

Drainage Computation Summary

1. Total Drainage Area = 42.3 AC (estimated maximum drainage area).

2. Runoff Coefficient = 0.80 (estimated fully developed drainage basin, "heavy industrial").

3. Travel Time (TR-55 Worksheet) = 0.76 hrs. = 45.6 min.

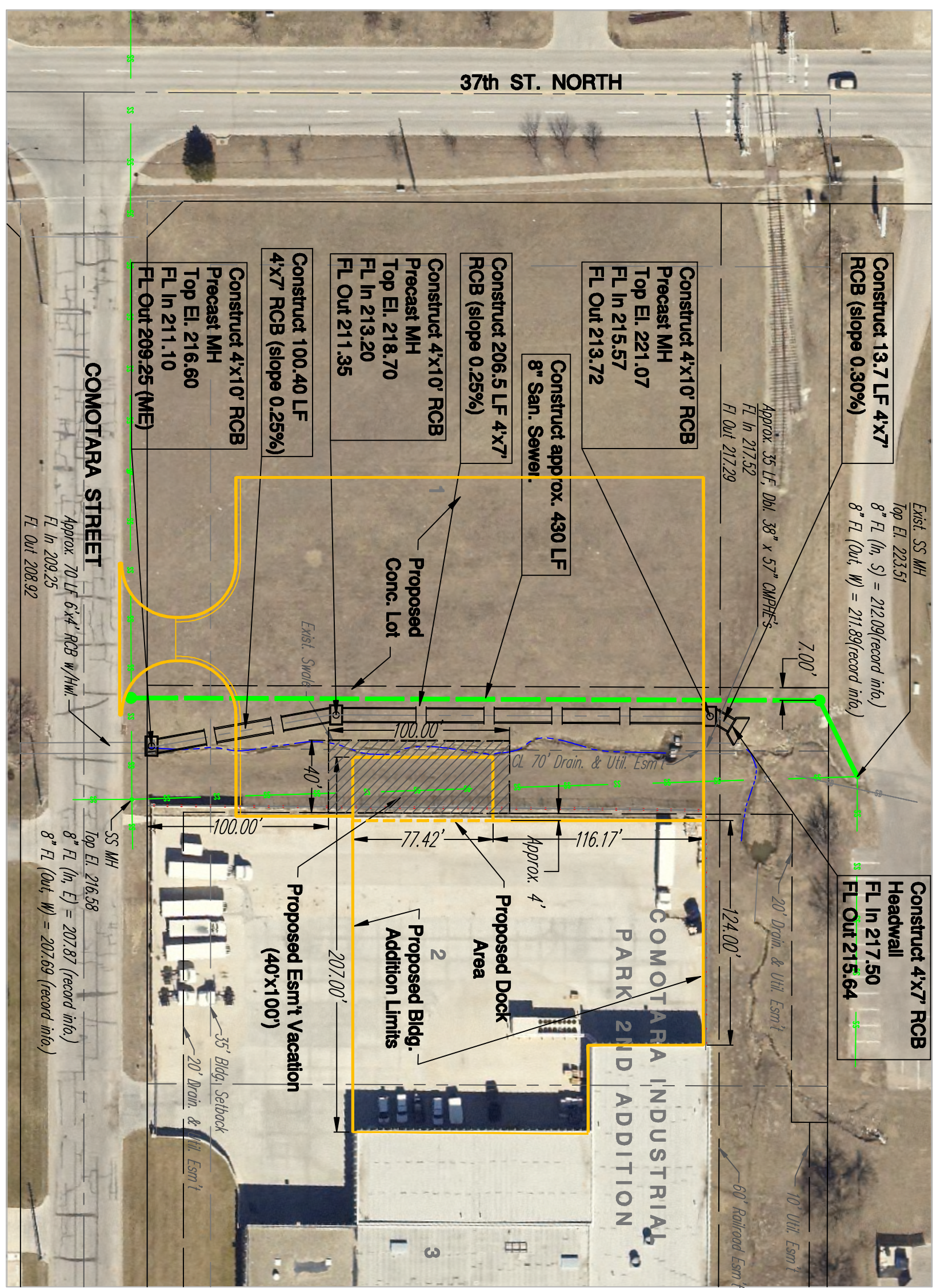
4. Rainfall Intensities:
 i (100-yr.) = 4.36 in/hr
 i (25-yr.) = 3.50 in/hr
 i (5-yr.) = 2.57 in/hr

5. Estimated Discharge Computation (Rational Formula)
 Q (100-yr.) = 147.5 CFS
 Q (25-yr.) = 118.4 CFS
 Q (5-yr.) = 86.9 CFS

6. From FEMA's "Quick 2 - Computation of Water Surface Elevations in Open Channels" (a companion program to the FEMA Manual #265, Managing Floodplain Development in Approximate Zone A Areas.)

A Step-Backwater analysis; upstream of the existing 38"x57" CMPHE's was run at two sections. For a Q (100-yr) = 147.5 CFS, the WSEL was determined to be 220.67 City datum.

Normal flow depth for Q (100-yr) in a 4'x7' RCB, at 0.25% slope, was calculated to be 2.76 ft. This flow was determined to be sub-critical.



CONCEPT DRAWING - NOT FOR CONSTRUCTION

Date Prepared: October 6, 2009

HOUSE OF SWAN BLDG. EXPANSION
 Concept Layout Plan w/ Aerial Overlay

LOTS 1-5
COMOTARA INDUSTRIAL PARK 2ND ADDN.
 WICHITA, SEDGWICK COUNTY, KANSAS

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