

COMMUNITY UNIT SCHOOL DISTRICT #304

OFFICE OF FACILITY OPERATIONS

SCOTT NEY, DIRECTOR

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TO: Donna Oberg

FROM: Scott Ney

RE: Geneva High School Heating Plant Discussion

DATE: June 8, 2015

The four Kewanee steam boilers in the boiler house deliver steam to the high school via underground steam pipes. (Picture 1 and 2) Once the steam pipes enter the high school, the steam exchanges its heat to the hot water system in the lower level mechanical room and then pumped to the building for heat. The insulation on the underground steam pipes has deteriorated to a point of concern and will continue to deteriorate further if left unaddressed. (Picture 3) Without the insulation, the hot steam pipes are exposed to the ground. Not only is this a large efficiency loss, but more importantly it creates a significant safety hazard. When groundwater comes in contact with the hot steam pipes, it flashes into steam and expands in volume. The newly formed steam then tries to move to an area of lower pressure via the path of least resistance, which in this case is the path along the buried pipes and into the lower level mechanical room.

A temporary patch has been made to the steam pipe in the basement mechanical room for the short term. (Picture 4) The steam pipes will need to be replaced within the next three years. The four Kewanee steam Boilers (installed 2000, 1967, 2 in 1957) that supply heat to the high school are inefficient and becoming more costly to maintain. Kewanee has stopped manufacturing all boilers and parts in 2001. Over the next several years, there will come a point where we will be unable to locate parts and therefore, we will not be able to repair these boilers.

CS2 Engineers have given us two options. Option 1 replacement of the insulated jacket, 12" steam and 2 1/2" condensate lines at an estimated budget cost of \$375,000. (Exhibit A and B) Option 2 would be to relocate the current heating plant to the high school and installing new high efficiency boilers on site for an estimated budget cost of \$1,050,000. This would allow us to abandoned the existing steam lines and remove the four Kewanee boilers.

Picture 1 (GHS Steam Lines August 2000 – View from GHS 2nd Floor Windows)



Picture 2 (GHS Steam Lines August 2000 – Looking toward HS)



Picture 3 (Steam pipe insulated jacket starting deteriorate)



Picture 4 (Temporary patch Fall 2014)



EXHIBIT A



CS2 DESIGN GROUP
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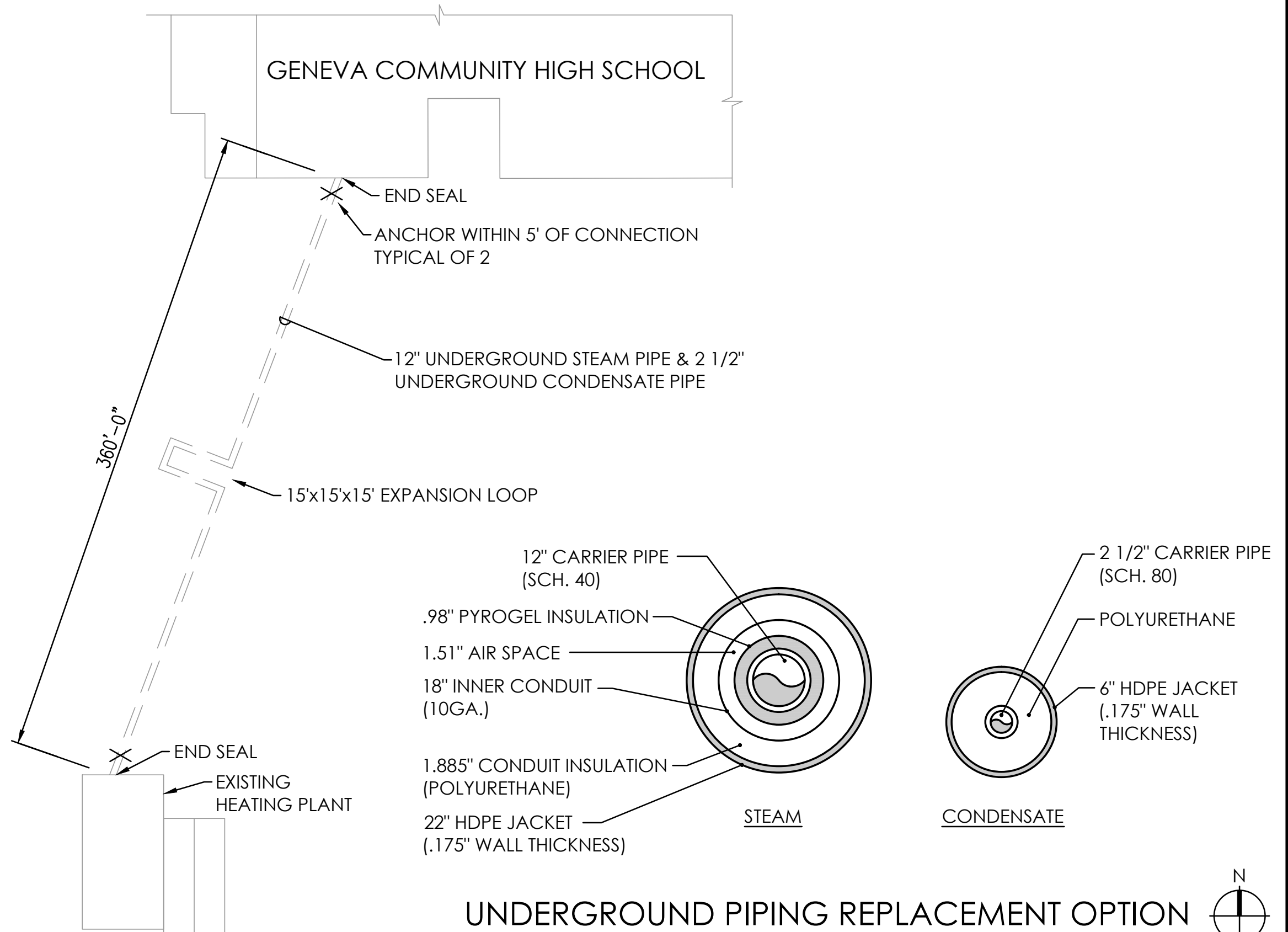
AERIAL PHOTO PLAN
SCALE: NONE



March 9, 2015 - JOB #819-A-2

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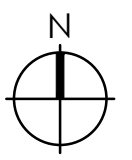
EXHIBIT B



UNDERGROUND PIPING REPLACEMENT OPTION

SCALE: 1"=50'-0"

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