Environmental Graphics

Developing universal wayfinding and graphic navigational systems to help people find their way in the built environment

DES 186 Environmental Graphics, Winter Quarter 2019
Instructor: Tim McNeil <tjmcneil@ucdavis.edu> (530) 752-2589
TA: TBD
Office Hours: Tuesday/Thursday 4:30–6:00 p.m. or by appointment

Course Overview: Design of informational and directional graphics for the built environment. Application and integration of typography, imagery and symbols into the architectural landscape. Developing universal wayfinding and graphic navigational systems to help people find their way.

Course Description: Environmental Graphic Design (EGD) communicates information in three-dimensional forms and integrates messages into the built and natural environment. These messages are geared towards finding a way from one place to another, identifying a location or a specific destination, or gaining orientation in unfamiliar surroundings. This spatial problem solving process is termed *wayfinding*. The designer is charged with creating the tools that facilitate wayfinding, and the physical result of a wayfinding problem is a successfully concluded and accessible journey.

Common examples of environmental graphics include directional signage systems, architectural signage, celebratory, interpretative and identity graphics, symbol, pictogram and map design. Applications of environmental graphics can be found in retail, museum, zoo, park, civic, university, health-care, sport, urban and theme environments. Environmental graphic design combines the skills of graphic, architecture, interior, landscape, lighting and industrial design. All are concerned with the visual aspects of wayfinding, communicating identity and information, and shaping the idea of place.

This course will introduce the basic design concepts for developing graphics in the built environment. These concepts will be explored through the study of wayfinding, large format images, universal symbols, information design, typographic scale, and concluding with the design of a signage system for a particular environment. The process will follow a professional environmental graphic design studio model starting with schematic design and ending in design development (design intent). Each project will be captured using environmental graphics presentation standards and techniques. The means and methods of designing signage systems will be explored through lectures, field trips, studio assignments, critiques and fieldwork. While pragmatic concerns will be stressed in all phases, experimentation is highly encouraged. Individual instruction and group discussion will occur regularly to foster the generation of ideas and monitor progress.

Course Objectives
• To advance knowledge of informational and directional graphics for the environment.
• To explore principles of universal wayfinding and graphic navigational systems.
• To provide tools, resources, and action steps for academic and professional advancement.

Summary of Course Topics
History of environmental graphic design; wayfinding and mapping principles; messages and the organization of information; sign vocabularies; Americans with Disabilities Act (ADA) code requirements; typography, imagery, maps, symbols and pictograms; exploration of sign color, size, shape and placement; design intent, style guides and design specification packages; materials, sign fabrication, installation and maintenance.

Reading See Bibliography and Reference List

Course Schedule
(Classes are T/TR from 9:00 – 11:50 a.m. in Cruess 208 unless noted otherwise)

WEEK 1   Jan 8:   **Project 1 due (presentation and critique)**/Course introduction
         Jan 10:   Overview of project 2/Studio

WEEK 2   Jan 15:   Studio/Computer lab
         Jan 17:   **Project 2 due (presentation and critique)**

WEEK 3   Jan 22:   Overview of project 3/Studio
         Jan 24:   Studio/Computer lab (preliminary design for project 3 due)

WEEK 4   Jan 29:   **Project 3 due (presentation and critique)**
         Jan 31:   9:00 a.m. Field trip (WeidnerCA, Sacramento)

WEEK 5   Feb 5:   Overview of project 4/Visit project site
         Feb 7:   Studio/Computer lab

WEEK 6   Feb 12:   **Project 4: phase 1 due (visual identity presentation and critique)**
         Feb 14:   Studio/Computer lab

WEEK 7   Feb 19:   Studio/Computer lab
         Feb 21:   **Project 4: phase 2 due (schematic design presentation and critique)**

WEEK 8   Feb 26:   Studio/Computer lab/Guest Lecture
         Feb 28:   Studio/Computer lab

WEEK 9   Mar 5:   **Project 4: phase 3 due (design development presentation and critique)**
         Mar 7:   Studio/Computer lab

WEEK 10 Mar 12:   Studio/Computer lab
         Mar 14:   **Project 4: phase 4 due (design intent presentation and critique)**

WEEK 11 Mar 20:   **Project 4: final due (printed poster, process book and PDF by 10:00 a.m.)**

Schedule is subject to change.

Pre-requisite Courses
DES 1 (Introduction to Design), DES 14 or 21 (Design Drawing), DES 15 (Design Media), DES 16 (Design/Computer), DES 115 (Typography), or DES 185 and/or DES 187

Grading (%)
Class participation (10%); Projects 1–3 (35%); Project 4 (55%)

A = 90–100				
B = 80–89	100–97 A+	<90–87 B+	79–82 C+	<70–67 D+
C = 70–79	<97–93 A	<87–83 B	76–78 C	<67–63 D
D = 60–69	<93–90 A-	<83–80 B-	73–75 C-	<63–60 D-

Grades are determined by:
• your work, methodology and design originality.
• your ability to explore, develop and refine a wide range of solutions.
• your ability to clearly communicate your ideas in person, in images and words.
• your active participation, both in critiques and studio work sessions.
• your response to criticism.
• your craft and professionalism.
• your notebooks and sketches.
• your attendance and completing assignments by the specified deadlines.

Your final grade is not necessarily an accumulation of assignment grades, but rather a weighted consideration of the above. Grades will be posted on **Canvas**.

Materials and Equipment
You are required to have the following materials: sketchbook/tracing pad/roll and markers, digital camera, Olfa knife and blades, metal ruler and self-healing cutting mat, white drafting tape, UHU Tac, model making, glues and mounting materials as needed.

Attendance and Etiquette
Attendance is required for all classes unless instructed otherwise. Please be on time for all classes, lectures, studio work, field trips and critiques. If you are not on time and consistently late this will lower your final participation grade by 0.5 pt. for each time it occurs. Remain for the entire duration of the class unless excused. Email instructor/TA in advance with a valid reason prior to missing a class.

Please attend all presentations and meet the deadlines. Late work will not be accepted and you will forfeit a grade. If necessary, present a project incomplete and on time rather than not at all. Studio time is valuable, do not use it to work on non-course related projects.

Mobile phones, tablets and laptops should be closed during lecture, discussion and field trips unless they are exclusively being used for note taking. Project research and work should be conducted on laptops and lab computers only and not on mobile phones.
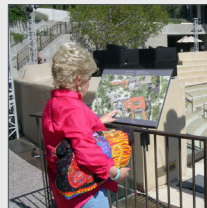
Wayfinding Principles
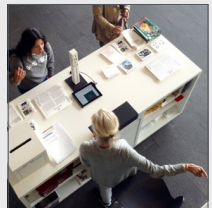
Common wayfinding strategies

Landmarks
Visually targeting and aiming for recognizable landmarks
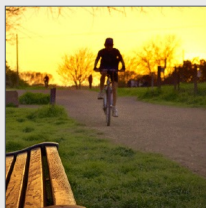
Compassing
Using natural phenomena to get your bearings such as the position of the sun

Maps
Consulting navigational tools such as maps or a set of instructions

People
Asking other people for directions or following the crowd

Signs
Reading graphic messages such as information and directional signs

Tracks
Following paths, smells, markers on the ground and using deductive reasoning

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Common sign types

Identification signs
Establish the identity of a specific place. e.g: Downtown Park

Orientation Signs
Provide an overview of a location or place. e.g: Map
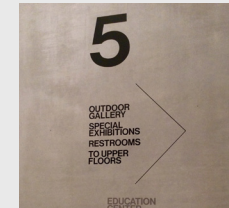
Directional signs
Recommend a route to a location or place using arrows. e.g: Building Level

Regulatory/Etiquette signs
Influence etiquette, behavior or actions. e.g: Accessible Restrooms

Honorary signs
Commemorate achievement, support and giving. e.g: Donor Marker

Celebratory signs
Explain or promote a place or event. e.g: Event Promotion

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Wayfinding is a problem-solving process by which people understand and make decisions about navigating architectural, natural, and urban spaces.

Signs are used to activate, inform, and organize the places where people live, work, play and learn.

Reference
Detailed information about wayfinding strategies is available on **Canvas.**

Anatomy of a Sign: Design Considerations

Anatomy of a Sign

1. Message
Identifying, Explanatory, Instructional

4. Form
Shape, Size, Materials

2. Placement
Location
Orientation
Plane of vision
Lighting

3. Graphics
Typography
Grid
Symbols/Pictograms
Arrows/Lines
Map/Image
Color

5. Accessibility
Universal Design

ENVIRONMENTAL GRAPHICS

PROFESSOR: TIM McNEIL   DES 186-W17 EG13

Anatomy of a Sign
The five basic design considerations

1	2	3	4	5

Message	Placement	Graphics	Form	Accessibility
Identifying	Location	Typography	Shape	Universal Design
Explanatory	Orientation	Grid	Size	
Instructional	Plane of vision	Symbols/Pictograms	Materials	
	Lighting	Arrows/Lines		
		Map/Image		
		Color		

ENVIRONMENTAL GRAPHICS

PROFESSOR: TIM McNEIL   DES 186-W17 EG13

Reference
Detailed information about the anatomy of a sign type is available on **Canvas.**
Consult the ADA guidelines, material list, and arrow/pictogram evaluations and studies.

Creativity, Ideation, Mind Mapping and Visual Thinking

Sketchbook by designer Ann Willoughby

Experience design is transactive and transformative: every experience designer is an experiencer; and every experiencer, via his or her reactions, a designer of experience in turn.

– Futures: Experience Design, California Association of Museums

CREATIVITY PRESENTATIONS: DUE JANUARY 8 – MARCH 14, 2019

Keep a journal that contains notes, ideas, sketches, drawings, diagrams, photographs and clippings that respond to class based creative exercises and exploratory work for all course projects (this journal will not be graded, it is for your own personal use).

Creativity is at the heart of good design, it is a quality that is highly valued, but not always well understood. Those who have studied and written about creativity stress the importance of a kind of flexibility of mind. Studies have shown that creative individuals are more spontaneous, expressive, and less controlled or inhibited. They also tend to trust their own judgement and ideas—they are not afraid of trying something new.

A common misunderstanding equates creativity with originality. In fact, there are very few absolutely original ideas. Most of what seems to be original is simply a bringing together of previously existing concepts in a new way. Psychologist and author Arthur Koestler referred to this merging of apparently unrelated ideas as bissociation. The fact that creative thinking is based on a knowledge of previous work in one's field is the justification for teaching the history and foundations of a given field as a resource for future research and creative work. Thus, creativity is the ability to see connections and relationships where others have not. Thinking in intuitive, non-verbal, and visual terms has been shown to enhance creativity in all disciplines. See: *An Introduction to Design Thinking: Process Guide.*

This journal begins its life on the first day of the course. Over the next ten weeks multiple rapid creative design challenges will be assigned, some of these will be studio based, others will occur in the field. A successful journal (hard bound sketchbook 8.5 x 11 inches) shows experimentation and steady progress through-out the course. It contains sketches and drawings (observational, transformative and speculative) and has few blank pages on the last day of instruction.

Finding Your Way

Wayfinding — the strategies that people use to find their way in familiar or new settings, based on their perceptual and cognitive abilities and habits.

– **Paul Arthur**, *Wayfinding: People, Signs, and Architecture*

PROJECT 1 - DUE JANUARY 8, 2019

Signs and messages saturate our built environment. Think about how many you encounter on a single journey. We fail to notice or glance at most signs for long because they have instinctively become part of our visual vocabulary. For example, a stop sign is recognized by its color and shape rather than the message it contains, or an arrow universally conveys a prescribed route or direction. *Signs* can also take the form of structures and serve as landmarks, such as the Golden Gate Bridge which is instantly recognizable and synonymous with San Francisco.

The problem solving process we use to find our way is called *wayfinding*, and signage systems are just one of the tools we use to navigate in unfamiliar surroundings. A wayfinding signage system is a cohesive and graphically consistent series of sign types, such as those installed at an airport. Air travel would be far more time consuming and frustrating without clear signs that direct you to departures, gates and baggage claim. Consult the *Society for Experiential Graphic Design* website for further examples.

STEP 1:   Consider what constitutes a wayfinding signage system; a series of signs that direct you to, and confirm a destination, e.g. (1) highway mile marker sign, (2) off-ramp sign, and (3) street location sign.

STEP 2:   Take a photograph of a wayfinding sign from a signage system. Note the specific design features: message, placement, graphics, form, accessibility. Consult the "Anatomy of a Sign" document in syllabus and previous project examples for reference.

STEP 3:   Present your example, discuss the design features and the location. Upload the single PDF file to Canvas, it should be identified with your last name and project number in the title (186W19_lastname_01.pdf), keep the file size below 5 MB.

Examples of wayfinding signage systems can be found at shopping centers, libraries, museums, universities, sports facilities, entertainment complexes, airports, health-care facilities, urban environments, parks. **Avoid advertising related signage.**

Cruess Tattoos

See YouTube for an abundance of instructional videos on how to weed, prepare and install vinyl lettering to surfaces.

Any excuse to get away from the computer screen is welcome.

– Stefan Sagmeister

PROJECT 2 – DUE JANUARY 17, 2019

Typographic messages intersect with architecture to identify a buildings purpose, confirm a destination, or convey information. Illuminated signs, large format super-graphics, light projections and LED billboards can be used effectively to communicate messages in the built environment. The integration of dynamic media into the architectural landscape has created *dynamic environments* with programmed on-demand content customized to specific locations. The built environment is saturated with messages both formal and informal. Often, informal messages are created as a reaction to a wayfinding problem (we need a sign), or advocacy on an issue (think graffiti). Sagmeister & Walsh https://sagmeisterwalsh.com/work/all/the-happy-show/ play with messages in the environment with some wonderful outcomes.

STEP 1:   Identify a clever, challenging or whimsical message (no more than a sentence) for the built environment. It can be related to an existing sign, animate an architectural element or device, or point to an object or place. Most importantly, it should cause a reaction from those who experience it. Words and simple symbols only.

STEP 2:   Keep this project local. Choose a location at Cruess Hall (inside or outside).

STEP 3:   Make sure the choice of typography for your message is deliberate and that you can justify its use: What is it responding too? Is it easy to read in the environment? Are there multiple typeface selections? See existing examples around Cruess Hall.

STEP 4:   Compose your message in Adobe Illustrator. Keep the elements confined to a 11 x 11 inch square for output on either dark or light grey cut vinyl depending on the surface contrast. It's important that you keep the letter cap height above 0.5 inch for weeding. Reduce the file to a single layer and outline the letters and elements. You can rearrange the elements afterwards to make your final composition. Once your design has been cut in vinyl, weed it, apply the transfer paper, and install at your intended location.

STEP 5:   The entire class will visit each location to review the results. Submit (1) your final design and (2) a photo of the final installation to Canvas as a single PDF file with your last name and assignment number in the title (186W19_lastname_02.pdf).

Directional Messages

Since this project will be tackled in teams of four, I highly recommend assigning specific tasks to each team member to help distribute the workload.

The cost of inkjet prints, cardboard and other construction materials are the groups responsibility. Please split the cost equitably. Print at least one face of your marker and be prepared to discuss the other sides.

The focus of this project is typography, imagery, legibility and scale as it relates to a signage system. The structural integrity of the design is not as critical. However, consideration of the marker shape, size and form are important and should adhere to ADA requirements and the demands of the location.

IMPORTANT: this intervention must be reversible and the site needs to be returned to the way you found it at the end of the project.

Naming places and defining spaces.

- **Per Mollerup**, *Wayshowing: A Guide to Environmental Signage Principles and Practices*

PROJECT 3 - DUE JANUARY 29, 2019

Designing a successful wayfinding signage system requires a familiarity with the site location, the environment in question, and an understanding of human behavior and the potential range of users. Gathering this information enables the designer to make informed decisions about the sign content and graphic style. The American with Disabilities Act (ADA) dictates many of these choices, particularly universal access and legibility. It can be a challenge to meet this set of criteria and create a site appropriate, aesthetically pleasing design solution. As nonverbal signs, symbols and maps are intended to speak to users from different language backgrounds and rely on a common set of graphic standards. The universal language of symbols is most evident in transportation signage systems where a symbol often stands alone, intended to be read more quickly than words. Not all symbols are as easy to decipher and are used to graphically enhance communication, the pictograms for the Olympic Games are a good example.

STEP 1:   **Location:** work in teams of four. Each group will be given one of six or seven wayfinding hubs on the UCD central campus to work with.

STEP 2:   **Message:** visit your wayfinding hub and identify the users at this site, let this research drive your solutions. Is there pedestrian or vehicular traffic? What information, such as maps and types of directional messages would be helpful at this hub: "Memorial Union", "Downtown Davis", "Parking" etc?

STEP 3:   **Concept:** design a freestanding marker at this hub that provides orientation and directs people to at least three locations. Each typographic message should be accompanied by an arrow and pictogram. Select an appropriate typeface (does not have to be UCD house style). Consider the grid, contrast, legibility, color, form, and the scale of the elements on the marker for your intended users. Build a preliminary scale model (1 in. to 1 ft.) of your solution for class review on January 24, 2019.

STEP 4:   **Construction:** render the final design for the marker in Adobe illustrator for output at actual size. Determine the exact exterior placement of your marker and build a full size freestanding mock-up for in-situ evaluation.

Creating a Visual Language

DAVIS PATHFINDER

PROJECT DESCRIPTION
The Davis Pathfinder project aims to provide new signtypes around the city of Davis that will improve wayfinding for pedestrians and cyclists. The concept revovles around the different districts of Davis: Central Davis, North Davis, South Davis, East Davis, West Davis, Downtown Davis, and UC Davis. Using color has a main component in differentiation and wayfinding, the sign types change depending on the district the audience is in. The idea is to make it as clear as possible to the audience where they are and for them to identify where they need to go at a quick glance.

SITE EVALUATION/EXISTING CONDITIONS:

AUDIENCE PERSONAS:

PRELIMINARY SKETCHES :

VOCABULARY OF SIGNS:

SIGN LOCATION PLAN:
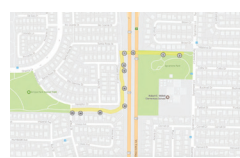
LOOK BOOK:

FORM, PALETTE, AND MATERIALS:

TYPE:
Gotham Medium
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

Gotham Medium Condensed
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

COLOR:

IN SITU RENDERINGS:

SIGN DETAIL: Orientation Sign

Front View   Side View   Back View

IDENTITY:

DAVIS PATHFINDER

MATERIALS:
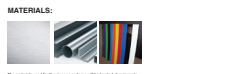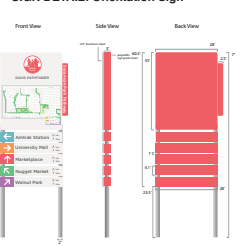
Symbols provide a shorthand pictorial representation of a place, a service, or an action.

– David Gibson, *The Wayfinding Handbook: Information Design for Public Places*

PROJECT 4 / PHASE 1 - DUE FEBRUARY 12, 2019

Symbols and pictograms should not be confused with logos which are designed to capture the personality of a brand, building or business. Typically, the visual identity for a company or place is the driver for the graphic palette associated with a sign system. The sign system on the UC Davis campus is a good example, it faithfully emulates the blue and gold color scheme and Futura typography from the university's wordmark. A logo can also be used as branding on a sign system; printed, etched or cut are a few of the techniques used in the fabrication process. The environmental graphic designer either inherits an existing logo and visual identity to work with or is asked to create one from scratch. The resulting identity needs to work across a wide spectrum of elements including print and digital as well as environmental applications.

STEP 1:   **Develop a visual language and identity:** working in teams, study any of the provided reference materials for the given project. Understand the brief, the organization mission and goals, project parameters, site or location, end-users and the client.

STEP 2:   **Look-book of architecture, site and materials:** document inspiration images that inform the project visual language. Capture distinctive architectural elements from the site, themes and stories, landscaping, existing identity graphics, materials, color, lighting and defining qualities and forms (3 pages).

STEP 3:   **Look-book of comparable visual identities:** document other comparable or competing visual identities and logos for inspiration and reference. Carefully consider how an organization brands itself (1 page).

STEP 4:   **Logo with design palette and summary:** modify/improve, or redesign a "mark" (logo) for the project with a corresponding color and typographic palette. Articulate clearly the rationale behind its creation with a 200 word written summary (1 page).

STEP 5:   **Deliverables:** print steps 2–4 on 11 x 17 paper for review. Include project title, date, names. Carry this forward to phase 2 and 3 of the project.

This project may be tackled in teams of no more than three.

Developing a Sign Typology

BRINGING WARMTH TO DAVIS
WAYFINDING SYSTEM FOR DAVIS PATHFINDER

The job of the wayfinding designer is to present information in public spaces that helps facilitate a seamless visitor experience.

– David Gibson, *The Wayfinding Handbook: Information Design for Public Places*

PROJECT 4 / PHASE 2 - DUE FEBRUARY 21, 2019

Signage systems are a graphically consistent series of sign types that help people find their way, identify and confirm destinations, establish codes of conduct, and convey information about a particular environment. Imagery, logos, typography, color and pictograms come together cohesively to create an identity for a building or place. A well designed signage system responds to its surrounding environment and meets its intended purpose. The appropriate materials, scale, height, orientation, mounting, lighting and placement are critical to the systems success.

STEP 6: **Design a wayfinding & signage system:** include the following for the assigned project:

1. Identification/Information sign (establish the identity of a specific place)
2. Orientation sign (provide an overview for a location)
3. Directional sign (recommend a route to a location)
4. Regulatory/Etiquette sign (influence behavior or actions)
5. Recognition/Honorary sign (acknowledge support and giving)
6. Celebratory/Promotional sign (explain something about an event)
7. Interpretive/Content sign (explain something about a place, object, or person)

STEP 7: **Audience personas and sign location plan:** develop four illustrated/description based audience personas (1 page). Analyze the major pathways and decision making points, prepare a sign location plan marking sign types and locations (1 page).

STEP 8: **Look-book of professional examples and design sketches:** produce a look-book of best precedent examples from other comparable professional projects, see segd.org (1 page). Ideate and render multiple preliminary sketches of the sign types (1 page).

STEP 9: **Graphics palette:** develop the appropriate sign contents: messages, typography, pictograms, images, arrows, grid, maps, logo from first phase (1 page).
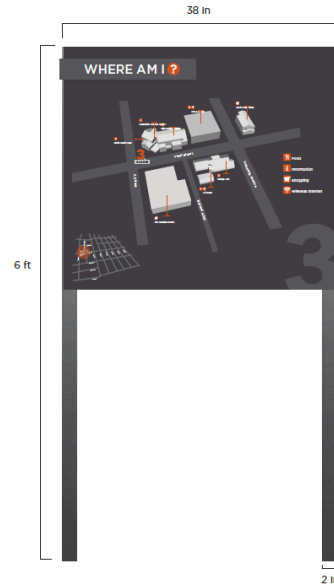
STEP 10: **Materials palette:** develop the appropriate sign form: color, size, shape, engineering, materials, lighting (1 page).

STEP 11: **Vocabulary of sign types:** design and then render all seven sign types as a single elevation on the same plane with scale reference and scale people (2 pages).

STEP 12: **Deliverables:** print steps 7–11 on 11 x 17 paper for review. Include project title, date, names.

Visualizing the Design Intent

Signs are the carefully prepared actors of the wayshowing stage. Location, mounting, and lighting are the elements of set design that help signs perform – or render them invisible.

- **Per Mollerup**, *Wayshowing: A Guide to Environmental Signage Principles and Practices*

Side Post
102" x 4" x 6" stainless steel,
bead blasted for matte finish

Graphics & Copy
Printed graphics and copy

Community Board
70" x 30" recycled
rubber

Map and Directory
Painted aluminum,
printed graphics and copy

Orientation Sign
Painted aluminum

Use the web, course resources, field trip and samples to familiarize yourself with options for sign fabrication materials.
Document other professional signage projects (see SEGD website), and use them for inspiration. See past projects for reference.

PROJECT 4 / PHASE 3 - DUE MARCH 5, 2019

STEP 13: **Detailed "typical" specifications:** render two sign types from the system (a large and small sign) as exploded views, front, side, top elevation and x-section as needed. Specify all dimensions, materials and fabrication techniques (2 pages). **Evaluate actual scale:** tape-out on the wall and print elements for one sign type mock-up.

STEP 14: **In-situ perspectives:** visualize how the sign system will be implemented and integrated into the site. Render all seven sign types at a proportional scale to their surroundings with people (4–7 pages). See previous projects for rendering style.

STEP 15: **Deliverables:** print steps 13–14 on 11 x 17 paper for review. Include project title, date, names.

PROJECT 4 / PHASE 4 - DUE MARCH 14, 2019

STEP 16: **Final presentation poster and book:** compile entire process as a poster (36 x 48 inch print). Clearly mark and identify sections with headings, sub-headings and a title block (see template). Produce an accompanying spiral bound 11 x 17 book containing the back-up material and all elements from the phases. Your presentation should clearly document your design process, outcomes and include the following:

1: Descriptive title; written project summary; audience personas; reference materials; look-books for site, existing conditions and best precedent examples; visual language and logo; final sign location plan (step 2, 3, 4 and 7)

2: Content palette (graphics) and form palette (materials); preliminary sketches; final vocabulary of sign types or responses (step 8, 9, 10 and 11).

3: Detailed drawings and specifications for two signs; all sign types scaled and rendered in-situ to their surroundings (step 13 and 14).

STEP 17: **Final critique:** deliver the poster as a PDF for projector presentation.

FINAL PROJECT COMPLETED - DUE MARCH 20, 2019 (10 A.M.)

Deliverables: submit the final printed poster and process book. Upload both to Canvas as PDF's (186W19_lastnames_04.pdf), keep the file sizes below 50 MB.