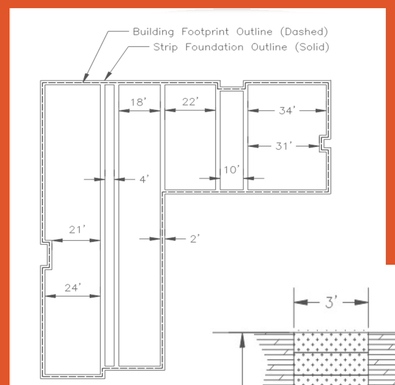
OSU HATFIELD MARINE SCIENCE CENTER STUDENT HOUSING

Design Objectives

- Protect the surrounding ecosystem
- Design with consideration to serviceability and longevity of the structure
- Inclusive design and accessibility

FOUNDATION

- Foundation Type: Strip Footings with rammed aggregate piers (RAP)
  - Load is spread over larger area
  - Constructed as one element
  - 78 RAPs installed under footings
  - RAPs mitigate settlement through compacted aggregate
  - Cost effective, easy to install



Foundation Drawings

Drawing provided by Mackenzie

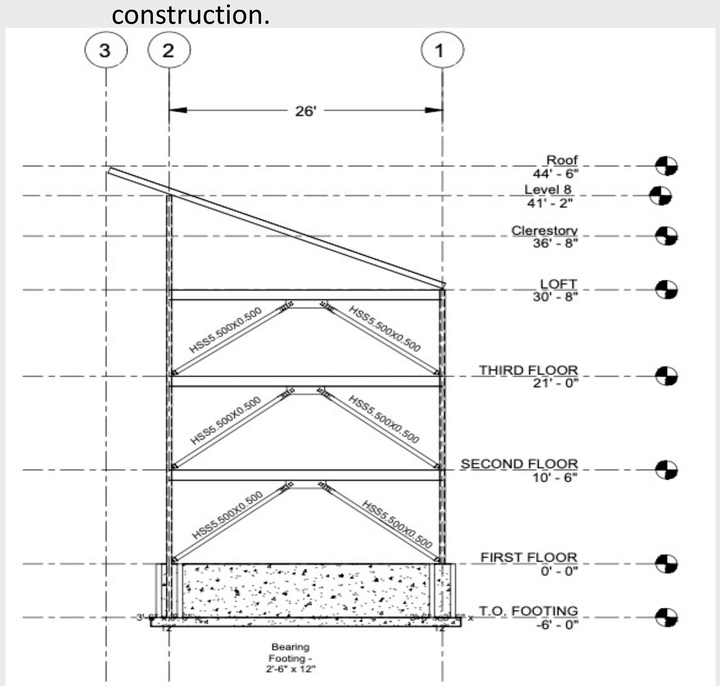
Google Earth Project Location

Location: South of Hatfield Marine Science Center campus in Newport, OR
Project Type: Residential (apartment building)
Expected Occupancy : 77 apartments, mix of 1- and 2-bedroom units

Structural : Lateral

Steel Chevron Diagonal bracing (N-S Elevation)

- Less connections i.e. cheap.
- Durable compared to wood shear walls.
- Pre-fabricated hence less work during construction.

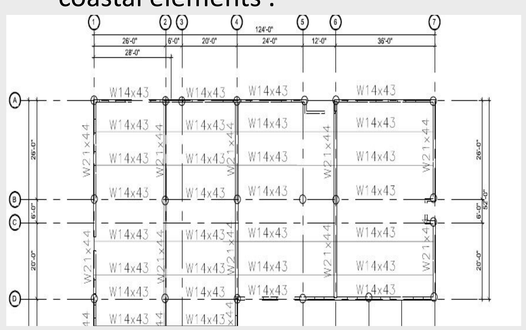


N-S bracing drawing

Structural : Gravity

Steel Frame

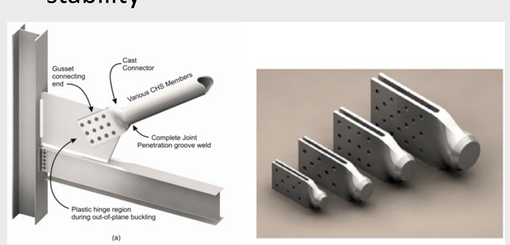
- Durability
- Corrosion resistance against harsh coastal elements .



Column drawing

HHS Connection

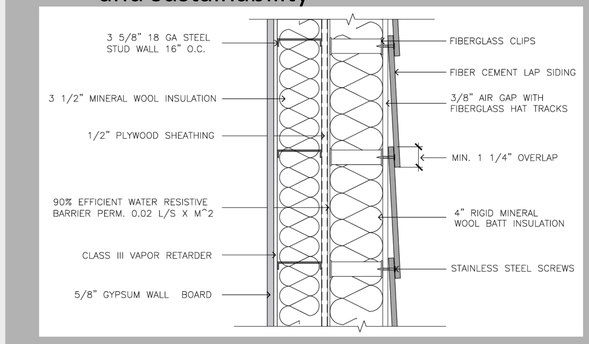
- Impressive strength to weight ratio
- Load transfer and ensuring structural stability



HSS bracings (Packer, *Atlas Tube* 2013)

BUILDING ENVELOPE

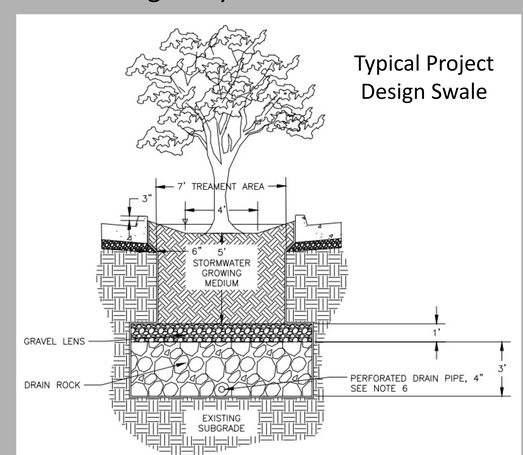
- Fiber cement lap siding mitigates water ingress and reduces maintenance
- Rainscreen with air cavity for ventilation and water drainage
- Fiberglass cladding attachments minimize thermal bridging
- Mineral wool insulation is hydrophobic and thermally efficient
- Overall design prioritizes moisture management with thermal efficiency and sustainability



Exterior Wall Section

WATER RESOURCES

- Ductile iron pipe system
- Manages runoff from the parking lot and housing development
- Peak runoff is reduced using parking lot swales
- Swales also assist in water filtration
- Material choice and bioretention will help protect the existing stream from pollutants throughout the building lifecycle



Swale Drawing

Oregon State University