CFS-4
FLiBe Thermal Loop

DEC Public Hearing

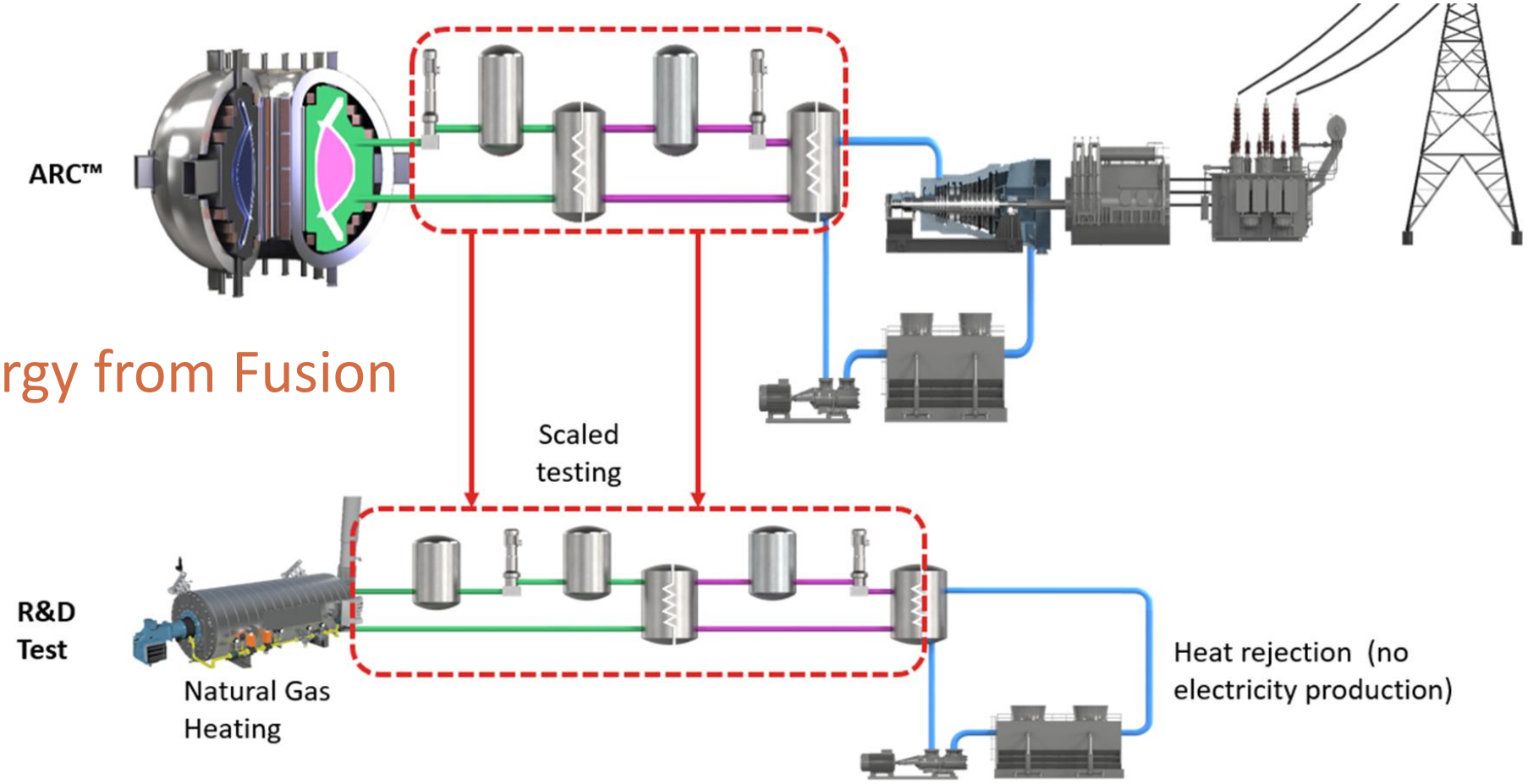
November 25, 2025

Commonwealth Fusion Systems

CFS-4 Use and Project Description

- R&D Facility
- FLiBe Thermal Loop (“FTL” Molten Salts)
- Heat Transfer

Extracting Energy from Fusion



Project Team

Commonwealth Fusion Systems

Jacobs

sener

CAVANAUGH TOCCI

vhb

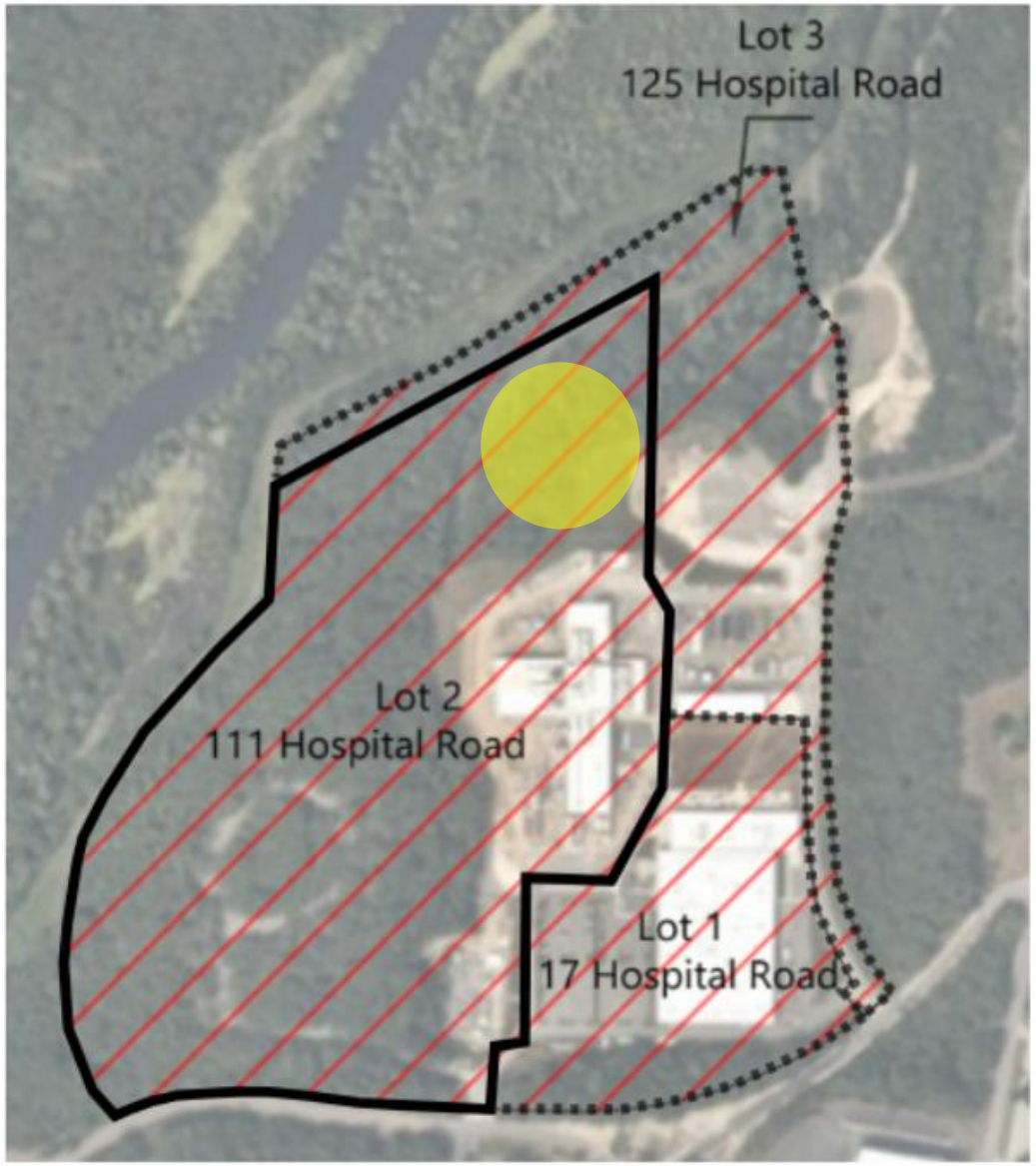
GZA

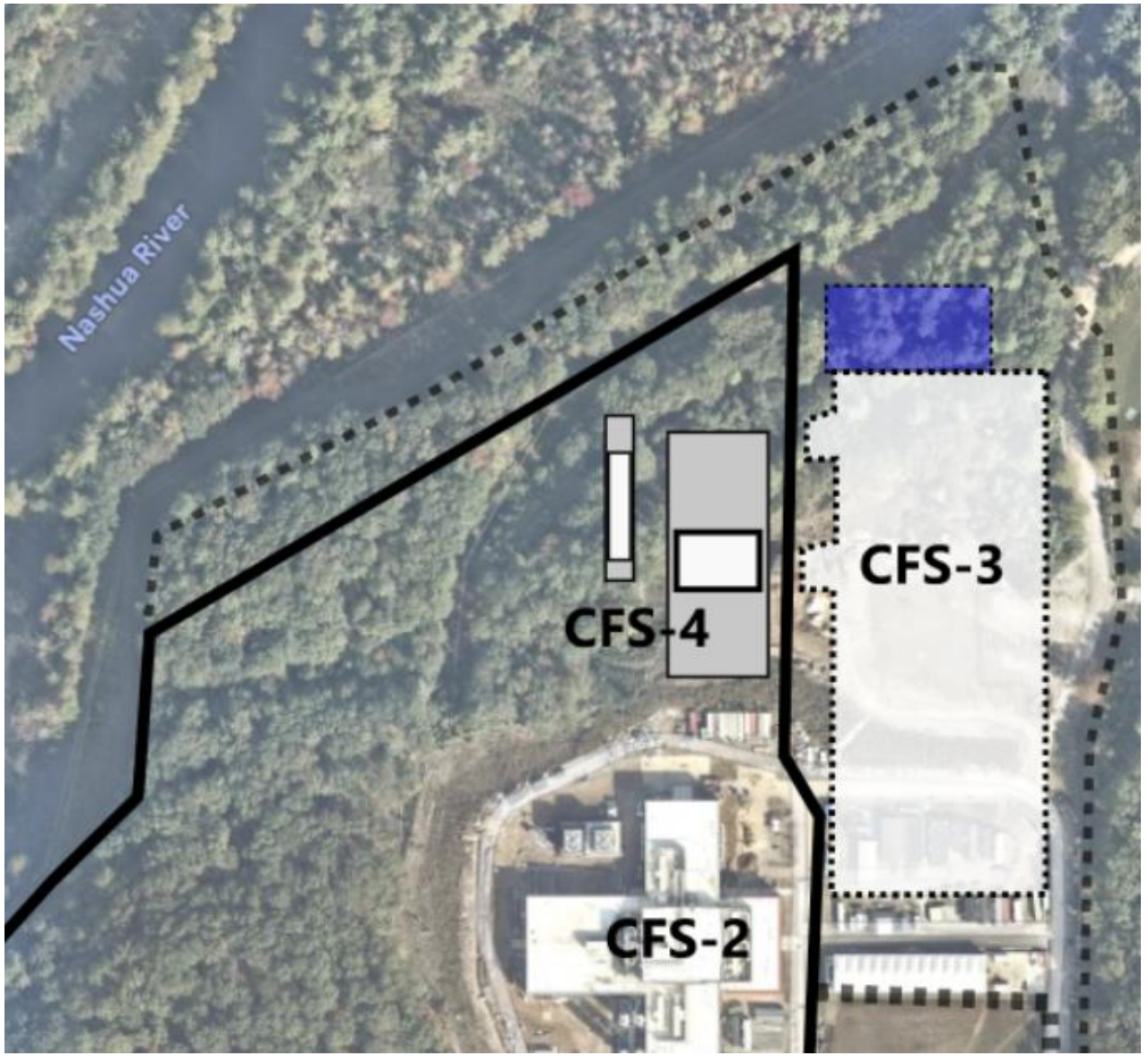
BOSTON ENVIRONMENTAL CORPORATION

BOND

Project Locus

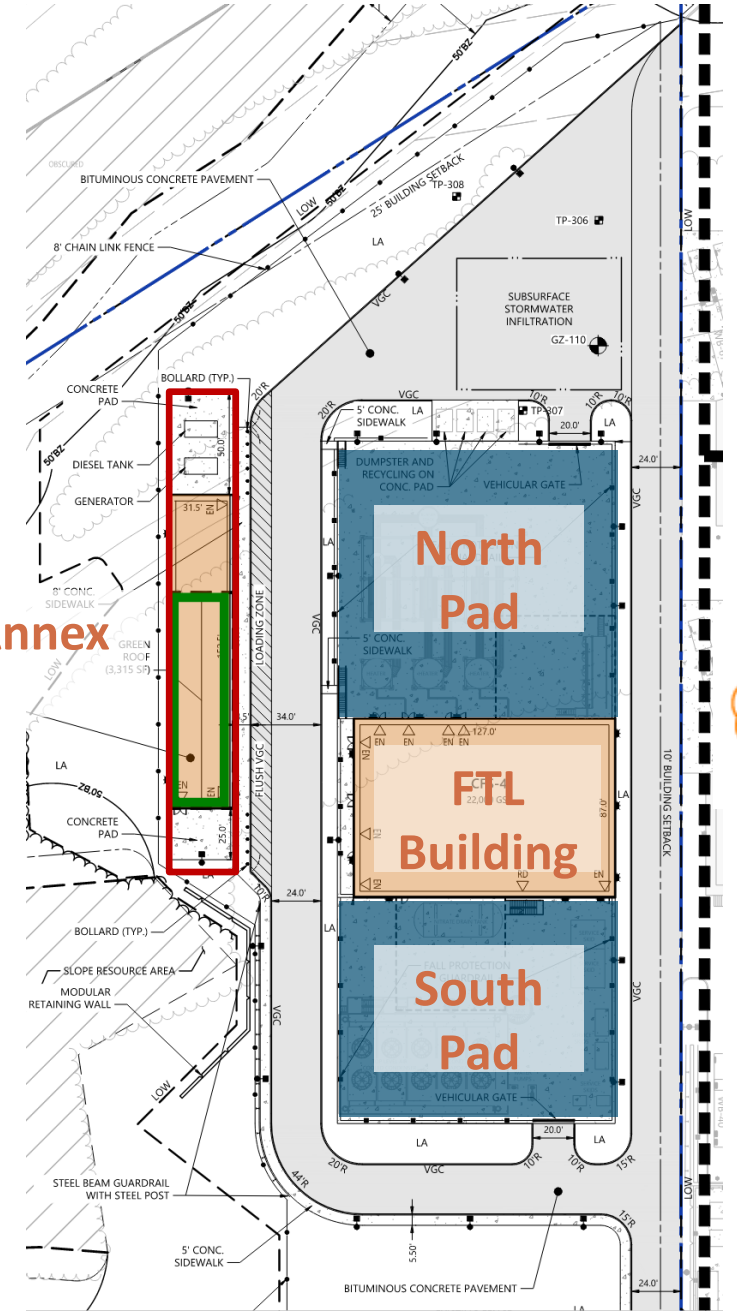
Project Site



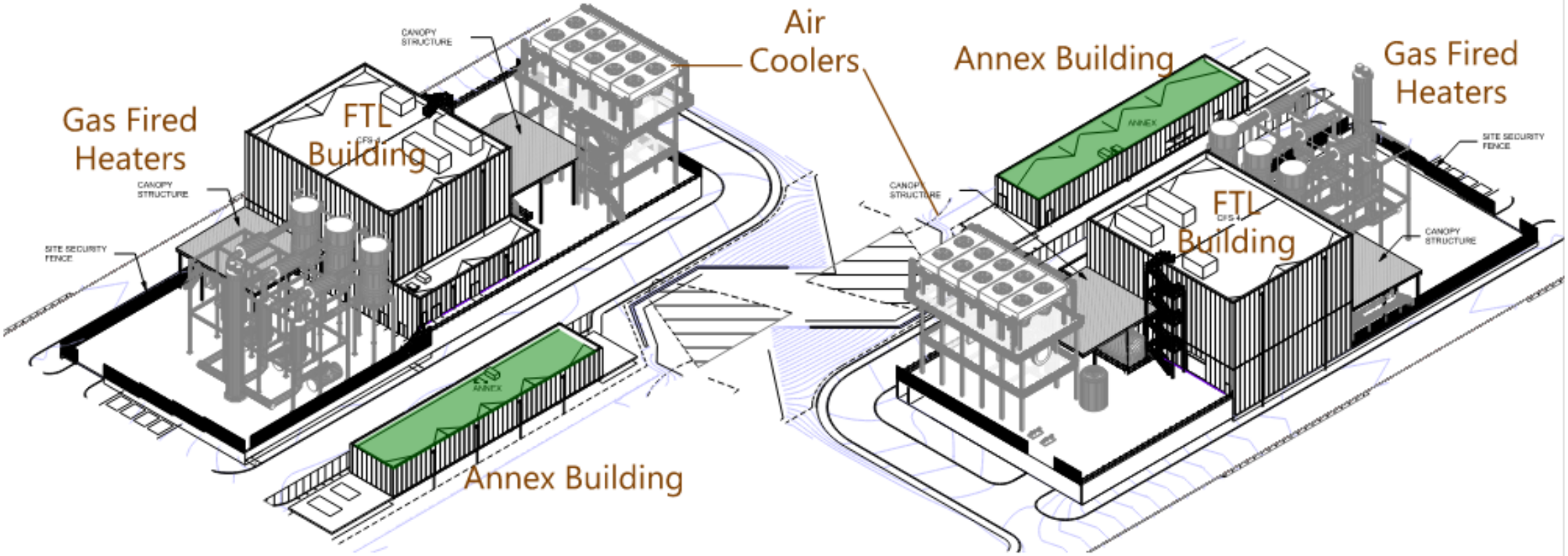


CFS-4 Use and Project Description

- R&D Facility
- Two Buildings
  - FTL Building
  - Annex Building - controls
- Two Equipment Pads
  - North Pad – heating
  - South Pad – cooling
- Common Access Drive with CFS-3
- Work Stations
- Parking



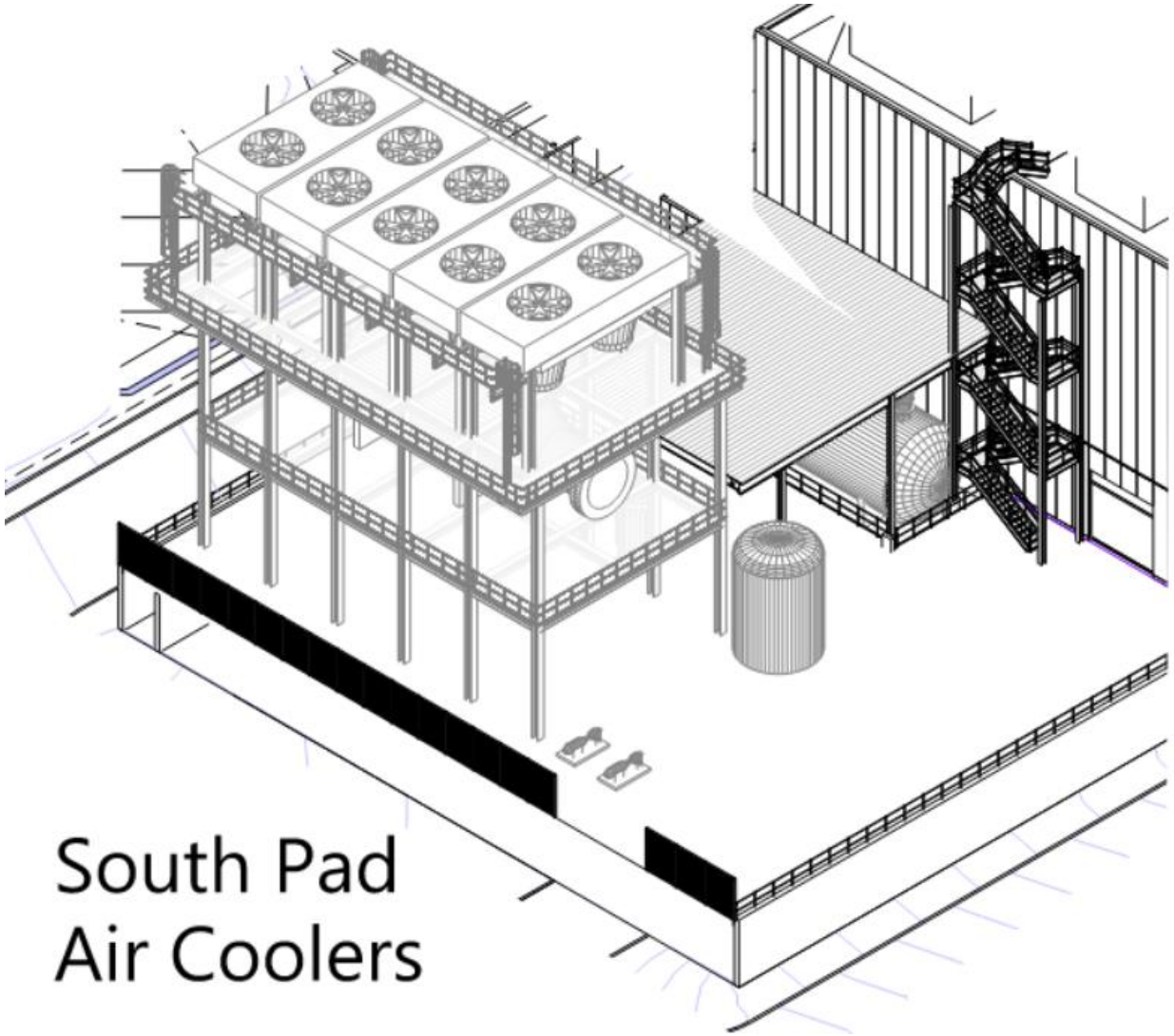
Project Perspectives



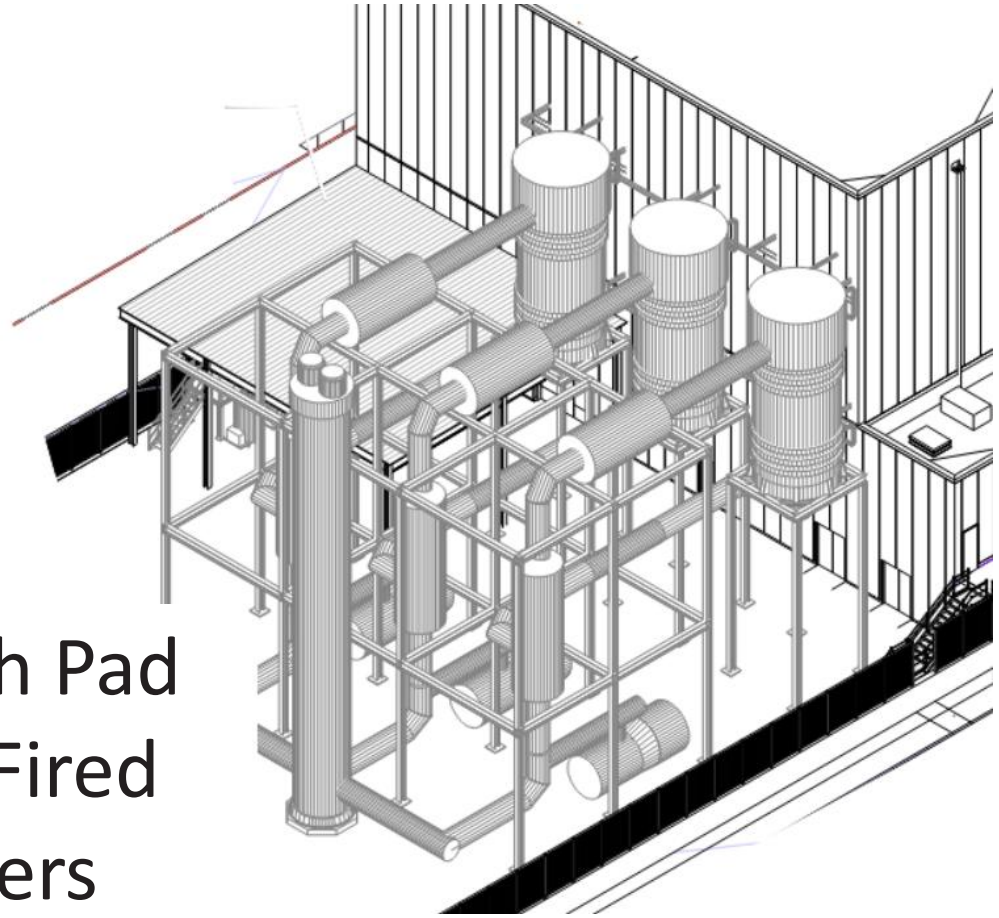
View from Northwest

View from Southeast

Equipment Pads

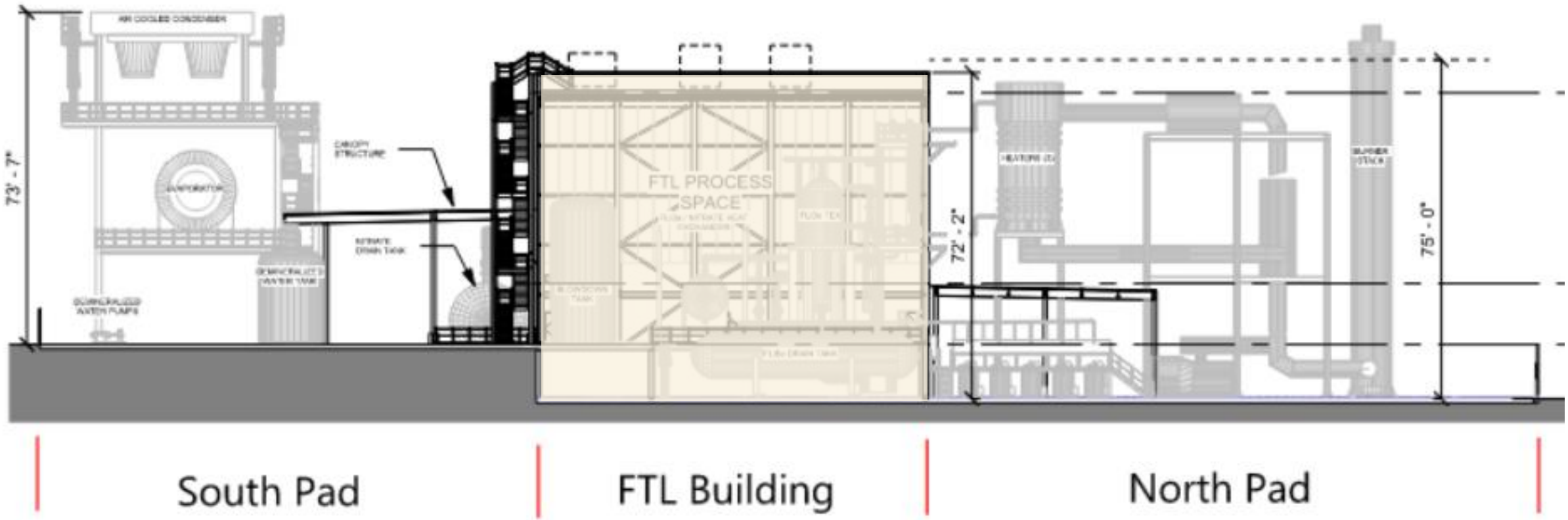


South Pad
Air Coolers

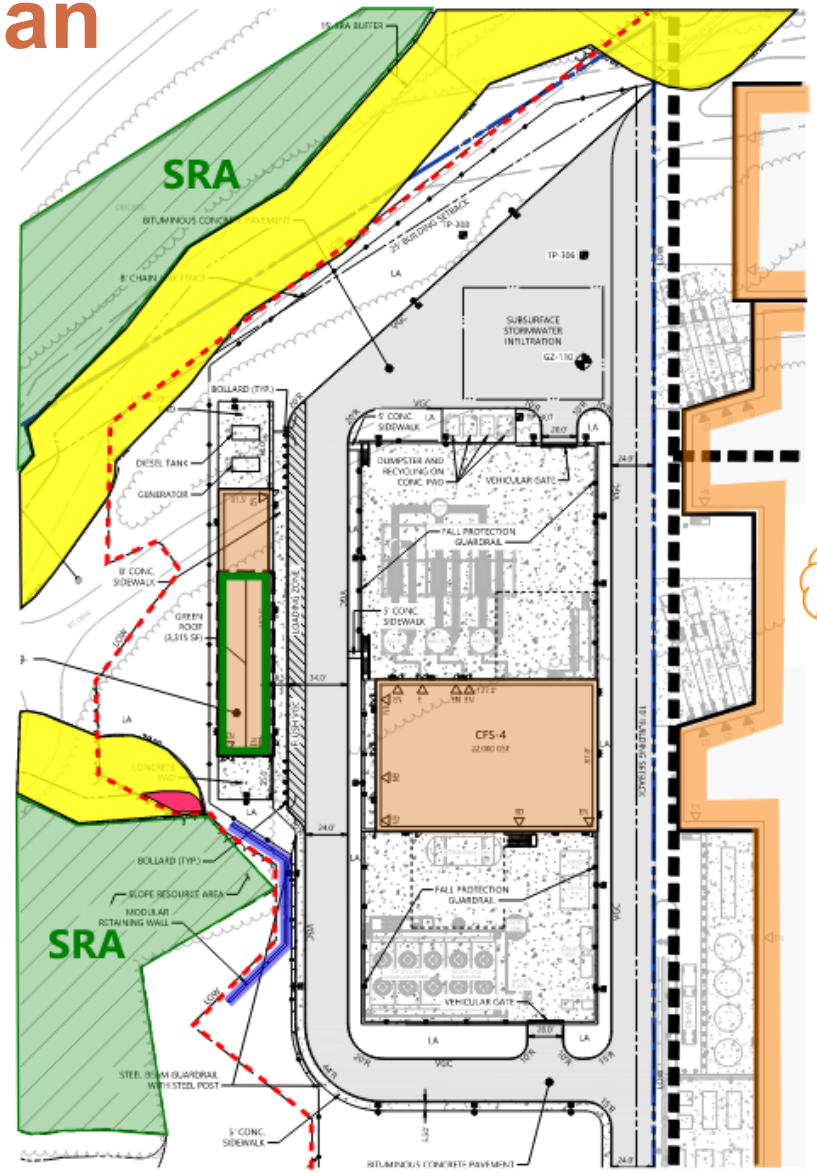


North Pad
Gas-Fired
Heaters

Elevation

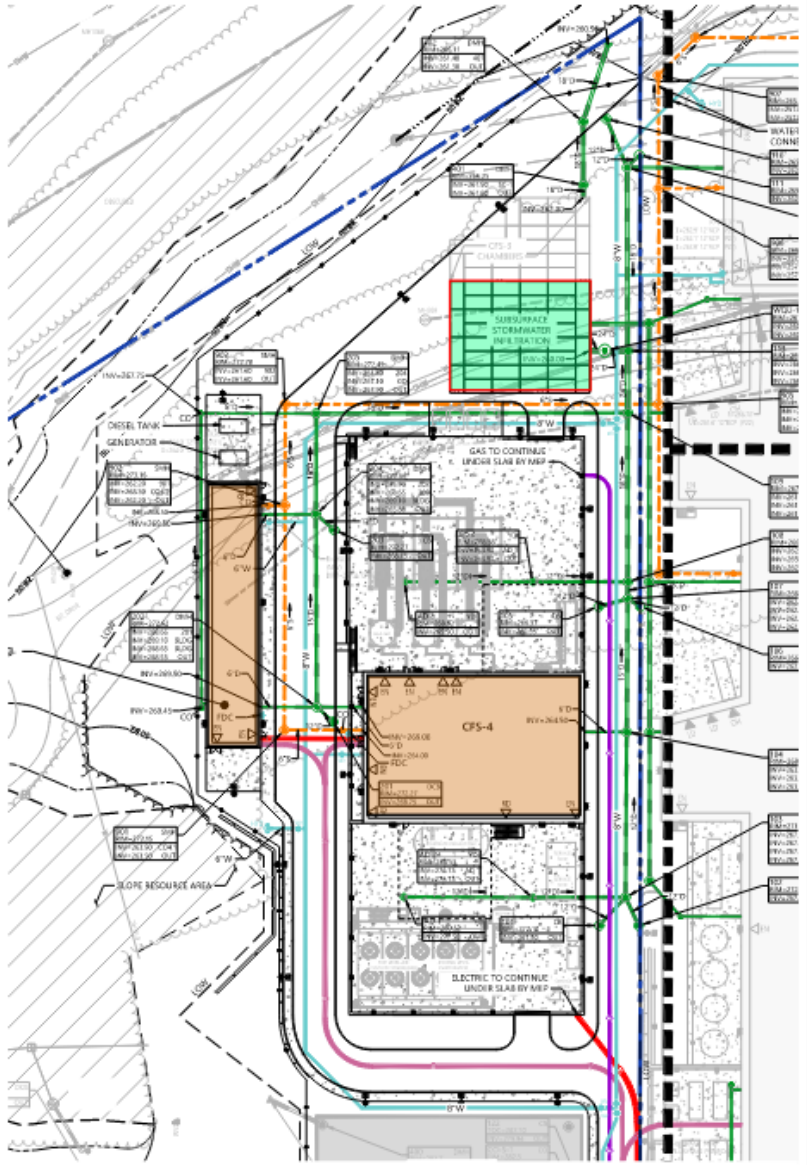

73' - 7"
FTL PROCESS SPACE
72' - 2"
75' - 0"
South Pad
FTL Building
North Pad

Site Plan



CFS-3
(Proposed)

Layout



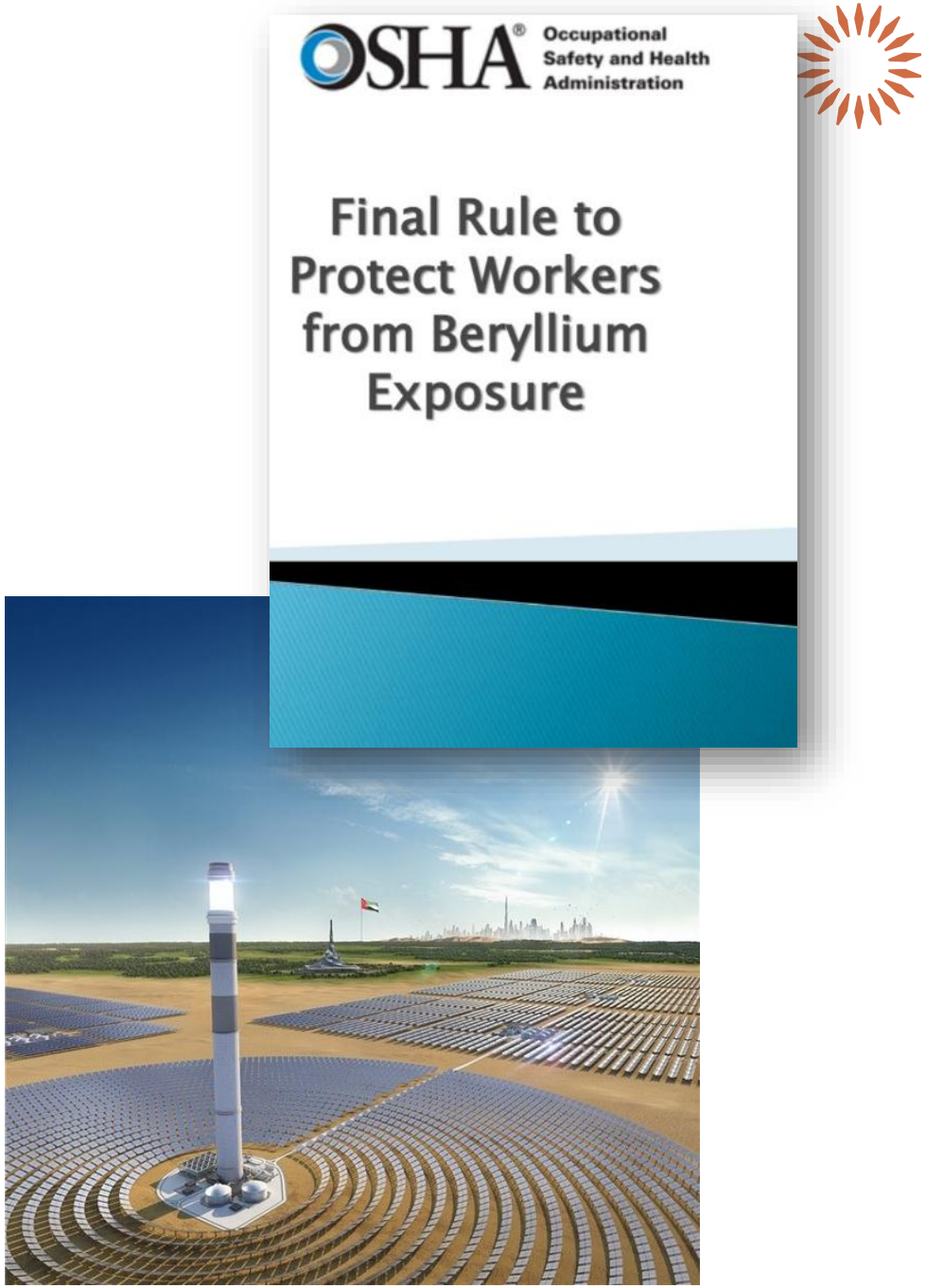
Utilities

Compliance and Key Issues

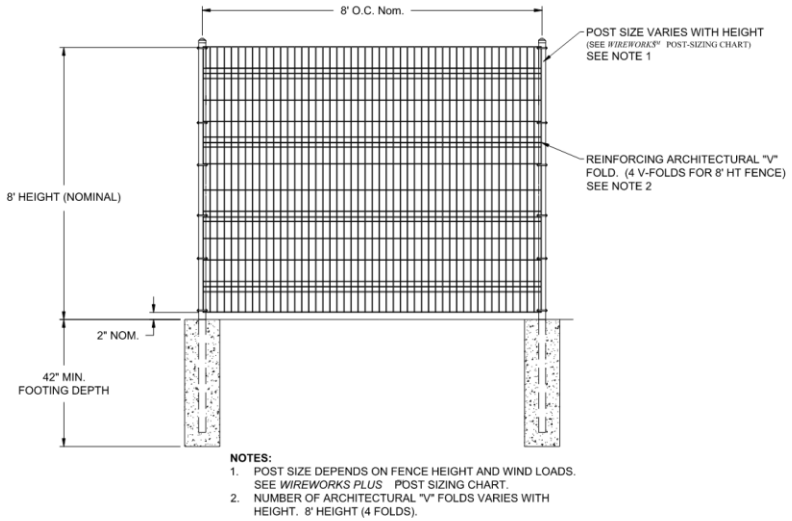
- Stormwater Management
- Zoning Bulk and Dimensional Controls
- SRA Slope Stability
- Soils Management
- Access and Site Circulation
- Safety and Site Security
- Traffic, Parking and Construction Logistics
- Visibility and Lighting
- Air Quality
- Noise

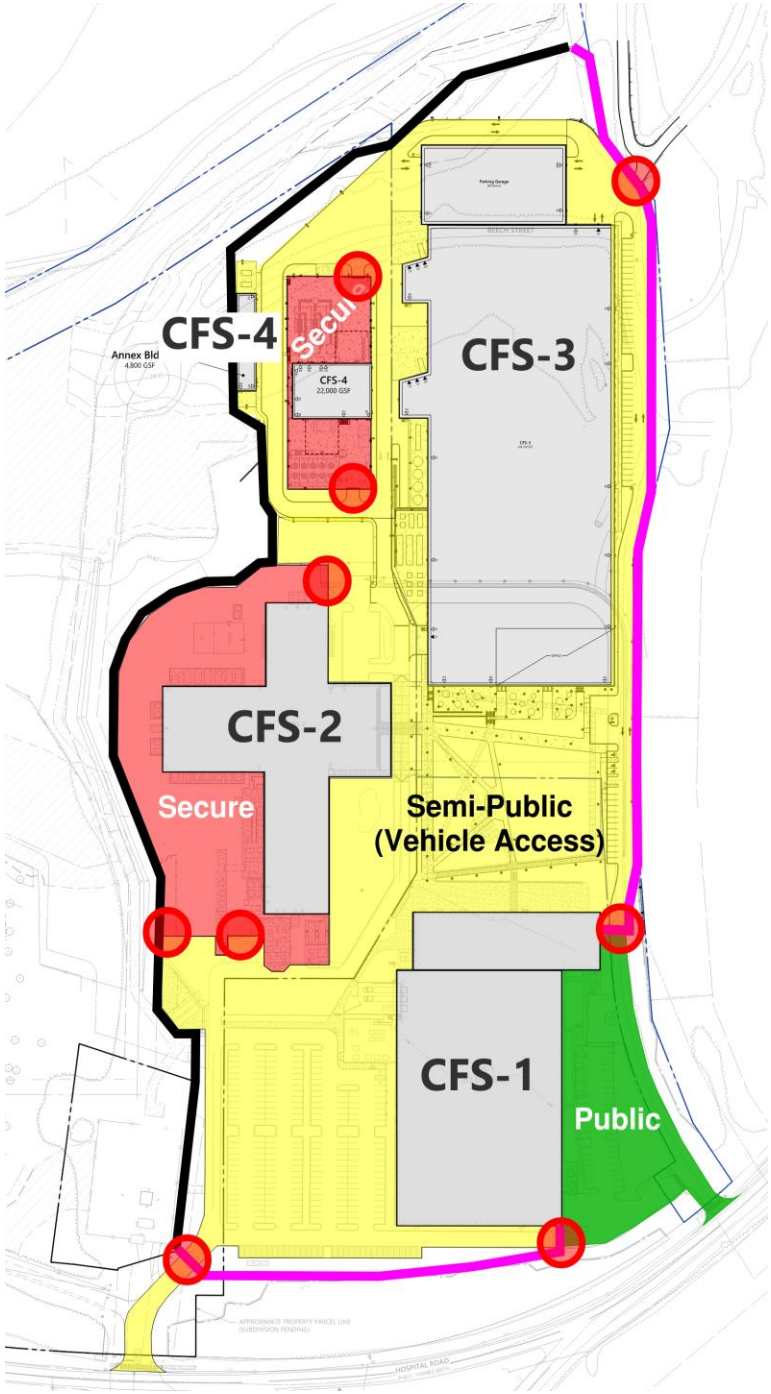
Safety

- Major considerations for safety in CFS-4
  - High temperature process (< 650C / 1200F)
  - Use of FLiBe salt - contains Beryllium
- Process temperature typical for industrial processes
  - Design piping / vessels / equipment to ASME code
  - Process design similar to central tower-style solar power
    - Uses molten salts at similar temperatures
- Beryllium management
  - Beryllium management program in accordance with OSHA standards (29 CFR 1910.1024)
  - Beryllium-containing salt within welded piping system
  - FLiBe-containing systems within HEPA-filtered building
- Programmatic considerations
  - Standard operating procedures and associated training
  - Process hazards evaluations



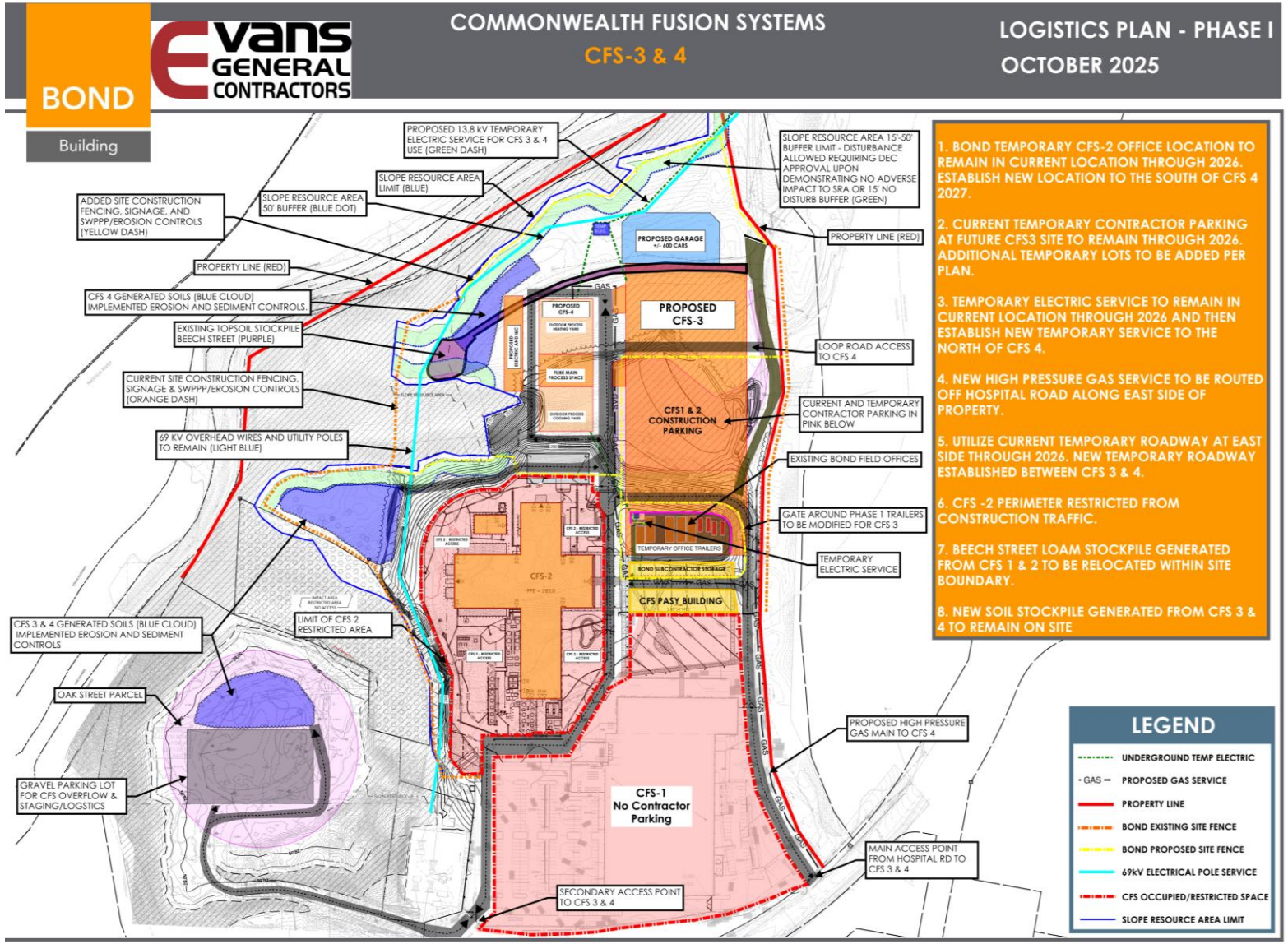
Site Security





Traffic, Parking and Construction Logistics

- Employee Growth
- Parking Management
- Construction Schedules CFS-2, CFS-3 and CFS-4
- Parking w/ CFS-3
- Oak St parcel

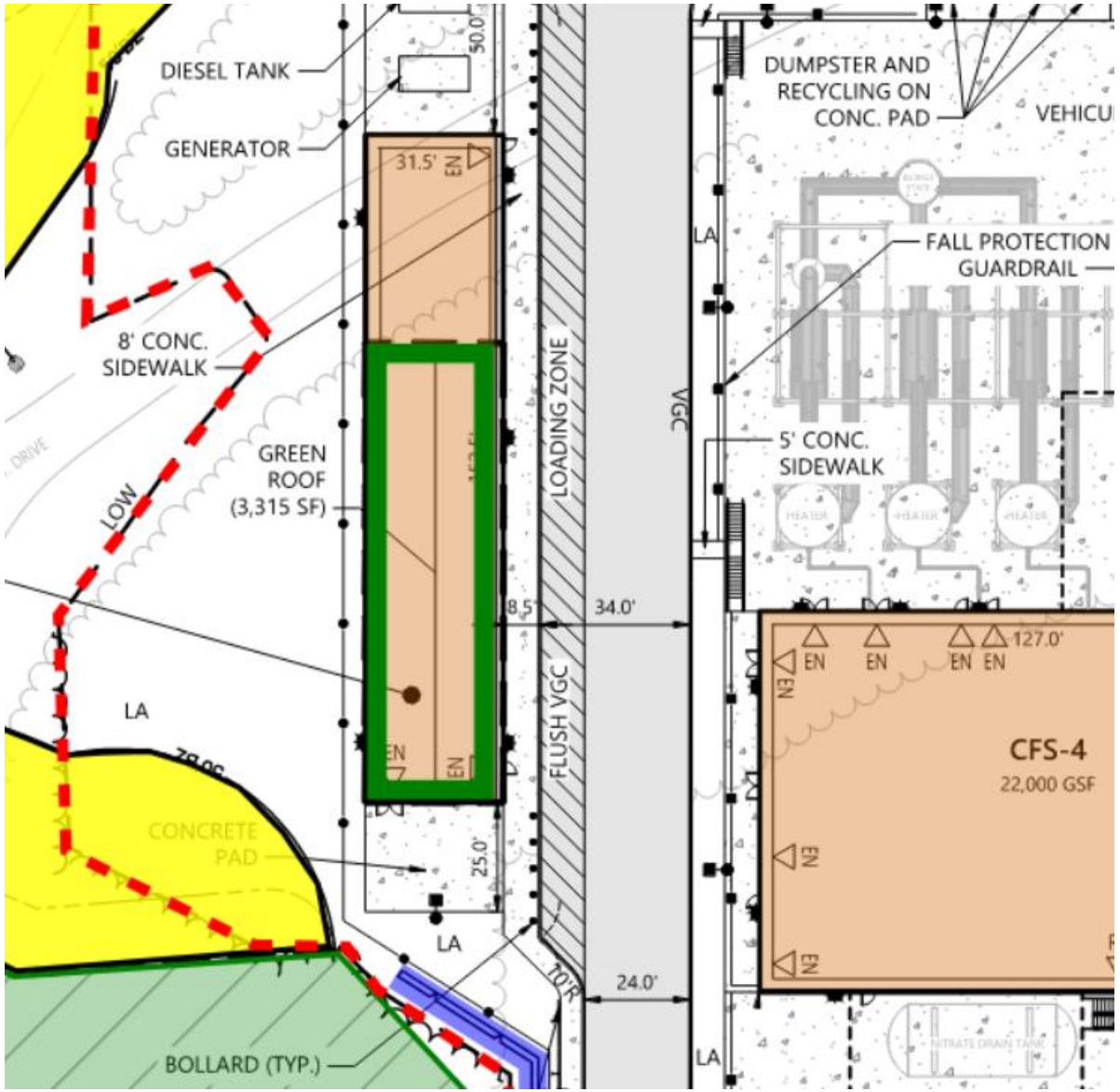


Visibility and Lighting

- Existing and planned residential use locations
- Topography
- Vegetation and Seasonal Variation
- Lighting
  - Normal Operations 7am – 11pm
  - Outside of Normal
  - Site Construction and Unscheduled Maintenance
- Dark sky compliant
- No visible plumes

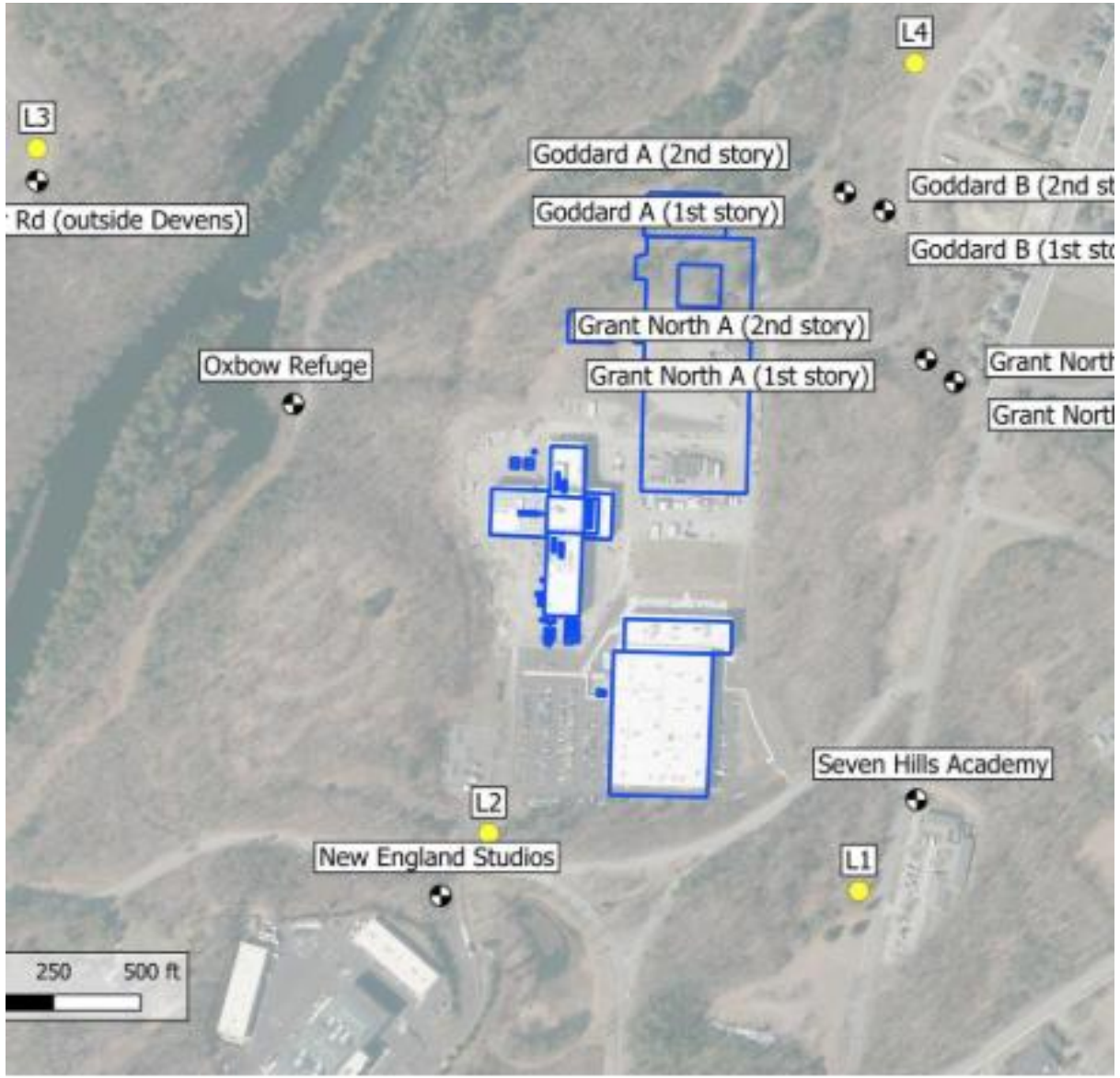
Air Quality

- Three 21 MW Gas Heaters
- Non-Major Comprehensive Air Quality Plan (NMCAQP)
- Cumulative Impact Analysis (CIA) required for proximity to EJ community under informal review by MADEP
- Permit in Q1 2026
- AQ permit triggers Green House Gas mitigation
  - 30% greenroof



Noise and Vibration

- Complex acoustic modelling underway to assess compliance w/ Noise IPS at sensitive receptors
- Considers topography, vegetation, and all permanent noise generating equipment on CFS campus
- Considers existing and proposed buildings
- CFS-3 buildings shield sound from CFS-4
- Under review by peer review consultant



Waivers Requested

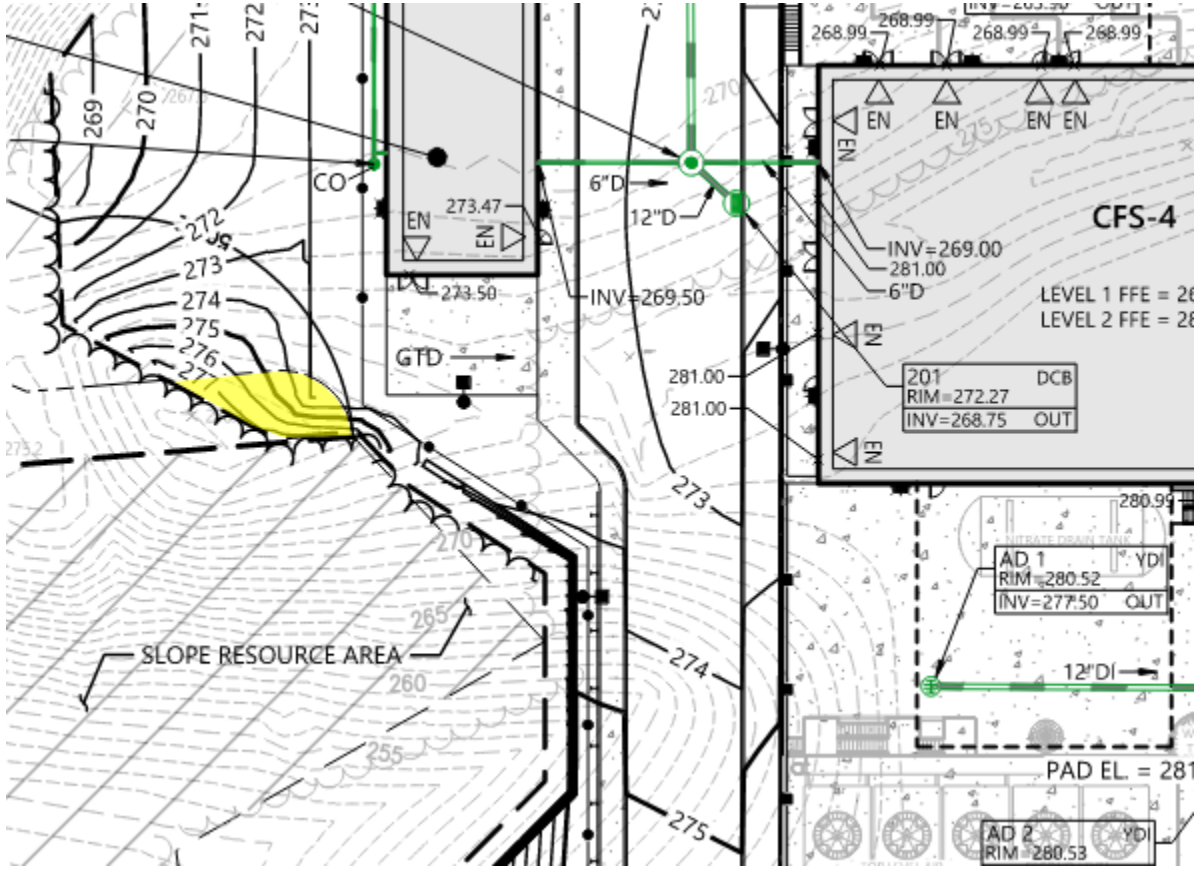
Table I-1 List of Waivers

Requirement Citation	Requirement Description
3.06.3.(b)	There shall be no Site Disturbance within the 35' Buffer Area beyond the 15' No Disturbance Area, unless the DEC makes a finding that the proposed activity will have no adverse impacts on the structure and stability of the SRA and 15' No Disturbance Area.

Waiver Request

Request to allow very limited work within the 15' No Disturb zone of a Slope Resource Area.

The 15' No Disturb zone where grading is proposed is the back side of a small hill on the opposite side of the protected SRA slope.



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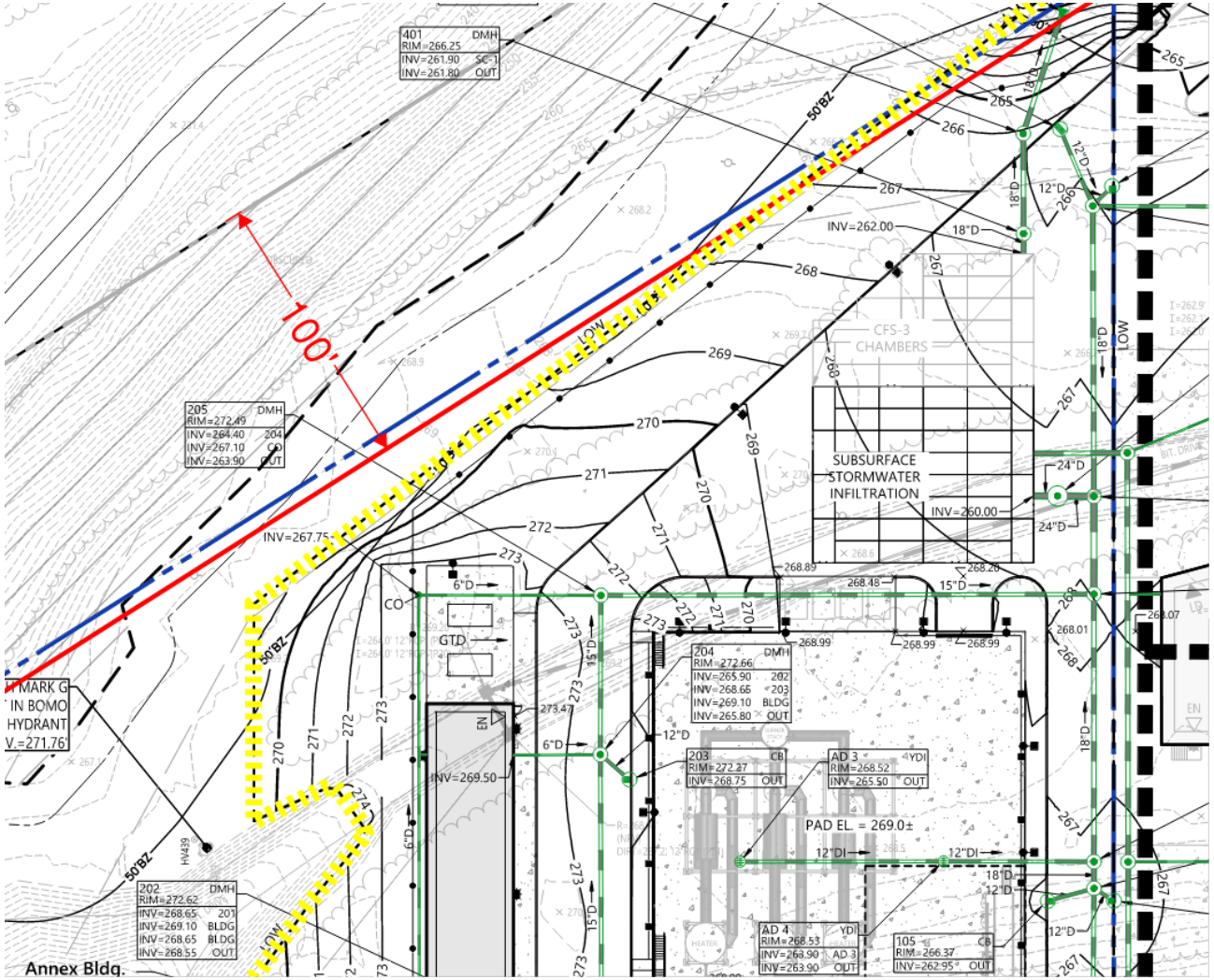
Requirement Citation	Requirement Description
3.02.3.(b)6.a	Existing and proposed landscape features such as street trees, fences, walls, planting areas, wooded areas, and walks. Scattered trees to be preserved shall also be shown as well as all "specimen trees" (trees exceeding a minimum caliper of 12") within 100' of existing or proposed lot lines have been identified and indicated on the plan.

Waiver Request

Request to waive trees requirement.

Some areas of the project site are technically within 100′ of a lot line, but the lot line is an internal lot line within the CFS campus. The project site is otherwise well beyond 100′ from an exterior lot line.



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Thank You!

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