

SCOTTSWOOD AREA WETLAND PROJECT

FOR THE
ILLINOIS ASSOCIATION FOR FLOODPLAIN AND
STORMWATER MANAGEMENT CONFERENCE
MARCH 2011



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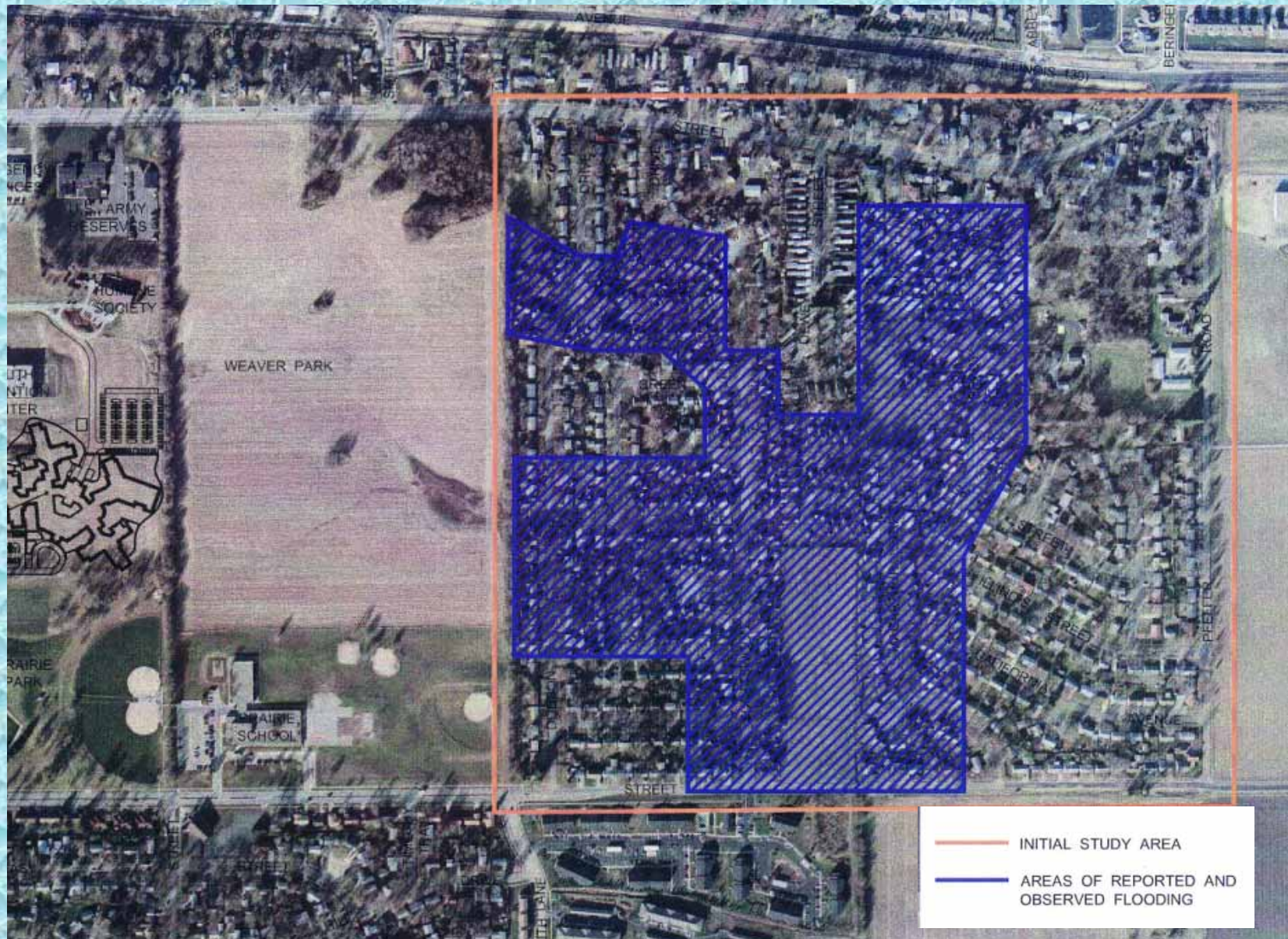
PROJECT LOCATION



PROJECT WATERSHED BOUNDARY

THE PROBLEM

- FREQUENT FLOODING
(\$200,000 DAMAGE PER YEAR)
- LACK OF AN OUTLET – NO DETENTION
- UNDERSIZED STORM SEWERS
- INADEQUATE INLET CAPACITIES
- POOR SURFACE DRAINAGE SYSTEMS
- INCOMPLETE DRAINAGE SYSTEM
- UPSTREAM WATERSHED OVERLOOKED
- SANITARY SEWER BACKUPS



AREAS OF FLOODING

CITY OF URBANA 2000 STUDY

- OUTLET STORM SEWERS
- STORMWATER DETENTION
- INLET IMPROVEMENTS
- STORM SEWER EXTENSIONS
- \$800,000 COSTS FOR CONSTRUCTION

CHANGES AND OPPORTUNITIES

- SUNNY ESTATES SUBDIVISION
- WASHINGTON STREET BRIDGE
- CHAMPAIGN COUNTY NURSING HOME
- URBANA PARK DISTRICT
WEAVER PARK



PROJECT WATERSHED BOUNDARY

9 COOPERATING AGENCIES

- URBANA TOWNSHIP
- URBANA TOWNSHIP ROAD DISTRICT
- CITY OF URBANA
- URBANA PARK DISTRICT
- URBANA SCHOOL DISTRICT #116
- CHAMPAIGN COUNTY
- ST. JOSEPH DRAINAGE DISTRICT #3
- COUNTY REGIONAL PLANNING COMMISSION
- ILLINOIS DEPARTMENT OF COMMERCE
AND ECONOMIC OPPORTUNITY

PROJECT PURPOSES

- ALLEVIATE ANNUAL FLOODING OF SCOTTSWOOD SUBDIVISION AREA (\$200,000 DAMAGE PER YEAR)
- PROVIDE RESIDENTS WITH A RECREATION PARK AND WILDLIFE AREA
- SERVE THE NEW CHAMPAIGN COUNTY NURSING HOME STORMWATER MANAGEMENT NEEDS

URBANA PARK DISTRICT WEAVER PARK COORDINATION

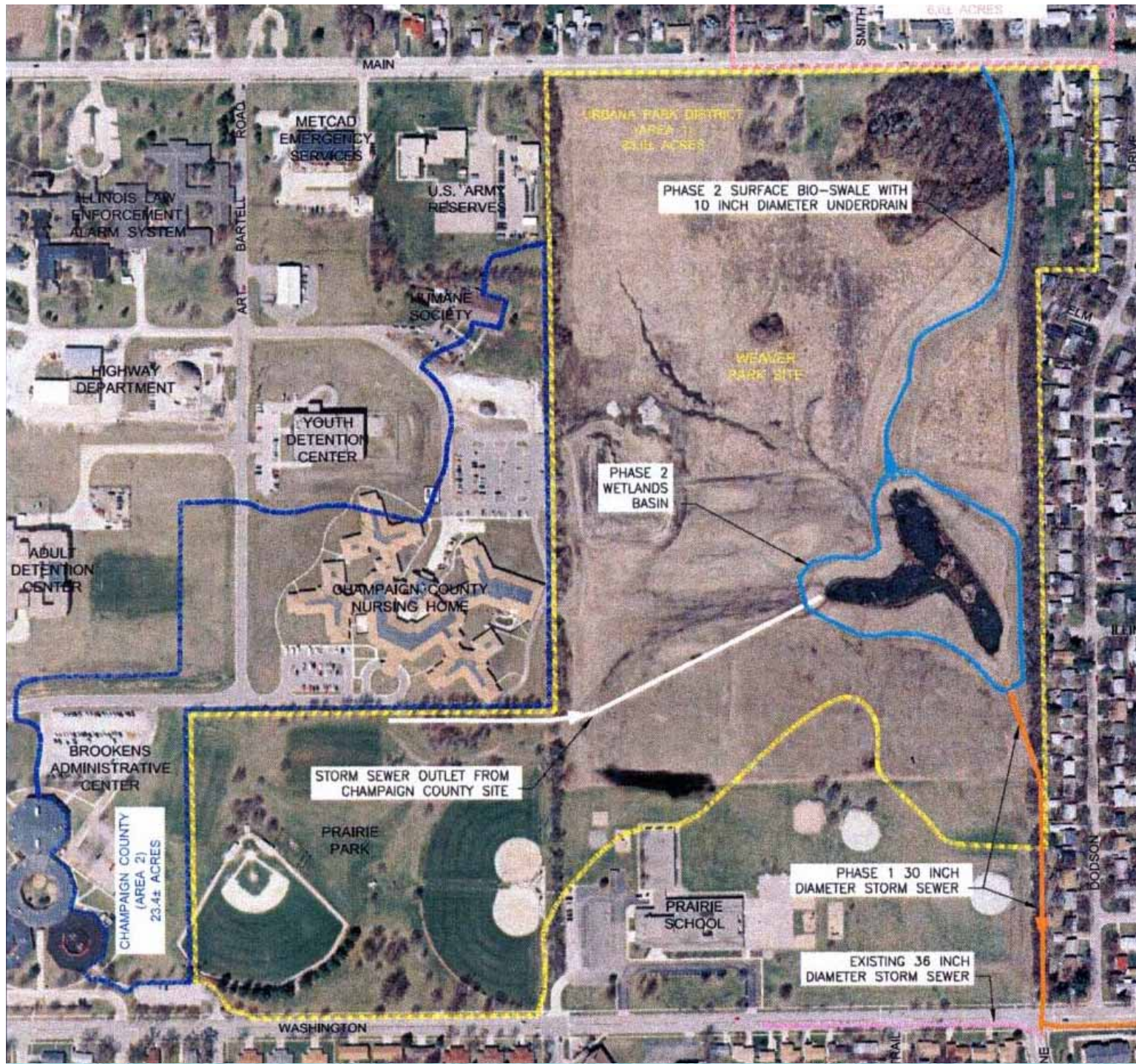
- UPD MASTER PLAN
- WETLAND BASIN DESIGN
- BALL FIELD GRADING
- COUNTY NURSING HOME DRAINAGE



URBANA PARK DISTRICT WEAVER PARK CONCEPTUAL DESIGN

PROJECT IMPROVEMENTS

- 3,000 LINEAL FEET OF OUTLET STORM SEWER
- INTERSECTION DRAINAGE IMPROVEMENTS
- 13 ACRE-FOOT WETLAND BASIN
- BALL FIELD SITE GRADING
- BIO-SWALE INSTALLATION
- ENNIS LANE OUTLET STORM SEWERS
- ILLINOIS STREET OUTLET STORM SEWERS



WEST PROJECT AREA

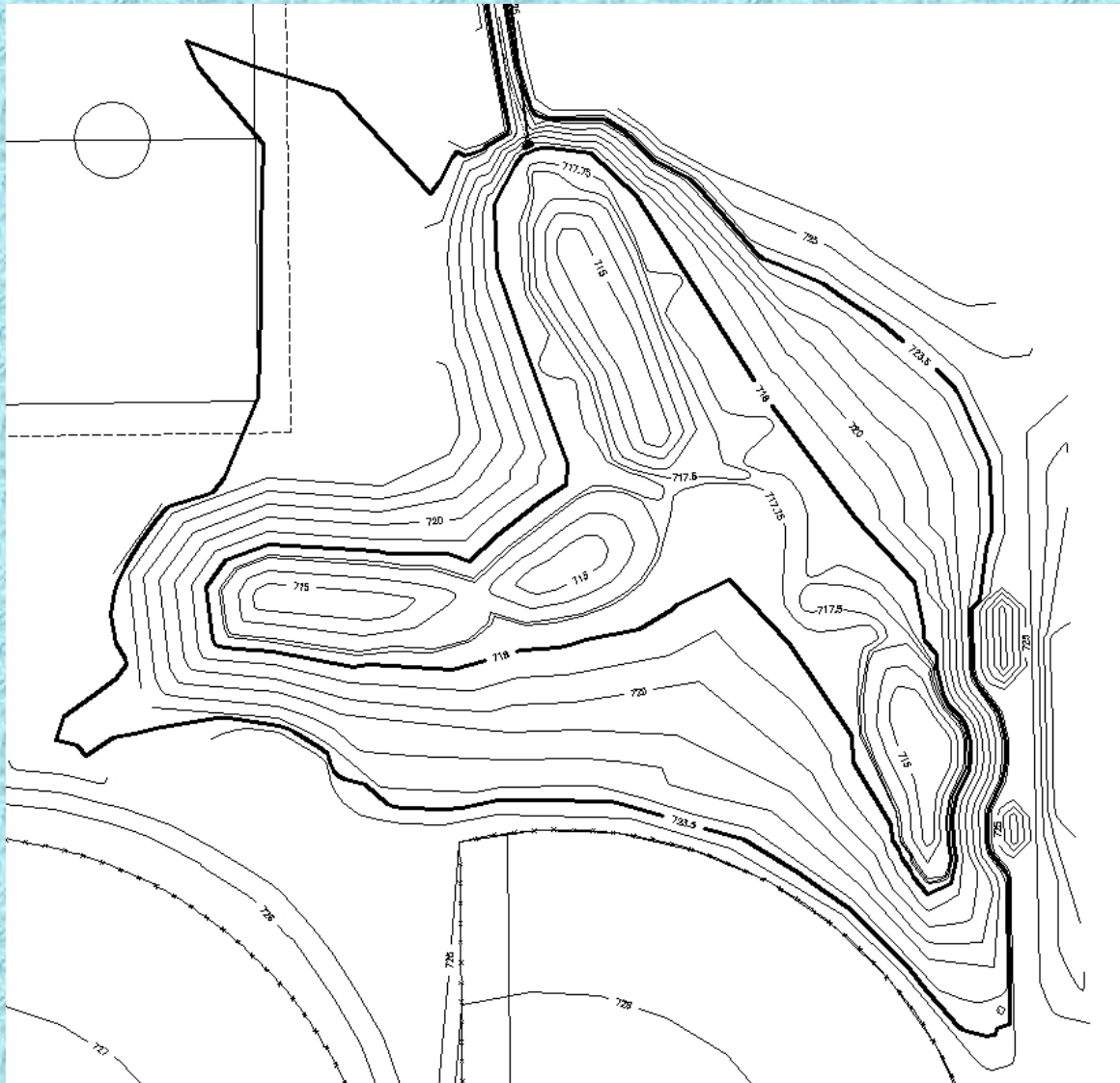
STORMWATER ENGINEERING

- ✗ Goal = Provide Maximum Flow Reduction in 50-Year Event due to Low Downstream Conveyance Capacity
- ✗ TR-20 & TR-55
- ✗ SCS Type II Rainfall Distribution
- ✗ 3 Drainage Areas
- ✗ Total Drainage Area = 113 Acres
- ✗ 50-Yr Target Storage Volume = 13.6 acre-feet
- ✗ 100-Yr Storage Volume = 16.0 acre-feet

WATER QUALITY DEVICE



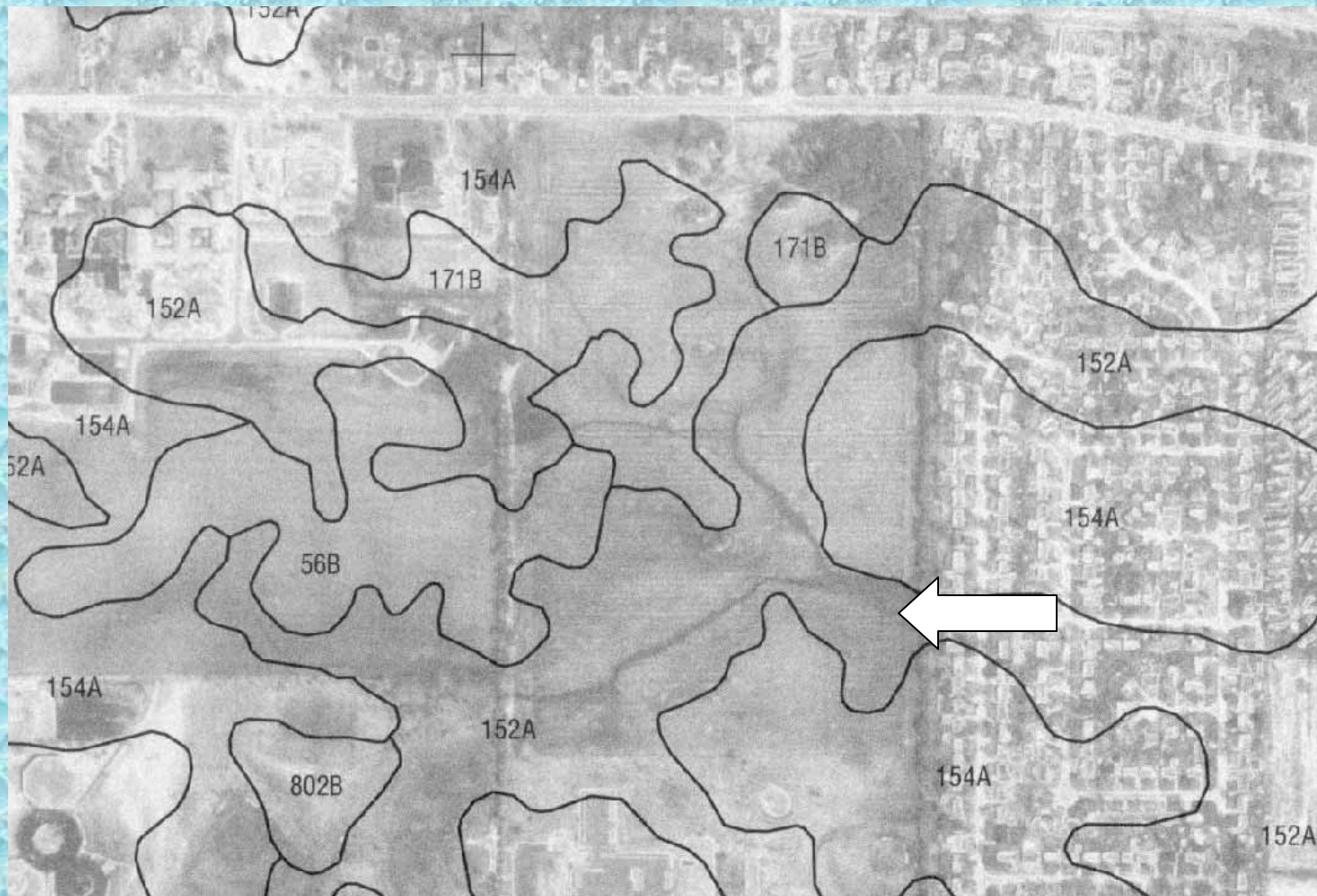
GRADING PLAN



SEEDING PLAN - NATIVE PLANT SPECIES



HYDRIC SOILS – DRUMMER SILTY CLAY LOAM



HYDROPERIOD RESULTS (NWL = 718.0 FT)

Design Storm	Peak Inflow	Peak Outflow	Peak Storage	HWL	Duration
Return Period	(cfs)	(cfs)	(ac-ft)	(ft)	Above 718.5 ft (hr)
6-Month	14	2	1.0	718.6	5.5
1-Year	30	4	1.9	719.0	12
5-Year	92	15	5.2	720.4	17
10-Year	124	22	6.7	721.0	18
50-Year	225	38	12.4	722.7	20
100-Year	278	40	16.0	723.7	21

CONSTRUCTION LAYOUT



9-20-06

WETLAND GRADING = 51,000 CY

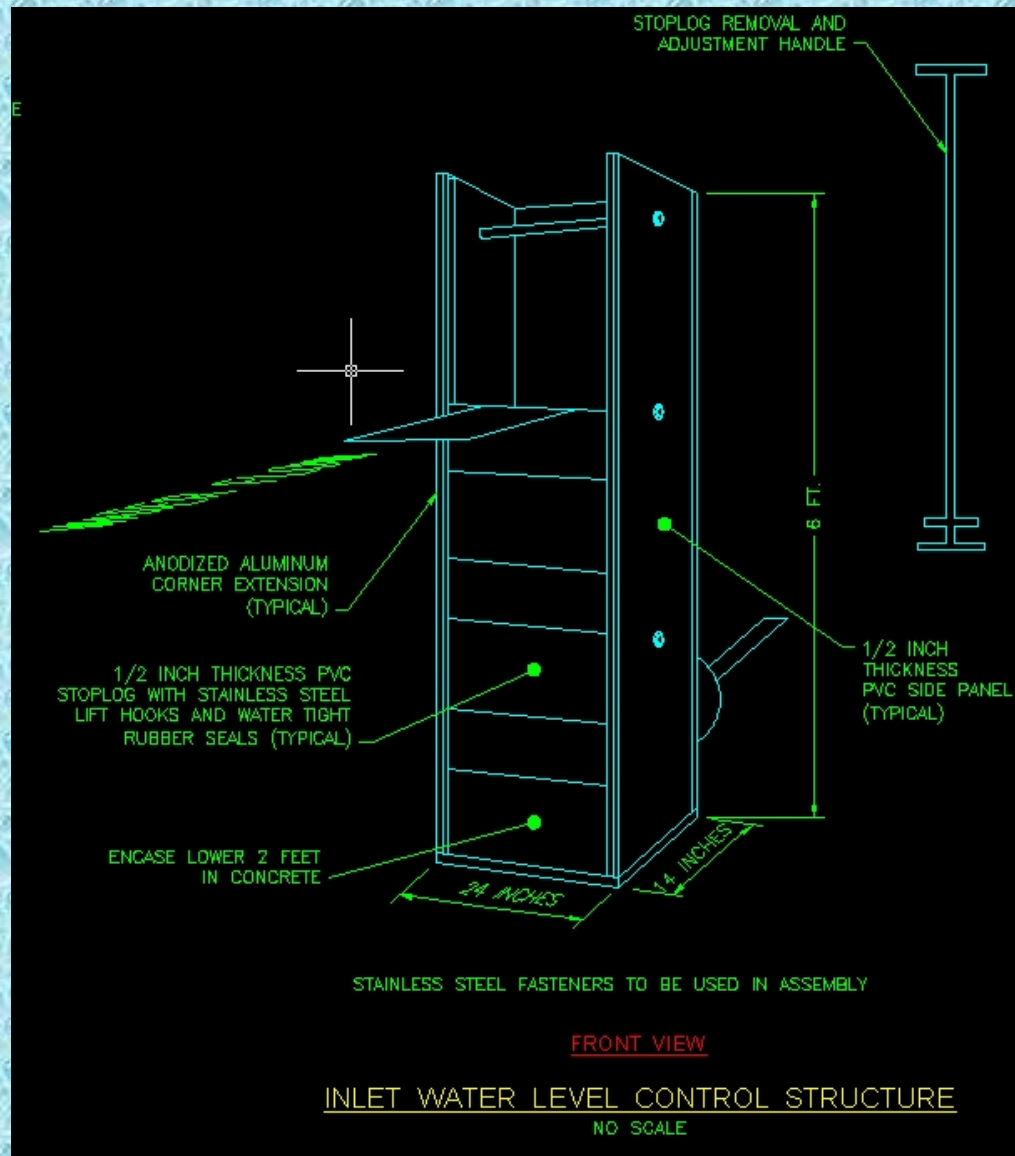


DUAL STAGE OUTLET CONTROL STRUCTURES

- ✖ NWL / Stage 1 = 718.0 ft
- ✖ Stage 2 = 719.25 ft



STAGE 1 – IN-LINE WATER LEVEL CONTROL STRUCTURE



SEEDBED PREPARATION

12 INCHES HYDRIC SOIL
CHISEL PLOW DEPTH 18 INCHES



EROSION BLANKET STABILIZATION



NATIVE SEEDING AREA = 4.2 ACRES



**1.6 AC WETLAND SEED
2.6 AC PRAIRIE SEED**

STORAGE CAPACITY = 16 ACRE-FEET



LOG HABITAT STRUCTURES



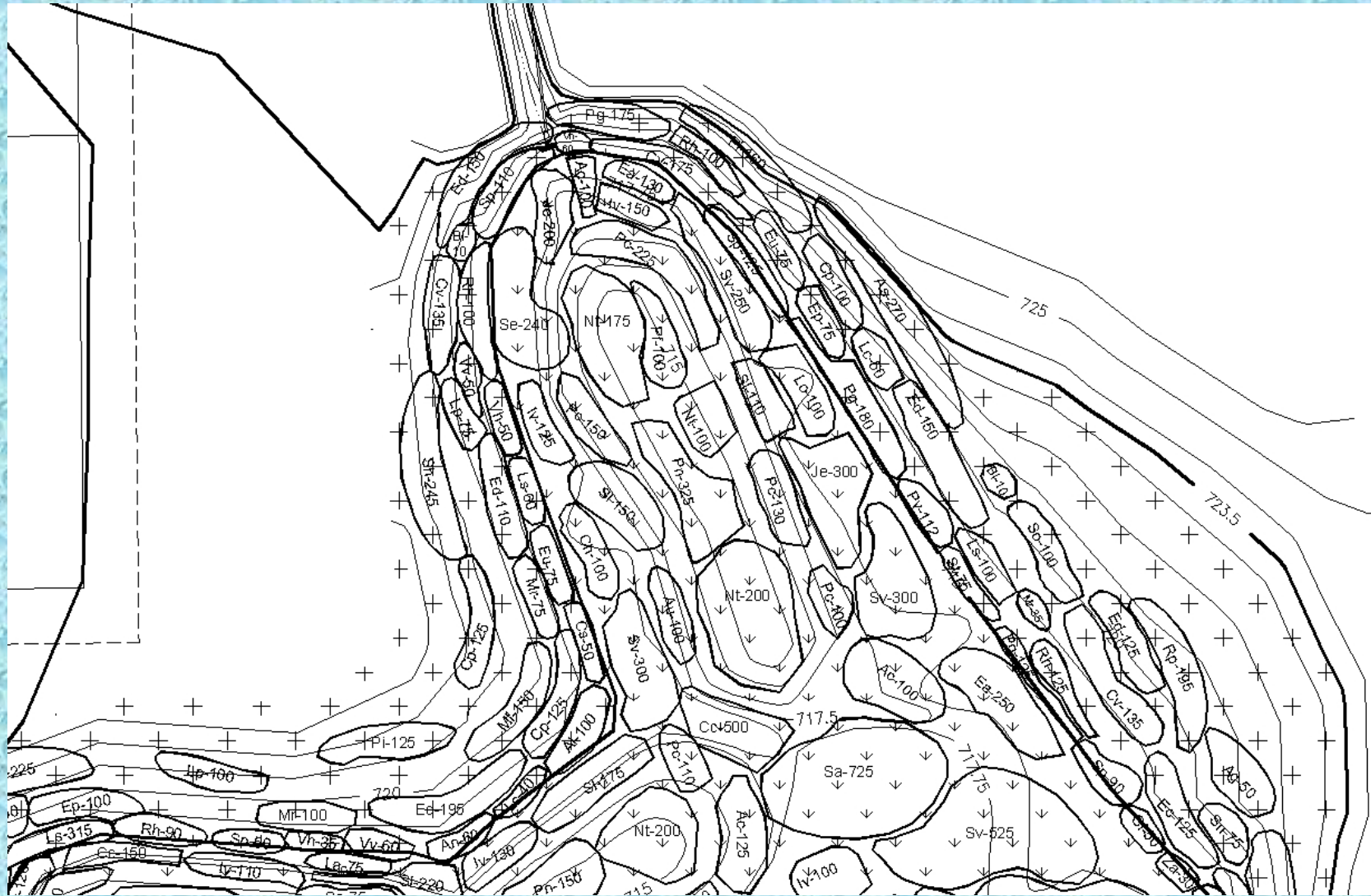
30,000 NATIVE PLANT PLUGS



13,000 PRAIRIE PLUGS
13,000 WETLAND PLUGS
4,000 SHORELINE PLUGS

6-18-07

NATIVE PLANT PLUG DETAIL



NATIVE PLANT MAINTENANCE - IRRIGATION



COVER CROP EMERGENCE



PLANT PLUG SURVIVAL



WETLAND GROWTH



7-31-07

EARLY FLOOD CONTROL (10-YEAR EVENT)



TOLERANCE OF FLOODING CONDITIONS



NATIVE PLANT MAINTENANCE



WATER QUALITY IMPROVEMENT



10-5-07

HABITAT DIVERSITY



5-15-2008

BIOSWALE STABILIZATION



BIOSWALE STORMWATER CONVEYANCE



ACEC ENGINEERING EXCELLENCE – MERIT AWARD
APWA PRAIRIE BRANCH – PROJECT OF THE YEAR



PROJECT BUDGET (COST = 8% BELOW BUDGET)

PRELIMINARY STUDY	\$60,000
DESIGN	\$130,000
OUTLET STORM SEWER	\$615,000
WETLAND BASIN	\$780,000
SCOTTSWOOD STORM SEWERS	\$260,000
EASEMENTS	\$125,000
GRANT ADMINISTRATION	\$90,000
LEGAL / ASSESSMENTS	\$50,000
CONSTRUCTION ENGINEERING	\$125,000
CONTINGENCY	\$165,000
TOTAL PROJECT COSTS	\$2,400,000

PROJECT FUNDING

IDCEO GRANT FUNDS	\$875,000
CITY OF URBANA	\$40,000
URBANA PARK DISTRICT	\$140,000
CHAMPAIGN COUNTY	\$330,000
DRAINAGE DISTRICT	\$10,000
PROPERTY ASSESSMENTS	\$960,000
TOTAL PROJECT FUNDS	\$2,400,000

QUESTIONS ?



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