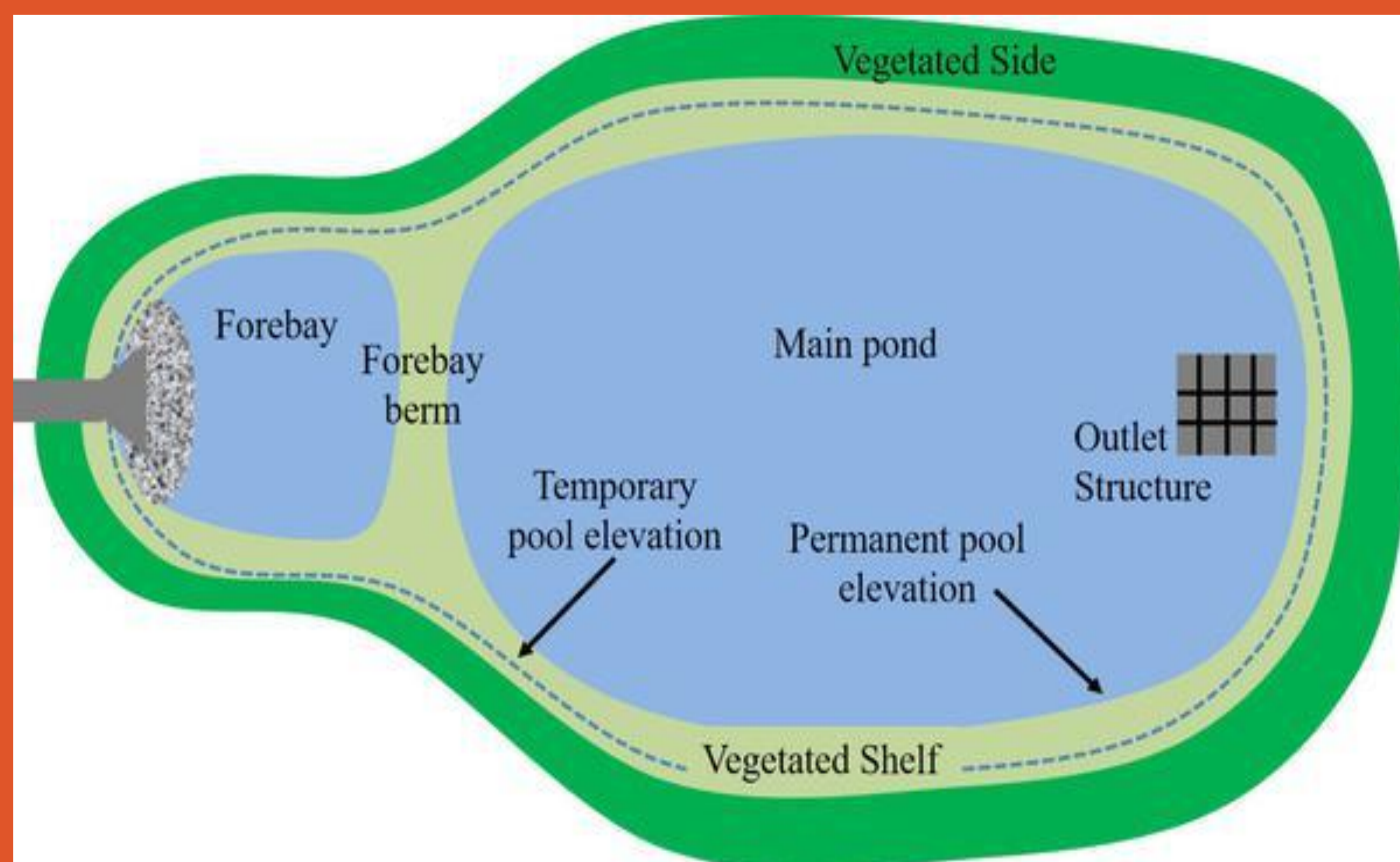


**WATER RESOURCES**

**Detention Pond with Flow Control Manhole**

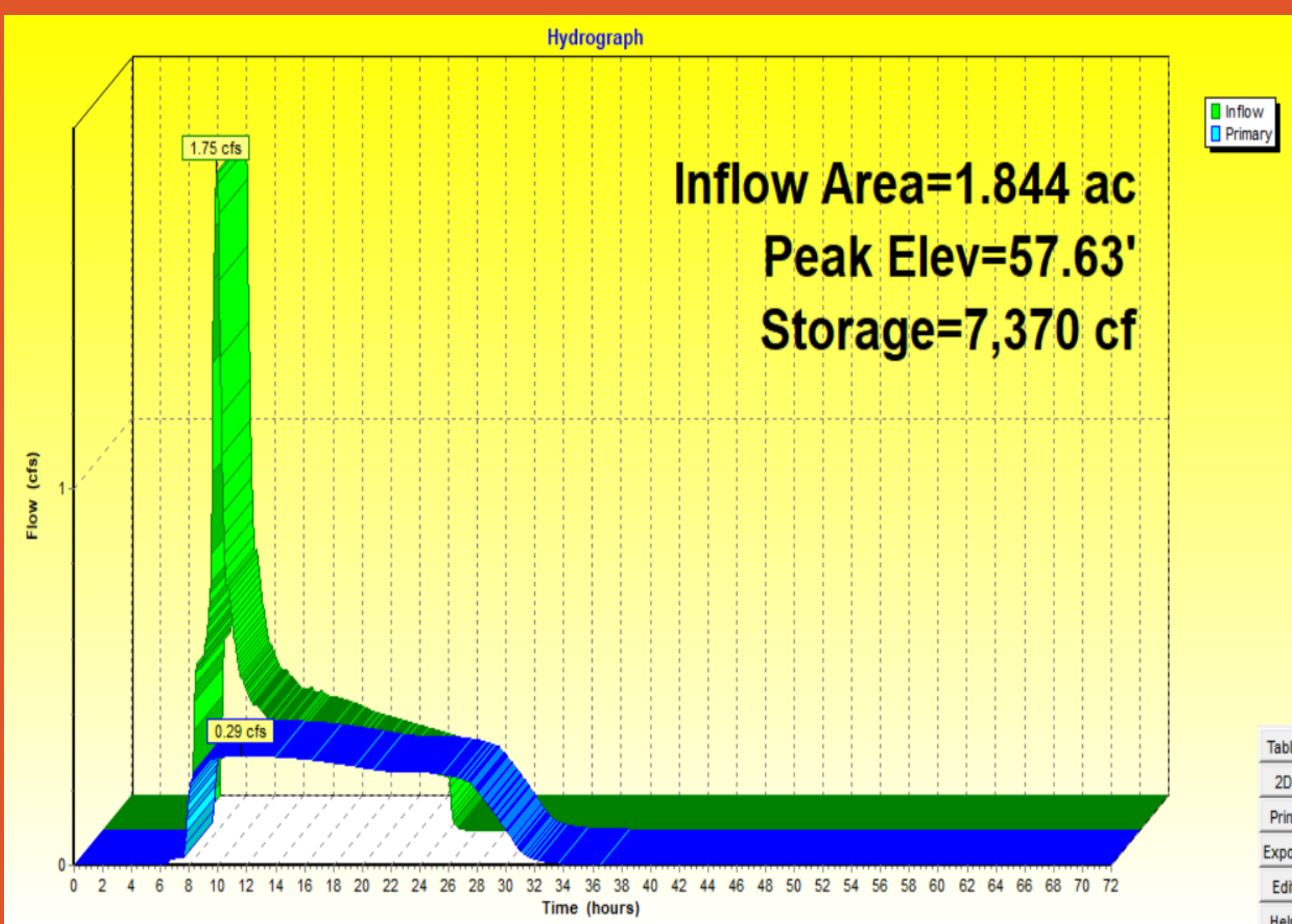
- Controls the 25-year storm event
- Safe overflow of 100-year storm event
- Returns the developed site to its natural hydrologic state, utilizing Low-Impact Development (LID)
- Water Quality: Sedimentation Forebay and WQMH



Typical Detention Pond with Sedimentation Forebay  
Source: North Carolina State University Dept. of Engineering

**Stormwater Conveyance and Site Grading**

- Building footprint elevated 5-7 feet, resilient to flooding natural disaster
- Roof drain connections, parking lot catch basins, and other area drains collect stormwater from the proposed impervious surfaces
- 12" C900 PVC used for longevity and energy efficient manufacturing



HydroCAD Model of Detention Basin for 100-yr event  
(Green = Inflow, Blue = Outflow)

# CITY OF ST. HELENS PUBLIC SAFETY BUILDING

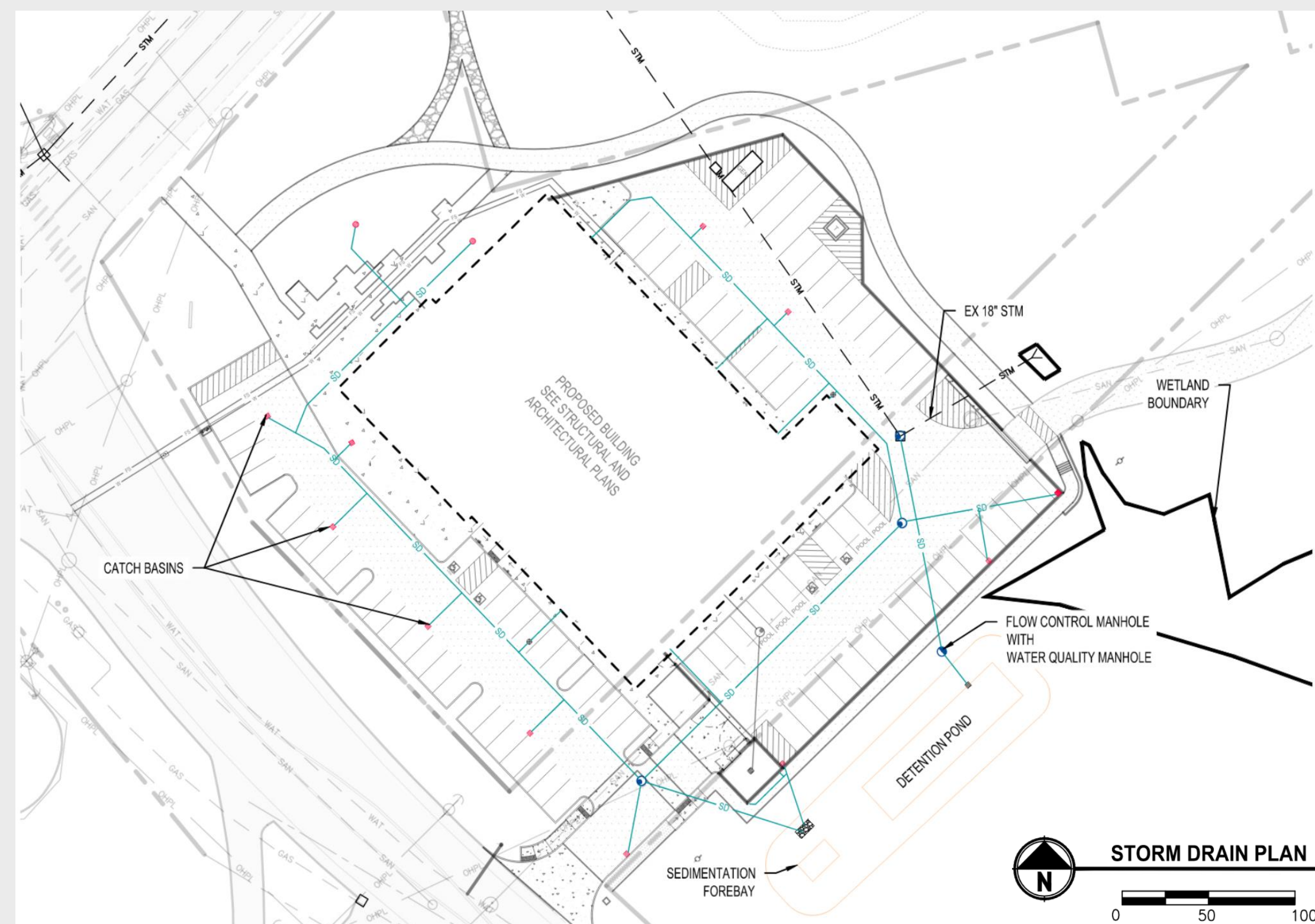
Combined police station and city office building used for public gathering and emergency response



**Sustainability**  
for the surrounding environment

**Resilience**  
in natural disaster

**Safety**  
for public & police purposes



Site Plan with Proposed and Existing Stormwater Management

**LIGHTING DESIGN**

**Corridors**

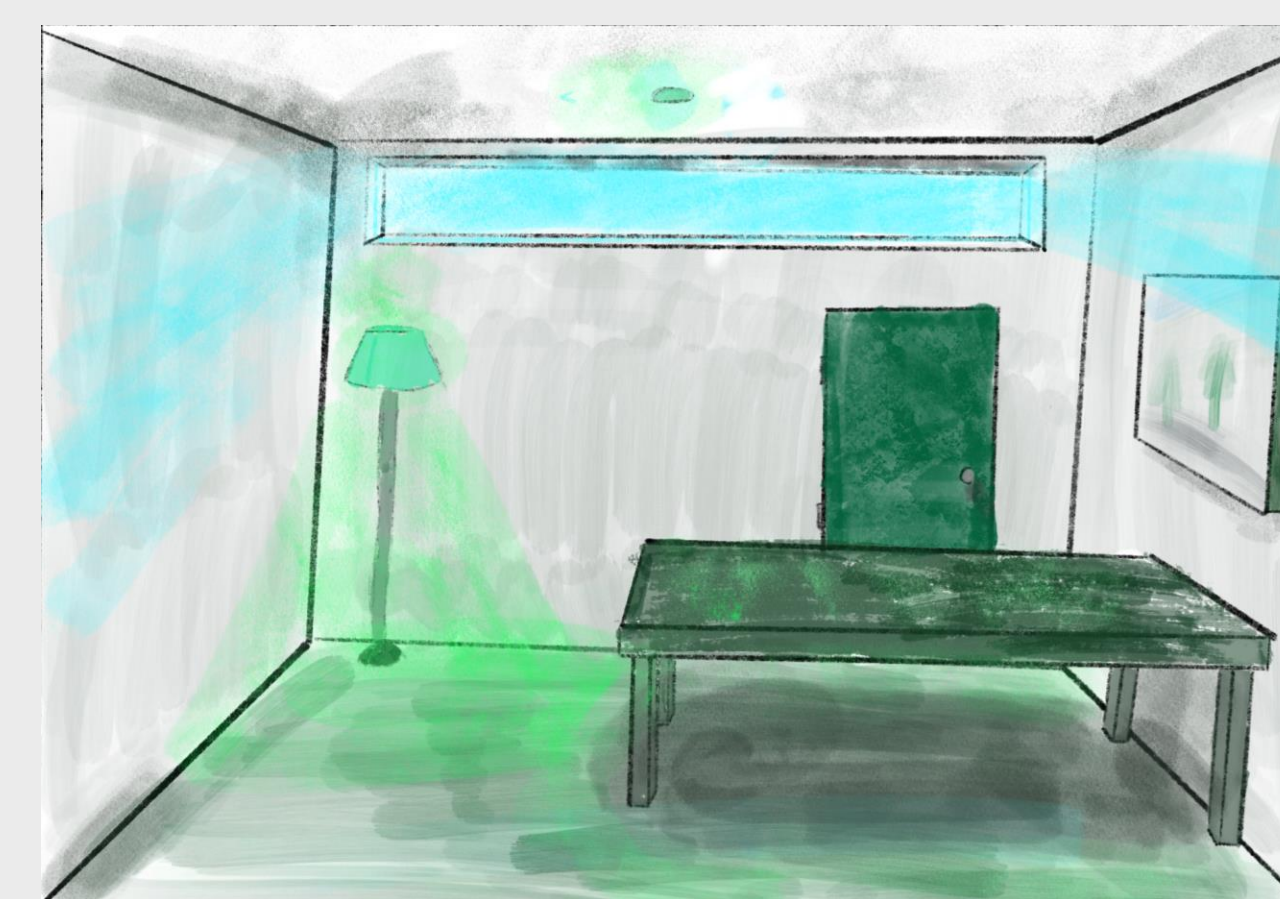
- Sawtooth Kalwall skylights facing NW & NE
  - Reduced glare
  - Higher R-Value than standard horizontal skylights
- Neutral recessed lighting (~4000K) with darker upper corners that make the corridors seem taller than reality and discourage loitering

**Courtroom**

- Dramatic, warmly lit (~3000K) downlighting accents the timber walls
- Task lighting minimizes shadows
- Canvas roller blinds to block afternoon sun shining in through tall westward windows

**Offices**

- Warmer lighting options for overhead and task lighting
- Glass upper wall for natural lighting without compromising privacy

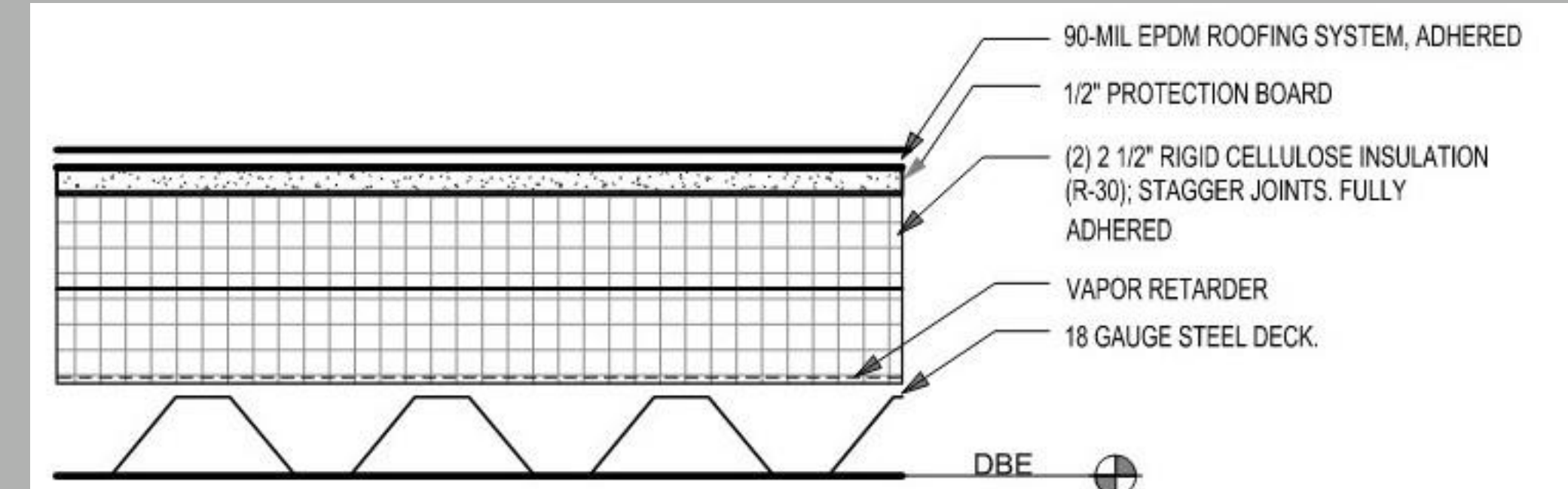


Proposed Office Lighting

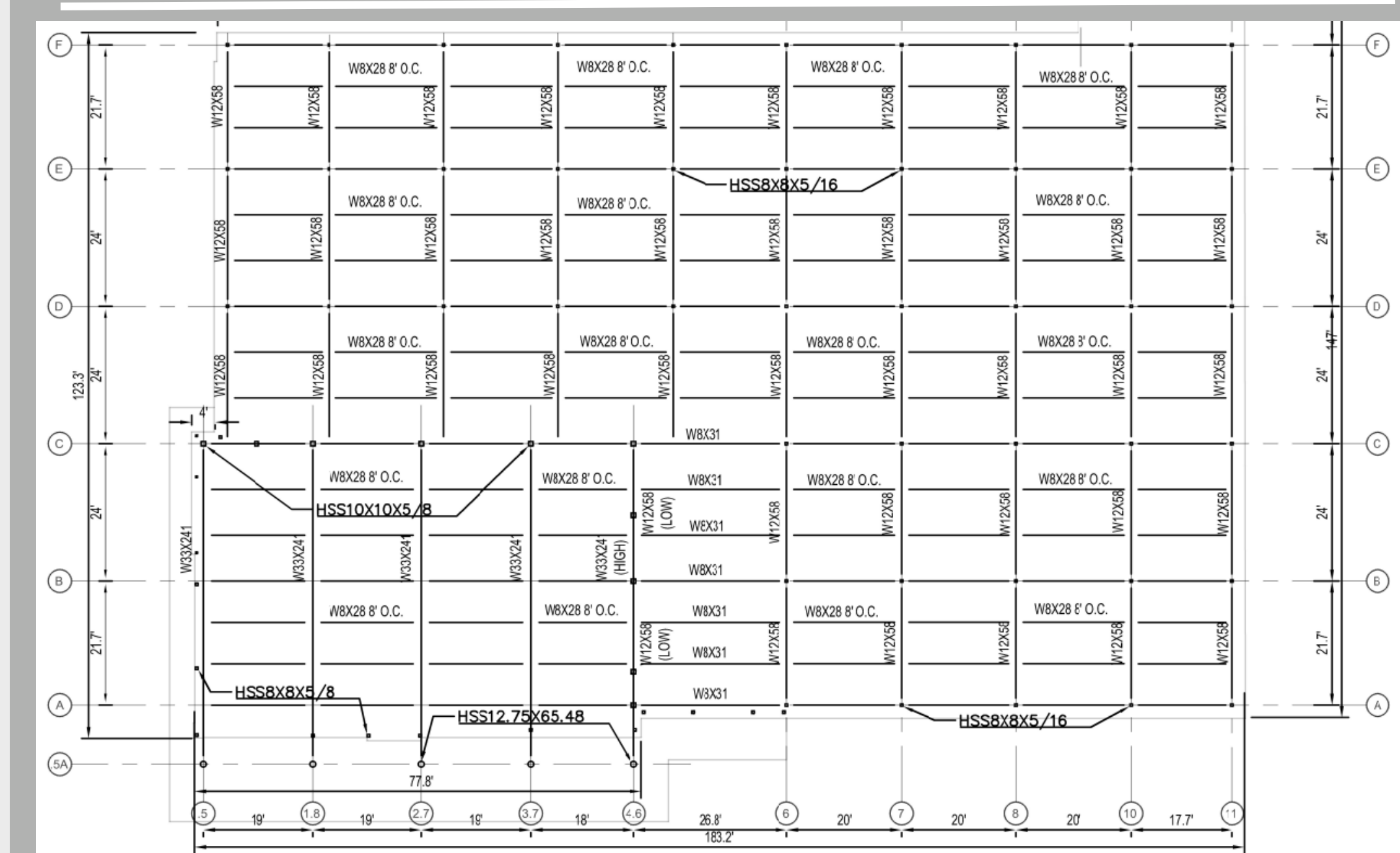
**BUILDING ENVELOPE**

EPDM Single-Ply Fully-Adhered Membrane offers:

- A low dead weight of 0.6 psf
- Anticipated service life of 30+ years
- Lower fossil fuel consumption and GWP than other typical commercial roofing materials



**GRAVITY STRUCTURE**

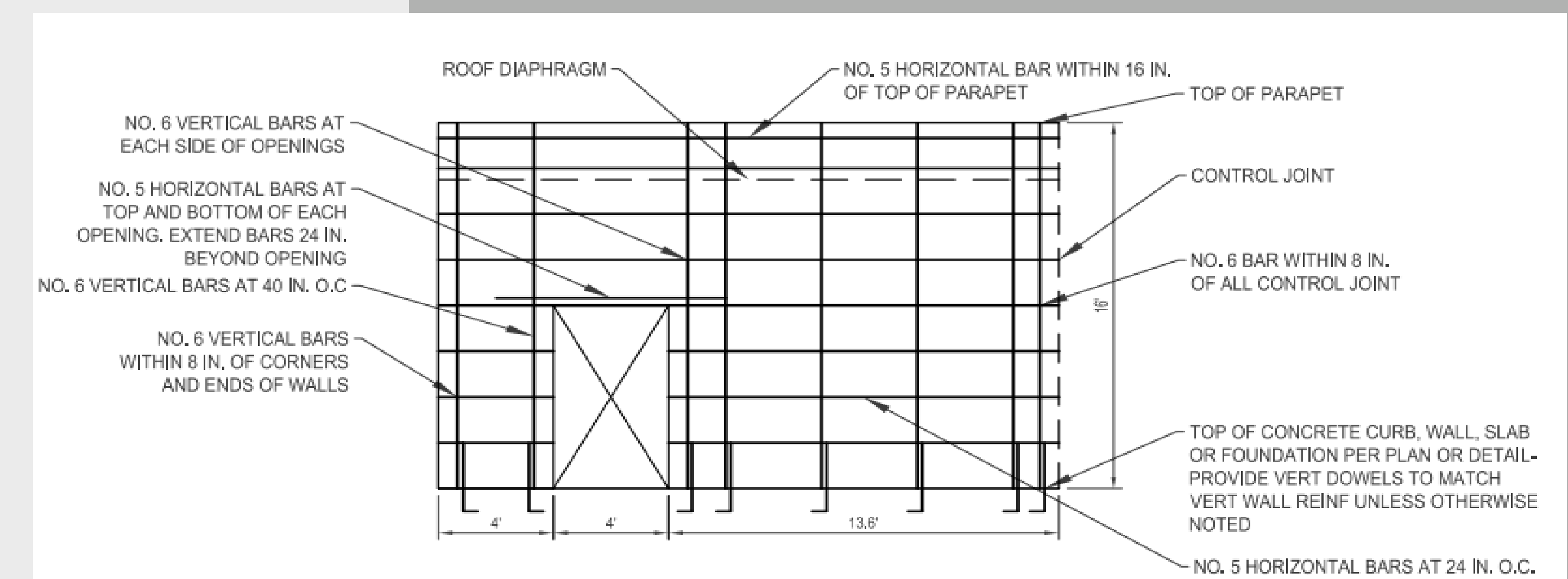


**Steel Building**

- Hollow Structural Section (HSS) Columns
- Wide-Flange (W) Beams & Girders
- ▴ 18 GA Deck System

**LATERAL FORCE RESISTING SYSTEM**

Designed per TMS 402/602-16 to resist wind & seismic loads



Special reinforced CMU shear walls offer:

- Ease of construction
- Sustainable
- Ductile

