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1969

INSPECTOR'S HANDBOOK

CLEARING AND GRUBBING



IOWA STATE HIGHWAY COMMISSION

AMES, IOWA

1969

CLEARING AND GRUBBING

Harry Robinson

INTRODUCTION

This handbook is an inspector's aid. It was written by two inspectors to bring together all of the most-often-needed information involved in their work.

Much care has been taken to detail each phase of construction, with particular attention to the requirements and limitations of specifications. All applicable specification interpretations in Instructions to Resident Engineers have been included.

The beginning inspector should look to the handbook as a reference for standards of good practice. The Standard Specifications and Special Provisions should not, however, be overlooked as the basic sources of information on requirements and restrictions concerning workmanship and materials.

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INTRODUCTION

Ordinarily on a grading project, there will be clearing and grubbing. Additional right of way frequently extends the lines to include tree growth in fence rows, orchards, and woodland. Some or all of this growth must be removed to make room for the new construction.

The methods used in clearing and grubbing vary with different contractors, however, the usual practice today is removal by heavy tractor equipped with a bulldozer blade. Blasting is occasionally used in non-populated areas.

Regardless of the method used, the interests of all people must be preserved. This includes the damage to other portions of construction, buildings, livestock, crops, utilities, bridges, adjacent property owners, and the traveling public.

DESCRIPTION OF CLEARING AND GRUBBING

Except for trees, shrubs, and grasses which are to be left in place as indicated on the plans and right of way contracts, or designated by the engineer, all trees, stumps, logs and down timber, hedge, shrubs, brush, growing corn, weeds, grass, corn-stalks, rubbish, and farm field fence (if not to be removed by owner or tenant) shall be removed from the right of way and from borrow pits. Selective clearing is normally done to save desirable trees and shrubs when they are favorably located with respect to road appearance and safety. This work is divided into several classes:

Clearing

Clearing consists of the cutting, removal, and disposal of trees three inches or more in diameter measured eighteen inches above the ground.

Grubbing

Grubbing consists of the removal and disposal of stumps, including roots.

Logs and Down Timber

Removal of logs and down timber consists of the removal and disposal of logs and down timber encountered on the work.

Hedge

Hedge removal consists of the pulling or grubbing and disposal of hedge fences of osage orange, or other shrubs planted close together in rows. If any individual tree of those composing a hedge has a diameter greater than six inches, it shall be measured separately as a tree.

Brush and Shrubs

Brush and shrub removal consists of the pulling or grubbing and disposal of trees and shrubs less than three inches in diameter, including roots, which are not classified as hedge.

Removal of Growing Corn

Removal of growing corn consists of cutting near the ground and disposing of the stalks.

Weeds and Rubbish

Weed and rubbish removal consists of

the removal and disposal of all weeds, grass, cornstalks, other vegetation and rubbish encountered on the work.

Farm Field Fence

Field fence removal consists of the removal and disposal of farm field fence that is not to be removed by the farm owner or tenant. If the fence is to be removed by the owner or tenant, it will be stated on the right of way contracts. The owner or tenant will be paid for the fence on the right of way contract. If the owner or tenant does not remove the fence, they should not be paid. The fence should then be removed by the contractor and payment made to him as a Clearing and Grubbing item.

DUTIES OF INSPECTOR

The clearing and grubbing inspector must be present when any operations are being performed by the contractor. The inspector must get an accurate count and measurement of all items for which the contractor is to be paid, and he must keep accurate records since payment to the contractor will be based on his records. As a part of his duties the inspector must watch the contractor's operation to insure that it does not cause a safety hazard to the traveling public, and to prevent the contractor from endangering or damaging private property during his work.

The inspector will need a copy of the Iowa State Highway Commission Standard Specifications book, and any revisions or special

provisions which apply to the job. He will also need a field book for keeping notes, a tape measure or tree tape and a six-foot rule for measuring tree diameter, and red cloth, paint, or colored plastic marking tape for marking trees to be saved.

METHOD OF MEASUREMENT

Measurements for clearing and grubbing will be made by you, the inspector, as follows:

Clearing

Trees will be measured at a height of eighteen inches above the ground. The diameter will be determined by measuring the circumference with a regular tape to the nearest inch and dividing by 3.14 or using a tree tape and reading the diameter directly on the tape. These tapes should be available in your resident office.

Grubbing

Stumps will be measured by taking the average diameter at cutoff.

Logs and Down Timber

Logs and down timber will be measured in a similar manner as trees. Measure across the butt end for logs.

Hedge

Hedge rows will be measured in hundreds of lineal feet (stations).

Example:



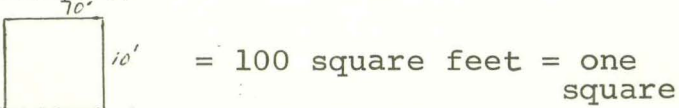
$$1.00 + 1.00 + 1.00 + .50$$

= 3.5 hundreds, or 3.5 stations

Brush and Shrubs

Brush will be measured in squares of 100 square feet:

Example:



Be sure to draw diagrams showing limits and stations.

Growing Corn

Growing corn will be measured in the same manner as brush. (July 1 to October 1)

Weeds and Rubbish

Weeds, grass, cornstalks, other vegetation, and rubbish will not be measured directly for payment; however, you should keep a record of these areas in your diary. They will be incidental to excavation items.

Farm Field Fence

Farm field fence will be measured in the same manner as hedge rows.

Note: If you are measuring in dense forest, each tree measured should be identified by paint. This procedure could be used for all measuring if any question might arise in

regard to which tree is to be removed, or if it has been measured.

PROJECT PLANS AND CONTRACT DOCUMENTS

The clearing and grubbing inspector should study the project plans and contract documents before work is started. Any special instructions found on the plans should be placed in the field book. The set of plans that you take to the job with you should show the right of way limits. You may have to draw them on your plans yourself.

You should study the right of way contracts also, to inform yourself if there have been any agreements made to leave any trees, bushes, or hedge in place. Also, you will note the percentage at which the contractor has bid the clearing and grubbing in reference to the schedule in our general specifications.

Example: In event the contractor bids the clearing and grubbing at 200% of the schedule, you count the number of trees, etc. in each pay category, and then you must multiply your answer by 200% as:

$$(8) \quad 9" \text{ to } 12" \text{ C. \& G.}$$

$$8 \times \$3.35 = \$26.80 \times 200\% = 53.60$$

(For prices, see Clearing and Grubbing section of General Specifications.)

PRELIMINARY ESTIMATE

A preliminary estimate will be made either by an inspector or a survey crew before the construction contract is let. The trees are to be measured and counted as stated in the Method of Measurement.

Later when the trees are actually removed, a final measurement and count will be made for payment. The final measurement and count will be made in the presence of the contractor. There may be an extensive length of time pass between the preliminary and final measurement and changes could have been made in the area requiring a final measurement.

Estimates of the amount of clearing and grubbing seldom appear on the plans. The plans are based on information supplied by preliminary surveys of the proposed route and at the time of the preliminary survey neither the exact extent of the work to be done nor the right of way needed has been decided. Hence, the amount of clearing and grubbing necessary in the building of the proposed road cannot be determined at that time. As clearing and grubbing, like other construction work, is usually done by contract, preliminary estimates of the quantities involved must be made after the plans are completed to supply figures on which to base contracts. The resident construction engineer to whom the project has been assigned, being on the site with his party, will usually be required to furnish this information. It may very logically be collected while the right of way is being

staked since known right of way lines simplify the matter of determining what trees may be involved. It is not necessary, however, that the preliminary estimate be exact to the last tree since it is used to supply contract figures only, the pay quantities being determined later by the amount of clearing and grubbing actually done. The staking of the right of way, therefore, is not a necessary prerequisite to the making of the estimate when the work is scheduled for an early letting. The basis of payment for clearing and grubbing set forth in the specifications will indicate the form in which the information for preliminary estimates should be assembled.

STATEMENT OF CLEARING AND GRUBBING FORM 312

This work sheet is rather simple in form and should be easy to follow if your field book is set up in the same manner before you go out to do the preliminary counting and measuring of the trees.

You will find later in this handbook how to set up your book. You will then carry the total of each individual item to Form 312, and continue until all items are accounted for from your field book.

Note example of Preliminary Work Sheet (Form 312). You will also see that the totals have been added, and the amount carried forward to Form 482. Form 482 is the estimate that is sent in to the contracts engineer, and this estimate is added to the proposal form before the letting of the contract.

FINAL MEASUREMENTS

Final measurements should be made in accordance with the instructions under: "Method of Measurement". You will have your field book set up according to the sample field book set-ups. These set-up samples are a guide to assure that the minimum of required information is recorded. Many times modifications are made to fit different situations; however, before making drastic changes, consult your supervisor.

IMPORTANT: When you are ready to measure, you must see the clearing contractor and strongly recommend that one of his men accompany you, and either help or observe your measurement, verify every item and at the end of the measuring period, he will sign the page or pages of your book which indicates you both have agreed to the measurement and count in the book up to this time and station - this is important. This procedure should be followed until all items on the project have been counted and/or measured.

Following are samples of field book set-ups and sketch.

FORM 347 & P. REVISED
 AUG. 1, 1951 (10-51)
 P. 12321

**PRELIMINARY
 "WORK SHEET"
 STATEMENT OF CLEARING AND GRUBBING
 PRIMARY ROAD WORK**

Project No. P-150-001-30-57County LINNEstimate No. 1Sheet No. 1 of 1

Payable to

Address

CLEARING AND GRUBBING		RATES	THIS ESTIMATE	
			QUANTITY	AMOUNT
3" to 6" Incl.	Clear	\$0.25		
	Grub	0.55		
	Cl. & Gb.	0.80	32	17.60
Disposal of Logs or Down Timber		0.125	119	95.20
Over 6" to 9" Incl.	Clear	0.55	7	0.88
	Grub	1.40		
	Cl. & Gb.	1.95	2	2.80
Disposal of Logs or Down Timber		0.275	18	33.10
Over 9" to 12" Incl.	Clear	0.95	3	0.83
	Grub	2.40		
	Cl. & Gb.	3.35		
Disposal of Logs or Down Timber		0.475		
Over 12" to 15" Incl.	Clear	1.40		
	Grub	3.30		
	Cl. & Gb.	4.70		
Disposal of Logs or Down Timber		0.70		
Over 15" to 18" Incl.	Clear	2.35		
	Grub	4.40		
	Cl. & Gb.	6.75		
Disposal of Logs or Down Timber		1.175		
Over 18" to 24" Incl.	Clear	4.20		
	Grub	6.80		
	Cl. & Gb.	11.00		
Disposal of Logs or Down Timber		2.10		
Over 24" to 30" Incl.	Clear	5.70		
	Grub	8.80		
	Cl. & Gb.	14.50		
Disposal of Logs or Down Timber		2.85		
Over 30" to 36" Incl.	Clear	11.00		
	Grub	14.00		
	Cl. & Gb.	25.00		
Disposal of Logs or Down Timber		5.50		
Over 36" to 42" Incl.	Clear	15.00		
	Grub	25.00		
	Cl. & Gb.	40.00		
Disposal of Logs or Down Timber		7.50		
Over 42" to 48" Incl.	Clear	29.00		
	Grub	40.00		
	Cl. & Gb.	60.00		
Disposal of Logs or Down Timber		10.00		
Over 48" to 60" Incl.	Clear	30.00		
	Grub	50.00		
	Cl. & Gb.	80.00		
Disposal of Logs or Down Timber		15.00		
Over 60" to 72" Incl.	Clear	40.00		
	Grub	60.00		
	Cl. & Gb.	100.00		
Disposal of Logs or Down Timber		20.00		
Over 72"	Clear	60.00		
	Grub	80.00		
	Cl. & Gb.	140.00		
Disposal of Logs or Down Timber		30.00		
Hedge Removal	Per 100 ft.	15.00	1.27	19.05
Brush Removal	Per 100 Sq. Ft.	0.40		
Removal of Growing Corn	Per 100 Sq. Ft.	0.20 0.16		
TOTAL CARRIED TO FORM 482				\$ 171.46
Totals Carried to Form 314				

(*July 1 to October 1)

Weeds, grass, cornstalks, other herbaceous vegetation and rubbish shall not be paid for directly but shall be included in the contract price for excavation.

I hereby certify that the several items and amounts listed herein are correct.

, 19

Checked and Approved, 19

District Engineer.

Resident Construction
Engineer

Ext. and Figs. Chkd.

By

Aud't by

O. K.

Form 482
 ISHC
 1-67

TO: CONTRACTS ENGINEER

PRELIMINARY ESTIMATE FOR CLEARING RIGHT OF WAY

COUNTY Linn PROJECT NO. P-150-0(1)--30-57
 LOCATION & LENGTH On Iowa 150 from Werner Avenue in Cedar Rapids,
Northerly into Hiawatha 0.623 Mi. Date Jan. 2, 1969

ESTIMATE BY DIVISIONS

Div. I	_____	\$	<u>171.46</u>
Div. II	_____	\$	<u>0.00</u>
OTHER (Designate)	_____		

TOTAL \$ 171.46

Prepared by John Doe Signed _____
 Res./Co. Engr.

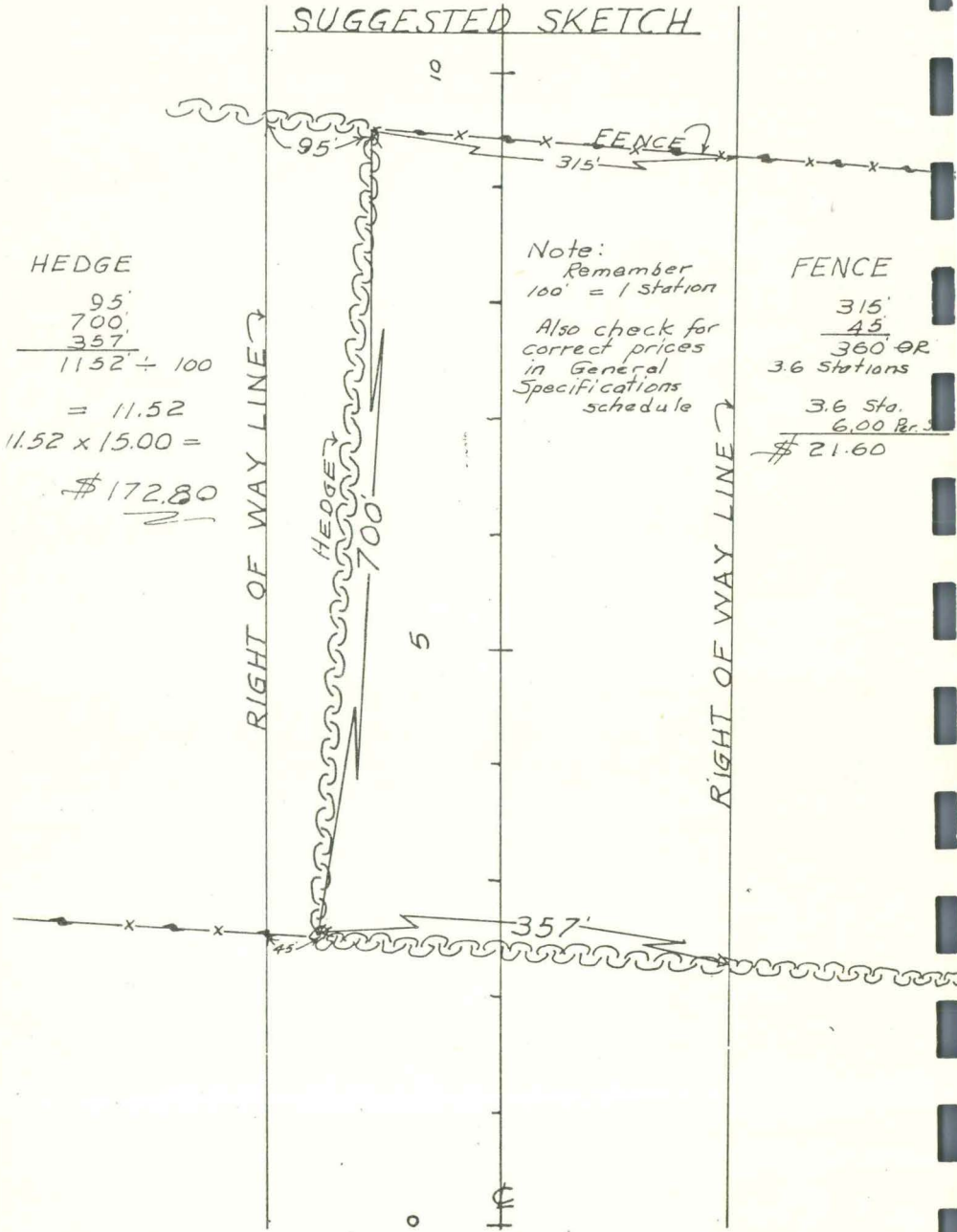
Checked _____
 District Office

Use one or more Forms 312, Statement of Clearing and Grubbing, as "work sheets" (and so label) for this estimate. Retain these "work sheets" (Form 312) in resident or county engineer's file attached to file copy of Form 482. Do not forward.

Notice: Form 312 is also used as the FINAL actual count statement and is still required at the completion of the project in support of Form 314, FINAL ESTIMATE.

cc: District Engineer : 2
 Res. Engr's. file : 1

SUGGESTED SKETCH



HEDGE

$$\begin{array}{r} 95' \\ 700' \\ \hline 357' \\ 1152' \div 100 \end{array}$$

= 11.52

11.52 x 15.00 =

\$172.80

Note:

Remember
100' = 1 Station

Also check for
correct prices
in General
Specifications
schedule

FENCE

$$\begin{array}{r} 315' \\ \hline 45' \\ \hline 360' \text{ OR } \\ 3.6 \text{ Stations} \end{array}$$

$$\begin{array}{r} 3.6 \text{ Sta.} \\ 6.00 \text{ Pr.} \\ \hline \$ 21.60 \end{array}$$

BASIS PAYMENT

Payment for clearing and grubbing and the removal and disposal of trees, stumps, logs and down timber, hedge rows, brush and growing corn shall be made at the contract percentage of the prices stipulated in the General Specification schedule.

DESCRIPTION OF RURAL REMOVAL OPERATION

The contractor who does clearing and grubbing in the country will move in with a big tractor and dozer attachment.

The tractor operator will observe the tree he plans to remove first to see if there are any dead limbs which might break off and fall on him or his tractor and then he will determine which way he wants to have it fall. Now he is ready to start. He digs down near the trunk of the tree, to cut all the roots, he continues doing this all the way around a big tree and then he will back-fill one side and raise his dozer blade as high as possible and push the tree down. If he is in an area where the timber can be burned, he will have the stump cut off and put in a pile.

Where the contractor has stumps to remove in the country, he will occasionally dynamite them out since they are much harder to remove after the tree has been removed.

CITY CLEARING

City clearing, can be a very delicate operation, as many things are to be considered, such as utilities above and below the

ground, houses, pedestrians and traveling public as well as sidewalk which is not to be removed.

The contractor ordinarily will have a tree climber with a chain saw remove the limbs that will endanger property. These limbs are let down by rope or perhaps by crane which has been brought in to assist in the removal. After the limbs have been removed, the trunk and stump will be next. You must know the location of all underground cables, pipe, etc. before digging. If in doubt, call the utilities for help. In some cases, stumps are removed by stump cutters.

The timber is then hauled to an area where it can be piled and burned.

DISPOSAL OF MATERIALS

You should tell the contractor that he must make his own arrangements for the disposal of stumps, etc. Stumps are hard to burn, and you will find that the contractor will usually find a place to bury them on private property.

Do not bury stumps in fill area or within the limits of the roadway.

No brush or timber can be burned before getting permission from the proper authorities. This must be done when working within city limits or other congested areas. When this is done, the fire department should be notified by the contractor so they will be aware of what is going on in the area. Starting a fire with old tires is usually prohibited in these areas.

The contractor must obtain a written

agreement with the property owner before he disposes of stumps and timber on his land, and you should get a copy of the signed agreement. The agreement should state among other things that the owner approves of receiving the stumps and timber, and also approves the conditions of placement.

Piles of timber and stumps or other debris stored on private property must not be located where it will be unsightly from any highway, even though the contractor has permission of the property owner and tenant.

The title to crops or trees growing on the right of way does not pass to the Highway Commission when the use of the land has been obtained by easement for road purposes only. Consequently, the owner from whom the right of way was secured retains the title to these and is permitted to claim them if he so desires. (The majority of right of way is obtained by fee title.) If acquired by condemnation or fee title, these become the property of the State. If you do not understand the above terms, your resident engineer will be happy to explain them to you. Mature crops are usually removed by the owner. Weeds, brush, and long grass are to be burned or cut and burned where fills are to be constructed, and over areas where excavation is to be made. Roots and stumps may be either burned or turned over to the landowner for filling gullies on his farm when he so requests. They will not be so used on the right of way. Timber large enough for saw logs, fence posts or fuel should be turned over to the landowner if he wishes it. If not, it

should be burned. (This again is on easement only.)

Unless arrangements have been made by right of way agreement or otherwise, the contractor will not be required to process for the fee owner timber which is less than six inches in diameter without extra compensation in addition to the scheduled prices.

The policy of returning to the landowner timber removed from the right of way carries with it no obligation to finally dispose of the material for him. That is, the contractor should not be asked to saw and split the wood or build erosion dams of the stumps. The state's obligation will be discharged if the trees, cut and trimmed as required by specifications, are deposited on the owner's land well back from the right of way line in places where they can be reached by the owner and, when possible, in a spot satisfactory to him. Any disposal that requires the timber to be loaded and hauled great distances is not intended, although it is desirable when possible to remove it from view from points on the road. This may eliminate the possibility of much unfavorable comment from the public on the appearance of the finished highway.

SAVING ORNAMENTAL TREES

Description: Any good, desirable, healthy tree located in a desired area can be classified as ornamental.

You should check your cross sections to determine if the tree or shrub is outside

of construction limits before marking it "Save". They must be marked so the operators will know they are to be saved. Colored plastic marking tape works well for this purpose.

Many times trees are saved in front of a home. Backslopes are modified sometimes to make it possible to save a nice healthy tree in these areas. Read through your right of way contracts thoroughly to check for the saving of trees. You don't want any irate property owner after you because you didn't honor his contract. The Highway Commission may have to buy him another tree if you cut his down. If you have any questions about whether or not a tree should be saved, contact your project inspector or your resident engineer before the tree is touched. The roadside improvement department in Ames will advise on request what trees are desirable and should be saved. For safety reasons, trees normally are not left within thirty feet of the roadway.

The appreciation of the public for a pleasing appearance of the roadside is growing and the inspector should recognize this by not destroying trees that can be retained with no detriment to the work.

The decision on what trees to save is not always an easy one. Trees to be saved should be of a species usually regarded as decorative or be valuable in some other way, should be young or in their prime, and should be in a position where they add to the appearance rather than detracting from it, as well as not interfering with visibility.

Old "snags" whose span of life is soon to end and small saplings easily replaced by planting should be given small consideration. A backslope may be altered slightly or a drainage ditch relocated to save a tree, with little permanent detriment to the road. On the other hand, it would be an exceptional tree that would justify changing the alignment or profile or any other major feature of an important highway.

Wherever possible, desirable trees and shrubs should be preserved within the right of way line if these trees are outside the construction area and will not endanger future traffic should they be saved. If it appears that approximately one third of the root system of a tree is affected by either a cut or fill section, it is generally best to remove the tree during the clearing and grubbing operation.

Trees are important for erosion control and slope stabilization as well as adding to the attractiveness of the completed highway.

Desirable trees and shrubs include oak, hackberry, cherry, maple, hickory, ash, sycamore, linden, all evergreens, walnut, sumac, plum thicket, as well as many other trees prevalent in various parts of the state.

In most cases, cottonwood, willow and box elder should not be preserved unless they may serve to reduce erosion in highly erosive soils.

If there are any questions concerning trees to be saved, the resident construction engineer should consult with the Roadside Improvement Section before making a decision.

RECORDS AND REPORTS

Reliable records are especially necessary in this case because as the work progresses all evidence of the amount of clearing and grubbing done is removed, and the record cannot be duplicated or checked later in the field. A station by station record of all the clearing and grubbing to be done on the entire project should be entered ahead of time. This record will not necessarily be a duplicate of the preliminary estimate even if that estimate were complete, as landowners may have removed timber in the interim or certain ornamental trees may have been chosen for preservation. As the work progresses appropriate notations can be entered in this book, checking off the items completed and showing any changes. To obtain the information for this record nothing less than actual measurement and count, tree by tree and actual measurement on the ground for hedge and brush, have proven satisfactory. At the time this information is being collected a good practice is to spot with red paint each tree to be removed. Blazes on the tree trunk are not satisfactory because trees intended for preservation may accidentally become scarred in a way to closely resemble a blaze and thus be removed by mistake.

It is suggested that your clearing and grubbing records be brought into the office and a duplicate copy made. You cannot take a chance of misplacing your book. The duplicate copy should be filed in the project records.

DIARY

Your clearing and grubbing diary starts the day you are assigned to the project, and must be kept up. The diary should include the contract starting date. If the contractor is not working, the reason why should be entered. You should enter the events important in the progress of the job. It should show:

- Contract information.
- Contractor and inspection person personnel.
- Equipment record.
- Description of equipment.
- Dates of starting and stopping operations.
- Weather conditions each day.
- Delays and causes.
- Directions given to the contractor.
- Instructions from your supervisor, if pertinent.
- Changes in personnel -- contractor or state.

The important items listed above should be recorded in their respective places as they happen, so that at the end of the day your records accurately show the day's activities.

Sample field book records are shown on the following pages.

CONTRACT INFORMATION

PROJECT No. FN-38-3(2)--21-53

JONES COUNTY

On Iowa 38 From Jct. Iowa
64 North to Center Junction

Culverts & Grading

Contract Starting Date
Contract Completion Date
Contract Calendar Days
Actual Starting Date
Actual Completion Date
Actual Calendar Days
Liquidated Damages-Days

SAMPLE DIARY SET UP

4-8-64
Monday

Warm
Showers
80°

Hours - 6:00 - 8:00 9:30 - 6:00
Delays - Rain 8:00 - 9:30
Worked - Cl. 10 Bal 932± + 942±
- Select Clay 452 - 472±00
- Spec. Compaction
- Rdwy. Pipe 945±26
- Finish Work

Remarks - Hauling Cl. 10 from
Borr. "B" Building Subgrade Sta.
932± to 942± Select Clay
from Cut Ditch Section 448-460.

Special: Scoops rutting haul road caus-
ing a Soft Spot which will
need correction Sta 920 to
923±00.

Special compaction is
completed in this area.

E.W.O. E.W.O. needed for
uncovered well Sta. 732±56
filled with broken Conc.
from Sta. 602±50

E.W.O. Removed and replaced Rdwy.
pipe at Sta. 945±26 pipe staked
wrong by Survey Party.
Mr. Jones Talked to Mr. Jones (Tenant)
about removing Temp. Fence so
we can complete Ch. Ch. Sta.
941±60.

Finish work started today
at Sta. 85±00 - 130
Accident
Page 75
Book 6
Visitor
Car Accident with "C" Full today
See details on page 75 Book 6. Dist.
Engr. visited project today.
Discussed depth of trench Sta.
622 - 626. Said we would inc.
rease the depth to 30' instead
of 2.0' as shown on plans
Signature District Engineer

CONTRACTOR'S PERSONNEL

A.R. Smith, Pres. Smith Constr. Co.
202 Elm Ave.
Des Moines, Iowa
Phone 828-3163

I. S. Kern, Superintendent
806 S.W. 4th St.
Ames, Iowa
Phone 452-2021

S.T. Jones, Foreman
407 Edmont Terrace
Charles City, Iowa
Phone 332-9901

A. Ray Teague, Flagman

INSPECTION PERSONNEL

Joseph H. Brown, Resident Engineer
Office Phone 203-4456
Home Phone 822-7778

Graham Smith Field Asst.
Phone 827-5555

Able Wilson, Project Insp. A.W.
Phone 827-0091

John H. Doe, Insp. Grade I J.D.
Phone 245-9001

Gary Lewis - Office Mgr. G.L.

Initials
Book
G.L.S.

Note: A separate page or pages should normally be kept for "Contractors personnel" and "Inspection personnel"

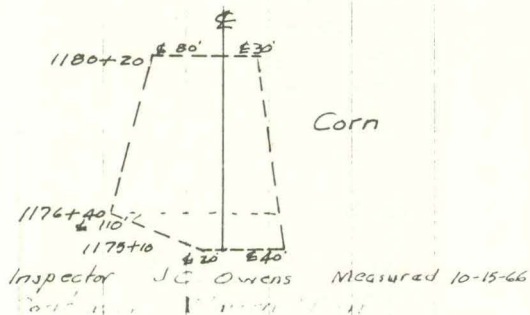
APRIL EQUIPMENT RECORD:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
TD-10A Doz.	X	X	X	X	X	X	X	X	0	0	6	X			X			6	X	X											
TD-14A-Rush	X	X	X	X	X	X	Sunday	X	X	X	X	X	X		X			6	X	X											
END LDZ	X	X	X	X	X	X	Sunday	-	-	-	-	-	-		X			6	X	X											
Truck (ST)	X	X	X	X	X	X	Sunday	-	-	-	-	-	-		X			6	X	X											
"C" PULL	X	X	X	X	X	X	Sunday	0	4	X	X	X	0		X			6	X	X											
"C" PULL	X	X	X	X	X	X	X	X	X	X	X	X	X		X			6	X	X											
"C" PULL	X	X	X	X	X	X	X	X	X	X	X	X	X		X			6	X	X											
LET-WEST SNEEPS FOOT	X	X	X	X	X	X	Sunday	X	X	X	X	X	X		X			6	X	X											
ROME DISC	X	X	X	X	X	X	X	X	X	-	-	-	-		X			6	X	X											
ADAMS	X	X	X	X	X	X	Sunday	X	X	X	X	X	X		X			6	X	X											
MOTOR GRIND	X	X	X	X	X	X	Sunday	-	-	-	-	-	-		X			6	X	X											
PH DRAGLINE	X	X	X	X	X	X	Sunday	-	-	-	-	-	-		X			6	X	X											
SAND DRAIN EQUIPMENT	Brought in April 8											R	R					4	Sand Drain Completed - Equip Removed on April 18 1965												

X - Worked normal day.
 G - Number of hours worked
 O - Equipment broke down
 - Available but not worked
 R - Rented

(less or more than a normal day)
 (Not available)

GROWING CROPS



Removal by Contractor
 Property owner - Joe & Selma Riggs
 Tenant - Peter Jensen

Note - Record sketches of all growing crops destroyed if covered by pay item to contractor or tenant or property owner on a R.O.W. contract. Be sure date of removal, who removed and what happened to it is recorded. Also nature of crop - corn, beans etc. Keep various property owners separate.

COMPUTATIONS

$$(8020 - 7640)(80 + 110) = 380 \times 95 = 36100$$

$$(640 - 510) \left(\frac{110 + 20}{2} \right) = 130 \times 65 = 8450$$

$$(8020 - 7510)(30 + 40) = 510 \times 35 = 17850$$

$$\frac{62400}{100} = 62.4 \text{ Sq.}$$

Computed by - J.C. Owens
 I M Fink

Measured as per article _____

CUTTING OR TRIMMING OF TREES

The Highway Commission's policy regarding cutting or trimming trees on the right of way when interests of landowners or pole line companies are involved is as follows:

"Trees located on right of way of the primary road system over which the state holds an easement only, belong to the adjacent property owner who holds the underlying fee in and to such primary road right of way.

"The adjacent property owner who owns these trees on primary road right of way may, without the consent or approval of the Highway Commission, trim or cut these trees so long as there is no interference with the free and full enjoyment of the public easement for highway purposes.

"The adjacent property owner who owns these trees on the primary road right of way, may, without the approval of the Highway Commission, give his consent to the owners of an electric transmission line to cut or trim these trees. When the owners of such transmission line have the consent of such property owner, the owners of the electric transmission line may properly cut or trim these trees on primary road right of way without the consent or approval of the State Highway Commission, due regard being given to the safety and convenience of the traveling public.

"Because of the above legal aspects of this matter and for other reasons, the Highway Commission has declined to approve various applications by pole line companies for the cutting or trimming of trees on primary road right of way.

"It may be that in its dealings with electric transmission line companies relative to the cutting or trimming of trees on primary road right of way, the Iowa State Commerce Commission or its representative may desire to consult with and secure the advice or suggestions of engineers representing the Highway Commission with reference to the proposed cutting or trimming of trees on primary road right of way. In such event the representative of the Highway Commission is authorized to consult and advise with the representative of the Iowa State Commerce Commission relative to such matter. In consulting and advising, the representative of the Highway Commission is not "approving", "consenting", "permitting", or "authorizing" the cutting or trimming of such trees. He is merely consulting and advising as to how the cutting or trimming may be done if it is done."

TREES PLANTED BY COMMISSION

On a limited mileage of the primary road system of the state, the Commission has had or may have roadside improvements projects. Some of these projects involved the planting of trees and shrubs. In the planting of these trees and shrubs an attempt was made to so space and locate them that they would not obstruct electric or telephone lines or become a hazard to the traveling public. If due to construction, maintenance, or other causes it appears desirable to remove any of these trees or shrubs, check with your superior before taking any action.

NOTES

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