

LINC BUILDING LAYOUT
<https://fa.oregonstate.edu/project-delivery/learning-innovation-center-linc-classroom-building>

The Learning Innovation Center (LInC) will be a center for inventive approaches to teaching and understanding, as well as a hub for students of all disciplines to create connections. Located to the West of the Memorial Union and just North of Austin Hall, the building will be on main display for all passersby to appreciate.

PROJECT BACKGROUND

- NEW ADDITION TO OREGON STATE UNIVERSITY CORVALLIS CAMPUS
- FOCUS ON ENHANCED LEARNING EXPERIENCES THROUGH UNIQUE CLASSROOM DESIGN.

DESIGN OBJECTIVES

- DESIGN A STRUCTURE THAT WILL WITHSTAND ALL APPLICABLE LOADING COMBINATIONS
- MEET STORMWATER DESIGN STANDARDS
- ENHANCE THE STUDENT LEARNING EXPERIENCE USING LIGHT



LEARNING INNOVATION CENTER

Safety – Functionality – Appearance

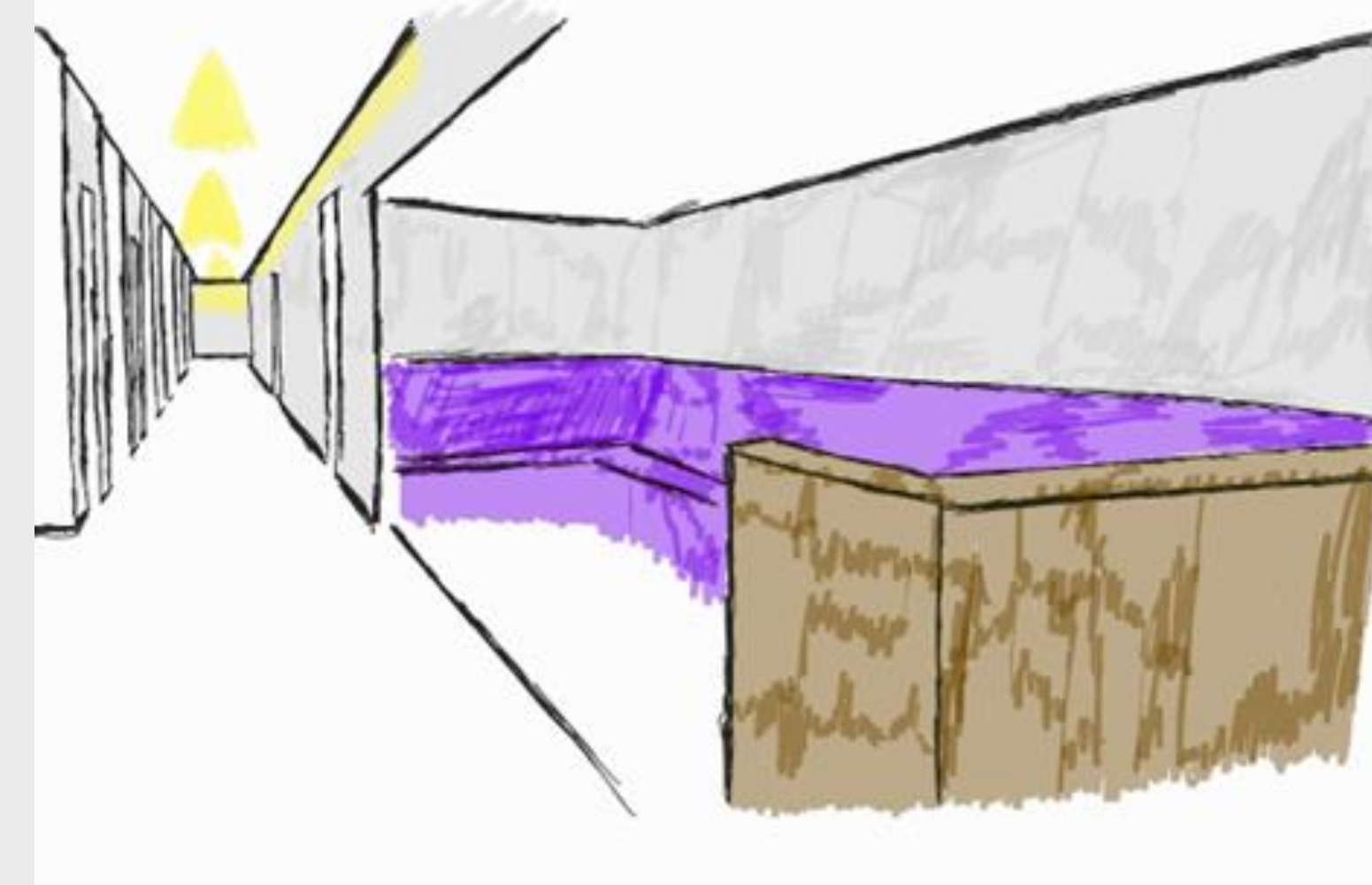
LIGHTING DESIGN

UNIFORMLY DISTRIBUTED LIGHT SYSTEMS WITH COOL-WARM COLOR TEMPERATURES (4000K TO 5000K) FOR THE TIERED AND LEARNING STUDIO CLASSROOMS.



SCHEMATIC SHOWING LIGHT DISTRIBUTION IN THE TIERED CLASSROOM

DIRECT LIGHT DISTRIBUTION SYSTEM FOR THE NORTH CORRIDOR WITH DAYLIGHT HARVESTING USING DAYLIGHT SENSORS.



SCHEMATIC SHOWING LIGHT DISTRIBUTION IN THE NORTH CORRIDOR

FOR ENERGY SAVINGS, MOTION SENSORS ARE USED TO TURN LIGHTS ON/OFF WHEN MOTION IS DETECTED.

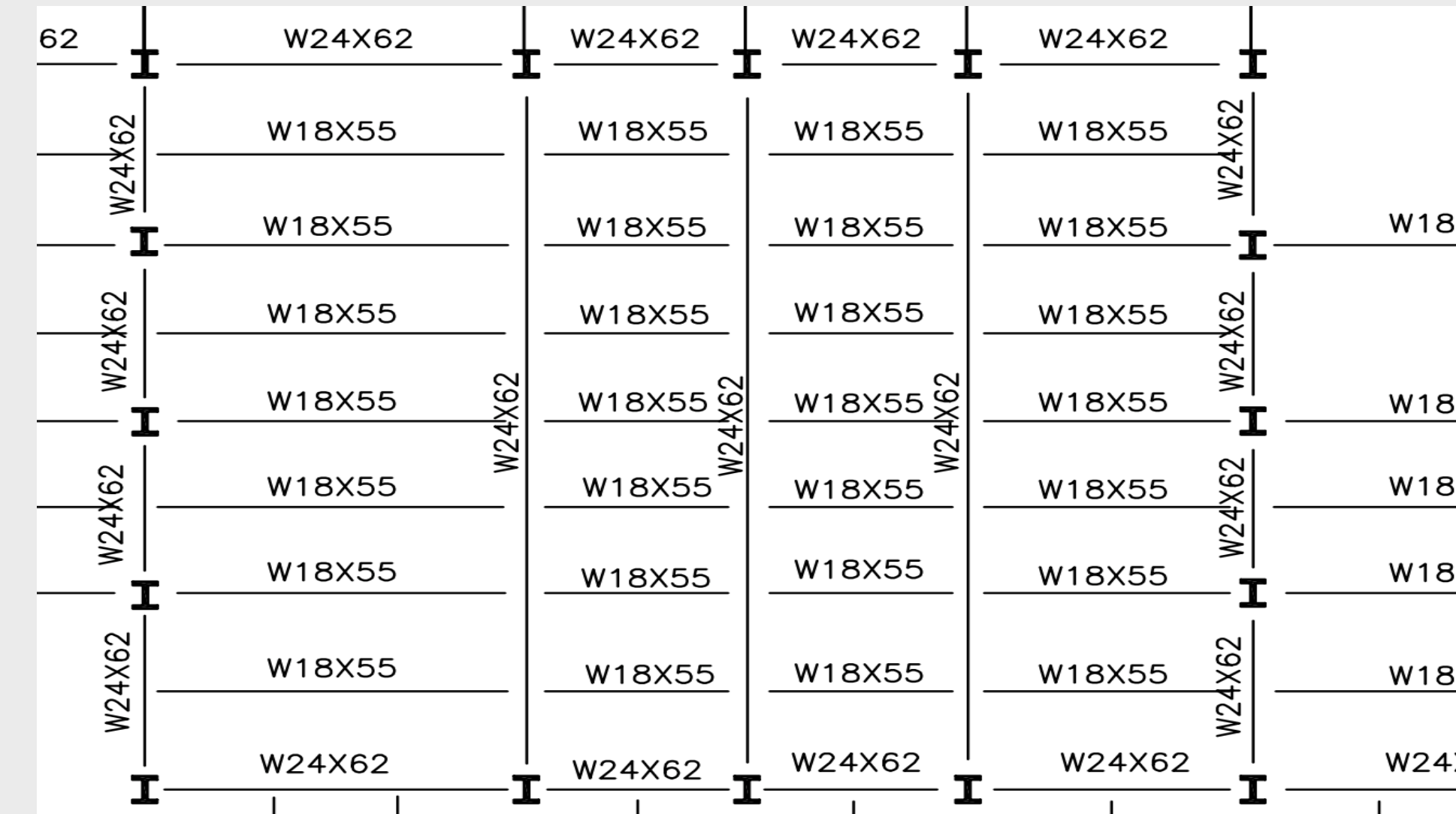


SCHEMATIC SHOWING LIGHT DISTRIBUTION IN THE LEARNING STUDIO CLASSROOM

CLASSROOM LIGHTS ARE DIMMABLE, TO PROVIDE FLEXIBILITY IN DIRECTING FOCUS TO SPECIFIC LIT AREAS OF THE CLASSROOM.

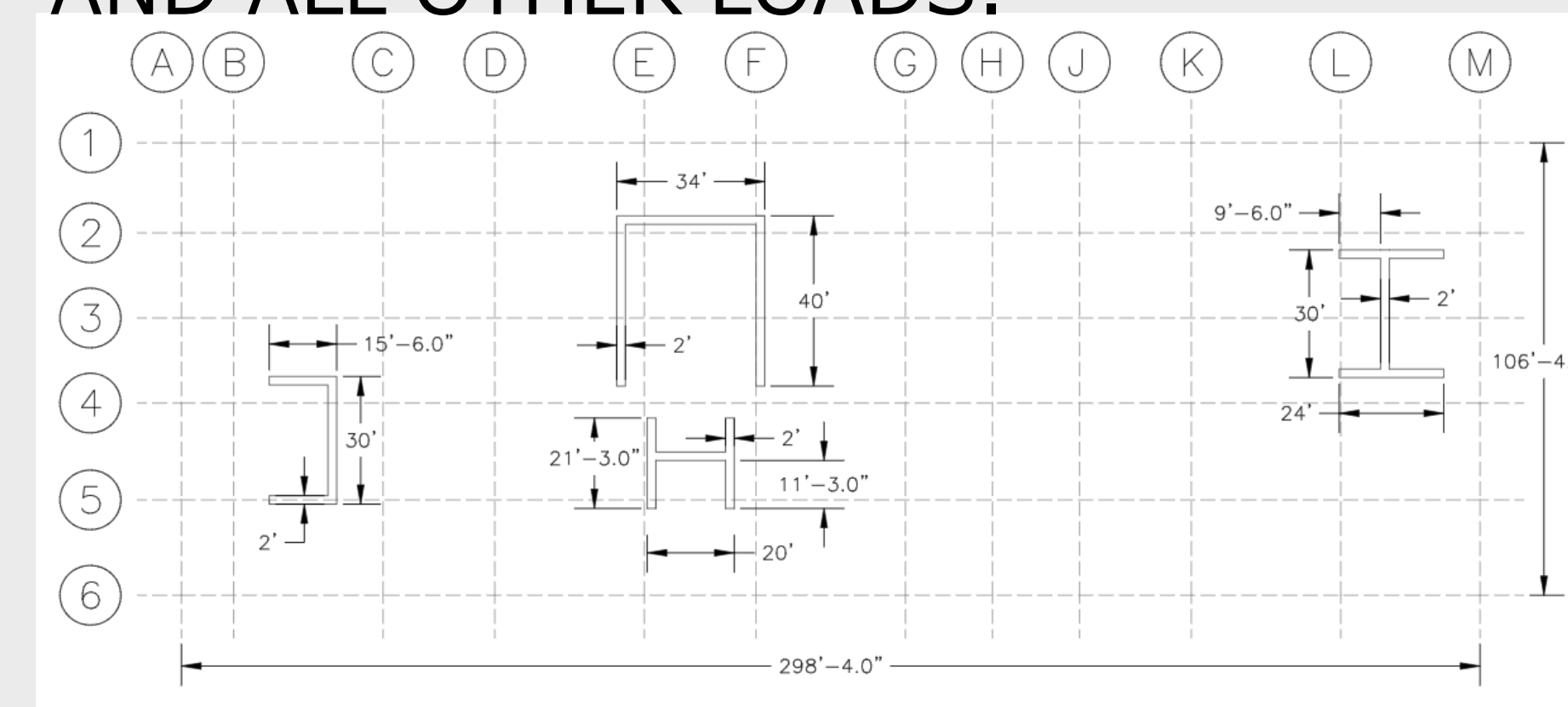
STRUCTURAL DESIGN

GRAVITY SYSTEMS DESCRIPTION USING STEEL AS THE SYSTEM'S MATERIAL. USING COMPOSITE GIRDERS AND BEAMS DESIGN TO ACHIEVE LONG SPAN.

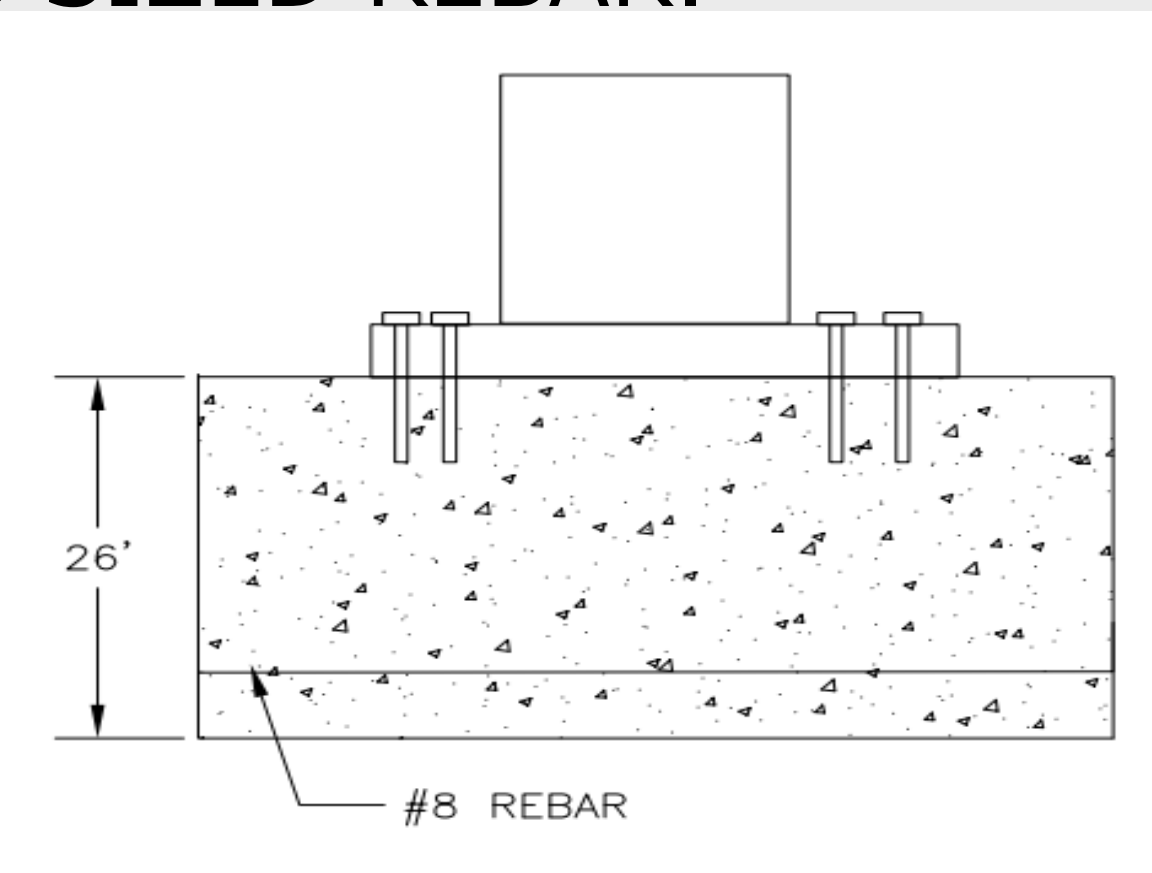


COMPOSITE BEAMS AND GIRDERS PLAN VIEW OF CLASSROOM 100

THE IDEAL LATERAL FORCE RESISTING SYSTEM FOR THIS PROJECT WAS DETERMINED TO BE CONCRETE SHEAR WALLS. THE WALLS WILL BE HIDDEN IN FOUR LOCATIONS AS SHOWN IN THE FIGURE. DESIGNED PER ASCE 7-16, THE SYSTEM WILL RESIST EXPECTED SEISMIC AND ALL OTHER LOADS.



THE SOIL QUALITY ON SITE IS VERY POOR, RESULTING IN THE NEED FOR FILL TO BE ADDED. THE TYPICAL FOOTING FOR A COLUMN WAS DETERMINED TO BE 9' X 9'. THESE FOOTINGS ARE DESIGNED WITH NORMAL WEIGHT CONCRETE REINFORCED WITH #8 SIZED REBAR.

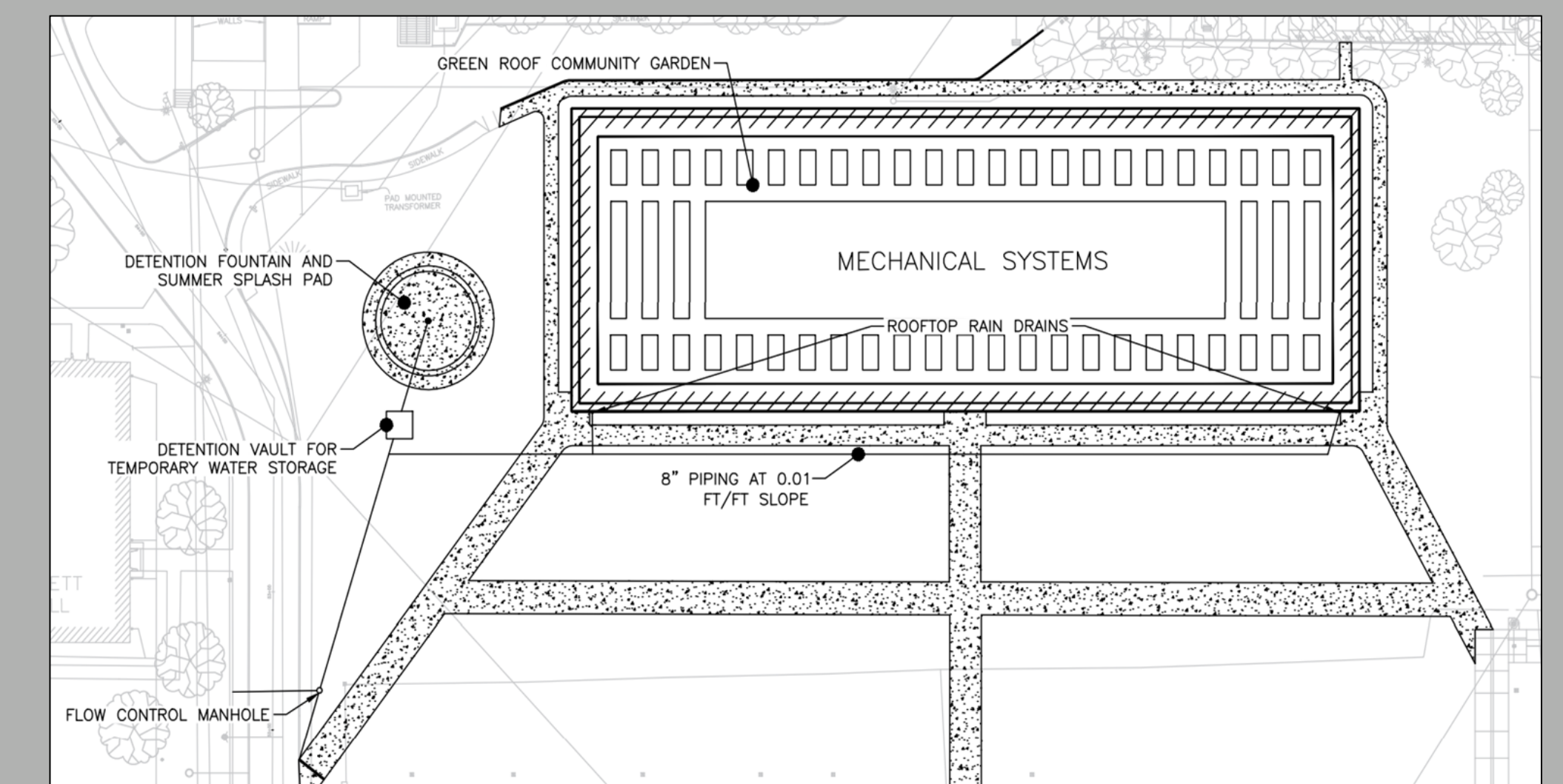


WATER RESOURCE DESIGN

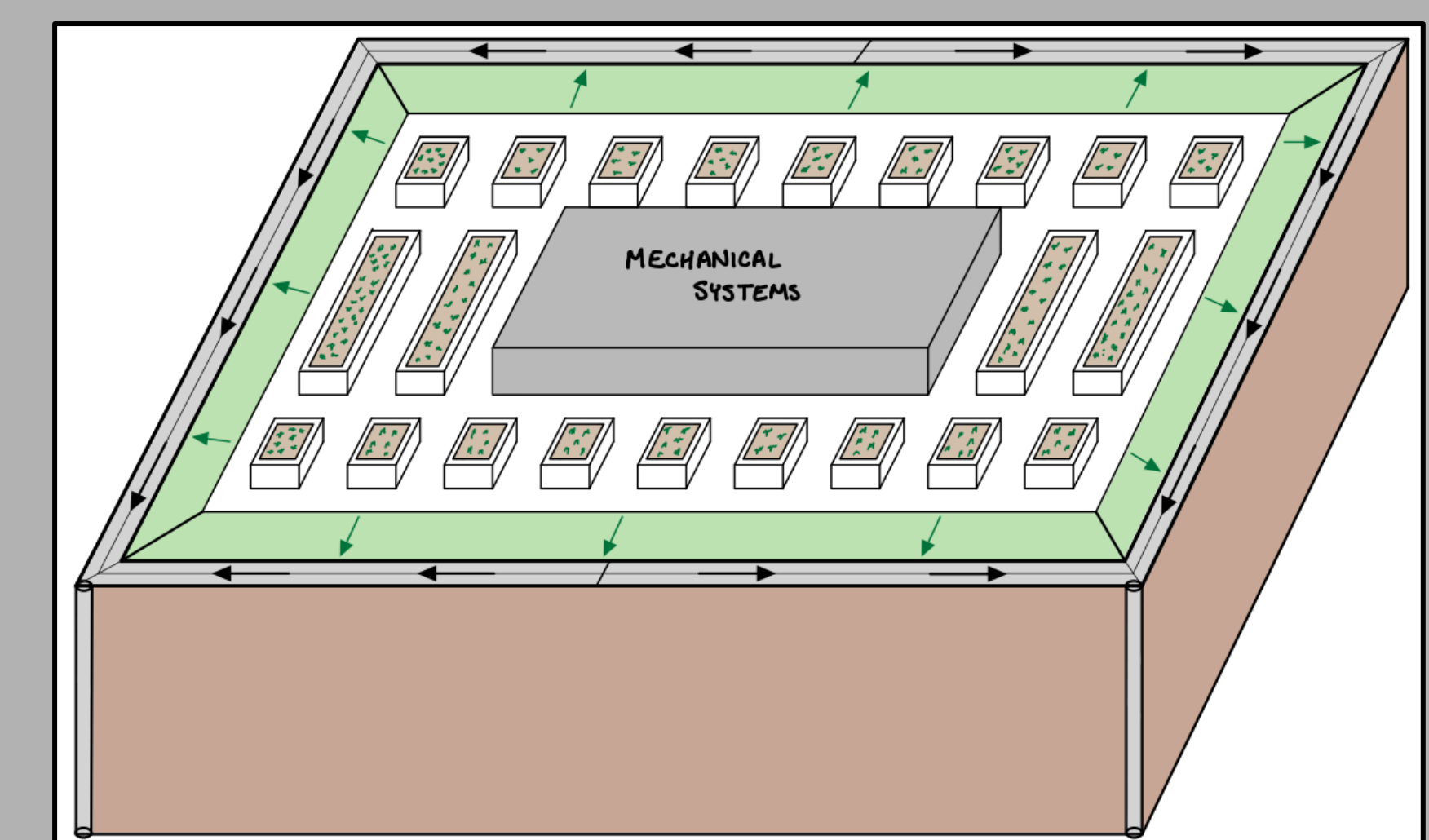
CONSTRAINTS: CITY OF CORVALLIS STORMWATER DESIGN MANUAL REQUIRES DETENTION OF 2, 5, 10, 25, AND 100-YR DESIGN STORM TO THE PRE-DEVELOPED DISCHARGE LEVELS. THIS DEVELOPMENT FALLS WITHIN THE EXCEPTIONS PROVIDED FOR WATER TREATMENT, THEREFORE NO TREATMENT IS REQUIRED. TR-55 METHOD TO BE USED.

CALCULATED STORAGE REQUIREMENTS: APPROX. 4,675 CUBIC FEET

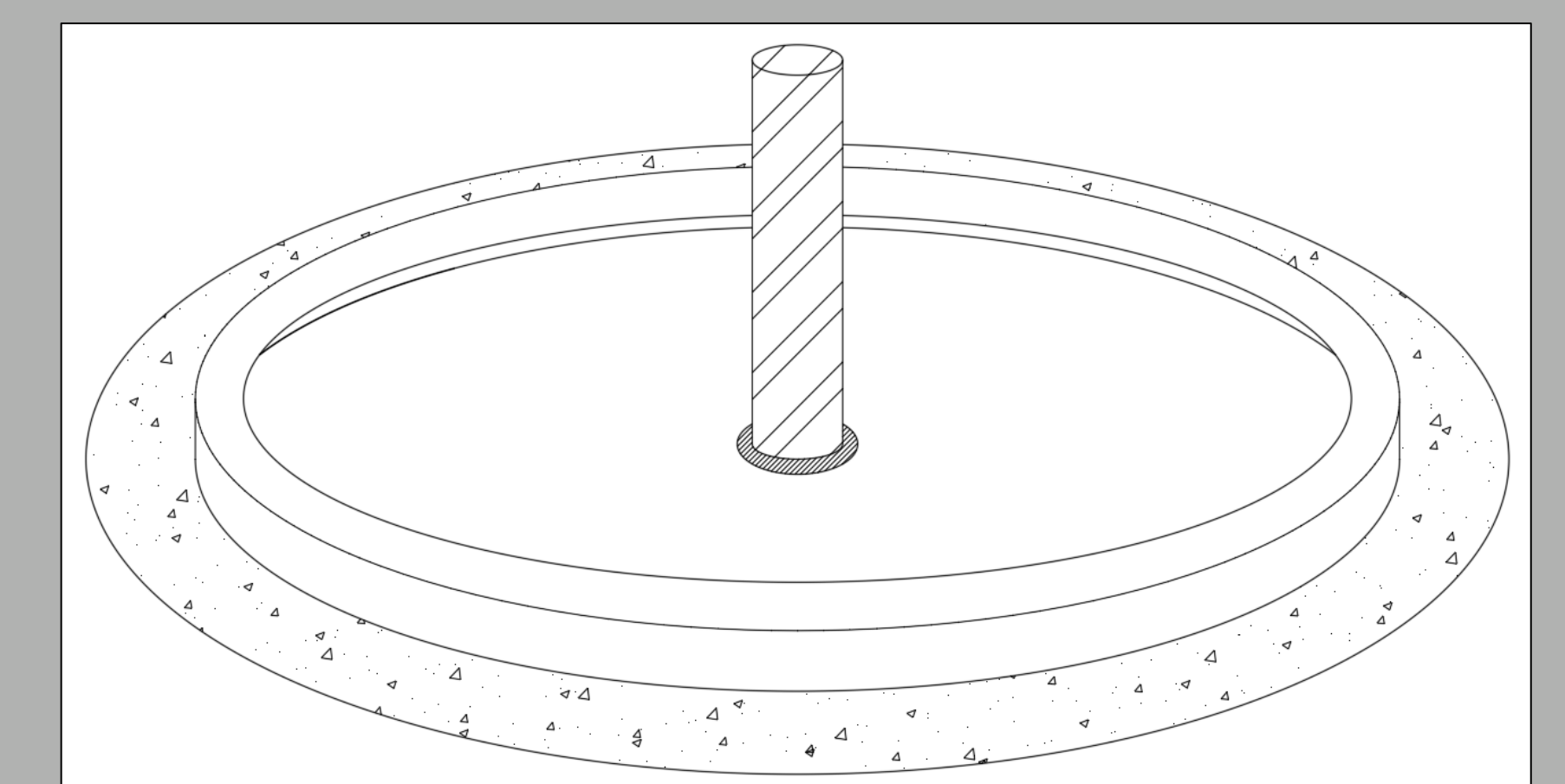
DESIGN SOLUTION	STORAGE CAPACITY
GREEN ROOF COMMUNITY GARDEN	1,250 FT ³
UNDERGROUND PIPING	200 FT ³
DETENTION VAULT	300 FT ³
DETENTION FOUNTAIN	3,050 FT ³



SITE DESIGN LAYOUT.



GREEN ROOF LAYOUT. RENDERING FOR VISUALIZATION ONLY.



FOUNTAIN DESIGN. FOUNTAIN TO FUNCTION AS DETENTION POND DURING RAINY SEASON AND SPLASH PAD DURING SUNNY SEASON