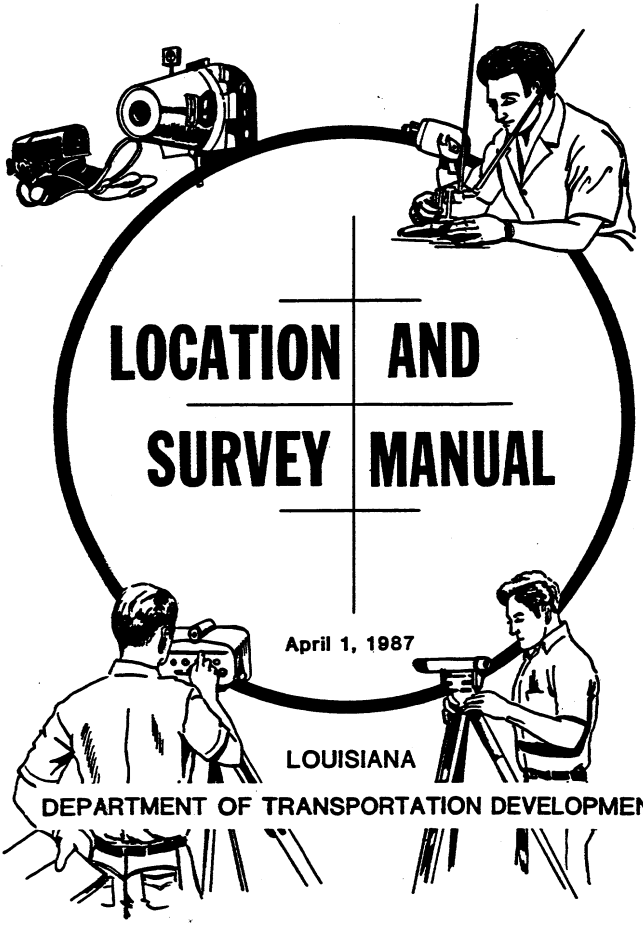

LOCATION AND SURVEY MANUAL

April 1, 1987

LOUISIANA

DEPARTMENT OF TRANSPORTATION DEVELOPMENT

STATE OF LOUISIANA

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

INTRADEPARTMENTAL CORRESPONDENCE

REFERRED TO

REFERRED FOR ACTION
ANSWER FOR MY SIGNATURE
FILE
FOR YOUR INFORMATION
FOR SIGNATURE
RETURN TO ME
PLEASE SEE ME
PLEASE TELEPHONE ME
FOR APPROVAL
PLEASE ADVISE ME

BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____

IN REPLY PLEASE REFER TO FILE NO

February 8, 1988
(504) 379-1131

MEMORANDUM TO:

ALL LOCATION & SURVEY MANUAL HOLDERS

The last paragraph of Section 1.06 and 1.07 of the current edition of the Location and Survey Manual states that "all level books and all cross-section books must be thoroughly checked and so noted with check marks, notes, and/or initials of the checker".

It has come to our attention that in many cases this procedure is not being followed.

Beginning immediately, it will be a requirement to thoroughly check all level and cross-section books and certify that this has been done by means of a note, date, and signature of the checker. This note should be placed on page (4) of these books.

Willis E. Grice

WILLIS E. GRICE
LOCATION & SURVEY ENGINEER

WEG:ple

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

APPROVED _____ DATE _____

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

INTRADEPARTMENTAL CORRESPONDENCE

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BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____

IN REPLY PLEASE REFER TO FILE NO.

December 12, 1989
(504) 379-1131

MEMORANDUM TO:

ALL LOCATION & SURVEY MANUAL HOLDERS

Effective immediately, it will no longer be necessary to wait for approval of the "Bench Mark Tabulation" and "Temporary Bench Mark Tabulation" Forms by the Location and Survey Engineer before proceeding further with any work involving vertical control.

However, "Bench Mark Tabulation" and "Temporary Bench Mark Tabulation" Forms will still be required bearing a note stating that the forms are certified correct and signed by the Party Chief or some other responsible person.

Willis E. Grice

WILLIS E. GRICE
LOCATION & SURVEY ENGINEER

WEG:plw

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

APPROVED _____ DATE _____

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

INTRADEPARTMENTAL CORRESPONDENCE

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BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____
BY _____ DATE _____

IN REPLY PLEASE REFER TO FILE NO.

December 12, 1989
(504) 379-1131

MEMORANDUM TO:

ALL LOCATION & SURVEY MANUAL HOLDERS

Since contaminated storage tanks have become such an environmental hazard, it has become the surveyor's responsibility to locate all tanks, within the limits of the survey, which are or have been used to store potentially hazardous chemical materials. Therefore, a special form labeled "Storage Tanks (Underground/Above Ground" showing the station and offset distance for these tanks must be submitted along with the completed location survey for all Department projects. If there are no such tanks within the project limits, the form is still to be submitted stating this fact. These forms are available through this Section.

Willis E. Grice

WILLIS E. GRICE
LOCATION & SURVEY ENGINEER

WEG:plw

cc: Mr. Dempsey D. White
Mr. Charles Higgins
Mr. William Hickey
Mr. Norval Knapp
Mr. Jarvis Poche
Mr. Vincent Pizzolato

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

ANY REFERENCE TO DEPARTMENT OF HIGHWAYS IN THIS MANUAL ARE TO MEAN DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT.

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SECTION FUNCTION

0.01 GENERAL

The Location and Survey Section is divided into four (4) major units. These are the Boundary Survey Unit, the Photogrammetric Unit, the Checking Unit and the Field Survey Unit. See page iii.

The Boundary Survey Unit prepares all right-of-way maps made by the Department which are required for the acquisition of right-of-way.

The function of the Photogrammetric Unit is to obtain aerial photography in whatever form may be required for any authorized person, unit, or section of the Department, and to obtain preliminary topographic information for use in preparing studies and for the preparation of construction plans. Various other office support functions are also carried out by this unit.

The Field Survey Unit makes location and property surveys required for the design of projects and preparation of right-of-way maps. It also makes hydrographic surveys for new bridge locations and for the monitoring of stream beds under major existing bridge structures. The setting and maintaining of geodetic survey monuments is also carried out by this unit.

The Checking Unit checks all topographic surveys and all right-of-way maps prepared. This Unit also monitors the work of consultants performing surveying and mapping work.

There is an interaction between all four of the above units with the common function being contributed to by each one.

Instructions and assignments are received from Assistant Department of Transportation and Development Secretaries through the Director, Planning and Design Division. This together with the section relationship to the other design sections is shown on page ii.

The flow of assignment and instructions within the section to its individual units is shown on page iii.

The total organization of the section is shown on page iv.

0.02 KEY JOB RESPONSIBILITIES

The Location and Survey Engineer is charged with the overall responsibility of administrating the entire Section's operation.

The Assistant Section Head is charged with the responsibility of administering the Field Survey Unit and assisting the Section Head in administrating the Section.

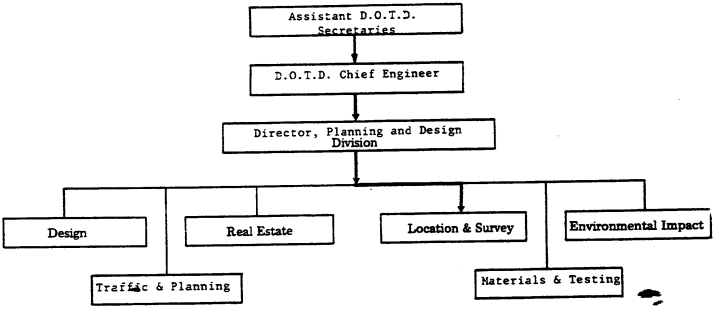
The Photogrammetrist is charged with the responsibility of administering the Photogrammetric Unit.

Two Head Land Surveyors are charged with the responsibility of administering the Boundary Survey Unit.

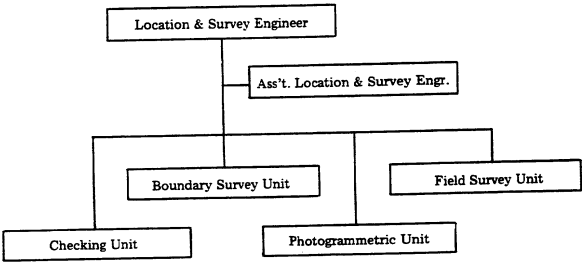
A Head Land Surveyor is charged with the responsibility of administering the Checking Unit.

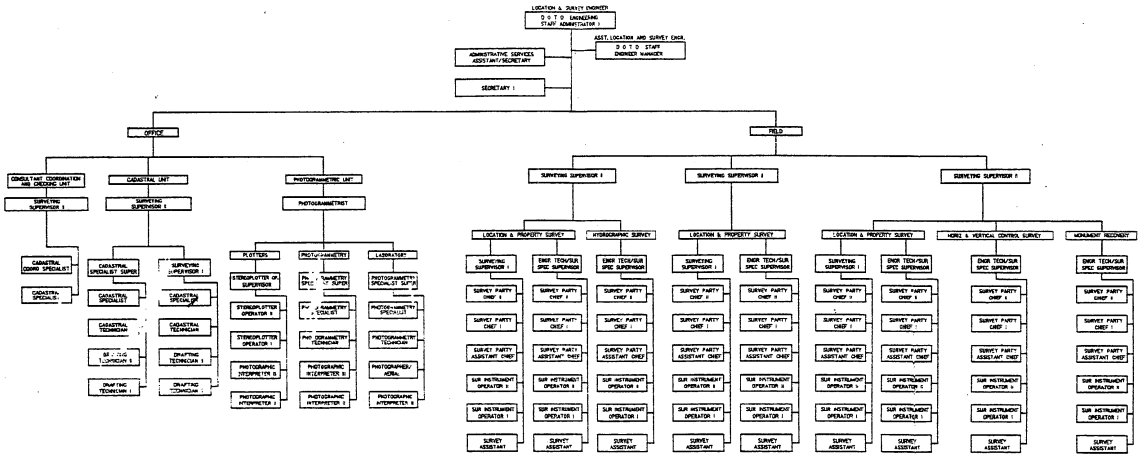
The three Surveying Supervisors under the direct supervision of the Location and Survey Engineer and the Assistant Location and Survey Engineer is charged with the responsibility of administering the field supervision of the Field Survey Unit. This unit differs slightly from the above mentioned three in that direct job assignments are made from the Assistant Section Head or Section Head.

SECTION ASSIGNMENT FLOW CHART



FUNCTION ORGANIZATION
AND
UNIT ASSIGNMENT FLOW CHART





NOTES:

1. FIELD SURVEY PARTIES WILL NOT HAVE OVER FIVE (5) MEN, NO PARTY WILL HAVE MORE THAN ONE (1) ENGR. TECH/SUR. SPEC. SUPER., OR ONE (1) SURVEYING SUPER. CLASSIFICATION.
2. EACH SURVEYING SUPERVISOR I IN THE FIELD WILL BE IN CHARGE OF AT LEAST THREE (3) SURVEY PARTIES.

PROPOSED
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
LOCATION AND SURVEY SECTION
ORGANIZATION CHART

DECEMBER 7, 1986

CHAPTER 1
LOCATION SURVEY

1.01 GENERAL

The location survey for any particular project provides the essential field information necessary for the preparation of plans and specifications for the proposed work. The instructions that will be discussed in this chapter are supplemental and in addition to the various memoranda already in force on this subject.

The Party Chief assigned to this type of work should be experienced, qualified and familiar with the geometrics of highway location, surveying, surveying calculations and standard engineering practices.

Survey precision will be checked by utilizing USC & GS or LGS monuments available. The USC & GS and LGS monuments located, whether used or not, will be referenced and described as shown in figure 1-31 and turned into the Location and Survey Engineer's office. In order that the surveyed line may be retraced and restaked in exactly the same place as the original and with the same stationing, all survey points such as points of tangency, points of curvature, points of intersection, externals, and points on tangent, will be accurately referenced in order that they may be identified or replaced, if necessary (see figure 1-1). POT's will be placed as close together as time and conditions will permit, but not more than 1,000 feet apart.

Locating units will avoid the practice of calling a survey line, "the centerline". This term can be misleading when the staked line is not in the middle of the right-of-way to be acquired, or the line is an offset line instead of one in the center of the roadway, or at other times, a "paper" location is made in the office to be used on construction and staked in the field later. The traverse is called what it really is, a "survey line". The use of the term "base line" is avoided because this was the term originally used exclusively by the U.S. Government for constructing a very accurate line from which to set other points and to use in triangulating and establishing horizontal control stations throughout the United States.

The necessity for any particular survey is decided upon by one of the Assistant Secretaries of D.O.T.D. He authorizes the survey, usually by stating generally where the desired improvement is to be and the classification of improvement to be made. The survey is given a number, name, termini, and general description by the Project Control Section, based upon the description given in the authorization. The Location and Survey Engineer or the District Administrator depending on who is supervising the survey will instruct the Party Chief regarding any particular features and control points to follow. The design criteria as to the type of road, traffic count, width of roadway, backslopes, ditch widths, fore slopes, maximum grade, maximum degree of curve permitted, minimum right-of-way widths, and other features should be known by the Party Chief before he begins his survey. It is suggested that "Minimum Design Standards for New Construction or Major Construction of Rural Highways and Roads", (see figure 1-2), "Minimum Design Standards for Urban Streets and Highways" (see figure 1-33), and "Minimum Design Standards for Overlay or Widening and Overlay of Rural Highways and Roads" (see figure 1-45), parish road maps, quadrangle maps from National Ocean Surveys, NOAA (formerly U.S. Coast and Geodetic Survey), U.S. Geological Survey, U.S. Corps of Engineers, and/or U.S. Army Map Service, aerial photographs and maps, utility maps, maps of completed state highway projects crossed or adjacent to the present project, ownership maps, drainage maps, horizontal and vertical control data, and every other source of available information be obtained by the Party Chief before he begins the survey.

Whenever a project crosses any National Forest Land, the following procedures insofar as surveying is concerned will be followed:

1. The Department of Transportation

and Development will:

a) Annually notify the Forest Service of planned location surveys across National Forest Lands. The Location and Survey Section will do this each year when the construction program has been approved by the Legislature.

b) Contact the Forest Service before starting work.

c) Request a joint Forest Service and D.O.T.D. presurvey field review.

(b) and (c) above will be done by proper District personnel when a District survey party is making the survey, by a Field Supervisor when the Location and Survey Section is making the survey, and by the consultant when a consultant firm is making the survey. In all instances (b) and (c) will be accomplished before a full survey party is on the site.

2. The Forest Service will:

a) Furnish available data and information on such matters as land corner location, property line boundaries, maps and access routes.

b) Explain Forest Service organization and regulations pertaining to fire prevention and suppression.

c) Review requirements and limitations related to clearing survey lines and material source investigations.

d) Provide on-the-ground review and interpretation of details of the preliminary report for assistance to D.O.T.D. Survey parties.

To carry out these procedures with the National Forest, contact Forest Supervisor, Kisatchie National Forest, 2500 Shreveport Highway, Pineville, La., 71360; telephone 318-445-6511.

If a statewide survey or consultant survey party is making the survey, the Party Chief will advise the District Administrator before starting the survey.

See Sheet 1-2a.

A formal diary of all contacts with the property owners along the project will be maintained and turned in as a part of the completed survey.

This diary will be kept in a standard type field book furnished by the Department of Transportation and Development.

The entries in this diary will show name of property owner, resident tenant or representative of the property owner contacted, date contacted, time of day contacted, personal or telephone contact, and a brief statement of subject matter. An example of an entry might be, "Contacted Mr. John Doe on his

Before field parties actually begin surveying on privately owned property, the Party Chief must personally contact each land owner, resident tenant, or representative for the property owner, and secure permission to survey on the property and to do whatever clearing is necessary. Should objection be raised and permission for surveying not given, the Location and Survey Engineer will be contacted if the Party Chief is employed in Section 30, Statewide Location. The property in question will be avoided until cleared by higher authority (see Paragraph 1.11). In those cases, where other than Department personnel are making location surveys, the person in charge will contact the highway official with whom they made the arrangements for their services when he fails to get the permission of entry. This procedure is necessary so as not to involve the Department in a suit or claim.

Act 617 of the 1983 Regular Session of the Louisiana Legislature generally stated that anyone cutting trees on property without the consent of the property owner shall be liable to the owners of the trees for civil damages in the amount of three times the fair market value of the trees cut, felled, destroyed or removed, plus reasonable attorney's fees.

CAUTION: Any consultant firm performing contract work for the D.O.T.D. who violates this Act will be held responsible.

property on July 30, 1982, at 8:30 a. m. Mr. Doe agreed to allow us to survey across his property and said we could cut any trees up to approximately 10" in diameter".

The Party Chief will follow a few simple rules in order to have better public relations when dealing with property owners, such as: give the owner ONLY what information he is authorized to divulge, REFRAIN from expressing his own personal opinions and views about the project, and cut no merchantable timber or other shrubs, bushes, flowers or growths of value without the owner's permission. Remember, the Party Chief is the first Department representative on this proposed improvement and those to follow (the Testing and Research crews, Right-of-Way crews, Plan-in-Hand Engineers, contractors estimating for bids, and contractors doing the actual construction) share, to some extent, in the influence which his crew has created by its actions and work while making the location survey.

1.02 UTILITIES

It is necessary to develop accurate and complete utility location data so that later in the progress of the project, determinations may be made as to the possible conflicts of those utilities with the proposed construction. This data is also necessary to determine whether the liability of relocating or adjusting the utility falls on the utility company or the Department; i.e., whether existing utilities requiring relocation are within public or on private rights of way.

All locations, descriptions, elevations, and ties to utilities will be placed in a utility book and not in the alignment and topography book. The only exception to this will be short jobs where the alignment and topography book will have enough room in the last one half of this book to place the utility survey data. The point being made is that utility data will not be shown together on the same page with other topography survey data.

When making the location survey, the Location Party Chief, Project Engineer, or Consultant Engineer shall observe the following procedures insofar as utilities are concerned:

A. Obtain the names, and addresses if possible, of all companies and individuals who own utility facilities within the area being surveyed. This is the first order of work on the project. Make a list of this information and mail the original to the Headquarters Utility Engineer immediately, with a copy to the District Utility Representative and a copy to the Location & Survey Engineer. Retain one copy to be turned in with the completed survey. This should be done during the first two weeks on the job. At this time, the District Utility Representative will be fully informed by the Party Chief as to the scope of the project. The Party Chief will also advise the District Utility Representative immediately at the conclusion of the staking of the entire survey line.

B. The Headquarters Utility Engineer will notify each utility owner of the pending survey, furnish excerpts of parish or municipal maps showing the approximate limits of the project, and request assistance from each owner in locating its facilities when called upon to do so. A copy of each letter will be furnished the Location & Survey Engineer, District Utility Representative, and Survey Party Chief or Consultant. The District Utility Representative will make final arrangements with utility companies to locate their underground facilities in the field so that these utilities may be tied into survey line and existing roadway centerlines by the Party Chief. The Party Chief will make himself available to make the required ties to underground facilities whenever the District Utility Repre-

sentative may advise him that a utility company representative has located or is ready to start locating such facility.

C. Check with District Utility Representative every two days up to eight days to find out if he has been able to contact and make necessary arrangements with utility companies.

D. If the District Utility Representative will not or cannot help you in this matter, so advise the Location & Survey Engineer, with a copy of the letter to the Headquarters Utility Engineer and the District Utility Representative. State the reasons why the District Utility Representative cannot help. At this time, you are to make your own contact with the utility companies. Be sure you do not contact the companies one day and expect them to be out in the field helping you the next day. They need enough time to schedule their work.

E. Advise those utility companies which are not able or unwilling to help you locate their facilities that you will have to probe for their lines if you cannot locate them with an underground pipe locator. Usually, the companies will prefer locating their lines themselves rather than have someone else probe for them. If a company is unable or unwilling to assist, so advise Department personnel listed above immediately, giving reasons why company cannot or will not help.

F. Any utilities found during the course of survey that were not included in the original list must be forwarded to the Headquarters Utility Engineer, District Utility Representative, and the Location & Survey Engineer as soon as they are found. Retain one copy to be turned in with completed survey.

G. The Party Chief shall locate each pipeline and determine its type (if possible), angle of crossing, profile, diameter, vent locations, casing length, etc.: each power pole, telephone pole, underground cable or conduit, together with appurtenances to these facilities: all water meters, fire hydrants, gas meters, etc.; and shall determine their positions relative to all of the following that apply:

1. The surveyed line of the project.
2. The centerline of the existing road when said existing road is near enough to the surveyed centerline to have utilities along the existing road involved in the proposed Project.
3. Where applicable, the back of the existing ditch in a cut section, or toe of the existing slope in a fill section, and existing roadside fence.
4. All of the above also apply to utilities along side roads except that "1" above would be the surveyed line for that particular side road. Utilities at the intersection of the project's surveyed line and the side road's surveyed line will be located from both lines.

H. All horizontal and vertical measurements shall be made to the nearest 0.10 foot. Vertical locations must be in terms of mean sea level elevations. The Party Chief must use judgment on the needed length of pipeline, casing length, or other underground utility to be profiled when said utility or pipeline crosses the project. This must be predicated on terrain, size of pipeline, expected right-of-way width, etc. On projects where the pipeline or other underground utility parallels the survey, the same general requirements shall hold; however, in the event of a meandering facility, care should be taken to get sufficient measurements to describe its path, both horizontally and vertically, accurately.

I. Underground telephone cables have al-

ways been located by the phone company personnel with our survey party help. The phone company has equipment whereby they can locate their underground facility. When this is done, the survey party places stakes at the places pointed out by the telephone company personnel. These stakes are then used to make the various ties described in "G" above for obtaining a complete description of the utility. The phone company usually advises that their cables have a certain amount of cover. This is fairly accurate since it is installed by a machine which follows the contour of the ground surface, burying the cable a constant depth. To confirm this as being a correct depth, random uncovering of the cable should be made. Usually the phone company will do this if you tell them that you are going to have to do it if they do not.

J. Plastic lines having no tracer wire attached and requiring excavation are the most time consuming to locate. These lines must be uncovered in enough places to arrive at a pattern for placement. For example: if these lines are uncovered every 1000' and the alignment is fairly straight, we assume everything in between the uncovered points are in the same line. If the amounts of cover are approximately the same at the points uncovered, then we assume this is also true in between the points uncovered. Depending on what the pattern is, this 1000' spacing may be lengthened or it may have to be shortened. Sometimes the company can tell you that the water meters for individuals are placed some uniform distance from the main water line. If this can be confirmed by uncovering the line by a few meters, then you can assume that you have developed the pattern of the placement of the water line. The meters should be easy to find. The uncovering of these lines should be done by the most economical method. In unusual situations where the only way a utility can be located is by major uncovering of the utility using special equipment such as a backhoe, additional payment to a consultant will be considered providing consultant has prior written approval of the Location & Survey Engineer to expend the extra money.

K. Other underground lines which may be located by either probing or with pipe detectors should also be located at intervals close enough to adequately describe the continuous path of the line. Elevations should be established on all underground facilities, both parallel and crossings, unless considered unnecessary by the District Utility Representative. The District Utility Representative will furnish the Party Chief a letter confirming that any less information than specified will be acceptable. Additionally, angles of crossing and casing lengths, if applicable, should be secured on all crossings. If necessary, supplemental sketches should be prepared for clarification.

L. The Party Chief shall obtain the needed information and with the help of the District Utility Representative prepare Form 10-006 and forward it to the District Utility Representative for further handling. Samples showing the proper method of preparing Form 10-006 are given in Figures 1-36 through 1-40, and 1-46 through 1-49. Figure 1-50 was used to prepare the sample Form 10-006 listed above. This figure 1-50 was not shown to represent a complete field roll. Its only purpose is to show how utility information is to be shown. This should be done as soon as possible so that if any required data is missing, the District Utility Represent-

ative can have the Party Chief supply it before the Party Chief leaves the job for his next assignment. A copy of the letter transmitting these forms to the District Utility Representative will be sent to the Headquarters Utility Engineer and Location & Survey Engineer at this time. Retain one copy of the forms to be turned in with the completed survey.

M. All location field survey data, together with one copy of the completed Form 10-006 and any special sheets which may have been acquired or prepared, shall be submitted to the Design Section through normal channels by the Party Chief.

N. Everything stated above can be summed up by stating that good judgment and close work with the District Utility Representative is all that is required.

O. All Consultant Engineer's work will follow the above procedure. Consultants are reminded and cautioned that all required utility data should be given to the District Utility Representative as soon as possible after the survey line is staked. This should normally be by the 60% completion of the entire survey time for most jobs. In any event, a final invoice for payment will not be approved until the District Utility Representative has given his approval of the required utility survey data.

1.03 ALIGNMENT AND SURVEY PRECISION

Several proposed routes for new roadways or realignments may be plotted on aerial mosaics, parish highway maps, district highway maps, and quadrangle maps. A complete study may be made photogrammetrically or a combination of an on the ground reconnaissance and a study from aerials may be conducted to determine the most feasible location for the proposed new construction. Sometimes a very small relocation will produce an excellent improvement in the alignment of the existing road with relatively small cost as compared with the resulting benefits. A decision is made as to which is the best line conforming to the standards for curvature, both vertical and horizontal, and other desired features. Staking of the route by the survey party can begin as soon as the decision is made.

The surveyed line for a project will be along what is normally referred to as centerline of project. Should it be impossible or not practical to stake along this centerline, then written approval to use some system of traverse lines as the principal survey lines must be obtained from the Location & Survey Engineer before starting work.

The procedure for surveying interchange areas will be discussed before starting the survey. In some areas, it may be necessary to stake out and survey from each ramp and frontage road base line while in other places, using the grid method from the two principal intersecting roads would be prefable.

If these traverse lines are approved by the Department, then the completed survey must have a sheet or sheets of standard size drawings showing the relationship between the traverse line which is referenced on the ground to all control points on centerline of project. Whether or not these drawings will be included in the contract plans will be decided by the Chief Location & Design Engineer.

In order to obtain the above desired accuracies, it is necessary to perform accurate chaining as well as good angular work. Chaining should be performed horizontally, with sag correction, temperature correction and tension correction being used when setting control points. (See figures 1-3, 1-4 and 1-5). Although it is not a requirement, it is much better to measure these distances with some type electronic distance measuring instrument.

In all cases all angles will be turned to the right (clockwise) from a backsight along the line over which you have already surveyed.

All angles turned at P.I.'s will be turned a minimum of two repetitions with telescope direct and two repetitions with telescope reversed. The angle should be recorded for each time turned.

The survey line for a project will be tied into horizontal control monuments established by Louisiana Geodetic Survey, National Ocean Surveys NOAA (formerly U.S. Coast and Geodetic Survey), or any other horizontal control monuments approved by the Department's Location and Survey Engineer. There will be no exception to this policy unless waived in writing by the Location and Survey Engineer.

The minimum requirements for survey work which will be acceptable, unless waived in writing by the Location and Survey Engineer, are as follows:

(1) For urban areas the surveys shall be modified second order or better. These surveys will have minimum linear closures of 1 in 15,000 and 15 seconds times the square root of the number of angles in the traverse of said survey or better for angular closure.

(2) For rural areas the surveys shall be third order or better. These surveys will have minimum linear closures of 1 in 10,000 and 30 seconds times the square root of the number of angles in the traverse of said survey or better for angular closure.

The precisions stated in (1) and (2) above are based on computations after the preliminary angular adjustment is made.

Angular closure shall be determined by closure on suitable azimuth marks, horizontal control monuments, observations of Polaris, a closed traverse, or a combination thereof.

A sketch on 8½ x 11" or 8½ x 14" paper showing distances, bearings, angles, linear error of closure, angular error of closure, and ties to all horizontal control monuments prior to any adjustment shall be submitted for approval to the Location and Survey Section upon initial establishment of the survey line. When a consultant is furnishing these services, this sketch must also show his adjusted distances, bearings, or angles. (See figure 1-32 and Section 1.13). Until this sketch is approved, the survey line will not be stationed.

All horizontal curves will be based on the arc definition. Except in urban surveys, horizontal curves will be used whenever the delta angle is above 0° 17'. The minimum length curves to be used for delta angles from 0° 18' through 5° 00' are as follows:

DELTA ANGLE	MINIMUM LENGTH CURVE IN FEET
Below 0° 17'	No Curve
0° 18' to 1° 00'	900
1° 01' to 2° 00'	800
2° 01' to 3° 00'	700
3° 01' to 4° 00'	600
4° 01' to 5° 00'	500

Although curves up to 13 degrees 30 minutes are permitted, depending upon the class of road and traffic count, it is desirable to try to use the smallest degree curve feasible (see figures 1-2, 1-33, and 1-45). Standards for classes 7 and 8 shown in figure 1-2 will only be used upon written instructions from the Department. At the present time, spirals are not in use unless specifically requested by the Design Section. When they are used, the selection is balanced with a 300 foot spiral for a 3 degree curve, 250 foot spiral for a 2 degree 30 minute curve, 200 foot spiral for a 2 degree curve and 150 foot spiral for a 1 degree 30 minute curve.

Stationing on most surveys begin with 100 + 00 and proceed in a northerly and easterly direction. In some instances, it is preferred to continue stationing from other plans or projects already under construction or completed. This is discussed in advance by the Party Chief with the Location & Survey Engineer. A decision is made as to the stationing, dependent upon some preference by the Design Section or others.

The survey line will be staked and complete survey data obtained for a distance of 500 feet proceeding the beginning of the project and 500 feet past the end of the project. This additional surveying is necessary for de-

signing a transition from the proposed project to the existing facility.

Stationing of cross roads usually start with 50 + 00 at the intersection of the cross road with the projects surveyed line, increasing in one direction from this point and decreasing in the other direction.

Station stakes, or points, are set at each 100 foot station, at PC's, externals, PT's, PI's and at necessary intermediate points. In curved portions of the survey line, stationing is carried through the curve along the curve and not along the tangents to the curve. POT's are set, preferably, not over 1,000 feet apart and at all intersecting roads, railroad crossings, property lines (where evident) stream crossing, bridge location, pipeline crossing or anywhere there is need to get survey information from an extension of the main survey line.

All highway bridges and all railroads crossing highways are now numbered. The numbers for the bridges are painted on the bridge. The numbers for the railroad crossings are placed on a sign at the crossing.

In all survey work where a bridge or railroad crossing is involved, the number assigned to that facility will be used to identify it in the notes, on the field roll, in correspondence concerning it, on the plans, etc.

Whenever a survey is adjacent to or crosses a railroad, ties will be made to railroad mile posts. This data is necessary so that later when discussing project or getting R/W from the railroad company, reference can be made to their maps which is tied into their mile posts.

All PI's and POT's should be iron rods at least 18 inches long and no less than ¾ inch in diameter. A punch mark on top should indicate the exact point. Care should be taken to drive these rods straight into the ground. If they are driven off line and then bent over onto line, they will shift back off line after the first rain.

1.04 FIELD NOTES

Notes taken in the field are usually worked over in the field office to some more advance form of presentation, such as maps, field rolls or computations. The notes are then always kept for reference. In the event of litigation or of important reference, the field notes are of primary importance, and are much more valuable than any copied or transferred data.

The notes must be completely and finally recorded in the note book as the survey progresses; not kept on scraps of paper and later copied in the book. In many engineering and property surveys, the notes are used by an office man who is not familiar with conditions on the ground, hence, the essential qualities of field notes are clearness and completeness. Even where the field man works up his own notes others will refer to them later. For these reasons, and for workmanlike appearance as well as for creating confidence in the work, notes must be neat and systematically arranged. They must be recorded in the conventional and generally used form, and not according to the individual whim. (see figure 1-6).

A medium, sharply-pointed pencil of about 3H or 4H grade can be used on all notes. The pencil should be soft enough so that the notes can be easily read but not easily smudged.

If changes are necessary in the notes, they shall be crossed out rather than erased, and the new material is inserted above the crossed-out material. This is a frank admission of error, while an erasure causes suspicion that dishonest alteration has occurred. It is sometimes desirable to mark out an entire page or more of notes and to refer on that page

to another page upon which the correct notes are to be found.

It is best not to crowd the notes since paper is cheaper than labor or a possible misinterpretation.

Make characters not less than 1/16 of an inch in height.

All alignment and topography notes are to be kept from the bottom of the page up. The page number shall be recorded on each sheet of the notebook in the upper right hand corner of the sheet. The names of the party, the date and weather should also be recorded on the upper right hand corner of the sheet starting each days work (see figure 1-6).

All locations, descriptions, elevations, and ties to utilities will be placed in a utility book and not in the alignment and topography book. The only exception to this will be short jobs where the alignment and topography book will have enough room in the last one half of the book to place the utility survey data. The point being made is that utility data will not be shown together on the same page with other topography survey data.

Figures 1-7 and 1-8 show the proper method of placing information on Sheets 2, 3, 4, and 5, of field books. All data placed on these pages must be in black ink.

1.05 TOPOGRAPHY

The existing topography will be located up to at least 50 feet on each side of the proposed right-of-way line and farther when there is a possibility that buildings, improvements, and trees that may have a historic value located farther back may affect the relocation of buildings nearer the survey line or where there may be damage to remaining buildings resulting from right-of-way acquisition. At cross streets in subdivisions topography will be located to the middle of the first block away from survey line or 150 feet from survey line whichever is the lesser distance. At road crossing and intersections in rural areas, the topography will be located to at least 200' each way from survey line of project. This 200' distance may have to be extended if the horizontal and vertical alignment of the intersecting road warrants such an extension. If there is any question about the necessity of such an extension, the Location and Survey Engineer should be contacted for instructions. In the event the centerline of the project is offset from the centerline of the existing highway, the above stated distances would be measured from the centerline of the project on the side on which the offset occurs and from the centerline of the existing highway on the other side. All topography is to show size and type of buildings and structures, types of foundation, porches, overhangs, individual trees, billboard type signs, utility poles, utility lines, pipe lines, existing drainage structures, location and type of fences and gates with plusses and angles to fence corners and cross fences. The measurements to utility poles, fire plugs, meters, etc., should be to the nearest 0.1 foot and to the nearest face or side. Woods lines and existing types of cultivation and breaks in the type of terrain should be indicated in the topography.

On all water wells, show exact location, depth and size. Give size and description of building, if well is enclosed, in addition to all connections and appurtenances.

For all railroad crossings, submit the correct name of the railroad, number of the crossing, the station number of each rail, the angle of crossings, the railroad station number, curve data is either survey or railroad is on a curve, the elevation of tops of rails at centerline and at right-of-way lines, and the alignment and profile of the top of each rail at 100 foot intervals for a distance of 300 feet on each side of the survey line.

For all other railroads which are more or less parallel to the project and close enough to possibly be involved, ties will be made to the railroad centerline and railroad station numbers. This is needed so that

if it becomes necessary to obtain right of way or other type easements from the railroad, the Department will be able to relate those requirements to railroad stationing as well as highway stationing.

All aircraft landing strips or runways located within 1500' of a project survey line will be tied into the survey line by an angle between the runway projected and the survey line, a station plus on the survey line, and a distance from the survey line to the end of the runway. Any airports within approximately 2 miles of the projects survey line will be shown on the parish map which is submitted with completed survey. These latter airports locations may be approximate.

For streams or other large drains crossing the surveyed line, topography will be shown by means of a traverse of the stream or drain for a distance of at least 300' along the drain on each side of the survey line. If the alignment of the stream is such that it is apparent that a channel change extending further out than 300' may be needed, then surveying further will be required. At pipe line crossings, the angles of crossings and alignment of each pipe line out to the limits of the cross sections will be required.

When topography such as residences are along the project being surveyed, information must be obtained to indicate in the field notes and on the field roll whether or not a person from a minority group occupies said improvement. If a person from a minority group does occupy the improvement, the surveyor will indicate this by the letter "M" on the improvement in the notes and on the field roll.

See Sheet 1-10a.

1.06 VERTICAL CONTROL

The datum used in all of our leveling will be Mean Sea Level although some areas in Louisiana have other datum in general use (see figure 1-9).

Bench levels must be run from proven bench marks. These bench marks must be identified in the survey notes by showing the agency which set the marks, its number, elevations, and location in relation to the survey line. The Department keeps on file lists of many such bench marks with the references, and elevations therefor. Other sources of information for such bench marks are the Corps of Engineers, Mississippi River Commission and Office of Public Works. In all cases, bench marks used should be first proven correct.

It is preferred to have two official government bench marks into which the line is tied at each end of the survey line. A closed line or loop of levels will be required if a closure cannot be accomplished by running a line of levels between published bench marks. It will be acceptable to use the profile of the surveyed line as the closing line of levels whenever a closed loop is necessary. In running the line of bench levels, intermediate or temporary bench marks will be placed at intervals of not over 1,000 feet and at all stream crossings, road intersections, and other points where it will be advantageous to have a bench mark as a starting point for drainage and cross section purposes. These temporary bench marks should be placed out of the limits of proposed construction.

These temporary bench marks are to be set by driving spikes in trees, cutting X's in solid concrete foundations or other places that are not subject to movement. Utility poles, fire hydrants, and sidewalks should never be used for bench marks if anything else less likely to be disturbed is available.

After running the level line and establishing the temporary bench marks along the survey, these temporary bench marks should be checked by one of the following methods: 1) When a closed line or loop of levels is required, each individual temporary bench mark should be tied into on the return loop; 2) When a closed line or loop of levels is not required, each individual temporary bench mark should be tied into with a continuous line of levels

In order to minimize any possible delays in construction, survey crews will notify the Location and Survey Engineer, in writing, any and all suspected waste disposal areas within the existing or proposed right of way as soon as discovered.

This information is needed so that the Department's Environmental Section and the Department of Natural Resources will have sufficient time to develop a cleanup or closure plan.

Examples of these type areas are garbage dumps, oil pits or ponds, cattle dipping vats or any other suspected dumping site.

when running the centerline profile or the cross-sections. When the bench levels are completed and checked, a bench mark tabulation form (see figure 1-41) will be submitted to the Location and Survey Engineer for approval before progressing any further with any work involving vertical control. If the temporary bench marks are checked at this time, a temporary bench mark tabulation form (see figure 1-42) will accompany the bench mark tabulation form. However, if the temporary bench marks are not checked until the profile or cross-sections are run, the temporary bench mark tabulation form (see figure 1-42) should be submitted to the Location and Survey Engineer immediately upon completion of the profile or cross-sections.

The vertical error of closure for location surveys will not exceed 0.035 foot times the square root of the number of miles of the level line run. This number of miles is the distance in one direction only.

Bench levels are run using single wire level notes and also three wire level notes. Refer to figures 1-10 and 1-11 for sample notes showing these two methods.

All level books must be thoroughly checked and so noted with check marks, notes, and/or initials of the checker.

1.07 CROSS SECTIONS

Survey line profile may be recorded in a regular level book prior to taking cross-sections or in a cross-section book either prior to or at the same time that the cross-sections are taken. The determining factors in arriving at the method to be used are the presence of existing cross-drains and the terrain over which the survey is being run.

Invert elevations of cross-drains will be shown in a regular level book regardless of when the profile is taken or where it is recorded. These elevations will not be recorded in cross-section book.

The party chief is to take the profile and record it whichever way listed above that gets the job done accurately and the most efficiently.

Roadway cross sections are to be taken at all stations and at plusses, where necessary, to cover the breaks in grade. They are to extend at least 25 feet beyond the proposed right-of-way lines. Level shots will include all breaks in grade and not be over 25 feet apart. DO NOT take half sections. Sections have to extend on both sides of the survey line. Sections are also needed at each equation and at beginning and end of existing bridges. In taking cross sections, a right angle prism will be used to determine direction of section. DO NOT estimate right angle to survey line.

Cross Section book, Stock Number 04 - 09 - 5080 is designed for the specific purpose of recording cross section notes. The main objective in using this type book is to facilitate more accurate transposition of notes from the books to data processing cards in the Computer Section.

Efficiency can also be improved by establishing uniform methods of recording notes. The following procedures and enclosed samples should help accomplish this without any difficulty.

1. Roadway bench mark level notes and check levels are not to be recorded in these books. Use regular level books.
2. Notes for establishing and checking bench marks at borrow pits, etc.will be shown in this book at the beginning or end of cross section notes for same. See figure no. 1-12.
3. Write legibly and show decimal points clearly.
4. Write all distances and rod readings horizontally in their respective squares.
5. The complete station number is to be written; for example "225 + 75" not "+ 75" and "226 + 00" not "226".

6. Rod reading at the centerline of roadway or any line where a profile through these points is likely to be needed, should be recorded in the same vertical line in the books;i.e., keep "O" distances in line on each page. This does not usually apply to borrow pit cross section. See figures 1-14 and 1-15.
7. When entering borrow pit cross section notes, begin at the first set of blocks nearest station number with the base line rod reading or the one nearest the base line, progressing from left to right for each line used for that station. If the base line is located in the center of the pit, record them the same way that roadway notes are recorded. See figure 1-13.
8. Show the borrow pit sketch and descriptive information pertaining to each borrow pit on the first page of its original cross section notes. The sketch should, in addition to giving its location with respect to the roadway, show how it was cross sectioned, i.e., where the base line is located and the beginning and ending station. See figure number 1-12. Descriptive information for other cross sections, such as location of lateral drains, borrow pit numbers and their locations, may be shown within the space alloted for the first station of that group of cross sections. See figure number 1-13.
9. If there is not enough space in the block allotted for station number to show pertinent alignment data, utilize the adjacent space and start recording distances and rod readings in the next group. See figure number 1-15.
10. If more than one line is required for roadway cross sections and other sections that have the base line located in the center of the cross sections, use the method shown in figure number 1-14.
11. If cross sections for any group are continued at some other place in the book or another book, or if sections are extended left or right, make complete cross reference of this as per figures 1-13, 1-14, and 1-15.
12. The heading information at the top of each page, except for page number, is to be filled in at the beginning of each day, at the beginning of each set of cross sections, or when there is a change in any of this information.
13. Figure number 1-16, illustrates the method to be used in recording level notes in the new cross section book, when the centerline profile and cross sections are taken at different times. The circumscribed information is recorded when the profile is run or copied from the profile run in the level book and the other is recorded when the cross sections are taken. The circumscribing is for illustrative purposes only and is not to be done in the cross section books.
14. Figure No. 1-17 shows method of keeping cross section notes when more than one height of instrument is required within one section.
15. When recording cross section notes in the cross section book, the H. I. will be shown at the top of each page.

At cross-streets in subdivisions, the cross-sections will be taken to the middle of the first block away from the survey line or 150 feet

from the survey line whichever is the lesser distance. At road crossings and intersections in rural areas, the cross-sections should be taken at least 200 feet each way from the survey line of the project.

In the event the centerline of the project is offset from the centerline of the existing highway, the above stated distances would be measured from the centerline of the project on the side on which the offset occurs and from the centerline of the existing highway on the other side.

The cross-sections on intersecting streets and roadways are to be taken normal to the centerline of the intersecting street or roadway.

It is imperative that the line of levels for the cross-sections be tied into each bench mark or temporary bench mark of the bench level line with a continuous line of levels to ensure that no cross-section or group of cross-sections be left dangling. This is a must.

In some cases, it will be necessary to make a grid map showing the area surveyed with the elevations spotted and distanced about 25 feet apart and at breaks. In making these grid maps, the elevations are to be reduced and spotted on the grid.

Invert elevations of all drainage structures, storm sewers, sanitary sewers and catch basins located in the cross sectioned area will be read to the nearest 0.01 foot and recorded in the level book, not in the cross section book.

Elevations on utilities and pipelines in the cross sectioned area will be read to the nearest 0.1 foot and recorded in the utility book, not in the cross section book.

Each ground shot will be read and recorded to the nearest 0.1 foot. All permanent surfaces such as parking lots, driveways, highways, etc. will be read and recorded to the nearest 0.01 foot. On large streams or canals, especially where there are navigation interests to accommodate, ravine sections are needed on the survey line and at parallel lines 25 feet, 50 feet, 100 feet and 150 feet each side of the survey line. Where there are bends or curves in the bank or channels, all will be shown by measurements from a traverse extending up and down each side and will extend far enough to properly define the bank and channel lines on both sides.

On streams affected by tide, the high tide, low tide and average tide elevations will be needed. In all cases, high water elevations are needed. In some instances it may be well to contact the Bridge Design Section and get detailed information from them as to just what they will need for design purposes.

At pipeline crossings elevations should be obtained for the top of the pipe at the surveyed line, if possible, and at least at 25', 50', and at the distance of the last cross section shot right and left of the surveyed line. The survey party must use judgment on the needed length of pipeline to be profiled. This must be predicated on terrain, size of pipeline, expected right-of-way width, etc. When pipelines generally parallel the surveyed line, elevations of the top of the pipeline should be given at least approximately every 500'. These pipeline elevations should be recorded in the utility book, not in the cross section book.

Where the survey line is adjacent to or parallel to a road or railroad, and the distance from the survey line to the nearest existing railroad right-of-way is not over the distance of the right-of-way for the proposed new facility plus twenty-five feet, the cross sections are to extend at least to the center of the railroad with a shot on the rail, and to the far ditch of the roadway if another road is involved.

All cross section books must be thoroughly checked and so noted with check marks, notes, and/or initials.

1.08 DRAINAGE MAP AND WATERSHED AREA

The type and size of drainage structures are determined from the acreage in each water-

shed area. It is necessary for a drainage map to be made which will show the survey line, the outline of the watershed area, and the location of the stream or draw. On all larger ditches or outfall drainage canals, existing drainage structures will be located and shown on the drainage map with the sizes and invert elevation of each if said structure is within 300 feet of the project. All other structures which fall between 300 feet and one-half mile of the project will also be shown on drainage map, however in these cases, only the size of the structure is required. This map will also furnish some of the data needed for the structure report, Form 1088. A structure Report form must be completed for each existing cross drain structure (see Figure 1-34). The scale for such a map is any convenient scale that clearly shows all pertinent data. Usually a scale of 1 inch equal 400 feet is satisfactory. (See figures 1-18 and 1-19).

These watershed areas can be most accurately and reliably obtained by running them out on the ground with a traverse or from aerials if the watershed line is properly spotted on these after checking on the ground. On some jobs the drainage maps can be made photogrammetrically. U.S. Government quadrangle maps or maps of surveys from the Soil Conservation Service, the State Department of Public Works or any other reliable source may show the same information for their own use in designing farm drainage systems, parish drainage projects, etc. The drainage area to be used should be calculated and shown in acres and, in very large areas, also indicated in square miles.

For grade-line purposes, each valley, low place or hollow, should have a highwater mark given. Personnel in the field are certainly in a better position to get this information than the Engineer in the office. If no one is available who can point out the highwater mark, some evidence of the last highwater may be present in the vicinity.

Every effort should be made to document the source of the HWM. If the HWM can be referenced to a particular date, it should be so noted. If it is "estimated", it should also be noted. Examples of possible documentation notes might be:

> "HWM 164.68. Seed line on downstream culvert headwall. Estimated date of occurrence April, 1981."
>
> "HWM 35.38. Stain line on upstream trees. Date of occurence not known."
>
> "HWM 52.61. Elevation of mark provided by local resident for spring of 1963."

Should there be any estimating to do about the highwater mark do not leave it for the office man; estimate it and say where it came from even if it was "estimated". In all cases, check with the District Maintenance Engineer. He usually knows about road flooding conditions in his area.

Often the height of the fill determines the type of structure to be used for a given opening which is calculated from the drainage area. The elevation of the finished road in low areas depends on the highwater mark and whether the highwater is from headwater or backwater. In addition, each major drain, ditch, or canal will have a traverse, profile and cross sections of the stream or drain for a distance of at least 300' along the drain on each side of the survey line. If the alignment of the stream is such that it is apparent that a channel change extending further out than 300' may be needed, then surveying further will be required.

1.09 SECTION TIES AND APPARENT PROPERTY LINES

As many section lines, property lines, lot lines, lease lines, etc., as possible as well as the corners thereto, will be tied to the survey line. These ties should not be the results of a full property survey but should be the end results of "apparent property line" surveys. These ties may be more completely checked

later if it becomes necessary to make a true property survey. If this becomes necessary, the party chief will be instructed to do so by the Location and Survey Engineer.

An apparent property line is located by the party chief asking the property owners, independently of each other, to show him their property lines. These lines may be identified by iron markers, fence lines, tree lines, hedgerows, ditches, etc. (Lines of occupation). If there are no conflicts in the location of the property line so pointed out, then this is the apparent property line. This line should then be properly tied to the survey line by station plus where it intersects said survey line and the angle that it forms with the survey line. The property owners full name must be recorded so that it may be shown on the plan portion of the field roll.

Information can be obtained from an owner as to his property lines, acreage, adjoining ownerships, etc., when he is first contacted for permission to survey on his land. Also, personnel in the Parish Assessor's office or Clerk of Court's office may give many details as to property owners or may suggest maps or give leads to descriptions of lands recorded in the Parish Clerk of Court's Office.

Chapter II of this manual will discuss property surveys.

1.10 FIELD OFFICE WORK

Field office work consists of consolidating all of the correspondence, survey data, forms, maps and everything in connection with the location survey in an orderly manner to be sent to the Baton Rouge office for delivery to the appropriate Design Section. The Location Report, form 1087 and Checking Form 1150 should be completed in the field office. (See figures 1-22,1-23,1-24,1-25,1-26,1-27 and 1-28).

For an overall picture, the survey is indicated in red on a parish road map with stations shown at the beginning and at the end of the project. If any part of the survey is within city limits, the line is shown in red on one of the city maps. There is also a layout map which shows the overall alignment of the road with reference to other roads and section lines and pertinent information in the vicinity of the survey. Drainage maps, as outlined before, may be combined with the layout map. If an aerial map is used, the line as staked in the field should be shown on said aerial map.

Plotting the plan and profile field roll along with sketches and grid maps, drawings of intersection and preparing drainage and layout maps are all part of the field office work.

Alignment will be plotted on a 1 inch equals 100 feet scale in open or non-congested areas and as large as 1 inch equals 20 feet in congested areas, with a larger scale used in special cases. Under no conditions should a scale of 1 inch equals 40 feet be used. All curve data that is shown in the alignment field book, as well as all P.C.'s, P.T.'s, externals, and P.O.T.'s, with reference thereto, will be shown on the plan portion of the field roll. This is necessary so that the alignment may be identified and re-staked later directly from the data shown on the field roll without the necessity of the field books.

The field roll and drainage and layout map must be drawn in ink.

In all cases the names of the owners of all utilities as well as the following listed data will be shown on the field roll as follows:

Gas and Oil

——————G——————G——————

Water

——————W——————W——————

Sewer

—— — —— S——————S——————

Underground telephone

——————T——————T——————

Underground Electric

——————P——————P——————

Power Poles, Direction of Line

—●— —●—

The profile portion of the field roll

shows the elevation at each station and each intermediate change in slope, or plus, as taken in the level and cross section books; the description of each bench mark also is given on this portion of the plan-profile roll so that levels can be re-established from them without the level or cross section book. The vertical scale used in plotting the profile is usually one tenth of that used in the alignment plotting, although, in special cases, other scales are used. For example, when the topography and alignment are plotted on a scale of 1 inch equals 100 feet, the vertical scale is 1 inch equals 10 feet. When the topography is 1 inch equals 20 feet, the vertical scale is 1 inch equals 4 feet. All high water marks, existing cross drain structures and invert elevations are shown on this profile. See figure 1-20 for sample field roll.

After a Party Chief, Project Engineer, or Consultant has been given a survey assignment, a Progress Report must be made for each week's progress to show the status every week, and even if nothing is done to show that the survey is active and has been started with some progress on it. There will be a separate Progress Report for each project. (See figure 1-21). For Statewide Location by Section 30, the original will be sent to the Location Survey Engineer Office in Baton Rouge. At this same time the Party Chief will send one copy of each status report to the following:

(1) District Administrator in whose district the particular project is located.

(2) Either Mr. Kenneth M. McKay, Surveying Supervisor, P. O. Box 1, Archibald, LA, 71218, or Mr. Lance J. Laborde, Surveying Supervisor, 10326 Shoe Creek Drive, Baton Rouge, LA, 70818, or Mr. Roy J. Boudreaux, P. O. Box 291, Crowley, LA, 70527-0291, depending on which survey party chief has the assignment.

A Project Engineer working under the District Administrator will send one copy to the Location & Survey Engineer in addition to whatever other distribution he may normally make.

Consultant Engineers will send the original status report to the Location & Survey Engineer and a copy to the District Administrator in whose district the job is located.

All of these status reports must be placed in the mail Friday afternoon after work so that they will be received by Monday morning.

The overall status of the authorized projects are determined in the Headquarters' Office from these weekly reports. The Project Engineer, Party Chief, or Consultant Engineer will save all concerned much time, trouble, and explanations if this information is promptly reported each week.

1.11 PROCEDURE FOR ENTERING PRIVATE PROPERTY

1. Determine who and where the owner is; if there is any doubt, you must consider the owner to be the person shown on the parish assessment rolls.

2. Make a diligent effort to contact the owner in person, by telephone, by telegram, or by letter; explain the project and what is required to be done on his property; and request permission for the Department's employees and representatives to go upon his property and obtain all information required to carry out the project. The owner should understand that he will be contacted later by others if any of his property is needed for a right-of-way.

An accurate diary of who was contacted, date of contact, and pertinent information about contact will be kept by Party Chief in the alignment and topography field book. This book will be turned in as a part of the completed survey.

3. If you obtain the permission you need, no formal notice is required.

4. If the owner refuses permission or cannot be located, the head of the field party

or any person in a similar position should notify the Location and Survey Engineer in the Baton Rouge Headquarters' office. The Baton Rouge office will then notify the property owner by registered letter, return receipt requested, in the manner set forth below, of the intention to enter upon his property.

5. The letter will be addressed to the property owner in the normal manner and will show all information necessary for the files. This letter will always be sent to the owner at the address shown on the assessment rolls even though we may think some other person is the owner. If we think the address on the assessment rolls is wrong, we will send the original letter there and a copy to the address we think is right. If the owner is away on a trip but can receive mail, a copy will be sent to that temporary address. A similar letter may be sent to any other person or persons who may have an interest in the property, including tenants, if we believe that doing so would help avoid trouble.

6. The letter should follow the form which is shown below for your guidance.

Dear Sir:

The proposed construction of a highway project has made it necessary for representatives of the Department of Transportation & Development to go upon your property and make surveys, soundings, drillings, and examinations as may be required to properly perform the duties imposed by law upon this department. We have not been able to obtain your permission to enter your property for those purposes so we have no choice except to enter thereupon in the manner provided by law.

Act 130 of 1955 (R.S. 48:217 as amended) grants this Department a right of entry in such cases and declares that such entry shall not be deemed a trespass. It also provides that the Department shall make reimbursement for any actual damage done to the property.

Therefore, you are respectfully notified that, after the expiration of _____ days from the date this registered notice is delivered, the Department's representatives will enter upon the following described property in order to perform completely the duties assigned them in accordance with that law.

(Identify the Property here)

We assure you that every reasonable effort will be exerted to avoid inconvenience to you or damage to your property and sincerely request your cooperation.

Yours very truly,

DEPARTMENT OF TRANSPORTATION
AND DEVELOPMENT
STATE OF LOUISIANA

BY: _____
(Type name & your title below your signature)
REGISTERED
RETURNED RECEIPT REQUESTED

cc Honorable _____
District Attorney

cc Honorable _____
Sheriff

Minor adjustments may be made to make the letter suitable to the particular circumstances but the Legal Section should be contacted if there is any doubt about such changes.

7. If the owner lives in the State, he is entitled to five days notice even if he should be temporarily outside the state, so you should insert "five" or "five (5)" instead of the blank shown on the second line of the third paragraph of the above form letter.

8. If the owner lives outside the State, he is entitled to fifteen days notice, so that period should be stated instead of the blank.

9. At the end of the third paragraph of the letter you should identify the property in such a way that you are confident the owner will recognize it as being the land you have in mind. For example, if the owner actually lives

on the property, you could describe it as "That tract of land upon which you are now living"; or "Lot 22 of the blank subdivision of the City of . . . ", etc.; or, "Boll Weevil Plantation"; or, "678 Broad Street". Of course, the legal description of the property as shown in the conveyance records and the description given in the assessment rolls will also be given.

10. The letter should be signed and the name and title of the person signing will be typed beneath the signature.

11. Each letter should be sent by registered mail, with a return receipt requested.

12. When the receipt is returned, it should be attached to a copy of the letter and both should be preserved for use in the event a lawsuit is filed.

13. You SHOULD NOT attempt to enter upon the property before the time has expired. The day the letter is received by the owner should not be counted as one of the five or fifteen days notice.

14. After the notice period has expired, proper entry can be made but, if there is reason to believe the owner will use force to prevent entry, ask the Sheriff to accompany and assist the Party Chief. If he refuses, any available member of the State Police or nearest State Police District Headquarters should be asked to assist. If again refused, the Department's Legal Section in Baton Rouge should be contacted immediately and a full report of the situation should be given. This should be followed by a complete, written report to your immediate superior, with ample copies for distribution to all Sections which are interested in the matter.

If it is suspected from the beginning that force may be used in an effort to stop entry upon the property, despite the owner's receipt of proper notice, it would be advisable to send or deliver to the Sheriff or the nearest State Police District Headquarters, or both, a copy of the letter to the owner. Whenever it is necessary to ask for such assistance, the Party Chief's copy of the letter should be available for examination by such officers.

15. After entry upon the property has been made the Party Chief should be very careful to avoid inconvenience to the owner or damage to any of his property. Complete notes should be kept regarding any damage upon which the owner might base a claim.

We want to caution you again that this letter must originate in the Headquarters Office.

For your information, Act 130 of 1955 was made a part of Revised Statutes, Title 48, Section 217 as amended, the pertinent part of which reads as follows:

"Where the consent of a property owner has not been otherwise obtained, the Department of Transportation and Development and its authorized agents and employees shall also have the power to enter upon any lands, waters and premises in the State for the purpose of making surveys, soundings, drillings, and examinations as it may deem necessary or convenient for the purpose of the Chapter and Section, and such entry shall not be deemed a trespass, nor shall such entry for such purpose be deemed an entry under any eminent domain proceedings which may be then pending, provided that registered notice of five days to resident owners and fifteen days to non-resident owners shall be given to the last record property owner as reflected by the parish assessment rolls, which said notice shall be mailed to the last known and recorded address of said owner as reflected by said assessment records.

The Department of Transportation and Development shall make reimbursement for any actual damages resulting to such lands, waters, and premises as a result of such activities."

1.12 SURVEY LINE ADJUSTMENT BY COMPASS RULE

Where control monuments are located at each end of the survey line, the complete adjustment should be made from the beginning to the end. However, where lateral ties are

made to control monuments located at intermediate points along the survey line, each section of the survey line should be adjusted as a separate survey line. Hold the adjusted values of the branch point as a fixed point for computing the next section.

Step One - Compute the unadjusted grid bearings for each tangent, PI to PI, from one control monument to the next control monument. Determine the angular error of closure. If the angular error of closure is within acceptable limits (15 seconds times the square root of the number of angles for modified second order or 30 seconds time the square root of the number of angles for third order) a preliminary angular adjustment should be made as follows: The angular error of closure is divided by the number of angles to arrive at a correction which is applied equally to each angle such that when the preliminary adjusted grid bearings for each tangent are computed, the angular error of closure will be zero. If the angular error of closure is not within acceptable limits, field checking should be done to determine the cause before adjusting any further.

Step Two - Determine the total horizontal distance for each tangent. PI to PI, by summing the distances between POTs. DO NOT convert measured distances to grid by applying a scale factor. Use measured distances. Next, compute the latitudes and departures for each tangent using the preliminary adjusted grid bearings and measured distances. Determine the linear error of closure and the precision. See Steps 1, 2, 3, and 4 in Figure 1-43 for sample computations. If the precision is within acceptable limits (1 in 5000 for rural areas or 1 in 10000 for urban areas) proceed to Step Three below. If the precision is not within acceptable limits and assuming that there are no office computational errors, field checking should be done to determine the cause.

Step Three - The survey line is adjusted using the "Compass Rule." From the adjusted latitudes and departures, adjusted grid coordinates are computed for each PI on the survey line and the adjusted grid distances plus the final adjusted grid bearings are also computed for each tangent. See Steps 1,2, and 3 in figure 1-44 for sample computations. To determine the adjusted distances between POT's, prorate the adjusted distances between PIs.

1.13 SURVEY FLOW CHART

This chapter has explained in some detail what data must be obtained to complete a location and apparent property survey. The order in which this data is generally obtained is shown by the Survey Flow Chart shown in figure 1-35.

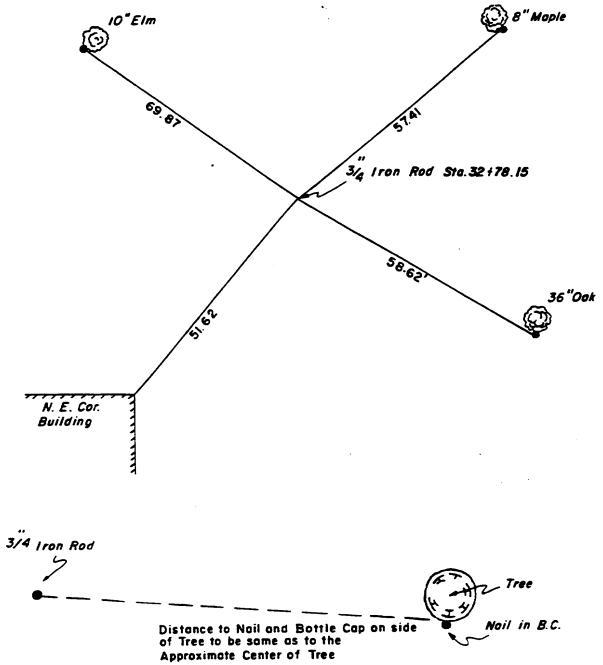


Figure 1-1 - Method of Witnessing Survey Line Control Points

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DESIGN STANDARDS FOR FREEWAYS

ITEM No.	ITEM	F-1	F-2	F-3
1	Design Speed (M.P.H.)	50 (1)	60	70
2	Level of Service	C (2)	C (3)	B (3)
3	Number of Travel Lanes (Minimum)	4	4	4
4	Width of Travel Lanes (Ft.)	12	12	12
5	Width of Shoulders Where Used (Ft.)			
	(A) Outside	10 (4)	10 (4)	10 (4)
	(B) Median	6 (5)	6 (5)	6 (5)
6	Type of Shoulders	Paved	Paved	Paved
7	Width of Median (Ft.)			
	(A) Depressed	50(Min.)	60(Min.)-100(Des.)	60(Min.)-100(Des.)
	(B) Continuous Barrier (4 Lane)	14 (6)	14 (6)	14 (6)
	Continuous Barrier (6 Lane)	26 (6)	26 (6)	26 (6)
8	Fore Slope - Ratio	4:1	4:1	4:1
9	Back Slope - Ratio	4:1	4:1	4:1
10	Pavement Cross Slope (Ft. per Ft.)	0.025 (7)	0.025 (7)	0.025 (7)
11	Stopping Sight Distance (Ft.)	400-475 (7)	525-650 (8)	625-850 (8)
12	Maximum Superelevation (Ft. per Ft.)	0.10	0.10	0.10
13	Maximum Horizontal Curvature	8°00'	5°00'	3°00'
14	Maximum Grade (%)	4 (9)	3 (9)	3 (9)
15	Minimum Vertical Clearance (Ft.)	16 (10)	16 (10)	16 (10)
16	Width of Right of Way (Ft.)			
	(A) Depressed Median	As Needed	300	300
	(B) Median Barrier	As Needed	As Needed	As Needed
	(C) Minimum From Edge of Bridge Structure	15-20	15-20	15-20
17	Bridge Design Load	HS-20	HS-20	HS-20
18	Width of Bridges (Minimum) (Face to Face Bridge Rail)	40'	40'	40'
19	Guardrail Required at Bridge Ends	Yes	Yes	Yes

(1) For Use In Urban Areas Only.

(2) Level of Service D Permissible For Heavily Developed Urban Areas.

(3) Level of Service C Permissible For Urban Conditions.

(4) 12' Paved Required With Truck DHV Greater Than 250.

(5) 4' To Be Paved -- 10' To Be Paved On 6 Lane Facilities -- 12' To Be Paved On 6 Lane Facilities With Truck DHV Greater Than 250.

(6) 32' Maximum.

(7) 2% Permissible For Rehabilitation Projects.

(8) Minimum Values Shown Permissible For Rehabilitation Projects. Maximum Values Shown To Be Used Where Conditions Permit.

(9) Grades 2% Higher May Be Used In Special Cases.

(10) 6" Additional To Allow For Future Surfacing -- 17' Required For Trusses and Pedestrian Overpasses.

Sheet 10 of 4

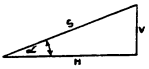
Date	Description	By
	Revisions	

DESIGN STANDARDS

Approved: Chief Engineer — Date: 8-28-82

Figure 1-2 Design Standards for Freeways.

To Convert Slope Distance to Horizontal Distance, Use the Following Approximate Formulas:



1. If the Vertical Height is known use: $S-H=\frac{V^2}{2S}$

   Where: S - H = The Correction to be applied (always subtracted)
   V = The Vertical Height of Difference in elevation
   S = The Slope Distance
   H = The Horizontal Distance

2. If the Vertical Angle is known use: $S-H=\frac{1.5S\alpha^2}{10000}$

   Where: S - H = The Correction to be applied (always subtracted)
   S = The Slope Distance
   H = The Horizontal Distance
   α = The Vertical Angle in degrees

To Apply a Sag Correction Use:

$$\text{Sag Correction Per Tape Length (in feet)} = -\left(\frac{L}{24}\right)\left(\frac{W}{P}\right)^2$$

Where: L = Length of Tape in feet
W = Weight of Tape in pounds
P = Tension on Tape

Example: A Tape which is exactly 100 feet long when supported on a floor under a 10 pound pull is lifted from the floor and supported at the ends. The Tape weighs 2 pounds. What is the corrected length between its ends when so supported?

$$\text{Sag Correction} = -\frac{(100)(2)^2}{(24)(10)} = -0.167 \text{ Foot}$$

Correct Distance = 100.000 - 0.167 = 99.833 Feet

Figure 1-3

Actual Thermometer Reading (Fahrenheit)	Temperature Correction per 100 feet	Actual Thermometer Reading (Fahrenheit)	Temperature Correction per 100 feet	Actual Thermometer Reading (Fahrenheit)	Temperature Correction per 100 feet
		- Chain is short		+ Chain is long	
0	-.0437	33	-.0226	67	-.0006
1	-.0434	34	-.0219	68	-.0000
2	-.0426	35	-.0213	69	+.0006
3	-.0418	36	-.0206	70	+.0013
4	-.0415	37	-.0200	71	+.0019
5	-.0407	38	-.0194	72	+.0026
6	-.0399	39	-.0187	73	+.0032
7	-.0393	40	-.0181	74	+.0039
8	-.0387	41	-.0174	75	+.0045
9	-.0381	42	-.0168	76	+.0052
10	-.0374	43	-.0161	77	+.0058
11	-.0368	44	-.0155	78	+.0065
12	-.0361	45	-.0148	79	+.0071
13	-.0355	46	-.0142	80	+.0077
14	-.0348	47	-.0135	81	+.0084
15	-.0342	48	-.0129	82	+.0090
16	-.0335	49	-.0123	83	+.0097
17	-.0329	50	-.0116	84	+.0103
18	-.0323	51	-.0110	85	+.0110
19	-.0316	52	-.0103	86	+.0116
20	-.0310	53	-.0097	87	+.0123
21	-.0303	54	-.0091	88	+.0129
22	-.0297	55	-.0084	89	+.0135
23	-.0290	56	-.0077	90	+.0142
24	-.0284	57	-.0071	91	+.0148
25	-.0277	58	-.0065	92	+.0155
26	-.0271	59	-.0058	93	+.0161
27	-.0264	60	-.0052	94	+.0168
28	-.0258	61	-.0045	95	+.0174
29	-.0252	62	-.0039	96	+.0181
30	-.0245	63	-.0032	97	+.0187
31	-.0239	64	-.0026	98	+.0194
32	-.0232	65	-.0019	99	+.0200
		66	-.0013	100	+.0206

Figure 1-4 - Tape Temperature Corrections Based on 68 Degrees as Normal

To Apply a Tension Correction Use:

$$\text{Pull Correction Per Tape Length} = + \frac{L(P-Ps)}{EA}$$

Where:
- L = Length of Tape
- P = Tension in Pounds on Tape
- Ps = Tension in Pounds on Standard Tape
- E = Modulus of Elasticity of Steel (28,000,000 pounds per square inch)
- A = Cross Sectional Area of Tape

Example: A 100 Foot Tape is its true length when supported on a floor under a 10 pound pull. The cross sectional area of the Tape is 0.0047 square inch. How much does its length increase under a pull of 20 pounds?

$$\text{Pull Correction} = \frac{(100)\ (20-10)}{(28,000,000)(0.0047)} = +0.0076 \text{ Ft.}$$

To Determine the cross sectional area of the tape: Weigh the Tape and compute its cross sectional area from the fact that steel weighs about 490 pounds per cubic foot or 0.28 pound per cubic inch. In the preceding example, the Tape weighed 1.58 pounds per 100 feet, from which its cross sectional area was computed to be 0.0047 square inch.

Figure 1-5

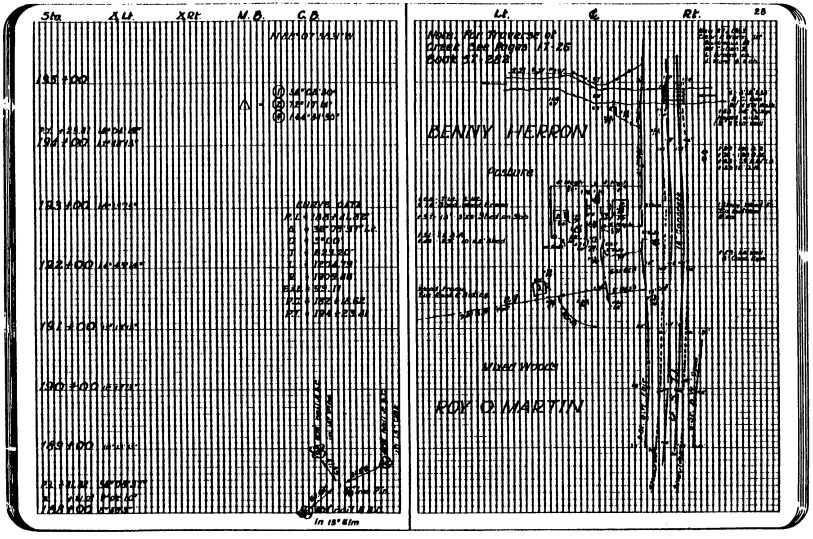


Figure 1-6 - Example of Location Alignment and Topography Notes

2

NUMBER OF THIS BOOK 51341

PROJECT NUMBER

CONSTRUCTION PROJECT NUMBER 389-01-02

NAME OF HIGHWAY Rayne - Mire

PARISH Acadia ROUTE La. 722, 1095

BEGINNING OF PROJECT* 88

Sta. 26+00 Jct. La. 35 N.E. of Rayne

(Eq. 79+58.13 Line Behind = 79+59.13 Line Ahead

END OF PROJECT* Sta 440+57.60 Jct. with La. 95 at Mire

LENGTH OF PROJECT 7.85 MILES

PROJECT BEGAN (DATE) April 8, 1960

PROJECT COMPLETED (DATE)

ENGINEER IN CHARGE Nick O. Walker & W.L. Landon

TRANSIT MAN Russell J. Milligan & Clarence Diffy

LEVELER Lance LaBarde

ASSISTANTS Harold Wilson

Joseph Henry Bourgoyne

DATUM USED U.S.C.&G.S. & La. Geodetic

MAGNETIC VARIATIONS 7°20'E

BEARING OF TANGENTS (TRUE OR MAGNETIC) Grid Az.

* NOTE DESCRIBE BEGINNING AND END OF PROJECT, AS SHOWN IN THE FOLLOWING EXAMPLE:

BEGINNING OF PROJECT Sta 10+00 East Baton Rouge Parish Line (South of Burtville)

END OF PROJECT, Sta 241+26.40 Junction La. 42, 1.9 Miles N.E. of Gardere on Gardere Lane at Highland Road.

3

BOOKS USED ON THIS JOB

LOCATION ALIGNMENT & TOPOGRAPHY NOTES 49-932

LOCATION LEVEL & X SECTION NOTES 51-341, 51-342, 51-343, 49-485, 49-486

ORIGINAL CONSTRUCTION X SECTION NOTES

FINAL ALIGNMENT & TOPOGRAPHY NOTES

FINAL LEVEL & X-SECTION NOTES

FORM GRADE NOTES

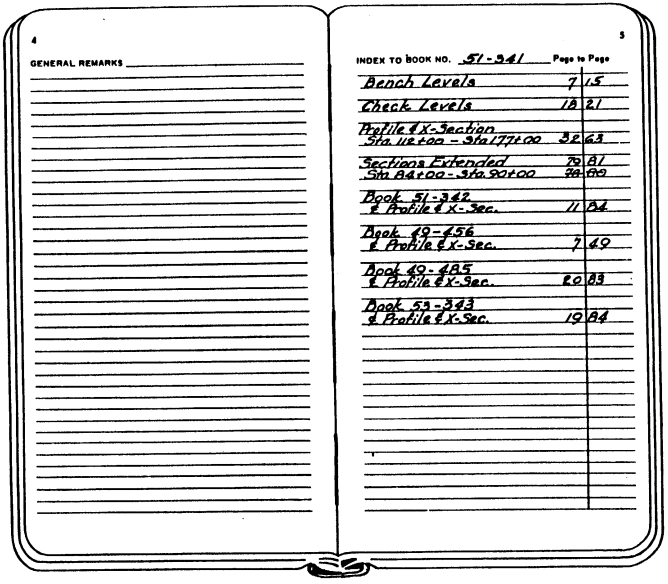
MASONRY NOTES

DIARY NOTES

FINAL ESTIMATE NOTES

OTHER NOTES (LIST BOOK NUMBER & DESCRIPTION OF CONTENTS)

Figure 1-7 - Proper Method of Placing Information on Sheets 2 and 3 of Field Books



4

GENERAL REMARKS

5

INDEX TO BOOK NO. 51-341

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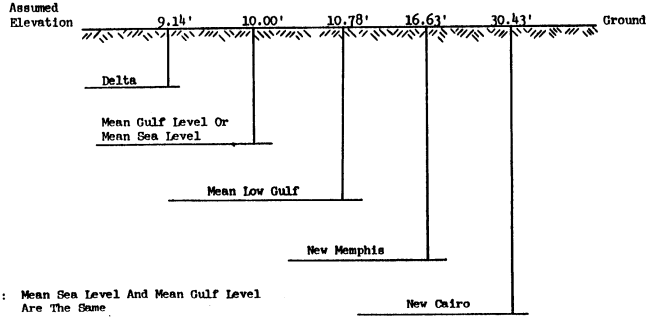
Bench Levels	7	15
Check Levels	18	21
Profile & X-Section Sta. 112+00 - Sta 177+00	32	63
Sections Extended Sta 84+00 - Sta. 90+00	79	81
Book 51-342 & Profile & X-Sec.	11	84
Book 49-456 & Profile & X-Sec.	7	49
Book 49-485 & Profile & X-Sec.	80	83
Book 53-343 & Profile & X-Sec.	19	84

Figure 1-8 - Proper Method of Placing Information on Sheets 4 and 5 of Field Books

TO CONVERT FROM VARIOUS DATUMS
TO MEAN SEA LEVEL DATUM

Delta	To Mean Sea Level	Add	0.86'
Mean Low Gulf	To Mean Sea Level	Subtract	0.78'
New Memphis	To Mean Sea Level	Subtract	6.63'
New Cairo	To Mean Sea Level	Subtract	20.43'

Note: Additions And Subtractions Are Done Algebraically



Note: Mean Sea Level And Mean Gulf Level Are The Same

Figure 1-9- Relationship of Various Level Datums

Cloudy 7
Walker
Diffey
Wilson
5-19-60

Sta.	BENCH LEVELS +	H.I.	−	Elev.		
BM	3.87	33.31		29.44		U.S.C. & G.S. Mark #A-412, 27.5' Lt.
						Sta. 23+64.00 Jefferson Davis Ave.
T.P.	5.59	34.20	4.70	28.61		
TBM	5.15	32.46	6.89	27.31		60d Nail in 18" oak 28' Rt. Sta. 35+27
TBM	3.95	32.21	4.20	28.26		20d Nail in 12" ash 26' Rt. Sta. 42+04
TP	5.01	32.37	4.85	27.36		
TP	5.05	33.11	4.31	28.06		
BM			3.07	30.04	30.080	USC & G.S. Mark #A-413, 25.5' Rt.
						Sta. 57+58 Elev. given 30.080
BM	3.11	33.19		30.08		Same BM
TP	5.57	33.27	5.49	27.70		
TP	5.49	33.74	5.02	28.25		

Figure 1-10 - Example of Differential Single Wire Level Notes for Bench Marks

+Rod	Stad.	✓	-Rod	Stad.	✓	Elev.	Point		Description		6
9.223			4.670			98.786	BM #1		U.S.C.&G.S. B.M. 100 at intersection of		
8.177	1.046	-.001	3.615	1.055	.000				Hwys. 10 & 106, 38'		
7.128	1.049		2.560	1.055	3.615	+8.176			Lt. Sta. 98+72		
24.528		8.176	10.845		3.615	-3.615			Elev. 98.786		
2.095	2.095		2.110	2.110		103.347	TP #1				
5.028			8.224								
3.885	1.143	+.001	7.222	1.002	.000	+3.886					
2.745	1.140	3.886	6.220	1.002	7.222	-7.222					
11.658		3.886	21.666		7.222						
2.283	2.283		2.004	2.004		100.011	TP #2				
3.875			6.856								
2.888	.987	+.002	6.374	.482	-.001	+2.890					
1.906	.982	2.890	5.890	.484	6.373	-6.373					
8.669		2.890	19.120		6.373						
1.969	1.969		.966	.966		96.528	BM #2		60d nail in Pecan Tree, Sta. 104+50	24" 35' Rt.	

NOTE: For detailed instructions on the reduction of 3-wire Level Notes, refer to the K & E Solar Ephemeris & Surveying Instrument Manual.

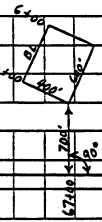
Figure 1-11 - Typical 3-Wire Bench Level Field Notes

DATE 4-11-63 RODMAN M. Schuler WEATHER Partly Cloudy - Cool PAGE NO. 41

INSTR. MAN H. Ray RODMAN A. Martin LOCATION ☐ ORIGINAL ☑ FINAL ☐

NOTES D. Stirling CHAINMAN B. Palmer

B. M.	+		M. I.		-		ELEV.		DESCRIPTION						
STATION															ELEV.
	Borrow Pit No. 8.														ROD
	700' Lt. Sta. 67+00														DIST.
															ELEV.
	℄ Proj. 55-02-13 →														ROD
															DIST.



#5	2.13		51.08				48.95		60d nail in 20" Sycamore tree, 100' Rt. Sta. 68+50						
															ELEV.
															ROD
															DIST.
T.P.	4.15		51.95		3.28		47.80								
															ELEV.
															ROD
															DIST.
T.B.M.	4.22		52.31		3.86		48.09		40d nail in 18" Red Oak tree, 25' Lt. Sta. 0+00 of Borrow Pit						
															ELEV.
0+00	4.1	4.0	4.1	3.9	4.2	4.2	4.2	4.0	4.1	3.8	3.2	3.7	3.7		ROD
	0	25	50	75	100	150	200	250	300	310	325	350	400		DIST.
#5					3.35		48.96		60d nail in 20" Sycamore tree, 100' Rt. Sta. 68+50 Elev. 48.95						

Figure 1-12 - Cross Section Notes

(Borrow Pits)

DATE 4-9-63 RODMAN C. Crouse WEATHER Fair - Mild PAGE NO. 21

INSTR. MAN C. Dixon RODMAN _____ LOCATION ☐ ORIGINAL ☐ FINAL ☑

NOTES R. Milano CHAINMAN L. Neubig

B. M.	+	H. I.	-	EL EV.	DESCRIPTION

STATION																
																EL EV.
	Borrow Pit No. 5, 400' Rt. Sta. 164+50															ROD
																DIST.
TBM	3.13	81.39						78.26	20d nail in 15" Pine tree, 40' Lt. Sta. 0+50 of Borrow Pit							
																EL EV.
0+00		0.00	Section													ROD
																DIST.
																EL EV.
0+13	2.2	2.5	6.3	9.6	11.7	12.8	10.8	9.3	10.1	10.0	10.9	10.5	9.4	8.8	See page 47 for extensions Rt.	ROD
	0	6	34	56	73	100	137	147	166	173	178	185	188	192		DIST.
																EL EV.
	4.9	2.2														ROD
	197	200														DIST.
																EL EV.
0+50	2.5	6.7	8.1	10.1	11.2	11.4	11.7	11.1	8.4	8.9	9.6	9.9	10.0	3.6		ROD
	9	0	18	25	39	64	93	124	138	154	160	170	188	200		DIST.

Figure 1-13 - Cross Section Notes

(Borrow Pits)

DATE 6-8-63 RODMAN B. White WEATHER Cloudy - Warm PAGE NO. 18

INSTR. MAN J. Robbins RODMAN A. Barnes LOCATION ☐ ORIGINAL ☑ FINAL ☐

NOTES R. Thomas CHAINMAN L. Black

B. M.	+		H. I.		-		ELEV.		DESCRIPTION							
# 4	5.42		107.92				102.50		60ᵈ nail in 20" oak, 80' Lt Sta. 48+50							
STATION																ELEV.
50+00	8.3	5.5	4.7	1.8	1.0	1.3	2.6	2.8	2.8	3.9	3.3	9.7	9.7			ROD
	65	56	51	44	32	21	15	0	32	42	55	60	65			DIST.
																ELEV.
51+00	7.8	7.8	5.7	3.5	3.6	4.7	4.7	3.1	4.2	5.6	6.2	6.4	4.1	4.1	5.7	ROD
	48	47	42	30	16	12	11	0	20	40	57	65	68	69	71	DIST.

																ELEV.
					7.3	8.1	8.5		6.5	7.1	6.0	5.3				ROD
					75	65	56		72	80	95	100				DIST.
																ELEV.
51+45.25 L.B. 51+48.25 L.A.	10.4	10.4	8.7	7.8	8.3	9.6	6.4	6.5	7.4	7.4	6.7	6.2	6.9	7.6	7.6	ROD
	65	45	30	15	12	10	2	0	10	11	15	30	47	48	65	DIST.
																ELEV.
				See Book No. 54-779, p.17 for												ROD
				continuation of these cross sections												DIST.

Figure 1-14 - Cross Section Notes

DATE 8-11-63 RODMAN R. Doucet WEATHER Clear - Hot PAGE NO. 55

INSTR-MAN D. Hebert RODMAN B. LeBlanc LOCATION ☑ ORIGINAL ☐ FINAL ☐

NOTES J. Breaux CHAINMAN E. Gremillion

B. M.	+		H. I.		-		EL EV.		DESCRIPTION						
			23.74				Continued from page 29								
STATION															EL EV.
251+00		2.8	3.3	3.3	3.2	4.1	3.7	3.5	3.8	4.0	3.3	3.4	3.1		ROD
		40	38	28	13	12	10	0	15	18	20	33	40		DIST.
T. P.	3.48		24.41		2.81		20.93								
															EL EV.
251+72		End Proj. 241-02-06, Begin Proj. 241-03-10													ROD
															DIST.
															EL EV.
251+72		3.9	3.6	4.3	4.2	5.0	4.4	4.1	4.5	5.2	4.0	4.4	4.0		ROD
		40	37	24	13	11	9	0	14	17	20	35	40		DIST.
															EL EV.
252+00		3.9	4.2	4.4	4.2	4.7	4.6	4.5	4.7	5.7	4.7	4.2	4.1		ROD
		40	36	25	13	11	9	0	14	17	20	30	40		DIST.
															EL EV.
253+00		4.3	4.3	4.5	5.5	5.3	5.0	4.8	5.0	5.8	4.8	4.8	4.7		ROD
		40	36	28	14	12	10	0	15	17	19	33	40		DIST.

Figure 1-15 - Cross Section Notes

DATE 5-17-63 RODMAN Y. Tittle WEATHER Partly Cloudy - Warm PAGE NO. 8

INSTR. MAN J. Taylor RODMAN J. Robinson LOCATION ☒ ORIGINAL ☐ FINAL ☐

NOTES B. Cunnon CHAINMAN T. Davis

B. M.							ELEV.	DESCRIPTION							
# 1	5.00		105.00				100.00	60" Nail in 18" Oak Tree 100' Rt Sta 10+60							
STATION															ELEV.
10+00							100.8								ROD
			4.8	5.1	6.6	6.2	5.8	5.2	4.4	4.8	5.4	6.7	4.3	4.7	
H.I. = 106.0			100	75	60	40	20	4.2 / 0	18	30	36	60	75	100	DIST.
															ELEV.
11+00							98.3								ROD
			4.6	5.3	7.6	6.3	5.4	5.5	5.6	6.3	7.8	5.2	4.7	3.5	2.1
H.I. = 103.8			107	80	73	62	50	6.9 / 0	35	45	56	68	75	90	100 DIST.
															ELEV.
11+50							99.2								ROD
	7.3	6.8	6.5	5.6	3.5	4.0	4.2	4.6	5.1	4.0	3.6	2.8			
H.I. = 103.8	100	75	60	50	35	18	12	5.8 / 0	25	50	75	100			DIST.
															ELEV.
12+00							101.3								ROD
			5.4	4.6	3.8	4.0	4.8	5.5	5.3	4.6	3.7	1.2			
H.I. = 107.1			100	75	50	40	10	3.7 / 0	25	50	75	100			DIST.
															ELEV.
12+32							100.4								ROD
		6.2	6.8	7.5	8.2	6.1	6.7	5.8	6.3	7.3	4.8	3.2	1.5	0.8	
H.I. = 106.2		100	95	70	50	30	18	4.6 / 0	16	32	40	50	75	100	DIST.

Figure 1-16 - Cross Section Notes

(To be used when centerline profile and cross sections are taken at different times)

DATE 11-1-73 ROADMAN R. Eliser WEATHER Clear - Cool PAGE NO. 74

INSTRUMAN E. Paulge ROADMAN B. Norwood LOCATION ☐ ORIGINAL ☐ FINAL ☐

NOTES R. Lee CHAINMAN L. Mud

B.S.	+	H.I.	−	ELEV.	DESCRIPTION
#6	1.42	233.05	13.62	231.63	60d nail in 20" Pine 85' Rt. Sta. 62+50

STATION																	
63+00																	ELEV.
		13.6	11.0	4.2	2.6	1.3	0.9	1.0	0.9	1.2	1.6	1.5	0.4				ROD
		56	41	22	18	14	10	0	11	13	15	16	18				DIST.

TP	0.98	220.41					219.43										
63+00																	ELEV.
		11.7	11.2	10.3	7.8	5.2	3.1	1.3									ROD
		200	156	121	100	89	76	68									DIST.

#6	13.21	244.84					231.63	60d nail in 20" Pine 85' Lt Sta. 62+50									
63+00																	ELEV.
									13.5	10.6	5.8	3.1	3.0	2.8	2.7		ROD
									23	25	32	43	50	75	100		DIST.

63+00																	ELEV.
									2.7	2.8	3.2	3.3	3.2				ROD
									150	175	198	210	230				DIST.

																	ELEV.
	See Book #70-218, page 16 for																ROD
	continuation of these cross-sections																DIST.

Figure 1 - 17 - Cross Section Notes

Figure 1-18 - Example of Drainage Map for City Section

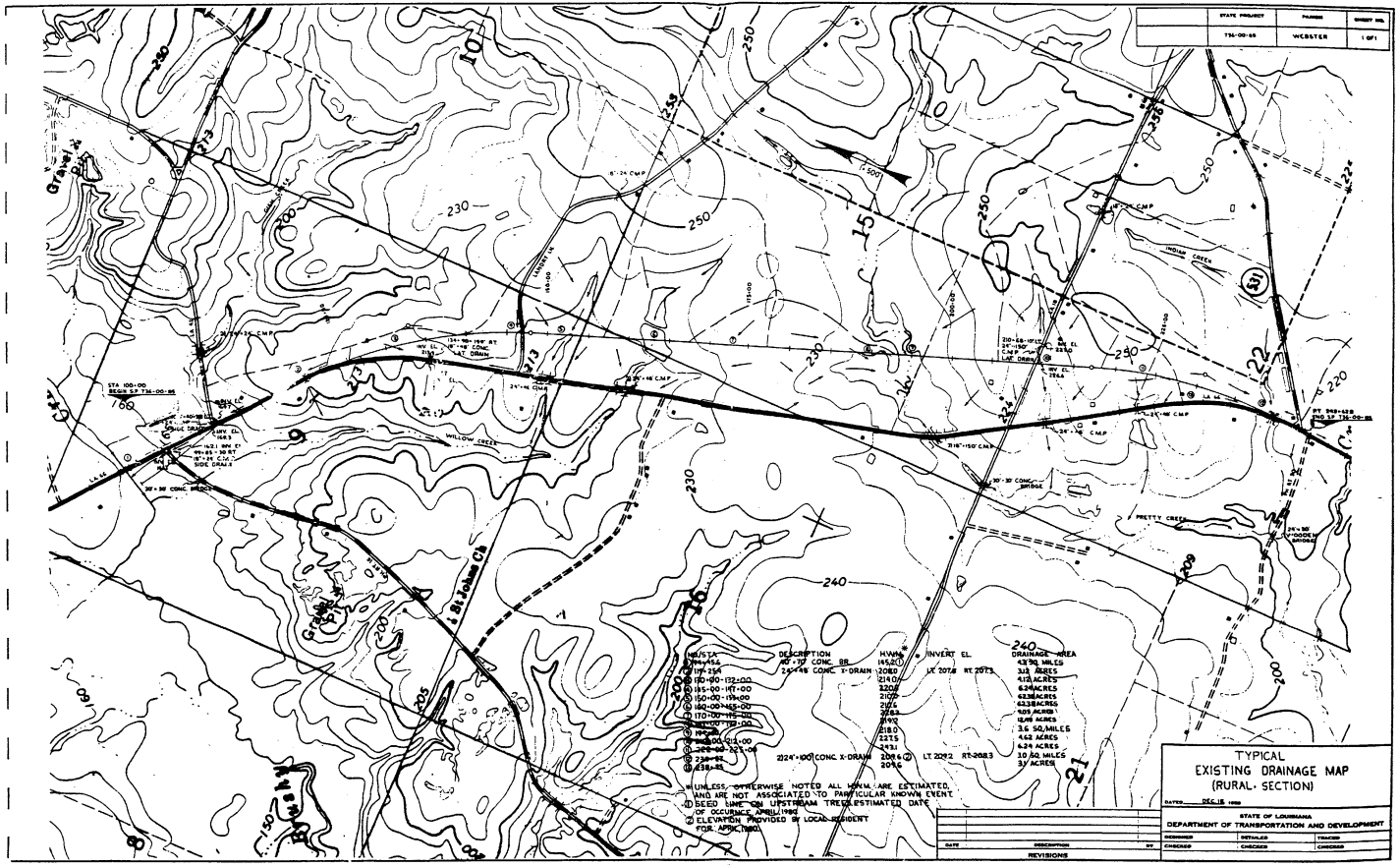


Figure 1-19 Example of Drainage Map of Rural Section

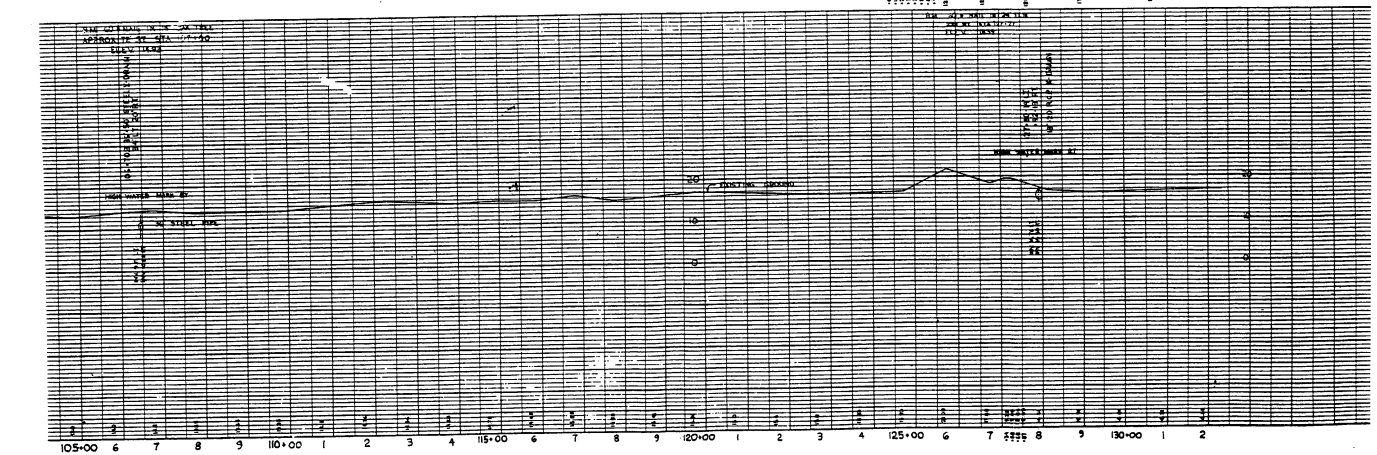


Figure 1 - 20 Example of Field Roll (Plan - Profile Roll)

DOTD 03-30-1080
12/85

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

SIDE 1

ACTIVITY AND PROGRESS OF TOPOGRAPHIC SURVEY PARTY

For the week ending, Saturday MAY 31 19 86

GANG NO. 019 SECTION 30 P.O. Box No. 417 PROJECT OR SURVEY NO. 700-04-08 LENGTH 6.42

ADDRESS	PHONE
OFFICE 906 S. BURNSIDE GONZALES, LA.	647-2106
LODGING AIRLINE COURTS GONZALES, LA.	

NAME OF HIGHWAY BURNSIDE - GARDERE
GEISMAR TO ST. GABRIEL SECTION
ROUTE NO. LA 30 DIST. 61
PARISH ASCENSION & IBERVILLE

DATE SURVEY BEGAN FEB. 3 19 86
DATE TO BE COMPLETED JULY 7 19 86

STATION NUMBER	
AT BEGINNING	AT END
300+30.65	639+02.63

DAY OF WEEK	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
WEATHER							
WORKING CONDITIONS		GOOD	GOOD	GOOD	FAIR	GOOD	

PERSONNEL			TOPOGRAPHIC SURVEYS				
NAME	TITLE	NO. OF DAYS WORKED	STAGES	THIS WEEK'S WORK STATION TO STATION		% of Stage Comp.	Wt. % Comp. To Date
ROBERT SMITH	Project Engineer	3	Preliminary			100	5
JOHN BECKER	Party Chief	5	Final Location			100	10
ED SINGLETON	Instrumentman	5	Topography			100	15
	Instrumentman		Utilities *			100	25
	Instrumentman		Levels	475+00	560+00	75	3.8
RALPH JONES	Rodman	5	X-Sections	300+00	310+00	3	0.5
RAY EVANS	Rodman	5	Drainage Areas			0	0
	Rodman		Apparent Property Ties			0	0
			Office Work			50	5
			Entire Survey				64.3

SEE REVERSE SIDE FOR ACTIVITY AND PROGRESS OF PROPERTY SURVEYS AND MAPS

REMARKS AND ADDITIONAL INFORMATION

*Keep separate from other Topography

MON. MAY 26 - CHECK LEVELS STA. 310+00 to 477+00
TUES. MAY 27 - " " " 477+00 to 618+00
WED. MAY 28 - " " " 618+00 to 644+00
CROSS SECTIONS " 300+00 to 310+00
THURS. MAY 29 - LEVELS & PROFILE " 310+00 to 380+00
FRI. MAY 30 - " " " 380+00 to 465+00

ORIGINAL TO LOCATION & SURVEY ENGINEER
C/C DISTRICT ADMINISTRATOR

James Smith
Project Engineer or Party Chief

Figure 1-21 Report Form for Activity and Progress of Topographic Survey Party (Side 1).

FORM 1087
Rev. 9/4/63

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

LOCATION REPORT

Name of Highway Alexandria - Colfax .....Project No. 9-01-30 69-02-08

Parish Rapides & Grant .....Official Route No. U.S. 71 .....

Survey by Roy J. Boudreaux .....Date November 19, 1965 .....

These questions to be answered by Party Chief making the survey, and to be submitted by him to the Location and Survey Engineer with survey notes, profiles and other data.

1. Give brief description of survey: where it begins and ends, the country traversed, and length of survey. If alternate lines were run, give a brief description of each and state which line is recommended. Use Page 4 answering this question.

2. Are all field books numbered and pages numbered?... Yes .....

3. What books contain the notes on this survey? Level Books Nos 68-219, 68-218, 66-813, 66-814, 66-815, ., Transit Books Nos. .....
68-155, 68-217

4. Is there an "Index" on front page of each book showing (a) Parish in which Highway was surveyed; (b) the name of the Highway, station numbers of beginning and ending of survey; (c) length in feet and miles, when and by whom made, etc?

..... Yes .....

.....

5. Where transit, level, and cross-section notes are recorded in one book, are they so indexed as to show clearly which transit, level and cross-section notes are to be used in conjunction?..... Yes .....

6. Where more than one book is used for recording transit, level and cross-section notes, are they indexed and cross indexed, giving number of book and page where notes are continued or are to be used in conjunction?.....
..... Yes .....

7. Are the columns in field books headed-Station, angle, calculated course, magnetic course, B.S., H.I., F.S., Elevation, etc?..... Yes .....

8. Was a true meridian established from which the true courses of all tangents were calculated? .....

9. What declination was found or used?.....

10. Were courses of all tangents checked by magnetic needle?... Yes .....

11. Has the angle at each P. I. been turned at least twice with total and average angle being recorded?..... Yes .....

12. Are the functions solved and shown for all curves; P. C., L. C., P. T., P. I., degree of curve, deflection angle, tangent distance and radius of curve?.....
..... Yes ....

Figure 1-22 - Location Report Form (Page 1)

13. Were land ties taken to section corner from each point where Highway intersected section line, or a sufficient number of ties taken to plot the section lines accurately with reference to center line of highway?.....Yes.....

14. Are all long or short stations and equations noted in the transit, level and cross-section books?.....NONE.....

15. Is the topography plotted to scale in transit book?....Yes.....
(Note: This scale should be 1" = 100', both along center line and perpendicular to it.)

16. Is all topography within 200 feet right and left of center line clearly shown?
.....No.....100' Right & Left Shown.....

17. Does topography show fence lines, property lines, and property owners?.....
.....Yes.....

18. Are all existing Bridges and culverts shown in plan and profile, in the transit and level books?...YES.....Is there a ravine section at left and right edge of Bridge for all existing Bridges?.....

19. Do the notes contain sufficient information on existing structures to remain in place to enable them to be clearly drawn and described on the plans, and capacity determined?.....Yes.....

20. What level datum was used?...L.G.S.....

21. Were levels tied to an accurate line of B. M.'s at each end of the survey?..
.....Yes.....

If not, were check levels run?.....

22. Has field profile been made?.....Yes.....Does it show: ground line along center line?.....Yes.....; proposed grade of sub-grade?..No...
.....recommended sizes of culverts and bridges required?....Yes.....;drainage areas and invert elevations for all culverts?.....Yes.....; drainage areas, elevation high and low water for all bridges and drainage structures?.....Yes.....

23. Have the railroads and sidings where material can be delivered for the Project been located, also capacity of each spur?..Yes.....

24. Does topography show where clearing and grubbing will be required -- say within 100 foot right - of - way?.....Yes.....

25. Have any curves less than a 500' radius?..No.....

26. Are there any railroad crossings?..No.....How many and what kind(grade, overhead and underpass)?.....Tied to nearest RR Mile Post?.....
Profile along RR 1000' on each side?.....

27. Where channel changes are to be made have they been indicated in the notes so that approximate yardage can be determined and whether yardage should be used in road-way embankment or wasted on canal banks?.....Yes.....

Figure 1-23 - Location Report Form (Page 2)

28. Have all bearings of tangents, functions of curves, and level notes been checked? Yes

29. Have cross-sections been taken? Yes

(Where ground is apparently level, these readings should be taken; one at center and one 60 feet, min. each side of center.)

30. Has the direction of flow been indicated for all drainage? Yes

31. Does field profile show vertical curves or indicate that they are to be put on in the office? No

32. Does the survey cross any navigable streams? NONE

At stations?

33. If movable bridges are anticipated, has depth for fresh water wells been noted? Not Applicable

34. Evidence of drift at Bridges.....Heavy:.....Light:.....

None:.... ✓

35. Evidence of Scour at Bridges.....Heavy:.....Light:.....

None:... ✓

36. Evidence of stream velocities.....High: .....Normal:.....

Low: .....Tidal:.....

37. Does District Construction Engineer recommend U.S.G.S. stream report?...

38. Has existing bridge been a maintenance problem due to drift accumulation under structure? NONE

If answer is yes to above, what min. length of span does district recommend?.

39. Have any bridges been located on curves or grades? No

40. Where the location is near an existing embankment through which permanent drainage structures are provided, do the notes show the sizes of those structures?

Area of opening below High Water elevation for Bridges? Yes

41. Structure report forms no.1088 are to be filled out in detail and submitted with survey.

42. Has lay-out and drainage map been prepared? In Baton Rouge Office & Spot checked Areas in Field.

Figure 1-24 - Location Report Form (Page 3)

43. Have all utilities, gas lines, water lines, sewer lines, power lines, etc., been accurately tied to the center lines so they may be plotted?....Yes.

44. Have all horizontal and vertical control monuments such as U.S.C. & G.S., U.S.G.S., L.G.S., ETC. been tied in to center-line? Tied to Geodimeter Control Line.....

Figure 1-25 - Location Report Form (Page 4)

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DESIGN STANDARDS FOR ARTERIAL ROADS AND STREETS

ITEM NO.	ITEM	RURAL				URBAN (8)	
		TWO LANE		FOUR LANE			
		RA-1	RA-2	RA-3 (1)	RA-4	UA-1	UA-2
1	Design Hourly Volume	0-600 (2)	0-600 (2)	601-2300	601-2500	N/A	N/A
2	Design Speed (M.P.H.)	60	70	60	70	40	45
3	Level of Service	B	B	B	B	C (5)	C (5)
4	Number of Travel Lanes	2	2	4 (4)	4 (4)	2(Min.)-4(Typ.)	2(Min.)-4(Typ.)
5	Width of Travel Lanes (Ft.)	12	12	12	12	8 to 12	12
6	Width of Parking Lanes (Where Used) (Ft.)	N/A	N/A	N/A	N/A	10 to 12	10 to 12
7	Width of Shoulders (Where Used) (Ft.)						
	(A) Outside	8'(Min.)-10'(Des.)	10	10	10	N/A	N/A
	(B) Median	N/A	N/A	6 (5)	6 (5)	N/A	N/A
8	Type of Shoulders	Paved	Paved	Paved	Paved	N/A	N/A
9	Width of Median (Ft.)						
	(A) Depressed	N/A	N/A	40'(Min.)-60'(Des.)	60	N/A	N/A
	(B) Raised	N/A	N/A	N/A	N/A	46'(Min.)-30'(Des.)	46'(Min.)-30'(Des.)
	(C) Two Way Left Turn Lanes	N/A	N/A	N/A	N/A	8'(Min.)-14'(Typ.)	8'(Min.)-14'(Typ.)
10	Width Of Sidewalk (Where Used)(Offset From Curb)(Ft.)	N/A	N/A	N/A	N/A	4	4
	Width Of Sidewalk(Where Used)(Adjacent From Curb)(Ft.)	N/A	N/A	N/A	N/A	6	6
11	Fore Slope - Ratio	6:1	6:1	6:1	6:1	3:1(Min.)-4:1(Des.)	3:1(Min.)-4:1(Des.)
12	Back Slope - Ratio	4:1	4:1	4:1	4:1	3:1	3:1
13	Pavement Cross Slope (Ft. per Ft.) (6)	0.025	0.025	0.025	0.025	0.025	0.025
14	Stopping Sight Distance (Ft.) (7)	525-650	625-850	525-650	625-850	275-325	325-400
15	Maximum Superelevation (Ft. per Ft.)	0.10	0.10	0.10	0.10	0.04	0.04
16	Maximum Horiz. Curvature (W/out Superelevation)(R-025)	N/A	N/A	N/A	N/A	10'00"	N/A
	Maximum Horiz. Curvature (W/out Superelevation)(R-025)	N/A	N/A	N/A	N/A	8'00"	N/A
17	Maximum Horizontal Curvature (With Superelevation) (6)	5'00"	3'30"	5'00"	3'30"	8'00"	7'30"
18	Maximum Grade (%)	3 (6)	3 (6)	3 (6)	3 (6)	7	6
19	Minimum Vertical Clearance (Ft.) (10)	16	16	16	16	16	16
20	Min. Horiz. Clearance (From Back of Curb)						
	(A) Outside	N/A	N/A	N/A	N/A	6'(Min.)-15'(Des.)	6'(Min.)-15'(Des.)
	(B) Median (Where Used)	N/A	N/A	N/A	N/A	4'(Min.)-15'(Des.)	4'(Min.)-15'(Des.)
21	Minimum Width Of Right of Way (Ft.) (9) (6)						
	(A) From ℄	75	75	As Needed	125	N/A	N/A
	(B) From Edge of Travel Lane	N/A	N/A	N/A	N/A	8'(Min.)-17'(Des.)	8'(Min.)-17'(Des.)
22	Bridge Design Load	HS-20	HS-20	HS-20	HS-20	HS-20	HS-20
23	Width of Bridges (Minimum)(Face to Face Bridge Rail)	Sndr. Width	44'	40'	40'	Roadway Width (3) Plus 8'	Roadway Width (3) Plus 8'
24	Guardrail Required at Bridge Ends	Yes	Yes	Yes	Yes	Yes	Yes

(1) Used When Adding Two Lanes To Existing Two Lane Facility.

(2) For Rolling Terrain, Limited Passing Sight Distance and High Percentage Trucks, 4 Lanes May Be Required When DHV is Above 400.

(3) Level Of Service D Permissible in Heavily Developed Areas.

(4) Consider Increasing To 6 Lane Facility When DHV is Above Figure Shown in Item No. 1.

(5) 4' Paved.

(6) 2% Permissible For Rehabilitation Projects.

(7) Minimum Values Shown Permissible For Rehabilitation Projects.
Maximum Values Shown To Be Used Where Conditions Permit.

(8) Flatter Curves May Be Necessary To Meet Requirements For Stopping Sight Distance On Structure.

(9) 4% Permissible in Rolling Terrain.

(10) 6" Additional To Allow For Future Surfacing.

(11) For Approach Roadways Without Curb Use Shoulder Width. In Special Cases 4' Sidewalks On One or Both Sides Of The Bridge May Be Required.

(12) Applies To Curbed Sections Only. For Uncurbed Sections Use Rural Standards.

(13) Minimum Required For New Location and As Needed For Existing Alignment.

(14) Obtain Additional Right of Way For Future Lanes Where Justified.

Sheet 2 of 4

Date	Description	By
	Revisions	

DESIGN STANDARDS

Approved: Chief Engineer 4-23-86 Date

Figure 1-29 Design Standards for Arterial Roads and Streets.

TIES TO L.G.S., U.S.C. AND G.S., AND U.S.G.S., etc., MONUMENTS FOR HORIZONTAL CONTROL _____

ARE LOCATION OF AIRPORTS WITHIN TWO MILES SHOWN _____

AIRPORT RUNWAYS WITHIN 1500 FEET OR LESS OF THE SURVEY LINE TIED TO SURVEY LINE _____

SIDE STREET CENTERLINES, ESTABLISHED _____

STREAMS AND DRAINAGE CANALS TRAVERSED AND CROSS-SECTIONED _____

TOPO TAKEN 500 FEET BEYOND BEGINNING AND END OF PROJECT (see section 1.05)

TOPO TAKEN 200 FEET EACH SIDE OF SURVEY LINE IN RURAL AREAS (see section 1.05)

TOPO TAKEN 150 FEET OR TO CENTER OF FIRST BLOCK IN URBAN AREAS (see section 1.05)

MINORITY NEIGHBORHOODS NOTED, DESCRIBED AND TIED TO SURVEY LINE _____

FIELD ROLL:

(a) Identified (Project No., Name, Route, Parish, etc.) _____
(b) Field Book Number and Contents _____
(c) Names of Utility Companies _____
(d) Horizontal and Vertical Scale _____
(e) Field Roll Inked _____
(f) Bearings (How Determined, True, Grid, etc.) _____
(g) Profile Shown _____
(h) Crossdrains Plotted in Profile Section _____
(i) Invert Elevations for Cross Drains _____
(j) High Water Marks Where Applicable _____
(k) B.M.'s and/or T.B.M.'s Shown (Description, Tie To Survey Line, and Elevation) _____
(l) All Curve Data, P.C.'s, P.T.'s, P.I.'s, and P.O.T.'s shown _____
(m) References to all P.C.'s, P.I.'s, and P.T.'s _____
(n) References to P.O.T.'s, at intervals not to exceed 1000' _____
(o) Utilities Shown in Proper Color (also size of pipeline) _____
(p) Property Owners Shown _____
(q) Property Lines Shown and Labeled _____
(r) When an apparent property line survey is made, the property lines should be referenced to the survey line by plus and angle at the intersection of the projection of the property line and the survey line _____
(s) Railroad Inventory Number for all Grade Crossings _____
(t) Field Roll Legible and Containing Normal Topography _____

FIELD BOOKS:

(a) Identified (Project No., Name, Route, Parish, etc., on Front Cover in Ink) _____
(b) Pages 2 and 3 Properly Filled Out, in Ink _____
(c) Properly Indexed and Cross Indexed on Pages 4 and 5, in Ink _____
(d) Daily Weather and Personnel Listed at Beginning of Each Day _____
(e) Alignment and Topography Notes Shown From Bottom of Page up _____
(f) All Curve Data, P.C.'s, P.T.'s, P.I.'s, and P.O.T.'s Shown _____
(g) Bearings Shown (Type - Magnetic or Calculated) _____
(h) All P.O.T.'s, P.C.'s, P.I.'s, and P.T.'s Referenced _____
(i) Bench Levels, Profile, Cross-Sections, etc., Recorded Properly _____

Figure 1-27 - Location Survey Checking Form

(j) Books Legible _____

(k) Utilities Recorded in Separate Book _____

DRAINAGE AND LAYOUT MAP:

(a) Identified (Project No., Name, Route, Parish, Etc.) _____

(b) Survey Line Shown _____

(c) Existing Roads, Railroads, and Streams Shown _____

(d) Drainage Structures Shown (Shown All Structures That Affect a Particular Drainage Area; Give Size) _____

(e) Drainage Areas Shown (Acres or Square Miles) _____

(f) Direction of Flow Shown _____

(g) High Water Marks (How Determined) _____

(h) Invert Elevation For Drainage Structures _____

(i) Standing Water _____

(j) Outfall _____

(k) Scale _____

UTILITY FORMS:

(a) Master Pole Lists _____

(b) Elevation of Buried Telephone Cable - If in Conduit (If Not in Conduit, Use Cover as Stated by Company Representative) _____

(c) Elevation and Size of Gas and Water Lines (Unless District Utility Representative States Specifically That it is Not Needed, in Which Case, All Concerned Should be Notified _____

(d) Length of Casing on Cross Pipelines _____

(e) Angle of Crossing on All Cross Pipelines (on Pipelines, Not Vents) _____

(f) Crossing of Service Lines _____

(g) Water and Gas Valves and Vents and Fire Hydrants _____

(h) Water and Gas Meters (Unless Adjacent to House) _____

(i) All Columns That Apply Filled in _____

(j) Forms Accepted by District Utility Representative _____

_____ DATE _____

REMARKS:

_____

PARTY CHIEF

_____

SUPERVISOR

Figure 1-28 - Location Survey Checking Form

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DESIGN STANDARDS FOR ARTERIAL ROADS AND STREETS

ITEM No.	ITEM	RURAL				URBAN (16)	
		TWO LANE		FOUR LANE			
		RA-1	RA-2	RA-3 (3)	RA-4	UA-1	UA-2
1	Design Hourly Volume	0-600 (1)	0-600 (2)	601-2300	601-2500	N/A	N/A
2	Design Speed (M.P.H.)	60	70	60	70	40	45
3	Level of Service	B	B	B	B	C (5)	C (5)
4	Number of Travel Lanes	2	2	4 (4)	4 (4)	2(Min.)-4(Typ.)	2(Min.)-4(Typ.)
5	Width of Travel Lanes (Ft.)	12	12	12	12	8 to 12	12
6	Width of Parking Lanes (Where Used) (Ft.)	N/A	N/A	N/A	N/A	10 to 12	10 to 12
7	Width of Shoulders (Where Used) (Ft.)						
	(A) Outside	8'(Min.)-10(Des.)	10	10	10	N/A	N/A
	(B) Median	N/A	N/A	6 (8)	6 (8)	N/A	N/A
8	Type of Shoulders	Paved	Paved	Paved	Paved	N/A	N/A
9	Width of Median (Ft.)						
	(A) Depressed	N/A	N/A	40(Min.)-60(Des.)	60	N/A	N/A
	(B) Raised	N/A	N/A	N/A	N/A	46(Min.)-30(Des.)	46(Min.)-30(Des.)
	(C) Two Way Left Turn Lanes	N/A	N/A	N/A	N/A	8 (Min.)-14(Typ.)	8 (Min.)-14(Typ.)
10	Width Of Sidewalk (Where Used) (Offset From Curb) (Ft.)	N/A	N/A	N/A	N/A	4	4
	Width Of Sidewalk (Where Used) (Adjacent From Curb) (Ft.)	N/A	N/A	N/A	N/A	6	6
11	Fore Slope - Ratio	6:1	6:1	6:1	6:1	3(Min.)-4(Des.)	3(Min.)-4(Des.)
12	Back Slope - Ratio	4:1	4:1	4:1	4:1	3:1	3:1
13	Pavement Cross Slope (Ft. per Ft.) (6)	0.025	0.025	0.025	0.025	0.025	0.025
14	Stopping Sight Distance (Ft.) (7)	525-650	625-850	525-650	625-850	275-325	325-400
15	Maximum Superelevation (Ft. per Ft.)	0.10	0.10	0.10	0.10	0.04	0.04
16	Maximum Horiz. Curvature (B/out Superelevation)(+025)	N/A	N/A	N/A	N/A	8°00'	N/A
	Maximum Horiz. Curvature (B/out Superelevation)(-025)	N/A	N/A	N/A	N/A	8°00'	N/A
17	Maximum Horizontal Curvature (With Superelevation) (8)	5°00'	3°30'	5°00'	3°30'	8°00'	7°30'
18	Maximum Grade (%)	3 (9)	3 (9)	3 (9)	3 (9)	7	6
19	Minimum Vertical Clearance (Ft.) (10)	16	16	16	16	16	16
20	Min. Horiz. Clearance (From Back of Curb)						
	(A) Outside	N/A	N/A	N/A	N/A	6(Min.)-15(Des.)	6(Min.)-15(Des.)
	(B) Median (Where Used)	N/A	N/A	N/A	N/A	4(Min.)-15(Des.)	4(Min.)-15(Des.)
21	Minimum Width Of Right of Way (Ft.) (11) (12)						
	(A) From ℄	75	75	As Needed	125	N/A	N/A
	(B) From Edge of Travel Lane	N/A	N/A	N/A	N/A	35(Min.)-17(Des.)	35(Min.)-17(Des.)
22	Bridge Design Load	HS-20	HS-20	HS-20	HS-20	HS-20	HS-20
23	Width of Bridges (Minimum Face to Face Bridge Rail)	Shldr. Width	44'	40'	40	Roadway Width (13) Plus 8	Roadway Width (13) Plus 8
24	Guardrail Required at Bridge Ends	Yes	Yes	Yes	Yes	Yes	Yes

(1) Used When Adding Two Lanes To Existing Two Lane Facility.

(2) For Rolling Terrain, Limited Passing Sight Distance and High Percentage Trucks, 4 Lanes May Be Required When DHV is Above 400.

(3) Level Of Service D Permissible in Heavily Developed Areas.

(4) Consider Increasing To 6 Lane Facility When DHV is Above Figure Shown in Item No. 1.

(5) 4' Paved.

(6) 2% Permissible For Rehabilitation Projects.

(7) Minimum Values Shown Permissible for Rehabilitation Projects.
Maximum Values Shown To Be Used Where Conditions Permit.

(8) Flatter Curves May Be Necessary To Meet Requirements For Stopping Sight Distance On Structure.

(9) 4% Permissible in Rolling Terrain.

(10) 6" Additional To Allow For Future Surfacing.

(11) For Approach Roadways Without Curb Use Shoulder Width. In Special Cases 4' Sidewalks On One or Both Sides Of The Bridge May Be Required.

(12) Applies To Curbed Sections Only. For Uncurbed Sections Use Rural Standards.

(13) Minimum Required For New Location and As Needed For Existing Alignment.

(14) Obtain Additional Right of Way For Future Lanes Where Justified.

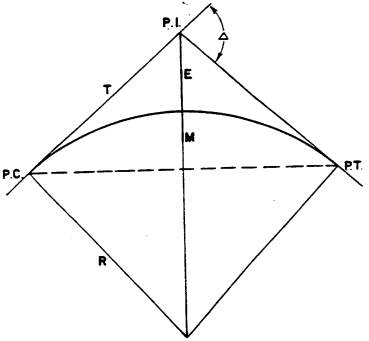
Sheet 2 of 4

Date	Description	By
	Revisions	

DESIGN STANDARDS

Approved: Chief Engineer — Date: 4-28-86

Figure 1-29 Design Standards for Arterial Roads and Streets.



$\Delta = 17^\circ - 50' = 00''$

$D = 2^\circ - 30''$

$R = 2291.83$

$T = 359.57$

$E = 28.04$

$L = 713.33$

P.C. = 315 + 61.43

P.I. = 319 + 21.00

P.T. = 322 + 74.76

315 + 61.43	$0^\circ - 00' - 00''$
316	$0^\circ - 28' - 55.65''$
317	$1^\circ - 43' - 55.65$
318	$2^\circ - 58' - 55.65$
319	$4^\circ - 13' - 55.65$
320	$5^\circ - 28' - 55.65$
321	$6^\circ - 43' - 55.65''$
322	$7^\circ - 58' - 55.65$
+ 74.76	$8^\circ - 55' - 00''$

R FROM TABLES

$T = R \text{ TANG.} \frac{\Delta}{2}$

$E = R \text{ EXTSEC} \frac{\Delta}{2} = T \text{ TANG} \frac{\Delta}{4}$

$L = \frac{\Delta}{D} \times 100$

THE FOLLOWING CHORDS MAY BE ASSUMED EQUAL TO THE ARCS.

100 Ft. Chords up to 2 degree curves.

50 Ft. Chords up to 7 degree curves.

25 Ft. Chords up to 18 degree curves.

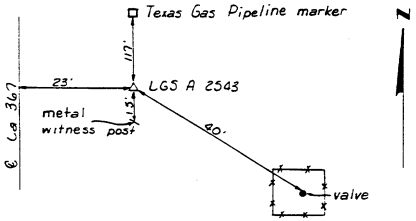
Figure 1-30 - Simple Curve - Arc Definition

5-19-66

LGS A2543

The monument was recovered in (describe condition of monument, such as good, top broken off, leaning, etc.). A new description follows.

To reach the monument from the junction of State Highway 367 and U.S. Highway 190 which is 3.1 miles east of Eunice, drive south-southeast along State Highway 367 to the monument which is on the left side of the highway. It is 1.5 feet north of a metal witness post, 23 feet east of the center of State Highway 367, 117 feet south of a Texas Gas Pipeline concrete marker and 40 feet northwest of a pop-off valve. This valve is 7 feet above the ground and is fenced.



Signed: Sunny McCullen

Figure 1-21 Referencing Horizontal and Vertical Control Monuments

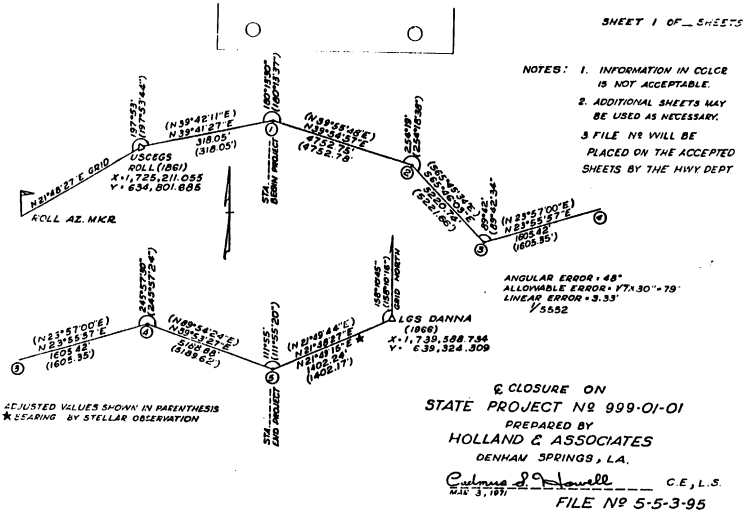


Figure 1-32 - Centerline Closure Sketch

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS

ITEM NO.	ITEM	RURAL			URBAN		
		RC-1	RC-2	RC-3	UC-1	UC-2	UC-3
1	Current Average Daily Traffic	0-400	Over 400	Over 400	N/A	N/A	N/A
2	Design Hourly Volume	N/A	100-200	Over 200	N/A	N/A	N/A
3	Design Speed (M.P.H.)	40	50	60	30	40	45
4	Level of Service	C	C	C	D	D	D
5	Number of Travel Lanes	2	2	2 to 4 ①	2 to 4	2 to 4	2 to 4
6	Width of Travel Lanes (Ft.)	10	11	12	10 to 12	10 to 12	12
7	Width of Parking Lanes (Where Used) (Ft.)	N/A	N/A	N/A	8 to 10	8 to 10	8 to 10
8	Width of Shoulders (Where Used) (Ft.)						
	(A) Outside	2(Min.)-4(Typ.)	6(Min.)-8(Desi.)	8(Min.)-10(Desi.)	6(Min.)-8(Desi.)	8(Min.)-10(Desi.)	8(Min.)-10(Desi.)
	(B) Median	N/A	N/A	4	N/A	N/A	4
9	Type of Shoulders	Aggregate	Aggregate-Paved(Desi.)	Paved	Paved	Paved	Paved
10	Width of Median (Ft.)						
	(A) Depressed	N/A	N/A	40(Min)-50(Desi)	N/A	N/A	N/A
	(B) Raised	N/A	N/A	N/A	4(Min)-30(Desi.)	4(Min)-30(Desi.)	4(Min)-30(Desi.)
	(C) Two Way Left Turn Lanes	N/A	N/A	N/A	11(Min)-14(Typ)	11(Min)-14(Typ)	11(Min)-14(Typ)
11	Width of Sidewalk (Where Used) (Offset From Curb)(Ft.)	N/A	N/A	N/A	4	4	4
	Width of Sidewalk (Where Used) (Adjacent To Curb)(Ft.)	N/A	N/A	N/A	6	6	6
12	Fore Slope - Ratio	3d	4d	6d	3d(Min)-4d(Desi)	3d(Min)-4d(Desi)	3d(Min)-4d(Desi)
13	Back Slope - Ratio	3d	4d	4d	2d(Min)-3d(Desi)	2d(Min)-3d(Desi)	3d
14	Pavement Cross Slope (Ft. per Ft.)⑦	0.025	0.025	0.025	0.025	0.025	0.025
15	Stopping Sight Distance (Ft.) ④	275-325	400-475	525-650	200	275-325	325-400
16	Maximum Superelevation (Ft. per Ft.)	0.10	0.10	0.10	0.04	0.04	0.04
17	Maximum Horiz. Curvature (R/out Superelevation)(+-.025)	N/A	N/A	N/A	23'00"	10'00"	N/A
	Maximum Horiz. Curvature (R/out Superelevation)(+-.025)	N/A	N/A	N/A	18'00"	8'00"	N/A
18	Maximum Horizontal Curvature (With Superelevation)	13'00"	8'00"	5'00"	24'00"	8'00"	7'30"
19	Maximum Grade (%)	7	6	5	9	9	8
20	Minimum Vertical Clearance (Ft.)	15	15	15	18	15	15
21	Minimum Horizontal Clearance (Ft.)						
	(A) Outside (From Back of Curb)	N/A	N/A	N/A	1(Min.)-6(Typ.)	1(Min.)-6(Typ.)	6(Min.)-15(Desi.)
	(B) Median (From Back of Curb)	N/A	N/A	N/A	1(Min.)-6(Typ.)	1(Min.)-6(Typ.)	6(Min.)-15(Desi.)
22	Width of Right of Way (Minimum) (Ft.) ⑤,⑥						
	(A) From ℄	40	60	75	N/A	N/A	N/A
	(B) From Edge of Traveway	N/A	N/A	N/A	30(Min.)-8 (Desi.)	35(Min.)-10(Desi.)	8 (Min.)-17(Desi.)
23	Bridge Design Load	HS-20	HS-20	HS-20	HS-20	HS-20	HS-20
24	Width of Bridges(Minimum)Face to Face Bridge Rail(Ft.)	28	Shldr. Width ⑦	Shldr. Width	Roadway Width Plus 2 ⑧	Roadway Width Plus 2 ⑧	Roadway Width Plus 2 ⑧
25	Guardrail Required at Bridge Ends	YES	YES	YES	YES	YES	YES

① For Rolling Terrain, Limited Passing Sight Distance and High Percentage Trucks, 4 Lanes May Be Required When DHV is Above 700.

④ 2): Acceptable For Rehabilitation Projects.

⑤ Minimum Values Shown Permissible For Rehabilitation Projects.
Maximum Values Shown To Be Used Where Conditions Permit.

⑥ Minimum Required For New Location and As Needed For Existing Alignment.

⑥ Obtain Additional Right of Way For Future Lanes Where Justified.

⑥ For Approach Roadways Without Curb Use Shoulder Width. In Special Cases 4' Sidewalks On One or Both Sides Of The Bridge May Be Required.

⑦ 30' Minimum Width is Allowable With Aggregate Shoulders.
38' Required For Paved Shoulders.

Sheet 3 of 4

Date	Description	By
	Revisions	

DESIGN STANDARDS

Approved [signature] Chief - Engineer 4-28-86 Date

Figure 1-33 Design Standards for Collector Roads and Streets.

FORM 1088
Rev. 9/4/63

STRUCTURE REPORT FORM

FILL THIS OUT FOR EVERY STRUCTURE INCLUDING PIPES

ROUTE La. US. 71 PROJECT 9-01-30 PARISH Rapides

HIGHWAY FROM Alexandria TO Colfax

STATION OF STRUCTURE 227 + 39

DRAINAGE AREA 249 Acs. INVERT ELEV. 85.53 HIGH WATER 94.34

TYPE OF STRUCTURE REMOMMENDED To be determined in office SIZE

SIZE AND LENGTH OF OLD STRUCTURE 4.5'X5'x 36' Conc. Box Culvert DISTANCE RT. C.L. 23.5'

DISTANCE LT. C.L. 12.5'

CONDITION OF OLD STRUCTURE? GOOD POOR

ON OLD BRIDGES GIVE ROADWAY WIDTH

GIVE ANGLES BETWEEN C.L. OF STREAM AND FORWARD

TANGENT

DOES SURVEY PARALLEL EXISTING RAILROAD OR HIGHWAY? No.

IF SO, SUPPLY FOLLOWING DATA FOR EXISTING R.R. OR HIGHWAY STRUCTURE

ELEVATION OF GRADE OPPOSITE RECOMMENDED STRUCTURE

TYPE OF OLD STRUCTURE UNDER R.R. OR OLD HIGHWAY

AREA OF OLD STRUCTURE UNDER R.R. OR OLD HIGHWAY

ELEVATION OF OLD STRUCTURE CLEARANCE (Low steel or concrete, bottom of stringer)

INVERT ELEVATION OF OLD STRUCTURE

REMARKS

IF EXISTING HIGHWAY STRUCTURE IS OTHER THAN CULVERT OR PIPE GIVE SKETCHES SHOWING ELEVATIONS AND ROADWAY. (This would include a profile view giving size of opening)

ALL ABOVE DATA MUST BE GIVEN

Give any additional information on reverse side

(Sign) _____

PARTY CHIEF

Figure 1-34 Structure Report Forms

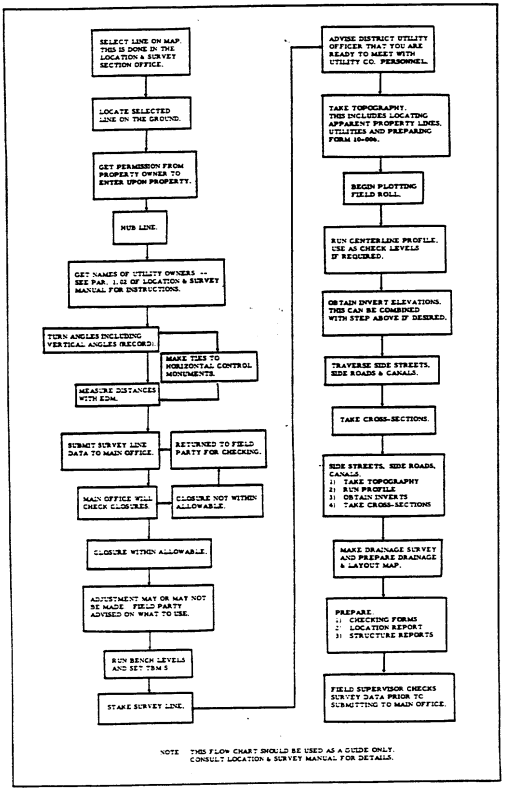


Figure 1-35: Location and apparent property line survey flow chart

FORM 10-006 8/71

Sheet No. 1 of 3 Sheets

DATE 10-28-80

MASTER POLE LIST

UTILITY LOCATION (POLE) ~~UNDERGROUND~~

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO. (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER POWER, TELEPHONE, TV CABLE

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FACILITY INSTALLED	STATION ON PROJECT SURVEY LINE	RT. OR LT. EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY SIDE OF FAC'L TY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	REMARKS
	POLES ALONG LA. 99 - STA. 50+00 ℄ LA. 99 = STA. 100+00							
	℄ LA. 100 SURVEY - STATIONING W. TO E. ALONG LA. 99							
	41+10	LT.		27.9'	28.8'	34.1'	28.8' LT.	
	44+00	LT.		27.6'	29.1'	34.6'	29.1' LT.	
	46+98	LT.		27.1'	28.8	34.2'	28.8' LT.	
	49+62	LT.		32.8'	27.9'		27.9' LT.	
	(SAME POLE)	LT.		33.1'	38.0'		38.0' LT.	MEAS. FROM ℄ LA. 100 STA. 100+28
	52+99	LT.		31.2'	30.7'		30.7' LT.	
	56+02	LT.		31.4'	35.8'		35.8' LT.	
	59+04	LT.		31.2'	36.2'		36.2' LT.	
	POLES ALONG EXISTING LA. 100 AND PROJECT SURVEY LINE (℄)							
	103+18	LT.		38.1'	36.4'	40.7'	36.4' LT.	
	105+98	LT.	30.4'		36.2'	40.5'	36.2' LT.	
	109+00	LT.	30.5'		36.6'	40.9'	36.6' LT.	
	111+96	LT.	29.9'		35.2'	41.2'	35.2' LT.	
	114+78	LT.	30.1'		35.8'	41.4'	5.6' LT.	
	117+92	LT.		34.0'	36.0'	40.8'	28.2' RT.	
	120+96	LT.		33.8'	35.6'		66.6' RT.	
	(SAME POLE)	LT.		28.2'	28.2'		28.2' LT.	MEAS. FROM ℄ PH. RD. STA. 50+66

Figure 1-36 Utility Form No. 10-006 (Master Pole List)

FORM 10-006 (7-71)

Sheet No. 2 of 3 Sheets

DATE 10-28-80

MASTER POLE LIST

UTILITY LOCATION (POLE) ~~UNDERGROUND~~

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO. (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER POWER, TELEPHONE, TV CABLE

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FACILITY INSTALLED	STATION ON PROJECT SURVEY LINE	RT. OR LT. EXIST. RTD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY SIDE OF FACILITY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	REMARKS
	POLES ALONG EXIST. LA. 100 AND PROJECT ℄ (CONT.)							
	123+92	LT.		34.8'	36.8'		102.4' RT.	
	127+00	LT.		34.9'	36.4'		104.6' RT.	
	130+01	LT.		35.3'	36.8'		103.2' RT.	
	132+98	LT.		35.7'	37.1'		101.6' RT.	
	136+04	LT.		35.6'	37.2'		85.6' RT.	
	139+02	LT.		35.2'	36.9'		48.2' RT.	
	141+99	LT.		36.4'	37.4'		16.7' LT.	
	144+96	LT.	33.6'		37.1'		34.2' LT.	
	148+66	LT.	33.6'		38.6'		38.6' LT.	
	(SAME POLE)	RT.	28.4'		45.0'		45.0' RT.	MEAS. FROM ℄ LA. 101 STA. 49+61
	POLES ALONG EXIST. LA. 101 - STA. 149+11.5 ℄ LA. 100 SURVEY = STA. 50+00 ℄ LA. 101 — STATIONING W. TO E. ALONG LA. 101.							
	39+99	RT.		28.7'	30.5'		30.5' RT.	
	42+97	RT.		28.6'	30.3'		30.3' RT.	
	46+00	RT.	28.2'		31.2'		31.2' RT.	
	51+94	RT.	28.4'		31.3'	32.7'	31.3' RT.	
	54+98	RT.		30.4'	31.4'	32.6'	31.4' RT.	
	58+00	RT.		30.1'	31.1'	32.4'	31.1' RT.	

Figure 1-37 Utility Form No. 10-006 (Master Pole List)

FORM 10-006 8/71

Sheet No. 3 of 3 Sheets

DATE 10-28-80

MASTER POLE LIST

UTILITY LOCATION (POLE) ~~UNDERGROUND~~

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO. (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER Power, TELEPHONE, TV CABLE

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FACILITY INSTLD	STATION ON PROJECT SURVEY LINE	RT. OR LT. EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY SIDE OF FACILTY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	REMARKS
	POLES ALONG PARISH ROAD - STA. 120+61							LA. 100 ℄ = STA.
	50+00 ℄ PARISH RD. - STATIONING W. TOE. ALONG							PARISH RD.
	39+30	LT.		26.8'	27.9'		27.9' LT.	
	41+98	LT.		25.9'	27.5'		27.5' LT.	
	44+97	LT.		26.1'	27.6'		27.6' LT.	
	48+04	LT.		26.3'	28.2'		28.2' LT.	
	53+95	LT.		26.4'	27.9'	30.3'	27.9' LT.	POLE W/ DOWN GUY & ANCHOR
	57+04	RT.		26.1'	27.8'		27.8' RT.	POLE W/ DOWN GUY & ANCHOR

NOTE: DIMENSIONS WILL CHANGE WHEN RDWY. ℄ IS NOT ℄.

NOTE: TOP OF DITCH BACKSLOPE IN DITCH SECTION

NOTE: TOE OF FORESLOPE IN FILL SECTION. SHOW APPLICABLE DIMENSION ONLY.

Figure 1-38 Utility Form No. 10-006 (Master Pole List)

FORM 10-006 8/71

Sheet No. 1 of 2 Sheets

DATE 10-28-80

UTILITY LOCATION ~~FROM~~ (UNDERGROUND)

STATE PROJECT NO 1-01-15 F. A. PROJECT NO (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER E. B. R. PARISH (WATER/GAS) DISTRICT

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FAC'LTY INST'LD	STATION ON PROJECT SURVEY LINE	RT. OR LT. EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY SIDE OF FAC'LTY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	WATER/ GAS METER	ELEV.	REMARKS
	6" C.I. WATER LINE ALONG LA. 99 - STA. 50+00 ℄ LA. 99 = STA.									
	100+00 ℄ LA. 100 ℄. STATIONING W. TO E. ALONG LA. 99									
	50+38	LT.		31.8'	34.0'		34.0' LT.		BEG. 6" C.I. W.L., LA. 99 35.05	
	55+00	LT.		31.3'	34.1'		34.1' LT.		34.68'	6" W.L.
	58+50	LT.		31.1'	34.2'		34.2' LT.		33.94'	"
	58+50	RT.		32.6'	38.4'		38.4' RT.	38.4'		W.M.
	60+00	LT.		31.4'	33.8'		33.8'	37.2'	32.91'	6" W.L.
	6" C.I. WATER LINE ALONG LA. 100 AND PROJECT ℄									
	100+34 LA. 100 = 50+38 LA. 99	RT.		34.8'	38.0'		38.0' RT.		35.05'	6" W.L.
	102+00	RT.		35.1'	38.4'		38.4' RT.	40.5'	35.24'	"
	102+90	LT.		35.1'	41.0'		41.0' LT.	41.0'		W.M.
	104+00	RT.		34.9'	38.3'		38.3' RT.		35.61'	6" W.L.
	106+08	RT.	30.5'		38.3'		38.3' RT.	41.0'	36.12'	"
	107+24	LT.	30.6'		40.9'		40.9' LT.	40.9'		W.M.
	109+60	RT.	30.5'		38.2'		38.2' RT.	42.0'	37.54'	6" W.L.
	112+14	RT.	29.9'		37.4'		38.2' RT.	41.5'	37.62'	"
	112+80	LT.	29.9'		41.0'		40.1' LT.	40.1'		W.M.
	115+15	RT.	30.1'		33.2'		62.8' RT.	70.8'	38.24'	6" W.L.
	117+00	RT.		34.4'	32.1'		84.8' RT.		38.46'	"

Figure 1-39 Utility Form No. 10-006 (Underground)

FORM 10-006 6/71.

Sheet No. 2 of 2 Sheets

DATE 10-28-80

UTILITY LOCATION ~~TRACE~~ (UNDERGROUND)

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO. (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER E.B.R. PARISH (WATER/GAS) DISTRICT

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FAC'LTY INST'LD	STATION ON PROJECT SURVEY LINE	RT. OR LT. EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY. SIDE OF FAC'LTY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	WATER/ GAS METER	ELEV.	REMARKS
	6" C.I. WATER LINE ALONG LA. 100 AND PROJECT ℄ (CONT.)									
	119+50	RT.		34.6'	40.6'		124.6' RT.	FIRE HYDRANT		
	120+13	RT.		34.5'	32.0'		122.2' RT.	6" W.L. TURNS W., XING. LA. 100	38.82'	
	6" C.I. WATER LINE ALONG PARISH RD. - STA. 50+00 ℄ PH. RD. = STA.									
	120+61 LA. 100 ℄. STATIONING W. TO E. ALONG PH. RD.									
	40+92	LT.		31.4'	39.1'		39.1' LT.	39.1'		
	41+00	RT.		29.8'	34.3'	31.8'	34.5' RT.		36.22'	6" W.L.
	44+20	RT.		29.7'	34.4'	31.6'	34.4' RT.			"
	44+20	LT.		31.2'	38.2'		38.2' LT.	38.2'		
	45+62	RT.		28.6'	33.2'	31.0'	33.2' RT.	39.1'	37.96'	6" W.L.
	51+22 ℄ PH. RD. = 120+13 ℄ LA. 100	RT.		27.9'	31.0'		31.0' RT.		38.82'	6" W.L. TURNS S.
	NOTE: 1. ON GAS FACILITIES GIVE SEPARATE TIES FOR METERS, REGULATORS, ETC. 2. ON LARGE SIZE WATER AND GAS MAINS, ALSO GIVE TIES FOR MAIN LINE VALVES AND VALVE BOXES.									

SHOW APPLICABLE DIMENSION ONLY, NOT BOTH (TOP OF DITCH BACKSLOPE OR TOE OF FILL).

Figure 1-40 Utility Form No. 10-006 (Underground)

SHEET ___ OF ___

BENCH MARK TABULATION

STATE PROJECT NO. _____ _____ PARISH

BM to BM	AMOUNT OF MISCLOSURE	APPROXIMATE DISTANCE ALONG LINE OF LEVELS IN MILES (ONE DIRECTION)	ALLOWABLE MISCLOSURE ($\sqrt{M} \times .038'$)	REMARKS
W-237 – W-239	–.016	1.2 Miles	.038	1970 USC&GS ADJUSTMENT WAS USED
W239 – X-240	.021	2.1 Miles	.051	"
X-240 – Y-243	.026	2.8 Miles	.059	"
Y-243 – Y-243	–.031	1.6 Miles	.044	RAN FROM Y-243 TO END OF JOB, THEN BACK TO Y-243

Figure 1-41 Bench Mark Tabulation

SHEET ___ OF ___

TEMPORARY BENCH MARK TABULATION

*(DATA OBTAINED BETWEEN FORWARD RUN AND PROFILE OR BETWEEN FORWARD RUN AND BACKWARD RUN)

STATE PROJECT NO. _____ _____ PARISH

BM to BM	*AMOUNT OF MISCLOSURE	APPROXIMATE DISTANCE ALONG LINE OF LEVELS IN MILES (ONE DIRECTION)	ALLOWABLE MISCLOSURE ($\sqrt{M} \times .035'$)	REMARKS
W-237 – T.B.M. #1	–.004	.208 Miles	.016	1970 U.S.C.&G.S. ADJUSTMENT WAS USED
T.B.M. #1 – T.B.M. #2	–.010	.197 Miles	.016	
T.B.M. #2 – T.B.M. #3	.007	.096 Miles	.011	
T.B.M. #3 – T.B.M. #4	–.009	.180 Miles	.015	
T.B.M. #4 – T.B.M. #5	.006	.207 Miles	.016	
T.B.M. #5 – T.B.M. #6	–.003	.184 Miles	.015	
T.B.M. #6 – W-239	–.003	.128 Miles	.013	1970 U.S.C.&G.S. ADJUSTMENT WAS USED

Figure 1-42 Tempofary Bench Mark Tabulation

NAME OF SURVEY

SURVEY COMPUTATIONS

Sample Survey Line Computations

SHEET OF SHEETS

SURVEY BY

DATE

BOOK	PAGE	POINT & STATION	BEARING AND FUNCTION	DISTANCE	LATITUDE (COS.) NORTH +	LATITUDE (COS.) SOUTH −	DEPARTURE (SIN.) EAST +	DEPARTURE (SIN.) WEST −	DMD	DOUBLE AREAS	CO-ORDINATES NORTH (y)	CO-ORDINATES EAST (x)
		Mead to 01	COS .984 019 73 N10°15'24.30"E SIN .178 059 47	8240.045	8108.367		1467.218					
		01 to 02	COS .993 727 46 N6°25'14.75"W SIN .111 829 07	12,842.126	12,761.573	Step ①		1436.123				
		02 to Buford	COS .950 232 03 N18°09'08.09"E SIN .311 543 06	9569.856	9093.584		2981.422					
			COS.	30652.027	29963.524 − 0.000	0.000	4448.640 −1436.123	1436.123				
			SIN.		29,963.524		3012.517					
			COS.		Step ②			Step ③				
			SIN.		Given: Beginning Coordinates		x = 2,037,567.48 + 3012.52			y = 142,492.72 29,963.52		
			COS.		Cal.: Ending Coordinates Given: Ending Coordinates		x = 2,040,580.00 x = 2,040,579.41		Error in Departure	y = 172,456.24 y = 172,456.42		Error in Latitude
			SIN.				0.59			0.18		
			COS.		1/49,679 is less than 1/10,000					$\sqrt{.59^2 + .18^2}$ = .617 = Linear Error of Closure		
			SIN.		∴ Proceed to Figure 1-44					.617 / 30652.027 = 1/49,679 = Precision		
			COS.		Step ④							
			SIN.									

Figure 1-43 Sample Survey Line Computations

NAME OF SURVEY: Sample Survey Line Computations

SURVEY COMPUTATIONS

SHEET OF SHEETS

SURVEY BY

DATE

BOOK	PAGE	POINT & STATION	BEARING AND FUNCTION	DISTANCE	LATITUDE (COS.) NORTH +	LATITUDE (COS.) SOUTH −	DEPARTURE (SIN.) EAST +	DEPARTURE (SIN.) WEST −	DMD	DOUBLE AREAS	CO-ORDINATES NORTH	CO-ORDINATES EAST
		Mead to 01	COS .984 019 73 N10°15'20.17"E ~~N10°15'24.80"E~~	8240.064 ~~8240.045~~	8108.415 ~~8108.367~~ + .048		1467.059 ~~1467.218~~ − .159		Given:	Begin Coord Mead	142,492.72	2,037,567.48
											+8108.41	+1467.06
			SIN .178 059 47							01	150,601.13	2,039,034.54
		01 to 02	COS .993 727 46 N6°25'18.56"W ~~N6°25'14.75"W~~	12,842.228 ~~12,842.126~~	12,761.648 ~~12,761.573~~ + .075			1436.370 ~~1436.123~~ + .247			+12,761.65	−1436.37
			SIN .111 829 07							02	163,362.78	2,037,998.17
		02 to Buford	COS .950 232 03 N18°09'03.34"E ~~N18°09'00.09"E~~	9569.852 ~~9569.856~~	9093.640 ~~9093.884~~ + .056		2981.238 ~~2981.422~~ − .184				+9093.64	+2981.24
			SIN .311 543 06							Buford Col.: Ending Coord.	172,456.42	2,040,979.41
			COS	30,652.027	29963.524 − 0.000	0.000	4448.640 −1436.123	1436.123	Given:	Ending Coord.	172,456.42	2,040,979.41
					29963.524		3012.517					
			SIN									
			COS									
			SIN									
			COS									
			SIN									
			COS									
			SIN									

Traverse Adjustment By Compass Rule

3rd Step

Using the adjusted Latitudes and Departures Compute the adjusted distances & adjusted bearings.

Error in Latitude

1st Step

.18 / 30,652.027	= Adj. / 8240.045
Adj =	+.048
.18 / 30652.027	= Adj. / 12,842.126
Adj.	+.075
.18 / 30652.027	= Adj. / 9569.856
Adj =	+.056

Error in Departure

1st Step

.59 / 30,652.027	= Adj. / 8240.045
Adj =	−.159
.59 / 30,652.027	= Adj. / 12,842.126
Adj. =	+.247
.59 / 30652.027	= Adj. / 9569.856
Adj. =	−.184

2nd Step

After the adjustments have been applied to the Latitudes & Departures as shown above, Compute the adjusted coordinates for each point on the traverse.

Figure 1-44 Sample Survey Line Computations

OFFICE OF HIGHWAYS
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
MINIMUM DESIGN STANDARDS FOR OVERLAY OR WIDENING AND OVERLAY OF RURAL HIGHWAYS AND ROADS

ITEM NO.	ITEMS	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	CLASS 7	CLASS 8
1	CURRENT AVERAGE DAILY TRAFFIC	OVER 12000	12000 - 3000	3000 - 1500	1500 - 750	750 - 400	400 - 250	250 - 50	50 or LESS
2	NUMBER OF TRAFFIC LANES	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
3	WIDTH OF EACH LANE	11'	11'	11'	10'	10'	10'	9'	9'
4	WIDTH OF SHOULDERS	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
5	TYPE OF SHOULDERS'	AGGREGATE (3)	AGGREGATE (3)	AGGREGATE (4)	AGGREGATE	AGGREGATE	AGGREGATE	AGGREGATE	(1)
6	MINIMUM WIDTH OF BRIDGES (8) (MEASURED FROM FACE TO FACE OF BRIDGE RAIL	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
7	PAVEMENT CROSS SLOPE (%)	2.0 To 2.5	2.0 To 2.5	2.0 To 2.5	2.0 To 2.5	2.0 To 2.5	2.0 To 2.5	2.0 To 2.5	2.0 To 2.5
8	WIDENING IN CURVES								
	FOR CURVATURE EXCEEDING	4°	4°	5° 30'	5° 30'	8° 30'			
	LANE WIDTH IN CURVES	12'	12'	12'	12'	11' (7)			
9	OTHER ITEMS (8)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

(1) EXISTING
(2) AS NECESSARY TO MAINTAIN THE EXISTING CROWN
(3) STABILIZED AND SURFACED DESIRABLE
(4) STABILIZED AND SURFACED DESIRABLE FOR ADT GREATER THAN 2000
(5) MINIMUM OF WIDTH OF ROADWAY
(6) IF NEW BRIDGE IS BUILT, STANDARDS FOR NEW CONSTRUCTION OR MAJOR RECONSTRUCTION SHALL BE USED
(7) 12' DESIRABLE
(8) INCLUDES: SIDE SLOPES, DESIGN SPEED, STOPPING SIGHT DISTANCE, CONTROLLING CURVATURE, CONTROLLING GRADE, ETC.

ADOPTED Dempsey D. White
DEMPSEY D. WHITE
CHIEF ENGINEER
JULY 6, 1982

SCHEDULE OF REVISIONS

REVISION	APPROVED	DATE

Figure 1-45 Minimum Design Standards for Overlay or Widening and Overlay of Rural Highways and Roads.

FORM 10-006 6/71

Sheet No. 1 of 2 Sheets

DATE 10-28-80

UTILITY LOCATION ~~[illegible]~~ (UNDERGROUND)

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO. (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER EVANGELINE PIPE LINE CO.

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FAC'LTY INST'LD	STATION ON PROJECT SURVEY LINE	RT. OR LT. EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: ~~TOE OF SLOPE~~ END CSG.	BACK OF DITCH	RDWY SIDE OF FAC'LTY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	ELEV. TOP PIPE	REMARKS
	132+50	LT.		35.6'	250.0'		102.0' LT.	34.81'	
	132+50	LT.		35.6'	200.0'		52.0' LT.	34.72'	
	132+50	LT.		35.6'	150.0'		2.0' LT.	34.60'	
	132+50	LT.		35.6'	100.0'		48.0' RT.	34.52'	
	132+50	LT.		35.6'	50.0'		98.0' RT.	34.40'	
	132+50	LT.	40.0'	35.6'			108.0' RT.	34.40'	VENT @ 48.0' LT.
	132+50	LT.		35.6'	25.0'		123.0' RT.	34.29'	
	132+50	RT.		36.2'	25.0'	45.0'	173.0' RT.	34.11'	
	132+50	RT.	40.0'	36.2'		45.0'	188.0' RT.	34.04'	VENT @ 45.0' RT.
	132+50	RT.		36.2'	75.0'	45.0'	223.0' RT.	33.88'	

20" HIGH PRESSURE GAS PIPELINE CROSSING SURVEYED LINE AT STA. 132+50 AT AN ANGLE OF 72°-18' LEFT, AND EXISTING ℄ AT STA. 132+05 AT AN ANGLE OF 71°-50' LEFT, ENCASED IN 80.0' OF 24" CASING. ALL MEASUREMENTS ARE ALONG PIPELINE. SURVEYED LINE LOCATED 141.0' LEFT OF EXISTING ℄ (148.0' LEFT ALONG PIPELINE).

SEE SKETCH, SHEET NO. 2 OF 2.

Figure 1-46 Utility Form No. 10-006 (Underground)

FORM 11-1006 8/7

Sheet No. 2 of 2 Sheets

DATE 10-28-80

UTILITY LOCATION ~~[illegible]~~ (UNDERGROUND)

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO. (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER EVANGELINE PIPE LINE CO.

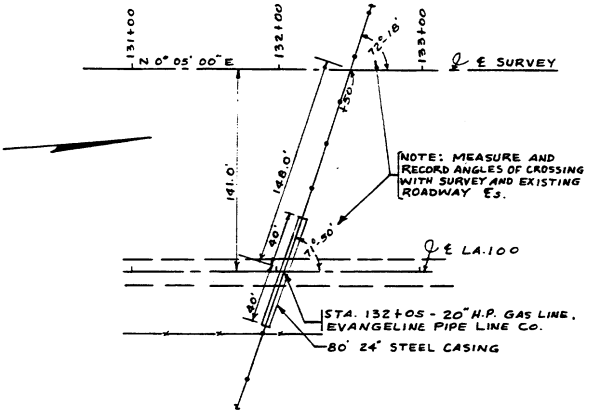


Figure 1-47 Utility Sketch (Pipe Line)

FORM 10-006 8/77

Sheet No. 1 of 1 Sheets

DATE 10-28-80

UTILITY LOCATION ~~POLES~~ (UNDERGROUND)

BURIED CABLE

STATE PROJECT NO. 1-01-15 F. A. PROJECT NO (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER SOUTH CENTRAL BELL TEL. CO.

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE FAC'LTY INST'LD	STATION ON PROJECT SURVEY LINE	RT. OR L.T. EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY SIDE OF FAC'LTY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	TEL. PED.	REMARKS
	BURIED TEL. CABLE ALONG LA. 100 AND PROJECT ℄								
	147+73	LT.	33.6'		48.0'		48.0' LT.		2-50 PR. BUR. CABLES AT MH.
	148+66	LT.	33.6'		40.0'		40.0' LT.		END 1-50 PR. CABLE AT POLE
	149+11.5	LT.			40.0'		40.0' LT.		50 PR. CA. CROSSES LA. 101 ℄
	149+50	LT.	33.8'		40.0'		40.0' LT.		END 50 PR. CABLE AT PEDESTAL
	BURIED TEL. CABLE ALONG LA. 101 - STA. 50+00 ℄ LA. 101 =								
	STA. 149+11.5 ℄ LA 100 SURVEY. STATIONING W. TO E. ALONG LA. 101								
	40+50	LT.		31.2'	32.0'		32.0' LT.		25 PR. BUR. CABLE
	42+25	LT.		31.4'	32.6'		32.6' LT.		"
	44+50	LT.		31.6'	33.1'		33.1' LT.		"
	48+75	LT.	30.4'		33.2'		33.2' LT.		"
	49+60	LT.	29.8'		33.2'		33.2' LT.	38.2'	" TEL. PED.
	49+60	RT.	28.4'		45.0'		45.0' RT.		50 PR. BUR. CA. XING LA. 101
	52+25	LT.	30.8'		34.2'		34.2' LT.	38.4'	25 PR. BUR., TEL. PED.
	55+00	LT.		33.2'	34.1'		34.1' LT.		25 PR. BUR. CA.
	58+00	LT.		32.8'	33.9'		33.9' LT.		"
	59+75	LT.		32.6'	33.8'		33.8' LT.		25 PR. BUR. CA.

Figure 1-48 Utility Form No. 10-006 (Buried Cable)

FORM 10-006 6-77

Sheet No. 1 of 1 Sheets

DATE 10-28-80

UTILITY LOCATION ~~(POLE)~~ (UNDERGROUND)

CONDUIT AND MANHOLES

STATE PROJECT NO 1-01-15 F. A. PROJECT NO (IF APPLICABLE)

HIGHWAY JCT. LA. 99 - JCT. LA. 101 HWY. STATE ROUTE NO. LA. 100

PARISH EAST BATON ROUGE OWNER SOUTH CENTRAL BELL TEL. CO.

NOTE: ALL DISTANCES ARE FROM CENTER LINE OF THE EXISTING ROAD UNLESS OTHERWISE NOTED

DATE PROJECT NOTED	STATION ON PROJECT SURVEY LINE	RT. OR LT. FROM EXIST. RD.	DISTANCE FROM CENTER LINE OF EXISTING ROAD TO: TOE OF SLOPE	BACK OF DITCH	RDWY SIDE OF FAC'L TY	FENCE	DIST. FROM & SIDE OF SURVEY LINE	ELEV. DUCT TOP	ELEV. MH ROOF	REMARKS
								28		6-4" TEL. DUCT
								000		
								000	18"	
										S.C.B. CONDUIT
	139+50	RT.		35.4'	100.0'	36.0'	164.0' RT.	36.00'		AT SUBSTATION
	139+50	RT.		35.4'	36.0'	36.0'	100.0' RT.	36.00'	38.00'	M/H
	141+00	RT.		35.2'	41.6'	36.0'	90.0' RT.	36.10'		
	145+00	RT.	33.6'		60.5'	41.5'	60.5' RT.	36.15'		
										M/H, END
	147+70	RT.	33.7'		60.5'	44.6'	60.5' RT.	36.20'	38.25'	6-DUCT SYSTEM
								00	2-4" TEL. DUCT.	
										M/H, BEG.
	147+70	RT.	33.7'		60.5'	44.6'	60.5' RT.	36.23'	38.25'	2-DUCT SYSTEM
										M/H, END
	147+70	LT.	33.6'		48.0'		48.0' LT.	36.25'	38.27'	2-DUCT SYSTEM
								BEG. 2-50 PR. BUR. CA.		
	147+73	LT.	33.6'		48.0'		48.0' LT.	AT MH. SEE BUR. CA. LIST.		

NOTE:
DIMENSIONS WILL CHANGE WHEN RDWY. ℄ IS NOT ℄.

NOTE:
SHOW APPLICABLE DIMENSION ONLY, NOT BOTH (TOP OF DITCH BACKSLOPE OR TOE OF FILL)

Figure 1-49 Utility Form No. 10-006 (Conduit and Manholes)

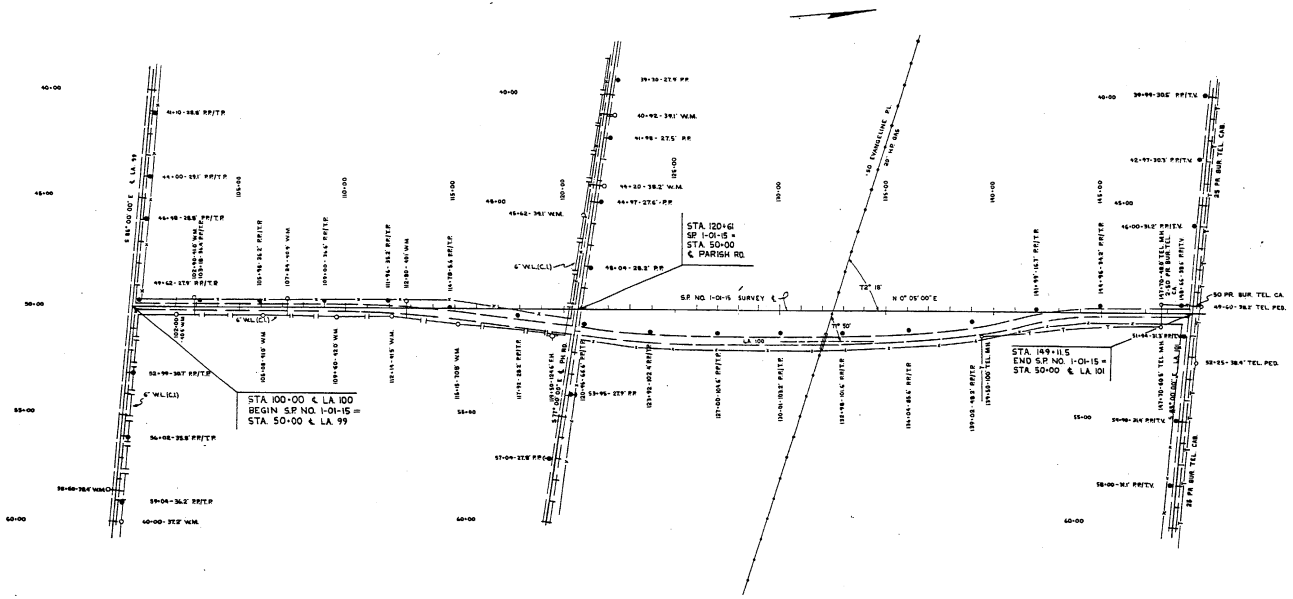

STA. 100+00 ℄ LA. 100
BEGIN S.P. NO. 1-01-15 =
STA. 50+00 ℄ LA. 99
STA. 120+61
S.P. 1-01-15 =
STA. 50+00
℄ PARISH RD.
STA. 149+11.5
END S.P. NO. 1-01-15 =
STA. 50+00 ℄ LA. 101
S.P. NO. 1-01-15 SURVEY ℄
N 0° 05' 00" E
LA. 100
50 PR. BUR. TEL. CA.
25 PR. BUR. TEL. CAB.
6" W.L.(C.I.)
50 EVANGELINE PL.
20' HP. OAK

FIGURE 1-50

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DESIGN STANDARDS FOR LOCAL ROADS AND STREETS

ITEM No.	ITEM	RURAL			URBAN	
		RL-1	RL-2	RL-3	UL-1	UL-2
1	Current Average Daily Traffic	0-250	250-400	Over 400	N/A	N/A
2	Design Hourly Volume	N/A	N/A	Over 100	N/A	N/A
3	Design Speed (M.P.H.)	30	40	50	20	30
4	Level of Service	D	D	D	D	D
5	Number of Travel Lanes	2	2	2	2	2
6	Width of Travel Lanes	9	10	11 ①	9 to 12	9 to 12
7	Width of Parking Lanes (Where Used)	N/A	N/A	N/A	7 to 9	7 to 9
8	Width of Shoulders (Where Used)	2	2	4 to 8	N/A	N/A
9	Type of Shoulders	Aggregate	Aggregate	Aggregate ②	N/A	N/A
10	Width of Sidewalk (Where Used)(Offset From Curb)	N/A	N/A	N/A	4	4
	Width of Sidewalk (Where Used)(Adjacent To Curb)	N/A	N/A	N/A	6	6
11	Fore Slope - Ratio					
	(A) Cut	2:1	3:1	3:1	3:1	3:1
	(B) Fill	2:1	3:1	3:1	3:1	3:1
12	Back Slope - Ratio	2:1	2:1	3:1	2:1	2:1
13	Pavement Cross Slope (ft. per ft.) ③	0.025	0.025	0.025	0.025	0.025
14	Stopping Sight Distance	200	275-325 ④	400-475 ④	125	200
15	Maximum Superelevation (ft. per ft.)	0.10	0.10	0.10	0.04	0.04
16	Maximum Horiz. Curvature (Without Superelevation) (+.025)	N/A	N/A	N/A	69°00	23°00
	Maximum Horiz. Curvature (With Superelevation) (-.025)	N/A	N/A	N/A	59°00	18°00
17	Maximum Horizontal Curvature (With Superelevation)	24°00	13°00	8°00	73°00	24°00
18	Maximum Grade (%)	9	9	8	10	9
19	Minimum Vertical Clearance	15	15	15	15	15
20	Minimum Horizontal Clearance (From Back of Curb)	N/A	N/A	N/A	1'(Min.)-6'(Typ.)	1'(Min.)-6'(Typ.)
21	Bridge Design Load	HS-20	HS-20	HS-20	HS-20	HS-20
22	Width of Bridges (Minimum) (Face to Face Bridge Rail)	24	28	Short Width	Roadway Width Plus 2' ⑤	Roadway Width Plus 2' ⑤
23	Guardrail Required at Bridge Ends	Yes	Yes	Yes	Yes	Yes

① 12' Lanes Required For DHV Over 200.

② Paved Shoulders Required For DHV Over 200.

③ 2% Permissible On Rehabilitation Projects.

④ Minimum Values Shown Permissible For Rehabilitation Projects. Maximum Values Shown To Be Used Where Conditions Permit.

⑤ For Approach Roadways Without Curb Use Shoulder Width. In Special Cases 4' Sidewalks On One or Both Sides Of The Bridge May Be Required.

Sheet 4 of 4

Date	Description	By
	Revisions	

DESIGN STANDARDS

Approved [signature] - 4-28-86
Chief Engineer Date

Figure 1-51 Design Standards for Local Roads and Streets.

CHAPTER II
PROPERTY SURVEY

2.01 GENERAL

This chapter will be devoted to the discussion very generally of the method used by the Location and Survey Section in making property surveys and determining existing right-of-way.

An attempt will be made not to go into the details of how to survey. It is assumed and expected that a person doing this type survey work already knows how to set up a transit, turn angles, chain, etc.

Property surveys are generally required on those highway projects that involve small ownerships, subdivided property, or other property which commands a high market value.

Apparent property line surveys are to be used only for showing locations of property lines determined as part of the Location Survey. (See Section 1.09)

Right of Way property maps will not be made based on apparent property lines unless authorized in writing by the Location and Survey Engineer.

2.02 ASSEMBLE DATA

The surveyor must assemble all data that might possibly help him determine the correct position for each property line along the project. This data may consist of but not be limited to U.S. Government township plats, U.S. Government field notes, past highway department plans, individual private survey plats, subdivision maps, and title abstracts.

2.03 TITLE ABSTRACT

The abstract of title shall be such that a property survey and right-of-way map can be made properly. It will include the name of the present owner, the recordation data whereby the present owner acquired the property, a description of the property acquired, any maps of survey to which reference is made, and descriptions of sales out of the property. Descriptions of rights-of-ways or servitudes granted for pipe lines, power lines, etc. that will be involved with the project must also be obtained.

2.04 PROPERTY SURVEY

The property survey should usually be done immediately upon the completion of the location survey.

The Location and Survey Section's Party Chief, Project Engineer, or Consultant performing the property survey must submit a weekly survey status report (See Figure 3-23). This report will be handled the same as the report for a Location Survey described in 1.10.

All property owners should be asked to point out their version of where their property lines are located. The property owners should be asked about these property lines independently of each other. The information received in this manner may or may not be correct but in any event it gives the surveyor some basis to start his survey.

When the surveyor completes all survey work and determines that the position of a property line does not fit the location pointed out to him by the property owner, he should immediately be aware of the possibility of his location of this line being

contested. He must therefore be in a position to defend his placement of the line in question.

The surveyor in the field is to tie any and all evidence of property lines or property corners into the project survey line. He is to decide as to the most correct position of each property line. The surveyor in the field is in a better position to make this determination than the surveyor in the office. In rare instances it may be necessary to do more extensive title work before determining the correct position of a property line. When these conditions occur, then the surveyor in the office may make the decision as to location of the property line based on whatever field information and additional title information is furnished.

2.05 SURVEY REQUIREMENTS

See Paragraph 1.01, 1.03, 1.04, 1.05, 1.09, and 1.10.

2.06 DETERMINE EXISTING RIGHT-OF-WAY

The amount of existing right-of-way may be determined by any one of several different methods although it is most probable that a combination of all methods will be used.

The surveyor should first check with the Department's Real Estate Section to determine if posted right-of-way plans are available. These plans would indicate the amount of right-of-way acquired, from whom acquired and date acquired. This existing right-of-way will be shown in relation to the centerline of the construction project for which it was acquired. CAUTION - the surveyor must be positive he has done sufficient surveying to furnish the correct relationship between the existing right-of-way and the surveyed line for the current project. He must not automatically assume the centerline of the old construction project from which the existing right-of-way was acquired and the survey line for the current project to be in the same position.

There may be right-of-way deeds executed in favor of the Department of Transportation and Development for existing right-of-way which have not been posted. Copies of these deeds should also be available from the Department's Real Estate Section. If for some reason they are not available from this source, then they may be obtained from the Conveyance Office records of the parish in which the right-of-way is located.

In some areas the existing right of way is based on subdivision dedications. Under these conditions the surveyor must locate a sufficient number of lot corners of the subdivision to enable him to properly define the dedicated right of way.

The last method by which existing right of way may be determined is to use an average line established 1½ feet back of the back of the backslope of the roadway ditch or toe of the roadway fill. This method is to be used only if it has been proven that right of way has not been formally acquired in any other manner.

CHAPTER III
RIGHT OF WAY MAP

3.01 GENERAL

Some type of right of way map is required on most projects where additional right of way is required or where a project is to be constructed within the limits of the existing right of way. (See paragraph 3.03 and 3.04) Right of way maps shall be prepared according to generally accepted practice for making maps for right of way acquisition either through negotiation or expropriation. Sufficient data must be shown on the maps so that "metes and bounds" descriptions may be prepared for each parcel of right of way required. The maps must be signed by a Registered Land Surveyor.

When two consultant firms are on a project with one firm making the property survey and the other firm preparing the R/W map, each will have their Registered Land Surveyor sign and seal the maps. Should it become necessary to go to court on these maps, one consultant will testify as to the accuracy of the survey and the other as to the accuracy of the computations and drawing of the final map.

3.02 CONSULTANT ENGINEERS SERVICE

The Consulting Engineer will request appropriate sample right of way maps from the Department's Location and Survey Engineer before starting any right of way surveying or right of way map preparation. (See figures 3-1 through 3-20 inclusive) Survey requirements for right of way surveys will be those given in paragraphs 1.01, 1.03, 1.04, 1.05, 1.09, and 1.10 which apply. When the right of way map is prepared by a consultant, it is checked by the Department at the preliminary and final stages. At the preliminary stage, the right of way map shall show all information that is required on the final map except the required right of way lines may be in pencil and need not be tied down and bearings, distances and areas for each required parcel need not be computed. The consultant will furnish the Deparmtent two sets of blueline prints of these preliminary maps for checking. The second stage for checking is the final right of way map. The consultant will submit two sets of blueline prints of these maps to the Department for checking. His letter transmitting these check prints will certify that the maps have been checked by him and are final. Any errors found in the right of way maps at this time will be corrected by the consultant at no charge to the Department.

Any deviation from the sample right of way map furnished must be approved in writing by the Department's Location and Survey Engineer before it will be accepted.

The consultant will furnish a weekly status report (See Figure 3-23) for each project for which a right-of-way map is being prepared. This report will be sent to the Location and Survey Engineer's Office in Baton Rouge.

3.03 MAP REQUIREMENT WHEN ADDITIONAL RIGHT-OF-WAY REQUIRED

On projects where additional right-of-way will be required, right-of-way map will show the following:

(1) Centerline of proposed highway including station numbers shown every 500 feet and at all P.C.'s and P.T.'s of curves, bearing of said centerline and all curve data pertaining thereto.

(2) All topography located both within and in the immediate vicinity of required right-of-way or affected by said required right-of-way such as houses, outbuildings, fences, railroads, power poles, telephone poles, wells, etc., giving measurements and descriptions of said improvement (i.e. two-story frame residence, asbestos siding, corrugated metal roof, brick piers, 2½ inch well 500 feet deep with tank and electric driven pump).

(3) On regular drafted right-of-way maps all topography within 50 feet of the required right-of-way line must be tied to the centerline and described. All major improvements between 50 feet and 500 feet of the

right of way line will be shown on the body of the map or on the residual map. The position for these may be estimated and dimensions will not be required. Symbols may be used if shown on the residual map. Where property abuts the project but does not extend 500 feet and the next property back of it is not involved in the required right of way or is not affected by the required right of way, then it will not be necessary to take topography on the back property.

If an aerial photography background is used and covers the area from 50 to 500 feet from the right of way, it is not necessary to label these major improvements.

(4) Distances and Lambert Grid bearings on every line enclosing each parcel of separate ownership. In subdivisions, all subdivision names, square numbers, lot numbers, and street names with their proper dimensions will be shown. In the event a portion of a lot or lots is required, then distances from the corners of the lot to the required right-of-way lines will be shown on all sides of said lot or lots. Bearings and station numbers will be shown on all intersecting street right-of-way lines.

(5) Parcel numbers of each separate ownership. Parcel as used herein shall be deemed to mean a contiguous tract of land in the same ownership whether or not such tract consists of one or more plotted lots or tracts or a fractional part thereof. (See Paragraph 3.05)

(6) Area of each parcel required showing area to the nearest 0.10 square foot for subdivided or urban property and to the nearest 0.001 acre for unsubdivided or rural property.

(7) Acquisition data in tabular form showing parcel number, present owner, date tract acquired (date deed filed), book and page number where filed, and area of parcel should be shown on each sheet covering parcels on that particular sheet.

(8) Map should show all parcels tied into an existing or re-established lot corner, square corner, subdivision corner, tract corner, quarter section or section corner. Said corners should be points lying outside required right of way if possible. All such physical markers (i.e., iron pipes, concrete monuments, iron rods, etc.) both found or re-established should be shown, noted whether found or reset, and described. Additionally, all parcels in which a railroad company is involved must be tied into a railroad station number in addition to a highway station number.

(9) Limits of proposed construction will be shown on final right of way property maps.

(10) Each sheet shall also carry a revision block which will indicate the date the revision was made, a brief description thereof, and the person by whom it was made.

(11) Title abstract data for each ownership will be furnished. (See Paragraph 2.03).

(12) As a part of above referred to map or set of maps, a map will be prepared showing the entire limits of each ownership traversed by the project whenever any additional right of way is required. Said map may be drawn to the scale of 1"=1000 feet if practical and will show the following:

(a) Centerline and required right of way lines of the project.

(b) All property lines of properties traversed by the project.

(c) Correct ownership of above said properties as shown in conveyance records.

(d) Approximate area of each parcel remaining on either or both sides of required right of way for the project. Said approximate area can be obtained by planimeter and no intricate calculations are necessary, however, the area required plus the area remaining has to equal to the area of entire ownership.

(e) Station numbers shown every 5000 feet along centerline of project.

(f) Section, township, range lines and parish.

(g) Said map will be of standard

size sheets of 22" x 36".

(h) If major improvements lying between fifty and five hundred feet of the required right of way line are not shown on the main body of the map then they will be shown on this map by symbol.

3.04 MAP REQUIREMENTS WHEN NO ADDITIONAL RIGHT-OF-WAY REQUIRED

Where no additional right of way will be required, right of way map will show the following:

(1) Centerline of proposed highway including station numbers shown every 500 feet and at all P.C.'s and P.T.'s of curves, bearing of said centerline and all curve data pertaining thereto.

(2) All topography located wholly or partially within the limits of existing right of way, such as houses, outbuildings, fences, railroads, power poles, telephone poles, wells, etc. giving measurements and descriptions of said improvements (i.e. two-story frame residence, brick piers).

(3) Distances and Lambert Grid bearings will be shown where needed. In subdivisions, all subdivision names, square numbers, lot numbers, and street names with their proper dimensions will be shown where said streets or lots border on project.

(4) Sufficient data relative to the determination of the existing right of way shall be shown on said map. This data may be the recordation of formal right of way deeds, a recorded subdivision plat, or in the absence of all other evidence a line 1.5 feet back of the back of the existing ditch or toe of the existing fill. Where duly recorded subdivision plats are the authority for establishing the existing right of way, sufficient field ties will be made to property corners and these ties with descriptions of said property corners will be shown on the map. (See Paragraph 2.06)

(5) All survey markers shown will be described and marked either found in place or set by surveyor.

(6) Limits of proposed construction will be shown on the final right of way property maps.

3.05 PARCEL IDENTIFICATION

The parcel numbering system will be in accordance with the following:

A parcel denoting required right of way shall be designated first by the sheet number of the plans on which it is situated followed by a dash and then the parcel number enumerating from left to right on the sheet insofar as practicable. The first parcel is to be number one and the remainder numerically progressing until the last parcel on the sheet is reached. The first parcel on Sheet 1 would be 1-1; the third parcel on Sheet 6 would be 6-3; etc. The parcel will be shown by sheet number dash then parcel number all encircled. (See Figures 3-1 through 3-20)

A parcel which is on several sheets of the plans will be shown on the first sheet on which it falls where practicable insofar as space is concerned. If it is not feasible to place it on the first sheet, then the sheet that is most practicable shall be selected. The acquisition data will be shown on the sheet selected and the parcel number will bear this sheet and parcel number and shall be placed on all sheets which indicate any portion of the parcel. In certain instances it may be necessary to prepare a sheet for acquisitions only. Proper references should be made on the sheets which carry the parcels as to the sheet number on which the acquisitions may be found.

Drainage parcels shall carry the number of the required right of way parcel to which they are attached and should be designated further by a dash, a "D" and a dash and one for the first drainage parcel. The second, third, and successive parcels attached to the required right of way parcel shall carry the same designation followed by 2, 3, and so on according to the number of drainage parcels attached to the required right of way parcel.

The 2 and 3 and so on being substituted for the last numeral one shown in the first drainage parcel. (i.e. 4-2-D-1, 4-2-D-2, etc.)

The same procedure shall be followed in designating construction servitude parcels except the letter C will be substituted for the letter D.

On railroad crossings, the required parcel will be designated RR-6-1 for the first of such parcels on Sheet 6 of the Right of Way Map. If there are two such parcels on Sheet 6, the second parcel would be RR-6-2, etc. Such a parcel on Sheet 2 would be RR-2-1, etc.

All other parcels involving railroads that are not crossings will be designated as described in the second and third paragraphs of this section 3.05.

Where, within a single ownership, a portion of the taking area is subjected to controlled access and the other portion is not, as would be the case with the improvement of an intersecting non-controlled highway, the following numbering system will be used:

The master parcel, which would be the one with controlled access, instead of being given the number of say 2-4 as previously done, will be given the number of 2-4-1. The parcels without controlled access will be denoted as 2-4-2 and 2-4-3. Where these parcels have been broken down in this manner also carry drainage and/or construction servitudes, they will be numbered exactly as they have in the past by reverting to the master number. As an example, a drainage servitude on parcel 2-4-1 will carry the number of 2-4-D-1 and so on, and the drainage parcel will carry the same numbering system irrespective of the parcel to which it is attached in regards to controlled access. In other words, the first drainage parcel will carry the number 2-4-D-1 whether or not the same is attached to parcel 2-4-1, 2-4-2, or 2-4-3, and they will progress from 2-4-D-1 to 2-4-D-2 and so on.

A separate parcel number need not be used to indicate that access is permissable to a frontage road since there is embodied in the deed form used on Interstate Projects a general clause to the effect that access is limited to such service roads as may be built.

Should the right of way be widened subsequent to the acquisition of a parcel, the additional area shall be designated by the letter "A" preceded by the original parcel number and followed by the number one for the first such parcel and proceeding thence in sequence, i.e. 2-4-A-1; 2-4-A-2, etc. In such instances the acquisition data by which the original parcel was acquired by the Department will be shown in the acquisition schedule. In the event of such widening prior to the acquisition, the parcel may be revised; and the revision need be indicated only by an appropriate notation in the revision schedule.

Subsequent to the acquisition of a given parcel, should the map be found to be erroneous as to metes and bounds and/or area of such parcel thereby requiring re-negotiations, then the map should be corrected and an asterisk placed in the acquisition schedule, the latter asterisk followed by the notation, "Denotes Corrected Parcel." An explanatory note should also be shown in the acquisition table.

The letter "R" preceded by the original parcel number and followed by one, two, etc. shall designate a revised parcel. (2-4-R-1, 2-4-R-2)

In the event it is necessary to acquire a parcel or parcels before the right-of-way map is complete, these parcels will be numbered ADV-1, ADV-2, etc. (See figure 3-21)

Cover letters will be written on all tranmittals of right of way maps. When revisions have been made, such letters will explain the reasons, or authority for the revisions.

The prefix "AR" will denote the required purchase of access rights only, and the parceling shall otherwise conform to the aforesaid provisions (AR-2-4, etc.). For the purpose of the map the areas of such parcels shall be considered as coincident with those shown on the residual map.

Each sheet, where practicable, will have an acquisition block denoting parcel number, the name of owner, acquisition data by owner, area, and a blank space the identical size as the "acquisition data by owner" for future use. The above recited data progresses from left to right as enumerated herein. The first line in the acquisition block shall always be left vacant in the first assembly of the block. This is for the purpose of possible future beneficial notes and comments. (See figure 3-2)

3.06 GENERAL NOTES

The following notes should appear on each sheet of the right of way property map where pertinent and they should be worded as shown:

(1) The coordinates and bearings shown hereon are grid and are on the Louisiana Coordinate System (use north or south) Zone. Distances shown are horizontal ground distances.

(2) To convert from grid bearings to true bearings, use (give correct theta angle.)

-	+
+	-

NOTE - the signs shown for the various quadrants are used as an illustration only and are not necessarily correct for every situation. Note also that the theta angle should be computed for a point that is in the center of each sheet. The theta angles will in most cases differ from sheet to sheet.

(3) To convert distances derived from coordinates shown hereon to horizontal ground distances use scale factor: (give correct scale factor).

NOTE - paragraph 3 above should be used only when the distances obtained by differences in station numbers are not the same as distances obtained by computation from the differences in coordinates between the same two points.

Instructions for the use of the above notes:

Centerline or base line traverses that are tied to the Louisiana Coordinate System should be adjusted, by using compass rule or least squares method, between tie points without applying the grid scale factor. The adjusted traverse will be considered to be on the Louisiana Coordinate System. Note - the adjustment should not be made until the field work meets the minimum standards as set forth in Paragraph 1.03.

The adjusted coordinates will be used to determine the grid distances and grid bearings.

If the distances derived from coordinates of station points differ from chained distances of the station points, the scale factor to convert distances derived from coordinates to horizontal ground distances should be determined and shown. If more than one scale factor is involved, then the note (3) above should be modified to read as follows:

(3) To convert distances derived from coordinates shown hereon to horizontal ground distances use the following scale factors:

Between Hwy Sta.__ and Hwy. Sta.___
(Give correct scale factor).

Between Hwy. Sta.__ and Hwy. Sta.___
(Give correct scale factor).

The grid bearings should be shown on the centerline of the project. When the centerline grid bearings do not give the same delta angles as do the field delta angles and the field delta angles were used for the centerline curve data, an appropriate note should be added explaining the difference.

3.07 FINAL RIGHT OF WAY MAP

The final map or set of maps will be in ink on tracing cloth or matt film reproducibles on a convenient scale such as 1"=100', 1"=50',

1"=30', or 1"=20'. The scale 1"=40' will never be used. The scale shown on Right-of-Way Map samples in Figures 3-7, 3-8, 3-9, 3-10, and 3-11 is 1"=40'; however, this will not be accepted. (These sample maps are to be followed except for scale.) The tracings will be Department's standard size which is 22"x36". The only exception to this standard map size is in those isolated conditions when a special map may have to be made prior to the completion of the right-of-way map. This is sometimes necessary so that a particular hardship case may be settled before completion of entire right of way map. These special maps will include all data required to be on completed right of way map. The size of these special maps may be 8½"x14" or multiples of the 8½" dimension (see Figure 3-21). Minimum letter size on all right of way maps must be large enough so that all lettering can be clearly read when drawing has been reduced 50%. The matt film reproducibles will be photographic reproductions on translucent .004 inch polyester film which incorporates a silver halide emulsion image of a permanent type, or better from which satisfactory prints can be made. Said map or set of maps are to be referred to as Right of Way Map and as such will be separate from construction plans and identified as a separate map or set of maps.

3.08 EXISTING SERVITUDES

Existing servitudes, or rights-of-ways for pipe lines, power lines, canals, or any other such facility will be shown on the right-of-way map. These will not be shown as separate parcels unless the company owns fee simple title.

The pipe line or other such facility will be tied into the projects centerline and the limits of the easement or servitude for the facility will be dimensioned from the facility. Bearings and distances around the servitude will not be shown however, area of the servitude will be shown.

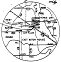
A "no property line" hook will be shown across the servitude or easement. (See Figure 3-18).

F.A.P.	PROJECT NO.	PARISH	SHEET NO.
		EAST BATON ROUGE	

These blocks are reserved for Construction Plan information only.

Title Sheet only

STATE PROJECT NO. 28-06-14



STATE OF LOUISIANA

DEPARTMENT OF HIGHWAYS

RIGHT OF WAY PROPERTY MAP OF PROPOSED

STATE HIGHWAY

STATE PROJECT NO. 28-06-14

DAWN VILLAGE - VENUS CITY HIGHWAY

(NORTH SECTION)

EAST BATON ROUGE PARISH

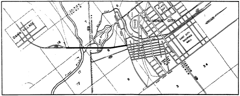
La-US 680

STA. 332 + 89.35
END STATE PROJECT NO. 28-06-13
BEGIN STATE PROJECT NO. 28-06-14

EQUATION - 1.73'
STA. 337 + 81.42 L.S.
STA. 337 + 83.15 L.S.

EQUATION - 3.14'
STA. 400 + 45.90 L.S.
STA. 400 + 46.04 L.S.

STA. 480 + 31.03
END STATE PROJECT NO. 28-06-14
BEGIN STATE PROJECT NO. 28-06-16



SAMPLE

NOTE:
THE FOLLOWING MONUMENTS WERE USED FOR HORIZONTAL CONTROL
U.S.C. & G.S. VENUS
L.G.S. 1198
L.G.S. A2242

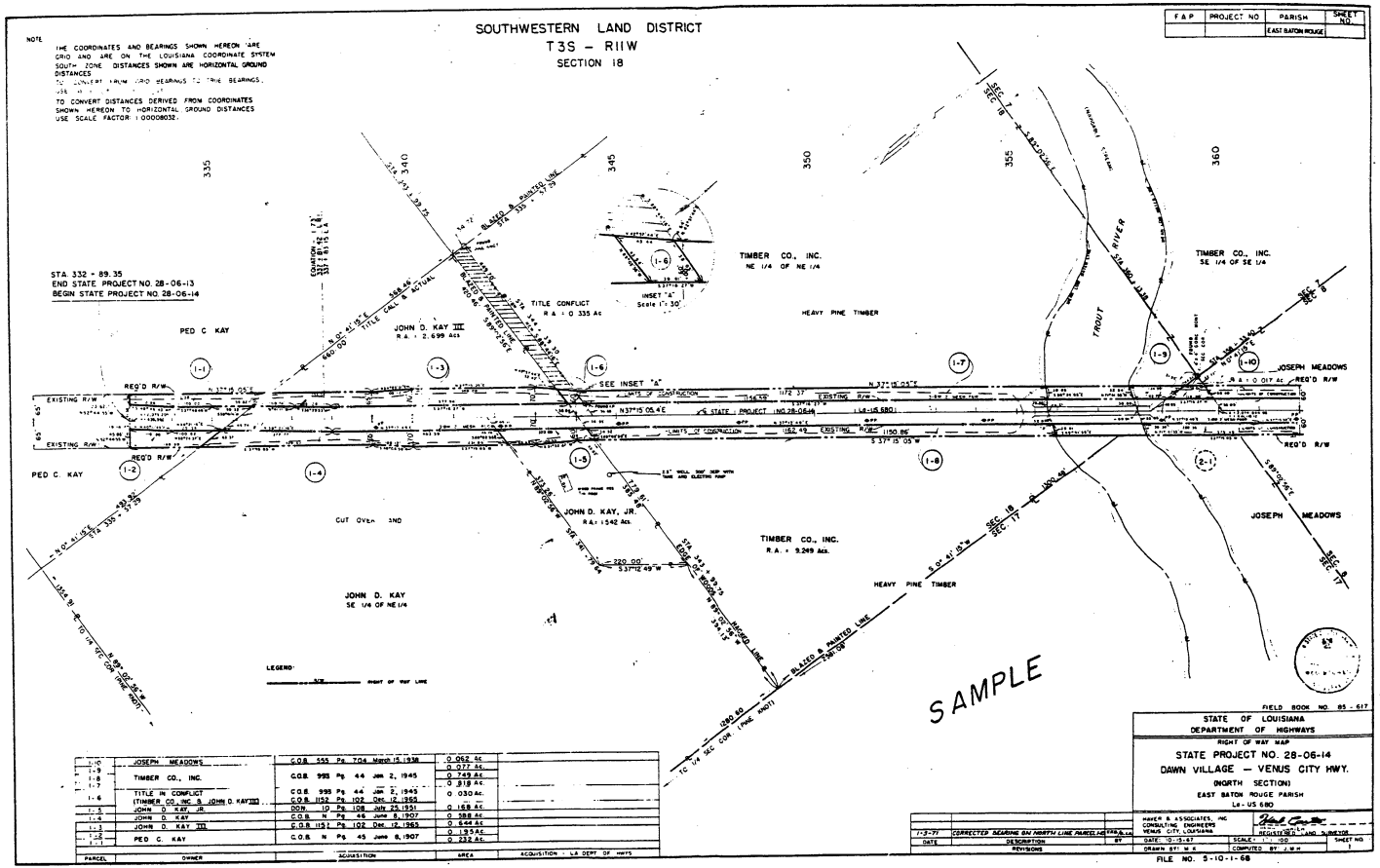
LAYOUT MAP

SCALE: 1 INCH = 2000 FEET

A file number will be furnished at the time of Formal check.

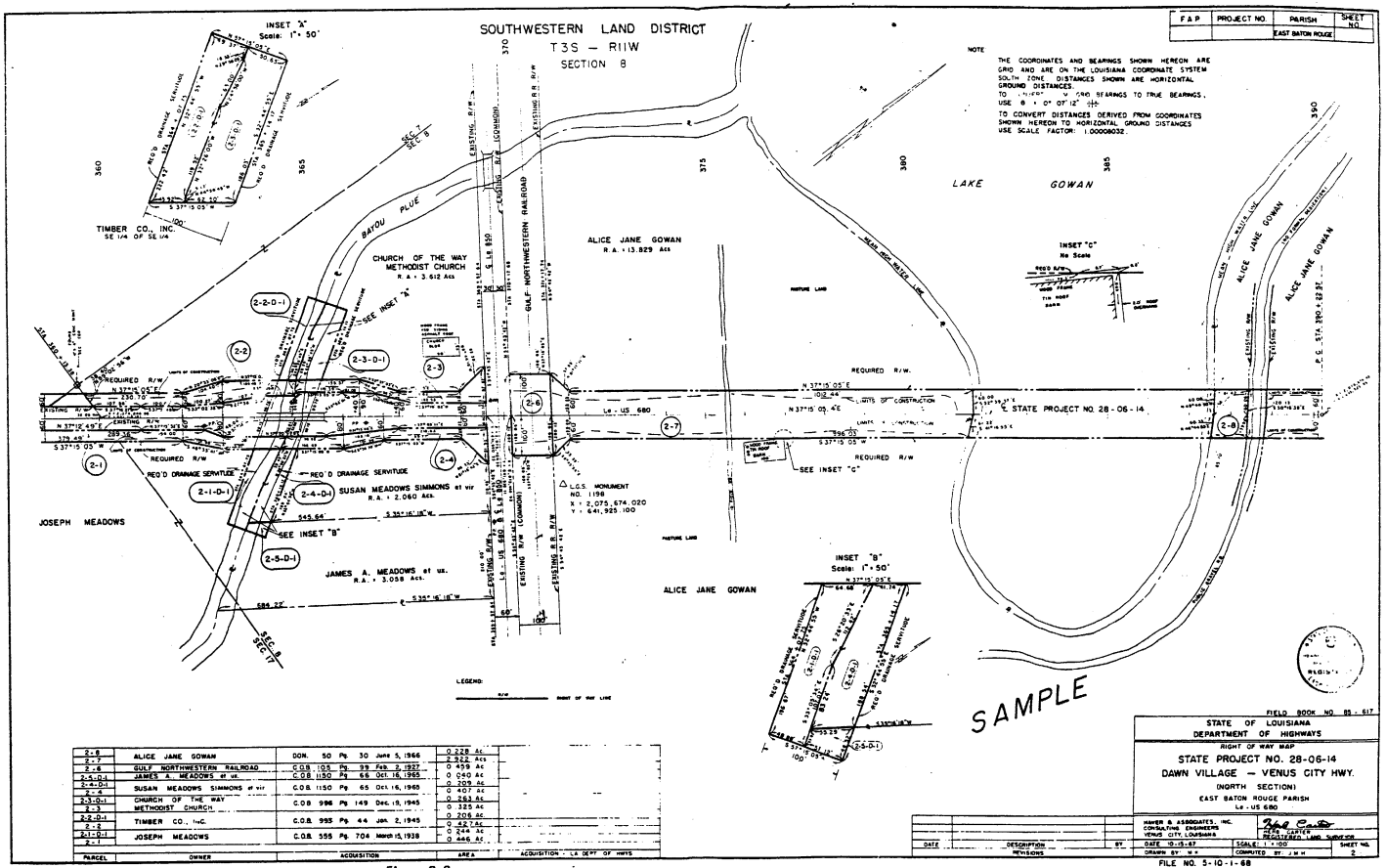
FILE NO. 5-10-1-68

Figure 3-1



PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA DEPT OF HWYS
1-10	JOSEPH MEADOWS	C.O.B. 555 Pg. 704 March 15, 1938	0.062 Ac.	
1-9	TIMBER CO., INC.	C.O.B. 993 Pg. 44 Jan. 2, 1945	0.077 Ac.	
1-8			0.749 Ac.	
1-7			0.819 Ac.	
1-6	TITLE IN CONFLICT (TIMBER CO., INC. & JOHN D. KAY III)	C.O.B. 993 Pg. 44 Jan. 2, 1945 C.O.B. 1152 Pg. 102 Oct. 12, 1965	0.030 Ac.	
1-5	JOHN D. KAY, JR.	DON. 10 Pg. 108 July 25, 1951	0.158 Ac.	
1-4	JOHN D. KAY	C.O.B. N Pg. 46 June 8, 1907	0.588 Ac.	
1-3	JOHN D. KAY III	C.O.B. 1151 Pg. 102 Dec. 12, 1965	0.644 Ac.	
1-2	PED C. KAY	C.O.B. N Pg. 45 June 8, 1907	0.195 Ac.	
1-1			0.232 Ac.	

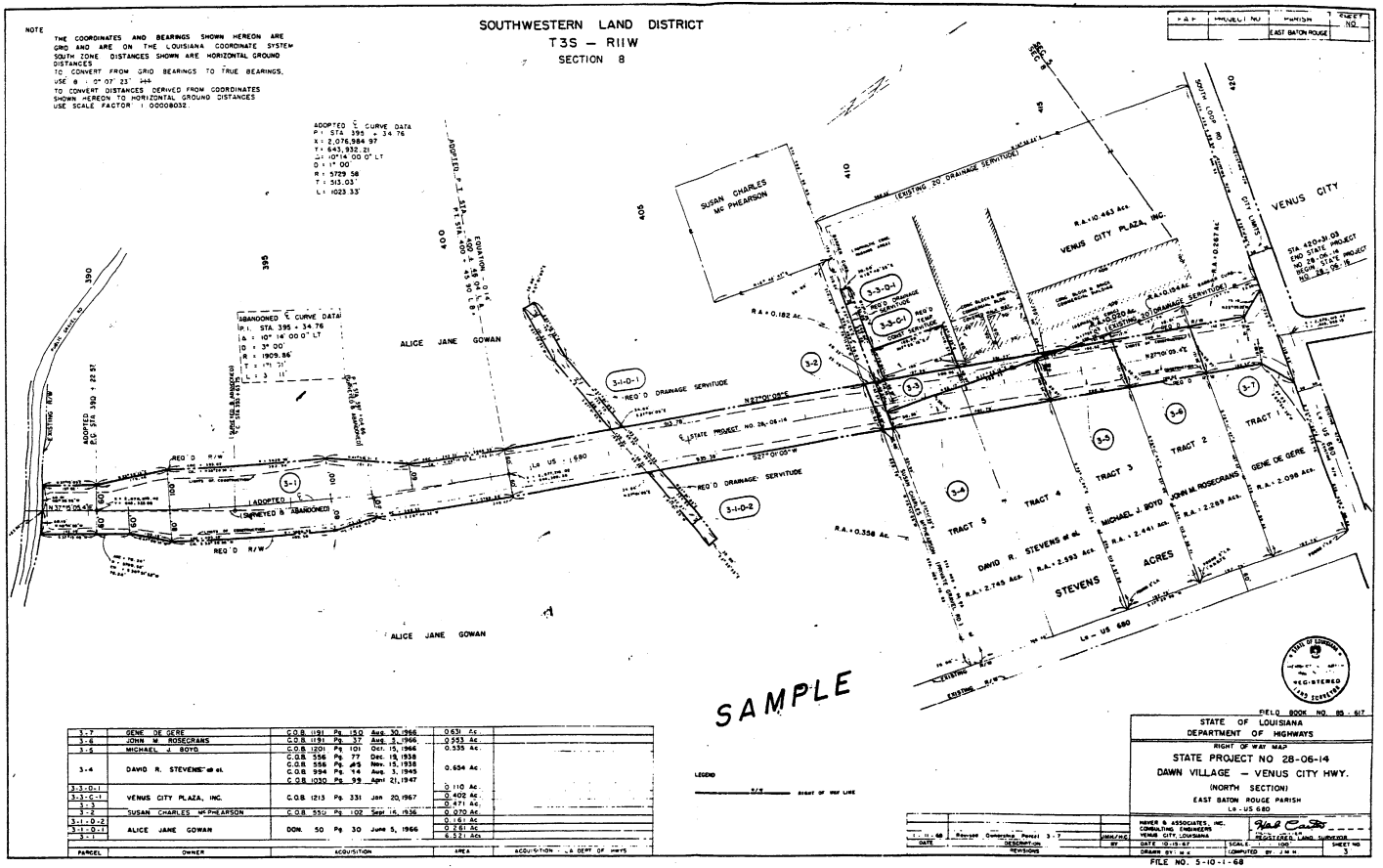
Figure 3-2



PARCEL	OWNER	ACQUISITION	AREA
2-8	ALICE JANE GOWAN	DON. 50 Pg. 30 June 5, 1966	0.228 Ac.
2-7			2.922 Acs
2-6	GULF NORTHWESTERN RAILROAD	C.O.B. 105 Pg. 99 Feb. 2, 1927	0.459 Ac
2-5-D-1	JAMES A. MEADOWS et us.	C.O.B. 1150 Pg. 66 Oct. 16, 1965	0.040 Ac
2-4-D-1	SUSAN MEADOWS SIMMONS et vir	C.O.B. 1150 Pg. 65 Oct. 16, 1965	0.209 Ac
2-4			0.407 Ac
2-3-D-1	CHURCH OF THE WAY METHODIST CHURCH	C.O.B. 986 Pg. 149 Dec. 19, 1945	0.263 Ac
2-3			0.325 Ac
2-2-D-1	TIMBER CO., Inc.	C.O.B. 993 Pg. 44 Jan. 2, 1945	0.206 Ac
2-2			0.427 Ac
2-1-D-1	JOSEPH MEADOWS	C.O.B. 555 Pg. 704 March 15, 1938	0.244 Ac
2-1			0.446 Ac

ACQUISITION - LA DEPT OF HWYS

Figure 3-3



PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA DEPT OF HWYS
3-7	GENE DE GERE	C.O.B. 1191 Pg. 150 Aug. 30, 1966	0.631 Ac.	
3-6	JOHN M. ROSECRANS	C.O.B. 1191 Pg. 37 Aug. 5, 1966	0.553 Ac.	
3-5	MICHAEL J. BOYD	C.O.B. 1201 Pg. 101 Oct. 15, 1966	0.535 Ac.	
3-4	DAVID R. STEVENS et al.	C.O.B. 556 Pg. 77 Dec. 19, 1938 C.O.B. 556 Pg. 49 Nov. 15, 1938 C.O.B. 994 Pg. 14 Aug. 3, 1949 C.O.B. 1030 Pg. 93 April 21, 1947	0.654 Ac.	
3-3-D-1			0.110 Ac.	
3-3-C-1	VENUS CITY PLAZA, INC.	C.O.B. 1213 Pg. 331 Jan. 20, 1967	0.402 Ac.	
3-3			0.671 Ac.	
3-2	SUSAN CHARLES MC PHEARSON	C.O.B. 550 Pg. 102 Sept. 16, 1936	0.070 Ac.	
3-1-D-2	ALICE JANE GOWAN	DON. 50 Pg. 30 June 5, 1966	0.161 Ac.	
3-1-D-1			0.261 Ac.	
3-1			6.521 Ac.	

Figure 3-4

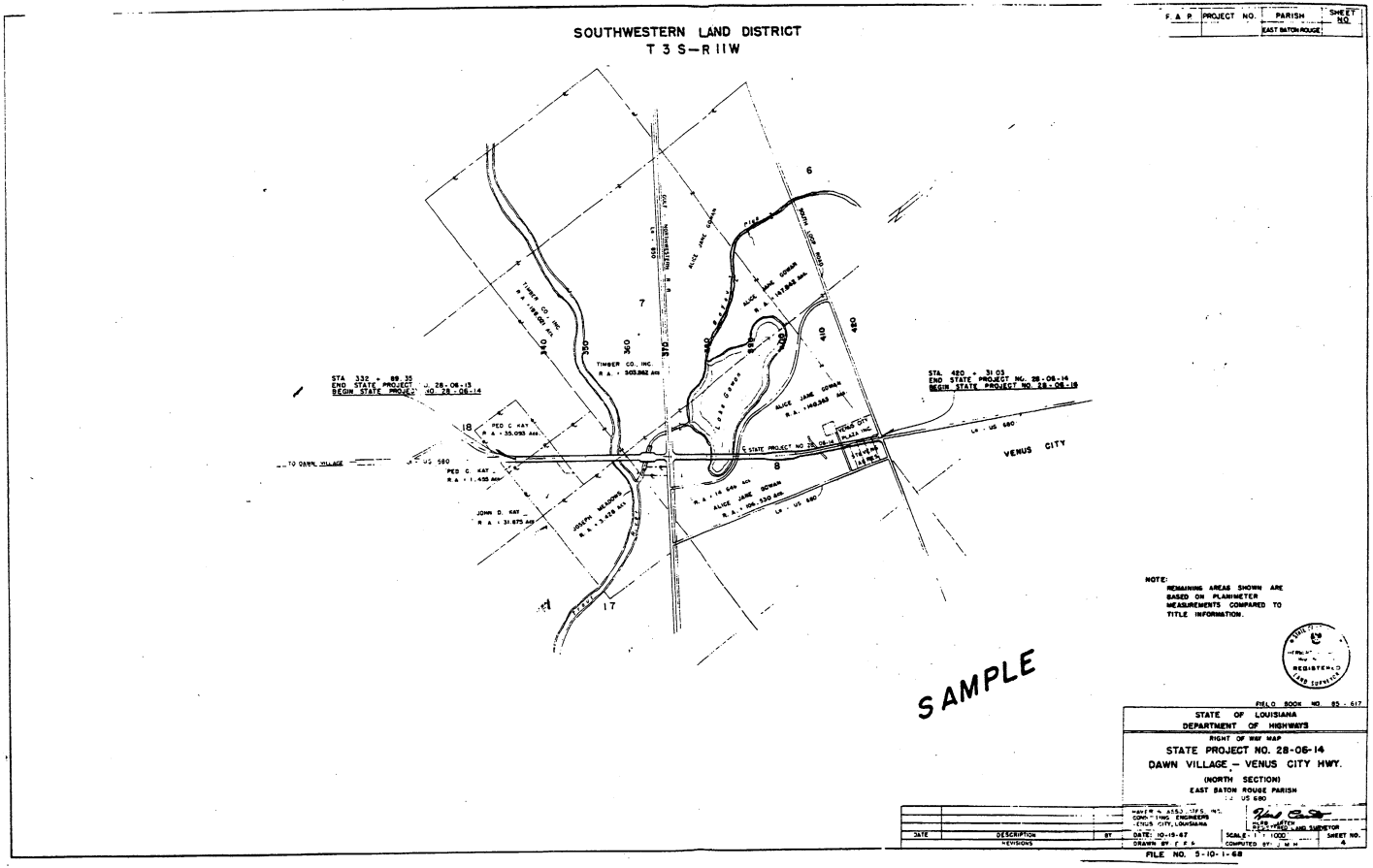
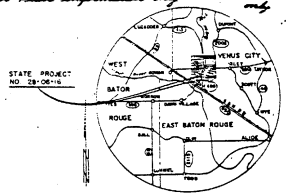

SOUTHWESTERN LAND DISTRICT
T 3 S—R 11W
F A P
PROJECT NO.
PARISH
EAST BATON ROUGE
SHEET NO.
STA 332 + 89.35
END STATE PROJECT NO. 28-06-13
BEGIN STATE PROJECT NO. 28-06-14
STA. 480 + 31.03
END STATE PROJECT NO. 28-06-14
BEGIN STATE PROJECT NO. 28-06-15
TIMBER CO., INC.
R.A. = 148.80 AC.
TIMBER CO., INC.
R.A. = 503.862 AC.
ALICE JANE GOMAN
R.A. = 147.842 AC.
ALICE JANE GOMAN
R.A. = 146.243 AC.
ALICE JANE GOMAN
R.A. = 18.626 AC.
ALICE JANE GOMAN
R.A. = 106.330 AC.
FED. C. KAY
R.A. = 35.093 AC.
FED. C. KAY
R.A. = 1.455 AC.
JOHN D. KAY
R.A. = 31.875 AC.
JOSEPH MEADORS
R.A. = 3.424 AC.
TERRY DAY
PLACE INC.
R.A. = 1.16 AC.
R.A. = 1.14 AC.
LA. US 190
LA. US 190
LA. US 190
LA. US 190
TO DAWN VILLAGE
VENUS CITY
NORTH LINE ROAD
STATE PROJECT NO. 28-06-14
6
7
8
17
18
SAMPLE
NOTE:
REMAINING AREAS SHOWN ARE BASED ON PLANIMETER MEASUREMENTS COMPARED TO TITLE INFORMATION.
FIELD BOOK NO. 95-617
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 28-06-14
DAWN VILLAGE — VENUS CITY HWY.
(NORTH SECTION)
EAST BATON ROUGE PARISH
US 190
HAYES, ALSO, INFS. INC.
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA
DATE: 10-15-67
DRAWN BY: F.E.A.
SCALE: 1" = 1000'
COMPUTED BY: J.M.H.
SHEET NO. 4
DATE
DESCRIPTION
BY
REVISIONS
FILE NO. 5-10-1-68

Figure 3-5

F.A.P.	PROJECT NO.	PARISH	SHEET NO.
		EAST BATON ROUGE	

These blocks are reserved for Construction Plan information only.

Title sheet only



STATE OF LOUISIANA

DEPARTMENT OF HIGHWAYS

RIGHT OF WAY PROPERTY MAP OF PROPOSED

STATE HIGHWAY

STATE PROJECT NO. 28-06-16

FEDERAL AID PROJECT NO. S-65(19)

STATE ROUTE IN VENUS CITY

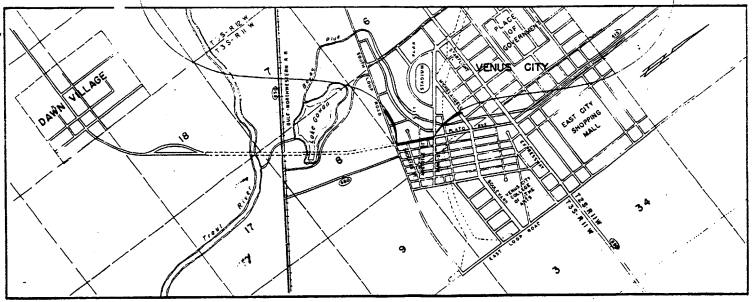
(PLATO AVE.)

EAST BATON ROUGE PARISH

La-US 680

STATION 420+31.03
END STATE PROJECT NO. 28-06-14
STATION 10+00
BEGIN STATE PROJECT NO. 28-06-16
BEGIN F.A.P. NO. S-65(19)

STATION 32+46.26
END STATE PROJECT NO. 28-06-16
END F.A.P. NO. S-65(19)



SAMPLE

NOTE:
THE FOLLOWING MONUMENTS WERE USED FOR HORIZONTAL CONTROL

U.S.C. & G.S. VENUS
L.G.S. A2243

LAYOUT MAP

SCALE: 1 INCH = 2000 FEET

A file number will be furnished at the time of Format check.

FILE NO. 5-10-1 68

Figure 3-6

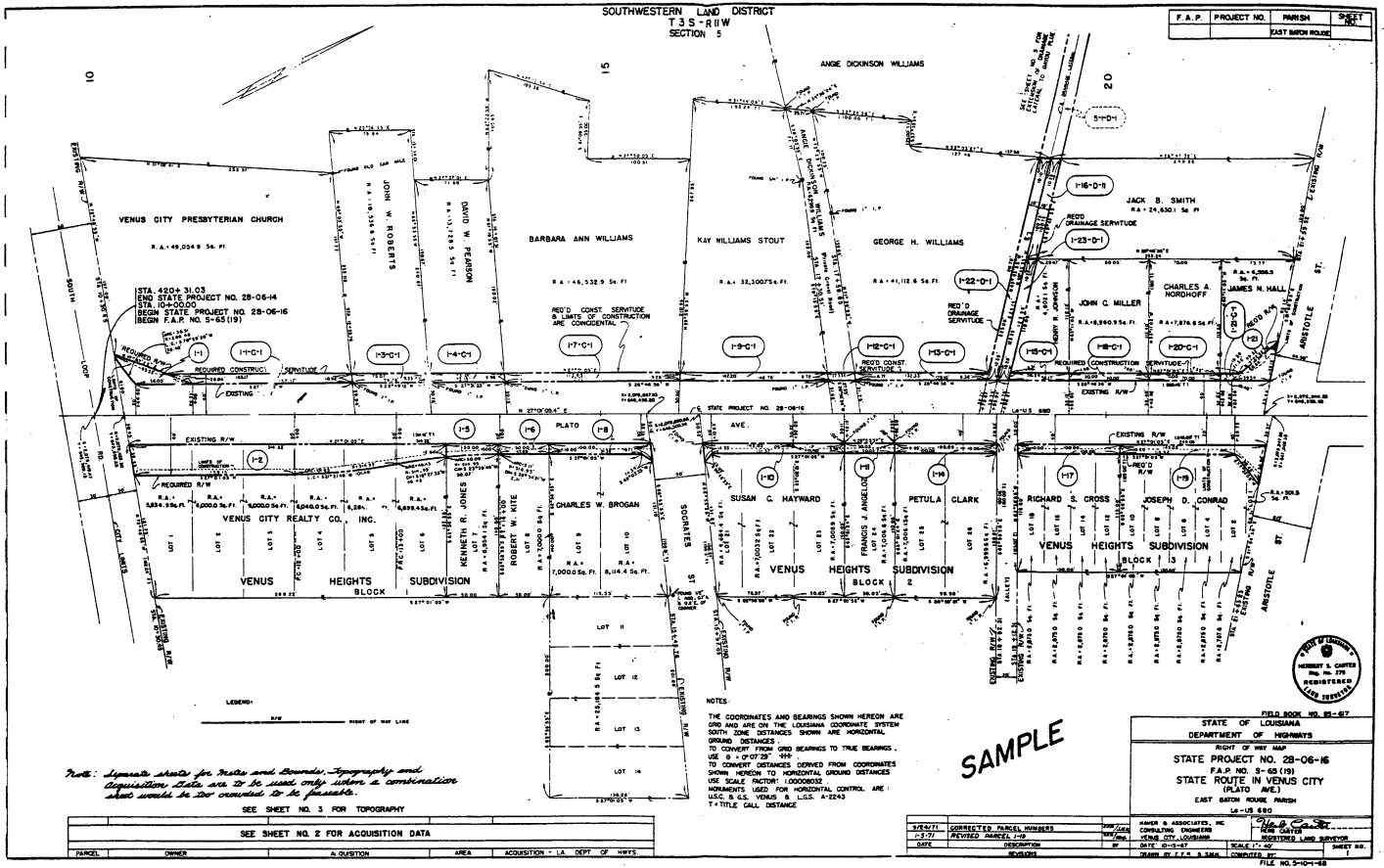

SOUTHWESTERN LAND DISTRICT
T3S-R11W
SECTION 5
F.A.P. | PROJECT NO. | PARISH | SHEET NO.
EAST BATON ROUGE
ANGIE DICKINSON WILLIAMS
VENUS CITY PRESBYTERIAN CHURCH
JOHN W. ROBERTS
DAVID W. PEARSON
BARBARA ANN WILLIAMS
KAY WILLIAMS STOUT
GEORGE H. WILLIAMS
JACK B. SMITH
JOHN C. MILLER
CHARLES A. NORDHOFF
JAMES N. HALL
STA. 420+31.03
END STATE PROJECT NO. 28-06-14
STA. 10+00.00
BEGIN STATE PROJECT NO. 28-06-16
BEGIN F.A.P. NO. S-65(19)
REQ'D CONST. SERVITUDE & LIMITS OF CONSTRUCTION ARE CONFIDENTIAL
REQ'D DRAINAGE SERVITUDE
REQUIRED CONSTRUCTION SERVITUDE
EXISTING R/W
PLATO AVE.
VENUS CITY REALTY CO., INC.
KENNETH R. JONES
ROBERT W. KITE
CHARLES W. BROGAN
SUSAN C. HAYWARD
FRANCIS J. ANGELOZ
PETULA CLARK
RICHARD S. CROSS
JOSEPH D. CONRAD
VENUS HEIGHTS SUBDIVISION
BLOCK 1
BLOCK 2
BLOCK 3
SOCRATES ST.
ARISTOTLE ST.
SOUTH LOOP
LEGEND:
RIGHT OF WAY LINE
NOTES:
THE COORDINATES AND BEARINGS SHOWN HEREON ARE GRID AND ARE ON THE LOUISIANA COORDINATE SYSTEM SOUTH ZONE DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.
TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS, USE θ = 0°07'29" +++.
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00008032.
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. VENUS & L.G.S. A-2243
T = TITLE CALL DISTANCE
SAMPLE
Note: Separate sheets for Metes and Bounds, Topography and Acquisition Data are to be used only when a combination sheet would be too crowded to be feasable.
SEE SHEET NO. 3 FOR TOPOGRAPHY
SEE SHEET NO. 2 FOR ACQUISITION DATA
PARCEL | OWNER | ACQUISITION | AREA | ACQUISITION - LA. DEPT. OF HWYS.
FIELD BOOK NO. 85-617
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 28-06-16
F.A.P. NO. S-65(19)
STATE ROUTE IN VENUS CITY
(PLATO AVE.)
EAST BATON ROUGE PARISH
La-US 680
9/24/71 CORRECTED PARCEL NUMBERS
1-5-71 REVISED PARCEL 1-19
DATE DESCRIPTION BY
REVISIONS
HAMER & ASSOCIATES, INC
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA
HERB CARTER
REGISTERED LAND SURVEYOR
DATE 10-15-67
SCALE 1" = 40'
DRAWN BY F.F.W. & S.S.M.
COMPUTED BY
SHEET NO. 1
FILE NO. 5-10-1-68

Figure 3-7

PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA. DEPT. OF HWYS
1-1				
1-1-C-1	VENUS CITY PRESBYTERIAN CHURCH	C.O.B. 994 Pg. 65 AUG. 10, 1945	856.8 SQ.FT.	
1-2	VENUS CITY REALTY CO., INC.	C.O.B. 1060 Pg. 77 MARCH 30, 1964	1791.2 SQ.FT.	
1-3-C-1			8325.2 SQ.FT.	
1-4-C-1				
1-5				
1-6				
1-7-C-1				
1-8				
1-9-C-1				
1-10				
1-11				
1-12-C-1				
1-13-C-1				
1-14				
1-15-C-1				
1-16-D-1				
1-17				
1-18-C-1				
1-19				
1-20-C-1				
1-21				
1-21-C-1				
1-22-D-1				
1-23-D-1				

THE REMAINDER OF THIS TABLE SHOULD BE TABULATED SHOWING OWNERS NAME OR NAMES, ALL ACQUISITION DATA AND AREAS AS ILLUSTRATED ABOVE

F.A.P.	PROJECT NO.	PARISH	SHEET NO.
		EAST BATON ROUGE	

SAMPLE CHECK SHEET

NAME OF PROJECT .....
PROJECT NO. .....

CORRECT ..... ✓
INCORRECT ..... ✗
DOES NOT APPLY ..... ○

		1	2	3	4	5	6	7	8	9	10
TITLE BLOCK	CHECK ITEM / DATE WORK										
	PROJECT NUMBER										
	SHEET NUMBER										
	SCALE										
	DATE										
	SHEET NUMBER										
	FILE NUMBER										
	F.A.P. NUMBER										
	PARISH NAME										
REVISION BLOCK	CORRECT FORM										
	DATE										
	REVISION										
	BY										
ACQUISITION BLOCK	CORRECT FORM										
	PARCEL NUMBERS										
	OWNERS NAMES										
	ACQUISITION DATA										
	ROW AREA										
	ACQUIRED BY L.A. DEPT. OF HWYS										
STRIP MAP PROPER	LAND DISTRICT										
	TOWNSHIP & RANGE										
	SECTION (PRIV) HEADRIGHT NUMBERS										
	NORTH ARROW										
	IDENTIFY SECTION CORNER - (IN CORNER & NO CORNER)										
	IDENTIFY SECTION LINES										
	IDENTIFY NO. NOTE TRACTS (OR SUBDIVISION THEREOF)										
	IDENTIFY POINTS USED FOR PARCEL TIES										
	CENTERLINE										
	SUBDIVISION NAMES										
	LOT NUMBERS										
	BEGINNING & ENDING STATIONS										
	LISTCHECK (DISTANCE TO ℄ W/ R/W BREAKS & ℄)										
	LABEL LOCATIONS										
	LABEL "SEAL P.E. & S.P." ADOPTED & SURVEYED										
	PROJECT NUMBER ON ℄										
	ROUTE NUMBER ON ℄										
	LABEL EXISTING R/W										
	LABEL REQ'D R/W										
	DIMENSION FROM ℄ TO EXISTING R/W										
	DIMENSION FROM ℄ TO REQ'D R/W										
	PARCEL NUMBERS (CHECK AGAINST ACQUISITION BLOCK)										
	PARCEL OWNERS (CHECK AGAINST ACQUISITION BLOCK)										
	RAILROAD LINES HERE										
	PLOTTED COORDS. (BACK & ℄)										
	CHECK COORDS. STRIP SQUARES FINAL R/W BLANK										
	CHECK DEPARTS & BOUNDS (CLOCKWISE CHECK CLOSURE										
	ROUTE NUMBERS ON CROSS ROADS										
	CONTROL OF ACCESS										
	LIMITS OF CONSTRUCTION										
	BEARING NOTE & COORDINATES & SCALE FACTOR										
	TOPOGRAPHY (REFER TO ℄ LEGEND)										
	REMAINING AREAS (FOR EACH LOT IN SUBDIVISIONS)										
	℄ BEARING										
DRAINAGE OR TEMPORARY EASEMENT	CURRENT LOCATION										
	DEPTS & BOUNDS (CLOCKWISE) CHECK CLOSURE										
	PARCEL NUMBERS										
	PARCEL WIDTH										
	PARCEL AREA										
	℄ ACQUISITION BLOCK										
	℄ TO ℄										
	LABEL AS REQ'D (DRAINAGE OR CONST. SERVITUDE										
OWNERSHIP MAP	OWNERS NAMES										
	REMAINING AREAS (NOT SHOWN ON STRIP MAP)										
	BEGINNING & ENDING STATIONS										
	℄ STATIONS										
	LAND DISTRICT										
	TOWNSHIP & RANGE										
	SECTION (PRIV) HEADRIGHT NUMBERS										
	TYP. REQ'D R/W										
	LABEL LOCAL ROADS & ROUTE NUMBERS										
	IDENTIFY SECTION CORNER & ETC.										
	PARCEL NUMBER ON ℄										
	NORTH ARROW										
	FILE NUMBER										
TITLE SHEET	LABEL "RIGHT OF WAY OF PROPOSED"										
	PROJECT NUMBER										
	F.A.P. NUMBER										
	NAME OF PROJECT										
	ROUTE NUMBER										
	PARISH										
	BEGINNING & ENDING STATIONS										
	REQ'D R/W SHADED										
	LOCATION MAP										
	NORTH ARROW										
	FILE NUMBER										

Note: The above sample Check sheet is a suggested form to be used in checking the format for the Right of Way Property Map. It is not to be construed as being complete in every sense, nor is it to be made a part of the Strip Map.

SAMPLE

Note: Whenever two firms are involved in making the Right of Way Property Map, the space we have used for the signature should be used to place the other firm name. The signature will then be placed beneath the seal.

STATE OF LOUISIANA
HERBERT S. CARTER
Reg. No. 279
REGISTERED
LAND SURVEYOR

FIELD BOOK NO. 85-617

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

RIGHT OF WAY MAP

STATE PROJECT NO. 28-06-16
F.A.P. NO. S-65(19)
STATE ROUTE IN VENUS CITY
(PLATO AVE.)
EAST BATON ROUGE PARISH
LA-US 680

DATE	DESCRIPTION REVISIONS	BY
8/24/71	CORRECTED PARCEL NUMBERS	

HAVER & ASSOCIATES, INC.
CONSULTING ENGINEERS
VENUS, CITY, LOUISIANA

Herb Carter
HERB CARTER
REGISTERED LAND SURVEYOR

DATE: 10-6-67 | SCALE: 1"=40' | SHEET NO. 2
DRAWN BY: D.S. & S.M.H. | COMPUTED BY: J.M.M.
FILE NO. S-10-1-68

Figure 3-8

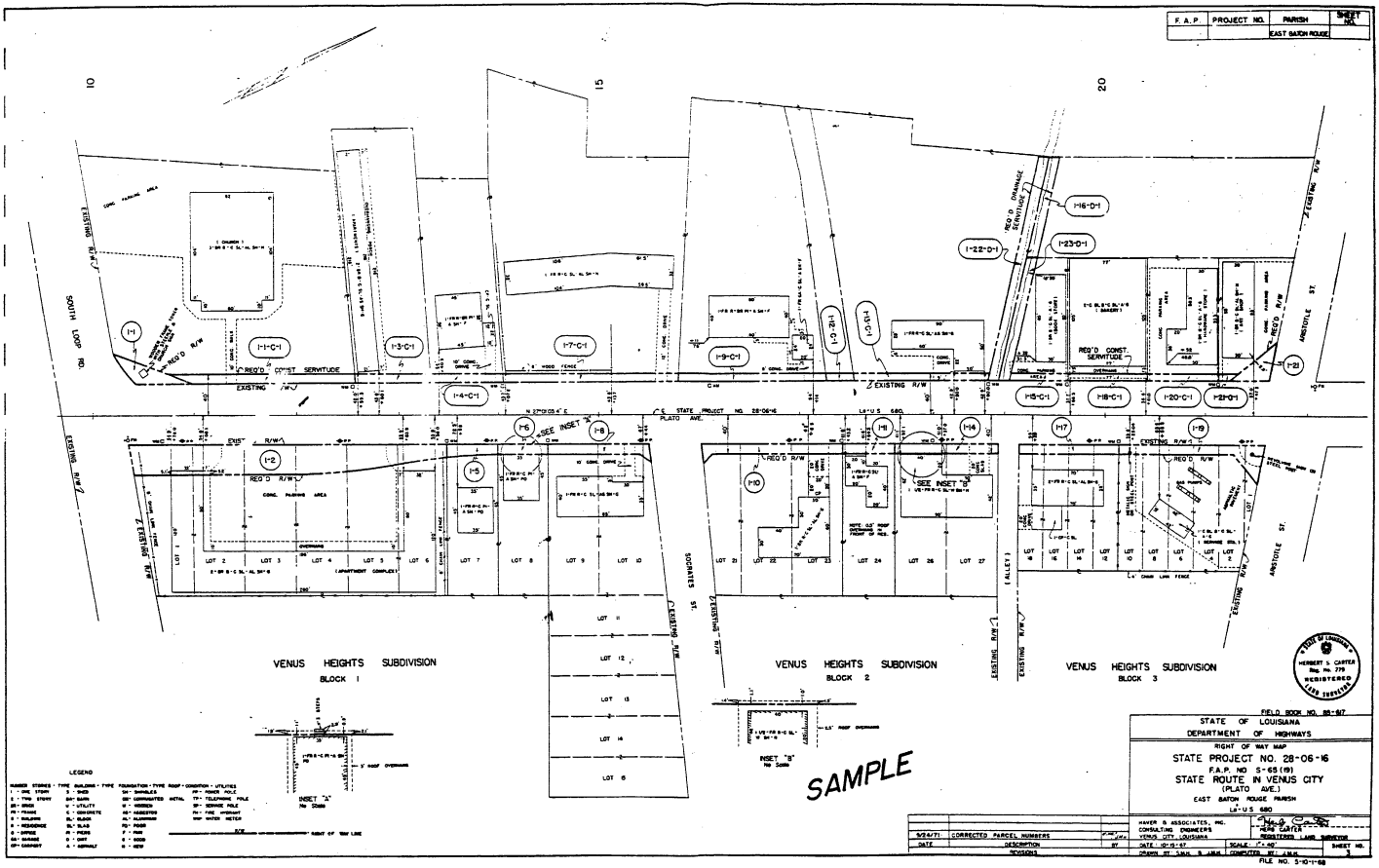
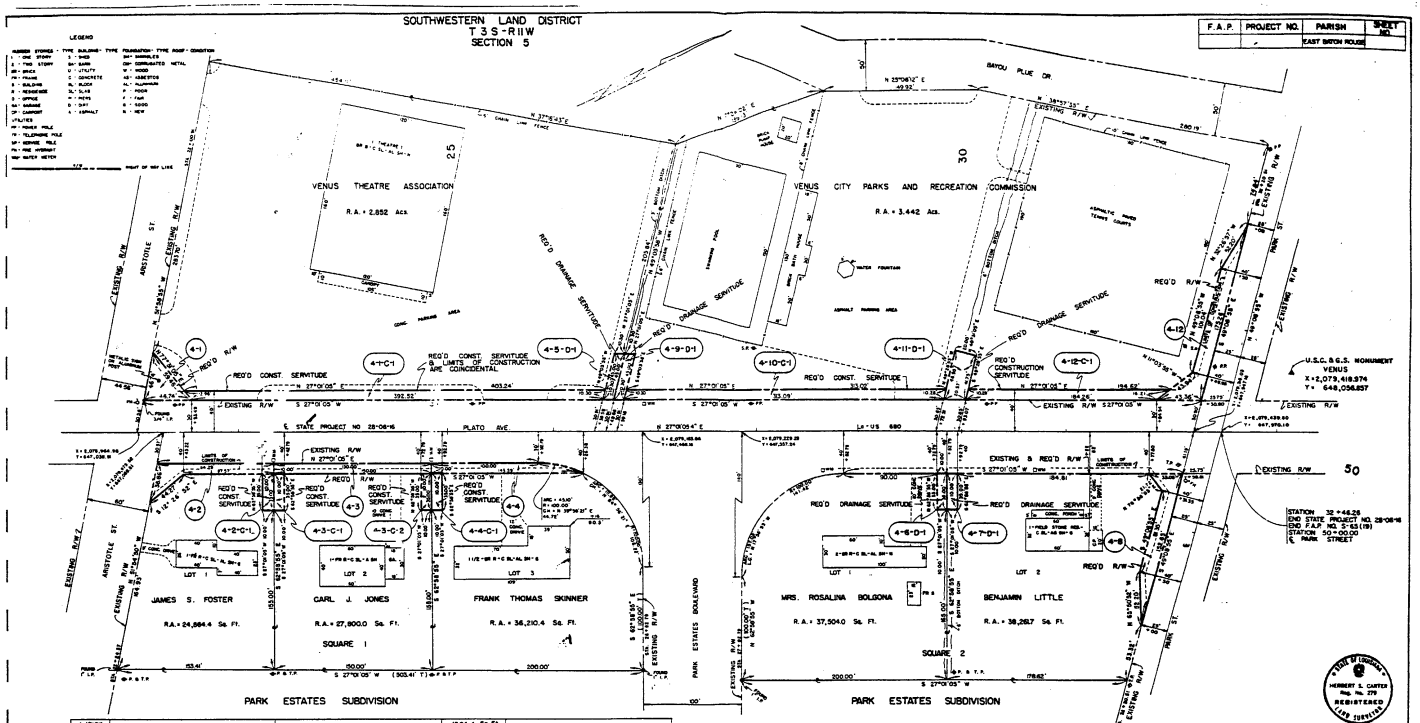

F. A. P.
PROJECT NO.
PARISH
EAST BATON ROUGE
SHEET NO.
SOUTH LOOP RD.
ARISTOTLE ST.
SOCRATES ST.
PLATO AVE.
EXISTING R/W
REQ'D R/W
REQ'D CONST SERVITUDE
REQ'D DRAINAGE SERVITUDE
SEE INSET "A"
SEE INSET "B"
VENUS HEIGHTS SUBDIVISION
BLOCK 1
VENUS HEIGHTS SUBDIVISION
BLOCK 2
VENUS HEIGHTS SUBDIVISION
BLOCK 3
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
LOT 15
LOT 21
LOT 22
LOT 23
LOT 24
LOT 26
LOT 27
(APARTMENT COMPLEX)
(ALLEY)
INSET "A"
No Scale
INSET "B"
No Scale
SAMPLE
LEGEND
RIGHT OF WAY LINE
STATE OF LOUISIANA
HERBERT S. CARTER
Reg. No. 779
REGISTERED
LAND SURVEYOR
FIELD BOOK NO. 85-67
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 28-06-16
F.A.P. NO S-65(19)
STATE ROUTE IN VENUS CITY
(PLATO AVE.)
EAST BATON ROUGE PARISH
LA-US 680
5/24/71
CORRECTED PARCEL NUMBERS
DATE
DESCRIPTION
BY
REVISIONS
HAVER & ASSOCIATES, INC.
CONSULTING ENGINEERS
VENUS CITY - LOUISIANA
HERB CARTER
REGISTERED LAND SURVEYOR
DATE: 10-15-67
SCALE: 1" = 40'
SHEET NO.
3
FILE NO. 3-10-1-68

Figure 3-9



PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - L.A. DEPT. OF HWYS.
4-12-C-1	VENUS CITY PARKS AND RECREATION COMMISSION	C.O.B. 944 Pg. 70 Aug.12, 1945	1894.4 Sq. Ft.	
4-12			2669.9 Sq. Ft.	
4-11-D-1			883.0 Sq. Ft.	
4-10-C-1			3330.0 Sq. Ft.	
4-9-D-1			4350.0 Sq. Ft.	
4-8	BENJAMIN LITTLE	C.O.B. 944 Pg. 44 Aug.30, 1945	2037.4 Sq. Ft.	
4-7-D-1			350.0 Sq. Ft.	
4-6-D-1	MRS. ROSALINA BOLOGNA	C.O.B. 1246 Pg. 110 April 24, 1967	350.0 Sq. Ft.	
4-5-D-1	VENUS THEATRE ASSOCIATION	C.O.B. 1200 Pg. 56 Sept.6, 1966	490.0 Sq. Ft.	
4-4-C-1	FRANK THOMAS SKINNER	C.O.B. 944 Pg. 39 Aug. 16, 1945	350.0 Sq. Ft.	
4-4			1295.8 Sq. Ft.	
4-3-C-2	CARL J. JONES	C.O.B. 1130 Pg. 41 June.9, 1965	350.0 Sq. Ft.	
4-3-C-1			350.0 Sq. Ft.	
4-3			1900.0 Sq. Ft.	
4-2-C-1	JAMES S. FOSTER	C.O.B. 944 Pg. 31 Aug. 15, 1945	350.0 Sq. Ft.	
4-2			1584 Sq. Ft.	
4-1-C-1	VENUS THEATRE ASSOCIATION	C.O.B. 1200 Pg. 56 Sept.6, 1966	3978.8 Sq. Ft.	
4-1			1073.3 Sq. Ft.	

Figure 3-10

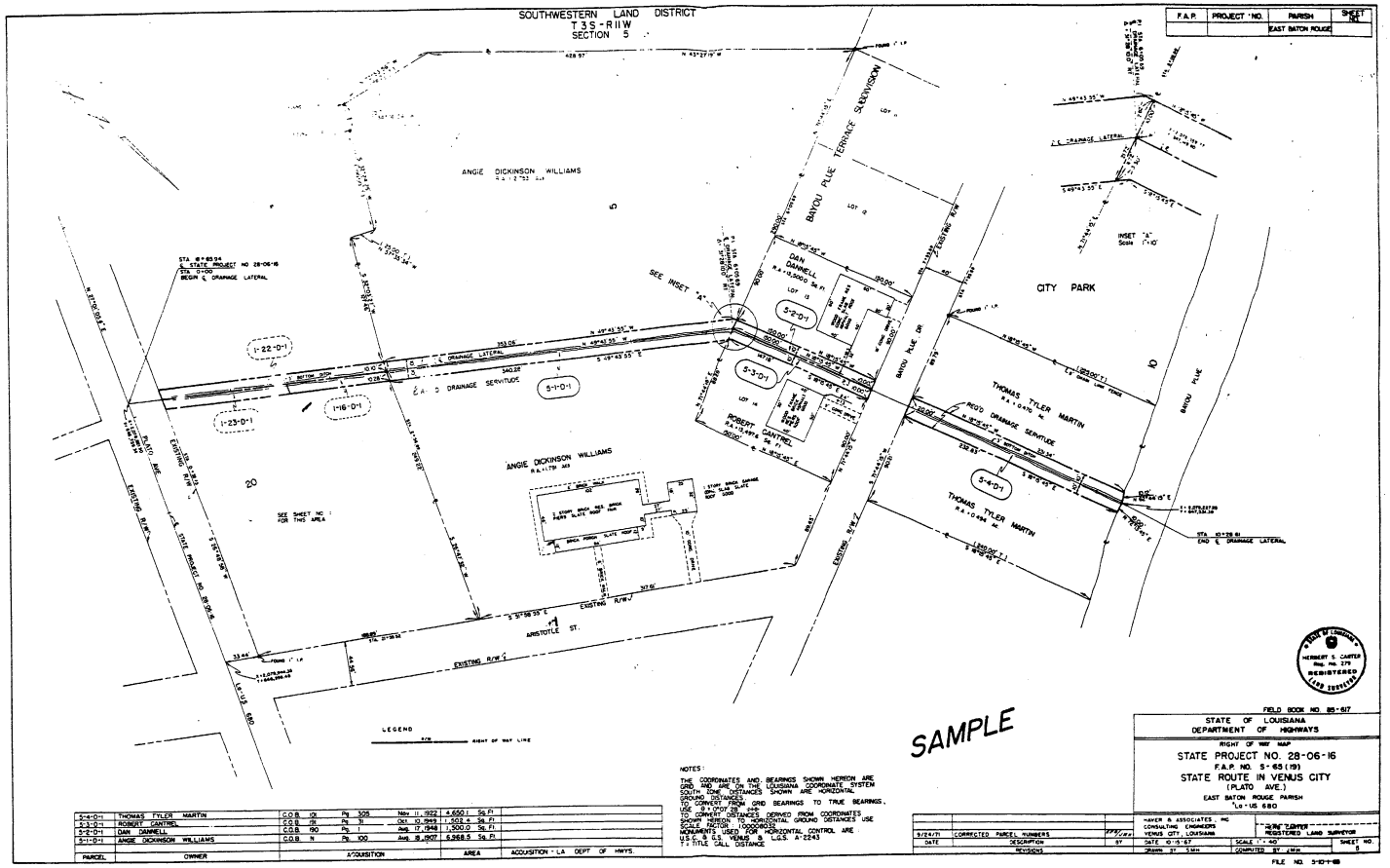

SOUTHWESTERN LAND DISTRICT
T3S-R11W
SECTION 5
F.A.P.
PROJECT NO.
PARISH
SHEET NO.
EAST BATON ROUGE
ANGIE DICKINSON WILLIAMS
BAYOU PLUE TERRACE SUBDIVISION
CITY PARK
BAYOU PLUE
BAYOU PLUE DR.
DAN DANNELL
ROBERT CANTREL
THOMAS TYLER MARTIN
REG'D DRAINAGE SERVITUDE
ANGIE DICKINSON WILLIAMS
ARISTOTLE ST.
EXISTING R/W
PLATO AVE.
SEE INSET "A"
INSET "A"
SEE SHEET NO. 1 FOR THIS AREA
STA. 10+28.81
END ℄ DRAINAGE LATERAL
LEGEND
RIGHT OF WAY LINE
SAMPLE
NOTES:
THE COORDINATES AND BEARINGS SHOWN HEREON ARE GRID AND ARE ON THE LOUISIANA COORDINATE SYSTEM SOUTH ZONE. DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.
TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS, USE 0+07'07.2 Sec.
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR 1.00000000
MONUMENTS USED FOR HORIZONTAL CONTROL ARE U.S.C. & G.S. VENUS & L.G.S. A-2243
1 = TITLE CALL DISTANCE
5-4-D-1 THOMAS TYLER MARTIN C.O.B. 101 Pg. 305 Nov. 11, 1922 4,650.1 Sq. Ft.
5-3-D-1 ROBERT CANTREL C.O.B. 191 Pg. 31 Oct. 10, 1949 1,502.4 Sq. Ft.
5-2-D-1 DAN DANNELL C.O.B. 190 Pg. 1 Aug. 17, 1948 1,500.0 Sq. Ft.
5-1-D-1 ANGIE DICKINSON WILLIAMS C.O.B. N Pg. 100 Aug. 18, 1907 6,968.5 Sq. Ft.
PARCEL
OWNER
ACQUISITION
AREA
ACQUISITION - LA DEPT OF HWYS.
9/24/71 CORRECTED PARCEL NUMBERS
DATE
DESCRIPTION
BY
REVISIONS
HAVER & ASSOCIATES, INC.
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA
HERBERT S. CARTER
REGISTERED LAND SURVEYOR
DATE 10-15-67
SCALE 1" = 40'
SHEET NO. 5
DRAWN BY SMH
COMPUTED BY JMH
FILE NO. 5-D-1-68
FIELD BOOK NO. 85-617
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 28-06-16
F.A.P. NO. S-65(19)
STATE ROUTE IN VENUS CITY
(PLATO AVE.)
EAST BATON ROUGE PARISH
La-US 680

Figure 3-11

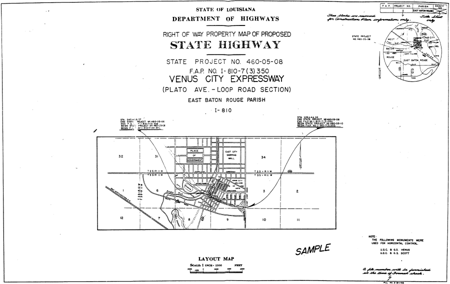

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY PROPERTY MAP OF PROPOSED
STATE HIGHWAY
STATE PROJECT NO. 460-05-08
F.A.P. NO. I-810-7(3)350
VENUS CITY EXPRESSWAY
(PLATO AVE. - LOOP ROAD SECTION)
EAST BATON ROUGE PARISH
I-810
F.A.P.
PROJECT NO.
PARISH
SHEET
EAST BATON ROUGE
These blocks are reserved for Construction Plan information only.
Title Sheet only
STATE PROJECT NO. 460-05-08
WEST
BATON
ROUGE
EAST BATON ROUGE
PLACE OF GOVERNMENT
EAST CITY SHOPPING MALL
SAMPLE
LAYOUT MAP
SCALE: 1 INCH = 2000 FEET
NOTE:
THE FOLLOWING MONUMENTS WERE USED FOR HORIZONTAL CONTROL.
U.S.C. & G.S. VENUS
U.S.C. & G.S. SCOTT
A file number will be furnished at the time of Format check.

Figure 3-12

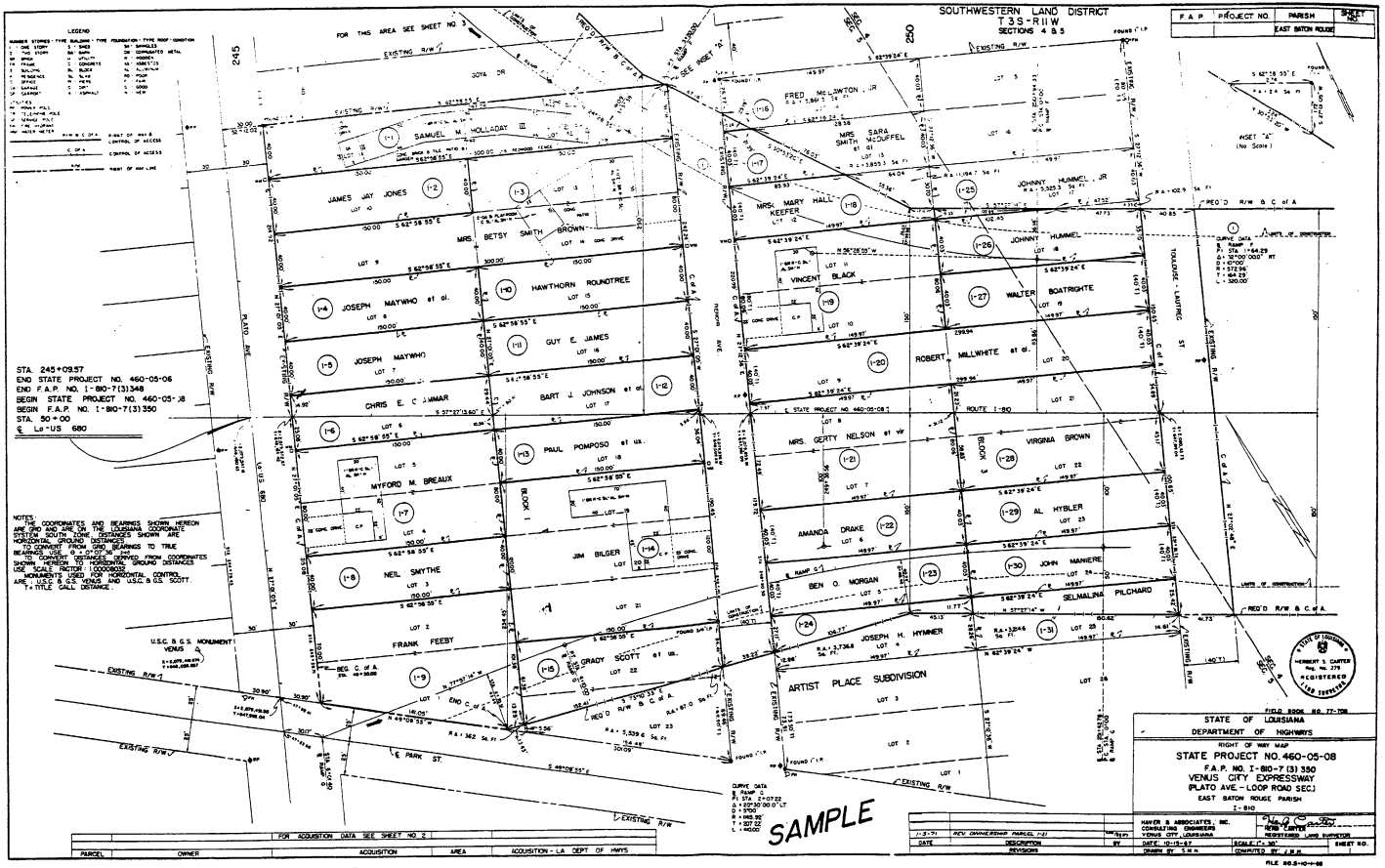

SOUTHWESTERN LAND DISTRICT
T3S-R11W
SECTIONS 4 & 5
F.A.P. PROJECT NO. PARISH SHEET NO.
EAST BATON ROUGE
FOR THIS AREA SEE SHEET NO. 3
SEE INSET "B"
INSET "A" (No Scale)
SAMUEL M. HOLLADAY III
JAMES JAY JONES
MRS. BETSY SMITH BROWN
JOSEPH MAYWHO et al.
HAWTHORN ROUNDTREE
JOSEPH MAYWHO
GUY E. JAMES
CHRIS E. C. JUMMAR
BART J. JOHNSON et al.
MYFORD M. BREAUX
PAUL POMPOSO et ux.
NEIL SMYTHE
JIM BILGER
FRANK FEEBY
GRADY SCOTT et ux.
FRED McLAWTON, JR
MRS. SARA SMITH McCUFFEL
MRS. MARY HALL KEEFER
JOHNNY HUMMEL, JR
JOHNNY HUMMEL
VINCENT BLACK
WALTER BOATRIGHTE
ROBERT MILLWHITE et al.
MRS. GERTY NELSON et vir
VIRGINIA BROWN
AMANDA DRAKE
AL HYBLER
BEN O. MORGAN
JOHN MANIERE
SELMALINA PILCHARD
JOSEPH H. HYMNER
ARTIST PLACE SUBDIVISION
BLOCK 1
BLOCK 3
BLOCK 4
ROUTE I-80
TOULOUSE - LAMYREC ST.
E. PARK ST.
EXISTING R/W
STA. 245+09.57
END STATE PROJECT NO. 460-05-06
END F.A.P. NO. I-80-7(3)348
BEGIN STATE PROJECT NO. 460-05-08
BEGIN F.A.P. NO. I-80-7(3)350
STA. 50+00
℄ Lo-US 680
NOTES
THE COORDINATES AND BEARINGS SHOWN HEREON ARE GRID AND ARE ON THE LOUISIANA COORDINATE SYSTEM SOUTH ZONE DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.
TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS USE: 0°-21'-07" W. ±
TO CONVERT DISTANCES SURVEYED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00008032
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. VENUS AND U.S.C. & G.S. SCOTT.
T = TITLE CALL DISTANCE.
U.S.C. & G.S. MONUMENT VENUS
FOR ACQUISITION DATA SEE SHEET NO. 2
PARCEL OWNER ACQUISITION AREA ACQUISITION - LA DEPT OF HWYS
SAMPLE
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 460-05-08
F.A.P. NO. I-80-7(3) 350
VENUS CITY EXPRESSWAY
(PLATO AVE. - LOOP ROAD SEC.)
EAST BATON ROUGE PARISH
I-80
HAVER & ASSOCIATES, INC.
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA
HERBERT S. CARTER
REGISTERED LAND SURVEYOR
DATE: 10-15-67
DRAWN BY S.M.H.
SCALE: 1" = 50'
COMPUTED BY J.B.H.
SHEET NO.
FIELD BOOK NO. 77-108
REV. OWNERSHIP PARCEL 1-21
DATE DESCRIPTION BY
REVISIONS
FILE NO. 3-10-1-68

Figure 3-13

PARCEL	OWNER	ACQUISITION		AREA	ACQUISITION-LA. DEPT. OF HWYS.
1-1	SAMUEL M. HOLLADAY III	C.O.B. 1492 Pg 60	OCT. 12, 1966	11,297.5 Sq. Ft.	
1-2	JAMES JAY JONES	C.O.B. 1491 Pg 100	AUG. 1, 1966	6,000.0 Sq. Ft.	
1-3	MRS. BETSY SMITH BROWN	C.O.B. 1480 Pg 60	JAN. 2, 1966		
		C.O.B. 1475 Pg 45	AUG. 14, 1965	18,000.0 Sq. Ft.	
		C.O.B. 1474 Pg 44	MAR. 15, 1965		
1-4					
1-5					
1-6					
1-7					
1-8					
1-9					
1-10					
1-11					
1-12					
1-13					
1-14					
1-15					
1-16					
1-17					
1-18					
1-19					
1-20					
1-21					
1-22					
1-23					
1-24					
1-25					
1-26					
1-27					
1-28					
1-29					
1-30					
1-31					

THE REMAINDER OF THIS TABLE SHOULD BE TABULATED SHOWING OWNERS NAME OR NAMES, ALL ACQUISITION DATA AND AREAS AS ILLUSTRATED ABOVE.

F.A.P.	PROJECT NO.	PARISH	SHEET NO.
		EAST BATON ROUGE	

SAMPLE CHECK SHEET

NAME OF PROJECT ..... CORRECT .....
RP. NO. ..... INCORRECT .....
DATE ..... DOES NOT APPLY .....

	SHEET NO.	1	2	3	4	5	6	7	8	9
TITLE BLOCK	PARCEL NO.									
	PROJECT NO.									
	OWNERS NAMES									
	ACQUISITION DATA									
	AREA									
	DATE									
	CITY NUMBER									
	CITY NAMES									
	PARISH NUMBER									
	PARISH NAME									
REVIEW BLOCK	PARCEL NO.									
	DATE									
	REVISION									
	BY									
ACQUISITION BLOCK	PARCEL NO.									
	PROJECT NO.									
	OWNER NAMES									
	ACQUISITION DATA									
	AREA									
	ACQUIRED BY LA. DEPT. OF HWYS.									
STRIP MAP PROPER	LAND DISTRICT									
	TOWNSHIP & RANGE									
	SECTION ~~PRW~~ HEADRIGHT NUMBERS									
	NORTH ARROW									
	IDENTIFY SECTION CORNER 1/4 CORNER & 40 CORNER									
	IDENTIFY SECTION LINES									
	IDENTIFY 40 PURE TRACTS (OF SUBDIVISION THEREOF)									
	IDENTIFY POINTS USED FOR PARCEL DES.									
	IDENTIFY									
	SUBDIVISION NAMES									
	LOT NUMBERS									
	BEGINNING & ENDING STATIONS									
	FLOODS OR & DISTANCE TO ℄ OF R/W BREAKS & ℄									
	LABEL EQUATIONS									
	CURVE DATA P.C. & P.T. ADOPTED & SURVEYED									
	PROJECT NUMBER ON ℄									
	ROUTE NUMBER ON ℄									
	LABEL EXISTING R/W									
	LABEL SOYO R/W									
	DIMENSION FROM ℄ TO EXISTING R/W									
	DIMENSION FROM ℄ TO PROP. R/W									
	PARCEL NUMBERS (CHECK AGAINST ACQUISITION BLOCK)									
	PARCEL OWNERS (CHECK AGAINST ACQUISITION BLOCK)									
	PARCEL LINES - HEAVY									
	FUTURE LINES - LIGHT (BACK & TIE)									
	PARCEL LINES - LIGHT (CHECK FINAL R/W PLANS)									
	PARCEL METES & BOUNDS (CLOCKWISE CHECK CLOSURE)									
	ROUTE NUMBERS OR LOCAL ROADS									
	CONTROL OF ACCESS									
	LIMITS OF CONSTRUCTION									
	BEARING NOTE 3 COORDINATES & SCALE FACTOR									
	TOPOGRAPHY LABELED OR IN LEGEND									
	REMAINING AREAS (FOR EACH LOT IN SUBDIVISIONS)									
	L. BEARING									
DRAINAGE OR TEMPORARY EASEMENT SERVITUDE	CORRECT LOCATION									
	METES & BOUNDS CLOCKWISE CHECK CLOSURE									
	PARCEL NUMBERS									
	PARCEL WIDTH									
	FLOODS									
	OWNER									
	T.L. ACQUISITION BLOCK									
	AREA									
	LABEL AS REQ'D (DRAINAGE OR CONST. SERVITUDE)									
OWNERSHIP MAP	OWNERS NAMES									
	REMAINING AREAS (NOT SHOWN ON STRIP MAP)									
	BEGINNING & ENDING STATIONS									
	℄ STATIONS									
	LAND DISTRICT									
	TOWNSHIP & RANGE									
	SECTION ~~PRW~~ HEADRIGHT NUMBERS									
	POST SOYO R/W									
	LABEL LOCAL ROADS & ROUTE NUMBERS									
	LABEL RIVERS, CANALS, ETC.									
	PROJECT NUMBER ON ℄									
	NORTH ARROW									
	PLA NUMBER									
TITLE SHEET	LABEL RIGHT OF WAY OF PROPOSED									
	PROJECT NUMBER									
	F.A.P. NUMBER									
	NAME OF PROJECT									
	ROUTE NUMBER									
	PARISH									
	BEGINNING & ENDING STATIONS									
	R/W OF SHADED									
	VICINITY MAP									
	NORTH ARROW									
	PLA NUMBER									

Note: *Separate sheets for Metes and Bounds, Topography and Acquisition Data are to be used only when a combination sheet would be too crowded to be passable.*

Note: *The above Sample Check Sheet is a suggested form to be used in checking the format for the Right of Way Property Map. It is not to be construed as being complete in every sense, nor is it to be made a part of the Strip Map.*

SAMPLE

Note: *Wherever two firms are involved in making the Right of Way Property Map, the space we have used for the signature should be used to place the other firm's name. The signature will then be placed beneath the seal.*

STATE OF LOUISIANA
HERBERT S. CARTER
Reg. No. 279
REGISTERED
LAND SURVEYOR

FIELD BOOK NO. 77-TOR

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

RIGHT OF WAY MAP

STATE PROJECT NO. 460-05-08
F.A.P. NO. I-810-7(3)350
VENUS CITY EXPRESSWAY
(PLATO AVE.-LOOP ROAD SEC.)
EAST BATON ROUGE PARISH
I-810

DATE	DESCRIPTION	BY
	REVISIONS	

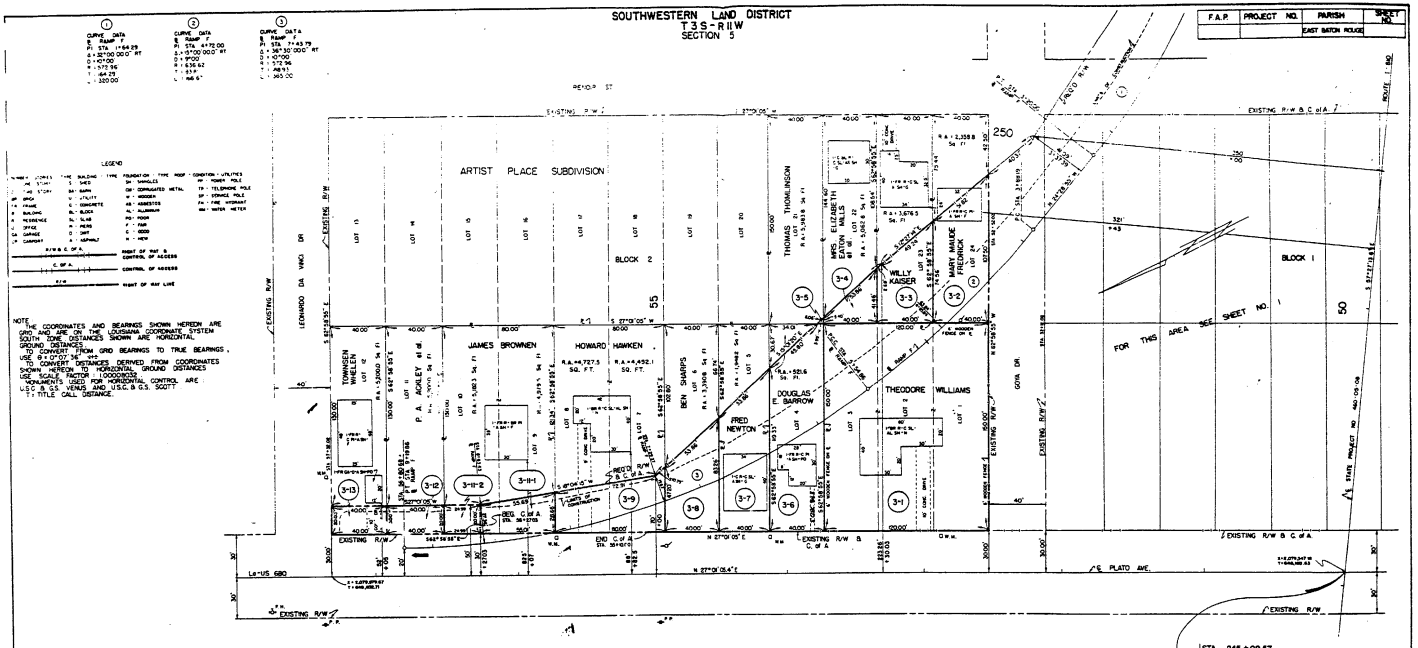
HAVER & ASSOCIATES, INC.
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA

HERB CARTER
REGISTERED LAND SURVEYOR

DATE 10-1-67 | SCALE | SHEET NO. 3
DRAWN BY E.F.R. & S.M.H. | COMPUTED BY J.M.H.

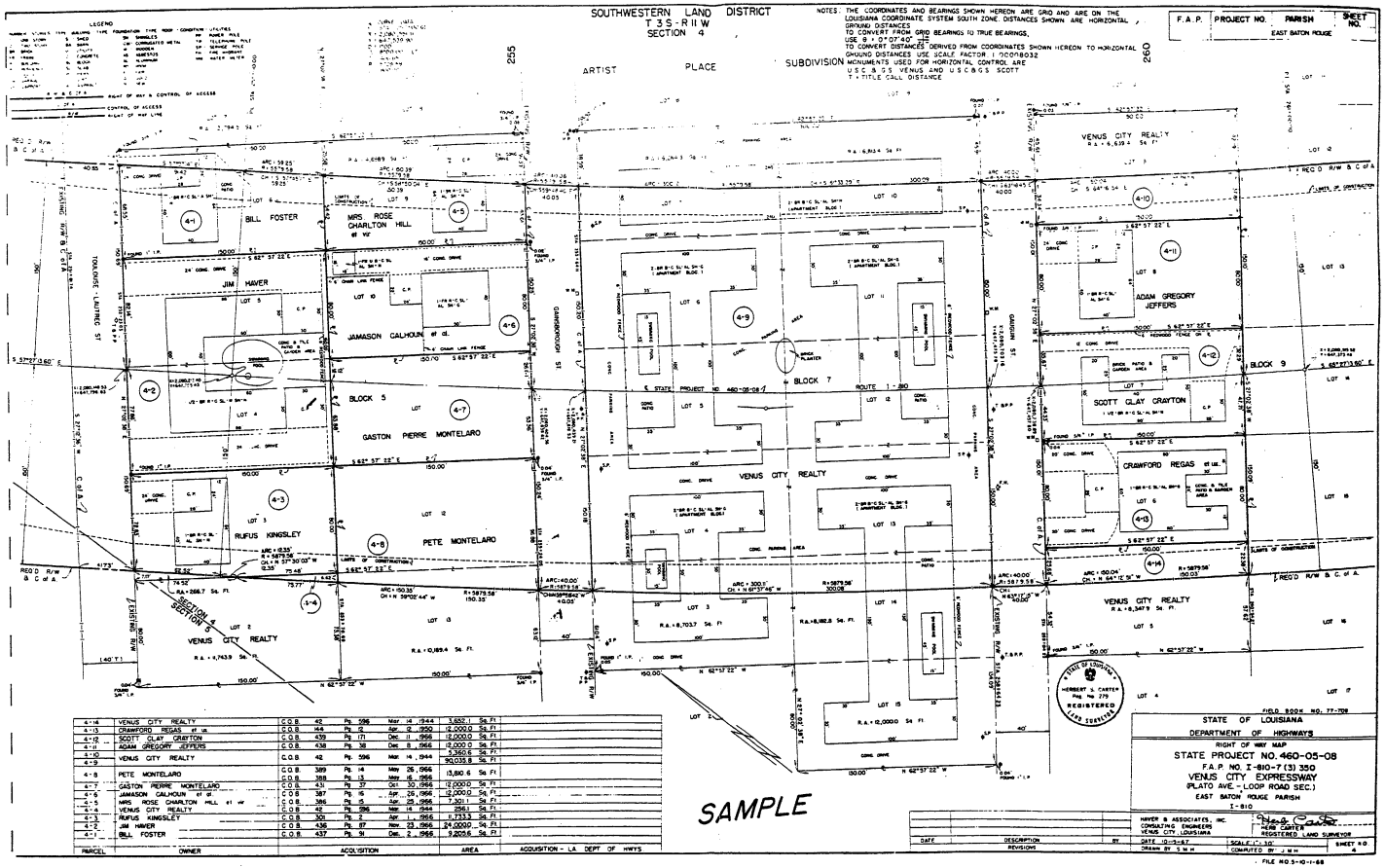
FILE NO. 5-10-1-68

Figure 3-14



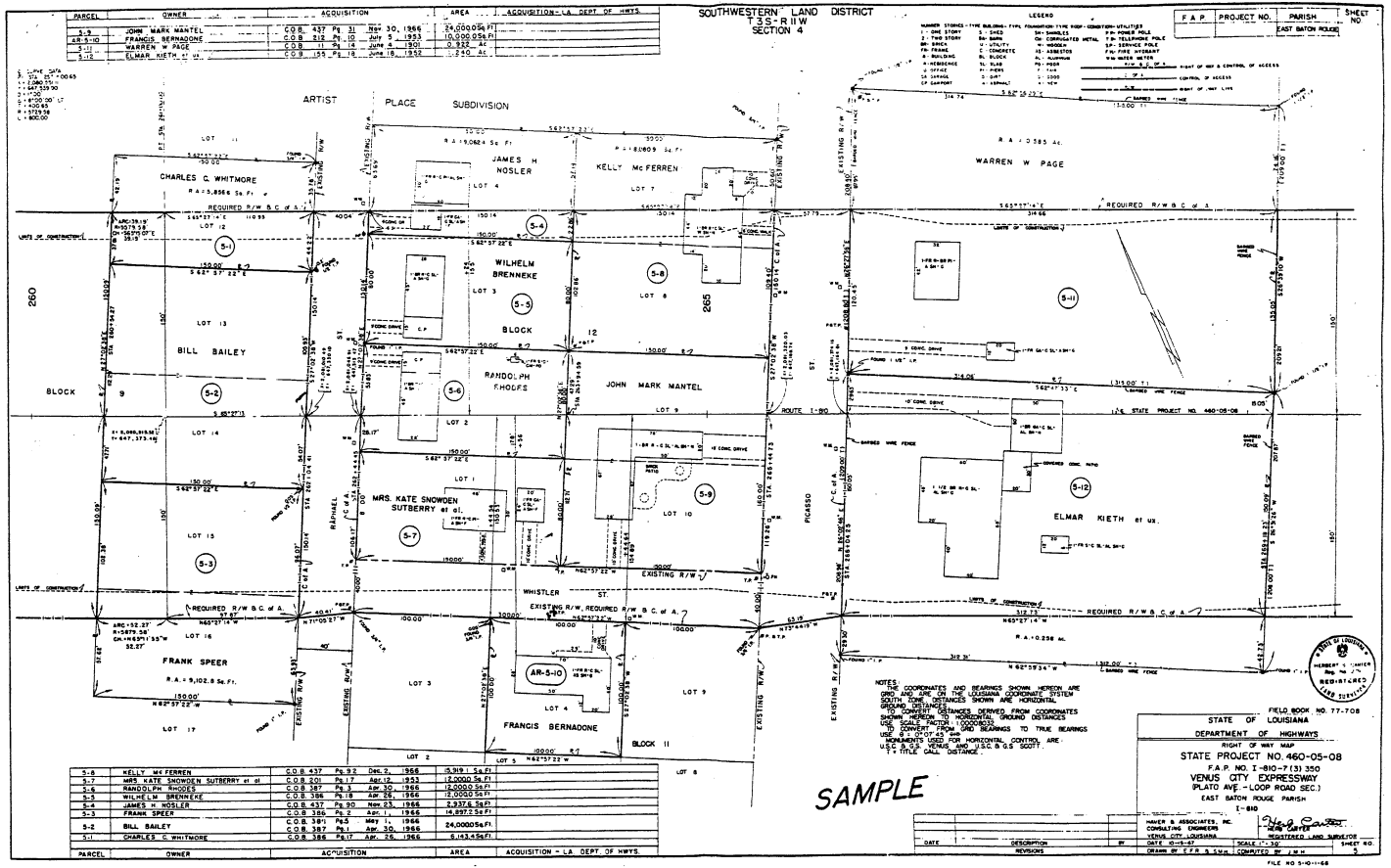
PARCEL	OWNER	COUISITION			AREA	ACQUISITION - LA. DEPT. OF HWYS
3-13	TOWNSEN WHELEN	C.O.B. 180	Pg. 18	May 16, 1962	800.0 Sq. Ft.	
3-12	P.A. ACKLEY et al.	C.O.B. 181	Pg. 7	Nov. 13, 1963	800.0 Sq. Ft.	
3-11-2	JAMES BROWNEN	C.O.B. 180	Pg. 31	May 5, 1961	499.8 Sq. Ft.	
3-11-1					1,139.4 Sq. Ft.	
AR-3-10	HOWARD HAWKEN	C.O.B. 285	Pg. 13	Apr. 5, 1965	DELETED	
3-9					2,520.4 Sq. Ft.	
3-8	BEN SHARPS	C.O.B. 180	Pg. 27	May 16, 1961	2,609.2 Sq. Ft.	
3-7	FRED NEWTON	C.O.B. 180	Pg. 33	May 5, 1961	4,051.8 Sq. Ft.	
3-6	DOUGLAS E. BARROW	C.O.B. 180	Pg. 32	May 5, 1961	3,478.4 Sq. Ft.	
3-5	THOMAS THOMLINSON	C.O.B. 183	Pg. 200	Nov. 22, 1964	15.2 Sq. Ft.	
3-4	MRS. ELIZABETH EATON MILLS et al.	C.O.B. 32	Pg. 710	Feb. 17, 1966	937.2 Sq. Ft.	
3-3	WILLY KAISER	C.O.B. 31	Pg. 707	Jan. 4, 1965	2,320.5 Sq. Ft.	
3-2	MARY MAUDE FREDRICK	C.O.B. 50	Pg. 50	Jan. 13, 1964	3,641.2 Sq. Ft.	
		C.O.B. 285	Pg. 11	Apr. 15, 1965		
3-1	THEODORE WILLIAMS	C.O.B. 184	Pg. 205	Dec. 15, 1964	18,000.0 Sq. Ft.	
		C.O.B. 49	Pg. 152	Dec. 1, 1963		

Figure 3-15



PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA. DEPT. OF HWYS
4-16	VENUS CITY REALTY	C.O.B. 42 Pg. 596 Mar. 14, 1944	3,652.1 Sq. Ft.	
4-13	CRAWFORD REGAS et ul.	C.O.B. 144 Pg. 12 Apr. 12, 1950	12,000.0 Sq. Ft.	
4-12	SCOTT CLAY CRAYTON	C.O.B. 439 Pg. 171 Dec. 11, 1966	12,000.0 Sq. Ft.	
4-11	ADAM GREGORY JEFFERS	C.O.B. 438 Pg. 38 Dec. 8, 1966	12,000.0 Sq. Ft.	
4-10	VENUS CITY REALTY	C.O.B. 42 Pg. 596 Mar. 14, 1944	3,366.6 Sq. Ft.	
4-9			90,035.8 Sq. Ft.	
4-8	PETE MONTELARO	C.O.B. 389 Pg. 14 May 26, 1966	13,816.6 Sq. Ft.	
		C.O.B. 388 Pg. 13 May 16, 1966		
4-7	GASTON PIERRE MONTELARO	C.O.B. 431 Pg. 37 Oct. 30, 1966	12,000.0 Sq. Ft.	
4-6	JAMASON CALHOUN et ul.	C.O.B. 387 Pg. 16 Apr. 26, 1966	12,000.0 Sq. Ft.	
4-5	MRS. ROSE CHARLTON HILL et vir	C.O.B. 386 Pg. 15 Apr. 25, 1966	7,301.1 Sq. Ft.	
4-4	VENUS CITY REALTY	C.O.B. 42 Pg. 596 Mar. 14, 1944	256.1 Sq. Ft.	
4-3	RUFUS KINGSLEY	C.O.B. 301 Pg. 2 Apr. 1, 1966	11,733.3 Sq. Ft.	
4-2	JIM HAVER	C.O.B. 436 Pg. 87 Nov. 23, 1966	24,000.0 Sq. Ft.	
4-1	BILL FOSTER	C.O.B. 437 Pg. 31 Dec. 2, 1966	9,200.6 Sq. Ft.	

Figure 3-16



PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA. DEPT. OF HWYS.
5-9	JOHN MARK MANTEL	C.O.B. 437 Pg. 31 Nov. 30, 1966	24,000.0 Sq. Ft.	
AR-5-10	FRANCIS BERNADONE	C.O.B. 212 Pg. 10 July 5, 1953	10,000.0 Sq. Ft.	
5-11	WARREN W PAGE	C.O.B. 11 Pg. 14 June 4, 1901	0.922 Ac.	
5-12	ELMAR KIETH et ux.	C.O.B. 155 Pg. 18 June 18, 1952	1.240 Ac.	

PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA. DEPT. OF HWYS.
5-8	KELLY McFERREN	C.O.B. 437 Pg. 92 Dec. 2, 1966	15,919.1 Sq. Ft.	
5-7	MRS. KATE SNOWDEN SUTBERRY et al	C.O.B. 201 Pg. 17 Apr. 12, 1953	12,000.0 Sq. Ft.	
5-6	RANDOLPH RHODES	C.O.B. 387 Pg. 3 Apr. 30, 1966	12,000.0 Sq. Ft.	
5-5	WILHELM BRENNEKE	C.O.B. 386 Pg. 18 Apr. 26, 1966	12,000.0 Sq. Ft.	
5-4	JAMES H. NOSLER	C.O.B. 437 Pg. 90 Nov. 23, 1966	2,937.6 Sq. Ft.	
5-3	FRANK SPEER	C.O.B. 386 Pg. 2 Apr. 1, 1966	14,897.2 Sq. Ft.	
5-2	BILL BAILEY	C.O.B. 381 Pg. 5 May 1, 1966	24,000.0 Sq. Ft.	
5-1	CHARLES C. WHITMORE	C.O.B. 386 Pg. 17 Apr. 26, 1966	6,143.4 Sq. Ft.	

Figure 3-17

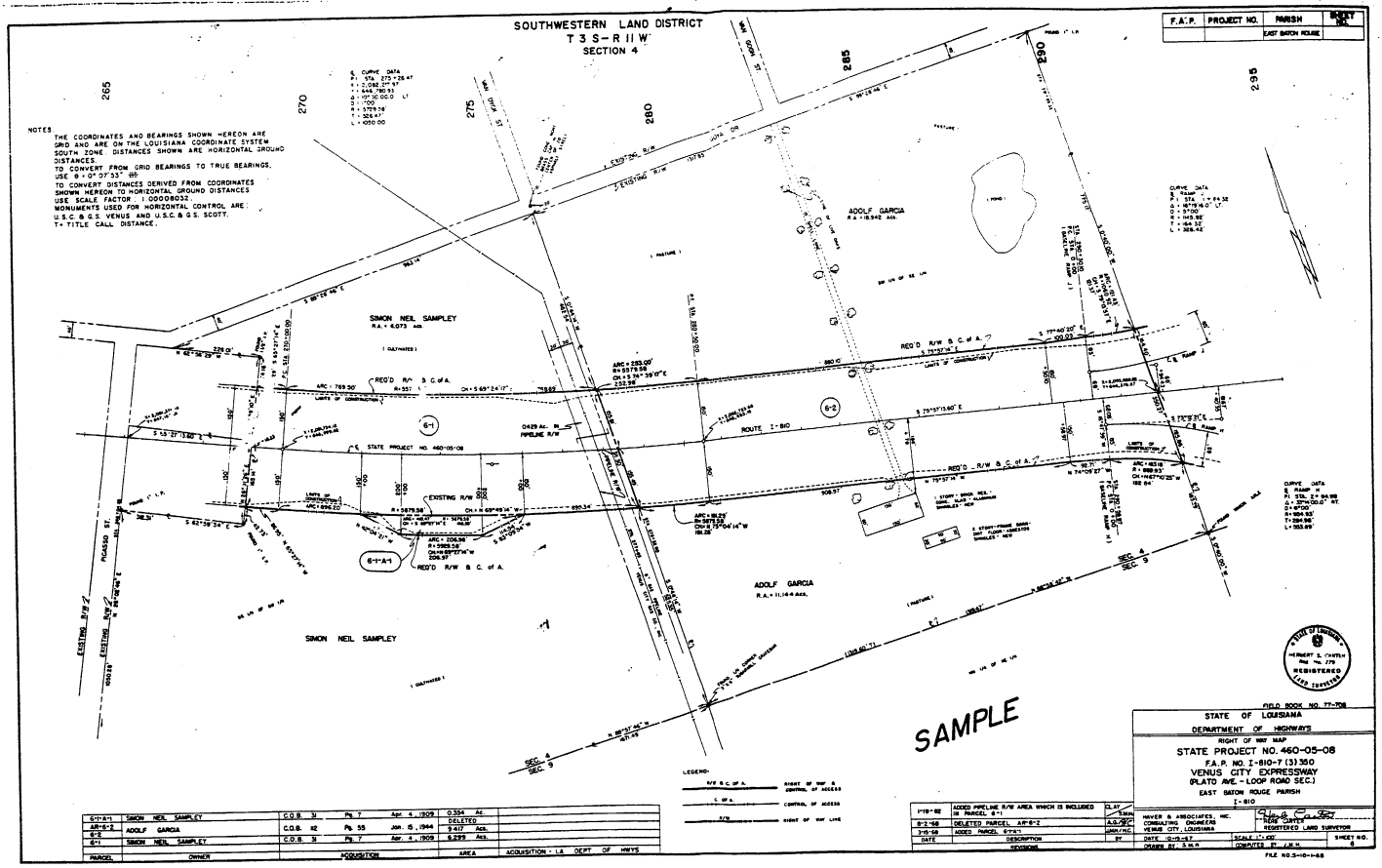
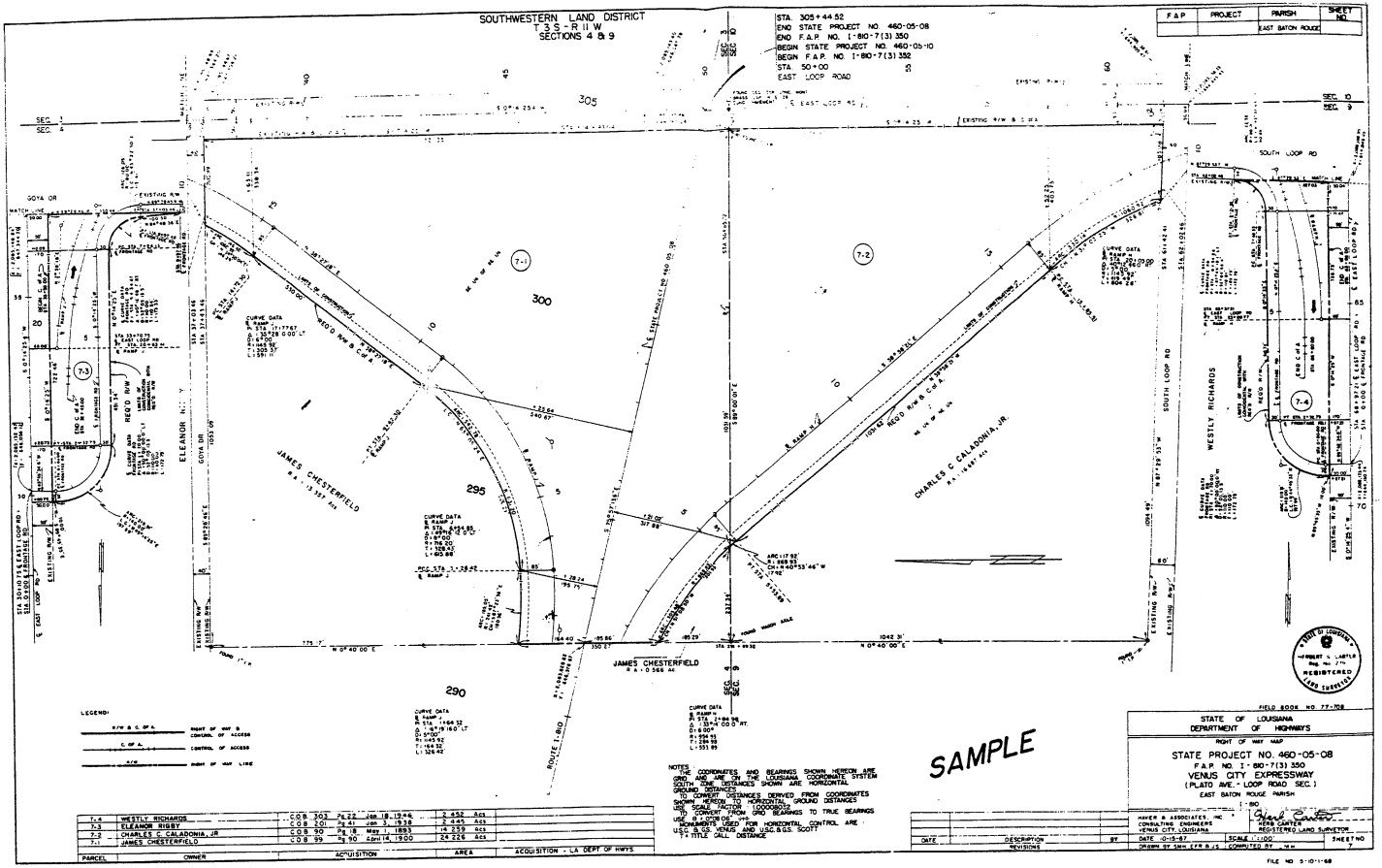

SOUTHWESTERN LAND DISTRICT
T 3 S - R 11 W
SECTION 4
F.A.P.
PROJECT NO.
PARISH
EAST BATON ROUGE
NOTES:
THE COORDINATES AND BEARINGS SHOWN HEREON ARE GRID AND ARE ON THE LOUISIANA COORDINATE SYSTEM SOUTH ZONE. DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.
TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS, USE 0° 0' 07" 53" ⊕
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00008032.
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. VENUS AND U.S.C. & G.S. SCOTT.
T= TITLE CALL DISTANCE.
SIMON NEIL SAMPLEY
ADOLF GARCIA
ROUTE I-810
STATE PROJECT NO. 460-05-08
EXISTING R/W
PIPELINE R/W
SAMPLE
SEC. 4
SEC. 9
LEGEND:
RIGHT OF WAY & CONTROL OF ACCESS
CONTROL OF ACCESS
RIGHT OF WAY LINE
FIELD BOOK NO. 77-708
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 460-05-08
F.A.P. NO. I-810-7 (3) 350
VENUS CITY EXPRESSWAY
(PLATO AVE. - LOOP ROAD SEC.)
EAST BATON ROUGE PARISH
I-810
HAYER & ASSOCIATES, INC.
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA
REGISTERED LAND SURVEYOR
DATE 10-15-67
SCALE 1" = 100'
SHEET NO. 6
FILE NO. S-10-1-68
6-1-A-1 SIMON NEIL SAMPLEY C.O.B. 31 Pg. 7 Apr. 4, 1909 0.354 Ac.
AR-6-2 ADOLF GARCIA C.O.B. 12 Pg. 55 Jan. 15, 1944 9.417 Acs.
6-2 SIMON NEIL SAMPLEY C.O.B. 31 Pg. 7 Apr. 4, 1909 6.299 Acs.
PARCEL OWNER ACQUISITION AREA ACQUISITION - LA DEPT OF HWYS
1-19-62 ADDED PIPELINE R/W AREA WHICH IS INCLUDED IN PARCEL 6-1
8-2-68 DELETED PARCEL AR-6-2
3-15-68 ADDED PARCEL 6-1A-1
DATE DESCRIPTION
REVISIONS

Figure 3-18



PARCEL	OWNER	ACQUISITION	AREA	ACQUISITION - LA DEPT OF HWYS.
7-4	WESTLY RICHARDS	COB 303 Pg 22 Jan 18 1946	2.452 Acs	
7-3	ELEANOR RIGBY	COB 201 Pg 41 Jan 3, 1938	2.445 Acs	
7-2	CHARLES C. CALADONIA, JR	COB 90 Pg 18 May 1, 1893	14.259 Acs	
7-1	JAMES CHESTERFIELD	COB 99 Pg 90 Jan 14, 1900	24.226 Acs	

Figure 3-19

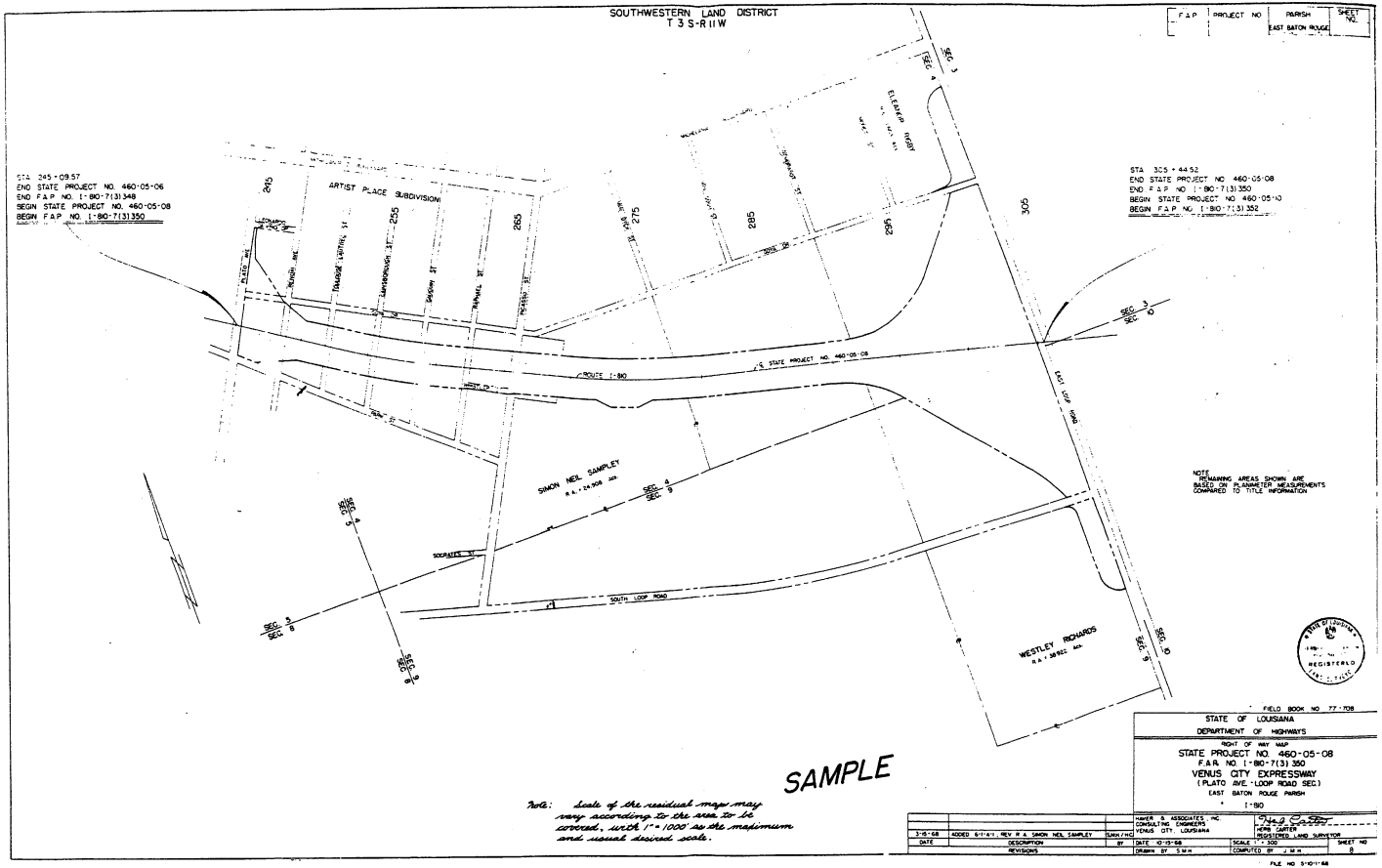

SOUTHWESTERN LAND DISTRICT
T 3 S-R 11 W
F.A.P. PROJECT NO
PARISH
EAST BATON ROUGE
SHEET NO.
STA 245 + 09.57
END STATE PROJECT NO. 460-05-06
END F.A.P. NO. I-810-7(3)348
BEGIN STATE PROJECT NO. 460-05-08
BEGIN F.A.P. NO. I-810-7(3)350
STA 305 + 44.52
END STATE PROJECT NO 460-05-08
END F.A.P. NO. I-810-7(3)350
BEGIN STATE PROJECT NO 460-05-10
BEGIN F.A.P. NO. I-810-7(3)352
ARTIST PLACE SUBDIVISION
ELEANOR DR
PLATO AVE
ROUGH AVE
TRAVIS LAPTON ST
SANDERSON ST
SAXON ST
TRAVIS ST
MCKEE ST
MAIN AVE
ROUTE I-810
STATE PROJECT NO. 460-05-08
WEST DR
SIMON NEIL SAMPLEY
R.A.T. 24.908 ACS
SOCRATES ST
SOUTH LOOP ROAD
WESTLEY RICHARDS
R.A.T. 38.962 ACS
EAST LOOP ROAD
SEC. 3
SEC. 4
SEC. 5
SEC. 8
SEC. 9
SEC. 10
NOTE
REMAINING AREAS SHOWN ARE BASED ON PLANIMETER MEASUREMENTS COMPARED TO TITLE INFORMATION
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 460-05-08
F.A.P. NO. I-810-7(3) 350
VENUS CITY EXPRESSWAY
(PLATO AVE.-LOOP ROAD SEC.)
EAST BATON ROUGE PARISH
I-810
FIELD BOOK NO 77-708
HAMER & ASSOCIATES INC.
CONSULTING ENGINEERS
VENUS CITY, LOUISIANA
KENS CARTER
REGISTERED LAND SURVEYOR
3-15-68
ADDED 6-17-61, REV. R & SIMON NEIL SAMPLEY
SMH/HC
DATE
DESCRIPTION
BY
REVISIONS
DATE 10-15-68
DRAWN BY S M H
SCALE 1" = 500'
COMPUTED BY J M H
SHEET NO 8
FILE NO 5-10-11-68
SAMPLE
Note: Scale of the residual maps may vary according to the area to be covered, with 1" = 1000' as the maximum and usual desired scale.

Figure 3-20

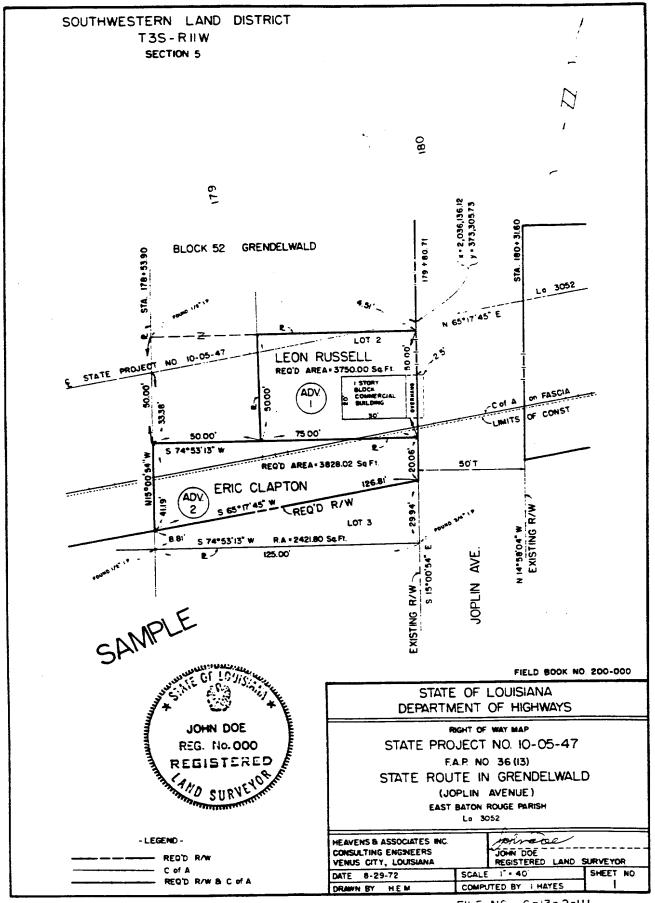
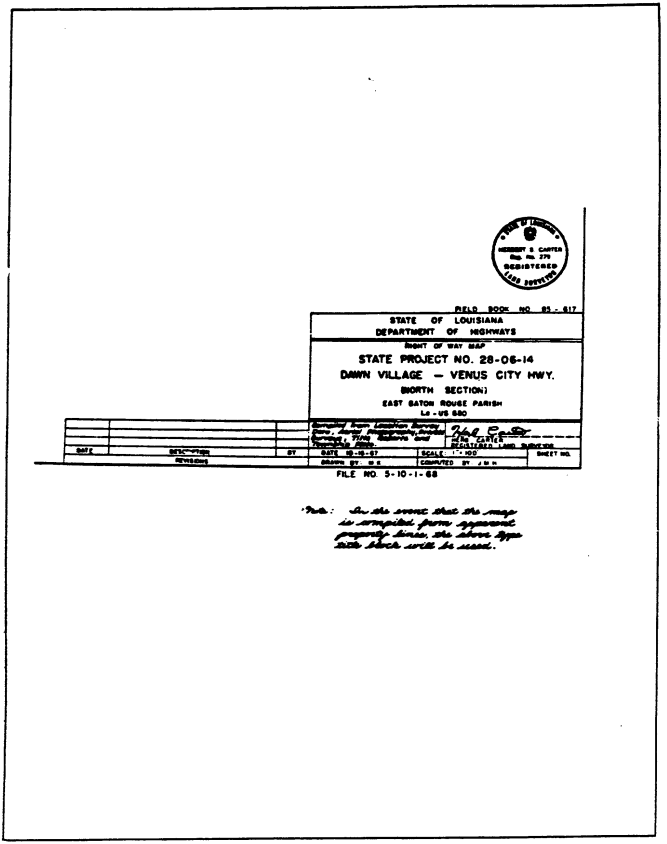


Figure 3-21

FILE NO. 6-13-2-111



MERRIFF S. CARTER
REGISTERED
LAND SURVEYOR
FIELD BOOK NO. 85 - 617
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 28-06-14
DAWN VILLAGE — VENUS CITY HWY.
(NORTH SECTION)
EAST BATON ROUGE PARISH
LA - US 680
Compiled from Location Survey Data, Land Monographs, Aerial Surveys, Title Reports and Township Plats.
Merrill S. Carter
MERRILL S. CARTER
REGISTERED LAND SURVEYOR
DATE
DESCRIPTION
BY
REVISIONS
DATE 10-16-67
SCALE 1" = 100'
SHEET NO.
DRAWN BY M.K.
COMPUTED BY J.M.H.
FILE NO. 5-10-1-68
Note: In the event that the map is compiled from apparent property lines, the above type title block will be used.

Figure 3 - 22

DOTD 03-30-1080
12/85

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

SIDE 2

ACTIVITY AND PROGRESS OF PROPERTY SURVEYS & MAPS

For the week ending, Saturday MAY 24 19 86

GANG NO. ____ SECTION ____ P.O. Box No. ____

PROJECT OR SURVEY NO. 52-08-26 LENGTH 7.1 Miles

NAME OF HIGHWAY BULL RUN HIGHWAY

AVOYELLES PA. LN. NO. LATANIER SECTION

ROUTE NO. LA. 1 DIST. 08

PARISH RAPIDES

ADDRESS	PHONE
OFFICE JOHN DOE ENGRS. LOGTOWN, LA.	449-8888
LODGING HOLIDAY INN ALEXANDRIA, LA.	

DATE SURVEY BEGAN 3-12 19 86

DATE TO BE COMPLETED 11-12 19 86

STATION NUMBER AT BEGINNING	AT END
0+00	375+00

DAY OF WEEK	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
WEATHER							
WORKING CONDITIONS		GOOD	GOOD	FAIR	POOR	FAIR	

PERSONNEL NAME	TITLE	NO. OF DAYS WORKED	PROPERTY SURVEYS STAGES	THIS WEEK'S WORK STATION TO STATION		% of Stage Comp.	Wt. % Comp. To Date
JOHN DOE	ENGINEER	3.5	RESEARCH			80	1
BILL SMITH	PARTY CHIEF	5	FIELD			15	10
				R/W MAPS			
MARK WILD		4	CALCULATIONS			10	1
BRUCE LANDRY		2	DRAFTING			5	1
			ENTIRE PROJECT				13

SEE REVERSE SIDE FOR ACTIVITY AND PROGRESS OF TOPOGRAPHIC SURVEY PARTY

REMARKS AND ADDITIONAL INFORMATION

MON. MAY 19 LOCATING TRACTS ON MAPS WITH TITLE REPORTS
FIELD SURVEY

TUES. MAY 20 LOCATING TRACTS ON MAPS WITH TITLE REPORTS
FIELD SURVEY

WED. MAY 21 RESEARCHING TITLE WORK & FIELD SURVEY

THURS. MAY 22 - FRI. MAY 23 FIELD SURVEY,
CALCULATIONS & DRAFTING.

Frank Jones
Project Engineer or Party Chief

ORIGINAL TO LOCATION & SURVEY ENGINEER
C/C DISTRICT ADMINISTRATOR

Figure 3-23 Report Form for Activity and Progress of Property Surveys and Maps (Side 2).

CHAPTER IV

MONUMENT RECOVERY AND PRESERVATION

4.01 GENERAL

The network of triangulation stations and bench marks of the National Ocean Surveys, NOAA (formerly U. S. Coast and Geodetic Survey), as well as control monuments of other governmental agencies, such as U.S. Geological Survey, U. S. Corps of Engineers, and Louisiana Geodetic Survey include thousands of monumented stations throughout the United States. These stations or monuments are coordinated into a standard, rigid system in which the distances, directions, and elevations are fixed and each monument is in a known correct relationship with other established monuments.

All persons shall make every effort to protect and preserve all such monuments. The Department's project engineer or any consultant or others working with the Department of Transportation and Development shall inform the Location and Survey Engineer, Department of Transportation and Development, P.O. Box 44245, Capitol Station, Baton Rouge, Louisiana, 70804, whenever there is danger of disturbing any monument or whenever action is necessary to preserve any monument. The monument which will be disturbed shall be reported by its proper designation which is the stamped name or number on the disk, along with the name of the organization which established the mark. If a date is stamped on the disk, it should also be given. The name of the organization which established the monument is found cast in the outer edge of the disk. See Figures 4-1, 4-2, 4-5, and 4-7.

Upon receipt of this information, the Location and Survey Engineer will notify by letter the proper governmental agency that is responsible for that particular monument. In all cases, one copy each of this letter will be sent to the following:

(1) National Geodetic Survey, NOS
Room 102
Department of Transportation
and Development
P.O. Box 44245, Capitol Station
Baton Rouge, La. 70804

(2) United States Department of the
Interior
Geological Survey
Rolla, Missouri 65401

Each of the agencies listed in (1) and, (2) above will be fully responsible for the resetting, or otherwise preserving monuments set or maintained by their respective agencies unless the Louisiana Geodetic Survey also has control on the monument. In these cases, both the Federal governmental agency and the Louisiana Department of Transportation and Development, through the Location and Survey Engineer, will supervise the resetting of the monuments.

Whenever it is the responsibility of the Department of Transportation and Development to reset a monument, the Location and Survey Section will furnish a man to personally supervise the work. Any additional personnel required to accomplish this will be furnished by the Project Engineer.

Under no conditions should the Project Engineer or anyone else move these monuments without written approval of the Location and Survey Engineer.

4.02 RECOVERY OF LOUISIANA GEODETIC SURVEY MONUMENTS

The Louisiana Department of Transportation and Development is responsible for Louisiana Geodetic Survey Monuments and data.

In the past, highway construction and

maintenance has probably been the largest single destroyer of L.G.S. Monuments. Progress is now being made to correct this situation. The Location and Survey Section has a two-man survey party whose primary job is to recover, mark by witness signs, and redescribe every L.G.S. monument along highways that are to be improved. This party also supervises the resetting of any L.G.S. monuments which have to be moved because of construction.

The survey party is furnished a list of projects for which bids will be received and descriptions of all L.G.S., U.S.C. & G.S., and U.S.G.S. monuments located within the limits of each proposed construction project on the bid list. From these descriptions, a search is made for each monument. Monuments other than Louisiana Geodetic Survey will be discussed in Paragraph 4.03. When Louisiana Geodetic Survey monuments are found, a metal witness sign is placed on a metal sign post about one foot from the monument. The sign is placed so that a man mowing grass on the highway right-of-way can see the flat side and not the edge of the sign. The edge of the sign should point toward the roadway. The sign and post should be approximately four feet above ground. If monuments are located in improved lawns, developed parking lots, etc., this sign requirement may be modified to meet local conditions.

A new description is written for each L.G.S. monument that is recovered (see Figure 1-31). If no evidence of the monument is found, it is reported as "not recovered." If the monument is found leaning badly, or the disk is gone, or only the bottom portion of the monument is found, then the monument is reported as destroyed. Definite evidence of the monument must be identified before a "destroyed" report is given.

After recovery field work has been completed for a project, the Monument Recovery Party Chief will personally show the Project Engineer each and every monument on his particular project. The Project Engineer is asked at this time to advise either the Recovery Party Chief or the Location and Survey Engineer whenever he determines that any of the monuments recovered will be affected by his construction project.

4.03 RECOVERY OF MONUMENTS OTHER THAN L.G.S.

When recovering L.G.S. monuments as described in Paragraph 4.02, the survey party will also search for monuments established by other agencies such as U.S. Coast and Geodetic Survey, U.S. Geological Survey, etc.

A "Report on Condition of Survey Mark" form will be completed by the Monument Recovery Party Chief for each monument for which a search was conducted (see Figure 4-8). This report will be sent to the Location and Survey Engineer, who will forward it to the proper agency. The existing description of the location of the monument is brought up-to-date at this time and a new description is furnished.

Whenever U.S.C. & G.S. or U.S.G.S. furnishes witness signs and posts for their monuments, the Department's Recovery Party will place them at the proper places where needed.

4.04 RESETTING LOUISIANA GEODETIC SURVEY MONUMENTS

Louisiana Geodetic Survey monuments are traverse stations for which horizontal positions or elevations or both have been determined. In moving these monuments, both the horizontal position and the elevation must be preserved.

These monuments shall always be reset just as soon as a new right-of-way is staked--always before a new right-of-way is cleared--in order to prevent construction equipment from disturbing the original monuments which will be used in establishing data on the new monuments.

The new monument may be a pre-cast concrete monument or a cast-in-place concrete monument with the appropriate brass disk in the top. Whichever type monument is used, it will be furnished by the Location and Survey Section when their personnel visit the job site to supervise the setting of the new monument. These monuments should be set in the ground as shown in Figure 4-3.

A complete report (see Figure 4-4) of the work done, including a description of the location at which the new mark was established and a copy of the field notes, shall be forwarded to:

Location and Survey Engineer
Department of Transportation
and Development
P.O. Box 44245, Capitol Station
Baton Rouge, Louisiana 70804

The description (see Figure 4-4) shall include a "to reach" description from the post office, bank, or prominent permanent building in the nearest town or the intersections of any highways nearest the mark, giving the mileages and the turns necessary to reach the mark. A local description is also necessary to find the mark once you are near the location. The distances and directions (to the nearest half-quadrant) from local objects, such as the centerline of the new construction, centerline of intersections, fence corners, buildings, trees, witness posts, etc. will enable the surveyor not familiar with the surrounding territory to recover the mark with the information given in this description.

4.05 PRESERVING VERTICAL CONTROL

The following is the proper procedure for moving a Louisiana Geodetic Survey monument and preserving vertical control. The new monument has to be in place before the old monument is disturbed. The placement of the new monument is determined as described in the above paragraphs. Level from the old monument to the new monument by means of an engineer's level and rod. The leveling shall be done in duplicate (break the instrument set up) to avoid the possibility of large errors. All readings are to be made to three decimal places in order to preserve the accuracy of the original surveys (see Figure 4-4). It is not necessary to set the new monument at the same elevation as the old monument. If the elevation of the old monument is not known, an assumed elevation may be used since the primary concern is the difference in elevation between the old and the new monuments. If an assumed elevation is used, be sure that this is properly noted in the field notes.

4.06 PRESERVING HORIZONTAL CONTROL

Data needed to preserve the geographic location, or the Louisiana State coordinates of the monument must also be obtained. This is done as follows:

(1) Measure a horizontal distance to the nearest hundredth of a foot (.01') between the center dot of the old mark and the center dot of the new mark. CAUTION: This must be a horizontal distance. A hand level should be used to be sure this is a horizontal measurement.

(2) With the transit centered and leveled over either the old mark or the reset mark, depending on which is intervisible with a third mark used to establish an azimuth (see Figure 4-6), measure the angle by repetition six times, three with the telescope direct and three with the telescope inverted using the following described procedure. (While it isn't necessary to zero the vernier for the initial pointing, in the procedure to be described, the vernier will be set on zero for the initial pointing.) Loosen both the upper and lower clamps and set the A vernier to approximately zero. Tighten the upper clamp and, using the upper tangent screw, bring the zero mark of the graduated circle and the A vernier into coincidence. With the telescope direct, turn the instrument clockwise to the first mark to be observed

and tighten the lower clamp. Using the lower tangent screw, set the vertical reticule exactly on the point. Loosen the upper clamp and turn the instrument clockwise to the second mark. Tighten the upper clamp and, using the upper tangent screw, set the vertical reticule exactly on the point. The A vernier should be read and the value of the first angle recorded.

The above procedure is repeated until the angle has been measured six times. The first three are measured with the telescope direct and the last three are measured with the telescope inverted. In all cases, the A vernier is read and recorded. Always allow the vernier to remain clamped, each time, at the end of each measurement instead of setting it back at zero when resighting at the backsight. Thus, the angle reading is mechanically added the number of times it is turned.

Figure 4-4 shows the proper method to be used in recording the six angles. The figure also shows the proper method to be used in meaning the angle. The angle should be meaned immediately after the angle is turned to determine whether or not there are any errors.

Note that the form shown in Figure 4-4 has a column for time and, thus, is convenient for polaris observations. It can also be used for measuring horizontal directions by using a direction theodolite.

(3) In the event that there are no other L.G.S. marks visible from the mark to be reset, an observation of Polaris must be made to determine the true direction from the old mark to the new mark.

Whether you locate the new mark by the preferred method of measuring angles as described above from an established traverse station or by making an observation on Polaris, be sure to indicate by a diagram in the field-notes what angles were observed (see Figure 4-6).

An example of the "Report on Relocation of Traverse Mark" is shown in Figure 4-4.

KNOW THESE MARKERS

BENCH
(Old Type)

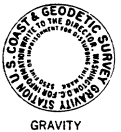
BENCH
(New Type)
Two Bench Marks Consolidated

BENCH
(Old Type)

TRAVERSE

TRIANGULATION

GRAVITY
(Old Type)



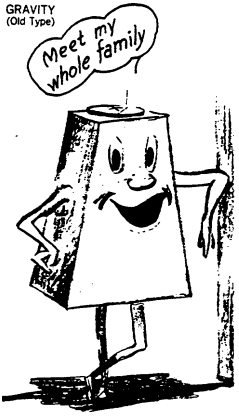
GRAVITY
(New Type)

TOPOGRAPHIC

AZIMUTH

REFERENCE

MAGNETIC

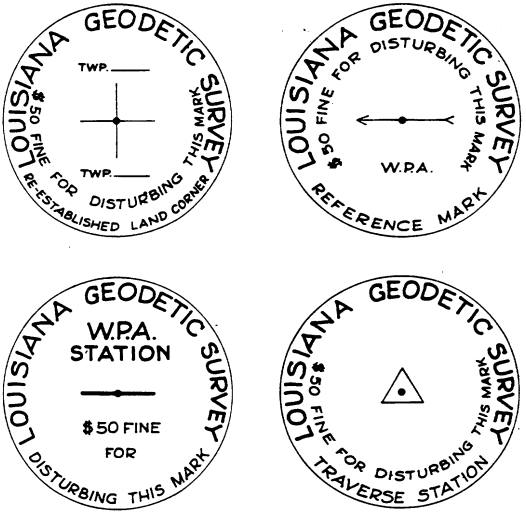


FACE LEGENDS

Standard bronze station marks of the National Geodetic Survey, NOS (formerly Coast and Geodetic Survey) that are set in concrete or bedrock to serve as a permanent mark for the particular station it represents. Additional information concerning these marks may be obtained by writing to the Director, National Geodetic Survey, NGS, Information Center, C-18, Rockville, Maryland 20852. Phone: (301) 496-8141.

Figure 4-1 Standard Markers for the U.S. Coast and Geodetic Survey.

KNOW THESE MARKERS



FACE LEGENDS

Standard bronze station marks of the LOUISIANA GEODETIC SURVEY that are set in concrete to serve as a permanent mark for the particular station it represents. Additional information concerning these marks may be obtained by writing to:

Louisiana Department of Transportation & Development
Attn: Location & Survey Engineer
P.O. Box 44245, Capitol Station
Baton Rouge, Louisiana 70804

Figure 4-2 Standard Markers for the Louisiana Geodetic Survey.

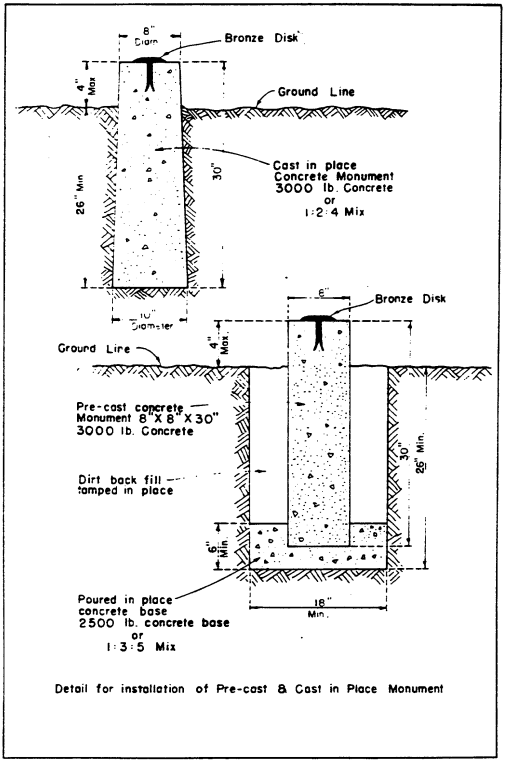


Figure 4-3 Instructions for the Installation of Pre-Cast and Cast In Place Monuments.

Form No. 4047 Revised 3-72

REPORT ON RELOCATION OF TRAVERSE MARKER

Designation of mark: 4056 (LGS)

Parish: Iberia

A. Horizontal Data:

STATION: 4056 (LGS) DATE: 8-2-62

Objects Observed	~~Time~~	Tel. D-R	°	'	"	Mean D-R	Dir. "	Remarks
C 3899	⓪		0	00	00			Back Sight
4056 Reset 1962	①	D	157	16	30			
	②	D	314	32	30			
	③	D	111	49	00			157
	④	R	269	05	30			720
	⑤	R	66	21	30			~~943~~
	⑥	R	223	38	00			157-16-20
								6) 943-38-00
								6xx 60 120
								34 98
								30 6x
								43 38
	Mean Angle = 157° 16' 20"							42 36
								1 2

Distance: Old station to new station 26.95 Feet. (Horizontal measurement)

B. Vertical Data:

Objects Observed	B.S	H.I.	F.S.	Elevation	Remarks
4056 (LGS)	3.185	32.302		29.117	
4056 Reset 1962	2.922	32.515	2.709	29.593	
4056 (LGS)			3.398	29.117	

C. Description of new mark:

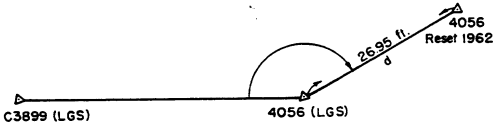
To reach from Cade go south on U.S. Highway 90 for 0.45 mile to a side road right, turn right and cross railroad tracts and go southwest and south for 3.7 miles to the mark on the right in the southeast corner of the front yard of a farm house owned by Mr. Syria Romero. It is 35 feet north of the centerline of a black top road, 3 feet east of a "T" fence corner, 28.5 feet east of the east edge of the sidewalk leading to the front door of the house, 23 feet southeast of the southeast corner of the house and 36 feet west of the west post of a metal gate. It is a Louisiana Geodetic Survey disk, stamped 4056 RESET 1962, set in top of an 8-inch square concrete post projecting 3 inches.

(Signed) John Doe, Party Chief

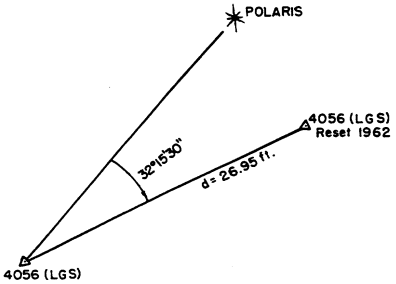
Figure 4-4 Report on Relocation of a Traverse Station.

Proper stamping of disk for resetting
Louisiana Geodetic Survey Traverse Station

Figure 4-5 Stamped Disk Showing a Reset Louisiana Geodetic Survey Traverse Station.



Establishment of station from angles from adjoining stations.
Measure angle and horizontal distance d.
Angle = 157° 16' 20"
Distance d = 26.95'
(Also see figure 4-4)



Establishment of direction between original and RESET Mark by observation of Polaris. Complete field notes of observation must be turned into the Location and Survey Engineers office with other reset data.

Figure 4-6 Sketches for Field Notes.

LEFT: Bench Mark Disc

RIGHT: Traverse Mark Disc

Standard bronze station marks of the U. S. Coast and Geodetic Survey established by the Louisiana Department of Transportation and Development. Additional information concerning these marks may be obtained by contacting:

The Director
National Geodetic Survey, NOS
Information Center, C-18
Rockville, Maryland 20852

Phone: (301) 496-8241

OR

Louisiana Department of Transportation & Development
ATTN: Location & Survey Engineer
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

Phone: 504-379-1131

Figure 4-7 Standard Markers for Joint U.S.C. & G.S. - D.O.T.D. Program

Name or Designation: S 264 Year Established: 1969

State: LOUISIANA County: NATCHITOCHES Organization Established by: USC & GS

Distance and direction from nearest town: 1.3 MILES NORTH OF CLARENCE

Description published in: *(Line, book, or quadrangle number)* LINE La 4

Mark searched for or recovered by: Name - JAMES R. MUSE

Organization - LOUISIANA DEPARTMENT OF HIGHWAYS

Date of report: 10-20-70 Address - PO BOX 1321, ALEXANDRIA, LOUISIANA 71301

Condition of marks: List letters and numbers found stamped in (not cast in) each mark.

Mark stamped:	Condition:
S 264 1969	GOOD

Marks accessible? [X] Yes [ ] No Property owner contacted? [X] Yes [ ] No

Please report on the thoroughness of the search in case a mark was not recovered, suggested changes in description, need for repairing or moving the mark, or other pertinent facts:

DESCRIPTION IS ADEQUATE

Figure 4-8 Report on Condition of Survey Mark.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ACTIVITY AND PROGRESS OF MARK MAINTENANCE PARTY

For the week ending, Saturday 5 31 19 75

PERSONNEL		NUMBER	ADDRESS	PHONE
NAME	TITLE	OF DAYS WORKED	REDWOOD MOTEL	
TUNNY A McCULLEN	PARTY CHIEF	5	LEESVILLE, La	123456
FRED McMURRAY	RODMAN	5		

DAY OF WEEK	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
WEATHER	—	PC	PC	RAIN	RAIN	CLOUDY	—
WORKING CONDITIONS	—	GOOD	GOOD	FAIR	FAIR	GOOD	—

DATE	PROJECT NO.	PARISH	ROUTE	STATION	BM.	TRI STA.	TRAV.	NOT FOUND	CONDITION	DESTROYED	RESET
5/25	ARRIVED AT MOTEL IN ABBEVILLE AT 11.00 A.M.										
5/25	80-01-15	VERMILION	167	3822	✓		✓		GOOD		
"				57V2	✓				GOOD		
"				57V3	✓				GOOD		
5/26	194-07-38	VERMILION	123	D3870 RESET	✓		✓		GOOD		
"				D3871	✓		✓	✓			
"				D3872	✓		✓	✓			
"	LEFT ABBEVILLE AT 1:00 P.M. — ARRIVED LEESVILLE 4.30 P.M.										
5/27	25-01-19	VERNON	171	C3342	✓		✓	✓			
"				C3343	✓		✓		FAIR		
"				C3344	✓		✓		FAIR		
5/28	134-01-09	VERNON	8	A5220	✓		✓			✓	
"				A5216	✓		✓	✓			
5/29				A5214	✓		✓				✓
5/29	ARRIVED HOME AT 3 15 P.M.										
				TOTALS	12	—	10	4	—	1	1

ORIGINAL TO: LOCATION AND SURVEY ENGINEER
COPY TO: GEODETIC ADVISOR
COPY TO: DISTRICT ENGINEER

Signature
PARTY CHIEF

Figure 4-9 Activity and Progress of Mark Maintenance Party.