

**LOCATION MAP** 

# SUBDIVISION/ PRELIMINARY/FINAL LAND DEVELOPMENT PLAN

# 4209 CUMBERLAND AVENUE RESIDENTIAL DEVELOPMENT

# CHRIS DAWSON ARCHITECTS

SUSQUEHANNA TOWNSHIP DAUPHIN COUNTY, PENNSYLVANIA

#### STORMWATER MANAGEMENT PLAN PREPARER **CERTIFICATE**

I, J. MARC KUROWSKI, HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT SITE PLAN AND REPORT MEETS ALL DESIGN STANDARDS AND CRITERIA OF SUSQUEHANNA TOWNSHIP'S STORMWATER



J. MARC KUROWSKI, P.E. mkurowski@kandwengineers.con

## CERTIFICATE OF ACCURACY (PLAN)

**UTILITY INFORMATION** THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF ACT 287 OF 1974 AS AMENDED BY ACT 187 OF 1996 FOR NOTIFICATION OF UTILITIES BEFORE EXCAVATION IN CONTRACT AREA. THE UNDERGROUND UTILITIES LOCATION CALL NUMBER IS 1-800-242-1776

PA ONE-CALL SERIAL NUMBER: PA ONE-CALL SERIAL NUMBER DATE: MAY 9, 2023

CAROLYN E. DUBOIS, R.L.A. cdubois@kandwengineers.com

DENNIS P. BURKHARD, P.L.S

THE FOLLOWING UTILITY FACILITY OWNERS WERE NOTIFIED BY THE PA ONE-CALL SYSTEM, INC.

VEOLIA WATER PENNSYLVANIA INC 6310 ALLENTOWN BOULEVARD HARRISBURG, PA. 17112 CONTACT: CHRISTOPHER BRIDE

2201 N FRONT ST, SUITE 200

**SITE SURVEYOR** 

HARRISBURG, PA 17110

KUROWSKI & WILSON LLC

HARRISBURG, PA 17110

2201 N FRONT ST, SUITE 200

EMAIL: CHRISTOPHER.BRIDE@VEOLIA.COM PHONE: 717-901-1631 FRONTIER COMMUNICATIONS OF PA INC

300F LATED ST WILKES BARRE, PA. 18702 CONTACT: MICHAEL NAVICH EMAIL: Michael.Navich@FTR.com PHONE: 570-208-8337

VERIZON PENNSYLVANIA LLO 1026 HAY ST PITTSBURGH, PA. 15221 CONTACT: DEBORAH BARUM EMAIL: deborah.d.delia@verizon.com PHONE: 412-344-4390

PPL ELECTRIC UTILITIES CORPORATION 437 BLUE CHURCH RD PAXINOS, PA. 17860 CONTACT: DOUG HAUPT EMAIL: dlhaupt@pplweb.com

COMMONWEALTH OF PENNSYLVANIA

PHONE: 570-490-0568

COMCAST 4601 SMITH STREET HARRISBURG, PA. 17109 CONTACT: MICHAEL SWEIGARD EMAIL: mike\_sweigard@cable.comcast.com PHONE: 717-298-8645

SUSOUEHANNA TOWNSHIP AUTHORITY/SUSQUEHANNA TOWNSHIP 1900 LINGLESTOWN RD HARRISBURG, PA. 17110 CONTACT: TRAVIS MEASE EMAIL: tmease@susquehannatwp.com

PHONE: 717-712-2572 UGI UTILITIES INC 1301 AIP DR MIDDLETOWN, PA. 17057 CONTACT: STEPHEN BATEMAN EMAIL: sbateman@ugi.com

PHONE: 610-807-7317 SUSQUEHANNA TOWNSHIP AUTHORITY/SUSQUEHANNA TOWNSHIP 1900 LINGLESTOWN RD HARRISBURG, PA. 17110 CONTACT: TRAVIS MEASE

PHONE: 717-712-2572

EMAIL: tmease@susquehannatwp.com

## CERTIFICATE OF OWNERSHIP, **ACKNOWLEDGMENT OF PLAN AND** OFFER OF DEDICATION (OWNER)

COUNTY OF DAUPHIN \_\_\_\_\_, 200 \_\_\_\_ BEFORE ME THE UNDERSIGNED PERSONALLY APPEARED. WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT THEY ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAN AND THAT THEY ACKNOWLEDGE THE SAME TO BE THEIR ACT AND DEED AND DESIRE THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

WITNESS MY HAND AND NOTORIAL SEAL THE DAY AND THE DATE ABOVE WRITTEN

NOTARY PUBLIC MY COMMISSION EXPIRES

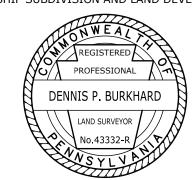
IT IS HEREBY CERTIFIED THAT THE UNDERSIGNED ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAT AND THAT ALL STREETS OR PARTS THEREOF, IF NOT PREVIOUSLY DEDICATED, ARE HEREBY TENDERED FOR DEDICATION TO



J. MARC KUROWSKI, P.E.

## **CERTIFICATE OF ACCURACY (SURVEY**

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE SURVEY AND PLAN SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE SUSQUEHANNA FOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.



DENNIS P. BURKHARD, P.L.S.

#### **OWNER STORMWATER STATEMENT**

(OWNER) ACKNOWLEDGE THAT THE STORMWATER BMP'S HOWN WITHIN THESE PLANS ARE PERMANENT FIXTURES THAT CANNOT BE ALTERED OR REMOVED WITHOUT PRIOR APPROVAL BY SUSQUEHANNA TOWNSHIP.

#### **WETLANDS STATEMENT**

HEREBY CERTIFY THAT THERE (ARE/ARE NOT) WETLANDS ON THE SUBJECT PROPERTY. THE PROPOSED PROJECT (WILL/WILL NOT) IMPACT OFF-SITE WETLANDS, AND PERMITS (ARE/ARE NOT) REQUIRED FROM THE STATE OR FEDERAL GOVERNMENT.

#### **SUSQUEHANNA TOWNSHIP PLANNING COMMISSION**

THIS PLAN RECOMMENDED FOR APPROVAL BY THE SUSQUEHANNA TOWNSHIP PLANNING COMMISSION THIS \_\_\_\_\_ DAY OF \_\_\_\_

#### RECORDER OF DEEDS

RECORDED IN THE OFFICE FOR RECORDING OF DEEDS, IN AND FOR DAUPHIN COUNTY, PENNSYLVANIA, IN PLAN BOOK \_\_\_\_\_, PAGE \_\_\_\_, THIS \_\_\_\_ DAY OF \_\_\_\_

RECORDER INSTRUMENT NO: \_

#### **DEVELOPER**

813 S 29TH STREET HARRISBURG, PA 1711 TELEPHONE: 717.343.9592

#### SITE DATA

PARAMJIT SINGH & RAVINDER KAUR 4209 CUMBERLAND AVE. HARRISBURG, PA 17110 717.343.9592

#### **ZONING DATA**

PLAN REFERENCE: PB. H-9, PG. 47

R-2, MEDIUM RESIDENTIAL DISTRICT CDO, DESIGNATED GREENWAY AREAS FOR THE CONSERVATION DISTRICT OVERLAY ABUTTING DISTRICT: BOR - BUSINESS / OFFICE / RESIDENTIAL

#### <u>PERMITTED USE:</u> SINGLE FAMILY DETACHED DWELLINGS

		REQUIRED	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5
MIN.	LOT AREA:	10,000 SF	24,348 SF	11,949 SF	10,000 SF	11,166 SF	17,204 SF
MIN.	LOT WIDTH:	75 FT	167 FEET	75 FEET	90 FEET	117 FEET	105 FEET
MIN.	SETBACKS						
	FRONT YARD:	30 FT	75 FEET	42 FEET	9.3 FEET	39 FEET	45 FEET
	SIDE YARD:	8 FT	14 FEET	10 FEET	10 FEET	10 FEET	38 FEET
	REAR YARD:	30 FT	41 FEET	19.7 FEET	20.9 FEET	30 FEET	30 FEET
٩AX.	IMPERV. COV.:	40%	14.7%	30.1%	31.5%	28.8%	18.3%
VAΝ	BLDG HEIGHT:	30 FT	<30 FFFT	<30 FFFT	<30 FFFT	<30 FFFT	< 30 FFFT

MAXIMUM RESIDENTIAL DENSITY: FOUR UNITS PER ACRE 4.98 ACRES=19 PERMITTED 5 RESIDENCES PROPOSED

## **EXISTING ZONING NON-CONFORMITIES**

LOT 2	REQUIRED	PROVIDED
REAR YARD SETBACK	30 FEET	19.7 FEET
LOT 3	REQUIRED	PROVIDED
FRONT YARD:	30 FT.	9.3 FEET
RFAR YARD:	30 FT.	20.9 FFFT

#### **WAIVER REQUESTS**

THE FOLLOWING WAIVER OF THE SUSQUEHANNA TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ARE REQUESTED BY THE APPLICANT: SECTION 22-404: PRELIMINARY PLAN SUBMISSION

#### **DAUPHIN COUNTY** PLANNING COMMISSION

COMMISSION THIS \_\_\_\_\_

THIS PLAN RECOMMENDED FOR APPROVAL BY THE DAUPHIN COUNTY PLANNING

#### **SUSQUEHANNA TOWNSHIP BOARD OF COMMISSIONERS APPROVAL**

THIS PLAN APPROVED BY THE SUSQUEHANNA TOWNSHIP BOARD OF COMMISSIONERS, AND ALL CONDITIONS IMPOSED WITH RESPECT TO SUCH APPROVAL WERE COMPLETED ON THIS

#### **SHEET INDEX**

Sheet Number	Sheet Title
1	COVER SHEET
2	OVERALL EXISTING FEATURES PLAN
3	EXISTING FEATURES PLAN
4	DEMOLITION PLAN
5	OVERALL SUBDIVISION PLAN
6	SUBDIVISION PLAN
7	SITE PLAN
8	GRADING PLAN
9	UTILITY PLAN
10	LANDSCAPE PLAN
11	EROSION & SEDIMENTATION CONTROL PLAN
12	ROAD & STORMWATER PROFILES
13	SITE DETAILS
14	SEWER DETAILS
15	PCSM DETAILS
16	E&S DETAILS
17	E&S NOTES

### **SEQUENCE OF CONSTRUCTION**

COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING, AND TOPSOIL

IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) TO ELIMINATE THE POTENTIAL FOR ACCELERATED FROSION AND/OR SEDIMENT POLLUTION.

SCHEDULE SHALL INCLUDE REGULAR INSPECTION AND MAINTENANCE REQUIREMENTS INCLUDING ENGINEER'S PRESENCE AT SITE TO OBSERVE CONSTRUCTION AT CRITICAL STAGES AS INDICATED HEREIN. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO CONSTRUCTION OF STAGES. INSPECTION SHOULD BE SCHEDULED IN ADVANCE WITH K&W ENGINEERS.

1. AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES. THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE DAUPHIN COUNTY CONSERVATION DISTRICT, AND THE EROSION AND SEDIMENT CONTROL PLAN PREPARER.

2. AT LEAST THREE (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 THE LOCATION OF

CONTRACTOR SHALL CLEARLY MARK THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLAN, ORANGE CONSTRUCTION FENCE OR WOODEN STAKES WITH FLAG TAPE ARE ADEQUATE FOR FIELD MARKING. ADDITIONALLY, CONTRACTOR SHALL CLEARLY MARK ALL WATERS OF THE COMMONWEALTH.

INSTALL ALL SEGMENTS OF COMPOST FILTER SOCK IN THE LOCATIONS SHOWN ON THE PLANS. IMMEDIATELY CONSTRUCT THE TEMPORARY ROCK CONSTRUCTION ENTRANCE AS SHOWN ON THE PLAN. ALL VEHICLES ENTERING THE SITE SHALL DO SO VIA THE ROCK CONSTRUCTION ENTRANCE, ANY MUD OR SEDIMENT TRACKED ONTO MACADAM ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF EACH WORKING DAY, WASHING OF THE ROADWAY IS NOT PERMITTED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL TRAFFIC CONTROL DEVICES ASSOCIATED

#### CRITICAL STAGE: COMPLETE EXCAVATION OF THE STORMWATER FACILITIES PER THE PCSM PLAN ND DETAILS. INSTALL THE OUTLET STRUCTURES. AVOID COMPACTION AND DO NOT DRIVE OVER THE BASIN BOTTOM AREA WITH HEAVY EQUIPMENT

WITH THE ACCESS DRIVE THROUGHOUT THE TERM OF CONSTRUCTION ACTIVITIES.

ROUGH GRADE SITE DRIVEWAY AND MODIFY ROCK CONSTRUCTION ENTRANCE ACCORDING TO THE PROPOSED GRADES. INSTALL ALL STORMWATER COLLECTION AND CONVEYANCE FACILITIES WITHIN THE SITE WORKING FROM DOWNSTREAM TO UPSTREAM. ALL STORM SEWER CONSTRUCTION INCLUDES TRENCHING, BACKFILLING, AND APPLYING FINAL STABILIZATION, INSTALL RIPRAP APRONS AS SHOWN ON THE PLAN.

CLEAR AND GRUB THE REMAINING PORTIONS OF THE SITE AND DEMO ITEMS AS REQUIRED. STRIP TOPSOIL AND STOCKPILE AT HE TEMPORARY AREA PROVIDED. SURROUND WITH COMPOST FILTER SOCK AND SEED PER TEMPORARY SEEDING SPECIFICATIONS, FERTILIZE AND MULCH. BEGIN BULK EXCAVATION OF THE SITE TO THE REOUIRED GRADES AS SHOWN ON THE PLANS, ANY EXCAVATED SOIL MATERIAL REMOVED FROM THE SITE SHALL ONLY BE PLACED IN AN AREA THAT HAS AN APPROVED EROSION CONTROL PLAN. ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN APPROPRIATE EROSION CONTROL

10. PLACE STONE SUBBASE IN AREAS OF PAVING AS SOON AS PRACTICAL TO PREVENT EROSION, E&S MATTING SHALL BE INSTALLED ON DISTURBED SLOPES WHICH ARE 3:1 OR GREATER. CONTRACTOR TO ENSURE SEDIMENT LADEN RUNOFF IS DIRECTED TO AN E&S CONTROL BMP.

UPON ACHIEVING FINAL ELEVATIONS, CONSTRUCT BUILDINGS. WHEN CONDITIONS WARRANT, THE FOOTERS AND OUNDATION WALLS MAY BE BACKFILLED. FILL MATERIAL SHALL BE FREE OF ROOTS, SOD, AND OTHER ORGANIO MATERIAL, FROZEN SOIL, STONES, AND DISCARDED CONSTRUCTION MATERIAL. THE FILL SHALL BE PLACED IN 8" LAYERS, WITH EACH LAYER BEING ROLLED AND COMPACTED PRIOR TO THE NEXT LAYER BEING PLACED. WHEN THE AREA REACHES THE PRESCRIBED ELEVATION, THE SUBBASE SHOULD BE THOROUGHLY ROLLED AND COMPACTED TO ELIMINATE

12. INSTALL PAVEMENT OR CONCRETE TO ALL AREAS INDICATED ON THE PLANS AND APPLY TOPSOIL WITH PERMANENT SEEDING TO ALL AREAS TO REMAIN AS LANDSCAPE OR GRASS, IF NEEDED, IMPORT TOPSOIL AND APPLY THE MINIMUM REQUIRED DEPTH TO ESTABLISH PERMANENT VEGETATION, SEED, FERTILIZE, AND MULCH EXPOSED OR DISTURBED AREAS. 13. THE CONTRACTOR SHALL REMOVE TEMPORARY INLET PROTECTION AND FLUSH ALL STORM SEWER PIPES AFTER THE SITE IS

14. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY BMPS, AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE DAUPHIN COUNTY CONSERVATION DISTRICT FOR A FINAL INSPECTION, PROPER DISPOSAL AND/OR RECYCLING OF THE BMPS IS REQUIRED BY THE SITE CONTRACTOR

STABILIZATION- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OF OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

\*\*IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS, DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION

#### **GENERAL NOTES**

- OF THREE (3) SINGLE FAMILY HOMES WITH ASSOCIATED SITE IMPROVEMENTS, GRADING, UTILITY CONNECTIONS, AND OTHER ASSOCIATED IMPROVEMENTS. THE EXISTING SITE FEATURES, TOPOGRAPHY AND PROPERTY BOUNDARY LINES SHOWN HEREON AR
- PUBLIC WATER TO BE PROVIDED BY VEOLIA WATER

- CONTROL SIGNS AND PAVEMENT MARKINGS AN OPERATION AND MAINTENANCE AGREEMENT WITH SUSQUEHANNA TOWNSHIP MUST BE COMPLETE
- THERE ARE NO NON EXISTING COVENANTS FOR THE SUBJECT TRACT.
- NGINEER AT LEAST 48 HOURS PRIOR TO STARTING SITE CONSTRUCTION ACTIVITIES.
- - 15. EROSION AND SEDIMENTATION CONTROL ARE INCORPORATED FOR REFERENCE.
  - 16. ALL TRASH PICK UP WILL BE COORDINATED WITH LOCAL TRASH REMOVAL COMPANY 17. A PENNDOT HOP PERMIT IS NOT REQUIRED.
  - AND LAND DEVELOPMENT ORDINANCE §22-111 THE OPERATION AND MAINTENANCE AGREEMENT IS CONSIDERED PART OF THIS PLAN SET.
  - 20. CUMBERLAND AVENUE WILL REMAIN A PRIVATE ACCESS DRIVE PER THE RECORDED PLAN H-9, PAGE 47 AND NOT DEDICATED AS RIGHT-OF-WAY. 21. A HOME OWNER'S ASSOCIATION WILL BE CREATED AS PART OF THIS PLANS AND RESPONSIBLE FOR
  - OPERATIONS AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES AND CONVEYANCE
  - 22. PROPOSED PROPERTY MARKERS AND/OR MONUMENTS SHALL BE INSTALLED AND INSPECTED BY THE TOWNSHIP ENGINEER PRIOR TO RECORDING OF THE PLAN.
  - 23. RECORD DRAWINGS WILL BE PROVIDED FOR ALL STORMWATER MANAGEMENT FACILITIES PRIOR TO OCCUPANCY, OR THE RELEASE OF FINANCIAL SECURITY.
- 24. SUSQUEHANNA TOWNSHIP SHALL BE NOTIFIED 24 HOURS PRIOR TO INFILTRATION TESTING BEING 25. NOTHING SHALL BE PLANTED OR PLACED WITHIN ANY EASEMENT WHICH WOULD ADVERSELY AFFECT THE
- FUNCTION OF THE EASEMENT, OR CONFLICT WITH ANY CONDITIONS ASSOCIATED WITH SUCH EASEMENT 26. SUSQUEHANNA TOWNSHIP OR ITS DESIGNEES SHALL HAVE ACCESS TO ALL EASEMENTS VIA THE NEAREST PUBLIC RIGHT-OF-WAY.

IMPERVIO	OUS AREAS		
Existing (	Existing Conditions		
Existing Parent Tract 25 774 SE (0.50 ac)			

#### Existing Parent Tract | 25,774 SF (0.59 ac) Proposed Conditions 3,575 SF (0.08 ac) 3,600 SF (0.08 ac) Lot 3 3,150 SF (0.07 ac) 3,216 SF (0.07 ac) Lot 4 3,140 SF (0.07 ac) Lot 5 Remaining Lands 20,258 SF (0.47 ac) Total 36,939 SF (0.85 ac)

#### SUBSURFACE INFILTRATION BASINS / BEDS

SUBSURFACE INFILIRATION DASINS /	BED3				
OPERATION & MAINTENANCE PROCEDURES					
ACTIVITY	SCHEDULE				
ALL CATCH BASINS AND INLETS CONTRIBUTING TO THE FACILITY SHOULD BE INSPECTED AND CLEANED OUT	SEMI-ANNUAL				
NSPECT FACILITY AND CONTROL STRUCTURE TO ENSURE FUNCTIONALITY	QUARTERLY				
REMOVE FLOATING DEBRIS AND ACCUMULATED PETROLEUM PRODUCTS	QUARTERLY				
OVERLYING VEGETATION SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS RE-VEGETATED AS SOON AS POSSIBLE	AS NEEDED				
CLEAN OUT GUTTERS AND INLETS TO REDUCE SEDIMENT LOAD TO BASIN	AS NEEDED				
REMOVE SEDIMENT AND DEBRIS FROM PIPE STORAGE AREAS	AS NEEDED				
MAINTAIN RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITY	ONGOING				
GENERAL MAINTENANCE NOTES: VEHICULAR ACCESS SHOULD BE PROHIBITED AND CARE SHOULD BE TAKEN	TO AVOID EXCESSIVE				

COMPACTION BY MOWERS. ONGOING

#### STORMWATER COLLECTION/CONVEYANCE

OPERATION & MAINTENANCE PROCEDURES

ACTIVITY	SCHEDULE
INLETS & CATCH BASINS SHOULD BE CLEANED OF DEBRIS. REPAIRS SHOULD BE MADE AS SOON AS PROBLEMS ARISE	CLEAN ANNUALLY & REPAIR AS NEEDED
INSPECT OUTFALL STRUCTURES QUARTERLY DURING 1ST YEAR & 1X PER YEAR THEREAFTER	QUARTERLY & ANNUALLY
COLLECTION/CONVEYANCE SYSTEMS SHOULD BE INSPECTED	SEMI-ANNUAL

GENERAL MAINTENANCE NOTES: 1. VACTOR TRUCKS MAY BE AN EFFICIENT CLEANING MECHANISM. 2. CATCH BASINS SHOULD BE CLEANED BEFORE HALF FULL

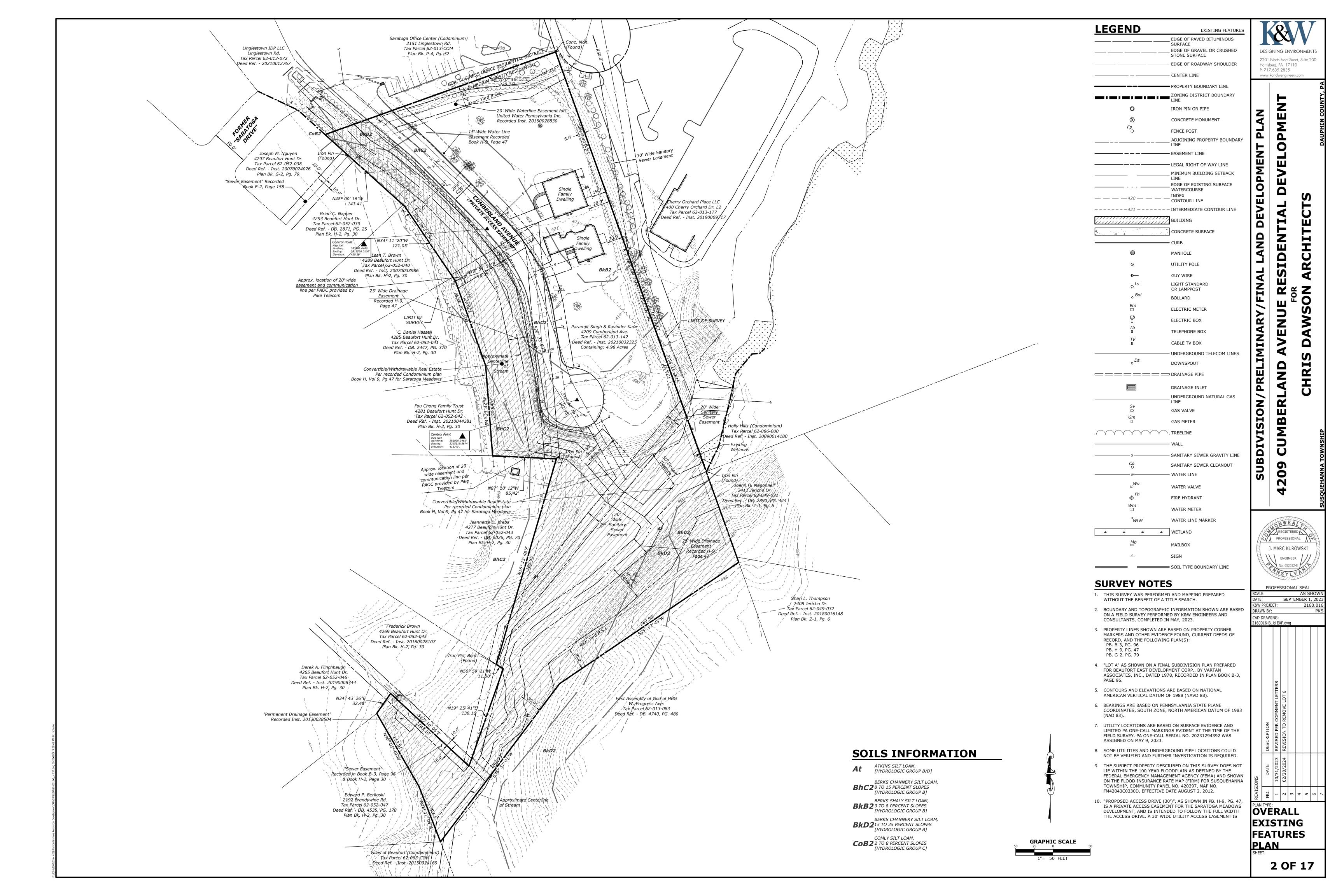
Harrisburg, PA 17110 P: 717.635.2835

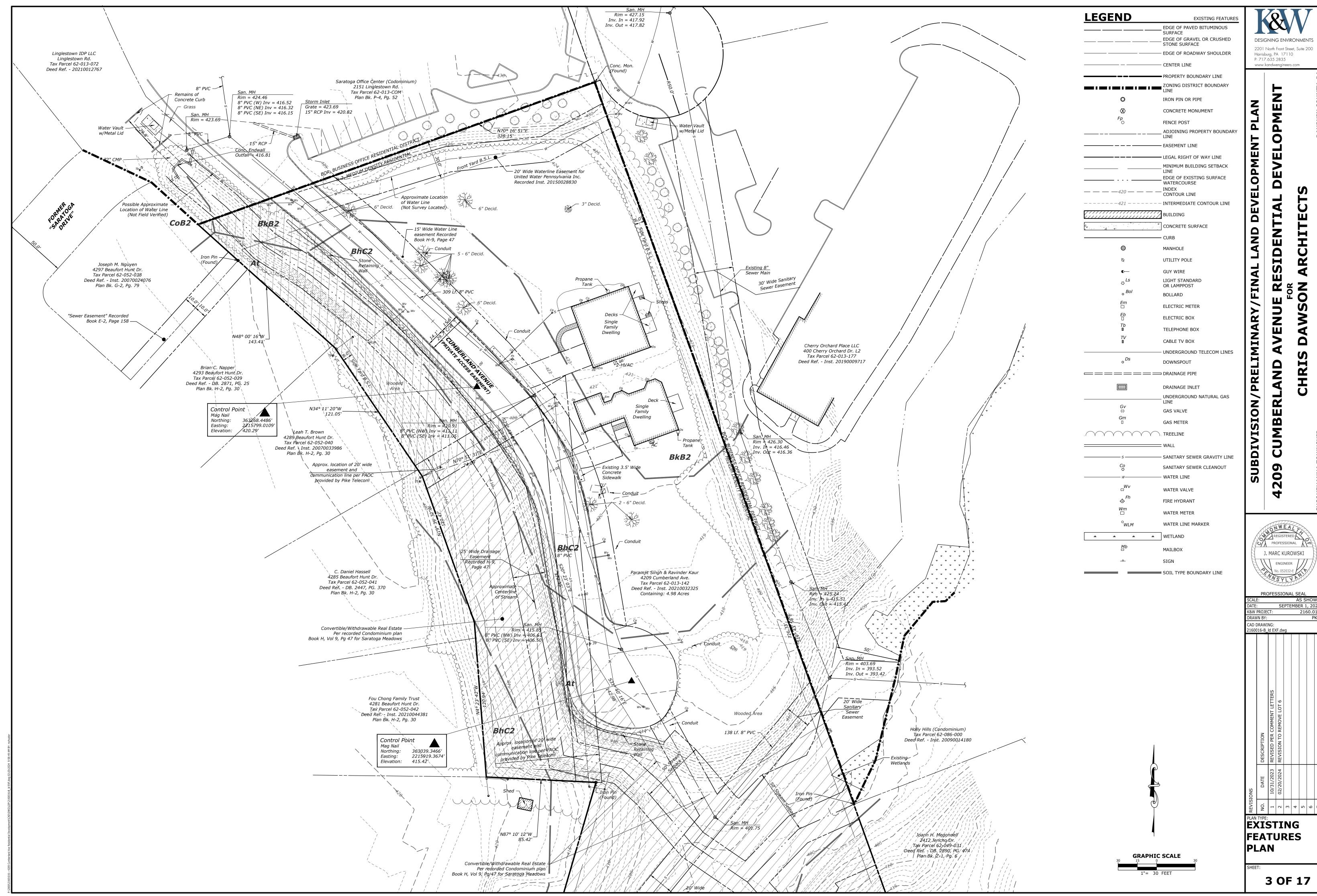
0

J. MARC KUROWSKI PROFESSIONAL SEA

SEPTEMBER 1

AD DRAWING 60016-A Id CVR.dwg







2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835

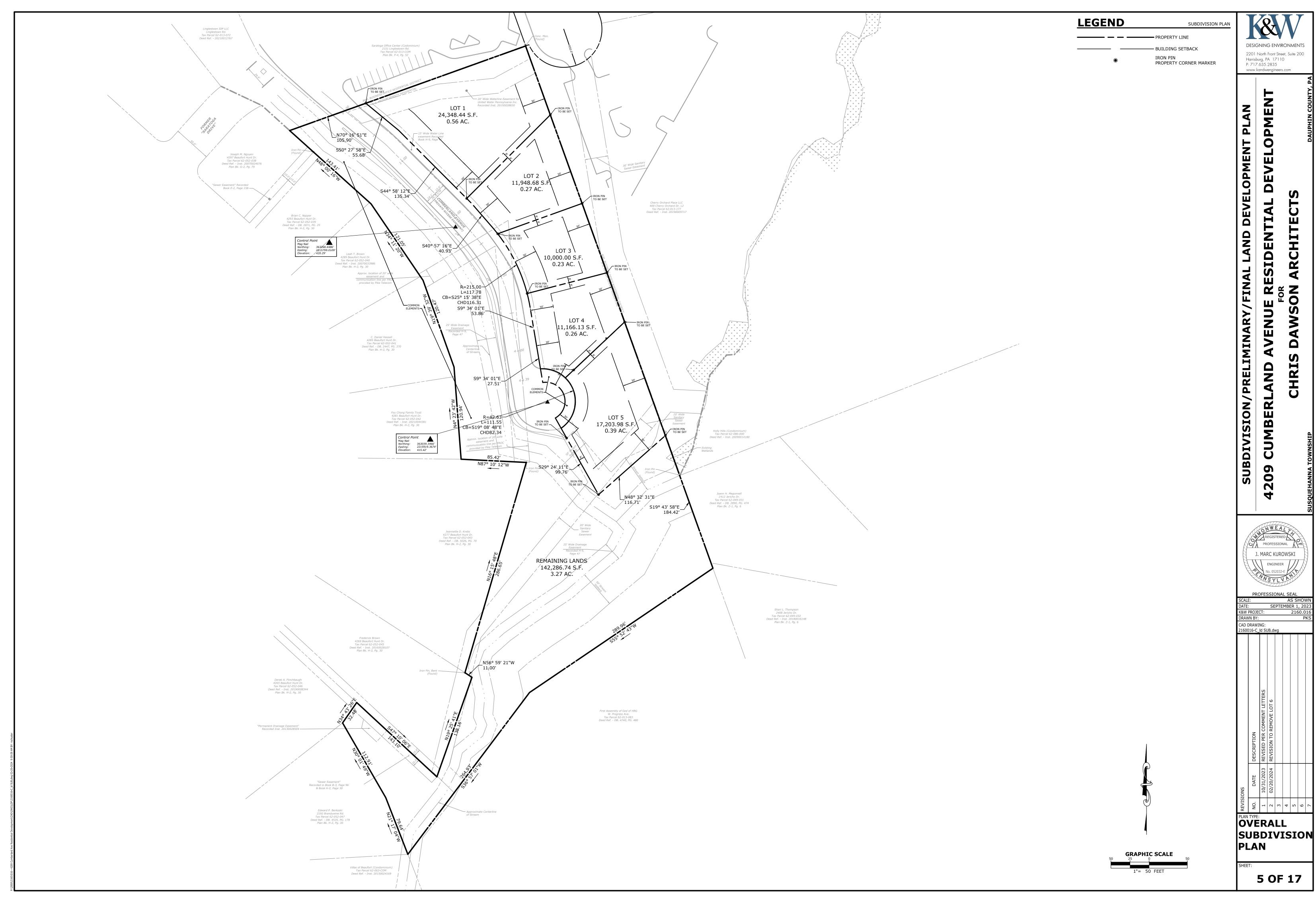
www.kandwengineers.com

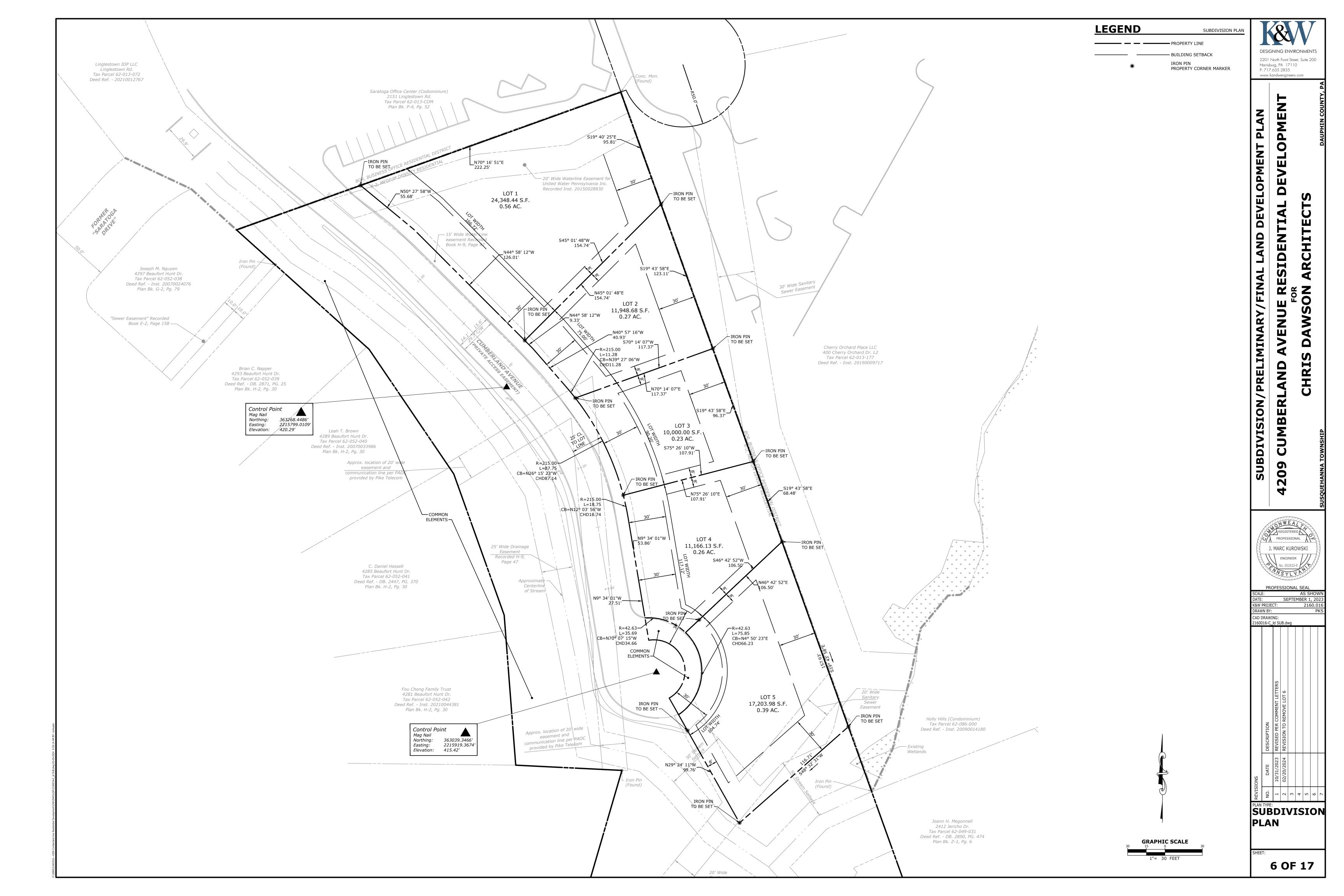
**BDIVISION/PRELIMINARY/FINAL** HRI SU

J. MARC KUROWSKI

CAD DRAWING: 160016-C\_ld DEMO.dwg

DEMOLITION PLAN









2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.com

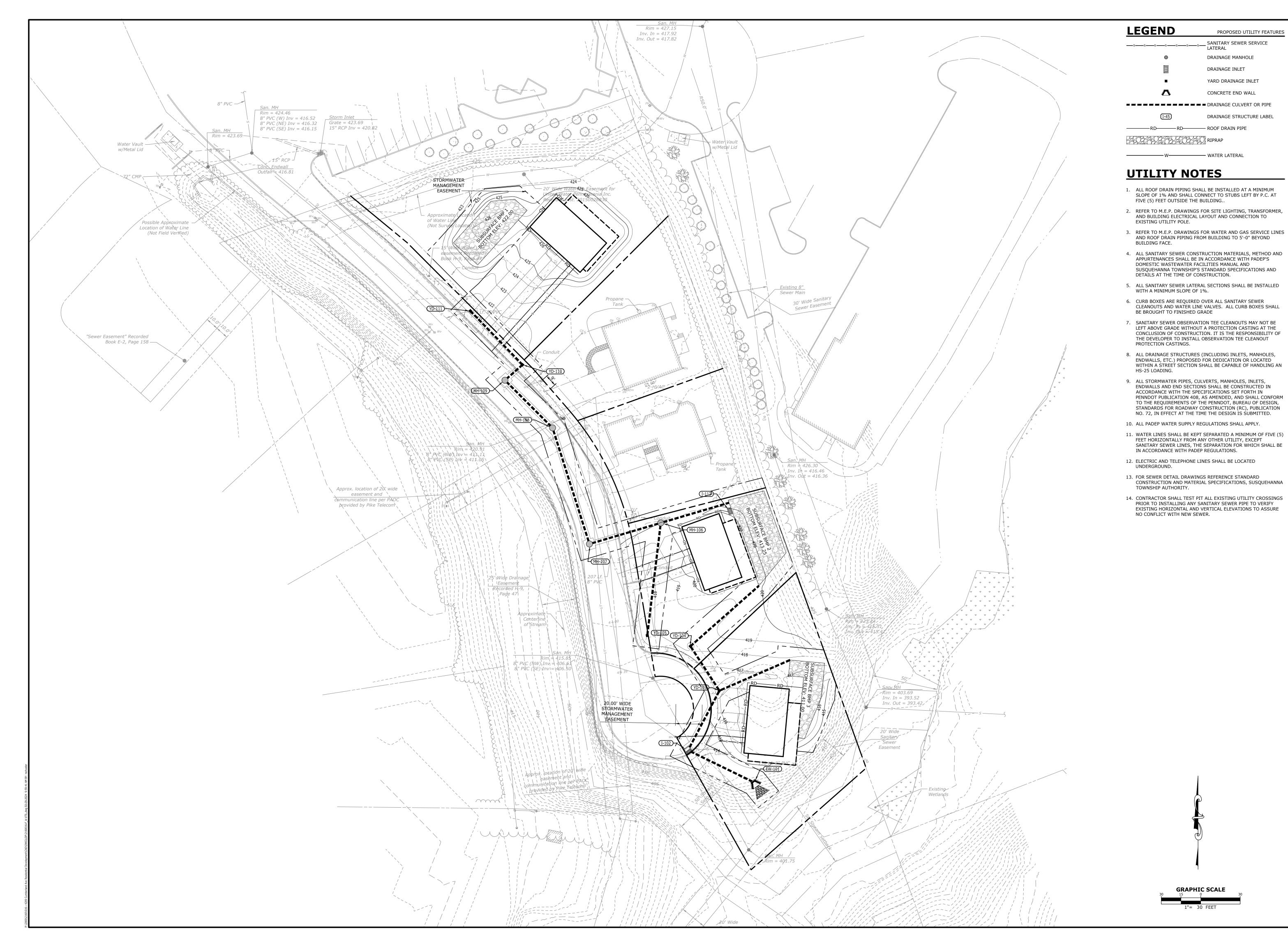
CHRIS

**BDIVISION/PRELIMINARY/FINAL** 

SU

L60016-E\_ld GRADE.dwg

GRADING PLAN



2201 North Front Street, Suite 200

Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.com

Ш

0

 $\mathbf{\Omega}$ 

20

J. MARC KUROWSKI

160016-F\_ld UTIL.dwg

UTILITY PLAN



**LEGEND** PROPOSED LANDSCAPE PLAN FEATURES

DECIDUOUS STREET TREE **EVERGREEN TREE** 

PLANTING LABEL

## LANDSCAPE NOTES

1. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES, AND LAWNS AND EXISTING EXTERIOR PLANTS FROM DAMAGE CAUSED BY PLANTING OPERATIONS, CONTACT PA-1-CALL 1-800-242-1776 AT A MINIMUM OF THREE WORKING DAYS PRIOR TO

2. PROVIDE EROSION CONTROL MEASURE TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUN-OFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND

3. ALL TREE AND SHRUB REMOVAL AS SHOWN ON THE DEMOLITION PLAN SHALL HAVE ALL STUMPS AND ROOTS REMOVED BY MEANS OF STUMP GRINDING AND/OR BACKHOE. ALL BIODEGRADABLE PLANT MATERIAL FROM THE REMOVAL PROCESS SHALL BE COLLECTED AND REMOVED FROM THE SITE.

#### PLANT BED ESTABLISHMENT

1. CONTRACTOR TO CONFIRM EXISTING TOPSOIL DEPTH AND SHALL FURNISH SOIL ANALYSIS BY QUALIFIED LAB STATING PERCENTAGES OF ORGANIC MATTER, GRADUATION OF SAND, SILT AND CLAY CONTENT, DELETERIOUS MATERIAL, PH AND MINERAL AND PLANT-NUTRIENT content of topsoil. Contractor to provide data at a minimum of 5 different planting areas. Contractor TO SUBMIT EXISTING TOPSOIL DEPTH AND RECOMMENDED QUANTITIES OF NITROGEN, PHOSPHORUS AND POTASH INGREDIENTS TO BE ADDED TO PRODUCE A SATISFACTORY TOPSOIL TO LANDSCAPE ARCHITECT FOR APPROVAL.

2. TOPSOIL SHALL HAVE ACIDITY RANGE OF PH 5.0 TO PH 7.0 AND AN ORGANIC CONTENT OF AT LEAST 3-4%. MINIMUM TOPSOIL DEPTH IN PLANTING BEDS SHALL BE 12" BUT 18" IS RECOMMENDED. ADDITIONAL TOPSOIL SHALL BE ADDED WHEN POSSIBLE.

3. APPLY APPROVED SOIL AMENDMENTS AND FERTILIZER ON SURFACE AND THOROUGHLY BLEND PLANTING SOIL MIX FOR PLANTING BACKFILL.

4. LAY OUT INDIVIDUAL TREE AND SHRUB LOCATIONS AND AREAS FOR MULTIPLE EXTERIOR PLANTINGS. STAKE LOCATIONS, OUTLINE AREAS, ADJUST LOCATIONS WHEN REQUESTED, AND OBTAIN LANDSCAPE ARCHITECTS ACCEPTANCE OF LAYOUT BEFORE PLANTING. MAKE MINOR ADJUSTMENTS AS REQUIRED.

HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING, PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK-FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALE, INJURIES, ABRASIONS, AND

2. PROVIDE TREES OF SIZES AND GRADES COMPLYING WITH ANSI Z60.1 FOR THE TYPE OF TREES REQUIRED. TREES OF A LARGER SIZE MAY BE USED IF ACCEPTABLE TO ARCHITECT, WITH A PROPORTIONATE

3. IF FORMAL ARRANGEMENTS OR CONSECUTIVE ORDER OF TREES IS SHOWN, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD, AND NUMBER LABEL TO ASSURE SYMMETRY IN PLANTING.

#### CLEANUP AND PROTECTION

1. DURING EXTERIOR PLANTING, KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION.

2. PROTECT EXTERIOR PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED EXTERIOR PLANTING.

1. REMOVE SURPLUS SOIL AND WASTE MATERIAL, INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

1. WARRANT THE FOLLOWING EXTERIOR PLANTS FOR THE WARRANTY PERIOD INDICATED IN THE SPECIFICATIONS, AGAINST DEFECTS INCLUDING DEATH ND UNSATISFACTORY GROWTH. WARRANTY PERIODS FOR ALL PLANT MATERIAL AND SOD: ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.

2. REMOVE DEAD EXTERIOR PLANTS IMMEDIATELY. REPLACE IMMEDIATELY UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON. 3. REPLACE EXTERIOR PLANTS THAT ARE MORE THAN 25 PERCENT DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD.

4. A LIMIT OF ONE REPLACEMENT OF EACH EXTERIOR PLANT WILL BE REQUIRED, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.

#### MISC. PLANTING NOTES

1. ALL PLANTING MATERIAL TO BE INSTALLED AS PER SIZE INDICATED ON

PLANT SCHEDULE. 2. ANY SUBSTITUTIONS THAT MAY BE REQUIRED SHALL BE APPROVED BY

THE LANDSCAPE ARCHITECT PRIOR TO ORDERING MATERIAL. 3. ALL PLANTINGS AND PLANTING PROCEDURES SHALL CONFORM TO GOOD NURSERY AND LANDSCAPE PRACTICE AND THE STANDARDS SET FORTH

4. PRIOR TO COMMENCEMENT OF WORK ALL UTILITIES BOTH ABOVE AND BELOW GROUND SHALL BE LOCATED THROUGH THE PA 1CALL SYSTEM AND/OR THE GENERAL CONTRACTOR ON SITE. IF ANY CONFLICTS DO OCCUR THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY

5. CONTRACTOR TO VERIFY ALL PLANT COUNTS AND LOCATIONS PRIOR TO ORDERING MATERIAL. K&W AND THE OWNER ACCEPT NO RESPONSIBILITY FOR TYPOGRAPHICAL ERRORS AND MISCOUNTS.

TERRASORB, OR APPROVED EQUAL, INCORPORATED INTO PLANTING SOIL AS RECOMMENDED BY MANUFACTURER. 7. ANY PLANT NOT INCLUDED IN A PLANTING BED SHALL HAVE A MULCHED

CIRCLE. THE SIZE OF THE MULCHED CIRCLE SHALL BE DETERMINED ACCORDING TO THE OVERALL PLANT SIZE OR CALIPER. CONSULT THE LANDSCAPE ARCHITECT FOR CLARIFICATION IF REQUIRED.

8. EACH PLANT SHALL BE PLANTED SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT, AT ANY TIME, COVER THE ROOTBALL WITH TOPSOIL BACKFILL.

9. THE TOPSOIL BACKFILL SHALL BE FIRMLY TAMPED, COMPARABLE TO FOOT PRESSURE, IN 3" LIFTS TO STABILIZE THE ROOT BALL AND TO PREVENT AIR POCKETS.

10. WATER ALL PLANTINGS INDIVIDUALLY WITH AN OPEN ENDED GARDEN HOSE SUBSEQUENT TO INSTALLATION. DO NOT USE MECHANICAL SPRINKLERS TO WATER PLANTINGS.

11. STREET TREES SHALL BE LOCATED SIX (6) FEET FROM EDGE OF ADJACENT SIDEWALK OR CURB UNLESS OTHERWISE DEPICTED.



2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.com

Z

0

 $\mathbf{\Omega}$ 

J. MARC KUROWSKI

PROFESSIONAL SEAL SEPTEMBER 1, AD DRAWING: 60016-H ld LS.dwg

LANDSCAPE PLAN



LEGEND PROPOSED E&S CONTROL PLAN FEATURES

EROSION PREVENTION MATTING SOIL MATERIAL STOCKPILE

SS—SILT SOCKS

INLET PROTECTION

- SLOPES EXCAVATIONS SHOULD BE STABILIZED TO PREVENT EROSION AND CONTRACTOR SHOULD EMPLOY PROPER CONSTRUCTION TECHNIQUES TO ENSURE SAFETY ON STEEP
- 3. <u>FROST ACTION</u> CONTRACTOR SHALL CONSULT PROJECT GEOTECHNICAL ENGINEER/INSPECTOR REGARDING ANY SPECIAL MEASURES TO BE TAKEN FOR EARTHWORK WHICH IS TO OCCUR
- 4. <u>SOIL pH LEVELS</u> CONTRACTOR SHALL HAVE SOIL pH TESTED TO DETERMINE CORRECT FERTILIZER APPLICATION RATES.
- 5. <u>FLOODING POTENTIAL</u> ENSURE THAT THE SITE HAS PROPER
- 6. <u>HIGH GROUNDWATER LEVEL</u> CONTRACTOR SHALL EMPLOY DEWATERING TECHNIQUES AS APPROVED BY THE CONSERVATION DISTRICT. PUMPED WATER FILTER BAGS SHALL BE USED TO DEWATER UTILITY TRENCHES AND BELOW GRADE
- 7. <u>EROSION</u> ANY EROSION THAT OCCURS THAT CAN NOT BE ADDRESSED BY MEASURES FOUND IN THE PLANS THE CONTRACTOR SHALL CONTACT THE SITE DESIGN ENGINEER AND
- 8. <u>BASIN AREAS AND EMBANKMENTS</u> FILL FOR BASIN EMBANKMENTS SHALL BE COMPACTED IN 8" LIFTS TO 98% MAXIMUM DRY DENSITY (STANDARD PROCTOR) ±2% MOISTURE CONTENT PER PER ASTM D-1557. ANTI-SEEP COLLARS SHALL BE INSTALLED ON A BASIN DISCHARGE PIPING TO PREVENT SEEPAGE OF WATER FROM THE BASIN. CONSULT WITH SITE DESIGN ENGINEER FOR THE SPECIFIC ANTI-SEEP COLLAR SIZE

#### **GENERAL E&S NOTES**

- AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E&S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DAUPHIN COUNTY CONSERVATION
- FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
- 3. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
- 4. SPECIAL CARE SHALL BE TAKEN TO PREVENT SEDIMENT LADEN STORMWATER FROM ENTERING ALL STORMWATER MANAGEMENT AND CONVEYANCE FACILITIES UNTIL THE SITE HAS BEEN
- 5. ANY SITES TO BE UNDISTURBED FOR LONGER THAN THREE DAYS PROCEDURES SET FORTH IN THE PA EROSION AND SEDIMENT CONTROL MEASURES MANUAL.

2201 North Front Street, Suite 200

Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.com

ELOPMEN 

HIH 

RELIMIN

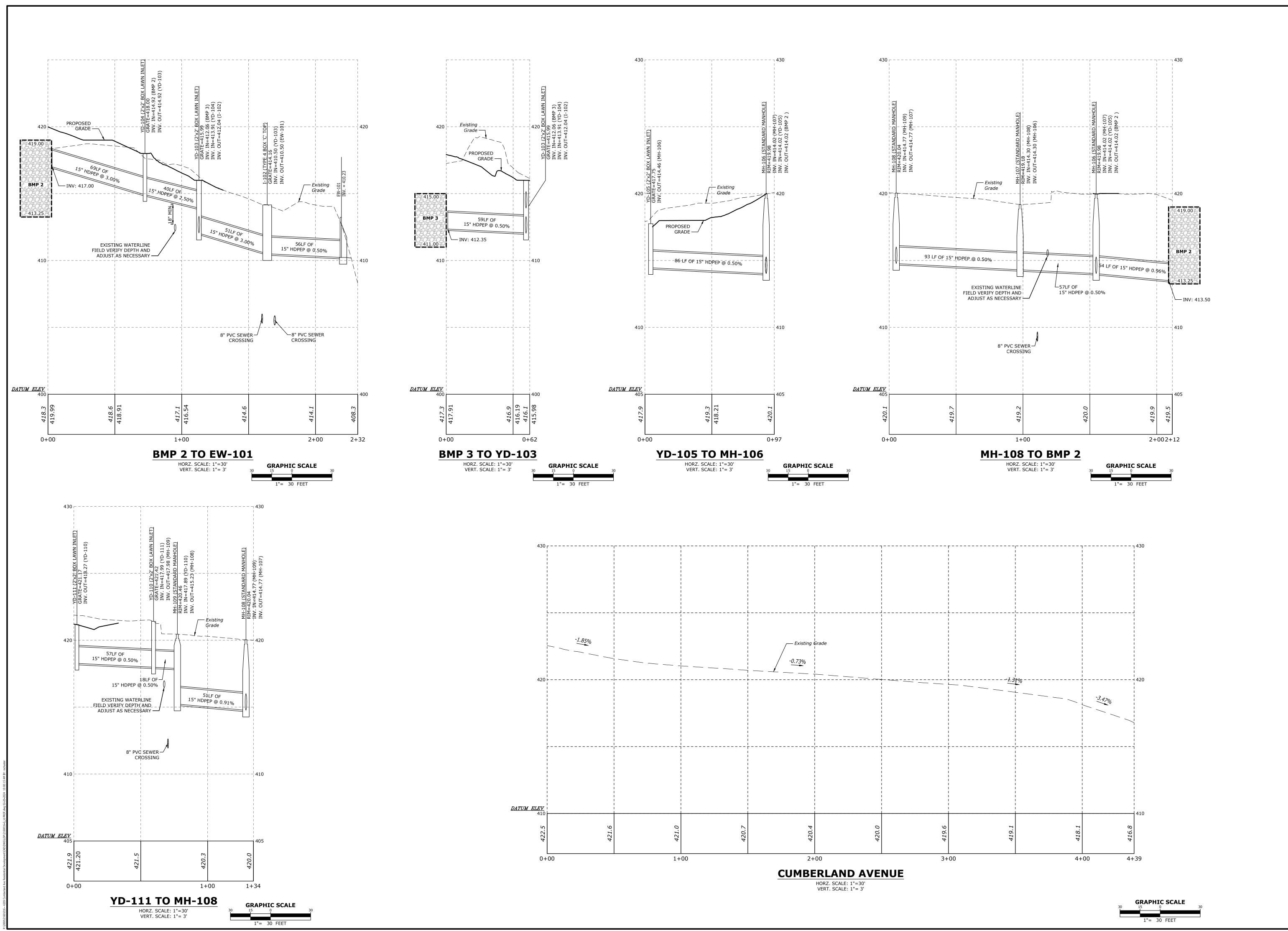
NO

 $oldsymbol{\Omega}$ 

SU

L60016-M\_ld E&S.dwg

**EROSION &** SEDIMENTATION CONTROL PLAN

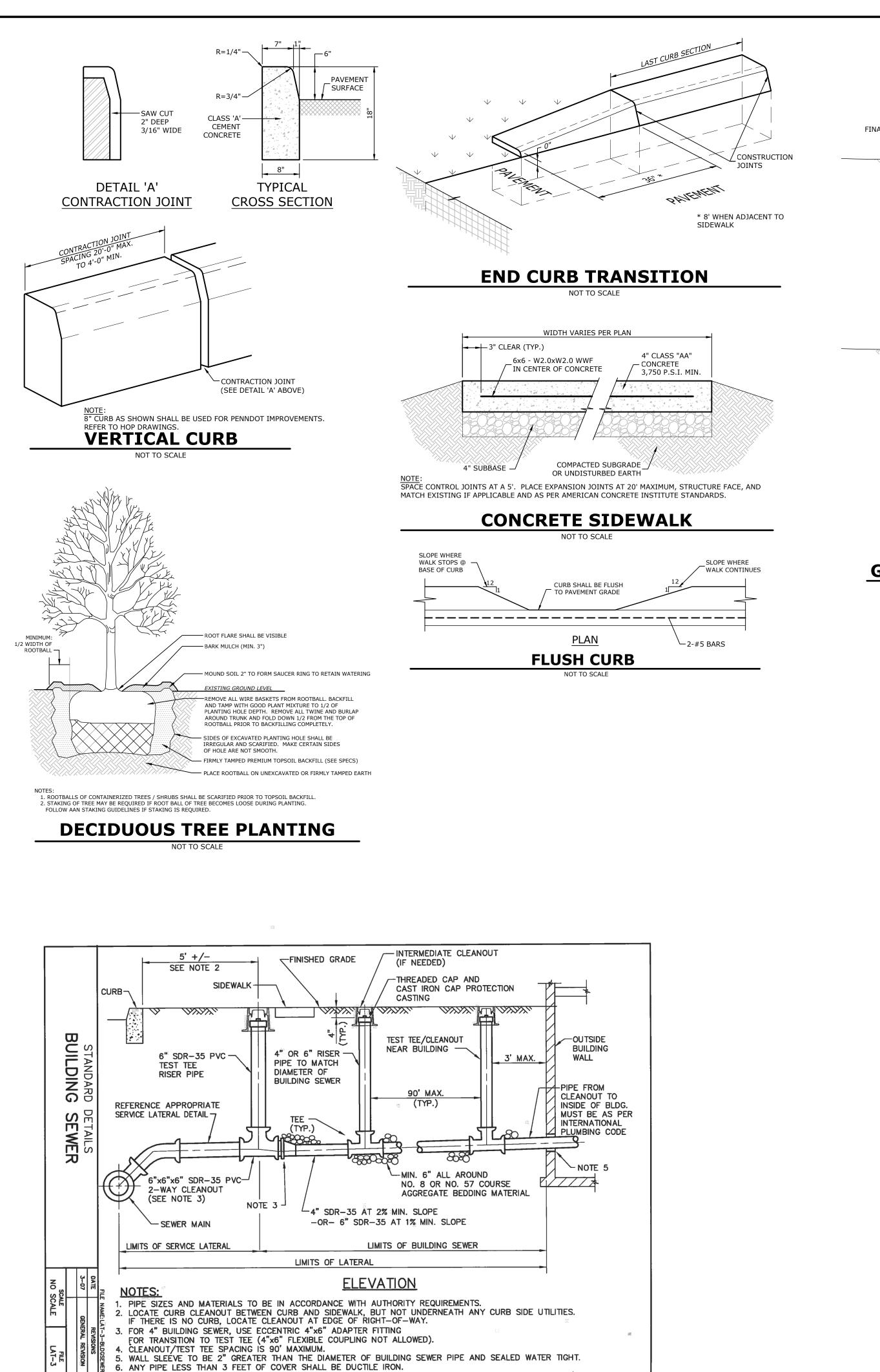


2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835

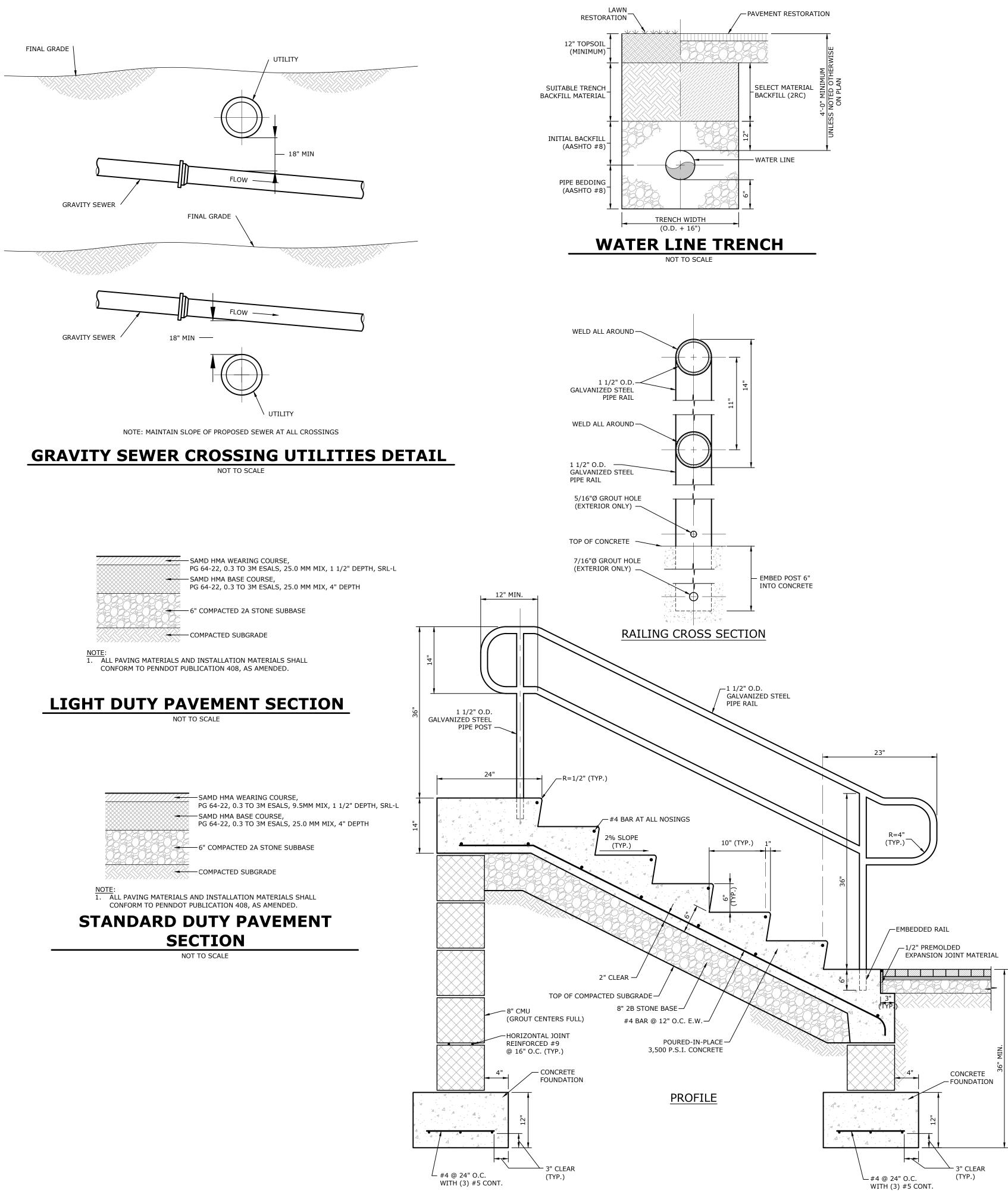
LAND DEVELOPMENT PLAN **BDIVISION/PRELIMINARY/FINAL** 

PR	OFE	2210	JIVA	L S	EAL		
SCALE: AS SHOWN							
DATE: SEPT				MBE	ER 1	, 20	23
<&W PROJ	ECT:				216	50.0	16
DRAWN BY	<b>'</b> :					Р	KS
CAD DRAW 2160016-0		ROF.	dwg				
	TERS						
1	1=	9					

ROAD & STORMWATER PROFILES



7. THERE SHALL BE A 10 FOOT HORIZONTAL SEPARATION BETWEEN WATER SERVICE AND SERVICE LATERAL / BUILDING SEWER.



**CONCRETE STAIRWAY** 

2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.co

**EVELOPMENT** 

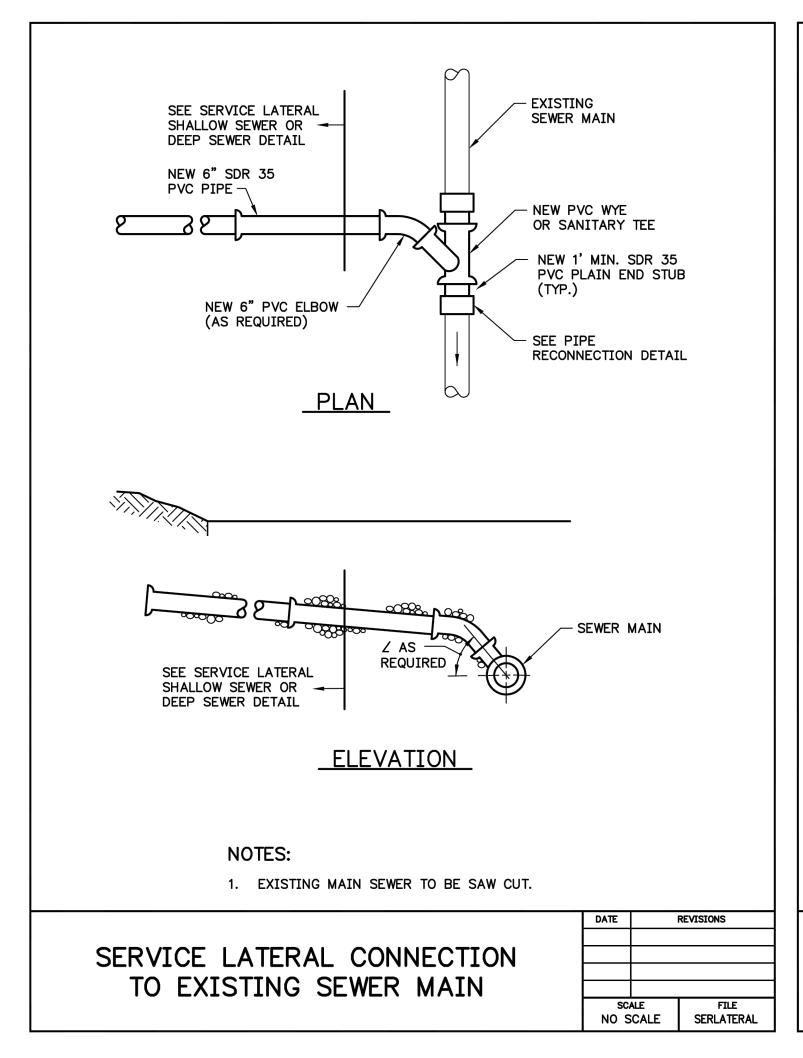
**DIVISION/PRELI** 

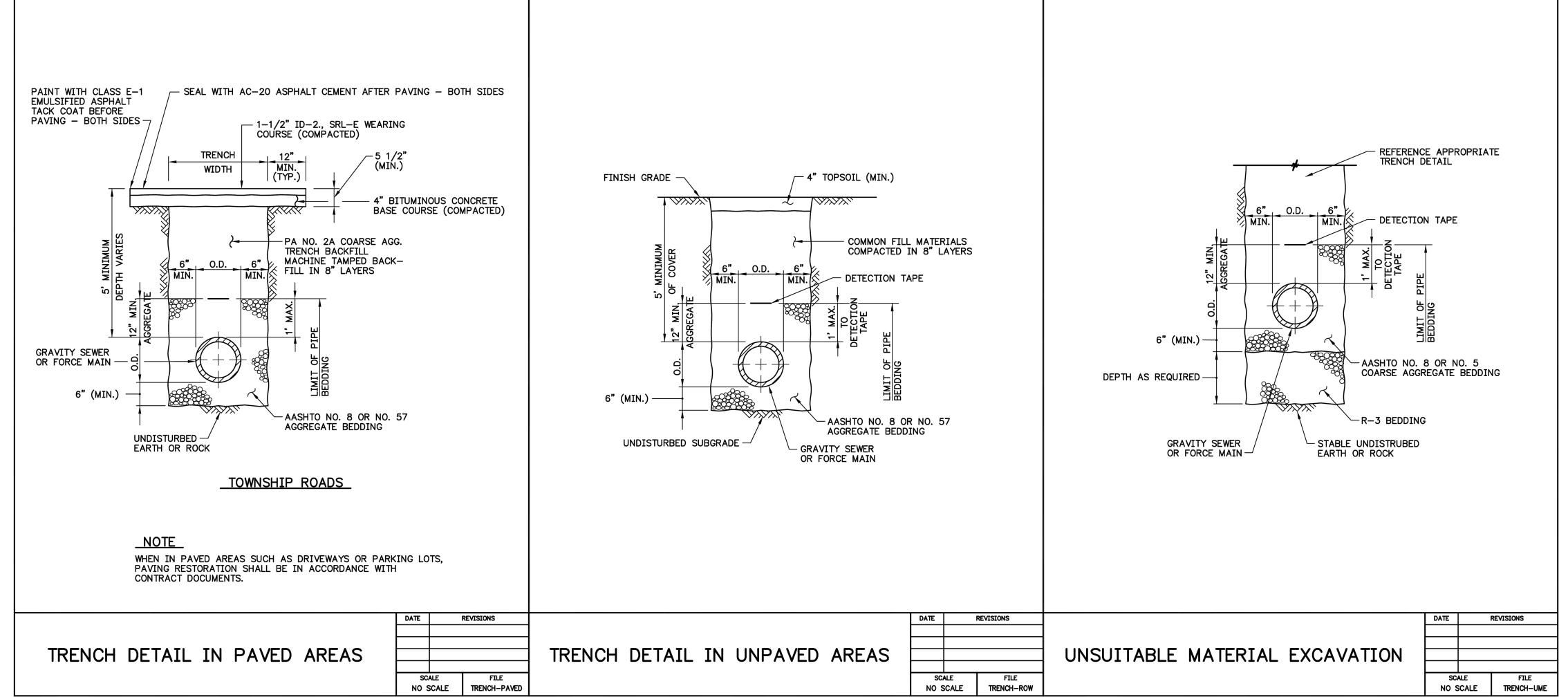
 $\mathbf{\omega}$ 

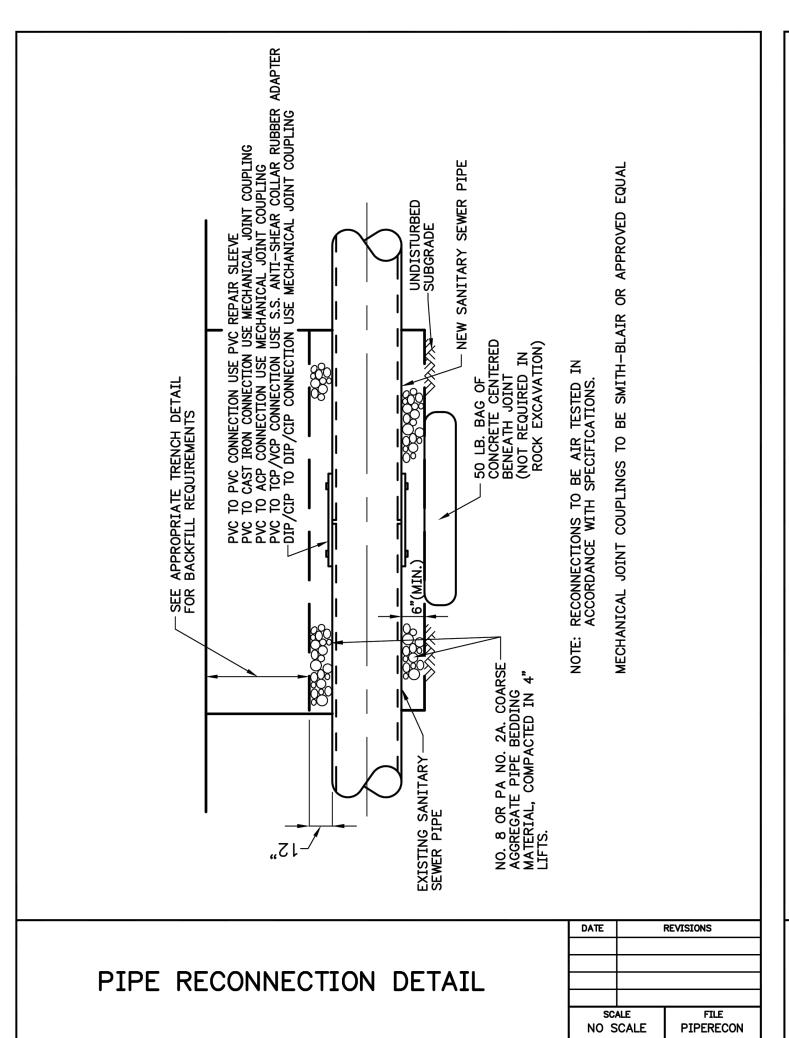
SU PROFESSIONAL J. MARC KUROWSKI ENGINEER

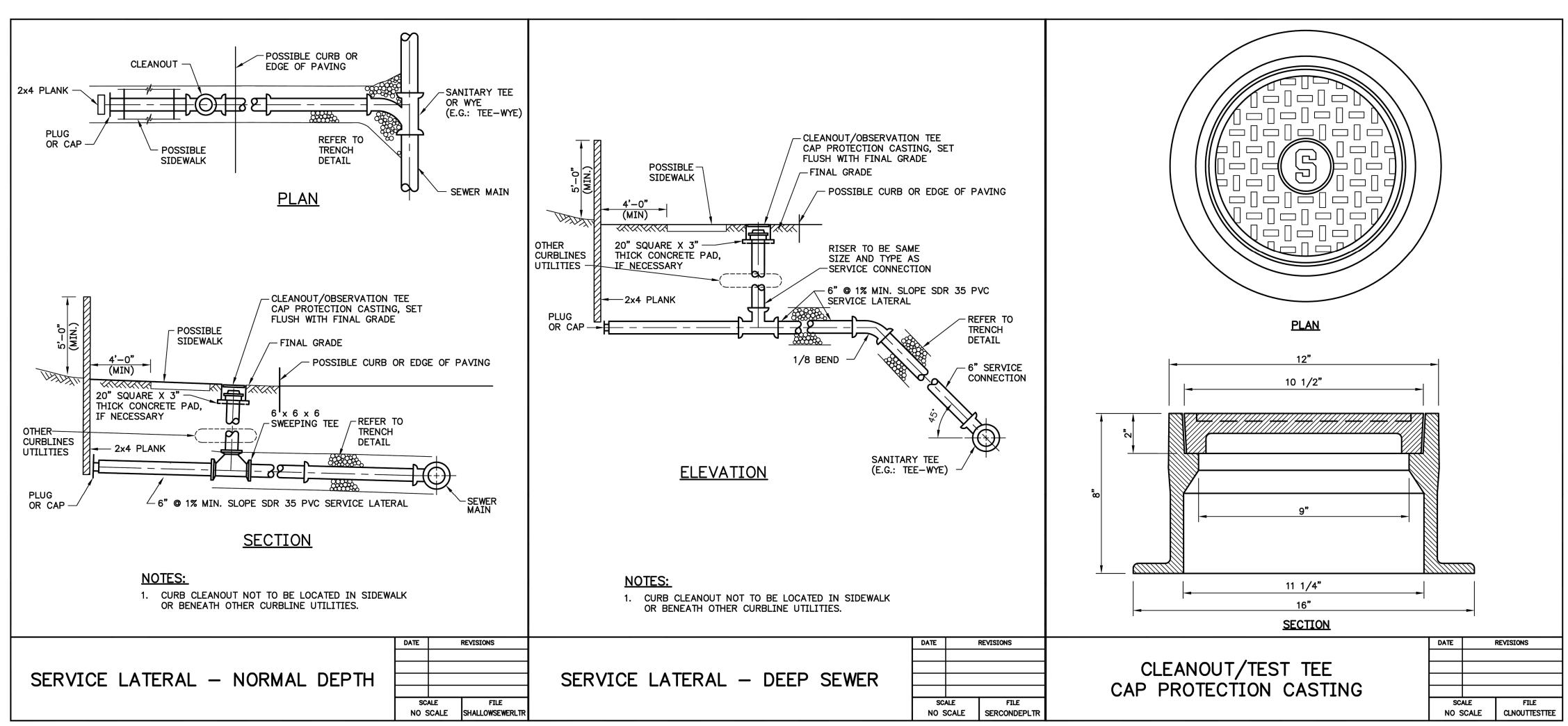
PROFESSIONAL SEAL SEPTEMBER 1, AD DRAWING: L60016-N\_ld DETL.dwg

SITE **DETAILS** 











ISION/PRELIMINARY/FINAL LAND DEVELOPMENT PLAN MBERLAND AVENUE RESIDENTIAL DEVELOPMENFOR FOR CHRIS DAWSON ARCHITECTS

REGISTERED
PROFESSIONAL

J. MARC KUROWSKI

ENGINEER
No. 052032-E

PROFESSIONAL SEAL

BD

SU

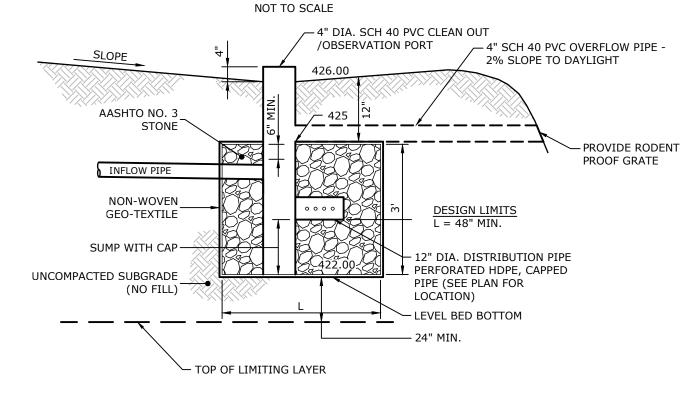
SCAL	Ε:						HOV	
DATE	:		SE	PTE	MBE		, 20	
K&W	PROJE	CT:				216	0.0 P	
DRAW	/N BY:						Р	
	DRAWI							
21600	016-N_	ld DI	ETL.c	lwg				
		١,,						
		REVISED PER COMMENT LETTERS						
		ΙË	9					
		凹	REVISION TO REMOVE LOT 6					
		Þ	<u> </u>					
		<del> </del>						
		₹	Σ					
	_	႘	2					
	<u></u>	띪	2					
	Ε	<u>ا</u>	Z					
	DESCRIPTION	SEI	SIC					
	SS	Š	Ň					
		₩	2					
		_	4					
		.0/31/2023	12/20/2024					
	DATE	1/2	)/2					
,,	۵	/31	/20					
S	l	0	2	l				

PLAN TYPE: SEWER DETAILS

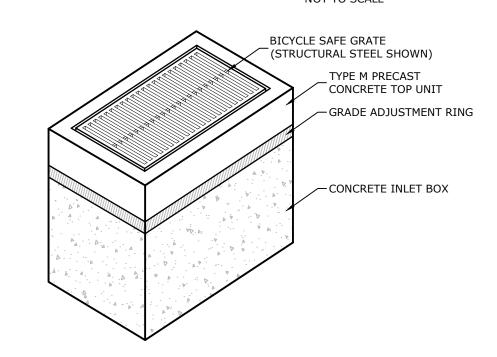
#### NOTES: 1. CLAY CORE SPECIFICATIONS:

THE CLAY CORE MATERIAL MUST BE CLASS AS A CL OR CH WITH NO PARTICLE SIZE LARGER THAN 3/4" b. MATERIAL SHOULD BE COMPACTED IN 8-INCH LIFTS TO A MINIMUM OF 98% OF THE SOILS MAXIMUM DRY DENSITY AS PER ASTM D698 AT THE OPTIMUM MOISTURE CONTENT.

#### **INFILTRATION BED SECTION (BMP 1)**



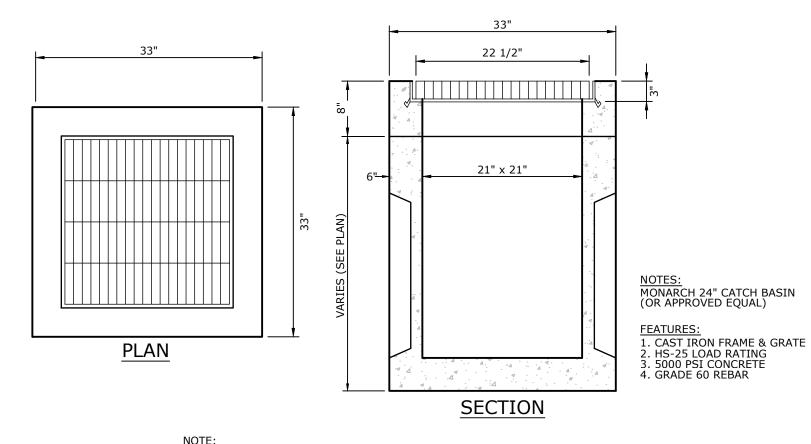
## INDIVIDUAL LOT INFILTRATION BMP (BMP 1)



#### NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENN DOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-46M. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES. STRUCTURE SHALL BE CERTIFIED FOR H20 LOADING.
- 2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.
- 3. USE PRECAST CONCRETE OR STEEL GRADE ADJUSTMENT RINGS WHEN REQUIRED
- 4. ALL INLETS IN PARKED AREAS SHALL HAVE HEAVY-DUTY BICYCLE SAFE GRATING. 5. ALL INLETS IN PEDESTRIAN/PLAYGROUND AREAS SHALL HAVE ADA COMPLIANT GRATING.
- 6. ALL INLETS SHALL BE SUMPED BELOW GRADE (2 INCHES) TO AID IN THE RUNOFF FLOW TO THE
- 7. ALL FRAMES, CONCRETE TOP UNITS, AND GRADE ADJUSTMENTS RINGS SHALL BE SET IN A BED OF FULL MORTAR IN ACCORDANCE WITH PENNDOT PUBLICATION 408.
- 8. ALL INLETS DEEPER THAN FIVE FEET SHALL BE PROVIDED WITH MANHOLE-TYPE STEPS FOR ACCESS.

#### **TYPE 'M' INLET**



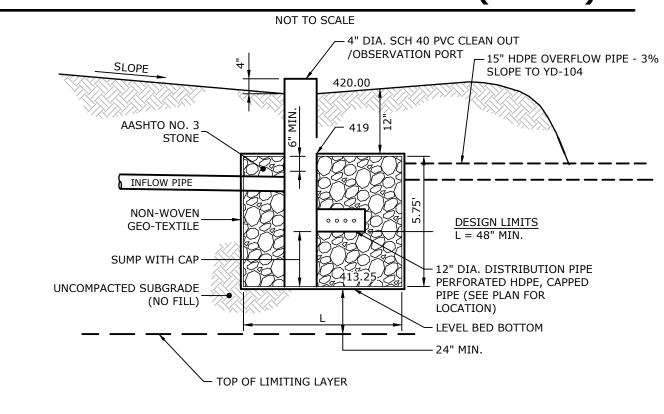
. ALL YARD INLETS IN PAVED AREAS SHALL HAVE HANDICAPPED ACCESSIBLE GRATES INSTALLED. 2. ALL OTHER YARD INLETS SHALL HAVE BICYCLE SAFE GRATES

2'x2' YARD INLET

#### DWELLING LOCATION GRASS COVER (ELEV. VARIES) 420.00 (MIN) CLASS 1 NON-WOVEN GEOTEXTILE 16" MIN OVERLAP (TYP ALL 1' WIDE CLAY CORE -SIDES, TOP & BOTTOM) CLEAN UNIFORMLY GRADED EARTHEN BACKFILL COARSE RESERVOIR .3.25 AGGREGATE AASHTO #3 + 2' MIN UNCOMPACTED

THE CLAY CORE MATERIAL MUST BE CLASS AS A CL OR CH WITH NO PARTICLE SIZE LARGER THAN 3/4" b. MATERIAL SHOULD BE COMPACTED IN 8-INCH LIFTS TO A MINIMUM OF 98% OF THE SOILS MAXIMUM DRY DENSITY AS PER ASTM D698 AT THE OPTIMUM MOISTURE CONTENT

#### **INFILTRATION BED SECTION (BMP 2)**



#### INDIVIDUAL LOT INFILTRATION BMP (BMP 2)

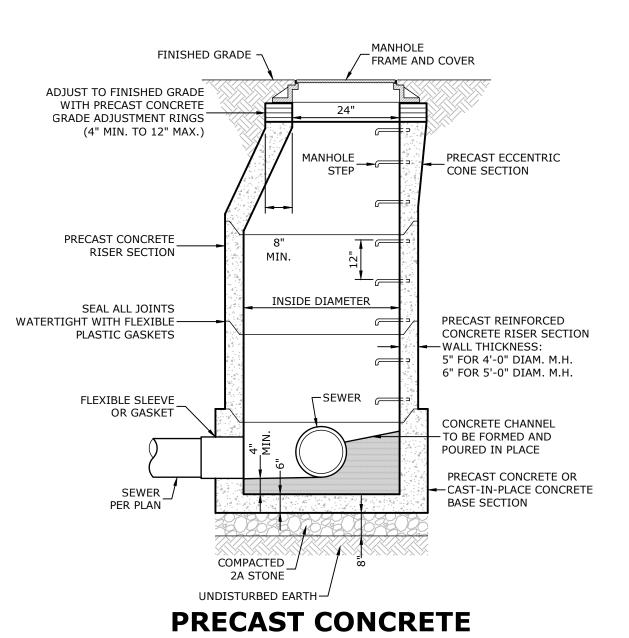
(STRUCTURAL STEEL SHOWN) TYPE C PRECAST CONCRETE TOP UNIT - GRADE ADJUSTMENT RING CONCRETE INLET BOX

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENN DOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES. STRUCTURE SHALL BE CERTIFIED FOR H20 LOADING.

2. ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOMS.

3. USE PRECAST CONCRETE OR STEEL GRADE ADJUSTMENT RINGS WHEN REQUIRED

#### **TYPE 'C' INLET**

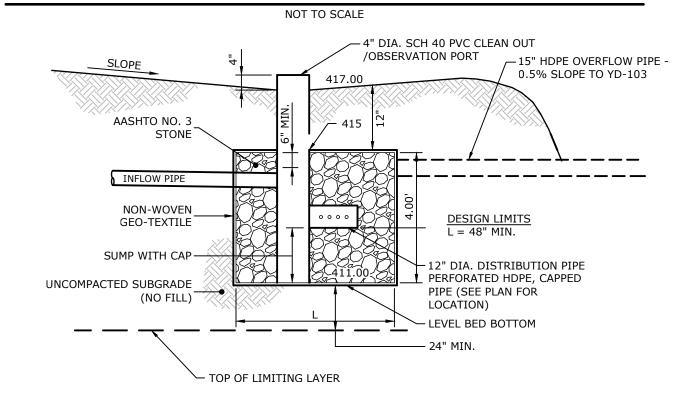


STORM SEWER SEWER MANHOLE

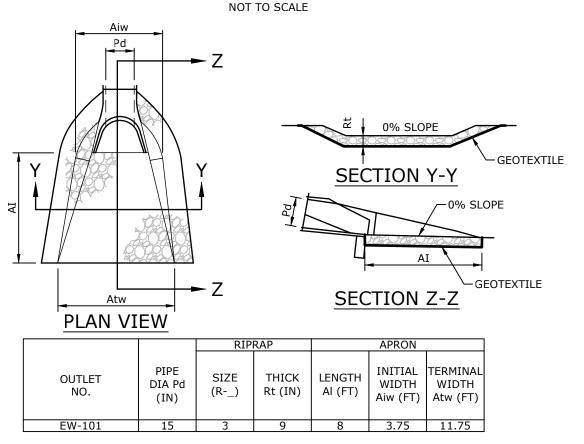
#### DWELLING LOCATION - GRASS COVER (ELEV. VARIES) 467.00 (MIN) CLASS 1 NON-WOVEN GEOTEXTILE 16" MIN OVERLAP (TYP ALL 1' WIDE CLAY CORE -SIDES, TOP & BOTTOM) CLEAN UNIFORMLY GRADED EARTHEN BACKFILL COARSE RESERVOIR 11.00 AGGREGATE AASHTO #3 UNCOMPACTED .. CLAY CORE SPECIFICATIONS: THE CLAY CORE MATERIAL MUST BE CLASS AS A CL OR CH WITH NO PARTICLE SIZE LARGER THAN 3/4" . MATERIAL SHOULD BE COMPACTED IN 8-INCH LIFTS TO A MINIMUM OF 98% OF THE SOILS MAXIMUM DRY

#### **INFILTRATION BED SECTION (BMP 3)**

DENSITY AS PER ASTM D698 AT THE OPTIMUM MOISTURE CONTENT.

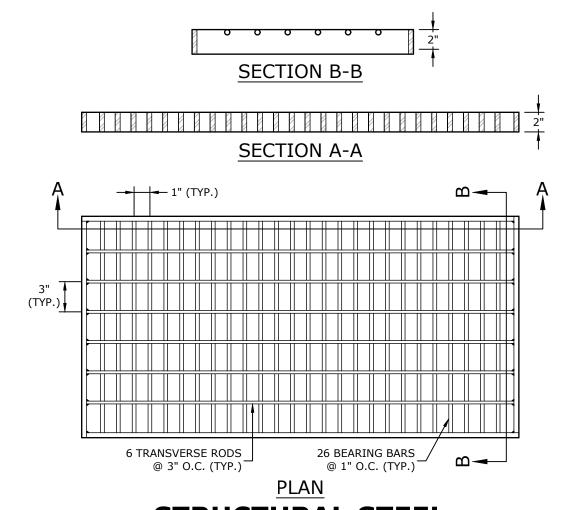


## **INDIVIDUAL LOT INFILTRATION BMP (BMP 3)**

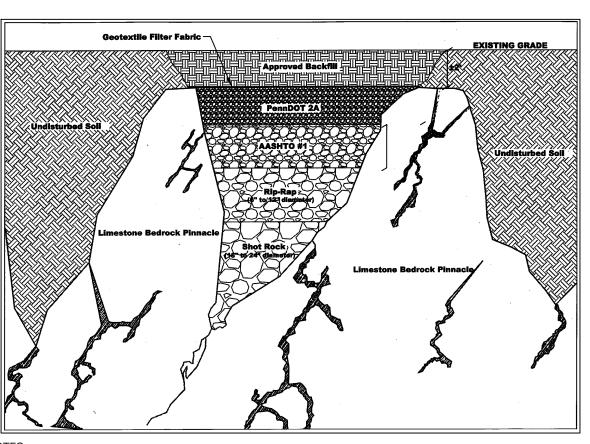


- ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
- ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

#### **STANDARD CONSTRUCTION DETAIL #9-1** RIPRAP APRONS AT PIPE OUTLETS

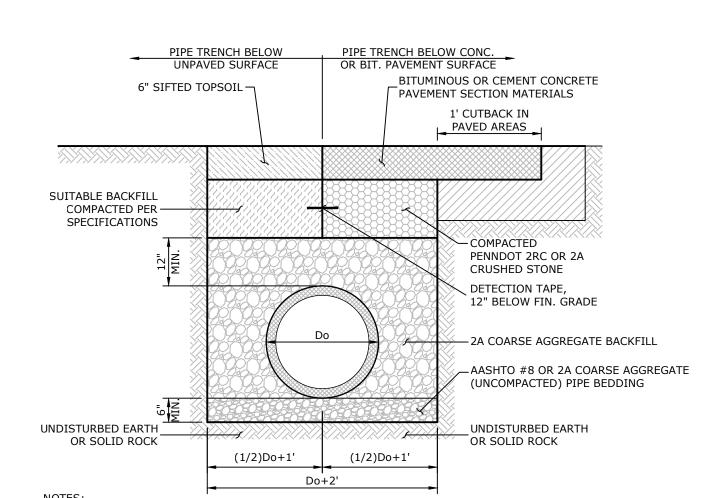


STRUCTURAL STEEL **BICYCLE SAFE GRATE** NOT TO SCALE



- THE REPAIRS OUTLINED BELOW ARE GENERAL GUIDELINES AND EACH SINKHOLE OCCURRENCE SHOULD BE THOROUGHLY REVIEWED BY THE GEOTECHNICAL ENGINEER OF RECORD FOR AN APPROPRIATE REMEDIATION PLAN:
  - STRUCTURAL AREAS (AREAS WITHIN THE BUILDING FOOTPRINT OR BENEATH PAVEMENT) • ANY AND ALL LOOSE AND/OR SATURATED SOILS WITHIN THE SINKHOLE SHOULD BE EXCAVATED AND CONTINUE UNTIL STABLE SOILS, A "THROAT" IS IDENTIFIED, OR UNTIL THE EXTENT OF THE EXCAVATION • UPON REMOVAL OF THE UNSTABLE SOILS, THE EXCAVATION SHOULD BE BACKFILLED USING HIGH MOBILITY, LOW STRENGTH FLOWABLE FILL (500 PSI) TO FINAL SUBGRADE ELEVATION.
  - NON-STRUCTURAL AREAS (NON-BUILDING/LANDSCAPED AREAS) • ANY AND ALL LOOSE AND/OR SATURATED SOILS SHOULD BE EXCAVATED FROM THE SINKHOLE. EXCAVATION SHOULD CONTINUE UNTIL STABLE SOILS, A "THROAT" IS IDENTIFIED, OR UNTIL THE EXTENT OF THE
  - EXCAVATION EQUIPMENT IS REACHED. • THE EXCAVATION SHOULD BE BACKFILLED WITH AGGREGATE OF DECREASING SIZE AS DEPICTED ON THE INVERTED FILTER DETAIL

## SINKHOLE REPAIR DETAIL



1. BACKFILL SHALL BE PLACED IN 8-INCH LIFTS, AT COMPACTION OF 95 PERCENT STANDARD PROCTOR

**STORM SEWER TRENCH SECTION** 

2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.

ELOPM PRELI N O DI  $\mathbf{\omega}$ 

J. MARC KUROWSKI N ENGINEER

PROFESSIONAL SEA SEPTEMBER 1 AD DRAWING: 60016-N\_ld DETL.dwg

**DETAILS** 

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES

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

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 REDUCI

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 IS NOT AVAILABLE THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE 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 SCREENED. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

#### **ALTERNATIVE CONSTRUCTION DETAIL** PUMPED WATER FILTER BAG

STARTING AT TOP OF SLOPE,

DIRECTION OF WATER FLOW

OVERLAP BLANKET ENDS 6 IN. MIN.

STYLE). STAPLE SECURELY.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED.

THE DOWNSLOPE BLANKET (SHINGLE

WITH THE UPSLOPE BLANKED OVERLYING

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT

**STANDARD CONSTRUCTION DETAIL #11-1** 

**EROSION CONTROL BLANKET INSTALLATION** 

ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED

ROLL BLANKETS IN

INSTALL BEGINNING OF ROLL

TRENCH, STAPLE, BACKFILL

BLANKET INSTALLATION

REFER TO MANUF. RECOMMENDED

AND LENGTH OF SLOPE BEING

BI ANKETED

STAPLING PATTERN FOR STEEPNESS

IN 6 IN. x 6 IN. ANCHOR

AND COMPACT SOIL

BLANKET EDGES STAPLED

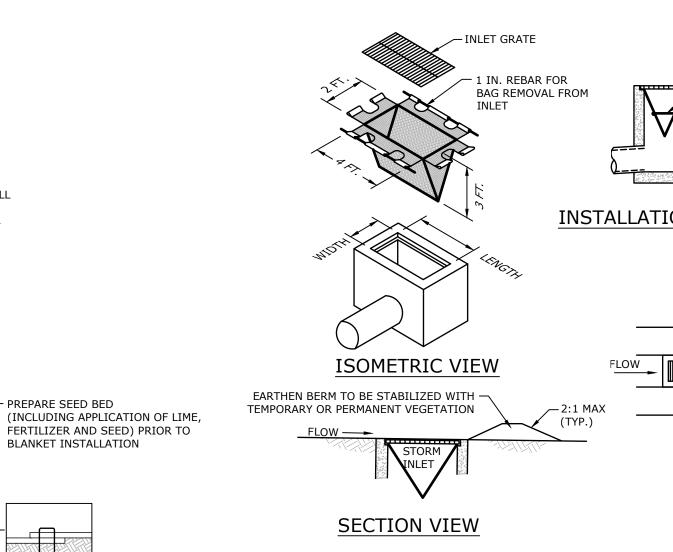
THE BLANKET SHOULD -

MUST MAINTAIN GOOD

SOIL CONTACT

(4 IN. MIN.)

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND



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 REMAIN

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 SIEVE.

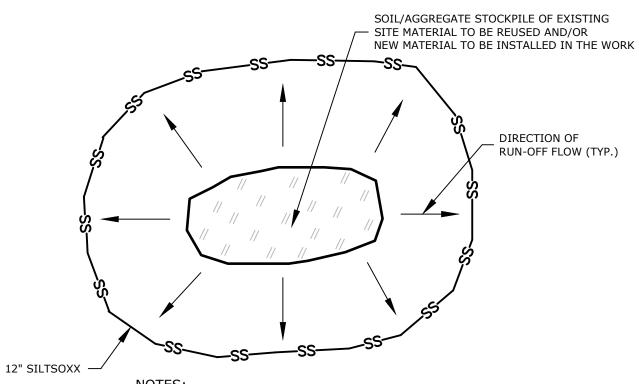
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS

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

FILTER BAG INLET PROTECTION - TYPE M INLET

DIRECT CONCRETE WASHOUT MAXIMUM DEPTH OF CONCRETE WASHOUT WATER 24" DIAMETER COMPOST FILTER SOCK. 4" MIN. OVERLAP ON UPSLOPE SIDE OF FILTER RING INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE. 2. 18" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION 2"x2"x36" WOOD STAKES PACED 5' O.C.

#### **FIGURE 3.18** TYPICAL COMPOST SOCK WASHOUT **INSTALLATION**

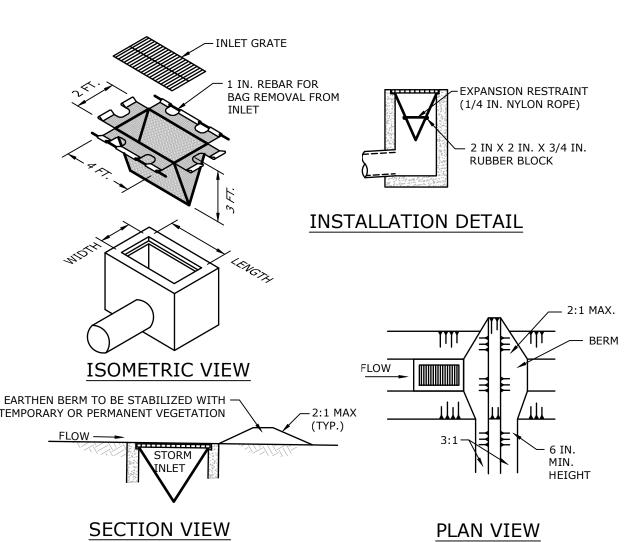


1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS. 3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS

4. ANY PROPOSED STOCKPILES FOR THE CONSTRUCTION SHALL NOT EXCEED 35 FEET IN

## **TEMPORARY TOPSOIL STOCKPILE**

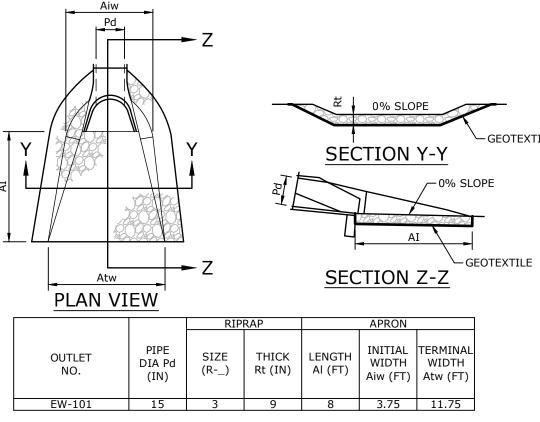


MAXIMUM DRAINAGE AREA = 1/2 ACRE.

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 TO THE PLAN NOTES.

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND

**STANDARD CONSTRUCTION DETAIL #4-16** 



COMPOST FILTER SOCK -

BLOWN/PLACED FILTER MEDIA -

COMPOST FILTER SOCK—

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 **STANDARD CONSTRUCTION DETAIL #9-1** 

# RIPRAP APRONS AT PIPE OUTLETS

- 2"X2" WOODEN STAKES

- 2"X2" WOODEN STAKES

PLACED 10' O.C.

PLACED 10' O.C.

2"X2" WOODEN STAKES COMPOST FILTER SOCK -PLACED 10' O.C. BLOWN/PLACED FILTER MEDIA -12" SUMP AREA UNDISTURBED AREA DISTURBED AREA

## UNDISTURBED AREA DISTURBED AREA **SECTION** DISTURBED AREA DISTURBED AREA CONTOURS

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.

UNDISTURBED AREA

PLAN VIEW

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

6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS;

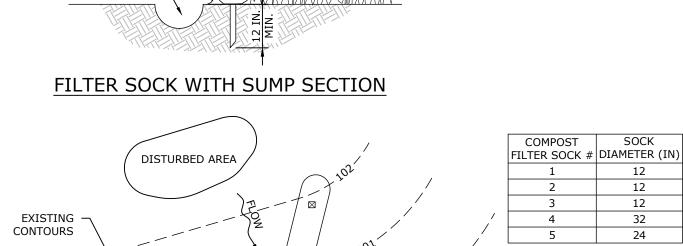
- PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. 7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE
- 8. TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31,

LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL

- 2012 AS AMENDED. REFER TO TABLE 4.1 & 4.2 FOR FABRIC SPECIFICATIONS AND 9. A SUMP AREA MAY BE ADDED TO THE STANDARD COMPOST FILTER SOCK PLACEMENT AT
- 10. A J-HOOK WITH SUMPED AREA MUST BE INSTALLED WHERE SPACE LIMITATIONS PREVENT THE PLACEMENT OF COMPOST FILTER SOCK AT LEVEL GRADE.

THE DISCRETION OF THE CONTRACTOR.

TABLE 4.2					
COMPOST STANDARDS					
ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)				
ORGANIC PORTION	FIBROUS AND ELONGATED				
рН	5.5 - 8.5				
MOISTURE CONTENT	30% - 60%				
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE				
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM				



GROUND

ENTERING ROCK CONSTRUCTION ENTRANCE.

APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

**PROFILE** 

**PLAN VIEW** 

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

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO

COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO

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

SEDIMENT POLLUTION CONTROL MANUAL EFFECTIVE DATE MARCH 31, 2012 AS AMENDED

TO BE CONSTRUCTED WITH MATERIALS AND TECHNIQUES IN ACCORDANCE WITH THE EROSION AND

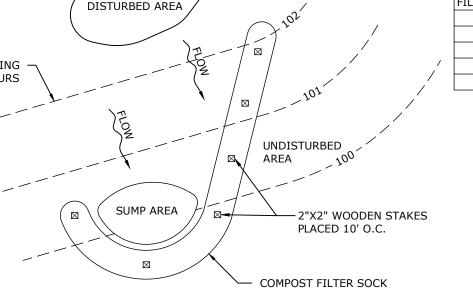
**ALTERNATIVE CONSTRUCTION DETAIL** 

**ROCK CONSTRUCTION ENTRANCE** 

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

\* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE



#### J-HOOK PLACEMENT

	TABLE 4.1 COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS						
MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)		
MATERIAL CHARACTERISTICS	PHOTO- DEGRADABLE	PHOTO- DEGRADABLE	BIO- DEGRADABLE	PHOTO- DEGRADABLE	PHOTO- 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	26 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	SYSTEMS				
INNER CON	TAINMENT NET	TING	HDPE BIAXIAL NET CONTINUOUSLY WOUND FUSION WELDED JUNCTURES				
			3/4"	X 3/4" MAX. APERT	URE SIZE		
OUTER F	ILTRATION MES	БН	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH) 3/16" MAX. APERTURE SIZE E USED ON PROJECTS LASTING 6 MO. OR LESS				

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

2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.d

BERM (6 IN. MIN.)\*

LOPM 

 $\mathbf{\omega}$ 

SEPTEMBER 1 AD DRAWING: L60016-N Id DETL.dwg

DETAILS

## GENERAL EROSION & SEDIMENT CONTROL NOTES

- 1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE ACCOMPANYING CONSTRUCTION SEQUENCE/STAGING OF EARTHMOVING ACTIVITIES. EACH STAGE SHALL BE COMPLETED BEFORE A SUBSEQUENT STAGE IS INITIATED. BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES AT LEAST 1 DAYS PRIOR TO CONSTRUCTION, THE GENERAL CONTRACTOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES. (THE LANDOWNER, THE EROSION AND SEDIMENTATION CONTROL PLAN DESIGNER, AND A REPRESENTATIVE OF THE DAUPHIN COUNTY CONSERVATION DISTRICT (717-921-8100) FOR AN ONSITE PRE-CONSTRUCTION MEETING, ALSO 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 800-242-1776 TO LOCATE BURIED UTILITIES.
- 2. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE. TIME, AND NAME OF THE PERSON CONDUCTING THE INSPECTION MUST BE NOTED IN THE LOG FOLLOWING EACH INSPECTION. THE INSPECTION LOG WILL ALWAYS BE KEPT ON THE SITE AND MADE AVAILABLE TO THE CONSERVATION DISTRICT UPON REQUEST.
- 3. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS OF THOSE INSTALLED WILL BE
- 4. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- 5. 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 PLAN.

6. 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 SHALL BE 2H:1V OR FLATTER. 7. 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
- 8. WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION, THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION,
- 8.1. THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND POLLUTION EVENTS.
- 8.2. ALL STEPS TAKEN TO REDUCE, ELIMINATE, AND PREVENT THE RECURRENCE OF THE NON-COMPLIANCE. 8.3. THE TIME FRAME TO CORRECT THE NON-COMPLIANT, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.
- 9. ONLY LIMITED UP-SLOPE DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE CONVEYANCE CHANNELS, DIVERSION CHANNELS, AND INTERCEPTOR CHANNELS FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE CONTROLS AS REQUIRED.
- 10. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
- 11. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.
- 12. VEHICLES MAY ONLY ENTER AND EXIT AT THE LOCATION OF APPROVED CONSTRUCTION ENTRANCE(S).
- 13. STOCK PILE HEIGHTS MUST NOT EXCEED 35 FEET NOR SHALL THE SIDE SLOPE EXCEED 2:1. 14. SILT SOCK MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. ENDS OF
- SILT FENCING MUST EXTEND TRAVELING UP-SLOPE AT 45 DEGREES. 15. SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH ONE-HALF THE ABOVE GROUND HEIGHT OF THE SILT
- 16. ANY SILT SOCK THAT HAS BEEN UNDERMINED OR TOPPED MUST BE REPLACED WITH FILTER OUTLETS IMMEDIATELY.
- 17. STORM WATER INLETS MUST BE PROTECTED UNTIL THE TRIBUTARY ACRES ARE STABILIZED. 18. SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM. 19. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING
- NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES, DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MAY BE SEEDED AND MULCHED WITH A OUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH AS SPECIFIED.
- 20. DIVERSIONS, CHANNELS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY. THEY SHALL BE CONSTRUCTED FREE OF ROCKS, TREE ROOTS, STUMPS, OR OTHER PROJECTIONS THAT IMPEDE NORMAL CHANNEL FLOW AND/OR PREVENT GOOD LINING TO SOILS CONTACT. CHANNEL SHALL BE INITIALLY OVER EXCAVATED TO ALLOW FOR THE PLACEMENT OF TOPSOIL.
- 21. THE APPLICANT WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED ON THIS PLAN.
- 22. THE APPLICANT MUST DEVELOP, AND HAVE APPROVED BY THE DAUPHIN COUNTY CONSERVATION DISTRICT, A SEPARATE EROSION AND SEDIMENTATION CONTROL PLAN FOR EACH SPOIL, BORROW, OR OTHER WORK AREA NOT DETAILED ON THE APPROVED PLAN, WHETHER LOCATED WITHIN OR OUTSIDE THE CONSTRUCTION LIMITS. PLAN MUST FOLLOW CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS
- 23. UNLESS OTHERWISE NOTED, THE LIMITS OF GRADING SHALL BE CONSIDERED THE LIMITS OF DISTURBANCE. 24. SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE OR STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE
- IMMEDIATELY IMPLEMENTED BY THE APPLICANT TO ELIMINATE ALL SUCH PROBLEMS. 25. SHOULD UNFORESEEN FROSTVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL ACT TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
- 26. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 6-4, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL RESOURCES, SUB-PART G. PROTECTION OF NATURAL. RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL. 27. PROTECTION TO EXISTING TREES AND SHRUBS SHALL BE TAKEN BY THE CONTRACTOR TO ELIMINATE UNNECESSARY
- 28. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST ALWAYS BE AVAILABLE AT THE PROJECT SITE. 29. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT.
- 30. 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.
- 31. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 FR SEC. AND 287.1 ER SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
- 32. ALL SLOPES 3:1 OR GREATER SHALL BE STABILIZED WITH EROSION CONTROL BLANKETING.
- 33. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST ALWAYS BE AVAILABLE AT THE PROJECT SITE. 34. SEDIMENT REMOVED FROM BMPS DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE WITH
- EXISTING SEDIMENT PROTECTION MEASURES IN PLACE AND INCORPORATED INTO THE SITE GRADING.
- 35. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES, PERMANENT STABILIZATION OF ALL DISTURBED AREAS SHALL OCCUR, DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES, DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS, DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- 36. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATORS SHALL CONTACT THE DAUPHIN COUNTY CONSERVATION DISTRICT FOR A FINAL INSPECTION PRIOR TO REMOVAL OF THE BMPS.
- 37. 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 IMMEDIATELY.
- 38. A SMALL AREA OF WETLANDS EXISTS TO THE SOUTH EAST OF THE PROPOSED LOTS, AS WELL AS RIVERINE WETLANDS EXIST ALONG THE STREAM. NO WETLAND AREA WILL BE DISTURBED OR AFFECTED AS PART OF THIS PLAN.

#### **MULCH SPECIFICATIONS**

ON ALL DISTURBED AREAS WHICH DO NOT HAVE AN EROSION CONTROL BLANKET SPECIFIED FOR INSTALLATION, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 3.0 TONS PER ACRE IMMEDIATELY AFTER SEEDING THE SURFACE. ON STEEP SLOPES OF 3:1 OR GREATER, MULCH SHALL BE ANCHORED THROUGH THE USE OF JUTE NETTING OR MIXING WITH ASPHALT AT THE RATE OF 100 GALLONS PER 3 TONS OF STRAW MULCH.

- SOIL AMENDMENTS SPECIFICATIONS
  APPLY THE FOLLOWING SOIL SUPPLEMENTS PRIOR TO PERMANENT SEEDING: A) PULVERIZED AGRICULTURAL LIMESTONE CONFORMING TO PENN D.O.T. FORM 408, SECTION 804, APPLIED AT A
- B) 10-20-20 ANALYSIS COMMERCIAL FERTILIZER CONFORMING TO PENN D.O.T. FORM 408, SECTION 804, APPLIED AT A RATE OF 140 POUNDS PER 1,000 SQUARE YARDS.

  C) 38-0-0 UREAFORM SLOW-RELEASE NITROGEN FERTILIZER CONFORMING TO PENN D.O.T. FORM 408, SECTION 804,

#### APPLIED AT A RATE OF 50 POUNDS PER 1,000 SQUARE YARDS. **SEED MIXTURES**

% PURE LIVE SEED: 81%

MULCH TYPE: STRAW MULCH

MULCHING RATE: 3 TON / ACRE

MULCHING RATE: 3 TON / ACRE

APPLICATION RATE: 10 LBS / 1000 SQ.YD. FERTILIZER TYPE: NITROGEN FERTILIZER (10-20-20)

PERMANENT SEED MIXTURE
TOPSOIL PLACEMENT DEPTH: 8" SPECIES: TURF TYPE TALL FESCUE %PURE LIVE SEED: 97% APPLICATION RATE: 21 LBS / 1,000SO.YD FERTILIZER RATE: 19-19-19 FERTILIZER APPL. RATE: 250LBS / ACRE LIMING RATE: 2.5 GALLONS / ACRE

HYDRO SEEDER

PERMANENT SEED MIXTURE - STEEP SLOPES TOPSOIL PLACEMENT DEPTH: 6" SPECIES: PENNDOT FORMULA D LOW MOW GRASS MIX

% PURE LIVE SEED: 81% APPLICATION RATE: 30LBS / 1,000SQ.YD. FERTILIZER RATE: NITROGEN FERTILIZER (10-20-20) LIMING RATE: 800LBS / 1,000S0.YD.

ANCHOR MATERIAL: NON ASPHALTIC EMULSION OR ANCHORING METHOD: MANUAL BROADCASTING OR RATE OF ANCHOR MATERIAL APPL.: 28 GALLONS / SEEDING SEASON DATES: 4/15 - 5/30 & 9/1-10/15

FERTILIZER APPLICATION RATE: 1/2 TON / ACRE

LIMING RATE: 1 TON / ACRE MULCH TYPE: STRAW MULCH

MULCHING RATE: 3 TON / ACRE

ANCHOR MATERIAL: NON ASPHALTIC EMULSION OR TERRA TACK II ANCHORING METHOD: MANUAL BROADCASTING OR HYDRO SEEDER RATE OF ANCHOR MATERIAL APPL.: 28 GALLONS / FERTILIZER APPLICATION RATE: 140LBS / 1,000 SQ.YD. SEEDING SEASON DATES: 3/15 - 6/1 & 8/1 - 10/15

#### **RECYCLING OR DISPOSAL**

#### **OF MATERIALS**

- ALL WASTE AND MATERIALS DEPOSITED IN AND REMOVED FROM POST-CONSTRUCTION STORMWATE MANAGEMENT (PCSM) BMP FACILITIES AND FROM IMPERVIOUS AREAS (EX. SWEEPING OF STREETS & PARKING LOTS) DURING OPERATION AND MAINTENANCE SHALL BE REMOVED FROM THE SITE AND PROPERLY 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 WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED
- 2. 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.

  3. ANTICIPATED CONSTRUCTION WASTE MAY INCLUDE TYPICAL BUILDING MATERIALS (I.E. LUMBER, DRYWALL,
- MASONRY, CARDBOARD AND PAPER, INSULATION, ASPHALT, ROOFING, PLASTIC AND VINYL, PAINTS, STAINS, SOLVENTS AND SEALANTS, (ETC.)
- 4. IT IS STRONGLY ENCOURAGED THAT SUCH RECOVERABLE WASTE MATERIALS BE SEPARATED AND APPROPRIATELY RECYCLED. NO POTENTIAL TOXIC OR HAZARDOUS WASTE IS KNOWN TO BE PRESENT ON SITE. IF ANY TOXIC OR HAZARDOUS WASTE IS ENCOUNTERED, THE CONTRACTOR SHALL FOLLOW ANY AND ALL APPLICABLE STATE OR FEDERAL REGULATIONS ASSOCIATED WITH THE DISPOSAL OF SUCH MATERIALS.

2201 North Front Street, Suite 200 Harrisburg, PA 17110 P: 717.635.2835 www.kandwengineers.com

ELOPMI I

PRELII

N O

DIV

 $\mathbf{\omega}$ 

SU

PROFESSIONAL SEAL SEPTEMBER 1 AD DRAWING: 160016-N Id DETL.dwg

**E&S NOTES**