OLD BRIDGE MUNICIPAL UTILITIES AUTHORITY

SEWER DIVISION

MIDDLESEX COUNTY, NEW JERSEY

NEXT UPDATE SCHEDULED FOR SEPTEMBER 2013

RULES AND REGULATIONS GOVERNING APPLICATIONS, CONSTRUCTION AND THE USE OF SEWERAGE IN THE TOWNSHIP OF OLD BRIDGE

$25.00

SEPTEMBER, 2006

NEXT UPDATE SCHEDULED FOR SEPTEMBER 2013

RULES AND REGULATIONS
FOR THE OLD BRIDGE MUNICIPAL UTILITIES AUTHORITY
SEWER DIVISION

INTRODUCTION

The Old Bridge Municipal Utilities Authority was created by Ordinance Number 40-85 of the Township of Old Bridge adopted on November 27, 1985 pursuant to Municipal Utilities Authorities Law N.J.S.A. 4:14-B-1 et. seq.

N.J.S.A. 40:14b-20 grants Authorities the right "to make and enforce bylaws or Rules and Regulations for the management and regulation of its business and affairs and for the use, maintenance and operation of the utilities system and any other of its properties, and to amend the same".

These Rules and Regulations are adopted pursuant to that grant of power and are applicable to all properties within the Township of Old Bridge and outside the Township of Old Bridge through Agreements with other Municipalities, which properties require domestic, commercial or industrial sewer use pursuant to statute or to these Rules and Regulations.

The Authority reserves the right to change or amend, from time to time, these Rules & Regulations, and the rates for sewer use by resolution of the Authority as necessary in the form of an Addendum to the Rules & Regulations.

TABLE OF CONTENTS

Page

I. Conditions Requiring Authority Approval----------I-1

II. Definitions----------II-1

III. General Summary of Requirements for Submission of Applications for Sewerage Systems------III-1

A. General----------III-1

B. Application for Preliminary Approval----------III-1

C. Application for Tentative Approval----------III-1

D. Application for Final Approval----------III-2

E. Application for Extension of Approval----------III-2

F. Revised Applications----------III-2

1. Change in Scope of Project
2. Change in Ownership

G. Residential Individual Sewer Lateral Connections----------III-3

H. Applications for Minor Approval----------III-3

IV. Discussion of Application Requirements for the Approval of Plans for Sewerage Systems----------IV-1

A. General----------IV-1

B. Application for Preliminary Approval----------IV-2

C. Application for Tentative Approval----------IV-5

D. Application for Final Approval----------IV-11

E. Application for Extension of Approval----------IV-15

F. Revised Applications----------IV-15

1. Change in Scope of Project
2. Change in Ownership

G. Residential Individual Sewer Lateral Connections----------IV-16

H. Application for Minor Approval----------IV-16

TABLE OF CONTENTS CONTINUED

Page

V. Detailed Information on Design and Construction of Sewerage Systems----------V-1

A. General Criteria----------V-1

B. Construction of Collection System----------V-1

C. Construction of Sewage Pumping Stations and Force Mains----------V-1

D. Submittals, Equipment and Supplies ----------V-2

VI. Inspection of Sewerage System During the Course of Construction----------VI-1

A. General----------VI-1

B. Pre-Construction Meeting----------VI-6

C. Insurance Requirements----------VI-7

D. Testing and Videotaping of Completed Sewer System----------VI-7

E. Certification----------VI-9

VII. Record Drawings, Easement Maps and Descriptions, and Manuals----------VII-1

A. Record Drawing----------VII-1

B. Easements----------VII-2

VIII. Inspections for Release and Reduction of Performance Guarantee----------VIII-1

A. Completed Construction Inspection----------VIII-1

B. Reduction of Performance Guarantee----------VIII-1

C. Final Inspection----------VIII-1

D. Release of Performance Guarantee----------VIII-2

IX. Acceptance of New Sewerage System by the Authority----------IX-1

TABLE OF CONTENTS CONTINUED

Page

X. Use of Sewerage System Prior to Acceptance----------X-1

A. Use of the Sewerage System by the Authority----------X-1

B. Unauthorized Use of the System----------X-1

C. Developer's Use of System During Construction----------X-1

XI. Requirements Applicable to Wastes Discharged into the System----------XI-1

A. General----------XI-1

B. Commercial User Waste Discharge----------XI-1

C. Industrial User Waste Discharge----------XI-1

D. Pretreatment, Metering and Sampling of Industrial Wastes----------XI-3

E. Prohibited Wastes----------XI-4

F. Groundwater Remediation Projects----------XI-5

XII. Compliance with Rules and Regulations----------XII-1

A. General----------XII-1

B. Non-compliance----------XII-1

XIII. Fees for Application of New Construction and User Fees----------XIII-1

A. Application Filing Fees Major Applications----------XIII-1

B. Application Filing Fees – Minor Applications----------XIII-1

C. Fees for Residential Individual Lateral Connection----------XIII-1

D. Connection Fee----------XIII-2

E. Cost Sharing Fee----------XIII-2

F. User Fees----------XIII-2

TABLE OF CONTENTS CONTINUED

Page

XIV. Customer Service Rules----------XIV-1

A. General----------XIV-1

B. Individual Lateral Connections----------XIV-1

C. Billing----------XIV-2

D. Service Units----------XIV-2

E. Commercial, Institutional or Public User Establishments----------XIV-3

F. Complaints----------XIV-3

G. Lien and Enforcement----------XIV-4

APPENDIX

Preliminary Application	Exhibit A
Tentative Application	Exhibit B
Final Application	Exhibit C
Minor Application	Exhibit D
Application for Extension of Approval	Exhibit E
Form W-9	Exhibit F
Sewer Construction Standards	Exhibit G
Fee Schedule	Exhibit H

I. CONDITIONS REQUIRING AUTHORITY APPROVAL

Any connection into the Authority's sewer system by developers, property owners, existing homeowners, etc. shall make application to and receive approval from the Authority.

Single family residential connections, which do not require a main extension are subject to the approval process in Section XIV, Customer Service Rules.

Residential subdivisions which require a main extension regardless of volume of flow; and all non-residential development such as schools, commercial buildings, industrial buildings regardless of flow; and all other structures where the Authority estimates an average daily discharge of 900 gallons or more of sewage or waste, will be required to be connected with the nearest existing sanitary sewer of adequate capacity in the Township of Old Bridge and must be granted approval by the OBMUA as a Major Application requiring Preliminary, Tentative and Final Approval in accordance with these Rules and Regulations.

Certain projects can be considered a Minor Application such as commercial projects with only a sewer lateral line, or a single family unit requiring a pump station and force main. The Authority will make determination on a case-by-case basis if a proposed connection can be processed as a Minor Application.

The Owner of a non-residential building which presently has an alternate method of sewer disposal is required to connect into the Authority's sewage collection system whenever said sewer system has been constructed to within 1,000 L.F. of the non-residential building property line as measured along right-of-ways.

The Owner of a residential dwelling which presently has an alternate method of sewer disposal is required to connect into the Authority's sewage collection system whenever said sewer system has been constructed within 100 feet of the lot line and 250 feet from the dwelling.

The Authority reserves the right to impose special conditions on all establishments where sewage flows are expected to exceed 400 gallons per day; special conditions to include requirements for treatment units such as grease traps, garbage disposals and other pretreatment units.

Whenever the square footage of a building increases, approval of the Authority for any addition is required. Additional fees may be required if it is determined that the addition constitutes additional EDCU's. This applies to all structures with the exception of single family residential homes. Authority approval is also required for any increase in lateral size. Approval is required to determine if the existing sewage facilities will need modifications due to the increase in flow.

Changes in quantity or quality of waste must be reported to the Authority. Additionally, when their is a change in operation for non-residential users, this change must be reported to the Authority.

II. DEFINITIONS:

As used in these Rules and Regulations, unless a different meaning clearly appears from the context, the following words shall have the following meanings:

Applicant: The person or developer who has filed an application with the Authority pursuant to these Rules and Regulations.

Authority: the Old Bridge Municipal Utilities Authority (OBMUA).

Block: an area delineated as such on the Tax Map of the Township of Old Bridge.

Connection Fee: charge per EDCU calculated in accordance with NJSA 40:14B-22. The amount is published in the most current rate schedule. (A 50% reduction in connection fees will be granted for new connections which are charged to Public Housing Authorities and to non-profit organizations building affordable housing projects.)

Developer: the legal or beneficial owner or owners of a lot or of any land proposed to be included in a development including the holder of an option to purchase or other person having an enforceable propriety interest in such land or an authorized agent of the owner certified to the Authority as such.

Easement: the right to use the land of another for a specific purpose not inconsistent with the general property rights of the owner.

Equivalent Domestic Consumer Unit (E.D.C.U.):

1) Residential

   (a) Each single family dwelling or portion of a structure normally occupied by a single family.
   (b) Each single family apartment dwelling in a multiple family structure or structures.

2) Each commercial, industrial, professional, institutional or public user whose estimated flow potentially does not exceed 400 gallons per day. Flows shall be based on the projected flow criteria in NJAC 7:14A-23.3.

3) Where a commercial, industrial, professional, institutional or public user potentially exceeds 400 gallons per day, then each 400 gallons or fraction thereof shall be considered one unit.

House Service Connection: the pipe and appurtenances between the Authority's street main and the first individual clean out.

Lot: a tract of parcel of land, delineated as such on the Tax Map of the Township of

Lot: a tract of parcel of land, delineated as such on the Tax Map of the Township of Old Bridge, intended for separate use, development or transfer of ownership.

MCUA: the Middlesex County Utilities Authority.

NJDEP: the New Jersey Department of Environmental Protection.

Owner: the person of company who has legal Title to the lot.

Plat: a map of a development used for the purpose of subdividing lots which will be filed with the County Clerk's Office.

Plan: the plan of a development of sufficient accuracy to be used for the purpose of discussion and classification and meeting the requirements of these Rules and Regulations.

Right-of-Way: land subject to use as a street, alley, or crosswalk or for drainage or other public purposes and legally dedicated to a public entity. (See Easement)

Street: any street, avenue, boulevard, road, land viaduct, bridge, alley or other way which is an existing state, county, municipal or private roadway, including the land between the street lines whether improved or unimproved, and may be comprise pavement, shoulders, gutters, sidewalks, parking areas and other areas within the street lines. (See Right-of-Way)

Township: the Township of Old Bridge in the County of Middlesex, New Jersey.

User Charge System: the resolutions prescribing charges, rules and regulations relating to connections and users of services of the sewerage of the Old Bridge Municipal Utilities Authority.

User: any person, firm or entity which discharges any waste or substance of any composition or nature which is then transmitted through the sewerage of the Authority.

III. GENERAL SUMMARY OF REQUIREMENTS FOR SUBMISSION OF APPLICATIONS FOR SEWERAGE SYSTEMS

A. General

The following is a summary, See Section IV for detailed information.

B. Application for Preliminary Approval

An Applicant for preliminary sewer approval shall be required to submit:

1. Preliminary Application Forms.
2. Application and Review Fees.
3. Completed W-9 Form.
4. Preliminary Engineer's Report
5. General Map.

C. Application for Tentative Approval

An Applicant for tentative sewer approval shall be required to submit:

1. Tentative Application Forms.
2. Resolution of Preliminary Planning/Zoning Approval.
3. Engineer's Construction Cost Estimate.
4. Engineer's Report.
5. General Map.
6. Plan and Profiles.
7. Specifications.
8. Details of Construction.
9. Private Utilities Maintenance Plan (if applicable)
10. Review Fees.

D. Application for Final Approval

An Applicant for final sewer approval must submit:

1. Final Application Forms.
2. Resolution of Final Planning/Zoning Board Approval.
3. Engineer's Estimate.
4. Engineer's Report.
5. General Map.
6. USGS Quad Map with site location.
7. Plans and Profiles.
8. Final Plat.
9. Specifications.
10. Details of Construction.
11. Completed NJDEP Permit to construct forms if necessary.
12. Escrow Fees.
13. Sectionalization Plan.

E. Application for Extension of Approval

An Applicant for extension of approval must submit the following:

1. Application for Extension of Approval.
2. Fees.

F. Revised Applications

1. Change in Scope of Project

An Applicant who has revised his application shall be required to submit:

a. Revised Application Forms.

b. Engineer's Estimate.

c. Engineer's Report.

d. General Map.

e. Plan and Profiles.

f. Specifications.

g. Details of Construction.

h. Review Fees.

2. Change in Ownership

Where there is a change in ownership of a property which is or was previously before the Authority for approval, the new Applicant must submit adequate proof of ownership and required fees.

G. Residential Individual Sewer Lateral Connections

H. Applications for Minor Approval

An Applicant who requests to be considered as a Minor Application shall be required to submit:

1. Preliminary Application Form

2. Fees

3. Plan

IV. DISCUSSION OF APPLICATION REQUIREMENTS FOR THE APPROVAL OF PLANS FOR SEWERAGE SYSTEMS

A. General

All applications must be complete and submitted at least twenty-one (21) calendar days before a regularly scheduled agenda meeting of the Authority. All items must be collated and packaged together for each application. Application number, once assigned, shall appear on all subsequent documents submitted.

Should it be found upon review of any application by the Staff Engineer that the application is deficient in any items as required, the application shall be deemed to be incomplete and shall not be reviewed by the Authority until all deficiencies are corrected. If, upon review of the plan submission, it should be determined that the plans or technical submissions are deficient in the requirements set forth herein, the application shall also be deemed incomplete. Resubmission of any plan which has been deemed incomplete must be accompanied with the required application number.

All applications are to be signed by the Applicant or an officer of the company, or, if signed by an authorized agent, shall be accompanied by an authorization certified by the Secretary of the Owner's Organization. If the Applicant is not the Owner, the Owner must also sign.

Concurrent submission of applications for two or more different stages (e.g. Preliminary and Tentative) of Authority approval on any project may be permitted at the discretion of the Authority.

Approved Preliminary applications will expire and become null and void after a one-year period from the date of Preliminary approval. Approved Tentative applications will expire and become null and void after a one-year period from the date of Tentative approval. Approved Final applications will expire and become null and void after a one-year period from the date of Final approval if no construction takes place. For large developments, where a sectionalization plan has been approved, an approval shall not become void providing that the Applicant is proceeding with development in accordance with his approved sectionalization plan and submitting applications for, or beginning construction of subsequent sections within the time limits for Tentative and Final approval from the date of build-out of the prior section.

The number of units in proposed sections of large developments will be determined at the discretion of the Authority on a case-by case basis. Date of approval is the date of the meeting at which the Authority grants its Preliminary, Tentative, or Final approval of an application. Any approval which expires under the terms of these Rules and Regulations

will result in loss of committed capacity and will require the Applicant to resubmit an application for the expired approval to regain the committed capacity; the reapplication shall include all fees. If there is significant change in scope from the original application, the Applicant shall be required to reapply for preliminary approval regardless of the approval stage which expired.

All fees paid on applications that become null and void are non-refundable except for unused escrow and connection fees paid prior to construction, which are refundable upon formal request by the Applicant.

An Applicant can request an extension for an approval. The extension must be approved by the Authority prior to its expiration upon filing of the appropriate form and required fee. Approved extensions shall be for the periods described in the above section unless the Resolution granting an extension specifically provides for a period which may be longer or shorter.

Applicants requesting special meetings of the Authority to consider their applications, will be responsible for payment of all expenses and time which is incurred by the Authority (such as advertising costs, secretarial costs, attendance of staff members, attendance of professionals, etc.) in conducting such a meeting.

Capacity shall be reserved in the Authority's sewerage system for developments which have received Preliminary approval of its application. This reserved capacity shall be lost in the event that any approval expires.

All drawings, design reports, specifications and estimates submitted by the Applicant must bear the signatures and raised seal of the Applicant's engineer.

B. Application for Preliminary Approval

1. Preliminary Application Forms:

An application for preliminary review of the sewerage system for the proposed development, shall be submitted to the Authority for a ruling on whether a comprehensive sewer system is required and whether the point of connection and downstream system can accommodate the proposed flows.

Preliminary application shall be filed on the 2006 form which is attached hereto.

The Applicant shall obtain written permission, from the Owner, to discharge into any downstream private collection system. Proof of such permission must be submitted with the Preliminary Application.

2. Preliminary Fees:

   The Applicant shall submit an application fee per Equivalent Domestic Consumer Unit (E.D.C.U.). The Applicant shall also post an Escrow per E.D.C.U. plus outside Professional Review Fee. **The application fee and review fees must be paid by separate checks.** The current fees are listed on a table attached to these Rules and Regulations.

   In certain applications where consulting engineer's are utilized to review the water systems, the Applicant must pay for the consulting engineer's fees in addition to the Preliminary Review Fees.

3. W-9 Form:

   A completed Dept. of the Treasury W-9 Form "Request for Taxpayer Identification Number and Certification" for the purpose of escrow account management shall accompany the application.

4. Preliminary Engineer's Report:

   Provide sufficient information to enable the Authority's Engineer to determine if site can be served by gravity and the proposed demand's affect upon the downstream collection system. The Authority may require a Capacity Analysis be performed by the Authority Engineer to assess the impact of the proposed site on the existing sewer system, should the information in the Engineer's report indicate the potential need based on current flows of the system or sub-system through which the sewage shall flow. The cost for this will be in addition to the escrow amounts required under Section IV-B2.

   If the Applicant's proposed demand causes an adverse affect upon the Authority's sewer collection system, the Applicant shall agree to modify the Authority's sewer collection system to accommodate the proposed demand.

5. General Map:

   The Applicant shall furnish four (4) copies of a general (overall) map showing the location of the development in the Township with the location of the nearest Authority existing facilities in the area, a description of the proposed method of connection, and four (4) copies of a detailed sketch plat. The sketch plat may be incorporated in the general map. Plans shall be of uniform size, 24" x 36" maximum.

The General (overall) Map shall be based on an Engineering survey or similarly accurate information and drawn at an appropriately sized scale so the proposed improvements are legible and shall contain at least the following information:

a. General Information:

(1) Proposed development name, identifying title, and Block and Lot. No.(s).

(2) Name and address of the Owner of the tract.

(3) Name and address of the Developer (if other than the owner).

(4) Name, address, and professional seal of person preparing plan.

(5) Key map showing the location of the tract in the municipality.

(6) The location of that portion of the tract which is to be developed relative to the entire tract.

(7) The location of any wetland and flood hazard areas on or within 300 feet of the tract.

(8) The location of all existing and proposed sewers and water mains on the tract and all pump stations, valve chambers, and other features that require permitting approval from the Authority and the NJDEP. Also indicated to the same scale as the rest of the plan shall be the proposed location and invert of the proposed sewer to be used for connection to the existing sewer system.

(9) The general layout and number of all proposed lots.

(10) Existing and proposed contours at two (2) foot intervals on the tract. Datum, symbols and conventions shall refer to established USCGS elevations and standards. Assumed datum and conversions are not acceptable.

6. Attend Meeting:

The Applicant or Applicant's Attorney may attend, but is not required to attend Authority Board Meetings. However, if the Applicant objects to the recommendations of approval the Applicant or Applicant's Attorney may appear before the Authority, at a regularly scheduled meeting (generally the 1st and 3rd Wednesday of every month) to discuss the application with the Authority.

C. Application for Tentative Approval

1. Tentative Application Forms:

   Upon notification by the Authority that preliminary approval has been given, the Applicant may submit an application for tentative approval on the 2006 form which is attached hereto.

2. Preliminary Planning/Zoning Board Approval:

   Before OBMUA tentative approval shall be considered, the Applicant must have received, preliminary approval from either the local Planning Board or Zoning Board of Adjustment, as shall be appropriate based on the nature and purpose of the application. A resolution of Planning or Zoning Board approval along with any reports generated and Township correspondence, shall be submitted with the Authority's Tentative application.

3. Engineer's Estimate of Construction Cost (3 copies)

   Construction cost shall include, as a minimum, the following items where required: pipe, manholes, house connections and cleanouts, pumping stations, force mains, appurtenances, restoration of existing roadways and easements, and record drawings. Construction cost estimate shall reflect costs of the Authority's installation of the facilities. The Authority's current unit prices can be obtained from the Authority's Engineer's Office.

4. Engineer's Report (3 copies)

   A complete Engineer's report in narrative form, setting forth the basis of design shall be submitted to the Authority for each project. The Engineer's Report shall be based on the engineering standards contained in these Rules and Regulations.

   The Engineer's Report shall contain the following minimum information:

   1. All information on the existing sewer system at, near and surrounding the proposed development.

   2. All proposed flow calculation data along with proposed routing of flow to the Authority System. A full size overall sewer system map of the proposed sewerage shall be provided.

   3. Design flow and capacity of proposed sanitary sewer system based on system design. Design flows and capacities shall be shown on the system map.

4. Pipe Support Design – The design engineer shall make investigations into the soil conditions, including performing soil borings and test pits as necessary to identify adequately the field soil conditions for pipeline design. A soils engineer shall prepare signed and sealed written report on his findings and recommendations for proper pipe support upon his evaluation of soils information. The design report shall include the basis of pipeline selection and support design based on soil conditions, depth of bury, soil loads, external loads (ie HS20 Truck loads), and trench and bedding design.

5. Pipe Corrosion Protection – This design engineer shall include evaluations of soil conditions with respect to environmental considerations such as soils acidity and aggressiveness/corrosivity to the pipe material proposed for use, and provide specific design recommendations for the protection of the pipelines to prevent corrosion and deterioration.

6. Any other element of design which the Authority determines must be evaluated and included.

7. The basis of design and all design elements entering into the sewerage system shall be presented in the Engineer's Report. The design requirements for this report are presented in Exhibit G.

If the size of any sewer main, as shown by the Applicant's Engineer, and checked by the Authority's Engineer, is inadequate for the future requirements of the area, or if the Authority requires a sewerage pump station of greater capacity or head than that required by the Applicant, the Applicant shall install the larger facility or facilities if required to do so by the Authority.

The Rules and Regulations, the recommendations of the Authority and the Authority Engineer; and the current Sanitary Sewer Master Plan as supplemented by engineering evaluations performed by the Authority Engineer and its consultants, will govern the approximate sizes and locations of sewer trunk mains, and the location of discharge into the OBMUA sewer system.

5. General Map of the Entire Development

Four (4) copies of a general map of the entire development shall be furnished, showing the sewer collection system (mains, manholes, force mains, pumping stations, easements, valve chambers, and other features requiring permitting approval) for the entire development, necessary off-site facilities and the location of that portion of the tract to be developed relative to the entire tract. The plan shall show property lines, roads, block and lot numbers and all proposed section numbers if applicable.

The General Map shall be based on an engineering survey or similarly accurate information and drawn to an appropriately sized scale so the proposed improvements are legible. Plans shall be of uniform size 24"x 36" maximum.

6. Plans and Profiles of all Proposed Sewers, Pipelines and Structures:

   Four (4) sets of detailed drawings shall be submitted.

The Plans shall contain the following:

a. General Information

   (1) Proposed development name, identifying title, block and lot no.(s) and sewer application number.

   (2) Name and address of the owner of the tract.

   (3) Name and address of the developer, if other than owner.

   (4) Name, address and professional seal of person preparing plans.

   (5) Drawings uniform in size 24" x 36" maximum.

   (6) Drawings at a scale of not more than fifty (50) feet to the inch (match lines and Key Maps shall be shown as necessary).

b. Site Information

   (1) A key map showing the location of the tract in the municipality.

   (2) The location of any wetland and flood hazard areas on the tract or within 300 feet of the tract.

   (3) Tract boundaries as determined from a legal description or engineering survey.

   (4) Existing and proposed contours at one (1) foot intervals on the tract. Datum, symbols and conventions shall refer to established USCGS elevations and standards. Assumed datum and conversions are not acceptable.

   (5) Locations of all existing buildings, streets, waterways, and other significant features.

   (6) Locations of all existing sewer mains, sewer laterals, water mains, water services, culverts, fire hydrants, gas mains, storm drains, catch basins, manholes, and other

man-made features on and within three hundred (300) feet of the tract.

(7) Locations of all existing easements and rights-of-way on the tract.

(8) Boring logs and tests to indicate subsurface conditions on the tract including potential for acid soils. The Engineer's Report should also include recommendations for sanitary sewer design and pipe selection, including proper pipe support based on subsurface soils information.

c. Planning Information:

(1) Proposed location of all roads, curbs, and sidewalks within and adjacent to the tract, with a notation as to the proposed widths of their rights-of-way.

(2) Proposed location of all lot lines and front set-back lines. All lots shall be numbered and all lot lines dimensioned.

(3) Proposed locations and widths of all easements and rights-of-ways to be established on the tract and the purpose for which they are to be established.

(4) Designations as to the proposed use of each lot and an indication of the types, location, and number of buildings and units proposed.

d. Engineering Information

(1) Proposed locations for all proposed water mains, valves, water services, curb stops, pre-cast meter pits, fire hydrants, booster pumping stations, treatment lines, storage tanks, storm and sanitary sewers, laterals, cleanouts, underdrains, and their accompanying manholes, inlets, culverts and appurtenances.

(2) Sanitary sewers to be constructed as close to the centerline of the road as possible.

(3) Horizontal clearances with water mains and other utilities

(4) Pipe sizes, types and strength classifications, including laterals.

(5) Benchmarks, referring to established USCGS elevations, shall be permanently established for the area and shall be set at all pump station and treatment plant sites.

(6) Spot elevations of street surfaces to the nearest 0.1 foot and sewer inverts to the nearest 0.01 foot.

(7) Finished first floor elevations at each unit.

(8) Proposed contours at one (1) foot intervals for the whole tract.

(9) Distances between manholes, slopes of sewers and inverts.

(10) Arrows showing flow direction.

(11) Manholes provided at ends of sewer lines, intersection, grade and alignment, and material changes.

(12) "Plan" and "Plan and Profile" drawings shall show:

(a) All existing and proposed utilities including water supply, sanitary sewers, storm drains, manholes, pumping stations, existing grades and proposed profiles.

(b) Gradients, lengths, sizes, materials, and strength classifications of all pipes .

(c) Details of all utility crossings with sanitary sewers, including crossings with sanitary sewer laterals (service connections) shall be shown and shall indicate clearance between utilities at all crossings. Where water and sewer lines are parallel and 4" sewer laterals cross the water main, the invert of the sewer main shall be a minimum of 8' below finished grade, unless otherwise approved by the engineer.

(d) Top of casting elevations.

(e) Details of connections to existing sewer manholes and details of doghouse manholes.

(f) Inverts of deep house connection laterals at sewer main.

(g) Clearances at all pipe crossings.

(h) Standard drawing scales (1" = 50' Horizontal; 1"= 5' vertical minimum) on each sheet.

(i) Sheets numbered consecutively.

(j) An index of the streets shall also be shown on each plan and profile sheet.

(k) Application number and stage of review.

(13) Plans for pumping stations shall include a general site plan indicating:

(a) Property boundaries

(b) Existing and proposed elevations at 1-foot contour intervals

(c) Location of pumping station and all above ground structures

(d) All chamber locations

(e) Mechanical piping plans and details

(f) Electrical plans and schematics

(g) All existing and proposed overhead and underground electrical and communications utilities.

(h) Emergency standby power facilities

(i) Any and all other details necessary for review by the Authority

(14) Individual connections provided for each individual family dwelling shall be provided with a cleanout at the curb-line, edge of road or easement line as indicate in the standard details attached hereto.

(15) The plans must indicate provisions for landscaping, paved roads and walkways.

(16) Applicable Standard Details and design details shall be incorporated into the plans.

7. Specifications for the Construction of Sewer Facilities

Two copies of complete specifications for the construction of the proposed sewerage system and appurtenances, including sewage pumping stations shall accompany the plans.

8. Details of Construction

The applicable Standard Details for Sewer Utility Construction shall be shown on a separate sheet from other details.

9. Private Utilities Maintenance Plan

Applicants proposing sewer utilities which will remain private, other than commercial projects with out separate tenants, such as apartment complexes, shall submit a

maintenance plan for review and approval which will become part of the Developer's Agreement recorded at the County Clerk's Office.

The Applicant shall prepare a plan for the maintenance of private sewer utilities which shall include as a minimum the following:

a. Annual sewer line cleanings

b. Annual cleanout markouts

c. Preventative Maintenance Plan for pump station, if applicable

d. Annual inspection of stocked repair parts and equipment

e. Annual inspection of Confined Space Equipment

f. Emergency response plan

g. Name and telephone number of contact who will coordinate all maintenance activities with the Authority.

The Applicant shall furnish any annual report to the Authority on its prior years activities associated with the operation and maintenance of private sewer system signed by the licensed operator of the system.

10. Tentative Fees:

An application for Tentative Approval must be accompanied by an escrowed review fee based on the estimated cost of sanitary sewerage construction as approved by the Authority Engineer, plus outside Professional Review fee. The current fees are listed on a table attached to the Rules and Regulations.

11. Attend Meetings:

The Applicant or the Applicant's Attorney may attend, but is not required to attend Authority Board Meetings. However, if the Applicant objects to the recommendations of approval, the Applicant or Applicant's Attorney may appear before the Authority at a regularly scheduled meeting (generally the 1st and 3rd Wednesday of every month) to discuss the application with the Authority.

D. Application for Final Approval

1. Final Application Forms:

Upon notification by the Authority that tentative approval has been given to the proposed sewer system with its appurtenances, or that all conditions of tentative approval have been satisfied, the Applicant may file an application for Final approval on the 2006 form which is attached hereto.

2. Final Planning/Zoning Board Approval:

   Before OBMUA final approval will be considered, the Applicant must have received final approval from either the local Planning Board or Zoning Board of Adjustment, as shall be appropriate, based on the nature and purpose of the application. A Resolution of Planning or Zoning Board approval along with any report generated and Township correspondence, shall be submitted with the Authority's Final application.

3. Engineer's Estimate of Construction Cost:

   Three (3) copies of the approved Tentative Engineer's estimate revised as necessary and labeled "Final".

4. Engineer's Report:

   Three (3) copies of the approved Tentative Engineer's report revised as necessary and labeled "Final".

5. General Map:

   Four (4) copies of the approved Tentative general map, revised as necessary and marked "Final".

6. USGS Quad Map:

   Three (3) copies of a USGS Quadrangle map indicating the site location.

7. Plans and Profiles:

   Four (4) copies of the approved Tentative plans and profiles, revised as necessary and marked "Final".

8. Final Plat:

   Four (4) copies of the Final Plat which will be filed at the County Clerk's office (if applicable).

9. Specifications:

   Four (4) copies of the approved Tentative specifications, revised as necessary and

marked "Final".

10. Details of Construction:

    Four (4) copies of the approved Tentative details of construction, revised as necessary and marked "Final".

11. NJDEP Construction Permit:

    Two (2) original NJDEP Application forms and all required attachments shall be submitted to the Authority.

    The Authority will coordinate the endorsement signatures and submission of the NJDEP "Permit to Construct the Sewer System". Applicant to process all other required NJDEP permits. All NJDEP fees to be paid by Applicant.

12. Final Fees:

    An application for Final Approval must be accompanied by an escrowed review fee based on the entire cost of the sanitary sewerage construction as approved by the Authority Engineer, plus an escrowed outside Professional Review Fee. The current fees are listed in a table attached to these Rules and Regulations.

    Connection fees (as set forth in the Authority's current rate schedule) shall be paid at least one (1) week prior to the Authority granting final approval.

    The Developer also must pay additional monies, during the course of the project, to maintain sufficient balance in the escrow account as determined by the Authority.

13. Sectionalization Plan:

    If the Applicant proposes to construct the development in phases, the final application shall pertain solely to those number of units and that portion of the system proposed for the initial phase of construction. As subsequent phases are proposed for construction, the Applicant shall submit final applications and supporting documents solely for each phase. All final applications within the phasing method shall contain an overall sanitary sewer plan indicating the sections including the phase seeking Final approval together with a list of the number of units proposed for each phase.

14. Attend Meetings:

    The Applicant or the Applicant's Attorney may attend, but is not required to attend Authority Board Meetings. However, if the Applicant objects to the recommendation of approval, the Applicant or Applicant's Attorney may appear at a regularly scheduled

Authority meeting (generally the 1st and 3rd Wednesday of every month) to discuss the Application with the Authority.

15. Executed Developer's Agreement (After Approval):

The Authority requires a Developer's Agreement between Developer/Applicant and the Old Bridge Municipal Utilities Authority which has been approved in substance and form by the Authority Attorney. The Agreement will be prepared by the Authority after Final Approval is granted. The Agreement will be forwarded to the Applicant for execution. The Developer's Agreement shall be fully executed prior to the pre-construction meeting. After execution of the Developer's Agreement, the document shall be recorded by the Authority in the office of the Middlesex County Clerk. All filing fees to be paid by the Applicant. The Developer's Agreement shall be fully executed prior to the pre-construction meeting.

16. Performance Guarantee (after Approval):

A Performance Guarantee shall be of a type approved by the Authority and by the Authority's Attorney as to form.

Performance Guarantees shall be in the amount of the total construction cost as defined under "Engineer's Estimate of Construction Cost", and shall be furnished, guaranteeing complete construction within the time period to be specified by the Authority, and further guaranteeing that said construction will be in accordance with the Rules and Regulations of the Authority and the plans and specifications, Engineer's Report, and cost estimates as approved by the Authority.

Performance guarantees shall be submitted prior to the pre-construction meeting and shall be in a form acceptable to the Authority's Attorney for ninety percent (90%) of the approved construction cost plus a separate cash bond in the amount of ten percent (10%) of the approved construction cost in the form of cash or certified check.

17. Approval of Plans by Local, State, County and Other Agencies

Approval of plans by the New Jersey Department of Environmental Protection (NJDEP) where required, or other agencies will be required by the Authority as a condition of the Authority's Final approval.

The Applicant shall obtain permits for all stream crossings or encroachments and Wetland disturbance from the NJDEP Division of Water Resources, where required.

The Applicant must also secure any necessary permits or clearances from any public utilities or agencies involved.

Permits to construct sewer mains or other structures within the right-of-way limits of State, County, and Municipal Roads and all Railroads must be secured and paid for by the Applicant.

Plumbing permits from the Old Bridge Township Building Department must be secured for installation of building laterals and private pump stations and force mains.

Where application for permit to construct sanitary sewers is required, two (2) originals of all required forms and attachments must be prepared by the Applicant in the name of the Authority for sewer lines to be dedicated or in the name of the Applicant for sewer lines which will remain private. The Authority shall submit the application to the Middlesex County Utilities Authority and to the State of New Jersey Department of Environmental Protection with required copies of plans, specifications and Engineer's Reports. MCUA and NJDEP application fees shall be provided by the applicant.

Additional studies, calculations, reports, drawings, or additional copies of any data necessary for the applications shall be submitted by the Applicant, if required by the Authority.

E. Application for Extension of Approval

The Authority will consider extensions of approval if it can be demonstrated that the developer is actively pursuing necessary approvals.

An application shall be filed on the 2006 form which is attached hereto. The application must be submitted sufficiently in advance of the expiration date so that the Authority will have ample time to act on the request of extension prior to the expiration of any phase of approval. Failure to receive an extension of any phase of approval shall render the application null and void.

An application for an extension shall be accompanied by an escrowed review fee. The current fee is listed on a table attached to these Rules and Regulations.

F. Revised Application:

1. Change in Scope of Project

After an application has been approved and there is substantive change, as determined by the Authority's Engineer, in the configuration of the system and/or revision of the road pattern, and/or whenever any off-site change related to the project or section is proposed, a revised application for the previous stage of approval is required.

2. Change in Ownership

Whenever there is a change in ownership by an Applicant, the new Applicant shall provide proof of ownership which is acceptable to the Authority's Attorney.

In addition, the new Owner shall submit proof of arrangements with prior Owner with regard to the transfer of all fees and bonds to the new owner, previously submitted to the Authority including connection fees, escrow fees, other fees and performance guarantees, along with any other information necessary for complete records on the application. The new owner shall submit a completed Department of Treasure W-9 Form.

The new owner will be assessed an Administrative charge of for the change of ownership. The current fee is listed on a table attached to these Rules and Regulations.

G. Residential Individual Sewer Lateral Connections

Single family residential connections, which connect into a gravity main in front of the property, are subject to the approval process in Section XIV, Customer Service Rules.

A sewer lateral shall not service more than one building.

Connections beyond the curb cleanout assembly are under the jurisdiction of the Township Construction Office through its Plumbing Inspector whose approval will be required.

Materials and method of construction shall be in accordance with Chapter V of these Rules and Regulations and the Authority's Standard Details.

H. Application for Minor Approval

1. Application Form:

An application for minor approval review of the proposed sewer system shall be submitted to the Authority for a ruling on whether the proposal can be processed as a Minor Application.

Minor Approval Application shall be filed on the 2006 form which is attached hereto.

2. Fees:

The Applicant shall submit an application fee per Equivalent Domestic Consumer

Unit (E.D.C.U.). The Applicant must also post an escrowed review fee based on the estimated cost of sanitary sewerage construction as approved by the Authority Engineer. The current fees are listed on a table attached to these Rules and Regulations.

Connection Fees will be required prior to approval.

3. Plan:

   The Applicant shall furnish three (3) copies of the plan showing the proposed connection into the Authority's system. The plan shall be based on an Engineering survey or similarly accurate information and drawn to an appropriately sized scale so proposed improvements are legible. Plans shall be of uniform size 24"x 36" maximum.

   The plan shall include, as a minimum, identifying title, block and lot numbers, existing utilities into which connection is proposed and the proposed location, size, inverts and material type of the proposed sewer line.

The Authority will make the determination if the Application can be processed as a Minor Application or if it is considered a Major Application.

The Authority may require additional information on the plans and additional review fees based upon the scope of the project.

V. DETAILED INFORMATION ON DESIGN AND CONSTRUCTION OF SEWERAGE SYSTEMS

A. General Criteria

The proposed sewer collection system shall be designed and constructed in all respects in accordance with N.J.A.C. 7:14A-22 et.seq. "Treatment Works Approval, Sewer Bans, Sewer Ban Exemptions", except where more stringent conditions of these Rules and Regulations apply, as found at Exhibit G.

All references to standard specifications A.S.T.M., A.N.S.I., A.W.W.A., and the like, shall be to the latest revision thereof.

The specific Authority requirements for the design of gravity sewer systems, including sewer mains, inverted siphons, and associated structure may be found at Exhibit G.

The Authority will not be responsible for the design of the project or any errors or omissions therein; such responsibility shall be solely and completely assumed by the APPLICANT'S engineer, surveyor, architect, or other design professional(s).

B. Construction of Collection System

1. Pipe Materials: For detailed specifications of different pipe systems requirements, see OBMUA standards in Exhibit G.

2. Pipe Bedding and Trenching: For pipe bedding and trenching requirements, see OBMUA standards in Exhibit G.

3. Pipe Appurtenances: For OBMUA requirements regarding manholes, inverted siphons and special structures, see OBMUA standards in Exhibit G.

4. Service Connections: For OBMUA requirements regarding service connections, see OBMUA standards in Exhibit G.

C. Construction of Sewage Pumping Stations and Force Mains

All pump stations shall be located in areas that are not subject to flooding and that are accessible by motor vehicle. Each pumping station must be on a parcel of land adequate to meet the requirements of the Authority for operations and maintenance.

All pump stations shall be designed to carry four times the average daily flow upon full Development of the tributary area.

All pumping stations shall be provided with the minimum requirements set forth in these standards and as shown in the Standard Construction Details in Exhibit G. The Authority may require more stringent or additional criteria as it deem appropriate. The Authority may waive some requirements on a case-by-case basis depending on the size of the system. An outline of OBMUA requirements regarding general site plan, force mains, structures, equipment and systems is provided below. Details of these requirements are included in Exhibit G.

1. General Site Plan
2. Pre-Case Chambers
3. Cast in Place Chambers
4. Dry Well Pump Station
5. Communitor Chamber
6. Valve Chamber
7. Control building
8. Backup Generator
9. Instrumentation
10. Intrusion Alarm System
11. Metal Fabrications
12. Heating, Ventilation and Air Conditioning
13. Carbon Adsorption Odor Control System
14. Bioxide Odor Control System
15. Portable Davit Crane
16. Electrical
17. Force Main

D. Submittals, Equipment and Supplies

Submittal requirements, including shop drawings and operation and maintenance manuals, as well as supplementary safety equipment and supplies for collection system and pump stations, can be found at Exhibit G.

Before any field changes are made, the design engineer shall revise drawings and submit copies to the Authority for approval. Four (4) copies of the approved drawings shall be submitted to the OBMUA prior to construction.

VI. INSPECTION OF SEWERAGE SYSTEM DURING THE COURSE OF CONSTRUCTION

A. General

All construction of sewerage systems shall be under the jurisdiction of the Staff Engineer for the Authority, either directly or through inspectors under his supervision. He shall enforce compliance with the approved plans and specifications. This inspection does not relieve the Design Engineer of his responsibility or liability as a representative of the Applicant and as a designer of the project.

Construction or testing of sewerage systems shall be performed during the regular OBMUA working hours of 7:00 A.M. to 3:30 P.M. Monday thru Friday, excluding holidays, unless otherwise approved by the Authority.

No house service connections shall be made to a street main, whether tested or not, unless under the observation and inspection of the Engineer for the Authority.

Neither the Authority Engineer's authority to act under this Article nor any decision made by the Authority Engineer in good faith either to exercise or not exercise such authority shall give rise to or create any duty of responsibility of the Authority Engineer to the Applicant, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

Wherever in the Approved Plans the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgement of the Authority Engineer as to the Work, such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Approved Plans. The use of any such term or adjective shall not be effective to assign to the Authority Engineer any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of this section.

The Authority Engineer will be the interpreter of the requirements of the Approved Plans and judge of the acceptability of the Work thereunder.

The Authority Engineer and other representatives of the Authority, testing agencies and governmental agencies with jurisdictional interest will have access to the Work at reasonable times for their observation, inspecting and testing. The Applicant shall provide proper and safe conditions for such access.

The temporary, leak-proof, mechanical rubber sealed bulkhead type plug shall be installed in the downstream (outlet) side of the manhole furthest downstream in any sewer main or branch under construction which will not adversely affect existing sewage flow and shall remain intact and unloosened until written permission is received from the Authority Engineer to remove same. In the case of proposed doghouse manholes, the existing sanitary sewer shall not be broken until written permission is received from the Authority Engineer. This permission will not be granted until each section of the sewer has been cleaned and flushed in a manner acceptable to the Sewer Division Superintendent and a Permit to Operate has been issued (See also Section VIII A).

The Authority Engineer will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Approved Plans and Specification. The Authority Engineer will have authority to disapprove or reject Work which the Authority Engineer determines to be defective, or, when in the opinion of the Authority Engineer, is not being constructed consistent with good Engineering practice and will also have authority to require special inspection or testing of the Work, the cost for which shall be borne by the Applicant.

1. Applicant's Obligations and Performance Requirements

   The Applicant shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Approved Plans and Specification.

   The Applicant shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.

   The Applicant shall provide on the job site at all times during the Work a competent superintendent. The superintendent will be the Applicant's representative at the site and shall have authority to act on behalf of the Applicant. All communications given to the superintendent shall be as binding as if given to the Applicant.

   The Applicant shall provide competent, suitably qualified personnel to survey and layout the Work and perform construction as required by the Approved Plans and Specifications; and shall at all times maintain good discipline and order at the site. All utilities must be staked out and cut (grade) sheets shall be supplied to the Authority Engineer prior to construction.

The Applicant shall give a minimum of forty-eight (48) hours notice to the Authority prior to construction or testing of sewers at all times during the construction period. No pipe shall be installed nor any excavation backfilled without the Authority Engineer or other representative of the Authority being on-site. Should any sewer construction be performed wherein a qualified inspector is absent due to the Applicant's failure to provide the proper notification, the Authority may require said work to be uncovered at the Applicant's expense. Failure to do so may result in non-acceptance of work in which case removal and reinstallation may be required.

All materials and equipment shall be of good quality and new, except as otherwise provided in the Approved Plans and Specification.

If required by the Authority Engineer, the Applicant shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment.

The Applicant shall be fully responsible to the Authority and the Authority Engineer for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with the Applicant.

Nothing in the Approved Plans shall create any contractual relationship between the Authority or the Authority Engineer and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of the Authority or the Authority Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization.

All work performed for the Applicant by a Subcontractor will be pursuant to an appropriate agreement between the Applicant and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Approved Plans and Specification for the benefit of the Authority and the Authority Engineer.

The Applicant shall obtain and pay for any and all construction permits and licenses. The Applicant shall pay all governmental charges and inspection fees necessary for the prosecution of the Work. The Applicant shall pay all charges of utility owners for connections to the Work.

The Applicant shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither the Authority nor the Authority Engineer shall be responsible for monitoring the Applicant's compliance with any Laws or Regulations.

The Applicant shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Approved Plans and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. The Applicant shall assume full responsibility for any damage to any such land or areas contiguous thereto, resulting from the performance of the Work.

During the progress of the Work, the Applicant shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work the Applicant shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy. The Applicant shall restore to original condition all property not designated for alteration by the Approved Plans.

The Applicant shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the Applicant subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

The Applicant shall, at all times, provide for continuity of safe storm water flow and prevention of soil erosion.

If at any time it is necessary to close a street or traveled way which is used by occupants or the public, the Applicant shall provide and maintain proper signs, lights, barricades, and any other traffic control devises, including traffic directors, as deemed necessary by the Police Department with jurisdiction. Adequate notice (one week preferred) of such closings shall be given to the local Emergency Services, the School Board, and any local residents as a minimum. No public road or other traveled way used by the public shall be closed at any time without the express written consent of the owner thereof.

The Applicant will be responsible for locating and protecting all existing utilities including, but not necessarily limited to, water, steam, oil, gas, sanitary sewers, storm sewers, drains, telephone ducts and electric conduits, or any other similar facilities which may be encountered during the construction operation. He shall be held solely responsible for locating all underground structures. He shall, at his own expense, arrange with the owners of such utilities for their aid and assistance in locating and protecting them and pay all charges, costs and expenses in connection therewith. He shall also provide the Authority with copies of the NJ

One-Call mark-out request reference number and any correspondence requesting the stake-outs for the various utilities if requested.

All damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Applicant, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the Applicant.

The Applicant shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Applicant shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- all employees on the Work and other persons and organizations who may be affected thereby;

- all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

- other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

The Applicant shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. All construction shall be performed in accordance with the contractor's OSHA Approved Confined Space Plan and all other applicable OSHA requirements. The Contractor is solely responsible for safety, adequacy and efficiency of all means and methods of construction.

The Applicant shall notify owners of adjacent property and of underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation and replacement of their property.

The Applicant's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the Authority Engineer has issued a notice to the Authority and the Applicant that the Work is acceptable and the Authority officially and formally accepts the Work by Resolution.

The Applicant shall also furnish the name of occupant, the street address and lot and block number of every connection made to an approved section of sewer main during the month.

The Applicant shall maintain in a safe place at the site one record copy of all Approved Plans in good order and annotated to show all changes made during construction. These record documents together with all approved Shop Drawings will be available to the Authority Engineer for reference.

The Applicant shall warrant and guarantee to the Authority and the Authority Engineer that all Work will be in accordance with the Approved Plans and will not be defective.

2. Limitations on the Authority Engineer's Responsibility

The Authority Engineer will not be responsible for the Applicant's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto.

The Authority Engineer will not be responsible for the Applicant's failure to perform or furnish the Work in accordance with the Approved Plans.

The Authority Engineer will not be responsible for the acts or omissions, of the Applicant or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

B. Pre-Construction Meeting

All developers are required to attend a pre-construction meeting prior to any water or sewer utility work at the site. The developer shall have his utility contractor(s) attend the pre-construction meeting to discuss the work and requirements of the Authority. For sectionalized developments, pre-construction meetings will be required prior to any utility work within each section.

All outstanding items which were conditions of approval shall be presented prior to the meeting including the following:

a) Outstanding Fees and Performance Guarantees

b) Proof of all required Permits and Off-site Easements

c) Executed Developer's Agreement

d) Executed utility easements which will be dedicated to the Authority

e) Proof of filing for all private utility easements

f) Insurance Certificate

Utility construction shall not begin until a written "Notice to Proceed" is issued by the Authority.

C. Insurance Requirements

The developer must submit to the Authority Certificates of Insurance satisfactory to the Authority. Certificates of Insurance must have the following minimum limits:

Bodily Injury Liability	$500,000 - $1,000,000
Property Damage Liability	$500,000 - $1,000,000

Workmen's Compensation required by the laws of the State of New Jersey.

The Applicant shall name the Authority as an additional insured, as well as agree and undertake to indemnify and save and hold harmless the Authority and the Authority's engineers and respective employees and agents in all manners pertaining to the construction.

D. Testing and Videotaping of Completed Sewerage System

Sanitary sewer systems must be complete before testing is witnessed by the Authority. This includes finished manholes inside and out, cleanouts in proper location, and base course pavement over lines to be tested.

All gravity sewer facilities shall be subjected to air pressure testing and videotaping. Prior to testing all lines and manholes shall be cleaned.

The tests shall be performed between two manholes or as otherwise directed by the Engineer for the Authority and shall include all related sewerage including laterals and cleanouts.

The Applicant's contractor shall furnish all labor, material and equipment necessary for the testing.

The sewer pipe shall be tested under a 5.0 psi pressure and shall be maintained for a period of five (5) minutes with no drop in pressure.

All sewer main will be videotaped by the Authority in accordance with the current rate schedule.

Force mains shall be subjected to a hydrostatic pressure test of two (2) times the maximum operating pressure or 100 psi, whichever is greater for a two-hour period.

All force main cleanout assemblies and air release assemblies shall be included in the tests. The air release valve assembly shall be observed for expulsion of air during the filling operation. After the force main is full, the lower outlet valve on the release valve shall be opened to verify the presence of water up to that level.

Sanitary sewer lines may require mandrel testing with a nine (9)point mandrel with a diameter of ninety-five percent (95%) of the pipe diameter. If directed by the Authority Engineer, the Applicant shall furnish a proving ring to verify the mandrel size.

Any piping found to have deflected excessively or be out-of-round, as determined by the Authority shall be replaced or repaired as directed.

Any pipe, joint or other part of the sewer construction found to show leakage shall be repaired, or removed and replaced in accordance with latest revision of "Repair Guidelines" published by Utility Contractor's Association of New Jersey.

Requirements for pump stations and for equipment performance testing of pump stations shall be established by the Authority.

If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, the Applicant shall assume full responsibility therefor, pay all costs in connection therewith and furnish the Authority Engineer the required certificates of inspection, testing or approval.

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to the Authority Engineer, and the Applicant shall assume full responsibility therefore, pay all costs in connection therewith and furnish the Authority Engineer the required certificates of inspection, testing or approval.

If any Work that is to be inspected, tested or approved is covered without testing, inspection, or approval by the Authority Engineer, it must be removed and reinstalled. Such uncovering shall be at the Applicant's expense unless the Applicant has given the Authority Engineer timely notice of his intention to cover the same and the Authority Engineer has not acted with reasonable promptness in response to such notice.

Neither observations by the Authority Engineer nor inspections, tests or approvals by others shall relieve the Applicant for his obligations to perform the Work in

accordance with the Approved Plans and Specifications.

If required by the Authority Engineer, the Applicant shall properly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by the Authority Engineer, remove it from the site and replace it with non-defective Work. The Applicant shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

E. Certification

Upon satisfactory completion of construction, the Authority's Engineer will certify to the Authority and to the NJDEP that the project has been inspected and tested under his supervision. The Applicant's Engineer must certify to the Authority and to the State that the project has been constructed according to the approved Plans and Specifications. NJDEP requires that such certification be given prior to its issuance of a permit to operate new sewerage facilities.

The Design Engineer shall concurrently submit Preliminary "As-built" plans (record drawings) and two (2) original signed and sealed "Certification for Approval by Professional Engineer" (NJDEP Form WQM-005, latest revision).

No active service connections will be permitted by the Authority without the issuance of the Approval to Operate by Local Agency.

VII. RECORD DRAWINGS, EASEMENT MAPS AND DESCRIPTIONS, AND MANUALS

A. Record Drawings

After construction and before final acceptance by the Authority, the Applicant shall furnish the Authority two (2) sets of prints of each drawing showing the details of the collection system, all facilities, connections, etc., as actually constructed in Plan. Record Drawings shall include all information listed on the most current "Record Drawing Review Checklist", available from the Authority's Engineering Department.

Data required on the Record Drawings includes materials of construction, manhole inverts, main lengths, main slopes and capacities, stationing of tee-wye from downstream manholes, deep stack locations with their height, location by triangulation of each cleanout to the outermost prominent foundation corners, and the book and page numbers and legal description of all utility easements. Drawings shall be free of all extraneous information such as storm sewer, gas, electric (except at pump stations), contours, landscaping, etc; construction information shall be erased and changed rather than crossed out. Record Drawings shall be signed and sealed by the licensed professional preparing such plans. The title block shall indicate that these are "Record Drawings" with the date of preparation.

Once the record drawings are found acceptable by the Authority's Engineer the Applicant shall furnish the Authority two (2) complete set of reproducibles and two (2) sets of prints of each approved drawings. The Applicant shall also submit the file on a compact disk formatted for Windows compatibility. The file shall be in one of the following formats: Auto CAD drawing file (dwg), ESRI Shapefile (shp), Drawing Exchange Format File (dxf) or MicroStation drawing file (dgn).

Exceptions may be granted for circumstances where production of digital file copy presents an undue hardship. In such case as where the original plans are hand drawn, the Authority, at its discretion, may require scanned copies in lieu of a digital file copy.

After construction and before final acceptance of sewage pump stations by the Authority, two (2) complete and up to date sets of operation and maintenance manuals including materials and parts listings, approved by the Authority's Engineer, shall be furnished.

Pipes installed at slopes less than those shown on the design drawings shall be reinstalled by the Contractor to the design slopes or the Design Engineer shall provide a design report prepared and sealed by a Professional Engineer showing the theoretical capacity and velocity of the pipe as installed based on total energy head and the pipe manufacturers "n" valve. The theoretical velocities and capacities shall be submitted to the Authority for evaluation. If the theoretical capacity and velocity meet the design requirements, the line will be acceptable. If the theoretical capacity and velocity do not meet the design requirements, the Contractor shall conduct a flow test to determine the velocity and capacity with the pipe flowing.

If the theoretical capacity and velocity do not meet the design requirement, the contractor shall conduct a flow test to determine the velocity and capacity with the pipe flowing one-half full. If the actual velocity and capacity meet the design requirement, the line is acceptable, otherwise the line shall be re-laid to the slope as shown on the drawings. In any case, the Authority retains the right to have the Applicant relay any line not meeting the minimum slope required, at the Applicant's expense.

B. Easements

All required easements to be deeded to the Authority shall be clearly indicated on the drawings. Easements shall be unrestricted and shall be a minimum width of twenty (20) feet, ten (10) feet minimum on either side of the pipe. Greater widths may be required based upon the size and/or depth of main.

Where sanitary sewers are to be installed in streets which will not be dedicated to the Township of Old Bridge the County of Middlesex or State of New Jersey (private roads), the easement width shall be the entire width between the curb lines.

The Applicant shall furnish two (2) prints of easement maps together with metes and bounds descriptions for each easement to be deeded to the Authority. Maps and descriptions shall be sealed by a licensed Land Surveyor and be suitable for filing at the office of the County Clerk.

The Applicant shall also provide the Authority with a properly executed Deed of Conveyance for the easements and/or the pump station site property to be conveyed to the Authority in a form recordable in the office of the Middlesex County Clerk along with a Title Insurance Policy for the Utility Easement and/or pump station site property in a form acceptable to the Authority Attorney.

Easements in a form approved by the Authority's Engineer and Attorney and executed by the property owner, and/or other parties with interest, will be required where sanitary sewers to be dedicated to the Authority are not located in public right-of-ways.

Title insurance policies shall be required for each easement conveyed to the Authority in an amount to be determined by the Authority but shall in no case be less than $10,000.00.

VIII. RELEASE AND REDUCTION OF PERFORMANCE GUARANTEE

A. Completed Construction Inspection

After completion of all mains and manholes proposed, and before use, the Authority shall be in receipt of the following:

a) Satisfactory pressure testing or hydrostatic testing results as applicable

b) Preliminary Record Drawings

c) All test certifications

Upon receipt of all required items, the Authority will perform a Completed Construction Inspection to determine that all mains and manholes are free of physical defects.

Where a permit to operate is required, the Applicant shall supply the OBMUA with the proper certifications, as specified in Chapters VI and IX, Record Drawings and forms as required by the NJDEP. The Authority will make Submission to the State; however, Applicant shall be responsible for any required fees.

B. Reduction of Performance Guarantee

Where the amount of the Performance Guarantee is in excess of $100,000, the developer may request not more than one reduction in the amount of the Performance Guarantee when in excess of fifty percent (50%) of the improvements to be installed are completed. The reduction shall only be made upon favorable recommendation of the Authority's Engineer and shall not exceed seventy percent (70%) of the dollar value of the improvements installed.

The Authority Engineer will determine the actual quantities and classifications of Work performed by the Applicant for bond reduction purposes. Such bond reduction shall not constitute acceptance or approval of any work performed which is included in the bond reduction.

C. Final Inspection

After satisfactory completion of all sewer laterals and cleanouts, the Authority will perform a Final Inspection to determine that sewer laterals and cleanouts are free of physical defects. If construction is proceeding in an acceptable manner connections will be permitted (by the issuance of water meters).

D. Release of Performance Guarantee

Upon submission of all items listed under Section IX "Acceptance of New Sewerage System by the Authority", the developer may request release of the Performance Guarantee.

Sanitary sewer systems which will be dedicated to the Authority shall be maintained by the Applicant for a period of two (2) years. If within two (2) years after the date of release of the performance guarantee any Work is found to be defective, the Applicant shall promptly, and in accordance with Authority's written or verbal instructions, either correct such defective Work, or, if it has been rejected by Authority, remove it from the site and replace it with non-defective Work.

IX. ACCEPTANCE OF NEW SEWERAGE SYSTEM BY THE AUTHORITY

After satisfactory completion of all structures proposed, the Applicant will:

1. Have water meters installed in all units and , be in receipt of Certificate of Occupancy (C.O.) from the Township of Old Bridge for all development units. (Upon 95 percent occupancy, the Authority may consider assuming the operation and maintenance of the developer's pump station which is proposed to be dedicated to the Authority).

2. Provide the Authority with record drawings in accordance with Chapter VII.

3. Provide the Authority with copies of any Final Plats filed with the Middlesex County Clerk's Office.

4. Formally dedicate to the Old Bridge Municipal Utilities Authority the constructed sewerage facilities within public right-of-ways and easement up to but not including the first clean-out with a recordable document. The Deed of Dedication shall be in a form approved by the Authority's Engineer and Attorney. This does not apply to facilities which will remain privately owned.

5. Give proper title to all lands, easements, structures, appurtenances and improvements as necessary by deed or appropriate dedication. Title Insurance Policies shall be provided when required by the Authority.

6. Provide warranties for all equipment installed extending beyond the maintenance period.

7. Provide affidavit which certifies that all facilities are free of liens or other encumbrances. The Applicant shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold the Authority and the Authority Engineer harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequently out of any action, legal or equitable, brought by any such other party against the Authority or the Authority Engineer to the extent based on a claim arising out of the Applicant's performance of the Work.

8. Supply the Authority with the required Confined Space Equipment as necessary.

9. Clean all lines to the satisfaction of the Authority.

10. Post a maintenance guarantee equal to fifteen percent (15%) of the Performance

Guarantee guaranteeing the satisfactory performance of the system for a period of two (2) years for systems which will be dedicated to the Authority.

11. Provide an adequate balance of all escrow fees, as required by the Authority Engineer. No interest shall be paid on escrow unless the balance exceeds $5,000. The Authority reserves the right to withhold the first $100 from all escrow accounts.

12. Provide proof of a NJDEP licensed collection system operator pursuant to N.J.A.C. 7:10-13.13 if the sewer system is to remain private.

Upon receipt and approval of the above listed items, the Authority will:

a) Release the Applicant from the Performance Guarantees.

b) Accept the title to all lands, easements, structures, appurtenances and improvements.

c) Assume the operation and maintenance of the system upon expiration of the two (2) year Maintenance Guarantee.

It should be noted that some of these items may not be required where the sanitary sewer system will remain privately owned and maintained. Even in sewer systems which will be dedicated to the Authority the sewer lateral from the street onto a private property belongs to the property owner. The property owner is solely responsible for the maintenance and repair of that section of the sewer lateral.

X. USE OF SEWAGE SYSTEM PRIOR TO ACCEPTANCE

A. Use of Sewage System by the Authority

During construction and before final acceptance, the Authority shall have the right to use any portion of the system completed and to allow additional connections without waiving their right to order correction of any defects.

B. Unauthorized Use of the System

Use of the system for the discharge of condensate from any HVAC system, sump pumps, or drainage from cellar drains, leaders, downspouts, drainage, developers cellar pits or pumping out septic tanks is strictly prohibited.

Similarly, discharge of any non-approved commercial or industrial flow into the system is strictly prohibited.

C. Developer's Use of System During Construction

The Developer shall not be permitted to use the system until a permit to operate has been issued by the NJDEP. The Developer shall not be permitted to use individual sewer laterals until a water meter has been installed in that particular unit.

XI. REQUIREMENTS APPLICABLE TO WASTES DISCHARGED INTO THE SYSTEM

A. General

The Applicant, Owner and/or User as may be applicable shall Conform with and abide by the minimum requirements of the Authority and, where applicable, the Middlesex County Utilities Authority (MCUA) as presently enacted and as amended and supplemented from time to time. In the event of conflict between Authority and MCUA requirements as to waste and discharge into sewers, the Customer shall be required to conform with and abide by the most stringent requirements.

B. Commercial User Waste Discharge

The Authority reserves the right to sample commercial user waste discharge as described in the following sections C, D and E if it is determined to be in the best interest of the OBMUA.

C. Industrial User Waste Discharge

1. Monitored Industrial User

All users which contribute more than 25,000 gallons per day of equivalent amounts of pollutant load based upon the standard domestic and commercial sewage concentrations shall be charged in accordance with this section. In addition, any establishment which discharges lesser amount of sewage or pollutant load, but in the opinion of the Authority is a significant contributor to the system may be charged under this section. All establishments charged under this section shall install, at their own cost, flow monitoring equipment which in the opinion of the Authority provides a true determination of the volume of sewage discharged during any billing period. Monitored industries shall also install, at their own cost, acceptable sampling equipment suitable for the collection of flow proportional effluent samples. Sampling frequency shall be established by the Authority and shall be appropriate for the individual industry. Samples shall be analyzed, at the users cost, by a laboratory licensed by the State of New Jersey and approved by the Authority. The cost to the Authority for all measurements, sample pick-up, tests and analysis will be added to the billings due from the industrial user.

The Authority, MCUA, NJDEP and/or the USEPA shall have unhindered 24-hour per day access to metering and flow sampling equipment and may obtain samples as deemed appropriate for billing purposes.

The metering and sampling chamber shall be constructed on a suitably sized area by the industrial user at his expense, and in compliance with the reasonable requirements of the Authority. Bills shall be based upon sewage flow plus surcharges for actual

pollutant load (BOD, Suspended Solids and Chlorine Demand), which the industrial user has individually contributed based upon sample analysis. All user charges shall be payable upon billing.

Should the monitoring system fail, billing will be based on the method described for an Unmonitored Industrial User.

2. Unmonitored Industrial Users

   Charges shall be based upon water consumption provided by records of local water companies and/or meters on private water supplied and other appropriate data as necessary to accurately determine the sewage contribution of each user.

   Where facilities necessary to accurately determine water consumption are not available, the Authority may require the industry to install sewage or water metering equipment, or may use other methods to establish the sewage contribution and the pollutant load of the user.

   Determination of flow and loadings will be periodically made at such frequency as is deemed necessary by the Authority, but normally not more frequently than three (3) times per week, nor less frequently than twice a year. Determination of flow and loadings by the Authority will be certified by the Authority to the industrial user and shall be binding as a basis for charges.

   All measurements, tests, and analysis of the characteristics of waters and wastes to which reference is made in this section shall be determined in accordance with the Standard Methods for the Examination of Water and Sewerage.

   The cost to the Authority for all measurements, tests and analysis will be added to the billings due from the Industrial user.

   Industrial users shall permit agents of the Authority, the MCUA, the NJDEP and/or the USEPA to enter upon all properties of the contributing industry at any reasonable time for the purpose of inspection, observation, measurement, sampling and testing.

   Any user objecting to an estimate of flow, or strength made hereunder, shall have the option at its own cost and expense of installing metering equipment on its discharge lines to record actual flow and strength readings. The metering equipment used, its installation and the location of the installation shall all be subject to the review and approval by the Authority or its designated representative.

3. Prior written approval shall be obtained from the Authority in order to discharge in the sewerage wastes containing any of the following:

a) A five (5) day BOD greater than three hundred (300) mg/1 (The Authority reserves the right to determine BOD values by means of other laboratory tests such as TOC and COD to determine the strength of sewage expressed as a modified BOD value for billing purposes); or

b) A suspended solids content greater than three hundred and eighty (380) mg/1;or

c) A chlorine demand greater than fifteen (15) mg/1;or

d) An average daily flow greater than 300 gallons/day; or

e) Any quantity of substances as described in Section E "Prohibited Wastes".

4. Any source deemed to be a Significant Industrial User (SIU) as defined by N.J.A.C. 7:14A-1 et seq., shall obtain a State NJPDES/SIU Permit prior to commencing discharge into the system.

5. Industrial users may, at the option of the Authority, be required to execute an individual contract with the Authority for sewerage service. Said contract may contain special conditions relating to pretreatment, metering, sampling or additional requirements as the Authority deems necessary and appropriate for the protection and proper operation of its sewerage system.

D. Pretreatment, Metering and Sampling of Industrial Wastes

1. Whenever necessary, in the opinion of the Authority's Engineer, the applicant shall provide at his own expense such facilities for pretreatment of industrial wastes as may be necessary to:

a) Reduce five (5) day BOD to three hundred (300) mg/1, suspended solids to three hundred eighty (380) mg/1, chlorine demand to fifteen (15) mg/1;or

b) Reduce objectionable characteristics or constituents to conform to the maximum limits permitted in these Rules and Regulations; or

c) Insurance equalization of discharge over a 24 hour period to prevent temporary overloading of the Authority's treatment or conveyance facilities.

2. Whenever necessary, in the opinion of the Authority's Engineer, the applicant shall provide at his own expense a suitable precast chamber with appurtenances for observation, metering, and sampling of waste materials as directed by the Authority.

3. Plans, specifications, and all other pertinent information relating to proposed facilities

for pretreatment, metering or sampling of industrial wastes shall be submitted to the Authority for approval. No construction shall be permitted until written approval has been granted by the Authority and all governmental regulatory bodies having jurisdiction.

4. Pretreatment, metering and sampling facilities shall be accessible to the Authority's authorized agent at all times. The applicant may, at the option of the Authority, be required to grant title to said facilities to the Authority in order to insure the proper operations or maintenance thereof.

E. Prohibited Wastes

No person shall discharge or cause to be discharged any storm water, surface water, groundwater, roof runoff, subsurface drainage or discharge from a sump pump into any sewer. Except as otherwise provided in these Rules and Regulations, no person shall discharge or cause to be discharged any of the following described wastes or waters into the Sewer System:

a) Any liquid or vapor having a temperature higher than one hundred and fifty (150) degrees Fahrenheit.

b) Any water or waste containing more than one hundred (100) ppm by weight of fats, oils, or grease.

c) Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas which, by reason of its nature or quality, may cause fire or explosion or which, in any other way, may be injurious to persons, the Sewer System, the Sewage Treatment Plant, or the Sewage Pump Stations.

d) Any noxious or malodorous gas or substance which, either singly or by interaction with other wastes, shall be capable of creating a public nuisance or hazard to life or preventing entry into any sewer for maintenance and repair.

e) Any garbage, except properly shredded or ground garbage.

f) Any solid or viscous substance which shall be capable of causing obstruction of the flow in any sewer or other interference with the proper operation of the Sewer System.

g) Any water or waste having a pH lower than 5.5 or higher than 8.5 or having any corrosive property capable of causing damage or hazard to structures or equipment of the Sewer System or to personnel engaged in operation and maintenance thereof.

h) Any condensate from HVAC systems or the like.

i) Any water or waste containing any toxic substance in quantity sufficient to constitute a hazard to humans or animals or to interfere with the biochemical processes of a sewage treatment plant or that will pass through a sewage treatment plant in such condition so that it will exceed State, Federal, or other requirements for the effluent discharge system, or which will result in sludge exceeding requirements established for domestic sewage sludge disposal.

j) Discharge containing BOD in excess of three hundred (300) mg/1 or S.S. in excess of three hundred and eighty (380) mg/1 or having chlorine demand greater than fifteen (15) mg/1.

k) Any toxic radioactive isotopes.

l) Cesspool or septic tank contents.

m) Any waters or wastes containing concentrations of materials in excess of the following limits:

Material	Maximum Concentration (mg/1)
Arsenic	0.1
Cyanide	0.2
Lead	0.3
Cadmium, Hexavalent Chromium Copper, Nickel, Tin, Zinc	1.0
Fluorides, Iron	5.0

n) Any hazardous waste as defined by the New Jersey Administrative Code, Sections 7:26-1.4 and 7:26-8.1 et. seq.

o) Any waters or wastes containing concentrations of materials in excess of the National Pretreatment Regulations.

F. Groundwater Remediation Projects

1. A groundwater remediator shall be a user who has been required by the New Jersey Department of Environmental Protection or by a Court Order to temporarily discharge the groundwater directly or indirectly into the sewer system maintained by the Old Bridge Municipal Utilities Authority under the authority and conditions set forth in

appropriate permits and approvals issued by the New Jersey Department of Environmental Protection.

2. A Groundwater Remediator shall be required to post escrows for review of its projects by the Authority's Professional Staff in accordance with these Rules and Regulations, in amounts to be fixed by the Authority's Engineers upon review of the preliminary application. These escrows shall be adjusted upward or downward as circumstances require. Any balances remaining shall be returned to the applicant upon completion of the review. The applicant shall post any required escrow or any addition to escrow within ten (10) days of it being demanded by the Authority. If the escrow is not posted within this time, the Authority shall cease all work on the project and shall notify the Department of Environmental Protection.

3. All Groundwater Remediators who temporarily connect into the system are not required to pay a connection fee for the temporary use of the system.

4. All flows from the Groundwater Remediation Project shall be subject to service charges calculated in accordance with the current rate schedule.

5. Notwithstanding any provisions of these Regulations to the contrary, the Authority, in order to foster completion of the groundwater remediation Project in a timely fashion and in the public interest, may enter into agreements with a Groundwater Remediator to fix the time period that the service charges may be in effect and to further provide for binding arbitration in the event there is a dispute about the applicable service charge.

6. All groundwater remediators shall be required to provide sufficient guarantees by way of performance and maintenance bonds, or other acceptable surety to insure that the Old Bridge Municipal Utilities Authority shall be protected in the event of a spillage, surcharge or other failure of the groundwater remediation project. This requirement shall be in addition to all other requirements imposed by these Rules and Regulations relating to insurance and guarantees. All groundwater remediators shall be required to execute an indemnity agreement with the Authority holding it harmless from any liability, cost or expense relating to the project. No connection shall be permitted until all indemnities have been executed and bonds have been posted.

XII. COMPLIANCE WITH RULES AND REGULATIONS

A. General

The Applicant shall comply with all of the Rules and Regulations as set forth herein. Failure to do so will result in the Authority's disapproval or rejection of the work.

The Applicant shall exercise all construction constraints required to the New Jersey Department of Environmental Protection Regulations and to any Agency having jurisdiction and shall be responsible to see that the finished work complies accurately with the Approved Plans.

B. Noncompliance

The Authority reserves the right to refuse to any Applicant the privilege of connecting to the Authority's system, or to compel discontinuance of use of a sewer, or to compel the pretreatment of industrial wastes at any time, in order to prevent discharge into the sewerage system of wastes deemed to be harmful to the sewerage system treatment process or operating personnel.

If any Applicant shall fail or refuse, upon receipt of written notice from the Authority, to remedy any unsatisfactory condition relating to sewage discharge within a period of 24 hours of receipt of said notice, the Authority shall have the right to disconnect all service to said Applicant until such time as all violations have been corrected to the satisfaction of the Authority. Violators will be charged for all costs incurred in emergency correction of the unsatisfactory condition and for all Authority expenses incurred.

XIII FEES FOR APPLICATION OF NEW CONSTRUCTION AND USER FEES

A. Application Filing Fees – Major Applications

1. Application Fee: The Applicant before proceeding shall post an application fee of per E.D.C.U in accordance with the attached Fee Table.

2. Preliminary Review Fee: An application for Preliminary Approval must be accompanied by an escrowed review fee per E.D.C.U. plus a Professional Review Fee in accordance with the attached Fee Table.

3. Tentative Review Fee: An application for Tentative Approval must be accompanied by an escrowed review fee based on the estimated cost of water construction as approved by the Authority Engineer, plus a Professional Review Fee of in accordance with the attached Fee Table.

4. Final Review Fee: An application for Final Approval must be accompanied by an escrowed review fee based on the entire cost of the water construction as approved by the Authority Engineer, plus a Professional Review Fee for preparation of the required Resolution, preparation of Developers Agreement, Bond Review, and Title Insurance Policy review. Fees shall be in accordance with the attached Fee Table.

5. Application for Extension Fee: An application for Extension of Approval must be accompanied by a fee in accordance with the attached Fee Table.

In certain applications, where consulting engineers are utilized to review the sewerage system, the Applicant must pay for the consulting engineer's fees in addition to the standard Review Fees.

The Developer also must pay additional monies, during the course of the project, to maintain sufficient balance in the escrow account as determined by the Authority.

B. Application Filing Fees – Minor Applications

1. Application Fee: An Applicant for a Minor Approval shall post an application fee per EDCU in accordance with the attached Fee Table.

2. Review Fee: An escrowed review fee will be required based on the scope of work

C. Fees for Residential Individual Sewer Service

1. Application Fees: The Applicant of an approved connection shall post an application fee in accordance with the attached Fee Table.

2. Inspection Fee: where required, a fee shall be paid for the Authority's inspection of the lateral connection to the main.

3. Connection Fee: The Applicant shall pay a connection fee in accordance with the current rate schedule. The fee shall be in accordance with the attached Fee Table.

D. Connection Fee

The Applicant shall be required to pay a connection fee in accordance with the current rate schedule for connection into the Authority's Sewer System per E.D.C.U., before Final approval. The current fee is shown on the attached Fee Table.

E. Cost Sharing Fee

The Authority reserves the right to impose the cost of sewer line extensions and/or pump stations upon Applicants for whose benefits they were designed. In those cases where the Authority has made expenditures for capital improvements performed by other developers through incremental cost sharing agreements, the Authority shall determine which Applicant shall be subject to this cost and shall charge same only to those Applicant's directly benefiting from the improvement.

As nearly as practicable, the charges shall be uniform throughout the entire sanitary sewer basin.

It is the intent of the Authority to only pass along the actual cost incurred by the Authority to the Applicant.

F. User Fees

Customers shall pay user fees in accordance with the Authority's current rate schedule. See also the attached Fee Table.

XIV. CUSTOMER SERVICE RULES

A. General

No agent or employee of the Authority has authorization to bind it by any promise, agreement or representation not provided for in these rules and regulations.

It is expressly understood and agreed that no claims will be made against the Authority, for damage to life or property, by reason of the breaking or blockage of any service lateral within the customer's premises, nor for any damage done due to the blockage of any sewer main for any cause beyond the Authority's control. The property Owner is completely responsible for the cleaning of the laterals to the center of the main. If broken, the Authority will repair the broken lateral from the curb line (cleanout) to the main.

If an account becomes inactive, new connection fees will be required to re-activate the account. All active accounts are subject to minimum billings regardless of usage.

B. Individual Lateral Connections

Owners of the property desirous of making connection to existing sewer mains, shall file an application for individual sewer connection with the Authority on a form which is available at the Engineer's office and submit detailed construction drawings of the proposed connection. The Applicant will be required to pay an application fee, inspection fee and connection fee as set forth in the Authority's current rate schedule and on a table attached to these Rules and Regulations.

Connection shall be made to an existing street sewer main at the expense of the applicant. Connection to the sewer main shall be made in accordance with the Authority's Construction details under the inspection of the Authority. The Applicant is responsible to obtain applicable road opening permits and provide traffic control if required.

All connections, service lines and fixtures furnished by the customer, shall be maintained by him in good order. All leaks or breaks in the lateral, must be repaired immediately by the owner or occupant of the premises. The customer shall be responsible for notifying the Authority of the party engaged by said customer to do any maintenance work on the customer's service line, prior to work being commenced.

The Authority shall in no event be responsible for maintaining any portion of the lateral owned by the customer, or for damage done by sewerage escaping therefrom; or from lines or fixtures on the customer's property; and the customer shall at all times comply with applicable municipal regulations with respect thereto, and make changes therein, required by reason of changes of grade, relocations of mains, or otherwise.

A sewer lateral from the curb line to a building shall not service more than one building.

Where two or more customers are now serviced by a single lateral, any violation of the rules of the Authority, with respect to either or any of said customers, shall be deemed a violation as to all, and unless said violation is corrected after reasonable notice, the Authority may take such action as can be taken for a single customer, except that such action will not be taken until the innocent customer, who has not violated the Authority's rules, has been given a reasonable opportunity to attach his pipe to a separately controlled service connection.

Connections beyond the curb line are under the jurisdiction of the Township Construction Office through its Plumbing Inspector whose approval will be required before the Authority will service the facility.

Materials and method of construction shall be in accordance with Chapter V of these Rules and Regulations.

C. Billing

Payment of sewer use charges shall be the responsibility of the owner of the property to which service is provided. Accounts maintained in the name of the tenants will not be permitted.

Each individual dwelling unit, commercial structure or industry must have its own individual connection to the street main.

All service charges shall be due and payable in quarterly installments for residential and payable in monthly installments for commercial and industrial.

In the event that any quarterly or monthly bill is not paid within 30 days from its issue date, it shall be classified as delinquent and interest shall be charged from the date of issuance at a percentage in accordance with the current rate schedule. Payments made by mail will be credited when received at the Authority. If service is thus discontinued, it will not be restored until all unpaid bills, including turn-on fees are paid.

The Sewer use charge may include all costs of the use, operation, maintenance and construction of the sewerage system of the Authority serving the properties within the sewer utility including, but not limited to, charges for operation and maintenance by the Middlesex County Utilities Authority, the debt service charges of the MCUA, and the costs for construction, use, operation, administration and maintenance of the collector and interceptor systems of the Authority.

At least once each year, the Authority shall review and revise, as necessary, sewer users and sewer use charges and shall establish a schedule of charges by user class, type of use, flow, biochemical oxygen demand (B.O.D.), suspended solids, (S.S.), chlorine demand (C.D.), and such other criteria as the Authority shall deem appropriate.

D. Service Units

Each individual dwelling unit shall comprise a residential service unit (or Equivalent Domestic Consumer Unit (E.D.C.U.) as defined in the Rules and Regulations.

By way of example, each individual dwelling unit shall be considered to be an individual residential service unit, even though such dwelling unit may be contained within, or be a part of, a larger residential structure or complex, such as a two-family house; connecting row house; connecting town houses; apartment buildings; condominium complexes; or any other such structure or combination of buildings which contain more than one individual dwelling unit.

Residential service units shall be charged a standard annual sewer rental payable in quarterly amounts. Residential sewage shall be considered as having the following average pollutant constituents: BOD-300 milligrams per liter; suspended solids-380 milligrams per liter; chlorine demand-15 milligrams per liter.

E. Commercial, Institutional or Public User Establishments

Each commercial, institutional or public user having a sewage flow shall be charged on the basis of actual metered water consumption.

Commercial sewage is considered to have average pollutant concentrations of 300 milligrams per liter; BOD; 380 milligrams per liter, suspended solids; and 15 milligrams per liter chlorine demand.

The Authority reserves the right to charge any establishment as an industrial user where the quantities of waste and/or concentration of any pollutant exceeds the standard concentrations above. In all cases where a commercial establishment contributes more than 25,000 gallons a day of sewage or a pollution load greater than that contained in 25,000 gallons per day of standard commercial sewage as defined above, the establishment will be required to install metering and sampling facilities and be charged under the monitored industrial category as described below.

F. Complaints

Complaints with respect to the character of the service furnished, or of the bills rendered, must be made at the Authority's office, either orally, or in writing, and a record of such complaint will be kept by the Authority, noting the name and address of the complainant, the date, the nature of the complaint and the remedy.

Requests for any documents, records, calculations, drawings, maps, reports, billing information or anything on file at the Authority must be submitted in writing. Each request will be considered on a case by case basis after proper Administrative and legal considerations have been made.

G. Liens and Enforcement

1. In the event that an initial service charge or annual service charge with regard to any parcel of real property owned by any person, corporation, or other entity (other than the State or an Agency or subdivision thereof) shall not be paid as and when due as herein stated, the unpaid balance thereof and all interest accruing thereon shall be a lien of such parcel and all such liens shall become enforceable with and as any other municipal lien or real property in the Municipality, in addition to the other remedies of civil suit or foreclosure or any other remedies which may be available to the Authority as same are described in N.J.S.A. 40:14A-21.

2. In the event that any service charge of the Authority with regard to any parcel of real property shall not be paid as and when due, the Authority may enter upon such parcel and cause the connection thereof to be cut and shut off until such service charge and any subsequent charge with regard to such parcel and all interest accrued thereon, shall be fully paid to the Authority; or may avail itself of any and all other remedies as are set forth in N.J.S.A., 40:14A-21, but in any event, the enforcement provision or any other provisions contained in these Regulations shall not be exclusive nor in derogation of the Statutory provision contained in N.J.S.A. 40:14A-21.

APPLICATION FOR PRELIMINARY APPROVAL

APPLICATION NO._____Date:_____

OLD BRIDGE MUNICIPAL UTILTIES AUTHORITY
SEWER DIVISION

APPLICATION FOR REVIEW OF PRELIMINARY PLANS FOR CONSTRUCTION OF SEWER SYSTEM AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY. (This application must be accompanied by the application and preliminary review fees as prescribed in the current Rules and Regulations).

Application is hereby made for preliminary review of plans for SEWERAGE CONSTRUCTION.

1. Applicant's Name:_____Phone:_____

   Address:_____

2. Name and Address of present owner (If other than No. 1 above)

   Name:_____Phone:_____

   Address:_____

3. Name and Address of Applicant's Attorney

   Name:_____Phone:_____

   Address:_____

4. Name and Phone Number of Contact Person at Applicant's Office who will receive all correspondence including Engineering Reports:

   Name:_____Phone:_____

5. Interest of applicant if other than owner:_____

   _____

6. Location of property:_____
   (neighborhood or section name)

   _____,_____,
   (street) (tax map block) (lot nos.)

EXHIBIT A (2006)

7. Number of proposed units, or square footage of Commercial Building(s) to be serviced:_____

_____

8. Acreage of entire tract:_____and portion

being serviced:_____

9. Development plans:_____
   a. Name of Development_____
   b. Sell lots only? (Yes or No)_____
   c. Construction of houses for sale? (Yes or No)_____
   d. Other:_____

10. Name and profession of person designing sewerage:

Name:_____ _____
Profession

Address:_____

_____ _____
Phone

11. Check appropriate statement:

_____ All proposed sewer mains shall be dedicated to the Authority

_____ All proposed sewer mains are to remain privately owned by the Applicant or Homeowner's Association

12. .Describe your proposal for sewer distribution:

_____

_____

_____

EXHIBIT A (2006)

13. List plans and other material accompanying application and number of each (attach additional sheets if necessary).

Item	Number
a.	
b.	
c.	
d.	
e.	

14. Submit four (4) prints of your general map.

Signature of Applicant:_____

Print or type Name of Applicant:_____

Signature of Owner:_____

Print or type Name of Owner:_____

Make all checks payable to the Old Bridge Municipal Utilities Authority

APPLICATION FOR TENTATIVE APPROVAL

APPLICATION NO. _____ Date: _____

OLD BRIDGE MUNICIPAL UTILITIES AUTHORITY
SEWER DIVISION

APPLICATION FOR REVIEW OF TENTATIVE PLANS FOR CONSTRUCTION OF SEWER SYSTEM AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY. (This application form must be accompanied by the tentative review fee as prescribed in the current Rules and Regulations).

Application is hereby made for tentative review of plans for SEWERAGE CONSTRUCTION.

1. Applicant's Name: _____ Phone: _____

   Indicate if Corporation, Partnership, etc. _____

   Address: _____

2. Name and Address of present owner (If other than No. 1 above)

   Name: _____ Phone: _____

   Address: _____

3. Name and Address of Applicant's Attorney

   Name: _____ Phone: _____

   Address: _____

4. Name and Phone number of Contact Person at Applicant's Office who will receive all correspondence including Engineering Reports:

   Name: _____ Phone: _____

5. Name and Title of Principal who will execute the Developer's Agreement for the Applicant

   Name: _____ Title: _____ Phone: _____

6. Name of Person who will attest to Principal's signature on Developer's Agreement

   Name: _____ Title: _____ Phone: _____

7. Preliminary OBMUA Approval Date:_____

   Name of Development:_____
   Tax Map Block and Lot No:_____

8. Does the Tentative Plan follow the Preliminary Plan in regard to Lot Layout and Area covered?
   _____If not, indicate changes:_____

   _____

9. Date of Preliminary Approval from the Old Bridge Township Planning/Zoning Board.

   _____ Township Application No._____
   Attach copies of Resolution

10. Number of units, or square footage of Commercial Building(s) proposed for Tentative Approval:

    _____

11. Name and profession of person designing sewerage:

    Name:_____ _____
    Profession

    Address:_____

    _____ _____
    Phone

12. Describe your proposal for sewage disposal:

    _____

    _____

    _____

13. Applicant's Engineer's estimate of cost of sanitary sewage construction, including as-built plans(cost estimate forms are available from the Engineering Department):

    _____

14. Tentative Fee amount enclosed: $_____
    Make checks payable to the Old Bridge Municipal Utilities Authority

15. List plans and other material accompanying application and number of each (attach additional sheets if necessary).

Item	Number
a.	
b.	
c.	
d.	
e.	

16. Submit four (4) prints of your tentative plan and a detailed cost estimate.

Signature of Applicant:_____

Print or type Name of Applicant:_____

Signature of Owner:_____

Print or type Name of Owner:_____

APPLICATION FOR FINAL APPROVAL

APPLICATION No._____Date:_____

OLD BRIDGE MUNICIPAL UTILITIES AUTHORITY
SEWER DIVISION

APPLICATION FOR REVIEW OF FINAL PLANS FOR CONSTRUCTION OF SEWER SYSTEM AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY. (This application form must be accompanied by final review fee as prescribed in the current Rules and Regulations).

Application is hereby made for final review of plans for SEWERAGE CONSTRUCTION.

1. Applicant's Name:_____Phone:_____

   Indicate if Corporation, Partnership, etc. _____

   Address:_____

2. Name and Address of present owner (If other than No. 1 above)

   Name:_____Phone:_____

   Address:_____

3. Name and Address of Applicant's Attorney

   Name:_____Phone:_____

   Address:_____

4. Name and Phone number of Contact Person at Applicant's Office who will be receiving all correspondence including Engineering Reports:

   Name:_____Phone:_____

5. Name and Title of Principal who will execute the Developer's Agreement for the Applicant

   Name:_____Title_____

6. Name of Person who will attest to Principal's signature on the Developer's Agreement:

   Name: _____Title:_____

7. Preliminary OBMUA Approval Date:_____

8. Tentative OBMUA Approval Date:_____

   Name of Development:_____
   Tax Map Block and Lot No:_____

9. Does the Final Plan follow exactly the Tentative Plan in regard to details and area covered?
   _____if not, indicate planned changes:_____

   _____

   _____

10. Date of Final Approval from the Old Bridge Township Planning/Zoning Board:_____

    _____Township Application No:_____
    Attach copies of Resolution

11. Number of lots, or square footage of Commercial Buildings proposed for Final Approval:

    _____

12. List of plans and other material accompanying application and number of each (attach additional sheets if necessary).

Item	Number
a.	
b.	
c.	
d.	
e.	
f.	
g.	

13. Applicant's engineer's estimate of cost of sanitary sewerage construction, including as-builts plans (cost estimate forms are available from the Engineering Department):

    $_____

14. Final Review and Inspection Fee enclosed $_____
    Make all checks payable to the Old Bridge Municipal Utilities Authority

EXHIBIT C (2006)

15. Submit four (4) prints of your final plan and a detailed cost estimate.

Signature of Applicant:_____

Print or type Name of Applicant:_____

Signature of Owner:_____

Print or type Name of Owner:_____

APPLICATION FOR MINOR APPROVAL

APPLICATION NO._____Date:_____

OLD BRIDGE MUNICIPAL UTILTIES AUTHORITY
SEWER DIVISION

APPLICATION FOR REVIEW OF MINOR APPLICATION PLANS FOR CONSTRUCTION OF SEWER SYSTEM AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY. (This application must be accompanied by the application and review fees as prescribed in the current Rules and Regulations).

Application is hereby made for minor application review of plans for SEWERAGE CONSTRUCTION.

1. Applicant's Name:_____Phone:_____

   Address:_____

2. Name and Address of present owner (If other than No. 1 above)

   Name:_____Phone:_____

   Address:_____

3. Name and Address of Applicant's Attorney

   Name:_____Phone:_____

   Address:_____

4. Name and Phone Number of Contact Person at Applicant's Office who will receive all correspondence including Engineering Reports:

   Name:_____Phone:_____

5. Interest of applicant if other than owner:_____

   _____

6. Location of property:_____
   (neighborhood or section name)

   _____,_____,
   (street) (tax map block) (lot nos.)

EXHIBIT D (2006)

7. Date of Approval from the Old Bridge Township Planning/Zoning Board

_____ Township Applicant No. _____
Attach copies of Resolution

8. Number of proposed units, or square footage of Commercial Building(s) to be serviced:_____

_____

9. Acreage of entire tract:_____and portion

being serviced:_____

10. Development plans:_____
    a. Name of Development_____
    b. Sell lots only? (Yes or No)_____
    c. Construction of houses for sale? (Yes or No)_____
    d. Other:_____

11. Name and profession of person designing sewerage:

Name:_____ _____
Profession

Address:_____

_____ _____
Phone

12. Check appropriate statement:

_____ All proposed sewer mains shall be dedicated to the Authority

_____ All proposed sewer mains are to remain privately owned by the Applicant or Homeowner's Association

13. .Describe your proposal for sewer distribution:

_____

_____

_____

EXHIBIT D (2006)

14. List plans and other material accompanying application and number of each (attach additional sheets if necessary).

Item	Number
a.	
b.	
c.	
d.	
e.	

15. Submit four (4) prints of your general map.

Signature of Applicant:_____

Print or type Name of Applicant:_____

Signature of Owner:_____

Print or type Name of Owner:_____

Make all checks payable to the Old Bridge Municipal Utilities Authority

APPLICATION FOR EXTENSION OF APPROVAL

APPLICATION No._____Date:_____

OLD BRIDGE MUNICIPAL UTILITIES AUTHORITY
SEWER DIVISION

APPLICATION FOR EXTENSION OF APPROVAL OF PLANS FOR CONSTRUCTION OF SEWER SYSTEMS AND APPURTENANCES IN THE TOWNSHIP OF OLD BRIDGE, COUNTY OF MIDDLESEX, STATE OF NEW JERSEY.

This application form must be accompanied by the appropriate fees as per the current Rules and Regulations.

Application is hereby made for extension of a _____Approval.

1. Applicant's Name:_____Phone:_____

   Address:_____

   Name of Development _____
   Tax Map Block and Lot No.:_____

2. Name and Address of present owner (If other than No. 1 above)

   Name:_____Phone:_____

   Address:_____

3. Name and Address of Applicant's Attorney

   Name:_____Phone:_____

   Address:_____

4. Name and Phone number of Contact Person at Applicant's Office who will receive all correspondence including Engineering Reports:

   Name:_____Phone:_____

5. Preliminary OBMUA Approval Date:_____

6. Tentative OBMUA Approval Date:_____

7. Final OBMUA Approval Date:_____

8. Construction cost estimate upon which original application fees were based: $_____

EXHIBIT E (2006)

9. Current estimate of construction cost: $_____

10. Status of project_____

11.Reason for requesting extension:_____

_____

_____

_____

12. Anticipated start-up date:_____

Signature of Applicant:_____

Print Name of Applicant:_____

Signature of Owner:_____

Print Name of Owner:_____

Make all check payable to the Old Bridge Municipal Utilities Authority.

Form **W-9**
(Rev. January 1993)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give this form to the requester. Do NOT send to IRS.

Please print or type

Name (If joint names, list first and circle the name of the person or entity whose number you enter in Part I below. See instructions on page 2 if your name has changed.)

Business name (Sole proprietors see instructions on page 2.) (If you are exempt from backup withholding, complete this form and enter "EXEMPT" in Part II below.)

Address (number and street)

List account number(s) here (optional)

City, state, and ZIP code

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. For individuals, this is your social security number (SSN). For sole proprietors, see the instructions on page 2. For other entities, it is your employer identification number (EIN). If you do not have a number, see **How To Obtain a TIN** below.

Social security number

OR

Employer identification number

Note: *If the account is in more than one name, see the chart on page 2 for guidelines on whose number to enter.*

Part II For Payees Exempt From Backup Withholding (See Exempt Payees and Payments on page 2)

▶

Requester's name and address (optional)

Certification.—Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), **and**
2. I am not subject to backup withholding because: **(a)** I am exempt from backup withholding, or **(b)** I have not been notified by the Internal Revenue Service that I am subject to backup withholding as a result of a failure to report all interest or dividends, or **(c)** the IRS has notified me that I am no longer subject to backup withholding.

Certification Instructions.—You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because of underreporting interest or dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, the acquisition or abandonment of secured property, contributions to an individual retirement arrangement (IRA), and generally payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (Also see **Signing the Certification** on page 2.)

Sign Here — Signature ▶ Date ▶

Section references are to the Internal Revenue Code.

Purpose of Form.—A person who is required to file an information return with the IRS must obtain your correct TIN to report income paid to you, real estate transactions, mortgage interest you paid, the acquisition or abandonment of secured property, or contributions you made to an IRA. Use Form W-9 to furnish your correct TIN to the requester (the person asking you to furnish your TIN) and, when applicable, (1) to certify that the TIN you are furnishing is correct (or that you are waiting for a number to be issued), (2) to certify that you are not subject to backup withholding, and (3) to claim exemption from backup withholding if you are an exempt payee. Furnishing your correct TIN and making the appropriate certifications will prevent certain payments from being subject to backup withholding.

Note: *If a requester gives you a form other than a W-9 to request your TIN, you must use the requester's form.*

How To Obtain a TIN.—If you do not have a TIN, apply for one immediately. To apply, get Form SS-5, Application for a Social Security Card (for individuals), from your local office of the Social Security Administration, or Form SS-4, Application for Employer Identification Number (for businesses and all other entities), from your local IRS office.

To complete Form W-9 if you do not have a TIN, write "Applied for" in the space for the TIN in Part I, sign and date the form, and give it to the requester. Generally, you will then have 60 days to obtain a TIN and furnish it to the requester. If the requester does not receive your TIN within 60 days, backup withholding, if applicable, will begin and continue until you furnish your TIN to the requester. For reportable interest or dividend payments, the payer must exercise one of the following options concerning backup withholding during this 60-day period. Under option (1), a payer must backup withhold on any withdrawals you make from your account after 7 business days after the requester receives this form back from you. Under option (2), the payer must backup withhold on any reportable interest or dividend payments made to your account, regardless of whether you make any withdrawals. The backup withholding under option (2) must begin no later than 7 business days after the requester receives this form back. Under option (2), the payer is required to refund the amounts withheld if your certified TIN is received within the 60-day period and you were not subject to backup withholding during that period.

Note: *Writing "Applied for" on the form means that you have already applied for a TIN OR that you intend to apply for one in the near future.*

As soon as you receive your TIN, complete another Form W-9, include your TIN, sign and date the form, and give it to the requester.

What Is Backup Withholding?—Persons making certain payments to you after 1992 are required to withhold and pay to the IRS 31% of such payments under certain conditions. This is called "backup withholding." Payments that could be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee compensation, and certain payments from fishing boat operators, but do not include real estate transactions.

If you give the requester your correct TIN, make the appropriate certifications, and report all your taxable interest and dividends on your tax return, your payments will not be subject to backup withholding. Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester, or
2. The IRS notifies the requester that you furnished an incorrect TIN, or
3. You are notified by the IRS that you are subject to backup withholding because you failed to report all your interest and dividends on your tax return (for reportable interest and dividends only), or
4. You do not certify to the requester that you are not subject to backup withholding under 3 above (for reportable interest and dividend accounts opened after 1983 only), or
5. You do not certify your TIN. This applies only to reportable interest, dividend, broker, or barter exchange accounts opened after 1983, or broker accounts considered inactive in 1983.

Except as explained in 5 above, other reportable payments are subject to backup withholding only if 1 or 2 above applies. Certain payees and payments are exempt from backup withholding and information reporting. See Payees and Payments Exempt From

EXHIBIT F

Backup Withholding, below, and **Exempt Payees and Payments** under **Specific Instructions,** below, if you are an exempt payee.

Payees and Payments Exempt From Backup Withholding.—The following is a list of payees exempt from backup withholding and for which no information reporting is required. For interest and dividends, all listed payees are exempt except item (9). For broker transactions, payees listed in (1) through (13) and a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker are exempt. Payments subject to reporting under sections 6041 and 6041A are generally exempt from backup withholding only if made to payees described in items (1) through (7), except a corporation that provides medical and health care services or bills and collects payments for such services is not exempt from backup withholding or information reporting. Only payees described in items (2) through (6) are exempt from backup withholding for barter exchange transactions, patronage dividends, and payments by certain fishing boat operators.

(1) A corporation. (2) An organization exempt from tax under section 501(a), or an IRA, or a custodial account under section 403(b)(7). (3) The United States or any of its agencies or instrumentalities. (4) A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities. (5) A foreign government or any of its political subdivisions, agencies, or instrumentalities. (6) An international organization or any of its agencies or instrumentalities. (7) A foreign central bank of issue. (8) A dealer in securities or commodities required to register in the United States or a possession of the United States. (9) A futures commission merchant registered with the Commodity Futures Trading Commission. (10) A real estate investment trust. (11) An entity registered at all times during the tax year under the Investment Company Act of 1940. (12) A common trust fund operated by a bank under section 584(a). (13) A financial institution. (14) A middleman known in the investment community as a nominee or listed in the most recent publication of the American Society of Corporate Secretaries, Inc., Nominee List. (15) A trust exempt from tax under section 664 or described in section 4947.

Payments of **dividends** and **patronage dividends** generally not subject to backup withholding include the following:

- Payments to nonresident aliens subject to withholding under section 1441.
- Payments to partnerships not engaged in a trade or business in the United States and that have at least one nonresident partner.
- Payments of patronage dividends not paid in money.
- Payments made by certain foreign organizations.

Payments of **interest** generally not subject to backup withholding include the following:

- Payments of interest on obligations issued by individuals.

Note: *You may be subject to backup withholding if this interest is $600 or more and is paid in the course of the payer's trade or business and you have not provided your correct TIN to the payer.*

- Payments of tax-exempt interest (including exempt-interest dividends under section 852).
- Payments described in section 6049(b)(5) to nonresident aliens.
- Payments on tax-free covenant bonds under section 1451.
- Payments made by certain foreign organizations.
- Mortgage interest paid by you.

Payments that are not subject to information reporting are also not subject to backup withholding. For details, see sections 6041, 6041A(a), 6042, 6044, 6045, 6049, 6050A, and 6050N, and their regulations.

Penalties

Failure To Furnish TIN.—If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil Penalty for False Information With Respect to Withholding.—If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal Penalty for Falsifying Information.—Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs.—If the requester discloses or uses TINs in violation of Federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Name.—If you are an individual, you must generally provide the name shown on your social security card. However, if you have changed your last name, for instance, due to marriage, without informing the Social Security Administration of the name change, please enter your first name, the last name shown on your social security card, and your new last name.

If you are a sole proprietor, you must furnish your **individual** name and either your SSN or EIN. You may also enter your business name or "doing business as" name on the business name line. Enter your name(s) as shown on your social security card and/or as it was used to apply for your EIN on Form SS-4.

Signing the Certification.—

1. Interest, Dividend, and Barter Exchange Accounts Opened Before 1984 and Broker Accounts Considered Active During 1983. You are required to furnish your correct TIN, but you are not required to sign the certification.

2. Interest, Dividend, Broker, and Barter Exchange Accounts Opened After 1983 and Broker Accounts Considered Inactive During 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item **2** in the certification before signing the form.

3. Real Estate Transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other Payments. You are required to furnish your correct TIN, but you are not required to sign the certification unless you have been notified of an incorrect TIN. Other payments include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services, payments to a nonemployee for services (including attorney and accounting fees), and payments to certain fishing boat crew members.

5. Mortgage Interest Paid by You, Acquisition or Abandonment of Secured Property, or IRA Contributions. You are required to furnish your correct TIN, but you are not required to sign the certification.

6. Exempt Payees and Payments. If you are exempt from backup withholding, you should complete this form to avoid possible erroneous backup withholding. Enter your correct TIN in Part I, write "EXEMPT" in the block in Part II, and sign and date the form. If you are a nonresident alien or foreign entity not subject to backup withholding, give the requester a completed **Form W-8,** Certificate of Foreign Status.

7. TIN "Applied for." Follow the instructions under **How To Obtain a TIN,** on page 1, and sign and date this form.

Signature.—For a joint account, only the person whose TIN is shown in Part I should sign.

Privacy Act Notice.—Section 6109 requires you to furnish your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, or contributions you made to an IRA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 31% of taxable interest, dividend, and certain other payments to a payee who does not furnish a TIN to a payer. Certain penalties may also apply.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account [1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor [2]
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee [1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner [1]
5. Sole proprietorship	The owner [3]
For this type of account:	**Give name and EIN of:**
6. Sole proprietorship	The owner [3]
7. A valid trust, estate, or pension trust	Legal entity [4]
8. Corporate	The corporation
9. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
10. Partnership	The partnership
11. A broker or registered nominee	The broker or nominee
12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity

[1] List first and circle the name of the person whose number you furnish.

[2] Circle the minor's name and furnish the minor's SSN.

[3] Show your individual name. You may also enter your business name. You may use your SSN or EIN.

[4] List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

Note: *If no name is circled when there is more than one name, the number will be considered to be that of the first name listed.*

*U.S. Government Printing Office: 1993 — 343-034/80026

EXHIBIT F

SEWER

CONSTRUCTION

STANDARDS

EXHIBIT G

EXHIBIT G
SEWER CONSTRUCTION STANDARDS
TABLE OF CONTENTS

SECTION 1
GENERAL DESIGN CRITERIA

1. Design of Gravity Sewer

SECTION 2
COLLECTION SYSTEM STANDARDS

1. Pipe Materals
    - 1.1 RCP-Reinforced Concrete Pipe
    - 1.2 DIP-Ductile Iron Pipe
    - 1.3 CIP-Cast Iron Pipe
    - 1.4 PVC-Polyvinyl Chloride Pipe
    - 1.5 PCCP-Prestressed Concrete Cylinder Pipe
    - 1.6 CCFRPM-Centrifugally Cast Fiberglass Reinforced Polymer Mortar Pipe (HOBAS)

2. Pipe Bedding and Trenching

3. Pipe Appurtenances
    - 3.1 Manholes
    - 3.2 Cleanouts
    - 3.3 Inverted Siphons
    - 3.4 Special Structures

4. Service Connections
    - 4.1 General Requirements
    - 4.2 Service Connections to Existing Sewer Mains
    - 4.3 Service Connections to New Sewer Mains
    - 4.4 Residential Service Connections
    - 4.5 Commercial and Industrial Service Connections

5. Testing and Videotaping

EXHIBIT G
SEWER CONSTRUCTION STANDARDS
TABLE OF CONTENTS

SECTION 3
PUMP STATION STANDARDS

1. General Site Plan
    - 1.1 Site Layout and Access
    - 1.2 Fences and Gate
    - 1.3 Pavement
    - 1.4 Landscaping

2. Pre-Cast Chambers
    - 2.1 Design
    - 2.2 Joints
    - 2.3 Openings
    - 2.4 Coatings

3. Cast in Place Chambers
    - 3.1 Design
    - 3.2 Joints
    - 3.3 Openings and Hatches
    - 3.4 Coating
    - 3.5 Curing and Protection of Concrete

4. Pumping Facilities and Equipment
    - 4.1 Wet Well
    - 4.2 Dry Well
    - 4.3 Pumps
    - 4.4 Pump Operation Control
    - 4.5 Manlift

5. Communitor Chamber
    - 5.1 General
    - 5.2 Communitor Equipment

6. Bypass Valve Chamber

7. Control Building
    - 7.1 General
    - 7.2 Architectural Elements
    - 7.3 Plumbing Accessores

EXHIBIT G
SEWER CONSTRUCTION STANDARDS
TABLE OF CONTENTS

SECTION 3
PUMP STATION STANDARDS

8. Backup Generator

9. Instrumentation
    - 9.1 Pressure Gauges
    - 9.2 Auto-dialer

10. Intrusion Alarm System

11. Metal Fabrications
    - 11.1 General
    - 11.2 Loose Lintels
    - 11.3 Plate Covers and Frames
    - 11.4 Pipe Rails and Grab Bars
    - 11.5 Gratings
    - 11.6 Stairs
    - 11.7 Ladders
    - 11.8 Pipe Bollards
    - 11.9 Stop Gates

12. Heating, Ventilation and Air Conditioning
    - 12.1 Underground Chambers Fresh Air Supply
    - 12.2 Control Building Exhause Fams
    - 12.3 Louvers
    - 12.4 Unit Heaters
    - 12.5 Dehumidifier

13. Carbon Adsorption Odor Control System
    - 13.1 General]
    - 13.2 Design

14. Bioxide ® Chemical Feed System
    - 14.1 Design

15. Portable Davit Cranes

EXHIBIT G
SEWER CONSTRUCTION STANDARDS
TABLE OF CONTENTS

SECTION 3
PUMP STATION STANDARDS

16. Electrical
    - 16.1 General
    - 16.2 Lighting
    - 16.3 Conduit
    - 16.4 Wire
    - 16.5 Grounding
    - 16.6 Wiring Devices
    - 16.7 Disconnect Switches
    - 16.8 Lightning Protection
    - 16.9 Miscellaneous
    - 16.10 Variable Frequency Drives

17. Pump Station Force Mains
    - 17.1 Design
    - 17.2 Joints
    - 17.3 Interior Finish
    - 17.4 Exterior Finish
    - 17.5 Testing

SECTION 4
SUBMITALS, EQUIPMENT AND SUPPLIES

1. Submittals
    - 1.1 Shop Drawings
    - 1.2 Operation and Maintenance Manuals

2. Confined Space Entry Safety Equipment

3. Spare Parts and Tools

4. Computer Equipment

SECTION 5
SEWER SYSTEM AND PUMP STATION CONSTRUCTION STANDARD DETAILS

EXHIBIT G-SECTION 1
GENERAL DESIGN CRITERIA

1. Design of Gravity Sewers

Material used in the construction of gravity sewers shall be as follows: gravity sewers shall be constructed of Polyvinyl Chloride, Centrifugally Cast Fiberglass Reinforced Polymer Mortar, Reinforced Concrete, Prestressed Concrete Cylinder, Ductile Iron or Cast Iron. Inverted siphons shall be constructed of ductile iron pipe unless otherwise permitted by the Authority.

All sewers and force mains shall be designed to flow with a minimum velocity of not less than two feet per second at full flow and a maximum velocity of ten feet per second, utilizing a Manning coefficient of n=0.013. Inverted siphons shall be designed for a minimum velocity of three feet per second and a maximum velocity of six feet per second.

All gravity sewer mains shall be designed to carry four times the average daily flow upon full development of the tributary area.

Average flow shall be assumed to be 100 gallons per capita per day, and each unit to be occupied by four persons (400 gallons per day per E.D.C.U.), unless it can be demonstrated to the Authority's satisfaction that a different standard should be applied because of the unique nature of the proposed use.

For commercial, industrial, or special types of residential developments, design flows shall be in accordance with NJDEP Rules and Regulation for Preparation of Plans for Sewer Systems and Wastewater Treatment Plants, latest revision, and are subject to approval by the Authority's Engineer.

The Authority will establish flow standards for any construction not included in the above.

Minimum size of sanitary sewer mains shall be eight inch (8") diameter, with a minimum slope of 0.4%, and minimum size of force mains shall be four inch (4") diameter. Where terminal manholes and gravity sewers are designed, and the average design flow through the pipe is less than 8,000 gallons per day, the minimum slope on an eight inch (8") diameter sewer pipe shall be 1.0%.

Connections made into existing manholes shall be cored and an approved adapter shall be installed and sealed with non-shrink grout.

Where the proposed gravity sewer main passes improved lots other than the Applicant's proposed lots, it will be the applicant's responsibility to furnish and install laterals, deep house connections and wye cleanouts to the improved lots.

All sewers must be designed on a separate plan in which all water from roofs, cellars, streets and any other storm water collection must not be allowed to enter the proposed sanitary sewerage facilities. Discharge from any HVAC system is expressly prohibited to enter the sanitary sewerage system.

Sanitary sewer mains shall be constructed as close to the centerline of the road as possible. All sewer mains shall clear other utility crossings or obstructions. Eighteen inches (18") minimum clearance is required with water lines. Twelve inches (12") minimum clearance is required with all other utilities (gas, storm, electric, etc.). Clearances shall be shown at all crossings.

Where sewers are constructed in easements, they shall be constructed with twelve foot wide stable stone access roads so that Authority vehicles can access along the entire length of the easement. In improved residential areas, access roads shall underlie grassed lawn areas, or be constructed with open lattice style pavers set to finish grade. Refer to Standard Details.

Where proposed sanitary sewers cross existing transite (asbestos cement) water mains, the transite (asbestos cement) pipe shall be removed from joint to joint to undisturbed ground beyond the proposed sanitary sewer trenches angle of repose, and replaced with Class 52 (minimum) DIP using Mueller solid repair sleeves or approved equal, or as directed by the Authority. Note that existing water main shut downs must be coordinated at least 48-hours in advance prior to shut downs with Authority's Water Department personnel. In the removal of transite (asbestos cement) pipe, the Applicant shall comply with all applicable Federal, State and local regulations, including local health ordinances, with respect to general safety, security, insurance, pollution, and asbestos related requirements, included worker training and permitting. The Applicant shall be responsible for all excavation, disconnection from existing structures, cutting, removal, handling, wrapping, transporting and disposal of transite (asbestos cement) pipe in accordance with all regulations. All transite (asbestos cement) pipe work shall be performed by properly licensed Asbestos Abatement Contractors and permitted workers in accordance with applicable laws and regulations.

Sanitary sewer mains shall be located a minimum of ten (10) feet horizontally from parallel proposed or existing water mains.

Where water and sewer mains are parallel and four (4) inch sewer lateral cross the water main, the invert of the sewer main shall be a minimum of eight (8) feet below finished grade, unless otherwise approved by the Authority.

Pipe type and strength classification shall be selected based on accepted engineering design practice for the service, depth of bury, and loading.

EXHIBIT G-SECTION 1
GENERAL DESIGN CRITERIA

Distances between manholes shall not exceed three hundred (300) feet for sewers eighteen (18) inches in diameter or smaller, or four hundred (400) feet for sewers greater in diameter than eighteen (18) inches.

Individual connections to the sewer main in the street shall be provided for each individual family dwelling proposed for connection. Each connection shall be provided with a cleanout inside the curb line or edge of road.

Materials used in the construction shall be in accordance with these Rules and Regulations and the Authority's Standard Details. Each house connection shall include a complete four inch (4") diameter PVC cleanout assembly with protection box if required as shown on the sewage system details attached hereto.

EXHIBIT G-SECTION 2
COLLECTION SYSTEM STANDARDS

1. Pipe Materials

1.1 Reinforced Concrete Pipe

1.1.1 Design:

Concrete pipe shall meet all the requirements of the A.S.T.M. Specification C76, Wall B.

Reinforced concrete pipe shall not be used for gravity sewers less than thirty (30) inches in diameter.

In no case shall pipe with a strength classification of less than Class IV be permitted. For depths less than three feet, measured from top of the pipe, installed under traffic areas, Class V pipe shall be required. Pipe shall have maximum length of 20 feet.

1.1.2 Joints:

Reinforced concrete pipe joints shall be the steel and rubber gasketed joint as described in Gifford-Hill American Specification SP-32, and as manufactured by Gifford-Hill American, Price Brothers or equal, and shall conform with AWWA C-302. Joints shall be made up in accordance with the manufacturer's recommendations, and shall be properly cleaned and lubricated and prepared prior to making the joint. After making up the joint, the gasket shall be verified as to proper positioning using a feeler gage supplied by the manufacturer. Upon proper jointing, the joint shall be externally wrapped with special grout bands furnished by the pipe manufacturer and filled with grout to the full circumference of the joint. The internal joint shall be filled with mortar to the flush inside face of the pipe.

1.1.3 Interior Finish:

Interior of pipe and fittings shall be shop coated with two (2) coats of a coal tar epoxy coating, equal to Carboline 300M, for a total dry film thickness of 16 mils, applied in strict accordance with he manufacturer's written instructions. At a minimum, surface preparation shall include removal of all dirt, laitance and other foreign materials, and abrasive blasting. Prior to coating, the manufacturer shall perform testing on every tenth section of pipe produced in accordance with ASTM D4263 to verify that capillary moisture in the concrete is absent prior to coating. Upon completion of mortar coating of interior joint, the mortar coating shall be given two (2) field coats of the coal tar epoxy applied to a total dry film thickness of 16 mils, applied in strict accordance with he manufacturer's written instructions.

1.1.4 Exterior Coating:

The applicant shall evaluate the soil conditions in the location of the pipe installation and report on the corrosiveness of the soil to the pipeline. An exterior pipe protective coating suitable for exposure to the soil and moisture conditions shall be applied to the pipe based on the evaluated soil conditions, and where required by the Authority. Acceptable coating shall be Carboline 300M Coal Tar Epoxy, or approved equal, applied in strict accordance with the manufacturer's written recommendations. The pipe may alternatively be wrapped with a polyethylene wrap of a suitable thickness.

1.2 Ductile Iron Pipe

1.2.1 Design:

Ductile iron pipe shall be centrifugally cast in metal or sand molds in accordance with A.N.S.I. Specification A21.51, minimum thickness Class 52, unless otherwise required.

1.2.2 Joints:

The joint shall conform to the requirements of A.N.S.I. A.21.11 and shall be of a type that employs a single elongated groove gasket to effect a joint seal such as United States Pipe Company's "Tyton" joint, James B. Clow and Sons, Inc. "Bell-Tite", or equal. Gaskets shall be of a composition suitable for exposure to sewage, and to soil conditions surrounding the pipeline. Pipe shall be furnished with flanges where connections to flanged fittings are required.

1.2.3 Interior Finish:

The pipe shall have smooth dense interior surfaces and shall be free from fractures, excessive interior surface crazing, and roughness. The ductile iron pipe shall have an internal lining of amine cured novalac epoxy containing at least 20 percent by volume of ceramic quartz pigment, Protecto 401 Ceramic Epoxy® or approved equal, applied at a dry film thickness of 40 mils. All surface preparation, coating, curing and handling shall be in strict accordance with the manufacturer's recommendations.

1.2.4 Exterior Finish:

The exterior of ductile iron pipe shall be coated with a 1-mil asphaltic coating in accordance with AWWA C151.

Where required by the Authority, and where required by acid soil conditions, furnish and install a continuous polyethylene sleeve, conforming to the requirements of AWWA C105. The sleeve shall consist of a tubular 8 mil thick linear low-density film or 4 mil thick high-density cross-laminated film.

1.3 Cast Iron Pipe

1.3.1 Design:

Cast iron pipe and fittings shall be pit cast extra heavy thickness in accordance with A.N.S.I. Specification A74, and shall only be permitted for use in house service connections.

1.3.2 Joints:

The joint shall incorporate a neoprene gasket in accordance with ASTM C-564.

1.3.3 Interior Finish:

The pipe shall have smooth dense interior surfaces and shall be free from fractures, excessive interior surface crazing, and roughness. The cast iron pipe shall have an internal lining of amine cured novalac epoxy containing at least 20 percent by volume of ceramic quartz pigment, Protecto 401 Ceramic Epoxy® or approved equal, applied at a dry film thickness of 40 mils. All surface preparation, coating, curing and handling shall be in strict accordance with the manufacturer's recommendations.

1.3.4 Exterior Finish:

The exterior of cast iron pipe shall be coated with a minimum 1-mil asphaltic coating in accordance with AWWA C151.

Where required by OBMUA, and where required by acid soil conditions, furnish and install a continuous polyethylene sleeve, conforming to the requirements of AWWA C105. The sleeve shall consist of a tubular 8 mil thick linear low-density film or 4 mil thick high-density cross-laminated film.

1.4 Polyvinyl Chloride Pipe (PVC)

1.4.1 Design:

PVC solid wall sewer pipe shall be permitted for all gravity collection system pipelines for sewer between 8-inches and 15 inches, and for gravity connection laterals.

The material from which the pipe and fittings are extruded shall be high impact types of PVC, unplasticized, having high mechanical strength and maximum chemical resistance conforming to TYPE I, Grade 1, of the specification for rigid polyvinyl chloride compounds, ASTM D 1784, latest edition. Pipe shall be free from defects, bubbles and other imperfections in accordance with accepted commercial practice.

PVC solid wall pipe shall meet the requirements of ASTM D3034. Plastic pipe and fittings shall conform to ASTM D 3034 latest revision, with a wall thickness designated for SDR 35 (minimum) for pipes 8 to 15 inches; ASTM F 679 for pipes 18 to 27 inches. Pipes 4" to 6" shall be Schedule 40.

If PVC seamless ribbed pipe is used it shall meet the requirements of ASTM F794 and Uni-Bell Uni-B-9. The pipe shall be homogeneous, and have a smooth interior with a solid cross-sectional rib exterior. Exterior ribs shall be open profile and perpendicular to the axis of the pipe to allow placement of the sealing gasket (whenever desired during construction) without field marking, beveling, sealing channels, gluing, welding, machining or additional cutting. The pipe stiffness at 5% deflection shall be a minimum of 46 psi when tested in accordance with ASTM D 2412. Pipe shall be colored green. Pipe shall be Ultra-Rib as manufactured by Extrusion Technologies, Inc., or pre-approved equal.

SDR 35 PVC pipe shall not be used if less than four (4) feet of cover or more than twenty feet (20') will be provided.

Refer to Standard Details for minimum required PVC pipe bedding details. The Applicant shall submit for approval, details of the pipes, joints, fittings, beddings, etc., which he intends to use.

1.4.2 Joints:

Plastic pipe shall be polyvinyl chloride sewer pipe with bell and spigot ends. O-Ring rubber gasketed joints shall conform to ASTM D 3212.

The adequacy of the pipe gasketed joint shall be demonstrated, by a test at the manufacturing plant in accordance with ASTM D 2444 Stiffness, latest revisions.

Rubber ring gaskets shall be manufactured as per ASTM F 477 latest revision. The gasket shall be the sole element depended upon to make the joint watertight.

1.5 Pre-Stressed Concrete Cylinder Pipe (PCCP)

1.5.1 Design:

Pre-stressed concrete cylinder pipe shall only be used for gravity sewer mains equal or greater than twenty four inches in diameter.

Pre-stressed concrete (lined) cylinder pipe in sizes sixteen (16") inches through forty eight (48") inches shall meet all requirements of AWWA C 301. The pipe shall be designed for actual loading conditions; however, in no case shall the design earth load be less than that due to six feet of cover with Class "C" Modified Bedding (minimum bedding class). Soil load shall be based on a soil density of 120 pounds per cubic foot minimum. Restrained joints shall be used to dissipate all thrust forces. Pipe shall be designed for a maximum working pressure equal to the hydrostatic load from the deepest depth of bury of the pipe, not less than five pounds per square inch.

Pipe shall be designed to withstand a live load equal to American Association of State Highway and Transportation Officials (AASHTO) H 20 Loading. Pipe design shall be in accordance with AWWA C304. Full calculations signed and sealed by a licensed New Jersey Professional Engineer for the pipe design shall be submitted for the record.

Pipe shall be furnished in maximum standard lengths of 20 feet. Each section of pipe shall be marked with its strength classification, date of initial manufacture, and placement sequence in accordance with the manufacturer's lay schedule for use in the work.

1.5.2 Joints:

Gaskets shall conform to AWWA C 301. Joints shall be made up in accordance with the manufacturer's recommendations, and shall be properly cleaned and lubricated and prepared prior to making the joint. The gasket shall be verified properly positioned using a feeler gage supplied by the manufacturer after installation. Upon proper jointing, the joint shall be externally wrapped with special grout bands furnished by the pipe manufacturer and filled with grout to the full circumference of the joint. The internal joint shall be filled with mortar to the flush inside face of the pipe.

1.5.3 Interior Coating:

Interior of pipe and fittings shall be shop coated with two (2) coats of a coal tar epoxy coating, equal to Carboline 300M, for a total dry film thickness of 16 mils, applied in strict accordance with he manufacturer's written

instructions. At a minimum, surface preparation shall include removal of all dirt, laitance and other foreign materials, and abrasive blasting. Prior to coating, the manufacturer shall perform testing on every tenth section of pipe produced in accordance with ASTM D4263 to verify that capillary moisture in the concrete is absent prior to coating. Upon completion of mortar coating of interior joint, the mortar coating shall be given two (2) field coats of the coal tar epoxy applied to a total dry film thickness of 16 mils, applied in strict accordance with he manufacturer's written instructions.

1.5.4 Exterior Coating:

The applicant shall evaluate the soil conditions in the location of the pipe installation and report on the corrosiveness of the soil to the pipeline. An exterior pipe protective coating suitable for exposure to the soil and moisture conditions shall be applied to the pipe based on the evaluated soil conditions, and where required by the Authority. Acceptable coating shall be Carboline 300M Coal Tar Epoxy, or approved equal, applied in strict accordance with the manufacturer's written recommendations. The pipe may alternatively be wrapped with a polyethylene wrap of a suitable thickness.

1.6 Centrifugally Cast Fiberglass Reinforced Polymer Mortar Pipe

1.6.1 Design:

Centrifugally Cast Fiberglass Reinforced Polymer Mortar Pipe and fittings shall be permitted for use in gravity sewer mains in sizes 18-inch in diameter to 48-inches in diameter.

Pipe shall be manufactured by the centrifugally cast process to result in a dense, non-porous corrosion resistant consistent composite structure, consisting of vinylester resin, silica sand, fiberglass and chopped strand fiberglass, and polymer mortar. Pipe shall be supplied in nominal 20-foot lengths. Pipe shall be manufactured and tested in accordance with ASTM D-3262- Standard Specification for Fiberglass Sewer Pipe. Minimum pipe stiffness when tested in accordance with ASTM D2412 shall be 36 psi. Pipe bedding shall be in accordance with the manufacturer's requirements, with the minimum bedding standard as detailed in the Standard Details. Wall thickness shall be as required for design conditions. Only one pipe wall thickness shall be used for the entire project design.

1.6.2 Joints:

Coupling joints shall meet the requirements of ASTM D4161- Standard Specification for Fiberglass Pipe Joints using Flexible Elastomeric Seals.

1.6.3 Interior Finish:

The pipe shall have smooth dense vinylester resin rich interior surface for corrosion protection.

1.6.4 Exterior Finish:

The pipe shall have smooth dense vinylester resin rich exterior surface for corrosion protection and to facilitate making up joints.

2. Pipe Bedding and Trenching

Trench dimensions, maximum depths, and bedding requirements (including cradles and encasement) for sewers, laterals, etc. shall be in accordance with the manufacturer's recommendations and as a minimum shall conform to the details shown on the Sewerage System Standard Detail Drawings.

PVC pipe shall be installed as specified in ASTM designation D-2321, latest revision. In no case shall less than a Class III material be used for bedding and haunching material unless approved in writing by the Authority.

Particular attention should be given to the special requirements for installing pipe in unstable soil or excessive ground water. Any additional cost for materials used under these trench conditions, is to be borne by the Applicant.

All bedding, cradles and encasements shall be in accordance with the manufacturer's recommendation for each pipe material, depth and soil condition. For RCP, PCCP, DIP, bedding shall not be less than the requirements for Class "C" Modified Bedding with choked crushed stone as shown on the Standard Construction Details. For PVC, the minimum bedding condition is also depicted on the Standard Construction Details.

Where subsurface investigations required for tentative approval indicate acid soils may exist in construction areas, additional testing shall be performed to determine definitively to what extent the condition exists and precautions shall be taken as recommended by the manufacturer.

Initial tests and all subsequent testing, excavation, lime application, restoration, disposal, etc. shall be in accordance with NJDEP specifications for construction in acid soils areas.

3. Pipe Appurtenances

3.1 Manholes

Manholes shall be provided at ends of sewer lines, at intersections and at changes of grade or alignment. Distances between manholes shall not exceed 300' feet for sewers 18 inches or less in diameter, 400' feet for sewers greater in diameter. Where sewers enter manholes at elevations two feet or more above the invert, drop manholes shall be provided and drop pipes shall be built. The maximum permitted drop shall be six (6) feet.

Manholes shall be of pre-cast concrete or cast-in-place concrete.

If pre-cast manhole bases, barrels and cones are used, they shall be equal to reinforced concrete pipe and fittings conforming to A.S.T.M. Specification C-478, with round rubber gasketed joints, conforming to A.S.T.M. Specification C-361, Maximum absorption shall be 8% in accordance with A.S.T.M. Specification C-76.

Manhole frames and covers shall be of cast iron conforming to Specifications A.S.T.M. A-48, Class 30B and be suitable for A.A.S.H.T.O. H-20-16 Highway loading. Frames shall weigh a minimum of 337 pounds, covers shall weigh a minimum 182 pounds. Frame and covers shall be as manufactured by East Jordan Iron Works, East Jordan, MI., Catalog No. 1212A for covers, Catalog No. 1212Z for frames, or equal, and shall be equipped with a "flow seal" cover. Minimum frame lip thickness shall be 15/16 inches. The letters "OBMUA" shall be cast integrally in the cover; or "SANITARY SEWER" if to remain private.

All manhole covers in easements or in remote areas, low lying or flood prone areas shall be watertight and bolted (East Jordan Iron Works Catalog No. 1212A & 1212ZPT, or equal) and set six (6) inches above finished grade, unless otherwise required by the Authority. Manholes within five (5) feet of a curb line shall have watertight covers. Watertight covers shall incorporate a ¼-inch diameter neoprene gasket set into a machined groove on the seating surface between the frame and cover. Manholes shall be supplied with suitable adaptors for the various pipe materials used.

Manholes shall be supplied with suitable flexible watertight connections cast into all pipe openings, with capability of deflecting a minimum of nine (9) degrees.

Details of manholes, manhole frames and covers are required to be as shown on the Standard Sewer Details will be required and installed to final grade.

3.2 Cleanouts

All cleanouts shall be left a minimum of 24" above finished grade during initial construction. Immediately after final testing of all cleanouts, installation of the

cleanout protection box as shown on the Standard Sewer Details will be required and installed to final grade.

3.3 Inverted Siphons

Inverted siphons, if permitted, shall be constructed of ductile iron, lined with a hydrogen sulfide sewer safe coating and shall not have less than two barrels. Provision shall be made for rodding and for flushing. Velocity shall not be less than 3 feet per second and adjustable flow control gates in chambers shall be provided. Inlet and outlet chambers shall be furnished and installed to facilitate inspection, isolation of each barrel, and cleaning of each barrel. These are special conditions and further standards will be provided by the Authority.

3.4 Special Structures

Special structures, including diversion structures, doghouse manholes, bypass manholes and metering structures shall be reviewed and approved on a case by case basis. Where standards of these Rules and Regulations apply to the design and construction of these structures, they shall be applied to the design details. The Authority reserves the right to supplement these standards with additional requirements where they are in the interest of the Authority for the proper design and construction of the sewerage system.

4. Service Connections

4.1 General Requirements

Connections shall be made in accordance with the Authority's Standard Construction Details, and shall be PVC Schedule 40 (Schedule 80 for deep house connections) or heavy duty cast iron.

All connections must have an inspection/observation cleanout, with a PVC plug when used with ductile iron or a bronze or brass plug when used with PVC to be placed two (2') foot from the outside face of the curb. If curbs are not in existence, cleanouts must be placed two feet off the edge of the pavement. To the maximum extent possible, the cleanouts must not be situated in the sidewalk or in driveways.

Deep house connections shall be installed where required as shown on the Standard Construction Details.

The maximum length of four (4") inch PVC piping shall be 20' and slopes shall be as required by local plumbing codes but not less than 1/4" per foot.

House connections shall be constructed of a minimum diameter of four (4) inch. Deep house connections shall be provided where the sewer main centerline is more than eight (8) feet below the finished surface. Pipe materials shall be as required based on the requirements of the Standard Sewer Details.
Each house connection shall include a complete four (4) inch diameter cast iron or PVC clean out assembly with a protective box as indicated in the Standard Sewer Detail.

Where proposed sanitary sewers cross existing transite (asbestos cement) water mains, the transite (asbestos cement) pipe shall be removed from joint to joint to undisturbed ground beyond the proposed sanitary sewer trenches angle of repose, and replaced with Class 52 (minimum) DIP using Mueller solid repair sleeves or approved equal, or as directed by the Authority's Engineer. Additional requirements can also be found at "Design of Gravity Sewer Mains".

Where water and sewer mains are parallel and four (4) inch sewer lateral cross the water main, the invert of the sewer main shall be a minimum of eight (8) feet below finished grade, unless otherwise approved by the Authority Engineer.

Pipe type and strength classification shall be selected based on accepted engineering design practice for the service, depth of bury, and loading.

4.2 Service Connections to Existing Sewer Mains

Connections to the sewer shall be made through an approved wye, saddle or other types as approved by the Authority.

The Applicant's Contractor will be responsible for locating and protecting all existing utilities including, but not necessarily limited to, water, steam, oil, gas, sanitary sewers, storm sewers, drains, telephone ducts and electric conduits, or any other similar facilities which may be encountered during the construction operation. He shall be held solely responsible for locating all underground structures. He shall, at his own expense, arrange with the owners of such utilities for their aid and assistance in locating and protecting them and shall pay all charges, costs and expenses in connection therewith. He shall also provide the Authority with copies of the correspondence requesting the stake-outs for the various utilities.

The Applicant's Contractor shall be required to obtain any and all necessary Road Opening Permits.

Cast iron (pit cast) house connection pipe, fittings and cleanouts shall be used when connecting existing ACP mains to individual houses. The material shall be extra heavy thickness conforming with the requirements of ANSI specification A-74. Neoprene gasket joints shall conform to ASTM C-564.

4.3 Service Connections to New Sewer Mains

Service connections to new sewer mains shall be with approved materials and in accordance with the Standard Construction Details.

Where the proposed gravity sewer main passes lots other than the Applicant's proposed lots, it will be the applicant's responsibility to furnish and install laterals, deep house connections and wye cleanouts to improved lots.

4.4 Residential Service Connections

Individual connections to the sanitary sewer main in the street shall be provided for each individual family dwelling or fee simple townhouse proposed for connection. Each connection shall be provided with a cleanout at the curb line or edge of road or right of way. All lateral connections shall be made perpendicular to the sewer main, and shall be labeled by station along the run from the upstream manhole.

Connections from the cleanout to the dwelling are under the jurisdiction of the Building Department through its Plumbing Inspector. His approval will be required before the Authority will accept discharge of sewage into its mains.

4.5 Commercial and Industrial Service Connections

Connections to commercial and industrial sites shall be heavy duty cast iron or PVC, manufactured in accordance with ASTM D-1785. Fittings shall conform to

the requirements of ASTM D-2467 for socket type. Socket type connections shall be joined with a primer and PVC solvent cement in accordance with ASTM D-2564.

5. Testing and Videotaping

Sanitary sewer systems must be complete before testing is witnessed by the Authority. This includes finished manholes inside and out, cleanouts in proper location, and base course pavement (or completed stone access road) over lines to be tested.

All gravity sewer facilities shall be subjected to air pressure testing and videotaping. Prior to testing all lines and manholes shall be cleaned.

The tests shall be performed between two (2) manholes or as otherwise directed by the Engineer for the Authority and shall include all related sewerage including laterals and cleanouts.

The Applicant's contractor shall furnish all labor, material and equipment necessary for the testing.

The sewer pipe shall be tested under a 5.0 psi pressure and shall be maintained for a period of five (5) minutes with no drop in pressure.

All sewer mains will be videotaped by the Authority in accordance with the current rate schedule.

Force mains shall be subjected to a hydrostatic pressure test in accordance with AWWA C600, with the test equal to two (2) times the maximum operating pressure or 100 psi (minimum) for a two-hour period. The test shall be performed on all portions of the force main.

All force main cleanout assemblies and air release assemblies shall be included in the tests. The air release valve assembly shall be observed for expulsion of air during the filling operation. After the force main is full, the lower outlet valve on the release valve shall be opened to verify the presence of water up to that level.

Sanitary sewer lines may require mandrel testing with a nine (9) point mandrel with a diameter of ninety-five percent (95%) of the pipe diameter. If directed by the Authority Engineer, the Applicant shall furnish a proving ring to verify the mandrel size.

Any piping found to have deflected excessively or be out-of-round, as determined by the Authority shall be replaced or repaired as directed.

Any pipe, joint or other part of the sewer construction found to show leakage shall be repaired, or removed and replaced in accordance with latest revision of "Repair Guidelines" published by Utility Contractor's Association of New Jersey.

EXHIBIT G – SECTION 3
PUMP STATION STANDARDS

1. General Site Plan

1.1 Site Layout and Access:

All pump stations shall be located in areas that are not subject to flooding and that are accessible by motor vehicle. Each pumping station must be on a parcel of land adequate to meet the requirements of the Authority for operations and maintenance.

The site shall be arranged to provide vehicular access to all structures and equipment as generally shown on the Standard Construction Details. Vehicular access is required to the Control Building, wet well, dry well (pump station), communitor chamber, bypass valve chamber and the carbon adsorption unit. The area around the communitor chamber, the wet well and the pump station shall either be paved or provided with a concrete pad.

Provide a concrete apron in front of the roll-up door of the Control Building and a concrete sidewalk from the parking area to the Control Building man door. The concrete apron and sidewalk shall be a minimum of five (5) inches thick, 3500 psi concrete and shall slope away from the Control Building (1/4- inch per foot).

The property boundaries shall be clearly marked with survey monuments and visible. The pump station property shall be entirely fenced in.

1.2 Fences and Gates

The pump station site shall be secured with a 6-foot high vinyl coated galvanized steel chain link fence. One 20-foot wide cantilever sliding gate is required for vehicular access and one 4-foot wide single swing gate is required for pedestrian access. For complete details, see Standard Construction Details.

1.3 Pavement

Provide paved access driveway and parking area. Paved parking area shall extend to each structure or equipment which requires vehicular access as outlined in Section 1.1 – Site Layout and Access. Authority requirements for pavement are shown in the Standard Construction Details.

1.4 Landscaping

The plans and specifications must include provisions for lawns or crushed stone ground cover, shrubbery, and landscaping. The landscaping plan proposed by the Developer shall be reviewed and approved by the Authority. In general, grasses, ground cover and shrubs shall not be planted adjacent to the fence.

Crushed stone shall always be placed over geotextile fabric. Crushed stone is not acceptable for any areas designated for vehicular traffic.

2. Pre-Cast Chambers

2.1 Design

Minimum structural member thickness for chambers or vaults shall be 5 inches. Cement shall be Type V Portland Cement in accordance with ASTM C150. Minimum 28-day concrete compressive strength shall be 4,000 psi. All reinforcing shall be embedded in the concrete with a minimum clear cover as recommended by ACI 318. Chambers in areas subject to vehicular traffic shall be designed for H-20 traffic loading. Chambers in other areas shall be designed for a vertical live load of 300 psf. Top slab of chambers that are not subject to vehicular traffic shall be set at a minimum of two (2) feet above existing grade. Wall and base design of square or rectangular chambers shall be in accordance with the requirements of ASTM C913, with water table assumed at grade, and lateral soil pressure coefficients developed as a result of investigated soil conditions. All chambers shall be designed to prevent uplift without being backfilled, or relying on backfill for prevention of uplift.

2.2 Joints

Where joints are designed in pre-cast concrete vaults, such joints shall be interlocking to secure proper alignment and to prevent migration of soil through the joint. Structural sections at joints shall be sized sufficiently to reinforce the section against localized stress during transportation and handling and excess contact bearing pressures through the joint. Joints shall be made waterproof through the use of acceptable butyl bentonite seal strips applied and adhered to the lower pre-cast section prior to placement of the upper pre-cast section. Joints shall be parged with cement grout inside and out after setting.

2.3 Openings

Provide full clear space openings, without obstructions from brackets and supports. Top slab frames and covers shall be all-welded steel, galvanized after fabrication, with the frames integrally cast into the chamber section. Where sidewall or roof penetrations into the chamber are required for piping, conduit, or ductwork, such penetrations shall be through pre-cast openings with waterstopped galvanized or plastic sleeves. The Authority may allow core drilling on a case-by-case basis. All drilled openings shall be smooth and free of surface irregularities and without exposed steel reinforcing. Any reinforcing steel exposed shall be cut back 1.5 inches and parged over with a non-shrink cement grout. Final sealing of openings shall be made using stainless steel Link-Seal materials suitable for the intended use, or cast-in-place resilient compression seals equal to Atlantic Products A-Lok gaskets for piping.

2.4 Coatings

The exterior of all below grade pre-cast chambers shall be coated with a waterproofing bituminous coating equal to Carboline Bituminous 50. Coating shall be applied in strict accordance with the manufacturers written guidelines.

The interior of chambers shall be coated with two coats of Carboline 300M coal tar epoxy, or equal, based on the location as indicated below. Coating shall be applied in strict accordance with the manufacturers written guidelines. Interior coatings are required at the following locations:

a. At or within 1000 feet downstream or 300 feet upstream of a sanitary sewer force main discharge location.
b. At or within 1000 feet downstream or 300 feet upstream of a sanitary sewer drop manhole location.
c. At any other location where the Authority determines it is necessary based on existing sewer conditions at the location of the chamber.

3. Cast-in-Place Chambers

3.1 Design

Cast-in-place reinforced concrete chambers shall be designed by qualified engineers to provide for the necessary strength and durability of the structure as required by the design conditions. Minimum structural member thickness for cast-in-place reinforced concrete chambers shall be 6 inches. All chambers exposed to sewage shall be constructed using Type V Portland Cement in accordance with ASTM C150. Minimum 28-day concrete compressive strength shall be 4,000 psi. All concrete shall be air entrained. All reinforcing steel shall be embedded in the concrete with a minimum clear cover as recommended by ACI 318. Reinforcing steel shall be in accordance with ASTM A615, Grade 60; welded wire fabric in accordance with ASTM A185; and bending details in accordance with ACI-SP66. Chambers in areas subject to vehicular traffic shall be designed for H-20 traffic loading. Chambers in other areas shall be designed for a vertical live load of 300 psf. Top slab of chambers that are not subject to vehicular traffic shall be set at a minimum of two (2) feet above existing grade. Wall and base design of square or rectangular chambers shall be designed in accordance with the water table assumed at grade, and lateral soil pressure coefficients developed as a result of investigated soil conditions. All chambers shall be designed to prevent uplift without being backfilled, or relying on backfill for prevention of uplift.

3.2 Joints

Where joints are designed in cast-in-place concrete chambers, such joints shall be made watertight utilizing 6-inch wide continuous PVC waterstops. Joints shall be keyed to provide shear transfer. Prior to placement of concrete, all joint areas shall be thoroughly cleaned to promote proper bonding between sections of the structure.

3.3 Openings and Hatches

Provide full clear space openings as required, without obstructions from brackets and supports. Top slab frames and covers shall be all-welded aluminum or stainless steel (Type 316), complete with all stainless steel Type 316 hardware. No ferrous metal parts shall be permitted. Frames shall incorporate a perimeter drainage channel, which shall be piped and directed away from the chamber interior. All aluminum in contact with concrete shall be coated with an asphaltic paint to protect against galvanic action. Where sidewall or roof penetrations into the chamber are required for piping, conduit, or ductwork, such penetrations shall be made with cast openings with waterstopped galvanized or plastic sleeves. The Authority may allow core drilling on a case-by-case basis. All drilled openings shall be smooth and free of surface irregularities and without exposed steel reinforcing. Any reinforcing steel exposed shall be cut back 1.5 inches and parged over with a non-shrink cement grout. Final sealing of openings shall be made using stainless steel Link-Seal materials suitable for the intended use, or cast-in-place resilient

compression seals equal to Atlantic Products A-Lok gaskets for piping.

3.4 Coatings

The exterior of all below grade cast-in-place chambers shall be coated with a waterproofing bituminous coating equal to Carboline Bituminous 50. Coating shall be applied in strict accordance with the manufacturers written guidelines.

The interior of chambers shall be coated with two coats of Carboline 300M coal tar epoxy, or equal, based on the location as indicated below. Coating shall be applied in strict accordance with the manufacturers written guidelines. Interior coatings are required at the following locations:

a. At or within 1000 feet downstream or 300 feet upstream of a sanitary sewer force main discharge location.
b. At or within 1000 feet downstream or 300 feet upstream of a sanitary sewer drop manhole location.
c. At any other location where the Authority Engineer determines it is necessary based on existing sewer conditions at the location of the chamber.

3.5 Curing and Protection of Concrete

Curing and protection of cast-in-place concrete shall be at a minimum in accordance with procedures set forth in ACI 301; ACI 305, Hot weather Concreting; and ACI306, Cold Weather Concreting.

4. Pumping Facilities and Equipment

4.1 Wet Well

The wet well shall be a pre-cast or cast-in-place concrete structure with a minimum diameter of eight (8) feet. The floors of the wet well shall slope at least 45 degrees toward the pump suction.

Wet well interior walls shall be coated with two equal coats of High Build Epoxy Polymide, DFT eight mils.

Provide a shear gate or flapper valve on all influent piping entering the wet well.

All equipment and fixtures within the wet well shall be explosion proof, damp proof and non-corrosive conforming with applicable standards. All support brackets, anchors, bolts and miscellaneous hardware shall be 316 stainless steel. When anchoring into concrete within the wet well, use exclusively chemical anchors.

The wet well shall be equipped with an aluminum access hatch, minimum size 3 feet by 4 feet and 316 stainless steel access ladder. The ladder shall be located opposite from the influent pipe and shall be equipped with a safety extension.

The wet well shall be equipped with removable aluminum or FRP safety gratings. At a minimum, a safety grating over the influent pipe is required. If the wet well depth exceeds 16 feet, other intermediate safety platforms are required.

A wet well wash down system is required, located approximately one foot above the wet well high level but below the safety platform situated above the influent pipe.

The capacity of the wet well shall not exceed 10 minutes of detention time at the calculated average dry weather flow rate.

Wet well ventilation system requirements are set forth in Section 12. Fan activation shall be through a switch which energizes the fan whenever the access hatch is opened.

Minimum 300 Watts of explosion proof lighting is required.

4.2 Dry Well

The pumps shall be housed in a dry well with a minimum inside diameter of ten (10) feet and minimum height of ten (10) feet. The dry well shall be designed deep enough to maintain a suction head on the pumps at starting. For dry wells over

twenty-five (25) feet deep, an intermediate level with removable grating shall be provided.

For dry wells constructed of steel, steel plates shall meet or exceed ASTM A-36 standards. Top and bottom of the pump station shall be minimum 3/8 inches thick. The thickness of the steel cylinder shall be determined by the depth of bury but shall be a minimum of 1/4 thick. Cathodic protection or sacrificial anodes are required.

Interior walls of the dry well shall be coated with two equal coats of epoxy polymide green to achieve a total minimum dry film thickness of 3.5 mils. All equipment and piping shall be coated as per the manufacturer's instructions. A heavy synthetic rubber mat shall be cemented to the station floor to protect the internal coating.

Tie-down holes shall be provided for anchoring the discharge line where it exits the station. Provide lifting loops on the ceiling of the pump station over each pump at an adequate height to permit a hoist to be used.

Sufficient space shall be provided in the dry well for repair and maintenance of the pump. Station must be designed to allow suction and discharge piping to be separated by 180 degrees.

All equipment and fixtures within the wet well shall be explosion proof, damp proof and non-corrosive conforming with applicable standards.

Provide ventilation in accordance Section 12, sump pump discharging into the wet well, dehumidifier, lighting, and heat. A manual on-off switch shall be provided for the explosion proof lights and blower, although they shall turn on automatically upon opening the access hatch. Explosion proof lighting shall have protective screens. All electrical equipment shall be mounted as high as possible in the station to prevent submergence in the event of station flooding.

All electrical and control panels, including the pump, man lift and environmental control panels shall be housed in the Control Building. Only pump disconnect switches shall be placed in the dry well.

Electric service shall be 480V/3phase/60hz.

4.3 Pumps

At least two (2) pumps shall be provided, each capable of handling the total peak flow. If more than two (2) pumps are used, their capacities shall be such that upon the failure of the largest pump, the others will handle the peak flows. Any pump exceeding 800 gpm shall be equipped with variable speed controls which shall be continuously variable based upon wet well level.

Pumps shall be vertical, close coupled, non clog centrifugal sewage pumps with filtered mechanical seals and shall be provided with hand holes and lifting eyes. Both the casing and impeller shall be constructed of cast iron with passages large enough to pass a minimum of a 3 inch solid. All pumps must come with bleeder valve.

Pump motors shall have a minimum service factor of 1.15 and shall be non overloading through the full operating range of the pumps. The motors shall be designed to operate with the specified pump. Pump motors shall be equipped with a stainless steel shaft sleeve.

All pumps and equipment shall be explosion proof and damp proof. Shut-off valves shall be provided on suction and discharge piping, which shall be flanged or otherwise removable, and check valves shall be provided on all discharges. Check valves shall be of the controlled closing swing type with outside spring and lever. Each pump shall be isolated from the system by plug valves provided on both the suction and discharge connections.

The pump suction shall terminate with a 90 degree flared elbow.

4.4 Pump Operation Control

For indoor installations, all control equipment shall be mounted within a NEMA Type 4, dead-front, powder coated or epoxy coated steel enclosure. For outdoor installations, or installations in wet or damp locations, all control equipment shall be mounted within a NEMA Type 4X, dead front, stainless steel enclosure. All enclosures shall be reinforced as required. All components within the control panel shall be UL listed or recognized, and the complete station control panel itself shall be labeled UL 508A General Use Industrial Control Panel. All reset buttons, level control devices, pilot lights, selector switches, etc., shall be mounted on an inner hinged panel. The hinged panel shall contain cut-outs for circuit breaker operators, motor starter reset buttons, etc., such that they are operable without opening the hinged panel and exposing the high voltage section of the cabinet. All devices in the panel shall be labeled and a coded wiring diagram shall be provided in a pocket within the panel.

Thermal magnetic air circuit breakers shall be provided for branch disconnect service and over-current protection of all auxiliary circuits. Instantaneous trip magnetic type motor circuit protectors, matched to the motor inrush current, shall be provided for each pump motor.

For installations where variable speed drives are not used, NEMA rated magnetic across-the-line starters with solid state overload protection for each phase shall be provided for each pump motor to give positive protection against phase unbalance, thermal overload, phase loss and ground fault. Each single-phase auxiliary motor

shall be equipped with an over-current protection device, in addition to its branch circuit breaker, or shall be impedance protected.

The pumps shall be controlled through a duplex pump controller based upon variations of liquid level within the wet well. Primary liquid level sensing shall be via a bubbler system or submersible pressure transducer. A five float backup system (three floats for control, one high level, one low level) shall be provided in the event of failure of the primary level sensing system. The high water alarm float will be a dry contact for direct use by the Authority. Any floats, transducers, etc., mounted in the wet well shall be intrinsically safe.

Bubbler systems shall incorporate two close-coupled, 115V, 60 cycle, single phase oil-less type compressors each with a minimum capacity of 0.2 cubic feet of free air per minute at 10 psi. An automatic alternator shall be provided for the compressors. Wiring and piping shall be arranged so that one compressor may be removed without removing the other compressor from service. A purge valve, pressure regulator, needle valve, rotameter and pressure transducer shall be included in the air piping. All air piping in the wet well shall be stainless steel. A compression bell shall be provided at the air piping discharge in the wet well.

Submersible pressure transducers shall be of the direct submersible type with stainless steel housing. The transducer shall be able to be mounted at the bottom of a pit with a support bracket and be cable connected providing an alanog input signal to a meter/controller. The analog signal shall be 4-20 ma. The transducer operating temperature shall exceed the limits of expected temperature of the wet well liquids.

The five float backup system shall be capable of operating the pump system in normal alternating duplex mode until the primary level control system failure is corrected. Float circuits shall be intrinsically safe.

The duplex pump controller shall have the following minimum control functions:

1) Operator front panel controls for each pump for selecting Manual-Off-Automatic control. Color touch-screen controllers are acceptable provided they revert to a separate backup float system upon primary controller failure.
2) A 3-position selector switch to select either pump as "LEAD" or to automatically alternate the pumps on each start cycle.
3) Signal inputs for stop, lead pump start, lag pump start, and high & low alarms with pilot lights showing each input signal.
4) Pilot light indicators: Green "Pump Running" pilot light, Red "Pump Failure" pilot light, Red "Pump Seal Failure" pilot light (if required).
5) Short cycle timers to keep the pump running after the start input deactivates for the delay time setting. D

6) Delay start timer for delaying the start of the lag pump for a preset amount of time if the lead pump fails or if both pumps are called for at the same time. Minimum delay time shall be 5 seconds.
7) Adjustable failure time delay for each pump to start the lag pump if the lead pump fails or of the lead pump selector switch is placed in the "Off" position.
8) Individual field adjustable time controls to delay starting each pump in the automatic mode after a power failure or during initial startup.
9) Manual override inputs for each pump.
10) Improper sequence alarm.
11) Automatic pump alternation on pump failure and seal failure when the pumps are in automatic mode.
12) Lamp test feature.
13) Operator selectable setpoints for Pump Stop, Lead Pump Start, Lag Pump Start, High Level Alarm with pilot lights to indicate when each setpoint is activated. Provide relay outputs for each setpoint.
14) Wet well level indicator.
15) Start, stop and speed signal outputs to interface with variable frequency drives (if required).
16) PID controls as required to regulate the speed of the pump motors to maintain a wet well level setpoint (variable frequency drive installations only).

4.5 Manlift

Provide a manlift if the dry well depth exceeds twenty (20) feet. The manlift shall be mounted on a stationary ladder and shall have upper and lower limit switches, approved brake design, undercarriage pressure operated safety, horizontal safety bar with switch and shall be operated by series connected push buttons for two-hand operation, an emergency stop button, and manual disconnect.

Rated carrying capacity shall be a minimum of 440 pounds.

All electrical devices shall be explosion proof.

The fused disconnect and main control panel shall be located within the Control Building. The man lift system must meet all O.S.H.A. requirements for man lifts.

5. Communitor Chamber

5.1 General

Provide a communitor chamber upstream of the wet well. Two channels shall be provided inside the communitor chamber. The first channel shall be for the main flow and shall be equipped with a communitor. The second channel shall be a bypass channel and shall be equipped with a 316 SS removable basket strainer.

Both channels shall be equipped with 316 SS guides and frames for 316 SS slide gates for isolation of the communitor or the bypass channel, as needed. Provide two 316 SS stop gates which will fit into either channel.

Two aluminum waterproof access hatches shall be provided, one over the basket strainer and another over the access ladder. The hatches shall be lockable.

Ventilation requirements are outlined in Section 12.

Provide a portable davit crane foundation adjacent to the Communitor Chamber. For further details, see Communitor Chamber Typical Layout Detail in the Standard Details.

5.2 Communitor Equipment

5.2.1 The unit shall be of two-shaft design and capable of continuous operation, processing wet or dry.

5.2.2 The unit shall be equipped with a submersible electric motor, and a programmable motor controller.

5.2.3 Communitor control panel shall be placed inside the Control Building. A motor disconnect switch shall be provided adjacent to the Communitor Chamber. The disconnect switch shall be capable of being locked in the on or off position.

5.2.4 The Communitor Chamber shall be equipped with a high level float and high level alarm from the float shall be wired to the auto dialer.

5.2.5 Manufacturer: Muffin Monster as manufactured by JWC Environmental or approved equal.

6. By-Pass Valve Chamber

A valve chamber is required downstream of the pump station to enable the Authority to bypass the pump station as needed. The purpose of the valve chamber is to pump flow from the wet well to a point in the force main downstream of the pump station using a temporary pump. The following components are required:

6.1 Provide a pre-cast or cast in place concrete vault, centered over the force main, minimum dimension of 8-foot square.

6.2 Provide two cast iron plug valves, one to prevent backflow to the pump station during bypass operations and another to isolate the temporary pump connection. Plug valves shall be sized in accordance with the size of the force main.

6.3 Provide an 8-inch check valve with outside spring and lever at the temporary pump connection.

6.4 The temporary pump connection shall terminate at an 8-inch Ever-Tite quick coupling.

6.5 The access hatch shall be water tight and shall be positioned to provide maximum clear opening over the temporary pump connection.

6.6 A sump equipped with a sump pump is required. The sump pump shall discharge into the wet well and the discharge line shall be equipped with a double check valve and an isolation valve.

For further details of the by-pass valve chamber, see Standard Details.

7. Control Building

7.1 General

A Control Building is required to house the emergency generator and miscellaneous generator appurtenances, pump station equipment control panels, the auto dialer, the intrusion alarm system panel, the chart recorder, and lighting and electrical panels. The Control Building shall also house a restroom, complete with toilet, sink and water heater. The size of the building shall be determined based on the size of the generator and other equipment and shall be approved on a case-by-case basis. A basic layout showing minimum acceptable clearances is included in Exhibit F.

The following must be incorporated into the Control Building design:

7.1.1 Ventilation for the generator room and the restroom. Ventilation for the generator room shall be in addition to make up air for the generator.

7.1.2 Unit heaters for the generator room and the restroom.

7.1.3 Insulated roll up door, minimum 10-feet, 8-inches wide.

7.1.4 Man door, minimum 36 inches wide.

7.1.5 Hose bib with a minimum of 100 feet of hose on wall rack. The backflow preventer shall be located inside building. The hose bib and the backflow preventer must be located a minimum of five (5) horizontal feet from any electrical equipment and can not be placed directly above or below electrical equipment.

7.1.6 A red alarm light in a vandal proof cage shall be installed on the building, be visible from the adjoining street and shall light to indicate any alarm condition.

Minimum requirements for various building components are set forth in subsequent sections.

Interior and exterior color and texture finishes shall be selected by the Authority based on samples provided by the Developer.

7.2 Architectural Elements

7.2.1 Fiberglass Asphalt Roofing

Roofing system shall be complete with shingles, underlayment, ridge vents, ridge caps and a leak barrier at eaves, hips, rake edges, around penetrations,

ridges, flashings and transitions.

Provide shingles of heavy weight construction, minimum 340 pounds per square nominal. The shingles shall have Class A fire and wind ratings from Underwriters Laboratories.

The shingles shall be treated with an algae killing compound to resist staining.

Manufacturer: Grand Timberline by GAF Corporation or approved equal.

7.2.2 Vinyl Siding

Vinyl siding and accessories shall comply with the specifications of ASTM D3679, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding. Solid vinyl soffit and accessories shall comply with ASTM D4477 – Rigid (Unplasticized) Poly (Vinyl Chloride) (PVC) Soffit. The manufacturer shall certify that siding and accessories meet or exceed the Vinyl Siding Institute Certification Standards.

Minimum acceptable thickness for vinyl siding is 0.044 inches.

7.2.3 Concrete Masonry Units (CMU)

Design of concrete masonry units and accessories shall comply with the requirements of ACI 531 – Building Code Requirements for Masonry Structures; ACI 530 – Specifications for Masonry Construction; and ASTM C-90 Load Bearing Masonry Units. Units shall be Split Face masonry units, normal weight, Type I. Units shall be provided with an intergral water repellant.

Minimum acceptable width of units shall be 8-inches. All masonry shall be constructed in running bond pattern. Masonry shall be manufactured to provide a minimum 3000 psi net compressive strength. All masonry shall be reinforced at a minimum every other course with standard weight Dur-O-Wal, or equal, or more as required by design. All framed opening shall be reinforced as required.

Color of split face masonry and mortar shall be approved by the Authority.

Mortar for masonry shall comply with ASTM C-270. At a minimum, use Type M mortar for below grade masonry, and Type S or all other masonry. Grout shall comply with ASTM C-476, minimum strength 3000 psi.

All exterior wall masonry units shall be insulated with manufacturer inserted polystyrene insulation blocks in accordance with ASTM C578, Type 1, as manufactured by Korfil, W.R. Grace or equal.

7.2.4 Insulation

Foundation Wall/Slab Insulation: In addition to CMU insulation, furnish and install 1.5 inch thick rigid board Foamular 250 insulation as manufactured by Owens-Corning or equal around the full perimeter of the foundation. Foundation insulation board shall be a installed at the inside face of exterior masonry or concrete foundation walls to a depth of two-feet below the floor slab, providing an insulation value of R=7.5 minimum. Foamular 250 shall also be placed under the floor slab a dimension extending two feet from the exterior foundation wall all around the perimeter of the foundation.

Exterior Wall Masonry Units Insulation: CMU shall be insulated with manufacturer inserted polystyrene insulation blocks in accordance with ASTM C578, Type 1, as manufactured by Korfil, W.R. Grace or equal.

Ceiling Insulation: Ceilings shall be fully insulated between rafters with thermal batt insulation providing a minimum insulation value of R-30. Insulation shall meet ASTM C665, Type II, Class C, be a nominal 9.5 inches thick and shall be Kraft faced. Insulation shall be as manufactured by Owens Corning, PINK Fiberglass Batt Insulation, or equal.

7.3 Plumbing Accessories

7.3.1 Toilet and lavatory shall be floor mounted, designed and installed to comply with ADA and ANSI 117.1.

7.3.2 Exposed brass, faucets, valves, traps and escutcheons shall be chrome plated.

7.3.3 Wall hydrants shall be non-freeze, anti siphon and automatic draining.

7.3.4 Stainless steel grab bars are required.

7.3.5 Provide wall mounted soap and toilet paper dispenser.

7.3.6 Provide a tankless water heater for the lavatory. Minimum of 40 degrees Fahrenheit temperature rise at 2 gallons per minute is required.

8. Backup Generator

A backup generator shall be required for all pump stations. The generator shall operate on 480 Volts, 3-phase, 60 Hz unless approved otherwise. The generator shall be installed inside the control building on structural concrete pad, a minimum of 4-inches high isolated from the remainder of the building floor. The generator shall be sized for the electrical requirements of all pump station equipment while sustaining no more than a 10% voltage droop with the application of the largest load. Sizing calculations shall be provided showing voltage dips, frequency dips, and current dips as loads are applied to the generator. The sizing calculations shall confirm that the voltage dips, frequency dips and current dips are acceptable to the various equipment manufacturers for their electrical equipment. The entire installation shall conform to the latest versions of the NEC and the International Mechanical and Fuel Gas Codes, and the National Standard Plumbing Code.

The generator shall be diesel fuel-fired, 4-cycle, and shall meet EPA Tier 2 emission regulations. The generator shall be provided with a unit-mounted, double-wall fuel tank sized for 24-hour operation at full load (100 gallon minimum size). The generator shall be liquid cooled and sized for operation in 130 degree Fahrenheit ambient temperatures. The following minimum accessories shall be provided:

1) Block heater with thermostat
2) Radiator duct flange
3) Critical grade exhaust silencer
4) Pre-formed, lace-on exhaust piping and silencer insulation
5) 12-volt battery, battery rack, cables & equalizer/float type battery charger
6) Main line circuit breaker with auxiliary contacts to provide trouble indication if the breaker is in the "Tripped" or "Off" position.
7) Run relay with four-pole, double-throw 10-ampere contacts and a battery operated coil connected to the ending ignition circuit for use as load shedding
8) Instruments:
    a. AC Voltmeter
    b. AC Ammeter
    c. AC Frequency Meter
    d. DC Voltmeter
    e. Engine Water Temperature
    f. Engine Oil Pressure
    g. Run Time Meter
    h. Phase selector switch
9) Equipment:
    a. Lamp test switch
    b. Overcrank/re-engagement protection
    c. Overspeed detection
    d. Voltage adjusting rheostat
    e. Run-Off/reset switch
    f. Emergency stop pushbutton
    g. Low coolant level detection

h. Panel lamps
i. Alarm package with alarm contacts
j. Alarm horn & silencing switch
k. Cool down timer
l. Generator exerciser.

Provide an automatic transfer switch rated for the full load of the generator, with solid neutral, voltmeter and ammeter in a NEMA 1 enclosure. The transfer switch shall have microprocessor controls, 0-60 second programmable transition (programmed timed HOLD in the "neutral" position) from stand-by to utility power and from utility power to stand-by power.

9. Instrumentation

9.1 Pressure Gauges

Provide 4" diameter, stainless steel case, liquid filled pressure gauges of appropriate range at the discharge of each pump. Provide compound vacuum-pressure gauges at each pump suction. Provide a shut-off ball valve, air bleed valve and snubber at each gauge. Each gauge shall be protected with a diaphragm seal.

9.2 Auto-dialer

The autodialer shall be a 16-bit microprocessor based system employing real-time multitasking operating system to monitor and control up to 16 input or output channels and up to two analog input or output channels. The Authority standard dialer is the Raco Verbatim unit.

The following minimum alarm functions shall be wired to and programmed into the autodialer:

1. Communitor chamber high level
2. Communitor failure
3. Wet well high level (transducer)
4. Wet well high level (float)
5. Wet well low level (transducer)
6. Wet well low level (float)
7. Lead pump failure (check valve fail to open)
8. Lag pump failure (check valve fail to open)
9. Station Intrusion (from intrusion alarm system)
10. Generator low fuel
11. Generator failure
12. Station loss of power (station on generator backup)
13. Station flooding.

10. Intrusion Alarm System

Provide an intrusion alarm system as follows:

10.1 Provide entry alarms for the wet well, dry well, the communitor chamber, bypass valve chamber covers and all doors of the Control Building.

10.2 All listed areas shall be connected to the alarm system through a mercury switch and supervised circuit.

10.3 The alarm control panel shall be placed inside the Control Building and shall be owner programmable.

10.4 All alarms shall be connected through a common channel to the auto dialer and also connected to a loud horn or bell outside the Control Building.

The system chosen will be approved by the Authority on a case by case basis to be sure it is compatible with the OBMUA System.

11. Metal Fabrications

11.1 General: Metal fabrications shall be furnished and installed as required. Protect all materials from galvanic action. All fasteners shall be Type 316 stainless steel.

11.2 Loose Lintels: Loose lintels shall be constructed of ASTM A36 galvanized steel angles, channels or wide flange sections in accordance with the span of opening.

11.3 Plate Covers and Frames: Plate covers and frames shall be constructed of welded mitered aluminum angle frames with welded anchor straps and aluminum checker plate reinforced with aluminum bars for support. Covers shall be designed for a minimum of 300 psf uniform load with less than ¼ inch deflection. Covers shall fit neatly and accurately into frames. Hinged covers shall be provided where required and shall be Bilco Model J-AL or JD-AL with all stainless hardware, perimeter drains, and locking devices as required by the Authority. No ferrous metal materials shall be used in hardware assemblies.

11.4 Pipe Rails and Grab Bars: All welded assemblies of 1.5 inch IPS Sch. 80 pipe, Alloy 6063-T6 for stanchions (minimum), and Sch. 40 for top and middle rails (minimum). Design and fabricate to withstand 50 plf along rail or concentrated load of 200 pounds anywhere on rail. Finish all aluminum with anodic finish and shop coat of methacrylate lacquer.

11.5 Gratings: Riveted or swage locked aluminum gratings with welded bearing band bars. Depth as required to limit deflection to less than ¼ inch under 100 psf load. Welded mitered angle frames around full perimeter of grated area and minimum 4 hold-down clips per grating panel. No panel greater than 14 square feet.

11.6 Stairs: Aluminum channel stringers and supports of 6061-T6 aluminum, pipe handrails, treads with abrasive nosing, and grating platforms as required.

11.7 Ladders: Aluminum or fiberglass ladders with slip resistant rungs and safety extension.

11.8 Pipe Bollards: Pipe bollards shall consist of minimum 7 foot long by 6-inch diameter Sch. 40 pipe posts embedded 3.5 feet into a concrete base, concrete filled and painted safety yellow. Pipe bollards shall be used to protect equipment and structures as required by the Authority.

11.9 Stop Gates: Provide embedded frame stainless steel stop gates with lifting handle, UHMW seat and seals and neoprene seal on the invert. All hardware associated with mounting frame shall be stainless steel.

12. Heating and Ventilation

12.1 Underground Chambers Fresh Air Supply

Provide a fresh air supply fan for each underground structure including but not limited to the wet well, dry well, communitor chamber and the bypass valve chamber. Minimum requirements for fresh air supply systems are as follows:

12.1.1 Provide a minimum of 12 air changes per hour.

12.1.2 Fans shall be direct drive, centrifugal blowers of fiberglass reinforced plastic (FRP) construction. Provide factory applied spark resistant and UV protective coating and gravity backdraft damper on fan discharge.

12.1.3 Fans shall be installed above grade on a concrete equipment pad in a weatherproof and sound proof enclosure.

12.1.4 Fans shall be interlocked to energize upon opening of the chamber hatch.

12.1.5 Ductwork shall be PVC and shall penetrate the chamber through the side wall. In wet chambers, the PVC duct shall terminate one foot above the high water level. In chambers that require a safety platform, the duct will terminate one foot above the safety grating.

12.1.6 The Authority will consider an alternate fresh air supply system for the dry well only when it is proposed as part of a complete package by the pump station manufacturer.

12.2 Control Building Exhaust Fans

Provide separate exhaust fans for the generator room and the restroom as follows:

12.2.1 Generator room exhaust fan shall be designed for a minimum of 8 air changes per hour. Provide direct drive exhaust fan with speed controller, backdraft damper, OSHA approved rear fan guard, remote mounted thermostat and fan switch. The fan shall be interlocked with an appropriately sized louver with a motorized damper. Damper actuator shall be wired to the exhaust fan. The louver shall be designed to fail in the open position. Materials of construction for the fan shall be approved on a case by case basis. See paragraph 12.3 for materials of construction for the louver.

12.2.2 Restroom exhaust fan shall be designed for a minimum of 12 air changes per hour. The fan shall be equipped with speed controller and vibration isolation. Provide an exhaust duct through the roof terminating with a rain cap. The exhaust fan shall be interlocked with the restroom light switch.

12.3 Louvers

Provide a louver with a motorized damper, appropriately sized for room make up air for emergency generator operation. The motorized damper shall be wired to the emergency generator control panel and the louver shall be designed to fail in the open position. The louver frame and blades shall be 6063 extruded aluminum. Provide aluminum bird/insect screen in removable frame.

12.4 Unit Heaters

Provide unit heaters in the generator room, the restroom and the dry well. Unit heaters shall be of the electric, horizontal type, with enameled steel cabinet, mounting bracket, adjustable horizontal louvers, spiral finned, enclosed heating element, automatic reset overheat protection, thermal protected, permanently lubricated fan and motor, fuses, and contactors. Provide wall-mounted low voltage thermostats and control transformers for the heater. The size of the unit heater shall be approved on a case-by-case basis.

12.5 Dehumidifier

Provide an appropriately sized dehumidifier for the dry well. The dehumidifier shall be piped to the sump.

13. Carbon Adsorption Odor Control Unit

13.1 General

Provide a carbon adsorption odor control unit to scrub the atmosphere inside the wet well, the communitor chamber and any other wet chambers or manholes on the pump station site. The carbon adsorption odor control unit shall utilize activated carbon. Units utilizing impregnated carbon are not acceptable. Minimum carbon life without hydrogen sulfide breakthrough shall be 365 days.

13.2 Design

The proposed unit shall consist of an adsorption vessel, a direct drive centrifugal fan, control panel and appurtenant ductwork factory mounted on a skid. The skid shall be secured to a concrete equipment pad using Type 316 stainless steel bolts or anchors.

13.2.1 The adsorption vessel shall be constructed of FRP or polyethylene, provide positive water runoff from the lid and be equipped with a Type 315 stainless steel rain cap with integral bird screen. The vessel shall have a completely removable top.

13.2.2 Provide one differential pressure gage to continuously monitor the pressure drop across the carbon bed.

13.2.3 Provide three sample probes per carbon bed, minimum 1-inch in diameter and extending into the carbon bed a minimum of 12 inches. Sample probes shall be equipped with full port PVC shutoff valves.

13.2.4 Provide a polypropylene carbon support screen capable of withstanding a l oad of at least 150 lbs/ft with a maximum deflection of ¼ inch.

13.2.5 All inlet, outlet and exhaust ductwork shall be PVC or FRP. All supports, whether they are located within the underground structures or above grade shall be Type 316 stainless steel. Ductwork shall not be supported by the adsorption vessel or the system fan.

13.2.6 The system fan shall be backward inclined blade, direct driven, centrifugal fan designed for 24 hour continuous service. The fan housing, impeller, inlet and outlet flanges shall be constructed of FRP. Metal parts in contact with the odorous air shall be encapsulated in FRP. The exterior surfaces of the fan shall have a final gel coat, ferro-white or equivalent. Fan motor shall be a heavy duty type, for 480V/3phase/60Hz power supply. Provide a lockable throttling valve, fully adjustable from fully open to fully closed. The fan shall be housed in a weather proof, sound proof enclosure. Use of vessel mounted fans will not be accepted.

13.2.7 The control panel shall be housed in the Control Building.

13.2.8 The control logic will allow shut down of the carbon adsorption unit if a high water level is detected in one of the chambers. An on-delay timer shall be interlocked to the starter circuit to shut down the starter in the event that the high level float remains active beyond the time set by the operator. A re-start timer interlocked to the starter to delay the system startup for a preset amount of time set by the operator is also required.

13.2.9 The carbon bed must be grounded

14. Bioxide ® Chemical Feed System

14.1 Design

Provide a Bioxide ® Chemical Feed System consisting of chemical feed pumps, feed controls, double walled storage tank and piping. All components of the feed system shall be provided by a single manufacturer who shall be responsible for the entire system. All materials of construction shall be compatible with the working environment and Bioxide ®.

14.1.1 Bioxide ® shall be an aqueous solution of calcium nitrate and shall be capable of reducing the dissolved hydrogen concentration in wastewater to less than 0.1 mg/l.

14.1.2 The storage tank shall be manufactured of rotationally molded high density crosslinked polyethylene in accordance with ASTM D 1998-93. All fittings with the exception of the overfill protection site glass shall be located on the tank top.

14.1.3 Provide two bellows type pumps, each capable of feeding Bioxide ® at the maximum anticipated rate. The pumps shall be self priming and feed rate of each pump shall be adjustable by the diameter of the bellows and adjustment of the stroke length.

14.1.4 A calibration cylinder with 3-way valves shall be provided to calibrate pump feed rates.

14.1.5 The operation of the chemical feed system shall be through a control panel that shall also house the pumps. The control panel enclosure shall be minimum NEMA 3R stainless steel, dead front and capable of being locked with a padlock.

14.1.6 The pumps shall be controlled with a 3-position hand/off/auto switch. In the auto position, the pumps shall be controlled by a timer. In the hand position, the pumps shall run regardless of the pre-set time interval.

14.1.7 Provide an ultrasonic level sensor and a digital display which shows tank level.

14.1.8 The system shall consist of an electronic leak detection system which utilizes a sensor sensitive to conductive fluids in the interstice of the double walled tank. Visual and audible alarms are required in the event of a leak.

14.1.9 Manufacturer: US Filter or approved equal.

15. Portable Davit Crane

Provide a portable davit crane with a power winch with the following requirements:

15.1 Provide stainless steel pedestal base with cover adjacent to the communitor chamber, the wet well and the dry well. All anchoring devices shall be Type 316 stainless steel.

15.2 Boom length and height shall be adjustable while under load.

15.3 Power winch shall be equipped with pendant control and brake. Provide limit switches to limit load travel.

15.4 Wire rope assembly shall be Type 304 stainless steel.

15.5 Control switch shall be NEMA 4 watertight.

15.6 Provide galvanized finish for the crane and epoxy finish for the winch.

16. Electrical

16.1 General

The work shall comply with the latest editions of:

1. National Electrical Code (NEC)
2. OSHA Federal Safety Codes and Standards
3. NFPA National Fire Codes and Life Safety Code (NFPA 101)
4. Illumination Engineering Society (IES) Standards
5. Underwriters Laboratory (UL) Standards
6. Uniform Construction Code
7. CABO Accessible Buildings Standards
8. Telephone Service Installation requirements by local phone provider
9. JCP&L Service Installation Requirements.

16.1.1 Incoming Electrical Service

The incoming service, equipment and devices shall meet the requirements

16.1.2 Surge Arrestors

Provide local utility company approved surge arrestors rated 3-phase, 4-wire, 600 VAC.

16.2 Lighting

16.2.1 General

Provide Specification Grade Lighting Fixtures.

16.2.2 Fluorescent Fixtures

All fluorescent fixtures shall be rated for 120 VAC service. Provide electronic ballasts and T-8 lamps in all fluorescent fixtures. Provide cold-weather ballasts and vapor-tight covers for all outdoor fluorescent fixtures.

16.2.3 Site Pole Lights

Site pole lights shall be 400 Watt metal halide pole light fixtures with a round straight 18-foot tall, bronze colored aluminum pole. Provide a vandal shield, and photocell for the light fixture. Site lighting shall be 277 VAC.

16.2.4 Chamber Lights

Provide Class 1, Division 1, explosion proof incandescent fixtures with 100 Watt (PS-25) lamps, 120VAC, optical globe with guard, surface or wall mounted as required. Locate lights within easy reach for bulb changes.

16.2.5 Exterior Lighting

Provide exterior pump station control building lighting. All lighting shall be halogen or metal halide and shall be controlled by a lighting timer.

16.2.6 Lighting Timers

Lighting timers shall be electronic, 7-day, 24-hour programmable by Intermatic or Tork compatible with the lighting fixtures to be controlled.

16.3 Conduit

16.3.1 Underground Installations

Use rigid galvanized steel or thickwall nonmetallic conduit. Use rigid galvanized steel or thickwall nonmetallic conduit in or under slabs in grade. Conduit passing through concrete shall be coated with two coats of bituminous paint extending a minimum of 6-inches beyond all points of concrete contact. Minimum size shall be ¾ inch.

16.3.2 In Slab Above Grade

Use rigid galvanized steel or thickwall nonmetallic conduit. Conduit passing through concrete shall be coated with two coats of bituminous paint extending a minimum of 6-inches beyond all points of concrete contact. Minimum size shall be ¾ inch.

16.3.3 In Class 1, Division 1 Hazardous Locations:

Use PVC coated rigid galvanized steel conduit. All conduits shall be filled and sealed per NEC.

16.3.4 All other locations

Use rigid galvanized steel conduit. Minimum size shall be ¾ inch.

16.3.5 Flexible Metallic Conduit

Utilize interlocking steel construction with integral ground. Length shall be limited to 18-inches.

16.3.6 Fittings

Fittings shall match conduit.

16.4 Wire

For wet and dry locations use Type THWN wire rated to 90 degrees C. Conductors shall be stranded, soft-drawn copper. All power wire shall be minimum #12 size. Aluminum wire is not allowed.

Use specialty power cables provided by the pump manufacturer.

Instrumentation cable shall be minimum 18 AWG, twisted/shielded.

Install UL type SE cable for service entrances.

16.5 Grounding

Properly ground all electrical boxes. Provide a ground for every branch and feeder circuit, sized per NEC Article 250. Provide a grounding loop around the pump station control building and a minimum of two 10-foot long ground rods. Provide CAD welded connections at the grounding grid and ground rods.

16.6 Wiring Devices

Wall switches shall be quiet type, 20 Amp rated, 120 VAC and 277 VAC. Provide Hubbell Specification Grade or equal.

Receptacles shall be duplex, 20 Amp rated, 120 VAC, Hubbell Specification Grade or equal.

Provide Ground Fault Circuit Interrupters of the "termination" type with duplex receptacles, only capable of protecting integral duplex receptacles, 20 Amps, 120 Volts, 60 HZ; with solid state ground fault sensing and signaling, Hubbel Specification Grade or equal.

16.7 Disconnect Switches

Provide safety disconnect switches rated 600 VAC, 3-phase & 1-phase, non-fused. Provide NEMA 1 enclosures for interior installations, NEMA 3R for exterior installations and wet & damp locations. Provide NEC Class 1, Division 1 explosion-proof devices where required by code.

16.8 Lighting Protection

Provide a Master Label Lightning Protection System for the Control Building complying with UL 96A. Provide the Authority with a UL Master Label for the overall system which is suitable for fastening to the building for display purposes.

16.9 Miscellaneous

16.9.1 Float Switches

Provide float switches sealed in a smooth chemical resistant polypropylene casing, ITT Flygt Model No. ENM-10. Float switches shall be supported by their own type SE cables.

16.9.2 Hatch Switches

Provide NEMA 4 sealed hatch switches for all chamber hatches. Switches in Class 1, Division 1 locations shall be explosion proof rated.

16.10 Variable Frequency Drives (VFD)

Where required, provide variable speed drives of the PWM type for the pump motors. The VFD shall be rated for controlling a NEMA B design AC motor. The drive shall have a user programmable interface and shall be provided with an across-the-line bypass starter that engages automatically in case of drive fault. The drive shall incorporate over-current, short circuit, ground fault, under-voltage, over-temperature and phase loss protection. The VFD shall accept start, stop and speed signals from the pump control system and shall provide failure alarm signals to the auto-dialer. The VFD shall have a circuit breaker main disconnect.

EXHIBIT G – SECTION 3
PUMP STATION STANDARDS

17. Pump Station Force Mains

17.1 Design:

Force mains shall be designed and constructed of ductile iron pipe centrifugally cast in metal or sand molds in accordance with A.N.S.I. Specification A21.51, minimum thickness Class 52, unless otherwise required. Force main velocities shall be two (2 fps) feet per second at the average pumping rate. Minimum design pressure shall be two times the working pressure plus an allowance for surge. Minimum size of force mains shall be 4-inch. Properly sized blow-off (cleanout) manholes shall be provided at all low points and properly designed air release or combination automatic air/vacuum release valves within manholes shall be furnished at high points. Minimum cover shall be 4 feet. Design shall minimize high and low points.

Use of 90 degree bends in force mains shall be avoided wherever possible. Force mains shall not terminate at manholes; connections shall be a minimum of ten (10) feet downstream of a manhole.

All force mains shall be provided with an approved tracer line buried two feet (2') below grade.

Force mains for pump stations shall be provided with shut-off valves inside a manhole, positioned on a horizontal level, with a tee connection for by-passing purposes. The riser on the by-pass should be installed with a gate valve and check valve assembly. The size of the manhole shall provide adequate working space.

17.2 Joints:

The joint shall conform to the requirements of A.N.S.I. A.21.11 and shall be of a type that employs a single elongated groove gasket to effect a joint seal such as United States Pipe Company's "Tyton" joint, James B. Clow and Sons, Inc. "Bell-Tite", or equal. Gaskets shall be of a composition suitable for exposure to sewage, and to soil conditions surrounding the pipeline. Pipe shall be furnished with flanges where connections to flanged fittings are required. All bends shall be restrained using properly designed concrete thrust blocks in combination with restrained pipe joints.

17.3 Interior Finish:

The pipe shall have smooth dense interior surfaces and shall be free from fractures, excessive interior surface crazing, and roughness. The ductile iron pipe shall have an internal lining of amine cured novalac epoxy containing at least 20 percent by volume of ceramic quartz pigment, Protecto 401 Ceramic Epoxy® or approved equal, applied at a dry film thickness of 40 mils. All surface preparation, coating,

curing and handling shall be in strict accordance with the manufacturer's recommendations.

17.4 Exterior Finish:

The exterior of ductile iron pipe shall be coated with a 1-mil asphaltic coating in accordance with AWWA C151.

In addition, furnish and install a continuous polyethylene sleeve, conforming to the requirements of AWWA C105. The sleeve shall consist of a tubular 8 mil thick linear low-density film or 4 mil thick high-density cross-laminated film.

17.5 Testing:

Upon completion of installation of force mains, they shall be subject to pressure testing. A two-hour high pressure hydrostatic test in accordance with AWWA C600, with the test pressure equal to 200% of the maximum operating pressure, or 100 psi (minimum), shall be performed on all portions of the force main. If the system fails the pressure test, the pipe shall be removed and reinstalled until the entire system passes. All force main cleanout assemblies and air release assemblies shall be included in the tests.

EXHIBIT G – SECTION 4
SUBMITALS, EQUIPMENT AND SUPPLIES

1. Submittals

1.1 Shop Drawings

The Contractor shall submit four (4) copies of manufacturer's shop drawings and details which shall describe the materials, dimensions, construction, control system, performance and operating characteristics for all pipeline and pump station equipment.

The review of shop drawings will be general only, and nothing contained in this section shall relieve, diminish or alter the responsibilities of the Contractor and/or design engineer.

No materials or equipment shall be purchased or fabricated until the Authority Engineer has reviewed the shop drawings. No work shall be done upon any part of a structure, the design or construction of which is dependent upon the features for which the review is required until comments have been solicited by the designer.

1.2 Operation and Maintenance Manuals

The Contractor shall submit five (5) bound copies of operation and maintenance manuals, as applicable, including product data, installation instructions, parts listing, recommended parts inventory listing, purchase source listing and emergency instructions for equipment supplied.

2. Confined Space Entry Safety Equipment

Confined Space Entry Equipment requirements for new lift/pump stations are as follows:

1. Davit arm over wet well man entrance.
2. Davit arm over dry well man entrance.
3. Retracting lifeline device.
4. Safety harness and lifeline.
5. Rescue winch.
6. Atmospheric monitoring device(s) to monitor for:
   - Hydrogen Sulphide
   - Oxygen content
   - Explosive atmosphere (gases)

If the collection system to be constructed is to be operated and maintained by OBMUA the following confined space safety equipment must be supplied:

1. Safety Tripod for man entering and exiting manholes.
2. Retractable lifeline.
3. Safety harness and lifeline.
4. Rescue winch.
5. Self contained breathing apparatus (air pack).
6. Atmospheric monitoring device(s) to monitor for:
   - Hydrogen Sulphide
   - Oxygen content
   - Explosive atmosphere (gases)

The actual quantity and specific type of equipment necessary shall be determined by the Sewer Division Superintendent on a case-by-case basis dependent upon the size of the system.

3. Spare Parts and Tools:

In addition to the equipment to be furnished above, the following supplies shall be furnished:

a. All spare parts as recommended by the manufacturer of the equipment furnished shall be furnished and delivered to the Authority.
b. A 2 year supply of all lubricants shall be provided.
c. All special tools required for proper maintenance of the equipment shall be furnished.

A spare parts cabinet shall be furnished and installed in the Generator Buildng for the proper storage and inventory of spare parts, tools, and O&M Manuals

4. Computer Equipment

Special computer equipment required for the setting or adjustment of equipment furnished shall be provided with the equipment. Hardware and software necessary to make connections with and perform adjustments to equipment shall be provided. Computer equipment shall be as recommended by the equipment supplier, and shall be in the form of a portable laptop computer suitable for use in the environment in which it will be exposed. Unit shall be shock resistant and water resistant.

EXHIBIT G
SEWER CONSTRUCTION STANDARDS

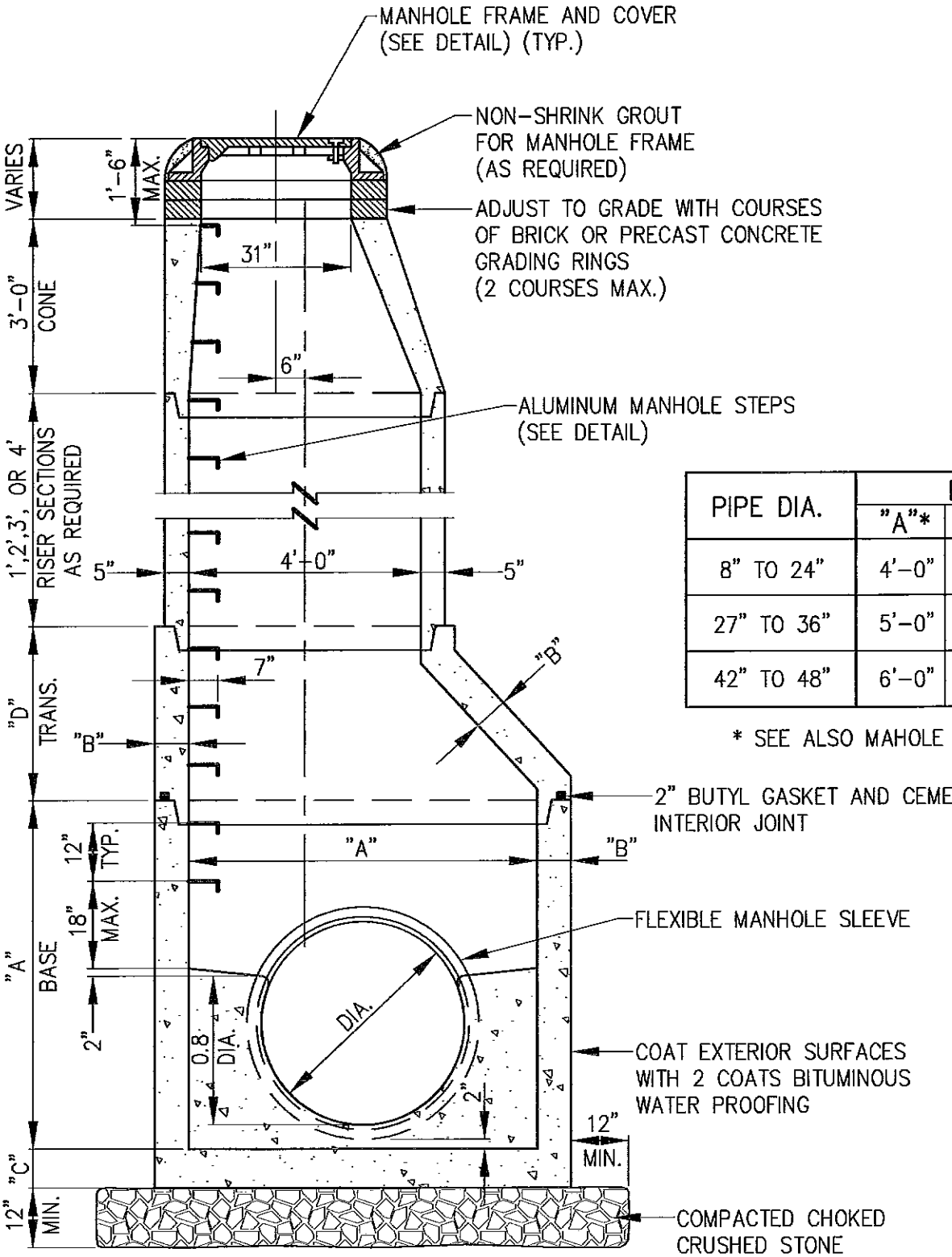
SECTION 5

SEWER SYSTEM AND PUMP STATION CONSTRUCTION STANDARD DETAILS

SEWER SYSTEM AND PUMP STATION CONSTRUCTION STANDARD DETAILS

EXHIBIT G - SECTION 5

TABLE OF CONTENTS	DATE ADOPTED
	September 20, 2006
Precast Concrete Manhole Standard	September 20, 2006
Precast Concrete Manhole Notes	September 20, 2006
Safety Platform	September 20, 2006
Shallow Manhole	September 20, 2006
Manhole Showing Stub	September 20, 2006
Flexible Manhole Sleeve	September 20, 2006
Doghouse Manhole	September 20, 2006
Manhole Chute Detail	September 20, 2006
Typical Drop Manhole Section	September 20, 2006
Aluminum Manhole Step	September 20, 2006
Reinforced Copolymer Manhole Step Detail	September 20, 2006
Typical Channeling of Manhole Bottom	September 20, 2006
Standard Manhole Assembly	September 20, 2006
Watertight Manhole Assembly	September 20, 2006
Trench Detail	September 20, 2006
Trench Excavation and Backfill Notes	September 20, 2006
Pipe Embedment Zone Width Schedule for PVC & Pipe Embedment Zone Width Schedule for Pipe Material Other Than PVC	September 20, 2006
Standard Pipe Bedding for PVC Pipe	September 20, 2006
Class "A" Modified Bedding Reinforced Concrete Cradle	September 20, 2006
Class "A-1" Modified Bedding Reinforced Concrete Encasement	September 20, 2006
Class "A-2" Modified Bedding Reinforced Concrete Arch	September 20, 2006
Rebar Schedule Reinforced Concrete	September 20, 2006
Typical Pipe Crossing Under Stream	September 20, 2006
Typical Pipe Crossing Under Highway	September 20, 2006
Pipe Driven In Steel Casing	September 20, 2006
Typical 4" House Connection Installation Main Less Than 10' Deep	September 20, 2006
Cleanout Arrangements	September 20, 2006
Typical 4 Inch Deep House Connection	September 20, 2006
Saddle Connection Detail	September 20, 2006
Typ Sewer & Water Lateral Connection Detail	September 20, 2006
Lateral Inside Drop Connection	September 20, 2006
Cleanout Protection Box Detail	September 20, 2006
Gravel Access Road Detail	September 20, 2006
Pavement Replace Municipal Roads	September 20, 2006
Force Main Joint Restraint Schedule	September 20, 2006
Typical By-Pass Manhole Detail	September 20, 2006
Automatic Air Release	September 20, 2006
Force Main Cleanout	September 20, 2006
Force Main Cleanout (Private Force Mains)	September 20, 2006
Suggested Site Arrangement For Pre-Engineered Pump Stations	September 20, 2006
Pavement Detail & Sidewalk Detail	September 20, 2006
Generator Building Typical Plan For Pre-Engineered Pump Stations	September 20, 2006
Chain Link Fence Detail	September 20, 2006
Single Swing Gate Detail	September 20, 2006
Cantilever Sliding Gate Detail	September 20, 2006



PIPE DIA.	DIMENSIONS			
	"A"*	"B"	"C"	"D"
8" TO 24"	4'-0"	5"	6"	–
27" TO 36"	5'-0"	6"	8"	2'-0"
42" TO 48"	6'-0"	7"	8"	3'-0"

* SEE ALSO MAHOLE CHUTE DETAIL

PRECAST CONCRETE MANHOLE STANDARD

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

GENERAL NOTES:

1. SHORTS SHALL BE USED AT MANHOLES.
2. EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS OF BITUMINOUS WATERPROOFING MATERIAL.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.
4. PREFABRICATED CHANNELS WILL ONLY BE PERMITTED FOR "STRAIGHT-THROUGH" AND "DEAD END" MANHOLES.

PRECAST CONCRETE MANHOLE (ASTM C-478):

1. WHERE FIVE FEET (5') AND SIX FEET (6') I.D. BASES ARE USED A TAPER SECTION CONNECTING BASE SECTION AND RISER SHALL BE REQUIRED AND SHALL HAVE A THICKNESS AS SHOWN. THE BASE SECTION AND RISER ALLOW FOR AT LEAST SIX FOOT (6') MINIMUM VERTICAL CLEARANCE WHERE POSSIBLE.
2. BASES TO BE AS SHOWN IN THE SCHEDULE.

BRICK OR CONCRETE BLOCK MANHOLES (NOT SHOWN):

1. BRICK OR CONCRETE BLOCK MANHOLES MUST BE SPECIFICALLY APPROVED BY THE AUTHORITY.
2. SHOP DRAWINGS MUST BE SUBMITTED FOR ALL DETAILS.

WORK AT EXISTING MANHOLES:

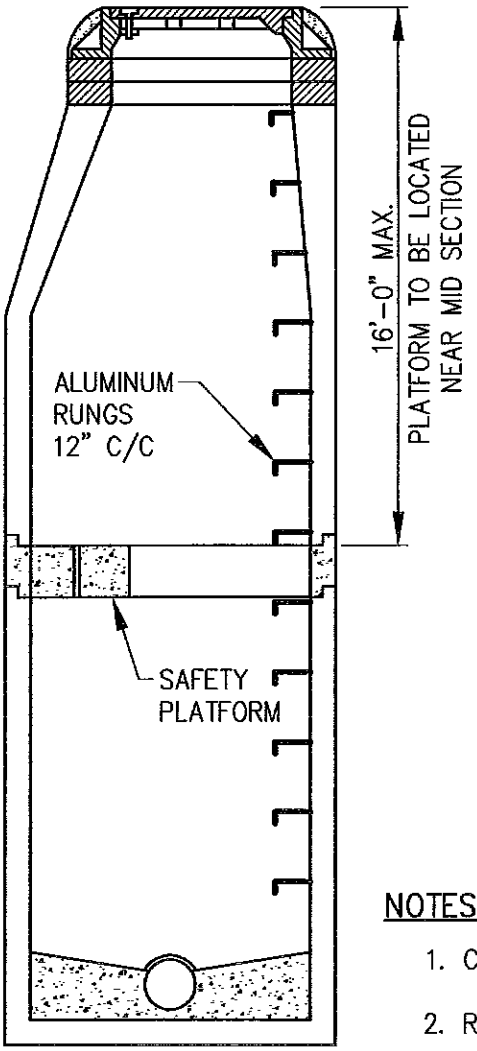
1. THE CONTRACTOR SHALL CORE DRILL THE MANHOLE AND COMPLETE A CONNECTION USING A SUITABLE ADAPTER AS REQUIRED AND APPROVED BY THE AUTHORITY.
2. THE CONTRACTOR SHALL NOT INTERFERE WITH EXISTING SEWERAGE SERVICE DURING THE PERIOD OF CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO KEEP DEBRIS OUT OF MANHOLE, AS DIRECTED BY THE AUTHORITY.

EASEMENTS:

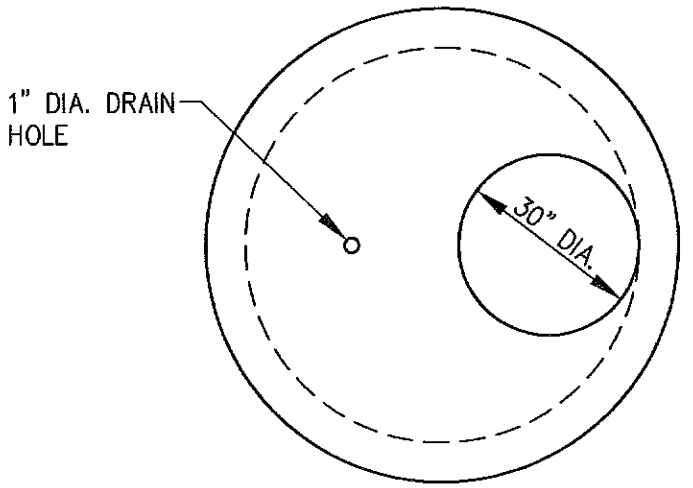
1. MANHOLES IN EASEMENTS SHALL BE SET SIX INCHES (6") ABOVE FINISHED GRADE. FLOOD PRONE AREAS MAY REQUIRE HIGHER ELEVATION AS DETERMINED BY THE AUTHORITY.

PRECAST CONCRETE MANHOLE NOTES

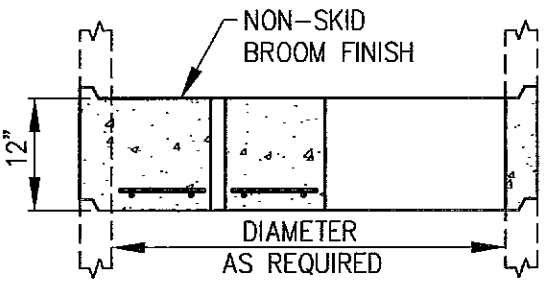
N.T.S.



MH CROSS SECTION



PLAN VIEW – SLAB



CROSS SECTION – SLAB

NOTES:

1. CONCRETE IS DESIGNED TO OBTAIN A STRENGTH OF 4,000 PSI IN 28 DAYS.
2. REINFORCING STEEL HAS A MINIMUM YIELD STRENGTH OF 60,000 PSI.
3. SLAB IS DESIGNED FOR A CONCENTRATED LOAD (P) AS FOLLOWS:

MH DIA. (FT)	P (LB.)
4	12,000
5	10,000
6	8,000

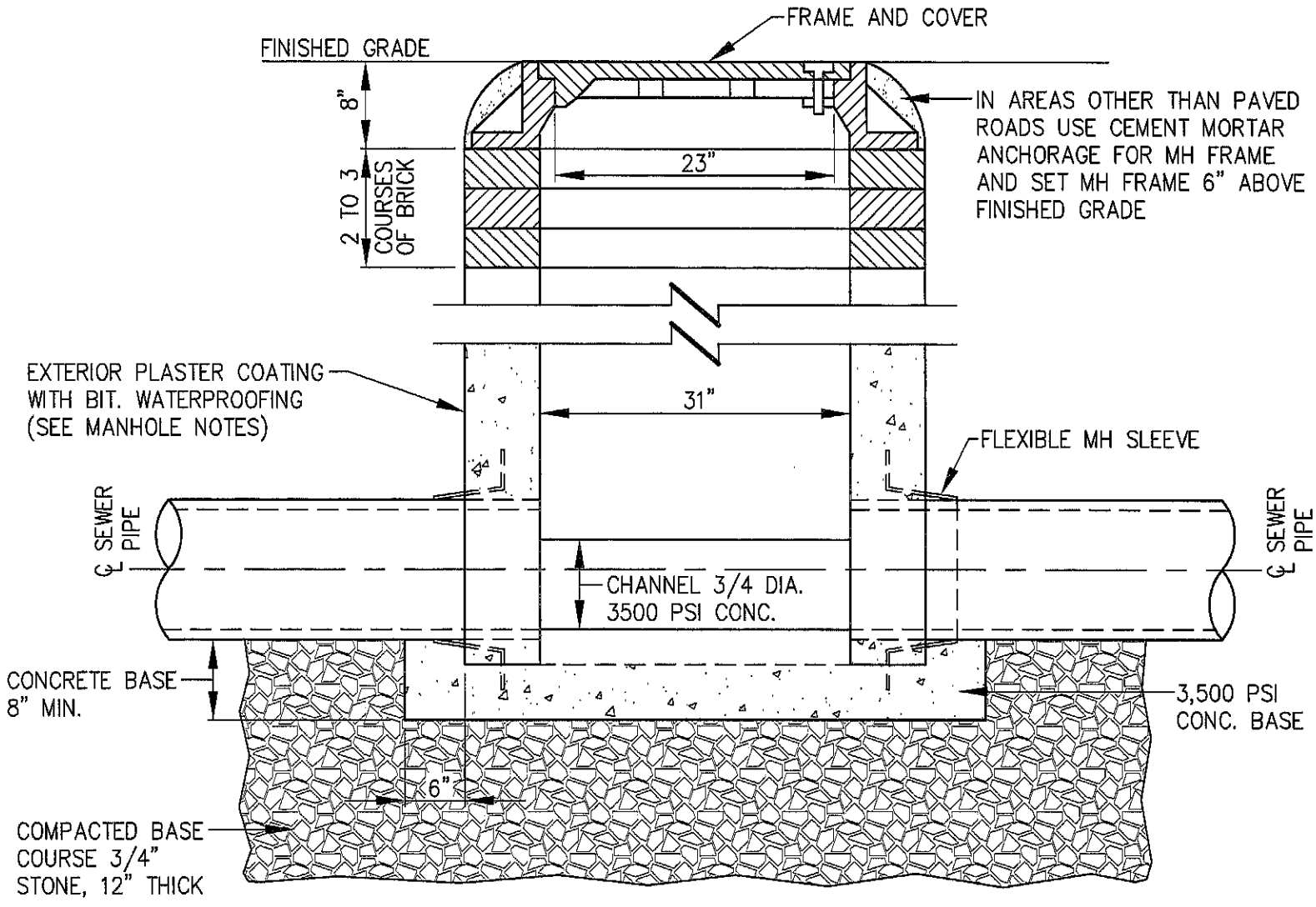
FOR DEEP MANHOLES WHERE INVERT ELEVATATION
IS GREATER THAN 16FT BELOW RIM ELEVATION

SAFETY PLATFORM

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

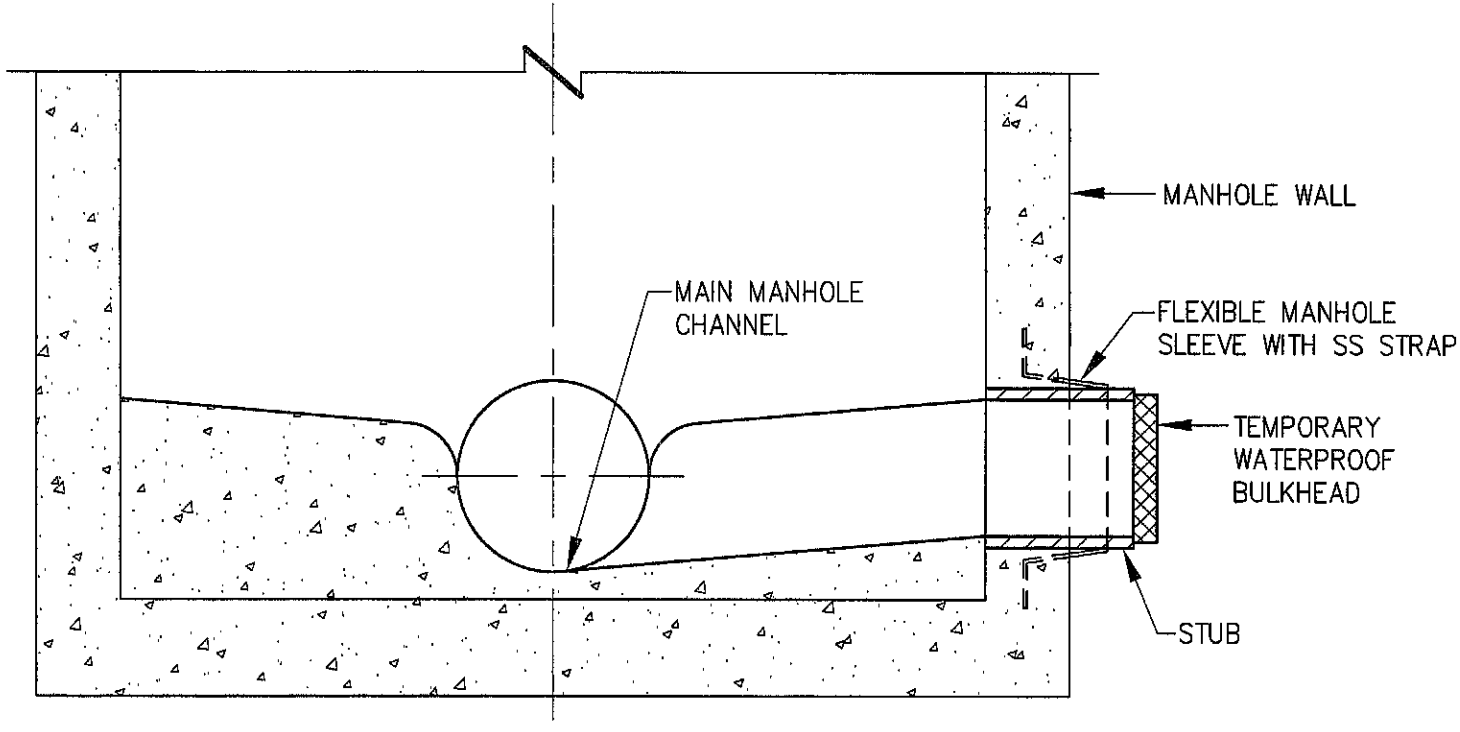
SHALLOW MH (CIRCULAR) TO BE USED AT LOCATIONS WHERE DISTANCE FROM FINISHED GRADE TO PIPE INVERT IS 3'–0" OR LESS

SHALLOW MANHOLE

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



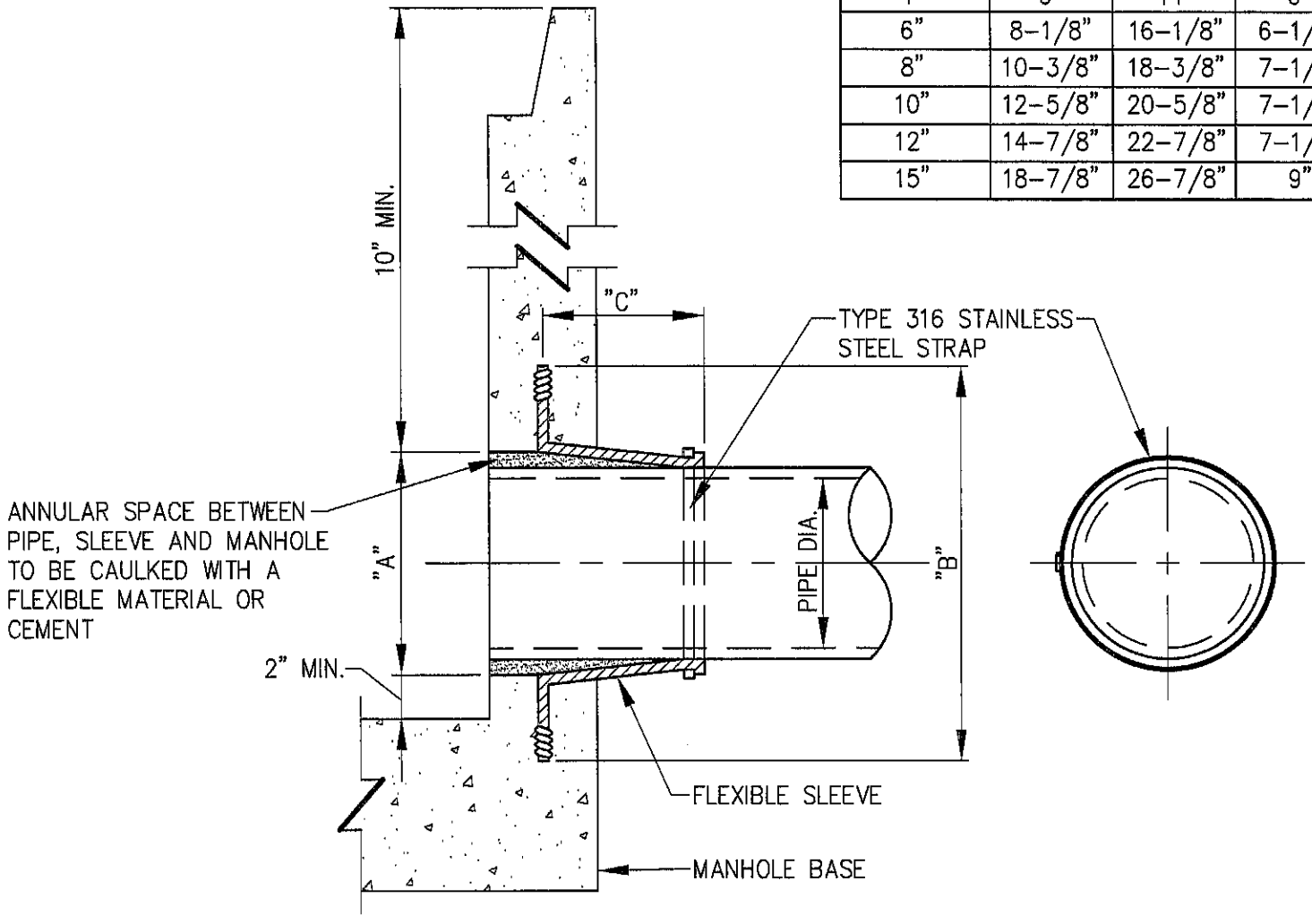
MANHOLE SHOWING STUB

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

PIPE DIA.	"A"	"B"	"C"
4"	6"	14"	6"
6"	8-1/8"	16-1/8"	6-1/2"
8"	10-3/8"	18-3/8"	7-1/2"
10"	12-5/8"	20-5/8"	7-1/2"
12"	14-7/8"	22-7/8"	7-1/2"
15"	18-7/8"	26-7/8"	9"

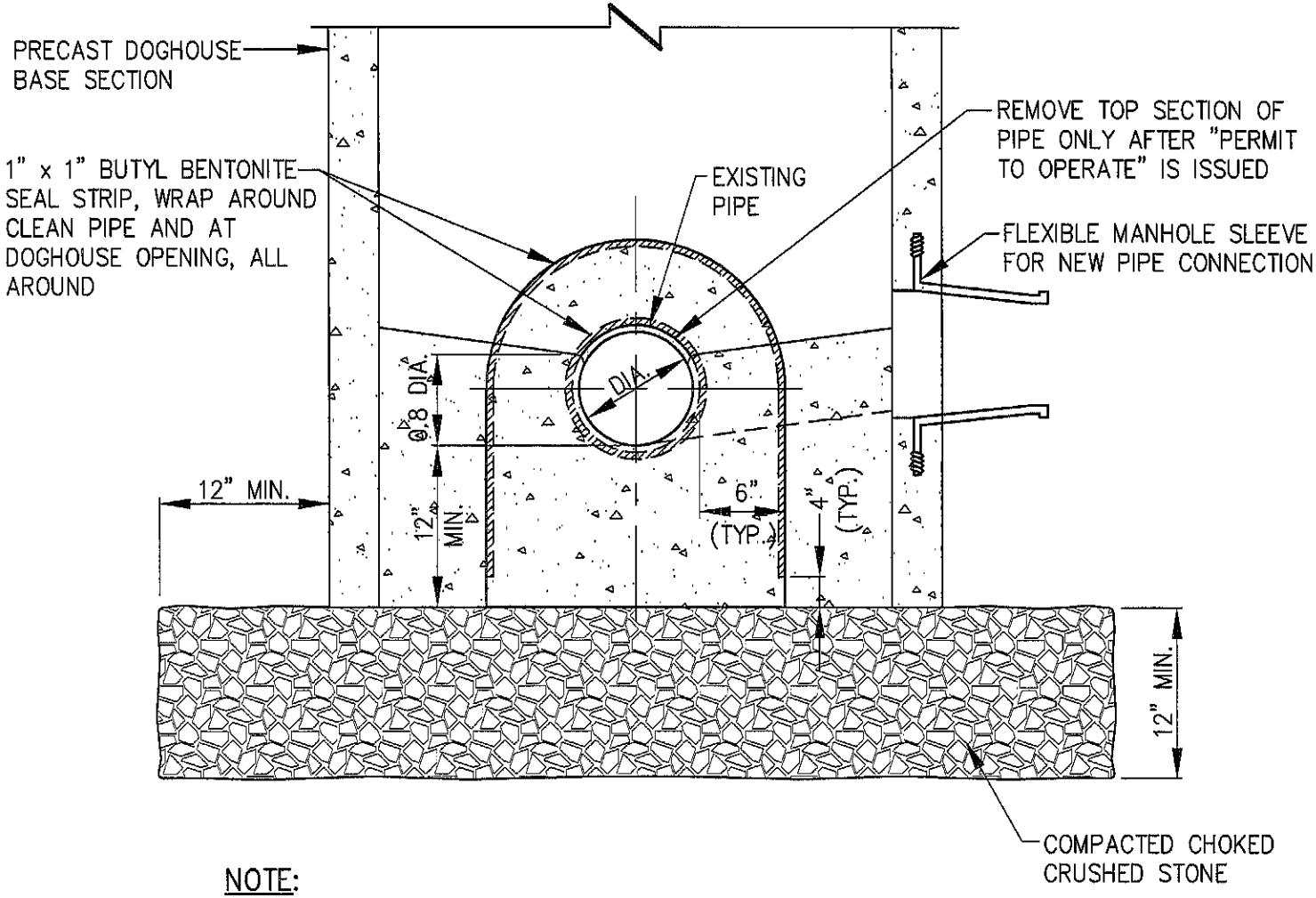


FLEXIBLE MANHOLE SLEEVE

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

1. FOR ALL OTHER DIMENSIONS, WALL THICKNESSES, ETC., SEE PRECAST MANHOLE DETAILS AND NOTES.

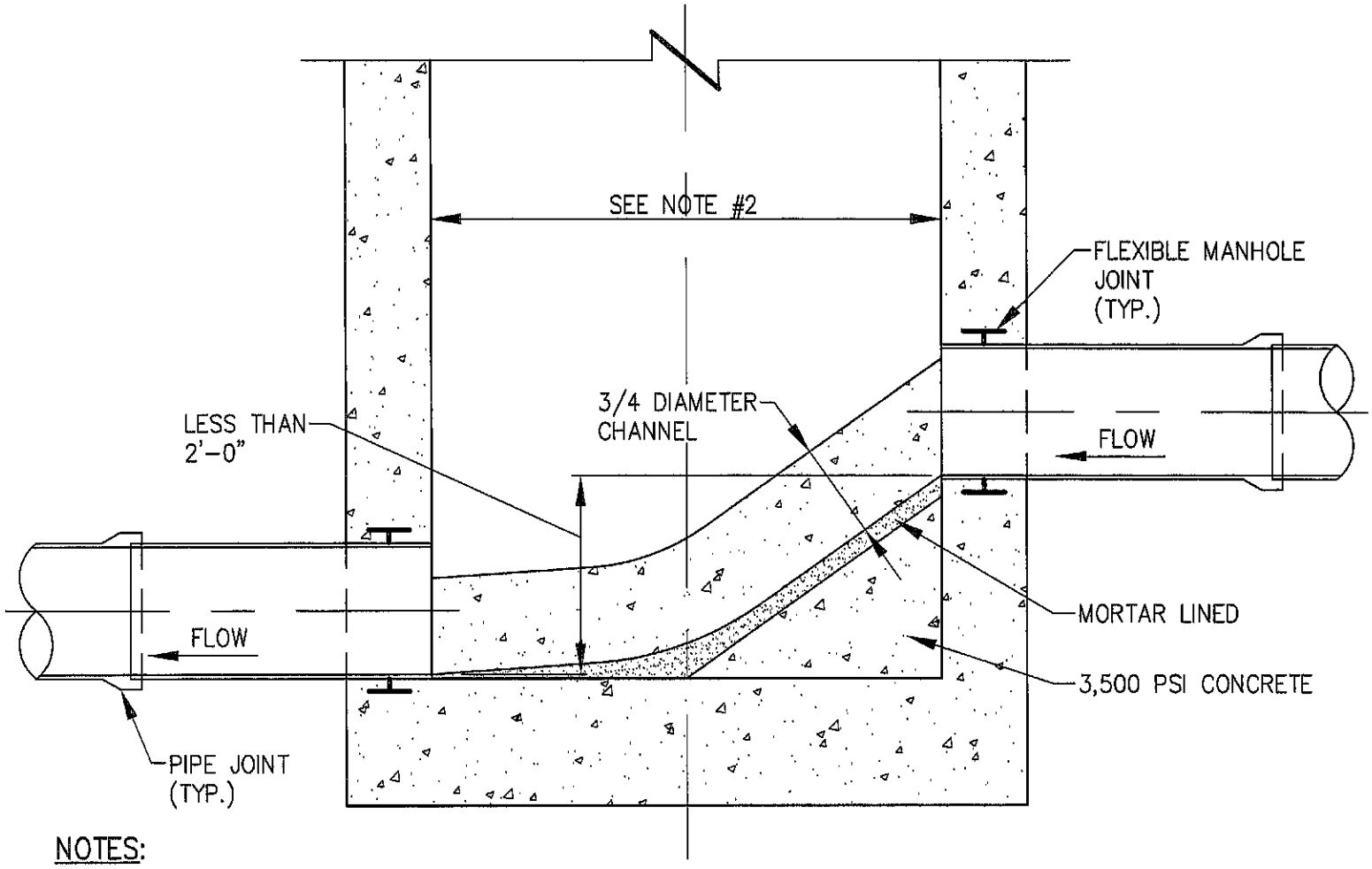
2. FINISHED CONSTRUCTION SHALL BE WATERTIGHT

DOGHOUSE MANHOLE

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTES:

1. MANHOLE CHUTE IS TO BE USED WHERE DIFFERENCE IN INVERT ELEVATIONS BETWEEN INCOMING PIPE AND OUTGOING PIPE IS LESS THAN TWO FEET (2'). IF THE DIFFERENCE IN INVERT ELEVATIONS IS TWO FEET (2') OR GREATER, A DROP MANHOLE SECTION IS REQUIRED.

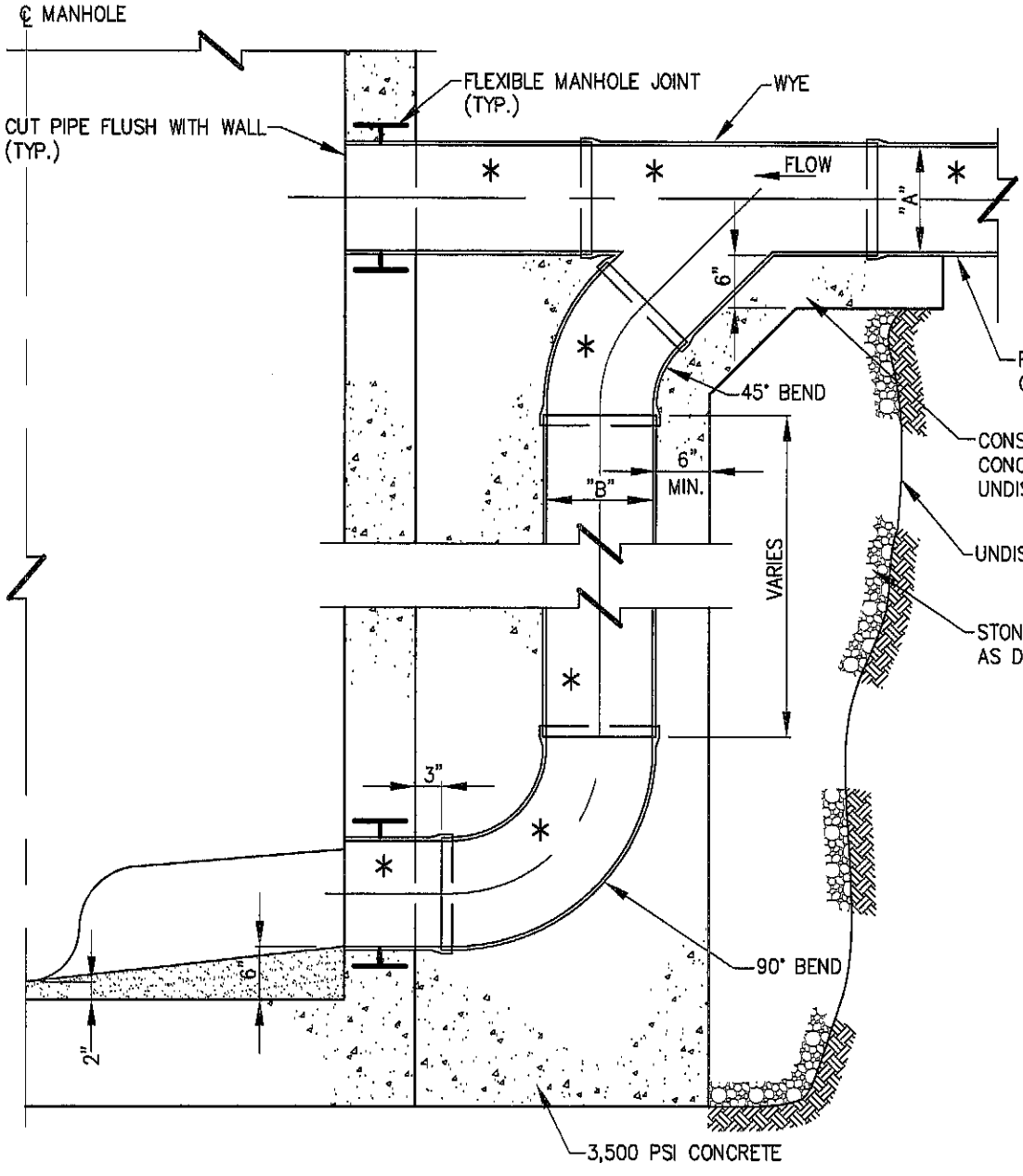
2. WHERE THE DIFFERENCE IN INVERT ELEVATION IS LESS THAN OR EQUAL TO ONE FOOT (1') THE MAHHOLE DIAMETER CAN BE FOUR FEET (4'). WHERE THE DIFFERENCE IN INVERT ELEVATION IS BETWEEN ONE AND TWO FEET (1' AND 2'); THE MANHOLE DIAMETER SHALL BE SIX FEET (6').

MANHOLE CHUTE DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



INLET PIPE SIZE "A"	DROP PIPE SIZE "B"
8" TO 16"	8"
18" TO 24"	12"
27" TO 30"	18"
33" TO 36"	24"
45" TO 48"	30"

* SDR26 (MIN.) PVC TO NEXT UPSTREAM MANHOLE

NOTES:

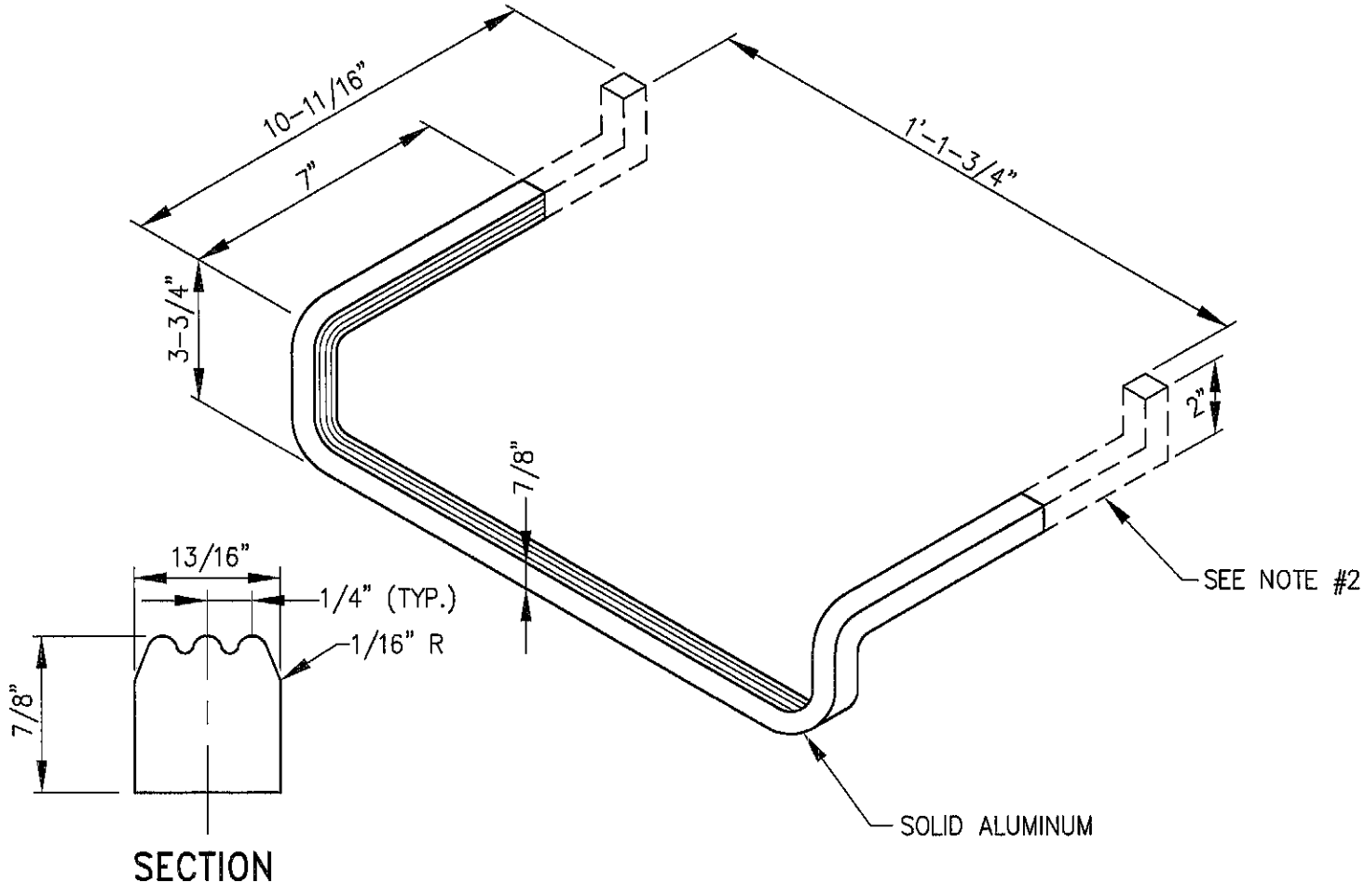
1. DROP PIPE TO BE USED IN ALL CASES WHERE DIFFERENCE BETWEEN INLET INVERT AND LOWEST OUTLET INVERT IS TWO (2) FEET OR GREATER.
2. IF DROP IS LESS THAN OR EQUAL TO THREE (3) FEET REPLACE WYE AND 45° BEND WITH A TEE/WYE. CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO CONSTRUCTION.
3. MAXIMUM DROP IS SIX (6) FEET.
4. EPOXY COAT ALL SURFACES.

TYPICAL DROP MANHOLE SECTION

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTES:

1. ALUMINUM STEP SHALL BE EXTRUDED ALUMINUM 6061-T6 ALLOY DROP FRONT DESIGN OR APPROVED EQUAL.

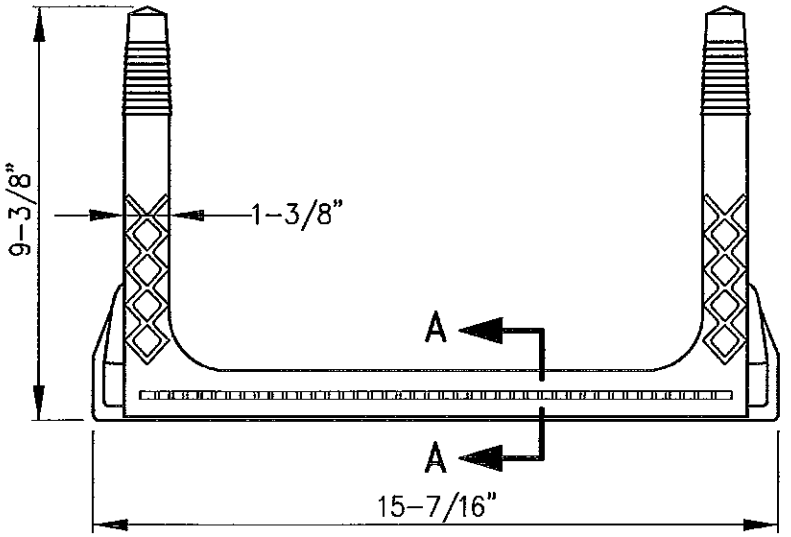
2. THE PORTION TO BE EMBEDDED IN THE CONCRETE SHALL BE COATED WITH COAL TAR PITCH OR OTHER APPROVED MATERIAL, AND SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARD.

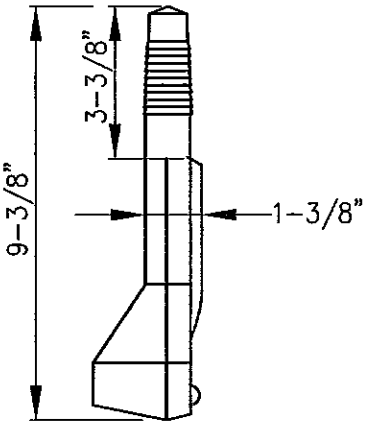
ALUMINUM MANHOLE STEP

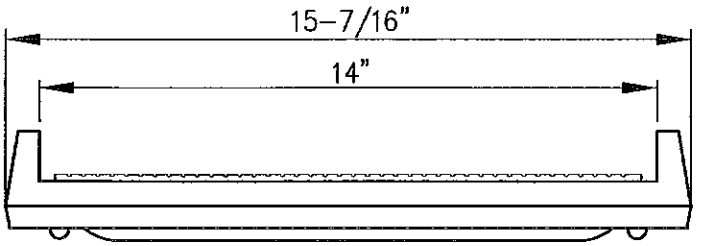
N.T.S.

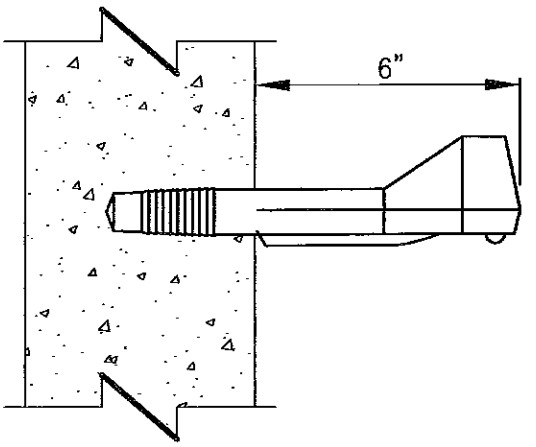
EXHIBIT G

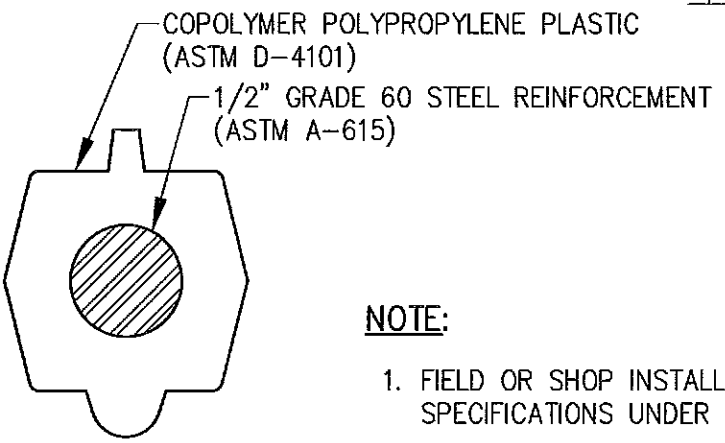
DATE ADOPTED: SEPTEMBER 20, 2006











SECTION "A-A"

NOTE:

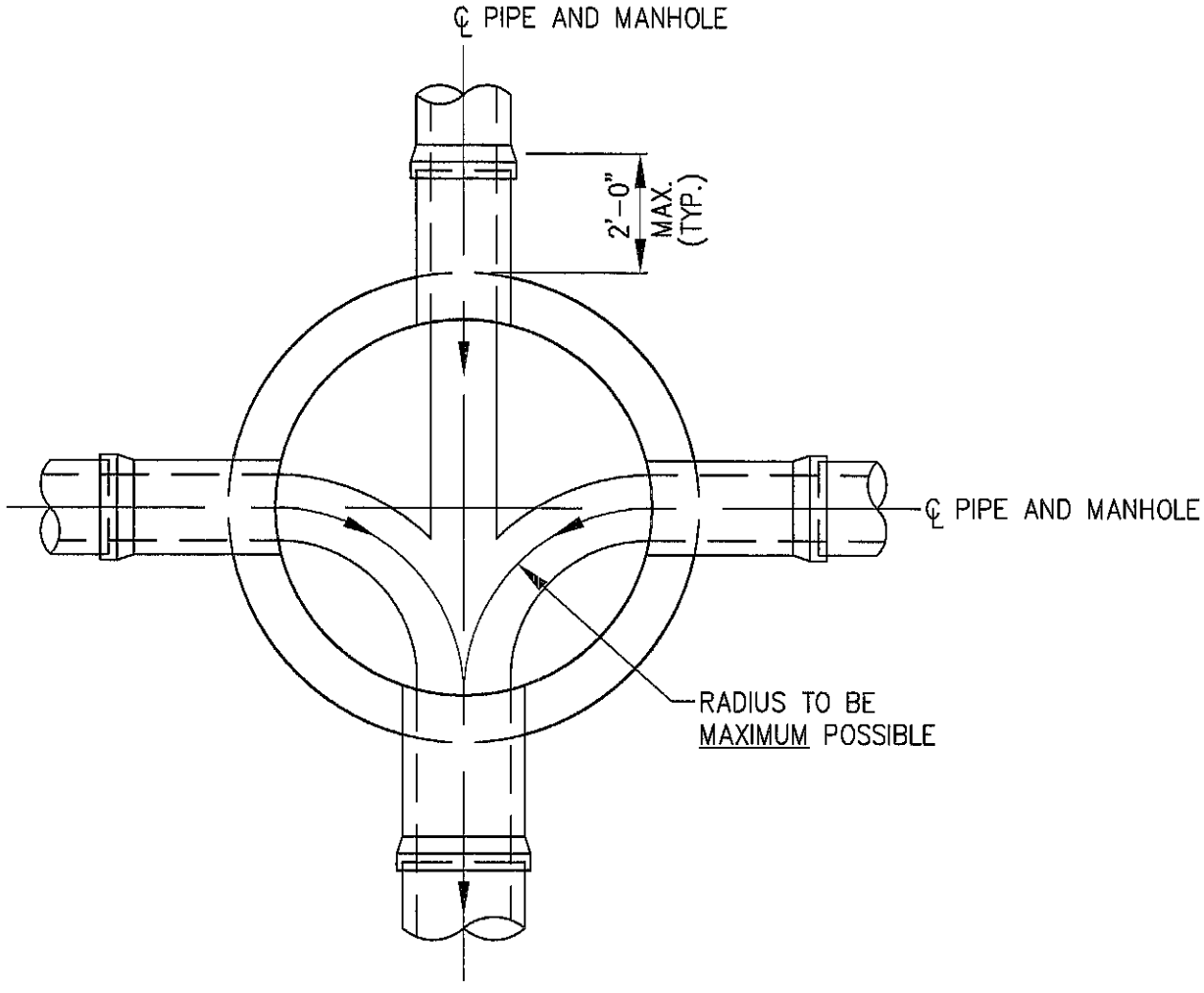
1. FIELD OR SHOP INSTALL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS UNDER FULL INSPECTION OF THE AUTHORITY.
2. STEPS INSTALLED AT 12" ON CENTER, VERTICAL.
3. MINIMUM 1500# PULL OUT LOAD

REINFORCED COPOLYMER MANHOLE STEP DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

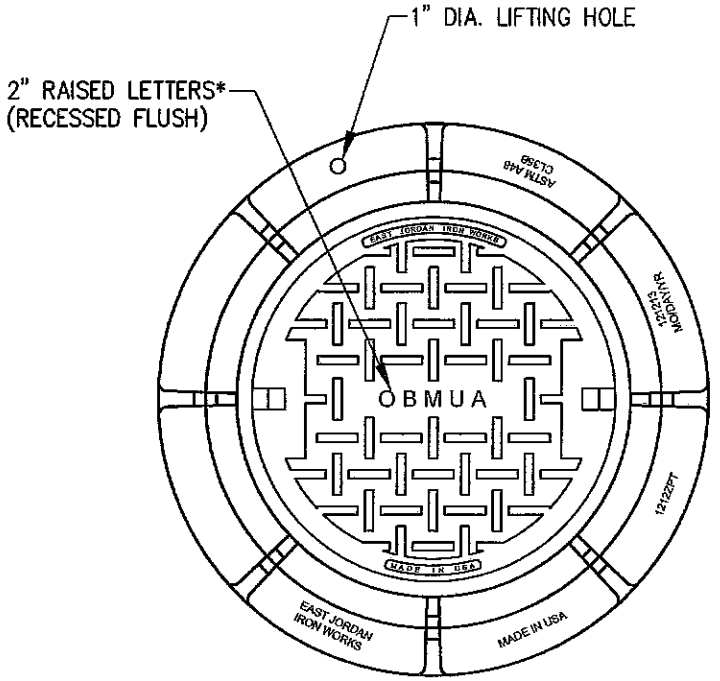


TYPICAL CHANNELING OF MANHOLE BOTTOM

N.T.S.

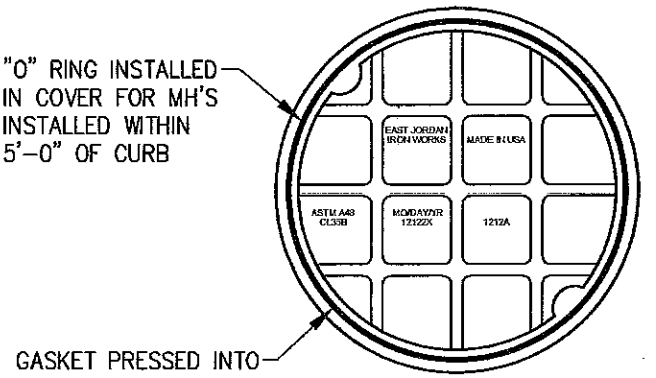
EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

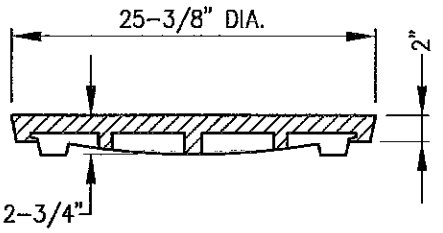


MARKINGS REQUIRED BY AASHTO M306-4:

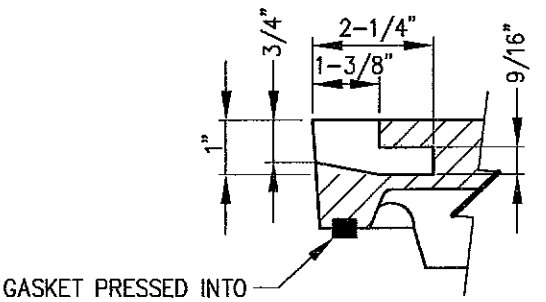
1. NAME OF PRODUCING FOUNDRY
2. COUNTRY OF MANUFACTURE (MADE IN USA)
3. ASTM A48 CLASS 35B
4. DATE OF MANUFACTURE



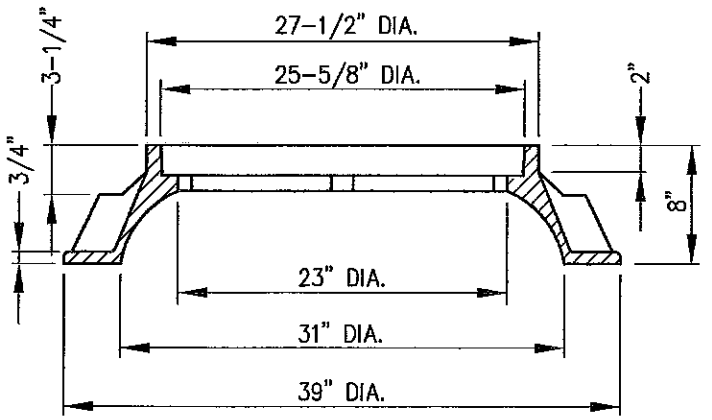
BOTTOM COVER



COVER SECTION



PICKHOLE



FRAME SECTION

23-7/8"

* FOR SEWERS TO REMAIN PRIVATE, COVERS SHALL SAY "SANITARY SEWER"

STANDARD MANHOLE ASSEMBLY

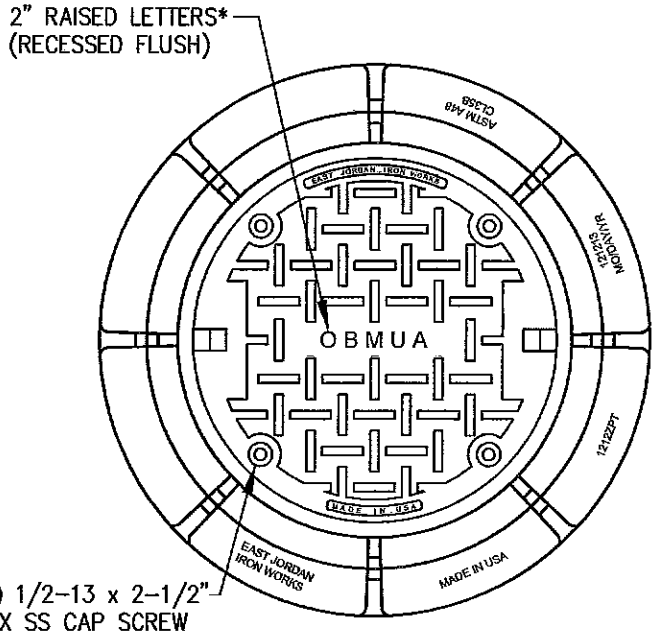
N.T.S.

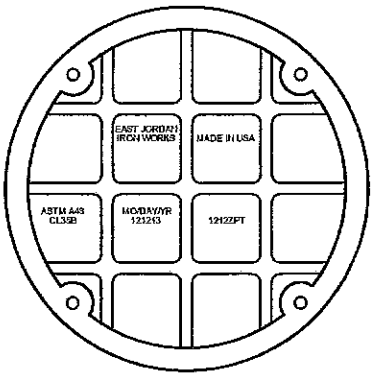
EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

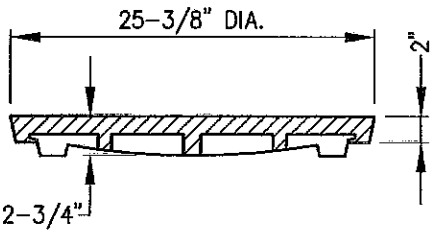
MARKINGS REQUIRED BY AASHTO M306-4:

1. NAME OF PRODUCING FOUNDRY
2. COUNTRY OF MANUFACTURE (MADE IN USA)
3. ASTM A48 CLASS 35B
4. DATE OF MANUFACTURE

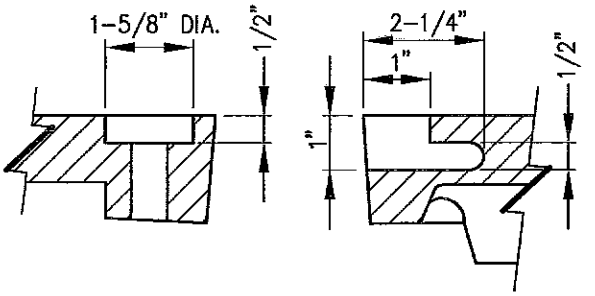




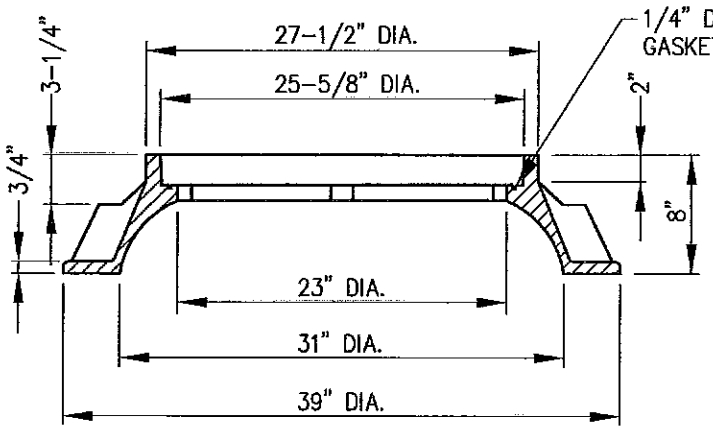
BOTTOM COVER



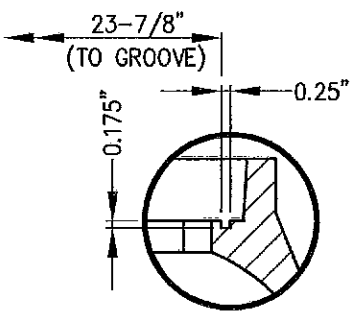
COVER SECTION



BOLT HOLE PICKHOLE



FRAME SECTION



GROOVE DETAIL

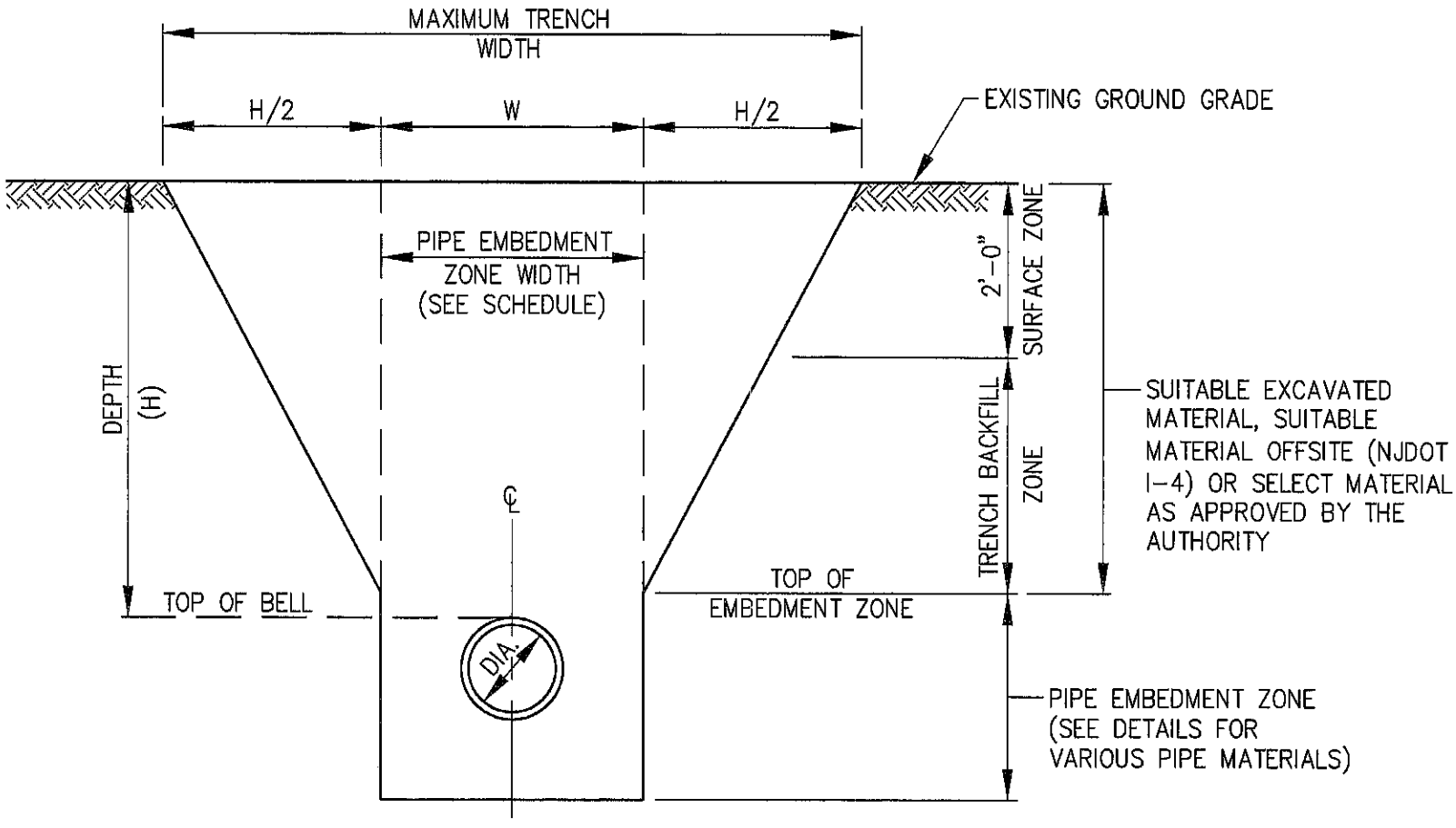
* FOR SEWERS TO REMAIN PRIVATE, COVERS SHALL SAY "SANITARY SEWER"

WATERTIGHT MANHOLE ASSEMBLY IN EASEMENTS

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



TRENCH DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

TRENCH EXCAVATION AND BACKFILL NOTES

1. THE MAXIMUM DRY DENSITIES SHALL BE DETERMINED IN ACCORDANCE WITH ASTM DESIGNATION D1577. THE MINIMUM PERCENTAGE OF COMPACTION TO BE ACHIEVED BY THE CONTRACTOR IN THE VARIOUS ZONES IS AS FOLLOWS:

	PIPE MATERIAL	LOCATION	INITIAL COMPACTION
SURFACE ZONE:	ALL	ALL	95%
TRENCH BACKFILL ZONE:			90%
PIPE EMBEDMENT ZONE:			95%

THE MINIMUM COMPACTION IN EMBANKMENTS SHALL BE 90%

2. THE PIPE EMBEDMENT ZONE WIDTH AND THE MAXIMUM TRENCH WIDTH SHALL NOT EXCEED THE PERMISSIBLE WIDTHS SHOWN. IF THE PERMISSIBLE WIDTH IS EXCEEDED, THE PIPE SHALL BE INSTALLED IN A HIGHER CLASS BEDDING THAN SHOWN ON THE DRAWINGS OR THE SPECIFIED PIPE SHALL BE REPLACED WITH PIPE OF GREATER CRUSHING STRENGTH OR BOTH, TO ACHIEVE SUITABLE CONDITIONS.

3. SUITABLE MATERIAL FROM EXCAVATIONS SHALL BE FREE FROM OBJECTIONABLE QUANTITIES OR ORGANIC MATTER, CLAYS, TREES, STUMPS, FROZEN MATERIAL, RUBBLE, REFUSE, CINDERS, ROCK AND OTHER ORGANIC MATERIALS CONSIDERED DELETERIOUS BY THE AUTHORITY AND SHALL NOT HAVE FINES IN EXCESS OF 10% PASSING THE NUMBER 200 SIEVE NOR STONE OR GRAVEL LARGER THAN 2-INCHES.

4. BACKFILL TO BE MECHANICALLY COMPACTED IN 12-INCH LIFTS TO THE SATISFACTION OF THE ENGINEER.

5. THE CONTRACTOR MUST COMPLY WITH ALL STATE AND FEDERAL CONFINED SPACE RULES, AND ALL APPLICABLE OSHA REQUIREMENTS.

TRENCH EXCAVATION AND BACKFILL NOTES

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

INSIDE DIAMETER OF PIPE (D)	4", 6", 8", 10", 12"	15"	18"	21"	24"	27"
EMBEDMENT ZONE WIDTH (W)	3'-0"	3'-6"	3'-6"	4'-0"	4'-0"	4'-6"

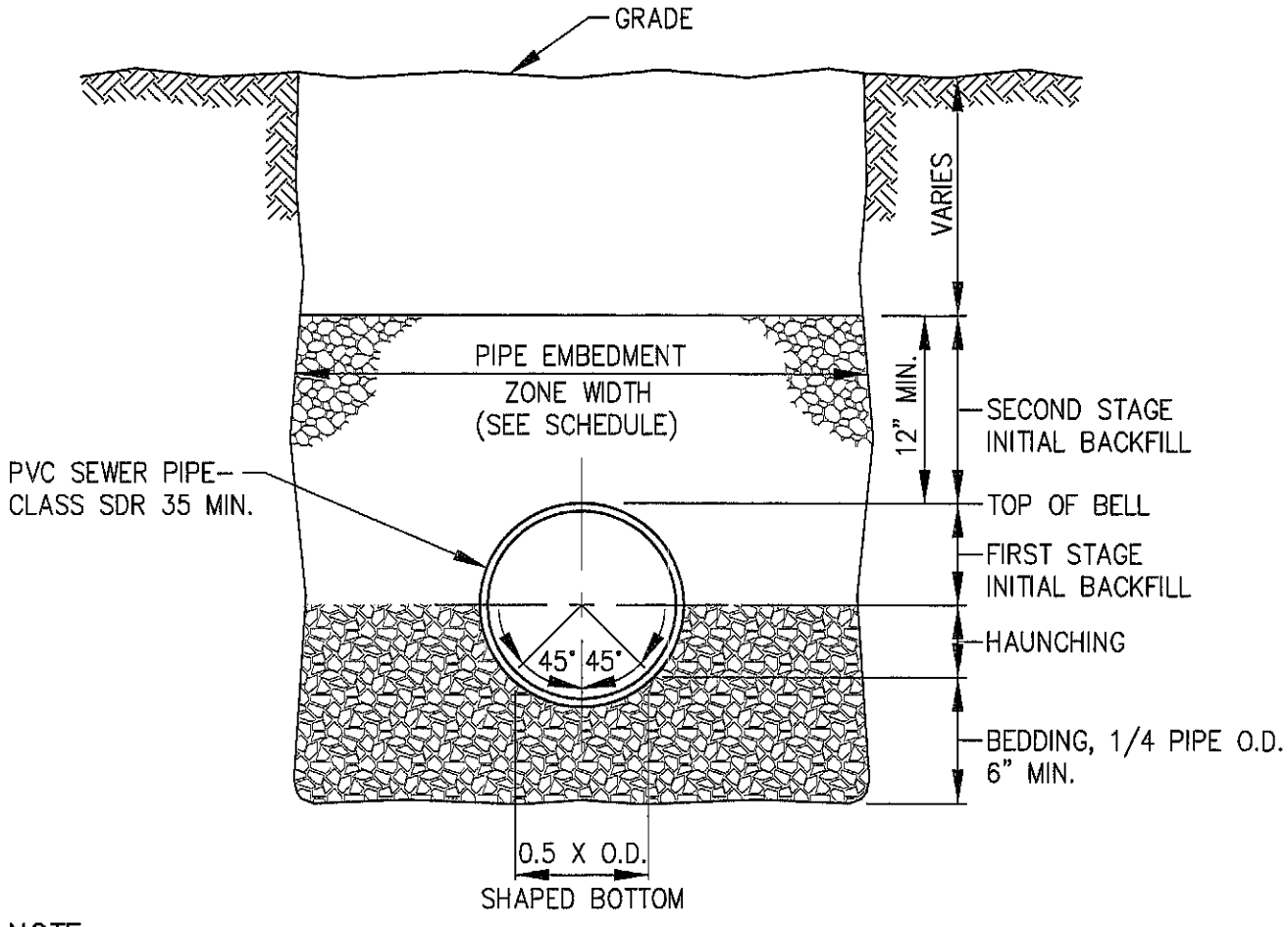
PIPE EMBEDMENT ZONE WIDTH SCHEDULE FOR PVC

INSIDE DIAMETER OF PIPE (D)	4", 6", 8", 10", 12"	14", 15", 16"	18"	20",21"	24"	27"	30"
EMBEDMENT ZONE WIDTH (W)	3'-6"	3'-9"	4'-0"	4'-0"	4'-6"	5'-0"	5'-3"

PIPE EMBEDMENT ZONE WIDTH SCHEDULE FOR PIPE MATERIAL OTHER THAN PVC

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

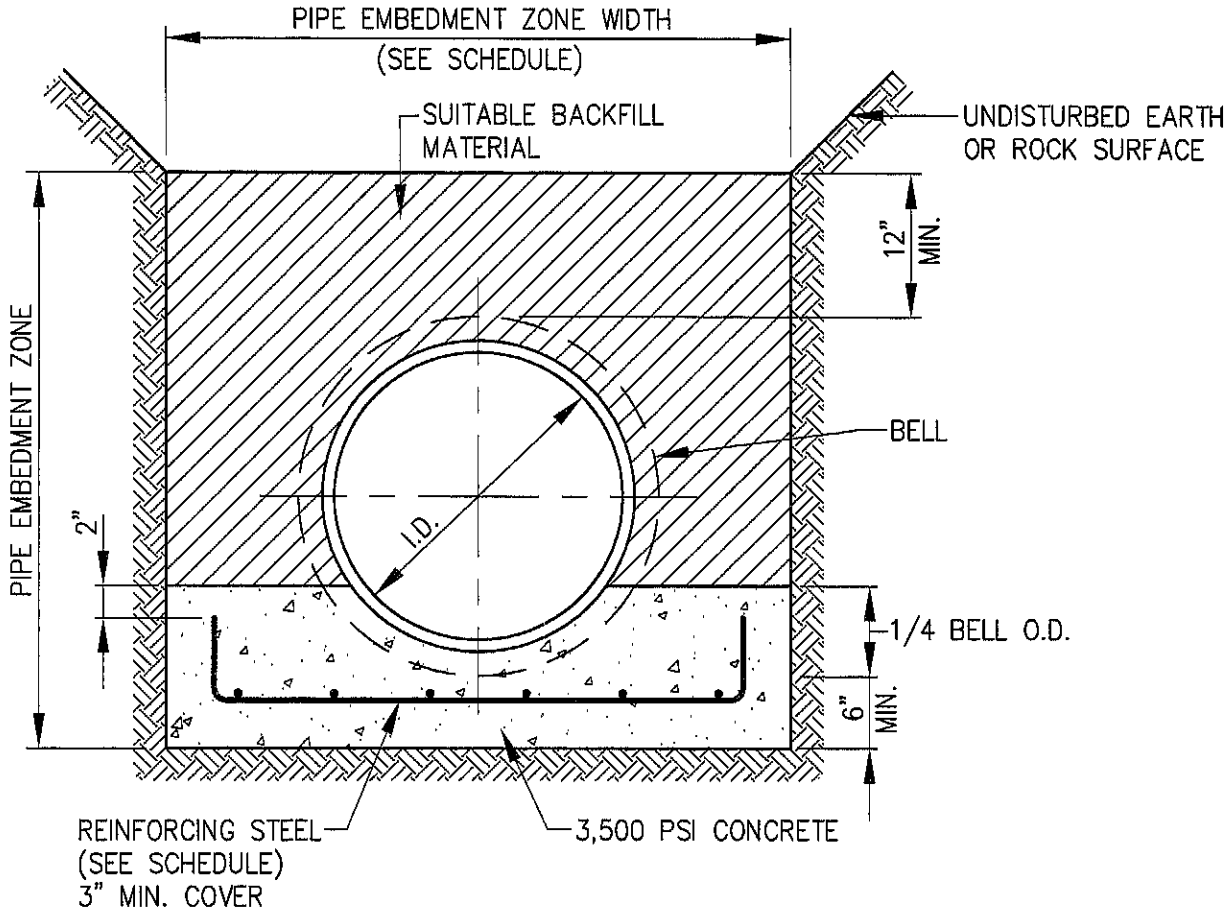
1. HAUNCH AND BEDDING COURSE SAND AND GRAVEL (NJDOT I-2) OR 3/4" CLEAN STONE.
2. HYDROHAMMERS ARE NOT TO BE USED 3' OR LESS FROM TOP OF PIPE.
3. USE 3/4" CLEAN STONE TO TOP OF BELL WHEN SELECT BACKFILL IS NOT USED.

STANDARD PIPE BEDDING FOR PVC PIPE

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

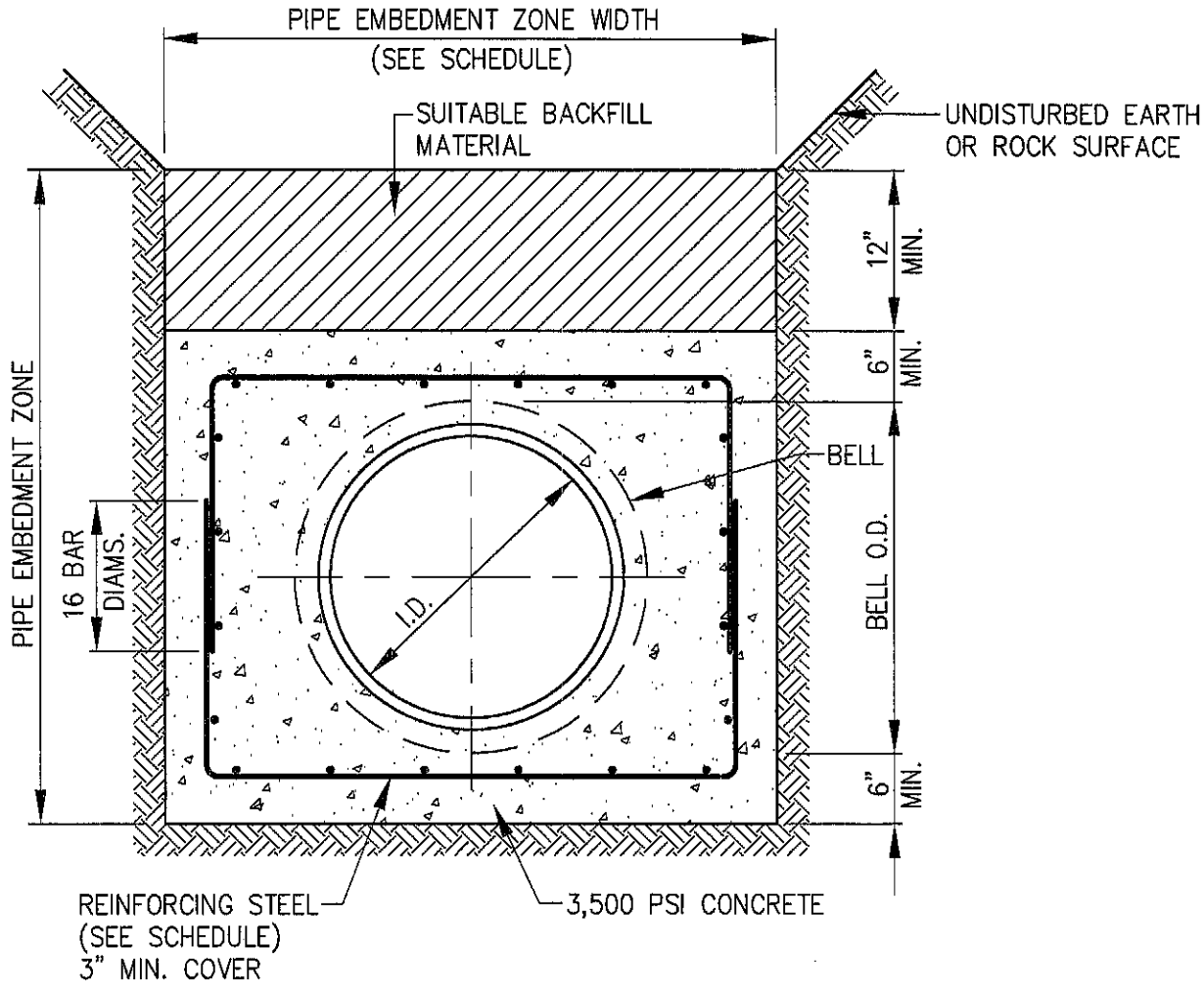


CLASS "A" MODIFIED BEDDING REINFORCED CONCRETE CRADLE

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

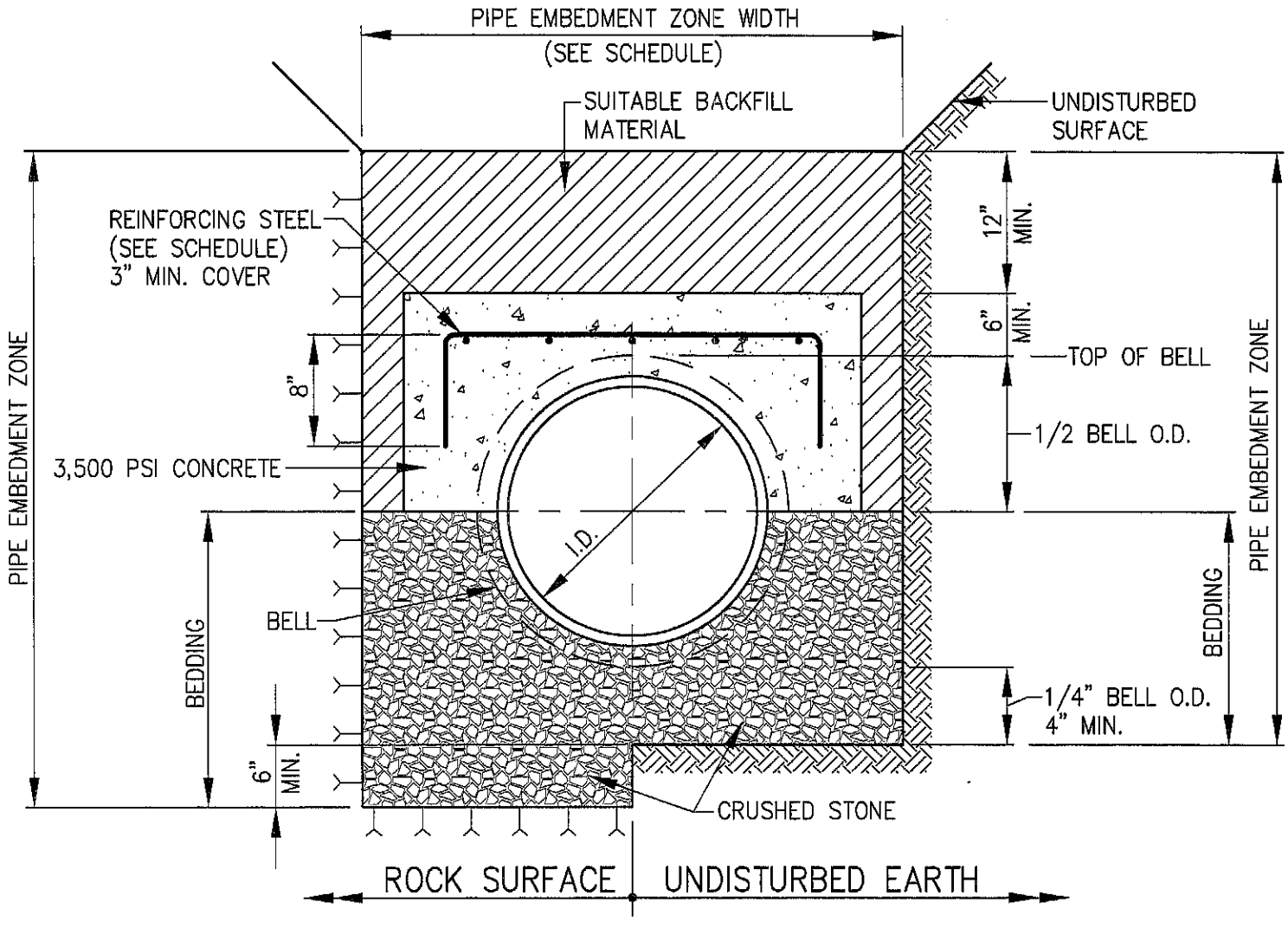


CLASS "A-1" MODIFIED BEDDING REINFORCED CONCRETE ENCASEMENT

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



CLASS "A-2" MODIFIED BEDDING REINFORCED CONCRETE ARCH

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

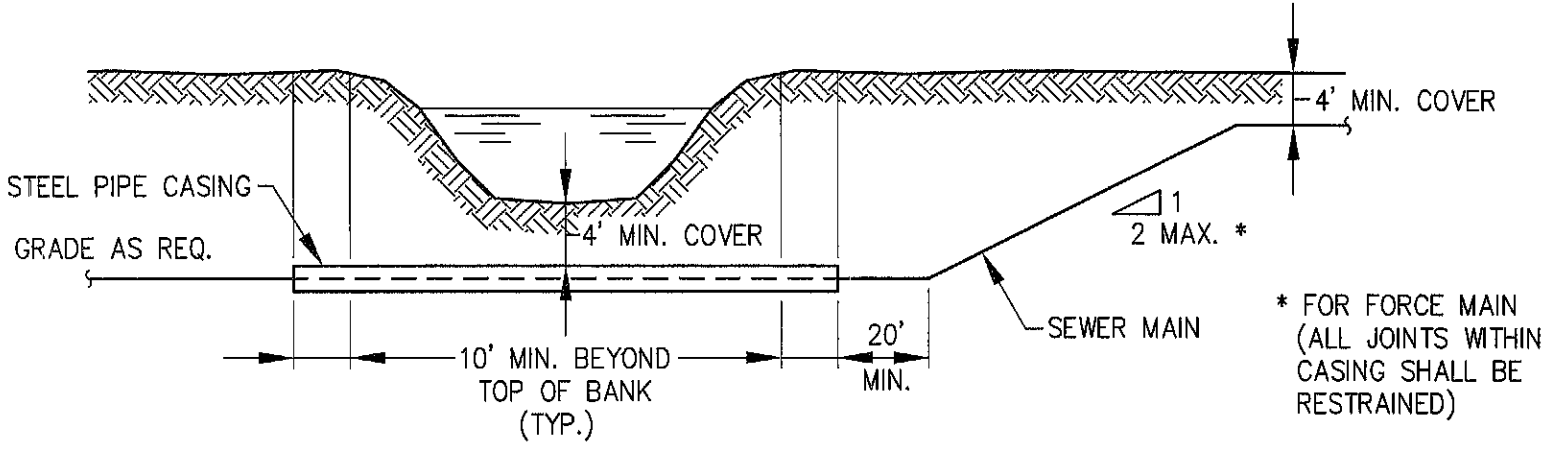
PIPE I.D.	4", 6", 8", 10", 12"	14", 15", 16"	18"	20",21"	24"	27"	30"
TRANS. STEEL CL. A MOD., CL. A-1 MOD., CL. A-2 MOD.	#4 @ 12"	#4 @ 10"	#4 @ 8"	#4 @ 6"	#4 @ 6"	#4 @ 6"	#5 @ 8"
LONG STEEL #6 BARS CLASS A MODIFIED	3	3	3	3	4	4	5
LONG STEEL #6 BARS CLASS A-1 MODIFIED	8	10	10	10	14	14	14
LONG STEEL #6 BARS CLASS A-2 MODIFIED	3	3	3	3	4	4	5

REBAR SCHEDULE
REINFORCED CONCRETE

N.T.S.

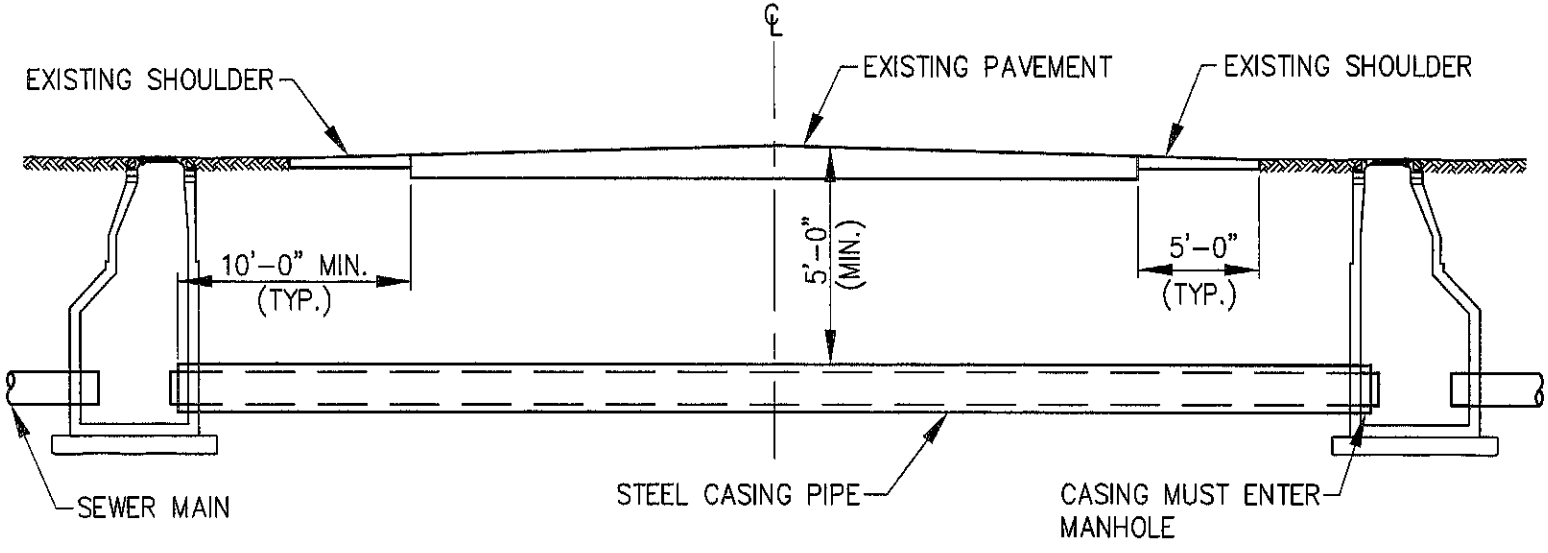
EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



TYPICAL PIPE CROSSING UNDER STREAM

N.T.S.



NOTE:

ALSO SEE DETAIL OF PIPE DRIVEN IN STEEL CASING.

TYPICAL PIPE CROSSING UNDER HIGHWAY

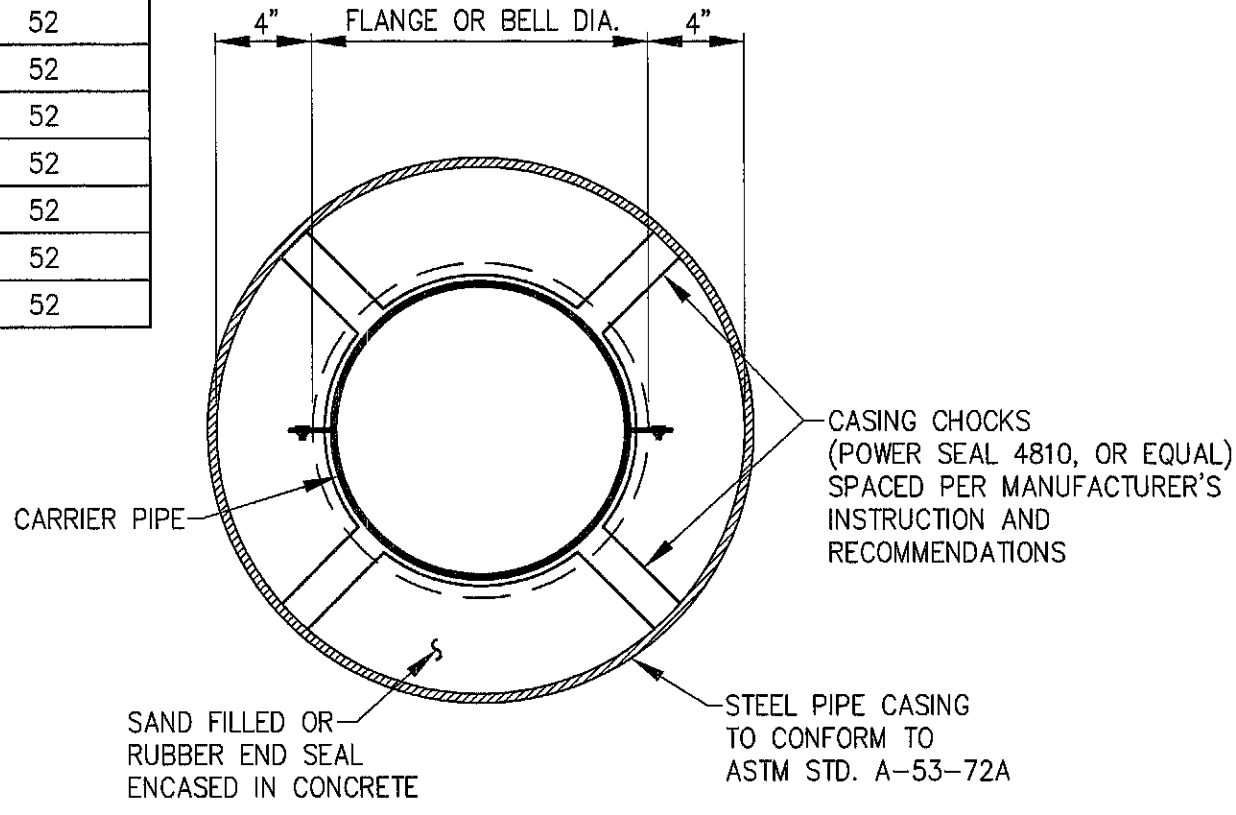
N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

CASING SCHEDULE

CARRIER PIPE SIZE	NOMINAL DIAMETER	STEEL WALL THICKNESS	DUCTILE IRON PIPE CLASS
6"	16"	1/2"	52
8"	18"	1/2"	52
10"	24"	1/2"	52
12"	30"	5/8"	52
16"	30"	5/8"	52
18"	36"	3/4"	52
20"	36"	3/4"	52
24"	42"	3/4"	52
30"	48"	3/4"	52

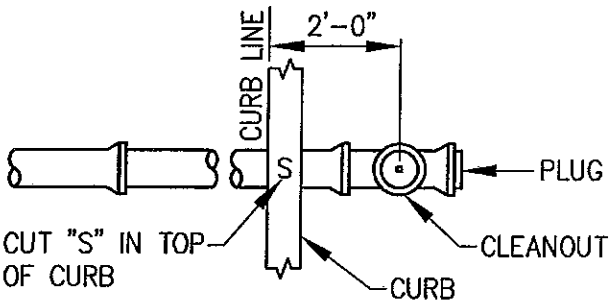


PIPE DRIVEN IN STEEL CASING

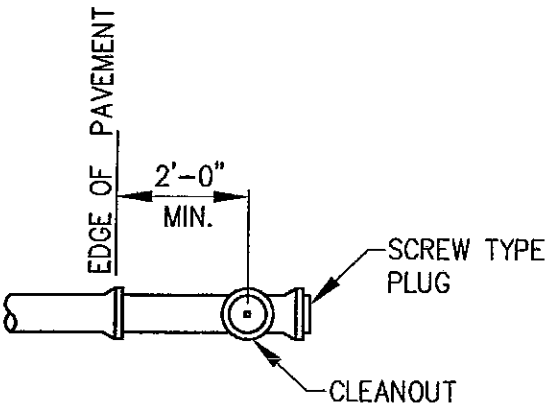
N.T.S.

EXHIBIT G

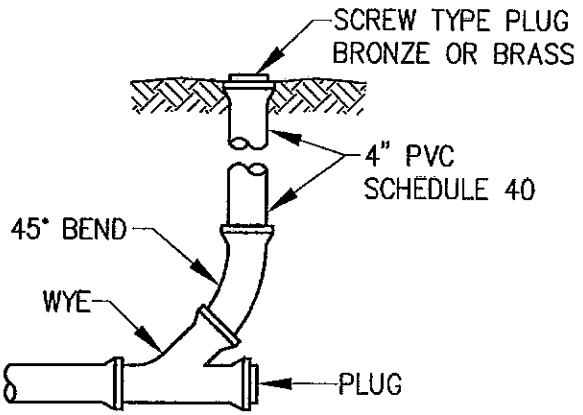
DATE ADOPTED: SEPTEMBER 20, 2006



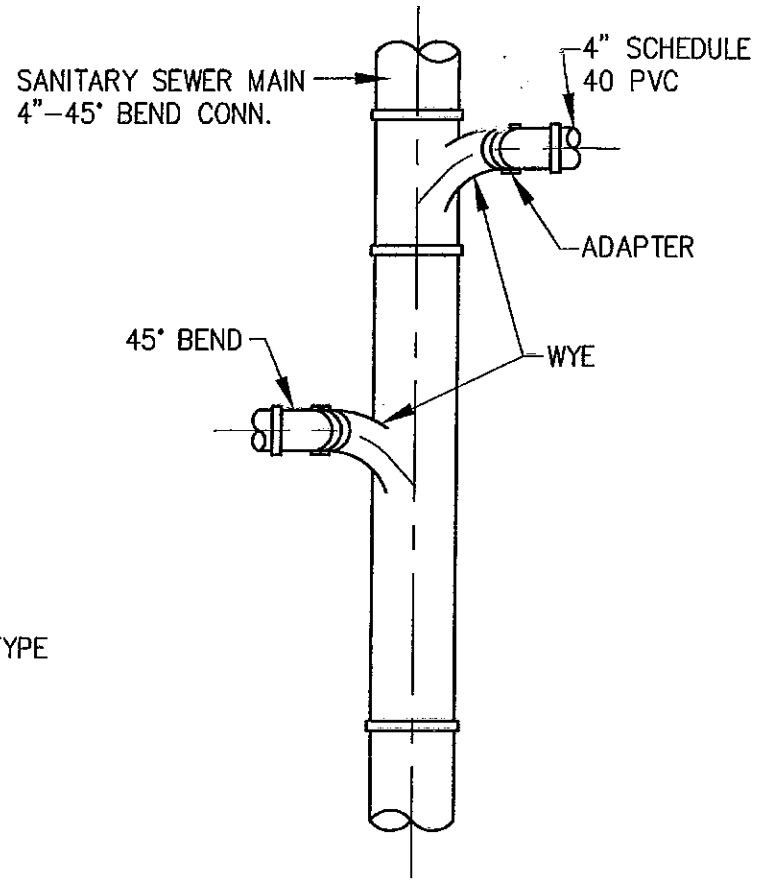
EXISTING CURB



NO EXISTING CURB



VERITCAL SECTION CLEANOUT



PLAN

NOTES:

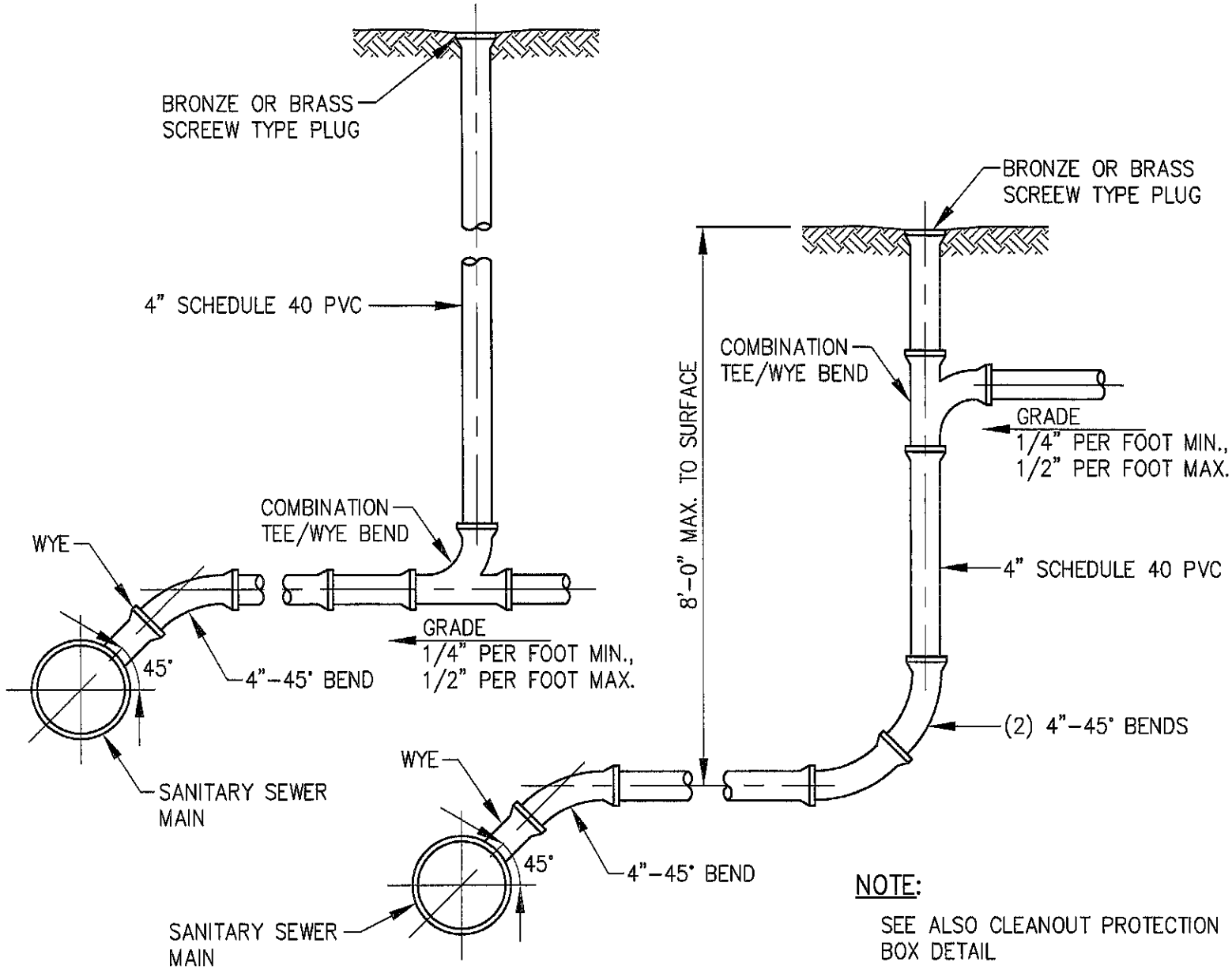
1. ALL COUPLINGS, PLUGS, PIPES AND CAPS TO BE STANDARD FOR TYPE OF PIPE USED; INSTALLATION TO BE WATERTIGHT.
2. CLEANOUTS AS SHOWN ARE REQUIRED ON ALL HOUSE CONNECTIONS.
3. HOUSE CONNEDTIONS ARE TO BE 4" SCHEDULE 40 PVC OR AS APPROVED BY THE LOCAL PLUMBING SUB-CODE OFFICIAL
4. SEE ALSO CLEAN-OUT PROTECTION BOX DETAIL.

TYPICAL 4" HOUSE CONNECTION INSTALLATION MAIN LESS THAN 10' DEEP

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

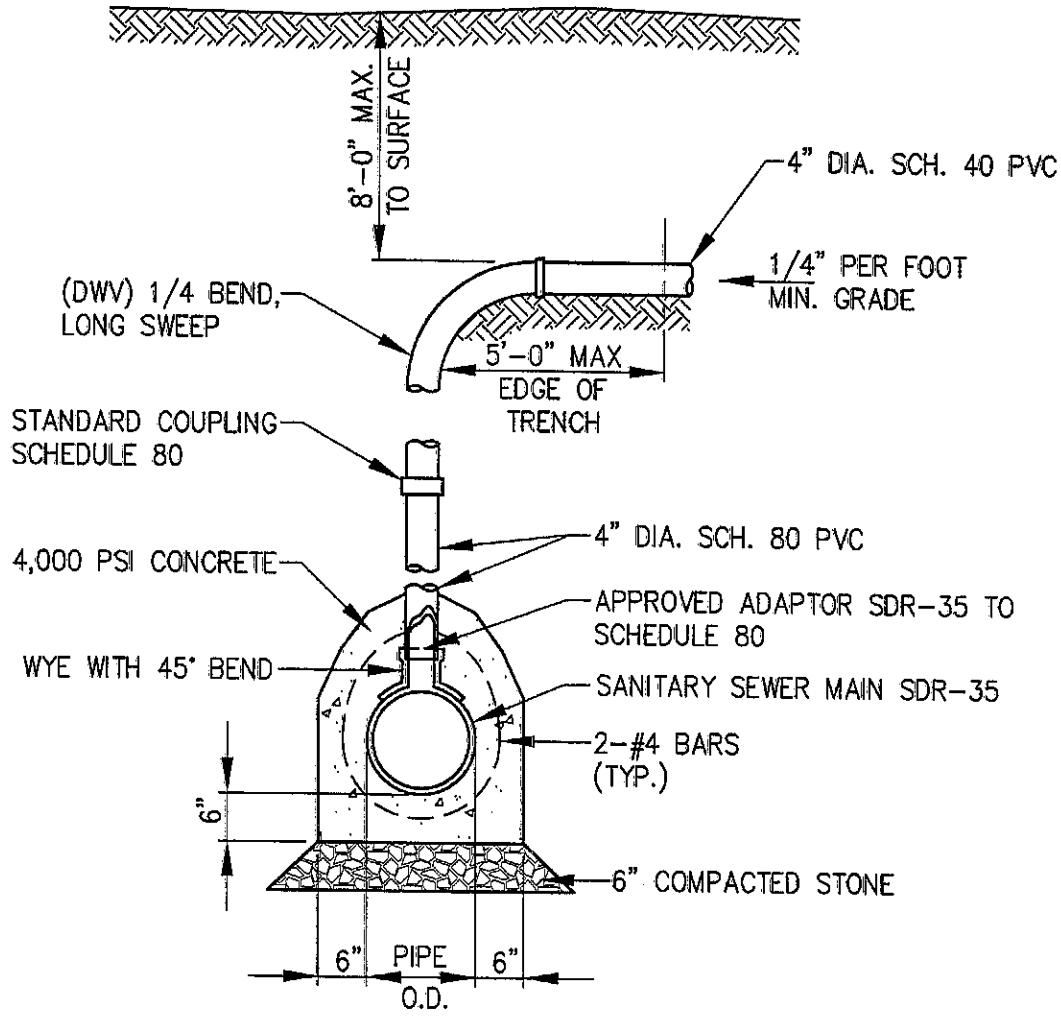


CLEANOUT ARRANGEMENTS

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

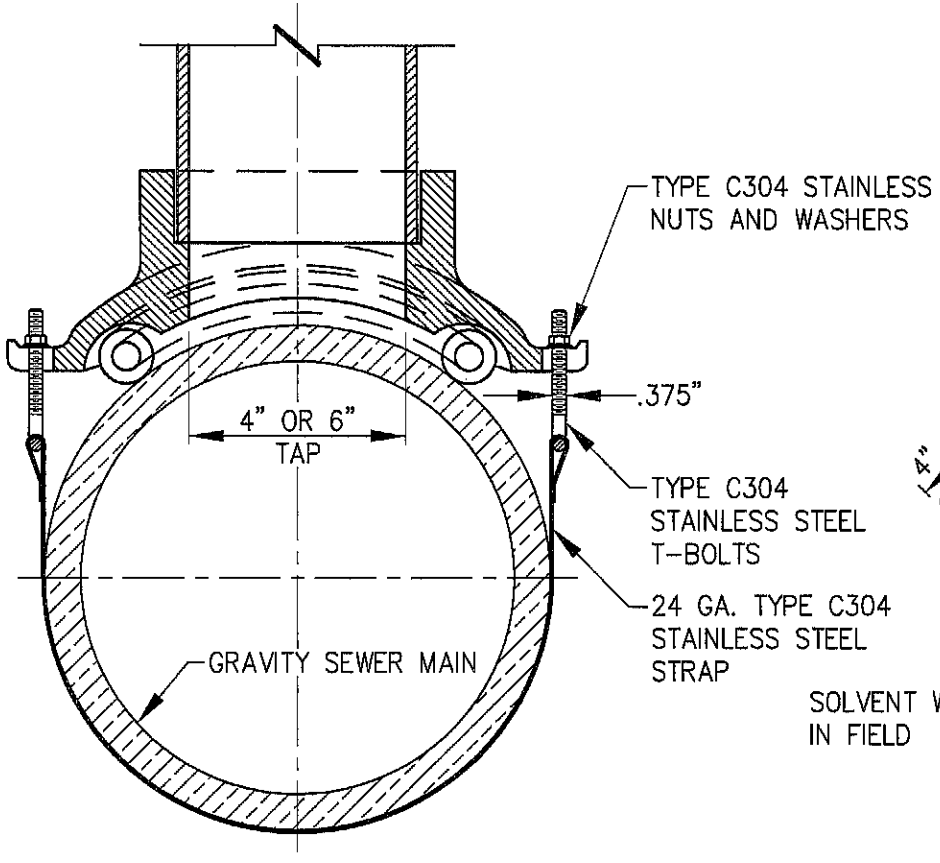


TYPICAL 4" HOUSE CONNECTION INSTALLATION
MAIN EQUAL TO OR MORE THAN 10' DEEP

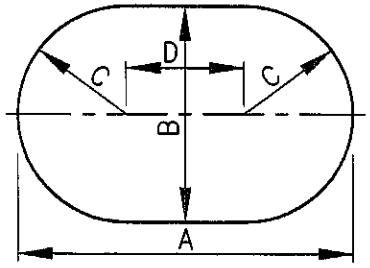
EXHIBIT G

N.T.S.

DATE ADOPTED: SEPTEMBER 20, 2006

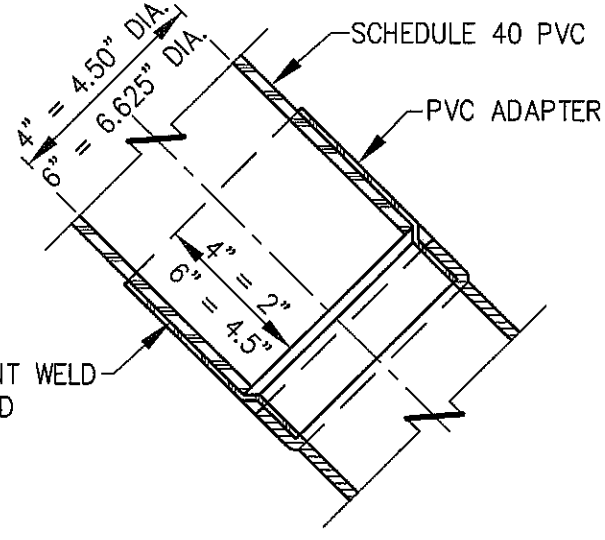


SEALTITE TYPE "E" WYE SEWER PIPE SADDLE



SIZE	A	B	C	D
4" INLET	6.50"	4"	2"	2.50"
6" INLET	9.25"	6"	3"	3.25"

SADDLE TAP DIMENSIONS



MODEL "E40P"

NOTE:

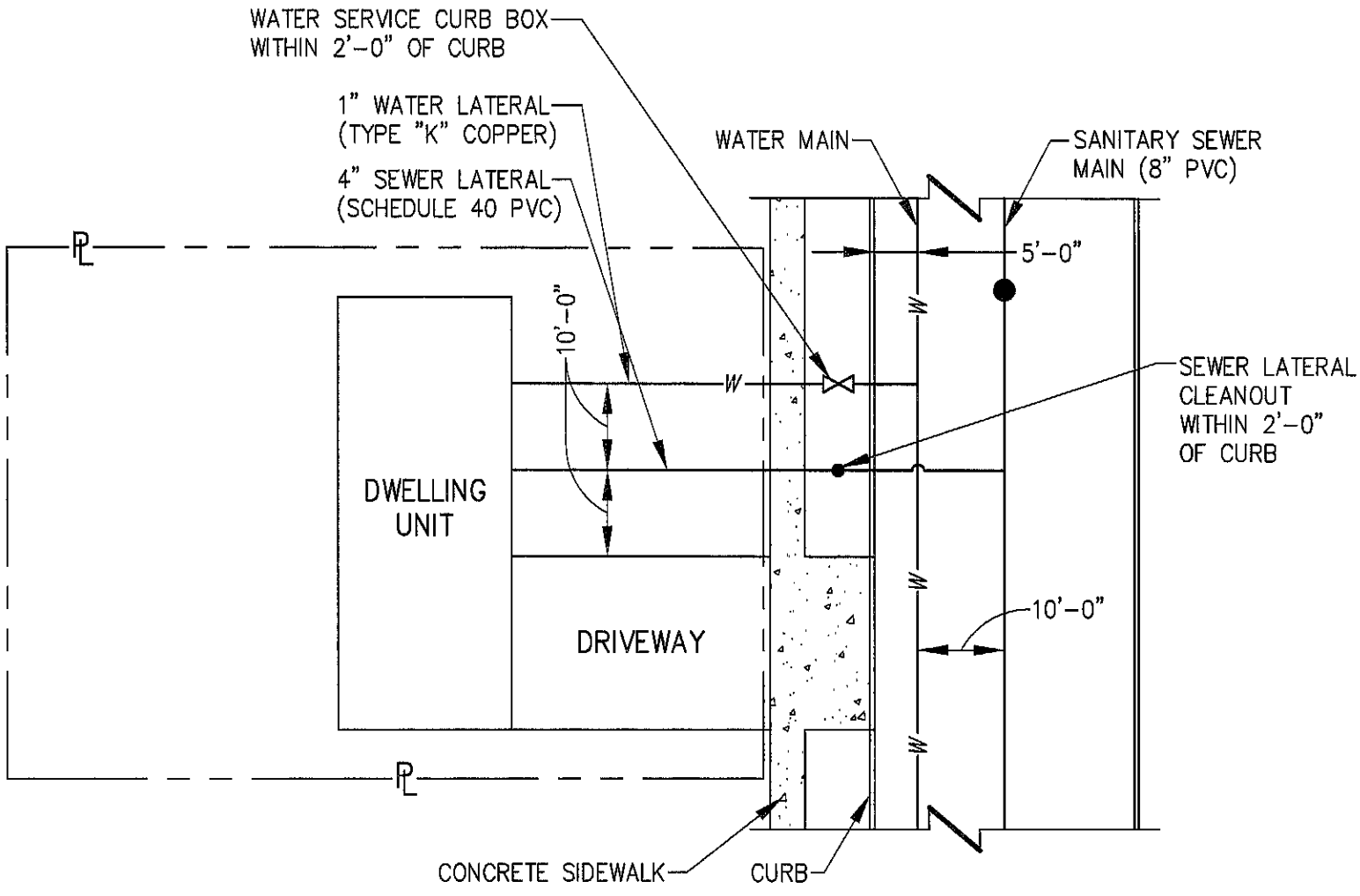
USE FOR SINGLE CONNECTIONS TO EXISTING MAINS

SADDLE CONNECTION DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

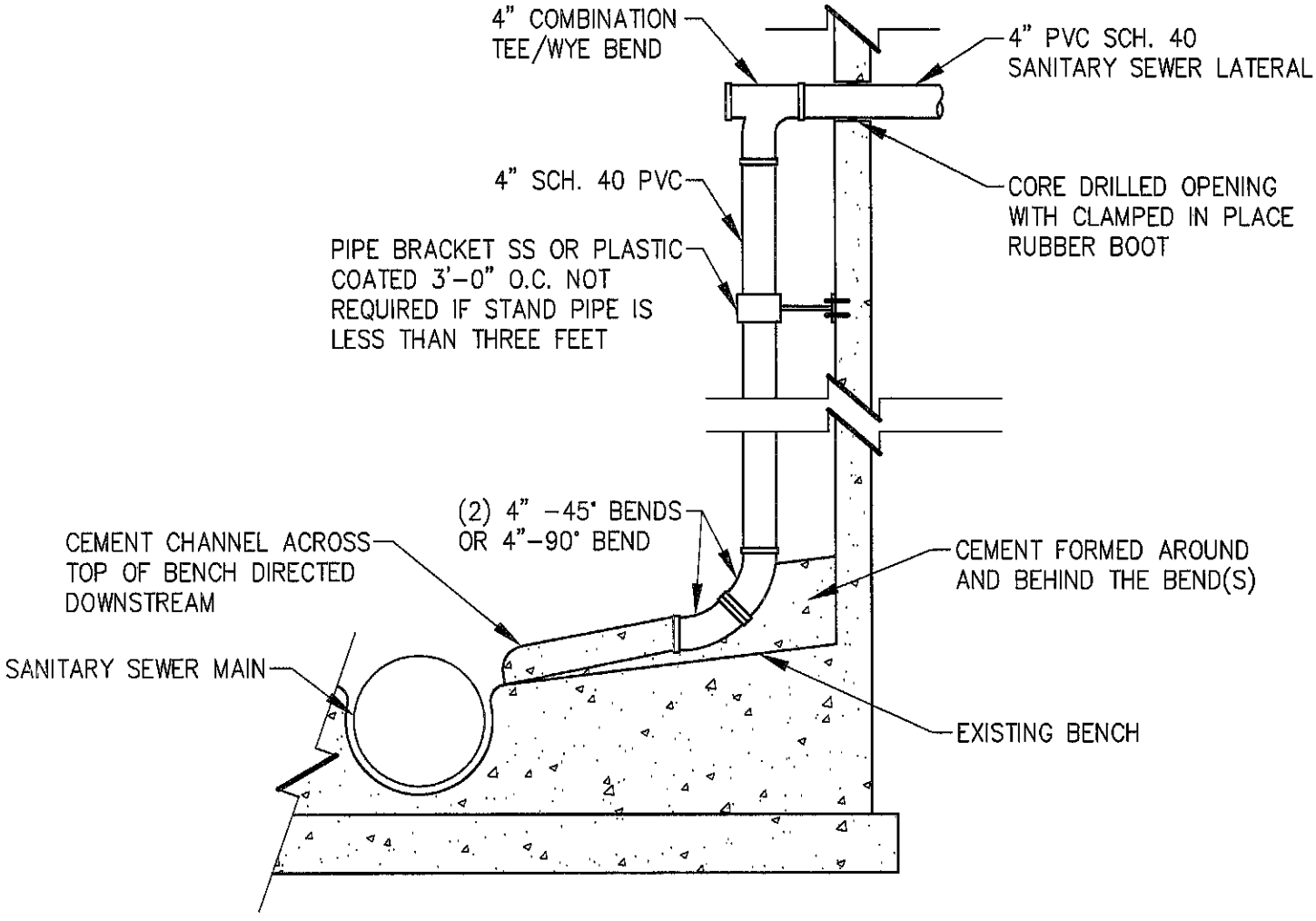
WHERE THERE IS NO CURB, INSTALL CURB BOX AND CLEANOUT JUST OUTSIDE OF PROPERTY LINE OR AS DIRECTED BY THE AUTHORITY

TYP SEWER & WATER LATERAL CONNECTION DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTES:

1. THIS LATERAL INSIDE DROP CONNECTION SHALL ONLY BE USED WHERE SPECIFICALLY APPROVED BY OBMUA.

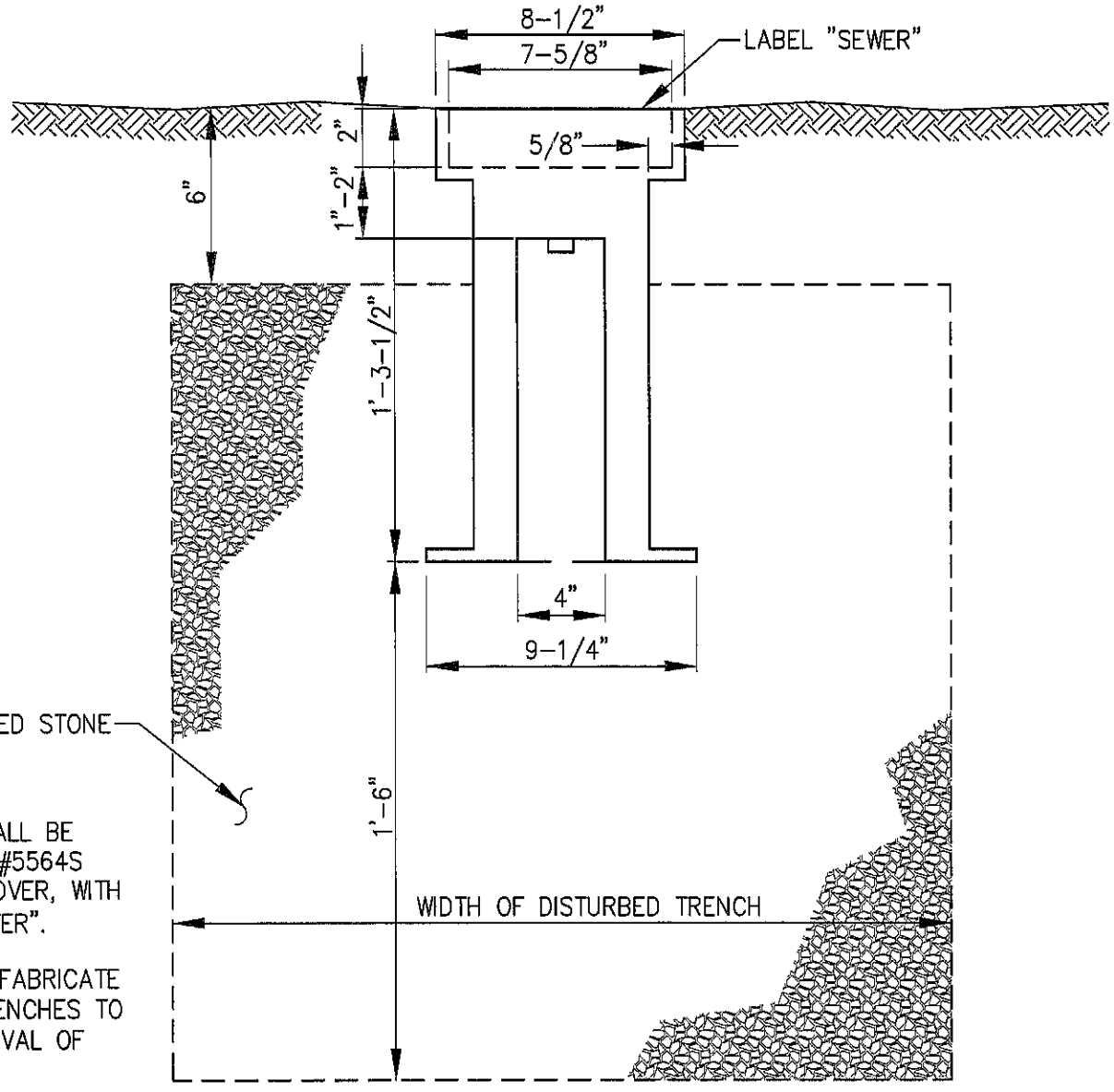
2. EPOXY COAT ALL MANHOLE SURFACES.

LATERAL INSIDE DROP CONNECTION

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTES:

1. PROTECTION BOX SHALL BE BINGHAM & TAYLOR #5564S TOP SECTION AND COVER, WITH COVER MARKED "SEWER".
2. CONTRACTOR SHALL FABRICATE AND SUPPLY (6) WRENCHES TO O.B.M.U.A. FOR REMOVAL OF CLEAN OUT CAP

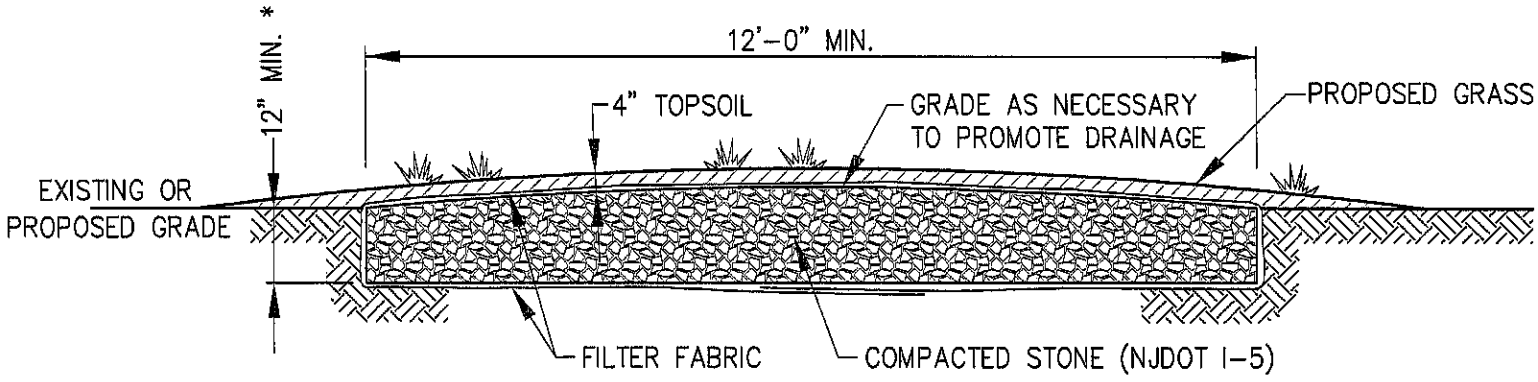
FOR PAVEMENT AND CONCRETE, AND WITHIN 5' OF DRIVEWAYS

CLEANOUT PROTECTION BOX DETAIL

N.T.S.

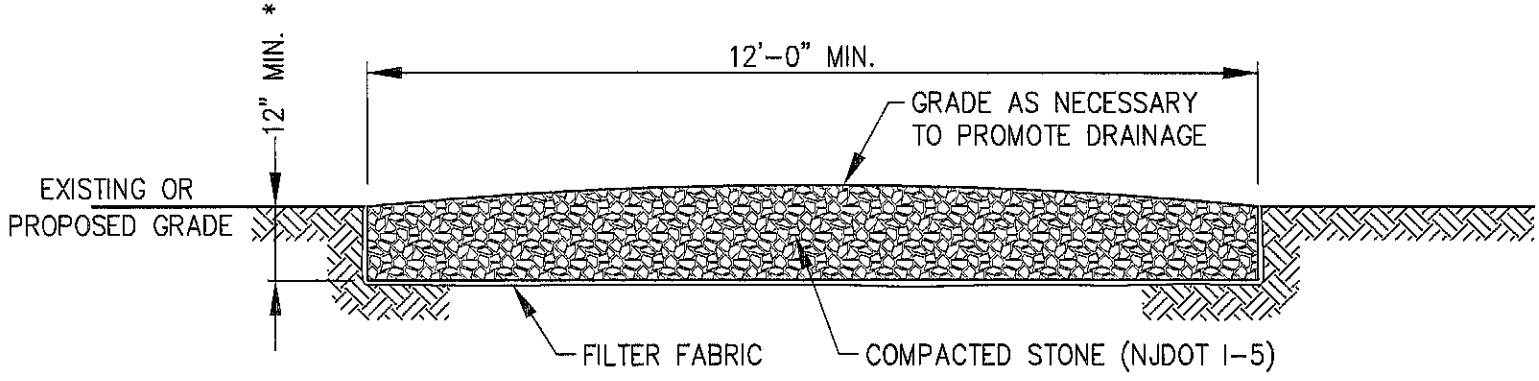
EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

REQUIRED OVER ALL SEWERS INSTALLED WITHIN HOMEOWNER PROPERTY.



NOTE:

REQUIRED OVER ALL SEWERS INSTALLED WITHIN EASEMENTS.

* PROVIDE SUFFICIENT THICKNESS TO SUPPORT VEHICLES

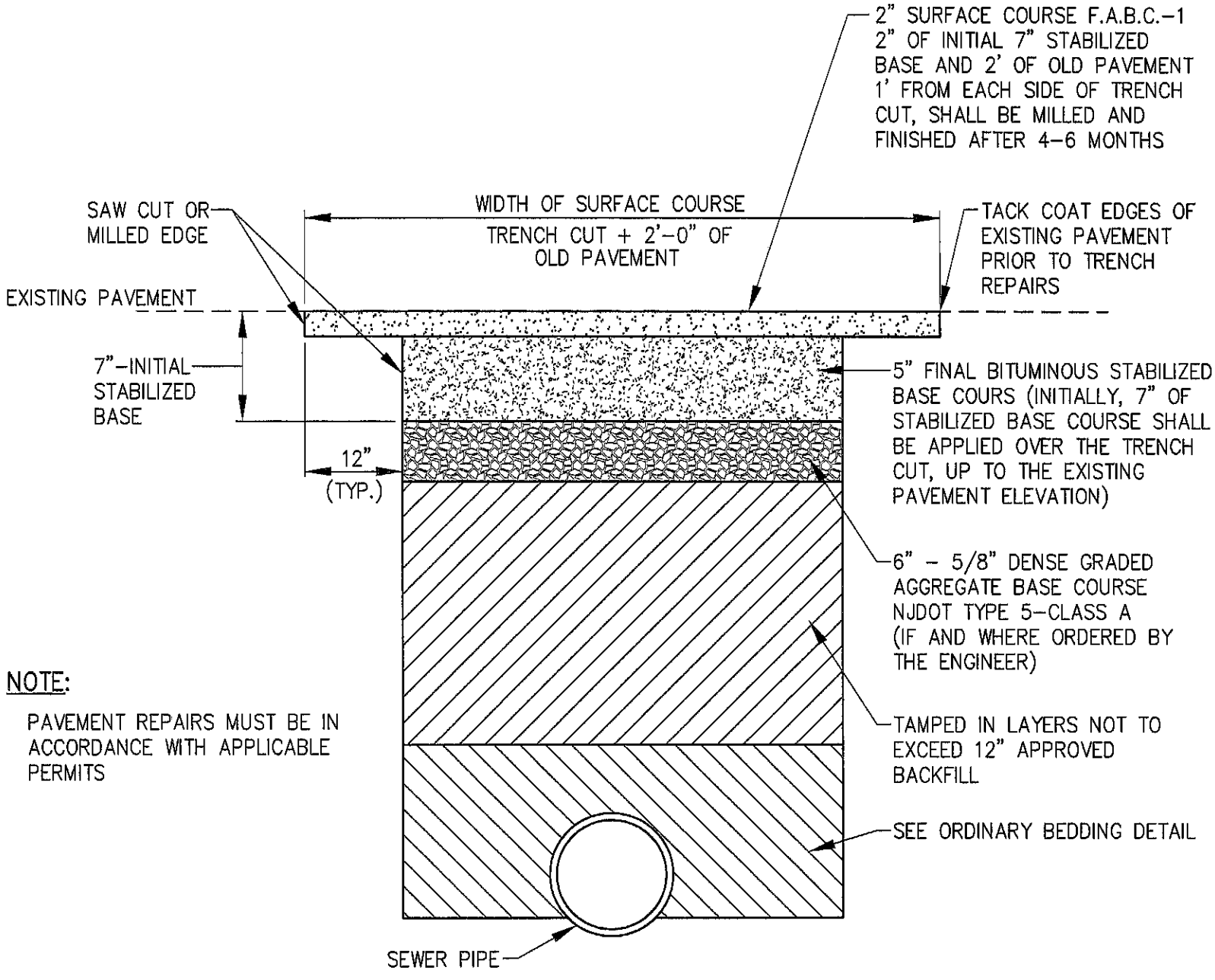
TO BE CENTERED OVER SEWER MAIN

GRAVEL ACCESS ROAD DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

PAVEMENT REPAIRS MUST BE IN ACCORDANCE WITH APPLICABLE PERMITS

PAVEMENT REPLACE MUNICIPAL ROADS

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

NUMBER AND SIZE OF RODS REQUIRED AND PIPE LENGTH IN FEET * TO BE RESTRAINED									
PIPE SIZE IN INCHES	90° TEE OR DEAD END PLUG			45°			22 1/2°		
	NO.	SIZE		NO.	SIZE		NO.	SIZE	
4	2	3/4"	30'	2	3/4"	10'	2	3/4"	5'
6	2	3/4"	40'	2	3/4"	10'	2	3/4"	5'
8	4	3/4"	50'	2	3/4"	15'	2	3/4"	5'
10	4	3/4"	60'	2	3/4"	20'	2	3/4"	5'
12	4	7/8"	70'	2	3/4"	20'	2	3/4"	5'
14	4	1"	80'	2	3/4"	25'	2	3/4"	5'
16	4	1"	80'	2	3/4"	25'	2	3/4"	5'

* LENGTH OF PIPE TO BE RESTRAINED IS FOR EACH SIDE OF BEND.

NOTES:

1. USE OF MECHANICAL JOINT RETAINER GLANDS OF "FIELD LOK" GASKETS SHALL PROVIDE A THRUST RESTRAINT SYSTEM EQUIVALENT TO THAT LISTED IN THE TABLE FOR CLAMPS AND RODS. ALL JOINTS WITHIN THE LENGTH LISTED IN THE TABLE SHALL BE RESTRAINED.

2. LENGTHS ARE BASED ON THE FOLLOWING CRITERIA: 150 PSI MAXIMUM PRESSURE AND 3'-6" OF COVER. TABLE IS FOR USE WITH CI/DIP ONLY. IF TEST CONDITIONS ARE MORE SEVERE OR LARGER PIPES ARE PROPOSED, THEN SPECIAL COMPUTATIONS MUST BE MADE BY THE DESIGNER.

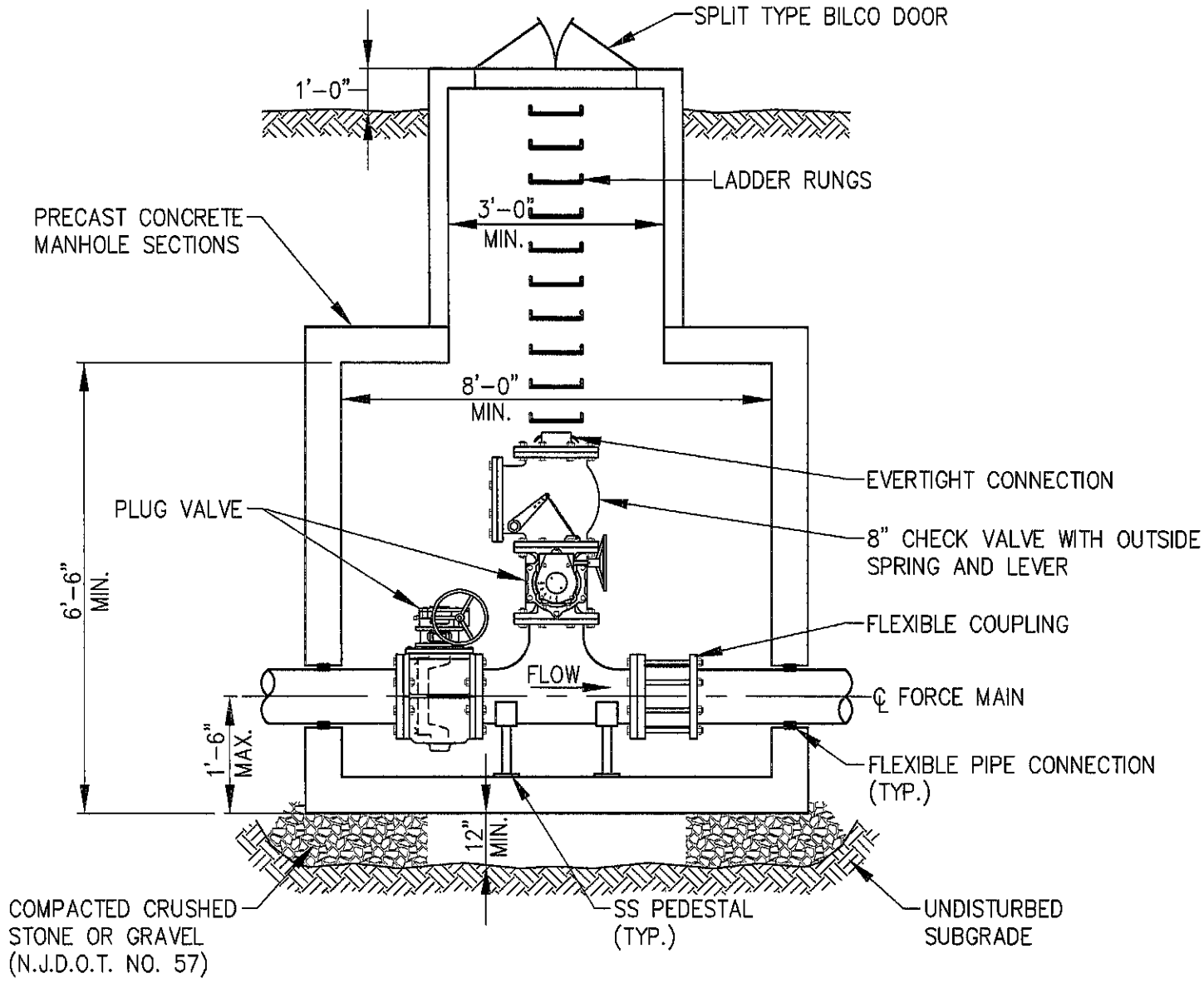
3. A BITUMASTIC COATING SHALL BE APPLIED TO ALL BOLTS, NUTS, WASHERS, RODS, THRUST, RESTRAINT BOLTS AND ALL UNCOATED HARDWARE.

FORCE MAIN JOINT RESTRAINT SCHEDULE

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

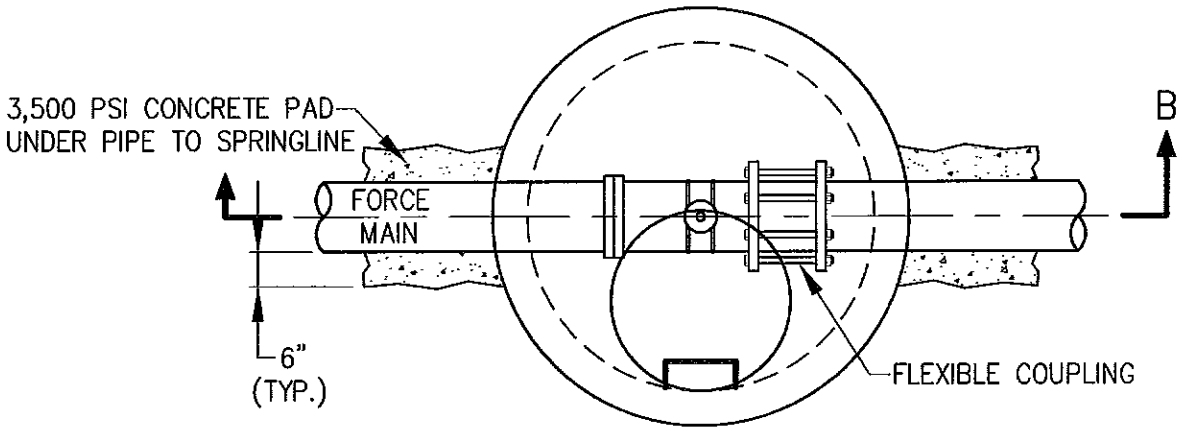


TYPICAL BY-PASS MANHOLE DETAIL

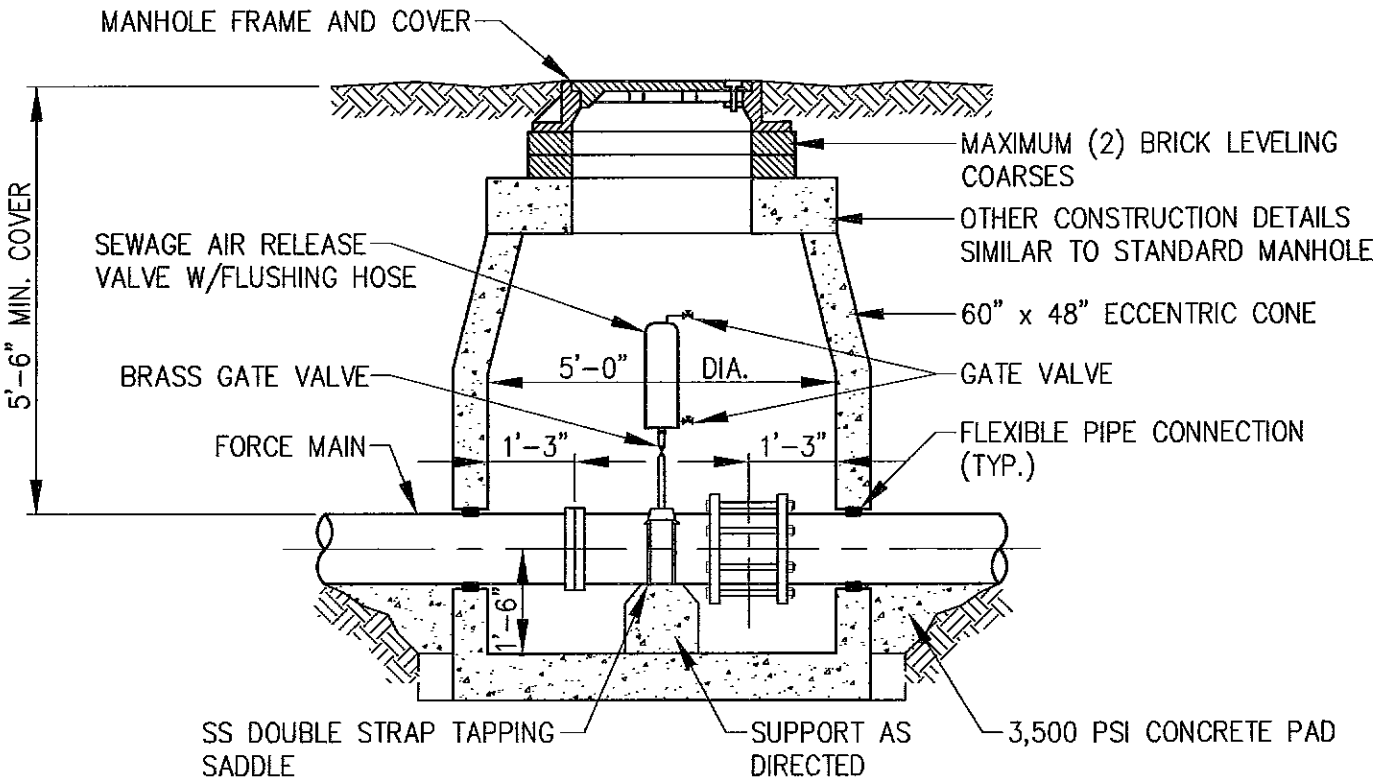
N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



(4"–12" F.M.)
AIR RELEASE VALVE
AND MANHOLE DETAIL



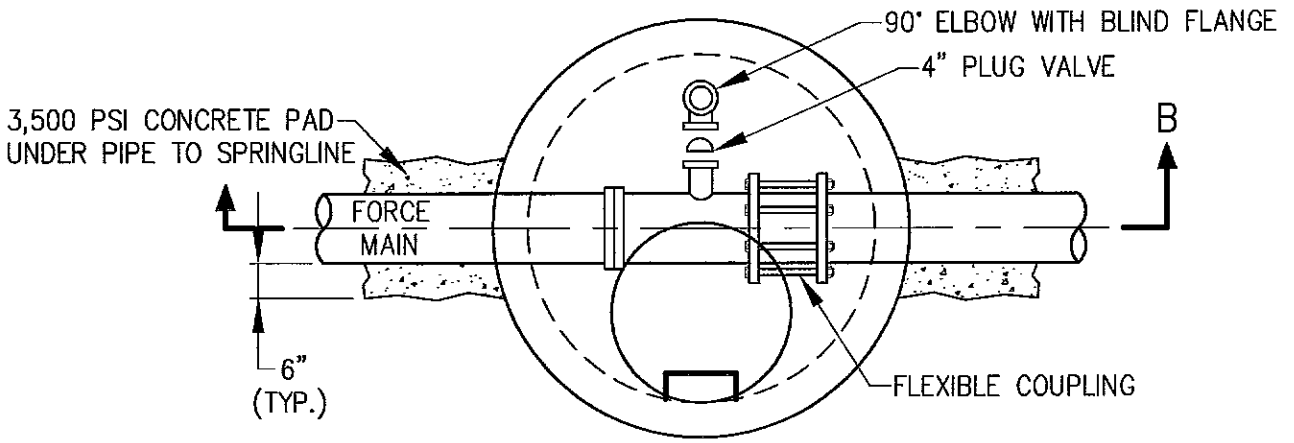
SECTION B–B

AUTOMATIC AIR RELEASE

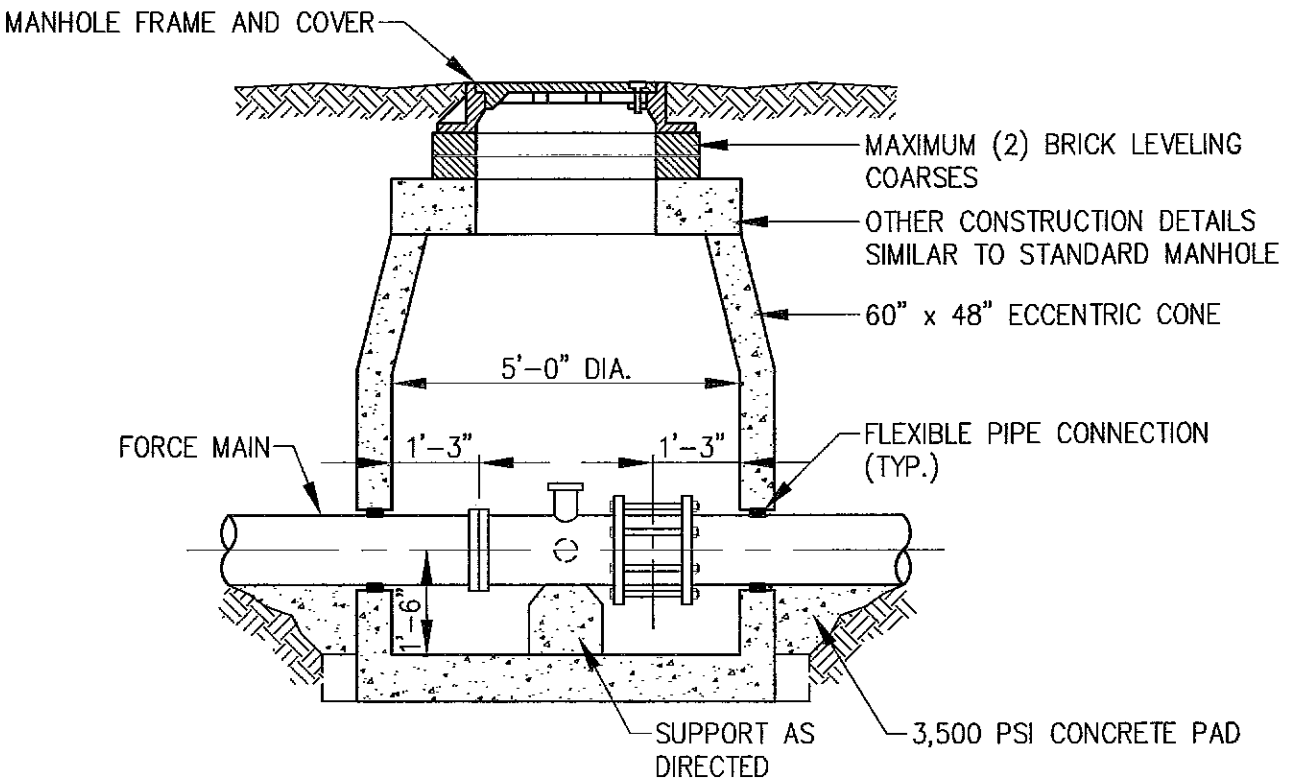
N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



PLAN



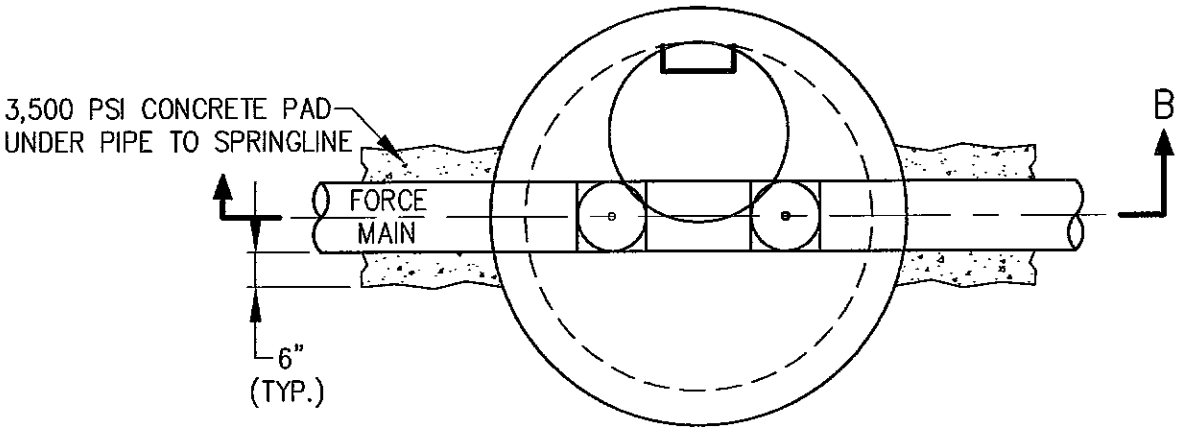
SECTION B-B

FORCE MAIN CLEANOUT

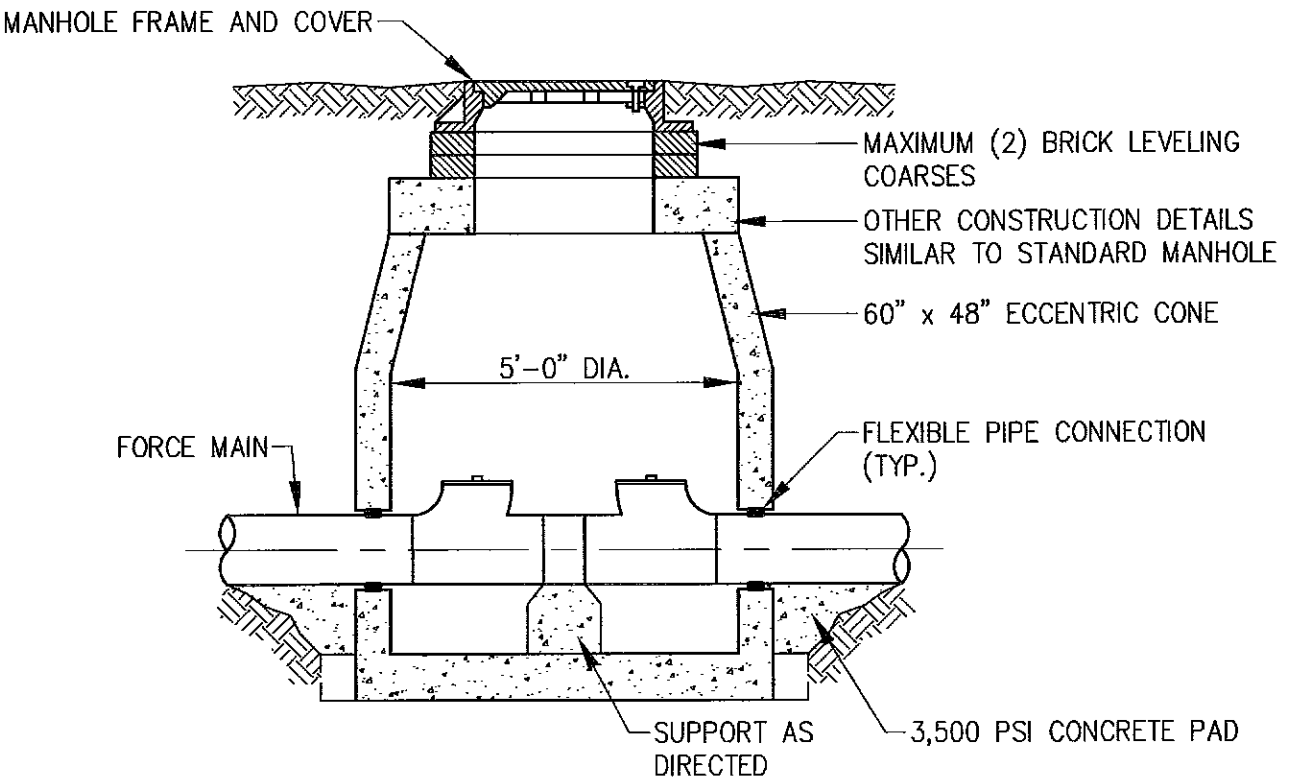
N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



PLAN



SECTION B-B

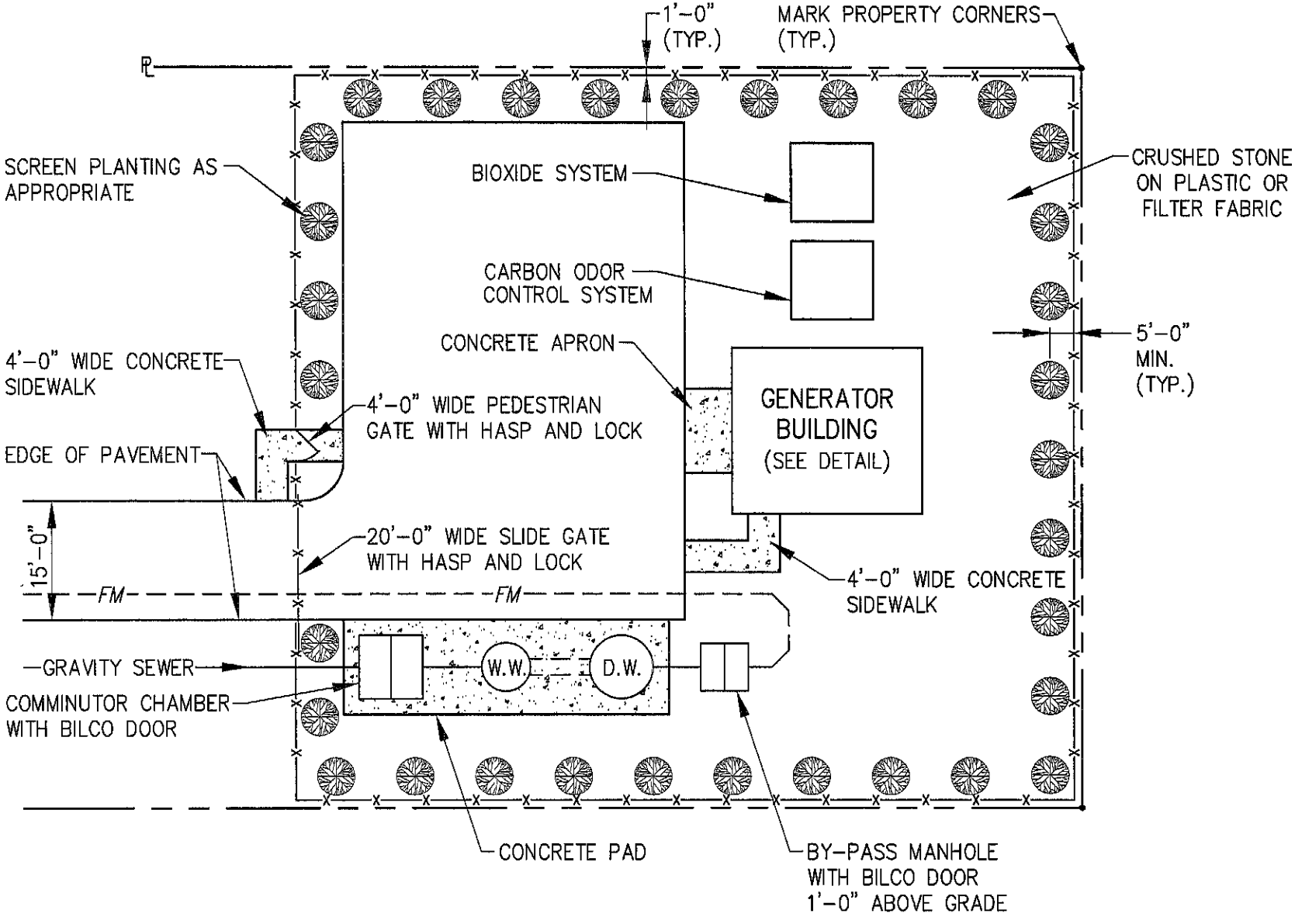
FOR PRIVATELY OWNED FORCE MAINS

FORCE MAIN CLEANOUT

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

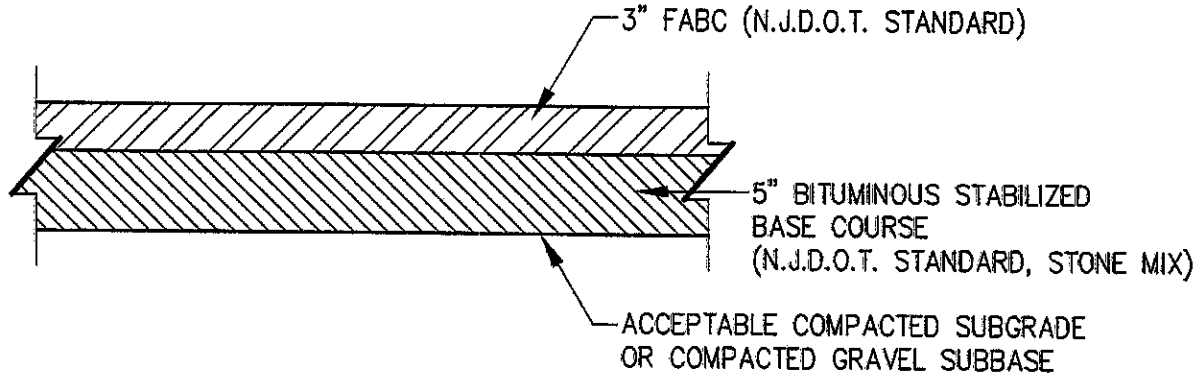


SUGGESTED SITE ARRANGEMENT FOR PRE-ENGINEERED PUMP STATIONS

N.T.S.

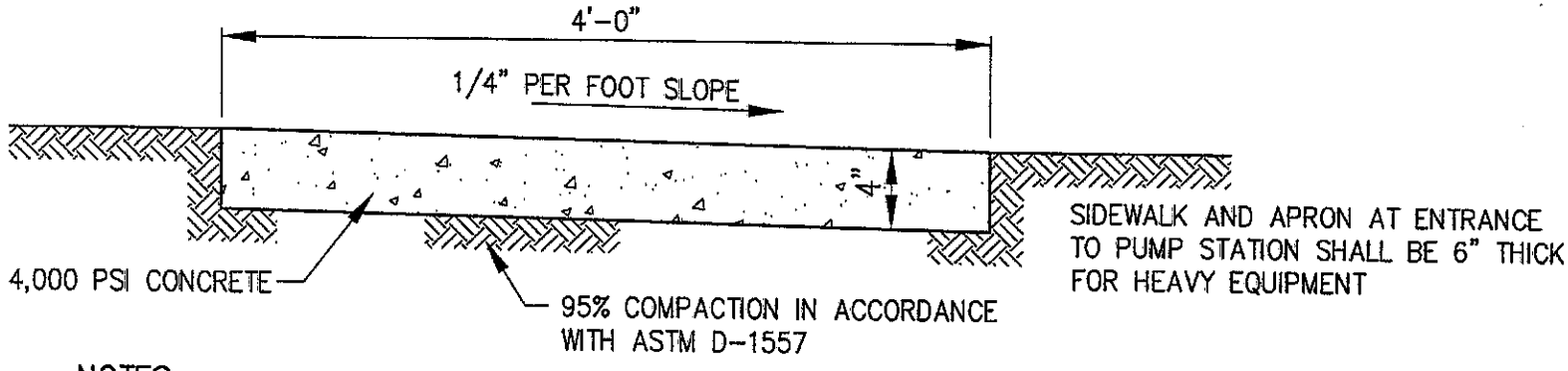
EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



PAVEMENT DETAIL

N.T.S.



NOTES:

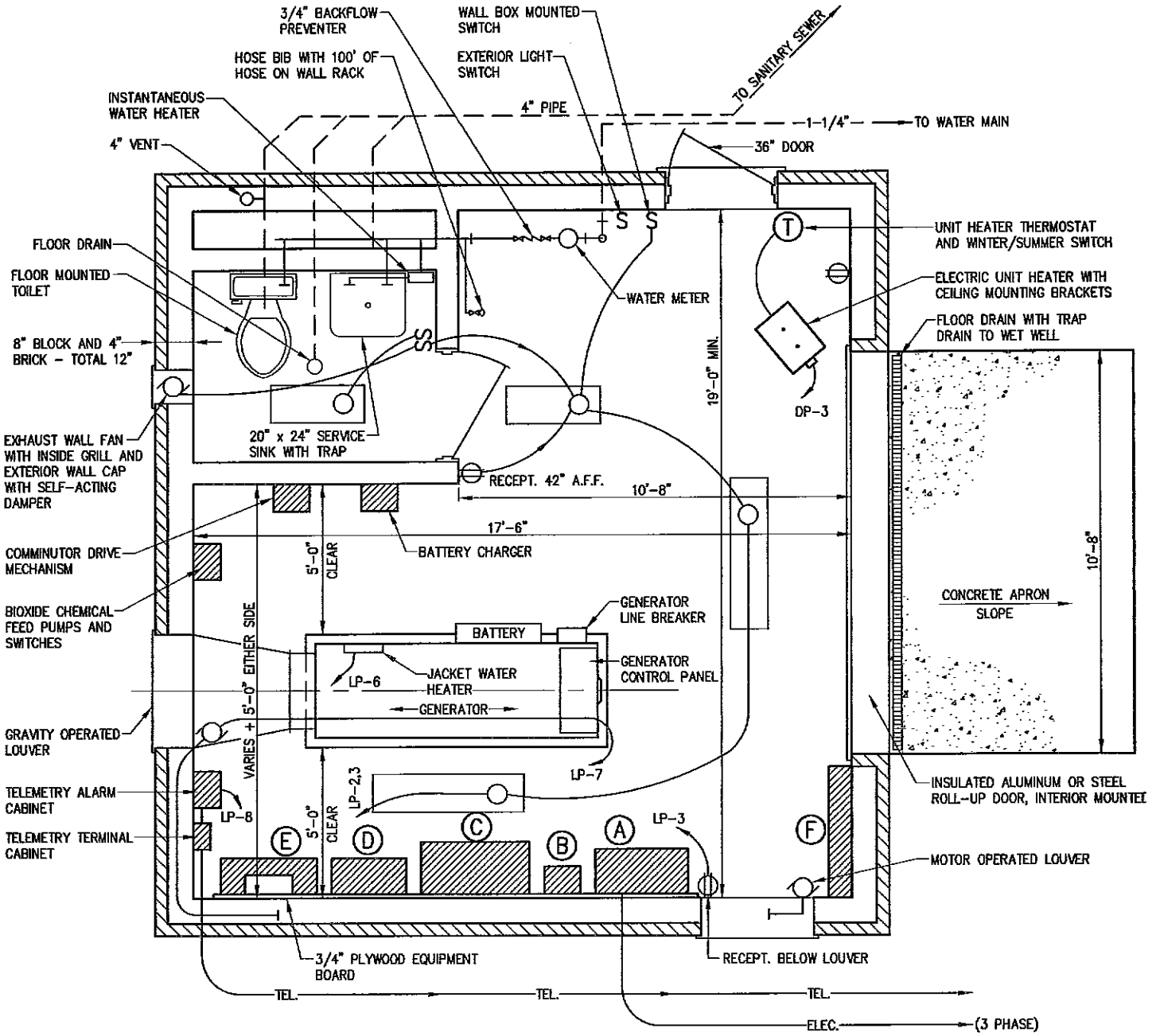
1. DIRECTION OF SLOPE AND GRADE TO BE AS SHOWN ON GRADING PLAN
2. SURFACE SHALL BE BROOM FINISHED
3. PROVIDE PREFORMED BITUMINOUS FIBER EXPANSION JOINTS, 1/2" THICK, AT 15'-0" (MAX.) INTERVALS. PROVIDE TOOLED CONTROL JOINTS EVERY 5'-0". TOOL ALL EDGES.

SIDEWALK DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTES:

1. FLUORESCENT FIXTURES SHALL BE SUSPENDED APPROXIMATELY 8'-6" ABOVE FINISHED FLOOR.
2. IF ADDITIONAL ROOM IS REQUIRED FOR SEWAGE TREATMENT EQUIPMENT, BUILDING SHALL BE ENLARGED ACCORDINGLY.
3. ALARM LIGHTS ON PANEL SHALL REMAIN BRIGHT/FLASHING UNTIL MANUALLY RESET.
4. WATER CLOSET SHALL BE PROVIDED WHERE REQUIRED BY THE AUTHORITY.
5. SLOPE FLOOR TO DRAINS.
6. DIMENSIONS SHOWN ARE MINIMUMS.

ELECTRICAL EQUIPMENT DESIGNATIONS

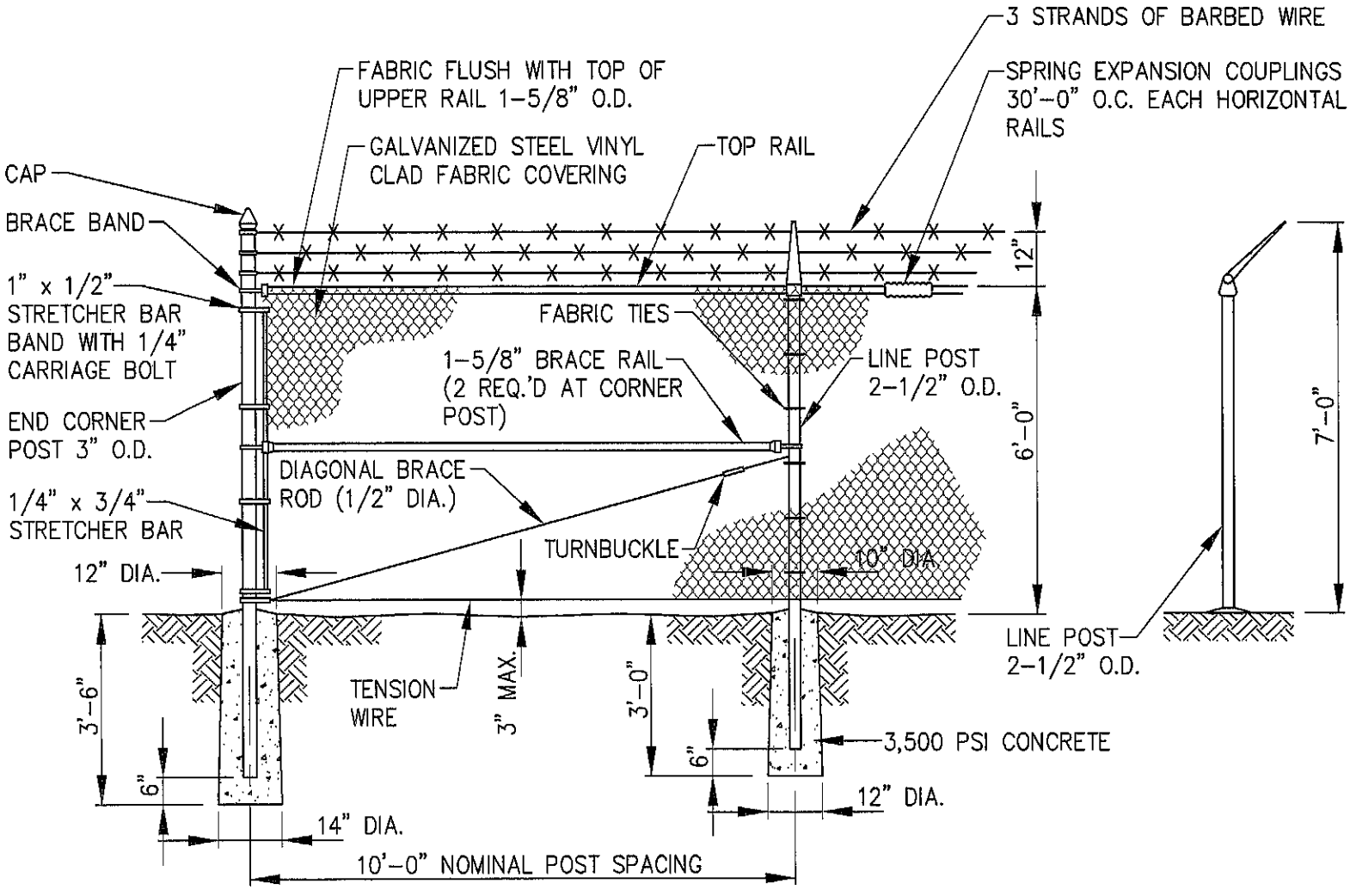
- (A) C/T CABINET WITH METER ABOVE
- (B) MAIN ENTRANCE BREAKER
- (C) AUTOMATIC TRANSFER SWITCH
- (D) DISTRIBUTION PANEL "DP" (480V)
- (E) LIGHTING PANEL "LP" WITH TRANSFORMER ABOVE
- (F) TROUBLE LIGHT PANEL

GENERATOR BUILDING TYPICAL PLAN FOR PRE-ENGINEERED PUMP STATIONS

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

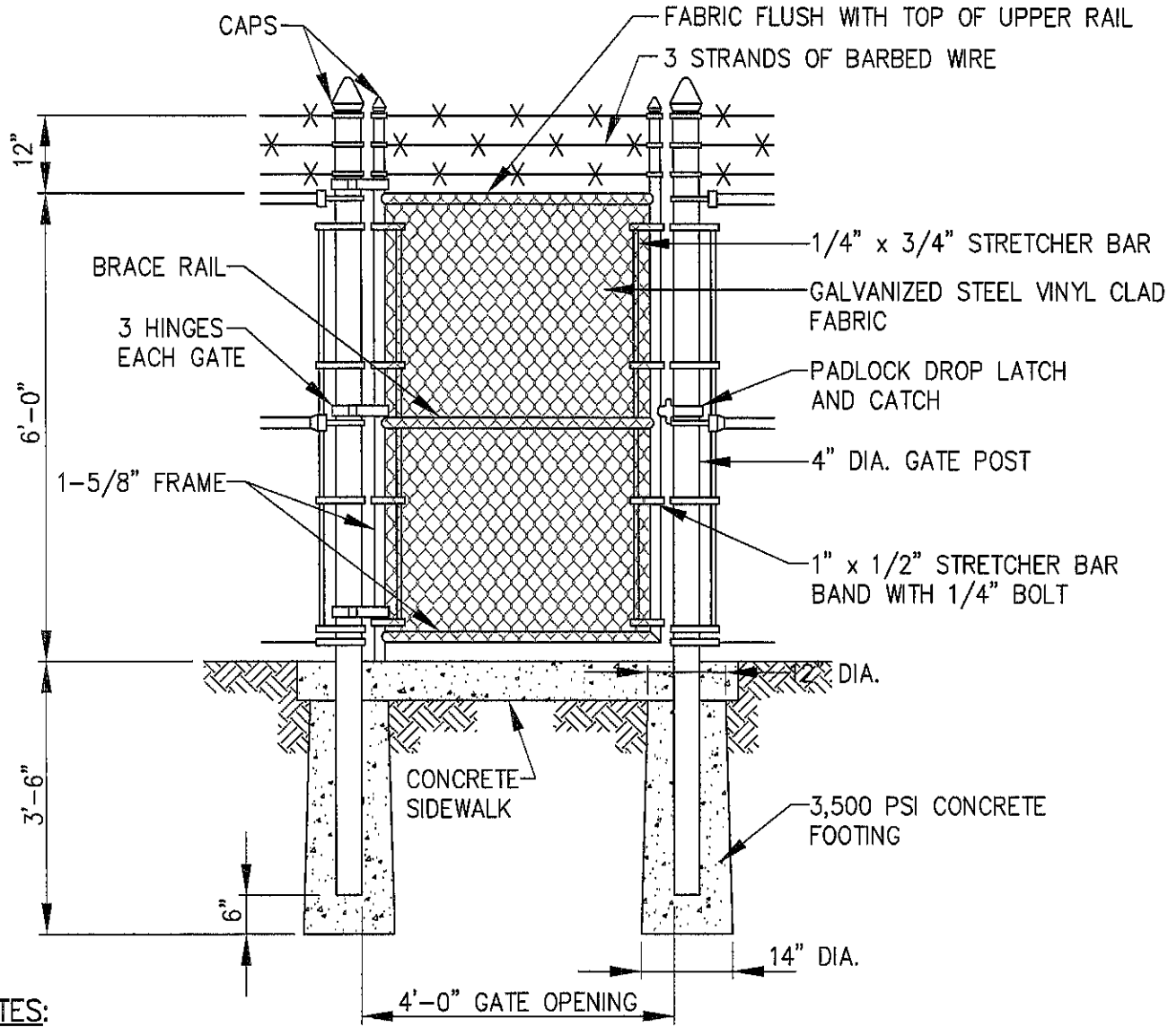
FENCE FABRIC SHALL BE 2-INCH DIAMOND MESH, No. 9 GAUGE OPEN HEARTH STEEL WIRE GALVANIZED AFTER WEAVING TO HAVE A HEAVY ZINC COATING. FABRIC SHALL BE COATED WITH POLYVINYL CHLORIDE (PVC), 15 MILS THICK IN COLOR SELECTED BY THE OBMUA.

CHAIN LINK FENCE DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006



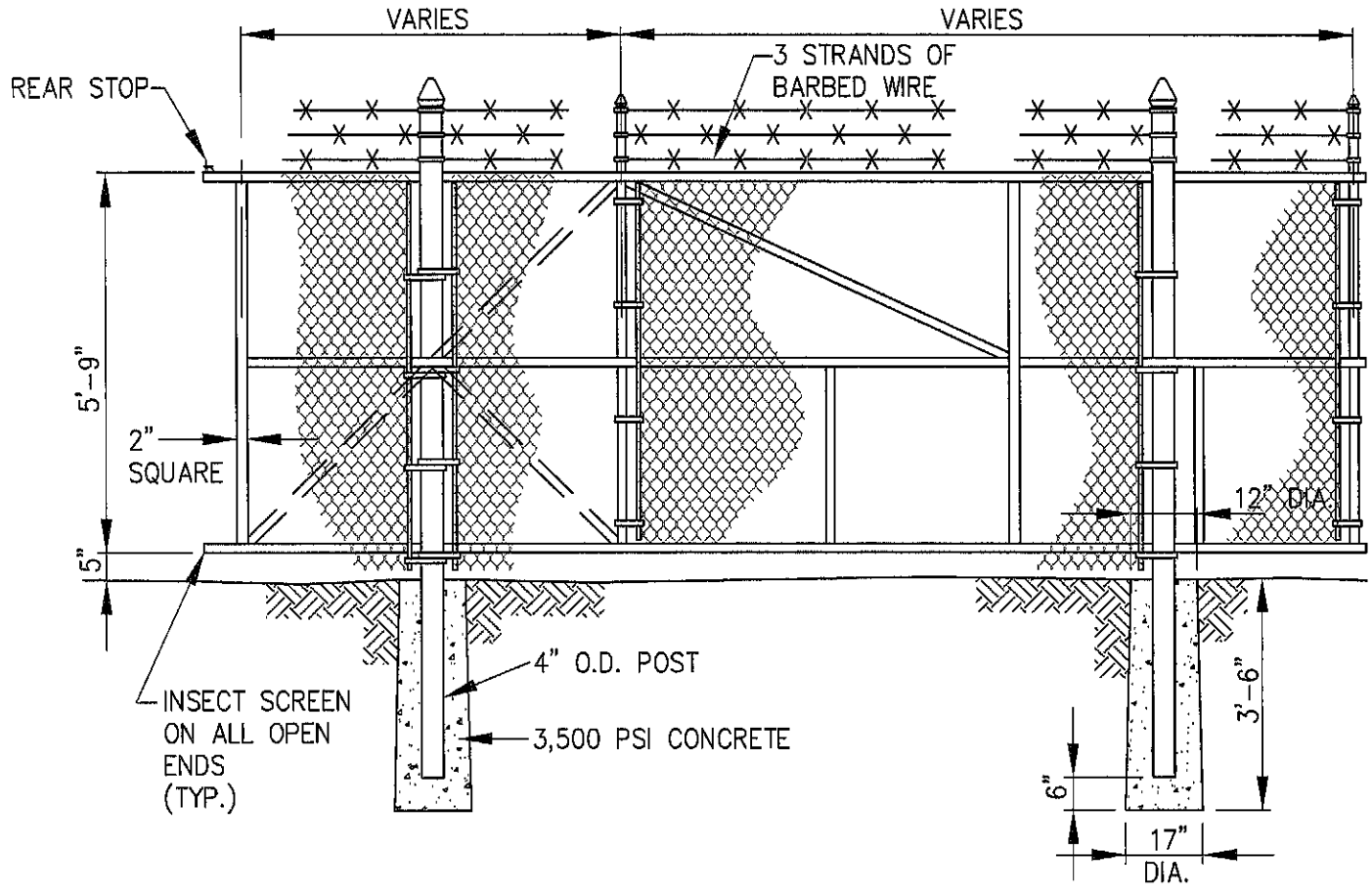
NOTES:

1. FENCE FABRIC SHALL BE 2-INCH DIAMOND MESH, No. 9 GAUGE OPEN HEARTH STEEL WIRE GALVANIZED AFTER WEAVING TO HAVE A HEAVY ZINC COATING. FABRIC SHALL BE COATED WITH POLYVINYL CHLORIDE (PVC), 15 MILS THICK IN COLOR SELECTED BY THE OBMUA.

2. FOR GATES LARGER THAN 4'-0" INSTALL DIAGONAL BRACING WITH TURNBUCKLE.

SINGLE SWING GATE DETAIL

EXHIBIT G N.T.S. DATE ADOPTED: SEPTEMBER 20, 2006



NOTE:

FENCE FABRIC SHALL BE 2-INCH DIAMOND MESH, No. 9 GAUGE OPEN HEARTH STEEL WIRE GALVANIZED AFTER WEAVING TO HAVE A HEAVY ZINC COATING. FABRIC SHALL BE COATED WITH POLYVINYL CHLORIDE (PVC), 15 MILS THICK IN COLOR SELECTED BY THE OBMUA.

CANTILEVER SLIDING GATE DETAIL

N.T.S.

EXHIBIT G

DATE ADOPTED: SEPTEMBER 20, 2006

EXHIBIT H
SEWER FEE TABLE

A. Application Filing Fees for Major Applications

1.	Application Fee:	$75.00 per EDCU
2.	Preliminary Escrow Fee:	$50.00 per EDCU ($2,000 minimum) plus $500.00
3.	Tentative Escrow Fee:	Five percent (5%) of the Construction Cost ($1,000 minimum) plus $500.00
4.	Final Escrow Fee:	Five percent (5%) of the Construction Cost for estimated Review Fee ($500.00 minimum), plus ten percent (10%) of the construction cost for estimated Inspection Fee ($1,000.00 minimum), plus $1,500.00
5.	Application for Extension:	$250.00
6.	Change of Ownership Administrative Charge:	$100.00

In certain applications, where Consulting Engineers are utilized to review or inspect the Applicant's proposed sewerage system, the Applicant must pay for the Consulting Engineer's Fees in addition to the standard Escrow Fees.

The Developer also must pay additional monies, during the course of the project, to maintain sufficient balance in the escrow account as determined by the Authority.

B. Application Filing Fees for Minor Applications

1.	Application Fee	$75.00 per EDCU
2.	Escrowed Review Fee:	Ten percent (10%) of construction cost estimate as determined by the Authority Engineer ($5,000 minimum).

C. Fees for Residential Individual Sewer Lateral Connections

1.	Application Fee:	$75.00
2.	Inspection Fee:	$65.00

D. Connection Fee: $3,320.00 per EDCU

E. User Fees

The quarterly residential charge is $133.49. The commercial/industrial rate is $6.47 per 1,000 gallons.

This table is meant to represent a portion of the most recent "Rate Structure" as adopted by Resolution of the Old Bridge Municipal Utilities Authority.

The full Rate Structure Resolution is available at the Administrative Office of the Authority.

NOTE: All fees must be paid with separate checks.