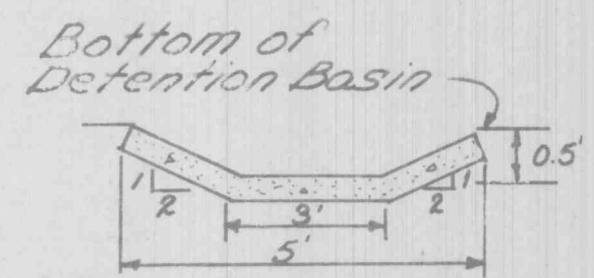
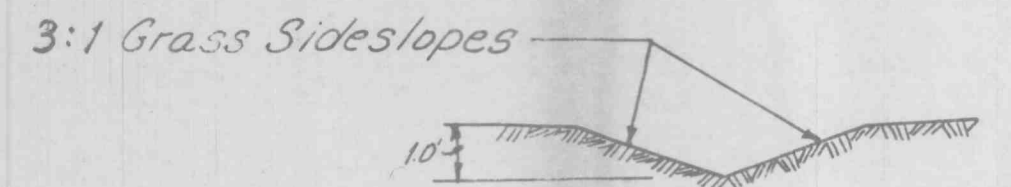


GBA GEORGE BUTLER ASSOCIATES, INC. Engineers / Architects / Landscape Architects / Planners Kansas City, Mo. / Lenexa, Ka. / O'Fallon, Mo. / Ames, Ia. / Oklahoma City, Ok.	DATE: Nov 1987
	DESIGN BY: J.L.B.
	DRAWN BY: S.A.S.
	PROJECT NO: 5126
	SHEET NO: 6
	TOTAL SHEETS: 9
	REVISIONS:
	BY: C.R.P. DATE: Dec 14, 89
	BY: S.A.S. DATE: Feb 27, 88



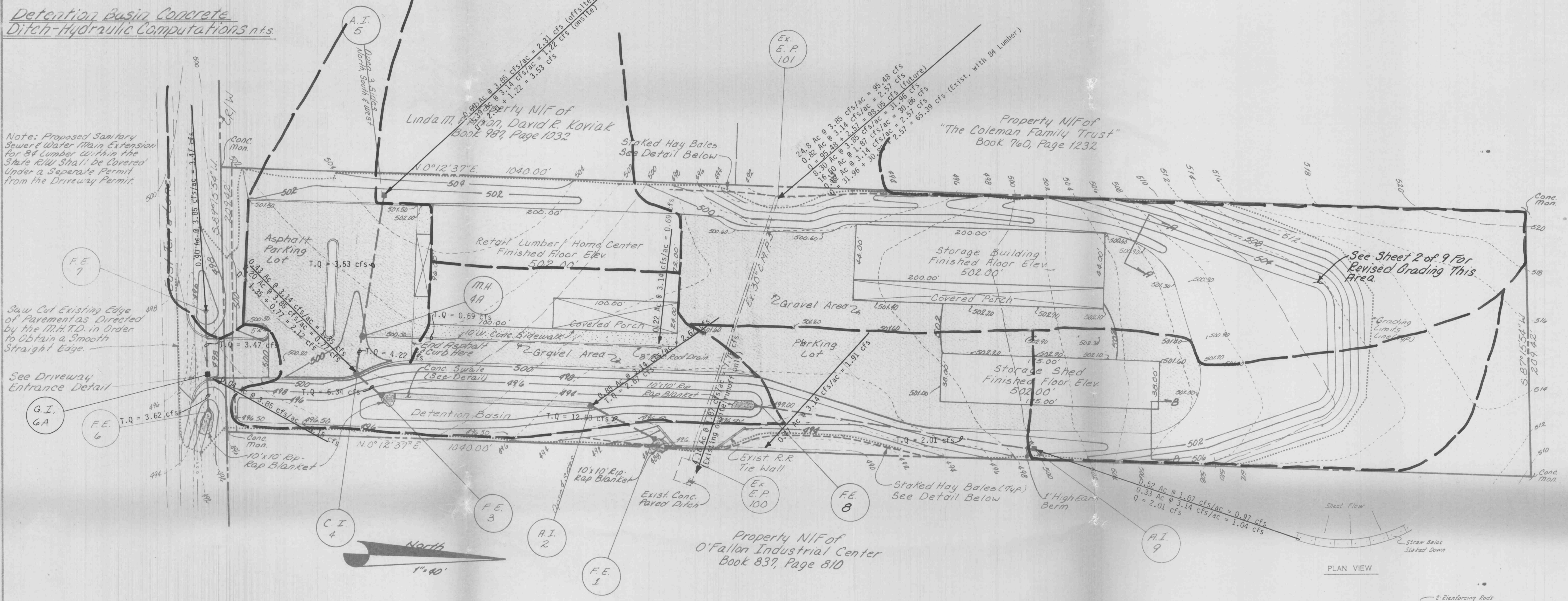
$Q = 8.50 \text{ cfs}$
 $n = 0.15$
 $A = 3h + 2h^2$
 $P = 3 + 4.47h$
 $R = 0.5$ (Height of Conc. Ditch)
 $Q = 10.43 \text{ cfs}$
 $10.43 \text{ cfs} > 8.50 \text{ cfs}$; Ditch is Adequate.
 See Sheet for Construction Detail



Ditch Section "A-A"
 $S = 0.01174$, $h = 0.52'$, $n = 0.025$ (Grass), $A = 0.81 \text{ ft}^2$, $P = 3.17'$, $V = 2.35 \text{ f.p.s.}$
 $Q = 1.90 \text{ cfs}$
 $Q = 1.90 \text{ cfs}$

Ditch Section "B-B"
 $S = 0.01174$, $h = 0.48'$, $n = 0.025$ (Grass), $A = 0.69 \text{ ft}^2$, $P = 2.71'$, $V = 2.17 \text{ f.p.s.}$
 $Q = 1.50 \text{ cfs}$
 $Q = 1.50 \text{ cfs}$

84 LUMBER

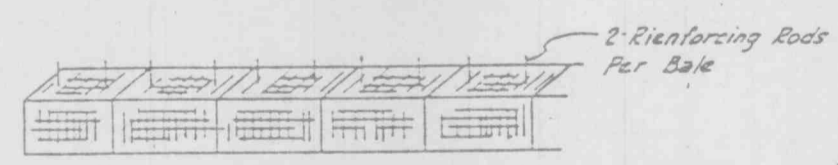


Note: Proposed Sanitary Sewer & Water Main Extension for 84 Lumber within the State R/W shall be covered under a separate permit from the Driveway Permit.

Saw Cut Existing Edge of Pavement as Directed by the M.H.T.D. in Order to Obtain a Smooth Straight Edge.

See Driveway Entrance Detail

See Sheet 2 of 9 for Revised Grading This Area.



FRONT VIEW
STRAW BALE DETAIL
 Straw Bale Erosion Control to be Used until vegetation is established.

SILTATION CONTROL NOTE
 Siltation Control shall be Bales of Straw Placed End to End & Anchored to Ground With 4" Long Reinforcing Rods As Directed By The Department of Highways and Traffic.
 Note: Siltation Control to be Placed as Needed.

SILTATION CONTROL DETAIL n.t.s.

NOTE
 Underground facilities, structures, and utilities have been plotted from available surveys and records and, therefore, their locations must be considered approximate only. There may be others, the existence of which is at present not known, verification of the locations of underground utilities, shown or not shown, will be the responsibility of the construction contractor.

NOTE:
DRAINAGE AREA MAP ONLY. DO NOT USE FOR CONSTRUCTION!