For a tuck pointing (raking out and repointing) mortar, add the minimum water to the dry ingredients to produce a mortar that retains its form when hand squeezed and released. Allow this mortar to stand covered (prehydrate) for 1 to 1 1/2 hours to greatly reduce shrinkage. Then mix with sufficient water to produce a stiff, but workable consistency, and use within 2 1/2 hours of initial mixing.

Avoid re-tempering the mortar when tuck pointing, matching a color, or to avoid color variations between batches (mix smaller quantities, if needed).

No admixtures, except for mortar coloring agents made from light-fast, durable, alkali-resistant minerals, will be permitted without written permission of the Director, Materials Bureau. If colored mortar is specified, submit samples of hardened mortar to the Engineer. Upon approval, use the same, uniform, mortar color throughout the work.

BASIS OF ACCEPTANCE. Inspection and approval by the Engineer.

705-22 PORTLAND CEMENT MORTAR BONDING GROUT

SCOPE. This specification covers the material requirements for portland cement mortar grout used for bonding fresh concrete to hardened concrete in both vertical and horizontal planes.

MATERIAL REQUIREMENTS. The ingredients for the portland cement mortar grout shall comply with the following:

Portland Cement, Type 1 or Type 2	701-01
Mortar Sand	703-03
Concrete Sand	703-07
Water	712-01

Proportioning. The mortar grout shall have the cement and mortar or concrete sand proportioned 1:1 in separate volumetric containers. The sand shall be deposited into an approved mechanical grout mixer prior to the cement. Both the sand and cement shall be dry mixed for one (1) minute. After dry mixing, water shall be added in sufficient quantity to result in a workable consistency. An additional three (3) minutes of mixing is required after adding desired water. Workable consistency is defined as a grout that will not run on vertical faces or puddle in low spots. Any grout that has dried or become unworkable, as determined by the Engineer, shall not be incorporated in the work. Hand mixing of the mortar may be permitted only for small quantities as approved by the Engineer.

BASIS OF ACCEPTANCE. The mortar grout shall be accepted on the basis of inspection and approval by the Engineer.

SECTION 706 - CONCRETE, CLAY AND PLASTIC PIPE

706-01 NON-REINFORCED CONCRETE PIPE

SCOPE. This specification covers the material and quality requirements for non-reinforced concrete pipe 24 inches and smaller used for culverts.

GENERAL. The provisions of §706-02, Reinforced Concrete Pipe, shall apply except that all references to reinforcing steel shall be deleted. In addition, physical and dimensional requirements of concrete pipe under 12 inches in diameter shall be as stated in Table 1, Class 1, of ASTM C14. Plain concrete pipe 12 to 24 inches in diameter shall conform to Table 1, Class 2, of ASTM C14.

MATERIAL REQUIREMENTS. The Material Requirements contained in §706-02 shall apply except that all references to reinforcing steel shall be deleted.

FABRICATION REQUIREMENTS. The Fabrication Requirements contained in §706-02 shall apply except as noted herein.

Marking. No pipe class or wall designation shall be marked on the pipe.

PHYSICAL REQUIREMENTS. The Physical Requirements contained in §706-02 shall apply except as noted herein.

Strength. The strength requirements for the respective diameter pipe sizes shall be as stated in Table 1 of ASTM C14. Details of the three-edge bearing test shall comply with ASTM C14.

SAMPLING AND TESTING. The Sampling And Testing requirements contained in §706-02 shall apply.

FINAL PRODUCTION INSPECTION. The Final Production Inspection requirements contained in §706-02 shall apply.

SHIPPING. The Shipping requirements contained in §706-02 shall apply.

BASIS OF ACCEPTANCE. The Basis Of Acceptance requirements contained in §706-02 shall apply.

706-02 REINFORCED CONCRETE PIPE CLASSES II, III, IV, V

SCOPE. This specification covers the material, fabrication, and physical requirements of reinforced concrete pipe and cattle pass.

GENERAL. Apply the requirements of AASHTO M 170, Reinforced Concrete Culvert, Storm Drain and Sewer Pipe, Classes II, III, IV, and V, except as modified by this specification. Produce reinforced concrete pipe by either machine made or wet cast methods in accordance with working drawings approved by the Department and in full compliance with the details of this specification. Pipe manufactured for a specific class will be acceptable for any class having a lower design strength.

Methods of manufacture include the following:

A. Wet Cast Pipe And Cattle Pass. Wet cast units are those made from concrete placed and consolidated by conventional equipment. These units develop resistance to freeze-thaw damage through the use of entrained air in the concrete. Air content in wet cast concrete shall range between 5.0% and 9.0%.

Manufacture wet cast pipe, for Department acceptance, in accordance with this specification and the current Materials Procedure for precast concrete titled "Procedures For Achieving And Maintaining Precast Concrete Manufacturer's Approved List Status".

B. Machine Made Pipe. Machine made units use very low slump concrete and methods of consolidation which produce a dense product with low permeability and good resistance to freeze-thaw damage.

Manufacture machine made pipe, for Department acceptance, in accordance with this specification and the current Materials Method titled "Quality Assurance Procedure For Concrete Pipe Items".

MATERIAL REQUIREMENTS

A. Materials

Portland Cement (Type 1, Type 2 or Type 3)	701-01
Concrete Repair Material	701-04
Concrete Repair Material - High Early Strength	701-12
Coarse Aggregate	703-02
Concrete Sand	703-07
Bar Reinforcement, Grade 60 (Reinforcement & Stirrups)	709-01
Wire Fabric for Concrete Reinforcement	709-02
Bar Reinforcement, Grade 40	709-03
Cold Drawn Wire for Concrete Reinforcement	709-09
Admixtures	711-08
Water	712-01
Concrete Pipe Joint Sealing Compound	705-16
Concrete Pipe Joint Elastomeric Gaskets	705-17
Fly Ash	711-10
Ground Granulated Blast Furnace Slag	711-12

B. Cementitious Content. Use a minimum combined cementitious content of 565 lb/cy. This includes the Portland Cement and pozzolan (fly ash and/or ground granulated blast furnace slag). The maximum allowable total chloride content in concrete shall not exceed 0.10 percent by weight of cementitious material tested in accordance with written procedural directives of the Materials Bureau.

C. Pozzolans. Fly ash and/or ground granulated blast furnace slag may, in total, be substituted for cement up to a maximum of 20% by weight of the total amount of cement plus pozzolan in the mix.

D. Admixtures. Calcium Chloride is not allowed in concrete. Admixtures, other than an approved Air Entraining agent for wet cast pipe, are not allowed unless otherwise approved by the Materials Bureau.

E. Reinforcement. Sample the reinforcement in accordance with the written directives of the Materials Bureau. Accept stirrups based on the manufacturer's certification, unless otherwise directed by the Materials Bureau.

F. Pipe Joint Materials

1. Elastomeric Gaskets. The gaskets used in the installation of round pipe shall meet the specification requirements of §705-17 and only those types and sizes designated by the pipe manufacturer on the approved drawings of the particular pipe.

2. Sealing Compounds. Concrete pipe joint sealing compound, meeting the specification requirements of §705-16, shall be used only on elliptical pipe and reinforced cattle pass.

FABRICATION REQUIREMENTS

Drawings. Submit detailed working drawings conforming to the Materials Bureau concrete pipe templates. All diameter sizes of a particular geometric shape can be included on one drawing. Separate drawings are required for cattle pass, jacking pipe and special designs.

Full approval of the working drawings is required prior to the manufacture of any concrete pipe.

Design, Reinforcement and Dimensions

A. General. Apply the Design, Reinforcement and Permissible Variations requirements of AASHTO M 170 for Class II, III, IV and V pipe, walls B & C. The AASHTO tables show minimum reinforcement. The manufacturer may submit drawings detailing alternatives to the specified reinforcement and/or wall thickness for Materials Bureau consideration. To gain full approval of alternate designs, manufacture and test pipe samples in accordance with the written procedural directives of the Materials Bureau.

B. Reinforced Concrete Cattle Pass. Apply the requirements of applicable Standard Sheet with the following modification. A minimum length of 48 inches is required for each section. The maximum allowable variation in laying lengths of two opposite sides of a cattle pass section is 1/8 inch per 12 inches of diameter, not to exceed 5/8 inch in any length of cattle pass, except where beveled or curved cattle pass lengths have been specified.

Concrete Batch Placement

A. Machine Made Pipe. Clean and properly assemble the forms prior to placing any concrete. Transport and place the concrete mixture such that no segregation of the concrete materials or displacement of the reinforcing steel occurs within the form.

B. Wet Cast Pipe And Cattle Pass. Apply the Concrete Placement And Consolidation requirements contained in §704-03.

Curing. Include the type of curing, curing time and any temperature requirements on the drawing.

A. Machine Made Pipe. Cure the pipe in accordance with AASHTO M 170. Other methods of curing are subject to approval by the Director, Materials Bureau.

B. Wet Cast Pipe And Cattle Pass. Apply the Curing requirements contained in §704-03.

Joints. Use either bell and spigot or tongue and groove design. Design the joints so as to permit effective jointing to reduce leakage and infiltration and to permit placement without irregularities.

Marking. The pipe markings must be identified on the inside barrel for pipe diameters of 1 1/2 feet and greater. If the diameter is less than 1 1/2 feet the markings may be stenciled on the outside of the pipe. Mark each piece of pipe with the following information, as applicable.

1.Name or trademark of manufacturer.
2.Date of manufacture.
3.Pipe class.
4.Wall designation.
5.Pipe diameter.
6.NYSDOT lot number ("NYSDOT ") (Machine made pipe only.)
7.Indelibly mark the word "TOP" on the inside and outside of the barrel at the appropriate location on each pipe length with elliptical or quadrant reinforcing.

Repair

A. Machine Made Pipe. Pipe may be repaired at the plant or in the field using 701-04 Concrete Repair Material or §701-12 Concrete Repair Material - High Early Strength. Repairs to more than 10% of a lot will not be permitted. Repairs will be acceptable if, in the opinion of the Department,

the repairs are sound, properly finished and cured, and the repaired pipe conforms to the requirements of these Specifications and the written procedural directives of the Materials Bureau.

B. Wet Cast Pipe And Cattle Pass. Apply the Repair requirements contained in §704-03.

PHYSICAL REQUIREMENTS

Strength. Apply the requirements of AASHTO M 170 except that the compressive strength requirements do not apply except for cattle pass. Conduct such number and type of three edge bearing tests as the Materials Bureau deems necessary to establish the quality of pipe.

Reinforced concrete cattle pass will not require a three-edge bearing test. The minimum 28 day compressive strength for cattle pass, as determined by concrete cylinders, is 3000 psi.

Absorption Requirements For Machine Made Pipe. The maximum average absorption for all pipe is 8.0% by weight for the last three specimens tested.

Freeze-Thaw Requirements. The Materials Bureau reserves the right to test the pipe for durability by freeze-thaw testing. The test will be run in accordance with written procedural directives of the Materials Bureau.

SAMPLING AND TESTING. It is required that each manufacturer have a testing machine, of a type approved by the Materials Bureau, to carry out three edge bearing tests. Employ a commercial testing agency to calibrate the testing machine according to ASTM E4 at a minimum of once a year. Upon request of the Materials Bureau, furnish a record of this calibration. Sample and test reinforced concrete pipe and cattle pass units, manufactured under the requirements of this specification, as follows.

A. Machine Made Pipe. Separate machine made reinforced concrete pipe into specific and identifiable production lots. Follow the written procedural directives of the Materials Bureau to determine the maximum number and type of units in a lot and the number of samples to be taken per lot. Test each lot of machine made reinforced concrete pipe as follows:

1. Three Edge Bearing Test. Follow the requirements for strength testing indicated above using the test procedure identified in the procedural directives issued by the Materials Bureau. Perform tests in the presence of a representative of the Department.

2. Absorption Test. Cores from each lot, drilled by the manufacturer in the presence of a representative of the Department, will be used for this test. The cores will be tested by the Materials Bureau in accordance with the test method specified in ASTM C497 except that under "absorption test" the drying period will be 48 hours at a temperature of 230°F.

Plug the holes when cores are taken. Ensure that plugs are sound, properly finished and cured according to the requirements of "Pipe Repair."

In addition to the above tests, pipe will be subject to inspection at any time prior to placing, and rejection may be made through failure to comply with the criteria shown in the written procedural directives of the Materials Bureau.

B. Wet Cast Pipe And Cattle Pass. Sample and test wet cast reinforced concrete pipe and cattle pass in accordance with Materials Bureau requirements contained in the current Materials Procedure for precast concrete, titled "Procedures For Achieving And Maintaining Precast Concrete Manufacturer's Approved List Status".

FINAL PRODUCTION INSPECTION. For wet cast units only, follow the Final Production Inspection requirements contained in §704-03.

SHIPPING

A. Machine Made Pipe. No units will be considered for shipment unless the units are free from defects as noted under Pipe Repair in this specification and according to the written procedural directives of the Materials Bureau.

B. Wet Cast Pipe And Cattle Pass. Follow the Shipping requirements contained in §704-03.

BASIS OF ACCEPTANCE

A. Machine Made Pipe. Units will be accepted in stock lot quantities at the manufacturing location in accordance with the current version of Materials Method 1 titled "Quality Assurance Procedure For Concrete Pipe Items".

B. Wet Cast Pipe And Cattle Pass. Follow the Basis Of Acceptance requirements contained in §704-03.

706-03 REINFORCED CONCRETE ELLIPTICAL PIPE; CLASSES HE-II, HE-III, HE-IV, VE-IV, VE-V AND VE-VI

SCOPE. This specification covers the material and quality requirements for both horizontal and vertical elliptical reinforced concrete pipe of the classes noted above for use as culvert pipe. Pipe designed for placement with the major axis horizontal is designated as horizontal elliptical pipe. Pipe designed for placement with the major axis vertical is designated as vertical elliptical pipe.

GENERAL. The provisions of §706-02, Reinforced Concrete Pipe Classes II, III, IV, V shall apply except as noted herein.

All references to AASHTO M 170, contained in §706-02, shall be replaced with AASHTO M 207. All reference to Classes II, III, IV and V, contained in §706-02, shall be deemed to include all classes of elliptical pipe.

MATERIAL REQUIREMENTS. The Material Requirements contained in §706-02 shall apply except that the pipe joint material shall be a sealing compound meeting the requirements of §705-16.

FABRICATION REQUIREMENTS. The Fabrication Requirements contained in §706-02 shall apply except as noted herein.

Design, Reinforcement and Dimensions. In the case of elliptical pipe, the working drawings indicate the equivalent round pipe diameter, rise, span and class. A tolerance of plus or minus 2% from the nominal rise and span of the pipe, as shown on the approved working drawing, will be permitted.

Variations in laying lengths of two opposite sides of a pipe section shall not be more than 1/8 inch per foot of equivalent diameter, with a maximum of 5/8 inch in any length of pipe, except where beveled or curved lengths have been specified.

Marking. No wall designation shall be marked on the pipe. An equivalent round pipe diameter shall be used for markings.

PHYSICAL REQUIREMENTS. The Physical Requirements contained in §706-02 shall apply.

SAMPLING AND TESTING. The Sampling And Testing requirements contained in §706-02 shall apply.

FINAL PRODUCTION INSPECTION. The Final Production Inspection requirements contained in §706-02 shall apply.

SHIPPING. The Shipping requirements contained in §706-02 shall apply.

BASIS OF ACCEPTANCE. The Basis Of Acceptance requirements contained in §706-02 shall apply.

706-04 PRECAST CONCRETE DRAINAGE UNITS

SCOPE. This specification covers the material and fabrication requirements for precast concrete drainage units including transverse drainage interceptors.

MATERIAL REQUIREMENTS. The Material Requirements contained in §704-03 shall apply except as noted herein.

The concrete used to fabricate round precast concrete drainage units shall have a minimum compressive strength of 4000 psi @ 28 days. The concrete used to produce machine made units shall have a maximum absorption of 8.0% by weight and is not required to be air entrained.

Additional materials listed below shall meet the requirements of the following subsections:

Frames And Grates	655
Concrete Grouting Material	701-05
Concrete Pipe Joint Sealing Compound	705-16
Concrete Pipe Joint Elastomeric Gaskets	705-17
Mortar For Concrete Masonry	705-21
Steps For Manholes	725-02

DRAWINGS. The Drawing requirements contained in §704-03 along with the following shall apply.

Fabricator Working Drawings are required for all round drainage structures. Cut sheets, showing structure heights, the size and location of pipe openings and step locations are required for all drainage structures.

FABRICATION. The Fabrication requirements contained in 704-03, along with the following shall apply.

Manufacturing Process. Precast concrete drainage units shall be wet cast or machine made.

A. Wet Cast. Wet cast units are manufactured from concrete, placed and consolidated by conventional equipment, containing entrained air to develop resistance to freeze-thaw damage.

B. Machine Made. Machine made units are manufactured with very low slump concrete, consolidated to produce a dense product with low permeability and good resistance to freeze-thaw damage. Machine made units are those made by the following methods:

- Packerhead
- Roller suspension
- Centrifugal
- Machine tamped
- Machine vibrated

- Other methods as approved by the Materials Bureau

Reinforcing. Reinforcing bar splices shall be lapped a minimum of 30 bar diameters and tied securely. Wire fabric splices shall be secured by one of the following methods:

A. Tying. Under this method the ends shall lap to a length of not less than 30 diameters of the reinforcement and the lap shall contain a longitudinal member. A sufficient number of laps shall be tied to maintain continuity of the cage through the period of placement and curing of the concrete.

B. Welding. Each circular member shall be lapped a minimum of 2 inches and welded. The weld shall develop a minimum of 50 percent of the specified strength of the wire.

Round Units. Precast bases, floors, risers, conical top sections, grade rings and flat slab tops shall conform to the design, dimension and reinforcement requirements of ASTM C478. The C478 requirements for splices, laps and welds shall not apply.

Transverse Drainage Interceptors. Bar reinforcement shall be epoxy coated meeting the requirements of §709-04.

Joints. Joints between precast riser sections shall be formed with male and female ends so that when the sections are assembled they will make a continuous and uniform unit.

Joint Sealant Materials. Joints between precast sections are to be sealed with flexible watertight Elastomeric Gaskets, Pipe Joint Sealing Compounds, Mortar for Concrete Masonry, Concrete Grouting Material or Concrete Repair Material meeting the requirements of the Standard Specifications. If elastomeric Gasket Sealers are used the shape, size and placement shall be recommended by the precast manufacturer.

Steps for Drainage Units. Steps for drainage units shall conform to §725-02, Steps for Manholes. Steps in risers and conical top sections shall be aligned to form a continuous ladder with rungs equally spaced vertically in the completed unit at a maximum spacing of 16 inches. All steps in a completed drainage unit shall be the same size. Steps shall be embedded into the walls of the section a minimum of 3 inches. The rung shall project a minimum clear distance of 4 inches from the walls of the section measured from the point of embedment. If the steps are grouted, the grouting material shall conform to §701-04 Concrete Repair Materials or §701-05 Concrete Grouting Material, or §701-12 Concrete Repair Material - High Early Strength. If plastic inserts are used for installing steps, they shall be approved by the Materials Bureau. Steps which are damaged during installation or handling shall be replaced.

Frames for Grates. Frames cast into the top slab or top of the uppermost riser shall be secured and held in place by a minimum of 4 stirrups or studs per frame, welded to the frame near the corners.

Parallel bar frames shall contain shear stud anchors, for the purpose of transferring loads, as required and detailed on the standard sheet for parallel bar grates and frames. Shear stud anchors, when required, shall replace the frame securing stirrups or studs.

Dimensional Tolerances.

A. Drainage Units (Rectangular / Square).

• Internal dimensions	+5/8 inch, -1/2 inch
• Wall thickness	
6 inches	+3/4 inch, -1/4 inch
≥8 inches	+3/4 inch, -1/2 inch

- Reinforcing steel cover

Walls (inside face)	2 inches (min), 4 inches (max)
Base (inside face)	2 inches (min), 3 1/4 inches (max)
Roof (all faces)	+5/8 inch, -1/4 inch
Pipe openings (2 inches)	±1 inch

- Step spacing and alignment ±3/4 inch

B. Drainage Units (Round).

- Internal diameter

≤60 inches	±5/8 inch,
>60 inches & ≤ 96 inches	±3/4 inch
>96 inches	±1 1/2 inches

- Wall thickness

Internal diameter ≤60 inches	+5/8 inch, -1/4 inch
Internal diameter >60 inches & ≤ 96 inches	+3/4 inch, -1/2 inch
Internal diameter >96 inches	+1 inch, -5/8 inch,
Reinforcing steel cover	
Base, Roof and Walls	+5/8 inch, -1/4 inch
Pipe openings (2 inches)	±1 inch

- Step spacing and alignment ±3/4 inch

SAMPLING AND TESTING. The sampling and testing requirements contained in 704-03 shall apply except as noted herein.

A. Machine Made Units. Testing for air content is not required. Cores shall be taken from the hardened concrete and tested for absorption. A minimum of 3 cores per 5 batches of a single mix with a minimum of three cores per day per mix shall be used to measure absorption. The average absorption of the 3 cores shall not exceed the maximum absorption specified herein. Testing shall be in accordance with ASTM C497 except that the drying period shall be 48 hours at a temperature of 230°F.

MARKING. The Marking requirements contained in §704-03 shall apply except as noted herein.

Markings shall be placed on the inside face of all precast pieces. Each flat slab top that doesn't have an integral frame or a design that readily indicates the top surface shall have the words "INSTALL THIS SIDE UP" placed on its top surface.

The markings on rectangular drainage units, including base slabs, bases and risers, shall include the maximum placement depth in feet ("MPD...feet"). The maximum placement depth is based on wall thickness and reinforcement and shall be in accordance with the Department's Standard Sheets or the contract plans.

Instead of marking the contract number on each unit they may be marked with "NYSDOT".

FINAL PRODUCTION INSPECTION. The Final Production Inspection requirements contained in §704-03 shall apply.

SHIPPING. The Shipping requirements contained in §704-03 shall apply.

BASIS OF ACCEPTANCE. The Basis Of Acceptance requirements contained in 704-03 shall apply.

706-05 POROUS CONCRETE PIPE UNDERDRAIN

SCOPE. This specification covers the material and quality requirements for porous concrete pipe and extra strength concrete porous concrete pipe underdrains.

GENERAL. Porous concrete pipe and extra strength porous concrete pipe shall be manufactured in accordance with approved working drawings and in compliance with details set forth below.

MATERIAL REQUIREMENTS. All materials shall comply with the requirements of ' 706-02, Reinforced Concrete Pipe, except that reinforcement shall not be used.

Drawings. Drawings shall be furnished in accordance with the provisions of ' 706-02.

FABRICATION. Porous concrete pipe and extra strength porous concrete pipe shall conform in size and shape to the details shown on the standard sheet for porous concrete pipe underdrain and the approved working drawing.

The inside surface of the pipe shall be straight and true to dimensions with a permissible variation from the true form of not more than 1 1/2 percent. A tolerance of 5% will be permitted in the diameter of the pipe. The wall thickness of the pipe may be greater than shown on the standard sheet, but it shall not be less than 95% of the stipulated wall thickness.

High early strength cement, calcium chloride or any other additive shall not be used unless otherwise approved by the Materials Bureau.

Concrete mix proportions will be such that will produce a concrete mix of such quality that the pipe will conform to the test and design requirements of these specifications.

Each length of pipe shall be clearly marked on the outside with the name or trademark of the manufacturer. Extra strength porous concrete pipe underdrain shall be clearly marked, " Extra Strength".

Curing. All pipe shall be cured in accordance with the provisions of 706-02.

Strength Requirements. The minimum ultimate strength for the size of the pipe being tested shall be as specified on the standard sheet. Requirements of 706-02 shall apply except that no determination of a 0.01 inch crack will be required and the ultimate strength values as determined on full length specimens shall be as specified on the standard sheet.

Infiltration Requirements. Pipe shall be tested for rate of infiltration in accordance with the method of test outlined in AASHTO Designation M176. The minimum rate of infiltration shall not be less than 1 gallon per minute per inch of internal diameter per foot of pipe for all sizes.

All tests shall be performed by the manufacturer at their plant and shall be witnessed by a representative of the Department. The number of samples for test shall be as directed by the Materials Bureau.

Other Requirements. In addition to the above tests, the pipe shall be subject to inspection at all times prior to placing and rejection will be made through failure to comply with any of the following conditions:

A. Dimensions. The pipe shall not vary in any dimensions more than permitted by this specification.

B. Fractures or Cracks. The pipe shall have no fractures or cracks passing through the shell or socket of the pipe, except that a single crack not exceeding 2 inches in length at either end of a pipe shall not be considered cause for rejection unless the defect exists in more than 5% of the lot offered for sampling and testing.

C. Quality. There shall be no defects that indicate imperfect mixing and molding.

D. Strength. There shall be no cracks that are sufficient to impair the strength, durability or serviceability of the pipe.

E. Shape. The shape of the pipe shall be such that there shall be no variation in alignment of more than 1/8 inch per linear foot.

BASIS OF ACCEPTANCE. The material will be considered for acceptance in stock lot quantities at the manufacturing location in accordance with procedural directives of the Materials Bureau.

In addition, the manufacturer shall furnish the Department representative at the plant a certification for each lot manufactured certifying that all pipe in the lot was manufactured in accordance with the terms of this specification and that the pipe details conform to drawings previously approved by the Department. Pipe shall be considered ready for acceptance when a lot conforms to the indicated test requirements. The manufacturer shall be permitted to retest to determine specification compliance.

Pipe not used within two years after its original acceptance shall be retested by the Department before it can be used.

~~**706-06 (VACANT)**~~

706-07 REINFORCED CONCRETE PIPE END SECTIONS

SCOPE. This specification covers the material and fabrication requirements for reinforced concrete pipe end sections.

MATERIAL REQUIREMENTS. The Material Requirements contained in §704-03 shall apply.

DRAWINGS. The Drawing requirements contained in §704-03 shall apply.

FABRICATION. The Fabrication requirements contained in §704-03, along with the following, shall apply.

The barrel portion of the end section shall meet the Design, Reinforcement and Permissible Variations requirements of AASHTO M 170 for Class III Pipe, Wall Designation B.

SAMPLING AND TESTING. The Sampling and Testing requirements contained in §704-03 shall apply, unless otherwise approved by the Director, Materials Bureau.

MARKING. The Marking requirements contained in §704-03 shall apply.

FINAL PRODUCTION INSPECTION. The Final Production Inspection requirements contained in §704-03 shall apply, unless otherwise approved by the Director, Materials Bureau.

SHIPPING. The Shipping requirements contained in §704-03 shall apply, unless otherwise approved by the Director, Materials Bureau.

BASIS OF ACCEPTANCE. The Basis Of Acceptance requirements contained in §704-03 shall apply, unless otherwise approved by the Director, Materials Bureau.

~~**706-08 POLYPROPYLENE PIPE**~~