

Typical Trench Section

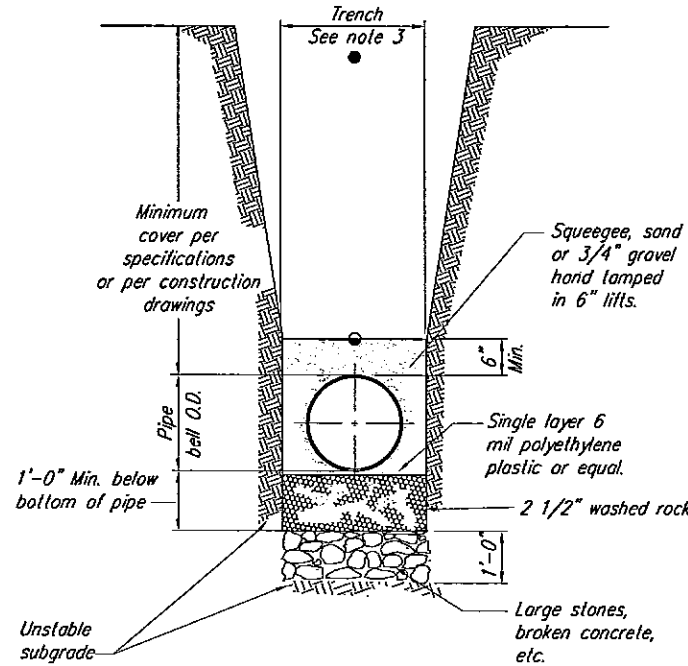
Pipe Diameter	Minimum Width	Maximum Width
6"	1'-6"	2'-6"
12"	2'-0"	3'-0"
16"	2'-6"	3'-6"
18"	3'-0"	4'-0"
24"	3'-0"	4'-0"
30"	3'-6"	4'-6"
36"	4'-0"	5'-0"

Notes:

- Minimum cover over waterline shall be 9'-0" below final grade to top of pipe. Minimum cover to be below official street grade.
- The trench shall be in accordance with applicable local, state, and federal specifications and safety regulations.
- Trench to be braced or sheeted as necessary for the safety of the workmen and the protection of other utilities.
- D1 and steel pipe shall be bedded from 6" below the bottom of the pipe to 6" above the top of the pipe.

STANDARD BEDDING

2302



Unstable Subgrade

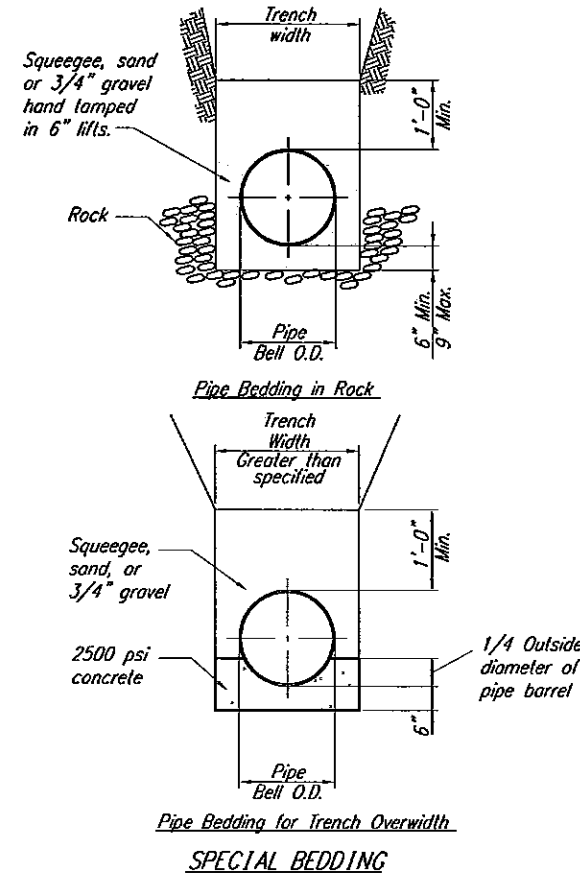
- Machine compacted trench backfill
- Limit of sloping or benching of trench walls.
- ▨ Undisturbed ground

Notes:

- Trench to be braced or sheeted as necessary for the protection of other utilities and to meet OSHA safety requirements.
- Trench width shall not be more than 16 inches nor less than 12 inches wider than the largest outside diameter of the pipe laid therein. (Bell or coupling O.D., if applicable).
- Compaction shall be as follows: Top 2.5' of trench shall be 95% S.P.D., trench zone 90% S.P.D. (This is only applicable in street R.O.W.) outside street R.O.W. 90% s.p.d.

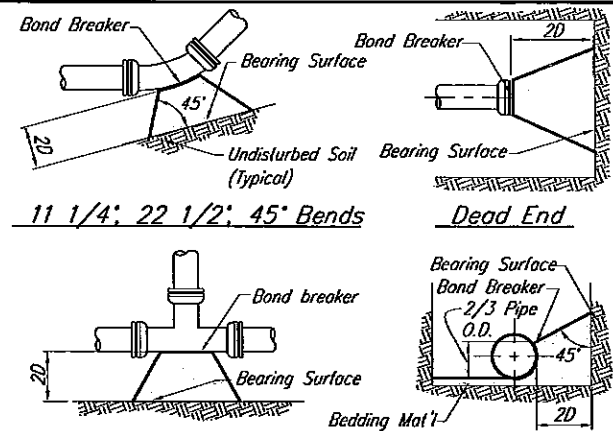
SPECIAL BEDDING

2303



SPECIAL BEDDING

2304



Tee Typical Cross Section

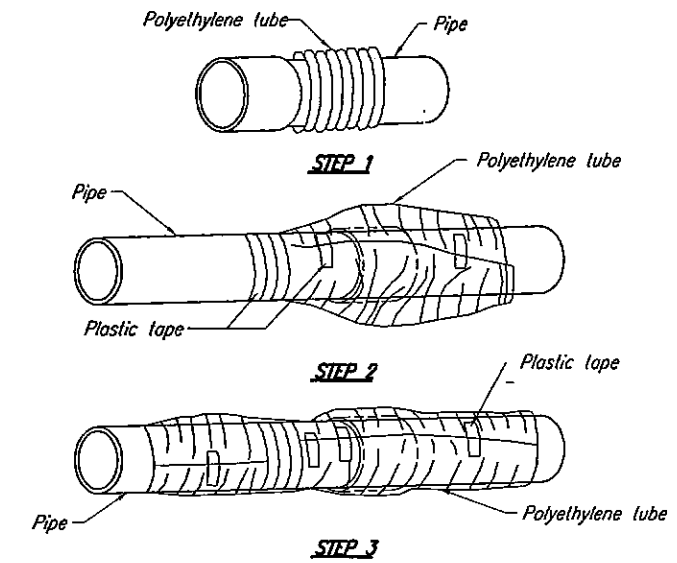
Size of Pipe	Minimum Surface Bearing Area (in Square Feet)				
	11 1/4"	22 1/2"	45"	90"	Tee or Dead End
6"	1.00	1.25	2.25	NA	3.00
8"	1.00	2.00	4.00	NA	5.25
12"	2.25	4.50	8.75	NA	11.25
16"	3.75	7.50	14.50	27.00	19.00
20"	5.00	10.00	19.50	35.50	25.00
24"	7.00	14.00	27.75	51.00	36.00

Notes:

- Bearing surface areas shown in chart are minimum.
- Based on 150 psi internal pipe pressure plus water hammer 4", 6", 8" and 12" water hammer = 110 P.S.I. 16" thru 36" water hammer = 70 P.S.I.
- Concrete for kickblocks to be 2500 PSI minimum.

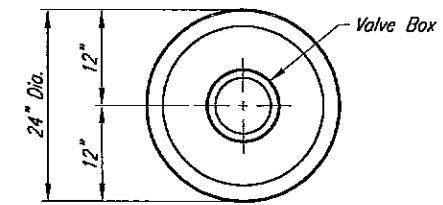
CONCRETE KICKBLOCKS

2301

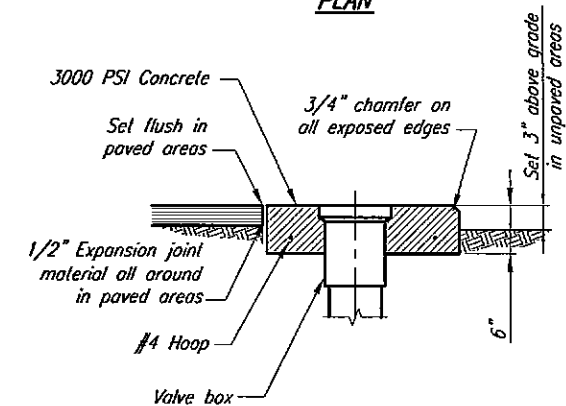


FIELD INSTALLATION WRAP

2501



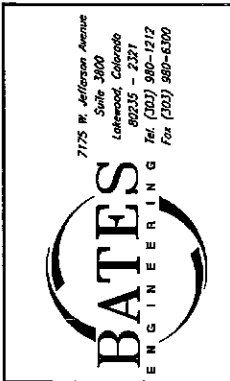
PLAN



SECTION

CONCRETE COLLAR DETAIL

2503



REVISIONS	No.	Description	Date	By
	1			
	2			

LEFT HAND WATER DISTRICT
2.0 MG ANDREWS TANK IMPROVEMENTS PROJECT
STANDARD DETAILS
SHEET NO. 1

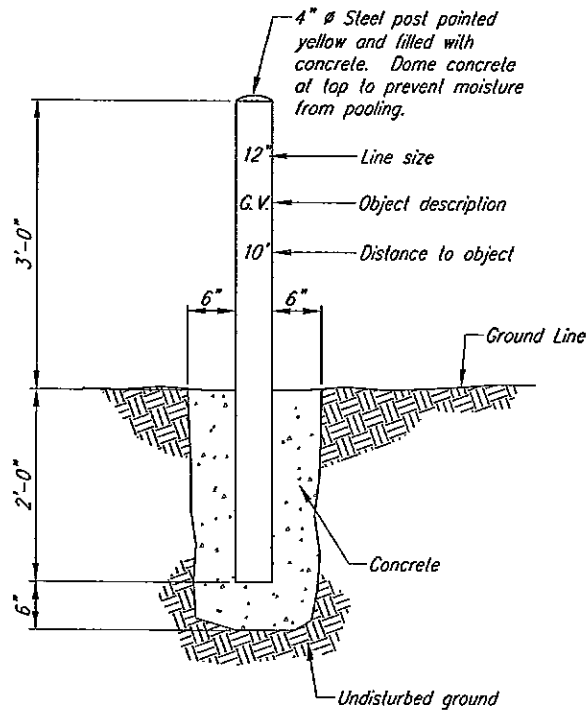


12/07/09
DATE:
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DESIGNED:
RFH
DRAWN BY:

PROJECT NO.
09.032

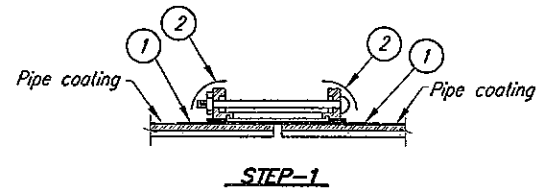
SHEET
D1

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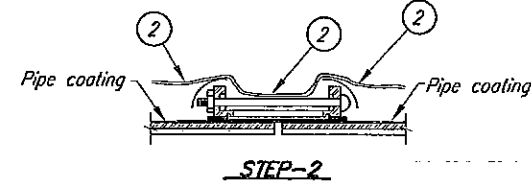


VALVE MARKER POST

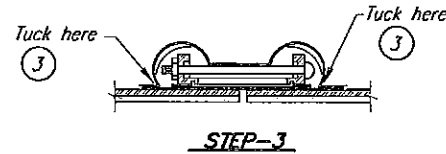
2504



Step-1 ①
The joint shall be thoroughly cleaned of all foreign matter. The outside surface of the middle ring, nuts, bolts and follower rings shall be primed with approved mastic. Begin wrapping the joint at area 1 by taking a 4-inch (4") wide piece of tape long enough to equal the circumference of the pipe plus provide a 6-inch (6") overlap. At area 2 wrap a 4-inch (4") wide piece of tape the circumference of the coupling of the bolts, plus provide a 6-inch (6") overlap.



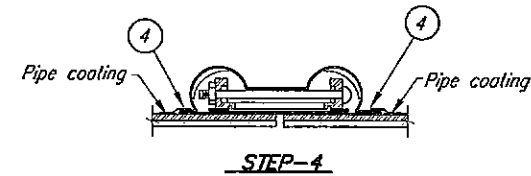
Step-2 ②
A double layer of joint-wrap tape long enough to equal the circumference of the coupling plus provide a 6-inch (6") overlap. 18-inch (18") wide joint-wrap tape shall be used for a 5-inch (5") middle ring and 24-inch (24") wide joint-wrap tape shall be used for a 7-inch (7") middle ring.



Step-3 ③
the loose ends of the joint-wrap tape in area 4 shall be tucked inward and downward toward the follower rings and provide tape bonding to area 1.

Note:

The joint-wrap tape should have slack not fit too tightly around the coupling. If joint-wrap tape is too tight, the danger of breaking the tape by soil pressure after trench is backfilled exists.



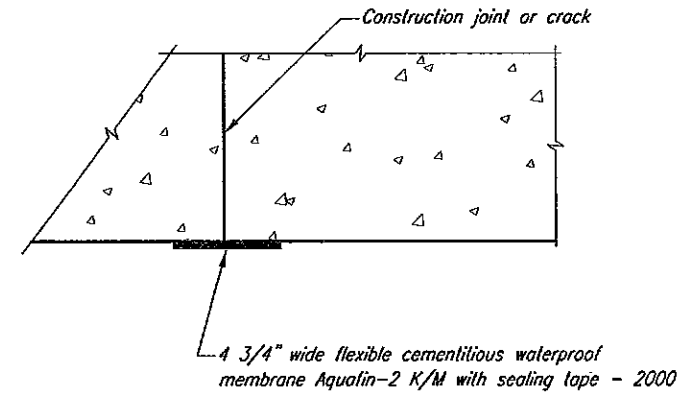
Step-4 ④
The tucked edges of the joint-wrap tape can now be sealed by wrapping the joint at area 5 with a piece of joint-wrap tape of sufficient width to provide a 2-inch (2") overlap with the tucked edges and with the pipe coating. The length of the tape shall be equal to the circumference of the pipe plus provide a 6-inch (6") overlap.

Note:

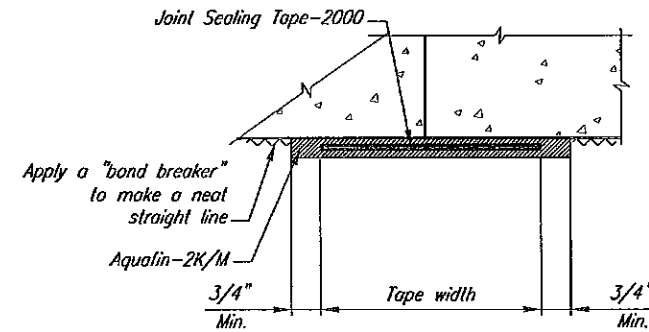
All joint-wrap tape & primer shall be in accordance with AWWA Standard C-209, Type ii. Tape and primer shall be compatible with each other.

FIELD WRAP-BOLTED SLEEVE TYPE COUPLING

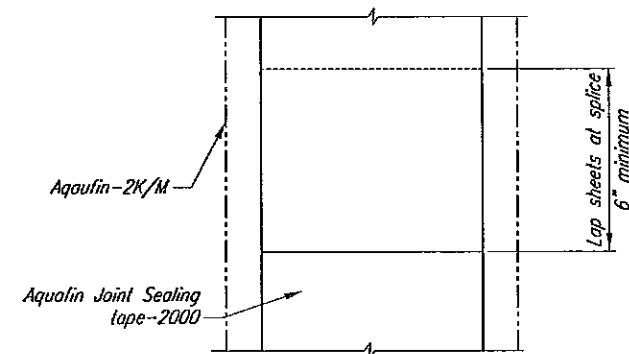
2515



CONSTRUCTION JOINT SURFACE SEALING



AQUAFIN JOINT SEALING TAPE-2000 SYSTEM



INSTALLATION OF LAP SPLICE FOR SEALING SYSTEMS

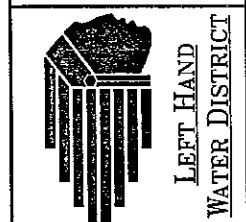
SEALING STRIP WATERPROOF MEMBRANE

3258



REVISIONS		AS CONSTRUCTED	
No.	Description	Date	By
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LEFT HAND WATER DISTRICT
2.0 MG ANDREWS TANK IMPROVEMENTS PROJECT
DETAILS
STANDARD DETAILS
SHEET NO. 2



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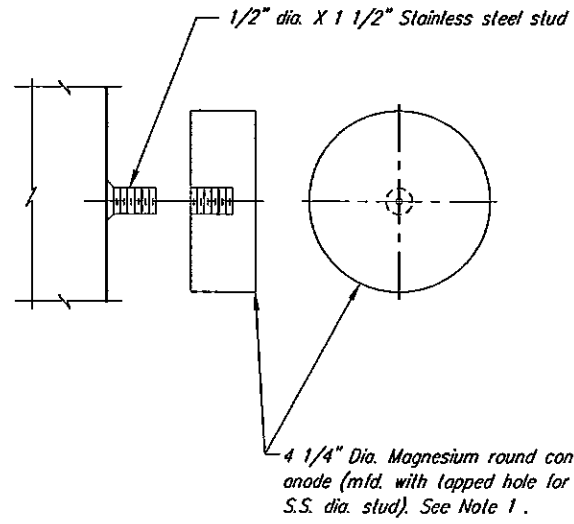
SHEET
D2

IMAGES:
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PLOT DATE: 12/29/2009 8:14 AM
DATE: 12/7/2009 4:14 PM



LEGEND

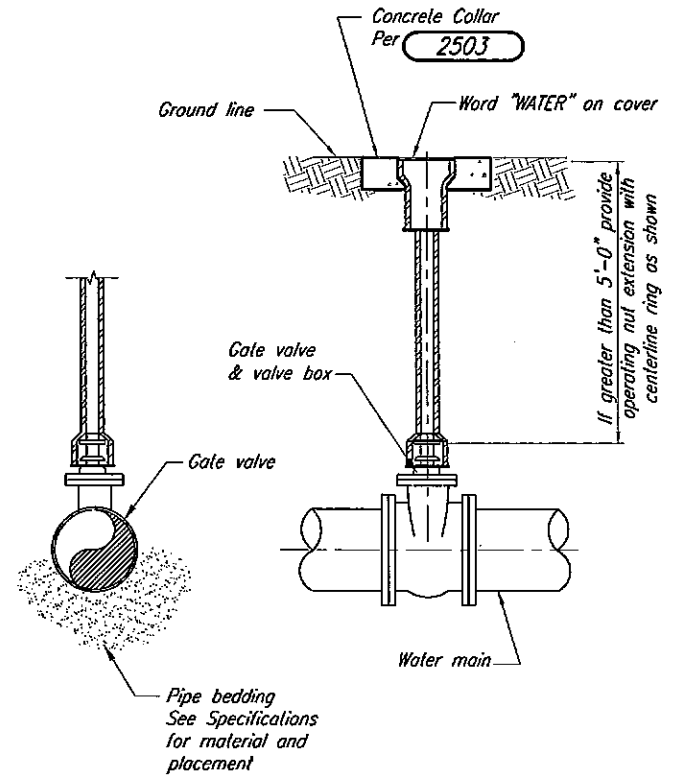
- Magnesium round condenser anode.

NOTE:

1. Anodes should be placed at 180° from each other.

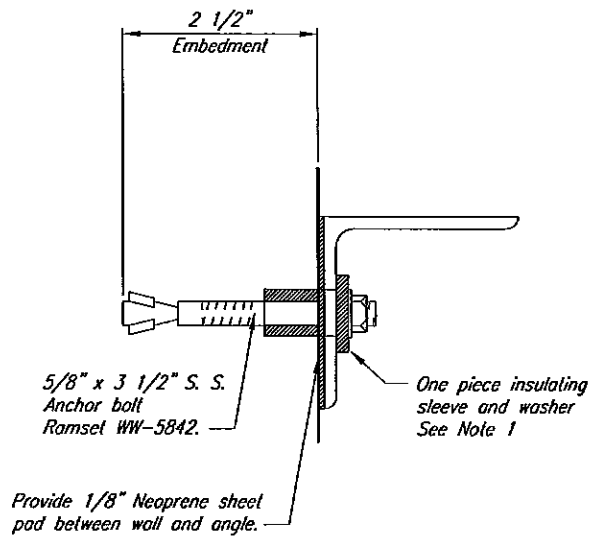
SACRIFICIAL ANODE DETAIL

5510



DIRECT BURIED GATE VALVE

15101

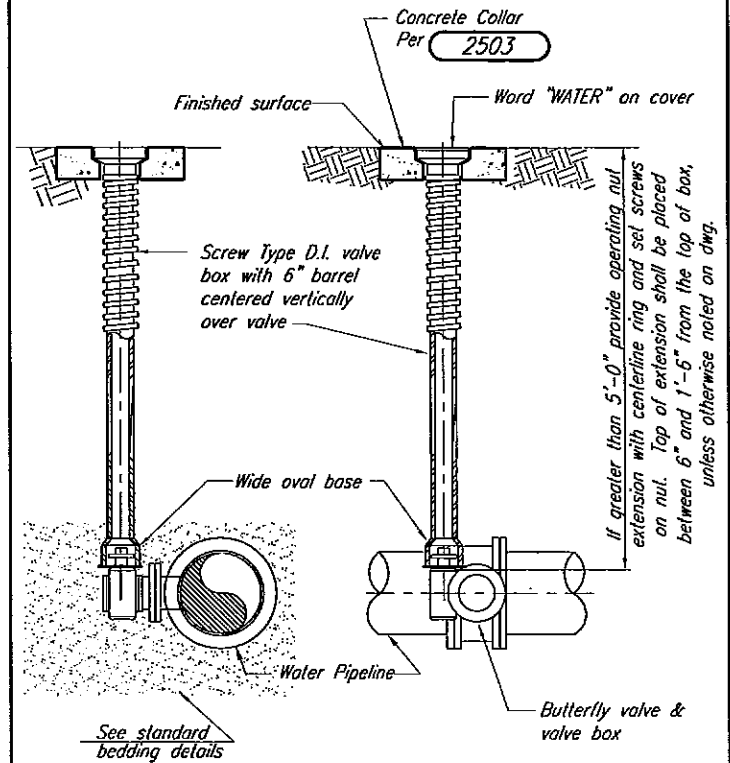


NOTES

1. Provide one piece insulating sleeves and washers to prevent contact between metal plates and expansion anchor/concrete.

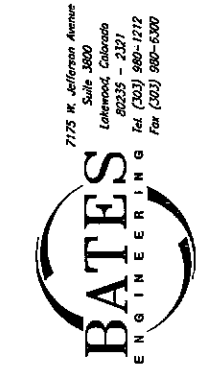
CONCRETE ANCHOR INSULATION DETAIL

5511



DIRECT BURIED BUTTERFLY VALVE

15104



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Date: --- By: ---

**LEFT HAND WATER DISTRICT
2.0 MG ANDREWS TANK IMPROVEMENTS PROJECT
DETAILS
STANDARD DETAILS
SHEET NO. 3**



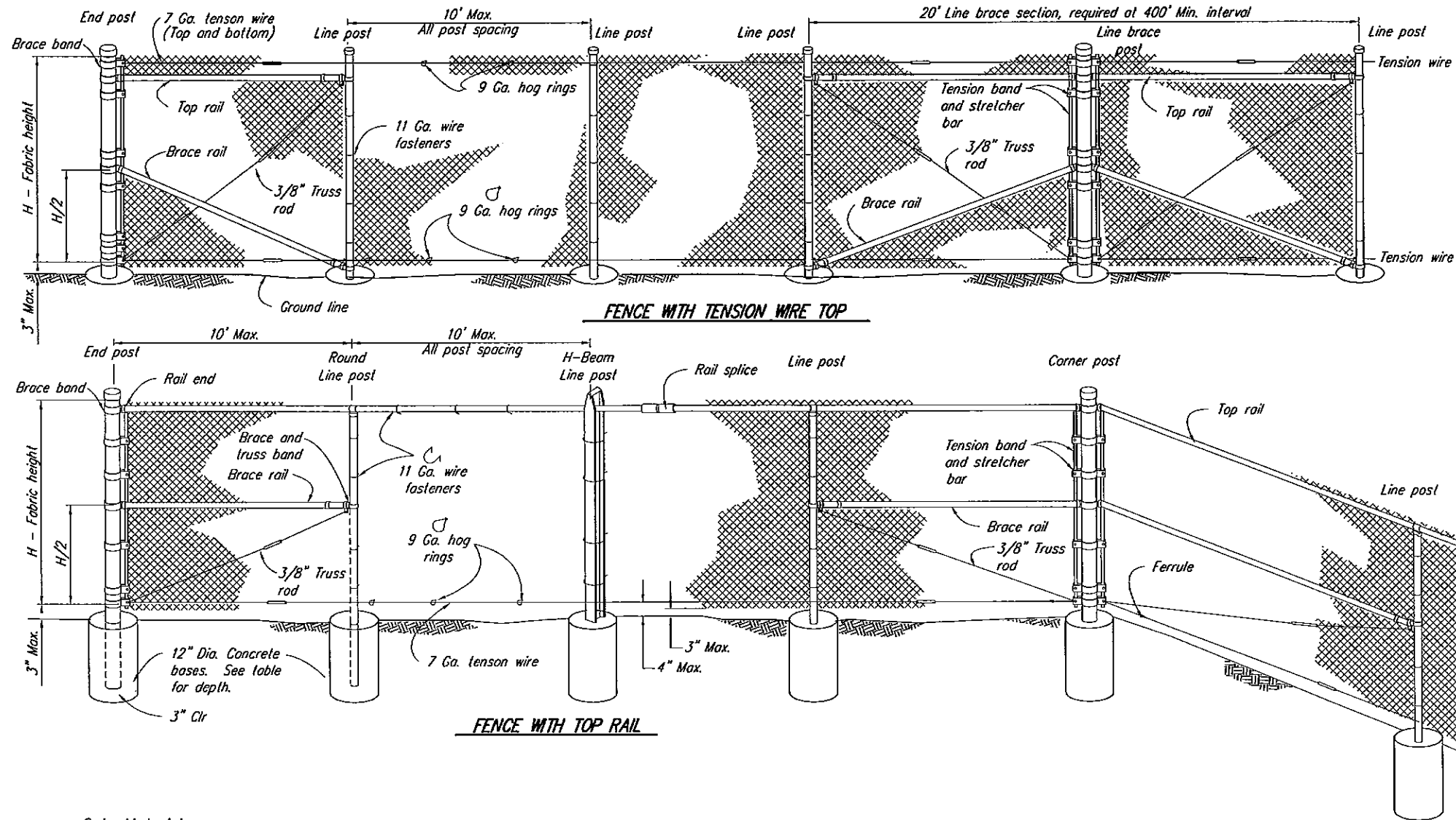
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DRAWN BY:

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09.032

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IMAGES:
AREA:

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PLOT DATE: 12/9/2009 8:14 AM
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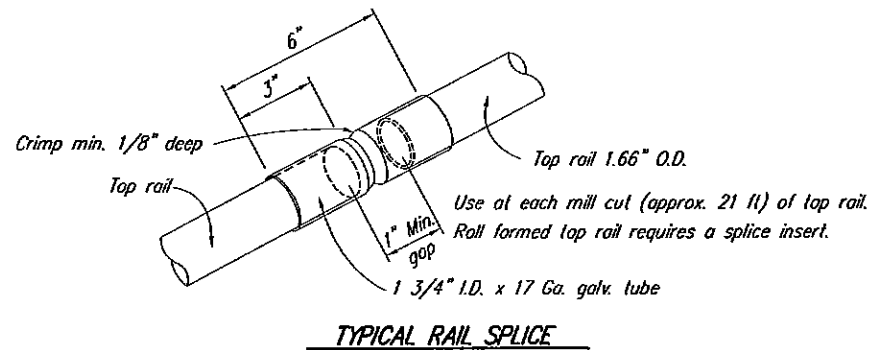
Gate Material

Gate Frame Width	Strain Post		*Concrete Base	
	Round I.D.	Roll-formed	Depth	Diameter
3' Thru 6'	2.50"	3.5"x3.5"	36"	12"
>6' Thru 13'	3.50"	-----	42"	12"
>13' Thru 18'	6.00"	-----	48"	18"
>18' Thru 23'	8.00"	-----	48"	24"
Gate Frame		Frame Pipe I.D.	Bracing Pipe I.D.	
Width	Height			
3' Thru 8'	3' Thru 6'	1.25"	1.25"	
>8' Thru 23'	6'	1.50"	1.25"	
>8' Thru 23'	>6' Thru 12'	1.50"	1.50"	

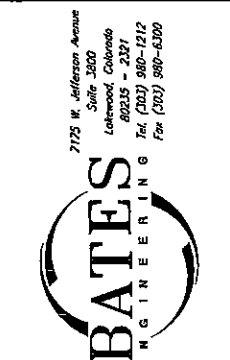
Concrete Bases

Fabric Height "H"	End, Corner & Line Brace Posts		Line Posts	
	*Concrete Base			
	Depth	Diameter	Depth	Diameter
3' Thru 4'	34"	12"	28"	12"
>4' Thru 12'	40"	12"	40"	12"

* All posts 3" clear from bottom of concrete base.



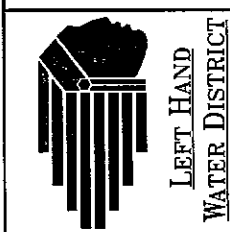
CHAIN LINK FENCE DETAILS



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LEFT HAND WATER DISTRICT
2.0 MG ANDREWS TANK IMPROVEMENTS PROJECT
STANDARD DETAILS
SHEET NO. 4



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