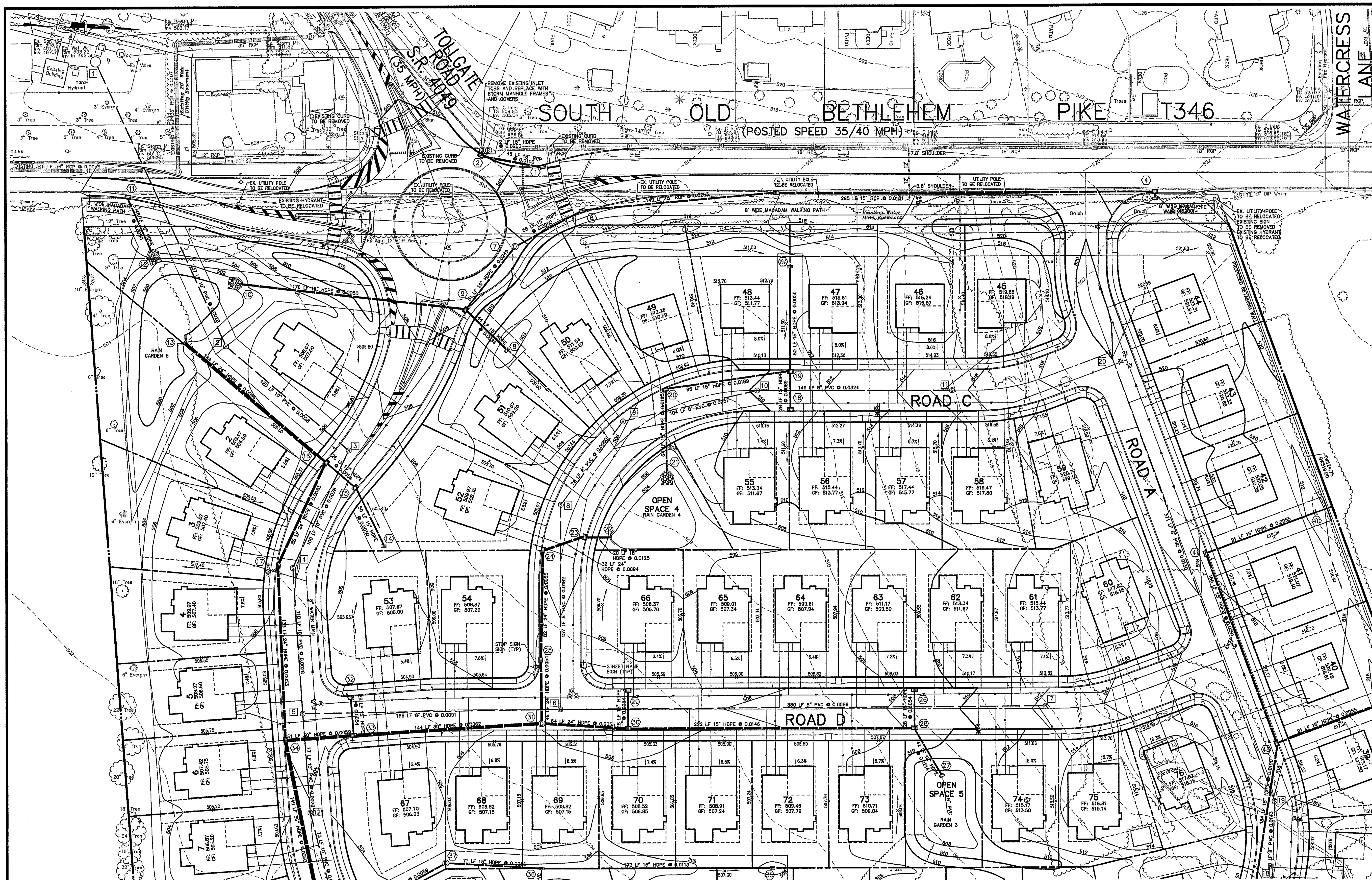


STORMWATER STRUCTURE CHART

INL 1
TG 510.96
INV 505.76

INL 2
TG 509.43
INV 505.30
INV 505.10

INL 3
TG 520.00
INV 517.11

INL 4
TG 520.65
INV 517.05
INV 516.85

INL 5
TG 515.31
INV 511.51
INV 511.31

INL 6
TG 511.49
INV 507.39
INV 507.19

STORM MH 7
RIM 509.90
INV 506.90
INV 504.90

INL 8
TG 507.40
INV 503.95

INL 9
TG 507.75
INV 503.58 (MH7)
INV 503.58 (8)
INV 503.38 (18)

EW 10
INV 502.50

INL 11
TG 506.18
INV 502.51

EW 12
INV 502.28

EW 13
INV 499.00

INL 14
TG 504.70
INV 501.45

INL 15
TG 504.91
INV 501.20
INV 501.00

INL 16
TG 504.91
INV 500.85(INL 15)
INV 498.05(OS 13)
INV 498.05

INL 17
TG 505.55
INV 497.60
INV 497.50

INL 18
TG 510.55
INV 507.30

INL 19
TG 510.55
INV 507.05 (19A)
INV 507.05 (18)
INV 506.85

INL 19A
TG 510.70
INV 507.45

INL 20
TG 508.30
INV 505.05
INV 504.85

EW 21
INV 503.60

HW 22
TW 505.50
INV 503.20

INL 23
TG 506.45
INV 502.95
INV 502.70

INL 24
TG 508.21
INV 502.40
INV 502.20

INL 25
TG 505.04
INV 501.75
INV 501.50

INL 26
TG 508.26
INV 505.00

INL 27
TG 509.00
FG 507.25
INV 505.75

INL 28
TG 508.26
INV 504.85(INL 26)
INV 504.85(INL 27)
INV 504.65

INL 29
TG 504.64
INV 501.55

INL 30
TG 504.84
INV 501.40(INL 28)
INV 501.40(INL 29)
INV 501.20

STORM MH 31
RIM 505.48
INV 501.25(INL 25)
INV 500.85(INL 30)
INV 500.75

INL 32
TG 504.02
INV 500.75

INL 33
TG 504.02
INV 500.60(INL 32)
INV 499.85(MH 31)
INV 499.65

INL 34
TG 504.01
INV 498.35(INL 33)
INV 495.80(INL 17)
INV 495.80

INL 35
TG 505.50
INV 502.25

INL 36
TG 503.50
INV 500.25
INV 500.05

STORM MH 37
RIM 504.70
INV 498.65
INV 498.45

INL 38
TG 502.44
INV 499.00
INV 498.80

INL 39
TG 502.44
INV 498.65(INL 38)
INV 495.05(INL 34)
INV 494.85

INL 40
TG 516.90
INV 513.65

INL 41
TG 517.82
INV 513.15
INV 512.95

INL 42
TG 515.00
INV 511.75

INL 43
TG 516.21
INV 511.25(INL 42)
INV 511.25(INL 41)
INV 511.00

INL 44
TG 511.00
INV 507.75

INL 45
TG 511.60
INV 507.55(INL 44)
INV 507.50(INL 43)
INV 507.30

INL 46
TG 509.61
INV 506.10
INV 505.60

INL 47
TG 509.48
INV 505.40
INV 505.20

EW 48
INV 504.00

EW 49
TW 507.80
INV 504.87

INL 50
TG 507.82
INV 504.35

INL 51
TG 507.54
INV 503.21(INL 50)
INV 502.56(INL 49)
INV 502.46

INL 52
TG 505.27
INV 502.00

INL 53
TG 505.27
INV 501.72(INL 52)
INV 501.66(INL 51)
INV 500.25

INL 54
TG 502.25
INV 499.00

INL 55
TG 502.50
INV 498.60
INV 498.40

INL 56
TG 504.22
INV 498.00(INL 55)
INV 497.25(INL 53)
INV 497.05

INL 57
TG 502.68
INV 499.40

INL 58
TG 502.88
INV 497.25(INL 57)
INV 496.50(INL 56)
INV 496.30

INL 59
TG 502.72
INV 494.80(INL 58)
INV 493.80(INL 39)
INV 493.60

INL 60
TG 501.35
INV 492.95
INV 492.85

INL 61
TG 501.50
INV 498.25

INL 62
TG 500.70
INV 497.45
INV 497.25

INL 63
TG 500.64
INV 496.50
INV 496.30

INL 64
TG 500.84
INV 495.25(INL 63)
INV 492.50(INL 60)
INV 492.40

INL 65
TG 501.00
INV 497.75

INL 66
TG 501.46
INV 494.85(INL 65)
INV 491.99(INL 64)
INV 491.69

INL 67
TG 501.00
INV 497.75

INL 68
TG 500.82
INV 497.18(INL 67)
INV 491.54(INL 66)
INV 491.44

EW 69
INV 497.15

EW 70
INV 496.90

STORM MH 71
RIM 500.50
INV 496.80(EW 69)
INV 496.80(EW 70)
INV 496.60

INL 72
TG 499.40
INV 496.15

INL 73
TG 500.25
INV 495.75(INL 72)
INV 495.75(MH 71)
INV 495.50

INL 74
TG 500.61
INV 490.65
INV 490.55

INL 74A
TG 501.12
INV 495.08(INL 73)
INV 490.38(INL 74)
INV 490.28

EW 74B
INV 489.28

INL 75
TG 499.83
INV 495.50(INL 76)
INV 490.95(INL 68)
INV 490.85

INL 76
TG 499.83
INV 495.74
INV 495.64

INL 77
TG 499.31
INV 496.13
INV 496.03

INL 78
TG 499.31
INV 498.27

INL 79
TG 501.50
INV 498.25

INL 80
TG 503.58
INV 500.30

INL 81
TG 503.58
INV 500.15(INL 80)
INV 497.70(INL 79)
INV 497.50

EW 82
INV 498.50

INL 83
TG 503.62
INV 497.85(EW 82)
INV 496.65(INL 81)
INV 496.45

EW 84
INV 497.50

INL 85
TG 501.41
INV 498.15

INL 86
TG 501.41
INV 498.00(INL 85)
INV 496.45(EW 84)
INV 495.30(INL 83)
INV 495.05

INL 87
TG 501.88
INV 498.60

INL 88
TG 501.58
INV 498.45(INL 87)
INV 494.20(INL 86)
INV 494.00

EW 89
INV 493.25

EW 90
INV 492.35

EW 91
INV 491.10

EW 92
INV 489.28

O.S. 93
TG 493.85
INV 489.16

EW 94
INV 489.00

SANITARY STRUCTURE CHART

WET WELL 1
RIM 508.20
INV IN 486.59

SAN MH 2
RIM 504.00
INV 487.31
INV 487.26

SAN MH 3
RIM 505.24
INV 487.70
INV 487.65

SAN MH 4
RIM 505.92
INV 488.03
INV 487.98

SAN MH 5 DROP
RIM 504.82
INV 494.70(MH 6)
INV 488.39(MH 12)
INV 488.34

SAN MH 6 DROP
RIM 505.71
INV 499.11(MH 7)
INV 496.67(MH 8)
INV 496.50

SAN MH 7
RIM 505.39
INV 499.40(MH 8)
INV 499.20(MH 13)
INV 499.15

SAN MH 8
RIM 512.32
INV 502.50

SAN MH 9
RIM 506.86
INV 499.77
INV 499.62

SAN MH 10
RIM 507.93
INV 500.33
INV 500.16

SAN MH 11
RIM 510.16
INV 503.17
INV 503.00

SAN MH 12
RIM 503.86
INV 488.66
INV 488.61

SAN MH 13
RIM 502.97
INV 488.92
INV 488.87

SAN MH 14 DROP
RIM 503.44
INV 493.80(MH 15)
INV 489.50(MH 21&33)
INV 489.45

SAN MH 15
RIM 504.88
INV 497.92
INV 497.75

SAN MH 16
RIM 510.19
INV 501.28
INV 501.03

SAN MH 17
RIM 511.99
INV 504.17
INV 504.00

SAN MH 18
RIM 514.27
INV 506.17
INV 506.00

SAN MH 19
RIM 515.95
INV 507.17
INV 507.00

SAN MH 20
RIM 520.08
INV 512.00

SAN MH 21
RIM 501.81
INV 490.00
INV 489.95

SAN MH 22
RIM 500.97
INV 490.24
INV 490.19

SAN MH 23
RIM 501.83
INV 490.52
INV 490.47

SAN MH 24
RIM 500.38
INV 491.35(MH 25)
INV 491.23(MH 26)
INV 491.18

SAN MH 25
RIM 501.09
INV 493.08

SAN MH 26
RIM 499.59
INV 491.56
INV 491.51

SAN MH 27
RIM 501.20
INV 491.97
INV 491.92

SAN MH 28
RIM 502.38
INV 492.39
INV 492.34

SAN MH 29
RIM 502.09
INV 492.98
INV 492.81

SAN MH 30
RIM 503.34
INV 493.77
INV 493.60

SAN MH 31
RIM 504.50
INV 494.66
INV 494.49

SAN MH 32
RIM 505.71
INV 496.19

SAN MH 33
RIM 500.00
INV 490.26
INV 490.09

SAN MH 34
RIM 501.40
INV 491.42
INV 491.25

SAN MH 35
RIM 500.46
INV 491.71

SITE IMPROVEMENT PLAN LEGEND:

EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LATERAL
EXISTING WATER LINE
PROPOSED WATER LINE
EXISTING GAS LINE
PROPOSED GAS LINE
EXISTING UG ELECTRIC
PROPOSED UG ELECTRIC
STORM STRUCTURE NUMBER
SANITARY MANHOLE NUMBER
EXISTING UTILITY POLE
PROPOSED UTILITY POLE
EXISTING LIGHT POLE
PROPOSED LIGHT POLE
EXISTING CONTOUR — 100
PROPOSED CONTOUR — 100
FLOODPLAIN LINE
EXISTING TREE LINE
PROPOSED TREE LINE
TREE PROTECTION FENCING
POSITIVE DRAINAGE INDICATOR — 100.00
PROPOSED RIP-RAP

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. – PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763

NOTES

1. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO STANDARDS AND SPECIFICATIONS AS ESTABLISHED BY RICHLAND TOWNSHIP AND THE CURRENT COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PUBLICATION 408).
2. ALL MATERIALS AND DETAILS OF CONSTRUCTION, INSTALLATION PROCEDURES AND REQUIREMENTS WITH RESPECT TO SANITARY SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH BUCKS COUNTY WATER AND SEWER AUTHORITY'S STANDARD SPECIFICATIONS LATEST EDITION.
3. ALL PROPOSED BUILDINGS SHALL BE SERVED WITH PUBLIC WATER AND SEWER. (SANITARY SEWER IS NOT TO BE PROVIDED FOR ANY BASEMENTS).
4. NO LATERALS SHOULD BE DIRECTLY CONNECTED TO THE MANHOLES WITHOUT THE PRIOR APPROVAL OF THE ENGINEER UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE APPROVED PLANS.
5. A MINIMUM OF EIGHTEEN INCHES (18") VERTICAL CLEARANCE, OR A MINIMUM OF TEN FEET (10') HORIZONTAL CLEARANCE IS REQUIRED BETWEEN SANITARY SEWER MAINS AND STORM SEWER AND WATER MAINS.
6. SANITARY SEWER MAINS NOT MEETING THE CRITERIA IN THE NOTE ABOVE, OR LOCATED ABOVE A WATER MAIN, MUST BE CONCRETE ENCASED TEN FEET (10') TO EITHER SIDE OF THE NON-COMPLIANT SANITARY SEWER MAIN. A TARPAPER LAYER OR SIMILAR PRODUCT SHALL BE PLACED TO AVOID FUSING TOGETHER THE TWO SERVICES INVOLVED.
7. ALL WATER FACILITIES SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH RICHLAND TOWNSHIP WATER AUTHORITY STANDARD SPECIFICATIONS.
8. A MINIMUM OF 4 FEET OF COVER SHALL BE PROVIDED OVER ALL WATER MAINS.
9. A MINIMUM OF 18 INCHES SHALL BE PROVIDED WHERE A WATER MAIN CROSSES ANOTHER UTILITY.
10. ALL WATER MAIN FITTINGS SHALL HAVE MEGALUG RESTRAINED JOINTS AND CONCRETE ANCHORAGE.
11. THE DEVELOPER, ITS SUCCESSORS AND ASSIGNS, HEREBY RESERVES THE RIGHT TO ENTER UPON EACH AND EVERY LOT AND AREA OF THE SUBDIVISION/LAND DEVELOPMENT DEPICTED HEREON, WHETHER PRIOR OR SUBSEQUENT TO CONVEYANCE OF ANY LOT, UNTIL EXPIRATION OF THE STATUTORY MAINTENANCE PERIOD FOLLOWING DEDICATION OF PUBLIC IMPROVEMENTS AS SET FORTH AT SECTION 509 OF THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE, AS AMENDED, 53 P.S. 10509, FOR THE PURPOSE OF COMPLETING ANY LANDSCAPING AS REQUIRED BY THE MUNICIPALITY AND, FURTHER, TO MAKE SUCH MODIFICATIONS IN GRADING AND/OR DRAINAGE IMPROVEMENTS ON ANY LOT AS MAY BE NECESSARY IN THE DISCRETION OF THE DEVELOPER, ITS SUCCESSORS AND ASSIGNS AND/OR THE MUNICIPAL ENGINEER FOR SATISFACTORY STORM WATER MANAGEMENT.
12. SOIL TYPES AS DEPICTED ON THESE PLANS HAVE BEEN TAKEN FROM THE BUCKS COUNTY SOIL SURVEY.
13. ELECTRIC, TELEPHONE, AND CABLE TV FACILITIES FOR ALL LOTS WITHIN THE DEVELOPMENT SHALL BE PROVIDED BY UNDERGROUND SERVICE. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT, CONTRACTORS MUST VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES AND FACILITIES PRIOR TO COMMENCING WORK.
14. GAS SERVICES THAT ARE ACCESSIBLE OR VULNERABLE TO VEHICULAR TRAFFIC SHALL HAVE APPROVED VEHICLE IMPACT PROTECTION INSTALLED.
15. FOOTPRINTS OF PROPOSED HOUSES DEPICTED ON THIS PLAN ARE CONCEPTUAL. ACTUAL CONFIGURATIONS SHALL BE DETERMINED UPON BUILDING PERMIT APPLICATION.
16. ON-STREET PARKING SHALL BE RESTRICTED TO ONE SIDE OF THE INTERNAL STREETS.
17. ALL PEDESTRIAN RAMPS AND DRIVEWAY APRONS MUST BE INSTALLED IN ACCORDANCE WITH PENNDOT PUBLICATION 72M RC-67M DATED JUNE 10, 2013 OR MOST RECENT EDITION.
18. SIDEWALK GRADES SHALL REMAIN CONSISTENT ACROSS DRIVEWAY.
19. THE EXISTING WATER WELL WILL BE FILLED AND SEALED IN ACCORDANCE WITH BUCKS COUNTY HEALTH DEPARTMENT REQUIREMENTS, DCNR WATER WELL ABANDONMENT GUIDELINES, AND THE WELL DRILLERS LICENSING ACT (ACT 610), INCLUDING SUBMISSION OF A COMPLETED WELL ABANDONMENT FORM.
20. ALL WATER SERVICES SHALL BE EQUIPPED WITH A WATER METER AND A BACKFLOW PREVENTER ASSEMBLY PURCHASED FROM RICHLAND TOWNSHIP WATER AUTHORITY. THE WATER METER AND BACKFLOW PREVENTER SHALL BE INSTALLED INSIDE THE BUILDING, AT A POINT THAT IS EASILY ACCESSIBLE FOR MAINTENANCE AND INSPECTION. THE WATER METER SHALL BE EQUIPPED WITH A REMOTE METER READER HEAD TO BE INSTALLED ON THE OUTSIDE OF THE BUILDING AT AN ACCESSIBLE LOCATION, PREFERABLY FACING THE NEAREST STREET.
21. ALL WATER SERVICES SHALL BE PROVIDED THE WATTS UB5 PRESSURE REDUCING VALVE.
22. AFTER COMPLETION OF CONSTRUCTION, AS-BUILT RECORD DRAWINGS WILL BE REQUIRED TO BE SUBMITTED BY THE APPLICANT. THE AS-BUILT DRAWINGS WILL SHOW SURVEY LOCATED POSITIONS FOR ALL WATER VALVES, HYDRANTS, AND CURB STOPS. DRAWINGS SHALL ALSO SHOW THE ACTUAL INSTALLED WATERLINE LOCATIONS BASED ON DETAILED CONSTRUCTION RECORDS AND/OR SURVEY LOCATED REFERENCE POINTS AND SHALL BE SUBMITTED IN BOTH HARDCOPY AND ELECTRONIC (AUTOCAD) FORMATS.
23. AREAS PROPOSED FOR INFILTRATION BMPs SHALL BE PROTECTED FROM SEDIMENTATION AND COMPACTION DURING THE CONSTRUCTION PHASE, SO AS TO MAINTAIN THEIR MAXIMUM INFILTRATION CAPACITY.
24. INFILTRATION BMPs SHALL NOT BE CONSTRUCTED NOR RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTORY DRAINAGE AREA TO THE INFILTRATION BMP HAS RECEIVED FINAL STABILIZATION.

REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

SITE IMPROVEMENT PLAN

TWIN LAKES

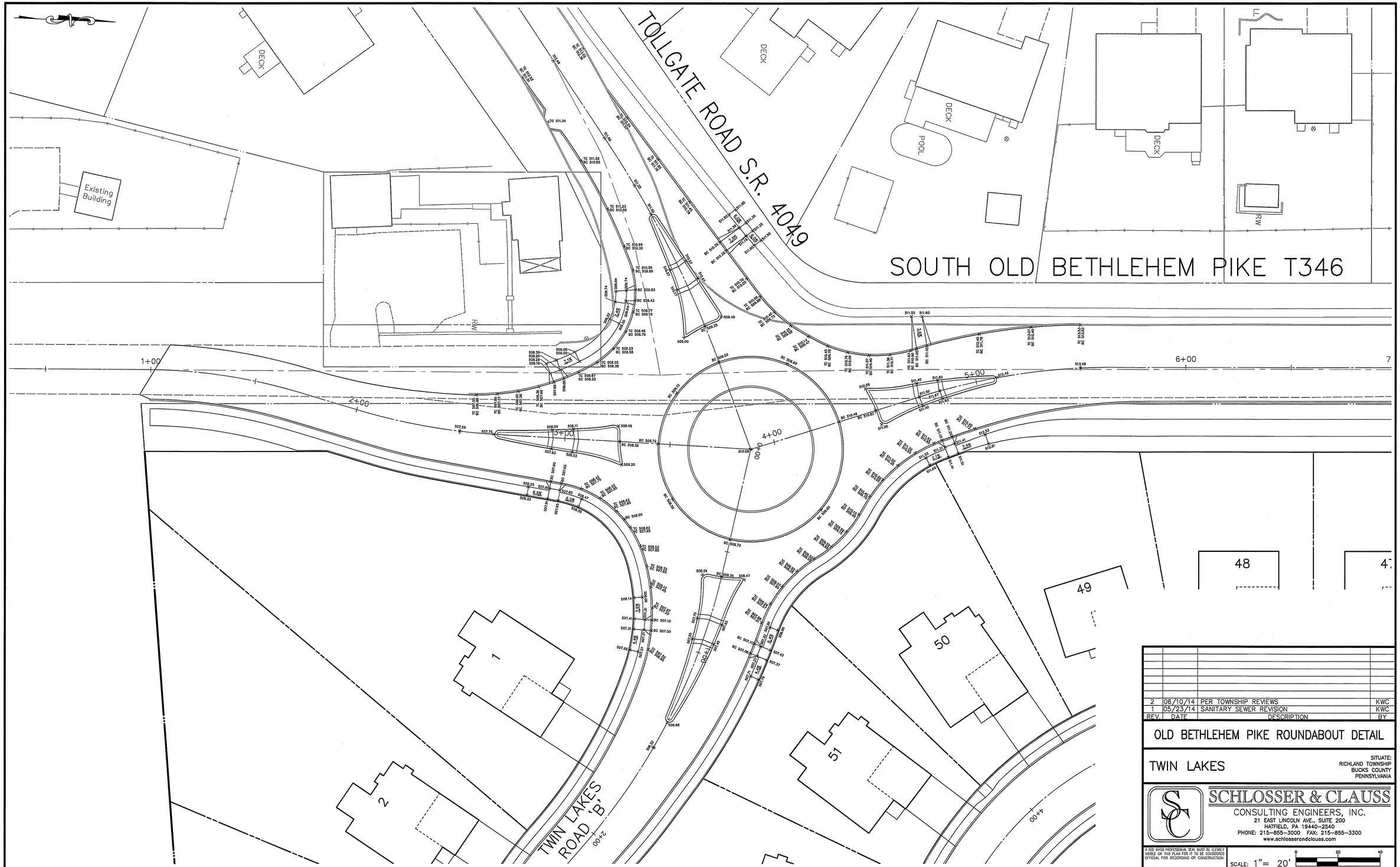
SITUATE:
RICHLAND TOWNSHIP
BUCKS COUNTY
PENNSYLVANIA

SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
PHONE: 215-855-3000 FAX: 215-855-3300
www.schlosserandclauss.com

A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

SCALE: 1" = 40' (0 40 80)

DRAWN BY: AJB	DATE: 10-15-2013
CHECKED BY: KWC	DWG NO: 13031
JOB NO: 13031	SHEET 11 OF 49



REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

OLD BETHLEHEM PIKE ROUNDABOUT DETAIL

TWIN LAKES

SITUATE:
RICHLAND TOWNSHIP
BUCKS COUNTY
PENNSYLVANIA

SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
PHONE: 215-855-3000 FAX: 215-855-3300
www.schlosserandclauss.com

A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

SCALE: 1"= 20' (0, 20, 40)

DRAWN BY: AJB	DATE: 10-15-2013
CHECKED BY: KWC	DWG NO: 13031BP
JOB NO: 13031	SHEET 27 OF 49

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. - PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763

TOLLGATE ROAD S.R. 4049
(POSTED SPEED 35 MPH)

SOUTH OLD BETHLEHEM PIKE T346
(POSTED SPEED 35/40 MPH)

TWIN LAKES ROAD 'B'

DECK
POOL
PATIO
WALL
RW
Route Sign
Stop Sign
Right Turn Sign
Right Tur Sign

W2-4 CIRCULAR INTERSECTION SIGN, 36"x36"
W16-8P STREET NAME SIGN (TOLLGATE ROAD), VARv12"
W13-1P 15 MPH SPEED ADVISORY SIGN, 18"x18"

W3-2 YIELD AHEAD SIGN, 36"x36"

R4-7 KEEP RIGHT SIGN, 24"x30"

EXISTING SIGN TO BE REMOVED

EXISTING STOP SIGN TO BE REMOVED

R1-2 YIELD SIGN, 36"x36"

R3-2 NO LEFT TURN SIGN, 24"x24"

MOUNTABLE CURB (TYP.)

RIGHT TURN SIGN TO BE REMOVED

EXISTING LANE STRIPING TO BE ERADICATED (TYPICAL)

YELLOW TRANSVERSE MARKING (TYPICAL)

EXISTING TRAFFIC MARKINGS TO BE ERADICATED (TYPICAL)

EXISTING 4"/W

EXISTING 4"/DY

EXISTING 4"/W

EXISTING 4"/DY

EXISTING 4"/W

SHOULDER

R6-1R ONE WAY SIGN, 36"x12"

R6-1R ONE WAY SIGN, 36"x12"

R6-1R ONE WAY SIGN, 36"x12"

R6-1R ONE WAY SIGN, 36"x12"

MOUNTABLE CURB

5" WIDE PEDESTRIAN CROSSWALK (TYP.)

YIELD TRIANGLES (TYPICAL-SEE DETAIL)

W3-2 YIELD AHEAD SIGN, 36"x36"

1
FF: 508.67
GF: 507.00

2
FF: 508.17
GF: 506.50

49
FF: 512.26
GF: 510.59

50
FF: 511.54
GF: 509.87

51
FF: 510.67
GF: 509.00

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. – PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763

REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

OLD BETHLEHEM PIKE ROUNDABOUT PAVEMENT MARKING AND SIGNAGE PLAN

TWIN LAKES

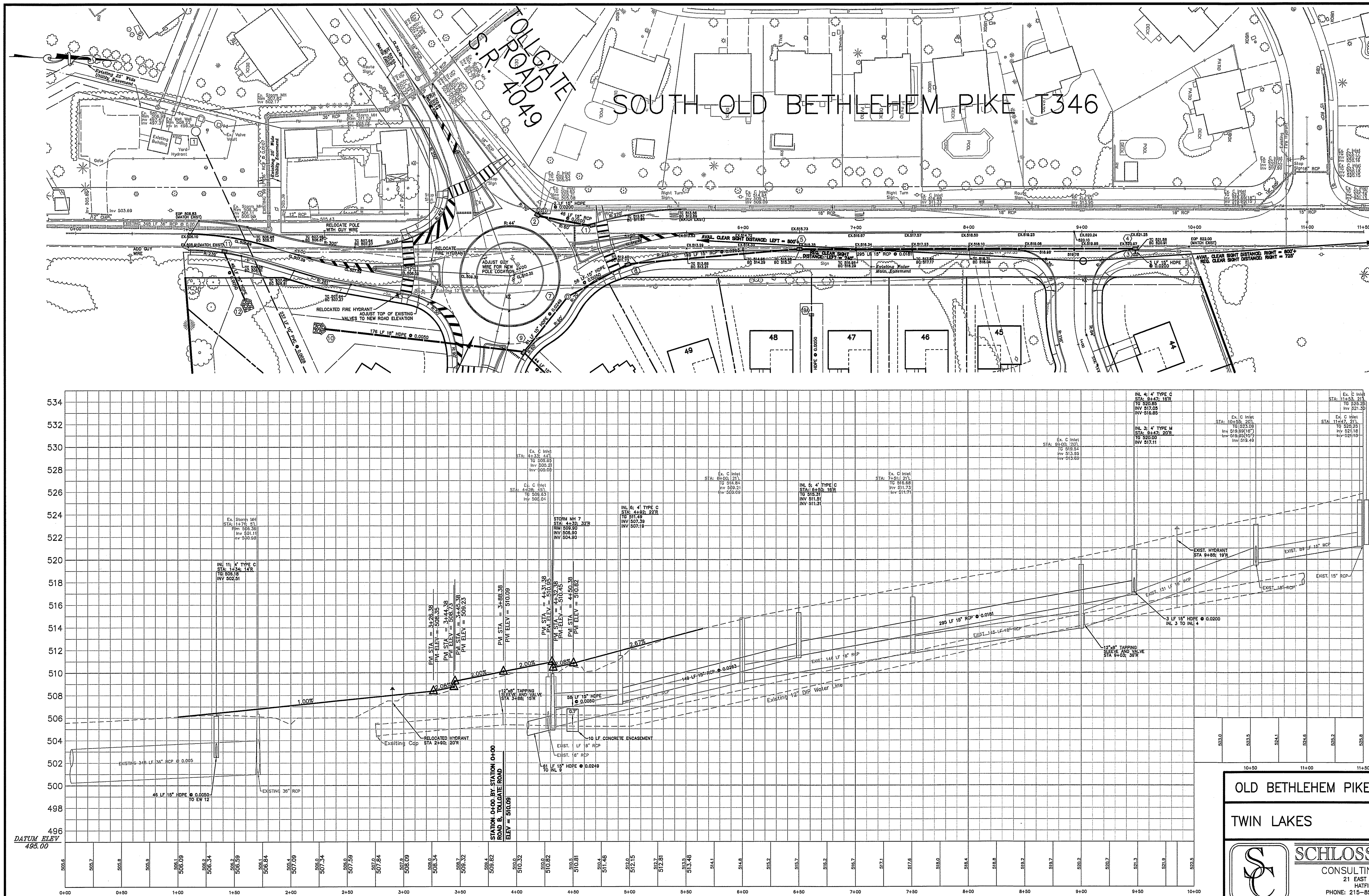
SITUATE:
RICHLAND TOWNSHIP
BUCKS COUNTY
PENNSYLVANIA

SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
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www.schlosserandclauss.com

A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

SCALE: 1"= 20'

DRAWN BY: AJB
DATE: 10-15-2013
CHECKED BY: KWC
DWG NO: 13031BP
JOB NO: 13031
SHEET 28 OF 49



LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. – PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763

REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

OLD BETHLEHEM PIKE PLAN & PROFILE

TWIN LAKES

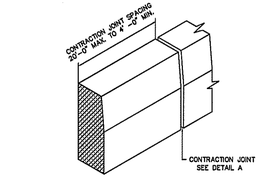
SITUATE: RICHLAND TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

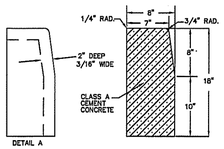
SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
PHONE: 215-855-3000 FAX: 215-855-3300
www.schlosserandclauss.com

A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

SCALE: 1"=40' HOR. 1"=4' VER.

DRAWN BY: AJB	DATE: 10-15-2013
CHECKED BY: KWC	DWG NO: 13031BP
JOB NO: 13031	SHEET 31 OF 49

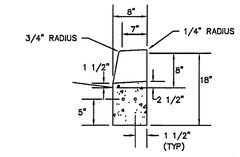




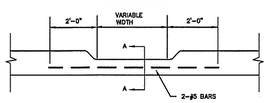
CONTRACTION JOINT — TYPICAL CROSS SECTION

PLAIN CEMENT CONCRETE CURB DETAIL
NTS

NOTES:
1. REFER TO Pa. DOT. STANDARDS, PUB. #72, DWG. RC-64, SHEET 1 OF 1 FOR ADDITIONAL NOTES.
2. CONSTRUCT IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 630.



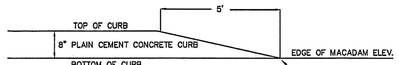
SECTION A-A



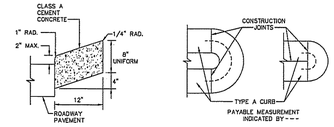
PLAN VIEW

DEPRESSED CURB FOR DRIVEWAYS
NTS

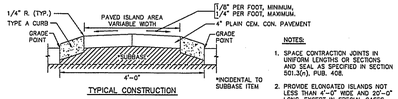
NOTES:
1. REFER TO Pa. DOT. STANDARDS, PUB. #72, DWG. RC-64, SHEET 1 OF 1 FOR ADDITIONAL NOTES.
2. CONSTRUCT IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 630.



CURB END TREATMENT DETAIL
NTS

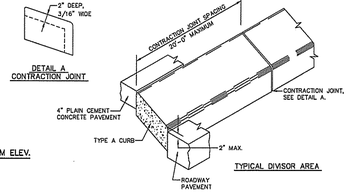


END DETAILS

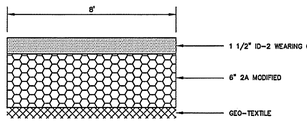


TYPICAL CONSTRUCTION

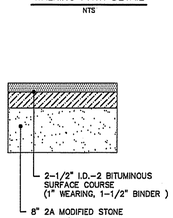
NOTES:
1. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS AND SEAL AS SPECIFIED IN SECTION 501.3(n), PUB. 408.
2. PROVIDE ELONGATED ISLANDS NOT LESS THAN 4'-0" WIDE AND 20'-0" LONG, EXCEPT IN SPECIAL CASES WHERE SPACE IS SEVERELY LIMITED.



CONCRETE MOUNTABLE CURB
N.T.S.

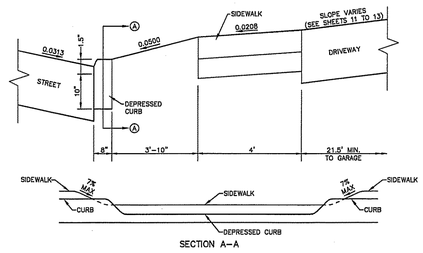


WALKING PATH DETAIL
NTS



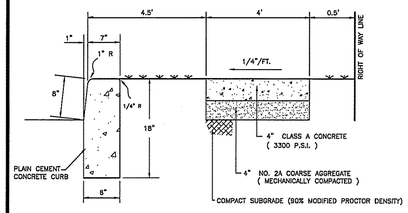
TYPICAL DRIVEWAY SECTION
NTS

NOTE: REFER TO PA. DOT PUB. 408 FOR SPECIFICATIONS



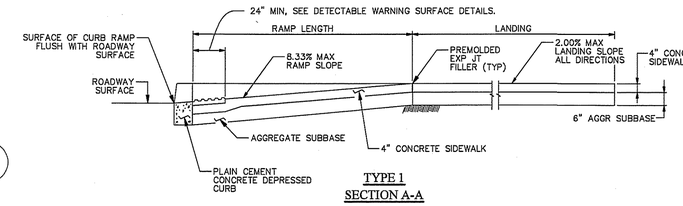
SECTION A-A

DRIVEWAY APRON DETAIL
NTS

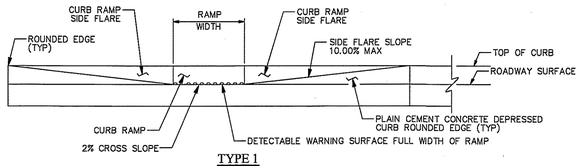


CONCRETE SIDEWALK & CURB DETAIL
N.T.S

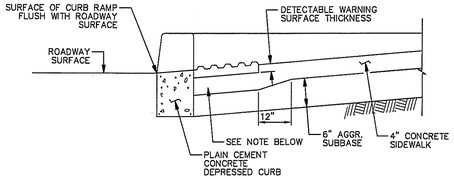
NOTE: 1. PROVIDE 3/16" CENTER JOINT @ 10' ON CENTER MAX.
2. REFER TO PA. DOT PUB. 408 FOR CONCRETE SPECIFICATIONS



TYPE 1
SECTION A-A

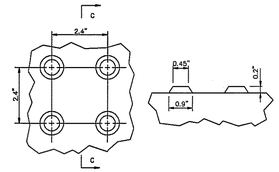


TYPE 1
ELEVATION



NOTE: CONSTRUCT NOTCH AS SHOWN TO PROVIDE FULL THICKNESS SIDEWALK UNDER DETECTABLE WARNING SURFACE.

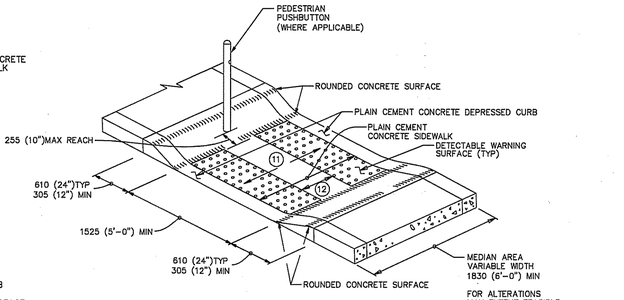
DETECTABLE WARNING SURFACE
EMBEDDING DETAIL



PLAN — SECTION C-C

NOTE: ONE CORNER OF THE DWS MUST BE WITHIN 8" OF THE FACE OF THE CURB. NO OTHER POINT ON THE LEADING EDGE OF THE DWS MAY BE MORE THAN 60" FROM THE FACE OF CURB.

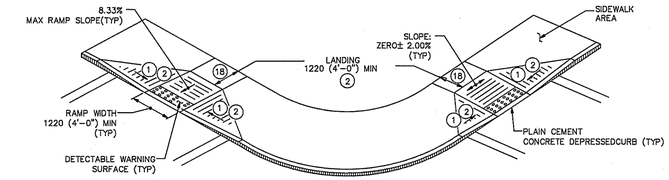
DETECTABLE WARNING SURFACE
TRUNCATED DOME DETAIL



(11) PROVIDE ADEQUATE SLOPE FOR DRAINAGE (5.00% MAX)

(12) NO SEPARATION BETWEEN DETECTABLEWARNING SURFACES FOR MEDIANS WITH LESSTHAN 1220 (4'-0") BETWEEN BACK OF CURBS.

TYPE B
TYPICAL MEDIAN OR ISLAND
ACCESS OPENING
WITH FLARED SIDES
(NARROW MEDIANS)



NOTE: IF SPACE IS LIMITED, IT MAY BE NECESSARY TO CURB THE SIDE FLARES OF THE TYPE 1 CURB RAMPS (SEE ALTERNATE INSTALLATION DETAIL BELOW). PEDESTRIAN TRAFFIC SHOULD NOT BE DIRECTED TO CROSS THE VERTICAL DROP.

(1) SIDE FLARES 10.00% MAX SLOPE

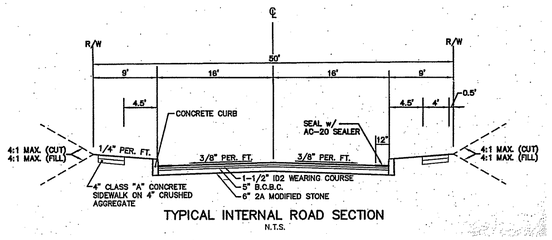
(2) IF THE LANDING IS INDICATED TO BE LESS THAN 1220 (4'-0"), CONSTRUCT SIDE FLARES 8.33% MAX SLOPE.

(3) OPTIONAL ROLLED CONCRETE SURFACE OR REGRADE SLOPE CAN BE USED TO MEET THE ADJACENT SURFACES IN LIEU OFA RETURN CURB CHEEK WALL.

(18) CURB RAMPS REQUIRE A 1220 (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPEOF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SEE DETAILS FOR LOCATIONS AND DIMENSIONS.

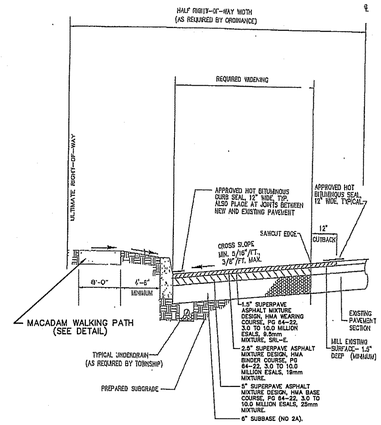
TYPE 1
DOUBLE CURB RAMPS
(PREFERRED INSTALLATION)

HANDICAP ACCESS RAMP DETAILS
NTS



TYPICAL INTERNAL ROAD SECTION
N.T.S.

(PER STIPULATION AND AGREEMENT)



TYPICAL ROAD WIDENING SECTION
OLD BETHLEHEM PIKE

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. — PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763

REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

CONSTRUCTION DETAILS

TWIN LAKES

SITUATE:
RICHLAND TOWNSHIP
BUCKS COUNTY
PENNSYLVANIA

SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
PHONE: 215-855-3000 FAX: 215-855-3300
www.schlosserandclauss.com

A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

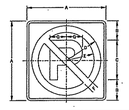
SCALE: N.T.S	
DRAWN BY: AJB	DATE: 10-15-2013
CHECKED BY: KWC	DWG NO: 13031DTL
JOB NO: 13031	SHEET 47 OF 49

R8-3
NO PARKING SYMBOL SIGN

(a) Justification. The No Parking Symbol Sign (R8-3) shall be authorized for use to prohibit parking along a street/roadway, if the exhibition applies to a limited area or zone, supplemental signs or messages shall be authorized to show the limits of the restriction. Authorized supplemental signs include, but are not limited to the Supplemental Hours Sign (R8-3a), Tow-Away Zone Sign (R8-3b), Fire Lane Sign (R8-3c), Fire Zone Sign (R8-3d), Fire Lane Plaque (R8-3b(P)-01), the Parking Area Plaque (R7-7(D)), Tow-Away Zone Sign (R7-203(P)) and the Parking On Pavement Sign (R8-3(P)). As an alternate to the use of supplemental signs, the appropriate supplemental message and the no parking symbol may be incorporated into a single sign.

(b) Size. The standard size R8-3 sign shall be 12" x 18" in business, residential, or park areas and 24" x 24" in rural areas. The standard size for expressways shall be 30" x 30", and in freeways shall be 48" x 48".

(c) Placement. Signs should be set at an angle of not less than 30° or more than 45° with a line parallel to the line of traffic so as to be visible to approaching traffic. Care should be taken to ensure that supplemental arrows point in the proper direction to indicate the regulated area. Signs shall be placed at the beginning of and at reasonable intervals throughout the restriction.



SIGN SIZE A x B	A	B	C	D	E	F	G	MAN-UFA	BOR-DER	BLANK STD.
12" x 12"	3	4(5)	4.9	3.9	1	3.4	0.4	0.4		----------
24" x 24"	6	12(13)	10.5	8.8	2	4.8	0.4	0.6		R3-24
30" x 30"	9	18(24)	13.8	13.5	3	7.2	0.6	0.8		R3-30
48" x 48"	12	24(32)	21	17	4	9.6	0.8	1.2		R3-48

COLOR:
SYMBOL AND BORDER,
BLACK (NON-REFLECTORIZED)

CIRCLE AND DIAGONAL
RED (REFLECTORIZED)

BACKGROUND,
WHITE (REFLECTORIZED)

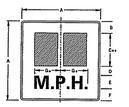
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

W13-1P
ADVISORY SPEED PLAQUE

(a) Justification. The Advisory Speed Plaque (W13-1P) shall be authorized for use in conjunction with any standard warning sign to indicate a recommended speed. The plaque shall not be used in conjunction with the WORD Chapter 25 Warning Signs. It shall not be used in conjunction with any sign other than a warning sign, nor shall it be used alone. It shall be mounted below the warning sign.

The speed shown shall be a multiple of 5 MPH, to be determined by accepted traffic engineering procedures.

(b) Size. The 30" x 30" size should be used with a warning sign of 30" x 30", the 24" x 24" with 30" x 30" sign, the 30" x 30" size with 48" x 48" signs.



SIGN SIZE A x B	B	C	D	E	F	G	MAN-UFA	BOR-DER	BLANK STD.
18" x 18"	2.5	8(5)	2	3(5)	2.5	5.5	0.4	0.6		B3-18
24" x 24"	3.5	10(6)	2.5	4(5)	3.5	7.1	0.4	0.6		B3-24
30" x 30"	4.5	12(7)	3.0	5(5)	4.5	10.7	0.5	0.8		B3-30

* INCREASE SPACING 200%
** OPTIONALLY SPACE NUMERALS ABOUT VERTICAL ℄

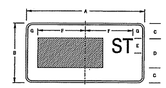
COLOR:
LEGEND AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
YELLOW (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

W16-8P
SINGLE-LINE ADVANCE STREET NAME PLAQUE

The Single-Line Advance Street Plaque (W16-8P) may be used beneath any intersection warning sign (W1 through W8 series of signs, pentagonal sign) to identify the name of the intersecting street. If the street name is too long to allow the entire name to fit on the Double-Line Advance Street Name Plaque (W16-9P) should be used. The abbreviations "ST" may be changed to "AVE", "LN", "CT", etc. as applicable.



SIGN SIZE A x B	C	D**	E	F	G**	MAN-UFA	BOR-DER	BLANK STD.
18" x 6"	2	4	2(3)	VAR.	2	0.4	0.4	---
* 18" x 12"	3	6	4(3)	VAR.	3	0.4	0.6	---

** CHOOSE SPEEDFLOMETER CASE Closer/setting FIGHT FOR BEST FIT
* MAXIMUM SPACE

COLOR:
LEGEND AND BORDER,
BLACK (NON-REFLECTORIZED)

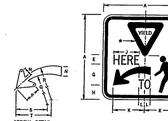
BACKGROUND,
YELLOW (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R1-5L
YIELD HERE TO PEDESTRIAN WITH LEFT ARROW SIGN

(a) Justification. The Yield Here to Pedestrian with Left Arrow Sign (R1-5L) is authorized for use on the right side of the roadway, adjacent to a yield line to advance the longitudinal stopbar/crosswalk.

(b) Placement. When used, the R1-5L sign and yield line should be installed 20 to 50 feet in advance of the nearest crosswalk line. If a Pedestrian sign (S01-2) has been post-mounted at the crosswalk location where a R1-5L is used on the approach, the R1-5L sign shall not be placed on the same post as or block the road user's view of the W11-2 sign.



ARROW DETAIL

* = Insert R1-2 sign seal size to fit.

SIGN SIZE A x B	A	B	C	D	E	F	G	H	J	K	L	M	MAN-UFA	BOR-DER	BLANK STD.
30" x 30"	3.2	14	10	4(5)	4.8	8.8	6	(10.3)	3.2	3.4	15.6	0.6	0.8		S3-36
ARROW DETAIL DIMENSIONS	2.2	0.4	(10.3)	(4.4)	10	(11.4)									

COLOR:
YIELD SYMBOL AND THE LEGEND YIELD,
RED (REFLECTORIZED)

OTHER LEGEND, SYMBOL AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

W16-9P
AHEAD PLAQUE

The Ahead Plaque (W16-9P) may be used to supplement any standard warning sign or regulatory sign. The Ahead Plaque (W16-9P) shall have a black legend and border on a yellow background. When used with a regulatory sign, the W16-9P sign shall have a black legend and border on a yellow background.



SIGN SIZE A x B	A	B	C	D	E	F	MAN-UFA	BOR-DER	BLANK STD.
24" x 12"	4	4(5)	8.7	0.4			0.6		S5-24S
30" x 24"	8.5	(7)	(9)	10.3	0.6		1		S5-30A
48" x 30"	10.5	(12)	13.9	19.7	0.8		1.2		S5-48S

COLOR:
LEGEND AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
YELLOW (REFLECTORIZED)

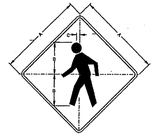
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

W11-2
PEDESTRIAN SIGN

The Pedestrian Sign (W11-2) may be used in areas of the unexpected hazard of pedestrians entering or crossing the road, or crossing the roadway. The W11-2 sign may be installed in advance of the crossing, in which case it may be supplemented with the Advance Arrow Plaque (W16-7P) or the Ahead Plaque (W16-9P).

If the sign is used at the crossing, the W11-2 sign shall be supplemented with a Diagonal Downward Pointing Arrow Plaque (W16-7P) showing the location of the crossing, which may or may not have crosswalk lines. If a W16-7P or W16-9P sign is used in advance of the crossing, and when where a W16-7P or W16-9P Pedestrian sign (S01-2), or R1-5R/L is used on the approach, the R1-5L or R1-5R sign shall not be placed on the same post as, or block the road user's view of, the W11-2 sign.

Fluorescent yellow-green background may be used for the W11-2 sign, in which case all associated plaques shall be the same color.

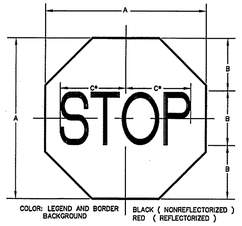


SIGN SIZE A x B	B	C	MAN-UFA	BOR-DER	BLANK STD.
18" x 18"	8	0.9	0.4	0.6	S3-18
24" x 24"	10.6	1.0	0.6	0.8	S3-24
30" x 30"	14.3	1.8	0.6	0.8	S3-30

COLOR:
SYMBOL AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
YELLOW OR FLUORESCENT
YELLOW GREEN (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations



COLOR: LEGEND AND BORDER — BLACK (NONREFLECTORIZED)
BACKGROUND — RED (REFLECTORIZED)

SIGN SIZE	DIMENSIONS A	B	C	SER-IES	BOR-DER	BLANK STD
24x24	24	8	10	C	5/8	B1-24
* 30x30	30	10	12 1/2	C	3/4	B1-30
36x36	36	12	15	C	7/8	B1-36
48x48	48	16	20	C	1 1/4	B1-48

*REDUCE SPACING 40%

(R1-1) 'STOP' SIGN DETAIL
NTS

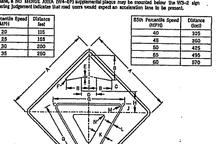
NOTES:
1. REFER TO PA. DOT PUBLICATION 236.
2. ALL ABOVE DIMENSIONS ARE IN INCHES

W3-2
YIELD AHEAD SIGN

The Yield Ahead Sign (W3-2) title authorized for use in advance of a yield sign when physical conditions prevent the driver from having a continuous view of the yield sign for the following distances. Advance placement distance for the W3-2 sign will be based on Department regulation. When used in a work zone, the background color shall be orange. For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane, the W3-2 sign shall be supplemented with a downward pointing Yield (R1-2) sign. The R1-2 sign when engineering judgement indicates that road users would expect an acceleration lane to be present.

85th Percentile Speed MPH	Distance feet
30	155
35	155
40	200
45	200

85th Percentile Speed (MPH)	Distance (feet)
40	305
45	355
50	415
55	495
60	570



SIGN SIZE A x B	B	C	D	E	F	G	H	J	K	L	M	MAN-UFA	BOR-DER	BLANK STD.
18" x 18"	4.8	2.8	3	0.4	0.4	0.2	14	3	3.7	1.0	0.3	0.7	0.4	0.6	B3-18
* 24" x 24"	9	4.4	6	0.8	0.4	0.4	28	7.6	3.8	1.8	0.6	1.4	0.6	0.8	B3-24
30" x 30"	12	6	8	1	0.5	0.5	35	10	4.8	2	0.8	1.8	1	0.8	1.2	B3-48

COLOR:
ARROW AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
YELLOW (REFLECTORIZED)

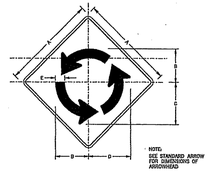
SYMBOL BACKGROUND,
WHITE (REFLECTORIZED)

SYMBOL BORDER,
RED (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

W2-6
CIRCULAR INTERSECTION SIGN

The Circular Intersection Sign (W2-6) may be used in advance of a circular intersection. When used, the Turn Speed Plaque (W13-1P) shall be installed below the W2-6 sign. If an approach to a roundabout has a posted or statutory speed limit of 45 MPH or higher, the W2-6 sign should be installed in advance of the circular intersection.



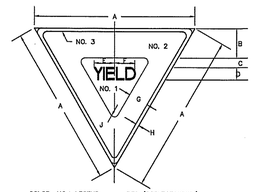
NOTE:
SEE STANDARD ARROW DIRECTIONS OF ARROWHEAD

SIGN SIZE A x B	D	G	H	MAN-UFA	BOR-DER	BLANK STD.
24" x 24"	24	10.5	10.5	0.4	0.6	B3-24
* 30" x 30"	30	13.1	13.1	0.4	0.8	B3-30
36" x 36"	36	15.8	15.8	0.5	1	B3-36
48" x 48"	48	21	21.0	0.8	1.2	B3-48

COLOR:
SYMBOL AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
YELLOW (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations



COLOR: NO.1 LEGEND — RED (REFLECTORIZED)
BACKGROUND — WHITE (REFLECTORIZED)
NO.2 BORDER — RED (REFLECTORIZED)
NO.3 MARGIN — WHITE (REFLECTORIZED)

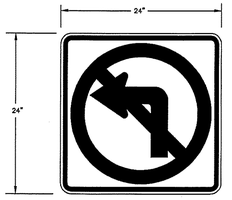
SIGN SIZE	DIMENSIONS A	B	C	D	E	F	G	H	J	SIDES	BLANK STD.
* 36x36	36	5 3/4	2	3	9 11/16	4 3/8	5	3/4	6 1/4	C	B2-36
48x48	48	7¢	2 3/4	4	6 1/4	5 7/8	6	1	2	C	B2-48
60x60	60	9 1/2	3 1/2	5	7 7/8	7 1/4	8	1 1/2	2 1/2	C	B2-60

(R1-2) 'YIELD' SIGN DETAIL
NTS

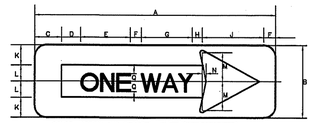
NOTES:
1. REFER TO PA. DOT PUBLICATION 236.
2. ALL ABOVE DIMENSIONS ARE IN INCHES

R3-2 NO LEFT TURN SIGN
NTS

NOTES:
1. REFER TO PA. DOT PUBLICATION 236.
2. ALL ABOVE DIMENSIONS ARE IN INCHES



COLOR: ARROW AND BORDER — BLACK (NON-REFLECTORIZED)
CIRCLE AND DIAGONAL — RED (REFLECTORIZED)
BACKGROUND — WHITE (REFLECTORIZED)



COLOR: ARROW AND BORDER — WHITE (REFLECTORIZED)
BACKGROUND AND LEGEND — BLACK (NON-REFLECTORIZED)

SIGN SIZE	DIMENSIONS A	B	C	D	E	F	G	H	J	K
* 36x12	36	12	3	1 1/4	9 1/8	2	9 5/8	1 1/2	7 1/2	1 1/4
48x18	48	18	4	1 7/8	12	2 3/4	13 1/8	2	10	5

SIGN SIZE	DIMENSIONS L	M	N	P	Q	SERIES LINES	BOR-DER	BLANK STD
* 36x12	2 5/8	4 1/2	1/2	11/16	2	D	1/2	B5-3612
48x18	2 1/2	6	3/4	7/8	2 1/2	D	7/8	B5-4818

(R6-1R) 'ONE WAY' SIGN DETAIL
NTS

NOTES:
1. REFER TO PA. DOT PUBLICATION 236.
2. ALL ABOVE DIMENSIONS ARE IN INCHES

R2-1
SPEED LIMIT SIGN

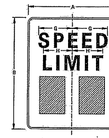
The Speed Limit Sign (R2-1) shall be authorized for use to display the maximum legal speed limit on a highway. When used as a variable speed limit sign, speed display module(s) may be attached to the sign or inserted through roll-outs in the sign substrate.

The R2-1 Sign shall be placed at intervals as specified in Department regulations. The standard size signs shall be as follows:

(1) 24" x 30", All single lane conventional highways having any speed limit.

(2) 30" x 36", Multi-lane conventional highways regardless of speed limit.

(3) 48" x 60", Expressways and freeways.



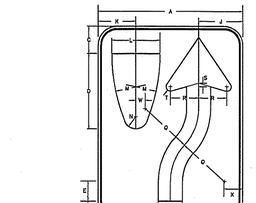
SIGN SIZE A x B	C	D	E	F	G	H	MAN-UFA	BOR-DER	BLANK STD.
24" x 30"	4E	5	30E	4	9.6	7.3	0.4	0.6	B5-3024
30" x 36"	5E	2	33E	5	12	9.3	0.6	0.8	B5-3630
48" x 60"	8E	6	20E	6	19.1	14.6	0.8	1.2	B5-4848

* OPTIONALLY SPACE BOARDERS ABOUT VERTICAL ℄

COLOR:
LEGEND AND BORDER,
BLACK (NON-REFLECTORIZED)

BACKGROUND,
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: Jon C. Braun Date: 03-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations



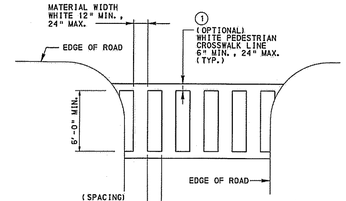
COLOR: LEGEND AND BORDER — BLACK (NONREFLECTORIZED)
BACKGROUND — WHITE (REFLECTORIZED)

SIGN SIZE	DIMENSIONS A	B	C	D	E	F	G	H	J	K	L	M	N
* 24x30	24	30	4 1/2	12 1/2	2 5/8	3	1 7/8	8 1/8	7 3/8	6 1/4	8	30	2
36x48	36	48	6 3/4	18 3/4	5	4 1/2	2 13/16	12 3/8	11 1/8	9 3/8	12	45	3

SIGN SIZE	DIMENSIONS P	Q	R	S	T	U	V	W	X	MAR-GIN	BOR-DER	BLANK STD
* 24x30	4	9	4 5/8	5/8	13/16	5 5/16	2 5/8	1 3/8	3	3/8	5/8	B5-3024
36x48	6	13 1/2	6 7/8	15/16	1 3/16	7 15/16	3 1/2	2	1 7/8	4 1/2	5/8	7/8 B5-4836

(R4-7) 'KEEP RIGHT' SIGN DETAIL
N.T.S.

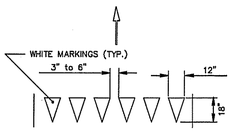
NOTES:
1. REFER TO PA. DOT PUBLICATION 236.
2. ALL ABOVE DIMENSIONS ARE IN INCHES



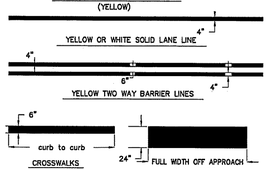
TYPE C – PERPENDICULAR

① MAKE THE CROSSWALK LINES SOLID WHITE, NO LESS THAN 6" WIDE.

CROSSWALK MARKINGS DETAIL
NTS



TYPICAL YIELD LINE LAYOUT
NTS



NOTE 1:
FOR SPEED ≤ 35 MPH, USE 8' C–C
FOR SPEED > 35 MPH, USE 16' C–C

PAVEMENT MARKINGS DETAIL
NTS

REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

SIGN AND PAVEMENT MARKING DETAILS

TWIN LAKES

SITUATE:
RICHLAND TOWNSHIP
BUCKS COUNTY
PENNSYLVANIA

SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
PHONE: 215-855-3000 FAX: 215-855-3300
www.schlosserandclauss.com

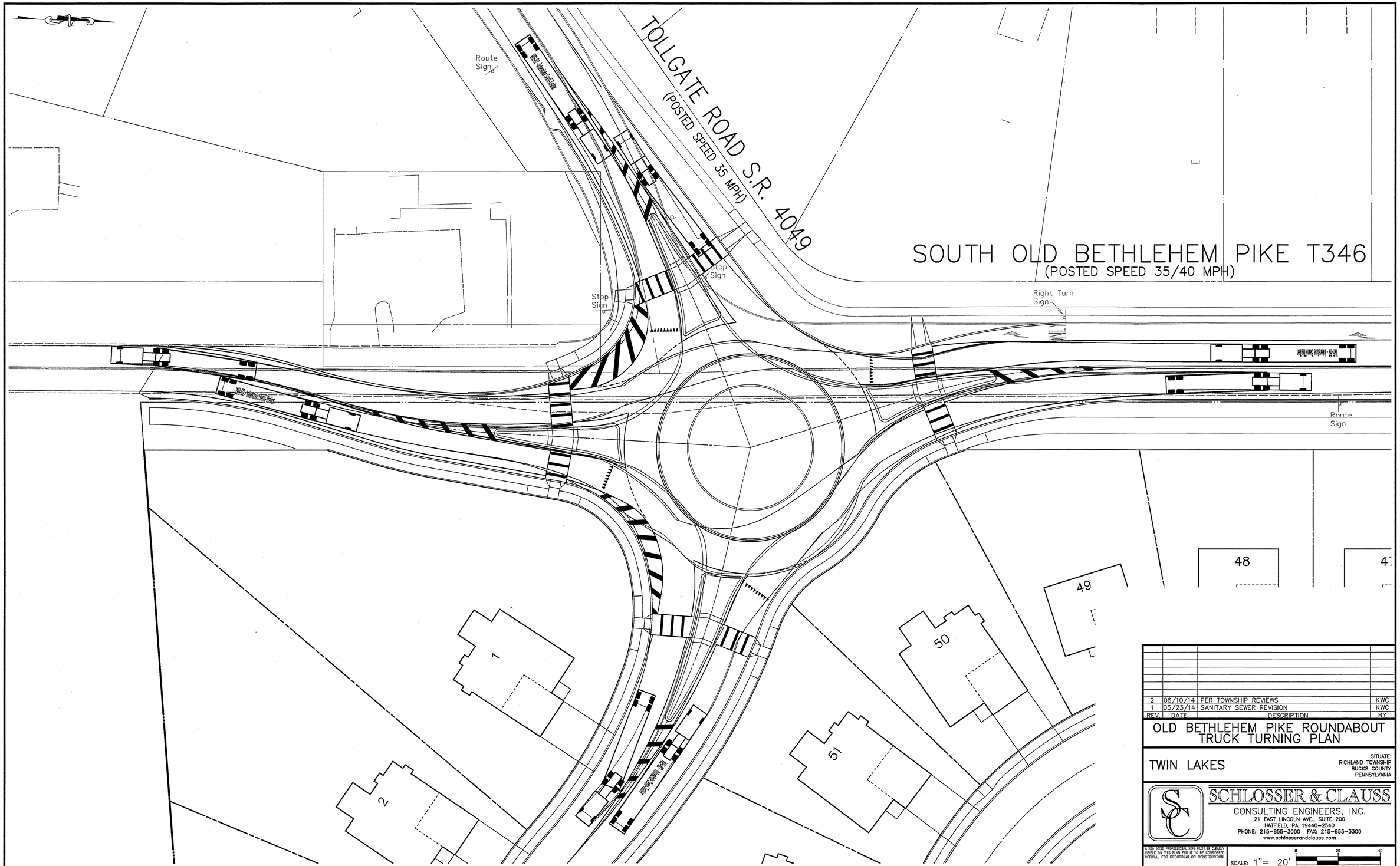
A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

SCALE: N.T.S
DRAWN BY: AJB
DATE: 10-15-2013
CHECKED BY: KWC
DWG NO: 13031DTL
JOB NO: 13031
SHEET 48 OF 49

PENNSYLVANIA ONE CALL SYSTEM, INC. SERIAL NUMBER 20132392763 NOTIFICATION BEFORE YOU DIG

LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. – PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763



LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK BY CALLING PA ONE CALL SYSTEM, INC. – PHONE: 1-800-242-1776 THREE DAYS PRIOR TO EXCAVATION. REFERENCE PENNSYLVANIA ACTS 287 & 121.

DESIGN SERIAL NUMBER: 2013 2392763

REV.	DATE	DESCRIPTION	BY
2	06/10/14	PER TOWNSHIP REVIEWS	KWC
1	05/23/14	SANITARY SEWER REVISION	KWC

OLD BETHLEHEM PIKE ROUNDABOUT TRUCK TURNING PLAN

TWIN LAKES

SITUATE:
RICHLAND TOWNSHIP
BUCKS COUNTY
PENNSYLVANIA

SCHLOSSER & CLAUSS
CONSULTING ENGINEERS, INC.
21 EAST LINCOLN AVE., SUITE 200
HATFIELD, PA 19440-2540
PHONE: 215-855-3000 FAX: 215-855-3300
www.schlosserandclauss.com

A RED INKED PROFESSIONAL SEAL MUST BE CLEARLY VISIBLE ON THIS PLAN FOR IT TO BE CONSIDERED OFFICIAL FOR RECORDING OR CONSTRUCTION.

SCALE: 1"= 20'

DRAWN BY: AJB	DATE: 10-15-2013
CHECKED BY: KWC	DWG NO: 13031BP
JOB NO: 13031	SHEET 1 OF 4