

SANITARY SEWER STANDARD DETAILS MANUAL



SEWER UTILITY
9850 64TH STREET WEST
UNIVERSITY PLACE, WASHINGTON 98467-1078
(253) 798-4050

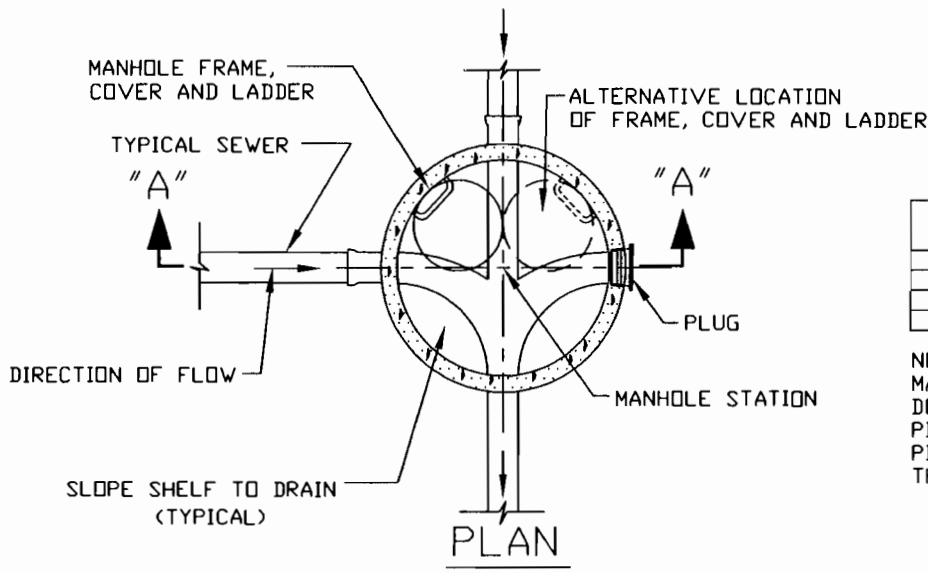
REVISED: 01/01/2006

ESTABLISHED: 01/01/2000

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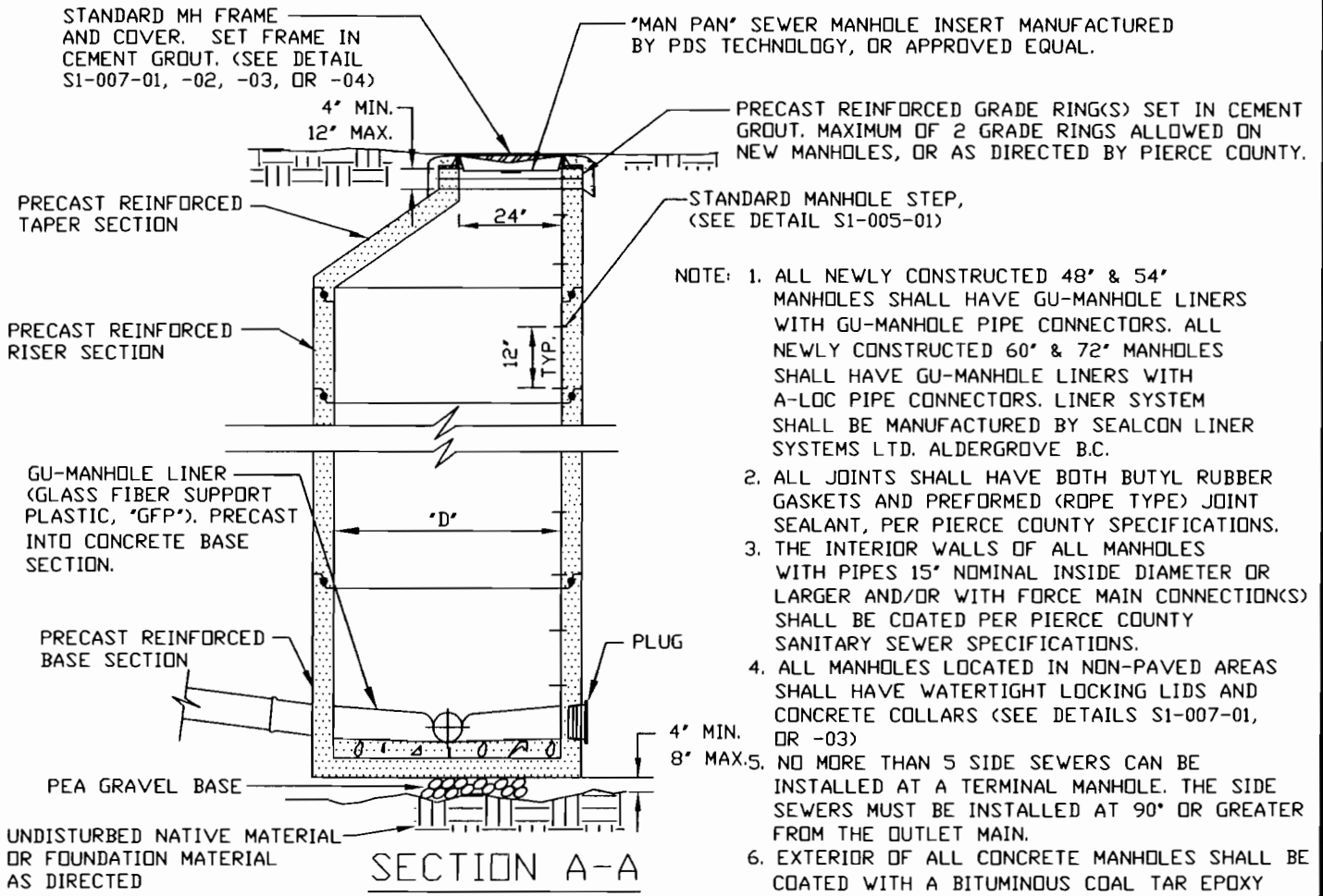
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S2-002-02	SS 4" FORCE MAIN AIR RELEASE / VACUUM RELIEF VALVE CLEANOUT AND PIG LAUNCH (SECTION VIEW)	01/01/2002
S2-003-01	SS 6" FORCE MAIN AIR RELEASE / VACUUM RELIEF VALVE CLEANOUT AND PIG LAUNCH (PLAN VIEW)	01/01/2002
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SECTION 1

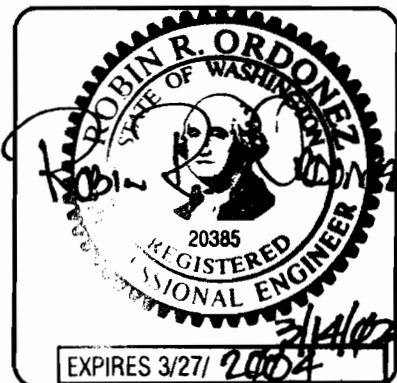


PIPE SIZE	MINIMUM MH DIA. ("D")
24" OR LESS	48"
36" OR LESS	54"
42" OR LESS	72"
72" OR LESS	96"

NOTE:
MANHOLE SIZE WILL BE DEPENDENT UPON THE NUMBER OF PIPES INTO THE THE MANHOLE, PIPE SIZE, AND CONFIGURATION THROUGH THE MANHOLE.



- NOTE:
1. ALL NEWLY CONSTRUCTED 48" & 54" MANHOLES SHALL HAVE GU-MANHOLE LINERS WITH GU-MANHOLE PIPE CONNECTORS. ALL NEWLY CONSTRUCTED 60" & 72" MANHOLES SHALL HAVE GU-MANHOLE LINERS WITH A-LOC PIPE CONNECTORS. LINER SYSTEM SHALL BE MANUFACTURED BY SEALCON LINER SYSTEMS LTD. ALDERGROVE B.C.
 2. ALL JOINTS SHALL HAVE BOTH BUTYL RUBBER GASKETS AND PREFORMED (RDPE TYPE) JOINT SEALANT, PER PIERCE COUNTY SPECIFICATIONS.
 3. THE INTERIOR WALLS OF ALL MANHOLES WITH PIPES 15" NOMINAL INSIDE DIAMETER OR LARGER AND/OR WITH FORCE MAIN CONNECTION(S) SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
 4. ALL MANHOLES LOCATED IN NON-PAVED AREAS SHALL HAVE WATERTIGHT LOCKING LIDS AND CONCRETE COLLARS (SEE DETAILS S1-007-01, OR -03)
 5. NO MORE THAN 5 SIDE SEWERS CAN BE INSTALLED AT A TERMINAL MANHOLE. THE SIDE SEWERS MUST BE INSTALLED AT 90° OR GREATER FROM THE OUTLET MAIN.
 6. EXTERIOR OF ALL CONCRETE MANHOLES SHALL BE COATED WITH A BITUMINOUS COAL TAR EPOXY COATING AT A MIN. DRY THICKNESS OF 50 MILS.
 7. MANHOLES SHALL BE VACUUM TESTED PER PIERCE COUNTY SPECIFICATIONS.



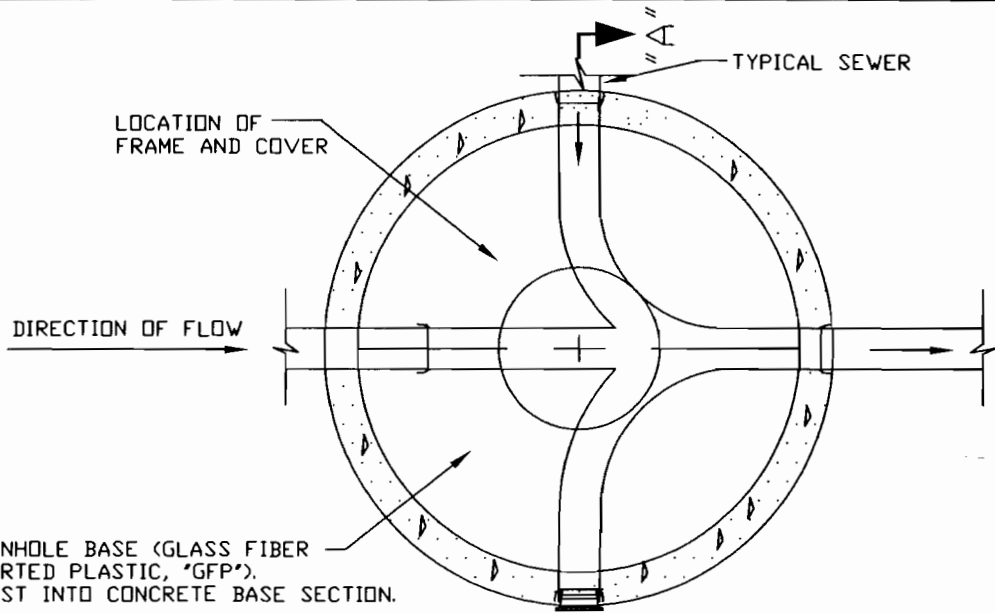
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WASTEWATER UTILITY DIVISION
9116 GRAVELLY LAKE DRIVE
LAKEWOOD, WASHINGTON 98499-3190
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STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
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**SANITARY SEWER
MANHOLE**

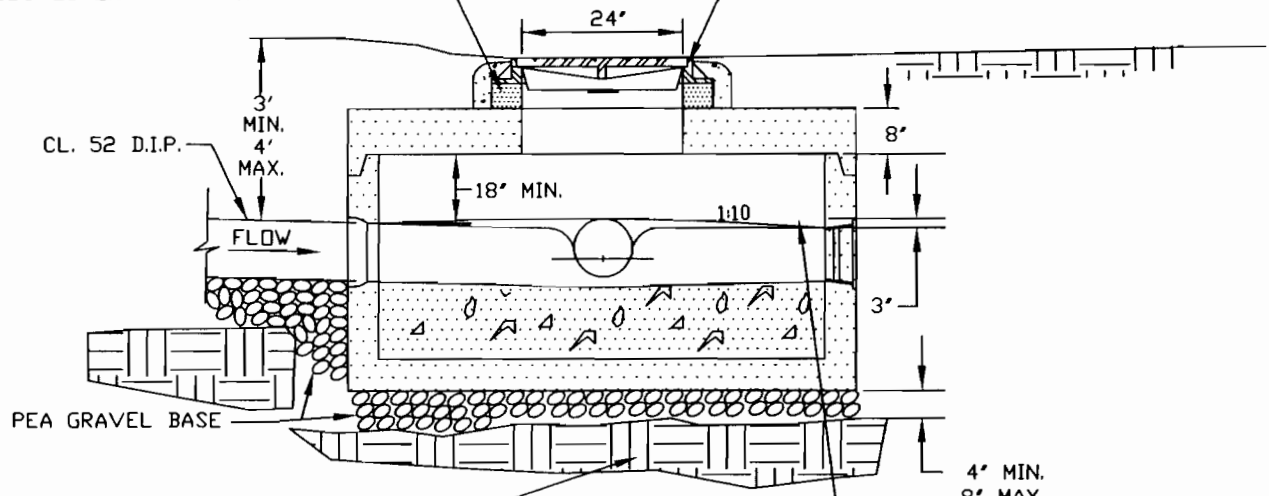
STD. DWG. NO.
S1-001-01



PLAN

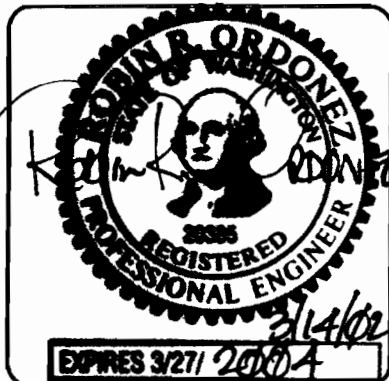
PRECAST REINFORCED GRADE RING(S) SET IN CEMENT GROUT. MAXIMUM OF 2 GRADE RINGS ALLOWED ON NEW MANHOLES

STANDARD MH FRAME AND COVER. SEE DETAIL S1-007-01, -02, -03, OR -04. SET FRAME IN CEMENT GROUT.



SECTION A-A

- NOTE: 1.) MAXIMUM OF TWO (2) GRADE RINGS. ADDITIONAL DEPTH SHALL BE PROVIDED IN PRECAST BASE SECTION OF NEW MANHOLES.
 2.) ALL NOTES ON S1-001-01 APPLY ON SHALLOW MANHOLE INSTALLATION.



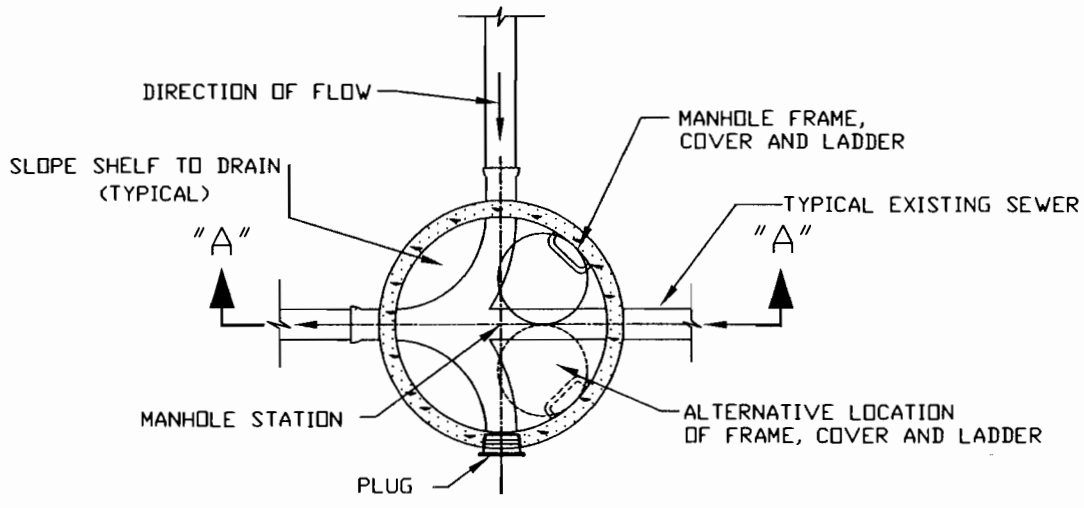
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STANDARD DETAILS

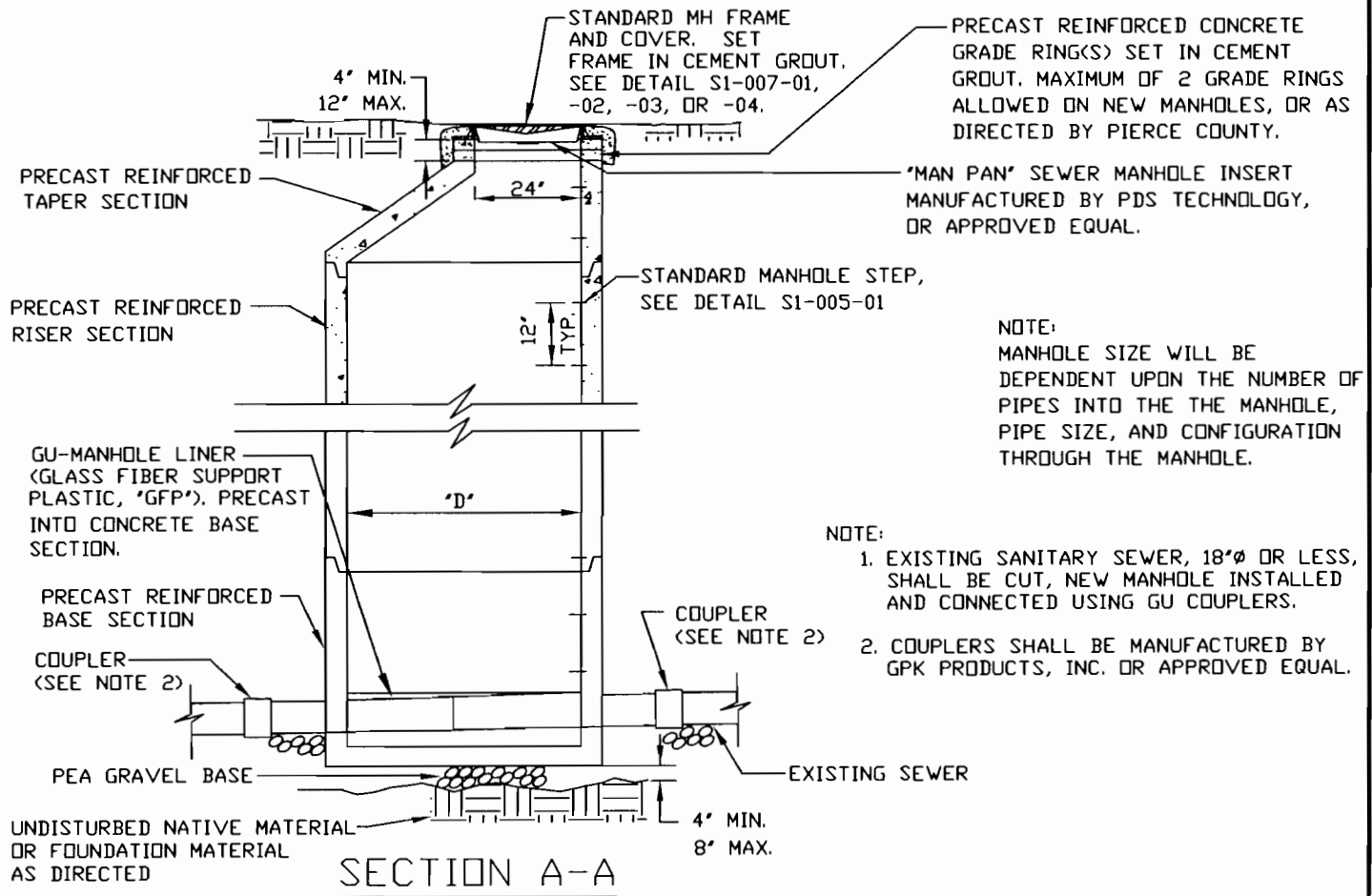
DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER
 SHALLOW MANHOLE**

STD. DWG. NO.
 S1-002-01



PLAN



SECTION A-A

- NOTE:
1. EXISTING SANITARY SEWER, 18"Ø OR LESS, SHALL BE CUT, NEW MANHOLE INSTALLED AND CONNECTED USING GU COUPLERS.
 2. COUPLERS SHALL BE MANUFACTURED BY GPK PRODUCTS, INC. OR APPROVED EQUAL.



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STANDARD DETAILS

**NEW SANITARY SEWER
MANHOLE CAST INTO
EXISTING MAIN**

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
S1-003-01

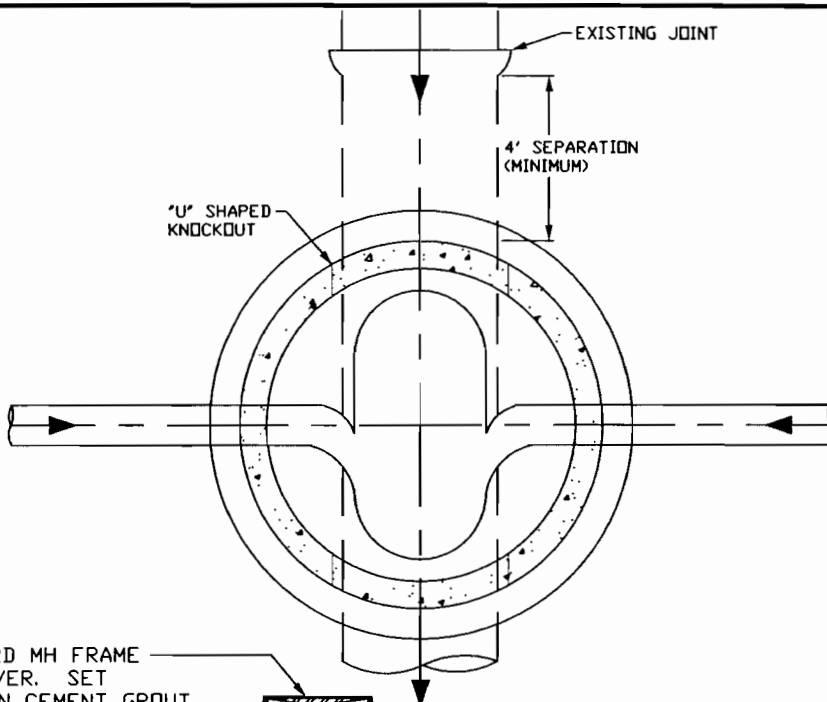


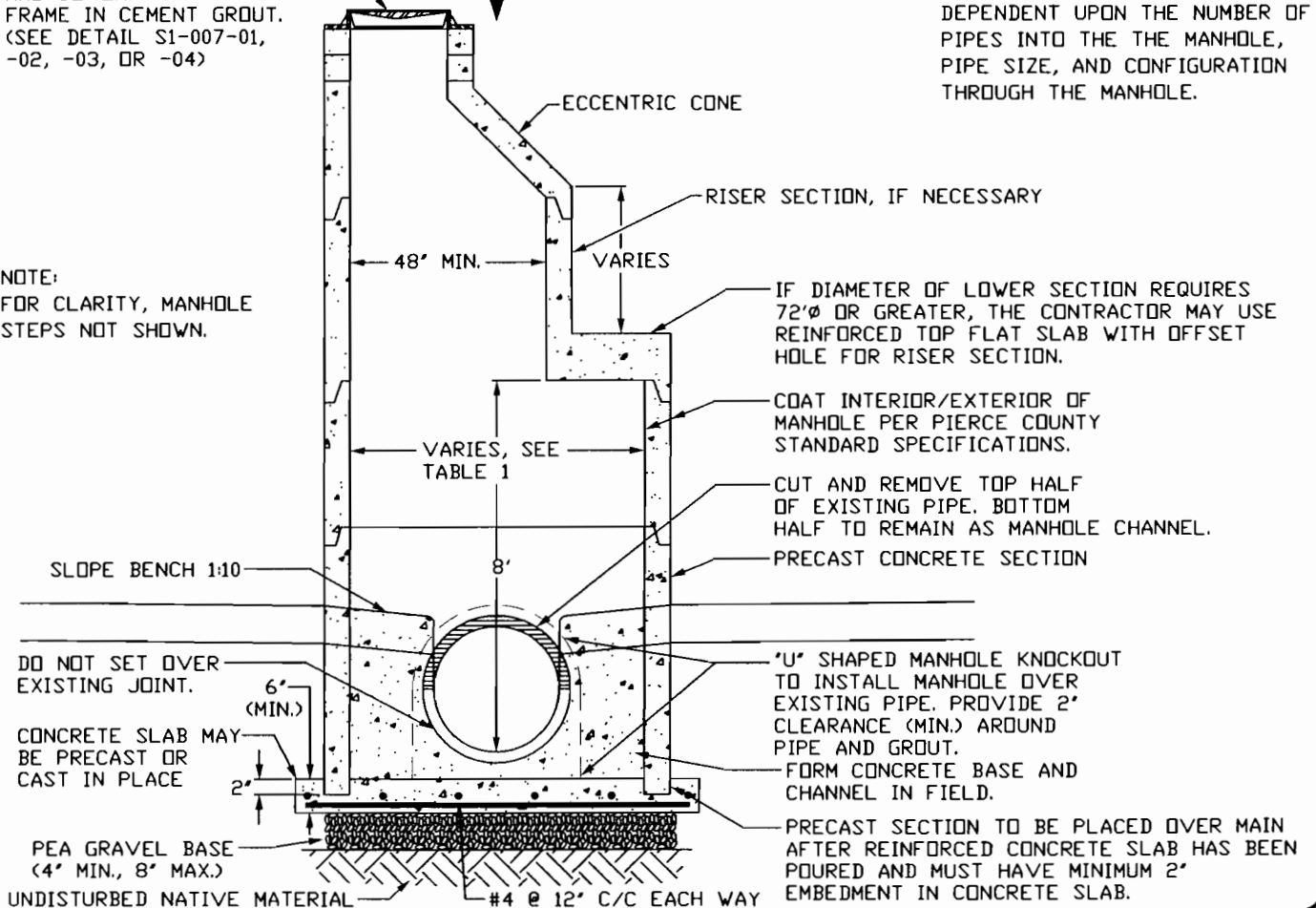
TABLE 1

PIPE SIZE	MINIMUM MH DIA.
24" OR LESS	48"
36" OR LESS	54"
42" OR LESS	72"
72" OR LESS	96"

NOTE:
MANHOLE SIZE WILL BE DEPENDENT UPON THE NUMBER OF PIPES INTO THE THE MANHOLE, PIPE SIZE, AND CONFIGURATION THROUGH THE MANHOLE.

STANDARD MH FRAME AND COVER. SET FRAME IN CEMENT GROUT. (SEE DETAIL S1-007-01, -02, -03, OR -04)

NOTE:
FOR CLARITY, MANHOLE STEPS NOT SHOWN.



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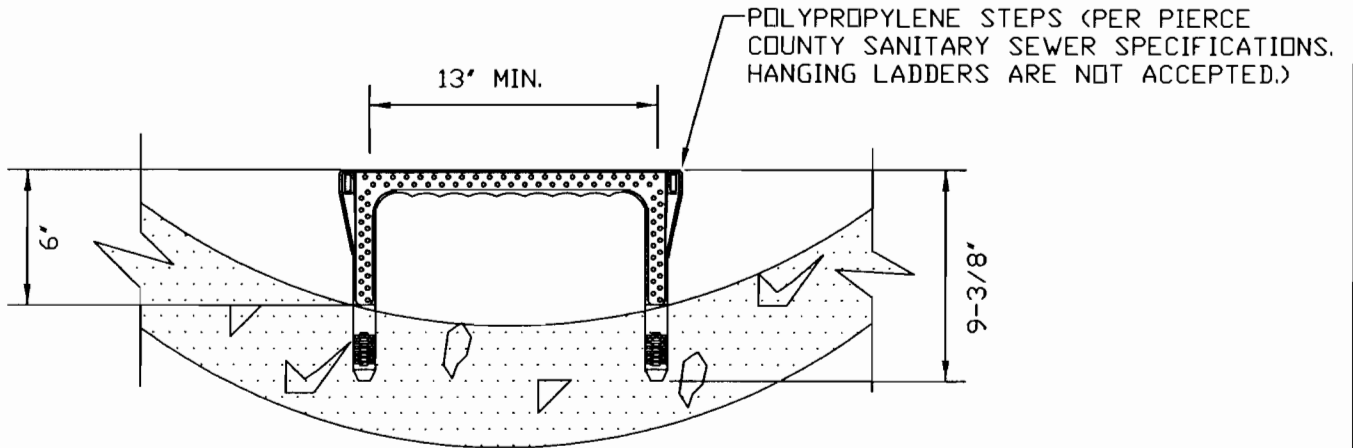
STANDARD DETAILS

SANITARY SEWER SADDLE
MANHOLE CAST OVER
EXISTING MAIN

DATE	SCALE
08/29/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

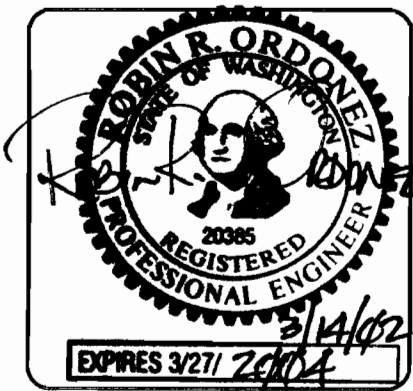
STD. DWG. NO.
S1-004-01





LEGS MAY BE PARALLEL OR APPROXIMATELY RADIAL AT OPTION OF MANUFACTURER EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE IDENTICAL.

MANHOLE STEP



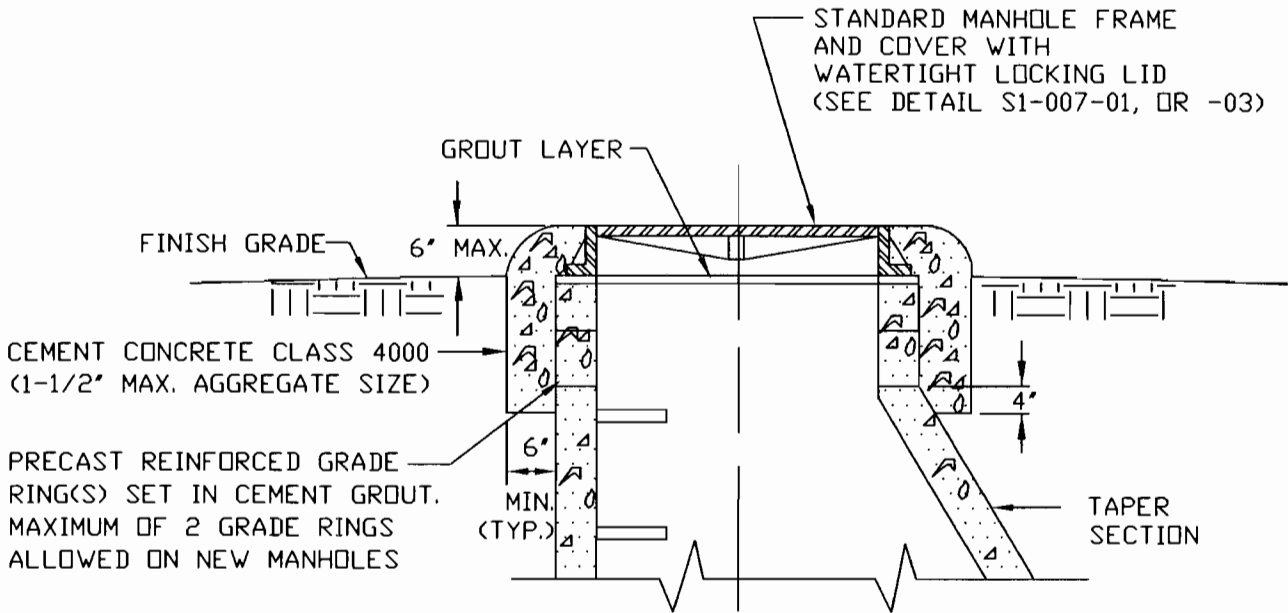
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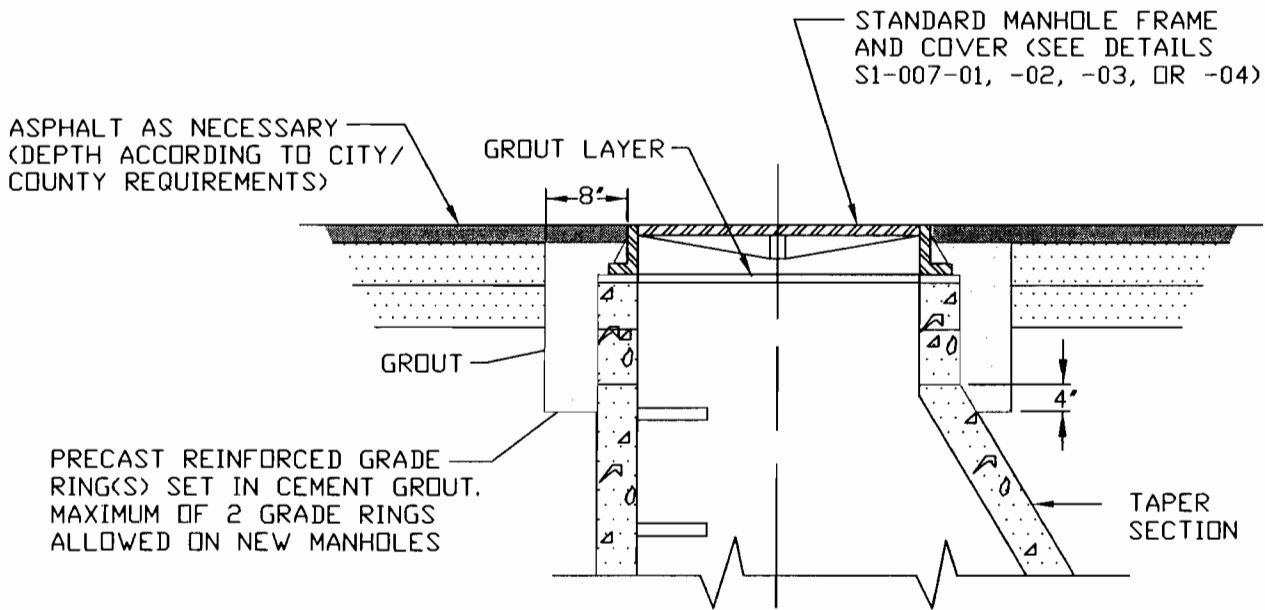
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APPROVED: 01/01/2002	
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SANITARY SEWER
 MANHOLE STEP

STD. DWG. NO.
 S1-005-01



NON-PAVED AREA



PAVED AREA



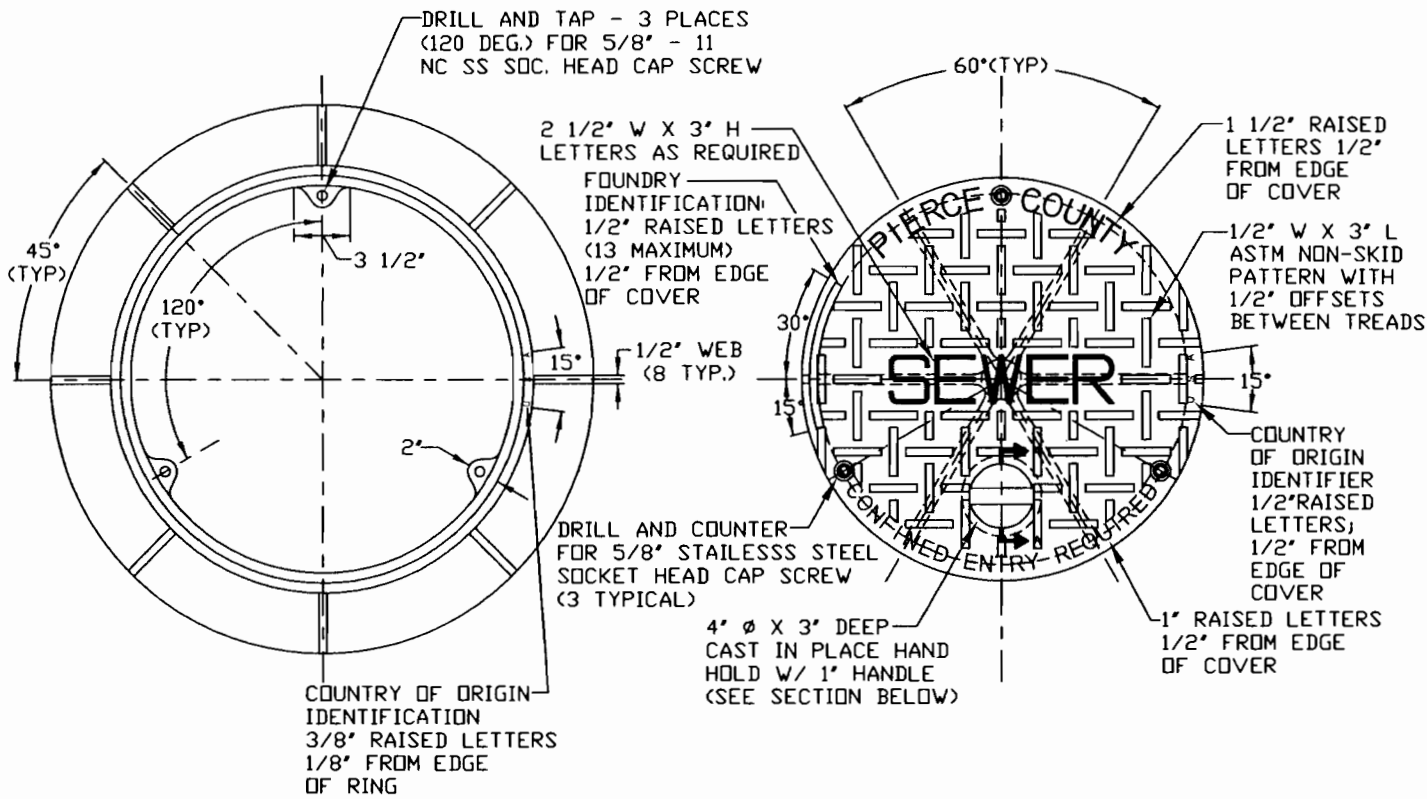
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REVISED:	

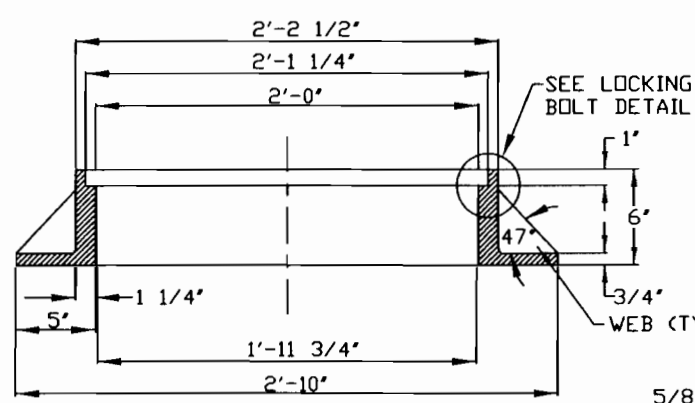
**SANITARY SEWER
 CONCRETE MANHOLE COLLAR**

STD. DWG. NO.
S1-006-01

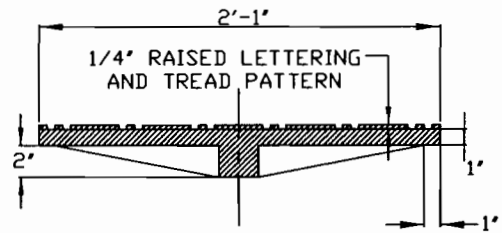


MANHOLE RING - PLAN

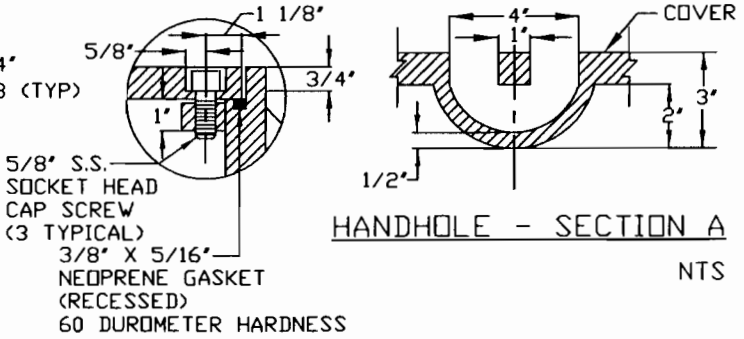
MANHOLE COVER - PLAN



MANHOLE RING - SECTION

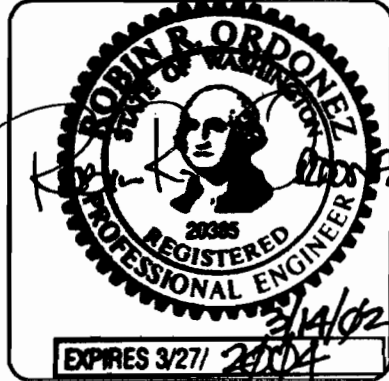


MANHOLE COVER - SECTION



LOCKING BOLT - DETAIL
NTS

HANDHOLE - SECTION A
NTS



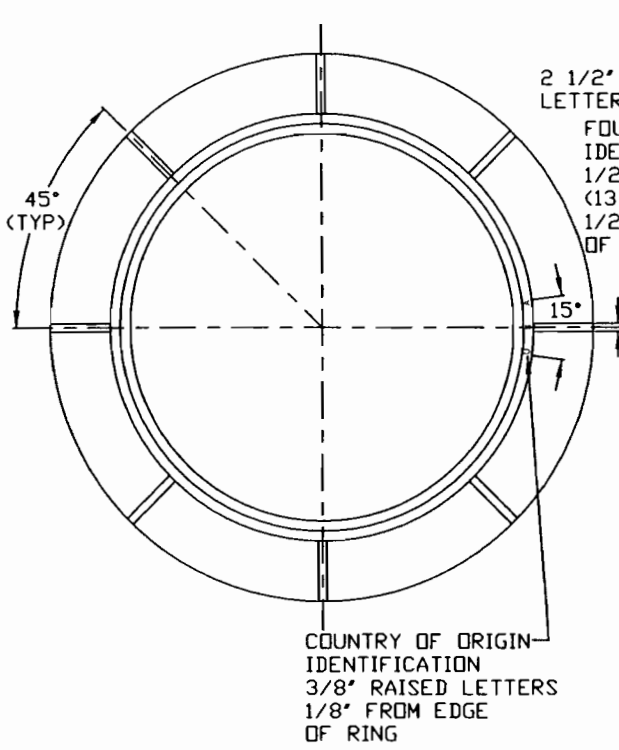
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(253) 798-4050

STANDARD DETAILS

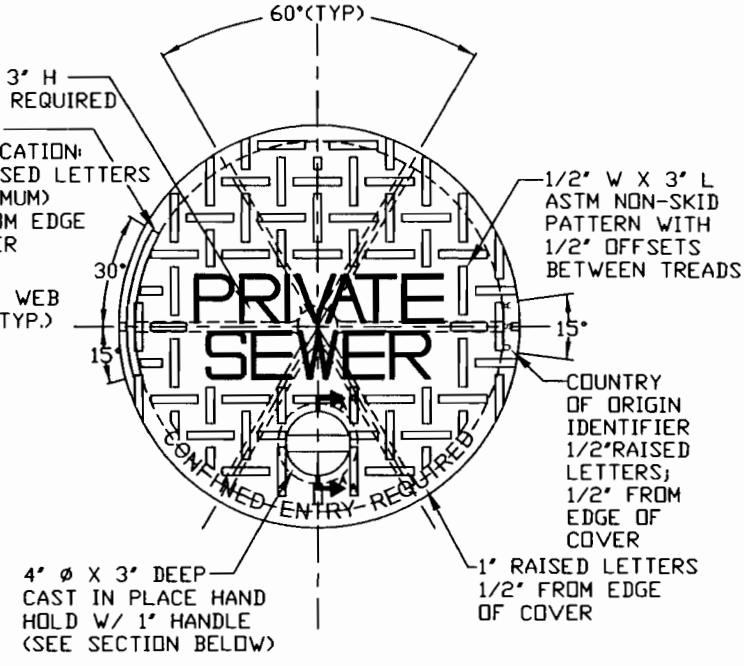
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APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER MANHOLE
FRAME & LOCKING COVER**

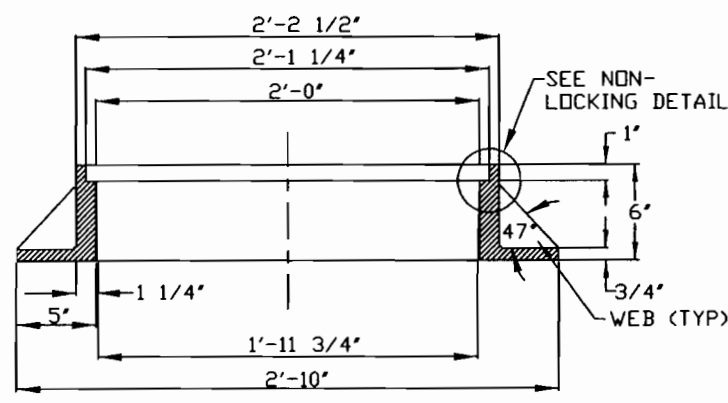
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S1-007-01



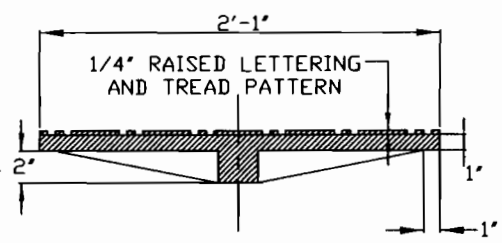
MANHOLE RING - PLAN



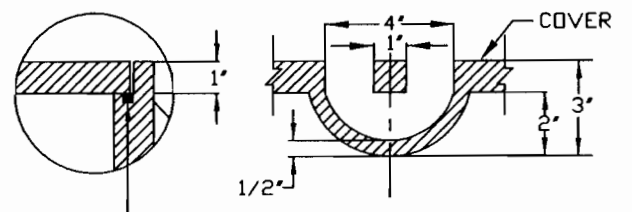
MANHOLE COVER - PLAN



MANHOLE RING - SECTION



MANHOLE COVER - SECTION



HANDHOLE - SECTION A

3/8" X 5/16" NEOPRENE GASKET (RECESSED) 60 DUROMETER HARDNESS
NON-LOCKING - DETAIL NTS

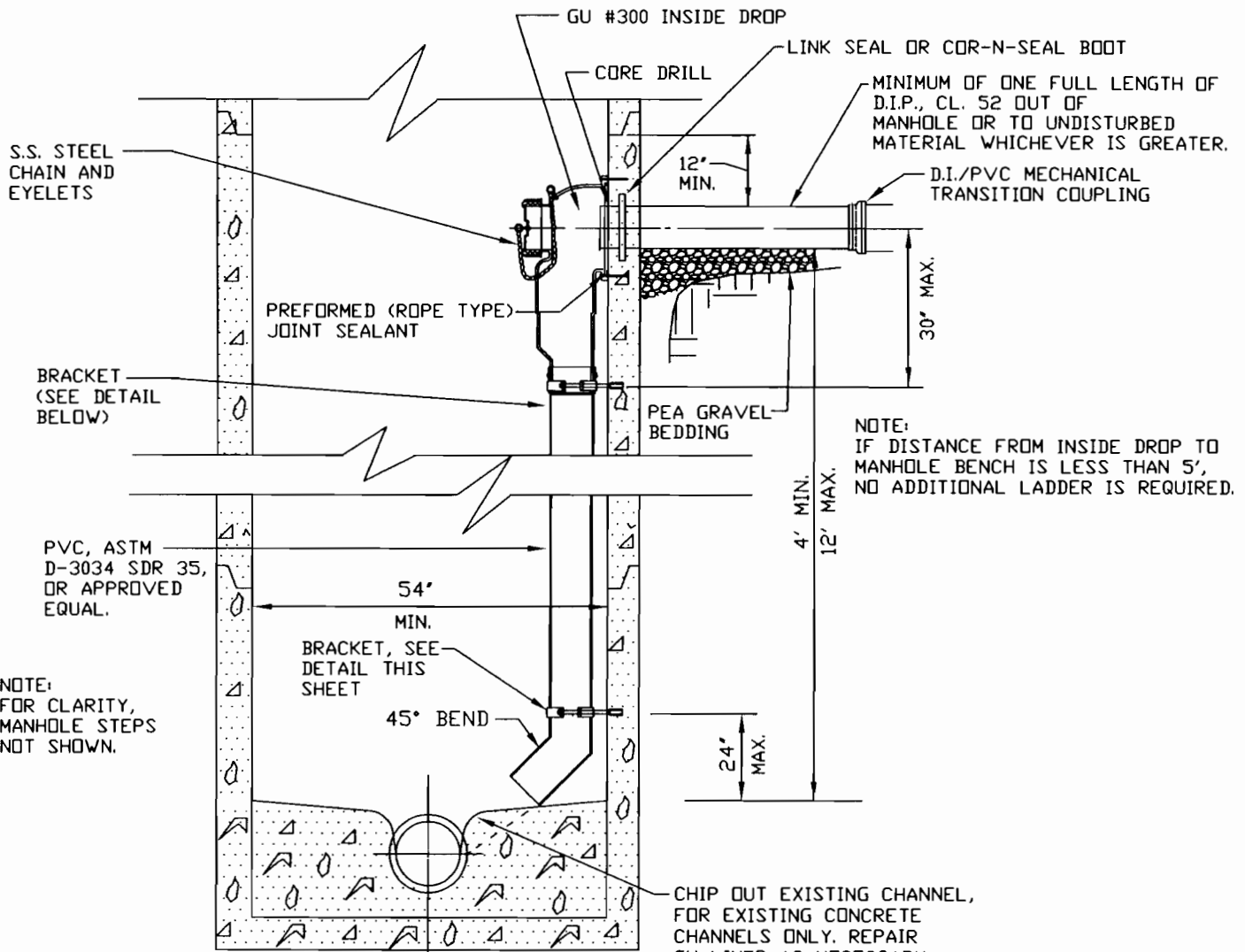


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DATE	SCALE
01/01/2000	1"=1'
APPROVED: 01/01/2002	
REVISED:	

**PRIVATE SANITARY SEWER
MANHOLE FRAME &
NON-LOCKING COVER**

STD. DWG. NO.
S1-007-04

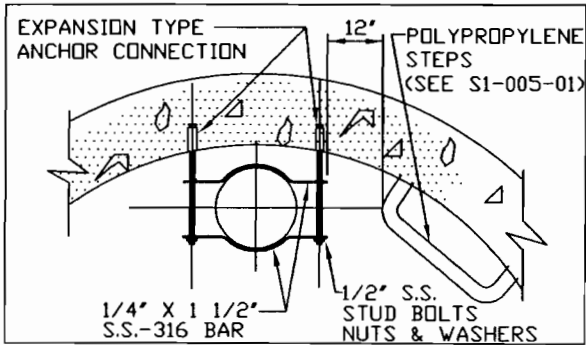


NOTE:
FOR CLARITY,
MANHOLE STEPS
NOT SHOWN.

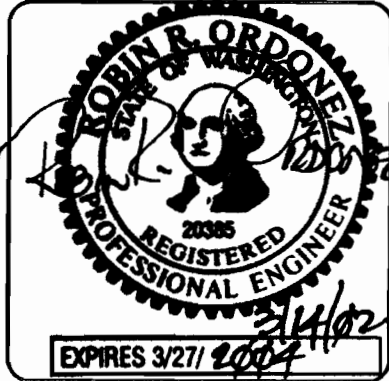
NOTE:
IF DISTANCE FROM INSIDE DROP TO
MANHOLE BENCH IS LESS THAN 5',
NO ADDITIONAL LADDER IS REQUIRED.

NOTES

1. BRACKETS SHALL BE PLACED A MAXIMUM OF 10' APART VERTICAL, DROP SHALL BE 8" DIA. MIN. FOR MAIN LINES & 6" DIA. FOR SIDE SEWERS.
2. INVERT TO BE RECHANNELED AS REQUIRED.
3. USE DEAD-END CHANNEL FOR MANHOLES WITH INVERT LINERS.
4. ONLY ONE INSIDE DROP STRUCTURE PER 54"Ø MANHOLE.
5. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
6. THE INTERIOR AND EXTERIOR WALLS OF ALL MANHOLES WITH PIPES 15' NOMINAL INSIDE DIAMETER LARGER AND/OR WITH FORCE MAIN CONNECTION(S) SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.



BRACKET



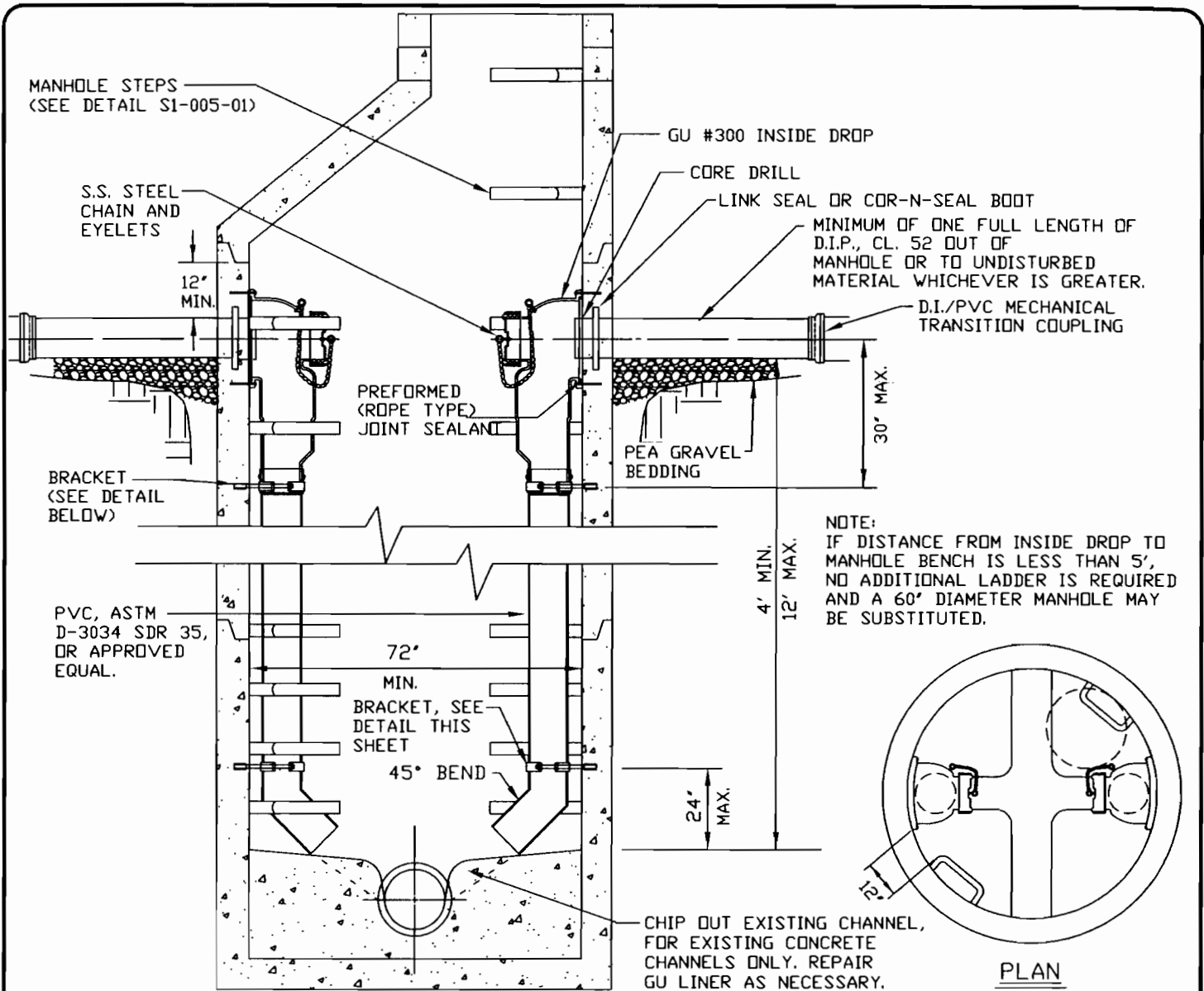
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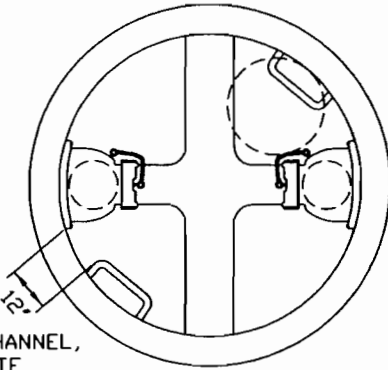
DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

SANITARY SEWER
6" & 8" DIAMETER GU300
SINGLE INSIDE DROP STRUCTURE
FOR GRAVITY CONNECTION

STD. DWG. NO.
S1-008-01



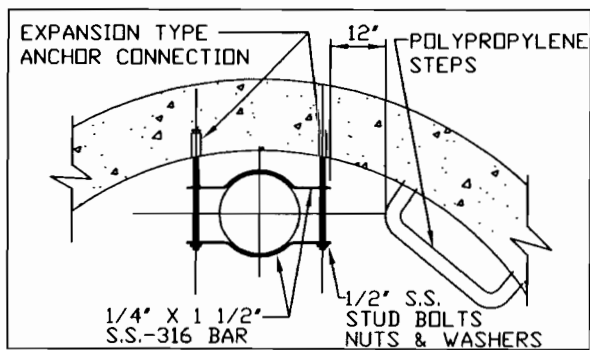
NOTE:
IF DISTANCE FROM INSIDE DROP TO
MANHOLE BENCH IS LESS THAN 5',
NO ADDITIONAL LADDER IS REQUIRED
AND A 60" DIAMETER MANHOLE MAY
BE SUBSTITUTED.



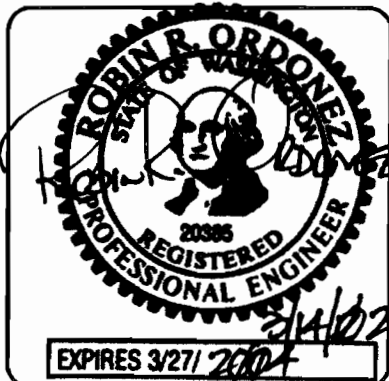
PLAN

NOTES

1. BRACKETS SHALL BE PLACED A MAXIMUM OF 10' APART VERTICAL, DROP SHALL BE 8" DIA. MIN. FOR MAIN LINES & 6" DIA. FOR SIDE SEWERS.
2. INVERT TO BE RECHANNELED AS REQUIRED.
3. USE DEAD-END CHANNEL FOR MANHOLES WITH INVERT LINERS.
4. TWO INSIDE DROP STRUCTURES REQUIRE A 72"Ø MANHOLE.
5. ADDITIONAL LADDER MUST BE INSTALLED ONE FOOT FROM THE DROP STRUCTURE (MEASURED EDGE TO EDGE) AND BUILT FROM THE MANHOLE SHELF UP TO THE GU300 DROP.
6. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
7. THE INTERIOR AND EXTERIOR WALLS OF ALL MANHOLES WITH PIPES 15" NOMINAL INSIDE DIAMETER LARGER AND/OR WITH FORCE MAIN CONNECTION(S) SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.



BRACKET



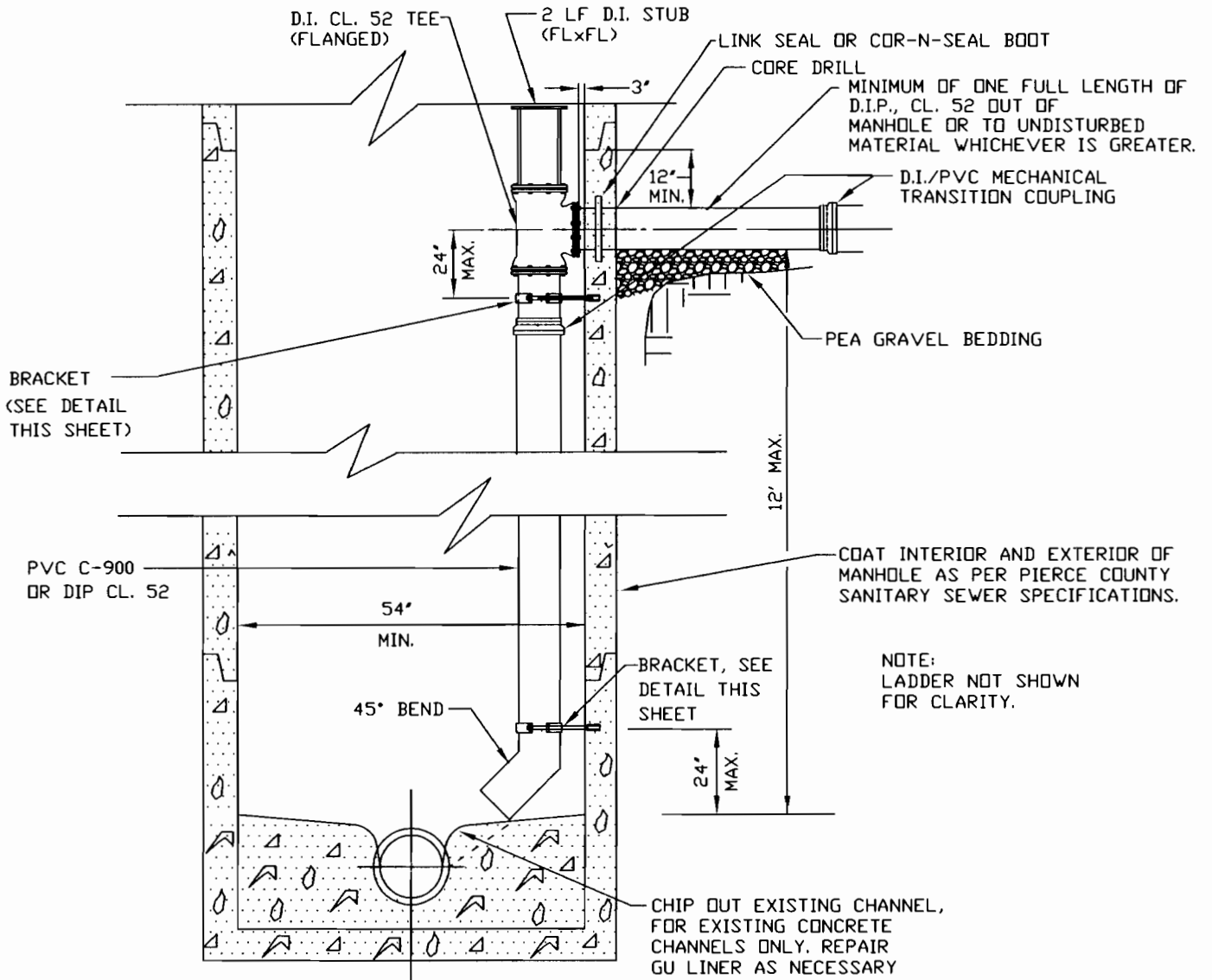
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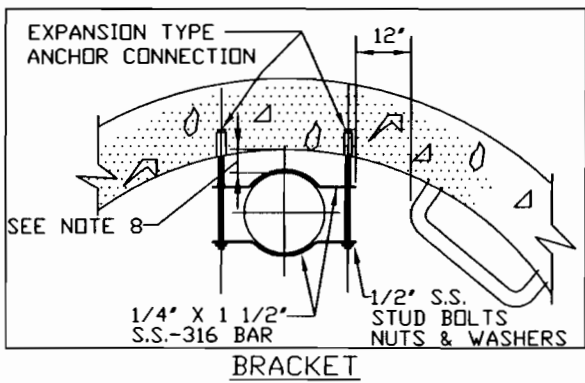
SANITARY SEWER
6" & 8" DIAMETER GU300
TWO INSIDE DROP STRUCTURES
FOR GRAVITY CONNECTION

STD. DWG. NO.
S1-008-02

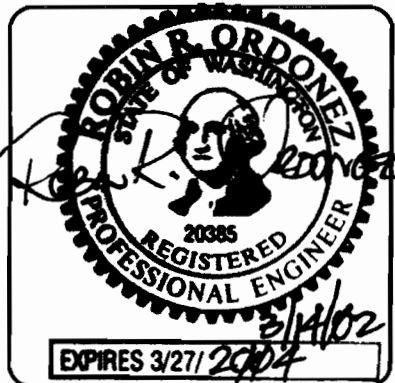


NOTES

1. BRACKETS SHALL BE PLACED A MAXIMUM OF 10' APART VERTICAL, DROP SHALL BE 8" DIA. MIN. FOR MAIN LINES & 6" DIA. FOR SIDE SEWERS.
2. INVERT TO BE RECHANNELED AS REQUIRED.
3. USE DEAD-END CHANNEL FOR MANHOLES WITH INVERT LINERS.
4. ONLY ONE INSIDE DROP STRUCTURE PER 54"Ø MANHOLE.
5. TWO INSIDE DROP STRUCTURES REQUIRE A 72"Ø MANHOLE.
6. LADDER MUST BE INSTALLED ONE FOOT FROM THE DROP STRUCTURE (MEASURED EDGE TO EDGE) FROM THE MANHOLE SHELF TO THE DUCTILE IRON TEE.
7. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE COATED PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
8. THE DISTANCE FROM MANHOLE WALL TO INSIDE DROP SHALL 7.45' FOR 6"Ø, 7.4' FOR 8"Ø, AND 8.2' FOR 10"Ø D.I.P.



BRACKET



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 WASTEWATER UTILITY DIVISION
 9116 GRAVELLY LAKE DRIVE
 LAKEWOOD, WASHINGTON 98499-3190
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STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

SANITARY SEWER
 6", 8" & 10" DIAMETER D.I.
 TEE INSIDE DROP STRUCTURE
 FOR FORCE MAIN CONNECTION

STD. DWG. NO.
 S1-009-01

6' MIN. FROM
EDGE OF CONC.
BLOCK TO PIPE.

MINIMUM, ONE FULL LENGTH OF
DUCTILE IRON PIPE (CLASS 52)
OR TO UNDISTURBED MATERIAL
WHICHEVER IS GREATER.

D.I.P. TEE, CL. 52
(FLANGED)

LINK SEAL OR COR-N-SEAL BOOT

1/2 BLIND FLANGE AS DAM

D.I./PVC MECHANICAL
TRANSITION COUPLING

PEA GRAVEL
BEDDING

D.I.P., CL. 52

BACKFILL WITH COMPACTED MATERIAL
AS DIRECTED BY THE ENGINEER

6' MIN.

1' MAX.

12' MAX.

CONCRETE CLASS 3000
(1-1/2' MAX. AGGREGATE SIZE)

D.I.P. 90° SHORT RADIUS BEND, CL. 52

6' MIN.

PEA GRAVEL,
4' MIN., 8' MAX.

UNDISTURBED NATIVE MATERIAL

NOTE

1. LADDER MUST BE INSTALLED ONE FOOT FROM
DROP STRUCTURE FROM THE MANHOLE SHELF
TO THE DUCTILE IRON TEE.
2. ALL DUCTILE IRON PIPES AND FITTINGS SHALL BE COATED
PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.



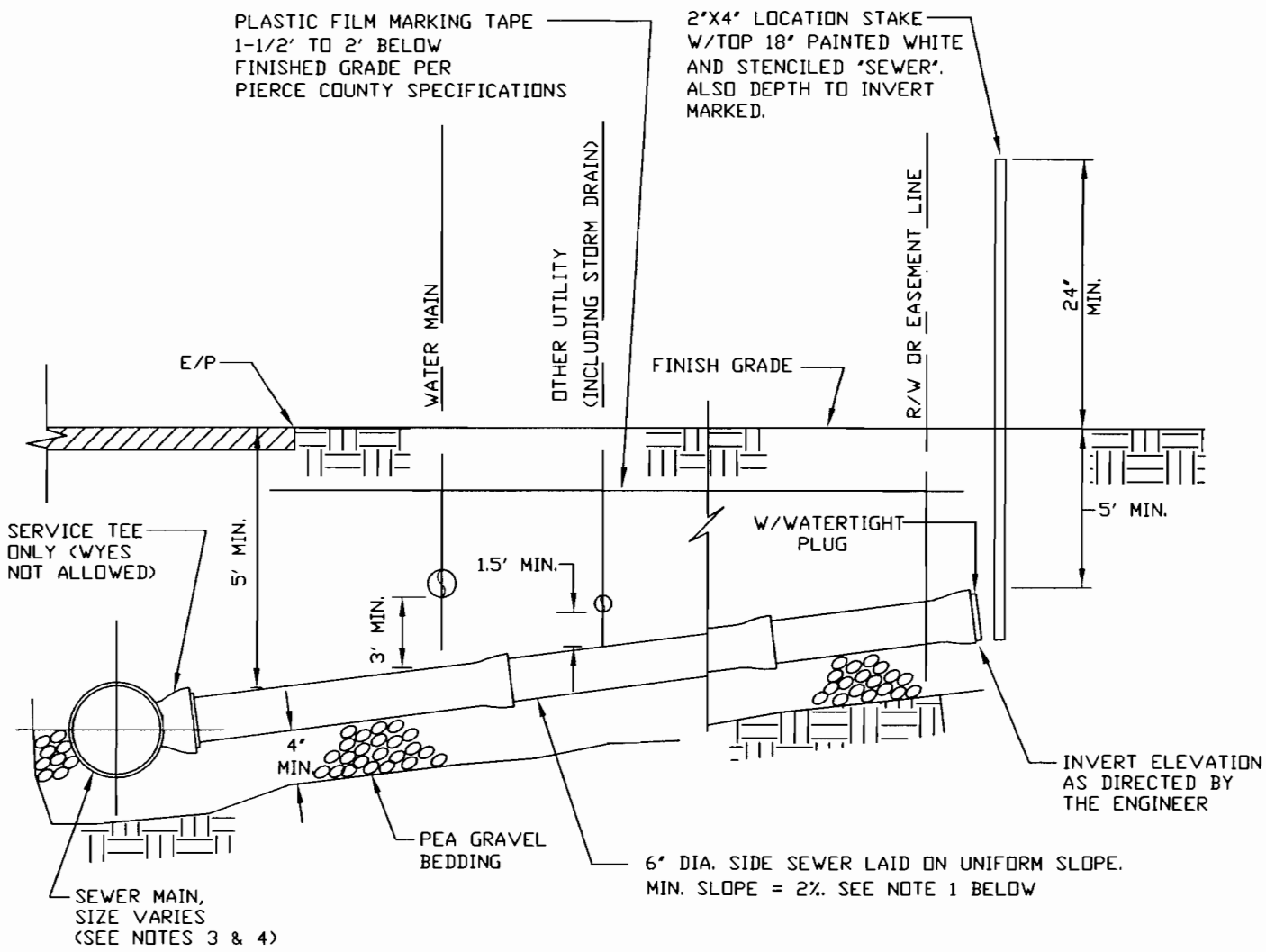
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STANDARD DETAILS

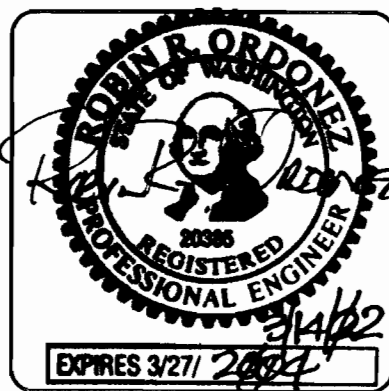
SANITARY SEWER
OUTSIDE DROP STRUCTURE

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
S1-010-01



- NOTES:
1. ACCEPTABLE PIPE TYPES FOR SIDE SEWERS ARE POLYVINYL CHLORIDE ASTM 3034 SDR 35 OR DUCTILE IRON PIPE CL. 52.
 2. BEDDING FOR POLYVINYL CHLORIDE AND CLASS 52 DUCTILE IRON PIPE SHALL BE PEA GRAVEL ONLY.
 3. TEES SHALL BE INSTALLED ON ALL NEW CONSTRUCTION OF SEWER MAINS LESS THAN 18" IN DIAMETER.
 4. NO SIDE SEWER TAPS PERMITTED ON 18-INCH DIAMETER AND GREATER PIPELINES.



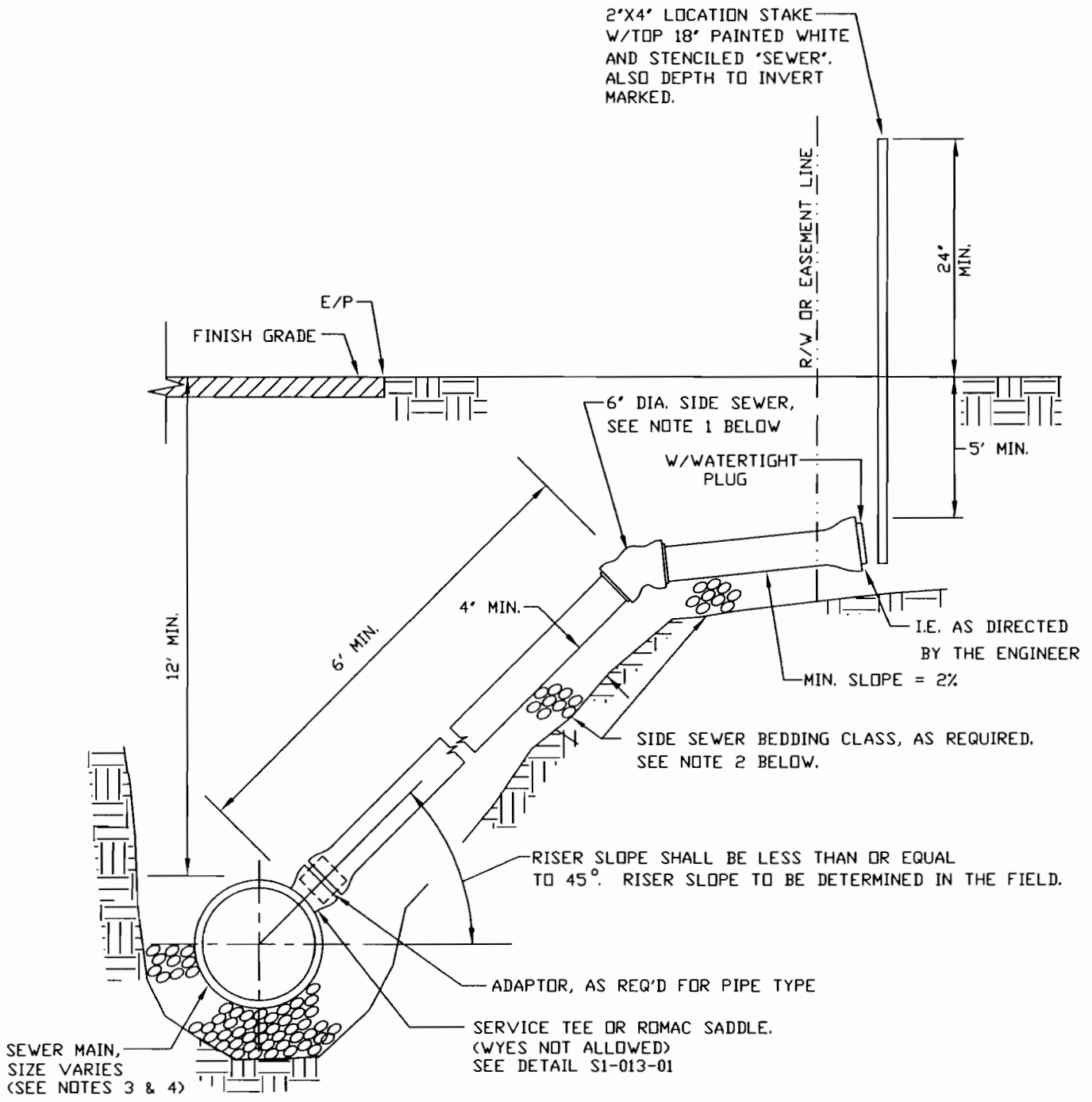
PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
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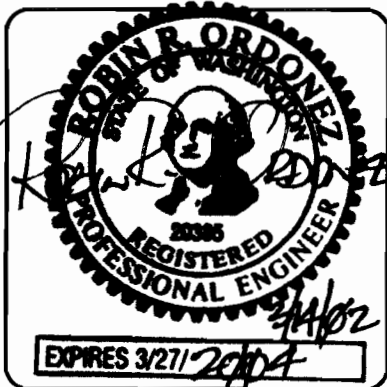
**NORMAL SIDE SEWER
 INSTALLATION
 FOR NEW MAINS**

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
 S1-011-01



- NOTES:
1. ACCEPTABLE PIPE TYPES FOR SIDE SEWERS ARE POLYVINYL CHLORIDE ASTM 3034 SDR 35 OR DUCTILE IRON PIPE CL. 52.
 2. BEDDING FOR POLYVINYL CHLORIDE AND CLASS 52 DUCTILE IRON PIPE SHALL BE PEA GRAVEL ONLY.
 3. TEES SHALL BE INSTALLED ON ALL NEW CONSTRUCTION OF SEWER MAINS LESS THAN 18" IN DIAMETER.
 4. NO SIDE SEWER TAPS PERMITTED ON 18-INCH DIAMETER AND GREATER PIPELINES.



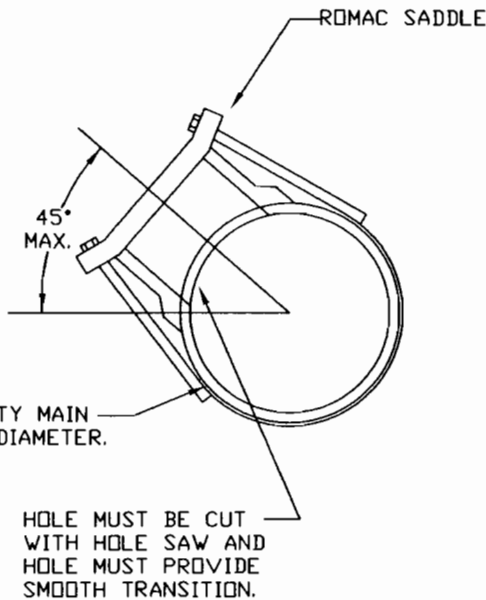
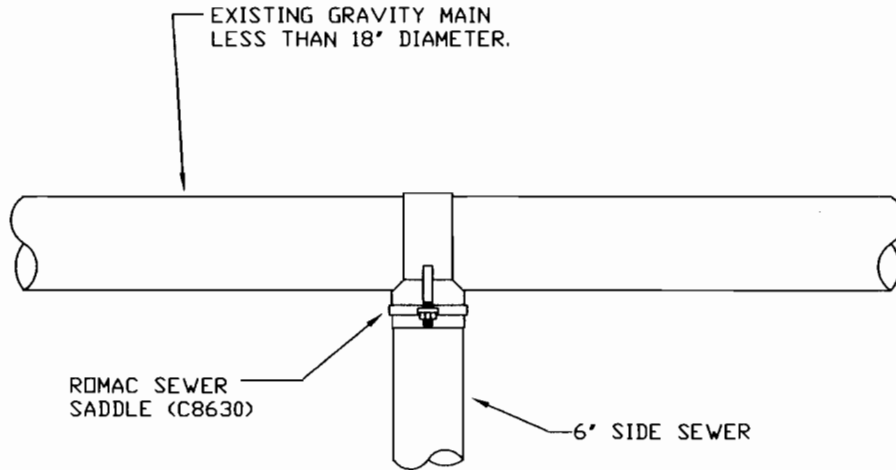
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STANDARD DETAILS

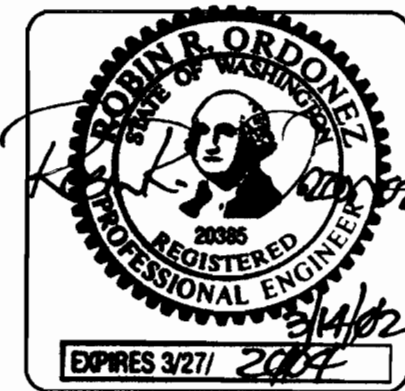
ALTERNATE SIDE SEWER INSTALLATION FOR NEW MAINS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
S1-012-01



- NOTES:
1. FOR EXISTING MAINS ONLY.
 2. ALL NUTS AND BOLTS SHALL BE STAINLESS STEEL.
 3. NO SIDE SEWER TAPS PERMITTED ON 18-INCH DIAMETER AND GREATER PIPELINES.



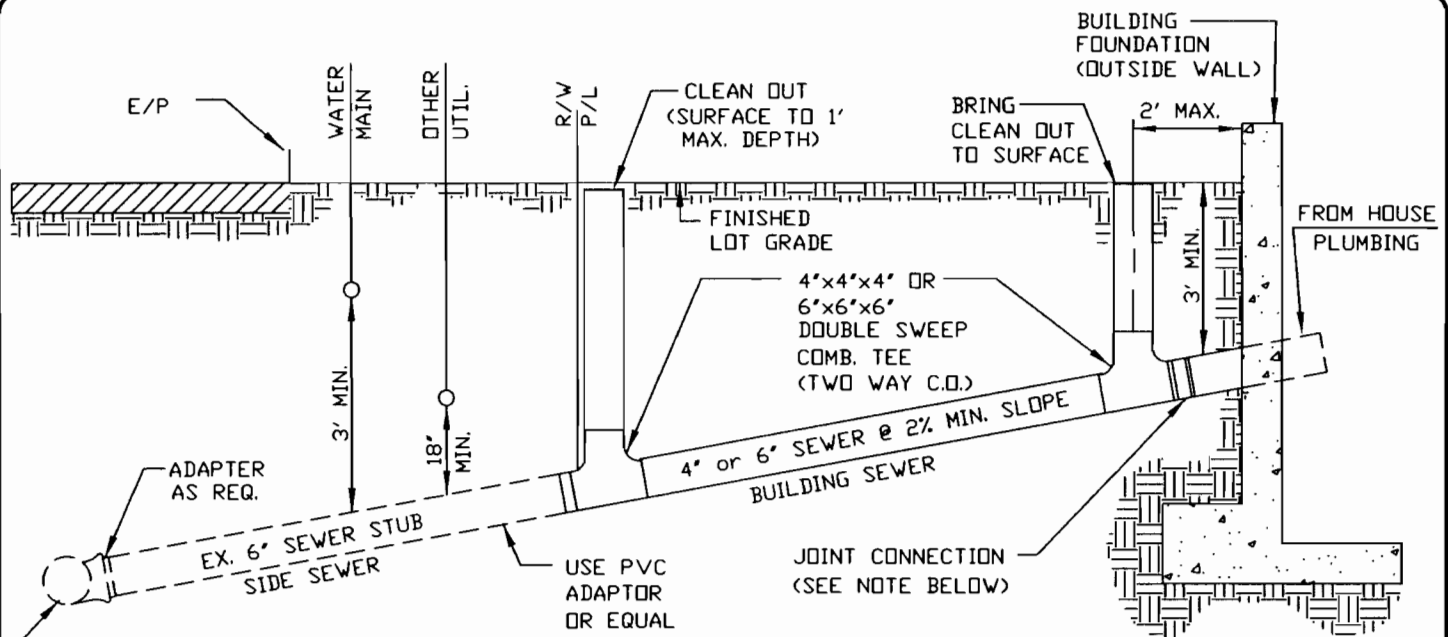
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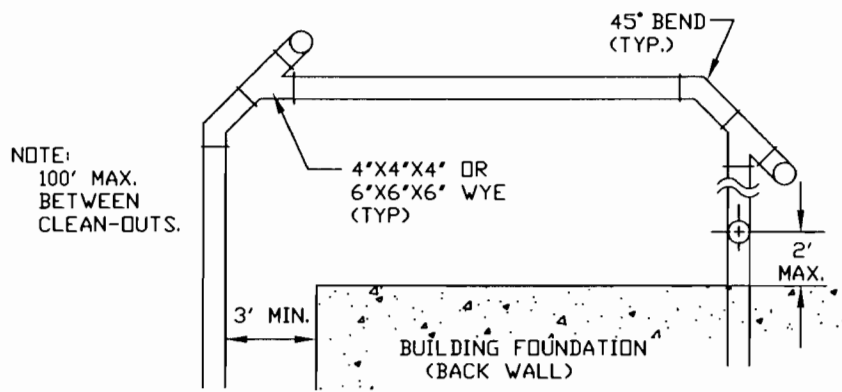
WET TAP FOR GRAVITY SIDE SEWER

STD. DWG. NO.
 S1-013-01

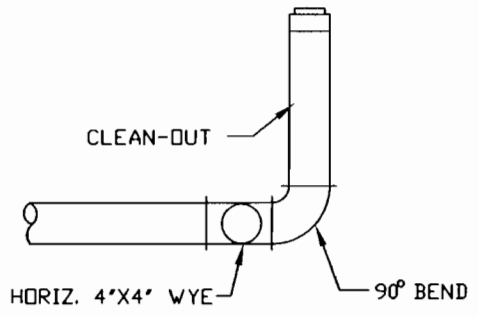


TYPICAL SIDE/BUILDING SEWER PROFILE

- NOTES:
- 1.) ABS TO PVC USE PVC ADAPTOR, OR APPROVED EQUAL.
 - 2.) PVC TO C.I.P. OR CONC. USE FERNCO w/STAINLESS STEEL CLAMPS OR EQUAL.
 - 3.) NO FERNCO TYPE COUPLINGS WILL BE ALLOWED.



TYPICAL BUILDING SEWER PLAN

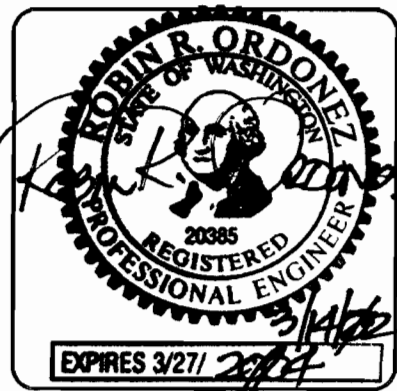


CLEAN-OUT CONNECTION PROFILE

BEDDING MATERIAL SHALL BE CLEAN, SOUND, FREE DRAINING, PEA GRAVEL WITH 100% PASSING THE 1/2" SIEVE. INITIAL BACKFILL SHALL CONSIST OF SELECT EARTH MATERIAL, FREE OF ORGANIC MATERIAL LARGER THAN 1 1/2".

INITIAL TRENCH BACKFILL

THESE DETAILS PLUS THE PIERCE COUNTY ADMINISTRATION CODE, CURRENT ISSUE, CONSTITUTE TOTAL DESIGN AND CONSTRUCTION REQUIREMENTS.



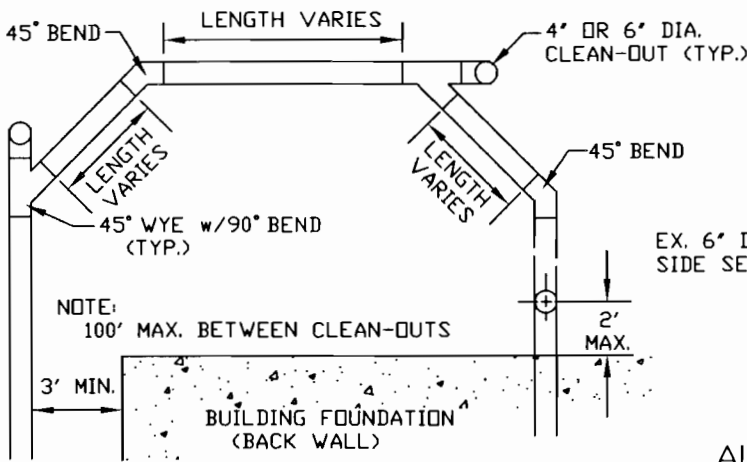
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STANDARD DETAILS

DATE	SCALE
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REVISED:	

SIDE SEWER LAYOUT

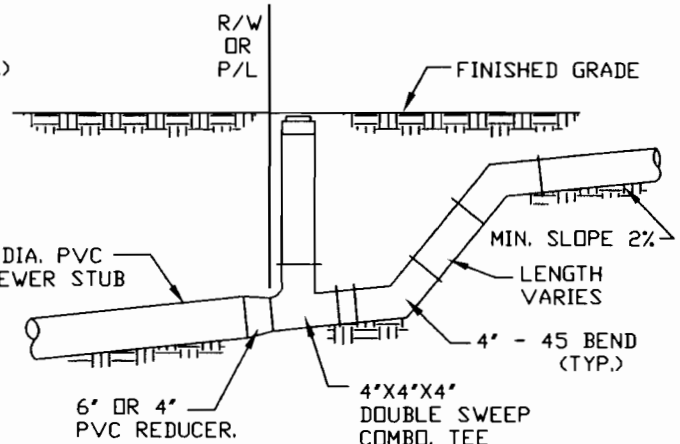
STD. DWG. NO.
 S1-014-01



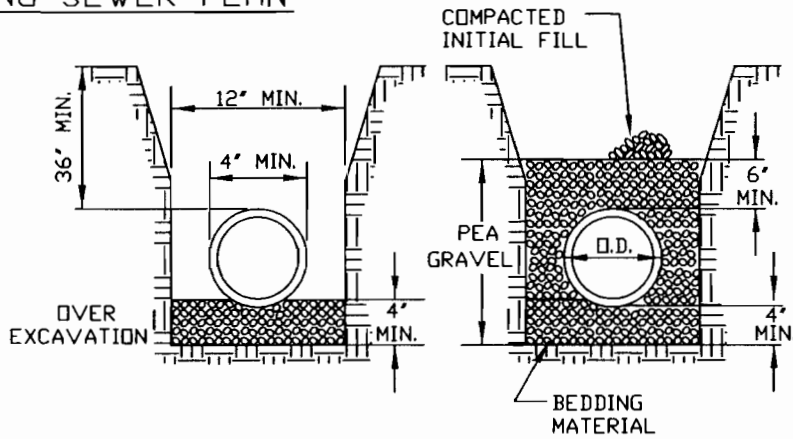
NOTE:
100' MAX. BETWEEN CLEAN-OUTS

NOTE: PREFER TO RUN PLUMBING TO FRONT WALL OF BLDG. & CONNECT SEWER THERE.

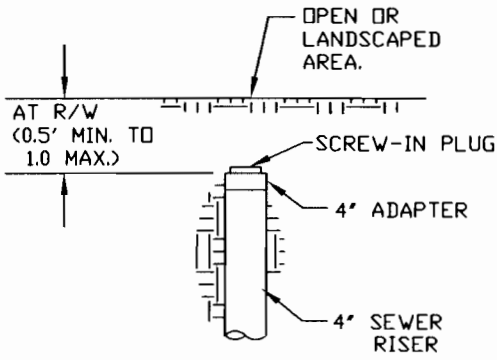
ALTERNATE BUILDING SEWER PLAN



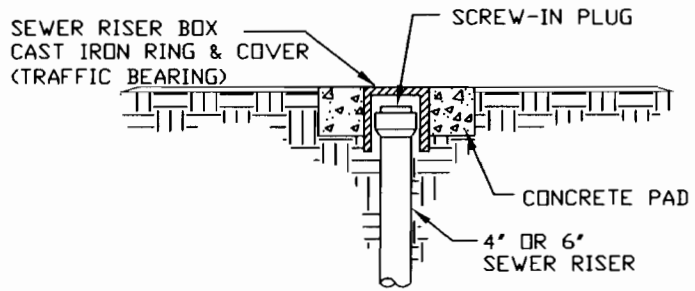
ALTERNATE BUILDING SEWER PROFILE



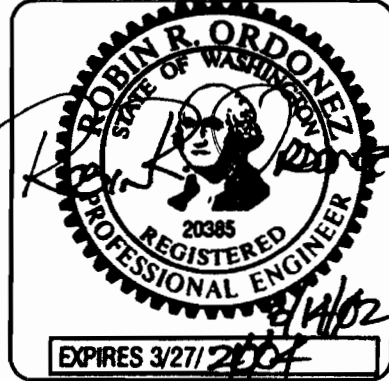
INSTALLATION BEDDING CROSS-SECTION



CLEAN-OUT COVER DETAIL IN OPEN AREA



CLEAN-OUT COVER DETAIL IN PAVEMENT



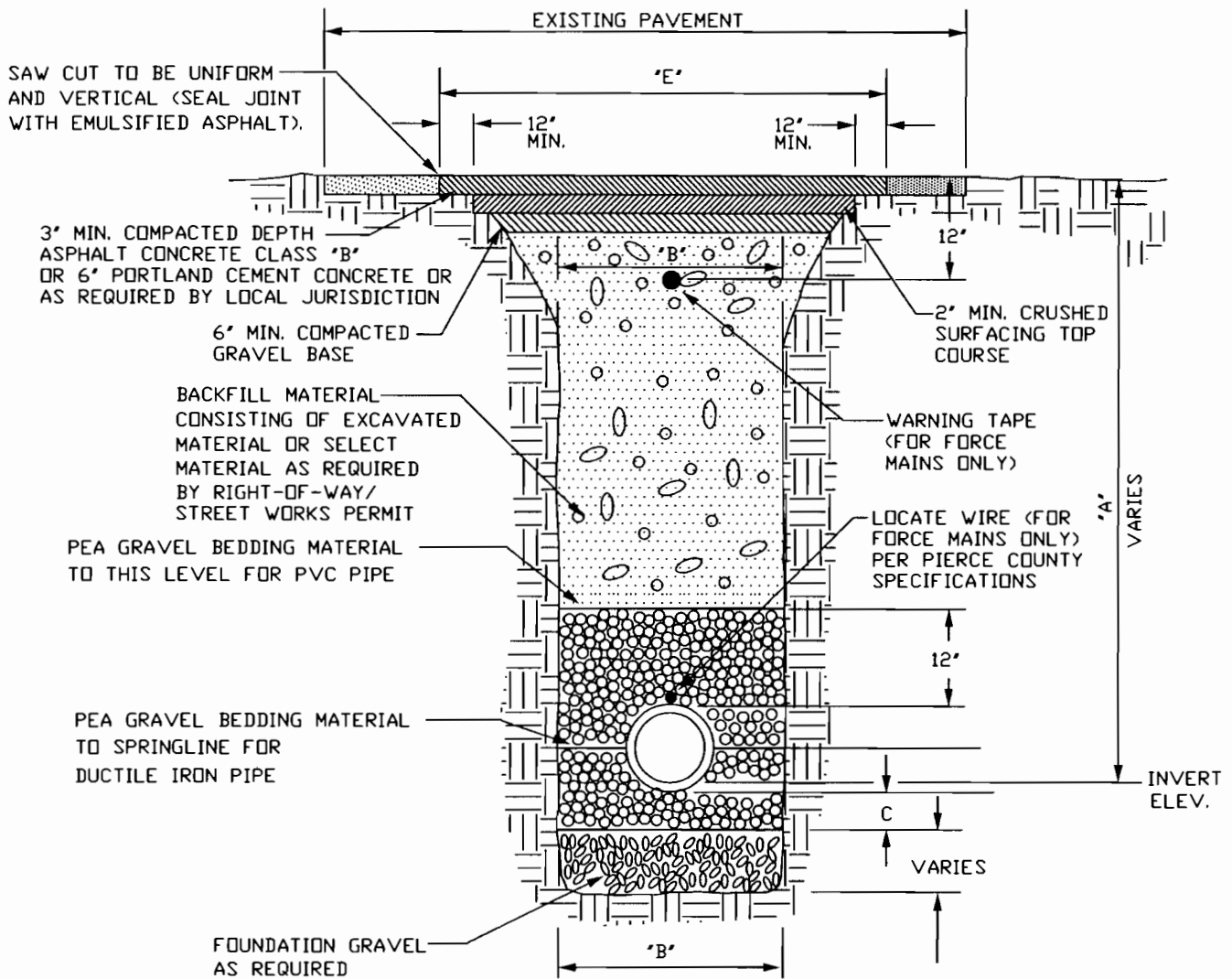
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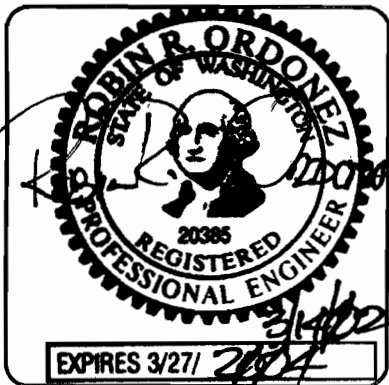
SIDE SEWER LAYOUT

STD. DWG. NO.
 S1-014-02



NOTES:

- (1) THE TYPICAL TRENCH SECTION SHOWN IS FOR THE PAYMENT LIMITS FOR FOUNDATION GRAVEL, GRAVEL BASE USED FOR TRENCH BACKFILL, AND PAVEMENT RESTORATION. PAYMENT FOR ALL FOUNDATION GRAVEL AND GRAVEL BASE USED FOR TRENCH BACKFILL SHALL BE PAID BY THE CUBIC YARD AS COMPUTED FROM THE MEASUREMENT OF THE CONSTRUCTION TRENCH SECTION, TO THE MAXIMUM WIDTH, 'B', AS INDICATED IN THE TABLE ON SHEET S1-013-02.
- (2) THE COST OF FURNISHING AND PLACING THE SELECT BEDDING MATERIAL SHALL BE INCLUDED IN THE UNIT BID FOR THE PIPE IN PLACE.
- (3) IN THE EVENT THAT A PORTION OF THE PAVEMENT PAYMENT WIDTH, 'E', FALLS OUTSIDE THE EXISTING PAVEMENT, THEN ONLY THAT WIDTH COVERED BY THE EXISTING PAVEMENT SHALL BE PAID.
- (4) IN THE EVENT THAT A PORTION OF THE PAYMENT WIDTH IS IN A GRAVEL SHOULDER THEN THAT PORTION SHALL BE PAID AS SHOULDER REPAIR.
- (5) WHERE A 'NEW ROADWAY SECTION' IS PROPOSED, THE PAVEMENT PAYMENT WIDTH SHALL BE THE LESSER OF THE EXISTING PAVEMENT WIDTH OR AS SHOWN ON THE ROADWAY SECTION ON THE APPROVED PLANS.
- (6) ALL PATCHES ACROSS CITY/COUNTY ROADS, OR ROAD APPROACHES IN CITY/COUNTY RIGHT-OF-WAY SHALL CONFORM TO THIS DETAIL.
- (7) TEMPORARY PATCH TO BE BACKFILLED AND COMPACTED TO EXISTING GROUND LINE AND PATCHED WITH TEMPORARY COLD MIX ASPHALT.
- (8) FOR LONGITUDINAL CUT, THE CITY/COUNTY MAY REQUIRE THE ENTIRE DRIVING LANE TO BE OVERLAYED.



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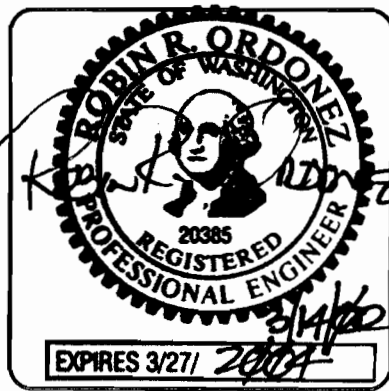
STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER
 TYPICAL TRENCH SECTION**

STD. DWG. NO.
 S1-015-01

PIPE DIAMETER	"E"																	"B"	"C"
	"A"	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'		
4"	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	22'	3'-4"	4'
6"	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	22'	3'-4"	4'
8"	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	22'	3'-4"	4'
10"	5.5'	6.5'	7.5'	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17'	18'	19'	20'	22'	3'-4"	4'
12"	5.5'	6.5'	7.5'	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17'	18'	19'	20'	22'	3'-4"	4'
14"	5.5'	6.5'	7.5'	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17'	18'	19'	20'	22'	3'-4"	4'
15"	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	3'-4"	4'
16"	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	3'-4"	4'
18"	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	3'-9"	4'
21"	6.5'	7.5'	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17.5'	18.5'	19.5'	20.5'	21.5'	22.5'	4'-1 1/2"	4'
24"	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	4'-6"	4'
27"	7.5'	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17.5'	18.5'	19.5'	20.5'	21.5'	22.5'	23.5'	4'-10 1/2"	4'
30"	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	5'-3"	6'
36"	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17.5'	18.5'	19.5'	20.5'	21.5'	22.5'	23.5'	24'	6'-0"	6'
42"	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	6'-9"	6'
48"	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17.5'	18.5'	19.5'	20.5'	21.5'	22.5'	23.5'	24.5'	25'	7'-6"	6'
54"	OPEN-TRENCH EXCAVATION SHALL REQUIRE FULL PAVEMENT RESTORATION																	8'-5"	6'
72"	OPEN-TRENCH EXCAVATION SHALL REQUIRE FULL PAVEMENT RESTORATION																	10'	6'



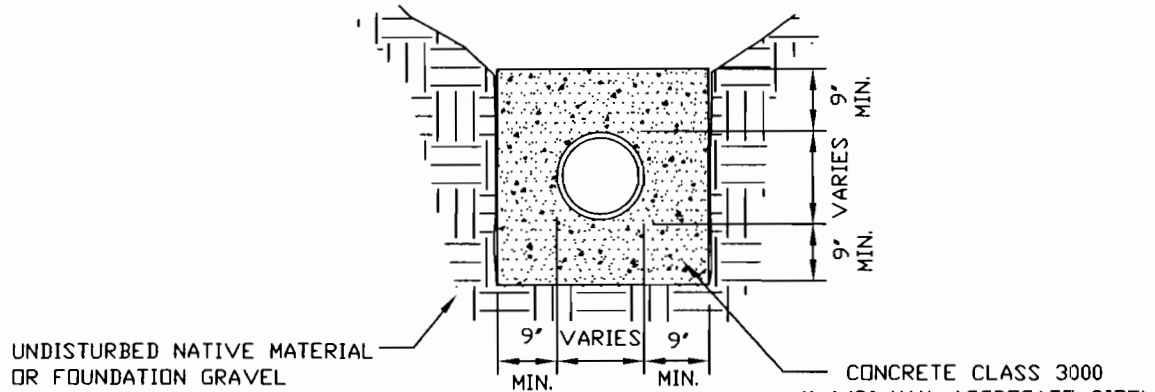
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 (253) 798-4050

STANDARD DETAILS

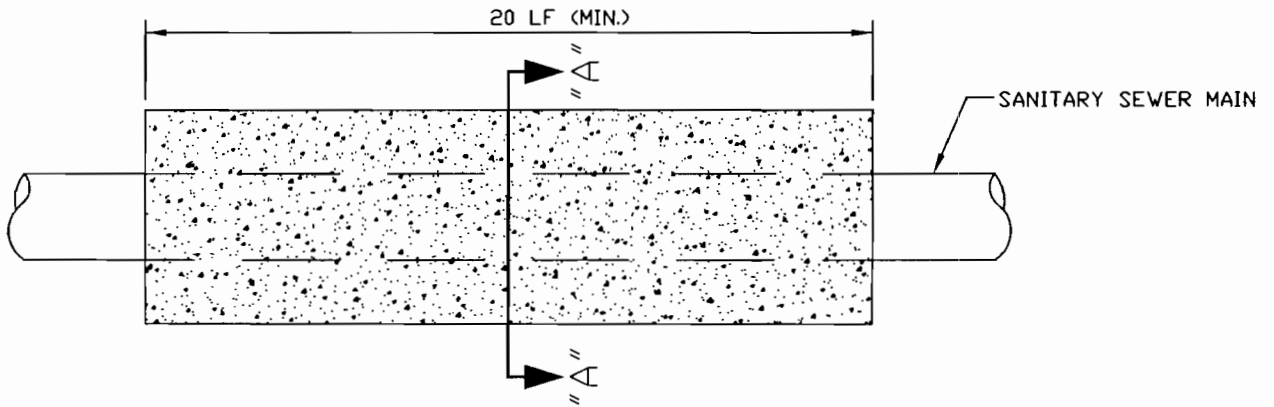
DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER
 TYPICAL TRENCH SECTION
 PAYMENT LIMIT TABLE**

STD. DWG. NO.
 S1-015-02

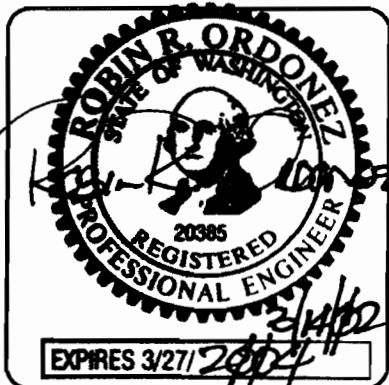


CONCRETE
ENCASEMENT
SECTION A-A



NOTE: CONCRETE ENCASEMENT USED FOR REDUCED VERTICAL SEPARATION FROM OTHER UTILITIES SHALL EXTEND 10' BEYOND EACH SIDE OF THE CROSSING.

PLAN VIEW



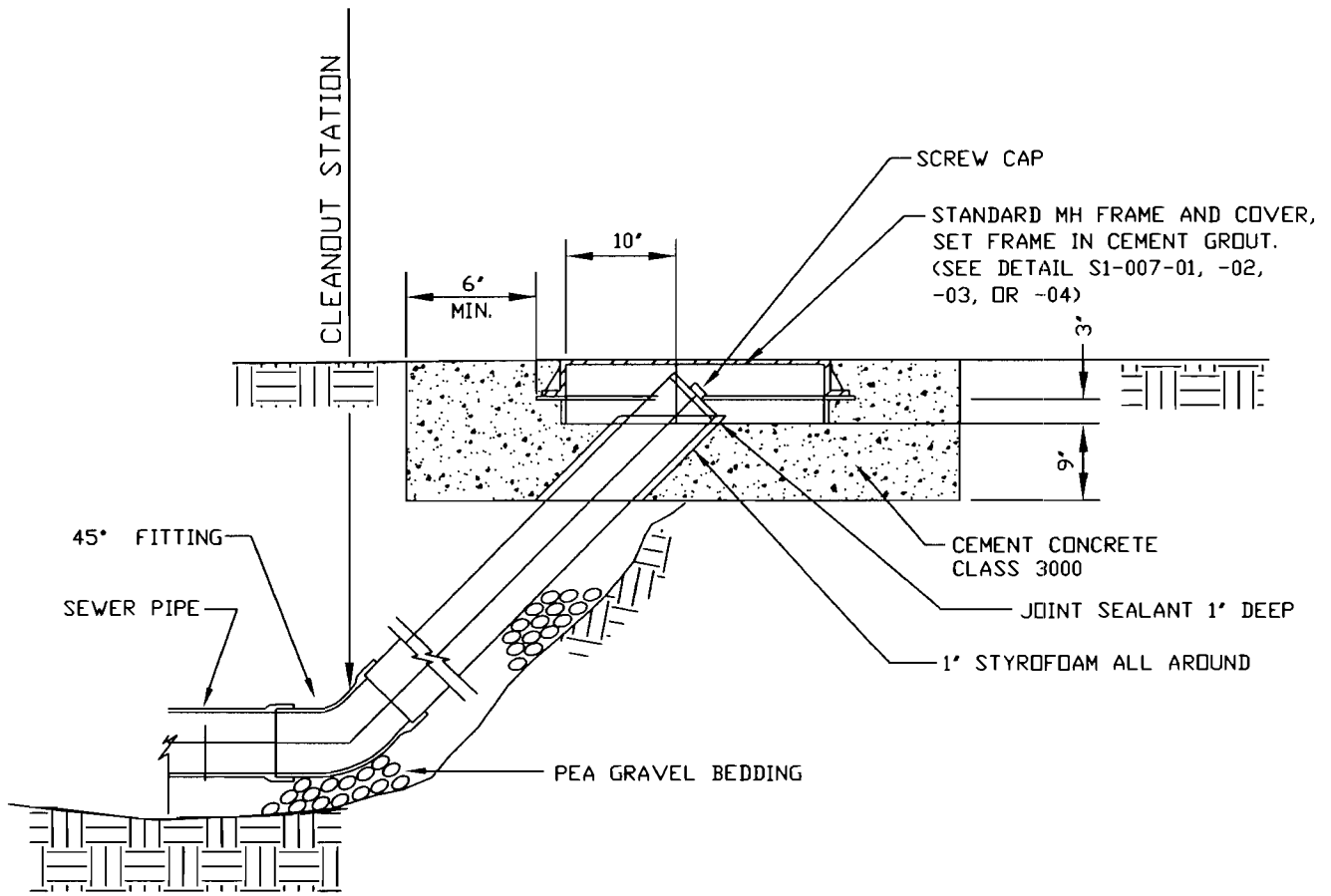
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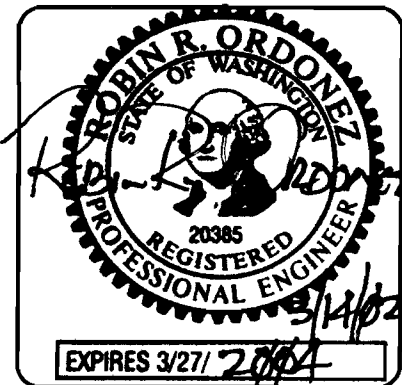
**SANITARY SEWER
CONCRETE ENCASEMENT**

DATE 01/01/2000	SCALE NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
S1-016-01



NOTE: NOT ALLOWED IN PUBLIC RIGHT-OF-WAY OR PRIVATE ROADS, UNLESS APPROVED OTHERWISE.



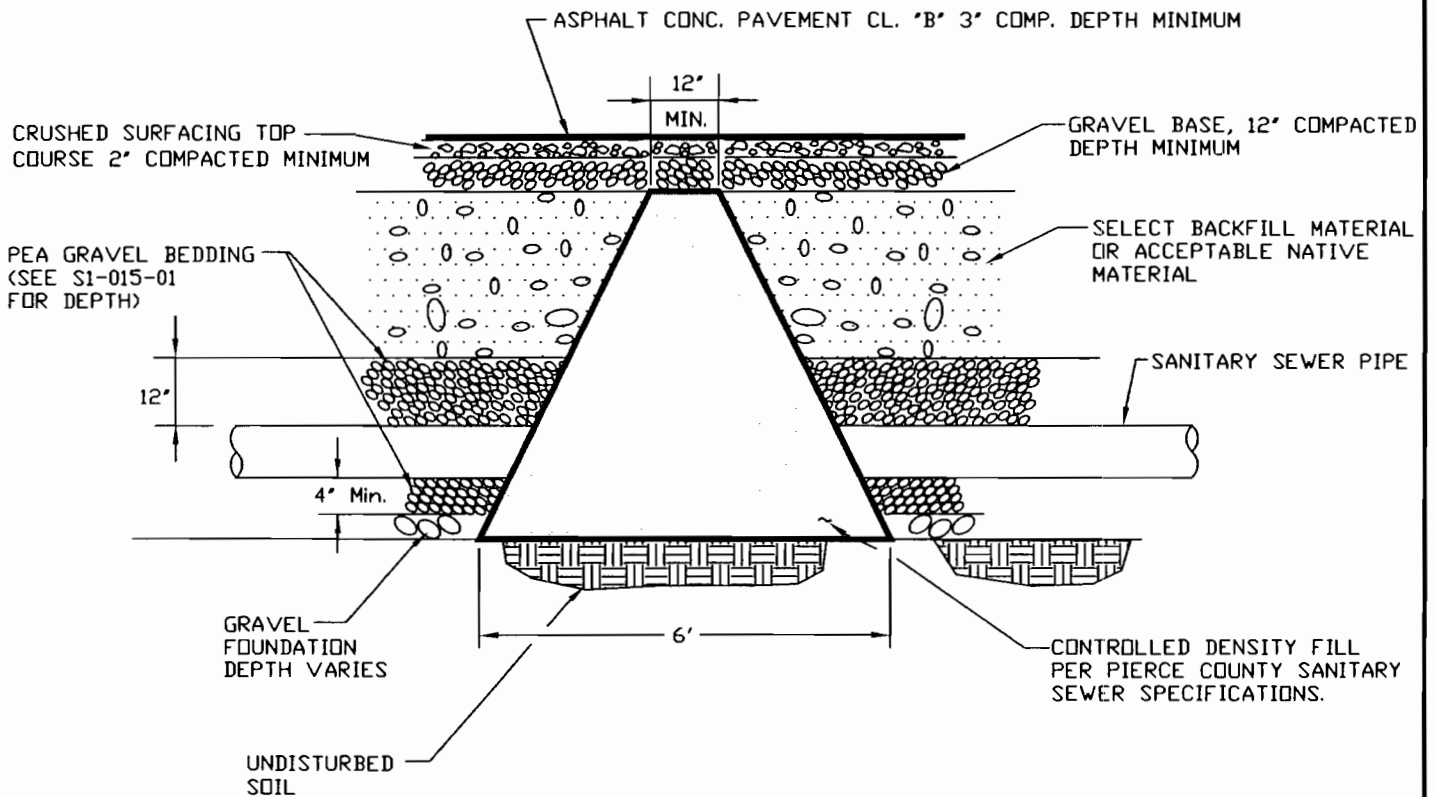
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**SANITARY SEWER
 TEMPORARY CLEANOUT**

STD. DWG. NO.
S1-017-01



NOTE: SEE SHEET S1-015-02 FOR TRENCH WIDTH ("B")

TRENCH DAM DETAIL



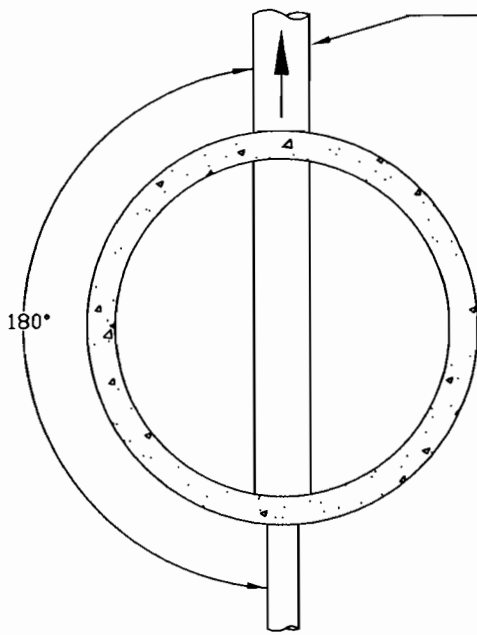
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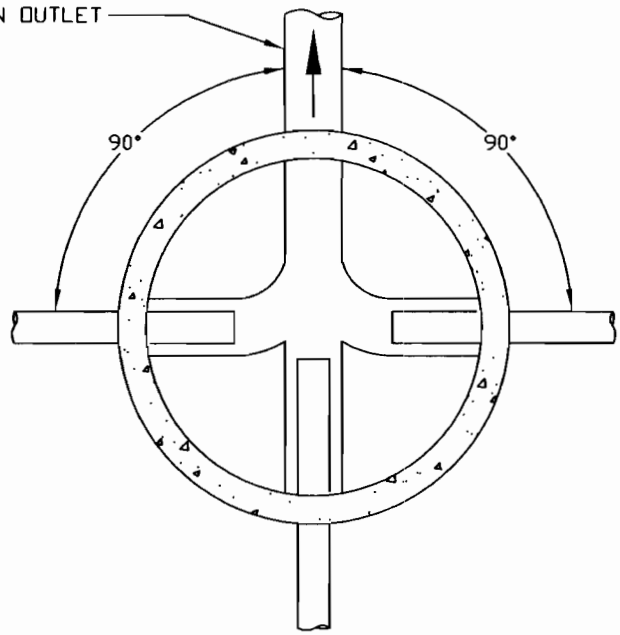
SANITARY SEWER TRENCH DAM

DATE	SCALE
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REVISED:	

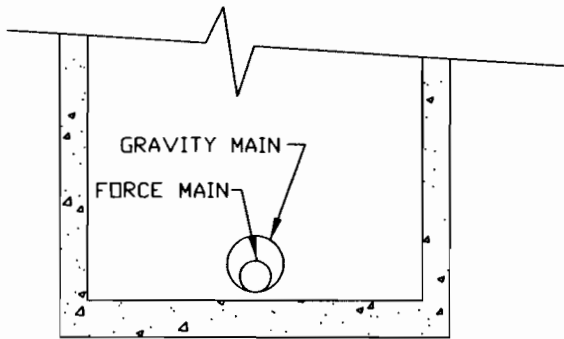
STD. DWG. NO.
S1-018-01



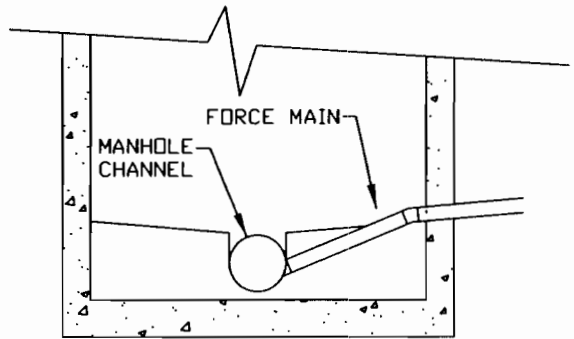
IF FORCE MAIN IS 6"Ø OR GREATER,
FORCE MAIN MUST ENTER AT 180° TO
THE OUTLET PIPE.



IF FORCE MAIN IS LESS THAN 6"Ø,
FORCE MAIN MUST ENTER AT 90°
OR GREATER TO THE OUTLET PIPE.

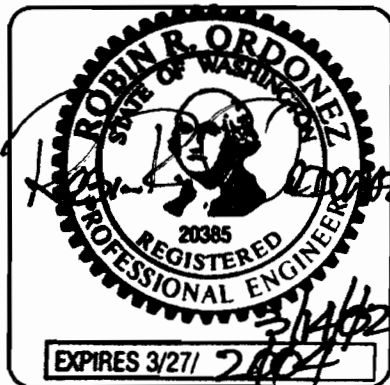


FORCE MAIN INVERT ELEVATION TO MATCH
GRAVITY PIPE INVERT ELEVATION.



FORCE MAIN CONNECTED DIRECTLY
INTO MANHOLE

NOTE: RE-CHANNEL BENCH, AS NECESSARY



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**SANITARY SEWER
FORCE MAIN CONNECTION
TO MANHOLE**

STD. DWG. NO.
S1-019-01

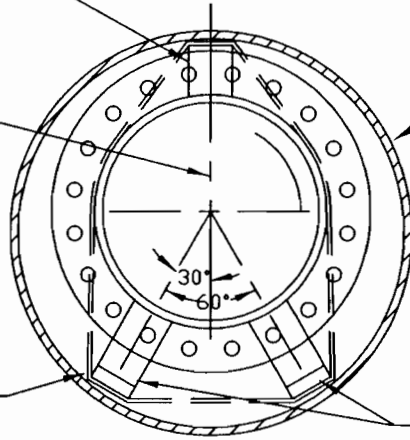
WOOD BLOCKING STRAPPED
TO CARRIER PIPE
(SEE SIDE VIEW BELOW)

CL OF PROPOSED PIPE

STEEL CASING PIPE

STEEL STRAP SECURELY
BOUND IN SLOT PROVIDED

2 PRESSURE TREATED TIMBER
SKIDS FASTENED TO PIPE
WITH STEEL STRAPS.
(SEE DETAIL S1-018-02)



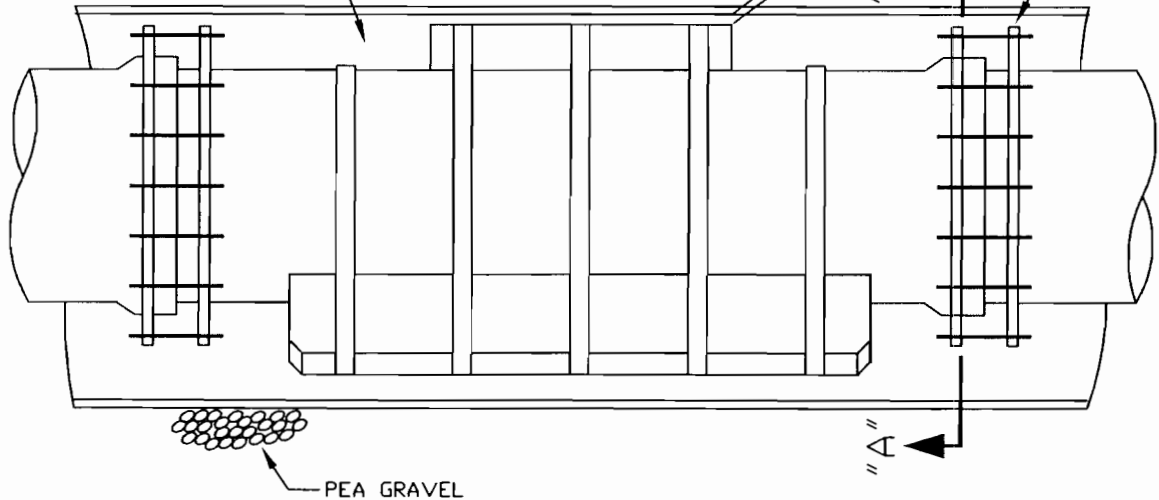
SECTION A-A

NOTE:
SUCCESSIVE LENGTHS OF CASING PIPE SHALL BE
JOINED WITH A CONTINUOUS WELD.

FILL ALL VOIDS WITH
NON-SHRINK GROUT OR SAND.

2" MAX.

RESTRAINING
JOINT

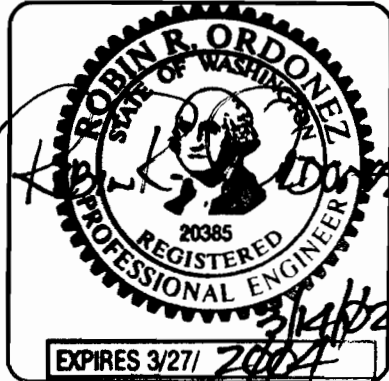


PEA GRAVEL

SIDE VIEW

NOTE:
USE RESTRAINED JOINTS FOR
CARRIER PIPE IF BOTTOM IS AT
OR BELOW THE NORMAL GROUND
WATER ELEVATION AT THE
PARTICULAR INSTALLATION LOCATION.

NOTE:
SEAL END OF CASING PIPE TO
SANITARY SEWER PIPE PER
SECTION 4 OF PIERCE COUNTY
SANITARY SEWER SPECIFICATIONS.



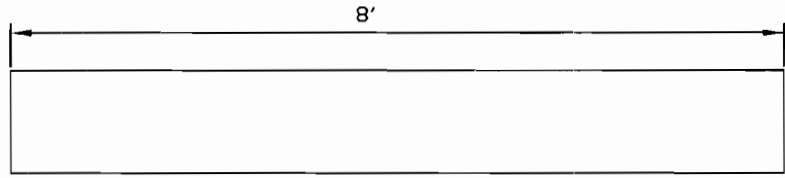
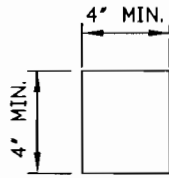
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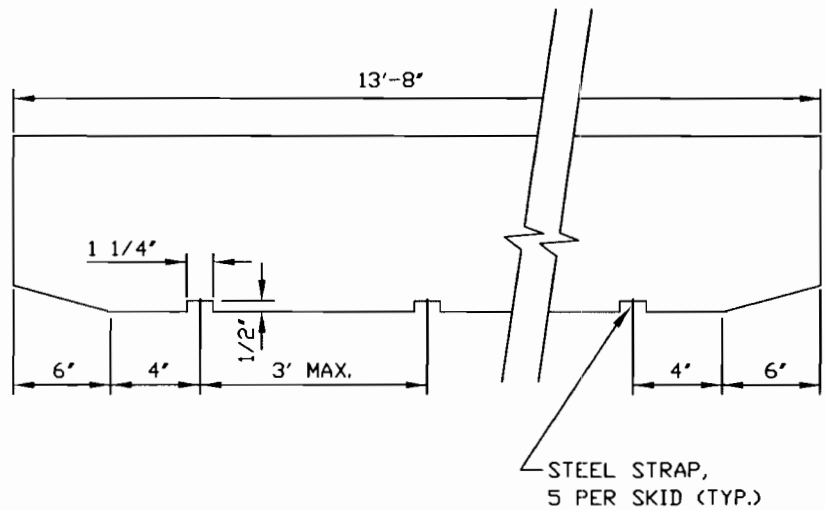
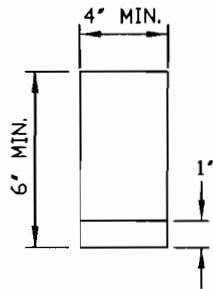
DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER
SUPPORT FOR CARRIER
PIPE INSIDE CASING**

STD. DWG. NO.
S1-020-01

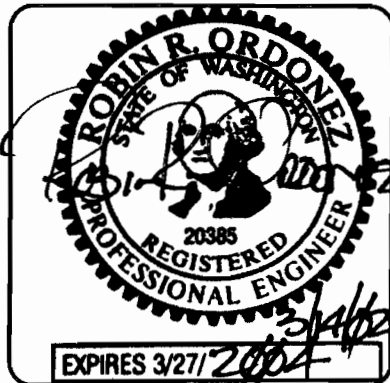


TOP BLOCK DETAIL



SKID DETAIL

NOTE:
 SKIDS ARE TO BE THOROUGHLY SEASONED WESTERN RED CEDAR
 OR PRESSURE TREATED DOUGLAS FIR. PREFABRICATED STEEL
 PIPE SUPPORTS MAY BE USED INSTEAD IF TIMBERS.
 SEE PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

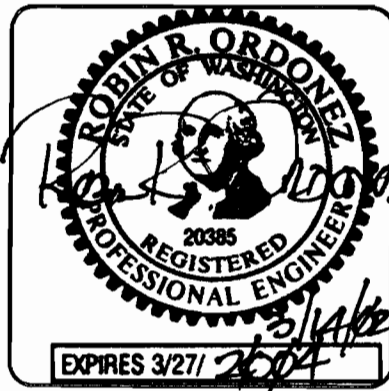
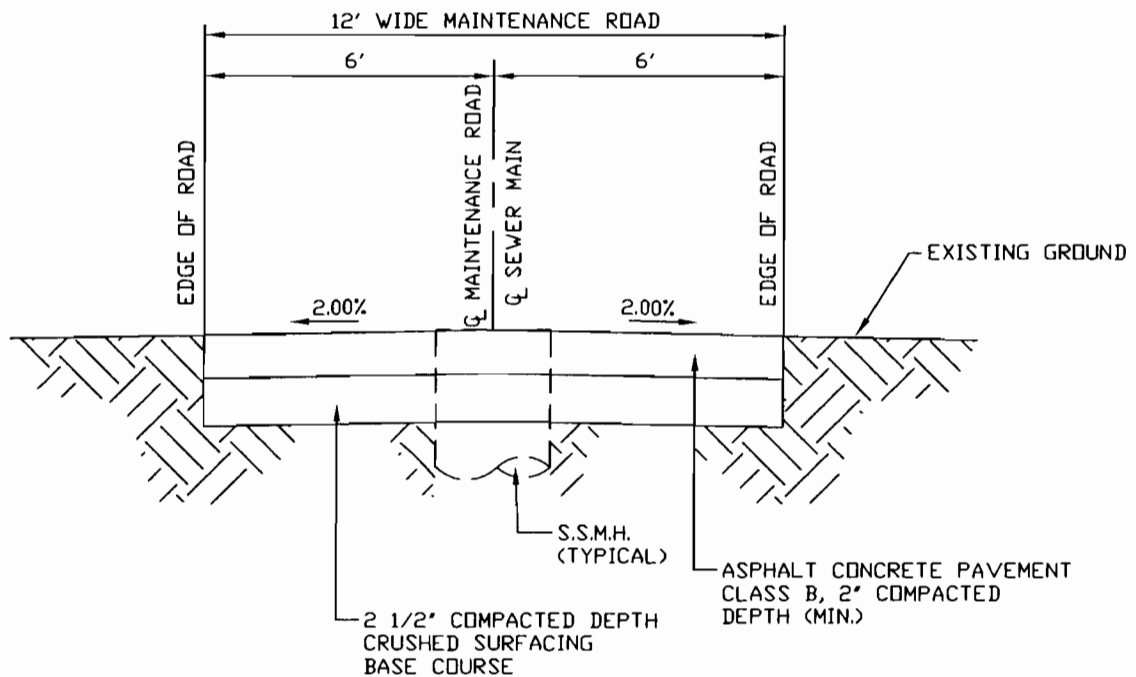
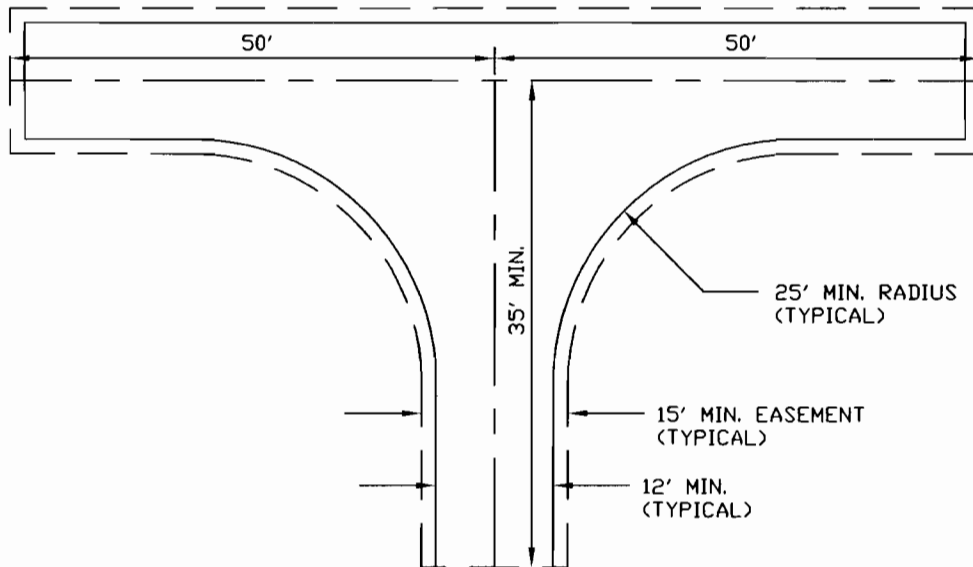


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**SANITARY SEWER
 WOOD BLOCK DETAIL
 FOR CASING PIPE**

DATE 01/01/2000	SCALE NTS
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REVISED:	

STD. DWG. NO.
S1-020-02



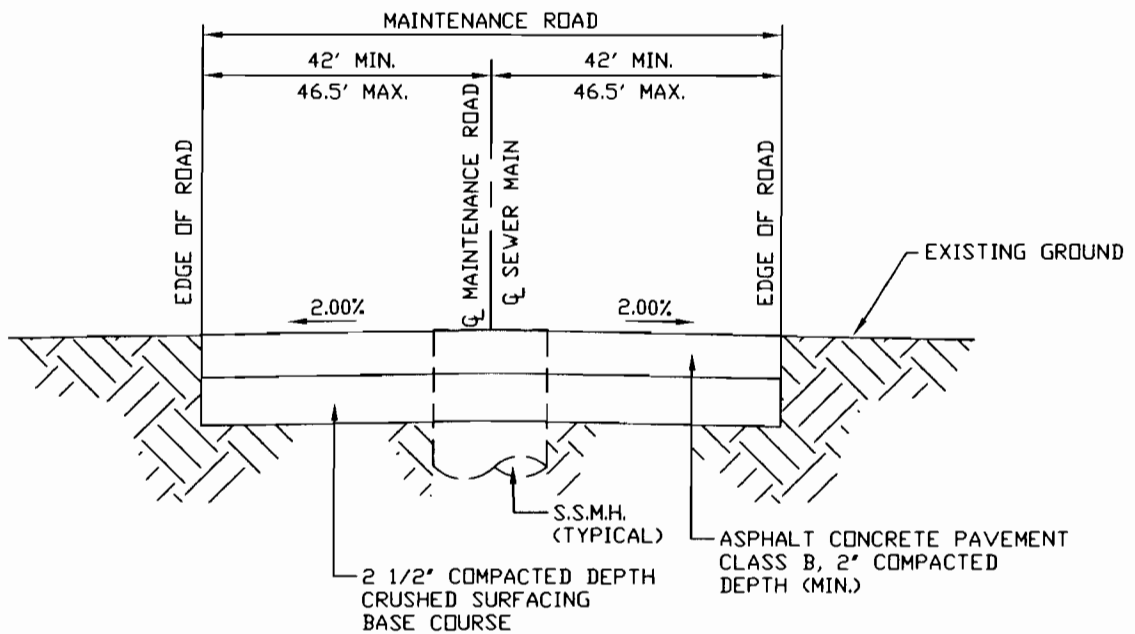
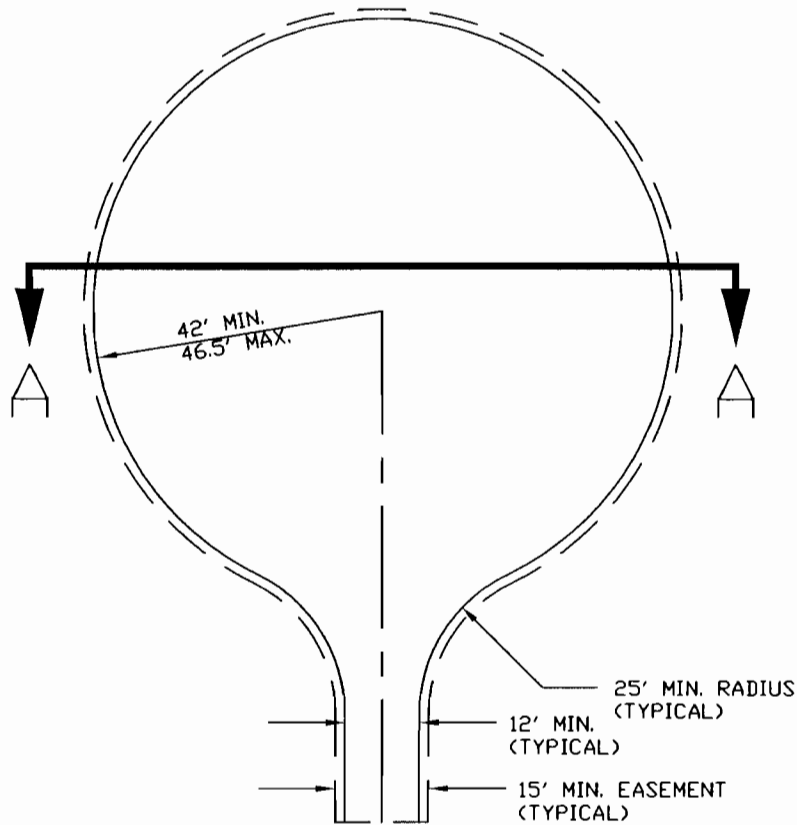
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**PAVED ACCESS MAINTENANCE
 ROAD DETAIL WITH HAMMERHEAD**

STD. DWG. NO.
S1-021-01



SECTION A-A



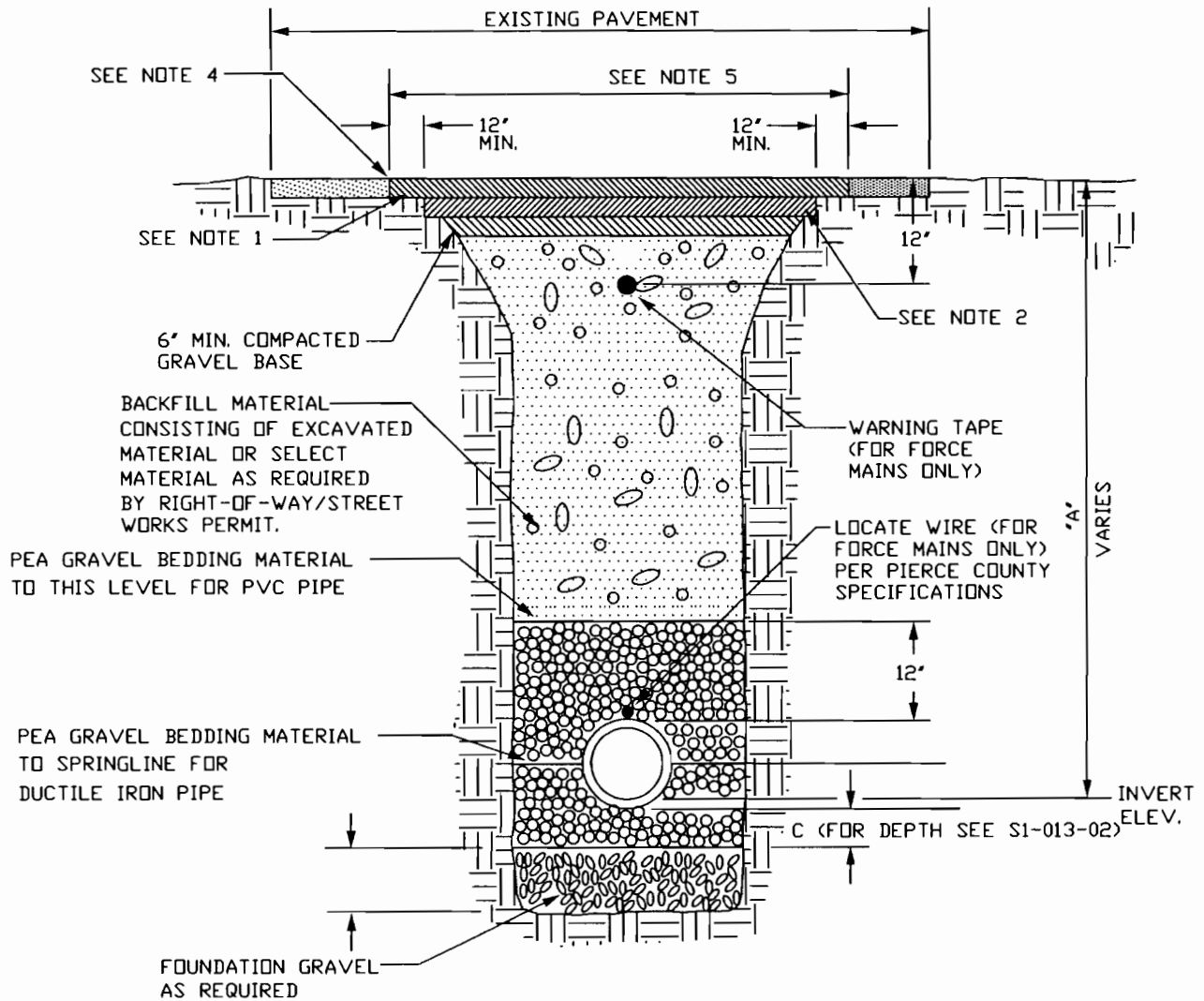
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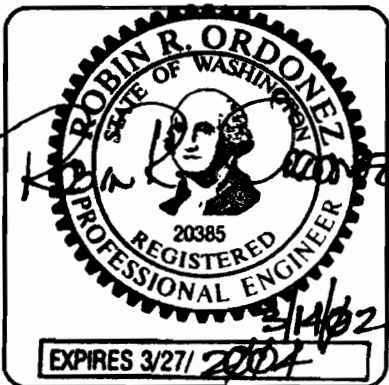
**PAVED ACCESS MAINTENANCE
 ROAD DETAIL WITH CUL-DE-SAC**

STD. DWG. NO.
S1-021-02



NOTES:

- 1) DETAIL IS ONLY APPLICABLE FOR WORK IN PIERCE COUNTY RIGHT-OF-WAY. ROAD WORK COMPLETED WITHIN CITY/TOWN JURISDICTION SHALL BE COMPLETED IN ACCORDANCE WITH CITY/TOWN SPECIFICATIONS.
- 2) ASPHALT CONCRETE PAVEMENT, CLASS B, WITH MINIMUM COMPACTED DEPTH OF 3' OR EXISTING PAVEMENT DEPTH PLUS 1", WHICHEVER IS GREATER UP TO A MAXIMUM DEPTH OF 6". PLACE IN LIFTS WITH A MAXIMUM COMPACTED DEPTH OF 3' PER WSDOT STANDARD SPECIFICATION 5-04, AND MACHINE ROLL FLUSH WITH EXISTING PAVEMENT.
- 3) 5/8" MINUS CRUSHED SURFACING TOP COURSE WITH 2" MINIMUM COMPACTED DEPTH. IF THE EXISTING PAVEMENT DEPTH IS GREATER THAN 8", THE MINIMUM COMPACTED DEPTH OF CRUSHED SURFACING TOP COURSE SHALL BE EQUAL TO THE DEPTH OF THE EXISTING PAVEMENT MINUS 6".
- 4) 3" MINUS IMPORTED OR NATIVE MATERIAL MEETING OR EXCEEDING WSDOT STANDARD SPECIFICATIONS 9-03.10 FOR GRAVEL BASE COMPACTED IN MAXIMUM 1' LOOSE LIFTS TO 95% MAXIMUM DENSITY. ANY NATIVE MATERIAL USED SHALL BE TESTED FOR COMPACTION AND/OR GRADATION AS REQUIRED BY THE ENGINEER.
- 5) NEAT, UNIFORM AND VERTICAL CUT (TYPICAL BOTH SIDES). CLEAN AND HEAT EDGES AND TACK WITH EMULSIFIED ASPHALT. SEAL JOINT WITH HOT ASPHALT CEMENT.
- 6) MINIMUM RESTORATION LIMITS UNLESS OTHERWISE DETERMINED BY THE ENGINEER. IF ANY PORTION OF A LONGITUDINAL PAVEMENT CUT AFFECTS A WHEEL TRACK AS DETERMINED BY THE ENGINEER, THE ENTIRE LANE SHALL BE REMOVED AND REPLACED.



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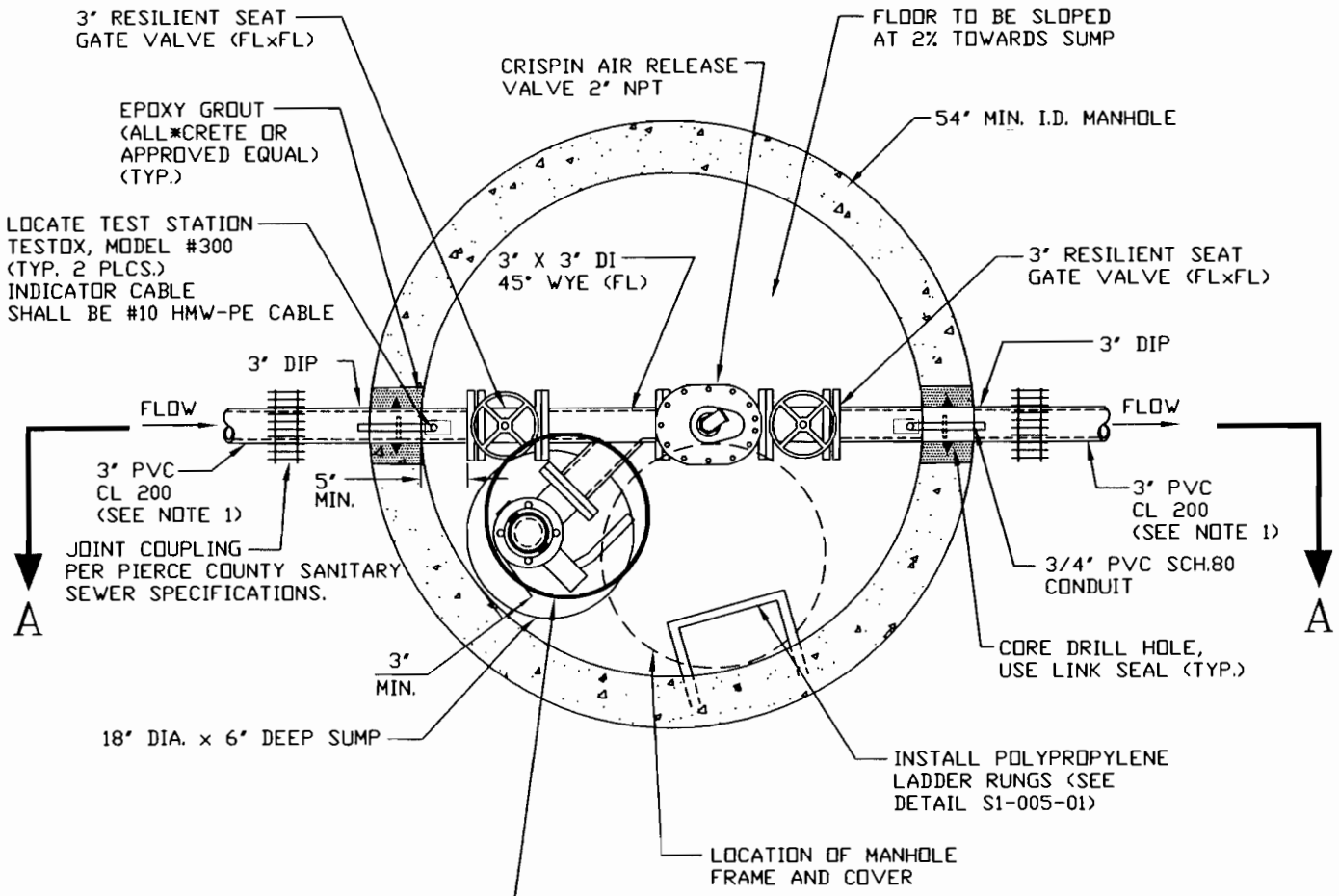
STANDARD DETAILS

DATE	SCALE
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**SANITARY SEWER
 ROAD PATCH /
 ROAD RESTORATION**

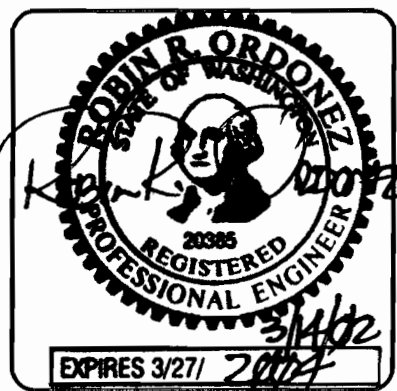
STD. DWG. NO.
S1-022-01

SECTION 2



- NOTES: 1) ALL FORCE MAINS 2" Ø TO 3" Ø ARE REQUIRED TO HAVE 3" Ø PIPE AND FITTINGS THROUGH THE VALVE VAULT, AS DESCRIBED IN THIS DETAIL.
- 2) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
- 3) COAT VALVE VAULT INTERIOR AND EXTERIOR PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
- 1.) 3" SHORT RADIUS 90° BEND (FLxFL), POINTING UP.
 - 2.) 3" PLUG VALVE (DEZURIK, FLxFL).
 - 3.) 3" TAPPED BLIND FLANGE (FLxNPT).
 - 4.) 3" CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F.
 - 5.) 3" CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.

PLAN



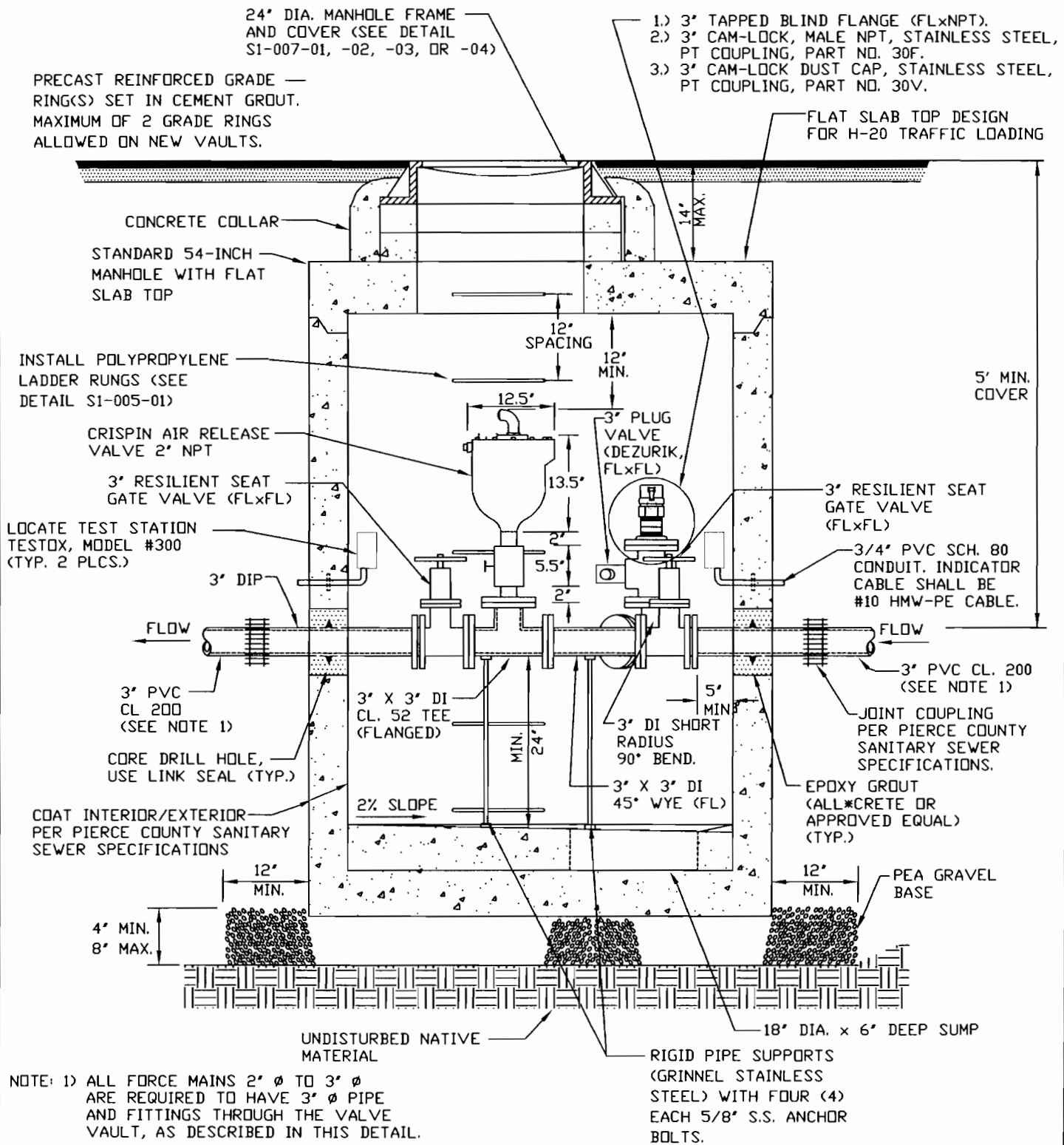
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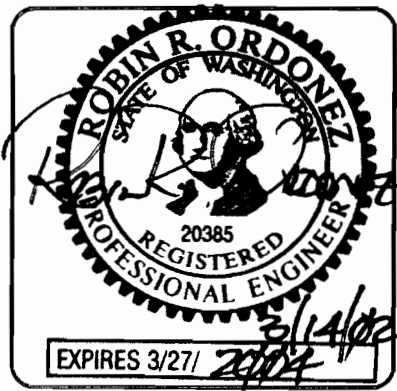
SS 3" FORCE MAIN AIR RELEASE /
 VACUUM RELIEF VALVE
 CLEANOUT AND PIG LAUNCH

STD. DWG. NO.
 S2-001-01



NOTE: 1) ALL FORCE MAINS 2" Ø TO 3" Ø ARE REQUIRED TO HAVE 3" Ø PIPE AND FITTINGS THROUGH THE VALVE VAULT, AS DESCRIBED IN THIS DETAIL.

SECTION VIEW "A-A"



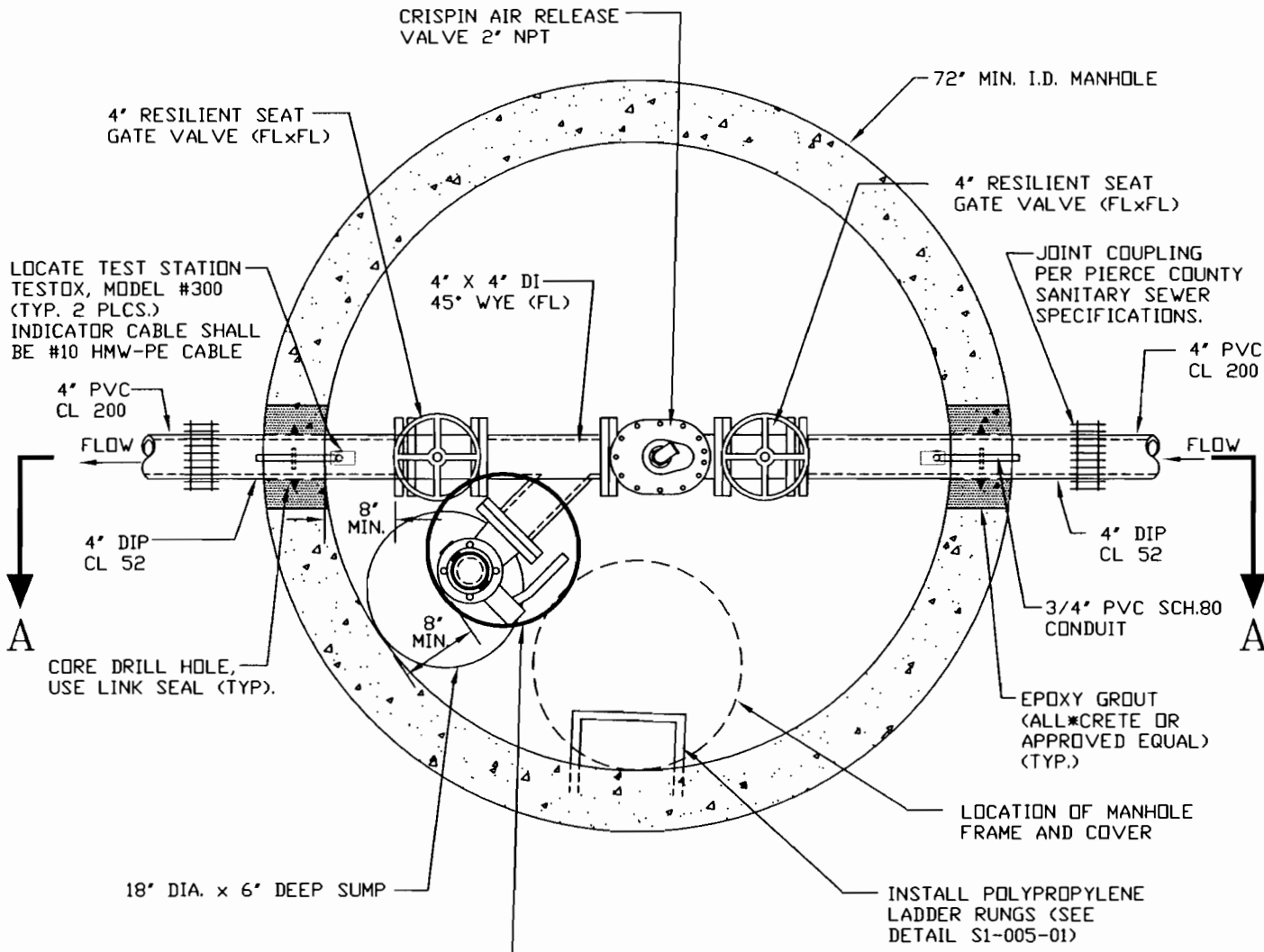
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SS 3" FORCE MAIN AIR RELEASE /
VACUUM RELIEF VALVE
CLEANOUT AND PIG LAUNCH

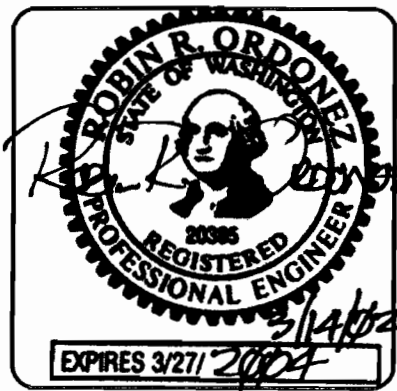
STD. DWG. NO.
S2-001-02



- LOCATE TEST STATION TESTOX, MODEL #300 (TYP. 2 PLCS.) INDICATOR CABLE SHALL BE #10 HMW-PE CABLE
- 4" X 4" DI 45° WYE (FL)
- 8" MIN.
- 8" MIN.
- 18" DIA. x 6" DEEP SUMP
- NOTES: 1) FLOOR TO BE SLOPED AT 2% TOWARDS SUMP.
 2) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
 3) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

- 1.) 4" X 3" SHORT RADIUS 90° REDUCING BEND (FLxFL), POINTING UP.
 2.) 3" PLUG VALVE (DEZURIK, FLxFL).
 3.) 3" TAPPED BLIND FLANGE (FLxNPT).
 4.) 3" CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F.
 5.) 3" CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.

PLAN



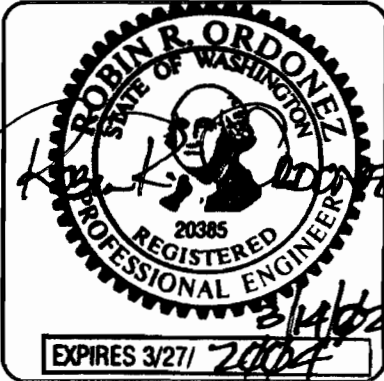
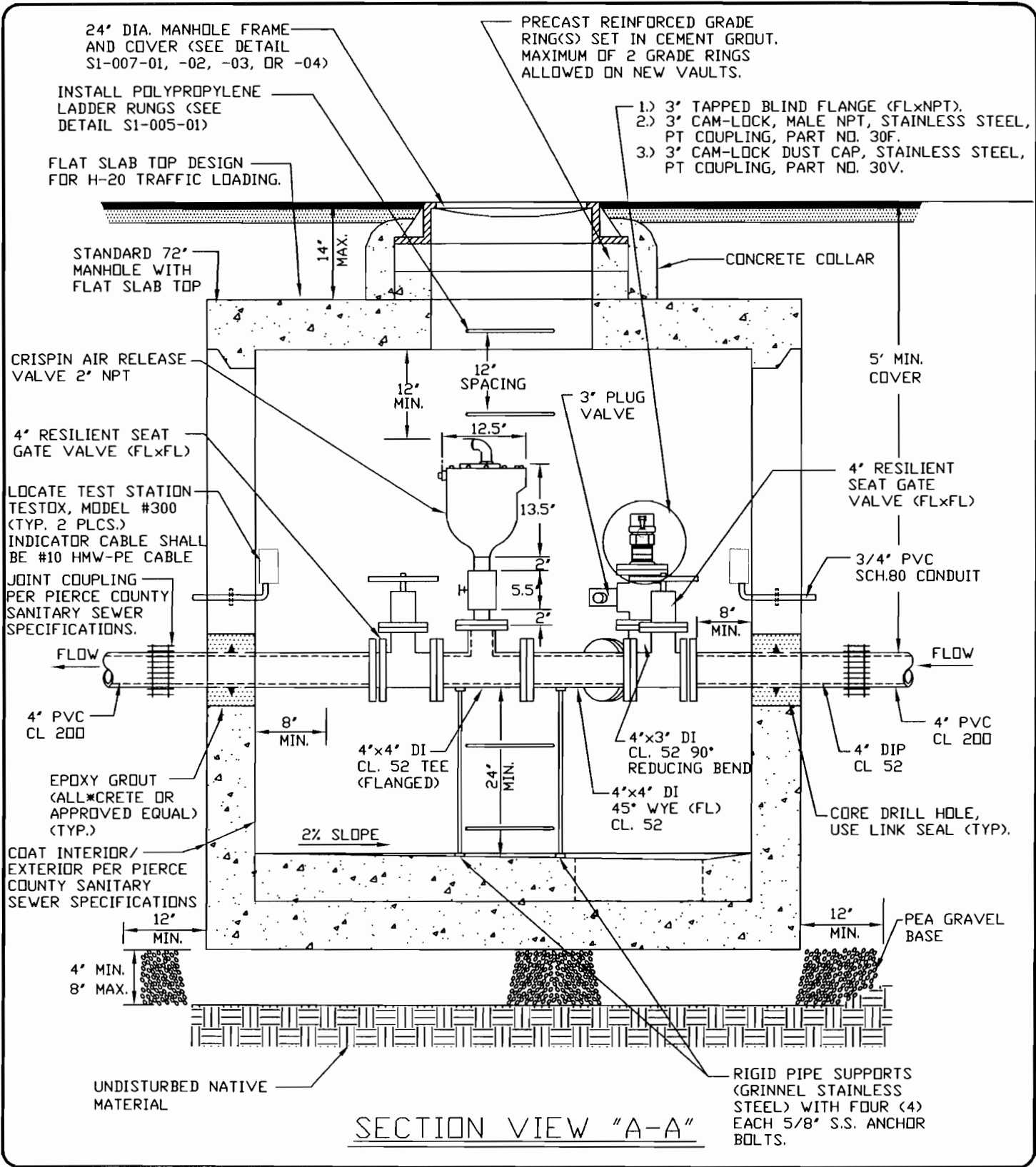
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SS 4" FORCE MAIN AIR RELEASE /
 VACUUM RELIEF VALVE
 CLEANOUT AND PIG LAUNCH

STD. DWG. NO.
 S2-002-01



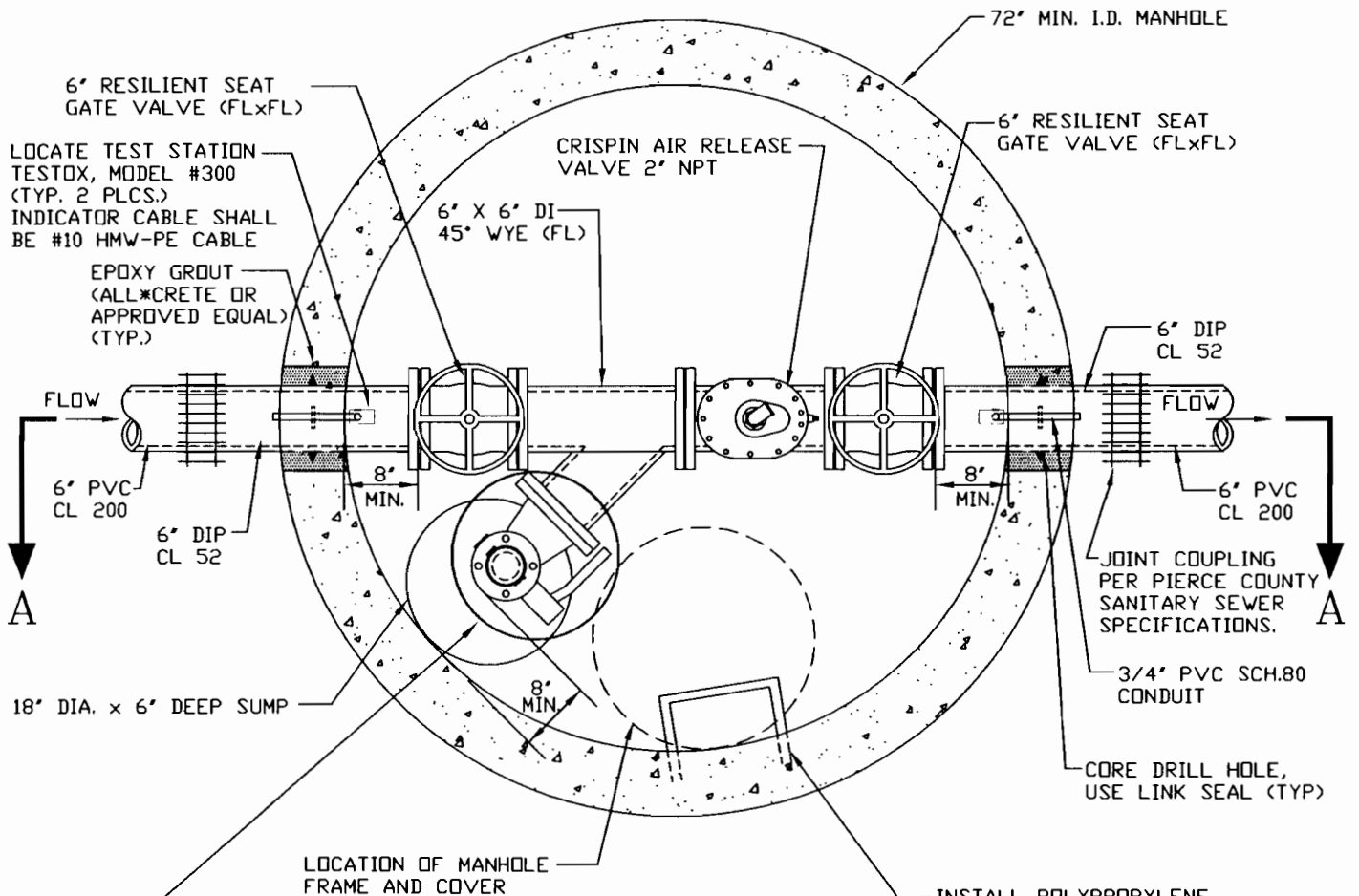
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STANDARD DETAILS

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SS 4" FORCE MAIN AIR RELEASE /
VACUUM RELIEF VALVE
CLEANOUT AND PIG LAUNCH

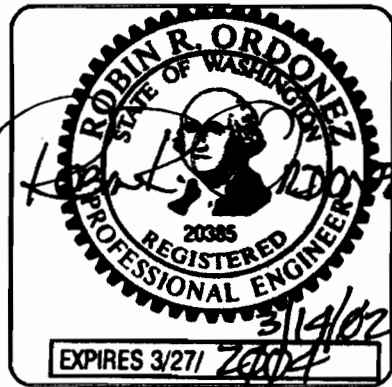
STD. DWG. NO.
S2-002-02



- 1.) 6" X 3" SHORT RADIUS 90° REDUCING BEND (FLxFL), POINTING UP.
- 2.) 3" PLUG VALVE (DEZURIK, FLxFL).
- 3.) 3" TAPPED BLIND FLANGE (FLxNPT).
- 4.) 3" CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F.
- 5.) 3" CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.

- NOTES:
- 1) FLOOR TO BE SLOPED AT 2% TOWARDS SUMP.
 - 2) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
 - 3) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

PLAN



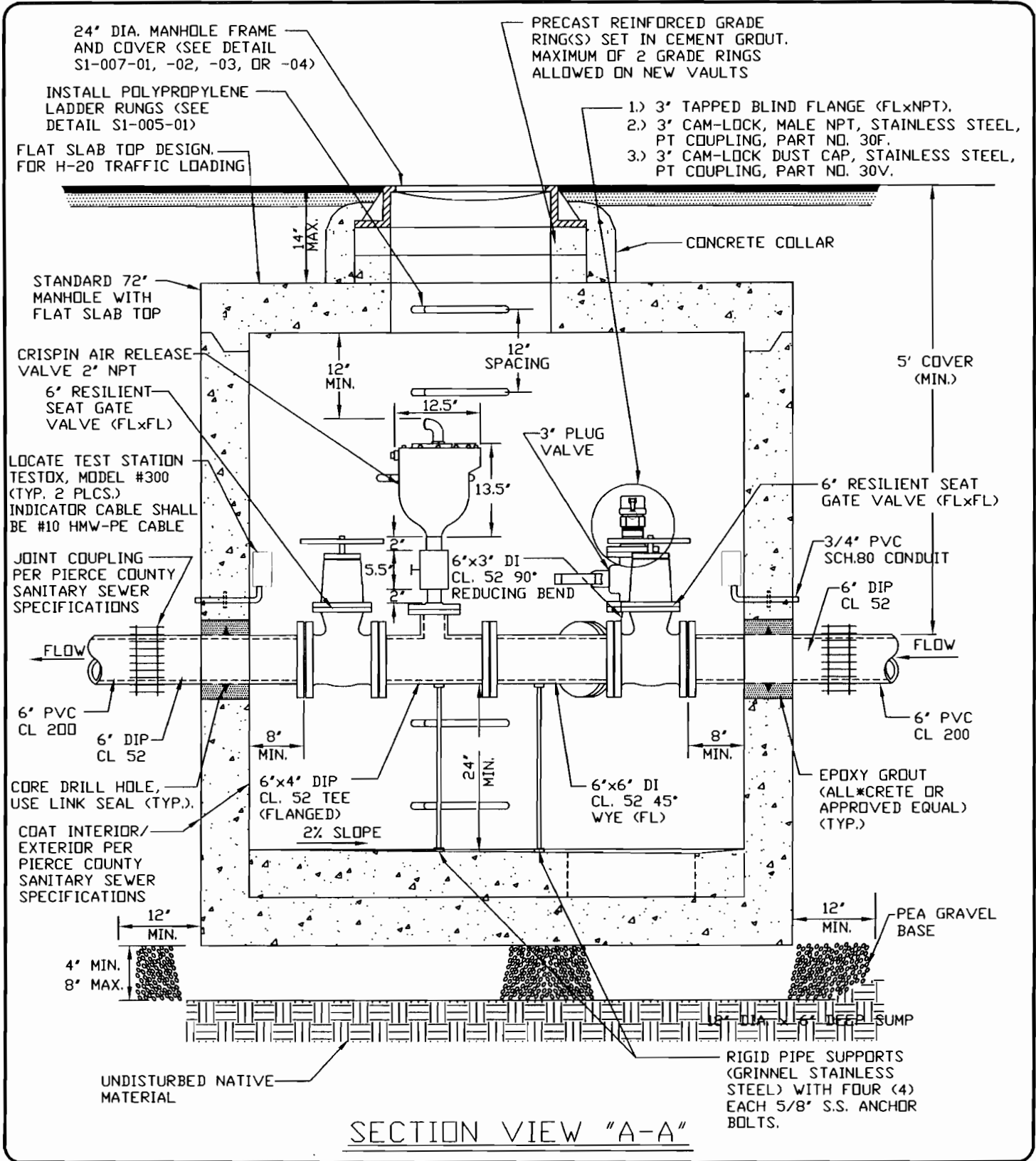
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SS 6" FORCE MAIN AIR RELEASE /
 VACUUM RELIEF VALVE
 CLEANOUT AND PIG LAUNCH

STD. DWG. NO.
 S2-003-01



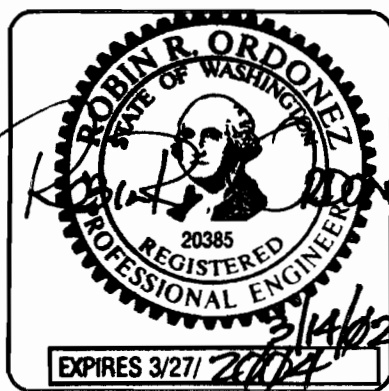
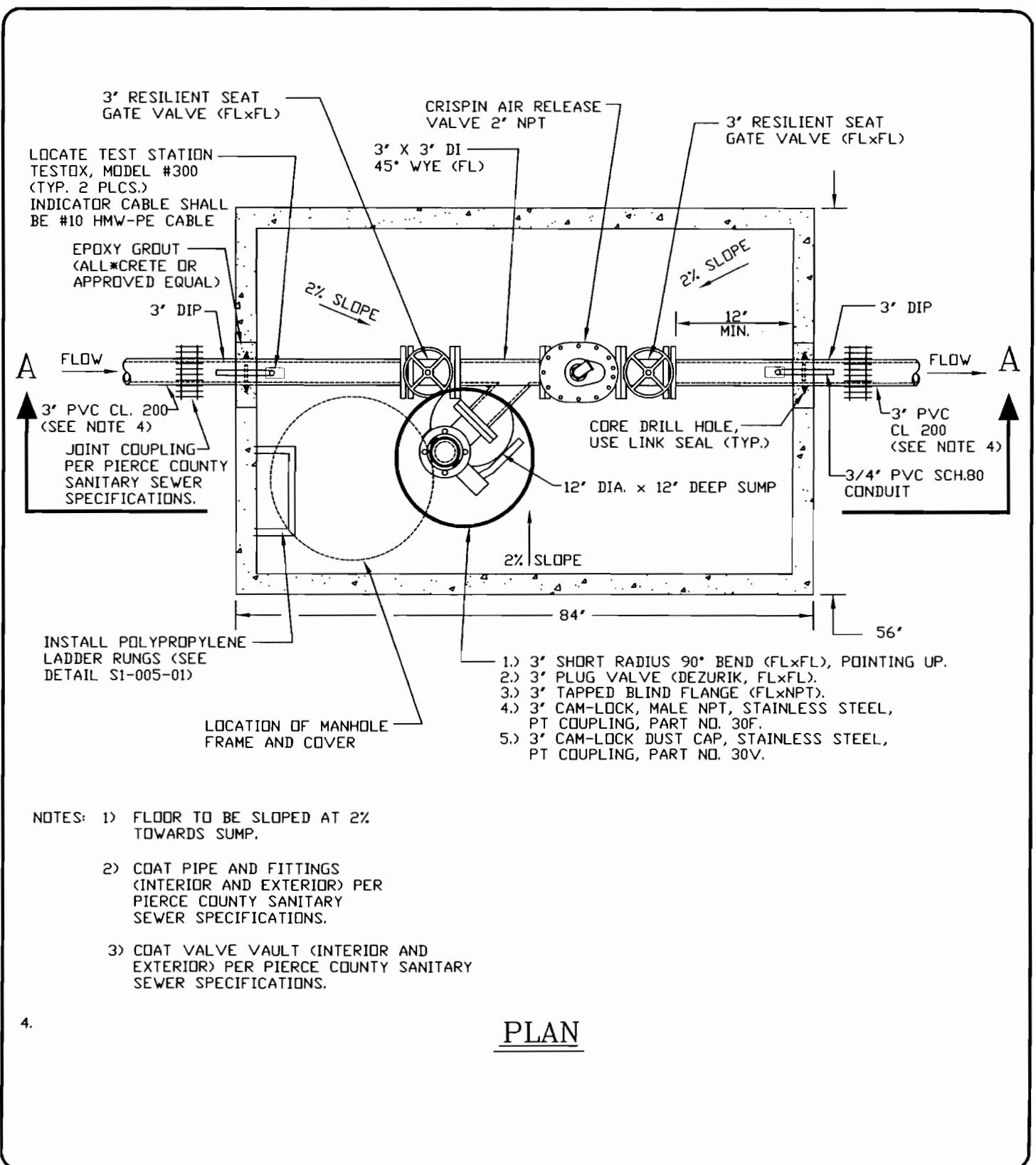
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SS 6" FORCE MAIN AIR RELEASE /
 VACUUM RELIEF VALVE
 CLEANOUT AND PIG LAUNCH

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**SS 3" FORCE MAIN AIR
 RELEASE / VACUUM RELIEF
 VAULT WITH CLEANOUT**

STD. DWG. NO.
S2-004-01

- 1.) 3" TAPPED BLIND FLANGE (FLxNPT).
- 2.) 3" CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F.
- 3.) 3" CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.

24" DIA. MANHOLE FRAME AND COVER (SEE DETAIL S1-007-01, -02, -03, OR -04)

PRECAST REINFORCED GRADE RING(S) SET IN CEMENT GROUT. MAXIMUM OF 2 GRADE RINGS ALLOWED ON NEW VAULTS.

PIPE INC., VAULT #57XXX, OR APPROVED EQUAL

CONCRETE COLLAR

INSTALL POLYPROPYLENE LADDER RUNGS (SEE DETAIL S1-005-01)

LOCATE TEST STATION TESTOX, MODEL #300 (TYP. 2 PLCS.) INDICATOR CABLE SHALL BE #10 HMW-PE CABLE

CORE DRILL HOLE, USE LINK SEAL (TYP.)

COAT INTERIOR/EXTERIOR PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS

CRISPIN AIR RELEASE VALVE 2" NPT

3" RESILIENT SEAT GATE VALVE (FLxFL)

3/4" PVC SCH.80 CONDUIT

3" DIP

3" PVC CL 200 (SEE NOTE 1)

JOINT COUPLING PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

EPOXY GROUT (ALL*CRETE OR APPROVED EQUAL)

3" DIP

FLOW

3" PVC CL 200 (SEE NOTE 1)

3" RESILIENT SEAT GATE VALVE (FLxFL)

12" SPACING

3" DI SHORT RADIUS CL. 52 BEND (FL)

3" X 3" DI CL. 52 WYE (FL)

2% SLOPE

3" PLUG VALVE

12.5"

12" MIN.

13.5"

2"

5.5"

2"

24" MIN.

3" X 3" DI CL. 52 TEE (FLANGED)

12" MIN.

FLOW

2% SLOPE

12" MIN.

12" MIN.

12" MIN.

12" MIN.

12" MIN.

12" MIN.

12" MIN.

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12" MIN.

SECTION VIEW "A-A"

NOTE: 1) ALL FORCE MAINS 2" Ø TO 3" Ø ARE REQUIRED TO HAVE 3" Ø PIPE AND FITTINGS THROUGH THE VALVE VAULT, AS DESCRIBED IN THIS DETAIL.

RIGID PIPE SUPPORTS (GRINNEL STAINLESS STEEL) WITH FOUR (4) EACH 5/8" S.S. ANCHOR BOLTS.

UNDISTURBED NATIVE MATERIAL

12" DIA. x 12" DEEP SUMP

PEA GRAVEL BASE

5' MIN. COVER

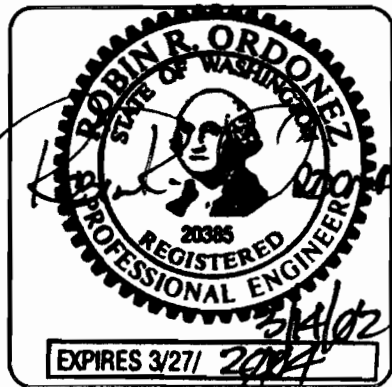
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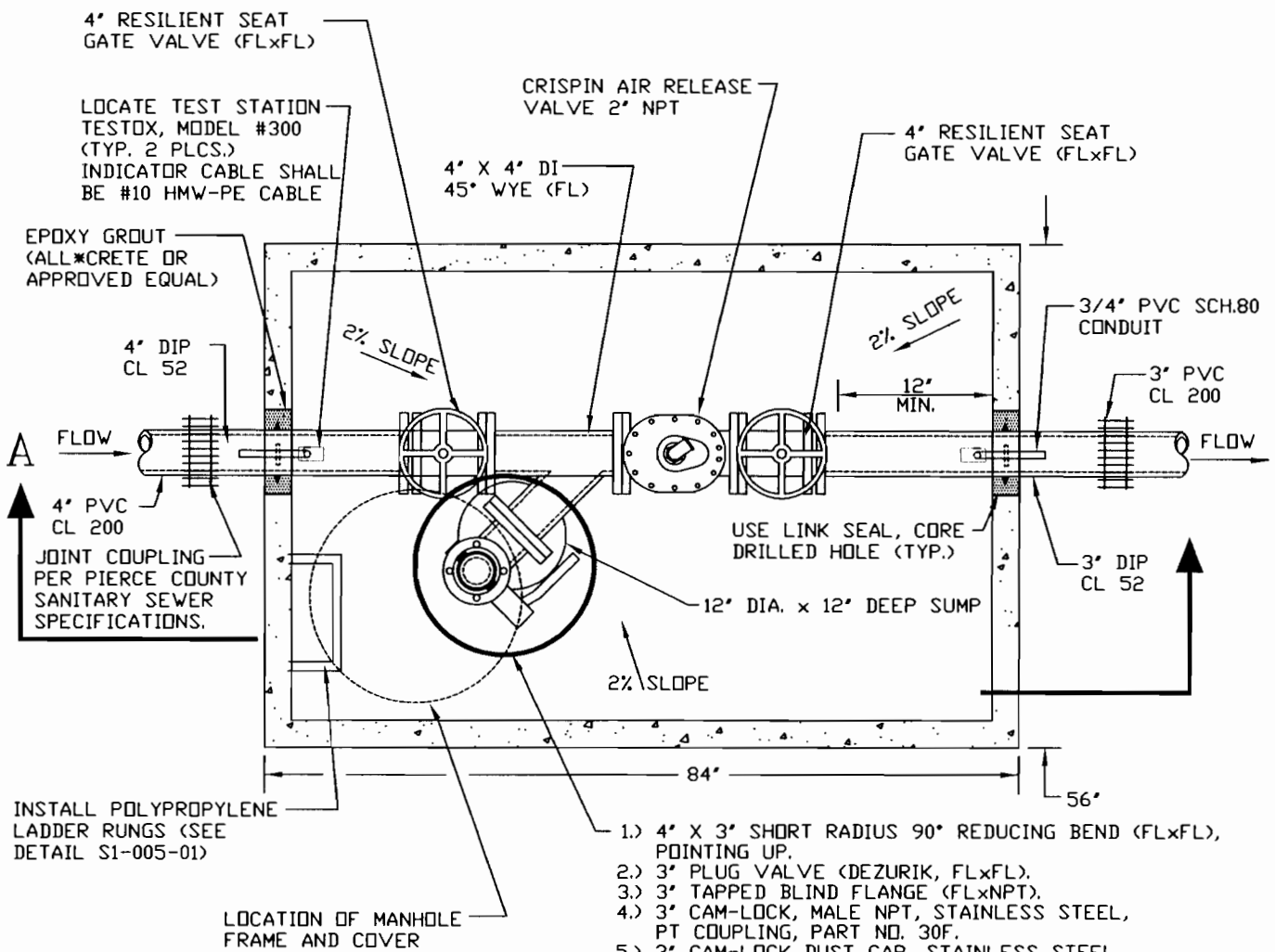
STANDARD DETAILS

SS 3" FORCE MAIN AIR RELEASE / VACUUM RELIEF VAULT WITH CLEANOUT

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APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
S2-004-02





4" RESILIENT SEAT GATE VALVE (FLxFL)

LOCATE TEST STATION TESTOX, MODEL #300 (TYP. 2 PLCS.) INDICATOR CABLE SHALL BE #10 HMW-PE CABLE

CRISPIN AIR RELEASE VALVE 2" NPT

4" RESILIENT SEAT GATE VALVE (FLxFL)

EPOXY GROUT (ALL CONCRETE OR APPROVED EQUAL)

4" X 4" DI 45° WYE (FL)

4" DIP CL 52

4" PVC CL 200

JOINT COUPLING PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

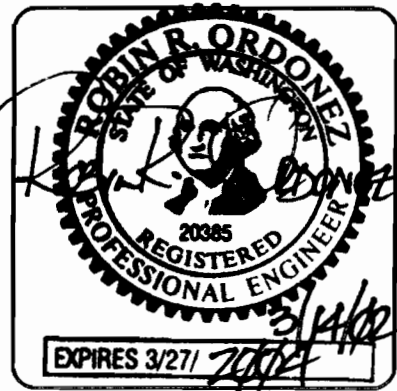
INSTALL POLYPROPYLENE LADDER RUNGS (SEE DETAIL S1-005-01)

LOCATION OF MANHOLE FRAME AND COVER

- 1.) 4" X 3" SHORT RADIUS 90° REDUCING BEND (FLxFL), POINTING UP.
- 2.) 3" PLUG VALVE (DEZURIK, FLxFL).
- 3.) 3" TAPPED BLIND FLANGE (FLxNPT).
- 4.) 3" CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F.
- 5.) 3" CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.

- NOTES:
- 1) FLOOR TO BE SLOPED AT 2% TOWARDS SUMP.
 - 2) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
 - 3) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

PLAN



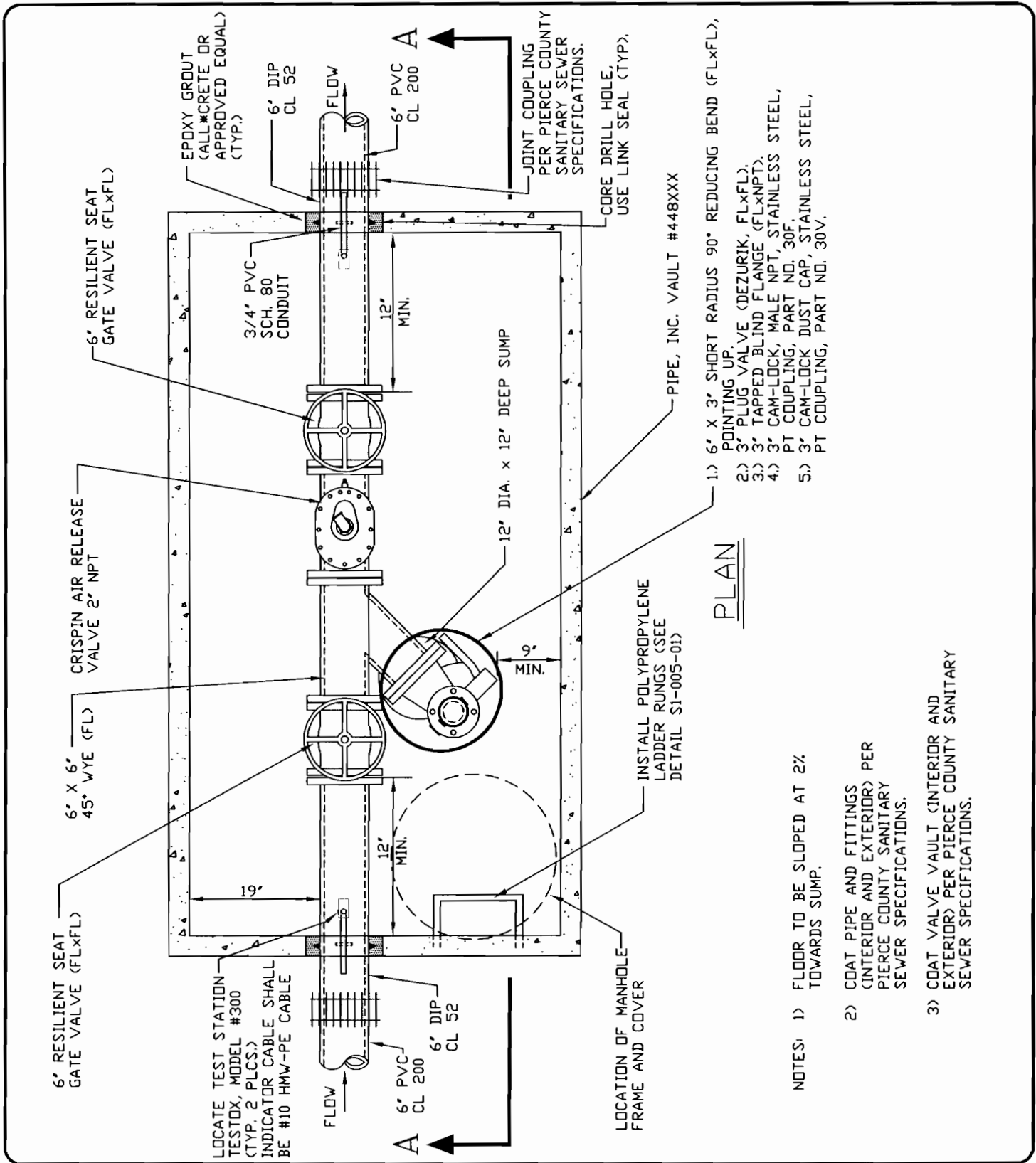
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**SS 4" FORCE MAIN AIR
 RELEASE / VACUUM RELIEF
 VAULT WITH CLEANOUT**

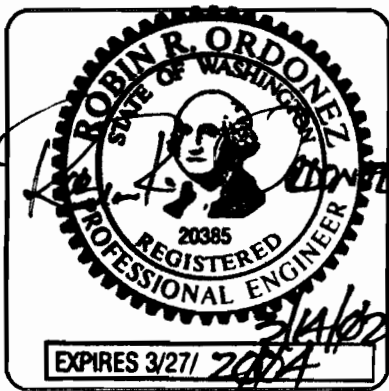
STD. DWG. NO.
S2-005-01



PLAN

- NOTES: 1) FLOOR TO BE SLOPED AT 2% TOWARDS SUMP.
- 2) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
- 3) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

- 1) 6' X 3' SHORT RADIUS 90° REDUCING BEND (FLxFL), POINTING UP.
- 2) 3' PLUG VALVE (DEZURIK, FLxFL)
- 3) 3' TAPPED BLIND FLANGE (FLxNPT)
- 4) 3' CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F
- 5) 3' CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.



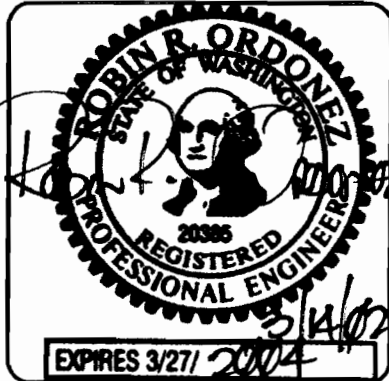
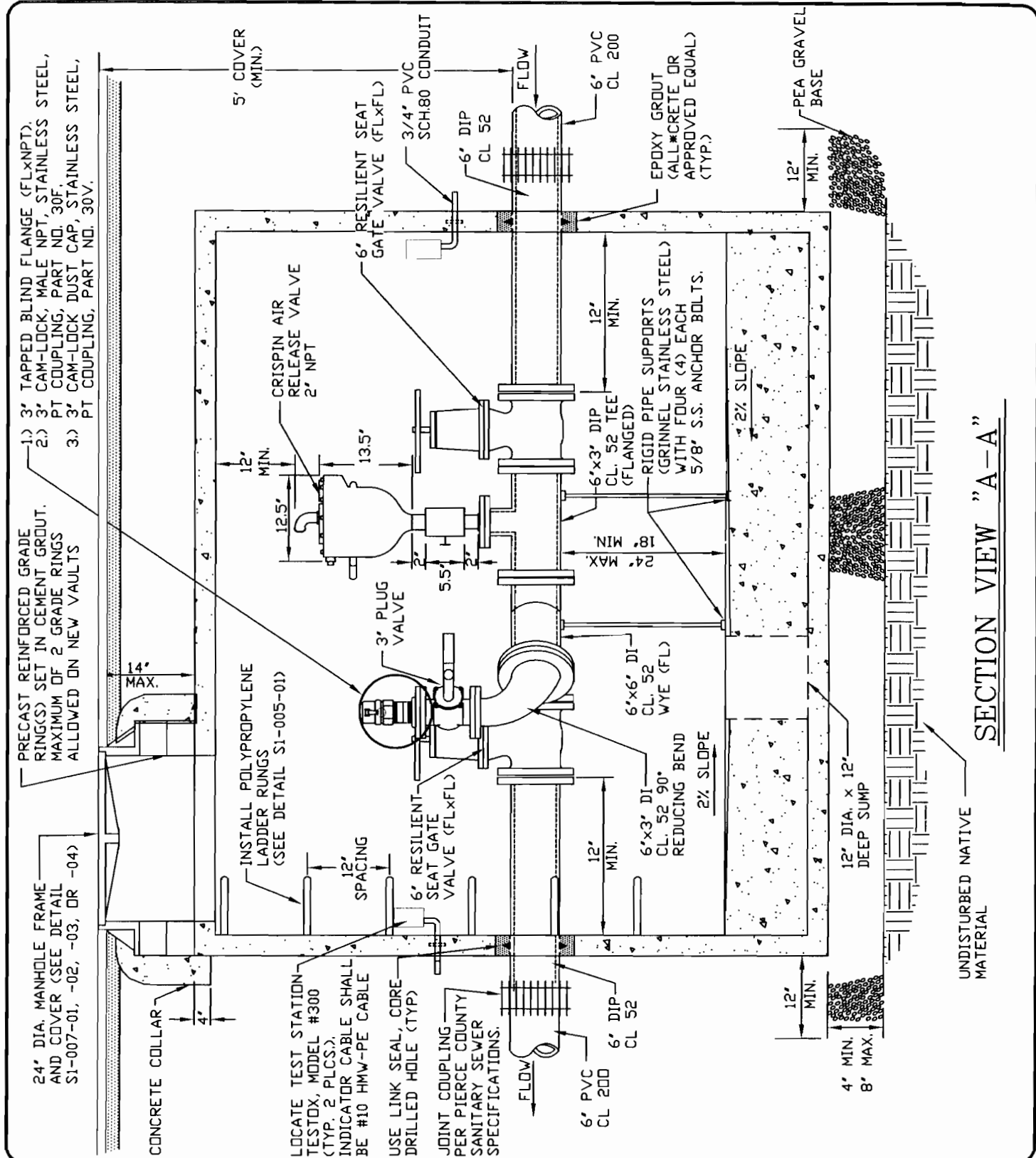
PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
 WASTEWATER UTILITY DIVISION
 9118 GRAVELLY LAKE DRIVE
 LAKEWOOD, WASHINGTON 98499-3190
 (253) 798-4050

STANDARD DETAILS

SS 6" FORCEMAIN AIR
 RELEASE / VACUUM RELIEF
 VAULT WITH CLEANOUT

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
 S2-006-01



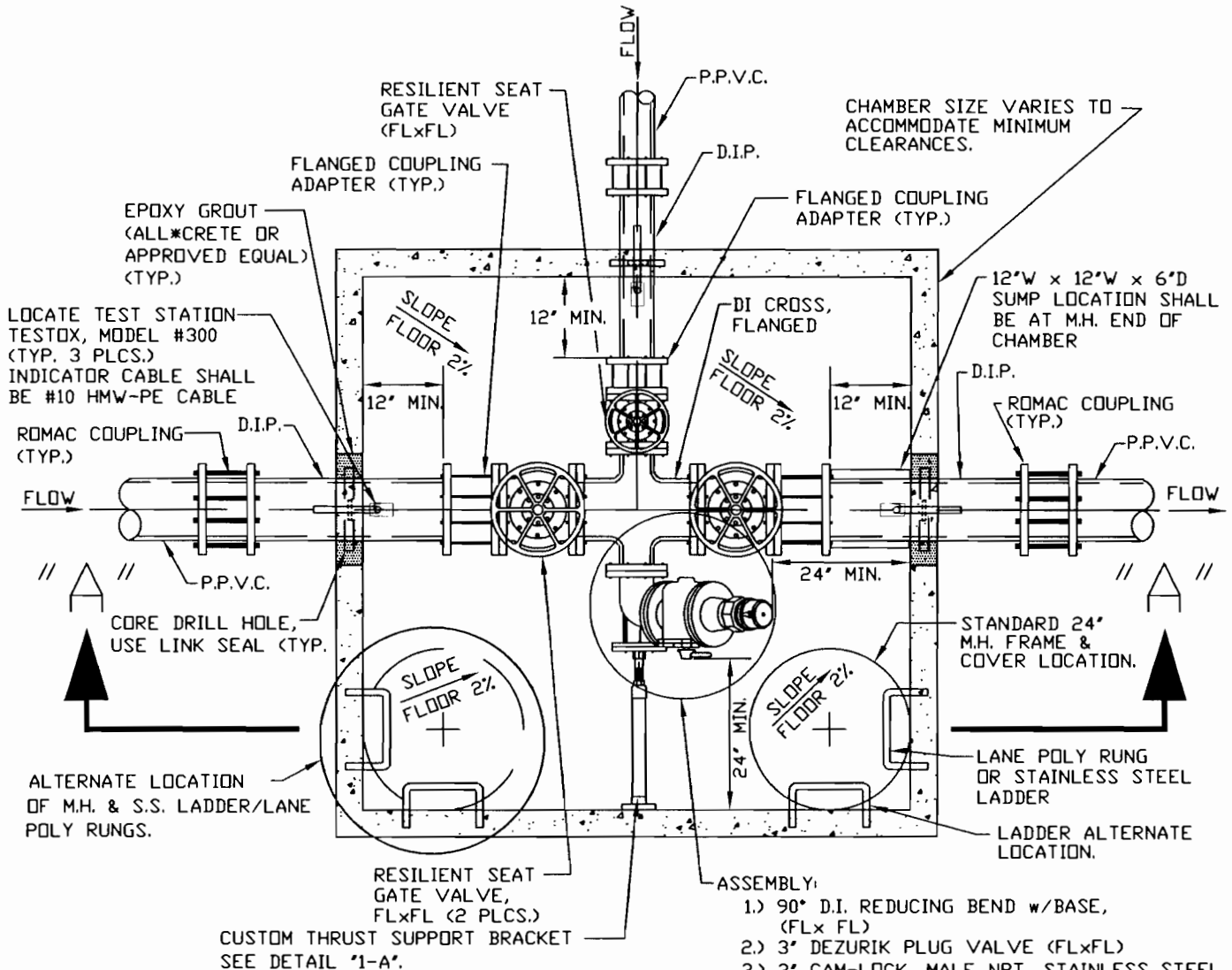
PIERCE COUNTY PUBLIC WORKS & UTILITIES DEPARTMENT
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 (253) 798-4050

STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

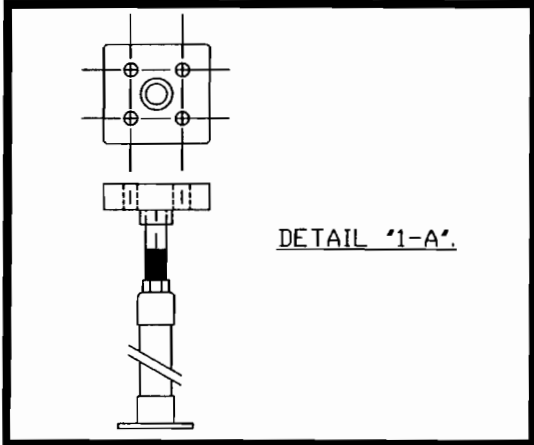
**SS 6" FORCEMAIN AIR
 RELEASE / VACUUM RELIEF
 VAULT WITH CLEANOUT**

STD. DWG. NO.
S2-006-02



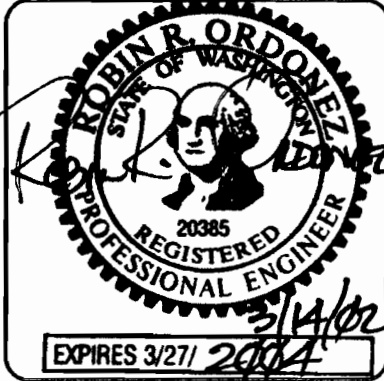
RESILIENT SEAT GATE VALVE, FLxFL (2 PLCS.)
 CUSTOM THRUST SUPPORT BRACKET
 SEE DETAIL '1-A'.

- ASSEMBLY:
- 1.) 90° D.I. REDUCING BEND w/BASE, (FLx FL)
 - 2.) 3' DEZURIK PLUG VALVE (FLxFL)
 - 3.) 3' CAM-LOCK, MALE NPT, STAINLESS STEEL, PT COUPLING, PART NO. 30F.
 - 4.) 3' CAM-LOCK DUST CAP, STAINLESS STEEL, PT COUPLING, PART NO. 30V.



PLAN DETAIL

- NOTES:
- 1.) FLOOR TO BE SLOPED AT 2% TOWARDS SUMP.
 - 2.) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SEWER SPECIFICATIONS.
 - 3.) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SEWER SPECIFICATIONS.
 - 4.) SIZES MAY VARY DUE TO FORCE MAIN CRITERIA.
 - 5.) INSTALL D.I. 4" X 3" REDUCING BEND SO THAT CAMLOCK CONNECTION IS POINTING TOWARD M.H.
 - 6.) WHEN USING S.S. LADDER, INSTALL LADDER SO THAT SUMP CAN BE INSTALLED BEHIND THE LADDER.



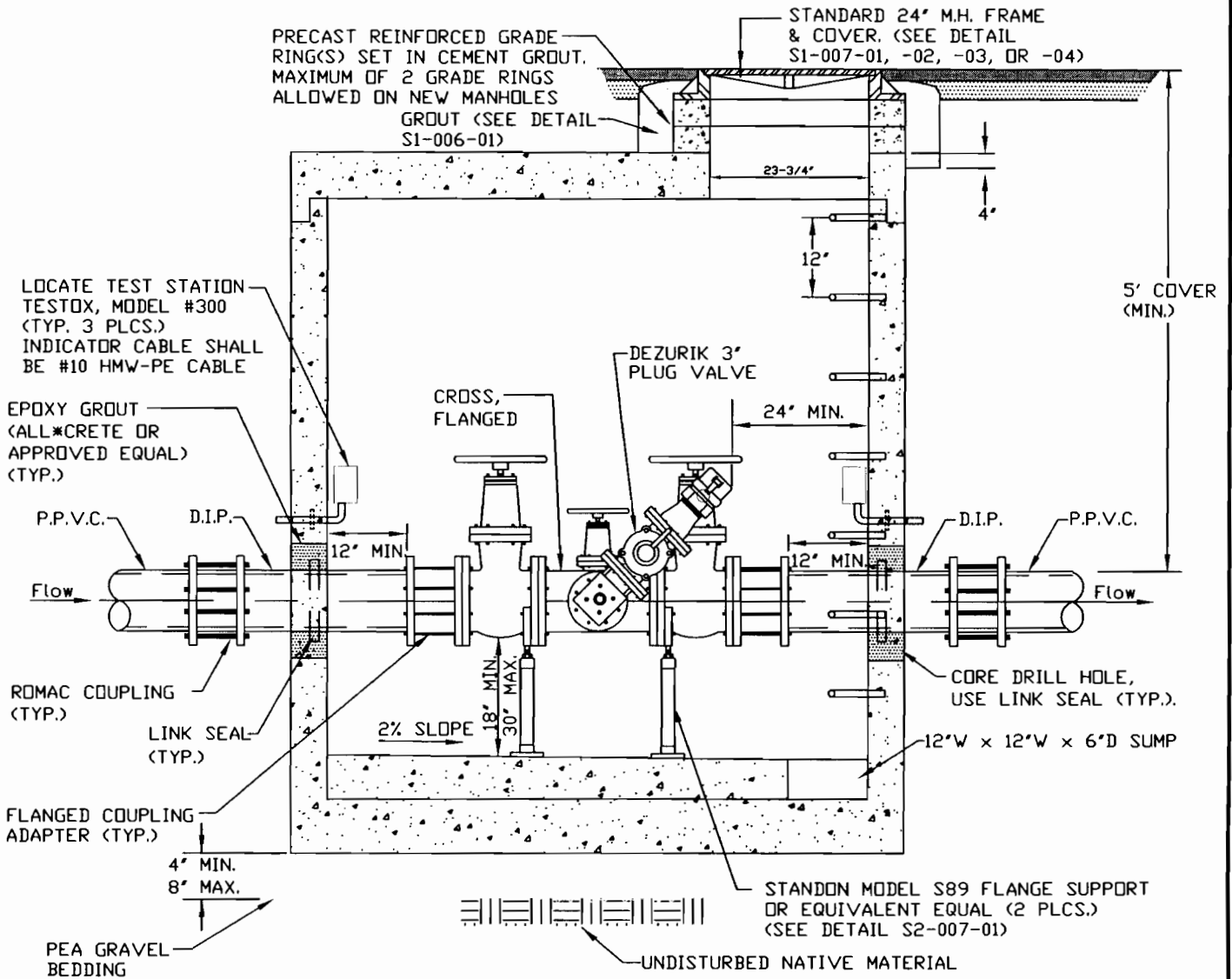
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STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER
 FORCE MAIN
 CLEANOUT VALVE VAULT**

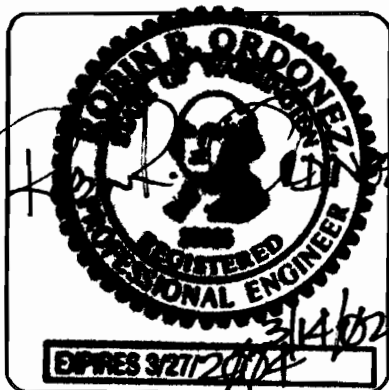
STD. DWG. NO.
S2-007-01



SECTIONAL DETAIL "A-A"

NOTES:

- 1.) SIZES MAY VARY DUE TO FORCE MAIN CRITERIA.
- 2.) INSTALL D.I. 4" X 3" REDUCING BEND SO THAT CAMLOCK CONNECTION IS POINTING TOWARD M.H.
- 3.) WHEN USING S.S. LADDER, INSTALL LADDER SO THAT SUMP CAN BE INSTALLED BEHIND THE
- 4.) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
- 5.) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.



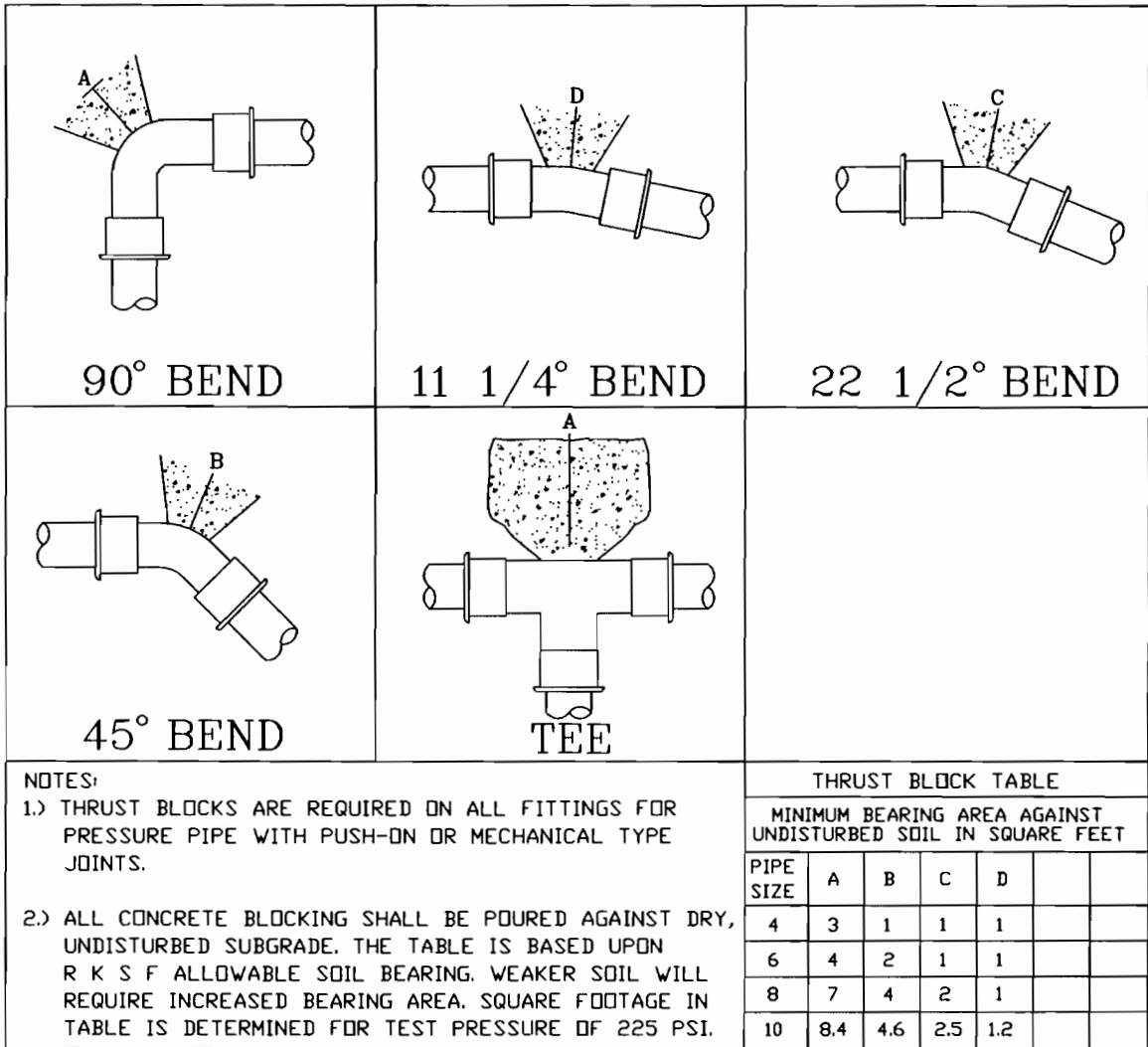
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STANDARD DETAILS

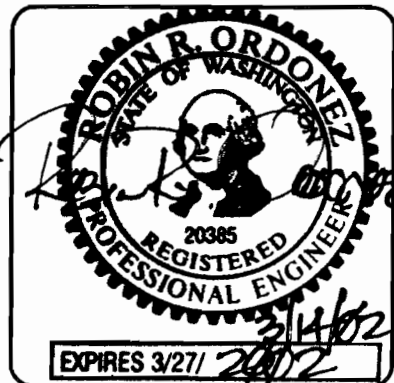
DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

**SANITARY SEWER
 FORCE MAIN
 CLEANOUT VALVE VAULT**

STD. DWG. NO.
S2-007-02



THRUST BLOCK DETAIL



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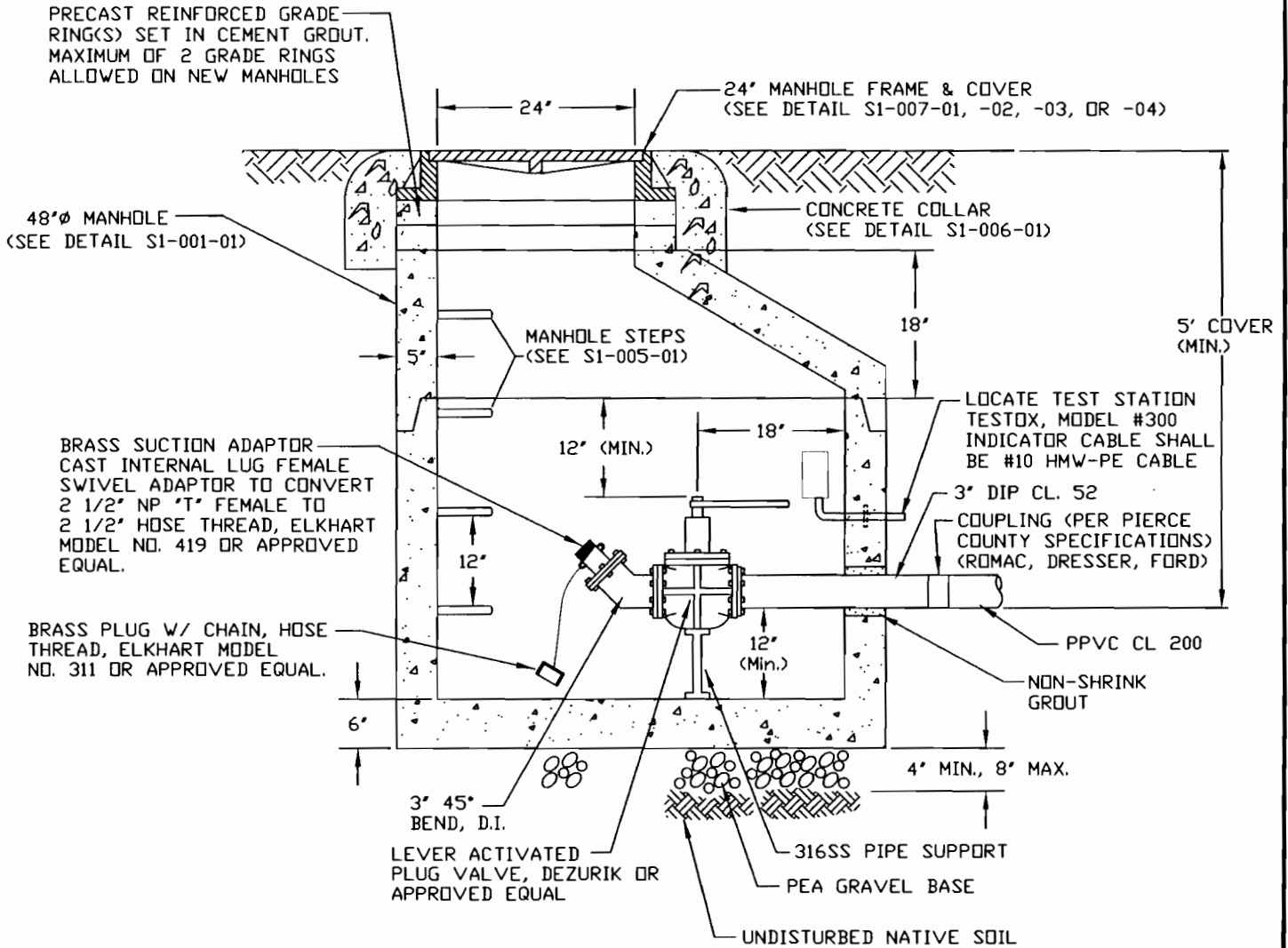
STANDARD DETAILS

SANITARY SEWER CONCRETE THRUST BLOCK DETAIL

DATE 01/01/2000	SCALE NTS
APPROVED: 01/01/2002	
REVISED:	

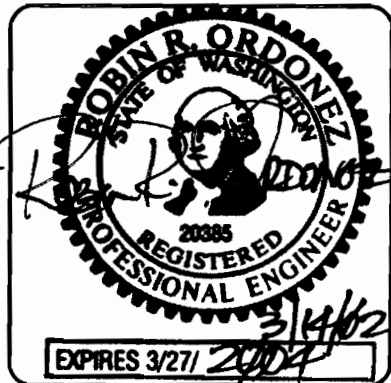
STD. DWG. NO.

S2-008-01



- NOTES: 1) FLOOR TO BE SLOPED AT 2% TOWARDS SUMP.
- 2) COAT PIPE AND FITTINGS (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.
- 3) COAT VALVE VAULT (INTERIOR AND EXTERIOR) PER PIERCE COUNTY SANITARY SEWER SPECIFICATIONS.

TERMINAL FORCE MAIN CLEANOUT (FOR 3" AND LARGER FORCE MAINS)



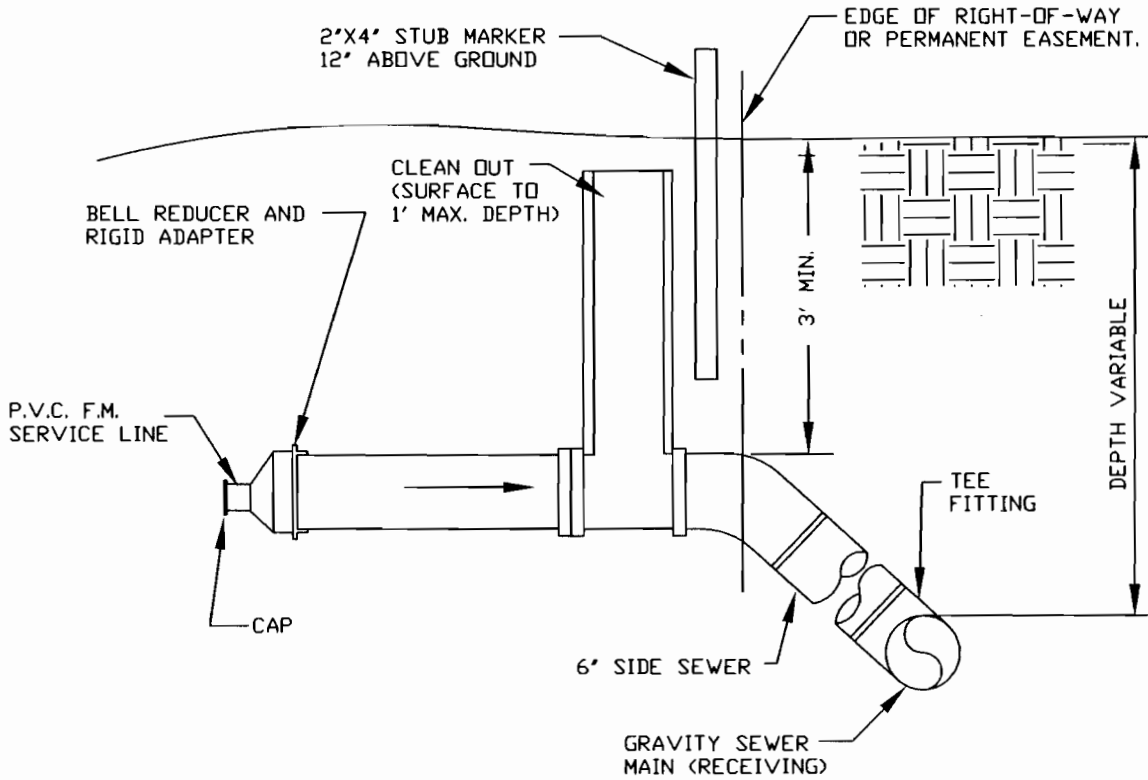
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STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

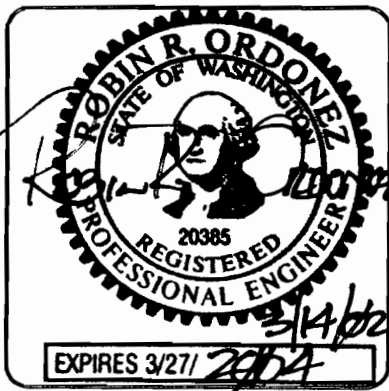
SANITARY SEWER
TERMINAL FORCE MAIN
CLEANOUT

STD. DWG. NO.
S2-009-01



NOTES

1. SERVICE LINE SHALL BE INSTALLED, SO AS TO PROVIDE A POSITIVE SLOPE UPWARD TOWARD ITS TERMINUS AT THE 6' GRAVITY PIPE.



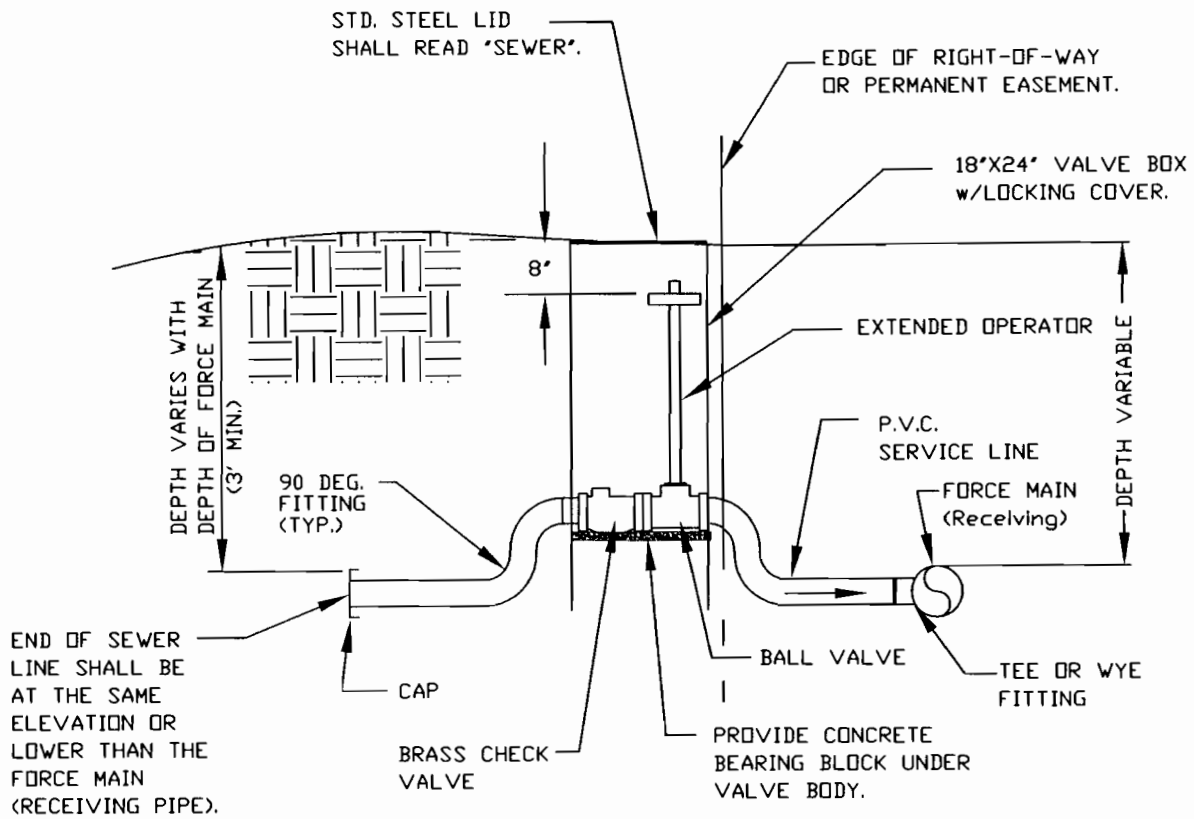
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STANDARD DETAILS

DATE	SCALE
01/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

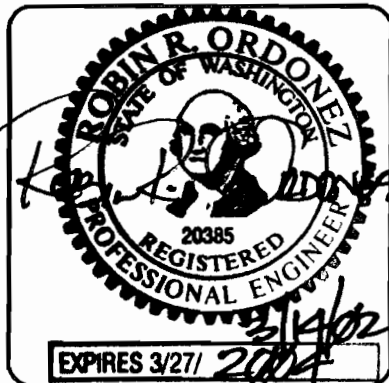
**SANITARY SEWER
 PRESSURE SIDE SEWER
 STUB TYPE 1**

STD. DWG. NO.
S2-010-01



NOTES

- SERVICE LINE SHALL BE INSTALLED, SO AS TO PROVIDE A POSITIVE SLOPE UPWARD TOWARD ITS TERMINUS AT THE FORCE MAIN.



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STANDARD DETAILS

SANITARY SEWER
 PRESSURE SIDE SEWER
 STUB TYPE 2

DATE	SCALE
09/01/2000	NTS
APPROVED: 01/01/2002	
REVISED:	

STD. DWG. NO.
S2-010-02