CCM-101

City of Cambridge

IN CITY COUNCIL

June 30, 1980

ORDERED:

That the Cambridge City Council hereby grants permission to Massachusetts Institute of Technology to undertake street work for the extension of M. I. T.'s chilled water system as per drawings CHWD-3 through 6 on file with City Engineer and City Clerk.

In City Council June 30, 1980.
Adopted by a yea and nay vote:-
Yeas 8; Nays 0; Absent 1.
Attest:- Paul E. Healy, City Clerk.

A true copy;

ATTEST: Paul E. Healy

C. C. 106

City of Cambridge

MASSACHUSETTS

In City Council June 30, 198 0

Agenda # 4 permission to MIT to undertake street work for the extension of MIT's chilled water system.

	YEA	NAY	ABSENT	PRESENT
Mr. Kevin P. Crane	✓			
Mr. Thomas W. Danehy	✓			
Ms. Saundra Graham			✓	
Mr. Leonard J. Russell	✓			
Mr. David E. Sullivan	✓			
Mr. Walter J. Sullivan	✓			
Mr.Alfred Vellucci	✓			
Mr. David A. Wylie	✓			
Mayor Francis H. Duehay	✓			
	8	0	1	

LSSR
RFH

Massachusetts Institute of Technology
Department of Physical Plant
77 Massachusetts Avenue
Cambridge, Massachusetts 02139

June 26, 1980

Mr. Conrad C. Fagone, Commissioner
Public Works Department
City of Cambridge
147 Hampshire Street
Cambridge, MA 02139

Dear Mr. Fagone:

Subject: Chilled Water Distribution System
East Campus Chilled Water Plant

On May 13, 1980, Mr. Richard McKay, Manager of the Central Utilities Plant, forwarded drawings CHWD 3 through 6 to Mr. John Cusack, the City Engineer, for his review. (Copy attached.) Mr. Cusack replied on June 16, 1980 wherein he made several recommendations concerning the proposed work. (Copy attached.)

This is to advise you that we will incorporate all of the recommendations made by Mr. Cusack in the actual work as finally installed. Mr. Cusack also advised us that we would have to seek the approval of the City Council in order to install this utility in the City streets. Accordingly, we plan to submit our request to the City Manager on Friday, June 27, 1980, with the hope that he will forward same to the Council for consideration at their meeting on June 30, 1980. As you can understand, we are anxious to accomplish this work during the remaining months of the summer when activity in this area of Cambridge is lighter than at most other times of the year.

In view of our willingness to incorporate all of the recommendations made by Mr. Cusack, we would appreciate your endorsement by signing this letter in the space provided below so that the manager will know that the Public Works Department concurs with our proposal.

As always we are most appreciative of the guidance offered by you and your staff.

Very truly yours,

William R. Dickson
Director of Physical Plant

Attachments

Conrad C. Fagone

Conrad C. Fagone

6/27/80

Date

CITY OF CAMBRIDGE

147 HAMPSHIRE ST., CAMBRIDGE, MASSACHUSETTS 02139

C WORKS DEPARTMENT
Conrad C. Fagone
Commissioner

16 June 80

Mr. Richard F. McKay, Manager
Central Utilities Plant
Massachusetts Institute of Technology
Department of Physical Plant
77 Massachusetts Avenue
Cambridge, MA 02139

Chilled Water Distribution System
East Campus Chilled Water Plant

Dear Mr. McKay:

In response to your May 13 letter concerning the distribution piping arrangement indicated on drawings CHWD 3 thru 6, the PWD offers the following comments and recommendations:

1. The chilled water lines crossing above the four existing over-under storm drain/sanitary sewer (SD/SS) structure should be encased in reinforced concrete to prevent the collapse of the chilled water lines due to traffic loads or differential soil settling adjacent to the SD/SS structures. The reinforced concrete encasement should be at least 6-inches thick around the chilled water lines and should extend at least 3-ft. beyond both vertical sides of the SD/SS structure.

2. The roadway construction standards of the City for all pipe line installation require a 6-inch cement concrete slab over the trench beneath the bituminous concrete pavement as indicated on the attached detail.

3. In those locations where the M.I.T. chilled water lines cross over the City SD/SS structures, the small clearance between the concrete base of the roadway and the concrete encased chilled water lines may present construction problems. For this reason your consultant, Syska & Hennessy Inc. may prefer to evaluate the option of designing the reinforced concrete encasement as part of the roadway slab rather than as a beam.

Mr. Richard F. McKay
M.I.T.

16 June 80

4. It is our understanding that the purpose of the chilled water system is for the air conditioning of various campus buildings, and it will not be used in the winter months. Eventhough the new chilled water lines can be drained inside of campus building E-40, the large number of vertical bends in the lines make it unlikely that complete dewatering of the lines can be accomplished; and that freezing may occur, particularly in the four locations where the chilled water lines cross over the SD/SS structures. Because of this potential freezing problem it is our recommendation that all portions of the chilled water lines above the frost line be insulated.

In addition to the comments pertaining to the chilled water system, it is suggested that your office should review the plans for water supply and fire protection lines with Water Department Superintendent John Seites. Utilizing the existing mains in Amherst Street (8-inch for supply and 12-inch for fire) will improve the flow capabilities of both systems, but there are several design questions on the fire protection line in need of clarification.

Specifically, on drawing CHWD-6, the water services detail section "L-L" does not indicate the depth of cover above the fire protection line, where it crosses over the SD/SS structure. If there is less than 4-ft. of cover material there, the recommendations cited above for the construction of chilled water lines apply to this fire protection line as well. The necessity of insulating the fire protection line where it is installed above the frost line is even more critical here, because this line is a dead main with no flow under pressure most of the time.

As discussed previously, M.I.T. must obtain approval from the City Council to install a private utility in City streets.

If there are any questions or additional information required, please call.

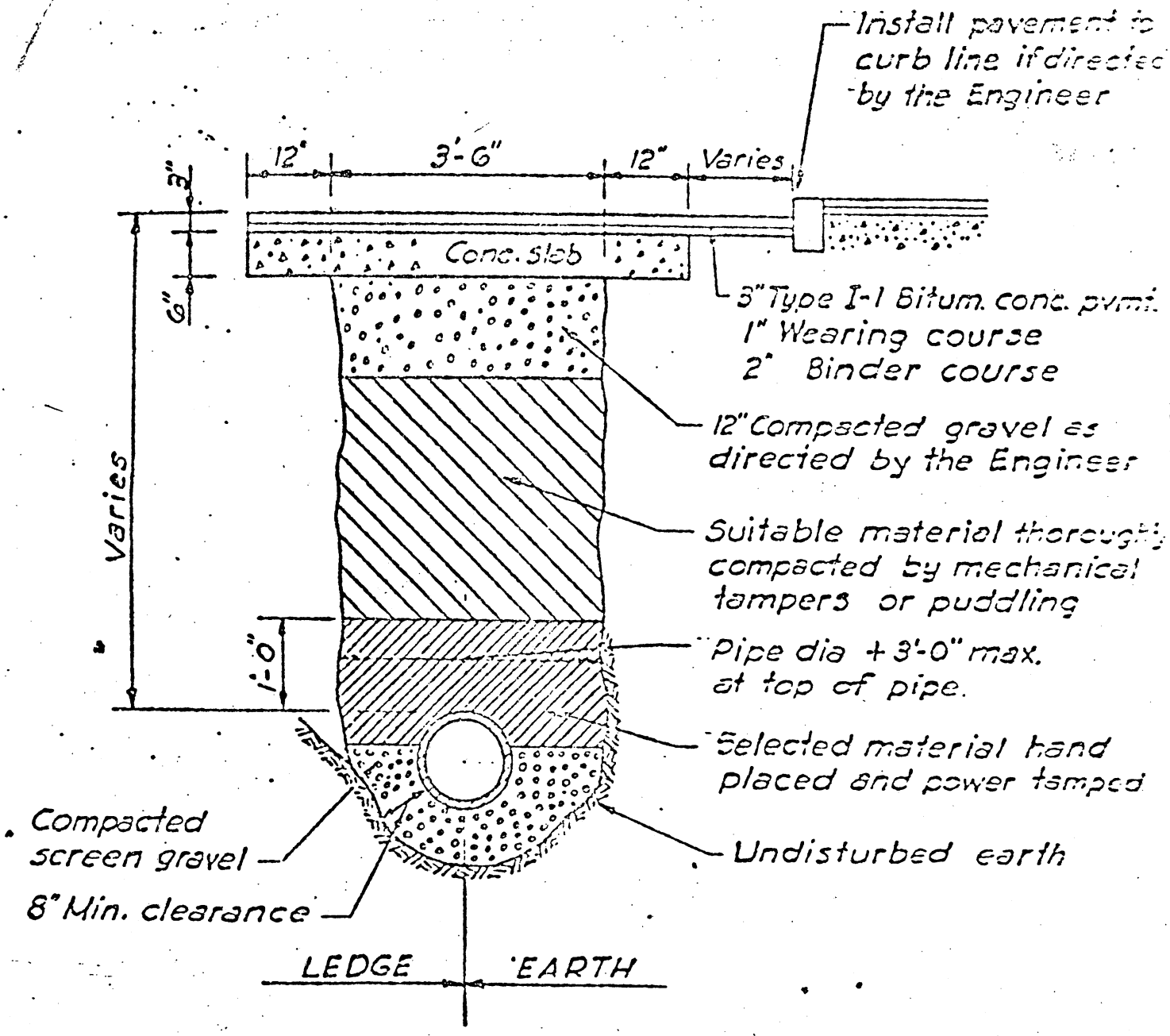
Very truly yours,

John J Cusack Jr

John J. Cusack, Jr.

JJC/ho'
Enclosure

cc: Conrad C. Fagone, Commissioner PWD
John H. Seites, Superintendent CWD
Jeremiah Lucey, Sewer Division Foreman
James Gardner, M.I.T.



TYPICAL TRENCH DETAIL

N.T.S.

CITY OF CAMBRIDGE

CAMBRIDGE, MASSACHUSETTS 02139
Tel. 498-9011

EXECUTIVE DEPARTMENT
JAMES L. SULLIVAN
City Manager

June 30, 1980

To the Honorable, the City Council:

Permission is hereby requested for Massachusetts Institute of Technology to undertake street work for the extension of M. I. T.'s chilled water system as shown on drawings CHWD-3 through 6 (dated May 27, 1980) which have been reviewed by and are on file with the City Engineer and the City Clerk. All necessary approvals have been received and the street work would be in accordance with conditions set forth in City Ordinances and such other conditions the Superintendent of Streets may deem proper. Enclosed please find copy of communications pertaining to this project.

Passage of the enclosed order is recommended.

Very truly yours,

James L. Sullivan
City Manager

JLS/mbf
Encs. 3

Agenda # 4

F-289

Permission for MIT to undertake street work for the extension of MIT's chilled water system.

In City Council,

June 30, 1980

6/30/1980

Order Adopted

8-0-1

Copies to PWD
Engrs
Bldg Dept