



AES GROUP INC.
 NATIONWIDE LAND SURVEYORS
 605 STATE STREET NEWBURGH, INDIANA 47630
1-800-TO-SURVEY
 1 800 828 5934 , 812 853 7720 , 812 473 3583

FAX COVER SHEET

FAX # 812 853 2465

DATE: NOV. 13 1996

TO: VANDERBURGH COUNTY SURVEYOR

ATTENTION: _____

SUBJECT: WILLOW CREEK SECTION E

FROM: RODNEY K YOUNG

COMMENTS: _____

SHEETS IN THIS TRANSMITTAL (INCLUDES COVER SHEET)

FORM 800

This form must be completed and submitted with all drainage plans
 Project WILLOW CREEK SEC E Detention Facility Design Return Period 25 yrs.

Designer AES ENGINEERING Release Rate Return Period 10 yrs.

Watershed Area 10.727 acres

Time of Concentration (undeveloped watershed) 28.1 minutes

Rainfall Intensity (I_U) 3.00 inches/hr

Undeveloped Runoff Coefficient (C_U) 0.30 (TABLE B03)

Undeveloped Runoff Coefficient ($O = C_U I_U A_U$) 11.58 cfs

Developed Runoff Coefficient (C_D) 0.4715

KERBY
 $t_c = 0.827 \left[\frac{N L}{\sqrt{S}} \right]^{0.467}$

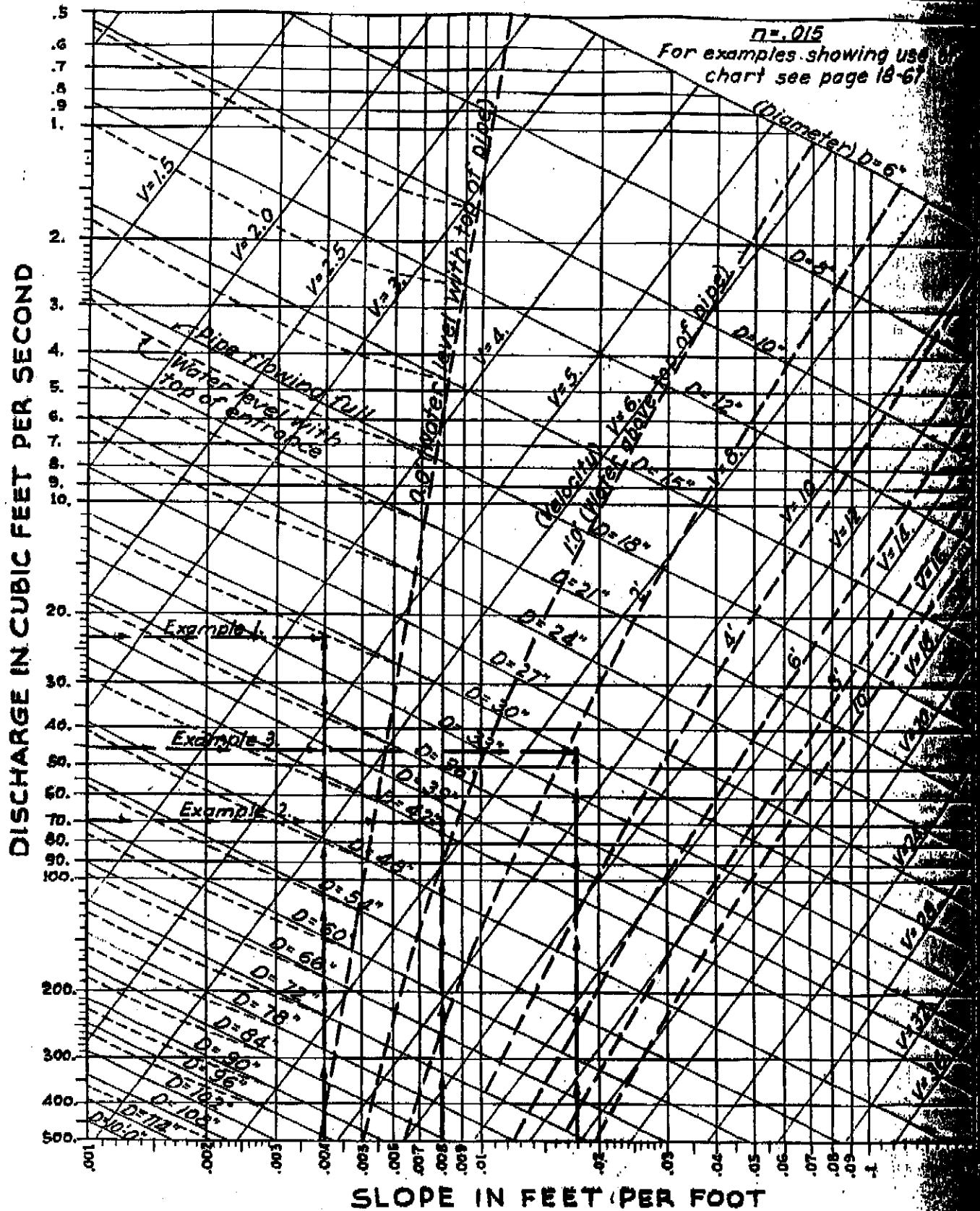
$t_c = 0.827 \left[\frac{0.50 \cdot 850}{\sqrt{0.05}} \right]^{0.467}$

1.15 AC	STREET	x 0.94	= 1.081
0.10 AC	LAKE	x 1.00	0.100
3.25 AC	HOUSES	x 0.92	2.070
5.23 AC	LAWNS	x 0.25	1.307
			5.058

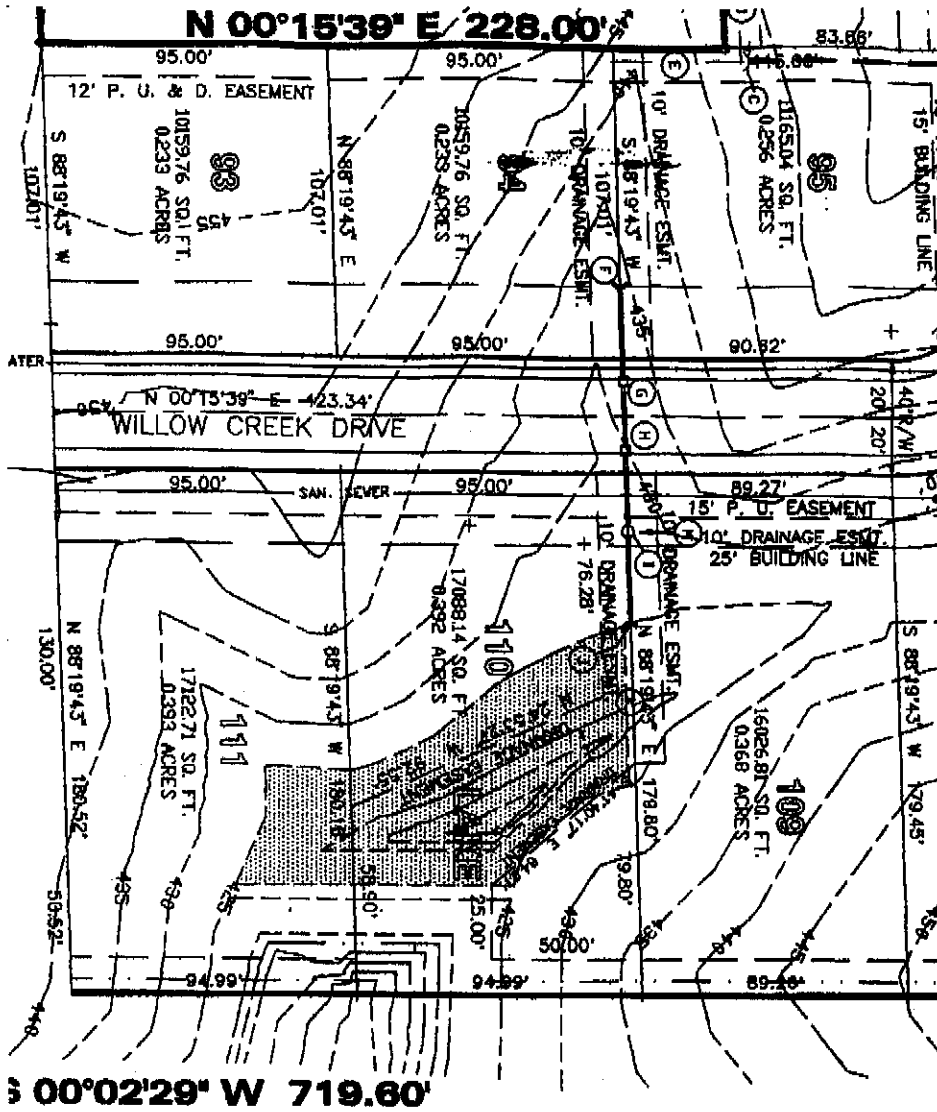
Storm Duration t_d (hrs.)	Rainfall Intensity I_d (inches/hr)	Inflow Rate $I(t_d)$ $(C_D I_d A_D)$ (cfs)	Outflow Rate O $(C_U I_U A_U)$ (cfs)	Storage Rate $I(t_d) - O$ (cfs)	Required Storage $\frac{I(t_d) - O}{12} t_d$ (acre-ft)
0.08	7.208	36.46	11.58	24.88	0.16
0.10	5.925	29.97	11.58	18.39	0.24
0.25	5.033	25.44	11.58	13.86	0.29
0.50	3.646	18.44	11.58	6.86	0.28
1.00	2.078	10.51			
2.00	1.400				
3.00	1.019				
4.00	0.834				
5.00	0.684				
6.00	0.589				
7.00	0.516				
8.00	0.463				
9.00	0.415				
10.00	0.379				

PEAK STORAGE

DRAINAGE & SEWERAGE - PIPE CAPACITIES - I



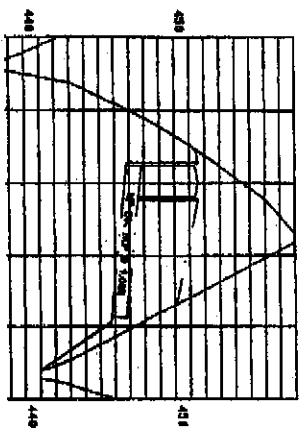
* Adapted from Gohi Culvert Manufacturing Corp.



SOUTHERN INDIANA HIGHER EDUCAT
DEED BOOK 310, PAGE 35 AND DEE
217 MAIN STREET
EVANSVILLE, INDIANA 47708

TOP OF DAM EL. 425.00 FT.
TOP OF SPILLWAY EL. 424.5 FT.
0.366 ACRE-FT. @ EL. 425.00 FT.
0.290 ACRE-FT. @ EL. 424.50 FT.
INVERT OF PIPE EL. 421.00 FT.
MINIMUM DEPTH OF 4 FT IN MIN STORM EVENT

0.149 ACRES
0.034 ACRES
0.366 ACRE-FT.



LETTER OF INSUFFICIENCY
OF DRAINAGE PLAN

November 21, 1996

TO: Mr. Rodney Young, P.E.

FR: Bill Jeffers, Chief Deputy
Vanderburgh County Surveyor

RE: Willow Creek Section E

Sir:

We regret to inform you that the submittals for approval of a preliminary drainage plan for Willow Creek Section E are insufficient for the following reasons:

1. We require a drawing showing the full extent of all watersheds (sub basins) draining into and through a project area.

The drawing assists us in determining the accuracy of the storm water runoff calculations as well as identifying the area(s) we must examine for existing conditions, etc.

2. We require a drawing showing all creeks, intermittent waterways, natural watercourses, man made drainage related features, roadside ditches, etc. within the area(s) depicted on the watershed map described above.

3. We require certain details and drawings of all existing and manmade drainage features within the area depicted on the watershed map described above. Especially within the project area.

The required details include (but may not be limited to) cross sections of natural watercourses and man made ditches and ponds.

For example: at such a hilly site, your client is either going to maintain natural features or he is going to make radical changes in order to build houses on such small lots.

Therefore, we require a grading plan with cross sections of existing and man made watercourses and ponds. We require such a plan so that we may determine the adequacy of the channels, ponds, pipes and *especially the size of the easements* (compared to lot size.)

For example: the proposed pond on Lot 110 will back water up to an elevation of 425 feet, rendering the lot unbuildable with its existing contours.

You must show the exact construction details of the pond then add the maintenance easement around the pond before determining the lot size required to house the pond plus a house.

4. Generally, preliminary drainage plans submitted to our office are accompanied by a report detailing the conditions of the site, proposed alterations to render the site buildable, and charting the basis of design of man made drainage facilities.

We are reluctant to recommend approval of preliminary drainage plans without a complete report as submitted by other developers.

 Bill Jeffers 11/21/96

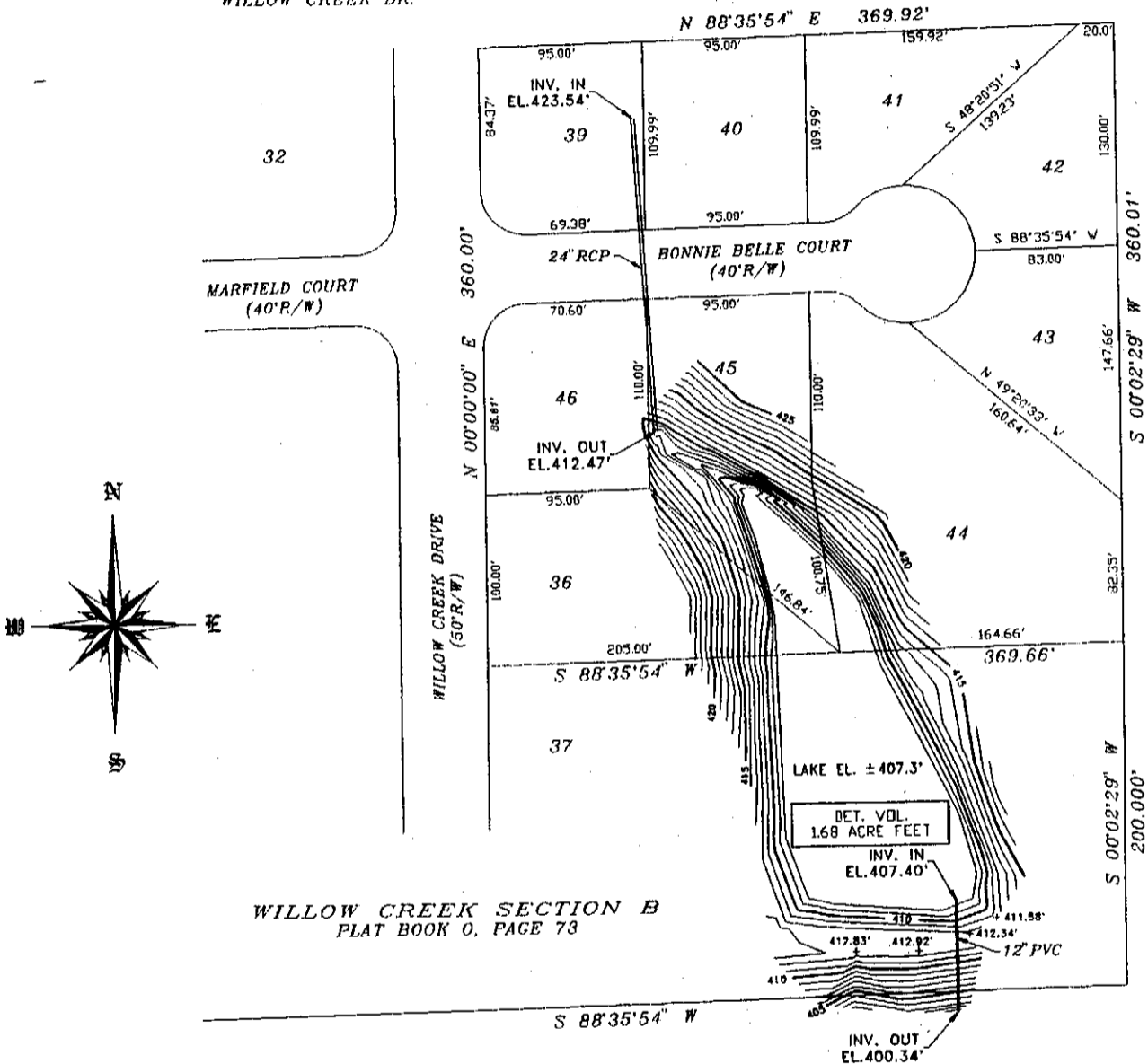
TOPOGRAPHICAL SURVEY

PROJECT DESCRIPTION

RETENTION POND ASBUILT

BEING IN WILLOW CREEK SUBDIVISION SECTION B (PLAT BOOK O, PAGE 73)
 SAID SUBDIVISION BEING PART OF THE EAST HALF OF THE SOUTHWEST QUARTER
 SECTION 31, TOWNSHIP SIX SOUTH, RANGE ELEVEN WEST
 VANDERBURGH COUNTY, INDIANA

TBM - ELEV. 442.44'
 TOP OF FIRE HYDRANT AT
 NE CORNER OF INTERSECTION
 OF MECHAN CT. &
 WILLOW CREEK DR.

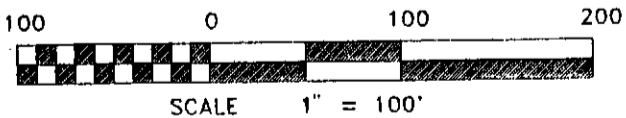


WILLOW CREEK SECTION B
 PLAT BOOK O, PAGE 73

WILLOW CREEK SECTION A
 PLAT BOOK O, PAGE 32

TOPD NOTES

1. CONTOUR INTERVAL = 1'



DRAWN BY: DSL

CHECKED BY: RKY

FILE NAME: HATFIELD.DWG

CERTIFICATION

Rodney K Young
 RODNEY K. YOUNG P.E., L.S.
 INDIANA REGISTRATION No. 910019
 DATE: 8/30/96



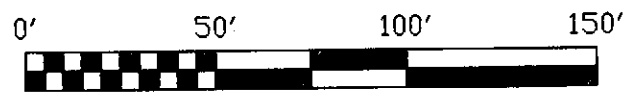
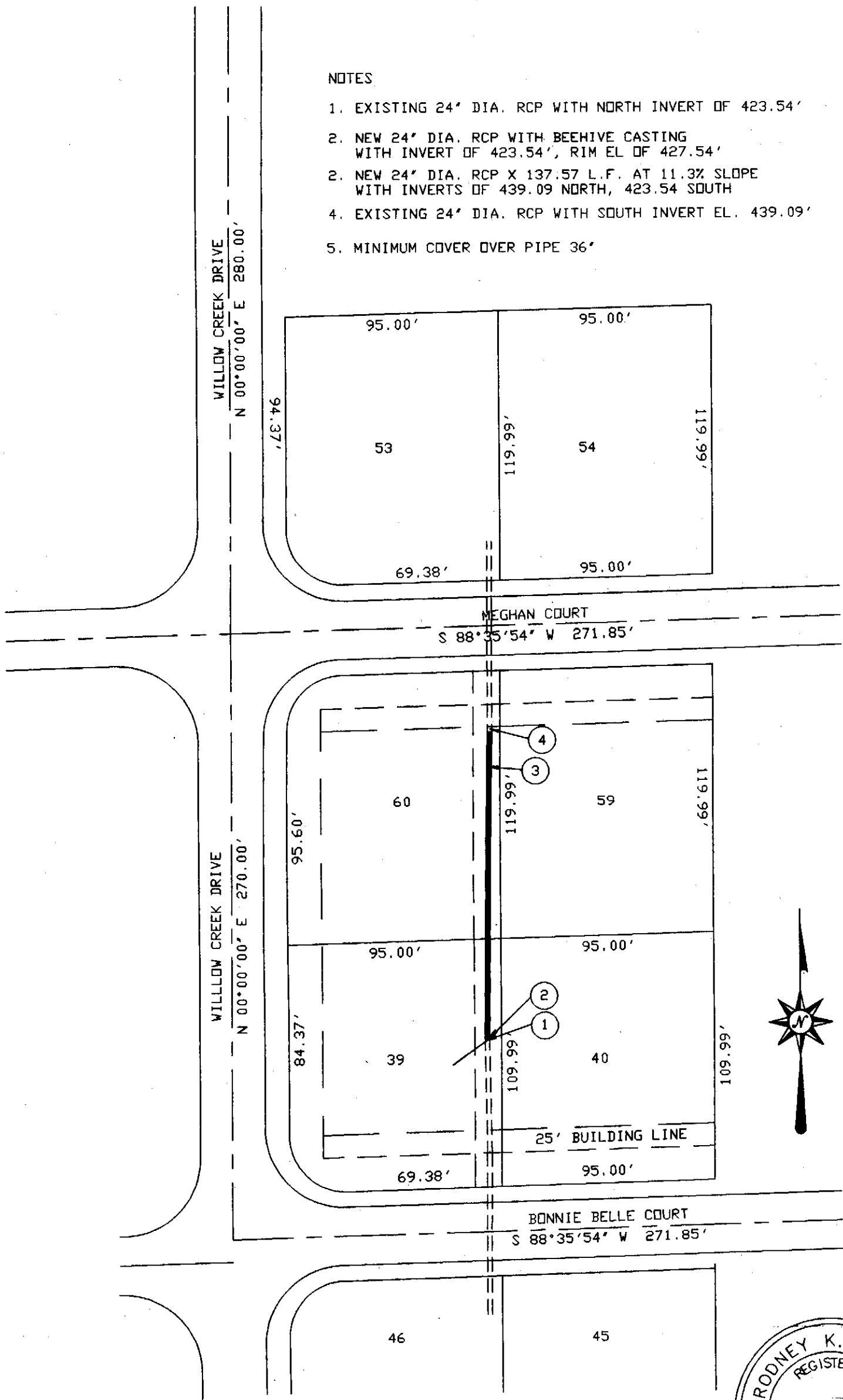
PREPARED FOR

BRUCE HATFIELD
 4613 SWEETSER AVENUE
 EVANSVILLE, IN 47714

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U.S. SURVEYOR
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NOTES

1. EXISTING 24" DIA. RCP WITH NORTH INVERT OF 423.54'
2. NEW 24" DIA. RCP WITH BEEHIVE CASTING WITH INVERT OF 423.54', RIM EL OF 427.54'
2. NEW 24" DIA. RCP X 137.57 L.F. AT 11.3% SLOPE WITH INVERTS OF 439.09 NORTH, 423.54 SOUTH
4. EXISTING 24" DIA. RCP WITH SOUTH INVERT EL. 439.09'
5. MINIMUM COVER OVER PIPE 36"



ARCHITECTURE * ENGINEERING * SURVEYING

AES Engineering, Inc.
Professional Engineers & Land Surveyors

605 State Street * P.O. Box 15 * Newburgh, IN 47630
812-853-7720 fax 812-853-2465

WCULVERT.DWG
REVISED: SEPTEMBER 9, 1996
CERTIFIED: DECEMBER 5, 1995

Rodney K. Young
RODNEY K. YOUNG, PE, LS
INDIANA LS REG. NO. 910019