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**SUBMITTAL PACKET**

**To Whom It May Concern:**

**Norwalk Tank Company manufactures concrete manholes, bases, flattops, and adjustment rings to conform to IDOT Standard Specifications, A.S.T.M. C478 and A.A.S.H.T.O. M199 standards as applicable.**

**Norwalk Tank Company is an Illinois Department of Transportation certified supplier of precast concrete products.**

**We stock a wide variety of products and can produce other items as ordered. If you require further information please do not hesitate to call.**

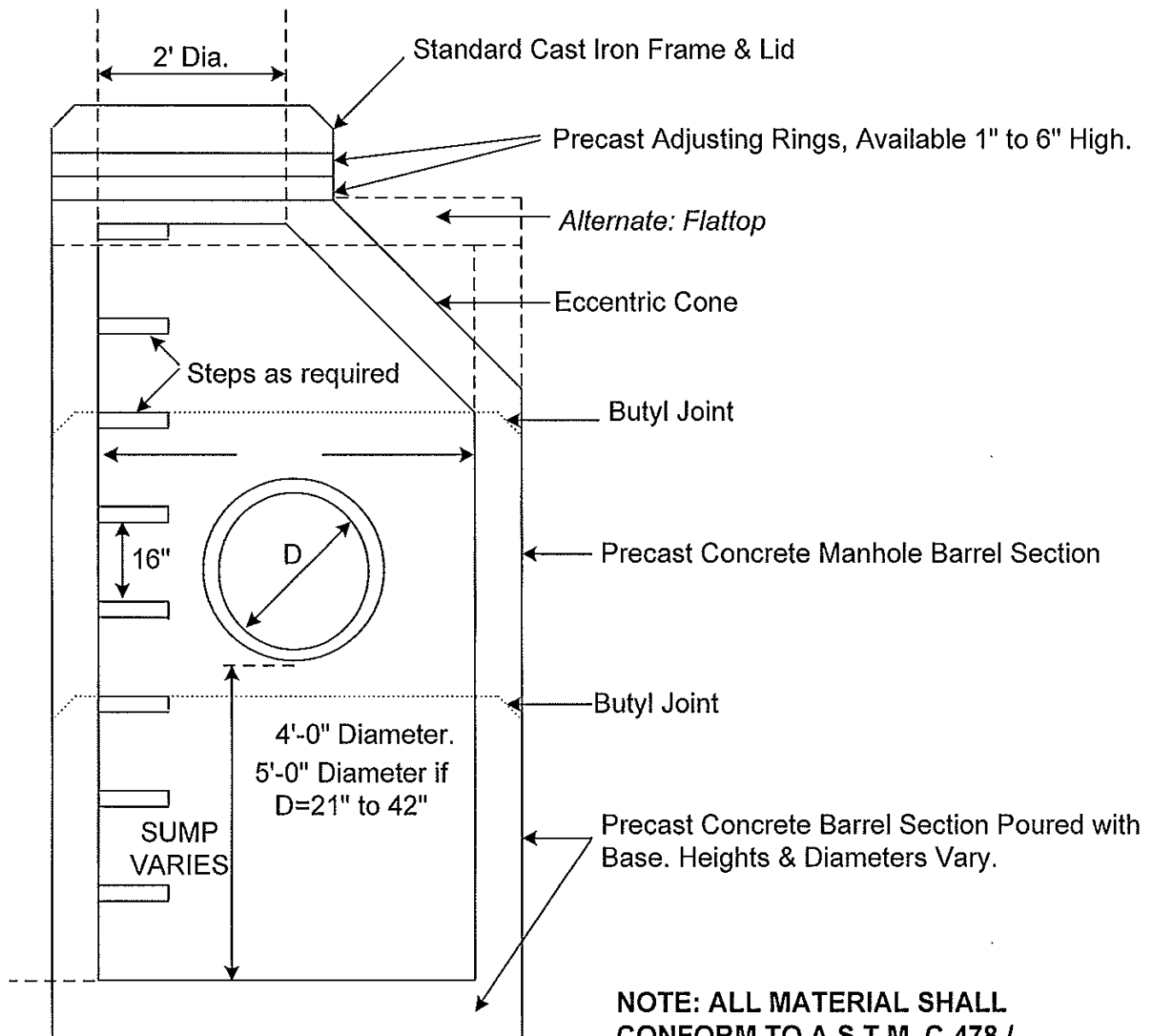
**Sincerely,**

**Cliff Scholp  
General Manager  
Norwalk Tank Company**

---

**The enclosed submittal package is a representative sample of vendors and material. Actual items and vendors may vary based on availability. Purchaser shall be solely responsible for determining whether product is appropriate for its intended use. Norwalk Tank Company does not design systems and does not recommend particular products for particular use.**

## TYPICAL PRECAST CONCRETE CATCH BASIN



**NOTE: ALL MATERIAL SHALL  
CONFORM TO A.S.T.M. C-478 /  
A.A.S.H.T.O M199 STANDARD  
SPECIFICATIONS.**



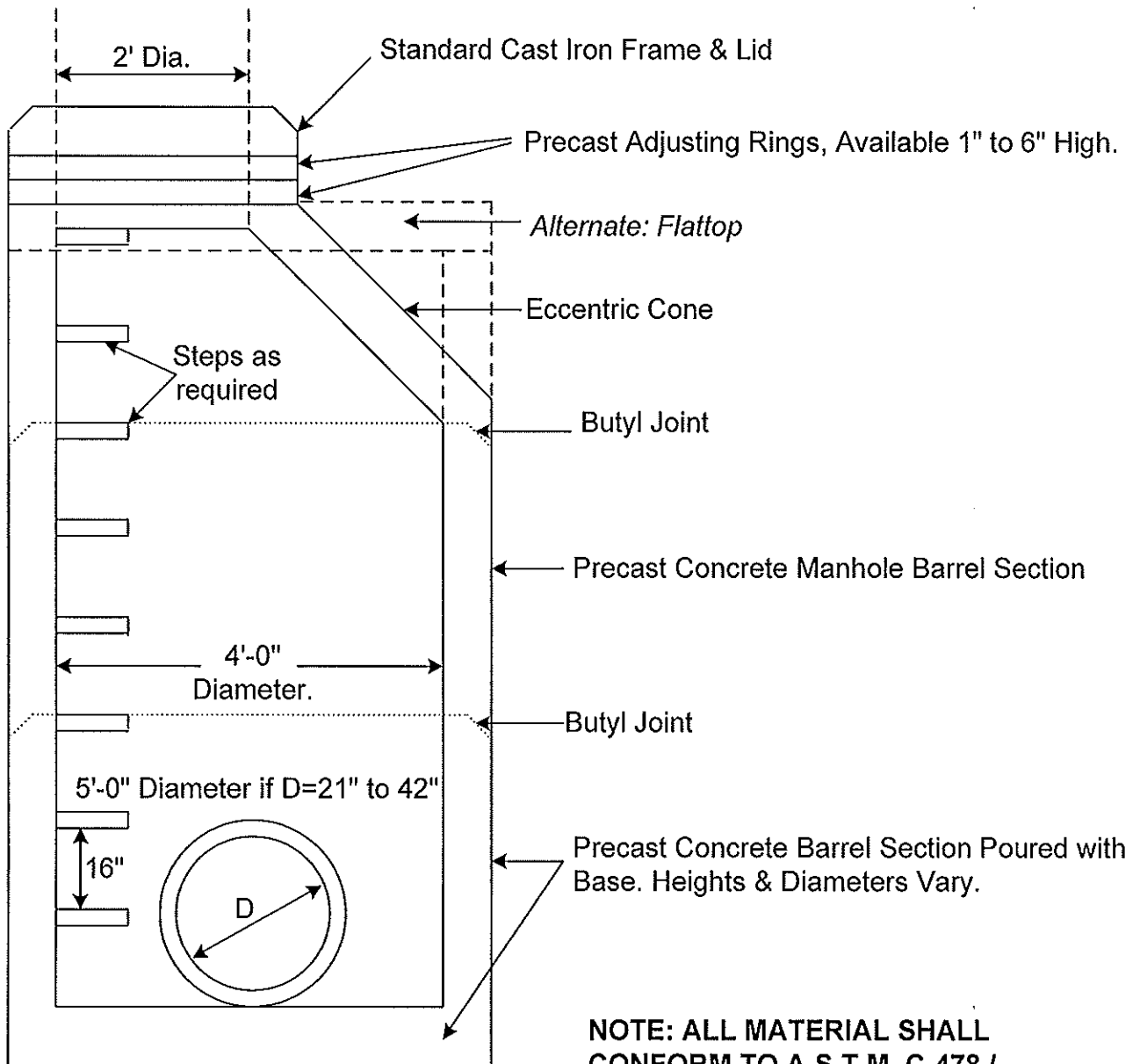
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COMPANY**

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EXAMPLE OF  
TYPICAL  
PRECAST  
CONCRETE  
CATCH BASIN

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## TYPICAL PRECAST CONCRETE STORM MANHOLE



**NOTE: ALL MATERIAL SHALL CONFORM TO A.S.T.M. C-478 / A.A.S.H.T.O M199 AND ILLINOIS STANDARD SPECIFICATIONS.**



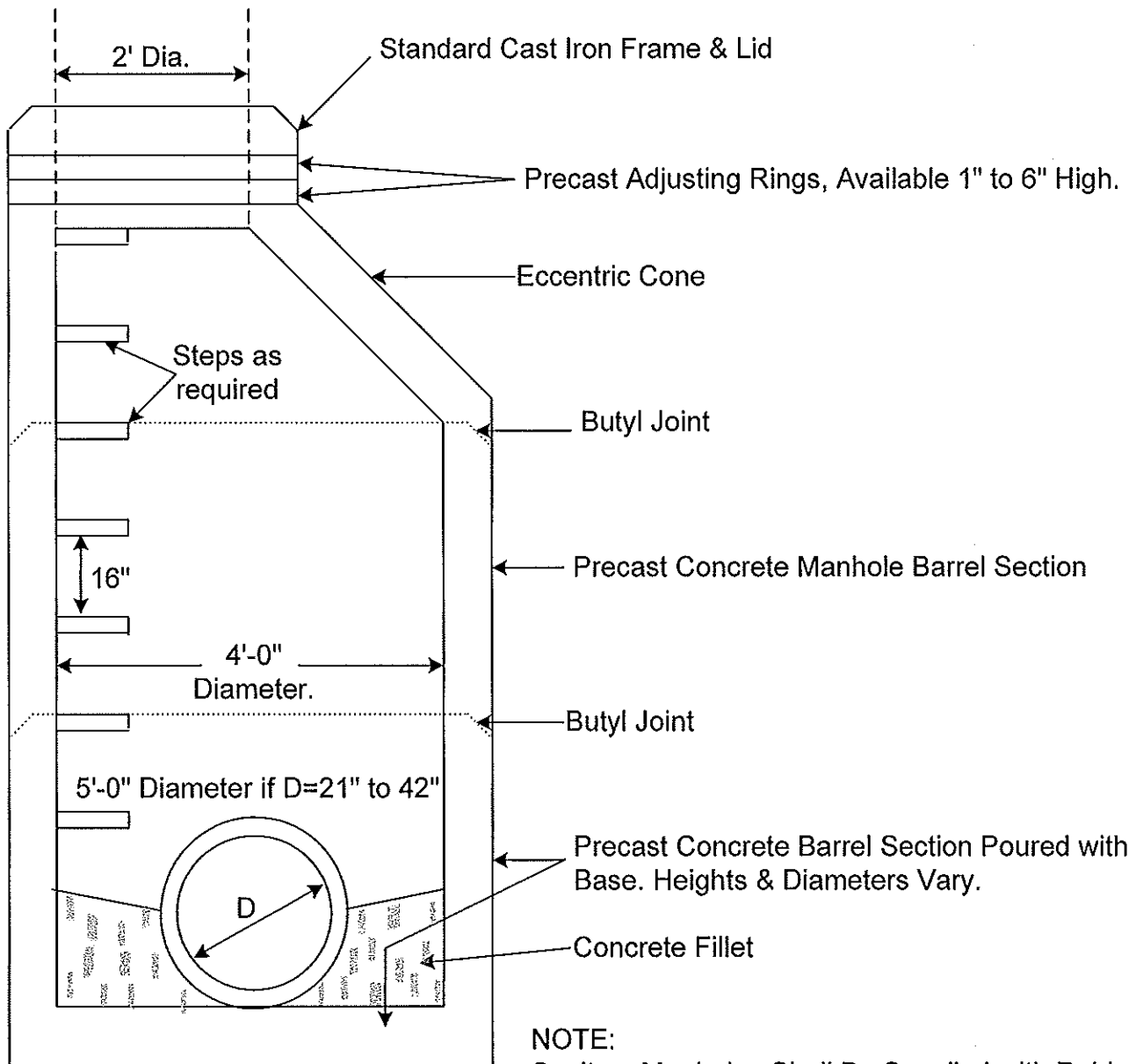
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EXAMPLE OF  
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CONCRETE  
STORM  
MANHOLE

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## TYPICAL PRECAST CONCRETE SANITARY MANHOLE



**NOTE:**

Sanitary Manholes Shall Be Supplied with Rubber Gasketed Couplings Per A.S.T.M. C-923 At Inlet and Outlet Points of Manhole.



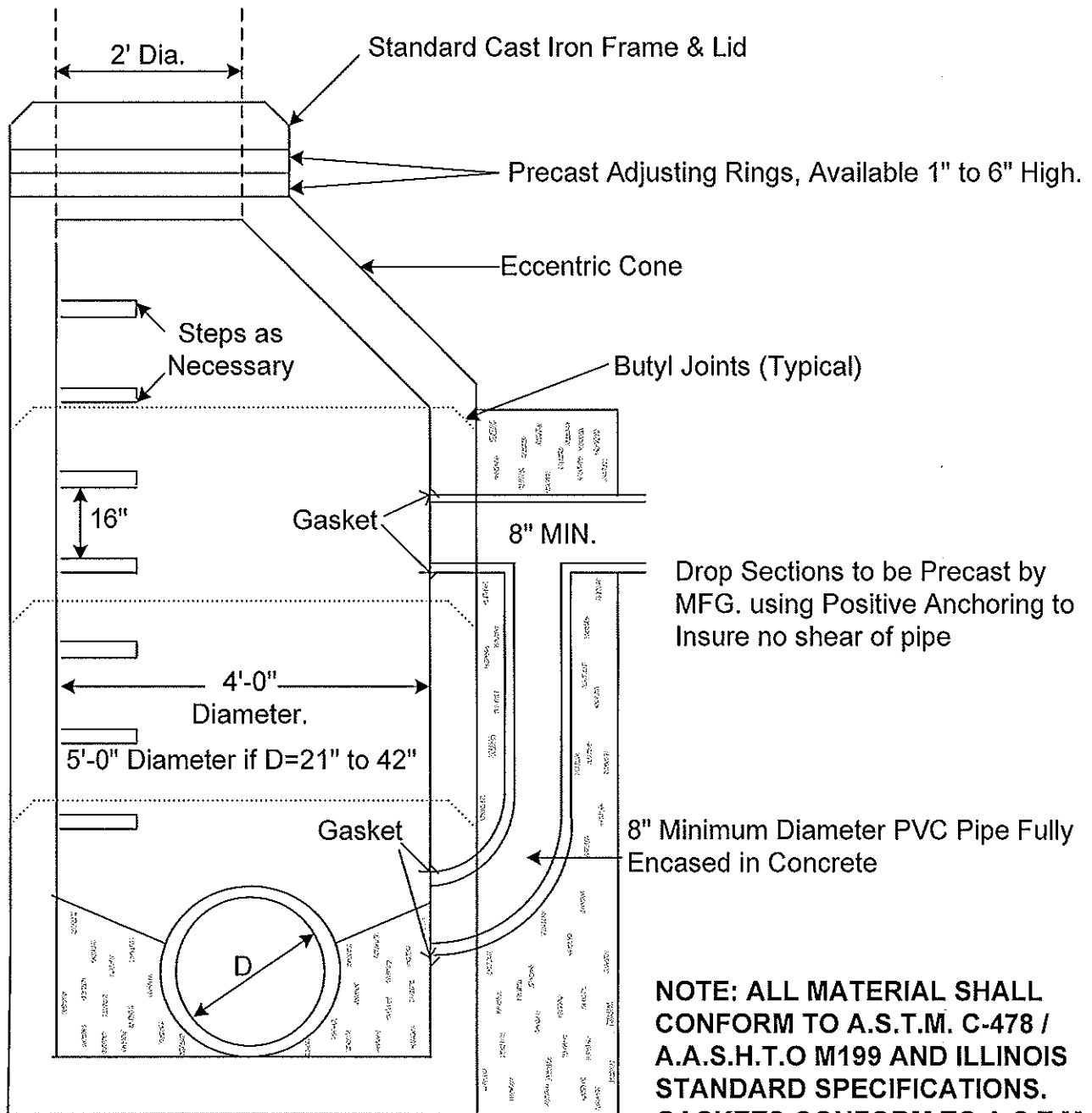
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EXAMPLE OF  
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CONCRETE  
SANITARY  
MANHOLE

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## TYPICAL DROP CONNECTION TO PRECAST SANITARY MANHOLE

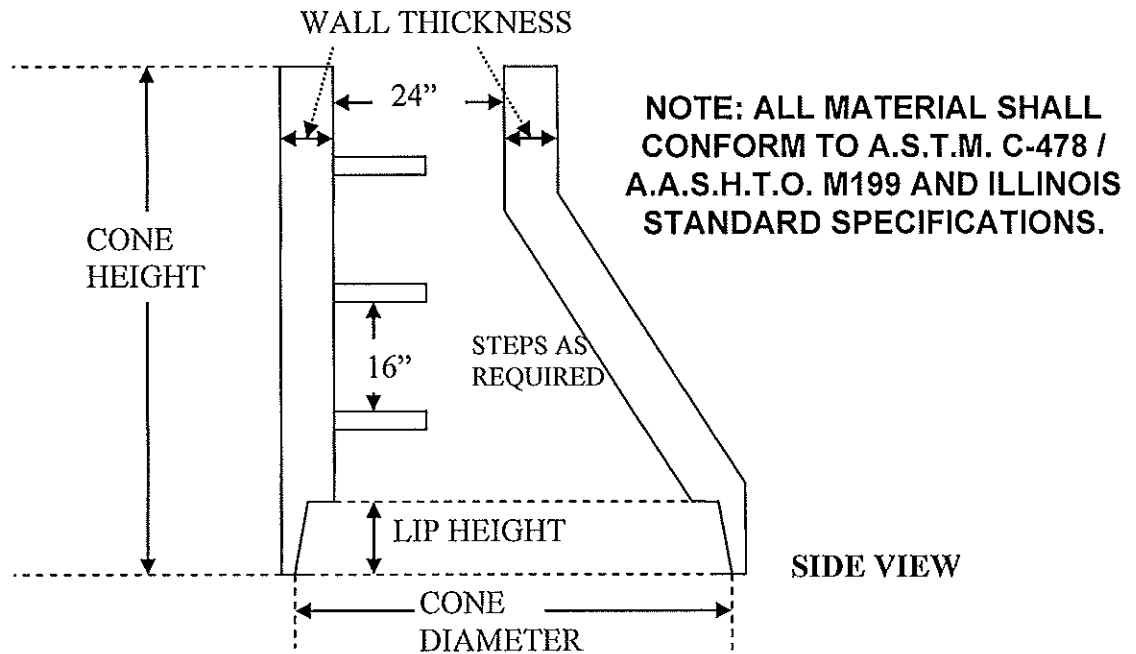
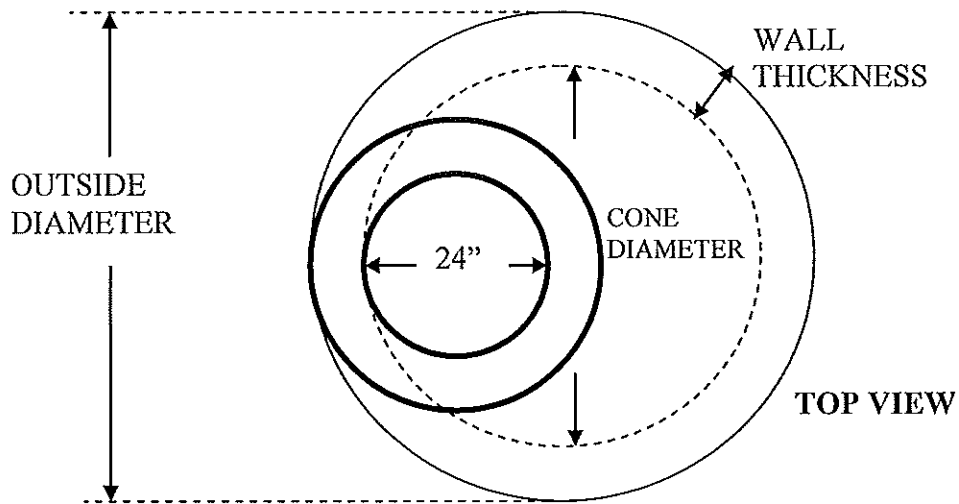


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TYPICAL DROP  
CONNECTION  
TO PRECAST  
SANITARY  
MANHOLE

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# TYPICAL PRECAST MANHOLE ECCENTRIC CONE



| ITEM     | ~INSIDE DIA. | ~HEIGHT | ~OUTSIDE DIA. | ~WALL THICKNESS | ~LIP HEIGHT |
|----------|--------------|---------|---------------|-----------------|-------------|
| 3CONE18  | 36"          | 18"     | 48"           | 4"              | 3.5"        |
| 4CONE18  | 48"          | 18"     | 58"           | 5"              | 4.5"        |
| 4CONE28* | 48"          | 28"     | 58"           | 5"              | 4.5"        |
| 4CONE36  | 48"          | 36"     | 58"           | 5"              | 4.5"        |
| 4CONE40  | 48"          | 40"     | 58"           | 5"              | 4.5"        |
| 5CONE36  | 60"          | 36"     | 72"           | 6"              | 5"          |

\*This cone has no upright chimney section.



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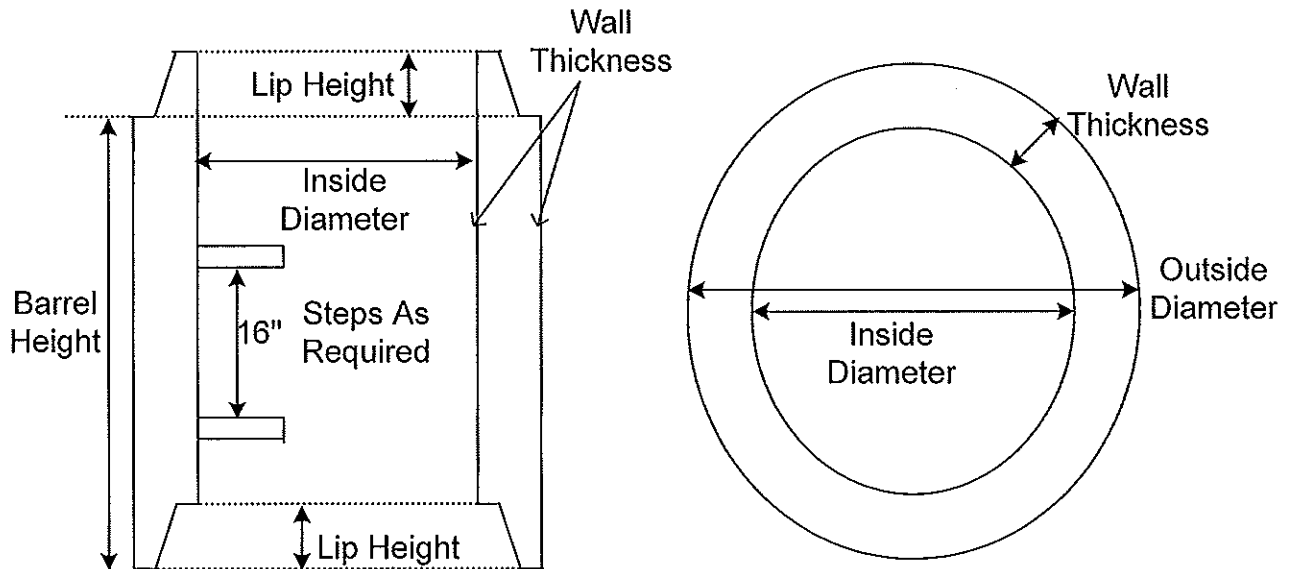
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TYPICAL  
PRECAST  
MANHOLE  
ECCENTRIC  
CONE

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# PRECAST CONCRETE BARREL SECTION

NOTE: ALL MATERIAL SHALL CONFORM TO A.S.T.M. C-478 /  
A.A.S.H.T.O. M199 AND ILLINOIS STANDARD SPECIFICATIONS



| ITEM        | ~INSIDE<br>DIA. | ~HEIGHT | ~OUTSIDE<br>DIA. | ~WALL<br>THICKNESS | ~LIP<br>HEIGHT |
|-------------|-----------------|---------|------------------|--------------------|----------------|
| 2X6 BARREL  | 24"             | 6"      | 30"              | 3"                 | FLAT           |
| 2X1 BARREL  | 24"             | 12"     | 30"              | 3"                 | FLAT           |
| 2X2 BARREL  | 24"             | 24"     | 30"              | 3"                 | FLAT           |
| 2X4 BARREL  | 24"             | 48"     | 30"              | 3"                 | FLAT           |
| 4X12 BARREL | 48"             | 12"     | 58"              | 5"                 | 4.5"           |
| 4X16 BARREL | 48"             | 16"     | 58"              | 5"                 | 4.5"           |
| 4X24 BARREL | 48"             | 24"     | 58"              | 5"                 | 4.5"           |
| 4X32 BARREL | 48"             | 32"     | 58"              | 5"                 | 4.5"           |
| 4X48 BARREL | 48"             | 48"     | 58"              | 5"                 | 4.5"           |
| 4X60 BARREL | 48"             | 60"     | 58"              | 5"                 | 4.5"           |
| 5X12 BARREL | 60"             | 12"     | 72"              | 6"                 | 5"             |
| 5X24 BARREL | 60"             | 24"     | 72"              | 6"                 | 5"             |
| 5X36 BARREL | 60"             | 36"     | 72"              | 6"                 | 5"             |
| 5X48 BARREL | 60"             | 48"     | 72"              | 6"                 | 5"             |
| 5X60 BARREL | 60"             | 60"     | 72"              | 6"                 | 5"             |



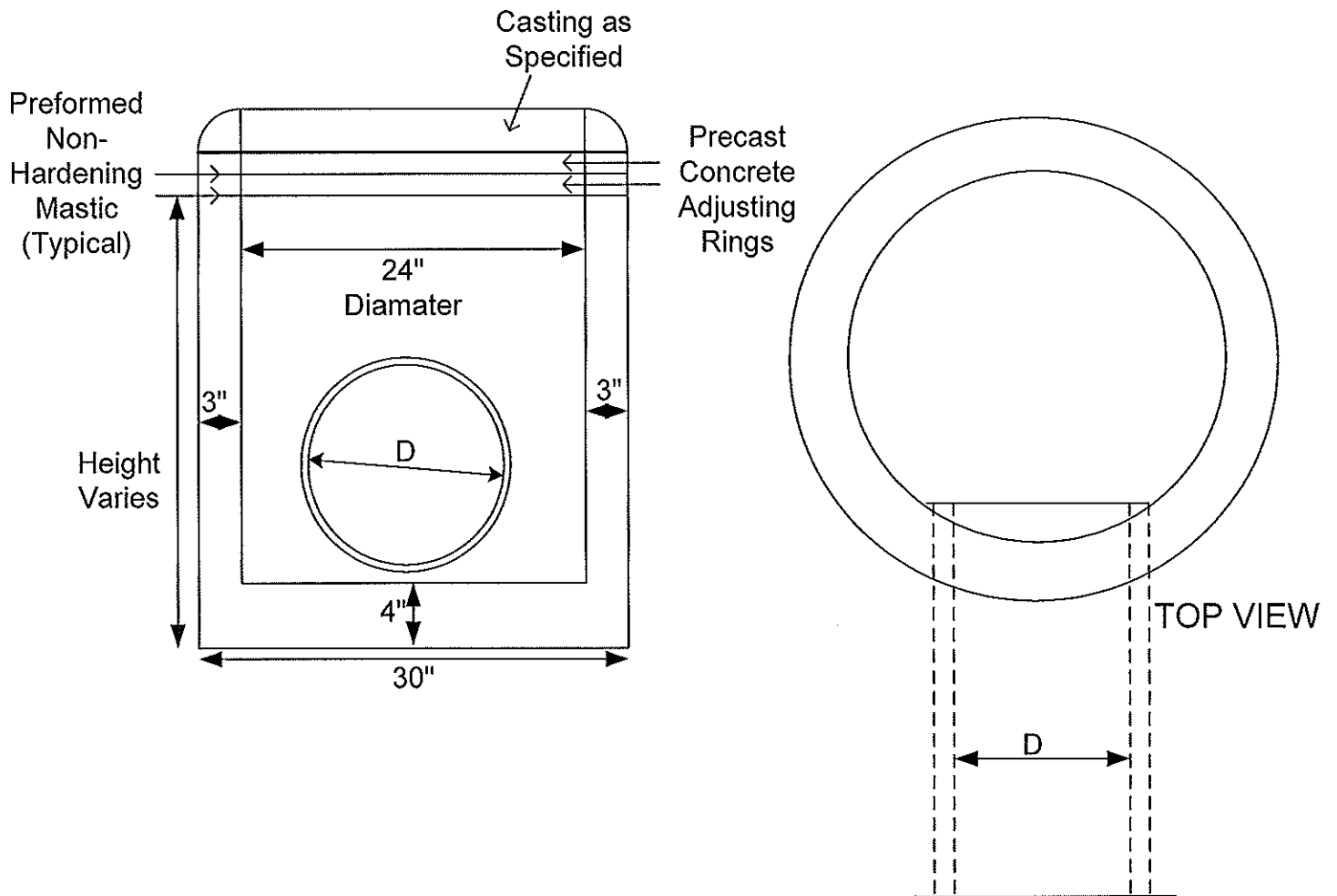
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DETAIL OF  
PRECAST  
CONCRETE  
BARREL  
SECTION

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## TYPICAL PRECAST CONCRETE TYPE A INLET



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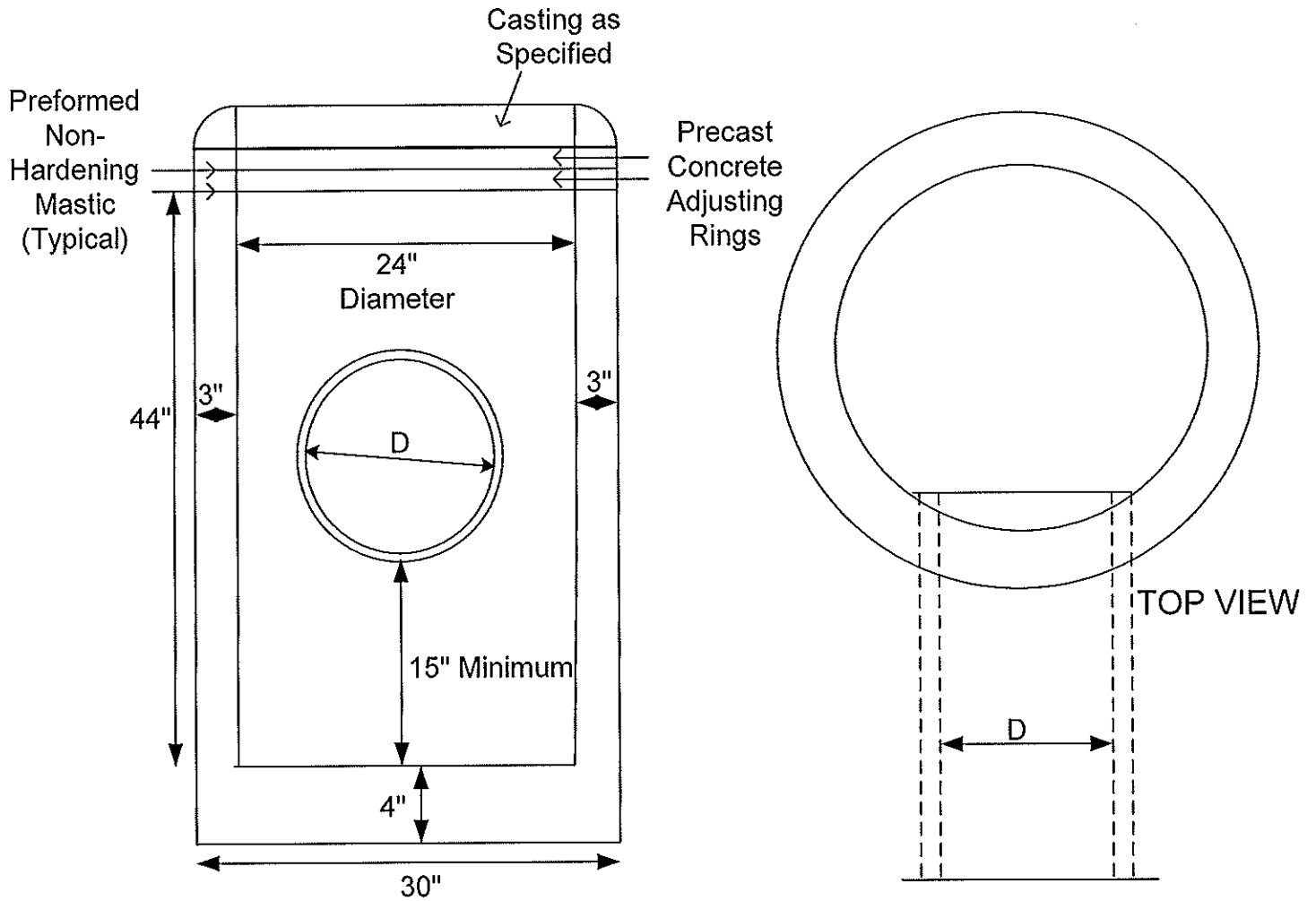
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TYPICAL  
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TYPE A

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# TYPICAL PRECAST CONCRETE CATCHBASIN TYPE C



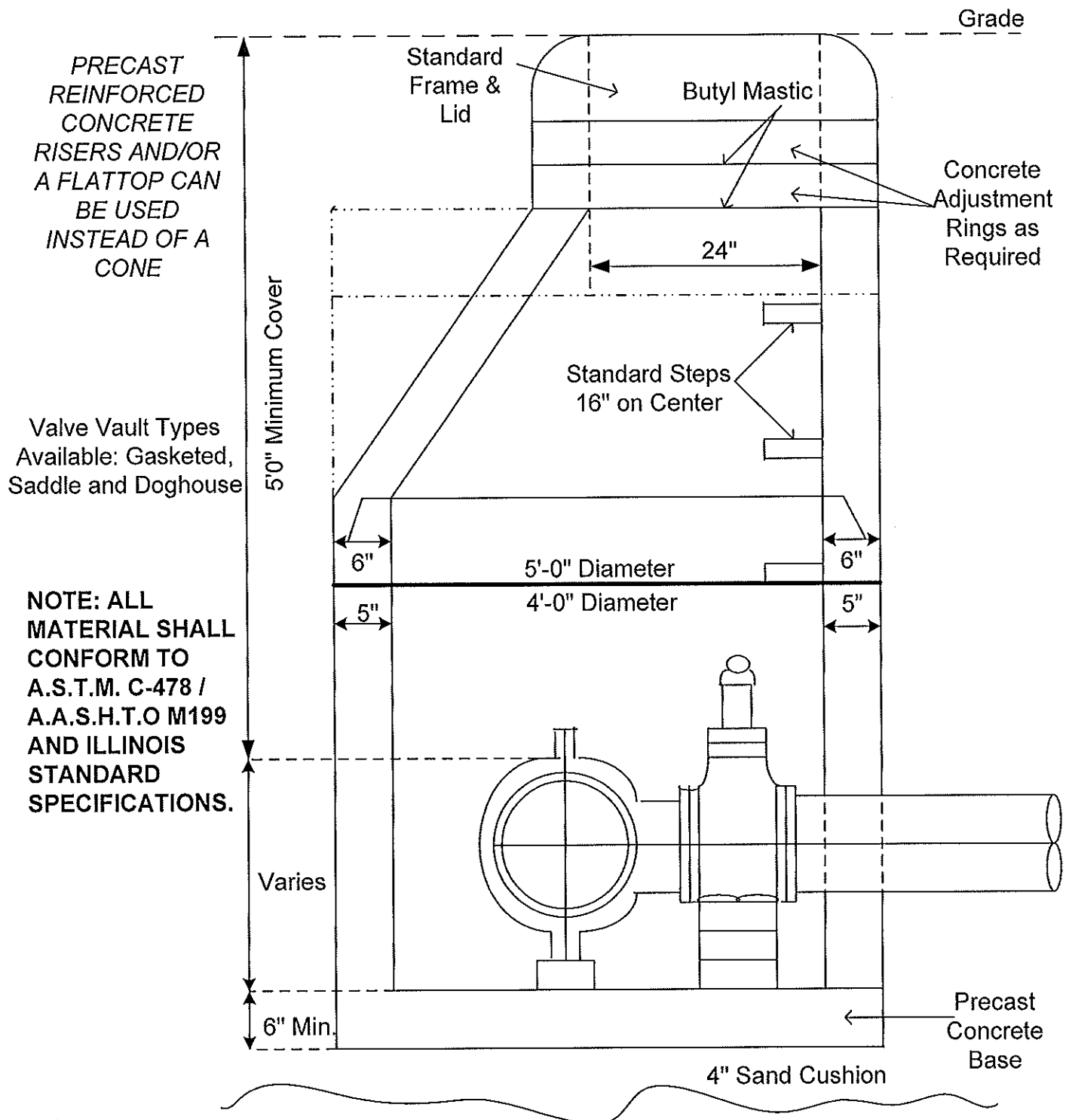
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TYPICAL  
PRECAST  
CATCHBASIN  
TYPE C

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## VALVE & VALVE VAULT DETAIL FOR PRESSURE CONNECTIONS



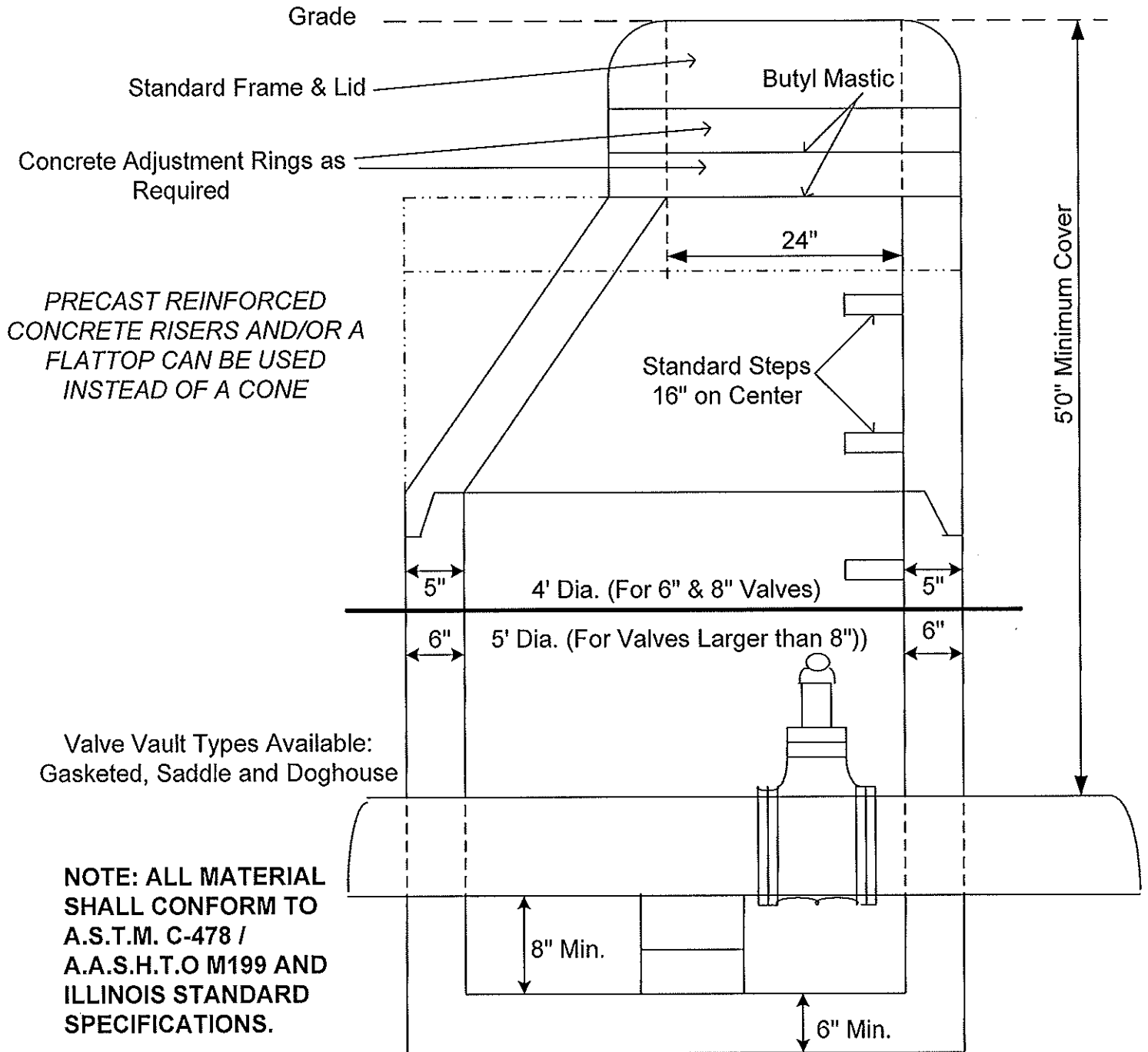
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VALVE & VALVE  
VAULT DETAIL  
FOR PRESSURE  
CONNECTIONS

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## TYPICAL PRECAST CONCRETE VALVE VAULT

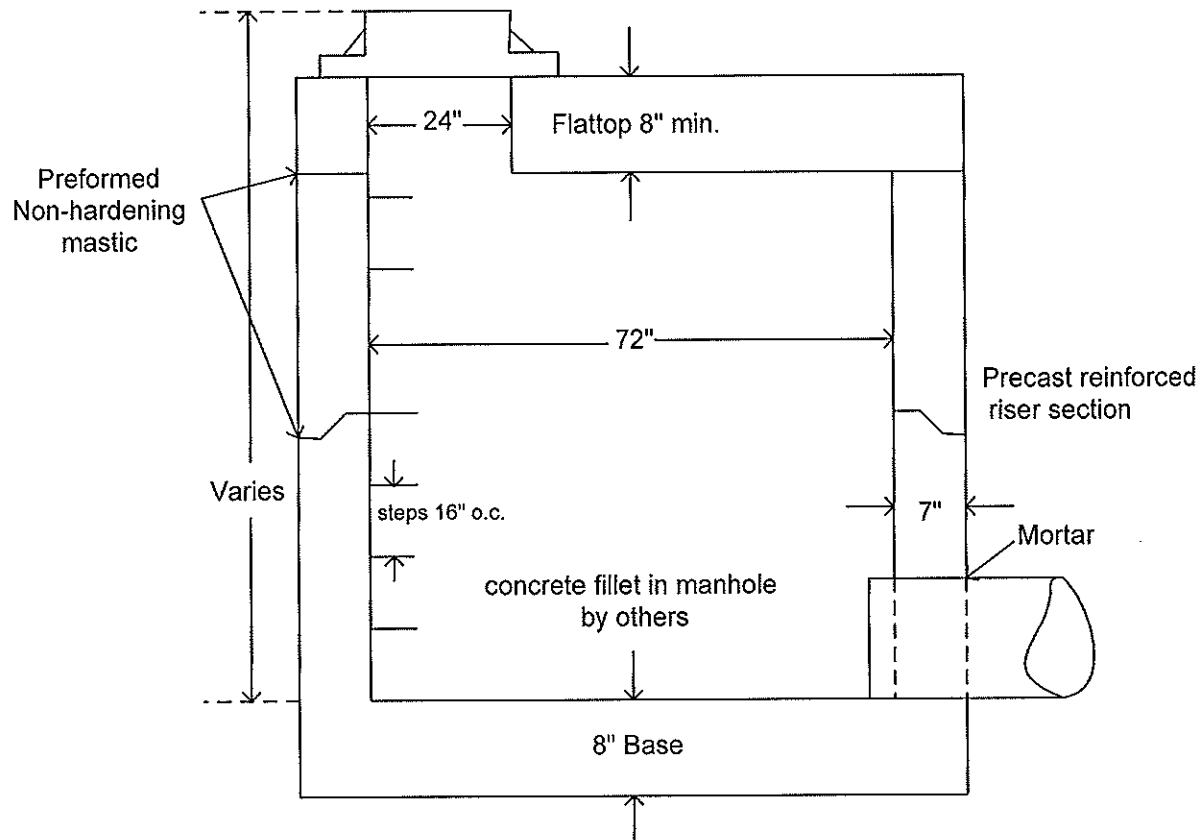


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TYPICAL  
PRECAST  
CONCRETE  
VALVE  
VAULT

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# EXAMPLE OF TYPICAL PRECAST CONCRETE 6' STORM MANHOLE



**NOTE: ALL MATERIAL  
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A.A.S.H.T.O. M199 AND  
ILLINOIS STANDARD  
SPECIFICATIONS.**

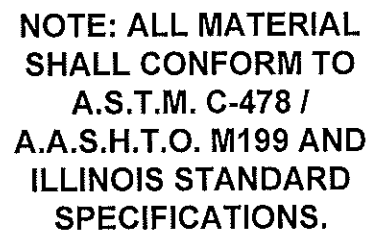


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EXAMPLE OF  
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PRECAST  
CONCRETE 6'  
STORM  
MANHOLE

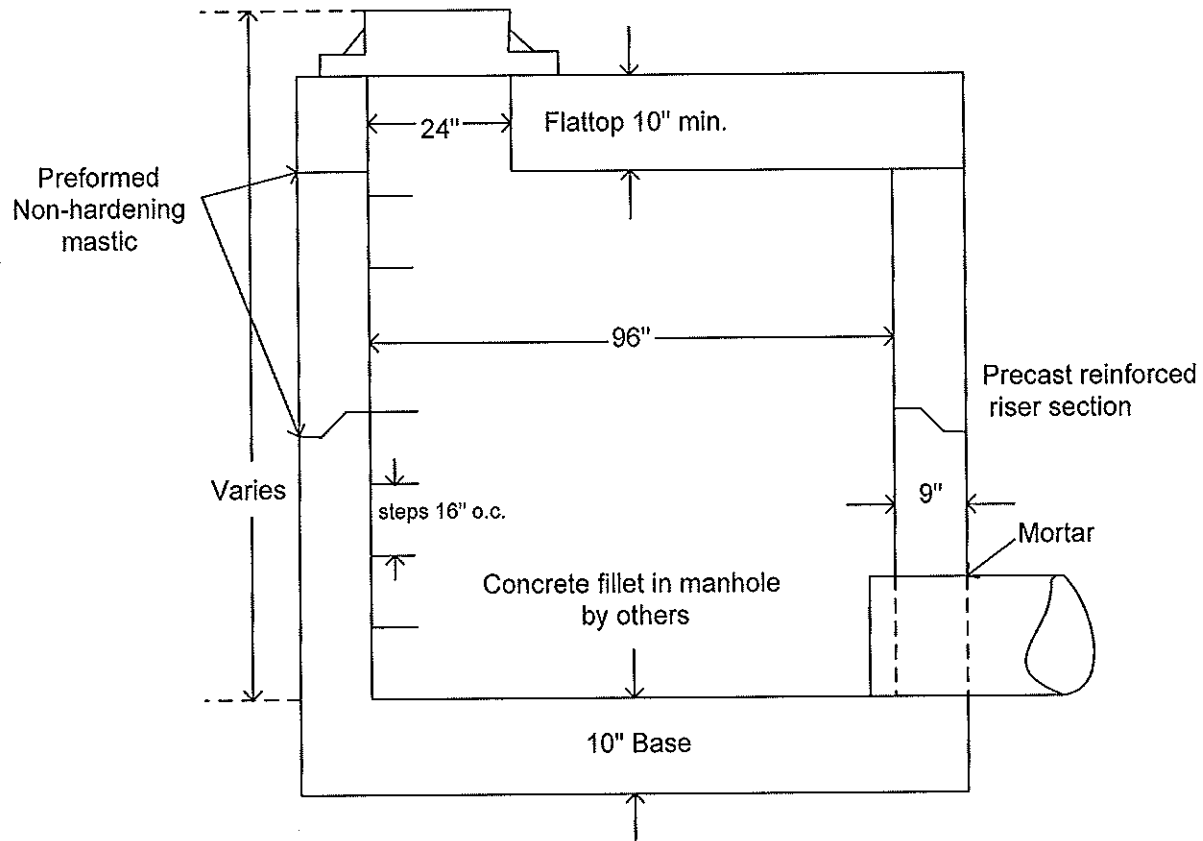
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**EXAMPLE OF  
TYPICAL  
PRECAST  
CONCRETE 7"  
STORM  
MANHOLE**

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## EXAMPLE OF TYPICAL PRECAST CONCRETE 8' STORM MANHOLE



**NOTE: ALL MATERIAL  
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A.A.S.H.T.O. M199 AND  
ILLINOIS STANDARD  
SPECIFICATIONS.**



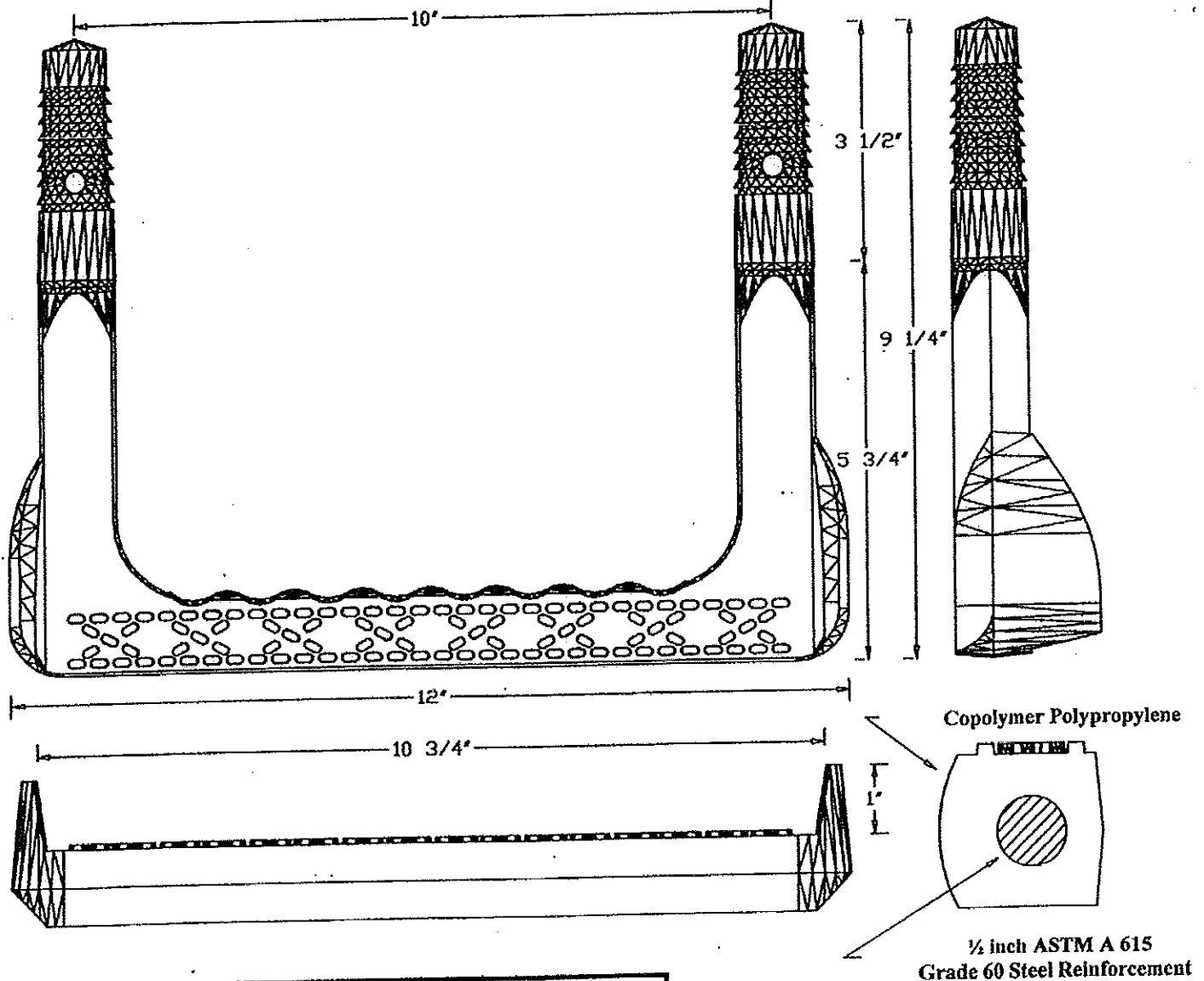
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**EXAMPLE OF  
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PRECAST  
CONCRETE 8'  
STORM MANHOLE**

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# ML-10-NCR



## ML-10-NCR

**Mechanical Lock Installation Methods:**  
Minimum Concrete Strength Must Be 3000 PSI

### Preformed Holes:

Two preformed holes on 10" centers.  
Holes must be parallel.  
Diameter of holes are 1.1" tapering to 7/8" in 3 1/2" of depth.

### Drilled Holes:

Drill two 1" holes on 10" centers with a minimum depth of 3 3/4".  
Use 1" masonry bit for drilling.  
Holes must be parallel.

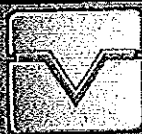
Drive step with sledge hammer until both legs are completely seated

*This step meets or exceeds ASTM C 478 and OSHA Standards  
when properly installed.*

**AMERICAN**  
**STEP COMPANY, INC.**

800-988-STEP 770-467-9844 OFFICE 770-467-8011 FAX  
830 EAST BROADWAY P. O. BOX 137 GRIFFIN, GA 30224-0137

## PRODUCT SPECIFICATIONS



**CONSEAL**  
Concrete Sealants Inc.

**CS-102B**

Butyl/Bituman Blended Sealant

### APPLICATIONS

For self-sealing joints in: Manholes, Concrete Pipe, Vaults, Box Culverts, Septic Tanks, and Vertical Panel Structures.

### SEALING PROPERTIES

- Provides permanently flexible watertight joints.
- Low to high temperature workability:
- CS-102B . . . 45°F to 130°F (-34°C to + 93°C)
- Rugged service temperature: -30°F to +200°F (-34°C to + 93°C)
- Excellent chemical and mechanical adhesion to clean and dry surfaces.
- Greater cohesive and adhesive strengths.
- Sealed Joints will not shrink, harden or oxide upon aging.
- Controlled flow resistance for application ease.
- No priming normally necessary. When confronted with difficult installation conditions, such as wet concrete or temperatures below 40°F (4°C), priming the concrete will improve the bonding action. Consult Concrete Sealants for the proper primer to meet your application.

### HYDROSTATIC STRENGTH

ConSeal CS-102B meets the hydrostatic performance requirement as set forth in ASTM C-990 section 10.1 (Performance requirement: 10psi for 10 minutes in straight alignment – in plant, quality control test for joint materials.)

### SPECIFICATIONS

ConSeal CS-102B meets or exceeds the requirements of Federal Specification SS-S-210 (210-A), AASHTO M-198B, and ASTM C-990-91.

### CHEMICAL COMPOSITION

|   | Spec           | Required | CS-102B |
|---|----------------|----------|---------|
| Hydrocarbon plastic content % by weight | ASTM D4        | 50-70    | 52.1    |
| Inert mineral filler % by weight        | AASHTO T111-42 | 30-50    | 47.9    |
| Volatile Matter % by weight             | ASTM D6        | 3.0 max. | 1.0     |

P.O. Box 176, New Carlisle OH, 45344 • 937.845.8776 or 800.332.7325  
FAX 937-845-3587 • [www.conseal.com](http://www.conseal.com)



## PRODUCT SPECIFICATIONS



# CONSEAL™

Concrete Sealants Inc.

# CS-102B

Butyl/Bituman Blended Sealant

### PHYSICAL PROPERTIES

|  | Spec      | Required   | CS-102B |
|--|-----------|------------|---------|
| Specific Gravity, 77°F                           | ASTM D71  | 1.20-1.35  | 1.22    |
| Ductility, 77°F (25°C)                           | ASTM D113 | 5.0 min.   | 8       |
| Softening point, ring and ball °F                | ASTM D36  | 320°F min. | 370°+   |
| Penetration, cone 77°F (25°C),<br>150 gm. 5 sec. | ASTM D217 | 50-120 mm  | 62 mm   |
| Flash point, C.O.C., °F                          | ASTM D92  | 600° min.  | 630°    |
| Fire point, C.O.C., °F                           | ASTM D92  | 625° min.  | 630°    |

### IMMERSION TESTING

- 30-Day Immersion Testing: No visible deterioration when tested in 5% Caustic Potash, 5% Hydrochloric Acid, 5% Sulfuric Acid, and 5% saturated Hydrogen Sulfide.
- One Year Immersion Testing: No visible deterioration when tested in 5% Formaldehyde, 5% Formic Acid, 5% Sulfuric Acid, 5% Hydrochloric Acid, 5% Sodium Hydroxide, 5% Hydrogen Sulfide and 5% Potassium Hydroxide.

### LIMITED WARRANTY

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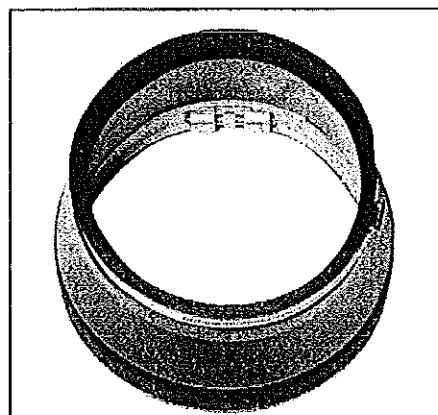
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FAX 937-845-3587 • [www.conseal.com](http://www.conseal.com)

# PSX:DIRECT DRIVE

## HIGH-PERFORMANCE PIPE-TO-MANHOLE CONNECTOR

### What It Is

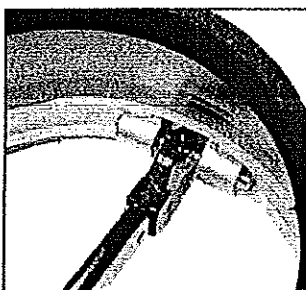
PSX: Direct Drive is a high-performance flexible pipe- to-manhole connector that offers easy installation and long-term performance in one convenient product. Whether you core or cast your holes, PSX:Direct Drive fits right into your production methods, ready to seal your toughest applications every time.



### How It Works

PSX:Direct Drive has superior materials and technology

- Specially developed synthetic rubber is continuously tested and lab-certified
- Power Sleeve made from tempered Series 304 stainless steel
- Installation Mechanism made from Series 300 stainless steel
- Installation Mechanism is infinitely adjustable
- Installation tools are calibrated and certified
- Take-up clamps made from Series 304 stainless steel with quick-adjusting screws



### Why It's Better

- Installs quickly and easily from outside the manhole
- Requires no retightening or adjustment
- All stainless-steel components
- No plastic parts to crack or break
- Accurately compensates for hole size variation
- Available for pipes from 1.7"- 44" OD
- Additional torque and multiple adjusters on larger diameters
- Use in manholes, wet wells, pump and lift stations, stormwater structures, on-site treatment structures, grease interceptors, or any application requiring a flexible watertight connector

### How It Performs

*PSX:Direct Drive meets or exceeds all requirements of the following Specifications and/or Test Methods:*

**ASTM C 923**  
**ASTM C 1244**  
**ASTM C 1478**  
**ASTM F 2510**

Protected by one or more of the following patents: 6805359, 7146689, 7263746

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**PRESS-SEAL GASKET CORPORATION**

*Providing Products and Services That Protect Our Planet's Clean Water Supply*

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email: [sales@press-seal.com](mailto:sales@press-seal.com)  
web: [www.press-seal.com](http://www.press-seal.com)



### Submittal Specification

A watertight flexible pipe-to-manhole connector shall be employed in the connection of the sanitary sewer and/or stormwater pipe to precast manholes or other structures.

The connector shall be PSX:DIRECT DRIVE as manufactured by Press-Seal Gasket Corporation, Fort Wayne, Indiana, or approved equal.

The connector assembly shall be the sole element relied on to assure a flexible watertight seal of the pipe to the structure. The connector shall consist of a rubber gasket, an internal expansion sleeve, and one or more external compression take-up clamps. Approved materials for the connector shall be natural or synthetic rubber and Series 300 non-magnetic stainless steel. No plastic components shall be permitted.

The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet/exceed the requirements of ASTM C 923, and shall have a minimum tensile strength of 1600 PSI. Minimum thickness of the cross-section shall be 0.275 inches.

The internal expansion sleeve components shall be made of Series 300 non-magnetic stainless steel and shall utilize no welds in their construction.

Installation shall be performed using a calibrated installation tool available from the connector manufacturer. Installation of the sleeve shall require no retightening after the initial installation.

The external compression take-up clamp(s) shall be constructed of Series 300 non-magnetic stainless steel and shall utilize no welds in its constructions. The clamp(s) shall be installed by torquing the adjusting screw using a torque-setting wrench available from the connector manufacturer.

Selection of the proper size connector for the manhole and pipe requirement, and installation thereof, shall be in strict conformance with the recommendations of the connector manufacturer. Any dead end pipe stubs installed in connectors shall be restrained from movement per ASTM C 923.

The finished connection shall provide sealing to 13 psi (minimum), and shall accommodate deflection of pipe to 7 degrees (minimum) without loss of seal.

Vacuum testing shall be conducted in strict conformance with ASTM C 1244 prior to backfill. Other testing shall be conducted in strict conformance with the requirements of the connector manufacturer.

#### PRODUCT PERFORMANCE

PSX:Direct Drive meets and/or exceeds all requirements of ASTM C 923, including physical properties of materials and performance testing. Performance testing includes:

- 13 psi minimum in straight alignment
- 10 psi at minimum 7° angle
- 10 psi minimum under shear load of 150 lbs/in. pipe diameter

PSX:Direct Drive meets and/or exceeds the following specifications:

- ASTM C 923 *Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals*
- ASTM C 1478 *Standard Specification for Storm Drain Resilient Connectors Between Reinforced Concrete Storm Sewer Structures, Pipes and Laterals*
- ASTM F 2510 *Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Corrugated High Density Polyethylene Drainage Pipes*
- ASTM C 1244 *Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test*

TYPICAL TEST RESULTS for PSX:Direct Drive (as in ASTM C 923 and C 1478)

| Test   | ASTM Test Method   | Test Requirements  | Typical Result                              |
|--|--|--|---|
| CHEMICAL RESISTANCE; IN SULFURIC ACID and 1N HYDROCHLORIC ACID | D 534, AT 22°C FOR 48 HRS  | NO WEIGHT LOSS<br>NO WEIGHT LOSS   | NO WEIGHT LOSS<br>NO WEIGHT LOSS            |
| TENSILE STRENGTH   | D 412  | 1200 PSI, MIN.   | 2100 PSI                                    |
| ELONGATION AT BREAK  | D 412  | 350%, MIN.   | 525%  |
| HARDNESS   | D 2240 (SHORE A DUROMETER)   | ±5 FROM THE MANUFACTURER'S SPECIFIED HARDNESS  | <2  |
| ACCELERATED OVEN-AGING   | D 573, 70± 1°C FOR 7 DAYS  | DECREASE OF 15%, MAX. OF ORIGINAL TENSILE STRENGTH,<br>DECREASE OF 20%, MAX. OF ELONGATION | -13% TENSILE CHANGE, -14% ELONGATION CHANGE |
| COMPRESSION TEST   | D 395, METHOD B, AT 70°C FOR 22 HRS  | DECREASE OF 25%, MAX. OF ORIGINAL DEFLECTION   | 13%   |
| WATER ABSORPTION   | D 471 IMMERSE 0.75 BY 2-IN. SPECIMEN IN DISTILLED WATER AT 70°C FOR 48 hrs | INCREASE OF 10%, MAX. OR ORIGINAL BY WEIGHT  | 3.50%                                       |
| OZONE RESISTANCE   | D 1171   | RATING 0   | PASS  |
| LOW-TEMP, BRITTLE POINT  | D 746  | NO FRACTURE AT -40°C   | PASS  |
| TEAR RESISTANCE  | D 624, METHOD B  | 200 LBF/IN. (MIN.)   | 450 LBF/IN.                                 |

Protected by one or more of the following patents: 6805359, 7146689, 7263746

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