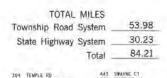


Case Study Concord Township, Delaware County

Nate Cline, PE Township Engineer, Pennoni



104 TEMPLE RD 105 BHINTON LAKE RD 306 KIRK RD 311 POLE CAT RD 117 SCHOOL HOUSE LA 119 FEATHER BEO LA FEATHER BED LA
SHAVERIGHER RU
MATTSON RO
RUBY RD
SCOTT HO
SPRING VALLEY RD
WATEN AY
BOLLING CIT
MOLLY LA
TRIMULE RO
TRIMULE RO
TOTAL ROOMS MILL RACE PL MATER MHEEL WAY COTTONWOOD LA MULBERRY LA FORMEST VIEW D GREEN CREEK LA 141 GREEN CHEEK LA
142 PATRICIA LA
143 FOX VALLET LA
144 HAWHIGHNE LA
145 BITTERSWEET CIR
146 BITTERSWEET DR
147 IVV LA
148 BOOD ROSE LA
149 DOGRODO LA
150 MERION DR BITTERSWEET OR

197 LA

9000 BOSE LA

000WG00 LA

MERICO DR

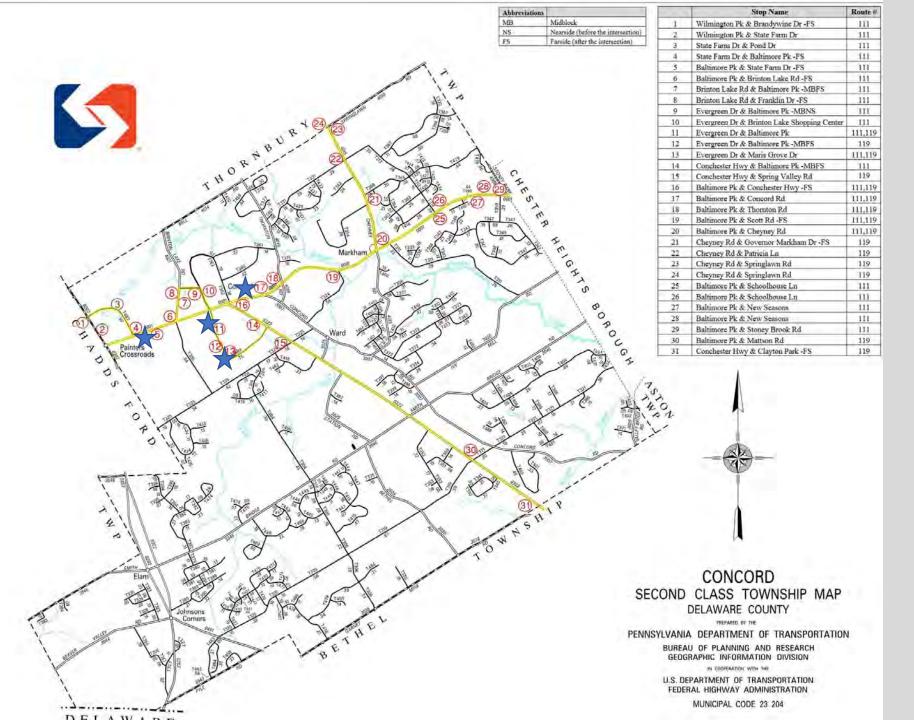
MARLBOROUGH LA
CAMBRIDGE DR

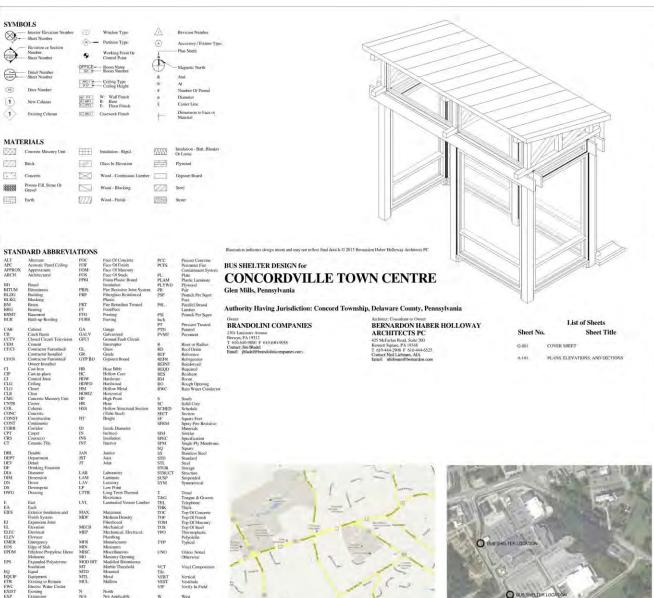
LEXINOTON LA
GOVERNOR MARKHAM DR

SUMMIT ST SUMMIT ST DAIN AV GRANDYWINE ST DOUGHERTY BLVD LACUME SY ALDON AY CONCHESTER RD HEMLOCK DR WENDY LA-WINDING WAY 366 GLEN VIEW ND 367 ANDRIEN ND 369 MENDENL HALL DN 369 MITCHELL CIR 149 MITCHELL CIR
310 MITCHELL CIR
310 MITCHECK LA
311 GLOVER DR
312 ST JOHNS DR
133 CONCORD MECTING RD
14 EDNARD JENNINGS RD
5 RUNNING SPRING LA
LOCURST FARM RD
PATRIOT LA
COLUMNA CIR COLONIAL CIR LEOPARD HUN #000CHUCK WAY RUNNING BROOK RO JERENIAM COLLETT NO JOS PANN LA
JOS LEYI RO
JOS LEYI RO
JOS PARTINIDE LA
JOS PARTINIDE LA
JOS PARTINIDE LA
JOS CARTEN BAT
JOS MELL TOP LA
JOS CARTEN BAT
JOS MELL N BAY
JOS MOLVERTON WAY
JOS JERPENTINE DR
JOS JERPENTINE DR PLEASANT HILL DE CONCORD CREEK RO WARD CREEK RO DARLINGTON RO Jay DARL NGTON PO Jay JOHN MANNIN Ch Jay WALTERS RO 400 CROSSAE'S DR 401 VERNON LA 402 PETERS LA 401 HARTSER CIR 401 WILLITS WAY 405 COUNTRY LA 406 PONOS YIEW RD 407 SLEFLORIDE RO 408 STEPHEN GREEN JOHN HANNUM CLE STEPHENS GREEN RE MERITAGE MILL DR HUMTINGOON PARM DR NICKLIN LA 412 BIO MODE DR
411 MERNI LA
414 PARK LA
415 MODEVIEN DR
416 FELLOWSHIP DR
417 MARSHALL CT 418 MORAIS DA 419 SAWMILL RO 420 GRAY HAWK LA 421 GENJAMIN LA PHOEBE (A IN INCREME DA ANVIL CI CHRISTOPHER DR JESE CT MARY CI NATHANIEL CT

429 BEECH TREE DR 430 GREAT OAK DR 431 SUSSEX CT

tal	84.21
445	SWAYNE CT
444	MILCIEL TY
345	#0005/06 FARM DR
446	ALLEN DR
441	HUNT MEET LA
446	HUNTSMAN DR
449	JONES DR
490	RALPH MARSH DH
451	ANNESLEY DR
452	HANNAH DR
453	MILLIAM HOWARD D
454	TROMAS SPEAKMAN
455	MILLWRIGHT DR
456	JOHN MYERS CTP
457	REBECCA LA
458	CROSS CREEK LA
459	STIRRUP LA
460	SAMUEL WILL LA
461	SWAN LAKE DR
	CONCORD CROSSING
463	LEA DR
465	LONE BEECH LA
466	EAVENSON WAY
467	HICKORY DR
468	MAPLE: LA
469	CHERRY CIN
470	JOHN BEAL OR
471	SMITHFIELD OR
477	NOBERT ADAMS CT
473	MRTGHTS CT
470	WILL HAVEN RE
415	PALMER DR
476	EDWIN MICLER DR
477	WILLIAM BEASER O
478	CLEMSON DK
479	PENHOSE TALLEY R
460	RIGBET ET
401	HIGH HILL LA
462	HELL IE LA
463	STATE FARM UR
484	FORWOOD DR
485	JOHN LARKIN DIV
48€	PENNOCK DR
487	NUDSON WAY
482	LOCKHART DR
489	EVERGREEN DR
490	JAMES GETTY LA





TYPICAL STRUCTURAL NOTES

General: 1-01 Governing Design Code: Latest edition of the International Building Code (IBC)

1-02 Live Loads: Roof (Snow) (LL) 30 psf

1-03 Roof Snow Load: a) Pf = 30 psf b) Ce = 1.0, Expusure B c) 1=1.0 d) C) = 1.0

1404 Wind Loads a) Basic Wind Speed = 90 mph b) I = 1.0 c) Wind Exposure B

1406 Loads greater than the design live loads shall not be placed on the structure. A concrete structure may not support its design live load for 28 days. Contractor shall support adjacent structures, utilities, and excavations Contractor shall have all temporary formwork, sheeting, shoring, underpinning, etc. certified by a qualified engine as a part of the contractor's work.

1.07 Contractor shall conform with the provisions of the local Building Code and any other Local, State, or Federal

1-08 At the time of shop drawing submission, the general contractor shall inform the engineer in switing of any deviations or omissions from the contract documents.

160 The contractor shall support adjacent structures, utilities, and executions. The contractor shall subten it show a superior contractor shall subten it show a superior contractor shall subten it show a superior contractor shall be represented as the contractor shall be represented explained or spirit contractors and a registered approach of the state of the contractors and a result of the contractors and a result of the contractors and a result of the contractors and the contractors are contractors and the contractors

1.10 Inspection: The Owner may employ the Engineer or a 3.13 All field and lab testing of concrete shall conform to a qualified impactions: the other maje empire for all of of the qualified impaction agency to perform any part and of the services special provides and the performance of the cooperation to laboratory. The Contractor shall afford full adequate unitie before the Engineery personnel and shall provide adequate unitie before the Engineery and provides adequate sortice before Depriming operations; spall make immediate report of all the shall be adequate the complexes report of the extra and behaviour, and complexes report of the extra and behaviour, and complexes report of the extra and behaviour, and complexes the extra and the extra and the extra and complexes the extra and the extra and complexes the extra and the extra and complexes the extra and complexes the extra and complexes the extra and complexes. Contractor - one copy to each.

I-II "Typical Details" (TYP) shown on the drawings apply to all conditions of the project similar to those shown in the details regardless of whether or not they are specifically referenced on the plans. Plans, sections, and details are not to be scaled for determination of quantities, lengths, or fit

1-12 Shop drawings for all structural items must be submitted by the General Contractor. If the Contractor or Charac fails to submit the shop drawings, the Engineer will not be responsible for the structural certification and/or the design of the project.

Soils: 2-01 Flootings are designed for a bearing capacity of 5,000psf. Footings shall bear on natural undisturbed soil. 11-0° below original grade and bottom of exterior footing shall be 3:0° below finished grade. Contractor shall verify soil pressure in the field. If found to be less than 5,000ps the footings will have to be redesigned.

2-02 All fill under slabs shall be course granular nuteria compacted to 95% of maximum density at optimum water compacted to 95% of maximum density at optimum water content. All slabs on grade shall have panels poured per ACE-MD. IR (tause local approved edition). Section 6.4.1 as all slabs on grade may be poured continuously by using a pre-molded keyed metal joint to form areas not exceeding 650 square feet.

2-03 All fill and backfill material, all footing bearing, excavations, and compaction control shall be inspected and approved in writing by a Qualified Engineer.

2-04 Utility lines shall not be placed through, or below foundations without the Engineer's approval. All excabations to be approved by proper authorities prior to the placing of foundations.

2-05 The Contractor shall obtain the Soil Report from the

Concrete
3.01 Except as noted, all reinforcing shall be high straightnew billes steel conforming to ASTM designation. A4-15
(by 6.00,000), all straigns, and its shall be new
intermediate grade seel conforming to ASTM designation
A6-16 (Fig. 6.00,000), all reinforcing shall be detailed,
labelcoated, and placed in accordance with the ACIs
Manual of Standard Practice for Detailing Concrete
Structures* (ACI-315).

3-02 Reinforcing steel shall be placed in accordance with the "CRSI Manual of Standard Practice for Reinforced

3-03 Lan all splices 36 bar diameters (2'-0" min.) except 3-03 Lap all splices, 56 bar diameters (2-0" min.) except as motifed not plans. Bend desides few will horizontal reinforcing 1-0" around all corners or provide 4-0" long corner bars to much horizontal reinforcing. Splicing of 96 or larger bars shall not be permitted unless otherwise unted or authorized by the Engineer. Lapped splices of #14 or # 18 bars shall not be permitted.

3-04 Hooks and bend shall conform to ACI-318 standards for minimum head radies and extension. Lengths given for bend based not include the radius and maximum.

SITE MAP

2

3-05 Welded wire fabric shall have ends lapped one full mesh and shall extend into support beams or walls, except as slabs on grade.

5-06 All concrete work shall be in accordance with the requirements of the American Concrete Institute Code (ACT-318: Latest Addition)

3-07 Concrete surfaces shall be cured in accordance with ACI Specifications. Submit manufacturers material for Engineer's review.

3-08 All concrete work shall conform to the latest approved (by local government) editions of the following ACI and ASTM documents:

ACI-614 placing concrete
ACI-ASCE Committee 423 unbounded rendon ASTM-C94 ready-mix concrete

accordance with ACI and as follows:

Footings = 3"

3-10 All concrete, except as noted elsewhere, shall be (fc) = 4.500psi) natural hard rock aggregate concrete. All exterior concrete shall be air-entrained at minimum 5% to

3-11 No calcium chloride shall be added to the concrete without written approval by the Engineer.

ASTM C431 Find cylinder specimens, ASTM C143 Slump test ASTM C173 or C231 Air contem (when required), ASTM C39 Lab testing cylinders ASTM C172. Sampling fresh concrete ASTM C42 Hadrened cored (when required)

certify their results as follows

Tcertify that the field and lab testing conforms to the ASTM documents and good practice."

3-14 Concrete test cylinders shall be made in accordance with ACJ-318. Mold and cure samples in accordance with ASTM C31. Fee splinders in accordance with ASTM C39, fat 7 days ige, and 2 at 28 days. Determine sharp in accordance with ASTM C413. Determine sharp in accordance with ASTM C413. Determine air context of concrete for each stempth test in accordance with ASTM C231.

3-15 Certify delivery tickets and control addition of water

3-16 Inspection of all placed concrete and reinfo 3-16 Inspection of all placed concrete and reinforcement required. Engineer shall approve inspector. Inspection Agency shall certify formwork, concrete, and reinforcement under an engineer's scal. Submit daily reports to Owner, Contractor, Architect, Building Department, and Engineer.

6-01 Provide erection bracing for roof framing to include strut bracing for bottom chord bearing, bottom chord restraint, and sway bracing.

6-02 Decking for roof shall be 3" T&G wood deck.

6-03 Design calculations by a registered engineer of the munufacturer shall be submitted with shop drawings. The minimum E = 850psi and E = 1.2x10f psi

6-04 Contractor shall keep roof framing laterally braces luring erection, until all diaphragms are installed.

6-05 The following design data shall be included on the shop drawings:
a) Metal connectors size.
b) Lumber grades.
c) Design loading and allowable unit stress increases.
d) Deflections.

6-06 Dead knots and waned on lumber shall not be used under the connector plates.

6-07 Desire and detailing of pre-manufactured product onnections, and accessories shall be in accordance with he recommendations of the AITC "Timber Constructs Manual" and the NFPA 'National Design Specifications for

6-08 Structural Wood Framing members (tox6 posts and 4x4 roof truss members) shall be Pressure Tyrated Doug-Fir Select Structural No. 1 with Minimum Allowable Bending Stress = 1150psi.

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Wilmington, Delaware

www.bernardon.com

BUS SHELTER DESIGN for CONCORDVILLE TOWN CENTRE Glen Mills, Pennsylvania

BRANDOLINI COMPANIES 1301 Lancaster Avenue Berwyn, Pennsylvania

1 7/29/13 Issued

Drawn: TDK Reviewed: Neil Liebman, AIA Project Number: 0012.00-13

Sheet Title:

COVER SHEET

G-001

N/A NIC NO NOM NTS

OCC OD OE/CI

OF/OI

Not To Scale

Outside Dian Owner Furnishe

Floor Drain

Water Closet

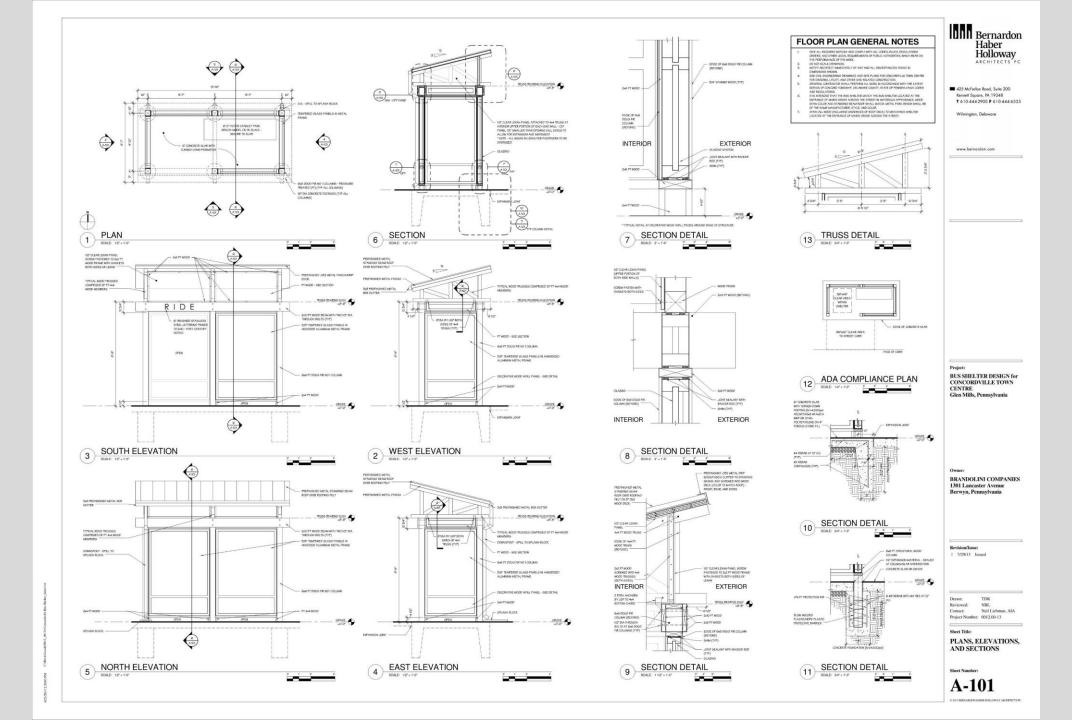
Walk-in-Closer

LOCATION MAP

3

WSCT

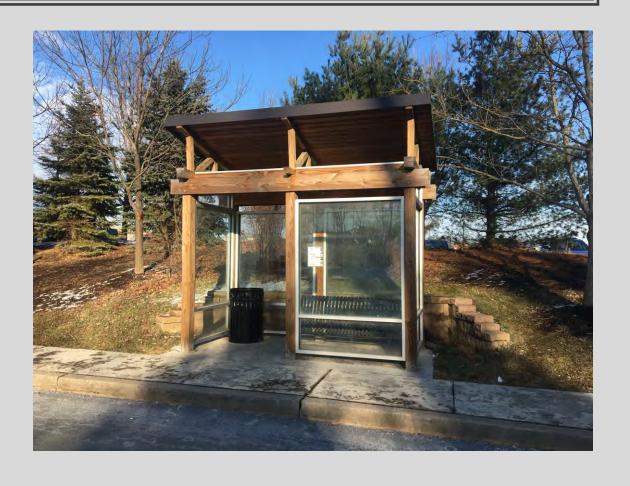
WWF



Team Toyota

Concordville Town Cenre





Concordville Town Cenre

CHOP

