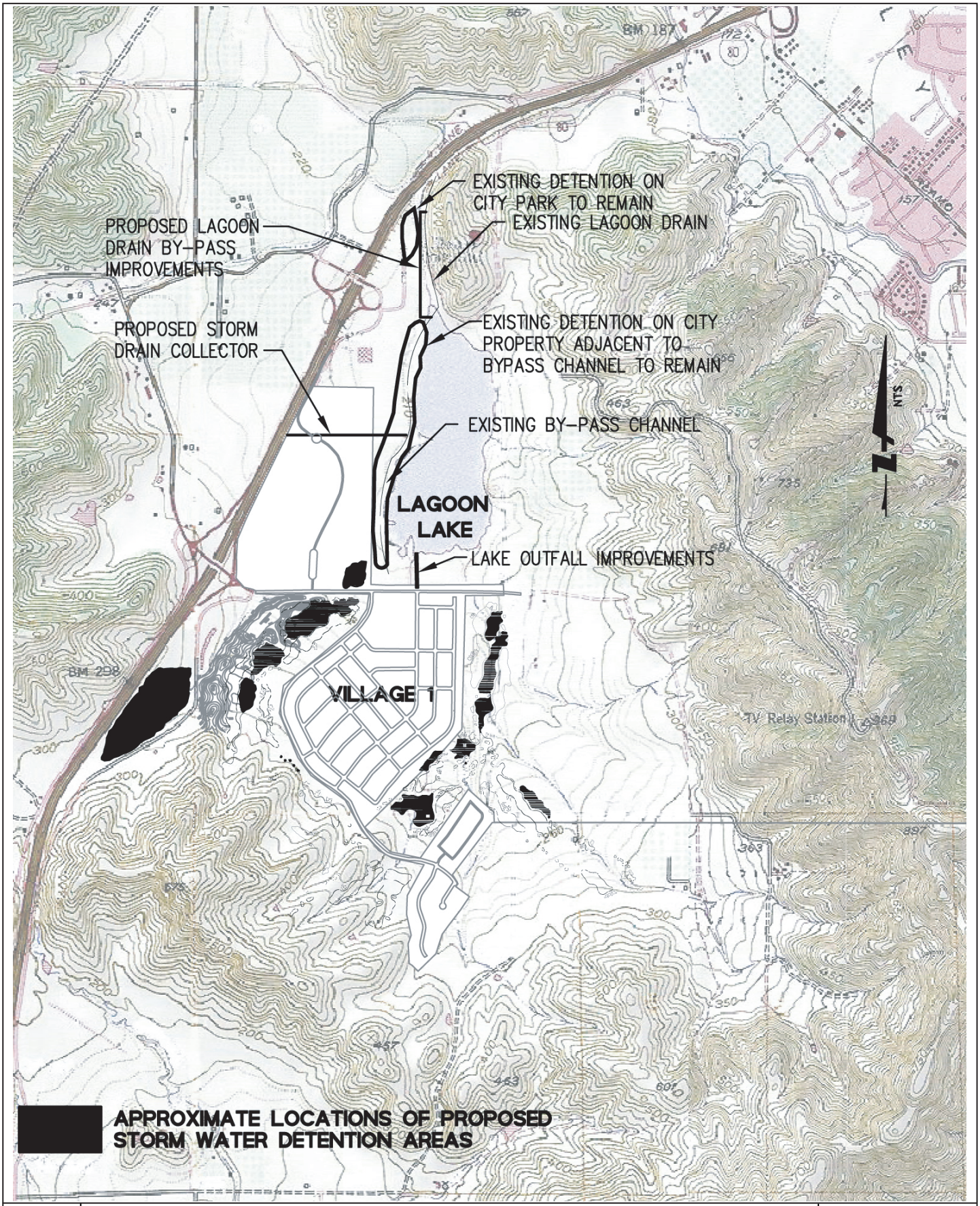

FIGURE **3-12**

Storm Drain Improvements and Detention

Not to Scale

10794-00

Source: City of Vacaville, 2004

City of Vacaville

EIP ASSOCIATES

Water Quality Protection

In addition to the detention ponds and grassy swales, the Proposed Project would also implement the following Best Management Practices (BMPs) consistent with California Regional Water Quality Control Board National Pollution Discharge Elimination System (NPDES) urban stormwater runoff management requirements:

- Catch basin inserts and/or swirl separator units;
- Stencil all storm inlets with appropriate warning information;
- Include street cleaning requirements within the HOA CCRs; and
- Provide detailed descriptions for erosion, dust, and toxic material control measures within the Storm Water Pollution Prevention Plan (SWPPP) for use during construction phases. These would include details for inlet protection, slope protection, temporary siltation detention basins, dewatering procedures, dust suppression, and equipment maintenance areas.

The stormwater drainage system within the private streets would be maintained by the HOA. The portions of the stormwater drainage system located in the public streets, or installed as part of the lake/channel drainage system, would be dedicated to the City as a public resource at completion of construction.

The applicant proposes that the planning, design, construction and maintenance of the Lagoon Valley Golf Course would adhere to the principles of "Environmental Principles for Golf Courses in the United States" developed by the United States Golf Association (USGA). According to the applicant, these principles are aimed at siting, designing, constructing and maintaining a golf course facility that is economically viable and takes into consideration the ecosystem it is part of and consideration for surrounding land uses.

The applicant's stated golf course operation program would employ the principles of Integrated Plant Management (IPM), a system that relies on a combination of practices for preventing and controlling pests (e.g., weeds, diseases, insects) in which monitoring is utilized to identify pests, damage thresholds are considered, and possible management options are evaluated and selected control(s) are implemented.

Proposed golf course maintenance would use nutrient products and practices that would help protect water quality. Strategies include:

- Use of slow-release fertilizers
- Selected organic products, and/or fertilization
- Integrated Pest Management (IPM)
- Use of buffer zones
- Selection of Least Toxic Controls for pest management
- Curative instead of preventative pest controls.

Soil conditions would be tested and monitored regularly and practices modified accordingly. Nutrient products and time applications would be chosen to meet, not exceed, the needs of the turfgrass. Soil tests would be taken to determine the need for specific nutrient requirements.

Fertilizers would be selected based upon their ability to release nutrients at a rate matching the ability of the turfgrass to absorb these nutrients. Slow release nitrogen sources would be utilized for the majority of fertilizer applications. If fast release fertilizer is used, the operator

would protect water resources by timing applications to avoid major rainfall events, proper placement of material, and proper rates of application.

Nutrient budgets would be established and will be evaluated and adjusted annually based on the maturity and response of the turfgrass.

All plant protectant products would only be applied by or under the supervision of a trained, licensed applicator or as dictated by law.

Education of applicators (including state licensing, professional association training and IPM certification) would be provided. Training for non-English speaking applicators would be provided in the worker's native language.

Golfers and guests would be informed about golf course chemical applications. Common methods include permanent signs on the first and tenth tee boxes and/or notices posted in golf shops and locker rooms.

The applicant/operator intends to apply for status as an Audubon Cooperative Sanctuary from Audubon International. Under this program, the proposed golf course would complete projects in Environmental Planning, Wildlife and Habitat Management, Chemical Use Reduction and Safety, Water Conservation, Water Quality Management, and Outreach and Education utilizing information from Audubon International to develop a sustainability and management plan that would fit Lagoon Valley's unique setting, and goals.

Flood Plain Considerations

In 1982, FEMA prepared a Flood Insurance Study report and Floodway Maps for the City of Vacaville. The results of this study for the project site area are shown on FEMA's Flood Insurance Rate Map (FIRM), Community-Panel Number 060373 0013 C, dated January 17, 1997. The FIRM indicates the 100-year flood elevation covers much of the proposed Business Village area and a smaller area within the northern edge of the residential project. The map defines the project area as "Zone A" with "No base flood elevation determined". The base flood elevation is set by the peak water surface elevation that will occur during a 100-year rainfall event.

In order to remove the residential development from the FIRM Zone A designation, all of the residential units and building structures will be required to be set above the 100-year water surface elevation. All of the residential units and building structures will be set above a minimum elevation of 218.0 (NGVD 1929).

For the Business Village area, the 100-year water surface elevation is dictated by the flow capacity of two existing improvements; 1) the box culvert under I-80 south of the Cherry Glen Road, and 2) the Lagoon Drain downstream of the dam structure.

In order to remove the Business Village development site from the FIRM Zone A designation, improvements would be installed to by-pass the Lagoon Drain and limit the flows to the box culvert. These improvements would reduce the water surface elevations so they can be contained within the Lagoon Drain and By-Pass channel.

In addition to the by-pass improvements, the runoff from the residential and Business Village areas would be detained on site to reduce the combined flow of the Lagoon and By-Pass

channel to match the capacity of the Lagoon Drain and box culvert under I-80. This detention would be accomplished within the golf course area, as well as through pond areas and below ground detention facilities within the Business Village area.

Electric, Gas, Telephone, and Cable Utilities

PG&E indicates that the existing power facilities currently within the Lagoon Valley will be sufficient to serve the proposed development. Gas service, telephone, and cable TV would be brought in to the project site to serve the Proposed Project (see Figure 3-13).

There are several existing residences adjacent to the Proposed Project, primarily to the south. These residences currently receive power and telephone from an above-ground utility line that run parallel to the existing Lagoon Valley Road. These utilities would need to remain in service during construction. Ultimately, these lines would placed underground through the project site as part of a joint utility trench design and reconnected at a service point near project property boundary.

A gas line would be connected to existing facilities within the Nelson Road right-of-way, approximately 1,000 feet south of Laurel Creek, and extended north within the paved right-of-way to the project area.

For services throughout the development, underground joint utility trenches (power, gas, telephone, cable TV) would be constructed along the street rights of way with service points for each residential and commercial building. Streetlights would also be constructed along the street rights of way.

Other Project Components

Dedication of Additional Open Space

Almost all of the land within the approximately 879 acres of the Development Area that would be developed with the proposed residential, golf course, and business village uses is privately owned. As previously described, the City would provide 48 acres of city-owned land in exchange for the dedication of approximately 60 acres of open space. The result would be a net increase in City open space of approximately 12 acres. In addition, the City of Vacaville owns a small, 3.7-acre parcel west of Lagoon Valley Lake. This parcel would remain under City ownership as part of the regional park.

Development Agreement

A Development Agreement between the City and the developer would be adopted, identifying obligations of the developer and the City with regard to creating funding mechanisms, implementing the development plan, timing of improvements and other commitments between the parties. The Development Agreement would vest the planning approvals for the project for a specified period of time (proposed at 15 years) and would guarantee that a certain number of residential permits (proposed at between 200 and 250 per year) would be available to the developer under the City's building permit allocations each year. Under the terms specified in the City Council's initiation of the development review process, the Development Agreement would include developer obligations for the payment of a community benefit contribution which is proposed at $5,800 per residential unit and $1 per square foot of non-residential