Erosion and Sediment Control (E&S) Narrative

Prepared For:
City of Reading - Department of Public Works
509 North Sixth Street
Storage Facility
City of Reading
Berks County, Pennsylvania

Prepared By:
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EXECUTIVE SUMMARY

The City of Reading, Berks County, PA proposes to construct a pole building to house equipment owned by the City of Reading’s Department of Public Works (DPW) and to pave the surrounding gravel area. The subject lot tract (T.M.P. 5307 68 83 7189) is located on North Sixth Street. Vehicle access is from North Sixth Street. The net area of the lot is 6.40 acres.

The project is anticipated to begin in the Fall of 2017 and completed by the Spring of 2018.

The following report contains the analysis and evaluations necessary to demonstrate compliance with the Pennsylvania’s Clean Streams Act, Title 25, Chapter 102, and Erosion and Sediment Control guidelines.
PROJECT OVERVIEW

1. GENERAL PROJECT AND SITE DESCRIPTION

A. EXISTING SITE DESCRIPTION

The project site is currently a public works facility located off North Sixth Street in the City of Reading, Berks County. See Figure 1 for USGS Location Map. The project area slopes from the east towards the west. The land in the area of the proposed pole building is vacant.

B. PROPOSED DEVELOPMENT DESCRIPTION

The proposed development includes the construction of a large pole building to house equipment owned by the City of Reading’s Department of Public Works (DPW) and to pave the surrounding gravel area. The subject lot tract (T.M.P. 5307 68 83 7189) is located on North Sixth Street. Vehicle access is from North Sixth Street. The net area of the lot is 6.40 acres.

The construction area for the proposed development will impact approximately 0.909 acres in total throughout the project. As demonstrated in this report, all construction activities will be conducted in accordance with the intent of the City of Reading Stormwater Management Ordinance and the Berks County Conservation District. All necessary approvals and permits for the proposed activities will be obtained prior to start of work.

C. PLAN PREPARER

The Erosion and Sediment Control program has been prepared by CEDARVILLE Engineering Group, LLC a full service civil engineering consulting firm. There are no proposed stormwater management facilities under this application. The erosion control measures were designed by Anika Patel. Ankita Patel has 8 years of experience in the stormwater management and erosion control design. The plans, design and reports are verified by Roderick Chirumbolo, PE. Roderick Chirumbolo is a licensed Engineer in the Commonwealth of Pennsylvania with 25 years of experience in the fields of Land Development and Municipal Engineering, including stormwater management and erosion control design.

D. CHAPTER 93 CLASSIFICATION

The project site ultimately discharges to Schuylkill River (Main Stem, Little Schuylkill River to Head of Tide). This section of the Schuylkill River is classified in Chapter 93 of the Pennsylvania Code as Warm Water Fishes (WWF) and Migratory Fishes (MF). This portion of the Schuylkill River is classified to support aquatic life. Fish consumption is impaired in this section of the Schuylkill River.

2. GEOLOGY AND SOIL CHARACTERISTICS, LIMITATIONS, AND RESOLUTIONS

The soils data is obtained from USDA-Natural Resources Conservation Services, soil survey website on September 2017. See Figure 2 for NRCS Web Soil Survey. The description below represents typical soil characteristics of this soil type in Berks County.

UgB, Urban Land, 0 to 8 percent slopes

Parent Material: Pavement, buildings and other artificially covered areas human transported material
3. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN

The Erosion and Sediment Control Plan was planned, designed and to be implemented to be consistent with the PCSM Plan under 25 Pa. Code §102.8 (relating to PCSM requirements).

In the Erosion and Sediment Control planning and design [102.4(b)(4)] the following was done:

- Minimize the extent and duration of the earth disturbance by utilizing the construction sequence.
- Maximize protection of existing drainage features and vegetation by maintaining existing drainage pattern and protection of existing trees to the maximum extent possible.
- Minimize soil compaction by utilizing the construction sequence.
- The silt fence will minimize the generation of increased stormwater runoff.

The redevelopment of the site will continue to utilize the same drainage pattern that currently exists. Stormwater will continue to flow into a series of inlets throughout the construction area and flow eastward towards a central stormwater conveyance system for the entire site.

4. LOCATION AND TYPE OF BMPS

Soil erosion control will be handled in various ways. The following erosion control methods utilized for this site will minimize any degradation to the surface water leaving the property and will be managed the following ways:

- A temporary ROCK CONSTRUCTION ENTRANCE will be located where the proposed paved area is to be constructed on site. This construction entrance shall be the only location utilized for access to the proposed earth moving activities during all stages of construction. All vehicles including construction equipment and materials delivery vehicles shall enter and/or exit the site only via these designated entrances. Provide for continuous drainage across the entrances.
- TOPSOIL STOCKPILE will be utilized to temporarily store topsoil during construction activities. Maintain 18” silt fence along down slope sides of the stockpile. Stabilize immediately. Stockpile heights must not exceed 35 feet and slopes must be 2:1 or flatter.
- SILT FENCE will be utilized to temporarily protect water quality from stormwater runoff.
- CONSTRUCTION SEQUENCE will serve to minimize any degradation to surface waters.
- TEMPORARY AND PERMANENT SEEDING AND MULCH Areas of temporary cessation of earth disturbance activities or any stage thereof shall be immediately stabilized with temporary seeding and mulch. Any area brought to final grade shall be immediately provided with permanent seeding and mulch. Refer to the plans for seeding specifications.

5. STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved Erosion and Sediment (E&S) Plan. A copy of the approved drawings (stamped, signed and dated by the Berks County Conservation District) must be available at the project site at all times. The Conservation District shall be notified of any changes to the approved plan prior to implementation of those changes. The district may require a written submittal of those changes for review and approval at its discretion.
2. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, and other objectionable material.

3. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S Best Management Practices (BMPs) specified by the construction sequence for that stage or phase have been installed and are functioning as described in this E&S plan.

4. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.

5. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate BMPs to minimize the potential for erosion and sediment pollution and notify the Berks County Conservation District and/or the South-central Regional office of dep.

6. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas. Discharge points should be established to provide for maximum distance to active waterways.

7. Until the site is stabilized, all E&S BMPs must be maintained properly. Maintenance shall include inspections of all E&S BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.

8. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

9. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled or swept into any roadside ditch, storm sewer, or surface water.

10. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.

11. All excavation for utility line installation shall be limited to the amount that can be excavated, installed, backfilled and stabilized within one working day. All excavated material shall be deposited on the upslope side of the trench.

12. Concrete wash water shall be handled in the manner described on the plan drawings. In no case shall it be allowed to enter any surface waters or groundwater systems.

13. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.

14. Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Pennsylvania Department of Environmental Protection as defined in section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.
6. **EROSION AND SEDIMENT CONTROL PLAN NOTE**

A copy of the approved erosion and sediment control plan must be available at the project site at all times. Additionally, the operator shall assure that an erosion and sediment control plan has been prepared, and has been approved by the Berks County Conservation District and/or Local Municipality in compliance with Chapter 102 Rules & Regulations, and is being implemented and maintained for all off-site soil and/or rock spoil and/or borrow areas. §102.4(5)(xiv).

7. **MAINTENANCE OF EROSION CONTROL FACILITIES**

1. The Contractor shall be responsible for the proper construction, stabilization and maintenance of all Erosion and Sedimentation Controls and related items included within the plan herewith. The Contractor shall schedule and conduct his operations to minimize erosion of soils and to prevent silting and muddying of streams, rivers and drainage systems.

2. Erosion and Sediment Control (E&SC) Specialists’ contacts:
   a. Berks County Conservation District: (610) 372-4657
   b. PA Department of Environmental Protection: (484) 250-5900

3. All Erosion and Sediment Control measures must remain in place until the site is stabilized, regardless if construction is taking place or not.

4. Until the site is stabilized, all Erosion and Sediment Controls must be properly maintained. Maintenance must include inspections of all Erosion and Sediment Controls after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching, and renetting, must be performed immediately. If Erosion and Sediment Controls fail to perform as expected, replacement BMPs, or modifications to those installed will be required.

5. Seeded areas that wash out must be filled and graded as necessary, and then reseeded, an anchoring method should then be used to hold seed and mulch in place; this is especially important around water courses, in swales, and areas of concentrated flows, and on slopes.

6. In the event owners of the property or the contractor fails to properly maintain the control facilities, the City shall have the right to enter said area and perform the required maintenance after proper notification of the owners.

7. In the event that the PA Department of Environmental Protection (PADEP), the Berks County Conservation District (BCCD), the Municipality or the Design Engineer or their agents deem that additional controls, measures or procedures beyond those shown or described are necessary to control or correct conditions which were unforeseen during the design stage, the Contractor shall be responsible to implement additional controls, measures or procedures as is deemed reasonably necessary and warranted.

8. No sediment, stones or debris shall be tracked on to surrounding roads. Any sediment that is tracked onto the surrounding roads must be cleaned off before the end of the day utilizing mechanical methods or via hand sweeping to the satisfaction of the Berks County Conservation District and City Engineer.
9. Any soil borrowed or spoil sites, offsite shall have an approved and implemented erosion control plan by the Berks County Conservation District. Transportation of any excess materials shall be such that spillage, tracking off site and other disturbances are kept to a minimum.

10. The Contractor shall periodically and especially after heavy rainfall, inspect all control facilities for proper function. Facilities shall be repaired if damages or malfunctioning or replaced as necessary. Maintenance of all control facilities shall continue until the entire area tributary to the facility is stabilized.

11. The Berks County Conservation District must be contacted prior to removal of any erosion and sedimentation control device such as silt socks, rock filters, temporary channels, etc. Temporary controls may be removed only after a minimum uniform 70% perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation has been achieved across the upslope areas. §102.4(5)(x).

8. MAINTENANCE INSTRUCTIONS FOR ALL E&S BMP’S

   Inspections must be logged onto DEP Form 3150-FM-BWEW0083 dated 2/2012 and kept on site at all times.

9. EROSION AND SEDIMENT CONTROL PLAN REVISION NOTE

   Before initiating any revision to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S control plan, the operator must receive approval of the revisions from the Berks County Conservation District. The operator shall assure the approved erosion and sediment control plan is properly and completely implemented. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution. The operator shall implement appropriate best management practices to eliminate potential for accelerated erosion and/or sediment pollution. §102.4(b)(5)(xiv)

10. DISPOSAL OF MATERIALS

   1. All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Department’s Solid Waste Management Regulations at 25 Pa. Code chapter 260, §§260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

   2. All off-site waste and borrow areas must have an E&S Plan approved by a County Conservation District or DEP fully implemented prior to being activated.

   3. The contractor is responsible for ensuring that any material brought on site is Clean Fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. Shall be compacted in accordance with local requirements or codes.

   4. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.

   5. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.

   6. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
7. Fill shall not be placed on saturated or frozen surfaces

11. THERMAL IMPACT ANALYSIS

Thermal impacts to the surface water cannot be avoided. Impacts are minimized by filtering the surface water through the silt fence followed by filtering through existing undisturbed vegetation. In addition, it is to be noted that the receiving waters of the Schuylkill River are denoted as warm water fisheries (WWF) and migratory fisheries (MF). The thermal impact potential to the Schuylkill River is minimal.

12. SEEDING AND MULCHING INFORMATION

COVER SEEDING:

The entire area disturbed by the work of this project, except where noted, shall be seeded as follows:

Temporary seeding (or mulching in winter) shall be done in areas where no active work will be performed. Areas which shall be undisturbed for one year shall be permanently seeded.

SEEDING (TEMPORARY):

According to season, at rate of one (1) lb. 1,000 sq. ft.
Annual Rye Grass- March 15 to August 15 at a rate of 55 lbs per acre,
Winter rye - September 15 to October 15 at rate of 168 lbs. per acre. Apply seed uniformly.
October 15 - March 1, use __ in. of mulch as ground cover over winter. Mulch with straw.

FERTILIZATION:

The following shall be spread and worked into topsoil to a depth of 3 to 4 inches. Apply ground agricultural grade limestone at the rate of one ton per acre and 5-5-5 fertilizer at the rate of 150 lbs. per acre.

SEEDING (PERMANENT):

The disturbed areas, drainage channels and swales shall be permanently seeded (stabilized) as follows:

FERTILIZATION:

The following shall be spread and worked into topsoil to a depth of 3 to 4 inches. Apply ground agricultural grade limestone at the rate of 184 lbs. per 1,000 sq. ft. And 10-20-20 fertilizer at the rate of 50 lbs. per 1,000 sq. ft. Immediately before seeding, work into the surface 10-10-10 fertilizer at the rate of 4 tons/acre or according to soil test.

GRASS SEEDING:

Kentucky bluegrass 88%: Tall Fescue 12% - 2 lbs per 1,000 sq. ft. Apply from April 1 to June 15 or August 15 to October 1. When seedings are watered regularly, seeding dates may be extended from June 15 to August 15. Apply seed uniformly by broadcasting hydraulic application. Cover grass with __ in. of soil & straw mulch.
MULCHING:

1. Mulching shall be provided as required in areas difficult to vegetate, and during off-season operations. Mulching methods and materials shall conform to the following:

   A. Mulch materials shall be unrotted salt hay, hay or small grain straw applied at the rate of 3 tons per acre. Mulch blower shall not grind or chop the material. Woodchips, free of insects and disease are permitted at a rate of 4-6 tons per acre.

   B. Mulch shall be spread uniformly by hand or mechanically so that approximately 85% to 95% of the soil surface will be covered.

   C. Mulch anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the slope.

      i. Peg and twine – drive 8” to 10” pegs to within 2” to 3” of the soil surface every 4’ in all directions. Stakes may be driven before or after applying mulch. Secure the mulch to the soil surface by stretching twine between pegs in a crisscross or square pattern, and secure the twine around each peg with two or more round turns.

      ii. Mulch netting – staple paper, jute, cotton or plastic nettings to the soil surface. Use degradable netting in areas to be mowed.

      iii. Mulch materials and binders shall be rolled in place by tracked vehicle or other suitable equipment.

   D. Applications should be heavier at edges where wind catches the mulch, in valleys and at crests of banks. Remainder of area should be uniform in appearance.

   E. Wood-fiber or paper-fiber mulch at the rate of 1,500 lbs per acre, or per manufacturer recommendation, may be applied by a hydroteeder. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

   F. Other:

      i. Where excessive soil erosion, tracking or flowing of sediment is evident or anticipated, a minimum of 4” of crushed stone shall be placed within the affected area and maintained until permanent stabilization is provided. Additional stone shall be placed as required until stabilization is achieved. Crushed stone shall conform to AASHTO designation M43. Size No. 2 (2-1/2” to 1-1/2”).

13. CONSTRUCTION SEQUENCE

See Erosion and Sediment Control Plan for construction sequence.