

7-15-21 REVISED PER TOWNSHIP COMMENTS 05-19-21 REVISED PER TOWNSHIP COMMENTS 01-21-21 REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS PROFESSIONAL ENGINEER PA Lic. No.

PE-057145-E

REVISIONS

LANGAN T: 610.984.8500 F: 610.984.8501 www.langan.com ngan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC

Collectively known as Langan

RIDGE FARMS

SOUTH WHITEHALL TOWNSHIP

PENNSYLVANIA

LEHIGH COUNTY

GRADING PLAN

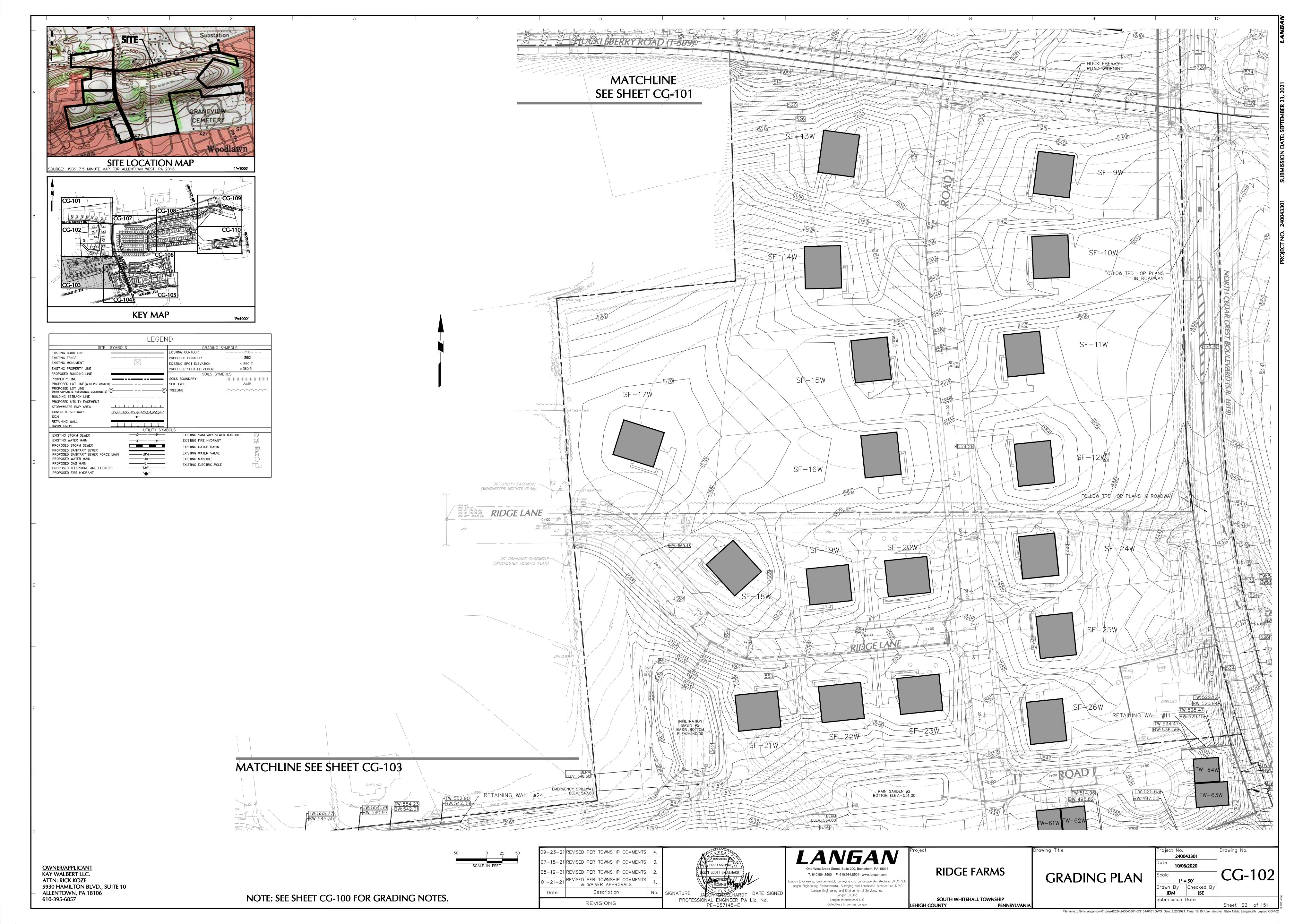
240043301 10/06/2020 CG-101 T" = 50'

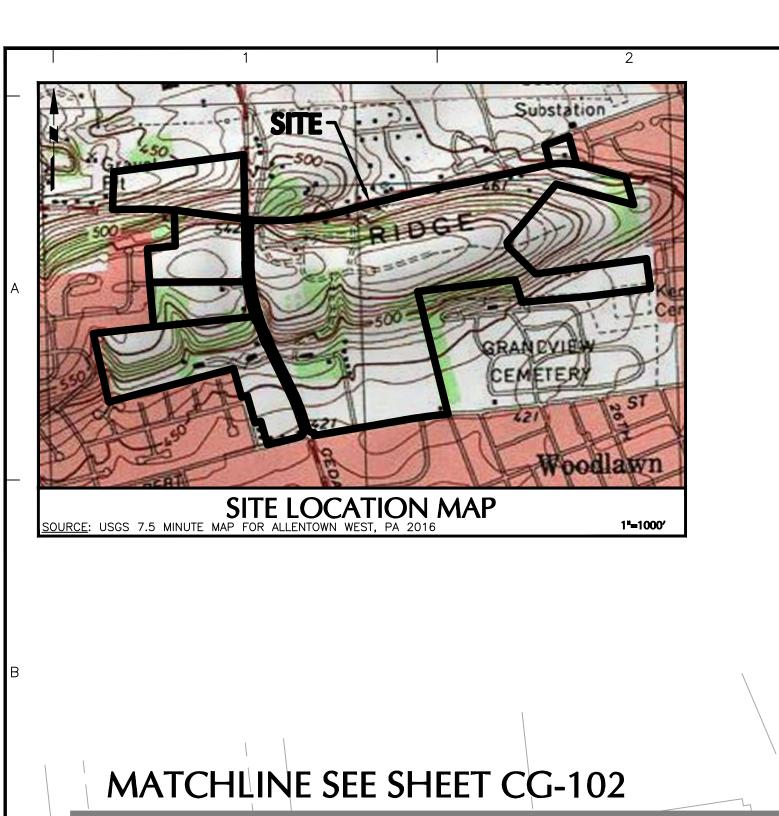
Drawn By Checked By | ICF Submission Date

Filename: c:\bms\langan-pw-01\dms42624\240043301-CG101-0101.DWG Date: 9/23/2021 Time: 18:15 User: dmoyer Style Table: Langan.stb Layout: CG-101

OWNER/APPLICANT KAY WALBERT LLC. ATTN: RICK KOZE 5930 HAMILTON BLVD., SUITE 10 ALLENTOWN, PA 18106 610-395-6857

NOTE: SEE SHEET CG-100 FOR GRADING NOTES.





OWNER/APPLICANT

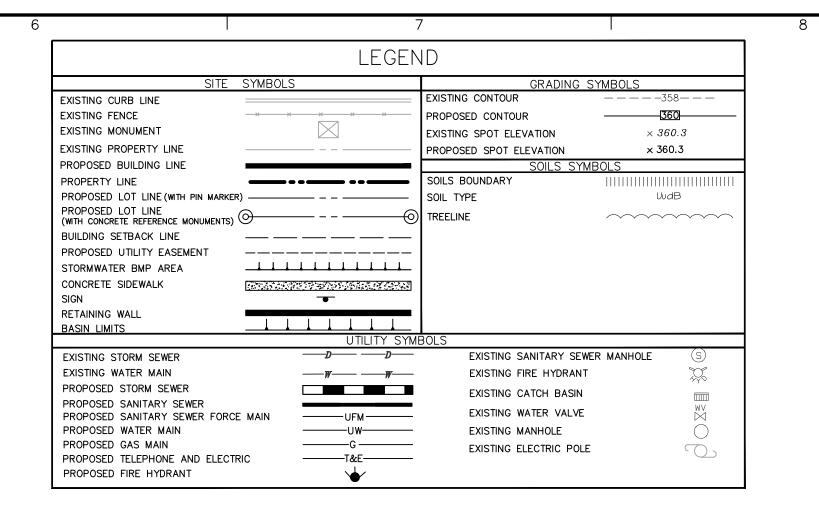
KAY WALBERT LLC.

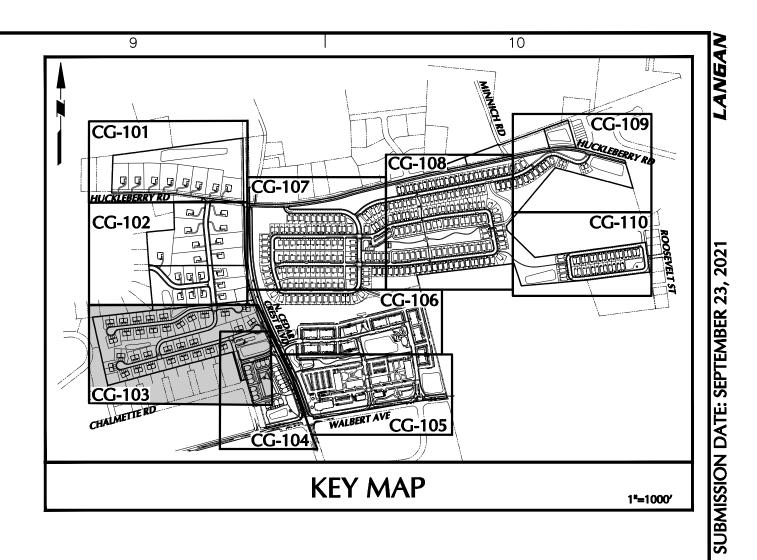
ALLENTOWN, PA 18106

5930 HAMILTON BLVD., SUITE 10

ATTN: RICK KOZE

610-395-6857





240043301

1" = 50'

Drawn By Checked By ISF

Submission Date

Filename: c:\bms\langan-pw-01\dms42624\240043301-CG101-0101.DWG Date: 9/24/2021 Time: 12:54 User: dmoyer Style Table: Langan.stb Layout: CG-103

GRADING PLAN

CG-103

RIDGE FARMS

SOUTH WHITEHALL TOWNSHIP

PENNSYLVANIA

LEHIGH COUNTY

T: 610.984.8500 F: 610.984.8501 www.langan.com

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PE-057145-E



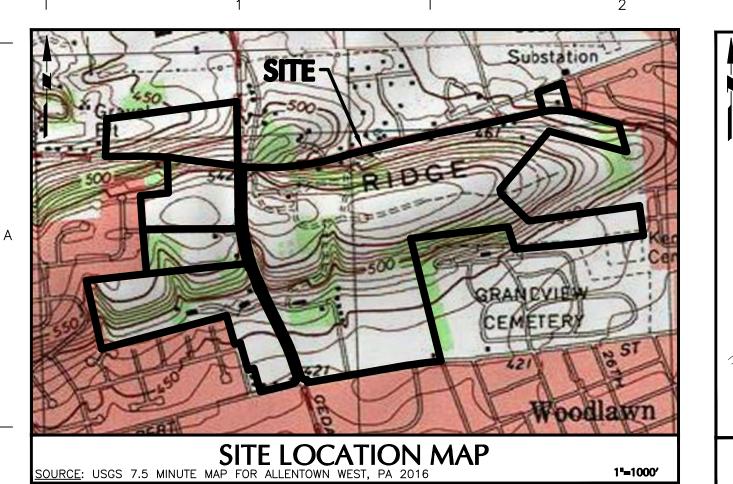
'-15-21|REVISED PER TOWNSHIP COMMENTS|

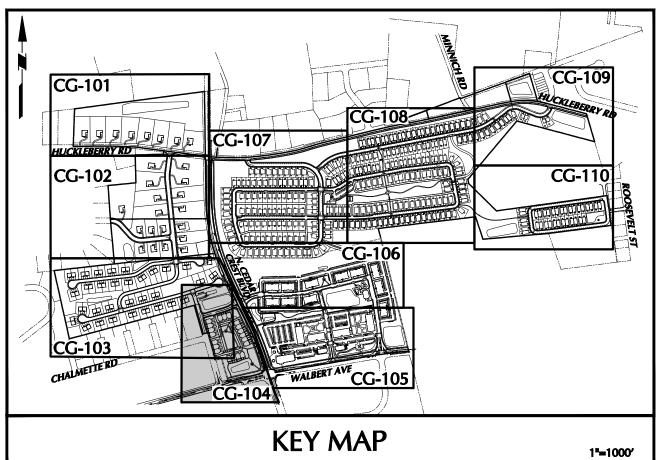
05-19-21 REVISED PER TOWNSHIP COMMENTS

01-21-21 REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS

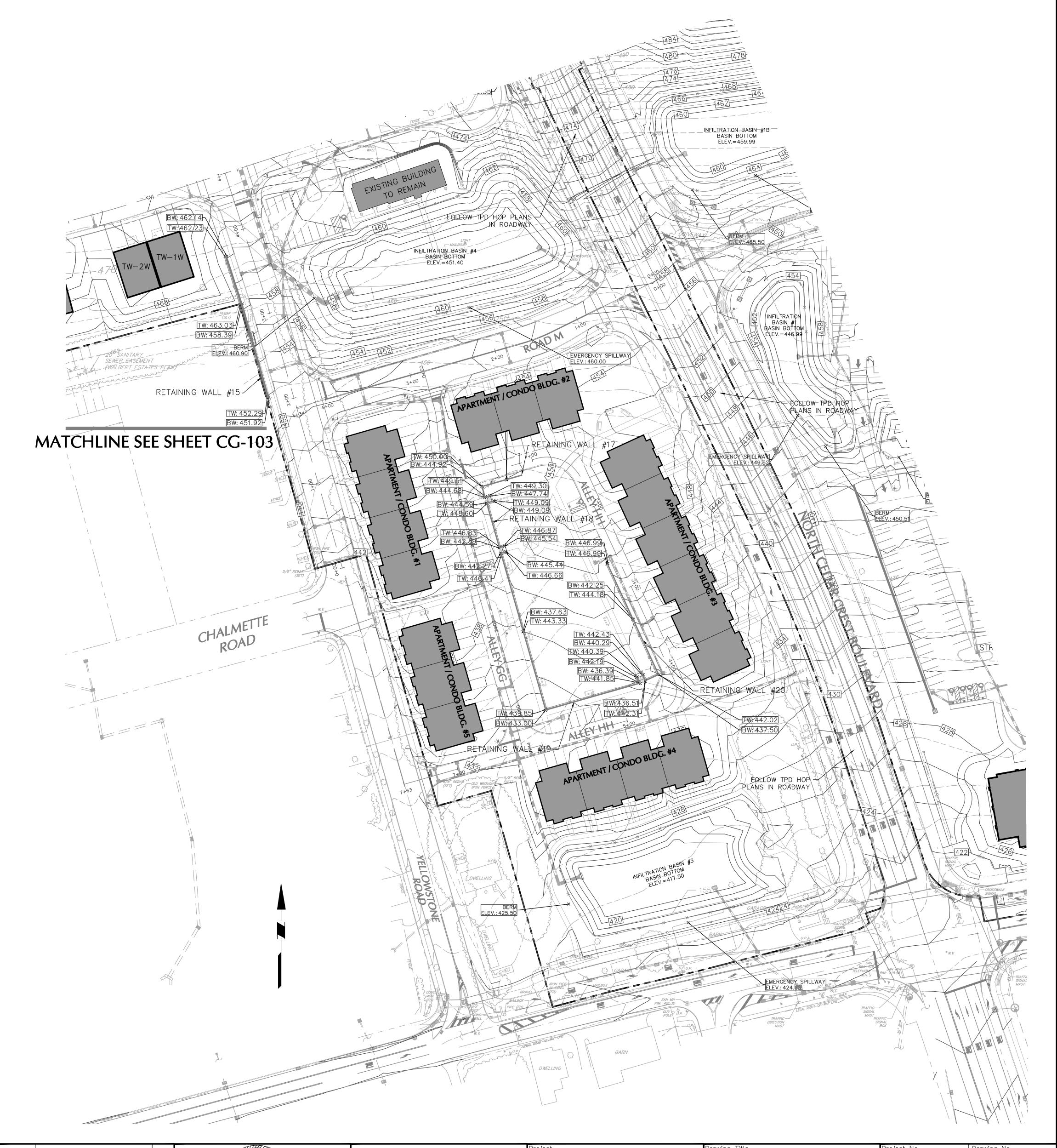
REVISIONS

NOTE: SEE SHEET CG-100 FOR GRADING NOTES.





SITE SYMBOL	.S	GRADIN	SYMBOLS
EXISTING CURB LINE ======		EXISTING CONTOUR	— — — — — — — — — — — — — — — — — — —
EXISTING FENCE -*-	× × × ×	PROPOSED CONTOUR	360
EXISTING MONUMENT		EXISTING SPOT ELEVATION	× 360.3
EXISTING PROPERTY LINE		PROPOSED SPOT ELEVATION	× 360.3
PROPOSED BUILDING LINE		SOILS S	YMBOLS
PROPERTY LINE -		SOILS BOUNDARY	
PROPOSED LOT LINE (WITH PIN MARKER) ————		SOIL TYPE	UudB
PROPOSED LOT LINE (WITH CONCRETE REFERENCE MONUMENTS)	—— ——— <u></u>	TREELINE	~~~~~
BUILDING SETBACK LINE			
PROPOSED UTILITY EASEMENT			
STORMWATER BMP AREA			
CONCRETE SIDEWALK			
SIGN	•		
RETAINING WALL	1 1 1 1 1		
BASIN LIMITS	UTILITY SYME	ROLS	
EXISTING STORM SEWER		EXISTING SANITARY S	EWER MANHOLE (S)
EXISTING WATER MAIN	w	EXISTING FIRE HYDRA	
PROPOSED STORM SEWER		EXISTING CATCH BAS	
PROPOSED SANITARY SEWER			M//
PROPOSED SANITARY SEWER FORCE MAIN	———UFM———	EXISTING WATER VAL	Æ 👸
PROPOSED WATER MAIN	UW	EXISTING MANHOLE	
PROPOSED GAS MAIN	———G ———	EXISTING ELECTRIC PO	N.F.



50 0 25
SCALE IN FEET

09-23-21 REVISED PER TOWNSHIP COMMENTS 4.

07-15-21 REVISED PER TOWNSHIP COMMENTS 3.

05-19-21 REVISED PER TOWNSHIP COMMENTS 2.

01-21-21 REVISED PER TOWNSHIP COMMENTS 1.

Date Description No.

REVISIONS

PROFESSIONAL

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PROFESSIONAL ENGINEER PA Lic. No.

PE-057145-E

One West Broad Street, Suite 200, Bethlehem, PA 18018

T: 610.984.8500 F: 610.984.8501 www.langan.com

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Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Langan Engineering and Environmental Services, Inc.

Langan CT, Inc.

Langan International LLC

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RIDGE FARMS GRADING

PENNSYLVANIA

SOUTH WHITEHALL TOWNSHIP

LEHIGH COUNTY

GRADING PLAN

Scale

1" = 50'

Drawn By Check

JDM

Submission Date

Project No.
240043301

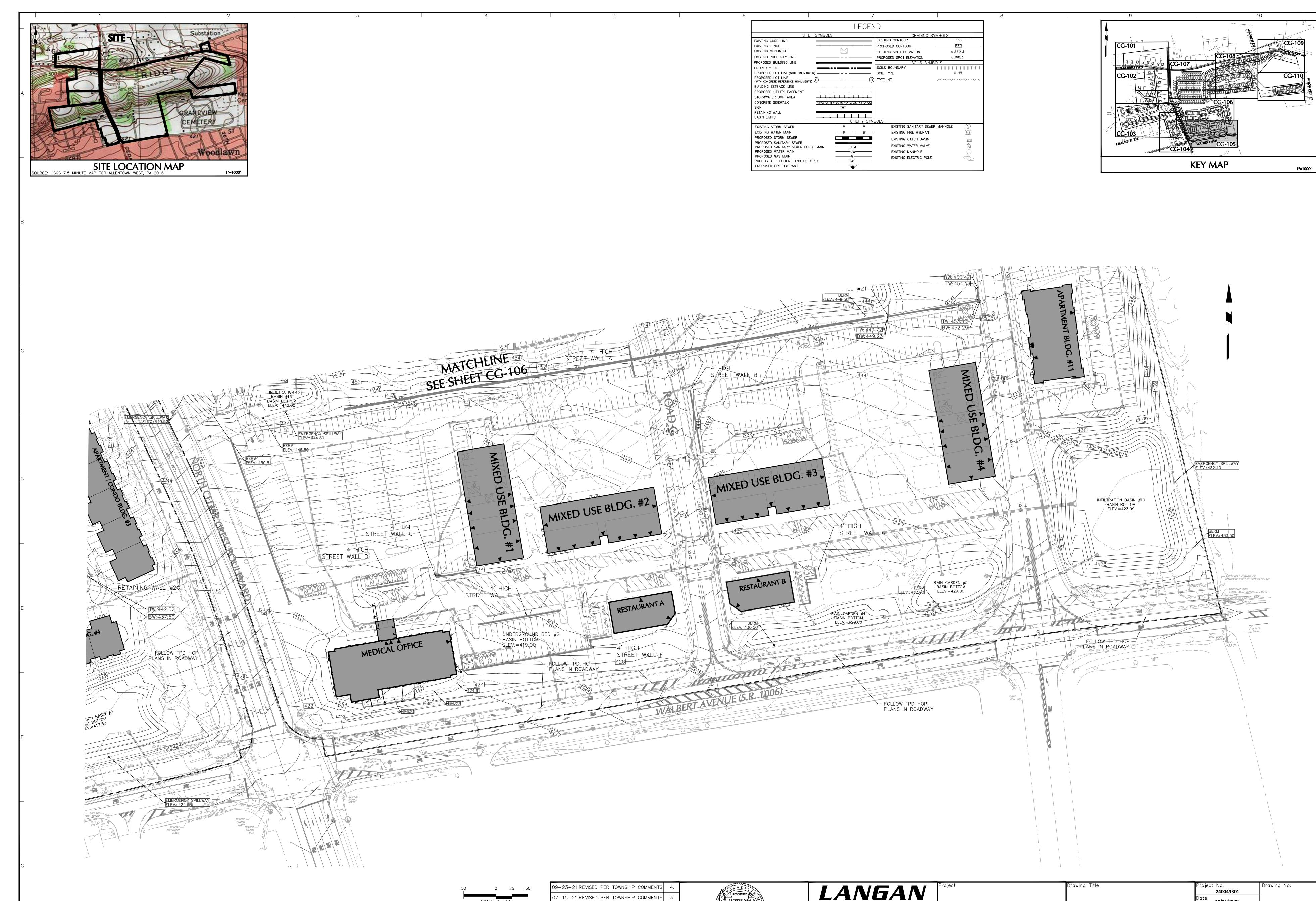
Date
10/06/2020

Scale

1" = 50'
rawn By Checked By JDM JSE

Filename: c:\bms\langan-pw-01\dms42624\240043301-CG101-0101.DWG Date: 9/24/2021 Time: 12:55 User: dmoyer Style Table: Langan.stb Layout: CG-104

OWNER/APPLICANT
KAY WALBERT LLC.
ATTN: RICK KOZE
5930 HAMILTON BLVD., SUITE 10
ALLENTOWN, PA 18106
610-395-6857



SOUTH WHITEHALL TOWNSHIP PENNSYLVANIA

GRADING PLAN

CG-105 1" = 50' Drawn By Checked By ISE

Filename: c:\bms\langan-pw-01\dms42624\240043301-CG101-0101.DWG Date: 9/24/2021 Time: 12:55 User: dmoyer Style Table: Langan.stb Layout: CG-105

NOTE: SEE SHEET CG-100 FOR GRADING NOTES.

OWNER/APPLICANT

KAY WALBERT LLC.

ALLENTOWN, PA 18106

5930 HAMILTON BLVD., SUITE 10

ATTN: RICK KOZE

610-395-6857

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

5-19-21 REVISED PER TOWNSHIP COMMENTS

01-21-21 REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS

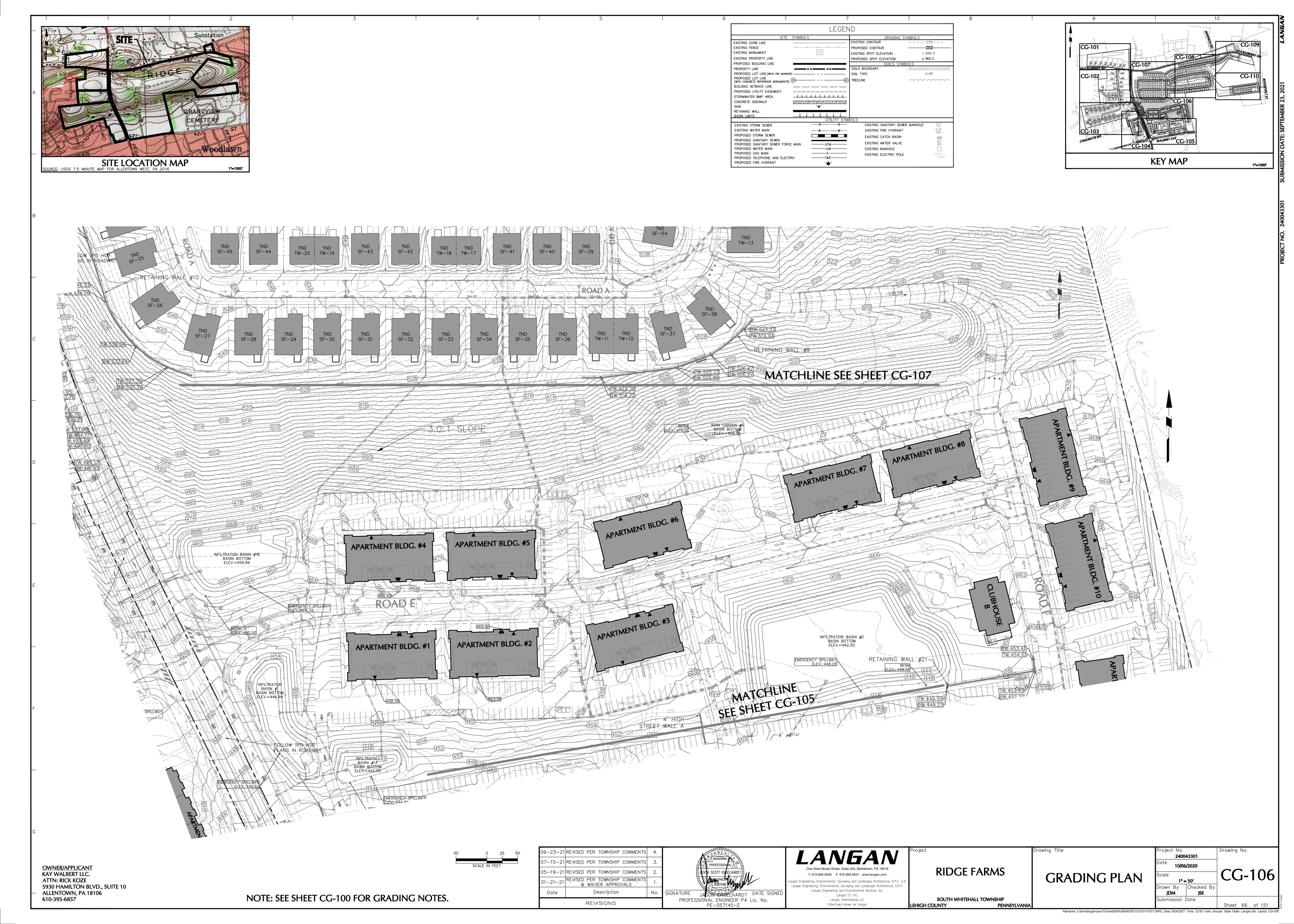
REVISIONS

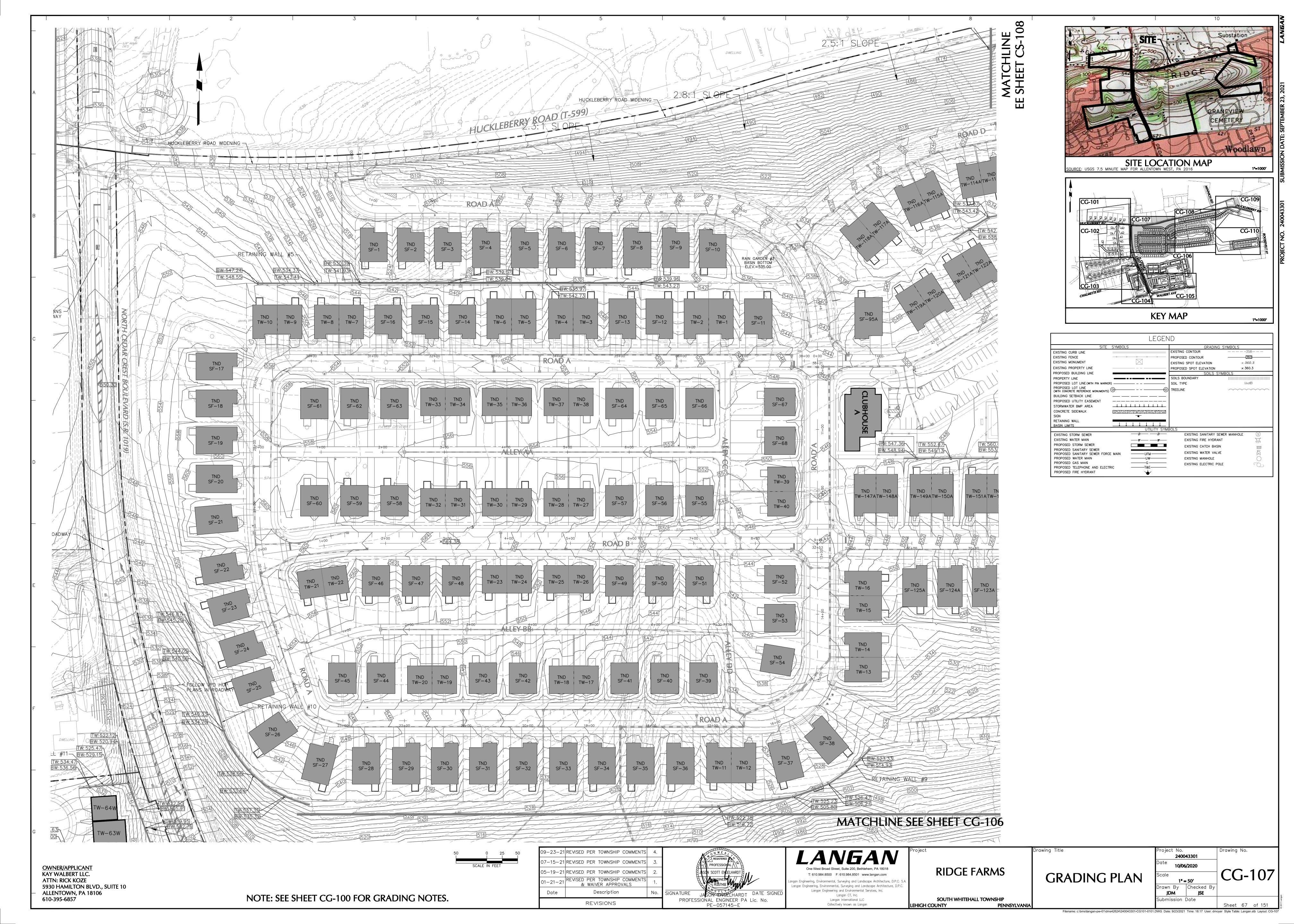
T: 610.984.8500 F: 610.984.8501 www.langan.com ngan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S. Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan

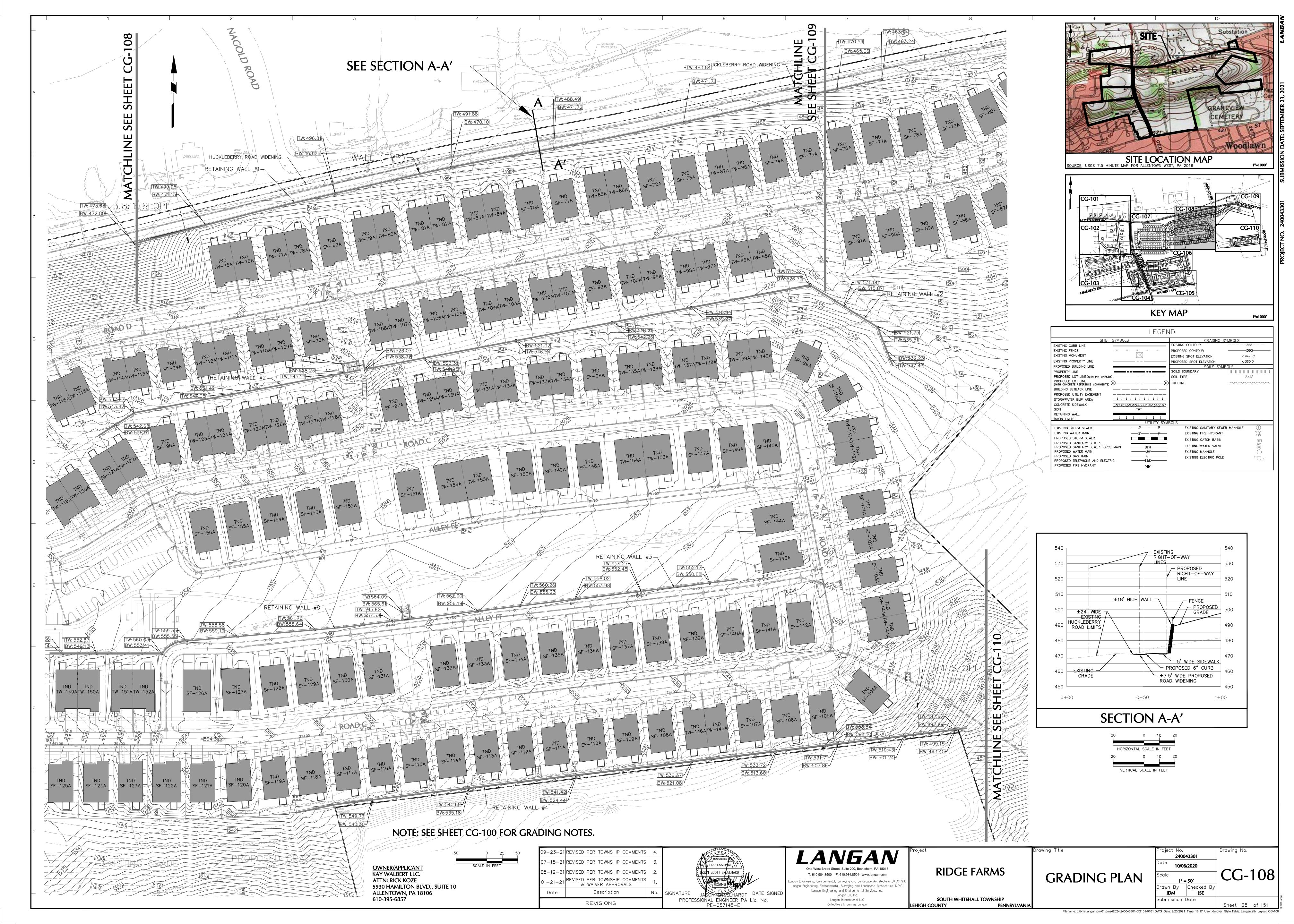
RIDGE FARMS

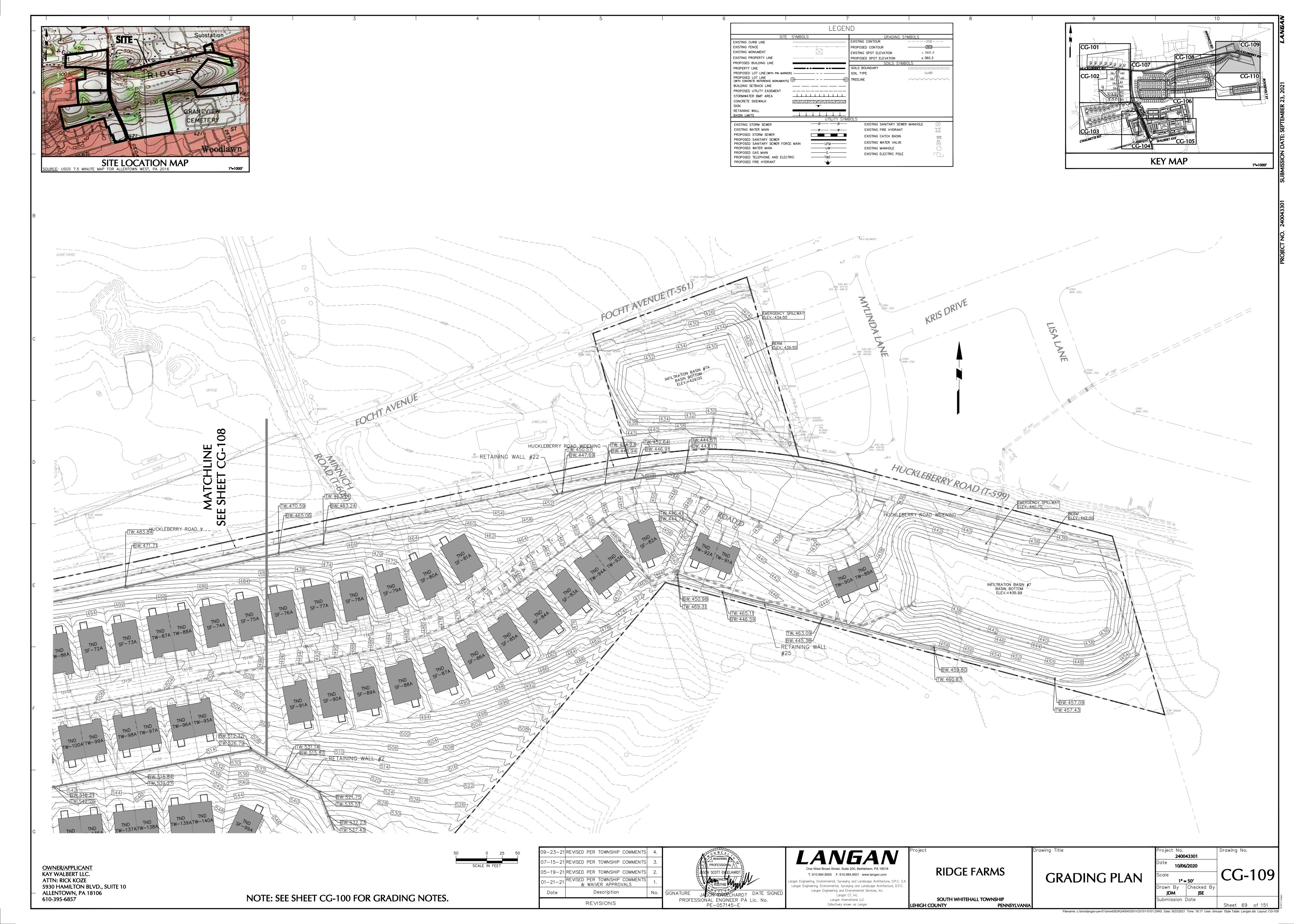
LEHIGH COUNTY

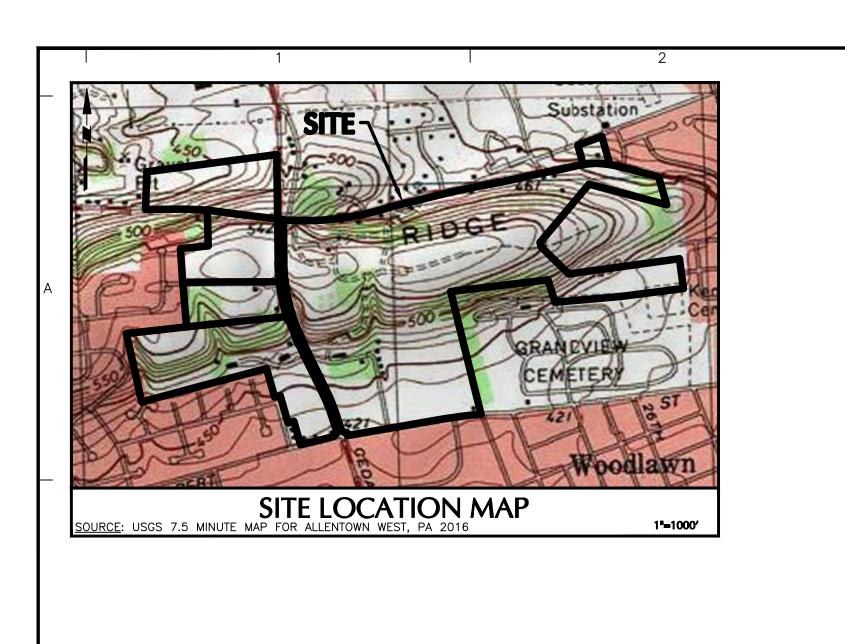
Submission Date

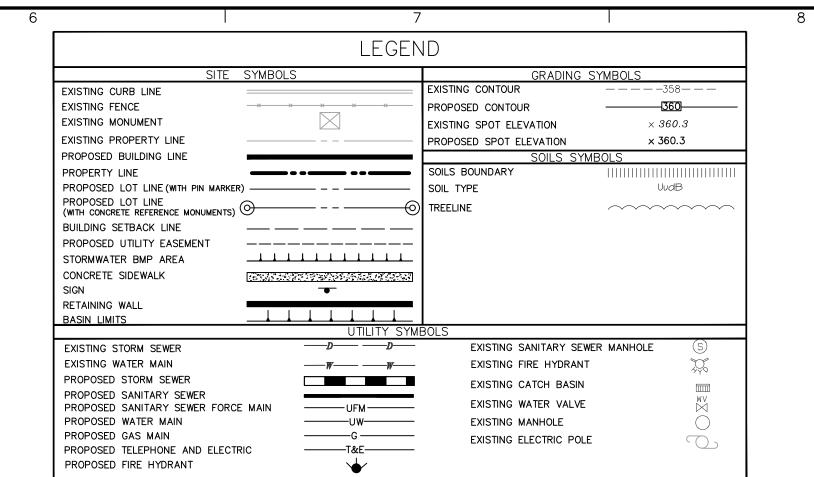


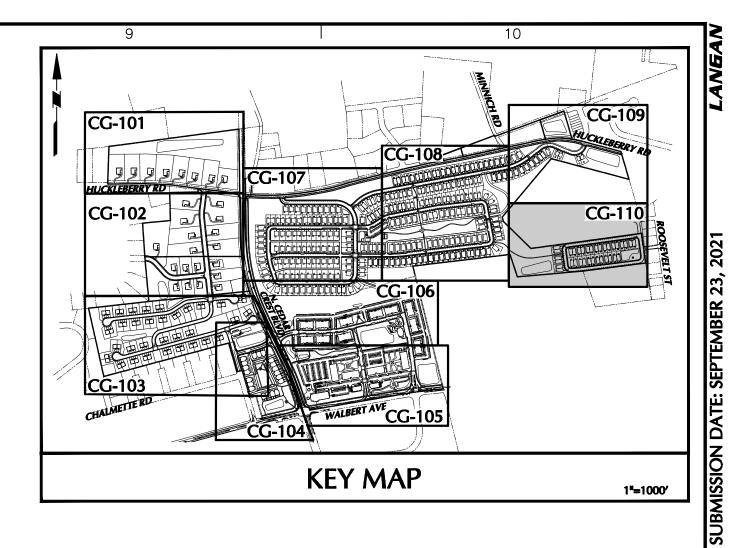


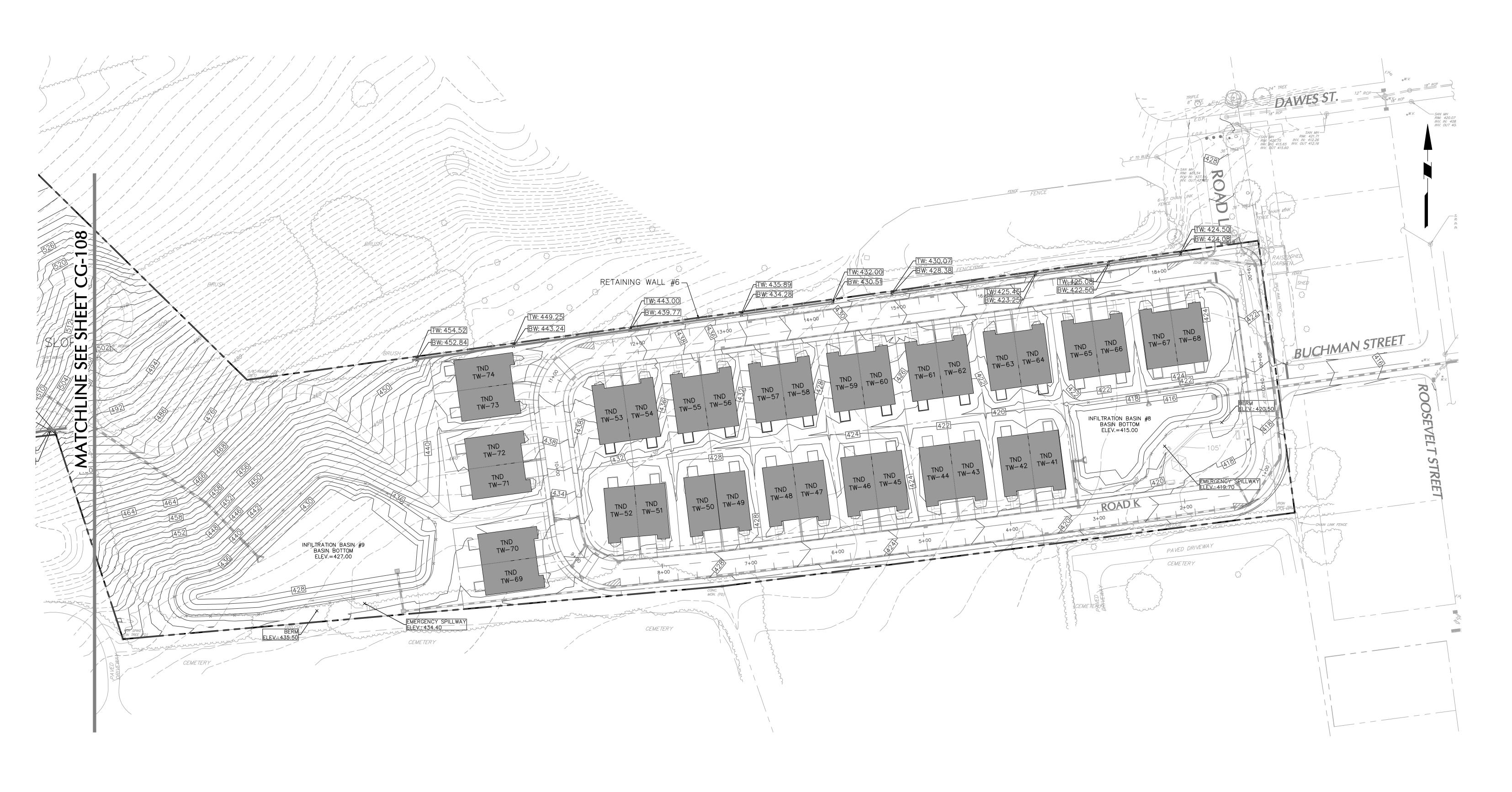












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Collectively known as Langan

RIDGE FARMS

PENNSYLVANIA

SOUTH WHITEHALL TOWNSHIP

LEHIGH COUNTY

GRADING PLAN

240043301 CG-110 Drawn By Checked By |

JDM | ICE Submission Date

Filename: c:\bms\langan-pw-01\dms42624\240043301-CG101-0101.DWG Date: 9/23/2021 Time: 18:18 User: dmoyer Style Table: Langan.stb Layout: CG-110

OWNER/APPLICANT KAY WALBERT LLC. ATTN: RICK KOZE 5930 HAMILTON BLVD., SUITE 10 ALLENTOWN, PA 18106 610-395-6857

NOTE: SEE SHEET CG-100 FOR GRADING NOTES.

<u>Lot</u> <u>Number</u>	Driveway Elevation	Garage Floor Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Max Rear Walkout Tie-in Elevation	Rear Walkup Tie-in Elevation	Basement Type	<u>Drivewa</u> <u>Slope</u>
SF-1	DE 515.82	515.82	(TF=DE+0.67) 516.49	(FF=TF+1) 517.49	(BF = FF - 8.67 ft.) N/A	(MAX = FF - 2 ft.) 515.49	FF - 9.33 ft N/A	FF + 7.33 ft 524.82	WALKUP	9.7%
SF-2	516.37	516.37	517.04	518.04	N/A	516.04	N/A	525.37	WALKUP	9.4%
SF-3	516.97	516.97	517.64	518.64	N/A	516.64	N/A	525.97	WALKUP	9.3%
SF-4	518.09	518.09	518.76	519.76	N/A	517.76	N/A	527.09	WALKUP	8.3%
SF-5 SF-6	520.29 522.96	518.09 520.29 522.96	518.76 520.96 523.63	519.76 521.96 524.63	N/A N/A N/A	517.76 519.96 522.63	N/A N/A N/A	527.09 529.29 531.96	WALKUP WALKUP	6.6%
SF-7	525.45	525.45	526.12	527.12	N/A	525.12	N/A	534.45	WALKUP	9.0%
SF-8	528.07	528.07	528.74	529.74	N/A	527.74	N/A	537.07	WALKUP	8.0%
SF-9	530.64	530.64	531.31	532.31	N/A	530.31	N/A	539.64	WALKUP	6.7%
SF-10	533.32	533.32	533.99	534.99	N/A	532.99	N/A	542.32	WALKUP	8.5%
SF-11	548.82	548.82	549.49	550.49	541.82	548.49	541.16	N/A	WALKOUT	2.6%
SF-12	551.54	551.54	552.21	553.21	544.54	551.21	543.88	N/A	WALKOUT	-6.9%
SF-13	552.86	552.86	553.53	554.53	545.86	552.53	545.20	N/A	WALKOUT	-7.9%
SF-14	549.71	549.71	550.38	551.38	542.71	549.38	542.05	N/A	WALKOUT	-7.6%
SF-15	550.79	550.79	551.46	552.46	543.79	550.46	543.13	N/A	WALKOUT	-7.6%
SF-16	552.78	552.78	553.45	554.45	545.78	552.45	545.12	N/A	WALKOUT	-2.7%
SF-17	559.21	559.21	559.88	560.88	552.21	558.88	N/A	N/A	STANDARD	8.1%
SF-18	559.60	559.60	560.27	561.27	552.60	559.27	N/A	N/A	STANDARD	8.2%
SF-19	560.68	560.68	561.35	562.35	553.68	560.35	N/A	N/A	STANDARD	6.7%
SF-20	561.40	561.40	562.07	563.07	554.40	561.07	N/A	N/A	STANDARD	7.7%
SF-21	561.53	561.53	562.20	563.20	554.53	561.20	N/A	N/A	STANDARD	2.6%
SF-22	561.33	561.33	562.00	563.00	554.33	561.00	553.67	N/A	WALKOUT	6.1%
SF-23	558.56	558.56	559.23	560.23	551.56	558.23	550.90	N/A	WALKOUT	7.0%
SF-24	554.33	554.33	555.00	556.00	547.33	554.00	546.67	N/A	WALKOUT	
SF-25	551.42	551.42	552.09	553.09	544.42	551.09	543.76	N/A	WALKOUT	-6.9%
SF-26	549.76	549.76	550.43	551.43	542.76	549.43	542.10	N/A	WALKOUT	-8.0%
SF-27	548.67	548.67	549.34	550.34	541.67	548.34	541.01	N/A	WALKOUT	-7.5%
SF-28 SF-29	546.88 544.73	546.88 544.73	547.55 545.40	548.55 546.40	539.88 537.73	546.55 544.40	539.22 537.07	N/A N/A N/A	WALKOUT WALKOUT	-7.5% -3.9%
SF-30	544.83	544.83	545.50	546.50	537.83	544.50	537.17	N/A	WALKOUT	3.2%
SF-31	542.78	542.78	543.45	544.45	535.78	542.45	535.12	N/A	WALKOUT	3.0%
SF-32	540.64	540.64	541.31	542.31	533.64	540.31	532.98	N/A	WALKOUT	2.8%
SF-33	538.49	538.49	539.16	540.16	531.49	538.16	530.83	N/A	WALKOUT	2.8%
SF-34	536.45	536.45	537.12	538.12	529.45	536.12	528.79	N/A	WALKOUT	6.1%
SF-35	534.41	534.41	535.08	536.08	527.41	534.08	526.75	N/A	WALKOUT	7.2%
SF-36	532.19	532.19	532.86	533.86	525.19	531.86	524.53	N/A	WALKOUT	2.5%
SF-37	534.90	534.90	535.57	536.57	527.90	534.57	527.24	N/A	WALKOUT	2.5%
SF-38	535.88	535.88	536.55	537.55	528.88	535.55	528.22	N/A	WALKOUT	2.7%
SF-39	537.86	537.86	538.53	539.53	530.86	537.53	N/A	N/A	STANDARD	-5.8%
SF-40	538.39	538.39	539.06	540.06	531.39	538.06	N/A	N/A	STANDARD	-6.9%
SF-41	540.21	540.21	540.88	541.88	533.21	539.88	N/A	N/A	STANDARD	-6.9%
SF-42	546.10	546.10	546.77	547.77	539.10	545.77	N/A	N/A	STANDARD	-6.8%
SF-43	547.23	547.23	547.90	548.90	540.23	546.90	N/A	N/A	STANDARD	-5.6%
SF-43	547.23	547.23	547.90	546.90	540.23	546.90	N/A	N/A	STANDARD	-3.6%
SF-44	550.49	550.49	551.16	552.16	543.49	550.16	N/A	N/A	STANDARD	-4.2%
SF-45	553.78	553.78	554.45	555.45	546.78	553.45	N/A	N/A	STANDARD	2.2%
SF-46	554.44	554.44	555.11	556.11	555.10	554.11	554.11	N/A	WALKOUT	4.8%
SF-47	555.33	555.33	556.00	557.00	555.99	555.00	555.00	N/A	WALKOUT	7.8%
SF-48	555.60	555.60	556.27	557.27	556.26	555.27	555.27	N/A	WALKOUT	9.7%
SF-49	547.43	547.43	548.10	549.10	548.09	547.10	547.10	N/A	WALKOUT	8.1%
SF-50	545.48	545.48	546.15	547.15	546.14	545.15	545.15	N/A	WALKOUT	7.2%
SF-51	542.92	542.92	543.59	544.59	543.58	542.59	542.59	N/A	WALKOUT	4.1%
SF-52	543.90	543.90	544.57	545.57	536.90	543.57	N/A	N/A	STANDARD	3.9%
SF-53	543.34	543.34	544.01	545.01	536.34	543.01	N/A	N/A	STANDARD	7.5%
SF-54	539.65	539.65	540.32	541.32	532.65	539.32	N/A	N/A	STANDARD	8.4%
SF-55	552.94	552.94	553.61	554.61	545.94	552.61	N/A	N/A	STANDARD	3.8%
SF-56	554.32	554.32	554.99	555.99	547.32	553.99	N/A	N/A	STANDARD	5.9%
SF-57	555.22	555.22	555.89	556.89	548.22	554.89	N/A	N/A	STANDARD	5.6%
SF-58	558.12	558.12	558.79	559.79	558.78	557.79	557.79	N/A	WALKOUT	4.5%
SF-59	557.97	557.97	558.64	559.64	558.63	557.64	557.64	N/A	WALKOUT	2.0%
SF-60 SF-61	560.83 559.92	560.83 559.92	561.50 560.59	562.50 561.59	553.83 552.92	560.50 559.59	N/A N/A	N/A N/A N/A	STANDARD STANDARD	7.6% 5.5%
SF-62	558.56	558.56	559.23	560.23	551.56	558.23	N/A	N/A	STANDARD	4.1%
SF-63	557.91	557.91	558.58	559.58	550.91	557.58	N/A	N/A	STANDARD	
SF-64	555.30	555.30	555.97	556.97	548.30	554.97	N/A	N/A	STANDARD	6.3%
SF-65	555.05	555.05	555.72	556.72	548.05	554.72	N/A	N/A	STANDARD	7.5%
SF-66	553.44	553.44	554.11	555.11	546.44	553.11	N/A	N/A	STANDARD	4.5%
SF-67	552.06	552.06	552.73	553.73	545.06	551.73	N/A	N/A	STANDARD	2.3%
SF-68	552.09	552.09	552.76	553.76	545.09	551.76	N/A	N/A	STANDARD	2.0%
SF-95A	549.23	549.23	549.90	550.90	542.23	548.90	541.57	N/A	WALKOUT	3.2%
SF-123A	558.31	558.31	558.98	559.98	551.31	557.98	550.65	N/A	WALKOUT	-3.6%
SF-124A	554.39	554.39	555.06	556.06	547.39	554.06	546.73	N/A	WALKOUT	-5.0%
SF-125A	552.18	552.18	552.85	553.85	545.18	551.85	544.52	N/A	WALKOUT	6.3%
TW-1	550.60	N/A	551.27	552.27	543.60	550.27	542.94	N/A	WALKOUT	2.8%
TW-2	551.27	N/A	551.94	552.94	544.27	550.94	543.61	N/A	WALKOUT	3.4%
TW-3	552.90	N/A	553.57	554.57	545.90	552.57	545.24	N/A	WALKOUT	-3.1%
TW-4 TW-5	552.90 552.23 549.66	N/A N/A N/A	553.57 552.90 550.33	553.90 551.33	545.23 542.66	551.90 549.33	543.24 544.57 542.00	N/A N/A N/A	WALKOUT WALKOUT WALKOUT	-3.1% -4.6% -5.0%
TW-6	548.99	N/A	549.66	550.66	541.99	548.66	541.33	N/A	WALKOUT	-7.7%
	553.29	N/A	553.96	554.96	546.29	552.96	545.63	N/A	WALKOUT	-5.0%
TW-8	553.29	N/A	553.96	554.96	546.29	552.96	545.63	N/A	WALKOUT	-7.6%
TW-9	555.57	N/A	556.24	557.24	548.57	555.24	547.91	N/A	WALKOUT	-2.8%
TW-10	555.57	N/A	556.24	557.24	548.57	555.24	547.91	N/A	WALKOUT	-3.2%
TW-11	533.16	N/A	533.83	534.83	526.16	532.83	525.50	N/A	WALKOUT	4.5%
TW-12	533.16	N/A	533.83	534.83	526.16	532.83	525.50	N/A	WALKOUT	3.7%
TW-12 TW-13 TW-14	538.39 539.06	N/A N/A	539.06 539.73	540.06 540.73	531.39 532.06	538.06 538.73	N/A N/A	N/A N/A N/A	STANDARD STANDARD	5.7% 5.5% 7.7%
TW-15	541.08	N/A	541.75	542.75	534.08	540.75	N/A	550.08	WALKUP	5.8%
TW-16	541.75	N/A	542.42	543.42	534.75	541.42	N/A	550.75	WALKUP	6.2%
TW-17	542.19	N/A	542.86	543.86	535.19	541.86	N/A	N/A	STANDARD	-8.2%
TW-18	542.86	N/A	543.53	544.53	535.86	542.53	N/A	N/A	STANDARD	-6.8%
TW-19	547.88	N/A	548.55	549.55	540.88	547.55	N/A	N/A	STANDARD	-7.6%
TW-20 TW-21	547.88 547.81	N/A N/A N/A	548.55 558.08	549.55 559.08	540.88 550.41	547.55 547.55 557.08	N/A N/A 557.08	N/A N/A N/A	STANDARD STANDARD WALKOUT	-7.6% -7.6% 5.9%
TW-22	557.41	N/A	558.08	559.08	550.41	557.08	557.08	N/A	WALKOUT	7.1%
TW-23	553.97	N/A	554.64	555.64	546.97	553.64	553.64	N/A	WALKOUT	8.3%
TW-24	553.30	N/A	553.97	554.97	546.30	552.97	552.97	N/A	WALKOUT	6.8%
TW-25	550.18	N/A	550.85	551.85	543.18	549.85	549.85	N/A	WALKOUT	7.1%
TW-26	550.18	N/A	550.85	551.85	543.18	549.85	549.85	N/A	WALKOUT	6.9%
TW-27	557.41	N/A	558.08	559.08	550.41	557.08	N/A	N/A	STANDARD	8.0%
TW-28	557.41	N/A	558.08	559.08	550.41	557.08	N/A	N/A	STANDARD	7.6%
TW-29 TW-30	557.41 555.77 555.77	N/A N/A N/A	556.44 556.44	557.44 557.44	548.77 548.77	555.44 555.44	555.44 555.44	N/A N/A N/A	WALKOUT WALKOUT	3.3% 2.6%
TW-31	558.23	N/A	558.90	559.90	551.23	557.90	557.90	N/A	WALKOUT	5.8%
TW-32	558.23	N/A	558.90	559.90	551.23	557.90	557.90	N/A	WALKOUT	5.4%
TW-33 TW-34 TW-35	557.36 557.36	N/A N/A	558.03 558.03	559.03 559.03	550.36 550.36	557.03 557.03	N/A N/A	N/A N/A N/A	STANDARD STANDARD	4.0% 4.4% 4.0%
TW-35	556.35	N/A	557.02	558.02	549.35	556.02	N/A	N/A	STANDARD	4.0%
TW-36	556.35	N/A	557.02	558.02	549.35	556.02	N/A	N/A	STANDARD	4.4%
TW-37	555.35	N/A	556.02	557.02	548.35	555.02	N/A	N/A	STANDARD	3.7%
TW-37 TW-38 TW-39	555.35 555.35 550.84	N/A N/A N/A	556.02 556.51	557.02 557.02 552.51	548.35 548.35 543.84	555.02 550.51	N/A N/A N/A	N/A N/A N/A	STANDARD STANDARD STANDARD	4.2% 4.5%
TW-40	550.17	N/A	550.84	551.84	543.17	549.84	N/A	N/A	STANDARD	3.3%
W-113A	523.53	N/A	524.20	525.20	516.53	523.20	N/A	532.53	WALKUP	7.6%
W-114A	524.20	N/A	524.87	525.87	517.20	523.87	N/A	533.20	WALKUP	9.0%
W-115A	527.90	N/A	528.57	529.57	520.90	527.57	N/A	536.90	WALKUP	7.0%
W-116A	528.57	N/A	529.24	530.24	521.57	528.24	N/A	537.57	WALKUP	8.8%
W-117A	531.93	N/A	532.60	533.60	524.93	531.60	N/A	540.93	WALKUP	2.9%
W-118A	533.94	N/A	534.61	535.61	526.94	533.61	N/A	542.94	WALKUP	9.0%
W-118A W-119A W-120A	550.27 550.27	N/A N/A N/A	550.94 550.94	535.61 551.94 551.94	526.94 543.27 543.27	533.61 549.94 549.94	542.61 542.61	N/A N/A	WALKOUT WALKOUT	-7.5% -7.0%
W-121A	549.81	N/A	550.48	551.48	542.81	549.48	542.15	N/A	WALKOUT	-3.7%
W-122A	549.81	N/A	550.48	551.48	542.81	549.48	542.15	N/A	WALKOUT	-2.9%
W-147A	548.51	N/A	549.18	550.18	541.51	548.18	N/A	N/A	N/A	10.0%
W-148A	549.85	N/A	550.52	551.52	542.85	549.52	N/A	N/A	N/A	7.1%
W-149A W-150A	554.70 556.04 560.75	N/A N/A N/A	555.37 556.71 561.42	556.37 557.71 562.42	547.70 549.04 553.75	554.37 555.71 560.42	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	7.1% 6.8% 5.8%

				RIDGE FARMS DEVELOPMENT - CG-109 BUILDING ELEVATIONS								
<u>Lot</u> <u>Number</u>	Driveway Elevation	Garage Floor Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Max Rear Walkout Tie-in Elevation	Rear Walkup Tie-in Elevation	Basement Type	Driveway Slope		
	DE		(TF=DE+0.67)	(FF=TF+1)	(BF = FF - 8.67 ft.)	(MAX = FF - 2 ft.)	FF - 9.33 ft	FF + 7.33 ft				
SF-76A	493.96	493.96	494.63	495.63	486.96	493.63	486.30	N/A	WALKOUT	-4.3%		
SF-77A	489.81	489.81	490.48	491.48	482.81	489.48	482.15	N/A	WALKOUT	-4.6%		
SF-78A	486.00	486.00	486.67	487.67	479.00	485.67	478.34	N/A	WALKOUT	-3.6%		
SF-79A	481.26	481.26	481.93	482.93	474.26	480.93	473.60	N/A	WALKOUT	-3.5%		
SF-80A	476.75	476.75	477.42	478.42	469.75	476.42	469.09	N/A	WALKOUT	-2.1%		
SF-81A	473.22	473.22	473.89	474.89	466.22	472.89	465.56	N/A	WALKOUT	7.9%		
SF-82A	453.00	453.00	453.67	454.67	N/A	452.67	N/A	462.00	WALKUP	10.0%		
SF-83A	467.40	467.40	468.07	469.07	N/A	467.07	N/A	476.40	WALKUP	5.9%		
SF-84A	471.58	471.58	472.25	473.25	N/A	471.25	N/A	480.58	WALKUP	6.3%		
SF-85A	475.19	475.19	475.86	476.86	N/A	474.86	N/A	484.19	WALKUP	7.2%		
SF-86A	478.79	478.79	479.46	480.46	N/A	478.46	N/A	487.79	WALKUP	10.0%		
SF - 87A	482.38	482.38	483.05	484.05	N/A	482.05	N/A	491.38	WALKUP	6.0%		
SF-88A	486.31	486.31	486.98	487.98	N/A	485.98	N/A	495.31	WALKUP	6.0%		
SF-89A	490.01	490.01	490.68	491.68	N/A	489.68	N/A	499.01	WALKUP	6.6%		
SF-90A	493.82	493.82	494.49	495.49	N/A	493.49	N/A	502.82	WALKUP	5.6%		
SF-91A	497.62	497.62	498.29	499.29	N/A	497.29	N/A	506.62	WALKUP	5.3%		
TW-89A	435.69	N/A	436.36	437.36	428.69	435.36	N/A	444.69	WALKUP	9.8%		
TW-90A	435.69	N/A	436.36	437.36	428.69	435.36	N/A	444.69	WALKUP	9.9%		
TW-91A	442.36	N/A	443.03	444.03	435.36	442.03	N/A	451.36	WALKUP	7.7%		
TW-92A	443.70	N/A	444.37	445.37	436.70	443.37	N/A	452.70	WALKUP	7.8%		
TW-93A	461.15	N/A	461.82	462.82	454.15	460.82	N/A	470.15	WALKUP	5.5%		
TW-94A	462.49	N/A	463.16	464.16	455.49	462.16	N/A	471.49	WALKUP	9.6%		

	RIDGE FARMS DEVELOPMENT - CG-108 BUILDING ELEVATIONS									
<u>Lot</u> <u>Number</u>	Driveway Elevation	Garage Floor Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Max Rear Walkout Tie-in Elevation	Rear Walkup Tie-in Elevation	Basement Type	Driveway Slope
	DE	+	(TF=DE+0.67)	(FF=TF+1)	(BF = FF - 8.67 ft.)	(MAX = FF - 2 ft.)	FF - 9.33 ft	FF + 7.33 ft		
SF-92A	510.21	510.21	510.88	511.88	N/A	509.88	N/A	519.21	WALKUP	9.6%
SF-93A	518.35	518.35	519.02	520.02	N/A	518.02	N/A	527.35	WALKUP	9.2%
SF-94A	522.47	522.47	523.14	524.14	N/A	522.14	N/A	531.47	WALKUP	9.7%
SF-96A	551.70	551.70	552.37	553.37	544.70	551.37	544.04	N/A	WALKOUT	4.8%
SF-97A SF-98A	562.06 558.01	562.06 558.01	562.73 558.68	563.73 559.68	555.06 551.01	561.73 557.68	554.40 550.35	N/A N/A	WALKOUT WALKOUT	-7.7% -7.5%
SF-99A	555.05	555.05	555.72	556.72	548.05	554.72	547.39	N/A N/A	WALKOUT	-8.3%
SF-100A	555.64	555.64	556.31	557.31	548.64	555.31	547.98	N/A	WALKOUT	-9.9%
SF-101A	553.35	553.35	554.02	555.02	546.35	553.02	545.69	N/A	WALKOUT	4.9%
SF-102A	551.18	551.18	551.85	552.85	544.18	550.85	543.52	N/A	WALKOUT	4.4%
SF-103A	549.36	549.36	550.03	551.03	542.36	549.03	541.70	N/A	WALKOUT	3.3%
SF-104A SF-105A	542.75 542.01	542.75 542.01	543.42 542.68	544.42 543.68	535.75 535.01	542.42 541.68	535.09 534.35	N/A N/A	WALKOUT WALKOUT	-8.4% -6.7%
SF-105A SF-106A	542.08	542.08	542.75	543.75	535.08	541.75	534.42	N/A N/A	WALKOUT	-6.2%
SF-107A	543.30	543.30	543.97	544.97	536.30	542.97	535.64	N/A	WALKOUT	-6.3%
SF-108A	546.71	546.71	547.38	548.38	539.71	546.38	539.05	N/A	WALKOUT	-5.6%
SF-109A	548.11	548.11	548.78	549.78	541.11	547.78	540.45	N/A	WALKOUT	-5.6%
SF-110A	549.63	549.63	550.30	551.30	542.63	549.30	541.97	N/A	WALKOUT	-4.9%
SF-111A	551.29	551.29	551.96	552.96	544.29	550.96	543.63	N/A	WALKOUT	-3.5%
SF-112A SF-113A	552.52 553.83	552.52 553.83	553.19 554.50	554.19 555.50	545.52 546.83	552.19 553.50	544.86 546.17	N/A N/A	WALKOUT WALKOUT	-3.4% -5.7%
SF-114A	555.36	555.36	556.03	557.03	548.36	555.03	547.70	N/A N/A	WALKOUT	-3.1%
SF-115A	556.76	556.76	557.43	558.43	549.76	556.43	549.10	N/A	WALKOUT	-3.7%
SF-116A	558.12	558.12	558.79	559.79	551.12	557.79	550.46	N/A	WALKOUT	-3.9%
SF-117A	558.81	558.81	559.48	560.48	551.81	558.48	551.15	N/A	WALKOUT	-6.1%
SF-118A	560.27	560.27	560.94	561.94	553.27	559.94	552.61	N/A	WALKOUT	-7.3%
SF-119A SF-120A	561.58 562.91	561.58 562.91	562.25 563.58	563.25 564.58	554.58 555.91	561.25 562.58	553.92 555.25	N/A N/A	WALKOUT WALKOUT	-6.4% -7.3%
SF-120A SF-121A	563.48	563.48	564.15	565.15	556.48	563.15	555.82	N/A N/A	WALKOUT	-7.3%
SF-122A	561.98	561.98	562.65	563.65	554.98	561.65	554.32	N/A	WALKOUT	-4.6%
SF-123A	563.34	563.34	564.01	565.01	556.34	563.01	N/A	N/A	STANDARD	-3.6%
SF-124A	562.09	562.09	562.76	563.76	555.09	561.76	N/A	N/A	STANDARD	-5.0%
SF-125A	561.37	561.37	562.04	563.04	554.37	561.04	N/A	N/A	STANDARD	6.3%
SF-126A SF-127A	560.68	560.68 559.99	561.35 560.66	562.35	553.68 552.99	560.35 559.66	N/A	N/A N/A	STANDARD STANDARD	9.2%
SF-127A SF-128A	559.99 559.29	559.29	559.96	561.66 560.96	552.29	558.96	N/A N/A	N/A N/A	STANDARD	7.1% 7.1%
SF-129A	558.89	558.89	559.56	560.56	551.89	558.56	N/A	N/A	STANDARD	7.6%
SF-130A	557.23	557.23	557.90	558.90	550.23	556.90	N/A	N/A	STANDARD	7.9%
SF-131A	556.51	556.51	557.18	558.18	549.51	556.18	N/A	N/A	STANDARD	7.7%
SF-132A	555.31	555.31	555.98	556.98	548.31	554.98	N/A	N/A	STANDARD	7.2%
SF-133A	554.97	554.97	555.64	556.64	547.97	554.64	N/A	N/A	STANDARD	7.7%
SF-134A SF-135A	551.79 550.49	551.79 550.49	552.46 551.16	553.46 552.16	544.79 543.49	551.46 550.16	N/A N/A	N/A N/A	STANDARD STANDARD	5.4% 6.1%
SF-135A SF-136A	549.67	549.67	550.34	551.34	543.49	549.34	N/A N/A	N/A N/A	STANDARD	7.8%
SF-137A	548.81	548.81	549.48	550.48	541.81	548.48	N/A	N/A	STANDARD	-2.8%
SF-138A	547.62	547.62	548.29	549.29	540.62	547.29	N/A	N/A	STANDARD	-5.2%
SF-139A	546.90	546.90	547.57	548.57	539.90	546.57	N/A	N/A	STANDARD	-5.9%
SF-140A	552.40	552.40	553.07	554.07	545.40	552.07	N/A	N/A	STANDARD	-5.4%
SF-141A	553.71	553.71	554.38	555.38	546.71	553.38	N/A	N/A	STANDARD	-6.9%
SF-142A SF-143A	556.48 557.59	556.48 557.59	557.15 558.26	558.15 559.26	549.48 550.59	556.15 557.26	N/A N/A	N/A N/A	STANDARD STANDARD	-7.2% 8.7%
SF-144A	559.18	559.18	559.85	560.85	552.18	558.85	N/A	N/A N/A	STANDARD	7.5%
SF-145A	561.57	561.57	562.24	563.24	554.57	561.24	N/A	N/A	STANDARD	3.8%
SF-146A	561.98	561.98	562.65	563.65	554.98	561.65	N/A	N/A	STANDARD	4.0%
SF-147A	563.34	563.34	564.01	565.01	556.34	563.01	N/A	N/A	STANDARD	5.0%
SF-148A	565.64	565.64	566.31	567.31	558.64	565.31	N/A	N/A	STANDARD	-2.3%
SF-149A	563.13	563.13	563.80	564.80	556.13	562.80 561.05	N/A	N/A	STANDARD	-7.5%
SF-150A SF-151A	561.38 559.54	561.38 559.54	562.05 560.21	563.05 561.21	554.38 552.54	561.05 559.21	N/A N/A	N/A N/A	STANDARD STANDARD	-7.1% 5.6%
SF-151A SF-152A	557.79	557.79	558.46	559.46	550.79	557.46	N/A N/A	N/A N/A	STANDARD	8.1%
SF-153A	555.71	555.71	556.38	557.38	555.27	555.38	N/A	N/A	STANDARD	8.5%
SF-154A	505.44	N/A	506.11	507.11	498.44	505.11	N/A	514.44	WALKUP	8.1%
SF-155A	506.25	N/A	506.92	507.92	499.25	505.92	N/A	515.25	WALKUP	8.4%
SF - 156A	507.02	N/A	507.69	508.69	500.02	506.69	N/A	516.02	WALKUP	4.2%

				RMS DEVELOPMEN ILDING ELEVATION				
_ot Number	Driveway Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Rear Walkout Tie-in Elevation	Basement Type	Driveway Slope
	DE	(TF=DE+0.67)	(FF=TF+1)	(BF = FF - 8.67 ft.)	(MAX = FF - 2 ft.)	FF - 9.33 ft		
TW-41	422.39	423.06	424.06	415.39	422.06	N/A	STANDARD	4.9%
TW-42	423.73	424.40	425.40	416.73	423.40	N/A	STANDARD	2.8%
TW-43	424.19	424.86	425.86	417.19	423.86	N/A	STANDARD	7.4%
TW-44	424.19	424.86	425.86	417.19	423.86	N/A	STANDARD	7.1%
TW-45	427.15	427.82	428.82	420.15	426.82	N/A	STANDARD	5.6%
TW-46	427.15	427.82	428.82	420.15	426.82	N/A	STANDARD	2.8%
TW-47	427.79	428.46	429.46	420.79	427.46	N/A	STANDARD	4.2%
TW-48	427.79	428.46	429.46	420.79	427.46	N/A	STANDARD	1.8%
TW-49	429.58	430.25	431.25	422.58	429.25	N/A	STANDARD	1.8%
TW-50	429.58	430.25	431.25	422.58	429.25	N/A	STANDARD	1.8%
TW-51	430.57	431.24	432.24	423.57	430.24	N/A	STANDARD	1.8%
TW-52	431.24	431.91	432.91	424.24	430.91	N/A	STANDARD	1.8%
TW-53	442.99	443.66	444.66	435.99	442.66	435.33	WALKOUT	8.3%
TW-54	441.65	442.32	443.32	434.65	441.32	433.99	WALKOUT	9.2%
TW-55	439.11	439.78	440.78	432.11	438.78	431.45	WALKOUT	6.4%
TW-56	437.98	438.65	439.65	430.98	437.65	430.32	WALKOUT	5.2%
TW-57	434.65	435.32	436.32	427.65	434.32	426.99	WALKOUT	9.4%
TW-58	433.98	434.65	435.65	426.98	433.65	426.32	WALKOUT	8.6%
TW-59	431.90	432.57	433.57	424.90	431.57	424.24	WALKOUT	4.8%
TW-60	430.56	431.23	432.23	423.56	430.23	422.90	WALKOUT	3.2%
TW-61	429.20	429.87	430.87	422.20	428.87	421.54	WALKOUT	9.0%
TW-62	427.86	428.53	429.53	420.86	427.53	420.20	WALKOUT	7.2%
TW-63	425.67	426.34	427.34	418.67	425.34	N/A	STANDARD	4.4%
TW-64	425.00	425.67	426.67	418.00	424.67	N/A	STANDARD	3.1%
TW-65	423.20	423.87	424.87	416.20	422.87	N/A	STANDARD	2.9%
TW-66	423.20	423.87	424.87	416.20	422.87	N/A	STANDARD	3.3%
TW-67	424.47	425.14	426.14	417.47	424.14	N/A	STANDARD	8.1%
TW-68	424.47	425.14	426.14	417.47	424.14	N/A	STANDARD	6.3%
TW-69	432.65	433.32	434.32	425.65	432.32	N/A	STANDARD	10.0%
TW-70	432.65	433.32	434.32	425.65	432.32	N/A	STANDARD	9.7%
TW-71	437.68	438.35	439.35	430.68	437.35	N/A	STANDARD	5.6%
TW-72	439.02	439.69	440.69	432.02	438.69	N/A	STANDARD	6.4%
TW-73	441.28	441.95	442.95	434.28	440.95	N/A	STANDARD	5.0%
TW-74	443.20	443.87	444.87	436.20	442.87	N/A	STANDARD	6.1%

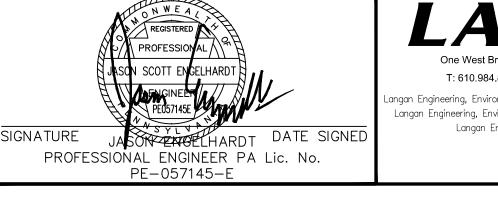
	RIDGE FARMS DEVELOPMENT - CG-101 SINGLE BUILDING ELEVATIONS								
<u>Lot</u> <u>Number</u>	<u>Driveway</u> Elevation	Garage Floor Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Max Rear Walkout Tie-in Elevation	Basement Type	Driveway Slope
	DE		(TF=DE+0.67)	(FF=TF+1)	(BF = FF - 8.67 ft.)	(MAX = FF - 2 ft.)	FF - 9.33 ft		
SF-1W	451.89	451.89	452.89	453.56	444.89	451.56	N/A	STANDARD	-8.9%
SF-2W	460.03	460.03	461.03	461.70	453.03	459.70	N/A	STANDARD	-8.2%
SF-3W	471.19	471.19	472.19	472.86	464.19	470.86	N/A	STANDARD	-8.3%
SF-4W	485.84	485.84	486.84	487.51	478.84	485.51	N/A	STANDARD	-5.1%
SF-5W	496.92	496.92	497.92	498.59	489.92	496.59	N/A	STANDARD	-4.8%
SF-6W	510.66	510.66	511.66	512.33	503.66	510.33	N/A	STANDARD	-4.4%
SF-7W	523.73	523.73	524.73	525.40	516.73	523.40	N/A	STANDARD	-7.3%
SF-8W	530.38	530.38	531.38	532.05	523.38	530.05	N/A	STANDARD	-3.8%

RIDGE FARMS DEVELOPMENT - CG-102 SINGLE BUILDING ELEVATIONS Lot Driveway Elevation El									
<u>Lot</u> lumber	<u>Driveway</u> Elevation	Garage Floor Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Max Rear Walkout Tie-in Elevation	Basement Type	Driveway Slope
	DE		(TF=DE+0.67)	(FF=TF+1)	(BF = FF - 8.67 ft.)	(MAX = FF - 2 ft.)	FF - 9.33 ft		
SF-9W	542.76	542.76	543.76	544.43	535.76	542.43	N/A	STANDARD	7.9%
SF-10W	549.00	549.00	550.00	550.67	542.00	548.67	N/A	STANDARD	8.9%
SF-11W	559.64	559.64	560.64	561.31	552.64	559.31	N/A	STANDARD	4.4%
SF-12W	565.19	565.19	566.19	566.86	558.19	564.86	N/A	STANDARD	8.1%
F-13W	539.45	539.45	540.45	541.12	532.45	539.12	N/A	STANDARD	7.5%
F-14W	553.90	553.90	554.90	555.57	546.90	553.57	N/A	STANDARD	8.9%
F-15W	560.37	560.37	561.37	562.04	553.37	560.04	N/A	STANDARD	8.2%
SF-16W	563.40	563.40	564.40	565.07	556.40	563.07	N/A	STANDARD	7.8%
SF-17W	573.39	573.39	574.39	575.06	566.39	573.06	N/A	STANDARD	3.8%
F-18W	570.20	570.20	571.20	571.87	563.20	569.87	N/A	STANDARD	2.7%
F-19W	561.50	561.50	562.50	563.17	554.50	561.17	N/A	STANDARD	5.8%
F-20W	556.70	556.70	557.70	558.37	549.70	556.37	N/A	STANDARD	7.7%
F-21W	558.01	558.01	559.01	559.68	551.01	557.68	N/A	STANDARD	-9.2%
SF-22W	556.84	556.84	557.84	558.51	549.84	556.51	N/A	STANDARD	-8.0%
F-23W	552.17	552.17	553.17	553.84	545.17	551.84	N/A	STANDARD	-5.4%
F-24W	560.37	560.37	561.37	562.04	553.37	560.04	N/A	STANDARD	7.0%
F-25W	554.98	554.98	555.98	556.65	547.98	554.65	N/A	STANDARD	7.6%
SF-26W	547.20	547.20	548.20	548.87	540.20	546.87	N/A	STANDARD	8.2%

				TWIN BUILDIN	G ELEVATIONS				
ot Number	Driveway Elevation	Top of Foundation Elevation	First Floor Elevation	Basement Floor Elevation	Max Tie-in Elevation	Rear Walkout Tie-in Elevation	Rear Walkup Tie-in Elevation	Basement Type	Driveway Slope
	DE	(TF=DE+0.67)	(FF=TF+1)	(BF = FF - 8.67 ft.)	(MAX = FF - 2 ft.)	FF - 9.33 ft	FF + 7.33 ft		
TW-1W	469.89	470.56	471.56	462.89	469.56	N/A	N/A	STANDARD	6.1%
TW-2W	470.56	471.23	472.23	463.56	470.23	N/A	N/A	STANDARD	2.5%
TW-3W	474.66	475.33	476.33	467.66	474.33	466.00	N/A	WALKOUT	8.2%
TW-4W	476.00	476.67	477.67	469.00	475.67	467.34	N/A	WALKOUT	2.0%
TW-5W TW-6W	479.50 480.84	480.17 481.51	481.17 482.51	472.50 473.84	479.17 480.51	470.84 472.18	N/A N/A	WALKOUT WALKOUT	7.0% 5.1%
TW-7W	482.24	482.91	483.91	475.24	481.91	473.58	N/A N/A	WALKOUT	-5.9%
TW-8W	484.25	484.92	485.92	477.25	483.92	475.59	N/A	WALKOUT	-5.4%
TW-9W	486.40	487.07	488.07	479.40	486.07	477.74	N/A	WALKOUT	-8.1%
TW-10W	487.74	488.41	489.41	480.74	487.41	479.08	N/A	WALKOUT	-6.9%
TW-11W	489.46	490.13	491.13	482.46	489.13	480.80	N/A	WALKOUT	3.0%
TW-12W	489.46	490.13	491.13	482.46	489.13	480.80	N/A	WALKOUT	5.2%
TW-13W TW-14W	488.02 488.02	488.69 488.69	489.69 489.69	481.02 481.02	487.69 487.69	479.36 479.36	N/A N/A	WALKOUT WALKOUT	2.0% 4.4%
TW-14VV	484.32	484.99	485.99	477.32	483.99	475.66	N/A N/A	WALKOUT	-2.0%
TW-16W	482.31	482.98	483.98	475.31	481.98	473.65	N/A	WALKOUT	-4.9%
TW-17W	483.76	484.43	485.43	476.76	483.43	N/A	492.76	WALKUP	2.5%
TW-18W	484.43	485.10	486.10	477.43	484.10	N/A	493.43	WALKUP	6.2%
TW-19W	485.60	486.27	487.27	478.60	485.27	N/A	494.60	WALKUP	6.7%
TW-20W TW-21W	486.27 488.81	486.94 489.48	487.94 490.48	479.27 481.81	485.94 488.48	N/A N/A	495.27 497.81	WALKUP WALKUP	8.6% 7.4%
TW-21W	489.48	490.15	490.46	482.48	489.15	N/A N/A	498.48	WALKUP	7.4%
TW-23W	490.10	490.77	491.77	483.10	489.77	N/A	499.10	WALKUP	6.9%
ΓW-24W	490.10	490.77	491.77	483.10	489.77	N/A	499.10	WALKUP	4.7%
W-25W	491.67	492.34	493.34	484.67	491.34	N/A	500.67	WALKUP	8.1%
ΓW-26W	489.66	490.33	491.33	482.66	489.33	N/A	498.66	WALKUP	6.6%
TW-27W	486.79	487.46	488.46	479.79	486.46	N/A	495.79	WALKUP	7.2%
TW-28W	484.78	485.45	486.45	477.78	484.45	N/A	493.78	WALKUP	7.2% 7.6%
TW-29W TW-30W	481.79 479.78	482.46 480.45	483.46 481.45	474.79 472.78	481.46 479.45	N/A N/A	490.79 488.78	WALKUP WALKUP	8.2%
TW-31W	476.67	477.34	478.34	469.67	476.34	N/A	485.67	WALKUP	7.5%
TW-32W	474.66	475.33	476.33	467.66	474.33	N/A	483.66	WALKUP	8.2%
TW-33W	471.63	472.30	473.30	464.63	471.30	N/A	480.63	WALKUP	6.3%
ΓW-34W	469.62	470.29	471.29	462.62	469.29	N/A	478.62	WALKUP	7.1%
TW-35W	470.78	471.45	472.45	463.78	470.45	N/A	479.78	WALKUP	6.6%
TW-36W TW-37W	472.12 476.48	472.79 477.15	473.79 478.15	465.12 469.48	471.79 476.15	N/A N/A	481.12 485.48	WALKUP WALKUP	5.0% 6.5%
TW-38W	477.15	477.13	478.82	470.15	476.13	N/A	486.15	WALKUP	8.1%
TW-39W	509.26	509.93	510.93	502.26	508.93	500.60	N/A	WALKOUT	3.0%
ΓW-40W	513.28	513.95	514.95	506.28	512.95	504.62	N/A	WALKOUT	9.9%
W-41W	519.06	519.73	520.73	512.06	518.73	510.40	N/A	WALKOUT	8.0%
TW-42W	523.08	523.75	524.75	516.08	522.75	514.42	N/A	WALKOUT	7.1%
ΓW-43W	525.75	526.42	527.42	518.75	525.42	517.09	N/A	WALKOUT	2.1%
TW-44W TW-45W	528.43 531.61	529.10 532.28	530.10 533.28	521.43 524.61	528.10 531.28	519.77 N/A	N/A 540.61	WALKOUT WALKUP	1.6% 8.0%
W-46W	532.28	532.95	533.95	525.28	531.95	N/A	541.28	WALKUP	5.8%
W-47W	529.86	530.53	531.53	522.86	529.53	N/A	538.86	WALKUP	8.2%
ΓW - 48W	525.84	526.51	527.51	518.84	525.51	N/A	534.84	WALKUP	6.1%
TW-49W	520.17	520.84	521.84	513.17	519.84	N/A	529.17	WALKUP	9.2%
ΓW-50W	515.48	516.15	517.15	508.48	515.15	N/A	524.48	WALKUP	5.3%
ΓW-51W ΓW-52W	510.38 505.69	511.05 506.36	512.05 507.36	503.38 498.69	510.05 505.36	N/A N/A	519.38 514.69	WALKUP WALKUP	8.1% 6.5%
TW-52VV	505.69	508.12	507.36	500.45	507.12	N/A N/A	514.69	WALKUP	8.1%
ΓW-54W	508.62	509.29	510.29	501.62	508.29	N/A	517.62	WALKUP	2.6%
W-55W	512.84	513.51	514.51	505.84	512.51	N/A	521.84	WALKUP	6.4%
W-56W	515.52	516.19	517.19	508.52	515.19	N/A	524.52	WALKUP	6.1%
W-57W	519.08	519.75	520.75	512.08	518.75	N/A	528.08	WALKUP	6.7%
TW-58W	521.76	522.43	523.43	514.76	521.43	N/A	530.76	WALKUP	8.4%
TW-59W TW-60W	525.84 528.52	526.51 529.19	527.51 530.19	518.84 521.52	525.51 528.19	N/A N/A	534.84 537.52	WALKUP WALKUP	8.8% 6.2%
ΓW-60W	535.69	536.36	537.36	521.52	535.36	527.03	N/A	WALKOUT	-2.1%
TW-62W	535.69	536.36	537.36	528.69	535.36	527.03	N/A	WALKOUT	-5.5%
TW-63W	536.88	537.55	538.55	529.88	536.55	528.22	N/A	WALKOUT	-8.0%
TW-64W	536.88	537.55	538.55	529.88	536.55	528.22	N/A	WALKOUT	-6.4%

OWNER/APPLICANT KAY WALBERT LLC. ATTN: RICK KOZE 5930 HAMILTON BLVD., SUITE 10 ALLENTOWN, PA 18106 610-395-6857

09-23-21	REVISED PER TOWNSHIP COMMENTS	4.	ALL ON WEAL A
07-15-21	REVISED PER TOWNSHIP COMMENTS	3.	REGISTERED PROFESSION AL
05-19-21	REVISED PER TOWNSHIP COMMENTS	2.	JASON SCOTT ENGELHA
01-21-21	REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS	1.	PEDS7145E
Date	Description	No.	SIGNATURE JASON ENGELL
	REVISIONS		PROFESSIONAL ENGINEE PE-057145



LANGAN T: 610.984.8500 F: 610.984.8501 www.langan.com Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A. Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc.
Langan International LLC
Collectively known as Langan

RIDGE FARMS

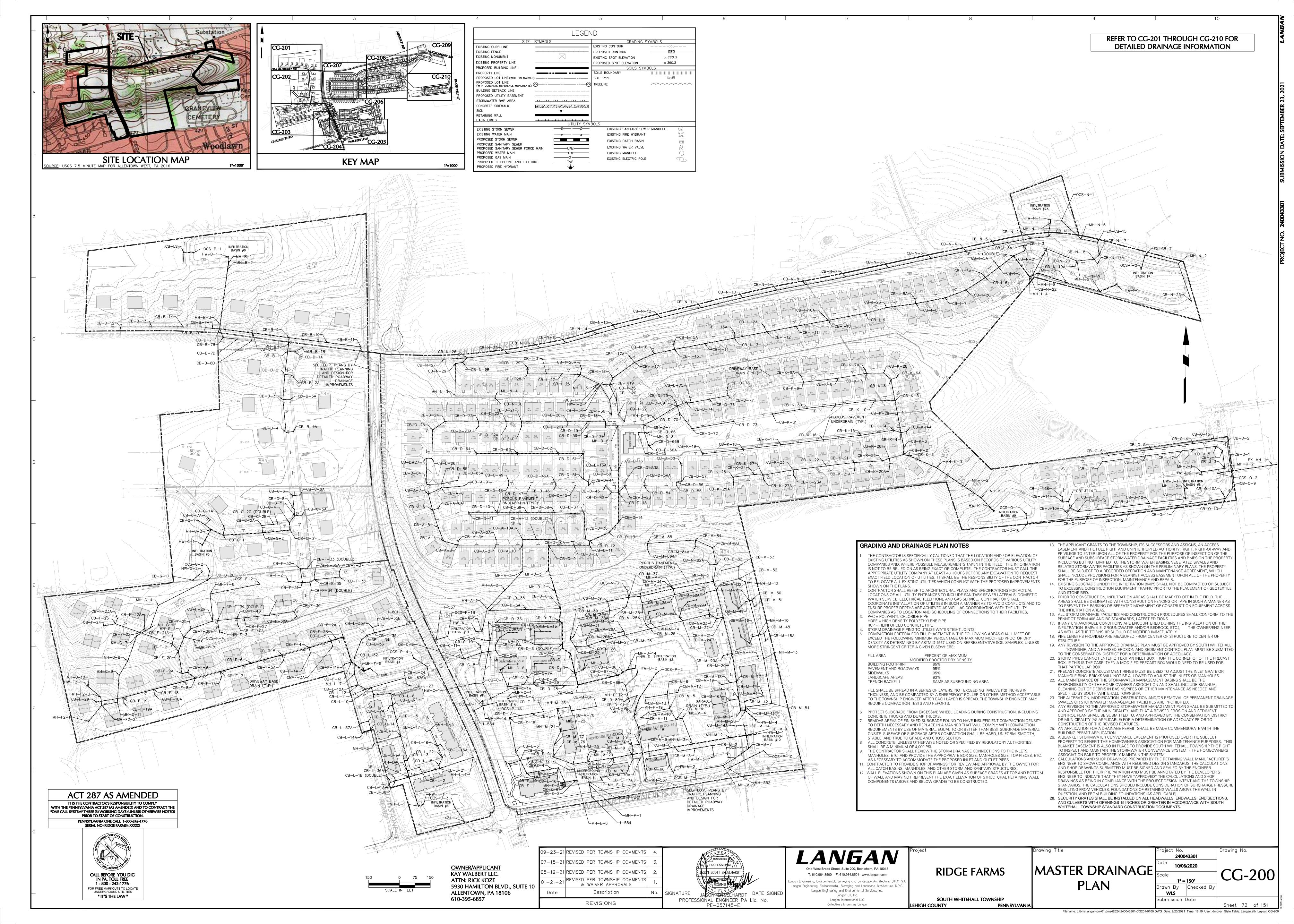
SOUTH WHITEHALL TOWNSHIP

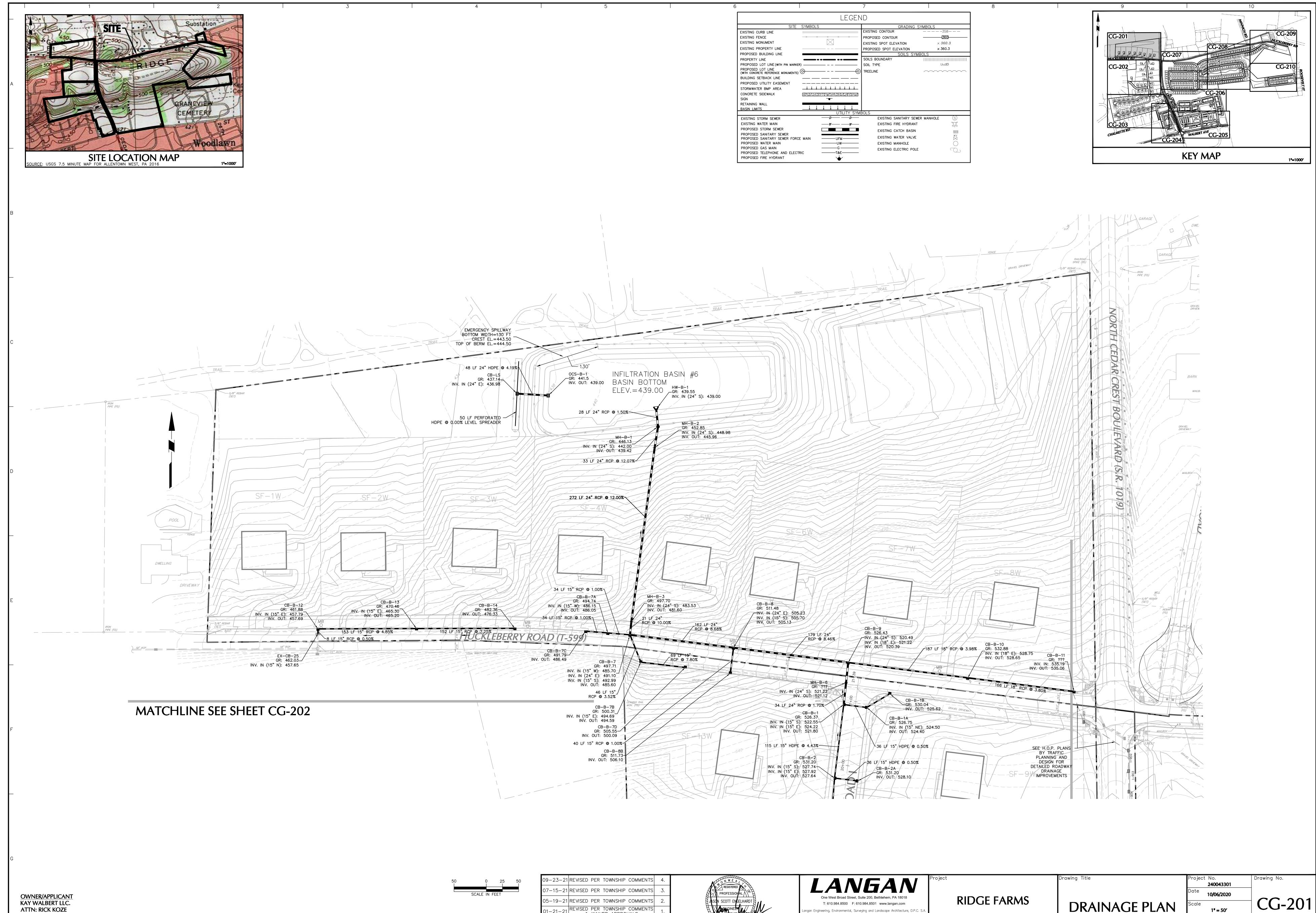
LEHIGH COUNTY

PENNSYLVANIA

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roject No. **240043301** CG-111





NOTE: SEE SHEET CG-200 FOR DRAINAGE NOTES.

5930 HAMILTON BLVD., SUITE 10

ALLENTOWN, PA 18106

610-395-6857

01-21-21 REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS PROFESSIONAL ENGINEER PA Lic. No. REVISIONS PE-057145-E



ngan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc.

Langan International LLC

Collectively known as Langan

DRAINAGE PLAN

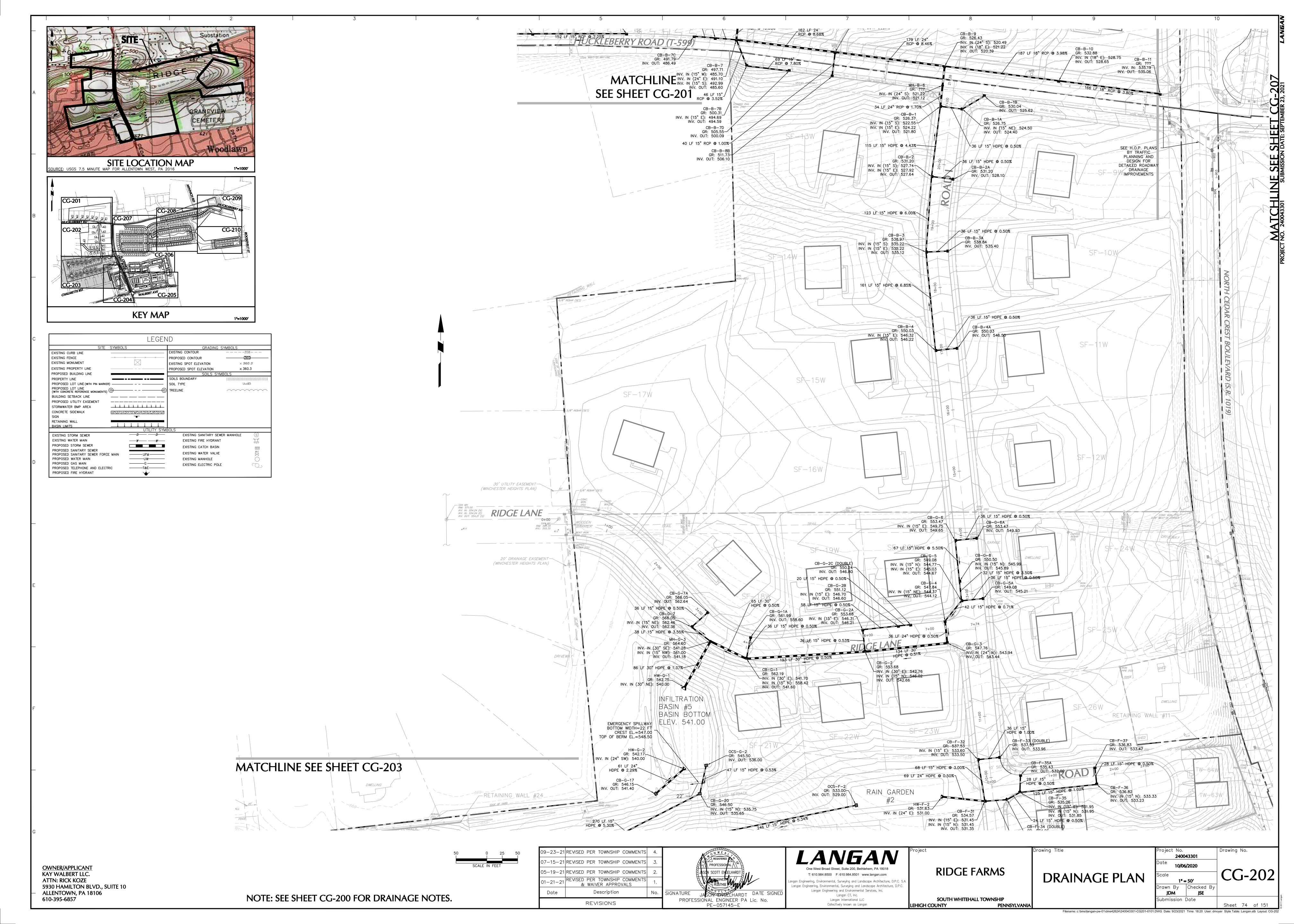
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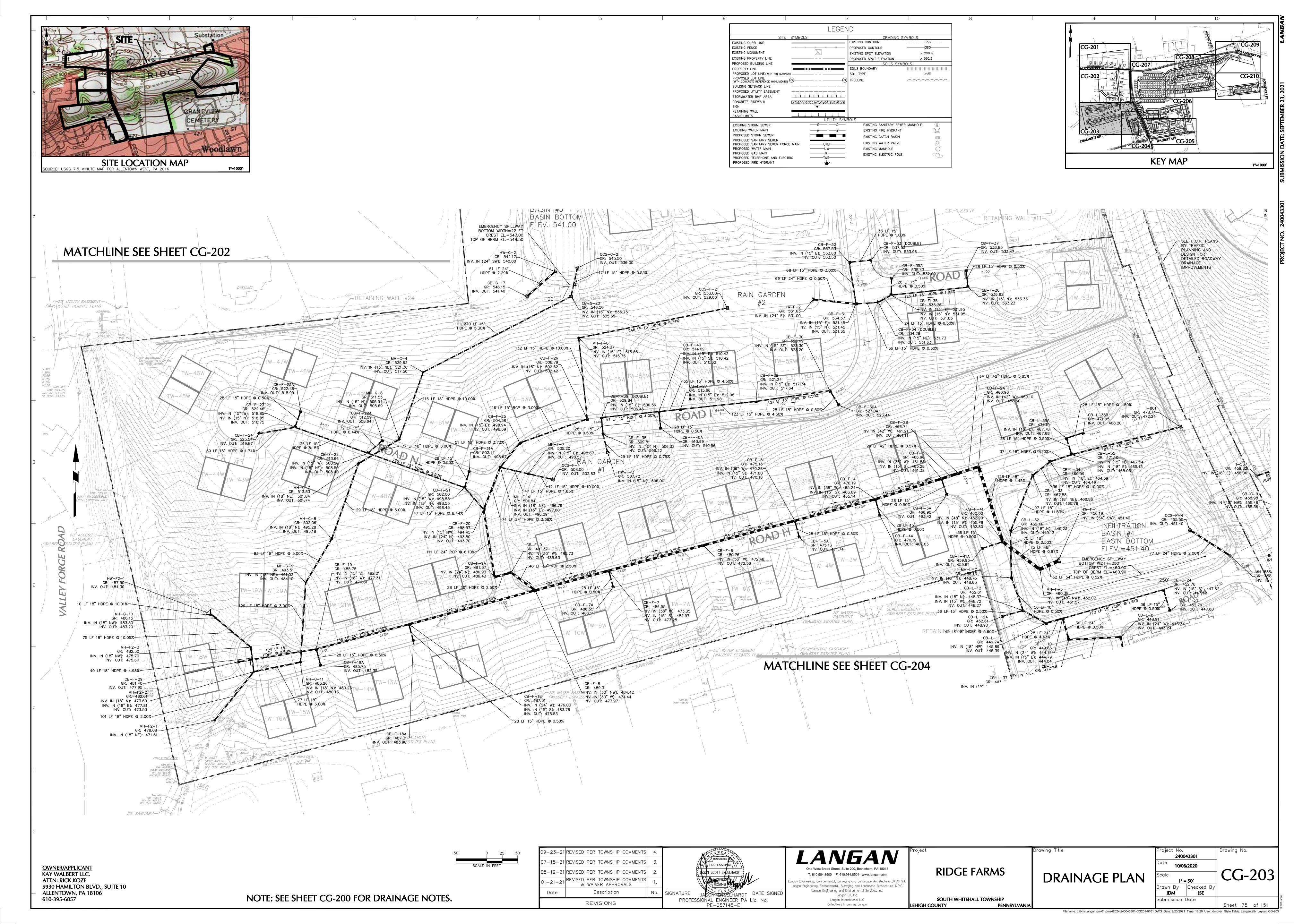
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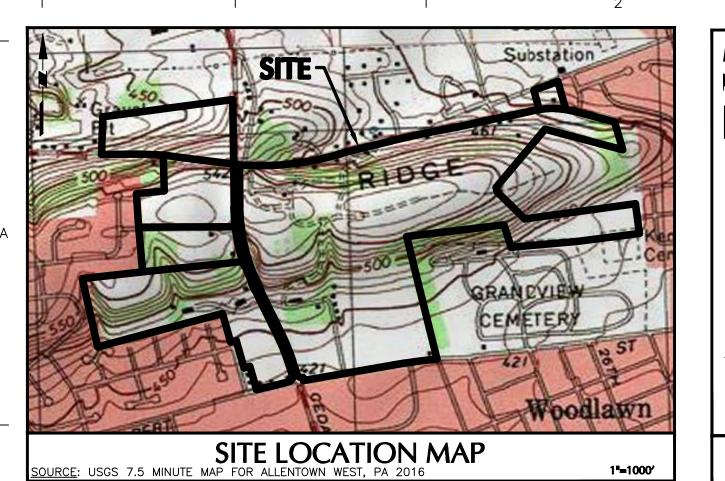
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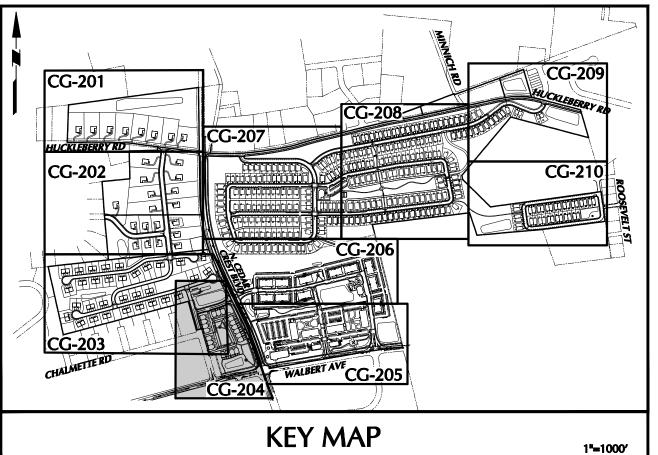
LEHIGH COUNTY PENNSYLVANIA Submission Date

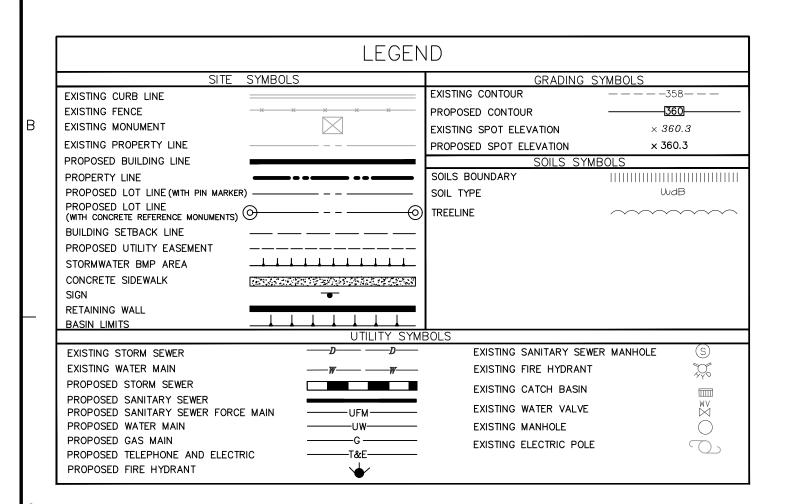
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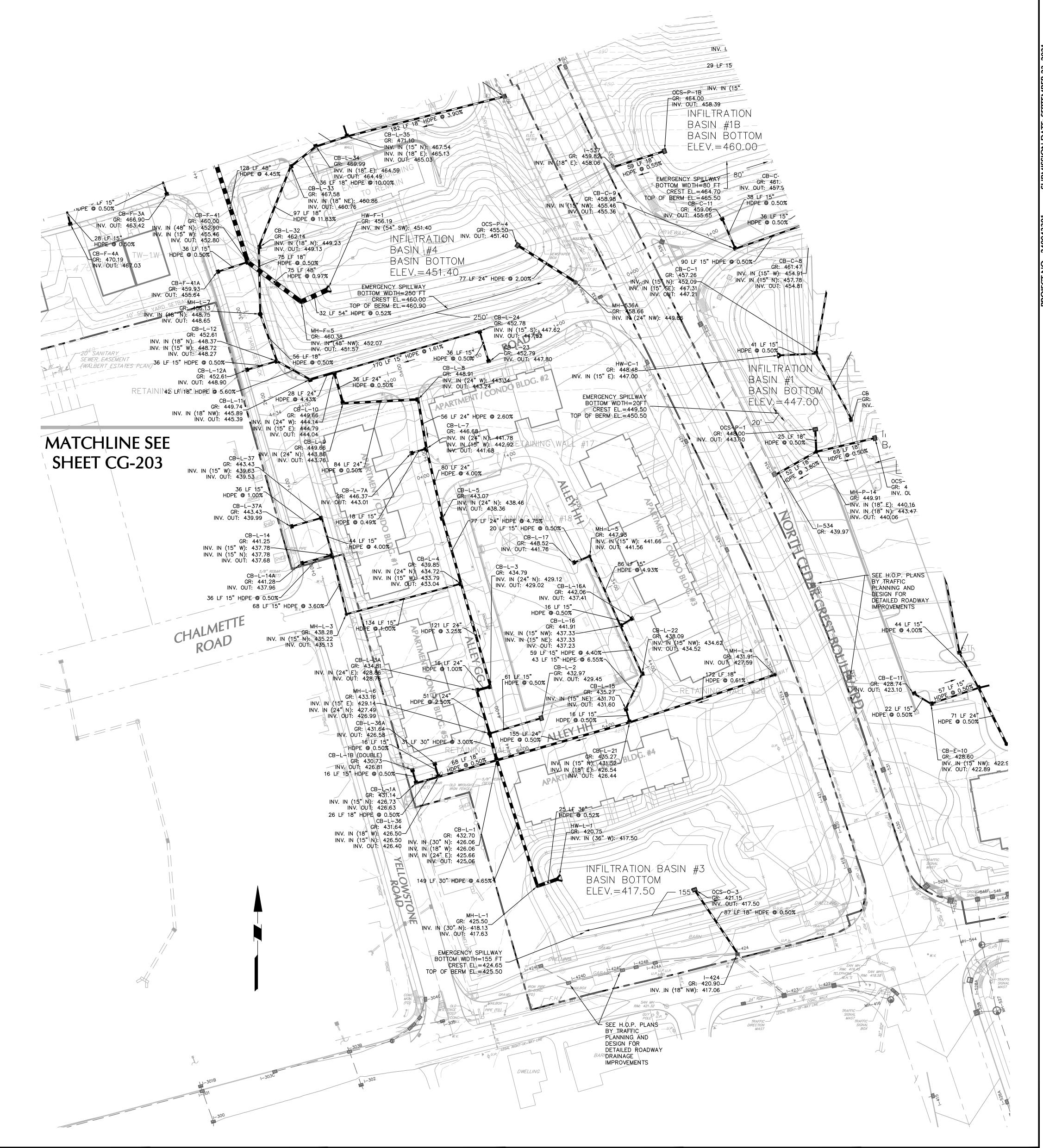












09-23-21 REVISED PER TOWNSHIP COMMENTS 4.

07-15-21 REVISED PER TOWNSHIP COMMENTS 3.

05-19-21 REVISED PER TOWNSHIP COMMENTS 2.

01-21-21 REVISED PER TOWNSHIP COMMENTS 1.

Date Description No.

REVISIONS

PROFESSIONAL

JASON SCOTT ENCELHARDT

PEOSTI4SE

PROFESSIONAL

AS Y L

PROFESSIONAL ENGINEER PA Lic. No.

PE-057145-E

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Ingan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A.

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Langan Engineering and Environmental Services, Inc.

Langan CT, Inc.

Langan International LLC

Collectively known as Langan

RIDGE FARMS

PENNSYLVANIA

SOUTH WHITEHALL TOWNSHIP

LEHIGH COUNTY

DRAINAGE PLAN

Project No.

240043301

Date

10/06/2020

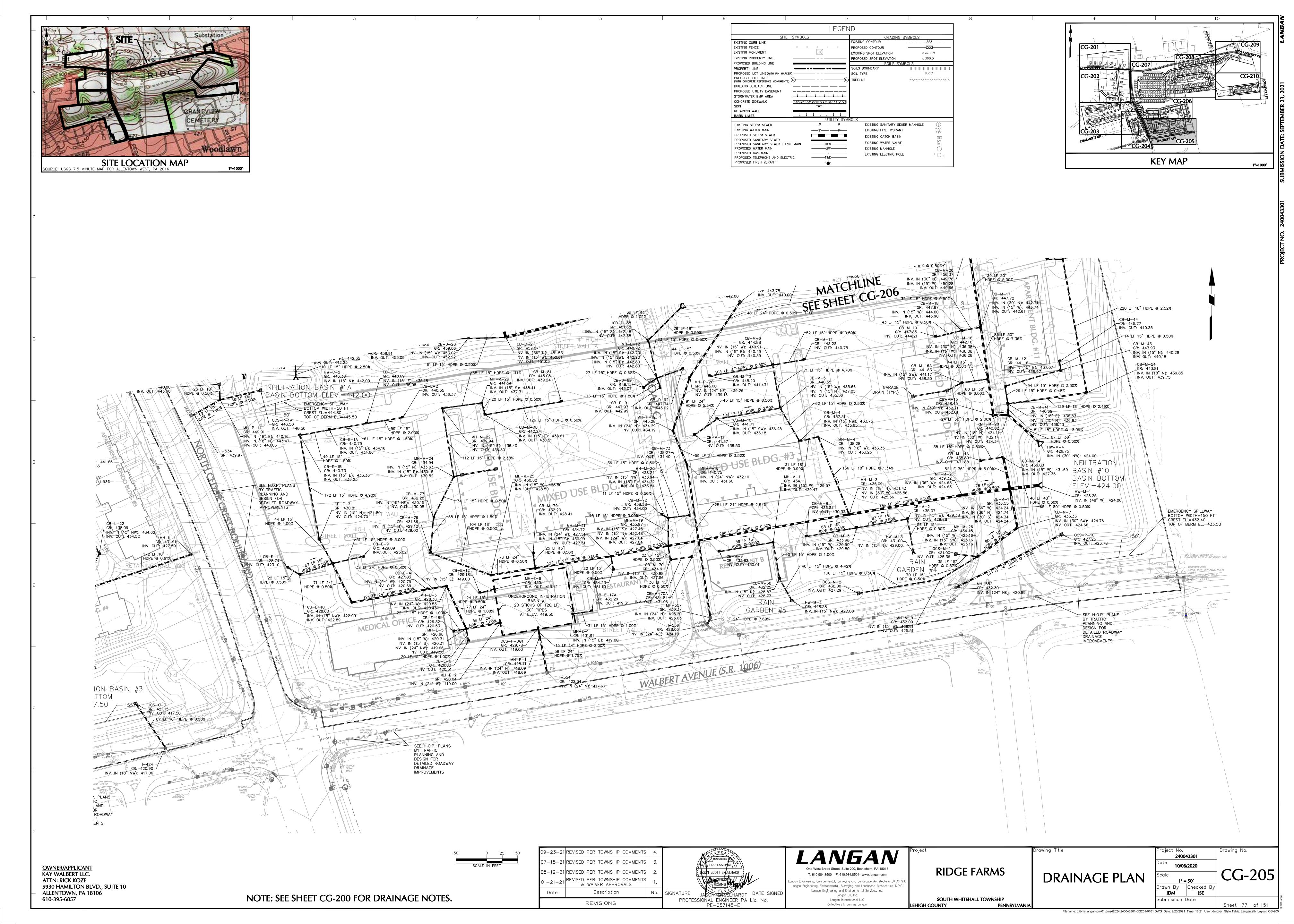
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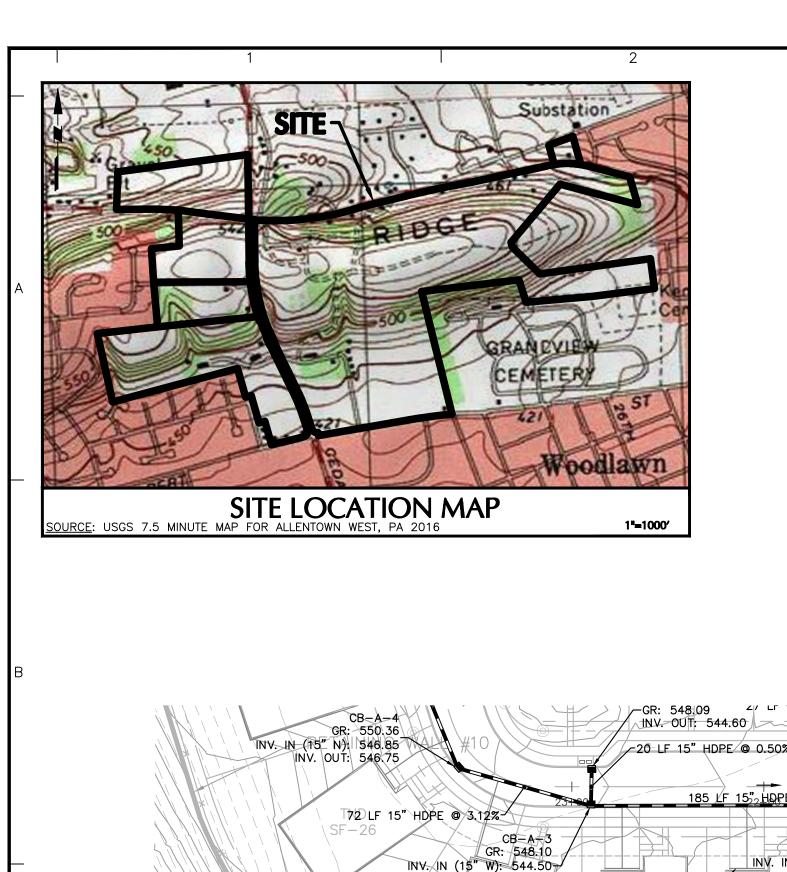
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Submission Date

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OWNER/APPLICANT

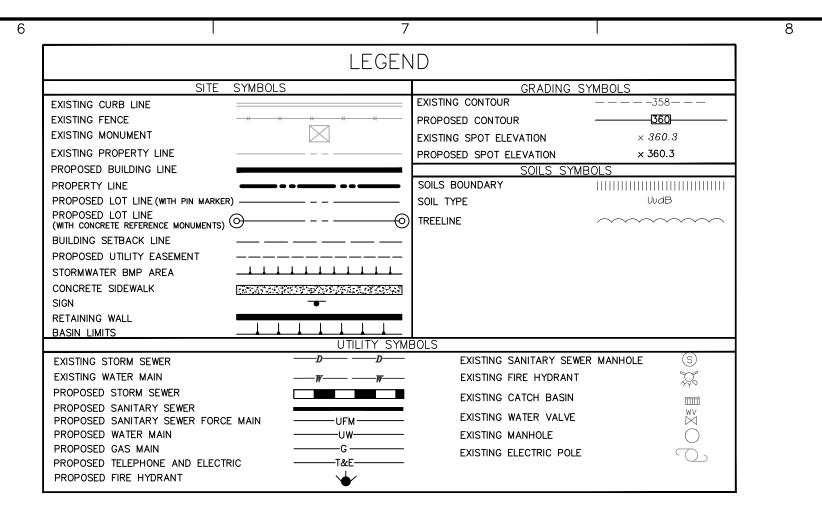
KAY WALBERT LLC.

ATTN: RICK KOZE

610-395-6857

ALLENTOWN, PA 18106

5930 HAMILTON BLVD., SUITE 10



RIDGE FARMS

SOUTH WHITEHALL TOWNSHIP

PENNSYLVANIA

LEHIGH COUNTY

DRAINAGE PLAN

T: 610.984.8500 F: 610.984.8501 www.langan.com

gan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

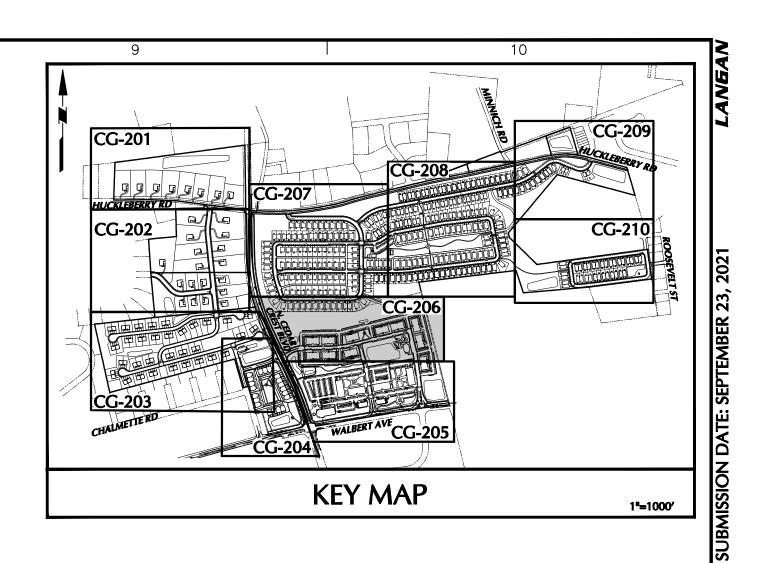
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CG-206

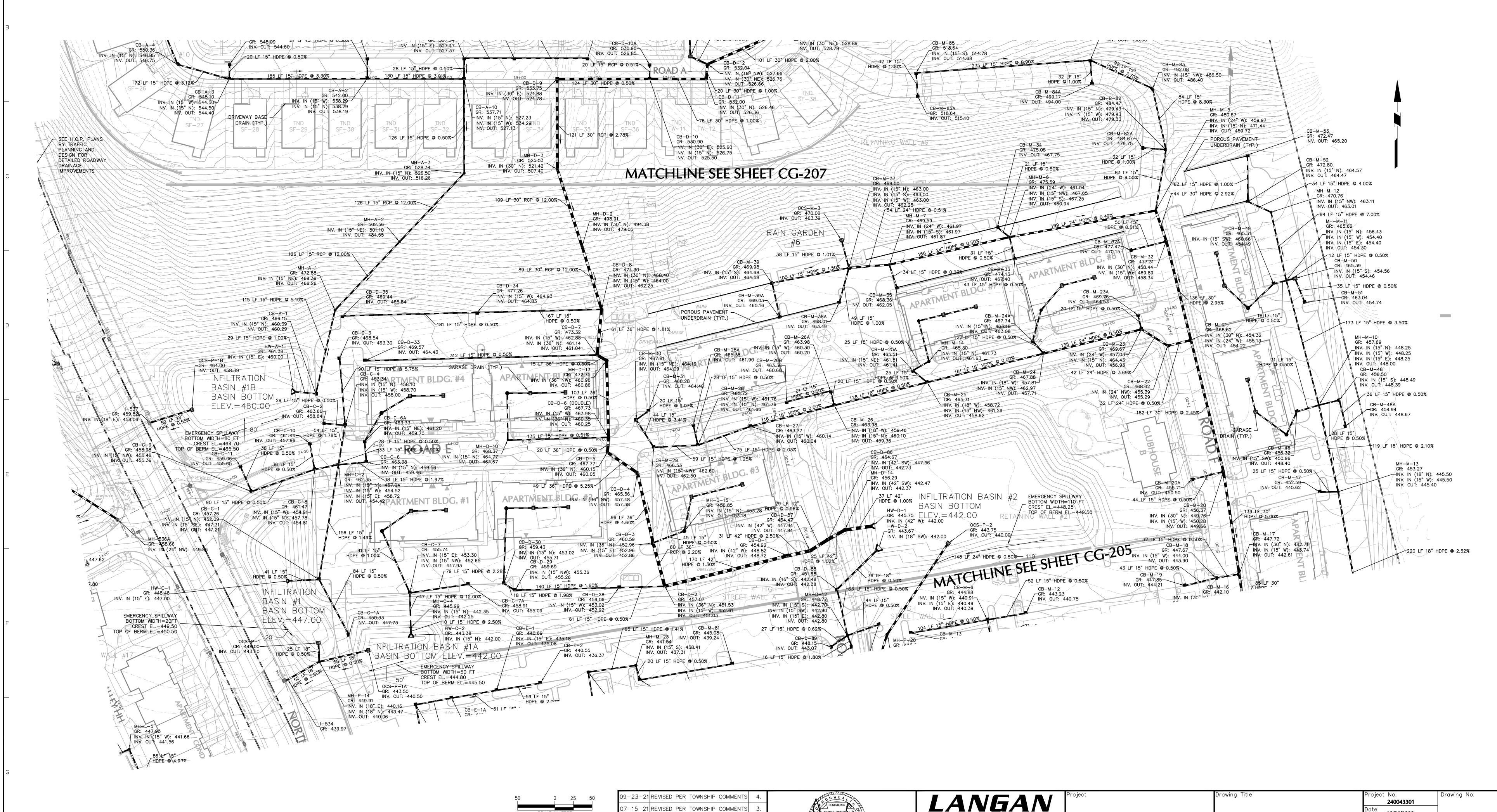
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JDM

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ubmission Date



-15-21 REVISED PER TOWNSHIP COMMENTS

5-19-21 REVISED PER TOWNSHIP COMMENTS

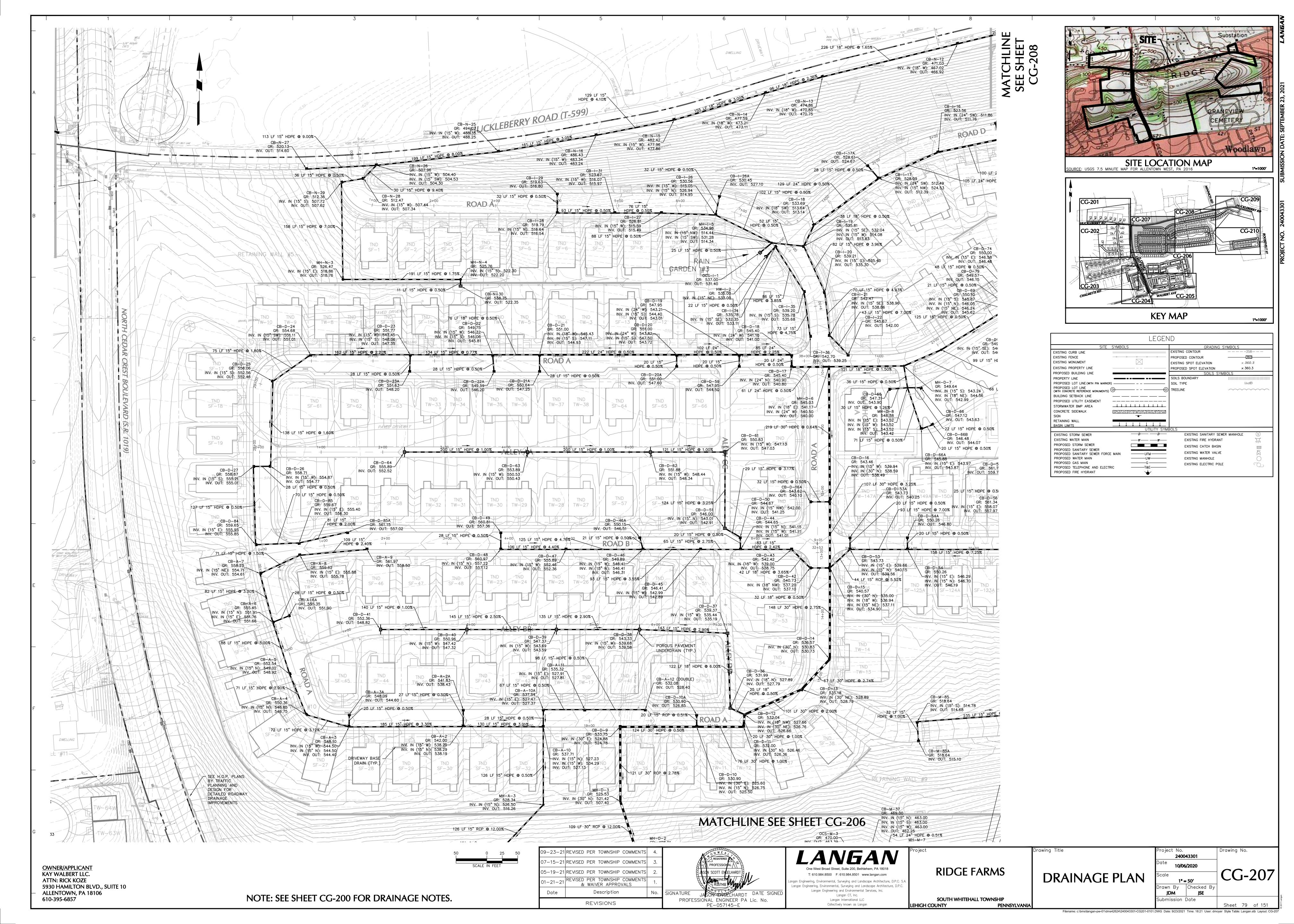
NOTE: SEE SHEET CG-200 FOR DRAINAGE NOTES.

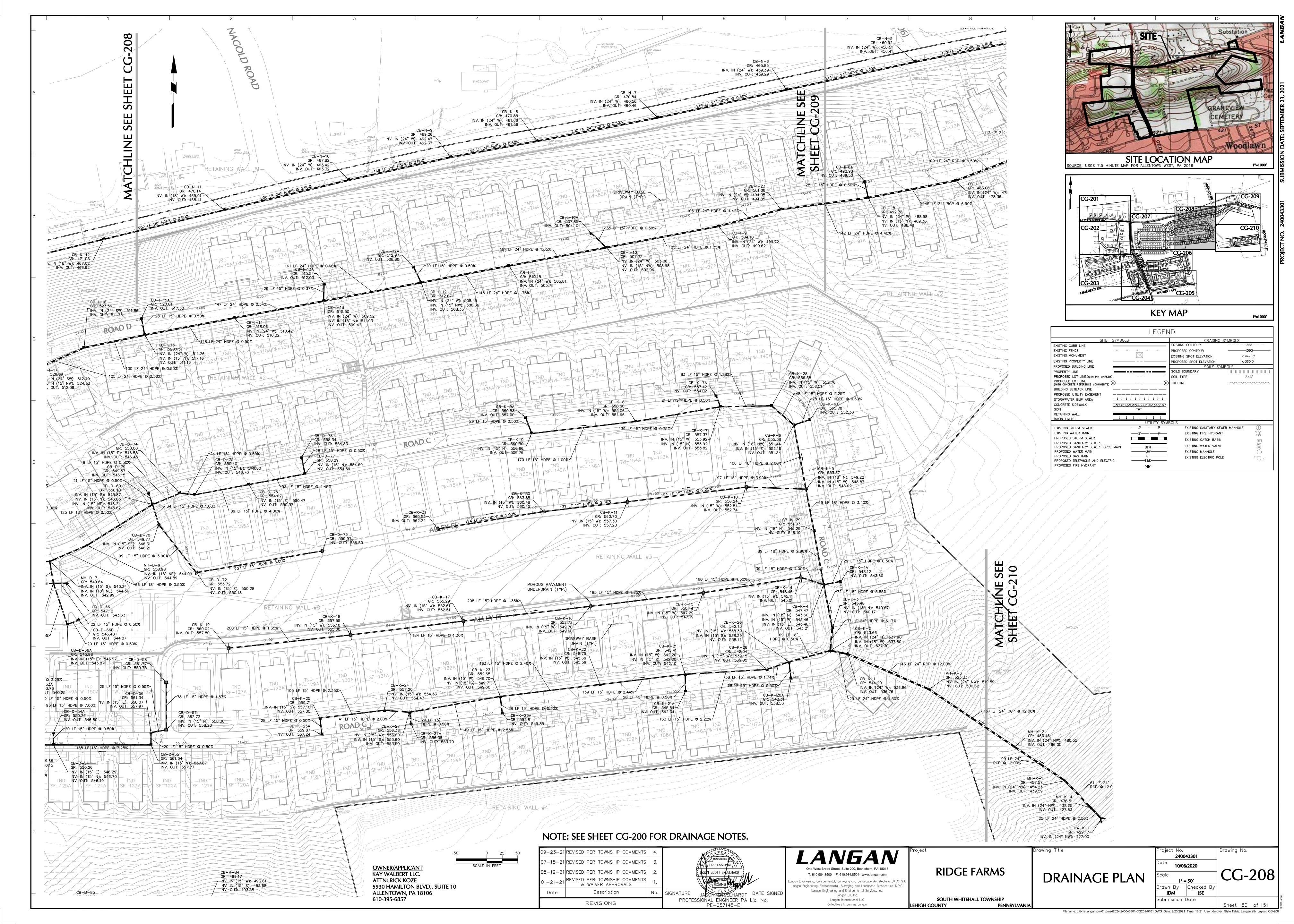
REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS

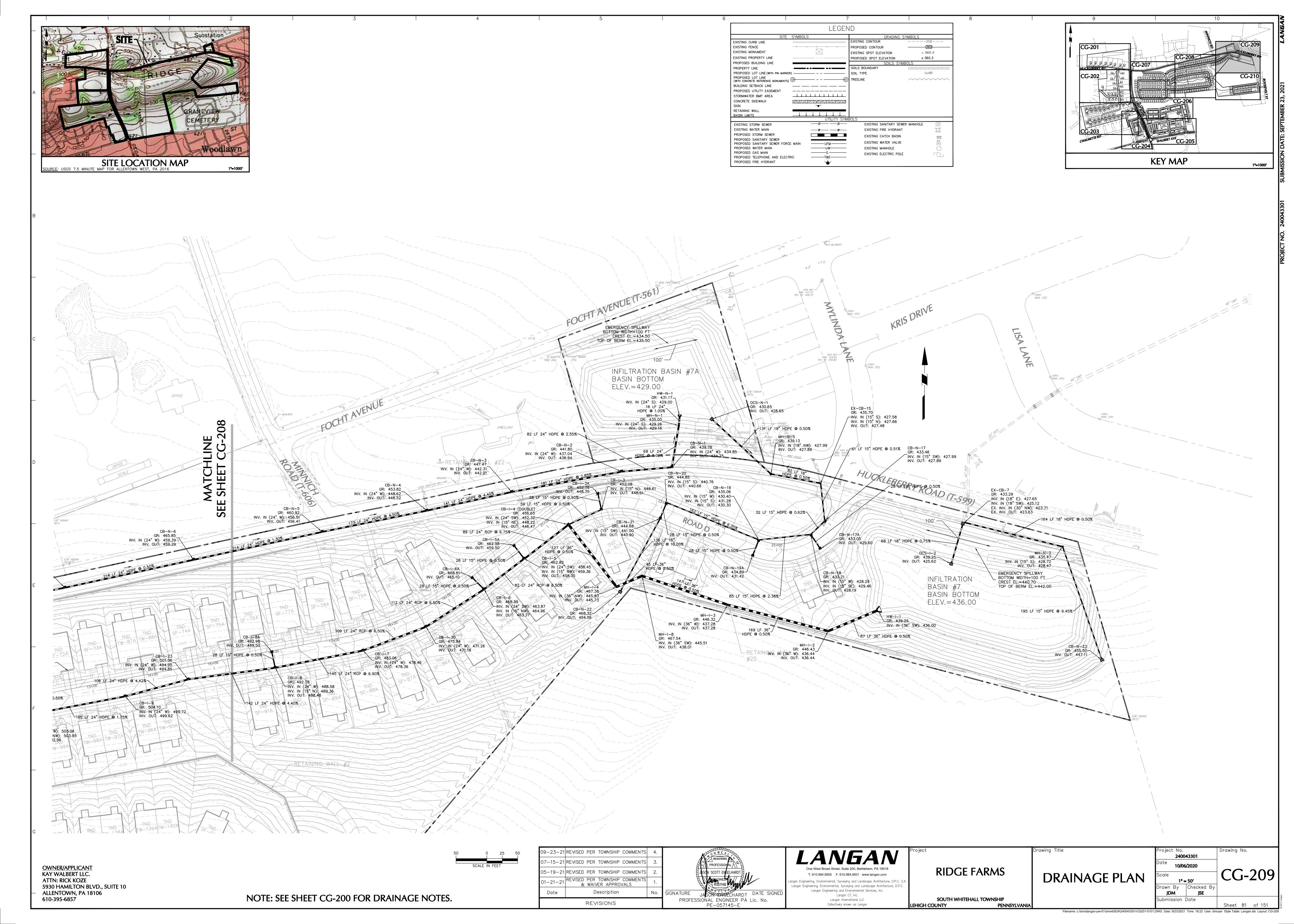
REVISIONS

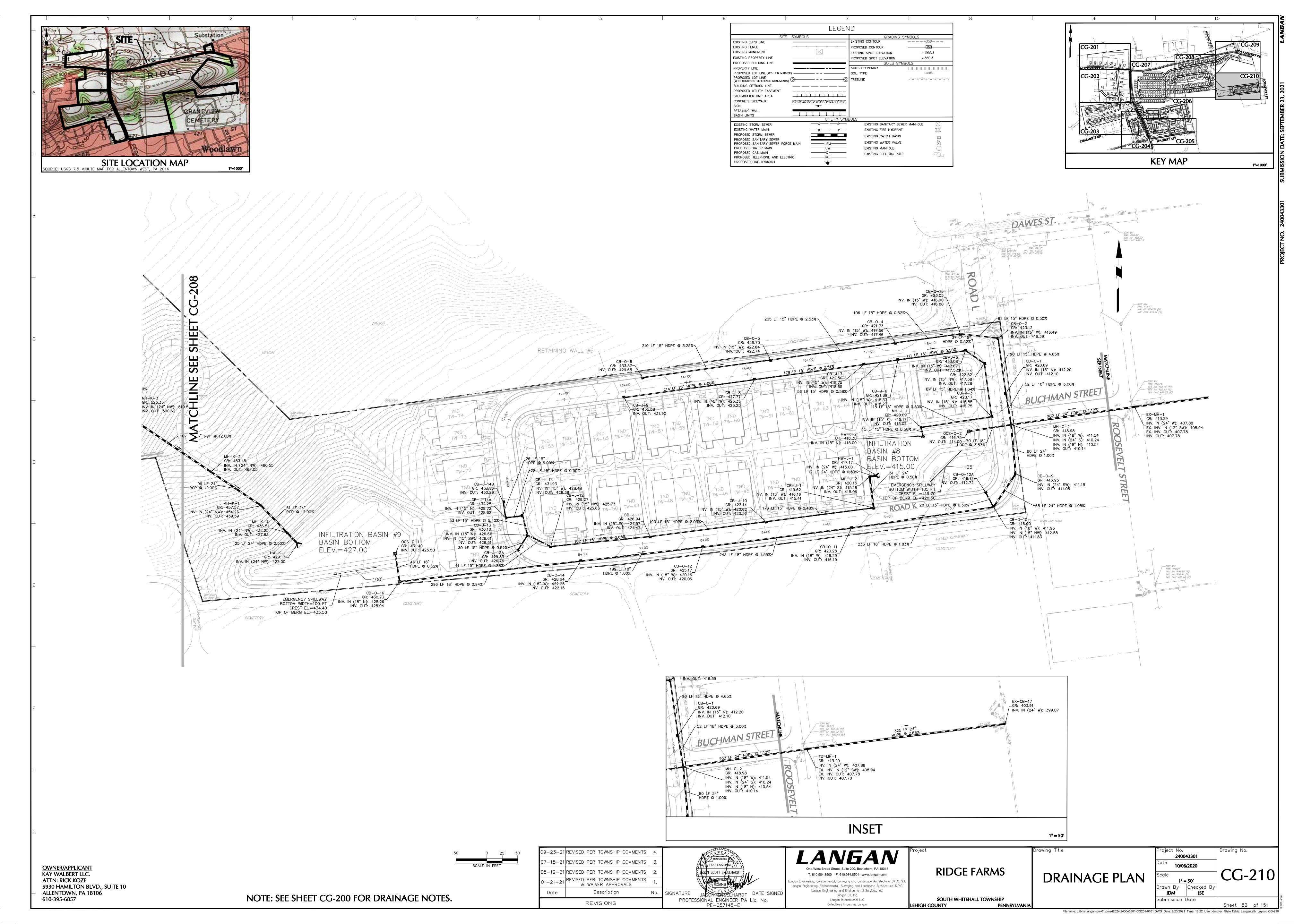
PROFESSIONAL ENGINEER PA Lic. No.

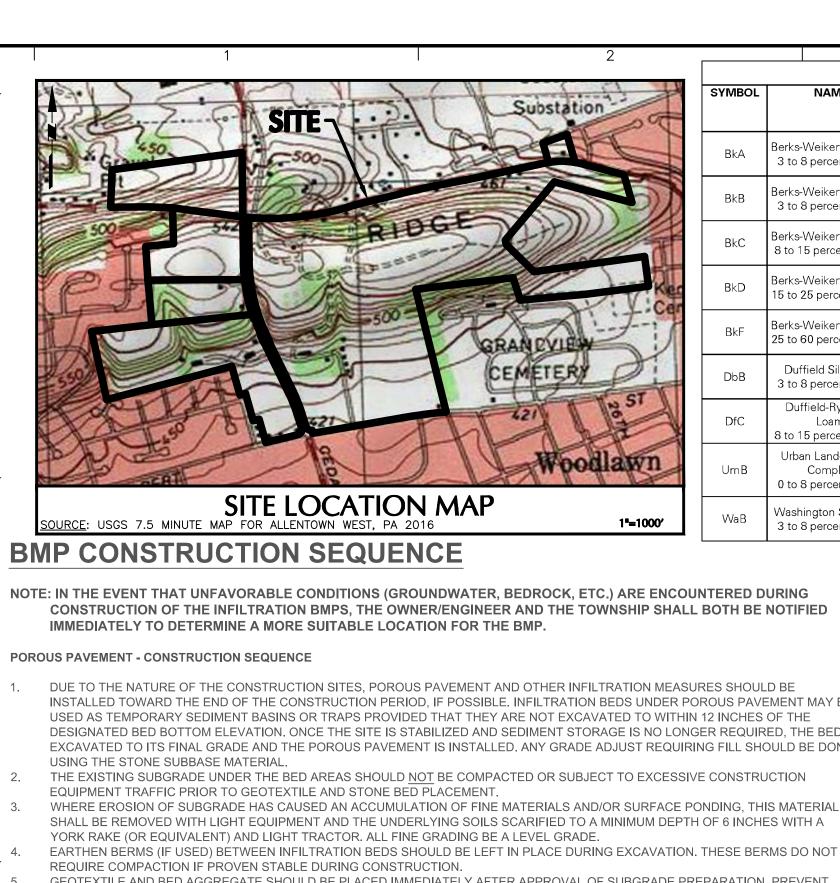
PE-057145-E











SOIL TABLE (NRCS) DEPTH TO HYDROLOGIC WATER TABLE | SOIL GROUP BEDROCK (IN.) (IN.) 20 - 403 to 8 percent slope 20 - 40 3 to 8 percent slopes erks-Weikert comple 20 - 40 8 to 15 percent slope 20 - 40 15 to 25 percent slop Berks-Weikert comple 20 - 40 25 to 60 percent slope Duffield Silt Loam. 48 - 120 to 8 percent slope 48 - 1**20** Jrban Land-Duffield 10 – 100 Complex. 0 to 8 percent slopes ishington Silt Loam 60 – 99 +80 3 to 8 percent slope INFILTRATION -

IIIII HI P

LEGEND EXISTING CURB LINE EXISTING FENCE POROUS ASPHALT PAVEMENT EXISTING MONUMENT EXISTING PROPERTY LINE BASIN INFILTRATION AREAS ROPOSED BUILDING LINE ROPERTY LINE ____ SOIL AMENDMENTS PROPOSED LOT LINE (WITH PINS) O----PROPOSED LOT LINE (WITH MONUMENTS) INFILTRATION TRENCH BUILDING SETBACK LINE PROPOSED UTILITY EASEMEN INFILTRATING RAIN GARDEN STORMWATER BMP AREA CONCRETE SIDEWALK RECEIVING WATERS AND CLASSIFICATION LIMIT OF DISTURBANCE LIMIT OF NPDES BOUNDARY RETAINING WALL RECEIVING WATERS BASIN LIMITS ORDAN CREEK - CLASSIFICATION: TSF, MF PROPOSED CONTOUR SOIL TYPE UudB **GEOLOGIC FORMATIONS AND SOIL CONDITIONS** EXISTING SPOT ELEVATION \times 360.3 TREELINE x 360.3 PROPOSED SPOT ELEVATION HE SITE IS UNDERLAIN BY THE MARTINSBURG & BEEKMANTOWN FORMATION. REFER TO THE SOIL TABLE FOR SOILS WITHIN THE LIMITS OF CONSTRUCTION. EXISTING STORM SEWER EXISTING WATER MAIN EXISTING FIRE HYDRANT PROPOSED STORM SEWER EXISTING CATCH BASIN THE EXISTING LAND COVER OF THE SUBJECT PROPERTY CONSISTS OF PRIMARILY CULTIVA PROPOSED SANITARY SEWER SOILS WITH WOODED AREAS SPREAD THROUGHOUT. MULTIPLE RESIDENTIAL AND FARM EXISTING WATER VALVE PROPOSED SANITARY SEWER FORCE MAIN _____UFM _____ STRUCTURES ARE PRESENT AT THE SITE WITH MODERATE TO SEVERE GRADE CHANGES. PROPOSED WATER MAIN EXISTING MANHOLE _____UW____ PROPOSED GAS MAIN EXISTING ELECTRIC POLE **BMP MAINTENANCE RESPONSIBILITY** PROPOSED TELEPHONE AND ELECTRIC -----T&E-----PROPOSED FIRE HYDRANT

HE 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

AN ANNUAL REPORT SHALL BE SUBMITTED BY THE NPDES PERMITTEE TO THE TOWNSHIP PUBLIC WORKS DEPARTMENT EACH MARCH 1ST STATING THAT THE

OPERATION AND MAINTENANCE HAVE BEEN PERFORMED FOR EACH BMP LISTED

THE PCSM PLAN, BMP INSPECTION REPORTS, AND BMP MONITORING RECORDS SHALI

BE MADE AVAILABLE BY THE NPDES PERMITTEE FOR REVIEW BY PADEP, LCCD, AND

THE NPDES PERMITTEE IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE. ANNUAL REPORT TO THE TOWNSHIP, RECORD KEEPING OF MONITORING THE LISTED

ACCESS TO THE SITE VIA AGREEMENT AND/OR EASEMENTS SATISFACTORY TO THE

TOWNSHIP SHALL BE PROVIDED FOR MUNICIPAL STORMWATER INSPECTION AND

MINIMIZE CHANGES IN STORMWATER RUNOFF

BELOW UPON ITS INSTALLATION.

THE TOWNSHIP UPON REQUEST

PAVEMENT :

PAVEMENT

BMPS UNTIL NPDES PERMIT TERMINATION.

OWNSHIP DRAINAGE REVIEW SCOPE NOTE THIS PLAN HAS BEEN REVIEWED BY THE TOWNSHIP STAFF, TOWNSHIP ENGINEER, AND TOWNSHIP SOLICITOR FOR CONSISTENCY ONLY WITH THE TOWNSHIP REGULATIONS AND ORDINANCES RELATED TO DESIGN REQUIREMENTS FOR ON-SITE STORMWATER MANAGEMENT FACILITIES (SPECIFICALLY STORMWATER BEST MANAGEMENT PRACTICES AND ON-SITE STORMWATER COLLECTION AND CONVEYANCE

ANY CHANGES TO OFF-SITE RUNOFF RESULTING FROM THIS DEVELOPMENT INCLUDING, BUT NOT LIMITED TO, CHANGES IN ACT 167 WATERSHED AND SUBAREA BOUNDARIES, POST-DEVELOPMENT RATES AND/OR VOLUMES OF RUNOFE, AND ON-SITE OR OFF-SITE IMPROVEMENTS WHICH MAY AFFECT FLOW RATES AND VOLUMES WITHIN THE WATERSHED, ARE REGIONAL MATTERS NOT REVIEWED BY THE TOWNSHIP STAFF AND CONSULTANTS AND ARE FOR REVIEW AND APPROVAL BY THE LEHIGH VALLEY PLANNING COMMISSION (LVPC SIMILARLY, THE TOWNSHIP STAFF AND CONSULTANTS HAVE NOT REVIEWED FACILITIES WITHIN AND RELATED TO THE STATE HIGHWAYS AND PROPERTY, AND WILL RELY ON THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION'S (PENNDOT'S) REVIEW OF STORMWATER MANAGEMENT FACILITIES PROPOSED IN STATE HIGHWAY RIGHTS-OF-WAY AND PROPERTY FOR DETERMINING CONFORMANCE WITH

REQUIREMENTS AND ADEQUACY OF THOSE FACILITIES WITHIN STATE HIGHWAY RIGHTS-OF-WAY THE TOWNSHIP STAFF, TOWNSHIP ENGINEER, AND TOWNSHIP SOLICITOR HAVE NOT INDEPENDENTLY REVIEWED, AND MAKE NO

REPRESENTATION AS TO THE REQUIREMENTS FOR, OR ADEQUACY OF, ANY FACILITY TO BE REVIEWED BY LVPC AND/OR PENNDOT, NOR OF ANY OFF-SITE PROJECT STORMWATER IMPACT. TOWNSHIP REVIEW NOTE THIS PLAN HAS BEEN REVIEWED BY THE TOWNSHIP STAFF AND TOWNSHIP ENGINEER FOR CONSISTENCY WITH MUNICIPAL REGULATIONS AND ORDINANCES RELATING TO LAND USAGE AND DIMENSIONAL REQUIREMENTS OF ZONING. INVESTIGATIONS REGARDING PERIPHERAL LAND AND PLAN ISSUES WHICH ARE NOT REQUIRED AS PART OF A REVIEW PROCESS. SUCH AS CLARITY OF TITLE. SUBSURFACE CONDITIONS, INCLUDING, BUT NOT LIMITED TO, SOIL AND WATER QUALITY, KARST GEOLOGICAL ACTIVITY, AND HISTORIC AND

ARCHEOLOGICAL ISSUES, OR SUCH OTHER ISSUES (AS APPROPRIATE) THAT MAY AFFECT THE MERCHANTABILITY OF THE LAND, HAVE NO BEEN INVESTIGATED OR REVIEWED BY THE TOWNSHIP OR THE TOWNSHIP ENGINEER. THE TOWNSHIP AND TOWNSHIP ENGINEER MAKE NO REPRESENTATION OR WARRANTY CONCERNING THESE ISSUES. WHICH SHOULD BE ADDRESSED BY QUALIFIED PROFESSIONALS COMMISSIONED BY THE APPLICANT AND/OR LAND OWNER(S) AS APPROPRIATE, AND ENGAGED IN THE APPROPRIATE FIELD OF PRACTICE. DIMENSIONS AND GEOMETRY OF THE PROPERTY BOUNDARY AND ANY INTERNAL LOTS AND STREETS HAVE BEEN OVERVIEWED WITH RESPECT TO APPLICABLE ORDINANCE STANDARDS FOR MATHEMATICAL COMPLETENESS, CLARITY OF DEPICTION, CONSISTENCY, CLOSURE AND AREA (ONLY). THE RESEARCH FOR AND DETERMINATION AND LOCATION OF PROPERTY LINES, STREET RIGHTS-OF-WAY, AND OTHER EASEMENTS, ETC., ARE THE RESPONSIBILITY OF THE SURVEYOR OF RECORD WHOSE SEAL APPEARS ON THIS PLAN, AND HAVE NOT BEEN

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RAIN GARDEN 6

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SOIL ÄMENDMENT

INFILTRATION

BASIN 10

AND FROM ANY AND ALL CLAIMS, DEMANDS, CAUSES OF ACTION OR SUITS WHICH ARISE OUT OF OR RELATE TO THE REVIEW APPROVAL, CONSTRUCTION OR OBSERVATION OF THE DEVELOPER'S DRAINAGE PLAN AND STORMWATER MANAGEMENT FACILITIES. LL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH HE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET, SEQ., 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.

PROTECTS HEALTH AND PROPERTY FROM INJURY AND DAMAGE

1. NOTWITHSTANDING ANY PROVISIONS OF THE TOWNSHIP STORMWATER MANAGEMENT PLAN, INCLUDING EXEMPTION AND WAIVER

PROVISIONS. ANY LANDOWNER AND ANY PERSON ENGAGED IN THE ALTERATION OR DEVELOPMENT OF LAND WHICH MAY AFFECT

STORMWATER RUNOFF CHARACTERISTICS SHALL IMPLEMENT SUCH MEASURES AS ARE REASONABLY NECESSARY TO PREVENT

THE RATE VOLUME, DIRECTION AND QUALITY OF RESULTING STORMWATER RUNOFF IN A MANNER WHICH OTHERWISE ADEQUATELY

MUNICIPALITY REVIEW AND APPROVAL OF THE DRAINAGE PLAN OR THE SUBSECUENT OBSERVATION AND APPROVAL OF

STORMWATER MANAGEMENT FACILITIES. SHALL NOT CONSTITUTE LAND DEVELOPMENT ON BEHALF OF OR BY THE MUNICIPALITY OF

OTHERWISE CAUSE THE MUNICIPALITY TO BE ENGAGED IN THE ALTERATION OR DEVELOPMENT OF LAND. BY SUBMITTING AI

APPLICATION UNDER THE TOWNSHIP STORMWATER MANAGEMENT PLAN, THE DEVELOPER HEREBY AGREES TO INDEMNIFY, DEFEND,

AND HOLD HARMLESS THE MUNICIPALITY AND ALL ITS REPRESENTATIVES. SERVANTS, EMPLOYEES, OFFICIALS AND CONSULTANTS OF

INJURY TO HEALTH, SAFETY OR OTHER PROPERTY. SUCH MEASURES SHALL INCLUDE SUCH ACTIONS AS ARE REQUIRED TO MANAGE 🖡

INDEPENDENTLY CONFIRMED OR VERIFIED BY THE TOWNSHIP, THE TOWNSHIP ENGINEER, OR THE TOWNSHIP SOLICITOR CONCRETE CHANNEL

PAVEMENT

OWNER/APPLICANT

KAY WALBERT LLC

ATTN: RICK KOZE

610-395-6857

LEHIGH VALLEY PLANNING COMMISSION

BY LEHIGH VALLEY PLANNING COMMISSION

ALLENTOWN, PA 18106

TRENCH 4

VEGETATED

BASIN 9 **ACT 287 AS AMENDED** OWNER/APPLICANT ACKNOWLEDGEMENT IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PENNSYLVANIA ACT 287 (AS AMENDED) AND TO CONTRACT THE I, THE UNDERSIGNED, BEING THE AGENT FOR THE OWNER OF THE SUBJECT "ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED) PROPERTY AND APPLICANT FOR LAND DEVELOPMENT OF SAID PROPERTY, PRIOR TO START OF CONSTRUCTION HEREBY ACKNOWLEDGE THAT IT IS THE RESPONSIBILITY OF THE OWNER TO PENNSYLVANIA ONE CALL 1-800-242-1776 MAINTAIN THE STORMWATER FACILITIES AS DESCRIBED ON THIS SERIAL NO (RIDGE FARMS): XXXXX POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN AND THAT ALL BMP'S ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED, OR MODIFIED WITHOUT PRIOR APPROVAL FROM SOUTH WHITEHALL TOWNSHIP.

THE FOLLOWING ENTITY IS RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF THE PCSM BMPS: 5930 HAMILTON BLVD., SUITE 10

RECORDING CERTIFICATE

BERT LLC: MANAGING MEMBER

FOR FREE MARKOUTS TO LOCAT

UNDERGROUND UTILITIES

" IT'S THE LAW "

RECORDING INFORMATION RECORDED IN THE OFFICE OF THE RECORDER TO DEEDS, NORTHAMPTON COUNTY, PENNSYLVANIA IN VOL NO. _____, PAGE NO._____ ON _____, 20____.

OWNERS CERTIFICATE: ON THIS, THE _____ DAY OF _____, 20___, BEFORE ME, THE UNDERSIGNED OFFICER,

RICK KOZE KAY WALBERT LLC; MANAGING MEMBER

WHO, BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT HE IS THE OWNER AND/ OWNER OF THE PROPERTY SHOWN ON THIS PLAN, AND THAT HE ACKNOWLEDGES THE SAME TO BE HIS AND DESIRES THE SAME BE RECORDED AS SUCH ACCORDING TO LAW. WITNESS MY HAND AND SEAL THE DAY AND DATE ABOVE WRITTEN.

MY COMMISSION EXPIRES: _____ (NOTARY PUBLIC OR OTHER OFFICER)

PUBLIC IMPROVEMENTS OFFER OF DEDICATION: I DO CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE SOUTH

CERTIFY THAT WE HAVE LAID OFF, PLATTED AND SUBDIVIDED, AND HEREBY LAY OFF, PLAT AND SUBDIVIDE SAID REAL ESTATE IN ACCORDANCE WITH THIS PLAT, AND THAT ALL PROPOSED STREETS SHOWN AND NOT HERETOFORE DEDICATED, ARE HEREBY DEDICATED TO THE PUBLIC USE. RICK KOZE

I, THE UNDERSIGNED, OWNERS OF THE REAL ESTATE SHOWN AND DESCRIBED HEREIN, DO HEREBY

WHETHER ROCK IS RIPPABLE. IF ROCK IS NOT RIPPABLE, BLASTING WILL BE REQUIRED. ALL BLASTING SHALL MEET ALL LOCAL, COUNTY, STATE AND FEDERAL REQUIREMENTS. 4. FOR AREAS WHERE TOPSOIL IS A LIMITATION, TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN ACCORDANCE WITH THE DETAILS. THE STOCKPILE SURFACE SHALL BE MAINTAINED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION NOTES. 5. FOR AREAS WHERE EMBANKMENTS ARE A LIMITATION. THE EXISTING ROAD SHALL BE CLOSED PRIOR TO CUTTING EMBANKMENTS. NO EMBANKMENTS THAT HOLD BACK WATER SHALL BE REMOVED. 6. FOR AREAS PRONE TO SINKS, REPAIR SINKHOLES PER DETAILS ON PLANS. 7. FOR AREAS WHERE WINTER GRADING IS OF CONCERN, PERFORM THE EARTHWORK DURING THE WARM

CONTROL MATTING AND THE SLOPES SHALL BE TRACKED

THROUGH A "DIRT BAG" OR TO THE SEDIMENT BASIN/TRAP. 3. FOR AREAS WHERE SHALLOW DEPTH TO BEDROCK IS A LIMITATION, CONTRACTOR SHALL DETERMINE

_ BY THE SOUTH WHITEHALL TOWNSHIP PLANNING COMMISSION

BY THE BOARD OF COMMISSIONERS OF SOUTH WHITEHALL TWP.

RESOLUTIONS TO LIMITATIONS 1. FOR AREAS WHERE STEEP SLOPES ARE A LIMITATION, SOIL SHALL BE STABILIZED WITH SPECIFIED EROSION

(MONTH DAY YEAR)

(MONTH DAY YEAR)

APPROVAL BY SOUTH WHITEHALL BOARD OF COMMISSIONERS:

2. FOR AREAS WHERE SEASONAL HIGH WATER TABLE IS A LIMITATION, PONDED WATER SHALL BE PUMPED Drawing No.

DUE TO THE NATURE OF THE CONSTRUCTION SITES. POROUS PAVEMENT AND OTHER INFILTRATION MEASURES SHOULD BI INSTALLED TOWARD THE END OF THE CONSTRUCTION PERIOD. IF POSSIBLE, INFILTRATION BEDS UNDER POROUS PAVEMENT MAY BE USED AS TEMPORARY SEDIMENT BASINS OR TRAPS PROVIDED THAT THEY ARE NOT EXCAVATED TO WITHIN 12 INCHES OF THE DESIGNATED BED BOTTOM ELEVATION. ONCE THE SITE IS STABILIZED AND SEDIMENT STORAGE IS NO LONGER REQUIRED, THE BED IS EXCAVATED TO ITS FINAL GRADE AND THE POROUS PAVEMENT IS INSTALLED. ANY GRADE ADJUST REQUIRING FILL SHOULD BE DONE

THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION

EARTHEN BERMS (IF USED) BETWEEN INFILTRATION BEDS SHOULD BE LEFT IN PLACE DURING EXCAVATION. THESE BERMS DO NOT GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION, PREVEN

RUNOFF AND SEDIMENT FROM ENTERING THE STORAGE BED DURING THE PLACEMENT OF THE GEOTEXTILE AND AGGREGATE BED SURFACE SEDIMENT SHOULD BE REMOVED BY A VACUUM SWEEPER AND SHOULD NOT BE POWER-WASHED INTO THE BED GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE OF MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. ADJACENT STRIF OF GEOTEXTILE SHOULD OVERLAP A MINIMUM OF 16IN. IT SHOULD ALSO BE SECURED AT LEAST 4 FT. OUTSIDE OF BED IN ORDER TO PREVENT ANY RUNOFF OR SEDIMENT FROM ENTERING THE STORAGE BED. THIS EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO BEDS ARE STABILIZED AND VEGETATED. AS THE SITE IS FULLY STABILIZED, EXCESS GEOTEXTILE ALONG BED EDGES CAN BE CUT BACK TO BED EDGE

CLEAN (WASHED) UNIFORMLY GRADED AGGREGATE IS PLACED IN THE BED IN 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED, WITH THE CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE. ONCE BED AGGREGATE IS INSTALLED TO THE DESIRED GRADE, A +/-1 IN, LAYER OF CHOKER BASE COURSE (AASHTO #57) AGGREGATE SHOULD BE INSTALLED UNIFORMLY OVER THE SURFACE IN ORDER TO PROVIDE AN EVEN SURFACE FOR PAVING.

NOTE: IF A VEGETATED SWALE IS USED FOR RUNOFF CONVEYANCE DURING CONSTRUCTION, IT MUST BE REGRADED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION AND STABILIZATION HAS OCCURRED. ANY DAMAGED AREAS MUST BE FULLY RESTORED TO ENSURE FUTURE FUNCTIONALITY OF THE SWALE.

INFILTRATION BASIN - CONSTRUCTION SEQUENCE

PROTECT INFILTRATION BASIN AREA FROM COMPACTION PRIOR TO CONSTRUCTION. IF POSSIBLE, INSTALL INFILTRATION BASIN DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR

INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. IF NECESSARY, EXCAVATE INFILTRATION BASIN BOTTOM TO AN UN-COMPACTED SUB-GRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUB-GRADE

INSTALL OUTLET CONTROL STRUCTURES. SEED AND STABILIZE TOPSOIL (VEGETATE IF APPROPRIATE WITH NATIVE PLANTINGS) DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

LEVEL SPREADER - CONSTRUCTION SEQUENCE

LEVEL SPREADERS ARE CONSIDERED A PERMANENT PART OF A SITE'S STORMWATER MANAGEMENT SYSTEM. THEREFORE, THE UPHILL DEVELOPMENT SHOULD BE STABILIZED BEFORE DIVERTING RUNOFF TO ANY DISPERSING FLOW TECHNIQUES. IF THE LEVEL SPREADER IS USED AS AN EROSION AND SEDIMENTATION CONTROL MEASURE, IT MUST BE RECONFIGURED (FLUSH PERFORATED PIPE, CLEAN OUT ALL SEDIMENT), TO ITS ORIGINAL STATE BEFORE USE AS A PERMANENT STORMWATER FEATURE.

ALL CONTRIBUTING STORMWATER ELEMENTS (INFILTRATION BEDS, INLETS, OUTLET CONTROL STRUCTURES, PIPES, ETC) SHOULD BE

PERFORATED PIPE SHOULD BE INSTALLED ALONG A CONTOUR, WITH CARE TAKEN TO CONSTRUCT A LEVEL BOTTOM. THE PIPE CAN BE UNDERGROUND IN A SHALLOW INFILTRATION TRENCH (SEE INFILTRATION TRENCH FOR DESIGN GUIDANCE), OR CLOSER TO THE SURFACE AND COVERED WITH A 12-INCH THICK LAYER OF AASHTO #57 STONE. IF THE PERFORATED PIPE IS IN A TRENCH, EXCAVATE TO THE DESIGN DIMENSIONS. IF THE PIPE IS TO BE AT OR NEAR THE SURFACE, SOME MINOR EXCAVATION OR FILLING MAY BE NECESSARY TO MAINTAIN A LEVEL BOTTOM.

IF NECESSARY, INSTALL EROSION CONTROL MATTING ALONG THE LENGTH OF THE LEVEL SPREADER AND TO A DISTANCE DOWNHILL, AS SPECIFIED BY THE MANUFACTURER/SUPPLIER. COVER THE PIPE WITH AASHTO #57 STONE.

BIOFILTRATION/RAIN GARDEN AREAS - CONSTRUCTION SEQUENCE

INSTALL TEMPORARY SEDIMENT CONTROL BMPS AS SHOWN ON THE PLANS. COMPLETE SITE GRADING. IF APPLICABLE, CONSTRUCT CURB CUTS OR INFLOW ENTRANCE BUT PROVIDE PROTECTION SO THAT DRAINAGE IS PROHIBITED FROM ENTERING CONSTRUCTION AREA.

STABILIZE GRADING WITHIN THE LIMIT OF DISTURBANCE EXCEPT WITH THE RAIN GARDEN AREA. RAIN GARDEN BED AREAS MAY BE USED AS TEMPORARY SEDIMENT TRAPS PROVIDED THAT THE PROPOSED FINISH ELEVATION OF THE BED IS 12 INCHES LOWER THAN THE BOTTOM ELEVATION OF THE SEDIMENT TRAP.

EXCAVATE RAIN GARDEN TO PROPOSED INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU

BACKFILL RAIN GARDEN WITH AMENDED SOIL AS SHOWN ON PLANS AND SPECIFICATION/DETAIL ON SHEET CG-501. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY. PRESOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH

PLANT VEGETATION ACCORDING TO PLANTING PLAN. MULCH AND INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY.

SUBSURFACE INFILTRATION BASIN

OR TOPSOIL AS SPECIFIED ON PLANS.

DUE TO THE NATURE OF CONSTRUCTION SITES, SUBSURFACE INFILTRATION SHOULD BE INSTALLED TOWARD THE END OF THE CONSTRUCTION PERIOD, IF POSSIBLE. (INFILTRATION BEDS MAY BE USED AS TEMPORARY SEDIMENT BASINS OR TRAPS AS DISCUSSED ABOVE).

INSTALL AND MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES (AS PER THE PENNSYLVANIA EROSION AND SEDIMENTATION CONTROL PROGRAM MANUAL) DURING CONSTRUCTION. THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL

SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE. EARTHEN BERMS (IF USED) BETWEEN INFILTRATION BEDS SHOULD BE LEFT IN PLACE DURING EXCAVATION. THESE BERMS DO NOT REQUIRE COMPACTION IF PROVEN STABLE DURING CONSTRUCTION.

INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES. GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF STRUCTURES. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. ADJACENT STRIPS OF GEOTEXTILE SHOULD OVERLAP A MINIMUM OF 16 INCHES. IT SHOULD ALSO BE SECURED AT LEAST 4 FEET OUTSIDE OF BED IN ORDER TO PREVENT ANY RUNOFF OR SEDIMENT FROM ENTERING THE STORAGE BED. THIS

EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO BEDS ARE STABILIZED AND VEGETATED. AS THE SITE IS FULLY STABILIZED, EXCESS GEOTEXTILE ALONG BED EDGES CAN BE CUT BACK TO THE EDGE OF THE BED CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLYCOMPACTED, WITH CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE. APPROVED SOIL MEDIA SHOULD BE PLACED OVER INFILTRATION BED IN MAXIMUM 6-INCH LIFTS.

SEED AND STABILIZE TOPSOIL. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

INFILTRATION TRENCH - CONSTRUCTION SEQUENCE

PROTECT INFILTRATION TRENCH AREA FROM COMPACTION PRIOR TO INSTALLATION. IF POSSIBLE, INSTALL INFILTRATION TRENCH DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT LADEN WATER FROM ENTERING INLETS AND

EXCAVATE INFILTRATION TRENCH BOTTOM TO A UNIFORM, LEVEL UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO PLACE NONWOVEN GEOTEXTILE ALONG BOTTOM AND SIDES OF TRENCH*. NONWOVEN GEOTEXTILE ROLLS SHOULD OVERLAP BY A

MINIMUM OF 16 INCHES WITHIN THE TRENCH. FOLD BACK AND SECURE EXCESS GEOTEXTILE DURING STONE PLACEMENT. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, ETC. PLACE UNIFORMLY GRADED, CLEAN-WASHED AGGREGATE IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.

INSTALL CONTINUOUSLY PERFORATED PIPE AS INDICATED ON PLANS. BACKFILL WITH UNIFORMLY GRADED, CLEAN-WASHED AGGREGATE IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS. FOLD AND SECURE NONWOVEN GEOTEXTILE OVER INFILTRATION TRENCH, WITH MINIMUM OVERLAP OF 16-INCHES. 10. PLACE 6-INCH LIFT OF APPROVED TOPSOIL OVER INFILTRATION TRENCH, AS INDICATED ON PLANS. SEED AND STABILIZE TOPSOIL

12. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED. ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS SOIL AMENDMENT AND RESTORATION

INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.

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

SUBGRADE CONSTRUCTION

SUBGRADE EXCAVATION SHALL BE FULLY EXPOSED FOR INSPECTION BY THE TOWNSHIP GEOTECHNICAL CONSULTANT PRIOR TO PLACEMENT OF MATERIAL. A MINIMUM OF FORTY-EIGHT (48) HOURS-NOTICE SHALL BE PROVIDED WHEN REQUESTING INSPECTION. SUBGRADE SHALL BE FREE OF UNCONTROLLED FILL, ORGANICS, OR OTHER DELETERIOUS MATERIALS

SUBGRADE SHALL BE LEVEL, WITH NO COARSE FRAGMENTS PROTRUDING ABOVE THE SURFACE. CONTRACTOR SHALL PROVIDE SURVEY CONTROL AND LEVELING EQUIPMENT TO DEOMNSTRATE THAT THE SUBGRADE IS LEVEL AND AT THE CORRECT ELEVATION. IF OVER-EXCAVATION IS REQUIRED, THE PROJECT GEOTECHNICAL CONSULTANT SHALL PROPOSE THE MATERIAL AND METHOD OF PLACEMENT TO FILL IN ANY VOIDS CREATED BY THE OVER-EXCAVATION. THIS PROPOSAL SHALL BE PROVIDED TO THE TOWNSHIP GEOTECHNICAL CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO BEGINNING THE WORK.

(2) THE OPERATOR NAME AND ADDRESS. (3) THE PERMIT NUMBER. (4) THE REASON FOR PERMIT TERMINATION. (5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND WILL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH § 102.8(M) AND PROOF OF

APPROPRIATE BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

POST CONSTRUCTION STORMWATER

TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

THE NOTICE OF TERMINATION MUST INCLUDE:

COMPLIANCE WITH § 102.8(M)(2).

(1) THE FACILITY NAME, ADDRESS AND LOCATION.

MANAGEMENT (PCSM) STANDARD NOTES:

UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER §

102.22(A)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPS IN

ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE

WITH §§ 102.4 AND 102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS;

AND PCSM REQUIREMENTS), THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF

INFILTRATION

RAIN GARDEN 2

RAIN GARDEN 1

PCSM REQUIREMENTS PCSM REPORTING AND RECORDKEEPING. THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE

CONSERVATION DISTRICT. LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES. A LICENSED PROFESSIONAL OR A DESIGNEE SHALL BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE CRITICAL STAGES MAY INCLUDE THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS AS DEEMED

TRATION TRENCH 1

ENGINEERED SOILS

& EXTENTS OF

INFILTRATION

BASIN 4

SOIL AMENDMENT

TERMINATION

POST CONSTRUCTION STORMWATER

PROVIDE NOTICE THEREOF TO THE DEPARTMENT.

CRITICAL STAGES OF PCSM PLAN IMPLEMENTATION

REVISIONS

PCSM BMPS LOCATED ON THE PROPERTY.

MANAGEMENT (PCSM) STANDARD NOTES CONT'D:

FOR ANY PROPERTY CONTAINING A PCSM BMP. THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN

TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT THE

RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND

INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND

THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY.

THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED

RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT

PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER § 102.7(B)(5) (RELATING TO PERMIT

THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER

ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF

SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE

THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND

A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT TO OBSERVE THE CONVERSION

OF THE TEMPORARY SEDIMENT BASINS TO PERMANENT INFILTRATION BASINS.

INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT, NONPROFIT

RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND

FINAL CERTIFICATION. THE PERMITTEE SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS

I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A. § 4904 TO THE BEST OF M KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

(1) THE PERMITTEE SHALL RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM (2) THE PERMITTEE SHALL PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN TO THE PERSON IDENTIFIED IN THIS SECTION AS BEING RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS.

PCSM LONG TERM OPERATIONS AND MAINTENANCE REQUIREMENTS:

UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPS ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE. THE DEPARTMENT OR CONSERVATION DISTRICT WILL CONDUCT A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION WITHIN 30 DAYS.

THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS.

PROFESSIONAL ENGINEER PA Lic. No. PE-057145-E 9-23-21|REVISED PER TOWNSHIP COMMENTS 7-15-21|REVISED PER TOWNSHIP COMMENTS| 05-19-21 REVISED PER TOWNSHIP COMMENTS REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS Description ON ENGLIPHARDT DATE SIGNEL SIGNATURE

T: 610.984.8500 F: 610.984.8501 www.langan.com ngan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.

SUBSURFACE

SURVEYOR CERTIFICATION:

SOIL AMENDMENT

I, TIMOTHY J. SHERIDAN, A PROFESSIONAL LAND SURVEYOR LICENSED IN THE COMMONWEALTH

BOUNDARY INFORMATION AND SURVEY WAS PERFORMED IN ACCORDANCE WITH THE MINIMUM

PROFESSIONAL LAND SURVEYORS IN THE COMMONWEALTH OF PENNSYLVANIA, AS ADOPTED BY

REPRESENTS A SURVEY MADE BY ME, THAT ALL MONUMENTS EXIST OR SHALL BE PLACED OR

OF PENNSYLVANIA (P.L.S. NO. SU-043961-E) DO HEREBY CERTIFY THAT THE OUTBOUND

STANDARDS FOR BOUNDARY SURVEYS SECTION OF THE MANUAL OF PRACTICE FOR

LOCATED, AND THAT ALL DIMENSIONAL AND GEODETIC DETAILS ARE CORRECT.

TIMOTHY J. SHERIDAN

PROFESSIONAL LAND SURVEYOR PA LIC. NO. SU-043961-E

A TRUE AND ACCURATE PLAN COMPLETED BY ME ON

JASON ENGELHARDT

WHITEHALL TOWNSHIP SUBDIVISION AND ZONING ORDINANCE.

THE PENNSYLVANIA SOCIETY OF LAND SURVEYORS ON JULY 10, 1998, THAT THIS PLAN

I HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER LICENSED IN

INFILTRATION

BASIN 1A

PROFESSIONAL ENGINEER PA Lic. No.

PF-057145-F

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan

RIDGE FARMS

SOUTH WHITEHALL TOWNSHIP

EHIGH COUNTY

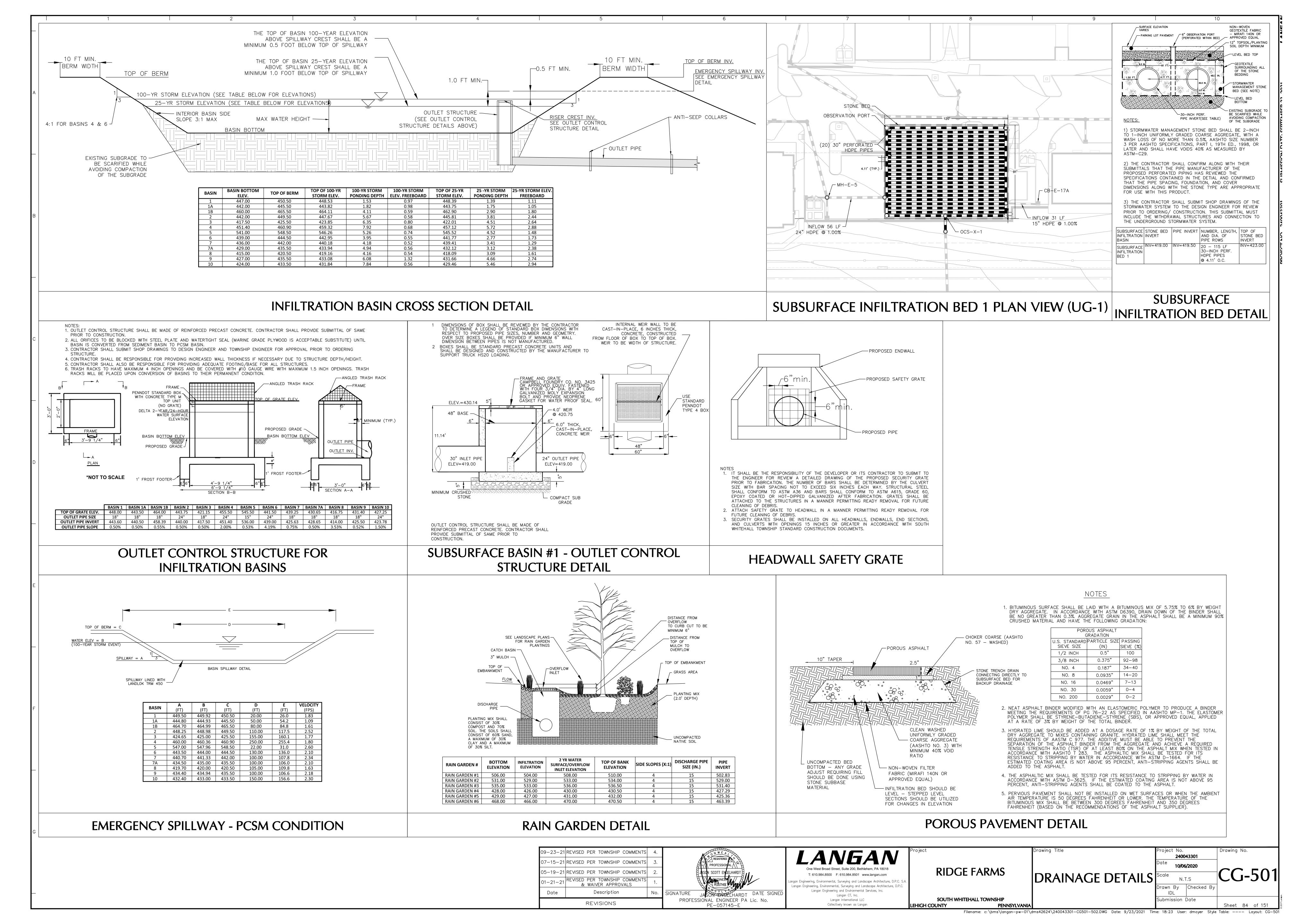
KAY WALBERT LLC; MANAGING MEMBER

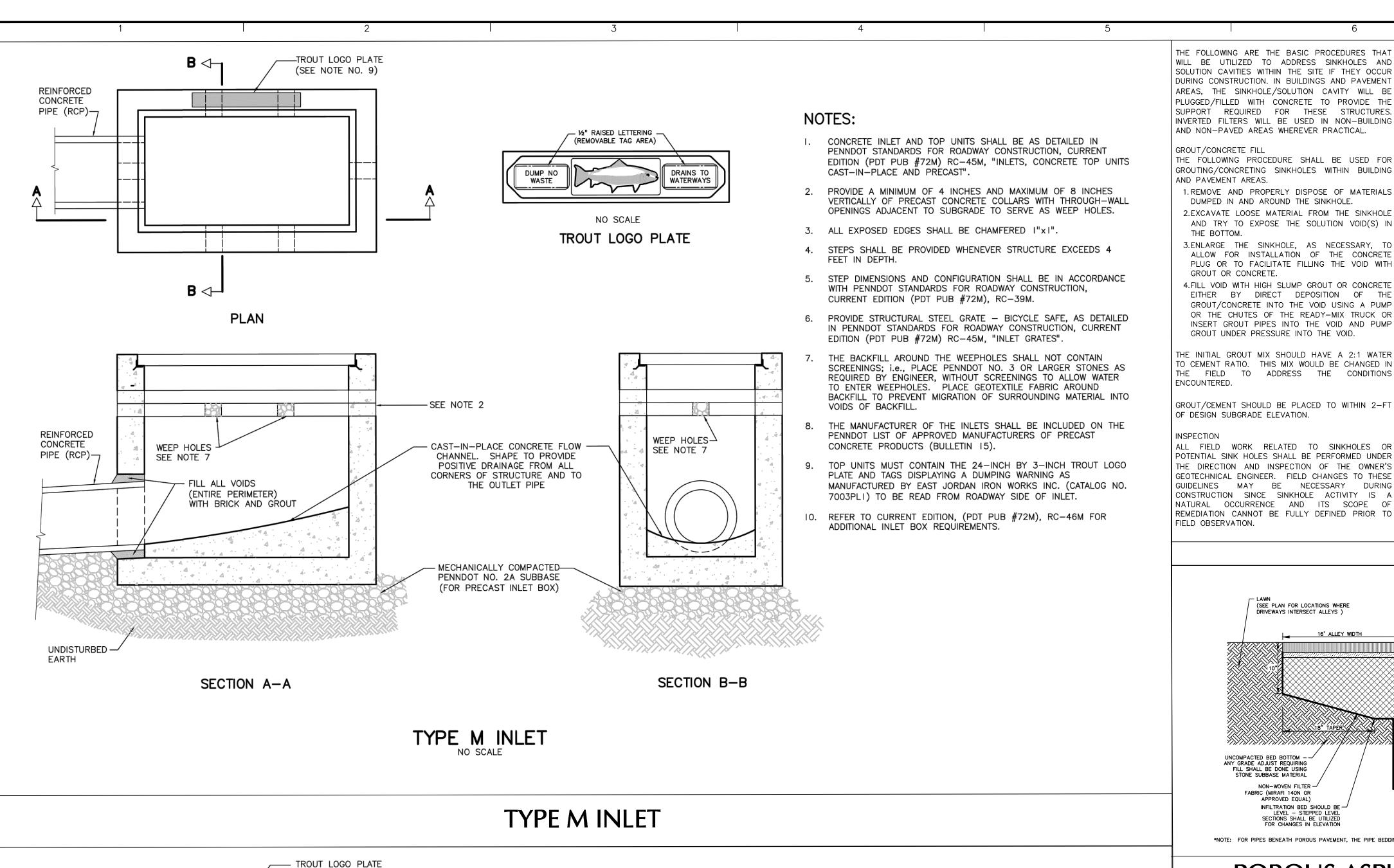
PENNSYLVANIA

MASTER POST CONSTRUCTION MANAGEMENT PLAN (RECORD PLAN)

240043301 10/06/2020 CG-400 1'' = 200'awn By | Checked By JLA ıbmission Date Sheet 83 of 151

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(REMOVABLE TAG AREA)

NO SCALE

TROUT LOGO PLATE

GRADE POINT

WEEP HOLES-

SECTION B-B

SEE NOTE 8

SLOPE 2.0%

(SEE NOTE NO. 10) _____ CONCRETE

- SEE NOTE 2

- CAST-IN-PLACE CONCRETE FLOW -

CHANNEL. SHAPE TO PROVIDE POSITIVE DRAINAGE FROM ALL

CORNERS OF STRUCTURE AND TO THE OUTLET PIPE

MECHANICALLY COMPACTED-

PENNDOT NO. 2A SUBBASE

(FOR PRECAST INLET BOX)

TYPE C INLET

TYPE C INLET

PIPE (RCP)—

REINFORCED

CONCRETE

PIPE (RCP)-

UNDISTURBED -

EARTH

SEE NOTE 8

(ENTIRE PERIMETER)

WITH BRICK AND GROUT

SECTION A-A

- CONCRETE INLET AND TOP UNITS SHALL BE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB #72M) RC-45M, "INLETS, CONCRETE TOP UNITS CAST-IN-PLACE AND PRECAST".
- 2. PROVIDE A MINIMUM OF 4 INCHES AND MAXIMUM OF 8 INCHES VERTICALLY OF PRECAST CONCRETE COLLARS WITH THROUGH-WALL OPENINGS ADJACENT TO SUBGRADE TO SERVE AS WEEP HOLES.
- 3. ALL EXPOSED EDGES SHALL BE CHAMFERED I"xI".
- 4. STEPS SHALL BE PROVIDED WHENEVER STRUCTURE EXCEEDS 4
- STEP DIMENSIONS AND CONFIGURATION SHALL BE IN ACCORDANCE WITH PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB #72M), RC-39M.
- 6. THE CENTERLINE OF AN INLET SHALL BE NO CLOSER THAN 8 FEET TO THE EDGE OF A DRIVEWAY.
- PROVIDE STRUCTURAL STEEL GRATE BICYCLE SAFE, AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB #72M), RC-45M, "INLET GRATES".
- SCREENINGS; i.e., PLACE PENNDOT NO. 3 OR LARGER STONES AS REQUIRED BY ENGINEER, WITHOUT SCREENINGS TO ALLOW WATER TO ENTER WEEPHOLES. PLACE GEOTEXTILE FABRIC AROUND BACKFILL TO PREVENT MIGRATION OF SURROUNDING MATERIAL INTO
- 9. THE MANUFACTURER OF THE INLETS SHALL BE INCLUDED ON THE PENNDOT LIST OF APPROVED MANUFACTURERS OF PRECAST CONCRETE PRODUCTS (BULLETIN 15).
- 10. TOP UNITS MUST CONTAIN THE 24-INCH BY 5-INCH TROUT LOGO PLATE AND TAGS DISPLAYING A DUMPING WARNING AS MANUFACTURED BY EAST JORDAN IRON WORKS INC. (CATALOG NO. 700 IPLI) TO BE READ FROM ROADWAY SIDE OF INLET.
- II. REFER TO PDT PUB #72M, RC-46M FOR ADDITIONAL REQUIREMENTS.

THE FOLLOWING ARE THE BASIC PROCEDURES THAT WILL BE UTILIZED TO ADDRESS SINKHOLES AND SOLUTION CAVITIES WITHIN THE SITE IF THEY OCCUR DURING CONSTRUCTION. IN BUILDINGS AND PAVEMENT AREAS, THE SINKHOLE/SOLUTION CAVITY WILL BE PLUGGED/FILLED WITH CONCRETE TO PROVIDE THE SUPPORT REQUIRED FOR THESE STRUCTURES. INVERTED FILTERS WILL BE USED IN NON-BUILDING AND NON-PAVED AREAS WHEREVER PRACTICAL.

GROUT/CONCRETE FILL THE FOLLOWING PROCEDURE SHALL BE USED FOR GROUTING/CONCRETING SINKHOLES WITHIN BUILDING AND PAVEMENT AREAS. 1. REMOVE AND PROPERLY DISPOSE OF MATERIALS DUMPED IN AND AROUND THE SINKHOLE. 2.EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND TRY TO EXPOSE THE SOLUTION VOID(S) IN THE BOTTOM. 3.ENLARGE THE SINKHOLE, AS NECESSARY, TO ALLOW FOR INSTALLATION OF THE CONCRETE PLUG OR TO FACILITATE FILLING THE VOID WITH GROUT OR CONCRETE. 4.FILL VOID WITH HIGH SLUMP GROUT OR CONCRETE EITHER BY DIRECT DEPOSITION OF THE

THE INITIAL GROUT MIX SHOULD HAVE A 2:1 WATER TO CEMENT RATIO. THIS MIX WOULD BE CHANGED IN THE FIELD TO ADDRESS THE CONDITIONS

GROUT/CEMENT SHOULD BE PLACED TO WITHIN 2-FT OF DESIGN SUBGRADE ELEVATION.

ALL FIELD WORK RELATED TO SINKHOLES OR POTENTIAL SINK HOLES SHALL BE PERFORMED UNDER THE DIRECTION AND INSPECTION OF THE OWNER'S GEOTECHNICAL ENGINEER. FIELD CHANGES TO THESE GUIDELINES MAY BE NECESSARY DURING CONSTRUCTION SINCE SINKHOLE ACTIVITY IS A NATURAL OCCURRENCE AND ITS SCOPE OF REMEDIATION CANNOT BE FULLY DEFINED PRIOR TO

(SEE PLAN FOR LOCATIONS WHERE DRIVEWAYS INTERSECT ALLEYS)

NON-WOVEN FILTER -

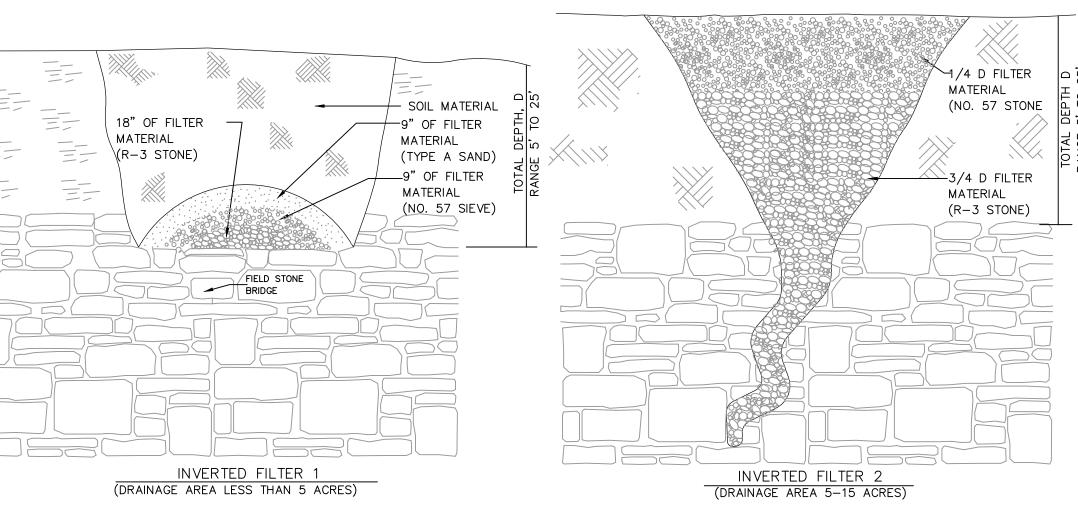
INFILTRATION BED SHOULD LEVEL — STEPPED LE

*NOTE: FOR PIPES BENEATH POROUS PAVEMENT, THE PIPE BEDDING MUST BE LEVEL IN ORDER TO PROMOTE INFILTRATION.

POROUS ASPHALT DETAIL

(WITH PIPE UNDERNEATH)

16' ALLEY WIDTH



NOTE: A PROFESSIONAL ENGINEER OR GEOLOGIST WITH EXPERIENCE IN SINKHOLE REMEDIATION MUST BE CONSULTED FOR RECOMMENDATIONS FOR REMEDIATION OF SINKHOLES INVOLVING STRUCTURES, UTILITIES, OR ROADWAYS. IF A SINKHOLE IS TO OCCUR THE TOWNSHIP MUST BE NOTIFIED IMMEDIATELY.

POROUS ASPHALT

SINKHOLE TREATMENT

--v 0% SLOPE

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN.
TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH - ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

STANDARD CONSTRUCTION DETAIL #9-1 RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

POROUS ASPHALT OVERFLOW SYSTEM

6" PERFORATED -PVC PIPE

--- NON-WOVEN FILTER

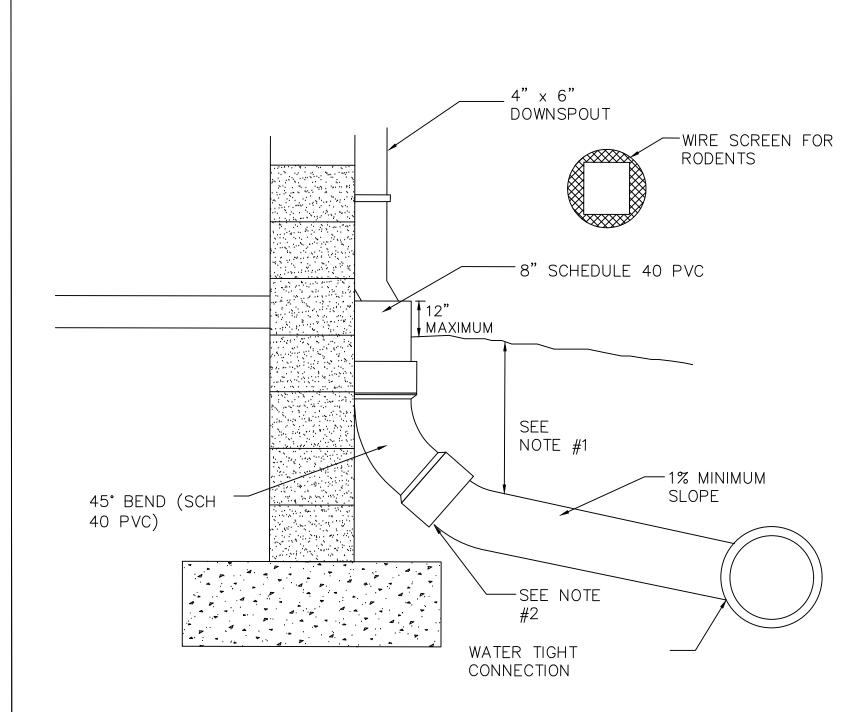
APPROVED EQUAL)

FABRIC (MIRAFI 140N OR

CLEAN WASHED
UNIFORMLY GRADED ___
COARSE AGGREGATE

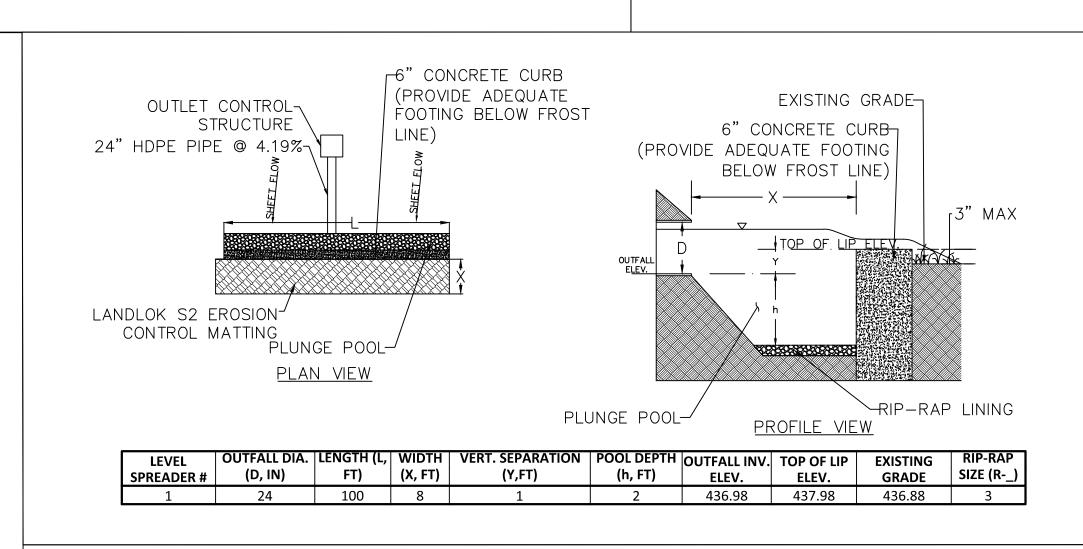
(AASHTO NO. 3)

RIP RAP APRON



POROUS ASPHALT

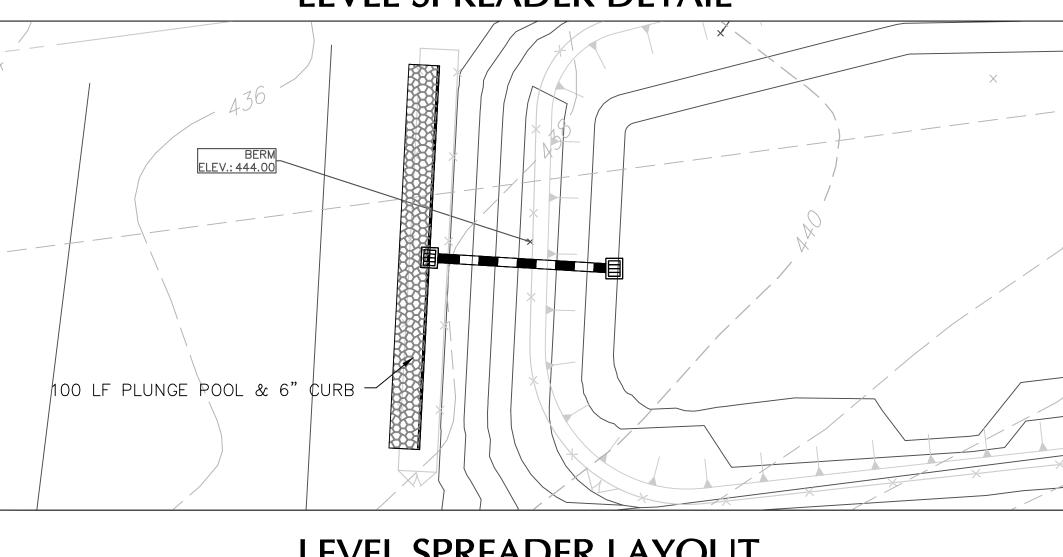
- 1. FOR ALL DEPTHS OF COVER LESS THAN TWO (2) FEET, PIPE MUST BE SCHEDULE 40 PVC. FOR DEPTHS OF COVER GREATER THAN TWO (2) FEET, FLEXIBLE PIPE MAY BE USED. REFER TO SPECIFICATIONS FOR ALLOWABLE
- 2. A WATERTIGHT CONNECTION SHALL BE MAINTAINED WITH ANY TRANSITION FROM SCHEDULE 40 PVC PIPE TO ANY OTHER PIPE TYPE.
- 3. THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN



- PROPOSED CB

OVERFLOW SYSTEM FOR ALLEY AREAS ONLY, OVERFLOW SYSTEM WILL NOT BE INSTALLED ON INDIVIDUAL DRIVEWAYS

LEVEL SPREADER DETAIL

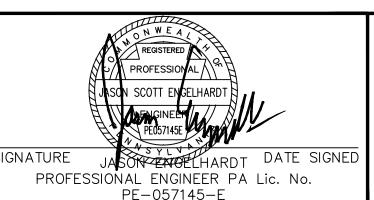


LEVEL SPREADER LAYOUT

DOWNSPOUT COLLECTOR

09-23-21	REVISED PER TOWNSHIP COMMENTS	4.
07-15-21	REVISED PER TOWNSHIP COMMENTS	3.
05-19-21	REVISED PER TOWNSHIP COMMENTS	2.
01-21-21	REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS	1.
Date	Description	No.
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REVISIONS



LANGAN Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C

Langan International LLC

RIDGE FARMS

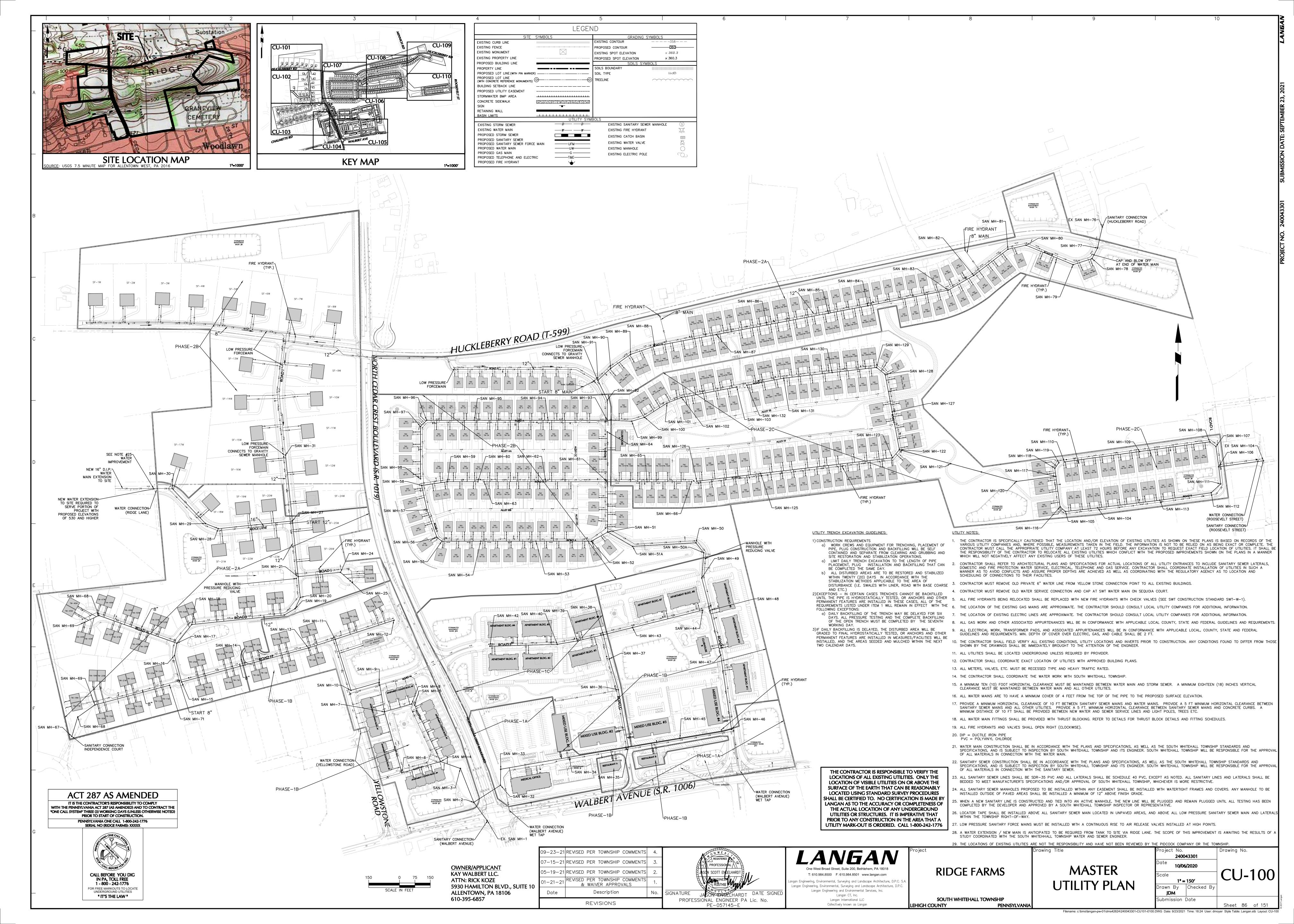
DRAINAGE DETAILS Sac

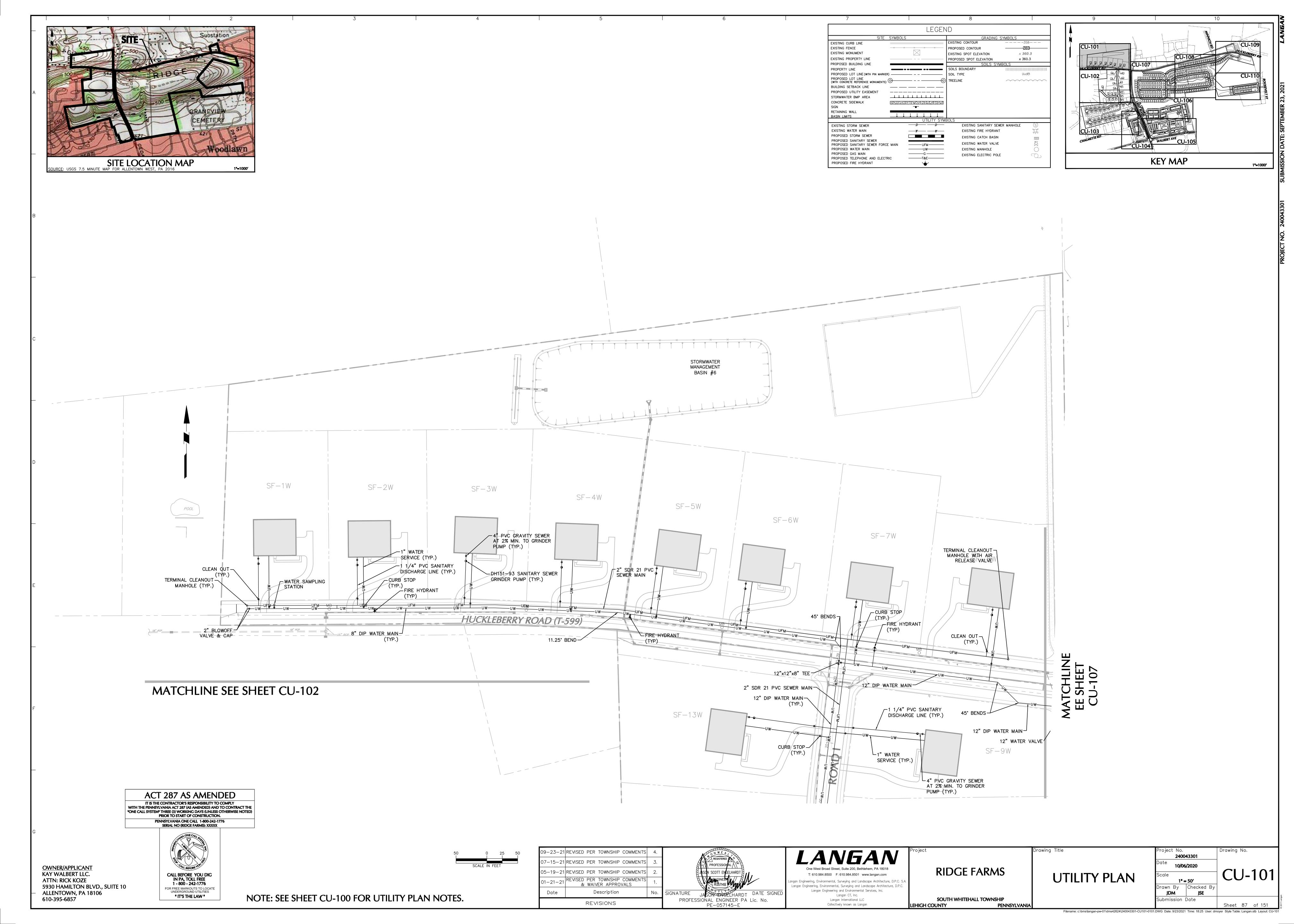
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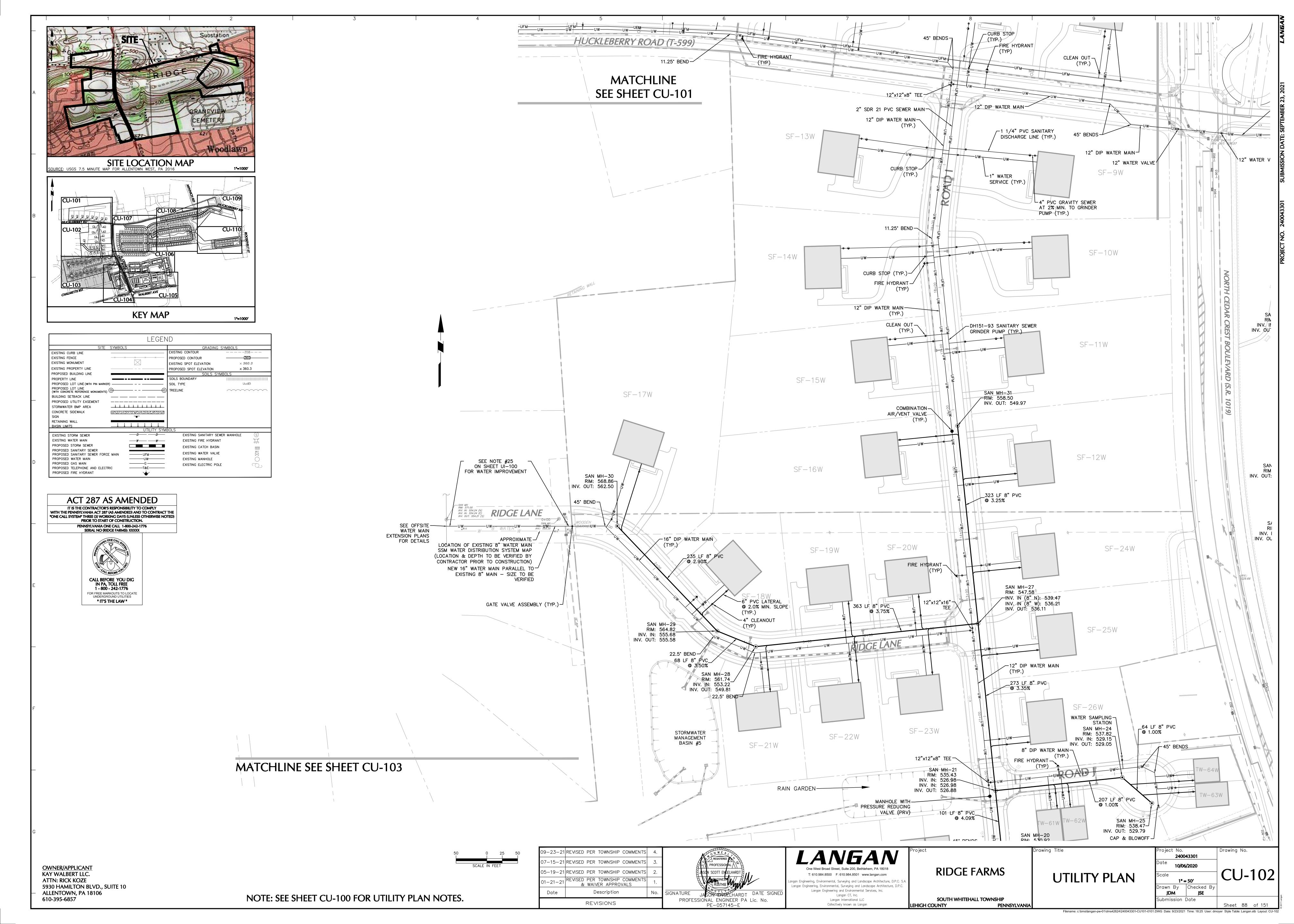
SOUTH WHITEHALL TOWNSHIP **PENNSYLVANIA**

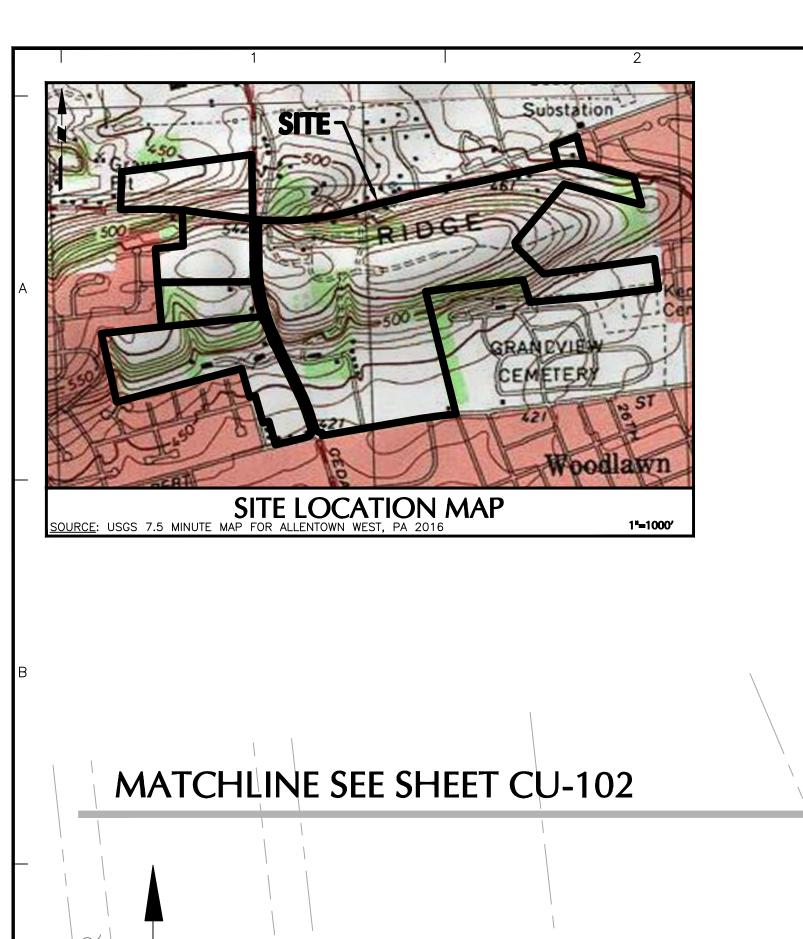
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LEHIGH COUNTY









OWNER/APPLICANT

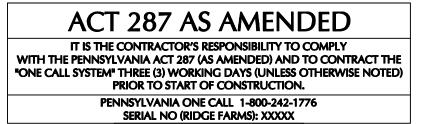
KAY WALBERT LLC.

ALLENTOWN, PA 18106

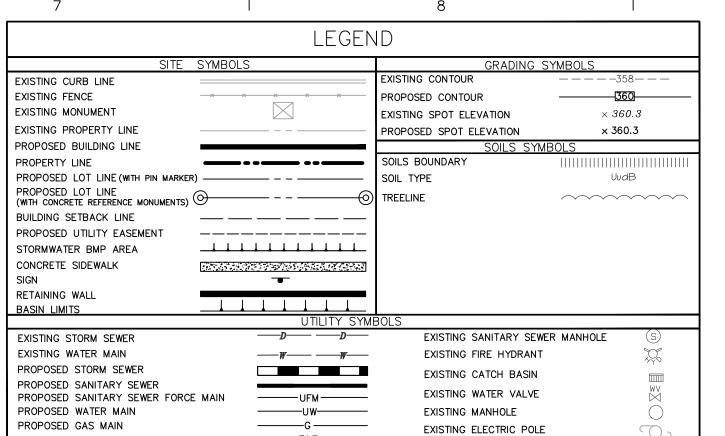
5930 HAMILTON BLVD., SUITE 10

ATTN: RICK KOZE

610-395-6857







RIDGE FARMS

SOUTH WHITEHALL TOWNSHIP

PENNSYLVANIA

LEHIGH COUNTY

T: 610.984.8500 F: 610.984.8501 www.langan.com

ngan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C Langan Engineering and Environmental Services, Inc.

Langan CT, Inc.

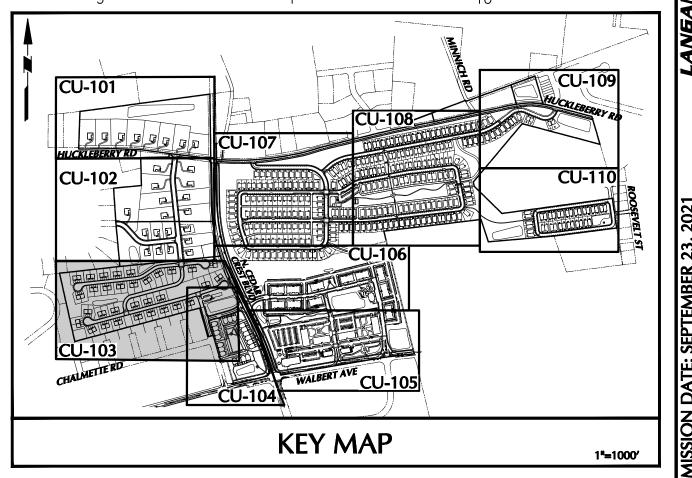
Langan International LLC

Collectively known as Langan

-----T&E-----

PROPOSED TELEPHONE AND ELECTRIC

PROPOSED FIRE HYDRANT



240043301

1" = 50'

Drawn By | Checked By

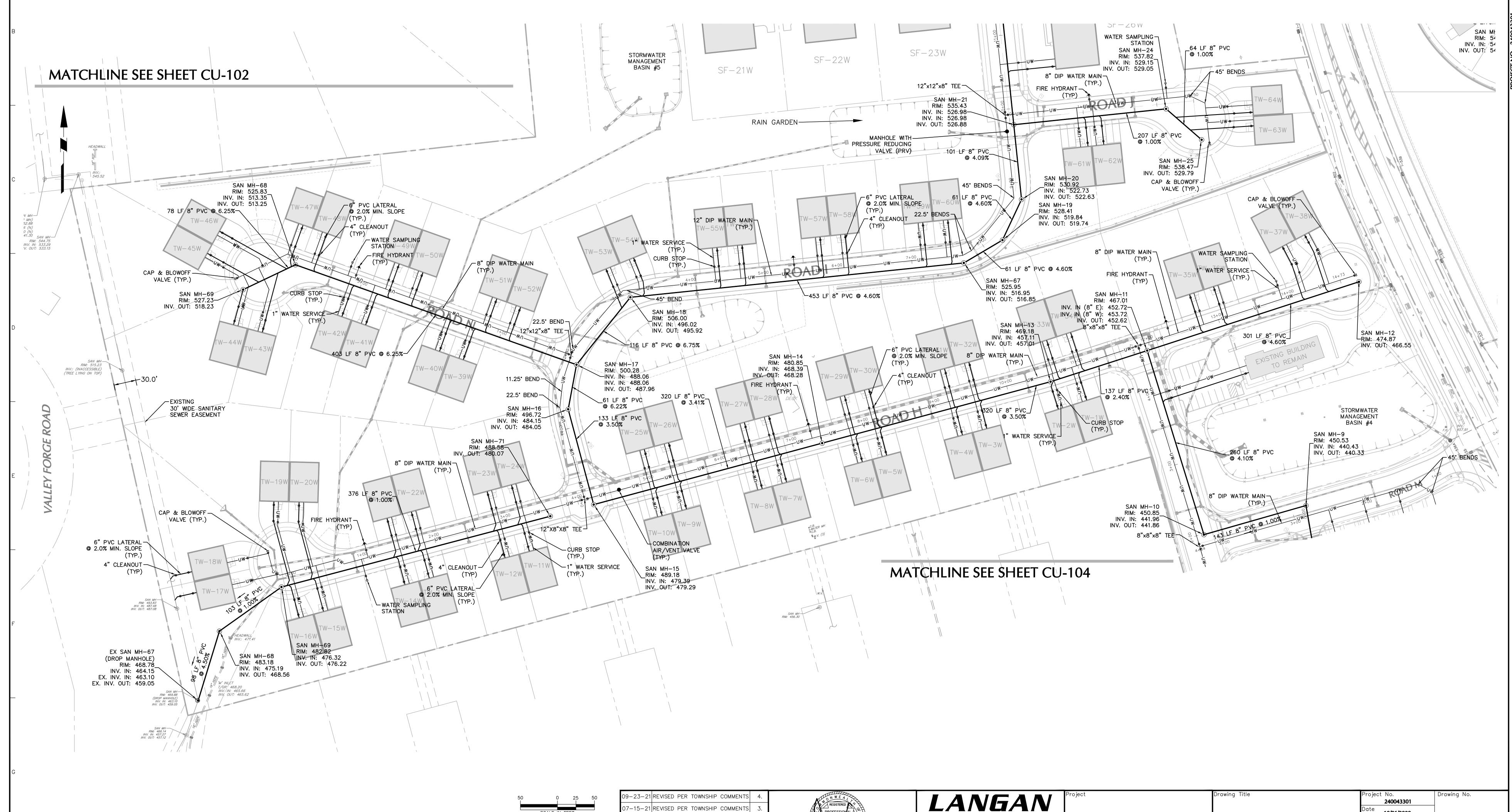
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Submission Date

UTILITY PLAN

CU-103



-15-21 REVISED PER TOWNSHIP COMMENTS

5-19-21 REVISED PER TOWNSHIP COMMENTS

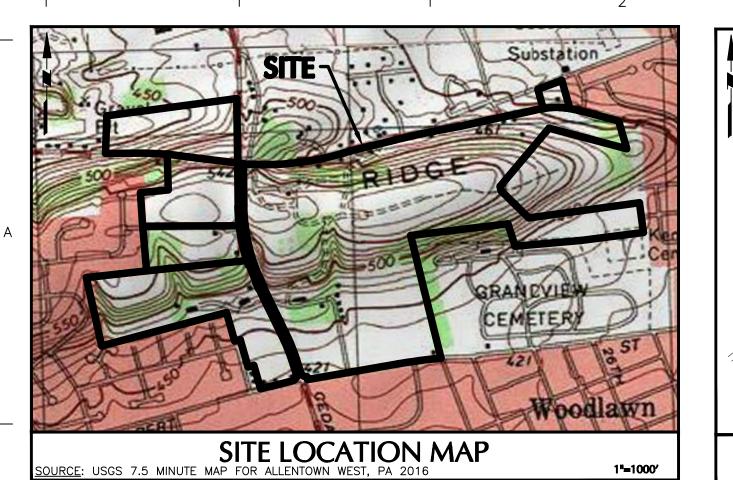
NOTE: SEE SHEET CU-100 FOR UTILITY PLAN NOTES.

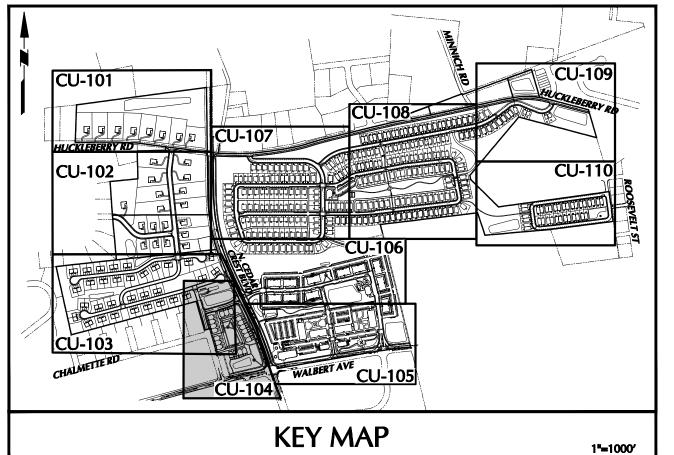
REVISED PER TOWNSHIP COMMENTS & WAIVER APPROVALS

REVISIONS

PROFESSIONAL ENGINEER PA Lic. No.

PE-057145-E





SITE SYMBOL	S	GRADING SYMBOLS				
EXISTING CURB LINE		EXISTING CONTOUR	— — — — — — — — — — — — — — — — — — —			
EXISTING FENCE -*	× × ×	PROPOSED CONTOUR	 360			
EXISTING MONUMENT		EXISTING SPOT ELEVATION	× 360.3			
EXISTING PROPERTY LINE		PROPOSED SPOT ELEVATION	× 360.3			
PROPOSED BUILDING LINE		SOILS	SYMBOLS			
PROPERTY LINE -	•••	SOILS BOUNDARY				
PROPOSED LOT LINE(WITH PIN MARKER) ————		SOIL TYPE	UudB			
PROPOSED LOT LINE (WITH CONCRETE REFERENCE MONUMENTS)	<u> </u>	TREELINE	~~~~~			
BUILDING SETBACK LINE						
PROPOSED UTILITY EASEMENT						
STORMWATER BMP AREA						
CONCRETE SIDEWALK						
SIGN	•					
RETAINING WALL	1 1 1 1					
BASIN LIMITS	UTILITY SYME	RUI C				
EXISTING STORM SEWER		EXISTING SANITARY	SEWER MANHOLE (S)			
EXISTING WATER MAIN	w	EXISTING FIRE HYDR	· ·			
PROPOSED STORM SEWER			OIN!			
PROPOSED SANITARY SEWER		EXISTING CATCH BA	M//			
PROPOSED SANITARY SEWER FORCE MAIN	———UFM———	EXISTING WATER VA	LVE 📈			
PROPOSED WATER MAIN	UW	EXISTING MANHOLE	\bigcirc			
PROPOSED GAS MAIN	————G ————	EXISTING ELECTRIC	POLE			

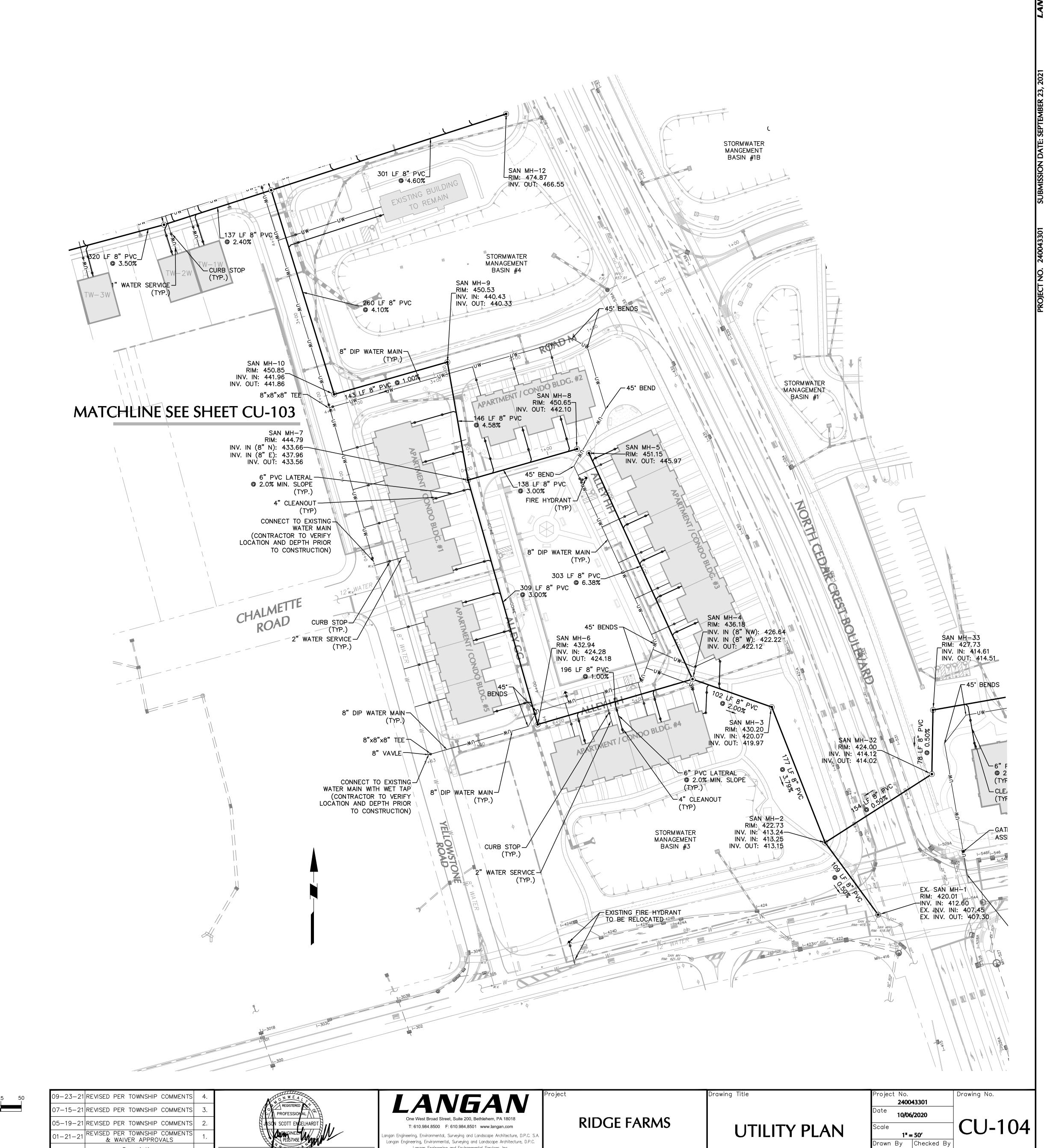
ACT 287 AS AMENDED IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY
WITH THE PENNSYLVANIA ACT 287 (AS AMENDED) AND TO CONTRACT THE
"ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED)
PRIOR TO START OF CONSTRUCTION. PENNSYLVANIA ONE CALL 1-800-242-1776 SERIAL NO (RIDGE FARMS): XXXXX



5930 HAMILTON BLVD., SUITE 10

ALLENTOWN, PA 18106

610-395-6857



Langan Engineering and Environmental Services, Inc.

Langan CT, Inc.

Collectively known as Langan

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PE-057145-E

REVISIONS

SOUTH WHITEHALL TOWNSHIP

PENNSYLVANIA

LEHIGH COUNTY

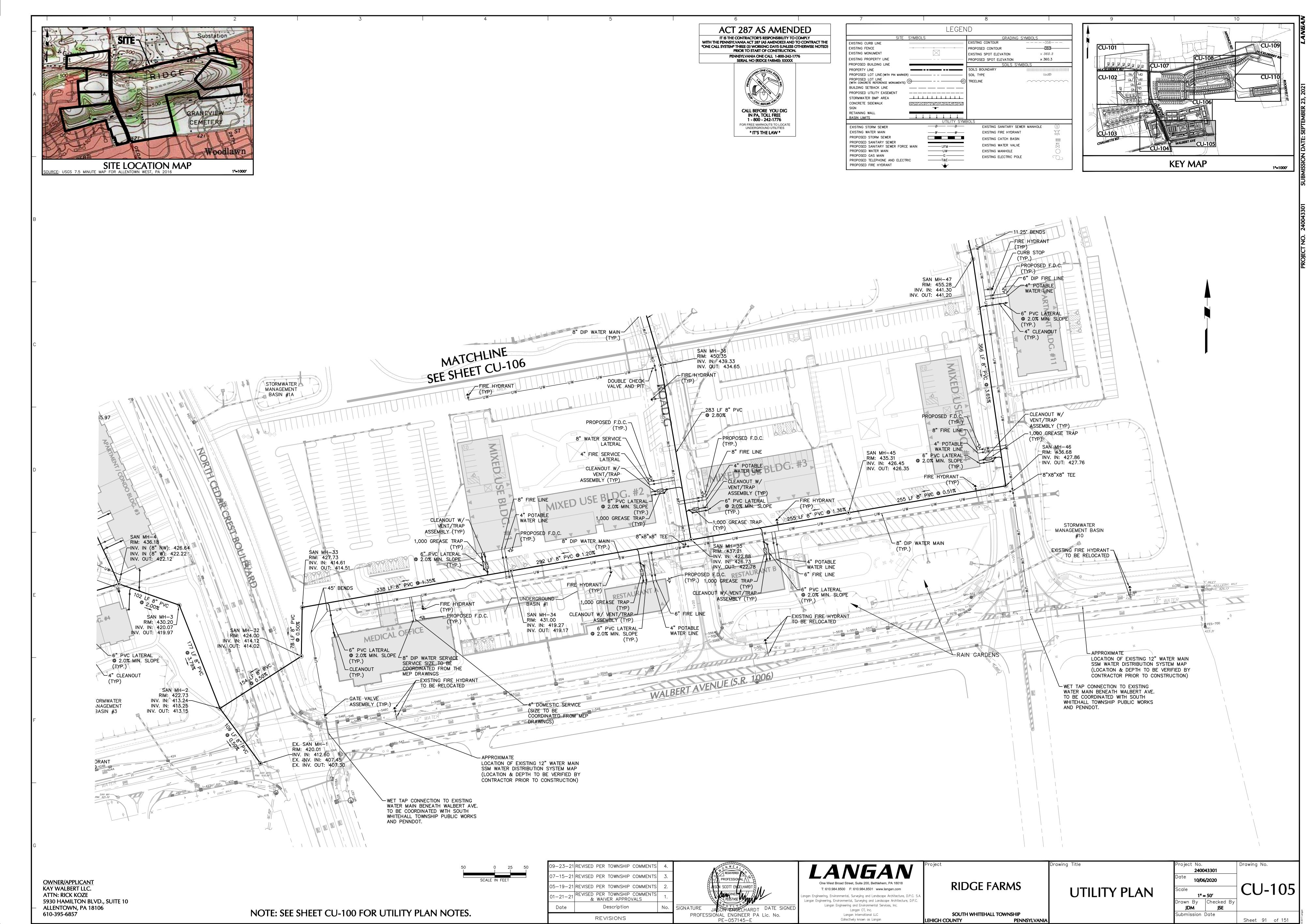
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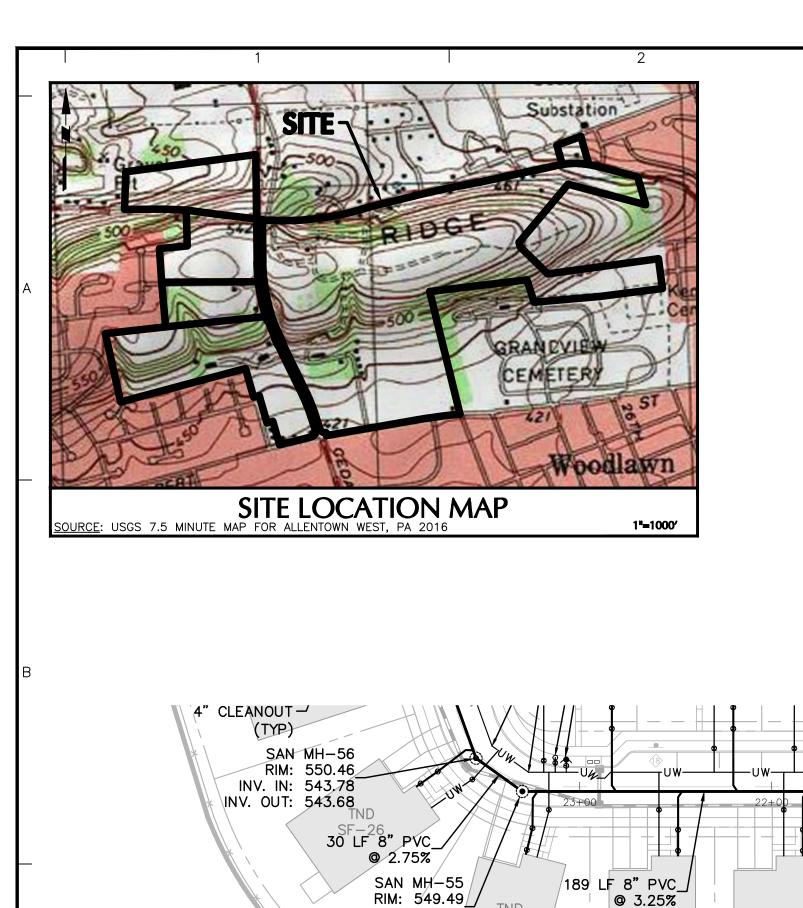
Submission Date

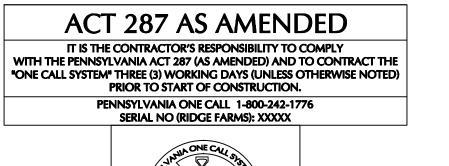
OWNER/APPLICANT KAY WALBERT LLC. ATTN: RICK KOZE

NOTE: SEE SHEET CU-100 FOR UTILITY PLAN NOTES.



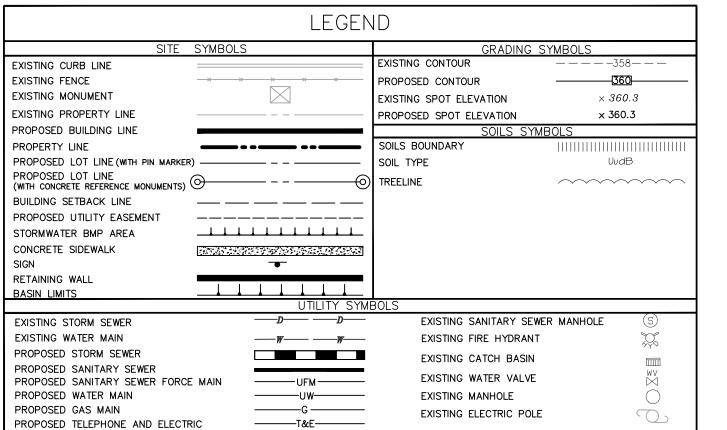
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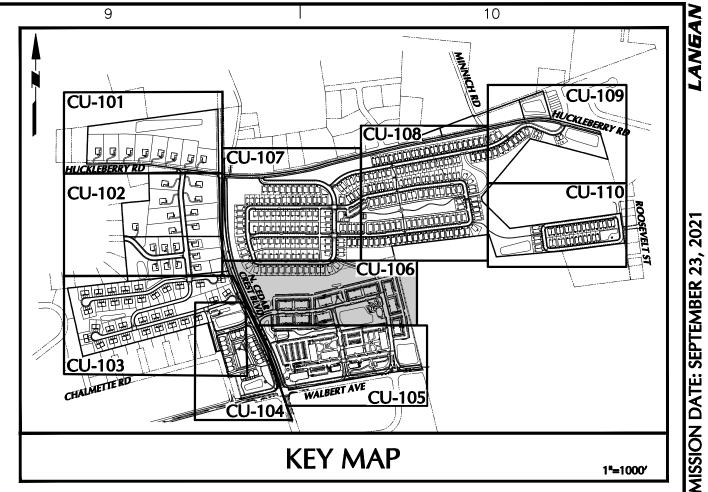


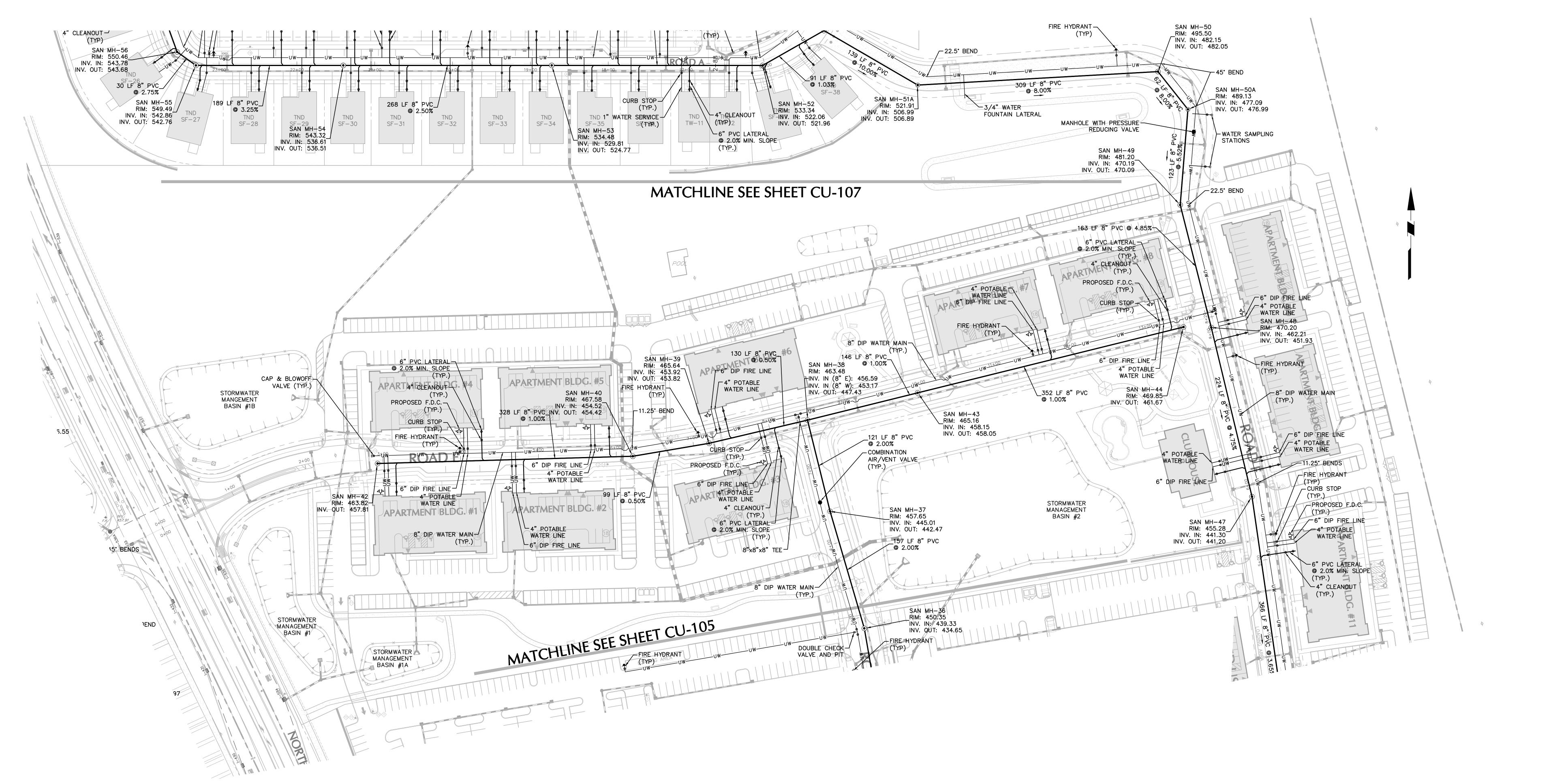




PROPOSED FIRE HYDRANT







OWNER/APPLICANT
KAY WALBERT LLC.
ATTN: RICK KOZE
5930 HAMILTON BLVD., SUITE 10
— ALLENTOWN, PA 18106
610-395-6857

NOTE: SEE SHEET CU-100 FOR UTILITY PLAN NOTES.

09-23-21 REVISED PER TOWNSHIP COMMENTS 4.

07-15-21 REVISED PER TOWNSHIP COMMENTS 3.

05-19-21 REVISED PER TOWNSHIP COMMENTS 2.

01-21-21 REVISED PER TOWNSHIP COMMENTS 4.

05-19-21 REVISED PER TOWNSHIP COMMENTS 1.

Date Description No.

REVISIONS

PROFESSIONAL

PROFESSIONAL

PEUST145E

NATURE

JASON PENGELHARDT

PEUST145E

PROFESSIONAL ENGINEER PA Lic. No.

PE-057145-E

One West Broad Street, Suite 200, Bethlehem, PA 18018
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Ingan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A.

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Langan Engineering and Environmental Services, Inc.

Langan CT, Inc.

Langan International LLC

Collectively known as Langan

RIDGE FARMS

PENNSYLVANIA

SOUTH WHITEHALL TOWNSHIP

LEHIGH COUNTY

UTILITY PLAN

Project No.
240043301

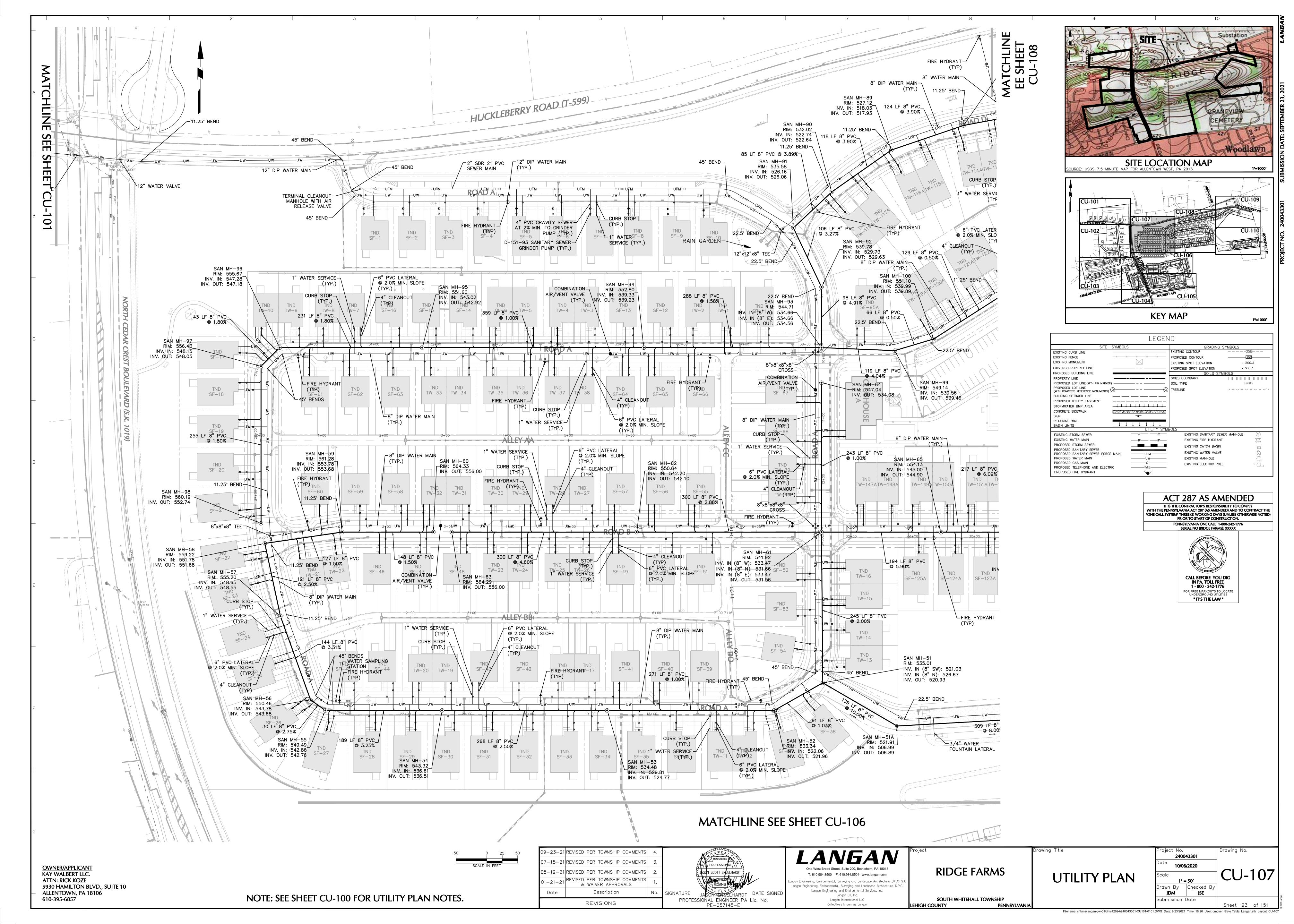
Date
10/06/2020

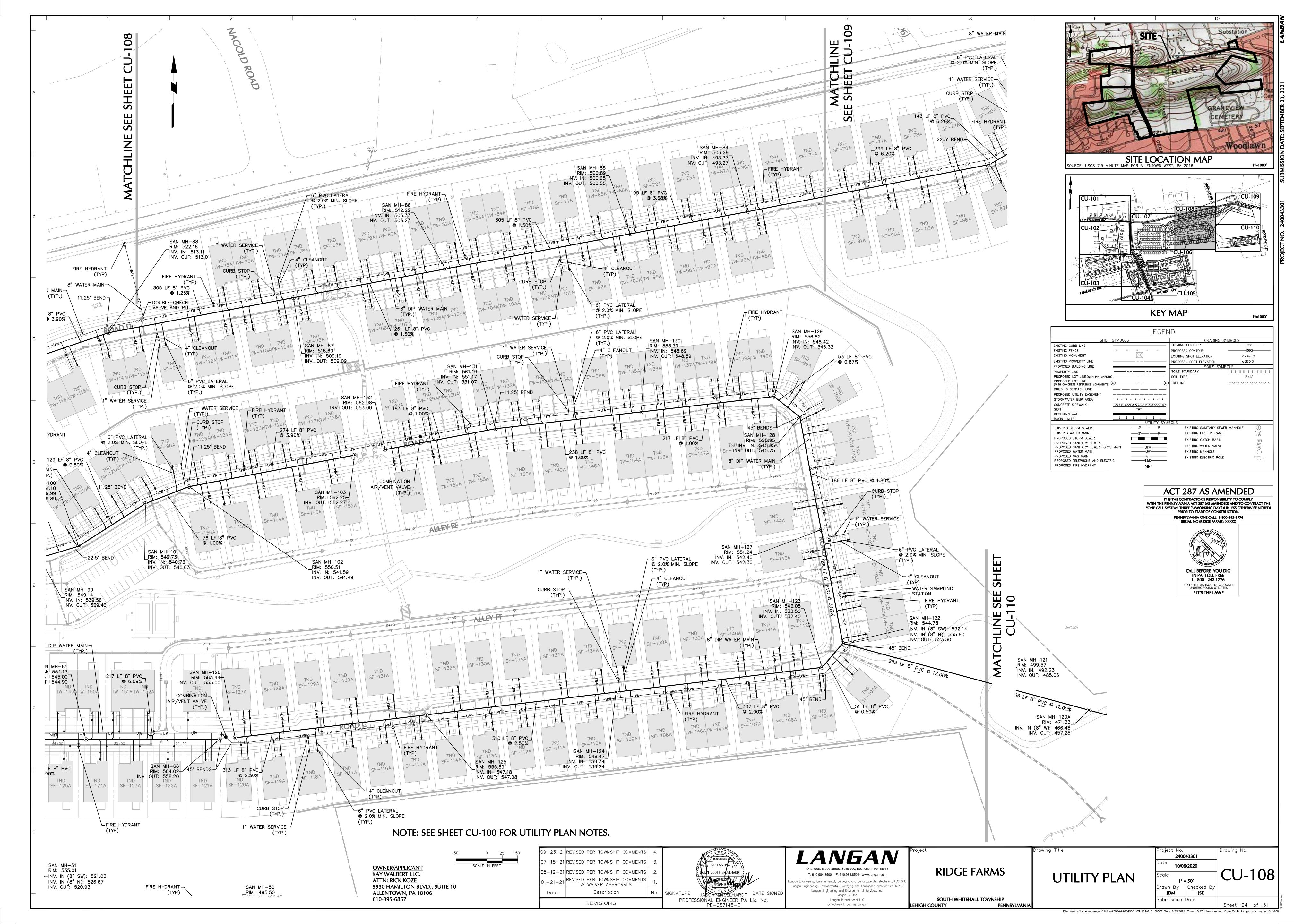
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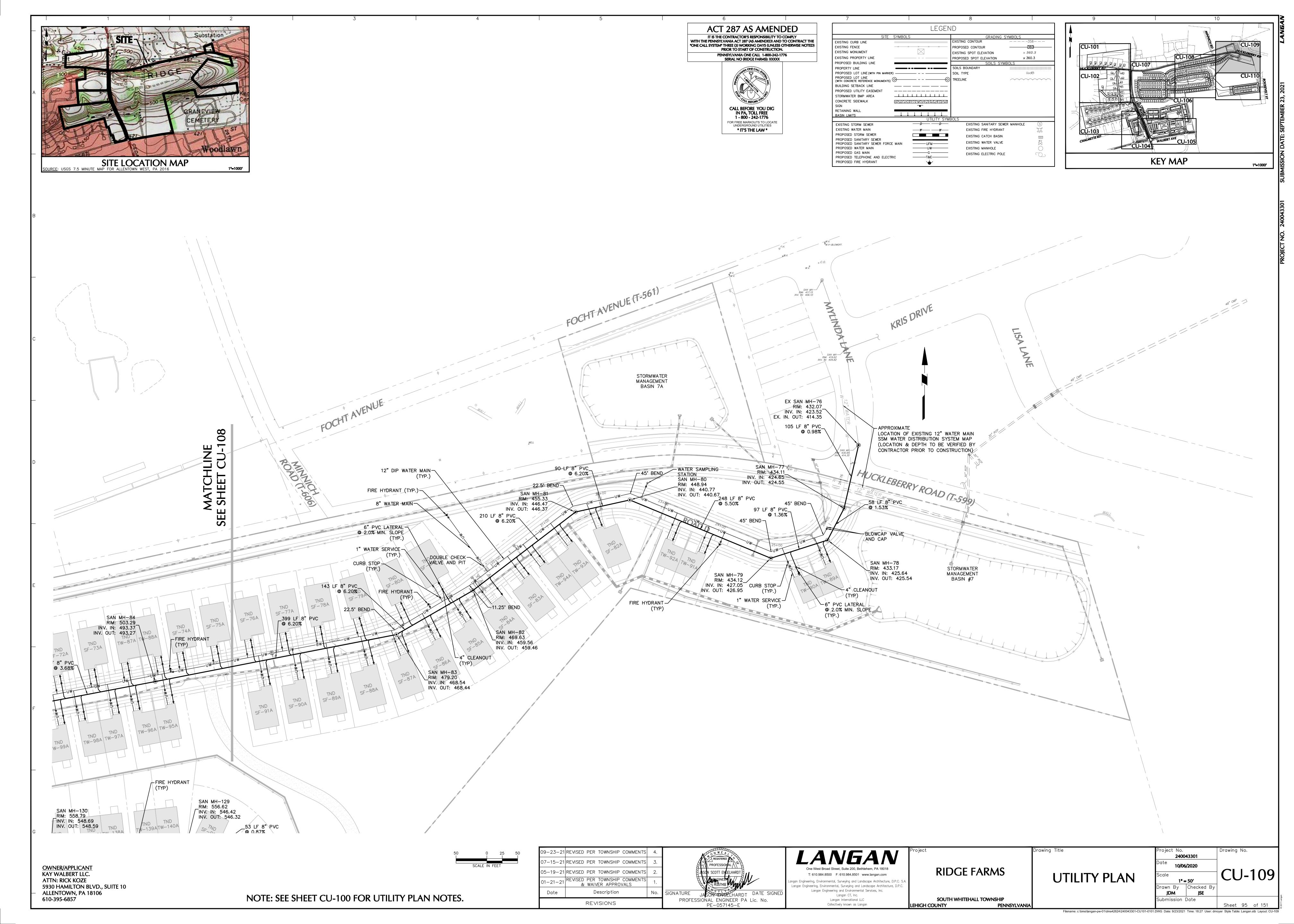
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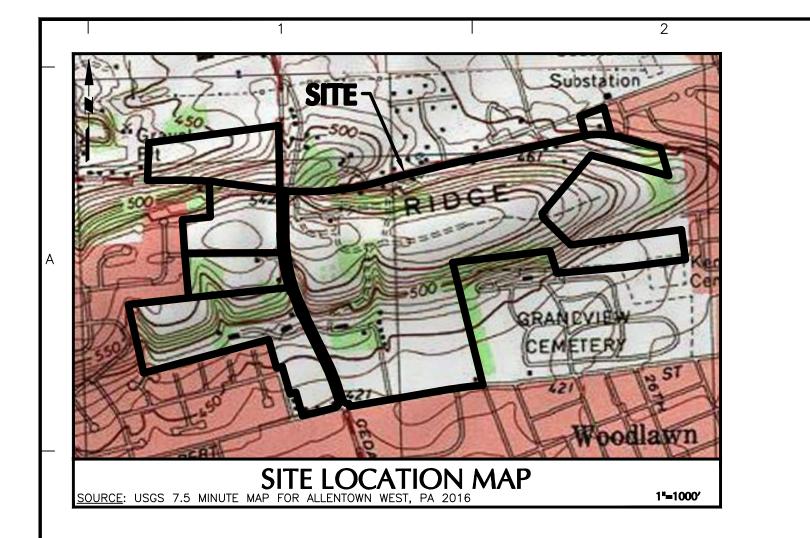
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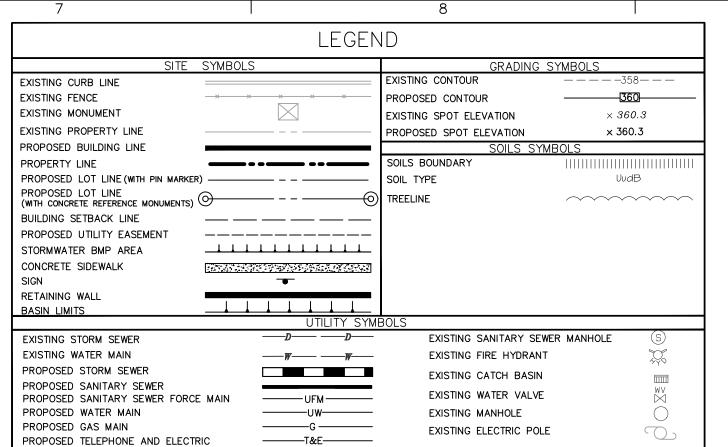


ACT 287 AS AMENDED

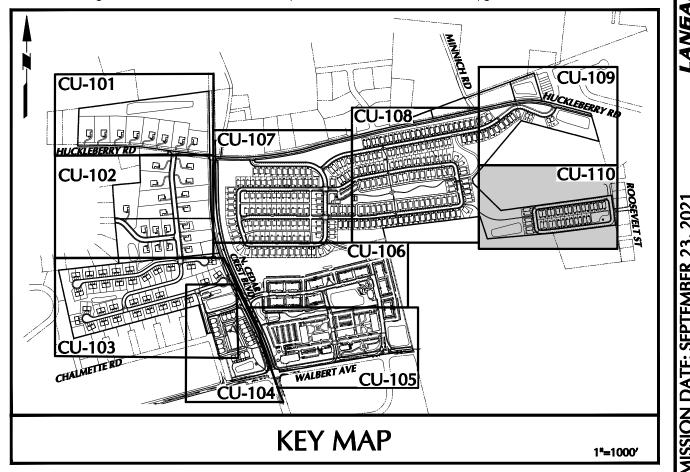
IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY
WITH THE PENNSYLVANIA ACT 287 (AS AMENDED) AND TO CONTRACT THE
"ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED)
PRIOR TO START OF CONSTRUCTION.

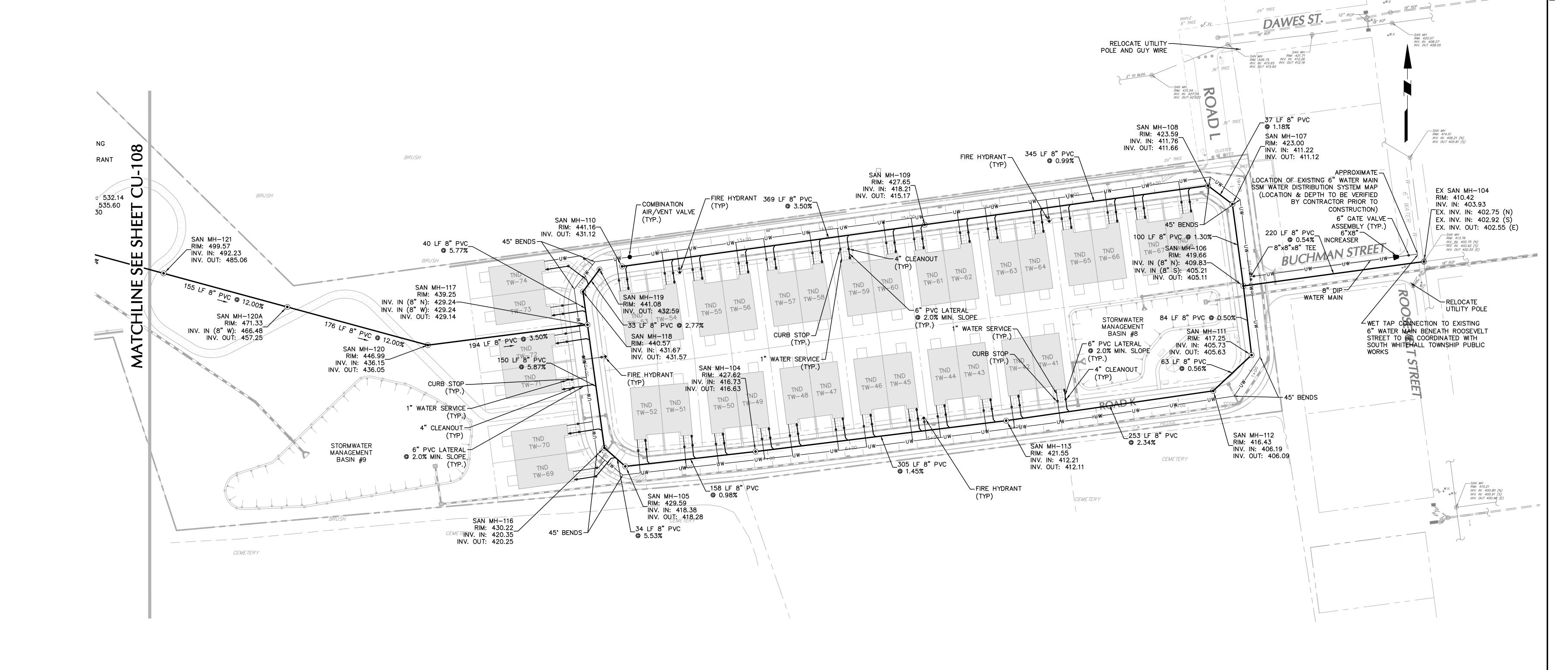
PENNSYLVANIA ONE CALL 1-800-242-1776
SERIAL NO (RIDGE FARMS): XXXXX





PROPOSED FIRE HYDRANT



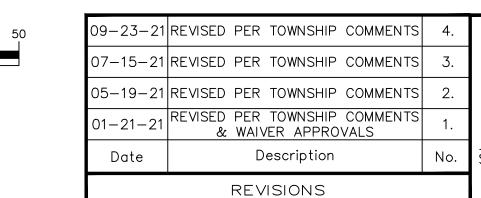


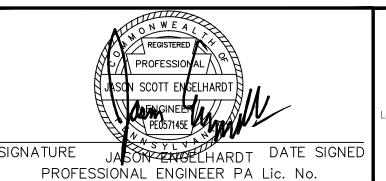
OWNER/APPLICANT
KAY WALBERT LLC.
ATTN: RICK KOZE

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610-395-6857





PE-057145-E

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Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan CT, Inc.

Langan International LLC

Collectively known as Langan

RIDGE FARMS

PENNSYLVANIA

SOUTH WHITEHALL TOWNSHIP

LEHIGH COUNTY

UTILITY PLAN

Project No.

240043301

Date

10/06/2020

Scale

1" = 50'

Drawn By Checked By JDM JSE

Submission Date

Filename: c:\bms\langan-pw-01\dms42624\240043301-CU101-0101.DWG Date: 9/23/2021 Time: 18:27 User: dmoyer Style Table: Langan.stb Layout: CU-110