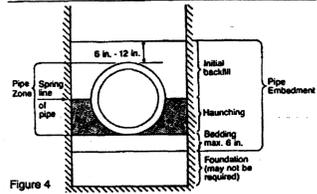


Pipe Zone Terminology



Foundation preparation is only required when the trench bottom is unstable. Any foundation that will support a rigid pipe without causing loss of grade or flexural breaking of pipe will be more than adequate for PVC pipes.

Bedding. The bedding directly underneath the pipe is required only to bring the trench bottom up to grade. It should not be so thick or soft that the pipe will settle and lose grade. The purpose of the bedding is to provide uniform longitudinal support of the pipe.

Haunching. The haunching area is the most important in terms of limiting the deflection of a flexible pipe. This is the area that should be compacted to the proctor densities shown in chart on page 7.

Initial Backfill. Initial backfill begins above the springline of the pipe to a plane 6 inches to 12 inches above the pipe. Compacting soils

to levels above the springline gives little additional side support. Most of the support is accomplished by compacting the soil surrounding the lower half of the pipe.

Caution: If hydro-hammers are used to prepare the bedding and backfill for the road surface, they should not be used within 3 feet of the top of the pipe and then only if the pipe zone soil density has been previously compacted to a minimum 85% standard proctor density.

Compaction Techniques. Flooding or jetting are commonly used methods for obtaining desired densities of granular embedment materials. If flooding is used, the embedment materials should be allowed to dry below optimum moisture before final backfill operations are begun. If jetting is used, desired density of the embedment

Pipe Zone Materials
Pipe zone materials include the material in the haunching area and the initial backfill (see figure 4). They include a number of processed materials plus the soil types listed under USCS Soil Classification System (FHA Bulletin No. 373). These materials are grouped into five broad categories according to their suitability for this application, as follows:

Class I. Angular, 1/4" to 1 1/2" graded stone, including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone and crushed shells.

Class II. Coarse sands and gravels with maximum particle size of 1 1/2 inch, including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.

Class III. Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC and SM and SC are included in this class.

Class IV. Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, ML, CH and CL are included in this class.

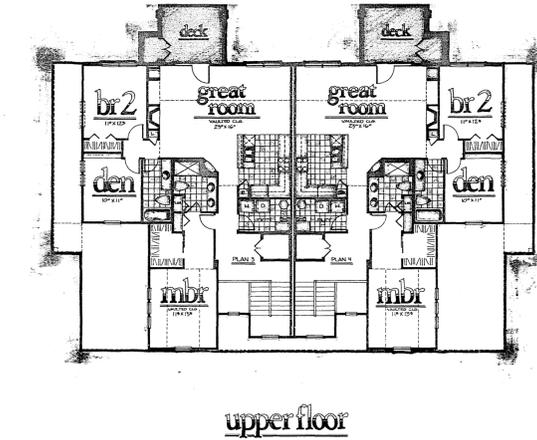
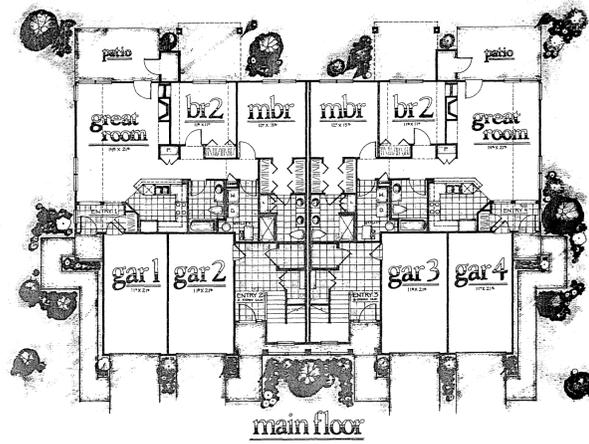
Class V. These materials are not recommended for bedding, haunching or initial backfill.

Key to Pipe Performance
The performance of a flexible conduit does not depend only on the Class of embedment materials used, but more importantly, on the density of the material in the haunching zone. The chart on page 7 shows that SDR 35 PVC sewer pipe will perform in Class III material equally as well as a Class I material with adequate compaction. By utilizing a combination of soil Class and soil density, the design engineer can achieve the most economical installation within recommended deflection limits.

Excavation and Pipe Laying. As with other pipes, the trench for PVC is excavated with bell holes to give uniform bearing along the full length of each pipe section. The ditch should be wide enough to allow for proper placement and compaction of the selected materials in the haunching area.

Sheeting. If soil conditions or regulations require the use of sheeting or boxes, they should be used in a manner as not to disturb the embedment material within two pipe diameters on each side of the pipe.

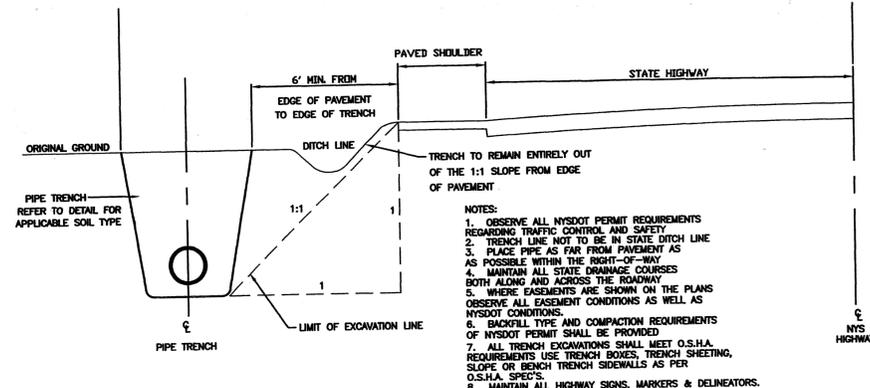
Compaction Techniques. Flooding or jetting are commonly used methods for obtaining desired densities of granular embedment materials. If flooding is used, the embedment materials should be allowed to dry below optimum moisture before final backfill operations are begun. If jetting is used, desired density of the embedment



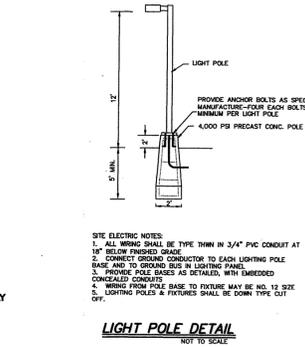
Brunswick Meadows



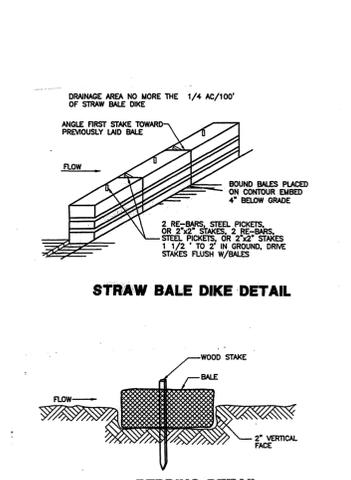
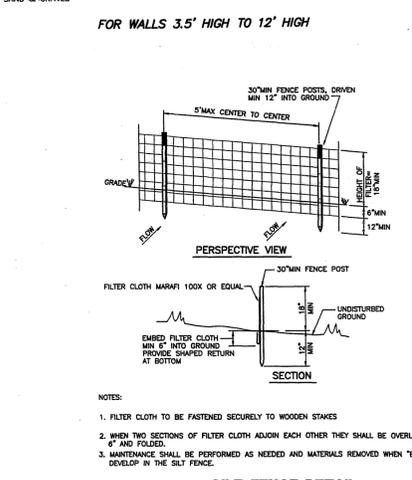
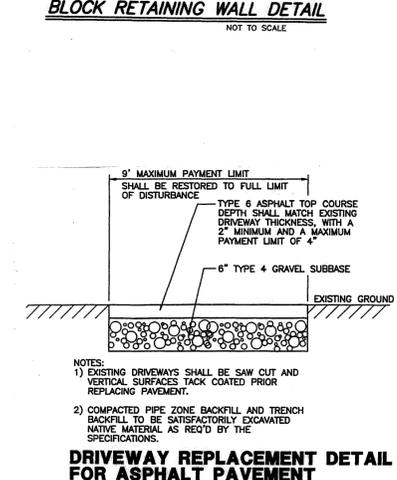
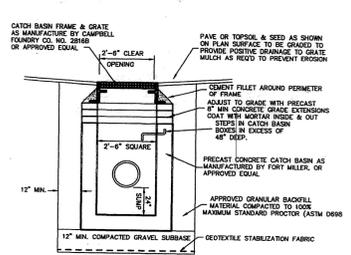
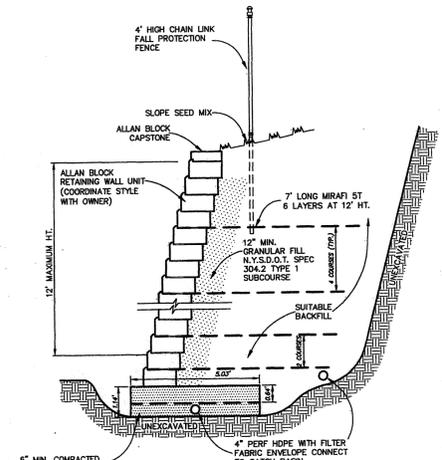
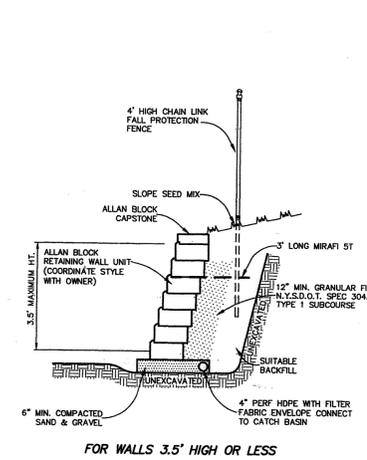
Typical (4) Unit Condominium



TYPICAL TRENCH DETAIL
ALONG NEW YORK STATE HIGHWAY
NO SCALE



LIGHT POLE DETAIL
NOT TO SCALE



TOWN OF BRUNSWICK PLANNING BOARD	PENNSYLVANIA COUNTY DEPT. OF HEALTH
BRUNSWICK MEADOWS ADDITIONAL DETAILS	
DANSHAIN LAND SURVEYING LLC P.O. BOX 72 TRAY, N.Y. 12151 TEL: 518-279-2002	REVISIONS: MAP UPDATED 11-19-2006
TOWN OF BRUNSWICK SCALE: AS NOTED FIELD: MND OFFICE: AJD	PENNSYLVANIA CO., N.Y. DATE: 3-13-2006 REV.#: C'DR: PD SHEET 10 OF 13