

Construction Features in Mitigation of Damages

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● **TWO MAIN REASONS** give rise to the need for construction features in highway design. The obvious and principal reason for the greater part of such features is to provide service to the traveling public. Engineers determine by traffic count, economic surveys, and other criteria the location and design of the improvement together with all necessary accompanying features to serve the traveling public such as approaches, under and overpasses, interchanges, signs, lights, bridges, drainage structures, etc. Thus, the need for most construction features is entirely an engineering determination.

Another reason giving rise to the inclusion of construction features in highway design arises from the necessity or desirability of mitigating damages to properties from which the right-of-way is taken. This factor has gained much importance with adoption of the principle of access control. In many cases it is necessary for appraisers to determine the amounts of damages that would be done if facilities such as proposed frontage roads, approaches, cattle and machine passes, culverts, and siphons were or were not constructed. These appraisals make it possible for design engineers to compare the costs of the proposed facilities with the damages that the facilities would offset and thereby determine whether the facilities are justified. Of course, in some cases the justification for facilities may arise partially from both of the above causes.

In the past the determination of the need for damage mitigating construction features was generally made on an inspection basis. That is, during some phase of construction planning it was deemed desirable for apparently obvious reasons to construct cattle passes, machine passes, etc. Sometimes the features were planned because it was known or thought that the grantors would demand them.

On highways without access control these determinations were not too important because the number of structures was relatively small and generally they were not too expensive. The methods then used to justify expenditures on such features probably was satisfactory, with some exceptions. But with the adoption of access control and other interstate criteria the situation has changed substantially. Such features may be quite costly and some method superior to inspection is required. There are still many cases where a feature may be justified for more or less obvious reasons but these reasons should be studied carefully before the expenditure of a large sum of money is predicated upon them. More importantly, there are now many cases where the obvious is misleading and a proper determination of the need for a construction feature in mitigation of damages can only be adequately made by appraising the remainder properties.

JUSTIFICATION OF FACILITIES IN MITIGATION OF DAMAGES

Certain principles may be applied to determine whether facilities for the primary benefit of private and publicly held properties are justified. In this connection, it should be borne in mind that anything which is part of the consideration for obtaining right-of-way or which reduces the amount of damage for which payment would have to be made is a right-of-way cost.

Private and Public Properties Not Federally Held

All that is required is to pay a property owner the value of property taken plus damages to the remainder. This is not to imply that no effort should be made to accommodate a grantor, but he should not be granted additional consideration over and above the amount deemed reasonable. Where partial takings are involved many opportunities are opened for creating good will by making arrangements which benefit grantors but result in no greater cost to the state. It is a task of negotiators and engineers to discover and make use of these opportunities.

Second, every opportunity should be taken to lessen expenditures by incorporating facilities which will result in lessening severance damages to the greatest degree. For instance, a structure is not justified even though it will result in reducing total right-of-way costs if at the same time a frontage road will result in an even greater reduction. This holds, of course, even though a grantor may have preference for a structure.

Federally Held Properties

First, it is necessary to adhere to the conditions, stipulations, or restrictions set forth in special permits, withdrawals or grants for rights-of-way which are accepted from the agencies in custody. This does not mean accepting conditions which appear unreasonable such as one to improve range land by fencing it if the fencing is neither necessary for continued use of the range land or safe use of the highway. The author's view with regard to facilities to be constructed for the primary benefit of remaining public lands (cattle passes, irrigation structures, etc.) is that they should be warranted by lessening would-be damages to a greater extent than the costs of the facilities. Here, as with private properties, it may be necessary in some complex situations to study the desirability of several possible solutions before a choice is made.

Second, from a policy standpoint, it is only reasonable that there should be cooperation with other public agencies to achieve the greatest common good and therefore one should be neither for nor against damage off-setting facilities as such. There is no intention to construct any that are not justified but on the other hand, criticism would result from allowing more damage to be caused to property than remedial facilities would cost.

The present value of publicly held lands should be determined with close attention to the plans for future use which may be being developed by the agency in custody because they have the opportunity of increasing present values through proper planning and expenditures of funds that is not ordinarily possible with private properties. However, not all governmental plans are successful or result in raising land values and, therefore, values predicated upon them should be reasonably sure of ascertainment so that they are not actually remote, speculative or imaginary.

Application of Principles

Working out satisfactory solutions to problems arising from partial takings will oftentimes require early coordination between design and right-of-way departments. Preliminary work by engineers and appraisers "on the ground" may be necessary to determine the most likely solutions and to set the stage for comparing them in sufficient detail. In the final analysis, the right-of-way department could make appraisals of the damages which would arise from the different proposals and advise the design department of their findings. Design could then compute the costs of the different facilities, compare them with the severance damages they would mitigate and thereby arrive at the best solution.

When damage offsetting facilities are considered it should be remembered that it takes a lot of damage lessening to pay for any of the structures they may be employed. Even without considering pilings and accessory frontage roads or other items which may be required, 20 ft and 16 ft x 212 ft Interstate underpasses will cost about \$45,000 and \$40,000; 24 ft and 20 ft x 14 ft concrete slab frame machinery passes (Interstate overpasses) will cost about \$40,000 and \$35,000. Even smaller passes (16 ft x 12 ft, 12 ft x 10 ft, 8 ft x 8 ft) will cost as much as \$36,000, \$21,000, and \$15,000. Structural plate cattle passes, depending on size and length, can run from \$7,000 to \$11,000. Therefore, the amount of damage lessening has to be substantial to warrant construction of even the smaller structures. Frontage roads and other facilities are not cheap either.

There are extensive damages that would have to be alleviated to warrant construction of a \$21,000 facility. For example, the structure would have to have the capacity of restoring \$35 per acre in value to \$40 acres of severed range land, or \$200 per acre to 105 acres of severed cultivated land. Then, practically speaking, unless valuable acreage is landlocked or major improvements are isolated, it is doubtful whether expensive structures can often be justified.

The measures of damages employed should be based upon appraisals that clearly support and explain the difference in the amount of damages that would occur if the facility were or were not constructed. Valuations and damages should be based upon prices being currently paid for comparable properties. Because present prices reflect the value of future uses, valuations and damages should be inspected to determine that they are reasonable and do not include amounts for remote, imaginary or improbable uses or damages. Some damages (while real) are not compensable and may not be included.

It would seem to be particularly advantageous to assign staff appraisers to problems in justification of facilities because of the close cooperation necessary with the design department. One well-detailed appraisal should provide sufficient information to determine the need for a facility. This appraisal might also be acceptable later as a basis for negotiation. A second appraisal, if required, could be made by a fee appraiser after any improvements were shown on the plans. His appraisal would be limited to estimating the total consideration and evaluating the one solution shown. In cases where the inclusion of improvements is questionable, it is important that they be justified initially by detailed appraisals, rather than by preliminary estimates to guard against plan changes or further substantiation which may be required for Federal participation.

It would be helpful to have all information concerning justification of facilities for both public and private lands made available by the state at preliminary design inspections for examination by the Bureau of Public Roads area engineer and division right-of-way appraiser. The information should include (a) a map of the area showing the existing road system, extent of ownerships, and the approximate line location together with proposed facilities; (b) appraisals in final form in justification of facilities for private and/or public properties; and (c) other information such as economic studies or explanations in support of such facilities. This information has been presented by the State of Idaho on several projects and proved quite useful. The contribution that can be made by appraisers through such analyses is as important to this stage of highway design and the over-all program as the customary appraisals are to right-of-way procurement.

In a paper presented by M. Fryhofer, Region 5 Design Engineer at a conference on October 22, 1958, the following statement was made: "In the review of crossroad separations vs closures, our engineers should feel free to call on you people for your opinions as to mitigation of damages which may result by the inclusion of a separation structure at a public road crossing. In some situations where the actual traffic volumes at a local road crossing are insufficient to justify a separation structure or where the inclusion of a separation appears doubtful, knowledge as to the extent of mitigation of damages may be most helpful in making a final decision to build or delete the structure."

Appraisers should play a vital part in aiding design work generally. In Idaho the appraisers have been called upon increasingly in such situations and their efforts have resulted in designs which have saved much money without materially lessening the serviceability of the improvement. On the American Falls to Igo project a county road grade separation was deleted from the final design plan because study proved there was little need for it. It was designed on a skew and its elimination saved about \$120,000. On the Roberts to Sage project two cattle passes were deleted from the construction prints even after construction had started because review of a right-of-way voucher brought out lack of justification for them. Additional damages were paid the grantors in this case so the saving was only about \$8,000. On US 95 to US 30, US 30 to Idaho 44, Raft River to Snake River, and other such projects appraisal analyses were more timely and many structures which were proposed did not even reach the preliminary or final design stages.

On the US 95 to US 30 project, seven or eight machine and cattle passes were originally proposed through one large public land withdrawal over which there are Taylor grazing rights. Subsequent analyses showed the practicality of reducing these to two in number and providing one or two wells for stock and fire fighting purposes. Further study eliminated both passes through the use of three wells and two very short stub access roads from two interchanges. The savings were, of course, quite substantial. The wells promise to cost no more than \$20,000. Incidentally, since it is thought that

the Taylor graze permittee has a range privilege but not a vested right, only as much was installed in the way of damage mitigating facilities as BLM could support for management purposes generally and without regard to the interests of the present permittee as such. In this case 9,000 acres of land are affected.

In some other cases, the small but still important minority, facilities were also added which might otherwise have been left out and required disproportionately larger damage payments.

STATE LAW

Idaho law does not embrace a "farm unit rule" as some other states. Such a rule requires an appraisal of the "after" situation from the standpoint that the remainders, though physically separated, are still to be considered as one unit for farming purposes. This rule oftentimes contradicts the principle of highest and best use in the appraisal of after situations. It is evident that it would allow the payment of much higher damages and result in the justification, legally but not economically, of more damage off-setting facilities than would be possible otherwise.

The law in Idaho also permits resort to easements of necessity in landlocking situations. Whether this legal avenue to mitigating damages is open in these states is important because it may be the limit or measure of damages in such cases. Idaho considers that the appraised value of the landlocked remainder should be its value with access less the cost of providing that access (which includes the value of the easement and the costs of construction necessary to provide the access road). It appears that it is not necessary to add legal fees to the cost of the easement because the state or Federal government could do this work and it would be charged to incidental expenses as is all other legal case work. There is also no need to speculate on the amount of the court award in an action for an easement of necessity because like all other property interests it is only worth its appraised value until or unless the court says differently.

ADJUSTMENT OF IMPROVEMENTS

Insofar as adjustments of improvements are concerned, Idaho practice is to pay for adjustments to buildings, restoring parts of them, moving them back, etc., so long as such costs are less than would have to be paid in damages otherwise. In Idaho, there is no choice other than to purchase part of a building in a right-of-way so such adjustments become a matter of negotiating for the best settlement obtainable.

Fences and approaches are generally considered as replacements in kind. Where the new fences are much better than the old ones or where approaches are much improved they are seldom reflected in the appraisals but an attempt to trade on them is made during negotiations.