

**PENNSAUKEN SEWERAGE AUTHORITY  
STANDARD CONSTRUCTION DETAILS**

## ABBREVIATIONS

A.C.P.	=	ASBESTOS CEMENT PIPE
ASTM	=	AMERICAN SOCIETY OF TESTING & MATERIALS
C.L.D.I.P.	=	CEMENT LINED DUCTILE IRON PIPE
C.M.P.	=	CORRUGATED METAL PIPE
C.O.	=	CLEAN OUT
CONC.	=	CONCRETE
D.C.	=	DEEP CUT SERVICE LATERAL
D.I.P.	=	DUCTILE IRON PIPE
EL.	=	ELEVATION
E.W.	=	EACH WAY
EXIST.	=	EXISTING
F.H.	=	FIRE HYDRANT
G.V.	=	GAS VALVE
I.P.S.	=	INTERNAL PIPE THREAD
M.B.	=	MAILBOX
M.H.	=	MANHOLE
M.J.	=	MECHANICAL JOINT
MUA	=	MUNICIPAL UTILITIES AUTHORITY
N.J.D.O.T.	=	NEW JERSEY DEPARTMENT OF TRANSPORTATION
O.C.	=	ON CENTER
PROP.	=	PROPOSED
P.V.C.	=	POLYVINYL CHLORIDE PIPE
R.C.P.	=	REINFORCED CONCRETE PIPE
R.O.W.	=	RIGHT OF WAY
SAN.	=	SANITARY
T & B	=	TOP AND BOTTOM
T.V.B.	=	TELEVISION CABLE BOX
V.C.P.	=	VITRIFIED CLAY PIPE
W.M.	=	WATER METER
W.V.	=	WATER VALVE



### **PENNSAUKEN SEWERAGE AUTHORITY**

1250 John Tipton Boulevard  
Pennsauken, NJ 08110  
(856) 663-5542 FAX: (856) 663-5718



PREPARED BY  
**CONSULTING ENGINEER SERVICES**  
PROFESSIONAL ENGINEERS, PLANNERS, & LAND SURVEYORS  
150 DELSEA DRIVE, SUITE 1, SEWELL, NJ 08080  
TELEPHONE (856) 228-2200 - FAX (856) 232-2348  
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DATE: 07/12/11 DWG. NO. I

## UTILITY CONTACTS

AT&T  
12 North 7th Street  
Camden, N.J. 08102  
(856) 756-7000

Connectiv Power  
Post Office Box 4875  
Trenton, N.J. 08650  
(800) 642-3780

Verizon  
Post Office Box 4833  
Trenton, N.J. 08650  
(800)-892-5200

Camden County Engineer  
Egg Harbor Road  
Charles Di Palma Complex  
Lindenwold, N.J. 08021  
(856) 566-2970  
Attn: Robert Kelly

Camden County MUA  
1645 Ferry Avenue  
Post Office Box 1432  
Camden, N.J. 08101  
(856) 541-3700  
Attn: Andrew Kricun

Merchantille Pennsauken  
Water Commission  
6751 Westfield Avenue  
Pennsauken, N.J. 08110  
(856) 663-0043

Traffic Safety Unit  
Pennsauken Twsp. Police Dept.  
2400 Bethel Avenue  
Pennsauken, N.J. 08109  
(856) 488-0080  
Attn: Sgt. Christopher Sulzbach

Dept. of Public Works  
Pennsauken Twsp. Municipal Bldg.  
5605 N. Crescent Boulevard  
Pennsauken, N.J. 08110  
(856) 663-0178

Pennsauken Township Engineer  
E-mail: dorourke@twp.pennsauken.nj.us  
(856) 665-1000 x-148  
Attn: Dennis O'Rourke PE

Comcast Cable  
3370 Rt. 42  
Turnersville, N.J. 08012  
(856) 728-0918

New Jersey American Water Co.  
213 Carriage Lane  
Delran, N.J. 08075  
(856) 824-2578

Public Service Electric & Gas Electric  
Distribution Dept.  
300 New Albany Road  
Moorestown, N.J. 08057  
(856) 778-6781

New Jersey One Call  
(800) 272-1000 (Phone)  
(800) 705-4559 (Fax)



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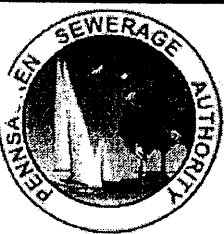


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## GENERAL NOTES

1. ANY PROPOSED DEVIATIONS FROM STANDARD CONSTRUCTION DETAILS, SHALL BE SUBJECT TO THE APPROVAL BY THE PENNSAUKEN SEWERAGE AUTHORITY ENGINEER.
2. ANY REFERENCE TO "ENGINEER" AND/OR "APPROVAL" SHALL BE INTERPRETED TO MEAN THE AUTHORITY ENGINEER OR APPROVAL BY THE AUTHORITY ENGINEER.
3. A. ALL CONSTRUCTION, MATERIALS, RESTORATION AND METHODS OF INSTALLATION IN TOWNSHIP ROADS SHALL BE SUBJECT TO THE REQUIREMENTS AND APPROVAL OF THE TOWNSHIP OF PENNSAUKEN.  
B. ALL CONSTRUCTION, MATERIALS, RESTORATION AND METHODS OF INSTALLATION IN COUNTY ROADS SHALL BE SUBJECT TO THE REQUIREMENTS AND APPROVAL OF CAMDEN COUNTY.
4. SANITARY SEWER CONSTRUCTION, MATERIALS AND TESTING SHALL BE SUBJECT TO THE APPROVAL OF AND INSPECTION BY THE PENNSAUKEN SEWERAGE AUTHORITY.
5. SANITARY GRAVITY SEWER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING ASTM D3034, SDR 35 SPECIFICATION FOR MAINS & 4"x 8" TEE AND ASTM D2241, SDR 26/35 SPECIFICATION FOR 4" LATERALS. INSTALL LATERAL @ 1\4" PER FT. MINIMUM SLOPE TO LIMITS SHOWN ON DETAIL. SANITARY FORCE MAIN SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING AWWA C900 - 89, DR-25, CLASS 100.
6. LOCATION OF 4" PVC SANITARY SEWER LATERALS SHALL BE ESTABLISHED BY THE RESPECTIVE PROPERTY OWNER IN THE FIELD. NO LATERAL MAY BE DIRECTLY CONNECTED TO A MANHOLE WITHOUT THE EXPRESSED APPROVAL OF THE AUTHORITY.
7. WATER MAINS AND SANITARY SEWER SHALL BE SEPARATED BY 10 FEET HORIZONTALLY WHEREVER POSSIBLE. OTHERWISE, THE SEWER AND WATER SHALL BE IN SEPARATE TRENCHES WITH THE SEWER 18" BELOW THE BOTTOM OF THE WATER MAIN. AT WATER AND SEWER CROSSINGS, THE SEWER SHALL BE 18" MINIMUM BELOW THE WATER OR SEWER MAIN SHALL BE C.L.D.I.P. WITH SLIP-ON JOINTS AND ENCASED IN CONCRETE FOR 10 FEET MINIMUM ON EACH SIDE OF THE CROSSING. WHERE SANITARY SEWER CROSS OVER OR WITHIN 18" UNDER A STORM PIPE THE SANITARY SEWER SHALL BE C.L.D.I.P. WITH SLIP-ON JOINTS AND ENCASED IN CONCRETE FOR 10 FEET EACH SIDE OF THE CROSSING.
8. ALL SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS DETAILED.
9. THE CONTRACTOR SHALL PAY ALL FEES INCLUDING INSPECTION FEES, AND GIVE NOTICES NECESSARY FOR, AND INCIDENTAL TO THE EXECUTION OF THE PROJECT.
10. NO MATERIALS SHALL BE PLACED OR ANY DISTURBANCE PERMITTED BEYOND THE PROJECT PROPERTY LINE OR RIGHT-OF-WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER DIRECTLY INVOLVED.
11. INSPECTION OF, OR FAILURE TO INSPECT ANY MATERIALS OR WORKMANSHIP BY STATE, COUNTY, TOWNSHIP OR AUTHORITY OFFICIALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO PERFORM THE WORK IN ACCORDANCE WITH APPLICABLE PLANS, SPECIFICATIONS AND LAWS.
12. THE CONTRACTOR SHALL NOTIFY UNDERGROUND LOCATION SERVICE AT 1-800-272-1000 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION WORK.



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## CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL NOTIFY THE PENNSAUKEN SEWERAGE AUTHORITY, PENNSAUKEN TOWNSHIP DEPARTMENT OF PUBLIC WORKS, AND THE CAMDEN COUNTY ENGINEERING DEPARTMENT (IF WORK IS WITHIN COUNTY R.O.W.) A MINIMUM OF 48 HOURS PRIOR TO THE SCHEDULED WORK.
2. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES OPERATING WITHIN THE SITE, 72 HOURS PRIOR TO ANY EXCAVATING. ALL UTILITIES SHALL BE PROTECTED DURING CONSTRUCTION WITHOUT INTERRUPTION OF SERVICE.
3. PROVISIONS TO BYPASS THE WASTEWATER DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND APPROVED BY THE AUTHORITY.
4. THE CONTRACTOR SHALL PROVIDE SOIL EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT NEARBY STREAMS AND STORM INLETS.
5. BACKFILL SHALL BE COMPACTED TO A MINIMUM PROCTOR DENSITY OF 95 PERCENT OF AVERAGE IN - SITU DRY DENSITY.
6. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL BACKFILL HIS TRENCH AND PROTECT THE PUBLIC FROM THE WORK AREA.
7. ROADWAYS SHALL BE SWEEPED CLEAN AT THE END OF EACH WORKING DAY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING, TOPSOILING, FERTILIZING AND SEEDING FERTILIZING AND SEEDING ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITIES.
9. UPON COMPLETION, ALL SEWER MAINS SHALL BE LAMPED AND TESTED FOR LOW PRESSURE EXFILTRATION.
10. A T.V. INSPECTION OF THE SANITARY SEWER SYSTEM SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER PRIOR TO FINAL APPROVAL AND ACCEPTANCE BY THE PENNSAUKEN SEWERAGE AUTHORITY.
11. MANHOLE CASTINGS THAT MUST BE RAISED SHALL BE DONE SO USING (A MAXIMUM OF 3) PRECAST CONCRETE GRADE RINGS THAT COMPLY WITH ASTM SPECIFICATION C-478-90b. THE CASTING SHALL BE REMOVED, THE GRADE RING(S) FIRMLY MORTARED IN PLACE, AND THE CASTING RESET IN A BED OF MORTAR TO THE PROPOSED GRADE. DUCTILE IRON MANHOLE EXTENSION RINGS SHALL NOT BE ACCEPTABLE FOR RAISING MANHOLE COVERS.
12. IN ORDER TO MAINTAIN A MINIMUM CLEANSING VELOCITY OF ONE FOOT PER SECOND WITH PEAK DISCHARGE RATES (SURGE FACTOR OF 2) AT TERMINAL LINES OF EIGHT (8) INCH P.V.C. PIPE, THE FOLLOWING MINIMUM SLOPES SHALL BE REQUIRED:

<u># OF DWELLINGS CONNECTED TO TERMINAL LINE</u>	<u>MINIMUM SLOPE</u>
8 TO 10	0.006 1/1
4 TO 7	0.008 1/1
1 TO 3	0.010 1/1

13. FRAMES IN ROADWAYS TO BE RAISED TO FINISHED GRADE WITH PRECAST GRADE RINGS NO SOONER THAN 24 HOURS PRIOR TO PAVING.
14. ALL PIPE TRENCHES (INCLUDING LATERALS TO CLEANOUTS) SHALL HAVE A THREE (3) INCH WIDE DETECTABLE UNDERGROUND UTILITY MARKING TAPE CONSISTING OF A SOLID ALUMINUM FOIL CORE SANDWICHED BETWEEN A 2 MIL. FILM. THE TAPE SHALL BE PLACED TWO (2) FEET BELOW THE FINISHED SURFACE AND DIRECTLY OVER THE PIPE. THE TAPE SHALL BE DETECTABLE AT THE SURFACE BY USE OF A METAL DETECTOR AND SHALL BE GREEN IN COLOR WITH THE WORDS "SANITARY SEWER LINE" PERMANENTLY PRINTED ON THE FACE.



### **PENNSAUKEN SEWERAGE AUTHORITY**

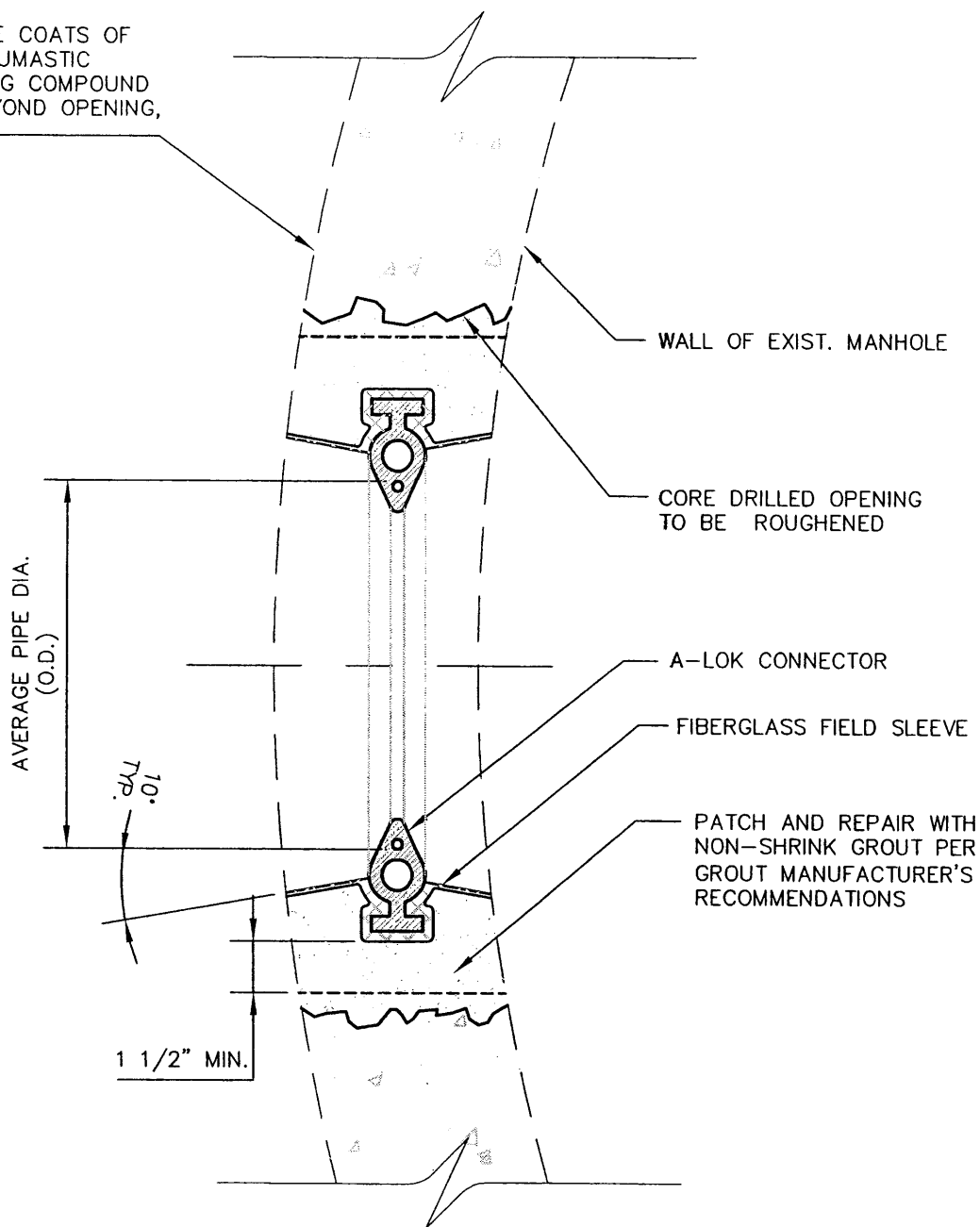
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TWO SEPARATE COATS OF  
APPROVED BITUMASTIC  
WATERPROOFING COMPOUND  
ONE FOOT BEYOND OPENING,  
IN FIELD



**NOTE:**

FOLLOW THE MANUFACTURER'S SLEEVE AND PIPE INSTALLATION INSTRUCTIONS.

## PIPE CONNECTION TO EXISTING MANHOLE DETAIL



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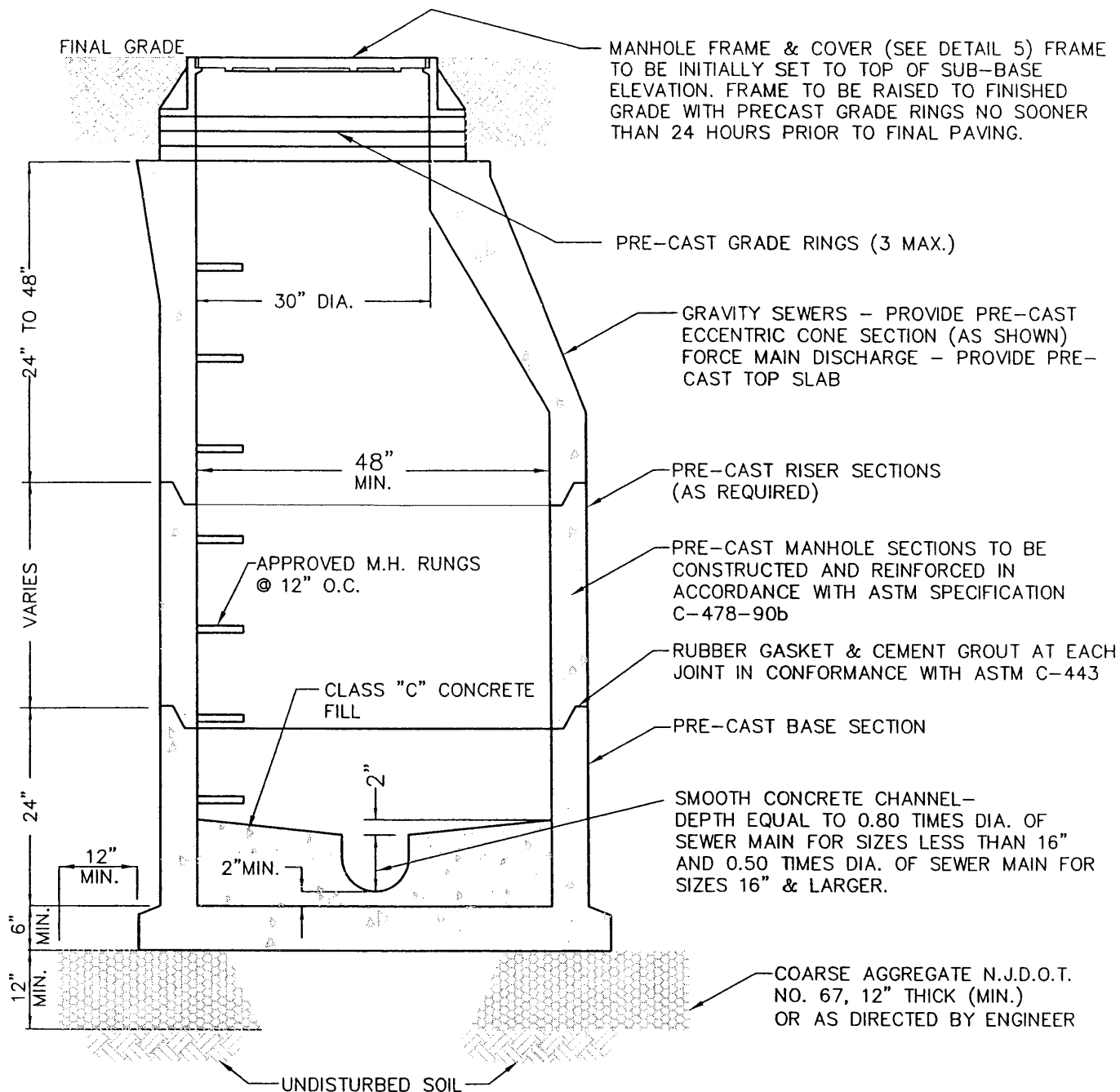
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DWG. NO. PSA DETAIL 1



- NOTES:
- 1) TWO SEPARATE COATS OF APPROVED BITUMASTIC WATERPROOFING COMPOUND SHALL BE APPLIED PER MANUFACTURERS INSTRUCTIONS TO THE ENTIRE EXTERIOR OF STRUCTURE.
  - 2) AT GRAVITY SEWERS, TWO SEPARATE COATS OF APPROVED TWO-PART EPOXY COATING SHALL BE APPLIED PER MANUFACTURER'S INSTRUCTIONS TO THE ENTIRE INTERIOR OF STRUCTURE.
  - 3) AT FORCE MAIN DISCHARGES, THE ENTIRE INTERIOR OF THE STRUCTURE SHALL BE LINED WITH P.V.C. "DURA PLATE 100 BY A-LOK", OR APPROVED EQUAL, DURING THE PRECASTING PROCESS.

## PRECAST MANHOLE DETAIL



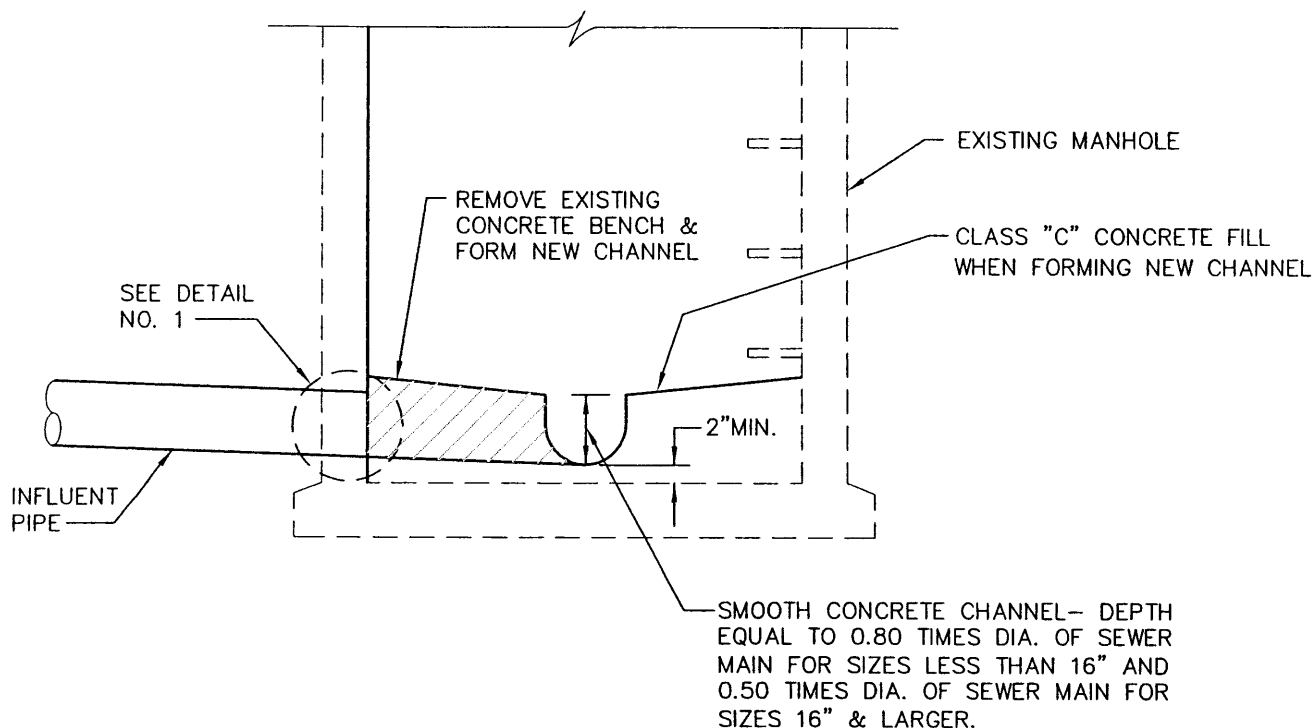
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**NOTE :**

IF THE PROPOSED PIPE COINCIDES WITH THE EXISTING MANHOLE RUNGS:

1. THE EXISTING MANHOLE OPENING AND CONE SECTION SHALL BE REALIGNED WITH THE PROPOSED ACCESS LADDER. THE EXISTING MANHOLE RUNGS WITHIN THE CONE SECTION MAY REMAIN AND ALL OTHERS SHALL BE REMOVED.
2. A NEW STAINLESS STEEL ACCESS LADDER WITH 1" DIAMETER RUNGS (MIN.) X 12" WIDE (MIN.) @ 12" ON CENTER SHALL BE INSTALLED 7" FROM THE MANHOLE WALL TO THE CENTERLINE OF THE RUNGS AND ATTACHED TO THE MANHOLE WALL WITH STAINLESS STEEL HARDWARE.

## CONNECTION TO EXISTING MANHOLE



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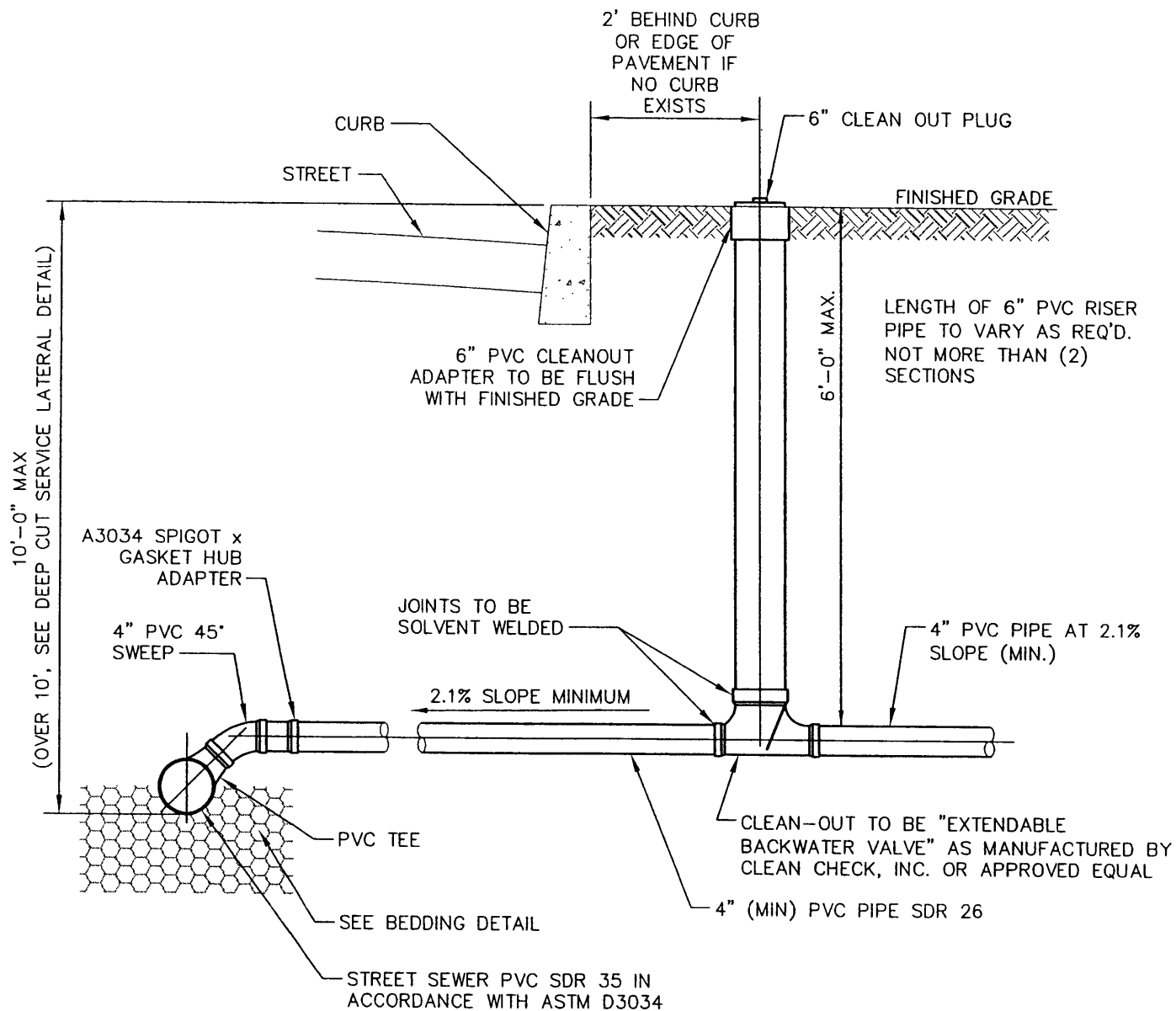
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## SERVICE LATERAL DETAIL



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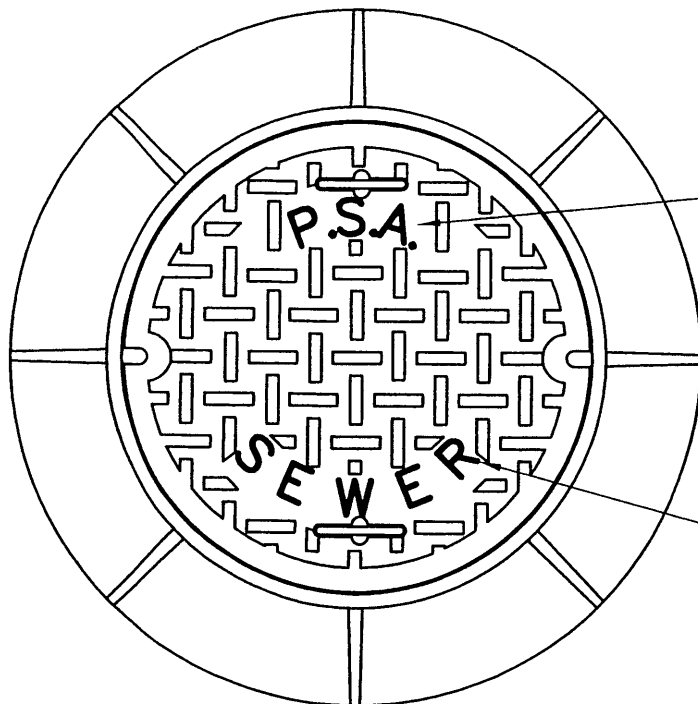
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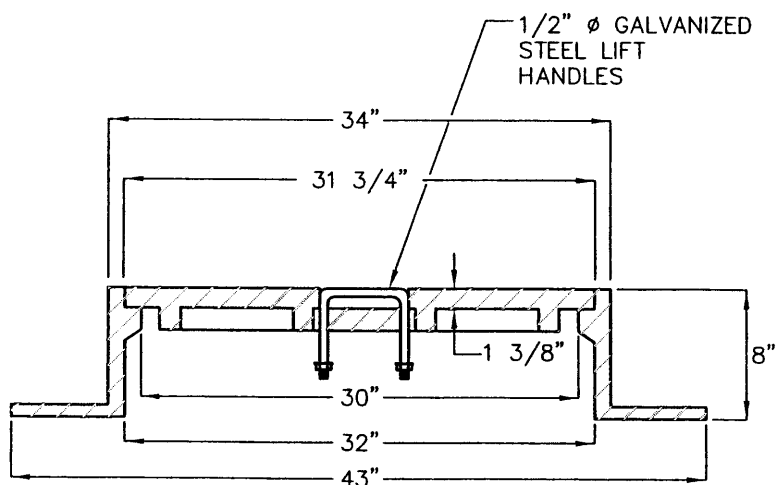
2" RAISED LETTERS  
OMIT WHERE MANHOLE  
WILL NOT BE MAINTAINED  
BY THE AUTHORITY

2" RAISED LETTERS

PLAN

NOTES:

STANDARD MANHOLE FRAMES & COVERS  
SHALL BE USED ON ALL MANHOLES NOT  
LOCATED WITHIN EASEMENTS UNLESS  
DIRECTED OTHERWISE BY THE ENGINEER.



STANDARD MANHOLE FRAME & COVER  
SHALL BE BRIDGESTATE PATTERN  
#1255A, OR APPROVED EQUAL, WITH  
NON-PENETRATING PICK HOLES AND  
DROP LIFT HANDLES.

"FLOW-SEAL" MANHOLE COVERS SHALL  
BE USED ON MANHOLES LOCATED WITHIN  
EASEMENTS, IN UNPAVED AREAS, AND  
OUTSIDE OF THE CENTERLINE OF PAVED  
ROADS.

ALL MANHOLE FRAME AND COVERS  
SHALL BE MADE IN THE USA.

SECTION

## STANDARD MANHOLE FRAME & COVER DETAIL



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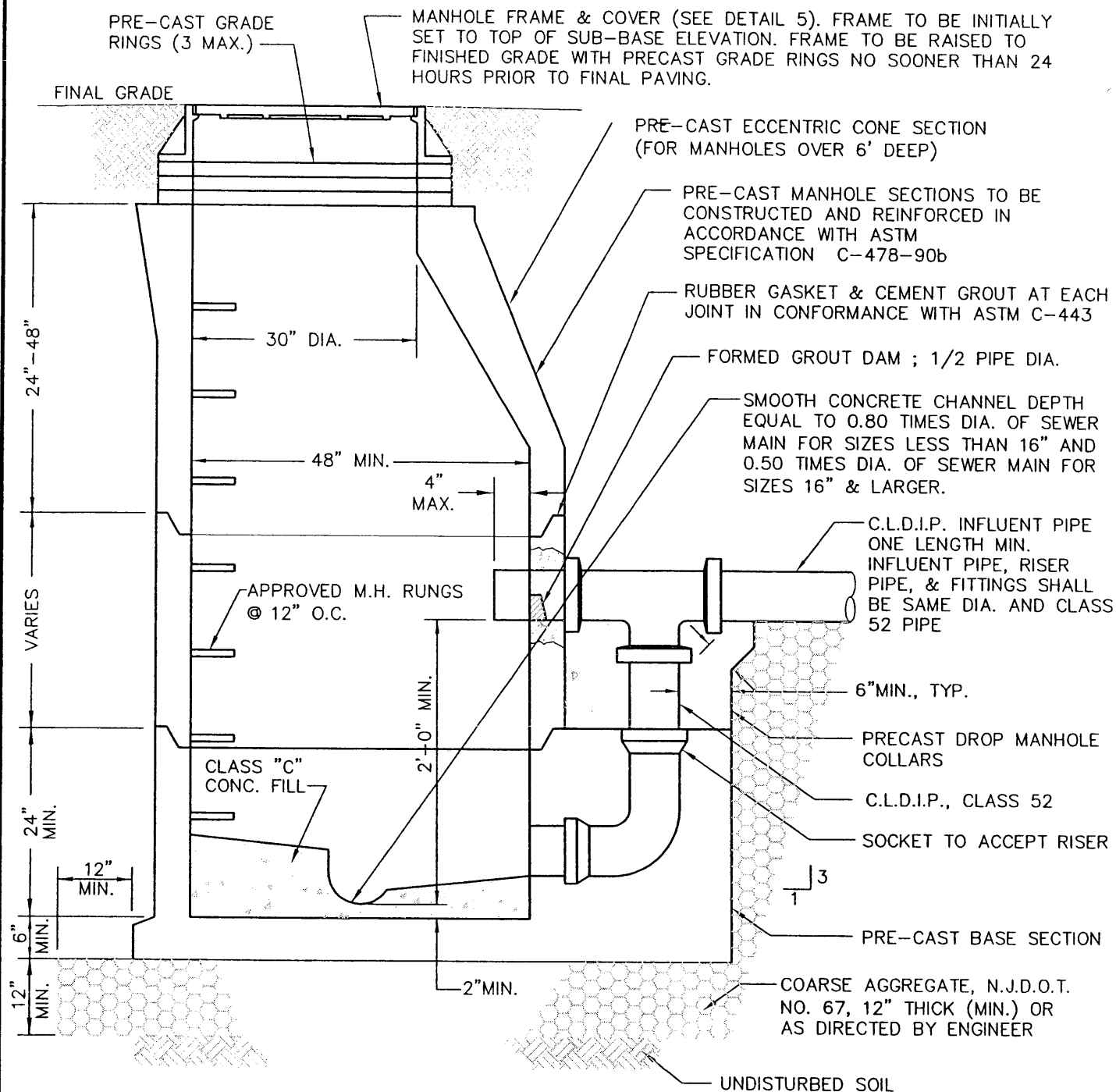
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DWG. NO. PSA DETAIL 5



- NOTES: 1) TWO SEPARATE COATS OF APPROVED BITUMASTIC WATERPROOFING COMPOUND SHALL BE APPLIED PER MANUFACTURERS INSTRUCTIONS TO THE ENTIRE EXTERIOR OF STRUCTURE.
- 2) TWO SEPARATE COATS OF APPROVED TWO-PART EPOXY COATING SHALL BE APPLIED PER MANUFACTURERS INSTRUCTIONS TO THE ENTIRE INTERIOR OF STRUCTURE.

## DROP MANHOLE DETAIL



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