

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SEWERS
INTER-DEPARTMENT
MEMORANDUM

Hand delivered 4/2/85

DATE: April 1, 1985

TO: ADO URIKO, P.E., CHIEF, PERMIT CONTROL SECTION
FROM: DOUGLAS SMITH, P.E., ACTING CHIEF, ENGINEERING REVIEW SECTION
SUBJECT: NEW YORK EXPOSITION AND CONVENTION CENTER, PVC DRAINAGE CONNECTION
TO CITY STORM SEWER

Your transmitted computations for the proposed 24 inch diameter PVC connections have been reviewed. The connections are acceptable to the loads as shown in the computations.

DOUGLAS SMITH, P.E., ACTING CHIEF
Engineering Review Section

cc: Farag
D. Smith
Patel (Rm. #930)
Suspense
CP:lp

DISPATCHED

APR 3 1985

WATER COLLECTION CONTROL
MAIL ROOM

*9968
4.1 85*

March 7, 1985

TO: *URIKO*
3/13/85
Syska & Hennessy

Mr. Magdi Farag, P.E.
Department of Environmental Protection
Bureau of Sewers
40 Worth Street, Room 922
New York, New York 10013

RECEIVED
BUREAU OF SEWERS

MAR 11 1985

DIVISION OF
SEWER REGULATION
AND CONTROL

Re: New York Exposition & Convention Center
PVC Drainage Connection to City Storm Sewer

Dear Mr. Farag:

As a follow up to our letter of February 8, 1985 and your telephone call of last week, I am enclosing the following:

- a. Load calculations
- b. Johns-Manville "Perma-Loc" brochure

You will note that the anticipated loads and associated deflection on the proposed 24 in. diameter PVC connections are well within the limits allowed by the pipe manufacturer and Uni-Bell.

If you require any additional information, please contact me.

Very truly yours,

SYSKA & HENNESSY


Kenneth E. Klein, P.E.
Associate Partner

KEK:bbm

enclosures

cc: I. M. Pei & Partners
Mr. Robert Milburn

Convention Center Development Corp.
Mr. Alan Holland

Syska & Hennessy, Inc.
Mr. Craig Kalle

RECEIVED BUREAU OF SEWERS
1985 MAR 13 PM 2:39
PERMIT CONTROL SECTION
MANHATTAN9968
3-13-85

March 6, 1985

Syska & Hennessy

New York Convention Center
Storm Sewer

References: A. Perma-Loc - PVC Sewer/Drain Pipe - Johns-Manville
 B. Handbook of PVC Pipe - Design & Construction

1. Pipe: 24 in. Perma-Loc Series 46
2. Soil: $W_c = 120 \text{ lb/cu. ft}$
 Soil type - pipe bedding material
 Class III. GM, GC, SM, SC
3. Superload: 600 lb/sq. ft

$$\text{Equivalent height } h_0 = \frac{600 \text{ lb/sq. ft}}{120 \text{ lb/cu. ft}} = 5.0 \text{ ft}$$
4. Pipe cover - see sketch
 $\text{Min. } h_1 = 3.66 \text{ ft}$
 $\text{Max. } h_1 = 6.71 \text{ ft}$
5. Vertical load on plastic pipe (prism load)
 $W = W_c \times H + B_c \text{ lb/ft}$
 $H = 6.71 + 5.0 = 11.71 \text{ ft, say } 12.0 \text{ ft}$
 $W = 3067 \text{ lb/ft}$ See Ref. A, table on page 4
 $\text{Soil pressure } P = W_c \times H = 120 \times 12 = 1440 \text{ lb/ft} = 10 \text{ lb/sq in.}$
6. Pipe deflection - modified "IDWA Deflection Formula" - Ref. B, page 144, Equation No. 25:

$$\frac{\% \Delta}{D} = \frac{D_2 \times K \times P \times 100}{0.149 \frac{F}{\Delta Y} + 0.061 E_1}$$

D_2 = lag factor

Ref. B, table 26

K = bedding factor

"

E_1 = soil stiffness

"

$\frac{F}{\Delta Y}$ = pipe stiffness

Ref. A