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CIVIL ENGINEERING
SEPTIC DESIGN

CONSTRUCTION INSPECTION
SITE DEVELOPMENT

MEMORANDUM

TO: Mr. Dean Petrucelli, AIA
Silver Petrucelli & Associates

FROM: Donald W. Smith, Jr., P.E.
Consulting Engineer

DATE: November 19, 2018

RE: Hinsdale School Culvert and Flooding
Winsted, CT

As requested we have investigated the stormwater culvert flowing under a portion of Hinsdale school and the associated flooding of the school property.

We have reviewed the following information:

- Report entitled STORMWATER STUDY HINSDDALE SCHOOL-MAD RIVER CONDUIT by A-N Consulting Engineers dated February, 1987
- Report entitled ANALYSIS OF EXISTING STORMWATER CULVERT AT THE HINSDALE SCHOOL; WINSTED CONNECTICUT by Wengall, McDonnell & Costello Consulting Engineers dated May, 1988
- We met on-site and have spoken with Jim Rollins, Director of Public works and Dave Cruden of the Winsted School Facilities Dept.

Based on our review of the above information, the following are our findings:

- The culvert is approximately 690 feet long and passes under the school, under Hinsdale Avenue, under the Dunkin donuts parking lot and under State Route 44 prior to discharging into the Mad River. Thus, maintenance and inspection responsibilities fall onto four (4) parties, the school, the Town, a private property owner and the State. A copy of a portion of the plan of the culvert from the 1987 Report, showing its location under the school, is attached to this Report.
- The 1987 Report identified a severe restriction in the culvert that limited the capacity to less than a 10 year event. This Report recommended 1) repairs to remove the severe restriction in the existing culvert 2) construction of a 48" RCP

relief culvert in Spencer Street 3) investigate upstream retention and 4) implement a policy that prohibits increases in storm water runoff due to development.

- The 1988 report indicates that improvements were made to the culvert that removed the severe restriction identified in the 1987 Report. This report also recalculated the stormwater flow associated with the 100 year event and determined that the Site would flood to elev. 764.7 in order to pass the 100 year flow thru the culvert and around the SE corner of the school. It should be noted that the current floor elevation of the school is 763.0 or 1.7' (20.5") below the flood elevation. In addition to three (3) sets of doorways and the front entrance, the unit ventilators that serve the 1988 classrooms have a air intake at the floor level.
- The 1988 Report recommended the following improvements to address the flooding condition:
 - 1) Do nothing
 - 2) Flood Proof the school
 - 3) Construct the relief culvert
 - 4) Construct a detention pond upstream of the culvert entrance, possibly upstream of Gilbert High School
 - 5) Reconstruct the existing culvert
- The portion of the culvert under the school appears to be in good structural condition and may be accessed/inspected via a double man door (one in-swinging and one out-swinging) in the basement. The out-swing door has a thin rubber gasket around it. Dave Cruden indicated he has witnessed water coming in around the door frame. He stated that water that infiltrates the door frame runs across the floor and down into the boiler room sump pump pit. They have a fire hose and a 2" discharge pump ready to be installed in the pit in times of heavy flow.
- Dave Cruden indicated that he had never observed any flooding on the north side of the school, however he did observe it around the catchbasin (CB) on the south side of the east addition. He indicated that water was either backing up and coming up and out of the CB in this area (top frame elevation of this CB is 758.0) or if the CB was unable to take the stormwater runoff from this area? He indicated that he had never observed it flowing around the SE corner of the school and onto Hinsdale Avenue.
- A field review of the area around the above CB revealed plywood flood covers on the unit ventilators to rooms 105, 106 & 107 and the presence of lead shields for bolting covers onto other ventilators in this same area.
- Attached are some photographs of the existing flood proofing measures as well as a Site Plan that shows the limits of observed flooding as well as the potential limits (100 year event) of flooding.

Based upon the above, we recommend the following actions be taken:

- Ownership and maintenance responsibilities of the culvert should be clarified and an inspection and maintenance plan for the entire culvert should be developed and implemented between the DOT, Town, school and private property owner.
- Development of a Flood Contingency Plan outlining the steps to be taken to flood proof the school in the event of a predicted flood emergency.

- Provide stormwater detention for any new impervious areas on-site.
- Eliminate the unit ventilators in each classroom and in-fill the openings to eliminate the potential for water infiltration, thus reducing the number of possible flood water entry points.
- Provide an easily deployable system to flood proof the culvert door in the basement, the main entry doors/windows and three (3) sets of entry doors.

We trust this information is responsive to your needs. Please feel free to contact me if you have any further questions regarding this matter.

STORM WATER STUDY

HINSDALE SCHOOL - MAD RIVER CONDUIT

John S. Gauguin

PREPARED FOR
PUBLIC WORKS DEPARTMENT
TOWN OF WINCHESTER
CITY OF WINSTED, CONNECTICUT



FEBRUARY, 1987

A-N CONSULTING ENGINEERS, INC.
Engineers • Environmental Consultants • Planners

REPORT

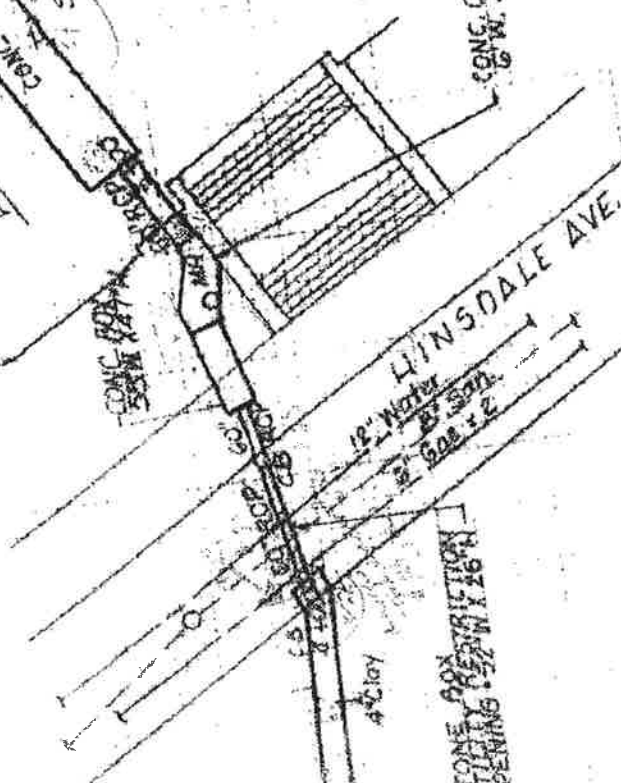
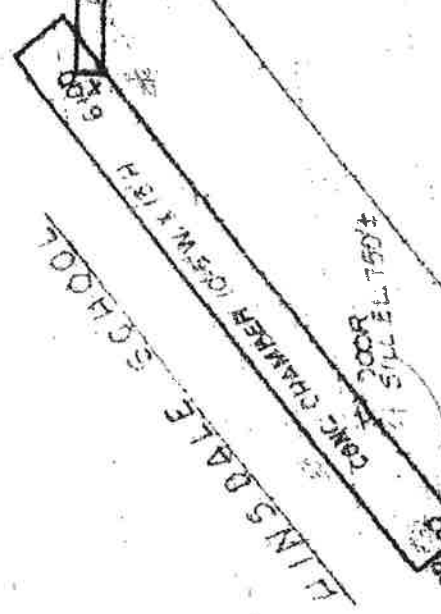
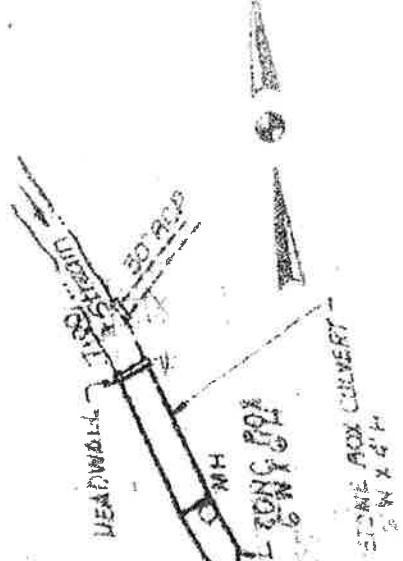
ANALYSIS OF EXISTING STORMWATER CULVERT AT THE HINSDALE SCHOOL; WINSTED, CONNECTICUT

Prepared For The
TOWN OF WINCHESTER
CITY OF WINSTED, CONNECTICUT



MAY 1988

WENGELL, McDONNELL & COSTELLO
CONSULTING ENGINEERS



TOWN OF WIN
 HINSDALE
 MAD RIVER
 FEBRUARY
 PLAN 2

STONE BOX
 3' DIA. x 16' L
 OPENING 4' x 2'

25
 1
 2" CONC
 4" Clay



Culvert looking upstream



Culvert looking downstream



Flood boards at room 106 & 107





outer door to culvert





Boiler room sump pump - small pump for normal operations



install bigger pump and connect to firehose when needed
Hinsdale School - 11/14/18