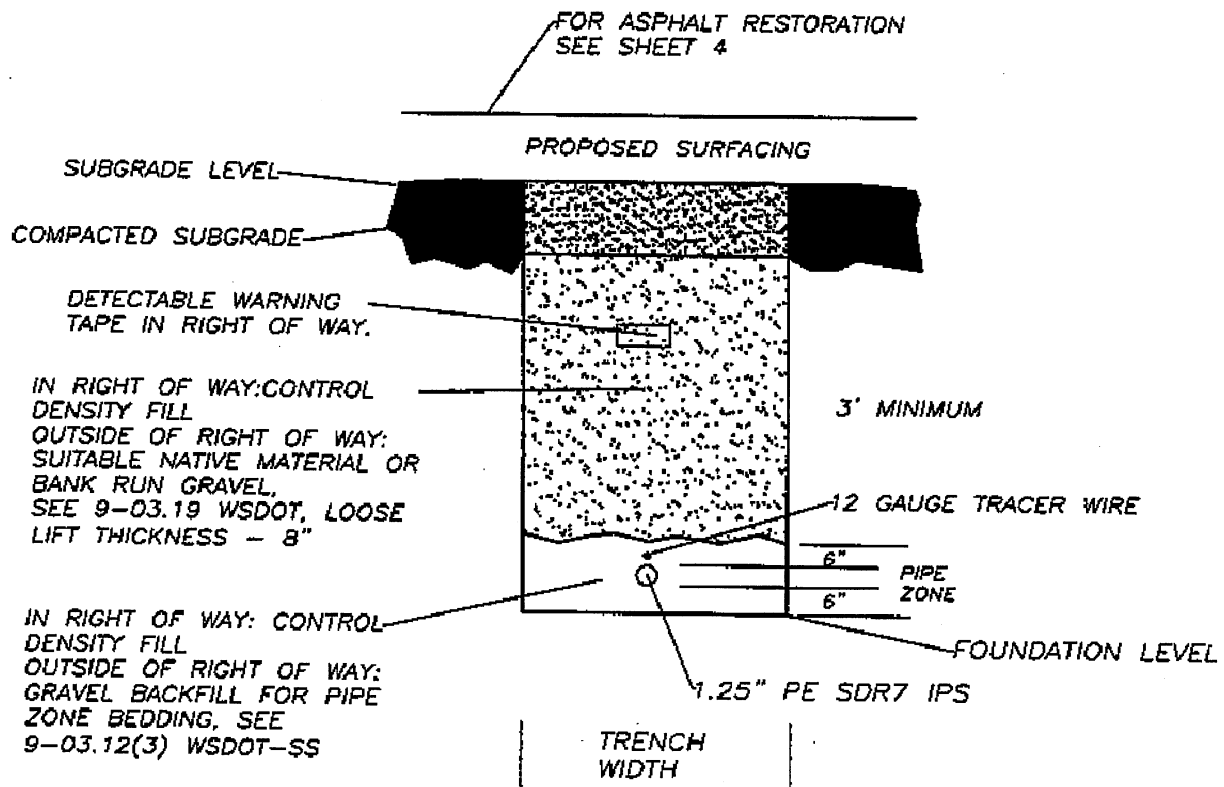


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NOTES:

TRENCH WIDTH IN PIPE ZONE:

MAX WIDTH = I.D. + 30" FOR PIPE 15" DIA. OR SMALLER

MAX WIDTH = 1.5 X I.D. + 18" FOR PIPE 18" DIA. OR LARGER

BACKFILL AND FOUNDATION MATERIAL COMPACTION REQUIREMENTS

		SS	SS
		PAVEMENT	LANDSCAPING
DEPTH	<2'	95%	90%
	>2'	90%	90%

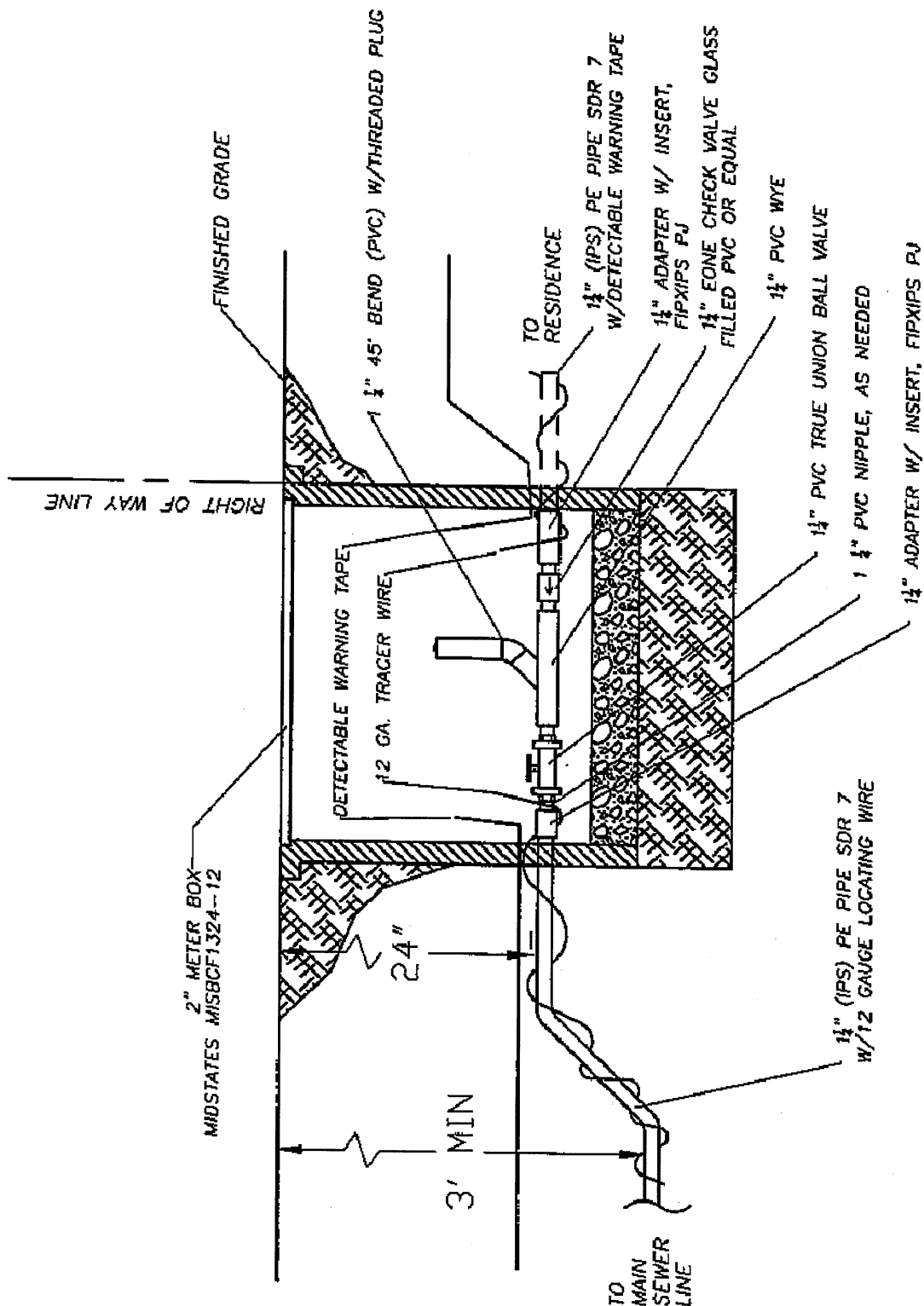
02-14-2010
DATE

1
NUMBER

UTILITY TRENCH BACKFILL
NO SCALE



CITY OF
BAINBRIDGE ISLAND
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ENGINEERING
DEPARTMENT



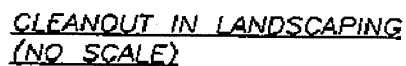
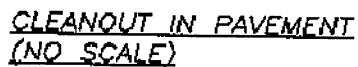
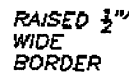
02-14-2010
DATE

2
NUMBER

SIDE SEWER SHUTOFF
NO SCALE



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ENGINEERING
DEPARTMENT



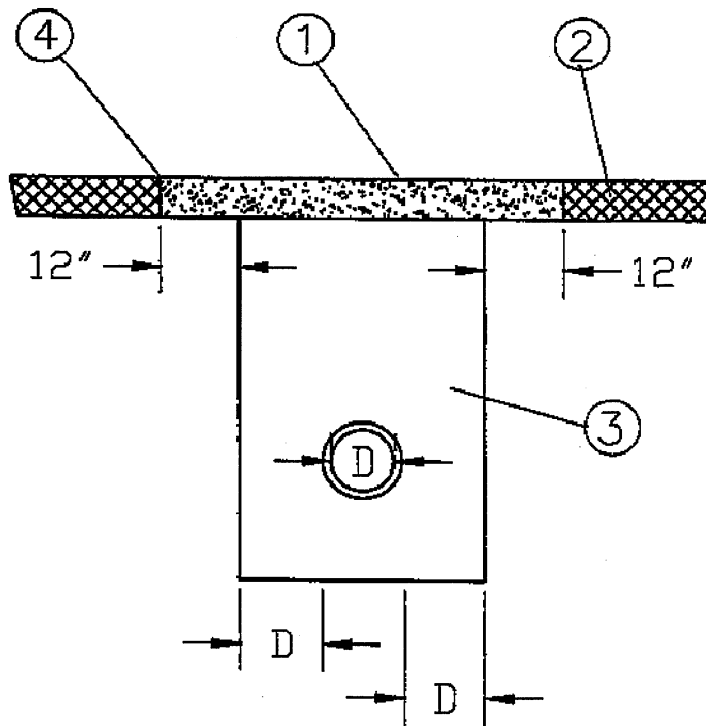
DATE _____

NUMBER

CLEANOUT
NO SCALE



**CITY OF
BAINBRIDGE ISLAND
PUBLIC WORKS
ENGINEERING
DEPARTMENT**



- ① LONGITUDINAL TRENCH REMOVE AND REPLACE EXISTING PAVEMENT (2" MIN THICKNESS) FULL WIDTH OF DISTURBED LANE.
- ② EXISTING PAVEMENT
- ③ SEE UTILITY TRENCH BACKFILL DETAIL FOR MATERIAL SPECIFICATION
- ④ STRAIGHT SAW CUT FULL DEPTH, CLEAN, HEAT & TACK EDGES WITH SEALER & SEAL WITH ASPHALT CEMENT.

TEMPORARY RESTORATION OF TRENCHES FOR OVERNIGHT USE SHALL BE ACCOMPLISHED BY USING COLD MIX, ATB, OR STEEL PLATES. PATCH SHALL BE MACHINE ROLLED FLUSH WITH EXISTING PAVEMENT AND SHALL BE PLACED PER SECTION 5-04 OF THE WSDOT/APWA SPECIFICATIONS.

02-14-2010
DATE

4
NUMBER

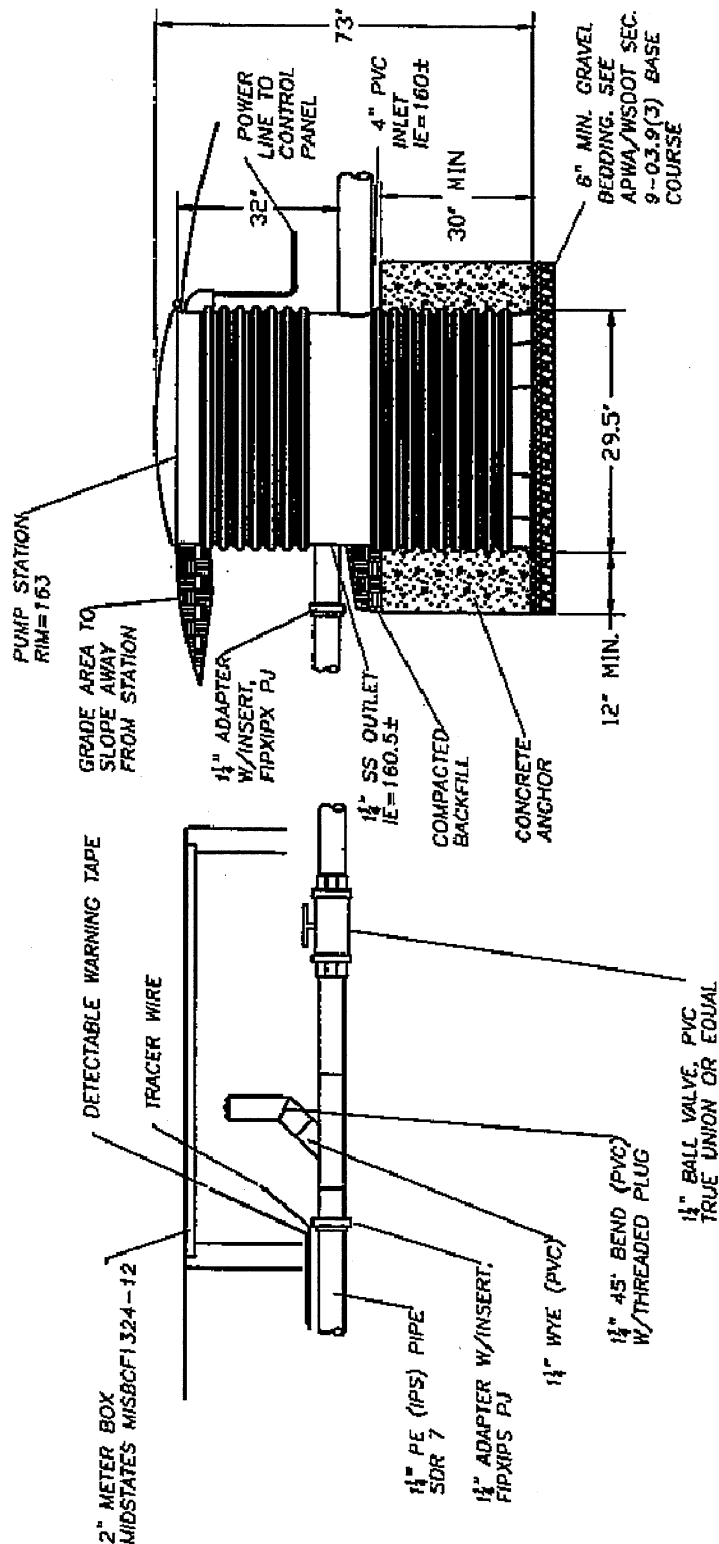
ROW UTILITY TRENCH RESTORATION
NO SCALE



CITY OF
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PUBLIC WORKS
ENGINEERING
DEPARTMENT

PUMP STATION NOTES

1. CONCRETE ANCHOR OF A MINIMUM VOLUME OF 27 CF SHALL BE INSTALLED.
2. BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY (ASTM D1557).
3. IF PROPER COMPACTION CAN NOT BE OBTAINED WITH NATIVE MATERIAL USE $\frac{3}{4}$ " - $\frac{1}{2}$ " CRUSHED STONE.
4. PUMP STATION SHALL BE ENVIRONMENT-ONE MODEL DH07 MODULAR UNIT CONTAINING A SIMPLEX GRINDER PUMP SYSTEM, A CHECK VALVE, TANK AND CONTROLS. THE UNIT SHALL BE PROVIDED WITH VISUAL AND AUDIBLE ALARMS.
5. INSTALL POWER SUPPLY SYSTEM IN ACCORDANCE WITH STATE AND CITY REQUIREMENTS.
6. CONTRACTOR SHALL PROVIDE SCHEDULE 80 PVC NIPPLES AS NEEDED.



02-14-2010
DATE

5
NUMBER

GRINDER PUMP STATION
NO SCALE



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ELECTROFUSION TRANSITION OR CORP. SADDLE
2" X 1½"
FIP
CENTRAL PLASTICS CO. OR EQUAL

1½" PE SDR7 IPS

1½" CORPORATION STOP,
MIP X PACKJOINT W/ INSERT
FORD FB1101-5 OR EQUAL

EX. 2" HDPE SSFM
* FIELD VERIFY PIPE TO
CONFIRM 2" HDPE AND
SCHEDULE WITH THE CITY
ONSITE.

02-14-2010
DATE

6
NUMBER

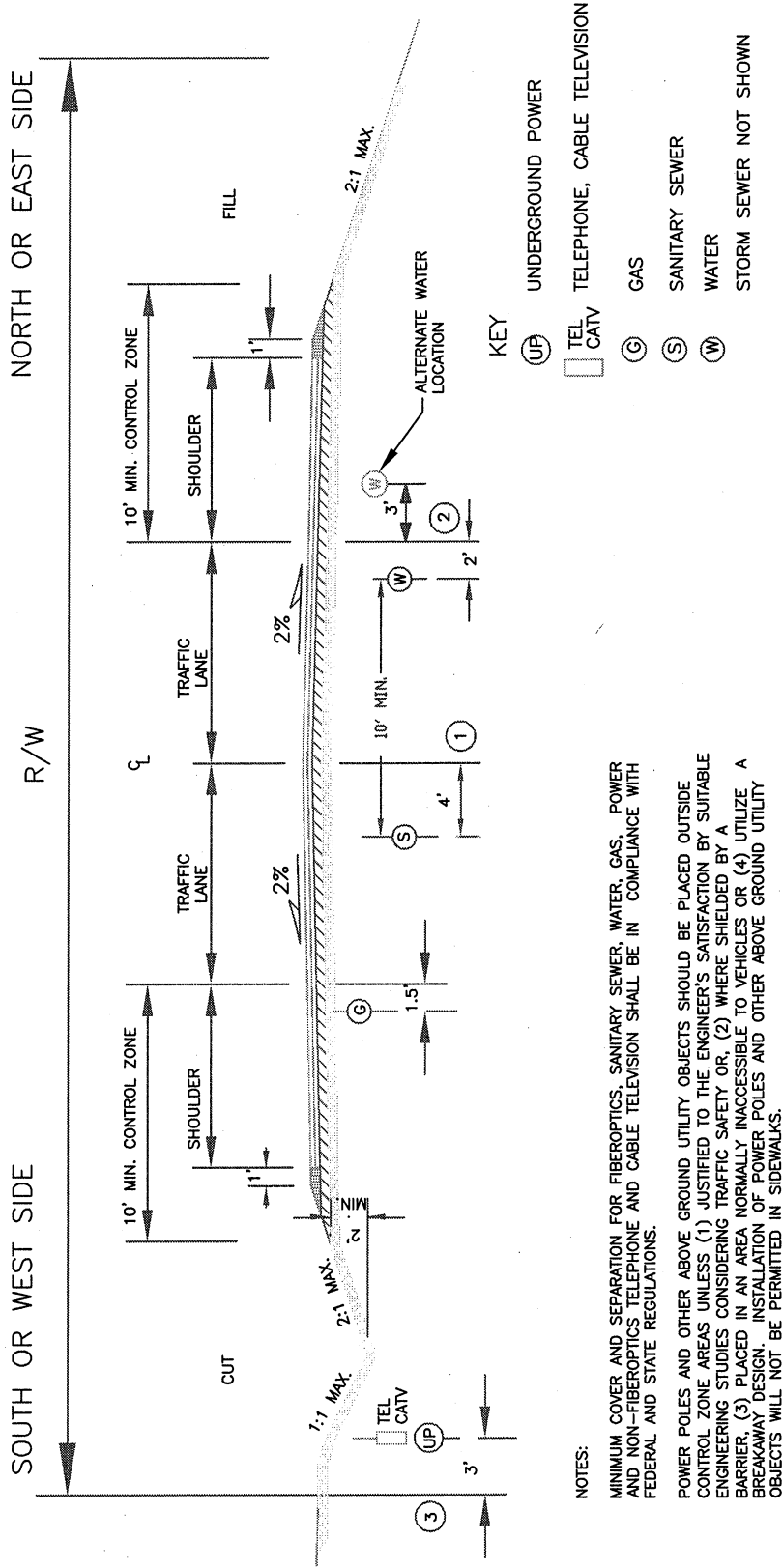
SSFM CONNECTION
NO SCALE



CITY OF
BAINBRIDGE ISLAND
PUBLIC WORKS
ENGINEERING
DEPARTMENT

TYPICAL UTILITY LOCATIONS - SHOULDER SECTION

UTILITY LOCATIONS SHOWN ARE FOR NEW CONSTRUCTION. INSTALLATIONS WITHIN EXISTING ROADS CAN VARY SIGNIFICANTLY AND WILL BE EVALUATED AT THE UTILITY PERMIT STAGE ON A CASE BY CASE BASIS. HOWEVER, WHETHER THE ROAD IS NEWLY CONSTRUCTED OR EXISTING, SANITARY SEWERS WILL REQUIRE PLACEMENT AS SHOWN ON THIS DRAWING AND IN ADDITION, NO UTILITY SHALL BE LOCATED DIRECTLY BELOW THE BOTTOM OF A ROADSIDE DITCH OR SWALE.



NOTES:

MINIMUM COVER AND SEPARATION FOR FIBEROPTICS, SANITARY SEWER, WATER, GAS, POWER AND NON-FIBEROPTICS TELEPHONE AND CABLE TELEVISION SHALL BE IN COMPLIANCE WITH FEDERAL AND STATE REGULATIONS.

POWER POLES AND OTHER ABOVE GROUND UTILITY OBJECTS SHOULD BE PLACED OUTSIDE CONTROL ZONE AREAS UNLESS (1) JUSTIFIED TO THE ENGINEER'S SATISFACTION BY SUITABLE ENGINEERING STUDIES CONSIDERING TRAFFIC SAFETY OR, (2) WHERE SHIELDED BY A BARRIER, (3) PLACED IN AN AREA NORMALLY INACCESSIBLE TO VEHICLES OR (4) UTILIZE A BREAKAWAY DESIGN. INSTALLATION OF POWER POLES AND OTHER ABOVE GROUND UTILITY OBJECTS WILL NOT BE PERMITTED IN SIDEWALKS.

CONTROL ZONE DISTANCES SHOWN APPLY TO ROADS WITH A POSTED SPEED OF 35 MPH OR LESS. CONTROL ZONE DISTANCES FOR ROADS POSTED AT GREATER THAN 35 MPH SHOULD BE DETERMINED ACCORDING TO CHAPTER 710, TRAFFIC BARRIERS, CONTAINED WITHIN THE LATEST EDITION OF THE WSDOT DESIGN MANUAL.

1 MAY BE PLACED EITHER SIDE OF CENTERLINE.

2 PERMITTED IN TRAFFIC LANE IF EXISTING SHOULDER WIDTH IS NOT SUFFICIENT.

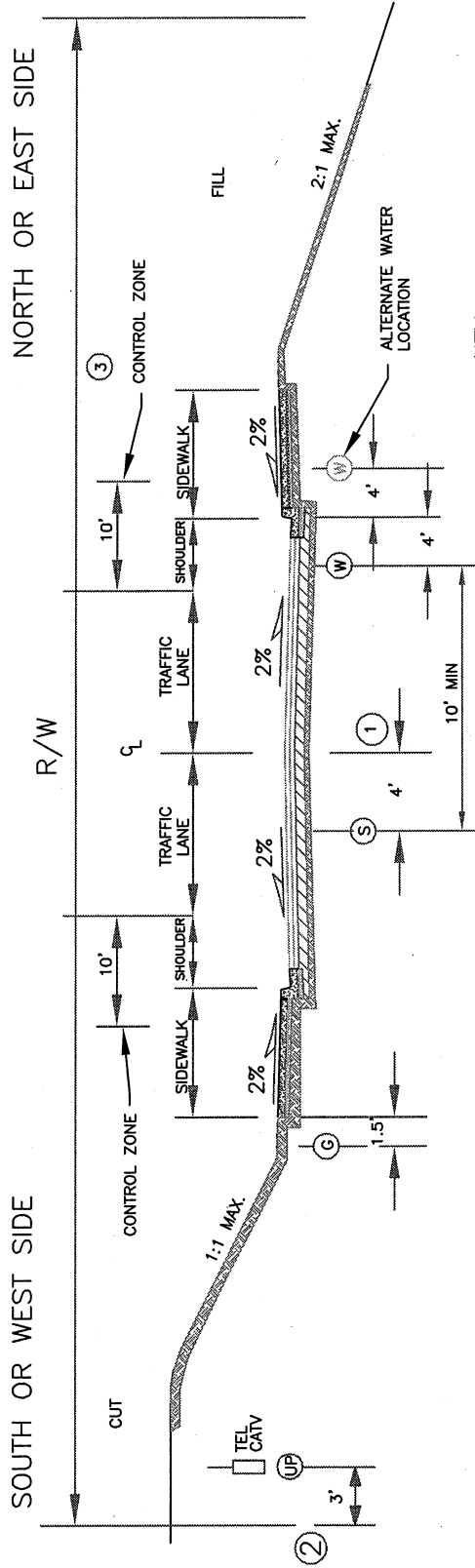
3 IN RESIDENTIAL PLATS, POWER, TELEPHONE, CABLE TV AND GAS MAY SHARE THE SAME TRENCH.

See Text Section 10-01

	CITY OF BAINBRIDGE ISLAND STANDARD DETAILS
TYPICAL UTILITY LOCATIONS SHOULDER SECTION	DWG. NO. 10-010
REV. 12/20/2016 REW. RTG	APPROVED PUBLIC WORKS DIRECTOR DATE 12/31/16

TYPICAL UTILITY LOCATIONS - CURB SECTION

UTILITY LOCATIONS SHOWN ARE FOR NEW CONSTRUCTION. INSTALLATIONS WITHIN EXISTING ROADS CAN VARY SIGNIFICANTLY AND WILL BE EVALUATED AT THE UTILITY PERMIT STAGE ON A CASE BY CASE BASIS. HOWEVER, WHETHER THE ROAD IS NEWLY CONSTRUCTED OR EXISTING, SANITARY SEWERS WILL REQUIRE PLACEMENT AS SHOWN ON THIS DRAWING AND IN ADDITION, NO UTILITY SHALL BE LOCATED DIRECTLY BELOW THE BOTTOM OF A ROADSIDE DITCH OR SWALE.



KEY

- (UP) UNDERGROUND POWER
- TEL TELEPHONE, CABLE TELEVISION
- CATV
- (G) GAS
- (S) SANITARY SEWER
- (W) WATER
- STORM SEWER NOT SHOWN

NOTES:

MINIMUM COVER AND SEPARATION FOR FIBEROPTICS, SANITARY SEWER, WATER, GAS, POWER AND NON-FIBEROPTICS TELEPHONE AND CABLE TELEVISION SHALL BE IN COMPLIANCE WITH FEDERAL AND STATE REGULATIONS.

POWER POLES AND OTHER ABOVE GROUND UTILITY OBJECTS SHOULD BE PLACED OUTSIDE CONTROL ZONE AREAS UNLESS (1) JUSTIFIED TO THE ENGINEER'S SATISFACTION BY SUITABLE ENGINEERING STUDIES CONSIDERING TRAFFIC SAFETY OR (2) WHERE SHIELDED BY A BARRIER. (3) PLACED IN AN AREA NORMALLY INACCESSIBLE TO VEHICLES OR (4) UTILIZE A BREAKAWAY DESIGN. INSTALLATION OF POWER POLES AND OTHER ABOVE GROUND UTILITY OBJECTS WILL NOT BE PERMITTED IN SIDEWALKS.

CONTROL ZONE DISTANCES SHOWN APPLY TO ROADS WITH A POSTED SPEED OF 35 MPH OR LESS. CONTROL ZONE DISTANCES FOR ROADS POSTED AT GREATER THAN 35 MPH SHOULD BE DETERMINED ACCORDING TO CHAPTER 710, TRAFFIC BARRIERS, CONTAINED WITHIN THE LATEST EDITION OF THE WSDOT DESIGN MANUAL.

See Text Section 10-01

(1) MAY BE PLACED EITHER SIDE OF CENTERLINE.

(2) IN RESIDENTIAL PLATS, POWER, TELEPHONE, CABLE TV AND GAS MAY SHARE THE SAME TRENCH.

(3) ADDITIONALLY 2' MINIMUM BEHIND CURB MEASURED FROM BACK OF ON-STREET PARKING WHEN APPLICABLE (CLEAR ZONE INCLUDES BULB-OUTS).

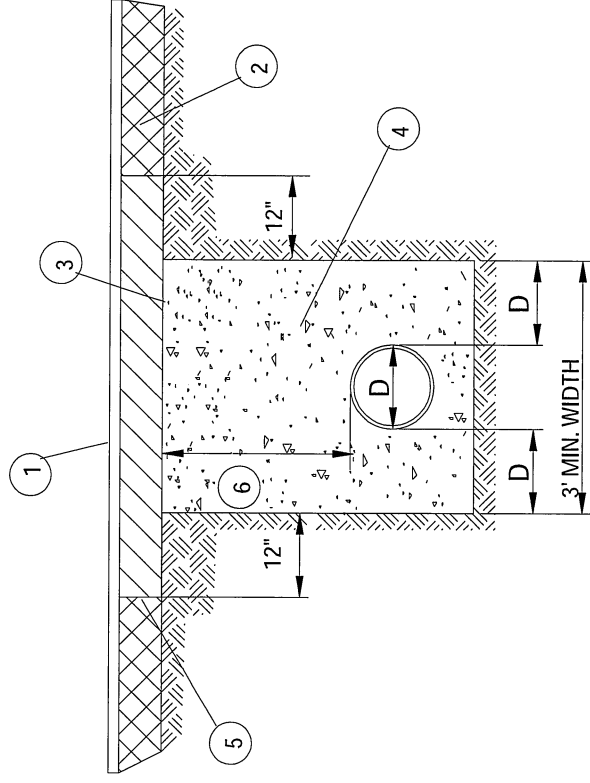
CITY OF BAINBRIDGE ISLAND STANDARD DETAILS		APPROVED	DWG. NO.
TYPICAL UTILITY LOCATIONS SHOULDER SECTION		12/31/16	10-020
REV. 12/20/2016		DATE	
REV. RTG		PUB. WORKS DIRECTOR	

NOTES:

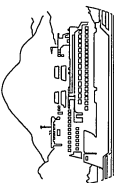
TEMPORARY RESTORATION OF TRENCHES FOR OVERNIGHT USE SHALL BE ACCOMPLISHED BY USING COLD MIX, ATB, OR STEEL PLATES.

PATCH SHALL BE MACHINE ROLLED FLUSH WITH EXISTING PAVEMENT AND SHALL BE PLACED PER SECTION 5-04 OF THE WSDOT/APWA SPECIFICATIONS.

- 1 LONGITUDINAL TRENCH - 2" ASPHALT CLASS B OVERLAY.
SEE SEC. 10-02b.1.
- TRANSVERSE TRENCH - 2" ASPHALT CLASS B OVERLAY WHERE MULTIPLE CROSSINGS BY SAME UTILITY. SEE SEC. 10-02b.2.
- 2 EXISTING PAVEMENT
- 3 MATCH EXISTING PAVEMENT
- 4 SELECT MATERIAL, BANK RUN GRAVEL, OR CONTROL DENSITY FILL, AS REQUIRED BY ENGINEER.
(95% COMPACTION)
- 5 STRAIGHT SAW CUT, CLEAN, HEAT & TACK EDGES WITH SEALER SS-1 & SEAL WITH HOT ASPHALT CEMENT.
- 6 SEE TEXT SECTION 10-01 8. FOR DEPTHS OF COVER.

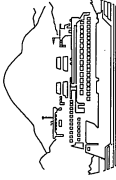


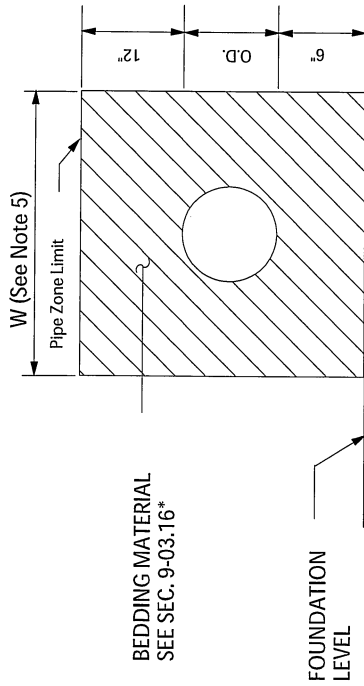
See Text Sections 10-01, 10-02

	CITY OF BAINBRIDGE ISLAND STANDARD DETAILS UTILITY TRENCH RESTORATION AND BACKFILL		DWG. NO. 10-030
REV.	APPROVED Jeffrey M. Jensen CITY ENGINEER	4/18/97 DATE	

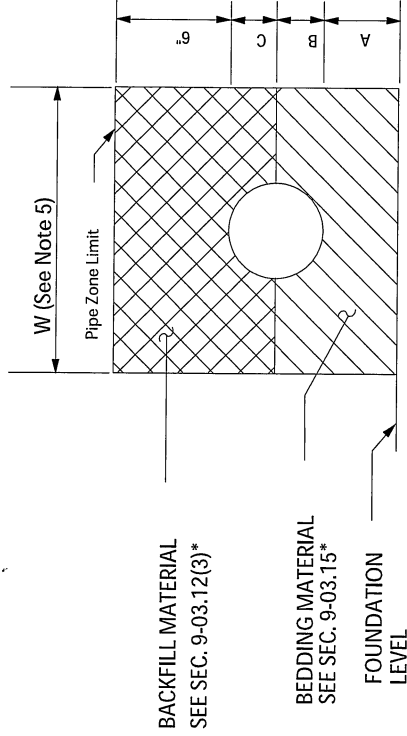
GENERAL RIGHT-OF-WAY USE RESTORATION REQUIREMENTS

1. AT THE ENGINEER'S DISCRETION, PRIOR TO COMMENCING ANY CONSTRUCTION, PHOTOGRAPHS DEPICTING PRE-EXISTING ROADWAY CONDITIONS WILL BE REQUIRED EVERY 50 FEET IN PAVED AREAS OR ANY OTHER LOCATION AS SPECIFIED BY THE ENGINEER. A 35 MM CAMERA SHALL BE USED AND COLOR PICTURES PROVIDED AS 5"X7" PRINTS, CONTAINED IN ALBUMS, CATALOGUED AND CROSS-REFERENCED.
2. SIGNING, FLAGGING AND TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THESE STANDARDS, THE WSDOT TRAFFIC MANUAL AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. ONE LANE OF TRAFFIC SHALL REMAIN OPEN AT ALL TIMES, ATTENDED BY FLAGMEN AND APPROPRIATE CONSTRUCTION SIGNING PROVIDED. THE ROAD SHALL BE RESTORED TO TWO-WAY TRAFFIC AT THE END OF EACH WORKING DAY. APPLICATIONS FOR TOTAL ROAD CLOSURES MUST BE FILED WITH THE CITY OF BAINBRIDGE ISLAND PUBLIC WORKS AT LEAST 5 DAYS PRIOR TO THE ANTICIPATED CLOSURE.
4. EXISTING DRAINAGE DITCHES, CULVERTS, ETC., SHALL BE KEPT CLEAN AT ALL TIMES. TEMPORARY DIVERSION OF ANY DRAINAGE SYSTEM WILL NOT BE PERMITTED WITHOUT THE CONSENT OF THE CITY ENGINEER. ANY DRAINAGE CULVERT, CATCH BASIN, MANHOLE OR OTHER DRAINAGE STRUCTURE DISTURBED BY EXCAVATION SHALL BE REPLACED WITH NEW MATERIAL OR REPAIRED TO THE SATISFACTION OF THE ENGINEER. TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES SHALL BE EMPLOYED TO PROTECT ADJACENT PROPERTY AND STORM DRAIN FACILITIES.
5. GRAVEL SHOULDERS DISTURBED BY EXCAVATION SHALL BE SHAPED TO CITY STANDARDS AND PROVIDED WITH A MINIMUM OF 2 INCHES COMPACTED CRUSHED SURFACING TOP COURSE GRAVEL.
6. IF IN THE OPINION OF THE ENGINEER, WEATHER CONDITIONS DETERIORATE TO THE POINT WHERE THE TRAVELED ROADWAYS ARE UNSAFE FOR THE PUBLIC OR DETRIMENTAL TO THE RESTORATION OF THE ROADWAY, EXCAVATION SHALL CEASE IMMEDIATELY AND CLEANUP SHALL BE PROMPTLY ACCOMPLISHED.
7. ALL PIPE OR OTHER MATERIAL STORED ALONG CITY RIGHT-OF-WAY MUST BE SECURED AT A SAFE DISTANCE FROM THE TRAVELED ROADWAY IN SUCH A MANNER AS TO AVOID FALLING ONTO THE ROADWAY.
8. NO EXCESS OR UNSUITABLE MATERIAL SHALL BE WASTED ON CITY RIGHT-OF-WAY. ANY SUCH MATERIAL DUMPED ON PRIVATE PROPERTY MAY REQUIRE A GRADING PERMIT. VERIFICATION WITH CITY OF BAINBRIDGE ISLAND PLANNING & COMMUNITY DEVELOPMENT IS REQUIRED.
9. STREET SURFACES SHALL BE CLEANED AT THE END OF EACH DAY'S OPERATION WITH A POWER BROOM OR OTHER APPROVED MEANS.
10. NO OPEN CUT OF CITY ROADS OR STREETS SHALL BE MADE WITHOUT THE APPROVAL OF THE CITY ENGINEER.
11. MAXIMUM AMOUNT OF OPEN TRENCH ON STREETS SHALL BE 400 LINEAL FEET. AT THE END OF EACH DAY, ALL DITCHES MUST BE BACKFILLED OR COVERED WITH STEEL PLATES AND BARRICADED WITH FLASHING WARNING LIGHTS TO PREVENT PEOPLE OR ANIMALS FROM FALLING INTO THE TRENCH.
12. FINAL CLEANUP INCLUDING COMPLETE RESTORATION OF SHOULDERS, CLEANING OF DITCHES, CULVERTS AND CATCH BASINS, AND REMOVAL OF LOOSE MATERIAL FROM BACK SLOPES OF DITCHES SHALL NOT EXCEED 1500 L.F. BEHIND EXCAVATING OPERATIONS OR AS REQUIRED BY THE CITY ENGINEER.
13. THE PERMITTEE WILL BE RESPONSIBLE TO COORDINATE WITH THE STATE DEPARTMENT OF NATURAL RESOURCES FOR ANY CONFLICT BETWEEN PERMIT WORK AND EXISTING SURVEY MONUMENTATION.

	CITY OF BAINBRIDGE ISLAND STANDARD DETAILS
	GENERAL RIGHT-OF-WAY USE RESTORATION REQUIREMENTS
REV.	APPROVED <u>Jeffrey M. Jensen</u> 4/18/97 CITY ENGINEER DATE
	DWG. NO. 10-040



BEDDING FOR FLEXIBLE PIPE



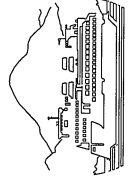
BEDDING FOR RIGID PIPE

NOTES:

1. PROVIDE UNIFORM SUPPORT UNDER BARREL, BAND TAMP UNDER HAUNCHES.
2. COMPACT BEDDING MATERIAL TO 95% MAX. DENSITY EXCEPT DIRECTLY OVER PIPE, HAND TAMP ONLY.
3. PIPE MUST BE ANCHORED IN SUCH A MANNER AS TO ENSURE FLOW LINE IS MAINTAINED.
4. MAX. WIDTH=I.D. +30" FOR PIPE 15" DIAM. OR SMALLER.
5. MAX. WIDTH=I.D. +30" FOR PIPE 18" DIAM. OR LARGER.

	DIMENSION
A	4" MIN. 27" & UNDER 6" MIN. OVER 27" I.D.
B	1/2 O.D.
C	1/2 O.D.

* STANDARD SPECIFICATIONS



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

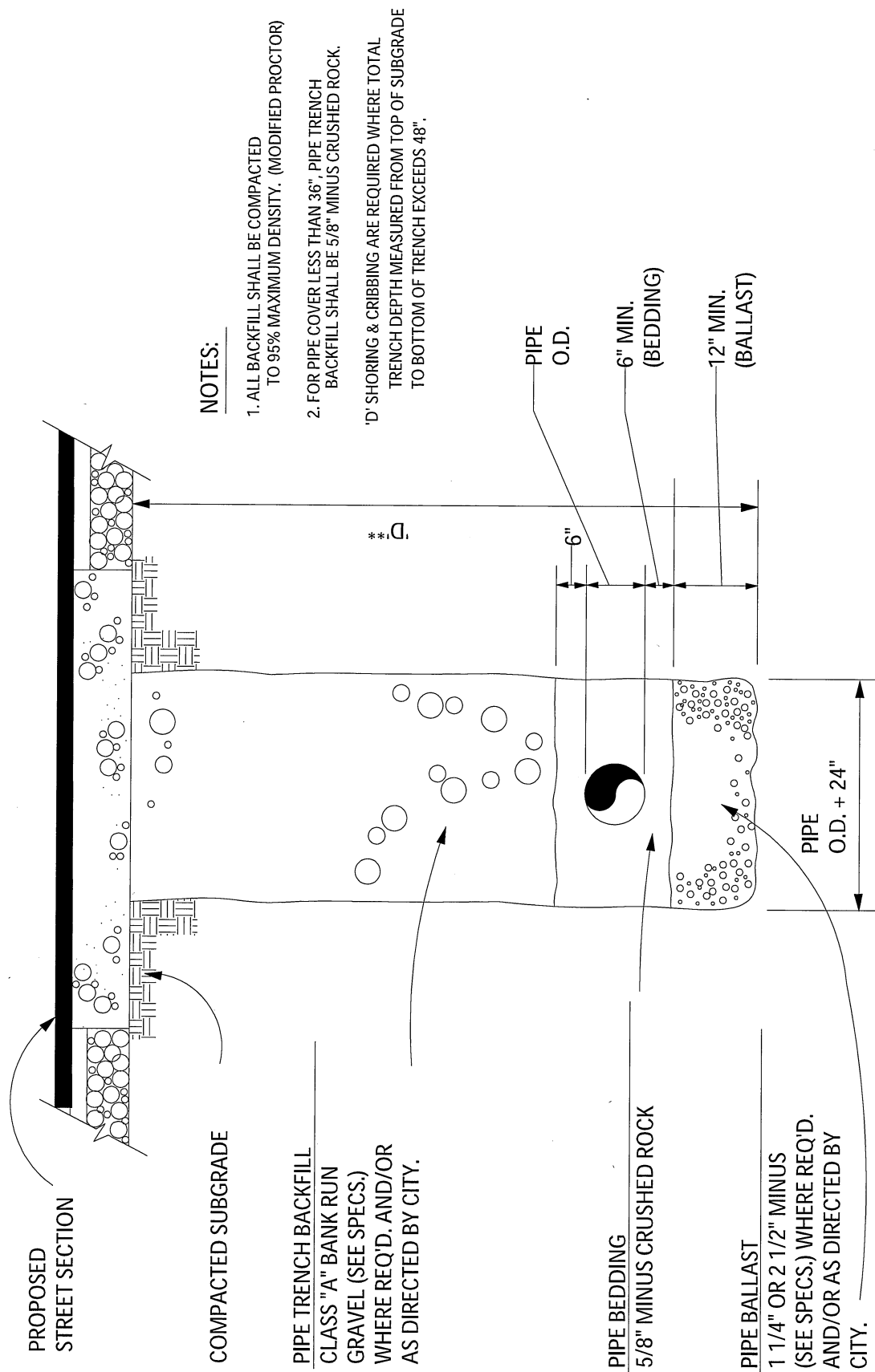
PIPE BEDDING FOR SANITARY SEWER
IN TRENCHES ONLY

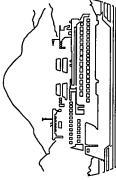
DWG. NO.
10-050

APPROVED
CITY ENGINEER
Jeffrey M. Jensen
4/18/97
DATE

Rev. 1

7.4-00	Revised notes and dimension	LCF	By	App'd
Date	Revision			



	CITY OF BAINBRIDGE ISLAND STANDARD DETAILS	
	TYPICAL CONCRETE & D.I. PIPE TRENCH	
REV.	APPROVED CITY ENGINEER <i>Jeffrey M. Jensen</i>	DWG. NO. 10-060 DATE 4/18/97

TYPICAL MANHOLE

1/2 BLIND FLANGE
AS DAM

D.I.P. TEE CL-50

ONE LENGTH OF DUCTILE
IRON PIPE (CLASS 50) TO
SOLID BEARING WHEN SPAN
IS MORE THAN 4'

FLEXIBLE JOINT

BACKFILL WITH CRUSHED
SURFACING TOP COURSE,
C.D.F. OR AS DIRECTED
BY THE CITY ENGINEER,
AND COMPACTED TO
95% MAXIMUM DENSITY (MODIFIED PROCTOR).

D.I.P. CL-50

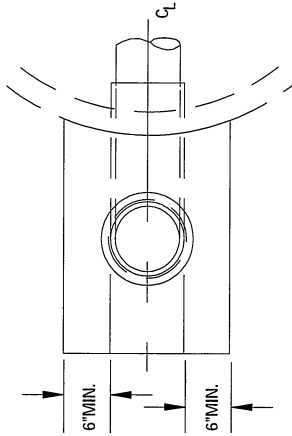
20" MAX.

6" MIN.

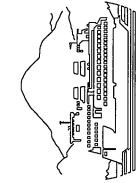
CONCRETE CLASS "C"
BLOCK POURED IN PLACE

D.I.P. CL-50
90° BEND

GROUT INSIDE & OUTSIDE
CONNECTION ENTRY



TYPICAL MANHOLE FOUNDATION CONSTRUCTION



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

DUCTILE IRON
DROP CONNECTION

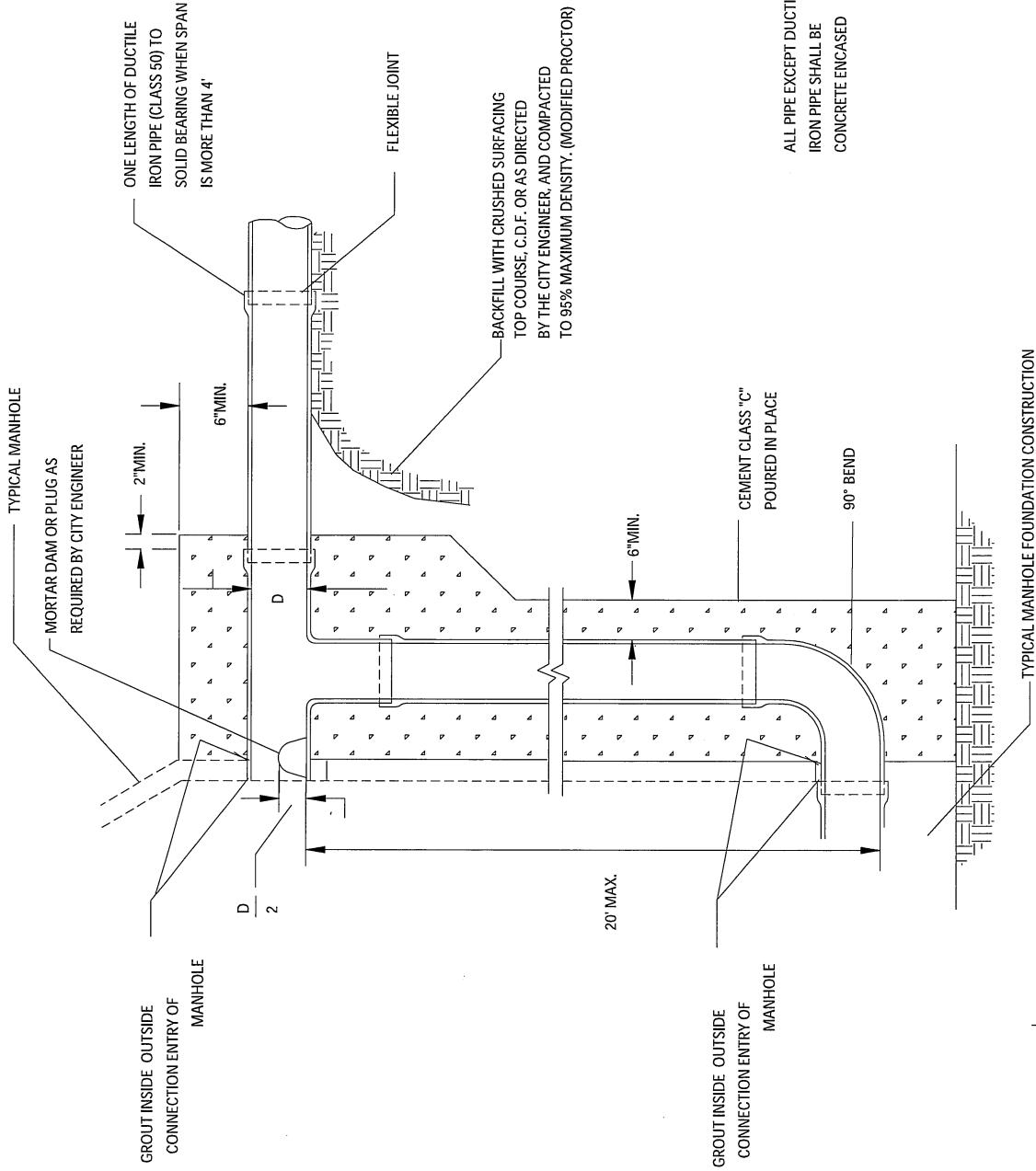
REV.

APPROVED

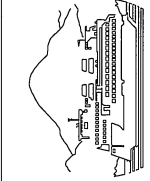
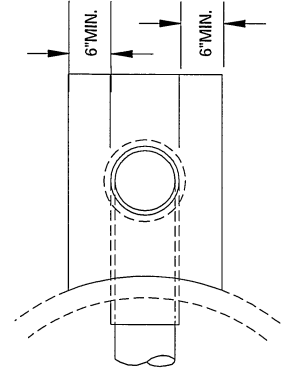
Jeffrey M. Jensen
CITY ENGINEER

4/18/97
DATE

DWG. NO.
10-070



ALL PIPE EXCEPT DUCTILE
IRON PIPE SHALL BE
CONCRETE ENCASED



CITY OF BAINBRIDGE ISLAND STANDARD DETAILS CONCRETE ENCASED DROP CONNECTION

APPROVED
CITY ENGINEER
Jeffrey M. Jensen
4/18/97
DATE

DWG. NO.
10-080

SPECIFICATIONS

- ① CONNECTION TO MAIN STACK.
- ② RUBBER COUPLING AT STRUCTURE EXIT.
- ③ 30" MIN. DISTANCE FROM HOUSE.
- ④ 18" MIN. COVER.
- ⑤ 90 DEGREE BEND WITH RISER AND THREADED PLUG/CLEANOUT AT GROUND LEVEL.
- ⑥ SANITARY TEE FOR 90 DEGREE, WYE FOR LESS THAN 90 DEGREE.
- ⑦ 8" DIA. BUILDING SEWER TO HOUSE.
- ⑧ 8" TO 4" REDUCER.
- ⑨ 8" CLEANOUT, WITH THREADED CAP.
- ⑩ 6" DIA. SIDE SEWER TO PROPERTY LINE OR BACKSIDE OF EASEMENT LINE.
- ⑪ MIN. OF 3' COVER AT PROPERTY LINE.
- ⑫ 4" TEST TEE.
- ⑬ NEW CONSTRUCTION OF SEWER MAIN SHALL HAVE A SWEEPING "TEE" CONNECTION.

GENERAL NOTES

ALL CONSTRUCTION REQUIRES A BUILDING PERMIT AND PAYMENT OF FEES.

CONSTRUCTION ON PROPERTY MAY BE DONE BY A BUILDING SEWER CONTRACTOR LICENSED BY KITSAP COUNTY OR THE PROPERTY OWNER.

CONSTRUCTION IN THE R/W MUST BE DONE BY A LICENSED CONTRACTOR AND WITH A PERMIT FROM THE ENGINEERING DEPARTMENT.

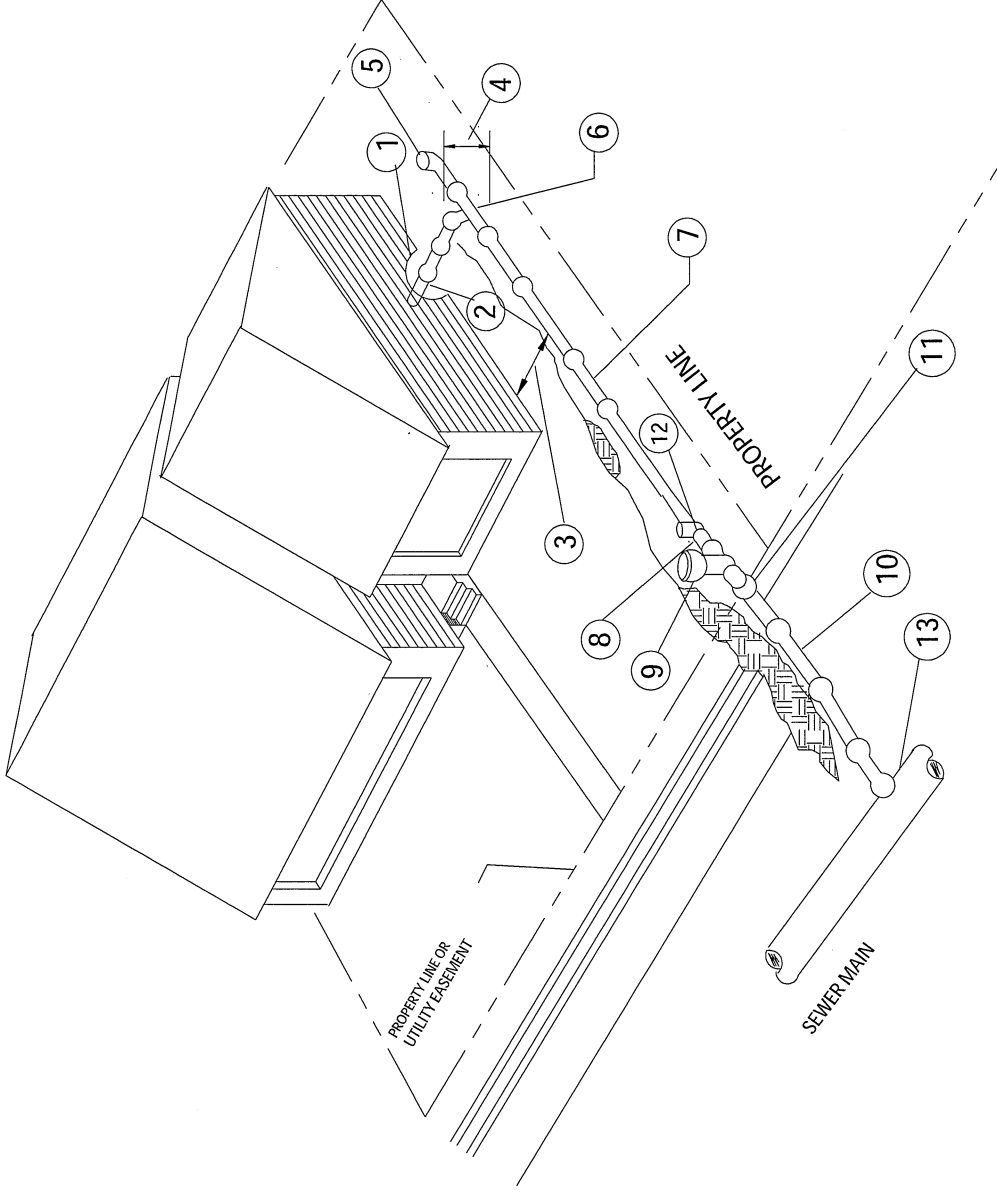
6" SEWER PIPE REQUIRED IN RIGHT-OF WAY AND THE PORTION OF THE 4" (MIN. SIZE)

SEWER PIPE ON PROPERTY SHALL BE LAID IN A CONTINUOUS 2% SLOPE UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER

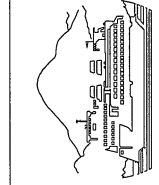
RUBBER GASKET PIPE REQUIRED. RINGITE OR EQUAL.

CITY GUIDELINES FOR SANITARY EXTENSIONS. PIPE SHALL CONFORM TO ASTM D-3034/SDR-35

ALL BUILDING SEWERS SHALL BE TESTED BY THE EXFILTRATION METHOD (HYDROSTATIC TEST).



NO DOWNSPOUTS OR OUTSIDE DRAINS SHALL BE
CONNECTED TO THE BUILDING SEWER.



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

BUILDING SEWER
DETAIL

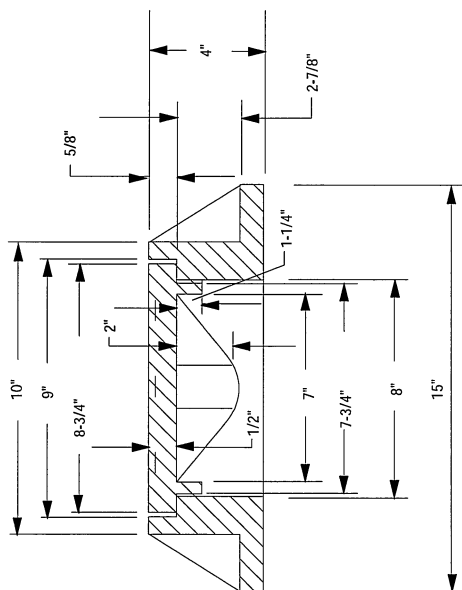
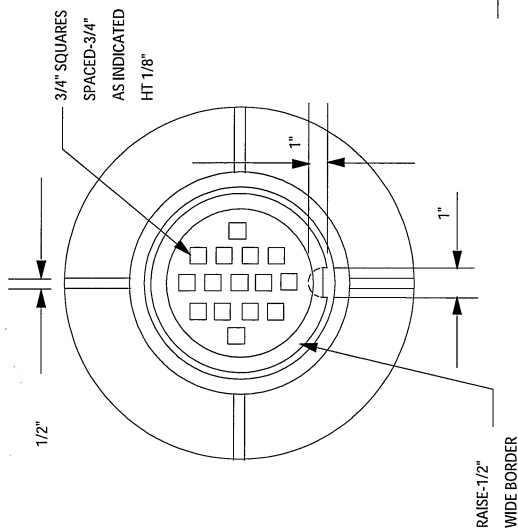
REV.

APPROVED

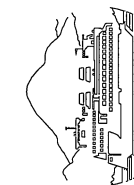
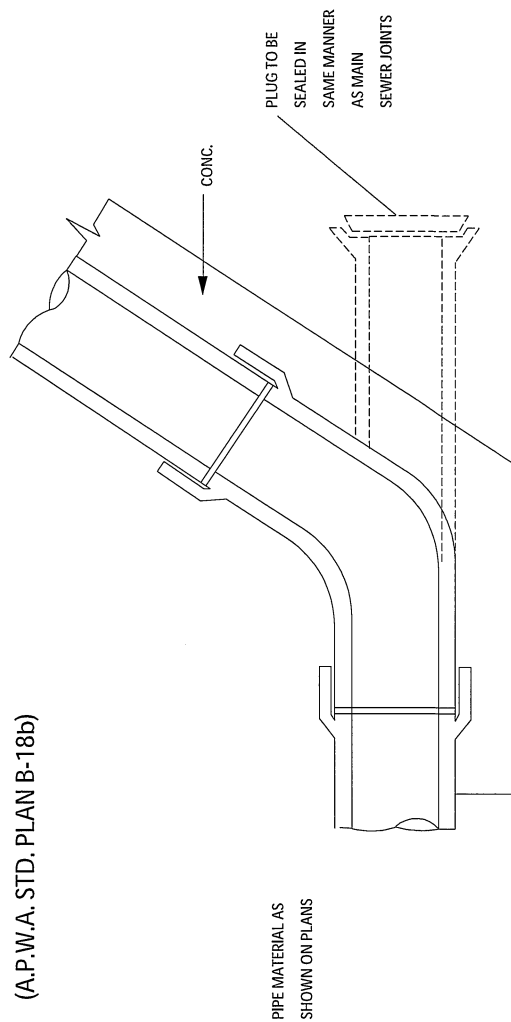
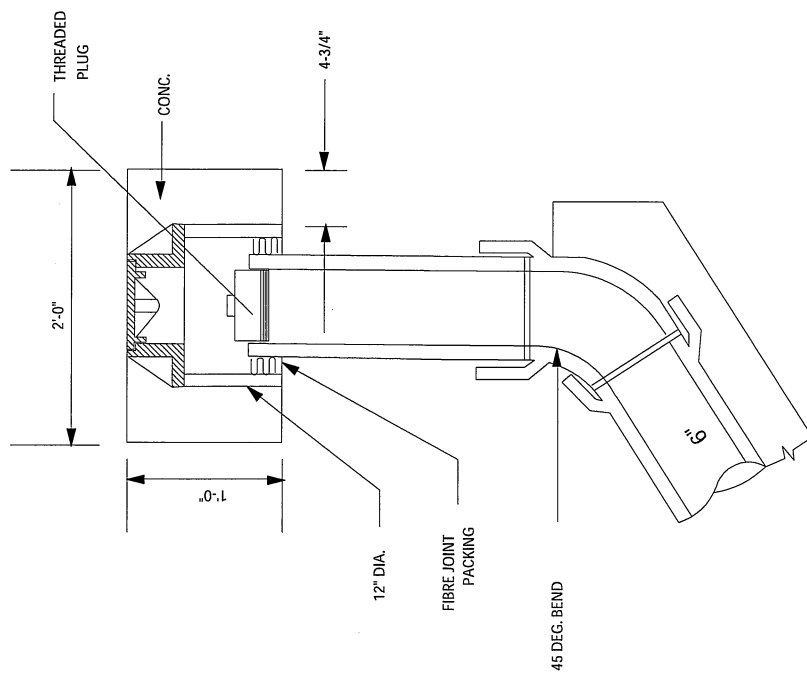
CITY ENGINEER

Jeffrey M. Jovan 4/18/97
DATE

DWG. NO.
10-085



CAST IRON RING AND COVER
(A.P.W.A. STD. PLAN B-18b)



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

6" CLEANOUT IN PAVED AREAS

REV.

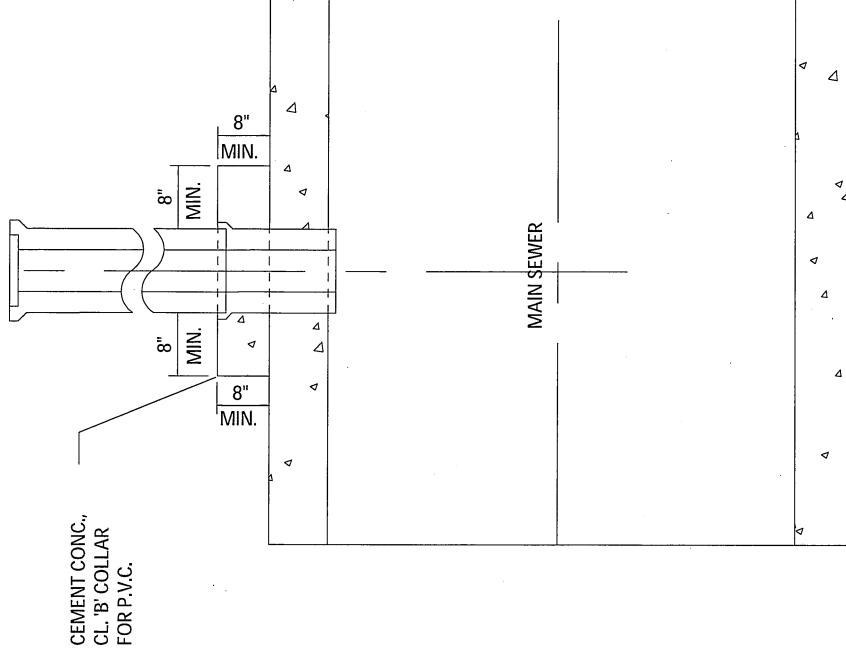
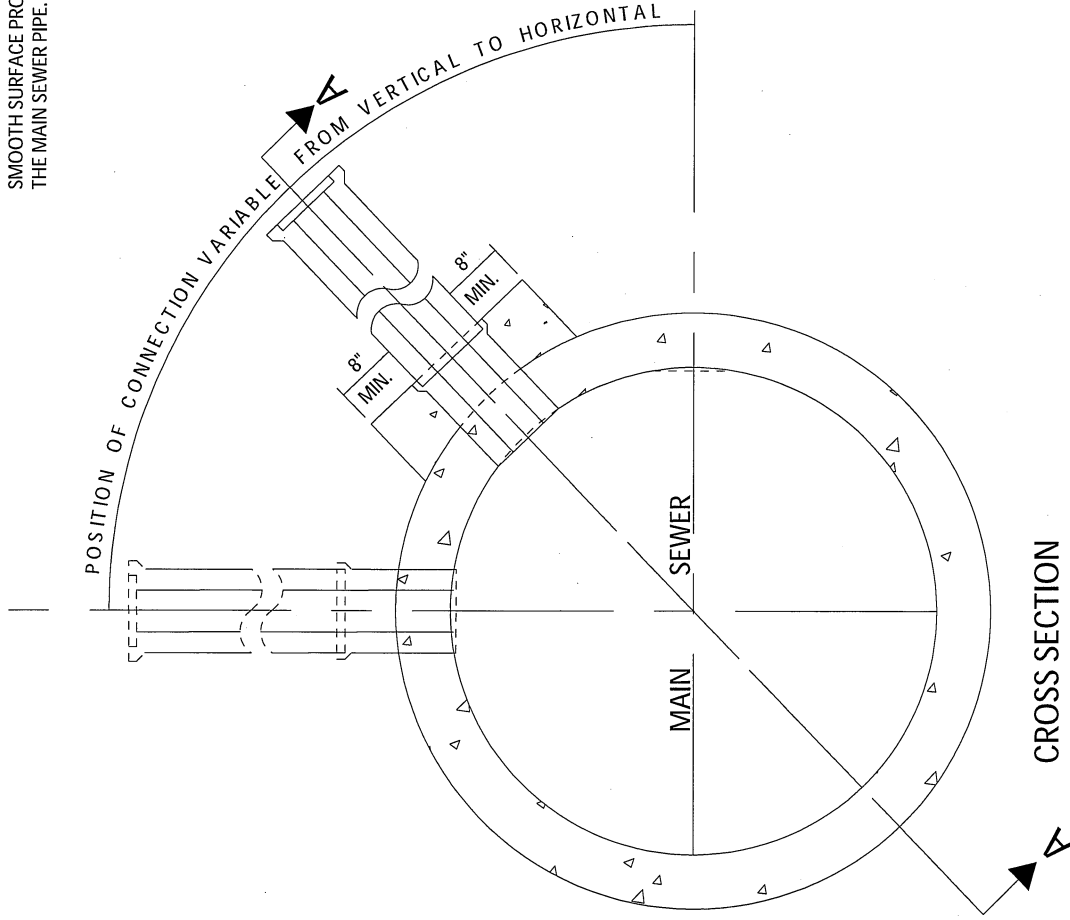
APPROVED

Jeffrey M. Jensen 4/18/97
CITY ENGINEER DATE

DWG. NO.
10-090

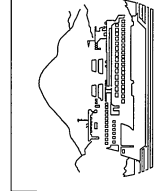
NOTE:

JOINT SHALL BE THOROUGHLY MORTARED AND A SMOOTH SURFACE PROVIDED ON THE INSIDE OF THE MAIN SEWER PIPE.



SEWER CONNECTION TYPE A N.T.S.

SECTION A-A



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

SEWER CONNECTION

REV

APPROVED

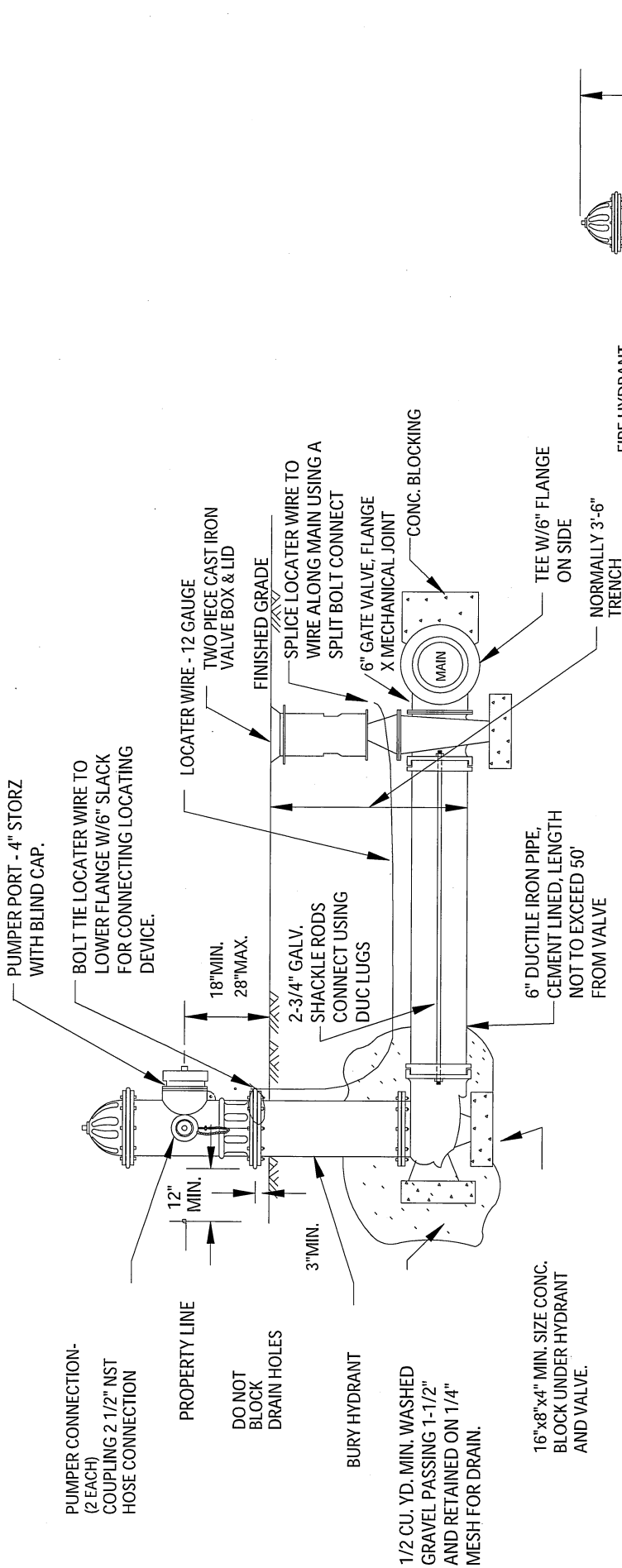
4/18/97

DWG. NO.

CITY ENGINEER

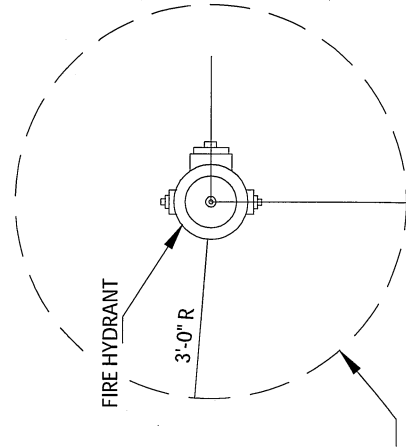
DATE

10-100



5 1/4" MAIN VALVE OPENING FIRE HYDRANT
6" MECHANICAL JOINT INLET, 1 1/2" PENTAGON OPERATING NUT. FIRE HYDRANT TO BE PAINTED TWO COATS OF RUSTOLEUM, ACCORDING TO FIRE DISTRICT FIRE FLOW ORDINANCE

NOTE: IF CONC. IS NOT SPECIFIED, BACKFILL TO BE COMPACTED IN 6" LAYERS.



MIN. AREA OF LEVEL GROUND SURFACE

SECTION

CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

FIRE HYDRANT ASSEMBLY

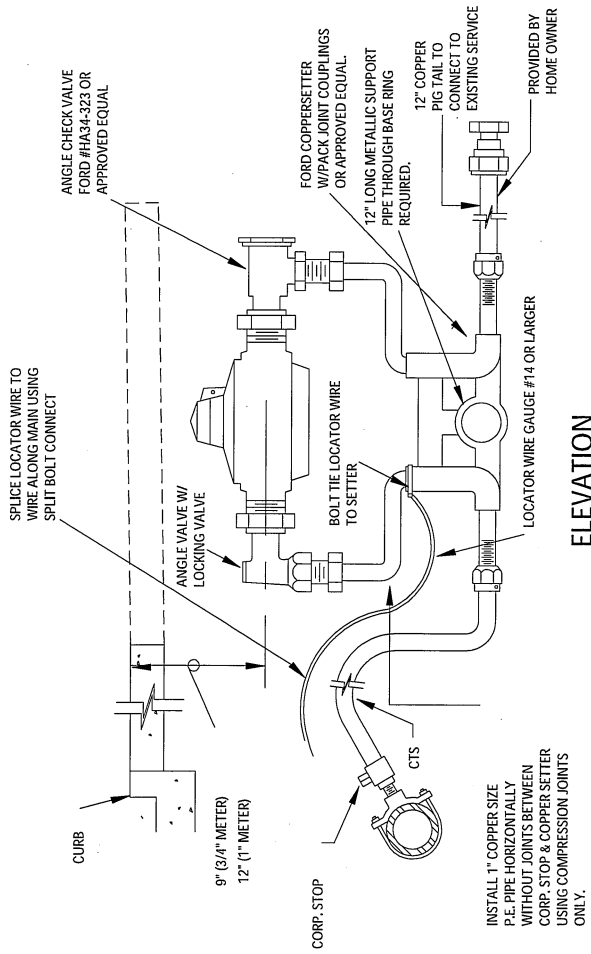
Rev. 1

DATE	ADD 4" STORZ ADAPTOR TO NOZZLE.	LCF	BY	APPROVED
5/3/00				

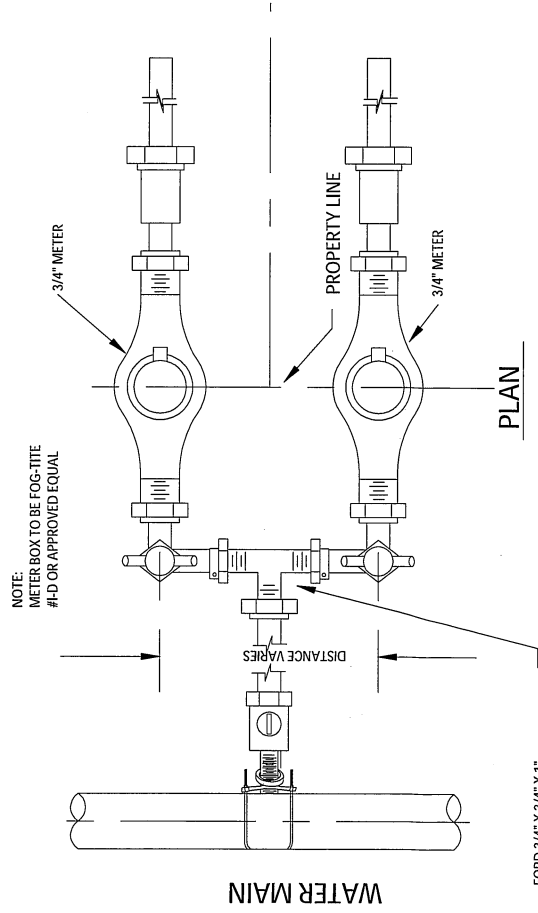
APPROVED *Jeffrey M. Jansen* 4/18/97
CITY ENGINEER

DWG. NO.
10-110

DATE

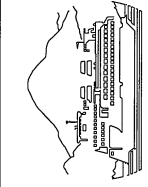


ELEVATION



FORD 3/4" X 3/4" X 1" TEE OR MUELLER #1-15343 3/4" X 3/4" X 1" WYE WITH LOCK EARS

3/4" DUAL WATER METER INSTALLATION N.T.S



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

3/4" DUAL WATER
METER INSTALLATION

APPROVED

CITY ENGINEER *Jeffrey M. Jensen* 4/18/97

DWG. NO.
10-130

DATE

METER BOX

W/READER HOLES

SEE NOTE BELOW

INLET BALL VALVE

OUTLET CHECK VALVE

8" 12" CLEARANCE

INSTALL 1" COPPER SIZE P.E. PIPE HORIZONTALLY
WITHOUT JOINTS BETWEEN CORP. STOP & COPPER SETTER
USING COMPRESSION JOINTS ONLY

1" BALL CORP FORD MIPXCT5 QJ OR EQUIV

1" SADDLE ROMAL 202S OR EQUIV

COPPER TUBING SIZE
SERVICE HIGH MOLECULAR
WEIGHT POLYETHYLENE

SPLICE LOCATOR WIRE TO WIRE ALONG MAIN USING
SPLIT BOLT CONNECT
LOCATOR WIRE USE 12 GAUGE WIRE

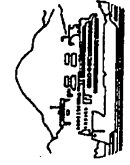
1" ADAPTER FORD MIPXQJ OR EQUIV

METER SETTER 5/8 x 3/4 x 12"
FORD VB.H T2-12-11-33
OR EQUIV

METER BOX STANDARDS

TRAFFIC AREA; MID STATES MSB CF 1324-12 OR EQUIV

NON TRAFFIC AREA; CARSON 1220-12 OR EQUIV



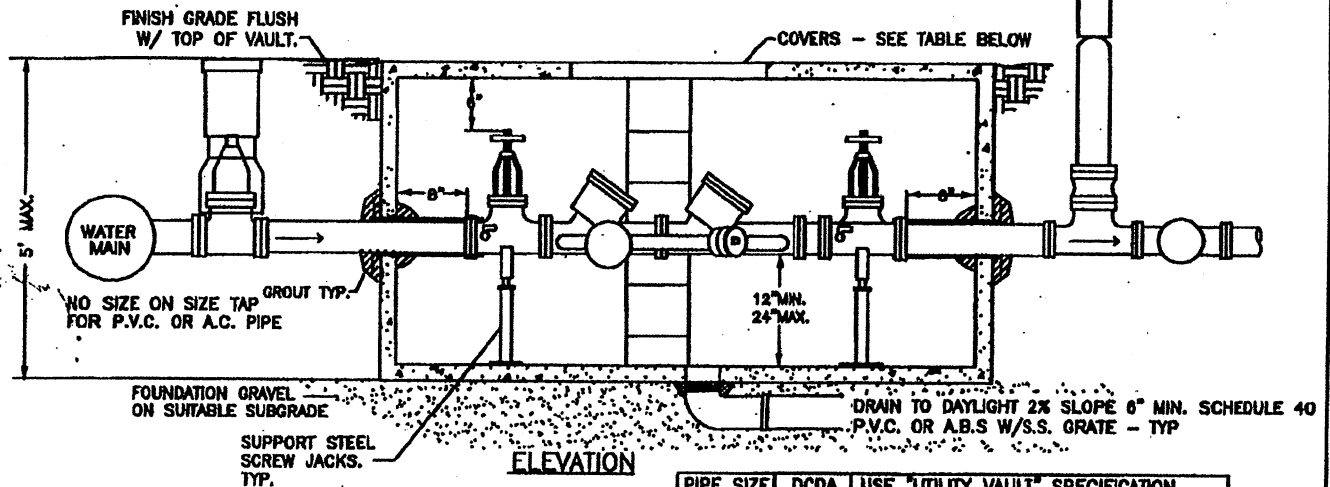
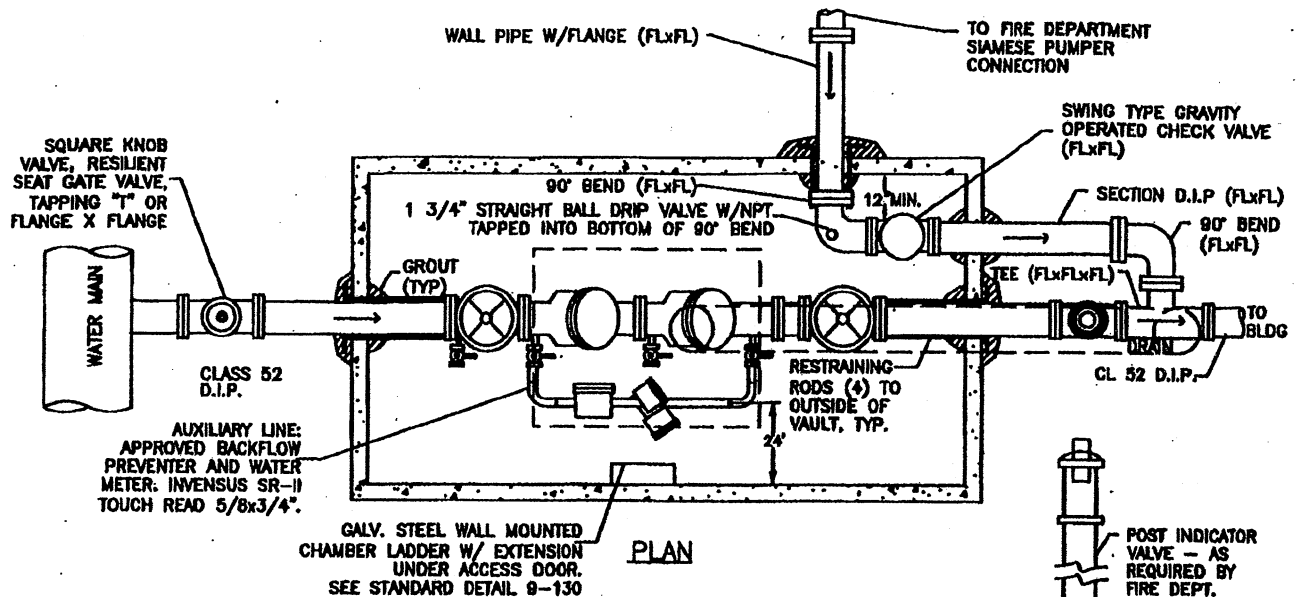
CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

SINGLE SERVICE FOR
5/8 x 3/4 WATER METER

APPROVED Jeffrey M. Jones 4/18/97
CITY ENGINEER DATE

DWG. NO.
10-140

REV.
3/28/06 ck



NOTES

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.

BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.

THE WATER LINE SHALL BE TESTED, DISINFECTED AND FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.

ALL PIPE, VALVES, AND FITTINGS FROM SUPPLY MAIN SHALL BE FLANGED OR FULLY RESTRAINED.

ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPARTMENT, OPERATIONS & MAINTENANCE DIVISION.

MAINTAIN MINIMUM 24" CLEARANCE ON ALL SIDES AROUND THE BACKFLOW PREVENTER, EXCEPT AS SHOWN.

PROVIDE AN ADEQUATE GRAVITY DRAINAGE SYSTEM TO DAYLIGHT. IF NOT POSSIBLE, PROVIDE AN ADEQUATELY SIZED SUMP PUMP SYSTEM AND ELECTRICAL SUPPLY.

DRAIN MAY BE FITTED IN SIDE PROVIDED IT COMPLETELY DRAINS.

TAMPER SWITCHES SHALL BE INSTALLED ON GATE VALVES AND CONNECTED TO BUILDING FIRE ALARM SYSTEM.

GROUT ALL VAULT PENETRATIONS WITH WATERTIGHT GROUT INSIDE AND OUTSIDE. BURY ALL RESTRAINING RODS MIN. 2\"/>

PROVIDE ASSEMBLY AS A SINGLE MANUFACTURED UNIT WITH A METER. METER SHALL BE INVENSUS SR II TOUCH READ 5/8" x 3/4\"/>

PIPE SIZE	DCDA	USE "UTILITY VAULT" SPECIFICATION OR OWNER APPROVED EQUAL
4"	4"	675 LA W/ 2-332P ACCESS HATCH
6"	6"	687 TL W/ 2-332P ACCESS HATCH
8"	8"	5108 LA W/ 2-332P ACCESS HATCH



REV.

CITY OF BAINBRIDGE ISLAND STANDARD DETAILS

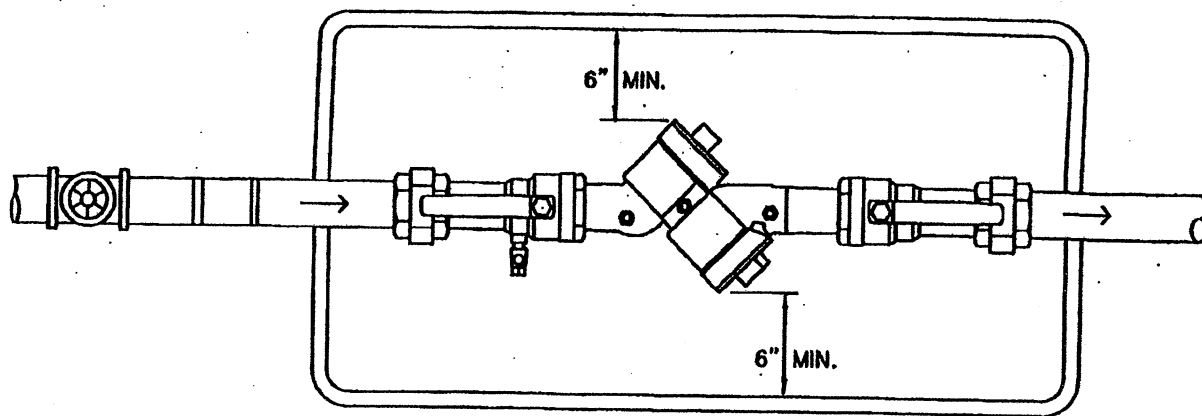
DOUBLE CHECK DETECTOR ASSEMBLY FOR FIRE SPRINKLER SYSTEMS 2" OR LARGER

CITY ENGINEER

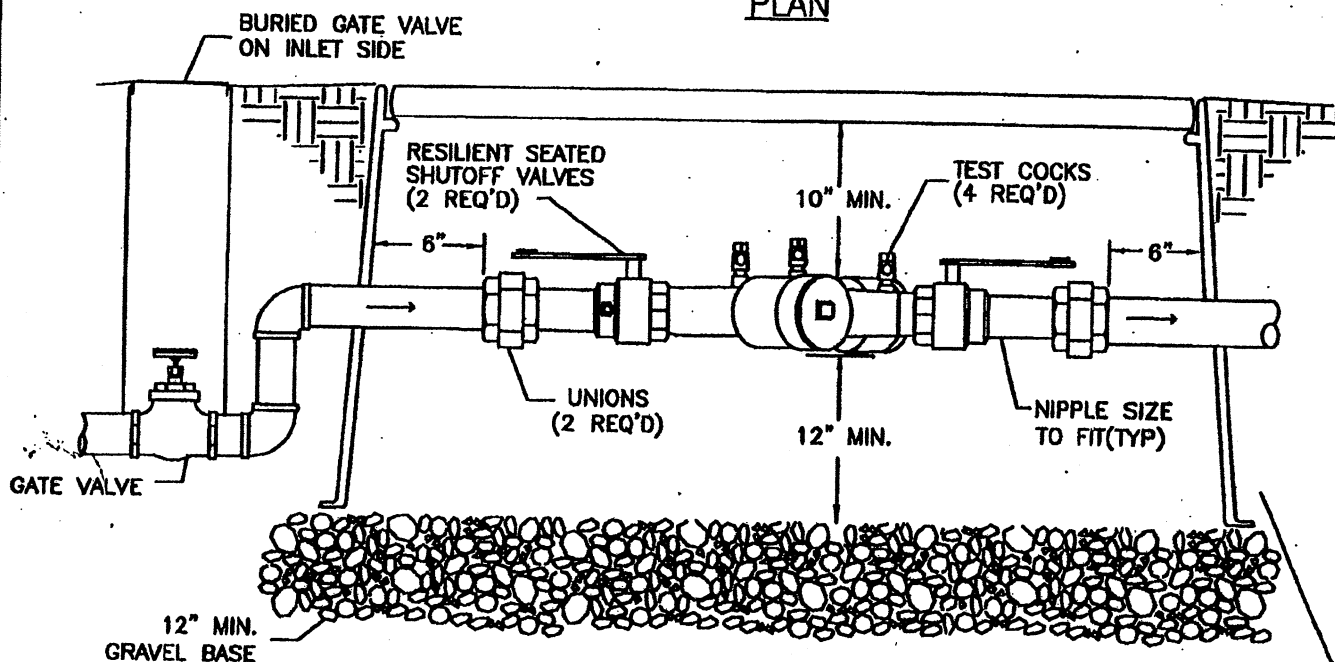
201-01-08
DATE

DWG. NO.

10-160



PLAN



ELEVATION

PLASTIC OR CONCRETE METER BOX—
3/4" TO 1" BOX SIZE 13"x24"x15".
1 1/2" TO 2" BOX SIZE 17"x30"x15".

NOTES:

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.

BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING OR FREEZING.

THE WATER LINE SHALL BE FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPT., OPERATIONS & MAINTENANCE DIVISION.

GATE VALVES SHALL BE BRASS AND PIPE NIPPLES AND UNIONS SHALL BE BRASS OR SCHEDULE 80 PVC.

ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.

PROVIDE ASSEMBLY AS A SINGLE MANUFACTURED UNIT.



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

DOUBLE CHECK VALVE ASSEMBLY
2" AND SMALLER

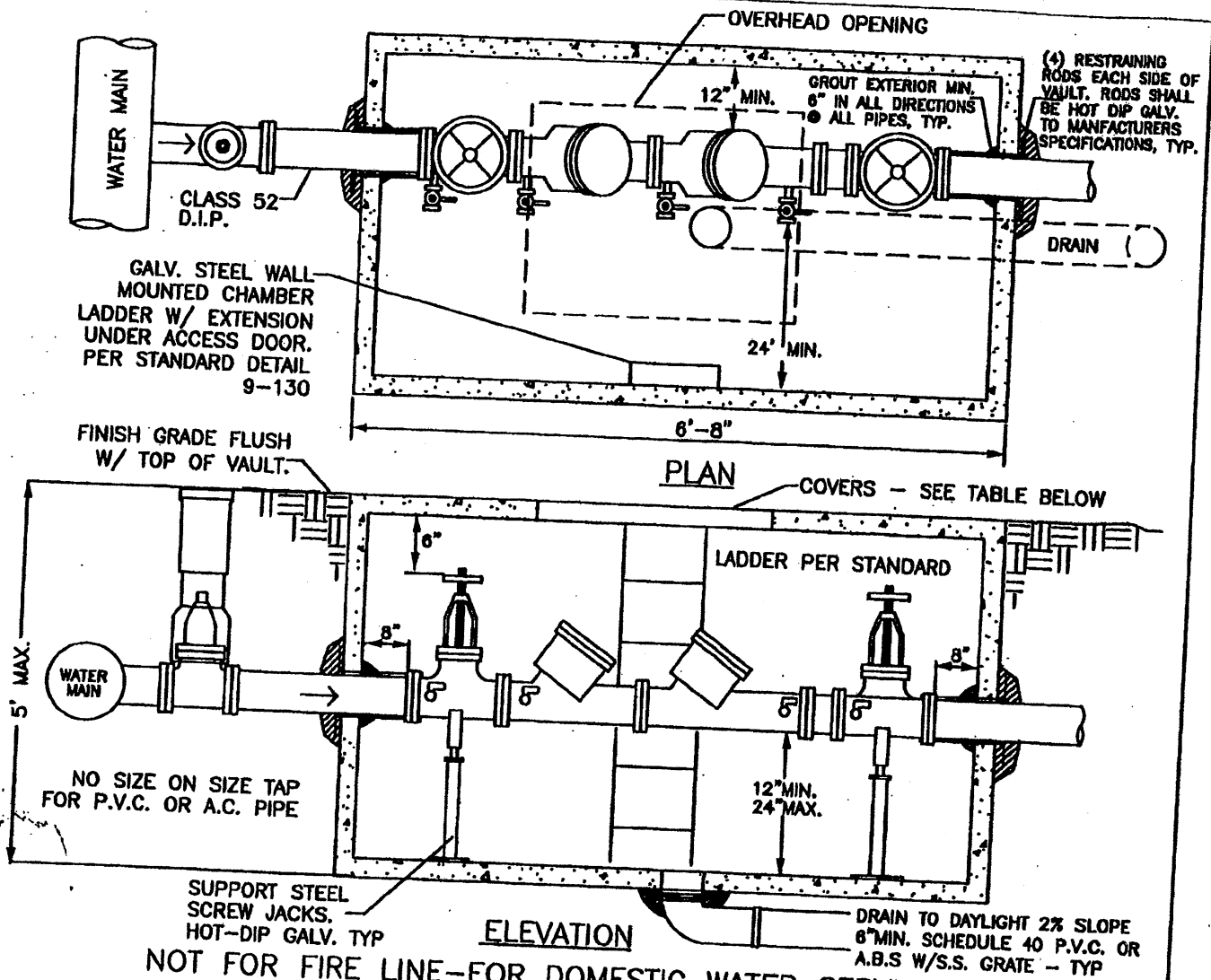
REV.

CITY ENGINEER

DATE

DWG. NO.

10-161



NOT FOR FIRE LINE--FOR DOMESTIC WATER SERVICE

PIPE SIZE	DCVA	USE "UTILITY VAULT" SPECIFICATION OR OWNER APPROVED EQUAL
4"	4"	675 LA W/ 2-332P ACCESS HATCH
6"	6"	687 TL W/ 2-332P ACCESS HATCH
8"	8"	5106 LA W/ 2-332P ACCESS HATCH

NOTES

- BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.
- DOUBLE CHECK VALVE ASSEMBLY'S ARE NOT APPROVED FOR FIRE PROTECTION SYSTEMS WITHIN CITY OF BAINBRIDGE ISLAND WATER SERVICE AREAS.
- INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.
- BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
- VAULT MAY BE BURIED UP TO 12" PROVIDED ASSEMBLY IS A MIN. 12" ABOVE FINAL GRADES PROVIDE AN ADEQUATE GRAVITY DRAINAGE SYSTEM TO DAYLIGHT. IF NOT POSSIBLE, PROVIDE AN ADEQUATELY SIZED SUMP PUMP SYSTEM AND ELECTRICAL SUPPLY. DRAIN MAY BE FITTED IN SIDE PROVIDED IT COMPLETELY DRAINS.
- THE WATER LINE SHALL BE TESTED, DISINFECTED AND FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.
- ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.
- ALL PIPE, VALVES, AND FITTINGS FROM SUPPLY MAIN SHALL BE FLANGED OR FULLY RESTRAINED.
- ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.
- THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPARTMENT, OPERATIONS & MAINTENANCE DIVISION.
- TAMPER SWITCHES SHALL BE INSTALLED ON GATE VALVES AND CONNECTED TO BUILDING FIRE ALARM SYSTEM.
- MAINTAIN MINIMUM 24" CLEARANCE ON ALL SIDES AROUND THE BACKFLOW PREVENTER, EXCEPT AS SHOWN.
- GROUT ALL VAULT PENETRATIONS WITH WATER TIGHT GROUT INSIDE & OUTSIDE. BURY ALL RESTRAINING RODS MIN. 2" OVER ASSEMBLY AS A SINGLE MANUFACTURED UNIT.
- PROVIDE AN ADEQUATE GRAVITY DRAINAGE SYSTEM TO DAYLIGHT. IF NOT POSSIBLE, PROVIDE AN ADEQUATELY SIZED SUMP PUMP SYSTEM AND ELECTRICAL SUPPLY. DRAIN MAY BE IN VAULT CORNER.



CITY OF BAINBRIDGE ISLAND STANDARD DETAILS

UNDERGROUND - WITH UPSTREAM METER
DOUBLE CHECK VALVE ASSEMBLY
2 1/2" AND LARGER

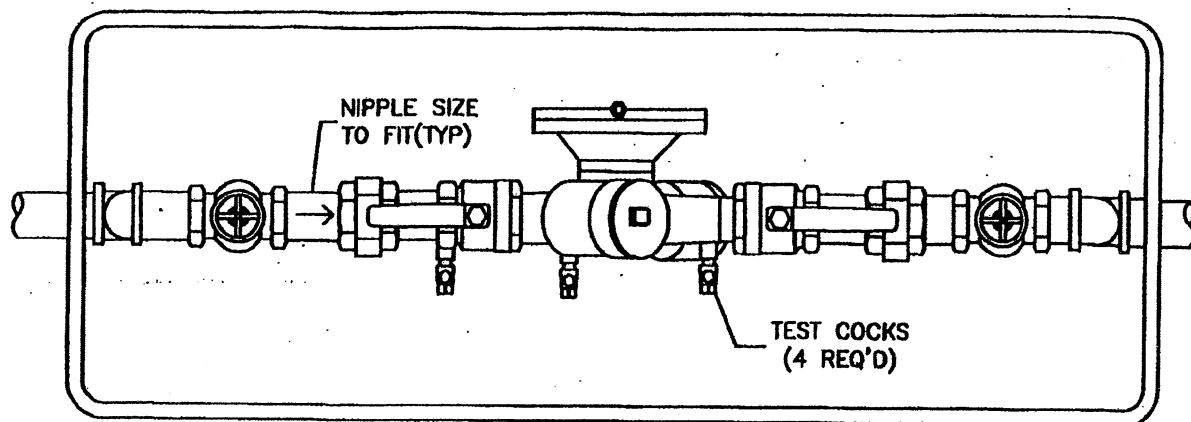
REV.

CITY ENGINEER

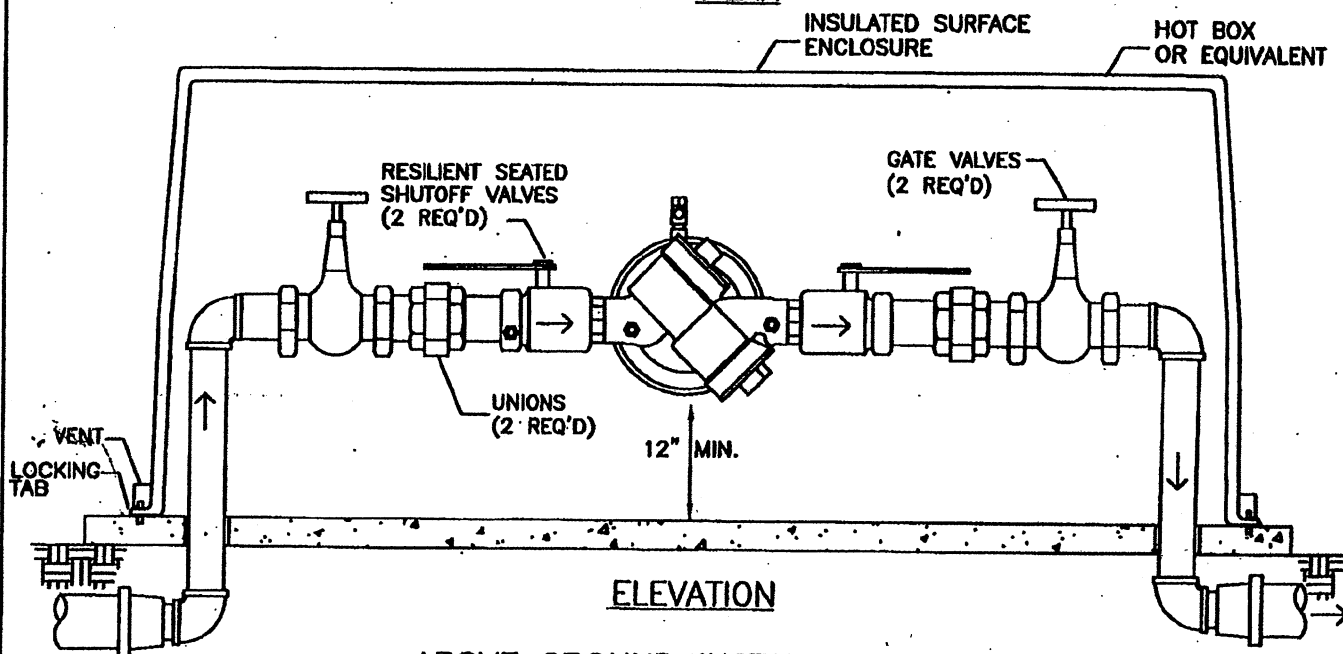
2003-01-08
DATE

DWG. NO.

10-162



PLAN



ELEVATION

ABOVE GROUND INSTALLATION ONLY

NOTES:

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.

BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING OR FREEZING.

THE WATER LINE SHALL FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.

ALL PIPE, VALVES, AND FITTINGS FROM SUPPLY MAIN SHALL BE FULLY RESTRAINED.

ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.

GATE VALVES, PIPE NIPPLES, AND UNIONS SHALL BE BRASS OR SCHEDULE 80 PVC.

PROVIDE ASSEMBLY AS A SINGLE MANUFACTURED UNIT.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPARTMENT, OPERATIONS & MAINTENANCE DIVISION.



REV.

CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

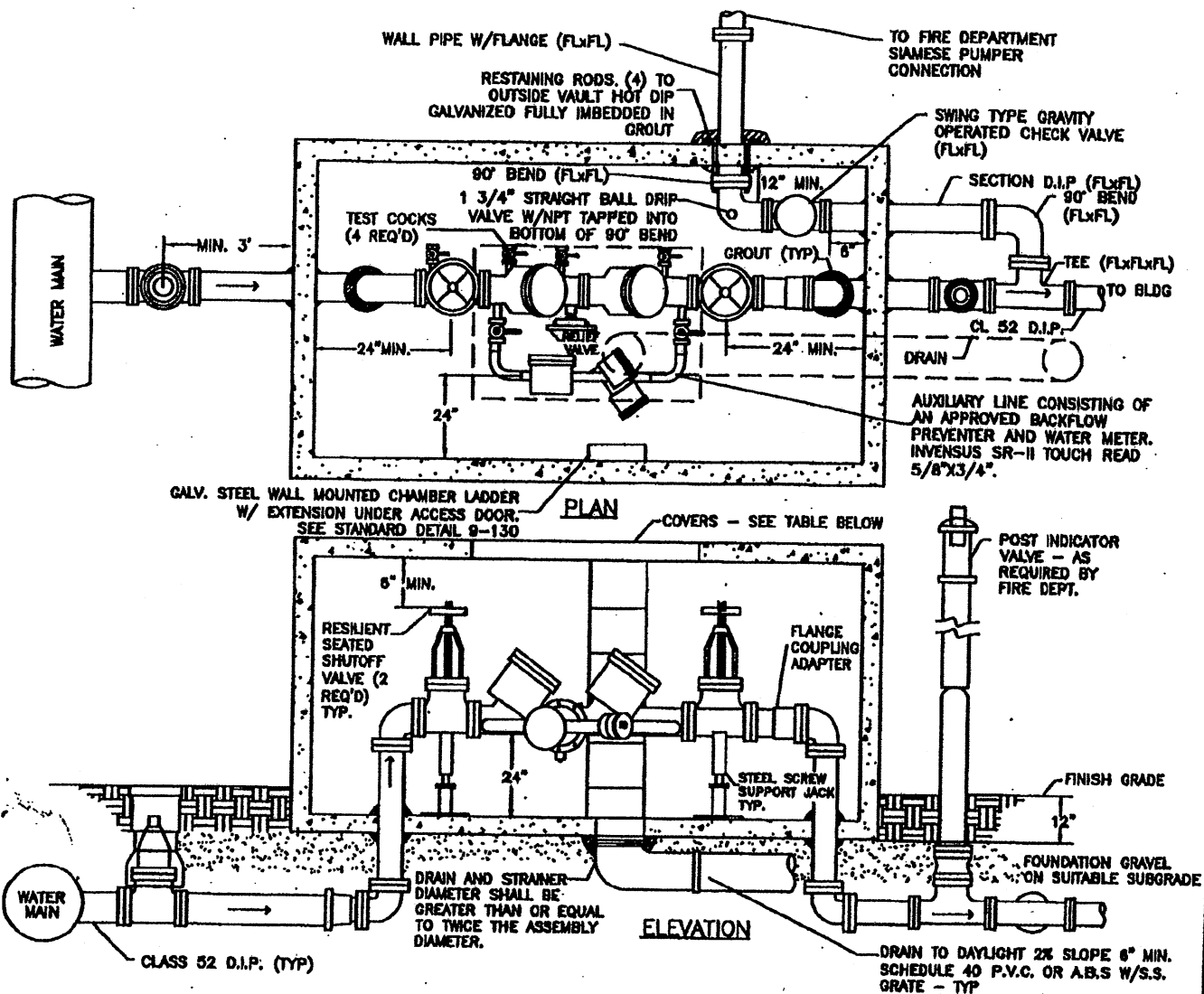
REDUCED PRESSURE BACKFLOW ASSEMBLY
2" & SMALLER

CITY ENGINEER

2002-02-08
DATE

DWG. NO.

10-163



NOTES:

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.

BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.

VAULT MAY BE BURIED UP TO 12\"/>

THE WATER LINE SHALL BE TESTED, DISINFECTED AND FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.

ALL PIPE, VALVES, AND FITTINGS FROM SUPPLY MAIN SHALL BE FLANGED OR FULLY RESTRAINED.

ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPARTMENT, OPERATIONS & MAINTENANCE DIVISION.

TAMPER SWITCHES SHALL BE INSTALLED ON GATE VALVES AND CONNECTED TO BUILDING FIRE ALARM SYSTEM.

MAINTAIN MINIMUM 24\"/>

GROUT ALL VAULT PENETRATIONS WITH WATERTIGHT GROUT INSIDE AND OUTSIDE. BURY ALL RESTRAINING RODS MIN. 2\"/>

PROVIDE ASSEMBLY AS A SINGLE MANUFACTURED UNIT.

DOUBLE CHECK VALVE ASSEMBLY'S ARE NOT APPROVED FOR FIRE PROTECTION SYSTEMS WITHIN CITY OF BAINBRIDGE ISLAND WATER SERVICE AREAS.

PIPE SIZE	RPDA	USE "UTILITY VAULT" SPECIFICATION OR OWNER APPROVED EQUAL.
4"	4"	675 LA W/ 2-332P ACCESS HATCH
6"	6"	687 TL W/ 2-332P ACCESS HATCH
8"	8"	5106 LA W/ 2-332P ACCESS HATCH



CITY OF BAINBRIDGE ISLAND STANDARD DETAILS

REDUCED PRESSURE DETECTOR ASSEMBLY FIRE SPRINKLER SYSTEM 2" & LARGER

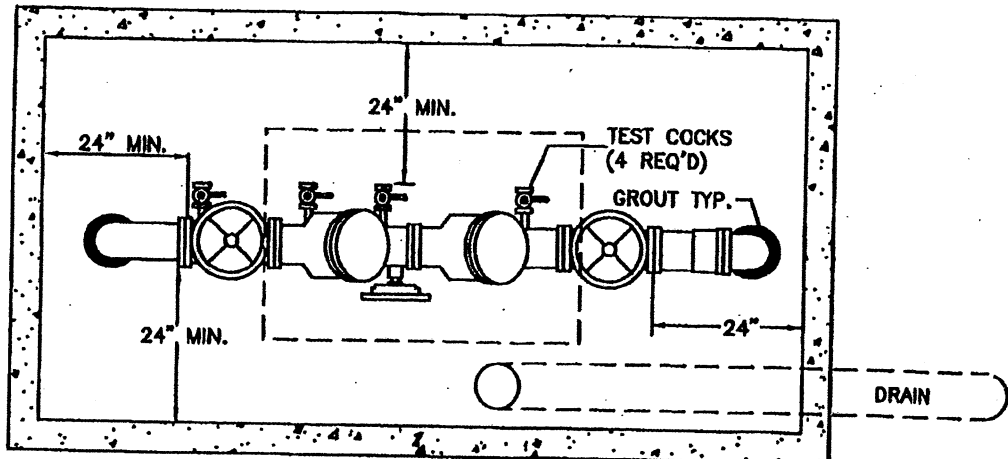
REV.

CITY ENGINEER

2007-07-08
DATE

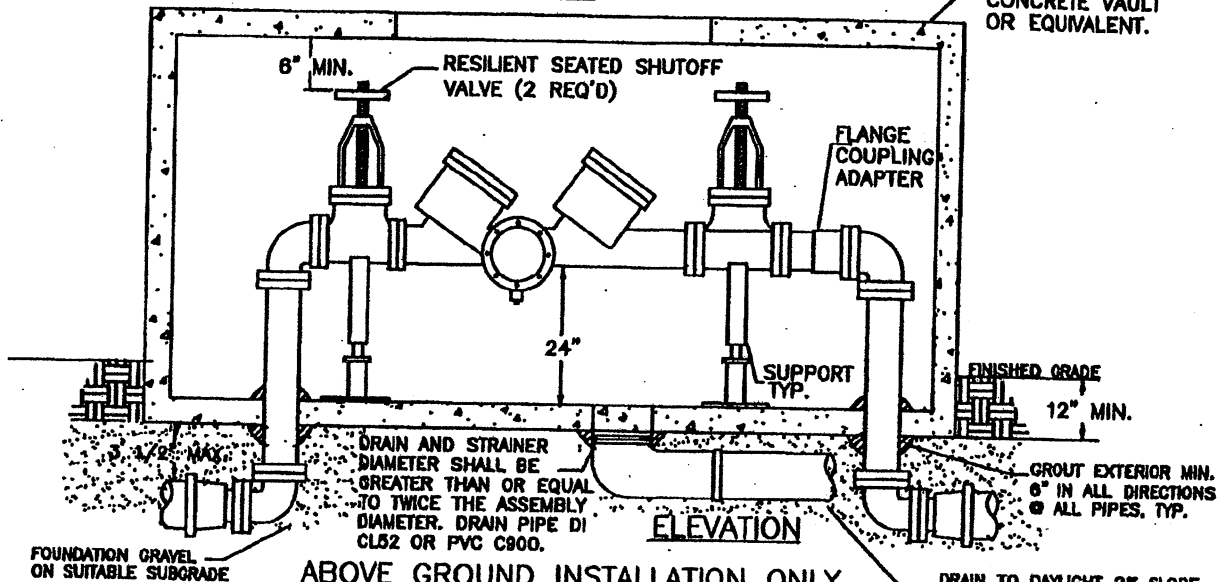
DWG. NO.

10-164



PLAN

HOT BOX,
CONCRETE VAULT
OR EQUIVALENT.



ELEVATION

ABOVE GROUND INSTALLATION ONLY

PIPE SIZE	RPBA	USE "UTILITY VAULT" SPECIFICATION OR OWNER APPROVED EQUAL
4"	4"	675 LA W/ 2-332P ACCESS HATCH
6"	6"	687 TL W/ 2-332P ACCESS HATCH
8"	8"	5106 LA W/ 2-332P ACCESS HATCH

NOTES:

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.

BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.

THE WATER LINE SHALL BE TESTED, DISINFECTED AND FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.

ALL PIPE, VALVES, AND FITTINGS FROM SUPPLY MAIN SHALL BE FLANGED OR FULLY RESTRAINED.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPARTMENT, OPERATIONS & MAINTENANCE DIVISION.

MAINTAIN MINIMUM 24" CLEARANCE ON ALL SIDES AROUND THE BACKFLOW PREVENTER, EXCEPT AS SHOWN.

PROVIDE AN ADEQUATE GRAVITY DRAINAGE SYSTEM TO DAYLIGHT.

GROUT ALL VAULT PENETRATIONS WITH WATERTIGHT GROUT INSIDE AND OUTSIDE. BURY ALL RESTAINING RODS MIN. 2".

PROVIDE ASSEMBLY AS A SINGLE MANUFACTURED UNIT.

ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.



REV.

**CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS**

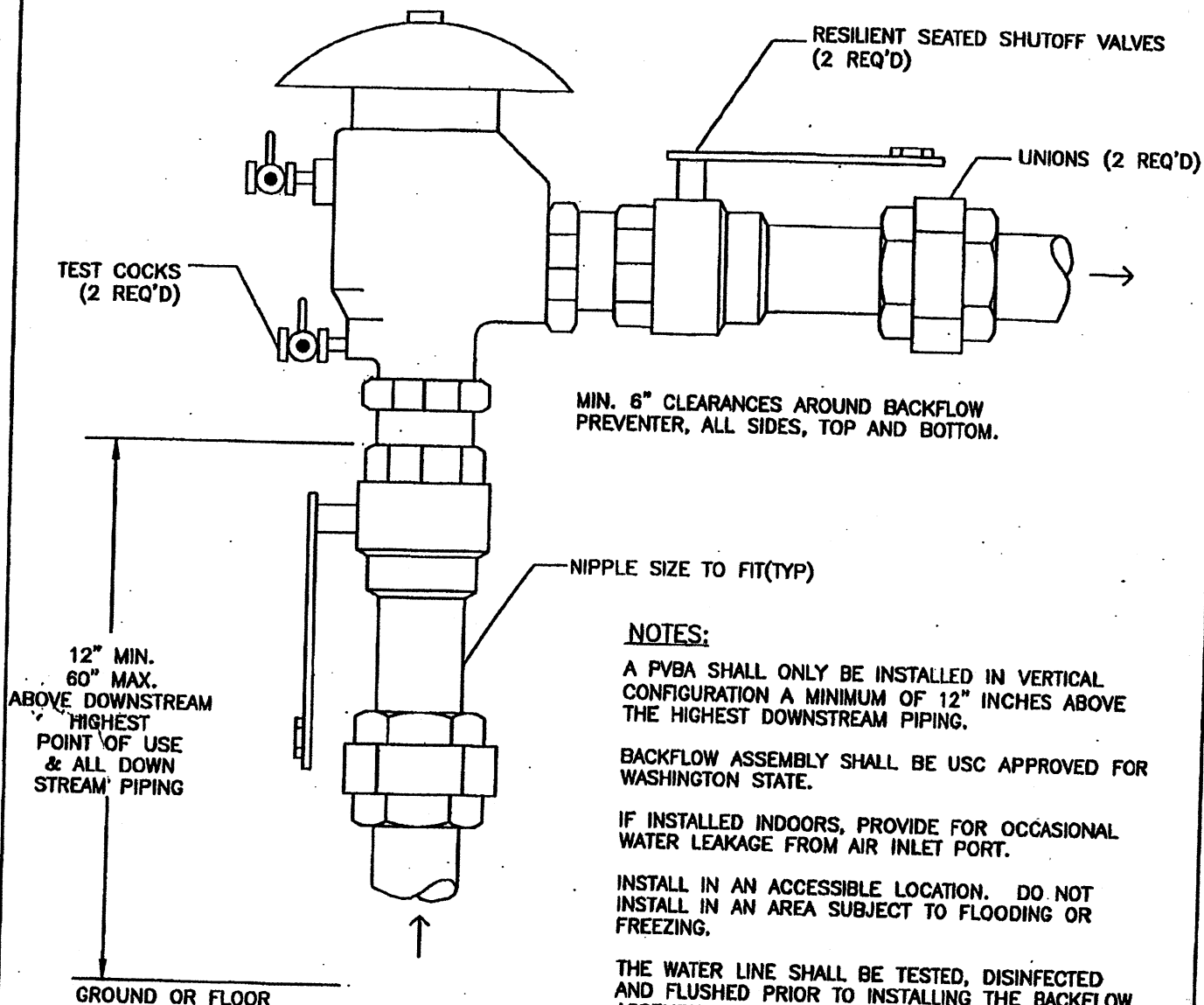
ABOVE GROUND WITH UPSTREAM METER
REDUCED PRESSURE BACKFLOW ASSEMBLY
2 1/2" AND LARGER

CITY ENGINEER

2003-01-08
DATE

DWG. NO.

10-165



NOTES:

A PVBA SHALL ONLY BE INSTALLED IN VERTICAL CONFIGURATION A MINIMUM OF 12" INCHES ABOVE THE HIGHEST DOWNSTREAM PIPING.

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

IF INSTALLED INDOORS, PROVIDE FOR OCCASIONAL WATER LEAKAGE FROM AIR INLET PORT.

INSTALL IN AN ACCESSIBLE LOCATION. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING OR FREEZING.

THE WATER LINE SHALL BE TESTED, DISINFECTED AND FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

GATE VALVES, PIPE NIPPLES, AND UNIONS SHALL BE BRASS OR SCHEDULE 80 PVC.

ALL FASTENERS SHALL BE HOT-DIP GALVANIZED OR STAINLESS STEEL.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPARTMENT, OPERATIONS & MAINTENANCE DIVISION.



CITY OF BAINBRIDGE ISLAND STANDARD DETAILS

PRESSURE VACUUM BREAKER ASSEMBLY FOR 2" & SMALLER

REV.

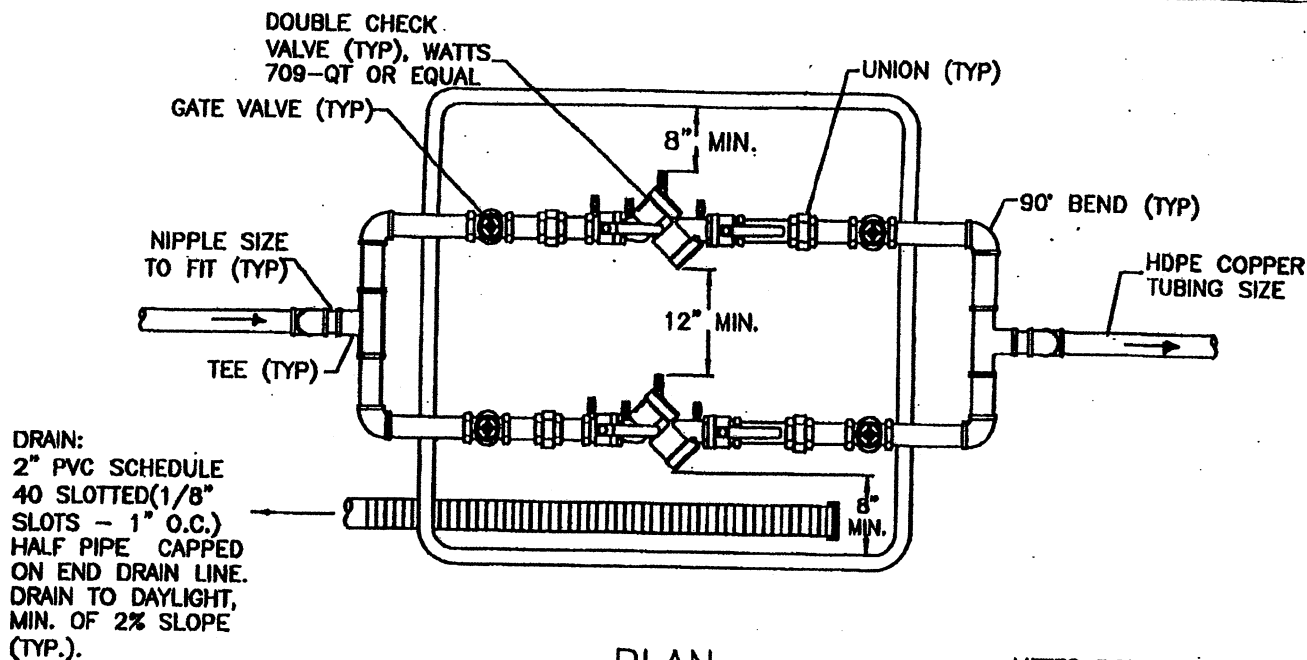
APPROVED

CITY ENGINEER

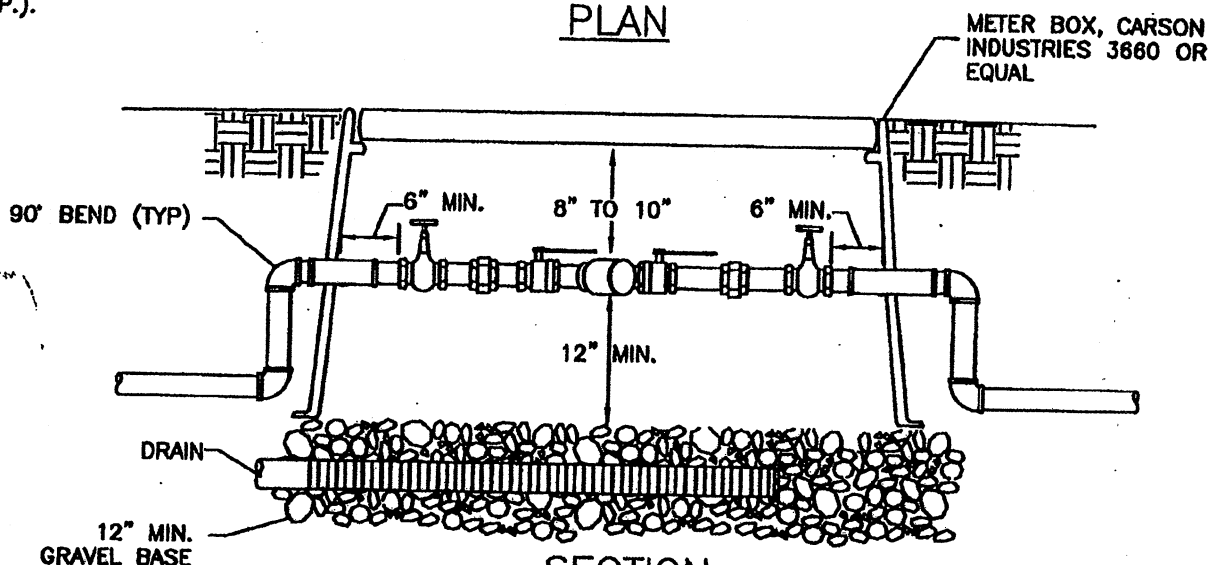
2007-03-08
DATE

DWG. NO.

10-166



PLAN



SECTION

NOTES:

BACKFLOW ASSEMBLY SHALL BE USC APPROVED FOR WASHINGTON STATE.

INSTALL ASSEMBLY IN HORIZONTAL POSITION. VERTICAL POSITION IS ALLOWED IF APPROVED BY WASHINGTON STATE DEPARTMENT OF HEALTH OR USC LIST FOR VERTICAL UP OR DOWN.

BACKFLOW ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AT OR WITHIN ONE FOOT OF THE PROPERTY LINE OR EASEMENT LINE AND ON THE OWNER'S PROPERTY UNLESS OTHERWISE APPROVED. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING OR FREEZING.

THE WATER LINE SHALL BE TESTED, DISINFECTED AND FLUSHED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY.

ALL ENCLOSURES SHALL BE APPROVED PRIOR TO INSTALLATION.

THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION AND PRIOR TO ACCEPTANCE AND ALSO ANNUALLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SUBMITTED TO THE CITY OF BAINBRIDGE ISLAND, PUBLIC WORKS DEPT., OPERATIONS & MAINTENANCE DIVISION.

GATE VALVES SHALL BE BRASS AND PIPE NIPPLES AND UNIONS SHALL BE BRASS OR SCHEDULE 80 PVC. NO SCHEDULE 40 IN BACKFLOW LINE.

PROVIDE ASSEMBLY AS A SINGLE MANUFACTURED UNIT.

ALL FASTENERS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL.



**CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS**

**DOUBLE CHECK VALVE ASSEMBLY FOR THREE
UNITS OR GREATER - 2" AND SMALLER
UNDERGROUND**

REV.

CITY ENGINEER

2007-09-08
DATE

DWG. NO.

10-167

PRECAST CONCRETE UNDERGROUND VAULT EQUAL TO UTILITY VAULT COMPANY AS SHOWN

BASE SECTION 44B4 BL WITH 4 INCH FLOOR DRAIN EQUAL TO OLYMPIC FOUNDRY NO. 74M CAST IN SUMP WITH 4 INCH CAST IRON PIPE EXTENDING OUT MINIMUM 12 INCHES BEYOND WALL IN DIRECTION REQUIRED

58 INCH SECTION 44B4 ML

TOP SECTION 44B4-TL2-332P WITH 3 - 36" X 36" SOLID LIDS AS SHOWN

LADDER NO. 7 REBAR RUNGS, 5/16" X 1 3/4" FLAT BAR RISER, WITH PROVISIONS TO ANCHOR AT TOP AND BOTTOM WITH 1/2 INCH CADMIUM PLATED BOLTS, LADDER ASSEMBLY, HOT DIP GALVANIZED AFTER FABRICATION, EQUAL TO UTILITY VAULT COMPANY STANDARD LADDER

PRESSURE GAGE ASSEMBLY

3/4" SERVICE SADDLE EQUAL TO ROMAC 101 5

3/4" CORPORATION STOP EQUAL TO FORD F100

3/4" TEE & NIPPLE AS REQUIRED

3/4" HOSE BIBB

2" LIQUID FILLED PRESSURE GAGE EQUAL TO US

GAGE SERIES 520, MINERAL OIL FILL,

PRESSURE RANGE 100 PSI DOWNSTREAM & 200 PSI UPSTREAM

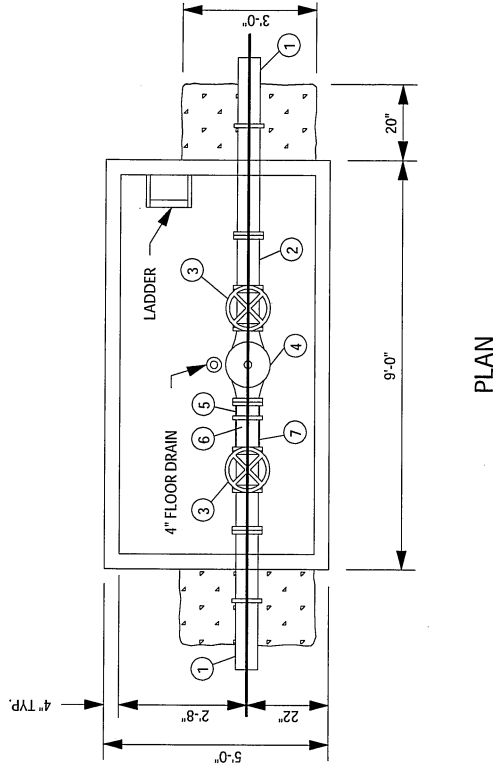
PAINTING SCHEDULE

CONCRETE EXTERIORS BELOW GRADE

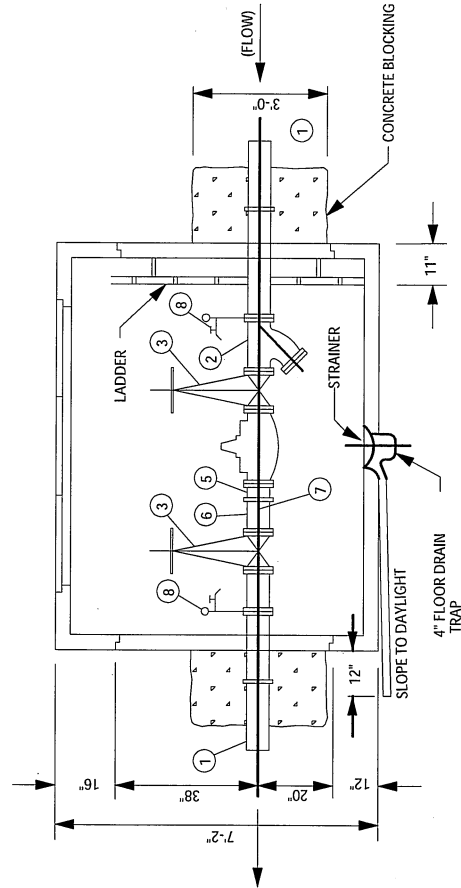
TWO (2) COATS OF KOPPERS BITUMASTIC BLACK SOLUTION, OR EQUAL

MATERIAL LIST

ITEM	DESCRIPTION
1	6" WALL PIPE, FL X P.E., 3'-0" LONG INTEGRALLY CAST COLLAR AT CENTER
2	6" SEDIMENT SEPARATOR, FL., EQUAL TO CRANE NO. 989-1/2 WITH 1 1/2" CORPORATION STOP
3	TWO 6" GATE VALVES, FL., OS & Y WITH HANDWHEEL EQUAL TO CLOW R/W RESILIENT WEDGE
4	6" PRESSURE REDUCING VALVE, FL., EQUAL TO CLA-VAL NO. 90G-01AB
5	6" FLEXIBLE FLANGED COUPLING ADAPTOR, EQUAL TO SMITH-BLAIR NO. 912-3-396
6	6" PIPE FL X P.E., 20 1/2" +/- LONG (LENGTH TO FIT)
7	TWO TIE RODS, 3/4" DIA., (LENGTH TO FIT)
8	PRESSURE GAGE ASSEMBLY, SEE ABOVE



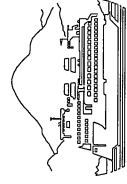
PLAN



ELEVATION

CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

FIRE FLOW ONLY
PRESSURE REDUCING STATION



REV.

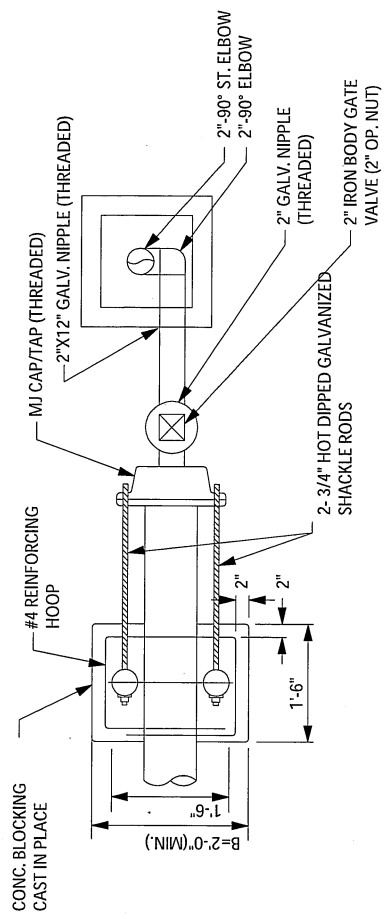
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Jeffrey M. Jensen 4/18/97
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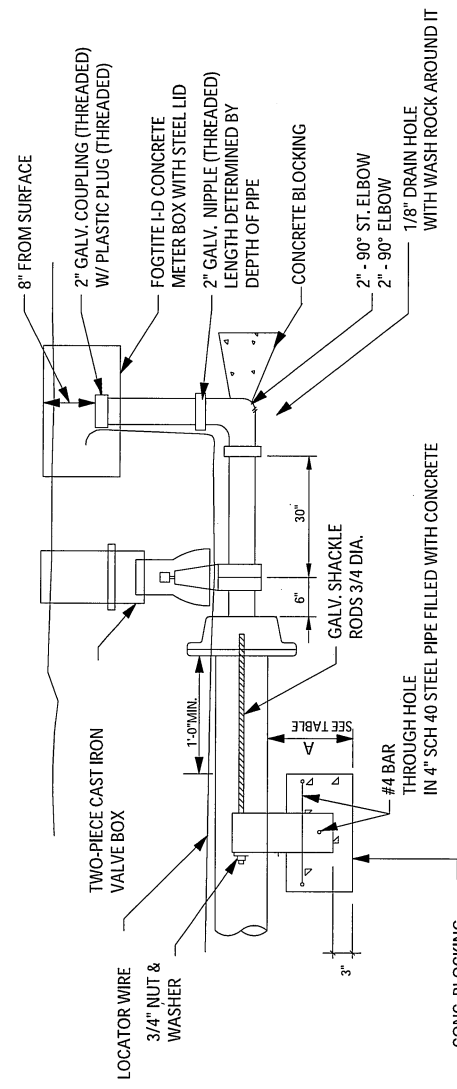
DWG. NO.
10-170

DATE

NOTE:
4" PLASTIC OR GALV. IRON PIPE
MAY BE USED FROM 12" OUT FROM
VAULT TO DAYLIGHT, ON DRAIN
LINE



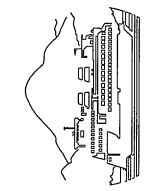
PLAN



ELEVATION

PIPE SIZE	A x B = MIN. AREA OF THRUST BLOCKING AGAINST UNDISTURBED SOIL SQ. FT.
4"	1
6"	4
8"	6
10"	10
*12"	14

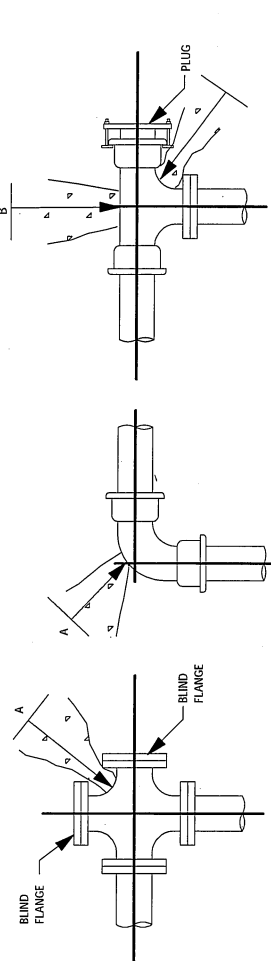
*1" DIA.



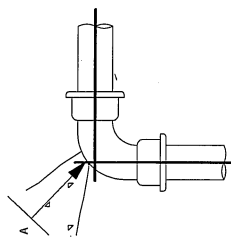
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STANDARD DETAILS

2" BLOWOFF

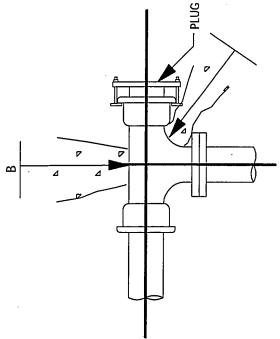
APPROVED	DATE	DWG. NO.
Jeffrey M. Jensen	4/18/97	10-180
CITY ENGINEER		



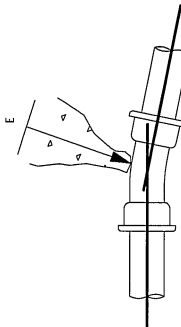
CAPPED CROSS



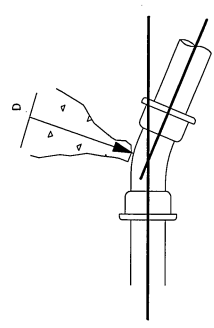
90° BEND



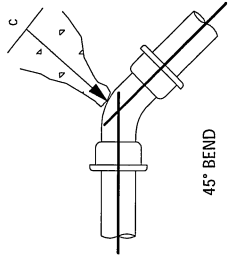
TEE



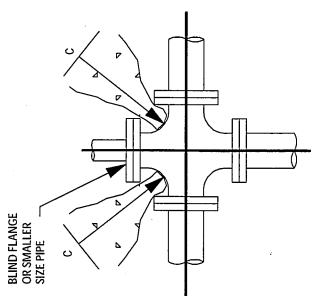
11 1/4° BEND



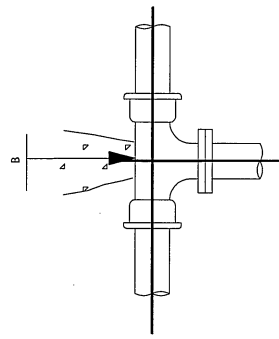
22 1/2° BEND



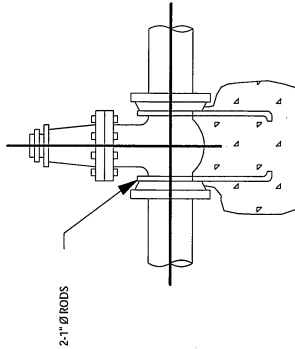
45° BEND



CROSS



TEE



GATE VALVE

PIPE SIZE	TRUST BLOCK - TABLE ML BEARING AREA AGAINST UNDISTURBED SOIL SQUARE FEET				
	A(ft.) ²	B(ft.) ²	C(ft.) ²	D(ft.) ²	E(ft.) ²
4"	3	1	1	1	1
6"	4	4	2	1	1
8"	7	6	4	2	1
10"	11	10	6	3	2
12"	16	14	9	5	3
14"	22	19	12	6	3
16"	29	25	16	8	4
18"	36	31	20	10	5
20"	45	39	24	13	6
22"	54	47	29	15	8
24"	64	56	35	18	9
28"	87	76	48	24	12
30"	101	87	55	28	14
36"	145	125	78	40	20
42"	197	171	107	55	27
48"	257	223	140	71	36
					NONE
					NONE
					4
					6
					9
					12
					16
					20
					24
					29
					35
					48
					55
					78
					107
					140

NOTES:

BEARING AREA OF CONCRETE THRUST-BLOCK BASED ON 200 PSI PRESSURE AND SAFE SOIL BEARING LOAD OF 2,000 POUNDS PER SQUARE FOOT.

AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES AND SOIL CONDITIONS.

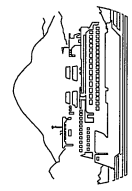
CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.

BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING OF JOINT.

CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATION PRESSURE UNDER ALL CONDITIONS OF SERVICE.

CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

CONCRETE BLOCKING



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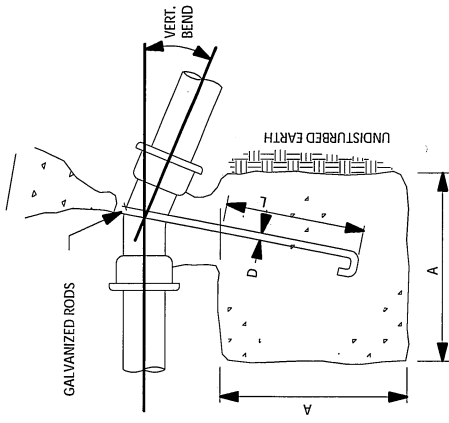
CITY ENGINEER

4/18/97

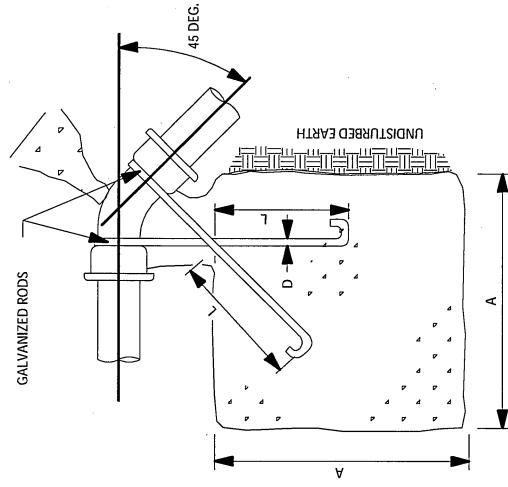
DATE

DWG. NO.

10-190



VERTICAL BLOCKING
FOR 11 1/4 DEG., 22 1/2 DEG., & 30 DEG. BENDS

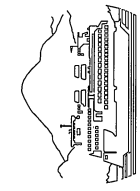


VERTICAL BLOCKING
FOR 45° BENDS

VERTICAL BLOCKING FOR 11 1/4 DEG. - 22 1/2 DEG. - 30 DEG. BENDS						
PIPE SIZE	VB	CUFT	A	D	L	
4"	11 1/4"	8	2.0'	3/4"	1.5'	
	22 1/2"	11	2.2'		2.0'	
	30"	17	2.6'			
6"	11 1/4"	11	2.2'	3/4"	2.0'	
	22 1/2"	25	2.9'			
	30"	41	3.5'			
8"	11 1/4"	16	2.5'	3/4"	2.0'	
	22 1/2"	47	3.6'			
	30"	70	4.1'	3/4"		
10"	11 1/4"	24	2.85'	3/4"	2.5'	
	22 1/2"	68	4.05'	3/4"	2.5'	
	30"	101	4.60'	3/4"	3.0'	
12"	11 1/4"	32	3.2'	3/4"	2.0'	
	22 1/2"	88	4.5'	7/8"	3.0'	
	30"	132	5.1'			
16"	11 1/4"	70	4.1'	7/8"	3.0'	
	22 1/2"	184	5.7'	1 1/8"	4.0'	
	30"	275	6.5'	1 1/4"		
20"	11 1/4"	91	4.5'	7/8"	3.0'	
	22 1/2"	225	6.1'	1 1/4"	4.0'	
	30"	330	6.5'	1 3/8"	4.5'	
24"	11 1/4"	128	5.0'	1"	3.5'	
	22 1/2"	320	6.8'	1 3/8"	4.5'	
	30"	480	7.9'	1 5/8"	5.5'	

VERTICAL BLOCKING FOR 45 DEG. BENDS

PIPE SIZE	VB	CUFT	A	D	L	
4"	45 DEG.	30	3.1'	3/4"	2.0'	
		68	4.1'			
		123	5.0'			
6"		178	5.6'	3/4"	2.5'	
		232	6.1'	3/4"	2.5'	
		478	7.8'	1 1/8"	4.0'	
8"		560	8.2'	1 1/4"		
		820	9.4'	1 3/8"	4.5'	



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

VERTICAL CONCRETE BLOCKING

NOTE: CONCRETE BLOCKING MINIMUM 2500 PSI CONCRETE

CONC. TO BE CLEAR OF JOINTS TO PERMIT DISMANTLING OF JOINT

REV.

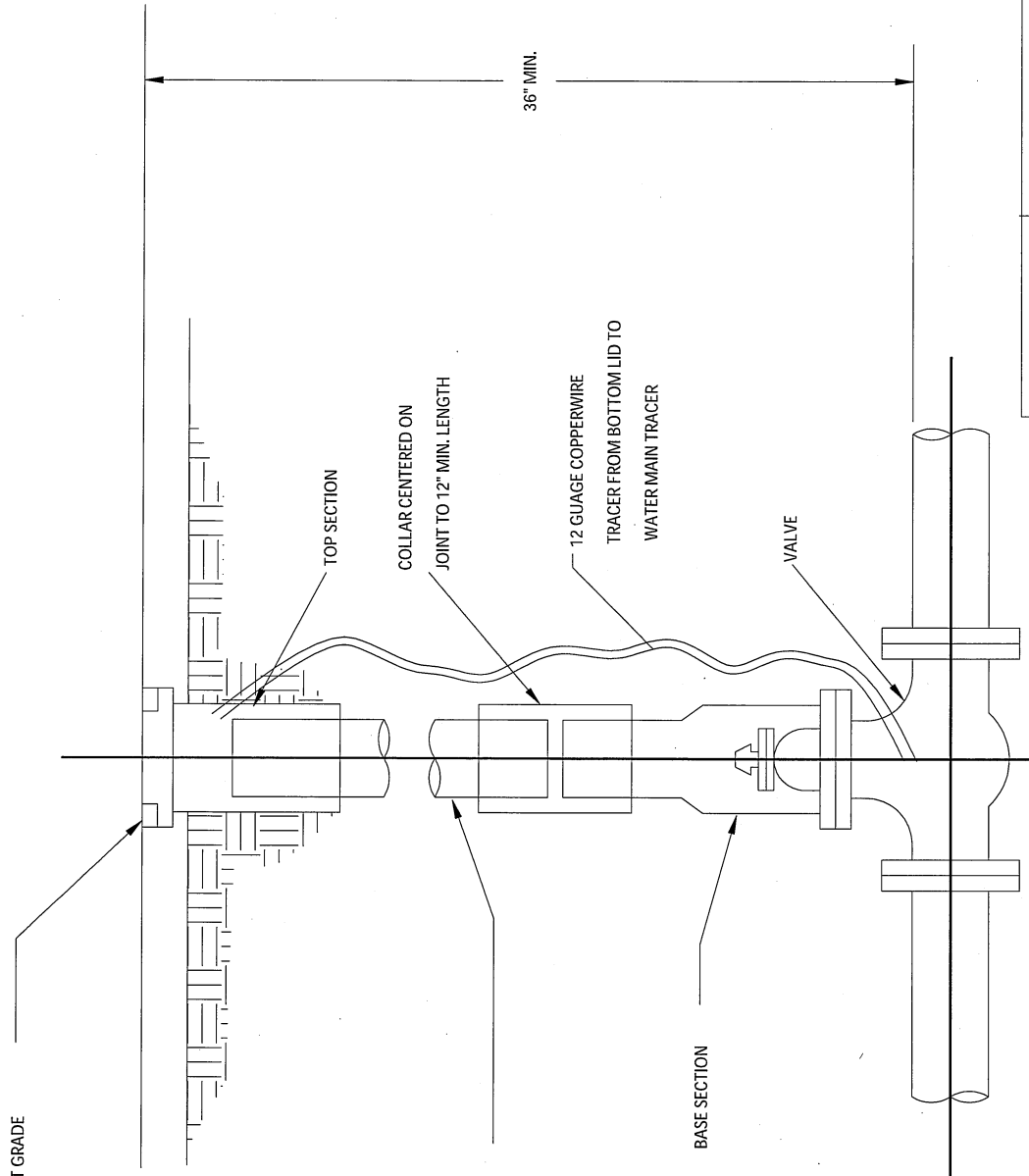
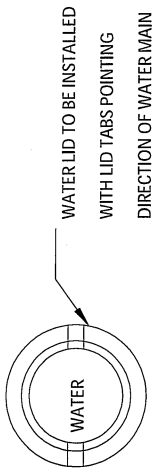
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DWG. NO.
10-200

DATE

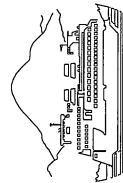
Jeffrey M. Jensen 4/18/97



EXTENSION PIECE, IF NECESSARY, TO BE ONE PIECE STANDARD CAST IRON VALVE BOX EXTENSION WITH COLLAR AS SHOWN

CITY OF BAINBRIDGE ISLAND STANDARD DETAILS

VALVE BOX
PAVED ROADWAY



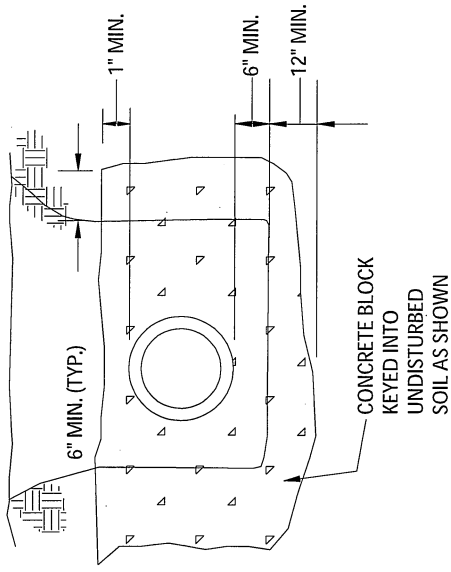
REV.

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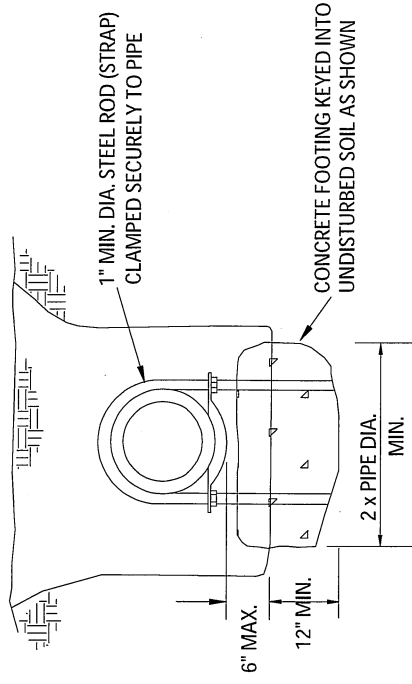
Jeffrey M. Jensen 4/18/97
CITY ENGINEER DATE

DWG. NO.

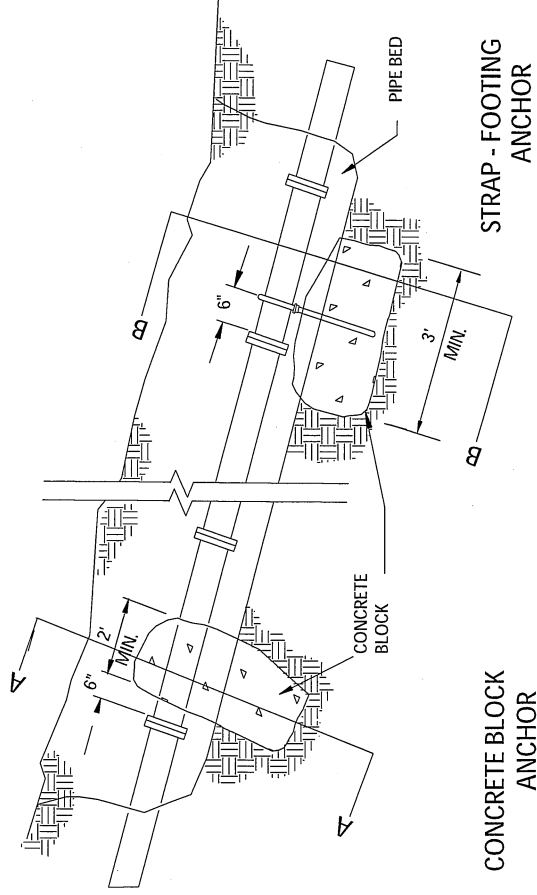
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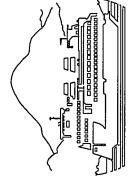
SECTION A-A



SECTION B-B



NOTE:
FOR HDPE, PIPE MUST BE FREE
TO SLIDE INSIDE A 4' LONG SECTION OF
PIPE ONE SIZE DIAMETER LARGER.



CITY OF BAINBRIDGE ISLAND
STANDARD DETAILS

PIPE ANCHOR

REV.

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CITY ENGINEER

DATE

4/18/97

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10-220