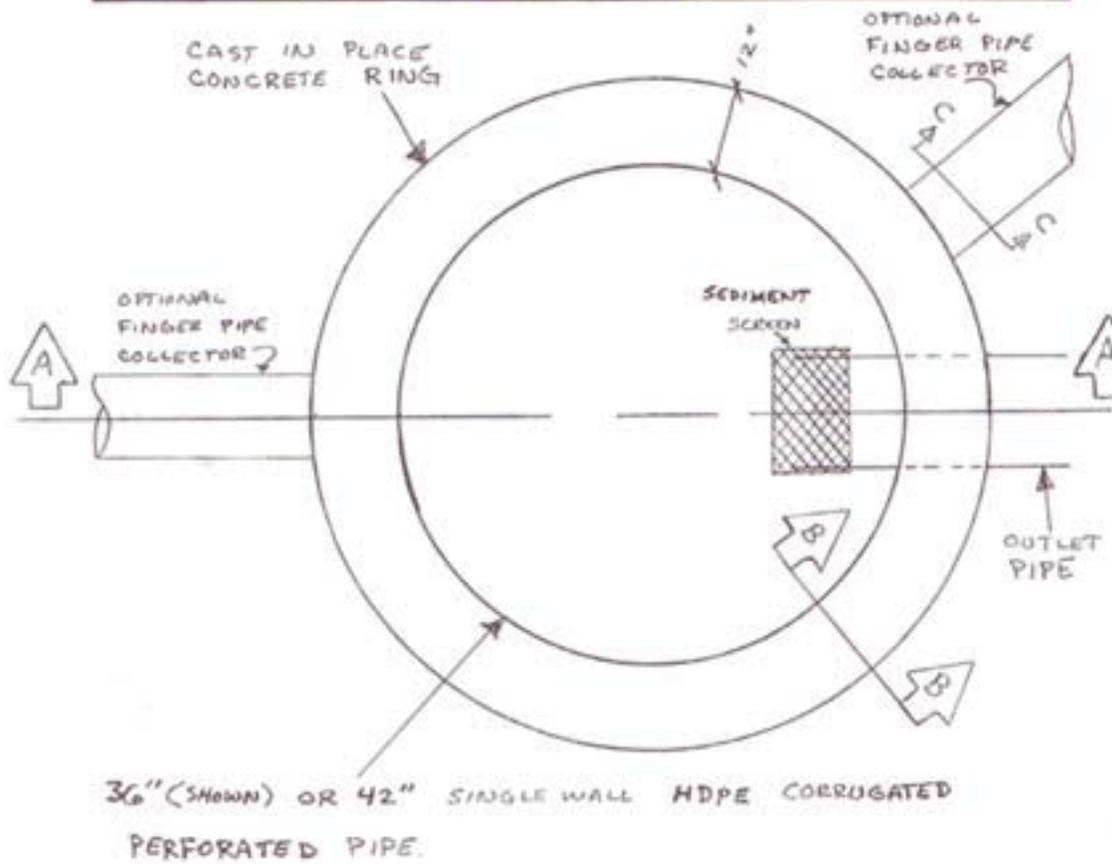


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Appendix E – Water Collection Area Design

7-1854 (7-94)
Bureau of Reclamation

COMPUTATION SHEET

BY EJ	DATE 15 FEB 2002	PROJECT MONTICELLO WATER LINE	SHEET 2 OF 5
CHKD BY	DATE	FEATURE PLAN -	
DETAILS			



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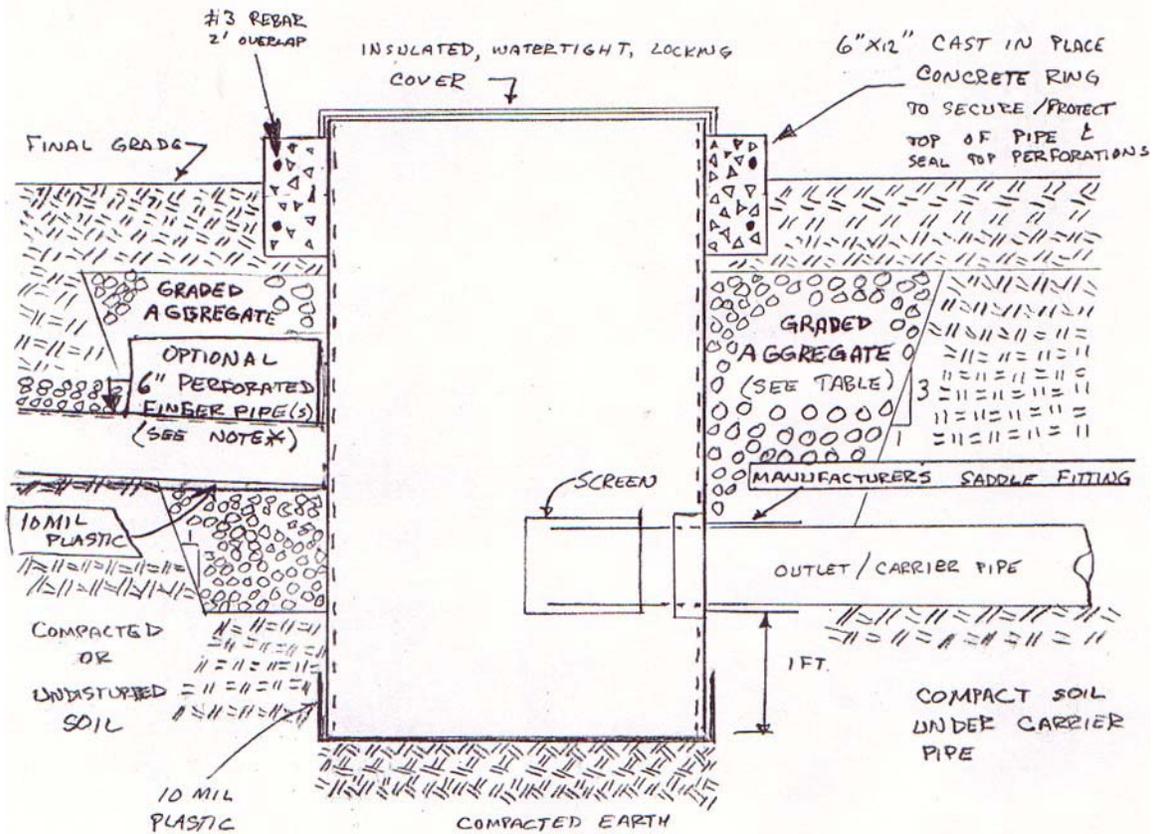
7-1654 (11-94)
 Bureau of Reclamation

COMPUTATION SHEET

BY EH	DATE 15 FEB 2002	PROJECT MONTICELLO WATER LINE	SHEET 3 OF 5
CHKD BY	DATE	FEATURE SPRING COLLECTION	
DETAILS CROSS SECTION - COLLECTOR - SECTION A-A			

INSTALL A 5' PIECE OF SINGLE-WALL CORRUGATED PERFORATED HDPE IN THE APPARENT CENTER OF THE MAIN SPRING (GENERALLY WHERE EXISTING SPRING COLLECTOR BOX IS LOCATED) VERTICALLY.

COMPACT EARTH BELOW PIPE AND/OR PLACE 10 MIL OR HEAVIER PLASTIC BELOW PIPE AND UP SIDES TO "SEAL" BASE,



* NOTE: IF SPRING EXTENDS MORE THAN FIFTEEN (15) FEET FROM MAIN SOURCE, PLACE 6" HDPE CORRUGATED PERFORATED FINGERS HORIZONTALLY TO CATCH ADDITIONAL SEEP. INVERT OF FINGER PIPE TWO (2) FEET FROM BOTTOM,

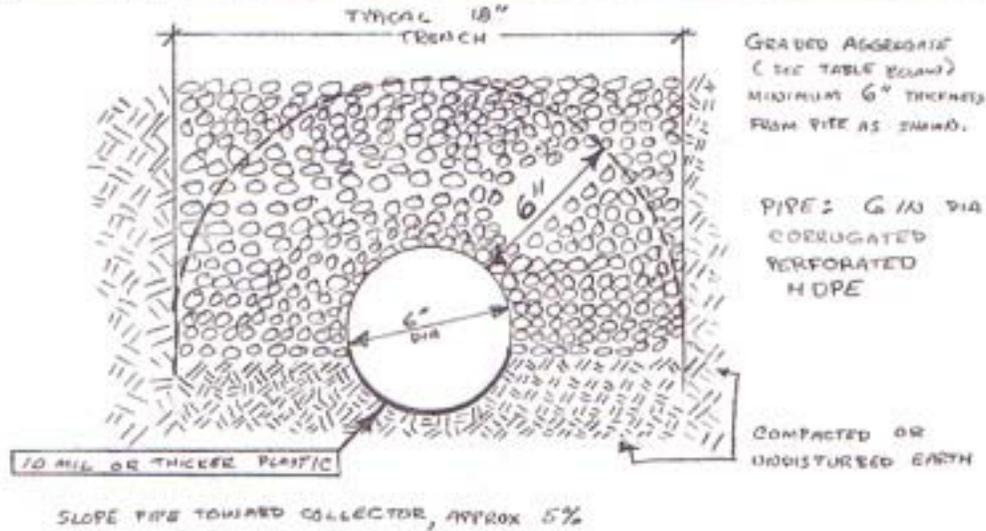
PLACE 10MIL PLASTIC UNDER FINGER PIPES. PLACE MIN SIX (6) INCHES GRADED AGGREGATE ON SIDES AND ABOVE PIPES.

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7-1054 (11-94)
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COMPUTATION SHEET

BY <i>EH</i>	DATE <i>15 FEB 2002</i>	PROJECT <i>MONTICELLO WATER LINE</i>	SHEET <i>4</i> OF <i>5</i>
CHKD BY	DATE	FEATURE <i>SPRING COLLECTOR BOXES</i>	
DETAILS <i>CROSS SECTION 6" HDPE FINGER TYPE COLLECTORS, SECTION C-C</i>			



Envelope material for Monticello

GRADATION TABLE

Gradations

SIEVE SIZE	PERCENT PASSING	PERCENT RETAINED
1-1/2 INCH	100 %	0%
3/4 INCH	75 - 100 %	0 - 25 %
3/8 INCH	45 - 80 %	20 - 55%
# 4	20 - 60 %	40 - 80 %
# 8	10 - 40 %	60 - 90 %
#30	0 - 10 %	90 - 100 %
# 50	0 - 5 %	95 - 100 %
# 200	0 - 3 %	97 - 100 %

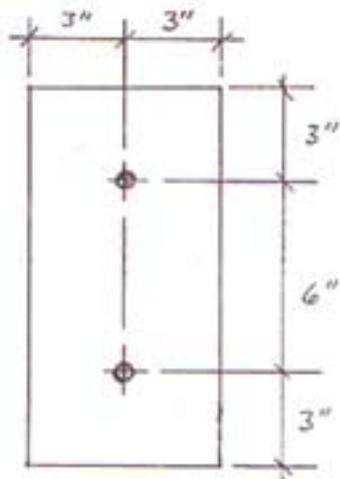
This gradation should work well with any base soil from silt to gravel and for pipe perforations up to 3/8 inch diameter.

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7-1854 (11-04)
 Bureau of Reclamation

COMPUTATION SHEET

BY <i>EU</i>	DATE <i>15 Feb 2002</i>	PROJECT <i>MONTICELLO WATER LINE</i>	SHEET <i>5</i> OF <i>5</i>
CHKD BY	DATE	FEATURE <i>SPRING COLLECTION</i>	
DETAILS <i>CROSS-SECTION CONCRETE RING (SECTION B-B) AND OUTBOARD END OF FINGER PIPES</i>			



SECTION B-B

#3 REBAR, 18 IN OVERLAP

CONCRETE RING

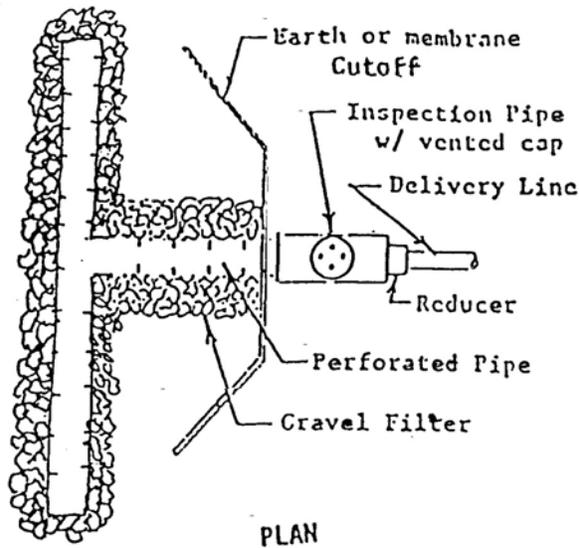
6" X 12"

TO SECURE / PROTECT TOP
 OF PIPES AND SEAL OFF
 TOP PERFORATIONS.

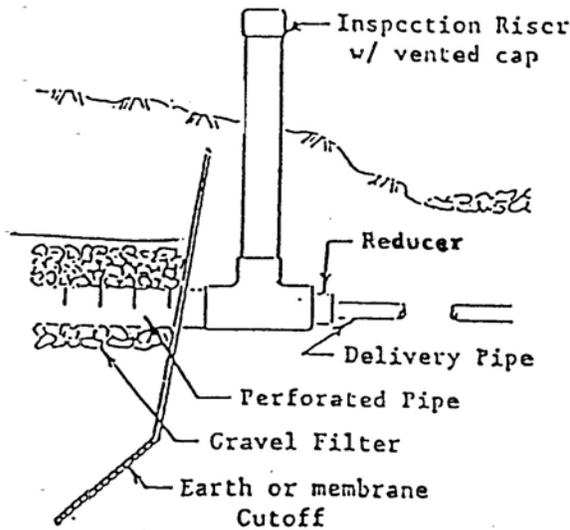
CAP ENDS
 OF FINGER
 COLLECTOR
 PIPES



WATER COLLECTION WITHOUT SPRING BOX



Gravel and rock filter to be at a depth of 3-4' above perforated pipe. Filter fabric to be placed along back and also over the collection system, with earthen fill above to natural contour of existing topography.



Note: Instead of a "T", a "Y" may be installed with the riser at a 45 degree angle with the ground. This will allow using a snake to clean out the perforated drain pipe.

PROFILE