Research Report

LEGAL ASPECTS AND GUIDELINES PERTAINING TO DRAINAGE OF SURFACE WATERS

KYP -- 12

by

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and

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DEPARTMENT OF HIGHWAYS
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April 1970

Eugene Goss
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COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT, KENTUCKY 40601

April 1, 1970

H.3.12

MEMORANDUM TO: A. O. Neiser, State Highway Engineer
Chairman, Research Committee

SUBJECT: Research Report, "Legal Aspects and Guidelines Pertaining to Drainage of Surface Waters"; KYP-68-12; Part III-A, HPR-1(5).

A previous study ("Research Relating to State Highway Laws", reported January 1967) afforded us an opportunity to review a vast array of literature and statutory law pertaining to enabling legislation and administrative authority to construct and maintain highways. It was surprising to find that the statutes are void of guidance on certain subjects: there are great "bodies" of unwritten or non-statutory laws which are referred to as "common law" and "civil law", which are deeply rooted in the past; many are doctrinal or equitable; many are extraordinary and argumentative -- they should not be confused with Civil Procedure. They have been described as the laws of "private rights" and offer redress of grievances when statutory or constitutional laws are not specific.

The right to own and possess land is constitutional; riparian rights attach -- some authorities contend that riparian rights cannot be severed and sold. Formerly, the attitude toward ownership of land was that rights extended from the center of the earth to the sky above and that owners rights were inviolable except through eminent domain and "due process". Modern attitudes superimpose a limited-use or "public interest" condition upon private ownership. Even so, an owner of land may not perpetuate a nuisance or use his land in ways which are injurious or damaging to others. Interestingly enough, a nuisance does not exist until someone is injured by it; priority of occupation does not constitute a prescriptive right.

The Department incurs liabilities when private rights are invaded or usurped. In some jurisdictions the state has been held liable in the same manner as a private owner; where sovereign immunity persists, damage to private property may be described as "nuisance", "trespass", or "negligence". Ultimately, such actions are held as a taking of or adverse possession of private property.

It is a foregone fact that the construction of highways involves alterations of the land and drainage patterns. Indeed, the Department is empowered to recover land for these purposes and to justly compensate owners for complete or partial takings as well as for damage to remaining property. The necessity of providing adequate drainage for highways probably pre-dates Roman or Civil Law. Yet the "due process" taking does not privilege the state to abuse the properties of adjacent owners. The fact that water flows downhill has never been disputed. Because this is inherent in nature, the owner of lower land was once deemed servient to higher lands and, therefore, must accept natural drainage of water from above. Subsequently, in common law, it was deemed permissive for owners of higher lands to cast unwanted waters onto lower lands as a burden. There, too, the water, if unwanted or damaging, became a hostile force. Unwanted water thus became a common enemy -- to be successively and expediently disposed of or prevented from entering. Hence, the common law concept could ultimately lead to a complete impasse.

To augment or improve natural drainage should be satisfying to all parties (a truism), but to tap additional sources (areas) and to concentrate waters in channels having insufficient capacity to carry the excess is offensive to all. To "change", "increase" or "accelerate" the normal flow of water violates no law of man nor of nature; to injure or damage others by such contrivances or artifices is subject to redress. Natural drainage cannot be preserved forever; alterations made to enable habitation and cultivation alter primeval conditions; consequently, two modified but similar doctrines have emerged; they are:

1. Balance of convenience doctrine.

2. Reasonable use doctrine.

It is interesting to note that these doctrines are not dependent upon nor do they issue from physical laws of nature (such as the "hydrological cycle") but do, seemingly, supersede former doctrines.

The difficulty with the reasonable use doctrine is that only a jury might be considered qualified to determine what is reasonable and what is not. This may also be so in respect to the balance of convenience doctrine -- and ultimately in all cases.

In some situations, it is conceivable that although the Department committed no offense, it would be held responsible because it possesses the only power to provide relief. For example, if the Department constructs a road enabling or attracting unforeseen commercial or residential development and if such development induces greater runoff and thereby renders a culvert or storm sewer inadequat the Department may become subservient to private or corporate owners and be required to reconstruct the culvert.

Likewise, the sinking of water in private wells -- near excavation, blasting, etc. -- incurs presumed fault. Malfunction of existing sewers or the creation of seepages usually involves presumed fault.

In summary, it seems that the most reliable guiding principle to follow from the standpoint of engineering design is to acquire the right to alter drainage when necessary alterations are likely to cause flooding, erosion, or other damage. In some situations where damage is unavoidable, the damage may be compensable -- as damage to a severed remainder of a parcel or merely as damage to an abutting owner. Easements, temporary or permanent, may be obtained for channel improvements essential to drainage and to the welfare of the roadway. In instances where the attendant damages are likely to be recurrent, either the affected lands should be acquired through fee-simple purchases or a permanent easement obtained. If the design headwater elevation for a culvert is such that it backs water onto private lands, a permanent easement might be acquired as a safeguard against future liabilities. To obtain title to all abutting lands likely to be affected by highway drainage burdens the Department for additional maintenance and deprives private owners of limited but perhaps profitable use of lands.

The report submitted herewith documents and directs attention to some matters associated with the design of drainage facilities and the possible liabilities incurred thereby. Messrs. McLellan and Fox were law students at the University of Kentucky while employed part-time in the Division of Research. Mr. McLellan was also a graduate engineer, formerly employed elsewhere by the Department.

No further research effort on this subject is planned at this time.

Respectfully submitted,

Jas. H. Havens

Jas. H. Havens
Director of Research

Attachment

bv

cc's: Research Committee

Assistant State Highway Engineer, Research and Development
Assistant State Highway Engineer, Planning and Programming
Assistant State Highway Engineer, Pre-Construction
Assistant State Highway Engineer, Construction
Assistant State Highway Engineer, Operations
Assistant State Highway Engineer, Staff Services
Assistant Pre-Construction Engineer
Assistant Operations Engineer
Executive Director, Office of Computer Services
Executive Director, Office of Equipment and Properties
Director, Division of Bridges

(cont.)

Director, Division of Construction
Director, Division of Design
Director, Division of Maintenance
Director, Division of Materials
Director, Division of Photogrammetry
Director, Division of Planning
Director, Division of Research
Director, Division of Right of Way
Director, Division of Roadside Development
Director, Division of Rural Roads
Director, Division of Traffic
Division Engineer, Bureau of Public Roads
Chairman, Department of Civil Engineering, University of Kentucky
Associate Dean for Continuing Education, College of Engineering
All District Engineers

PART I

LEGAL ASPECTS
OF
DRAINAGE OF SURFACE WATERS

Drainage laws may be classified many ways. One of these is according to liability, that is, either public or private liability. Since this paper is more concerned with the former, it will deal primarily with that area which includes municipal, county and state liability resulting from the drainage of surface waters.

There are two general types of surface waters (1). The first is diffused surface waters, derived from falling rain or melting snow. The essential characteristics of diffused surface waters are a short-lived flow that is not confined to the channel of a legal watercourse or concentrated in a lake or pond (2). The second of these two types is surface waters flowing in a well-defined watercourse. The essential characteristics of such a watercourse are a channel with definite bed and banks and a current of water; however, the water in such a channel need not flow year round (3). Both types of surface waters will be considered in this discussion.

In the United States there are three basic rules of law applied to diffused surface waters: 1) the civil law rules, 2) the common enemy rule or common law, and 3) the reasonable use rule. Kentucky, in the case of Johnson v. Marcum (4), established its use of the civil law rule and is so listed in publications giving such a breakdown.

Civil law is the system of jurisprudence held and administered in the Roman Empire, particularly as set forth in the compilation of Justinian and his successors. This is collectively known as the "Corpus Juris Civilis". Civil law is retained today in many geographical areas which were within the Roman Empire as well as areas which later were colonized by countries located in those geographical areas. The term is used in contradistinction to the common law of England and to the common law recognized in various other states. The terms Civil Law, Roman Law, and Roman Civil Law are synonymous and are the law of private rights.

Under civil law, the owner of land at a higher elevation has the right to have diffused surface waters, flowing naturally upon his land, pass through natural channels of drainage onto or over a lower tract of land. When a person interferes with the natural flow of diffused surface waters and thereby causes harm to a neighboring landowner, he is subject to liability to that landowner. This rule has been modified to the extent, at least in most jurisdictions, that a landowner may make minor alterations in the natural flow where such alterations are necessary for the normal use and improvement of his land, even though the alterations may cause the diffused surface waters to flow onto adjoining lands in an unnatural manner. This modification was put into effect in the Kentucky case of Wallace v. Schneider (5), and is not, as some writers have claimed, an application of the common enemy doctrine (6). Highway authorities, incidental to the power to lay out, construct and maintain highways, have the power to drain diffused surface waters from the highways and to construct ditches and culverts to do so. This authority is, in general, a discretionary authority regarding the adoption of a particular system of drainage. Being discretionary, the courts exercise no control except when a private right of a citizen is invaded.

Common law, as distinguished from Roman Law or modern civil law and other systems, is that body of law and juristic theory which was originated, developed and formulated and is administered in England, particularly the unwritten law of England. It has been retained among most of the areas peopled by Anglo-Saxon stock. The common law comprises those principles and rules of action, relating to the government and security of persons and property, which derive their authority solely from usages and customs of former times, or from the judgments and decrees of the courts recognizing, affirming and enforcing such usages and customs. As such, it differs from law created by the enactment of legislatures.

Under the common law rule or common enemy rule, diffused surface waters are considered a common enemy; and, as long as his intentions were not malicious, a landowner had unlimited legal privileges to interfere with the flow of diffused surface waters on his land. This was regardless of harm which may have occurred as a result of operations on his land to prevent diffused surface waters from reaching his land without being required to take into account the consequences to surrounding landowners. The surrounding landowners had a corresponding right to protect their own property in a similar manner.

The reasonable use rule does not come entirely from either the civil law or common law. Rather, it is a result of judicial construction (interpretation) over the years, taking the better points from both. Simply stated, the possessor of land is not privileged to deal with diffused surface water drainage in any manner he so chooses. The landowner, providing he is acting in good faith to effect a reasonable use of his land, may drain his land of diffused surface waters and cast them upon other land if 1) there is a reasonable necessity for the drainage, 2) reasonable care is taken to avoid unnecessary injury to other land, 3) the benefit accruing to the land drained outweighs the gravity of the harm to the other land, and 4) a reasonable and feasible drainage system is adopted, utilizing the natural drainage system where possible.

In Kentucky this power to provide drainage on highways and roads lies, by statute, with the county (7). However, it would seem that this statute is a holdover from the time when counties were responsible for the major portion of the highway function. Today, the major portion of that function lies almost entirely with the Commonwealth, through its Department of Highways. Therefore, rules of law, opinions, and decisions discussed below which involve counties would seem to be just as applicable today for the Commonwealth as they were for the counties at the time when they were rendered.

Generally, under the incident power mentioned above, highway authorities may drain diffused surface water from a highway onto abutting land. Following the modification adopted in Wallace v. Schneider (5), this would seem true even though it would cause the diffused surface waters to flow more freely over or onto the abutting land. Indeed, in York v. Pike Co., the court held that prudent construction of a highway did not depend on the quantity of water thrown onto the plaintiff's land, but on what was necessary to properly drain the highway (8). However, this power to construct facilities for drainage may be limited by the deed conveying the right of way for the highway. It is after this deed has passed and the abutting property owner suffers damages from drainage to property not included in the original deed that a problem arises. The question then becomes one of what are the remedies available to the property owner and what liability has the Department of Highways incurred.

There are two methods by which liability may attach regarding the Highway Department. The first is through the power of eminent domain; the second, trespass.

Eminent domain is defined as "...the power to take private property for public use"(9). Section 13 of Kentucky's Constitution states in part, "...nor shall any man's property be taken or applied to public use...without just compensation being previously made to him." Further, in Section 242, the Constitution provides that the Department "...shall make just compensation for property taken, injured or destroyed..."

The question, herein, is what constitutes a taking of property. Of course, the primary acquisition of rights of way for construction, reconstruction, or repairs comes within this "taking". But what of incidents which occur after the initial acquisition and after the completion of the work for which the property was acquired? More specifically, what does "taking" include where surface water is concerned?

Considering first surface waters in natural streams, the court in Keck v. Hafley (10) said that under Sections 13 and 242 of the Constitution, the State is not immune from suit if it fails to initiate a condemnation proceeding. The court went on to observe that such a suit was in the nature of condemnation proceedings in reverse. The facts of this case were briefly as follows: In the construction of a highway next to the landowner's property, the channel of a stream was changed so as to divert the natural flow of water and cause it to flood his land and crops. The court, in its opinion, found that the flooding occurred even during normal rainfall. This resulted in the erosion of top soil, creating gullies, and in general destroyed the use of the property for the purpose of cultivation. The court then ruled that the impairment in such use of the land constituted a "taking" of it.

This, of course, raises the question of how could the process of damaging be a "taking". This had been answered previously in Bader v. Jefferson County (11). There the court said, under Sections 13 and 242 of the Constitution requiring compensation, that, though there was no actual taking in the sense of reducing to possession, if there was a physical invasion of the property or damage to it by diversion of water or flooding, then there was a taking and the owner must be compensated.

Another Kentucky case concerning water in a stream is Letcher County v. Hogg (12). In that case, a county had allowed debris to accumulate against a highway bridge. This resulted in flooding of the owner's land and destruction of a warehouse and the washing away of soil. The court held this to be a "taking" of property and that the county was prohibited by Section 242 of the Constitution from doing so without just compensation.

In Department of Highways v. Corey (13), the court held that the location and construction of a culvert in a stream caused damage to a property owner's land and that the damage was of sufficient nature as to amount to a taking of the property. The court went on to say that, though the State is immune to suit because of sovereign immunity, this immunity was waived because the taking was without just compensation as required by Sections 13 and 242 of the Kentucky Constitution. Investigation in other jurisdictions reveals that in Missouri the law is the same. There, in the case of State Highway Commission v. Goodson,

the court said that where land is flooded or its drainage prevented by obstructing or diverting the flow of water, there is in general a taking of property and that such taking entitles the owner to compensation (14). So, too, in Idaho, which, as Kentucky, is a civil rule jurisdiction. In Renninger v. State, the court held that where the state, in constructing a new highway bridge across a stream, had permitted a portion of the construction to act as a dam obstructing the natural flow of water; and such an act resulted in the taking of land (15).

This same attitude prevails when diffused surface waters are involved. In Commonwealth v. Kelley (16), the Highway Department, because of negligent management of a highway and culverts, caused diffused surface water to overflow onto and injure the owner's land. The court, in its decision, said that an interference with the legally protected use of land which destroys that use or places a substantial and additional burden on the owner to maintain the use is a "taking" of his property. Previously, in Moore v. Lawrence County (17), the court said that a reasonably apparent injury to land that resulted from the ditching of a county road is "injured" within the meaning of Section 242 of the Constitution. The ditching had been done in such a manner as to discharge accumulated water onto the property in a greater quantity than the prior natural flow. A municipality (18) was held liable, also under Section 242 of the Constitution, where the city established an alleyway without providing drainage. This lack of drainage caused surface water to back up onto the owner's premises. The case of Bader v. Jefferson County (11), also referred to diffused surface water as well as surface water in a natural course. In City of Danville v. Smallwood (19), the city was constructing a storm sewer and work had ceased temporarily. During a rainstorm, water was unnaturally diverted onto the owner's property causing his dwelling to collapse. The court, in ruling for the owner, said that this constituted a "taking" of the property and, under Section 242 of the Constitution, the owner was entitled to compensation.

A recent case, Commonwealth v. Robbins (20), held that, when surface water is unreasonably diverted from its natural course of drainage and is cast upon land onto which that surface water had not previously flowed, the person or persons causing the diversion are liable for resulting damage. Continuing, the court said that the injury complained of was not authorized by the original deed and that the measure of damages is the same as in condemnation cases.

The above case seems to adopt the reasonable use rule. A very important decision, Klutey v. Department of Highways, was rendered recently by the Court of Appeals using this rule. It was decided on December 8, 1967, by a 5-2 vote. Both the majority and dissenting opinions are given in Appendix A. The facts in the case are very similar to those found in the Roundtree case (28). The distinguishing point and the point on which it appears that the court made its decision is that, from the facts, no new watershed was tapped, as was the case in the Roundtree case. The importance of the Klutey case cannot be overlooked and is the reason for the inclusion of the opinion in its entirety. The reasonable use rule was next applied by the Court of Appeals in the case of Commonwealth v. Baird, on May 20, 1969. This decision is included in Appendix B because it is the first application of the reasonable use rule since it was adopted in the Klutey case.

Not all cases, however, hold that mere diversion of water onto adjoining

land is a "taking". In the early case of York v. Pike County, the court stated that a "taking" did not depend upon the quantity of water thrown onto the land, but on what was necessary to properly drain the highway. However, later in Department of Highways v. McKinney (21), the court ruled that the Highway Department had no right to divert water from its natural course and cast it upon the land of an adjacent property owner.

Supporting the York case (8), is the California case of Department of Public Works v. Lindskog. There the court held that the state could obstruct the flow of surface waters, not running in a natural channel from owner's land onto a highway, without making compensation for resulting damage (22).

Contrary views, supporting McKinney (21), are found in the South Dakota case of Boque v. Clay County and in two Georgia cases, Tift County v. Smith and Sheehan v. Richmond County. In the South Dakota case a county had, by means of a drainage ditch, collected surface water in large and unnatural quantities and discharged them onto the owner's land. There they remained to infiltrate and evaporate. The court ruled that this constituted a "taking" of property (23). In the Sheehan case the court ruled that the state may not channel or cast large quantities of collected surface water from highways onto adjacent owner's land without just compensation for resulting damages (24). In Tift, it simply ruled that a property owner could recover damages resulting when highway improvements caused water to flow onto his land (25).

The second area of liability (i.e. trespass) is not as clearly defined as the first. The doctrine of sovereign immunity restricts the remedies the landowner has for damages resulting from trespass quare clausum freight or trespass qcf. This is the action for damages for an unlawful entry or trespass upon the plaintiff's land. It should be noted that the liabilities and remedies discussed above resulted primarily from the type of trespass known as a continuing trespass, which amounted to a "taking". However, trespass qcf is ordinarily a trespass occurring once and, while sufficient to cause damage, may not be sufficient to constitute a "taking".

When then, if the damage is not a "taking", is the Highway Department liable and what are the remedies available to the landowner? First the landowner may seek damages in the manner set forth in Chapter 44 of the Kentucky Revised Statutes. This chapter established a Board of Claims to evaluate claims against the Commonwealth. A landowner whose property has been damaged as a result of drainage from a highway presents his claim to the Board. This claim must be presented to the Board within one year of the time the damage shall have accrued. The limit of damages which the Board may award is $10,000, exclusive of interest and costs. Either the landowner or the Highway Department may appeal the decision of the Board to Circuit Court and then to the Court of Appeals. The Board of Claims Act does not define causes for action against the Commonwealth, but its effect is to waive the defense of sovereign immunity by providing a remedy for a particular character of claim. To come within the exclusive jurisdiction of the Board of Claims, the injury must result from negligence. If there is an absence of negligence, then the landowner's remedy lies either in eminent domain or an injunction. In Commonwealth, Department of Highways v. Smith, the court held that it was for the Board of Claims to determine whether the condition could be alleviated at a reasonable cost without damages to the property owner (26). In this case the property owner's yard had been flooded with diffused surface water from a highway as a result of the water not being channeled into a drain.

The last remedy available to the property owner is an injunction. Unless another and exclusive remedy is provided by statute, an injunction may be allowed to protect the landowner. The Kentucky Court of Appeals, in Anderson v. State Highway Commission of Kentucky, recognized this right of a property owner to enjoin agents of the State from injuring or destroying his land (27). The court, in dismissing the Commonwealth's contention that this was a suit against the State and hence void under the doctrine of sovereign immunity, stated that the State may be sued by a private citizen to restrain the commission of a contemplated injury or to compel to perform acts essential to protect the property or right of individuals. This is when the suit, whatever its nature, will not do more than restrain the commission of a wrong or compel the performance of a duty. In other words, where the suit directly concerns an act of the Department, whether of commission or omission, injunctive relief is available. Later in Department of Highways v. McKinney (21), the court reaffirmed this position. There the court affirmed an injunction requiring the Commonwealth to close a drainage culvert and clean out a ditch where the nuisance was shown to be in excess of $3000 and the cost of abatement $200.

An important case covering the matter of injunction was Commonwealth, Department of Highways v. Roundtree (28). The original action was by the Commonwealth to enjoin Roundtree from obstructing the drainage of diffused surface waters from a catch basin onto his land. Roundtree, in his counterclaim, asked for an injunction to prevent the continued maintenance of the catch basin. Upon appeal the Court of Appeals, in affirming an injunction in favor of Roundtree, stated that, where the surface waters were from sources beyond the scope of the natural drainage easement and in the absence of a proscriptive right to discharge this additional water onto the adjoining land, the continued maintenance of the catch basin could be properly enjoined. In addition, the court held that Roundtree could recover for damages already done as well as obtain the injunction against continued maintenance of the drainage. The court said that damages represented recovery for a temporary use, not a permanent easement.

However, the property owner cannot seek both injunctive relief and damages for permanent taking. That is, he must elect either to recover his damages under eminent domain or injunctive relief (10).

In review, the Department of Highways may be liable for damages resulting from flooding caused by the diversion of either diffused surface waters or surface waters flowing in a stream. The property owner may seek his remedy either in a suit of condemnation in reverse under the theory of eminent domain or by making a claim against the Department through the statutory provisions of the Board of Claims or by seeking injunctive relief for the abatement of the invasion of his property. As an added note, the course charted by the Court in Klutey seems to be entirely different from the previous one laid down through the years and, as such, should be watched in the future.

LIST OF REFERENCES

1. Lewis, The Arizona Law of Liability for the Division of Diffused Waters, 8 Ariz. Law Review 316, 1967.

2. Doney v. Beatty, 124 Mont. 41, 220 P 2nd 77, 82 (1950). A watercourse is a channel, cut by running water, with well-defined banks through which water flows for substantial periods of each year.

3. King County v. Boeing Co., 62 Wash. 2nd 545, 384 P 2nd 122, 126 (1963). Surface waters are ordinarily those vagrant or diffused waters produced by rain, melting snow or springs.

4. Johnson v. Marcum, 152 Ky. 629, 153 SW 959 (1913). Where two estates join and one is lower than the other, the lower is subject to the natural flow of water from the higher, and the lower proprietor, even though the land be improved city property, may not erect embankments or create other obstructions to the natural flow so that water will be cast back upon the upper proprietor's land.

5. Wallace v. Schneider, 310 Ky. 17, 219 SW 2nd 977 (1949). The owner of a dominant estate may drain and ditch his land to rid it of surface water, even to the extent of building sewers, gutters, and culverts, without liability to the owner of the servient estate, even though flow of surface water onto the servient estate is thereby accelerated, so long as he does not tap additional watersheds or divert surface water from natural drains in which ditches, gutters, sewers or culverts are constructed.

6. Kenworthy, Urban Drainage, 39 Dicta 197 at 200, 1962.

7. K.R.S. 178.150 and K.R.S. 179.300.

8. York v. Pike Co., 226 Ky. 703, 11 SW 2nd 712 (1928). Prudent construction is what is necessary to properly drain the highway.

9. Black's Law Dictionary, 4th edition.

10. Keck v. Hafley, Ky., 237, SW 2nd 527 (1951). Where construction of a highway changed a creek channel and diverted the flow of water so as to damage the owner's land and destroy use of part of it, such impairment constituted a "taking".

11. Bader v. Jefferson County, 274 Ky. 486, 119 SW 2nd 870 (1938). The Constitution requires compensation for a physical invasion of property or actual damage thereto resulting from the weakening or destruction of lateral support, or diversion of water or flooding of property, not withstanding that there is no actual taking in its sense of reducing to possession.

12. Letcher County v. Hogg, 209 Ky. 182, 272 SW 423 (1925). The county is liable, under Constitution Section 242 prohibiting taking of property without compensation, for washing away of land and destruction of a warehouse, caused by diversion of a stream resulting from the county permitting drift to accumulate against the trestle supporting a highway bridge.

13. Department of Highways v. Corey, Ky., 247 SW 2nd 389. In property owner's suit against the State for damages to realty allegedly caused by negligent construction of a culvert, evidence sustained the conclusion that the location and construction of a culvert directly caused damage to land, and that damage was of such a nature as to amount to a taking of land without compensation within the meaning of constitutional provisions, thus waiving State's immunity to suit.

14. State Highway Commission v. Goodson, 281 SW 2nd 848 (1955). Where land is flooded, or its drainage prevented by obstruction of flow of water or its diversion from its natural channel, there is, in general, such a "taking" as to entitle the owner to compensation.

15. Renninger v. State, 213 P 2nd 911 (1950). Where the state constructed a new bridge with approaches across a river, so that the highway was raised in grade, acted as a dam, obstructing the natural flow of the river and the state refused to institute condemnation proceedings, land was "taken" and the owner was entitled to maintain action.

16. Commonwealth v. Kelley, 214 Ky. 581, 236 SW 2nd 695 (1951). If the State Highway Department negligently manages and operates ditches, sidewalks and culverts, causing overflow of water which rendered property unfit for occupancy, there was a trespass amounting to a "taking".

17. Moore v. Lawrence County, 142 Ky. 44, 136 SW 1031 (1911). Under Constitution Section 242, which provides that municipal corporations, invested with the power of taking private property for public use, shall make compensation for property taken or injured before the taking or injury. A party, to whose property a reasonably apparent injury has resulted from the ditching of a county road in such a way as to discharge accumulated water upon his property in a greater quantity than the natural flow, is "injured" within the meaning of Section 242, and the County is liable for the injury from the increase of burden.

18. Ewing v. City of Louisville, 140 Ky. 726, 131 SW 1016 (1910). Where the city established an alleyway without a culvert or drain, which caused surface water to backup onto the plaintiff's premises, it is liable under the direct provision of Constitution Section 242, which allows compensation for property injured or destroyed, as well as that taken for public use.

19. City of Danville v. Smallwood, Ky., 247 SW 2nd 516. Owners were entitled to compensation for taking of their property where the city constructed a storm sewer which caused water to be unnaturally diverted across owner's yard.

20. Commonwealth v. Robbins, Ky., 421 SW 2nd 820 (1967). Where surface water is unreasonably diverted from its natural course of drainage and is cast upon land onto which it had not previously flowed, the person or persons causing the diversion are liable for resulting damage.

21. Department of Highways v. McKinney, 291 Ky. 1, 162 SW 2nd 179 (1942). The State Highway Department has no right to make any change in the construction or reconstruction of a road which would divert water from its natural course and cast it upon the land of an adjacent property owner, and any plan doing so is illegal.

22. Department of Public Works v. Lindoskog, 16 Cal. Rptr. 58 (1961). The state could obstruct flow of surface waters, not running in a natural channel from plaintiff's land onto highway property, without making compensation for resulting damage. Plaintiff's statement that he had the right to have his surface water received by the lower highway land (refused) in absence of reference to waters flowing in a natural channel.

23. Boque v. Clay County, 75 SD, 140, 60 NW 2nd 218 (1953). Collecting surface waters by means of a drainage ditch and discharging them onto plaintiff's land in unusual and unnatural quantities, not into a natural water course, so that it remained to infiltrate and evaporate constitutes a "taking".

24. Tift County v. Smith, 107 Ga. App. 140, 129 SE 2nd 172 (1962). Property owners could recover damages from a county where a highway improvement caused water to flow over the abutting land.

25. Sheehan v. Richmond County, 100 Ga. App. 496, 111 SE 2nd 924 (1959). The state may not channel or cast large quantities of collected surface water from a highway upon land at a lower elevation adjoining the highway without just compensation for resulting damage.

26. Commonwealth, Department of Highways v. Smith, Ky., 388 SW 2nd 362 (1965). A deed of right of way for construction of road and grading did not bar grantor's claim arising out of flooding occasioned allegedly by negligent failure to continue or extend a curb along the road which would steer water more effectively into a concrete drain or flume and thus avoid flooding.

27. Anderson v. Highway Commission, 252 Ky. 696, 68 SW 2nd 5 (1934). Landowner's suit to enjoin state highway commission from diverting waters of a creek so as to flood owner's lands was held not a "suit against commonwealth" so as to be not maintainable without its consent.

28. Department of Highways v. Roundtree, Ky., 372 SW 2nd 804. Continued maintenance of a highway catch basin which discharged onto lower adjoining land surface waters from sources beyond the scope of the natural drainage easement was properly enjoined in the absence of showing of prescriptive right to discharge such additional water onto adjoining land or any grant or other muniment of title.

APPENDIX A

KLUTEY v. DEPARTMENT OF HIGHWAYS

RENDERED:
December 8, 1967

COURT OF APPEALS OF KENTUCKY

CARLTON N. KLUTEY, et al — APPELLANTS

v.

APPEAL FROM HENDERSON CIRCUIT COURT
HON. FAUST Y. SIMPSON, JUDGE

COMMONWEALTH OF KENTUCKY,
DEPARTMENT OF HIGHWAYS — APPELLEE

OPINION OF THE COURT BY COMMISSIONER CLAY

AFFIRMING

This action was brought by the Commonwealth to enjoin appellants from maintaining embankments on their property which diverted the flow of water from two drainage pipes under a new highway constructed in the City of Henderson. Appellants counterclaimed and sought an injunction against the Commonwealth. The Chancellor found in favor of the latter.

Appellants owned a 70-acre tract. The Commonwealth condemned an 8-acre strip running from north to south for the construction of a limited access highway. This left a landlocked area of 8 acres on the east side of the highway. When it was constructed, two drainage pipes were built to carry water from the east side to the west side. One was 24 inches in diameter and the other 18 inches. Water flowing through these pipes was cast onto appellants' land on the west. Appellants claim that by virtue of the accelerated flow deep ditches were cut in their property and a flooding condition was created.

To stem the tide appellants built embankments opposite the western openings of these two drainage pipes, thereby backing water up on the highway. It is these embankments the Chancellor ordered removed. It is appellants' contention that the Commonwealth had no right to cast this surface water on their land through the drainage pipes and they requested an injunction compelling the Commonwealth to channel the flow in a different direction.

There is a sharp issue of fact as to whether, prior to the construction of the highway, surface waters naturally drained from land on the east to appellants' property in the area where the 24-inch pipe is located. Appellants' evidence was that there was no east-west natural drainage at this point. On the other hand, witnesses for the Commonwealth testified that prior to the construction of the highway there was a drainage ditch ranging from one to four feet in depth at this point and that an area of approximately 8 acres to the east drained onto appellants' land. On the basis of testimony and topographical and engineering maps the Chancellor found there had been a natural flow of surface water onto appellants' land at this point. Since there was substantial credible evidence to support this finding, we cannot say it was clearly erroneous.

With respect to the 18-inch pipe, admittedly the natural drainage at that point was from east to west on a gentle slope. However, it is clear that the drainage pipe substantially accelerated the flow. The same may be said about the 24-inch pipe. It may be pointed out that as a result of appellants' protests, the Commonwealth partially sealed the eastern end of the 24-inch drainage pipe so that instead of draining an area of 8 acres it now accommodates a flow from an area of something over one acre.

On the theory that there was no natural drainage onto appellants' land at the point of the 24-inch pipe, appellants contend the Commonwealth has changed the direction of the natural flow and has in effect tapped additional territory and subjected their property to an additional servitude. The finding of the Chancellor with respect to the natural drainage course answers that argument.

The additional argument is made, however, that the Commonwealth had no right with either pipe to so accelerate the flow of water as to cause the serious

damage of which appellants complain. Their evidence was to the effect they had never had a drainage problem before but after the highway was constructed the discharge from the 24-inch pipe caused a flooding condition and the discharge from the 18-inch pipe was cutting a deep gorge through their land. The Chancellor apparently took the view that since the Commonwealth was not tapping an additional source of surface water, it had the right to accelerate the flow by the construction of drainage pipes without regard to the damage caused. The Chancellor also intimated that in the prior condemnation suit appellants had been compensated for the potential water damage that would be caused by the construction of the highway, a matter we will discuss later in this opinion). Reliance was placed upon Wallace v. Schneider, 310 Ky. 17, 219 SW 2nd 977. The difficult question presented, which has both legal and equitable aspects, requires a re-examination of surface water rights in Kentucky.

We will assume (as do the parties) that the Commonwealth stands in the position of an adjoining property owner. The conflicting rights of such parties at an earlier time led to the development of two doctrines which were almost diametrically opposed. Under the "common enemy" doctrine each landowner had the rights to dispose of surface water on his land in any manner he saw fit, regardless of the adverse consequences to his neighbor. Under the "civil law" doctrine, while the lower owner was bound to accept natural drainage from the upper owner, the upper owner had no right, by artificial means, to change or increase the normal flow. It was soon found that the strict application of either doctrine would often cause an inequitable result as between the parties, and neither theory took into account the socially desirable uses of the property or the extent of damage one property owner might cause his neighbor. For this reason exceptions and modifications gradually infused the doctrines and there evolved a flexibility in their application. For a history of the developments in this field, attention is called to 59 A.L.R. 2nd 421.

In one of our earlier Kentucky cases, Pickerill v. City of Louisville, 125 Ky. 213, 100 SW 873, we purported to adopt the "civil law" doctrine, although the opinion recognizes that formerly the "common law" ("common enemy") principle had been applied. That case involved a situation (which naturally develops under the "common enemy" concept), quite similar to the one before us, where the upper property owner ditches his land to rid himself of surface water and the lower owner, to avoid the consequences, throws the water back by obstructing the flow with an artificial embankment. In the opinion we stated the rule to be (page 876 SW):

> "***the owner of the upper ground has no right to make excavations, barriers, or drains upon his ground by which the flow of surface water is diverted from its natural channel and a new channel made on the lower ground, nor can he collect into one channel waters usually flowing off into his neighbor's land by several channels, and thereby increase the flow upon the lower ground."

The same principle was followed in Gott v. Franklin, 307 Ky. 466, 211 SW 2nd 680, where we held the plaintiff had no right by artificial means (the tiling of a garden) to collect water and cause it to flow onto neighboring property in accelerated and larger quantities. Here again we substantially applied the "civil law" doctrine.

The following year the case of Wallace v. Schneider, 310 Ky. 17, 219 SW

2nd 977, was decided. There the defendant, in establishing a subdivision, graded the land, built roads, gutters and sewers, and thereby accelerated the flow of water onto plaintiff's property. The applicable law was thus stated (page 980 SW 2nd):

> "The owner of the dominant estate may drain and ditch his land for the purpose of ridding it of surface water even to the extent of building sewers, gutters, and culverts without liability to the owner of the servient estate, even though such methods of ridding his own property of surface water causes such water to be accelerated in its flow onto the servient estate, so long as he does not tap additional territory from which surface waters otherwise would not have flowed through the natural drain in which the ditches, gutters, sewers, or culverts are constructed." (Emphasis added)

This would appear to be a modified "common enemy" doctrine.

In the later case of Rutherford v. Louisville and Nashville R. Co., Ky., 243 SW 2nd 1017, the defendant railroad company had dug a new ditch, or widened an old one, on its right-of-way, whereby a greatly accelerated flow of water was channeled through a 24-inch culvert emptying into a ditch on property adjoining the plaintiff's land and caused a flooding condition. We held the defendant could not unreasonably subject plaintiff's property to a servitude involving more than the absorption of the natural flow of water, and the owner of the lower estate could recover damages from the owner of the upper estate (page 1018 SW 2nd):

> "***if the latter unreasonably changes the natural course of the water or causes it to collect and be cast upon the lower estate in an unnatural volume or in an unusual or swift stream; *** or if he collects in one channel waters usually flowing onto his neighbor's land by several channels and thereby increases the flow on the lower ground." (Emphasis added)

It will be noted this opinion uses the terms "unreasonably", "unnatural" and "unusual". Our prior opinions had not made reference to such factors. Recognition of their significance established a middle ground principle between the "common enemy" doctrine (which favors the upper owner) and the "civil law" doctrine (which favors the lower owner). In the recent case of Commonwealth, Department of Highways v. Robbins, Ky., 421 SW 2nd 820, we determined that the Commonwealth had "unreasonably" diverted surface water from its natural course of drainage. Thus in Kentucky we have developed a "reasonable use" rule, which is followed in other states. See Bassett v. Salisburg Mfg. Co., 43 NH 569, 82 Am Dec 179; Bush v. Rochester, 191 Minn. 591, 255 NW 256; Armstrong v. Francis Corp., 20 NJ 320, 120 A. 2nd 4, 59 A.L.R. 2nd 413; and Weinberg v. Northern Alaska Development Corp., Alaska, 384 P 2nd 450.

In substance the rule balances the reasonableness of the use by the upper owner against the severity of damage to the lower owner, and is identical with the principle we had adopted in determining the existence of a nuisance. In Louisville Refining Company v. Mudd, Ky., 339 SW 2nd 181, we said:

> "*** we accept the proposition that the existence of a nuisance must be ascertained on the basis of two broad factors, neither of which

may in any case be the sole test to the exclusion of the other: 1) the reasonableness of the defendant's use of his property, and 2) the gravity of harm to the complainant."

In fact, our problem is a nuisance problem. See Pickerill v. City of Louisville, 125 Ky. 213, 100 SW 873; Commonwealth, Department of Highways v. Cochrane, Ky., 397 SW 2nd 155.

The difficulty, of course, lies in determining and applying the tests of reasonableness. To begin with, the lower owner has the servient estate and he must accept drainage from his neighboring upper owner. Also it must be recognized that any artificial utilization of land by the latter may, in some degree, affect the natural drainage on adjoining lower lands. Acceleration of the flow of surface water onto his lower neighbor often results when the upper owner modifies his drainage system. Our problem is the extent to which this may be done without liability.

In Enderson v. Kelehen, Minn., 32 NW 2nd 286, 289, the principle involved and the pertinent considerations are thus set forth:

"*** the rule is that in effecting a reasonable use of his land for a legitimate purpose of a landowner, acting in good faith, may drain his land of surface waters and cast them as a burden upon the land of another, although such drainage carries with it some waters which would otherwise have never gone that way but would have remained on the land until they were absorbed by the soil or evaporated in the air, if

(a) There is a reasonable necessity for such drainage;

(b) If reasonable care be taken to avoid unnecessary injury to the land receiving the burden;

(c) If the utility or benefit accruing to the land drained reasonably outweighs the gravity of the harm resulting to the land receiving the burden; and

(d) If, where practicable, it is accomplished by reasonably improving and aiding the normal and natural system of drainage according to its reasonable carrying capacity, or if, in the absence of a practicable natural drain, a reasonable and feasible artificial drainage system is adopted."

We believe this constitutes a sound approach to the problem and obviously requires consideration of all relevant factors and special circumstances in each particular case.

Though appellants argue to the contrary, we do not have in this case the tapping of a new watershed, as appeared in Commonwealth, Department of Highways, v. Roundtree, Ky., 372 SW 2nd 804, and was referred to in the above quotation from the Schneider case (1). While the Commonwealth actually tapped a new source in constructing a median strip catch basin, where was a substitution of this surface water for that formerly draining from an 8-acre area through the 24-inch pipe, and from a practical standpoint the tapping of the new source did not itself

increase the volume of water flowing toward appellants' land. The narrow question involves the extent to which the Commonwealth, by an artificial drainage system, may lawfully accelerate the flow of surface water onto appellants' land in a natural drainage direction.

If the Commonwealth was creating a nuisance, it was taking an easement over appellants' land for drainage purposes and the landowner would be entitled to compensation therefor as allowed in Bowling Green-Warren County Airport Bd. v. Long, Ky., 364 SW 2nd 167, or equitable relief as upheld in Pike County Board of Education v. Belfry Coal Corp., Ky., 346 SW 2nd 37. If, in the light of all the circumstances, the Commonwealth was not creating a nuisance, it was entitled to the relief granted.

While the Chancellor relied upon the Schneider opinion (2) (which has been somewhat qualified as herein pointed out), his opinion convinces us that he took into consideration those factors which we have heretofore indicated were relevant in determining the respective rights of the parties. Of significance was the public necessity for the construction of this highway and the engineering necessity for this type of drainage system according to accepted standards. Cf. Louisville and Jefferson County Air Bd. v. Porter, Ky., 397 SW 2nd 146. Another consideration was the action taken by the Commonwealth in good faith prior to this suit to ameliorate the situation by sealing off a substantial source of flow through the 24-inch drainage pipe.

Of perhaps greater significance was the prior condemnation suit between the parties. In that proceeding appellants were awarded $30,000 damages when the Commonwealth acquired a strip through their land for the construction of the highway. When that trial was held, the new road and the two culverts had been constructed. One of the appellants testified to the drainage condition created and pointed out how it was damaging his property. In the closing argument his counsel commented on this element of damage. The Chancellor therefore properly assumed (as he noted in his opinion) that the $30,000 award for the land taken included compensation for the accelerated flow created by these drainage pipes (3).

In our opinion, the Chancellor properly balanced the equities between the parties and we find no error in his judgment.

The judgment is affirmed.

Williams, C.J., and Hill, Palmore, Milliken and Steinfeld, J.J., concur.

Dissenting opinion by Judge Osborne, in which Judge Montgomery joins.

DISSENTING OPINION BY JUDGE OSBORNE

It appears that the holding of the trial court which is affirmed by the majority opinion herein is to the effect that the dominant tenement is free to release surface water upon the servient tenement in any quantity or with any force that it chooses so long as an additional source of water is not tapped. The same applies to the acceleration of flow. In affirming this revolutionary principle the majority opinion turns to the courts of Minnesota for authority.

Enderson v. Kelehen, Minn., 32 N.W. 2nd 286.

The respective rights of property holders as they relate to the use and disposition of surface waters greatly differ in the several states. The reason for this being that problems pertaining to surface water vary with the difference in rainfall, soil texture, steepness of slope and many other factors. What is a problem in one state is not a problem in another. For this reason, the law of Arizona would differ from the law of Florida, etc. Over a period of years, each state has developed its set of rules controlling the use and disposition of surface water. We have done this in Kentucky and have adopted what is known as the "civil law doctrine" which holds that while the lower owner is bound to accept natural drainage from the upper owner, the upper owner has no right by artificial means to change or increase the normal flow of water or to accelerate the flow at any one point in such manner as to unreasonably damage the lower owner.

This is a well-settled principle in this state and well defined though there is some unfortunate language in a few isolated cases which cannot be avoided when the question is written on by so many different individuals over such a long period of time. The law generally is well settled. No later than last week the principles enunciated in the above cases were reaffirmed by this court. Commonwealth, Department of Highways v. Robbins, Ky. 421 SW 2nd 820. The majority opinion herein can do nothing but inject confusion and consternation.

For the foregoing reasons, I respectfully dissent. Judge Montgomery joins in this dissent.

1. Wallace v. Schneider, 310 Ky. 17, 219 SW 2nd 977.

2. Wallace v. Schneider, 310 Ky. 17, 219 SW 2nd 977.

3. When the Commonwealth is actually taking an easement for drainage or other purposes, the pleadings and the judgment should so provide. See Bowling Green-Warren County Airport Bd. v. Long., Ky., 364 SW 2nd 167.

APPENDIX B

DEPARTMENT OF HIGHWAYS v. BAIRD

RENDERED:
May 30, 1969

COURT OF APPEALS OF KENTUCKY

COMMONWEALTH OF KENTUCKY,
DEPARTMENT OF HIGHWAYS — APPELLANT

v. — APPEAL FROM WHITLEY CIRCUIT COURT
HONORABLE PLEAS JONES, JUDGE

G. C. BAIRD and CARRIE BAIRD, his wife — APPELLEES

OPINION OF THE COURT BY COMMISSIONER CULLEN

AFFIRMING

G. C. Baird and wife recovered judgment against the Commonwealth, Department of Highways, in the amount of $3,000, for damages to the Baird property found by a jury to have resulted from surface water the flow of which was accelerated by construction of an I-highway on a right-of-way adjoining the Baird property. The department has appealed, asserting various grounds of error, the first of which is that the department's motion for a directed verdict should have been sustained because the evidence did not establish any basis for liability on the part of the department.

The Baird property consisted of a small parcel of land on which was located an upholstery shop. It lay down grade from a valley into which rainwater flowed from surrounding hills. Prior to construction of the highway the water flowed down the valley through a small natural drain which continued along one side of the Baird property to a culvert under the highway on which the Baird property fronted. The evidence was that before the construction of the highway, the drain along the side of the Baird property handled the flow of surface waters with no difficulty and there had never been any overflow or flooding problem.

The highway department acquired a right-of-way across the valley, adjoining the back line of the Baird property, for construction of an I-highway. The highway then was constructed, consisting of two double-lane roadways, each one resting on a 33-foot fill. The fills ran parallel to the back line of the Baird property and crossed at right angles the line of the old drain in the valley. To provide for the disposition of surface water the department installed a 42-inch culvert or tile running beneath both of the fills, along the line of the old drain, and terminating at the back line of the Baird property, so that the flow of the water would be from the mouth of the culvert or tile into the natural drain running along the side of the Baird property. In addition, the department constructed a concrete gutter running diagonally down the side of the fill nearest the Baird back line, and terminating at the same point as the culvert, so that water from the gutter also went into the natural drain alongside the Baird property.

The evidence for the Bairds was that the flow of water into the natural drain by the side of their property was so accelerated by the highway construction that the drain could not handle it; in times of heavy rains the surface water flooded through the upholstery shop, filling the floor with mud and damaging the equipment and supplies; and even in times of normal rains the surface water seeped through the walls of the building and permeated the soil. Even the witnesses for the Commonwealth (except one whose testimony will be discussed at a later point herein) admitted that the flow of water coming from the culvert and gutter was too much for the natural drain to handle. The department, after the instant suit was filed, endeavored to alleviate the problem by constructing a wooden dike near the end of the culvert, but it did not prove to be of any real benefit.

The evidence as to damages (based on "before" and "after" values) was that the value of the Baird property before the water problem arose was around $3,800 and its "after" value was only $1,000, making a difference of $2,800. In addition,

the Baird's proved damage to their personalty in the upholstery shop of several hundred dollars. As hereinbefore stated, the verdict was for $3,000.

The Department of Highways rests its first argument on this appeal, that it was entitled to a directed verdict, on the proposition that an upper property owner is not liable to the lower property owner for damage from increased flow of surface water unless the upper owner has tapped a new or additional watershed area. There was no proof of such tapping of a new or additional area in this case, so the department says it has no liability. The argument is without merit, because the liability of the upper owner is not so limited. As clearly stated in Klutey v. Commonwealth, Department of Highways, Ky., 428 S.W. 2d 766, the upper owner under certain conditions may be liable for acceleration of the flow of surface water without having tapped a new watershed. We are unable to comprehend how the department can argue (as it has) that Klutey limits liability to instances of tapping of new watersheds.

The instant case was tried in the circuit court before Klutey was published. As a consequence, the instructions were prepared with the law being in the state of confusion related in the opinion of Klutey. The appellant complains of error in the instructions. However, as shall hereinafter be explained, we have concluded that the plaintiffs were entitled to a directed verdict on liability, so we need not consider whether there was error in the instructions.

Under the rule stated in Klutey there is to be a balancing of factors, in main part consisting of weighing the reasonableness of the use of the land drained (or the "utility" of such use) against the gravity of the harm to the land receiving the burden of the drainage. In most instances this would be a matter for the jury, under instructions such as those outlined in George v. Standard Slag Company, Ky., 431 S.W. 2d 711. However, in cases of extremes, the liability or nonliability may be determined as a matter of law.

In the instant case the damage to the Baird property was extreme - its gravity was severe. The evidence was that the water flooding has destroyed almost 75 percent of the value of the Baird property. We think that as a matter of law damage of such proportions must be considered to outweigh the admitted reasonableness or "utility" of the highway department's use of its right-of-way. In the Restatement of the Law of Torts, Sec. 828, Comment on Clause (c) p. 255, it is recognized that even where the defendant has done everything reasonably possible to avoid the damage he still may be liable if the "harm is too great".

It may be argued that the result we reach here is inconsistent with that reached in Klutey, where the lower court denied injunctive relief to the owner of the lower land and this court affirmed. However, there are two clear distinctions between the two cases. First and foremost, here we have evidence of destruction of a major portion of the value of the lower land, whereas in Klutey the evidence did not show that there was damage of major proportions over and above the amount of compensation for water damage which the landowner had received in a prior condemnation award. Second, Klutey was a suit for an injunction, whereas the instant action is for damages. Obviously, the granting of an injunction might reverse the balance of harm, putting the upper owner in a position of detriment far outweighing the amount of damages to the lower owner.

We come now to other grounds of error raised by the appellant.

It is contended that the damage to the Baird property was not in fact extensive or substantial; that the cause of the flooding could easily and cheaply have been remedied; and therefore not only is the award of $3,000 damages excessive but the case should not have been submitted on the basis of difference in value but rather on the cost of remedying the situation. The argument is based on the testimony of one witness who said that the drain alongside the Baird property could have been cleaned out and an earth dike erected for about $100, and that this would solve the problem. It is our opinion, however, that the testimony of the witness was not credible. He was not an expert on drainage, but simply a real estate appraiser. The engineer witnesses for the highway department admitted that the culvert and gutter were emptying too much water into the drain for it to handle. The department had attempted without success to solve the problem by erecting a wooden dike. Had there been such a simple solution as suggested by the witness surely the Bairds would not have stood by and watched their shop be inundated repeatedly nor would the highway department have subjected itself to this litigation. All of the circumstances militate against the credibility of the opinion of the witness in question.

Finally, the appellant department argues that the Bairds were estopped to assert a claim for water damage by reason of the fact that compensation for potential water damage was included in the sum they had received for selling to the department, for right-of-way for the highway, part of an adjoining tract of land owned by them. The Bairds owned a residential lot adjoining the lot on which the upholstery shop was located, having acquired the two lots at different times. Part of the residential lot was needed for the highway right-of-way, and a condemnation suit was filed. After negotiations, the Bairds deeded the desired parcel to the department and an agreed order was entered dismissing the condemnation suit. Neither the deed nor the agreed order made any reference to water damage. There was no testimony that potential water damage even was discussed. While there was some evidence that the Bairds were shown the plans for the highway, it was admitted even by the highway engineers that no ordinary person could tell from those plans what the drainage treatment would be. On the estoppel point the case is comparable to Commonwealth, Department of Highways v. Robbins, Ky., 421 S.W. 2d 820, and we hold now, as we did there, that the circumstances were not such as to estop the owners. See also Commonwealth v. Litteral, Ky., 319 S.W. 2d 458.

The judgment is affirmed.

All concur.

APPENDIX C

ANNOTATED BIBLIOGRAPHY

Jarvis v. Cornett, Ky., 257 S.W. 2d 524 (1953)

The owner of an upper estate may drain and ditch his land for purposes of carrying off surface water therefrom into natural channels by building sewers, gutters and culverts thereon, without liability to the owner of the lower estate, even though such methods of ridding his property of surface water accelerate and increase flow of such water onto lower estate, so long as he does not tap water from additional watersheds or divert water from natural drains which otherwise would not have flowed onto the lower estate.

Gott v. Franklin, 307 Ky. 466, 211 S.W. 2d 680 (1948)

The lower of two adjoining properties is subject to natural flow of surface water from the upper one; but the owner of higher ground has no right to rid his land of surface water, naturally flowing through several channels, by excavation or collection thereof in artificial channels, thereby increasing flow onto lower ground.

Cassell v. Gumes Investments, Inc., Ky., 383 S.W. 2d 128 (1964)

Elimination of an artificial pond by upper owners, with resulting increase in flow of surface water across lands of lower owners did not entitle the latter to injunctive relief in absence of any action of upper owners diverting water which otherwise would not have flowed onto lower owner's land.

Louisville and N.R. Co. v. Bush, Ky., 366 S.W. 2d 578 (1960)

Though the railway company had recently dug a drainage ditch along the right of way to prevent accumulation of surface water from higher land and had constructed a new drain above an old clogged culvert through the railroad fill built many years previously, the company was not liable for damage caused by the flow of surface water from higher land through the new drain and across lower land, or had changed natural course of water, or caused it to accumulate and be cast upon lower land in an unnatural volume or unusual or swift stream.

Comm. v. Cochrane, Ky., 397 S.W. 2d 155 (1965)

Upper owner cannot use his land in such a way as to injure property of lower riparian owner.

Rutherford v. Louisville N.R. Co., Ky.. 243 S.W. 2d 1017 (1951)

A lower estate is subject to servitude of natural flow of surface water from upper estates but owner of lower estate may recover damages if the owner of an upper estate unreasonably changes the natural course of water or causes it to collect and be cast upon lower estate in an unusual or swift stream, or if he diverts water from ordinary channels and casts it upon lower estate at a point which would not have been its natural destination, or if he collects in one channel waters usually flowing onto lower estate by several channels and thereby increases flow onto the lower estate.

Lewallen v. Davenport, Ky., 255 S.W. 2d 16 (1953)

The defendant, whose land adjoined but was lower than plaintiff's land, was

was liable for damages caused by water backed onto plaintiff's land by a fill built by defendant to prevent the flow onto his land of water which had been diverted across plaintiff's land by reconstruction of a state highway.

Newport News and N.U. Co. v. Wilson, 16 Ky. Law Rep. 262, 27 S.W. 809 (1894)

One may lawfully drain his land into a natural water course even if by so doing a lower proprietor is injured by the increased flow.

Franz v. Jacobs, 183 Ky. 647, 210 S.W. 163 (1919)

An upper proprietor has an easement in the land of the lower proprietor for the escape from his land of both surface water and that running in natural streams. The lower proprietor may not interfere with this right. An upper proprietor cannot collect surface water into a volume and empty it upon the lower proprietor, nor can he by such means augment the flow of a natural stream, so as to damage his neighbor below.

Kraver v. Smith, 156 Ky. 674, 177 S.W. 286

A riparian owner may make any use of the water which is beneficial to himself, including the use thereof for stock purposes, so long as he does not inflict any substantial injury to those on the stream below him.

Smith v. Wathen, 156 Ky. 820, 162 S.W. 88 (1914)

Landowners on a natural stream of a watercourse, which furnishes the natural drainage for that locality, have the right to drain their land into it by artificial means. He is not entitled to put levees or embankment along the ditches stopping the surface water which in times of high water would run over his property and divert it all into the natural water course so that the land of an opposite owner would be overflowed; but he is bound to maintain openings in the levees so as to allow the surface waters to flow through.

Raleigh v. Clark, 24 Ky. Law Rep. 1554, 71 S.W. 857 (1903)

The defendant, whose farm adjoined plaintiff's and drained over it into a creek, agreed to construct and keep open a ditch from plaintiff's line to the creek and afterwards let the ditch fill up whereby plaintiff's land was overflowed and his crops damaged. It was held that if the plaintiff, by himself cleaning out the ditch, could have avoided the damage, he was only entitled to recover from defendant the reasonable cost of opening the ditch and keeping it open.

Stone v. Ashurst, 285 Ky. 687, 149 S.W. 2d 4 (1941)

A lower estate is subject to the servitude of receiving the natural flow of surface water from the upper estate and the owner of the lower estate has no right to erect embankments or create other obstructions which will cause the natural flow of water to stop and overflow the upper land. The owner of the upper estate has no right to make excavations, or drains upon his land by which the flow of surface water is diverted from its natural course and disposition and thereby cast upon the lower estate in an unnatural volume.

Board of Trustees, Town of Auburn v. Chyle, 256 Ky. 283, 75 S.W. 2d 1039 (1934)

Lower lands are subject to the servitude of receiving natural flow of surface water and the mere facilitating and accelerating of flow without increasing quantity or direction is not actionable.

Steinke v. Vernon Lumber Co., 190 Ky. 231, 227 S.W. 274 (1921)

The owner of an upper estate is not liable to the owner of a lower estate for injury from water flowing from upper to lower estate in an ordinary and usual way, but is liable if he changes the natural course of the water or causes it to collect and be cast upon the lower estate in a larger volume or in an unusual or swift stream.

Wharton v. Barber, 188 Ky. 57, 221 S.W. 499 (1920)

An upper owner has no right to increase materially the volume of water discharged upon the lower estate nor cast upon the lower land water which would not have reached it if the natural drainage conditions had not been disturbed. The upper owner may not divert water from the ordinary channels upon a lower estate at a point which would not have been its natural destination.

L & N R. Co. v. Stephen, 188 Ky. 1, 220 S.W. 746 (1920)

Landowners by a railroad's right of way had no right under Kentucky Statute 2380, Subsection 30, to drain into a public ditch to the injury of other landowners waters which did not naturally fall or flow upon their own lands, but came on such lands from the wrong or negligence of the railroad in digging a ditch on its right of way and throwing up an embankment.

Pickerill v. City of Louisville, 30 Ky. Law Rep. 1239, 100 S.W. 873

The owner of upper ground has no right to make excavations, barriers, or drains thereon by which the flow of surface water is diverted from its natural channel and a new channel made on the lower ground nor can he collect in one channel waters usually flowing onto his neighbor's land by several channels, and thereby increase the flow onto the lower ground.

Robertson v. Daviess Gravel Road Co., 25 Ky. Law Rep. 1114, 77 S.W. 189

The right of the owner of property naturally draining on a road to have the surface water flow over the road extend no further than to burden the road with the natural flow of surface water and does not entitle such owner to collect the water from his and other lands into a ditch and discharge it on the road at a certain point and compel the proprietor of the road to thus receive it and provide for its disposal.

Grinstead v. Sanders, 22 Ky. Law Rep. 40, 56 S.W. 665

While the plaintiffs may cultivate their land according to the usual course of husbandry, they may not turn the natural course of the water so as to throw upon the defendants water which would naturally flow over their own land. The defendant does not have the right to erect a dam so as to throw the water back upon the plaintiff.

Board v. Schneider, 301 Ky. 239, 191 S.W. 2d 418

A lower estate is subject to the servitude of receiving the natural flow of surface water from the upper estate and owner has no right to create obstructions which will cause the natural flow of water to block and overflow the upper ground. The owner of the upper estate has no right to do anything to divert the flow of surface water from its natural course or channel or to collect it and then throw it upon neighbor's land.

PART II

ENGINEERING ASPECTS OF LIABILITIES ARISING FROM THE DRAINAGE OF SURFACE WATERS

The purpose of this report is to outline the legal standards for drainage of surface waters in Kentucky in order to assist engineers in developing an understanding of their application. Engineers designing highway drainage structures should be aware of legal guidelines the Department should observe and respect in its handling of surface waters incident to highway facilities. This objective may be accomplished by first stating the legal standards or doctrines which the courts in Kentucky have employed and which the Department of Highways should recognize. Specific cases in which the Department was involved in litigation have been examined to see why the Department was liable for damage. It is hoped that by illustrating the different elements of the legal standards with the actual engineering plans or a discussion of the actual field conditions over which the controversy arose, Department engineers may, thereby, avoid legal redress in the future by employing due foresight in designing the facility. This awareness of the legal requirements should then be supplemented by technical expertise in applying the purely engineering considerations.

LEGAL STANDARDS

The first standard applied by the Kentucky Court of Appeals to drainage of surface waters is that "the upper owner cannot tap an additional source of water and discharge it upon the lower or servient owner". The second standard is that "the upper owner has no right by artificial means to a) change the normal flow of water, b) to increase the normal flow of water, or c) to accelerate the flow of water at any one point, in such manner as to unreasonably damage the lower owner". The term "artificial means" refers to culverts, pipe, paved ditches, and any other structure used by the Department to control surface water drainage. These standards were the only ones applied by the court until December 1967.

In December 1967, the court adopted a third standard in the case of Klutey v. Department of Highways. This guideline states that "in effecting the reasonable use of his land, a landowner, acting in good faith, may drain his land of surface water and cast them as a burden upon the land of another, although such drainage carries with it some waters which would otherwise have never gone that way but would have remained on the land until they were absorbed by the soil or evaporated in the air if:

a) there is a reasonable necessity for such drainage;

b) if reasonable care be taken to avoid unnecessary injury to the land receiving the burden;

c) if the utility or benefit accruing to the land drained reasonably outweighs the gravity of the harm resulting to the land receiving the burden; and

d) it is accomplished by reasonably improving and aiding the normal and

natural system of drainage according to its reasonable carrying capacity, or if, in the absence of a practical natural drain, a reasonable and feasible artificial drainage system is adopted.

The court further stated that in connection with this newly adopted standard that "consideration of all relevant factors and special circumstances in each particular case" is necessary in the application of this standard to a particular situation.

In substance, the third standard balances the reasonableness of the use of the land drained by the upper owner against the severity of damage to the lower owner or the gravity of the harm to the land receiving the burden of drainage.

APPLICATION OF LEGAL STANDARDS

In order to understand the application and use of these three legal standards to situations encountered by engineers in the solution of practical drainage problems, several actual situations where the Department was involved in litigation will be examined from an engineering standpoint. The cases illustrated in Figures 1 through 14 are taken from engineering design plans, and the illustrations depict the drainage situations where the controversies arose.

DEPARTMENT OF HIGHWAYS v. McKINNEY

The first case involved the reconstruction and widening of US 60 in McCracken County just west of Paducah (see Figure 1). The legal problem was created by the construction of a 4- x 2- foot box culvert at Station 240 + 55 to drain waters from the hilly land on the south side of US 60. Prior to reconstruction there had been no culvert or pipe in this area to carry water from the south side over to the north side where the McKinney farm was located. Instead, the water that drained from the hilly terrain on the south side flowed into a ditch on the same side of the old road. This ditch ran parallel to the old road until it reached the existing culvert at Station 249 + 89. The water on the south side then flowed through this culvert and continued in a natural drain across one edge of the McKinney property.

After construction of the culvert at Station 240 + 55, water from the hill drained through this new culvert and across the middle of the McKinney farm. The farmland on the north side of the road was relatively flat. As a result of diverting the water from the south side across to the McKinney farm through the new culvert, a ditch five to six feet in depth was cut through the McKinney farm. Twenty acres of land were flooded after every heavy ran, and crops were destroyed.

In the original design, there might have been a more careful consideration of the probable consequences of locating a culvert at a point where it would discharge water, which was then left to seek its own course, onto a lower owner. The new road followed the old road alignment in this section. The ditch along the south side of the old road was able to carry all the runoff from the hills to the culvert at Station 249 + 89. Why was it necessary to construct the new

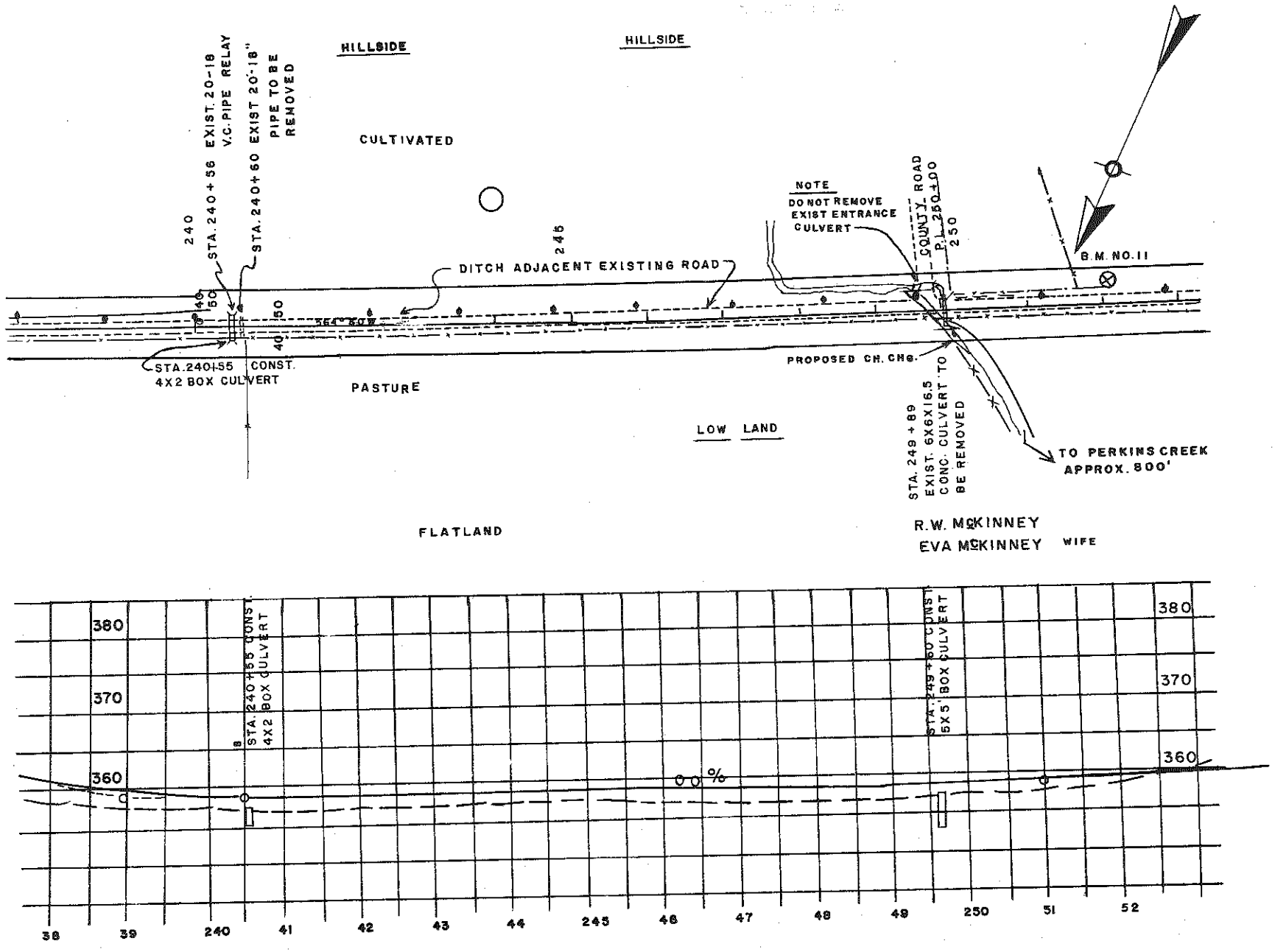


Figure 1. US 60 Reconstruction West of Paducah, Department v. McKinney.

culvert at 240 + 55? Apparently, the court decided that it was not necessary, and ordered the Department to block the culvert entrance and construct a ditch on the south side of highway so that the water would drain through the culvert at Station 249 + 89, just as was the situation prior to construction. The court based its decision upon the second standard. It held that the Department had "diverted water from its natural course, and caused a change in the normal flow of water, in such manner as to unreasonably damage the lower owner". The court recognized the fact that the natural or normal flow would have been across the McKinney farmland if there had not been a road across the south edge of the farm. But the court also noted that the normal flow would have been more evenly distributed across the McKinney farm prior to the construction of a road and before the culvert was constructed at Station 240 + 55. The normal flow was stopped entirely by the old road and the south side ditch. With the new road and the new culvert at Station 240 + 55, the surface water runoff was concentrated and discharged through the new culvert. This amounted to a "change" and an "increase in the normal flow of water in such manner as to unreasonably damage the lower owner", which was held to be a violation of the second standard.

COMMONWEALTH v. KELLEY

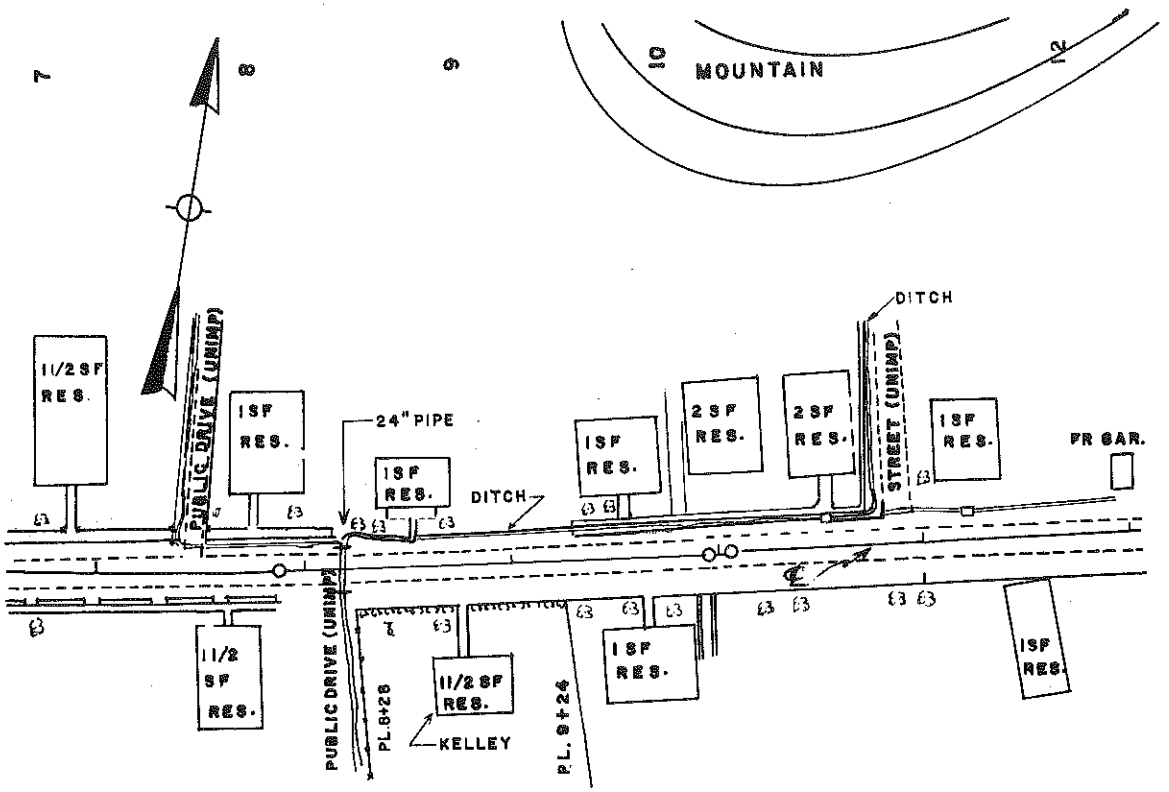
Reconstruction of a city street is illustrated by Figure 2. The suit arose over a ditch across the street from the Kelley property and parallel to the street and the 24-inch pipe located at Station 8 + 19.4. The ditch across the street from the Kelley house extends several hundred feet in either direction. Just a few hundred feet to the north of the street is a mountain slope, which slopes down toward the rear of the houses on the north side of the street. During heavy rains, the ditch and the pipe at Station 8 + 19.4 did not carry all the runoff from the higher terrain on the north side of the street. The ditch overflowed and the water drained across the street and flooded the Kelley property, which was about 12 inches lower than the new street. The entire area to the south side of the street was low flatland. The overflow onto the Kelley property damaged the foundation of the house, making it unfit for occupancy. Extensive repairs were required to restore the house to livable conditions. By its design and construction, the Department had "changed the normal flow of water in such a manner as to unreasonably damage the lower owner". In making this decision the court was applying the second standard.

However, if the third standard -- the "reasonable use" rule -- had been in effect at the time the Kelley case was decided in 1951, the court might have applied it as the standard. Application of part (c) of the "reasonable use" standard might have led the court to reason that "the utility or benefit accruing to the land drained" did not "reasonably outweigh the gravity of the harm resulting to the land receiving the burden", because the harm to Kelley was very great when compared to the benefit gained by the savings in construction costs of a small ditch across the street from Kelley and a pipe at Station 8 + 19.4.

This case demonstrates the application of the second standard as applied by the court to hold the Department liable. It also provided an opportunity to suggest how another standard might be applicable in reaching the same decision.

DEPARTMENT OF HIGHWAYS v. COREY

The construction of a double 12- x 12-foot box culvert in an existing channel (see Figure 3) resulted in liability for the Department. The culvert



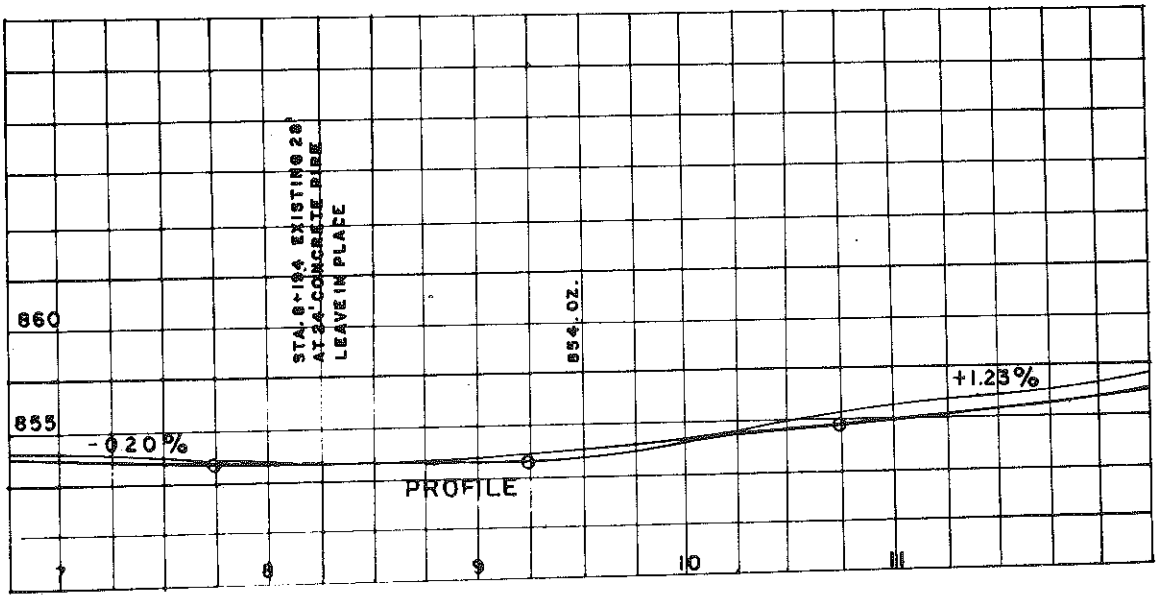


Figure 2. Kelley Residence on East Main Street, US 460, in Salyersville, Commonwealth v. Kelley.

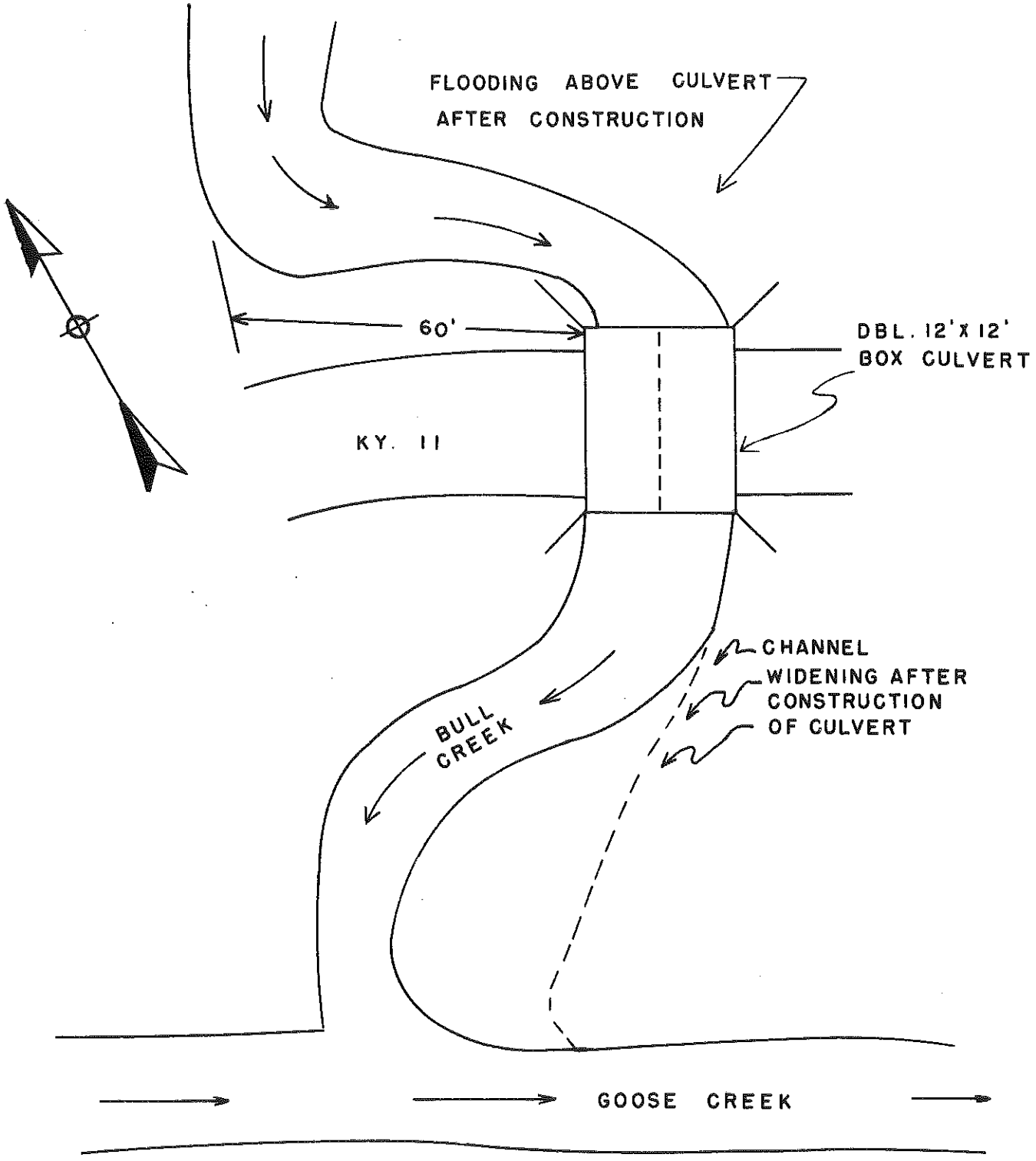


Figure 3. Reconstruction of KY 11 in Knox County, Department v. Corey.

was located about ten miles east of Barbourville on KY 11 in Bull Creek. With the culvert located as shown in Figure 3, the current of the stream flows almost at a right angle to the culvert entrance. The center section of the double box culvert acts as a barricade to the drifts of logs, brush, and debris carried by Bull Creek. Debris caught by the mid-wall of the culvert acts as a dam and causes water to back up and flood the land above the culvert. A whirlpool effect in the creek near the culvert entrance cut away some of the bottom land above the culvert. On the outlet end, the stream changed its channel by increasing the width from 25 feet to about 60 feet, thus taking some downstream acreage from the fertile bottom farmland. In this situation, the court applied the second standard and held that the construction of the culvert "changed the normal flow of water" by flooding and cutting gorges above the culvert and by widening the channel below the culvert. The court stated that this was a "taking" of property and the owner must be compensated. A design which might have minimized such damage is a channel change and shift of the location of the culvert about 50 feet west of the actual site.

The "reasonable use" test of third standard had not been adopted by the court when this case was decided. If it had been in effect, the court might have applied part b) or c) in deciding the question of liability.

DEPARTMENT OF HIGHWAYS v. ROUNDTREE

This case illustrates the application of the first standard by the court to find the Department liable for "tapping an additional source of water and discharging it upon the lower owner". Here a curb catch basin or inlet was constructed on the south side of US 27 within the city limits of Whitley City. The grade of US 27 is downhill from the northeast to the southwest, as indicated by the centerline profile in Figure 4. The cross slope of the pavement is to the southeast side of the road. This causes the surface water runoff from the pavement to drain toward the Roundtree property. A curb inlet was constructed at the edge of the road just in front of the Roundtree property, as indicated in Figure 4. All of the water from a 13,000-square foot area of pavement uphill of the curb inlet emptied into this inlet at the Roundtree property. The water was discharged through the outlet end in the rock retaining wall and into a drain or a low area across the Roundtree lot. Due to the large volume of water collected by the inlet and discharged onto Roundtree's property, the open area south of the residence was flooded. The court held that draining all the water from the 13,000-square foot area of pavement uphill from Roundtree was "tapping an additional source of water", and this is not permitted by the first standard.

Since the highway continued at the same grade downhill to the southwest of the Roundtree property, and therefore the runoff would continue down the edge of the pavement if there were no curb inlet at this site, the court ordered the Department to seal off the inlet.

DEPARTMENT OF HIGHWAYS v. SMITH

In the situation illustrated in Figure 5, the court held that the Department did "tap an additional source of water and discharge it upon the lower owner", again an application of the first standard. The Department constructed a street across the Smith property. The elevation of the street was slightly

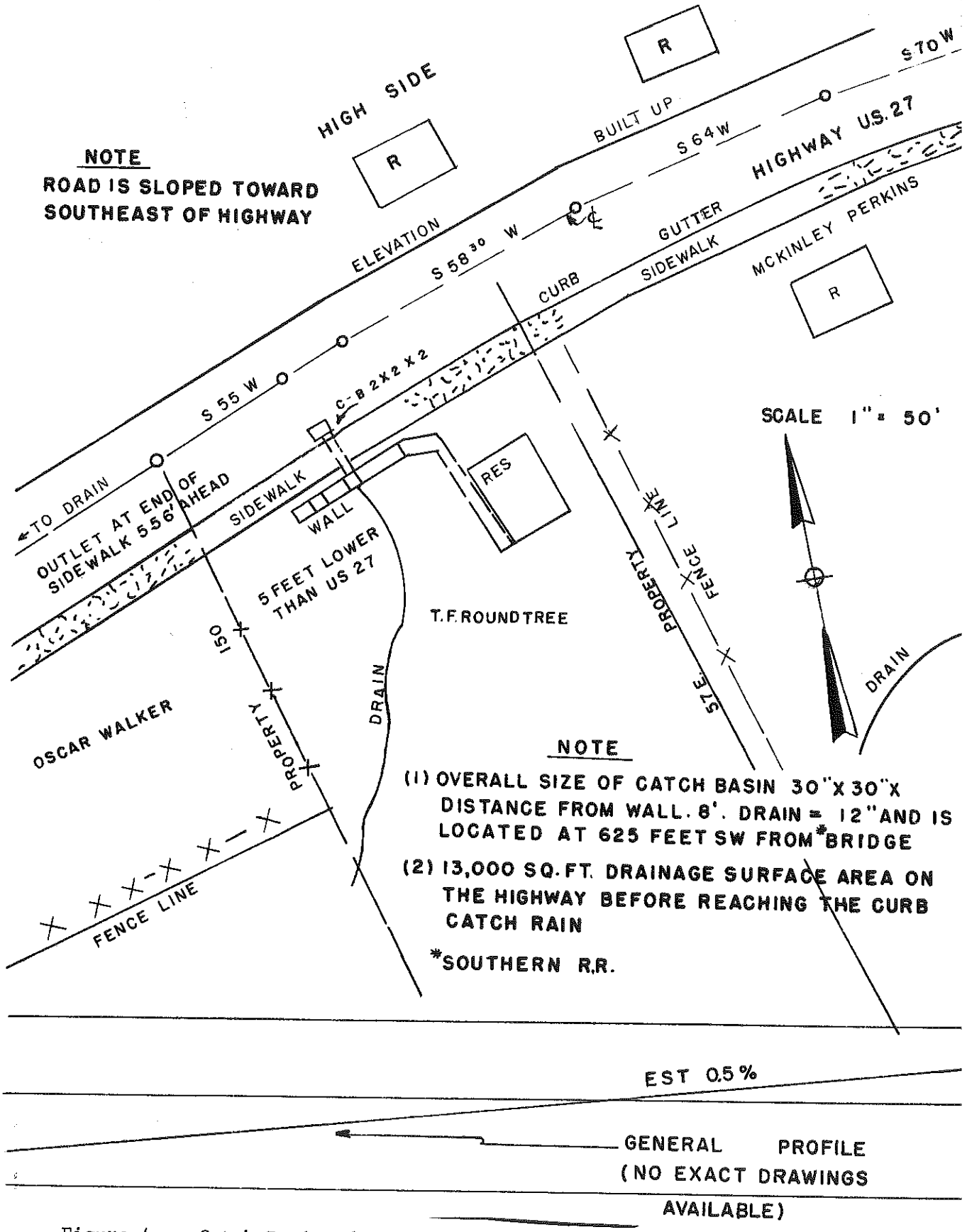


Figure 4. Catch Basin Adjacent to Roundtree Property, US 27, Whitley City, Department v. Roundtree.

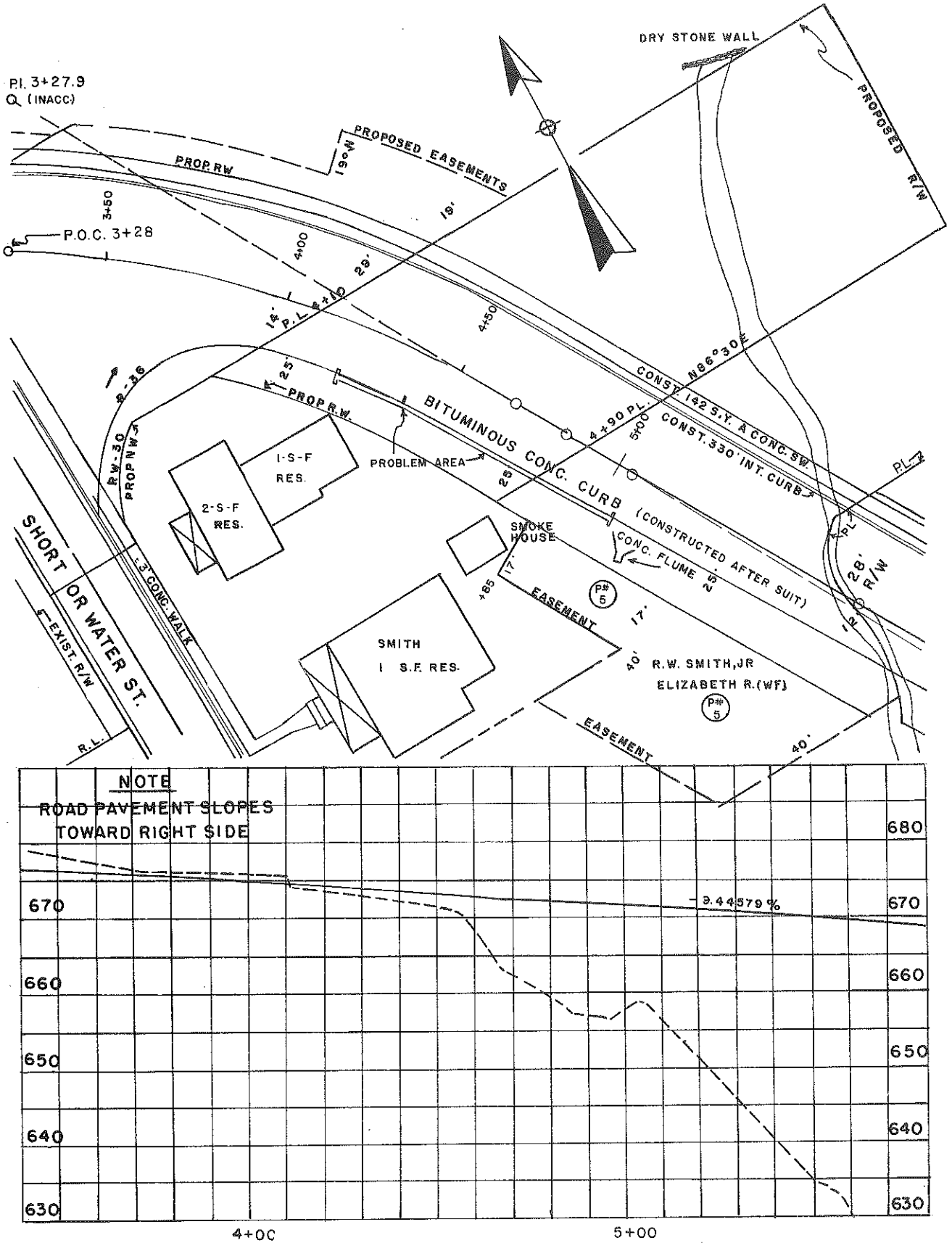


Figure 5. Railroad Street, Irvine, across Smith Property, Department v. Smith.

above the elevation of the Smith property. The profile grade of the street sloped down at about 3.5 percent past the Smith property from north to south. The cross slope of the pavement was toward the Smith's. Consequently, the surface water runoff from the pavement, beginning at Station 3 + 18 drained toward the Smith lot. A concrete flume was constructed near Station 5 + 00 to collect the runoff from the street. However, no curb on the Smith side of the street between Stations 3 + 50 and 5 + 00 had been constructed. Consequently, all of the runoff from the street drained over into the Smith yard instead of the flume, which had been designed to collect this runoff. Before the street was constructed, the water from the property behind and to the north of the Smith property drained into a ravine running north to south across the east side of the Smith property. This ravine was filled in construction of the street. The "additional source of water" which was "tapped" was this runoff from the entire pavement surface as far back into the intersection as Station 3 + 18.

After the suit was decided, the Department constructed the "missing" section of curb from Station 3 + 50 to the flume at Station 5 + 00.

COMMONWEALTH v. ROBBINS

In this case, the court held that "when surface water is unreasonably diverted from its natural course of drainage and cast upon land into which that surface water had not previously flowed", the person or persons causing the diversion are liable for the resulting damage. The situation is depicted in Figure 6. A street was constructed across the rear of the Robbins property. The residence shown at the top in Figure 6 was downhill from the mountain in the lower left corner of the plan view. Prior to the construction of the street, the surface water runoff from the mountain was evenly distributed over all the property owners at the bottom of the mountain. The Robbins property was only one of five or six receiving the water. However, during construction, a ditch, which catches all water flowing off the mountain and all the property below for a distance of about 600 feet, was excavated on the east side of the street. An 18-inch cross-drain pipe was constructed at Station 15 + 41 to pick up the discharge from the ditch. No further drainage provisions were made to take care of the water being discharged at the outlet end of the 18-inch pipe at the rear of Robbins lot. There was an existing shallow ditch down the Robbins' north property line. Since no provisions had been made to carry the water away from the outlet end of the pipe (west end), the water ran down the ditch at the north property line until it reached a low area about 15 feet from the rear of Robbins house. The water now stands about 14 inches deep in this low area after heavy rains, a condition which did not exist prior to construction. Extensive damage was done to the basement of the house.

The court applied the second standard to these circumstances to find the Department liable. By means of the ditch and the 18-inch pipe at Station 15 + 41, there was an "increase in the normal flow of water", and, as a result, the "lower owner was unreasonably damaged".

The court did not apply its first standard to this situation but it might be said that the ditch acted as a conduit to "tap an additional source of water" because most of the runoff from the mountain did not flow across the Robbins property prior to construction.

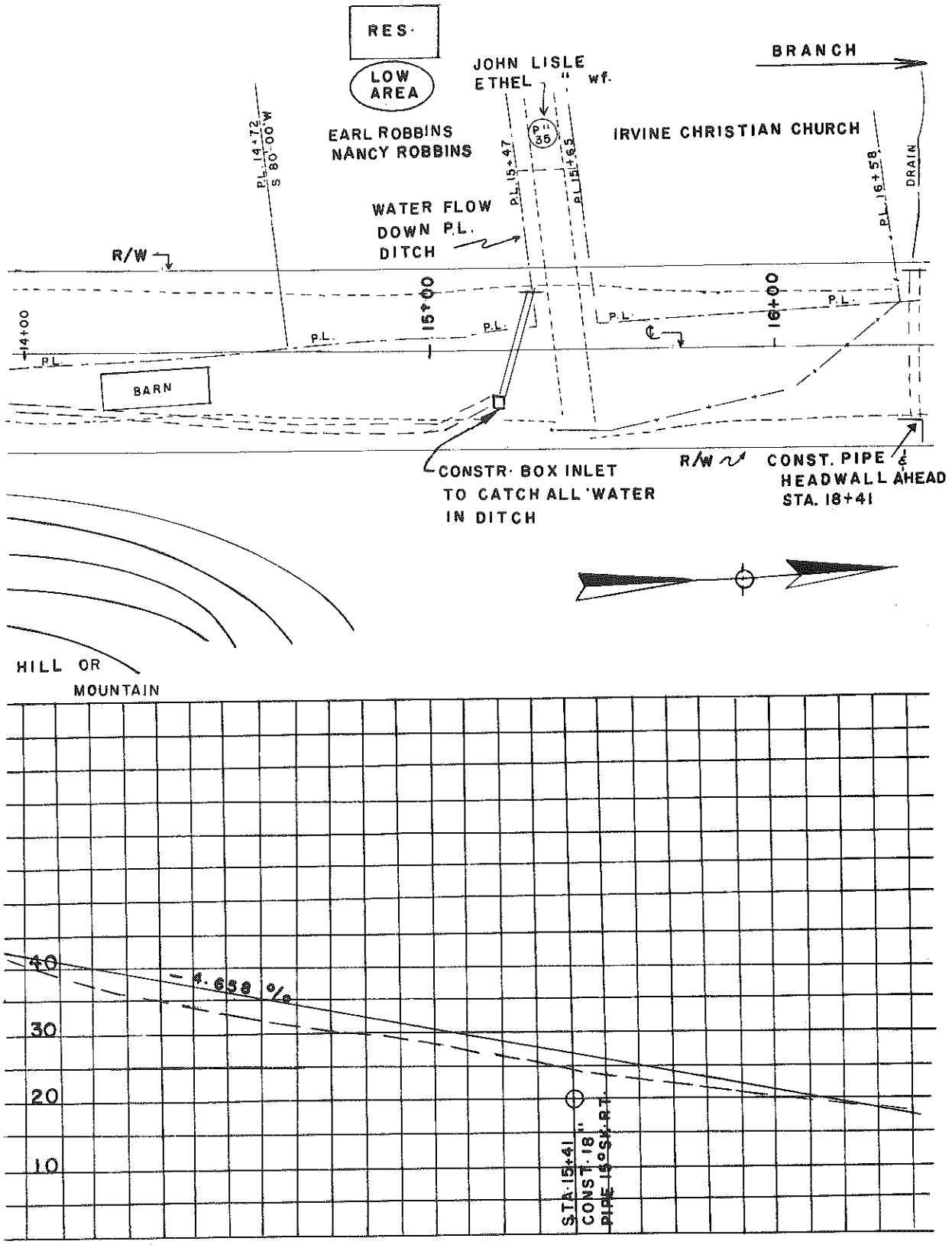


Figure 6. Court Street, Irvine, Commonwealth v. Robbins.

There was another cross-drain pipe about 300 feet ahead of the 18-inch pipe installed at Station 18 + 41. The ditch could have been extended to this pipe and the 18-inch pipe at Station 15 + 41 eliminated. The drain from the outlet of the second pipe led to a small creek.

KLUTEY v. DEPARTMENT OF HIGHWAYS

In late 1967, the Kentucky Court of Appeals introduced a new legal test to be used in deciding surface water drainage cases. This was called the "reasonable use" rule and was adopted in the case of Klutey v. Department of Highways. There the Department was not liable because the water damage to the property was taken into consideration as one factor in the actual condemnation award in the original taking of right of way for constructing the new road. Figure 7 illustrates the actual situation over which the litigation arose. The legal question raised by the suit was the extent to which the Commonwealth, by an artificial drainage system, may lawfully accelerate the flow of surface water onto the lower owner in a natural drainage direction. The property west of the new road was lower than that east of the road. The natural drain was from the hilly side on the east, as illustrated in Figure 7, down to the lowland on the west side of the road. The Department constructed two pipes, one 18 inches in diameter and the other 24 inches, to carry the surface water from east to west under the new roadway, which acted as a dam across the path of the natural drain. The property owner claimed that these two pipes accelerated the flow of water over his land, and, as a result, deep ditches were cut in the property and there was some flooding of the lowland west of the new road. The court then stated that "the lower owner has the servient estate and he must accept drainage from his neighboring upper owner. Also, it must be recognized that any artificial utilization of land by the upper owner may, in some degree, affect the natural drainage on adjoining lower lands. Acceleration of the flow often results when the upper owner modifies his drainage system". To determine whether or not the upper owner is liable for a change in the natural drainage, the court stated it was a matter of "balancing the reasonableness of the use by the upper owner against the severity of damage to the lower owner".

The Court of Appeals stated that the trial court judge had considered the necessary factors in deciding that the Department's drainage design was reasonable. The court further stated that "of significance was the public necessity for this type of drainage system according to accepted standards".

Even though the court's decision was in favor of the Department in the Klutey case, it cannot be stated with a certainty that Figure 7 illustrates a proper engineering application of the "reasonable use" standard, because Klutey had been compensated for the water damage in an earlier condemnation trial award. Had it not been for this previous compensation award to Klutey, which was based in part upon the water damage caused by the 18-inch and the 24-inch pipes, the court very well might have found the Department liable.

DEPARTMENT OF HIGHWAYS v. BAIRD

The first case in which the Court of Appeals applied the reasonable use standard to find the Department liable was Department of Highways v. Baird, decided May 30, 1969. The property owner, Baird, was awarded a judgment because the jury found that the damages resulted from surface water flow accelerated by

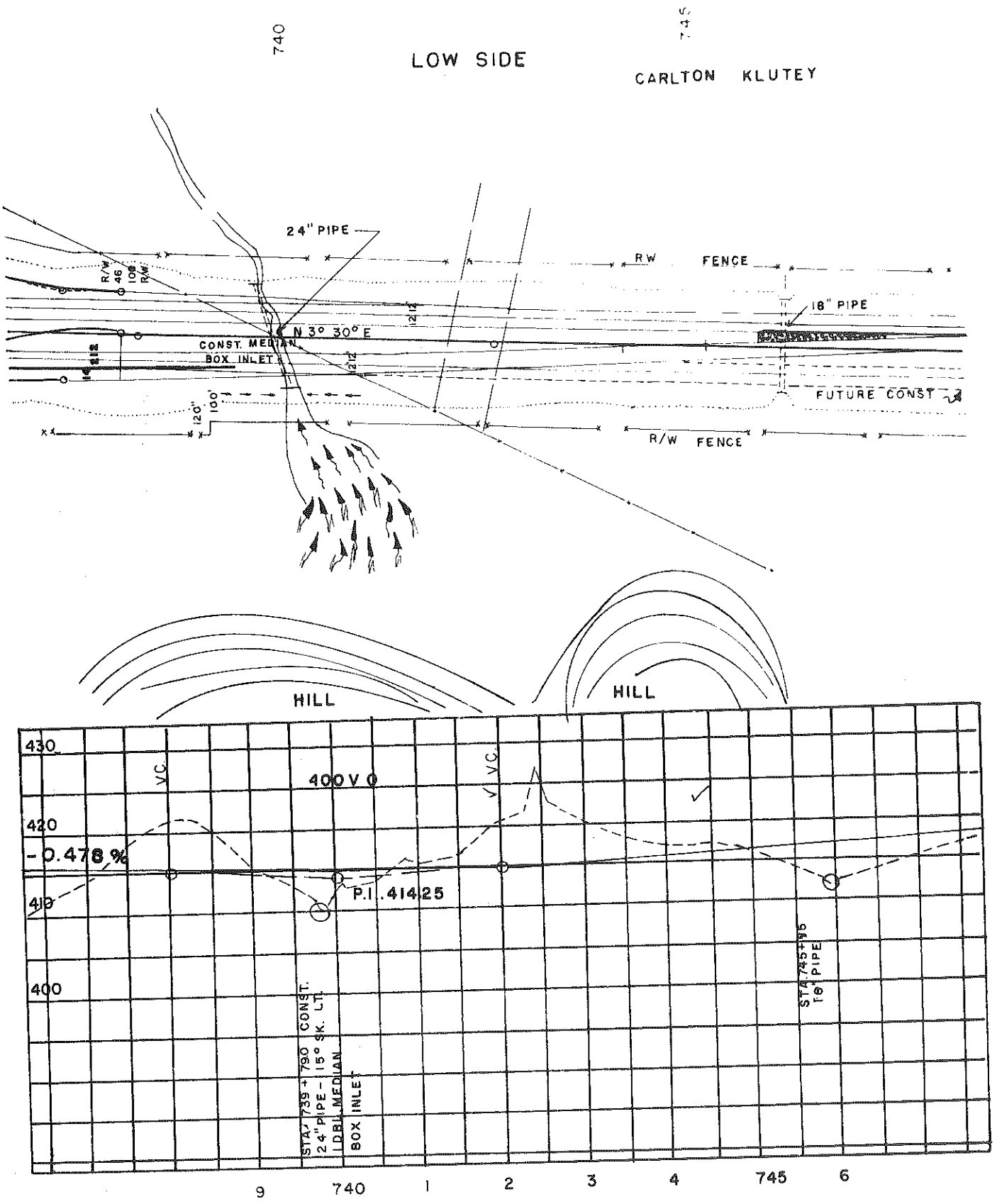


Figure 7. Henderson By-Pass, Klutey v. Department.

the construction of an interstate highway on a right of way adjoining the Baird property (see Figures 8 and 9). Figure 8 shows the 42-acre drainage area, and Figure 9 shows the location of a 42-inch pipe at Station 541 + 64.1 constructed to collect the runoff from this drainage area.

The Baird property, a small parcel of land on which was located an upholstery shop, was downstream from the 42-acre drainage area in Figure 8. Water flowed down the valley through a small natural drain. The drain continued along one side of the Baird property to a culvert under existing US 25. Prior to construction of the interstate road at the rear of Baird's upholstery shop, the natural drain along the side of the property handled the flow of surface waters with no difficulty. There had been no previous overflow or flooding problem. The fill on the interstate at the rear of the upholstery shop is about 33 feet high. The outlet end of the 42-inch pipe is in the natural drain running along the side of the Baird property but is within fifteen feet of the shop. There is also a paved ditch running diagonally down the side of the fill nearest the Baird property (see Figure 9). Flow of water into the natural drain alongside of the Baird property was so accelerated after the construction of the interstate across the valley that the natural drain could not carry all the water. When rains fell, surface water collected and carried through the 42-inch pipe and the paved ditch was more than could be handled by the natural drain. Thus, the natural drainage channel overflowed at the outlet end of the pipe and flooded the upholstery shop.

The court stated that under the "reasonable use" standard "the upper owner under certain conditions may be liable for acceleration of the flow of surface water without having tapped a new watershed" (reference to the older, first standard applied by the court). The court also stated that there must be a balancing of the reasonableness of the use of the land drained (or of the utility of such use) against the gravity of the harm to the land receiving the burden of the drainage.

Here, the damage was severe because flooding destroyed almost 75 percent of the value of the Baird property. The court stated that "damage of such proportions must be considered to outweigh the admitted reasonableness or "utility" of the Highway Department use of its right of way". This is not to say that damage to the lower owner which would have destroyed less than 75 percent of the value of the property would be held reasonable.

One possible solution to the problem in the original design would have been to extend the 42-inch pipe at Station 541 + 64.1 to a point beyond the upholstery shop and to make the channel deeper for a few feet beyond the outlet end of the pipe. It should be noted from examining Figure 9 that the outlet end of the pipe and the shop were in very close proximity.

DEPARTMENT OF HIGHWAYS v. WATSON

The last case to be examined is Department of Highways v. Watson, decided June 20, 1969, about a year and a half after the "reasonable use" standard was first established in the Klutey case. The "reasonable use" standard was applied by the court in the Baird case just three weeks prior to this case. However, in the present case, the court did not use its newest standard to determine liability. Instead, the court used the second standard as the guideline to apply in the Watson case.

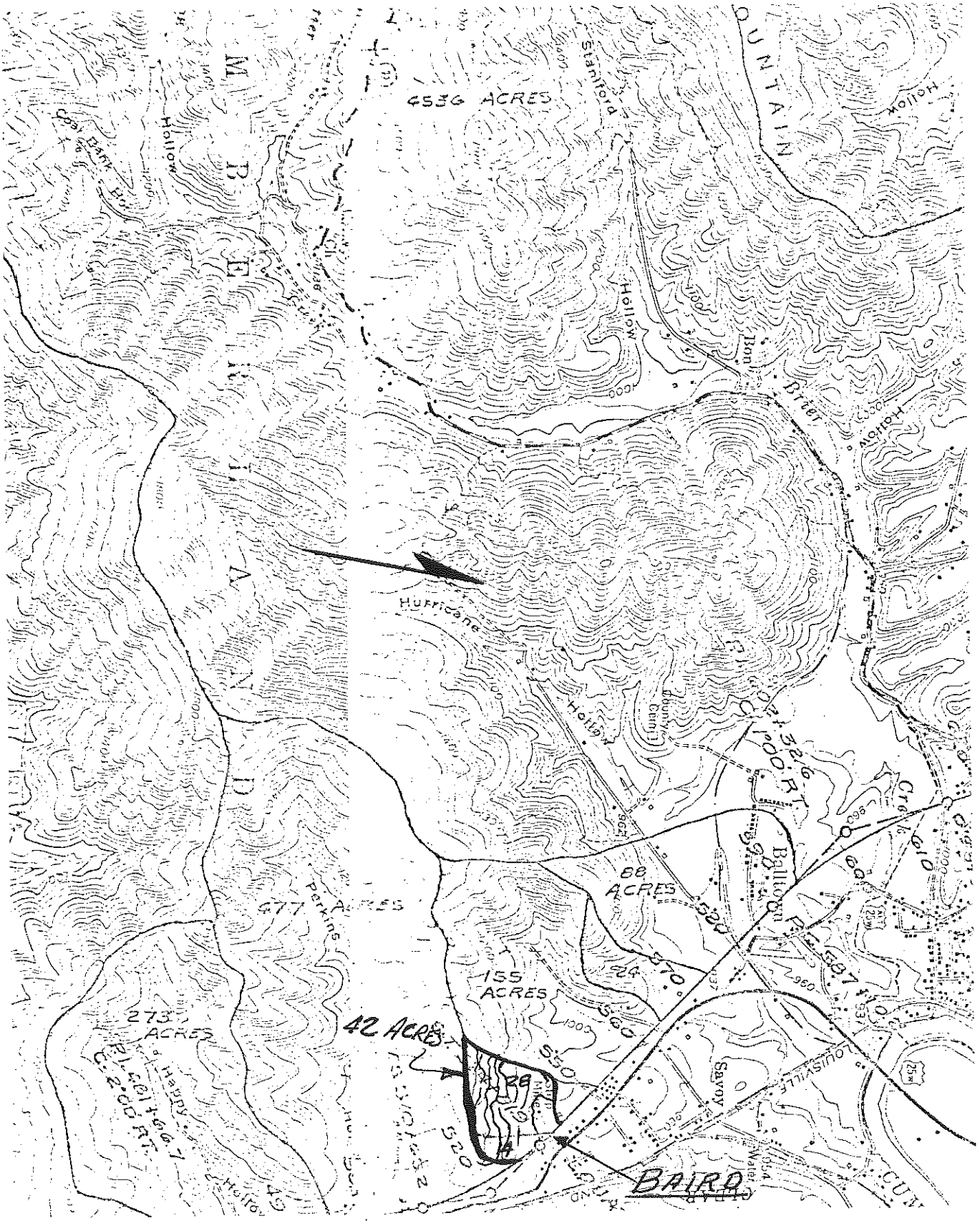


Figure 8. 42-Acre Drainage Area above Baird Property, Department v. Baird.

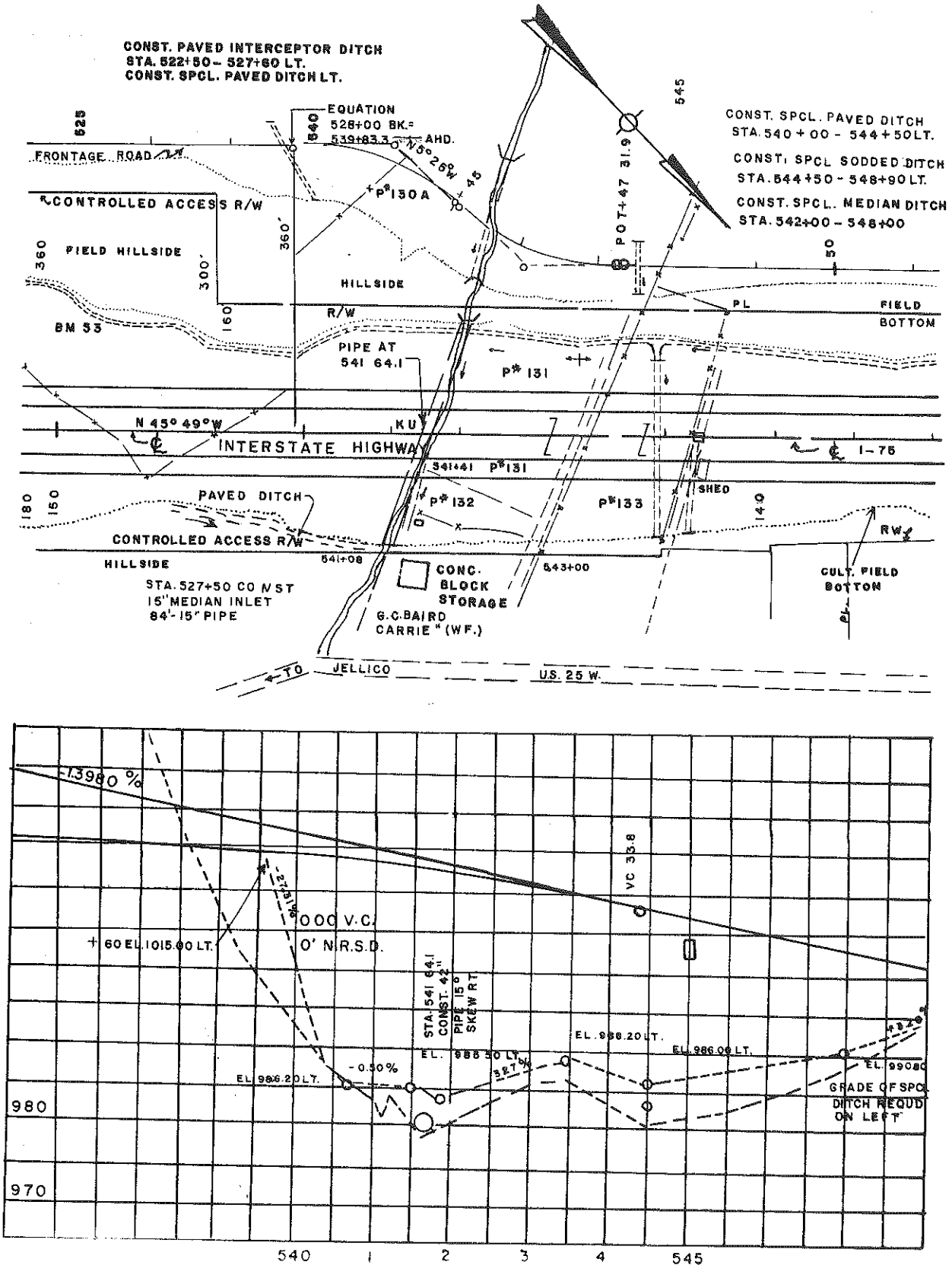


Figure 9. 42-inch Pipe Outlet Near Baird's Upholstery Shop, Department v. Baird.

The court held that the Department was liable for damage from surface water drainage because the construction of I 75 and two parallel frontage roads "unreasonably diverted surface water from its natural course of drainage and cast them upon" Watson's land "where it had not previously flowed". The court did not mention the "reasonable use" standard and the "balancing of factors", as it had in the Klutey and Baird cases.

Figures 10 through 14 illustrate the situation involved in the present case. These figures should be studied very carefully in order to visualize the terrain conditions where this particular section of I 75 was constructed. The most significant fact to note is the location of the Watson property in relation to the interstate (see Figure 10). It is about 1500 to 2000 feet east of I 75 and not adjacent to the constructed road, as has been the situation in each of the previous cases studied. This is the first such situation in Kentucky where the property owner was located that far away from the construction and was successful in a suit against the Department for damage from surface water drainage.

This drainage situation is very complex because there was no one feature which contributed to the damage as there was in the Smith case, where failure to extend a curb to the constructed drain flume (see Figure 5) caused the damage. Instead, the damage in the present case was the consequence of the combined effect of all drainage structures and features in a 2000-foot section of I 75 and the two parallel frontage roads. Watson's property was located at the bottom of a deep, wooded ravine, as noted in Figure 10. A natural drainage ditch, which drained the entire valley above the Watson property, came down the mountain valley directly in front of the Watson house. The ditch delineated the city limits line, as noted by the broken line in front of Watson's house. At the bottom of the valley, directly opposite the Watson house, the ditch makes a 90 degree turn and runs south and parallel to the street for about 75 to 100 feet. Then it crosses under the street in two 24-inch pipes. It was at the point of the 90-degree turn opposite the Watson house that the overflow and flooding occurred after I 75 was constructed across the valley about 2000 feet away from the Watson property.

The critical section of I 75 begins at Station 648 + 00 and ends 2000 feet ahead at Station 668 + 00 (see Figure 11). In addition to the section of I 75, two frontage roads were also constructed across the valley. Frontage Road 13 is the relocation of KY 204, the only road which crossed the valley prior to the interstate construction. Figure 12 represents the centerline profile of Frontage Road 13. The valley is between Stations 32 + 00 and 49 + 00 on this road. Frontage Road 14 is just east of I 75 (see Figure 11). The profile of Frontage Road 14 is presented in Figure 14.

Surface water runoff collected by all of the drainage structures, pavement surfaces, and slopes shown in Figure 11 ultimately reach one of the streams in Figure 11. Although it is not shown in Figure 11, these streams converge into one ditch down the valley that makes the 90-degree turn opposite the Watson property. From the point where the streams converge, all of the surface water runoff from the valley above where the new roads were constructed runs down this one ditch until it reaches the bottom of the ravine opposite the Watson property.

The court characterized this overflow as "conduct" which unreasonably changed the existing water course so as to substantially damage the property of the lower owner's land, where it had not previously flowed. The court, by this

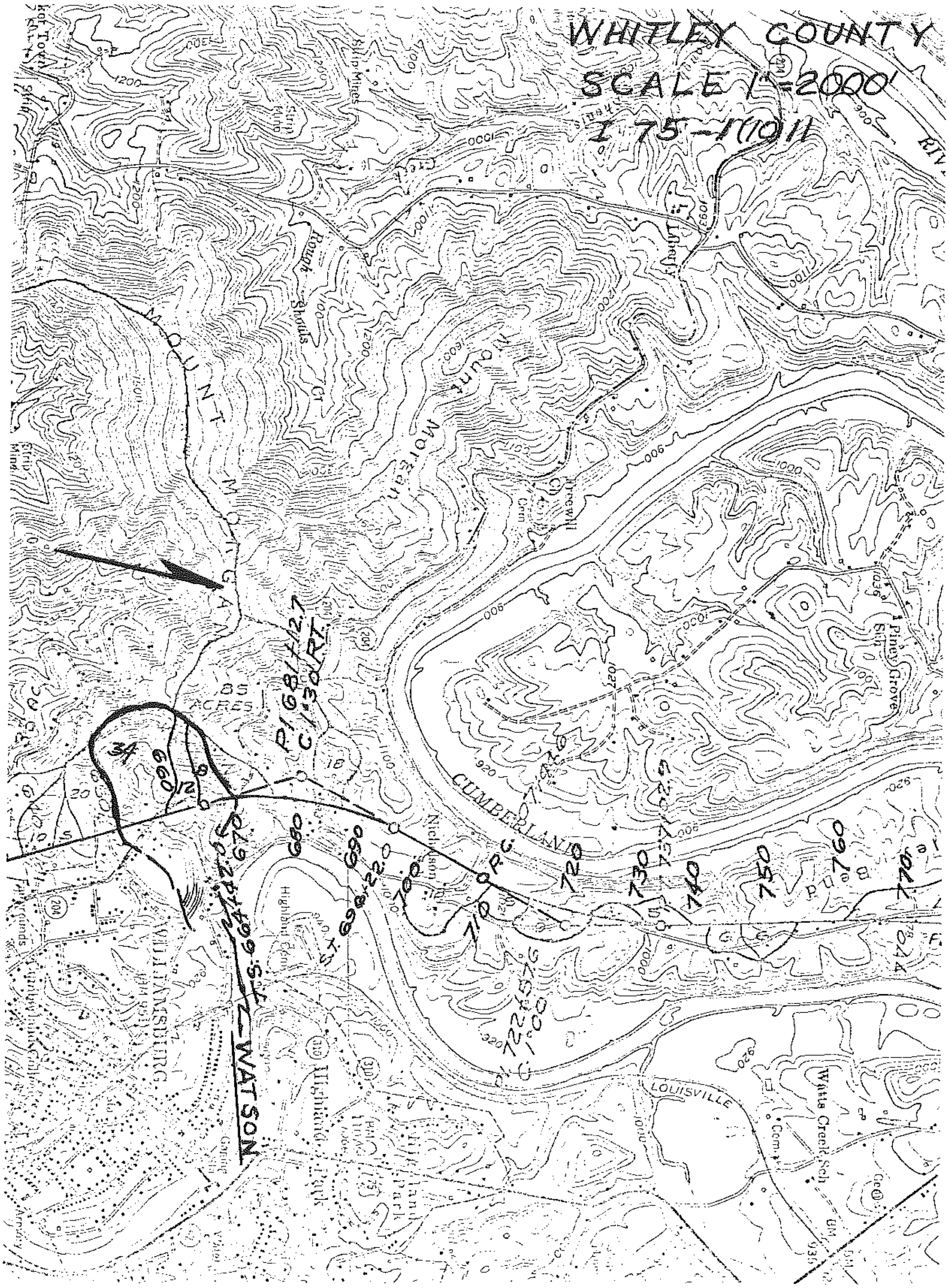


Figure 10. Drainage Area above Watson Property, Department v. Watson.

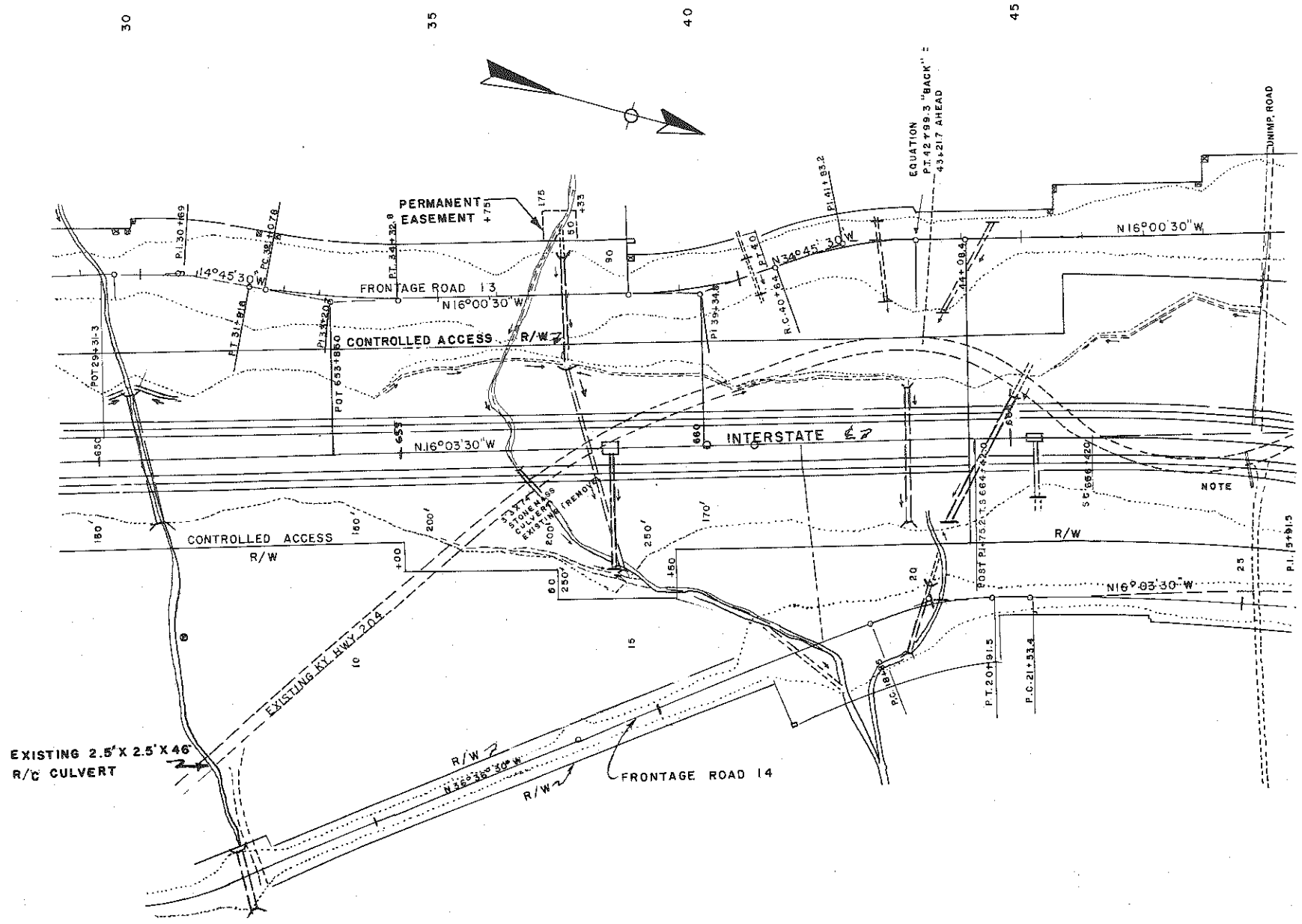


Figure 11. Plan of I 75 and Two Frontage Roads Showing the Drainage System, Department v. Watson.

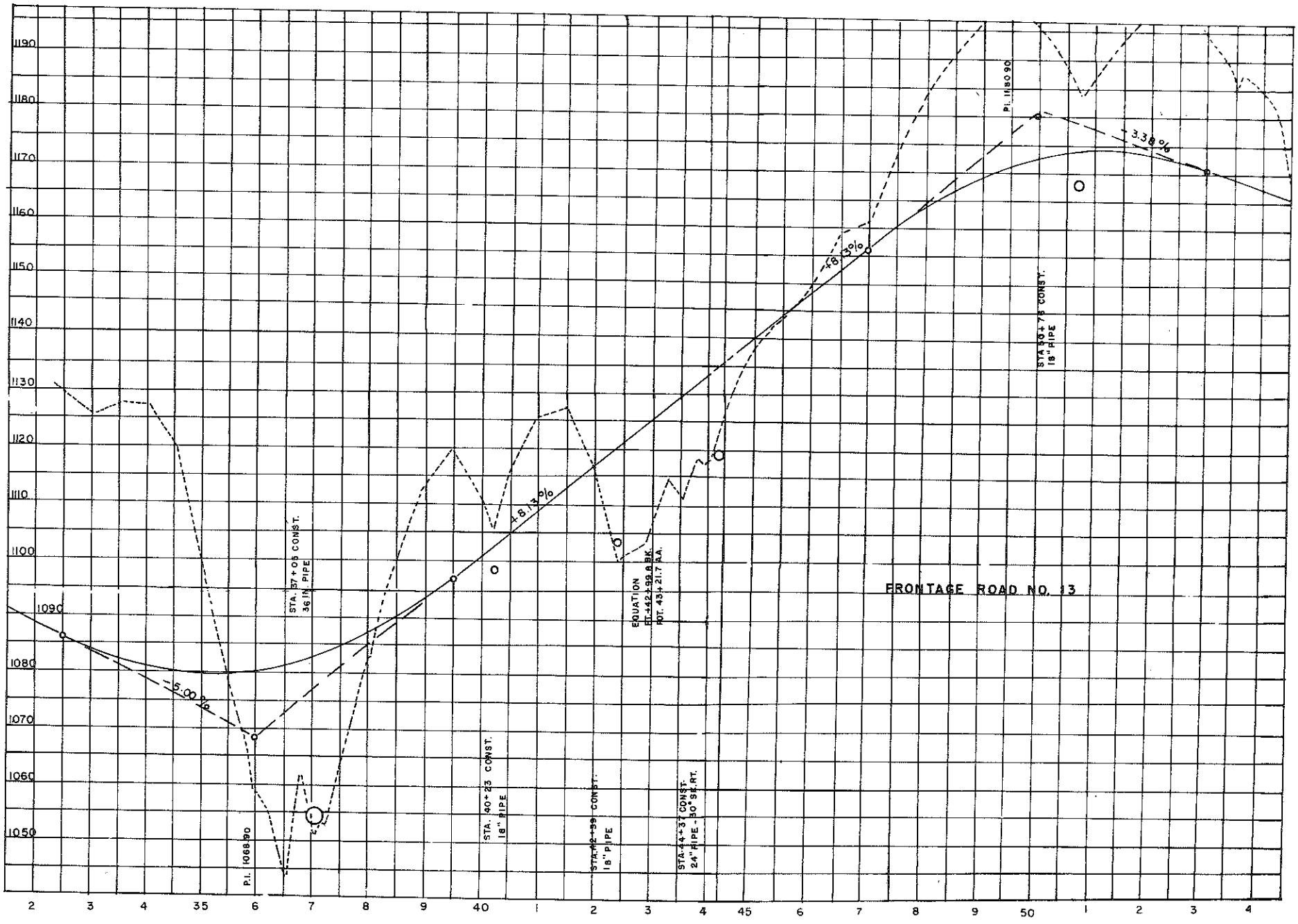


Figure 12. Profile of Frontage Road 13 Adjacent to I 75, Department v. Watson.

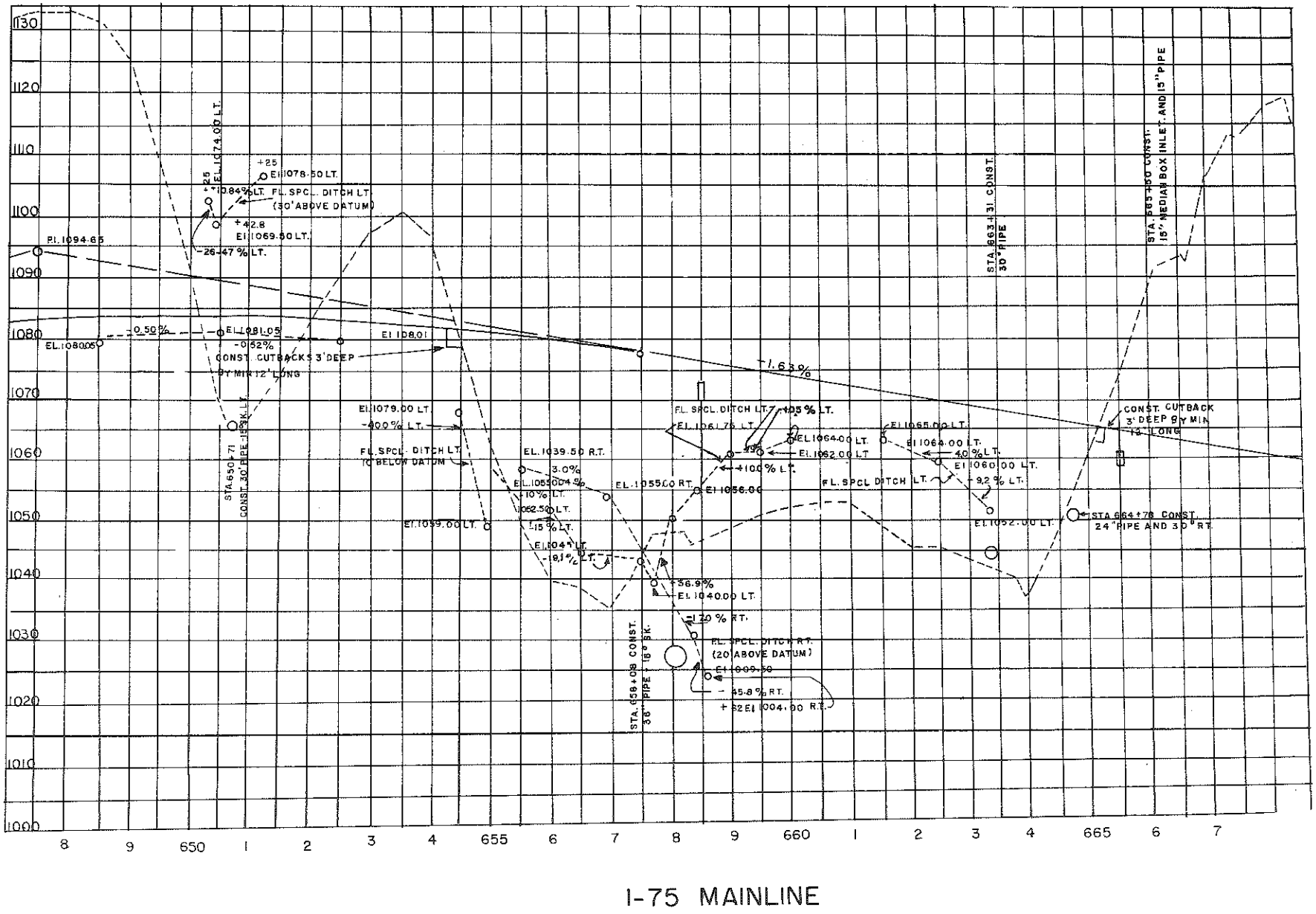


Figure 13. Profile of I 75 Between Stations 648 + 00 and 668 + 00, Department v. Watson.

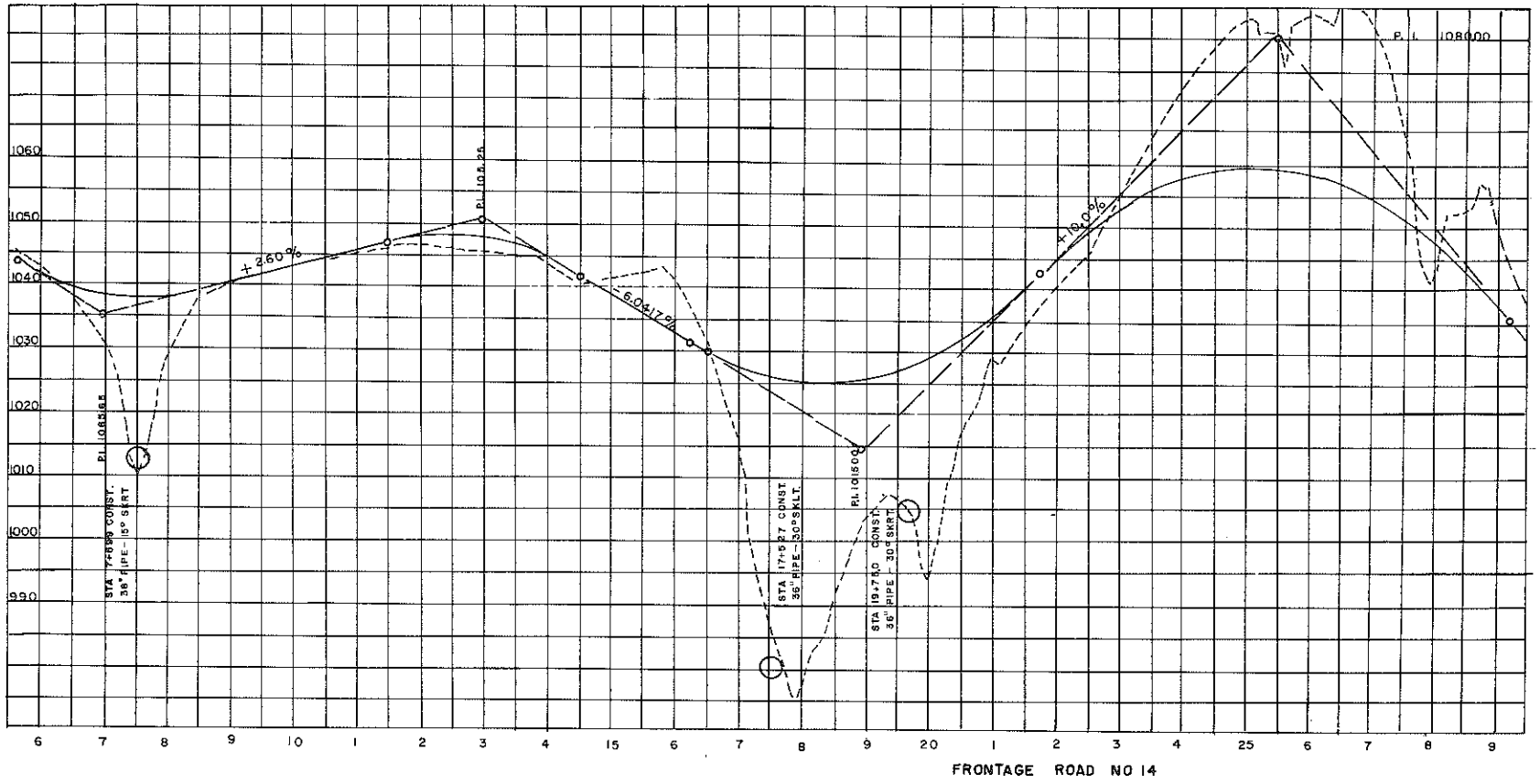


Figure 14. Profile of Frontage Road 14 Adjacent to I 75, Department v. Watson.

language, applied the second standard to find the Department liable in this case. The court also stated that whether or not a new watershed was tapped by the Department in its design and construction, the Department may still be liable for the results. In effect, the court was saying that the fact that the first standard -- "cannot tap additional source of water and discharge it upon the lower owner" -- had not been violated does not preclude the court from applying another standard to find the Department liable for the damage to the Watson property. The change in the water course was caused by an increase in the flow of the ditch so that it was unable to carry all the runoff during peak periods at the 90-degree turn. The "change" in the existing water course was the overflow and flooding which occurred.

Construction in the critical sections of I 75 and the two frontage roads involved two median box inlets, several thousand square feet of pavement surface, paved ditches, normal roadside ditches, considerable surface area on the face of high fills and deep cuts, and improvement of some land adjacent to the road by converting it from woodland to grass land. Each of these items greatly increased the rate of runoff, and ultimately the volume of surface water being carried down the ditch above Watson's house. The drainage area above the interstate was 95 percent woodland prior to the construction of these roads.

Significant factors to note about this case are: 1) the complexity of the situation and the design; 2) the ultimate impact of the drainage design upon the volume of runoff; 3) the Watson property is located 1500 to 2000 feet away from the road construction; and 4) the court applied the second standard and not the third standard to find liability. The part of the second standard applied by the court is that "the upper owner has no right by artificial means to change the normal flow of water".

SUMMARY

Each of the cases examined illustrate how the legal standards for drainage of surface waters have been applied by the courts to situations involving the Department of Highways. The engineer faced with a drainage problem will have to apply each of these standards to his particular solution of the design problem. Ideally, the final design should satisfy each element of the three standards, and the engineer should ask himself if the design does measure up to each standard in every respect.

To serve as a kind of checklist against which the engineer should test or compare designs, the three legal standards or guidelines are summarized as follows:

1. The upper owner cannot tap an additional source of water and discharge it upon the lower owner or servient tenement.

2. The upper owner has no right, by artificial means (paved ditch, culvert, catch basin, etc.) to:

   a. change the normal flow of water,

   b. increase the normal flow of water,

c. accelerate the flow of water at any one point,

in such a manner as to unreasonably damage the lower owner.

3. In effecting a reasonable use of his land for a legitimate purpose, a landowner, acting in good faith, may drain his land of surface waters and cast them as a burden upon the land of another, although such drainage carries with it some waters which would otherwise have never gone that way but would have remained on the land until they were absorbed by the soil or evaporated in the air, if:

   a. there is a reasonable necessity for such drainage,

   b. reasonable care is taken to avoid unnecessary injury to the land receiving the burden,

   c. the utility or benefit accruing to the land drained outweighs the gravity of harm resulting to the land receiving the burden, and

   d. where practicable, it is accomplished by reasonably improving and aiding the normal and natural system of drainage according to its reasonable carrying capacity, or if in the absence of a practicable natural drain, a reasonable and feasible artificial drainage system is applied.

The courts recognize that there is no magical solution to surface water drainage problems, and that it is a matter of judgment in each case. However, the courts have established these three criteria or standards to use in making those judgments.