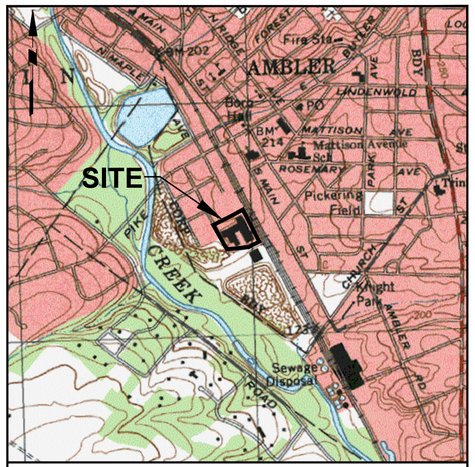
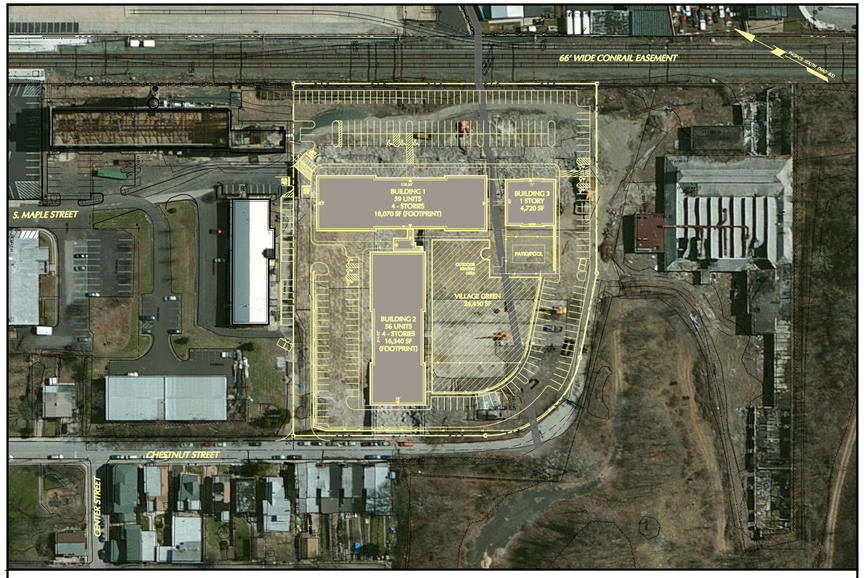
AMBLER CROSSINGS
BOROUGH OF AMBLER, MONTGOMERY COUNTY, PENNSYLVANIA
CONDITIONAL USE & PRELIMINARY / FINAL LAND DEVELOPMENT PLANS



SITE LOCATION MAP SCALE 1"=1,000'



SITE PLAN SCALE 1" = 100'

REFERENCE: WORLD AERIAL IMAGERY BASEMAP IS PROVIDED THROUGH LANGAN'S ESRI ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE. SOURCE OF AERIAL IMAGERY IS MICROSOFT FROM 2011. CREDITS: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, AND THE GIS USER COMMUNITY

DRAWING LIST

Page No.	Drawing No.	Drawing Title	Scale	Date Revised
1	GI-100	COVER SHEET	AS SHOWN	10/3/2013
2	GI-101	AERIAL MAP	1"=50'	10/3/2013
3	GI-102	EXISTING FEATURES PLAN	1"=80'	10/3/2013
4	CS-101	SITE PLAN (RECORD PLAN)	1"=30'	10/3/2013
5	CS-501	CONSTRUCTION DETAILS	N.T.S.	10/3/2013
6	CS-502	CONSTRUCTION DETAILS	N.T.S.	10/3/2013
7	CS-503	CONSTRUCTION DETAILS	N.T.S.	10/3/2013
8	CS-601	FIRE TRUCK TURN PLAN	N.T.S.	10/3/2013
9	CS-701	GREEN SPACE PLAN	1"=30'	10/3/2013
10	CG-101	GRADING PLAN	1"=30'	10/3/2013
11	CG-201	DRAINAGE PLAN	1"=30'	10/3/2013
12	CG-501	DRAINAGE DETAILS	N.T.S.	10/3/2013
13	CG-502	DRAINAGE DETAILS	N.T.S.	10/3/2013
14	CG-503	DRAINAGE DETAILS	N.T.S.	10/3/2013
15	PCSM-101	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	1"=30'	10/3/2013
16	PCSM-501	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	N.T.S.	10/3/2013
17	CU-101	UTILITY PLAN	1"=30'	10/3/2013
18	CU-501	UTILITY DETAILS	N.T.S.	10/3/2013
19	CU-502	UTILITY DETAILS	N.T.S.	10/3/2013
20	CU-601	DRAINAGE AND UTILITY PROFILES	AS SHOWN	10/3/2013
21	CU-602	DRAINAGE AND UTILITY PROFILES	AS SHOWN	10/3/2013
22	LP-101	LANDSCAPE PLAN	1"=30'	10/3/2013
23	LP-501	LANDSCAPE NOTES AND DETAILS	N.T.S.	10/3/2013
24	LT-101	SITE LIGHTING PLAN	1"=30'	10/3/2013
25	LT-501	SITE LIGHTING NOTES AND DETAILS	N.T.S.	10/3/2013

SUPPLEMENTAL DRAWING: MAP OF BOUNDARY AND TOPOGRAPHIC SURVEY, DRAWING No. 1.01, BY LANGAN ENGINEERING

CONTACTS

SEWER COLLECTION ENGINEER
Gilmore & Associates Inc.
331 Butler Avenue
New Britain, PA 18901
215-345-4330

SEWER TREATMENT ENGINEER
Environmental Engineering &
Management Associates, Inc.
P.O. Box 232
Kulpsville, PA 19443
215-368-3375

ELECTRIC AND GAS
PECO
Customer Service Center
2301 Market Street
P.O. Box 8699
Philadelphia, PA 19101
Customer service inquiries call: 1-800-494-4000
Gas or electric emergency call: 1-800-841-4141

BOROUGH ENGINEER
Gilmore & Associates
Jim Dougherty
350 Butler Ave
New Britain, PA 18901
215-345-4330

BOROUGH HALL
122 East Butler Avenue
Ambler. PA 19002
215-646-1000

SEWER AND WATER SERVICE
Borough of Ambler
122 East Butler Avenue
Ambler, PA 19002-4476
215-628-9457
215-628-0142 Fax

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

ENGINEER & SURVEYOR
LANGAN
Phone: 610.984.8500 Fax: 610.984.8501
One West Broad Street
Suite 200
Bethlehem, PA 18018
www.langan.com

GENERAL SITE NOTES:

1. These plans represent the overall sitework improvements required for project construction. The Contractor shall furnish, install, test and complete all work to the satisfaction of the Engineer and Owner in accordance with the Contract Documents. The Contractor shall be solely responsible for means and methods of construction; as such, these plans do not completely represent, nor are they intended to represent, all specific instructions required for sitework construction. The Contractor shall be responsible to construct all improvements depicted on these plans in accordance with all applicable rules, regulations and laws in effect at the time of construction.
2. The Contractor shall accept the site as is. The Contractor shall assess conditions, and the kind, quality and quantity of work required. The Owner makes no guarantee in regard to the accuracy of any available information which was obtained during investigations. The Contractor shall make a thorough site inspection in order to field check existing site conditions, correlate conditions with the drawings and resolve any possible construction conflicts with the Owner and Engineer prior to commencement of work. The Contractor shall make additional topographic surveys he deems necessary, provided they are coordinated with the Owner. Any conditions determined by the Contractor that differ from the information shown on the drawings that are not brought to the attention of the Owner and Engineer prior to the start of work shall not be considered grounds for additional payment or changes to the contract duration, or any other claims against the Owner or Owner's Engineer.
3. The Contractor shall, when they deem necessary, provide written Requests for Information (RFIs) to the Owner and Engineer prior to the construction of any specific sitework item. The (RFI) shall be in a form acceptable to Owner and Engineer and shall allow for a minimum of two work days or additional reasonable time for a written reply. RFIs shall be numbered consecutively by date submitted. The Contractor shall be solely responsible for sitework items constructed differently than intended or as depicted on the plans.
4. Information related to elevations and proposed utilities (such as roadway grades, invert elevations, rim elevations, grate elevations, building finished floor elevations, etc.) may be found in more than one location in the Contract Documents. The Contractor shall sufficiently review all plans, profiles and any other information in the Contract Documents for consistency prior to construction. Any inconsistencies or discrepancies that are found by the Contractor or his assigns shall be immediately brought to the attention of the Owner and Engineer in writing, in the format of an RFI prior to construction.
5. There are additional notes, specifications and requirements contained throughout the plan set as well as references to specifications from applicable governing authorities and industry standards. It is the Contractor's responsibility to obtain, review and adhere to all these documents.
6. Construction activities are planned to start in the Spring of 2014 with final stabilization occurring in the Fall of 2015. Construction activities will commence once all applicable permits and approvals have been obtained.

ACT 287 AS AMENDED

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 287 AS AMENDED TO CONTACT THE UTILITY COMPANIES FOR MORE ACCURATE LOCATION PRIOR TO ANY EXCAVATION.

TO OBTAIN ADDITIONAL UTILITY INFORMATION OR TO ARRANGE FOR FIELD LOCATION OF EXISTING UTILITIES BEFORE EXCAVATION. CALL THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776. THE UTILITY COMPANIES SHOWN MAY OR MAY NOT HAVE UTILITY LINES IN THE AREA.

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
(3) WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND
(10) WORKING DAYS IN DESIGN STAGE
-- STOP & CALL --

Pennsylvania One Call System, Inc.
1-800-242-1776

SERIAL NUMBER 2935617

10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.
Date	Description	No.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: COVER SHEET

Project No.	240025501
Date	4-9-13
Scale	AS SHOWN
Drawn By	JDM
Drawing No.	GI-100
	Sheet 1 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 2400025501

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

50 0 25 50
SCALE IN FEET

REFERENCE: WORLD AERIAL IMAGERY BASEMAP IS PROVIDED THROUGH LANGAN'S ESRI ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE. SOURCE OF AERIAL IMAGERY IS MICROSOFT FROM 2011. CREDITS: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, AND THE GIS USER COMMUNITY

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER PE057145E

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
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Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

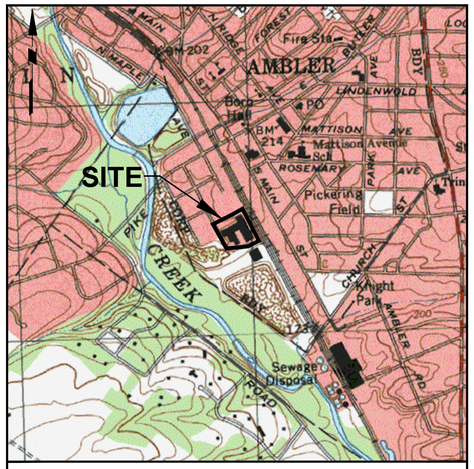
Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
AERIAL MAP

Project No.	240025501
Date	4-9-13
Scale	1"=50'
Drawn By	JDM

Drawing No.
GI-101
Sheet 2 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501



SITE LOCATION MAP

SCALE 1"=1,000'

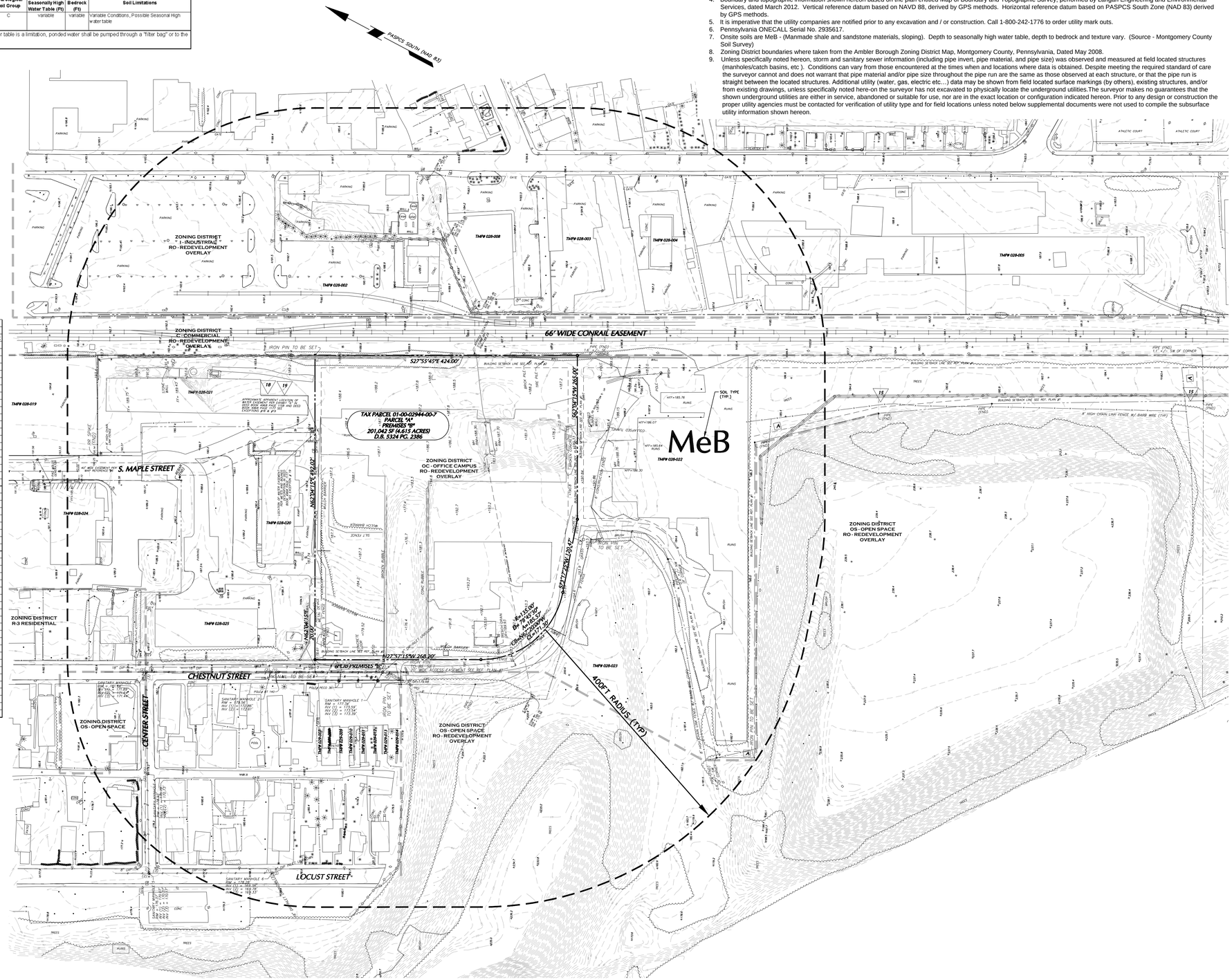
AMBLER BOILER HOUSE
SOIL TYPE DESCRIPTIONS AND LIMITATIONS

Map Symbol	Soil	Hydrological Soil Group	Depth to Seasonally High Water Table (Ft)	Depth to Bedrock (Ft)	Soil Limitations
MeB	Man made, Shale and Sandstone Materials, Sloping	C	variable	variable	Variable Conditions, Possible Seasonal High water table

Notes: 1. For areas where seasonal high water table is a limitation, ponded water shall be pumped through a "filter bag" or to the the sediment basin/trap.

GENERAL NOTES:

1. This property is subject to all easements and restrictions as shown herein.
2. Location of above ground utilities as shown.
3. No certification is made by the undersigned as to the actual underground position of any utilities or to the completeness and / or accuracy of utility information provided by others.
4. Boundary and topographic information shown hereon based on the plan entitled Map of Boundary and Topographic Survey; performed by Langan Engineering and Environmental Services, dated March 2012. Vertical reference datum based on NAVD 88, derived by GPS methods. Horizontal reference datum based on PASPCS South Zone (NAD 83) derived by GPS methods.
5. It is imperative that the utility companies are notified prior to any excavation and / or construction. Call 1-800-242-1776 to order utility mark outs.
6. Pennsylvania ONECALL Serial No. 2935617.
7. Onsite soils are MeB - (Manmade shale and sandstone materials, sloping). Depth to seasonally high water table, depth to bedrock and texture vary. (Source - Montgomery County Soil Survey)
8. Zoning District boundaries where taken from the Ambler Borough Zoning District Map, Montgomery County, Pennsylvania. Dated May 2008.
9. Unless specifically noted hereon, storm and sanitary sewer information (including pipe invert, pipe material, and pipe size) was observed and measured at field located structures (manholes/catch basins, etc). Conditions can vary from those encountered at the times when and locations where data is obtained. Despite meeting the required standard of care the surveyor cannot and does not warrant that pipe material and/or pipe size throughout the pipe run are the same as those observed at each structure, or that the pipe run is straight between the located structures. Additional utility (water, gas, electric etc…) data may be shown from field located surface markings (by others), existing structures, and/or from existing drawings, unless specifically noted here-on the surveyor has not excavated to physically locate the underground utilities.The surveyor makes no guarantees that the shown underground utilities are either in service, abandoned or suitable for use, nor are in the exact location or configuration indicated hereon. Prior to any design or construction the proper utility agencies must be contacted for verification of utility type and for field locations unless noted below supplemental documents were not used to compile the subsurface utility information shown hereon.



ADJOINING PROPERTY OWNERS

TMP NUMBER	OWNER	DEED-PAGE NUMBER	TMP NUMBER	OWNER	DEED-PAGE NUMBER
028 001	**MAPLE AVENUE PARK PARTNERS** LLP	4904-02060	028 025	JEFFERSON JOHN J/STEPHENS-JEFFERSON SALLY	5778-917
	110 SPRUCE ROAD			PO BOX 370	
	AMBLER, PA 19002			AMBLER PA 19002	
				OFFICE CAMPUS	
028 002	SEPTA RR DIV	0576-00106	029 007	BILLMAN ROBERT A	4865-00134
	152 S MAIN STREET			214 S. CHESTNUT STREET	
	AMBLER, PA 19002-4718			AMBLER, PA 19002-5509	
	COMMERCIAL			RESIDENTIAL	
028 003	GOLDKAMP DONALD & MICHAEL &	4794-00736	029 008	DUKERT DONALD A. JR. & ANNE L	5041-01058
	MACK FRANK			216 S. CHESTNUT STREET	
	186 S. MAIN STREET			AMBLER, PA 19002-5509	
	AMBLER, PA 19002-4718			RESIDENTIAL	
	RESIDENTIAL				
			029 009	CLOSS DIANE N	5288-00684
028 004	MELOGRANA F. DAVIOD & NANCY	5253-01862		218 S. CHESTNUT STREET	
	188 S. MAIN STREET			AMBLER, PA 19002-5509	
	AMBLER, PA 19002-4718			RESIDENTIAL	
	RESIDENTIAL				
			029 010	FORTE JOSEPH	4993-01110
028 008	D. AMAN PROPERTIES INC.	5320-01085		220 S. CHESTNUT ST.	
	180 S. MAIN STREET			AMBLER, PA 19002-5509	
	AMBLER, PA 19002-4718			RESIDENTIAL	
	COMMERCIAL				
			029 011	COLELLI DOMENICO & ANGELINA	3212-00060
028 019	AMBLER STATION ASSOCIATES	5719-01475		222 S. CHESTNUT STREET	
	100 W. BUTLER AVE			RESIDENTIAL	
	AMBLER PA. 19002				
	OFFICE CAMPUS		029 012	WASNIEWSKI CHESTER S. & ROSE C.	3295-00631
				224 S. CHESTNUT STREET	
028 020	MAPLE WAY PARTNERS LP	5856-00952		AMBLER, PA 19002-5509	
	224 S MAPLE WAY			RESIDENTIAL	
	AMBLER PA. 19002				
	OFFICE CAMPUS		029 013	DUGAS ALLISON M. & JASON	5339-02088
				228 S. CHESTNUT STREET	
028 021	AMBLER BH DEV PARTNERS LP	4904-02060		AMBLER, PA 19002-5509	
	610 W. GERMANTOWN PIKE #100			RESIDENTIAL	
	PLYMOUTH MEETING PA 19462				
	OFFICE CAMPUS		029 014	DUGAS DONALD D. DONNA	4944-017321
				228 S. CHESTNUT STREET	
028 022	AMA/AMERICAN MARKETING ASSOC INC	5002-879		AMBLER, PA 19002-5509	
	57 OLD POST RD #3RD			RESIDENTIAL	
	GREENWICH CT 06830				
	OFFICE CAMPUS				
			029 024	BAST ROBERT L & BEATRICE W	5027-01781
028 023	NICOLET IND INC. ELAINE MASTERS			110 SPRUCE RD	
	CHESTNUT STREET			AMBLER PA 19002	
	AMBLER, PA 19002-5509			OFFICE CAMPUS	
	INDUSTRIAL				

LEGEND

SITE SYMBOLS	GRADING SYMBOLS
CURB LINE	EXISTING CONTOUR — 358 —
EXISTING EDGE OF PAVEMENT LINE	PROPOSED CONTOUR 360
PROPOSED BUILDING LINE	EXISTING SPOT ELEVATION + 360.3
PROPERTY LINE	PROPOSED SPOT ELEVATION + 360.3
LOT LINE	TOP OF WALL ELEVATION + TW
IRON PIN TO BE SET	BOTTOM OF WALL ELEVATION (AT GROUND SURFACE) + BW
CONCRETE MON. TO BE SET	
WALPOLE FENCE	
WROUGHT IRON FENCE	
RETAINING WALL	
PROPOSED GUIDERAIL	
GRADING/ACCESS EASEMENT	
UTILITY EASEMENT	

UTILITY SYMBOLS	
EXISTING STORM SEWER	EXISTING SANITARY SEWER MANHOLE
EXISTING SANITARY SEWER	EXISTING FIRE HYDRANT
EXISTING GAS MAIN EXISTING	EXISTING GAS VALVE
WATER MAIN EXISTING	EXISTING CATCH BASIN
OVERHEAD ELECTRIC	EXISTING WATER VALVE
PROPOSED STORM SEWER	EXISTING MANHOLE
PROPOSED SANITARY SEWER	EXISTING ELECTRIC POLE
PROPOSED WATER MAIN	PROPOSED WATER VALVE
PROPOSED ELECTRIC	PROPOSED HYDRANT
PROPOSED GAS	

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

80 0 40 80
SCALE IN FEET

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER
JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA PENNSYLVANIA CONNECTICUT FLORIDA
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Langan Engineering and Environmental Services, Inc.
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Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: EXISTING FEATURES PLAN

Project No.	240025501
Date	4-9-13
Scale	1"=80'
Drawn By	JDM

Drawing No. GI-102
Sheet 3 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 2400025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-GI102-0101.dwg Date: 10/2/2013 Time: 16:14 User: jmoninghoff Style Table: ---- Layout: GI-102

RECORD PLAN NOTES & COVENANTS:

1. Boundary and topographic information shown hereon based on the plan entitled Map of Boundary and Topographic Survey; performed by Langan Engineering and Environmental Services, dated March 2012. Vertical reference datum based on NAVD 88, derived by GPS methods. Horizontal reference datum based on PASPCS South Zone (NAD 83) derived by GPS methods.
2. All proposed work is subject to township, FEMA, DEP and County Soil Conservation approvals.
3. All roads and storm sewers shall remain private and maintained by the property owner.
4. Monuments and pins to be set per Borough Requirements.
5. Traffic signs shall be in accordance with the "PennDot Guidelines for Local Roadways."
6. All underground utilities shall be designed and installed according to design standards listed in the Borough of Ambler Subdivision and Land Development Ordinance (BA SALDO).
7. A blanket stormwater easement over the entire property for inspection and maintenance of stormwater features is offered for dedication to the Borough of Ambler.
8. Sign type, size and detail to be submitted with zoning application following plan approval.
9. This property is subject to all easements and restrictions as shown herein.
10. This plan is not valid unless embossed with the seal of the undersigned professional (s).
11. Location of above ground utilities as shown. No certification is made by the undersigned as to the actual underground position of any utilities or to the completeness and / or accuracy of utility information provided by others.
12. It is required that the utility companies are notified prior to any excavation and / or construction. Call 1-800-242-1776 to order utility mark outs.
13. Subject Property will be served by public water and sanitary sewer.
14. The stormwater facilities (as shown on this plan) are a basic and perpetual plan of the storm drainage system of the Ambler Borough, and as such are to be protected and preserved in accordance with the approved final plan by the owner(s) on whose lands the structure(s) is(are) located. The Borough of Ambler and/or it's agents reserve the right and privilege to enter upon such lands from time to time for the purpose of inspection of said structures in order to determine that the structural and design integrity are being maintained by the owner(s).
15. Subject Property's proposed use will not require regular delivery or shipping of goods, merchandise or equipment by semi-trailer truck.
16. All proposed utility services shall be placed underground.
17. Proposed open space areas shall be owned and maintained by the property owner per agreement with Borough. Open space land may not be separately sold, nor shall such land be further developed or subdivided.
18. A knox box (key box) should be provided for all proposed buildings including the Recreation building. Location and specification shall be coordinated with the Ambler Fire Department at the time of building permit application.
19. Bicycle racks will be located in the basements of Buildings #1 and #2.
20. Benches and trash receptacles will be placed in the pool area and the village green following construction after it is determined were residents congregate.
21. Curb sections shall be 10 feet in length except where shorter sections are required, but no section may be shorter than four feet. All curb shall be poured separate of the sidewalk. All curb, when poured, shall have an expansion joint between the curb and sidewalk.

WAIVERS REQUESTED

1. §22-308.A - Plan Processing Procedures - The Applicant is requesting a waiver from the requirement to file preliminary and final plans separately, and is requesting that the preliminary and final plans be accepted and reviewed concurrently
2. §22B-100.2.2.A - Planting Islands - A waver is requested from the requirement to provide one landscaped island for every 10 parking spaces.
3. §22B-100.3 - Street Trees - The Applicant is requesting a waiver from the street tree planting requirement to permit the required street trees to be planted elsewhere onsite.

AMBLER BOROUGH ZONING DATA TABLE

ZONING DISTRICT: REDEVELOPMENT OVERLAY DISTRICT – (TOD) TRANSPORTATION ORIENTED DEVELOPMENT

TAX MAP PARCEL: 01-00-02944-00-7

ITEM	TOD (REQUIRED)	TOD (PROPOSED)
Zoning District:	TOD (Proposed)	TOD (PROPOSED)
Proposed Use:	MULTI-FAMILY RESIDENTIAL	MULTI-FAMILY RESIDENTIAL
Min. Lot Area:	8 AC.[6]	4.615 AC. **
Max. Lot Area:	12 AC.	4.615 AC.
Lot Dimensions:		
Min. Lot Width	100 FT	424 FT
Min. Lot Frontage on Active Passenger Rail	1250 FT[7]	424 FT **
Max Density	35 DU/AC (162 D.U.)	25 DU/AC (115 Total Units)
Building Setbacks / Coverage:		
Min. Front Yard Setback	8 FT	42 FT
Min. Side Yard Setback	20 FT [1]	32 FT
Min. Rear Yard Setback	20 FT [1]	128 FT
Building Spacing: [2]		
Corner to corner	30 FT[2]	N/A
Face to face	40 FT	40 FT
Planting Buffer	10 FT [3]	10 FT
Max. Building Coverage:	50% of Lot Area	19.5%
Max. Impervious Coverage:	80% of Lot Area	72.9%
Max. Building Height:	65 FT	< 65 FT
Max. Building Length:	250 FT [4]	323 FT **
Parking:		
Ratio	1.5 Space/DU [5](173 Spaces)	216 [8]
Handicap Ratio	1 HC Space / 25 Spaces (9 Spaces)	9

NOTES:

** Ordinance amendment proposed

1. Side and Rear Yards adjacent to a railroad right-of-way may be reduced by 50%.
2. Corner to corner spacing shall be deemed controlling unless the angle of any face of one building to the angle of any face of any immediately adjoining building shall be less than 20 degrees.
3. All TOD Developments shall provide a permanent landscaped planting area of at least 10 feet (10') in depth along all property lines adjacent to existing residential uses.
4. The maximum length of any building used exclusively for multi-family residential use (excluding mixed-use buildings), shall be 250 feet.
5. Parking for residential units shall be provided at a rate of 1.5 spaces per unit over the entire residential portion of the TOD.
6. Minimum Lot Area can be reduced to 4 acres if the tract has frontage on public street of at least 750 feet.
7. Minimum Lot Frontage along active rail can be reduced to 750 feet if the tract has frontage on public street of at least 750 feet.
8. There are 216 parking spaces proposed on Ambler Crossings and 173 parking spaces are required. There are also 17 additional parking spaces proposed on TMP# 028-020 that are accessed by the Crossings project. 45 of the parking spaces on Ambler Crossings are shared with the Ambler Boiler House project.

OPEN SPACE CALCULATIONS

LOCATION	AREA (S.F.)	AREA (AC.)	REQUIRED 20%
VILLAGE GREEN/PLAZA (1)	25,227	0.58	
RECREATION AREA (2)	14,646	0.34	
GREEN SPACE (3)	27,615	0.63	
TOTAL OPEN SPACE PROVIDED	67,488	1.55	34%

1) A PORTION OF THE OPEN SPACE MUST CONTAIN A VILLAGE GREEN OR PLAZA. VILLAGE GREENS/PLAZAS MUST BE AT LEAST 20,000 SQUARE FEET AND HAVE AN AVERAGE WIDTH OF AT LEAST 100 FEET.
(2) RECREATION AREA INCLUDES COMMUNITY CENTER WITHIN THE LIMITS OF THE PROPOSED CURB LINE.
3) GREEN SPACE AREA WAS CALCULATED USING ALL REMAINING PERVIOUS AREAS EXCLUDING THE VILLAGE GREEN AREA.

SIGN LEGEND

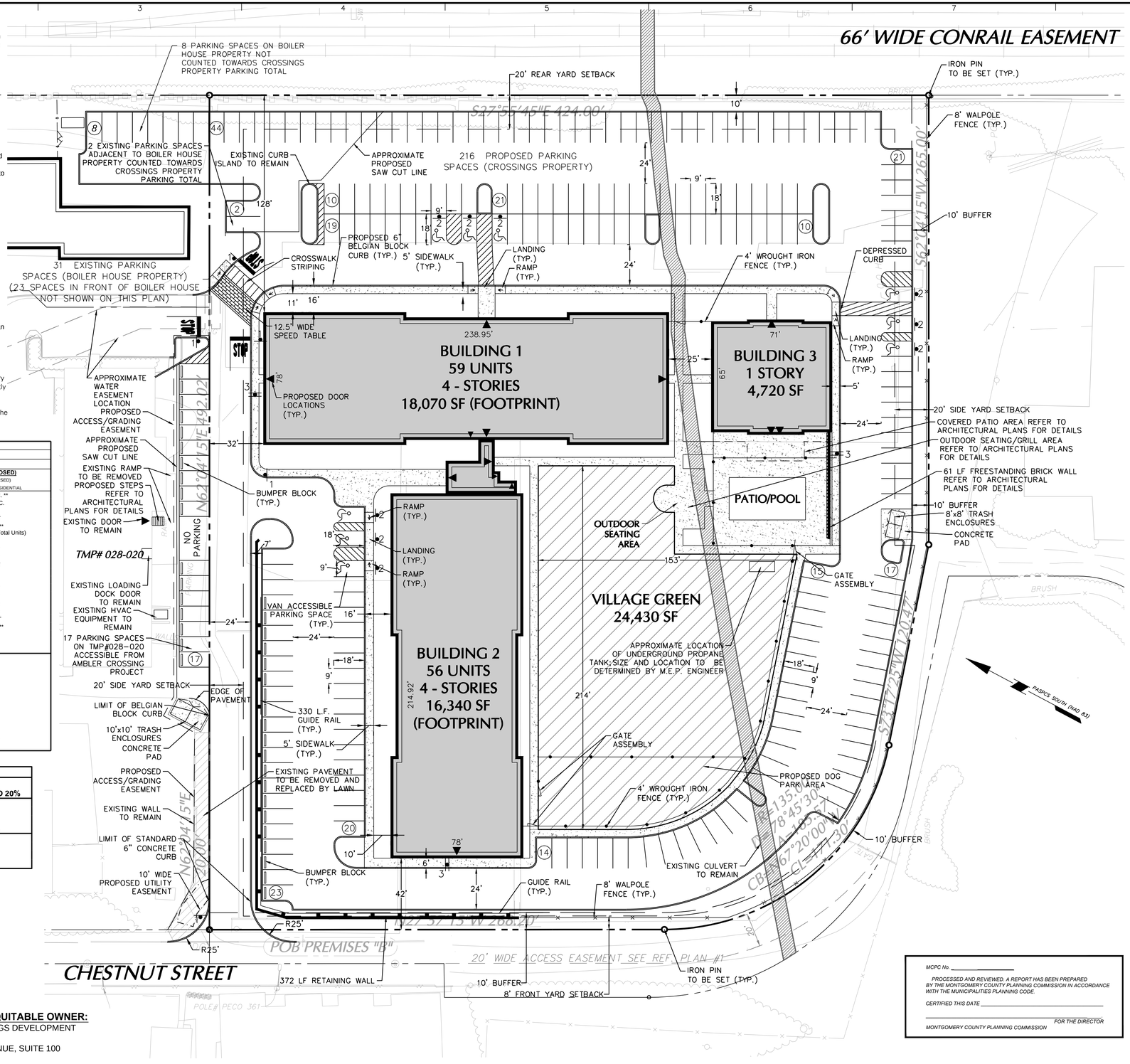
1 STOP
2 ACCESSIBLE PARKING
3 NO PARKING

LEGEND

SITE SYMBOLS: CURB LINE; EXISTING EDGE OF PAVEMENT LINE; PROPOSED BUILDING LINE; PROPERTY LINE; LOT LINE; IRON PIN TO BE SET; CONCRETE MON. TO BE SET; WALPOLE FENCE; WROUGHT IRON FENCE; RETAINING WALL; PROPOSED GUIDERAIL; GRADING/ACCESS EASEMENT; UTILITY EASEMENT

GRADING SYMBOLS: EXISTING CONTOUR; PROPOSED CONTOUR; EXISTING SPOT ELEVATION; PROPOSED SPOT ELEVATION; TOP OF WALL ELEVATION; BOTTOM OF WALL ELEVATION (AT GROUND SURFACE)

UTILITY SYMBOLS: EXISTING STORM SEWER; EXISTING SANITARY SEWER; EXISTING GAS MAIN EXISTING; WATER MAIN EXISTING; OVERHEAD ELECTRIC; PROPOSED STORM SEWER; PROPOSED SANITARY SEWER; PROPOSED WATER MAIN; PROPOSED ELECTRIC; PROPOSED GAS; EXISTING SANITARY SEWER MANHOLE; EXISTING FIRE HYDRANT; EXISTING GAS VALVE; EXISTING CATCH BASIN; EXISTING WATER VALVE; EXISTING MANHOLE; EXISTING ELECTRIC POLE; PROPOSED WATER VALVE; PROPOSED HYDRANT



APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

30 0 15 30
SCALE IN FEET

Date	Description	No.
10–3–13	BOROUGH COMMENTS	2.
6–21–13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE–057145–E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: SITE PLAN (RECORD PLAN)

Project No.	240025501
Date	4–9–13
Scale	1"=30'
Drawn By	JKM
Drawing No.	CS-101
	Sheet 4 of 25

I HEREBY CERTIFY TO THE BOROUGH OF AMBLER, THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF, THE SURVEY SHOWN ON THIS PLAN PERFORMED ON _____(Date) IS IN ACCORDANCE WITH THE "MINIMUM STANDARDS OF THE PROFESSIONAL LAND SURVEYORS MANUAL OF PRACTICE IN THE COMMONWEALTH OF PENNSYLVANIA", AS ADOPTED BY THE PENNSYLVANIA SOCIETY OF LAND SURVEYORS, BASED ON THE RECORDS PROVIDED BY THE TITLE REPORT # _____ISSUED BY_____ON _____

SHAUN HIGGINS
PROFESSIONAL LAND SURVEYOR PA Lic. No. SU-051088-E
DATE
SIGNATURE

I HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA; THAT THE INFORMATION CONTAINED IN THE ACCOMPANYING PLANS HAS BEEN PREPARED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE AND IS TRUE AND CORRECT.

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E
DATE
SIGNATURE

OWNERS CERTIFICATION

I, _____, HAVE LAID OUT UPON MY LAND SITUATE IN THE BOROUGH OF AMBLER, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA, CERTAIN LOTS AND STREETS ACCORDING TO THE ACCOMPANYING PLAN WHICH IS INTENDED TO BE RECORDED.

WITNESS MY HAND AND SEAL THIS _____DAY OF _____, 20____.

PRINTED NAME *SIGNATURE*

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY

ON THE _____DAY OF _____, 20____, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, PERSONALLY APPEARED _____ WHO ACKNOWLEDGED HIMSELF TO BE THE _____

A CORPORATION, AND THAT HE AS SUCH PRESIDENT BEING AUTHORIZED TO DO SO ACKNOWLEDGED THIS PLAN TO BE THE OFFICIAL PLAN OF STREETS AND PROPERTY SHOWN THEREON. SITUATE IN THE BOROUGH OF AMBLER, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA AND DESIRED THAT THIS PLAN BE RECORDED ACCORDING TO LAW.
WITNESS MY HAND AND SEAL THE DAY AND YEAR AFORESAID.

NOTARY PUBLIC
MY COMMISSION EXPIRES

APPROVED THIS _____DAY OF _____, 20____ BY THE BOROUGH COUNCIL OF THE BOROUGH OF AMBLER, MONTGOMERY COUNTY, PA.

ATTEST: _____ *SIGNATURE, PRESIDENT*
DATE SIGNED
ATTEST: _____ *SIGNATURE, SECRETARY*
SEAL: *DATE SIGNED*
(BOROUGH NOTARY SEAL)

REVIEWED THIS _____DAY OF _____, 20____ BY THE PLANNING COMMISION OF THE BOROUGH OF AMBLER, MONTGOMERY COUNTY, PA.

ATTEST: *SIGNATURE* *DATE SIGNED*

REVIEWED BY THE BOROUGH ENGINEER OF THE BOROUGH OF AMBLER, MONTGOMERY COUNTY, PA.

BOROUGH ENGINEER: *SIGNATURE* *DATE SIGNED*

RECORDED IN THE MONGOMERY COUNTY COURT HOUSE THIS _____ DAY OF _____, 20____ IN PLAN BOOK _____, PAGE _____.

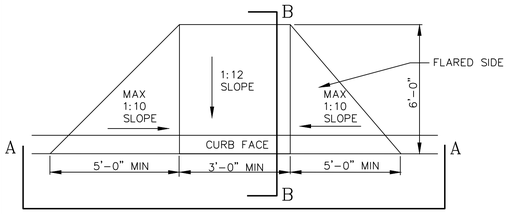
MCPC No. _____

PROCESSED AND REVIEWED, A REPORT HAS BEEN PREPARED BY THE MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE.

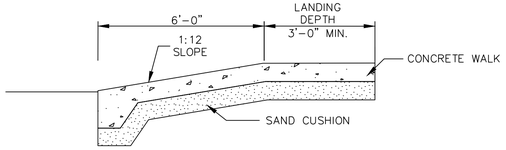
CERTIFIED THIS DATE _____

FOR THE DIRECTOR
MONTGOMERY COUNTY PLANNING COMMISSION

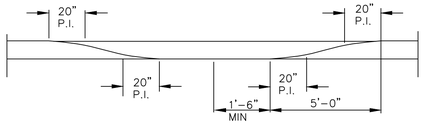
LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501



PLAN



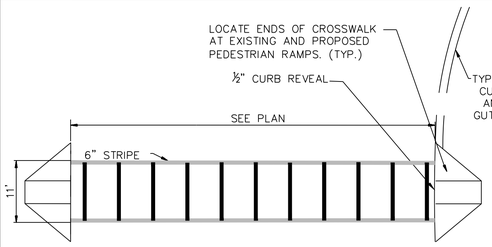
SECTION B–B



SECTION A–A

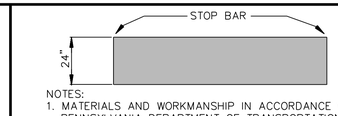
NOTES:
1. CONTRACTOR SHALL REFER TO LATEST ADA ACCESSIBILITY GUIDELINES TO ENSURE THAT DETAILS ARE CURRENT AT THE TIME OF CONSTRUCTION, AND SHALL NOTIFY ENGINEER PRIOR TO START OF CONSTRUCTION IF DISCREPANCIES ARE FOUND.
2. CONTRACTOR SHALL VERIFY IF ADDITIONAL REQUIREMENTS OR ACCESSIBILITY REGULATIONS ARE USED BY THE LOCAL MUNICIPALITY BUILDING DEPARTMENT OR CONSTRUCTION DEPARTMENT. IF THOSE REGULATIONS DIFFER FROM ADA, CONTRACTOR SHALL NOTIFY DESIGN ENGINEER PRIOR TO CONSTRUCTION.
3. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.
4. LANDINGS ARE REQUIRED AT THE TOP OF THE CURB RAMP WITH MINIMUM 3 FOOT CLEAR LENGTH. IN ALTERATIONS, WHERE THERE IS NO LANDING AT THE TOP OF CURB RAMPS, THE FLARES SHALL BE PROVIDED AND NOT BE STEEPER THAN 1:12. THE WIDTH OF THE FLARED SIDE SHALL BE EXTENDED AS NECESSARY TO REACH THE DESIRED CURB REVEAL HEIGHT.
5. ALL RAMPS TO HAVE A SLIP RESISTANT SURFACE AND BROOM FINISH IN ACCORDANCE WITH ADA REQUIREMENTS.
6. IF DETECTABLE WARNINGS ARE PROPOSED, SEE ADA DETECTABLE WARNING SURFACE DETAIL FOR MORE INFORMATION.
7. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20.
8. CURB RAMPS AND FLARES SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES, OR PARKING ACCESS AISLES. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING FLARES.

CURB RAMP



NOTES:
1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, MOST RECENTLY REVISED.
2. RELECTORIZE ALL PAVEMENT MARKINGS.
3. APPLY ALL PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 15 MILS WET THICKNESS.
4. CROSSWALK MARKING GEOMETRY AND PAINT SPECIFICATIONS TO COMPLY WITH ALL PADOT REQUIREMENTS AS WELL AS PUB. 408, MOST RECENTLY REVISED.

CROSSWALK MARKING



NOTES:
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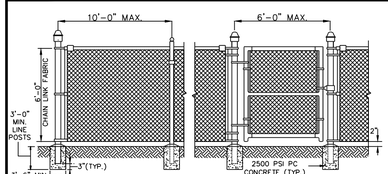
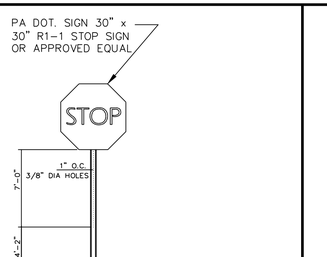
3. APPLY ALL PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 15 MILS WET THICKNESS.

STOP BAR DETAIL



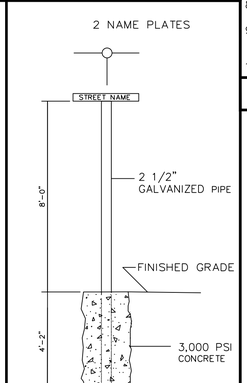
SEE THE SITEWORK SPECIFICATIONS FOR THE SIZE, TYPE, AND GAUGE OF MATERIALS THAT WILL BE USED FOR CONSTRUCTION OF A CHAIN LINK FENCE.

CHAIN LINK FENCE WITH GATE

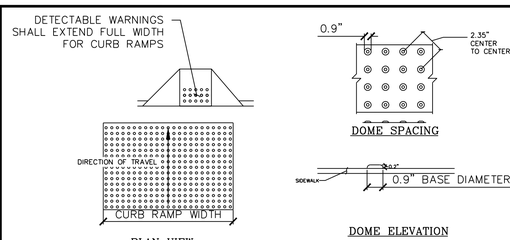


NOTES:
1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS
2. FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
3. ALL POSTS SHALL BE EMBEDDED 4'–2" MINIMUM BELOW GRADE. ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT, AND HOLES PUNCHED
4. AND DRILLED BEFORE GALVANIZING. GALVANIZING SHALL BE IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123–78 (OR LATEST REVISED).
5. POSTS MAY BE STEEL, ALUMINUM, OR TWO–PIECE U–POST.
6. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBERS AS SHOWN ON THIS DETAIL AND DIRECTIONAL SIGN SHEET.
7. BOLTS SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT.
8. ALL TRAFFIC AND PEDESTRIAN SIGNAGE AND LOCATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL CURRENT AMENDMENTS. SIGN POST MOUNTING SHALL BE IN ACCORDANCE WITH PADOT STANDARD
9. DRAWING NUMBER TC–8702B, "POST–MOUNTED SIGNS, TYPE B," MOST RECENT REVISION. SIGN POST LOCATION SHALL BE IN ACCORDANCE FIG. 2A–2 OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, MINIMUM 4 FT FROM SIDEWALK, AND MINIMUM 2 FT FROM MARKED OR UNMARKED CROSSWALK.

STOP SIGN



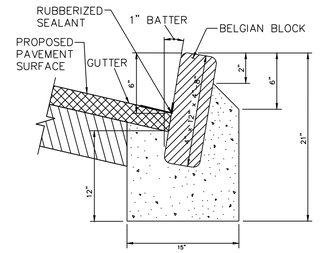
STREET SIGN



PLAN VIEW — DOME ELEVATION

NOTES:
1. DETECTABLE WARNINGS SHALL BE CONSTRUCTED PER MANUFACTURER'S SPECIFICATIONS.
2. WIDTH OF DETECTABLE WARNING AREA SHALL BE FULL WIDTH OF RAMP.
3. LENGTH OF DETECTABLE WARNING AREA SHALL BE MINIMUM 2 FEET REGARDLESS OF SECTION WIDTH. FOR CURB RAMPS, THE DETECTABLE WARNING SHALL EXTEND THE FULL DEPTH OF THE RAMP AND COMPLY WITH ADAAG 4.29.2.
4. DETECTABLE WARNING AREA CAN BE SQUARE WHERE USED IN A CURB RADIUS.
5. DETECTABLE WARNING DOMES SHALL BE ALIGNED ON A SQUARE GRID PARALLEL ALIGNMENT IN THE PREDOMINANT DIRECTION OF OF TRAVEL TO PERMIT WHEELS TO TRAVEL BETWEEN DOMES.
6. DETECTABLE WARNING DOMES SHALL BE PLACED SO THE EDGE NEAREST THE CURB IS 6 INCHES TO 8 INCHES FROM CURB LINE.
7. MAT EDGES SHALL BE BEVELED TO ELIMINATE TRIP HAZARD.
8. DETECTABLE WARNING COLOR SHALL CONTRAST WITH ADJOINING SURFACES.
9. CONTRACTOR SHALL OBTAIN LOCAL AUTHORITY, OWNER'S ENGINEER, AND OWNER'S APPROVAL FOR MANUFACTURER PRIOR TO INSTALLATION.
10. ALL CURB RAMPS REQUIRE BRICK RED DETECTABLE WARNING SURFACE WHEN INSTALLED.

ADAAG DETECTIBLE WARNING SURFACE



NOTES:
1. SEE CONCRETE INSTALLATION NOTES ON SHEET CS–501.
2. THIS CURB TO BE USED FOR ALL ON–SITE CURB.
3. ON TRANSITIONS FROM AND TO PROPOSED CURB, USE ONE LARGE BLOCK SLOPED TO CUT AND TO FIT.
4. CURB IMMEDIATELY ADJACENT TO INLET CASTING MUST HAVE PREFORMED EXPANSION MATERIAL.
5. CEMENT JOINTS TO BE ½" WIDE. CEMENT JOINT MATERIAL TO BE APPROVED BY BOROUGH ENGINEER PRIOR TO INSTALLATION.
6. CURB PC'S AND PT'S REINFORCED WITH TWO 24" LONG #4 BARS.
7. ON TRANSITIONS TO PROPOSED 18" CONCRETE CURB, TWO 24" LONG #4 BARS ARE TO BE USED.

BELGIAN BLOCK CURB

CONCRETE INSTALLATION NOTES:

1– ALL CURBS, GUTTERS AND SIDEWALKS AS WELL AS ALL DRIVEWAYS OVER SIDEWALKS SHALL BE CONSTRUCTED OF CONCRETE. SAID CONCRETE SHALL HAVE A LOW SLUMP WITH A MAXIMUM SLUMP OF FOUR (4) INCHES, A COMPRESSIVE STRENGTH OF FOUR THOUSAND (4,000) POUNDS PER SQUARE INCH (PSI) IN TWENTY EIGHT (28) DAYS, A LOW WATER–CEMENT RATIO OF FORTY–FIVE HUNDREDTH (0.45 OR LESS, ENTRAINED AIR OF FIVE (5) TO EIGHT (8) PERCENT TOTAL AIR CONTENT AND A MINIMUM CEMENTITIOUS MATERIALS CONTENT OF FIVE HUNDRED SIXTY FOUR (564) POUNDS PER CUBIC YARD (lb/cu.yd.) OF CONCRETE.

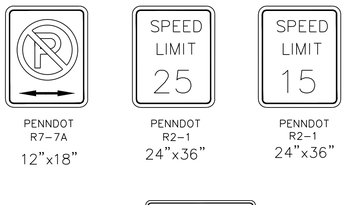
2– CERTIFICATION FOR THE CONCRETE MIX SHALL BE FURNISHED SEVEN (7) CALENDAR DAYS PRIOR TO THE START OF ANY CONCRETE CONSTRUCTION ACTIVITIES.

3– PROPER FINISHING PRACTICES SHALL BE USED. NO FINISHING OPERATION SHALL BE PERFORMED WHILE THERE IS EXCESS MOISTURE OR BLEEDING WATER ON THE CONCRETE SURFACE. NO SUBSEQUENT FINISHING OPERATION AFTER BULL FLOATING SHALL BE DONE UNTIL THE CONCRETE WILL SUSTAIN FOOT PRESSURE WITH ONLY ABOUT ONE–QUARTER (1/4) INCH INDENTATION. THE FINAL FINISHING OPERATION SHALL BE TO MAKE A LIGHT BROOM FINISH.

4– THE FINISHED CONCRETE SHALL BE CURED FOR AT LEAST SEVEN (7) DAYS AFTER PLACEMENT. AS SOON AS THE CONCRETE IS HARD IT SHALL BE CURED BY ONE OR COMBINATION OF:
- I– MOISTEN THE CONCRETE AND COVER IT WITH WATERPROOF PAPER OR POLYETHYLENE FILM WEIGHTED DOWN AROUND THE EDGES TO PREVENT EVAPORATION.
- II– THE CONCRETE SHALL BE KEPT CONTINUOUSLY WET WITH A SPRINKLER.
- III– THE CONCRETE SHALL BE COVERED WITH BURLAP THAT IS KEPT MOIST BY OCCASIONALLY SPRAYING WITH WATER.
- IV– LIQUID MEMBRANE–FORMING CURING COMPOUNDS SHALL BE SPRAYED ONTO THE CONCRETE SURFACE PRIOR TO TEMPERATURES BELOW FORTY (40) DEGREES FAHR. THE CURING COMPOUND SHALL BE A TYPE THAT LEAVES NO PERMANENT DISCOLORATION ON THE SURFACE AND DOES NOT INTERFERE WITH THE APPLICATION OF ANY SUBSEQUENT SURFACE TREATMENT.

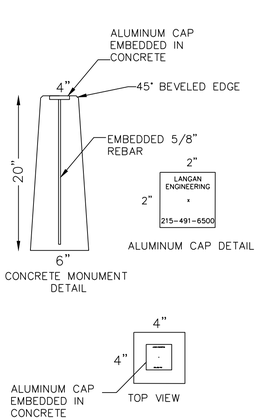
5– THE CONCRETE SHALL AIR DRY FOR AT LEAST THIRTY DAYS PRIOR TO APPLICATION OF DEICER CHEMICALS. IF TIME DOES NOT PERMIT THIS AIR DRYING, THE CONCRETE SURFACE SHALL BE SEALED WITH AN APPROVED BREATHABLE SURFACE TREATMENT.

CONCRETE NOTES



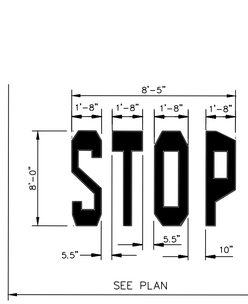
NOTES:
1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS
2. FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
3. ALL POSTS SHALL BE EMBEDDED 4'–2" MINIMUM BELOW GRADE. ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT, AND HOLES PUNCHED
4. AND DRILLED BEFORE GALVANIZING. GALVANIZING SHALL BE IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123–78 (OR LATEST REVISED).
5. POSTS MAY BE STEEL, ALUMINUM, OR TWO–PIECE U–POST.
6. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBERS AS SHOWN ON THIS DETAIL AND DIRECTIONAL SIGN SHEET.
7. BOLTS SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT. ALL TRAFFIC AND PEDESTRIAN SIGNAGE AND LOCATION SHALL BE IN
8. ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ALL CURRENT AMENDMENTS. ALL SIGNS SHALL BE HI–INTENSITY

SIGN DETAILS



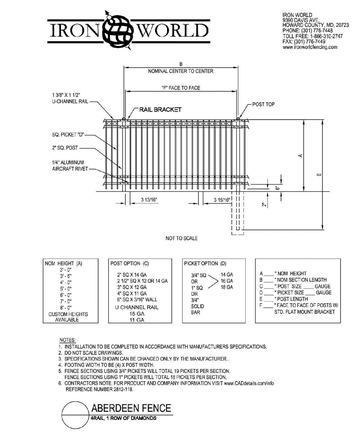
CONCRETE MONUMENT

NOTE:
1. WORDS AND ARROWS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 3B OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS
2. THESE WORDS AND BAR ARE TO BE PAINTED REFLECTIVE WHITE.



GENERAL NOTES:
1. MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408, UNLESS NOTED OTHERWISE.
2. RELECTORIZE ALL PAVEMENT MARKINGS
3. EDGE LINES SHOULD BE 4" WIDE SOLID LINE OF THE COLOR INDICATED AND PLACED 4 INCHES INSIDE THE EDGE OF THE PAVEMENT SHOULDER
4. APPLY ALL PAINTED CENTER LINES, LANE LINES AND LEGENDS AT 15 MILS WET THICKNESS.
5. APPLY PAINTED EDGE LINES AT 12 MILS WET THICKNESS.

STOP LEGEND DETAIL



WROUGHT IRON FENCE

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

Date	Description	No.
10–3–13	BOROUGH COMMENTS	2.
6–21–13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER PE057145E

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE–057145–E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA PENNSYLVANIA CONNECTICUT FLORIDA
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Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: CONSTRUCTION DETAILS

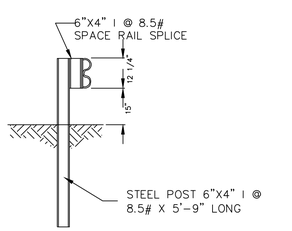
Project No.	240025501
Date	4–9–13
Scale	N.T.S.
Drawn By	JKM

Drawing No. CS–501

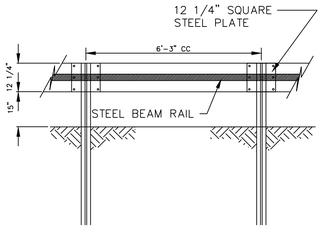
Sheet 5 of 25

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

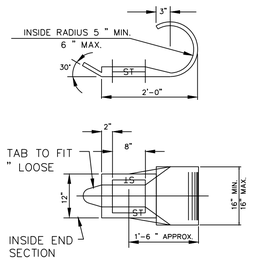
Filename: \\langan.com\data\BE\data5\240025501\Cadd Data – 240025501\SheetFiles\240025501–CS501–0101.dwg Date: 10/2/2013 Time: 16:15 User: jmoninghoff Style Table: Langan.stb Layout: CS–501



SECTION

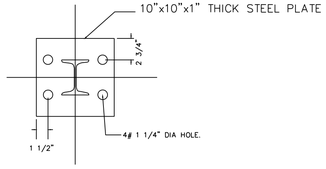


ELEVATION



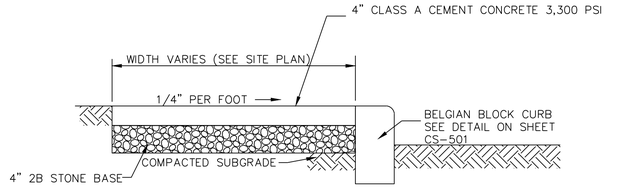
END SECTION

1. GUIDE RAIL SHALL BE CLASS A, TYPE 1, CONFORMING TO CURRENT AASHO SPECIFICATIONS.
2. GUIDE RAIL LAPS TO BE IN DIRECTION OF TRAFFIC FLOW.



BASE PLATE DETAIL

STEEL GUIDE RAIL



NOTES:

CONTRACTION JOINTS: SPACED AT EQUAL INTERVALS BETWEEN EXPANSION JOINTS, NOT TO EXCEED 5 FEET FOR SIDEWALKS TO BE FORMED BY DIVISION PLATES OR CUTTING GROOVE INTO CONCRETE SURFACE NOT LESS THAN 1/3 ENTIRE DEPTH OF SLAB.

SIDEWALK THICKNESS 6 INCHES AT RESIDENTIAL DRIVEWAYS.

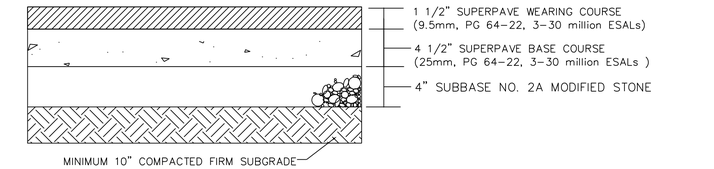
EXPANSION JOINTS TO BE ONE-HALF-INCH PRECLUDED, BITUMINOUS, EXPANSION JOINT MATERIAL AT THIRTY-FOOT INTERVALS; NEXT TO BUILDINGS, POLES, STRUCTURES AND CURBS; AROUND INTERSECTIONS OF TWO WALKS; DRIVEWAY APRON JOINT TO WALL, CURB OR SIDEWALK; AND AT ENDS OF ALL WALKS AND CURBS INCLUDING RADIUS CURBS.

MINIMUM NO. 6, SIX BY SIX MESH TO BE USED IN CONCRETE DRIVEWAY CONSTRUCTION.

SEE CONCRETE INSTALLATION NOTES ON SHEET CS-501.

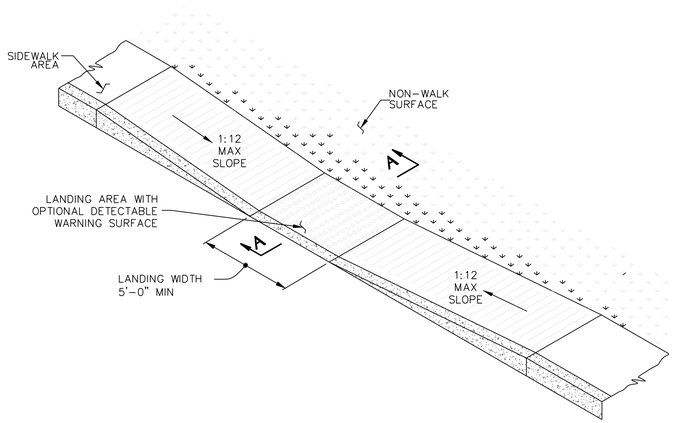
ANY CONSTRUCTION ISSUES NOT COVERED BY THE CONCRETE INSTALLATION NOTES SHOULD DEFER TO PENNDOT SPECIFICATIONS PUB. 408, MOST RECENTLY REVISED.

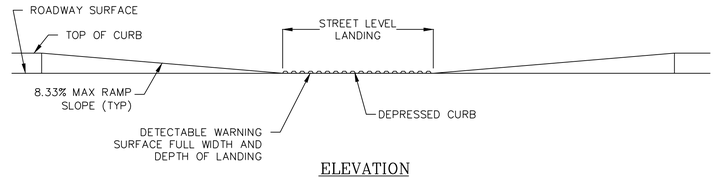
SIDEWALK DETAIL



*FINAL PAVEMENT SECTION SHALL BE COORDINATED WITH THE GEOTECHNICAL REPORT
*ALL COURSES SHALL CONFORM TO PADOT 408 REQUIREMENTS
*PAVING SECTION FOR ALL PROPOSED PAVEMENT ASSOCIATED WITH THIS APPLICATION

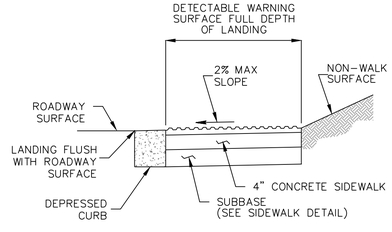
PAVING DETAIL





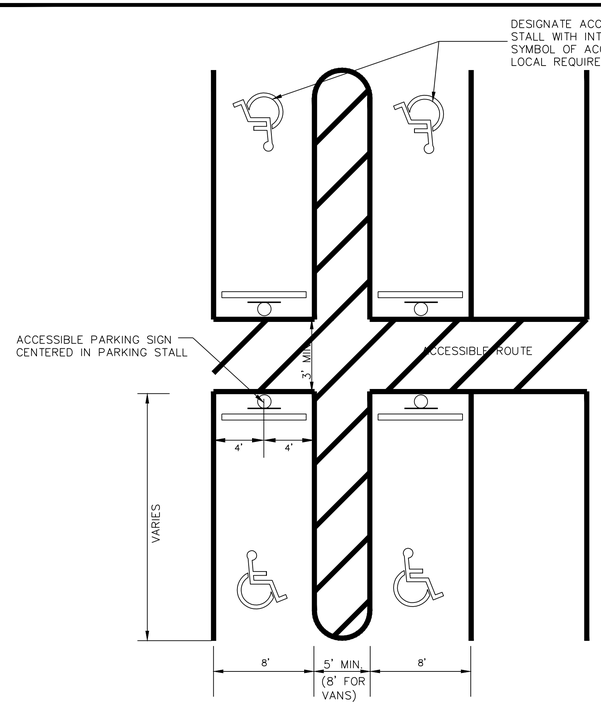
ELEVATION

NOTES:
1. CONTRACTOR SHALL REFER TO THE LATEST ADA ACCESSIBILITY GUIDELINES TO ENSURE THAT DETAILS ARE CURRENT AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND.
2. CONTRACTOR SHALL VERIFY IF ADDITIONAL REQUIREMENTS OR ACCESSIBILITY REGULATIONS ARE USED BY THE LOCAL MUNICIPALITY BUILDING DEPARTMENT OR CONSTRUCTION DEPARTMENT. IF THOSE REGULATIONS DIFFER FROM ADA, CONTRACTOR SHALL NOTIFY DESIGN ENGINEER PRIOR TO CONSTRUCTION.
3. IF CURB RAMPS ARE PROPOSED WITH DETECTABLE WARNINGS, SEE ADA DETECTABLE WARNING SURFACE DETAIL.
4. ALL RAMPS SHALL HAVE A BROOM FINISH AND SLIP RESISTANT SURFACE IN ACCORDANCE WITH ADA REQUIREMENTS.
5. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20.



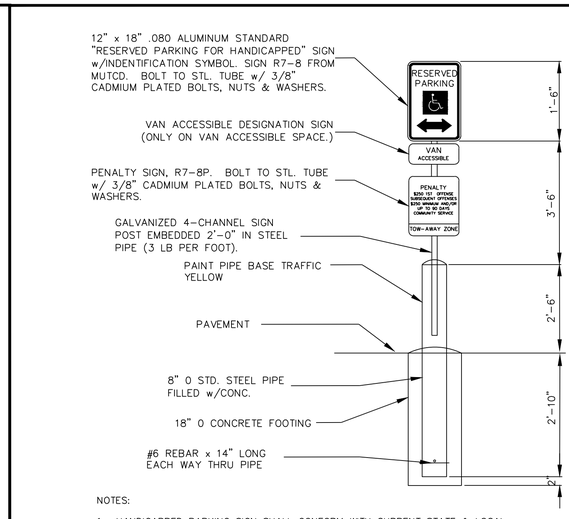
SECTION A-A

CURB RAMP



NOTES:
1. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST 96 INCHES WIDE. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE. TWO ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE CLEAR WIDTH OF AN ACCESSIBLE ROUTE. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS.
2. THE ACCESS AISLE SHALL BE A MINIMUM OF 60 INCHES WIDE FOR CARS OR A MINIMUM OF 96 INCHES WIDE FOR VANS. THE ACCESSIBLE ROUTE CONNECTED TO THE ACCESS AISLE AT THE FRONT OF THE PARKING SPACES SHALL BE A MINIMUM OF 36 INCHES.
3. PARKING SPACES FOR VANS, ACCESS AISLES SERVING THEM, AND VEHICULAR ROUTES FROM AN ENTRANCE TO THE VAN PARKING SPACES, AND FROM THE VAN PARKING SPACES TO A VEHICULAR EXIT SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF 98 INCHES MINIMUM.
4. CONTRACTOR SHALL REFER TO THE LATEST ADA ACCESSIBILITY GUIDELINES TO ENSURE THAT DETAILS ARE CURRENT AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND PRIOR TO COMMENCEMENT OF WORK.

ACCESSIBLE PARKING STALL



NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE & LOCAL CODES AND REGULATIONS.
2. THE BOTTOM OF R7-8 SIGN SHALL BE MOUNTED APPROXIMATELY 60 INCHES ABOVE THE PARKING LOT OR SIDEWALK SURFACE WHEN SIGN IS PARALLEL TO SIDEWALK AND APPROXIMATELY 72 INCHES ABOVE THE PARKING LOT OR SIDEWALK SURFACE WHEN SIGN IS PERPENDICULAR TO SIDEWALK.
3. THE R7-8 SIGN SHALL BE CENTERED AND MOUNTED AT THE HEAD OF EACH PARKING SPACE.
4. WHERE PARKING SPACES RESERVED FOR PERSONS WITH DISABILITIES ARE DESIGNATED TO ACCOMMODATE WHEEL CHAIR VANS, SIGN R7-8B SHOULD BE MOUNTED BELOW THE R7-8 SIGN.

ADA ACCESSIBLE PARKING SIGN

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT
PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

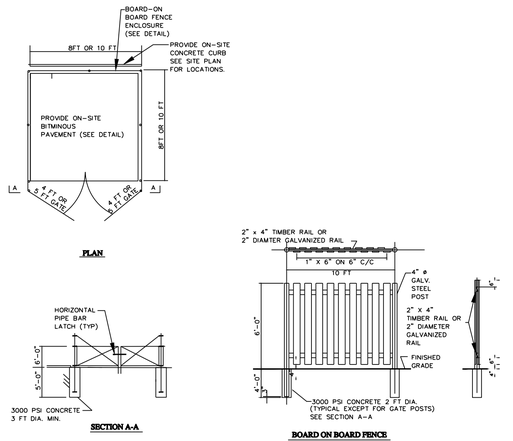
Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
CONSTRUCTION DETAILS

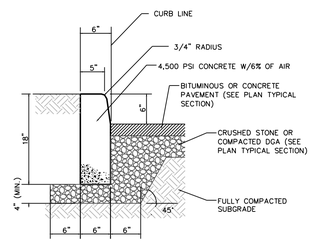
Project No.	240025501
Date	4-9-13
Scale	N.T.S.
Drawn By	KG

Drawing No. CS-502
Sheet 6 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

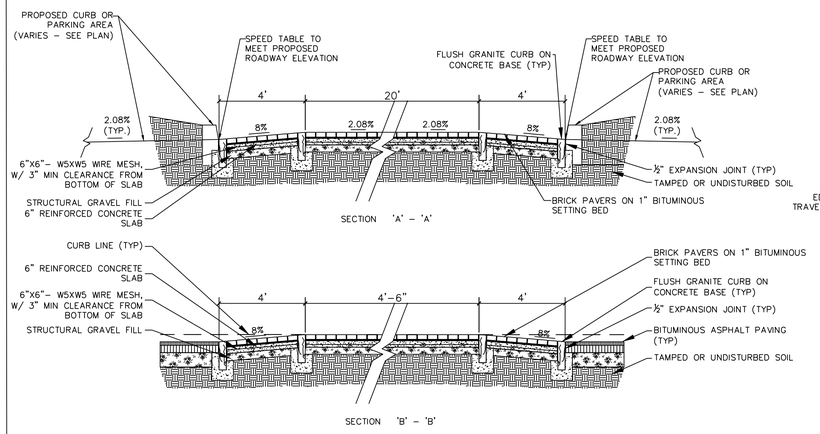


TRASH ENCLOSURE



NOTES:
1. CONCRETE TO TEST 4,500 P.S.I. MINIMUM ON 28 DAY TEST. AIR ENTRAINMENT 5% TO 7%, SLUMP TO BE 3" ± 1"
2. TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED BITUMINOUS JOINT FILLER.
3. EXPOSED CONCRETE SURFACE IS TO BE RUBBED TO PROVIDE SMOOTH FINISHED SURFACE.
4. ALL SUBSOIL SHALL BE FULLY COMPACTED TO 95% OF MODIFIED PROCTOR DRY DENSITY PER ASTM D1557.

6" STANDARD CURB



SPEED TABLE

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
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Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

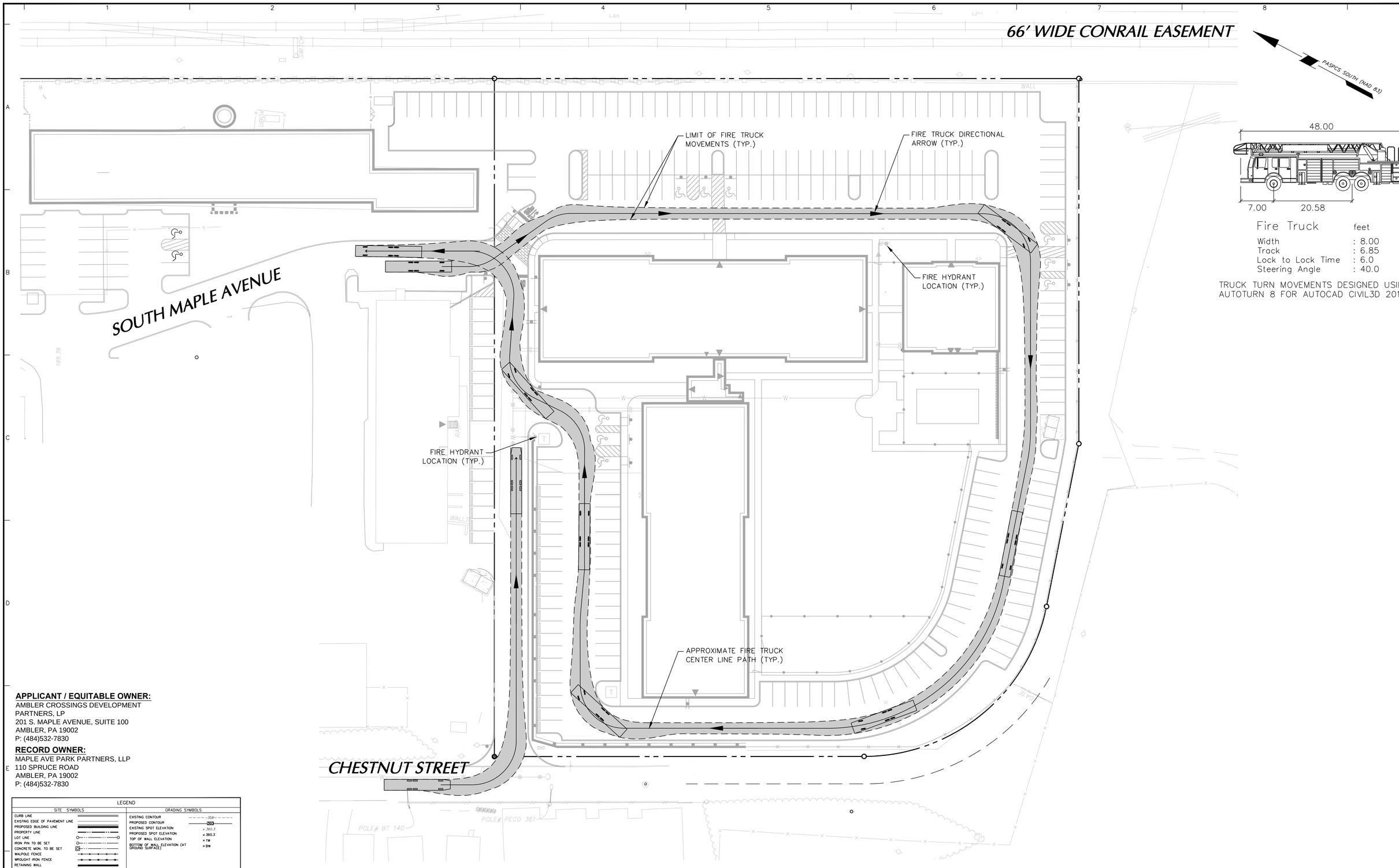
Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
CONSTRUCTION DETAILS

Project No.	240025501
Date	4-9-13
Scale	N.T.S.
Drawn By	KG

Drawing No.
CS-503
Sheet 7 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501



Fire Truck	feet
Width	: 8.00
Track	: 6.85
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

TRUCK TURN MOVEMENTS DESIGNED USING AUTOTURN 8 FOR AUTOCAD CIVIL3D 2013.

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P: (484)532-7830

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110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

LEGEND

SITE SYMBOLS		GRADING SYMBOLS	
CURB LINE		EXISTING CONTOUR	358
EXISTING EDGE OF PAVEMENT LINE		PROPOSED CONTOUR	360
PROPOSED BUILDING LINE		EXISTING SPOT ELEVATION	× 360.3
PROPERTY LINE		PROPOSED SPOT ELEVATION	× 360.3
LOT LINE		TOP OF WALL ELEVATION	× TW
IRON PIN TO BE SET		BOTTOM OF WALL ELEVATION (AT GROUND SURFACE)	× BW
CONCRETE MON. TO BE SET			
WALPOLE FENCE			
WROUGHT IRON FENCE			
RETAINING WALL			
PROPOSED GUIDERAIL			
GRADING/ACCESS EASEMENT			
UTILITY EASEMENT			

UTILITY SYMBOLS			
EXISTING STORM SEWER	D D	EXISTING SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER	S S	EXISTING FIRE HYDRANT	
EXISTING GAS MAIN EXISTING	G G	EXISTING GAS VALVE	
WATER MAIN EXISTING	W W	EXISTING CATCH BASIN	
OVERHEAD ELECTRIC		EXISTING WATER VALVE	
PROPOSED STORM SEWER		EXISTING MANHOLE	
PROPOSED SANITARY SEWER		EXISTING ELECTRIC POLE	
PROPOSED WATER MAIN	W	PROPOSED WATER VALVE	
PROPOSED ELECTRIC	E	PROPOSED HYDRANT	
PROPOSED GAS	G		

30 0 15 30
SCALE IN FEET

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER PE057145 E

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
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DUBAI ISTANBUL
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Langan International LLC
Collectively known as Langan

Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
FIRE TRUCK TURN PLAN

Project No.	240025501
Date	4-9-13
Scale	1"=30'
Drawn By	JDM

Drawing No.
CS-601

Sheet 8 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

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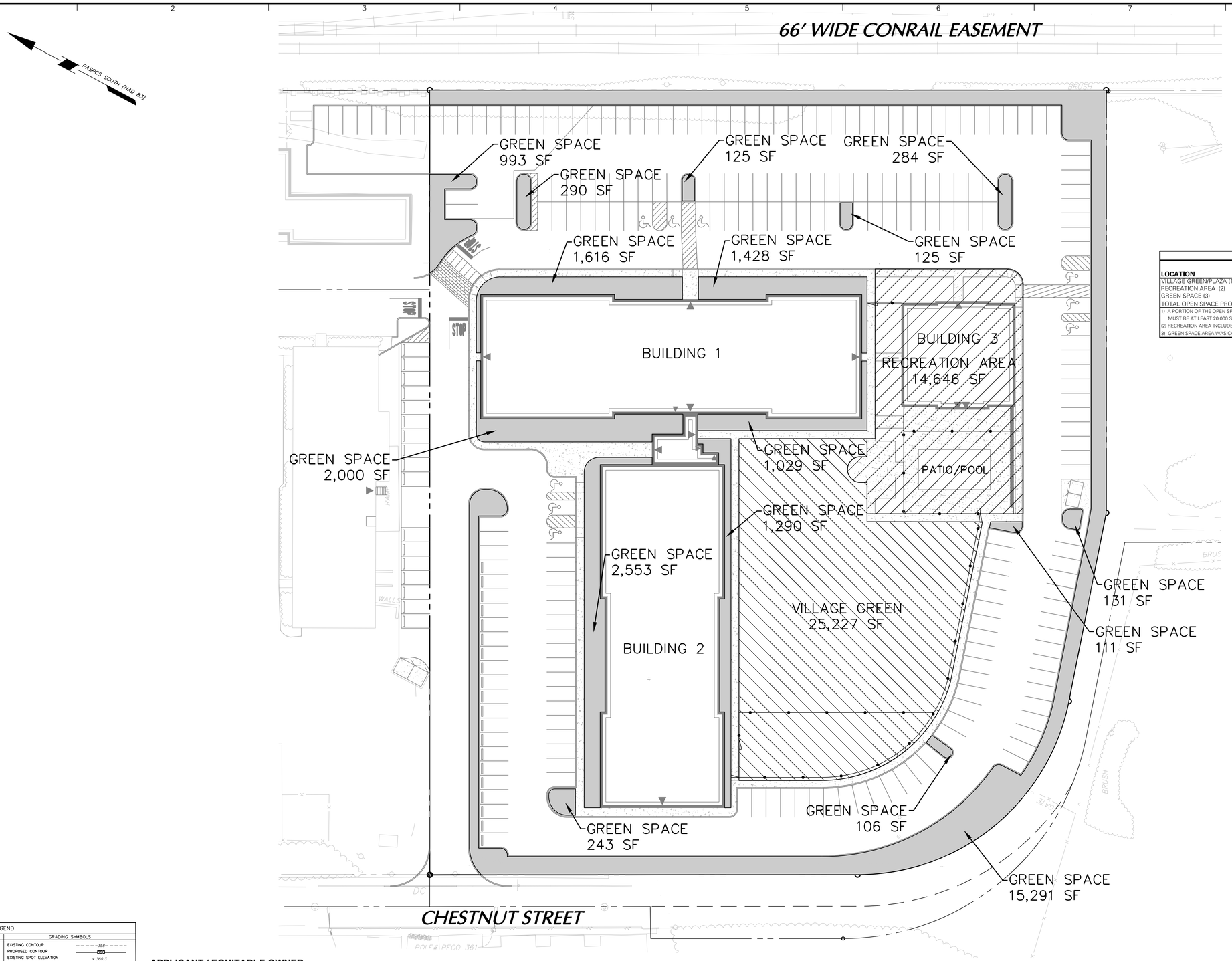

LEGEND

VILLAGE GREEN	
RECREATION AREA	
OPEN SPACE	

OPEN SPACE CALCULATIONS

LOCATION	AREA (S.F.)	AREA (AC.)	REQUIRED 20%
VILLAGE GREEN/PLAZA (1)	25,227	0.58	
RECREATION AREA (2)	14,646	0.34	
GREEN SPACE (3)	27,615	0.63	
TOTAL OPEN SPACE PROVIDED	67,488	1.55	34%

1) A PORTION OF THE OPEN SPACE MUST CONTAIN A VILLAGE GREEN OR PLAZA. VILLAGE GREENS/PLAZAS MUST BE AT LEAST 20,000 SQUARE FEET AND HAVE AN AVERAGE WIDTH OF AT LEAST 100 FEET.
(2) RECREATION AREA INCLUDES COMMUNITY CENTER WITHIN THE LIMITS OF THE PROPOSED CURB LINE.
(3) GREEN SPACE AREA WAS CALCULATED USING ALL REMAINING PERVIOUS AREAS EXCLUDING THE VILLAGE GREEN AREA.

LEGEND

SITE SYMBOLS		GRADING SYMBOLS	
CURB LINE		EXISTING CONTOUR	358
EXISTING EDGE OF PAVEMENT LINE		PROPOSED CONTOUR	360
PROPOSED BUILDING LINE		EXISTING SPOT ELEVATION	× 360.1
PROPERTY LINE		PROPOSED SPOT ELEVATION	× 360.3
LOT LINE		TOP OF WALL ELEVATION	× TW
IRON PIN TO BE SET		BOTTOM OF WALL ELEVATION (AT GROUND SURFACE)	× BW
CONCRETE MON. TO BE SET			
WALPOLE FENCE			
WROUGHT IRON FENCE			
RETAINING WALL			
PROPOSED GUIDERAIL			
GRADING/ACCESS EASEMENT			
UTILITY EASEMENT			

UTILITY SYMBOLS			
EXISTING STORM SEWER	D	EXISTING SANITARY SEWER MANHOLE	
EXISTING SANITARY SEWER	S	EXISTING FIRE HYDRANT	
EXISTING GAS MAIN EXISTING	G	EXISTING GAS VALVE	
WATER MAIN EXISTING	W	EXISTING CATCH BASIN	
OVERHEAD ELECTRIC		EXISTING WATER VALVE	
PROPOSED STORM SEWER		EXISTING MANHOLE	
PROPOSED SANITARY SEWER		EXISTING ELECTRIC POLE	
PROPOSED WATER MAIN	W	PROPOSED WATER VALVE	
PROPOSED ELECTRIC	E	PROPOSED HYDRANT	
PROPOSED GAS	G		

APPLICANT / EQUITABLE OWNER:
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AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

30 0 15 30
SCALE IN FEET

No.	Description	Date
2.	BOROUGH COMMENTS	10-3-13
1.	BOROUGH COMMENTS	6-21-13

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

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Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

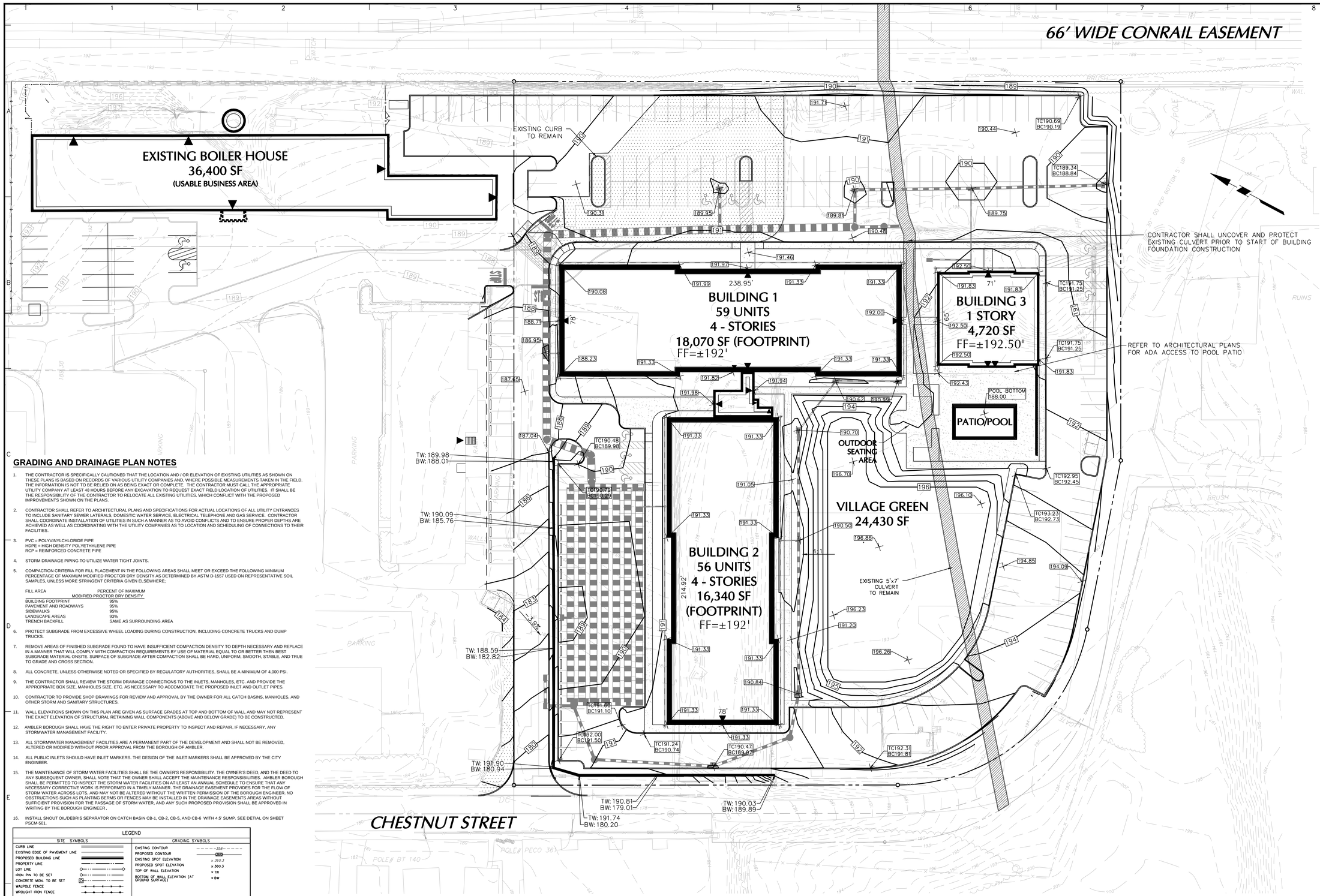
Drawing Title: GREEN SPACE PLAN

Project No. 240025501
Date 4-9-13
Scale 1"=30'
Drawn By JDM

Drawing No. CS-701
Sheet 9 of 25

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-CS701-0101.dwg Date: 10/2/2013 Time: 16:16 User: jmoninghoff Style Table: Langan.stb Layout: CS-701



GRADING AND DRAINAGE PLAN NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES, WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
3. PVC = POLYVINYLCHLORIDE PIPE
   HDPE = HIGH DENSITY POLYETHYLENE PIPE
   RCP = REINFORCED CONCRETE PIPE
4. STORM DRAINAGE PIPING TO UTILIZE WATER TIGHT JOINTS.
5. COMPACTION CRITERIA FOR FILL PLACEMENT IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA GIVEN ELSEWHERE;

FILL AREA	PERCENT OF MAXIMUM MODIFIED PROCTOR DRY DENSITY
BUILDING FOOTPRINT	95%
PAVEMENT AND ROADWAYS	95%
SIDEWALKS	95%
LANDSCAPE AREAS	93%
TRENCH BACKFILL	SAME AS SURROUNDING AREA

6. PROTECT SUBGRADE FROM EXCESSIVE WHEEL LOADING DURING CONSTRUCTION, INCLUDING CONCRETE TRUCKS AND DUMP TRUCKS.
7. REMOVE AREAS OF FINISHED SUBGRADE FOUND TO HAVE INSUFFICIENT COMPACTION DENSITY TO DEPTH NECESSARY AND REPLACE IN A MANNER THAT WILL COMPLY WITH COMPACTION REQUIREMENTS BY USE OF MATERIAL EQUAL TO OR BETTER THEN BEST SUBGRADE MATERIAL ONSITE. SURFACE OF SUBGRADE AFTER COMPACTION SHALL BE HARD, UNIFORM, SMOOTH, STABLE, AND TRUE TO GRADE AND CROSS SECTION.
8. ALL CONCRETE, UNLESS OTHERWISE NOTED OR SPECIFIED BY REGULATORY AUTHORITIES, SHALL BE A MINIMUM OF 4,000 PSI.
9. THE CONTRACTOR SHALL REVIEW THE STORM DRAINAGE CONNECTIONS TO THE INLETS, MANHOLES, ETC. AND PROVIDE THE APPROPRIATE BOX SIZE, MANHOLES SIZE, ETC. AS NECESSARY TO ACCOMODATE THE PROPOSED INLET AND OUTLET PIPES.
10. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE OWNER FOR ALL CATCH BASINS, MANHOLES, AND OTHER STORM AND SANITARY STRUCTURES.
11. WALL ELEVATIONS SHOWN ON THIS PLAN ARE GIVEN AS SURFACE GRADES AT TOP AND BOTTOM OF WALL AND MAY NOT REPRESENT THE EXACT ELEVATION OF STRUCTURAL RETAINING WALL COMPONENTS (ABOVE AND BELOW GRADE) TO BE CONSTRUCTED.
12. AMBLER BOROUGH SHALL HAVE THE RIGHT TO ENTER PRIVATE PROPERTY TO INSPECT AND REPAIR, IF NECESSARY, ANY STORMWATER MANAGEMENT FACILITY.
13. ALL STORMWATER MANAGEMENT FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED OR MODIFIED WITHOUT PRIOR APPROVAL FROM THE BOROUGH OF AMBLER.
14. ALL PUBLIC INLETS SHOULD HAVE INLET MARKERS. THE DESIGN OF THE INLET MARKERS SHALL BE APPROVED BY THE CITY ENGINEER.
15. THE MAINTENANCE OF STORM WATER FACILITIES SHALL BE THE OWNER'S RESPONSIBILITY. THE OWNER'S DEED, AND THE DEED TO ANY SUBSEQUENT OWNER, SHALL NOTE THAT THE OWNER SHALL ACCEPT THE MAINTENANCE RESPONSIBILITIES. AMBLER BOROUGH SHALL BE PERMITTED TO INSPECT THE STORM WATER FACILITIES ON AT LEAST AN ANNUAL SCHEDULE TO ENSURE THAT ANY NECESSARY CORRECTIVE WORK IS PERFORMED IN A TIMELY MANNER. THE DRAINAGE EASEMENT PROVIDES FOR THE FLOW OF STORM WATER ACROSS LOTS, AND MAY NOT BE ALTERED WITHOUT THE WRITTEN PERMISSION OF THE BOROUGH ENGINEER. NO OBSTRUCTIONS SUCH AS PLANTING BERMS OR FENCES MAY BE INSTALLED IN THE DRAINAGE EASEMENTS AREA WITHOUT SUFFICIENT PROVISION FOR THE PASSAGE OF STORM WATER, AND ANY SUCH PROPOSED PROVISION SHALL BE APPROVED IN WRITING BY THE BOROUGH ENGINEER.
16. INSTALL SNOUT OIL/DEBRIS SEPARATOR ON CATCH BASIN CB-1, CB-2, CB-5, AND CB-6 WITH 4.5' SUMP. SEE DETIAL ON SHEET PSCM-501.

LEGEND

SITE SYMBOLS		GRADING SYMBOLS	
CURB LINE		EXISTING CONTOUR	358
EXISTING EDGE OF PAVEMENT LINE		PROPOSED CONTOUR	360
PROPOSED BUILDING LINE		EXISTING SPOT ELEVATION	× 360.5
PROPERTY LINE		PROPOSED SPOT ELEVATION	× 360.5
LOT LINE		TOP OF WALL ELEVATION	× TW
IRON PIN TO BE SET		BOTTOM OF WALL ELEVATION (AT GROUND SURFACE)	× BW
CONCRETE MON. TO BE SET	CM		
WALPOLE FENCE			
WROUGHT IRON FENCE			
RETAINING WALL			
PROPOSED GUIDERAIL			
GRADING/ACCESS EASEMENT			
UTILITY EASEMENT			

UTILITY SYMBOLS			
EXISTING STORM SEWER	D D	EXISTING SANITARY SEWER MANHOLE	S
EXISTING SANITARY SEWER	S S	EXISTING FIRE HYDRANT	
EXISTING GAS MAIN EXISTING	G G	EXISTING GAS VALVE	
WATER MAIN EXISTING	W W	EXISTING CATCH BASIN	
OVERHEAD ELECTRIC		EXISTING WATER VALVE	
PROPOSED STORM SEWER		EXISTING MANHOLE	
PROPOSED SANITARY SEWER		EXISTING ELECTRIC POLE	
PROPOSED WATER MAIN	W	PROPOSED WATER VALVE	
PROPOSED ELECTRIC	E	PROPOSED HYDRANT	
PROPOSED GAS	G		

PAVEMENT LEGEND

PAVEMENT TO BE REMOVED

No.	Description	Date
2.	BOROUGH COMMENTS	10-3-13
1.	BOROUGH COMMENTS	6-21-13

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER PE-057145-E

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
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Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

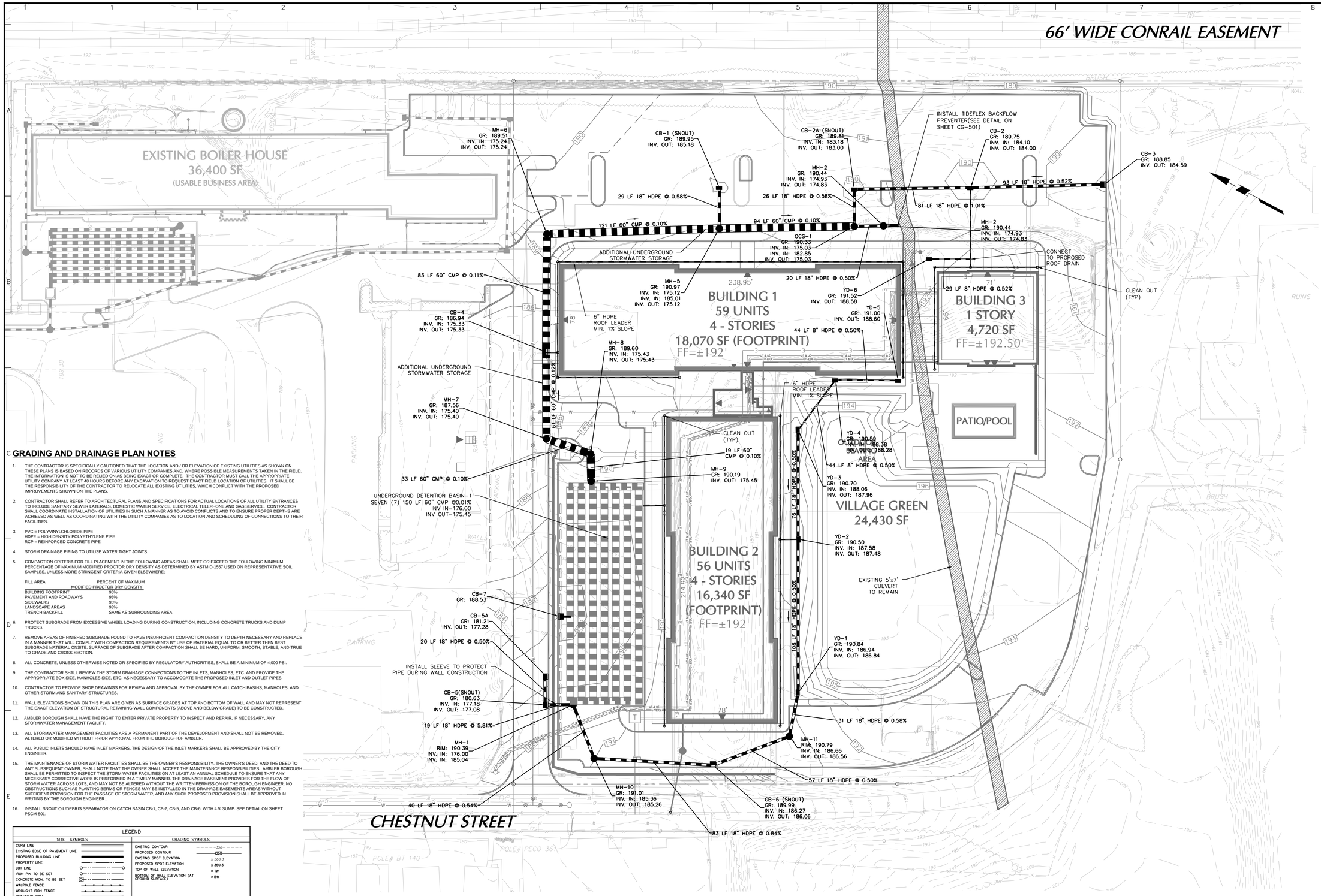
Drawing Title
GRADING PLAN

Project No.	240025501
Date	4-9-13
Scale	1"=30'
Drawn By	JKM

Drawing No.
CG-101
Sheet 10 of 25

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-CG101-0101.dwg Date: 10/2/2013 Time: 16:16 User: jmoninghoff Style Table: Langan.stb Layout: CG-101



GRADING AND DRAINAGE PLAN NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES, WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
3. PVC = POLYVINYLCHLORIDE PIPE
   HDPE = HIGH DENSITY POLYETHYLENE PIPE
   RCP = REINFORCED CONCRETE PIPE
4. STORM DRAINAGE PIPING TO UTILIZE WATER TIGHT JOINTS.
5. COMPACTION CRITERIA FOR FILL PLACEMENT IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA GIVEN ELSEWHERE;

FILL AREA	PERCENT OF MAXIMUM MODIFIED PROCTOR DRY DENSITY
BUILDING FOOTPRINT	95%
PAVEMENT AND ROADWAYS	95%
SIDEWALKS	95%
LANDSCAPE AREAS	93%
TRENCH BACKFILL	SAME AS SURROUNDING AREA

6. PROTECT SUBGRADE FROM EXCESSIVE WHEEL LOADING DURING CONSTRUCTION, INCLUDING CONCRETE TRUCKS AND DUMP TRUCKS.
7. REMOVE AREAS OF FINISHED SUBGRADE FOUND TO HAVE INSUFFICIENT COMPACTION DENSITY TO DEPTH NECESSARY AND REPLACE IN A MANNER THAT WILL COMPLY WITH COMPACTION REQUIREMENTS BY USE OF MATERIAL EQUAL TO OR BETTER THEN BEST SUBGRADE MATERIAL ONSITE. SURFACE OF SUBGRADE AFTER COMPACTION SHALL BE HARD, UNIFORM, SMOOTH, STABLE, AND TRUE TO GRADE AND CROSS SECTION.
8. ALL CONCRETE, UNLESS OTHERWISE NOTED OR SPECIFIED BY REGULATORY AUTHORITIES, SHALL BE A MINIMUM OF 4,000 PSI.
9. THE CONTRACTOR SHALL REVIEW THE STORM DRAINAGE CONNECTIONS TO THE INLETS, MANHOLES, ETC. AND PROVIDE THE APPROPRIATE BOX SIZE, MANHOLES SIZE, ETC. AS NECESSARY TO ACCOMODATE THE PROPOSED INLET AND OUTLET PIPES.
10. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE OWNER FOR ALL CATCH BASINS, MANHOLES, AND OTHER STORM AND SANITARY STRUCTURES.
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16. INSTALL SNOUT OIL/DEBRIS SEPARATOR ON CATCH BASIN CB-1, CB-2, CB-5, AND CB-6 WITH 4.5' SUMP. SEE DETIAL ON SHEET PSCM-501.

LEGEND

SITE SYMBOLS	GRADING SYMBOLS
CURB LINE	EXISTING CONTOUR ~358~
EXISTING EDGE OF PAVEMENT LINE	PROPOSED CONTOUR 360
PROPOSED BUILDING LINE	EXISTING SPOT ELEVATION × 360.3
PROPERTY LINE	PROPOSED SPOT ELEVATION × 360.3
LOT LINE	TOP OF WALL ELEVATION × TW
IRON PIN TO BE SET	BOTTOM OF WALL ELEVATION (AT GROUND SURFACE) × BW
CONCRETE MON. TO BE SET	
WALPOLE FENCE	
WROUGHT IRON FENCE	
RETAINING WALL	
PROPOSED GUIDERAIL	
GRADING/ACCESS EASEMENT	
UTILITY EASEMENT	

UTILITY SYMBOLS	
EXISTING STORM SEWER	EXISTING SANITARY SEWER MANHOLE
EXISTING SANITARY SEWER	EXISTING FIRE HYDRANT
EXISTING GAS MAIN EXISTING	EXISTING GAS VALVE
WATER MAIN EXISTING	EXISTING CATCH BASIN
OVERHEAD ELECTRIC	EXISTING WATER VALVE
PROPOSED STORM SEWER	EXISTING MANHOLE
PROPOSED SANITARY SEWER	EXISTING ELECTRIC POLE
PROPOSED WATER MAIN	PROPOSED WATER VALVE
PROPOSED ELECTRIC	PROPOSED HYDRANT
PROPOSED GAS	

30 0 15 30
SCALE IN FEET

No.	Description	Date
2.	BOROUGH COMMENTS	10-3-13
1.	BOROUGH COMMENTS	6-21-13

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER PERSONAL SEAL

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
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Collectively known as Langan

Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
DRAINAGE PLAN

Project No.	240025501
Date	5-10-13
Scale	1"=30'
Drawn By	JKM

Drawing No. CG-201
Sheet 11 of 25

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

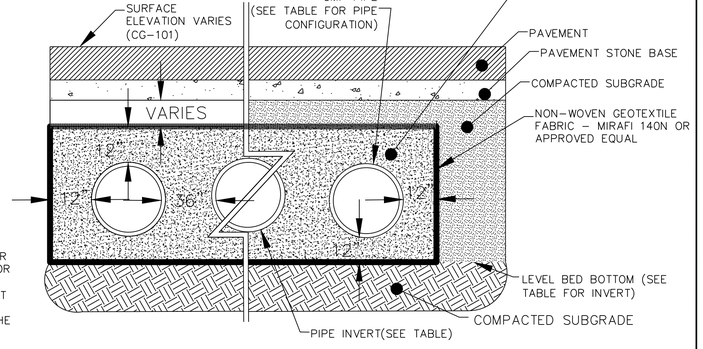
Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-CG201-0101.dwg Date: 10/2/2013 Time: 16:16 User: jmoninghoff Style Table: Langan.stb Layout: CG-201

NOTES:

1) STORMWATER MANAGEMENT STONE BED SHALL BE 2-INCH TO 1-INCH UNIFORMLY GRADED COARSE AGGREGATE, WITH A WASH LOSS OF NO MORE THAN 0.5%, AASHTO SIZE NUMBER 3 PER AASHTO SPECIFICATIONS, PART I, 19TH ED., 1998, OR LATER AND SHALL HAVE VOIDS 40% AS MEASURED BY ASTM-C29.

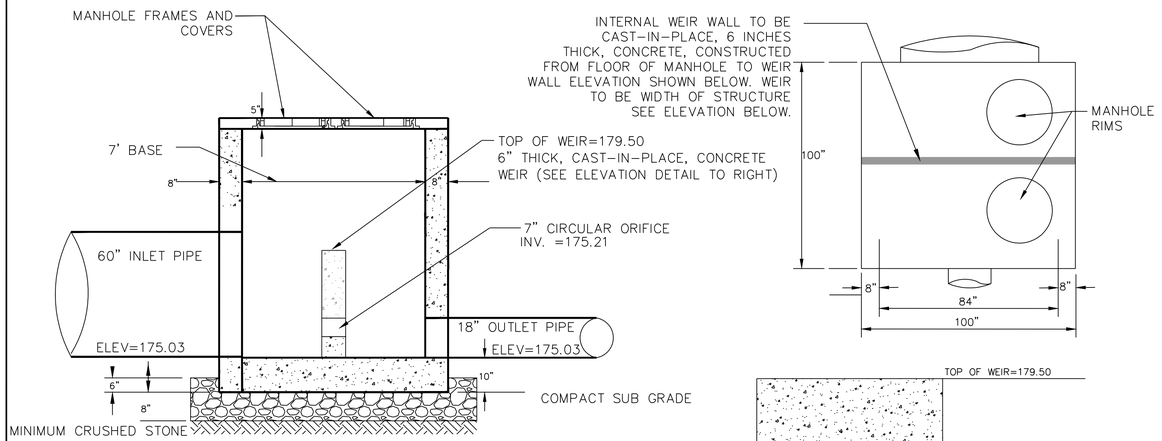
2) SEE DRAWING CG-201 FOR PIPE LAYOUT, CONNECTIONS AND INSPECTION PORTS.

3) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE STORMWATER SYSTEM TO THE DESIGN ENGINEER FOR REVIEW PRIOR TO ORDERING/ CONSTRUCTION. THIS SUBMITTAL MUST INCLUDE THE WITHDRAWAL STRUCTURES AND CONNECTION TO THE UNDERGROUND STORMWATER SYSTEM.

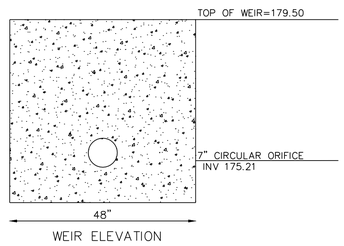


UNDERGROUND DETENTION BASIN	STONE BED INVERT	PIPE INVERT	NUMBER, LENGTH, AND DIA. OF PIPE ROWS
UNDERGROUND DETENTION BASIN #1	INV=175.00	INV=176.00	7 - 150 LF 60-INCH CMP PIPES

SUBSURFACE DETENTION BASIN



NOTES:
1. OUTLET CONTROL STRUCTURE SHALL BE MADE OF REINFORCED PRECAST CONCRETE.
2. CONTRACTOR SHALL PROVIDE SUBMITTAL OF SHOP DRAWINGS PRIOR TO CONSTRUCTION.



SUBSURFACE DETENTION BASIN OUTLET CONTROL STRUCTURE

Tideflex® Technologies

Technical Data

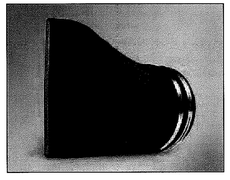
Series TF-1—Tideflex® Check Valve

Features & Benefits

- Ideal for manhole installations
- Lightweight, all-elastomer design
- Seals around entrapped solids
- Cost-effective, maintenance-free design

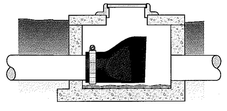
Materials of Construction

- Elastomers available in Pure Gum Rubber, Neoprene, Hypalon®, Chlorobutyl, Buna-N, EPDM, and Viton®

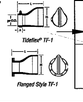


We are pleased to announce the introduction of the revolutionary TF-1 Check Valve. It functions and operates under the same simple principle of operation as the original TF-2 Tideflex®.

This design is ideal for existing manhole installations where the invert of the pipe is close to the floor of the vault. There are many check valves in interceptors, manholes, and vaults. These vaults are designed so that there would be a maximum gravity head; thus, the invert pipe is as close to the base as possible. The TF-1 allows installations in such applications.



The Tideflex® Technologies Series TF-1 Tideflex® Check Valve is designed for applications in manholes, where the bottom of the manhole is close to the invert of the pipe. The TF-1 configuration allows the valve to be properly installed without manhole modification, ensuring positive backflow prevention and a lifetime of maintenance-free performance.



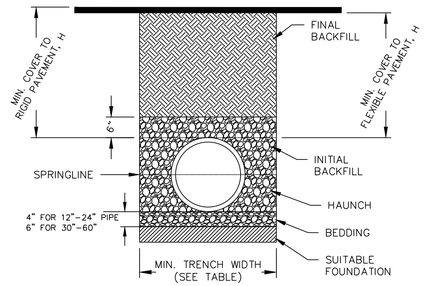
Dimensions Series TF-1 Tideflex® Check Valve

The TF-1 slip-on connection is based on the O.D. of the mating Pipe. For in-between sizes, consult factory.

Pipe O.D.	Tideflex® TF-1 Cuff Slip-On Length A	TF-1 Flanged ANSI Flange Size	Maximum Length L	Maximum Height H
6"	2"	6"	14"	12"
8"	3"	8"	17-1/4"	15-1/4"
10"	3"	10"	21-1/2"	18-3/4"
12"	4"	12"	26"	22"
15"	5"	15"	32"	28"
18"	6"	18"	40"	35"
24"	8"	24"	50"	43"
30"	9"	30"	60-1/4"	54-3/4
36"	10"	36"	60"	69"
42"	10"	42"	59-1/2"	70-1/2
48"	10"	48"	71"	81"
60"	13"	60"	60-3/4"	95"

Tideflex Technologies, Inc. • 300 Bilmar Dr., Pittsburgh, PA 15205 USA • 412-919-0919 • Fax 412-919-0918 • www.tideflex.com

FLAP VALVE DETAIL



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION: H-25	SURFACE LIVE LOADING CONDITION: HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

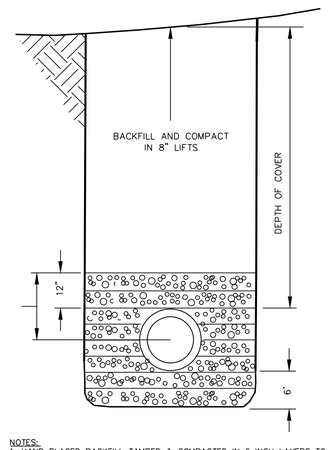
* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

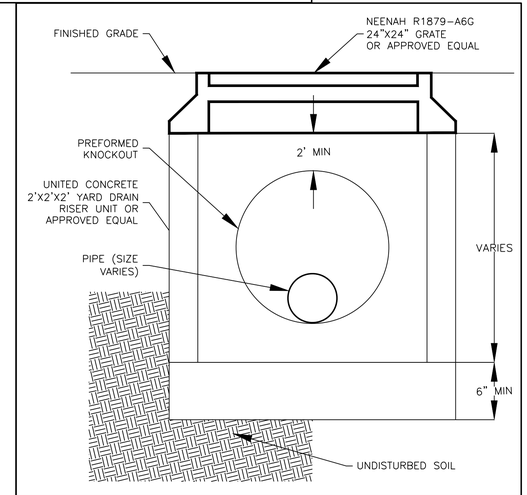
** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

HDPE PIPE DETAIL



NOTES:
1. HAND PLACED BACKFILL TAMPED & COMPACTED IN 6 INCH LAYERS TO 1' ABOVE TOP OF PIPE. BACKFILL TO BE GRANULAR MATERIAL W/LESS THEN 5% FINES. REMAINDER OF FILL TO BE PLACED AND COMPACTED IN 8" LIFTS AS PER SITE SPECIFICATIONS.
2. ALL STORM SEWER PIPE SHALL BE LAID IN CLASS B FINE AGGREGATE BEDDING AS PER SECTION 703.1 OF PENNDOT PUB. 408, IN SHAPED SUBGRADE, AS SPECIFIED IN PENNDOT STANDARDS FOR ROADWAY CONSTRICTION RC-30.
3. NOT MORE THAN ONE HUNDRED (100') OF TRENCH SHALL BE EXCAVATED IN ADVANCE OF PIPE OR UTILITY INSTALLATION AND BACKFILLING. ALL TRENCHES ARE TO BE CLOSED AT THE END OF EACH WORK DAY.
4. ANY EXISTING SITE SOILS WITHIN THE ALIGNMENT OF THE PROPOSED UTILITY CORRIDORS WILL BE EXCAVATED TO APPROXIMATELY TWO (2) FEET BELOW THE ANTICIPATED DEPTH OF THE DEEPEST UTILITY LINE. THE WIDTH OF THE EXCAVATION WILL BE APPROXIMATELY TWO (2) FEET BEYOND THE ANTICIPATED WIDTH REQUIRED TO CONTAIN ALL UTILITIES ANTICIPATED TO BE INSTALLED IN EACH CORRIDOR. EXCAVATED SOILS WILL BE RELOCATED TO DESIGNATED FILL AREAS OF THE SITE USING PROCEDURES DESCRIBED IN SECTION 5.0. THE WALLS AND BOTTOM OF THE UTILITY EXCAVATION WILL THEN BE LINED WITH A GEOTEXTILE FILTER FABRIC AND THE EXCAVATION WILL BE FILLED WITH IMPORTED CLEAN FILL.

STORM TRENCH



YARD DRAIN

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

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T: 610.984.8500 F: 610.984.8501 www.langan.com
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Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

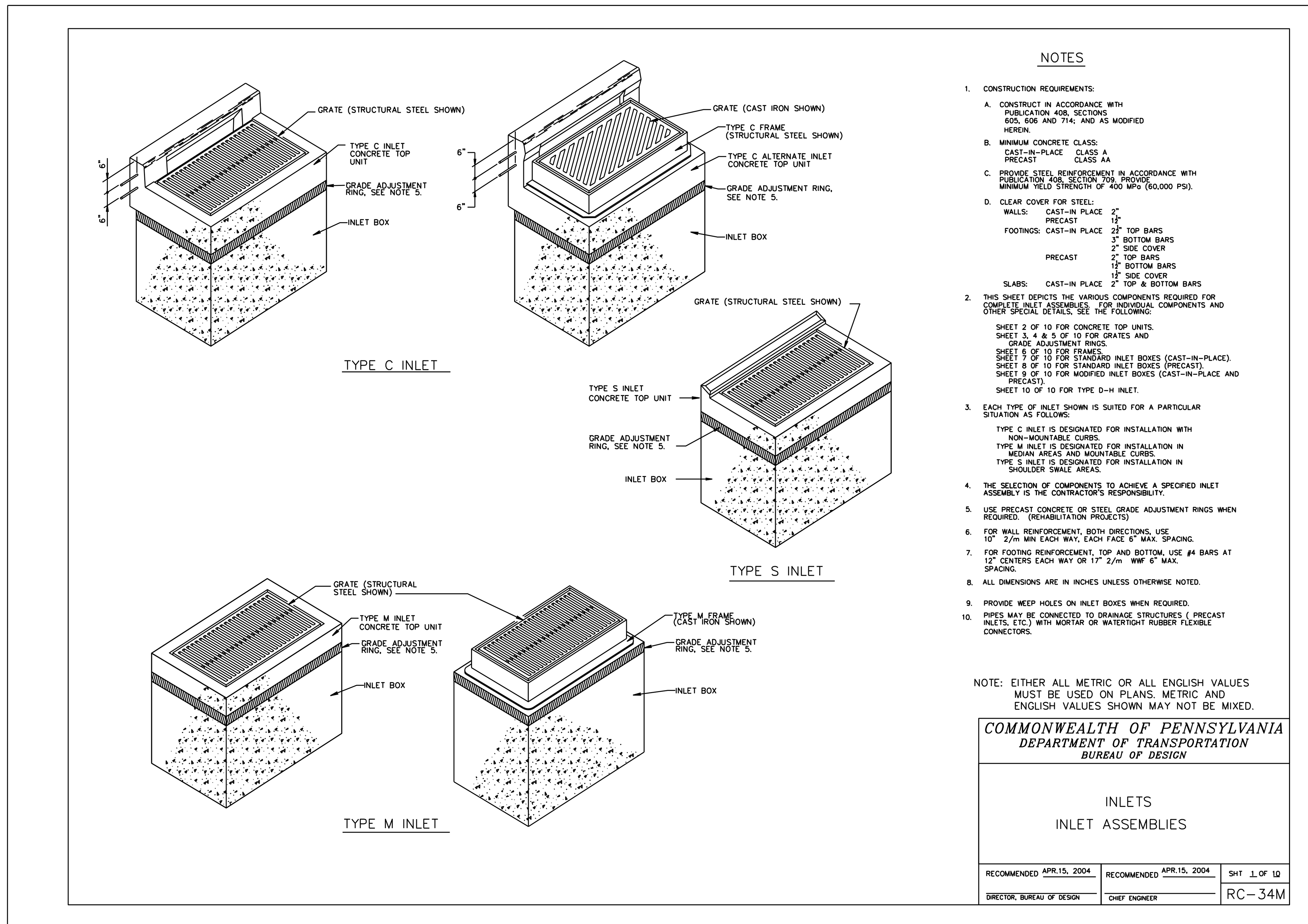
Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

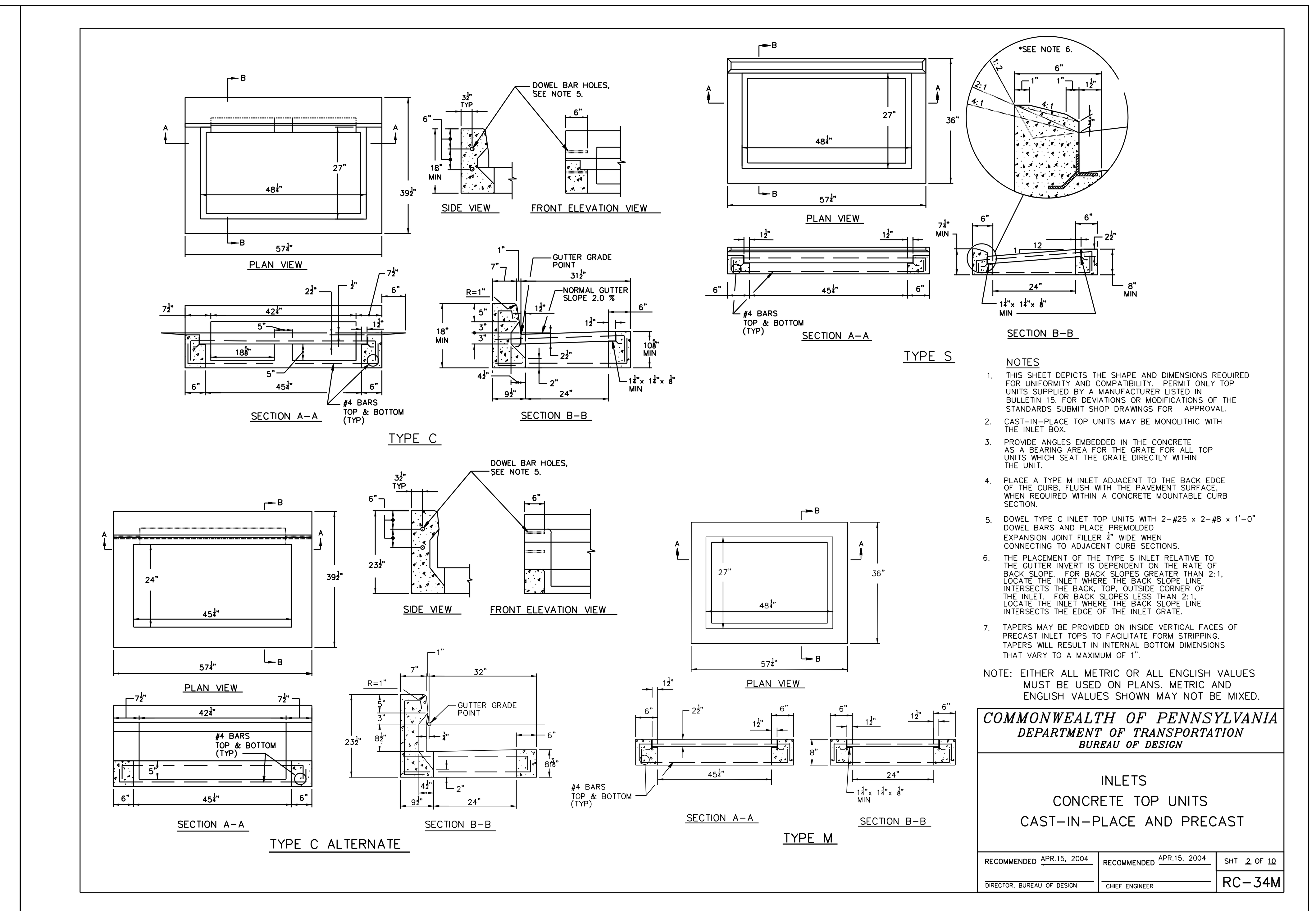
Drawing Title: DRAINAGE DETAILS

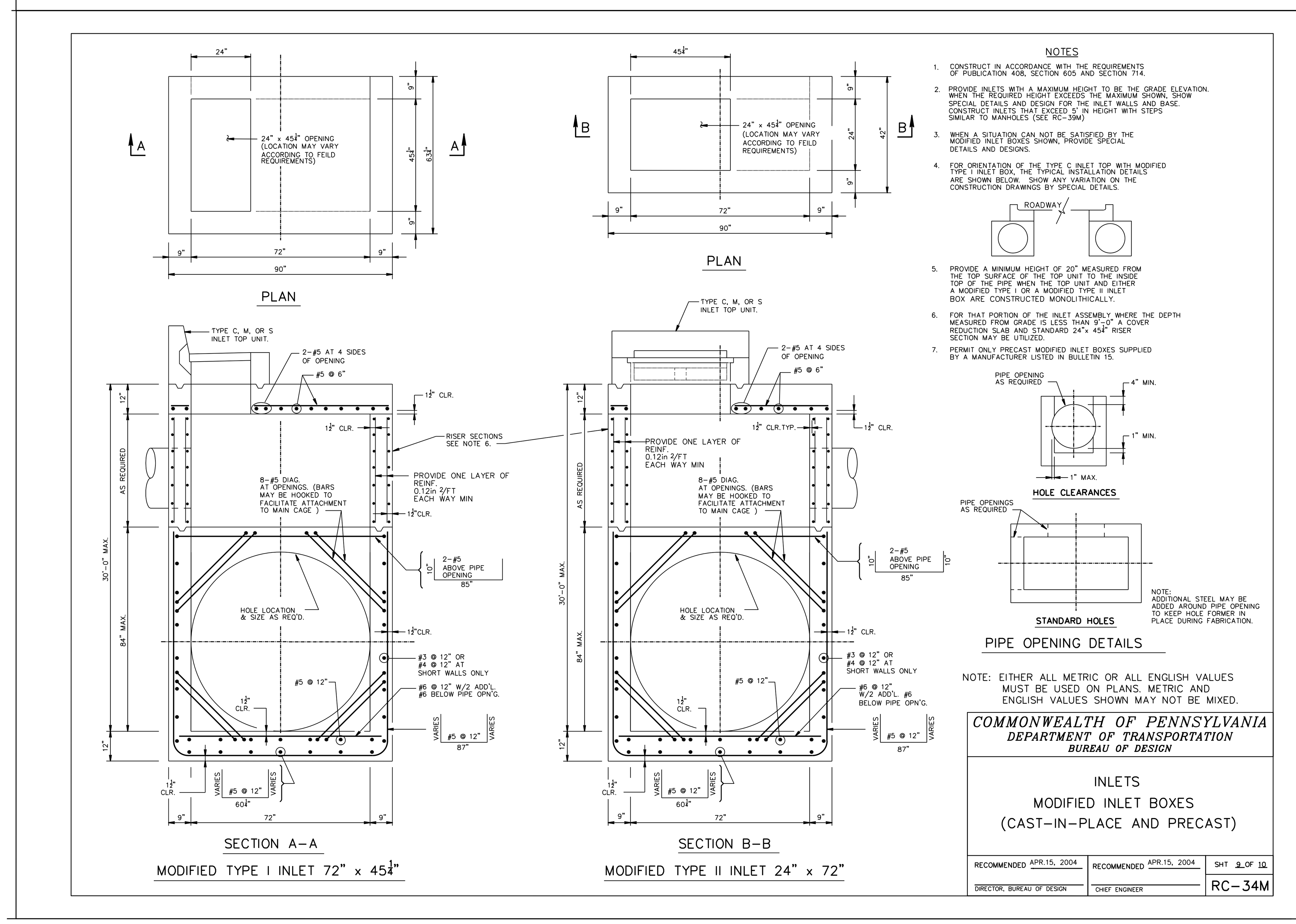
Project No. 240025501
Date 4-9-13
Scale N.T.S.
Drawn By JKM

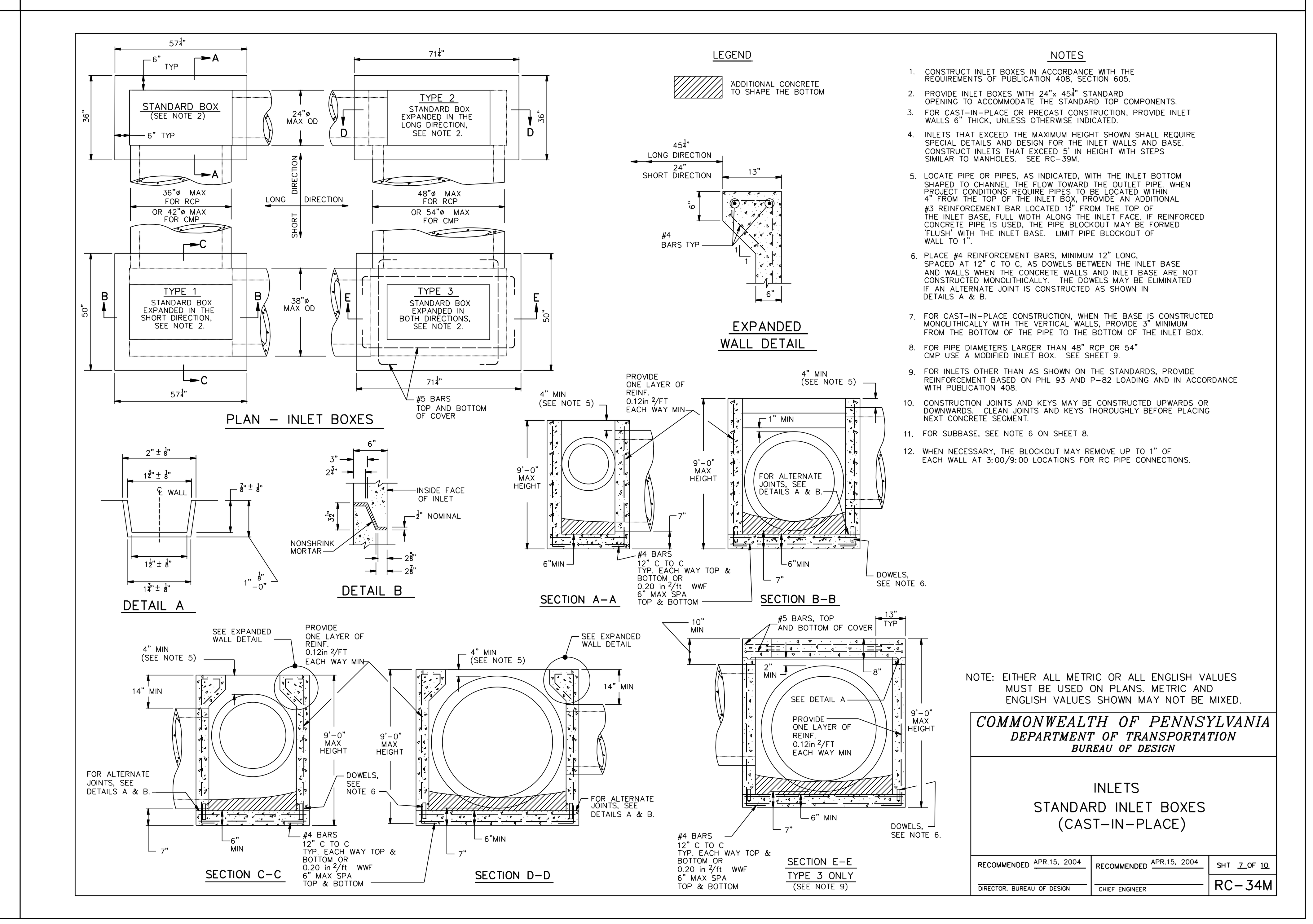
Drawing No. CG-501
Sheet 12 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501









NOTE: THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE MOST CURRENT APPLICABLE ROADWAY CONSTRUCTION DETAILS FROM PENNDOT PUBLICATION 72M.

NOTE: ALL CURBED CATCH BASINS ARE TO BE PENNDOT TYPE C INLETS, AND ALL CURBLESS CATCH BASINS ARE TO BE PENNDOT TYPE M INLETS (UNLESS OTHERWISE SPECIFIED ON SHEET CG-201). THESE INLETS ARE TO BE CONSTRUCTED TO THE STANDARDS OF THE LATEST EDITION OF PENNDOT PUBLICATION #72M, STANDARDS FOR ROADWAY CONSTRUCTION.

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: DRAINAGE DETAILS

Project No. 240025501
Date 4-9-13
Scale N.T.S.
Drawn By JKM

Drawing No. CG-502

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

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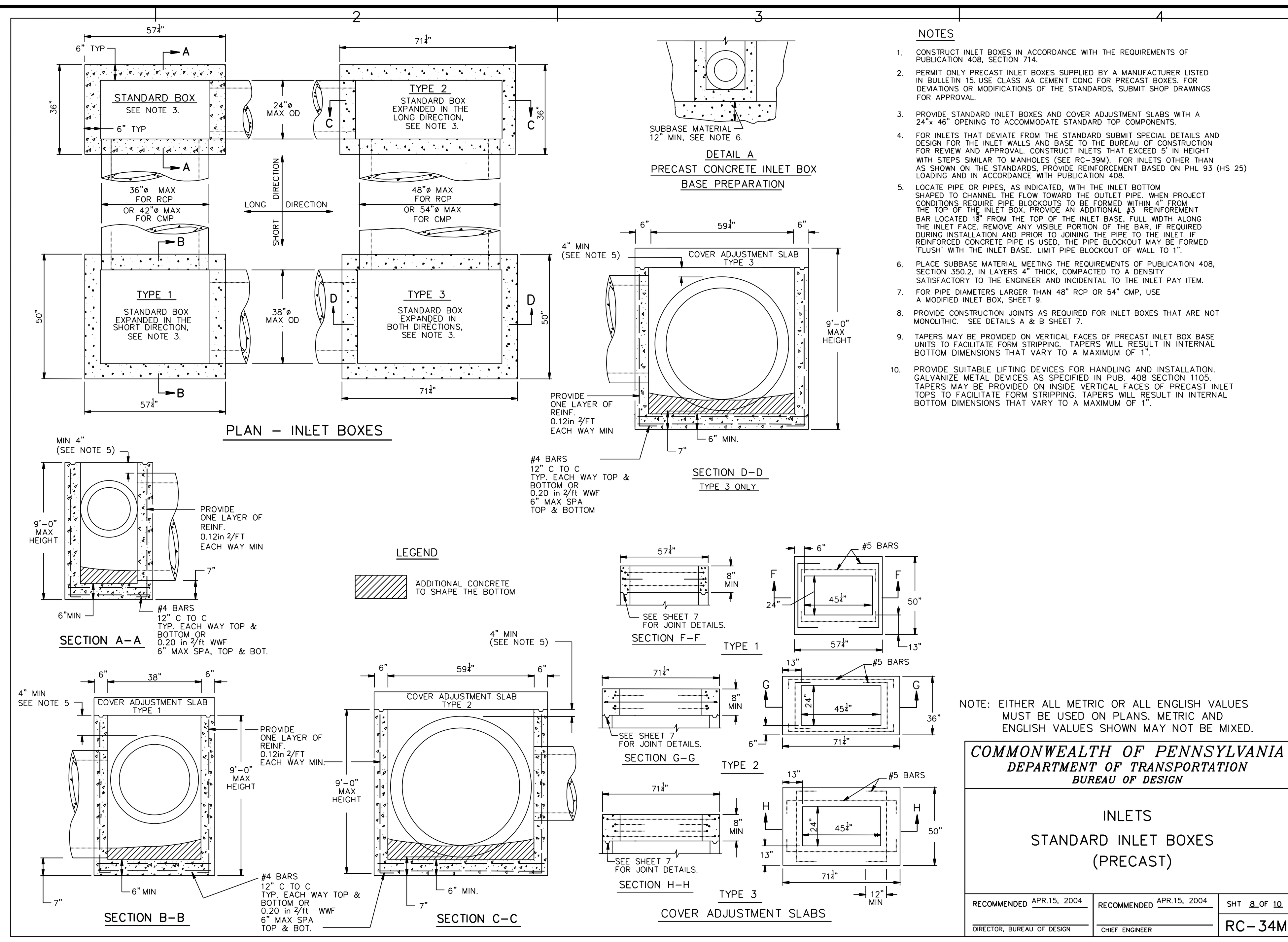

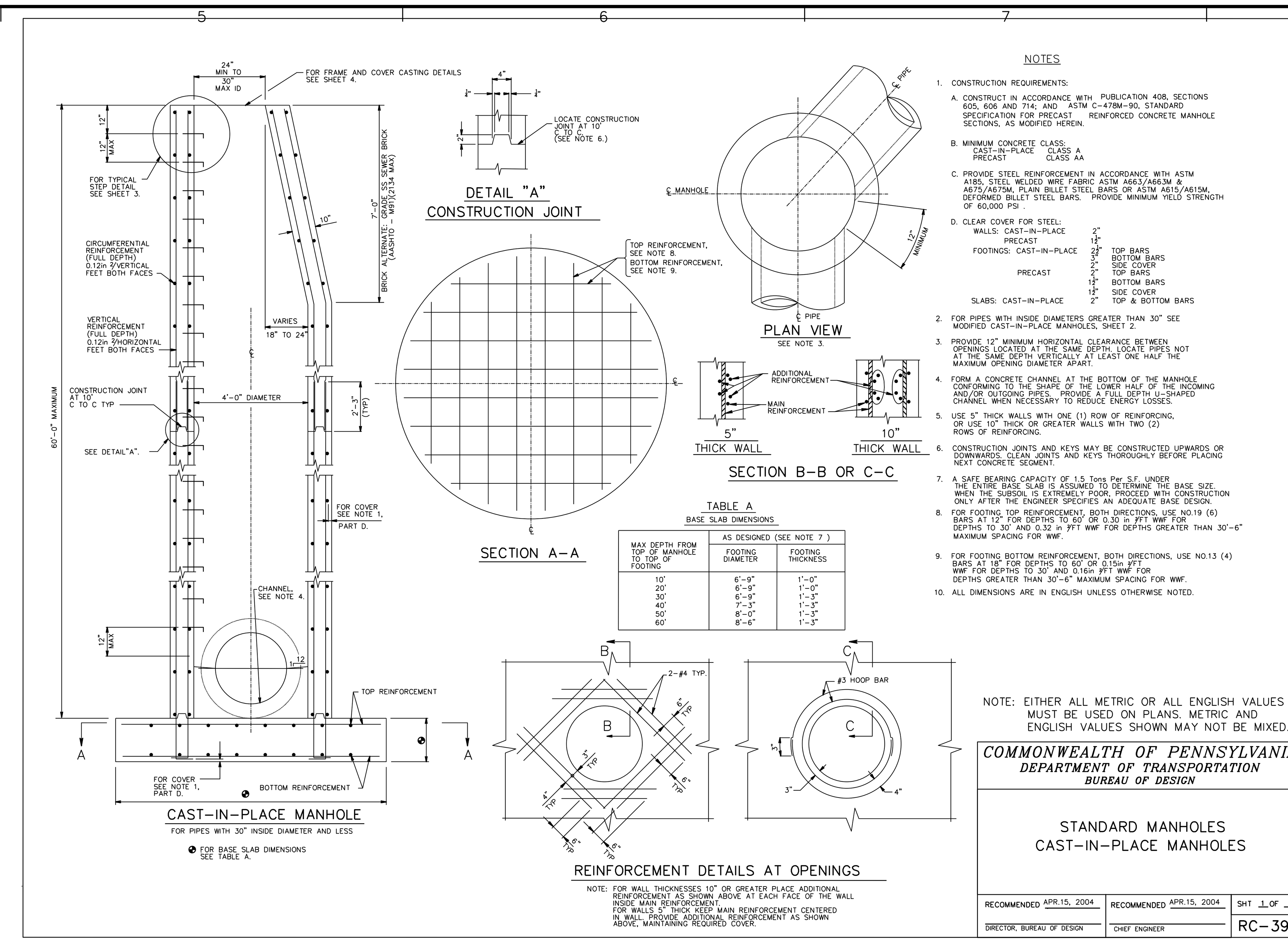

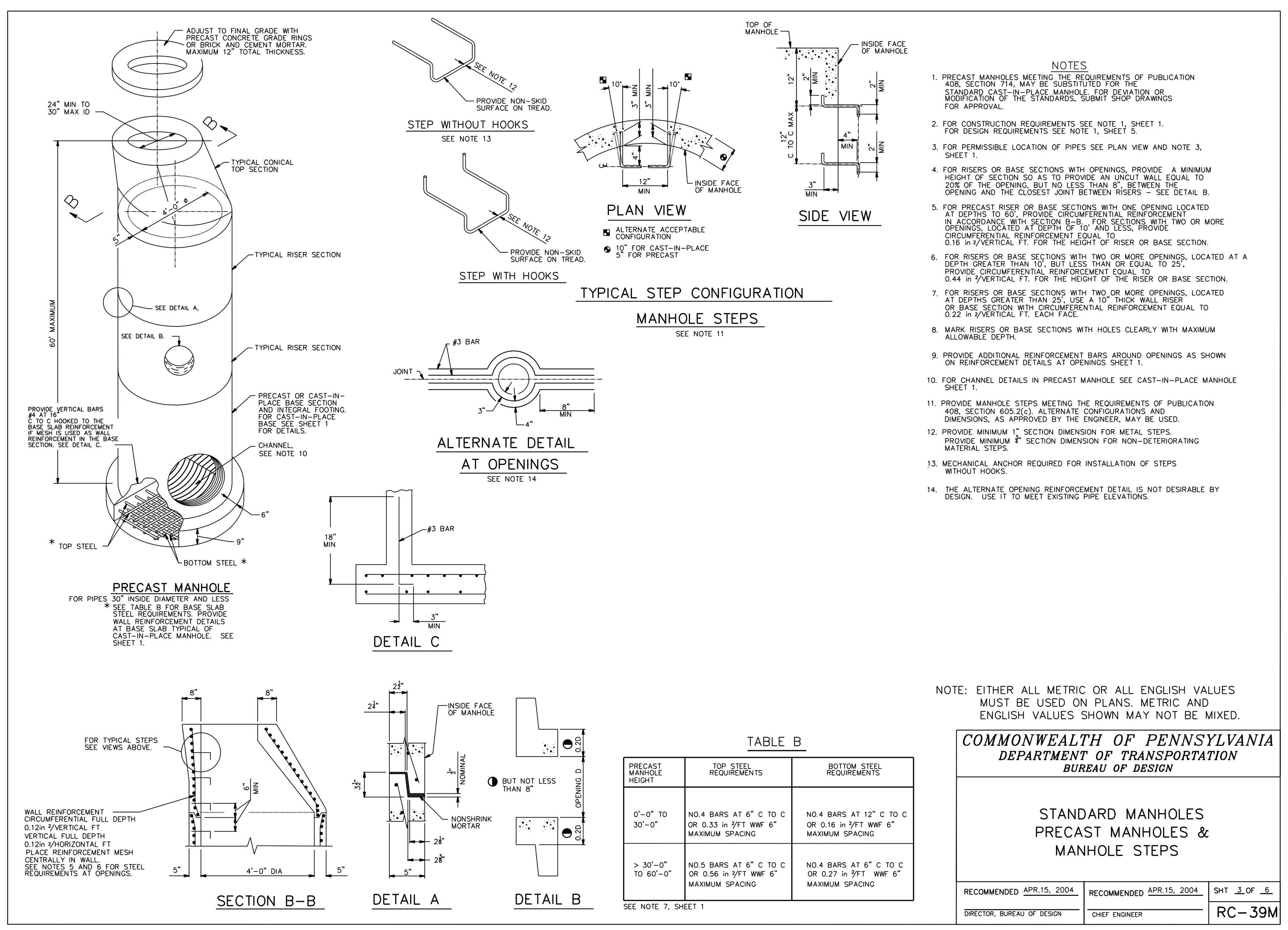

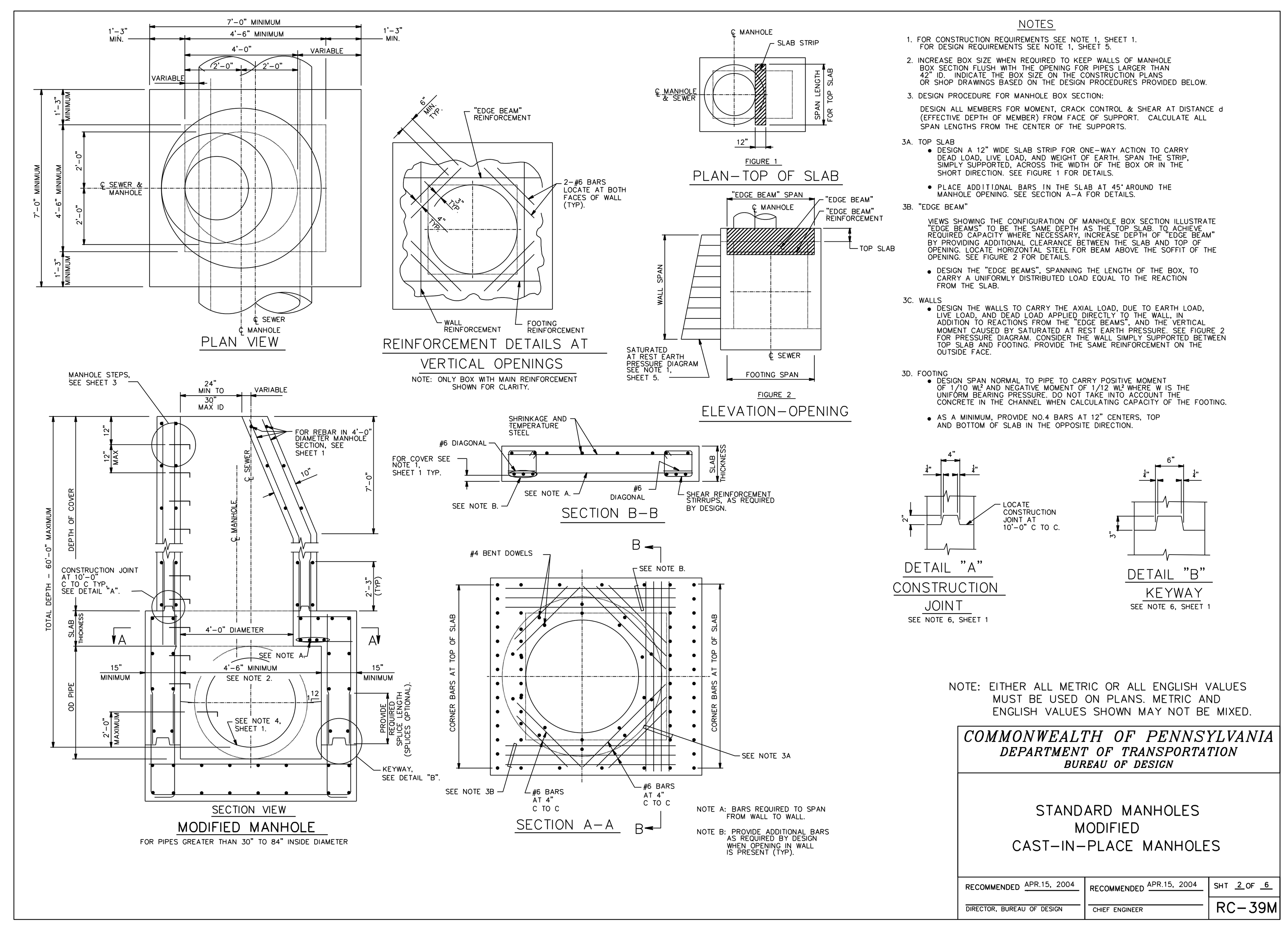

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JASON ENGELHARDT
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LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
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Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: DRAINAGE DETAILS

Project No. 240025501
Date 4-9-13
Scale N.T.S.
Drawn By JKM

Drawing No. CG-503

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SUBMISSION DATE: 2013-10-03
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BMP MAINTENANCE PLAN

THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER CONVEYANCE SYSTEM, AND ALL OTHER PROPOSED BMP'S AS THE PROPERTY OWNER.

1) STORMWATER CONVEYANCE SYSTEM

- CATCH BASINS, MANHOLES AND PIPES TO BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST ANNUALLY AS WELL AS AFTER EVERY STORM EXCEEDING 1-INCH OF RAINFALL.
- ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEARING, AND DETERIORATION AT LEAST ANNUALLY.

2) SUBSURFACE DETENTION FACILITY

- THE SUBSURFACE BASIN MUST BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST ONCE A SEASON (FOUR TIMES A YEAR) AS WELL AS AFTER EVERY STORM EXCEEDING 1-INCH OF RAINFALL WITHIN ONE HOUR. SNOUT UNITS WILL BE INSTALLED AT THE INLETS DIRECTLY UPSTREAM OF THE SUBSURFACE BASIN. SEASONAL INSPECTIONS SHOULD BE ACCEPTABLE BECAUSE MATERIAL ACCUMULATION SHOULD BE MINIMIZED BY THE PROPER OPERATION OF THESE WATER QUALITY DEVICES.
- SEDIMENT REMOVAL SHOULD TAKE PLACE WHEN ALL RUNOFF HAS DRAINED FROM AND THE BASIN IS REASONABLY DRY. DISPOSAL OF DEBRIS, TRASH, SEDIMENT, AND OTHER WASTE MATERIAL SHALL BE DONE AT SUITABLE DISPOSAL/RECYCLING SITES AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL WASTE REGULATIONS.
- ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEARING, AND DETERIORATION DURING ANY INSPECTIONS. THE CONDITION OF SURROUNDING ABOVEGROUND AREAS SHALL BE INSPECTED FOR EVIDENCE OF POTENTIAL FAILURES OR DETERIORATION OF THE UNDERGROUND SYSTEM.
- IF STANDING WATER IS ENCOUNTERED IN THE SUBSURFACE FACILITY, THE WATER SHOULD BE PUMPED DOWNSTREAM THROUGH A SEDIMENT FILTER BAG. AFTER STANDING WATER IS REMOVED, THE FACILITY SHOULD BE INSPECTED AS USUAL. IF MODIFICATIONS TO THE FACILITY ARE REQUIRED TO ALLEVIATE STANDING WATER, THE PROPERTY OWNER SHALL HIRE A PROFESSIONAL ENGINEER TO REMEDY THE STANDING WATER ISSUE. ANY REMEDIES MUST BE APPROVED BY THE TOWNSHIP PRIOR TO THE START OF CONSTRUCTION.

3) STREET SWEEPING

- THE STREETS AND PARKING AREAS SHOULD BE CLEANED A MINIMUM OF THREE TIMES PER YEAR. CLEANINGS SHOULD OCCUR AROUND THE BEGINNING OF THE SPRING, SUMMER AND FALL SEASONS.
- A VACUUM COMMERCIAL CLEANING UNIT SHALL BE USED. THE NON-POROUS AND POROUS PAVEMENT SHALL BE CLEAN AT THE SAME TIME.
- TO LIMIT THE DISRUPTION TO THE USE OF OF THE PROPERTY, SWEEPING SHALL OCCUR DURING OFF HOURS. TYPICALLY, THE EARLY MORNING IS THE OPTIMAL TIME FOR A COMMERCIAL FACILITY.
- THE PROPERTY OWNER SHALL POST SIGNS TO RESTRICT PARKING AND NOTIFY TENANTS OF THE DATE AND APPROXIMATE TIME OF THE SWEEPING. NOTIFICATION SHOULD OCCUR NO LESS THAN 2 DAYS PRIOR TO SWEEPING.

4) SOIL AMENDMENT & RESTORATION

- THE SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME, DUE TO COMPACTION BY USE AND/OR SETTLING

5) SNOUT OIL/DEBRIS SEPARATOR

- THE OIL/DEBRIS SEPARATOR SHALL BE INSPECTED ALONG WITH THE STORMWATER CONVEYANCE SYSTEM

FIRST YEAR ONLY RECOMMENDATIONS:

- MONTHLY MONITORING OF A NEW INSTALLATION AFTER THE SITE HAS BEEN STABILIZED.
- MEASUREMENTS SHOULD BE TAKEN AFTER EACH RAIN EVENT OF .5 INCHES OR MORE, OR MONTHLY, AS DETERMINED BY LOCAL WEATHER CONDITIONS.
- CHECKING SEDIMENT DEPTH AND NOTING THE SURFACE POLLUTANTS IN THE STRUCTURE WILL BE HELPFUL IN PLANNING MAINTENANCE. RAINFALL VOLUME VS. SEDIMENT AND DEBRIS CAPTURE CAN THEN BE PLOTTED AS AN ACCURATE PREDICTOR OF SERVICE INTERVALS.

FOR ONGOING MAINTENANCE AFTER FIRST YEAR:

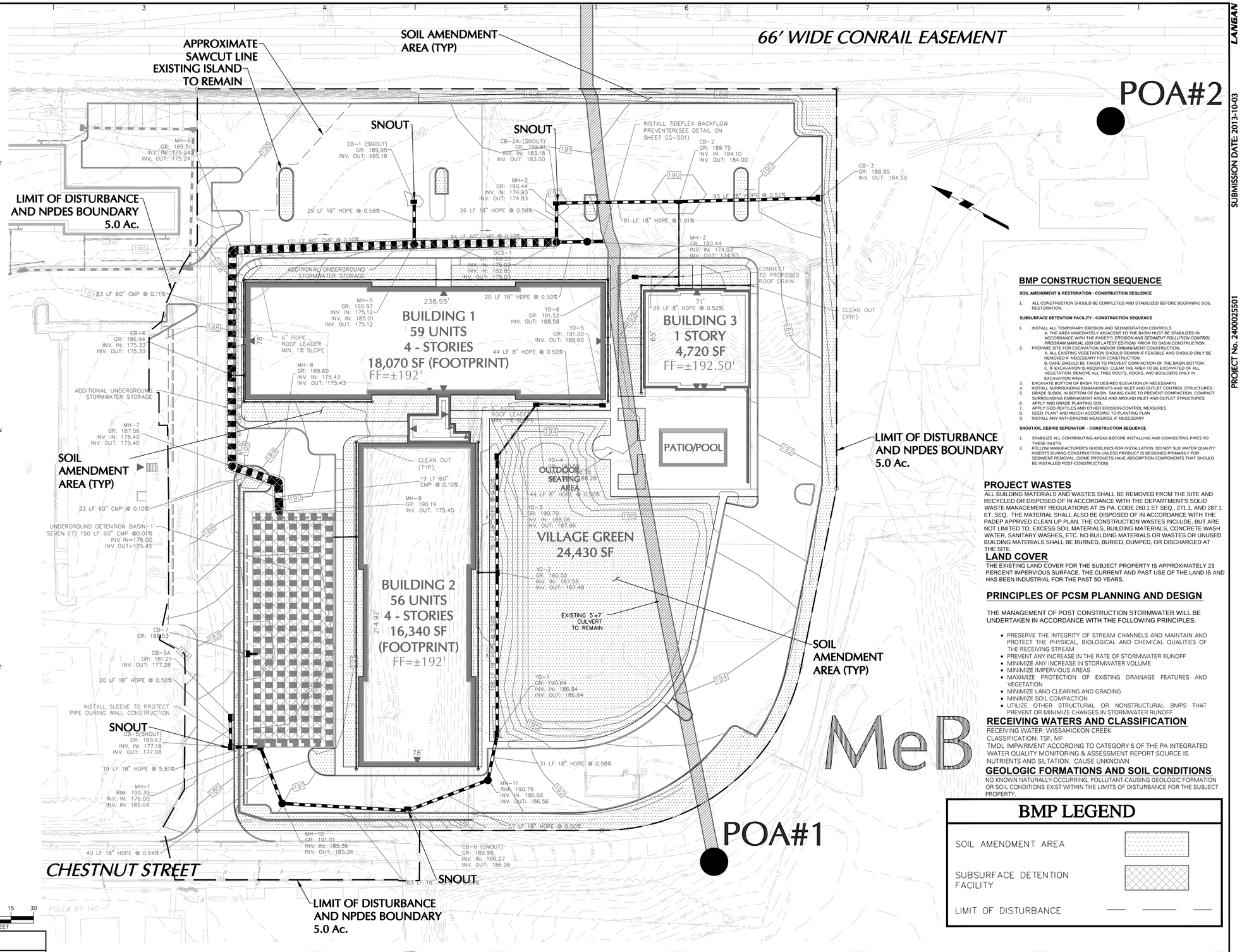
- THE POLLUTANTS COLLECTED IN SNOUT EQUIPPED STRUCTURES WILL CONSIST OF FLOATABLE DEBRIS, TRASH AND OILS ON THE SURFACE OF THE CAPTURED WATER, AND GRIT AND SEDIMENT ON THE BOTTOM OF THE STRUCTURE.
- IT IS BEST TO SCHEDULE MAINTENANCE BASED ON THE SOLIDS COLLECTED IN THE SUMP.
- OPTIMALLY, THE STRUCTURE SHOULD BE CLEANED WHEN THE SUMP IS HALF FULL (E.G.WHEN 2 FEET OF MATERIAL COLLECTS IN A 4 FOOT SUMP, CLEAN IT OUT).
- FOR FLOATABLES AND TRASH ONLY (WITH OR WITHOUT TRASHSCREEN), SERVICE WHEN 6-INCHES OF FLOATING MATERIAL ACCUMULATES ON SURFACE ABOVE STATIC WATER LEVEL.
- STRUCTURES SHOULD ALSO BE CLEANED IF A SPILL OR OTHER INCIDENT CAUSES A LARGER THAN NORMAL ACCUMULATION OF POLLUTANTS IN A STRUCTURE.
- MAINTENANCE SHOULD BE PERFORMED WITH A VACUUM TRUCK.
- IN THE CASE OF AN OIL SPILL, THE STRUCTURE SHOULD BE SERVICED IMMEDIATELY
- ALL COLLECTED WASTES MUST BE HANDLED AND DISPOSED OF ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS.
- TO MAINTAIN THE SNOUT HOODS THEMSELVES, AN ANNUAL INSPECTION OF THE ANTI-SIPHON VENT AND ACCESS HATCH MUST BE PERFORMED. FLUSHING OF THE VENT IS NEEDED TO MAINTAIN THE ANTI-SIPHON PROPERTIES. OPENING AND CLOSING THE ACCESS HATCH IS ALSO REQUIRED TO PROPERLY MAINTAIN THE STRUCTURAL COMPONENTS OF THE SNOUT.

CRITICAL STAGE OF BMP INSTALLATION

THE INSTALLATION OF THE SOIL AMENDMENT AND RESTORATION, AND THE INSTALLATION OF THE SUBSURFACE DETENTION BASIN SHOULD BE INSPECTED BY A LICENSED PROFESSIONAL (ENGINEER OR ARCHITECT).

NOTES:

1. AMBLER BOROUGH SHALL HAVE THE RIGHT TO ENTER PRIVATE PROPERTY TO INSPECT AND REPAIR, IF NECESSARY, ANY STORMWATER MANAGEMENT FACILITY.
2. ALL STORMWATER MANAGEMENT FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED OR MODIFIED WITHOUT PRIOR APPROVAL FROM THE BOROUGH OF AMBLER.



BMP CONSTRUCTION SEQUENCE

SOIL AMENDMENT & RESTORATION - CONSTRUCTION SEQUENCE

1. ALL CONSTRUCTION SHOULD BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION.

SUBSURFACE DETENTION FACILITY - CONSTRUCTION SEQUENCE

1. INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
   A. THE AREA IMMEDIATELY ADJACENT TO THE BASIN MUST BE STABILIZED IN ACCORDANCE WITH THE PADEP'S *EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL* (200 OR LATEST EDITION) PRIOR TO BASIN CONSTRUCTION.
2. PREPARE SITE FOR EXCAVATION AND/OR EMBANKMENT CONSTRUCTION.
   A. ALL EXISTING VEGETATION SHOULD REMAIN IF FEASIBLE AND SHOULD ONLY BE REMOVED IF NECESSARY FOR CONSTRUCTION.
   B. CARE SHOULD BE TAKEN TO PREVENT COMPACTION OF THE BASIN BOTTOM.
   C. IF EXCAVATION IS REQUIRED, CLEAR THE AREA TO BE EXCAVATED OF ALL VEGETATION. REMOVE ALL TREE ROOTS, ROCKS, AND BOULDERS ONLY IN EXCAVATION AREA.
3. EXCAVATE BOTTOM OF BASIN TO DESIRED ELEVATION (IF NECESSARY)
4. INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES.
5. GRADE SUBSOIL IN BOTTOM OF BASIN, TAKING CARE TO PREVENT COMPACTION. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES.
6. APPLY AND GRADE PLANTING SOIL.
7. APPLY GEO-TEXTILES AND OTHER EROSION-CONTROL MEASURES
8. SEED, PLANT AND MULCH ACCORDING TO PLANTING PLAN
9. INSTALL ANY ANTI-GRAZING MEASURES, IF NECESSARY

SNOUT/OIL DEBRIS SEPERATOR - CONSTRUCTION SEQUENCE

1. STABILIZE ALL CONTRIBUTING AREAS BEFORE INSTALLING AND CONNECTING PIPES TO THESE INLETS
2. FOLLOW MANUFACTURER'S GUIDELINES FOR INSTALLATION. DO NOT SUE WATER QUALITY INSERTS DURING CONSTRUCTION UNLESS PRODUCT IS DESIGNED PRIMARILY FOR SEDIMENT REMOVAL. (SOME PRODUCTS HAVE ADSORPTION COMPONENTS THAT SHOULD BE INSTALLED POST-CONSTRUCTION)

PROJECT WASTES

ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. THE MATERIAL SHALL ALSO BE DISPOSED OF IN ACCORDANCE WITH THE PADEP APPRVED CLEAN UP PLAN. THE CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASHES, ETC. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

LAND COVER

THE EXISTING LAND COVER FOR THE SUBJECT PROPERTY IS APPROXIMATELY 23 PERCENT IMPERVIOUS SURFACE. THE CURRENT AND PAST USE OF THE LAND IS AND HAS BEEN INDUSTRIAL FOR THE PAST 50 YEARS.

PRINCIPLES OF PCSM PLANNING AND DESIGN

THE MANAGEMENT OF POST CONSTRUCTION STORMWATER WILL BE UNDERTAKEN IN ACCORDANCE WITH THE FOLLOWING PRINCIPLES:

- PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM
- PREVENT ANY INCREASE IN THE RATE OF STORMWATER RUNOFF
- MINIMIZE ANY INCREASE IN STORMWATER VOLUME
- MINIMIZE IMPERVIOUS AREAS
- MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION
- MINIMIZE LAND CLEARING AND GRADING
- MINIMIZE SOIL COMPACTION
- UTILIZE OTHER STRUCTURAL OR NONSTRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF

RECEIVING WATERS AND CLASSIFICATION

RECEIVING WATER: WISSAHICKON CREEK
CLASSIFICATION: TSF, MF
TMDL IMPAIRMENT ACCORDING TO CATEGORY 5 OF THE PA INTEGRATED WATER QUALITY MONITORING & ASSESSMENT REPORT:SOURCE IS NUTRIENTS AND SILTATION. CAUSE UNKNOWN

GEOLOGIC FORMATIONS AND SOIL CONDITIONS

NO KNOWN NATURALLY-OCCURRING, POLLUTANT-CAUSING GEOLOGIC FORMATION OR SOIL CONDITIONS EXIST WITHIN THE LIMITS OF DISTURBANCE FOR THE SUBJECT PROPERTY.

BMP LEGEND

SOIL AMENDMENT AREA

SUBSURFACE DETENTION FACILITY

LIMIT OF DISTURBANCE

LEGEND

SITE SYMBOLS	GRADING SYMBOLS
CURB LINE	EXISTING CONTOUR
EXISTING EDGE OF PAVEMENT LINE	PROPOSED CONTOUR
PROPOSED BUILDING LINE	EXISTING SPOT ELEVATION
PROPERTY LINE	PROPOSED SPOT ELEVATION
LOT LINE	TOP OF WALL ELEVATION
IRON PIN TO BE SET	BOTTOM OF WALL ELEVATION (AT GROUND SURFACE)
CONCRETE MON. TO BE SET	
WALPOLE FENCE	
WROUGHT IRON FENCE	
RETAINING WALL	
PROPOSED GUIDERAIL	
GRADING/ACCESS EASEMENT	
UTILITY EASEMENT	

UTILITY SYMBOLS	
EXISTING STORM SEWER	EXISTING SANITARY SEWER MANHOLE
EXISTING SANITARY SEWER	EXISTING FIRE HYDRANT
EXISTING GAS MAIN EXISTING	EXISTING GAS VALVE
WATER MAIN EXISTING	EXISTING CATCH BASIN
OVERHEAD ELECTRIC	EXISTING WATER VALVE
PROPOSED STORM SEWER	EXISTING MANHOLE
PROPOSED SANITARY SEWER	EXISTING ELECTRIC POLE
PROPOSED WATER MAIN	PROPOSED WATER VALVE
PROPOSED ELECTRIC	PROPOSED HYDRANT
PROPOSED GAS	

SCALE IN FEET: 30 0 15 30

AMBLER BOILER HOUSE
SOIL TYPE DESCRIPTIONS AND LIMITATIONS

Map Symbol	Soil	Hydrological Soil Group	Depth to Seasonally High Water Table (Ft)	Depth to Bedrock (Ft)	Soil Limitations
MeB	Man made, Shale and Sandstone Materials, Sloping	C	variable	variable	Variable Conditions, Possible Seasonal High water table

Notes: 1. For areas where seasonal high water table is a limitation, ponded water shall be pumped through a "filter bag" or to the the sediment basin/trap.

No.	Description	Date
2.	EASEMENT SUBMISSION	~~10-05-13~~ 4-9-13
1.	BOROUGH COMMENTS	6-21-13

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER JASON SCOTT ENGELHARDT

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

Project No.	240025501
Date	4-9-13
Scale	1"=30'
Drawn By	TFH
Drawing No.	PCSM-101
Sheet	15 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

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SOIL AMENDMENT & RESTORATION SPECIFICATIONS FOR MINOR COMPACTION

THE FOLLOWING SPECIFICATIONS ARE PROVIDED FOR INFORMATION PURPOSES ONLY. THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS, BUT ARE BY NO MEANS EXCLUSIVE OR LIMITING.

1. SCOPE

   a. THIS SPECIFICATION COVERS THE USE OF COMPOST FOR SOIL AMENDMENT AND THE MECHANICAL RESTORATION OF COMPACTED, ERODED AND NON-VEGETATED SOILS SOIL AMENDMENT AND RESTORATION IS NECESSARY WHERE EXISTING SOIL HAS BEEN DEEMED UNHEALTHY IN ORDER TO RESTORE SOIL STRUCTURE AND FUNCTION, INCREASE INFILTRATION POTENTIAL AND SUPPORT HEALTHY VEGETATIVE COMMUNITIES.

   b. SOIL AMENDMENT PREVENTS AND CONTROLS EROSION BY ENHANCING THE SOIL SURFACE TO PREVENT THE INITIAL DETACHMENT AND TRANSPORT OF SOIL PARTICLES.

2. COMPOST MATERIALS

   a. COMPOST PRODUCTS SPECIFIED FOR USE IN THIS APPLICATION ARE DESCRIBED IN TABLE 1. THE PRODUCT'S PARAMETERS WILL VARY BASED ON WHETHER VEGETATION WILL BE ESTABLISHED ON THE TREATED SLOPE.

   b. ONLY COMPOST PRODUCTS THAT MEET ALL APPLICABLE STATE AND FEDERAL REGULATIONS PERTAINING TO ITS PRODUCTION AND DISTRIBUTION MAY BE USED IN THIS APPLICATION. APPROVED COMPOST PRODUCTS MUST MEET RELATED STATE AND FEDERAL CHEMICAL CONTAMINANT (E.G., HEAVY METALS, PESTICIDES, ETC.) AND PATHOGEN LIMIT STANDARDS PERTAINING TO THE FEEDSTOCKS (SOURCE MATERIALS) IN WHICH IT IS DERIVED.

   c. VERY COARSE COMPOST SHOULD BE AVOIDED FOR SOIL AMENDMENT AS IT WILL MAKE PLANTING AND CROP ESTABLISHMENT MORE DIFFICULT.

   d. NOTE 1 – SPECIFYING THE USE OF COMPOST PRODUCTS THAT ARE CERTIFIED BY THE U.S. COMPOSTING COUNCIL'S SEAL OF TESTING (STA) PROGRAM (WWW.COMPOSTINGCOUNCIL.ORG) WILL ALLOW FOR THE ACQUISITION OF PRODUCTS THAT ARE ANALYZED ON A ROUTINE BASIS, USING THE SPECIFIED TEST METHODS. STA PARTICIPANTS ARE ALSO REQUIRED TO PROVIDE A STANDARD PRODUCT LABEL TO ALL CUSTOMERS, ALLOWING EASY COMPARISON TO OTHER PRODUCTS.

3. SUB-SOILING TO RELIEVE COMPACTION

   a. BEFORE THE TIME THE COMPOST IS PLACED AND PREFERABLY WHEN EXCAVATION IS COMPLETED, THE SUBSOIL SHALL BE IN A LOOSE, FRIABLE CONDITION TO A DEPTH OF 8 INCHES BELOW FINAL TOPSOIL GRADE AND THERE SHALL BE NO EROSION RILLS OR WASHOUTS IN THE SUBSOIL SURFACE EXCEEDING 3 INCHES IN DEPTH.

   b. TO ACHIEVE THIS CONDITION, SUBSOILING, RIPPING, OR SCARIFICATION OF THE SUBSOIL WILL BE REQUIRED AS DIRECTED BY THE OWNERS REPRESENTATIVE, WHEREVER THE SUBSOIL HAS BEEN COMPACTED BY EQUIPMENT OPERATION OR HAS BECOME DRIED OUT AND CRUSTED, AND WHERE M – NECESSARY TO OBLITERATE EROSION RILLS. SUB-SOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN ALL AREAS WHERE PLANT ESTABLISHMENT IS PLANNED. SUB-SOILING SHALL BE PERFORMED BY THE PRIME OR EXCAVATING CONTRACTOR AND SHALL OCCUR BEFORE COMPOST PLACEMENT.

   c. SUBSOILED AREAS SHALL BE LOOSENED TO LESS THAN 1400 KPA (200 PSI) TO A DEPTH OF 8 INCHES BELOW FINAL TOPSOIL GRADE. WHEN DIRECTED BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL VERIFY THAT THE SUB-SOILING WORK CONFORMS TO THE SPECIFIED DEPTH.

   d. SUB-SOILING SHALL FORM A TWO-DIRECTIONAL GRID. CHANNELS SHALL BE CREATED BY A COMMERCIALLY AVAILABLE, MULTI-SHANKED, PARALLELOGRAM IMPLEMENT (SOLID-SHANK RIPPER). THE EQUIPMENT SHALL BE CAPABLE OF EXERTING A PENETRATION FORCE NECESSARY FOR THE SITE. NO DISC CULTIVATORS CHISEL PLOWS, OR SPRING-LOADED EQUIPMENT WILL BE ALLOWED. THE GRID CHANNELS SHALL BE SPACED A MINIMUM OF 12 INCHES TO A MAXIMUM OF 36 INCHES APART, DEPENDING ON EQUIPMENT, SITE CONDITIONS, AND THE SOIL MANAGEMENT PLAN. THE CHANNEL DEPTH SHALL BE A MINIMUM OF 8 INCHES OR AS SPECIFIED IN THE SOIL MANAGEMENT PLAN. IF SOILS ARE SATURATED, THE CONTRACTOR SHALL DELAY OPERATIONS UNTIL THE SOIL WILL NOT HOLD A BALL WHEN SQUEEZED. ONLY ONE PASS SHALL BE PERFORMED ON ERODIBLE SLOPES GREATER THAN 1 VERTICAL TO 3 HORIZONTAL. WHEN ONLY ONE PASS IS USED, WORK SHOULD BE AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE, WHENEVER PRACTICAL.

   e. EXCEPTIONS TO SUB-SOILING INCLUDE AREAS WITHIN THE DRIP LINE OF ANY EXISTING TREES, OVER UTILITY INSTALLATIONS WITHIN 30 INCHES OF THE SURFACE, WHERE TRENCHING/DRAINAGE LINES ARE INSTALLED, WHERE COMPACTION IS BY DESIGN (ABUTMENTS, FOOTINGS, OR IN SLOPES), AND ON INACCESSIBLE SLOPES, AS APPROVED BY THE OWNER'S REPRESENTATIVE. IN CASES WHERE EXCEPTIONS OCCUR, THE CONTRACTOR SHALL OBSERVE A MINIMUM SETBACK OF 20 FEET OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. ARCHEOLOGICAL CLEARANCES MAY BE REQUIRED IN SOME INSTANCES.

4. COMPOST SOIL AMENDMENT QUALITY

   a. THE FINAL, RESULTING COMPOST SOIL AMENDMENT MUST MEET ALL OF THE MANDATORY CRITERIA IN TABLE 4.

5. COMPOST SOIL AMENDMENT INSTALLATION

   a. AFTER EXISTING TOPSOIL IS RE-SPREAD, SPREAD 2 INCHES OF APPROVED COMPOST ON EXISTING SOIL. TILL ADDED SOIL INTO EXISTING SOIL WITH A ROTARY TILLER THAT IS SET TO A DEPTH OF 6 INCHES. ADD AN ADDITIONAL 4 INCHES OF APPROVED COMPOST TO BRING THE THE AREA UP TO GRADE.

   b. AFTER PERMANENT PLANTING/SEEDING, 2-3 INCHES OF COMPOST BLANKET WILL BE APPLIED TO ALL AREAS NOT PROTECTED BY GRASS OR OTHER PLANTS.

Soil Texture	Ideal Bulk densities	Bulk densities that may afffect root growth	Bulk densities that restrict root growth
	g/cm3	g/cm3	g/cm3
Sands, loamy sands	<1.60	1.69	1.8
Sandy loams, loams	<1.40	1.63	1.8
Sandy clay loams, loams, clay loams	<1.40	1.6	1.75
Slilt, silt loams	<1.30	1.6	1.75
Silt loams, silty clay loams	<1.10	1.55	1.65
Sandy clays, silty clays, some clay loams (35-45% clay)	<1.10	1.49	1.58
Clays (>45% clay)	<1.10	1.39	1.47

Source: Protecting Urban Soil Quality, USDA-NRCS

Table 4. Adsorbed Mass of Nutrients and Metals in Unvegetated Plot Runoff From 30-Minute, High-Intensity (100-mm/hr.) Rainstorm

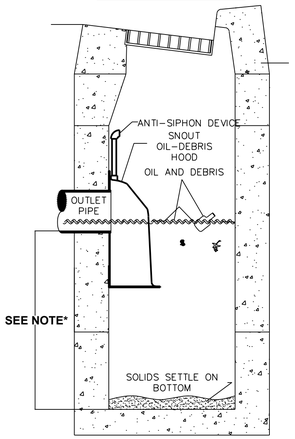
	Compost Treatments			Conventional Treatments	
	Biosolids	Yardwaste	Bioindustrial Compost	Compacted Subsoil	Topsoil
Element	Geometric Mean (mg)				
Chromium	0.01[b]	<0.01[a]	<0.01[b]	0.92[c]	0.76[c]
Copper	0.02[b]	<0.01[a]	0.01[b]	1.03[c]	0.66[c]
Nickel	<0.01[b]	<0.01[a]	<0.01[b]	0.96[c]	0.67[c]
Lead	0.01[b]	<0.01[a]	<0.01[b]	1.82[c]	0.95[c]
Zinc	0.10[b]	<0.01[a]	0.03[b]	6.55[c]	3.99[c]
Nitrogen	0.47[b]	<0.01[a]	0.09[a,b]	266.65[c]	211.87[c]
Phosphorus	0.45[b]	<0.01[a]	0.09[a,b]	36.47[c]	29.07[c]
Potassium	0.17[b]	<0.01[a]	0.09[a,b]	103.94[c]	71.57[c]

Means within the same row with different letter designations are significantly different ($p<0.05$).

Highest | Medium | Lowest

SOIL AMENDMENT SPECIFICATION

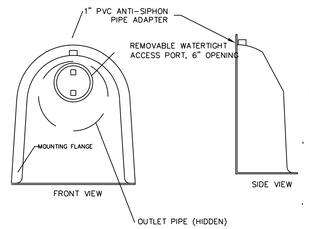
TYPICAL INSTALLATION



SEE NOTE*

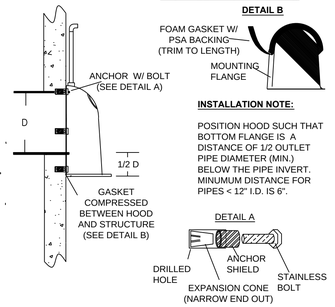
***NOTE-** SUMP DEPTH OF 36" MIN. FOR < OR= 12" DIAM. OUTLET. FOR OUTLETS >OR= 15", DEPTH = 2.5-3X DIAM.

CONFIGURATION DETAIL



SNOUT OIL-WATER-DEBRIS SEPARATOR

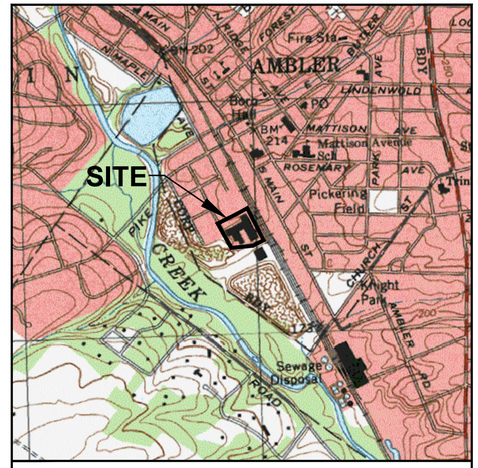
INSTALLATION DETAIL



NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:
   BEST MANAGEMENT PRODUCTS, INC.
   53 MT. ARCHER RD.
   LYME, CT 06371
   (860) 434-0277, (860) 434-3195 FAX
   TOLL FREE: (800) 504-8008 OR (888) 354-7585
   WEB SITE: www.bmpinc.com
   OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION.
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 24" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8' STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
9. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.
   INSTALLATION KIT SHALL INCLUDE:
   A. INSTALLATION INSTRUCTIONS
   B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
   C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
   D. 3/8" STAINLESS STEEL BOLTS
   E. ANCHOR SHIELDS
10. **THE CONTRACTOR IS SPECIFICALLY MADE AWARE THAT OIL/DEBRIS HOODS MAY REQUIRE OVERSIZED STRUCTURES AND/OR DEEPER STRUCTURES TO ACCOMMODATE DEVICES. EXISTING STRUCTURES IN WHICH DEVICES ARE PROPOSED MAY REQUIRE REPLACEMENT IF UNDERSIZED. CONTRACTOR MUST INCLUDE REPLACEMENT OF EXISTING STRUCTURES RECEIVING SNOUT DEVICE IN BID AND VERIFY PRIOR TO INSTALLATION.**

BMP 6.6.4 B SNOUT OIL/DEBRIS SEPARATOR



SITE LOCATION MAP SCALE 1"=1,000'

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

Date	Description	No.
7-05-13	~~ESPONSES TO COMMENTS~~	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

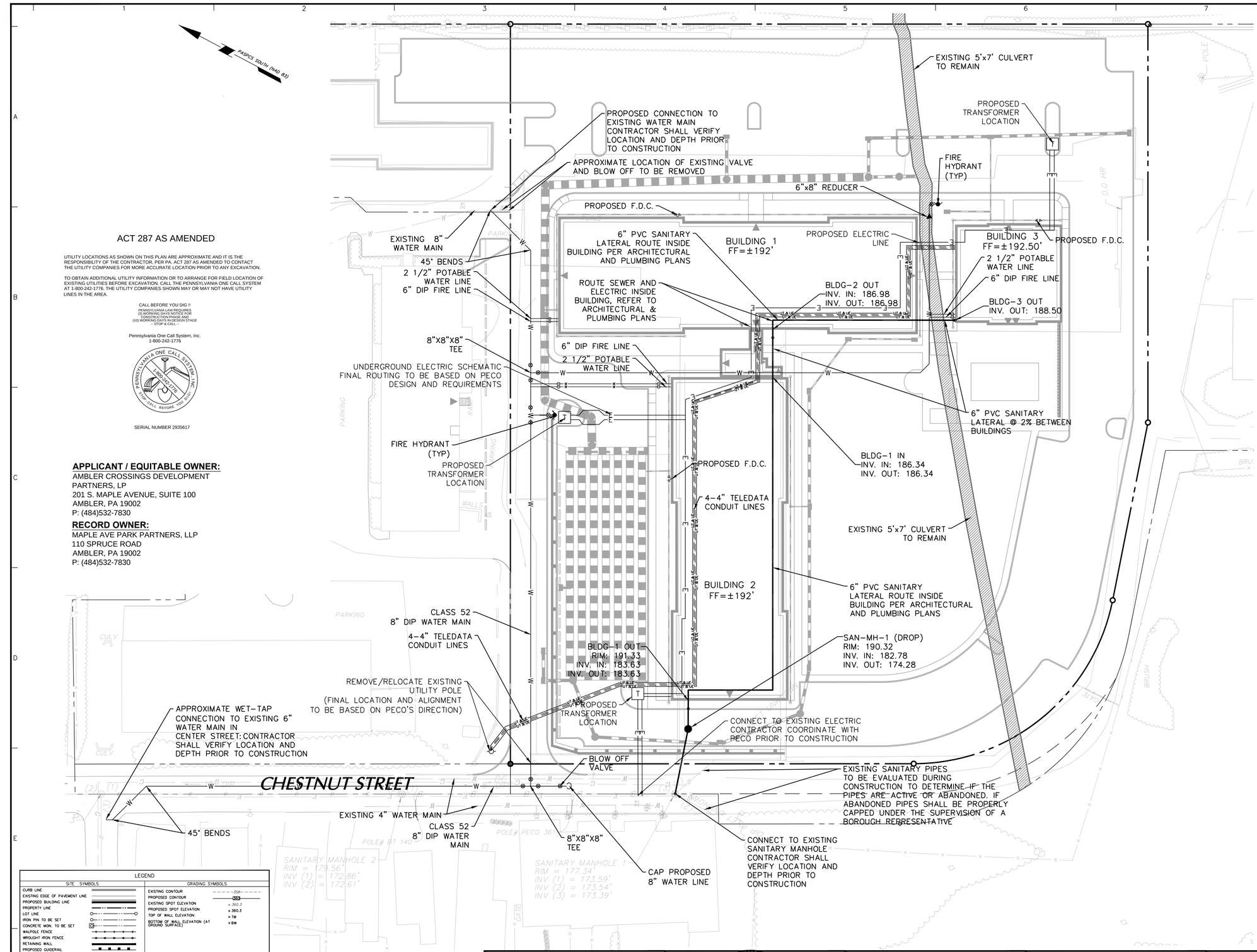
LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

Project No.	240025501
Date	4-9-13
Scale	N.T.S.
Drawn By	KG
Drawing No.	PSCM-501
	Sheet 16 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501



ACT 287 AS AMENDED

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER ACT 287 AS AMENDED TO CONTACT THE UTILITY COMPANIES FOR MORE ACCURATE LOCATION PRIOR TO ANY EXCAVATION.

TO OBTAIN ADDITIONAL UTILITY INFORMATION OR TO ARRANGE FOR FIELD LOCATION OF EXISTING UTILITIES BEFORE EXCAVATION. CALL THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776. THE UTILITY COMPANIES SHOWN MAY OR MAY NOT HAVE UTILITY LINES IN THE AREA.

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
(3) WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND
(10) WORKING DAYS NOTICE FOR DESIGN STAGE
STOP & CALL !

Pennsylvania One Call System, Inc.
1-800-242-1776

SERIAL NUMBER 2935617

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

LEGEND

SITE SYMBOLS	GRADING SYMBOLS
CURB LINE	EXISTING CONTOUR — 350 —
EXISTING EDGE OF PAVEMENT LINE	PROPOSED CONTOUR 350
PROPOSED BUILDING LINE	EXISTING SPOT ELEVATION × 360.5
PROPERTY LINE	PROPOSED SPOT ELEVATION × 360.3
LOT LINE	TOP OF WALL ELEVATION ×TW
IRON PIN TO BE SET	BOTTOM OF WALL ELEVATION (AT GROUND SURFACE) ×BW
CONCRETE MON. TO BE SET	
WALPOLE FENCE	
WROUGHT IRON FENCE	
RETAINING WALL	
PROPOSED GUIDERAIL	
GRADING/ACCESS EASEMENT	
UTILITY EASEMENT	

UTILITY SYMBOLS	
EXISTING STORM SEWER	EXISTING SANITARY SEWER MANHOLE
EXISTING SANITARY SEWER	EXISTING FIRE HYDRANT
EXISTING GAS MAIN EXISTING	EXISTING GAS VALVE
WATER MAIN EXISTING	EXISTING CATCH BASIN
OVERHEAD ELECTRIC	EXISTING WATER VALVE
PROPOSED STORM SEWER	EXISTING MANHOLE
PROPOSED SANITARY SEWER	EXISTING ELECTRIC POLE
PROPOSED WATER MAIN	PROPOSED WATER VALVE
PROPOSED ELECTRIC	PROPOSED HYDRANT
PROPOSED GAS	

30 0 15 30
SCALE IN FEET

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS IN A MANNER WHICH WILL NOT NEGATIVELY AFFECT ANY EXISTING USERS OF THESE UTILITIES.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY (WATER, SEWER, GAS, ELECTRIC, TELEPHONE AND CABLE) LOCATIONS, INVERTS AND CONDITIONS PRIOR TO CONSTRUCTION. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN ON THE DRAWINGS AND REQUIRING MODIFICATIONS TO THE SITE DESIGN SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE CONSTRUCTION. DIFFERING UTILITY CONDITIONS THAT ARE ENCOUNTERED BY THE CONTRACTOR, THAT REQUIRE MODIFICATION OF SITE DESIGN AND THAT ARE NOT BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT AT HIS SOLE COST.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
4. THE LOCATION OF EXISTING GAS MAINS ARE APPROXIMATE. THE CONTRACTOR MUST CONSULT THE LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION. ALL PROPOSED GAS WORK AND OTHER ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.
5. THE LOCATION OF EXISTING ELECTRIC LINES ARE APPROXIMATE. THE CONTRACTOR MUST CONSULT THE LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION. ALL PROPOSED ELECTRICAL WORK, TRANSFORMER PADS, AND ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.
6. ALL GAS WORK AND OTHER ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.
7. ALL ELECTRICAL WORK, TRANSFORMER PADS, AND ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS. MIN. DEPTH OF COVER OVER ELECTRIC, GAS, AND CABLE SHALL BE 2 FT.
8. ALL WATER MAIN WORK SHALL BE IN ACCORDANCE WITH THE AMBLER BOROUGH WATER DEPARTMENT STANDARDS AND SPECIFICATIONS. SEE CONSTRUCTION NOTES BELOW.
9. THE CONTRACTOR SHALL COORDINATE THE SANITARY SEWER WORK WITH AMBLER BOROUGH.
10. A MINIMUM EIGHTEEN (18) INCHES VERTICAL CLEARANCE MUST BE MAINTAINED BETWEEN WATER MAIN AND ALL OTHER UTILITIES. WHERE CLEARANCE CANNOT BE MAINTAINED, THEN WATER MAIN SHALL BE ENCASED IN CONCRETE 10 FEET ON EACH SIDE OF THE CROSSING. IN CASES WHERE, THE UTILITY IS A SANITARY OR STORM SEWER MAIN OR LATERAL AND THE CLEARANCE CANNOT BE MAINTAINED, THEN THE SEWER SHALL ALSO BE ENCASED.
11. THE CONTRACTOR MUST CONTACT AMBLER BOROUGH ONE WEEK PRIOR TO WATER MAIN CONSTRUCTION, AND 72 HOURS PRIOR TO EXCAVATION NEAR AND CONNECTION TO EXISTING WATER AND SEWER MAIN.
12. ALL WATER MAIN FITTINGS AND VALVES SHALL BE MECHANICAL JOINT (RESTRAINED) AND THE FITTINGS SHALL BE PROVIDED WITH THRUST BLOCKING. REFER TO DETAILS FOR THRUST BLOCK DETAILS AND FITTING SCHEDULES.
13. ALL FIRE HYDRANTS AND VALVES SHALL OPEN RIGHT (CLOCKWISE).
14. SANITARY LATERALS SHALL BE INSTALLED ACCORDING TO THE TYPICAL SANITARY SEWER LATERAL DETAIL.
15. ALL PROPOSED SANITARY SEWER LINES AND APPURTENANCES WITHIN THE SUBJECT PROPERTY BOUNDARY WILL BE PRIVATELY OWNED AND MAINTAINED.
18. ALL UTILITIES SHALL BE LOCATED UNDERGROUND UNLESS REQUIRED BY PROVIDER.
19. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF UTILITIES WITH APPROVED BUILDING PLANS.
20. WATER LINE SIZE TO BE VERIFIED BY PLUMBING ENGINEER BASED ON FIXTURE COUNT, FIRE FLOW REQUIREMENTS AND FIRE FLOW TESTING.
21. F.D.C. – FIRE DEPARTMENT CONNECTION.
22. AS A CONDITION OF FINAL APPROVAL, AN EVALUATION OF THE EXISTING 8 INCH SANITARY SEWER IN SOUTH CHESTNUT STREET WILL BE PERFORMED PRIOR TO CONSTRUCTION OF THE PROPOSED SANITARY SEWER SYSTEM. AN INSPECTION REPORT AND DVD WILL BE FORWARDED TO THE BOROUGH ENGINEER FOR REVIEW.
23. THE EXISTING SANITARY SEWER BETWEEN EXISTING SANITARY MANHOLES 1&2 WILL BE INSPECTED FOLLOWNG CONSTRUCTION OF THE PROPOSED SANITARY SEWER SYSTEM.
24. A BLANKET EASEMENT OVER PROPOSED SANITARY SEWER AND WATER SYSTEMS IS TO BE OFFERED FOR DEDICATION TO THE BOROUGH OF AMBLER.

UTILITY TRENCH EXCAVATION GUIDELINES

1) CONSTRUCTION REQUIREMENTS:
   a) WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
   a) LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   b) ALL DISTURBED AREAS ARE TO BE RESTORED AND STABILIZED WITHIN TWENTY (20) DAYS IN ACCORDANCE WITH THE STABILIZATION METHODS APPLICABLE TO THE AREA OF DISTURBANCE (I.E. SWALES WITH LINER, ROAD WITH BASE COARSE)
2) EXCEPTIONS – IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
   a) DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
3) IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL SUBGRADE ELEVATION, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

WATER SYSTEM CONSTRUCTION NOTES

A. WATER SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION BY AMBLER BOROUGH WATER DEPARTMENT.
B. ALL WATER LINES SHALL HAVE A MINIMUM OF 4' OF COVER.
C. ALL WATER LINES SHALL BE DUCTILE IRON PIPE CLASS 52.
D. VALVES SHALL BE SET 5' FROM A FITTING.
E. MEGALUGS SHALL BE USED TO RESTRAIN MECHANICAL JOINT FITTINGS AND FIELD LOCK GASKETS TO RESTRAIN PUSH-ON JOINTS WITHIN 40' OF BOTH HORIZONTAL AND VERTICAL BENDS IN WATER LINES 12" IN DIAMETER AND SMALLER.
F. A 5' MINIMUM HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER LINES AND TREE PLANTING.
G. ALL FITTINGS AND HYDRANTS SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS.
H. FIRE HYDRANT LINES SHALL BE 6" DIAMETER, WITH 6" DIAMETER SHUT OFF VALVES.

SANITARY SYSTEM CONSTRUCTION NOTES

A. ALL PRECAST SANITARY MANHOLES SHALL RECEIVE TWO INTERIOR COATS (6 MIL. DFT. EACH) OF A WHITE EPOXY COATING.
B. MANHOLES NOT LOCATED WITHIN A PAVED AREA SHALL RECEIVE A WATERTIGHT FRAME AND COVER.
C. MANHOLES IN PAVING SHALL BE PROVIDED WITH A DEEP BOWL INSERT WITH VENTILATION HOLES.
D. CLEANOUTS LOCATED IN PAVED AREAS SHALL BE PROVIDED WITH A CAST IRON LID AND BOX ASSEMBLY.

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

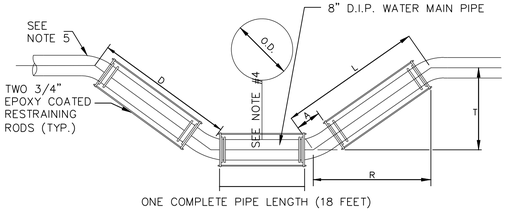
Project: AMBLER CROSSINGS
AMBLER BOROUGH MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: UTILITY PLAN

Project No.	240025501
Date	4-9-13
Scale	1"=30'
Drawn By	JKM
Drawing No.	CU-101
	Sheet 17 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data – 240025501\SheetFiles\240025501-CU101-0101.dwg Date: 10/3/2013 Time: 08:51 User: jmoninghoff Style Table: Langan.stb Layout: CU-101

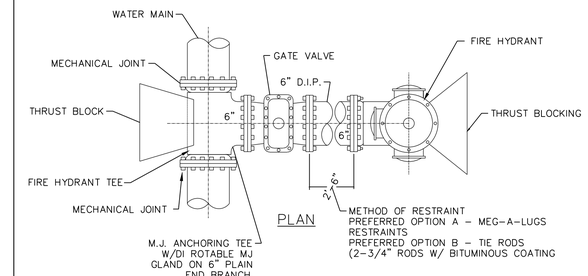


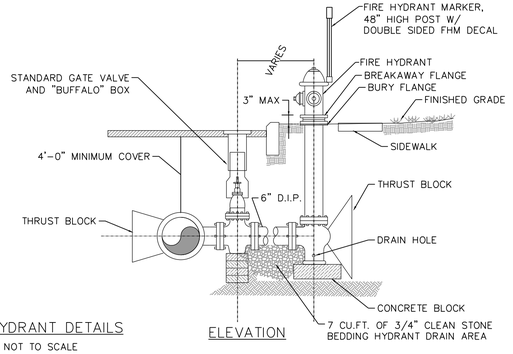
ONE COMPLETE PIPE LENGTH (18 FEET)

NOTES:
1. WATER MAIN MAY BE LOOPED ABOVE OBSTRUCTION IF 4' MINIMUM COVER IS MAINTAINED ABOVE MAIN.
2. WATER MAIN SHALL BE DUCTILE IRON CEMENT LINED PIPE, CLASS 52. ALL JOINTS SHALL BE RESTRAINED MECHANICAL JOINTS FOR LOOPING ASSEMBLY.
3. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS AND OTHER POINTS OF PIPE DIRECTION CHANGE.
4. MINIMUM VERTICAL CLEARENCE BETWEEN SANITARY OR STORM SEWERS AND WATER MAIN SHALL BE 18" MINIMUM. CONCRETE ENCASE SANITARY SEWER 10 FEET ON EITHER SIDE OF CROSSING IF ABOVE WATER MAIN.
5. MEGALUG RESTRAINED GLANDS AND VERTICAL THRUST BLOCK AT EACH BEND.

MECHANICAL JOINTS			
ANGLE	D	R	L
45°	D=Tx 1.414	R=T x 1.00	L=D – 2A
22 1/2°	D=Tx 2.613	R=T x 2.414	L=D – 2A
11 1/4°	D=Tx 5.126	R=T x 5.027	L=D – 2A

LOOPING WATER DETAIL



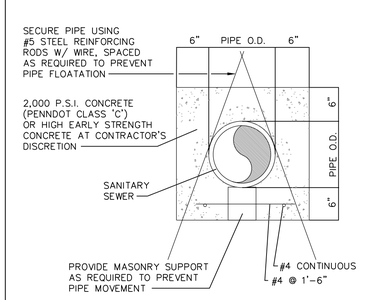


NOTES:
1. WHERE NO CURB EXISTS, THE FIRE HYDRANT SETBACK DISTANCE FROM EDGE OF ROAD SHALL BE AS DIRECTED BY THE BOROUGH WATER DEPARTMENT.
2. HYDRANTS MUST BE PROVIDED WITH 5–¼" VALVE OPENING, (2) 2–½" NST OUTLETS, AND (1) 4–½" NST OUTLET WITH 5" STORZ ADAPTOR AND 5" STORZ BLANK CAP ASSEMBLY.

FIRE HYDRANT DETAILS
NOT TO SCALE

ELEVATION

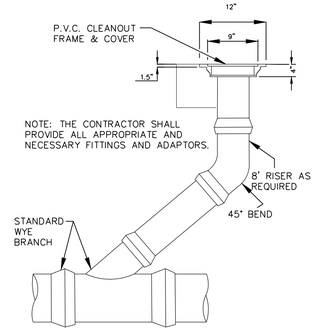
FIRE HYDRANT ASSEMBLY



NOTES:
PROVIDE REINFORCEMENT AT UTILITY CROSSINGS ONLY.

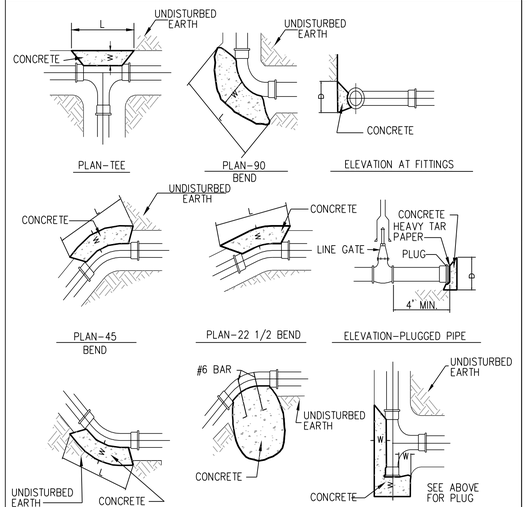
AMBLER BOROUGH		CONCRETE ENCASEMENT DETAIL

PIPE ENCASEMENT



CLEANOUT LINE TO BE 6" DIAMETER.
PIPE MATERIAL TO BE P.V.C.

SANITARY SEWER CLEAN OUT



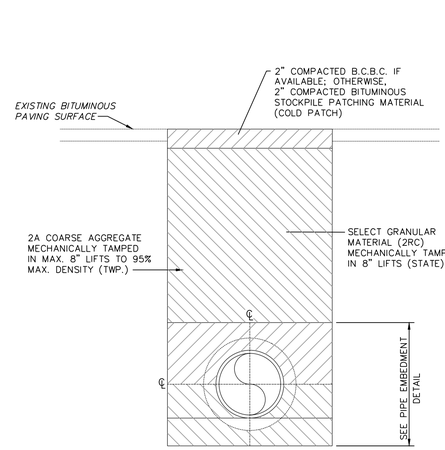
THRUST BLOCK SCHEDULE									
PIPE SIZE	TEE		22 1/2		45		90		W
	L	D	L	D	L	D	L	D	
6"	18"	15"	15"	12"	15"	12"	15"	15"	21"
8"	2'	18"	18"	12"	18"	12"	2'	18"	2'
12"	3'	2'	2'	12"	2'	12"	3'	2'	28"
16"	4'	2.5'	2'	12"	2.33'	15"	4'	2.5'	31"
20"	5.25'	3'	2'	18"	3'	2'	5.25'	3'	33"
24"	7.5'	3'	3'	18"	4'	2.5'	7.5'	3'	3'

BASIS: 2,000 LB/SQ.FT. SOIL RESISTANCE 250 PSI WATER PRESSURE CORRECTION FACTORS FOR OTHER SOILS:

SOFT CLAY	4
SAND	2
SAND & GRAVEL	1.33
SHALE	0.4

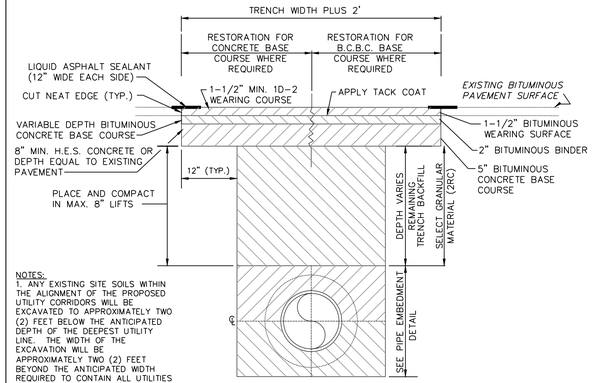
NOTE:
1. IF SOFT MATERIALS ARE ENCOUNTERED, THE THRUST BLOCKS SIZES SHALL BE ADJUSTED ACCORDINGLY.
2. CONCRETE TO BE 4000 PSI.

THRUST BLOCKS



AMBLER BOROUGH		TEMPORARY PAVEMENT AND TRENCH RESTORATION FOR EXISTING TOWNSHIP ROADS AND STATE HIGHWAYS
		SCALE: NOT TO SCALE

TEMPORARY PAVEMENT & TRENCH RESTORATION

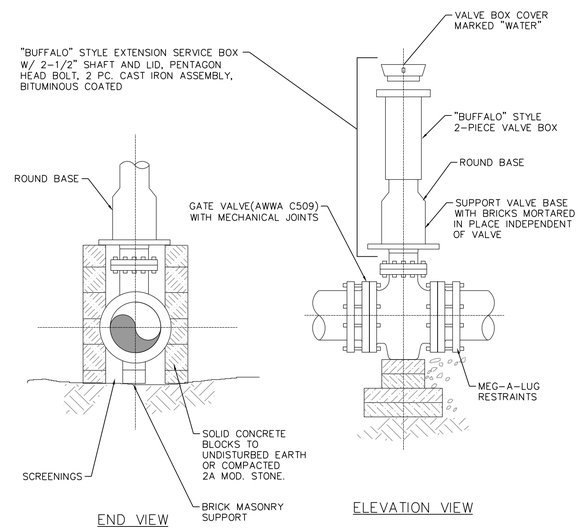


NOTES:
1. ANY EXISTING SITE SOILS WITHIN THE ALIGNMENT OF THE PROPOSED UTILITY CORRIDORS WILL BE EXCAVATED TO APPROXIMATELY TWO (2) FEET BELOW THE ANTICIPATED DEPTH OF THE DEEPEST UTILITY LINE. THE WIDTH OF THE EXCAVATION WILL BE APPROXIMATELY TWO (2) FEET BEYOND THE ANTICIPATED WIDTH REQUIRED TO CONTAIN ALL UTILITIES ANTICIPATED TO BE INSTALLED IN EACH CORRIDOR. EXCAVATED SOILS WILL BE RELOCATED TO DESIGNATED FILL AREAS OF THE SITE USING PROCEDURES DESCRIBED IN SECTION 5.0. THE WALLS AND BOTTOM OF THE UTILITY EXCAVATION WILL THEN BE LINED WITH A GEOTEXTILE FILTER FABRIC AND THE EXCAVATION WILL BE FILLED WITH IMPORTED CLEAN FILL.

RESTORATION FOR CONCRETE BASE NOTES:
1. SURFACE OF REPLACEMENT CONCRETE TO BE AT SAME ELEVATION AS EXISTING SLAB.
2. FOR LIMITS OF CONCRETE REPLACEMENT, SEE PENNDOT. REG. 459.8 (i)(4).
3. CUT BACK IS NOT REQUIRED BEYOND A TRANSVERSE OR LONGITUDINAL JOINT OR CURB.

AMBLER BOROUGH		PERMANENT PAVEMENT AND TRENCH RESTORATION FOR STATE HIGHWAYS
		SCALE: NOT TO SCALE

PERMANENT PAVEMENT & TRENCH RESTORATION



GATE VALVE AND BOX DETAIL
NOT TO SCALE

GATE VALVE

Date	Description	No.
10–3–13	BOROUGH COMMENTS	2.
6–21–13	BOROUGH COMMENTS	1.

REVISIONS

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE–057145–E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
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Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

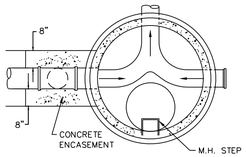
Drawing Title: UTILITY DETAILS

Project No. 240025501
Date 4–9–13
Scale N.T.S.
Drawn By KG

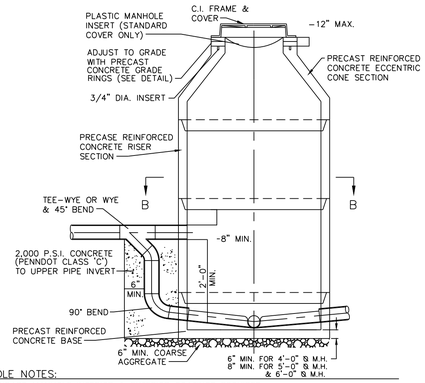
Drawing No. CU–501
Sheet 18 of 25

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data – 240025501\SheetFiles\240025501–CU501–0101.dwg Date: 10/2/2013 Time: 16:18 User: jmoninghoff Style Table: Langan.stb Layout: CU–501



SECTION B–B

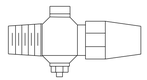


MANHOLE NOTES:

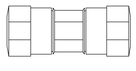
1. STANDARD MANHOLE INTERIOR & EXTERIOR COATINGS REQUIRED.
2. AN ALTERNATE ARRANGEMENT INVOLVES USE OF A PRECAST BASE WHICH INCLUDES THE 90° BEND ALONG WITH PRECAST CONCRETE COLLARS AROUND THE DROP PIPE TO THE INVERT OF THE UPPER PIPE. ANNULAR SPACE BETWEEN DROP PIPE AND COLLAR TO BE FILLED WITH AASHTO #8 (PENNDOT 1B) COARSE AGGREGATE.

AMBLER BOROUGH | TYPE "A" DROP MANHOLE

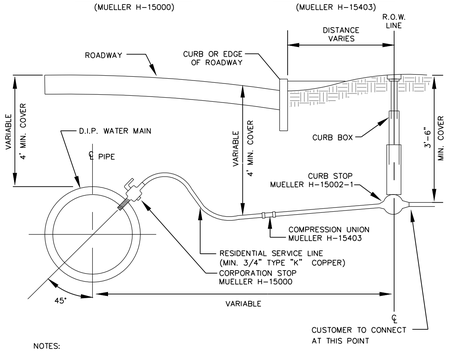
MANHOLE



CORPORATION STOP
(MUELLER H–15000)



COMPRESSION UNION
(MUELLER H–15403)



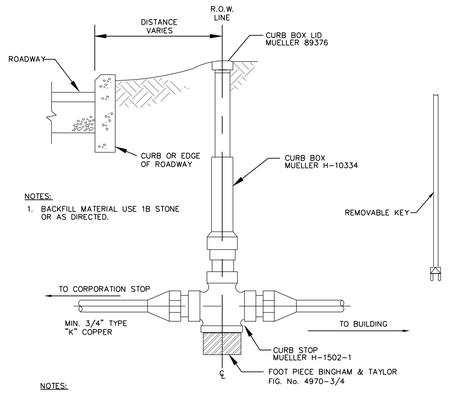
NOTES:

1. CORPORATION STOP MANUFACTURED BY MUELLER SERIES # H–15000 OR APPROVED EQUAL.
2. NO COUPLINGS IN THE SERVICE LINES SHALL BE PERMITTED AT LESS THAN 100 FOOT INTERVALS.
3. ALL SERVICE LINES SHALL BE MINIMUM 3/4" DIAMETER.

CORPORATION STOP DETAIL

NOT TO SCALE

CORPORATION STOP



NOTES:

1. BACKFILL MATERIAL USE 1B STONE OR AS DIRECTED.

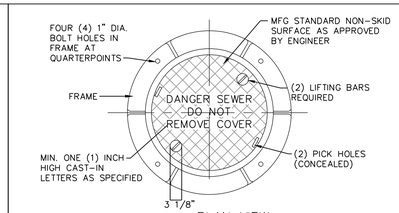
NOTES:

1. LOCATE CURB BOX BETWEEN CURB AND SIDEWALK WHERE THERE ARE BOTH. WHERE THERE IS NO SIDEWALK, CURB BOX SHALL BE LOCATED AT OR NEAR THE RIGHT–OF–WAY LINE, EXCEPT WHERE DIRECTED BY THE BOROUGH WATER DEPARTMENT.
2. CURB BOX SHALL NOT BE LOCATED IN PAVED AREAS.
3. CURB STOP MANUFACTURED BY MUELLER (MODEL # H–15002–1) OR APPROVED EQUAL.
4. CURB BOX MANUFACTURED BY MUELLER (SERIES # H–10334 WITH 89376 LID) OR APPROVED EQUAL.
5. CURB BOX SHALL BE PROVIDED WITH FOOT PIECE AS MANUFACTURED BY BINGHAM & TAYLOR FIG. No. 4970–3/4 OR APPROVED EQUAL.
6. CURB BOX COVER SHALL NOT BE COVERED BY SOD, GRASS OR PLANTINGS AND MUST BE FULLY ACCESSIBLE WITHOUT DIGGING. CURB BOX COVER SHALL BE PAINTED LIGHT BLUE.
7. CURB BOX MUST BE VERTICAL AND PLUMB.

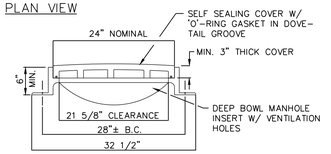
CURB STOP DETAIL

NOT TO SCALE

CURB STOP



PLAN VIEW



SECTION VIEW

MANHOLE FRAME & COVER NOTES:

1. ALL MATERIAL GRAY CAST IRON, A.S.T.M. A–48, CL30 SUITABLE FOR AASHTO HIGHWAY LOADING CLASS HS–20.
2. COVER SHALL HAVE THE WORDS "DANGER SEWER – DO NOT REMOVE COVER" CAST THEREON. LETTERS ARE TO HAVE A MINIMUM HEIGHT OF 2".
3. PROVIDE FOUR (4) ANCHOR BOLT HOLES, 1"ø MIN.
4. MANUFACTURED BY SYRACUSE CASTINGS SALES CORP.
   * STANDARD: MODEL 1255/1039

AMBLER BOROUGH | STANDARD MANHOLE FRAME & COVER

MANHOLE FRAME AND COVER

LANGAN

SUBMISSION DATE: 2013-10-03

PROJECT No. 2400025501

10–3–13	BOROUGH COMMENTS	2.
6–21–13	BOROUGH COMMENTS	1.
Date	Description	No.

REVISIONS

JASON SCOTT ENGELHARDT — REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF PENNSYLVANIA

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE–057145–E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
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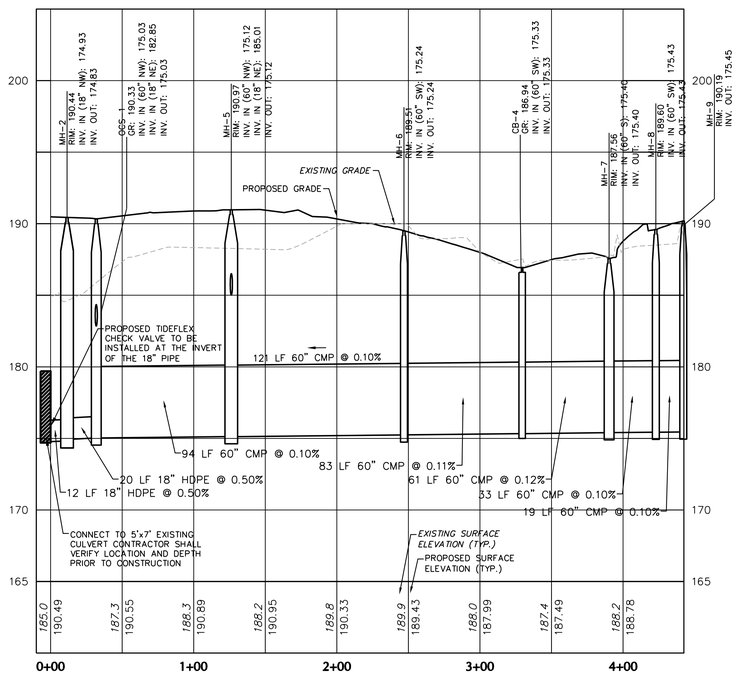
Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: UTILITY DETAILS

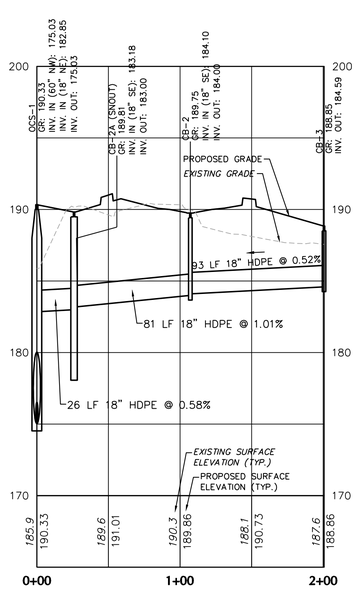
Project No.	240025501
Date	4–9–13
Scale	N.T.S
Drawn By	KG

Drawing No. CU-502

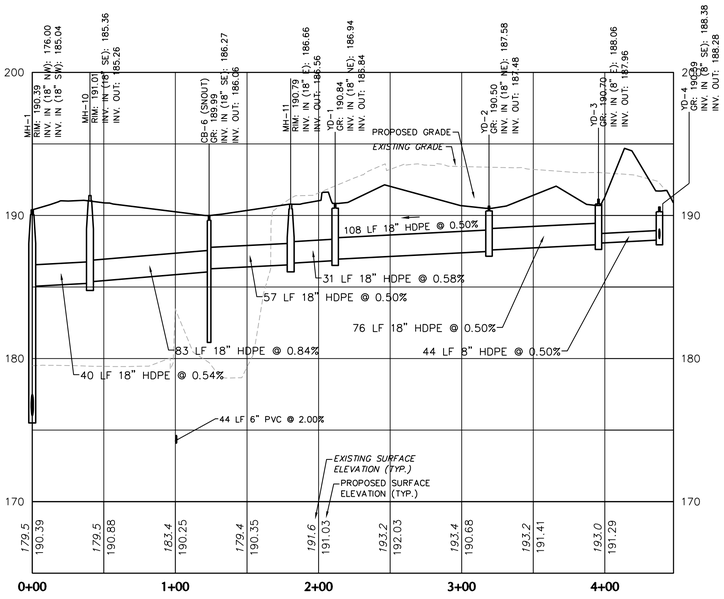
Sheet 19 of 25



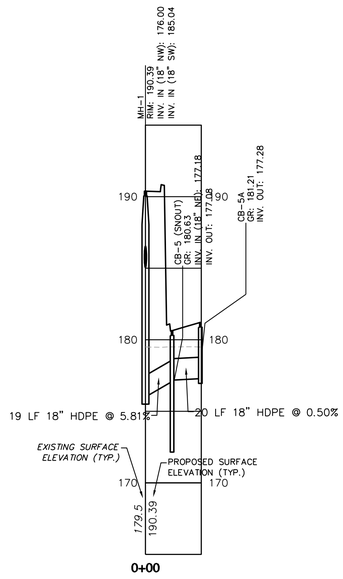
EXISTING CULVERT TO MH-9 PROFILE
(SCALE 1" = 50' HORIZONTAL; 1" = 5' VERTICAL)



OCS-1 TO CB-3 PROFILE
(SCALE 1" = 50' HORIZONTAL; 1" = 5' VERTICAL)



MH-1 TO YD-4 PROFILE
(SCALE 1" = 50' HORIZONTAL; 1" = 5' VERTICAL)



MH-1 TO CB-5A PROFILE
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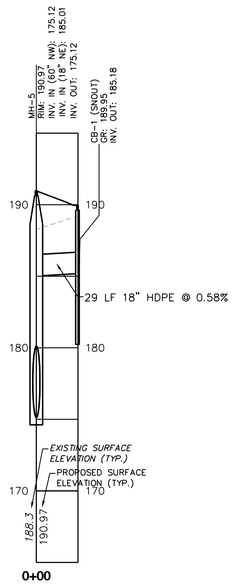

MH-5 TO CB-1 PROFILE
(SCALE 1" = 50' HORIZONTAL; 1" = 5' VERTICAL)

HORIZONTAL 50 0 25 50 SCALE IN FEET

VERTICAL 5 0 2.5 5 SCALE IN FEET

No.	Description	Date
2.	BOROUGH COMMENTS	10-3-13
1.	BOROUGH COMMENTS	6-21-13

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
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Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

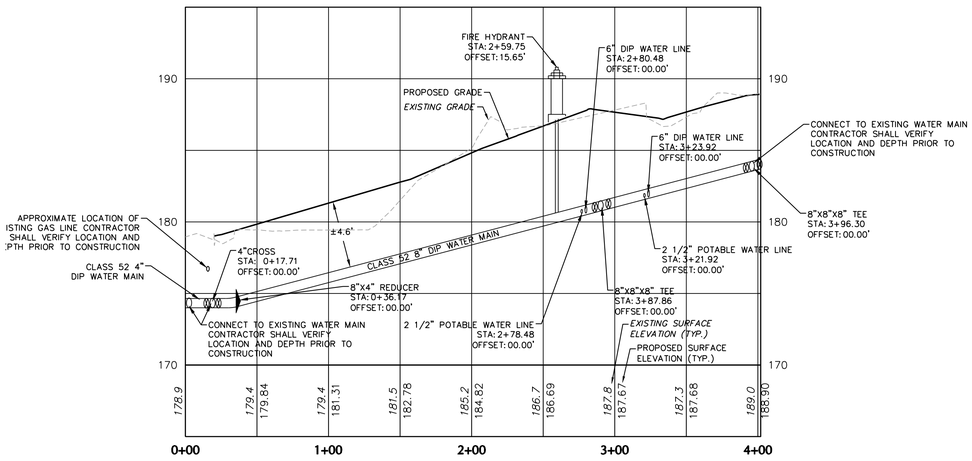
Drawing Title
DRAINAGE AND UTILITY PROFILES

Project No. 240025501
Date 4-9-13
Scale AS SHOWN
Drawn By JKM

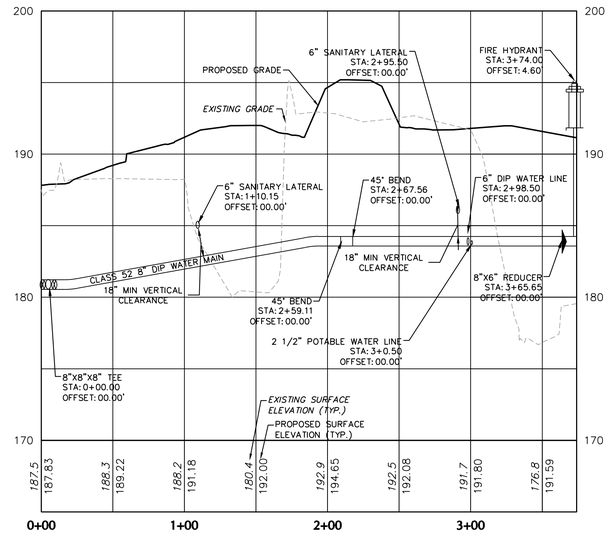
Drawing No. CU-601
Sheet 20 of 25

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 2400025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data – 240025501\SheetFiles\240025501-CU601-0101.dwg Date: 10/3/2013 Time: 09:06 User: jmoninghoff Style Table: Langan.stb Layout: CU-601



WATER LINE 1 PROFILE
(SCALE 1" = 50' HORIZONTAL; 1" = 5' VERTICAL)



WATER LINE 2 PROFILE
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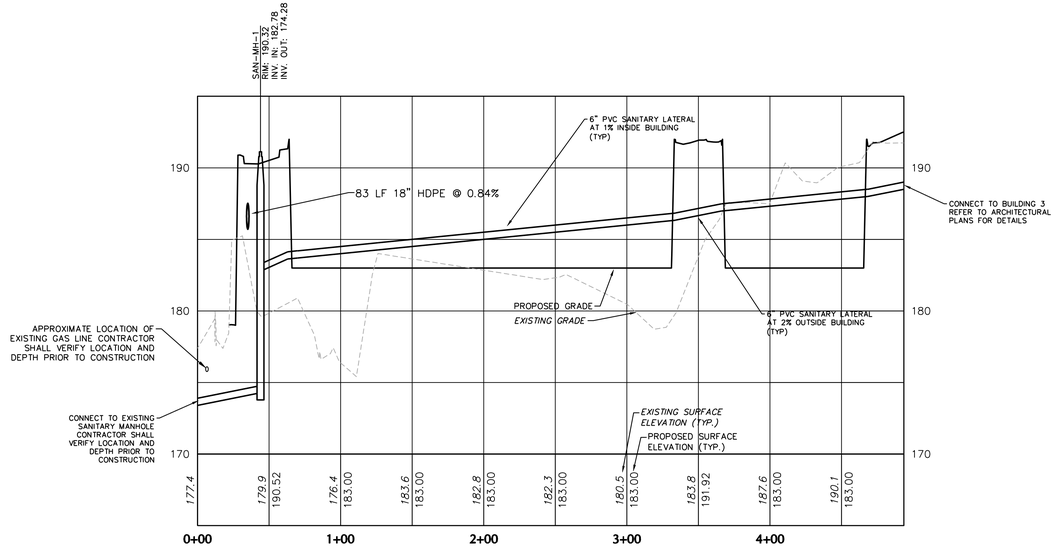

SANITARY LATERAL PROFILE
(SCALE 1" = 50' HORIZONTAL; 1" = 5' VERTICAL)

HORIZONTAL 50 0 25 50 SCALE IN FEET

VERTICAL 5 0 2.5 5 SCALE IN FEET

10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.
Date	Description	No.

REVISIONS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JASON SCOTT ENGELHARDT ENGINEER

JASON ENGELHARDT
PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
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AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
DRAINAGE AND UTILITY PROFILES

Project No. 240025501	Drawing No. CU-602
Date 4-9-13	
Scale AS SHOWN	
Drawn By JKM	
	Sheet 21 of 25

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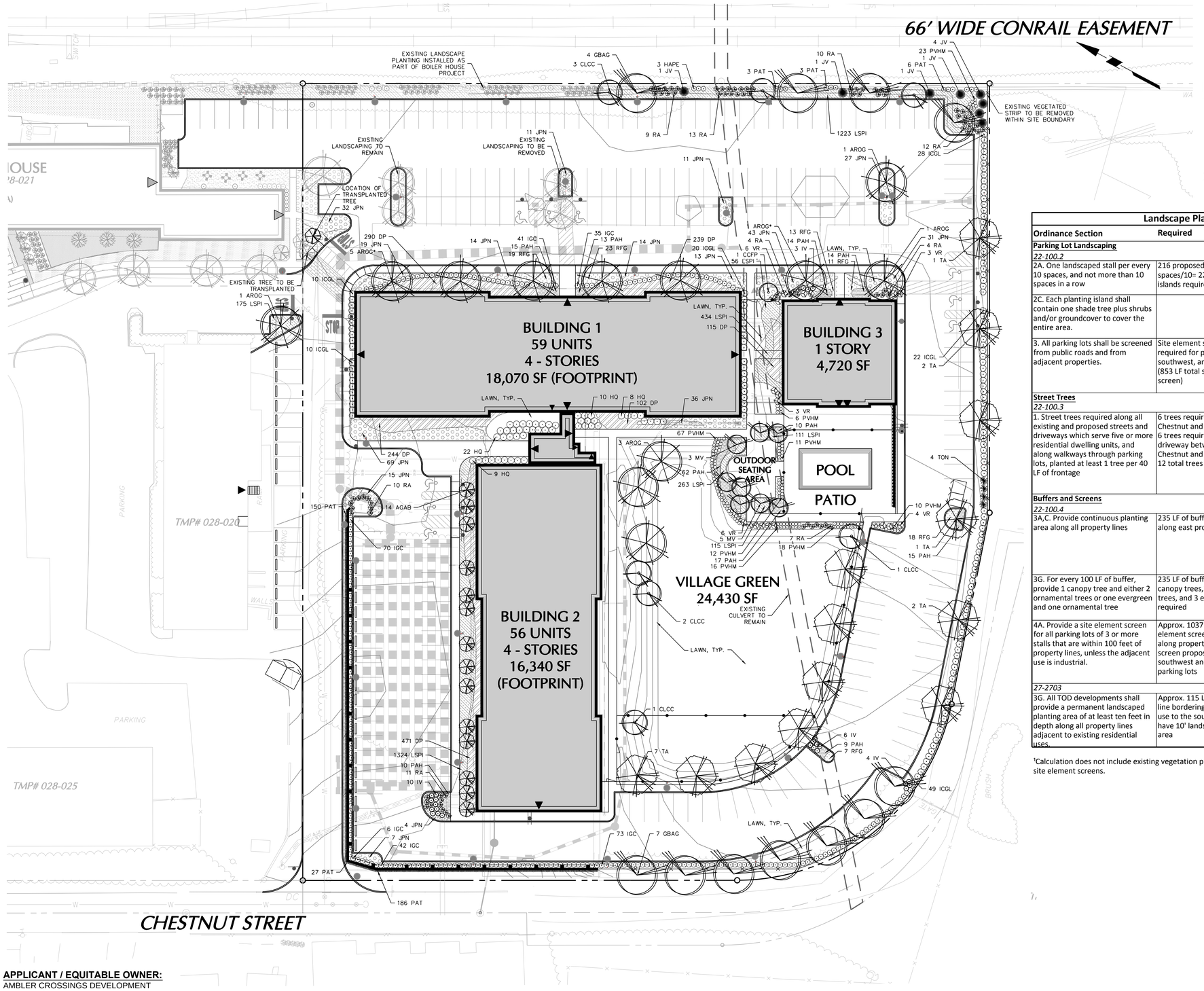
SUBMISSION DATE: 2013-10-03
PROJECT No. 2400025501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-CU601-0101.dwg Date: 10/2/2013 Time: 16:19 User: jmoninghoff Style Table: Langan.stb Layout: CU-602



NOTES:

1. ALL SITE WORK, OR ANY ACTIVITY WITH THE POTENTIAL TO DISTURB SUBSOILS, SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED SOIL MANAGEMENT AND CLEANUP PLANS FOR THE SITE.

2. REFER TO SHEET LP-501 FOR LANDSCAPE NOTES, DETAILS AND PLANT SCHEDULE.

Landscape Planting Requirements

Ordinance Section	Required	Provided	Complies
Parking Lot Landscaping			
22-100.2			
2A. One landscaped stall per every 10 spaces, and not more than 10 spaces in a row	216 proposed parking spaces/10= 22 landscaped islands required	9 landscaped islands provided, average of 22 spaces in a row	no (waiver requested)
2C. Each planting island shall contain one shade tree plus shrubs and/or groundcover to cover the entire area.		One shade tree plus groundcover in each proposed island where no utility conflicts exist	yes
3. All parking lots shall be screened from public roads and from adjacent properties.	Site element screen required for proposed west, southwest, and south lots (853 LF total site element screen)	853 LF site element screen (opaque retaining wall with vines or shrubs planted 3' O.C.) provided along west, southwest, and south lots	yes
Street Trees			
22-100.3			
1. Street trees required along all existing and proposed streets and driveways which serve five or more residential dwelling units, and along walkways through parking lots, planted at least 1 tree per 40 LF of frontage	6 trees required along S. Chestnut and Maple Ave. + 6 trees required along driveway between S. Chestnut and Maple Ave. = 12 total trees required	Street trees proposed elsewhere on site (identified with an asterisk "*"). No street trees proposed along Maple Ave. frontage or proposed driveway due to retaining wall.	yes
Buffers and Screens			
22-100.4			
3A,C. Provide continuous planting area along all property lines	235 LF of buffer required along east property line[1]	235 LF of buffer planting provided along eastern property line, site element screens provided along south and west property lines	yes
3G. For every 100 LF of buffer, provide 1 canopy tree and either 2 ornamental trees or one evergreen and one ornamental tree	235 LF of buffer required; 3 canopy trees,3 ornamental trees, and 3 evergreen trees required	235 LF of buffer provided; 3 canopy trees, 3 ornamental trees, and 4 evergreen trees provided	yes
4A. Provide a site element screen for all parking lots of 3 or more stalls that are within 100 feet of property lines, unless the adjacent use is industrial.	Approx. 1037 LF of site element screen required along property line to screen proposed west, southwest and south parking lots	1037 LF of site element screen provided along west, southwest, and south property lines to screen parking lots from adjacent residences and public road	yes
27-2703			
3G. All TOD developments shall provide a permanent landscaped planting area of at least ten feet in depth along all property lines adjacent to existing residential uses.	Approx. 115 LF of property line bordering residential use to the southwest to have 10' landscape planting area	Approx. 115 LF of 10'-wide landscape planting area provided along southwest property line bordering residential	yes

[1]Calculation does not include existing vegetation provided as part of Boiler House project or areas requiring site element screens.

I HEREBY CERTIFY THAT I AM A REGISTERED LANDSCAPE ARCHITECT, LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA; THAT THE INFORMATION CONTAINED IN THE ACCOMPANYING PLANS HAS BEEN PREPARED IN ACCORDANCE WITH ACCEPTED LANDSCAPE ARCHITECTURAL PRACTICE AND IS TRUE AND CORRECT.

MICHAEL SZURA
REGISTERED LANDSCAPE ARCHITECT PA Lic. No. LA002533

DATE

SIGNATURE

OWNERS CERTIFICATION

I, _____, HAVE LAID OUT UPON MY LAND SITUATE IN THE BOROUGH OF AMBLER, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA, CERTAIN LOTS AND STREETS ACCORDING TO THE ACCOMPANYING PLAN WHICH IS INTENDED TO BE RECORDED.

WITNESS MY HAND AND SEAL THIS _____ DAY OF _____, 20____.

PRINTED NAME _____ SIGNATURE _____

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY

ON THE _____ DAY OF _____, 20____, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, PERSONALLY APPEARED _____ WHO ACKNOWLEDGED HIMSELF TO BE THE _____ A CORPORATION, AND THAT HE AS SUCH PRESIDENT BEING AUTHORIZED TO DO SO ACKNOWLEDGED THIS PLAN TO BE THE OFFICIAL PLAN OF STREETS AND PROPERTY SHOWN THEREON, SITUATE IN THE BOROUGH OF AMBLER, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA AND DESIRED THAT THIS PLAN BE RECORDED ACCORDING TO LAW.
WITNESS MY HAND AND SEAL THE DAY AND YEAR AFORESAID.

NOTARY PUBLIC

MY COMMISSION EXPIRES

APPROVED THIS _____ DAY OF _____, 20____ BY THE BOROUGH COUNCIL OF THE BOROUGH OF AMBLER, MONTGOMERY COUNTY, PA.

ATTEST: _____ SIGNATURE, PRESIDENT

DATE SIGNED

ATTEST: _____ SIGNATURE, SECRETARY

SEAL: _____ DATE SIGNED

(BOROUGH NOTARY SEAL)

REVIEWED THIS _____ DAY OF _____, 20____ BY THE PLANNING COMMISION OF THE BOROUGH OF AMBLER, MONTGOMERY COUNTY, PA.

ATTEST: _____ SIGNATURE _____ DATE SIGNED

REVIEWED BY THE BOROUGH ENGINEER OF THE BOROUGH OF AMBLER, MONTGOMERY COUNTY, PA.

BOROUGH ENGINEER: _____ SIGNATURE _____ DATE SIGNED

RECORDED IN THE MONGOMERY COUNTY COURT HOUSE THIS _____ DAY OF _____ 20____ IN PLAN BOOK _____, PAGE _____.

MCPC No. _____

PROCESSED AND REVIEWED. A REPORT HAS BEEN PREPARED BY THE MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE.

CERTIFIED THIS DATE _____

_____ FOR THE DIRECTOR

MONTGOMERY COUNTY PLANNING COMMISSION

APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

30 0 15 30
SCALE IN FEET

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

MICHAEL SZURA
REGISTERED LANDSCAPE ARCHITECT PA Lic. LA002533

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
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ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project	AMBLER CROSSINGS
	AMBLER BOROUGH MONTGOMERY COUNTY PENNSYLVANIA
Drawing Title	LANDSCAPE PLAN
Project No.	240025501
Date	4-9-13
Scale	1"=30'
Drawn By	RG
Drawing No.	LP-101
	Sheet 22 of 25

SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501

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GENERAL LANDSCAPE PLANTING NOTES:

PLANTING MATERIALS

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.

2. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.

3. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS IN SAME SIZE SHOULD BE SIMILAR IN FORM, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.

4. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.

5. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.

PLANTING SOILS

1. REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON-SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON-SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS

2. SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS, MARSHES OR CONTAMINATED SITES.

3. IF DEPTH OF PLANTING SOILS AND TOPSOIL IS NOT INDICATED IN PLANS OR DETAILS, A MINIMUM 18" DEPTH SHALL BE PROVIDED FOR ALL TREES AND LARGE SHRUBS; MINIMUM 12" DEPTH SHALL BE PROVIDED FOR GROUNDCOVERS, HERBACEOUS AND MEADOW OR ORNAMENTAL GRASS AREAS AND A MINIMUM 6" LAYER SHALL BE INSTALLED IN ALL LAWN AREAS. TOPSOIL AND PLANTING SOIL DEPTH INDICATED ON PLANS AND PLANTING DETAILS AND NARRATIVE SPECIFICATIONS SHALL GOVERN DEPTH WHEN PROVIDED.

4. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.

5. IF THE QUANTITY OF SOILS FROM THE SITE IS NOT ADEQUATE TO FILL PLANTING AREAS TO THE DEPTH INDICATED IN THE PLANS AND DETAILS, CONTRACTOR SHALL FURNISH PLANTING SOILS THAT ARE FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER AND COMPLY WITH THE FOLLOWING CRITERIA
-SOILS SHALL MEET ALL APPLICABLE SOIL REMEDIATION STANDARDS
-ORGANIC CONTENT: 2-5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS
-SOLUBLE SALTS: LESS THAN 0.5 MM HOS/CM
-SOIL PH: 4.5-7% TO BE AMENDED PER SOIL TEST RESULTS
-PHYSICAL (SIEVE) ANALYSIS/ SOIL TEXTURE
SAND: 40-60% SILT: 25-60% CLAY: 5-20%
-NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE.

6. ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULTS SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS, THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE.

7. IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE, WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED, PH RANGE OF 6-8; MOISTURE CONTENT 35-55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL; FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER

8. SCARIFY AND/OR TILL ALL COMPACTED SUBSOILS PRIOR TO ADDING PLANTING SOIL OR TOPSOIL. PLANTING SOILS AND TOPSOIL SHALL BE PLACED IN 12-18" LIFTS THAT ARE LOOSELY COMPACTED. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION.

DELIVERY, STORAGE, AND HANDLING

1. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.

2. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP OR BREAK BALLED STOCK DURING DELIVERY OR HANDLING.

3. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOT BALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING, IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8" INTO THE PLANTING HOLE. WITH CONTAINER-GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.

4. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.

INSTALLATION

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.

2. THE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.

3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.

4. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.

5. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.

6. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.

7. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.

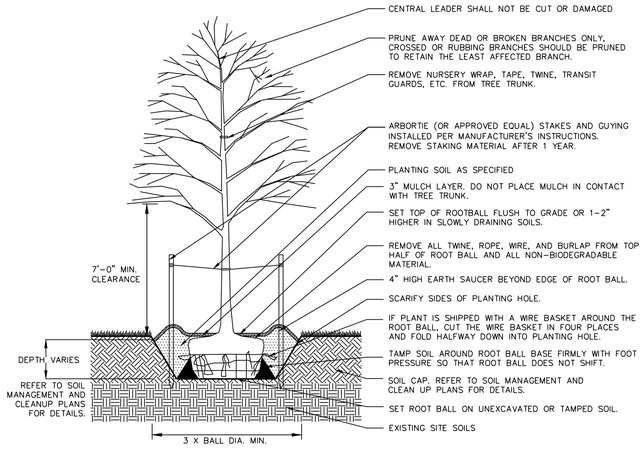
8. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.

9. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.

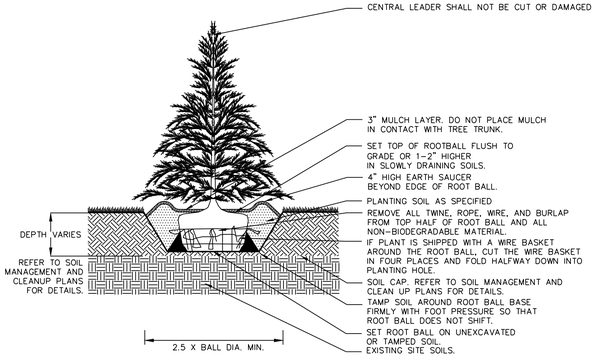
10. AFTER COMPLETION OF A PROJECT, ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A SHREDDED HARDWOOD BARK OR APPROVED EQUAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.

GUARANTEE

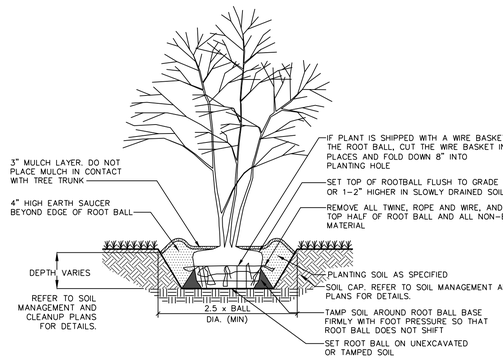
1. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF ONE YEAR FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.



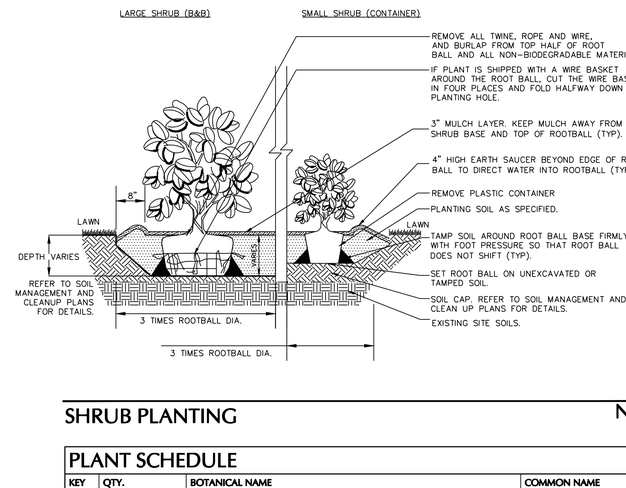
DECIDUOUS TREE PLANTING N.T.S.



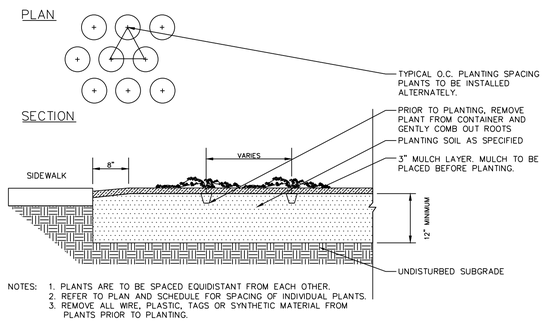
EVERGREEN TREE PLANTING N.T.S.



MULTI-STEMMED TREE PLANTING N.T.S.



SHRUB PLANTING N.T.S.



GROUNDCOVER/ PERENNIAL PLANTING N.T.S.

LAWN SEED NOTES:

1. PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER THAN 2" DIAMETER.
2. THE FOLLOWING SEED MIX SHALL BE SOWN AT THE RATES AS DEPICTED:

RED FESCUE	1 1/2 LBS./1,000 SF
PERENNIAL RYEGRASS	1 LBS./1,000 SF
KENTUCKY BLUEGRASS	1 1/2 LBS./1,000 SF
SPREADING FESCUE	1 LBS./1,000 SF

3. SEED MIX SHALL BE MULCHED WITH SALT HAY OR UNROTTED SMALL GRAIN STRAW AT A RATE OF 2 TONS/AC OR 90 LBS/1,000 SF
4. SEEDING DATES FOR THIS MIXTURE SHALL BE AS FOLLOWS:
SPRING: APRIL 1 - MAY 31
FALL: AUGUST 16 - OCTOBER 31
5. GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR TO IRRIGATE SEEDED AREA UNTIL AN ACCEPTABLE STAND OF COVER IS ESTABLISHED BY OWNER.

TREE AND SHRUB TRANSPLANTING NOTES:

1. REFER TO LANDSCAPE PLAN FOR LOCATION OF TRANSPLANTED PLANTS.
2. TRANSPLANTING SHALL CONSIST OF ON-SITE OR OFF-SITE TRANSPLANTING OF EXISTING TREES AND OTHER PLANT MATERIALS FROM PROPOSED CONSTRUCTION AREAS TO PERMANENT POSITIONS AS NOTED ON THE DRAWINGS.
3. DIGGING, WRAPPING, AND HANDLING: TREES AND OTHER PLANT MATERIALS SHALL BE DUG AND PREPARED FOR MOVING IN A MANNER THAT WILL NOT CAUSE DAMAGE TO BRANCHES, SHAPE, ROOT SYSTEM, AND DEVELOPMENT.
4. TIME OF PLANTING AND TRANSPLANTING: UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT, EVERGREEN MATERIAL SHALL BE TRANSPLANTED FROM APRIL 1ST TO MAY 1ST, AND FROM SEPTEMBER 1ST TO OCTOBER 15TH. DECIDUOUS MATERIAL SHALL BE TRANSPLANTED FROM MARCH 1ST TO MAY 1ST AND FROM OCTOBER 15TH TO DECEMBER 1ST.
5. BALLED AND BURLAPPED PLANTS:
i. BALLS SHALL BE FIRMLY WRAPPED WITH BURLAP OR ACCEPTED CLOTH SUBSTITUTE.
ii. NO BALLED PLANT WILL BE ACCEPTABLE IF THE BALL IS CRACKED AND BROKEN OR IF THE STEM OR TRUNK IS LOOSE IN THE BALL, EITHER BEFORE OR DURING TRANSPLANTING.
iii. ROOT BALL SHALL BE HELD TOGETHER WITH DRUM LACING USING THREE-PLY SISAL.
iv. BALLED PLANTS SHALL BE LIFTED AND HANDLED FROM THE BOTTOM OF THE BALL.
v. PROTECT BALL AND DELIVER TO THE SITE, PLANT IMMEDIATELY, AND WATER THOROUGHLY.
vi. WIRE CAGED BALLS ARE NOT ACCEPTABLE.
vii. ROOT BALL SIZE SHALL BE AS NOTED IN THIS DOCUMENT.
6. RELOCATING MATERIAL:
i. RELOCATED PLANT MATERIALS SHALL BE PLANTED ACCORDING TO PROCEDURES DESCRIBED FOR NEW MATERIAL, SECTION 02900. VERIFY FINAL GRADES HAVE BEEN ESTABLISHED BEFORE PLANTING OPERATIONS. ALL PLANTS SHALL STAND, AFTER SETTLEMENT, AT THE SAME LEVEL AT WHICH THEY HAVE GROWN.
ii. ENSURE PROPOSED PLANTING PITS DRAIN BY TEST-FILLING WITH WATER BEFORE TRANSPLANTATION.
iii. CONTINUE WATERING AND CARING FOR RELOCATED MATERIAL AS SPECIFIED.
iv. MULCH TREE AND PLANTING PIT AREAS TO REDUCE WEEDS, DISCOURAGE FOOT TRAFFIC, CONSERVE MOISTURE, AND MINIMIZE TEMPERATURE FLUCTUATIONS.
v. WRAP TREE TRUNKS AND STRUCTURAL BRANCHES OF THIN-BARKED TREES TO PROTECT AGAINST SUN SCALD AND DEHYDRATION. RETAIN THROUGH AT LEAST ONE GROWING SEASON, AND THROUGH COLD SEASON.
vi. FEED WITH A DILUTED SOLUTION OF N-P-K WITH A SOLID NEEDLE TO PROVIDE WATER, AIR AND NUTRIENTS.
vii. WHERE FOLIAGE IS DESICCATED OR SLOW TO REGENERATE, SPRAY WITH A SOLUBLE TYPE OF FOLIAGE FEEDER.
viii. AT TIME OF PLANTING, FILL AIR POCKETS AND KEEP ROOTS, ESPECIALLY FEEDER ROOTS, MOIST, LIVE AND HEALTHY. USE SOIL NEEDLES FOR WATERING NEW TRANSPLANTS.
7. WATERING
i. FOLLOWING TRANSPLANTATION, THE SOIL AROUND EACH PLANT SHALL BE THOROUGHLY SATURATED WITH WATER AND SHALL BE THOROUGHLY WATERED AS SEASONABLE CONDITIONS REQUIRE THROUGHOUT THE ENTIRE MAINTENANCE PERIOD.
ii. PROVIDE MANUAL WATERING OF RELOCATED PLANT MATERIALS FOR ENTIRE MAINTENANCE PERIOD. IF USED, CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL OF ALL TEMPORARY WATERING SYSTEMS AFTER WATERING PERIOD.

NOTE: ALL SITEWORK, OR ANY ACTIVITY WITH THE POTENTIAL TO DISTURB SUBSOILS, SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED SOIL MANAGEMENT AND CLEANUP PLANS FOR THE SITE.

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREE(S)						
AROG	12	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2 1/2-3" CAL.	B+B	-
GBAG	11	GINKGO BILOBA 'AUTUMN GOLD'	MAIDENHAIR TREE	2 1/2-3" CAL.	B+B	-
TA	13	TILIA AMERICANA	BASSWOOD	2 1/2-3" CAL.	B+B	-
ORNAMENTAL TREE(S)						
AGAB	14	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	14-16'	B+B	-
CCFP	1	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	1 1/2-2" CAL.	B+B	-
CLCC	7	CRATAEGUS LAEVIGATA 'CRIMSON CLOUD'	CRIMSON CLOUD HAWTHORN	1 1/2-2" CAL.	B+B	-
MV	8	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	8-10'	B+B	-
EVERGREEN TREE(S)						
JV	8	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	8-10'	B+B	-
EVERGREEN SHRUB(S)						
ICGL	146	ILEX CRENATA 'GREEN LUSTER'	GREEN LUSTER HOLLY	24-30"	#3 CAN	-
IGC	274	ILEX GLABRA COMPACTA	DWARF INKBERRY HOLLY	24-30"	#5 CAN	-
TON	4	THUJA OCCIDENTALIS 'NIGRA'	DARK AMERICAN ARBORVITAE	5-6'	B+B	-
VR	22	VIBURNUM X RHYTIDOPHYLLUM	LEATHERLEAF VIBURNUM	3-4'	B+B	-
DECIDUOUS SHRUB(S)						
HQ	49	HYDRANGEA QUERCIFOLIA	OAKLEAF HYDRANGEA	24-30"	#5 CAN	-
IV	20	ITEA VIRGINICA 'HENRY'S GARNET'	GARNET SWEETSPIRE	24-30"	#5 CAN	-
RA	80	RHUS AROMATICA	SUMAC	18-24"	#3 CAN	-
GROUND COVER						
DP	1477	DENNSTAEDTIA PUNCTILOBULA	EASTERN HAYSCENTED FERN	1 QUART	CONTAINER	spaced @ 18" o.c.
JPN	353	JUNIPERUS PROCUMBENS 'NANA'	JAPANESE GARDEN JUNIPER	12-15" SPRD.	#2 CAN	spaced @ 36" o.c.
LSPI	3619	LIRIOPE SPICATA	CREEPING LILYTURF	1 QUART	CONTAINER	spaced @ 12" o.c.
PERENNIAL(S)						
RFC	85	RUDBECKIA FULGIDA 'GOLDSTURM'	GOLDSTURM/BLACK-EYED SUSAN	1 QUART	CONTAINER	spaced @ 24" o.c.
ORNAMENTAL GRASS(ES)						
PAH	189	PENNISETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	1 QUART	CONTAINER	spaced @ 24" o.c.
PVHM	163	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	1 QUART	CONTAINER	-
VINE(S)						
HAPE	3	HYDRANGEA ANOMALA PETIOLARIS	CLIMBING HYDRANGEA	1 QUART	CONTAINER	-
PAT	529	PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY	1 QUART	CONTAINER	-

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

MICHAEL SZURA
REGISTERED LANDSCAPE ARCHITECT PA Lic. LA002533

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
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Drawing Title
LANDSCAPE NOTES AND DETAILS

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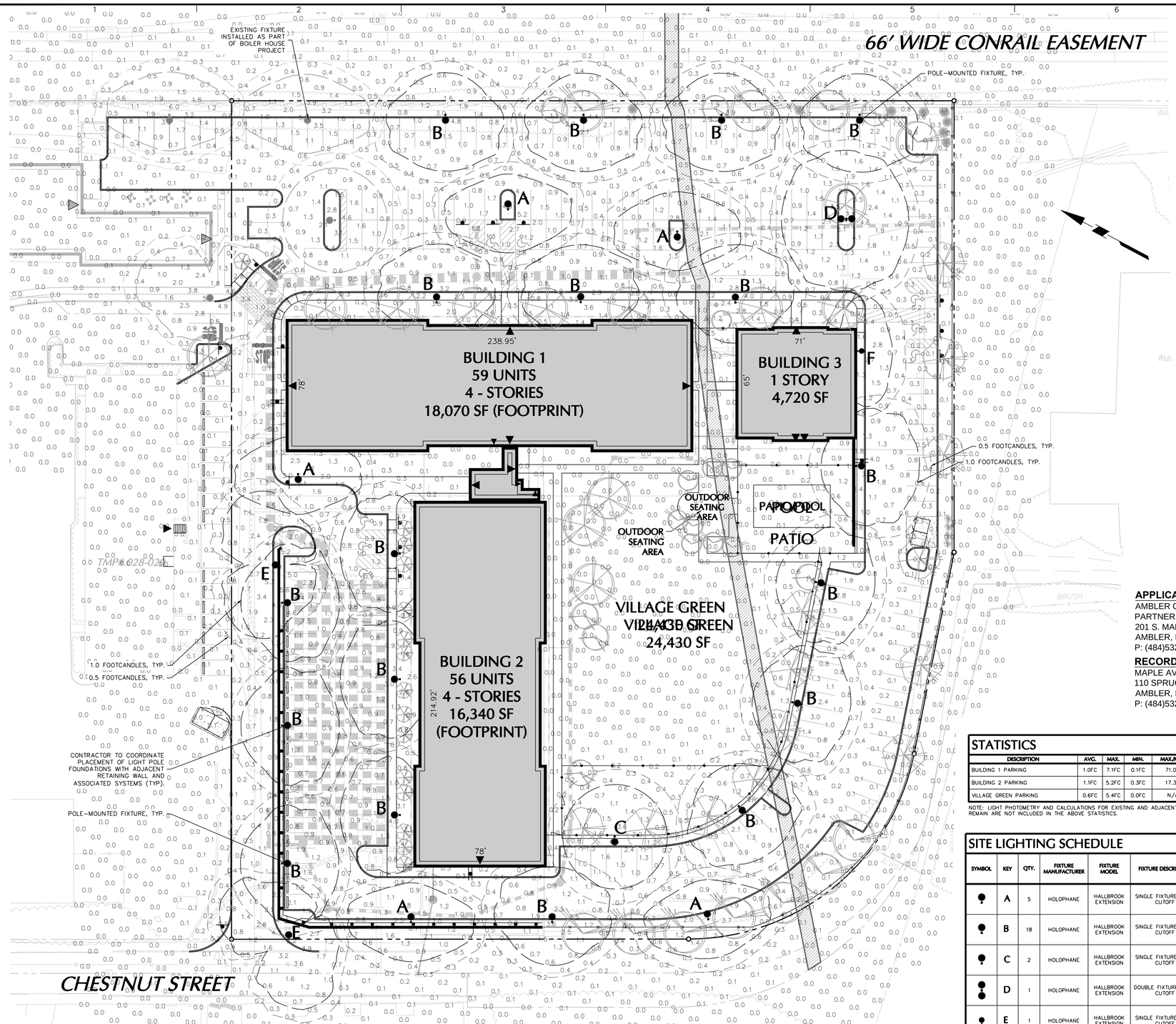


APPLICANT / EQUITABLE OWNER:
AMBLER CROSSINGS DEVELOPMENT PARTNERS, LP
201 S. MAPLE AVENUE, SUITE 100
AMBLER, PA 19002
P: (484)532-7830

RECORD OWNER:
MAPLE AVE PARK PARTNERS, LLP
110 SPRUCE ROAD
AMBLER, PA 19002
P: (484)532-7830

GENERAL LIGHTING NOTES:

1. POINT-BY-POINT CALCULATIONS PROVIDED WITHIN HAVE BEEN PREPARED IN ACCORDANCE TO IESNA STANDARDS AND IN CONSIDERATION OF THE VARIABLES WITHIN THESE NOTES AND SITE LIGHTING SCHEDULE. THE VALUES SHOWN ON THE PLANS ARE NOT AN INDICATION OF THE INITIAL LIGHT INTENSITIES OF THE LAMPS. THESE VALUES ARE AN APPROXIMATION OF THE MAINTAINED INTENSITIES DELIVERED TO THE GROUND PLANE USING INDUSTRY ACCEPTABLE LIGHT LOSS FACTORS (LLF) WHICH COVER LAMP DEGRADATION AND NATURAL BUILDUP ON THE FIXTURE LENS. THE LIGHTING PLAN IS DESIGNED WITH AN INDUSTRY ACCEPTABLE LLF TO ENSURE ADEQUATE LIGHT INTENSITIES OVER YEARS OF USE AND WEAR. MINOR VARIATIONS IN TOPOGRAPHY, PHYSICAL OBSTRUCTIONS, AMBIENT OR ADJACENT LIGHT SOURCES AND/OR OTHER POTENTIAL IMPACTS HAVE NOT BEEN INCLUDED IN THESE CALCULATIONS. THEREFORE, AS-BUILT LIGHT INTENSITIES MAY VARY, IN EITHER DIRECTION, FROM WHAT IS EXPLICITLY PORTRAYED WITHIN THESE DRAWINGS.
2. PROVIDE A CONCRETE BASE FOR EACH LIGHT POLE AT THE LOCATIONS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH PROJECT PLANS AND SPECIFICATIONS RELATING DIRECTLY TO CAST-IN-PLACE CONCRETE.
3. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND FEEDER CABLE FOR EXTERIOR LIGHTING WITH EXISTING AND PROPOSED UTILITIES, SITE DRAINAGE SYSTEMS, AND PAVING. CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE SHOULD ANY UTILITIES, NOT SHOWN ON THE PLANS, BE FOUND DURING EXCAVATIONS.
4. CONTRACTOR TO OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR IMPROPER CONNECTIONS AND OPERATION.
5. AIM AND ADJUST ALL LUMINAIRES TO PROVIDE ILLUMINATION LEVELS AND DISTRIBUTION AS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.
6. CONTRACTOR TO COORDINATE INSTALLATION OF ALL THE WALL MOUNTED FIXTURES AND ELECTRICAL CONNECTIONS TO SITE STRUCTURE(S) WITH BUILDING MEP, ARCHITECT, AND/OR OWNER.
7. INSTALLATION OF ALL LIGHTING FIXTURES, POLES, FOOTINGS, AND FEEDER CABLE TO BE COORDINATED WITH ALL SITE WORK TRADES TO AVOID CONFLICT WITH FINISHED AND PROPOSED WORK.
8. POINT SPACING ON PLACE OF CALCULATION IS 10 FT. LEFT TO RIGHT AND 10 FT. TOP TO BOTTOM. POINT BY POINT CALCULATIONS ARE BASED ON A 0.72 MAINTENANCE FACTOR.
9. ALL SITE LIGHTING RELATED WORK AND MATERIALS SHALL COMPLY WITH CITY, COUNTY, AND OTHER APPLICABLE GOVERNING AUTHORITY REQUIREMENTS.
10. SITE ELECTRICAL CONTRACTOR TO COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
11. SITE ELECTRICAL CONTRACTOR TO COORDINATE POWER SOURCE WITH LIGHT FIXTURES TO INSURE ALL SITE LIGHTING IS OPERATING EFFECTIVELY, EFFICIENTLY AND SAFELY.
12. SITE ELECTRICAL CONTRACTOR SHALL CONFIRM THAT LIGHT FIXTURES MATCH SPECIFICATIONS ON THE PLANS.
13. REFER TO ELECTRIFICATION PLAN FOR PROVIDING ADEQUATE POWER FOR SITE LIGHTING.
14. SITE ELECTRICAL CONTRACTOR SHALL EXAMINE AND VERIFY THAT SOIL CONDITIONS ARE SUITABLE TO SUPPORT LOADS EXERTED UPON THE FOUNDATIONS DURING EXCAVATION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNSATISFACTORY CONDITIONS.
15. POLE FOUNDATIONS SHALL NOT BE POURED IF FREE STANDING WATER IS PRESENT IN EXCAVATED AREA.
16. ELECTRICIAN AND INSTALLATION OF WALL MOUNTED FIXTURES SHALL BE COORDINATED WITH THE ARCHITECTURAL, STRUCTURAL, AND SITE DRAWINGS FOR SAFETY AND TO PROVEN EXPOSED WIRING.
17. POST-APPROVAL ALTERATIONS TO LIGHTING PLANS OR INTENDED SUBSTITUTIONS FOR APPROVED LIGHTING EQUIPMENT SHALL BE SUBMITTED TO THE BOROUGH FOR REVIEW AND APPROVAL.
18. THE BOROUGH RESERVES THE RIGHT TO CONDUCT POST-INSTALLATION INSPECTIONS TO VERIFY COMPLIANCE WITH THE ORDINANCE REQUIREMENTS AND APPROVED LIGHTING PLAN COMMITMENTS AND, IF DEEMED APPROPRIATE BY THE BOROUGH, TO REQUIRE REMEDIAL ACTION AT NO EXPENSE TO THE BOROUGH.
19. ALL EXTERIOR LIGHTING SHALL MEET IESNA FULL-CUTOFF CRITERIA UNLESS OTHERWISE APPROVED BY THE BOROUGH.
20. THE INSTALLER SHALL NOTIFY THE BOROUGH TO ARRANGE FOR INSPECTION AND APPROVAL OF ALL EXTERIOR LIGHTING, INCLUDING BUILDING-MOUNTED LIGHTING, PRIOR TO ITS INSTALLATION.
21. LIGHTING SUBSTITUTION REQUIREMENTS:

    ALL LIGHTING SUBSTITUTIONS MUST BE MADE WITHIN 14 DAYS PRIOR TO THE BID DATE TO PROVIDE AMPLE TIME FOR REVIEW AND TO ISSUE AN ADDENDUM INCORPORATING THE SUBSTITUTION WITH THE FOLLOWING REQUIREMENTS:

    A. ANY SUBSTITUTION TO LIGHTING FIXTURES, POLES, ETC. MUST BE APPROVED BY THE OWNER, ENGINEER AND TENANTS.

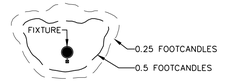
    B. COMPUTER PREPARED PHOTOMETRIC LAYOUT OF THE PROPOSED LIGHTED AREA WHICH INDICATES BY ISOFOOTCANDLE THE SYSTEM'S PERFORMANCE. ANY COST ASSOCIATED WITH REVIEW AND/OR APPROVAL OF THE SUBSTITUTIONS SHALL BE ENTIRELY BORNE BY THE CONTRACTOR.

    C. A PHOTOMETRIC REPORT FROM A NATIONAL INDEPENDENT TESTING LABORATORY WITH REPORT NUMBER, DATE, FIXTURE CATALOG NUMBER, LUMINAIRE AND LAMP SPECIFICATIONS; IES CALCULATIONS, CANDLEPOWER TABULATIONS, ZONE LUMEN SUMMARY, ISOLUX PLOT, AND CATALOGUE CUTS. CATALOGUE CUTS MUST IDENTIFY, BUT NOT LIMITED TO, OPTICS, LAMP TYPE, DISTRIBUTION TYPE, REFLECTOR, LENS, BALLASTS, WATTAGE, VOLTAGE, FINISH AND HOUSING DESCRIPTION.

    D. POLE MANUFACTURER AASHTO CALCULATIONS INDICATING THE POLE AND ANCHOR BOLTS BEING SUBMITTED ARE CAPABLE OF SUPPORTING THE POLE AND FIXTURE SYSTEMS BEING UTILIZED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

    E. THE UNDERWRITERS LABORATORY LISTING AND FILE NUMBER FOR THE SPECIFIC FIXTURE(S) TO BE UTILIZED.

    F. A COLOR PHOTOGRAPH THAT CLEARLY SHOWS THE REPLACEMENT FIXTURE POLE MOUNTED, THE FIXTURE'S COLOR, FINISH, AND PHYSICAL CHARACTERISTICS.
22. PHOTOMETRIC LIGHTING TEMPLATE:



NOTE: THE PHOTOMETRIC TEMPLATE REPRESENTS LIGHT THROW FOR EACH INDIVIDUAL FIXTURE. IT DOES NOT REPRESENT LIGHT COMING FROM OTHER SOURCES.

STATISTICS

DESCRIPTION	AVG.	MAX.	MIN.	MAX./MIN.	AVG./MIN.
BUILDING 1 PARKING	1.0FC	7.1FC	0.1FC	71.0:1	9.9:1
BUILDING 2 PARKING	1.1FC	5.2FC	0.3FC	17.3:1	3.4:1
VILLAGE GREEN PARKING	0.6FC	5.4FC	0.0FC	N/A	N/A

NOTE: LIGHT PHOTOMETRY AND CALCULATIONS FOR EXISTING AND ADJACENT LIGHTING TO REMAIN ARE NOT INCLUDED IN THE ABOVE STATISTICS.

SITE LIGHTING SCHEDULE

SYMBOL	KEY	QTY.	FIXTURE MANUFACTURER	FIXTURE MODEL	FIXTURE DESCRIPTION	FIXTURE MOUNTING HEIGHT	LAMP	OPTICS	LUMENS	LLF	IES FILE	FIXTURE CATALOGUE NO.	POLE MANUFACTURER	POLE DESCRIPTION	POLE LENGTH	POLE CATALOGUE NO.
	A	5	HOLOPHANE	HALLBROOK EXTENSION	SINGLE FIXTURE: FULL CUTOFF	15'	175W METAL HALIDE	TYPE III	14,000	0.72	GE175MH00XS21XX.IES	GE-175PM-MA-1-B-S-21	HOLOPHANE	14' HIGH CAST ALUMINUM PRINCETON SERIES POLE WITH VALENCIA CROSS ARM	14'	Z-P-1555X18-CA-B K-GW-VL27/1CXXH-GWLF/200-SCA
	B	18	HOLOPHANE	HALLBROOK EXTENSION	SINGLE FIXTURE: FULL CUTOFF	15'	175W METAL HALIDE	TYPE IV	14,000	0.72	GE175MH00XS26NX.IES	GE-175PM-MA-1-B-S-26	HOLOPHANE	14' HIGH CAST ALUMINUM PRINCETON SERIES POLE WITH VALENCIA CROSS ARM	14'	Z-P-1555X18-CA-B K-GW-VL27/1CXXH-GWLF/200-SCA
	C	2	HOLOPHANE	HALLBROOK EXTENSION	SINGLE FIXTURE: FULL CUTOFF	15'	175W METAL HALIDE	TYPE V	14,000	0.72	GE175MH00XS25XX.IES	GE-175PM-MA-1-B-S-25	HOLOPHANE	14' HIGH CAST ALUMINUM PRINCETON SERIES POLE WITH VALENCIA CROSS ARM	14'	Z-P-1555X18-CA-B K-GW-VL27/1CXXH-GWLF/200-SCA
	D	1	HOLOPHANE	HALLBROOK EXTENSION	DOUBLE FIXTURE: FULL CUTOFF	15'	175W METAL HALIDE	2@ TYPE IV	28,000	0.72	GE175MH00XS26NX.IES	GE-175PM-MA-1-B-S-25	HOLOPHANE	14' HIGH CAST ALUMINUM PRINCETON SERIES POLE WITH DOUBLE VALENCIA CROSS ARM	14'	Z-P-1555X18-CA-B K-GW-VL54/2-CA/BK-GWL F/200-SCA
	E	1	HOLOPHANE	HALLBROOK EXTENSION	SINGLE FIXTURE: FULL CUTOFF	15'	175W METAL HALIDE	TYPE V	14,000	0.72	GE175MH00XS25XX.IES	GE-175PM-MA-1-B-S-25	HOLOPHANE	BUILDING MOUNTED FIXTURE WITH VALENCIA CROSS ARM	13'	VL27/1-CA/BK
	F	2	SPRING CITY ELECTRICAL MFG.	BOROUGH HORIZONTAL	SINGLE FIXTURE: CUTOFF	14'-6"	150W HIGH PRESSURE SODIUM	TYPE III	12,800	0.72	BRH-PBRO-HC3.IES	ALMBRH-PBRO-HC3	SPRING CITY ELECTRICAL MFG.	CAST IRON MADISON ST. LOUIS TOP POLE. POLE FINISH: SHERWIN WILLIAMS ACROLON GREEN-BLACK	12'-8"	--

NOTES:
1. REFER TO SHEET LL-501 FOR SITE LIGHTING NOTES, DETAILS AND FIXTURE CUTSHEETS.
2. ALL SITE WORK, OR ANY ACTIVITY WITH THE POTENTIAL TO DISTURB SUBSOILS, SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED SOIL MANAGEMENT AND CLEANUP PLANS FOR THE SITE.
3. CONTRACTOR SHALL INSTALL AUTOMATED SWITCHES ON SITE LIGHTING SO THAT PROPOSED LIGHT LEVELS ARE DIMMED TO 25% OF THOSE SHOWN ON THIS PLAN. DIMMING SHALL OCCUR BETWEEN THE HOURS OF 11 PM AND 6 AM.

REVISIONS		
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.
Date	Description	No.

MICHAEL SZURA
REGISTERED LANDSCAPE ARCHITECT PA Lic. LA002533

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

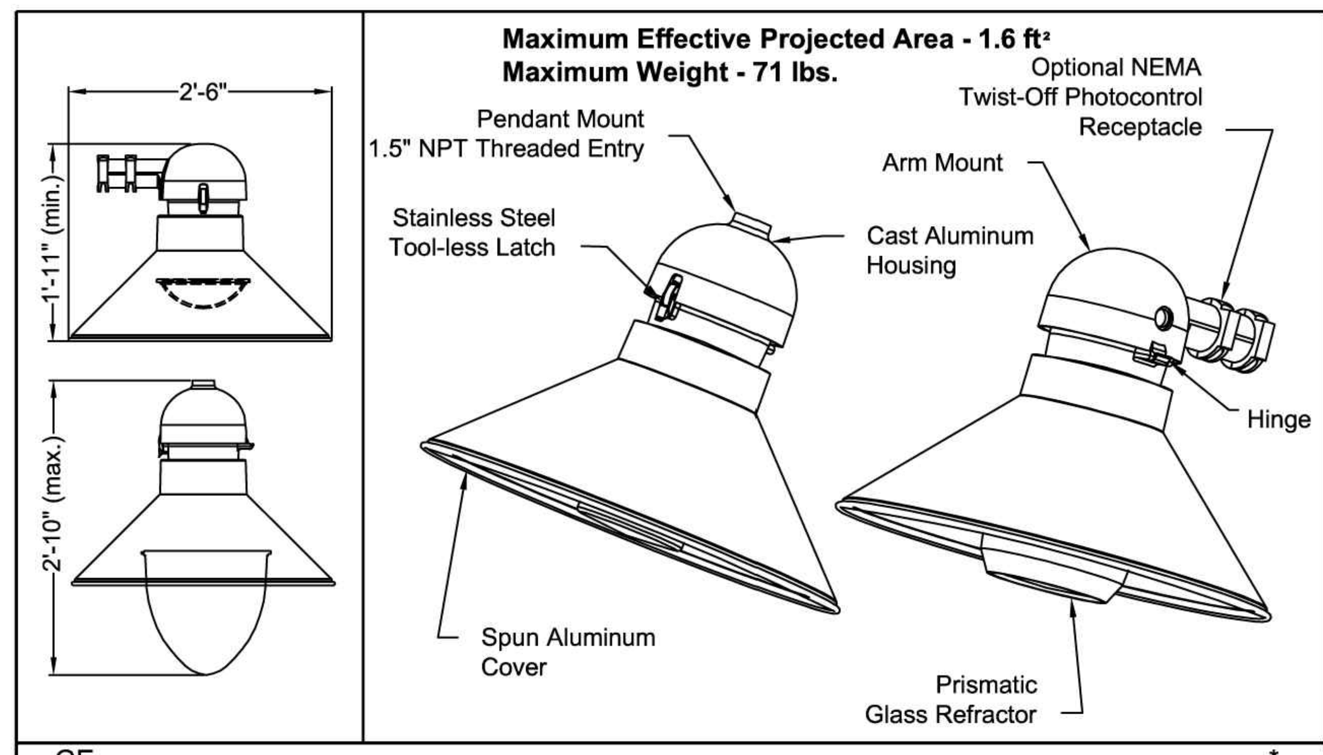
Project: AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title: SITE LIGHTING PLAN

Project No.	240025501
Date	4-9-13
Scale	1"=30'
Drawn By	RG
Drawing No.	LL-101
Sheet	24 of 25

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-LL-101-0101.dwg Date: 10/2/2013 Time: 16:20 User: jmoninghoff Style Table: Langan.stb Layout: LL-101

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501



GlasWerks® II Hallbrook® Ext.

DECORATIVE OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An Acuity Brands Company

ORDERING INFORMATION:

GE

GE	15AHP	12	2	B	S	51	N	*

COVER TYPE
GE = Hallbrook Extended

BALLAST TYPE
(MOGUL BASE)
050HP = 50W HPS (N/A IN 347V)
070HP = 70W HPS
100HP = 100W HPS
15AHP = 150W 55V HPS
175MH = 175W MH
175PM = 175W PM
250HP = 250W HPS
250PM = 250W PM
320PM = 320W PM (Compact Lamp Only)
350PM = 350W PM (Compact Lamp Only)
400HP = 400W HPS
400PM = 400W PM (Compact Lamp Only)
(MEDIUM BASE)
50DHP = 50W HPS (N/A IN 347V)
70DHP = 70W HPS
10DHP = 100W HPS
15DHP = 150W 55V HPS
70DMH = 70W MH (N/A IN 347V, 480V)
10DMH = 100W MH (N/A IN 347V, 480V)
15DMH = 150W MH (N/A IN 347V, 480V)
17DMH = 175W MH
17DPM = 175W PM
(INDUCTION)
055QL = 055W QL
085QL = 85QW QL
Available W/ 12, 20, 24, 27V
20, 20A, 9A Only

VOLTAGE
12 = 120 VOLT
20 = 208 VOLT
24 = 240 VOLT
27 = 277 VOLT
48 = 480 VOLT
34 = 347 VOLT
MA = MT (PREWIRED TO 120V)
MB = MT (PREWIRED TO 208V)
MC = MT (PREWIRED TO 240V)
MD = MT (PREWIRED TO 277V)

HOUSING STYLE
1 = Arm
2 = Pendant

HOUSING COLOR
A = AS SPECIFIED
B = BLACK
D = DARK GREEN (RAL6005)
E = BROWN GREE (RAL6008)
F = DARK GREEN (RAL6009)
H = DARK GREEN (RAL6012)
N = GREEN
Z = BRONZE

UPLIGHT
S = Standard
U = Uplight

CAST DOOR GUARD
(N/A with 919 & 920, 4094, HS, HA optics)
N = No Cast Guard
C = Vertical (Painted to Match Luminaire)
D = Vertical (Painted White)
E = Horizontal (Painted to Match Luminaire)
F = Horizontal (Painted White)
H = Door, Vertical & Horizontal Ribs (As Specified Paint)
V = Door, Vertical Ribs Only (As Specified Paint)

OPTICS
2A = 920 Large Sag, Asymmetric
20 = 920 Large Sag, Symmetric
21 = 4521 Large Cylindrical Glass, Wide Asymmetric
24 = 4524 Large Cylindrical Glass, Narrow Asymmetric 4 Way.
25 = 4525 Large Cylindrical Glass, Symmetric.
26 = 4526 Large Cylindrical Glass, Forward throw Asymmetric.
72 = 4172 Bowl Glass Narrow, Asymmetric (**Not Available w/ UPLIGHT**)
73 = 4173 Bowl Glass Wide, Asymmetric (**Not Available w/ UPLIGHT**)
75 = 4175 Bowl Glass, Symmetric (**Not Available w/ UPLIGHT**)
9A = 4094 Large Teardrop Glass, Forword Throw Asymmetric (**Not Available w/ UPLIGHT**)
HS= Flat Glass, Horizantal Lamp Square Symmetric (**Medium Base Only**) (**Not Available w/ UPLIGHT**)
HA= Flat Glass, Horizantal Lamp Square Asymmetric (**Medium Base Only**) (**Not Available w/ UPLIGHT**)

OPTIONS
SEE SHEET 2

ACCESSORIES
SEE SHEET 2

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ORDER #:
TYPE:
DRAWN: AFA
DATE: 6-16-06
DWG #: LUM_HALLBROOK_EXT
1 of 3

OPTIONS
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
P = PROTECTED STARTER FOR HPS UNITS ONLY
T= BOTH NEMA AND STARTER TOGETHER FOR HPS ONLY UNITS ONLY, NOT AVAILABLE WITH "P" OR "H".
NEMA050HP = NEMA LABEL 50 HPS
NEMA070HP = NEMA LABEL 70 HPS
NEMA100HP = NEMA LABEL 100 HPS
NEMA150HP = NEMA LABEL 150 HPS
NEMA070MH = NEMA LABEL 70 MH
NEMA100MH = NEMA LABEL 100 MH
NEMA150MH = NEMA LABEL 150 MH
NEMA175MH = NEMA LABEL 175 MH
NEMA100MV = NEMA LABEL 100 MV
NEMA175MV = NEMA LABEL 175 MV
PCTWSTL120 = DTL TWISTLOCK PHOTOCONTROL 120 VOLT
PCTWSTL12202427 = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
PCTWSTL480 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
PCTWSTSHRTCAP = SHORTING CAP
LEADS1.5FT10GA = 1.5 FEET OF PREWIRED LEADS
LEADS3FT10GA = 3 FEET OF PREWIRED LEADS
LEADS10FT10GA = 10 FEET OF PREWIRED LEADS
LEADS20FT10GA = 20 FEET OF PREWIRED LEADS
LEADS25FT10GA = 25 FEET OF PREWIRED LEADS
LEADS30FT10GA = 30 FEET OF PREWIRED LEADS

ACCESSORIES:
IG-5 = Plug-In Replacement Starter (HPS Only)
IG-6 = Plug-In Replacement Protected Starter (HPS Only)
IG-7 = Plug-In Replacement Starter kit for 70DMH, 10DMH and 15DMH units.

Specifications

GENERAL DESCRIPTION
The Euro styled luminaire consists of a prismatic glass optical assembly shielded by a flared cut-off reflector and a top mounted cast aluminum ballast assembly with a circumferential 1-1/2 inch reveal.

OPTICAL ASSEMBLY
The optical assembly consists of a thermal resistant annealed borosilicate glass refractor mechanically held in a formed aluminum door frame. The hinged door frame is attached to the spun cover with two tool-less screws and hinge. A cast aluminum vertical or horizontal guard door frame is not available on this series. The hinged door assembly allows easy access for re-lamping. Light from a vertical lamp is distributed by precisely molded refracting prisms to maximize utilization, uniformity and luminaire spacing. Thirteen unique refractors are available for symmetrical or asymmetric distribution.

BALLAST ASSEMBLY
The cast aluminum ballast housing, has a smooth domed contour. A terminal block is provided with a quick disconnect receptacle. The ballast housing is hinged with a tool-less latch to provide easy access to the ballast assembly. The unitized ballast assembly, containing the ballast and other electrical components, plugs into the quick disconnect receptacle. The ballast plate is attached with two tool-less screws. A nickel plated lamp grip socket of street lighting grade with a glazed porcelain body and the center contact backed by a coiled spring, is positioned mechanically to the ballast plate, placing the lamp at the light center of the prismatic glass refractor.
The pendant mount version has a 1-1/2 inch circumferential reveal. This housing has an integral 1-1/2 inch NPT threaded entry with stainless steel set screw.
The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

BALLASTS
(Refer to the Ballast Handbook for specific operating characteristics)
All HPS ballasts are High Power Factor Lag type.
175 watt Metal Halide (MH) ballasts are Peak Lead Autotransformer type. 70, 100, and 150 watt MH units are High Power Factor Lag type ballasts.

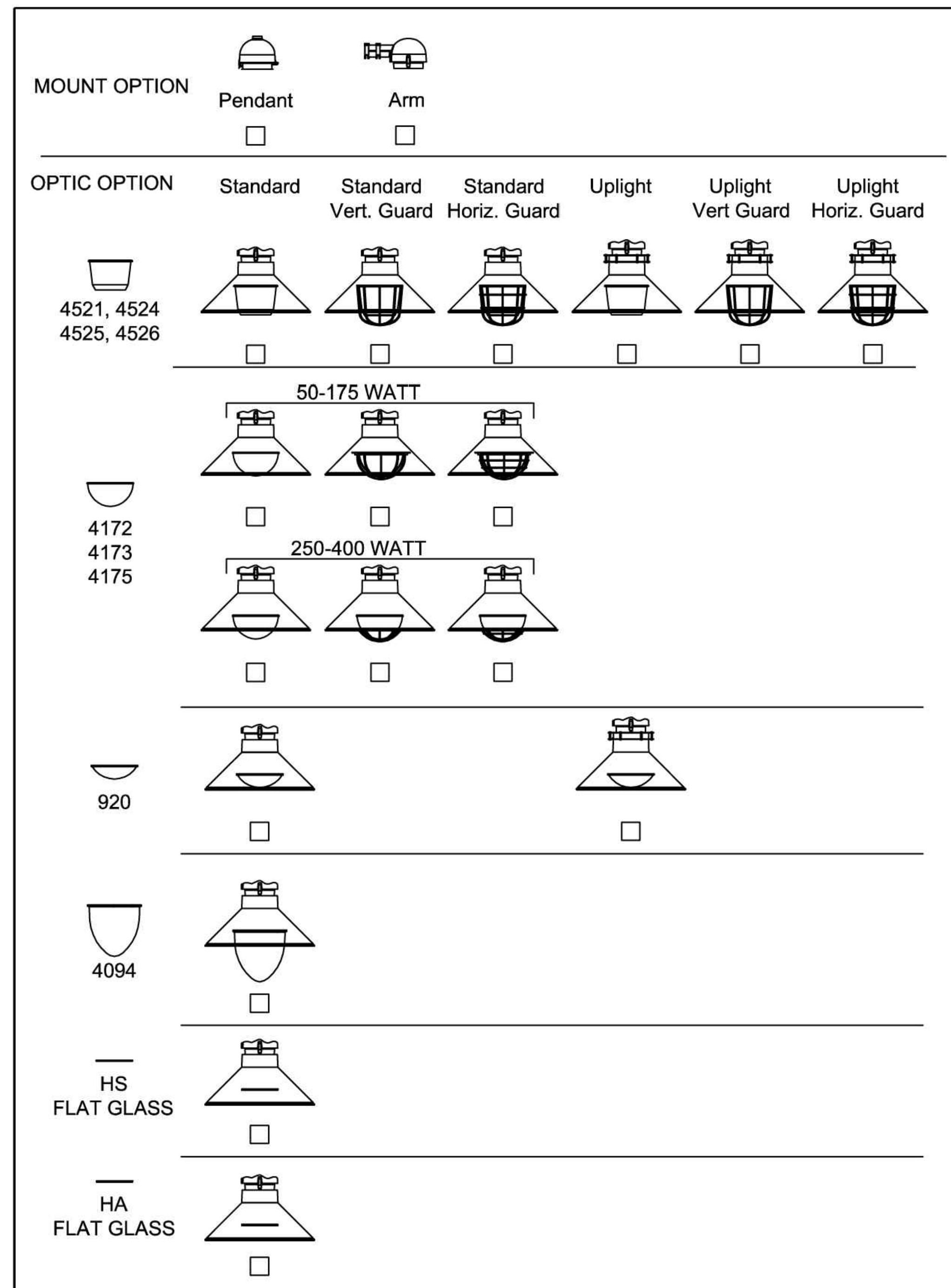
FINISH
The luminaire is finished with polyester powder paint applied after a seven stage pretreatment process to insure maximum durability.

GlasWerks® II Hallbrook® Ext.

DECORATIVE OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An Acuity Brands Company

ORDER #:
TYPE:
DRAWN: AFA
DATE: 6-16-06
DWG #: LUM_HALLBROOK_EXT
2 of 3



Mark Appropriate Box For Trim Option

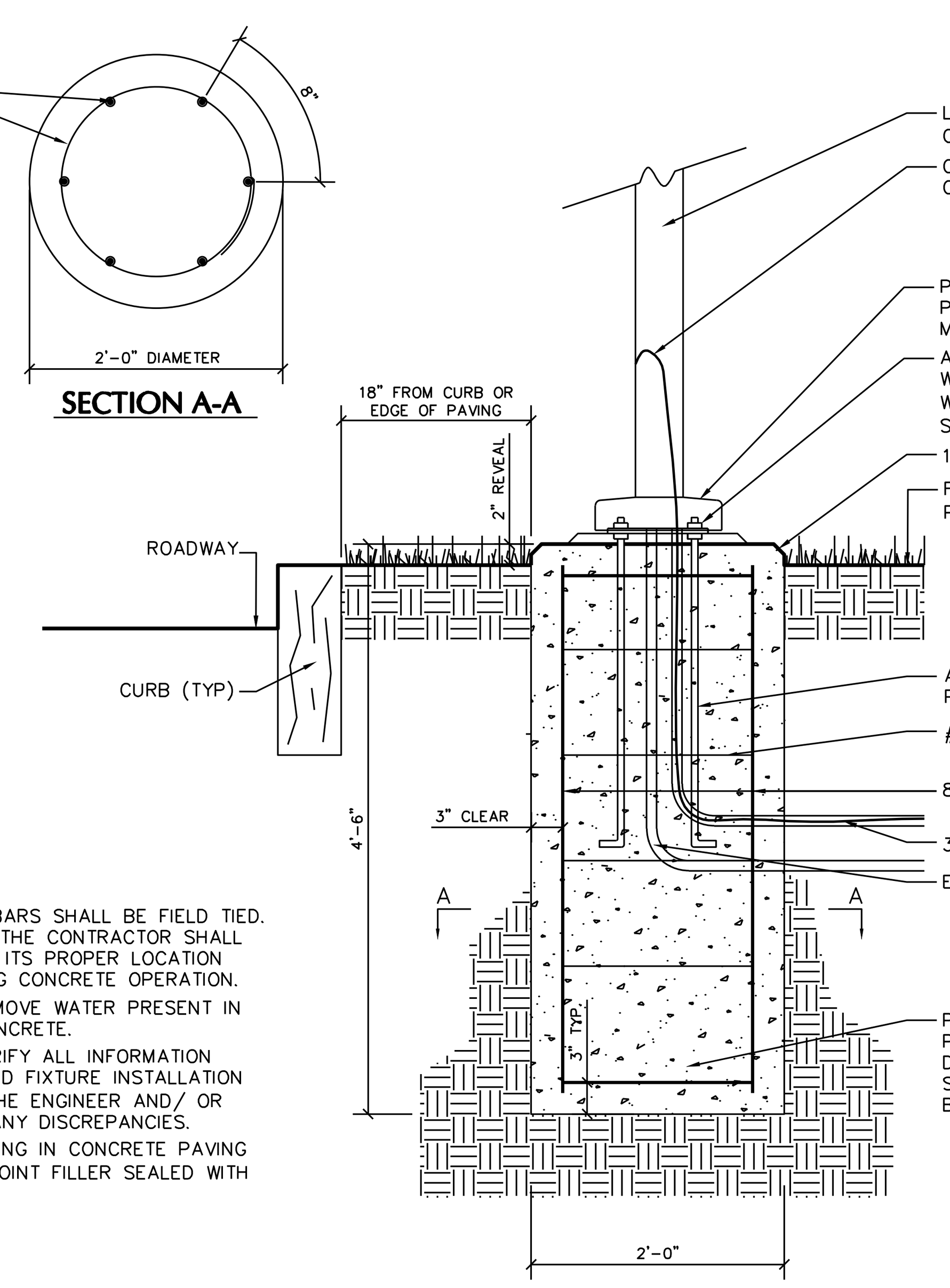
GlasWerks® II Hallbrook® Ext.

DECORATIVE OUTDOOR

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An Acuity Brands Company

ORDER #:
TYPE:
DRAWN: AFA
DATE: 6-16-06
DWG #: LUM_HALLBROOK_EXT
3 of 3

1 LIGHT FIXTURE
NTS



NOTES:
1. VERTICAL AND HORIZONTAL BARS SHALL BE FIELD TIED. WELDING IS NOT PERMITTED. THE CONTRACTOR SHALL SUPPORT REINFORCEMENT IN ITS PROPER LOCATION FROM THE FORMWORK DURING CONCRETE OPERATION.
2. THE CONTRACTOR SHALL REMOVE WATER PRESENT IN HOLE PRIOR TO POURING CONCRETE.
3. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO THE POLE AND FIXTURE INSTALLATION WITH THE MANUFACTURER. THE ENGINEER AND/ OR OWNER TO BE NOTIFIED OF ANY DISCREPANCIES.
4. INSTALLATION OF POLE FOOTING IN CONCRETE PAVING REQUIRES 1/2" EXPANSION JOINT FILLER SEALED WITH JOINT SEALANT.

NOTE: THE INFORMATION ILLUSTRATED IN THE LIGHT POLE FOUNDATION DETAIL HAS BEEN PROVIDED FOR GENERAL REFERENCE AND PRELIMINARY COST ESTIMATE PURPOSES. LIGHT POLE FOUNDATIONS SHOULD BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER BASED ON EXISTING SOIL CONDITIONS, LOCAL DESIGN STANDARDS AND MANUFACTURERS RECOMMENDATIONS.

2 LIGHT POLE FOUNDATION
NTS

Date	Description	No.
10-3-13	BOROUGH COMMENTS	2.
6-21-13	BOROUGH COMMENTS	1.

REVISIONS

MICHAEL SZURA
REGISTERED LANDSCAPE ARCHITECT PA Lic. LA002533

LANGAN
One West Broad Street, Suite 200, Bethlehem, PA 18018
T: 610.984.8500 F: 610.984.8501 www.langan.com
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
ABU DHABI ATHENS DOHA
DUBAI ISTANBUL
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project
AMBLER CROSSINGS
AMBLER BOROUGH
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title
SITE LIGHTING NOTES AND DETAILS

Project No. 240025501
Date 4-9-13
Scale N.T.S.
Drawn By RG

Drawing No.
LL-501

Filename: \\langan.com\data\BE\data5\240025501\Cadd Data - 240025501\SheetFiles\240025501-LL501-0101.dwg Date: 10/2/2013 Time: 16:20 User: jmoninghoff Style Table: Langan.stb Layout: LL-501

LANGAN
SUBMISSION DATE: 2013-10-03
PROJECT No. 240025501