



*Excellence Delivered **As Promised***

Date: November 5, 2020

To: Steve Norcini, PE Township Engineer

From: Roger Phillips, PE

cc: Kevin W. Kochanski, RLA, CZO – Director of Community Development
Mary Eberle, Esq. – Grim, Biehn, and Thatcher
Damon Drummond, PE – Gilmore & Associates, Inc.
Patricia Sherwin – Radnor Township Engineering Department

RE: Eagle Road Subdivision – Preliminary Land Development

Date Accepted: 10/06/2020

90 Day Review: 01/04/2021

Gannett Fleming, Inc. has completed a review of the Preliminary Land Development Plans for compliance with the Radnor Township Code. The Plans were also reviewed for conformance with Subdivision and Land Development, Zoning and other applicable codes of the Township of Radnor.

The applicant is proposing to subdivide the property into nine lots and construct nine single-family homes. This project is located within the R-4 zoning district of the Township.

Eagle Road Subdivision

Plans Prepared By: Site Engineering Concepts, LLC

Dated: 08/27/2020

Sewage Facilities Planning

1. Final plan approval will not be granted until Planning Approval or a Planning Exemption notification is received from the PA DEP.

Zoning

1. A breakdown of how the building coverage and impervious coverages were calculated in the zoning table must be provided. A maximum square footage should also be provided. Additionally, an impervious breakdown for the entire site must be provided.

Gannett Fleming, Inc.

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2. The applicant should confirm the minimum lot width at the building setback lines for Lot 1 and Lot 2.
3. §280-105.E. – All outside lighting, including sign lighting, shall be directed in such a way as not to create a nuisance in any agricultural, institutional or residential district, and in every district all such lighting shall be arranged as to protect the street or highway and adjoining property from direct glare or hazardous interference of any kind. Any luminary shall be equipped with some type of glare shielding device approved by the Township Engineer. The lighting plans must be revised to include the glare shielding device.
4. §280-112.C. – Areas of steep slopes containing slopes steeper than 14% shall be outlined as following (1) Areas containing slopes steeper than 14% but less than 20% shall be distinguished from the areas containing slopes of 20% or steeper. (2) Areas containing slopes of 20% and steeper shall be separately identified.

Subdivision and Land Development

1. §255-20-A(3) – Each sheet shall be numbered and shall show its relationship to the total number of sheets. The Landscape Plans must be revised to be incorporated into the plan set.
2. §255-20-B(1)(e)[5] – The site plan must show the size of the units (in bedrooms), if known.
3. §255-20-B(1)(n) – Existing principal buildings (and their respective uses) and driveways on the adjacent peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads and other significant man-made features within 500 feet of and within the site (this includes properties across streets) must be shown on the plans. This must be shown or a waiver requested.
4. §255-20-B(1)(o)[9] – All fire hydrants must be shown on the site plan.
5. §255.27.C(4) – When a subdivision abuts or contains an existing street of inadequate right-of-way width, the Board of Commissioners may require the reservation or dedication of rights-of-way to conform with the required standards. Eagle Road is a Major Collector. The right-of-way requirement is by code is 80 feet and the cartway width is 48 feet. The applicant has indicated on the plans that they are providing an additional 10 feet of right of way on their frontage which would be the equivalent of a 60 foot right of way.

6. §255.27.H(6) – Minimum curb radii at street intersections shall be 25 feet for local streets; 30 feet for collectors; 35 feet for arterials; and 10 feet for driveways. This must be shown on the plans.
7. §255.27.I(3) – Private driveways where provided shall be located not less than 40 feet from the intersection and shall provide access to the street of lower classification when a corner lot is bound by streets of two different classifications. The driveway for Lot #9 does not conform to this requirement.
8. §255.37.B – The minimum width of all sidewalks and pedestrian paths shall be four feet. This must be dimensioned on the plans.
9. §255.37.K – Sidewalks shall be required in developments where lot areas are 20,000 square feet or less. The applicant should consider extending the sidewalk easterly along the cul-de-sac towards Eagle Road.
10. §255-40.C(2) – Access and circulation for fire-fighting and other emergency equipment, moving vans, fuel trucks, garbage collection, deliveries and snow removal shall be planned for efficient operation and convenience.
11. §255-43.1.B(1) – For all residential subdivisions or land developments involving a total of four or more lots and/or dwelling units, a minimum of 1,440 square feet of suitable park and recreation land shall be provided per dwelling unit within such subdivision/land development, unless the developer agrees to a fee in lieu of \$3,307 per dwelling unit (existing or proposed).
12. §255-54.B – The central water system should be designed with adequate capacity and appropriately spaced fire hydrants for fire-fighting purposes pursuant to the specification of the National Fire Protection Association. Review and approval by the Township Engineer and the Township Fire Marshall shall be required in order to ensure that adequate fire protection is provided.

Stormwater

1. §245-13.B(22) – Please revise the plans to include a statement, signed by the applicant, acknowledging that any revision to the approved drainage plan must be approved by the municipality, and that a revised erosion and sediment control plan must be submitted to the Conservation District for a determination of adequacy.
2. §245-13.B(23) – Please revise the plans to include the following signature block for the design engineer:

"I, (Design Engineer), on this date (date of signature), hereby certify that the drainage plan meets all design standards and criteria of the Radnor Township Stormwater Management Ordinance."

3. §245-32.B(4) – Please revise the plans to include a statement, signed by the landowner, acknowledging that the stormwater controls and BMPs are fixtures that can be altered or removed only after approval by the municipality.
4. The stormwater report narrative claims 19 subsurface infiltration beds are proposed but the plans indicate 18. Please revise this inconsistency.
5. The plans propose infiltration beds of various sizes but the Infiltration Bed Volumes-POI A table in the stormwater report appears to indicate a standard infiltration bed size for each front lot and rear lot system. Please provide dimensional data for each infiltration bed that is consistent with the plans.
 - a. Please update the infiltration volumes provided in the 2 Year Storm Volume Calculation-POI A, as necessary.
6. Please revise the hydrograph report to include the summaries of the proposed infiltration beds so the dimensional and elevation data used in the stormwater design can be reviewed.
7. The post-developed flow rates found in the Rate Table-POI A are inconsistent with those found in the hydrographs. Please revise the calculations to correct these inconsistencies. The post-developed flow should be modeled by routing the design storms through the stormwater systems.
8. The drainage areas used in the hydrograph report are inconsistent with those found on the Post-Developed Drainage Area Plan. The hydrograph report appears to utilize 2 post-developed drainage areas but the drainage area plans delineate 18 drainage areas of varying sizes. Please revise these inconsistencies. The stormwater calculations should reflect what is proposed.
9. Please revise the drainage area maps in the stormwater report to include scales.
10. It appears that some of the proposed drainage areas indicate runoff to be captured that will actually bypass a given system. Please revise the Post-Developed Drainage Area Plan to accurately reflect the runoff that will be collected by each proposed stormwater BMP.
11. Please update the plans to show dimensional data for each proposed infiltration bed including bottom of bed elevations and outlet invert elevations.

12. It appears that infiltration beds 1B and 2B are proposed in locations that had failed infiltration tests. Please revise the design so infiltration is not proposed in locations of failed infiltration tests.
13. §245-22.A(1)(c) – Please provide calculations to show that all stormwater BMPs proposing infiltration can fully infiltrate the retention volume in 96 hours.
14. Please provide calculations to show how the §245-23 Water Quality requirements are met.
15. Please provide calculations to show how the §245-27.F requirements are met.
16. Please provide stormwater piping profiles including all crossing utilities.
17. Please provide an overflow outlet structure for the proposed stormwater systems.
18. Please revise the stormwater report to include a soil inventory report of the project site that details the soil types and boundaries.
19. Final approval of the stormwater management plan will be required as part of the Grading Permit process. Any revisions to the size or location of the individual structures or other features will be addressed at this time.

Sanitary Sewer

1. The sanitary sewer easement for the existing sewer must be shown on the drawings.
2. There shall be no plantings in the existing or proposed sanitary sewer easements.
3. The foundations for the houses on Lot #1 and Lot #2 appear to be less than 10 feet from the existing sanitary sewer main. The applicant must consider relocating the existing sanitary sewer main.
4. The Radnor Township frame and cover detail must be added to the plan. We have attached a copy for your use.

General

5. It must be noted who the owner of the cul-de-sac will be (Public or Private). Who will be the owner of the property along the easterly side of the cul-de-sac? It must be noted who the owner of the
6. The applicant must appear before the Shade Tree Commission and gain approval prior to this plan being presented to the Board or Commissioners.
7. The attached tree protection detail from Rockwell and Associates must be added to the plan.

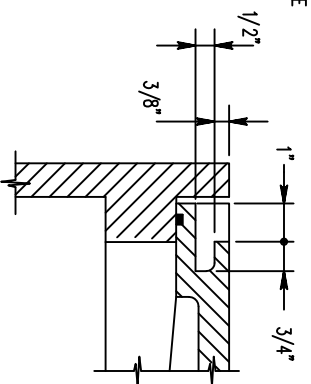
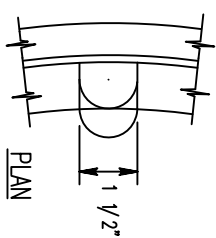
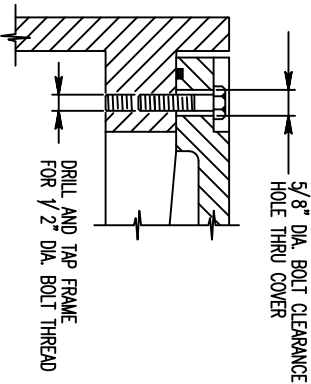
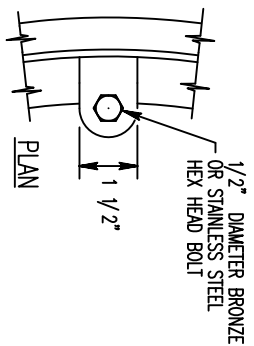
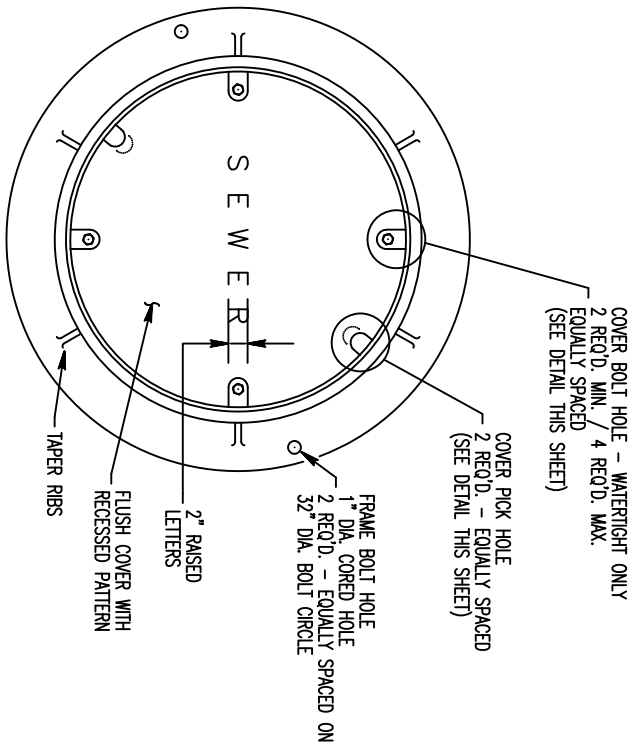
If you have any questions or require any additional information, please contact me.

Very truly yours,

GANNETT FLEMING, INC.

A handwritten signature in blue ink, appearing to be 'R. Phillips', with a large, stylized initial 'R' and a horizontal line extending to the right.

Roger A. Phillips, P.E.
Senior Project Manager



PLAN

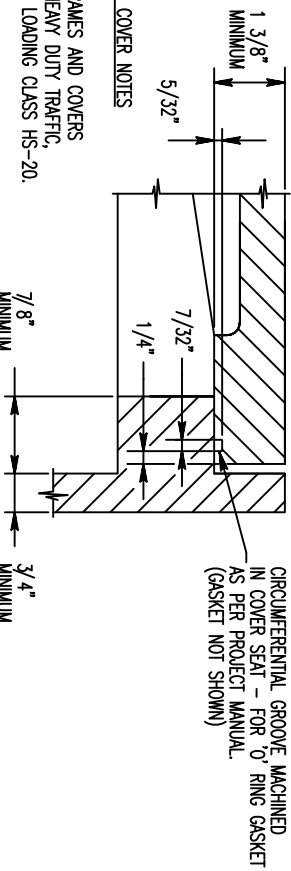
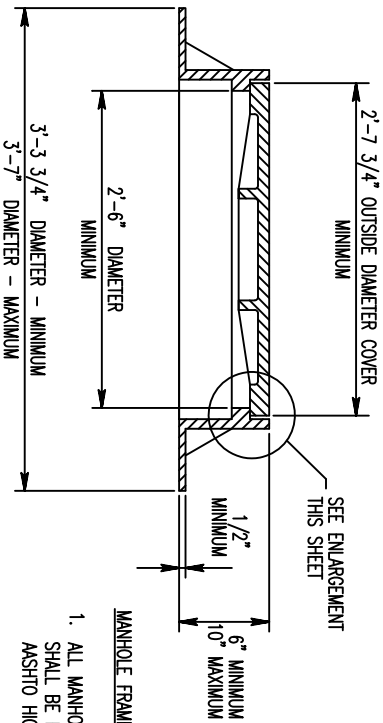
SECTIONAL ELEVATION

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COVER BOLT HOLE

REQUIRED ONLY ON MANHOLES DESIGNATED TO HAVE "WATERTIGHT" COVERS

COVER PICK HOLE



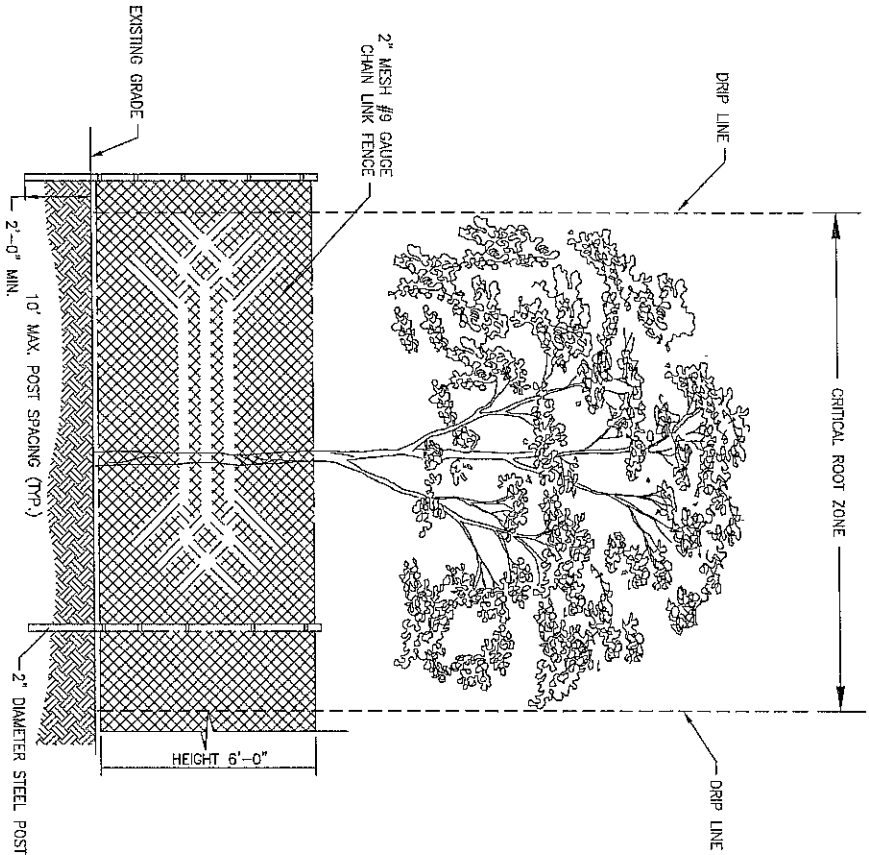
MANHOLE FRAME AND COVER NOTES

1. ALL MANHOLE FRAMES AND COVERS SHALL BE FOR HEAVY DUTY TRAFFIC, ASPHALT HIGHWAY LOADING CLASS HS-20.

STANDARD AND WATERTIGHT

MANHOLE FRAME AND COVER

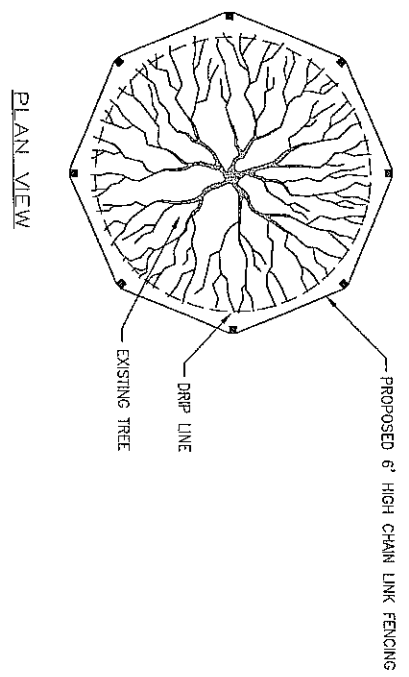




- DO NOT:
- A. Allow run off of spillage of damaging materials into the area below any tree canopy;
 - B. Store materials, stockpile soil, or park, or drive vehicles within the TPZ;
 - C. Cut, break, skin, or bruise roots, branches, or trunks without first obtaining authorization from the Consulting Arborist;
 - D. Allow fires under and adjacent to trees;
 - E. Discharge exhaust into foliage;
 - F. Secure cables, chains, or rope to trees or shrubs;
 - G. Trench, dig, or otherwise excavate within the drip line or TPZ of the tree(s) without first obtaining authorization from the Consulting Arborist;
 - H. Apply soil sterilants under pavement near existing trees.

TREE PROTECTION DETAIL

NO SCALE



TREE PROTECTION SPECIFICATIONS

- I. A 4" layer of coarse mulch or woodchips is to be placed beneath the drip line of the protected trees. Mulch is to be kept 12" from the trunk.
- II. A protective barrier of 6" chain link fencing shall be installed around the drip line of protected tree(s). The fencing can be moved within the drip line if authorized by the Consulting Arborist but not closer than 2" from the trunk of any tree. Fence posts shall be 20" in diameter and are to be driven 2" into the ground. The distance between posts shall not be more than 10'. This enclosed area is the Tree Protection Zone (TPZ).
- III. Movable barriers of chain link fencing secured to cement blocks can be substituted for "fixed" fencing if the Consulting Arborist agrees that the fencing will have to be moved to accommodate certain phases of construction. The builder may not move the fence without authorization from the Consulting Arborist.
- IV. Where the Consulting Arborist has determined that tree protection fencing will interfere with the safety of work crews, Tree Wrap may be used as an alternative form of tree protection. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major scaffold limbs may require protection as determined by the Consulting Arborist. Straw waddle may also be used as a trunk wrap by calling the waddle around the trunk up to a minimum height of six feet from grade. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the straw waddle.

Arbiculture ♦ Urban Forestry ♦ Horticulture
 Consulting ♦ Planning ♦ Management

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