

Site Location & Project Description: Longfellow Elementary School is an approximately 3.4 acre site located in downtown Albuquerque, bordered by Martin Luther King, Jr. Blvd to the south, Edith Blvd. to the west, Walter Street to the East, and Martineztown Park to the north. Tributary area to Longfellow Elementary School is divided into four sub-basins, A through D, and no offsite basins contribute to existing nor proposed flows. The rational method, as described in COA DPM was used to compute proposed and existing flows. Basin areas and land treatments will remain unchanged from the existing condition*, and the maximum discharge for the entire site will remain as in the undeveloped condition, 7.3 cfs (from COA archive K14-D10). Basin "A" at the southwest corner of the site is comprised of landscaping and concrete sitework and will surface drain (Q_A = 3.1 cfs) to existing drainage infrastructure along Edith Blvd. and Martin Luther King Blvd. Basin "B" at the northeast corner of the site is comprised of asphalt paving and some landscaping and will surface drain ($Q_B = 2.0$ cfs) to the COA park to the north of the site via sidewalk culvert. Both Basins "A" and "B" maintain drainage patterns as in the existing condition. *NOTE: Basin D is subdivided into D1 and D2 for the proposed condition.

Basin "C" at the northwest corner of the site contains playing fields, which will be regraded and replanted per the proposed improvements. The existing ponding area will be removed and runoff will surface drain ($Q_C = 2.1$ cfs) to a grate inlet at the northwest corner of the basin. The inlet will discharge to a battery of approximately 1380 LF of 30" perforated CMPs located under the playing field. The infiltration battery will discharge via 18" ADS pipe to the west edge of the site, where it will surface drain to existing COA drainage infrastructure in Edith Blvd. Discharge will be limited by a 5-5/8" dia. orifice plate at the 18" outlet. See computations below.

$Q_{18} = c_0 A \sqrt{2gh} = 0.667 \cdot \frac{n}{4} \sqrt{\frac{12}{2 \cdot 32 \cdot 2 \cdot 5 \cdot 5}} = 2.166 \text{ cfs}$

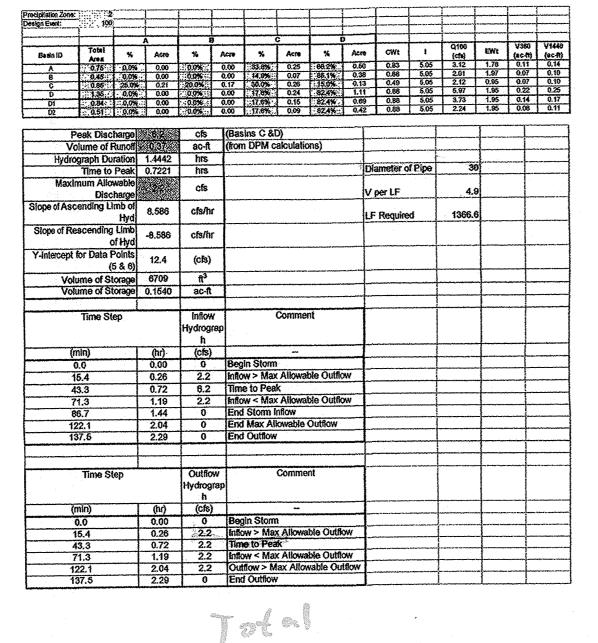
Basin "D" at the southeast corner of the site is comprised of school buildings and concrete sitework. Drainage improvements to Basin "D" will be completed in phases. In the first phase, a new grate inlet and 12" CMP from an existing grate inlet on the east side of the building will replace the swale that currently collects drainage from the roof drains (Basin "D1"). This storm drain will convey runoff (Q = 2 cfs; $V = 6,100 \text{ ft}^3$) to the playground storage area ($S_{total} = 7,900 \text{ ft}^3$). This improvement maintains the existing condition in which Basin "D" flows (V = 5,454 ft³)* are routed through the playground storage area and 1.3 cfs is discharged to a catch basin in Edith Bivd via 3" PVC pipe.

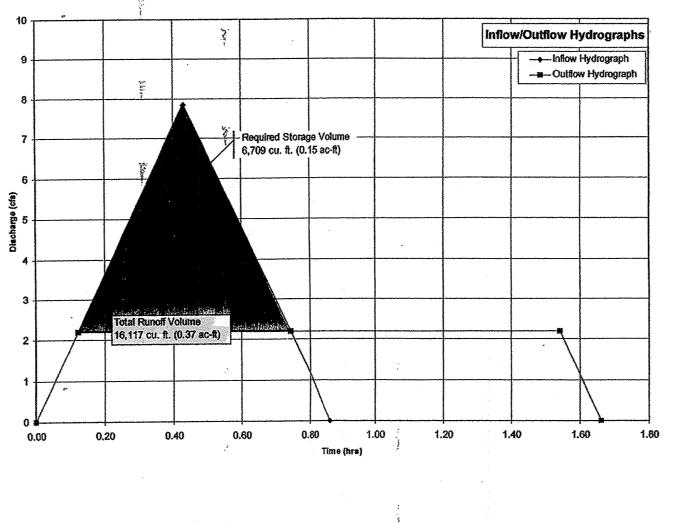
"NOTE: Approved COA calculation for drainage criteria applicable in 1981.

In the second phase of improvements, a new grate inlet in the courtyard area will convey Basin "D2" runoff (Q = 3.7 cfs) to the infiltration battery in Basin "C". The 3" PVC pipe from the playground storage area will be removed and plugged, and a series of 4-1"Ø geotextile-lined weepholes will be cut into the retaining wall allowing runoff to discharge slowly (Q = 0.4 cfs)** from the playground storage area to the field in Basin "C" where runoff will be collected in the grate inlet at the northwest corner of the field. Thus, all runoff from Basin "D" (V_{100-yr, 24-hr} = 16,117 ft³) will be routed through the 30" perforated CMPs in Basin "C". The required storage volume (\$100-yr, 24-hr = 6,709) is based on TR-50 calculations for a triangular hydrograph. Note that no credit is taken for any infiltration in required storage volume calculations. Minimum pipe size will be 12", and all pipes will maintain a minimum slope of 0.0075 ft/ft.

See attached for routing computations.

**Flow through geotextile-lined weepholes is based on Agpmint from product inertakine, plus a 35% dogging record	
$Q_{12} = \frac{1.486}{n} \cdot \frac{\pi D^2}{4} \cdot \sqrt[3]{\left(\frac{\pi D^2}{4\pi D}\right)^2} \cdot \sqrt{S} = \frac{1.486}{0.012} \cdot \frac{\pi 1^2}{4} \cdot \sqrt[3]{\left(\frac{\pi 1^2}{4\pi 1}\right)^2} \cdot \sqrt{0.0075} = 3.34 \text{ cfs}$	\Lat P





LEGEND

5070-

EXISTING INDEX CONTOUR EXISTING INTERMEDIATE CONTOUR FLOWLINE

NOT PART OF THIS CONTRACT

PROPOSED BUILDING

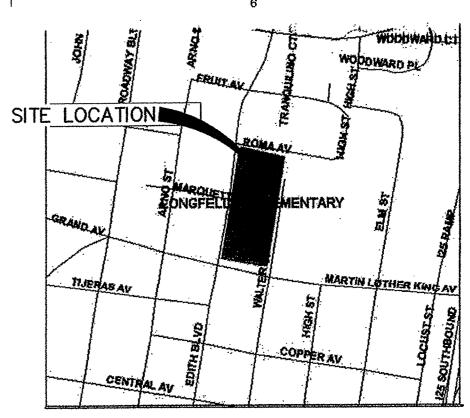
PROPOSED STORM DRAIN EXISTING BASIN BOUNDARY

PROPOSED BASIN BOUNDARY

LIMITS OF WORK PERFORMED

BASIN (A) BASIN DESIGNATOR

> BY OTHERS NORTHING COORDINATE EASTING COORDINATE



GRADING &

C-104

(IN FEET) JUL 0 3 2006

HYDROLOGY SECTION

