

**DRAINAGE REPORT**  
**for**  
**AMESTOY DRYWALL OFFICE**

*Prepared for*

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## **I. PROJECT DESCRIPTION**

*This drainage report has been prepared to support the proposed development of Tract C-1-B of the Irving Business Park. The proposed development will consist of an office / warehouse with a separate storage building.*

## **II. DRAINAGE DESIGN CRITERIA AND PREVIOUS REPORTS**

*An earlier drainage report, prepared by this office, entitled The Rastra Building (B13-020), analyzed developed drainage conditions for all of the tracts within the Irving Business Park. An analysis of the entire park was required at that time in order to size the necessary outfall structure to the Calabacillas Arroyo. Applicable excerpts from the Rastra report have been included in this report to assist the reviewer.*

*As in the Rastra Building report, this analysis has been prepared for the 100-year, 6-hour storm event. The AHYMO hydrology software was used in accordance with Section 22.2 of the City of Albuquerque Development Process Manual (DPM) to determine site run-off. AHYMO printouts have been included in Appendix A of this report.*

*Manning's Equation was used in determining proposed storm drain capacities.*

## **III. EXISTING DRAINAGE CONDITIONS**

*Per the recommendations made in the Rastra Report, those portions of the Irving Business Park west of this site, as well as the off-site flows impacting the Business Park, currently surface discharge to an existing bar-ditch located near the southern boundary. Those flows, as well as storm waters generated from this 3.07 acre tract are routed to a drop inlet located along the eastern boundary of this site. The collected flows outfall to the Calabacillas Arroyo via a baffled 48" RCP pipe. As stated earlier, the inlet and outfall pipe were both sized to carry future developed flows from the Irving Business Park basin as well as the contributing off-site flows.*

## **IV. DEVELOPED DRAINAGE CONDITIONS**

*With the development of this site, it is proposed that an adequately sized storm drain be extended west from the existing drop inlet. The proposed storm drain will follow the alignment of the existing bar-ditch. The system will intercept a portion of the developed flow from this site (B2), as well as off-site flows from upstream tracts further to the west. The sediment laden flows from the off-site basins to the south will also be intercepted by this new system prior to entering the new paved areas.*

*Developed sub-basin B-1 will continue to surface discharge to the existing drop inlet located along the eastern boundary.*

*Hydrologic and hydraulic calculations are included in Appendix A of this report to support this analysis.*

## **V. SUMMARY**

*The analysis and recommendations made in this report follow closely those made in the previously approved Rastra Building study. With that, there will be no adverse impacts with the development of Tract C-1-B of the Irving Business Park.*



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PROJECT AMESTOY DRYWALL  
SUBJECT Drainage Calc.  
BY JS DATE 8/17/04  
CHECKED \_\_\_\_\_ DATE \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

### Size On-site Storm Drain

$$S = 1.80\%$$

$$n = .013 \text{ (RCP)}$$

$$Q = 1.486 / n \cdot A \cdot R^{2/3} \cdot S^{1/2}$$

#### 1. Bottom Reach

$$Q = 48.96 \text{ cfs}$$

a) Try 30" RCP

$$\text{Area} = 4.91 \text{ sf}$$

$$R = 0.625$$

$$\therefore Q = (1.486 / .013) \cdot (4.91) \cdot (.625)^{2/3} \cdot (.018)^{1/2}$$
$$= 55.0 \text{ cfs} > 48.96 \text{ OK}$$

#### 2. 2nd Reach

$$Q = 43.19 \text{ cfs} \rightarrow \text{use 30" RCP}$$

#### 3. 3rd Reach

$$Q = 34.69 \text{ cfs} \rightarrow \text{still use 30" RCP}$$

#### 4. 4th Reach

$$Q = 15.66 \text{ cfs}$$

a) Try 24" RCP

$$\text{Area} = 3.14 \text{ sf}$$

$$R = 0.50$$

$$\therefore Q = (1.486 / .013) \cdot (3.14) \cdot (.50)^{2/3} \cdot (.018)^{1/2}$$
$$= 30.3 \text{ cfs} > 15.66 \text{ cfs OK}$$