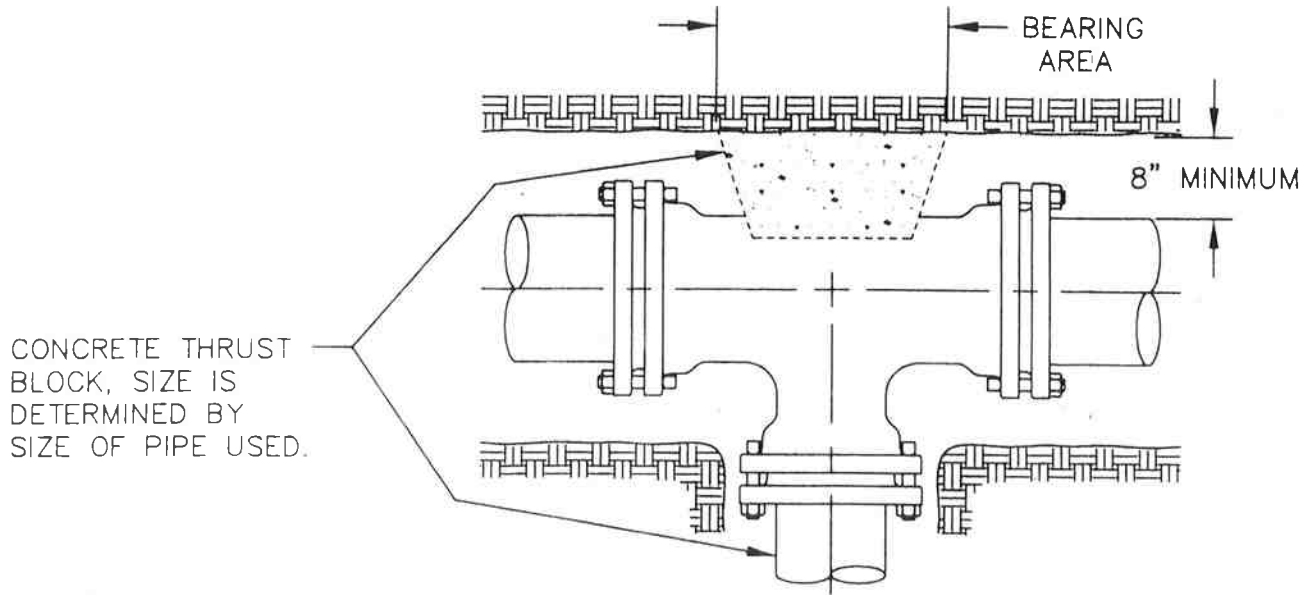


LAKELAND SOUTH
BONNEY LAKE WATER SERVICE




CONCRETE THRUST
 BLOCK, SIZE IS
 DETERMINED BY
 SIZE OF PIPE USED.


NOTES:

- 1) BLOCK HEIGHT SHALL BE EQUAL TO OR LESS THAN ONE HALF OF TOTAL DEPTH FROM GROUND SURFACE TO BLOCK BASE.
- 2) BLOCK SIZE BASED ON 250 PSI TEST PRESSURE.
- 3) WRAP FITTINGS WITH POLYETHYLENE PLASTIC BEFORE POURING CONCRETE THRUST BLOCK.

FITTING SIZE (INCHES)	BEARING AREA OF BLOCK IN SQUARE FEET*				
	TEES & PIPE ENDS	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
2000 PSF SOIL BEARING STRENGTH					
6	4	6	3	2	2
8	7	10	6	3	2
10	10	15	9	5	3
12	14	22	12	6	4
16	25	38*	21	11	7
18	32*	48*	27*	14	8

MAXIMUM BEARING AREA ALLOWED IS 25 S.F. BEARING AREA MAY BE REDUCED BY USING RODS, RESTRAINED JOINT PIPE OR CONDUCTING * SOILS TEST TO CONFIRM HIGHER SOIL BEARING

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WATER MAIN BLOCKING

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE AREA

ROCK WALL
 OR OPTIONAL
 KEYSTONE
 BLOCKS
 (OUTSIDE R/W)

GUARD POST, 9"Ø x 6' LONG
 REINFORCED CONCRETE,
 RENTON CONCRETE
 PRODUCTS OR EQUAL.
 (TYPICAL OF 2)

MIN. AREA OF
 LEVEL GROUND
 SURFACE

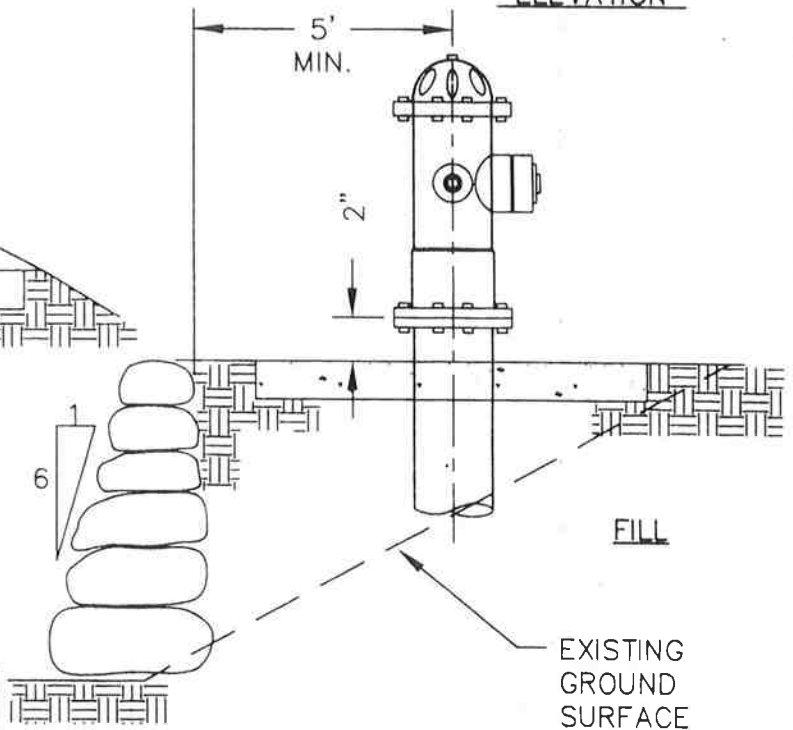
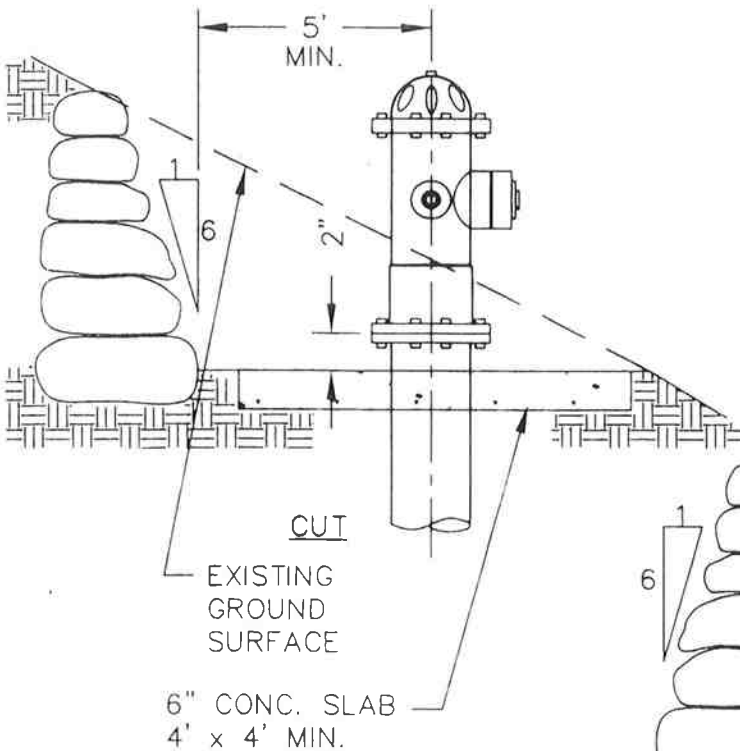
FIRE HYDRANT
 PER CITY STD.

5' RADIUS,
 CLEAR
 DISTANCE

PLAN

GUARD POST (ONLY
 WHEN SPECIFICALLY
 REQUIRED AS SHOWN
 IN THE PLAN)

GUARD POST
 ELEVATION



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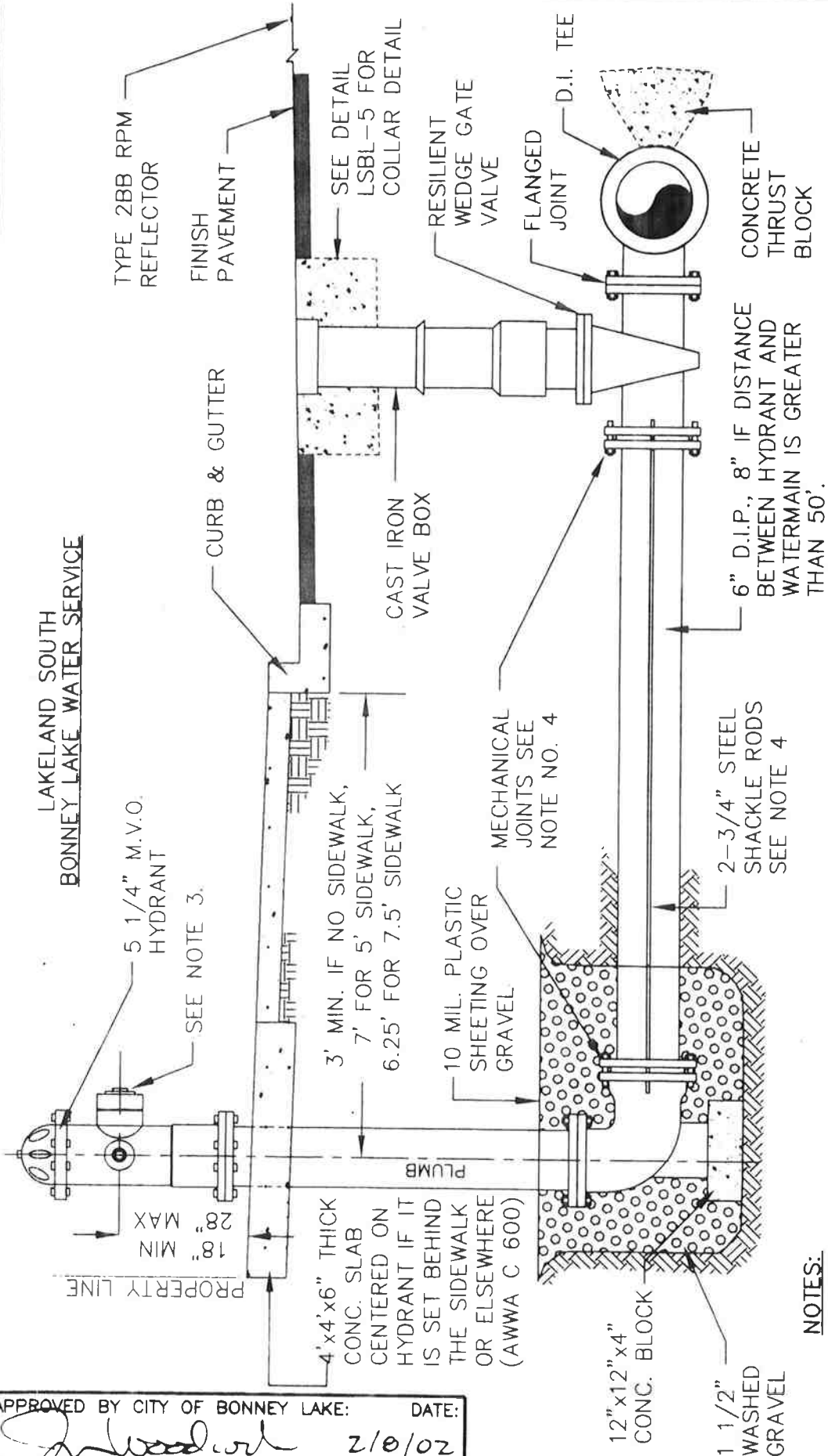
[Signature] 2/8/02

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[Signature] 2/14/02

FIRE HYDRANT LOCATION IN CUT OR FILL
 AND GUARD POST DETAIL

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE



NOTES:

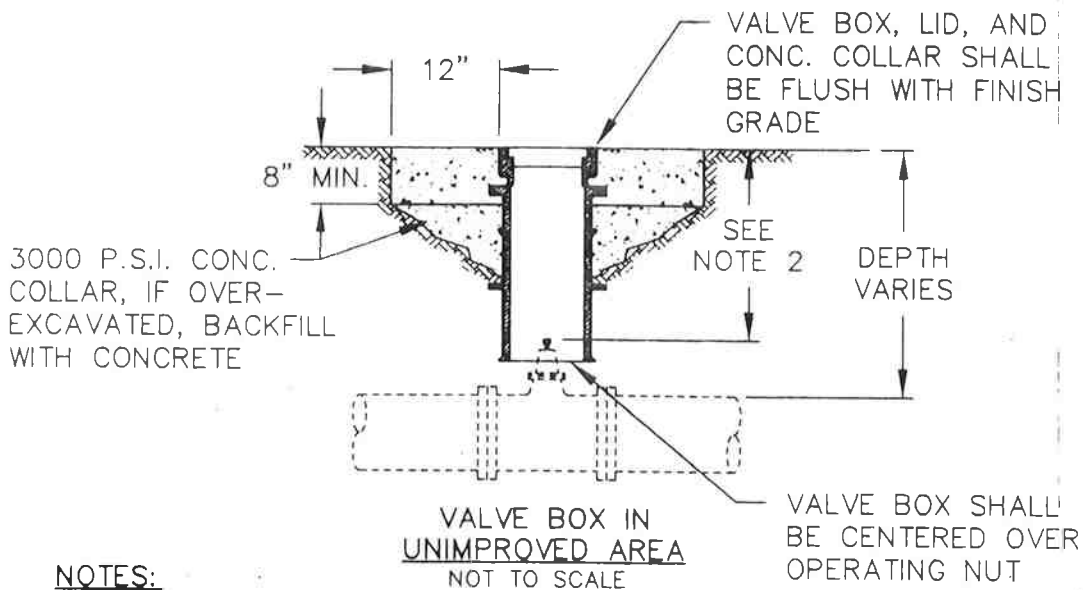
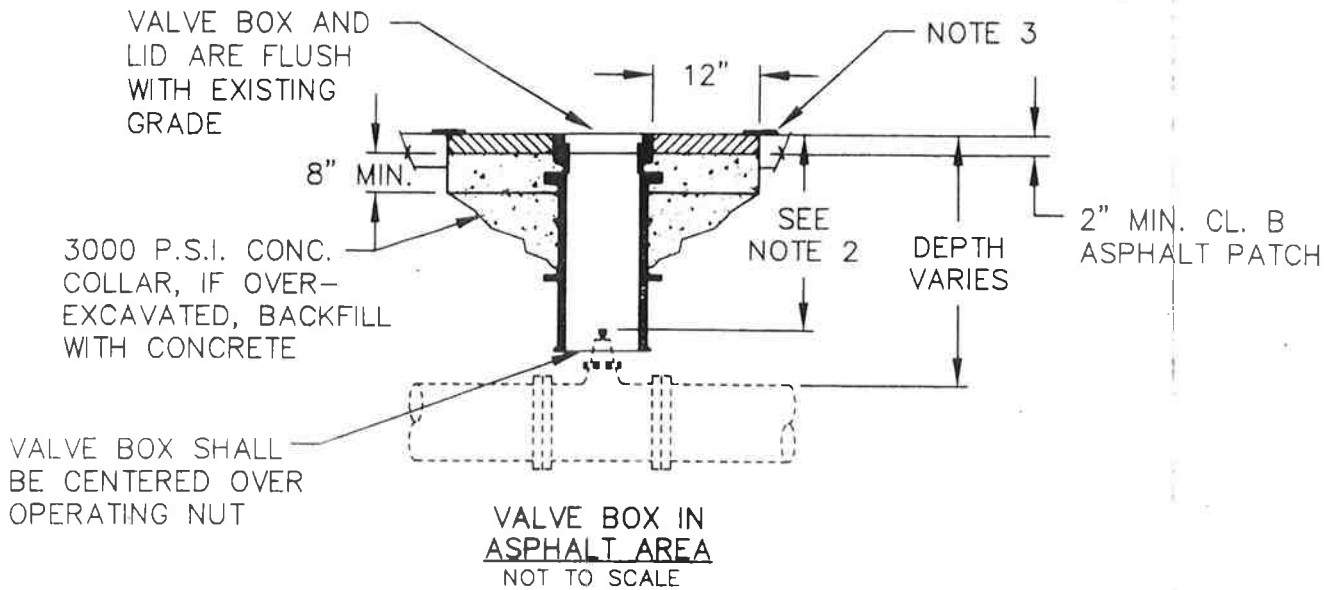
- 1) HYDRANT SHALL BE LOCATED WITHIN THE R.O.W. OR WATER EASEMENT.
- 2) WHERE NO CURB & GUTTER IS INSTALLED, FIRE HYDRANT SHALL BE LOCATED (IN RELATION TO STREET CENTER LINE) AS INDICATED ON THE DRAWINGS.
- 3) INSIDE CITY LIMITS & AREA WITHIN FIRE DISTRICT No. 44, HYDRANTS SHALL HAVE 2-2 1/2" NATIONAL STANDARD THREAD (NST) HOSE PORTS & 1-4 1/2" NST PUMPER PORT WITH A 5" STORZ ADAPTER AND CAP.
- 4) MEGA-LUGS MAY BE USED IN PLACE OF SHACKLE RODS WITH PRIOR APPROVAL OF THE ENGINEER.
- 5) INSURE 5' MINIMUM CLEARANCE TO OBSTACLES FROM CENTERLINE OF HYDRANT.

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5 1/4" M.V.O. HYDRANT
SETTING DETAIL

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE AREA



NOTES:

- 1) EACH VALVE BOX SHALL BE ADJUSTABLE CAST IRON OF 5" INSIDE DIAMETER, HAVE A TOP SECTION OF 18" MINIMUM LENGTH, AND SHALL BE RICH NO. 940 OR APPROVED EQUAL. EARS SHALL BE PLACED IN LINE WITH PIPE IT SERVES.
- 2) DEPTH OF OPERATING NUT SHALL BE 15" MINIMUM TO 36" MAXIMUM, INCLUDING EXTENSION WHEN REQUIRED.
- 3) SEAL CONCRETE COLLAR AND ASPHALT CONCRETE SEAMS WITH WITH AR 4000.

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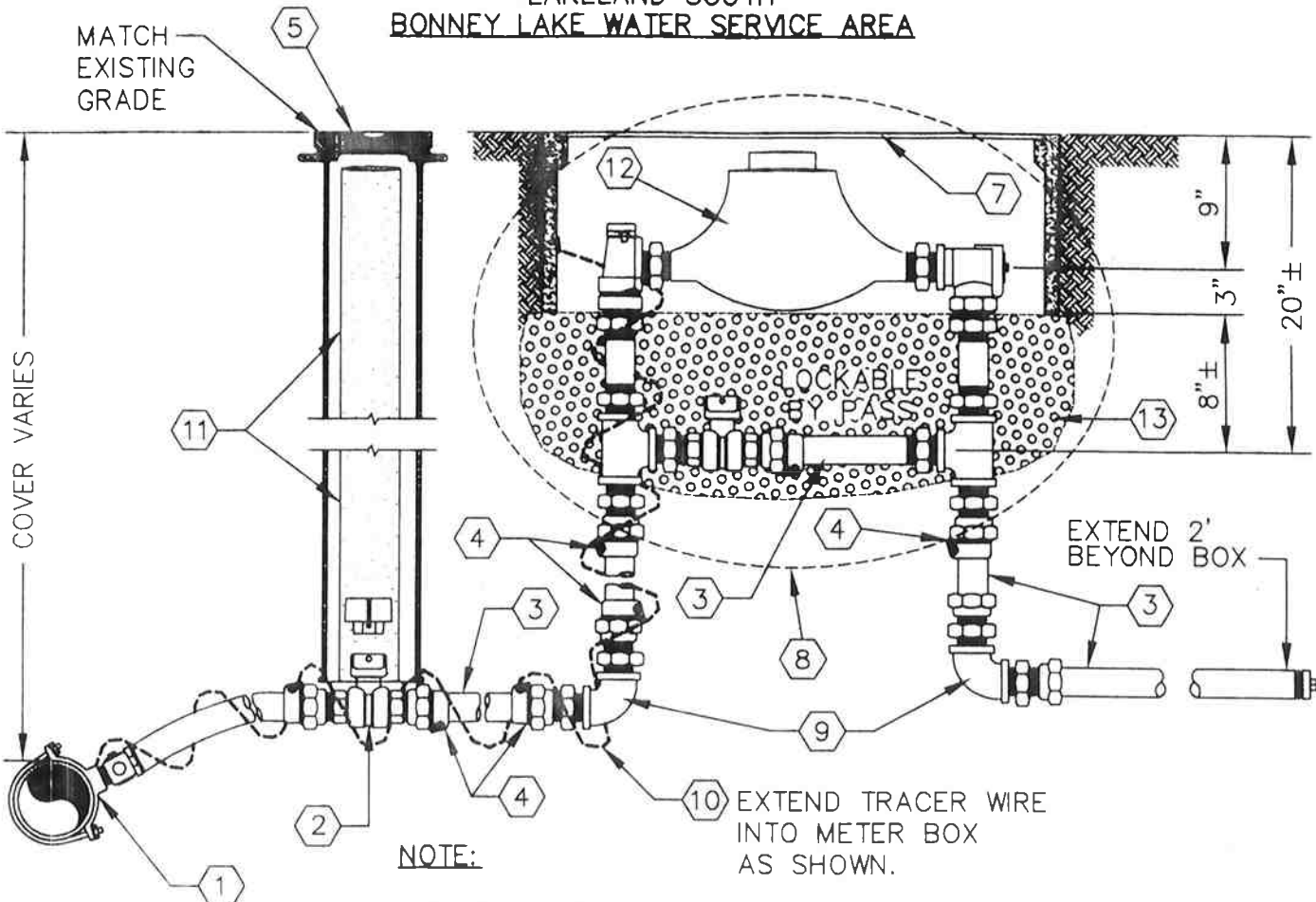
[Signature] 2/18/02

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[Signature] 2/14/02

ADJUSTMENT OF NEW AND EXISTING UTILITY STRUCTURES TO FINISH GRADE

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE AREA



NOTE:

TEMPORARILY INSTALL "SPACER" IN
 METER SETTER UNTIL METER IS
 INSTALLED

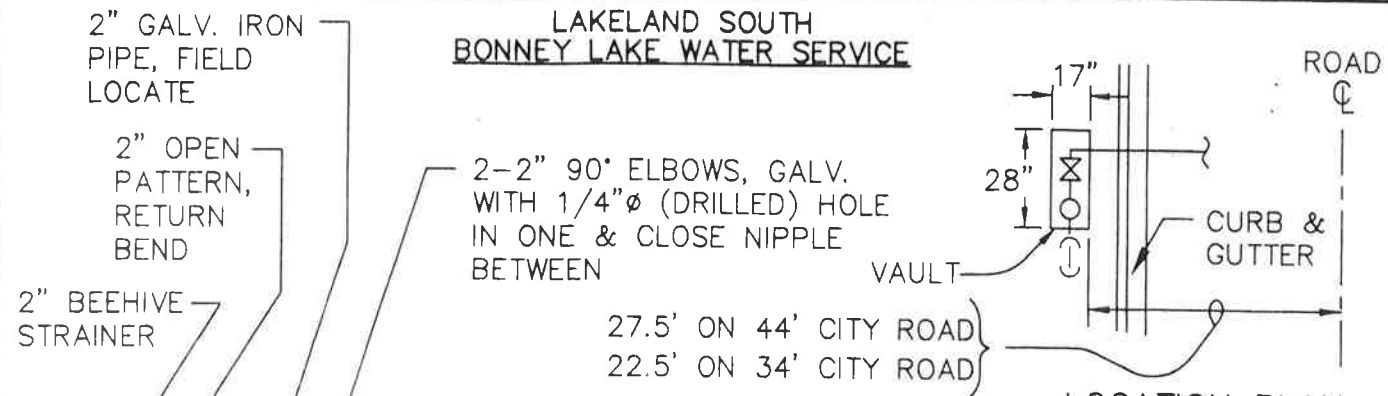
DESCRIPTION	MAKER OR RATING	1 1/2"	2"
① Double Strap Saddle	Romac or Equal	202 IPT	202 IPT
② Gate Or Ball Valve w/ 2" Operating Nut	Ford or equal	Ball Valve B11-666 with Qt67	Resilient Seat Gate
③ Pipe - High Molecular Polyethylene Pipe (I.P.S.)	SDR7(200PSI)		
④ Coupling Male	Ford or Equal	C84-66	C84-77
⑤ Valve Box	Rich or Equal		
⑥ Nipple Brass		1 1/2" x 6"	2"x6"
⑦ Meter Box	Fogtite#2 w/H2O Load		
⑧ Meter Setter w/Lockable Bypass	Ford or Equal	VFH 66-12B	VFH 77-12B
⑨ Brass 90° Elbow		1-1/2"	2"
⑩ Tracer Wire	14 Ga. Copper Wire	Solid	Solid
⑪ PVC Sleeve Beneath Pavement	PVC-Sch. 80	4"φ	4"φ
⑫ SENSUS TOUCH-READ METER			
⑬ 8" to 10" of 5/8" Minus Crushed Rock Top Course			

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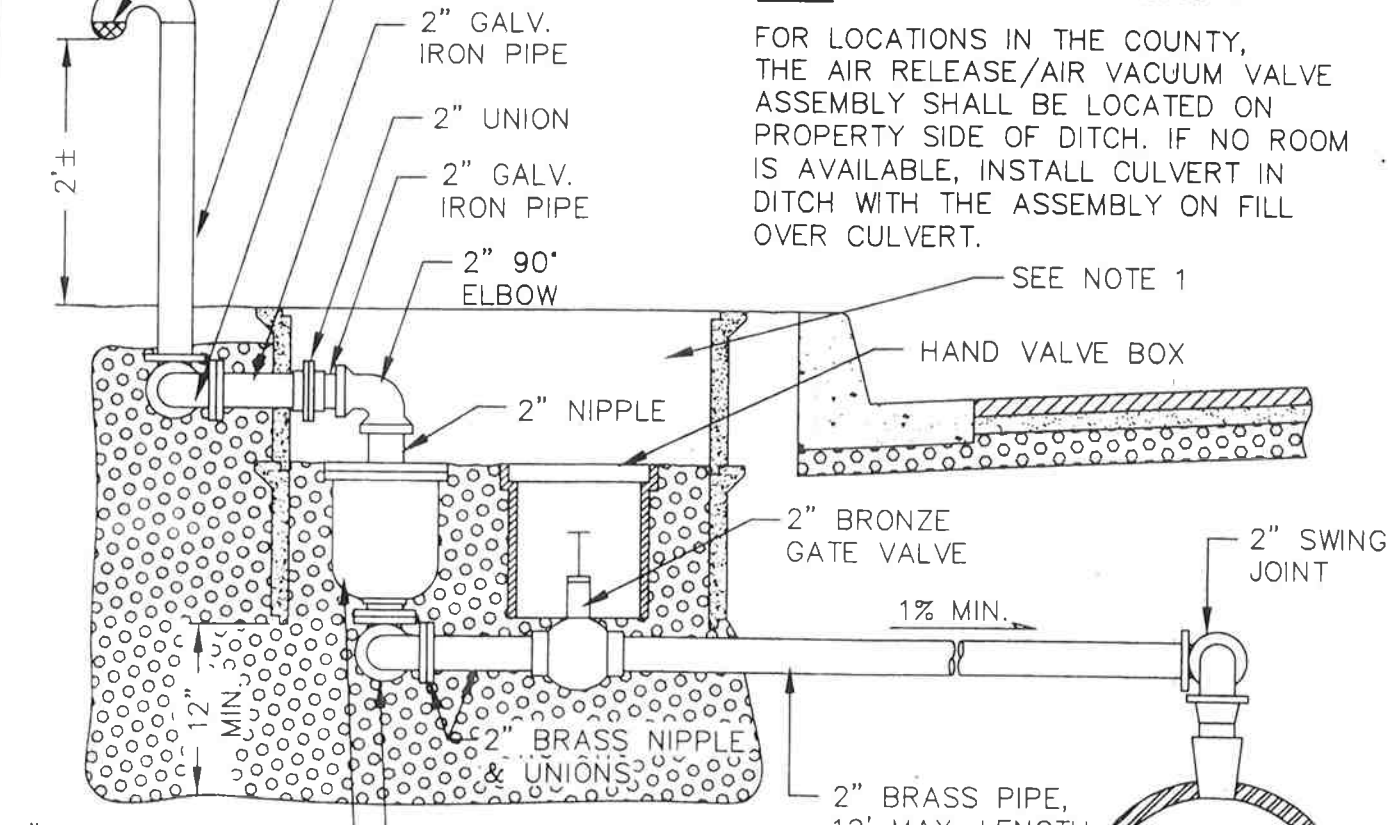
1 1/2" & 2" WATER SERVICE and MATERIAL LIST

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE



LOCATION PLAN
Not to Scale

NOTE:
FOR LOCATIONS IN THE COUNTY, THE AIR RELEASE/AIR VACUUM VALVE ASSEMBLY SHALL BE LOCATED ON PROPERTY SIDE OF DITCH. IF NO ROOM IS AVAILABLE, INSTALL CULVERT IN DITCH WITH THE ASSEMBLY ON FILL OVER CULVERT.



ELEVATION
Not to Scale

2" COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY, SCREWED APCO #143C OR EQUAL.

NOTES:

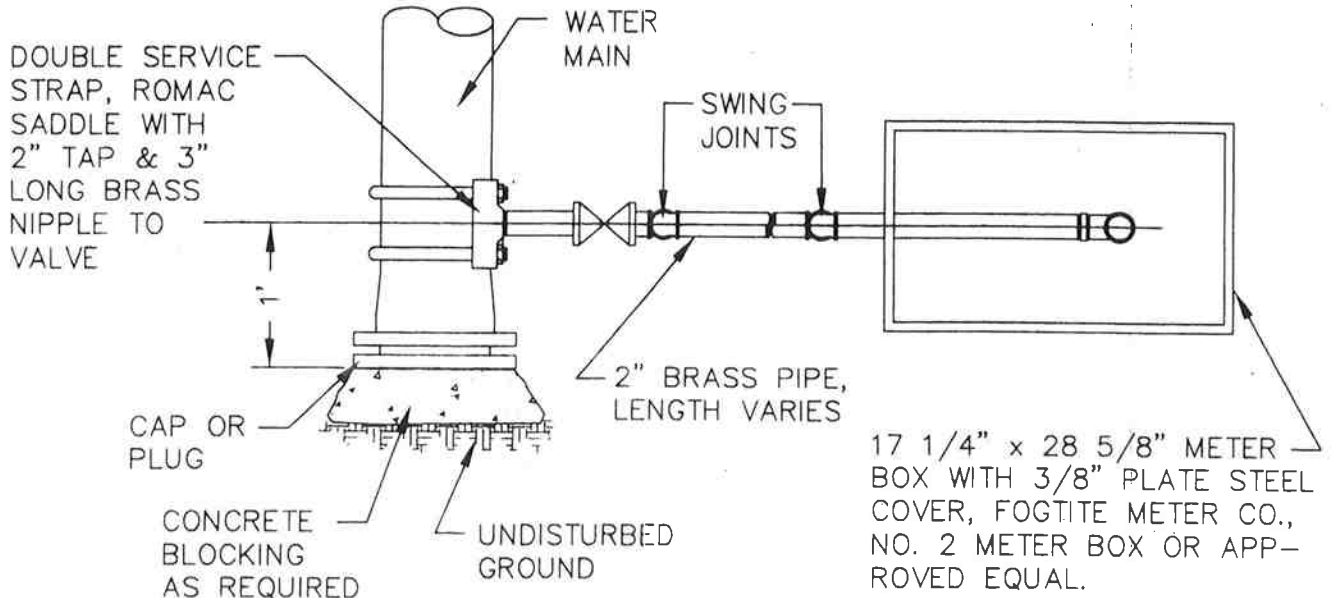
- 1) COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY TO BE INSTALLED IN 17"x28" CONC. METER BOX WITH 3/8" STEEL DIAMOND PLATE COVER, FOG-TITE METER SEAL CO. #2 METER BOX OR EQUAL.
- 2) BED WITH WASHED GRAVEL, PASSING 1 1/2" AND RETAINED ON 1/4" MESH.
- 3) GATE VALVE SHALL BE AWWA RESILIENT SEAL, FIPT. x FIPT. WITH HANDWHEEL.
- 4) ALL PIPING BETWEEN DOUBLE STRAP SADDLE AND INLET SIDE OF COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY SHALL BE BRASS.
- 5) TAP MAIN AT SYSTEM'S HIGHEST POINT, LOCATION TO BE APPROVED BY THE CITY.

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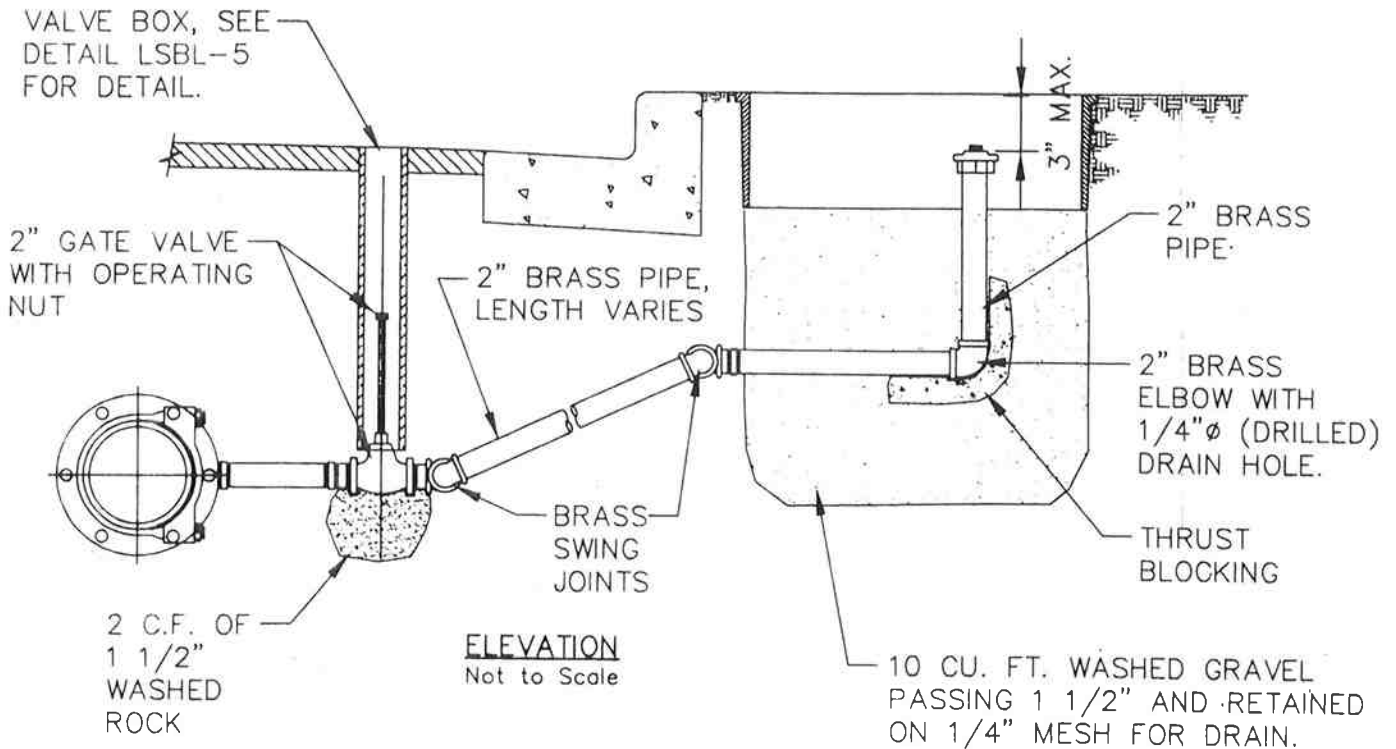
APPROVED BY CITY OF AUBURN: *[Signature]* DATE: 2/12/02

TYPICAL 2" COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY DETAIL

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE AREA



PLAN
 Not to Scale



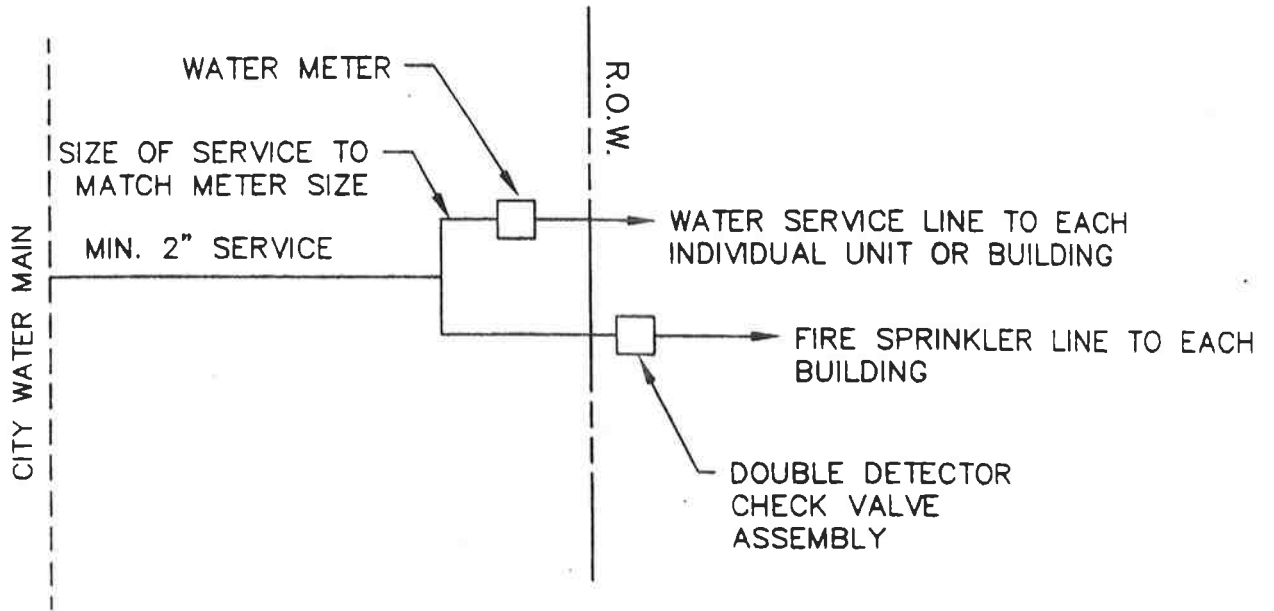
ELEVATION
 Not to Scale

NOTE:

- 1) THE OUTLET SHALL BE BRONZE 2 1/2 N.S.T. AND BE LOCKABLE TO PREVENT UNAUTHORIZED USE.

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<i>[Signature]</i>	2/8/02
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<i>[Signature]</i>	2/14/02

2" BLOWOFF ASSEMBLY
 DETAIL



NOTES:

- 1) ABOVE DESIGN APPLICABLE TO SINGLE FAMILY.
- 2) CONNECTION TO CITY WATER MAIN PER CITY OF AUBURN REQUIREMENTS.
- 3) DOUBLE CHECK VALVE ASSEMBLY REQUIRED ON FIRE SPRINKLER LINE.
- 4) PLANS FOR SEPARATE FIRE SPRINKLER LINE MUST BE SUBMITTED AND APPROVED BY FIRE MARSHAL PRIOR TO INSTALLATION.

APPROVED BY CITY ENGINEER:

DATE:

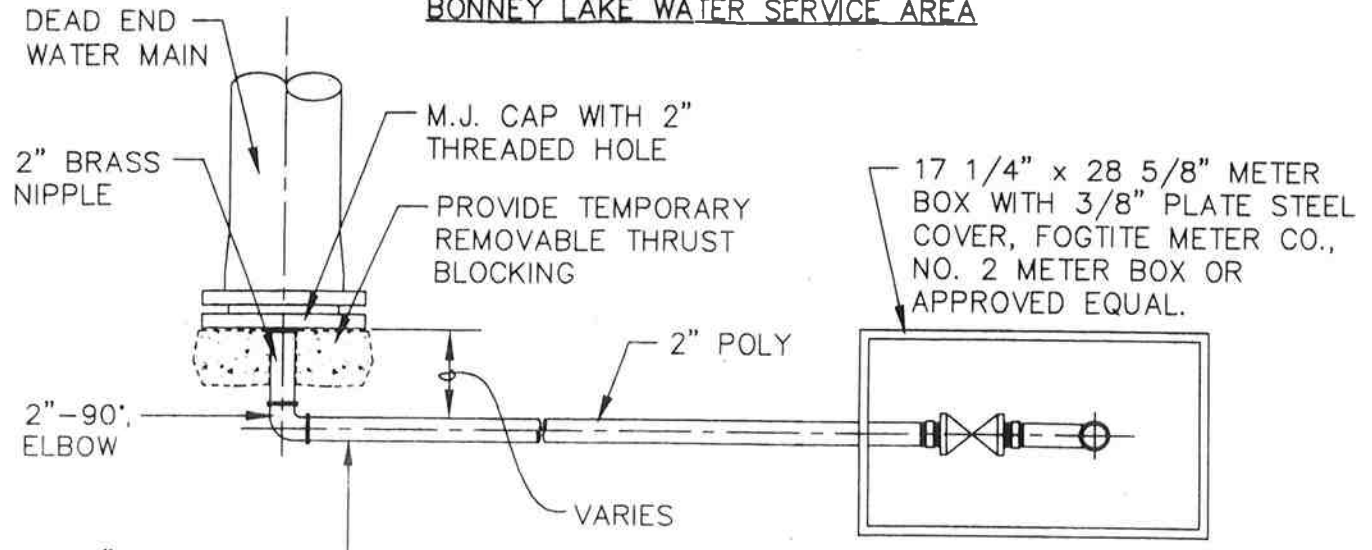
Q. Dawdy

4/5/02

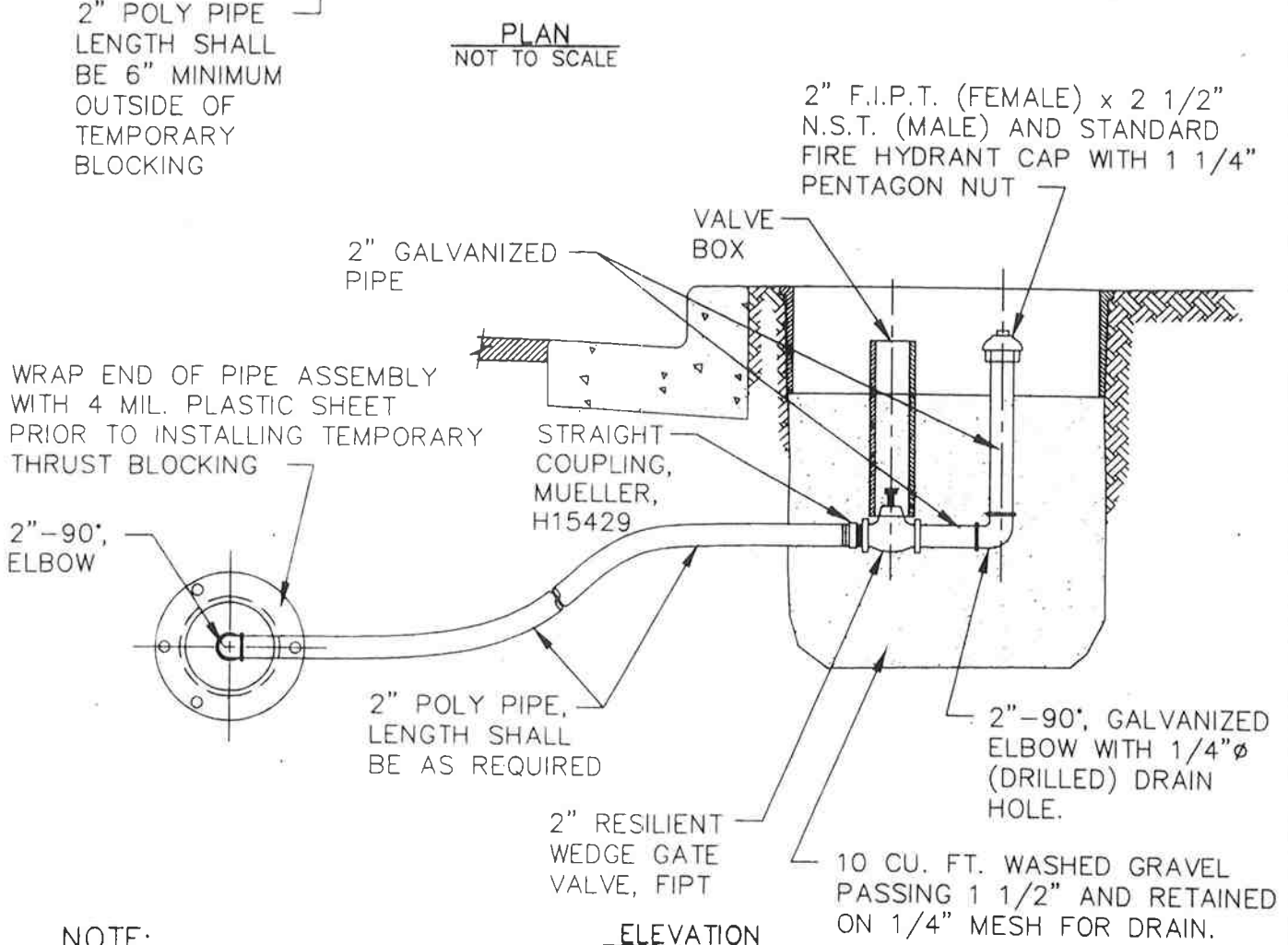


3/4" TO 3" FIRE SPRINKLER LINES
WITH DOMESTIC SERVICE LINE

LAKELAND SOUTH
BONNEY LAKE WATER SERVICE AREA



PLAN
 NOT TO SCALE



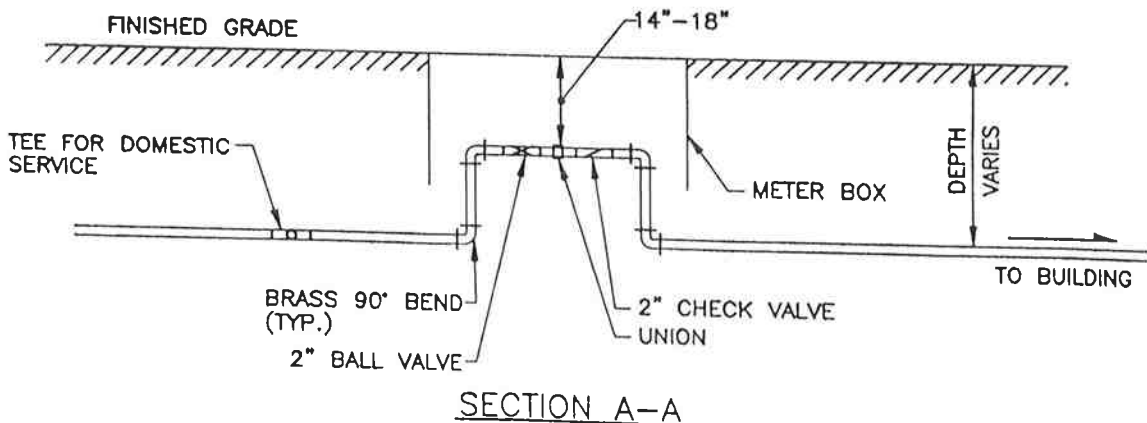
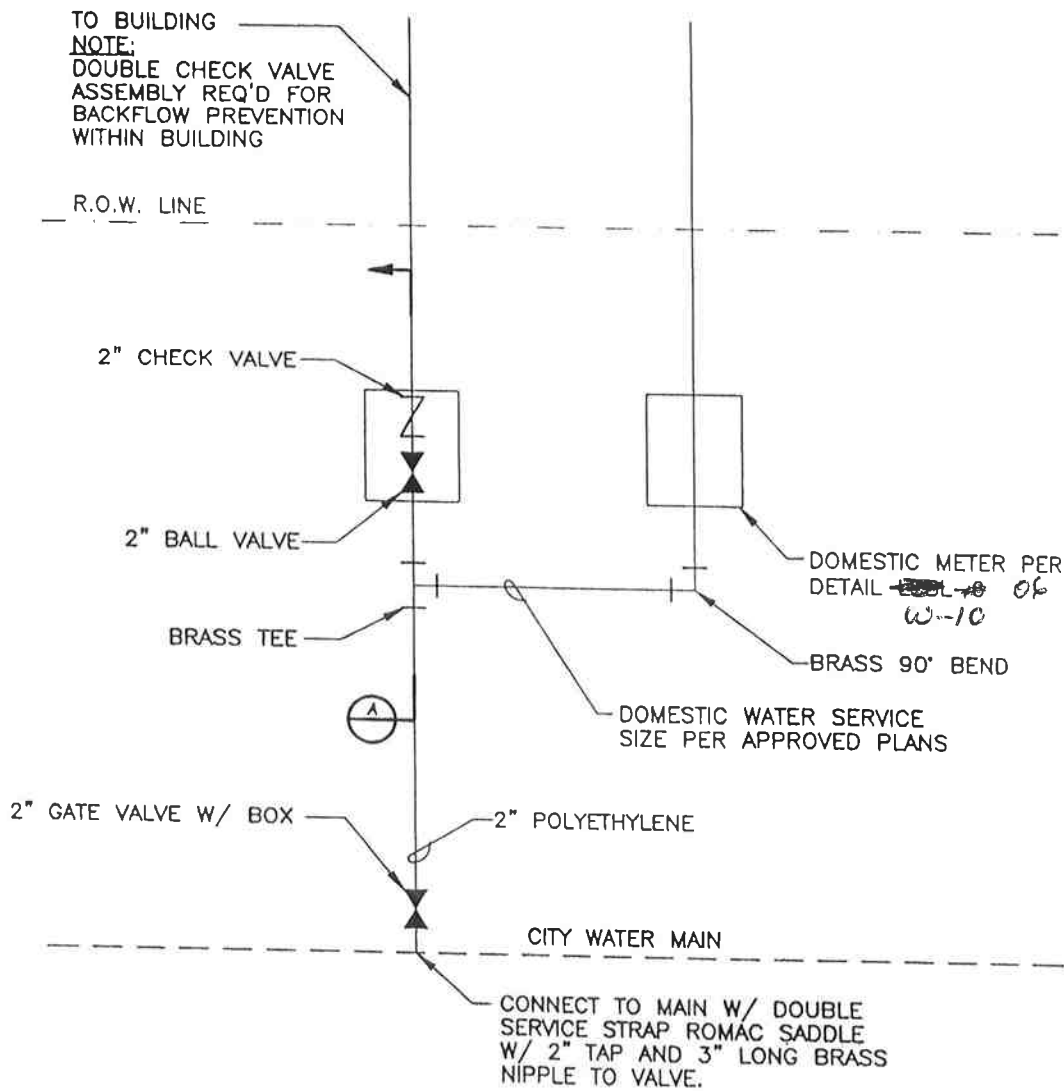
ELEVATION
 NOT TO SCALE

NOTE:

- 1) TEMPORARY BLOWOFFS SHALL BE USED ON ALL DEAD END WATERLINES WITH LOCATION OF BLOWOFF BOX AS SHOWN ON THE PLAN OR WHERE DIRECTED BY THE ENGINEER.

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<i>[Signature]</i>	2/8/02
APPROVED BY CITY OF AUBURN:	DATE:
<i>[Signature]</i>	2/14/02

TEMPORARY BLOWOFF
 DETAIL



SECTION A-A

APPROVED: *Keth Boettcher* DATE: 12-9-03
 APPROVED: *Dennis Selby* DATE: 12/23/03

LAKELAND SOUTH
 BONNEY LAKE WATER SERVICE
 FIRE SPRINKLER LINE WITH
 DOMESTIC SERVICE