SPECIAL CONSIDERATIONS

EXISTING DEFICIENCIES

Many of the existing problems, principally in natural "drainages" and "swales", could have been alleviated had easements been acquired and/or ordinances been enacted to prevent construction of improvements (principally houses and mobile homes) in these drainage ways.

This problem was addressed in the 1968 report because, even then, many of the problems existed. Regulation would not necessarily preclude the use of these creeks and swales for many of the activities people enjoy, but should require that adequate capacity is provided. This could be accomplished through a permit process, much like a building permit.

In order to determine what the future needs of the community in general and each individual basin in particular were, the present day deficiencies in the system were identified. Computer calculations were made for each basin analyzing the present land use, existing natural channels and culverts.

Where well defined natural channels did not exist, primarily in the upper reaches of each basin, and where storm waters were leaving the channels causing or having the potential to cause damage, closed storm drain pipe has been recommended for installation. In downstream reaches where the existing natural channel was undefined or lacked adequate capacity and the potential for property damage existed, improved channels have been recommended. Where reaches of the channels lacked capacity but no improvements were threatened, no work is recommended at this time. It was felt that this area could be improved when it was developed, if the use of the floodplain was desired by the owner or developer.

In the areas where insufficient width existed to accomodate an improved channel, closed storm drain has been

recommended. Culverts have been recommended for replacement or augmentation where they are inadequate and threat to the roadway or other improvements exists. All existing deficient culverts have not been recommended for replacement though, due to the beneficial effects of upstream storage. This is more fully discussed under Culvert Replacement.

ENCROACHING STRUCTURES

Structures identified during the inventory process as possibly being subject to storm water damage should be analyzed in a more in-depth individual study. Some may be subject to only minor problems such as storm water entering a garage and might be remedied by minor maintenance work. Others, however, appear to be in imminent danger of sustaining major structural damage. In a few isolated instances, particularly along the Pentz 1 Basin drainage, threat to personal safety exists.

The resolution of responsibility for the probable damages to these structures is not within the scope of this study. In general, those structures that are threatened have not been placed in jeopardy due to upstream development alone but together with poor on-site design and modifications to the natural channel, causing the acute problems.

The detention sites proposed for construction will definitely decrease the potential for storm water damage to structures located immediately downstream. Exhibit "E" illustrates some basic approaches to floodproofing structures.

FLOOD ZONING

Consideration was given to the possibility of recommending flood zoning of the natural drainage channels. This type of regulation has been utilized in other areas of the country to regulate development within areas subject to storm water flows. In order to properly describe and

locate the boundaries of such a zone, very detailed hydrologic and hydraulic studies must be made in order to determine the actual flood "stage". This approach is more applicable to towns and cities adjoining major streams and rivers. It requires that extensive topographic information and hydraulic calculations be made in order to determine the actual bounds of the design flood. The nature of the topography and lack of major streams and stream flow data within the study area precluded this level of detail and make Flood Zoning impractical.

SPECIAL PERMIT ZONES

Since flood zoning would require much more extensive field work, as well as mapping and computer effort, than is practical, an alternate approach would be to establish general areas where special clearance would be required prior to constructing improvements. This approach, called Special Permit Zones, would require the developer or landowner to verify that adequate provisions are provided for design flows.

The following criteria is recommended.

1. All finish floors and bridge soffits to be established a minimum of one foot above the calculated design flood level (50 year recurrence interval).
2. All culverts be designed to flow full, using accepted culvert design practices under flows developed from a 10 year recurrence interval storm, with no overtopping of roadway or fill for 50 year recurrence interval storm.
3. Enlargement of the natural channel or other modifications contemplated should be compatible with the Facilities Plans. Placement of closed conduit instead of open channels could be allowed in some specific instances provided, however, that

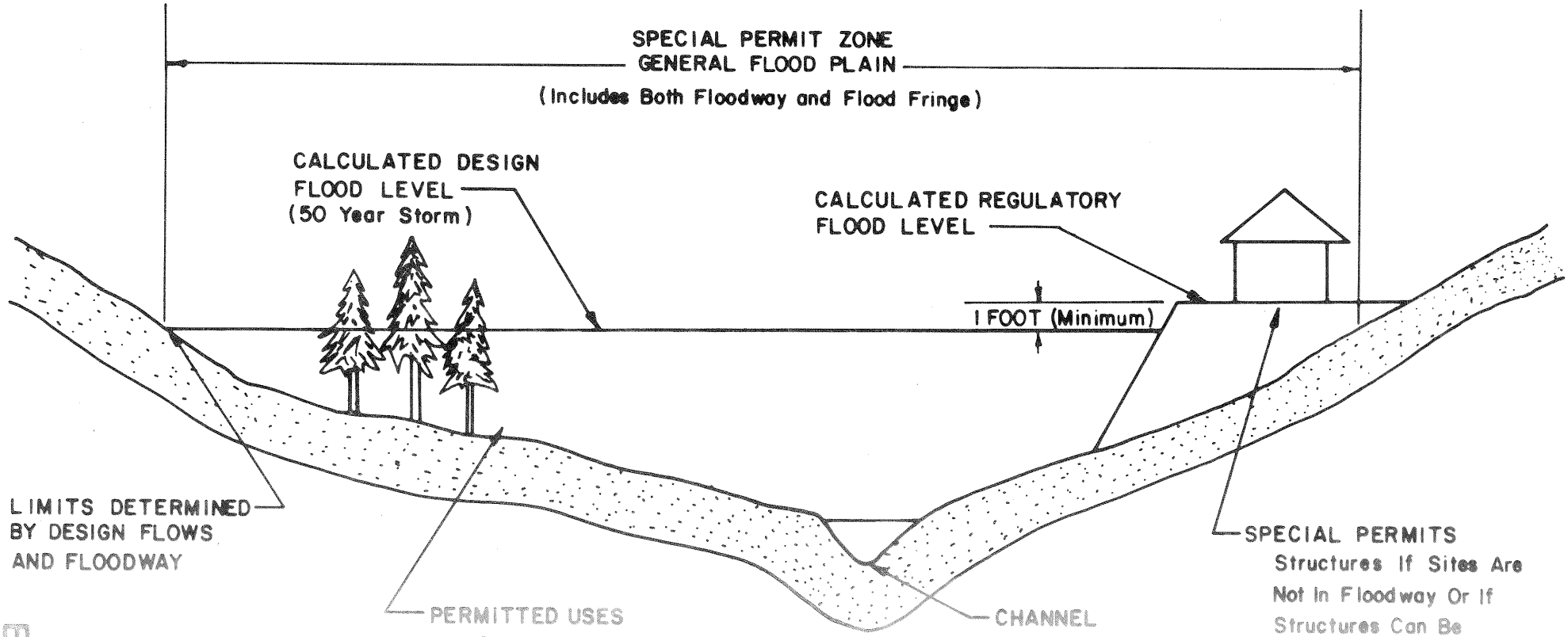
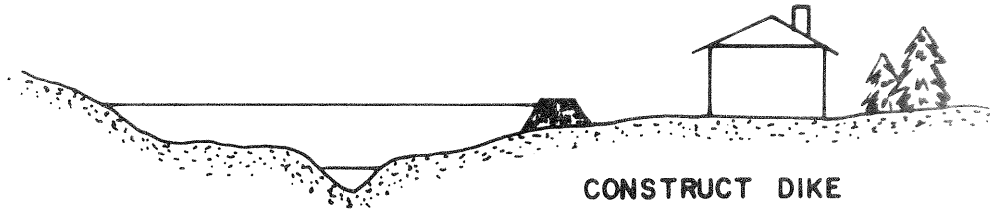


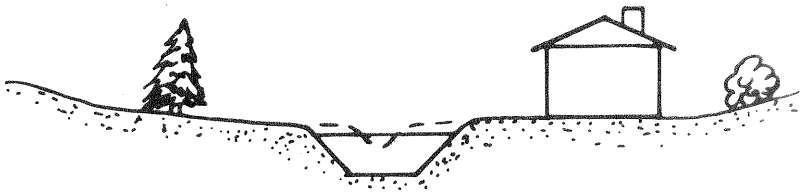
EXHIBIT "D"

NOTE:
NOT TO SCALE
VERTICAL EXAGGERATED FOR CLARITY

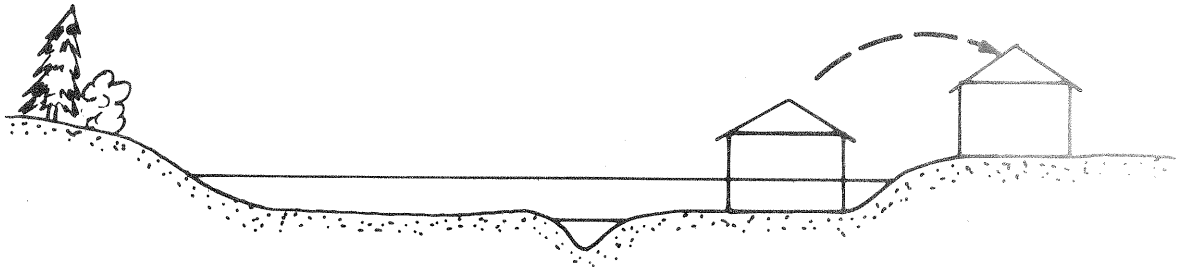
MAJOR FLOODPROOFING ALTERNATIVES:



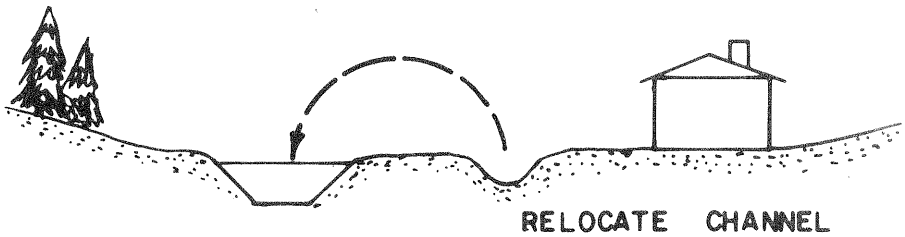
CONSTRUCT DIKE



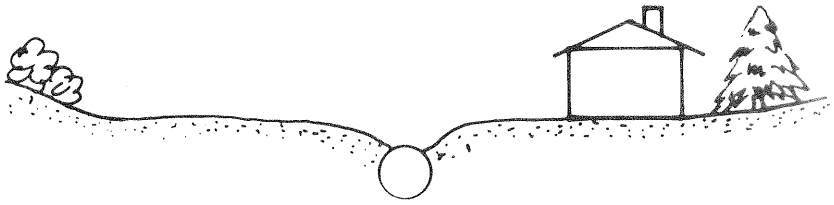
WIDEN - DEEPEN
CHANNEL



RELOCATE STRUCTURE



RELOCATE CHANNEL



INSTALL CLOSED STORM DRAIN

EXHIBIT "E"