Rutland City BRF3000 (16) Lighting Plan for 900.640 – Drilled Shaft in Earth

During the construction of the drilled shaft work hours will extend past daylight. Work is anticipated to commence by 7am and finish around 5pm daily. Work will be focused in the immediate area surrounding the shaft. Support activities will also extend east towards the construction entrance.

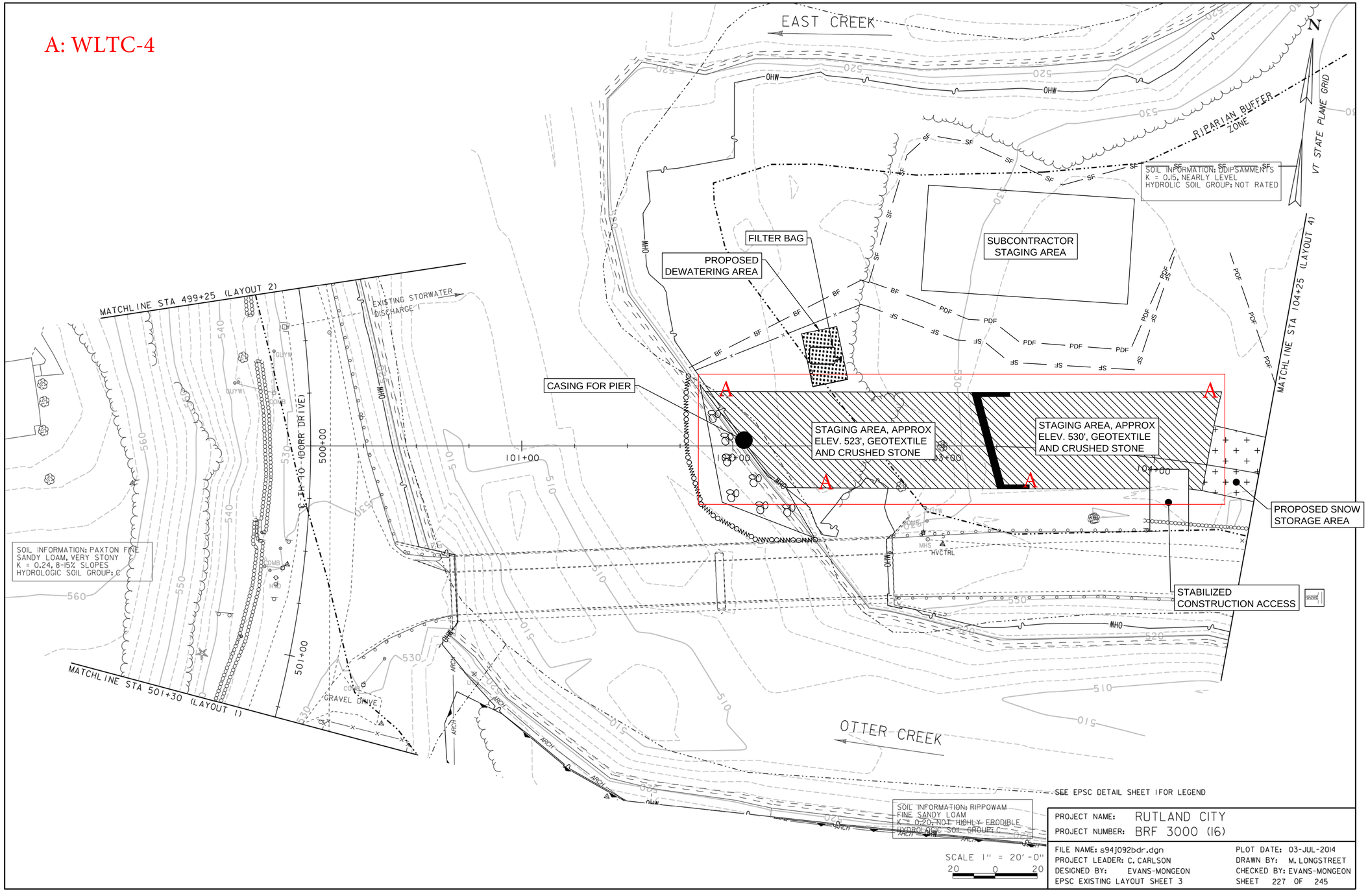
The work area will be roughly 250’ x 70’ = 17,500 square feet. The National Cooperative Highway Research Program (NCHRP) Report 498 recommends an illumination area of 65’ for fast moving equipment. That is listed in Table 3 of NCHRP Report 498 (Section 3).

Four light towers will be placed as shown on the attached sketch. The light towers will be Wanco WLTC-4 or equivalent models. Each light tower has four 1,000 watt metal halide lamps.

The NCHRP Report 498(Section 3) recommends that an illumination level of 54 lux be maintained for excavation work and 108 lux for bridge deck work. Referring to figure 5 of NCHRP Report 498(Section 3); to achieve 108 lux with metal halide bulbs the illumination should be .5 watts per square foot.

The total illumination would then be .5 watts/sf x 17,500 sf = 8,750 watts. Four WLTC-4 light towers will produce 16,000 watts and therefore be well above the recommended level of 8,750 watts.

The light towers will be installed with two on the north side of the work area and two placed on the south side. The installation will be per the attached Figure 6 from the NCHRP Report 498. The locations and angles will be field adjusted to ensure effective coverage of the work area and the changing conditions of the site.



NOTES:

1. BASE PLAN IS FROM RUTLAND CITY BRF 3000 (16) PLANS BY VAOT DATED 7/3/2014.
2. STAGE 1 WORK INCLUDES THE CONSTRUCTION OF ABUTMENT 1 AND THE PIER.

REVISIONS

DATE	COMMENTS	BY

RUTLAND CITY
BRF 3000 (16)

CITY OF RUTLAND, VERMONT

Project #	---
Project Mgr.	TPK
Design by	TPK
Drawn by	TPK
Reviewed by	NRJ
Approved by	TPK
Date	
Scale	AS SHOWN

SHEET OF

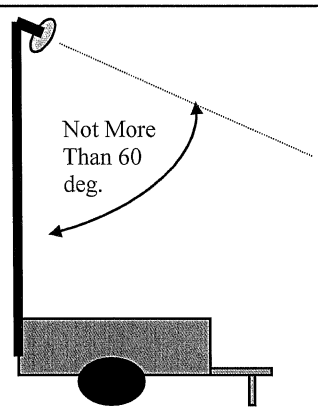
Fixed Work Areas	
Drainage Excavation, Pipe Installation, Structures, Signalization, Maintenance Activities, Staging and Startup of Paving Operations	
Illumination Requirements	Minimum Area Illumination Level = 54 lx Category II Work – Minimum Illumination Level = 108 lx Category III Work - Minimum Illumination Level = 216 lx
Recommended Lighting Equipment	Portable Light Plants with extending towers, four luminaires (typically 1000w metal halide)
Configuration Guidelines	1) Extend Tower to Maximum Practical Height 2) Use Glare Control Shades on the Luminaires 3) Maintain Glare Control Aiming When possible aim lights away from oncoming traffic Angle between the vertical and the aiming direction of the lamps should not exceed 60 degrees 4) Space Light Plants to Provide Required Illumination Levels
Typical Configuration Sketch	

Figure 6. Field guidelines for fixed area lighting.