1990 CALIFORNIA PROFESSIONAL LAND SURVEYOR EXAMINATION

Candidate ID Number_____

SECTION A - 157 POINTS OF 295 TOTAL POINTS

FOUR HOURS ALLOWED TO COMPLETE THIS SECTION

Examination Overview

The 1990 California Professional Land Surveyor examination is given in two four-hour periods on the same day. Section A is the first section of this two-part examination; Section B will be given in the afternoon. Section A consists of the following:

Test Problem No.	Subject Matter	Point Value	Pages
A1	Public Lands	27 Points	_____
A2	Description and Boundary	26 Points	_____
A3	Subdivision/Legal	40 Points	_____
A4	Photogrammetry	28 Points	_____
A5	Research	16 Points	_____
A6	Basis of Bearings	20 Points	_____

FOR OFFICE USE ONLY

The scope of this exam relates to the principles and practice of land surveying in the various areas of practice. You will be graded on the answers specifically required and also on your method of obtaining these answers as demonstrated in your solution.

There are no trick questions; rather the questions have been designed to realistically reflect the actual conditions and practice of Land Surveying. The assignment of points to each question is not based on the time required to complete an answer. Instead, points have been assigned on the basis of the relative importance of each question to basic land surveying competence.

TURN THIS PAGE OVER FOR SPECIFIC EXAMINATION INSTRUCTIONS

Examination Instructions

1 . test problem in Section A is contained in a separate folder; the number of the problem is clearly indicated on cover of the folder. Follow the steps listed below to present your solutions:

- Place all sheets in the appropriate folder when you turn in your examination. Any work not in the appropriate folder will not be scored.
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- Enter your identification number on the front cover of each folder and in the upper right-hand corner of each page of the grid sheets in the space provided. **Do not write your name on any part of this examination.**
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- Additional grid sheets can be obtained from your proctor.
- Mark your solution pages 1 of 3, 2 of 3, etc.
- In addition to the correct answer, show all work pertinent to the problem's solution to demonstrate to the grader the method used.
- When giving a citation, provide Section and Paragraph Numbers only, do not write out the content.

Clearly delineate any work that you do not want scored by lining through that part and marking VOID across it.

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Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section A

Problem 1

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM A1

27 Points

PROBLEM STATEMENT

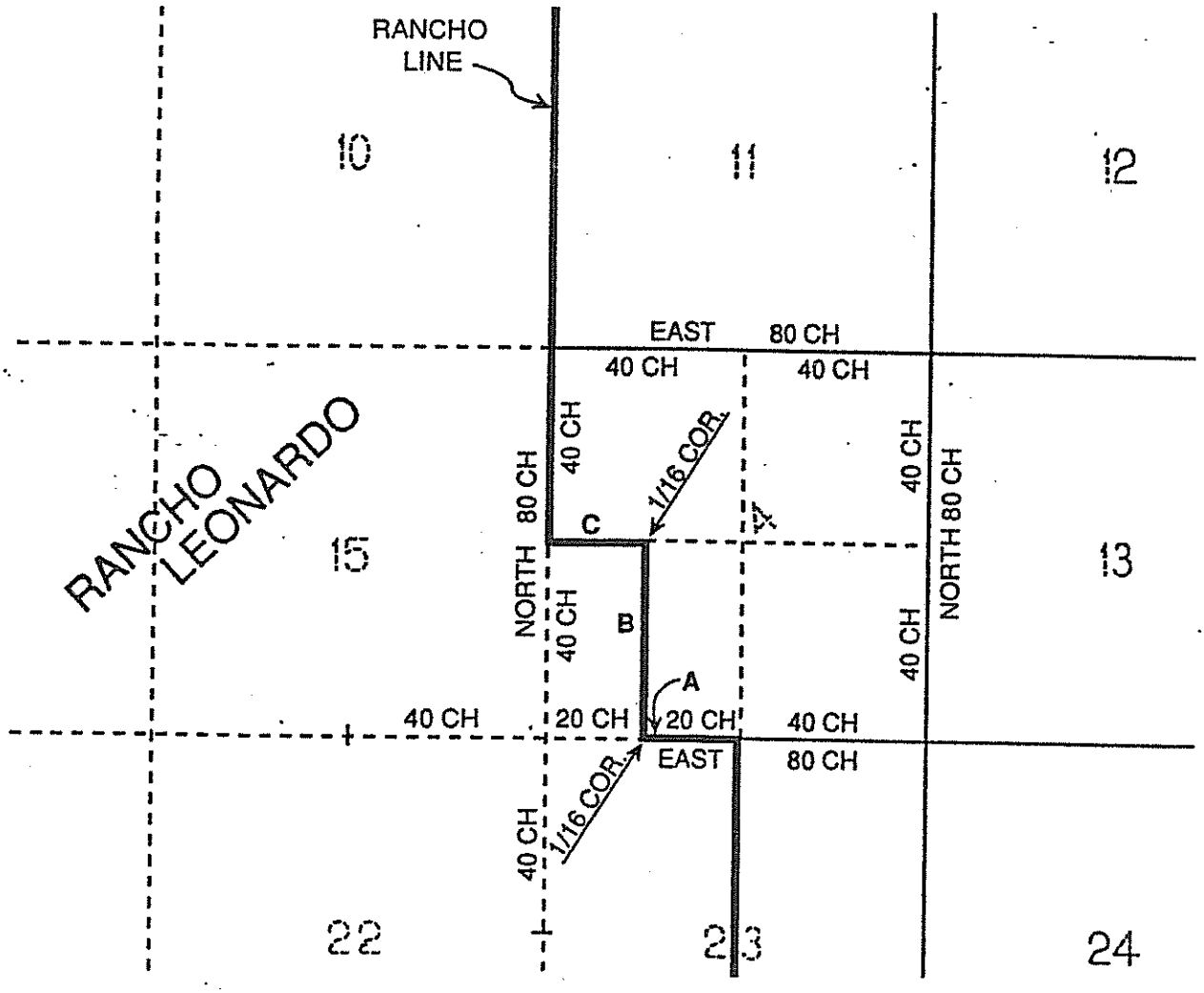
Rancho Leonardo is shown in part on the plat dated 1860 below. The Rancho follows sectional lines.

PROBLEM REQUIREMENT

Using the coordinates indicated on the survey plat on the facing page, calculate the bearings and distances of the Rancho lines denoted as A, B, and C, in Section 14. Show your answers directly on the survey plat. On the grid paper provided, identify your methods and show all your work.

27 Points

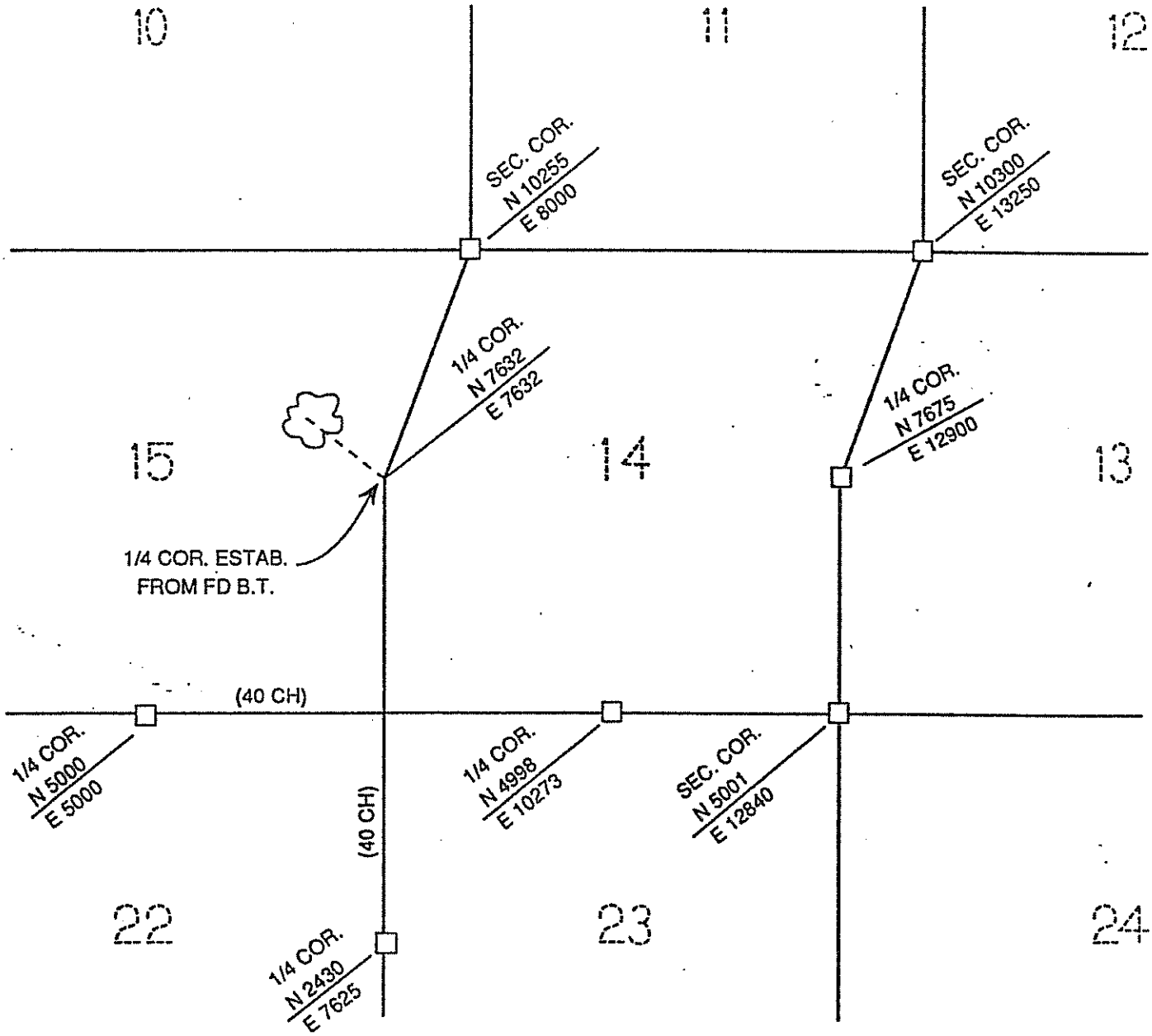
PORTION OF 1860 PLAT



LEGEND

CH = CHAINS

BASIS OF BEARINGS BASED ON SOLAR OBSERVATION



SURVEY PLAT

LEGEND

□ = FOUND ORIGINAL GOVERNMENT SURVEY STAKES

= FOUND ORIGINAL GOVERNEMNT B.T.

( ) = G.L.O. DISTANCE

Grading Plan - Problem A1

Grader ID No. _____
Candidate ID No. _____

a. Proper double proportion demonstrated. **Method: 6 Points** _____

b. Proper single proportion demonstrated. **Method: 6 Points** _____

c. Correct dimensions for:

A – N 89° 16' 59" W – 1318.33'
or N 89° 16' 58" W – 1318.35' **5 Points** _____

B – N 1° 52' 49" E – 2630.43'
or N 1° 52' 51" E – 2630.42' **5 Points** _____

C – N 89° 31' 56" E – 1409.12'
or N 89° 31' 56" E – 1409.12' **5 Points** _____

(**Note:** Acceptable margin of error for dimensions is ± 2 seconds and ± .03 feet.)

Comments:

TOTAL: 27 Points _____

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section A

Problem 2

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM A2

26 Points

PROBLEM STATEMENT

The diagram on the facing page represents your survey of Block 2 of the First Addition to the City of Ocean View, California. This subdivision was originally monumented only at the block corners with iron pipes that were all found in good condition. The subdivision map contains a note on it indicating that all lots are 200' x 200' and that the streets run North and East.

The original purchaser of Lot 1 conveyed portions of the lot as follows:

1921, conveyed the following (preamble omitted):

> Beginning at the Southeast corner of First Street and "A" Avenue; thence, East along the North line of Lot 1, 65.00 feet; thence, South, at right angles, 200.00 feet; thence, West, at right angles, to "A" Avenue; thence North along "A" Avenue to the point of beginning.

1937, conveyed the following to the owner of Lot 2 (preamble omitted):

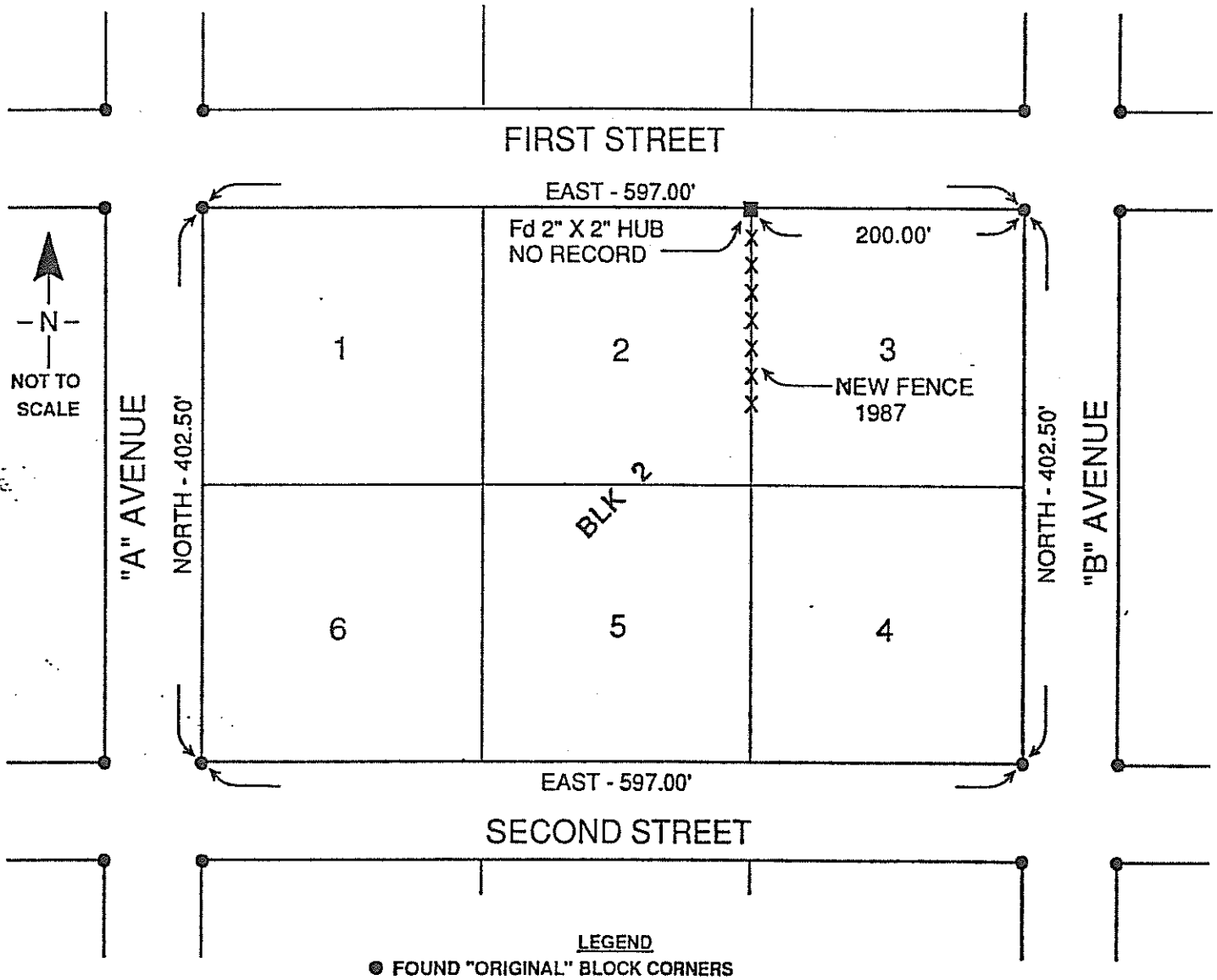
> The East 5.00 feet of Lot 1.

1988, conveyed the following to your client (preamble and recording references omitted):

> Lot 1, excepting those portions conveyed in 1921 and 1937.

PROBLEM REQUIREMENTS

1. Sketch a plat of Lot 1 and all given conveyances on the grid paper provided; show all dimensions. **13 Points**
2. Identify any deed inconsistencies and state your recommendations for resolution. **13 Points**



LEGEND

● FOUND "ORIGINAL" BLOCK CORNERS

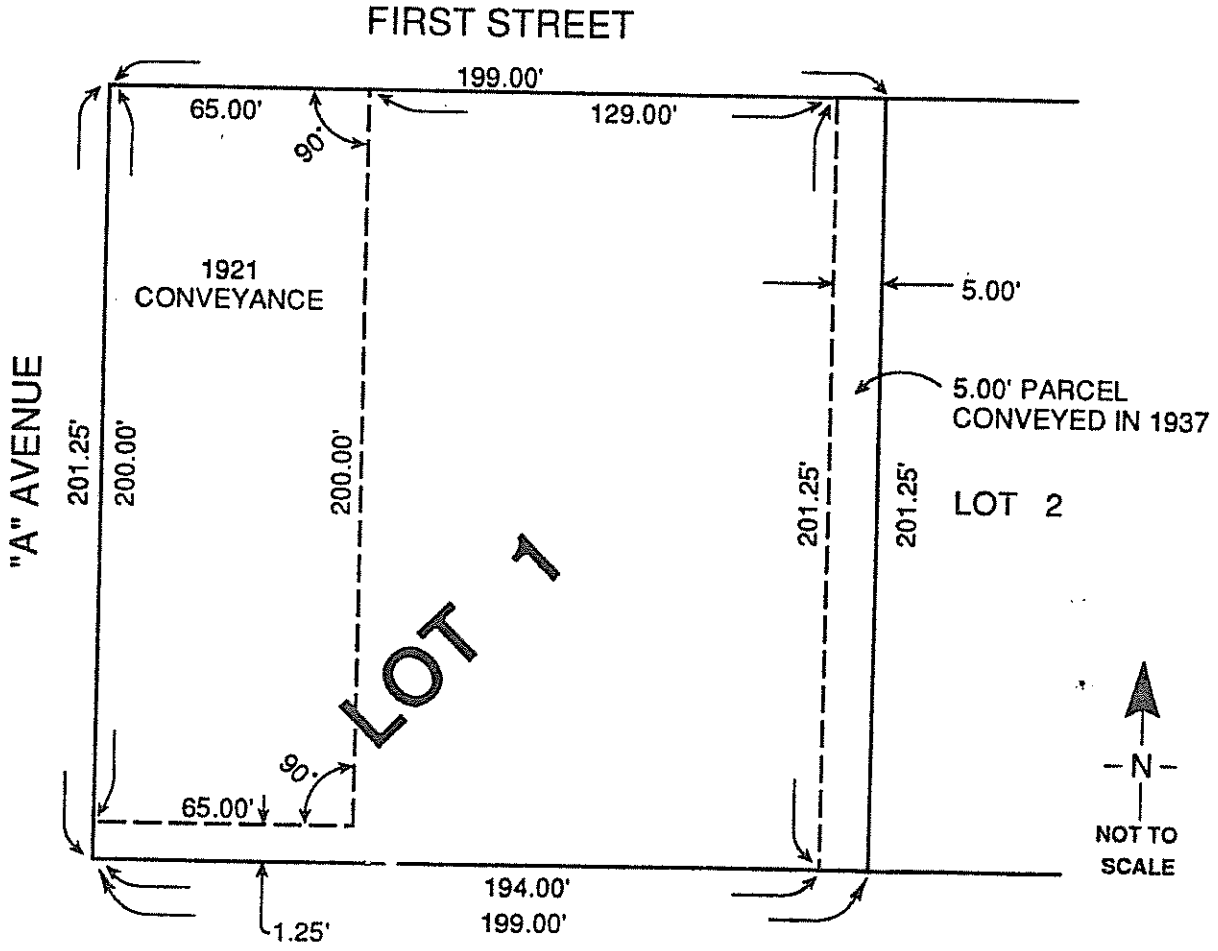
NOTE: DISTANCES ARE BASED ON FIELD MEASUREMENTS

Grading Plan - Problem A2

Grader ID No. _____
Candidate ID No. _____

1. One point for each of the 13 distances. (**Note:** The distance need not be written if it is inferred mathematically.)

13 Points Maximum _____



2. a. The 1.25' deed inconsistency is identified. **5 Points** _____

   b. Statement of the resolution of the 1.25' strip. For example: Hold 200.00' since the terminus of the line was not qualified. **8 Points** _____

TOTAL: 26 Points _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section A

Problem 3

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM A3

40 Points

PROBLEM STATEMENT

In June 1969, Meyers conveyed to your client the West one-half of Lot 5 of Rainbow Acres. In December 1970, Meyers sold a portion of the remainder of Lot 5 to Landis with the following legal description:

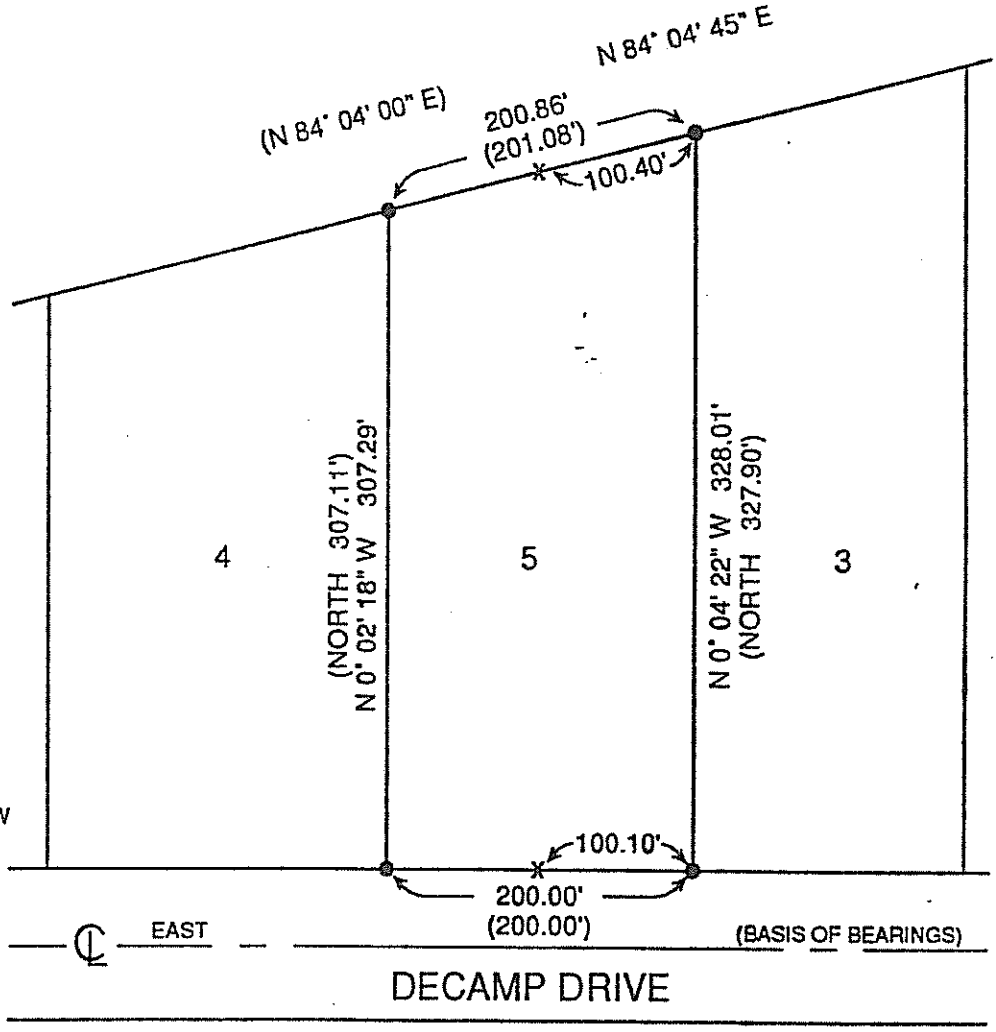
> "The Southerly 100.00 feet of that portion of Lot 5 of Rainbow Acres, in the County of Rainbow, in the State of California, as per map recorded April 16, 1954 in Book 3 of Maps, Page 3, in the Office of the County Recorder of said county described as follows:
>
> > Beginning at the Southeast corner of Lot 5; thence West along the Southerly line thereof 100.00 feet to a one-inch iron pipe; thence North parallel with the Easterly line of said Lot 317.60 feet to a one-inch iron pipe on the Northerly line of said lot; thence North 84° 04' 00" East along said Northerly line 100.54 feet to the Northeast corner thereof; thence South, 327.90 feet to the point of beginning."

You have been asked to survey and monument your client's parcel of land. The record values of Lot 5, as well as the results of your boundary survey, are shown in the plat on the facing page.

PROBLEM REQUIREMENTS

1. Describe how you would determine the boundaries of your client's property. (Calculations are not required.) — **15 Points**
2. Describe the effect of the Landis deed on your client's property. — **7 Points**
3. Prepare a legal description for the remainder of Meyers' property. (Do not use a metes and bounds description.) — **15 Points**
4. Is the filing of a Corner Record sufficient documentation of your survey? Explain your answer and cite references. — **3 Points**

RAINBOW ACRES RECORDED IN BOOK 3, PAGE 3
OF MAPS IN THE COUNTY OF RAINBOW



N
NOT TO SCALE

LEGEND

● FD 3/4" IRON PIPE WITH DISK L.S. XXX PER MAP OF RAINBOW ACRES.

X FD 1" IRON PIPE. NO RECORD. ORIGIN UNKNOWN.

( ) RECORD VALUE PER RAINBOW ACRES MAP.

Grading Plan - Problem A3

Grader ID No. _____
Candidate ID No. _____

1. a. Calculate the boundaries of the West one-half of Lot 5 by using one-half the area of Lot 5. **8 Points** _____

   b. The Easterly boundary will be set on a mean bearing of the East and West lines of Lot 5. (It will be acceptable to set the Easterly line parallel with the Westerly line of Lot 5.) **7 Points** _____

2. The Landis deed has no effect on the client's property since it is junior to the client's deed. **7 Points** _____

3. The East one-half of Lot 5 of Rainbow Acres, in the County of Rainbow, in the State of California, as per map recorded April 16, 1954 in Book 3 of Maps, Page 3, in the Office of the County Recorder of said county. **Preamble: 3 Points** _____

   Excepting the Southerly 100.00 feet. (Note to Graders: It is recognized that there are various ways to write a legal description for the Meyers' property. The new deed must recognize the rights of the previously conveyed parcels.) **Parcel Description: 12 Points** _____

4. a. No. A Record of Survey is required. **1 Point** _____

   b. One of the five rationales indicated in Section 8762 of the Professional Land Surveyors' Act, is listed. **1 Point** _____

   c. Section 8762 is cited. **1 Point** _____

TOTAL: 40 Points _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section A

Problem 4

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM A4

28 Points

PROBLEM STATEMENT

Your firm has been retained by the U.S. Forest Service to provide photo mylars of the entire area shown as Exhibit A. Road A will be strip mapped along its entire length and to a width of 200 feet of each side of its centerline. The mapping is to be prepared on the plan and profile sheet shown as Exhibit B.

Use the limits and descriptions shown below to accomplish the scope of work.

Strip Mapping

1. Focal length 6"
2. 1" = 50' with 1' contour interval
3. Film format 9" x 9"
4. Flight altitude 1500' above ground level

Photo Mylars

1. Focal length 8 1/4"
2. Scaled photo distance between panels A and B = 5 inches
3. Film format 9" x 9"

On all photography, 60% forward overlap and 30% sidelap will be required. All mapping shall conform to National Mapping Accuracy Standards.

PROBLEM REQUIREMENTS

1. Determine the following and show your work.

   a. Flying height (ASL) for photo mylars (in feet) — 8 Points

   b. Negative scale for mapping photography (in feet) — 2 Points

   c. Minimum number of flight lines for mapping — 4 Points

   d. Minimum number of photographs required for: — 4 Points

      1. Photo mylars
      2. Topographic mapping

   e. Minimum number of plan and profile sheets required for mapping — 2 Points

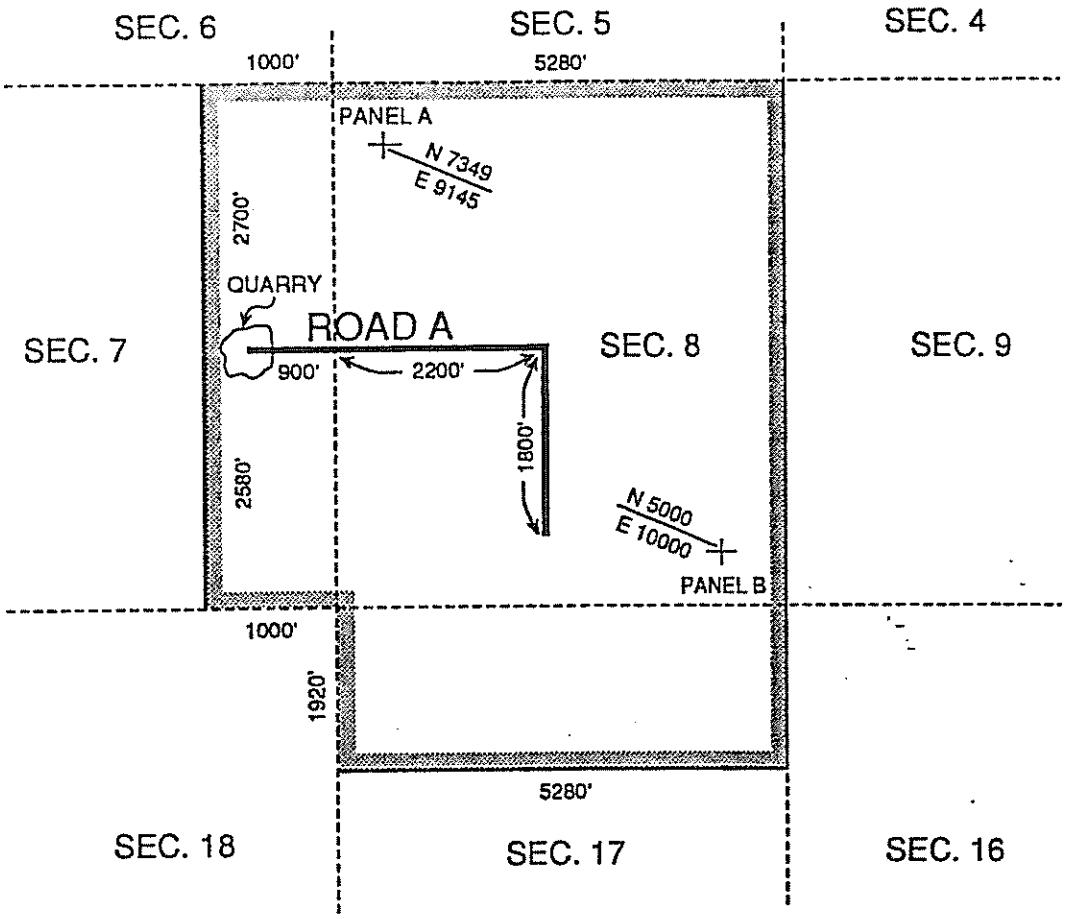
   f. The C-factor for the strip mapping — 2 Points

   g. Neat model size of ground coverage of photo mylars (in feet) — 2 Points

2. What portion(s) of the work require(s) the signature and seal of a Professional Land Surveyor? — 2 Points

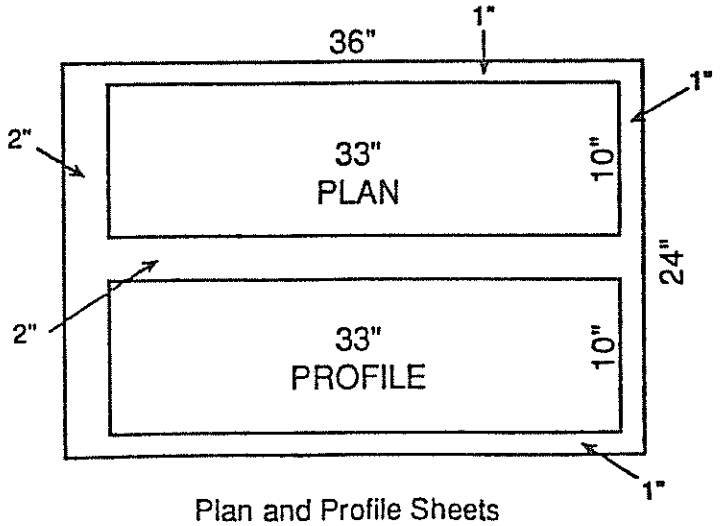
3. Describe the minimum accuracy standards for the contours expected for this mapping. — 2 Points

EXHIBIT A



ELEVATIONS OF PROJECT AREA:
HIGHEST = 3250'
LOWEST = 1850'

EXHIBIT B



Plan and Profile Sheets

Grading Plan - Problem A4

Grader ID No. _____
Candidate ID No. _____

1. a. Flying height above sea level is the flying height plus average terrain elevation.

$$\text{Average terrain elevation} = \frac{\text{Highest elevation} + \text{Lowest elevation}}{2}$$

$$= \frac{3250' + 1850'}{2} = 2550 \text{ feet}$$ **Method: 1 Point** _____

$$\text{Negative scale} = \frac{\text{Ground distance}}{\text{Photo distance}} = \frac{\text{Coordinate Inverse}}{5 \text{ inches}}$$

$$= \frac{2500'}{5"} = 1" = 500' = 1{:}6000$$ **Method: 1 Point** _____

Flying height = Camera focal length x negative scale

$$= 8.25" \times 500' = 0.687' \times 6000' = 4125'$$ **Method: 1 Point** _____

Flying height above sea level =
flying height + elevation of average terrain

Method: 1 Point _____

$$= 4125 + 2550' = \underline{6675 \text{ feet above sea level}}$$ **Answer: 4 Points** _____

b. Negative Scale for mapping photography **Method: 1 Point** _____

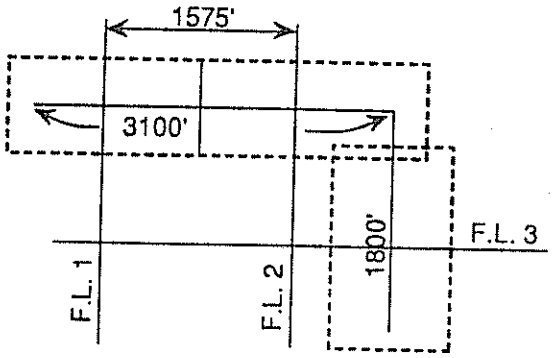
$$= \frac{\text{Camera focal length}}{\text{Flying height}} = \frac{6"}{1500'} = \underline{1" = 250'} \text{ or } 1{:}3000$$ **Answer: 1 Point** _____

c. Neat Model using 60% forward lap, 30% sidelap.

(0.4 x 9") x (0.7 x 9") = 3.6" x 6.3"

Photo scale: 1" = 250' 250' x 3.6" = 900' 250'x 6.3" = 1575' **Method: 2 Points** _____

Minimum Flight Lines = 3 **Answer: 2 Points** _____



*Method refers to calculations or explanations

d. *1.* Photo mylars:

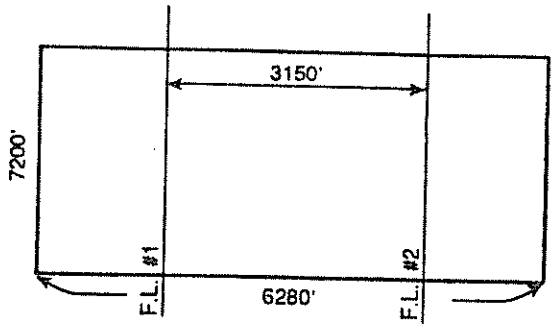


Photo Mylars

Negative Scale 1" = 500'
Neat Model 3.6" x 500' = 1800' 6.3" x 500' = 3150'
= 1800' x 3150'

$\frac{7200'}{1800'}$ = 4 exposures

$\frac{6280'}{3150'}$ = 1.99 = 2 flight lines

2 flight lines x 4 exposures/line = 8 photographs

Method: 1 Point _____
Answer: 1 Point _____

2. Topographic mapping:

3 flight lines x 2 exposures = 6 photographs

Method: 1 Point _____
Answer: 1 Point _____

e. Plan and profile sheets: 33" x 50' = 1650' net length possible.

Total length = 4900' + 1650' = 2.97' (3) sheets required
4900' + 50' = 98" 98" + 33" = 2.9 (3) sheets required

Method: 1 Point _____
Answer: 1 Point _____

f. C-Factor = $\frac{\text{Flying height above ground}}{\text{Contour interval}} = \frac{1500'}{1'} = 1500$

Method: 1 Point _____
Answer: 1 Point _____

g. Neat model = 3.6" x 6.3" Negative scale: 1" = 500' or 1:6000

3.6" x 500' = 1800' 6.3" x 500' = 3150'

Neat model ground coverage = 1800' x 3150'

Method: 1 Point _____
Answer: 1 Point _____

2. All topographic plan and profile sheets. LS Act 8761

2 Points _____

3. Per the National Mapping Accuracy Standards, not more than ten percent of the elevations tested and not more than one-half the contour interval shall be in error. For this problem, 1 foot contour interval + .5 feet = 0.5 feet. (There are many possible variations of this answer depending on citation source.)

2 Points _____

TOTAL: 28 Points _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section A

Problem 5

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM A5

16 Points

PROBLEM STATEMENT

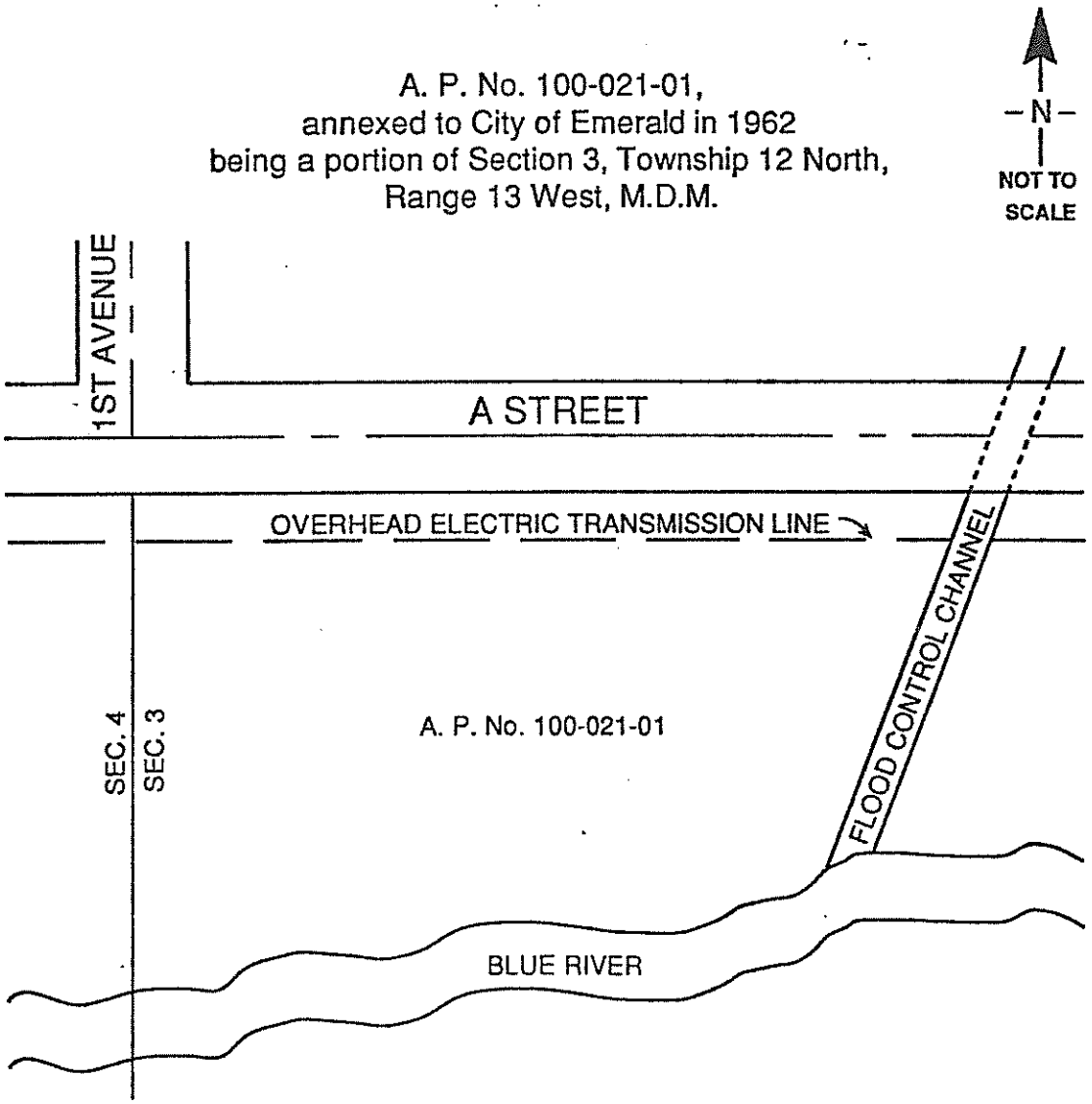
A boundary survey is proposed for the parcel shown in the diagram below. You are to provide the research data for this survey.

PROBLEM REQUIREMENT

1. List eight possible sources of data and, for each source, specify one type of information you would expect to receive.

Example: Railroad Company – Railroad right-of-way records.

16 Points
(2 points each)



Grading Plan - Problem A5

Grader ID No. _____
Candidate ID No. _____

1. Score only the first eight sources listed **and** score only the first type of information listed that corresponds with each of the eight sources. For each reference to a source, circle the one type of information for which points have been awarded and place a check mark in the blank provided. The same source may be listed more than once provided the type of information listed is different. Specific offices of the County or City (but not the state or federal government) may be omitted (example: County - Records of Survey). Conversely, the word County or City may be omitted from the office (example: Recorder - Records of Survey). Probable sources of survey data and the type of information expected to be received from each are as follows:

Sources of Survey Data	Type of Information	
County Recorder	Deeds, Records of Survey, township plats, R/W maps	_____
County Surveyor	R/W maps, G.L.O. township plats and field notes, corner records, county road monumentation, road survey notes	_____
County Flood Control District	R/W survey maps, field notes, easement deeds	_____
B.L.M.	Original G.L.O. township plats and field notes	_____
City Engineer or Surveyor	Street monuments, field notes, R/W maps, easement records, recorded maps, deeds	_____
State Lands Commission	River status (navigability), established survey lines, title status	_____
Electric and Utility Company (not water or gas)	R/W survey maps, field notes, ties to other survey information, easement deeds	_____
Title Company	Acquisition deeds, title chain, adjoiners deeds, unrecorded surveys, easement deeds	_____
Aerial Photographs	Depends on local sources	_____
Client Information	Deeds, old maps, letters	_____
Private Survey Records	Unrecorded Survey Data	_____
Field Visit	Easements, encroachments, survey monuments, lines of occupation	_____
Assessor's Office	Tax records, ownership, assessment, special districts, unrecorded maps, schools district maps, assessor's maps	_____
Adjoining Owners	Testimony about obliterated corners or monument locations	_____
Historical Association	Old maps, written communications, field notes	_____
Specialized Libraries (Bancroft, Cal State Fresno)	Old maps, communications, field notes	_____
Road Department	R/W road plans, field notes, maps	_____
Harbor or Navigation Codes	River information	_____
U.S. Corps of Engineers	Flood control information	_____
Archives (B.L.M., Federal)	Field notes, correspondence, maps	_____

TOTAL: 16 Points Maximum (2 points for each source-type combination) _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section A

Problem 6

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM A6

20 Points

PROBLEM STATEMENT

W. White owns a parcel of land that requires a survey. Your research and field reconnaissance data are indicated below and on the diagram on the facing page.

Research Data – Essential portions of relevant deeds

April 27, 1937 – W. White acquired property as described by the following deed description:

> Beginning at an axle in the Westerly line of G. Green's property, thence S 85° 15' W, 490.00 feet to a two-inch iron pipe; thence N 12° 15' W to the Southerly line of B. Brown's property; thence along said Southerly line to the Westerly line of G. Green's property; thence Southeasterly along said Westerly line to the point of beginning.
>
> No basis of bearings was stated.

April 19, 1921 – G. Green acquired property described in a deed, based on a solar observation, that states in part:

> ...to an axle; thence N 7° 15' W to the South line of B. Brown's property, thence along...

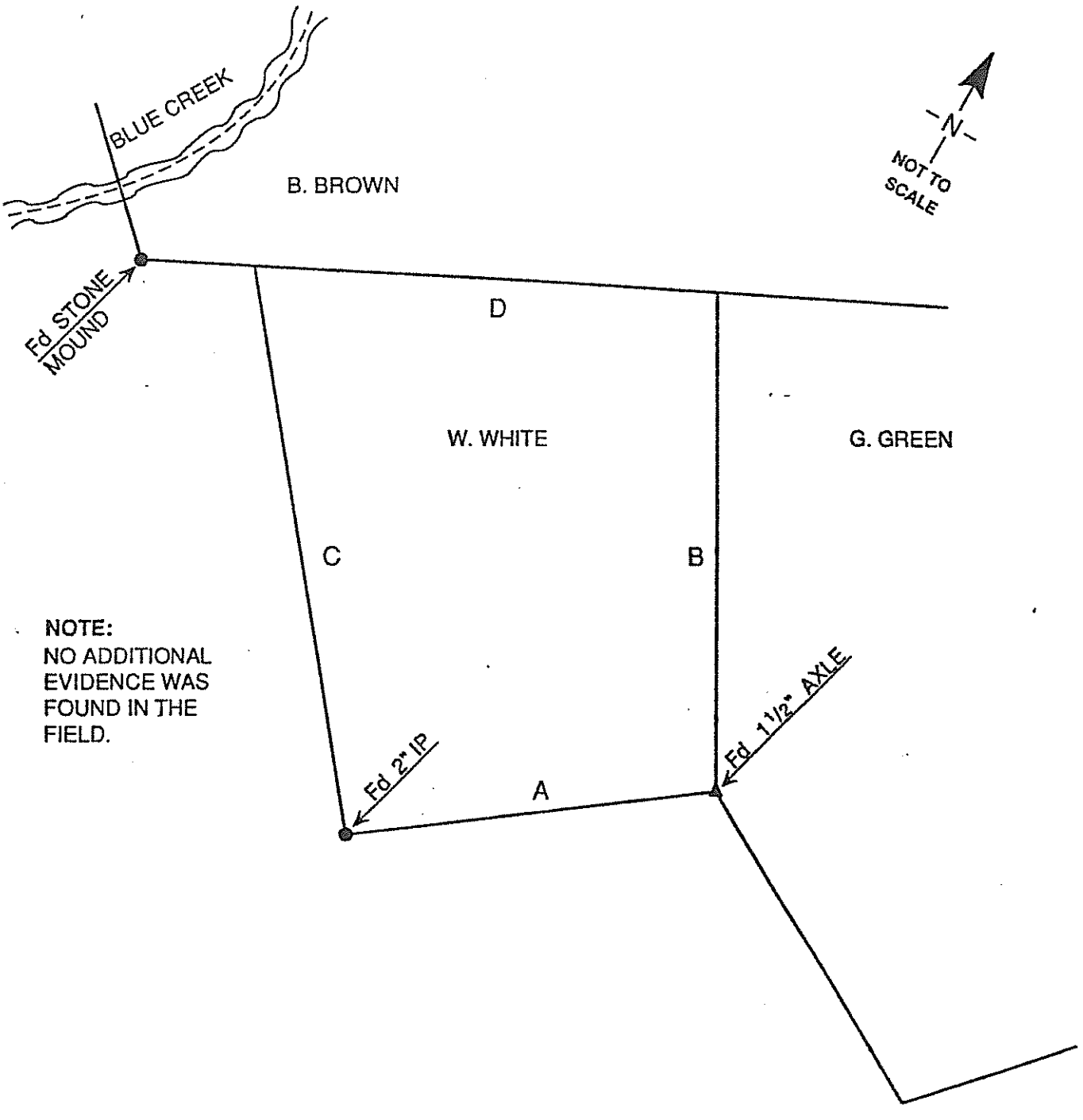
July 7, 1891 – B. Brown acquired the following property described in part:

> Beginning at a stone mound near the East line of Blue Creek; thence N 88° 15' E, 3,200 feet, thence...
>
> The basis of bearings was stated as magnetic.

PROBLEM REQUIREMENT

1. From the information given, explain how you would establish boundary lines A, B, C, and D.

20 Points


BLUE CREEK
B. BROWN
N
NOT TO SCALE
Fd STONE MOUND
D
W. WHITE
G. GREEN
C
B
NOTE:
NO ADDITIONAL EVIDENCE WAS FOUND IN THE FIELD.
Fd 2" IP
A
Fd 1 1/2" AXLE

Grading Plan - Problem A6

Grader ID No. _____
Candidate ID No. _____

1. a. Line A – Use found monuments. **3 Points** _____

   b. Line B – Perform an astronomic observation and intercept Brown with record bearing. **4 Points** _____

   c. Line C – Use South line A as a basis for 97° 30' angle. Intercept Brown. **4 Points** _____

   d Line D – Determine magnetic declination in the subject property vicinity for 1891 from coast and geodetic tables. Apply correction to an astronomic or solar observation.

   – or –

   Find a monumented line in the vicinity with a magnetic bearing from the same historical period.

   – or –

   Take a magnetic bearing and apply necessary corrections between the original survey and today's survey. **9 Points** _____

   Note: The solution is acceptable only if the beginning/terminus of each line is accepted.

TOTAL: 20 Points _____

Comments:

1990 CALIFORNIA PROFESSIONAL LAND SURVEYOR EXAMINATION

Candidate ID Number_____

SECTION B - 138 POINTS OF 295 TOTAL POINTS

FOUR HOURS ALLOWED TO COMPLETE THIS SECTION

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B1	Subdivision	36 Points	_____
B2	Legal	10 Points	_____
B3	Public Lands	16 Points	_____
B4	Lot Line Adjustment/Legal	32 Points	_____
B5	Construction Staking	24 Points	_____
B6	Record of Survey	20 Points	_____

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Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section B

Problem 1

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM B1

36 Points

PROBLEM STATEMENT

You have been asked to survey and monument Lot 3 of the XYZ Subdivision in Rainbow County, California shown below. Lot A of the ABC Subdivision was conveyed in August 1933. Lot B of the ABC Subdivision was conveyed to a different party in June 1936.

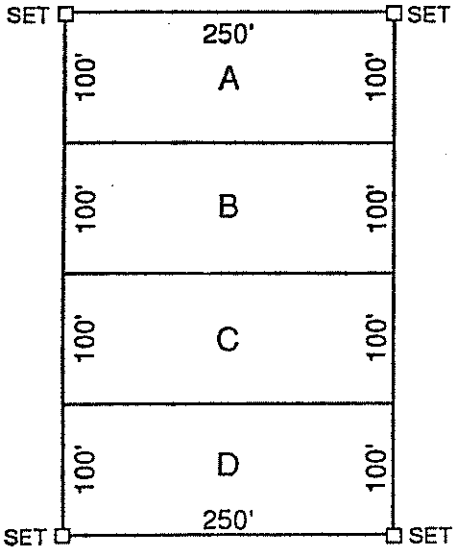
PROBLEM REQUIREMENTS

1. Given only the information shown on the plats below, indicate the lengths of the sides w, x, y, and z of Lot 3 on your field survey. — 24 Points (6 points each)

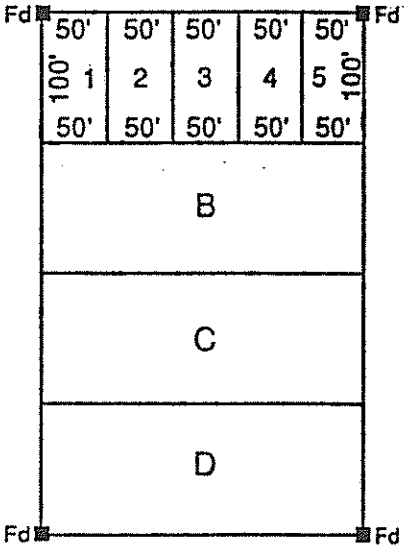
2. Using only the information given in the Problem Statement above and in the plats shown below, write a legal description for Lot B. — 6 Points

3. What type of document(s) will you be required by law to prepare? — 6 Points

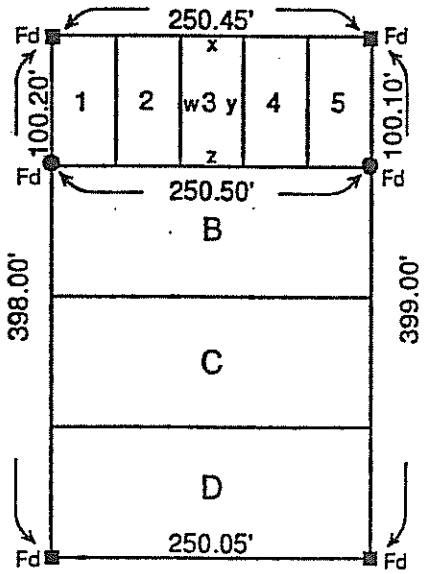
ABC SUBDIVISION
Filed in Book 3
of Maps at Page 25
in July 1932



XYZ SUBDIVISION
Filed in Book 7
of Maps at Page 73
in May 1946
(a Division of Lot A
of ABC Subdivision)



YOUR
FIELD SURVEY
Prepared in
April 1990



LEGEND

□ = SET 3" X 3" REDWOOD POST WITH NAIL
■ = FOUND 3" X 3" REDWOOD POST WITH NAIL (ORIGINAL)
● = FOUND 1" IRON PIPE (ORIGIN UNKNOWN)

Grading Plan - Problem B1

Grader ID No. _____
Candidate ID No. _____

1. **a.** Hold block corners and prorate lot lines.
   w = 99.60'
   Method: 4 Points _____
   Answer: 2 Points _____

   b. Hold block corners, compute original lot lines, and prorate new lot lines.
   x = 50.09'
   Method: 4 Points _____
   Answer: 2 Points _____

   c. Hold block corners and prorate lot lines.
   y = 99.65'
   Method: 4 Points _____
   Answer: 2 Points _____

   d. Prorate between found block corners.
   z = 50.07'
   Method: 4 Points _____
   Answer: 2 Points _____

2. Lot B of ABC Subdivision filed in Book 3 of Maps at Page 25, in Rainbow County, California.
   Note: Format and wording may vary but legal description must include: lot name, subdivision name, book number, page number, and county. Also, watch for metes and bounds descriptions that may negate description of Lot B.
   6 Points _____

3. Record of Survey is required.
   6 Points _____

Comments:

TOTAL: 36 Points _____

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section B

Problem 2

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM B2

10 Points

PROBLEM STATEMENT

Your city has decided to implement a computer-based Land Information System (LIS) that is designed to collect, store, manipulate, and retrieve data. These data focus primarily on land parcels and their associated records within your city's legal jurisdiction and administrative boundaries. This LIS will be available for use beginning June 1, 1995.

The City Surveyor has recommended the use of the California State Plane Coordinate System for the city LIS and has asked you to research the appropriate sections of the California Code and respond to the statements listed below.

PROBLEM REQUIREMENTS

1. Complete the following sentences by filling in the blanks on this sheet.

   a. There are two defined California Coordinate Systems. Their abbreviations are _____ and _____, and they are defined in _____ of the _____. **1 Point**

   b. The City Surveyor is concerned about field survey data measurement specifications and accuracy classification standards. Your research has determined that Section _____ addresses his concerns. **1 Point**

   c. The California Coordinate System has two systems of distances expressed in: _____ and _____ of a _____ and _____ and _____ of a _____. **1 Point**

   d. The City Surveyor wants all parcel boundary measurements submitted after June 1, 1995 to comply with Section _____. This section states that 1st and 2nd order accuracy standards and measurement specifications are defined by the _____. If compliance with the above is claimed, this section will also require additional _____ data showing _____, _____, _____, _____, and a _____. **1 Point**

PROBLEM REQUIREMENTS (continued)

2. For the following problem requirements, circle the appropriate legal status of the situations described and cite the section number of the applicable California Government Code.

   a. Local title companies will be contributing data to the new LIS. In return, they are requiring that all parcel data and all attributes associated with each parcel be delivered with only California Coordinates.
   Legal: Yes / No. Section No. _____. **1 Point**

   b. The Recorder's Office has requested the same data format as that requested by the title companies and the Recorder believes that data will be sufficient for constructive notice in the recording process.
   Legal: Yes / No. Section No. _____. **1 Point**

   c. The Planning Director agrees with the Recorder and also believes that the very first California Coordinates for a parcel should be held fixed and as the final boundary of the parcel.
   Legal: Yes / No. Section No. _____. **1 Point**

   d. The City Surveyor plans to accept data formatted in either of the California Coordinate Systems up to June 1, 1995.
   Legal: Yes / No. Section No. _____. **1 Point**

3. The following is a general knowledge question. **Circle** corre t answers or **fill in the blanks as** appropriate.

   The geodetic projection used for the newest California Coordinate System is best described as follows:

   a. Clarkes' Spheroid / Geodetic Reference System of _____, which is : **1 Point**

   b. South / North oriented and Geocentered / NonGeocentered. **1 Point**

Grading Plan - Problem B2

Grader ID No. _____
Candidate ID No. _____

1.a. There are two defined California Coordinate Systems. Their abbreviations are CCS27 and CCS83, and they are defined in Division 8.5 or Chapter 611 of the Public Resources Code. **1 Point** _____

b. The City Surveyor is concerned about field survey data measurement specifications and accuracy classification standards. Your research has determined that Section 8813 addresses his concerns. **1 Point** _____

c. The California Coordinate System has two systems of distances expressed in: feet and decimals of a foot and meters and decimals of a meter. **1 Point** _____

d. The City Surveyor wants all parcel boundary measurements submitted after June 1, 1995 to comply with Section 8813. This section states that 1st and 2nd order accuracy standards and measurement specifications are defined by the Federal Geodetic Control Committee. If compliance with the above is claimed, this section will also require additional written data showing equipment, procedures, closures, adjustments and a control diagram. **1 Point** _____

2. a. Local title companies will be contributing data to the new LIS. In return, they are requiring that all parcel data and all attributes associated with each parcel be delivered with only California Coordinates.
Legal: Yes __X__ No ____. Section No. __8814__. (13) **1 Point** _____

b. The Recorder's Office has requested the same data format as that requested by the title companies and the Recorder believes that data will be sufficient for constructive notice in the recording process.
Legal: Yes ____ No __X__. Section No. __8814__. (13) **1 Point** _____

c. The Planning Director agrees with the Recorder and also believes that the very first California Coordinates for a parcel should be held fixed and as the final boundary of the parcel.
Legal: Yes ____ No __X__. Section No. __8814__. (13) **1 Point** _____

d. The City Surveyor plans to accept data formatted in either of the California Coordinate Systems up to June 1, 1995.
Legal: Yes ____ No __X__. Section No. __8817__. (16) **1 Point** _____

3. a. The geodetic projection used for the newest California Coordinate System is best described as follows:

b. Geodetic Reference System of 1980, which is **1 Point** _____

c. North oriented and Geocentered. **1 Point** _____

TOTAL: 10 Points _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section B

Problem 3

Grader Use Only — Do Not Write Below This Line

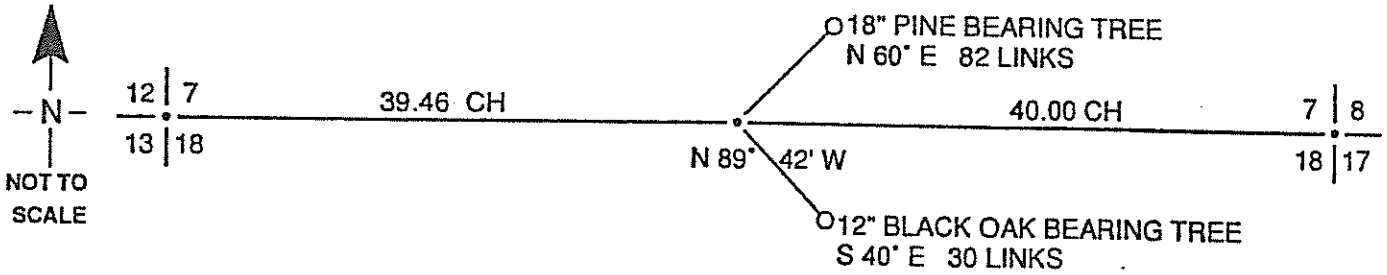
Grader ID Number:_____

PROBLEM B3

16 Points

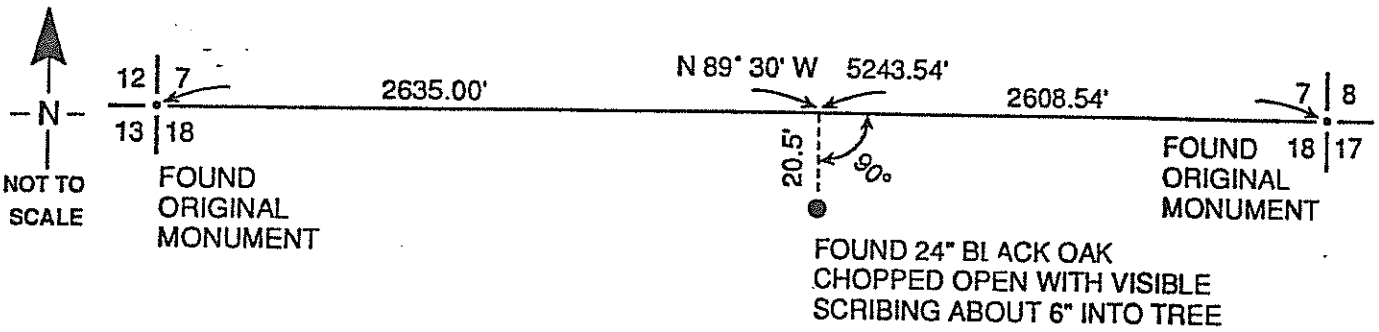
PROBLEM STATEMENT

Below is a sketch compiled from G.L.O. plat and field notes dated July 26, 1879.



T. 5N., R. 6E.

Below is a sketch showing the results of a field survey you performed in January 1990.



PROBLEM REQUIREMENTS

1. Describe how you would re-establish the missing 1/4 corner monument position. **10 Points**

2. Assume that, in addition to the oak tree, you had found a blazed 18" living pine tree without visible scribing near the location called in the notes for the 18" pine bearing tree. How would you re-establish the missing 1/4 corner monument position? Explain your answer. **6 Points**

Grading Plan - Problem B3

Grader ID No. _____
Candidate ID No. _____

1. Measure N 40° W, 30 links (19.8 feet) from the found black oak bearing tree.

or

Measure record bearing and distance from the bearing tree. **10 Points** _____

2. a. Measure N 40° W, 30 links (19.8 feet) from the found black oak bearing tree.

("Same as #1 above" is also correct if the candidate has answered #1 correctly.) **4 Points** _____

b. The pine tree was rejected because it was too young to be the age of the original tree.

or

The black oak tree is the best available evidence. **2 Points** _____

TOTAL: 16 Points _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section B

Problem 4

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM B4

32 Points

PROBLEM STATEMENT

Your client has asked you to complete a lot line adjustment of existing parcels 1, 3, and 4 of P.M. No. 5000 filed in P.M. Book 192 at Pages 11 and 12. These parcels are encumbered by deeds of trust. You have also been asked to provide the surveying and mapping services to create the new parcels A, B, and C as shown on the diagram on the facing page. Your survey has confirmed that the record information on the existing parcel map is identical to that on the plat map on the facing page. The resulting parcels conform to local building and zoning ordinances. Your client has required that the new parcel line be monumented.

PROBLEM REQUIREMENTS

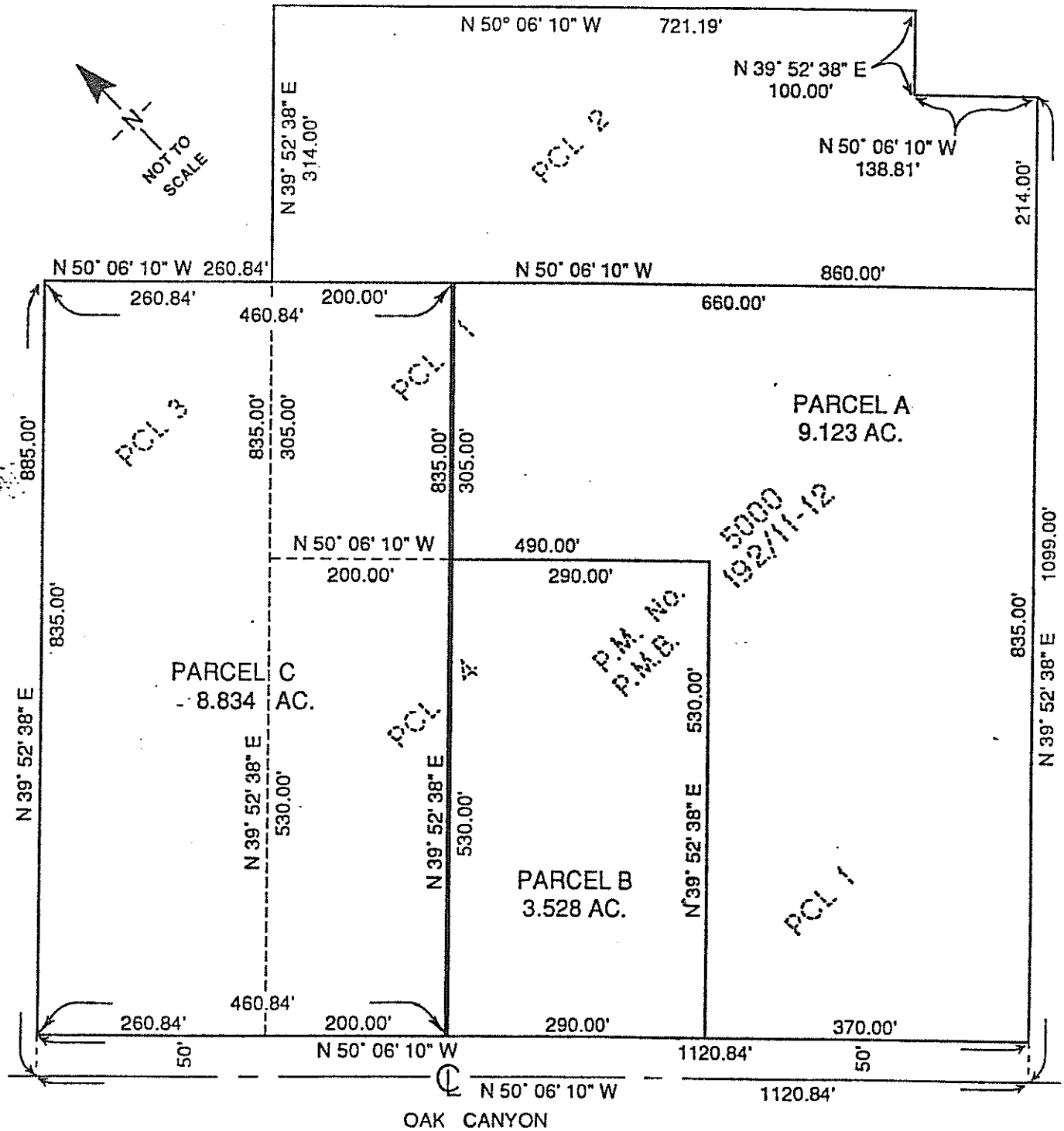
1. Prepare a separate legal description for each of the new parcels A, B, and C. (Do not use metes and bounds descriptions.) — 24 Points (8 points each)

2. List the document(s) you would advise your client to revise or record in order to transfer title after the lot line adjustment has been approved. — 4 Points

3. List the document(s) that, according to state law, you are required to file after monumenting the new lot corners. — 2 Points

4. Cite the specific section and paragraph(s) of the California Government Code that addresses lot line adjustments. — 2 Points

PLAT MAP DELINEATING LOT LINE ADJUSTMENT IN THE CITY OF BENTON, COUNTY OF RAINBOW



LEGEND

- EXISTING LOT LINE TO REMAIN
- EXISTING LOT LINE TO BE ADJUSTED
- PROPOSED PARCEL LINE
- P.M.B. PARCEL MAP BOOK

NOTE: RECORD AND MEASURED DATA ARE IDENTICAL

Grading Plan - Problem B4

Grader ID No. _____
Candidate ID No. _____

1. See reverse for sample solutions.

   a. Legal description of Parcel A — 8 Points _____
   The candidate must clearly identify that the most northwesterly 200.00 feet of said Parcel 1 is an exception.

   b. Legal description of Parcel B — 8 Points _____

   c. Legal description of Parcel C — 8 Points _____

2. a. New Grant deeds or conveyances that reflect adjustment. — 2 Points _____

   b. Modification of Trust deeds — 2 Points _____

   (Record of Survey, Certificate of Correction, Legal Description, L.L.A. sketch, etc. are not acceptable answers.)

3. Record of Survey — 2 Points _____

4. Section 66412(d) of the Subdivision Map Act — 2 Points _____

Comments:

TOTAL: 32 Points _____

SAMPLE SOLUTIONS

1. a. **Example of Legal Description for Parcel A:**

Being Parcel 1 of Parcel Map No. 5000 in the City of Benton, County of Rainbow, State of California, as shown on the map filed in Book 192, Pages 11 and 12 of Parcel Maps in the Office of the County Recorder of said county.

Except the most Northwesterly 200.00 feet of said Parcel 1.

b. **Example of Legal Description for Parcel B:**

Being Parcel 4 of Parcel Map No. 5000 in the City of Benton, County of Rainbow, State of California, as shown on the map filed in Book 192, Pages 11 and 12 of Parcel Maps in the Office of the County Recorder of said county.

Except the Northwesterly 200.00 feet of said Parcel 4.

c. **Example of Legal Description for Parcel C:**

Being Parcel 3 of Parcel Map No. 5000 in the City of Benton, County of Rainbow, State of California, as shown on the map filed in Book 192, Pages 11 and 12 of Parcel Maps in the Office of the County Recorder of said county, together with the most Northwesterly 200.00 feet of Parcel 1 of said Parcel Map No. 5000 and the Northwesterly 200.00 feet of Parcel 4 of said Parcel Map No. 5000.

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section B

Problem 5

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM B5

24 Points

PROBLEM STATEMENT

You have been provided design criteria as shown on the diagrams below and on the facing page.

PROBLEM REQUIREMENTS

Answer the following questions using the information provided in the diagrams.

1. Determine the ground elevations of the back of the sidewalk at the following locations:
   a. Driveway centerline — 3 Points
   b. Southeasterly property corner — 3 Points
   c. Southwesterly property corner — 3 Points
2. Provide the grade percentage between Point C and the building pad. Show all calculations. — 6 Points
3. What is the slope ratio from Point A to the toe of slope? — 3 Points
4. Calculate the cut from the back of the sidewalk to the sewer lateral invert at the property line. — 3 Points
5. Calculate the distance from the North property line to the toe of slope at Point B. — 3 Points

Note: Round all answers to 0.01'.

DIAGRAM 1
STREET ℄ PROFILE

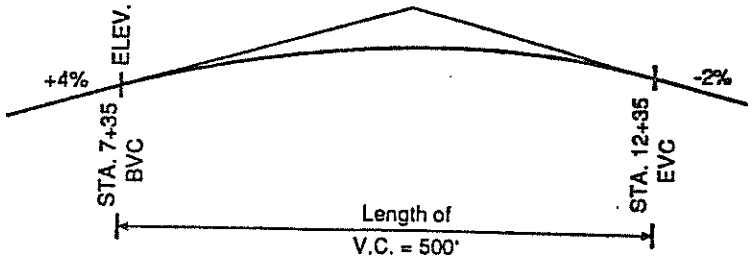


DIAGRAM 2
STREET SECTION

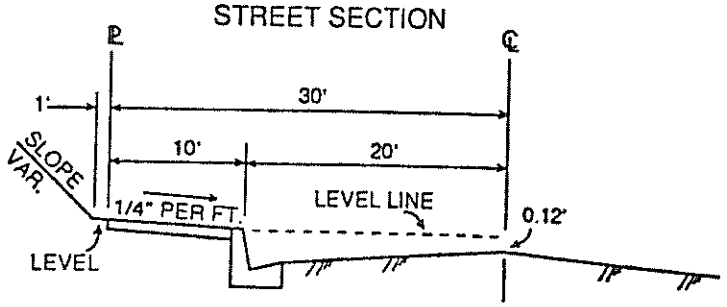
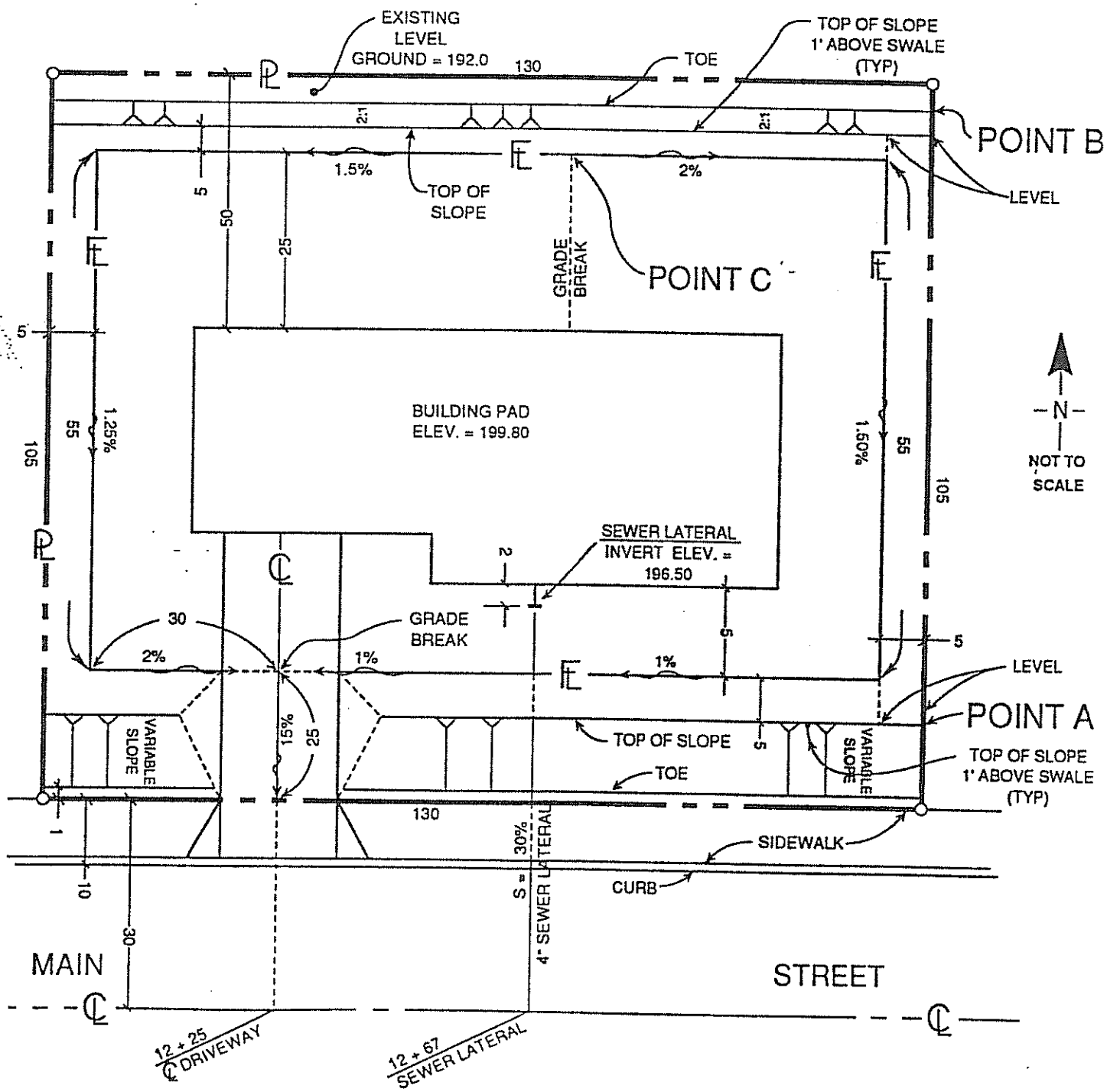


DIAGRAM 3
PLAN VIEW
(ALL DIMENSIONS ARE IN FEET)



Grading Plan - Problem B5

Grader ID No. _____
Candidate ID No. _____

±0.02' is acceptable for the following answers.

1. Calculation of the ground elevation of the back of the sidewalk at the:

   a. Driveway centerline: 192.69' — **3 Points** _____

   b. Southeasterly property corner: 190.80' — **3 Points** _____

   c. Southwesterly property corner: 193.28' — **3 Points** _____

2. Grade percentage between Point C and the building pad: 3.40% — **6 Points** _____

3. Slope ratio from Point A to the toe of slope: 39.68% or $\frac{2.52}{1}$ — **3 Points** _____

4. Cut from the back of the sidewalk to the sewer lateral invert at the property line: 3.76' — **3 Points** _____

5. Distance from the North property line to the toe of slope at Point B: 5.66' — **3 Points** _____

TOTAL: 24 Points _____

Comments:

Candidate ID Number_____

1990 California Professional Land Surveyor Examination

Section B

Problem 6

Grader Use Only — Do Not Write Below This Line

Grader ID Number:_____

PROBLEM B6

20 Points

PROBLEM STATEMENT

On March 3, 1990, you performed a survey of the lands of B. Smith described as follows:

> The South 75.00 feet of the West 100.00 feet of the East 200.00 feet of Lot 1, Tract 500, recorded in Book 8 of Maps, Page 86, Records of Rainbow County, State of California.

The client acquired the property in 1959 from R. Jones, who still owns the remainder of Lot 1.

PROBLEM REQUIREMENTS

Use the boundary survey on the opposite page to answer the Problem Requirements.

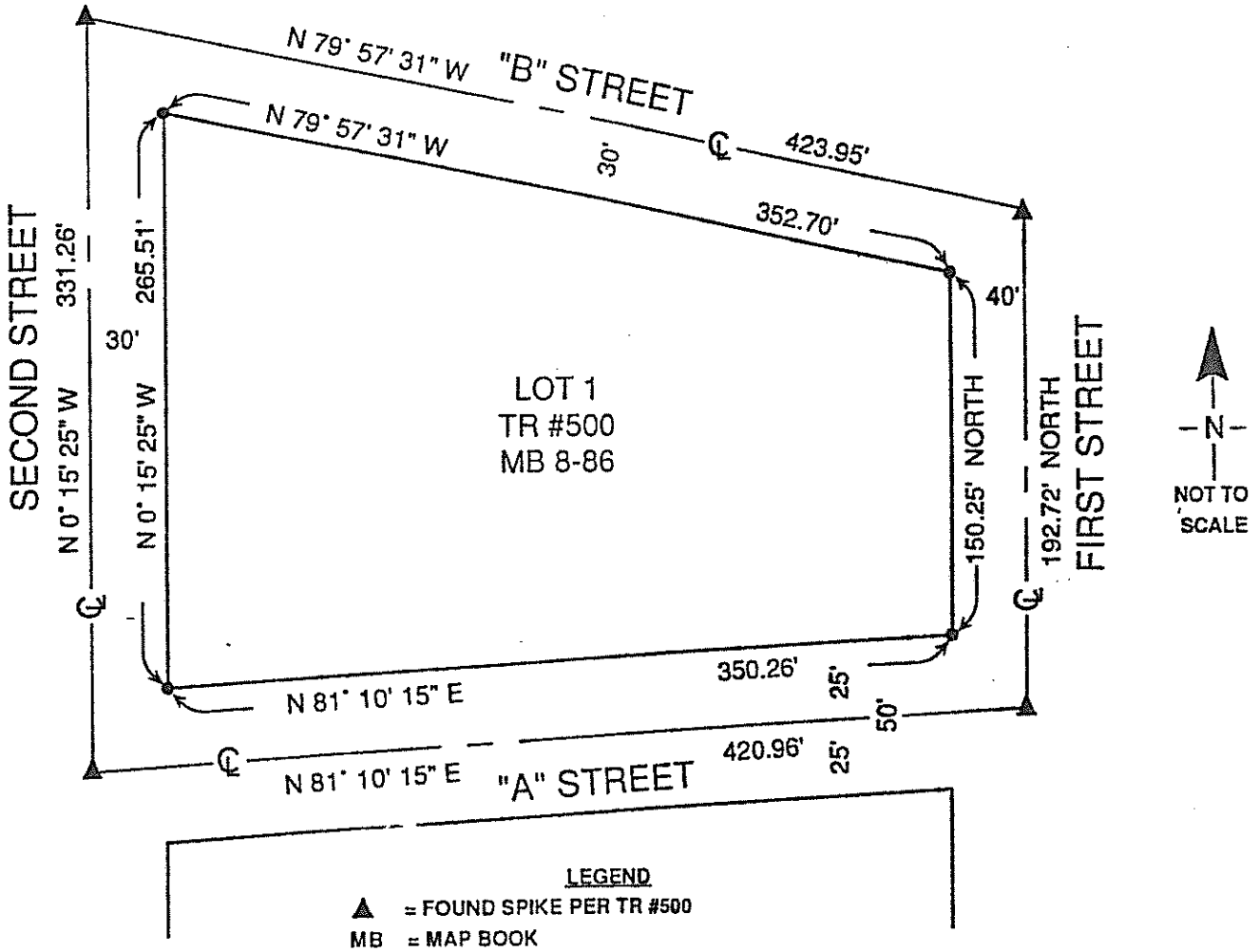
1. Determine the boundaries of your client's property. **6 Points**

2. Draft a Record of Survey Map of your client's property on a separate sheet of the grid paper provided. The Record of Survey should be carefully and clearly drafted and should fulfill all of the requirements of the State of California Business and Professions Code <u>except</u> the following: **14 Points**

   a. sheet size
   b. ink
   c. tracing cloth/polyester film
   d. one-inch border
   e. required surveyor's, County Surveyor's and Recorder's statements
   f. memorandum of oaths

   Ignore <u>local</u> Record of Survey requirements.

BOUNDARY SURVEY
SKETCH OF LOT 1, TRACT 500
BOOK 8 OF MAPS, PAGE 86,
RAINBOW COUNTY, CALIFORNIA



LEGEND

▲ = FOUND SPIKE PER TR #500

MB = MAP BOOK

● = FOUND 2" IP, LS 0000 PER TR #500

NOTE: RECORD AND MEASURED DIMENSIONS ARE IDENTICAL

Grading Plan - Problem B6

Grader ID No. _____
Candidate ID No. _____

1. Boundary Establishment
   a. Correct method of establishing boundaries is demonstrated. **2 Points** _____
   b. Correct boundary data is provided. **2 Points** _____
   c. Property being surveyed is delineated correctly on map. **2 Points** _____

2. Record of Survey Requirements
   a. Legible (8763) **2 Points** _____
   b. All monuments found and set and tagged are shown (8764a) **4 Points** _____
   c. Basis of bearings is noted (8764b) **2 Points** _____
   d. North arrow and scale are indicated (8764c) **2 Points** _____
   e. Legal designation of the parcel is indicated (8764c) **1 Point** _____
   f. Survey time period is indicated (8764c) **1 Point** _____
   g. Street names (8764d) **2 Points** _____

Comments:

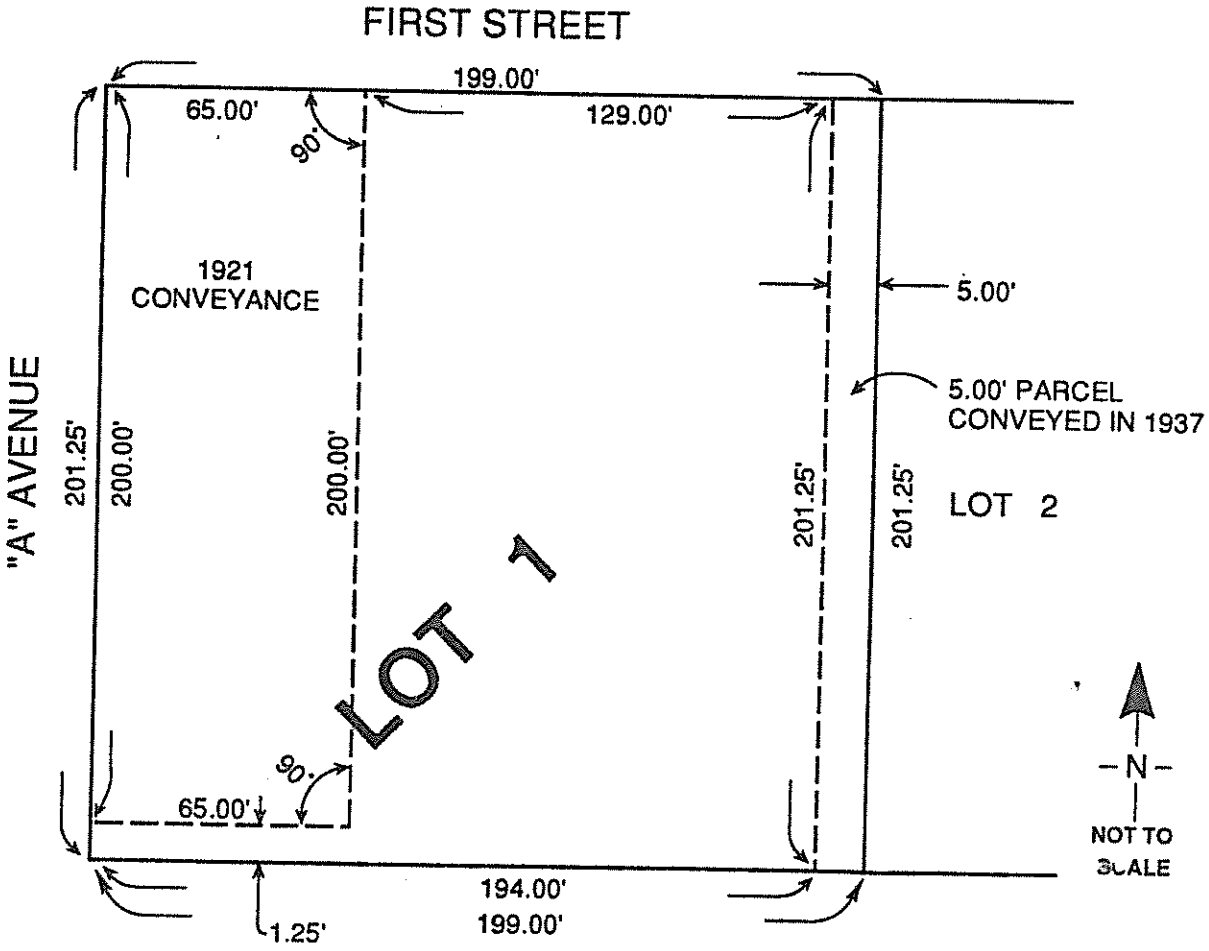
TOTAL: 20 Points _____

Grading Plan - Problem A2

Grader ID No. _____
Candidate ID No. _____

1. One point for each of the 13 distances. (**Note:** The distance need not be written if it is inferred mathematically.)

13 Points Maximum _____



2. a. The 1.25' deed inconsistency is identified. **5 Points** _____

   b. Statement of the resolution of the 1.25' strip. For example: Hold 200.00' since the terminus of the line was not qualified. **8 Points** _____

TOTAL: 26 Points _____

Comments:

Grading Plan - Problem A3

Grader ID No. _____
Candidate ID No. _____

1. a. Calculate the boundaries of the West one-half of Lot 5 by using one-half the area of Lot 5. **8 Points** _____

   b. The Easterly boundary will be set on a mean bearing of the East and West lines of Lot 5. (It will be acceptable to set the Easterly line parallel with the Westerly line of Lot 5.) **7 Points** _____

2. The Landis deed has no effect on the client's property since it is junior to the client's deed. **7 Points** _____

3. The East one-half of Lot 5 of Rainbow Acres, in the County of Rainbow, in the State of California, as per map recorded April 16, 1954 in Book 3 of Maps, Page 3, in the Office of the County Recorder of said county. **Preamble: 3 Points** _____

   Excepting the Southerly 100.00 feet. (Note to Graders: It is recognized that there are various ways to write a legal description for the Meyers' property. The new deed must recognize the rights of the previously conveyed parcels.) **Parcel Description: 12 Points** _____

4. a. No. A Record of Survey is required. **1 Point** _____

   b. One of the five rationales indicated in Section 8762 of the Professional Land Surveyors' Act, is listed. **1 Point** _____

   c. Section 8762 is cited. **1 Point** _____

Comments:

TOTAL: 40 Points _____

Grading Plan - Problem A4

Grader ID No. _____
Candidate ID No. _____

1. a. Flying height above sea level is the flying height plus average terrain elevation.

$$\text{Average terrain elevation} = \frac{\text{Highest elevation + Lowest elevation}}{2}$$

$$= \frac{3250' + 1850'}{2} = 2550 \text{ feet}$$ **Method: 1 Point** _____

$$\text{Negative scale} = \frac{\text{Ground distance}}{\text{Photo distance}} = \frac{\text{Coordinate Inverse}}{\text{5 inches}}$$

$$= \frac{2500'}{5"} = 1" = 500' = 1{:}6000$$ **Method: 1 Point** _____

Flying height = Camera focal length x negative scale

$$= 8.25" \times 500' = 0.687' \times 6000' = 4125'$$ **Method: 1 Point** _____

Flying height above sea level =
flying height + elevation of average terrain

Method: 1 Point _____

$$= 4125 + 2550' = \underline{\underline{6675 \text{ feet above sea level}}}$$ **Answer: 4 Points** _____

b. Negative Scale for mapping photography **Method: 1 Point** _____

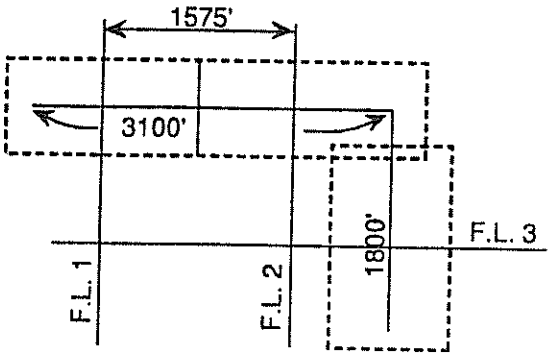
$$= \frac{\text{Camera focal length}}{\text{Flying height}} = \frac{6"}{1500'} = \underline{\underline{1" = 250'}} \text{ or } 1{:}3000$$ **Answer: 1 Point** _____

c. Neat Model using 60% forward lap, 30% sidelap.

(0.4 x 9") x (0.7 x 9") = 3.6" x 6.3"

Photo scale: 1" = 250' 250' x 3.6" = 900' 250'x 6.3" = 1575' **Method: 2 Points** _____

<u>Minimum Flight Lines = 3</u> **Answer: 2 Points** _____



*Method refers to calculations or explanations

d. *1.* Photo mylars:

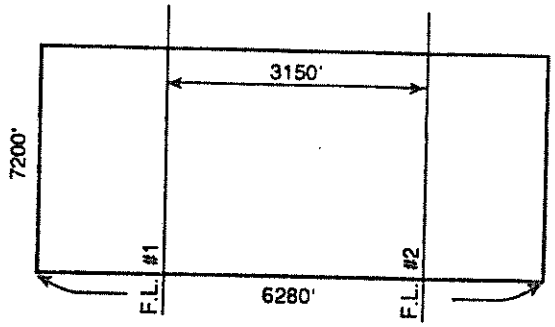


Photo Mylars

Negative Scale 1" = 500'
Neat Model 3.6" x 500' = 1800' 6.3" x 500' = 3150'
= 1800' x 3150'

$\frac{7200'}{1800'}$ = 4 exposures

$\frac{6280'}{3150'}$ = 1.99 = 2 flight lines

2 flight lines x 4 exposures/line = 8 photographs

Method: 1 Point _____
Answer: 1 Point _____

2. Topographic mapping:

3 flight lines x 2 exposures = 6 photographs

Method: 1 Point _____
Answer: 1 Point _____

e. Plan and profile sheets: 33" x 50' = 1650' net length possible.

Total length = 4900' + 1650' = 2.97' (3) sheets required
4900' + 50' = 98" 98" + 33" = 2.9 (3) sheets required

Method: 1 Point _____
Answer: 1 Point _____

f. C-Factor = $\frac{\text{Flying height above ground}}{\text{Contour interval}} = \frac{1500'}{1'} = 1500$

Method: 1 Point _____
Answer: 1 Point _____

g. Neat model = 3.6" x 6.3" Negative scale: 1" = 500' or 1:6000

3.6" x 500' = 1800' 6.3" x 500' = 3150'

Neat model ground coverage = 1800' x 3150'

Method: 1 Point _____
Answer: 1 Point _____

2. All topographic plan and profile sheets. LS Act 8761

2 Points _____

3. Per the National Mapping Accuracy Standards, not more than ten percent of the elevations tested and not more than one-half the contour interval shall be in error. For this problem, 1 foot contour interval + .5 feet = 0.5 feet. (There are many possible variations of this answer depending on citation source.)

2 Points _____

TOTAL: 28 Points _____

Comments:

Grading Plan - Problem A5

Grader ID No. _____
Candidate ID No. _____

1. Score only the first eight sources listed **and** score only the first type of information listed that corresponds with each of the eight sources. For each reference to a source, circle the one type of information for which points have been awarded and place a check mark in the blank provided. The same source may be listed more than once provided the type of information listed is different. Specific offices of the County or City (but not the state or federal government) may be omitted (example: County - Records of Survey). Conversely, the word County or City may be omitted from the office (example: Recorder - Records of Survey). Probable sources of survey data and the type of information expected to be received from each are as follows:

Sources of Survey Data	Type of Information	
County Recorder	Deeds, Records of Survey, township plats, R/W maps	_____
County Surveyor	R/W maps, G.L.O. township plats and field notes, corner records, county road monumentation, road survey notes	_____
County Flood Control District	R/W survey maps, field notes, easement deeds	_____
B.L.M.	Original G.L.O. township plats and field notes	_____
City Engineer or Surveyor	Street monuments, field notes, R/W maps, easement records, recorded maps, deeds	_____
State Lands Commission	River status (navigability), established survey lines, title status	_____
Electric and Utility Company (not water or gas)	R/W survey maps, field notes, ties to other survey information, easement deeds	_____
Title Company	Acquisition deeds, title chain, adjoiners deeds, unrecorded surveys, easement deeds	_____
Aerial Photographs	Depends on local sources	_____
Client Information	Deeds, old maps, letters	_____
Private Survey Records	Unrecorded Survey Data	_____
Field Visit	Easements, encroachments, survey monuments, lines of occupation	_____
Assessor's Office	Tax records, ownership, assessment, special districts, unrecorded maps, schools district maps, assessor's maps	_____
Adjoining Owners	Testimony about obliterated corners or monument locations	_____
Historical Association	Old maps, written communications, field notes	_____
Specialized Libraries (Bancroft, Cal State Fresno)	Old maps, communications, field notes	_____
Road Department	R/W road plans, field notes, maps	_____
Harbor or Navigation Codes	River information	_____
U.S. Corps of Engineers	Flood control information	_____
Archives (B.L.M., Federal)	Field notes, correspondence, maps	_____

TOTAL: 16 Points Maximum (2 points for each source-type combination) _____

Comments:

Grading Plan - Problem A6

Grader ID No. _____
Candidate ID No. _____

1. **a.** Line A – Use found monuments. **3 Points** _____

   b. Line B – Perform an astronomic observation and intercept Brown with record bearing. **4 Points** _____

   c. Line C – Use South line A as a basis for 97° 30' angle. Intercept Brown. **4 Points** _____

   d Line D – Determine magnetic declination in the subject property vicinity for 1891 from coast and geodetic tables. Apply correction to an astronomic or solar observation.

   – or –

   Find a monumented line in the vicinity with a magnetic bearing from the same historical period.

   – or –

   Take a magnetic bearing and apply necessary corrections between the original survey and today's survey. **9 Points** _____

   Note: The solution is acceptable only if the beginning/terminus of each line is accepted.

TOTAL: 20 Points _____

Comments:

Grading Plan - Problem B1

Grader ID No. _____
Candidate ID No. _____

1. **a.** Hold block corners and prorate lot lines.
   w = 99.60'
   Method: 4 Points _____
   Answer: 2 Points _____

   b. Hold block corners, compute original lot lines, and prorate new lot lines.
   x = 50.09'
   Method: 4 Points _____
   Answer: 2 Points _____

   c. Hold block corners and prorate lot lines.
   y = 99.65'
   Method: 4 Points _____
   Answer: 2 Points _____

   d. Prorate between found block corners.
   z = 50.07'
   Method: 4 Points _____
   Answer: 2 Points _____

2. Lot B of ABC Subdivision filed in Book 3 of Maps at Page 25, in Rainbow County, California.
   Note: Format and wording may vary but legal description must include: lot name, subdivision name, book number, page number, and county. Also, watch for metes and bounds descriptions that may negate description of Lot B.
   6 Points _____

3. Record of Survey is required.
   6 Points _____

Comments:

TOTAL: 36 Points _____

Grading Plan - Problem B2

Grader ID No. _____
Candidate ID No. _____

1.a. There are two defined California Coordinate Systems. Their abbreviations are CCS27 and CCS83, and they are defined in Division 8.5 or Chapter 611 of the Public Resources Code. **1 Point** _____

b. The City Surveyor is concerned about field survey data measurement specifications and accuracy classification standards. Your research has determined that Section 8813 addresses his concerns. **1 Point** _____

c. The California Coordinate System has two systems of distances expressed in: feet and decimals of a foot and meters and decimals of a meter. **1 Point** _____

d. The City Surveyor wants all parcel boundary measurements submitted after June 1, 1995 to comply with Section 8813. This section states that 1st and 2nd order accuracy standards and measurement specifications are defined by the Federal Geodetic Control Committee. If compliance with the above is claimed, this section will also require additional written data showing equipment, procedures, closures, adjustments and a control diagram. **1 Point** _____

2. a. Local title companies will be contributing data to the new LIS. In return, they are requiring that all parcel data and all attributes associated with each parcel be delivered with only California Coordinates.
Legal: Yes __X__ No ____. Section No. __8814__. (13) **1 Point** _____

b. The Recorder's Office has requested the same data format as that requested by the title companies and the Recorder believes that data will be sufficient for constructive notice in the recording process.
Legal: Yes ____ No __X__. Section No. __8814__. (13) **1 Point** _____

c. The Planning Director agrees with the Recorder and also believes that the very first California Coordinates for a parcel should be held fixed and as the final boundary of the parcel.
Legal: Yes ____ No __X__. Section No. __8814__. (13) **1 Point** _____

d. The City Surveyor plans to accept data formatted in either of the California Coordinate Systems up to June 1, 1995.
Legal: Yes ____ No __X__. Section No. __8817__. (16) **1 Point** _____

3. a. The geodetic projection used for the newest California Coordinate System is best described as follows:

b. Geodetic Reference System of 1980, which is **1 Point** _____

c. North oriented and Geocentered. **1 Point** _____

TOTAL: 10 Points _____

Comments:

Grading Plan - Problem B3

Grader ID No. _____
Candidate ID No. _____

1. Measure N 40° W, 30 links (19.8 feet) from the found black oak bearing tree.

or

Measure record bearing and distance from the bearing tree. **10 Points** _____

2. a. Measure N 40° W, 30 links (19.8 feet) from the found black oak bearing tree.

("Same as #1 above" is also correct if the candidate has answered #1 correctly.) **4 Points** _____

b. The pine tree was rejected because it was too young to be the age of the original tree.

or

The black oak tree is the best available evidence. **2 Points** _____

TOTAL: 16 Points _____

Comments:

Grading Plan - Problem B4

Grader ID No. _____
Candidate ID No. _____

1. See reverse for sample solutions.

   a. Legal description of Parcel A — **8 Points** _____
   The candidate must clearly identify that the most northwesterly 200.00 feet of said Parcel 1 is an exception.

   b. Legal description of Parcel B — **8 Points** _____

   c. Legal description of Parcel C — **8 Points** _____

2. a. New Grant deeds or conveyances that reflect adjustment. — **2 Points** _____

   b. Modification of Trust deeds — **2 Points** _____

   (Record of Survey, Certificate of Correction, Legal Description, L.L.A. sketch, etc. are not acceptable answers.)

3. Record of Survey — **2 Points** _____

4. Section 66412(d) of the Subdivision Map Act — **2 Points** _____

Comments:

TOTAL: 32 Points _____

SAMPLE SOLUTIONS

1. a. **Example of Legal Description for Parcel A:**

Being Parcel 1 of Parcel Map No. 5000 in the City of Benton, County of Rainbow, State of California, as shown on the map filed in Book 192, Pages 11 and 12 of Parcel Maps in the Office of the County Recorder of said county.

Except the most Northwesterly 200.00 feet of said Parcel 1.

b. **Example of Legal Description for Parcel B:**

Being Parcel 4 of Parcel Map No. 5000 in the City of Benton, County of Rainbow, State of California, as shown on the map filed in Book 192, Pages 11 and 12 of Parcel Maps in the Office of the County Recorder of said county.

Except the Northwesterly 200.00 feet of said Parcel 4.

c. **Example of Legal Description for Parcel C:**

Being Parcel 3 of Parcel Map No. 5000 in the City of Benton, County of Rainbow, State of California, as shown on the map filed in Book 192, Pages 11 and 12 of Parcel Maps in the Office of the County Recorder of said county, together with the most Northwesterly 200.00 feet of Parcel 1 of said Parcel Map No. 5000 and the Northwesterly 200.00 feet of Parcel 4 of said Parcel Map No. 5000.

Grading Plan - Problem B5

Grader ID No. _____
Candidate ID No. _____

±0.02' is acceptable for the following answers.

1. Calculation of the ground elevation of the back of the sidewalk at the:
   a. Driveway centerline: 192.69' — **3 Points** _____
   b. Southeasterly property corner: 190.80' — **3 Points** _____
   c. Southwesterly property corner: 193.28' — **3 Points** _____
2. Grade percentage between Point C and the building pad: 3.40% — **6 Points** _____
3. Slope ratio from Point A to the toe of slope: 39.68% or $\frac{2.52}{1}$ — **3 Points** _____
4. Cut from the back of the sidewalk to the sewer lateral invert at the property line: 3.76' — **3 Points** _____
5. Distance from the North property line to the toe of slope at Point B: 5.66' — **3 Points** _____

TOTAL: 24 Points _____

Comments:

Grading Plan - Problem B6

Grader ID No. _____
Candidate ID No. _____

1. Boundary Establishment
   - a. Correct method of establishing boundaries is demonstrated. **2 Points** _____
   - b. Correct boundary data is provided. **2 Points** _____
   - c. Property being surveyed is delineated correctly on map. **2 Points** _____

2. Record of Survey Requirements
   - a. Legible (8763) **2 Points** _____
   - b. All monuments found and set and tagged are shown (8764a) **4 Points** _____
   - c. Basis of bearings is noted (8764b) **2 Points** _____
   - d. North arrow and scale are indicated (8764c) **2 Points** _____
   - e. Legal designation of the parcel is indicated (8764c) **1 Point** _____
   - f. Survey time period is indicated (8764c) **1 Point** _____
   - g. Street names (8764d) **2 Points** _____

Comments:

TOTAL: 20 Points _____