Orth-Rodgers & Associates, Inc.
TRANSPORTATION ENGINEERS AND PLANNERS

January 15, 2014

PennDOT Engineering District 6-0
District Permit Unit
7000 Geerdes Blvd
King of Prussia, PA 19405

RE: Mid-County HOP Response Letter
HOP Application # 42543

Dear PennDOT reviewer:

The following is our response to PennDOT's HOP review comment letter, received on December 13, 2013 on PennDOT's E-permitting System. For clarity, PennDOT's HOP comments have been restated in italics followed by our response.

General

1. Based on information provided as part of preliminary submissions (D09-039) and previous coordination between applicant representatives and Department staff, it was understood that this project was to include the following improvements:
a. Construction of a new southbound right turn lane on the I-476 South off-ramp at S.R. 0003.
b. Installation of traffic adaptive signal control for the S.R. 0003 signal system (I-0097).
c. Construction of a westbound right turn lane at S.R. 0003 and Mather Avenue.
d. Construction of sidewalk along S.R. 0003.
The submitted plans do not appear to include these improvements.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed to including only the above improvements 1a and 1b. These improvements will be added to the revised HOP project plans.

2. The applicant is proposing to widen S.R. 0003 and install/modify the parallel subsurface stormwater facilities. If the drainage design cannot be revised to eliminate the proposed drainage impact, in accordance with scenario #4 of the PennDOT Strike-Off Letter 470-12-1, dated January 11, 2012, the municipality must be the sole or primary co-applicant on the permit to address maintenance responsibilities. PennDOT is legally bound by Section 421 of the State Highway Law (36 P.S. § 670-421) to enforce this maintenance responsibility for stormwater facilities relating to HOP projects. The Department policy is that a second HOP application with the Municipality listed as the sole or main co-applicant, must be submitted stating unequivocally that this second application is only for the maintenance of the proposed stormwater facilities installed within the Right-of-Way. Condition Code 389 stating that "Drainage installed by this permit is the primary responsibility of the Local Government to continually maintain or replace" will be added to the permit. Additionally, the following two notes must be added to the plans:
a. Drainage installed by this permit is the primary responsibility of the local government to continually maintain or replace.
b. Private co-permittee is responsible for providing funding to the local government to offset future maintenance costs associated with the permitted drainage facilities.

ORA Response: The proposed drainage impact at Point of Interest #3 has been eliminated, resulting in a reduction in peak flows at each point of interest for no impact.

3. In order to help the reviewer and to expedite the review process, provide a project narrative outlining the details and scope of this project.

ORA Response: Marple Associates Inc intends to develop a 26 acre site in the southwest quadrant of the I-476/West Chester Pike (SR 0003) interchange in Marple Township, Delaware County. Two access points will be provided for the proposed development. The primary access point is a proposed new full movement signalized intersection of West Chester Pike and Langford Run Road, located at the site's existing right in, right out only driveway. The second site access is located at the existing unsignalized intersection of South Lawrence Road and Langford Run Road, which provides left and right turn entry and right turn only exit.

The following roadway improvements are included in this HOP project:

- Right turn lane traveling eastbound on West Chester Pike (SR 0003) for Langford Run Road.
- Through lane traveling eastbound on West Chest Pike (SR 0003) from around Mather Avenue to southbound I-476 off ramp intersection.
- Left turn lane traveling westbound on West Chester Pike (SR 0003) from southbound I-476 off ramp intersection for Langford Run Road.
- Removing existing southbound off-ramp to westbound West Chester Pike (SR 0003), diverting westbound West Chester Pike (SR 0003) traffic to the existing southbound I-476 off ramp at the existing signalized intersection of West Chester Pike (SR 0003), and installing a new right turn lane on southbound I-476 off-ramp.
- Replacing the existing sign structure which will be in conflict with new median widening along West Chester Pike (SR 0003). Existing overhead structure signs will be relocated to new overhead sign structure on West Chester Pike (SR 0003).
- New traffic signal at the intersection of West Chester Pike (SR 0003) and Langford Run Road.
- Traffic Adaptive system implementation along existing West Chester Pike (SR 0003) corridor from Malin Rd to S. Lawrence Rd.

4. A letter of acknowledgement from Marple Township for the proposed development indicating awareness of the HOP Plan submission must be provided for review. (Pa Code, Title 67, Chapter 441.3(j)).

ORA Response: The Mid-County HOP plans and reports with revision date of January 15, 2014 have been submitted to Marple Township for review on January 15, 2014. A copy of the submissions letter to Marple Township is included with HOP resubmission.

5. PennDOT Form M-950MPC, Land Use Questionnaire, must be completed and submitted with all Highway Occupancy Permit applications. (Sections 619.2 and 1105 of the Municipal Planning Code and PennDOT Publication 282, Chapter 3.3).

ORA Response: Land Use Questionnaire Form, M-950MPC, was completed and included in HOP resubmissions.

6. Any references to meetings with Department personnel will not be considered in the review unless documentation in the form of meeting minutes previously approved by the Department personnel with whom the applicant/engineer met has been provided with the HOP application package.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed to accept referenced meeting as submitted in initial HOP submission.

7. The Traffic Study must be prepared in accordance with the PennDOT guidelines provided in the "Policies and Procedures for the Transportation Impact Studies" dated January 28, 2009.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed to accept the current TIS. The current TIS has been updated with a revision date of January 6, 2014 and included in the HOP resubmission.

8. Issuance of a Highway Occupancy Permit will not occur until the Traffic Signal Permit has been issued.

ORA Response: Noted

9. A completed M-950AA (Applicant's Authorization for Agent to Apply for HOP) must be provided with the resubmission.

ORA Response: Signed Applicant's Authorization for Agent to Apply for HOP Form is included in HOP re-submission.

10. The applicant must ensure all documentation submitted is properly labeled (i.e. pavement and drainage report covers).

ORA Response: All documents will be properly labeled as requested.

11. An RMS Update Form must be completed prior to the issuance of the permit.

ORA Response: RMS Update Form is included in HOP re-submission.

12. The following comments pertain to the structural adequacy review associated with the proposed overhead sign structure over S.R. 0003:
a. Provide a minimum 10 feet of soil cover depth over the proposed footers per BD-645M unless adequate design justification (i.e. foundation design) is provided.
b. Provide a reviewer block on the structure plan.
c. Provide segment and offset information pertaining to the overhead structure on roadway and structure plans.
d. Provide all information on the design criteria block per BD-645M (Sheet 4 of 7).
e. Provide a space for S-number in the title block of the structure plans.
f. All structure plans are subject to the review and approval of the PennDOT District Bridge Engineer.

ORA Response: Sign structure plan was updated including the foundation meeting the minimum soil cover requirement, added reviewer title block, segment/offset location, design criteria block per BD-645M (sheet 4 of 7), space for S-number on title block and sign structure S-number request form.

13. Please be aware that the following materials must be provided after Department approval of the submission materials and at the time of issuance of the permit:
a. One (1) hard copy of the HOP plans.
b. One (1) CD containing the District 6-0 CS-4401 ADA inspection forms along with the detailed ramp drawings in color pdf format.
c. Two (2) copies of the District 6-0 CS-4401 ADA inspection forms, pedestrian studies, and pedestrian checklists printed in-color.
d. One (1) copy of the Signal Plan on mylar.

e. One (1) CD containing the signal plan(s) in dwg format and all synchro files.
f. Four (4) copies of the Structure plans and reports. Ensure that TS&L and Foundation approval letters are included to ensure that the Final Design letter can be executed.

ORA Response: Noted

Application
1. The applicant must submit proof of ownership or interest in property (i.e., copy of deed, sales agreement, etc.) for the applicable parcel. (Pa Code Title 67, Chapter 441.3(e)(6)).

ORA Response: All deeds for the property site, owned by Marple Associated, have been included with HOP resubmission.

Transportation Impact Study/Transportation Impact Assessment
1. As discussed during previous coordination the new traffic signal proposed for S.R. 0003 and Langford Run Road cannot be put in operation until warrants are satisfied; additionally left turns from Langford Run Road to S.R. 0003 will not be permitted until the signal is operational. A determination regarding the schedule to activate the signal will be made as more information is available on the anticipated uses and build-out schedule.

ORA Response: Noted

2. The Transportation Impact Study should be signed and sealed by a Professional Engineer currently licensed to practice in the State of Pennsylvania. Publication 46, Chapter 11.1.4.

ORA Response: Professional Engineer sign and signature has been added to the updated TIS and included in HOP resubmission.

3. Provide recent traffic count data. The traffic counts in the Transportation Impact Study must be updated since they are over three years old. Transportation Impact Study Guidelines, Step 2.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed to accept the current TIS traffic counts. The TIS was updated with a revision dated of January 6, 2013 and includes HOP resubmission.

4. Provide updated analyses using the current Synchro software version. The provided Synchro analysis was completed using an outdated version of this software.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed to accept the Synchro version submitted on November 5, 2013.

5. The last review of the submitted TIS included the following two comments which do not appear to have been addressed:
a. The proposed land uses assumed in Technical Appendix F (Trip Generation) are not consistent with the development scheme outlined in the study.
b. Overall level-of-service must be calculated for the unsignalized intersection of Langford Run and South Lawrence Road.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed not to include the above comments 5a and 5b.

Plan Presentation

1. Provide the type and width of the existing pavement, travel lanes, and shoulders on the plans. Pa Code, Title 67, Chapter 441.3.

ORA Response: The typical section plan sheets has been updated as requested.

2. Provide an overall site plan and clearly indicate the proposed development. (Pa. Code, Title 67, Chapter 441.3(i)(3) and 441.3(i)(4)).

ORA Response: Marple Associate, Inc site plan has been included as requested.

3. Dimension all points of curvature, tangent and other break points (i.e. PT label for modified median). (Pa. Code, Title 67, Chapter 441.3(i)(4)).

ORA Response: The construction plan sheets have been updated as requested.

4. Show and dimension lane transition tapers and bay tapers for all proposed or modified auxiliary lanes (Pa. Code, Title 67, Chapter 441.3(i)(4)) on the pavement marking plans.

ORA Response: Pavement marking plans have been updated as requested.

5. Reference the HOP application number on the plan set (Pa. Code, Title 67, Chapter 441.3).

ORA Response: Mid-County HOP title information block and application number has been added to all plan sheets.

6. Provide a signature and seal of a Pennsylvania licensed Professional Land Surveyor to the plans to ensure geometric alignments, property lines, right-of-way lines, and topographic features are accurate and shown in accordance with industry standards.

ORA Response: A provision for Professional Land Surveyor's note, seal and signature box has been added to title sheet.

7. Provide a note to the plans stating the following: The permittee shall contact the County Maintenance Manager at the time of the guiderail removal; all existing guiderail to be removed shall be transported to and stored as per the direction from the County Maintenance Manager or his representative.

ORA Response: Note was added to the General Note and Construction Plan sheets.

8. The applicant should refer to the marked-up plans to assist in the clarification of comments. The marked-up plans can be found on the Department's e-Permitting system.

ORA Response: We have reviewed and made the appropriate revisions to the plans based on the District's marked-up plans.

9. Mastarms on the northern and southern side of S.R. 0003 at approximately STA 345+00 should be indicated on the Construction Plan.

ORA Response: The existing and proposed traffic signal and sign mast arms have been added to the Construction Plans as requested.

10. The survey note provided within the plan set must be revised to include the date the information was obtained. Note that S.R. 0003 has recently undergone resurfacing in the Summer of 2013; therefore, the plans must be verified to account for any change in roadway elevations resulting from the resurfacing and revised if necessary.

ORA Response: The survey for the project was obtained on July 2013 after PennDOT's resurfacing improvement was conducted. A provision for Professional Land Surveyor's note, seal and signature box was added to title sheet including the month and year the survey was performed.

11. The plans should be revised to depict the proposed basedrain on the Construction Plan sheets. Denote all beginning and end sections as well as any base drain outlet locations with Station and Offset designations as applicable.

ORA Response: Base drain information has been added to the Construction Plan as requested.

12. Sheet numbers must be provided on the Drainage and Truck Turning Plan sets.

ORA Response: Sheet numbers have been added to both the drainage and truck turning plan sets as requested.

13. The HOP Plans should be revised to maintain the existing bike lane pavement markings along S.R. 0003 across Langford Run Road under the proposed conditions. Revise the plans accordingly.

ORA Response: Existing and proposed bike lane pavement markings have been added to the traffic signal permit plan and pavement marking and signing plan at the intersection of SR 0003 and Langford Run Road as requested.

Access Configuration/Profile- Driveways/Local Roads
1. The left turn restriction for exiting Langford Run Road at Lawrence Road needs to be further emphasized through providing a larger island and angling the right exit only. Two "All Traffic Must Turn Right" signs must be installed on each side of the exit drive.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed not to include the above improvements at the intersection of Langford Run Road and Lawrence Road with this current HOP submission. A HOP improvement project for the intersection of Lawrence Rd and Langford Run Rd will be submitted in the future for this location.

2. The truck turning template must be revised to eliminate the encroachment into the adjacent left turning lane along Langford Run Road. Additionally, templates depicting a simultaneous dual left turn movement from Langford Run Road onto westbound S.R. 0003 must be submitted.

ORA Response: On the dual lefts movement from Langford Run Road onto westbound SR 0003 we restricted truck traffic only to outside of the left turn lane. Overhead, 'NO TRUCKS', sign was added to the mast arm on Langford Run Road. Updated truck turning template will be included in the HOP resubmission.

3. It appears there is a conflict between the roads proposed within the plan set and the Pavement Report (i.e. depth of wearing course and binder course).

ORA Response: Pavement Report and typical roadway sections was reviewed and updated.

4. The egress radius of Langford Run Road at the intersection with S.R. 0003 should be revised to 45-feet minimum.

ORA Response: The egress radius of Langford Run Road at the intersection of SR 0003 was updated to 45' radius as requested.

Sight Distance- Driveways/Local Roads
1. The HOP Plans must be revised to include the required safe sight distance and actual sight distance for all intersections located within the limit of work. Additionally, the sight distance note must be revised to indicate required sight distance of 460 ft. to the right and 400 ft. to the left. Revise the sight distance triangle accordingly.

ORA Response: The construction plan was updated to indicate sight distances along SR 0003 West Chester Pike at the intersection of Langford Run Road and Southbound I-476 off ramp.

Typical Sections
1. The proposed widening along S.R. 0003 must be revised to maintain a minimum of 2% slope.

ORA Response: Proposed widening minimum cross slope of 2% was revised as requested.

2. The Typical Sections must be revised to include the existing slope information.

ORA Response: Existing roadway cross slopes was added to the typical sections and cross sections.

3. Extend the mill and overlay along the eastbound side of S.R. 0003 to the existing stopbar (from approximately STA 348+00 to 350+50).

ORA Response: The mill and overlay was extended on eastbound SR 0003 as requested.

4. The Typical Sections for S.R. 0003 must be revised to indicate a minimum 2' sawcut area.

ORA Response: The minimum 2' area of paving, adjacent to existing roadway was added as requested.

Curb
1. Curb elevation information must be shown for construction on the Grading and Drainage plan sheets.

ORA Response: Curb elevations were added to both the grading and drainage plan sheets.

2. Specify curb ramps in accordance with RC-67M, and clearly indicate the type of curb ramp to be provided at each location. Publication 72M, RC-67M.

ORA Response: Curb ramp types were added to both the curb ramp detail plan and construction plans.

Cross Sections
1. The Cross Sections must be revised to reflect the following information:
a. Centerline elevation (existing and proposed).
b. Proposed widening, travel lanes, median, shoulders, sidewalks and overlay dimensions.
c. Existing and proposed roadway and shoulder cross slopes.
d. Grade break locations, including offset and elevation at each break.
e. Side slope to existing ground.
f. Slope treatment behind curbline.
g. Superelevation transitions and leveling course (if applicable).

ORA Response: Roadway cross-sections were updated as requested.

Signs
1. A sign tabulation must be provided in the plan set that references the series, name, dimensions, location along the roadway centerline, impact and the party responsible for maintenance for each sign (existing and proposed) within the Limits of Work. Additionally, a separate tabulation must also pe provided on an 8-1/2"x11" sheet and included with the next submission.

ORA Response: Sign Data Spread Sheet with all existing and proposed signs is added to the pavement marking and signing plan sheets and a separate 8-1/2”x11 sheet is also included in the HOP resubmission.

Pavement Markings
1. The following comments refer to the pavement marking plan:
a. Label tie-ins for all proposed and existing pavement markings.
b. Label the existing gore at approximately STA 348+50.
c. The Plan indicates W/8” and W/4" makings at approximately STA 349+30 RT. Clarirification is required to determine the width of the existing line.

ORA Response: Pavement marking and signing plan was updated noting the limit of the W/8” and W/4” line.

Maintenance and Protection of Traffic
1. Add applicable Publication 213 PATA Figures in the HOP application with the next submission.

ORA Response: All applicable Publication 213 PATA Figures has been added to the traffic control plan sheets as requested.

2. The Sequence of Construction should be revised to address the following:
a. It appears that construction on the S-WC Ramp should occur prior to closing the slip ramp.
b. Clarfy and provide additional information as to how and when the installation of the new overhead sign structure and removal of the old structure will occur (i.e. address any necessary lane closures, temporary barrier protection, etc).

ORA Response: Traffic Control Plan sequence of construction has been revised by detailing ramp construction, lane closures, construction hours, installation of traffic signals, and the installation/removal of overhead sign structure.

Guiderail

1. The plans and cross-sections do not adequately depict or address the grading associated with the existing wall removal and impact to the surrounding earth slopes, existing sign structure removal, and proposed guiderail installation along the south side of S.R. 0003 between approximately STA 317+50 RT and 318+50 RT. It appears there is insufficient area to re-grade the embankment behind the portion of wall that is proposed to be removed as currently designed.

ORA Response: Only portion of existing wall will be removed for the installation of new sign structure foundation. Height of the existing wall being removed is less than 3' in height. The area around the sign structure foundation will be re-graded and then the guide rail can be installed.

2. Supporting calculations must be provided to justify the proposed guiderail design.

ORA Response: The north and south side of SR 0003, Type 2-S Guide Rail is being installed due to the new sign structure obstruction. On the west bound SR 0003 approach to the new sign structure includes the installation of Anchored Backslope Terminal, Type 1 buried end transition, 200 LF of Type 2-S Guide Rail and Terminal Section Single on the trailing end. Installation of the buried end transition will not require "Length Of Need" (LOD) guide rail calculations. On the east bound SR 0003 approach to the new sign structure includes the installation of Terminal Section Bridge Connection, 75 LF of Type 2-S Guide Rail and Terminal Section Single on the trailing end. "Length Of Need" (LOD) guiderail calculation will not be needed since the guide rail is connected to existing wall approaching the new sign structure. The length of required guiderail was added to the construction plans.

Signal Section (Publication 46, 148 and 149)

1. General

a. The Traffic Signal Design Report should be revised to include the following:

i. An executive summary and applicable correspondence

ORA Response: Executive Summary has been included in the updated Signal Design Report.

ii. Signal warrant analysis

ORA Response: Warrant has been included in the updated Signal Design Report

iii. Updated manual traffic counts (TIS counts are over three years old)

ORA Response: Per December 18, 2013 meeting between Department and ORA, determined that new counts are not required.

iv. Sight distance information.

ORA Response: Calculations are illustrated on HOP construction plans for Langford Run Road intersection.

v. Three-years of reportable crashes

ORA Response: Crash Data is incorporated into updated Signal Design Report.

vi. Existing signal permit plans (revisions only) and a copy of the construction plan (for reference only)

ORA Response: Updated traffic signal permit plans are included in the resubmittal of the HOP plans, including the modified intersections of Malin Road, Sproul road (SR 0320), Church Road/Berkley Road, Langford Run Road, I-476 SB Ramps, I-476 NB Ramps, South Lawrence Road and System Permit I-0097.

vii. Turn lane warrant analysis per PennDOT Publication 46, Chapter 11, SOL 470-08-7.
ORA Response: Analysis has been included in the updated Signal Design Report.

viii. Left turn conflict factor analysis.
ORA Response: Analysis has been included in the updated Signal Design Report.

ix. Pedestrian Needs Accommodation Checklist with Summary; (Publication 46, Chapter 19)
ORA Response: Checklist has been included in the updated Signal Design Report.

x. Half-size (11" X 17") curb ramp detail sheets.
ORA Response: Curb ramp detail sheets are included in the HOP resubmission.

xi. Electronic copies of capacity analysis in Synchro 8
ORA Response: No new analyses are being offered, Traffic Adaptive analysis is not required.

b. Provide a pedestrian feasibility study for all affected intersections. Include municipal correspondence approving the proposed ADA facilities (including the need for APS).
ORA Response: Per December 18, 2013 meeting between Department and ORA, determined that studies are not required for the other seven signalized intersection. As noted above, pedestrian study has been included for Langford Run Road intersection in the Signal Design Report.

c. This application cannot be recommended for approval until signed TE-160 Forms for all affected intersections are provided.
ORA Response: Preliminary TE-160 forms for each effected intersection have been included in the Signal Design Report. These will be forwarded to the municipality for approval.

d. An updated signal permit plan for SR 0003 and New Ardmore Avenue (file #0002) must be submitted to note the new adjacent signal to the east.
ORA Response: This intersection and the adjacent intersections being modified for traffic adaptive implementation have been included in the plan set.

e. As noted in the TIS and based on previous coordination between the Applicant's representatives and Department staff it is understood that the scope of project impacts is anticipated to be limited to:
i. S.R. 0003 from New Ardmore Avenue to I-476 South ramps; and
ii. Lawrence Road and Langford Run.
If correct the TIS should be revised accordingly.
ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed to include only the improvements along West Chester Pike (SR0003) including the intersection of Langford Run Rd, Southbound I-476 off-ramps and installation of traffic adaptive signal control on SR 0003 These improvements will be added to the revised HOP resubmission.

f. As noted in the TIS and during previous coordination meetings the traffic signal cannot be put in operation until warrants are satisfied, which may not occur until the majority of the development has been built and occupied. Until warrants are satisfied the traffic signal will not be put in operation and traffic volumes must be monitored.
ORA Response: Noted

2. Traffic Adaptive at the 7 intersections. New Ardmore to Old West Chester Pike
ORA Response: Signal plans from Malin Road to South Lawrence Road indicate Traffic Adaptive operation.

3. Need all related signal permit plans submitted With System Plan.
ORA Response: Plans included in plan set.

General (cont.)
g. As noted during previous coordination meetings the I-476 South off-ramp must be modified to provide a new southbound right turn lane in addition to the existing lanes. An updated signal permit plan (File #2418) must be provided reflecting this new lane and the associated equipment and operational modifications. Additional overhead signing upstream on the ramp should be provided to assist motorists destined for Langford Rd in making an appropriate lane choice.
ORA Response: The intersection has been revised to provide dual left turn lanes, a shared through/right lane and a separate right turn lane. Roadway construct and traffic signal permit plans have been included in the plan set.

h. As discussed during previous coordination meetings Adaptive Control should be provided. The applicant should coordinate a meeting to include the Department, Marple Township and Newtown Township to determine the scope of Adaptive Control and mechanism for implementation.
ORA Response: Traffic adaptive will replace the current closed loop system in operation from Malin Road to South Lawrence Road. The traffic signal permit plans and system permit plan reflects this change. TE-160 forms for each intersection will be reviewed and approved by the municipality.

I. An updated System Permit plan (I-0097) must be submitted.
ORA Response: Revised System Permit plan is included in the plan set.

j. The Department recently modified the markings along S.R. 0003 within the project limits to incorporate a bike lane/modified shoulder; was marked in recent years. Ensure that this lane/shoulder is reflected appropriately as the plans are modified.
ORA Response: Markings have been incorporated on the Signing and Pavement Marking Plans and traffic signal permit plans.

k. Provide a construction plan for review.
ORA Response: Developer's contractor can prepare construction 'as-built' for municipality as required.

4. West Chester Pike (S.R. 0003) and Langford Run Road
a. Provide a pedestrian crossing for Langford Run Road.
ORA Response: Though identified in the pedestrian study that no pedestrians use the intersection currently, a crossing has been designed for the Langford Run Road approach.

b. Remove the exclusive pedestrian phase at the intersection and add pedestrian timings to their corresponding vehicular phase.
ORA Response: Phase has been removed. Signal operation modified to allow pedestrians to cross during Langford Run phase.

c. When there a pedestrian crossing when turning right the right turn signal, prior to overlap, should be shown as yellow and red with no green arrow on the side street phase.
ORA Response: Complied as noted above.

d. Revise pedestrian clearance calculations. The width of crossing should be measured from curb to curb. (Pub 149 11.6.4
ORA Response: Clearance times recalculated with appropriate widths.

e. In the MST diagram, revise signal head 5 to indicate 'Red' during flashing operations.
ORA Response: Revised as indicated.

f. Each of the calculated Yellow and All-Red times should be rounded to the nearest whole second; additionally, ensure that the sum of the rounded Yellow + All-Red times is greater than the sum of the calculated Yellow + All-Red times. Adjust the time as necessary. Pub 149.
ORA Response: All clearance times recalculated and rounded as indicated.

g. Include a volume chart with the opening year build volumes on the signal permit plan.
ORA Response: Provided as indicated.

h. Show the proposed overhead street name signs on the plan. Use latest standard lettering for overhead street name signs (D3-4 and D3-5) per Publication 236.
ORA Response: Provided as indicated.

i. Add signs 'J' and 'R' to the median on the west leg of the intersection.
ORA Response: Provided as indicated.

j. Do not use H, I, O, Q, or U as the sign plan symbol on the signal permit plan.
ORA Response: Revised as indicated.

ADA Compliance
1. In accordance with PennDOT Publication 13M (Chapters 6, 7, and 9) and MUTCD, Section 4E, an engineering study must be conducted and submitted to determine the need for pedestrian accommodation at signalized intersections. A completed "Pedestrian Needs Accommodation At Signalized Intersections Checklist," as well as all supplementing documentation must be returned along with your resubmitted package. At a minimum, it would appear appropraite to provide additional/upgraded ADA accomodations across Langford Road adjacent to S.R. 0003, across S.R. 0003 at the western leg of the S.R. 8037 intersection, across the Ramp S-WC Spur, and across the Ramp WC-S1 Spur adjacent to S.R. 0003. Asking for a pedestrian study at each signalized intersection as well as additional curb ramps at the intersections of SR 0003/ SR 476 SB Ramps and SR 0003/Langford Run Road.

ORA Response: Meeting held on December 18, 2013 with PennDOT's Permit and Traffic Units agreed ORA to only provide Pedestrian Needs Accommodation Checklist and Bicycle and Pedestrian Checklist for new traffic signalized intersection of SR 0003 West Chester Pike and Langford Run Road. The completed checklists are located in Traffic Signal Design Report.

2. The proposed project includes pedestrian facilities that are located outside of the legal Right-of-Way; as such, the following note should be included on the plans: "All proposed pedestrian facilities reflected on these plans, that are outside of PennDOT legal right-of-way, shall be constructed to comply with the requirements of the U.S. Access Board, Public Right-Of-Way Accessibility Guidelines (PROWAG) and the 2010 ADA Standards. PennDOT Design Manual Part 2, Chapter 6, and PennDOT Standards for Roadway Construction (Publication 72M, RC-67M) provide guidance on ADA accessible design for pedestrian facilities and can be utilized for reference."

ORA Response: Note was added to the ADA Curb Ramp Detail Sheet as requested.

3. The CS-4401 forms must be updated to include a minimum of 3 photos for each proposed ramp.

ORA Response: Form was updated with new photos of each proposed curb ramp as requested.

4. Revise the ADA Ramps to provide rounded concrete surfaces in lieu of cheek walls.

ORA Response: Rounded concrete surfaces was added to the ADA Curb Ramp as requested.

Drainage
1. It is required that the Drainage Control Report be signed and sealed by a licensed Professional Engineer registered in Pennsylvania (Drainage Impact Report Guidelines, April 2004).

ORA Response: Pennsylvania licensed Professional Engineer seal and signature was added to the updated Drainage Control Report

2. The drainage calculations should be computed by the rational method for 25-year Frequency storm (Non-Interstate Limited, Access Freeway and arterials).

ORA Response: As documented in Pub. 13M, PennDOT Design Manual, Part 2:
Section 10.2.C.2 states that the design storm for city streets and highways with longitudinal drains and side drains is the 10-yr frequency storm. But, greater design storms are used for drainage facilities in an underpass or depressed section of the highway.

Section 10.2.C.3 states that "when a pipe is part of a storm sewer system and crosses the roadway, it shall be designed as a storm sewer with the same design storm as the remainder of the drainage system."

The proposed drainage for the project is part of an existing storm drain system which is not in underpass or a depressed section of the roadways, nor do cross pipes in the system qualify as culverts, therefore the project storm drain pipes are designed for the 10-year storm.

Furthermore, Table 10.6.1 in Section 10.6.E documents "the minimum magnitude of design floods for all drainage structure projects" and is intended for drainage structures which are defined in Section 10.0 as "roadway drainage and waterway structures are referred to above include culverts, bridges, channel changes and longitudinal encroachments on waterways or floodplains". No drainage structures are in the project.

The project storm drains are designed for the 10-year design storm in accordance with Pub. 13M, Design Manual, Part 2.

3. The profiles of the existing and/or proposed stormwater drainage system with all pertinent dimensions (type of pipe, corrugations, length, slope, invert elevations, ground profile, minimum and maximum fill height, etc.) for the construction should be added to the plans. PennDOT Design Manual, Part 2, Chapter 10.
ORA Response: Roadway profiles were updated as request.

4. Calculations for the capacity analysis of the swale should be submitted for review (Drainage Impact Report Guidelines, April 2004). Details of the swale must also be provided.
ORA Response: Swale capacity analysis calculations and details were added as requested

5. The pipe information upstream of INL 121 (i.e. ENIL 8-INL 121) appears to have been ommitted from the drainage report. The drainage analysis must include the upstream area for POI 1 depicted on the Point of Interest Plan.

ORA Response: The upstream pipe information from INL 121 has been added to the drainage report and shows as the following existing storm drain system:

EINL 1	Existing inlet and existing pipe out remain
EINL 2	Existing inlet and existing pipe out remain
EINL 3	Existing inlet and existing pipe out remain
EINL 47	Existing inlet and existing pipe out remain
EINL 5	Existing inlet and existing pipe out remain
EINL 4	Existing inlet and existing pipe out remain
EINL 7	Existing inlet and existing pipe out remain
EINL 8	Existing inlet and existing pipe out remain
EINL 8A	EINL 8A is either a buried junction or a tee connection. Existing buried junction/tee connection and existing pipe out remain
EINL 9	Existing inlet and existing pipe out remain
EINL 10	Inlet is replaced and existing pipe out remains
EINL 11	Existing inlet and existing pipe out remain
INL 112	Inlet is replaced and existing pipe out remains
EINL 13	Existing inlet and existing pipe out remain
EINL 48	Existing inlet and existing pipe out remain
EINL 14	Existing inlet and existing pipe out remain
INL 115	Inlet is replaced and existing pipe out remains
EINL 16	Existing inlet and existing pipe out remain
EINL 20	Existing inlet and existing pipe out remain
INL 121	Inlet is replaced and existing pipe out remains

The area for Point of Interest, POI 1, is included in the report. Additional labels have been added to the Point of Interest Plan.

6. It appears EINL 16 is to be capped and plugged. An associated detail must be provided with the next submission indicating the method of capping, etc.

ORA Response: The plan has been revised to removing the existing inlet and plugging the existing pipe from installing a cap on the existing inlet and plugging the existing pipe.

7. Additional information should be provided with respect to EINL 49 (i.e. existing connections, analysis, etc.) with the next submission.

ORA Response: The existing pipe connecting EINL 49 to EINL 42 has been added to the mapping and the analysis is in the storm drain pipe calculations.

8. The existing 21" Concrete Pipe (CMP) located along the median between MH 123 and EINL 26 on S.R. 0003 should be replaced with an equivalent Reinforced Concrete Pipe (RCP).

ORA Response: The existing 21" CMP, located within the existing median, has been replaced with a 21" RCP.

9. Considering the large drainage area discharge and velocity, a headwall with appropriate rip rap should be provided upstream of EINL 44. All corresponding details, calculations, etc. should be provided and the plans revised accordingly.

ORA Response: The existing inlet and ditch approaching the inlet will remain with the addition of a 6" dike behind the inlet to ensure that the runoff is collected at the inlet. The addition of a headwall upstream of the inlet is not necessary.

10. The Drainage Plans should be revised accordingly:
a. Indicate all existing curb tie-ins.

ORA Response: All existing curb tie-ins have been added to the drainage plan.

b. Elevations for clarity.

ORA Response: Drainage elevations are provided on the sides of the plans to reduce text crowding in the plan views.

c. All Points of Interest (POI).

ORA Response: Points of Interest (POI) labels have been added to the Proposed Drainage Area plans.

d. DA 149 is labeled as 49.

ORA Response: The DA 149 label is correct. It is proposed drainage area DA 149 to existing inlet EINL 49. The existing inlet remains while the project revises the drainage area due to grading.

11. Details for the proposed concrete block/gravel inlet protection and all proposed rock apron should be provided on the plans and include all pertinent information necessary for construction (i.e. rock size, apron length/widths, materials, etc.).

ORA Response: The erosion and sediment control items utilized are standard details. No rock aprons are proposed.

Plan Marked-up Comments:

1. It is required that the Drainage Control Report be signed and sealed by a licensed Professional Engineer registered in Pennsylvania (Drainage Impact Report Guidelines, April 2004).

ORA Response: Pennsylvania licensed Professional Engineer seal and signature was added to the updated Drainage Control Report

If you have any questions about this submission, please contact me at (610) 407-9700.

Very truly yours,

ORTH-RODGERS & ASSOCIATES, INC.

George R. Spadaro
Senior Project Manager

Enclosure
cc: Claude de Bottone, Marple Assoc.
Richard A. Geist, Richard A. Geist Consultant
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