Understanding the

L/A/R/E

Landscape

Architect

Registration

Examination

Volume 2

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Understanding the L.A.R.E. – Volume 2

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Understanding the L.A.R.E. – Volume 2

Foreword

In June of 1992, almost 2,000 candidates from 45 states and British Columbia sat for one or more sections of the first edition of the Landscape Architect Registration Examination. For most of these individuals, this exam represents the last step in a long process of education and internship leading to registration.

For CLARB, the administration of the L.A.R.E. also represents a milestone in a long, ambitious process. The process of revising any exam program is difficult. Redesigning a licensing exam is especially difficult.

Over five years of planning and two years of concentrated development effort was required to produce the L.A.R.E. Standards for accuracy, fairness and reliability had to be met and the test had to address only those job-related knowledge, skills, and abilities required to practice landscape architecture which directly affect the health, safety and welfare of the public. Many hours of work involving over 100 dedicated professional landscape architects, a dozen testing experts, and the CLARB staff went into creating the L.A.R.E.

So was it worth it? Absolutely!

The L.A.R.E. has received much praise, not only from the member registration boards but, interestingly, from candidates as well!

As good as the subjective response from individuals is, it is ultimately the objective psychometric analysis of an exam which proves its quality. I am very pleased to report that a detailed analysis conducted by Educational Testing Service (ETS) shows that the L.A.R.E. has met or exceeded every testing objective established for a licensing exam.

There is some disappointing news, however. As you review the passing rates for the L.A.R.E. published in this book, you will note that a minority of examinees possessed the knowledge, skills and abilities necessary to pass certain exam sections. The L.A.R.E. results have shown us the hard, cold truth that the educational and internship systems are not sufficiently preparing examinees in all areas. We at CLARB have already started exploring ways to improve

these preparation systems and we call on all educators and employers to help provide future licensees with the information and the experience necessary to adequately prepare them for licensure.

CLARB will also continue to evaluate and improve the exam process. Score reporting delays will be shortened and beginning in December, 1993, CLARB will make the graphic sections available for a second annual administration.

We are very proud of the work that has been accomplished, but we will continue to seek improvements to ensure every candidate and the public of a complete, fair examination process.

Ronald J. Mlnarik
President, CLARB

I

Understanding the L.A.R.E. – Volume 2

Introduction

Understanding the L.A.R.E. — Volume 2 is a handbook designed to help candidates prepare for the Landscape Architect Registration Examination (L.A.R.E.). The goal of this publication is to assist candidates in understanding the format and the grading of the graphic sections of the examination.

This publication is meant to serve as a complement to the first volume, *Understanding the L.A.R.E.* The first volume completely covers the process of licensure, answers frequently-asked questions about the examination, explains the exam methodology and identifies the exam specifications (knowledge, skills and abilities) that describe the content of each section of the examination.

Volume 2 expands on the information about the graphic test sections given in the first volume by providing the problem statements, grading criteria and actual solutions to actual vignette problems from the 1992 L.A.R.E. The first chapter outlines a process for getting the maximum benefit from this publication and contains two sample vignette problems for each section of the examination. The second chapter describes the process used to evaluate the vignette problems and the concept of the national grading session. The third chapter provides red-line comments on actual solutions from the 1992 L.A.R.E. to point out errors commonly made by candidates. The final chapters provide a list of reference materials and the passing rates for the 1992 L.A.R.E.

This handbook should be used as a tool to understand the content and format of the L.A.R.E. Other references will be needed to prepare for the examination and individuals are encouraged to seek out additional references to supplement the information offered here.

1

Chapter 1

Sample Problems for the L.A.R.E.

How to get the maximum benefit from this publication

- Read the first volume of *Understanding the L.A.R.E.* for the examination specifications (knowledge, skills and abilities tested on the L.A.R.E.) and to understand the exam methodologies and process.

- Read the description of what information is required on the vignette problems in the next few pages.

- Read and understand the *L.A.R.E. Reference Manual* found in the first volume of *Understanding the L.A.R.E.* This manual outlines the codes and graphic conventions that you must follow when completing the examination.

- Read the section on explicit and implicit requirements for the examination.

- Turn to the first sample problem on page 10 and complete the following:

  * Read the problem statement carefully.

  * Highlight explicit instructions given in the problem statement.

  * Note the implicit requirements needed to solve the problem.

  * Work out your solution on tracing paper before transferring that solution to the problem sheet.

- Flip over to chapter 2 and read how your examination is evaluated.

- Turn to the evaluation criteria for the first sample problem on page 37 and grade your solution.

- Compare your solution to the sample solutions for this problem found in chapter 3 to see if you have correctly solved the problem.

- Go on to complete this process for the remainder of the sample problems. It is a good idea to time yourself from this point on to see if you can complete each problem in the required time frame. You should give yourself approximately 35 minutes to solve each problem.

- After you have completed all of the sample problems and compared them against the sample solutions, go back and see which areas you may have had problems with and which problems you could not complete in the given time frame.

- Once you have identified the areas that you may need to work on, refer to chapter 4 for any reference sources that might help you brush up on those areas.

Information required to complete your solutions

In this chapter you will find sample vignette problems that were taken from the 1992 L.A.R.E. Completing these sample problems will give you a better understanding of the examination process and help you to improve your ability to provide the required information requested in each problem statement.

During the actual examination, you will have 3½ or 4 hours to complete each graphic section of the examination. Each exam section consists of 5 or 6 vignette problems. You are responsible for budgeting your time to complete all of the vignettes in the given time period. Before attempting any of the vignette problems, there are two sources of information that you must use to develop your solution.

The first source is the problem statement. Each vignette problem includes a problem statement which describes the context of the site and specific requirements that you must provide when completing your solution. It is very important to completely understand the problem statement before attempting to solve the problem.

The second source of information that you must thoroughly review before attempting your solution is the *L.A.R.E. Reference Manual.* This manual will be sent to you approximately four weeks before the test administration. You may not bring this copy with you to the test site; however, another copy will be given to you during the test administration for use as a reference source. A preliminary copy of the *L.A.R.E. Reference Manual* can be found in the first volume of *Understanding the L.A.R.E.*

The *L.A.R.E. Reference Manual* provides graphic standards for portions of the exam as well as zoning and construction standards which must be followed when completing all of the vignette problems. This manual is similar to a local zoning code that you would use when designing a project in a new jurisdiction. Although the standards within the *L.A.R.E. Reference Manual* may differ from your local codes, the exam is evaluated based on the standards given in this manual. The standards given in the manual are taken directly from recognized national or international codes. It is important for you to thoroughly review the *L.A.R.E. Reference Manual* before the exam so that you know where to find information during the examination. It is not necessary to memorize these standards, but you must understand the concepts given and when they must be applied.

Explicit vs. implicit instructions

Explicit instructions are those that are given directly in the problem statement. These are the written instructions that you should highlight and make sure to complete. In addition to the written instructions there are implicit instructions which must also be addressed.

A minimally competent landscape architect is expected to provide a solution that not only responds to the explicit instructions given in the problem statement, but also to factors affecting the practice of landscape architecture such as safety, efficiency and code regulations. Even though you are not told in the problem statement to provide a safe design, it is expected that a minimally competent landscape architect would always provide such a design. If a client were to give you a project, that client would expect you to follow codes, provide a safe design and not waste money on an over-designed project.

In the testing situation, candidates are expected to perform in the same manner as a practicing minimally competent landscape architect. That is, you should always consider the codes (in the *L.A.R.E. Reference Manual*) even if the problem statement did not specifically tell you to consider the codes. You should not place 50 cubic yards of concrete in a detail which only required 5 cubic yards. You would not place parking for a building on the opposite side of a major road; similarly you would not allow the safety of a vehicle passenger to be compromised by making that vehicle back into a major traffic flow.

So, after you read the problem statement, ask yourself what code, safety and efficiency standards you will need to consider when solving the problem. Remember, your task is to demonstrate that you can function in the real world as a competent practitioner.

Completing the sample vignette problems

When completing the sample problems, it is a good idea to time yourself to become familiar with the actual test conditions. It is imperative to read and understand the entire problem statement before you begin your solution. The best way to be sure that you include all of the required information is to highlight the factors in the problem statement that you must provide in your solution. If you jump directly into the solution before thoroughly understanding the problem statement, you are bound to leave information out of your solution.

After you have completed your solution, it is a good idea to review the problem statement again to make sure that your solution contains everything requested. Make sure that you have followed the format requirements and provided the correct number of program elements. Be sure that you have responded to all site conditions and any site context. If you take the time to thoroughly read and highlight the problem statement, it will save you more time in the long run than if you have to revise your solution to include something that you forgot.

Do not try to embellish your drawings with additional information. Your solution is evaluated based only on the required elements and how you put them together. Many times, adding information that is not required will only take away time that could be spent completing other solutions.

After you have completed all of the sample problems, checking them against the evaluation criteria and sample solutions as you go, you should review your own solutions and see if there are areas in which you need to obtain additional knowledge before the exam. Included in this publication is a reference list of publications recommended by the Examination Committee. Many of these publications can be obtained through the Council office. This publication list is not intended to be so comprehensive as to encompass everything on the exam, but these books can be of great assistance if you do not have reference material on the areas that you need to study.

The following is a suggested schedule that will help you to perform your best on the upcoming L.A.R.E.:

- 4 Months Before the Exam: Review *Understanding the L.A.R.E.* and *Understanding the L.A.R.E.— Volume 2*. Complete the sample vignette problems and identify your areas of weakness.

- 3 Months Before the Exam: Order reference books from CLARB if you do not have the books that you need. Allow for four to six weeks for delivery.

- 2 Months Before the Exam: Study the areas that you were having difficulty with on the sample vignette problems. Go back and review the problems to see why you had difficulty and to see if you have acquired the skills necessary to overcome your difficulties.

- 1 Month Before the Exam: The pre-examination packet will be sent to you approximately 30 days before the exam. This packet contains information such as the details of the examination site, the scales that you will need to bring, an updated copy of the *L.A.R.E. Reference Manual* and the time schedule for the exam.

  If you have any questions concerning the exam or materials sent in the pre-examination packet, it is a good idea to call or write us as soon as possible.

Sample Problems

Section 3 — Conceptualization and Communication

Sample Problem 1

PROBLEM STATEMENT:

Prepare a conceptual relationship diagram for a proposed 400 acre [162 hectares] planned community development. The development is to be designed to be pedestrian-oriented to minimize need for vehicular transportation within the community.

CONTEXT:

- A relatively flat site.
- Near a medium-sized city.
- A temperate climate.

REQUIRED:

Draw a relationship diagram in the box provided below which incorporates the following land uses and indicates the relationship between elements which best accomplishes the intent of a pedestrian-oriented community.

- Label each element by number.
- Utilize the graphic and drafting conventions given.

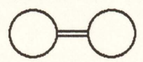
Land Use Elements

- Single family residential - one quarter acre [0.09ha] lots.
- Multi-family residential - mid-rise apartment buildings and townhouses.
- Elderly housing - mid-rise buildings.
- General office - mid-rise office buildings.
- Hospital and medical offices - mid-rise buildings.
- Retail center - neighborhood center [neighbourhood centre] shopping area with shops, restaurants and outside seating to be the community's active meeting place.
- Neighborhood [Neighbourhood] school - community use at night.
- Neighborhood [Neighbourhood] park - incorporating play-field for the neighborhood [neighbourhood] school.

Drafting Conventions

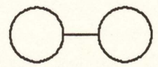
- Relationships between elements shall be shown as follows:

a.



A double line - indicates a strong relationship requiring physical proximity. Pedestrian access would be easily accomplished.

b.



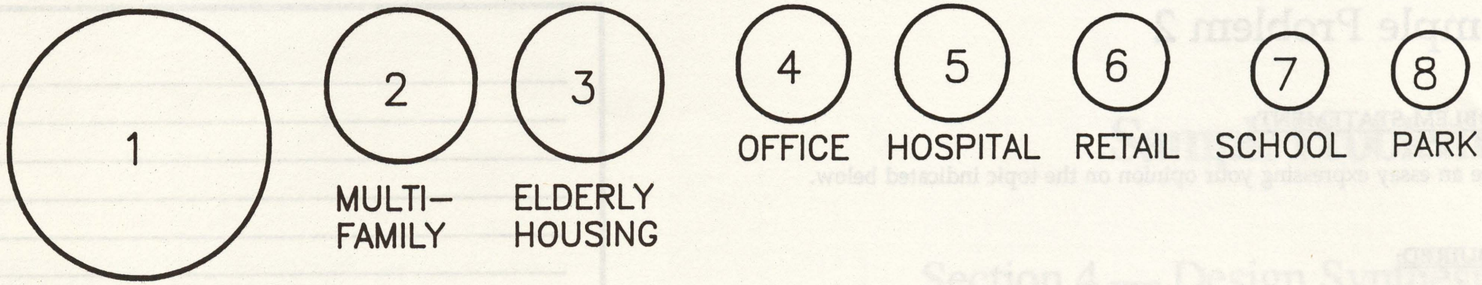
A single line - indicates some relationship requiring ease of access. Pedestrian access would be possible but not convenient.

c.

No line - indicates no desired relationship or that the elements should not be physically close to each other. Access between these elements would primarily be through vehicular circulation.

Note: It is assumed that all elements will be accessible through vehicular circulation whether or not they are linked with a relationship line.

- Relationship lines should not cross.
- Elements should not touch or overlap.
- The diagram is conceptual and not to scale. Relationships are only indicated through relationship lines. Graphic proximity has no meaning.



Land Use Elements – Graphic Convention

Relationship Diagram

Sample Problem 1

Landscape Architect Registration Examination

Conceptualization and Communication

Council of Landscape Architectural Registration Boards

Scale: NONE

Sample Problem 2

PROBLEM STATEMENT:

Write an essay expressing your opinion on the topic indicated below.

REQUIRED:

The ongoing debate among design professionals regarding the concept of incidental practice, that is, those areas of overlap between various disciplines where a design professional must decide between doing the work oneself or engaging a consultant from an allied profession.

- Cite two examples of overlap between landscape architecture and civil engineering and explain where, in your opinion, the line should be drawn between the professions. Justify your responses as completely as possible.
- Clearly express your thoughts using complete sentences.

NOTE: You will be evaluated on your ability to effectively communicate your opinion on this issue.

Solutions which are illegible or which are unintelligible will not be evaluated.

Sample Problems

Section 4 — Design Synthesis

Sample Problem 3

PROBLEM STATEMENT:

Prepare a preliminary planting plan for the area within the project limit line on the site shown below.

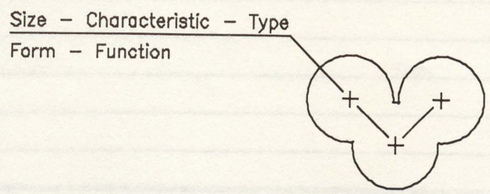
CONTEXT:

- The streets on the north and west sides of the development are unattractive, noisy and carry a high traffic volume.
- The site is relatively flat and the soils are well drained but susceptible to erosion.
- The only existing vegetation on the site is a group of deciduous trees at the northwest corner of the development.
- The fence surrounding the development on the west and north is a 6 ft. [2m] high chain link fence.
- The townhouses are two-story [storey] and lack separation from the parking area.
- Excessive heat gain is a problem.

REQUIRED:

Address the issues related to:

- Surrounding streets;
- Privacy for each unit;
- Heat gain on buildings and patios;
- Sense of site entry;
- Parking area and front entry to townhouses.
- Locate and identify all plant types by size, characteristic, type, form and function using the Plant Characteristics in the *L.A.R.E. Reference Manual* and the graphic designation shown below.



Sample Problem 3

Design Synthesis

Landscape Architect Registration Examination

Council of Landscape Architectural Registration Boards

NORTH

Scale: 1"=40' [1:500 metric]

Sample Problem 4

PROBLEM STATEMENT:

Design an outdoor entry plaza next to a one-story [storey] office building.

CONTEXT:

- The plaza will be used during both day and evening hours.
- The specimen tree is a heritage plant with surface roots extending to the periphery of the tree's canopy.
- The facade of the office building is common red brick with black trim around all doors and windows. The owner is concerned about the compatibility of the plaza with the building.
- The site is essentially flat although it is adequately sloped to drain surface water toward the south.
- A parking lot is located immediately north of the site.

REQUIRED:

This design is to include:

- Paved access from the parking lot to the plaza.
- A 300 sq. ft. [28m^2] (tolerance of 10% permitted) paved plaza including:
  a. A 40-50 sq.ft. [4-4.5m^2] pool with water jet. Locate the pool and water jet to be a direct focal point to the access from the parking and the office window on the east side of the site.

     Specify the height of the pool surface and water jet.

  b. A total of 10 linear feet [3m] of seating. The seating should:
     1) allow users to converse easily and comfortably;
     2) be oriented to take advantage of the pool and water jet; and
     3) be oriented so users can enjoy the space in the afternoon and early evening hours.
- Location and identification of generic types of lighting as per *L.A.R.E. Reference Manual.*
- Areas for planting (individual plants do not need to be indicated.)
- Show and identify all the proposed elements including the pavement by materials, type and color [colour].

Landscape Architect Registration Examination

Design Synthesis

Sample Problem 4

Council of Landscape Architectural Registration Boards

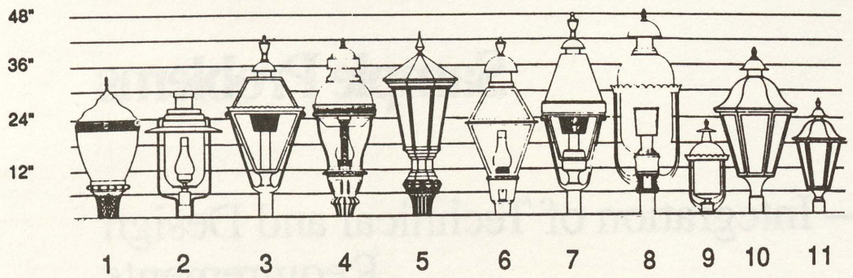
NORTH

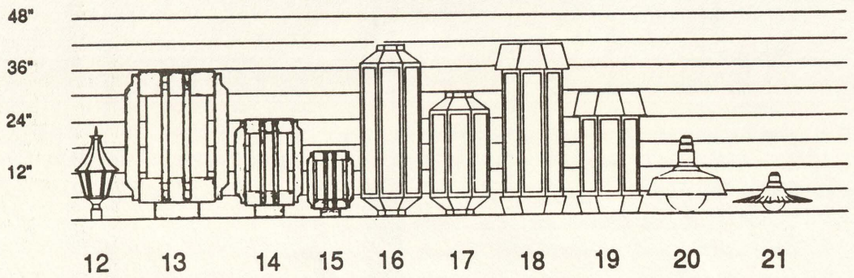
Scale: 1/4"=1'-0" [1:50 metric]

Sample Problems

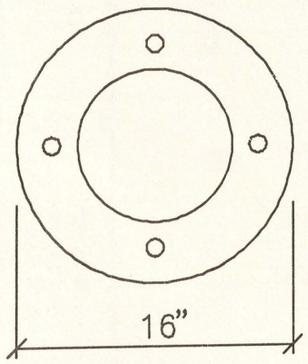
Section 5 — Integration of Technical and Design Requirements

LIGHTING SELECTION LIST

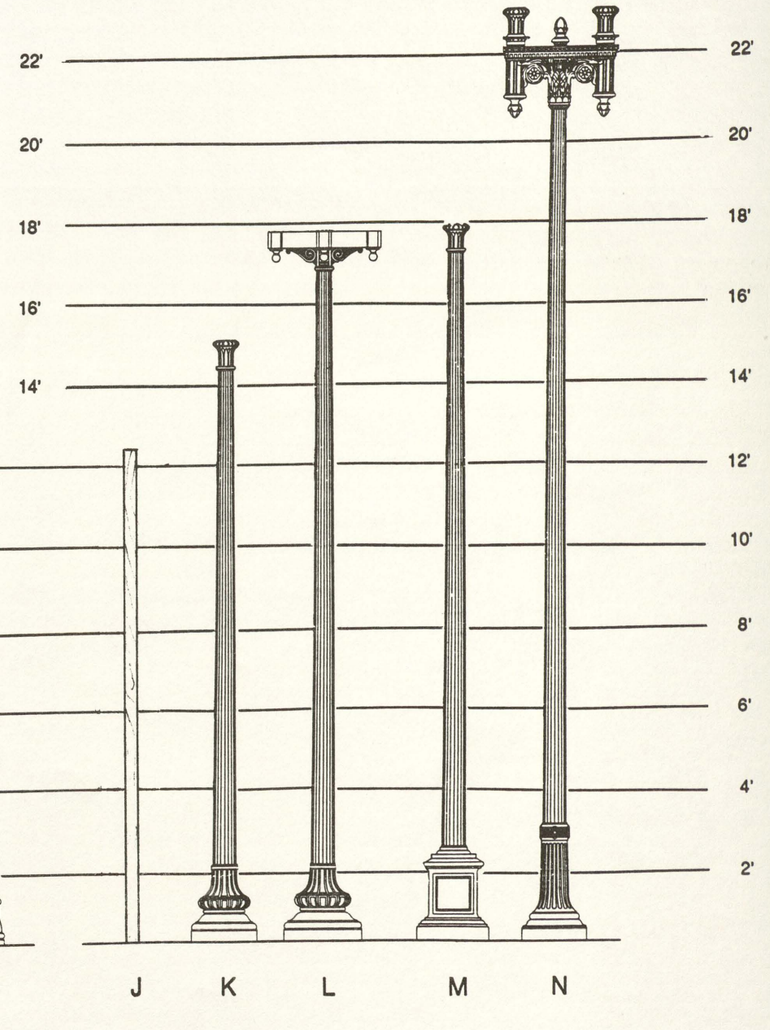




LUMINAIRE SELECTION



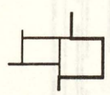
MOUNTING TEMPLATE



POST SELECTION

AVAILABLE MATERIAL LIST

PAVING OPTIONS

Section	Plan		Section	Plan	
		Concrete Paver (any color) [any colour]			Handmade Brick
		Concrete Paver (any color) [any colour]			Terrazzo Ceramic Tile (non-slip surface)
		Construction Brick			Concrete
		Flagstone			Exposed Aggregate Concrete
		Wire Cut Brick			

(NOT TO SCALE)

FASTENERS

L-shaped Anchor Bolt
Carriage Bolt
Lag Bolt
Machine Bolt
Finish Nails
Common Nails
Wood Screw

(NOTE: All fasteners are galvanized)

BUILDING MATERIALS

Air-Entrained Concrete (Finishes: Broom, Exposed Aggregate, Trowel)
Common Brick
Concrete Modular Units (CMU)
Expansion Joint Material
Galvanized Electrical Conduit
Granite
Mastic
Metal Pin
Metal Post Anchor
Mortar
Perforated PVC Pipe
Pressure Treated Lumber
(1x6, 2x2, 2x4, 2x6, 2x8, 2x10, 2x12 and 4x4)
[25x150, 50x50, 50x100, 50x150, 50x200, 50x250, 50x300, 100x100]
PVC Pipe
Sand
Square Steel Tubing
Steel Reinforcing Bar (deformed or smooth)
Stone
Wrought Iron

Base Plan for Problems 5 and 6

PROBLEM STATEMENT:

Prepare design development details* for a mini-park that has been designed as an extension to an existing plaza. The mini-park has been designed as a setting for an historical monument. The intent in preparing the details is for you to demonstrate an understanding of basic structural design and design character.

CONTEXT:

- The site is located in a late-Victorian-era historical district.
- The buildings in the district are brick with elaborate wood detailing.
- All building codes from the *L.A.R.E. Reference Manual* will apply.
- Existing plaza pavement is herringbone patterned brick with a concrete accent header.
- Existing plaza planter walls consist of brick veneer and brick caps.
- All existing site furnishings reflect the historic era.
- Frost line is 24" deep.
- Soils are plastic in nature with a moderate shrink/swell potential.

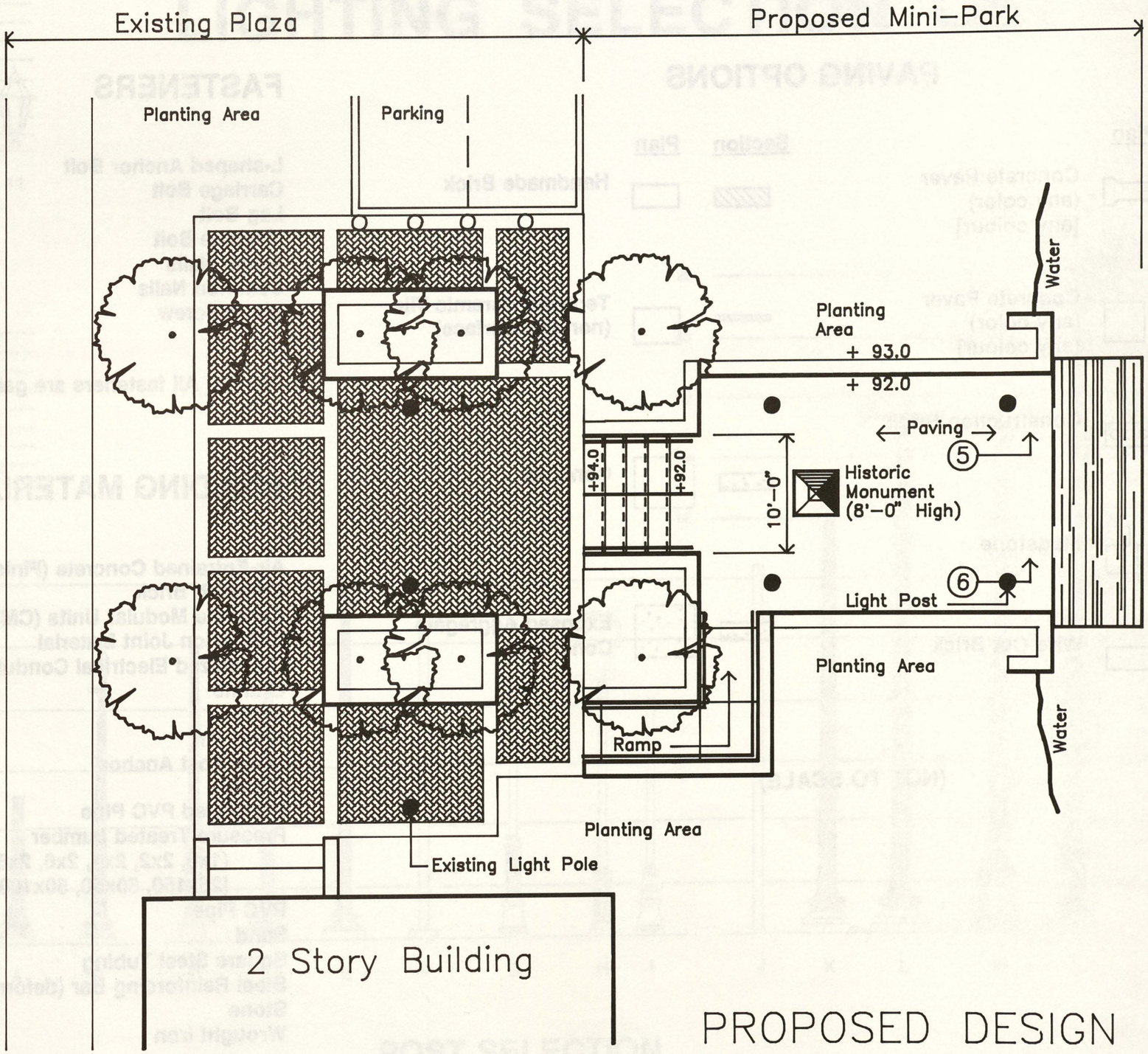
* **DESIGN DEVELOPMENT DETAIL**

Structural Development Intent

The intent in preparing a Design Development Detail is to show an understanding of **structural detailing principles** through shape, materials, finishes, critical dimensions, fasteners and finishes. The candidate is to show elements to a reasonable size, proportion and shape (exact calculation of structural properties is not a part of this problem). All materials must be selected from the Available Material List (moderately priced, commonly available and of nominal size) and labeled with generic names. As many members or fasteners as needed may be used.

Graphic Communication Intent

Design Development Detail drawings are drawings used to explain the **design character** to laymen. These drawings need not be hard line or be drawn precisely to scale. They need to be self-explanatory and readable by a layman. All materials, critical dimensions and important connections must be shown and labeled.



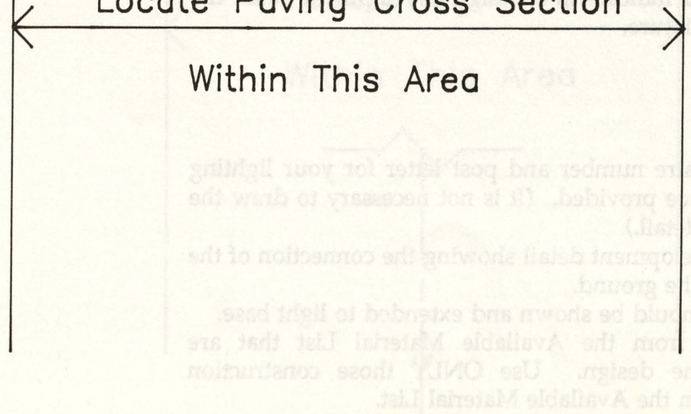
Sample Problem 5

PROBLEM STATEMENT:

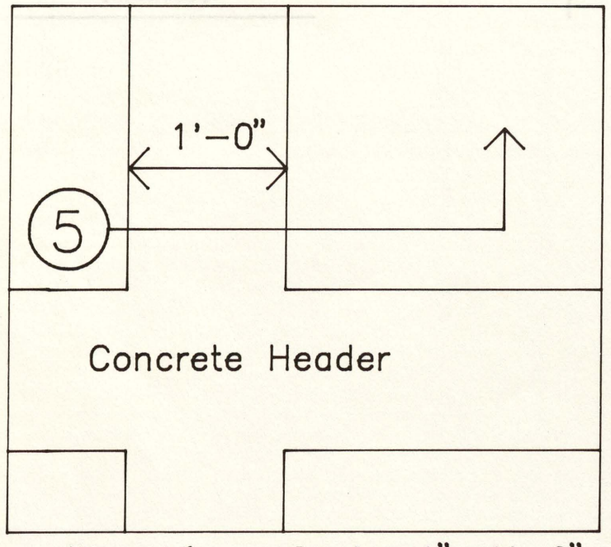
You are to show an understanding of the basic principles of paving material construction.

REQUIRED:

- Show typical paving pattern in plan view.
- Draw a cross-section of the pavement.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to be built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.



Typical Paving Pattern



Plan View Scale: 1"=1'–0"

Top of Pavement

Top of Pavement

5 PAVING DETAIL

Scale: 1"=1'–0"

Sample Problem 6

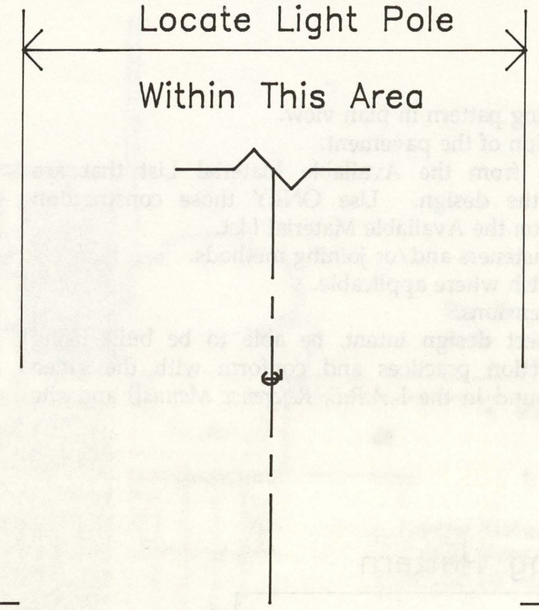
PROBLEM STATEMENT:

You are to choose a light post and luminaire from the Lighting Selection List for use in the mini-park addition and indicate in a design development detail the proposed base connection of the fixture.

REQUIRED:

- Indicate the luminaire number and post letter for your lighting selection in the space provided. (It is not necessary to draw the luminaire in your detail.)
- Draw a design development detail showing the connection of the lighting fixture to the ground.
- Proposed paving should be shown and extended to light base.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to be built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.

Luminaire # _____
Post # _____



6 LIGHT POST CONNECTION

Scale: 1"=1'-0"

Landscape Architect Registration Examination
Integration of Technical and Design Requirements
Sample Problem 6
Council of Landscape Architectural Registration Boards
Scale: 1"=1'-0"

Metric Sample Problem 6

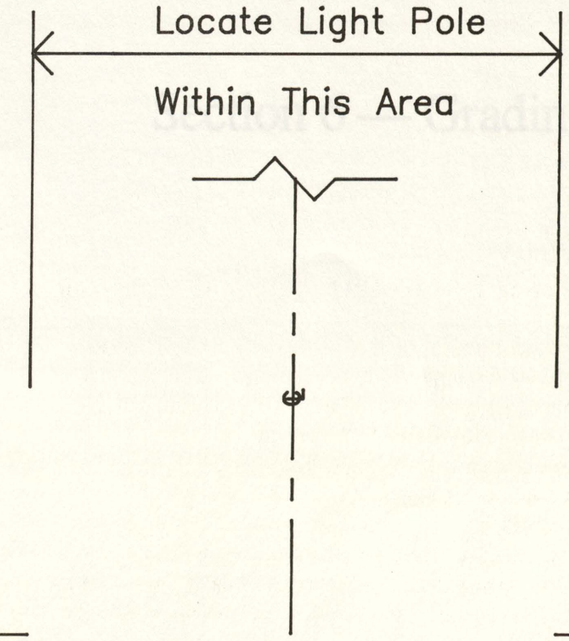
PROBLEM STATEMENT:

You are to choose a light post and luminaire from the Lighting Selection List for use in the mini-park addition and indicate in a design development detail the proposed base connection of the fixture.

REQUIRED:

- Indicate the luminaire number and post letter for your lighting selection in the space provided. (It is not necessary to draw the luminaire in your detail.)
- Draw a design development detail showing the connection of the lighting fixture to the ground.
- Proposed paving should be shown and extended to light base.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to be built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.

Luminaire # _____
Post # _____



6 LIGHT POST CONNECTION

Scale: 1:10

METRIC

Sample Problems

Section 6 — Grading and Drainage

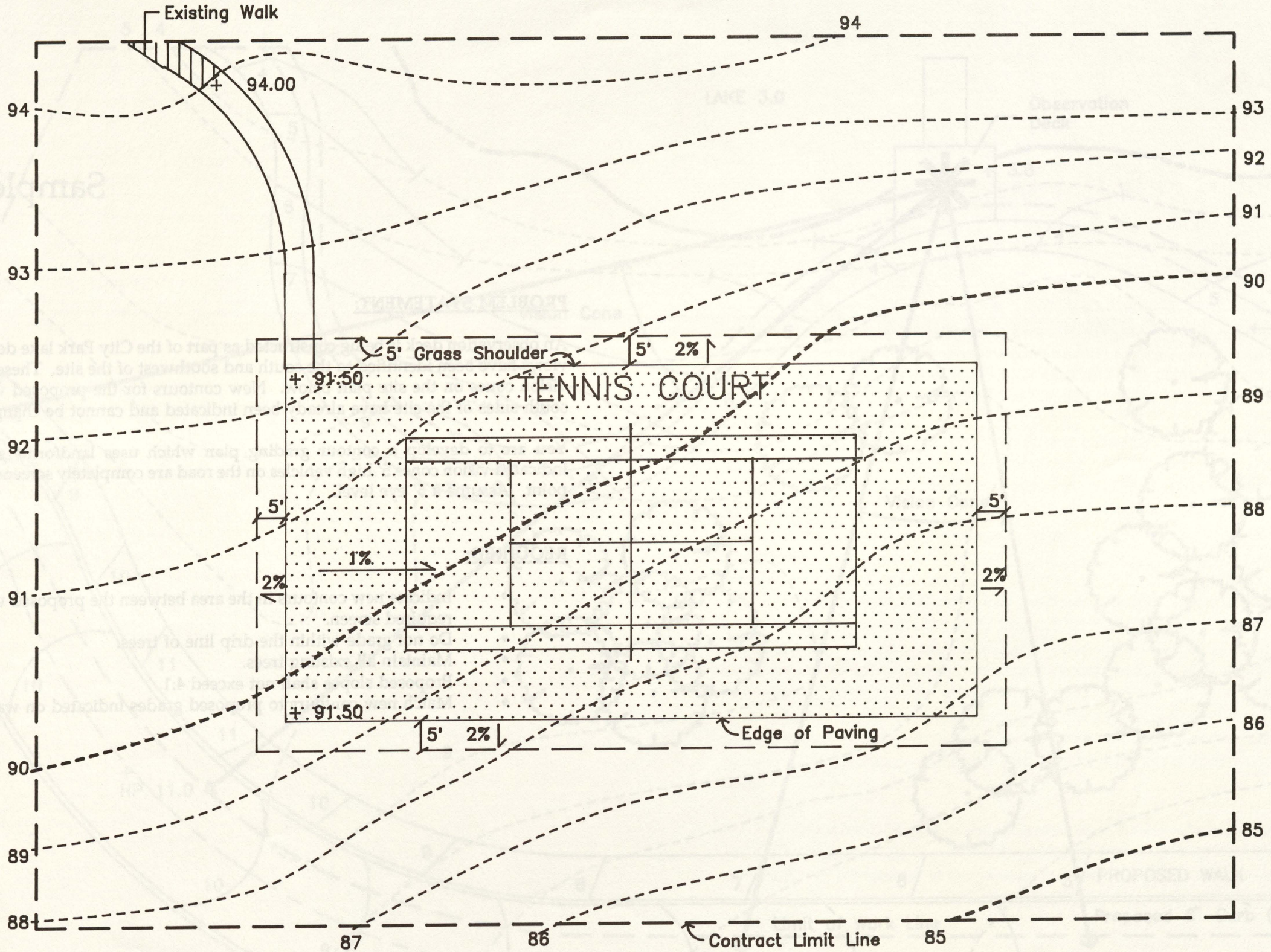
Sample Problem 7

PROBLEM STATEMENT:

Prepare a grading plan for the tennis court within the contract limit line.

REQUIRED:

- Gradient on new walk is not to exceed 6%.
- No surface water from adjacent lawn areas is to be permitted to flow onto shoulder, tennis court or walk. Divert water by the use of drainage swales as necessary without the use of storm drains or culverts.
- Drainage swales are to have a minimum longitudinal (centerline) gradient of 2%.
- Slopes are to be a maximum of 3:1.
- Show all proposed 1′ contours and meet existing contours within the contract limit line.
- Show all necessary spot elevations in paved areas, shoulders and swales.
- Pitch tennis court paving and grass shoulders at the gradients indicated.
- Maintain spot elevations given on tennis court.



Sample Problem 7

Landscape Architect Registration Examination

Grading & Drainage

Council of Landscape Architectural Registration Boards

NORTH

Scale: 1" = 20'

Sample Problem 8

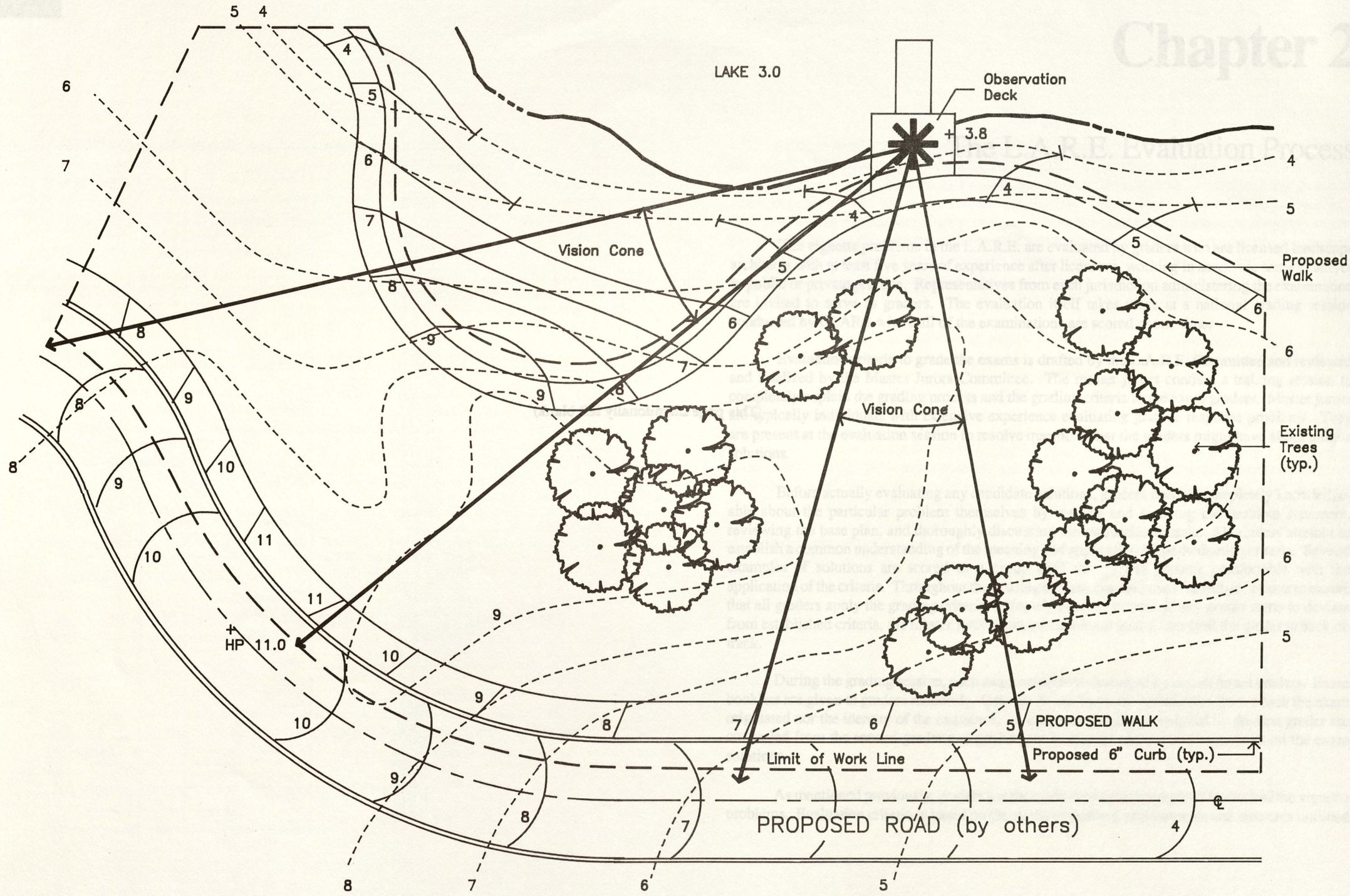
PROBLEM STATEMENT:

An observation deck is being constructed as part of the City Park lake development. Significant views have been identified to the south and southwest of the site. These views are indicated as vision cones on the site plan below. New contours for the proposed walks on the north and south sides of the site have already been indicated and cannot be changed.

You are to develop a contour grading plan which uses landforms so that within the two indicated vision cones 5′ high vehicles on the road are completely screened from the observation point. Assume a 5′ eye level.

REQUIRED:

- Indicate new contours in the area between the proposed walks to accomplish the required screen.
- Do not grade within the drip line of trees.
- Maintain all existing trees.
- Proposed slopes shall not exceed 4:1.
- Match new contours to proposed grades indicated on walks.



Sample Problem 8

Grading & Drainage

Landscape Architect Registration Examination

Council of Landscape Architectural Registration Boards

NORTH

Scale: 1"=20'

2

Chapter 2

The L.A.R.E. Evaluation Process

The vignette problems in the L.A.R.E. are evaluated by graders who are licensed landscape architects with at least five years of experience after licensure, working in academic settings and/or in public or private practice. Representatives from each jurisdiction administering the examination are invited to serve as graders. The evaluation itself takes place at a national grading session conducted by CLARB where all of the examinations are scored at one time.

Evaluation criteria to grade the exams is drafted by the L.A.R.E. Committee and reviewed and finalized by the Master Jurors Committee. The master jurors conduct a training session to completely explain the grading process and the grading criteria to the exam graders. Master jurors are typically individuals with extensive experience evaluating graphic response problems. They are present at the evaluation session to resolve questions that the graders might have about unique solutions.

Before actually evaluating any candidate solutions, graders become completely knowledgeable about the particular problem themselves by reading and studying the problem statement, reviewing the base plan, and thoroughly discussing the evaluation criteria. All graders attempt to establish a common understanding of the meaning and application of the evaluation criteria. Several examples of solutions are scored as a group until the graders become comfortable with the application of the criteria. Throughout the grading session, master jurors "correlate" exams to ensure that all graders apply the grading criteria uniformly to all solutions. If any grader starts to deviate from established criteria, the master juror provides additional instruction until the grader is back on track.

During the grading session, each exam solution is evaluated by two different graders. Exam booklets are given to graders randomly. Graders do not know the jurisdiction from which the exam originated nor the identity of the examinee. In addition, the scores assigned by the first grader are concealed from the second grader and graders are instructed not to make any marks on the exam solutions.

As mentioned previously, graders use the evaluation criteria prepared for each of the vignette problems. Evaluation criteria is based on the stated objectives, requirements and elements outlined

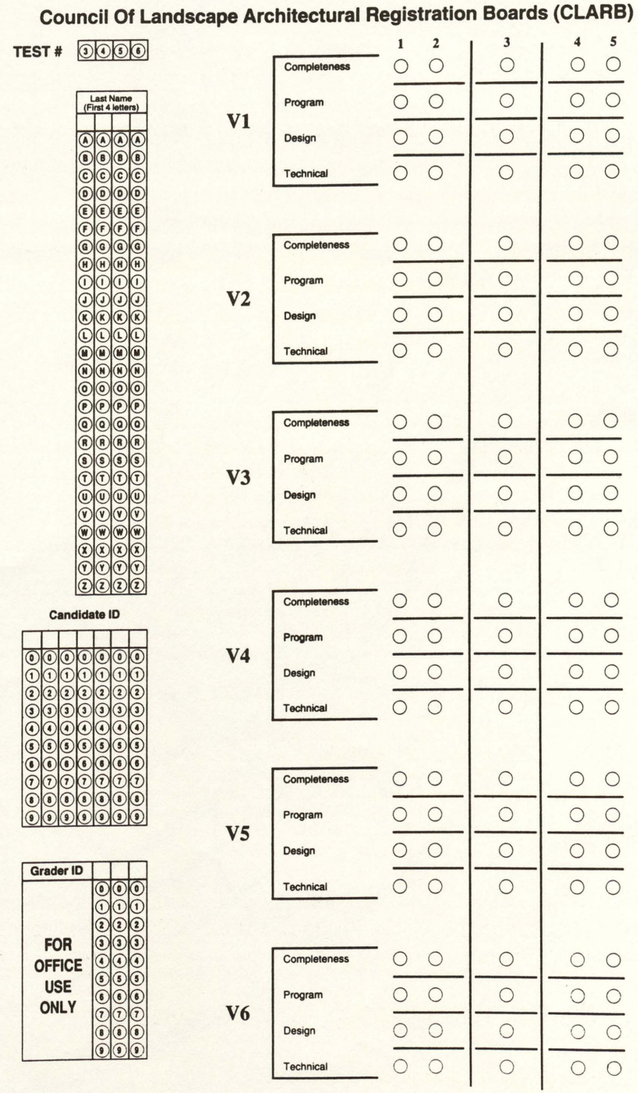
in the problem statement and identifies items that should be part of a candidate's solution. The graders are supervised constantly to ensure that the stated criteria is uniformly applied and that their personal opinions are excluded from the grading process.

Each grader applies the grading criteria and assigns a score from 1 to 5 for each scoring area. Scores of 1 and 2 are failing scores, scores of 4 and 5 are passing scores and the score of 3 is a null score indicating the solution is neither clearly passing nor clearly failing for that scoring area. (See page 36 for information on how these scores are combined to produce a pass/null/fail score for a vignette.)

Vignettes which receive a passing grade from one grader and a failing grade from the other grader are graded a third time.

Booklets at or close to the passing point are graded a final time by two master jurors working together. This step ensures both candidates and the public that every borderline case is correctly graded.

The graders record their scores on a computer scanned score sheet. Each score sheet is removed from the test booklet and sent through a computer scanner to record that grader's score before the exam booklet is sent on to receive additional evaluations. This process ensures that no grader will be biased by marks recorded from another grader and allows the master jurors to receive computer reports on the consistency of each grader. The evaluation score sheet is shown to the right.



The exams will be evaluated in the following areas:

1. Completeness

   Is the solution sufficiently complete to score?

   Is the solution legible?

   Have the stated rules for presentation of solutions been followed? (i.e., drawings done on base sheet, no use of color, etc.)

2. Program

   Are all elements incorporated in the solution?

   Are all elements the size and shape indicated in the program?

   Are specified relationships accomplished?

3. Design

   Does the solution work effectively?

   Is it usable?

   Does the solution respond appropriately to given stimuli? (e.g., environmental factors, opportunities/constraints, etc.)

4. Technical Aspects

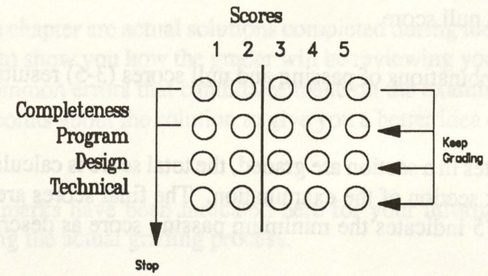
   Are elements for which size and shape were not specified in the program of sufficient size and shape for their intended function? (e.g., slopes, drive widths, turning radii, etc.)

   Are legal constraints observed? (e.g., zoning, building codes)

   Are safety issues addressed satisfactorily?

Completeness, program and design are all linear in nature. That is, any solution which clearly fails to meet the requirements of any of the first three grading criteria will not be evaluated further. The nature of these areas supports this approach. It is illogical to further evaluate an incomplete solution or one which violates simply stated instructions. Similarly, a solution which does not address the program requirements cannot be further evaluated since the difficulty of the problem is affected when significant elements are changed or omitted.

The process flows as follows:



For some vignette problems, there may not be both Design and Technical components to the problem. In these cases, graders are instructed to assign a null score of 3 for one of these grading areas.

How to assign a pass, null or fail mark to your vignette solution:

- Grade each vignette solution according to the evaluation criteria found in chapter 3 of this booklet.
- If any failing marks have been assigned in any category (a score of 1 or 2), the vignette solution receives a failing mark.
- If the solution is not failing, next look at the design and technical categories on the evaluation criteria. If the solution received a 3 in both of these categories, then the solution receives a null score.
- Any other combinations of passing and null scores (3-5) results in a passing score for that vignette.

After all vignettes in a section are graded, the total score is calculated to determine a passing or failing grade on that section of the examination. The final scores are reported using a standard score scale on which 75 indicates the minimum passing score as described in *Understanding the L.A.R.E.*

This grading process, in which every examination is graded at least twice and as many as four times, makes certain that every examination solution is reviewed fairly and completely. It eliminates subjective evaluation and bias, and ensures that all exams are graded against the same criteria.

3

Chapter 3

Sample Solutions and Evaluation Criteria

This chapter contains the criteria used to evaluate the sample problems found in Chapter 1. You should review your solutions against the criteria given in this chapter. Reviewing your exam against the evaluation criteria will help you understand what the grader is looking for when evaluating your solution.

Also included in this chapter are actual solutions completed during the 1992 L.A.R.E. Each solution has been red-lined to show you how the grader will be reviewing your solutions as well as pointing out many of the common errors that candidates make on the examination. Each solution will indicate good and bad points about the solution to give you a better idea of what is expected in an exam situation.

Remember, the red marks have been indicated here for your information. No marks are made on any solutions during the actual grading process.

Keep in mind that it is not necessary to pass all of the vignette problems within a test section to pass that test section. The vignette style test has been developed to allow you several opportunities to show your understanding of a particular subject area.

A Cut Score Committee evaluated the difficulty of each vignette in the 1992 L.A.R.E. and established the minimum performance required to pass each section. Future exams will be compared to the 1992 exam in terms of difficulty to establish the passing point.

Sample Problem 1 - Relationship Diagram

The objective of this problem is to analyze a program statement in terms of the relationship between areas in a pedestrian-oriented community.

The description of the land use elements provides insight as to the required relationships and the priority for pedestrian access. For instance, the neighborhood park is described as incorporating the play-field for the neighborhood school. This indicates that the relationship between the park and the school are critical. This relationship should be indicated according to the drafting conventions by drawing a double line between these uses.

The fact that the school and park are described as neighborhood facilities indicates that ease of access from the residential areas should be provided. Here, a single line would be acceptable.

The other critical area is the retail center. The description for the retail center indicates that it is the community's active meeting place. Since this is to be a pedestrian-oriented community, the active meeting place would need access from all of the population areas within the community. Therefore, a single line would be required to connect the retail to the single-family residential, multi-family, elderly housing and the offices.

If you refer to the evaluation criteria for this problem, you will see that only certain relationships need to be included in the solution and that some relationships are considered more important than others. For instance, you could still pass if you omit a relationship between the single-family to the park or if you do not indicate a relationship between the office and the retail.

Evaluation Criteria - Sample Problem 1

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and legible
2	Incomplete, illegible or violates directions (i.e. uses color etc.)
1	Blank

Program

Eight land uses are given and are labeled by number

Scores of 4 or 2 are not allowed for this area

5	Meets requirements
3	All uses shown but labeled by name only
1	One or more uses omitted

Design

Critical relationships

School to Park (7 = 8)

Important Relationships

Single Family to School (1 = 7)
Single Family to Park (1 = 8)
Multi-family to School (2 = 7)
Multi-family to Park (2 = 8)
Single Family to Retail (1 - 6)
Multi-family to Retail (2 - 6)
Elderly to Retail (3 - 6)
Offices to Retail (4 - 6)

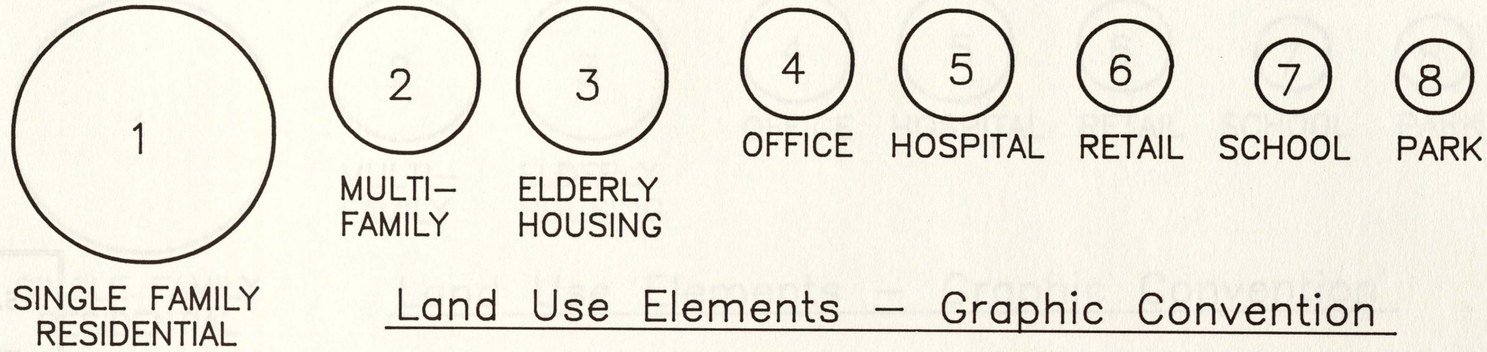
5	Satisfies critical relationships, identifies at least a single link between all important relationships
4	Satisfies requirements above except no relationship between Single Family to Park (1 = 8) and/or Offices to Retail (4 = 6)
3	Satisfies requirements above except no relationship between Multi-family to Park (2 = 8) and/or Elderly to Retail (3 = 6)
2	Omits important relationships to school or to retail except as allowed above
1	Omits critical relationship

Technical Assigned score of 3

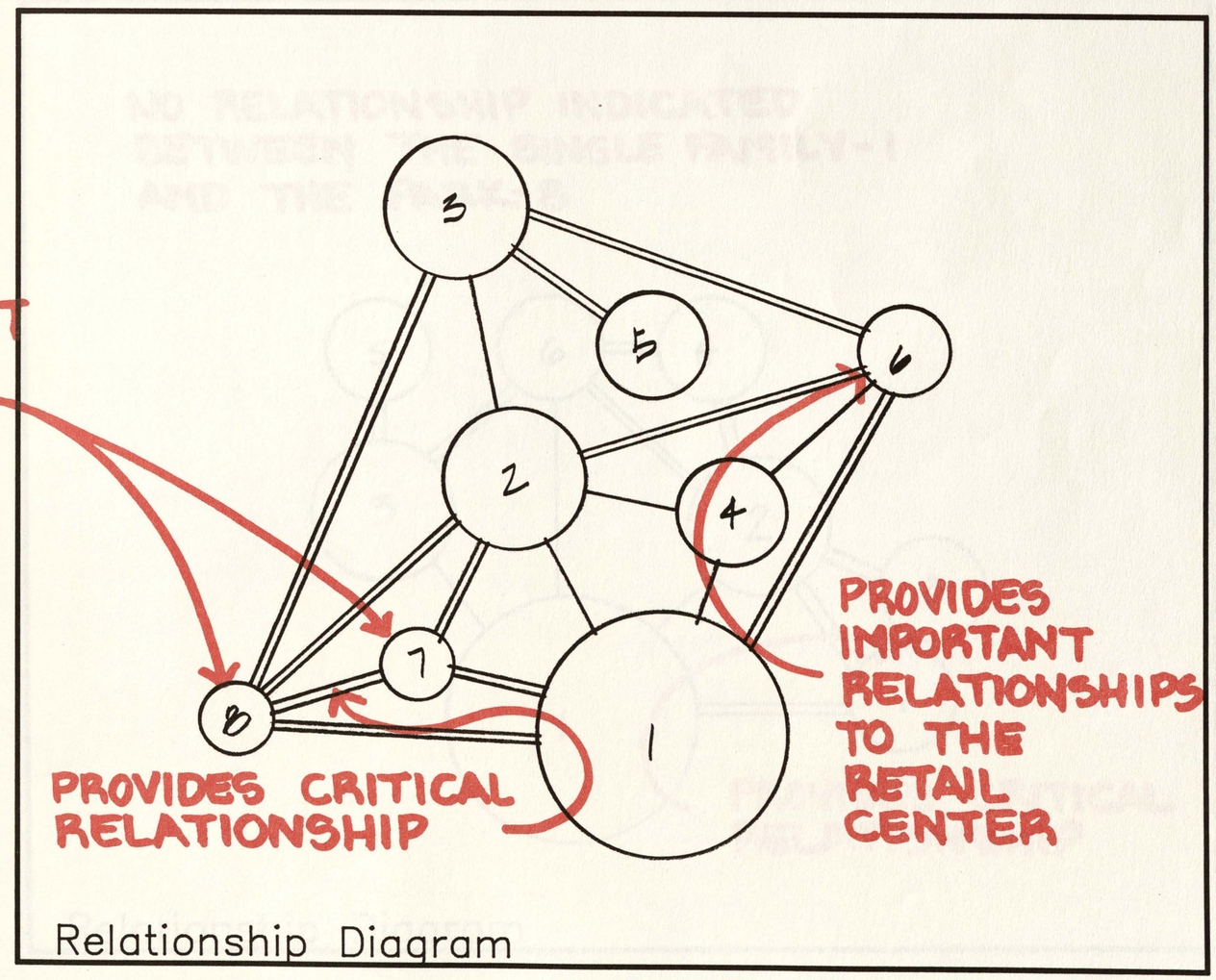
SAMPLE #1 VIGNETTE #1

This solution correctly addresses the important relationships outlined by the problem statement. It provides the important pedestrian links to the retail center and the park for this pedestrian oriented community. This is a very good solution.

Sample #1 Vignette #1



Land Use Elements – Graphic Convention



Relationship Diagram

3

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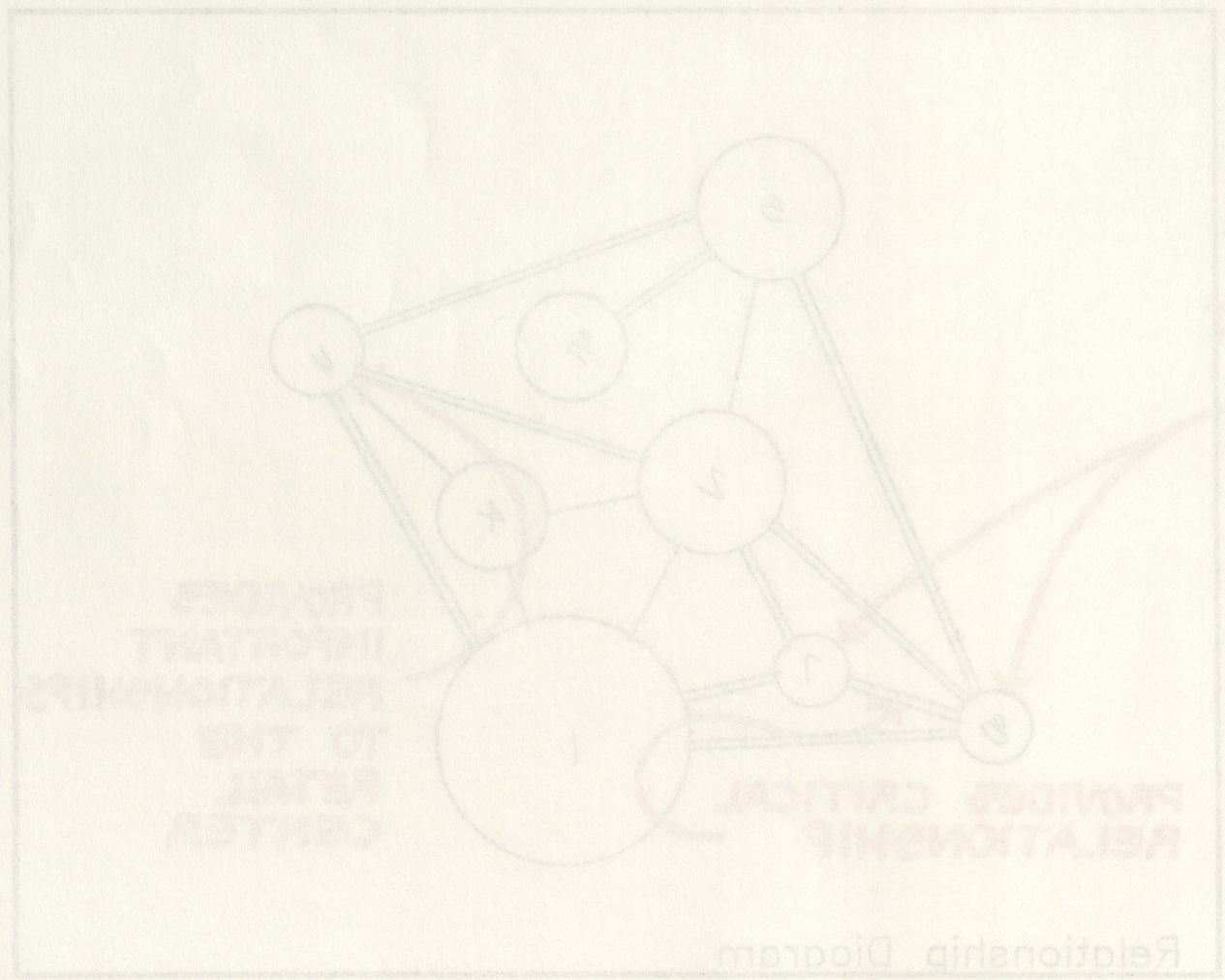
Scale: NONE

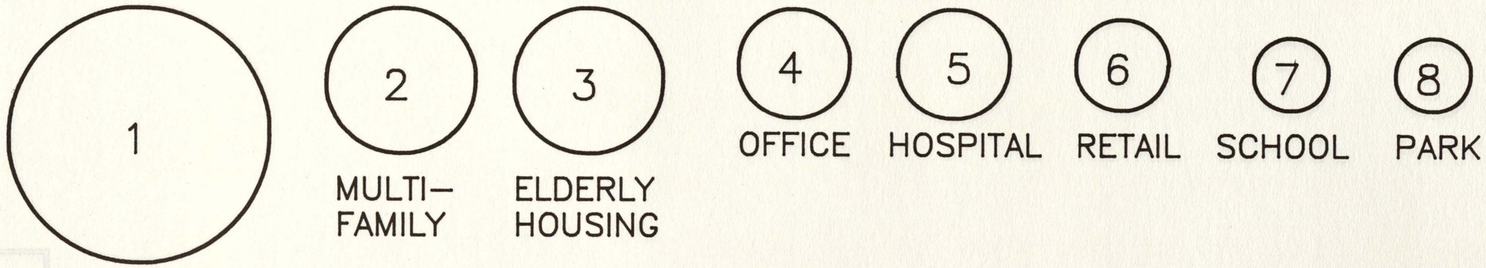


SAMPLE #1 VIGNETTE #2

This solution provides the critical relationship identified in the problem statement. The solution indicates most of the important relationships to the retail center and the park.

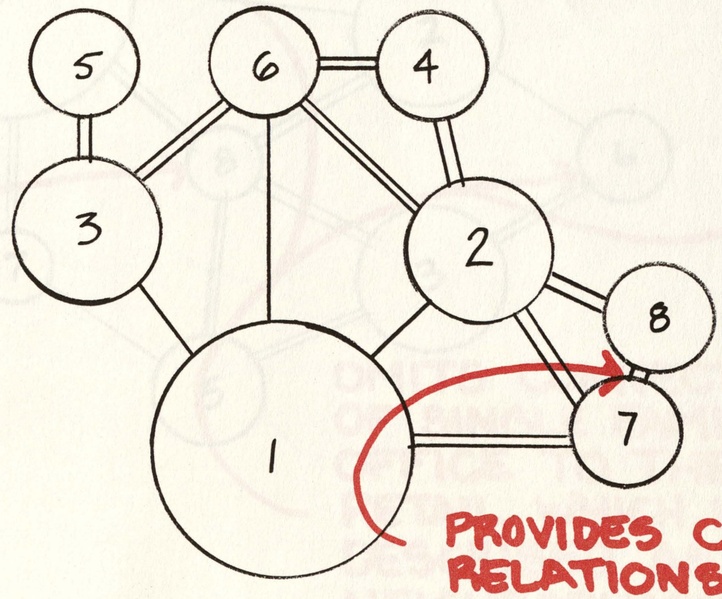
The candidate failed to identify the importance of any pedestrian link from the single family residential area to the park. However, in accordance with the grading criteria, this omission was not sufficient to cause this solution to fail.

Sample #1 Vignette #2



Land Use Elements – Graphic Convention

NO RELATIONSHIP INDICATED BETWEEN THE SINGLE FAMILY-1 AND THE PARK-8



Relationship Diagram

3

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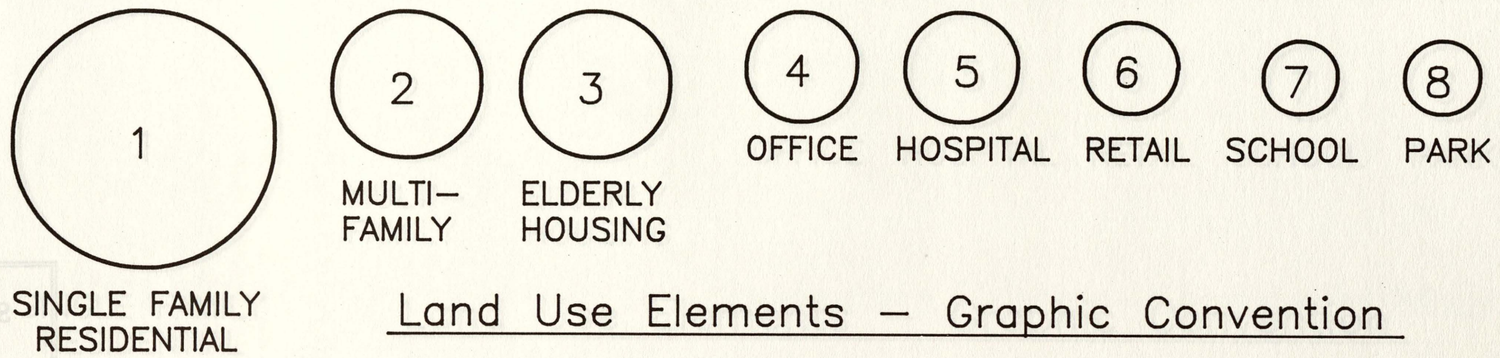
Scale: NONE

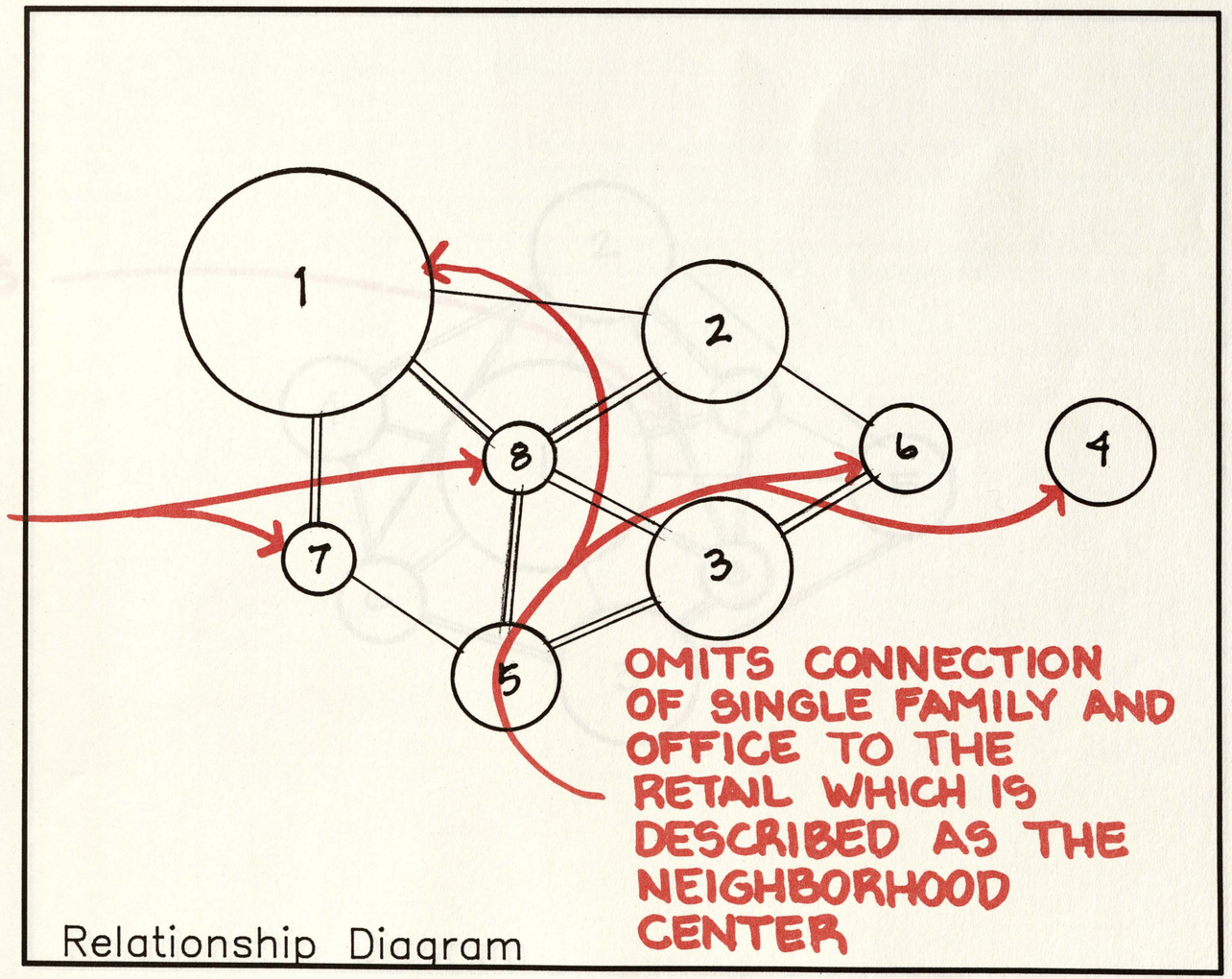
SAMPLE #1 VIGNETTE #3

This failing solution did not provide the critical relationship between the school and the park. This candidate also failed to recognize the importance of the retail center which is described as the community's active meeting place. This importance should have been reflected by links between the retail center and the residential and office areas.

Sample #1 Vignette #3



Land Use Elements – Graphic Convention



Relationship Diagram

DID NOT PROVIDE CRITICAL RELATIONSHIP

3

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Scale: NONE

SAMPLE #1 VIGNETTE #4

By repeatedly crossing relationship lines, this candidate failed to follow the drafting conventions outlined in the problem statement. Disregarding the directions has caused this solution to fail according to the "completeness" criteria.

Sample #1 Vignette #4

1 SINGLE FAMILY RESIDENTIAL

2 MULTI–FAMILY

3 ELDERLY HOUSING

4 OFFICE

5 HOSPITAL

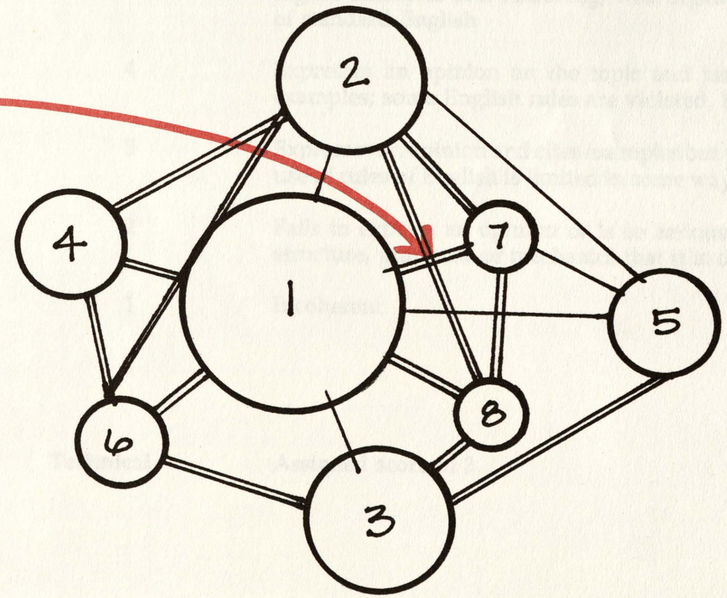
6 RETAIL

7 SCHOOL

8 PARK

Land Use Elements – Graphic Convention

DID NOT FOLLOW DRAFTING CONVENTIONS BY CROSSING RELATIONSHIP LINES



Relationship Diagram

Candidate I.D. 3

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Scale: NONE

Sample Problem 2 - Written Communication

In this written communication problem you must express an opinion on the topic of incidental practice. You are required to cite two examples of where the professions of landscape architecture and civil engineering overlap and to clearly justify each of the examples.

According to the evaluation criteria, you are not judged on your opinion, as long as you clearly express an opinion and justify it with examples. If the solution is illegible or so flawed in the use of English that it is difficult to understand, it can not be evaluated and would be considered a failing solution.

Evaluation Criteria - Sample Problem 2

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color etc.)
1	Blank

Program

The response must

a) Address the issue of the overlap between landscape architecture and civil engineering; and
b) Cite two examples.

5	Meets requirements
4	Meets requirements except cites one example by inference
3	Cites both examples by inference
2	Cites no examples
1	Fails to address the issue

Design

5	Expresses an opinion on the topic and clearly justifies the position with logical examples and reasoning; well organized and uses common rules of standard English
4	Expresses an opinion on the topic and justifies the position with two examples; some English rules are violated, but the intent is clear
3	Expresses an opinion and cites examples but without clear justification; the use of rules of English is limited in some way but intent is understandable
2	Fails to express an opinion or is so seriously flawed in use of sentence structure, grammar or mechanics that it is difficult to understand
1	Incoherent

Technical Assigned score of 3

SAMPLE #2 VIGNETTE #1

This candidate expressed an opinion on the topic and clearly justifies the position with logical examples and reasoning. The solution is very well organized in essay format and follows common rules of standard English. This is a very good solution.

Sample #2 Vignette #1

PROBLEM STATEMENT:

Write an essay expressing your opinion on the topic indicated below.

REQUIRED:

The ongoing debate among design professionals regarding the concept of incidental practice, that is those areas of overlap between various disciplines where a design professional must decide between doing the work oneself or engaging a consultant from an allied profession.

- Cite two examples of overlap between landscape architecture and civil engineering and explain where, in your opinion, the line should be drawn between the professions. Justify your responses as completely as possible.
- Clearly express your thoughts using complete sentences.

NOTE: You will be evaluated on your ability to effectively communicate your opinion on this issue.

Solutions which are illegible or which are unintelligible will not be evaluated.

VERY WELL ORGANIZED IN ESSAY FORMAT - IDENTIFIES SUBJECT IN FIRST PARAGRAPH, CITES EXAMPLES WITH JUSTIFICATION IN THE NEXT TWO PARAGRAPHS AND DRAWS A CONCLUSION IN THE FINAL PARAGRAPH.

CLEARLY EXPRESSES AND JUSTIFIES AN OPINION ON THE SUBJECT.

there are many areas of work where Landscape Architecture and Civil Engineering overlap. In many instances the design work could be handled correctly and efficiently by either profession. However, at some point a professional should be able to recognize when the level of expertise does not meet or exceed the level of design difficulty. Two examples of overlapping design are grading/retaining walls, and drainage systems.

In my opinion, a Landscape Architect should be competent in the design of small retaining walls necessitated by a change in grade. Walls which are 4' tall or shorter usually require minimal use of reinforcing bar or other similar materials and methods. Walls taller than 4' require substantial reinforcing, and should therefore be turned over to an Engineer for the design work.

Drainage system design is another area of work which many Landscape Architects are asked to provide. Small systems such as single inlet runs to swales, can be done simply. However, when the system requires a network of inlets, piping, catch basins, and lift stations, the design should be done by a Civil Engineer.

In many cases, a Landscape Architect may believe he/she is skilled enough to attempt design work on many sorts of projects which he/she is truly not qualified to do. Eventually this thinking could lead to severe personal injury or property damage which is much more costly than consulting/contracting with a more qualified designer such as a Civil Engineer.

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Candidate I.D.

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SAMPLE #2 VIGNETTE #2

This solution expresses an opinion on the topic and justifies the position with two examples. Some English rules are violated, but the intent is clear. The solution is not in essay format; however, the candidate has used complete sentences to justify their position. This is a passing solution.

Sample #2 Vignette #2

PROBLEM STATEMENT:

Write an essay expressing your opinion on the topic indicated below.

REQUIRED:

The ongoing debate among design professionals regarding the concept of incidental practice, that is those areas of overlap between various disciplines where a design professional must decide between doing the work oneself or engaging a consultant from an allied profession.

- Cite two examples of overlap between landscape architecture and civil engineering and explain where, in your opinion, the line should be drawn between the professions. Justify your responses as completely as possible.
- Clearly express your thoughts using complete sentences.

NOTE: You will be evaluated on your ability to effectively communicate your opinion on this issue.

Solutions which are illegible or which are unintelligible will not be evaluated.

CITES TWO EXAMPLES OF OVERLAP AND JUSTIFIES BOTH RESPONSES

SOME ENGLISH RULES ARE VIOLATED, BUT THE INTENT IS CLEAR

Example one:

the layout & design of roadway systems including alignment, guardrail design & materials, slope stabilization and visual "clear space."

I believe the LA & CE should work together at the outset of any roadway system project. The CE should provide input on design speed requirements and then work with the LA on alignment, guardrail design & materials, slope stabilization and visual clear space to meet safety requirements. The LA is trained in "fitting" the road in the landscape and should be responsible for specifying the appropriate alignment, color and materials of guardrail, slope stabilization techniques and visual clear space that ensures the public safety and preserves the natural landscape for human enjoyment.

Example Two:

the layout and design of lighting systems including type, color, and placement of lighting standards and fixtures.

the CE should provide lighting requirements and construction techniques for a lighting system. the LA should be responsible for analyzing the site and providing a lighting plan that is compatible with the surrounding architecture and natural landscape. he/she needs to explore alternatives to "standards" that are applicable to the individual site and design a lighting system that meets the lighting requirements yet compliments the existing site features and function. the CE should aid the LA in the construction techniques for the plan.

3

Candidate I.D.

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SAMPLE #2 VIGNETTE #3

This solution expresses an opinion on the topic and cites examples, however, the candidate has not clearly justified where the overlap occurs in their examples. The solution is flawed in use of sentence structure, grammar and mechanics, but the intent is clear. This is a null solution, neither clearly passing nor clearly failing.

Sample #2 Vignette #3

PROBLEM STATEMENT:

Write an essay expressing your opinion on the topic indicated below.

REQUIRED:

The ongoing debate among design professionals regarding the concept of incidental practice, that is those areas of overlap between various disciplines where a design professional must decide between doing the work oneself or engaging a consultant from an allied profession.

- Cite two examples of overlap between landscape architecture and civil engineering and explain where, in your opinion, the line should be drawn between the professions. Justify your responses as completely as possible.
- Clearly express your thoughts using complete sentences.

NOTE: You will be evaluated on your ability to effectively communicate your opinion on this issue.

Solutions which are illegible or which are unintelligible will not be evaluated.

FAILS TO JUSTIFY WHY THERE IS AN OVERLAP IN THE THREE AREAS OF WORK CITED

SENTENCE STRUCTURE IS FLAWED, BUT THE INTENT IS CLEAR

THE DEBATE AMONG DESIGN PROFESSIONALS OVER INCIDENTAL PRACTICE OR THE OVERLAP BETWEEN VARIOUS DISCIPLINES NOT ONLY IS FOUND IN DESIGN FIELD BUT REGULARLY IN MANY OTHER PRACTICES.

STRICTLY LOOKING IN THE FIELD OF LANDSCAPE ARCHITECTURE, THE DECISION FOR A DESIGNER TO HIRE A CIVIL ENGINEER TO DO WORK SUCH AS:

- DRAINAGE PLANS
- RETAINING WALLS
- DECK DESIGN.

MANY TIMES THIS DECISION IS FORCE ON THE LANDSCAPE ARCHITECT NOT DUE TO THE LIMITS OF THE DESIGNERS SKILL. WHERE SHOULD THIS LINE OF PROFESSIONALS BE DRAWN. IF ONE IS KNOWLEDGABLE ONE SHOULD BE ALLOWED TO PERFORM IN ONES DISIPLINE.

I FEEL THAT A LINE SHOULD COME FROM GOVERNING BODIES SO AS TO ALLOW PROFESSIONS TO FUNCTION WITHIN THE BOUNDS OF THERE FIELDS. TO SETTLE CONFLICTS THAT ARISE FROM DISIPLINES THAT HAVE DIFFERENT VIEWS ON HOW A PROJECT SHOULD BE DONE. THE DEBATE WILL CONTINUE UNTILL SPECIFIED LIMITS OR KNOWLEDGEBLE LIMITS ARE FOUND AND ESTABLISHED.

SAMPLE #2 VIGNETTE #4

This solution fails to address the concept of incidental practice among design professionals. It defines areas of practice as being related to one profession or the other, but does not address areas of overlap that occur between landscape architects and engineers. This is a failing solution because it does not respond to the stated problem requirements.

Sample #2 Vignette #4

PROBLEM STATEMENT:

Write an essay expressing your opinion on the topic indicated below.

REQUIRED:

The ongoing debate among design professionals regarding the concept of incidental practice, that is those areas of overlap between various disciplines where a design professional must decide between doing the work oneself or engaging a consultant from an allied profession.

- Cite two examples of overlap between landscape architecture and civil engineering and explain where, in your opinion, the line should be drawn between the professions. Justify your responses as completely as possible.
- Clearly express your thoughts using complete sentences.

NOTE: You will be evaluated on your ability to effectively communicate your opinion on this issue.

Solutions which are illegible or which are unintelligible will not be evaluated.

FAILS TO ADDRESS THE ISSUE OF OVERLAP BETWEEN THE PROFESSIONS

EXAMPLE #1. A situation arises where in order to create the most efficient and pleasing traffic pattern a bridge must be constructed over a rather steep-sloped ravine. The type of bridge has not been determined, but must be congruent with the natural surroundings and obstruct as little of the view as possible. The bridge will be used for both pedestrian and light vehicular traffic, as well as occasional equestrian use. Safety is of concern as the bridge will span a dry creek bed with horizontal measurement of over 50' and a vertical drop of 20'. The L.A. has determined the best flow, visual lay-out, and aesthetic needs. Yet he is aware of the structural needs of the project. A professional L.A. in this situation, because of safety concerns should enlist a Civil Engineer for his consultation.

EXAMPLE #2. A highway rest stop has been planned along a major interstate 100 miles from any metropolitan area. The Civil Engineer has determined the most appropriate site by geology, road pattern, and by the mean distance between the nearest facilities. He has also designed building and pavement surfaces to accomodate the expected use capacity. He recognizes the need for vegetation for erosion and climate control. At this point a line should be drawn. A landscape Architect should be included in the selection and placement of plant material and other outside fixtures - ie. trash receptacles, picnic tables, lighting, etc. His expertise lends itself more to the aesthetic appeal of the rest stop. With proper lay-out - an L.A. can create a more relaxing, cooling, more convenience-oriented environment and thus accomplish the Civil Engineers purpose in constructing the rest-stop.

Candidate I.D. 3

Landscape Architect Registration Examination
Conceptualization and Communication

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Sample Problem 3 - Townhouse Landscaping

This vignette requires that you use landscaping to alleviate the concerns described in the context of the problem statement. You must identify the plants using the graphic designation shown in the *L.A.R.E. Reference Manual.*

The surrounding streets are described as unattractive and noisy. To address this issue you should locate plant material that would screen the surrounding streets. This could consist of coniferous trees, large evergreen shrubs, evergreen vines on the fence or a combination of trees and shrubs.

The second statement in the context describes the soils as being susceptible to erosion. This indicates that you should provide lawn or groundcover on the open areas of the site to prevent erosion.

The building is also said to lack separation from the parking area. It is necessary to provide trees in front of the units to separate the building from the parking and provide a sense of entry to the units themselves.

You are also required to provide a sense of entry into the site. This would consist of plantings near the entrance from Church Street that do not create a safety hazard by blocking a drivers view of oncoming traffic.

Excessive heat gain is also described as a problem on the buildings and patios. To alleviate this problem, you must provide medium or large trees to shade the west side of the building. Trees located too far from the units or small trees would not adequately address this issue.

Evaluation Criteria - Sample Problem 3

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color, violates graphic standards, etc.)
1	Blank

Program

The solution must address these areas:

a) Planting near site entry
b) Planting between parking and building
c) Planting between building and surrounding streets

5	Addresses all areas
4	Addresses all areas but does not identify function of plants
3	Some planting in each area
2	Fails to address one issue
1	Fails to address two or more issues

Design

Safety

a) Plant material types and locations should not create areas in which people could potentially hide (e.g. no large shrub or medium/large evergreen tree should be located adjacent to pedestrian walks unless placed against a building wall)
b) Plant materials should not impair the views of drivers

Design

a) Plant materials should be located to screen the surrounding streets
b) Trees should be located to the west of the building to prevent heat gain on the units and patios
c) Plants should be located near the entry and/or entry sign to give a sense of site entry
d) Trees should be located to create a separation from the parking area
e) Soil erosion should be prevented by proper selection and location of plants in the open areas of the site (e.g. lawn or ground cover should be indicated on areas that are not planted with trees or shrubs)

5	Meets requirements
4	Meets Safety and Design requirements except for planting around entry sign or planting to prevent soil erosion
3	Meets Safety and partially addresses Design requirements except inadequate screening or shade
2	Meets Safety requirements but fails to provide shade, to screen street from buildings or to separate parking from buildings
1	Fails to meet one or more Safety requirements or two or more Design requirements

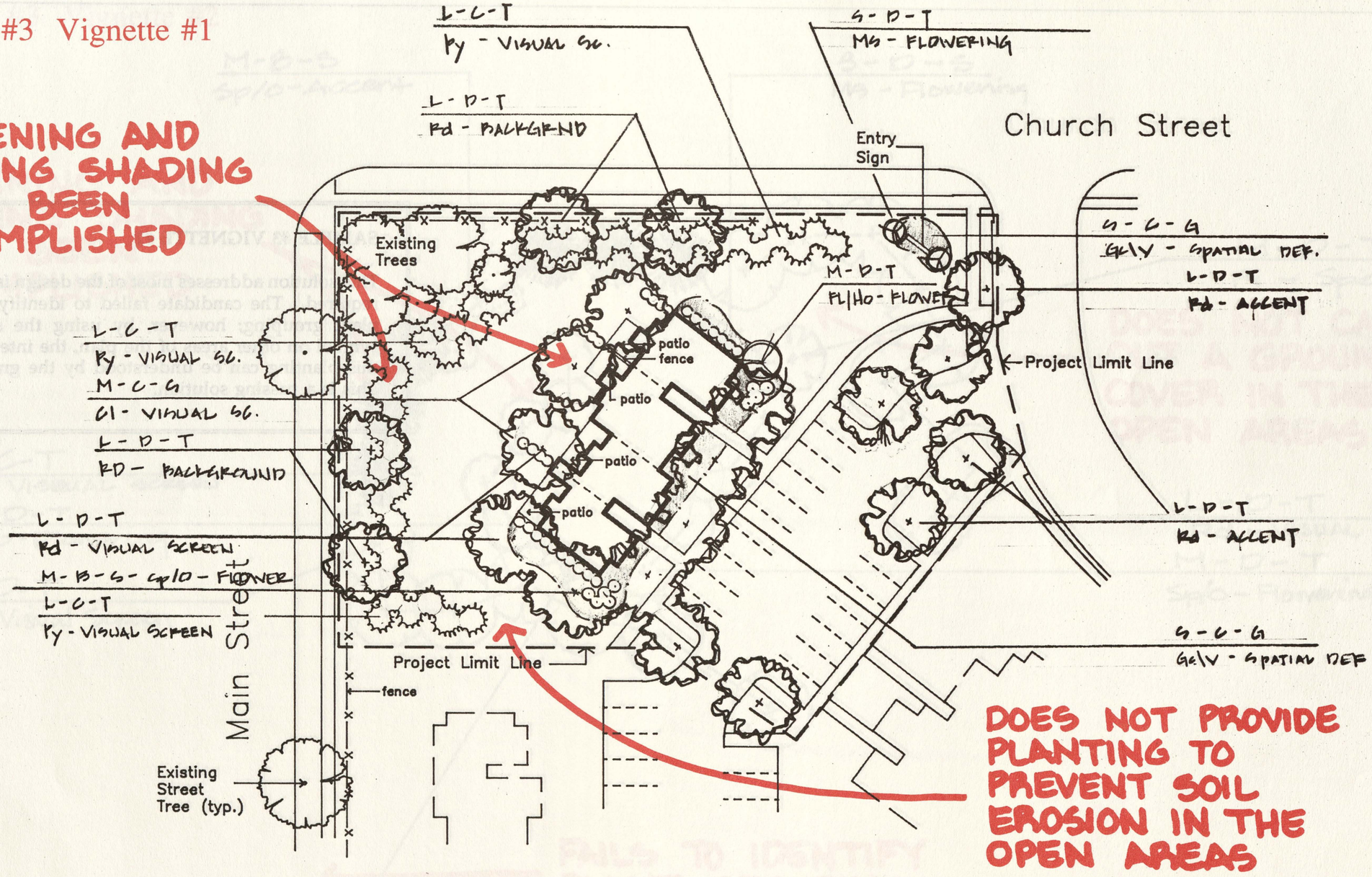
Technical Assigned score of 3

SAMPLE #3 VIGNETTE #1

This passing solution successfully accomplishes most of the design issues requested in the problem statement. Screening of the streets, prevention of heat gain on the units, planting near the site entry and separation of the building from the parking area have been accomplished. The only missing element is a lawn or ground cover labeled on the areas that are not planted with trees or shrubs.

Sample #3 Vignette #1

SCREENING AND BUILDING SHADING HAVE BEEN ACCOMPLISHED



FAILS TO IDENTIFY PLANT GROUPING

Landscape Architect Registration Examination

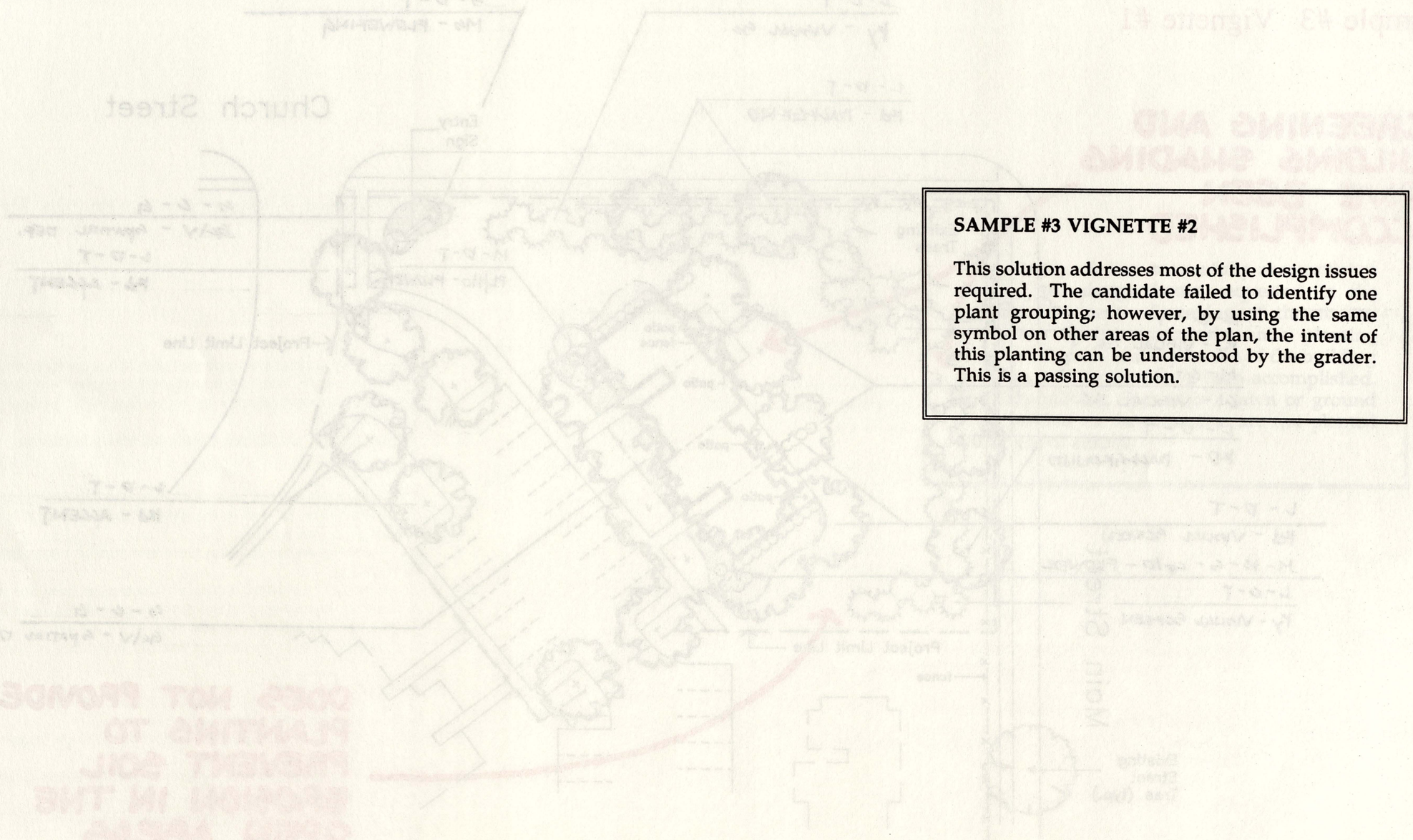
Design Synthesis

Candidate I.D. 4

Council of Landscape Architectural Registration Boards

NORTH

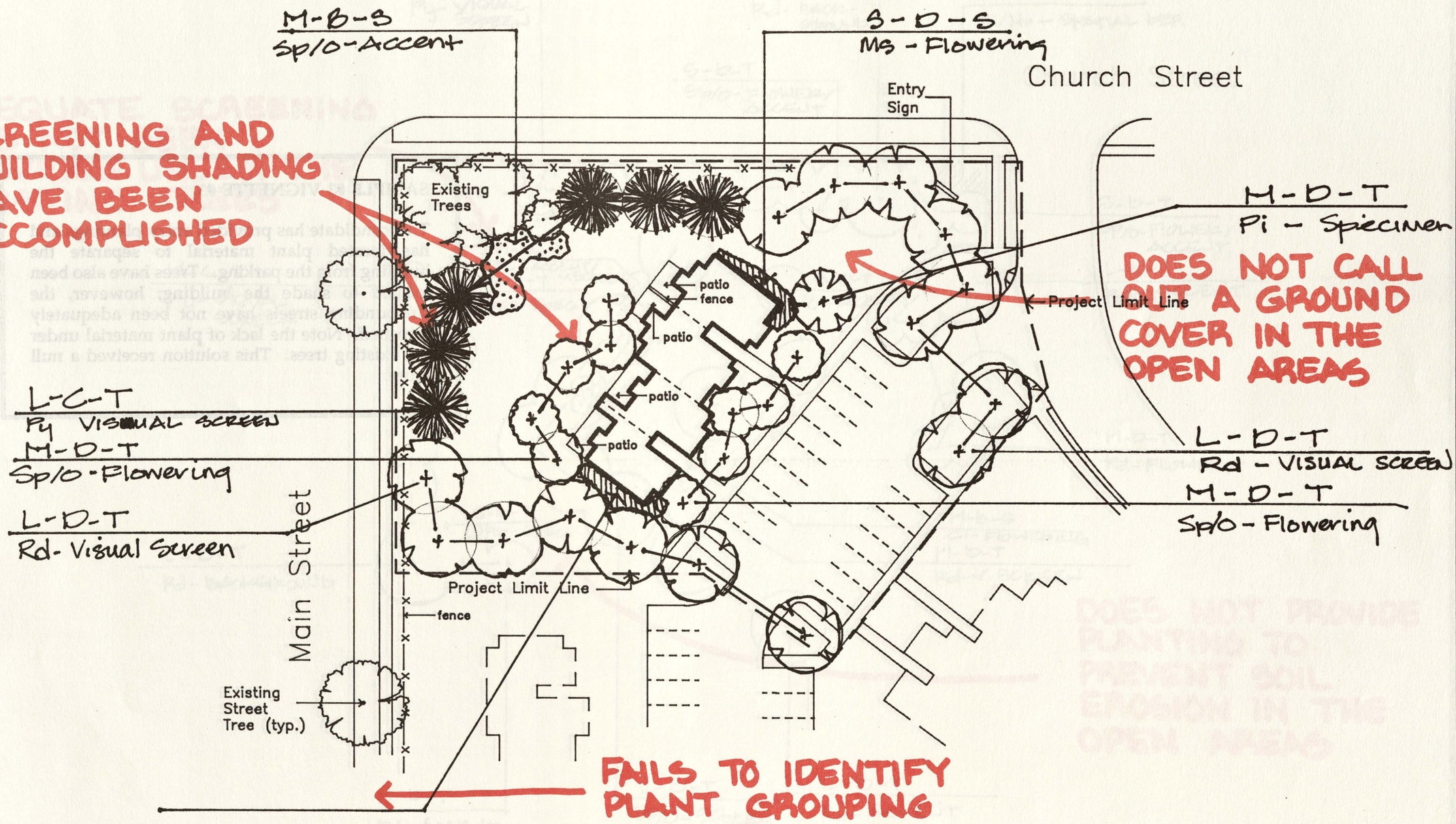
Scale: 1"=40' [1:500 metric]



SAMPLE #3 VIGNETTE #2

This solution addresses most of the design issues required. The candidate failed to identify one plant grouping; however, by using the same symbol on other areas of the plan, the intent of this planting can be understood by the grader. This is a passing solution.

Sample #3 Vignette #2



Candidate I.D. 4

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NORTH

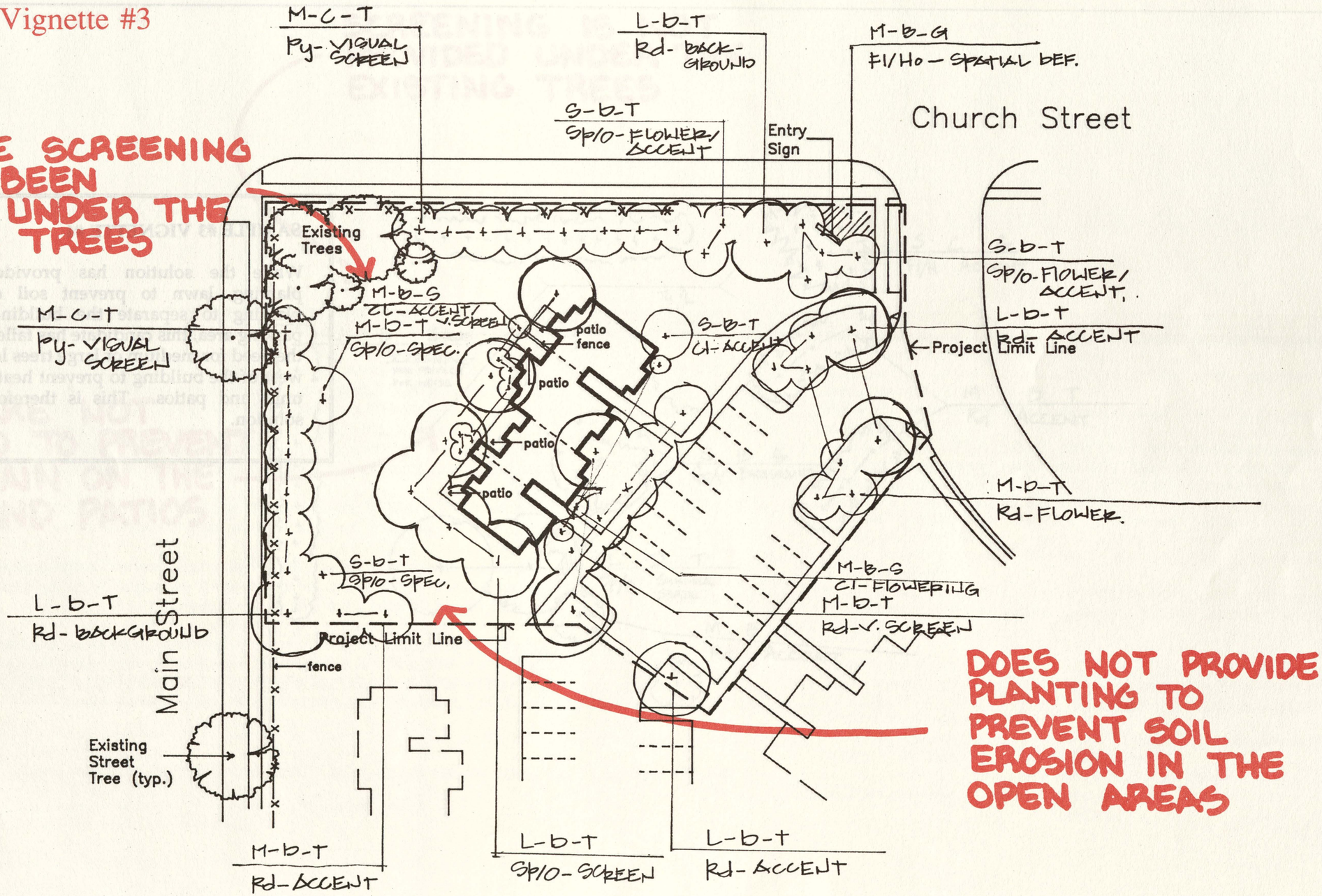
Scale: 1"=40' [1:500 metric]

SAMPLE #3 VIGNETTE #3

This candidate has provided entry plantings and has located plant material to separate the building from the parking. Trees have also been located to shade the building; however, the surrounding streets have not been adequately screened. Note the lack of plant material under the existing trees. This solution received a null score.

Sample #3 Vignette #3

ADEQUATE SCREENING HAS NOT BEEN PROVIDED UNDER THE EXISTING TREES



DOES NOT PROVIDE PLANTING TO PREVENT SOIL EROSION IN THE OPEN AREAS

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NORTH

Scale: 1"=40' [1:500 metric]

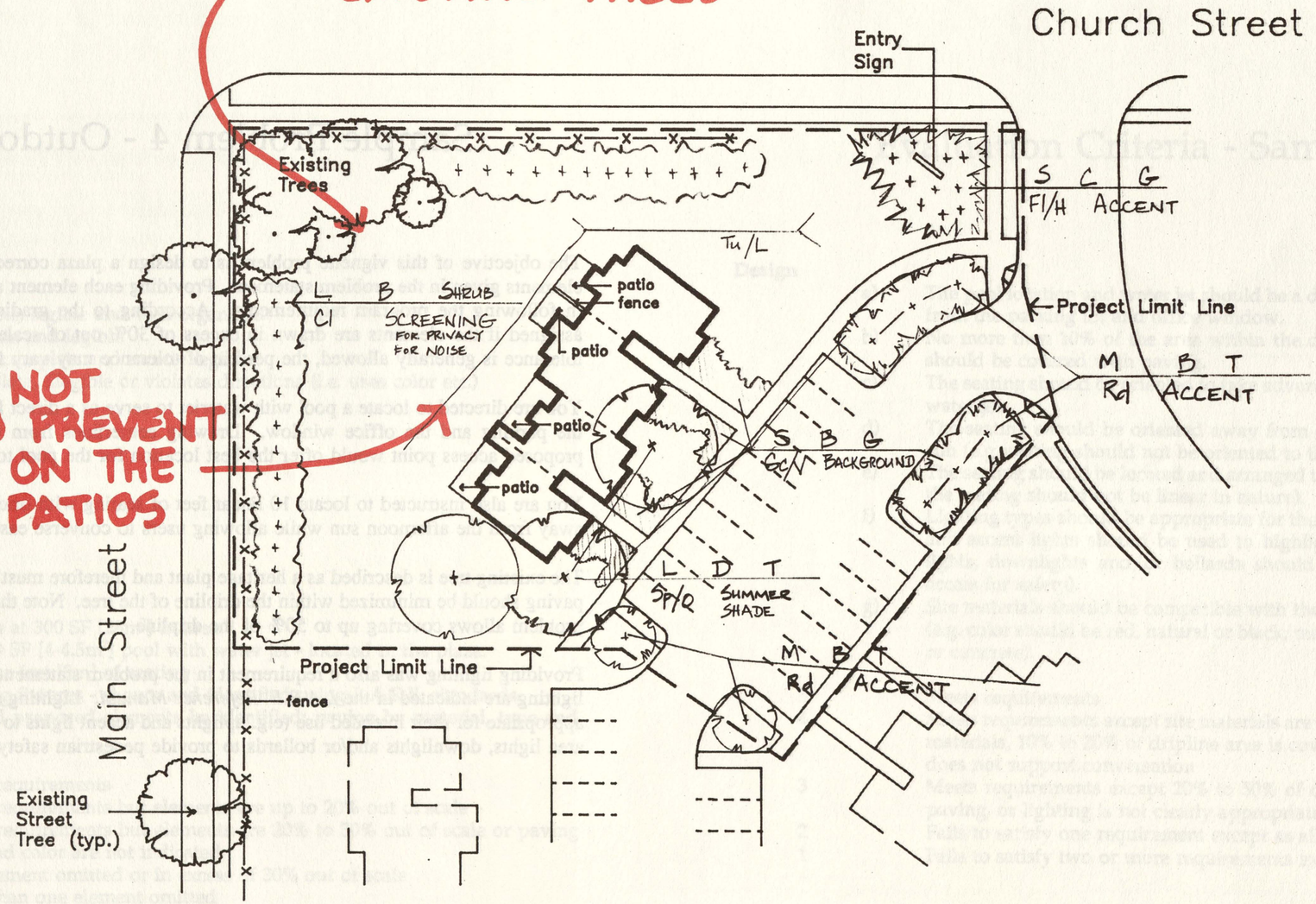
SAMPLE #3 VIGNETTE #4

While the solution has provided entrance planting, lawn to prevent soil erosion and planting to separate the building from the parking area, this candidate has failed to address the need for medium or large trees located to the west of the building to prevent heat gain on the units and patios. This is therefore a failing solution.

Sample #3 Vignette #4

SCREENING IS NOT PROVIDED UNDER THE EXISTING TREES

TREES ARE NOT LOCATED TO PREVENT HEAT GAIN ON THE UNITS AND PATIOS



Landscape Architect Registration Examination

Candidate I.D. 4

Design Synthesis

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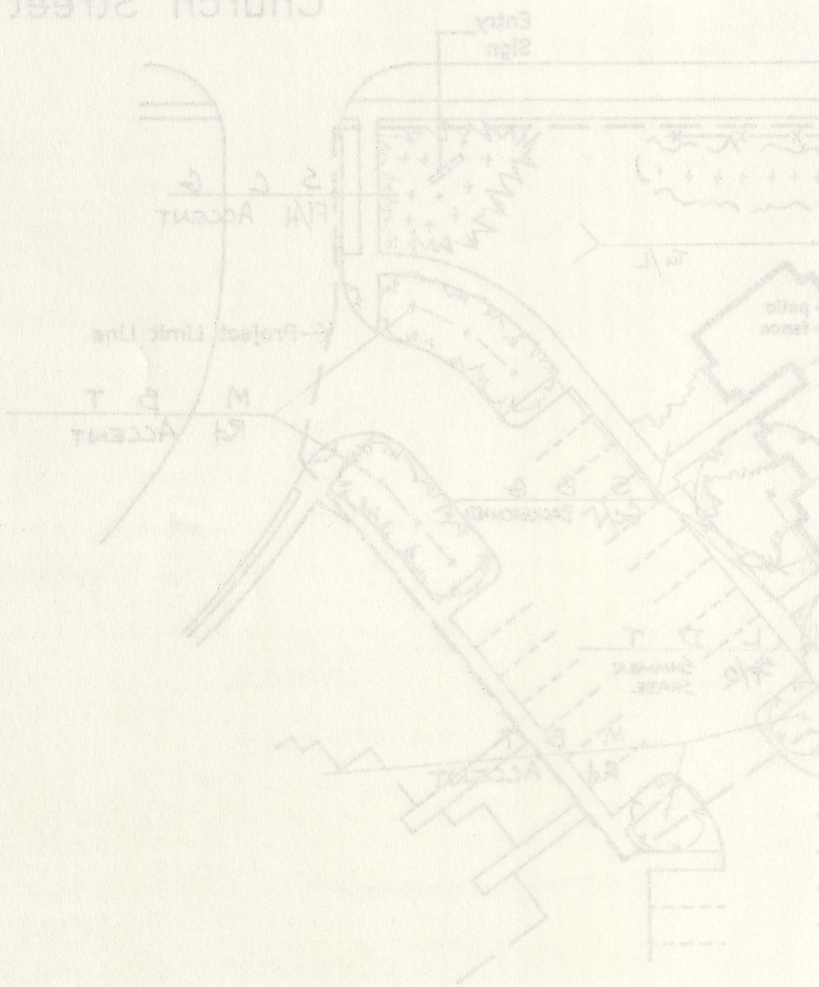
NORTH

Scale: 1"=40' [1:500 metric]

Sample Problem 4 - Outdoor Entry Plaza



The objective of this vignette problem is to design a plaza correctly using all of the program elements given in the problem statement. Providing each element at the specified size is critical in following the program requirements. According to the grading criteria, a failing mark is assigned if the elements are drawn in excess of 30% out of scale. (Note: While some scale tolerance is generally allowed, the percent of tolerance may vary from problem to problem.)

You are directed to locate a pool with waterjet to serve as a direct focal point to the access from the parking and the office window. Drawing centerlines from the office window and your proposed access point would offer the best location for the pool to meet this requirement.

You are also instructed to locate 10 linear feet of seating with orientation towards the pool and away from the afternoon sun while allowing users to converse easily.

The existing tree is described as a heritage plant and therefore must be retained. This means that paving should be minimized within the dripline of the tree. Note that the grading criteria for this problem allows covering up to 50% of the dripline.

Providing lighting was also a requirement in the problem statement. Guidelines for labeling the lighting are indicated in the *L.A.R.E. Reference Manual*. Lighting types must be shown that are appropriate for their intended use (e.g. uplights and accent lights to highlight or accent elements; area lights, downlights and/or bollards to provide pedestrian safety).

Evaluation Criteria - Sample Problem 4

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color etc.)
1	Blank

Program

The program requires

a) A plaza at 300 SF [28m^2] in area.
b) A 40-50 SF [4-4.5m^2] pool with water jet - located in the plaza.
c) 10 linear feet [3m] of seating
d) Lighting fixtures - shown and identified using L.A.R.E. standards.
e) That all proposed elements be identified; paving by material, type and color.

5	Meets requirements
4	Meets requirements but elements are up to 20% out of scale
3	Meets requirements but elements are 20% to 30% out of scale or paving type and color are not indicated
2	One element omitted or in excess of 30% out of scale
1	More than one element omitted

Design

a) The pool location and water jet should be a direct focal point to the access from the parking lot and office window.
b) No more than 10% of the area within the dripline of the specimen tree should be covered with paving.
c) The seating should be oriented to take advantage of views to the pool and water jet.
d) The seating should be oriented away from afternoon and early evening sun (e.g. seating should not be oriented to the west or southwest).
e) The seating should be located and arranged to allow for conversation (e.g. the seating should not be linear in nature).
f) Lighting types should be appropriate for their intended use (e.g. uplights and accent lights should be used to highlight or accent elements; area lights, downlights and/or bollards should be located near pedestrian access for safety).
g) Site materials should be compatible with the building material and color (e.g. color should be red, natural or black; materials should be brick, stone or concrete).

5	Meets requirements
4	Meets requirements except site materials are not compatible with building materials, 10% to 20% of dripline area is covered with paving, or seating does not support conversation
3	Meets requirements except 20% to 50% of dripline area is covered with paving, or lighting is not clearly appropriate
2	Fails to satisfy one requirement except as allowed above
1	Fails to satisfy two or more requirements except as allowed above

Technical Assigned score of 3

SAMPLE #4 VIGNETTE #1

This candidate has correctly drawn all of the required elements to scale and followed the graphic conventions for labeling lighting fixtures as defined in the *L.A.R.E. Reference Manual*. The solution clearly meets all of the design requirements specified in the problem statement. This is a very good solution.

Sample #4 Vignette #1

PROBLEM STATEMENT:

Design an outdoor entry plaza next to a one-story [storey] office building.

CONTEXT:

- The plaza will be used during both day and evening hours.
- The specimen tree is a heritage plant with surface roots extending to the periphery of the tree's canopy.
- The facade of the office building is common red brick with black trim around all doors and windows. The owner is concerned about the compatibility of the plaza with the building.
- The site is essentially flat although it is adequately sloped to drain surface water toward the south.
- A parking lot is located immediately north of the site.

REQUIRED:

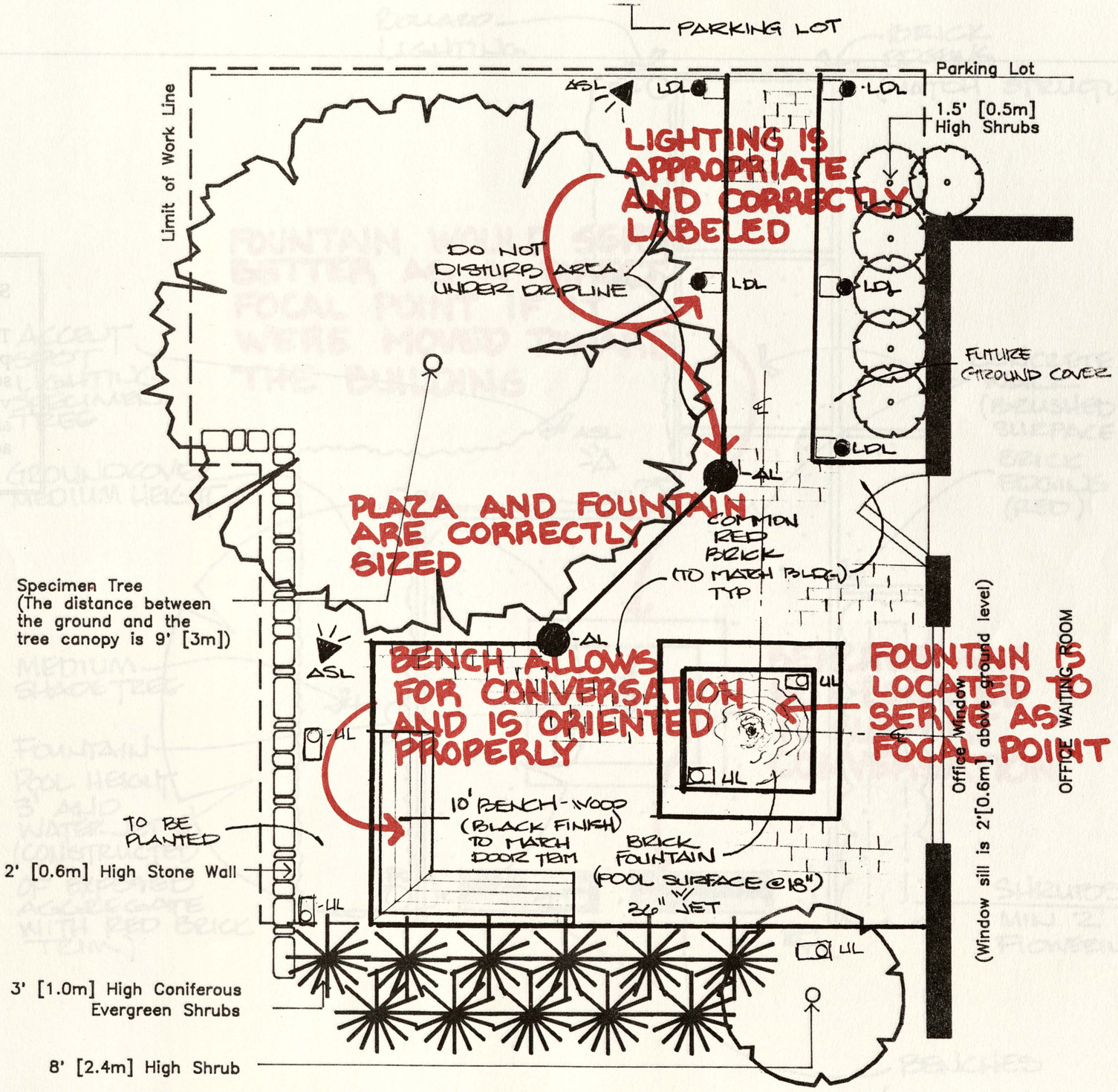
This design is to include:

- Paved access from the parking lot to the plaza.
- A 300 sq. ft. [28m²] (tolerance of 10% permitted) paved plaza including:
  - a. A 40-50 sq.ft. [4-4.5m²] pool with water jet. Locate the pool and water jet to be a direct focal point to the access from the parking and the office window on the east side of the site.

    Specify the height of the pool surface and water jet.

  - b. A total of 10 linear feet [3m] of seating. The seating should:
    1) allow users to converse easily and comfortably; and
    2) be oriented to take advantage of the pool and water jet; and
    3) be oriented so users can enjoy the space in the afternoon and early evening hours.
- Location and identification of generic types of lighting as per *L.A.R.E. Reference Manual.*
- Areas for planting (individual plants do not need to be indicated.)
- Show and identify all the proposed elements including the pavement by materials, type and color [colour].

SCALE: 1/4" = 1'-0" [1:50 METRIC]



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Design Synthesis

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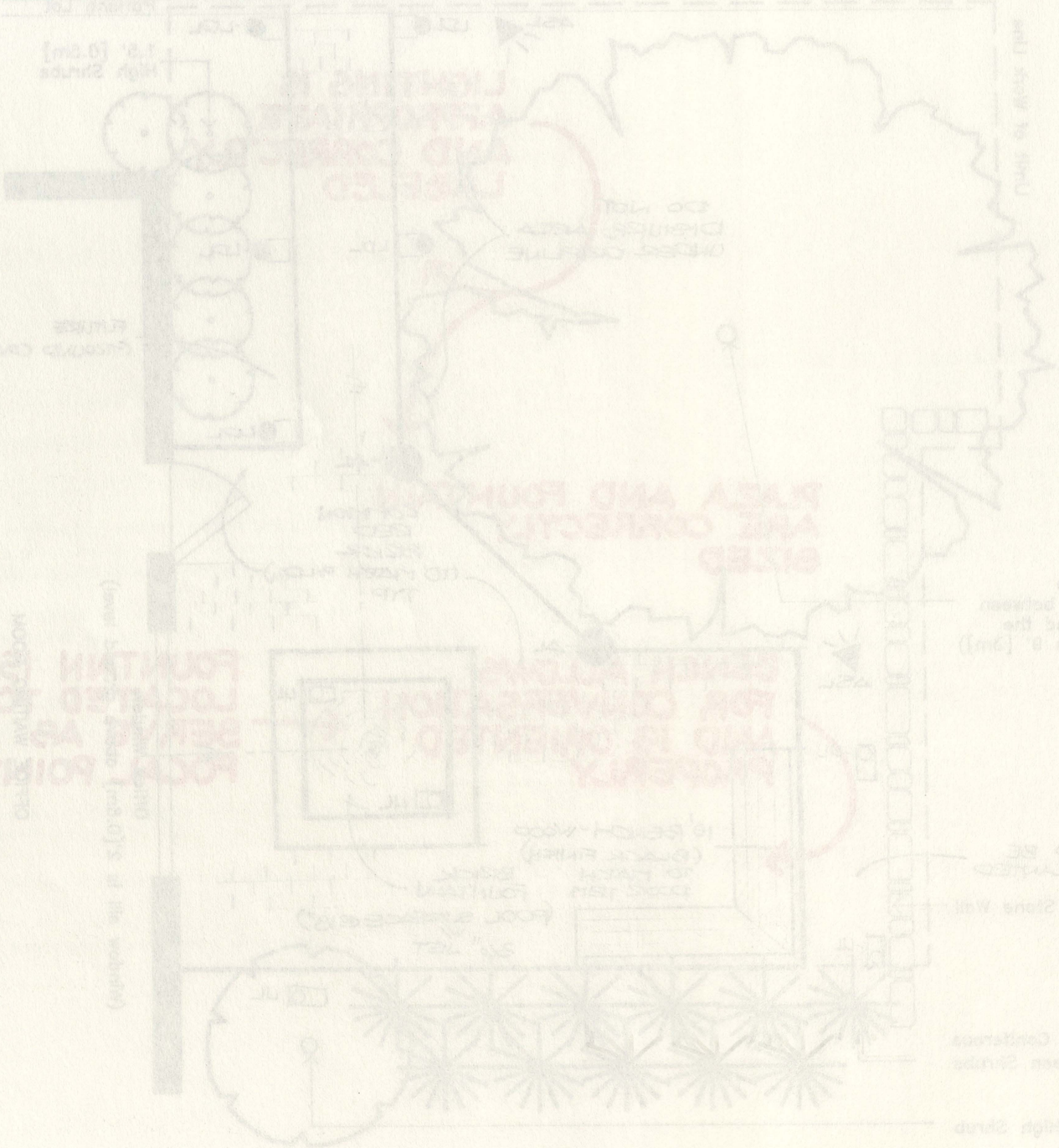
NORTH

Scale: 1/4"=1'-0" [1:50 metric]



SAMPLE #4 VIGNETTE #2

This solution provides all of the required program elements at the appropriate scale. The seating has been located to take advantage of the views to the pool and water jet, but has not been arranged to allow for conversation. This is an acceptable solution.

Sample #4 Vignette #2

PROBLEM STATEMENT:

Design an outdoor entry plaza next to a one-story [storey] office building.

CONTEXT:

- The plaza will be used during both day and evening hours.
- The specimen tree is a heritage plant with surface roots extending to the periphery of the tree's canopy.
- The facade of the office building is common red brick with black trim around all doors and windows. The owner is concerned about the compatibility of the plaza with the building.
- The site is essentially flat although it is adequately sloped to drain surface water toward the south.
- A parking lot is located immediately north of the site.

REQUIRED:

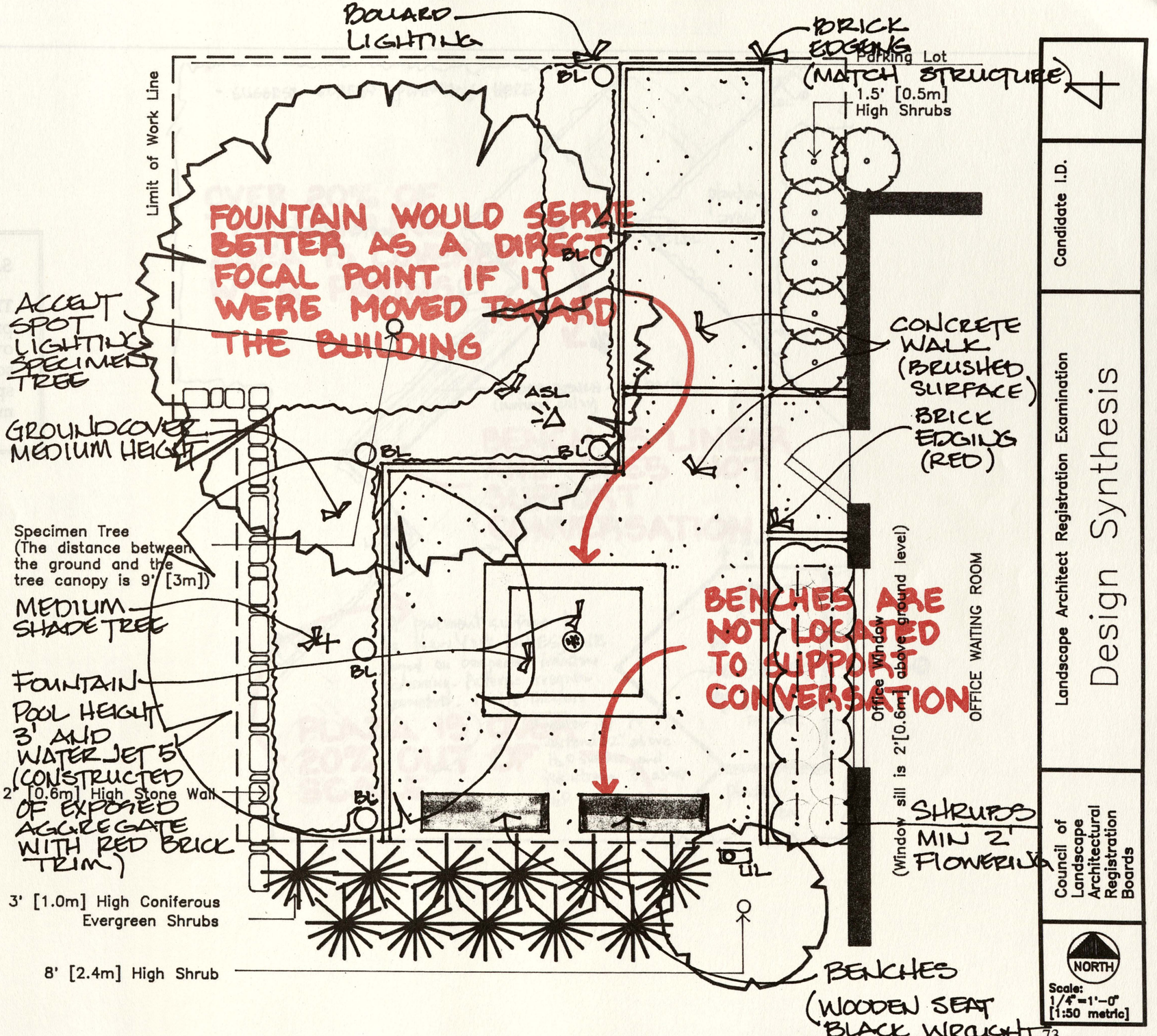
This design is to include:

- Paved access from the parking lot to the plaza.
- A 300 sq. ft. [28m²] (tolerance of 10% permitted) paved plaza including:
  - a. A 40-50 sq.ft. [4-4.5m²] pool with water jet. Locate the pool and water jet to be a direct focal point to the access from the parking and the office window on the east side of the site.

    Specify the height of the pool surface and water jet.

  - b. A total of 10 linear feet [3m] of seating. The seating should:
    1) allow users to converse easily and comfortably; and
    2) be oriented to take advantage of the pool and water jet; and
    3) be oriented so users can enjoy the space in the afternoon and early evening hours.
- Location and identification of generic types of lighting as per *L.A.R.E. Reference Manual*.
- Areas for planting (individual plants do not need to be indicated.)
- Show and identify all the proposed elements including the pavement by materials, type and color [colour].

SCALE: 1/4" = 1'-0" [1:50 METRIC]



SAMPLE #4 VIGNETTE #3

This candidate has provided all of the required program elements, but has shown the plaza area over 20% larger than the area required. The solution also covers over 20% of the existing specimen tree's dripline with paving, therefore making this a null solution.

Sample #4 Vignette #3

PROBLEM STATEMENT:

Design an outdoor entry plaza next to a one-story [storey] office building.

CONTEXT:

- The plaza will be used during both day and evening hours.
- The specimen tree is a heritage plant with surface roots extending to the periphery of the tree's canopy.
- The facade of the office building is common red brick with black trim around all doors and windows. The owner is concerned about the compatibility of the plaza with the building.
- The site is essentially flat although it is adequately sloped to drain surface water toward the south.
- A parking lot is located immediately north of the site.

REQUIRED:

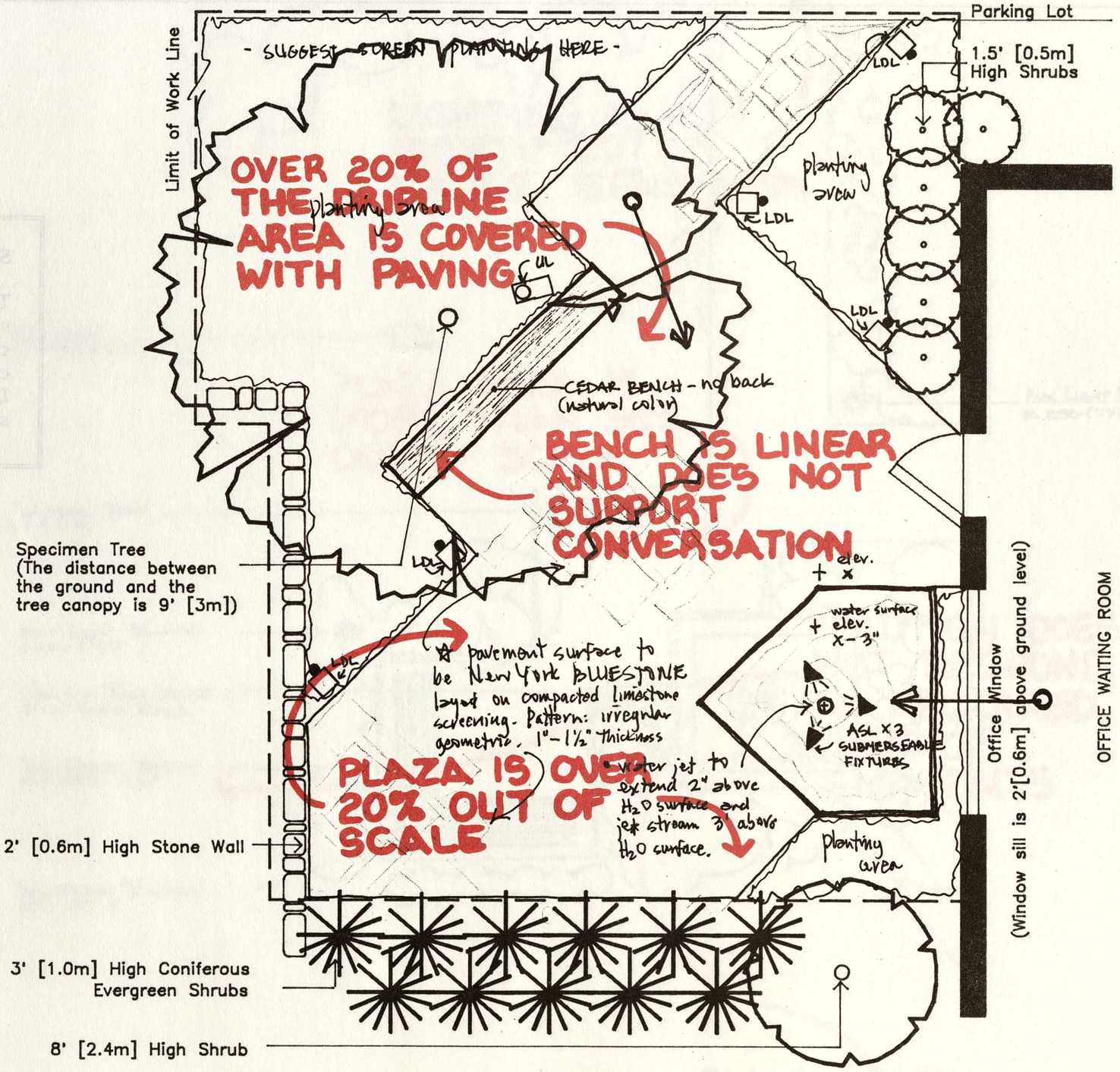
This design is to include:

- Paved access from the parking lot to the plaza.
- A 300 sq. ft. [28m²] (tolerance of 10% permitted) paved plaza including:
  - a. A 40-50 sq.ft. [4-4.5m²] pool with water jet. Locate the pool and water jet to be a direct focal point to the access from the parking and the office window on the east side of the site.

    Specify the height of the pool surface and water jet.

  - b. A total of 10 linear feet [3m] of seating. The seating should:
    - 1) allow users to converse easily and comfortably; and
    - 2) be oriented to take advantage of the pool and water jet; and
    - 3) be oriented so users can enjoy the space in the afternoon and early evening hours.
- Location and identification of generic types of lighting as per *L.A.R.E. Reference Manual.*
- Areas for planting (individual plants do not need to be indicated.)
- Show and identify all the proposed elements including the pavement by materials, type and color [colour].

SCALE: 1/4" = 1'-0" [1:50 METRIC]



Candidate I.D. 4

Landscape Architect Registration Examination

Design Synthesis

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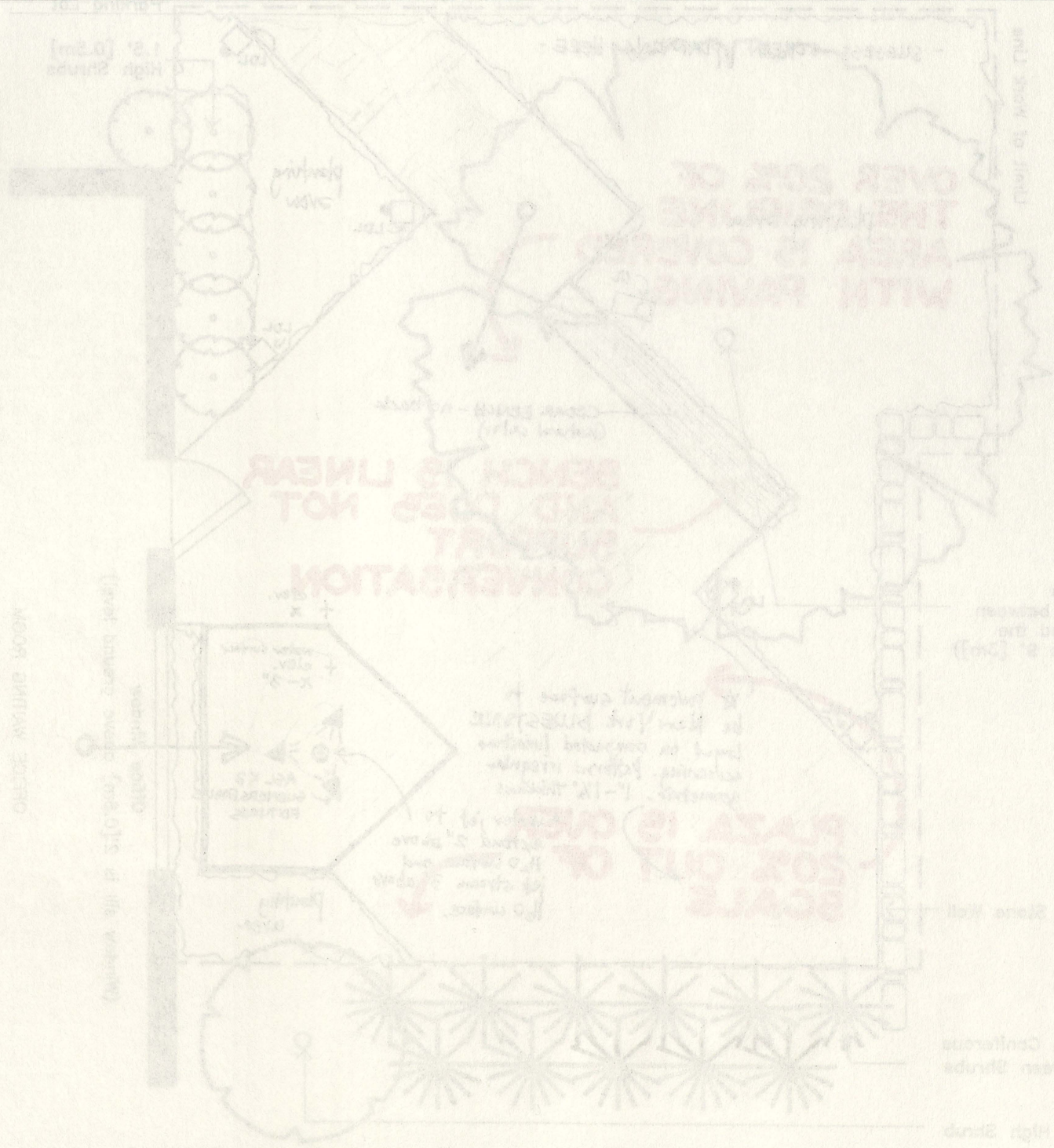
NORTH

Scale: 1/4"=1'-0" [1:50 metric]



SAMPLE #4 VIGNETTE #4

This solution disregards the size requirements specified in the problem statement. The candidate has also failed to follow graphic conventions to label lighting as outlined in the *L.A.R.E. Reference Manual*. This is a failing solution.

nple #4 Vignette #4

LEM STATEMENT:

n an outdoor entry plaza next to a one-story [storey] office building.

CONTEXT:

- The plaza will be used during both day and evening hours.
- The specimen tree is a heritage plant with surface roots extending to the periphery of the tree's canopy.
- The facade of the office building is common red brick with black trim around all doors and windows. The owner is concerned about the compatibility of the plaza with the building.
- The site is essentially flat although it is adequately sloped to drain surface water toward the south.
- A parking lot is located immediately north of the site.

UIRED:

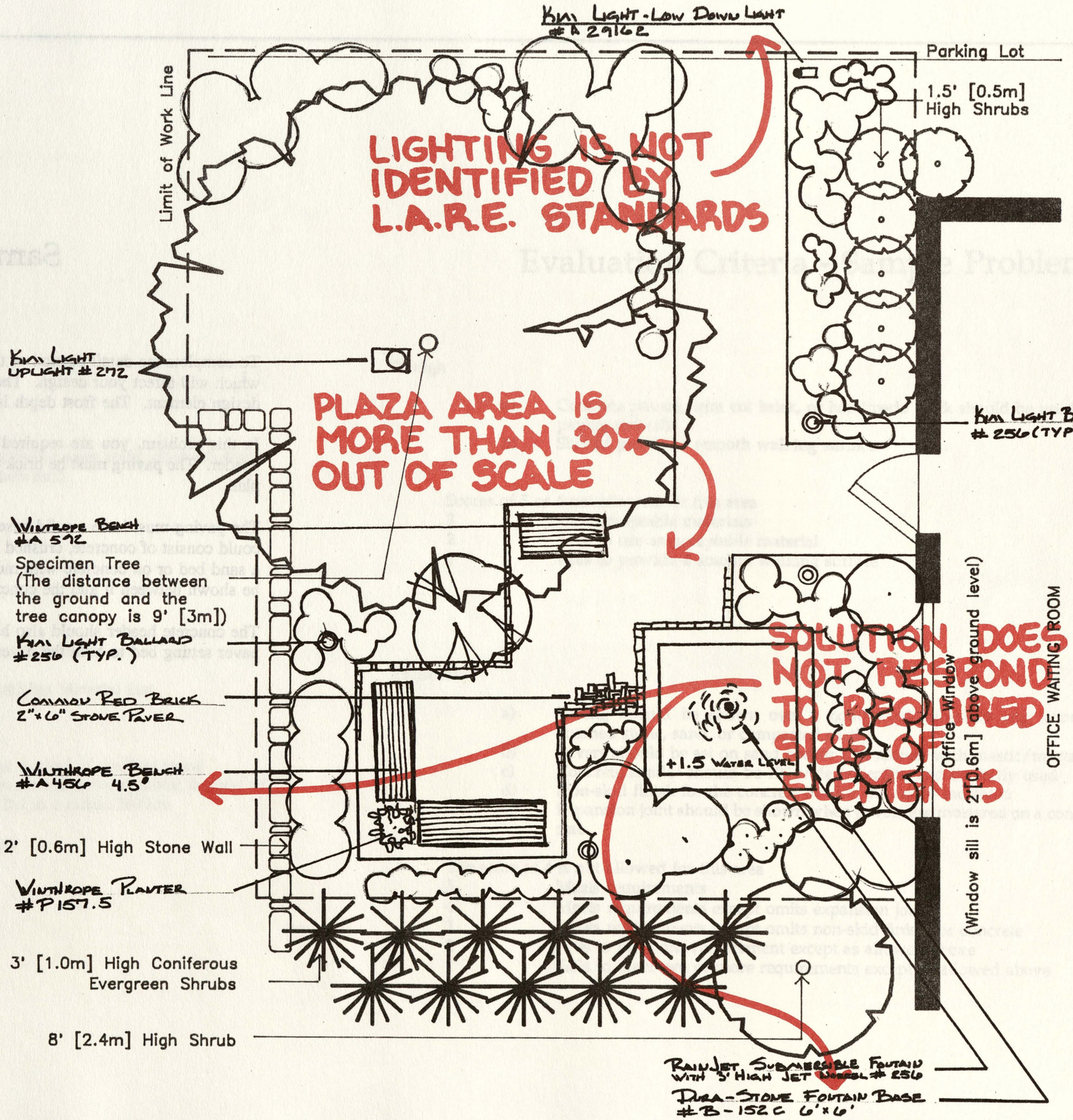
design is to include:

- Paved access from the parking lot to the plaza.
- A 300 sq. ft. [28m²] (tolerance of 10% permitted) paved plaza including:
  - a. A 40-50 sq.ft. [4-4.5m²] pool with water jet. Locate the ~~pool and water jet to be~~ a direct focal point to the access from the parking and the office window on the east side of the site.

    Specify the height of the pool surface and water jet.

  - b. A total of 10 linear feet [3m] of seating. The seating should:
    1) allow users to converse easily and comfortably; and
    2) be oriented to take advantage of the pool and water jet; and
    3) be oriented so users can enjoy the space in the afternoon and early evening hours.
- Location and identification of generic types of lighting as per *L.A.R.E. Reference Manual.*
- Areas for planting (individual plants do not need to be indicated.)
- Show and identify all the proposed elements including the pavement by materials, type and color [colour].

CALE: 1/4" = 1'-0" [1:50 METRIC]



Candidate I.D. 4

Landscape Architect Registration Examination

Design Synthesis

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NORTH

Scale: 1/4"=1'-0" [1:50 metric]

Sample Problem 5 - Paving Detail

To complete the detail portion of the examination, you must first understand the site conditions which will affect your design. The mini-park is set in an historic district with brick as a major design element. The frost depth is 24" and the soils are described as plastic in nature.

In this problem, you are required to draw a cross-section of the paving including a concrete header. The paving must be brick or concrete pavers to match the site context given on the base plan.

The paving must have a solid base on which to rest due to the soil conditions of the site. This could consist of concrete, crushed stone, sand or compacted earth. The pavers should be set on a sand bed or on concrete with mortar. If the base used is concrete, an expansion joint should be shown between it and the concrete header.

The concrete header should also have a non-skid finish for safety and should extend below the paver setting bed to hold the pavers in place.

Evaluation Criteria - Sample Problem 5

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color, does not show a cross-section and typical paving pattern etc.)
1	Blank

Program

a) Paver should be indicated in both plan and section
b) Header should be shown and labeled
c) Materials used should be from the Available Material List

5	Meets requirements
4	Meets requirements but calls for gravel instead of crushed stone
3	Meets requirements - not all materials are labeled but intent is clear or uses one material not on the material list in a minor fashion
2	Fails to meet one requirement
1	Fails to meet two or more requirements

Design

a) Concrete pavers, wire cut brick, or handmade brick should be used as a paving material
b) Should provide a smooth walking surface

Scores of 5 or 4 not allowed for this area

3	Uses acceptable materials
2	Fails to use an acceptable material
1	Fails to provide a smooth walking surface

Technical

a) Paving should be shown over a compacted subgrade (e.g. concrete, crushed stone, sand, or compacted earth)
b) Pavers should be set on sand bed or on concrete with mastic/mortar
c) Concrete header should be 12" wide in section and correctly used
d) Non-skid finish for the concrete header should be indicated
e) Expansion joint should be shown when pavers are mortared on a concrete slab

The score of 4 is not allowed for this area

5	Meets requirements
4	Meets requirements except omits expansion joints
3	Meets requirements except omits non-skid finish for concrete
2	Fails to meet one requirement except as allowed above
1	Fails to meet two or more requirements except as allowed above

SAMPLE #5 VIGNETTE #1

This solution properly incorporates materials from the Available Material List in a paving cross-section and plan. The header is shown correctly, holding the pavers and paver base in place. The subgrade and paver base have been compacted to ensure that a smooth walking surface is maintained. This is a very good solution.

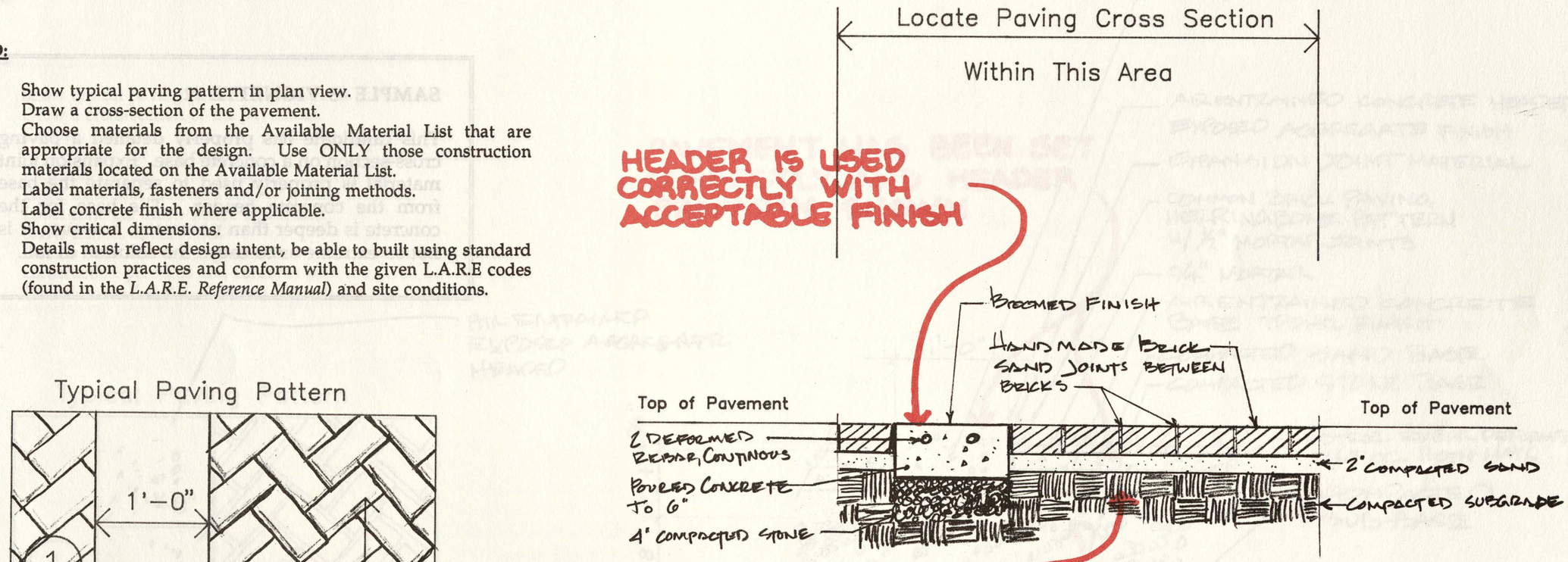
Sample #5 Vignette #1

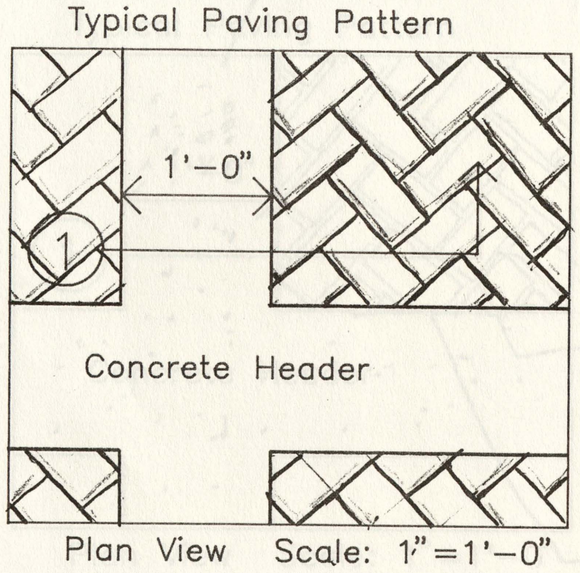
PROBLEM STATEMENT:

You are to show an understanding of the basic principles of paving material construction.

REQUIRED:

- Show typical paving pattern in plan view.
- Draw a cross-section of the pavement.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.





1 PAVING DETAIL

Scale: 1"=1'-0"

Candidate I.D. 5

Landscape Architect Registration Examination

Integration of Technical and Design Requirements

Council of Landscape Architectural Registration Boards

Scale: 1"=1'-0"

SAMPLE #5 VIGNETTE #2

This candidate has properly detailed a paving cross-section on a concrete base. Expansion joint material is properly used to separate the base from the concrete header. The base for the concrete is deeper than necessary; however, it is not so extreme as to cause the solution to fail.

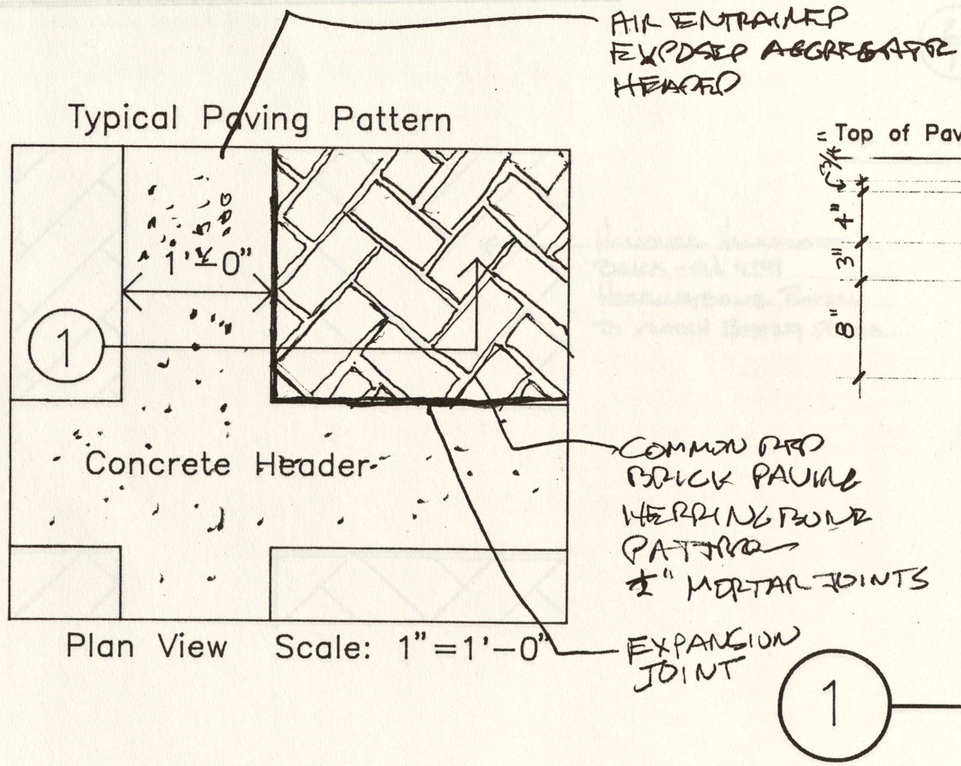
Sample #5 Vignette #2

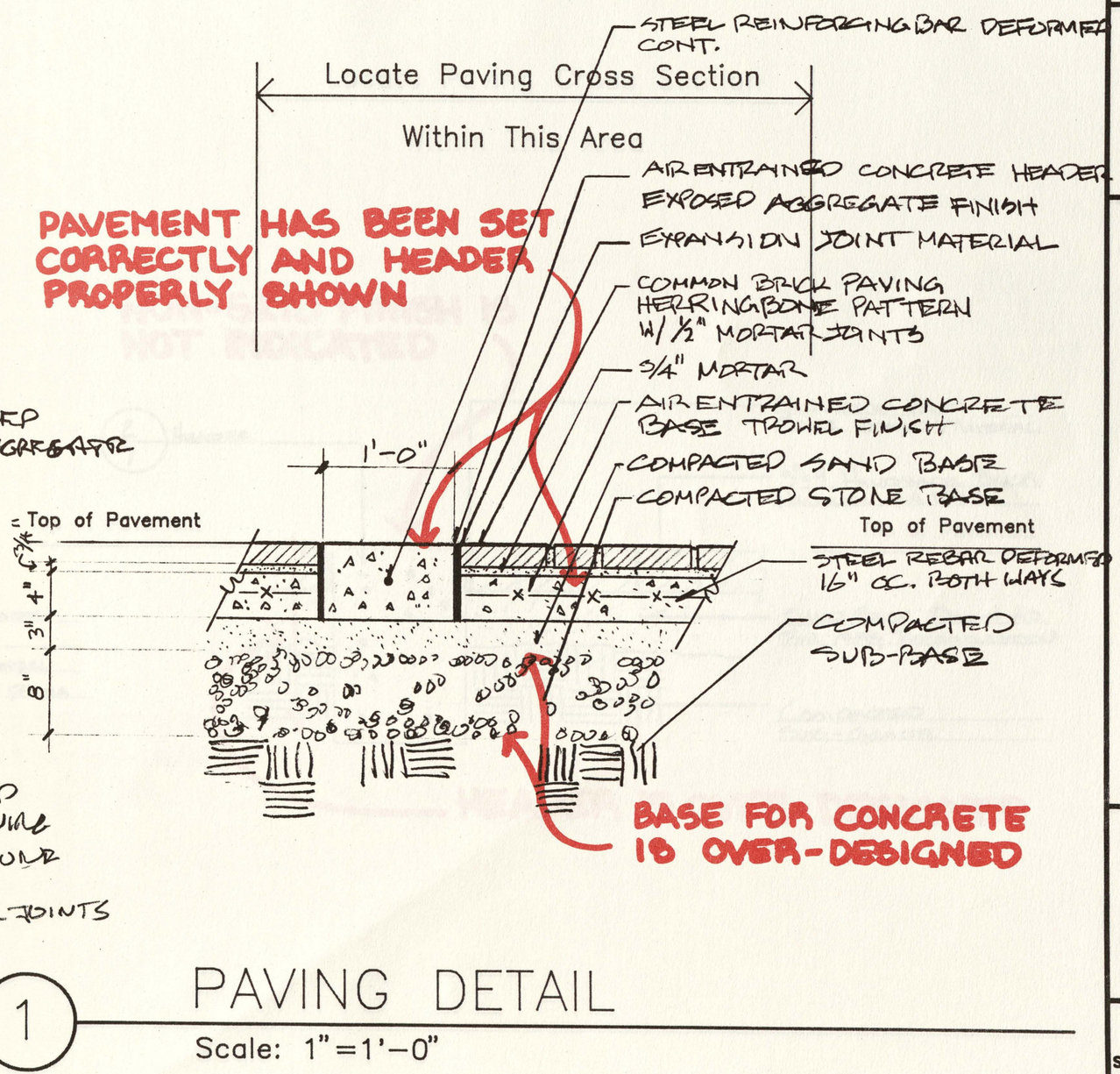
PROBLEM STATEMENT:

You are to show an understanding of the basic principles of paving material construction.

REQUIRED:

- Show typical paving pattern in plan view.
- Draw a cross-section of the pavement.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.





1 PAVING DETAIL

Scale: 1"=1'-0"

Candidate I.D. 5

Landscape Architect Registration Examination

Integration of Technical and Design Requirements

Council of Landscape Architectural Registration Boards

Scale: 1"=1'-0"

SAMPLE #5 VIGNETTE #3

This candidate has adequately detailed the paver base, but has a limited understanding of the correct use of a header. The depth of the header is over-designed, and the solution does omit a non-skid finish for the header. Therefore this solution received a null score.

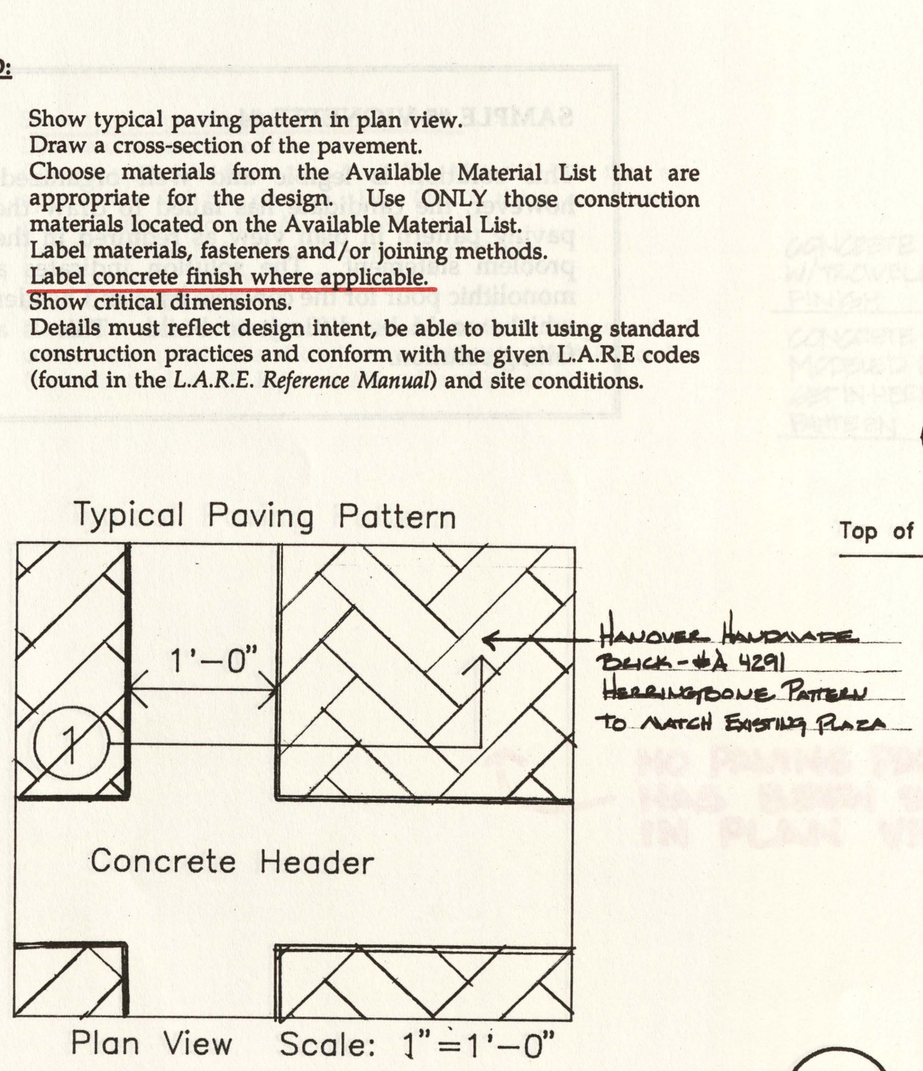
Sample #5 Vignette #3

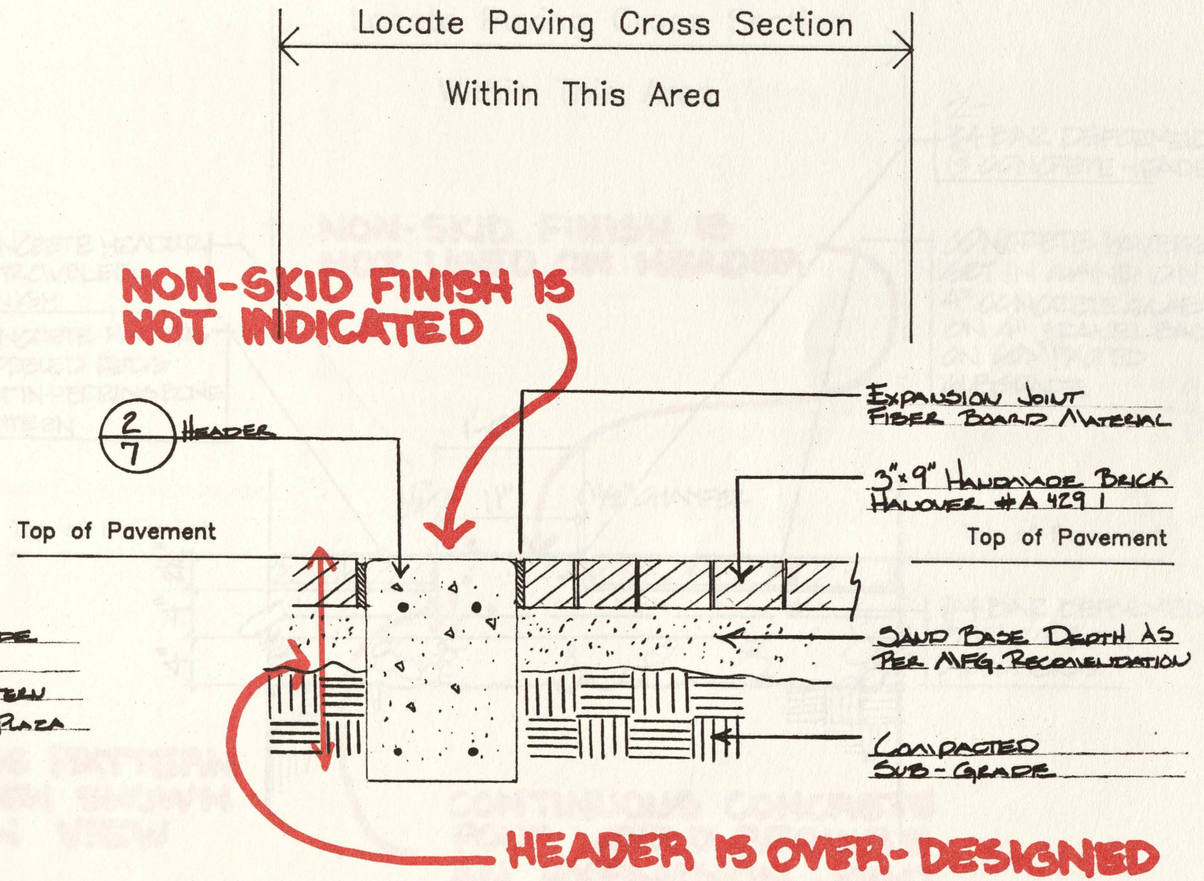
PROBLEM STATEMENT:

You are to show an understanding of the basic principles of paving material construction.

REQUIRED:

- Show typical paving pattern in plan view.
- Draw a cross-section of the pavement.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.





1 PAVING DETAIL

Scale: 1"=1'-0"

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Scale: 1"=1'-0"

SAMPLE #5 VIGNETTE #4

This solution is legible and well organized; however, the candidate has failed to draw the paving pattern in plan view as required in the problem statement. The solution indicates a monolithic pour for the concrete base and header which would be difficult to build. This is a failing solution.

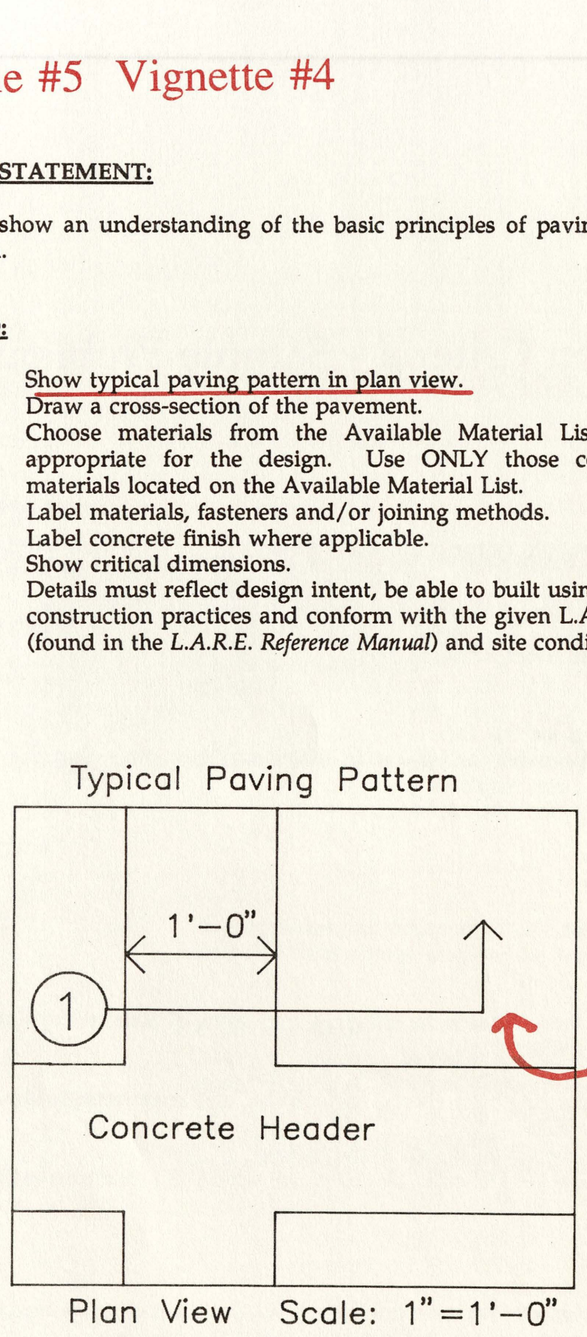
Sample #5 Vignette #4

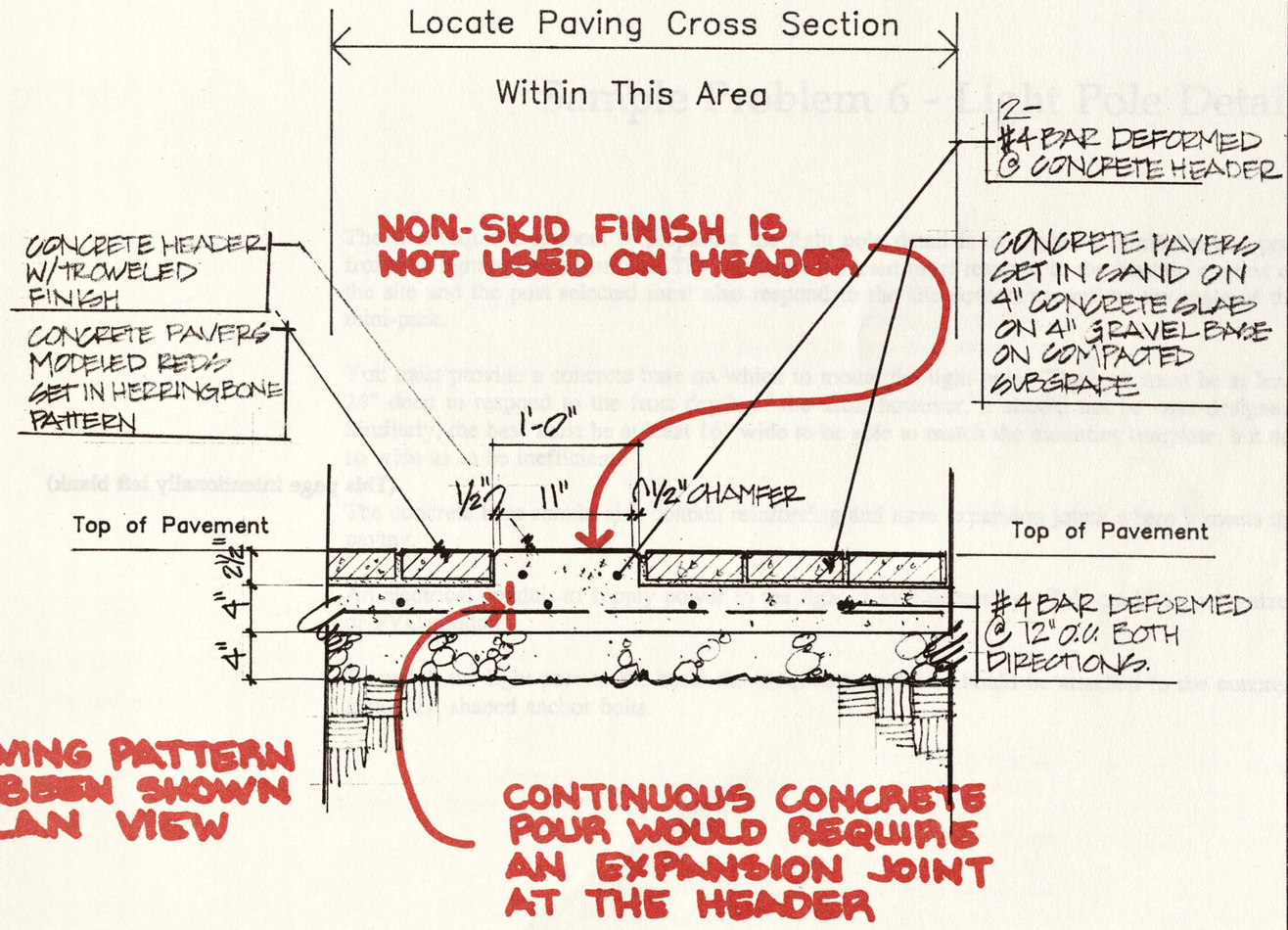
PROBLEM STATEMENT:

You are to show an understanding of the basic principles of paving material construction.

REQUIRED:

- Show typical paving pattern in plan view.
- Draw a cross-section of the pavement.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.





1 PAVING DETAIL

Scale: 1"=1'–0"

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Scale: 1"=1'–0"

Sample Problem 6 - Light Pole Detail

The first required element in preparing the light pole detail is to choose a luminaire and post from the lighting selection list. The luminaire selected must respond to the historic context of the site and the post selected must also respond to the site context as well as the scale of the mini-park.

You must provide a concrete base on which to mount the light pole. The base must be at least 24" deep to respond to the frost depth of the area, however, it should not be over-designed. Similarly, the base must be at least 16" wide to be able to match the mounting template, but not so wide as to be inefficient.

The concrete base should also contain reinforcing and have expansion joints where it meets the paving.

An electrical conduit to supply power to the light is also necessary. This could be galvanized or PVC conduit.

To attach the light pole to the base, the mounting template should be attached to the concrete using "L" shaped anchor bolts.

Metric Evaluation Criteria - Sample Problem 6

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color, does not show a light pole base, etc.)
1	Blank

Program

a) The luminaire and post should be selected from the lighting selection list
b) Materials used should be from the Available Material List

5	Meets requirements
4	Meets requirements but calls for gravel instead of crushed stone
3	Meets requirements - not all materials are labeled but intent is clear or uses one material not on the material list in a minor fashion
2	Fails to meet one requirement
1	Fails to meet two or more requirements

Design

a) The design should fit the context of the site (e.g. the luminaire selected is 1 - 12 or 16 - 21; and the post selected should be C,D,E,G,H,I,K,L or M)
b) The base should not be designed to create a tripping hazard
c) The base design should be relatively economical (e.g. no larger than 600mm in diameter, 1050mm deep)

Scores of 5 or 4 not allowed for this area

3	Meets requirement a) and generally meets requirements b) and c)
2	Fails to meet one requirement
1	Fails to meet two or more requirements

Technical

a) A concrete footer should be shown a minimum of 600mm deep and a minimum of 400mm wide
b) Electrical conduit should be correctly shown
c) The post mounting plate should be indicated and appropriately attached with anchor bolts
d) Reinforcing should be shown in the footing
e) An expansion joint should be indicated where the paving meets the footing

5	Meets requirements
4	Meets requirements except reinforcing is not shown and/or an expansion joint is not indicated where the paving meets the footing
3	Meets requirements except section of mounting plate is incorrect
2	Fails to meet one requirement except as allowed above
1	Fails to meet two or more requirements except as allowed above

Evaluation Criteria - Sample Problem 6

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color, does not show a light pole base, etc.)
1	Blank

Program

a) The luminaire and post should be selected from the lighting selection list
b) Materials used should be from the Available Material List

5	Meets requirements
4	Meets requirements but calls for gravel instead of crushed stone
3	Meets requirements - not all materials are labeled but intent is clear or uses one material not on the material list in a minor fashion
2	Fails to meet one requirement
1	Fails to meet two or more requirements

Design

a) The design should fit the context of the site (e.g. the luminaire selected is 1 - 12 or 16 - 21; and the post selected should be C,D,E,G,H,I,K,L or M)
b) The base should not be designed to create a tripping hazard
c) The base design should be relatively economical (e.g. no larger than 2' in diameter, 3.5' deep)

Scores of 5 or 4 not allowed for this area	
3	Meets requirement a) and generally meets requirements b) and c)
2	Fails to meet one requirement
1	Fails to meet two or more requirements

Technical

a) A concrete footer should be shown a minimum of 24" deep and a minimum of 16" wide
b) Electrical conduit should be correctly shown
c) The post mounting plate should be indicated and appropriately attached with anchor bolts
d) Reinforcing should be shown in the footing
e) An expansion joint should be indicated where the paving meets the footing

5	Meets requirements
4	Meets requirements except reinforcing is not shown and/or an expansion joint is not indicated where the paving meets the footing
3	Meets requirements except section of mounting plate is incorrect
2	Fails to meet one requirement except as allowed above
1	Fails to meet two or more requirements except as allowed above

SAMPLE #6 VIGNETTE #1

This solution shows the correct method to mount the light pole. The concrete base responds to the frost depth and necessary mounting template diameter. The light pole is correctly mounted using anchor bolts in the concrete. Electrical conduit, concrete reinforcement and expansion joints where the concrete meets the pavement have all been shown. This is a very good solution.

Sample #6 Vignette #1

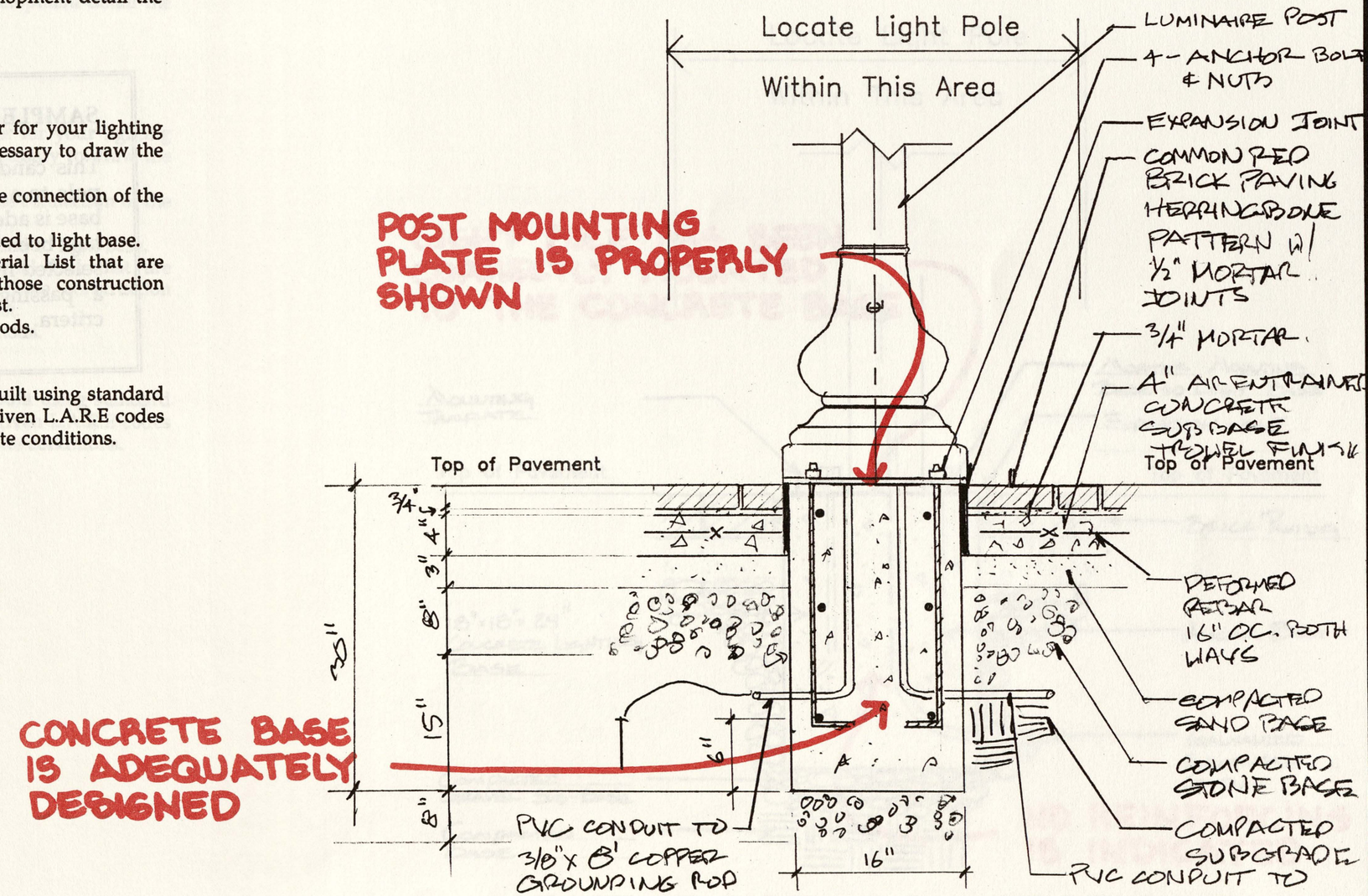
PROBLEM STATEMENT:

You are to choose a light post and luminaire from the Lighting Selection List for use in the mini-park addition and indicate in a design development detail the proposed base connection of the fixture.

REQUIRED:

- Indicate the luminaire number and post letter for your lighting selection in the space provided. (It is not necessary to draw the luminaire in your detail.)
- Draw a design development detail showing the connection of the lighting fixture to the ground.
- Proposed paving should be shown and extended to light base.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.

Luminaire # 11
Post # K



3 LIGHT POST CONNECTION

Scale: 1"=1'-0"

5

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Scale: 1"=1'-0"

SAMPLE #6 VIGNETTE #2

This candidate has properly mounted the light pole to a concrete base using anchor bolts. The base is adequately sized; however, no reinforcing has been indicated. The post and luminaire selected fit the context of the historic site. This is a passing solution based on the evaluation critera.

Sample #6 Vignette #2

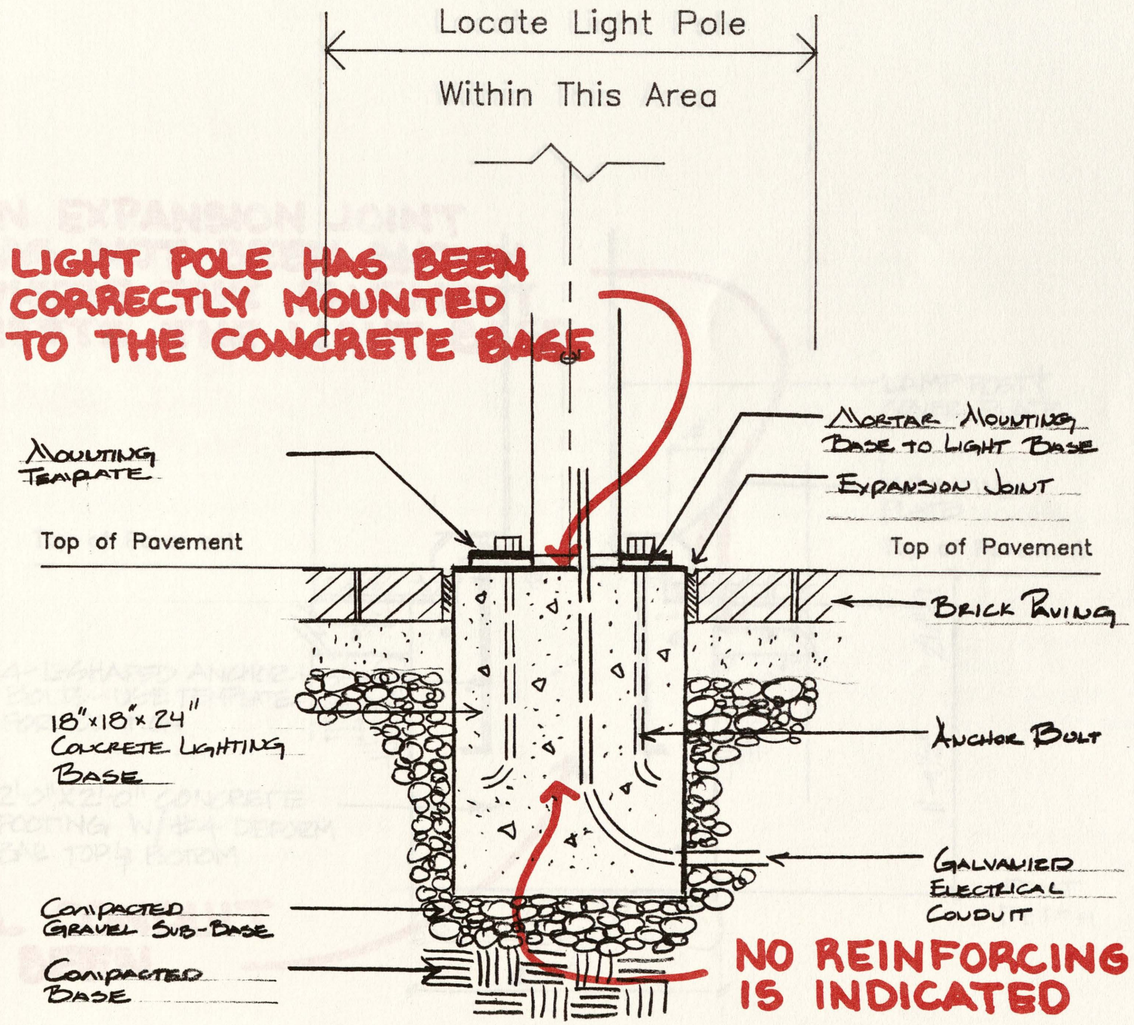
PROBLEM STATEMENT:

You are to choose a light post and luminaire from the Lighting Selection List for use in the mini-park addition and indicate in a design development detail the proposed base connection of the fixture.

REQUIRED:

- Indicate the luminaire number and post letter for your lighting selection in the space provided. (It is not necessary to draw the luminaire in your detail.)
- Draw a design development detail showing the connection of the lighting fixture to the ground.
- Proposed paving should be shown and extended to light base.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.

Luminaire # 1
Post # D



3 LIGHT POST CONNECTION

Scale: 1"=1'-0"

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Scale: 1"=1'-0"

SAMPLE #6 VIGNETTE #3

This candidate has failed to indicate an electrical connection for the light pole. The connection of the mounting plate to the base is shown correctly; however, the method shown around the paving will cause the brick to buckle due to settling. This is a failing solution.

Sample #6 Vignette #3

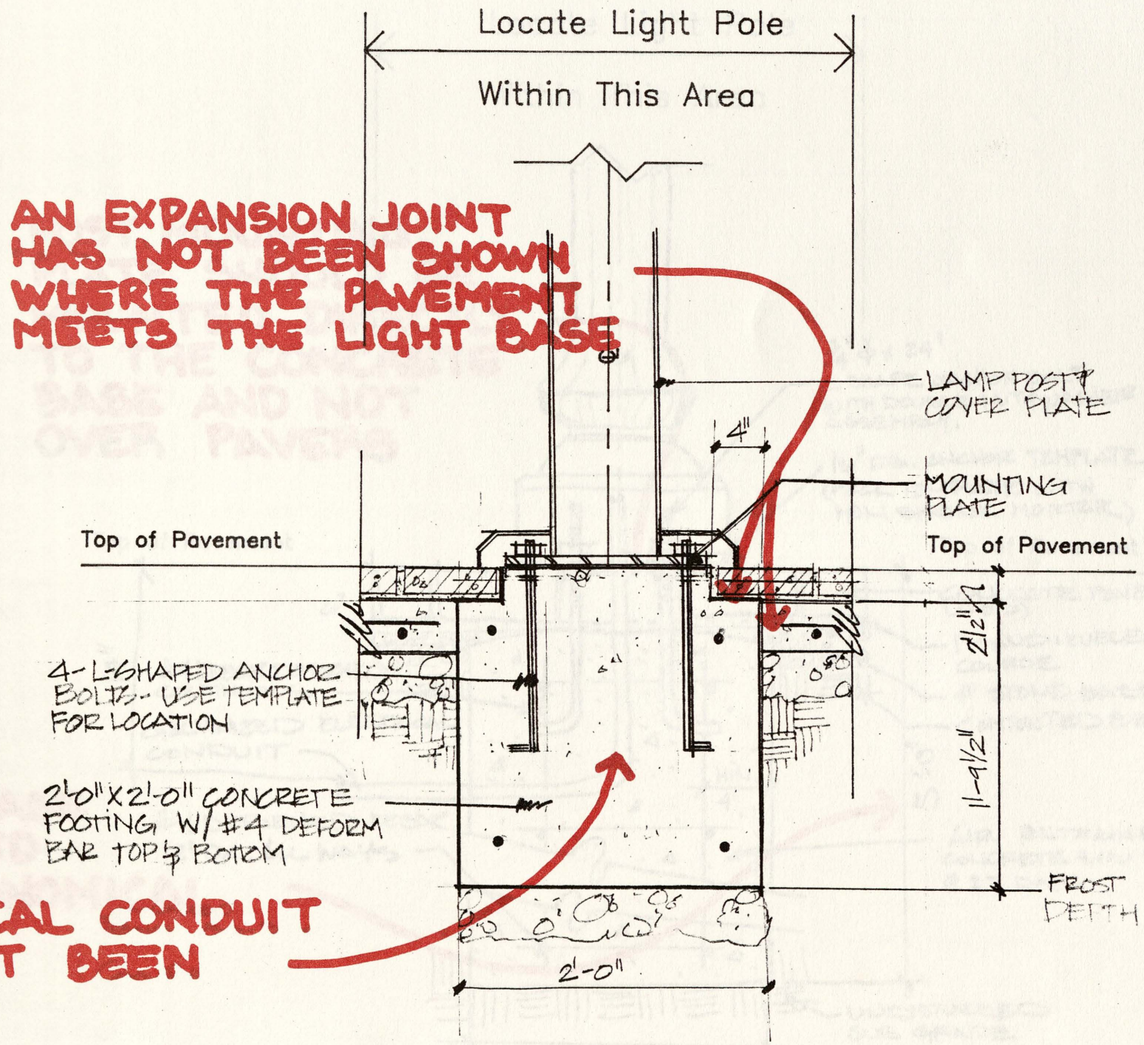
PROBLEM STATEMENT:

You are to choose a light post and luminaire from the Lighting Selection List for use in the mini-park addition and indicate in a design development detail the proposed base connection of the fixture.

REQUIRED:

- Indicate the luminaire number and post letter for your lighting selection in the space provided. (It is not necessary to draw the luminaire in your detail.)
- Draw a design development detail showing the connection of the lighting fixture to the ground.
- Proposed paving should be shown and extended to light base.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.

Luminaire # 11
Post # D



3 LIGHT POST CONNECTION

Scale: 1" = 1'-0"

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Scale: 1"=1'-0"

SAMPLE #6 VIGNETTE #4

This solution indicates a concrete base which is 5 feet deep in the ground. This much concrete is not economical and therefore causes this solution to fail.

Sample #6 Vignette #4

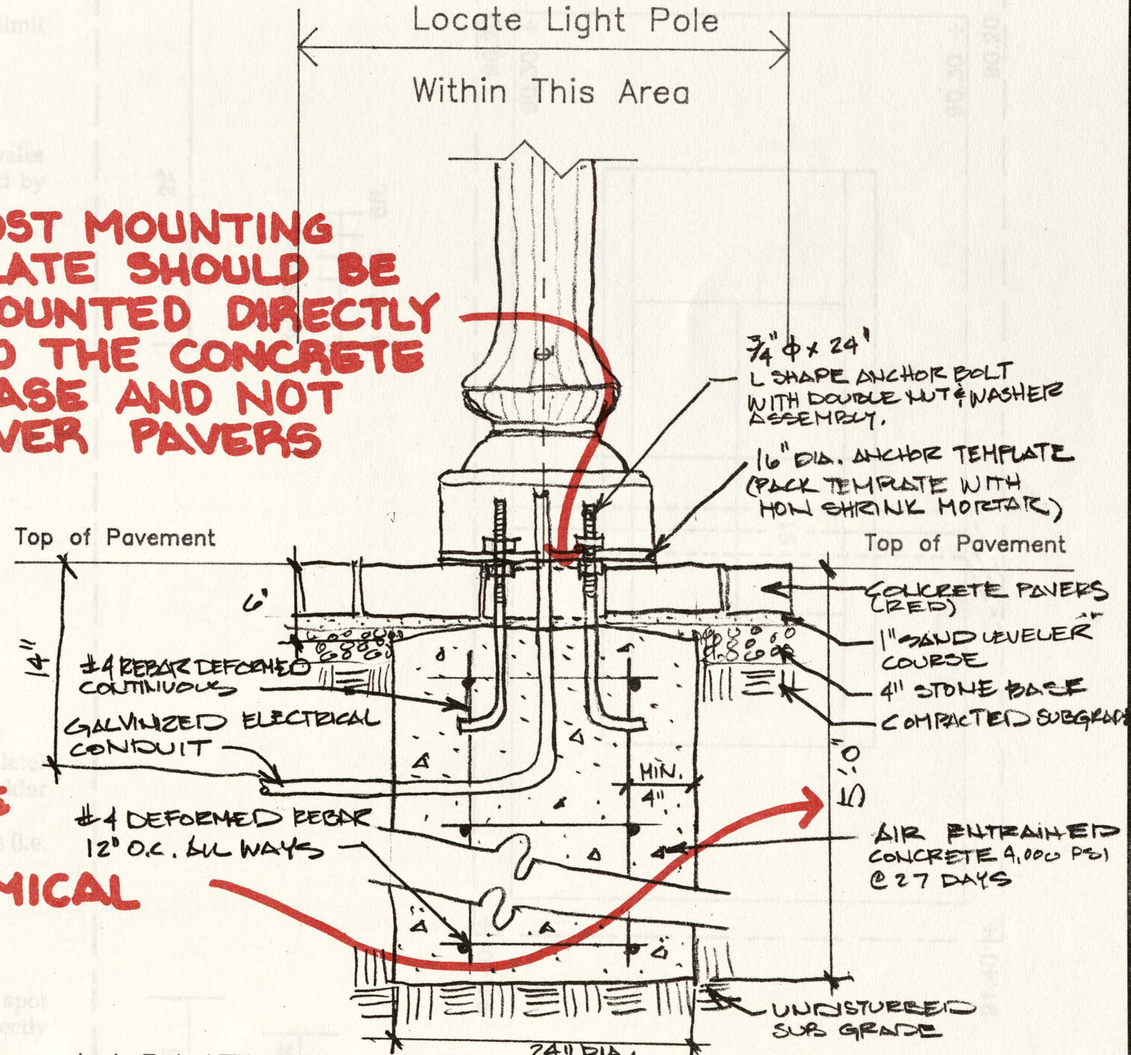
PROBLEM STATEMENT:

You are to choose a light post and luminaire from the Lighting Selection List for use in the mini-park addition and indicate in a design development detail the proposed base connection of the fixture.

REQUIRED:

- Indicate the luminaire number and post letter for your lighting selection in the space provided. (It is not necessary to draw the luminaire in your detail.)
- Draw a design development detail showing the connection of the lighting fixture to the ground.
- Proposed paving should be shown and extended to light base.
- Choose materials from the Available Material List that are appropriate for the design. Use ONLY those construction materials located on the Available Material List.
- Label materials, fasteners and/or joining methods.
- Label concrete finish where applicable.
- Show critical dimensions.
- Details must reflect design intent, be able to built using standard construction practices and conform with the given L.A.R.E codes (found in the *L.A.R.E. Reference Manual*) and site conditions.

Luminaire # 5
Post # E



3 LIGHT POST CONNECTION

Scale: 1" = 1'-0"

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Scale: 1" = 1'-0"

Sample Problem 7 - Tennis Court

The main objective in this vignette is to divert water away from the court using swales.

The tennis court must slope at 1% as shown on the base sheet. To accomplish this you must correctly locate the 91 contour across the court, as shown on the evaluation template, and accurately locate spot elevations on the southern end of the court.

It is also important to show a 2% slope away from the tennis court on the grass shoulder. According to the grading criteria, this slope could be indicated either by spot elevations or contours.

To divert water away from the court, swales should be shown with a minimum 2% slope along the centerline of the swale. The swale should begin with a highpoint near where the proposed walk meets the tennis court shoulder. Slopes on the remaining lawn area should not exceed 3:1 (1 foot of fall in 3 feet of run).

In preparing the grading plan for the tennis court you must also consider safety and economy. You could solve the problem using retaining walls; however, this would be totally unnecessary and would not be an economical solution.

Evaluation Criteria - Sample Problem 7

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions (i.e. uses color, exceeds contract limit lines, etc.)
1	Blank

Program

a) Runoff from adjacent lawns should be diverted from the tennis court by swales
b) Tennis court should slope to the south (right side of drawing) as indicated by contours and spot elevations

5	Meets requirements
Score of 4 not used	
3	Generally meets requirements
2	Fails to meet one requirement
1	Fails to meet two requirements

Design

a) The design should be economical (e.g. walls should not be incorporated in the plan)
b) The design should be safe

Scores of 5 or 4 not allowed for this area

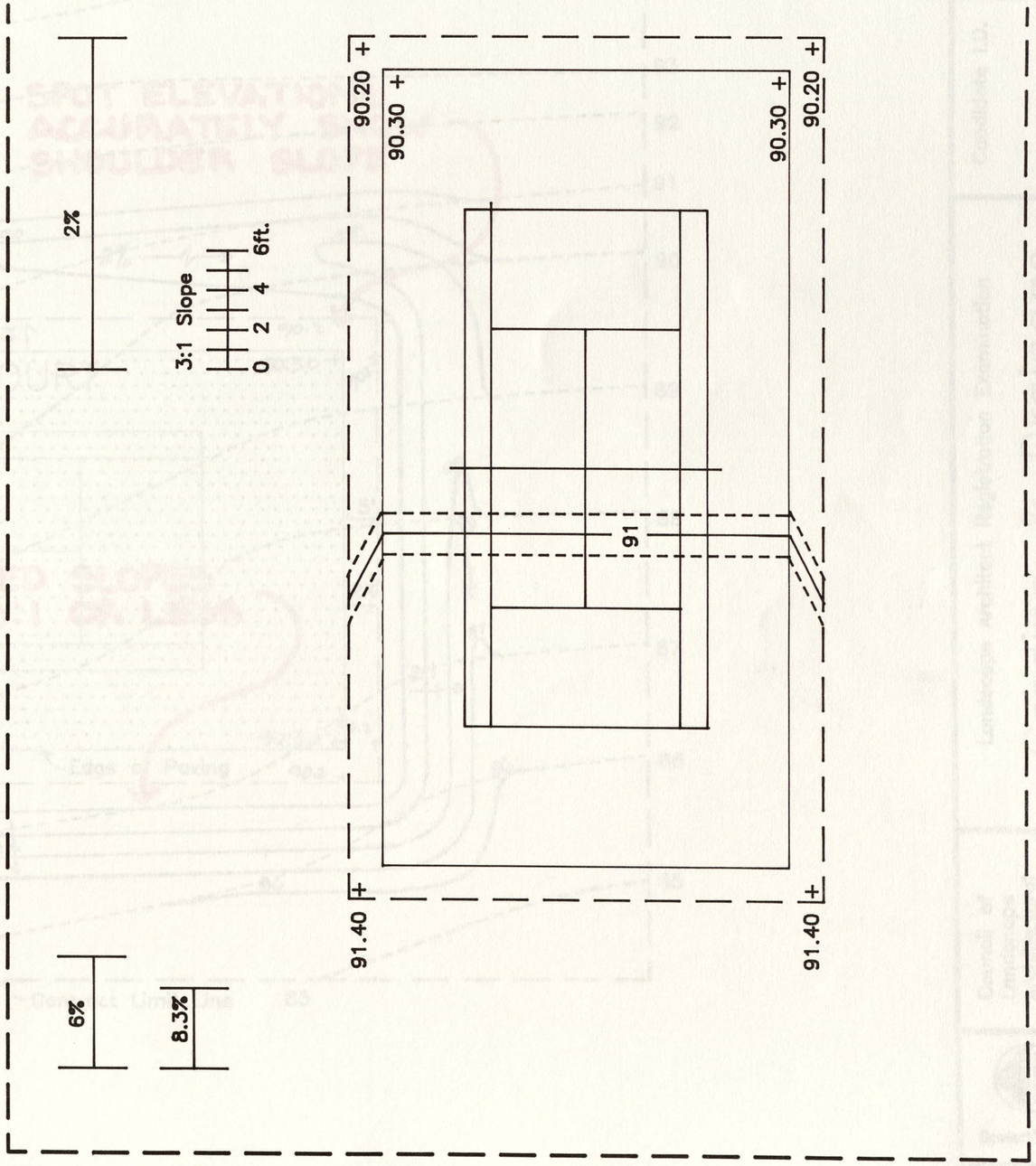
3	Generally meets the requirements
2	Fails to meet one requirement
1	Fails to meet both requirements

Technical

a) Swales should slope longitudinally at a minimum of 2%
b) Spot elevations at the two lower corners of the tennis court should be 90.30
c) Proposed 91 contour should be shown accurately on tennis court (see template)
d) Spot elevations should be shown accurately at the four corners of the shoulder (see template)
e) All contours should be continuous and connect accurately to existing contours (i.e. 93 proposed connects to 93 existing)
f) Slopes should not exceed 3:1 (calculated over several contours)
g) Walk slope should not exceed 6%

5	Meets requirements
4	Meets requirements except walk slopes between 6% and 8.3% and/or spot elevations on grass shoulder are not shown but shoulder is graded correctly and/or shoulder slopes at more than 2%
3	Meets requirements except spot elevations at the lower corners of the tennis courts are off by .05′ or less.
2	Fails to meet one requirement except as allowed above
1	Fails to meet two or more requirements except as allowed above

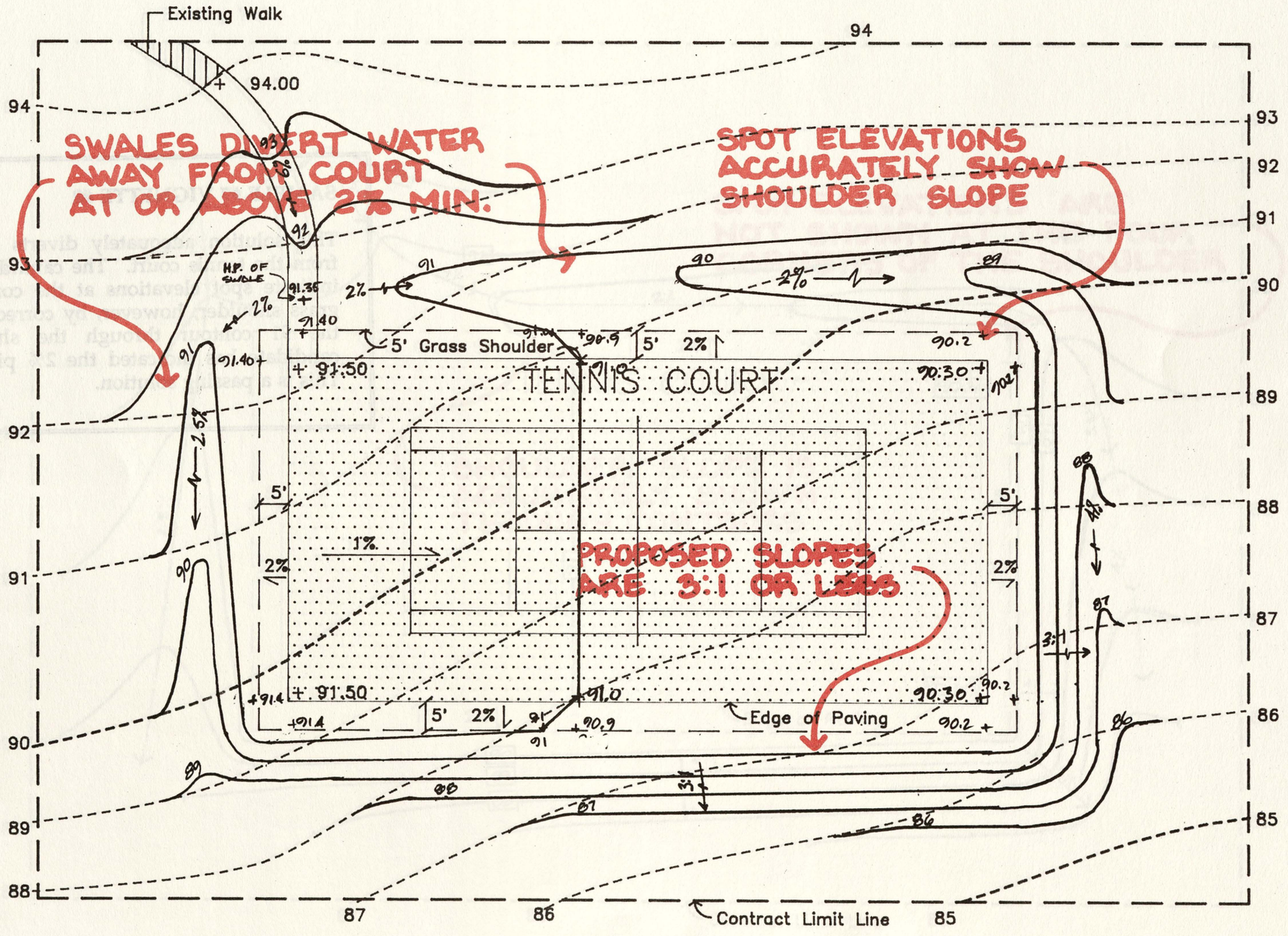
Evaluation Template



SAMPLE #7 VIGNETTE #1

This candidate has successfully diverted water away from the tennis court using swales with a minimum 2% slope. The solution correctly shows the desired pitch of the tennis court through contours and spot elevations. This is a very good solution.

Sample #7 Vignette #1



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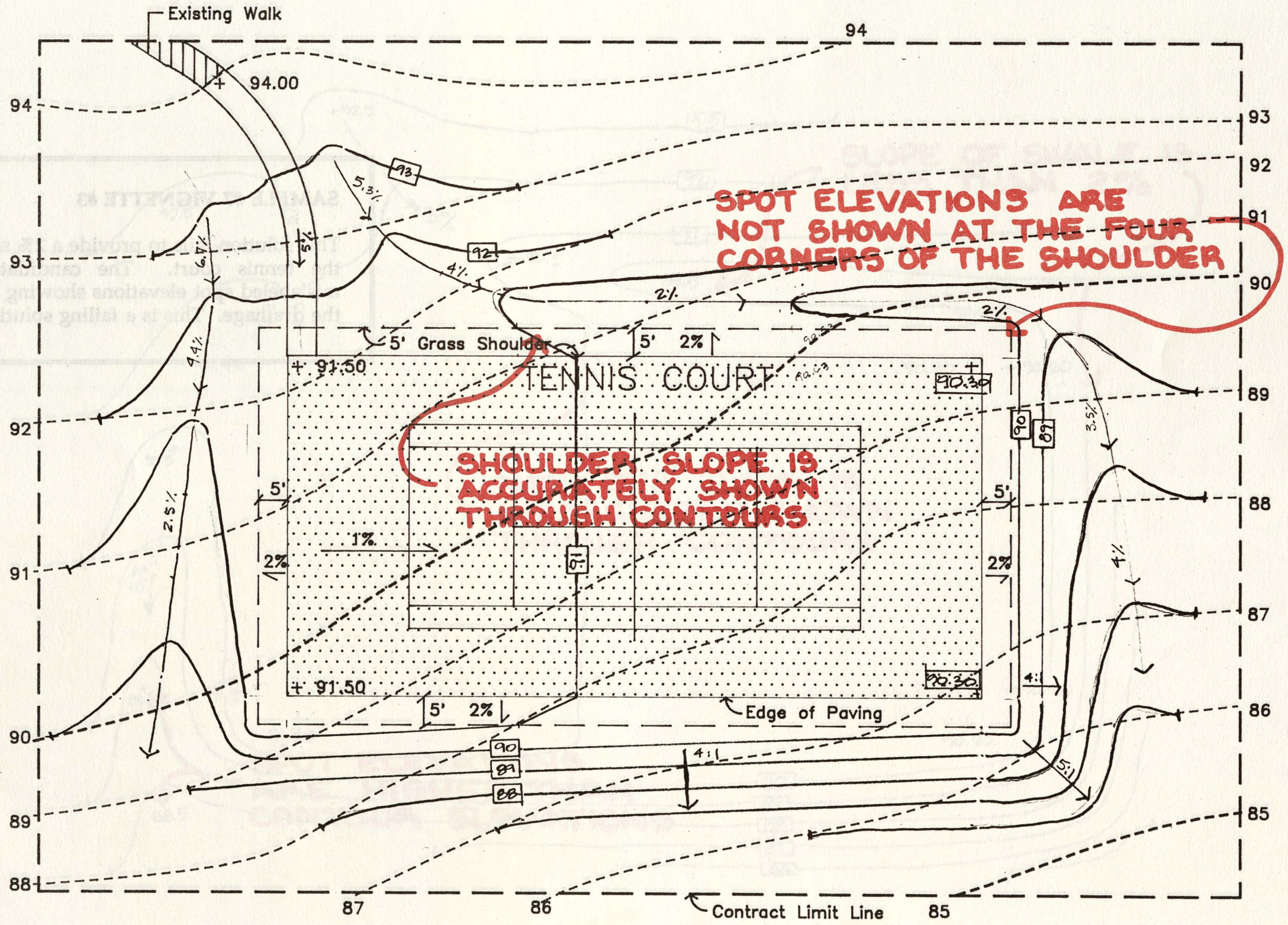
NORTH

Scale: 1" = 20'

SAMPLE #7 VIGNETTE #2

This solution adequately diverts water away from the tennis court. The candidate failed to indicate spot elevations at the corners of the grass shoulder; however, by correctly showing the 91 contour through the shoulder, the candidate has indicated the 2% pitch desired. This is a passing solution.

Sample #7 Vignette #2



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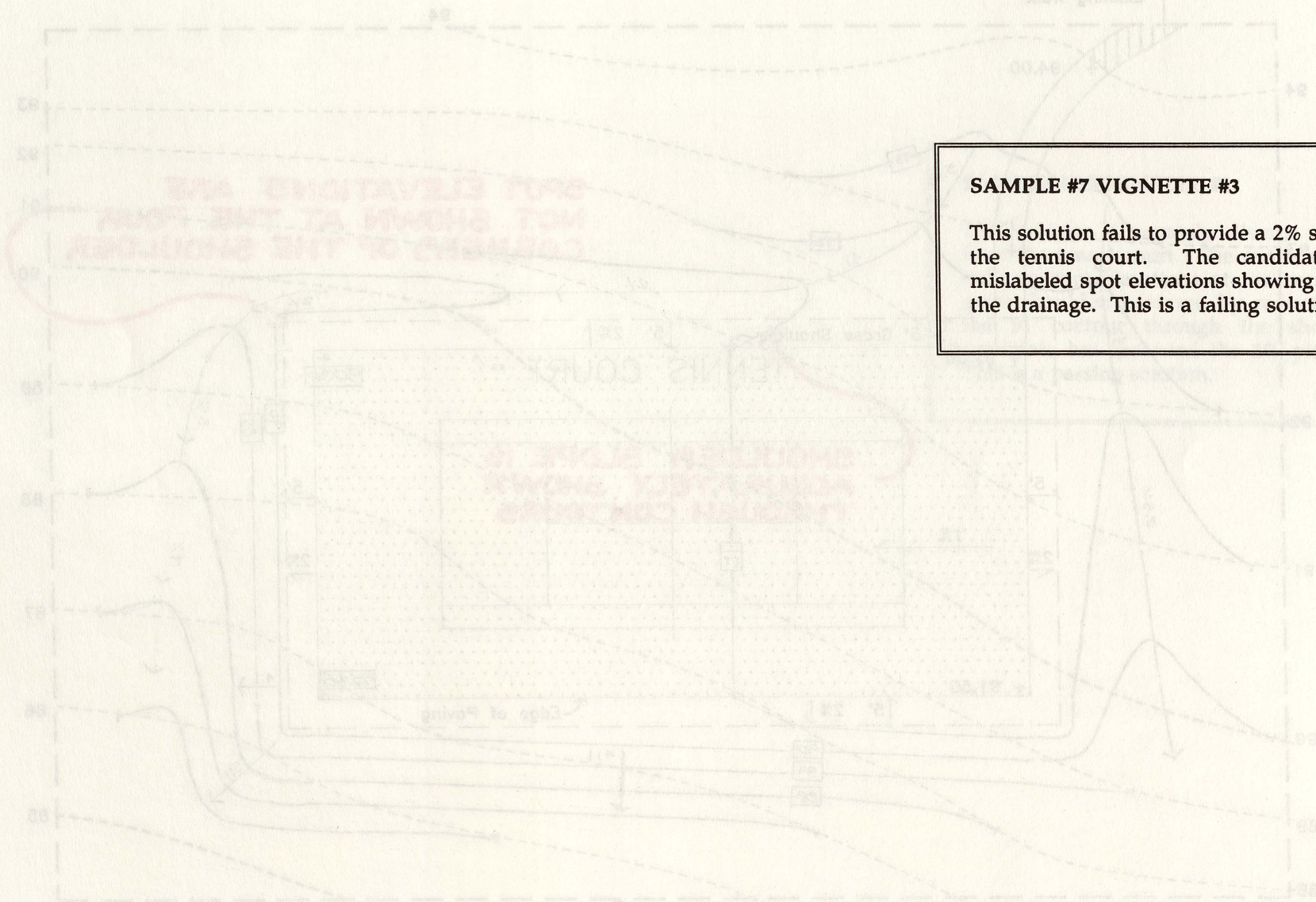
NORTH

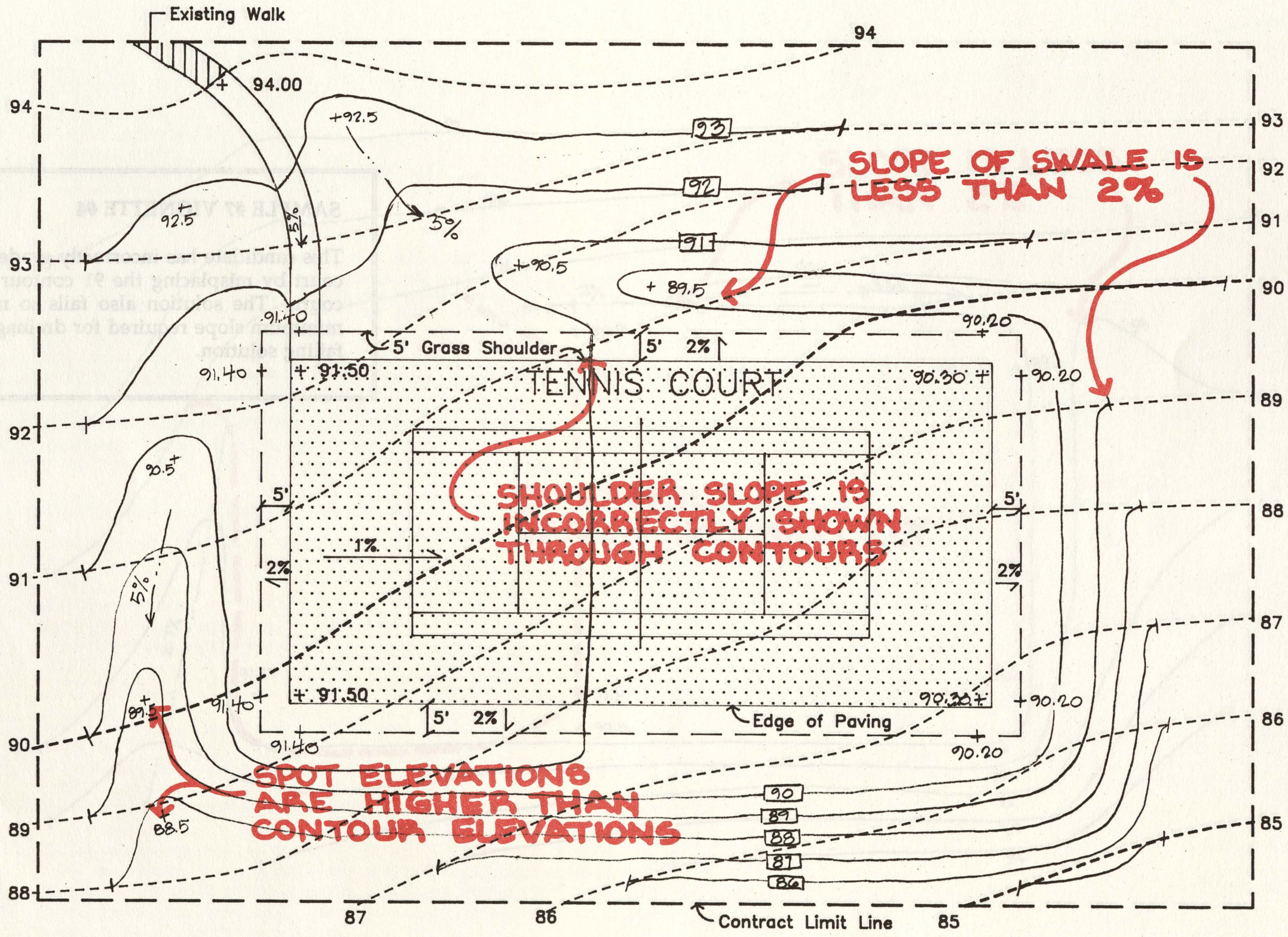
Scale: 1" = 20'



SAMPLE #7 VIGNETTE #3

This solution fails to provide a 2% slope around the tennis court. The candidate has also mislabeled spot elevations showing a conflict in the drainage. This is a failing solution.

Sample #7 Vignette #3



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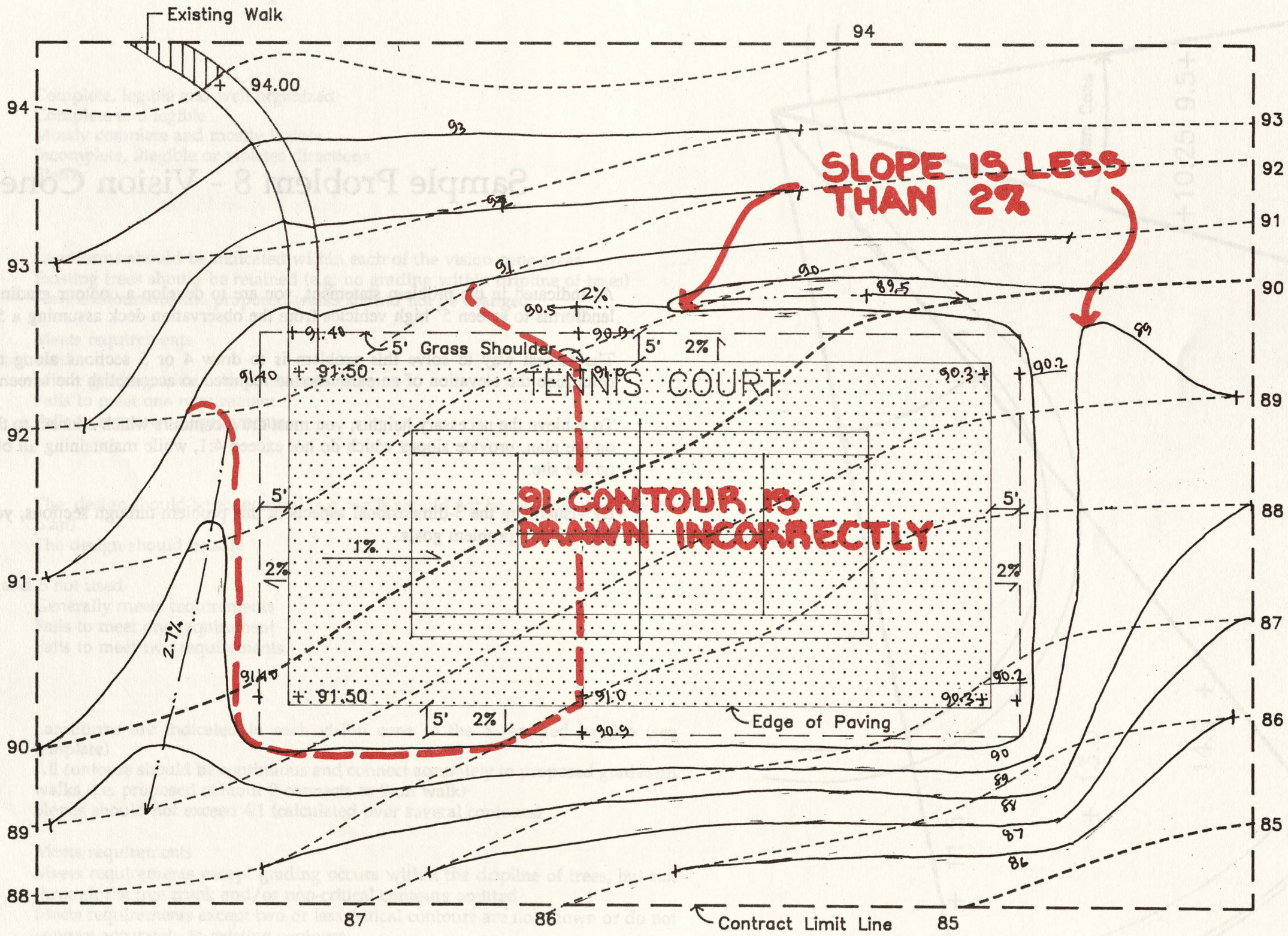
NORTH

Scale: 1" = 20'

SAMPLE #7 VIGNETTE #4

This candidate has incorrectly graded the tennis court by misplacing the 91 contour around the court. The solution also fails to maintain the minimum slope required for drainage. This is a failing solution.

Sample #7 Vignette #4



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NORTH

Scale: 1" = 20'

Sample Problem 8 - Vision Cone Problem

As indicated in the problem statement, you are to develop a contour grading plan which uses landforms to screen 5' high vehicles from the observation deck assuming a 5' eyelevel.

The easiest way to solve this problem is to draw 4 or 5 sections along the vision cone to determine the elevation of an earth mound required to accomplish the screening objectives.

To achieve the necessary heights, you must draw contours which connect to the contours shown on the plan, provide slopes which do not exceed 4:1, while maintaining all of the existing trees on the site.

By visualizing the 3-dimensional aspects of this problem through sections, you can easily meet the required problem goals.

Evaluation Criteria - Sample Problem 8

Completeness

5	Complete, legible and well organized
4	Complete and legible
3	Mostly complete and mostly legible
2	Incomplete, illegible or violates directions
1	Blank

Program

a) Landforms should be indicated within each of the vision cone areas
b) Existing trees should be retained (e.g. no grading within dripline of trees)
c) New contours for the proposed walks should not be changed

5	Meets requirements
Score of 4 not used	
3	Minor grading within the drip line of trees
2	Fails to meet one requirement
1	Fails to meet two requirements

Design

a) The design should be economical (e.g. walls should not be incorporated into the plan)
b) The design should be safe

Score of 4 and 5 not used

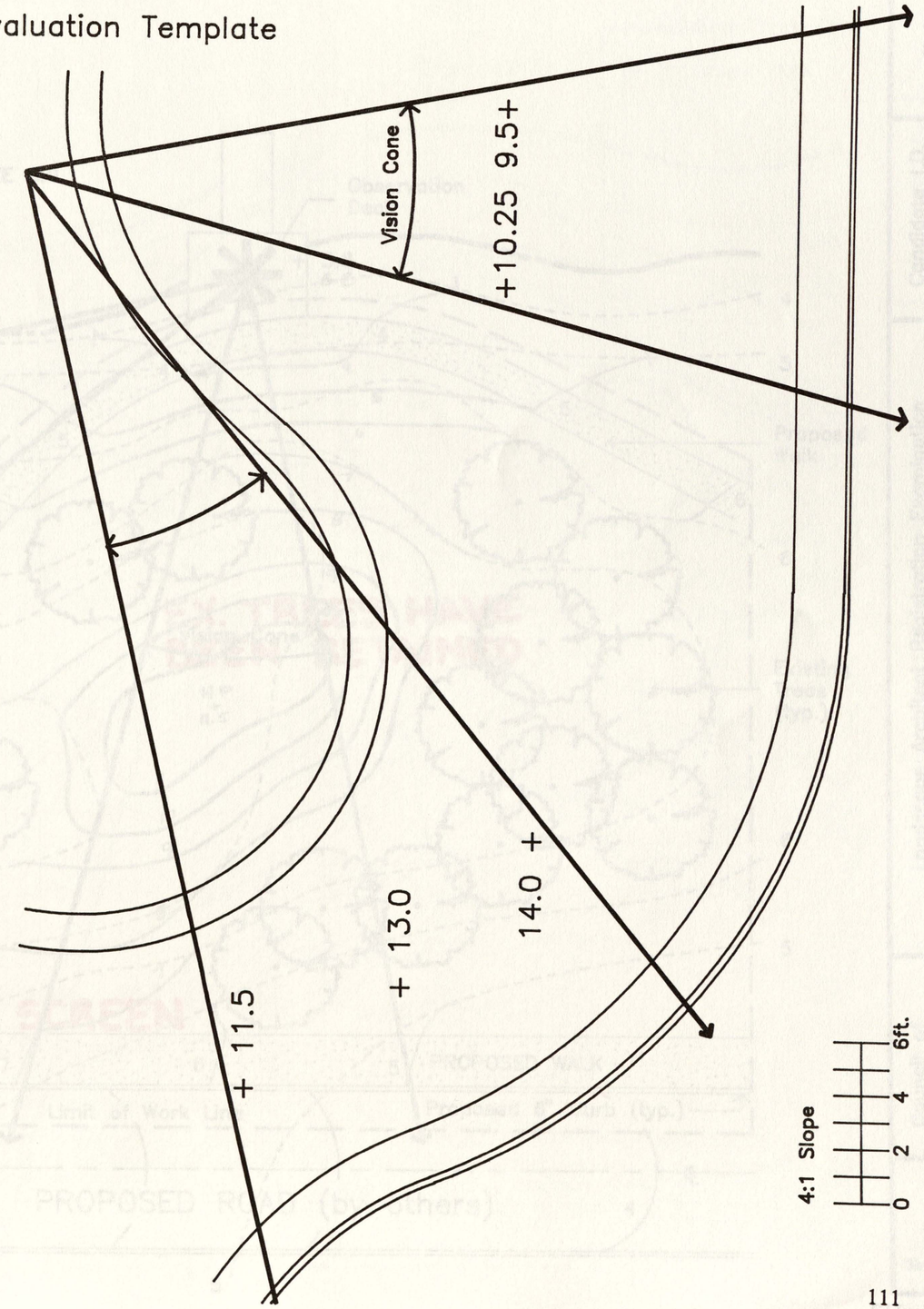
3	Generally meets requirements
2	Fails to meet one requirement
1	Fails to meet two requirements

Technical

a) Landforms are indicated in each vision cone to the 5 required heights (see template)
b) All contours should be continuous and connect accurately to proposed grades on walks (i.e. proposed contour 9 connects to 9 on walk)
c) Slopes should not exceed 4:1 (calculated over several contours)

5	Meets requirements
4	Meets requirements except grading occurs within the dripline of trees, but not through the tree trunk and/or non-critical contours omitted
3	Meets requirements except two or less critical contours are not shown or do not connect accurately to existing contours
2	Fails to meet one requirement except as allowed above
1	Fails to meet two or more requirements except as allowed above

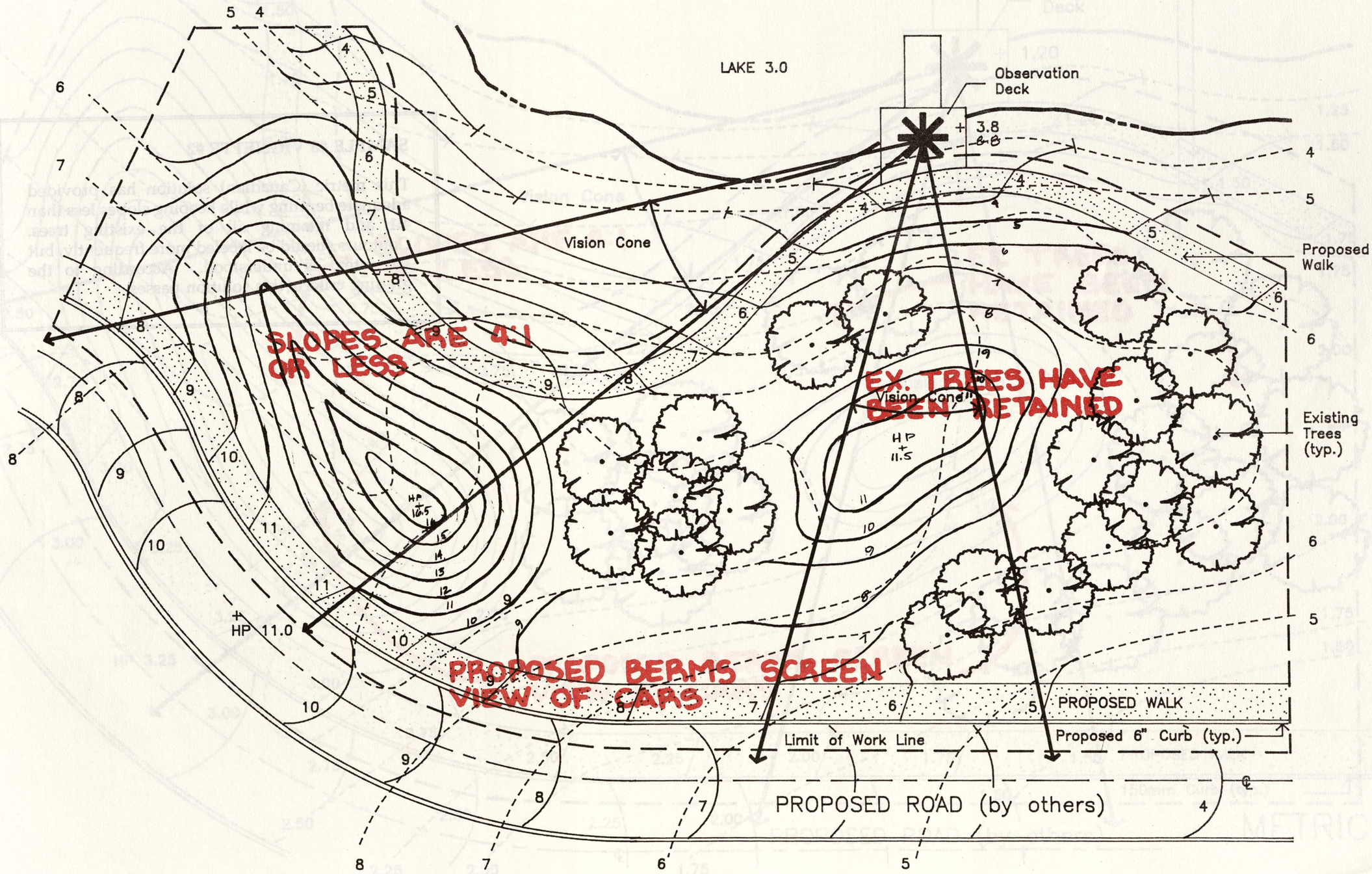
Evaluation Template



SAMPLE #8 VIGNETTE #1

This solution provides earth mounding that is high enough to screen cars on the road from the eye level of a person standing on the observation deck. The candidate has correctly tied all of the proposed contours to existing contours while saving all of the existing trees. This is a very good solution.

Sample #8 Vignette #1



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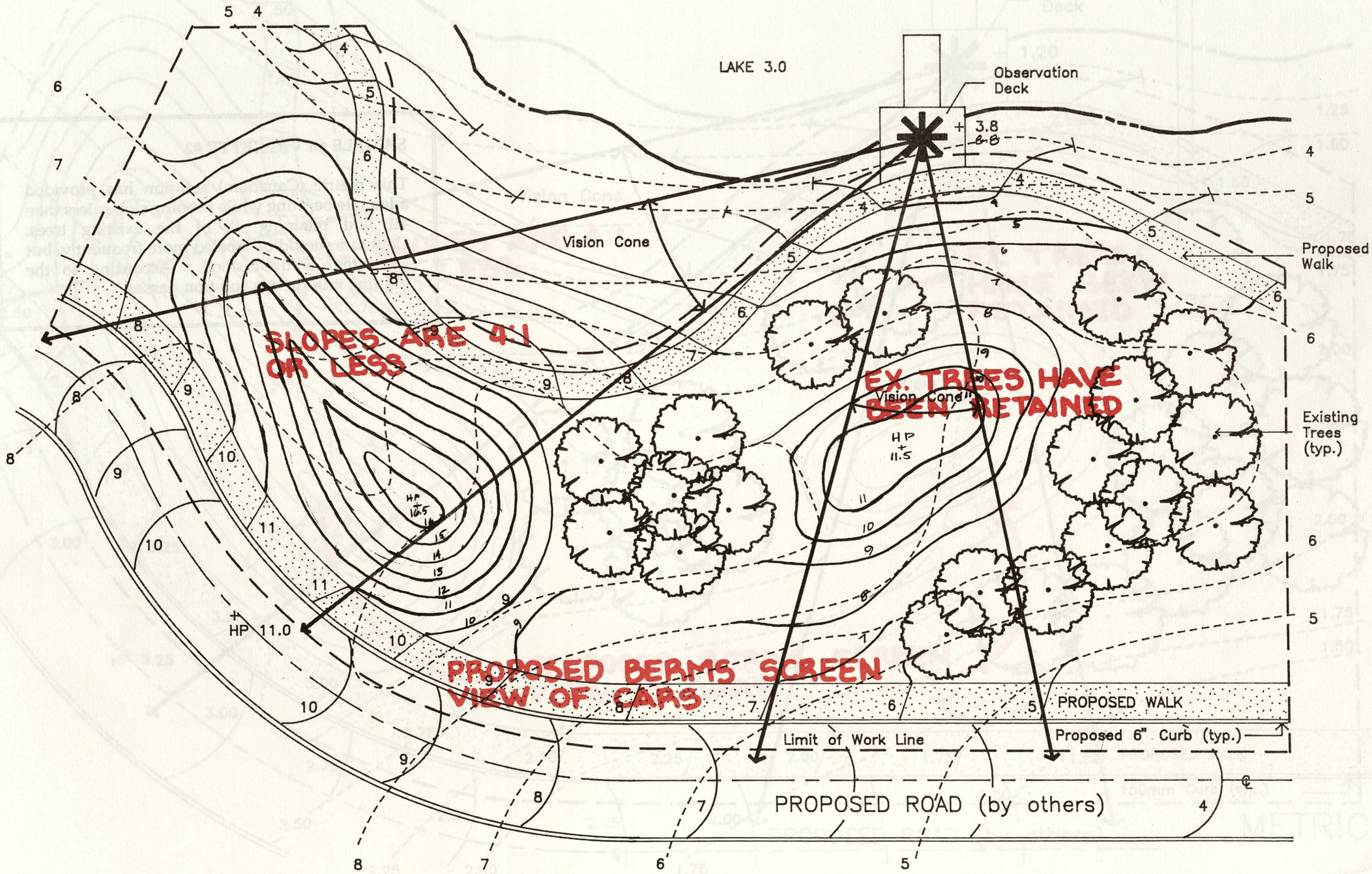
NORTH

Scale: 1"=20'

SAMPLE #8 VIGNETTE #1

This solution provides earth mounding that is high enough to screen cars on the road from the eye level of a person standing on the observation deck. The candidate has correctly tied all of the proposed contours to existing contours while saving all of the existing trees. This is a very good solution.

Sample #8 Vignette #1



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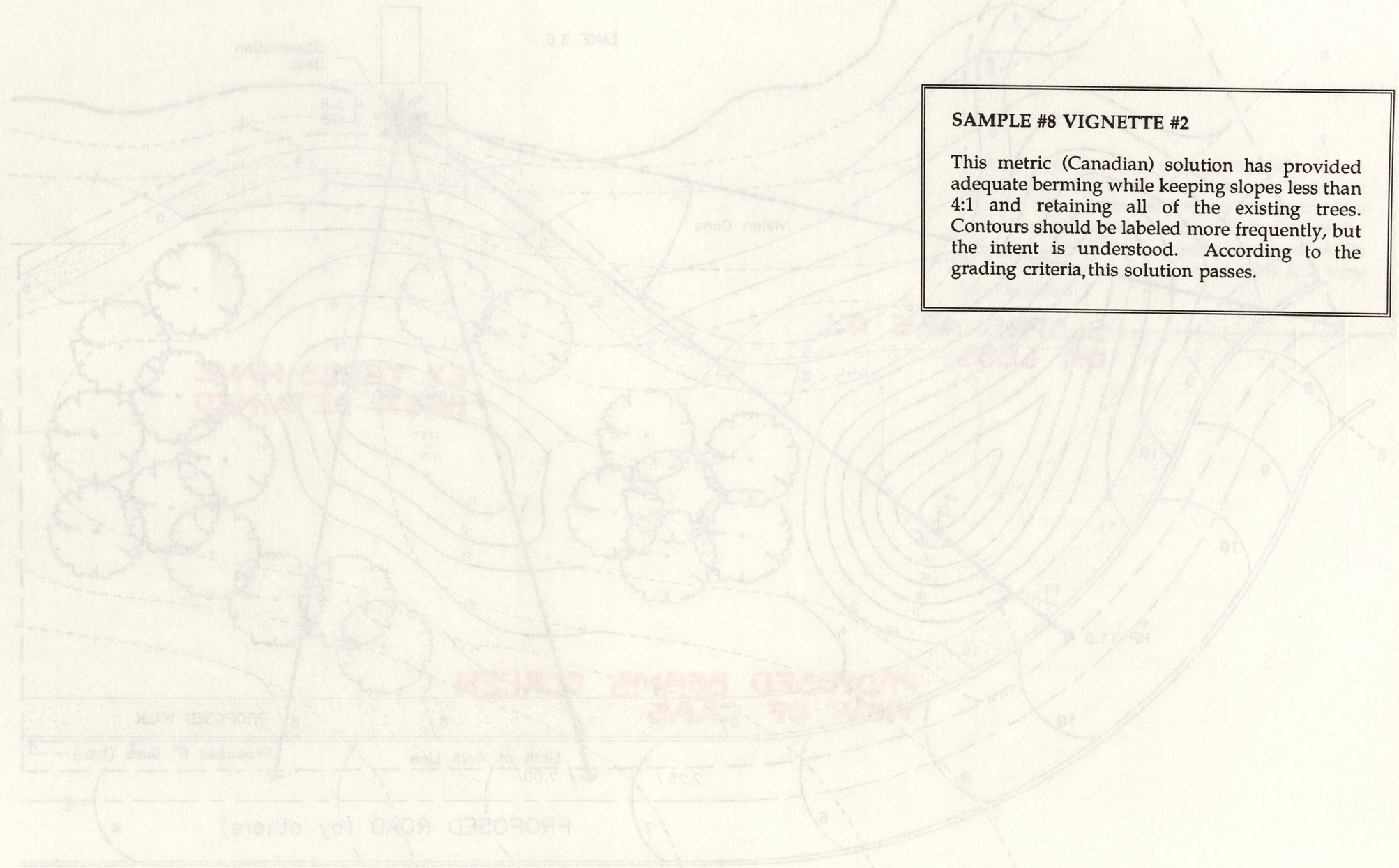
NORTH

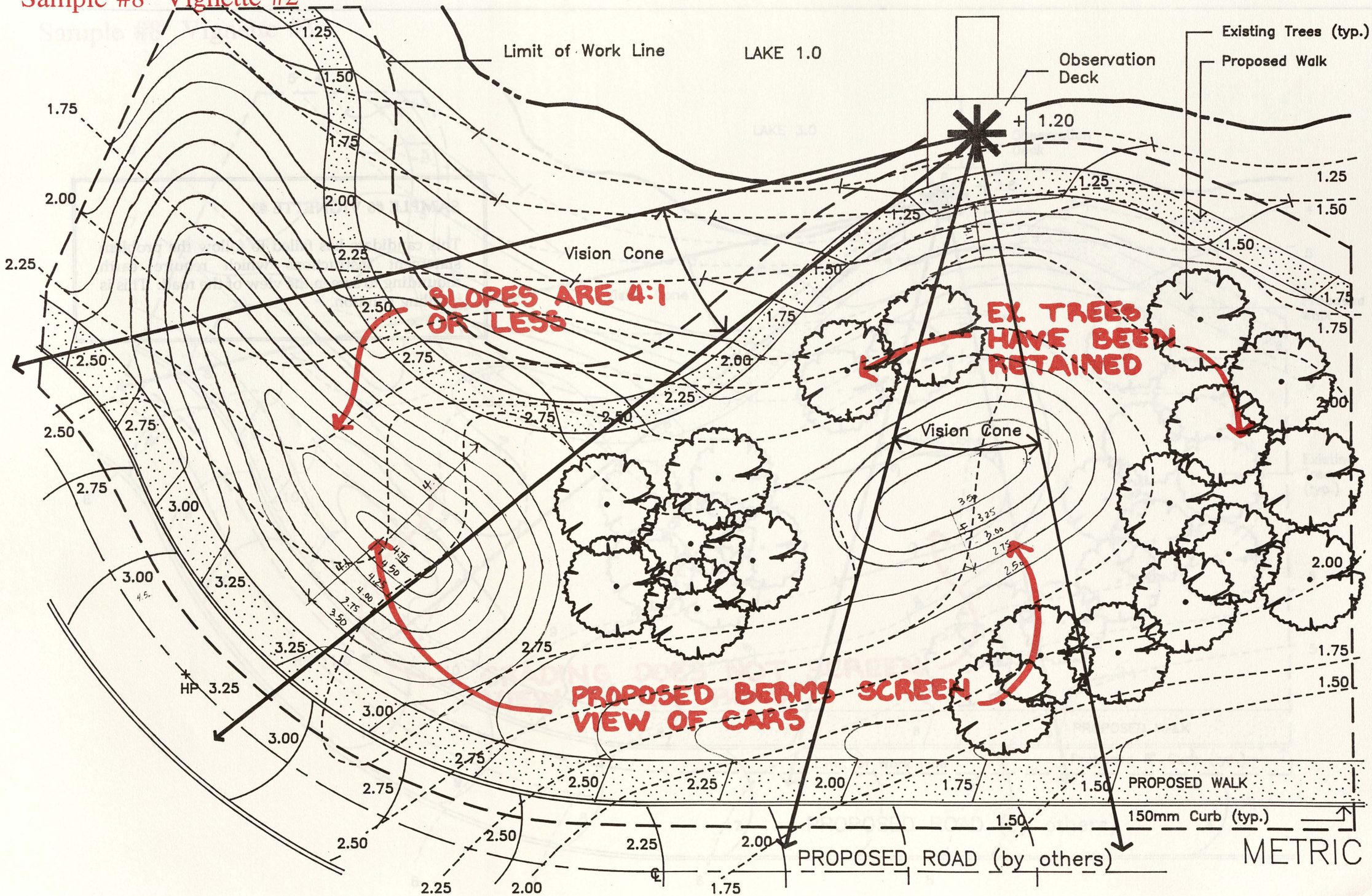
Scale: 1"=20'



SAMPLE #8 VIGNETTE #2

This metric (Canadian) solution has provided adequate berming while keeping slopes less than 4:1 and retaining all of the existing trees. Contours should be labeled more frequently, but the intent is understood. According to the grading criteria, this solution passes.

Sample #8 Vignette #2



6

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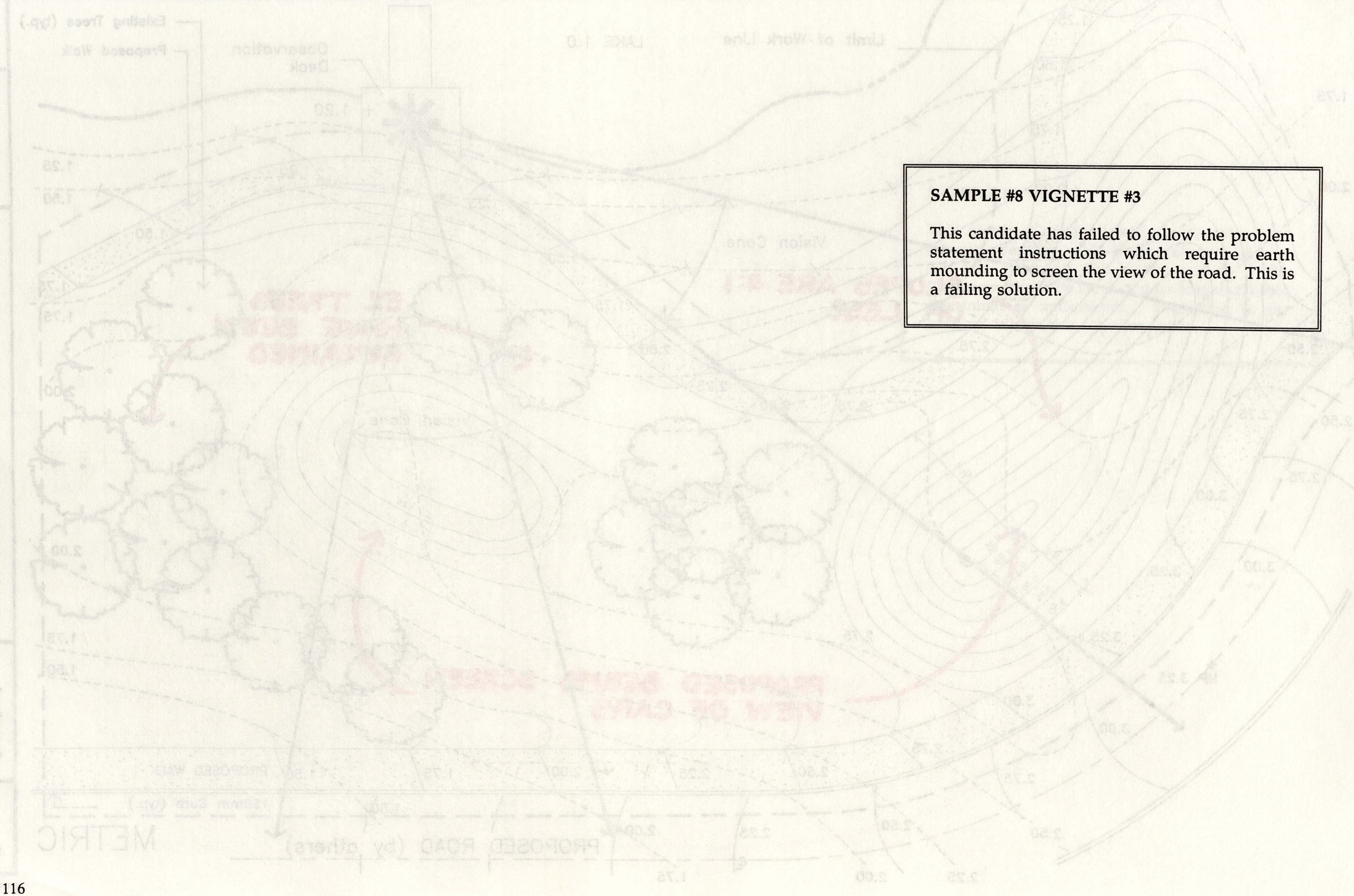
NORTH

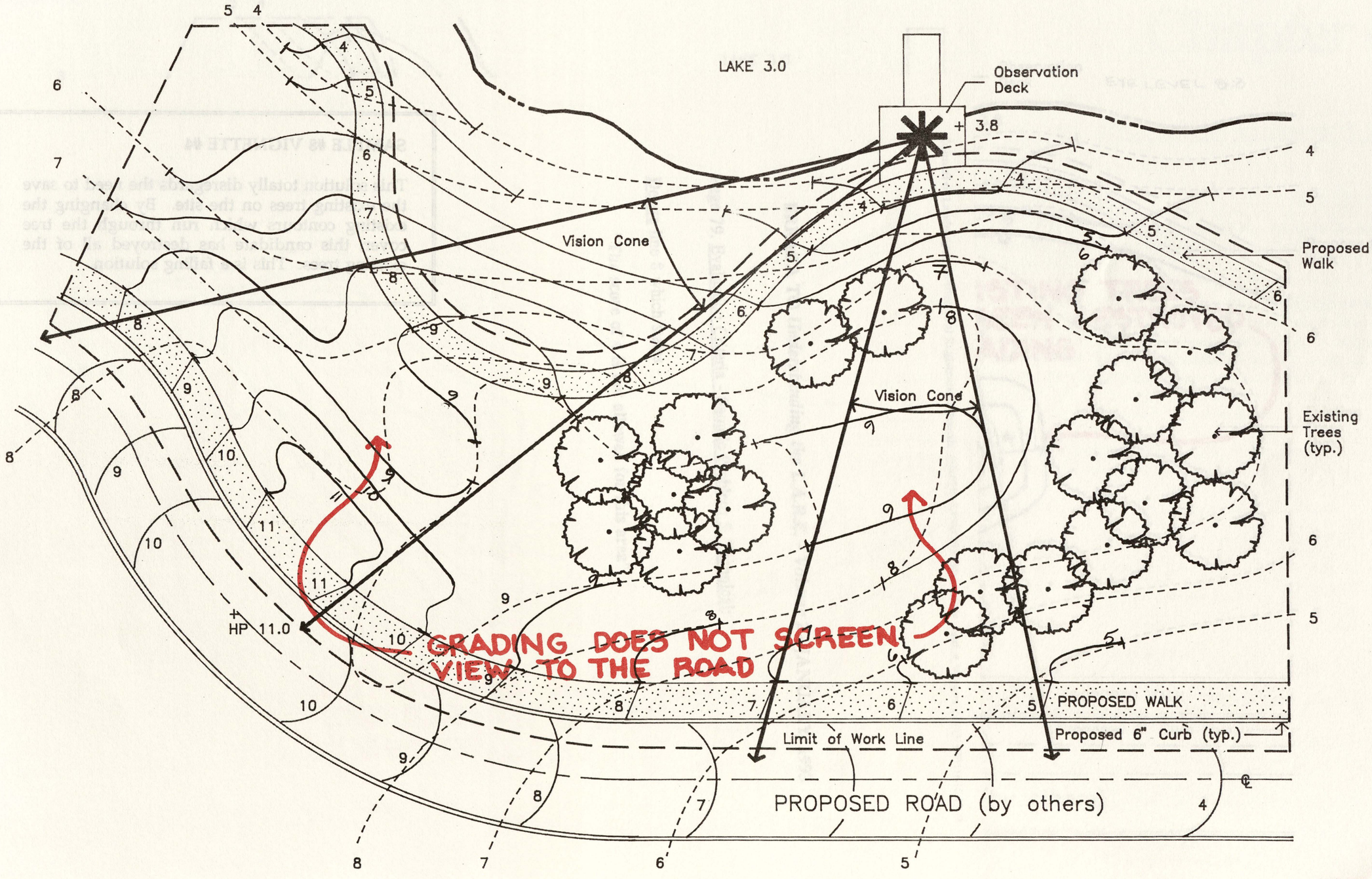
Scale: 1:200



SAMPLE #8 VIGNETTE #3

This candidate has failed to follow the problem statement instructions which require earth mounding to screen the view of the road. This is a failing solution.

Sample #8 Vignette #3



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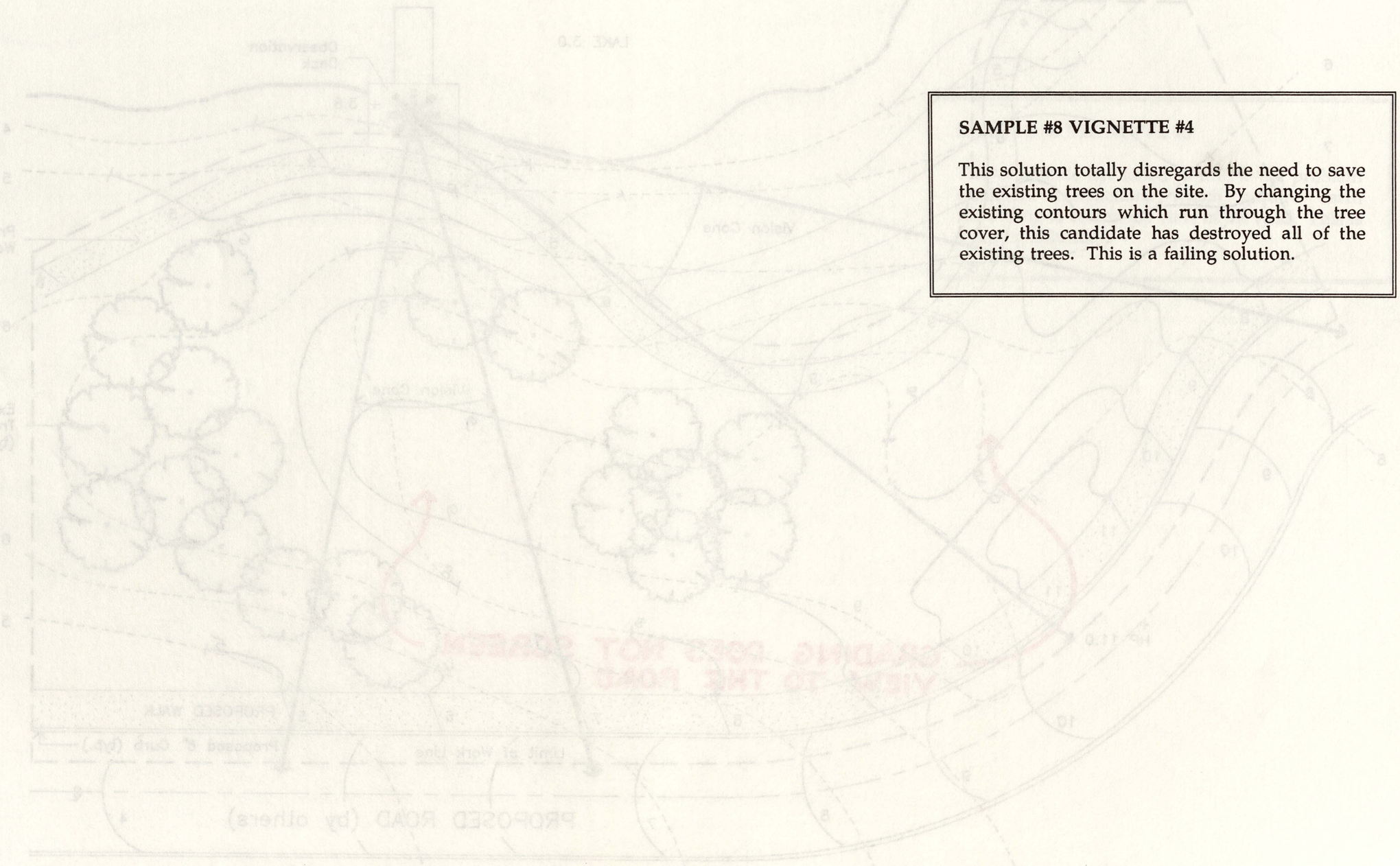
Grading & Drainage

Council of Landscape Architectural Registration Boards

NORTH

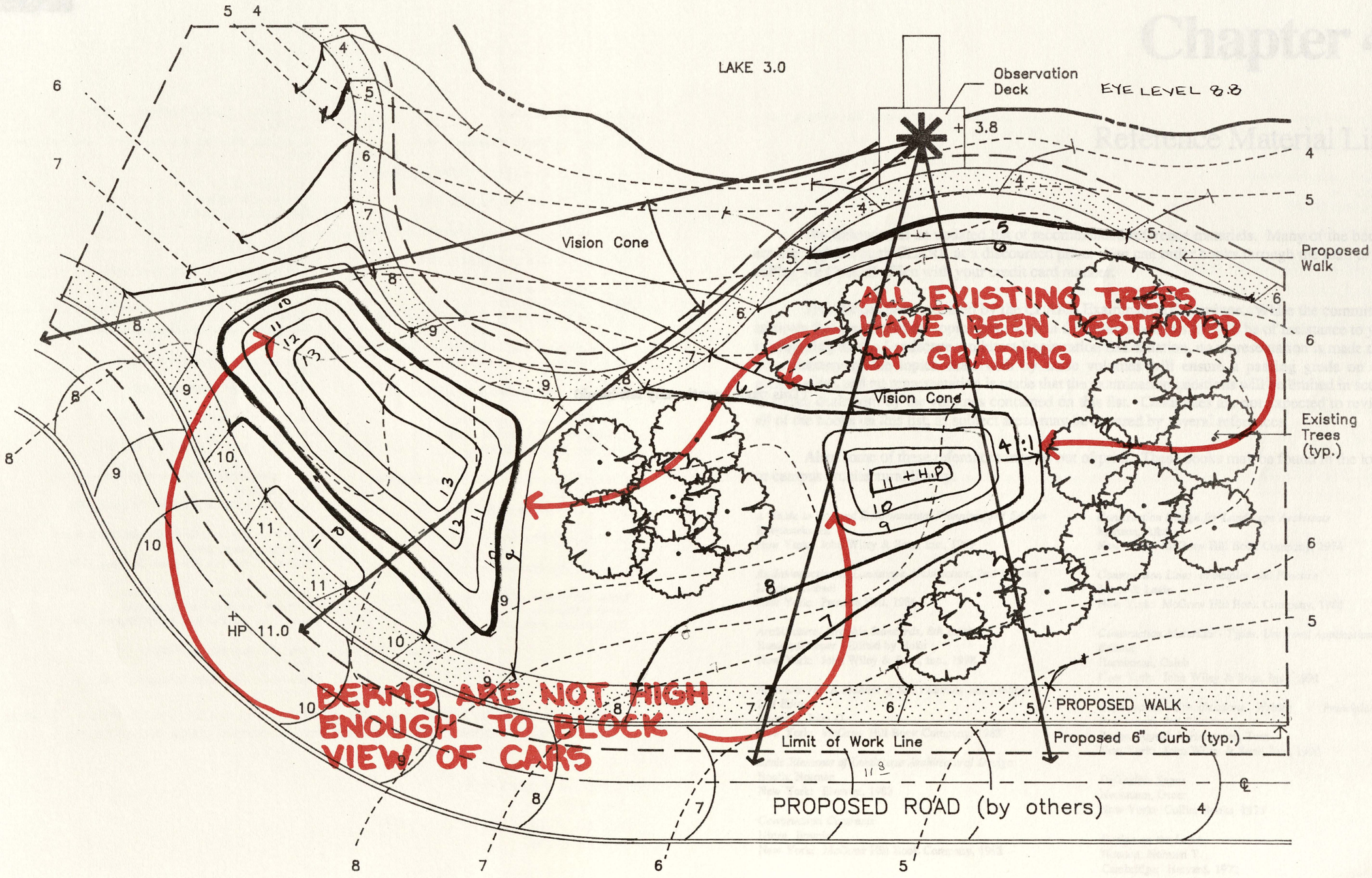
Scale: 1"=20'



SAMPLE #8 VIGNETTE #4

This solution totally disregards the need to save the existing trees on the site. By changing the existing contours which run through the tree cover, this candidate has destroyed all of the existing trees. This is a failing solution.

Sample #8 Vignette #4



Candidate I.D. 6

Landscape Architect Registration Examination

Grading & Drainage

Council of Landscape Architectural Registration Boards

NORTH

Scale: 1"=20'

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Chapter 4

Reference Material List

The following is an updated list of recommended reference materials. Many of the books are available through CLARB at a discounted price. You can order books through the mail or by calling the Council office with your credit card number.

This list has been prepared by the CLARB Examination Committee. While the committee believes that mastery of the topics dealt with in the volumes on this list will be of assistance to you in preparing for the Landscape Architect Registration Examination, no representation is made that your mastery of the topics dealt with by these volumes will ensure a passing grade on the examination, and no representation is made that the examination questions will be limited in scope to topics dealt with by the volumes contained on this list. Candidates are not expected to review all of the books on this list, as subject areas may be covered by several references.

Also, some of these references may be out of print. These books may be found in the local or campus architectural library.

A Guide to Site and Environmental Planning, 3rd Edition
Rubenstein, H.
New York: John Wiley & Sons, Inc., 1969

An Introduction to Landscape Architecture, 2nd Edition
Laurie, Michael
New York: Prentice Hall, 1986

Architectural Graphic Standards, 8th Edition
Ramsey/Sleeper - Edited by Hoke
New York: John Wiley & Sons, Inc., 1988

Architecture: A Manual of Site Planning and Design, 2nd Edition
Simonds, John O.
New York: McGraw Hill Book Company, 1983

Basic Elements of Landscape Architectural Design
Booth, Norman
New York: Elsevier, 1983

Construction Contracts
Hinze, Jimmie
New York: McGraw Hill Book Company, 1993

Construction Design for Landscape Architects
Munson, Albe
New York: McGraw Hill Book Company, 1974

Construction Law: Principles and Practice
Jervis & Levin
New York: McGraw Hill Book Company, 1988

Construction Materials - Types, Uses and Applications, 2nd Edition
Hornbostel, Caleb
New York: John Wiley & Sons, Inc., 1991

Construction Specifications Writing - Principles and Procedures, 3rd Edition
Rosen, Harold & Heineman, Tom
New York: John Wiley & Sons, Inc., 1990

Defensible Space
Newmann, Oscar
New York: Collier Books, 1973

Design on the Land
Newton, Norman T.
Cambridge: Harvard, 1971

Design with Nature
McHarg, Ian L.
New York: John Wiley & Sons, Inc., 1991

Designing Places for People
Deasy, C.M.
Watson-Guptill, 1985

Dictionary of Architecture and Construction, 2nd Edition
Harris, Cyril M.
New York: McGraw Hill Book Company, 1992

Earthscape
Simonds, John O.
New York: Van Nostrand Reinhold, 1986

Environmental Analysis
Marsh, William
New York: McGraw Hill Book Company, 1978

From Concept to Form in Landscape Design
Reid, Grant W.
New York: Van Nostrand Reinhold, 1993

From Line to Design: Design Graphics Communication, 3rd Edition
Van Dyke, Scott
New York: Van Nostrand Reinhold, 1990

Graphic Standards for Landscape Architecture
Austin, R. - Dunbar, T. - Todd, K. - Hulvershorn, J.K.
New York: Van Nostrand Reinhold

Guide to Professional Practice
Marshall, Lane
Washington, DC: American Society of Landscape Architects, 1981

Handbook of Landscape Architectural Construction,
Nelischer, Maurice (editor)
Washington, DC: Landscape Architecture Foundation, Inc., 1985

Handbook of Modern Construction Law
Lambert, Jeremiah
New York: Prentice Hall, 1982

Landscape Architecture: A Manual of Site Planning and Design, 2nd Edition
Simonds, John O.
New York: McGraw Hill Book Company, 1983

Landscape Architecture Construction, 2nd Edition
Landphair, Harlow & Klatt, Fred
New York: Prentice Hall, 1987.

Landscape Management
Feucht & Butler
New York: Van Nostrand Reinhold, 1987

Managing Our Wildlife Resources, 2nd Edition
Anderson, Stanley H.
New York: Prentice Hall, 1990

On-Site Stormwater Management: Applications for Landscape and Engineering, 2nd Edition
Ferguson, Bruce K. & Debo, Thomas N.
New York: Van Nostrand Reinhold, 1990

Planting Design, 2nd Edition
Walker, Theodore D.
New York: Van Nostrand Reinhold, 1991

Plants in the Landscape, 2nd Edition
Carpenter, Philip & Walker, Theodore D.
Freeman, W.H., & Company, 1989

Principles of Grading, Drainage and Road Alignment
Untermann, Richard K.
Reston Publishing Co., 1978

Recreation Planning and Design
Gold, Seymour
New York: McGraw Hill Book Company, 1980

Simplified Site Design
Ambrose, James & Brandow, Peter
New York: John Wiley & Sons, Inc., 1992

Simplified Site Engineering, 4th Edition
Parker, Harry - MacGuire, John
New York: John Wiley & Sons, Inc., 1967

Simplified Irrigation Design
Melby, Pete
New York: Van Nostrand Reinhold, 1988

Site Design and Construction Detailing, 3rd Edition
Walker, Theodore D.
New York: Van Nostrand Reinhold, 1991

Site Engineering for Landscape Architects, 2nd Edition
Strom, Stephen & Nathan, Kurt
New York: Van Nostrand Reinhold, 1992

Site Planning, 3rd. Edition
Lynch, Kevin & Hack, Gary
Cambridge, Massachusetts: The M.I.T. Press, 1984

Site Planning and Design for the Elderly: Issues, Guidelines and Alternatives
Carstens, Diane Y.
New York: Van Nostrand Reinhold, 1985

Site Reconnaissance & Engineering
Landphair, Harlow & Motloch, John
New York: Prentice Hall, 1985.

Soils and Foundations for Architects and Engineers
Duncan, Chester I.
New York: Van Nostrand Reinhold, 1992

Soil Mechanics, 5th Edition
Craig, R.F.
New York: Van Nostrand Reinhold, 1992

Spaces: Dimensions of the Human Landscape
Greenbie, Barrie B.
Yale University Press, 1981

The Architect's Handbook of Professional Practice, 11th Edition
Washington, DC: American Institute of Architects Press, 1988

The Granite Garden
Spirn, Anne Whiston
Basic Books, Inc., 1984

The Image of The City
Lynch, Kevin
Cambridge, MA: The M.I.T. Press, 1977

The Landscape Lighting Book
Moyer, Janet L.
New York: John Wiley & Sons, Inc., 1992

The Social Life of Small Urban Spaces
Whyte, William
The Conservation Foundation, 1980

Timber Construction Manual, 3rd Edition
A.I.T.C.
New York: John Wiley & Sons, Inc., 1986

Time-Saver Standards for Landscape Architecture
Harris, Cyril M.
New York: McGraw Hill Book Company, 1988

Time-Saver Standards for Residential Development
De Chiara, Joseph, Editor
New York: McGraw Hill Book Company, 1984

Time-Saver Standards for Site Planning
DeChiara, Joseph & Koppelman, L.E.
New York: McGraw Hill Book Company, 1984

Urban Soil in Landscape Design
Craul, Philip J.
New York: John Wiley & Sons, Inc. 1992

Most of the publications listed above can be obtained through the Council office. To obtain a catalog including available publication names and discounted prices, please contact:

CLARB
12700 Fair Lakes Circle
Suite 110
Fairfax, Virginia 22033
(703) 818-1300

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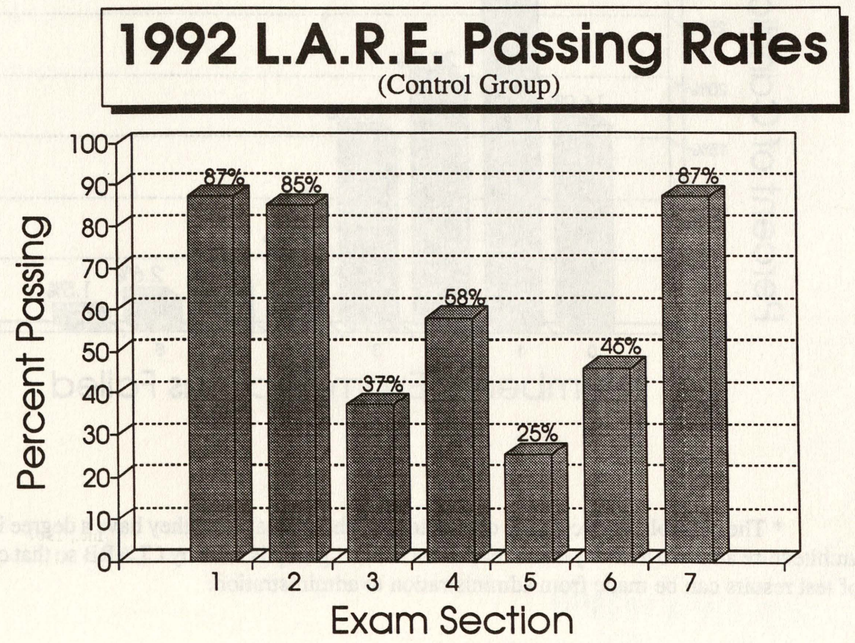
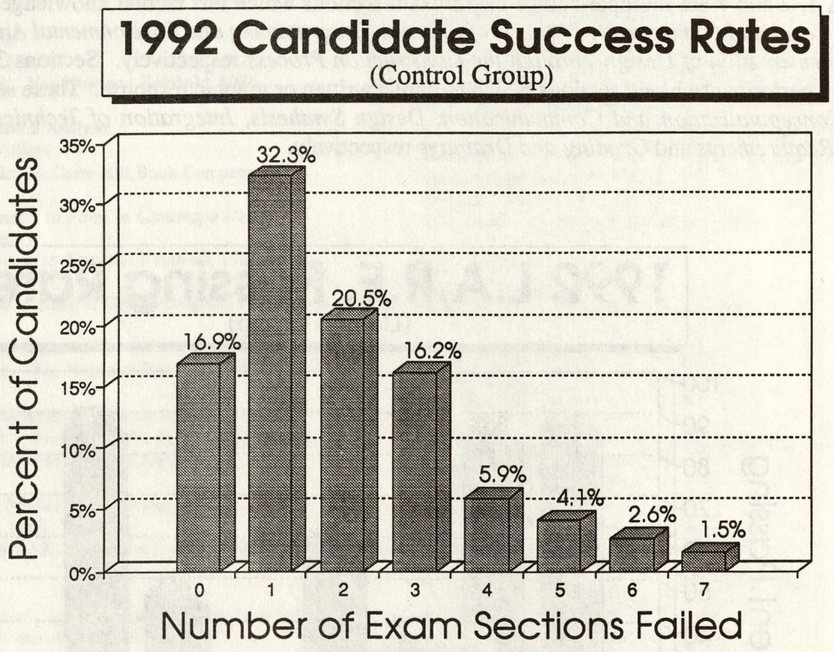
Chapter 5

1992 L.A.R.E. Candidate Performance

The passing rates for each section of the 1992 L.A.R.E. are given in the graph below. Sections 1, 2 and 7 are multiple-choice based exam sections which test factual knowledge in the areas of *Legal and Administrative Aspects of Practice*, *Programming and Environmental Analysis*, and *Implementation of Design Through the Construction Process* respectively. Sections 3, 4, 5, and 6 are performance based sections which require a written or graphic response. These sections cover *Conceptualization and Communication*, *Design Synthesis*, *Integration of Technical and Design Requirements* and *Grading and Drainage* respectively.



The following graph gives another picture of examinee performance on the L.A.R.E. This graph indicates where candidates are in terms of completing their exam requirements by demonstrating how successful candidates were in terms of passing what they took.



* The control group consists of candidates who indicate that they have a degree in landscape architecture and two to five years of experience. This group is used by CLARB so that comparisons of test results can be made from administration to administration.

Conclusions

This data indicates that while most examinees have sufficient factual knowledge concerning the practice of landscape architecture (Sections 1, 2, and 7), many candidates do not possess the synthetical and analytical skills required (Sections 3, 4, 5, and 6). Particularly disappointing are the passing rates for Section 5 — *Integration of Technical and Design Requirements*. This section tested candidates' ability to execute design concepts through the preparation of construction details at the design development level.

The data also indicates that most candidates are within one or two sections of completing their exam requirements. Over 70% of the candidates failed two sections or less, 50% failed one section or less and 17% passed all sections that they attempted.

The data suggests that we need to find ways to improve the educational and internship process which prepare applicants for licensure to ensure that they acquire all of the skills required before they sit the exam.

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