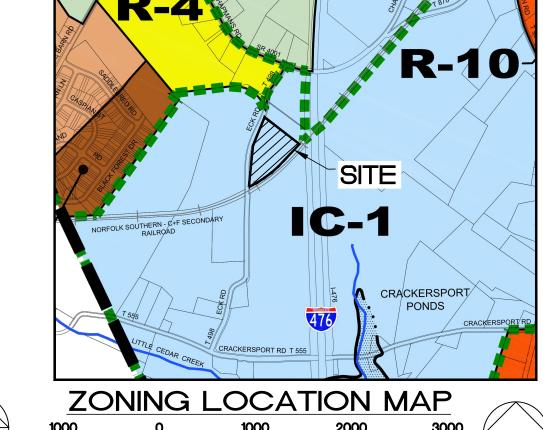
# 1429 ECK ROAD OUTDOOR STORAGE

SITUATED IN:

PIN 547720402074-1 1429 ECK ROAD ALLENTOWN, PA 18104 SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

**DEVELOPED FOR:** J.G. PETRUCCI CO., INC. 171 ROUTE 173 SUITE 201 ASBURY, NEW JERSEY 08802

# LOCATION MAP 2000 4000



RR

Scale 1" = 2000'

# Scale 1" = 1000"

ZONING DISTRICT: INDUSTRIAL COMMERCIAL-1 (SPECIAL HEIGHT LIMITATION) OVERLAY DISTRICT: TND - INDUSTRIAL RETROFIT AND INFILL

		SHEET INDEX		DISTRICT: TN
SHEET NUMBER	DWG. NUMBER	LAND DEVELOPMENT	DATE OF LAST REVISION	TO BE RECORDED
1	LD-1	COVER SHEET	05-15-23	X
2	LD-2	RECORD PLAN	05-15-23	X
3	LD-3	EXISTING FEATURES PLAN	05-15-23	
4	LD-4	GRADING & UTILITIES	05-15-23	
5	LD-5	LANDSCAPING PLAN	05-15-23	
6	LD-6	LANDSCAPING DETAILS	05-15-23	
7	LD-7	LIGHTING PLAN	05-15-23	
8	LD-8	STORM SEWER PROFILES	05-15-23	
9	LD-9	STORM SEWER DETAILS	05-15-23	
10	LD-10	STORM SEWER DETAILS	05-15-23	
11	LD-11	SANITARY SEWER PROFILES	05-15-23	
12	LD-12	SANITARY SEWER DETAILS	05-15-23	
13	LD-13	WATERLINE PLAN, PROFILES & DETAILS	05-15-23	
14	LD-14	MISCELLANEOUS DETAILS	05-15-23	
15	LD-15	MISCELLANEOUS DETAILS	05-15-23	
		STORMWATER MANAGEMENT PLANS		
16	SWM-1	PRE-DEVELOPMENT PLAN	05-15-23	
17	SWM-2	POST-DEVELOPMENT PLAN	05-15-23	
18	SWM-3	STORM SEWER DRAINAGE AREAS PLAN	05-15-23	
		TRUCK TURNING PLANS		
19	TT-1	TRUCK TURNS - WB-67	05-15-23	
20	TT-2	TRUCK TURNS - EMERGENCY VEHICLE AND TRASH TRUCK	05-15-23	
		EROSION AND SEDIMENT POLLUTION CONTROL PLANS		
21	ES-1	EROSION AND SEDIMENT CONTROL PLAN - STAGE 1	05-15-23	
22	ES-2	EROSION AND SEDIMENT CONTROL PLAN — STAGE 2 & 3	05-15-23	
23	ES-3	EROSION AND SEDIMENT CONTROL NOTES	05-15-23	
24	ES-4	EROSION AND SEDIMENT CONTROL DETAILS	05-15-23	
25	ES-5	EROSION AND SEDIMENT CONTROL DETAILS	05-15-23	
26	ES-6	EROSION AND SEDIMENT CONTROL DETAILS	05-15-23	
		POST CONSTRUCTION STORMWATER MANAGEMENT PLANS		
27	PCSM-1	PRE-DEVELOPMENT PLAN	05-15-23	Х
28	PCSM-2	POST-DEVELOPMENT PLAN	05-15-23	X
29	PCSM-3	POST-DEVELOPMENT DRAINAGE AREAS PLAN	05-15-23	Х
30		PCSM NOTES	05-15-23	X
31		PCSM DETAILS	05-15-23	X
32		PCSM DETAILS	05-15-23	X

### OWNER OF RECORD:

SITE DATA:

PARCEL ID:

DOCUMENT ID:

TOTAL LOT AREA:

DARYL R. & CHERYL L. LONG 3742 EAGLE ROAD SLATINGTON, PENNSYLVANIA 18080

ROW TO BE DEDICATED: 0.711 ACRES AREA TO BE CONVEYED: 0.053 ACRES ADJ. TOTAL LOT AREA: 4.348 ACRES

1429 ECK ROAD

547720402074-1

ALLENTOWN, PA 18104

### **EQUITABLE OWNER:**

TRIPLE NET INVESTMENTS CI, LLC 171 ROUTE 173 - SUITE 201 ASBURY, NEW JERSEY 08802-1365

### **DEVELOPER:**

J.G. PETRUCCI CO. 171 ROUTE 173 - SUITE 201 ASBURY, NEW JERSEY 08802-1365

### **TOWNSHIP NOTES:**

- 1. 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 NOT 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 INDEPENDENTLY CONFIRMED OR VERIFIED BY THE TOWNSHIP, THE TOWNSHIP ENGINEER, OR THE TOWNSHIP SOLICITOR.
- . 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 INJURY TO HEALTH, SAFETY OR OTHER PROPERTY. SUCH MEASURES SHALL INCLUDE SUCH ACTIONS AS ARE REQUIRED TO MANAGE THE RATE VOLUME, DIRECTION AND QUALITY OF RESULTING STORMWATER RUNOFF IN A MANNER WHICH OTHERWISE ADEQUATELY PROTECTS HEALTH AND PROPERTY FROM INJURY AND DAMAGE.
- 3. MUNICIPALITY REVIEW AND APPROVAL OF THE DRAINAGE PLAN, OR THE SUBSEQUENT OBSERVATION AND APPROVAL OF STORMWATER MANAGEMENT FACILITIES, SHALL NOT CONSTITUTE LAND DEVELOPMENT ON BEHALF OF OR BY THE MUNICIPALITY OR OTHERWISE CAUSE THE MUNICIPALITY TO BE ENGAGED IN THE ALTERATION OR DEVELOPMENT OF LAND. BY SUBMITTING AN 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 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.
- 4. ALL CONSTRUCTION WITHIN TOWNSHIP RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH TOWNSHIP SPECIFICATIONS AND STANDARDS FOR CONSTRUCTION.
- 5. THE SOUTH WHITEHALL TOWNSHIP AND TOWNSHIP AUTHORITY CONSTRUCTION DETAILS ARE A MINIMUM STANDARD FOR ALL CONSTRUCTION WITHIN THE TOWNSHIP. INCORPORATION OF PORTIONS OR ALL OF THE TOWNSHIP STANDARD CONSTRUCTION DETAILS ON THE PLANS CONSTITUTES AN ACCEPTANCE OF AND ENDORSEMENT OF THOSE STANDARDS BY THE DEVELOPER AND THE PLAN PREPARER.
- 6. THE LOCATION OF EXISTING UTILITIES IS THE RESPONSIBILITY OF THE DEVELOPER/DESIGN ENGINEER. THE LOCATIONS OF SUCH FACILITIES HAVE NOT BEEN REVIEWED BY THE TOWNSHIP OR THE TOWNSHIP ENGINEER. THE DEVELOPER/DESIGN ENGINEER IS RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UTILITIES AND AVOIDING CONFLICTS OF SAME WITH PROPOSED IMPROVEMENTS. SIGNIFICANT EFFORTS TO RESOLVE SUCH CONFLICTS, INCLUDING BUT NOT NECESSARILY LIMITED TO REDESIGN, CONSTRUCTION DELAYS, UTILITY RELOCATIONS, ETC., MAY RESULT IF CONFLICTS WITH EXISTING UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION.
- . PER SALDO SECTION 312-34(D), THE TOWNSHIP PLANNING COMMISSION AND DEVELOPER SHALL CONSIDER NEEDS FOR AND MAY REQUIRE OPEN SPACE USES AND COMMUNITY FACILITIES, OR FEES IN LIEU OF.

### **ZONING DECISION:**

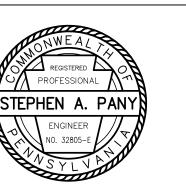
- BY MEANS OF A DECISION AND ORDER ENTERED BY THE SOUTH WHITEHALL TOWNSHIP ZONING HEARING BOARD AND EXECUTED ON JANUARY 12, 2023 THE FOLLOWING WERE GRANTED:
- 1. A SPECIAL EXCEPTION USE APPROVAL PURSUANT TO SECTION 350-48(0)(9)(C) TO AUTHORIZE THE OPERATION OF AN OUTDOOR STORAGÈ ÚSÉ IN THE IC-1 ZONING DISTRICT.
- 2. A VARIANCE PURSUANT TO SECTION 350-48(0)(2)(E)(ii)(E) TO PROVIDE EIGHT (8) STANDARD PARKING SPACES AND TO RESERVE AN ADDITIONAL SIXTEEN (16) STANDARD PARKING SPACES WHERE TWENTY-THREE (23) STANDARD PARKING SPACES ARE REQUIRED
- BY SECTION 350-48(0)(9)(D). 3. THE GRANT OF THE SPÉCÍAL EXCEPTION USE APPROVAL IS CONDITIONED UPON THE FOLLOWING:
- a. THE CONTINUED APPLICATION OF SECTION 3 50-48(0)(2)(E)(II)(E) b. ALL RECORDED PLANS MUST IDENTIFY THE SIXTEEN (16) PARKING SPACES TO BE RESERVED BY THE APPLICANT; c. IF THE BOARD OF COMMISSIONERS DETERMINES THAT THE RESERVED PARKING SPACES ARE NECESSARY FOR REGULAR MOTOR VEHICLE PARKING, THEN THE RESERVED SPACES SHALL BE
- CONVERTED TO REGULAR MOTOR VEHICLE PARKING SPACES (STANDARD SIZE SPACES) IN AN AMOUNT THAT IS DETERMINED BY THE BOARD OF COMMISSIONERS; d. THERE SHALL BE NO IDLING OF VEHICLES OR EQUIPMENT OTHER THAN REQUIRED FOR THE ATTACHING OR DETACHING OF TRAILERS;
- e. THE CHAIN LINK FENCE ENCLOSING THE PROPERTY SHALL CONTAIN OPAQUE STRIPS, EXCEPT THAT ALL FENCING ALONG THE RESIDENTIAL PROPERTY TO THE NORTH SHALL BE SOLID; . THE REPRESENTATIONS, TESTIMONY, AND EXHIBITS OFFERED BY OR ON BEHALF OF THE APPLICANT IN THE HEARING REGARDING THE PROPOSED USE AND OPERATION OF THE PROPERTY ARE BINDING UPON THE APPLICANT AS CONDITIONS OF APPROVAL FOR THE SPECIAL EXCEPTION AND VARIANCE: g. A LANDSCAPE BUFFER SATISFACTORY TO THE TOWNSHIP SHALL BE
- PLANTED ALONG THE NORTHERN SIDE OF THE PROPERTY AND SHALL BE CONSTRUCTED TO INCLUDE A RAISED PLANTING BERM IN ACCORDANCE WITH THE APPLICANT'S EVIDENCE; h. THE MINIMUM HEIGHT AT PLANTING OF ANY TREES IN THE LANDSCAPE BUFFER SHALL BE AT LEAST TEN FEET (10'); THE LANDSCAPE BUFFER SHALL CONSIST OF PLANT MATERIALS
- THE OPERATOR OF THE FACILITY SHALL MAINTAIN A PROPER HAZARDOUS SPILL CONTAINMENT UNIT APPROPRIATE FOR THE
- k. THERE SHALL BE NO VERTICAL STACKING OF TRAILERS OR CONTAINERS PARKED ON THE PROPERTY; THERE SHALL BE NO REFRIGERATED UNITS ALONG THE NORTH
- SECTION OF THE PROPERTY IN THE AREA DESIGNATED WITH THIRTY (30) PARKING SPACES; m. NO HAZARDOUS MATERIALS SHALL BE PERMITTED IN THE PARKING

n. NO LIVESTOCK TRAILERS SHALL BE PERMITTED IN THE PARKING

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



### **ENGINEER'S STATEMENT**

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

Pany & Lentz Engineering Company accepts no responsibility for unauthorized use of this document. Reproduction of this drawing or any portion thereof is prohibited without the written consent of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid.

All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

### CERTIFICATION OF OWNER OF RECORD

THE APPLICANT IS THE OWNER, EQUITABLE OWNER OR HAS AN OPTION OR CONDITIONA CONTRACT OF SALE ON THE LAND PROPOSED TO BE SUBDIVIDED OR DEVELOPED, THAT NO LITIGATION OR LIENS EXIST ON OR ARE PENDING AGAINST THE SITE, THAT THE PLAN HAS BEEN PROCESS WITH THE APPLICANT'S FREE CONSENT AND THAT THE APPLICANT DESIRES

THE APPLICANT CERTIFIES THAT HE WILL PROPERLY GRADE ALL INDIVIDUAL LOTS TO PROVIDE ADEQUATE SURFACE DRAINAGE SO THAT NO LOW SPOTS OR WATER POCKETS CREATE A PUBLIC NUISANCE AND THAT HE WILL PLACE PERMANENT CONCRETE REFERENCE MONUMENTS TO GRADE AS NOTED ON THE PLAN UPON COMPLETION OF GRADING.

THE APPLICANT ACKNOWLEDGES THAT FOLLOWING APPROVAL OF THIS PLACE, PLAN CHANGES MAY BE REQUIRED TO ADDRESS THE COMMENTS AND REGULATIONS OF OUTSIDE AGENCIES RESPONSIBLE TO REVIEW ANY ASPECT OF THE PROJECT REFLECTED ON THIS PLACE, INCLUDING BUT NOT LIMITED TO POST-CONSTRUCTION STORMWATER MANAGEMEN' AND NPDES PERMIT REGULATIONS. IN THE EVENT OF CHANGES TO THE PLAN FOLLOWING APPROVAL (WHETHER OR NOT THE PLAN HAS BEEN RECORDED), THE APPLICANT SHALL SUBMIT THE REVISED PLAN TO THE TOWNSHIP FOR REVIEW BEFORE THE APPLICANT MAY MOVE FORWARD WITH CONSTRUCTION ACTIVITIES PURSUANT TO THE REVISED PLAN (WHETHER OR NOT THE PLAN HAS BEEN RECORDED).

JAMES G. PETRUCCI (MANAGER)	DATE		
SWORN AND SUBSCRIBED	TO BEFORE ME THIS	DAY OF	, 20

### SURVEYORS CERTIFICATION

NOTARY PUBLIC

I HEREBY CERTIFY THE ABOVE PLAN AND SURVEY TO BE CORRECT IN ALL ITS DETAILS.

SCOT A DIETRICH, PLS PA SU053116 609 HAMILTON STREET ALLENTOWN, PA 18101 610-433-1634

BY THE SOUTH WHITEHALL TOWNSHIP

SECRETARY

BY THE BOARD OF COMMISSIONERS OF YEAR THE TOWNSHIP OF SOUTH WHITEHALL.

SECRETARY

TOWNSHIP ENGINEER

### LEHIGH VALLEY PLANNING COMMISSION REVIEW BLOCK

REVIEWED BY LEHIGH VALLEY PLANNING COMMISSION.

### RECORDER OF DEEDS

PLAN RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF LEHIGH COUNTY, PENNSYLVANIA DOCUMENT ID NUMBER ON THE \_\_\_ DAY OF \_\_\_\_\_\_, 20 \_\_\_.

WITNESS MY HAND AND SEAL OF OFFICE THIS \_\_\_ DAY OF \_\_\_\_\_, 20 \_\_\_

RECORDER OF DEEDS

### WAIVER NOTE:

THE FOLLOWING WAIVERS FROM SECTIONS OF THE SOUTH WHITEHALL TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ARE REQUESTED FOR THIS APPLICATION:

1. SECTION 312-36(c)(5)(A) - TO ALLOW A DRIVEWAY WIDTH AT THERIGHT-OF-WAY LINE TO BE LARGER THAN 40 FEET.

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

# DATE

REVISION



**COVER SHEET** 

CONSULTING ENGINEERS

CIVIL . STRUCTURAL . MECHANICAL . MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD OUTDOOR STORAGE JOB. NO. 2022258

SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

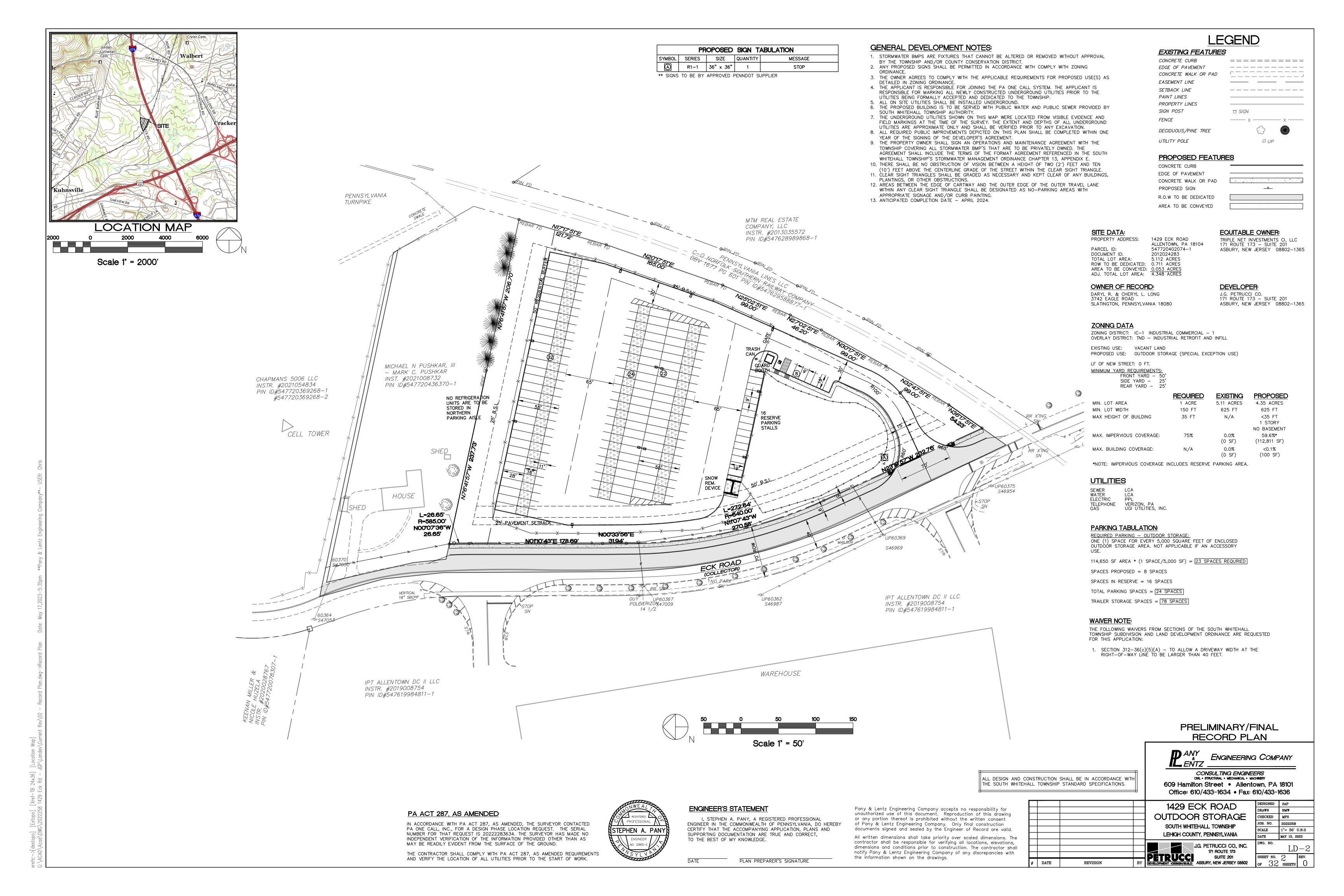
171 ROUTE 173

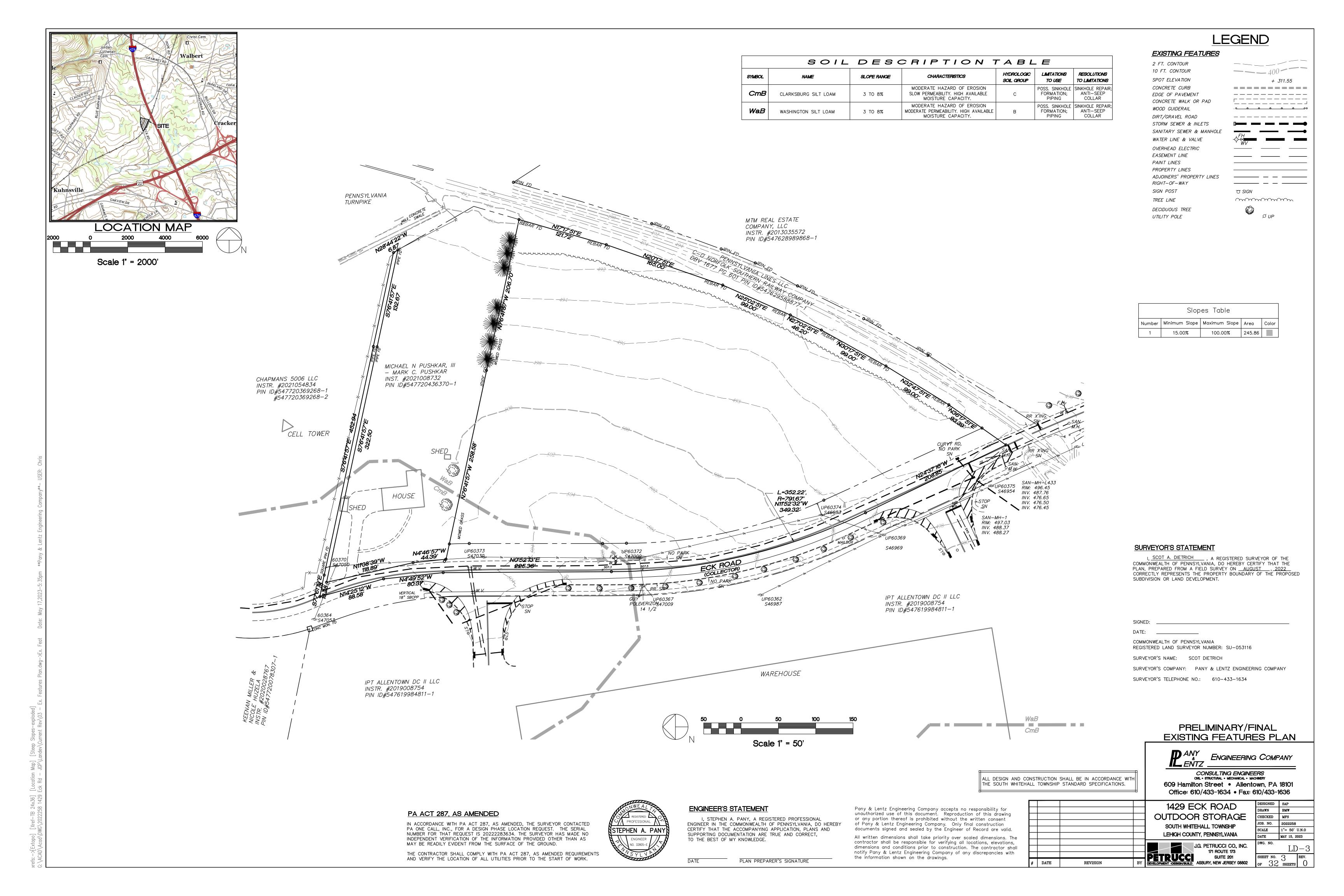
SCALE 1"= 50' U.N.O

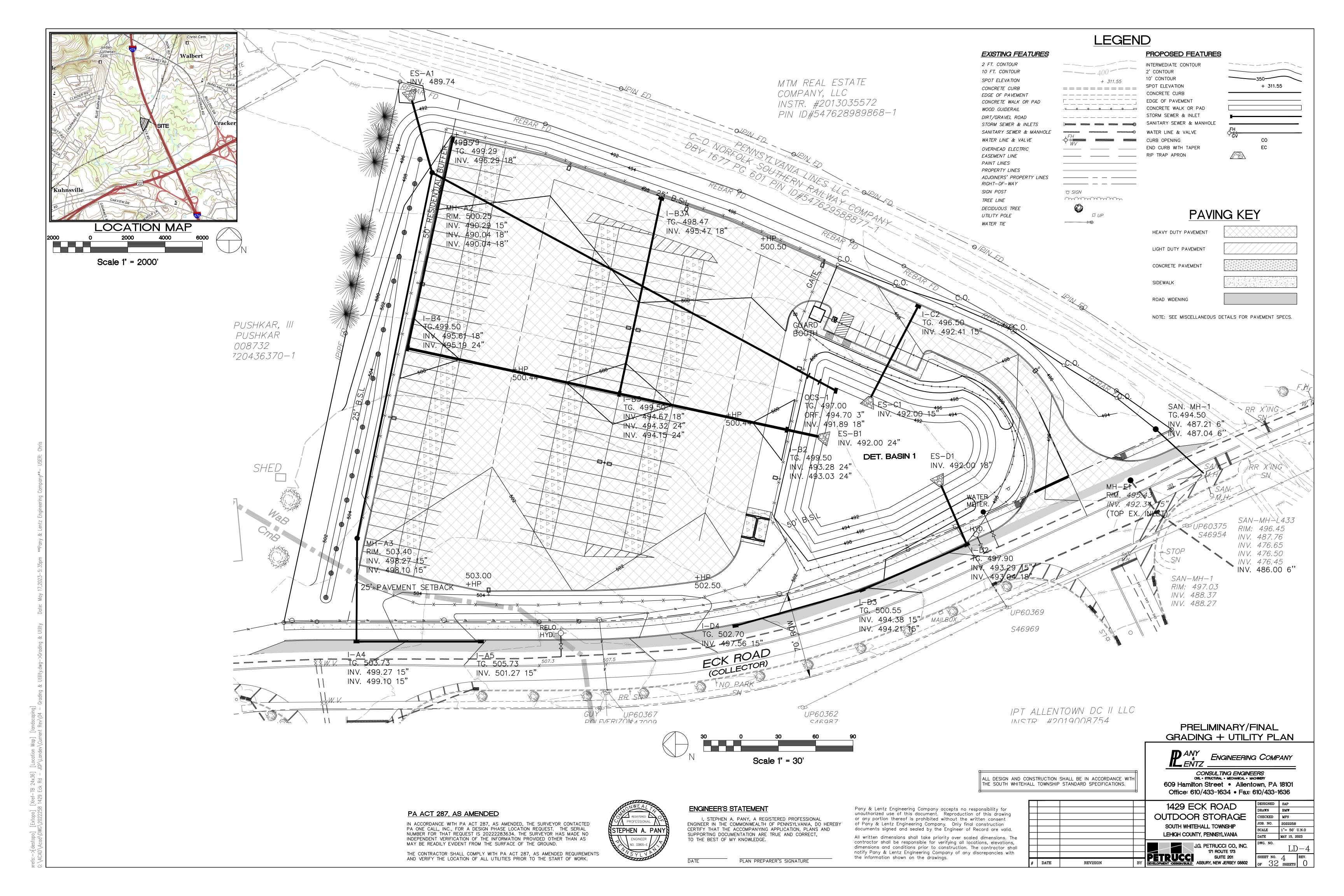
PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

DATE MAY 15, 2023 J.G. PETRUCCI CO., INC.

BMW



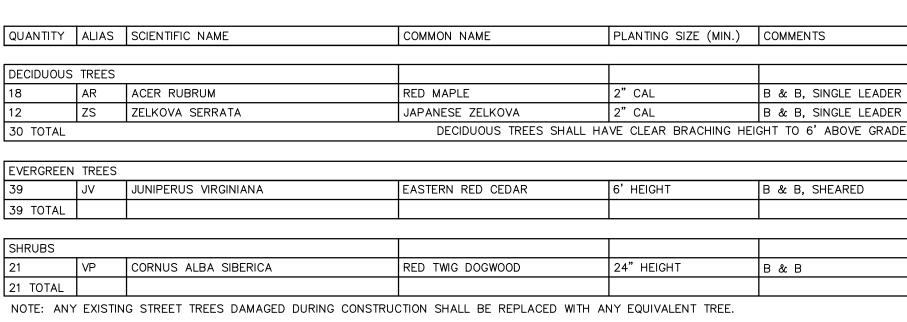




### GENERAL PLANTING NOTES:

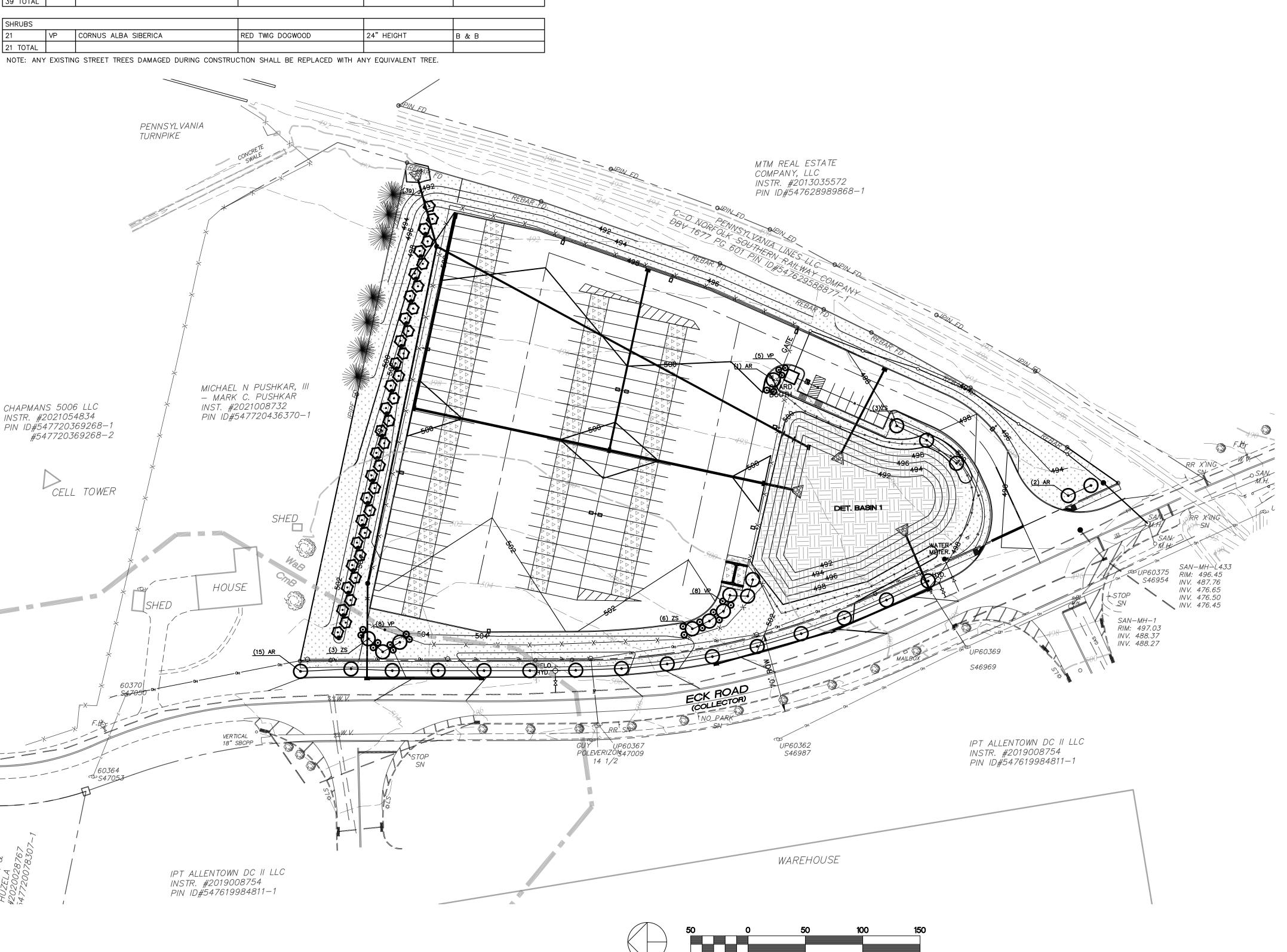
Scale 1" = 2000'

- 1. THE CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO BEGINNING CONSTRUCTION, AS PER ACT 187. CALL 1-800-242-1776.
- 2. ALL NEW PLANT MATERIAL SHALL BE WARRANTED FOR A PERIOD OF EIGHTEEN MONTHS FROM DATE OF FINAL ACCEPTANCE.
- 3. THE CONTRACTOR SHALL STAKE OUT THE LOCATIONS OF ALL NEW PLANT MATERIAL FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY OF PLANT MATERIAL.
- 4. THE CONTRACTOR SHALL NOT DEVIATE FROM THE PLANT SCHEDULE WITHOUT PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT / OWNER, AND SOUTH WHITEHALL TWP.
- 5. ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE SEEDED FOR TURF, AS DESCRIBED BELOW, UNLESS OTHERWISE NOTED ON THE PLAN.
- 6. TURF SEEDING SHALL OCCUR DURING THE SPECIFIED PERIODS. DURING OTHER PERIODS, SEED WITH FORMULA E. RAKE AND RESEED WITH FORMULA B DURING THE NEXT RECOMMENDED PERIOD.
- 7. PREPARE TURF AREAS PER THE REQUIREMENTS AND DURING THE THE TIME PERIODS DESCRIBED IN SECTIONS 804 (SEEDING AND SOIL SUPPLEMENTS) AND 805 (MULCHING) OF PennDOT SPECIFICATIONS PUBLICATION 408M IN THE LATEST REVISION. (SEE SPECS BELOW)
- 8. PLANT MATERIAL LOCATED IN THE VICINITY OF UTILITY ZONES SHALL BE REVIEWED IN THE FIELD PRIOR TO PLANT INSTALLATION.
- 9. ALL PLANTINGS SHALL BE LOCATED TO AVOID PLACEMENT WITHIN
- 10. THE CONTRACTOR SHALL SUBMIT PROOF OF PLANT MATERIAL PATENTS WHERE SPECIFIED.



AUTHORITY	REQ	JIREMENT	CALCULATION	MINIMUM	PROVIDED
SOUTH WHITEHALL TWP.	OFF STREET PARKING	1 TREE MINIMUM FOR 10 OFF STREET PARKING SPACES	24 CAR PARKING SPACES / 10 = 2.4 TREES 78 TRAILER PARKING SPACES / 10 = 7.3 TREES = 9.7 TREES	10	77
SOUTH WHITEHALL TWP.	STREET TREES	1 TREE MINIMUM FOR 100 FEET OF STREET RIGHT-OF-WAY	ECK ROAD:  806 LINEAR FEET OF STREET R.O.W. / 100 = 8.1 TREES = 9.0 TREES	9	15

PROPOSED TREE REQUIREMENTS TABULATION



LEGEND

**EXISTING FEATURES** 

2 FT. CONTOUR 10 FT. CONTOUR SPOT ELEVATION + 311.55 CONCRETE CURB ========= \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_

. 0 0 0 0 0

\_\_\_\_\_

+ 311.55

m

SIGN

EDGE OF PAVEMENT CONCRETE WALK OR PAD WOOD GUIDERAIL DIRT/GRAVEL ROAD STORM SEWER & INLETS SANITARY SEWER & MANHOLE WATER LINE & VALVE

OVERHEAD ELECTRIC EASEMENT LINE PAINT LINES PROPERTY LINES ADJOINERS' PROPERTY LINES RIGHT-OF-WAY

SIGN POST TREE LINE DECIDUOUS TREE

UTILITY POLE

PROPOSED FEATURES

2' CONTOUR 10' CONTOUR SPOT ELEVATION CONCRETE CURB EDGE OF PAVEMENT CONCRETE WALK OR PAD STORM SEWER & INLET

INTERMEDIATE CONTOUR

SANITARY SEWER & MANHOLE WATER LINE & VALVE CURB OPENING END CURB WITH TAPER RIP TRAP APRON

DECIDUOUS/EVERGREEN TREE

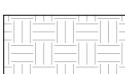
SHRUB EXISTING TREE TO BE REMOVED, AND REPLACED AT SAME LOCATION EXISTING TREE TO BE REMOVED

AND RELOCATED





MEADOW/LOW MAINTENANCE SEED MIX



BASIN/WATER TOLERANT SEED MIX

NOTE: SEE LANDSCAPING DETAILS SHEET FOR SEED MIX INFORMATION. STANDARD LAWN SEED MIX TO BE UTILIZED IN AREAS NOT SPECIFIED.

Scale 1" = 50'

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

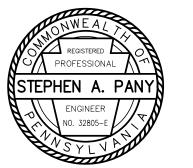
# DATE

REVISION

### PA ACT 287, AS AMENDED

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THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



### **ENGINEER'S STATEMENT**

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

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of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

or any portion thereof is prohibited without the written consent

CONSULTING ENGINEERS
CML • STRUCTURAL • MECHANICAL • MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

DESIGNED SAP
DRAWN BMW JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023

ENGINEERING COMPANY

J.G. PETRUCCI CO, INC. 171 ROUTE 173

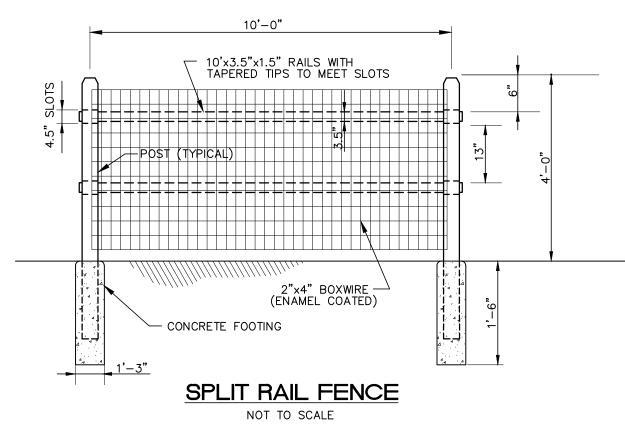
PRELIMINARY/FINAL LANDSCAPING PLAN

PETRUCCI SUITE 201

<u>DEVELOPMENT -DEBIGN/BUILD</u> ASBURY, NEW JERSEY 08802

## CHAIN LINK FENCE AND GATE N.T.S.

2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. PROVIDE ALL FENCE TIES, RINGS, AND CLIPS AS RECOMMENDED BY FENCE MANUFACTURER.



ALL WOOD FOR SPLIT RAIL FENCE TO BE PRESSURE TREATED. 2. END POST SHALL BE TERMINAL POST.

### PERMANENT SEEDING SCHEDULE

ALL RECOMMENDED SEEDING FROM THE "EROSION CONTROL AND CONSERVATION PLANTINGS ON NON CROPLAND" 1997 BY PENN STATE COLLEGE OF AGRICULTURAL SCIENCES

AREA	SPECIES	RECOMMENDED VARIETY	SEEDING RATE PURE LIVE SEED (LB./AC.)	PLANTING DATES
LAWN AREAS AND	PERENNIAL RYEGRASS	PENN FINE, MANHATTAN CITATION OR REGAL	20	
ROAD SHOULDERS	FINE FESCUE	PENN LAWN	40	MAR 1 - AUG 15
	KENTUCKY BLUE GRASS	MIXED SEED OF 2 OR 3 NAMED VARIETIES THAT ORIGINATED IN PA	30	
TEMPORARY SEEDING AS REQUIRED	ANNUAL RYEGRASS	COMMON SEED	40	MAR 1 - NOV 15

- SEE BASIN SEED MIXTURES (SHEET 3) -

PURE LIVE SEED (P.L.S.) IS THE PRODUCT OF THE PERCENTAGE OF PURE LIVE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. TO CALCULATE THE AMOUNT OF SEED REQUIRED TO PLANT ONE (1) ACRE, DIVIDE THE SEEDING RATE IN THE LBS. P.L.S./ACRE BY THE P.L.S. CONTENT OF THE SEEDLOT TO BE USED.

WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE AN AREA IMMEDIATELY AFTER FINAL EARTHMOVING HAS BEEN COMPLETED, OR WHERE THE ACTIVITY CEASES, INTERIM STABILIZATION MEASURES SHALL BE IMMEDIATELY IMPLEMENTED (TEMPORARILY SEEDED AND/OR MULCHED.)

3. SOW SEEDS UNIFORMLY ON THE PREPARED AREAS BY HYDRAULIC APPLICATION, BROADCASTING, OR HANDSEEDING METHODS. INSPECT SEEDING EQUIPMENT AND ADJUST THE EQUIPMENT IF REQUIRED TO ASSURE THE SPECIFIED APPLICATION RATES. PERIODICALLY CHECK ON THE RATE AND UNIFORMITY OF APPLICATION.

4. DIVERSIONS, CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.

5. HAY OR STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE, IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

6. TEMPORARY SEEDING: A.) APPLY ONE (1) TON AGRICULTURAL GRADE LIMESTONE PER ACRE.

B.) APPLY 5-5-5 FERTILIZER AT 1,000 POUNDS PER ACRE.

C.) AFTER SOWING TEMPORARY SEEDING, APPLY THREE (3) TONS HAY OR STRAW MULCH PER ACRE.

7. PERMANENT SEEDING:

PERFORM SOIL TEST TO DETERMINE REQUIRED AMMENDMENTS OR A.) APPLY 10-20-20 TURF TYPE FERTILIZER AT A RATE OF 500 LBS PER ACRE.

B.) APPLY LIME AT A RATE OF 4,000 LBS PER ACRE.

C.) MULCH WITH HAY (MIN. 3 TONS/ACRE) TO PROTECT THE SEED FROM DRYNESS AND EROSION. ALL AREAS THAT FAIL TO GERMINATE MUST BE RESEEDED.

### HYDRO-SEEDING REQUIREMENTS

**SEEDING NOTES:** 

1. HYDRO-SEEDING IS A METHOD OF SEEDING IN WHICH LIME, FERTILIZER AND SEED ARE MIXED WITH WATER AND APPLIED AS A SLURRY AT A RATE OF 1,000 GALLONS PER ACRE. THE SLURRY MIX SHALL CONSIST OF 1) 4,000 POUNDS OF AGRICULTURE GRADE LIMESTONE PER ACRE 2) 50 POUNDS OF NITROGEN - 100 OF NITROGEN - 100 POUNDS OF P205 - 100 POUNDS OF K20 PER ACRE 3) SEED AS REQUIRED PER ACRE.

. APPLY A SECOND APPLICATION OF LIME AND FERTILIZER 30 DAYS AFTER INITIAL APPLICATION. . WHEN HYDRO-SEEDING LEGUMES AND FERTILIZER TOGETHER, ADD THE LEGUME INOCULANT JUST BEFORE

APPLICATION, SINCE SOME FERTILIZATION ARE HARMFUL TO RHIZOBIS. DO NOT ALLOW THE SEED AND INOCULANT TO BE IN CONTACT WITH FERTILIZER IN THE HYDRO—SEEDER FOR LONGER THAN A HALF HOUR TO AN HOUR. IF THE INOCULANT IS IN THE TANK FOR LONGER THAN AN HOUR, ADD A NEW SUPPLY OF INOCULANT.

4. USE FIVE (5) TIMES THE RATE OF INOCULANT RECOMMENDED ON THE PACKAGE WHEN SEEDING WITH HYDRO-SEEDER.

-KEEP MULCH 3" AWAY FROM

-ROOT COLLAR AT OR 1" ABOVE

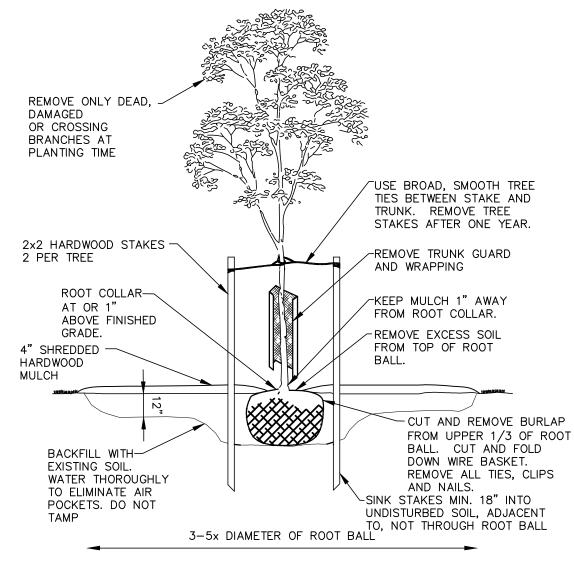
STEM/ROOT COLLAR.

REMOVE POT AND CUT AWAY

BURLAP FROM TOP OF BALL. REMOVE ALL TIES AND TWINE.

FINISH GRADE.

5. HYDRO-SEEDING DATES: MAY 1 TO NOVEMBER 15. 6. APPLY HAY OR STRAW MULCH BINDER FOR ALL HYDRO-SEED STABILIZED AREAS



### OFF-STREET TREE PLANTING DETAIL WITH OPTIONAL STAKING

### BASIN/WATER TOLERANT SEED MIXTURES

BOTANICAL NAME	ROOT	NOTES
UNIFORM COVER (MECHANICA	L BROADCAST)	
andropogon virginicus	seed	2#/1000 SF
andropogon elliotti	seed	1#/1000 SF
panicum virgatum	seed	0.5#/1000 SF
dichanthelium scoparium	seed	0.25#/1000 SF
carex tribuloides	seed	0.25#/1000 SF
lolium multiflorum	seed	0.5#/1000 SF
festuca rubra commutata	seed	2#/1000 SF
festuca ovina glauca	seed	2#/1000 SF
SWATH/GROUP COVER (HAND	SPREAD)	
aster novae—angliae	seed	1#/1000 SF
eupatorium perpurea	seed	0.25#/1000 SF
iris versicolor	seed	0.25#/1000 SF
lobelia cardinalis	seed	0.25#/1000 SF

### MEADOW/LOW MAINTENANCE SEED MIXTURE

SEEDING RATE: 20#/ACRE

% OF MIX	COMMON NAME	BOTANICAL NAME
35%	BIG BLUESTEM, 'PRAIRIE VIEW'	ANDROPOGON GERARDII, 'PRAIRIE VIEW'-IN ECOTYPE
21%	VIRGINIA WILDRYE,	ELYMUS VIRGINICUS, PA ECOTYPE
18%	SWITCHGRASS, 'SHAWNEE'	PANICUM VIRGATUM, 'SHAWNEE'
10%	COASTAL PANICGRASS, 'ATLANTIC'	PANICUM AMARUM, 'ATLANTIC'-VA ECOTYPE
5%	PARTRIDGE PEA	CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE
3%	BLACKEYED SUSAN	RUDBECKIA HIRTA, COASTAL PLAIN NC ECOTYPE
3%	INDIANGRASS	SORGHASTRUM NUTANS, PA ECOTYPE
2%	OXEYE SUNFLOWER	HELIOPSIS HELIANTHOIDES, PA ECOTYPE
1.5%	SHOWY TICKTREFOIL	DESMODIUM CANADENSE, PA ECOTYPE)
1%	PLAINS COREOPSIS	COREOPSIS TINCTORIA
0.4%	PANICLEDLEAF TICKTREFOIL	DESMODIUM PANICULATUM, PA ECOTYPE
0.1%	COMMON MILKWEED	ASCLEPIAS SYRIACA, PA ECOTYPE

NOTE: SEED MIX IS THE "NATIVE UPLAND WILDLIFE FORAGE & COVER MEADOW" MIX BY ERNST CONSERVATION SEEDS (WWW.ERNSTSEEDS.COM). SUBSTITUTE EQUIVALENT MAY BE PROVIDED UPON REVIEW AND APPROVAL OF MIX BY DESIGN ENGINEER OR LANDSCAPE

### **GENERAL PLANTING NOTES:**

1. The contractor must verify location of all underground utilities prior to digging, per Act

187. CALL 1-800-242-1776. 2. Any existing street tree damaged during construction shall be replaced. Broken or scarred trees shall be replaced with the same species and size.

Existing street trees shall be protected during construction by placing construction fencing or silt fence either along the tree canopy drip line or a minimum of ten (10) feet from the trunk, whichever is greater. Tree protection shall remain in place until final construction and restoration of the area occurs. There shall be no construction equipment or storage of materials within the protected area.

. The Owner is responsible for maintenance and replacement of trees after installation. 5. Trees must meet the requirements of the American Standard for Nursery Stock and be

6. All tree calipers shall be measured at a point at least six (6) inches above the soil 7. No plant substitutions will be allowed without written approval of the Owner, and

Municipality and LVIP. 8. All unbuilt and unpaved areas disturbed during construction shall be seeded for turf, as

described below, unless otherwise noted on the plan. 9. Plant stakes and guy wires, if used, shall be removed by the Owner within one year of

10. Turf seeding shall occur during the specified periods. During other periods, seed with Formula E. Rake and reseed with Formula B during the next recommended period.

11. Prepare turf areas per the requirements and during the time periods described in Sections 804 (Seeding and Soil Supplements) and 805 (Mulching) of PennDOT Specifications publication 408M in the latest revision. (See "Turf Seeding Specifications")

### Turf Seed Specifications

PennDOT Formula B (see Pub.408 for additional specifications) for general turf areas.

--Perennial Ryegrass Mixture. A combination of improved certified varieties with no one variety exceeding 50% of the total Ryegrass

component. (18% by mass) --Creeping Red Fescue or Chewings Fescue. (30% by mass) --Kentucky Bluegrass Mixture. A combination of improved certified varieties with no one variety exceeding 25% of the total Bluegrass

component. (52% by mass) Apply seed at a rate of 100 lb. per acre or 2.5 lb per 1000 sf. Spread seed within the following dates: March 15 to June 1; August 1 to October 15. PennDOT Formula E (see Pub.408 for additional specifications) for

temporary seeding. --Annual Ryegrass (100% by mass)

Apply seed at a rate of 44 lb. per acre or 1.0 lb per 1000 sf. Spread seed within the following dates: March 15 to October 15. Prepare turf areas per the requirements of Sections 804 (Seeding and

Soil Supplements) and 805 (Mulching) of PennDOT Specifications publication 408M in the latest revision.

> PRELIMINARY/FINAL LANDSCAPING DETAILS

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

CONSULTING ENGINEERS CML . STRUCTURAL . MECHANICAL . MACHINERY

609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP

JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023 J.G. PETRUCCI CO., INC. 171 ROUTE 173

ENGINEERING COMPANY

BMW

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contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



ROOTBALL ON UNDISTURBED SOIL

APPLY 3" SHREDDED -

HARDWOOD MULCH.

BREAK DOWN SIDES OF PIT-

FOR ROOT EXPANSION

BACKFILL WITH TOPSOIL.-WATER THOROUGHLY TO REMOVE AIR POCKETS.

WHEN BACKFILLING.

HAND TAMP ONLY.

### **ENGINEER'S STATEMENT**

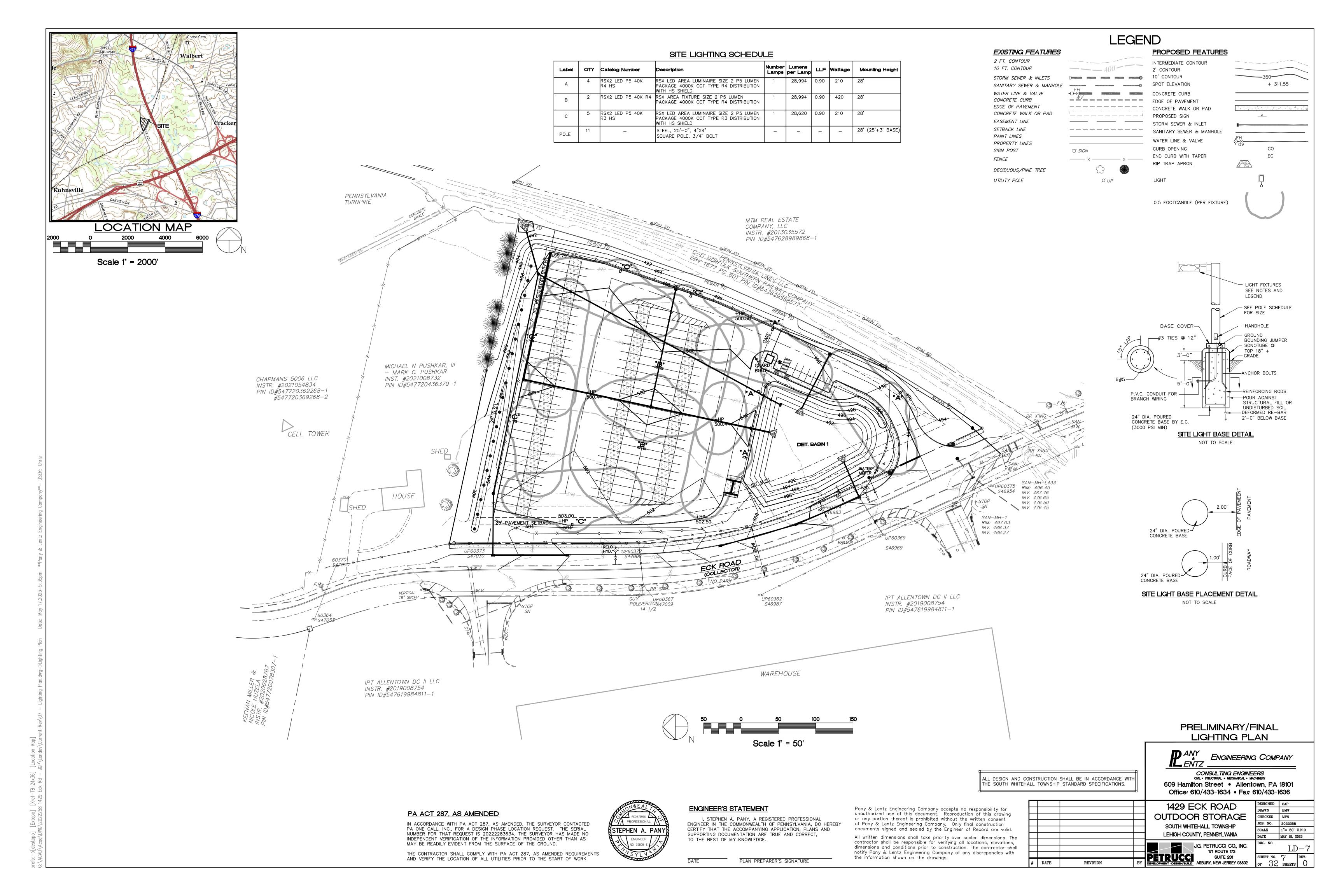
3 x DIAMETER OF ROOT BALL

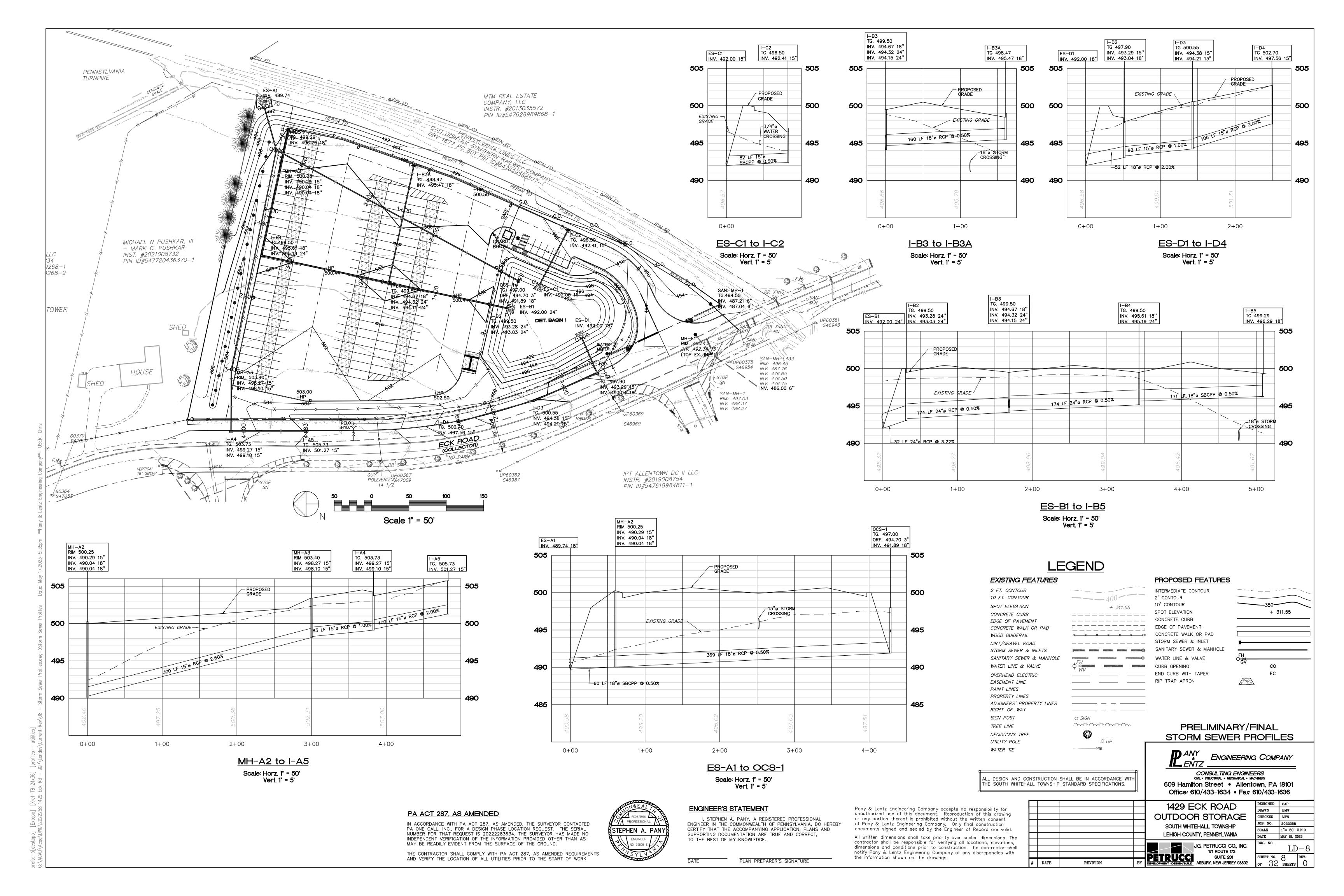
SHRUB PLANTING DETAIL

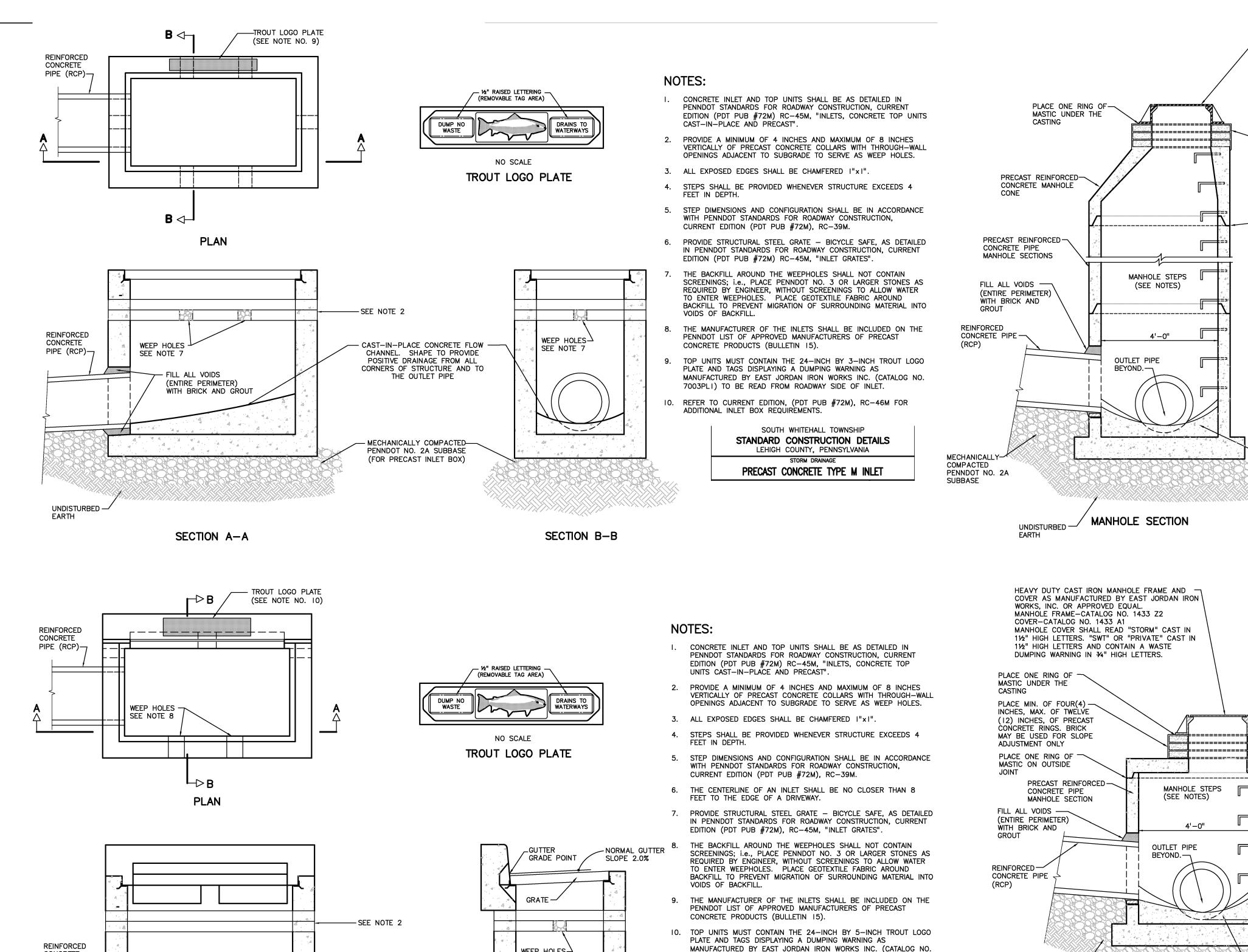
I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

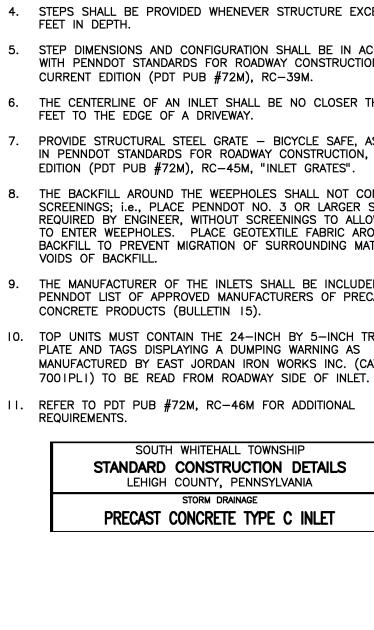
PLAN PREPARER'S SIGNATURE

LEHIGH COUNTY, PENNSYLVANIA PETRUCCI SUITE 201
DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802 # DATE REVISION

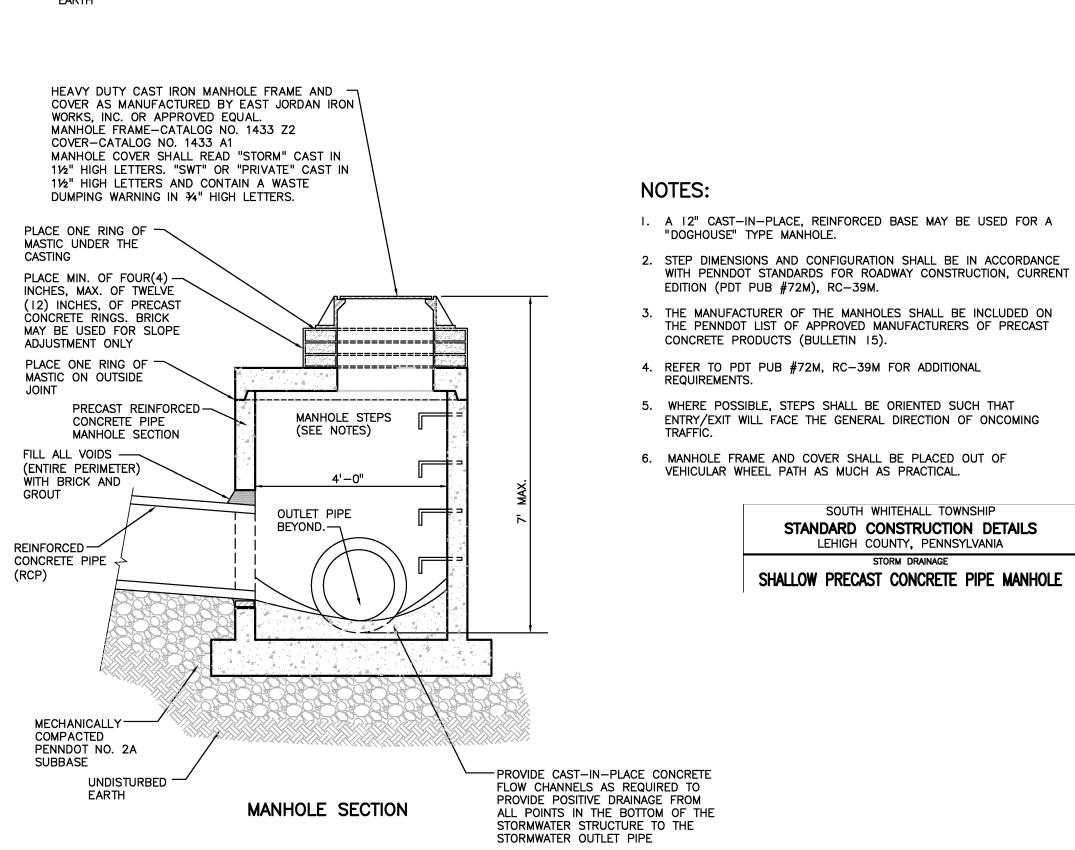








REQUIREMENTS.



- HEAVY DUTY CAST IRON MANHOLE FRAME AND COVER AS MANUFACTURED BY EAST JORDAN IRON WORKS, INC.

MANHOLE COVER SHALL READ "STORM" CAST IN 11/2" HIGH LETTERS. "SWT" OR "PRIVATE" CAST IN 11/2" HIGH

LETTERS AND CONTAIN A WASTE DUMPING WARNING IN

PROVIDE CAST-IN-PLACE CONCRETE

FLOW CHANNELS AS REQUIRED TO

PROVIDE POSITIVE DRAINAGE FROM ALL POINTS IN THE BOTTOM OF THE STORMWATER STRUCTURE TO

THE STORMWATER OUTLET PIPE

I. A 12" CAST-IN-PLACE, REINFORCED BASE MAY BE USED FOR A

2. STEP DIMENSIONS AND CONFIGURATION SHALL BE IN ACCORDANCE WITH PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT

3. THE MANUFACTURER OF THE MANHOLES SHALL BE INCLUDED ON

THE PENNDOT LIST OF APPROVED MANUFACTURERS OF PRECAST

ENTRY/EXIT WILL FACE THE GENERAL DIRECTION OF ONCOMING

SOUTH WHITEHALL TOWNSHIP STANDARD CONSTRUCTION DETAILS

LEHIGH COUNTY, PENNSYLVANIA

STANDARD PRECAST CONCRETE PIPE MANHOLE

"DOGHOUSE" TYPE MANHOLE.

REQUIREMENTS.

EDITION (PDT PUB #72M), RC-39M.

CONCRETE PRODUCTS (BULLETIN 15).

4. REFER TO PDT PUB #72M, RC-39M FOR ADDITIONAL

5. WHERE POSSIBLE, STEPS SHALL BE ORIENTED SUCH THAT

6. MANHOLE FRAME AND COVER SHALL BE PLACED OUT OF

VEHICULAR WHEEL PATH AS MUCH AS PRACTICAL.

MANHOLE FRAME-CATALOG NO. 1433 Z2

COVER-CATALOG NO. 1433 A1

PLACE MIN. OF FOUR (4) INCHES,

MAX. OF TWELVE (12) INCHES,

OF PRECAST CONCRETE RINGS.

BRICK MAY BE USED FOR SLOPE

OR APPROVED EQUAL.

3/4" HIGH LETTERS.

ADJUSTMENT ONLY

-PLACE ONE RING OF

MASTIC ON OUTSIDE

### PRELIMINARY/FINAL STORM SEWER DETAILS ENGINEERING COMPANY

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

REVISION

CONSULTING ENGINEERS CIVIL . STRUCTURAL . MECHANICAL . MACHINERY

609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP

JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023

BMW

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PA ACT 287, AS AMENDED

TYPE C INLET

CONCRETE

PIPE (RCP)-

UNDISTURBED -

- FILL ALL VOIDS

(ENTIRE PERIMETER)

WITH BRICK AND GROUT

SECTION A-A

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

- 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)

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



WEEP HOLES-

SEE NOTE 8

SECTION B-B

**ENGINEER'S STATEMENT** 

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

# DATE

LEHIGH COUNTY, PENNSYLVANIA

J.G. PETRUCCI CO., INC. 171 ROUTE 173 PETRUCCI SUITE 201
DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802



PLAN VIEW

TURF

30 MIL PVC LINER -

SECTION Z-Z

© √ 0% SLOPE -GEOTEXTILE SECTION Y-Y

-SLOPES ABOVE

PIPE IN

12" TOPSOIL-

TO BE 4:1

12" TOPSOIL-

ABOVE LINER

END OF LINER EL. 499.00

BASIN ELEVATION

TOP OF BASIN EL. 500.00

IMPERVIOUS LINER-

SUBGRADE AND -BASE PER LINER

MANUFACTURER'S RECOMMENDATIONS

TOP OF GRATE EL. 497.00

3" ORIFICE INV. 494.70

BASIN INV. 491.89 18"

LAG SCREWS INTO OUTLET-

30 MIL LINER-

12" TOPSOIL -

CHEM-CALK #900)

POLYURETHANE SEALANT -SIKA 1-A (ALTERNATE SEALANT

NON-POTABLE APPLICATION

CONTROL STRUCTURE

RIPRAP APRON TABLE

		RIPE	RAP		APRON				
OUTLET NO.	PIPE DIA Pd (IN)	TAILWATER CONDITION (Max or Min)	Q (CFS)	V (FPS)	SIZE (R)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
ES-A1	18	MIN.	13.97	7.96	4	18	12	4.50	16.50
ES-B1	24	MIN.	9.68	4.54	3	9	12	6.00	18.00
ES-C1	15	MIN.	1.26	2.33	3	9	8	3.75	11.75
ES-D1	18	MIN.	1.18	2.03	3	9	8	4.50	12.50

NOTES:
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

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 NOT TO SCALE

SPILLWAY ELEV. EL

- SUBGRADE AND BASE PER LINER

—4" MIN. ALL

AROUND PIPE

STORM PIPE

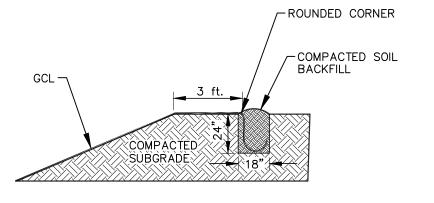
-HOLE IN PATCH SMALLER

THAN PIPE DIA. & STRETCHED OVER PIPE TO FORM FLANGE

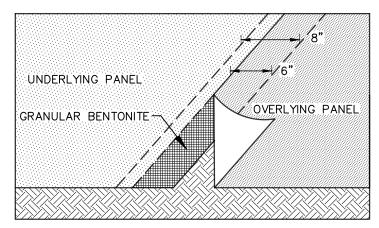
SUBGRADE COMPACTED TO 95% PROCTOR DENSITY

SPILLWAY LINER INSTALLATION

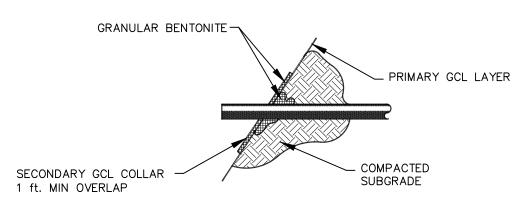
MANUFACTURER'S RECOMMENDATIONS.



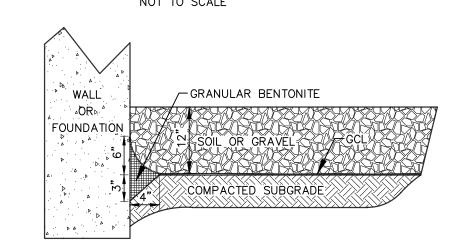
TYPICAL ANCHOR TRENCH DESIGN



BENTONITE-ENHANCED OVERLAPPED SEAM



CROSS-SECTION OF A HORIZONTAL PIPE PENETRATION

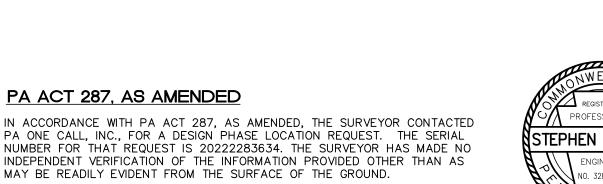


CROSS-SECTION OF GCL SEAL AGAINST AN EMBEDDED STRUCTURE OR WALL NOT TO SCALE

### **DETENTION BASIN LINER DETAILS**

NOTE: CONTRACTOR SHALL SUBMIT FOR APPROVAL MANUFACTURER'S LINER LAYOUT PLAN AND INSTALLATION REQUIREMENTS PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL INSTALL LINER PER MANUFACTURER'S SPECIFICATIONS.



STORM PIPE LINER SEAL

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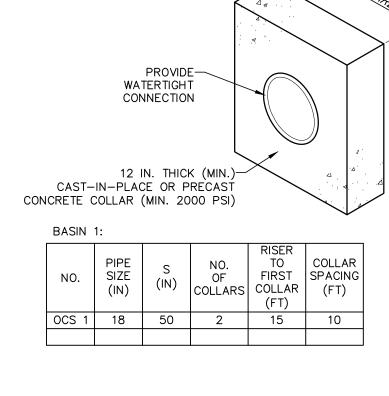
### **ENGINEER'S STATEMENT**

TOP BERM EL.

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ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

# DATE

REVISION

|<mark>→ 8'</mark> | BERM

3" ORIFICE INV. 494.70

-#4 REBAR 1∖2" BENT

AND WELDED TO 3\8"

— CLASS AA CEMENT CONCRETE

METAL BRACKET

**OPENINGS** 

3" ø INV. 492.00 VALVE CLOSED

DURING SUMMER

\_\_\_\_

45 1/4"

**FRONT VIEW** 

NOTE: 3" ORIFICE TO BE PLUGGED DURING SUMMER MONTHS TO ALLOW STORAGE FOR SPRAY IRRIGATION, THEN

ANTI-SEEP-

COLLARS (SEE

DETAIL)

OUTLET PIPE

OUTLET CONTROL STRUCTURE 1 ----

**BASIN SECTION** 

NOT TO SCALE

-BOTTOM OF DETENTION BASIN

BELOW FROST LINE

TRASH RACK DETAIL

OUTLET CONTROL

-SUBGRADE AND

BASE PER LINER MANUFACTURER'S

RECOMMENDATIONS

STRUCTURE \_\_\_ SEALANT

LAG SCREW

OUTLET CONTROL STRUCTURE LINER SEAL

UNPLUGGED DURING WINTER MONTHS TO ALLOW BASIN TO DRAIN.

SPRAY BASIN OUTLET CONTROL STRUCTURE +

NOTE: FOR FURTHER SPRAY IRRIGATION DETAILS SEE THE SPRAY IRRIGATION PLAN SET.

EL. 492.00

(SEE DETAIL)

SPRAY IRRIGATION PUMP SUMP -

(SEE NOTE)

-3" ORIFICE

INV. 492.00 VALVE CLOSED DURING SUMMER

EL. 494.70 (SPRAY IRRIGATION STORAGE VOLUME)

±0.00%

\_\_\_\_\_

24"

SIDE VIEW

TG ELEV.

T/BERM EL. 500.00

EMERGENCY SPILLWAY EL. 498.50 \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_

GRADE

100 YR. W.S.E. 497.08 \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_

#4 @ 6" EACH WAY

POINTS AND BANDED

WELDED @ ALL INTERSECTIONS

— 3" ORIFICE INV. 494.70

- 6" CONCRETE SLAB

└─ 3\8" METAL BRACKET

ATTACHED TO CONCRETE

1'-0" MIN. FREEBOARD

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16 CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

NOT TO SCALE

PRELIMINARY/FINAL STORM SEWER DETAILS



DESIGNED SAP
DRAWN BMW **OUTDOOR STORAGE** JOB. NO. 2022258 SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

SCALE 1"= 50' U.N.O DATE MAY 15, 2023 J.G. PETRUCCI CO, INC. LD - 10171 ROUTE 173

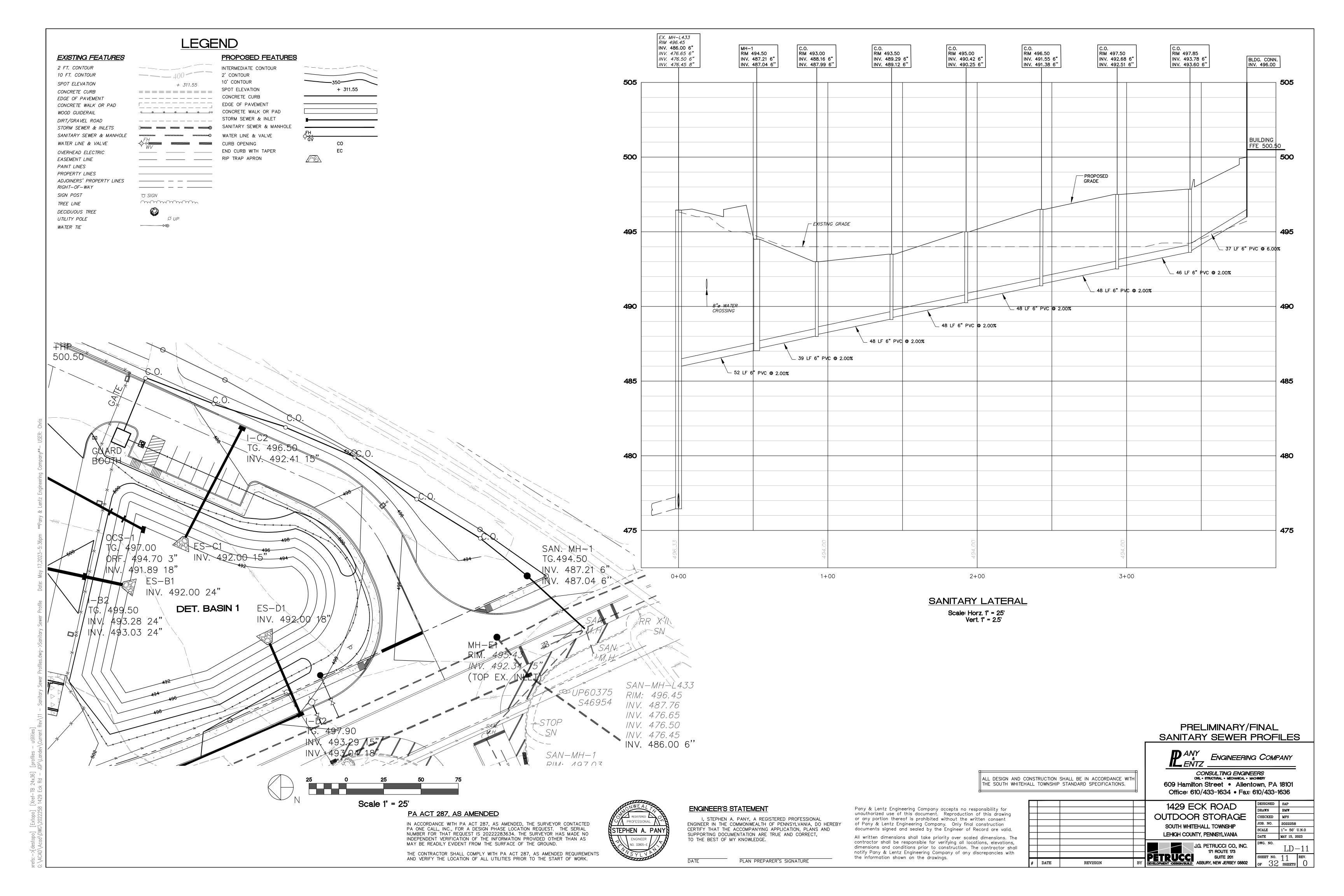
PETRUCCI SUITE 201
DEVELOPMENT -DEBIGN/BUILD ASBURY, NEW JERSEY 08802

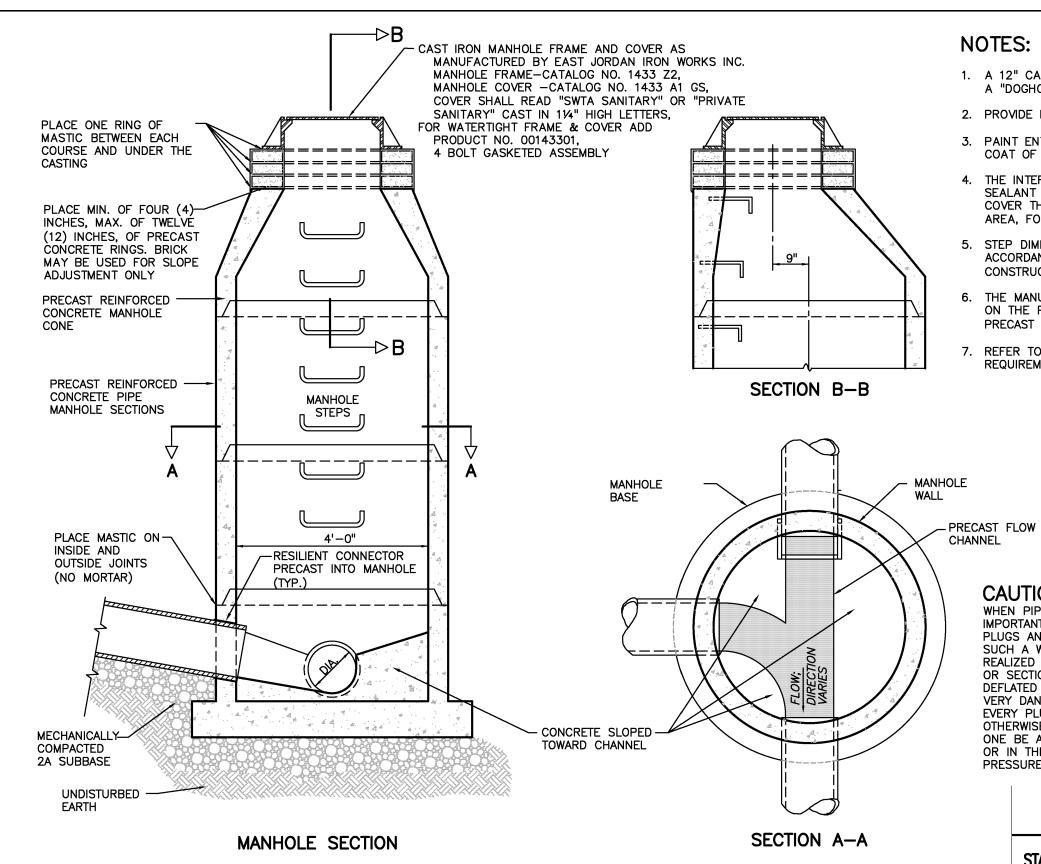
T/BERM

─30 MIL LINER

-12" MIN. TOPSOIL

PLAN PREPARER'S SIGNATURE





PA ACT 287, AS AMENDED

MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

**NOTES:** 

1. A 12" CAST-IN-PLACE, REINFORCED BASE MAY BE USED FOR A "DOGHOUSE" TYPE MANHOLE.

2. PROVIDE FLEXIBLE GASKET IN MACHINED GROOVE IN LID.

3. PAINT ENTIRE OUTER SURFACE OF MANHOLE WITH ONE (1) COAT OF AN APPROVED BITUMASTIC MATERIAL.

4. THE INTERIOR SHALL BE COATED WITH FLEX-SEAL UTILITY SEALANT AS MANUFACTURED BY SEALING SYSTEMS, INC., TO COVER THE CASTING JOINT TO CONCRETE AND ANY PLASTERED AREA, FOLLOWING THE MANUFACTURER'S SPECIFICATIONS.

5. STEP DIMENSIONS AND CONFIGURATION SHALL BE IN ACCORDANCE WITH PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB #72M), RC-39M.

THE MANUFACTURER OF THE MANHOLES SHALL BE INCLUDED ON THE PENNDOT LIST OF APPROVED MANUFACTURERS OF PRECAST CONCRETE PRODUCTS (BULLETIN 15).

7. REFER TO PDT PUB #72M, RC-39M FOR ADDITIONAL REQUIREMENTS.

WHEN PIPING SYSTEMS ARE PRESSURE TESTED, IT IS EXTREMELY IMPORTANT AND ESSENTIAL THAT ALL PLUGS INCLUDING TEST PLUGS AND ALL PIPE JOINTS ARE INSTALLED AND RESTRAINED IN SUCH A WAY THAT BLOWOUTS ARE PREVENTED. IT MUST BE REALIZED THAT SUDDEN EXPULSION OF A POORLY INSTALLED PLUG OR SECTION OF PIPE OR OF A TEST PLUG WHICH IS PARTIALLY DEFLATED BEFORE THE PIPE PRESSURE IS RELEASED CAN BE VERY DANGEROUS. FOR THIS REASON IT IS RECOMMENDED THAT EVERY PLUG AND PIPE JOINT BE POSITIVELY BRACED OR OTHERWISE RESTRAINED DURING PRESSURE TESTING AND THAT NO ONE BE ALLOWED IN A MANHOLE ADJOINING A LINE BEING TESTED OR IN THE VICINITY OF AN EXPOSED PLUG OR PIPE SO LONG AS PRESSURE IS MAINTAINED IN THE LINE.

SOUTH WHITEHALL TOWNSHIP AUTHORITY STANDARD CONSTRUCTION DETAILS LEHIGH COUNTY, PENNSYLVANIA SANITARY SEWER

STANDARD PRECAST CONCRETE PIPE MANHOLE

WHEN PIPING SYSTEMS ARE PRESSURE TESTED, IT IS EXTREMELY IMPORTANT AND ESSENTIAL THAT ALL PLUGS INCLUDING TEST PLUGS AND ALL PIPE JOINTS ARE INSTALLED AND

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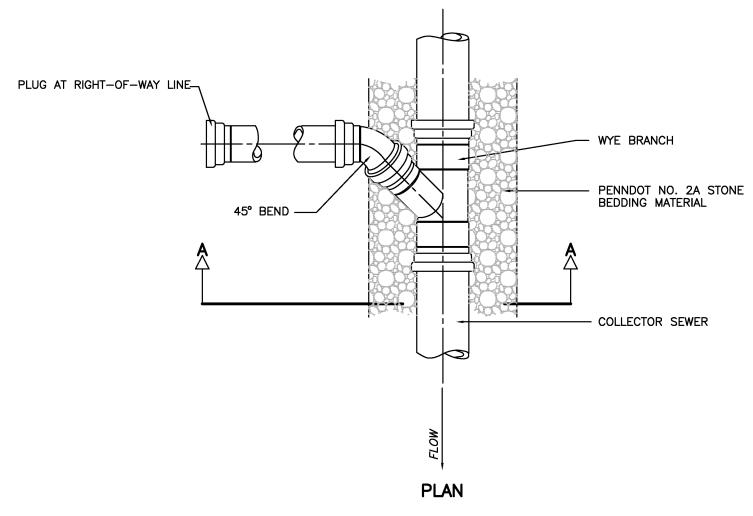
WARNING TAPE SHALL BE PLACED AT A MINIMUM 2 FT. ABOVE ANY MAINLINE PIPE OR LATERAL. ---- PLUG 90° ELBOW -SEWER LATERAL MIN. SLOPE =  $\frac{1}{4}$ " PER FT. (MIN) (MIN) (MIN) (MIN) - CONCRETE COLLAR —— 45° BEND - 45° BEND WYE BRANCH-COLLECTOR SEWER -- COLLECTOR SEWER <u>. 4 ' 1.4</u> ---- Undisturbed Earth --

ROAD SURFACE-

CURB LINE OR — EDGE OF ROAD

**ELEVATION** 

SOUTH WHITEHALL TOWNSHIP AUTHORITY STANDARD CONSTRUCTION DETAILS LEHIGH COUNTY, PENNSYLVANIA TYPICAL SERVICE CONNECTION DEEP SEWER



WHEN PIPING SYSTEMS ARE PRESSURE TESTED, IT IS EXTREMELY IMPORTANT AND ESSENTIAL THAT ALL PLUGS INCLUDING TEST PLUGS AND ALL PIPE JOINTS ARE INSTALLED AND RESTRAINED IN SUCH A WAY THAT BLOWOUTS ARE PREVENTED. IT MUST BE REALIZED THAT SUDDEN EXPULSION OF A POORLY INSTALLED PLUG OR SECTION OF PIPE OR OF A TEST PLUG WHICH IS PARTIALLY DEFLATED BEFORE THE PIPE PRESSURE IS RELEASED CAN BE VERY DANGEROUS. FOR THIS REASON IT IS RECOMMENDED THAT EVERY PLUG AND PIPE JOINT BE POSITIVELY BRACED OR OTHERWISE RESTRAINED DURING PRESSURE TESTING AND THAT NO ONE BE ALLOWED IN A MANHOLE ADJOINING A LINE BEING TESTED OR IN THE VICINITY OF AN EXPOSED PLUG OR PIPE SO LONG AS PRESSURE IS MAINTAINED IN THE LINE. TYPICAL SEWER LATERAL SLOPE IS 1/4" PER FT. (MIN.)

∕—45° BEND

PENNDOT NO. 2A STONE BEDDING MATERIAL

SECTION A-A

SECTION A-A

NOTES:

I. NORMAL INSTALLATION OF SANITARY SEWER SERVICE LATERAL SHALL BE A MINIMUM OF 8 FEET BELOW THE TOP OF CURB OR OUTSIDE EDGE OF SHOULDER.

2 WARNING TAPE SHALL BE PLACED AT A MINIMUM OF 2 FT. ABOVE ANY MAINLINE PIPE OR LATERAL.

SOUTH WHITEHALL TOWNSHIP AUTHORITY STANDARD CONSTRUCTION DETAILS LEHIGH COUNTY, PENNSYLVANIA

SANITARY SEWER TYPICAL SANITARY SERVICE CONNECTION

PRELIMINARY/FINAL SANITARY SEWER DETAILS

JOB. NO. 2022258

SCALE 1"= 50' U.N.O

ENGINEERING COMPANY

CONSULTING ENGINEERS CIVIL • STRUCTURAL • MECHANICAL • MACHINERY

609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636 DESIGNED SAP
DRAWN BMW

1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

J.G. PETRUCCI CO, INC. 171 ROUTE 173 PETRUCCI SUITE 201
DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT,

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL STEPHEN A. PANY NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS

**ENGINEER'S STATEMENT** 

TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

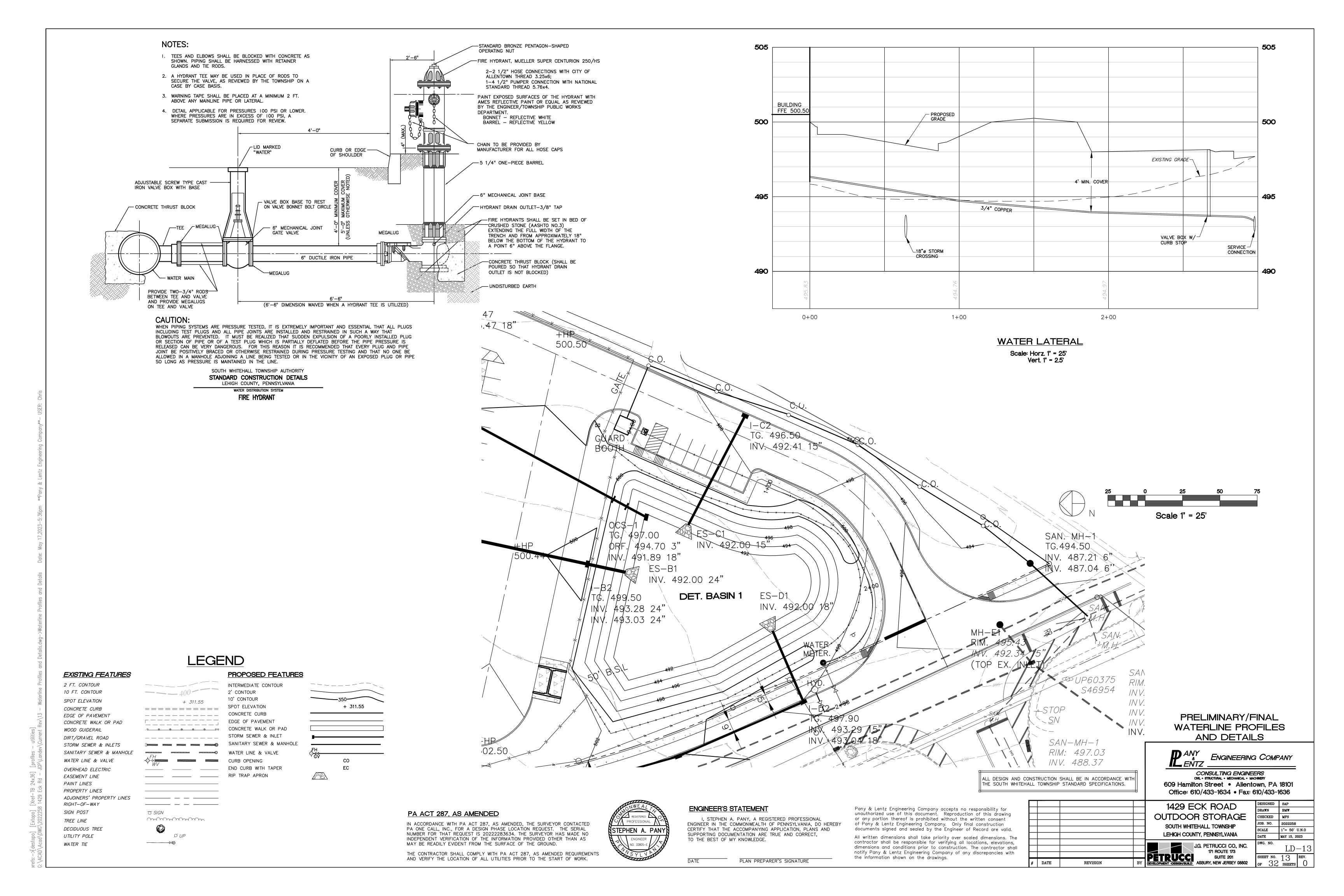
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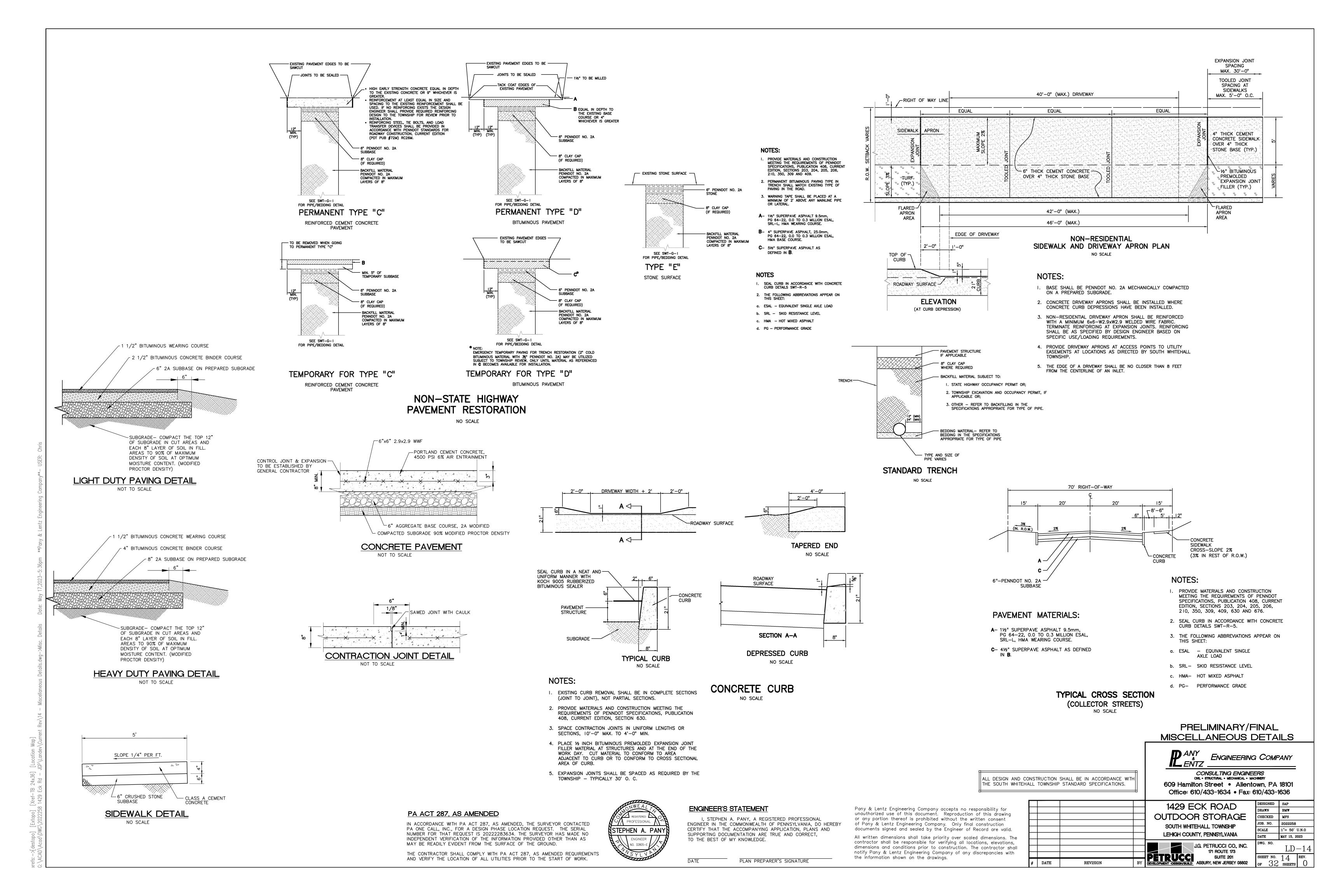
Pany & Lentz Engineering Company accepts no responsibility for

# DATE REVISION

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

DATE MAY 15, 2023





STEPHEN A. PANY

PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO

INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS

**ENGINEER'S STATEMENT** 

TO THE BEST OF MY KNOWLEDGE.

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL

CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND

SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT,

ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY

PLAN PREPARER'S SIGNATURE

Pany & Lentz Engineering Company accepts no responsibility for unauthorized use of this document. Reproduction of this drawing

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All written dimensions shall take priority over scaled dimensions. The

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# DATE

REVISION

contractor shall be responsible for verifying all locations, elevations,

or any portion thereof is prohibited without the written consent

of Pany & Lentz Engineering Company. Only final construction

DESIGNED SAP
DRAWN BMW

JOB. NO. 2022258

SCALE 1"= 50' U.N.O

DATE MAY 15, 2023

1429 ECK ROAD

OUTDOOR STORAGE

SOUTH WHITEHALL TOWNSHIP

LEHIGH COUNTY, PENNSYLVANIA

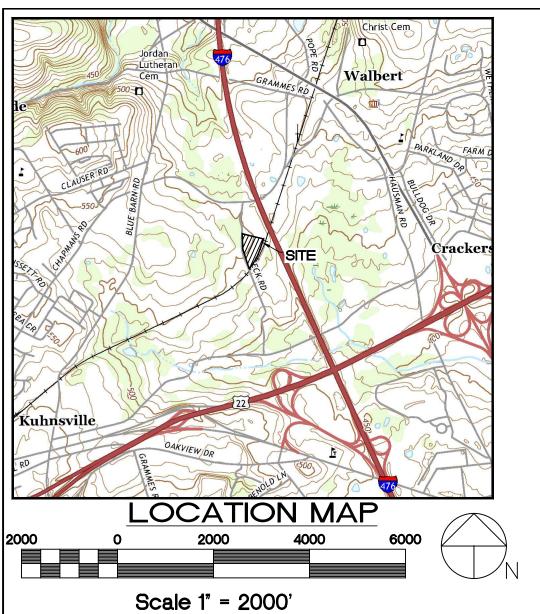
PETRUCCI SUITE 201

ASBURY, NEW JERSEY 08802

J.G. PETRUCCI CO., INC.

171 ROUTE 173

xrefs:—>[destopo] [Extopo] [Xref—TB 24x36] [Location Map]



	SOIL DESCRIPTION TABLE							
SYMBOL	NAME	SLOPE RANGE	CHARACTERISTICS	HYDROLOGIC SOIL GROUP	LIMITATIONS TO USE	RESOLUTIONS TO LIMITATIONS		
CmB	CLARKSBURG SILT LOAM	3 TO 8%	MODERATE HAZARD OF EROSION SLOW PERMEABILITY. HIGH AVAILABLE MOISTURE CAPACITY.	С	POSS. SINKHOLE FORMATION; PIPING	SINKHOLE REPAIR ANTI-SEEP COLLAR		
WaB	WASHINGTON SILT LOAM	3 TO 8%	MODERATE HAZARD OF EROSION MODERATE PERMEABILITY. HIGH AVAILABLE MOISTURE CAPACITY.	В	POSS. SINKHOLE FORMATION; PIPING	SINKHOLE REPAIR ANTI-SEEP COLLAR		

PA ACT 287, AS AMENDED

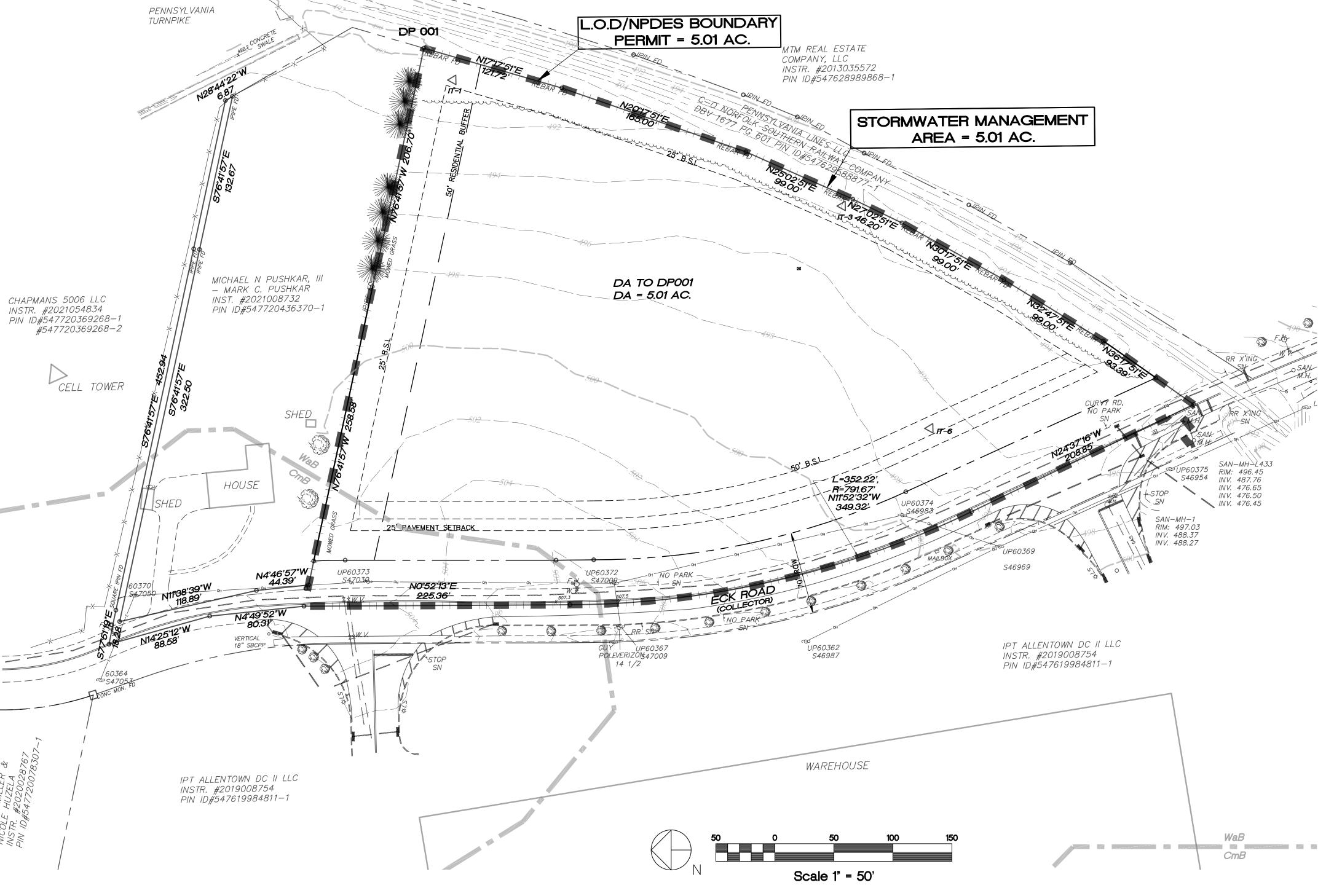
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AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS

RECEIVING WATERCOURSE TABLE			
NAME	CLASSIFICATION		
LITTLE CEDAR CREEK*	HIGH QUALITY, COLD WATER FISHERY		

<sup>\*</sup> DENOTES SPECIAL PROTECTION WATERSHED



**LEGEND** 

EXISTING FEATURES

2 FT. CONTOUR 10 FT. CONTOUR SPOT ELEVATION CONCRETE CURB EDGE OF PAVEMENT CONCRETE WALK OR PAD WOOD GUIDERAIL DIRT/GRAVEL ROAD STORM SEWER & INLETS SANITARY SEWER & MANHOL WATER LINE & VALVE OVERHEAD ELECTRIC EASEMENT LINE PAINT LINES

PROPERTY LINES ADJOINERS' PROPERTY LINES RIGHT-OF-WAY SIGN POST

TREE LINE DECIDUOUS TREE UTILITY POLE WATER TIE

m

+ 311.55

=========

### STORMWATER FEATURES

LIMIT OF DISTURBANCE/ STORMWATER MANAGEMENT/ NPDES BOUNDARY

PRELIMINARY/FINAL STORMWATER MANAGEMENT PRE-DEVELOPMENT PLAN

ENGINEERING COMPANY

CONSULTING ENGINEERS
CML • STRUCTURAL • MECHANICAL • MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP

SCALE 1"= 50' U.N.O DATE MAY 15, 2023 SWM-1

LEHIGH COUNTY, PENNSYLVANIA J.G. PETRUCCI CO, INC. 171 ROUTE 173 SUITE 201

STEPHEN A. PANY

### **ENGINEER'S STATEMENT**

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

PETRUCCI SUITE 201

DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

# DATE

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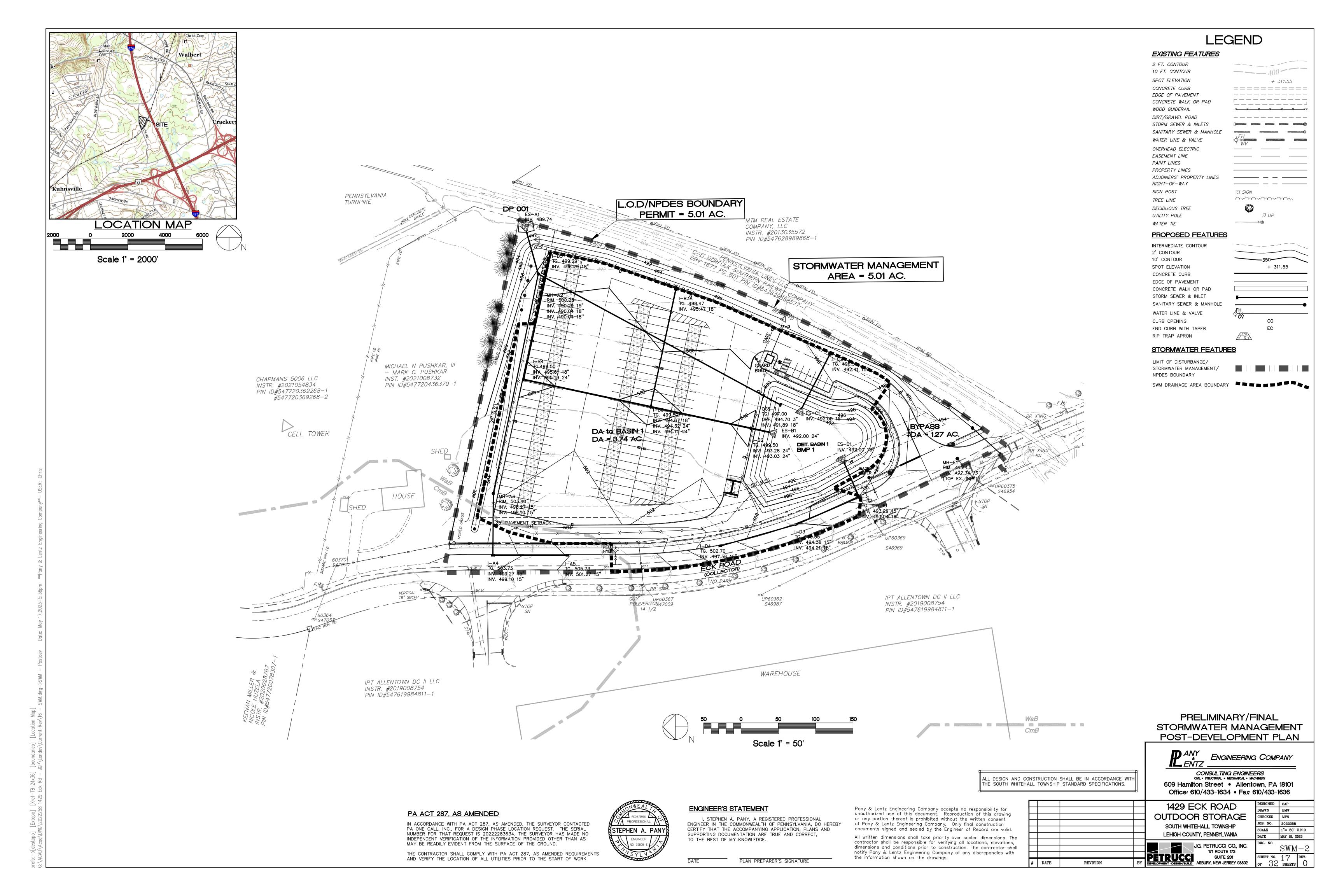
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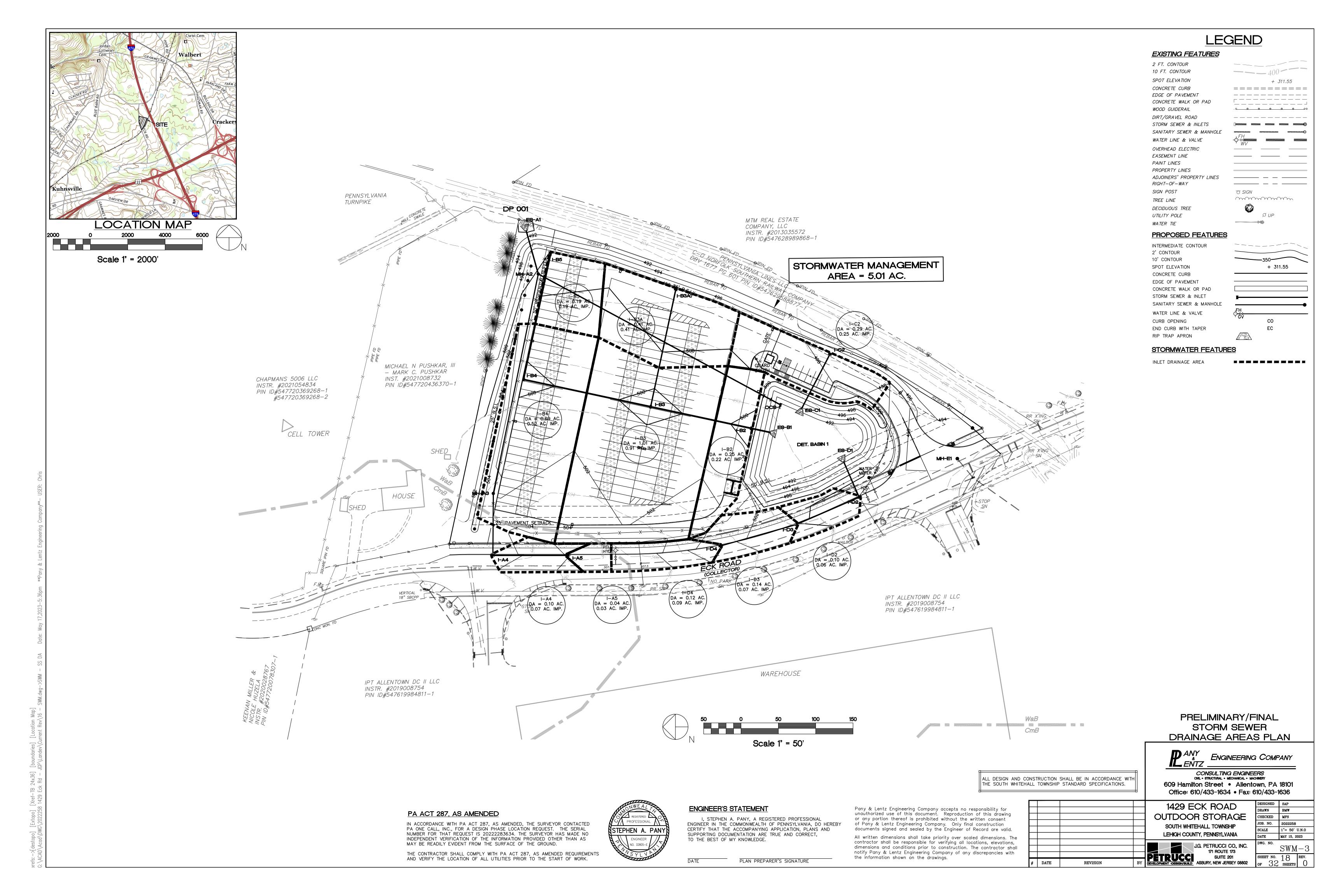
of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid.

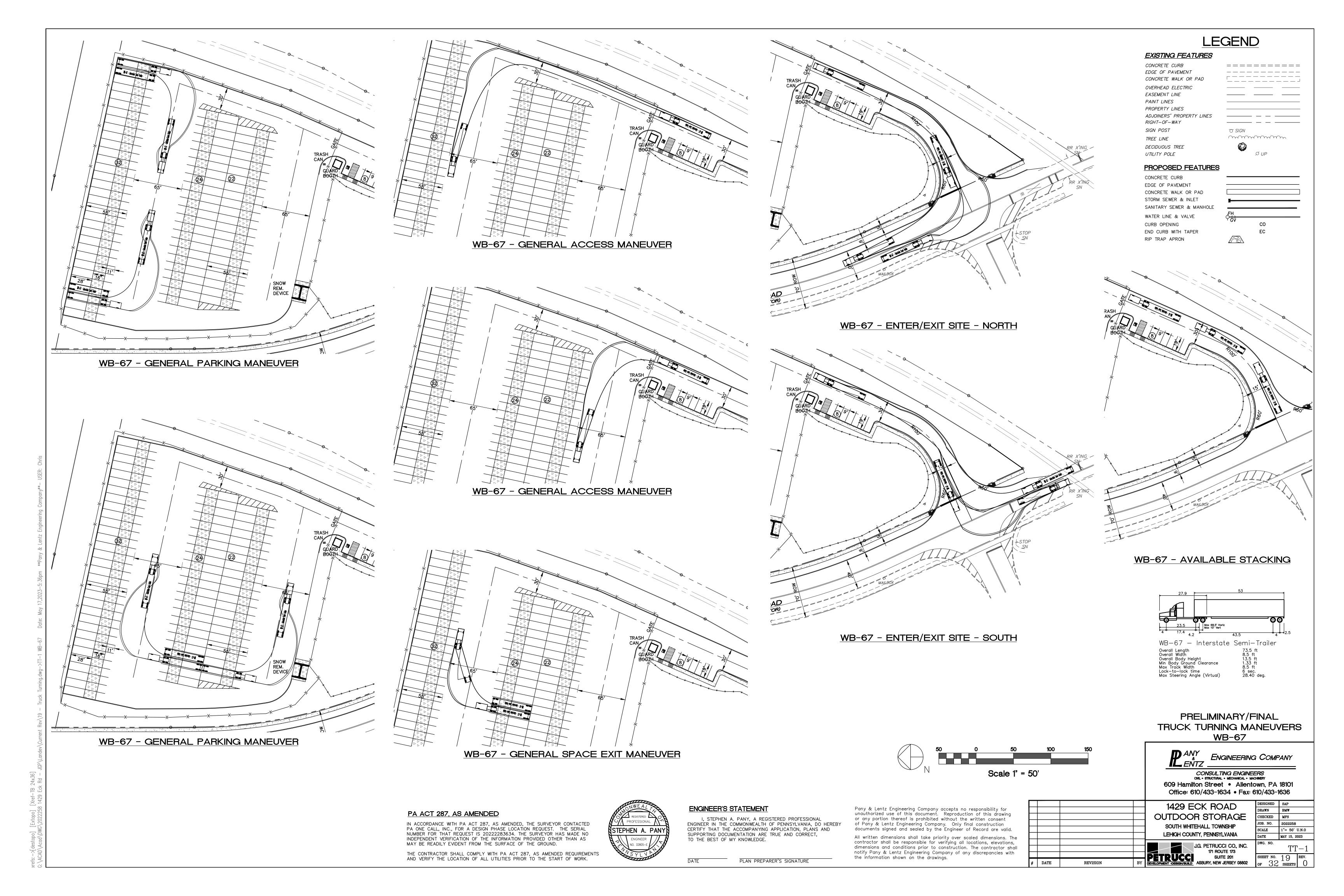
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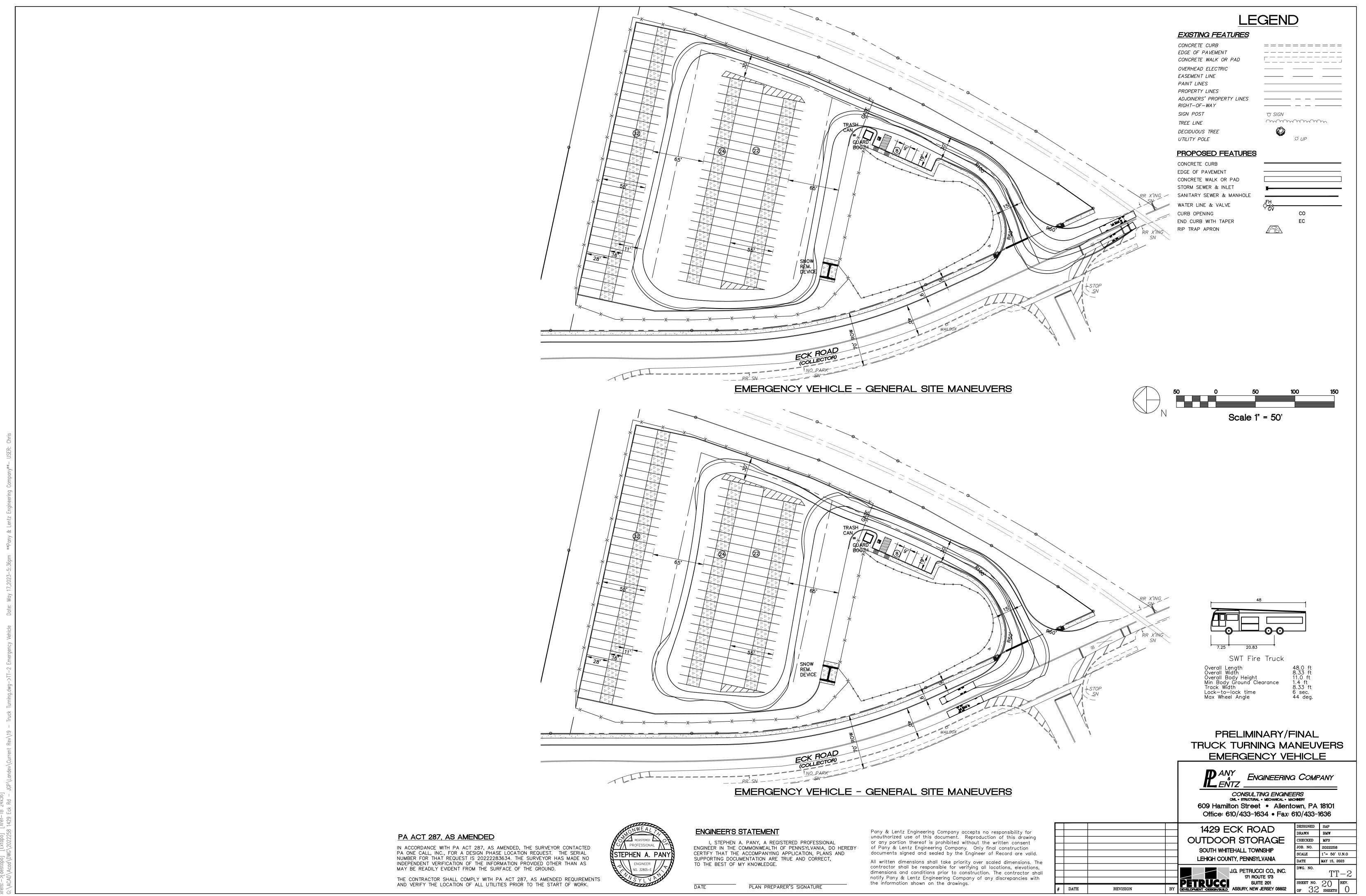
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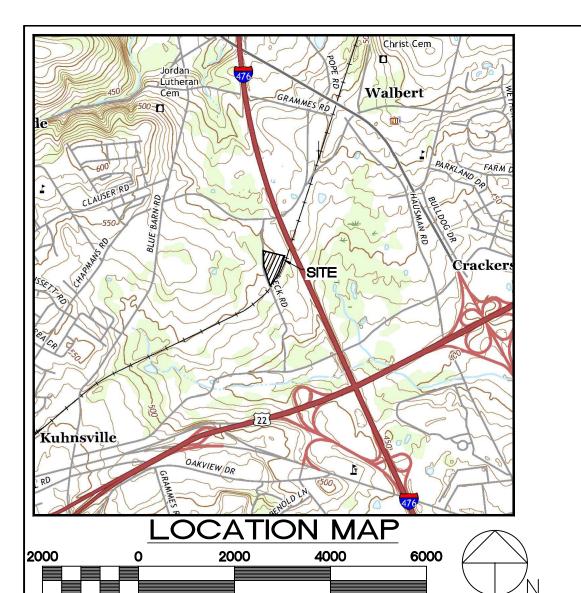








->[destopo] [Extopo] [Xref-TB 24x36]



Scale 1" = 2000'

EXISTING FEATURES

INDEX CONTOUR

SPOT ELEVATION

CONCRETE CURB

PROPERTY LINE

LIGHT STANDARD

DECIDUOUS TREE

SOILS BOUNDARY

ESPC SYMBOLS

WITH WASH RACK

RIPRAP APRON

STAGING AREA

FILTER BAG

RIP RAP APRON & SPILLWAY

18" COMPOST FILTER SOCK

32" COMPOST FILTER SOCK

EROSION CONTROL BLANKET

EROSION CONTROL BLANKET

TOPSOIL/SOIL STOCKPILE

LIMIT OF DISTURBANCE/ NPDES BOUNDARY

STONE INLET PROTECTION

CONCRETE WASHOUT FACILITY

ROCK CONSTRUCTION ENTRANCE

UTILITY POLE

EDGE OF PAVEMENT

CONCRETE WALK OR PAD

STORM SEWER & INLETS

WATER LINE & VALVE

SANITARY SEWER & MANHOLE

CONTOUR

*FENCE* 

GAS

ELECTRIC

SIGN POST

TREE LINE

**LEGEND** 

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\_ \_ \_ \_ \_ \_ \_ \_ \_ \_

GAS

m

P300

STAGING AREA

 $\Leftrightarrow$  LS

ORANGE CONSTRUCTION FENCE —O—O—O

12" COMPOST FILTER SOCK

24" COMPOST FILTER SOCK

a*SIGN* 

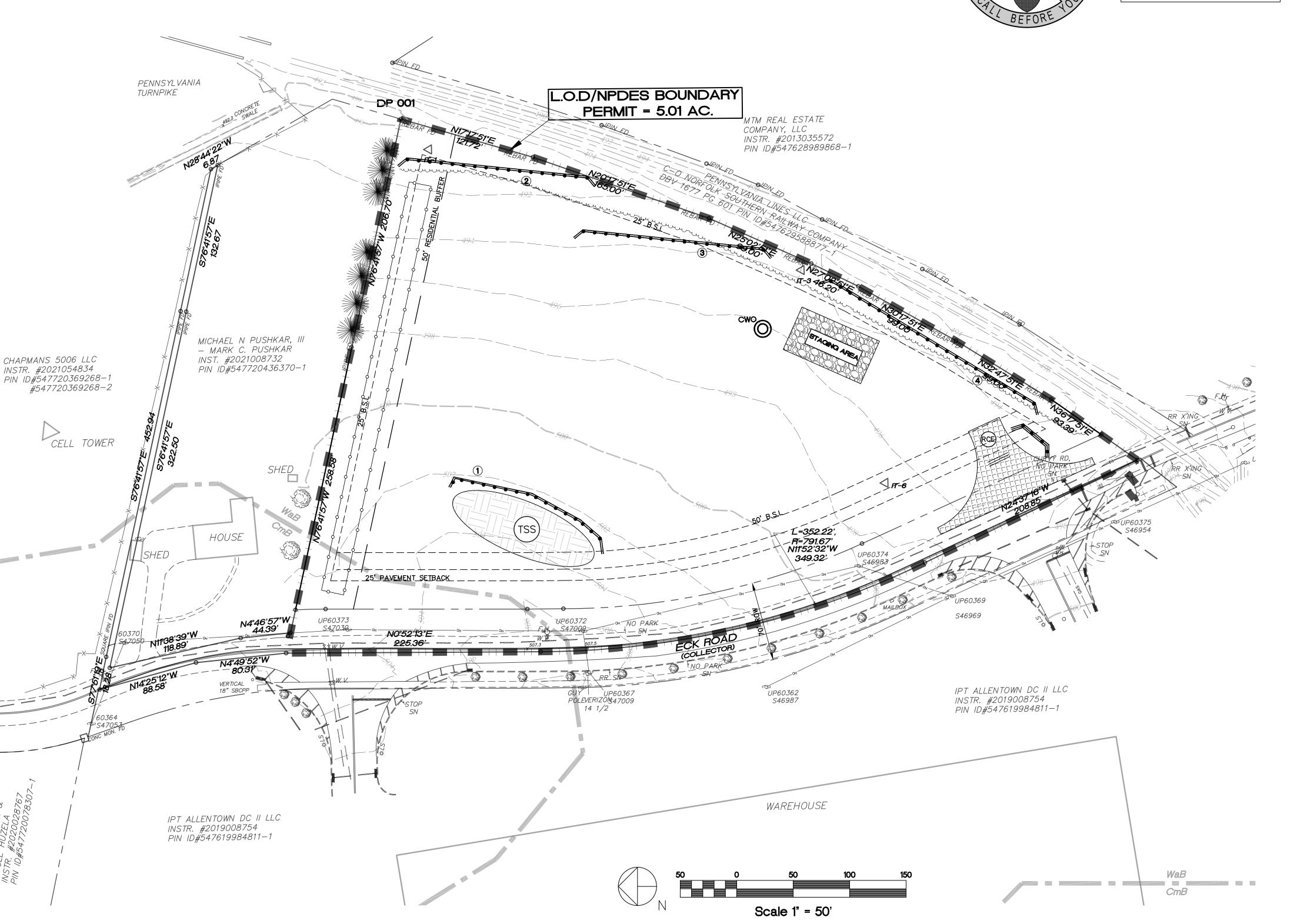
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SYMBOL	NAME	SLOPE RANGE	CHARACTERISTICS	HYDROLOGIC SOIL GROUP	LIMITATIONS TO USE	RESOLUTIONS TO LIMITATIONS		
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RECEIVING WATERCOURSE TABLE				
NAME	CLASSIFICATION			
LITTLE CEDAR CREEK*	HIGH QUALITY, COLD WATER FISHERY			
* DENOTES SPECIAL PRO	DIECTION WATERSHED			



CALL BEFORE YOU DIG! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL POCS SERIAL NUMBER

System. INC. 1-800-242-1776 2022283634

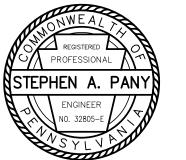


THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES. ARTICLE III. WATER RESOURCES, CHAPTER 102, EROSION CONTROL.

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



### **ENGINEER'S STATEMENT**

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

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1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA J.G. PETRUCCI CO, INC.

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

# DATE

REVISION

Office: 610/433-1634 • Fax: 610/433-1636

JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023 ES-1171 ROUTE 173

ENGINEERING COMPANY

PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

FINAL **EROSION + SEDIMENT** POLLUTION CONTROL PLAN

STAGE 1

CONSULTING ENGINEERS CIVIL . STRUCTURAL . MECHANICAL . MACHINERY

609 Hamilton Street • Allentown, PA 18101

BMW

IMMEDIATELY. 3. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE

SHALL BE IMMEDIATELY STABILIZED. 4. THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA OF PROPOSED WORK. 5. THE INCREASE IN IMPERVIOUS AREA AND THE RESULTING THERMAL

IMPACT WILL BE MITIGATED BY THE PROPOSED VEGETATED SWALES,

EROSION AND SEDIMENT CONTROL PLAN NOTES: 1. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY

2. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED

IMPLEMENTED.

INFILTRATION BEDS AND DIRECTING RUNOFF TO OTHER VEGETATED AREAS. AS A RESULT OF THE USE OF THESE CONTROLS, ANY THERMAL IMPACT CAUSED BY THIS PROJECT WILL BE NEGLIGIBLE. 6. THE E&S PLAN HAS BEEN PLANNED, DESIGNED AND IMPLEMENTED

TO BE CONSISTENT WITH THE PCSM PLAN.

AS PART OF THIS PROJECT. 8. THERE IS THE POTENTIAL FOR KARST SOIL CONDITIONS LOCATED ON SITE THAT COULD RESULT IN STORM WATER RUNOFF FROM THE SITE THAT DO NOT MEET WATER QUALITY STANDARDS FOR THE RECEIVING WATER COURSE. A SINK HOLE REPAIR DETAIL IS

INCLUDED. 9. ANY SEDIMENT REMOVED FROM BMP'S OR ROADWAY SHALL BE DISPOSED OF IN PROPOSED LANDSCAPED AREA ON SITE OUTSIDE OF INFILTRATION BASINS AND SWALES. DISTURBED AREAS SHALL BE STABILIZED IMMEDIATELY.

7. THERE ARE NO EXISTING OR PROPOSED RIPARIAN FOREST BUFFERS

10. ANTICIPATED CONSTRUCTION WASTES INCLUDE BUT ARE NOT LIMITED TO LUMBER, SHEET ROCK, ASPHALT, CONCRETE AND OTHER TYPICAL BUILDING MATERIALS. ANY WASTES GENERATED SHALL BE DISPOSED OF AS NOTED ABOVE.

### ENVIRONMENTAL DUE DILIGENCE

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

### **DEFINITION OF CLEAN FILL**

CLEAN FILL IS DEFINED AS: UNCONTAMINATED NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESS FOR RE-USE).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENTS POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF

### **CRITICAL STAGING NOTE:**

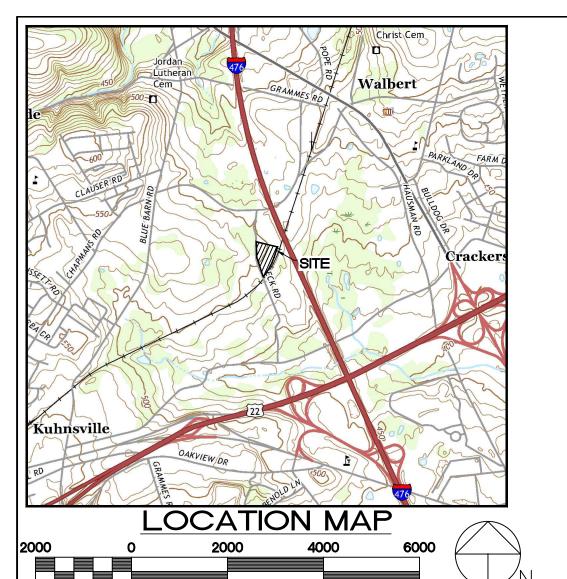
SEE POST CONSTRUCTION STORM WATER MANAGEMENT PLAN FOR CONSTRUCTION NOTES AND DETAILS FOR PCSM BMPS REFERENCED ON

CRITICAL STAGES OF IMPLEMENTATION FOR WHICH A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON SITE TO PERFORM REQUIRED OBSERVATIONS INCLUDE:

1. MARKING OF LIMITS OF DISTURBANCE FOR SPRAY IRRIGATION AREA AND OVERALL LIMITS.

INSTALLATION OF DETENTION BASIN OUTLET CONTROL STRUCTURE. . INSTALLATION OF SPRAY IRRIGATION SYSTEM.

4. OVERSIGHT FOR THE SPRAY IRRIGATION SYSTEM ACTIVATION. SEE STAGING OF EARTH MOVING ACTIVITIES.



Scale 1" = 2000'

EXISTING FEATURES

INDEX CONTOUR

SPOT ELEVATION

CONCRETE CURB

PROPERTY LINE

LIGHT STANDARD

DECIDUOUS TREE

SOILS BOUNDARY

ESPC SYMBOLS

WITH WASH RACK

RIPRAP APRON

STAGING AREA

FILTER BAG

RIP RAP APRON & SPILLWAY

18" COMPOST FILTER SOCK

32" COMPOST FILTER SOCK

EROSION CONTROL BLANKET

EROSION CONTROL BLANKET

TOPSOIL/SOIL STOCKPILE

LIMIT OF DISTURBANCE/ NPDES BOUNDARY

STONE INLET PROTECTION

PROPOSED FEATURES

INDEX CONTOUR CONTOUR ODD CONTOUR

SPOT ELEVATION

CONCRETE CURB

EDGE OF PAVEMENT

WATER LINE & VALVE

**FENCE** 

ELECTRIC

CONCRETE WALK OR PAD STORM SEWER & INLET

SANITARY SEWER & MANHOLE

CONCRETE WASHOUT FACILITY

ROCK CONSTRUCTION ENTRANCE

UTILITY POLE

EDGE OF PAVEMENT

CONCRETE WALK OR PAD

STORM SEWER & INLETS

WATER LINE & VALVE

SANITARY SEWER & MANHOLE

CONTOUR

*FENCE* 

GAS

ELECTRIC

SIGN POST

TREE LINE

**LEGEND** 

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STAGING AREA

—— UGE —— UGE ——

 $\Leftrightarrow$  LS

ORANGE CONSTRUCTION FENCE —O—O—O—

12" COMPOST FILTER SOCK

24" COMPOST FILTER SOCK

a*SIGN* 

	SOIL DESCRIPTION TABLE							
SYMBOL	NAME	SLOPE RANGE	CHARACTERISTICS	HYDROLOGIC SOIL GROUP	LIMITATIONS TO USE	RESOLUTIONS TO LIMITATIONS		
CmB	CLARKSBURG SILT LOAM	3 TO 8%	MODERATE HAZARD OF EROSION SLOW PERMEABILITY. HIGH AVAILABLE MOISTURE CAPACITY.	С	POSS. SINKHOLE FORMATION; PIPING	SINKHOLE REPAIR; ANTI-SEEP COLLAR		
WaB	WASHINGTON SILT LOAM	3 TO 8%	MODERATE HAZARD OF EROSION MODERATE PERMEABILITY. HIGH AVAILABLE MOISTURE CAPACITY.	В	POSS. SINKHOLE FORMATION; PIPING	SINKHOLE REPAIR; ANTI-SEEP COLLAR		

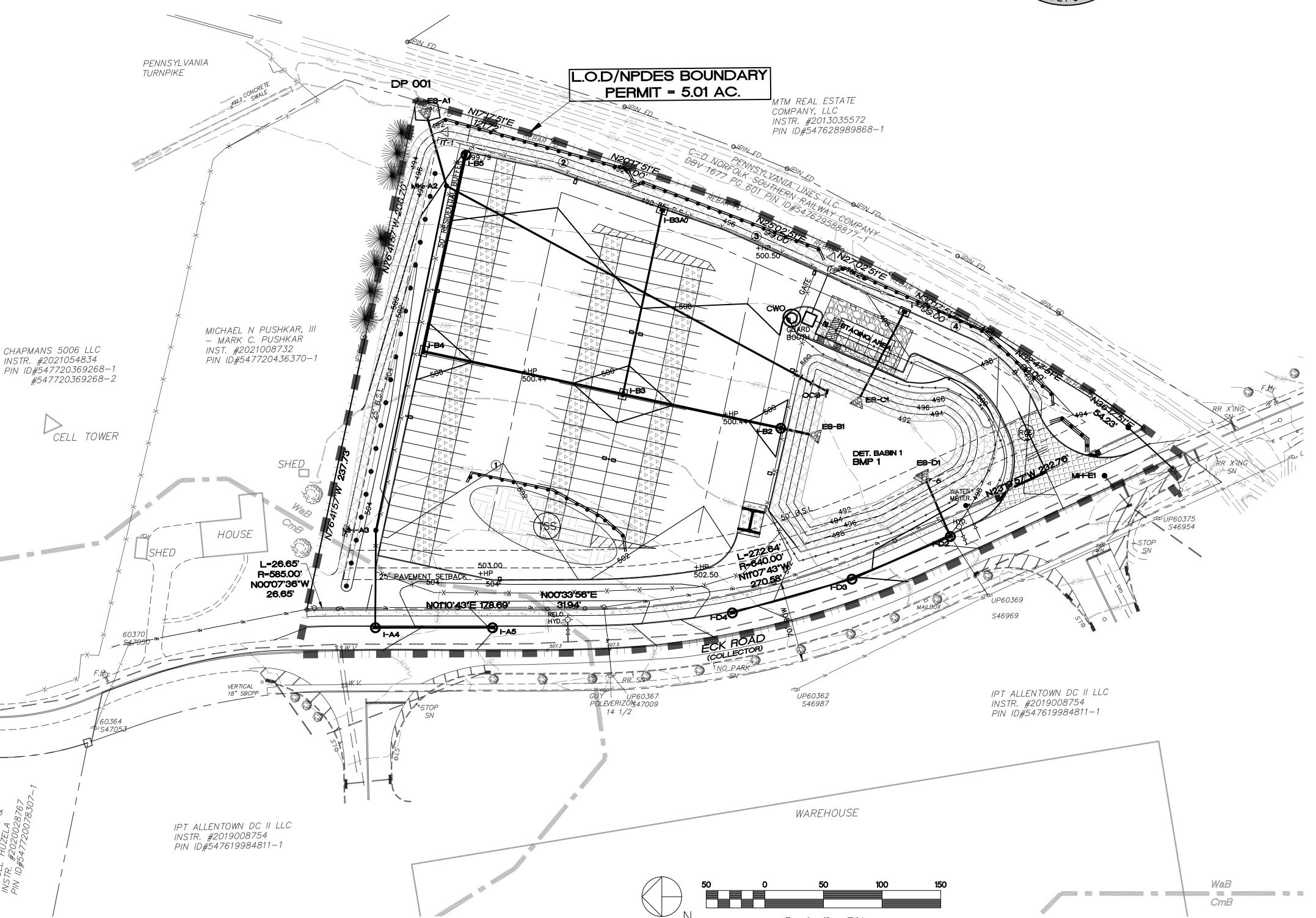
RECEIVING WATERCOURSE TABLE					
NAME	CLASSIFICATION				
LITTLE CEDAR CREEK*	HIGH QUALITY, COLD WATER FISHERY				

' DENOTES SPECIAL PROTECTION WATERSHED



CALL BEFORE YOU DIG! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL POCS SERIAL NUMBER

System. INC. 1-800-242-1776 2022283634



THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES. ARTICLE III. WATER RESOURCES, CHAPTER 102, EROSION CONTROL.

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



### **ENGINEER'S STATEMENT**

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

Pany & Lentz Engineering Company accepts no responsibility for unauthorized use of this document. Reproduction of this drawing or any portion thereof is prohibited without the written consent of Pany & Lentz Engineering Company. Only final construction

documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

1429 ECK ROAD OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

BMW JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023 J.G. PETRUCCI CO, INC. 171 ROUTE 173

PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

# DATE

REVISION

ENGINEERING COMPANY CONSULTING ENGINEERS

CIVIL . STRUCTURAL . MECHANICAL . MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

FINAL

**EROSION + SEDIMENT** 

POLLUTION CONTROL PLAN

STAGE 2 + 3

EROSION AND SEDIMENT CONTROL PLAN NOTES: 1. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY

2. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED

DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE

4. THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA

IMPACT WILL BE MITIGATED BY THE PROPOSED VEGETATED SWALES,

INFILTRATION BEDS AND DIRECTING RUNOFF TO OTHER VEGETATED

AREAS. AS A RESULT OF THE USE OF THESE CONTROLS, ANY THERMAL IMPACT CAUSED BY THIS PROJECT WILL BE NEGLIGIBLE. 6. THE E&S PLAN HAS BEEN PLANNED, DESIGNED AND IMPLEMENTED

7. THERE ARE NO EXISTING OR PROPOSED RIPARIAN FOREST BUFFERS

8. THERE IS THE POTENTIAL FOR KARST SOIL CONDITIONS LOCATED ON SITE THAT COULD RESULT IN STORM WATER RUNOFF FROM THE SITE

DISPOSED OF IN PROPOSED LANDSCAPED AREA ON SITE OUTSIDE OF INFILTRATION BASINS AND SWALES. DISTURBED AREAS SHALL BE

10. ANTICIPATED CONSTRUCTION WASTES INCLUDE BUT ARE NOT LIMITED TO LUMBER, SHEET ROCK, ASPHALT, CONCRETE AND OTHER TYPICAL

BUILDING MATERIALS. ANY WASTES GENERATED SHALL BE DISPOSED

THAT DO NOT MEET WATER QUALITY STANDARDS FOR THE RECEIVING WATER COURSE. A SINK HOLE REPAIR DETAIL IS

9. ANY SEDIMENT REMOVED FROM BMP'S OR ROADWAY SHALL BE

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS

TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL

TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS, ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL

PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A

SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE

BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE,

TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF

CLEAN FILL IS DEFINED AS: UNCONTAMINATED NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL,

TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF

SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A

REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF

REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENTS POLICY

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL

OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORGIN OF THE FILL MATERIAL AND THE RESULTS OF THE

ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING

THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF

SEE POST CONSTRUCTION STORM WATER MANAGEMENT PLAN FOR CONSTRUCTION NOTES AND DETAILS FOR PCSM BMPS REFERENCED ON

PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON SITE TO PERFORM

4. OVERSIGHT FOR THE SPRAY IRRIGATION SYSTEM ACTIVATION.

1. MARKING OF LIMITS OF DISTURBANCE FOR SPRAY IRRIGATION AREA

INSTALLATION OF DETENTION BASIN OUTLET CONTROL STRUCTURE.

CRITICAL STAGES OF IMPLEMENTATION FOR WHICH A LICENSED

. INSTALLATION OF SPRAY IRRIGATION SYSTEM.

THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED

ASPHALT DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN

CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED

ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR

IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL.

INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE

THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

**DEFINITION OF CLEAN FILL** 

PROCESS FOR RE-USE).

"MANAGEMENT OF FILL".

**CRITICAL STAGING NOTE:** 

REQUIRED OBSERVATIONS INCLUDE:

AND OVERALL LIMITS.

SEE STAGING OF EARTH MOVING ACTIVITIES.

5. THE INCREASE IN IMPERVIOUS AREA AND THE RESULTING THERMAL

3. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH

SHALL BE IMMEDIATELY STABILIZED.

TO BE CONSISTENT WITH THE PCSM PLAN.

ENVIRONMENTAL DUE DILIGENCE

ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE

IMPLEMENTED.

IMMEDIATELY.

INCLUDED.

OF PROPOSED WORK.

AS PART OF THIS PROJECT.

STABILIZED IMMEDIATELY.

OF AS NOTED ABOVE.

ES-2

### DEFINITION OF CLEAN FILL

CLEAN FILL IS DEFINED AS: UNCONTAMINATED NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESS FOR

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENTS POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

### INLET PROTECTION DRAINAGE AREA TABLE

PROPOSED INLET	DRAINAGE AREA	PROTECTION TYPE
I-A4	0.10	FILTER BAG
I-A5	0.04	FILTER BAG
I-B2	0.25	FILTER BAG
I-B3	1.01	STONE
I-B3A	0.41	STONE
I-B4	0.69	STONE
I-B5	0.19	FILTER BAG
I-C2	0.29	STONE
I-D2	0.10	FILTER BAG
I-D3	0.14	FILTER BAG
I-D4	0.12	FILTER BAG

NOTE:
EXISTING COVER CONSISTS OF ROW CROPS

CELL TOWER

### EROSION AND SEDIMENT CONTROL PLAN NOTES:

2. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY

- 1. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED
- EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY. 3. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH
- DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED. 4. THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA OF
- PROPOSED WORK. 5. THE INCREASE IN IMPERVIOUS AREA AND THE RESULTING THERMAL IMPACT WILL BE MITIGATED BY THE PROPOSED VEGETATED SWALES, DETENTION BASIN AND DIRECTING RUNOFF TO OTHER VEGETATED AREAS.
- AS A RESULT OF THE USE OF THESE CONTROLS, ANY THERMAL IMPACT CAUSED BY THIS PROJECT WILL BE NEGLIGIBLE.
- 6. THE E&S PLAN HAS BEEN PLANNED, DESIGNED AND IMPLEMENTED TO BE CONSISTENT WITH THE PCSM PLAN. 7. THERE ARE NO EXISTING OR PROPOSED RIPARIAN FOREST BUFFERS AS
- PART OF THIS PROJECT. 8. THERE IS THE POTENTIAL FOR KARST SOIL CONDITIONS LOCATED ON
- SITE THAT COULD RESULT IN STORM WATER RUNOFF FROM THE SITE THAT DO NOT MEET WATER QUALITY STANDARDS FOR THE RECEIVING WATER COURSE. A SINK HOLE REPAIR DETAIL IS INCLUDED.
- 9. ANY SEDIMENT REMOVED FROM BMP'S OR ROADWAY SHALL BE DISPOSED OF IN PROPOSED LANDSCAPED AREA ON SITE OUTSIDE OF INFILTRATION BASINS AND SWALES. DISTURBED AREAS SHALL BE STABILIZED
- **IMMEDIATELY** 10. ANTICIPATED CONSTRUCTION WASTES INCLUDE BUT ARE NOT LIMITED TO LUMBER, SHEET ROCK, ASPHALT, CONCRETE AND OTHER TYPICAL BUILDING MATERIALS. ANY WASTES GENERATED SHALL BE DISPOSED OF AS NOTED ABOVE.

SEE POST CONSTRUCTION STORM WATER MANAGEMENT PLAN FOR CONSTRUCTION NOTES AND DETAILS FOR PCSM BMPS REFERENCED ON THIS

CRITICAL STAGES OF IMPLEMENTATION FOR WHICH A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON SITE TO PERFORM REQUIRED **OBSERVATIONS INCLUDE:** 

- 1. MARKING OF LIMITS OF DISTURBANCE FOR SPRAY IRRIGATION AREA AND OVERALL LIMITS.
- INSTALLATION OF DETENTION BASIN OUTLET CONTROL STRUCTURE. INSTALLATION OF SPRAY IRRIGATION SYSTEM.
- 4. CONVERSION OF SEDIMENT BASIN TO DETENTION BASIN.
- 5. OVERSIGHT FOR THE SPRAY IRRIGATION SYSTEM ACTIVATION.
- SEE STAGING OF EARTH MOVING ACTIVITIES.

### STAGING OF EARTH MOVING ACTIVITIES

NOTE: AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE NORTHAMPTON COUNTY CONSERVATION DISTRICT TO AN ON-SITE

AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT SOLID WASTE REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR

### FOR ALL STAGES:

- a. SEDIMENT AND EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPS) MAY BE REMOVED WHEN THE TRIBUTARY AREA TO A PARTICULAR BMP IS STABILIZED. FOR PERMANENT STABILIZATION, A DISTURBED AREA SHALL BE COVERED WITH EITHER A MINIMUM UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENT.
- b. DISPOSAL OF ACCUMULATED SEDIMENT FROM THE REMOVAL OF THESE FACILITIES SHALL BE IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES ON SITE. c. ANY DISTURBED AREAS CAUSED BY THE REMOVAL OF THESE FACILITIES AND ANY DISPLACED SEDIMENT SHALL BE IMMEDIATELY FERTILIZED, SEEDED AND MULCHED. RE—SPREAD TOPSOIL AND IMMEDIATELY FERTILIZE. SEED WITH A PFRMANENT SEED MIXTURE AND MULCH.
- d. INSPECT AND MAINTAIN EXISTING SEDIMENT AND EROSION CONTROL BMPS ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. PERFORM REPAIRS/REPLACE IMMEDIATELY. e. CONTRACTOR SHALL PROVIDE WATER SOURCE FOR USE AT WASH RACK IN ROCK CONSTRUCTION ENTRANCE.
- . CONTRACTOR SHALL COORDINATE WITH LICENSED PROFESSIONAL OR DESIGNEE FOR NECESSARY OBSERVATION OF CRITICAL STAGES OF PCSM BMP IMPLEMENTATION AS NOTED IN STAGING.

### STAGE 1 - INSTALL PERIMETER CONTROLS a. MARK LIMITS OF DISTURBANCE IN FIELD INCLUDING LIMITS AROUND SPRAY IRRIGATION AREAS AT EXISTING GRADE SO THAT NO CONSTRUCTION TRAFFIC OCCURS IN AREAS AS SHOWN ON THE POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN. INSTALL PROTECTIVE FENCING AROUND BMP AREAS AS SHOWN. THIS IS A CRITICAL STAGE PER THE PCSM.

- b. INSTALL ROCK CONSTRUCTION ENTRANCE WITH WASH RACK FROM ECK ROAD AS SHOWN ON PLANS. INSTALLATION INCLUDES REMOVING TOPSOIL FROM AREA OF ENTRANCE AS NECESSARY. PLACE ANY TOPSOIL REMOVED IN STOCKPILES AND STABILIZE IN ACCORDANCE WITH DETAILS. STABILIZE ENTRANCE, INSTALL COMPOST FILTER SOCK #1 ASSOCIATED WITH STOCKPILE AT LOCATIONS SHOWN ON PLANS. INSTALL 24" COMPOST FILTER SOCKS AT DISCHARGE POINT FROM WASH RACKS.
- c. INSTALL AND STABILIZE ROCK STAGING AREA AT LOCATION SHOWN ON PLAN. PLACE ANY TOPSOIL REMOVED IN STOCKPILE AND STABILIZE.
- d. ESTABLISH AND UTILIZE CONCRETE WASHOUT FACILITIES AS NEEDED DURING BUILDING AND SITE CONSTRUCTION. e. INSTALL COMPOST SOCK FILTER #2, #3, AND #4 AT LOCATION SHOWN ON PLANS.

### STAGE 2 - BASIN CONSTRUCTION AND SITE IMPROVEMENTS

a. PERFORM EARTHMOVING ACTIVITIES TO PREPARE DRIVEWAY AND PARKING LOT SUBGRADE. UPON COMPLETION OF GRADING, IMMEDIATELY SPREAD AMENDED TOPSOIL, SEED, FERTILIZER AND INSTALL EROSION CONTROL BLANKETS. b. RELOCATE COMPOST SOCK FILTER #2, #3, AND #4 AS NECESSARY.

c. PERFORM EARTHMOVING ACTIVITIES TO CONSTRUCT DETENTION BASIN 1 BERM. INSTALL PROPOSED BASIN 1 OUTLET PIPE AND STRUCTURE IN ACCORDANCE WITH DETAILS ON THE PLANS WITH ANTI-SEEP COLLAR. GRADE BOTTOM OF BERM TO SUPPLY COVER OVER OUTLET PIPE. INSTALLATION OF OUTLET STRUCTURE IS A PCSM CRITICAL STAGE REQUIRING OBSERVATION. BASIN BERM SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS ON THE PLAN. INSTALL ES-D1 AND STUB OUT PIPE FOR FUTURE CONNECTION. INSTALL RIPRAP AT ES-D1 IN ACCORDANCE WITH DETAILS ON PLANS. IMMEDIATELY TOPSOIL. SEED AND FERTILIZE AREAS OF FINISHED GRADES OUTSIDE OF BERM. INSTALL EROSION CONTROL BLANKETS IN LOCATIONS SHOWN ON PLANS. INSTALL SPILLWAY IN ACCORDANCE WITH DETAILS ON PLANS.

- d. MEANWHILE, INSTALL STORM SEWER FROM ES-A1 TO MH-A3, ES-B1 TO I-B5, AND ES-C1 TO I-C2. INSTALL INLET PROTECTION DEVICES AROUND EACH NEW INLET. STUB OUT PIPE FROM MH-A3 FOR FUTURE CONNECTION.
- INSTALL RIPRAP APRON AT ES-A1, ES-B1, AND ES-C1 IN ACCORDANCE WITH DETAILS ON PLANS. SIMULTANEOUSLY, COMPLETE INSTALLATION OF DETENTION BASIN 1. INSTALL THE SPRAY BASIN INTAKE STRUCTURE AND BASIN LINER. INSTALL SPRAY PUMP STATION AND PIPING THROUGH THE BASIN BERM. f. CONTINUE ON-SITE MASS GRADING. PROTECT AREAS OF SPRAY IRRIGATION FROM CONSTRUCTION TRAFFIC AND COMPACTION.
- q. BEGIN INSTALLATION OF OTHER UNDERGROUND UTILITIES INCLUDING SANITARY SEWER AND WATER. h. PERFORM MAINTENANCE ON EXISTING EROSION AND SEDIMENT CONTROL MEASURES ON A WEEKLY BASIS, AFTER EACH RUNOFF EVENT OR IF DAMAGED BY CONSTRUCTION ACTIVITIES. REPAIR/REPLACE BMPS IMMEDIATELY. IF A COMPOST FILTER SOCK FAILS AT ANY POINT DURING CONSTRUCTION, THEN IT MUST BE REPAIRED/REPLACED BY THE CONTRACTOR IMMEDIATELY, BEING SURE TO NOT PUNCTURE BASIN LINER IN THE PROCESS.

### STAGE 3 - ROAD WIDENING, PCSM BMP INSTALLATION AND PROJECT COMPLETION a. BEGIN EARTH MOVING ACTIVITIES TO ESTABLISH SUBGRADE IN AREA OF ECK ROAD WIDENING, INSTALL SUBBASE

- AND STONE BASE COURSE. b. PERFORM ROAD WIDENING ON ECK ROAD ACROSS SITE FRONTAGE.
- c. IMMEDIATELY APPLY TOPSOIL, PERMANENT SEED MIXTURE, FERTILIZER, MULCH AND EROSION CONTROL BLANKETS AS SHOWN ON THE PLANS UPON REACHING FINAL GRADES AS SHOWN ON PLANS
- COMPLETE UNDERGROUND UTILITY INSTALLATION. e. MEANWHILE, INSTALL CURB, SUBBASE AND BASE COURSES IN PROPOSED DRIVEWAY AND PARKING AREA UPON COMPLETION OF UTILITY WORK TO MINIMIZE AREA OF POTENTIAL EROSION.

### INSTALL FINAL PAVING WEARING COURSE. COMPLETE BUILDING CONSTRUCTION.

### h. INSTALL SPRAY IRRIGATION SYSTEM IN AREAS OUTSIDE OF THE BASIN. THIS IS A PCSM CRITICAL STAGE COMPLETE INSTALLATION OF SPRAY IRRIGATION SYSTEM.

- ON LOT SEDIMENT CONTROL BMPS MAY BE REMOVED ONCE TRIBUTARY AREA IS STABILIZED. FOR PERMANENT STABILIZATION, A DISTURBED AREA SHALL BE COVERED WITH EITHER A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENT. DISPOSE OF ANY ACCUMULATED SEDIMENT AS NOTED. IMMEDIATELY STABILIZE AREAS DISTURBED BY
- THE REMOVAL OF SEDIMENT CONTROL BMPS. k. UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITY UNDER 25 PA. CODE § 102.22(A)(2) AND INSTALLATION OF BMPS IN ACCORDANCE WITH THE APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH 25 PA. CODE § 102.4 AND 102.8, THE PERMITTEE AND/OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION (NOT) TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.

### STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES:

- 1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND
- APPROVAL AT ITS DISCRETION. 2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MFFTING.
  - 3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- 4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION. 5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL
- 6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S
- 7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS UNLESS AREAS OUTSIDE OF THE LIMITS ARE ALSO WITHIN THE LIMITS OF AN APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN. 8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES
- 9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSIÓN AND SEDIMENT
- POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT. 10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT

- FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED. 12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY
- THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUF TO ANALYTICAL TESTING.
- 13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER
- BAG DISCHARGING OVER NON-DISTURBED AREAS. 14. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY NOR EXIT DIRECTLY FROM THE SITE ONTO KESSLERSVILLE ROAD. VEHICLES MAY ONLY
- ENTER AND EXIT THE CONSTRUCTION SITE VIA A STABILIZED ROCK CONSTRUCTION ENTRANCE. 15. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS
- OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY, IF
- THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED. 16. A LOG SHOWING DATES THAT F&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION. 17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK
- DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER. 18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. SEDIMENT REMOVED FROM
- BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES. 19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS -
- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL. 20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL
- INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR
- 21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS. 22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD
- INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS 23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- 24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES. 25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR
- SUBSURFACE DRAIN OR OTHER APPROVED METHOD. 26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK
- AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN. 27. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT. THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN.
- AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- 28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM. PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO
- SLUMPING, SLIDING, OR OTHER MOVEMENTS. 29. EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED
- OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT. 30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR
- OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS. . AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE
- ONLY DURING THE GERMINATING SEASON. 32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR
- OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION. 33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE. CIVIL. AND /OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW
- PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION. 34. IN THE EVENT OF SINKHOLE DISCOVERY A PROFESSIONAL GEOLOGIST OR ENGINEER WILL BE CONTACTED CONCERNING MITIGATION. ADDITIONALLY, THE LEHIGH COUNTY CONSERVATION DISTRICT WILL BE MADE AWARE OF THE SINKHOLE DISCOVERY IMMEDIATELY.
- 35. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED. 36. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
- 37. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED
- SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES. 38. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL ŚLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.

### STANDARD INSPECTION AND MAINTENANCE NOTES:

- 1. PERFORM MAINTENANCE ON EXISTING EROSION AND SEDIMENT CONTROL MEASURES ON A WEEKLY BASIS, AFTER EACH RUNOFF EVENT OR IF DAMAGED BY CONSTRUCTION ACTIVITIES. REPAIR/REPLACE BMPS IMMEDIATELY. IF A COMPOST FILTER SOCK FAILS AT ANY POINT DURING CONSTRUCTION, THEN IT MUST BE REPAIRED/REPLACED BY THE CONTRACTOR
- 2. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE
- 3. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE
- MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION. 4. SEE SPECIFIC BMP INSPECTION AND MAINTENANCE NOTES ASSOCIATED WITH EACH DETAIL.

FINAL **EROSION + SEDIMENT** POLLUTION CONTROL PLAN **NOTES** 

ENGINEERING COMPANY

BMW

JOB. NO. 2022258

SCALE 1"= 50' U.N.O

MAY 15, 2023

ES-3

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

Pany & Lentz Engineering Company accepts no responsibility for

or any portion thereof is prohibited without the written consent

of Pany & Lentz Engineering Company. Only final construction

the information shown on the drawings.

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documents signed and sealed by the Engineer of Record are valid.

All written dimensions shall take priority over scaled dimensions. The

contractor shall be responsible for verifying all locations, elevations,

dimensions and conditions prior to construction. The contractor shall

notify Pany & Lentz Engineering Company of any discrepancies with

CONSULTING ENGINEERS CIVIL . STRUCTURAL . MECHANICAL . MACHINERY 609 Hamilton Street • Allentown, PA 18101

Office: 610/433-1634 • Fax: 610/433-1636 1429 ECK ROAD

OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

J.G. PETRUCCI CO, INC. 171 ROUTE 173

PETRUCC SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802 # DATE REVISION

BUILDING ROOF AREA EXISTING PAVEMENT/SIDEWALK COVER TYPE LEGEND - PROPOSED SCALE: 1"=100'

VEGETATED AREAS

L.O.D/NPDES BOUNDARY

PERMIT - 5.01 AC.

PA ACT 287, AS AMENDED IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

NEW PAVEMENT/SIDEWALK

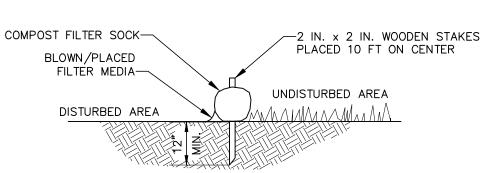
THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

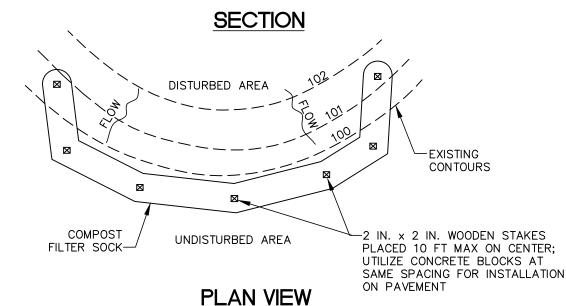


**ENGINEER'S STATEMENT** 

I. STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE





1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION

2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY

3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

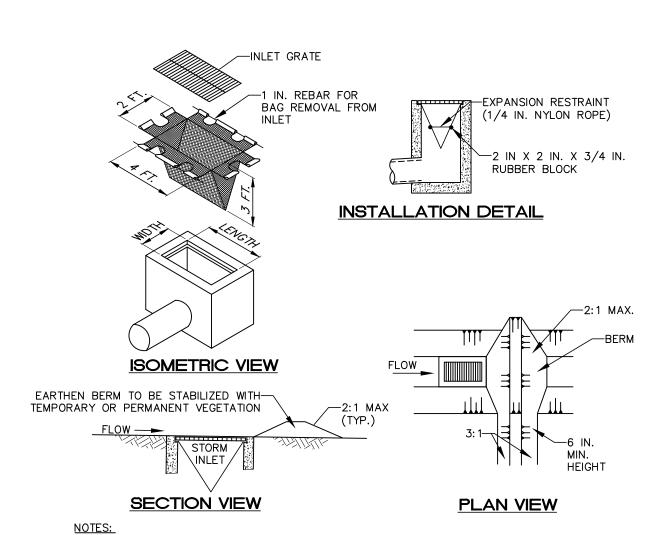
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN

5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

6. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

### STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

NOT TO SCALE



MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

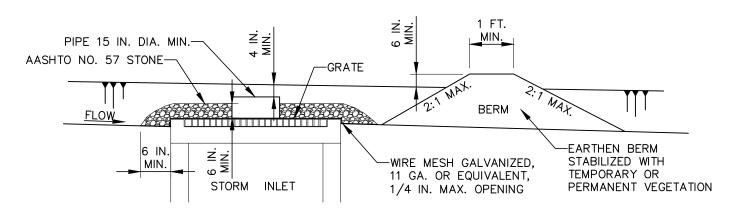
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR

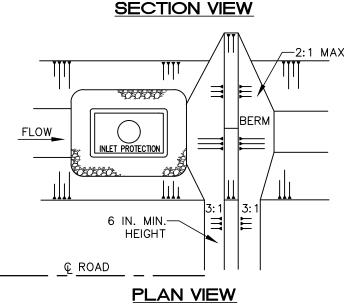
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS. STANDARD CONSTRUCTION DETAIL #4-16 FILTER BAG INLET PROTECTION - TYPE M INLET

NOT TO SCALE





INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

STONE INLET PROTECTION AND BERM FOR A TYPE M INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN. OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA. TOP OF PIPE SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADWAY IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC. EARTHEN BERM SHALL BE

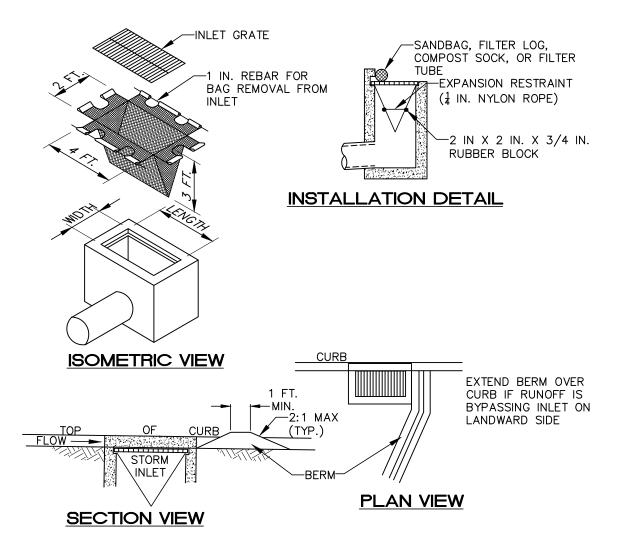
SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

### STANDARD CONSTRUCTION DETAIL #4-20 STONE INLET PROTECTION AND BERM - TYPE M INLET

NOT TO SCALE



MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

### STANDARD CONSTRUCTION DETAIL #4-15 FILTER BAG INLET PROTECTION - TYPE C INLET

NOT TO SCALE

PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

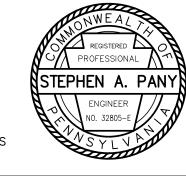


TABLE 4.1

	Compos	t Sock Fabric	Minimum Sp	ecifications	_	
Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)	
Material	Photo-	Photo-	Bio-	Photo-	Photo-	
Characteristics	degradable	degradable	degradable	degradable	degradable	
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"	
Tensile Strength		26 psi	26 psi	44 psi	202 psi	
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.	
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years	
		Two-ply	y systems L		<u> </u>	
Inner C	ontainment Ne	tting	HDPE biaxial net Continuously wound Fusion-welded junctures			
Outer Filtration Mesh			3/4" X 3/4" Max. aperture size Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)			

PROJECT LIFE IS ANTICIPATED TO BE 10 MONTHS.

TABLE 4.2 Compost Standards				
25% - 100% (dry weight basis)				
Fibrous and elongated				
5.5 - 8.5				
30% - 60%				
30-50% pass through 3/8" sieve				
5.0 dS/m (mmhos/cm) Maximum				
Ī				

Sock fabrics composed of burlap may be used on projects lasting 6 months or less.

3/16" Max. aperture size

COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOOD/BARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1%BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX. THE PHYSICAL PARAMETERS OF THE COMPOST SHOULD COMPLY WITH THE STANDARDS IN TABLE 4.2. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERNATIVE.

### COMPOST SPECIFICATIONS

NOT TO SCALE

SEEDING NOTES

- 1. PURE LIVE SEED (P.L.S.) IS THE PRODUCT OF THE PERCENTAGE OF PURE LIVE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. TO CALCULATE THE AMOUNT OF SEED REQUIRED TO PLANT ONE (1) ACRE, DIVIDE THE SEEDING RATE IN THE LBS. P.L.S./ACRE BY THE P.L.S. CONTENT OF THE SEEDLOT TO BE USED. 2. UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE
- PROJECT SITE SHALL BE IMMEDIATELY STABILIZED (I.E. SEEDED AND MULCHED). 3. SOW SEEDS UNIFORMLY ON THE PREPARED AREAS BY HYDRAULIC APPLICATION, BROADCASTING, OR HANDSEEDING METHODS. INSPECT SEEDING EQUIPMENT AND ADJUST THE EQUIPMENT IF REQUIRED TO ASSURE THE SPECIFIED APPLICATION RATES. PERIODICALLY CHECK ON THE RATE AND UNIFORMITY OF APPLICATION.
- 4. DIVERSIONS, CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
- 5. HAY OR STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE 6. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN. . ALL AREAS THAT FAIL TO GERMINATE MUST BE RESEEDED.
- 8. TEMPORARY SEED DURING SEPT.-OCT. 15. PERMANENT SEED DURING MARCH-AUG. FOLLOW GUIDELINES IN PENN STATE'S "EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLANDS" MANUAL.

### HYDRO-SEEDING REQUIREMENTS

- 1. HYDRO-SEEDING IS A METHOD OF SEEDING IN WHICH LIME, FERTILIZER AND SEED ARE MIXED WITH WATER AND APPLIED AS A SLURRY AT A RATE OF 1,000 GALLONS PER ACRE. THE SLURRY MIX SHALL CONSIST OF 1) 4,000 POUNDS OF AGRICULTURE GRADE LIMESTONE PER ACRE 2) 50 POUNDS OF NITROGEN - 100 OF NITROGEN - 100 POUNDS OF P205 - 100 POUNDS OF K20 PER ACRE. 3) SEED AS REQUIRED PER ACRE.
- 2. APPLY A SECOND APPLICATION OF LIME AND FERTILIZER 30 DAYS AFTER INITIAL APPLICATION. 3. WHEN HYDRO-SEEDING LEGUMES AND FERTILIZER TOGETHER, ADD THE LEGUME INOCULANT JUST BEFORE APPLICATION, SINCE SOME FERTILIZATION ARE HARMFUL TO RHIZOBIS. DO NOT ALLOW THE SEED AND INOCULANT TO BE IN CONTACT WITH FERTILIZER IN THE HYDRO-SEEDER FOR LONGER THAN A HALF HOUR TO AN HOUR. IF THE INOCULANT IS IN THE TANK FOR LONGER THAN AN HOUR, ADD A NEW SUPPLY OF INOCULANT. 4. USE FIVE (5) TIMES THE RATE OF INOCULANT RECOMMENDED ON THE PACKAGE WHEN SEEDING WITH
- 5. HYDRO-SEEDING DATES: MAY 1 TO NOVEMBER 15. 6. APPLY HAY OR STRAW MULCH BINDER FOR ALL HYDRO-SEED STABILIZED AREAS.

### TOPSOIL PLACEMENT NOTES:

- PLACE TOPSOIL PRIOR TO PERMANENT SEEDING PLACEMENT. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED
- TO A DEPTH OF 3-5 INCHES PRIOR TO APPLICATION. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED TO DEPTH NOTED
- IN STAGING. SPREADING SHOULD BE PERFORMED IN SUCH A MANNER THAT SEEDING CAN PROCEED IMMEDIATELY AFTER TOPSOIL PLACEMENT.
- 4. TOPSOIL SHOULD NOT BE PLACED WHILE TOPSOIL OR SUBSOIL IS IN A FROZEN, MUDDY OR WET CONDITION.

∽CLASS 2, TYPE A GEOTEXTILE STAGING AREA SECTION NOT TO SCALE

-MINIMUM THICKNESS = 6"

AASHTO # 3 STONE

FINAL EROSION AND SEDIMENT POLLUTION CONTROL DETAILS

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

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1429 ECK ROAD OUTDOOR STORAGE

SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA 171 ROUTE 173

J.G. PETRUCCI CO., INC. PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802 REVISION

ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND

PLAN PREPARER'S SIGNATURE

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL

SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT,

**ENGINEER'S STATEMENT** 

TO THE BEST OF MY KNOWLEDGE.

Pany & Lentz Engineering Company accepts no responsibility for unauthorized use of this document. Reproduction of this drawing or any portion thereof is prohibited without the written consent of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

# DATE

ENGINEERING COMPANY

STANDARD E&S WORKSHEET # 21

**Temporary and Permanent Vegetative Stabilization Specifications** 

SPECIFICATIONS: The Department recommends the use of the Penn State publication, "Erosion

by contacting the applicable county conservation district. Upon selection of a reference, that reference

should be used to provide all specifications for seeding, mulching, and soil amendments. The following

\*SPECIES: ANNUAL RYEGRASS

Control and Conservation Plantings on Noncropland," as the standard to use for the selection of species, seed specifications, mixtures, liming and fertilizing, time of seeding, and seeding methods. Specifications for these items may also be obtained from PennDOT's Publication # 408, Section 804 or

> % PURE LIVE SEED: 81% APPLICATION RATE: 48

FERTILIZER APPL. RATE:

(PERMANENT) TOPSOIL PLACEMENT DEPTH: 6-8

RATE OF ANCHOR MATERIAL APPL

RATE OF ANCHOR MATERIAL APPL

Note: This worksheet should be added to the plan drawings.

TOPSOIL PLACEMENT DEPTH:

(PERMANENT - STEEP SLOPE)

FERTILIZER TYPE: 10-10-10

LIMING RATE: ONE

MULCHING RATE: THREE

% PURE LIVE SEED: <u>81/76/64</u> APPLICATION RATE 15/35/25

FERTILIZER TYPE:

FERTILIZER APPL. RATE: 1000

MULCHING RATE:

ANCHOR MATERIAL

% PURE LIVE SEED: APPLICATION RATE

FERTILIZER TYPE

LIMING RATE:

**MULCH TYPE** 

MULCHING RATE

ANCHOR MATERIA

ANCHORING METHOD:

Agricultural lime

10-20 -20 fertilizer

Agricultural lime

10-10-10 fertilizer

SEEDING SEASON DATES: \*If more than one species is used, indicate application rate for each species.

FERTILIZER APPL. RATE

LIMING RATE:

MULCH TYPE: STRAW

SEEDING SEASON DATES: MARCH 1 TO AUGUST 15

363-2134-008 / March 31, 2012 / Page 392

6 tons

500 lb.

soil amendments shown in Table 11.2.

SEED AND MULCH

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland

TOPSOIL, FERTILIZER, TEMPORARY

**TABLE 11.2** Soil Amendment Application Rate Equivalents

**Permanent Seeding Application Rate** 

Per Acre Per 1,000 sq. ft. Per 1,000 sq. yd.

**Temporary Seeding Application Rate** 

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the

2,480 lb.

410 lb.

\*SPECIES:

ANCHORING METHOD: CRIMPING BY TRACTOR IMPLEMENT

MULCH TYPE: STRAW

DATE: <u>05/01/23</u>

\*SPECIES: PERENNIAL RYEGRASS/FINE FESCUE/KENTUCKY BLUE GRASS

LB./ACRE

LB./ACRE

\_T./ACRE

T./ACRE

LB./ACRE

LB./ACRE

T./ACRE

T./ACRE

LB./ACRE

LB./ACRE

(X-X-X)

LB./ACRE

T./ACRE

T./ACRE

LB./ACRE

Or as per soil

test; may not be

required in

agricultural fields

Or as per soil

test; may not be

required in

agricultural fields

Typically not

required for

topsoil stockpiles

Typically not

required for

topsoil stockpiles

(X-X-X)

(X-X-X)

PROJECT NAME: 1429 Eck Road Outdoor Storage

specification will be used for this project:

PREPARED BY: BMW

CHECKED BY: MFS

(TEMPORARY)

LOCATION: South Whitehall Township, Lehigh County

BMW JOB. NO. 2022258 SCALE 1"= 50' U.N.O MAY 15, 2023 ES-4

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

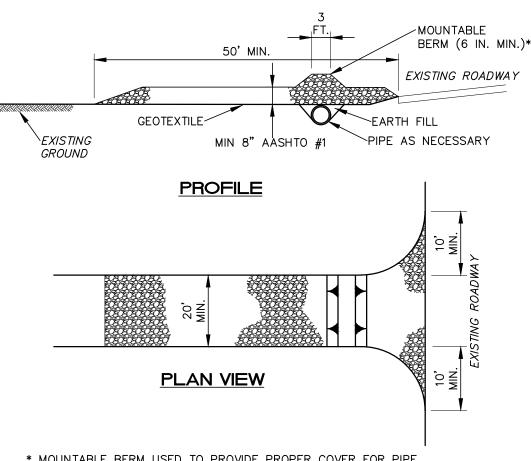
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

### STANDARD CONSTRUCTION DETAIL #3-16 PUMPED WATER FILTER BAG



\* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

### STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

COLLECTOR CHANNEL

BASIN OR TRAP

DRAIN SPACE

WASH RACK

REINFORCED CONCRETE OR

WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED

TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE

MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT

OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND

RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING

THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS

STANDARD CONSTRUCTION DETAIL #3-2

ROCK CONSTRUCTION ACCESS WITH WASH RACK

NOT TO SCALE

WELDED STEEL PIPE

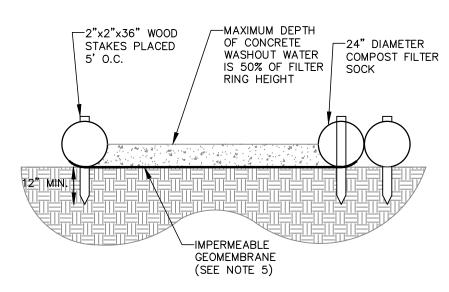
WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

AASHTO #1 ROCK (8" THICK) EXTENDING 25' MIN. ON BOTH

APPROACHES TO WASH RACK

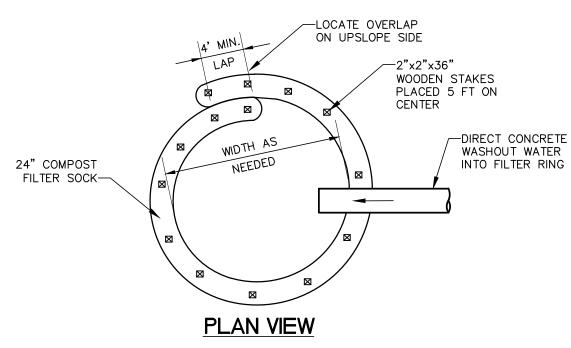
CONSTRUCTION VEHICULAR TRAFFIC.

DISCHARGING TO SEDIMENT



### SECTION VIEW

INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE. 2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.



NOTES:
1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL 2. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL

- 3. COMPOST FILTER SOCK SHALL BE PLACED, MAINTAINED AND REMOVED PER SCD 4-1. 4. WASH OUT SHALL BE LOCATED AS NEEDED. LOCATION SHALL BE MINIMUM 50 FEET AWAY
- FROM OPEN CHANNELS, STORM DRAIN INLETS WITHOUT INLET PROTECTION, WETLANDS, BUFFERS, WATER COURSES AND MAIN CONSTRUCTION TRAFFIC PATHS.
- 5. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

### COMPOST FILTER SOCK CONCRETE WASH OUT DETAIL NOT TO SCALE

### CASE 1

### SMALL SINKHOLE IN SOIL

1. EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT OR TO A DEPTH OF 15 FEET BELOW GRADE, WHICHEVER OCCURS FIRST.

2. IF NO ROCK IS ENCOUNTERED, PLUG SOIL THROAT WITH GROUT OR CONCRETE. IF A CLEARLY DEFINED THROAT IS NOT ENCOUNTERED AFTER 10 FEET, STOP EXCAVATION. GENERALLY, A ZONE OF SOFT, IN-FILL MATERIAL WILL BE FOUND WHICH COVERS MOST OF THE BOTTOM OF THE EXCAVATION. COVER THIS AREA WITH 4 FEET OF CONCRETE EXTENDING AT LEAST 1 FOOT INTO FIRM SOIL. IF THE SOFT ZONE IS LARGE, (>3 FT), REINFORCING STEEL SHOULD BE INCLUDED WITHIN THE CONCRETE CAP.

3. AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER. TWO COMPLETE COVERAGES SHOULD BE USED ON

4. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.

5. WHEN SINKHOLE IS UNDER A PROPOSED UTILITY, CONCRETE IS TO BE SET 6" BELOW THE UTILITY TO ALLOW FOR A STONE BEDDING.

LIMESTONE-

BEDROCK

LIMESTONE-

BEDROCK

### CASE 2 SMALL SINKHOLE IN ROCK

- 1. EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT OR TO A DEPTH OF 15 FEET BELOW GRADE, WHICHEVER OCCURS FIRST.
- 2. IF ROCK IS ENCOUNTERED, CLEAN SURFACE AND PLACE HIGH-SUMP CEMENT GROUT INTO OPEN VOIDS AND CREVICES UNTIL VOIDS ARE FILLED. IF SEVERAL CUBIC YARDS OF GROUT DO NOT FILL VOIDS, USE A STIFFER, LEAN CONCRETE MIX.
- AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER. TWO COMPLETE COVERAGES SHOULD BE USED ON
- BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.
- WHEN SINKHOLE IS UNDER A PROPOSED UTILITY, CONCRETE IS TO BE SET 6" BELOW THE UTILITY TO ALLOW FOR A STONE BEDDING.

# Geotextile Filter Fabric Rip-Rap (18" to 24" dlameter) Limestone Bedrock Pinnacie

PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.

2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.

3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES

4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.

5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5cm-12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED.
TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN
WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.

7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.

8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725 USA 1-800-772-2040 CANADA 1-800-448-2040 www.nagreen.com

CHANNEL INSTALLATION

CRITICAL POINTS

A. OVERLAPS AND SEAMS B. PROJECTED WATER LIN

\* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE

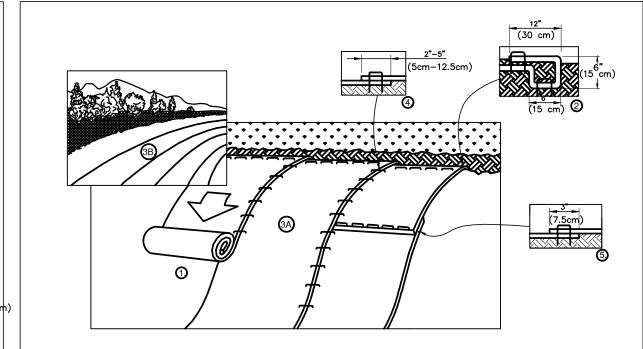
\*\* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

CRITICAL POINTS ALONG THE CHANNEL SURFACE.

HORIZONTAL SEAM INSTALLATION (5A) - PLACE CONSECUTIVE BLANKETS END OVER END WITH A 4" - 6" (10cm-15cm) OVERLAP. SEAMS ACROSS THE FACE OF THE SLOPE BY PLACING THE SEAM STITCHES OF OVERLAPPING BLANKETS ON TOP OF EACH OTHER. STAPLE THROUGH BOTH BLANKETS OF THE OVERLAPPED AREA, APPROXIMATELY 6" (15cm) APART.

SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

INVERTED ROCK FILTER SINKHOLE REPAIR DETAIL



PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN. 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH
WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP—SLOPE PORTION OF THE TRENCH. ANCHOR THE
BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH.
BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm)
PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF
STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.

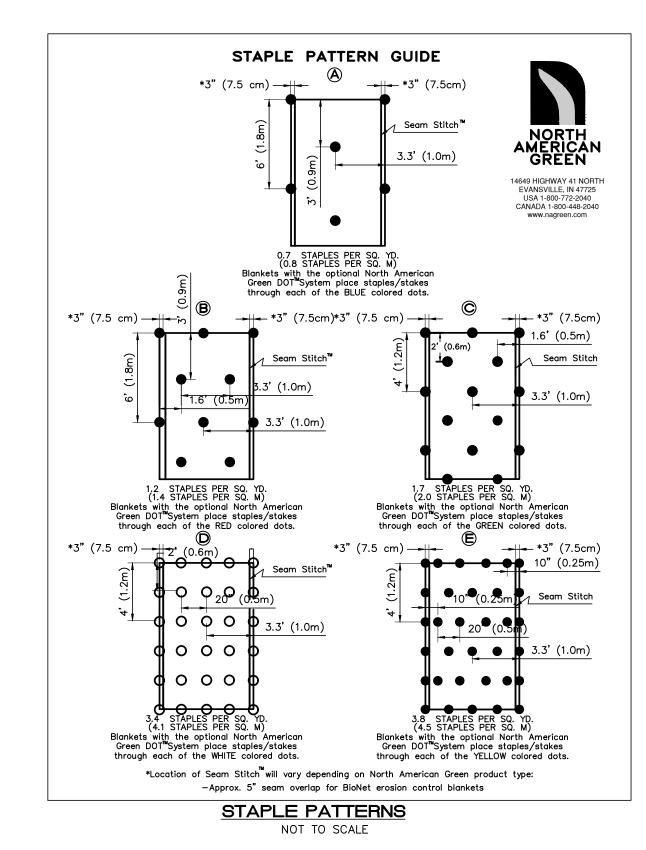
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

\*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

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> **SLOPE INSTALLATION** NOT TO SCALE

### EROSION CONTROL BLANKET DETAILS



### **EROSION CONTROL BLANKET INSTALLATION TABLE**

LOCATION	TYPE	STAPLE PATTERN
3:1 SLOPES	NAG S75BN	С
4:1 SLOPES	NAG S75BN	С

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

REVISION

### FINAL **EROSION AND SEDIMENT** POLLUTION CONTROL DETAILS

ENGINEERING COMPANY

CONSULTING ENGINEERS CIVIL . STRUCTURAL . MECHANICAL . MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP

JOB. NO. 2022258 LEHIGH COUNTY, PENNSYLVANIA J.G. PETRUCCI CO, INC. 171 ROUTE 173

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



EACH LIFT.

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All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with

documents signed and sealed by the Engineer of Record are valid. the information shown on the drawings.

PA ACT 287, AS AMENDED

MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

PLAN PREPARER'S SIGNATURE

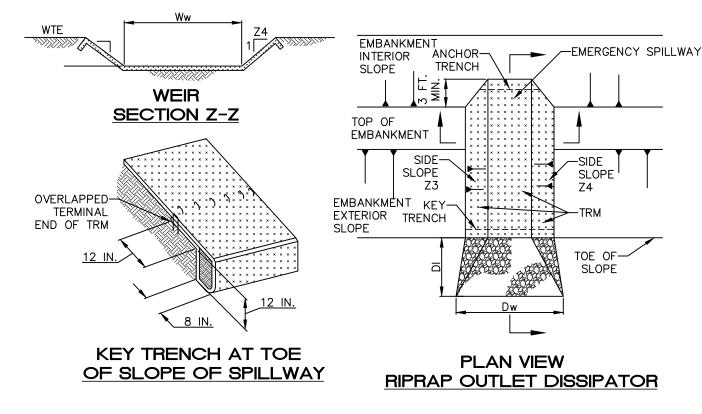
# DATE

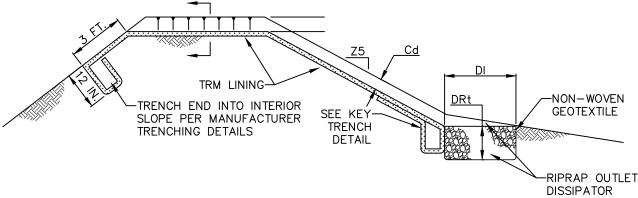
PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

SCALE 1"= 50' U.N.O MAY 15, 2023 ES-5

BMW

**ENGINEER'S STATEMENT** Pany & Lentz Engineering Company accepts no responsibility for I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.





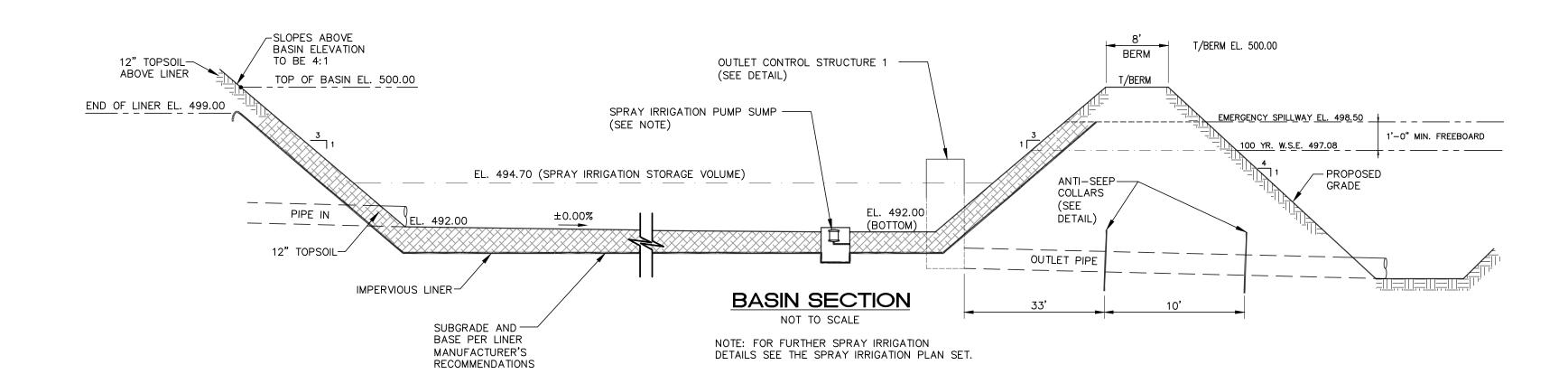
			WEIR			LINI	NG	CHA	NNEL		DISSIF	PATOR	
BASIN NO.	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH Cd (FT)	LENGTH DI (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R)	RIPRAP THICK. DRt (IN)
1	.3	3	500.00	498 50	60	P300	F	50	1.50	N/A	N/A	N/A	N/A

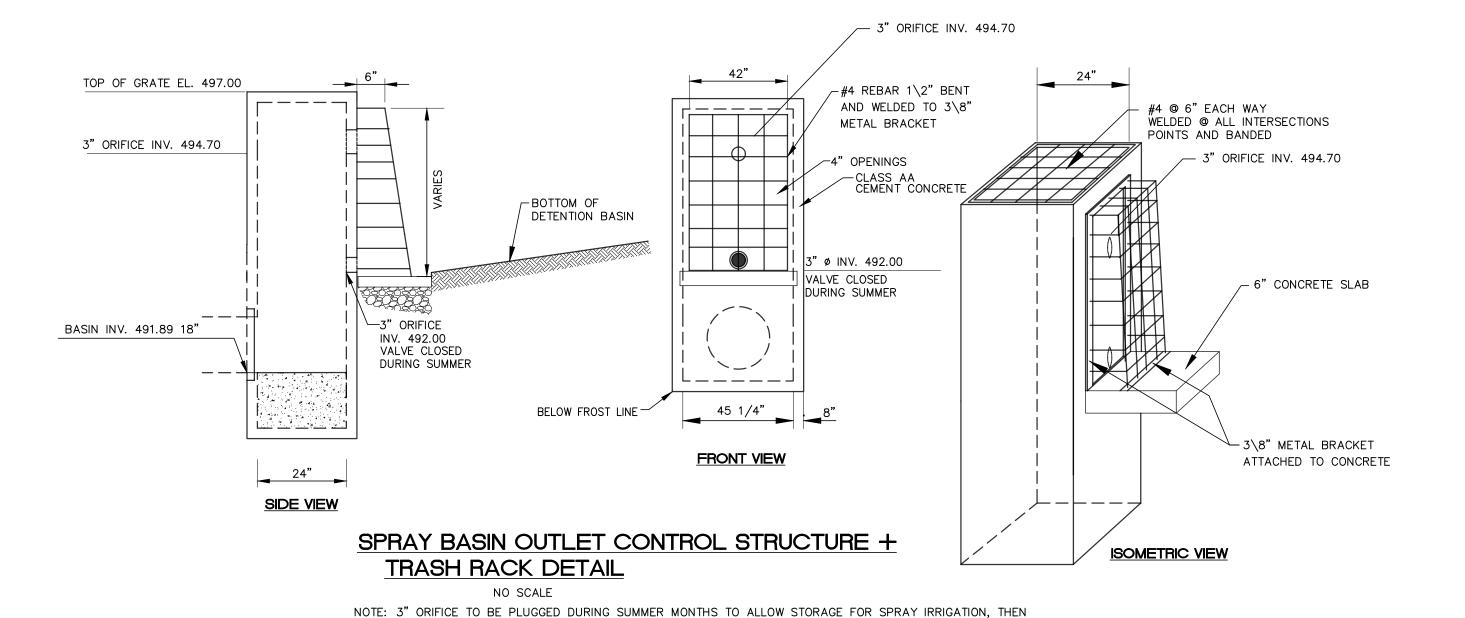
EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY

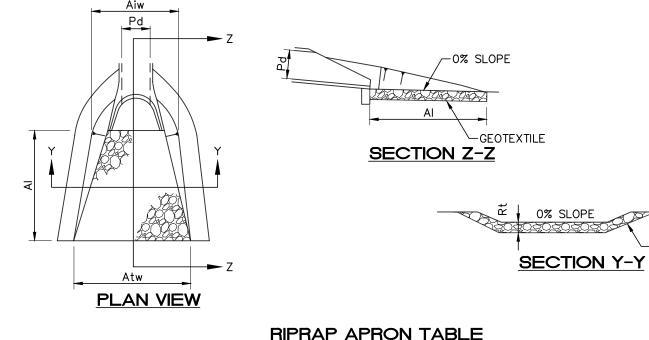
SECTION X-X

HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY. RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR. THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS

> STANDARD CONSTRUCTION DETAIL #7-13 **DETENTION BASIN EMERGENCY SPILLWAY** WITH TRM LINING





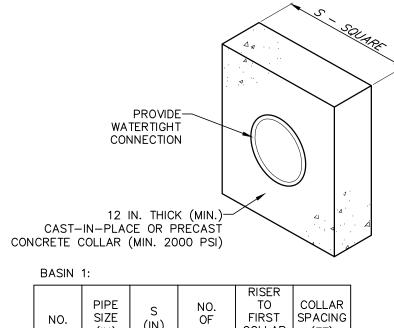


		<u> </u>	<u> (IPRA</u>	P AP	RON I AL	3LE			
OUTLET				RIP	RAP		APRON		
OUTLET NO.	PIPE DIA Pd (IN)	TAILWATER CONDITION (Max or Min)	Q (CFS)	V (FPS)	SIZE (R)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
ES-A1	18	MIN.	13.97	7.96	4	18	12	4.50	16.50
ES-B1	24	MIN.	9.68	4.54	3	9	12	6.00	18.00
ES-C1	15	MIN.	1.26	2.33	3	9	8	3.75	11.75
ES-D1	18	MIN.	1.18	2.03	3	9	8	4.50	12.50

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

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 NOT TO SCALE



BASIN	1:				
NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACINO (FT)
OCS 1	18	50	2	15	10

NOTES:

UNPLUGGED DURING WINTER MONTHS TO ALLOW BASIN TO DRAIN.

—GEOTEXTILE

ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT. COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

# STANDARD CONSTRUCTION DETAIL #7-16

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

REVISION

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS NOT TO SCALE

EROSION AND SEDIMENT POLLUTION CONTROL DETAILS

> CONSULTING ENGINEERS CIVIL • STRUCTURAL • MECHANICAL • MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

FINAL

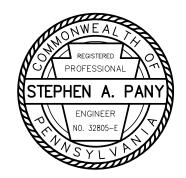
1429 ECK ROAD **OUTDOOR STORAGE** 

DESIGNED SAP
DRAWN BMW JOB. NO. 2022258 SOUTH WHITEHALL TOWNSHIP SCALE 1"= 50' U.N.O LEHIGH COUNTY, PENNSYLVANIA DATE MAY 15, 2023 J.G. PETRUCCI CO., INC. ES-6171 ROUTE 173 PETRUCCI SUITE 201
DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



### **ENGINEER'S STATEMENT**

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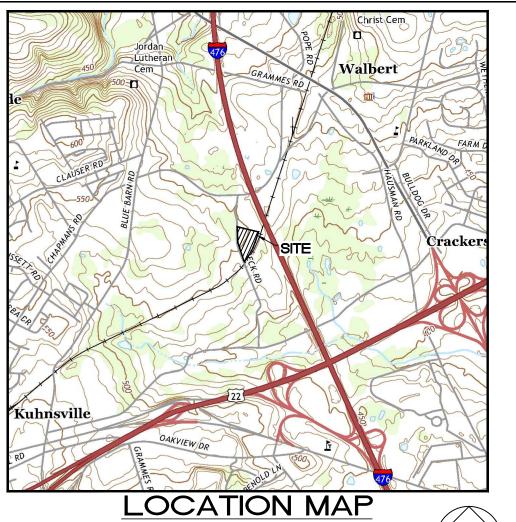
PLAN PREPARER'S SIGNATURE

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unauthorized use of this document. Reproduction of this drawing

of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings. # DATE



### LEGEND

Scale 1" = 2000'

EXISTING FEATURES 2 FT. CONTOUR 10 FT. CONTOUR SPOT ELEVATION + 311.55 CONCRETE CURB ========= EDGE OF PAVEMENT \_\_\_\_\_\_ CONCRETE WALK OR PAD **WOOD GUIDERAIL** DIRT/GRAVEL ROAD \_\_\_\_\_\_ STORM SEWER & INLETS SANITARY SEWER & MANHOLE WATER LINE & VALVE OVERHEAD ELECTRIC EASEMENT LINE PAINT LINES PROPERTY LINES ADJOINERS' PROPERTY LINES RIGHT-OF-WAY SIGN POST ♂ SIGN mTREE LINE DECIDUOUS TREE  $\varnothing$  UP UTILITY POLE

### STORMWATER FEATURES

LIMIT OF DISTURBANCE/ STORMWATER MANAGEMENT/ NPDES BOUNDARY



	SOIL DESCRIPTION TABLE							
SYMBOL	NAME	SLOPE RANGE	CHARACTERISTICS	HYDROLOGIC SOIL GROUP	LIMITATIONS TO USE	RESOLUTIONS TO LIMITATIONS		
CmB	CLARKSBURG SILT LOAM	3 TO 8%	MODERATE HAZARD OF EROSION SLOW PERMEABILITY. HIGH AVAILABLE MOISTURE CAPACITY.	С	POSS. SINKHOLE FORMATION; PIPING	SINKHOLE REPAIR ANTI-SEEP COLLAR		
WaB	WASHINGTON SILT LOAM	3 TO 8%	MODERATE HAZARD OF EROSION MODERATE PERMEABILITY. HIGH AVAILABLE MOISTURE CAPACITY.	В	POSS. SINKHOLE FORMATION; PIPING	SINKHOLE REPAIR ANTI-SEEP COLLAR		

RECEIVING WATERCOURSE TABLE					
NAME	CLASSIFICATION				
LITTLE CEDAR CREEK*	HIGH QUALITY, COLD WATER FISHERY				

\* DENOTES SPECIAL PROTECTION WATERSHED

### OWNER'S STATEMENT OF ACKNOWLEDGEMENT

WE THE OWNERS OF THIS PLAT OF LAND BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY WE ARE THE SOLE OWNERS OF THIS PROPERTY IN PEACEFUL POSSESSION OF IT AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE OF SAME, HEREBY DEDICATE TO THE TOWNSHIP OF BETHLEHEM FOR PUBLIC USE ALL THE ROAD RIGHTS-OF-WAY, UTILITY EASEMENTS AND RIGHTS-OF-WAY OF PUBLIC IMPROVEMENTS SUCH AS SEWER LINES AND STORM DRAINAGE FACILITIES AS SHOWN ON THIS SUBDIVISION PLAN. IT HAS ALSO BEEN NOTED THAT STORMWATER BMPs ARE FIXTURES THAT CANNOT BE ALTERED OR REMOVED WITHOUT APPROVAL BY THE TOWNSHIP AND/OR NORTHAMPTON COUNTY CONSERVATION DISTRICT. WE DO FURTHER DEPOSE AND SAY THAT WE HAVE COMPLIED WITH ALL REQUIREMENTS AND PROVISIONS OF THE BETHLEHEM TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND SHALL SAVE THE TOWNSHIP HARMLESS AND INDEMNIFY THE TOWNSHIP OF BETHLEHEM AGAINST ANY LIABILITY OR LOSS RESULTING FROM THE SUBDIVISION OF THIS PLAT OF LAND FOR WHATEVER REASON PRESENT OR FUTURE.

	OWNERS'				SIGNATURES
SWORN AND	SUBSCRIBED	BEFORE ME	THIS	DAY OF	, 20

DUMPED, OR DISCHARGED AT THE SITE.

STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

GENERATED SHALL BE DISPOSED OF AS NOTED ABOVE

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN NOTES THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA OF PROPOSED WORK.

MITIGATED BY THE PROPOSED INFILTRATION BEDS, RE-VEGETATING DISTURBED AREAS, AND

DIRECTING RUNOFF TO OTHER VEGETATED AREAS. AS A RESULT OF THE USE OF THESE

2. THE INCREASE IN IMPERVIOUS AREA AND THE RESULTING THERMAL IMPACT WILL BE

CONTROLS, ANY THERMAL IMPACT CAUSED BY THIS PROJECT WILL BE NEGLIGIBLE. 3. THE PCSM PLAN HAS BEEN PLANNED, DESIGNED AND IMPLEMENTED TO BE CONSISTENT

4. THERE ARE NO EXISTING OR PROPOSED RIPARIAN FOREST BUFFERS AS PART OF THIS

MARKING OF, INSTALLATION AND COMPLETION OF THE DETENTION BASIN AND SPRAY

MARKING FOR PROTECTION OF THE AREAS OF MINIMIZED SOIL COMPACTION IS ALSO REQUIRED. SEE LIST OF CRITICAL STAGES UNDER PCSM BMP INSTALLATION SEQUENCE.

6. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED,

7. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY

8. ANTICIPATED CONSTRUCTION WASTES INCLUDE BUT ARE NOT LIMITED TO LUMBER, SHEET ROCK, ASPHALT, CONCRETE AND OTHER TYPICAL BUILDING MATERIALS. ANY WASTES

STANDARDS FOR THE RECEIVING WATER COURSE. A SINK HOLE REPAIR DETAIL IS

IRRIGATION SYSTEMS TO ENSURE CONSISTENCY WITH THE PLAN. OBSERVATION OF THE

5. A LICENSED PROFESSIONAL OR QUALIFIED DESIGNEE SHOULD BE ON SITE FOR THE

WITH THE EROSION AND SEDIMENT CONTROL PLAN.

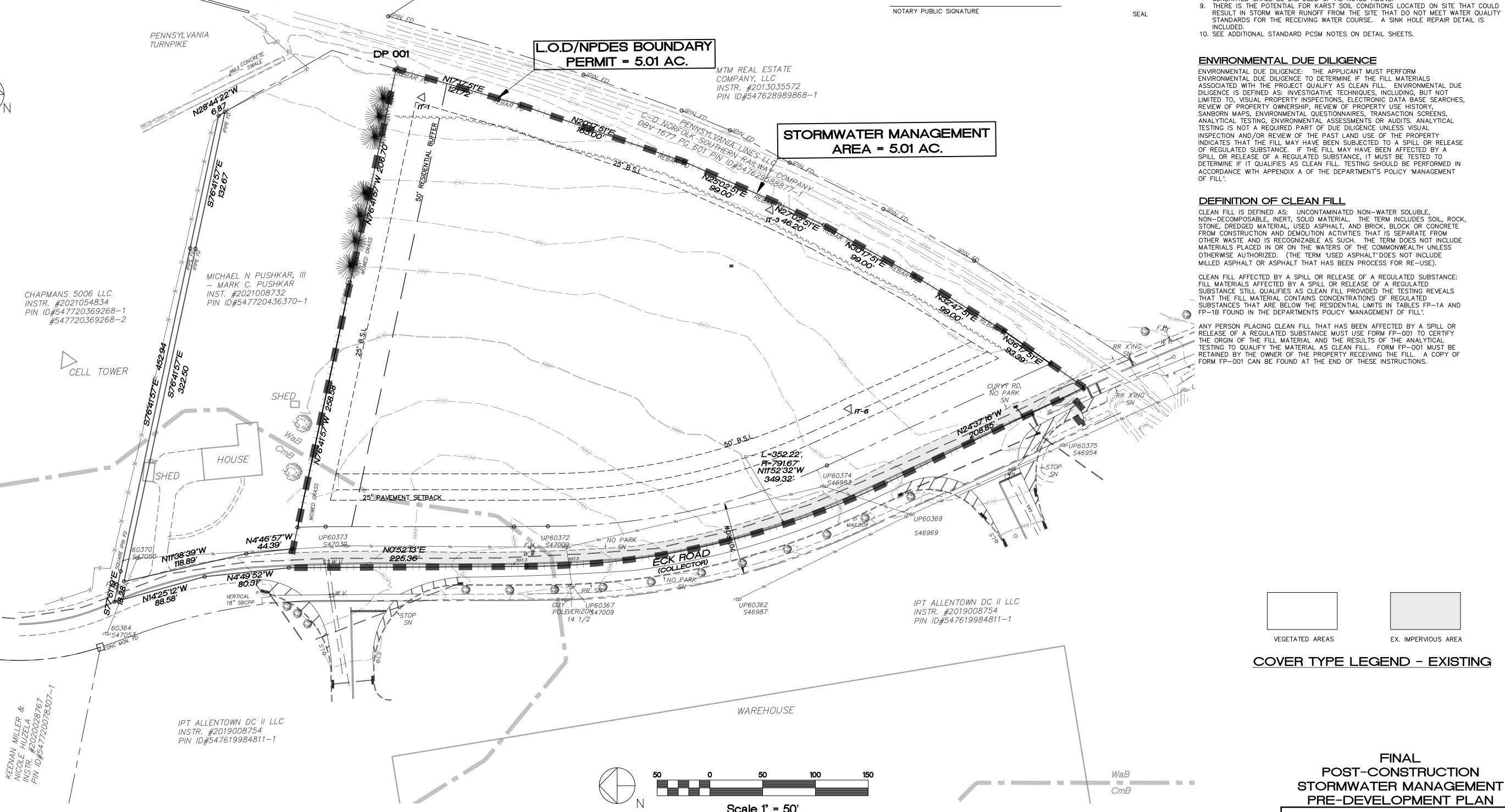
CURRENT PROJECT.

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VEGETATED AREAS EX. IMPERVIOUS AREA COVER TYPE LEGEND - EXISTING

> FINAL POST-CONSTRUCTION STORMWATER MANAGEMENT PRE-DEVELOPMENT PLAN

ENGINEERING COMPANY

CONSULTING ENGINEERS CML . STRUCTURAL . MECHANICAL . MACHINERY 609 Hamilton Street • Allentown, PA 18101

Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP SCALE 1"= 50' U.N.O

DATE MAY 15, 2023 J.G. PETRUCCI CO, INC. 171 ROUTE 173

LEHIGH COUNTY, PENNSYLVANIA PETRUCCI SUITE 201
DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802

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

POCS SERIAL NUMBER

20222283634

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PLAN PREPARER'S SIGNATURE

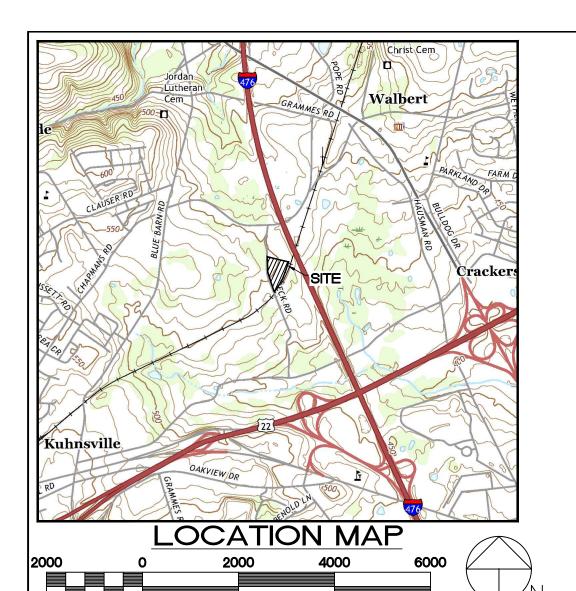
the information shown on the drawings.

of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid.

# DATE

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.



# **LEGEND**

Scale 1" = 2000"

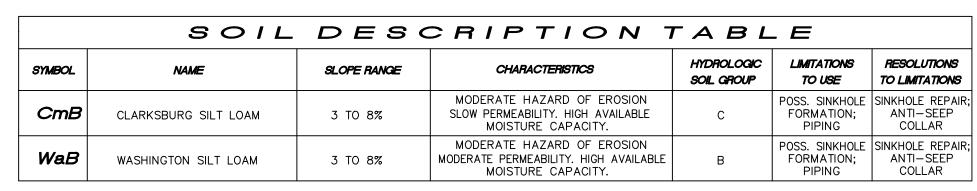
### EXISTING FEATURES

2 FT. CONTOUR 10 FT. CONTOUR SPOT ELEVATION + 311.55 CONCRETE CURB ========= EDGE OF PAVEMENT CONCRETE WALK OR PAD **WOOD GUIDERAIL** ,  $\circ$   $\circ$   $\circ$   $\circ$   $\circ$   $\circ$ DIRT/GRAVEL ROAD \_\_\_\_\_\_ STORM SEWER & INLETS SANITARY SEWER & MANHOLE WATER LINE & VALVE OVERHEAD ELECTRIC EASEMENT LINE PAINT LINES PROPERTY LINES ADJOINERS' PROPERTY LINES RIGHT-OF-WAY \_\_\_\_\_\_ SIGN POST O SIGN mTREE LINE DECIDUOUS TREE  $\varnothing$  UP UTILITY POLE WATER TIE

PROPOSED FEATURES INTERMEDIATE CONTOUR 2' CONTOUR 10' CONTOUR SPOT ELEVATION CONCRETE CURB EDGE OF PAVEMENT CONCRETE WALK OR PAD STORM SEWER & INLET SANITARY SEWER & MANHOLE WATER LINE & VALVE CURB OPENING END CURB WITH TAPER RIP TRAP APRON

### STORMWATER FEATURES

LIMIT OF DISTURBANCE/ STORMWATER MANAGEMENT/ NPDES BOUNDARY



MICHAEL N PUSHKAR, III

PIN ID#547720436370-1

- MARK C. PUSHKAR

INST. #2021008732

HOUSE

IPT ALLENTOWN DC II LLC INSTR. #2019008754 PIN ID#547619984811-1

R=585.00'

N0007'36"W

26.65'

PENNSYLVANIA

TURNPIKE

RECEIVING WATERCOURSE TABLE					
NAME	CLASSIFICATION				
LITTLE CEDAR CREEK*	HIGH QUALITY, COLD WATER FISHERY				

MTM REAL ESTATE

PIN ID#547628989868-1

COMPANY, LLC INSTR. #2013035572

\* DENOTES SPECIAL PROTECTION WATERSHED

L.O.D/NPDES BOUNDARY PERMIT = 5.01 AC.

### PCSM STRUCTURAL BMP INSTALLATION SEQUENCE:

THE FOLLOWING OUTLINES AN OVERALL SEQUENCE FOR ORDER OF STRUCTURAL BMP INSTALLATION. REFER TO INDIVIDUAL BMP CONSTRUCTION NOTES AND SEQUENCES ON DETAIL SHEET FOR SPECIFIC INFORMATION ON EACH BMP. THE SEQUENCE OF IMPLEMENTATION AND INSTALLATION WILL FOLLOW THE STAGING OF EARTHMOVING ACTIVITIES PRESENTED IN THE EROSION AND SEDIMENT

CONTROL PLANS AND NARRATIVE. THIS WILL MINIMIZE SEDIMENT ACCUMULATION IN THE AREAS NOT DISTURBED.

CONSTRUCTION TO PROTECT INFILTRATION AREAS FROM COMPACTION THE DETENTION BASIN IS TO BE CONSTRUCTED TOWARDS THE START OF THE

PROJECT SO THAT DISTURBED AREAS IN THE BASIN ARE STABILIZED PRIOR TO

THE LIMITS OF DISTURBANCE SHALL BE MARKED PRIOR TO START OF

REVEGETATE/RESTORATION IS ALSO TO BE IMPLEMENTED AS A FINAL STEP IN CONSTRUCTION AND SITE STABILIZATION.

CRITICAL STAGES OF IMPLEMENTATION FOR WHICH A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON SITE TO PERFORM REQUIRED OBSERVATIONS

- 1. MARKING OF LIMITS OF DISTURBANCE FOR SPRAY IRRIGATION AREA AND
- OVERALL LIMITS. INSTALLATION OF DETENTION BASIN OUTLET CONTROL STRUCTURE.
- INSTALLATION OF SPRAY IRRIGATION SYSTEM. 4. OVERSIGHT FOR THE SPRAY IRRIGATION SYSTEM ACTIVATION.

SEE STAGING OF EARTH MOVING ACTIVITIES.

STORMWATER MANAGEMENT

AREA = 5.01 AC.

### ENVIRONMENTAL DUE DILIGENCE

DUMPED, OR DISCHARGED AT THE SITE.

STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

GENERATED SHALL BE DISPOSED OF AS NOTED ABOVE

10. SEE ADDITIONAL STANDARD PCSM NOTES ON DETAIL SHEETS.

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WITH THE EROSION AND SEDIMENT CONTROL PLAN.

CURRENT PROJECT.

3. THE PCSM PLAN HAS BEEN PLANNED, DESIGNED AND IMPLEMENTED TO BE CONSISTENT

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REQUIRED. SEE LIST OF CRITICAL STAGES UNDER PCSM BMP INSTALLATION SEQUENCE.

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OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY

8. ANTICIPATED CONSTRUCTION WASTES INCLUDE BUT ARE NOT LIMITED TO LUMBER, SHEET ROCK, ASPHALT, CONCRETE AND OTHER TYPICAL BUILDING MATERIALS. ANY WASTES

9. THERE IS THE POTENTIAL FOR KARST SOIL CONDITIONS LOCATED ON SITE THAT COULD RESULT IN STORM WATER RUNOFF FROM THE SITE THAT DO NOT MEET WATER QUALITY

STANDARDS FOR THE RECEIVING WATER COURSE. A SINK HOLE REPAIR DETAIL IS

5. A LICENSED PROFESSIONAL OR QUALIFIED DESIGNEE SHOULD BE ON SITE FOR THE

### **DEFINITION OF CLEAN FILL**

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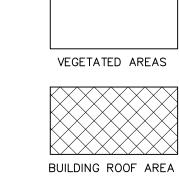
DURING CONSTRUCTION: TRIPLE NET INVESTMENTS LXVI, LLC 171 STATE ROUTE 173, SUITE 201 ASBURY, NEW JERSEY 08802

POST CONSTRUCTION: LOT OWNER

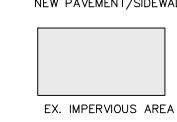
### PCSM STRUCTURAL BMPs

1. RUNOFF CAPTURE AND REUSE (BMP 6.5.2) - SPRAY IRRIGATION

1. RE-VEGETATE AND REFOREST DISTURBED AREAS USING NATIVE SPECIES (BMP 5.6.3) NOTE: SEE REVEGETATE AND REFOREST CHECKLIST ON SHEET 6.







**COVER TYPE LEGEND - PROPOSED** 

FINAL POST-CONSTRUCTION STORMWATER MANAGEMENT POST-DEVELOPMENT PLAN

ENGINEERING COMPANY

CONSULTING ENGINEERS CIVIL . STRUCTURAL . MECHANICAL . MACHINERY

609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP

JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023 171 ROUTE 173

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of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

IPT ALLENTOWN DC II LLC INSTR. #2019008754

PIN ID#547619984811-1

### CALL BEFORE YOU DIG!

CHAPMANS 5006 LLC

INSTR. #2021054834

PIN ID#547720369268-1

#547720369268-2

CELL TOWER

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL

POCS SERIAL NUMBER 20222283634

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



OLEVERIZON 47009

### **ENGINEER'S STATEMENT**

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

WAREHOUSE

PLAN PREPARER'S SIGNATURE

# DATE

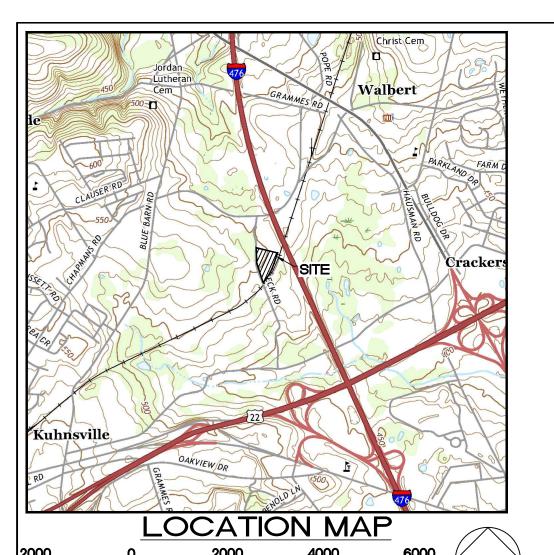
ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

CmB

LEHIGH COUNTY, PENNSYLVANIA PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

J.G. PETRUCCI CO, INC.



### **LEGEND**

Scale 1" = 2000'

EXISTING FEATURES 2 FT. CONTOUR 10 FT. CONTOUR SPOT ELEVATION + 311.55 CONCRETE CURB ========= EDGE OF PAVEMENT CONCRETE WALK OR PAD **WOOD GUIDERAIL** ,  $\circ$   $\circ$   $\circ$   $\circ$   $\circ$   $\circ$ DIRT/GRAVEL ROAD \_\_\_\_\_\_ STORM SEWER & INLETS SANITARY SEWER & MANHOLE WATER LINE & VALVE OVERHEAD ELECTRIC EASEMENT LINE PAINT LINES PROPERTY LINES ADJOINERS' PROPERTY LINES RIGHT-OF-WAY \_\_\_\_\_ SIGN POST O SIGN mTREE LINE DECIDUOUS TREE  $\varnothing$  UP UTILITY POLE WATER TIE

PROPOSED FEATURES INTERMEDIATE CONTOUR 2' CONTOUR 10' CONTOUR SPOT ELEVATION CONCRETE CURB EDGE OF PAVEMENT CONCRETE WALK OR PAD STORM SEWER & INLET SANITARY SEWER & MANHOLE WATER LINE & VALVE CURB OPENING END CURB WITH TAPER RIP TRAP APRON

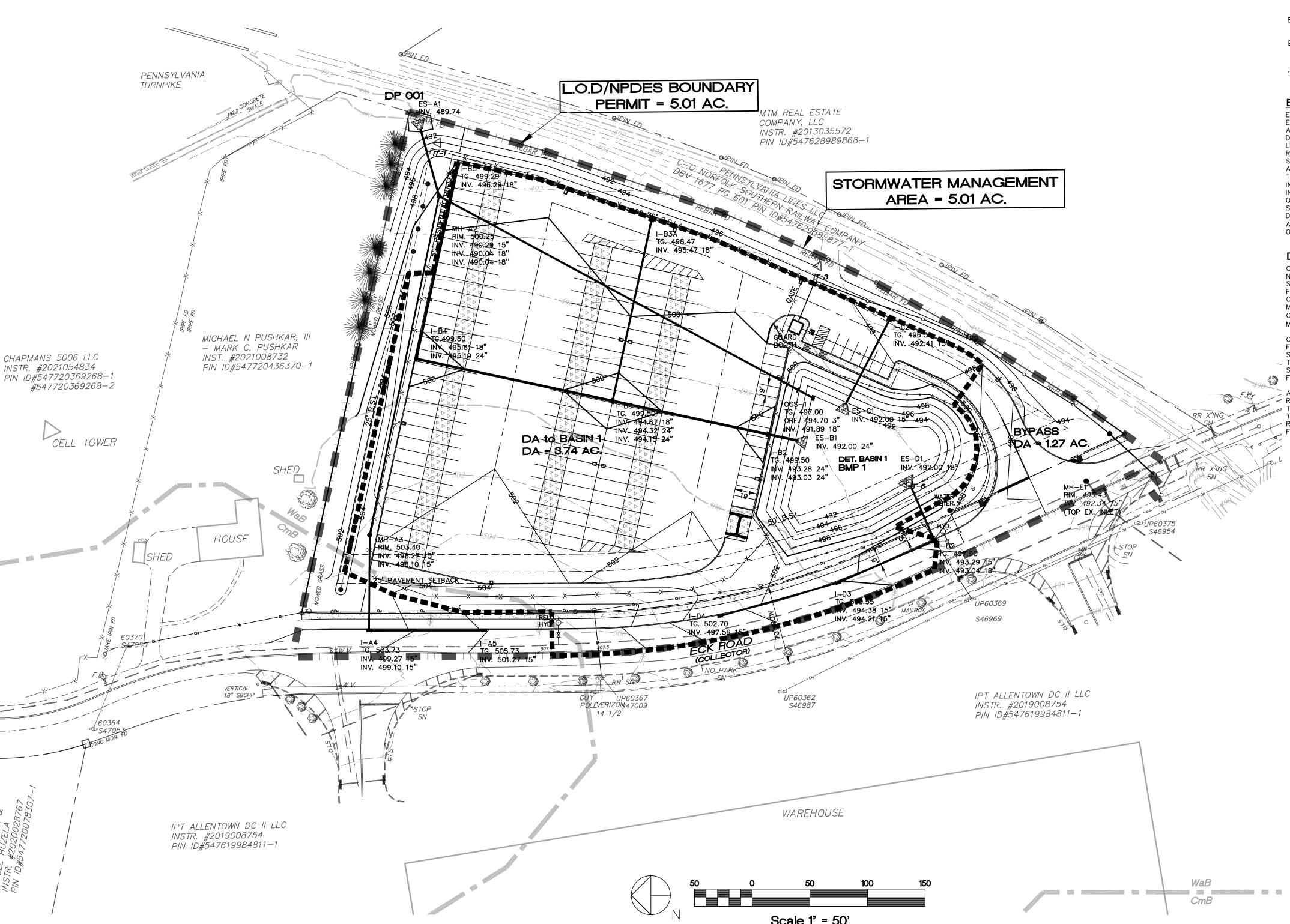
### STORMWATER FEATURES

LIMIT OF DISTURBANCE/ STORMWATER MANAGEMENT/ NPDES BOUNDARY SWM DRAINAGE AREA BOUNDARY

SOIL DESCRIPTION TABLE **LIMITATIONS** HYDROLOGIC RESOLUTIONS CHARACTERISTICS SYMBOL SLOPE RANGE TO USE TO LIMITATIONS SOIL GROUP MODERATE HAZARD OF EROSION POSS. SINKHOLE SINKHOLE REPAIR; **CmB** 3 TO 8% CLARKSBURG SILT LOAM SLOW PERMEABILITY. HIGH AVAILABLE FORMATION; ANTI-SEEP MOISTURE CAPACITY. PIPING COLLAR MODERATE HAZARD OF EROSION POSS. SINKHOLE SINKHOLE REPAIR; WaB MODERATE PERMEABILITY. HIGH AVAILABLE FORMATION; ANTI-SEEP WASHINGTON SILT LOAM 3 TO 8% MOISTURE CAPACITY. COLLAR PIPING

RECEIVING WATERCOURSE TABLE					
NAME	CLASSIFICATION				
LITTLE CEDAR CREEK*	HIGH QUALITY, COLD WATER FISHERY				

\* DENOTES SPECIAL PROTECTION WATERSHED



POST CONSTRUCTION STORMWATER MANAGEMENT PLAN NOTES I. THERE ARE NO WETLANDS LOCATED ON OR ADJACENT TO THE AREA OF PROPOSED WORK.

- 2. THE INCREASE IN IMPERVIOUS AREA AND THE RESULTING THERMAL IMPACT WILL BE MITIGATED BY THE PROPOSED INFILTRATION BEDS, RE-VEGETATING DISTURBED AREAS, AND DIRECTING RUNOFF TO OTHER VEGETATED AREAS. AS A RESULT OF THE USE OF THESE CONTROLS, ANY THERMAL IMPACT CAUSED BY THIS PROJECT WILL BE NEGLIGIBLE.
- 3. THE PCSM PLAN HAS BEEN PLANNED, DESIGNED AND IMPLEMENTED TO BE CONSISTENT WITH THE EROSION AND SEDIMENT CONTROL PLAN. 4. THERE ARE NO EXISTING OR PROPOSED RIPARIAN FOREST BUFFERS AS PART OF THIS
  - CURRENT PROJECT. 5. A LICENSED PROFESSIONAL OR QUALIFIED DESIGNEE SHOULD BE ON SITE FOR THE MARKING OF, INSTALLATION AND COMPLETION OF THE DETENTION BASIN AND SPRAY IRRIGATION SYSTEMS TO ENSURE CONSISTENCY WITH THE PLAN. OBSERVATION OF THE MARKING FOR PROTECTION OF THE AREAS OF MINIMIZED SOIL COMPACTION IS ALSO REQUIRED. SEE LIST OF CRITICAL STAGES UNDER PCSM BMP INSTALLATION SEQUENCE.
  - 6. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
  - 7. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY
  - STABILIZED, OR PLACED IN TOPSOIL STOCKPILES. 8. ANTICIPATED CONSTRUCTION WASTES INCLUDE BUT ARE NOT LIMITED TO LUMBER, SHEET ROCK, ASPHALT, CONCRETE AND OTHER TYPICAL BUILDING MATERIALS. ANY WASTES
  - GENERATED SHALL BE DISPOSED OF AS NOTED ABOVE 9. THERE IS THE POTENTIAL FOR KARST SOIL CONDITIONS LOCATED ON SITE THAT COULD RESULT IN STORM WATER RUNOFF FROM THE SITE THAT DO NOT MEET WATER QUALITY STANDARDS FOR THE RECEIVING WATER COURSE. A SINK HOLE REPAIR DETAIL IS
- 10. SEE ADDITIONAL STANDARD PCSM NOTES ON DETAIL SHEETS.

### ENVIRONMENTAL DUE DILIGENCE

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT

### **DEFINITION OF CLEAN FILL**

CLEAN FILL IS DEFINED AS: UNCONTAMINATED NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESS FOR RE-USE).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENTS POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

> FINAL POST-CONSTRUCTION STORMWATER MANAGEMENT DRAINAGE AREAS PLAN

# ENGINEERING COMPANY

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1429 ECK ROAD OUTDOOR STORAGE

SOUTH WHITEHALL TOWNSHIP SCALE 1"= 50' U.N.O LEHIGH COUNTY, PENNSYLVANIA DATE MAY 15, 2023 J.G. PETRUCCI CO, INC. PCSM-171 ROUTE 173

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unauthorized use of this document. Reproduction of this drawing

documents signed and sealed by the Engineer of Record are valid. # DATE

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PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

### SPRAY IRRIGATION INSPECTION AND MAINTENANCE:

GENERAL REQUIREMENTS:

THE CONTRACTOR SHALL PROVIDE IRRIGATION MAINTENANCE FOR ONE CALENDAR YEAR. AFTER THE FIRST YEAR THE CONTRACTOR CAN PROVIDE SERVICE CONTRACT WITH THE OWNER OR THE OWNER SHALL CONTINUE IRRIGATION MAINTENANCE ON THEIR OWN.

ANNUAL START UP (ONCE TEMPERATURE IS REGULARLY ABOVE FREEZING): INSPECT WET WELL PUMP, FLOAT SWITCHES, INTAKE SCREEN, AND VERIFY OPERATIONS FOR

- CURRENT YEAR, REPAIR AS REQUIRED. POWER UP CONTROLLER VERIFY OPERATIONS REPAIR AND AS REQUIRED. CLEAR OUT OLD
- VOLUME AND PREPARE FOR CURRENT YEAR VOLUMES. 3. INSPECT ELECTRIC VALVES. CHECK AND VERIFY CORRECT ELECTRIC CONNECTIONS TO
- CONTROLLER DECODERS AND SOLENOIDS. 4. INSPECT SPRINKLERS TO VERIFY POP UP OPERATIONS ROTATION, AND SPRAY CORRECT
- SPRAY PATTERN ARCS
- INSPECT FLOW METER AND VERIFY CORRECT FLOW DATA. INSPECT RAIN SWITCH CHECK BATTERIES AND CORRECT OPERATIONS.
- INSPECT AND TEST HIGH PRESSURE BLOW OFF VALVE. INSPECT AND VERIFY OPERATION OF AUTO DRAIN VALVE.
- INSPECT AND CLEAN OUT VALVE BOXES FROM SOIL OR CRITTERS.
- 10. INSPECT AND CHECK GROUNDING TO CONTROLLER.
- . CHECK THE PRESSURE OF THE SYSTEM. 12. REPLACE BROKEN VALVE BOX LIDS.

MONTHLY MAINTENANCE.

CONFIRM CONTROLLER OPERATION AND PROGRAMMING. INSPECT ELECTRIC VALVES, MANUAL VALVES QUICK COUPLER VALVES. SPRINKLERS FOR OPERATION. CLEAR OUT VEGETATION AROUND VALVE BOXES AND SPRINKLERS. INSPECT AND CHECK SCREEN AT PUMP INTAKE. VEGETATION AND POND BOTTOM TO BE NO LESS THAN 18 INCHES FROM THE INTAKE SCREEN AT ALL TIMES. COLLECT MONTHLY FLOW TOTALS. PERFORM AN ANNUAL IRRIGATION AUDIT TO DETERMINE EFFICIENCY OF THE SYSTEM. SELECT A SAMPLE AREA AND ROTATE LOCATION ANNUALLY. ANY SYSTEM COMPONENTS WHICH ARE IN NEED OF REPAIR OR REPLACEMENT SHALL BE ATTENDED TO IMMEDIATELY. BRUSH WITHIN TEN FEET OF THE SPRAY HEADS SHALL BE CLEARED ON AT LEAST YEARLY BASIS.

INSTALLER: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM FIVE YEARS DOCUMENTED EXPERIENCE. ONE CYCLE IS ENOUGH PER ZONE. STOP WHEN MAJORITY OF THE MIST IS COMPLETE. COLLECT TOTAL FLOWS FOR EACH MONTH.

### PCSM/IRRIGATION SPRAY CONSTRUCTION SEQUENCE:

CONTRACTOR SHALL MAKE THEMSELVES FAMILIAR WITH ALL ASPECTS OF THE CONSTRUCTION OF THE PCSM SYSTEM. PRIOR TO ANY TRENCHING CONSTRUCTION OR INSTALLATION, THE CONTRACTOR SHALL FLAG OUT AREA TO ENSURE THE BEST LOCATION OF PIPE, SPRINKLER HEADS, VALVES, ETC. ANY DEVIATIONS IN LAYOUT SHALL BE BROUGHT TO THE OWNERS REPRESENTATIVE BEFORE PROCEEDING.

THE CONTRACTOR IS EXPECTED TO MAKE MINOR ADJUSTMENTS OF WIRE, PIPE AND VALVE LOCATIONS AS TO NOT CONFLICT WITH EXISTING OR FUTURE UTILITIES. SPRINKLER MANUFACTURER TO CONFIRM ORIFICE SIZE FOR SPRINKLER HEAD BASED ON SPECIFIED GPM AND SPRAY RADIUS.

- **IRRIGATION SEQUENCE:** INSTALLATION OF WET WELL AND INTAKE PIPE AND SCREEN
- INSTALLATION OF GAS EASEMENT SLEEVE INSTALLATION OF MAIN LINE, VALVES AND COMMUNICATION CABLE
- INSTALLATION OF LATERAL LINES
- INSTALLATION OF SPRINKLER HEADS INSTALLATION OF SUBMERSIBLE PUMP
- DECODER TEST B. TESTING OF SYSTEM
- 9. ADJUSTMENT OF ALL SPRINKLER HEADS 10. FLOW SENSOR TEST
- 11. COMPLETION OF AS-BUILT DRAWINGS CONTACT THE NORTHAMPTON COUNTY CONSERVATION DISTRICT AS TO ANY CHANGES IN THE

SPRAY SYSTEM AND SUPPLY THE NCCD WITH AS-BUILT AND IMPACT OF CHANGES.

GENERAL PCSM/IRRIGATION: SYSTEM WILL BE ACTIVE FROM APRIL 15TH TO OCTOBER 15TH

### SPRING START UP:

- 1. CLOSE WINTER BYPASS VALVE 2. OPEN SPRING GATE VALVES
- . CHECK POND LEVEL SENSORS
- 4. SLOWLY FILL MAIN LINE 5. CHECK FOR LEAKS AND PROPER ALIGNMENT OF HEADS 6. REPAIR AND ADJUST SYSTEM AS REQUIRED FOR PROPER OPERATION

### WARRANTY + MAINTENANCE:

CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN GOOD OPERATING CONDITION AND COORDINATE THE OPERATION OF THE SYSTEM WITH THE ON SITE MANAGER THROUGH MONTHLY INSPECTIONS OF SYSTEM COMPONENTS AND MAKE REPAIRS OR REPLACEMENTS OF PARTS AS NECESSARY. THIS INCLUDES CHECKING AND VERIFYING OPERATION IN EACH STATION, ALIGNMENT OF HEADS, RAIN SENSORS, FREEZE SENSOR AND CENTRAL CONTROL.

### WINTERIZATION:

WHEN COLD WEATHER APPROACHES AND CHANCE FOR FREEZING CONDITIONS EXIST, THE IRRIGATION SYSTEM SHALL BE DRAINED AFTER

### WINTERIZATION PROCEDURE SHALL INCLUDE THE FOLLOWING:

1. OPERATE SYSTEM TO DRAIN BASINS TO LOWEST POSSIBLE LEVEL 2.CLOSE INTAKE PIPE VALVE

- 3.OPEN WINTER BYPASS VALVE IN OUTLET STRUCTURE 4.BLOW OUT EACH STATION TWICE WITH COMPRESSED AIR 5. WINTERIZE AND TURN OFF PUMP
- 6.CLOSE DISCHARGE VALVE AT PUMP 7.OPEN WINTER BYPASS VALVE TO OUTFLOW STRUCTURE 8. FOLLOWING DRAINING OF SYSTEM, TURN THE CONTROLLER TO "SYSTEM/OFF" OR "AUTO/OFF" AS APPROPRIATE.
- THE APPLICANT/OWNER IS RESPONSIBLE TO MONITOR AND RECORD THE FLOW THROUGH THE SPRAY IRRIGATION SYSTEM TO ENSURE THE REQUIRED VOLUME IS BEING APPLIED.
- THE ENTIRE VOLUME OF 87.892 CUBIC FEET SHALL BE UTILIZED WITHIN 7 DAYS OF THE BEGINNING OF EACH STORM EVENT.
- THE SPRAY IRRIGATION SYSTEM SHALL NOT BE ACTIVATED UNTIL APPROXIMATELY 24 HOURS AFTER ANY SIGNIFICANT PRECIPITATION STORM EVENT. THIS SHALL BE ACCOMPLISHED VIA SPECIFIED RAIN SENSOR AND CONTROLLER WITH APPROPRIATE
- THE SPRAY IRRIGATION SYSTEM SHOULD BE DESIGNED TO COMPLETELY DRAIN WHEN IT IS SHUT OFF.

 $P \cap \cap T$ 

MOTES

0.25#/1000 SF

### BASIN/WATER TOLERANT SEED MIXTURES

BUTANICAL NAME	RUUT	NOTES
UNIFORM COVER (MECHANICAL	BROADCAST)	
andropogon virginicus	seed	2#/1000 SF
andropogon elliotti	seed	1#/1000 SF
panicum virgatum	seed	0.5#/1000 SF
dichanthelium scoparium	seed	0.25#/1000 SF
carex tribuloides	seed	0.25#/1000 SF
lolium multiflorum	seed	0.5#/1000 SF
festuca rubra commutata	seed	2#/1000 SF
festuca ovina glauca	seed	2#/1000 SF
SWATH/GROUP COVER (HAND	SPREAD)	
aster novae-angliae	seed	1#/1000 SF
eupatorium perpurea	seed	0.25#/1000 SF
iris versicolor	seed	0.25#/1000 SF

### MEADOW SEED MIXTURE

lobelia cardinalis

DOTANICAL NIAME

SEEDING RATE: 20#/ACRE

% OF MIX	COMMON NAME	BOTANICAL NAME
 35%	BIG BLUESTEM, 'PRAIRIE VIEW'	ANDROPOGON GERARDII, 'PRAIRIE VIEW'-IN ECOTYPE
21%	VIRGINIA WILDRYE,	ELYMUS VIRGINICUS, PA ECOTYPE
18%	SWITCHGRASS, 'SHAWNEE'	PANICUM VIRGATUM, 'SHAWNEE'
10%	COASTAL PANICGRASS, 'ATLANTIC'	PANICUM AMARUM, 'ATLANTIC'-VA ECOTYPE
5%	PARTRIDGE PEA	CHAMAECRISTA FASCICULATA (CASSIA F.), PA ECOTYPE
3%	BLACKEYED SUSAN	RUDBECKIA HIRTA, COASTAL PLAIN NC ECOTYPE
3%	INDIANGRASS	SORGHASTRUM NUTANS, PA ECOTYPE
2%	OXEYE SUNFLOWER	HELIOPSIS HELIANTHOIDES, PA ECOTYPE
1.5%	SHOWY TICKTREFOIL	DESMODIUM CANADENSE, PA ECOTYPE)
1%	PLAINS COREOPSIS	COREOPSIS TINCTORIA
0.4%	PANICLEDLEAF TICKTREFOIL	DESMODIUM PANICULATUM, PA ECOTYPE
0.1%	COMMON MILKWEED	ASCLEPIAS SYRIACA, PA ECOTYPE

NOTE: SEED MIX IS THE "NATIVE UPLAND WILDLIFE FORAGE & COVER MEADOW" MIX BY ERNST CONSERVATION SEEDS (WWW.ERNSTSEEDS.COM). SUBSTITUTE EQUIVALENT MAY BE PROVIDED UPON REVIEW AND APPROVAL

OF MIX BY DESIGN ENGINEER OR LANDSCAPE ARCHITECT.

### EXTENDED DRY DETENTION BASIN CONSTRUCTION NOTE:

AREAS RESERVED FOR EXTENDED DRY DETENTION BASIN SHALL BE PROTECTED FROM HEAVY CONSTRUCTION TRAFFIC DURING SITE DEVELOPMENT TO PREVENT COMPACTION OF THE UNDERLYING SOILS. DURING SUBGRADE PREPARATION, THE NATURAL SOIL AT THE BOTTOM OF EACH BMP EXCAVATION SHALL BE ROUGHED WITH A CHISEL PLOW, OR SIMILAR IMPLEMENT. TO A DEPTH OF FOUR TO SIX INCHES RATHER THAN GRADED SMOOTH. THE DESIGN ENGINEER, A CERTIFIED SOIL SCIENTIST, OR A PROFESSIONAL GEOLOGIST SHALL INSPECT AND CERTIFY THE SUBGRADE PREPARATION AT THE TIME OF CONSTRUCTION. THE INSPECTION AND CERTIFICATION DOCUMENTS FOR SUCH SYSTEMS SHALL BE SUBMITTED TO THE TOWNSHIP AND TOWNSHIP ENGINEER FOR DOCUMENTATION PURPOSES AND THE TOWNSHIP ENGINEER SHALL BE NOTIFIED 48-HOUR PRIOR TO SUBGRADE PREPARATION SO IT CAN HAVE A REPRESENTATIVE

### EXTENDED DRY DETENTION BASIN CONSTRUCTION SEQUENCE:

- INSTALL TEMPORARY SEDIMENT CONTROL BMP's AS SHOWN ON THE PLANS. EXCAVATE DETENTION BASIN TO PROPOSED INVERT DEPTH.
- INSTALL SURROUNDING EMBANKMENTS AND INLET AND OUTLET CONTROL STRUCTURES. 4. GRADE SUBSOIL IN BOTTOM OF BASIN AS SHOWN ON PLANS AND SPECIFICATION. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF
- NECESSARY. 5. COMPACT SURROUNDING EMBANKMENT AREAS AND AROUND INLET AND OUTLET STRUCTURES. 6. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR
- UPPER LAYER OF COMPOST, MULCH OR TOPSOIL AS SPECIFIED ON PLANS. 7. SEED AND APPLY GEO-TEXTILES, EROSION CONTROL BLANKETS AND OTHER EROSION CONTROL
- NOTE: ONCE COMPLETE, PROTECT DETENTION BASIN FROM SEDIMENT AT ALL TIMES DURING

CONSTRUCTION. COMPOST FILTER SOCKS, DIVERSION BERMS, AND/OR OTHER APPROPRIATE MEASURES SHALL BE USED AT THE TOE OF SLOPES THAT ARE ÁDJACENT TO DETENTION BASIN TO PREVENT SEDIMENT FROM WASHING INTO THESE AREAS DURING SITE DEVELOPMENT

### EXTENDED DRY DETENTION BASIN INSPECTION AND MAINTENANCE NOTES:

- 1. WHILE VEGETATION IS BEING ESTABLISHED, ADDITIONAL SEEDING, WATERING AND WEEDING MAY BE
- 2. DETRITUS MAY ALSO NEED TO BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
- 3. SEDIMENT REMOVAL SHOULD BE CONDUCTED WHEN BASIN IS COMPLETELY DRY. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZIED AND VEGETATED.
- 4. BASIN AREAS SHOULD BE INSPECTED AT LEAST FOUR TIMES PER YEAR AND AFTER EVERY STORM GREATER THAN 1 INCH FOR SEDIMENT BUILD-UP, EROSION, VEGETATIVE CONDITIONS, ETC.
- 5. STRUCTURES TO INSPECT INCLUDE BASIN BOTTOMS, TRASH RACKS, OUTLET STRUCTURES, RIPRAP OR GABION STRUCTURES AND INLETS.
- 6. VEGETATIVE COVER SHOULD BE MAINTAINED AT A MINIMUM OF 95%. IF VEGETATIVE COVER HAS BEEN REDUCED BY 10%, VEGETATION SHOULD BE REESTABLISHED.

FREQUENCY

### EXTENDED DRY DETENTION BASIN MAINTENANCE SCHEDULE

1. INSPECT FOR SEDIMENT ACCUMULATION	4 TIMES PER YEAR; AFTER 1" STORM EVENTS			
2. REMOVE ACCUMULATED SEDIMENT	AS NEEDED (BASIN DRY)			
3. INSPECT FOR DEBRIS (DEAD VEGETATION AND TRASH)	4 TIMES PER YEAR; AFTER 1" STORM EVENTS			
4. INSPECT VEGETATED AREAS FOR EROSION	ANNUALLY			
5. REPAIR EROSION AREAS	AS NEEDED			
6. RAKE OUT DEAD VEGETATION	ANNUALLY, EARLY SPRING			
7. PLUG 3"Ø OCS ORIFICE TO ALLOW PONDING IN BASIN	ANNUALLY, EARLY SPRING			
8. INSPECT AND REMOVE INVASIVE PLANTS	ANNUALLY — JULY			
9. MOW TO A HEIGHT OF 6"	ANNUALLY — LATE FALL			
7. UNPLUG 3"Ø OCS ORIFICE TO ALLOW BASIN TO DRAIN	ANNUALLY — LATE FALL			
9. INSPECT DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY P.E.)	ANNUALLY			
10. ADJUST/CORRECT AS DETERMINED BY WET COMPARE TO AS-BUILT PLANS (BY P.E.)	AS NEEDED			
11. MAINTAIN RECORDS ON ALL ACTIVITIES	ANNUALLY			
12. CONDUCT EMERGENCY INSPECTIONS BY P.E.	AS NEEDED			

### OUTLET PROTECTION CONSTRUCTION SEQUENCE:

INSTALL OUTLET PIPE

MEASURES..

PREPARE SUBGRADE

TASK

- INSTALL OUTLET PROTECTION DEVICE IN ACCORDANCE WITH STANDARD CONSTRUCTION
- DETAILS #9-1 AND #9-2 INCLUDED IN THESE PCSM PLANS. 4 FOLLOW MAINTENANCE GUIDELINES AS SHOWN BELOW

### OUTLET PROTECTION MAINTENANCE SCHEDULE

TASK	FREQUENCY
1. INSPECT FOR DEBRIS, (LEAVES AND TRASH), EROSION, AND RIPRAP DISPLACEMENT	EARLY SPRING, FALL, AND AFTER MAJOR STORM EVENTS
2. CLEAR DEBRIS/REPAIR EROSION /REPLACE RIPRAP	AS NEEDED
3. INSPECT FOR SEDIMENT ACCUMULATION	ANNUALLY
4. REMOVE ACCUMULATED SEDIMENT	EVERY 5 -10 YEARS
6. CONDUCT EMERGENCY INSPECTIONS BY PROFESSIONAL ENGINEER	AS NEEDED
7. MAINTAIN RECORDS ON ALL ACTIVITY	ANNUALLY

### OUTLET PROTECTION INSPECTION AND MAINTENANCE NOTES:

- 1. OUTLET CONTROL DEVICES SHOULD BE INSPECTED AFTER SEVERE STORMS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY AND THAT THERE ARE NO EROSION PROBLEMS DEVELOPING. . INSPECT FOR DEBRIS AND SEDIMENT BUILDUP, AND RIPRAP DISPLACEMENT.
- 3. CLEAN OUT LEAVES, TRASH, DEBRIS, ETC., 4. REMOVE SEDIMENT BUILDUP EXCEEDING 2" IN DEPTH OR WHEN IT BEGINS TO CONSTRICT THE
- 5. THE SOURCE OF SEDIMENT CONTAMINATION SHOULD BE IDENTIFIED AND CONTROLLED WHEN
- NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE PRESENT. 6. REPLACE DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER IMMEDIATELY AFTER IT IS
- DISPLACED AND ESPECIALLY AFTER MAJOR STORM DISCHARGE EVENTS. 7. MAINTAIN RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITY.

### REVEGETATE AND REFOREST CONSTRUCTION NOTES:

APPROPRIATE NATIVE TREE SPECIES WITH ASSOCIATED GROUND COVER THAT HAS QUICK ESTABLISHMENT SHALL BE SELECTED. SELECTIONS SHALL MIMIC SURROUNDING NATIVE VEGETATION.

DECIDUOUS TREES SHALL BE 2" CALIPER MINIMUM. EVERGREEN SHALL BE 6' HEIGHT

### TREES AND SHRUBS SHOULD BE PLANTED ON APPROXIMATELY 8-FOOT CENTERS.

- REVEGETATE AND REFOREST CONSTRUCTION SEQUENCE: . INSTALL TEMPORARY SEDIMENT CONTROL BMP'S AS SHOWN ON THE ESPC PLANS. 2. PERFORM ALL OTHER EARTH MOVING ACTIVITIES TO THE GREATEST EXTENT POSSIBLE. STABILIZE AREAS UPGRADIENT FROM THE REVEGETATE/REFOREST AREA. ANY TREES AND
- IN PERIODS OF LITTLE RAIN OR DROUGHT 3. CLEAR AND GRUB SITE AND/OR PREPARE SOILS AS NEEDED. ELIMINATE UNDESIRABLE

SHRUBS SHOULD BE INSTALLED AT TIME OF YEAR WHÉN SUCCESSFUL ESTABLISHMENT OF

PLANTS WITHOUT IRRIGATION IS MOST LIKELY. TEMPORARY IRRIGATION MAY BE NEEDED

- SPECIES AHEAD OF PLANTING DATE. MARK PLANTING LAYOUT AT SITE. PURCHASE PLANTS AND PLANTING MATERIALS. 4. PLANT PROPOSED TREES AND SHRUBS, AS APPLICABLE, INCLUDING NECESSARY TREE
- 5. CONCURRENT WITH #4, STABILIZE REVEGETATE/REFOREST AREA WITH APPROPRIATE PERMANENT SOIL STABILIZATION METHODS, INCLUDING QUICK ESTABLISHING GROUND
- COVER. UTILIZE EROSION CONTROL MATTING OR BLANKETS PER PLAN IF NECESSARY BEGIN MAINTENANCE OF NEW PLANTINGS.

### REVEGETATE AND REFOREST INSPECTION AND MAINTENANCE NOTES:

- 1. MONITOR FOR BROWSING DAMAGE BY DEER, INVASION BY EXOTIC SPECIES AND OTHER
- 2. WATER AS NEEDED FOR PROPER PLANT ESTABLISHMENT. . UTILIZE MULCH TO MAINTAIN MOISTURE IN ROOT ZONE. PLACE 2-4 INCH LAYER, LEAVING
- SPACE AROUND TRUNKS. 4. CONTROL WEED GROWTH.
- MAINTAIN RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITY. 6. DEAD TREES TO BE REPLACED WITHIN 6 MONTHS.

### REVEGETATE AND REFOREST MAINTENANCE SCHEDULE

THE MOST CRITICAL PERIOD DURING REVEGETATE/REFOREST AREA ESTABLISHMENT IS MAINTENANCE OF THE NEWLY PLANTED TREES DURING CANOPY CLOSURE, TYPICALLY THE FIRST 3 TO 5 YEARS, ONGOING MAINTENANCE PRACTICES ARE NECESSARY, MAINTENANCE AND MONITORING PLANS SHOULD BE PREPARED FOR THE SPECIFIC SITE AND CARETAKERS NEED TO BE ADVISED OF REQUIRED DUTIES DURING THE REGULAR MAINTENANCE PERIOD.

### MAINTENANCE MEASURES THAT SHOULD BE PERFORMED REGULARLY:

PLANTINGS NEED DEEP REGULAR WATERING DURING THE FIRST GROWING SEASON, EITHER NATURAL WATERING VIA RAINFALL, OR PLANNED WATERING, VIA CARETAKER. PLANTING IN THE FALL INCREASES THE LIKELIHOOD OF SUFFICIENT RAIN DURING PLANTING ESTABLISHMENT.

### MULCHING

WATERING

DISTURBANCES.

MULCH WILL ASSIST IN MOISTURE RETENTION IN THE ROOT ZONE OF PLANTINGS, MODERATE SOIL TEMPERATURE, PROVIDE SOME WEED SUPPRESSION, AND RETARD EVAPORATION. USE COARSE, ORGANIC MULCH THAT IS SLOW TO DECOMPOSE IN ORDER MINIMIZE REPEAT APPLICATION APPLY 2-4 INCH LAYER, LEAVING AIR SPACE AROUND TREE TRUNK TO PREVENT FUNGUS

USE COMBINATION OF WOODCHIPS, LEAVES, AND TWIGS THAT ARE STOCKPILED FOR SIX MONTHS TO A YEAR.

### WEED CONTROL

WEED COMPETITION LIMITS BUFFER GROWTH AND SURVIVAL, THEREFORE WEEDS SHOULD BE CONTROLLED BY EITHER HERBICIDES, MOWING, OR WEED MATS:

### HERBICIDES

THIS IS A SHORT-TERM MAINTENANCE TECHNIQUE (2-3 YEARS) THAT IS GENERALLY CONSIDERED LESS EXPENSIVE AND MORE FLEXIBLE THAN MOWING, AND WILL RESULT IN A QUICKER ESTABLISHMENT OF THE BUFFER. HERBICIDE USE IS REGULATED BY THE PA DEPARTMENT OF AGRICULTURE. PROPER CARE SHOULD BE TAKEN TO ENSURE THAT PROXIMITY TO WATER FEATURES IS CONSIDERED.

### MOWING

MOWING CONTROLS THE HEIGHT OF THE EXISTING GRASSES, YET INCREASES NUTRIENT UPTAKE, THEREFORE COMPETITION FOR NUTRIENTS WILL PERSIST UNTIL THE CANOPY CLOSURE SHADES OUT LOWER LAYERS. A PLANTING LAYOUT SIMILAR TO A GRID FORMAT WILL FACILITATE EASE OF MOWING YET YIELD AN UNNATURALLY SPACED COMMUNITY. MOWING MAY RESULT IN STRIKES ON THE TRUNK UNLESS PROTECTIVE MEASURES ARE UTILIZED. MOWING SHOULD OCCUR TWICE EACH GROWING SEASON. MOWER HEIGHT SHOULD BE SET BETWEEN 8 -12 INCHES.

### WEED MATS

WEED MATS ARE GEO-TEXTILE FABRICS THAT ARE USED TO SUPPRESS WEED GROWTH AROUND NEWLY PLANTED VEGETATION BY PROVIDING SHADE AND PREVENTING SEED DEPOSITION. WEED MATS ARE INSTALLED AFTER PLANTING, AND SHOULD BE REMOVED ONCE THE TREES HAVE DEVELOPED A CANOPY THAT WILL NATURALLY SHADE OUT WEEDS.

### DEER DAMAGE

- DEER WILL BROWSE ALL VEGETATION WITHIN REACH, GENERALLY BETWEEN 5-6 FEET ABOVE THE GROUND
- APPROACHES TO MINIMIZE DAMAGE INCLUDE: 1) SELECTING PLANTS THAT DEER DO NOT PREFER (EX. PAPER BIRCH, BEECH, ASH,
- COMMON ELDERBERRY) 2) HOMEMADE DEER REPELLANTS
- 3) TREE SHELTERS TREE SHELTERS

HERBICIDE

- REPAIR BROKEN STAKES TIGHTEN STAKE LINES STRAIGHTEN LEANING TUBES CLEAN DEBRIS FROM TUBE
- REMOVE NETTING AS TREE GROWS REMOVE WHEN TREE IS APPROXIMATELY 2 INCHES WIDE

### INVASIVE PLANTS MONITOR RESTORATION SIGHT REGULARLY FOR ANY SIGNS OF INVASIVE PLANTS. APPENDIX B CONTAINS COMMON INVASIVE PLANTS FOUND IN PENNSYLVANIA.

CHOICE OF CONTROL METHOD IS BASED ON A VARIETY OF CONSIDERATIONS, BUT FALLS

INTO THREE GENERAL CATEGORIES: MECHANICAL MECHANICAL WITH APPLICATION OF HERBICIDE

### (PCSM) STANDARD NOTES:

POST CONSTRUCTION STORMWATER MANAGEMENT

### PERMIT TERMINATION

UPON PERMANENT STABLIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER \$102.22(A)(2) (RELATING TO PERMANENT STABLIZATION). 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 TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

- THE NOTICE OF TERMINATION MUST INCLUDE: (1) THE FACILITY NAME, ADDRESS AND LOCATION.
- (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 PSCM BMPS IN ACCORDANCE WITH

§102.8(M) AND PROOF OF COMPLIANCE WITH §102.8(M)(2).

### PCSM REQUIREMENTS

PCSM REPORTING AND RECORD KEEPING, 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 REPSONSIBLE 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 APPROPRIATE BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

### 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 FOLLOWS: "I(NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A. §4904 TO THE BEST OF MY 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 PROACTICES."

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

### 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 REPSONSIBLE 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 MAINTENANCE OF

FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN 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 TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A CONVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AN ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER \$102.7(B)(5) RELATING TO PERMIT

THE PERSON REPSONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT. NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVDE NOTICE THEROF TO

TERMINATION

THE DEPARTMENT.

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.

### FINAL POST-CONSTRUCTION STORMWATER MANAGEMENT

CONSULTING ENGINEERS

CIVIL • STRUCTURAL • MECHANICAL • MACHINERY 609 Hamilton Street • Allentown, PA 18101 Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

171 ROUTE 173

THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

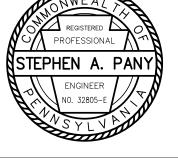
ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH

PETRUCCI SUITE 201
DEVELOPMENT - DESIGN/BUILD ASBURY, NEW JERSEY 08802

### PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED. THE SURVEYOR CONTACTED PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.



### **ENGINEER'S STATEMENT** L STEPHEN A. PANY, A REGISTERED PROFESSIONAL

ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The

contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

Pany & Lentz Engineering Company accepts no responsibility for

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# DATE REVISION

NOTES

ENGINEERING COMPANY

BMW JOB. NO. 2022258 SCALE 1"= 50' U.N.O MAY 15, 2023 J.G. PETRUCCI CO, INC.

PCSM-

INVERTED ROCK FILTER SINKHOLE REPAIR DETAIL

### STANDARD E&S WORKSHEET # 21 **Temporary and Permanent Vegetative Stabilization Specifications**

PROJECT NAME: 1429 Eck Road Outdoor Storage LOCATION: South Whitehall Township, Lehigh County PREPARED BY: BMW DATE: 05/01/23 CHECKED BY: MFS DATE: <u>05/01/23</u> SPECIFICATIONS: The Department recommends the use of the Penn State publication, "Erosion Control and Conservation Plantings on Noncropland," as the standard to use for the selection of species, seed specifications, mixtures, liming and fertilizing, time of seeding, and seeding methods. Specifications for these items may also be obtained from PennDOT's Publication # 408, Section 804 or by contacting the applicable county conservation district. Upon selection of a reference, that reference should be used to provide all specifications for seeding, mulching, and soil amendments. The following specification will be used for this project:

(PERMANENT) TOPSOIL PLACEMENT DEPTH: 6-8 \*SPECIES: PERENNIAL RYEGRASS/FINE FESCUE/KENTUCKY BLUE GRASS % PURE LIVE SEED: <u>81/76/64</u> APPLICATION RATE 15/35/25 LB./ACRE FERTILIZER TYPE: (X-X-X)LB./ACRÉ FERTILIZER APPL. RATE: LIMING RATE: T./ACRE MULCH TYPE: STRAW MULCHING RATE: T./ACRE ANCHOR MATERIAL ANCHORING METHOD: CRIMPING BY TRACTOR IMPLEMENT RATE OF ANCHOR MATERIAL APPL. LB./ACRE SEEDING SEASON DATES: MARCH 1 TO AUGUST 15 (PERMANENT - STEEP SLOPE) TOPSOIL PLACEMENT DEPTH: \*SPECIES: % PURE LIVE SEED: LB./ACRE APPLICATION RATE FERTILIZER TYPE: (X-X-X)LB./ACRÉ FERTILIZER APPL. RATE: LIMING RATE T./ACRE **MULCH TYPE** T./ACRE MULCHING RATE ANCHOR MATERIAL **ANCHORING METHOD:** LB./ACRE RATE OF ANCHOR MATERIAL APPL. SEEDING SEASON DATES: \*If more than one species is used, indicate application rate for each species. Note: This worksheet should be added to the plan drawings.

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### **TABLE 4.2 Compost Standards** 25% - 100% (dry weight basis) **Organic Matter Content** Organic Portion Fibrous and elongated 5.5 - 8.5 30% - 60% Moisture Content 30-50% pass through 3/8" sieve Particle Size Soluble Salt Concentration 5.0 dS/m (mmhos/cm) Maximum

COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOOD/BARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1%BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX. THE PHYSICAL PARAMETERS OF THE COMPOST SHOULD COMPLY WITH THE STANDARDS IN TABLE 4.2. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERNATIVE.

### COMPOST SPECIFICATIONS

NOT TO SCALE

### SEEDING NOTES:

- 1. PURE LIVE SEED (P.L.S.) IS THE PRODUCT OF THE PERCENTAGE OF PURE LIVE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. TO CALCULATE THE AMOUNT OF SEED REQUIRED TO PLANT ONE (1) ACRE, DIVIDE THE SEEDING RATE IN THE LBS. P.L.S. /ACRE BY THE P.L.S. CONTENT OF THE SEEDLOT TO BE USED. 2. UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE
- PROJECT SITE SHALL BE IMMEDIATELY STABILIZED (I.E. SEEDED AND MULCHED). 3. SOW SEEDS UNIFORMLY ON THE PREPARED AREAS BY HYDRAULIC APPLICATION, BROADCASTING, OR HANDSEEDING
- METHODS. INSPECT SEEDING EQUIPMENT AND ADJUST THE EQUIPMENT IF REQUIRED TO ASSURE THE SPECIFIED APPLICATION RATES. PERIODICALLY CHECK ON THE RATE AND UNIFORMITY OF APPLICATION. 4. DIVERSIONS, CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE SEEDED AND
- MULCHED IMMEDIATELY.

ALL AREAS THAT FAIL TO GERMINATE MUST BE RESEEDED.

- 5. HAY OR STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE. 6. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
- 8. TEMPORARY SEED DURING SEPT.-OCT. 15. PERMANENT SEED DURING MARCH-AUG. FOLLOW GUIDELINES IN PENN STATE'S "EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLANDS" MANUAL.

### HYDRO-SEEDING REQUIREMENTS

- 1. HYDRO-SEEDING IS A METHOD OF SEEDING IN WHICH LIME, FERTILIZER AND SEED ARE MIXED WITH WATER AND APPLIED AS A SLURRY AT A RATE OF 1,000 GALLONS PER ACRE. THE SLURRY MIX SHALL CONSIST OF 1) 4,000 POUNDS OF AGRICULTURE GRADE LIMESTONE PER ACRE 2) 50 POUNDS OF NITROGEN - 100 OF NITROGEN - 100 POUNDS OF P205 - 100 POUNDS OF K20 PER ACRE 3) SEED AS REQUIRED PER ACRE.
- . APPLY A SECOND APPLICATION OF LIME AND FERTILIZER 30 DAYS AFTER INITIAL APPLICATION. WHEN HYDRO-SEEDING LEGUMES AND FERTILIZER TOGETHER, ADD THE LEGUME INOCULANT JUST BEFORE APPLICATION, SINCE SOME FERTILIZATION ARE HARMFUL TO RHIZOBIS. DO NOT ALLOW THE SEED AND INOCULANT TO BE IN CONTACT WITH FERTILIZER IN THE HYDRO-SEEDER FOR LONGER THAN A HALF HOUR TO AN HOUR. IF THE

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED

PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL

NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO

INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS

AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS

MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

- INOCULANT IS IN THE TANK FOR LONGER THAN AN HOUR, ADD A NEW SUPPLY OF INOCULANT. 4. USE FIVE (5) TIMES THE RATE OF INOCULANT RECOMMENDED ON THE PACKAGE WHEN SEEDING WITH
- HYDRO-SFEDER 5. HYDRO-SEEDING DATES: MAY 1 TO NOVEMBER 15.
- 6. APPLY HAY OR STRAW MULCH BINDER FOR ALL HYDRO-SEED STABILIZED AREAS.

PA ACT 287, AS AMENDED

ALIAS	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE (MIN.)	COMMENTS			
DECIDUOUS TREES							
AR	ACER RUBRUM	RED MAPLE	2" CAL	B & B, SINGLE LEADER			
ZS	ZELKOVA SERRATA	JAPANESE ZELKOVA	2" CAL	B & B, SINGLE LEADER			
30 TOTAL DECIDUOUS TREES SHALL HAVE CLEAR BRACHING HEIGHT TO 6' ABOVE GRADE							
	TREES	TREES AR ACER RUBRUM	TREES  AR ACER RUBRUM  RED MAPLE  ZS ZELKOVA SERRATA  JAPANESE ZELKOVA	TREES RUBRUM RED MAPLE 2" CAL ZS ZELKOVA SERRATA JAPANESE ZELKOVA 2" CAL			

30 101A	<u> </u>		DECIDOOO3 TREES SHA	DECIDOOGS TREES SHALL HAVE CLEAR BRACHING HEIGHT TO 0 ABOVE GRADE				
EVERGRE	EN TREES	5						
39	JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	6' HEIGHT	B & B, SHEARED			
39 TOTA	L							
	•	•	·	•	•			
SHRUBS								
21	VP	CORNUS ALBA SIBERICA	RED TWIG DOGWOOD	24" HEIGHT	В & В			
21 TOTAL								

NOTE: ANY EXISTING STREET TREES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH ANY EQUIVALENT TREE.

### **GENERAL PLANTING NOTES:**

### Landscape Notes

- 1. The contractor must verify location of all underground utilities prior to digging, per Act 187. CALL
- Any existing street tree damaged during construction shall be
- replaced. Broken or scarred trees shall be replaced with the same species and size. Existing street trees shall be protected during construction
- by placing construction fencing or silt fence either along the tree canopy drip line or a minimum of ten (10) feet from the trunk, whichever is greater. Tree protection shall remain in place until final construction and restoration of the area occurs. There shall be no construction equipment or storage of materials within the protected area.
- 4. The Owner is responsible for maintenance and replacement of trees after installation. Trees must meet the requirements of the American Standard
- for Nursery Stock and be free of pests and disease. 6. All tree calipers shall be measured at a point at least six (6) inches above the soil line.
- 7. No plant substitutions will be allowed without written approval of the Owner, and Municipality and LVIP. 8. All unbuilt and unpaved areas disturbed during construction
- shall be seeded for turf, as described below, unless otherwise noted on the plan.
- 9. Plant stakes and guy wires, if used, shall be removed by the Owner within one year of installation
- 10. Turf seeding shall occur during the specified periods. During other periods, seed with Formula E. Rake and reseed with Formula B during the next recommended period.
- 11. Prepare turf areas per the requirements and during the time periods described in Sections 804 (Seeding and Soil Supplements) and 805 (Mulching) of PennDOT Specifications publication 408M in the latest revision. (See "Turf Seeding Specifications")

### Turf Seed Specifications

- PennDOT Formula B (see Pub.408 for additional specifications) for general turf areas.
- --Perennial Ryegrass Mixture. A combination of improved certified varieties with no one variety exceeding 50% of the total Ryegrass component. (18% by mass) -- Creeping Red Fescue or Chewings Fescue. (30% by mass)
- --Kentucky Bluegrass Mixture. A combination of improved certified varieties with no one variety exceeding 25% of the total Bluegrass component. (52% by mass)
- Apply seed at a rate of 100 lb. per acre or 2.5 lb per 1000 sf. Spread seed within the following dates: March 15 to June 1; August 1 to October 15. PennDOT Formula E (see Pub.408 for additional specifications) for
- temporary seeding. -- Annual Ryegrass (100% by mass)
- Apply seed at a rate of 44 lb. per acre or 1.0 lb per 1000 sf. Spread seed within the following dates: March 15 to October 15. Prepare turf areas per the requirements of Sections 804 (Seeding and Soil Supplements) and 805 (Mulching) of PennDOT Specifications

publication 408M in the latest revision.

CASE 1

SMALL SINKHOLE IN SOIL

2. IF NO ROCK IS ENCOUNTERED, PLUG SOIL THROAT

WHICHEVER OCCURS FIRST.

1. EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT

OR TO A DEPTH OF 15 FEET BELOW GRADE,

WITH GROUT OR CONCRETE. IF A CLEARLY DEFINED THROAT IS NOT ENCOUNTERED AFTER 10 FEET, STOP EXCAVATION. GENERALLY, A ZONE OF SOFT, IN-FILL MATERIAL WILL BE FOUND WHICH COVERS MOST OF THE BOTTOM OF

THE EXCAVATION. COVER THIS AREA WITH 4 FEET

3. AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE

IN 6" LIFTS WITH A POWER TAMPER OR RAMMER.

4. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT

5. WHEN SINKHOLE IS UNDER A PROPOSED UTILITY,

TWO COMPLETE COVERAGES SHOULD BE USED ON

CONCRETE IS TO BE SET 6" BELOW THE UTILITY TO

WITH RELATIVELY IMPERMEABLE SOIL. COMPACT SOIL

OF CONCRETE EXTENDING AT LEAST 1 FOOT INTO FIRM

SOIL. IF THE SOFT ZONE IS LARGE, (>3 FT), REINFORCING

STEEL SHOULD BE INCLUDED WITHIN THE CONCRETE CAP.



3-5x DIAMETER OF ROOT BALL

TUSE BROAD, SMOOTH TREE

TIES BETWEEN STAKE AND

STAKES AFTER ONE YEAR.

TRUNK. REMOVE TREE

-REMOVE TRUNK GUARD

✓KEEP MULCH 1" AWAY

FROM ROOT COLLAR.

-REMOVE EXCESS SOIL

SINK STAKES MIN. 18"

THROUGH ROOT BALL

ADJACENT TO, NOT

INTO UNDISTURBED SOIL,

-CUT AND REMOVE BURLAP

BALL. CUT AND FOLD

FROM UPPER 1/3 OF ROOT

DOWN WIRE BASKET. REMOVE

ALL TIES, CLIPS AND NAILS.

FROM TOP OF ROOT

AND WRAPPING

-KEEP MULCH 3" AWAY FROM APPLY 3" SHREDDED -STEM/ROOT COLLAR. HARDWOOD MULCH. BREAK DOWN SIDES OF PIT FOR ROOT EXPANSION -ROOT COLLAR AT OR 1" ABOVE WHEN BACKFILLING. FINISH GRADE. BACKFILL WITH TOPSOIL. WATER THOROUGHLY TO REMOVE AIR POCKETS. REMOVE POT AND CUT AWAY HAND TAMP ONLY. BURLAP FROM TOP OF BALL. REMOVE ALL TIES AND TWINE. ROOTBALL ON UNDISTURBED SOIL

SHRUB PLANTING DETAIL

3 x DIAMETER OF ROOT BALL

### Criteria and Credits for BMP 5.6.3 Re-Vegetate and Re-Forest Disturbed Areas, Using Native Species

### Part 2 Revegetate and Reforest

REMOVE ONLY DEAD, DAMAGED -

2x2 HARDWOOD STAKES -

OR CROSSING BRANCHES AT

2 PER TREE

ROOT COLLAR AT OR 1"

4" SHREDDED -

BACKFILL WITH EXISTING SOIL

WATER THOROUGHLY TO

ELIMINATE AIR POCKETS.

DO NOT TAMP

ABOVE FINISHED GRADE.

HARDWOOD MULCH

PLANTING TIME

To receive credit for planting trees, the following criteria must be met:

- Trees must be native species (see Appendix), minimum 2" caliper. Minimum tree height
- is 6 feet. (SEE NOTE BELOW) ▼ Trees shall be adequately protected during construction.
- Trees credited for stormwater management shall be clearly labeled on the construction drawings and recorded on Record Plan for project.
- Trees shall be maintained and protected for the life of the project (50 years) or until redevelopment occurs.
- No more than 25% of the runoff volume can be mitigated through the use of trees. Escrow shall be provided for the replacement of any protected trees used for stormwater credit that die within 5 years of construction. Dead trees shall be replaced within 6
- months. Shall be located on the development project.
- May be applied for trees required under Street Tree or Landscaping requirements.
- ☐ May be applied for trees planted as part of Riparian Buffer improvement.
- Non-native species are not applicable.

TREE SPECIES NOTE: TREE SPECIES OTHER THAN THE ONES SPECIFIED ON THE PLAN MAY BE SUBSTITUTED AS LONG AS TREES MEET REQUIREMENTS OF BMP 5.6.3. COORDINATE WITH NCCD ON ANY PROPOSED SUBSTITUTIONS TO CONFIRM SPECIES IS ACCEPTABLE.

> FINAL POST-CONSTRUCTION STORMWATER MANAGEMENT DETAILS

ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SOUTH WHITEHALL TOWNSHIP STANDARD SPECIFICATIONS.

REVISION

CONSULTING ENGINEERS CIVIL . STRUCTURAL . MECHANICAL . MACHINERY 609 Hamilton Street • Allentown, PA 18101

Office: 610/433-1634 • Fax: 610/433-1636

1429 ECK ROAD OUTDOOR STORAGE SOUTH WHITEHALL TOWNSHIP LEHIGH COUNTY, PENNSYLVANIA

JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023 J.G. PETRUCCI CO., INC. PCSM-171 ROUTE 173 PETRUCCI SUITE 201
DEVELOPMENT -DESIGN/BUILD ASBURY, NEW JERSEY 08802

ENGINEERING COMPANY

BMW

### CASE 2 SMALL SINKHOLE IN ROCK

ALLOW FOR A STONE BEDDING.

SURFACE WATER.

- 1. EXCAVATE DOWN TO ROCK TO SINKHOLE THROAT OR TO A DEPTH OF 15 FEET BELOW GRADE, WHICHEVER OCCURS FIRST.
- 2. IF ROCK IS ENCOUNTERED, CLEAN SURFACE AND PLACE HIGH-SUMP CEMENT GROUT INTO OPEN VOIDS AND CREVICES UNTIL VOIDS ARE FILLED. IF SEVERAL CUBIC YARDS OF GROUT DO NOT FILL VOIDS, USE A STIFFER, LEAN CONCRETE MIX.
- AFTER CONCRETE HAS SET OVERNIGHT, BACKFILL HOLE WITH RELATIVELY IMPERMEABLE SOIL. COMPACT SOIL IN 6" LIFTS WITH A POWER TAMPER OR RAMMER. TWO COMPLETE COVERAGES SHOULD BE USED ON EACH LIFT.
- 4. BACKFILL HOLE ABOVE EXISTING GRADE TO DIVERT SURFACE WATER.
- WHEN SINKHOLE IS UNDER A PROPOSED UTILITY, CONCRETE IS TO BE SET 6" BELOW THE UTILITY TO ALLOW FOR A STONE BEDDING.

STEPHEN A. PANY

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

### **ENGINEER'S STATEMENT**

ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY

of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid. All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall notify Pany & Lentz Engineering Company of any discrepancies with the information shown on the drawings.

PLAN PREPARER'S SIGNATURE

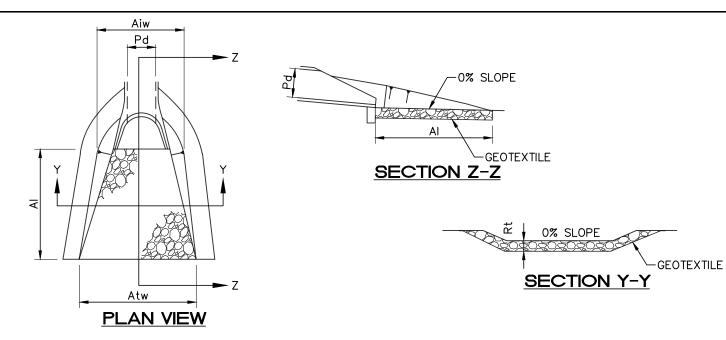
- LIMESTONE -

BEDROCK

LIMESTONE-

BEDROCK

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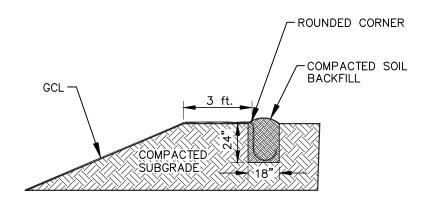
### RIPRAP APRON TABLE

		RIPRAP		APRON					
OUTLET NO.	OUTLE PIPE DIA Pd (IN)	TAILWATER CONDITION (Max or Min)	Q (CFS)	V (FPS)	SIZE (R)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
ES-A1	18	MIN.	13.97	7.96	4	18	12	4.50	16.50
ES-B1	24	MIN.	9.68	4.54	3	9	12	6.00	18.00
ES-C1	15	MIN.	1.26	2.33	3	9	8	3.75	11.75
ES-D1	18	MIN.	1.18	2.03	3	9	8	4.50	12.50

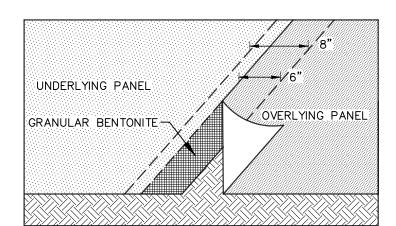
NOTES:
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

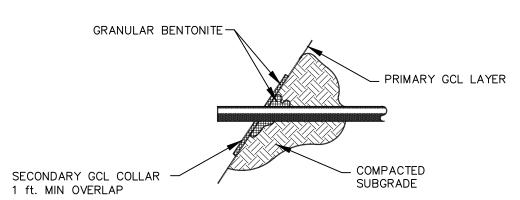
### STANDARD CONSTRUCTION DETAIL #9-1 RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL NOT TO SCALE



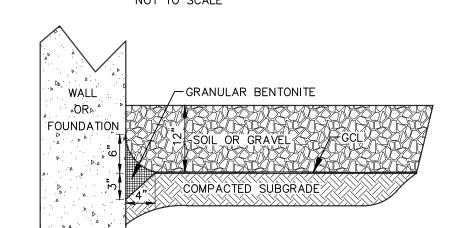
TYPICAL ANCHOR TRENCH DESIGN



BENTONITE-ENHANCED OVERLAPPED SEAM



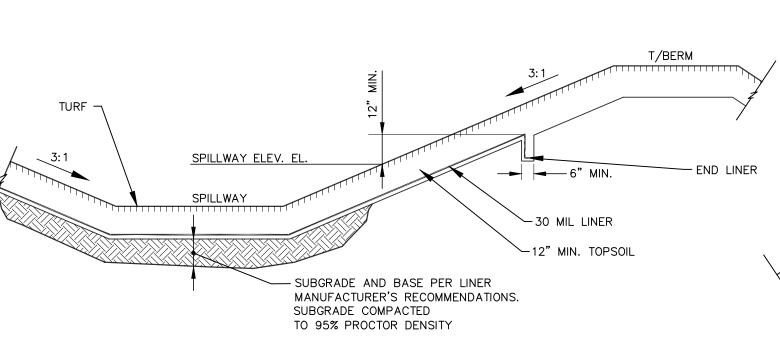
CROSS-SECTION OF A HORIZONTAL PIPE PENETRATION



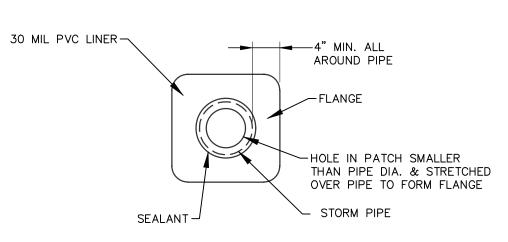
CROSS-SECTION OF GCL SEAL AGAINST AN EMBEDDED STRUCTURE OR WALL

### DETENTION BASIN LINER DETAILS

NOTE: CONTRACTOR SHALL SUBMIT FOR APPROVAL MANUFACTURER'S LINER LAYOUT PLAN AND INSTALLATION REQUIREMENTS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INSTALL LINER PER MANUFACTURER'S SPECIFICATIONS.



### SPILLWAY LINER INSTALLATION



PA ACT 287, AS AMENDED

IN ACCORDANCE WITH PA ACT 287, AS AMENDED, THE SURVEYOR CONTACTED

NUMBER FOR THAT REQUEST IS 20222283634. THE SURVEYOR HAS MADE NO

THE CONTRACTOR SHALL COMPLY WITH PA ACT 287, AS AMENDED REQUIREMENTS

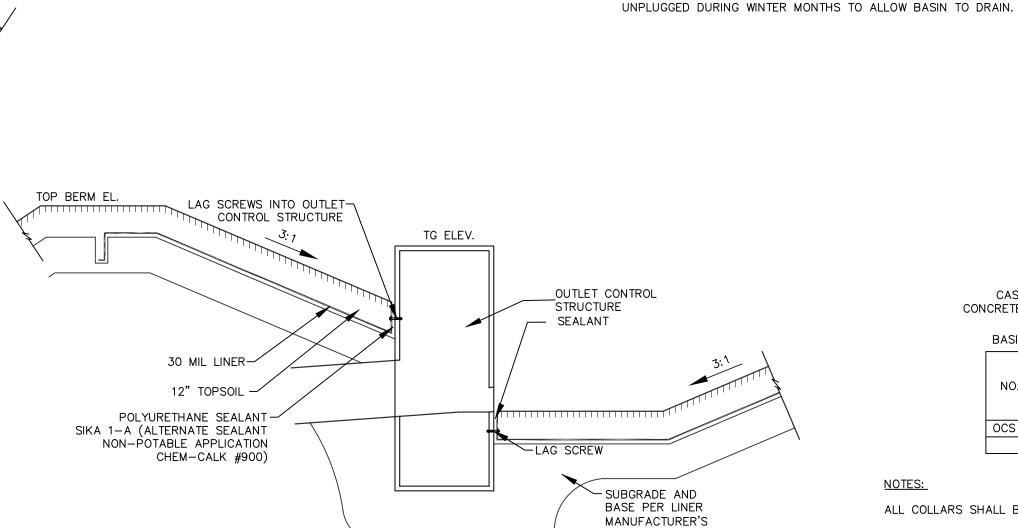
INDEPENDENT VERIFICATION OF THE INFORMATION PROVIDED OTHER THAN AS

AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.

MAY BE READILY EVIDENT FROM THE SURFACE OF THE GROUND.

PA ONE CALL, INC., FOR A DESIGN PHASE LOCATION REQUEST. THE SERIAL

STORM PIPE LINER SEAL



SLOPES ABOVE BASIN ELEVATION

TOP OF BASIN EL. 500.00

IMPERVIOUS LINER-

TOP OF GRATE EL. 497.00

3" ORIFICE INV. 494.70

BASIN INV. 491.89 18"

SUBGRADE AND -BASE PER LINER

MANUFACTURER'S

RECOMMENDATIONS

SIDE VIEW

TO BE 4:1

PIPE IN

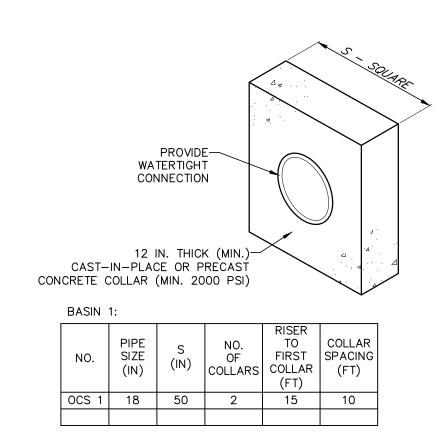
12" TOPSOIL-

12" TOPSOIL-

END OF LINER EL. 499.00

ABOVE LINER

OUTLET CONTROL STRUCTURE LINER SEAL



NOTES:

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OUTLET CONTROL STRUCTURE 1

**BASIN SECTION** 

NOTE: FOR FURTHER SPRAY IRRIGATION

DETAILS SEE THE SPRAY IRRIGATION PLAN SET.

(SEE DETAIL)

-BOTTOM OF DETENTION BASIN

SPRAY BASIN OUTLET CONTROL STRUCTURE +

TRASH RACK DETAIL

SPRAY IRRIGATION PUMP SUMP -

(SEE NOTE)

EL. 494.70 (SPRAY IRRIGATION STORAGE VOLUME)

─3" ORIFICE

RECOMMENDATIONS

INV. 492.00 VALVE CLOSED DURING SUMMER

> ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT. COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16

### CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

FINAL POST-CONSTRUCTION STORMWATER MANAGEMENT **DETAILS** 

ENGINEERING COMPANY

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1429 ECK ROAD **OUTDOOR STORAGE** SOUTH WHITEHALL TOWNSHIP

DESIGNED SAP
DRAWN BMW JOB. NO. 2022258 SCALE 1"= 50' U.N.O DATE MAY 15, 2023 J.G. PETRUCCI CO., INC. PCSM-6

### **ENGINEER'S STATEMENT**

STEPHEN A. PANY

I, STEPHEN A. PANY, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING APPLICATION, PLANS AND SUPPORTING DOCUMENTATION ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE.

PLAN PREPARER'S SIGNATURE

or any portion thereof is prohibited without the written consent of Pany & Lentz Engineering Company. Only final construction documents signed and sealed by the Engineer of Record are valid.

LEHIGH COUNTY, PENNSYLVANIA

T/BERM EL. 500.00

COLLARS

DETAIL)

OUTLET PIPE

— 3" ORIFICE INV. 494.70

-#4 REBAR 1\2" BENT

AND WELDED TO 3\8"

— CLASS AA CEMENT CONCRET

METAL BRACKET

−4" OPENINGS

" ø INV. 492.00 VALVE CLOSED

DURING SUMMER

45 1/4"

FRONT VIEW

NOTE: 3" ORIFICE TO BE PLUGGED DURING SUMMER MONTHS TO ALLOW STORAGE FOR SPRAY IRRIGATION, THEN

EMERGENCY SPILLWAY EL. 498.50 \_ t \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_

- PROPOSED

GRADE

100 YR. W.S.E. 497.08 \_ \_

#4 @ 6" EACH WAY

POINTS AND BANDED

ISOMETRIC VIEW

WELDED @ ALL INTERSECTIONS

3" ORIFICE INV. 494.70

- 6" CONCRETE SLAB

-3\8" METAL BRACKET

ATTACHED TO CONCRETE

1'-0" MIN. FREEBOARD

All written dimensions shall take priority over scaled dimensions. The contractor shall be responsible for verifying all locations, elevations, dimensions and conditions prior to construction. The contractor shall 171 ROUTE 173 notify Pany & Lentz Engineering Company of any discrepancies with PETRUCCI SUITE 201

DEVELOPMENT - DEBIGN/BUILD ASBURY, NEW JERSEY 08802 the information shown on the drawings. # DATE REVISION