



## City of Duluth

DEPARTMENT OF PUBLIC WORKS/UTILITIES  
Engineering Division  
211 City Hall • Duluth MN 55802  
(218) 730-5200 Fax: (218) 730-5907

May 20, 2013

### STORMSEWER REPAIR WORK

4441 Grand Ave – Westminster Presbyterian Church Demolition

#### Work Summary:

A 48" reinforced concrete pipe (RCP) was installed under the building at the time the building was constructed, the RCP was attached to an existing cast-in-place (CIP) concrete storm sewer on the south end of the building. The work includes but not limited to re-installing a portion of the 48" RCP under the building, repairing voids in the CIP sewer and cleaning out debris from a portion of the storm sewer.

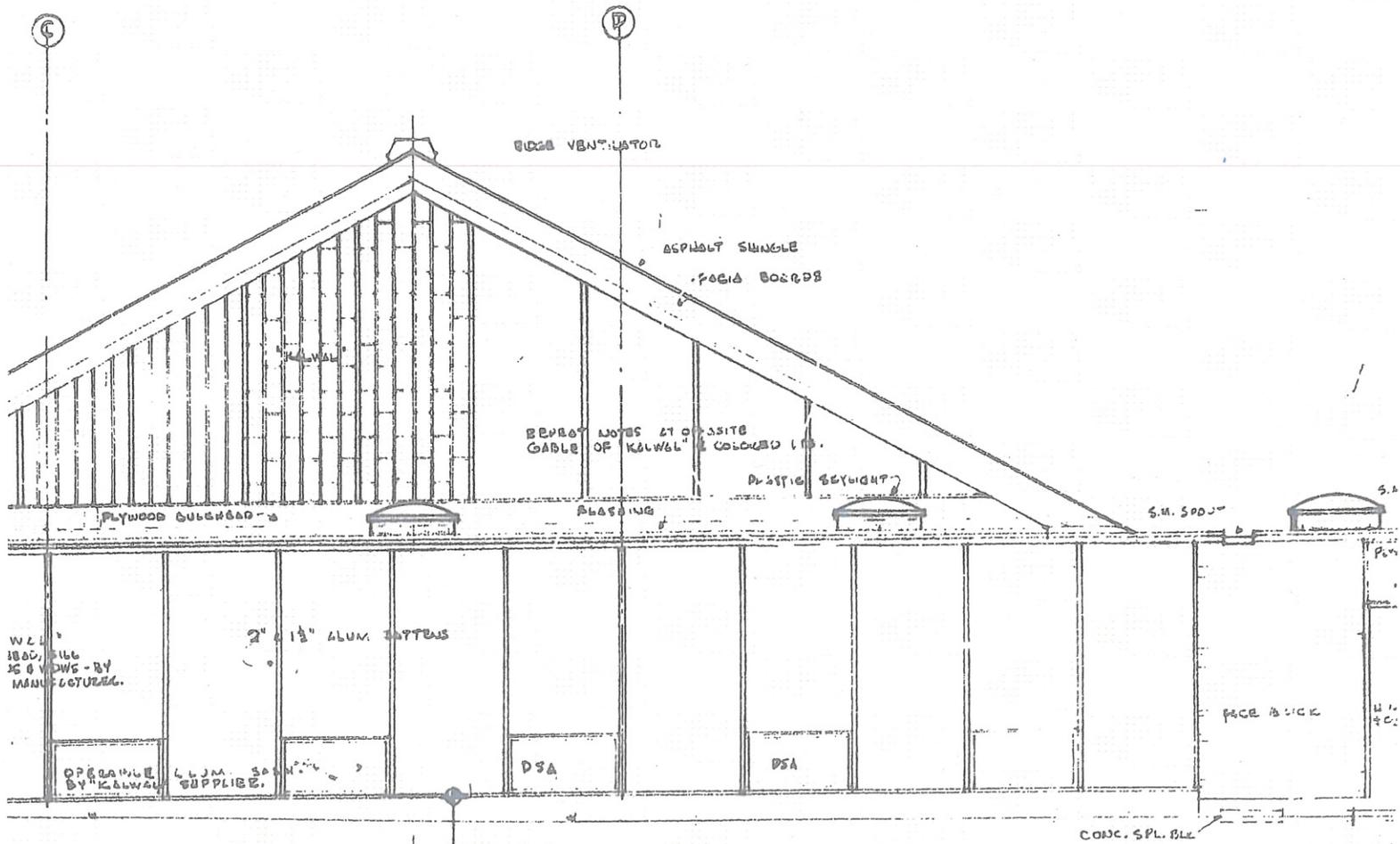
#### General Notes:

- A. All work shall comply with the City of Duluth, Construction Standards 2013
- B. The attached plan and cross sections are for reference only, these are copies of the original design documents for the construction of the church. There is no as-built data available, the Contractor shall field verify storm sewer alignment and elevations
- C. Contractor shall notify the City Engineering Department 1 day prior to re-installing the salvaged 48" RCP. A City representative shall be present during the re-installation of the 48" RCP.
- D. The Contractor shall prepare and submit for approval a plan on how storm sewer flows will be bypassed / pumped around the work area. The storm sewer system up-gradient captures and conveys a considerable area. A rain event can increase flows quickly and significantly.

#### Key Notes:

1. Cast-in-place (CIP) concrete storm sewer, installed prior to the construction of the church building, approximate location – field verify location.
2. 48" RCP storm sewer installed as part of the church construction, approximate location – field verify location.
3. Existing storm sewer manhole, protect from damage from demolition activities, approximate location – field verify location.
4. Connection joint of 48" RCP and CIP storm sewer, approximate location – field verify location.
5. Remove and salvage 50 l.f. of 48" RCP starting at the RCP-CIP connection joint – see key note 4. Contractor shall protect the remaining portion of the 48" RCP and CIP storm sewer from damage.

6. Clean out debris for a distance of 30 l.f. down gradient of the RCP-CIP connection joint. Repair all voids in CIP for 30 l.f. with non-shrink grout.
7. Clean out debris for a distance of 20 l.f. up gradient from the end of the removed 48" RCP.
8. Reinstall salvaged 48" RCP working down gradient towards the CIP storm sewer. Follow City standard specifications for pipe installation.
9. Connect reinstalled 48" RCP to CIP storm sewer with a concrete construction joint – extend 2' in each direction over the RCP-CIP joint, concrete shall be 18" thick around entire RCP-CIP connection joint, with 2 layers of concrete reinforcement mesh to extend around the joint, equally spaced within the 18" thickness.
10. Pipe to be inspected prior to backfilling of the building basement.



TOP OF WALL  
EL. 104'-4"

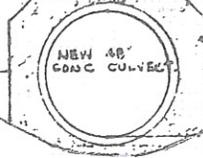
FOR REFERENCE  
ONLY  
STORM SEWER

TOP OF FINISH  
EL. 92'-4"

TOP OF FINISH  
EL. 91'-4"

TOP OF FINISH  
EL. 90'-4"

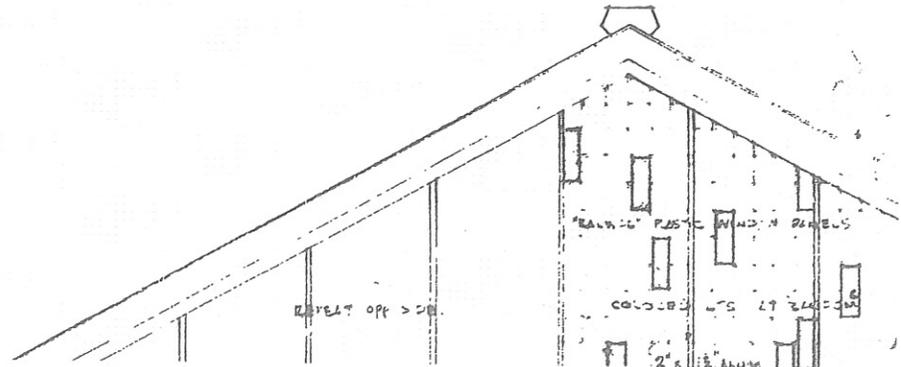
TOP OF FINISH  
EL. 90'-4"



GRAVEL FILL

INVERT BELOW  
EL. 88'-1 1/2"

ORTH ELEVATION



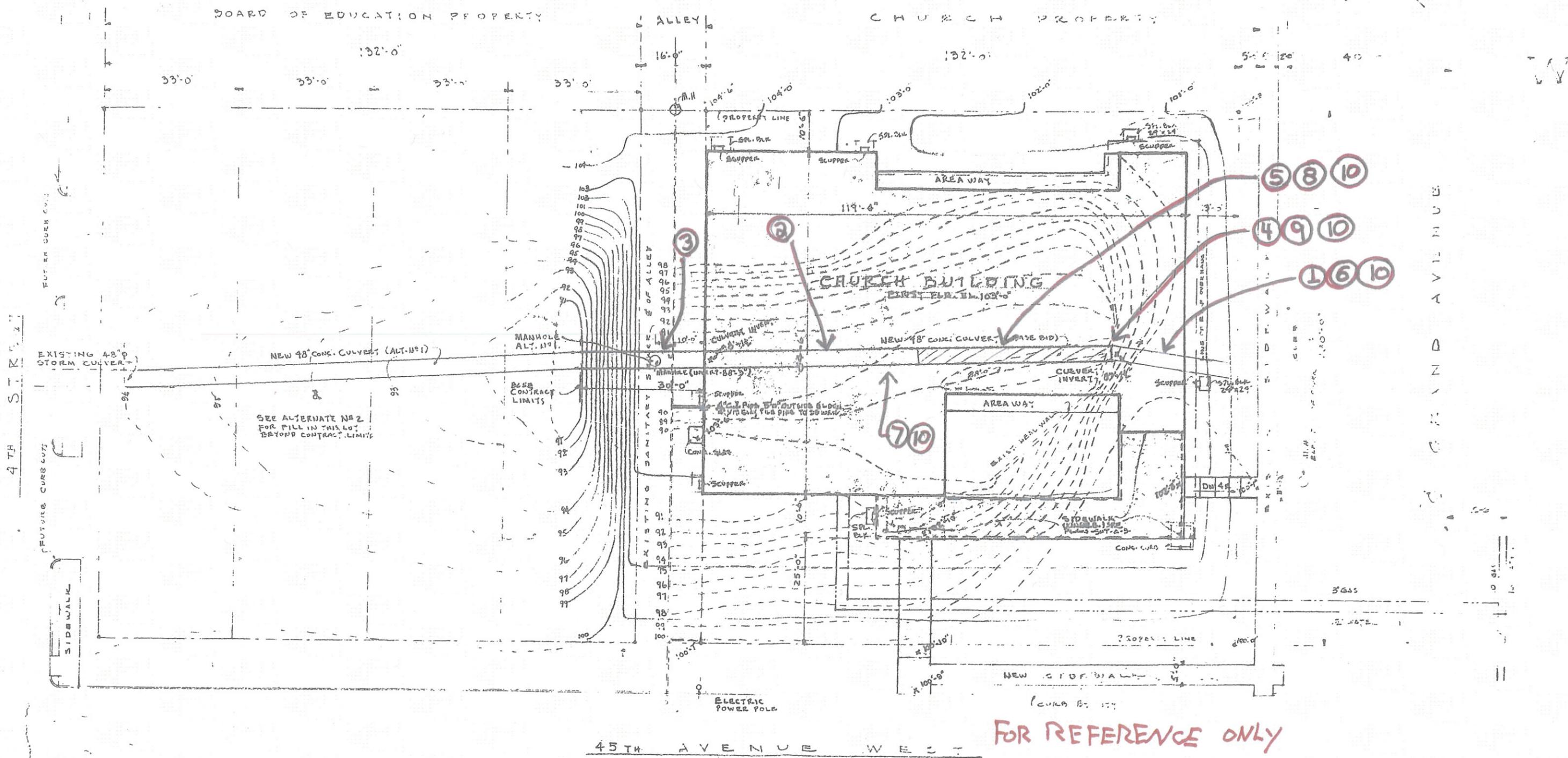


ELECT. POWER POLE



BOARD OF EDUCATION PROPERTY

CHURCH PROPERTY



FOR REFERENCE ONLY

PLOT AND GRADING PLAN

SCALE: 1/16" = 1'-0"

EXIST. FG GRADE  
FINISHED GRADE

GENERAL NOTES:

AND DIMENSIONS ESTABLISHED.