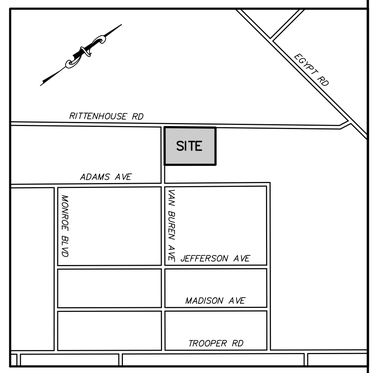
PRELIMINARY/FINAL LAND DEVELOPMENT PLANS

FOR

960 RITTENHOUSE ROAD WAREHOUSE

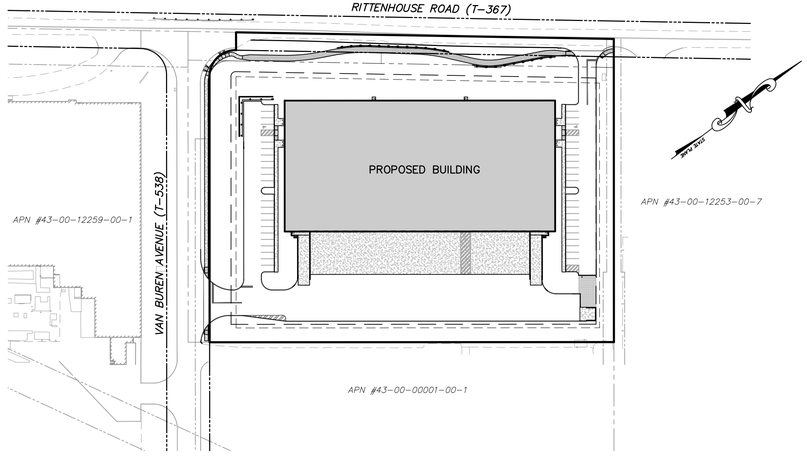
LOWER PROVIDENCE TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA



LOCATION MAP
SCALE: 1" = 800'

PROJECT DATA

APPLICANT/ OWNER IN EQUITY:	960 RITTENHOUSE ROAD ASSOCIATES, LLC 338 SUN VALLEY DRIVE AMBLER, PA 19002 PHONE: 215-840-3938
OWNER:	FACCIOLO FRANK U/W MARTIAL TRUST 2024 SPROUL ROAD BROMALL, PA 19008
SITE ADDRESS/INFO:	960 RITTENHOUSE ROAD AUDUBON, PA 19403 PARCEL ID 43-00-12256-00-4 DEED BOOK 5868, PAGE 548
PROJECT SITE AREA:	5.534 ACRES (241,041 S.F.) GROSS 5.231 ACRES (227,842 S.F.) NET
SITE DESCRIPTION:	THE FOLLOWING NARRATIVE DESCRIBES THE MODIFICATIONS TO THE PROPERTY. THIS PROJECT WILL INCLUDE CONSTRUCTION OF A NEW WAREHOUSE BUILDING, AND ASSOCIATED DRIVEWAY/PARKING. FOR STORMWATER MANAGEMENT, PROPOSED MRC BASINS AND AN UNDERGROUND DETENTION BASIN ARE DESIGNED TO MEET REQUIREMENTS FOR PEAK RATE AND WATER QUALITY FOR RUNOFF GENERATED BY THE PROPOSED IMPROVEMENTS.



CONTACT LIST

CIVIL ENGINEER:
REL DESIGN, INC.
939 JEFFERSON AVE.
NORRISTOWN, PA 19403
CONTACT NAME: ROB O'DONNELL, P.E., VICE-PRESIDENT
MANAGER, STRUCTURAL AND CIVIL ENGINEERING
TEL: (610) 666-9200 x276
EMAIL: RODONNELL@RELAMB.COM

ARCHITECT:
REL DESIGN, INC
939 JEFFERSON AVE.
NORRISTOWN, PA 19403
CONTACT NAME: JIM DONAGHY, R.A., PROJECT ARCHITECT
TEL: (610) 666-9200 x231
EMAIL: JDONAGHY@RELAMB.COM

SURVEYOR:
DONALD P. SWEENEY, P.L.S.
CONTROL POINT ASSOCIATES, INC.
1600 MANOR DRIVE., SUITE 210
CHALFONT, PA 18914
TEL: (215) 712-9800
EMAIL: WWW.CPASURVEY.COM

CIVIL DRAWING INDEX

DWG. NO.	DRAWING TITLE
C-001	CIVIL COVER SHEET
C-002	SITE PLAN NOTES
C-101	SITE PLAN
C-102	TRUCK TURNING PLAN
C-201	EXISTING FEATURES PLAN
C-202	DEMOLITION PLAN
C-203	AERIAL PLAN
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C-303	GRADING PLAN 3 (CURB RAMPS)
C-310	DRIVEWAY PROFILES
C-311	RITTENHOUSE ROAD SIGHT DISTANCE PROFILE
C-312	RITTENHOUSE ROAD WIDENING
C-320	STORM SEWER PROFILES 1
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C-410	WATER PROFILES
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C-601	LANDSCAPE PLAN
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C-703	EROSION & SEDIMENTATION CONTROL PLAN (FINAL STAGE)
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C-722	EROSION & SEDIMENTATION CONTROL DETAILS 3
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C-801	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
C-802	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 1
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C-850	PRE-DEVELOPED DRAINAGE AREA PLAN
C-851	POST-DEVELOPED DRAINAGE AREA PLAN
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C-902	CONSTRUCTION DETAILS 2
C-903	CONSTRUCTION DETAILS 3
C-904	CONSTRUCTION DETAILS 4
C-905	CONSTRUCTION DETAILS 5
C-906	CONSTRUCTION DETAILS 6

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL
Pennsylvania One Call System, Inc
1-800-242-1776

CERTIFICATIONS

COMMONWEALTH OF PENNSYLVANIA:
COUNTY OF MONTGOMERY

OWNER
OWNERSHIP, ACKNOWLEDGEMENT OF PLAN AND OFFER OF DEDICATION

I (WE), _____ HAVE LAID OUT UPON MY (OUR) LAND, SITUATED IN THE TOWNSHIP OF LOWER PROVIDENCE, COUNTY OF MONTGOMERY, COMMONWEALTH OF PENNSYLVANIA, IMPROVEMENTS ACCORDING TO THIS PLAN WHICH IS INTENDED TO BE RECORDED. WITNESS MY (OUR) HAND AND SEAL THIS _____ DAY OF _____ 20____.

_____
OWNER SIGNATURE

ON THIS, THE _____ DAY OF _____, 20____ BEFORE ME, A NOTARY PUBLIC IN AND FOR THE COMMONWEALTH OF PENNSYLVANIA, THE UNDERSIGNED OFFICER/OWNER, PERSONALLY APPEARED _____ BEING _____ OF 960 RITTENHOUSE ROAD ASSOCIATES, WHO ACKNOWLEDGED HIMSELF TO BE THE OWNER OF THE 960 RITTENHOUSE ROAD ASSOCIATES LAND DEVELOPMENT, AND, BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED BY SIGNING THE NAME OF THE OWNER/COMPANY BY HIMSELF, AS (OFFICER) _____.

_____ _____
NOTARY PUBLIC SIGNATURE MY COMMISSION EXPIRES

PLANNING COMMISSION

I HEREBY CERTIFY THAT THE LOWER PROVIDENCE TOWNSHIP PLANNING COMMISSION REVIEWED THIS PLAN AND RECOMMENDED APPROVAL OF THIS FINAL SUBDIVISION AND/OR LAND DEVELOPMENT PLAN TO THE BOARD OF SUPERVISORS AT A MEETING HELD ON THE _____ DAY OF _____ 20____.

_____
CHAIRPERSON

BOARD OF SUPERVISORS

I HEREBY CERTIFY THAT THIS FINAL SUBDIVISION AND/OR LAND DEVELOPMENT PLAN WAS APPROVED AS TO LAYOUT AND LOCATION BY THE LOWER PROVIDENCE TOWNSHIP BOARD OF SUPERVISORS AT A MEETING HELD ON THE _____ DAY OF _____ 20____.

_____ _____
CHAIRPERSON TOWNSHIP SECRETARY

SURVEYOR'S CERTIFICATION

I, DONALD P. SWEENEY, A PROFESSIONAL LAND SURVEYOR IN THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE OUTBOUND BOUNDARY INFORMATION AND SURVEY WAS PERFORMED IN ACCORDANCE WITH THE MINIMUM STANDARDS FOR BOUNDARY SURVEYS SECTION OF THE MANUAL OF PRACTICE FOR PROFESSIONAL LAND SURVEYORS IN THE COMMONWEALTH OF PENNSYLVANIA, AS ADOPTED BY THE PENNSYLVANIA SOCIETY OF LAND SURVEYORS ON JULY 10, 1998, THAT THIS PLAN REPRESENTS A SURVEY MADE BY ME, THAT ALL MONUMENTS EXIST OR SHALL BE PLACED OR LOCATED, AND THAT ALL DIMENSIONAL AND GEODETIC DETAILS ARE CORRECT.

_____ _____
SIGNATURE DATE
P.L.S. No.

RECORDER OF DEEDS

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC, IN AND FOR THE COUNTY OF MONTGOMERY, AT NORRISTOWN, PENNSYLVANIA IN PLAN BOOK _____ PAGE _____ ON _____ 20____.

_____
RECORDER OF DEEDS

PROFESSIONAL ENGINEER CERTIFICATION

I, ROBERT J. O'DONNELL, A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA, HEREBY CERTIFY THAT THE PLAN AND DESCRIBED HEREON, AS WELL AS OTHER DRAWINGS WHICH ARE PART OF THIS SET, ARE TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE LOWER PROVIDENCE TOWNSHIP ZONING AND SUBDIVISION AND LAND DEVELOPMENT ORDINANCES, AND WERE PREPARED BY ME OR UNDER MY DIRECTION.

_____ _____
SIGNATURE DATE
PA. P.E. No. 060541

MONTGOMERY COUNTY PLANNING COMMISSION

MCPC No. _____

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

CERTIFIED THIS DATE _____

_____
FOR THE DIRECTOR

TOWNSHIP MANAGER

I HEREBY CERTIFY THAT THE BOARD OF SUPERVISORS HAS APPROVED THE IMPROVEMENT CONSTRUCTION PLAN AND ANY CHANGES THERETO ON THE DATE SHOWN.

_____
TOWNSHIP MANAGER

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

COVER SHEET

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-001
1 OF 40

G:\2023\2324 - Farmhouse Development\Civil\CAD\C-001 COVER SHEET.dwg, 11/3/2023 8:44 AM, Robert Dzurenda

PROPERTY DESCRIPTION

ALL THAT CERTAIN LOT OR PIECE OF GROUND SITUATE IN THE TOWNSHIP OF LOWER PROVIDENCE, COUNTY OF MONTGOMERY AND COMMONWEALTH OF PENNSYLVANIA, DESCRIBED IN EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

BEGINNING AT A POINT ON THE CENTER LINE OF RITTENHOUSE ROAD, A CORNER OF PARCEL #1301 AND OTHER LAND NOW OR LATE OF VALLEY FORGE INDUSTRIAL PARK, SAID POINT BEING AT THE DISTANCE OF ONE THOUSAND NINE HUNDRED THIRTY–THREE AND NINETY–FOUR ONE–HUNDREDTHS FEET MEASURED SOUTHWESTERLY ALONG THE CENTER LINE OF RITTENHOUSE ROAD FROM A POINT MARKING ITS INTERSECTION WITH THE CENTER LINE OF EGYPT ROAD; THENCE FROM SAID BEGINNING POINT LEAVING RITTENHOUSE ROAD BY OTHER LAND NOW OR LATE OF VALLEY FORGE INDUSTRIAL PARK THE TWO FOLLOWING COURSES AND DISTANCES. (1) SOUTH FORTY–EIGHT DEGREES NO MINUTES EAST THREE HUNDRED NINETY–SEVEN AND FIFTY–SEVEN ONE–HUNDREDTHS FEET; (2) SOUTH FORTY–TWO DEGREES NO MINUTES WEST TWO HUNDRED SEVENTY FEET TO A POINT ON THE CENTER LINE OF VAN BUREN AVENUE; THENCE BY CENTER LINE OF VAN BUREN AVENUE NORTH FORTY EIGHT DEGREES NO MINUTES WEST FOUR HUNDRED, TWO AND FORTY–THREE ONE HUNDREDTHS FEET TO A POINT ON THE CENTER LINE OF RITTENHOUSE ROAD; THENCE BY THE CENTER LINE OF RITTENHOUSE ROAD NORTH FORTY–THREE DEGREES TWO MINUTES EAST TWO HUNDRED SEVENTY AND FOUR ONE–HUNDREDTHS FEET TO THE FIRST MENTIONED POINT AND PLACE OF BEGINNING.

ALL THAT CERTAIN LOT OR PIECE OF GROUND, SITUATE IN THE TOWNSHIP OF LOWER PROVIDENCE, COUNTY OF MONTGOMERY AND STATE OF PENNSYLVANIA, BOUNDED AND DESCRIBED AS FOLLOWS, TO WIT:

BEGINNING AT A POINT ON THE CENTER LINE OF VAN BUREN AVENUE A CORNER OF THIS AND PARCEL NO. 1301, SAID POINT BEING AT THE DISTANCE OF FOUR HUNDRED TWO AND FORTY–THREE ONE–HUNDREDTHS FEET MEASURED SOUTH FORTY–EIGHT DEGREES NO MINUTES EAST ALONG THE CENTER LINE OF VAN BUREN AVENUE FROM ITS INTERSECTION WITH THE CENTER LINE OF RITTENHOUSE ROAD; THENCE FROM SAID BEGINNING POINT LEAVING VAN BUREN AVENUE BY PARCEL NO. 1301 NORTH FORTY–TWO DEGREES NO MINUTES EAST TWO HUNDRED SEVENTY FEET TO A POINT; THENCE BY OTHER LAND NOW OR LATE OF VALLEY FORGE INDUSTRIAL PARK THE TWO FOLLOWING COURSES AND DISTANCES: (1) SOUTH FORTY–EIGHT DEGREES NO MINUTES EAST THIRTY–TWO FEET; (2) SOUTH FORTY–TWO DEGREES NO MINUTES WEST TWO HUNDRED SEVENTY FEET TO A POINT ON THE CENTER LINE OF VAN BUREN AVENUE; THENCE BY THE CENTER LINE OF VAN BUREN AVENUE NORTH FORTY–EIGHT DEGREES NO MINUTES WEST THIRTY–TWO FEET TO THE FIRST MENTIONED POINT AND PLACE OF BEGINNING.

BEING KNOWN AS 960 RITTENHOUSE ROAD.

BEING PARCEL NO. 43–00–12256–00–4

ALSO ALL THAT CERTAIN PIECE OR PARCEL OF GROUND SITUATE IN LOWER PROVIDENCE TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA AND DESCRIBED ACCORDING TO A CERTAIN PLAN OF PROPERTY MADE BY YERKES ENGINEERING CO., CIVIL ENGINEERS AND SURVEYORS DARED JULY 22, 1.963, AS FOLLOWS, TO WIT:

BEGINNING AT A POINT ON THE TITLE LINE IN THE BED OF RITTENHOUSE ROAD A CORNER OF LANDS NOW OR LATE OF AERO SPACE COMPONENTS DIVISION ATLAS CHEMICALS INDUSTRIES, INC., SAID POINT BEING AT THE DISTANCE OF 605. 02 FEET MEASURED SOUTH 43 DEGREES 02 MINUTES WEST ALONG THE LINE THROUGH THE BED OF RITTENHOUSE ROAD FROM ITS POINT OF INTERSECTION WITH THE EXTENDED LINE IN THE BED OF EISENHOWER AVENUE; THENCE EXTENDING FROM SAID POINT OF BEGINNING SOUTH 48 DEGREES 00 MINUTES EAST ALONG THE AFORESAID LANDS NOW OR LATE OF AERO SPACE COMPONENTS DIVISIONS OF ATLAS CHEMICALS INDUSTRIES, INC. CROSSING THE SOUTHEASTERLY SIDE OF RITTENHOUSE ROAD 423. 70 FEET TO A POINT A CORNER OF LANDS NOW OR LATE OF VALLEY FORGE INDUSTRIAL PARK, INC., THENCE EXTENDING SOUTH 42 DEGREES 00 MINUTES WEST ALONG THE LAST MENTIONED LAND 325.00 FEET TO A POINT A CORNER OF LANDS NOW OR LATE OF NAVIGATION COMPUTER CORP. , THENCE EXTENDING NORTH 48 DEGREES 00 MINUTES WEST ALONG THE LAST MENTIONED LANDS RECROSSING THE SOUTHEASTERLY SIDE OF RITTENHOUSE ROAD 429.57 FEET TO A POINT IN THE TITLE LINE IN THE BED OF SAME; THENCE EXTENDING NORTH 43 DEGREES 02 MINUTES EAST ALONG THE TITLE LINE THROUGH THE BED OF RITTENHOUSE ROAD 325.06 FEET TO THE FIRST MENTIONED POINT AND PLACE OF BEGINNING.

SURVEY NOTES

1. PROPERTY KNOWN AS BLOCK 63G, UNIT 4, APN #'S 43–00–12256–00–4 AS IDENTIFIED ON THE TAX MAP OF LOWER PROVIDENCE TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA.
2. AREA = 241,041 SQUARE FEET OR 5.534 ACRES.
3. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK–OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE ASBUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.

   A QUALITY LEVEL SYSTEM IS UTILIZED TO IDENTIFY THE SOURCE OF THE UNDERGROUND UTILITY INFORMATION. THE METHOD OF DETERMINATION IS BASED ON CONTRACTUAL AGREEMENT WITH THE CLIENT AND IS DEPICTED ON THE SURVEY BY THE LINE TYPES SHOWN IN THE DRAWING LEGEND. FOR REFERENCE, THE QUALITY LEVELS ARE AS FOLLOWS:

   QUALITY LEVEL D – UTILITIES SHOWN BASED UPON REFERENCE MAPPING OR ORAL HISTORY. NOT FIELD VERIFIED.

   QUALITY LEVEL C – LOCATION OF UTILITY SURFACE FEATURES SUPPLEMENTS REFERENCE MAPPING. INCLUDES MARKOUT BY OTHERS.

   QUALITY LEVEL B – UTILITY LOCATION DATA IS COLLECTED THROUGH GEOPHYSICAL SENSING TECHNOLOGY TO SUPPLEMENT SURFACE FEATURES AND OR REFERENCE MAPPING. INCLUDES MARKOUT BY CONTROL POINT ASSOCIATES, INC.

   QUALITY LEVEL A – HORIZONTAL AND VERTICAL LOCATION OF UTILITIES ARE OBTAINED USING VACUUM EQUIPMENT EXCAVATION OR OTHER METHODS TO EXPOSE THE UTILITY. LOCATION SHOWN AT SINGLE POINT WHERE EXCAVATION OCCURRED UNLESS UTILITY WAS LOCATED PRIOR TO FILLING.

   ALL FOUR TYPES MAY NOT BE PRESENT ON THE SURVEY.
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY THE CLIENT, A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC., AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
5. THIS SURVEY IS PREPARED WITH REFERENCE TO A TITLE COMMITMENT PREPARED BY LAND SERVICES USA, INC. AS AGENT FOR FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. PAFA22–0536, WITH A COMMITMENT DATE OF 1/12/2022, REVISION A, DATED 11/22/22. WHERE THE FOLLOWING SURVEY RELATED EXCEPTIONS APPEAR IN SCHEDULE B, PART II:

   [8] TITLE TO THAT PORTION OF THE PREMISES WITHIN THE BED OF RITTENHOUSE ROAD AND VAN BUREN AVENUE IS SUBJECT TO THE PUBLIC AND PRIVATE RIGHTS THEREIN.

   [9] EASEMENTS AS SET FORTH IN DEED BOOK 3075 PAGE 252 AND DEED BOOK 3106 PAGE 193 – FRONT 50' OF RITTENHOUSE ROAD SUBJECT TO EASEMENT FOR MAINTENANCE OF PUBLIC OR PRIVATE ROADS AND UTILITY SERVICE LINES; 10' WIDE UTILITY EASEMENT DESCRIBED IN D.B. 3075, PG. 252 IS NULL AND VOID PER D.B. 3106, PG. 193; SHOWN PER D.B. 3106, PG. 193.

   [10] RESTRICTIONS AS IN DEED BOOK 3007 PAGE 410 – NOT LOCATED ON THE SURVEYED PROPERTY.

   [11] RIGHT OF WAY GRANTED TO THE PHILADELPHIA ELECTRIC COMPANY AS IN DEED BOOK 3283 PAGE 442 AND DEED BOOK 4763 PAGE 2010:

   D.B 3283, PG. 442 – 40' WIDE EASEMENT LOCATED ON THE SURVEYED PROPERTY; SHOWN.
   D.B. 4763, PG. 2010 – EASEMENT FOR PAD MOUNTED TRANSFORMER, BLANKET IN NATURE; TRANSFORMER SHOWN.

   [12] RIGHT OF WAY GRANTED TO THE PHILADELPHIA ELECTRIC COMPANY AND THE BELL TELEPHONE COMPANY OF PENNSYLVANIA AS IN DEED BOOK 2944 PAGE 478 – NOT LOCATED ON THE SURVEYED PROPERTY.
6. EXISTING FIRM: BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN.) PER REF. MAP #2.
7. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
8. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNETGPS).

   TEMPORARY BENCH MARKS SET:
   TBM–A: MAG NAIL SET IN CONC CURB, ON THE EASTERLY SIDE OF RITTENHOUSE ROAD, ELEVATION = 213.27'
   TBM–B: MAG NAIL SET IN CONC CURB, ON THE EASTERLY SIDE OF RITTENHOUSE ROAD, ELEVATION = 228.63'

   PRIOR TO CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE BENCHMARKS ILLUSTRATED ON THIS SKETCH HAVE NOT BEEN DISTURBED AND THEIR ELEVATIONS HAVE BEEN CONFIRMED. ANY CONFLICTS MUST BE REPORTED PRIOR TO CONSTRUCTION.
9. THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
10. THERE ARE A TOTAL OF (121) DESIGNATED PARKING SPACES, INCLUDING (2) HC ACCESSIBLE SPACES.
11. BUILDING DIMENSIONS SHOWN HEREON ARE MEASURED AT GROUND LEVEL OF BUILDING EXTERIOR.
12. A SUBSURFACE UTILITY MARKOUT WAS PERFORMED BY CONTROL POINT ASSOCIATES, INC. TO ASSIST IN THE LOCATION OF UNDERGROUND UTILITIES. UTILITIES WERE MARKED AND FIELD LOCATED ON 1/24/2023.
13. THE SURVEYED PROPERTY IS THE SAME PROPERTY AS DESCRIBED IN A TITLE COMMITMENT PREPARED BY LAND SERVICES USA, INC., AS AGENT FOR FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. PAFA22–0536, WITH A COMMITMENT DATE OF 1/12/2022, REVISION A, DATED 11/22/2022.
14. THERE IS NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELD WORK.
15. THE SURVEYED PROPERTY CONTAINED IN THE LEGAL DESCRIPTION IS CONTIGUOUS WITHOUT ANY GAPS, GORES OR OVERLAPS.
16. THE SURVEYED PROPERTY HAS DIRECT PHYSICAL ACCESS TO VAN BUREN AVENUE AND RITTENHOUSE ROAD, PUBLIC ROADWAYS.

ZONING DATA (APN #43–00–12256–00–4)

ZONING DISTRICT: INDUSTRIAL PARK DISTRICT – IP (MIXED USE OVERLAY)
EXISTING USE: MANUFACTURING (PERMITTED BY RIGHT)
PROPOSED USE: WAREHOUSE (PERMITTED BY CONDITIONAL USE)*

GENERAL STANDARDS	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE**	1 ACRE	*5.23 ACRES*	5.231 ACRES
SITE/LOT WIDTH	NA		
SITE/LOT DEPTH	NA		
MAXIMUM BUILDING COVERAGE	65%	*11%*	31%
MAXIMUM IMPERVIOUS SURFACE***	65%	*37%*	64.9%
MINIMUM YARDS			
FRONT YARD	30 FT	*37.33 FT*	62.50 FT
SIDE YARD	25 FT	*142.88 FT*	82.00 FT
REAR YARD	20 FT	*NA*	NA
BUILDING SETBACKS			
FROM ACCESSORY BUILDINGS	25 FT	*NA*	NA
FROM STREETS	30 FT	*50.14 FT*	77.82 FT
FROM PARKING AREAS	15 FT	*29.90 FT*	15.00 FT
MAXIMUM BUILDING HEIGHT	90 FT	*<90 FT*	<90 FT

* CONDITIONAL USE DECISION DATED 06/01/2023 FOR TMP #43–00–12256–00–4. CONDITIONAL USE REQUIRED FOR TMP #43–00–00001–00–1.
** EXCLUDES PUBLIC RIGHT–OF–WAY
*** 75% IS PERMITTED WHEN THE DESIGN INCLUDES THE USE OF GREEN ROOFS AND RAIN GARDENS.

PARKING REQUIREMENTS

PARKING REQUIREMENTS
PARKING USE: WAREHOUSE
PARKING REQUIREMENT: 1 SPACE/1,500 S.F. OR 1 PER EMPLOYEE ON LARGEST SHIFT (WHICHEVER IS GREATER)

69,174 S.F. (1 SPACE/1,500 S.F.) = 47 SPACES (REQUIRED)

TOTAL PROPOSED: 48 SPACES

IMPERVIOUS SURFACE

BUILDING	69,174 SF
PAVING	50,620 SF
CONCRETE	28,201 SF
TOTAL	147,995 SF (3.397 ACRES)

PERMITTED PER ZONING 148,097 SF (3.400 ACRES)

LOT AREA

*GROSS AREA: 5.534 ACRES (241,041 S.F.) (TO BOUNDARY)
**NET AREA: 5.231 ACRES (227,842 S.F.) (EXCLUDES LEGAL ROW)

* PER REFERENCE PLAN 1.
** PER REFERENCE PLAN 2.

GENERAL NOTES

1. TOPOGRAPHIC INFORMATION SHOWN WITHIN THE SURVEY LIMITS ARE BASED UPON FIELD SURVEY BY CONTROL POINT ASSOCIATES, INC., PERFORMED IN OCTOBER, 2022.
2. THE SURVEY IS REFERENCED TO THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, PA SOUTH ZONE, NAD 83 (2011) AND THE ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNETGPS).
3. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK–OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS–BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED, BY THE CONTRACTOR, AS TO THEIR LOCATION, SIZE AND TYPE.
4. THIS SURVEY DOES NOT CERTIFY AS TO THE PRESENCE OR ABSENCE OF UNDERGROUND IMPROVEMENTS, ENCROACHMENTS OR STRUCTURES. THE RESPONSIBILITY FOR THE SAME SHALL BE THAT OF THE CONTRACTOR.
5. NO WETLAND INVESTIGATIONS WERE PERFORMED FOR THIS SURVEY.
6. PARCEL(S) SHOWN HEREON ARE LOCATED IN FLOOD ZONE X, AREA DETERMINED TO BE OUTSIDE 500 YEAR FLOODPLAIN PER FLOOD INSURANCE RATE MAP (FIRM) PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), BEING PANEL 331 OF 451, MAP NUMBER 42091C0331G, EFFECTIVE DATE MARCH 02, 2016.
7. NO CERTIFICATION IS MADE BY REL DESIGN, INC. AS TO THE POSITION OF ANY UTILITIES OR TO THE COMPLETENESS OF ANY UTILITIES SHOWN. ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2008 (UNDERGROUND UTILITY LINE PROTECTION ACT).
8. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
9. THE EXISTING BUILDING IS CURRENTLY SERVED BY PUBLIC SEWER SERVICE PROVIDED BY LOWER PROVIDENCE SEWER AUTHORITY. ALL CONSTRUCTION SHALL MEET LOWER PROVIDENCE SEWER AUTHORITY STANDARDS AND SPECIFICATIONS.
10. THE EXISTING BUILDING IS CURRENTLY SERVED BY PUBLIC WATER SERVICE PROVIDED BY AUDUBON WATER CO. ALL CONSTRUCTION SHALL MEET AUDUBON WATER CO. STANDARDS AND SPECIFICATIONS.
11. ALL UTILITIES SERVICING THE PROJECT SHALL BE UNDERGROUND AND INSTALLED PRIOR TO FINAL PAVING.
12. THESE PLANS WERE DESIGNED IN ACCORDANCE WITH THE LOWER PROVIDENCE TOWNSHIP ZONING ORDINANCE DATED SEPTEMBER 27, 2021, AND THE SUBDIVISION AND DEVELOPMENT OF LAND ORDINANCE DATED JUNE 30, 2023.
13. NOTHING SHALL BE PLACED, PLANTED, SET OR PUT WITHIN THE AREA OF ANY EASEMENT, AND THE AREA SHALL BE KEPT AS LAWN.
14. ALL DRAINAGE FACILITIES ARE TO BE MAINTAINED BY THE OWNER TO RETAIN THEIR DESIGN CAPACITY. A BLANKET EASEMENT FOR CONVEYANCE SWALES, STORM SEWER AND APPURTENANCES OUTSIDE RIGHT–OF–WAY AREAS IS OFFERED TO LOWER PROVIDENCE TOWNSHIP.
15. CONTRACTOR SHALL PROVIDE PROJECT CLOSE–OUT DOCUMENTATION AND AS–BUILTS UPON PROJECT COMPLETION. AS–BUILTS SHALL BE PROVIDED IN BOTH PDF AND AUTOCAD DWG FILE FORMATS.
16. 15' WIDE/VARIABLE WIDTH MULTI–PURPOSE TRAIL/PUBLIC RIGHT–OF–WAY EASEMENT DIRECTLY ADJACENT TO RITTENHOUSE ROAD TO BE PROVIDED TO LOWER PROVIDENCE TOWNSHIP.

WAIVERS REQUIRED

1. §123–32.A – A WAIVER IS REQUIRED FROM PROVIDING CURB ALONG RITTENHOUSE ROAD.
2. §123–33 – A PARTIAL WAIVER IS REQUIRED FROM PROVIDING SIDEWALK ALONG RITTENHOUSE ROAD.
3. §123–36.B.(1) – A WAIVER IS REQUIRED FROM PROVIDING DRIVEWAY ACCESSES AT LEAST 200 FEET APART.
4. §123–36.F – A PARTIAL WAIVER IS REQUIRED FROM A MAXIMUM DRIVEWAY PAVING WIDTH OF 28 FEET.
5. §123–50.B – A PARTIAL WAIVER IS REQUIRED FROM EACH NONRESIDENTIAL DEVELOPMENT SHALL BE SCREENED AS A NECESSARY SAFEGUARD TO THE CHARACTER OF AN ADJACENT AREA.
6. §123–143 (VALLEY FORGE CORPORATE CENTER LAND USE AND DESIGN MANUAL) – A PARTIAL WAIVER IS REQUIRED FROM LANDSCAPE BUFFERS.
7. §129–19.C.(2) – A WAIVER IS REQUIRED FROM ALL STORM SEWER PIPING BEING CLASS III REINFORCED CONCRETE PIPE.
8. §129–19.C.(6) – A WAIVER IS REQUIRED FROM PIPE SLOPE OF TERMINAL SECTIONS HAVING A MINIMUM SLOPE OF 1% (0.01 FT./FT).
9. §129–19.C.(16) – A WAIVER IS REQUIRED FROM STORMWATER PIPES BEING ORIENTED AT RIGHT ANGLES TO ELECTRIC, WATER, SANITARY SEWER AND GAS UTILITIES WHEN CROSSING ABOVE OR BENEATH SAME.
10. §129–19.G.(4) – A WAIVER IS REQUIRED FROM NO EXCAVATION BEING MADE WITH A CUT FACE STEEPER IN SLOPE THAN FOUR HORIZONTAL TO ONE VERTICAL (4:1 = 25%).
11. §129–19.H.(9) – A WAIVER IS REQUIRED FROM ALL DETENTION OR RETENTION BASINS HAVING SLOPES OF FOUR HORIZONTAL TO ONE VERTICAL (4:1 = 25%) OR FLATTER ON THE BASIN'S OUTER BERM AND FIVE HORIZONTAL TO ONE VERTICAL OR LESS ON THE BASIN'S INNER BERM.
12. §129–19.H.(10) – A WAIVER IS REQUIRED FROM ALL PORTIONS OF A DETENTION BASIN BOTTOM HAVING A MINIMUM SLOPE OF 2%.
13. §129–19.H.(12) – A WAIVER IS REQUIRED FROM EMERGENCY SPILLWAYS DISCHARGING OVER EMBANKMENTS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE CHECKER–BLOCKS TO PROTECT THE BERM AGAINST EROSION.
14. §129–19.H.(15) – A WAIVER IS REQUIRED FROM THE MINIMUM FREEBOARD THROUGH THE EMERGENCY SPILLWAY OF ONE FOOT.
15. §129–19.H.(19) – A WAIVER IS REQUIRED FROM THE GRATE OF THE BASIN OUTLET STRUCTURE OF AT LEAST SIX INCHES LOWER THAN THE ELEVATION OF THE EARTHEN EMERGENCY SPILLWAY. SIX INCHES, MINIMUM, IS ALSO REQUIRED BETWEEN THE ROUTED ONE–HUNDRED–YEAR WATER SURFACE ELEVATION AND TOP OF THE OUTLET STRUCTURE.
16. §129–19.H.(24) – A WAIVER IS REQUIRED FROM PERIMETER BERMS AND EMBANKMENTS OF RETENTION/DETENTION BASINS BEING DESIGNED TO CREATE A NATURAL APPEARANCE AND REDUCE FUTURE MAINTENANCE REQUIREMENTS.

REFERENCE PLANS

1. PLAN ENTITLED "ALTA/NSPS LAND TITLE SURVEY", PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED LAST REVISED 02/15/2023.
2. PLANS ENTITLED "CONDITIONAL USE PLAN", PREPARED BY LANDCORE, DATE 02/13/2023.

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
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Pennsylvania One Call System, Inc
1–800–242–1776

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

SITE PLAN NOTES

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-002
2 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-001 COVER SHEET.dwg, 11/3/2023 8:44 AM, Robert Dzurenda

R=36.50
Δ=91°02'00"
L=57.99'
CHB=N07°30'43"W
CHD=52.08'

N53°01'43"E (SP)
25.00'

SIGN "DIRECTIONAL ARROWS"

15' WIDE/VARIABLE WIDTH MULTI-PURPOSE TRAIL/PUBLIC RIGHT-OF-WAY EASEMENT TO BE PROVIDED TO LOWER PROVIDENCE TOWNSHIP

95.8'

8' WIDE CROSSWALK (4" SWL)

4" SWL

MAGNAIL SET

R-2 ZONING DISTRICT

IP ZONING DISTRICT

EOP

D.Y.L.

50' ROW

N38°00'17"E (SP)

±32' CARTWAY (PAVED)

RITTENHOUSE ROAD (T-367)

527.93'

558' TO VAN BUREN AVE.

IRON PIN W/CAP SET

NO PARKING SIGN (R8-3)

3-RAIL SPLIT RAIL FENCE (TYP.)

15'

25'

5' CURB TAPER

24" STOP BAR

R=25'

R=30'

CONC CURB

SIGN "RITTENHOUSE ROAD" "VAN BUREN AVE"

RELOCATED SPEED LIMIT SIGN

R=36.50
L=34.34'

8' WIDE ASPHALT PATH

EX. LEGAL/ULTIMATE ROW

527.93'

N 38°00'17" E

S 38°00'17" W 345.16'

ID SIGN "PARK POINTE"

40' WIDE PECO EASEMENT (D.B. 3283, PG. 442)

MRC BASIN #2B

MRC BASIN #2A

N 51°59'43" W 3.00'

S 38°00'17" W 37.00'

S 51°59'43" E 3.00'

S 38°00'17" W 157.48'

4" DYL

24"

EX. WELL #3 (AUDUBON WATER COMPANY)

STOP SIGN (R1-1)

ID SIGN "MICROELECTRONICS"

IRON PIN W/CAP SET

RELOCATED STOP SIGN

R=25.00
L=39.72'

3.29' (TIE)

SEGMENTAL BLOCK RETAINING WALL

5'x5' CONCRETE PAD

30' FRONT YARD

50' CURBLINE PARKING SETBACK

NO TRUCK SIGN (R5-2)

82.00'

423.70'

100' CLEAR SIGHT TRIANGLE

CL APN #43-00-12253-00-7 DRIVEWAY

SIGN "SPEED LIMIT 25 MPH"

30'

WOOD GUIDE RAIL

PROPOSED TENANT SIGN (MOUNTED TO BUILDING FACADE)

PROPOSED TENANT SIGN (MOUNTED TO BUILDING FACADE)

±32' CARTWAY (PAVED)

50' CURBLINE PARKING SETBACK

RESERVED PARKING SIGN (R7-8) & VAN ACCESSIBLE SIGN (R7-8A)

RESERVED PARKING SIGN (R7-8) & VAN ACCESSIBLE SIGN (R7-8A)

8'

8'

24'

9'x18' (TYP.)

15'

183.00'

20' PARKING SETBACK

371.72'

EX. LEGAL/ULTIMATE ROW

60' ROW

20' WIDE SANITARY SEWER EASEMENT (PER D.B. 3501, PG. 330)

PROPOSED BUILDING
(69,174 S.F.)

20' WIDE PECO EASEMENT (D.B. 3283, PG. 444)

5' WIDE CONCRETE SIDEWALK

5' WIDE CONCRETE SIDEWALK

BLOCK 63G
UNIT 25
APN #43-00-12259-00-1
N/F LANDS OF
AMERICAN REAL ESTATE GROUP LP
D.B. 5650, PG. 191

BLOCK 63G
UNIT 3
APN #43-00-12253-00-7
N/F LANDS OF
MSM 970 RITTENHOUSE ROAD, LLC
D.B. 6111, PG. 878

9'x18' (TYP.)

DRIVE UP DOOR

LOADING DOCK (TYP.)

PROPOSED HEAVY DUTY CONCRETE (LOADING DOCK AND DRIVE UP DOOR)

DRIVE UP DOOR

378.00'

25' SIDE YARD

5' WIDE CONCRETE SIDEWALK

NO PARKING SIGN (R8-3)

MATCH EXISTING CURB

30' FRONT YARD

STOP SIGN (R1-1) & NO RIGHT TURN FOR TRUCKS

CONCRETE RETAINING WALL

4" EXPOSED LOADING DOCK AREA

60'

CONCRETE RETAINING WALL

NO PARKING SIGN (R8-3)

DEPRESSED CURB (TYP.)

R=5' (TYP.)

8' CHAIN LINK FENCE

S53°01'43"E (SP)

VAN BUREN AVENUE (T-538)

CONC CURB

N53°01'43"W (SP)

STOP SIGN (R1-1)

R=45'

R=15'

R=20'

24" STOP BAR

35'

AUTHORIZED PERSONNEL ONLY SIGN

UNDERGROUND DETENTION BASIN 1

65'

3-POINT TURN BACK IN ZONE

EMERGENCY ACCESS (GRASS PAVERS)

BOLLARD

9' WIDE CROSSWALK (4" SWL)

379' TO RITTENHOUSE RD.

4" DYL

24" STOP BAR

R=20'

6" CONCRETE CURB (TYP.)

37.5'

19.0'

PROPOSED DUMPSTER ENCLOSURE

R=45'

295' TO ADAMS AVE.

70.6'

100' CLEAR SIGHT TRIANGLE

25' SIDE YARD

20' PARKING SETBACK

30' WIDE PECO EASEMENT (D.B. 3283, PG. 444)

6' CHAIN LINK FENCE

IRON PIN W/CAP SET

S36°58'17"W (SP)

565.00'

EOP

6' WOOD FENCE

MAGNAIL SET

5' CURB TAPER

CL APN #43-00-00001-00-1 DRIVEWAY

CONC WALK

SIGN "DO NOT ENTER"

PROPOSED CONCRETE MONUMENT TO BE SET (TYP.)

APN #43-00-00001-00-1
BLOCK 63G, UNIT 5
N/F LANDS OF
WEBSTER WHEELER PARTNERS, LLC
D.B. 5678, PG. 2497

LEGEND

- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- PROPOSED ROAD CENTERLINE
- PROPOSED BUILDING SETBACK
- PROPOSED PARKING SETBACK
- PROPOSED CURB
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED CLEAR SIGHT TRIANGLE
- SWL SOLID WHITE LINE
- DYL DOUBLE YELLOW LINE
- PROPOSED LIGHT DUTY PAVING
- PROPOSED HEAVY DUTY PAVING
- PROPOSED CONCRETE PAVING/SIDEWALK

SERIAL NO. 20222781727
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Pennsylvania One Call System, Inc
1-800-242-1776

TRANSCONTINENTAL GAS TRANSMISSION EASEMENT (D.B. 2261, PG. 216) (D.B. 2076, PG. 430) (D.B. 3326, PG. 524) (D.B. 3326, PG. 529)

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

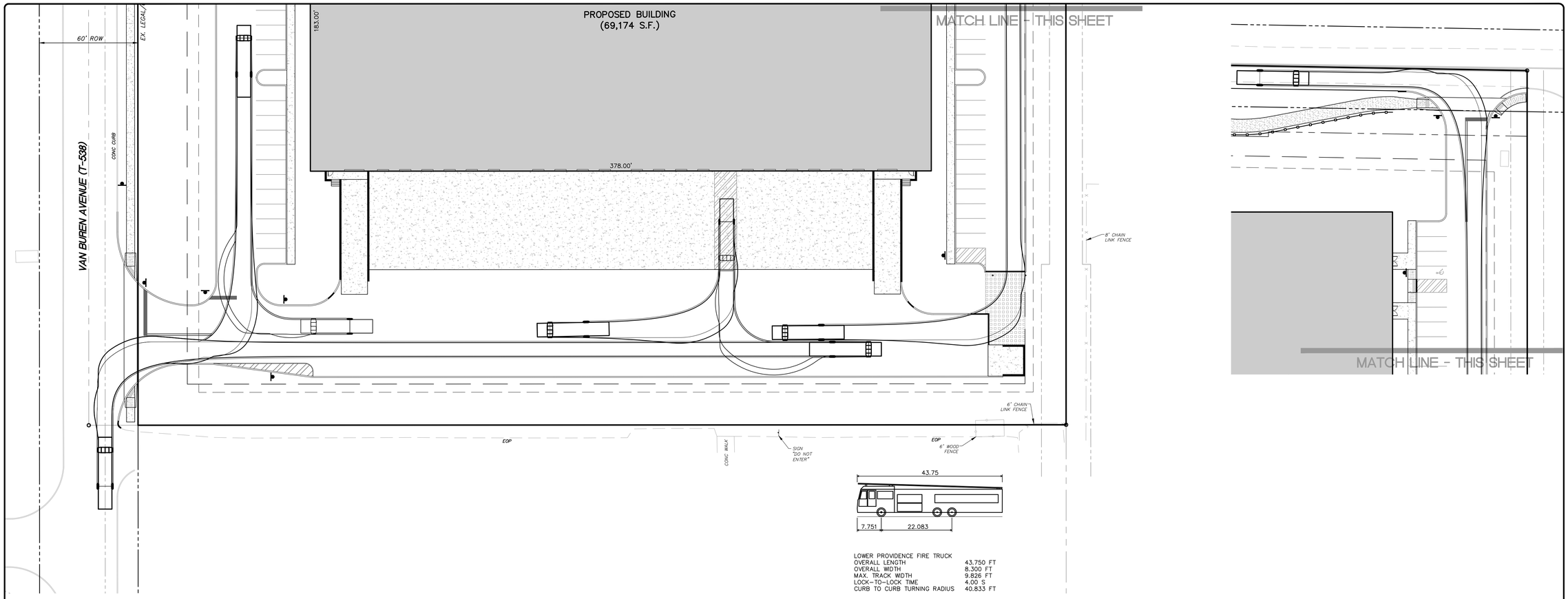
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

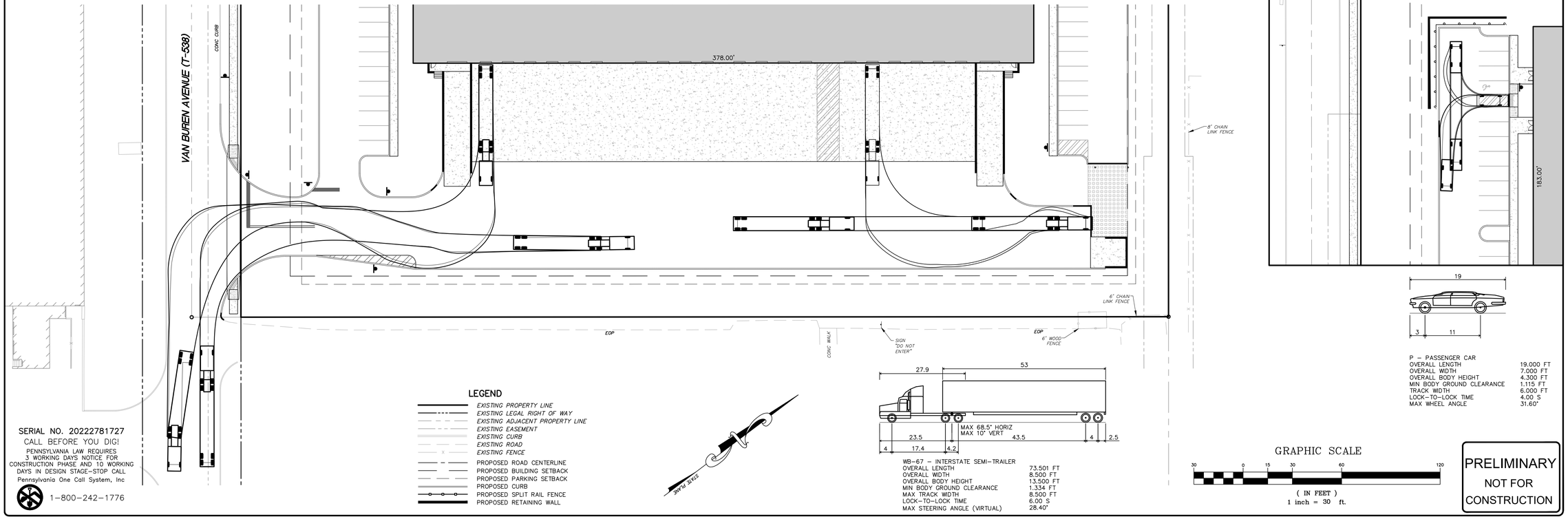
SITE PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-101
3 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-101 SITE PLAN.dwg, 11/3/2023 8:44 AM, Robert Dzurenda





LEGEND

- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- PROPOSED ROAD CENTERLINE
- PROPOSED BUILDING SETBACK
- PROPOSED PARKING SETBACK
- PROPOSED CURB
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
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Pennsylvania One Call System, Inc
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PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

TRUCK TURNING PLAN

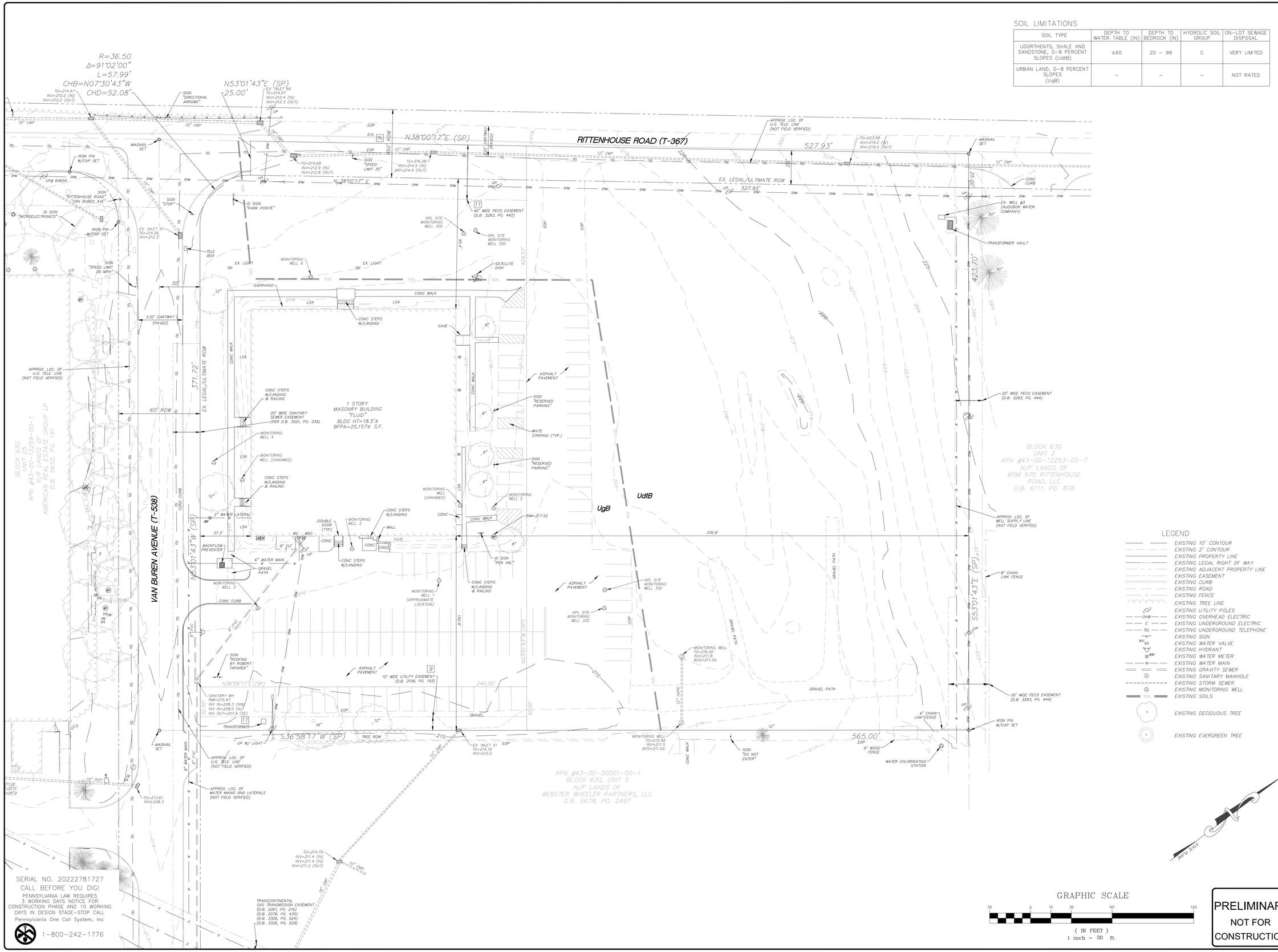
CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-102
4 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-101 SITE PLAN.dwg, 11/3/2023 8:44 AM, Robert Dzurenda

SOIL LIMITATIONS

SOIL TYPE	DEPTH TO WATER TABLE (IN)	DEPTH TO BEDROCK (IN)	HYDROLIC SOIL GROUP	ON-LOT SEWAGE DISPOSAL
UDORTHENTS, SHALE AND SANDSTONE, 0-8 PERCENT SLOPES (UdtB)	±60	20 - 99	C	VERY LIMITED
URBAN LAND, 0-8 PERCENT SLOPES (UgB)	–	–	–	NOT RATED



LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING HYDRANT
- EXISTING WATER METER
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- EXISTING MONITORING WELL
- EXISTING SOILS
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
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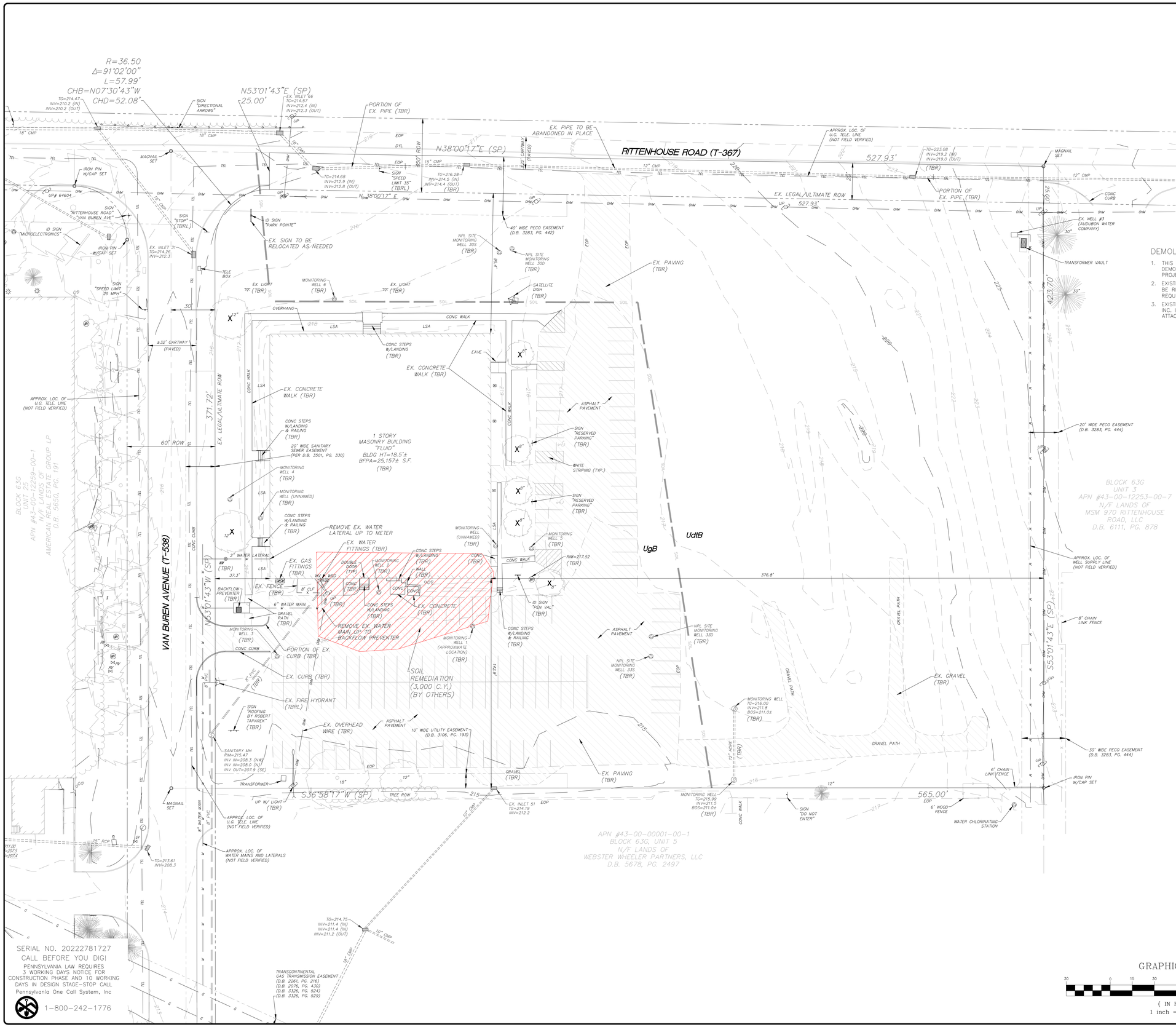
EXISTING FEATURES PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-201
5 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-201 EXISTING FEATURES PLAN.dwg, 11/3/2023 8:44 AM, Robert Dzurenda



DEMOLITION NOTES

1. THIS PLAN REPRESENTS AN OVERALL VIEW OF THE EXISTING FEATURES AND DEMOLITION REQUIRED. ALL DEMOLITION SHALL OCCUR IN ACCORDANCE WITH PROJECT CONSTRUCTION SEQUENCE.
2. EXISTING MONITORING WELLS THAT ARE REQUIRED TO BE REMOVED SHALL BE REMOVED AND/OR ABANDONED PER ALL APPLICABLE PADEP REQUIREMENTS.
3. EXISTING MONITORING WELL NUMBERS AS TAKEN FROM ROUX ASSOCIATES, INC. ENVIRONMENTAL LETTER DATED JANUARY 06, 2023, INCLUDING ATTACHMENTS.

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING HYDRANT
- EXISTING WATER METER
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- EXISTING MONITORING WELL
- EXISTING SOILS
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- (TBR) TO BE REMOVED
- (TBRL) TO BE RELOCATED
- X TREE TO BE REMOVED
- EXISTING CURB REMOVAL DELINEATION
- SOIL REMEDIATION AREA (TO BE PREFORMED AT BUILDING/PARKING LOT DEMO STAGE)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/02/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

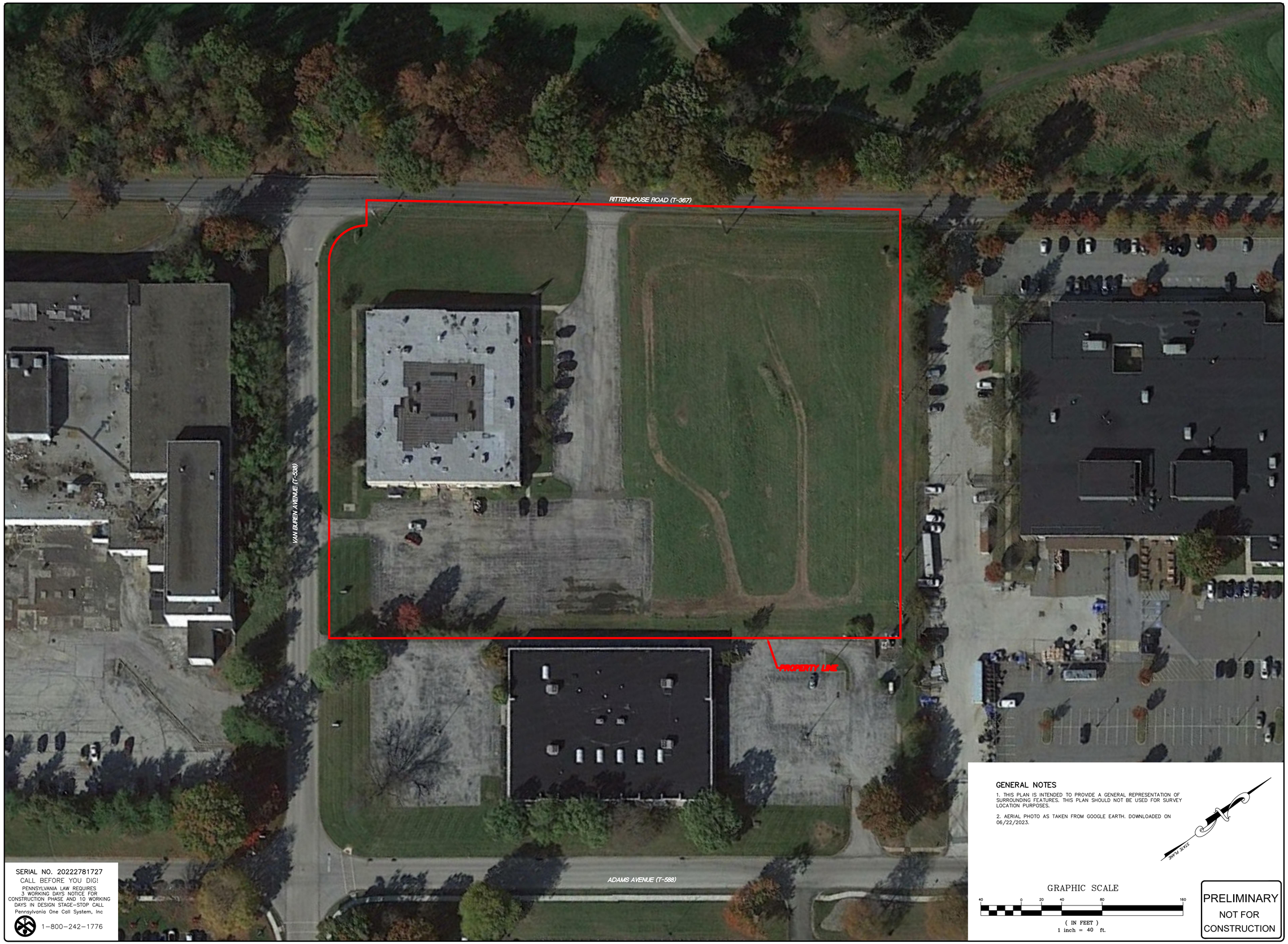
DEMOLITION PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	1" = 30'
WORK ORDER NO.:	2324
DRAWING NO.:	C-202

6 OF 40

G:\2023\2324 - Farmhouse Development\Civil\CAD\C-201 EXISTING FEATURES PLAN.dwg, 11/3/2023 8:44 AM, Robert Durenda



SERIAL NO. 20222781727
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Pennsylvania One Call System, Inc
1–800–242–1776

GENERAL NOTES

1. THIS PLAN IS INTENDED TO PROVIDE A GENERAL REPRESENTATION OF SURROUNDING FEATURES. THIS PLAN SHOULD NOT BE USED FOR SURVEY LOCATION PURPOSES.

2. AERIAL PHOTO AS TAKEN FROM GOOGLE EARTH. DOWNLOADED ON 06/22/2023.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

AERIAL PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 40'
WORK ORDER NO.: 2324
DRAWING NO.: C-203
7 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-201 EXISTING FEATURES PLAN.dwg, 11/2/2023 4:08 PM, Robert Dzurenda

GENERAL NOTES

1. THE CONTRACTOR, DURING THE PERFORMANCE OF ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE PROJECT, IS RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS, CODES AND REGULATIONS.
2. ALL MATERIAL USED FOR FILL OR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON-COMPACTIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
3. ALL EXCAVATIONS, INCLUDING TRENCHES, SHALL BE KEPT DRY TO PROTECT THEIR INTEGRITY.
4. ELEVATIONS, DIMENSIONS, AND THE LOCATIONS OF LINEAR FEATURES SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
5. THE BURYING OF TREES, STUMPS AND CONSTRUCTION DEBRIS IS PROHIBITED. ALL CONSTRUCTION DEBRIS MUST BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
6. ALL AREAS SHALL BE PROPERLY GRADED TO ENSURE PROPER DRAINAGE FLOW TO NEAREST INLET OR WATERCOURSE WITHOUT PONDING OR OBSTRUCTION.
7. A MINIMUM OF 8 INCHES OF TOPSOIL IS REQUIRED AT ALL DISTURBED AREAS OF THE SITE THAT ARE NOT IMPERVIOUS COVER. NO RELEASE OF EXCESS TOPSOIL IS PERMITTED FROM THE SITE UNTIL APPROVAL BY THE TOWNSHIP ENGINEER.
8. ALL DISTURBED AREAS NOT COVERED BY IMPERVIOUS SURFACES (INCLUDING GRAVEL) OR SPECIFIED SEED MIX SHALL BE SEEDED WITH THE STANDARD GRASS SEED MIX.
9. MINIMUM PERMITTED LAWN GRADE IS 2.0%. MAXIMUM PERMITTED LAWN GRADE IS 4:1.
10. ALL STORM SEWER PIPE SHALL BE WATERTIGHT ADS N12 HDPE PIPE WITH THE EXCEPTION OF THE BASIN OUTLETS WHICH SHALL BE O-RING RCP THROUGH THE BASIN BERMS.
11. PROVIDE 18" VERTICAL CLEARANCE BETWEEN ALL WATER/SANITARY/STORMWATER UTILITY CROSSINGS. IN THE EVENT THAT THE 18" VERTICAL CLEARANCE CANNOT BE PROVIDED AT THE PIPE CROSSINGS, CONCRETE ENCASEMENTS MUST BE PROVIDED. ALL OTHER UTILITY CROSSINGS SHALL PROVIDE 12" VERTICAL CLEARANCE.
12. ALL STORM SEWER INLETS MUST BE IDENTIFIED WITH A STORM DRAIN MARKER. STORM DRAIN MARKERS SHALL BE STAINLESS STEEL, AFFIXED TO THE INLET HOOD WITH ADHESIVE, RIVETS, OR BOLTS. MARKER MAY BE BOLTED TO THE GRATE IN OFF-ROAD LOCATIONS. MARKER SHALL HAVE A MINIMUM DIAMETER OF 3-1/2 INCHES AND INCLUDE "NO DUMPING – DRAINS TO WATERWAY" AND A FISH SYMBOL.

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CONTOUR
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

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Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	10/2/23	TOWNSHIP SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

GRADING PLAN 1

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	1" = 30'
WORK ORDER NO.:	2324
DRAWING NO.:	C-301
	8 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-301 GRADING PLAN.dwg, 11/3/2023 8:44 AM, Robert Dzurenda

CURB RAMP NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 409, 630, 676 694 AND 695.

2. PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.

3. CONSTRUCT CURB RAMPS WITH A MINIMUM 4'–0" x 4'–0" CLEAR SPACE BEYOND THE CURB FACE, WITHIN THE WIDTH OF THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.

4. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.

5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.

6. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB ALTERATIONS WHERE THE CURB IS LESS THAN THE STANDARD 8" HEIGHT.

7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.

8. TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB, RAMP LENGTH NOT TO EXCEED 15'–0". ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.

9. NON–WALK AREA IS AN OBSTRUCTED OR GRASS/NON–PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.

10. THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON POLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS. FOR ALTERATION PROJECTS, PROVIDE ACCESS TO EXISTING PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.

11. SEE TC–8803 FOR ADDITIONAL PEDESTRIAN PUSHBOTTON DETAILS NOT SHOWN.

12. ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB.

13. PROVIDE DETECTABLE WARNING SURFACES (DWS) 24" MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT–ON–DARK OR DARK–ON–LIGHT FOR THE FULL WIDTH OF RAMP.

14. FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR ACCESSIBLE ROUTE.

15. FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE RECONSTRUCTED.

16. CONSTRUCT SIDEWALKS AT A LONGITUDINAL SLOPE NOT TO EXCEED 5.0% FOR ROADWAY PROFILE SLOPES THAT EXCEED 5.0%, CONSTRUCT PARALLEL SIDEWALKS ADJACENT TO ROADWAY AT A LONGITUDINAL SLOPE NOT TO EXCEED ROADWAY PROFILE SLOPE.

17. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 13.33. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A CURB RAMP, TURNING SPACE OR BLENDED TRANSITION IS NOT TO EXCEED 5.0%.

18. THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.

19. ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'–0" FOR A 1:12 SLOPE.

20. SIDEWALK WIDTH MAY BE REDUCED TO 4'–0", WHEN PASSING AREAS 5'–0" x 5'–0" ARE PROVIDED EVERY 200'.

21. THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.

22. CONSTRUCT DEPRESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING. FOR LEVEL LANDINGS BEHIND DEPRESSED CURB, ADJUST SLOPES TO PROVED POSITIVE DRAINAGE. AT THE JOINT BETWEEN DEPRESSED CURB AND ROADWAYS, REMOVE EXCESS JOINT SEALER AND COVER THE SEALED AREA WITH A LIGHT APPLICATION OF DRY SAND.

23. CHEEK WALLS ARE PERMITTED WHEN ADJACENT TO NON–WALK AREAS OR ELEVATION DIFFERENCES CANNOT BE ACCOMMODATED BY FLARES OR GRADING. GRADE GRASS AREAS OR OTHER NON–WALK AREAS AT 3:1 OR FLATTER. DO NOT INSTALL CHEEK WALLS THAT INTERSECT THE PEDESTRIAN PATH.

24. CONSTRUCT TOP OF PLAIN CEMENT CONCRETE DEPRESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES)

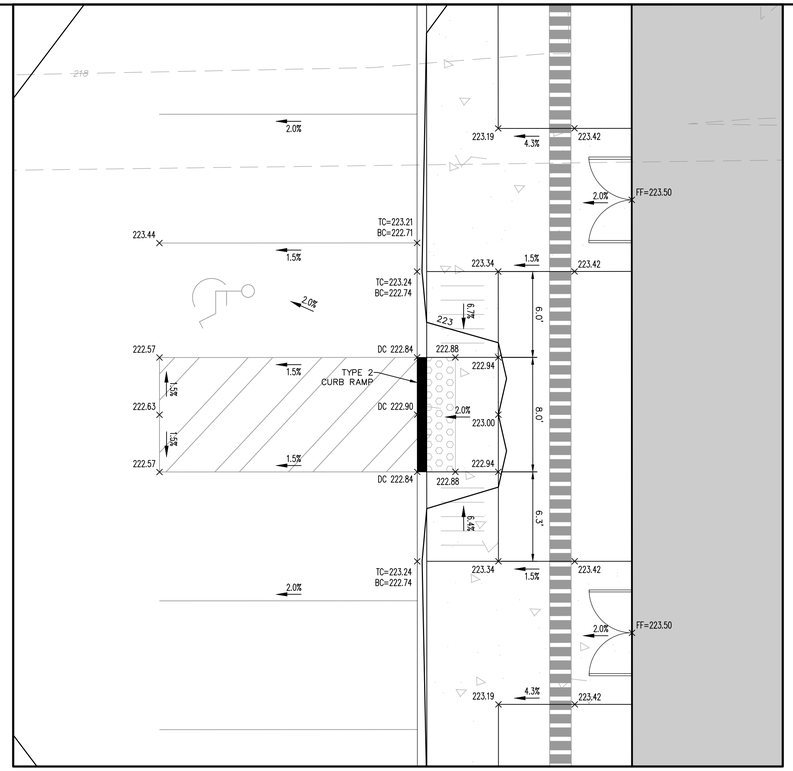
25. FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULLY INSIDE OF MARKED CROSSWALK LINES.

26. A 4'–0" MAXIMUM DIGITAL DISPLAY LEVEL WILL BE USED TO VERIFY THE SLOPES OF CURB RAMPS AND SIDEWALKS.

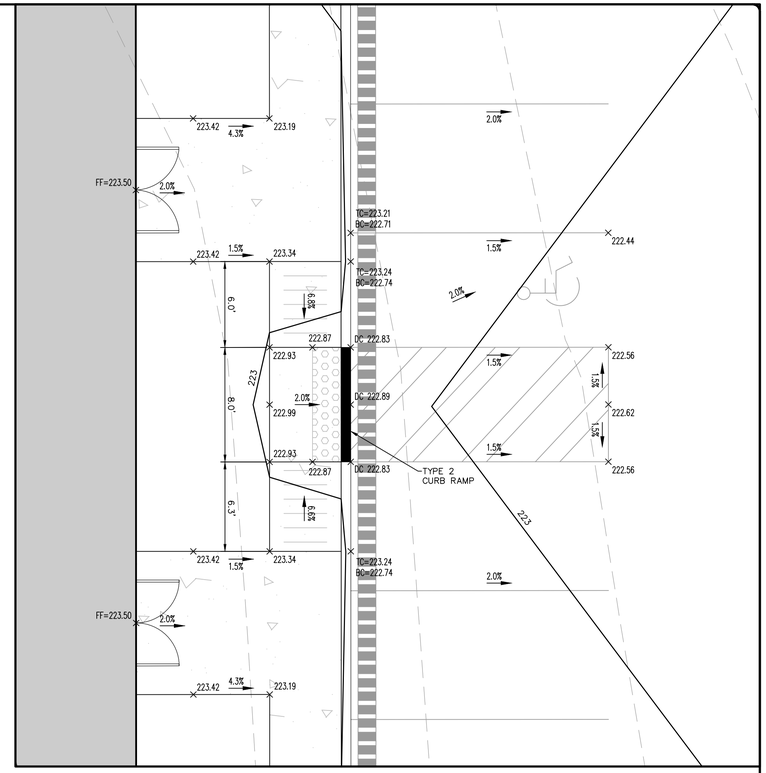
27. INSTALL DUMMY JOINTS WHERE RAMPS, TURNING SPACES, FLARES AND SIDEWALKS ABUT.

28. CONSTRUCT DEPRESSED CURB SLOPE TO MATCH ROADWAY PROFILE AND HAVE A FLUSH CONNECTION. TRANSITION CURB RAMP CROSS SLOPE TO MATCH ROADWAY PROFILE AS GRADUALLY AS POSSIBLE. DO NOT EXCEED 3.00% PER 1'–0" CROSS SLOPE RATE OF CHANGE WHEN TRANSITIONING TO ROADWAY PROFILE.

29. DO NOT SCORE OR MAKE GROOVES ON SLOPED SURFACES. LINES SHOWN ON DETAILS ARE FOR ILLUSTRATION ONLY.



WESTERN ADA ACCESSIBLE ENTRANCE
SCALE: 1" = 5'

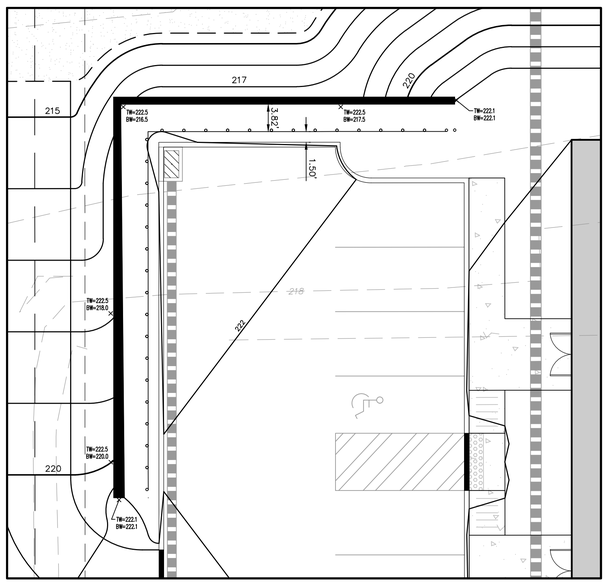


EASTERN ADA ACCESSIBLE ENTRANCE
SCALE: 1" = 5'

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.



RETAINING WALL
SCALE: 1" = 10'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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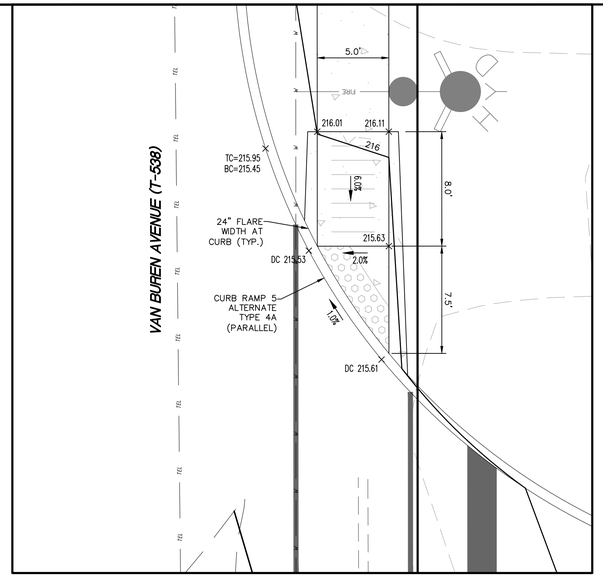
REV	DATE	DESCRIPTION
B	10/02/23	1ST TOWNSHIP SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

GRADING PLAN 2 (CURB RAMPS)

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

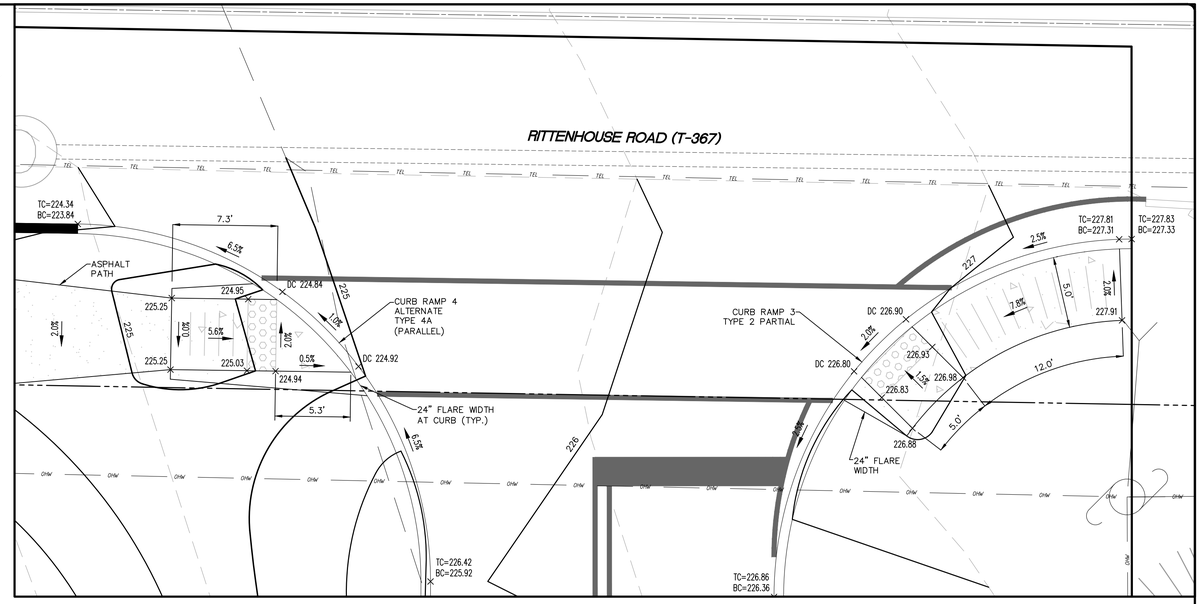
DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-302
9 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C–301 GRADING PLAN.dwg, 11/3/2023 9:01 AM, Robert Dzurenda



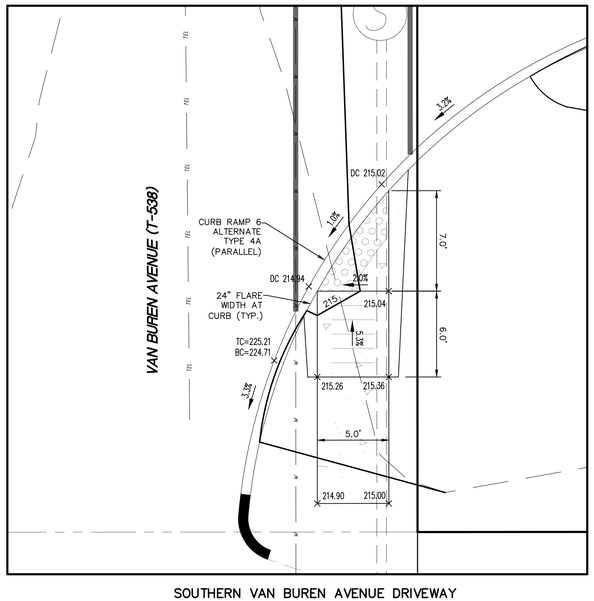
NORTHERN VAN BUREN AVENUE DRIVEWAY

SCALE: 1" = 5'



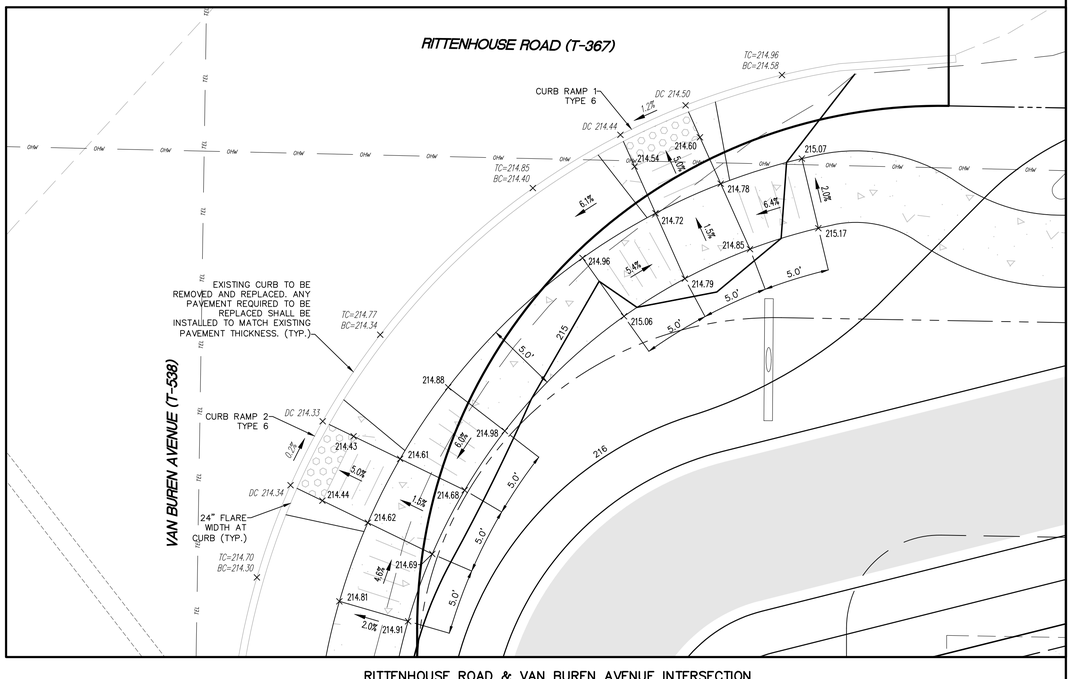
RITTENHOUSE ROAD DRIVEWAY

SCALE: 1" = 5'



SOUTHERN VAN BUREN AVENUE DRIVEWAY

SCALE: 1" = 5'



RITTENHOUSE ROAD & VAN BUREN AVENUE INTERSECTION

SCALE: 1" = 5'

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)

1 inch = 5 ft.

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REV	DATE	DESCRIPTION
B	10/2/23	TOWNSHIP SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

GRADING PLAN 3 (CURB RAMPS)

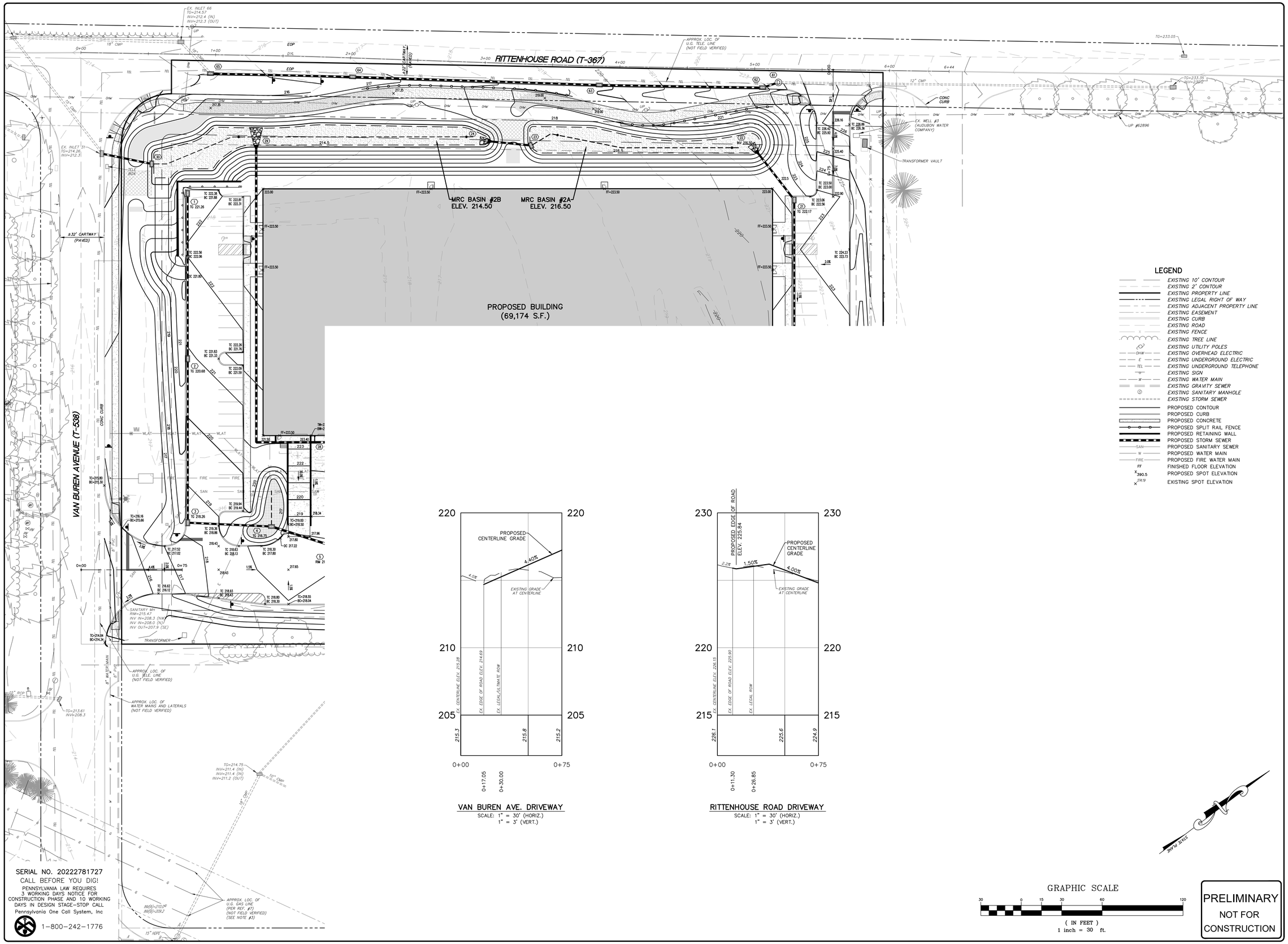
CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC

PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE

LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	1" = 5'
WORK ORDER NO.:	2324
DRAWING NO.:	C-303

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-301 GRADING PLAN.dwg, 11/3/2023 8:45 AM, Robert Dzurenda



VAN BUREN AVE. DRIVEWAY
SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)

RITTENHOUSE ROAD DRIVEWAY
SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CONTOUR
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FF FINISHED FLOOR ELEVATION
- X 390.5 PROPOSED SPOT ELEVATION
- X 374.19 EXISTING SPOT ELEVATION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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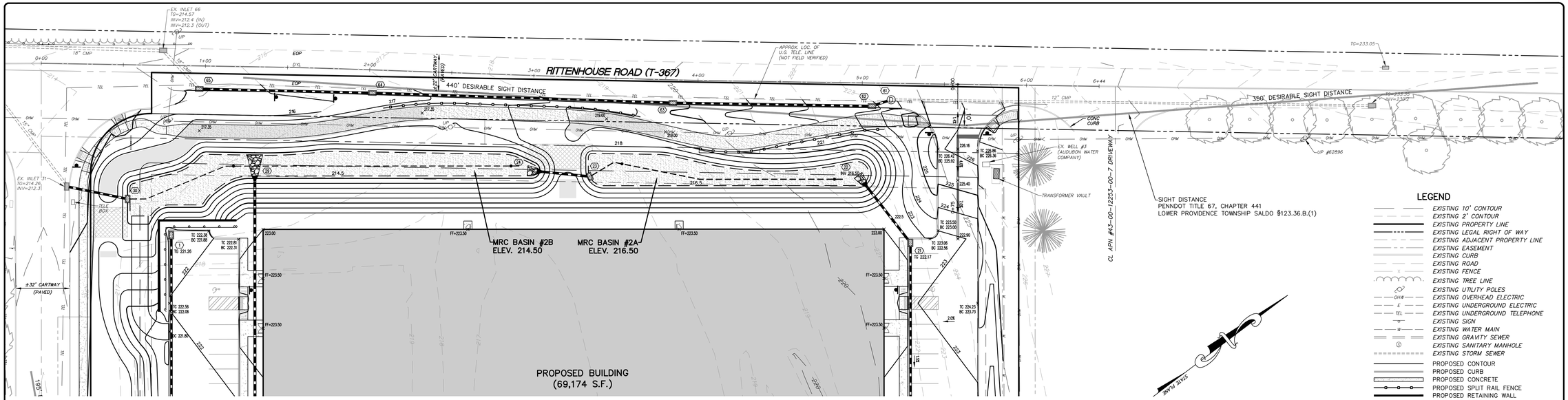
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

DRIVEWAY PROFILES

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

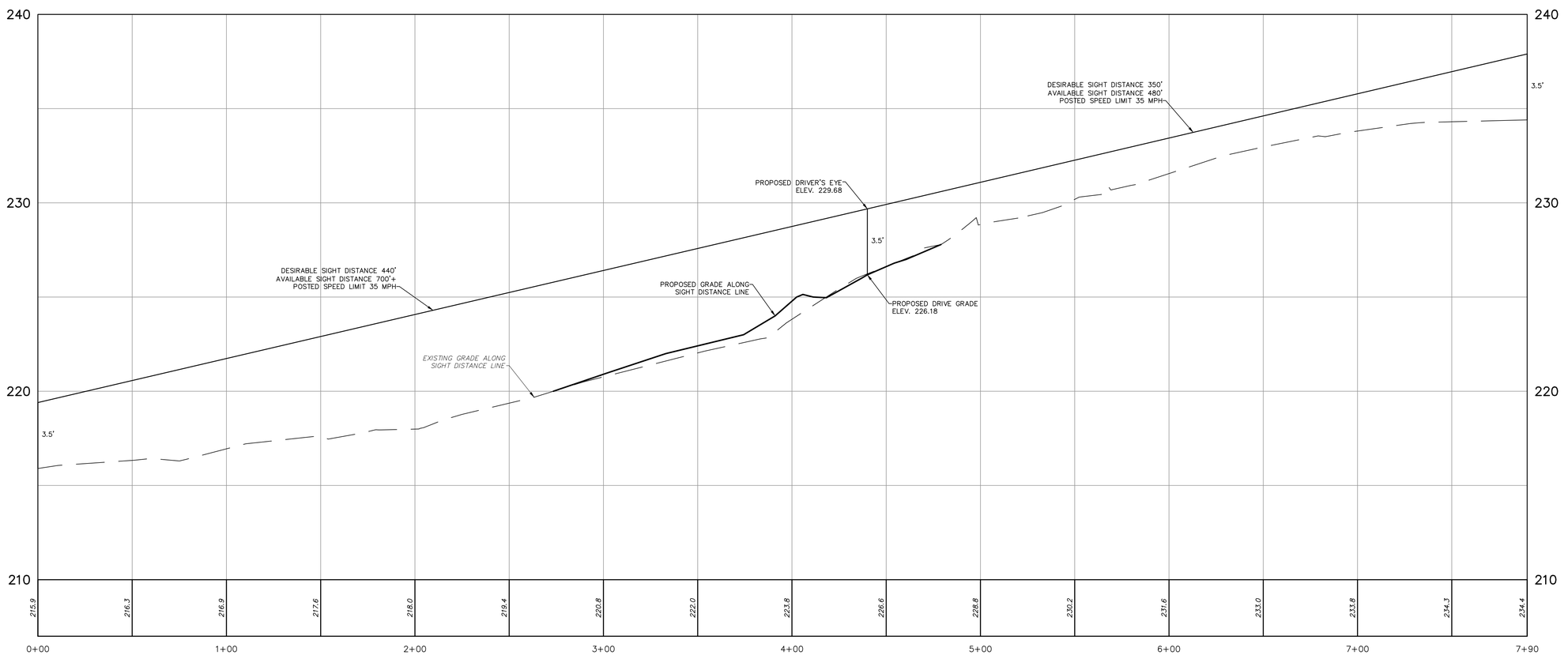
DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-310
11 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-310 ROAD PROFILES.dwg, 11/3/2023 8:45 AM, Robert Dzurenda



LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CONTOUR
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SERIAL NO. 20222781727

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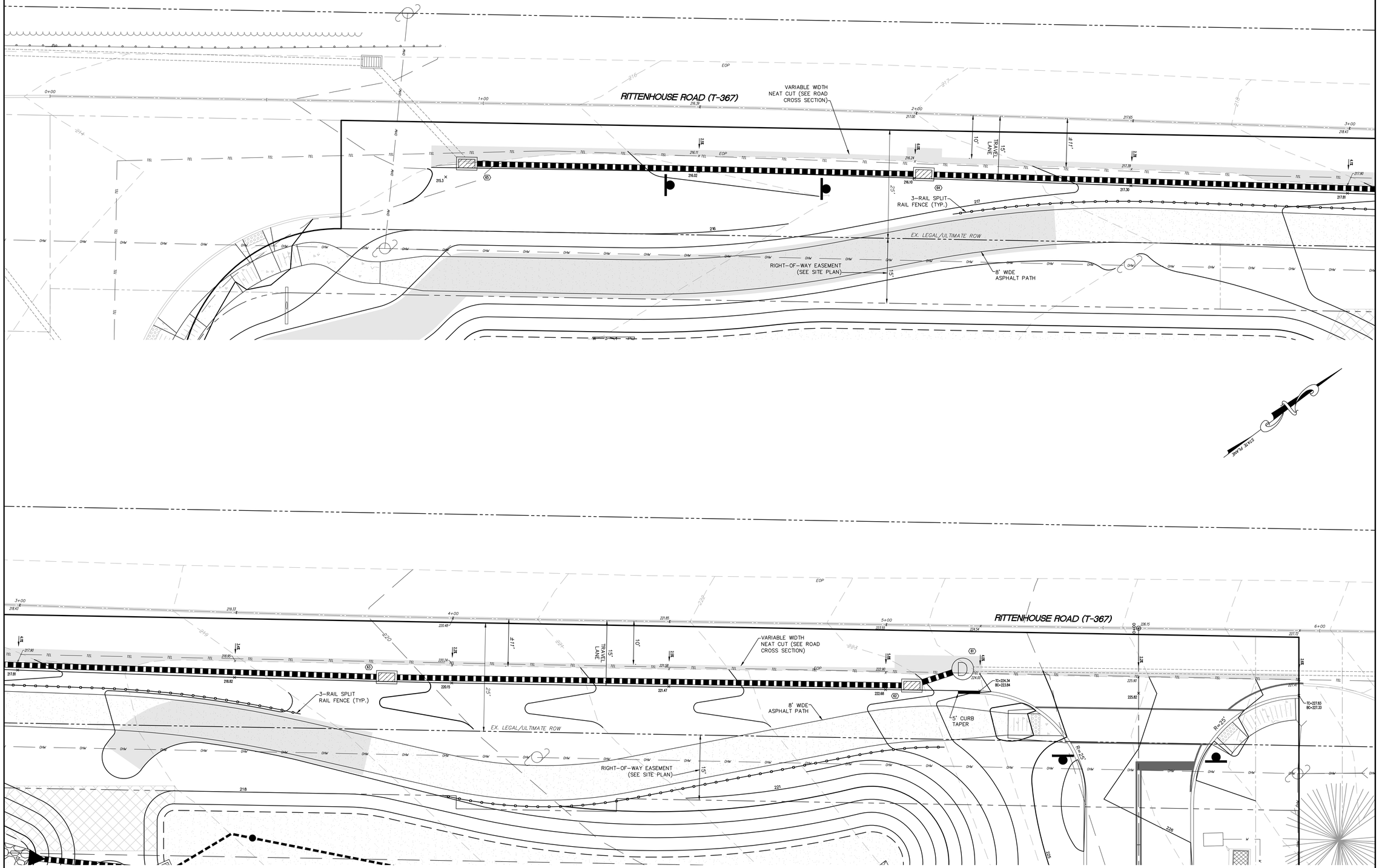
REV.	DATE	DESCRIPTION
A	11/03/23	TOWNSHIP RESUBMISSION

RITTENHOUSE ROAD SIGHT DISTANCE PROFILE

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-311
12 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-310 ROAD PROFILES.dwg, 11/3/2023 8:45 AM, Robert Dzurenda



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GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

PRELIMINARY

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REV.	DATE	DESCRIPTION
A	11/03/23	TOWNSHIP RESUBMISSION

RITTENHOUSE ROAD WIDENING

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC

PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE

LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD

A/E: WRM

Q/C: WRM

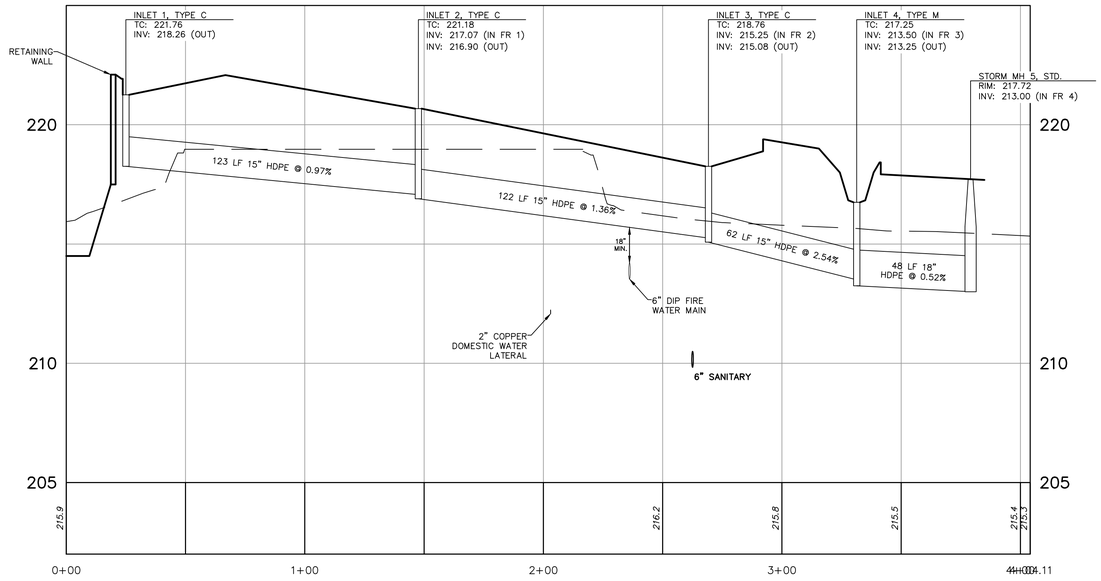
SCALE: 1" = 10'

WORK ORDER NO.: 2324

DRAWING NO.: C-312

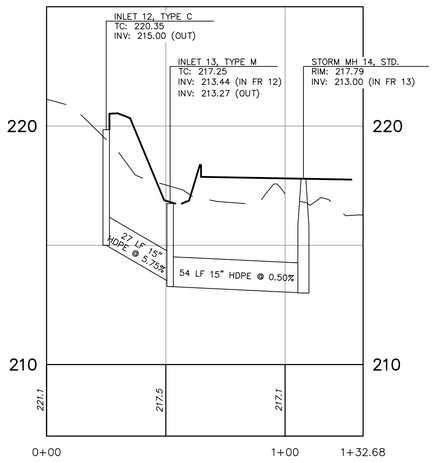
13 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-310 ROAD PROFILES.dwg, 11/3/2023 9:02 AM, Robert Dzurenda



INLET #1 – STORM MH #5

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)



INLET #12 – STORM MH #14

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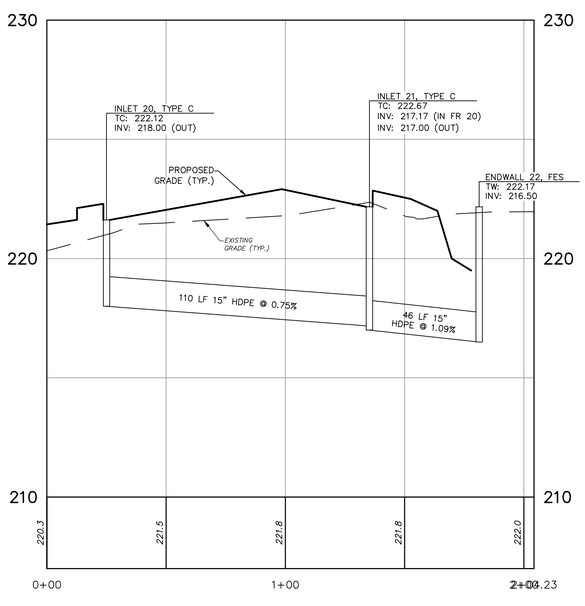
1" = 3' (VERT.)



INLET #20 – ENDWALL #22

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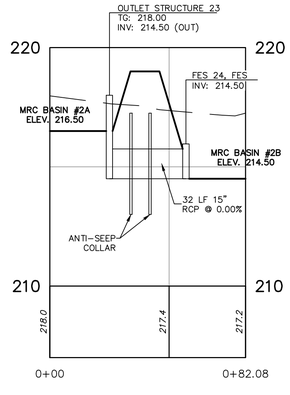
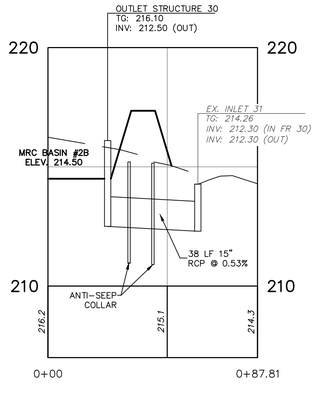
1" = 3' (VERT.)



OUTLET #23 – FES #24

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)



OUTLET #30 – EX. INLET #31

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SERIAL NO. 20222781727
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PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

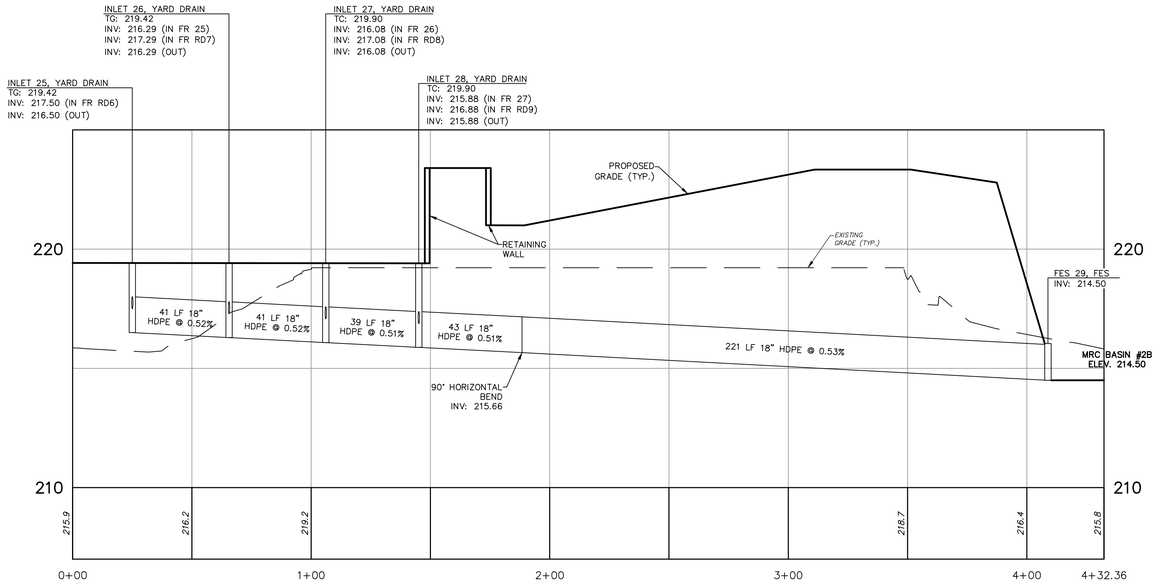
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

STORM SEWER PROFILES 1

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

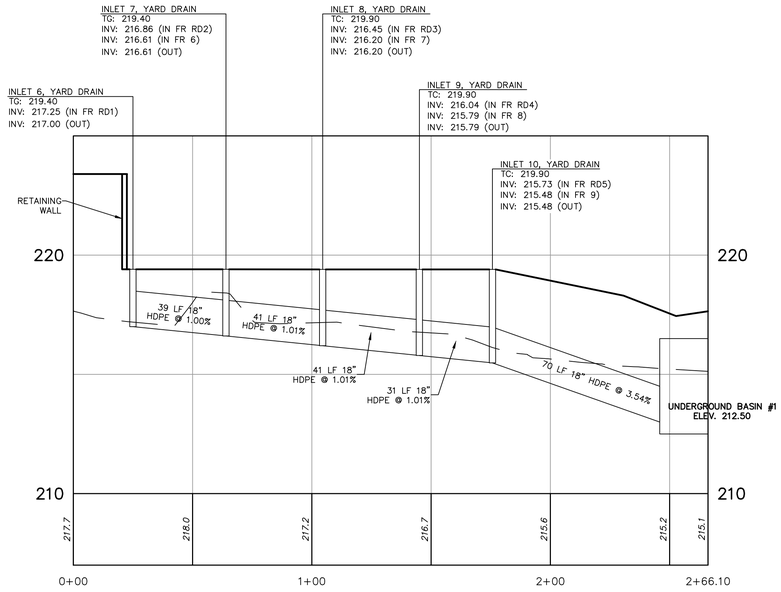
DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-320

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-320 STORM PROFILES.dwg, 11/2/2023 4:08 PM, Robert Dzurenda



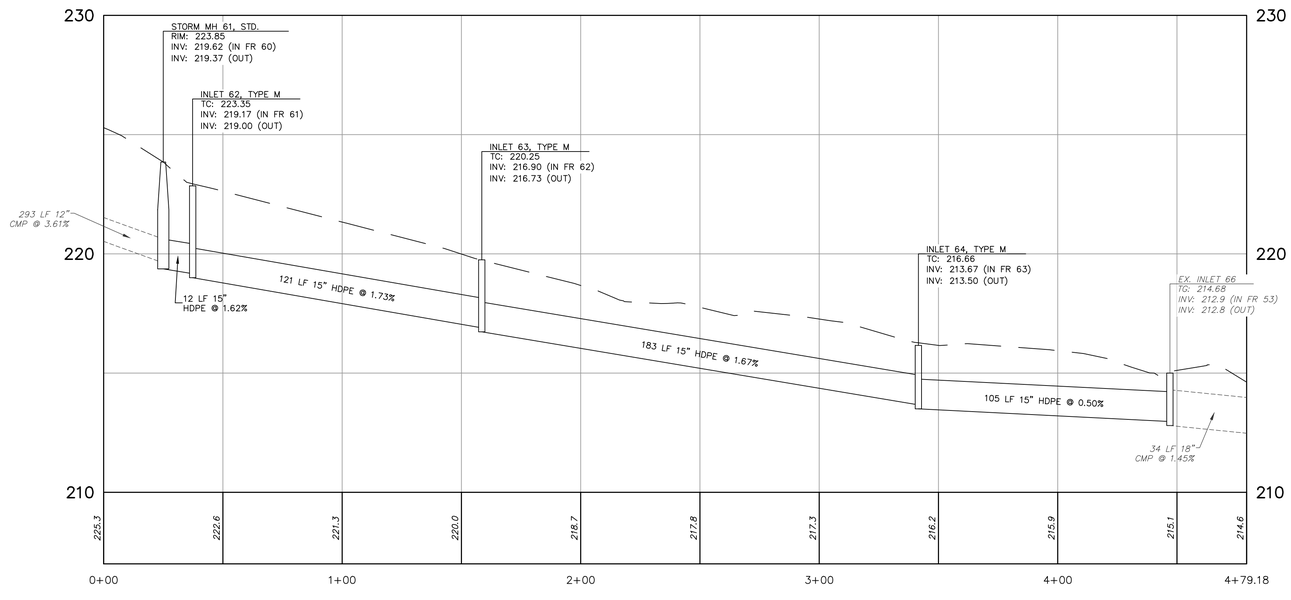
INLET #10 – FES #29

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)



INLET #6 – #PIPE END 11

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)



STORM MH #61 – EX. INLET #66

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

SERIAL NO. 20222781727
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PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL
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1–800–242–1776

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Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

STORM SEWER PROFILES 2

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-321
15 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-320 STORM PROFILES.dwg, 11/2/2023 4:09 PM, Robert Dzurenda

UTILITY GENERAL NOTES

1. ALL EXISTING UNDERGROUND UTILITIES (WATER, ELECTRIC & FIBER) ARE SHOWN AT APPROXIMATE LOCATION AND DEPTHS. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED, BY THE CONTRACTOR, AS TO THEIR LOCATION, SIZE AND TYPE.

3. PROVIDE 18" VERTICAL CLEARANCE BETWEEN ALL WATER/SANITARY/STORMWATER UTILITY CROSSINGS. IN THE EVENT THAT THE 18" VERTICAL CLEARANCE CANNOT BE PROVIDED AT THE PIPE CROSSINGS, CONCRETE ENCASEMENTS MUST BE PROVIDED. ALL OTHER UTILITY CROSSINGS SHALL PROVIDE 12" VERTICAL CLEARANCE.

4. THRUST BLOCKS OR RESTRAINED JOINTS SHALL BE INSTALLED AT ALL DOMESTIC WATER AND FIRE WATER HORIZONTAL AND VERTICAL BENDS.

5. ELECTRIC AND FIBER DUCT BANKS ARE SHOWN HEREIN FOR COORDINATION WITH SITE UTILITIES AND GRADING FEATURES ONLY. CONSTRUCTION OF ELECTRIC AND FIBER DUCT BANKS SHALL BE BASED ON THE MOST CURRENT ELECTRICAL PLANS AND DETAILS.

6. ALL UTILITY (STORM, WATER, FIRE, SANITARY, ETC) PIPES SHALL HAVE A FLOWABLE FILL TRENCH PLUG AT THE BUILDING FACE. THE TRENCH PLUG SHALL EXTEND AT LEAST 5 FEET FROM THE FACE OF THE BUILDING EXTERIOR.

SANITARY SEWER NOTES

1. ALL MATERIALS AND METHODS OF CONSTRUCTION EMPLOYED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD CONSTRUCTION AND MATERIAL SPECIFICATION FOR SANITARY SEWER OF THE LOWER PROVIDENCE TOWNSHIP SEWER AUTHORITY.
2. IN ACCORDANCE WITH THIS SECTION 1.02(c) OF THE LOWER PROVIDENCE MATERIAL AND CONSTRUCTION SPECIFICATIONS FOR SANITARY SEWER EXTENSION, SHOP DRAWINGS OF THE SANITARY SEWER SYSTEM SHALL BE SUBMITTED TO THE AUTHORITY FOR REVIEW PRIOR TO CONSTRUCTION.
3. WHENEVER POSSIBLE, SEWER MAINS SHOULD BE LAID AT LEAST 10' HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10' A SEWER MAY BE LAID CLOSER THAN 10' TO A WATER MAIN IF:
   A. IT IS LAID IN A SEPARATE TRENCH.
   B. IT IS LAID IN THE SAME TRENCH WITH THE WATER MAIN LOCATED AT ONE SIDE OF A BENCH OF UNDISTURBED EARTH.
   C. IN EITHER CASE, THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18" BELOW THE BOTTOM (INVERT) OF THE WATER MAIN.
4. THE AUTHORITY'S INSPECTION DEPARTMENT MUST BE NOTIFED AT LEAST 48 HOURS IN ADVANCE THAT INSPECTION IS REQUIRED. NOTIFICATION MAY BE MADE EITHER IN WRITING OR VERBALLY, BUT IN EITHER INSTANCE, NOTIFICATION MUST BE RECEIVED BY THE INSPECTION DEPARTMENT PRIOR TO THE SAID 48 HOURS.
5. WHEN A NEW SANITARY LINE IS CONSTRUCTED AND TIED INTO AN ACTIVE MANHOLE, THE NEW LINE WILL BE PLUGGED AND REMAIN PLUGGED UNTIL ALL TESTING HAS BEEN COMPLETED AND APPROVED BY THE AUTHORITY.
6. SHOULD ANY CHANGE BE PRECIPITATED FROM FIELD CONDITIONS ENCOUNTERED, OR IF ANY CHANGE FROM THE CONSTRUCTION DRAWINGS IS NECESSARY, A CHANGE ORDER REQUEST MUST BE FILED WITH THE AUTHORITY. THIS CHANGE MAY NOT COMMENCE UNTIL APPROVAL OF THE CHANGE ORDER IS GRANTED.
7. AGGREGATE BACKFILL OF ROADWAY TRENCHES WILL BE WAIVED IF PAVING IS PREFORMED MORE THAN 90 DAYS AFTER SEWER INSTALLATION.
8. AS-BUILT RECORD DRAWINGS MUST BE SUBMITTED AND APPROVED BEFORE ANY SEWERS ARE ACCEPTED FOR DEDICATION. THE DRAWINGS MUST BE ACCOMPANIED BY A LETTER FROM THE DEVELOPER'S ENGINEER ATTESTING TO THEIR CORRECTNESS.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- PROPOSED UNDERGROUND ELECTRIC

SERIAL NO. 20222781727
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1–800–242–1776

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

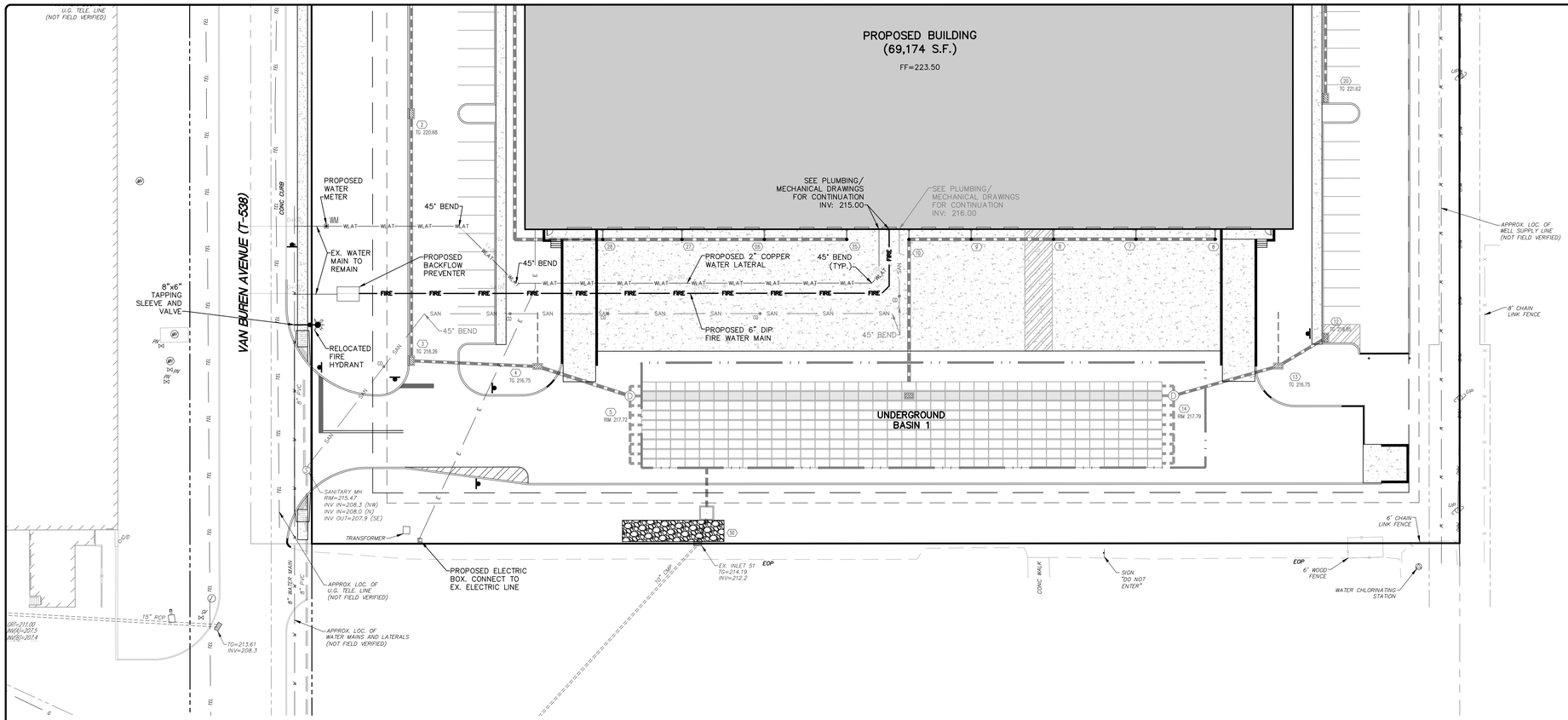
REV.	DATE	DESCRIPTION
A	09/22/23	TOWNSHIP SUBMISSION
B	11/03/23	TOWNSHIP RESUBMISSION

UTILITY PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-401
16 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-401 UTILITY PLAN.dwg, 11/3/2023 8:45 AM, Robert Dzurenda

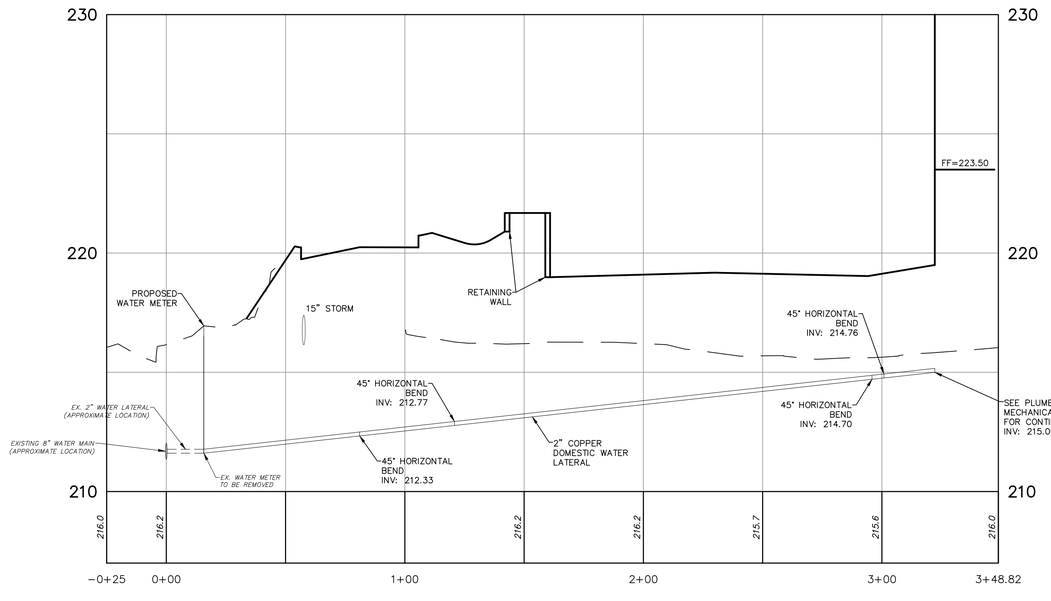


LEGEND

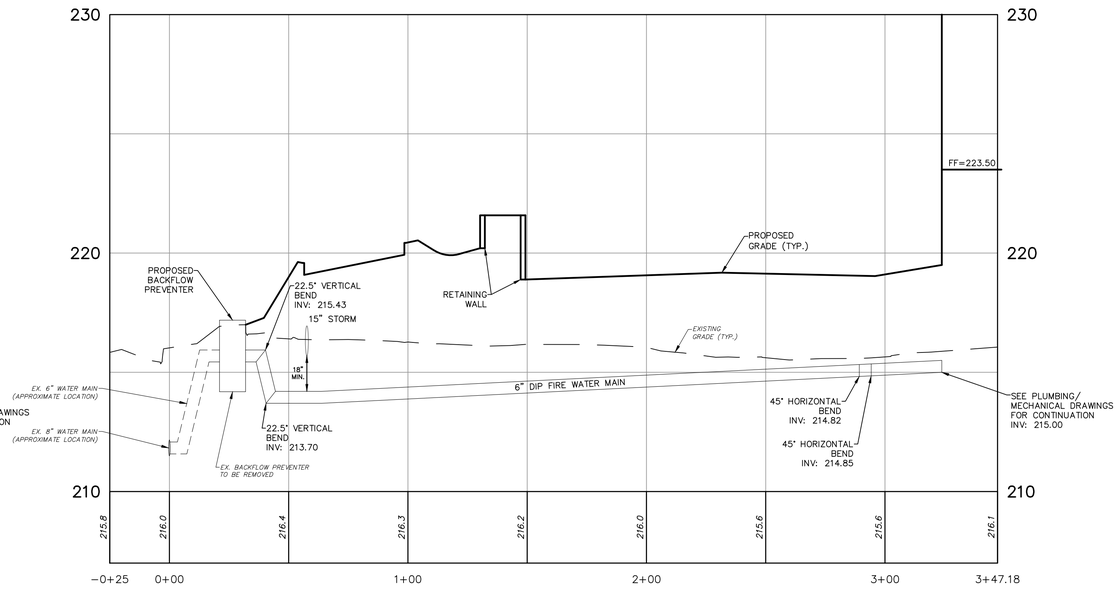
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- PROPOSED UNDERGROUND ELECTRIC

UTILITY GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE GENERAL UTILITY NOTES ON SHEET C-401.
2. ALL EXISTING UNDERGROUND UTILITIES (WATER, ELECTRIC & FIBER) ARE SHOWN AT APPROXIMATE LOCATION AND DEPTHS. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED, BY THE CONTRACTOR, AS TO THEIR LOCATION, SIZE AND TYPE.
3. PROVIDE 18" VERTICAL CLEARANCE BETWEEN ALL WATER/SANITARY/STORMWATER UTILITY CROSSINGS. IN THE EVENT THAT THE 18" VERTICAL CLEARANCE CANNOT BE PROVIDED AT THE PIPE CROSSINGS, CONCRETE ENCASEMENTS MUST BE PROVIDED. ALL OTHER UTILITY CROSSINGS SHALL PROVIDE 12" VERTICAL CLEARANCE.



DOMESTIC WATER BUILDING CONNECTION
SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)



FIRE WATER BUILDING CONNECTION
SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)

SERIAL NO. 20222781727
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1–800–242–1776

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

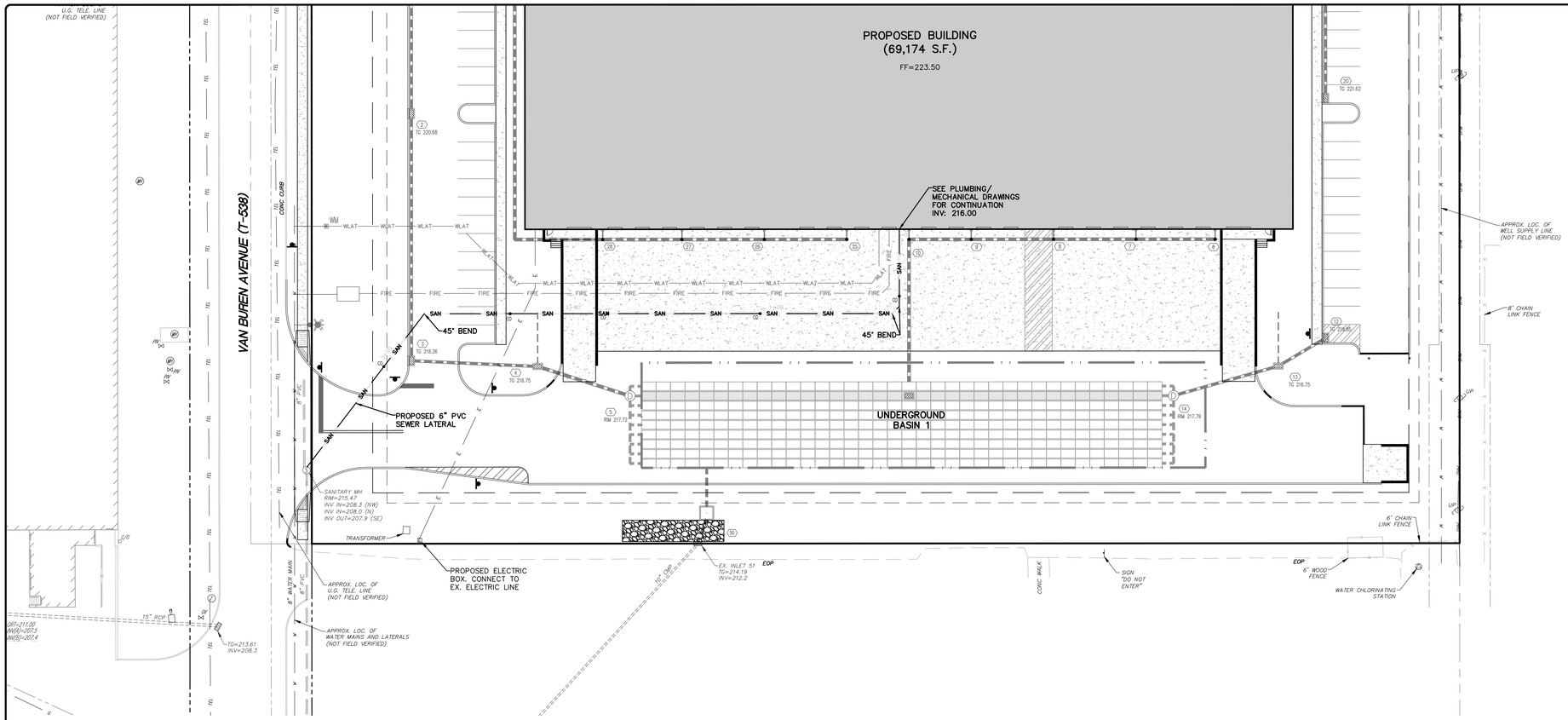
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

WATER PROFILES

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-410
17 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-410 WATER PROFILES.dwg, 11/3/2023 8:46 AM, Robert Dzurenda



LEGEND

- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- PROPOSED UNDERGROUND ELECTRIC

UTILITY GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE GENERAL UTILITY NOTES ON SHEET C-401.
2. ALL EXISTING UNDERGROUND UTILITIES (WATER, ELECTRIC & FIBER) ARE SHOWN AT APPROXIMATE LOCATION AND DEPTHS. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED, BY THE CONTRACTOR, AS TO THEIR LOCATION, SIZE AND TYPE.
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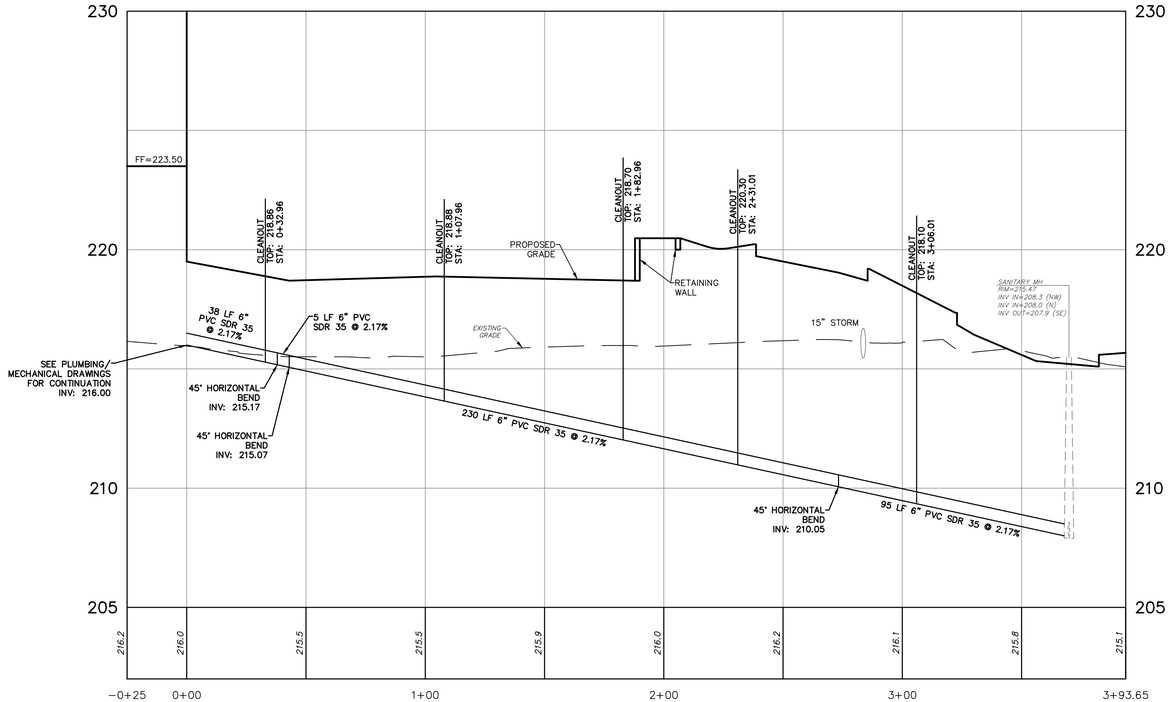

SANITARY SEWER BUILDING CONNECTION
SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SERIAL NO. 20222781727
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PRELIMINARY
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REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

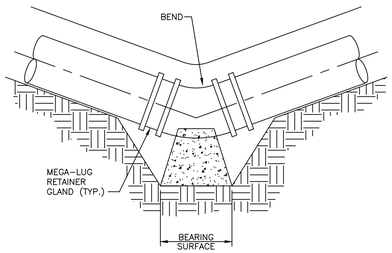
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

SANITARY SEWER PROFILES

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-420
18 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-420 SEWER PROFILES.dwg, 11/3/2023 8:46 AM, Robert Dzurenda

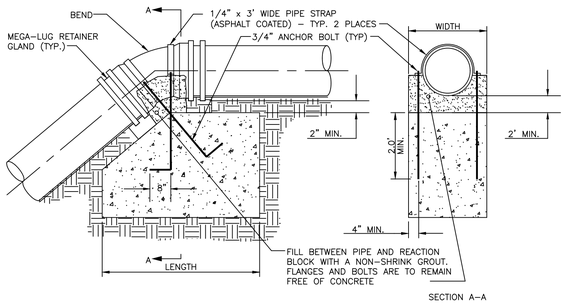


NOTES:

1. ALL CONCRETE SHALL BE PENNDOT CLASS A
2. ALL FITTINGS AND JOINTS SHALL BE COVERED WITH PLASTIC BEFORE PLACING CONCRETE.
3. PROVIDE MEGA-LUG RETAINER GLAND AT ALL JOINTS.
4. ALL FITTINGS SHALL BE CLASS 350 COMPACT DUCTILE IRON WITH MECHANICAL JOINTS.

BEARING SURFACE REQUIRED - SQ. FT. HORIZONTAL THRUST BLOCKING AND VERTICAL THRUST DOWNWARD 150 P.S.I. TEST PRESSURE															
PIPE SIZE	6" & 8"				10" & 12"				16" 18" 20"				24"			
TYPE OF BEARING MATERIAL AND ALLOWABLE LOADS	DEGREE OF BEND OR DEFLECTION															
	22.5°	45°	90°	D.E.	22.5°	45°	90°	D.E.	22.5°	45°	90°	D.E.	22.5°	45°	90°	D.E.
SAND 0.75 TON/SQ.FT.	3.4	6.0	11.0	6.4	6.7	12.8	23.4	14.2	14.8	28.8	52.9	34.4	26.1	48.3	89.7	64.0
SOFT CLAY 1 TON/SQ.FT.	2.6	4.6	8.2	4.8	5.0	9.6	17.5	10.7	11.2	21.7	39.7	28.2	19.6	36.3	67.3	48.0
SAND & GRAVEL 2 TON/SQ.FT.	1.3	2.3	4.1	2.4	2.5	4.8	8.8	5.3	5.6	10.8	20.0	14.1	9.8	13.1	33.6	24.0
CLAY 4 TON/SQ.FT.	1.0	1.2	2.1	1.3	1.3	2.4	4.4	2.7	2.8	5.4	10.0	7.2	4.9	9.1	16.8	12.0
SOFT ROCK 5 TON/SQ.FT.	1.0	1.0	1.6	1.0	1.0	1.9	3.5	2.2	1.6	4.4	8.0	5.7	3.9	7.3	13.5	9.6
ROCK 15 TON/SQ.FT.	–	–	1.0	0.4	–	1.0	1.2	0.8	1.0	1.4	2.6	1.9	1.3	2.4	4.5	3.2

TYPICAL SECTION VERTICAL THRUST DOWNWARD
(NOT TO SCALE)



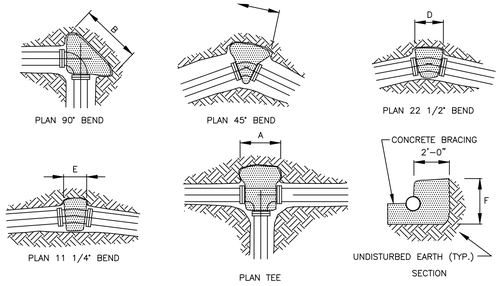
SECTION A-A

NOTES:

1. ALL CONCRETE SHALL BE PENNDOT CLASS A.
2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS U-SHAPED AROUND PIPE.
3. ALL FITTINGS AND JOINTS SHALL BE COVERED WITH POLYETHELENE FILM BEFORE PLACING CONCRETE.
4. PAINT ALL EXPOSED STEEL WITH TWO COATS OF VALDURA PAINT OR APPROVED EQUAL.
5. ALL FITTINGS SHALL BE CLASS 350 COMPACT DUCTILE IRON WITH MECHANICAL JOINTS.

CONCRETE BLOCKING DIMENSIONS, VERTICAL THRUST UPWARD - 150 P.S.I. TEST PRESSURE									
PIPE SIZES	LENGTH			WIDTH			DEPTH		
	11.25°	22.25°	45°	11.25°	22.25°	45°	11.25°	22.25°	45°
6" & 8"	3'	4'	6'	3'	4'	6'	3'	4'	6'
10" & 12"	3.5'	4'	7'	3.5'	4'	7'	3.5'	4'	7'
14" & 16"	4'	6'	9'	4'	6'	9'	4'	6'	9'
18" & 20"	5'	6.5'	11.5'	5'	6.5'	11.5'	5'	6.5'	11.5'
24"	5'	9'	12.5'	5'	9'	12.5'	5'	9'	12.5'

TYPICAL SECTION VERTICAL THRUST UPWARD
(NOT TO SCALE)

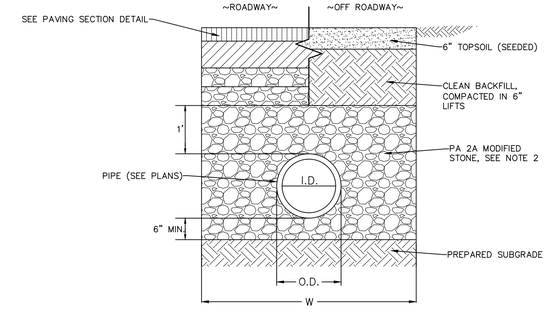


NOTES

1. PROVIDE PLASTIC COVERING TO PROTECT PIPE JOINTS FROM CONCRETE.
2. ALL CONCRETE SHALL BE PENNDOT CLASS A.
3. USE 150 PSI TEST PRESSURE UNLESS DIRECTED OTHERWISE BY THE AUTHORITY.
4. PROVIDE MEGA-LUG RETAINER GLAND AT ALL JOINTS.
5. ALL FITTINGS SHALL BE CLASS 350 COMPACT DUCTILE IRON WITH MECHANICAL JOINTS.

TEST PRESSURE	PIPE DIAMETER	REACTION BACKING DIMENSIONS A	B	C	D	E	F
150 PSI	16	5'-6"	7'-9"	4'-2"	2'-2"	—	3'-4"
	12	4'-2"	5'-11"	3'-3"	1'-8"	—	2'-6"
	8	3'-0"	4'-3"	2'-4"	1'-2"	—	1'-8"
	6	2'-2"	3'-4"	1'-10"	0'-11"	—	1'-3"
200 PSI	16	7'-3"	10'-3"	5'-7"	2'-10"	1'-6"	3'-4"
	12	5'-7"	7'-11"	4'-3"	2'-2"	1'-2"	2'-6"
	8	4'-0"	5'-7"	3'-1"	1'-7"	0'-10"	1'-8"
	6	3'-1"	4'-5"	2'-5"	1'-3"	0'-8"	1'-3"
250 PSI	16	9'-3"	13'-2"	7'-1"	3'-6"	2'-3"	3'-4"
	12	6'-4"	8'-11"	5'-4"	3'-5"	1'-9"	2'-6"
	8	5'-0"	6'-11"	3'-10"	1'-11"	1'-3"	1'-8"
	6	3'-10"	5'-6"	3'-9"	1'-10"	1'-1"	1'-3"

REACTION BACKING
(NOT TO SCALE)



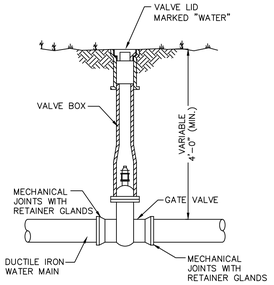
NOTES:

I.D. = NOMINAL INSIDE DIAMETER OF PIPE
O.D. = OUTSIDE DIAMETER OF PIPE BARREL OR SHELL
H.D. = HUB DIAMETER, OUTSIDE DIAMETER OF PIPE AT BELL OR BAND
H = HEIGHT OF FILL OVER TOP OF PIPE

W = TRENCH WIDTH AS FOLLOWS:
2.0 FT + H.D. FOR PIPES OR PIPE-ARCHES 48" AND LESS I.D. OR SPAN
2.5 FT + H.D. FOR PIPES OR PIPE-ARCHES GREATER THAN 48" I.D. OR SPAN

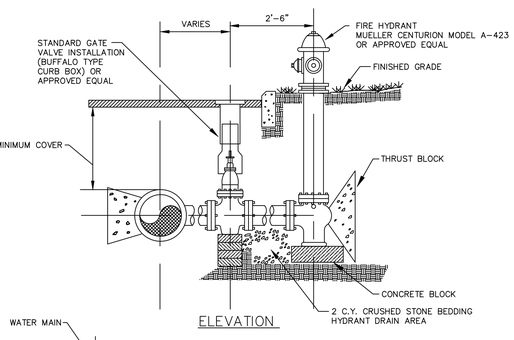
1. PIPE SHALL BE CENTERED IN TRENCH.
2. PA 2A MODIFIED STONE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PENNDOT) STANDARD SPECIFICATIONS. STONE TO BE PLACED IN LOOSE, HORIZONTAL LIFTS NOT EXCEEDING 6" IN THICKNESS. EACH LIFT SHALL BE COMPACTED TO AT LEAST 95% OF THE AGGREGATE'S MAXIMUM DRY DENSITY PER ASTM D698 - STANDARD PROCTOR METHOD

TRENCH DETAIL
(NOT TO SCALE)



NOTES:
1. GATE VALVE SHALL BE RESILIENT SEATED GATE VALVES WITH MECHANICAL JOINTS.
2. VALVE BOXES SHALL BE THREE PIECE CAST IRON, SCREW TYPE.

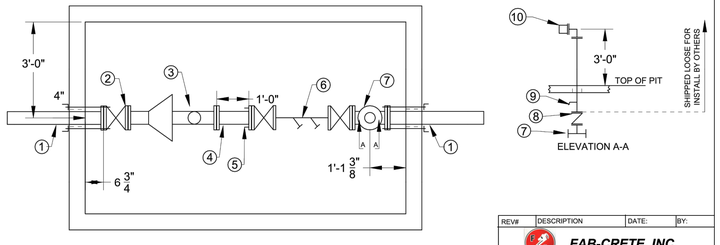
GATE VALVE AND VALVE BOX DETAIL
(NOT TO SCALE)



NOTE: A MIN. COVER OF FIVE FEET WITH RESPECT TO HYDRANT LOCATION SHALL BE PROVIDED WITH THE NECESSARY BENDS, FITTINGS, AND RESTRAINTS AS DIRECTED BY AUDUBON WATER.

FIRE HYDRANT CONNECTION DETAIL
(NOT TO SCALE)

LEGEND		
ITEM	QTY.	NAME
1	2	4" DIP FLGxPE 3'-0"
2	1	4" OS&Y GATE VALVE
3	1	4" SENSUS F2 METER W/ 4-WHEEL REG IN 1000 GAL INCR
4	1	4" DIP FLGxPE 1'-0"
5	1	4" FLG COUPLING ADAPTER
6	1	4" WILKINS 360DA DCDA WITH METER W/ 4-WHEEL RED IN 1000 GAL INCR
7	1	4" FLG TEE
8	1	4" KENNEDY 806 WAFER CHECK
9	1	1/2" BALL DRIP
10	1	5"x4" STORZ FDC
	3	4" S-89 PIPE STAND (3 REQ)



PIPE LAYOUT

REV#	DESCRIPTION	DATE:	BY:
	FAB-CRETE, INC.		
SIZE & DESCRIPTION:	4" FIRE METER PIT W/ FDC		
CUSTOMER:	OLIVER SPRINKLER		
JOB NAME:	955 MADISON AVE		
WATER AUTHORITY:	AUDUBON		
QTY:	CU. YDS:	WEIGHT:	1200 LBS
DRAWN BY:	D. EDDINGER	DRAWING DATE:	11/23/21
PART NUMBER:	SALES ORDER NUMBER:	SHEET:	004

APPROVED FOR PRODUCTION BY:_____ DATE:_____

SERIAL NO. 20222781727

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL Pennsylvania One Call System, Inc

1-800-242-1776

WATER NOTES

1. ALL WATERLINES AND APPURTENANCES SHALL CONFORM TO THE DETAILS AND SPECIFICATION OF THE AUDUBON WATER COMPANY.
2. FIRE LINE COMPONENTS SHALL MATCH FIRE LINE SIZE SPECIFIED ON THE PLAN.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

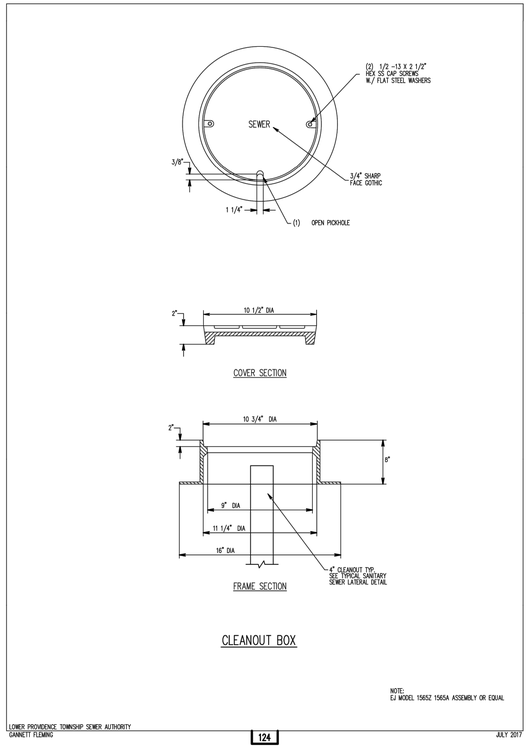
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

WATER DETAILS

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

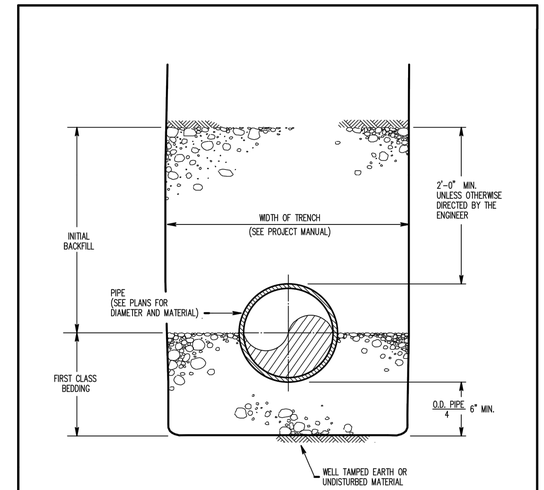
DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE:
WORK ORDER NO.: 2324
DRAWING NO.: C-480
19 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-480 WATER DETAILS.dwg, 11/3/2023 8:46 AM, Robert Dzurenda



CLEANOUT BOX

NOTE:
EJ MODEL 1565Z 1565A ASSEMBLY OR EQUAL

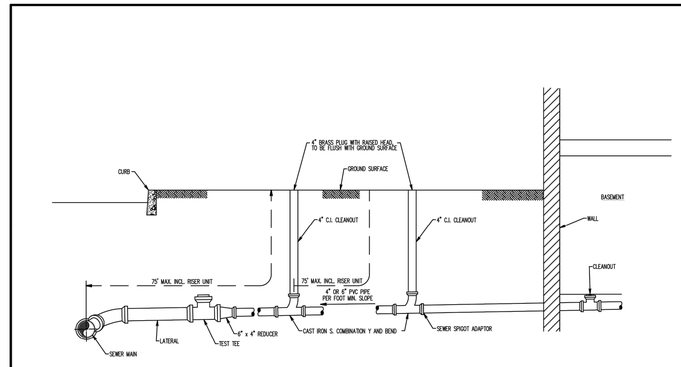


SECTIONAL ELEVATION

FIRST CLASS BEDDING AND INITIAL BACKFILL

PIPE BEDDING

MICRO-STATION MISC2.dgn
FIGLBD



SANITARY SEWER LATERAL – NEW BUILDING

NOTE:
IF VENT IS LOCATED IN PAVED AREA REFER TO "CLEANOUT BOX"

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL
Pennsylvania One Call System, Inc
1–800–242–1776

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

SANITARY SEWER DETAILS

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	1" = 30'
WORK ORDER NO.:	2324
DRAWING NO.:	C-490

20 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-490 SEWER DETAILS.dwg, 11/3/2023 8:46 AM, Robert Dzurenda

LANDSCAPE COMPLIANCE CHART - LOWER PROVIDENCE TOWNSHIP				
REQUIREMENT	REQUIRED	PROPOSED	COMMENT	ORDINANCE
INTERNAL LANDSCAPING: SHALL BE REQUIRED FOR BUFFERING AND/OR SCREENING PURPOSES				
AREA USED AS PARKING, LOADING, AND DRIVEWAYS: 73,075 SF	REQUIRED	PROPOSED		
THE MINIMUM NUMBER OF TREES AND SHRUBS REQUIRED SHALL BE ONE SHADE TREE AND ONE EVERGREEN TREE PER 5,000 SF OF PAVED AREA USED AS PARKING, LOADING, AND DRIVEWAYS	15 SHADE TREES 15 EVERGREEN TREES	**16** SHADE TREES 15 EVERGREEN TREES		123-50.A.
THE MINIMUM NUMBER OF TREES AND SHRUBS REQUIRED SHALL BE ONE FLOWERING OR EVERGREEN SHRUB PER 1,500 SF OF PAVED AREA USED FOR PARKING, LOADING, AND DRIVEWAYS	49 SHRUBS	**50** SHRUBS		
PERIMETER LANDSCAPING: EACH NON-RESIDENTIAL DEVELOPMENT SHALL BE SCREENED AS A NECESSARY SAFEGUARD TO THE CHARACTER OF THE ADJACENT AREA.				
ALONG ROAD ROW, TREES SHALL BE PLANTED 40-50' APART.				123-50.B.
RITTENHOUSE ROAD: 565'	12 SHADE TREES	SATISFIED BY STREET TREES BELOW	[1] [W]	
VAN BUREN AVE: 408'	9 SHADE TREES	SATISFIED BY STREET TREES BELOW	[1] [W]	
ALONG PROPERTY LINES ABUTTING SIMILAR DISTRICTS, THE MINIMUM NUMBER OF TREES AND SHRUBS SHALL BE: A) ONE SHADE TREE PER 100' OF PROPERTY LINE; B) ONE EVERGREEN TREE AND ONE FLOWERING TREE OF THREE FLOWERING / EVERGREEN SHRUBS PER 150' OF PROPERTY LINE				
NORTHEASTERN PROPERTY LINE: 399'	4 SHADE TREES 3 EVERGREEN TREES 3 FLOWERING TREES	4 SHADE TREES 3 EVERGREEN TREES 3 FLOWERING TREES		
SOUTHEASTERN PROPERTY LINE: 565'	6 SHADE TREES 4 EVERGREEN TREES 4 FLOWERING TREES	3 SHADE TREES 4 EVERGREEN TREES 4 FLOWERING TREES	[3] [W]	
SHADE TREES: SHADE TREES SHALL BE ALONG BOTH SIDES OF ALL NEW OR EXIST. STREETS AT INTERVALS OF NO LESS THAN 40 FEET & NO MORE THAN 50 FEET. TREES SHALL BE PLACED BEHIND OF THE ROW LINE AND NOT INTERFERE WITH THE INSTALLATION / MAINTENENCE OF SIDEWALKS, DRAINAGE FACILITIES, AND / OR UTILITIES.				
RITTENHOUSE ROAD: 565'	12 SHADE TREES	12 SHADE TREES		123-52.
VAN BUREN AVE: 408'	9 SHADE TREES	9 SHADE TREES		
TREE PRESERVATION, PROTECTION AND REPLACEMENT: EVERY TREE DETERMINED BY TH TOWNSHIP LANDSCAPE ARCHITECT TO BE LIVING AND HEALTHY, WITH A DBH OF 8" OR GREATER WHICH IS REMOVED / DESTROYED, SHALL BE REPLACED WITH ONE OF MORE NEW SHADE TREES.				
3 TREES GREATER THAN 8" DBH PROPOSED TO BE REMOVED	3 SHADE TREES	3 SHADE TREES		123-114.
VALLEY FORGE CORPORATE CENTER: LANDSCAPE BUFFERS SHALL BE REQUIRED IN THE LOCATIONS CITED IN THE LOWER PROVIDENCE TOWNSHIP VALLEY FORGE CORPORATE CENTER LAND USE AND DESIGN MANUAL.				
FRONT / STREET BUFFER REQUIRES BUFFER TYPE 'A' CONSISTING OF 3 DECIDUOUS TREES, 2 UNDERSTORY TREES, 6 SHRUBS, AND 850 SF PERENNIAL GROUNDCOVER PER 100 LINEAL FEET.				123-143.
RITTENHOUSE ROAD: 565'	17 SHADE TREES 12 UNDERSTORY TREES 34 SHRUBS 4803 SF OF PERENNIAL GROUNDCOVER	12 STREET TREES 5 SHADE TREES 12 UNDERSTORY TREES **36** SHRUBS **6360** SF OF PERENNIAL GROUNDCOVER	[2] [W]	
VAN BUREN AVE: 408'	13 SHADE TREES 9 UNDERSTORY TREES 25 SHRUBS 3468 SF OF PERENNIAL GROUNDCOVER	9 STREET TREES 4 SHADE TREES 9 UNDERSTORY TREES 25 SHRUBS 3468 SF OF PERENNIAL GROUNDCOVER	[2] [W]	
ALONG PARKING AND LOADING AREAS REQUIRES BUFFER TYPE 'C' CONSISTING OF 4 SHADE TREES, 2 UNDERSTORY TREES, 3 EVERGREEN TREES, AND 12 EVERGREEN SHRUBS PER 100 LINEAL FEET.				
PARKING AREA ALONG SOUTHWEST PROPERTY LINE: 334'	14 SHADE TREES 7 UNDERSTORY TREES 10 EVERGREEN TREES 40 EVERGREEN SHRUBS	13 BUFFER / STREET TREES 7 TYPE 'A' UNDERSTORY TREES 0 EVERGREEN TREES 25 TYPE 'A' SHRUBS 15 EVERGREEN SHRUBS	[3] [W]	
PARKING AREA ALONG SOUTHEAST PROPERTY LINE: 364'	15 SHADE TREES 8 UNDERSTORY TREES 11 EVERGREEN TREES 44 EVERGREEN SHRUBS	3 REPLACEMENT SHADE TREES 4 PERIMETER UNDERSTORY TREES 4 UNDERSTORY TREES 11 INTERNAL EVERGREEN TREES 44 EVERGREEN SHRUBS	[3] [W]	
PARKING AREA ALONG NORTHEAST PROPERTY LINE: 399'	16 SHADE TREES 8 UNDERSTORY TREES 12 EVERGREEN TREES 48 EVERGREEN SHRUBS	8 SHADE TREES 4 UNDERSTORY TREES 6 EVERGREEN TREES 48 EVERGREEN SHRUBS	[3] [W]	
BASIN LANDSCAPING: THE PERIMETER BERMS AND EMBANKMENTS OF RETENTION / DETENTION BASIN SHALL BE DESIGNATED TO CREATE A NATURAL APPEARANCE AND REDUCE FUTURE MAINTENANCE REQUIREMENTS.				
MINIMUM PLANT MATERIAL PER 100 LINEAR FEET OF BASIN PERIMETER (MEASURED AT THE 100 YR. WATER SURFACE ELEVATION): 3 EVERGREEN TREES, 2 DECIDUOUS TREES, 3 SHRUBS. BASIN PERIMETER:				123-19.H.(24)
BASIN 1: 200'	6 EVERGREEN TREES 2 DECIDUOUS TREES 10 SHRUBS	6 EVERGREEN TREES 0 DECIDUOUS TREES 10 SHRUBS	[4] [W]	
BASIN 2: 250'	8 EVERGREEN TREES 5 DECIDUOUS TREES 13 SHRUBS	**9** EVERGREEN TREES 0 DECIDUOUS TREES 13 SHRUBS	[4] [W]	

I (V) VARIANCE REQUIRED I (EN) EXISTING NON-CONFORMANCE I (W) WAIVER REQUESTED) I
I (TBD) TO BE DETERMINED I (NA) NOT APPLICABLE I (NS) NOT SPECIFIED I

[1] DUPLICATE REQUIREMENT TO STREET TREES, WAIVER REQUESTED TO ALLOW FOR STREET TREE REQUIREMENT TO SATISFY PERIMETER SHADE TREES.

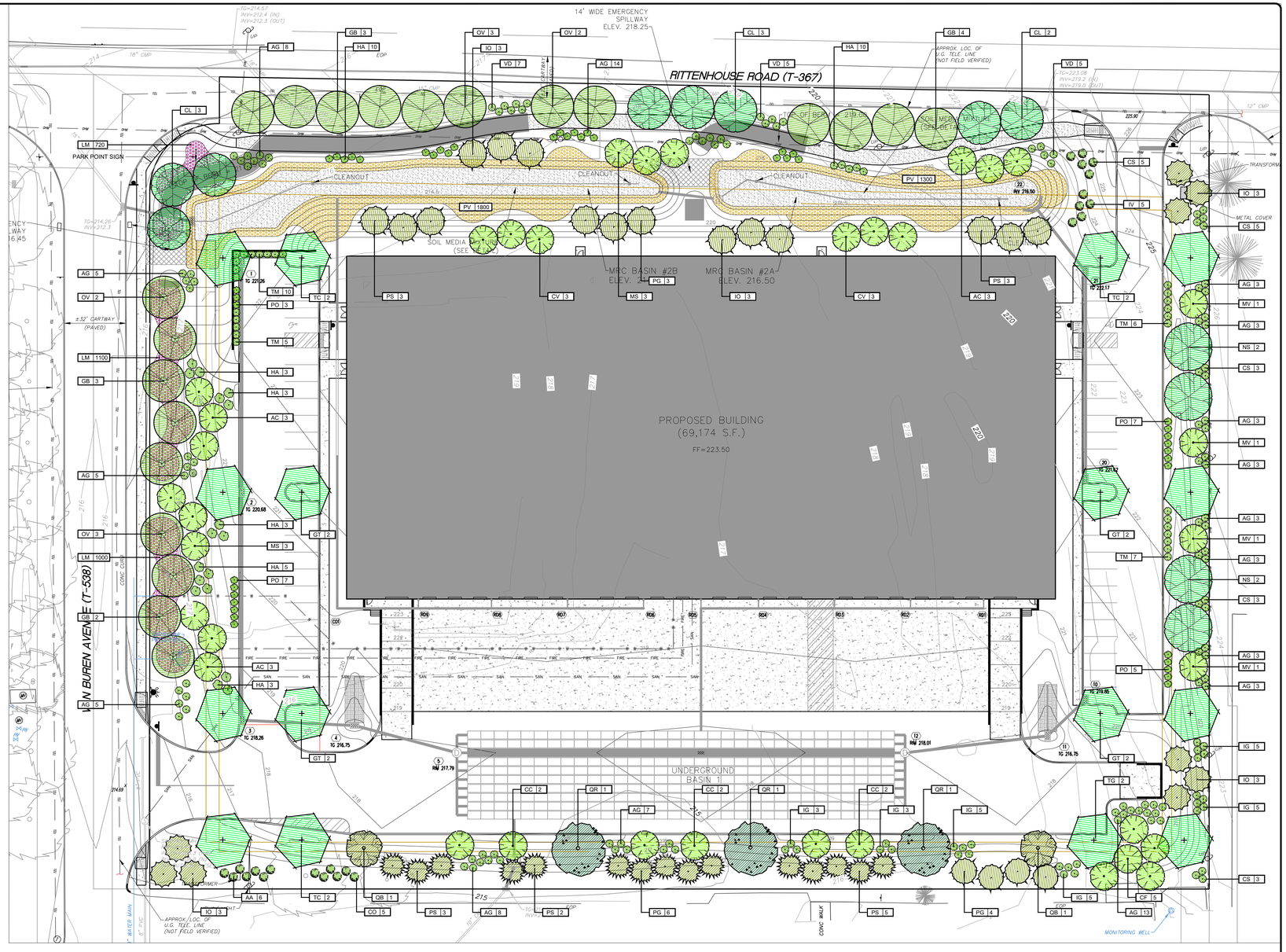
[2] DEPTH OF BUFFER DOES NOT ALLOW FOR INSTALLATION OF OVERLAPPING REQUIREMENTS. WAIVER REQUESTED TO ALLOW FOR OTHER REQUIREMENTS TO OFFSET DEFICIENCIES.

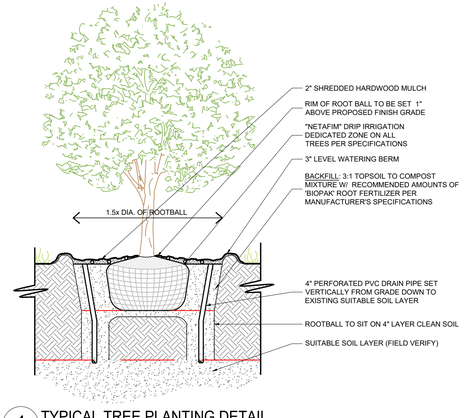
[3] DEPTH OF BUFFER DOES NOT ALLOW FOR INSTALLATION OF OVERLAPPING REQUIREMENTS. QUANTITY OF PLANTS PROPOSED IS APPROPRIATE FOR AVAILABLE SPACE, WAIVER REQUESTED TO OFFSET DEFICIENCIES.

[4] PROXIMITY OF BASIN AREAS TO OTHER REQUIRED LANDSCAPE DOES NOT ALLOW FOR PLANTING OF ALL REQUIRED DETENTION BASIN LANDSCAPE, WAIVER REQUESTED TO ALLOW FOR LESSER QUANTITY OF PLANT MATERIAL.

PLANT LIST

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. PLANTING CALIPER	MIN. PLANTING SPREAD	MIN. PLANTING HEIGHT	REMARKS	COMMENTS
SHADE TREES								
CL	8	CLADRASTIS LUTEA	YELLOWWOOD	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
GB	12	GINGKO BILOBA 'PRINCETON SENTRY'	'PRINCETON SENTRY' GINGKO	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
GT	8	GLEDITSIA TRIANCANTHOS VAR. INERMIS	THORNLESS HONEYLOCUST	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
NS	4	NYSSA SYLVATICA	BLACKGUM	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
OV	10	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
QB	2	QUERCUS BICOLOR	SWAMP WHITE OAK	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
QR	3	QUERCUS RUBRA	RED OAK	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
TC	8	TILIA CORDATA 'GREENSPIRE'	'GREENSPIRE' LITTLELEAF LINDEN	2.5" CAL.	-	12-14' HT.	B&B	FULL, STRAIGHT LEADER
ORNAMENTAL TREES								
AC	9	AMELANCHIER CANADENSIS	SERVICEBERRY	-	-	8' HT.	B&B	MULTI-STEM, MIN. 5 STEMS
CC	6	CERCIS CANADENSIS	REDBUD	-	-	8' HT.	B&B	FULL SPECIMEN
CF	5	CORNUS FLORIDA	FLOWERING DOGWOOD	-	-	8' HT.	B&B	FULL SPECIMEN
CV	6	CRATAEGUS VIRIDUS 'WINTER KING'	'WINTER KING' HAWTHORN	-	-	8' HT.	B&B	FULL SPECIMEN
MS	6	MAGNOLIA STELLATA	STAR MAGNOLIA	-	-	8' HT.	B&B	FULL SPECIMEN
MV	4	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	-	-	8' HT.	B&B	MULTI-STEM, MIN. 5 STEMS
EVERGREEN TREES								
IO	15	ILEX OPACA	AMERICAN HOLLY	-	-	6' HT.	B&B	BRANCHED FULLY TO GROUND
PG	13	PICEA GLAUCA	WHITE SPRUCE	-	-	6' HT.	B&B	BRANCHED FULLY TO GROUND
PS	16	PINUS STROBUS	EASTERN WHITE PINE	-	-	6' HT.	B&B	BRANCHED FULLY TO GROUND
SHRUBS**								
AA	6	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
AG	89	ABELIA X GRANDIFLORA	GLOSSY ABELIA	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
CO	6	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
CS	19	CORNUS SERICEA	RED-TWIG DOGWOOD	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
HA	17	HYDRANGEA 'ANNABELLE'	'ANNABELLE' HYDRANGEA	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
IG	26	ILEX GLABRA	INKBERRY	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
IV	5	ILEX VERTICILATA 'RED SPRITE'	'RED SPRITE' WINTERBERRY	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
PO	19	PHYSOCARPUS OPULIFOLIUS	NINEBARK	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
TM	28	TAXUS X MEDIA 'DENSIFORMIS'	DENSIFORM YEW	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
VD	17	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	-	-	24-30" HT.	CONT.	HEAVY, FULL SPECIMEN
PERENNIALS**								
LM	2256	LIRIOPE MUSCARI	LILYTURF	-	-	-	CONT.	PLANT 15" ON CENTER
PV	3180	SWITCHGRASS	SWITCHGRASS	-	-	-	CONT.	PLANT 24" ON CENTER





1 TYPICAL TREE PLANTING DETAIL
NOT TO SCALE

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

LANDSCAPE ARCHITECTURE • GOOD GROUNDS DESIGN •

PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT
WILLIAM MCKEAN
REGISTRATION NUMBER 5399

GOOD GROUNDS DESIGN
LANDSCAPE ARCHITECTURE, LLC.
607 McKEAN ROAD,
AMBLER PA, 19002

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL Pennsylvania One Call System, Inc
1-800-242-1776

PRELIMINARY
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION
A	09/22/23	TOWNSHIP SUBMISSION

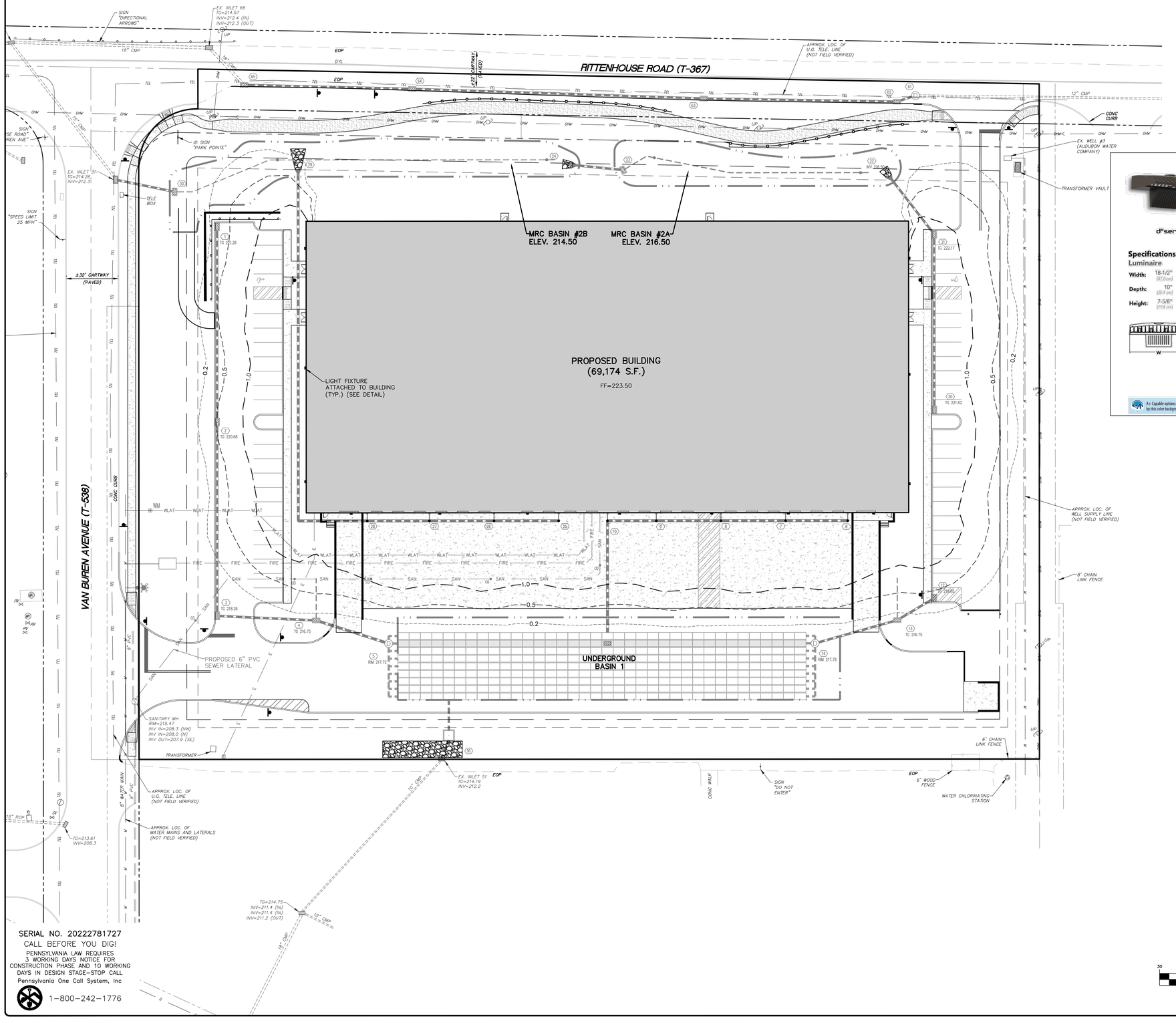
LANDSCAPE PLAN

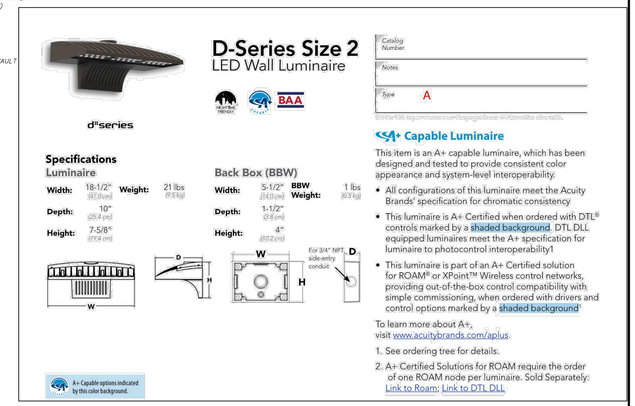
CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: CWM
A/E:
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: L-601
21 OF 40

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	SOURCE	MOUNTING	VOLTAGE	WATTS	OPTIONS/REMARKS
A	LED WALLPACK LIGHTING FIXTURE, TYPE T4M DIST.	LITHONIA #DSXW2 LED 20C 1000 40K T4M 277 BBW PE DDBXD	LED	WALL	277V	73	MOUNT 17'-0" AFG





LIGHT FIXTURE DETAIL
(NOT TO SCALE)

LEGEND

- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- PROPOSED UNDERGROUND ELECTRIC

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR
CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

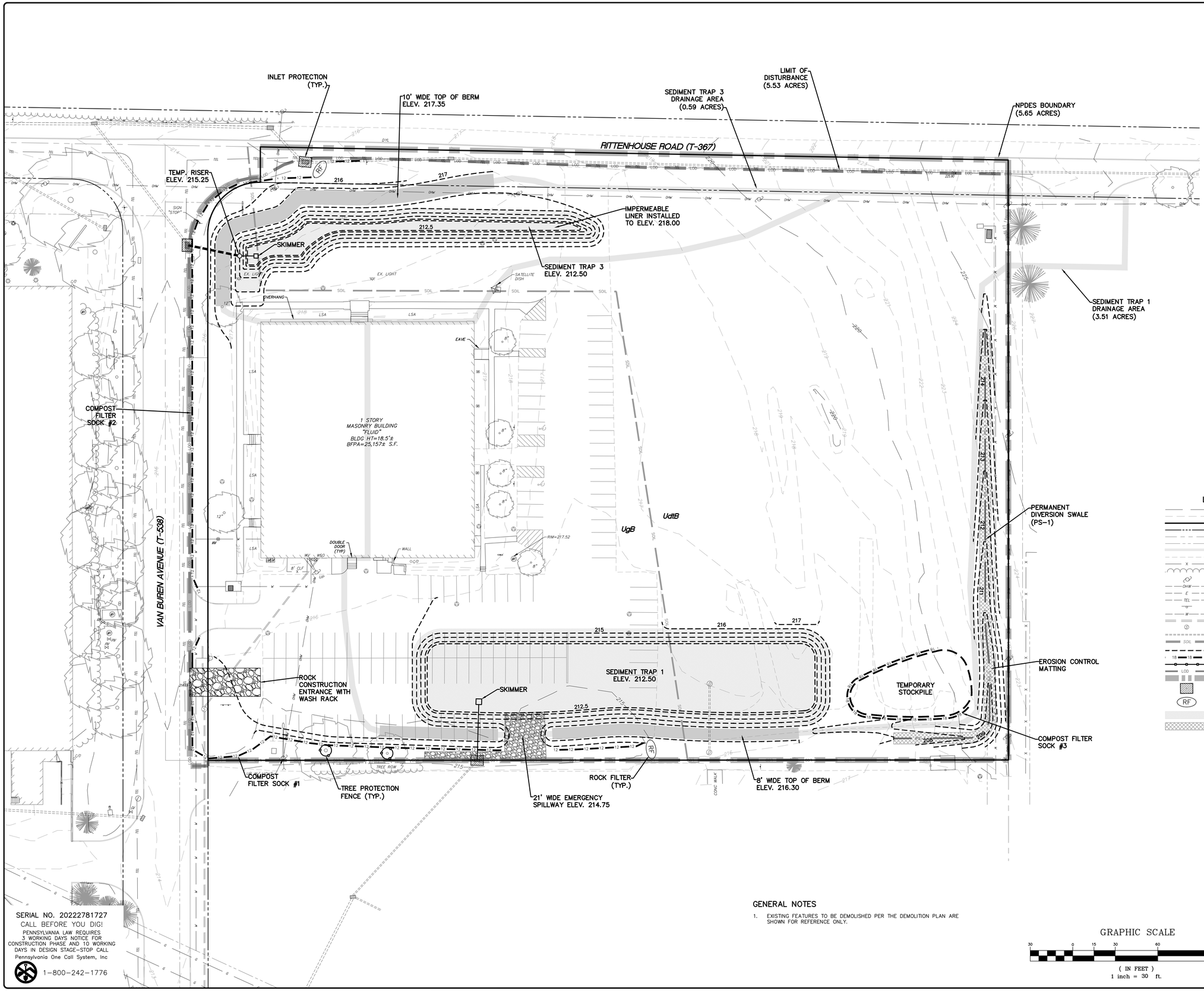
REV.#	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

LIGHTING PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-610
22 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-610 LIGHTING PLAN.dwg, 11/3/2023 8:46 AM, Robert Dzurenda



SERIAL NO. 20222781727

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1-800-242-1776

GENERAL NOTES

1. EXISTING FEATURES TO BE DEMOLISHED PER THE DEMOLITION PLAN ARE SHOWN FOR REFERENCE ONLY.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRELIMINARY
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REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

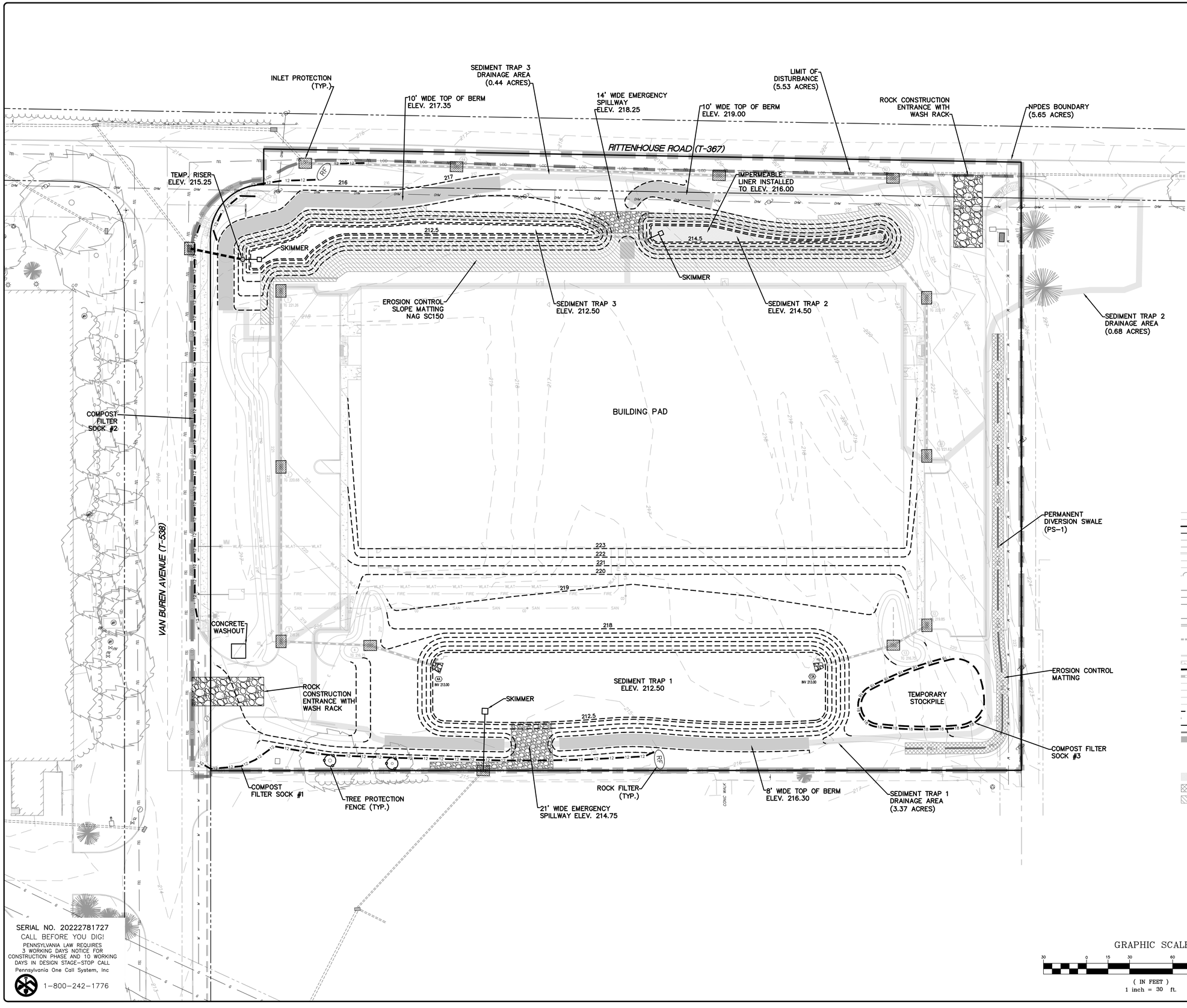
EROSION & SEDIMENTATION CONTROL PLAN (INITIAL STAGE)

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	1" = 30'
WORK ORDER NO.:	2324
DRAWING NO.:	C-701

23 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-701 E&S PHASE 1.dwg, 11/3/2023 8:46 AM, Robert Dzurenda



SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL
Pennsylvania One Call System, Inc
1–800–242–1776

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

EROSION & SEDIMENTATION CONTROL PLAN (INTERMEDIATE STAGE)

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-702
24 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-702 E&S PHASE 2.dwg, 11/3/2023 9:09 AM, Robert Durenda

INLET PROTECTION (TYP.)

LIMIT OF DISTURBANCE (5.53 ACRES)

ROCK CONSTRUCTION ENTRANCE WITH WASH RACK

NPDES BOUNDARY (5.65 ACRES)

RITTENHOUSE ROAD (T-367)

TEMP. RISER ELEV. 215.25

SKIMMER

SKIMMER

SEDIMENT TRAP 3 ELEV. 212.50

SEDIMENT TRAP 2 ELEV. 214.50

COMPOST FILTER SOCK #2

PROPOSED BUILDING (69,174 S.F.) FF=223.50

PERMANENT DIVERSION SWALE (PS-1)

VAN BUREN AVENUE (T-538)

CONCRETE WASHOUT

ROCK CONSTRUCTION ENTRANCE WITH WASH RACK

COMPOST FILTER SOCK #1

TREE PROTECTION FENCE (TYP.)

ROCK FILTER (TYP.)

CONC. WALK

PERMANENT STABILIZATION

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LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- EXISTING SOILS
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- PROPOSED UNDERGROUND ELECTRIC
- TEMPORARY CONTOUR
- COMPOST SILT SOCK
- TREE PROTECTION FENCE
- LIMIT OF DISTURBANCE
- NPDES BOUNDARY
- INLET PROTECTION
- ROCK FILTER
- EROSION CONTROL CHANNEL MATTING
- EROSION CONTROL SLOPE MATTING
- PERMANENT STABILIZATION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

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C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

EROSION & SEDIMENTATION CONTROL PLAN (FINAL STAGE)

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-703
25 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-703 E&S PHASE 3.dwg, 11/3/2023 9:10 AM, Robert Durendo

STANDARD E&S 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, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
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 BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. 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 MAP(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 SIDE SLOPES SHALL BE 2H:1V OR FLATTER.
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 EROSION 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 DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY 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 ANYWHERE OTHER THAN THE APPROVED 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 E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE BY THE CONTRACTOR 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.
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 CODES.
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. 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.
31. 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.

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

GENERAL MAINTENANCE NOTES

A. COMPOST FILTER SOCK

1. SOCKS SHOULD BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURE'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED AS REQUIRED TO KEEP THE SOCK FUNCTIONAL. IN ALL CASES REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK.
3. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURE'S RECOMMENDATIONS.

B. CONSTRUCTION ENTRANCE WITH WASH RACK

1. 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 IN WRITING FROM THAT SEQUENCE AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

C. SEDIMENT BASIN/TRAP

1. SEDIMENT WILL BE REMOVED FROM THE SEDIMENTATION BASIN/TRAP WHEN THE CAPACITY OF THE TRAP IS REDUCED BY 2000 CUBIC FEET PER ACRE OF PROJECT AREA TRIBUTARY TO IT.
2. A "CLEAN-OUT" ELEVATION WILL BE CLEARLY INDICATED ON THE PLAN DRAWINGS. THIS ELEVATION WILL BE IDENTIFIED BY APPROPRIATE STRUCTURE OR DEVICE WITHIN THE CONSTRUCTED BASIN TO INDICATE WHEN SEDIMENT SHOULD BE REMOVED.
3. SEDIMENT WILL NOT BE ALLOWED TO ENTER WATERS OF THE COMMONWEALTH DURING EITHER SEDIMENT REMOVAL OR DISPOSAL OPERATIONS.
   (a) THE LOCATION OF SEDIMENT DISPOSAL AREAS MUST BE SHOWN ON A MAP WHICH IS PART OF THE EROSION AND SEDIMENT CONTROL PLAN.
4. SEDIMENTATION BASIN/TRAP WILL BE PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.
5. SEDIMENT BASIN/TRAP SHOULD NOT BE CONVERTED TO A PERMANENT DETENTION BASIN UNTIL CONTRIBUTING DRAINAGE AREA IS 70% STABILIZED.

D. BASIN OUTLETS

1. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
2. ANY WETLAND PLANTINGS THAT APPEAR TO BE REMOVED OR DEAD WILL BE REPLACED BY HAND.
3. ANY SEDIMENT BUILDUP WILL BE REMOVED BY HAND.
4. ALL MAINTENANCE WILL BE PERFORMED BY THE LOT OWNER OR HOMEOWNERS ASSOCIATION. AT ANYTIME THE TOWNSHIP HAS THE RIGHT TO MAINTAIN THIS FACILITY AT THE OWNERS EXPENSE.

E. ROCK FILTER OUTLETS

1. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

F. CONCRETE WASHOUT

1. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
2. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
3. LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT AREA.

G. POST CONSTRUCTED STORMWATER MANAGEMENT BASIN (BMP)

1. ALL BASINS WILL BE CHECKED ON A REGULAR BASIS FOR DEBRIS BUILDUP (TRASH AND CONSTRUCTION DEBRIS) THAT MAY CAUSE CLOGGING OF ORIFICES WITHIN OUTLET STRUCTURES.

FILL MATERIALS

IF THE SITE WILL NEED TO HAVE FILL IMPORTED FROM AN OFF SITE LOCATION, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND THE DETERMINATION OF CLEAN FILL WILL RESIDE WITH THE OPERATOR.

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 PROCESSED FOR RE-USE.)

ENVIRONMENTAL DUE DILIGENCE: 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."
FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTER 271 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

PROJECT CONSTRUCTION WASTES

1. TREES – CHIPPED AND REMOVED OFFSITE FOR MULCH.

2. BUILDING MATERIALS – SHALL BE REMOVED AND DISPOSED OF AT PROPER RECYCLING FACILITY AS PER NOTE #10 OF THE GENERAL EROSION & SEDIMENT CONTROL NOTES.

3. ROCK WASTE – ALL ROCKS THAT ARE SUITABLE FOR LANDSCAPING USES SHALL BE USED ON SITE OR AT ANOTHER FACILITY.

4. SOIL WASTE – ALL EXCAVATED SOIL SHALL BE USED ON SITE, AS FILL MATERIAL WHERE POSSIBLE. ANY EXCESS MATERIAL NOT USED ON SITE MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVED AND WERE ALL BMPS ARE PROPERLY INSTALLED. ALL SEDIMENT REMOVED DURING MAINTENANCE AND CLEANING OF EROSION AND SEDIMENTATION CONTROLS DEVICES WILL BE INCORPORATED INTO THE FINE GRADING UPSTREAM FROM A SEDIMENT CONTROL DEVICE. EXCESS MATERIAL REMOVED FROM EROSION AND SEDIMENTATION CONTROL MEASURES AND CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WERE ALL BMPS ARE PROPERLY INSTALLED.

5. SEDIMENT REMOVAL FROM ALL SEDIMENT BASINS TO BE RETURNED TO SITE UPSTREAM OF ALL PROPOSED BMP'S.

6. ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

SEDIMENT DISPOSAL FOR PCSM BMP

1. SEDIMENT SHOULD BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND REVEGETATED.

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

3. EXCESS SEDIMENT MATERIAL THAT CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WHERE ALL BMPS ARE PROPERLY INSTALLED.

E&S PLAN PLANNING & DESIGN NOTES

1. THE CONTRACTOR SHALL MINIMIZE THE EXTENT AND DURATION OF THE EARTH DISTURBANCE BY LIMITING THE CLEARING, GRUBBING, AND TOPSOIL STRIPPING TO AREAS IN EACH PHASE 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 BMP'S SPECIFIED BY THE CONSTRUCTION SEQUENCE FOR THAT PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE CONTRACTOR SHALL STABILIZE AND AREAS DISTURBED BY ANY ACTIVITIES.

2. TO MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION, ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO SEDIMENT BASINS/TRAPS AND DIVERSION BERM FOR GRADING. E&S BMP'S MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS TO THOSE BMP'S. E&S BMP'S SHALL REMAIN FUNCTIONAL UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED. AT NO TIME WILL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARY. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAYS SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE.

3. TO MINIMIZE SOIL COMPACTION, NO LAND CLEARING AND/OR GRADING SHALL BE PERFORMED OUTSIDE OF LIMIT OF DISTURBANCE FENCING. PROPER CARE SHALL BE TAKEN TO MINIMIZE SOIL COMPACTION.

4. THE FOLLOWING MEASURES OR CONTROLS UTILIZED TO MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF: INFILTRATION BASIN, INFILTRATION TRENCH AND MANUAL RELEASE CONCEPT.

DISPOSAL OF WASTE NOTE

ANY CONSTRUCTION WASTES ARE TO BE DISPOSED OF SAFELY PER LOCAL AND STATE REQUIREMENTS.

SEDIMENT BASIN/TRAP CONVERSION SEQUENCE

NOTE: PRIOR TO BASIN/TRAP CONVERSION, ALL EARTH DISTURBANCE MUST BE COMPLETE AND ALL AREAS MUST BE 70% STABILIZED WITHIN THE TRIBUTARY AREAS OF THE BASIN TO BE REMOVED. ALSO, REFER TO INFILTRATION BASIN CONSTRUCTION SEQUENCE.

1. ALL STORM SEWER THAT CONVEYS SEDIMENT LADEN WATER TO THE SEDIMENT BASIN/TRAP MUST BE FLUSHED/CLEANED PRIOR TO CONVERSION.
2. DEWATER THE BASIN/TRAP PER TEMPORARY PUMPED WATER REMOVAL FACILITY (DOWNSTREAM OF THE SEDIMENT BASIN).
3. REMOVE ACCUMULATED SEDIMENT, MIX WITH TOPSOIL AND STABILIZE.
4. THE SKIMMER SHOULD STAY IN PLACE UNTIL THE CONVERTED BASIN HAS BEEN REVEGETATED.
5. COMPLETE ANY REMAINING OUTLET STRUCTURE AND/OR EMERGENCY SPILLWAY CONSTRUCTION, AS NECESSARY. REFER TO BASIN CONSTRUCTION DETAILS.
6. REGRADE AREA TO PROPOSED FINAL GRADE.
7. RESTABILIZE AREA WHEN FINAL GRADING IS COMPLETE.

UTILITY LINE TRENCH EXCAVATION

1. EXPOSED TRENCH EXCAVATIONS HAVE HIGH POTENTIAL FOR ACCELERATED EROSION AND SEDIMENT POLLUTION. SINCE THESE EXCAVATIONS ARE USUALLY LOCATED AT LOWER ELEVATIONS ALONG OR ACROSS EARTH DISTURBANCE SITES, OPEN TRENCHES SERVE TO CONCENTRATE SEDIMENT LADEN RUNOFF AND CONVEY IT TO SITE BOUNDARIES OR WATERWAYS. THE MOST IMPORTANT EROSION AND SEDIMENT POLLUTION CONTROL CONSIDERATION FOR TRENCH CONSTRUCTION IS THE LIMITING AND SPECIFIC SCHEDULING OF WORK ACTIVITIES.
2. CONSTRUCTION REQUIREMENTS:
   A) LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY;
   B) WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
   C) LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   D) WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING TO AN APPROVED FACILITY FOR REMOVAL OF SEDIMENT BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS.
   E) ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.

TEMPORARY SEEDING SPECIFICATIONS

PROVIDE THE FOLLOWING SEED MIXTURE FOR ALL DISTURBED AREAS:

SPECIES	ANNUAL RYEGRASS
% PURE LIVE SEED	100.0%
APPLICATION RATE	40.0 LB./ACRE
FERTILIZER TYPE	10-20-10 OR COMMERCIAL 10-10-10
FERTILIZER APPLICATION RATE	500 LB./ACRE
LIMING RATE	1.0 T./ACRE
MULCH TYPE	HAY OR STRAW
MULCHING RATE	3.0 T./ACRE

PERMANENT SEEDING SPECIFICATIONS

PROVIDE THE FOLLOWING SEED MIXTURE FOR ALL DISTURBED AREAS UNLESS SPECIFIED ON THE LANDSCAPE PLAN:

SPECIES	% BY MASS	PURITY	GERMINATION	MAX. % WEED SEED	SEEDING RATE LBS PER 1,000 S.Y.
PERENNIAL RYEGRASS MIXTURE (LOLIUM PERENNE). A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.	18	98	90	0.15	4.0
CREEPING RED FESCUE OR CHEWINGS FESCUE	30	98	85	0.15	5.0
KENTUCKY BLUEGRASS MIXTURE (POA PRATENSIS). A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.	52	98	80	0.20	12.0

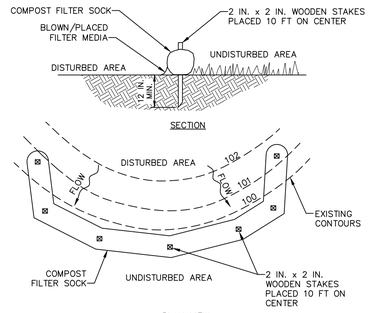
SEEDING APPLICATION:
MARCH 15 THROUGH JUNE 1
AUGUST 1 THROUGH OCTOBER 15

MANAGED RELEASE CONCEPT CONSTRUCTION SEQUENCE

1. IF THE CONTRACTOR RUNS INTO SHALLOW BEDROCK THE DESIGN ENGINEER OR THE ON-SITE GEOTECHNICAL ENGINEER MUST BE CONTACTED IMMEDIATELY BEFORE ANY ADDITIONAL WORK IS COMPLETED.
2. INSTALL THE MRC BMP DURING FINAL PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT-LADEN WATER FROM ENTERING THE FACILITY.
3. INSTALL AND MAINTAIN PROPER E&S BMPS DURING CONSTRUCTION.
4. THE MRC BMP BOTTOM SHOULD BE UN-COMPACTED, FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT THE SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES, REINFORCED SPILLWAY, PIPE BEDDING, UNDERDRAIN PIPING WITH AGGREGATE ENVELOPE, CLEANOUTS, ETC.
6. PLACE SOIL MEDIA GENTLY DO NOT COMPACT SOIL MEDIA OR THE BASIN BOTTOM. THE PLACEMENT OF SOIL MEDIA SHOULD BE DONE FROM OUTSIDE THE BMP FOOTPRINT TO AVOID COMPACTION BY CONSTRUCTION EQUIPMENT. EQUIPMENT SHOULD NEVER DRIVE OVER PLACED SOIL MEDIA WITHOUT CONSTRUCTION MATTING.
7. SEED AND STABILIZE DISTURBED AREA. VEGETATE WITH NATIVE PLANTINGS.
8. MAINTAIN INLET PROTECTION AND OTHER E&S CONTROLS UNTIL THE SITE IS FULLY STABILIZED.

MANAGED RELEASE CONCEPT MAINTENANCE NOTES

1. UPGRADIENT CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED ANNUALLY, OR MORE OFTEN IF HISTORICAL MAINTENANCE RECORDS SUGGEST A MORE FREQUENT CLEANING.
2. THE VEGETATION (FOR THE MRC BMP AND CONTRIBUTING DRAINAGE AREA) SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED.
3. CARE SHOULD BE T



NOTES:

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 CONTROL MANUAL.

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 AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

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 THE PLAN.

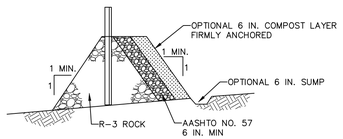
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

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.

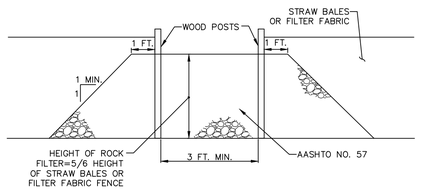
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

COMPOST FILTER SOCK (ABACT BMP)

(NOT TO SCALE)



OUTLET CROSS-SECTION



UP-SLOPE FACE

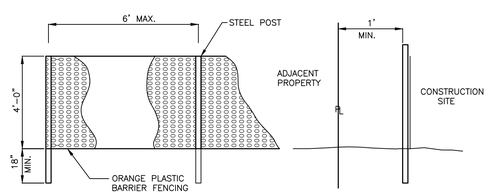
NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

ROCK FILTER OUTLET

(NOT TO SCALE)



NOTE: ALL CONSTRUCTION FENCING SHALL BE IN PLACE PRIOR TO GRADING ACTIVITIES

ORANGE CONSTRUCTION FENCE DETAIL

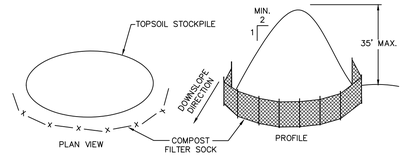
(NOT TO SCALE)

SERIAL NO. 20222781727

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL Pennsylvania One Call System, Inc

1-800-242-1776



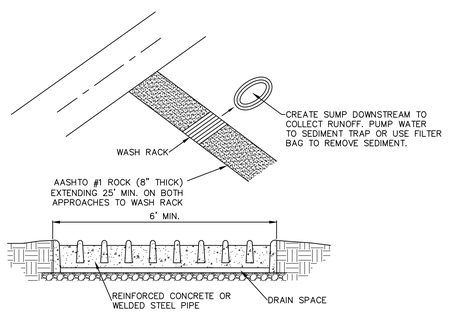
NOTES:
1. COMPOST FILTER SOCK MUST BE PLACED ALONG THE DOWN-SLOPE SIDE OF ALL STOCKPILES.

2. IMMEDIATELY APPLY TEMPORARY SEEDING TO ALL STOCKPILES.

3. STOCKPILES SHOWN ON PLAN ARE FOR GRAPHICAL PURPOSES ONLY AND DO NOT REPRESENT TOPSOIL VOLUMES FOR THE SITE.

TOPSOIL STOCKPILE AREA

(NOT TO SCALE)



NOTES:

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

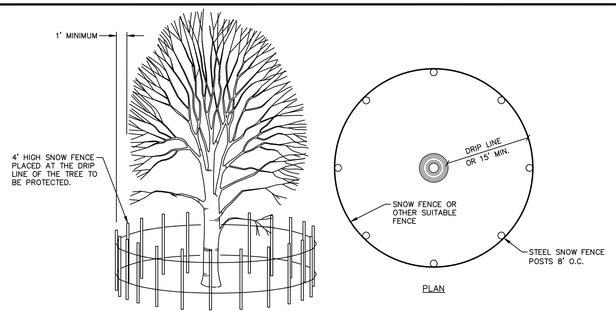
WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

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

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 NOT ACCEPTABLE.

ROCK CONSTRUCTION ACCESS WITH WASH RACK (ABACT BMP)

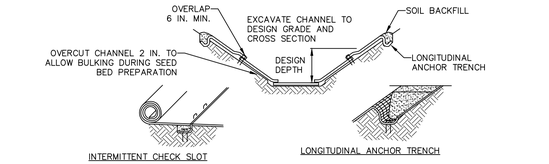
(NOT TO SCALE)

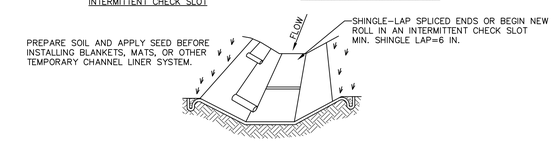


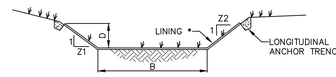
1. TREE PROTECTION SHALL BE PROVIDED FOR ANY AND ALL TREES TO BE PRESERVED DURING AND AFTER CONSTRUCTION.
2. ALL TREES SHEDULED TO REMAIN SHALL BE MARKED; WHERE GROUPS OF TREES EXIST, ONLY THE TREES ON THE EDGE NEED TO BE MARKED.
3. 4' HIGH SNOW FENCE OR OTHER SUITABLE FENCE MOUNTED ON STEEL POSTS LOCATED EIGHT (8) FEET ON CENTER, SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION AREA.
4. ALL EXISTING TREES AND SHRUBS TO BE PRESERVED ON SITE SHALL BE PROTECTED AGAINST CONSTRUCTION DAMAGE BY SNOW FENCING. ALL FENCING SHALL BE PLACED OUTSIDE THE INDIVIDUAL TREE CANOPY, OR 15 FEET FROM THE TRUNK OF THE TREE TO BE RETAINED, WHICHEVER IS GREATER. AT THE SPECIFIC LOCATION DETERMINED APPROPRIATE BY THE LANDSCAPE ARCHITECT. ALL TREES TO REMAIN SHALL BE IDENTIFIED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION, GRADING OR CLEARING. ALL EXISTING VEGETATION BEING PRESERVED AND LOCATED AT THE EDGE OF THE NEW TREELINE SHALL BE PRUNED AND TRIMMED TO REMOVE DEAD OR DAMAGED BRANCHES. SEE DETAILS FOR TREE PRESERVATION THIS SHEET.
5. WHEN THE FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED AND APPROVED BY THE TOWNSHIP PRIOR TO COMMENCING CLEARING AND FURTHER CONSTRUCTION. THE FENCING ALONG THE PROTECTION AREA SHALL BE MAINTAINED UNTIL ALL WORK AND CONSTRUCTION HAS BEEN COMPLETED. ANY DAMAGES TO THE PROTECTIVE FENCING SHALL BE REPLACED AND REPAIRED BEFORE FURTHER CONSTRUCTION SHALL CONTINUE.
6. TREES BEING REMOVED SHALL NOT BE FELLED, PUSHED OR PULLED INTO A TREE PROTECTION AREA OR INTO TREES THAT ARE TO BE RETAINED.
7. GRADE CHANGES AND EXCAVATIONS SHALL NOT ENCROACH UPON THE TREE PROTECTION AREA.
8. NO TOXIC MATERIALS SHALL BE STORED WITHIN ONE HUNDRED (100) FEET OF A TREE PROTECTION AREA INCLUDING PETROLEUM BASED AND/OR DERIVED PRODUCTS.
9. THE AREA WITHIN THE TREE PROTECTION AREA SHALL NOT BE BUILT UPON NOR SHALL ANY MATERIALS BE STORED THERE EITHER TEMPORARILY OR PERMANENTLY. VEHICLES AND EQUIPMENT SHALL NOT BE PARKED IN THE TREE PROTECTION AREA.
10. WHEN TREE STUMPS ARE LOCATED WITHIN TEN (10) FEET OF THE TREE PROTECTION AREA, THE STUMPS SHALL BE REMOVED BY MEANS OF A STUMP GRINDER TO MINIMIZE THE EFFECT ON THE SURROUNDING ROOT SYSTEMS.
11. TREE ROOTS WHICH MUST BE SEVERED SHALL BE CUT BY A BACK HOE OR SIMILAR EQUIPMENT ALIGNED RADIALLY TO THE TREE. THIS METHOD REDUCES THE
12. LATERAL MOVEMENT OF THE ROOTS DURING EXCAVATION, WHICH IF DONE BY OTHER METHODS COULD DAMAGE THE INTERTWINED ROOTS OF ADJACENT TREES.
13. TREES SHALL NOT BE USED FOR ROPING, CABLES, SIGNS OR FENCING. NAILS AND SPIKES SHALL NOT BE DRIVEN INTO TREES.
14. ANY SEVERED ROOTS AS A RESULT OF EXCAVATION SHALL BE TRIMMED SO THAT THEIR EDGES ARE SMOOTH AND ARE CUT BACK TO A LATERAL ROOT IF EXPOSED.
15. TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING CONSTRUCTION SHALL BE PROTECTED FROM FURTHER DAMAGE. DAMAGED BRANCHES SHALL BE PRUNED ACCORDING TO NATIONAL ARBORIST ASSOCIATION STANDARDS. ALL CUTS SHALL BE MADE SUFFICIENTLY CLOSE TO THE TRUNK OR PARENT LIMB BUT WITHOUT CUTTING INTO THE BRANCH COLLAR OR LEAVING A PROTRUDING STUB. ALL NECESSARY PRUNING CUTS MUST BE MADE TO PREVENT BARK FROM BEING TORN FROM THE TREE AND TO FACILITATE RAPID HEALING.
16. ALL TREES WHICH HAVE BEEN DISTURBED OR HAVE EXPERIENCED DAMAGE TO THEIR ROOTS OR BRANCHES SHALL BE FERTILIZED. TREES SHALL BE FERTILIZED IN EARLY FALL OR MIDSPRING. FERTILIZER GRADE SHALL HAVE APPROXIMATELY THREE (3) PARTS NITROGEN TO ONE (1) PART PHOSPHOROUS AND ONE (1) PART POTASSIUM [RATIO OF 3:1:1]. FERTILIZER SHALL BE BROADCAST OVER THE SOIL SURFACE IN AN AREA TWICE THE SIZE OF THE TREE PROTECTION AREA AT A RATE OF ONE (1) POUND OF NITROGEN PER ONE THOUSAND (1000) SQUARE FEET.
17. WHEN THERE IS NO ALTERNATIVE BUT TO LOCATE AN ELECTRICAL OR OTHER SMALL UTILITY LINE WITHIN A TREE PROTECTION AREA, THE TOWNSHIP SHALL DETERMINE
18. THE MOST DESIRABLE LOCATION FOR THE LINE AND THE FOLLOWING GUIDELINES SHALL BE USED:
19. (1) WHERE POSSIBLE TRENCHES SHOULD BYPASS THE ROOT AREA.
    (2) WHERE TRENCHES MUST BE DUG PAST THE SIDE OF A TREE, THE FOLLOWING PRECAUTIONS SHALL BE OBSERVED:
        a) TRENCHES SHALL BE NO CLOSER TO THE TRUNK THAN HALF THE DISTANCE FROM THE DRIP LINE
        b) CUT AS FEW ROOTS AS POSSIBLE
        c) IF ROOTS HAVE TO BE CUT, CUT THEM AS CLEANLY AS POSSIBLE
        d) BACKFILL THE TRENCH AS SOON AS POSSIBLE, AVOIDING SOIL COMPACTION

TREE PROTECTION DETAIL

(NOT TO SCALE)







CHANNEL CROSS-SECTION

* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING*
PS-1	NORTHEASTERN PROPERTY LINE	2	1.00	6.0	3	3	NAG SC250

NOTES:

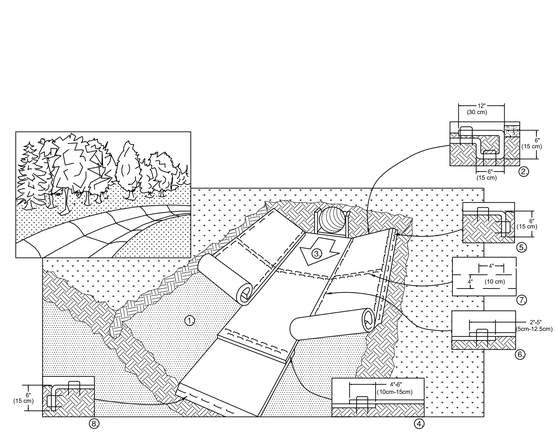
1. ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

2. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

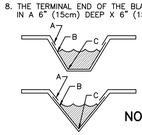
3. NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

VEGETATED CHANNEL

(NOT TO SCALE)



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



CRITICAL POINTS

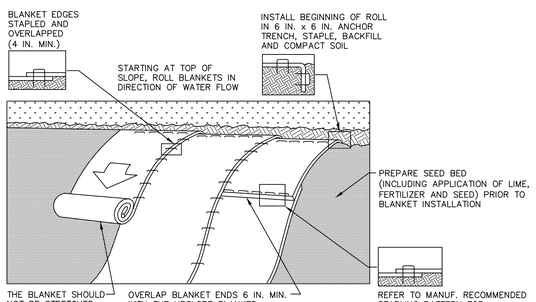
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

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

NORTH AMERICAN GREEN CHANNEL STABILIZATION

(NOT TO SCALE)



NOTES:

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

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.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

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

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EROSION CONTROL SLOPE STABILIZATION DETAIL

(NOT TO SCALE)

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
A	09/22/23	TOWNSHIP SUBMISSION
B	10/02/23	MCCD SUBMISSION
C	11/03/23	TOWNSHIP RESUBMISSION

EROSION & SEDIMENTATION CONTROL DETAILS 2

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC

PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE

LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD

A/E: WRM

Q/C: WRM

SCALE: AS SHOWN

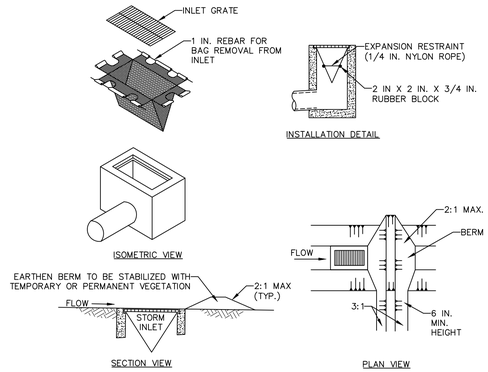
WORK ORDER NO.: 2324

DRAWING NO.: C-721

27 OF 40

PRELIMINARY
NOT FOR CONSTRUCTION

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-720 E&S DETAILS.dwg, 11/3/2023 8:47 AM, Robert Dzurenda



NOTES:

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 REMAIN PERMANENTLY.

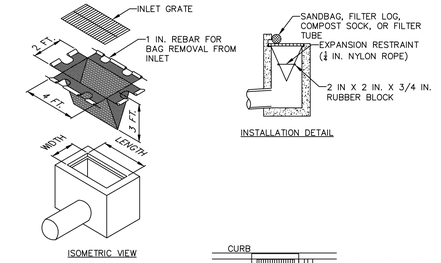
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

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

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

FILTER BAG INLET PROTECTION – TYPE M INLET (ABACT BMP)

(NOT TO SCALE)



NOTES:

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.

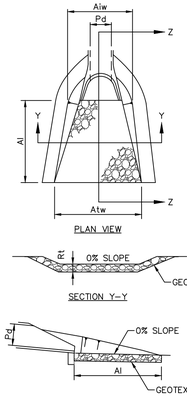
ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 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 SIEVE.

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.

FILTER BAG INLET PROTECTION – TYPE C INLET (ABACT BMP)

(NOT TO SCALE)



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R–_	RIPRAP THICK. Rt (IN)	APRON LENGTH Ai (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
4A	18	3	12	7	4.50	7.3
13A	15	3	12	6	3.75	6.15
22	15	3	12	6	3.75	6.15
24	15	3	12	6	3.75	6.15
29	18	3	12	13	4.50	9.7

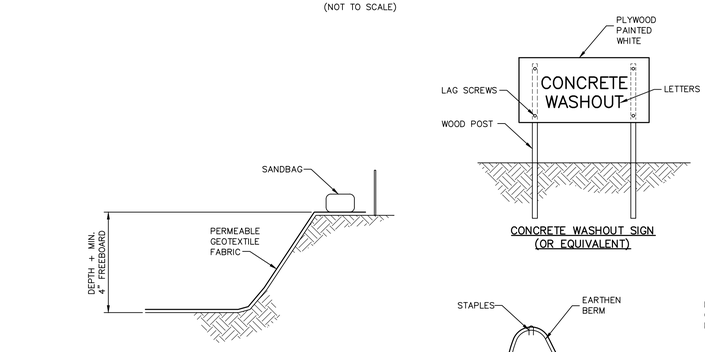
NOTES:

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.

RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

(NOT TO SCALE)



CONCRETE WASHOUT SIGN (OR EQUIVALENT)

NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.

2. SIGNAGE IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5' OF THE WASHOUT FACILITY.

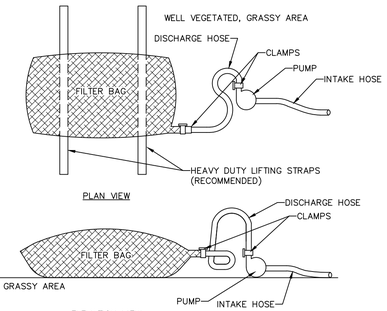
MAINTENANCE:
1. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.

2. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.

3. LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT AREA.

CONCRETE WASHOUT DETAIL

(NOT TO SCALE)



NOTES:

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 IS NOT AVAILABLE.

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 SCREENED.

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

PUMPED WATER FILTER BAG

(NOT TO SCALE)

SERIAL NO. 20222781727

CALL BEFORE YOU DIG!

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

Pennsylvania One Call System, Inc

1–800–242–1776

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

EROSION & SEDIMENTATION CONTROL DETAILS 3

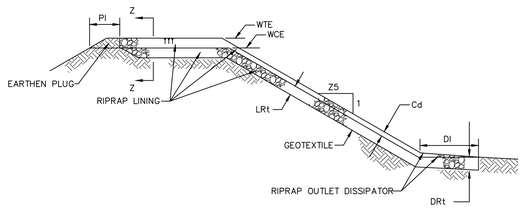
CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC

PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE

LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-722

G:\2023\2324 – Farmhouse Development\Civil\CAD\C–720 E&S DETAILS.dwg, 11/3/2023 8:47 AM, Robert Dzurenda



EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY

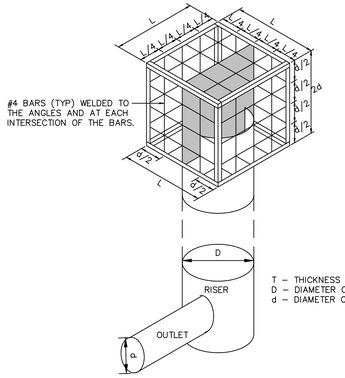
TRAP NO.	WEIR					LINING		CHANNEL		DISSIPATOR			
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	RIPRAP SIZE (R–__)	RIPRAP THICK. LRt (IN)	Z5 (FT)	DEPTH Cd (FT)	LENGTH Dl (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R–__)	RIPRAP THICK. DRt (IN)
1	3	3	216.30	214.75	21	3	12	4	6	8	55	3	12
2	3	3	219.00	218.25	14	3	12	3	6	–	–	–	–

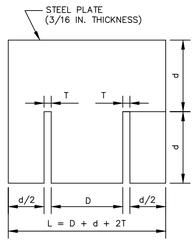
NOTES:

DIMENSION PI SHALL BE 5' MINIMUM.
DISPLACED RIPRAP WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

SEDIMENT TRAP EMERGENCY SPILLWAY WITH RIPRAP LINING

(NOT TO SCALE)

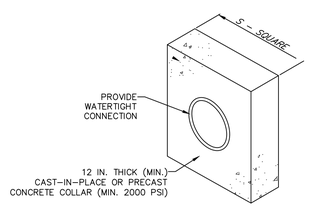




T – THICKNESS OF RISER PIPE
D – DIAMETER OF RISER PIPE
d – DIAMETER OF OUTLET PIPE

TRASH RACK AND ANTI–VORTEX DEVICE

(NOT TO SCALE)



BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
2A	15	51	2	9	8
2B	15	51	2	9	10

NOTES:

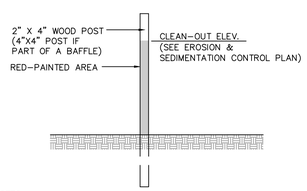
ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.

COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

CONCRETE ANTI–SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

(NOT TO SCALE)

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL
Pennsylvania One Call System, Inc
1–800–242–1776

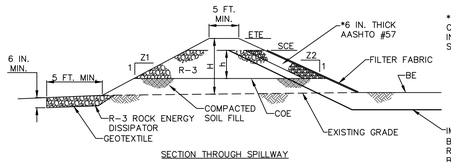


NOTES:

1. A CLEAN OUT STAKE SHALL BE PLACED IN THE CENTER OF EACH SEDIMENT TRAP AND BASIN.
2. WHEN SEDIMENT REACHES THE CLEAN OUT ELEVATION, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM SEDIMENT TRAPS AND BASINS. TRAPS AND BASINS MUST BE RESTORED TO ORIGINAL DIMENSIONS.

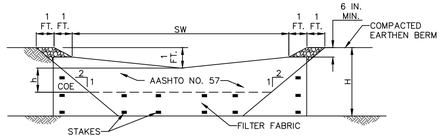
CLEAN OUT STAKE DETAIL

(NOT TO SCALE)



*A 6 IN. THICK LAYER OF COMPOST, COMPOST SOCK, OR CLEAN SAND SHALL BE INSTALLED ON TOP OF THE AASHTO #57 STONE AND SECURELY ANCHORED.

SECTION THROUGH SPILLWAY



INSIDE FACE

TRAP NO.	Z1 (FT)	Z2 (FT)	H (FT)	h (FT)	EMBANK. TOP ELEV. ETE (FT)	SPILLWAY CREST ELEV. SCE (FT)	CLEAN OUT ELEV. COE (FT)	BOTTOM ELEV. BE (FT)	SPILLWAY WIDTH SW (FT)
1	3	3	3.8	2.3	216.30	214.75	213.50	212.50	21
2	3	3**	4.5	3.8	219.00	218.25	215.50	214.50	14

** 2:1 SLOPE FROM ELEVATION 216.50 TO TRAP BOTTOM.

NOTES:

EMBANKMENT OUTLET SHALL BE COMPOSED ENTIRELY OF ROCK ABOVE CLEAN OUT ELEVATION (COE); MAIN BODY R–3 OR LARGER R–4 TO BE USED FOR DRAINAGE AREAS GREATER THAN 3.0 ACRES. INSIDE FACE AASHTO #57 STONE OR SMALLER. **A 6 IN. THICK LAYER OF COMPOST, COMPOST SOCK, OR CLEAN SAND SHALL BE INSTALLED ON TOP OF THE AASHTO #57 STONE AND SECURELY ANCHORED** IN HQ WATERSHEDS. 24 IN. DIAMETER COMPOST SOCK(S) SHALL BE USED IN PLACE OF FILTER FABRIC AND AASHTO #57 STONE IN EV WATERSHEDS.

FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 6 IN. UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN THE MANNER DESCRIBED IN THE E&S PLAN.

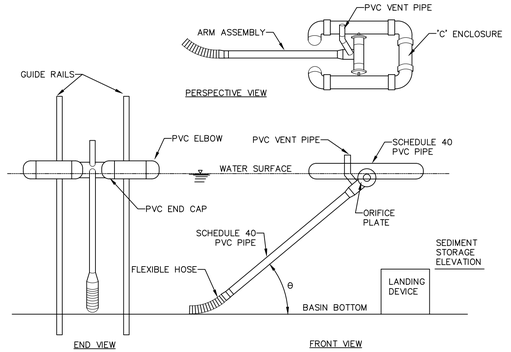
CHECK EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. CLOGGED OR DAMAGED SPILLWAYS AND/OR EMBANKMENTS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.

DISPLACED RIPRAP WITHIN THE SPILLWAY OR OUTLET PROTECTION SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE TRAP SHALL BE STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. TO ASSIST IN REMOVING SEDIMENT, WHICH MAY BE SATURATED, A DEVICE SUCH AS IS SHOWN IN STANDARD CONSTRUCTION DETAIL #7–18 MAY BE USED TO DEWATER THE SEDIMENT PRIOR TO ITS REMOVAL.

SEDIMENT TRAP – EMBANKMENT SPILLWAY (ABACT BMP)

(NOT TO SCALE)



TRAP NO.	25–YEAR WATER SURFACE ELEVATION (FT)	ARM LENGTH (FT)	ARM DIA. (IN)	ORIFICE DIA. (IN)	TOP OF LANDING DEVICE ELEVATION (FT)	COUPLING CONNECTION ELEVATION (FT)
1	215.05	8	3	3.2	213.50	212.20
2	218.22	8	1.5	1.9	215.50	214.50
3	215.72	8	1.5	2.0	213.50	212.50

NOTES:

SEDIMENT TRAP 1 OUTLET PIPE WILL BE A 4" PVC SCH 40 THROUGH THE BERM TO THE EXISTING INLET.

ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.

SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

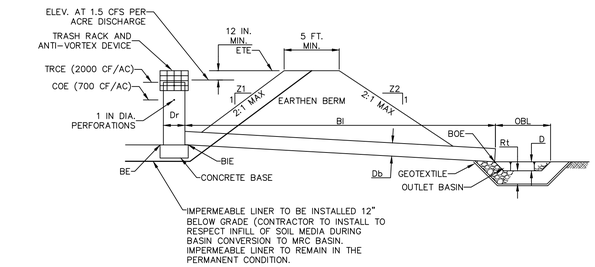
ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN–OUT STAKE OR THE TOP OF THE LANDING DEVICE.

A SEMI–CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS.

SKIMMER (ABACT BMP)

(NOT TO SCALE)



TRAP NO.	Z1 (FT)	Z2 (FT)	RISER MAT'L	RISER DIA Dr (IN)	RISER CREST ELEV RCE (FT)	RISER BOT PERF ELEV (FT)	BARREL MAT'L	BARREL DIA Bd (IN)	BARREL INLET ELEV BIE (FT)	BARREL LENGTH Bl (FT)	BARREL OUTLET ELEV BOE (FT)	EMBANKMENT TOP ELEV ETE (FT)	EMBANKMENT TOP WIDTH Etw (FT)	CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
3	3*	3	CMP	18	215.00	213.50	RCP	15	212.50	38	212.30	217.35	10	213.50	212.50

TRAP NO.	CONCRETE BASE LENGTH CBl (IN)	CONCRETE BASE WIDTH CBw (IN)	CONCRETE BASE THICK. CBt (IN)	OUTLET BASIN RIPRAP SIZE (R–__)	OUTLET BASIN ROCK THICK Rt (IN)	OUTLET BASIN DEPTH D (IN)	OUTLET BASIN WIDTH OBW (FT)	OUTLET BASIN LENGTH OBL (FT)
3	48	48	18	NA	NA	NA	NA	NA

* 2:1 SLOPE FROM ELEVATION 214.50 TO TRAP BOTTOM.

NOTES:

SEE DETAIL #8–3 TEMPORARY RISER FOR DETAILS OF THE TEMPORARY RISER CONSTRUCTION.

FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

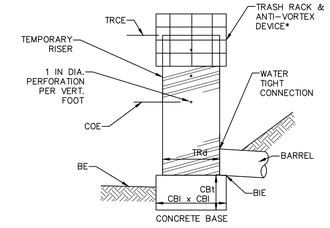
A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN THE MANNER DESCRIBED IN THE E&S PLAN.

CHECK EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. CLOGGED OR DAMAGED SPILLWAYS AND/OR EMBANKMENTS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.
DISPLACED RIPRAP WITHIN THE OUTLET PROTECTION SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE TRAP SHALL BE STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. TO ASSIST IN REMOVING SEDIMENT, WHICH MAY BE SATURATED, A DEVICE SUCH AS IS SHOWN IN STANDARD CONSTRUCTION DETAIL #7–18 MAY BE USED TO DEWATER THE SEDIMENT PRIOR TO ITS REMOVAL.

BARREL/RISER SEDIMENT TRAP (ABACT BMP)

(NOT TO SCALE)



* SEE STANDARD CONSTRUCTION DETAIL #7–5, TRASH RACK AND ANTI–VORTEX DEVICE
** LOWEST HOLE AT SEDIMENT CLEAN–OUT ELEVATION

TRAP NO.	TEMPORARY RISER DIA TRd (IN)	TEMPORARY RISER CREST ELEV TRCE (FT)	TEMPORARY RISER MAT'L	TEMPORARY RISER CLEAN OUT ELEV. COE (FT)	CONCRETE BASE LENGTH CBl (IN)	CONCRETE BASE WIDTH CBw (IN)	CONCRETE BASE THICK. CBt (IN)	BARREL INLET ELEV BIE (FT)
3	18	215.00	CMP	213.50	48	48	18	212.50

NOTES:

A MINIMUM OF 2–#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

SEDIMENT TRAP TEMPORARY RISER

(NOT TO SCALE)

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

EROSION & SEDIMENTATION CONTROL DETAILS 4

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-723
29 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C–720 E&S DETAILS.dwg, 11/3/2023 8:47 AM, Robert Dzurenda

BMP 5
MANAGED RELEASE CONCEPT
DA = 1.23 ACRES
BMP BOTTOM = 0.09 ACRES

BMP 4
MANAGED RELEASE CONCEPT
DA = 0.56 ACRES
BMP BOTTOM = 0.05 ACRES

14' WIDE EMERGENCY SPILLWAY
ELEV. 218.25

TOP OF BERM = 219.00

RITTENHOUSE ROAD (T-367)

TOP OF BERM = 217.35

17' WIDE EMERGENCY SPILLWAY
ELEV. 216.45

±32' CARTWAY (PAVED)

MRC BASIN #2B
ELEV. 214.50

MRC BASIN #2A
ELEV. 216.50

SOIL MEDIA MIXTURE (SEE DETAIL)

PROPOSED BUILDING
(69,174 S.F.)
FF=223.50

BMP 1
CONSTRUCTED FILTER INLET (BMP 6.4.7)
DA = 0.37 ACRES
BMP BOTTOM = 0.01 ACRES

BMP 2
CONSTRUCTED FILTER INLET (BMP 6.4.7)
DA = 0.39 ACRES
BMP BOTTOM = 0.01 ACRES

UNDERGROUND BASIN 1

BMP 3
DRY EXTENDED DETENTION BASIN (BMP 6.6.3)
DA = 2.49 ACRES
BMP BOTTOM = 0.25 ACRES

VAN BUREN AVENUE (T-538)

APPROX. LOC. OF U.G. TELE. LINE (NOT FIELD VERIFIED)

APPROX. LOC. OF WELL SUPPLY LINE (NOT FIELD VERIFIED)

APPROX. LOC. OF WATER MAINS AND LATERALS (NOT FIELD VERIFIED)

EX. WELL #3 (AUDUBON WATER COMPANY)

TRANSFORMER VAULT

WATER CHLORINATING STATION

8" CHAIN LINK FENCE

6' CHAIN LINK FENCE

6' WOOD FENCE

CONC CURB

CONC WALK

SANITARY MH
RIM=215.47
INV IN=208.3 (NW)
INV IN=208.0 (N)
INV OUT=207.9 (SE)

EX. INLET 66
TG=214.57
INV=212.4 (IN)
INV=212.3 (OUT)

EX. INLET 51
TG=214.19
INV=212.2

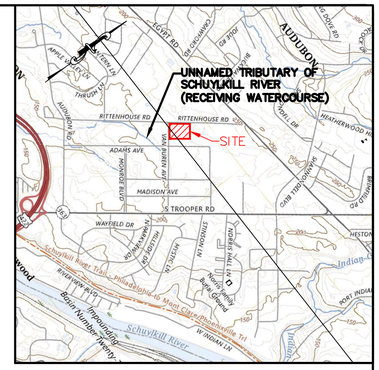
EX. INLET 31
TG=214.26
INV=212.3

TG=214.47
INV=210.2 (IN)
INV=210.2 (OUT)

TG=213.61
INV=208.3

TG=214.75
INV=211.4 (IN)
INV=211.4 (IN)
INV=211.2 (OUT)

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL
Pennsylvania One Call System, Inc
1-800-242-1776



LOCATION MAP
SCALE: 1" = 2,000'

GENERAL NOTE

1. A COPY OF THE APPROVED STORMWATER SITE PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
2. RECEIVING WATERS ARE A UNNAMED TRIBUTARY TO THE SCHUYLKILL RIVER: CHAPTER 93 CLASSIFICATION IS WWF.

OWNER

FACCIOLO FRANK U/W MARTIAL TRUST
2024 SPROUL ROAD
BROMALL, PA 19008

APPLICANT/OWNER IN EQUITY

960 RITTENHOUSE ROAD ASSOCIATES, LLC
338 SUN VALLEY DRIVE
AMBLER, PA 19002
PHONE: 215-840-3938

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- OHW — EXISTING OVERHEAD ELECTRIC
- E — EXISTING UNDERGROUND ELECTRIC
- TEL — EXISTING UNDERGROUND TELEPHONE
- S — EXISTING SIGN
- W — EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CONTOUR
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- SAN — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- FIRE — PROPOSED FIRE WATER MAIN
- FF — FINISHED FLOOR ELEVATION
- LOD — LIMIT OF DISTURBANCE
- NPDES BOUNDARY

LIMIT OF DISTURBANCE
5.53 ACRES

LIMIT OF NPDES PERMIT
5.53 ACRES

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

N 39°14' 32"E

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-801
30 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-801 PCSM PLAN.dwg, 11/3/2023 8:47 AM, Robert Dzurenda

EXISTING CONDITIONS – USES:

THIS SITE HAS PREVIOUSLY BEEN USED, IS CURRENTLY USED AND IS PROPOSED TO BE USED AS AN INDUSTRIAL LOT.

OWNERSHIP, OPERATIONS AND MAINTENANCE PROCEDURES:

MAINTENANCE PROCEDURES/RESPONSIBILITIES

THE OWNERS, THEIR HEIRS, ASSIGNEES, AND/OR GRANTEES OF THE PROPERTY SHOWN ON THIS PLAN SHALL BE RESPONSIBLE FOR THE OPERATION, MAINTENANCE, REPAIR, RECONSTRUCTION, AND/OR REPLACEMENT OF THE STORMWATER MANAGEMENT FACILITIES, INCLUDING BUT NOT LIMITED TO INLETS, OUTLETS, DRAINAGE PIPE(S), ENERGY DISSIPATION FACILITIES, FENCING, DRAINAGE SWALE(S), INFILTRATION PRACTICE FACILITIES, BEST MANAGEMENT PRACTICE (BMP) FACILITIES, DETENTION FACILITIES, NATURAL WATERCOURSES AND POND(S), WHICH ARE LOCATED WITHIN THE BOUNDARIES OF THE PROPERTY. SAID MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO CLEANING, REMOVAL OF POLLUTANTS AND DEBRIS, REPAIR OF EROSION CONDITIONS, CLOSURE OF SINKHOLES, AND MAINTENANCE OF VEGETATION. NO BUILDING OR STRUCTURE SHALL BE CONSTRUCTED WITHIN THE DRAINAGE EASEMENTS SHOWN ON THE PLANS, NOR SHALL THE STORMWATER MANAGEMENT FACILITIES PLANNED FOR THE DRAINAGE EASEMENTS BE ALTERED FROM DESIGN CONDITIONS SHOWN ON PLANS AS APPROVED BY THE GOVERNING MUNICIPALITY WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE GOVERNING MUNICIPALITY.

MAINTENANCE OWNERSHIP

UPON COMPLETION OF THE PROPOSED BMP'S, OWNERSHIP AND MAINTENANCE RESPONSIBILITIES FOR SAID BMP'S SHALL BE 960 RITTENHOUSE ROAD ASSOCIATES, LLC.

RESPONSIBLE PARTY/PERMITTEE (CONSTRUCTION & STABILIZATION OF POST CONSTRUCTION BMP'S)

960 RITTENHOUSE ROAD ASSOCIATES, LLC

RESPONSIBLE PARTY (ON–GOING OPERATION & MAINTENANCE OF POST CONSTRUCTION BMP'S)

960 RITTENHOUSE ROAD ASSOCIATES, LLC

WATERSHED CLASSIFICATION:
THE RECEIVING WATERSHED OF THIS PROJECT IS THE SCHUYLKILL RIVER, ACCORDING TO PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE CHAPTER 93 CLASSIFICATION OF THIS WATERSHED IS WWF (WARM WATER FISH).

RECEIVING SURFACE WATERS:
AN UNNAMED TRIBUTARY TO THE SCHUYLKILL RIVER.

DISPOSAL OF WASTE NOTE:
ANY CONSTRUCTION WASTES ARE TO BE DISPOSED OF SAFELY PER LOCAL AND STATE REQUIREMENTS.

GEOLOGIC FORMATIONS/SOIL CONDITIONS:
AS PER THE ROUX, INC. LETTER DATED 9/11/23, THE STORMWATER MANAGEMENT BMP'S HAVE BEEN SELECTED THAT DO NOT INCLUDE INFILTRATION. THERE ARE NO NATURALLY OCCURRING GEOLOGIC FORMATIONS ONSITE.

RIPARIAN BUFFERS:
THERE ARE NO DEFINED RIPARIAN BUFFERS OR RIPARIAN FOREST BUFFERS ONSITE.

EXISTING CONDITIONS NOTE:
THE SITE WAS PREVIOUSLY DEVELOPED AND CURRENTLY CONSISTS OF A SINGLE–STORY INDUSTRIAL BUILDING WITH AN APPROXIMATE FOOTPRINT OF 25,157+/– S.F. AND ASSOCIATED PARKING. ADDITIONALLY, EXISTING SUPPORT INFRASTRUCTURE SUCH AS ELECTRIC, FIBER, STORM SEWER, SANITARY SEWER AND WATER SERVICE EXIST ON SITE AS PART OF THE PREVIOUS DEVELOPMENT.

MAINTENANCE INSPECTIONS NOTE:
INSPECTIONS MUST BE LOGGED AND MUST BE KEPT ON SITE AT ALL TIMES.

ENVIRONMENTAL DUE DILIGENCE:
INVESTIGATIVE TECHNIQUES, INCLUDING BUT NOT LIMITED TO VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN 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. IT THE FILL MAY HAVE BEEN AFFECTED BY THE 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 DEP'S POLICY "MANAGEMENT OF FILL." FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEP'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.

ANTICIPATED CONSTRUCTION WASTES:

1. TREES – CHIPPED AND REMOVED OFFSITE FOR MULCH.

2. BUILDING MATERIALS – SHALL BE REMOVED AND DISPOSED OF AT PROPER RECYCLING FACILITY AS PER NOTE #10 OF THE GENERAL EROSION & SEDIMENT CONTROL NOTES.

3. ROCK WASTE – ALL ROCKS THAT ARE SUITABLE FOR LANDSCAPING USES SHALL BE USED ON SITE OR AT ANOTHER FACILITY.

4. SOIL WASTE – ALL EXCAVATED SOIL SHALL BE USED ON SITE, AS FILL MATERIAL WHERE POSSIBLE. ANY EXCESS MATERIAL NOT USED ON SITE MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVED AND WERE ALL BMPS ARE PROPERLY INSTALLED. ALL SEDIMENT REMOVED DURING MAINTENANCE AND CLEANING OF EROSION AND SEDIMENTATION CONTROLS DEVICES WILL BE INCORPORATED INTO THE FINE GRADING UPSTREAM FROM A SEDIMENT CONTROL DEVICE. EXCESS MATERIAL THAT IS REMOVED FROM EROSION AND SEDIMENTATION CONTROL MEASURES AND CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WERE ALL BMPS ARE PROPERLY INSTALLED.

5. SEDIMENT REMOVAL FROM ALL SEDIMENT BASINS TO BE RETURNED TO SITE UPSTREAM OF ALL PROPOSED BMP'S.

MINIMIZE IMPERVIOUS AREAS:
THE PROPOSED SITE IMPERVIOUS IS WITHIN THE ALLOWABLE PERMITTED BY THE LOWER PROVIDENCE TOWNSHIP ZONING ORDINANCE.

THERMAL IMPACTS:
THERMAL IMPACTS CONSIST OF WATER BEING STAGNANT WITHIN THE BASINS FOR AN EXTENDED PERIOD OF TIME AND WATER RUNNING OVER ASPHALT FOR AN EXTENDED PERIOD OF TIME. BOTH ARE PREVENTED DUE TO THE PROPOSED FILTRATION WITHIN MRC BASINS #2A & #2B, AS WELL AS CONVEYANCE FACILITIES WITHIN THE ASPHALT.

RECYCLING NOTE:
THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT 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 WASTES AT THE SITE. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

FILL MATERIALS:
WHEN FILL IS TO BE IMPORTED FROM OFF–SITE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THAT THE FILL IS CLEAN FILL AND TO PERFORM THE ENVIRONMENTAL DUE DILIGENCE. MATERIAL THAT IS BEING USED FROM ON–SITE IS NOT REQUIRED TO BE DETERMINED AS CLEAN FILL BY THE CONTRACTOR UNLESS THERE IS A BELIEF THAT A SPILL OR RELEASE OF A REGULATED SUBSTANCE OCCURRED ON SITE. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON–WATER SOLUBLE, NON–DECOMPOSABLE, INERT, SOLID MATERIAL. 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 WATER OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM 'USED ASPHALT' DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE–USE.)

CLEAN FILL REQUIREMENTS:

1. CLEAN FILL IS 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.

2. CLEAN FILL FORM FP–001 MUST BE COMPLETED AND GIVEN TO REGULATORY AGENCY TO CERTIFY THE ORIGIN OF THE FILL MATERIAL.

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL Pennsylvania One Call System, Inc
1–800–242–1776

PROJECT WASTES AND RECYCLING OR DISPOSAL OF MATERIAL:

PROJECT WASTES ARE ANTICIPATED TO INCLUDE CLEARED VEGETATION, AND EXCESS FILL MATERIAL NOT NEEDED FOR SITE GRADING OR NOT SUITABLE FOR USE AT THE SITE AS FILL OR TOPSOIL. CLEARED TREES WILL BE LOGGED AND SOLD COMMERCIALLY, IF POSSIBLE, AND REMAINING MATERIALS WILL BE DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S REQUIREMENTS. EXCESS MATERIAL NOT UTILIZED FOR SITE CONSTRUCTION WILL BE STOCKPILED ON–SITE AND, IF REQUIRED, DISPOSED OF AT A PERMITTED SITE AND IN ACCORDANCE WITH DEPARTMENT REGULATIONS. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S SOLID WASTE MANAGEMENT REGULATIONS MATERIAL.

CHAPTER 102 REQUIREMENTS:

102.4(B) – THE EROSION AND SEDIMENT CONTROL PLAN HAS BEEN DESIGNED TO PREVENT ACCELERATED EROSION AND SEDIMENTATION. THE FOLLOWING IS A DESCRIPTION OF THE FACTORS CONSIDERED.

– MINIMIZE THE EXTENT AND DURATION OF THE EARTH DISTURBANCE:
EROSION AND SEDIMENT POLLUTION CONTROL HAS BEEN DESIGNED SO THE TIME PERIOD BETWEEN INITIAL DISTURBANCE AND FINAL STABILIZATION IS MINIMIZED.
THE DISTURBED AREA HAS BEEN DETERMINED AND DELINEATED ON THE PLANS, ALSO A SEQUENCE OF EARTH MOVING HAS BEEN PROVIDED ON THE PLANS AND IN THE NARRATIVE TO DESCRIBE THE VARIOUS CONSTRUCTION STEPS IN ORDER TO COMPLETE THE PROJECT IN AN ORDERLY AND IN A PRACTICAL COMPRESSED PLANNED TIME FRAME AND TO ENSURE THE TEMPORARY AND FINAL STABILIZATION THROUGH ALL CONSTRUCTION ACTIVITIES.

– MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION:
THE SITE WAS DESIGNED AND PLANNED TO PRESERVE NATURAL DRAINAGE PATHS AND VEGETATION. MAXIMUM PROTECTION OF THE EXISTING CHANNELS WILL BE ACHIEVED BY USING: UPSTREAM VOLUME AND RATE CONTROL BMP'S, EROSION CONTROL MATTING, AND ROCK FILTERS AS REQUIRED. IN ADDITION, EXISTING VEGETATION, ESPECIALLY EXISTING TREES SHALL BE PRESERVED WHEREVER POSSIBLE. THE FENCING WAS PLANNED TO AVOID DISTURBANCE OF TREES.

– MINIMIZE SOIL COMPACTION:
DURING THE CONSTRUCTION PROCESS, MINIMUM SOIL COMPACTION SHALL BE APPLIED WHEREVER POSSIBLE TO PROTECT NATIVE VEGETATION, TREES AND SOIL.

–TOPSOIL STOCKPILING AND STORAGE AREAS SHALL BE PROTECTED AND MAINTAINED.

–E&S PLANS UTILIZE OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE THE GENERATION OF INCREASED STORMWATER RUNOFF:
EROSION AND SEDIMENTATION CONTROL PLAN HAS BEEN DESIGNED TO PREVENT OR MINIMIZE THE GENERATION OF INCREASED STORMWATER RUNOFF. THROUGH THE USE OF EFFECTIVE, EFFICIENT, AND PRACTICAL E&S BMP'S, THE DISTURBED AREAS HAVE BEEN PROVIDED ON THE PLANS.
THE SEQUENCE OF EARTH MOVING HAS BEEN PROVIDED ON THE PLANS AND IN THE NARRATIVE TO DESCRIBE THE VARIOUS CONSTRUCTION STEPS IN ORDER TO COMPLETE THE PROJECT AND TO ENSURE THE FINAL STABILIZATION AND TO PREVENT GENERATION OF INCREASED STORMWATER RUNOFF.

–TEMPORARY AND PERMANENT STABILIZATION SHALL BE PROVIDED DURING THE EARTH DISTURBANCE, AND FINAL PERMANENT STABILIZATION SHALL BE PROVIDED FOR ALL DISTURBED AREAS.

–LOCATIONS AND DETAILS OF STABILIZED STOCKPILES HAVE BEEN SHOWN ON THE PLANS.

–ALL RUNOFF FROM DISTURBED AREAS SHALL BE COLLECTED AND CONVEYED TO BMP'S FOR SEDIMENT REMOVAL.

PCSM GENERAL NOTES:

PERMIT TERMINATION:
UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER § 102.22(A)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPS IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH §§ 102.4 AND 102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS; AND PCSM REQUIREMENTS), THE PERMITTEE OR CO–PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OF 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 PCSM 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 OF THE CONSERVATION DISTRICT.

LICENSED PROFESSIONAL OVERSIGHT OF CRITICAL STAGES. A LICENSED PROFESSIONAL OR A DESIGNEE SHALL BE PRESENT ONSITE AND RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN. THE CRITICAL STAGES MAY INCLUDE THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS OR OTHER BMPS AS DEEMED APPROPRIATE BY THE DEPARTMENT OF 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 _____ DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 P.A.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 IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES.'

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

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

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

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 THE RESPONSIBILITY FOR LONG TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER §102.7(B)(5) (RELATING TO PERMIT TERMINATION).

THE PERSON RESPONSIBLE 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 WITH PROVIDE NOTICE THEREOF TO 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.

THE PERSON RESPONSIBLE FOR PERFORMING LONG–TERM OPERATION AND MAINTENANCE SHALL PROVIDE INSPECTION OF PCSM BMPS, INCLUDING THE REPAIR, REPLACEMENT, OR OTHER ROUTINE MAINTENANCE OF THE PCSM BMPS TO ENSURE PROPER FUNCTION AND OPERATION. THEY MUST ALSO PROVIDE FOR COMPLETION OF A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR AND MAINTENANCE ACTIVITIES AND HOW ACCESS TO THE PCSM BMPS WILL BE PROVIDED.

NPDES PERMIT DESIGN / CONSTRUCTION PROJECT CONSIDERATIONS

- MINIMIZES THE EXTENT AND THE DURATION OF EARTH DISTURBANCE: THROUGH USE OF THE SEQUENCE OF CONSTRUCTION, THE EXTENT AND DURATION OF EARTH DISTURBANCE WILL BE MINIMIZED.
- PRESERVE THE INTEGRITY AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM. THE WATERSHED DISCHARGE POINTS WERE PRESERVED SO THAT THERE WAS POSITIVE IMPACT TO THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM. BY USING THE PROPOSED BMPS, POST CONSTRUCTION RUNOFF VOLUME WILL BE LESS THAN THE PRECONSTRUCTION RUNOFF VOLUME. ADDITIONALLY, WATER QUALITY TREATMENT WILL TAKE PLACE TO MAINTAIN THE PROPERTIES OF THE RECEIVING STREAM.
- PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF. WITH THE PROPOSED STORMWATER MANAGEMENT IMPROVEMENTS, THE STORMWATER RUNOFF RATE WILL NOT INCREASE FOR EACH STORM EVENT AND WILL MEET LOCAL LOWER PROVIDENCE TOWNSHIP REQUIREMENTS.
- MINIMIZE ANY INCREASE IN STORMWATER RUNOFF VOLUME. WITH THE PROPOSED BMP'S STORMWATER RUNOFF VOLUME DECREASES IN THE POST CONSTRUCTION SCENARIO VERSUS THE PRE CONSTRUCTION.
- MINIMIZE IMPERVIOUS AREAS. THE PROPOSED SITE IMPERVIOUS IS WITHIN THE ALLOWABLE PERMITTED BY THE LOWER PROVIDENCE TOWNSHIP ZONING ORDINANCE.
- MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION. THE DISCHARGE POINT LOCATIONS WERE KEPT CONSISTENT IN THE POST CONSTRUCTION DESIGN. WITH THE PROPOSED EROSION BMPS, ALL SILT WILL REMAIN WITHIN THE LIMIT OF DISTURBANCE.
- MINIMIZE LAND CLEARING AND GRADING. THE CLEARING AND GRADING IS BEING MINIMIZED FOR THE PROJECT BY ONLY CLEARING AND GRADING AREAS REQUIRED TO BE DISTURBED.
- MINIMIZED SOIL COMPACTION. NO HEAVY CONSTRUCTION VEHICLES SHALL BE PARKED IN THESE AREAS. STABILIZATION METHODS SHALL TAKE PLACE IMMEDIATELY UPON COMPLETION OF THE GRADING.
- GEOLOGIC FORMATION/SOIL CONDITIONS WHICH HAVE POTENTIAL TO CAUSE POLLUTION CONSIST OF EARTH MOVING ACTIVITIES, AS WELL AS THE TIME PERIOD BETWEEN STABILIZATION OF SOIL. THESE MEASURES CAN BE PREVENTED BY ACTING ON STABILIZATION METHODS AS SOON AS POSSIBLE. ANY EARTH MOVING ACTIVITY MUST BE STABILIZED, AND THEN CHECKED AFTER EVERY RAIN EVENT TO CONFIRM THAT STABILIZATION HAS NOT BEEN AFFECTED.

PCSM BMP FAILURES AND RESOLUTIONS:

PRIMARY CAUSES OF REDUCED PERFORMANCE AND RESOLUTIONS:
1. POOR CONSTRUCTION TECHNIQUES, ESPECIALLY SOIL COMPACTION/SMEARING, WHICH RESULTS IN SIGNIFICANTLY REDUCED INFILTRATION RATES.
   SCARIFY THE BASIN BOTTOM AND ADD A LAYER OF SAND, GRAVEL OR AMENDED SOILS.
2. A LACK OF SITE SOIL STABILIZATION PRIOR TO THE BMP RECEIVING RUNOFF, WHICH GREATLY INCREASES THE POTENTIAL FOR SEDIMENT CLOGGING FROM CONTIGUOUS LAND SURFACES.
   SCARIFY THE BASIN BOTTOM AND ADD A LAYER OF SAND, GRAVEL OR AMENDED SOILS.
3. INADEQUATE PRETREATMENT, ESPECIALLY OF SEDIMENT–LADEN RUNOFF, WHICH CAN CAUSE A GRADUAL REDUCTION OF INFILTRATION RATES.
   SCARIFY THE BASIN BOTTOM AND ADD A LAYER OF SAND, GRAVEL OR AMENDED SOILS.
4. LACK OF PROPER MAINTENANCE (EROSION REPAIR, RE–VEGETATION, REMOVAL OF DETRITUS, CATCH BASIN CLEANING, VACUUMING OF PERVIOUS PAVEMENT, ETC.), WHICH CAN REDUCE THE LONGEVITY OF INFILTRATION BMP'S.
   REPAIR FACILITY AS NECESSARY AND MAINTAIN FACILITY PER MAINTENANCE NOTES.
5. INADEQUATE DESIGN.
   RE–EVALUATE THE DESIGN TO MAXIMIZE INFILTRATION.

MANAGED RELEASE CONCEPT CONSTRUCTION SEQUENCE

1. IF THE CONTRACTOR RUNS INTO SHALLOW BEDROCK THE DESIGN ENGINEER OR THE ON–SITE GEOTECHNICAL ENGINEER MUST BE CONTACTED IMMEDIATELY BEFORE ANY ADDITIONAL WORK IS COMPLETED.
2. INSTALL THE MRC BMP DURING FINAL PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT–LADEN WATER FROM ENTERING THE FACILITY.
3. INSTALL AND MAINTAIN PROPER E&S BMPS DURING CONSTRUCTION.
4. THE MRC BMP BOTTOM SHOULD BE UN–COMPACTED, FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT THE SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES, REINFORCED SPILLWAY, PIPE BEDDING, UNDERDRAIN PIPING WITH AGGREGATE ENVELOPE, CLEANOUTS, ETC.
6. PLACE SOIL MEDIA GENTLY. DO NOT COMPACT SOIL MEDIA OR THE BASIN BOTTOM. THE PLACEMENT OF SOIL MEDIA SHOULD BE DONE FROM OUTSIDE THE BMP FOOTPRINT TO AVOID COMPACTION BY CONSTRUCTION EQUIPMENT. EQUIPMENT SHOULD NEVER DRIVE OVER PLACED SOIL MEDIA WITHOUT CONSTRUCTION MATTING.
7. SEED AND STABILIZE DISTURBED AREA. VEGETATE WITH NATIVE PLANTINGS.
8. MAINTAIN INLET PROTECTION AND OTHER E&S CONTROLS UNTIL THE SITE IS FULLY STABILIZED.

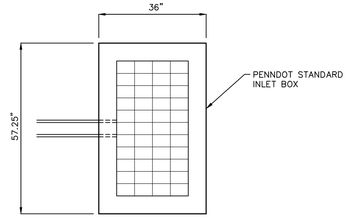
MANAGED RELEASE CONCEPT MAINTENANCE NOTES

1. UPGRADIENT CATCH BASINS AND INLETS SHOULD BE INSPECTED AND CLEANED ANNUALLY, OR MORE OFTEN IF HISTORICAL MAINTENANCE RECORDS SUGGEST A MORE FREQUENT CLEANING.
2. THE VEGETATION (FOR THE MRC BMP AND CONTRIBUTING DRAINAGE AREA) SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED.
3. CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS. MOW ONLY AS APPROPRIATE FOR VEGETATIVE SPECIES.
4. INSPECT AT LEAST TWO TIMES PER YEAR AFTER RUNOFF EVENTS GREATER THAN 0.8 INCH AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN THE DESIGN PARAMETERS (A LICENSED PROFESSIONAL ENGINEER SHOULD CLEARLY IDENTIFY WHAT THESE PARAMETERS ARE).
5. AT LEAST TWO TIMES PER YEAR, OR MORE IF HISTORICAL MAINTENANCE INDICATE IT IS NECESSARY, INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION, SIGNS OF WATER CONTAMINATION/SPILLS, AND INSTABILITY. LEAF LITTER NEEDS TO BE REMOVED ANNUALLY.
6. AS NEEDED, REMOVE ACCUMULATED SEDIMENT AS REQUIRED TO MAINTAIN INFILTRATION THROUGH THE MRCS SOIL MEDIA AND TO MAINTAIN WATER QUALITY FUNCTIONALITY. RESTORE ORIGINAL CROSS SECTION. PROPERLY DISPOSE OF SEDIMENT.
7. IF POROUS PAVEMENT IS INCLUDED IN THE DESIGN, VACUUM AT LEAST TWICE PER YEAR. VACUUM SHOULD HAVE SUFFICIENT SUCTION POWER AND BE DESIGNED FOR USE WITH POROUS PAVEMENTS.
8. REMOVE ACCUMULATED SEDIMENT FROM BASIN AS REQUIRED. RESTORE ORIGINAL CROSS–SECTION AND PROPERLY DISPOSE OF SEDIMENT.

SUBSURFACE DETENTION BASIN CONSTRUCTION SEQUENCE

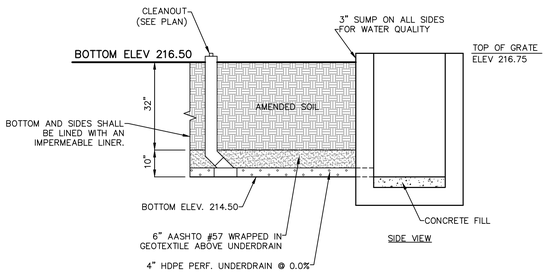
NOTE: PRIOR TO BASIN/TRAP REMOVAL, ALL EARTH DISTURBANCE MUST BE COMPLETE AND ALL AREAS MUST BE 70% STABILIZED WITHIN THE TRIBUTARY AREAS OF THE BASIN TO BE REMOVED.

1. DUE TO THE NATURE OF CONSTRUCTION SITES, SUBSURFACE DETENTION SHOULD BE INSTALLED TOWARDS THE END OF THE CONSTRUCTION PERIOD, IF POSSIBLE, TO MAXIMIZE ANY RESIDUAL INFILTRATION OPPORTUNITY.
2. INSTALL AND MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES (AS PER THE PA EROSION AND SEDIMENTATION CONTROL PROGRAM MANUAL) DURING CONSTRUCTION.
3. THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.
4. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, SUCH MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM OF 6 INCHES WITH A YORK RATE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE.
5. EARTHEN BERMS (IF USED) BETWEEN BEDS SHOULD BE LEFT IN PLACE DURING EXCAVATION. THESE BERMS DO NOT REQUIRE COMPACTION IF PROVEN STABLE DURING CONSTRUCTION.
6. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.
7. GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF STRUCTURES. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. ADJACENT STRIPS OF GEOTEXTILE SHOULD OVERLAP A MINIMUM OF 16 INCHES. IT SHOULD ALSO BE SECURED AT LEAST 4 FEET OUTSIDE OF BED IN ORDER TO PREVENT ANY RUNOFF OF SEDIMENT FROM ENTERING THE STORAGE BED. THIS EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO BEDS ARE STABILIZED AND VEGETATED. AS THE SITE IS FULLY STABILIZED, E

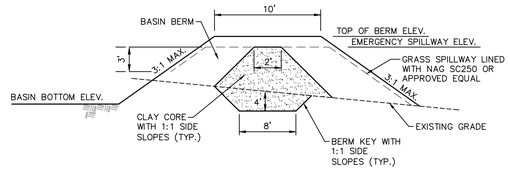


AMENDED SOIL:
20% LEAF MULCH
30% TOPSOIL (DO NOT REUSE SOIL FROM SITE)
50% SAND

MIX AMENDED SOIL THOROUGHLY FOR AN EVEN TEXTURE PRIOR TO PLACEMENT AS SHOWN ON THE PLAN. MUST PROVIDE A MINIMUM INFILTRATION RATE OF 2.125 IN/HR.

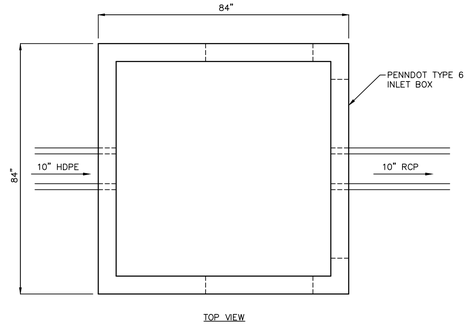


CONSTRUCTED FILTER INLET DETAIL (O.S. #4 & #12)
SCALE: 1" = 2'

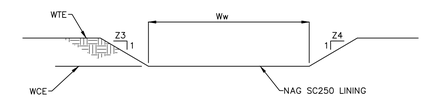


BASIN CONSTRUCTION NOTES:
1. SITE CONTRACTOR SHALL RETAIN A QUALIFIED GEOTECHNICAL ENGINEER TO DOCUMENT ADEQUATE CONSTRUCTION OF THE BERM WITHIN FILL AREAS. ADDITIONALLY, PERIODIC COMPACTION TESTS SHALL BE CONDUCTED BY THE SOILS ENGINEER AT VARIOUS STAGES OF BERM CONSTRUCTION TO INSURE STRUCTURAL STABILITY. THE RESULTS OF THESE TESTS, TOGETHER WITH SOIL ANALYSIS SHALL BE COMPILED IN THE FORM OF A REPORT AND SUBMITTED TO THE ENGINEER OF RECORD.
2. A MINIMUM OF 8" OF TOPSOIL MUST BE PLACED ON ALL AREAS AFFECTED BY THE BASIN.
3. THE BASIN FILL BERM SHOULD BE COMPACTED AT A MINIMUM OF 95% PROCTOR.
4. THE BASIN IS TO BE STRUCTURALLY SOUND.
5. A CLAY CORE SHALL BE PROVIDED WITHIN THE BERM TO HELP PROTECT AGAINST SEEPAGE.

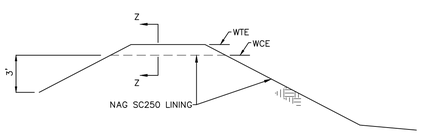
PERMANENT BASIN BERM AND KEY DETAIL
(NOT TO SCALE)



UNDERGROUND BASIN 1 OUTLET STRUCTURE DETAIL (O.S. #50)
SCALE: 1" = 2'



SECTION Z-Z

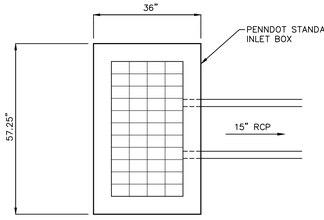


EMBANKMENT SECTION ALONG EMERGENCY SPILLWAY

BASIN	WIER Z3 (FT)	WIER Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	SPILLWAY LINING
MRC BASIN 2A	3	3	219.00	218.25	14	NAG SC250
MRC BASIN 2B	3	3	217.35	216.45	24	NAG SC250

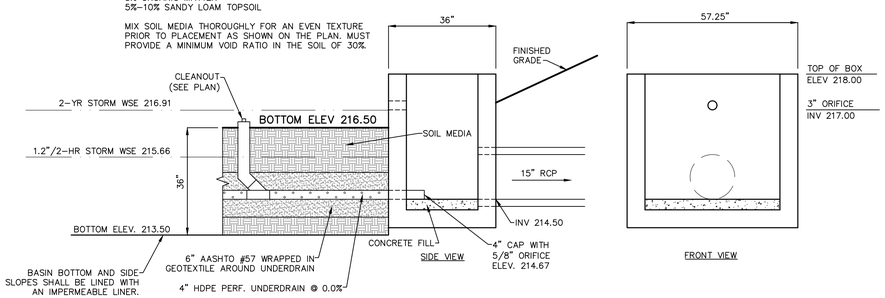
NOTE: SPILLWAY LINING IS REQUIRED TO BE INSTALLED TO THE TOE OF THE SLOPE OF THE OUTER BERM AND TO A MINIMUM DEPTH OF THREE FEET BELOW THE EMERGENCY SPILLWAY ELEVATION ON THE INSIDE OF THE BERM.

PERMANENT BASIN EMERGENCY SPILLWAYS
(NOT TO SCALE)



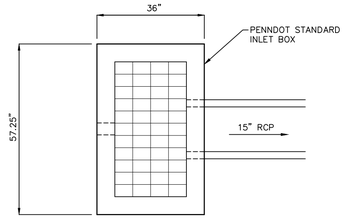
SOIL MEDIA (PLACE WITHIN ENTIRE BASIN BOTTOM):
85%-95% WELL GRADED SAND
(<5% FINE SAND)
5% ORGANIC MATTER
5%-10% SANDY LOAM TOPSOIL

MIX SOIL MEDIA THOROUGHLY FOR AN EVEN TEXTURE PRIOR TO PLACEMENT AS SHOWN ON THE PLAN. MUST PROVIDE A MINIMUM VOID RATIO IN THE SOIL OF 30%.



NOTES:
1. SOIL MEDIA TO HAVE PERMEABLE NON-WOVEN GEOTEXTILE FABRIC AT BOTTOM OF SOIL MIX. 18" MINIMUM OVERLAP AT SEAMS.
2. THE 6" AASHTO #57 STONE SHALL BE PLACED AROUND THE UNDERDRAIN PIPE. FULL DEPTH SOIL MEDIA SHALL BE USED FOR THE REMAINDER OF THE RAIN GARDEN.
3. ALL CONCRETE PIPE JOINTS TO BE MORTARED WATERTIGHT AT OUTLETS WITH ANTI-SEEP COLLARS.
4. BASIN BOTTOM AND SIDE SLOPES SHALL BE LINED WITH AN IMPERMEABLE LINER.

MRC BASIN 2A OUTLET STRUCTURE DETAIL (O.S. #23)
SCALE: 1" = 2'



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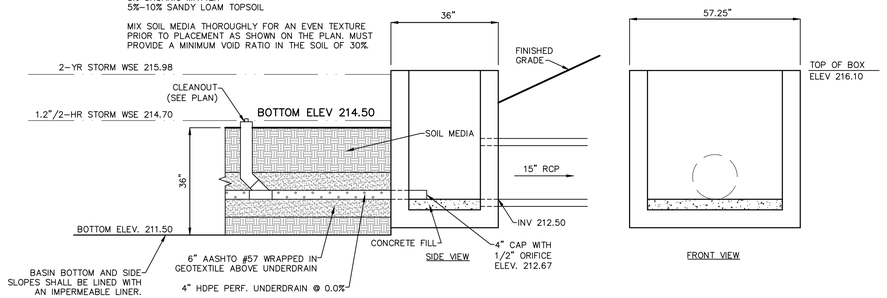

NOTES:
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2. THE 6" AASHTO #57 STONE SHALL BE PLACED AROUND THE UNDERDRAIN PIPE. FULL DEPTH SOIL MEDIA SHALL BE USED FOR THE REMAINDER OF THE RAIN GARDEN.
3. ALL CONCRETE PIPE JOINTS TO BE MORTARED WATERTIGHT AT OUTLETS WITH ANTI-SEEP COLLARS.
4. BASIN BOTTOM AND SIDE SLOPES SHALL BE LINED WITH AN IMPERMEABLE LINER.

MRC BASIN 2B OUTLET STRUCTURE DETAIL (O.S. #30)
SCALE: 1" = 2'

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL Pennsylvania One Call System, Inc
1-800-242-1776

PRELIMINARY
NOT FOR
CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
C	11/03/23	TOWNSHIP RESUBMISSION
B	10/02/23	MCCD SUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS 2

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-803
32 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-802 PCSM DETAILS.dwg, 11/3/2023 8:47 AM, Robert Dzurenda

RITTENHOUSE ROAD (T-367)

VAN BUREN AVENUE (T-538)

POI #2

POI #2
1.19 ACRES

POI #2
BYPASS
0.07 ACRES

POI #1

POI #1
0.95 ACRES (OFF-SITE)

POI #1
3.98 ACRES (ON-SITE)
4.93 ACRES (TOTAL)

100' @ 2.0%

100' @ 3.1%

100' @ 6.0%

205' @ 2.2%

235' @ 0.7%

70' @ 0.8%

1 STORY
MASONRY BUILDING
"FLUID"
BLDG HT=18.5'±
BFPA=25,157± S.F.

±32' CARTWAY (PAVED)

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE-STOP CALL
Pennsylvania One Call System, Inc
1-800-242-1776

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER VALVE
- EXISTING HYDRANT
- EXISTING WATER METER
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- EXISTING SOILS
- PRE-DEVELOPED DRAINAGE AREA
- TIME OF CONCENTRATION

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR
CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

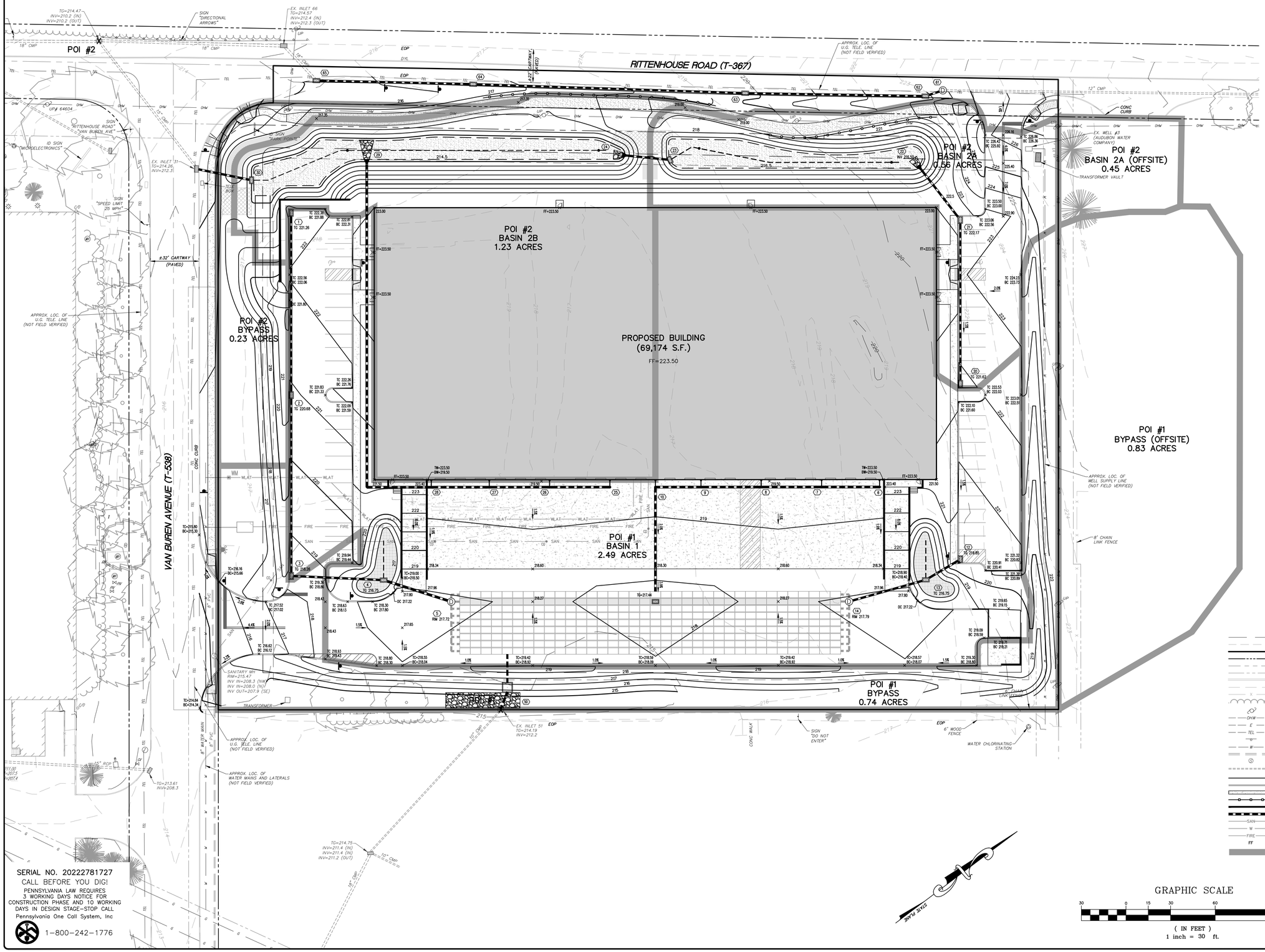
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

PRE-DEVELOPED DRAINAGE AREA PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: 1" = 30'
WORK ORDER NO.: 2324
DRAWING NO.: C-851
33 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-851 PRE-DEVELOPED DRAINAGE PLAN.dwg, 11/3/2023 8:48 AM, Robert Dzurenda



SERIAL NO. 20222781727

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL Pennsylvania One Call System, Inc

1–800–242–1776

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CURB
- EXISTING ROAD
- EXISTING FENCE
- EXISTING TREE LINE
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING SIGN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM SEWER
- PROPOSED CONTOUR
- PROPOSED CURB
- PROPOSED CONCRETE
- PROPOSED SPLIT RAIL FENCE
- PROPOSED RETAINING WALL
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED FIRE WATER MAIN
- FINISHED FLOOR ELEVATION
- POST–DEVELOPED DRAINAGE AREA

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV	DATE	DESCRIPTION
A	09/22/23	TOWNSHIP SUBMISSION
B	11/03/23	TOWNSHIP RESUBMISSION

POST-DEVELOPED DRAINAGE AREA PLAN

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC

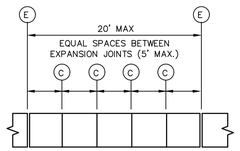
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE

LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	1" = 30'
WORK ORDER NO.:	2324
DRAWING NO.:	C-852

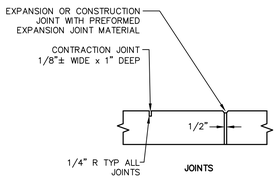
34 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-852 POST-DEVELOPED DRAINAGE PLAN.dwg, 11/3/2023 8:48 AM, Robert Dzurenda

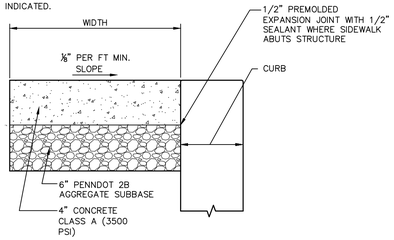


JOINT SPACING

USE JOINT SPACING AS SHOWN EXCEPT WHERE OTHERWISE INDICATED.



JOINTS



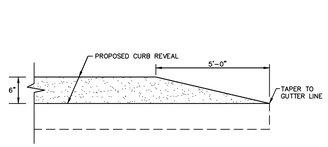
INSTALLATION NOTES:

1. ALL CONSTRUCTION TO CONFORM WITH PENNDOT PUBLICATION 408, LATEST EDITION.
2. ALL CONCRETE TO BE CLASS AA 3500 PSI.
3. MINIMUM WIDTHS AND MINIMUM SLOPES PER SALDO 513; 526.10; 706.3 & 809, AS APPLICABLE.
4. THIS STANDARD IS NOT INTENDED FOR SIDEWALK WHICH CROSSES A DRIVEWAY.
5. INSTALLATION OF CURB RAMPS FOR ACCESSIBILITY SHALL MEET ADA REQUIREMENTS AND SHALL BE IN ACCORDANCE WITH PENNDOT DETAILS RC-67, LATEST EDITION. PENNDOT DETAILS ARE INCLUDED HEREWITH BY REFERENCE.

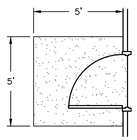
SIDEWALK REPAIR AND REPLACEMENT STANDARDS:

1. SIDEWALKS SHALL BE REPLACED WHEN THE FOLLOWING CONDITIONS OCCUR:
   A. EVIDENCE OF DETERIORATED CONDITION.
   B. SIDEWALKS SECTIONS WITH VERTICAL MISALIGNMENTS GREATER THAN 1/4".

CONCRETE SIDEWALK INSTALLATION
(NOT TO SCALE)

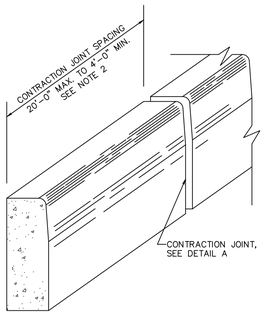


CONCRETE CURB VERTICAL TAPER END TREATMENT
(NOT TO SCALE)

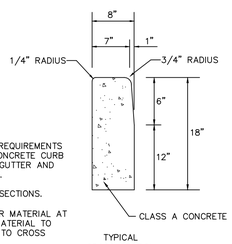


NOTE:
1. SEE CONCRETE SIDEWALK INSTALLATION DETAIL ON SHEET C-901 FOR SECTION DEPTH.
2. SEE STRUCTURAL DRAWINGS FOR REINFORCEMENT DETAILS.

TYPICAL DOOR PAD
(NOT TO SCALE)



DETAIL A
CONTRACTION JOINT



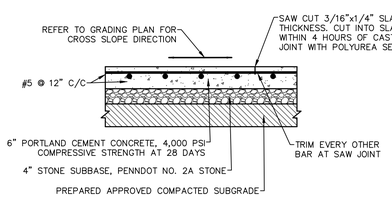
TYPICAL
CROSS SECTION

NOTES:

1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CEMENT CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAIN CEMENT GUTTER AND SECTION 641 FOR PLAIN CEMENT CONCRETE CURB GUTTER.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4" THICK PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.
4. SEE RC-50M FOR PLAIN CURB SLOPED TOP TREATMENT AT THE END OF STRUCTURES.
5. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
6. WHERE CURBS ARE INSTALLED ADJACENT TO PARKING LANES A 6" HIGH CURB CAN BE UTILIZED WITH APPROVAL FROM THE LOCAL MUNICIPALITY.

PLAIN CEMENT CONCRETE CURB
(NOT TO SCALE)

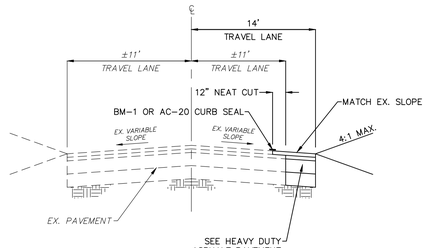
SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL
Pennsylvania One Call System, Inc
1-800-242-1776



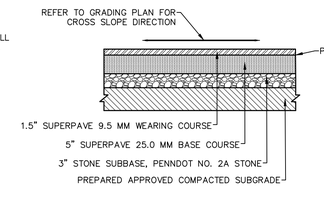
INSTALLATION NOTES:

1. EXPANSION/CONTRACTION JOINTS SHALL BE INSTALLED AT 18 FT C/C.

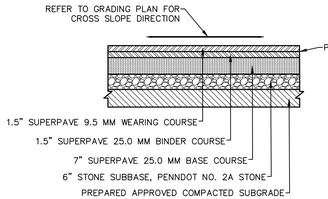
HEAVY DUTY CONCRETE PAVEMENT DETAIL
(NOT TO SCALE)



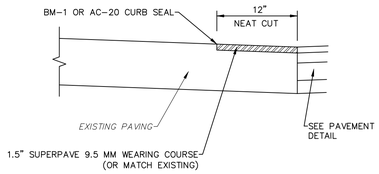
RITTENHOUSE ROAD CROSS SECTION
(NOT TO SCALE)



LIGHT DUTY ASPHALT PAVEMENT DETAIL
(NOT TO SCALE)

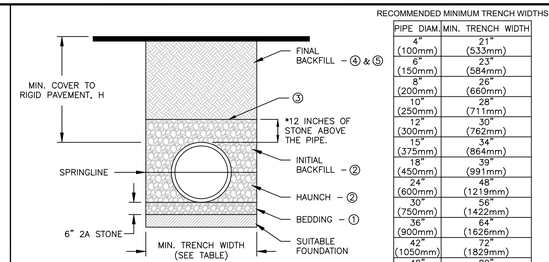


HEAVY DUTY ASPHALT PAVEMENT DETAIL
(NOT TO SCALE)



NOTE: REPLACE ANY PAVEMENT AND/OR CURBING DESTROYED DURING CONSTRUCTION OF DRIVEWAY.

NEAT CUT FOR VAN BUREN AVE. DRIVEWAY DETAIL
(NOT TO SCALE)



* SELECT MATERIAL FROM THE SITE CAN BE USED IF COMPACTED IN LIFTS ABOVE THE STONE PER DIRECTION OF ON SITE GEOTECHNICAL ENGINEER.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING TO THE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	SURFACE LIVE LOADING CONDITION HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

MAXIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I COMPACTED	CLASS I DUMPED	CLASS II 95%	CLASS II 90%	CLASS III 95%
4" (100mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	18 (5.5m)
6" (150mm)	44 (13.4m)	20 (6.1m)	29 (8.8m)	20 (6.1m)	21 (6.4m)
8" (200mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
10" (250mm)	38 (11.6m)	18 (5.5m)	26 (7.9m)	18 (5.5m)	18 (5.5m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
15" (375mm)	38 (11.6m)	17 (5.2m)	25 (7.6m)	17 (5.2m)	18 (5.5m)
18" (450mm)	36 (11.0m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
24" (600mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
30" (750mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	13 (4.0m)	13 (4.0m)
42" (1050mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
48" (1200mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (Ys) = 120 PCF

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
6	INITIAL BACKFILL	JAB	04/02/20	

NOTE: ALL DIMENSIONS ARE ± 1/2 FOOT.

© 2020 ADS, INC.

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

DIA. DET/SYST
TRENCH INSTALLATION DETAIL (N-12 PER AASHTO)
DRAWING NUMBER: STD-101

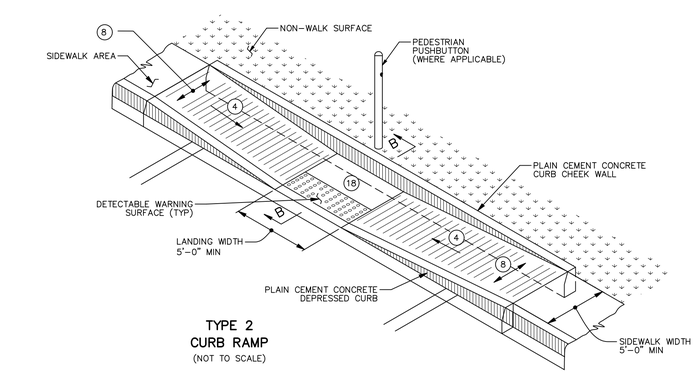
ADS. ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DRAWN BY: TJR
DATE: 12/29/16
SCALE: NTS
SHEET: 1 OF 1

TRENCH INSTALLATION LEGEND:

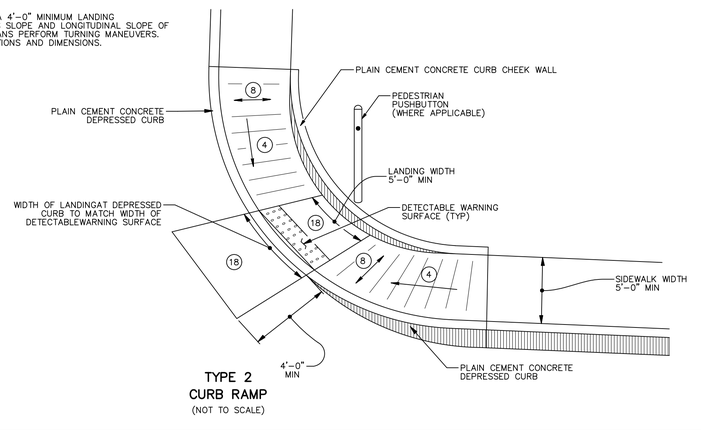
① - AASHTO 57 STONE
② - 2A STONE COMPACTED IN 6" LIFTS TO 1 FT ABOVE BELL OF PIPE, SEE BEDDING DETAIL FOR SANITARY SEWER (PVC PIPE)
③ - PROVIDE METALLIC MARKER TAPE FOR WATERLINE
④ - EXISTING PAVED AREAS: 2A STONE COMPACTED IN 6" LIFTS TO SUBBASE ELEVATION
PROPOSED PAVED AREAS: CLEAN BACKFILL, AS APPROVED BY TOWNSHIP ENGINEER, IN 8" LIFTS COMPACTED TO 98% DRY DENSITY MINIMUM
⑤ - CLEAN BACKFILL, AS APPROVED BY TOWNSHIP ENGINEER, COMPACTED IN 8" LIFTS

STORM SEWER PIPING BEDDING & BACKFILL DETAIL
(NOT TO SCALE)

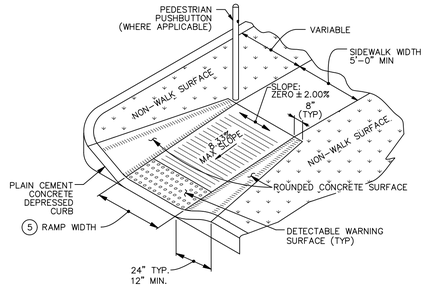


TYPE 2 CURB RAMP
(NOT TO SCALE)

④ 8.33% MAX RAMP SLOPE
⑧ SLOPE: ZERO - 2.00%
⑱ CURB RAMPS REQUIRE A 4'-0" MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SEE DETAILS FOR LOCATIONS AND DIMENSIONS.

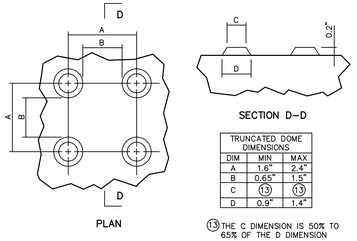


TYPE 2 CURB RAMP
(NOT TO SCALE)



⑤ CURB RAMP WIDTH IS EQUAL TO SIDEWALK WIDTH WHEN THE SIDEWALK WIDTH IS GREATER THAN OR EQUAL TO THE MINIMUM 4'-0".

ALTERNATE TYPE 4A CURB RAMP (PARALLEL)
(NOT TO SCALE)

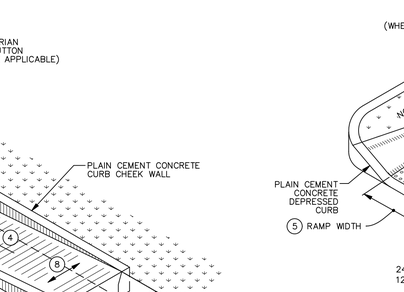


TRUNCATED DOME DIMENSIONS		
DIM	MIN	MAX
A	1.6"	2.4"
B	0.65"	1.5"
C	⑬	⑬
D	0.9"	1.4"

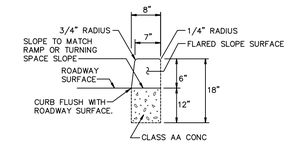
PLAN

⑬ THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION

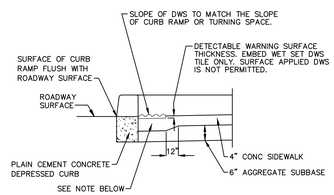
DETECTABLE WARNING TRUNCATED DOME DETAIL
(NOT TO SCALE)



8' WIDE ASPHALT PATH DETAIL
(NOT TO SCALE)



DEPRESSED CURB AT RAMP
(NOT TO SCALE)



NOTES:
1. CONSTRUCT NOTCH AS SHOWN TO PROVIDE FULL THICKNESS SIDEWALK UNDER DETECTABLE WARNING SURFACE.
2. OPTIONAL: CONSTRUCT 2" MAX. CONCRETE BORDER AROUND DWS TO PROVIDE PROPER INSTALLATION.

DETECTABLE WARNING SURFACE EMBEDDING DETAIL
(NOT TO SCALE)

PRELIMINARY
NOT FOR CONSTRUCTION

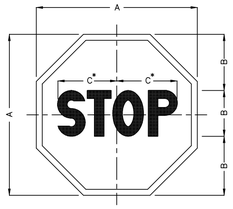
REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
A	09/22/23	TOWNSHIP RESUBMISSION
B	11/03/23	TOWNSHIP SUBMISSION

CONSTRUCTION DETAILS 1
CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-901
35 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-901 CONSTRUCTION DETAILS.dwg, 11/3/2023 8:48 AM, Robert Dzurenda



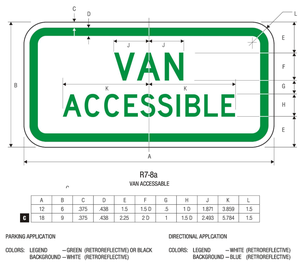
COLOR: LEGEND AND BORDER BACKGROUND — WHITE (REFLECTORIZED); RED (REFLECTORIZED)

SIGN SIZE	DIMENSIONS IN INCHES A	B	C	SERIES	BORDER	BLANK STD
24 x 24	24	8	10	C	5/8	B1–24
30 x 30	30	10	12 1/2	C	3/4	B1–30
36 x 36	36	12	15	C	7/8	B1–36
48 x 48	48	16	20	C	1 1/4	B1–48

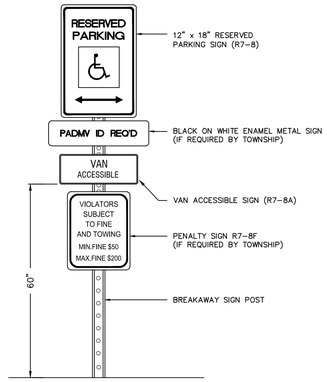
* REDUCE SPACING 40%

STOP SIGN (R1–1)
(NOT TO SCALE)

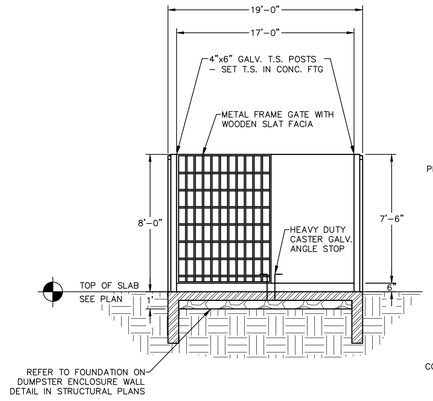
HANDICAP RESERVED PARKING SIGN (R7–8)
(NOT TO SCALE)



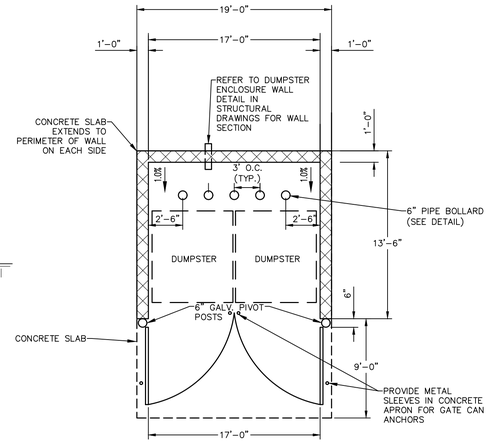
VAN ACCESSIBLE SIGN DETAIL (R7–8A)
(NOT TO SCALE)



RESERVED PARKING SIGN
(NOT TO SCALE)

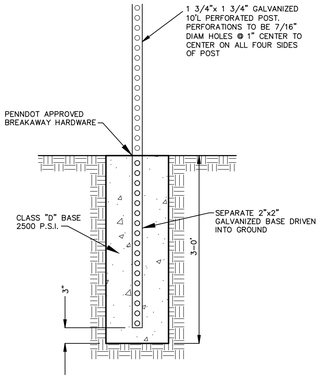


DUMPSTER GATE ELEVATION
(NOT TO SCALE)



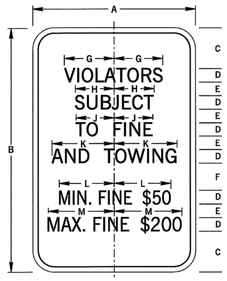
NOTES:
1. THE DUMPSTER ENCLOSURE SHALL BE LOCATED WITHIN THE BUILDING ENVELOPE. THE SCREENING WALL SHALL BE OF THE SAME OR COMPATIBLE MATERIALS AS THE BUILDING. ACCESS GATES, ETC. SHALL BE OF THE SAME QUALITY AND MATERIALS AS OTHER DOORWAYS, TRIM AND EXTERIOR FRAMING MATERIALS OF THE BUILDING. COLORS OF THESE ELEMENTS SHALL BE COMPATIBLE WITH THE THEME OF THE BUILDING.

DUMPSTER ENCLOSURE DETAIL
(NOT TO SCALE)



NOTE: PROVIDE VANDAL PROOF HARDWARE (I.E. 5/16 TOUGH NUT OR APPROVED EQUIVALENT).

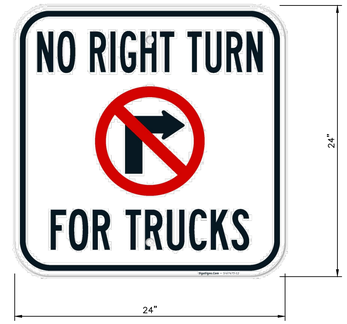
BREAKAWAY SIGN BASE
(NOT TO SCALE)



COLOR: LEGEND AND BORDER BACKGROUND — RED (REFLECTORIZED) WHITE (REFLECTORIZED)

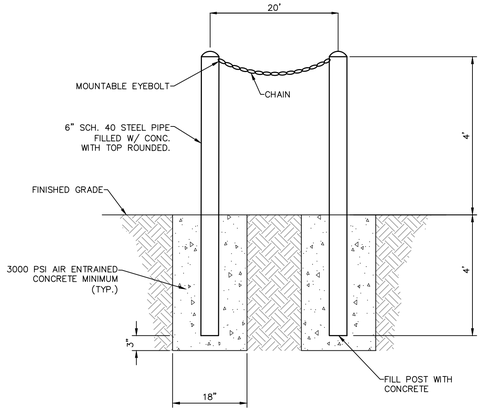
SIGN SIZE A x B	DIMENSIONS – IN C	D	E	F	G	H	J	K	L	M	MARGIN	BORDER	BLANK STD.
12" x 18"	3	1C	1	2	3	2.4	2.3	3.6	4	4.6	0.4	0.4	B5–1218

RESERVED PARKING PENALTIES SIGN
(NOT TO SCALE)



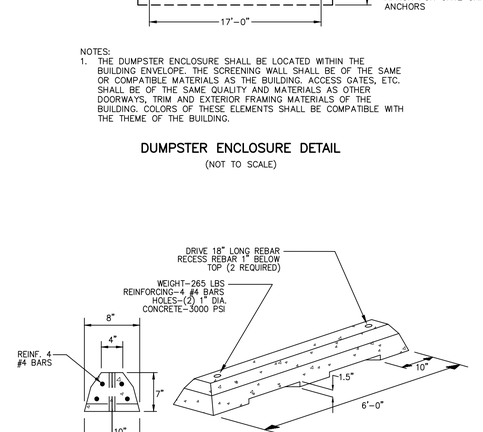
COLOR: SYMBOL AND BORDER CIRCLE AND DIAGONAL BACKGROUND — BLACK (REFLECTORIZED) RED (REFLECTORIZED) WHITE (REFLECTORIZED)

NO RIGHT TURN FOR TRUCKS SIGN
(NOT TO SCALE)



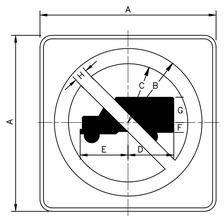
NOTE: ALL PIPES SHALL FITTED WITH SAFETY YELLOW PVC SLEEVES

BOLLARD DETAIL
(NOT TO SCALE)



NOTE: CONCRETE CURB STOPS TO BE INSTALLED AT ALL ADA ACCESSIBLE PARKING SPACES.

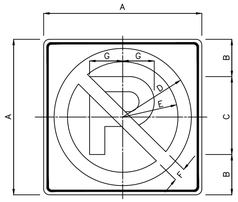
CONCRETE CURB STOP DETAIL
(NOT TO SCALE)



SIGN SIZE AxA	DIMENSIONS (IN INCHES) B	C	D	E	F	G	H	MARGIN	BORDER	BLANK STD.
24x24	10.5	8.5	6.5	7.5	1.8	4.3	2	0.4	0.6	B3–24
30x30	13.2	10.6	8.1	9.4	4.7	5.3	2.6	0.4	0.8	B3–30
36x36	15.8	12.8	9.8	11.3	5.6	6.4	3	0.6	1	B3–36
48x48	21	17	13	15	7.5	8.5	4	0.8	1.2	B3–48

COLOR:
SYMBOL AND BORDER: BLACK (NON–REFLECTORIZED)
CIRCLE AND SLASH: RED (REFLECTORIZED)
BACKGROUND: WHITE (REFLECTORIZED)

NO TRUCK SIGN (R5–2)
(NOT TO SCALE)



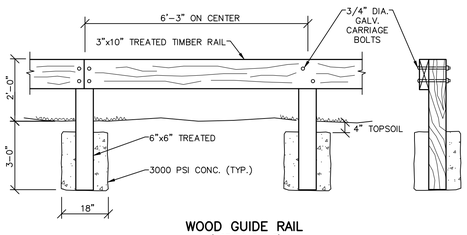
COLOR: SYMBOL AND BORDER CIRCLE AND DIAGONOL BACKROUND — BLACK (NON–REFLECTORIZED) RED (REFLECTORIZED) WHITE (REFLECTORIZED)

SIGN SIZE AxA	DIMENSIONS IN INCHES B	C	D	E	F	G	MARGIN	BORDER	BLANK STD
12x12	3	6E(M)	4.9	3.9	1	2.4	0.4	0.4	–
24x24	6	12E(M)	10.5	8.5	2	4.8	0.4	0.6	B3–24

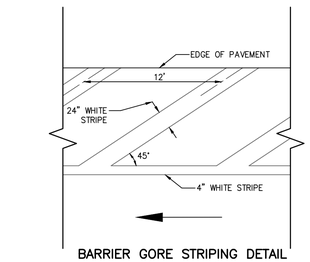
NO PARKING SIGN (R8–3)
(NOT TO SCALE)

NOTES:
1. LEGEND AND BORDER TO BE BLACK (NON–REFLECTORIZED).
2. BACKGROUND TO BE WHITE (NON–REFLECTORIZED).

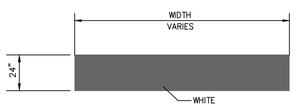
AUTHORIZED PERSONNEL ONLY SIGN
(NOT TO SCALE)



WOOD GUIDE RAIL
(NOT TO SCALE)

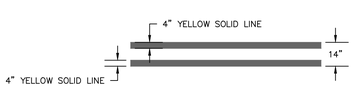


BARRIER GORE STRIPING DETAIL
(NOT TO SCALE)

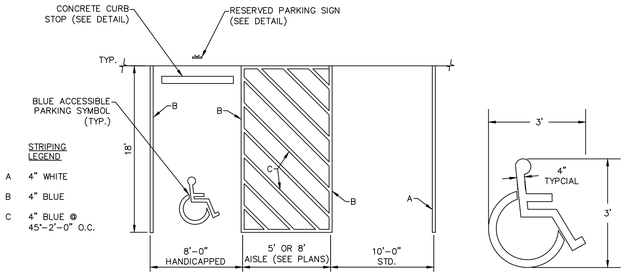


STOP BAR STRIPING DETAIL
(NOT TO SCALE)

SINGLE WHITE LINE STRIPING DETAIL
(NOT TO SCALE)



DOUBLE YELLOW LINE STRIPING DETAIL
(NOT TO SCALE)



NOTES:
1. THESE DETAILS ARE FOR REFERENCE AND DIMENSIONAL CONTROL ONLY.
2. ALL DIMENSIONS ARE TO CENTER OF STRIPE UNLESS OTHERWISE INDICATED.
3. STRIPING TO BE COLORED AS SHOWN UNLESS DICTATED OTHERWISE BY LOCAL CODE OR PROJECT SPECIFICATIONS.
4. PROVIDE DETECTABLE WARNING SURFACE WITH BRICK RED TRUNCATED DOMES FOR ALL HANDICAP WALKWAYS AND IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS.
5. BLUE HANDICAP STRIPING, HANDICAP SYMBOL AND STANDARD PARKING STRIPING SHALL BE THERMOPLASTIC.

TYPICAL ADA ACCESSIBLE 90° PARKING STRIPING LAYOUT DETAIL
(NOT TO SCALE)

ALL STRIPING SHALL BE THERMOPLASTIC

STRIPING NOTES
1. ALL STRIPING OR SYMBOLS FOR NEW CONSTRUCTION SHALL FOLLOW PENNDOT 408 SECTION 960, HOT THERMOPLASTIC PAVEMENT MARKINGS OR PENNDOT 408 SECTION 964, EPOXY PAVEMENT MARKINGS.

SERIAL NO. 20222781727
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL
Pennsylvania One Call System, Inc
1–800–242–1776

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

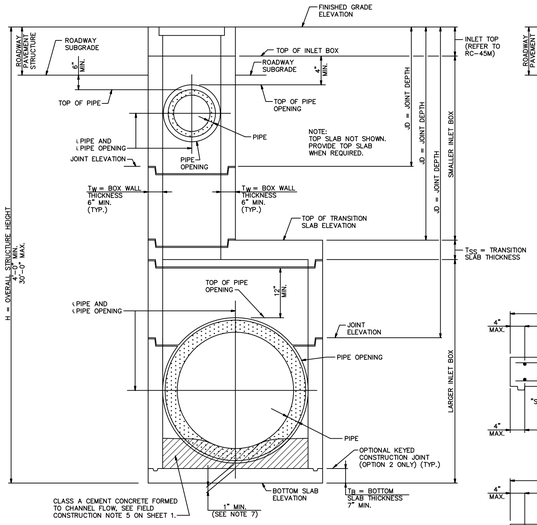
CONSTRUCTION DETAILS 2

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	AS SHOWN
WORK ORDER NO.:	2324
DRAWING NO.:	C-902

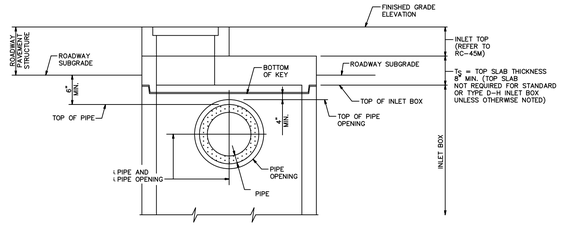
36 OF 40

Q:\2023\2324 – Farmhouse Development\Civil\CAD\C–901 CONSTRUCTION DETAILS.dwg, 11/3/2023 8:48 AM, Robert Dzurenda

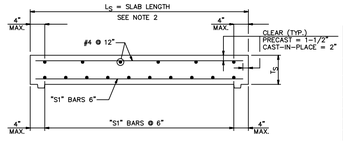


SECTION K–K
LARGER INLET BOX TO SMALLER INLET BOX WITH TRANSITION SLAB AND INLET TOP
(NOT TO SCALE)

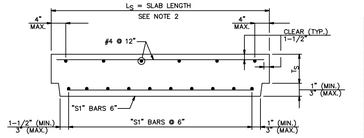
NOTES: (SHEET REFERENCES ARE TO PENNDOT RC STANDARDS)
1. FOR ADDITIONAL NOTES SEE SHEETS 1 – 3.
2. FOR INLET BOX TYPES SEE SHEET 6.
3. FOR TOP SLAB DETAILS SEE SHEETS 7 – 10.
4. FOR TRANSITION SLAB DETAILS SEE SHEETS 11 & 12.
5. FOR REINFORCEMENT DETAILS SEE SHEET 25 – 28.
6. FOR DESIGN TABLES SEE SHEETS 29 – 44.
7. FOR PIPE LOCATION AND PIPE OPENING NOTES, SEE SHEET 2.



SECTION K–K
INLET BOX WITH TOP SLAB AND INLET TOP
(NOT TO SCALE)



TOP SLAB WITH KEYED JOINT



TOP SLAB WITH SHIPLAP JOINT (PRECAST ONLY)

TOP SLAB CAST–IN–PLACE CONCRETE U.S. CUSTOMARY UNITS		
INLET BOX TYPE	Ts (IN.)	S1 (BAR SIZE)
STANDARD	8	#6
TYPE 4	12	#7
TYPE 5	14	#8
TYPE 6	14	#8
TYPE 7	14	#9
TYPE 8	14	#9
TYPE 9	14	#9
TYPE 10	14	#9

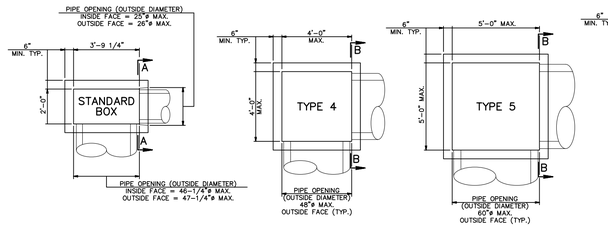
TOP SLAB CAST–IN–PLACE CONCRETE METRIC UNITS		
INLET BOX TYPE	Ts (mm^2)	S1 (BAR SIZE)
STANDARD	203	#19
TYPE 4	305	#22
TYPE 5	356	#25
TYPE 6	356	#25
TYPE 7	356	#29
TYPE 8	356	#29
TYPE 9	356	#29
TYPE 10	356	#29

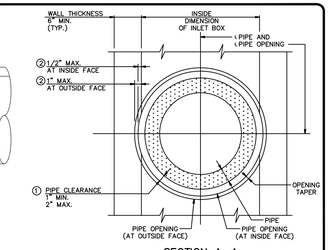
TOP SLAB PRECAST CONCRETE U.S. CUSTOMARY UNITS		
INLET BOX TYPE	Ts (IN.)	S1 (BAR SIZE)
STANDARD	8	#6
TYPE 4	10	#8
TYPE 5	12	#9
TYPE 6	12	#9
TYPE 7	14	#9
TYPE 8	14	#9
TYPE 9	14	#9
TYPE 10	14	#9

TOP SLAB PRECAST CONCRETE METRIC UNITS		
INLET BOX TYPE	Ts (mm^2)	S1 (BAR SIZE)
STANDARD	203	#19
TYPE 4	254	#25
TYPE 5	305	#29
TYPE 6	305	#29
TYPE 7	356	#29
TYPE 8	356	#29
TYPE 9	356	#29
TYPE 10	356	#29

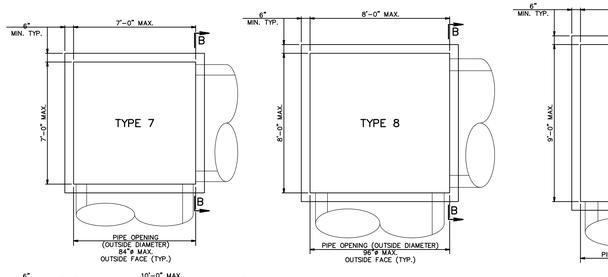
SECTION D–D
(ADDITIONAL REINFORCEMENT NOT SHOWN)

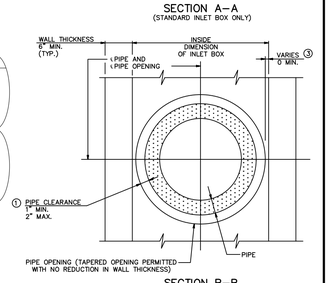
INLET BOXES
TOP SLABS
(NOT TO SCALE)





SECTION A–A
(STANDARD INLET BOX ONLY)

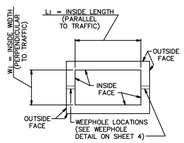




SECTION B–B
(TYPICAL ALL TYPES EXCEPT STANDARD)

INLET BOX TYPES
(NOT TO SCALE)

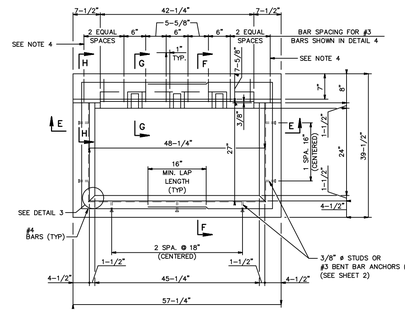
NOTES:
1. FOR ADDITIONAL NOTES SEE SHEETS 1 – 3.
2. FOR PIPE LOCATION AND PIPE OPENING NOTES SEE SHEET 2.



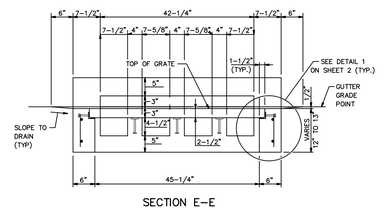
INLET BOX SCHEMATIC

LEGEND
OUTSIDE FACE – OUTSIDE FACE OF INLET BOX WALL
INSIDE FACE – INSIDE FACE OF INLET BOX WALL

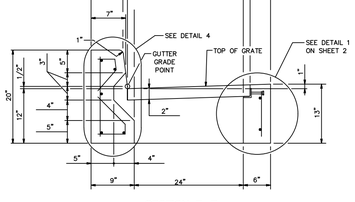
LEGEND
1 OUTSIDE DIAMETER OF PIPE TO PIPE OPENING
2 REDUCTION IN WALL THICKNESS DIMENSION
3 INSIDE FACE OF BOX WALL TO OUTSIDE DIAMETER OF PIPE OPENING



PLAN VIEW – TYPE C



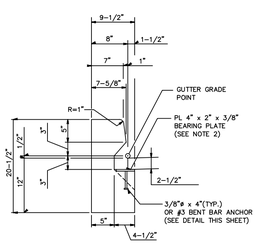
SECTION E–E



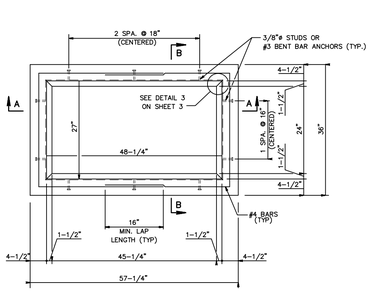
SECTION F–F

INLET TOP UNITS
(NOT TO SCALE)

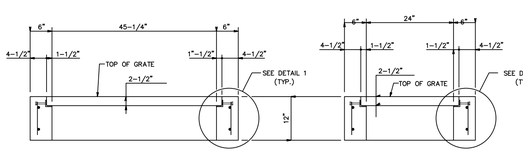
NOTES: (SHEET REFERENCES ARE TO PENNDOT RC STANDARDS)
1. FOR ADDITIONAL NOTES, SEE SHEET 1.
2. A MAXIMUM OF TWO HOLES ARE PERMITTED IN THE PLATE TO POSITION AND HOLD THE PLATE IN PLACE DURING FABRICATION. HOLES ARE NOT PERMITTED TO BE GREATER THAN 1/4" DIAMETER.
3. FABRICATOR TO DETERMINE NUMBER OF BARS REQUIRED TO MATCH SHAPE INDICATED. PROVIDE ONE, TWO, OR THREE BARS AS REQUIRED.
4. BEND OUTSIDE STIRRUP TO ACCOMMODATE DOWEL BARS AND STILL MAINTAIN CLEARANCE REQUIREMENTS.



SECTION G–G



PLAN VIEW – TYPE M

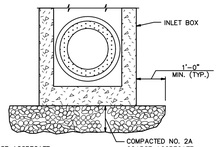


SECTION A–A

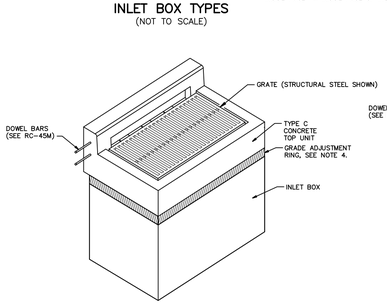
SECTION B–B

INLET TOP UNITS
(NOT TO SCALE)

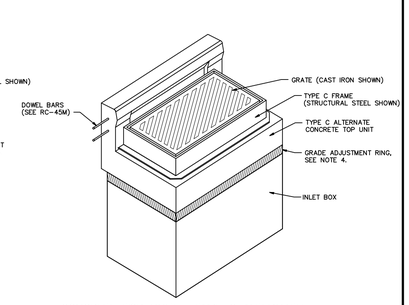
NOTES: (SHEET REFERENCES ARE TO PENNDOT RC STANDARDS)
1. FOR ADDITIONAL NOTES SEE SHEETS 1 – 3.
2. STANDARD INLET BOXES SHOWN, PROVIDE TOP SLABS FOR OTHER INLET BOX TYPES.
3. SEE RC–45M FOR DETAILS FOR THE CONCRETE TOP UNITS, FRAMES, AND GRATES.
4. PROVIDE GRADE ADJUSTMENT RINGS WHEN REQUIRED. SEE RC–45M FOR DETAILS.



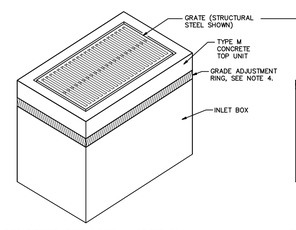
INLET BOX SUBBASE PREPARATION DETAIL
(SEE FIELD CONSTRUCTION NOTES ON SHEET 1)
(NOT TO SCALE)



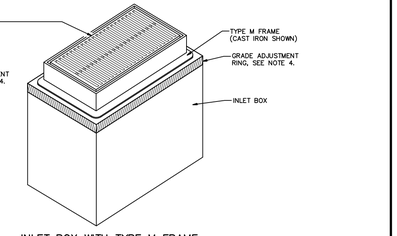
CONCRETE TOP UNIT – TYPE C



CONCRETE TOP UNIT – TYPE C ALTERNATE WITH TYPE C FRAME



CONCRETE TOP UNIT – TYPE M



INLET BOX WITH TYPE M FRAME

INLET BOXES
INLET ASSEMBLIES
(NOT TO SCALE)

SERIAL NO. 20222781727
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PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE–STOP CALL
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PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

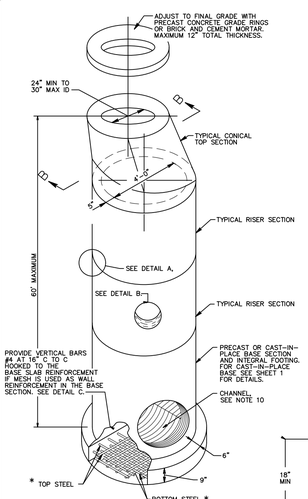
CONSTRUCTION DETAILS 3

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN:	RAD
A/E:	WRM
Q/C:	WRM
SCALE:	AS SHOWN
WORK ORDER NO.:	2324
DRAWING NO.:	C-903

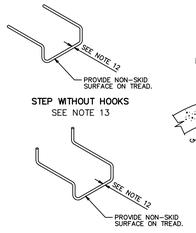
37 OF 40

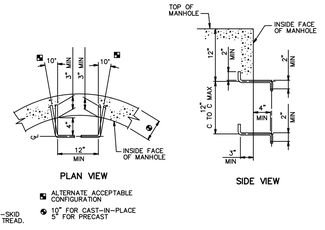
Q:\2023\2324 – Farmhouse Development\Civil\CAD\C-901 CONSTRUCTION DETAILS.dwg, 11/3/2023 8:48 AM, Robert Dzurenda



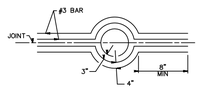
PRECAST MANHOLE

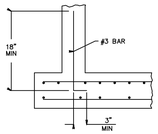
FOR PIPES 30" INSIDE DIAMETER AND LESS
* SEE TABLE B FOR BASE SLAB STEEL REQUIREMENTS. PROVIDE WALL REINFORCEMENT DETAILS AT BASE SLAB TYPICAL OF CAST-IN-PLACE MANHOLE. SEE SHEET 1.

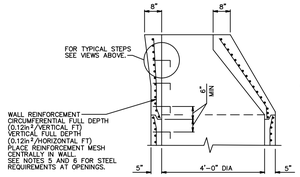




TYPICAL STEP CONFIGURATION







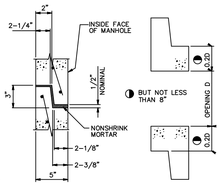
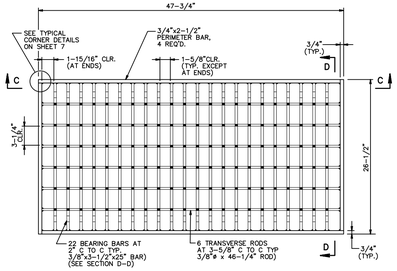


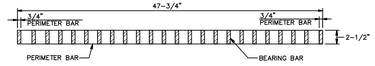
TABLE B

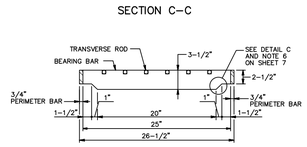
PRECAST MANHOLE HEIGHT	TOP STEEL REQUIREMENTS	BOTTOM STEEL REQUIREMENTS
0'-0" TO 30'-0"	NO.4 BARS AT 6" C TO C OR 0.33 in²/FT WWF 6" MAXIMUM SPACING	NO.4 BARS AT 12" C TO C OR 0.16 in²/FT WWF 6" MAXIMUM SPACING
> 30'-0" TO 60'-0"	NO.5 BARS AT 6" C TO C OR 0.56 in²/FT WWF 6" MAXIMUM SPACING	NO.4 BARS AT 6" C TO C OR 0.27 in²/FT WWF 6" MAXIMUM SPACING

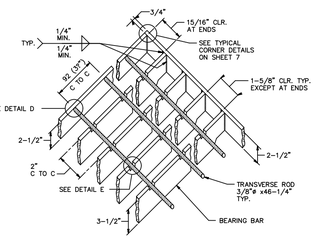
SEE NOTE 7, SHEET 1

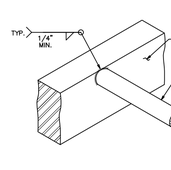
STANDARD STORM SEWER MANHOLES
PRECAST MANHOLES & MANHOLE STEPS
(NOT TO SCALE)

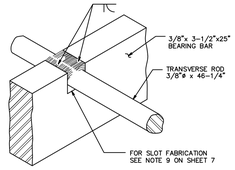






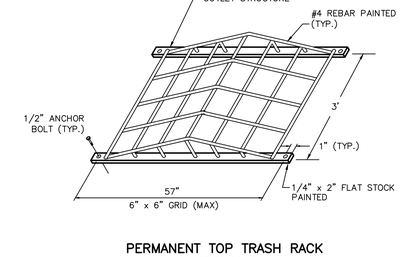






NOTES:
1. ALL STORM SEWER INLETS MUST BE IDENTIFIED WITH A STORM DRAIN MARKER. STORM DRAIN MARKERS SHALL BE STAINLESS STEEL, AFFIXED TO THE INLET HOOD WITH ADHESIVE, RIVETS, OR BOLTS. MARKER MAY BE BOLTED TO THE GRATE IN OFF-ROAD LOCATIONS. MARKER SHALL HAVE A MINIMUM DIAMETER OF 3-1/2 INCHES AND INCLUDE "NO DUMPING – DRAINS TO WATERWAY" AND A FISH SYMBOL.

STRUCTURAL STEEL GRATE
BICYCLE SAFE
(NOT TO SCALE)



PERMANENT TOP TRASH RACK
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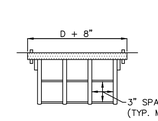
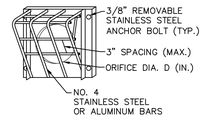
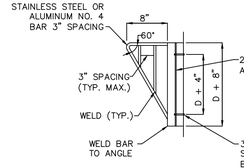
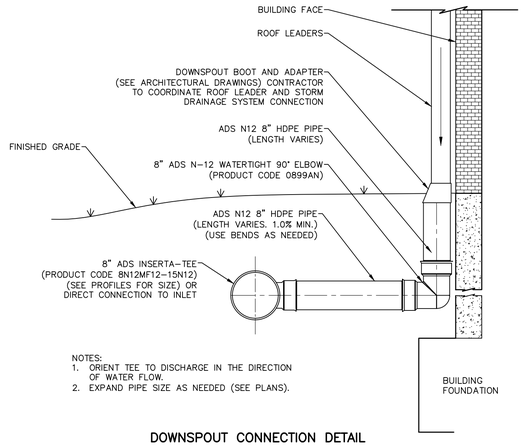




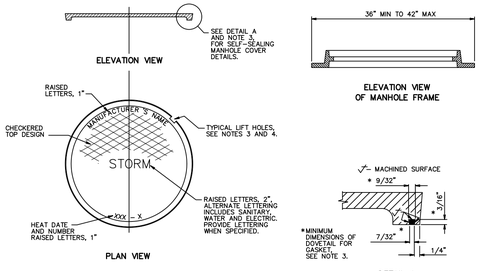


ORIFICE TRASH RACK DETAIL
(NOT TO SCALE)

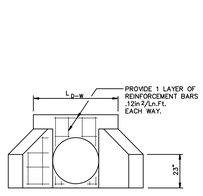


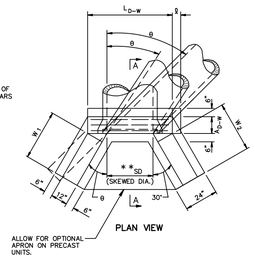
NOTES:
1. ORIENT TEE TO DISCHARGE IN THE DIRECTION OF WATER FLOW.
2. EXPAND PIPE SIZE AS NEEDED (SEE PLANS).

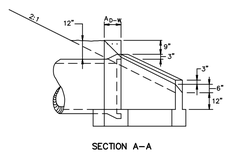
DOWNSPOUT CONNECTION DETAIL
(NOT TO SCALE)



STANDARD MANHOLES
COVERS, FRAMES AND ADJUSTMENT RISERS
(NOT TO SCALE)







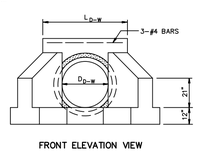


TABLE A
2:1 EMBANKMENT SLOPES

PIPE DIAMETER	SKEW ∠ = 90° TO 60° θ = 30°			SKEW ∠ = 55° θ = 35°			SKEW ∠ = 50° θ = 40°			SKEW ∠ = 45° θ = 45°			SKEW ∠ = 40° θ = 50°			SKEW ∠ = 30° θ = 60°			SKEW ∠ = 20° θ = 70°			SKEW ∠ = 10° θ = 80°				
D_{D-W}	L_{D-W}	X	W_1	L_{D-W}	X	W_1	L_{D-W}	X	W_1	L_{D-W}	X	W_1	L_{D-W}	X	W_1	L_{D-W}	X	W_1	L_{D-W}	X	W_1	L_{D-W}	X	W_1	W_2	A_{D-W}
(IN.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(FT.)	(IN.)
36	5.8	0	4.6	6.0	.33	4.9	6.2	.5	5.2	6.5	.67	5.7	7.0	.75	6.2	8.3	1.33	8.0	11.1	1.75	11.7	19.6	5.0	23.0	4.6	12
42	6.3	0	5.8	6.6	.33	6.1	6.9	.5	6.5	7.3	.67	7.1	7.8	.75	7.8	9.3	1.33	10.0	12.5	1.75	14.6	22.5	5.0	28.8	5.8	12
48	6.9	0	6.9	7.2	.33	7.3	7.5	.5	7.8	8.0	.67	8.5	8.5	.75	9.4	10.3	1.33	12.0	14.0	1.75	17.5	25.3	5.0	34.6	6.9	12
54	7.5	0	8.0	7.8	.33	8.5	8.2	.5	9.1	8.7	.67	9.9	9.3	.75	10.9	11.3	1.33	14.0	15.5	1.75	20.5	28.2	5.0	40.3	8.0	12
60	8.1	0	9.2	8.4	.33	9.8	8.8	.5	10.4	9.4	.67	11.3	10.1	.75	12.5	12.3	1.33	16.0	16.9	1.75	23.4	31.1	5.0	46.0	9.2	15
72	9.2	0	11.5	9.6	.33	12.2	10.1	.5	13.0	10.8	.67	14.1	11.7	.75	15.6	14.3	1.33	20.0	19.8	1.75	29.2	36.9	5.0	57.6	11.5	15

TYPE D-W ENDWALL
(SEE TABLE A FOR DIMENSIONS NOT INDICATED.)
(NOT TO SCALE)

SERIAL NO. 20222781727
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PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL
Pennsylvania One Call System, Inc
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REL DESIGN, INC.,
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Valley Forge, Pennsylvania

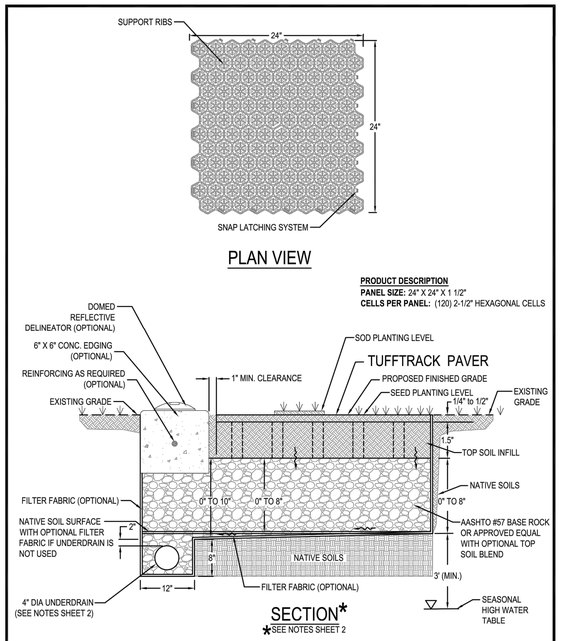
REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

CONSTRUCTION DETAILS 4

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-904

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-901 CONSTRUCTION DETAILS.dwg, 11/3/2023 8:48 AM, Robert Daurenda



1 of 2

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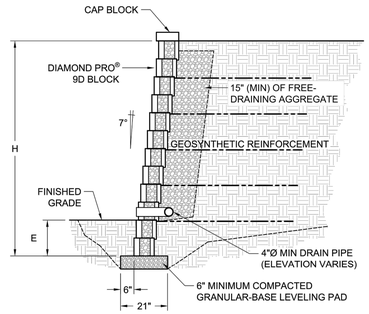

ANCHOR BUILD SOMETHING BEAUTIFUL

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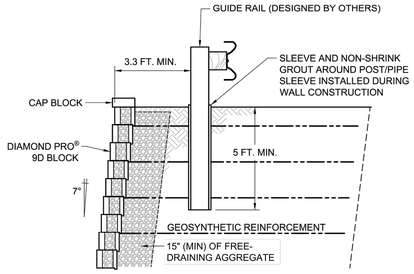
Diamond Pro® 9D Straight II Face Retaining Wall System

Typical Reinforced Cross Section

Scale:	Drawn by:
3/8" = 1'-0"	SB
Date:	Drawing number:
11/5/2018	DP9ST206



ANCHOR BUILD SOMETHING BEAUTIFUL

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Diamond Pro® 9D Straight II Face Retaining Wall System

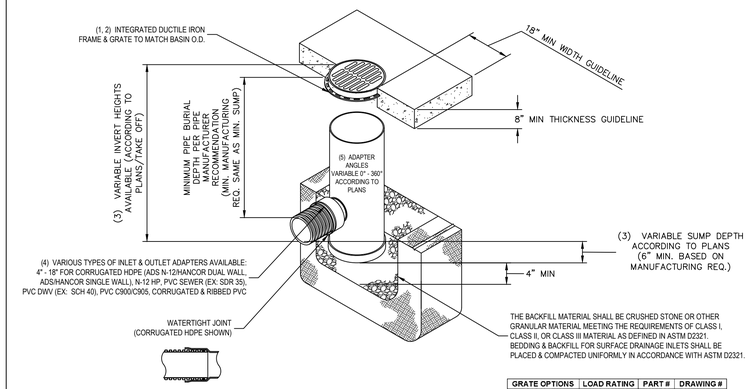
Typical Guide Rail Section

Scale:	Drawn by:
3/8" = 1'-0"	SB
Date:	Drawing number:
11/5/2018	DP9ST211

RETAINING WALL GENERAL NOTES:

1. TOP AND BOTTOM OF WALL ELEVATIONS SHOWN ON THE GRADING PLAN REPRESENT FINISHED GRADE DIRECTLY IN FRONT OF AND BEHIND THE RETAINING WALL.
2. COORDINATE WALL COLOR WITH PROJECT ARCHITECT. PHYSICAL SAMPLES OF WALL STONE ARE REQUIRED TO BE PROVIDED TO THE PROJECT ARCHITECT AT THE TIME OF SHOP DRAWING SUBMITTAL.
3. MINIMUM CLEARANCE FOR UTILITY CROSSING IS 24" FROM BOTTOM OF RETAINING WALL TO TOP OF PIPE.
4. ALIGNMENT LINE THROUGH CENTER OF BOTTOM BLOCK.
5. CONTRACTOR IS REQUIRED TO PROVIDE SIGNED AND SEALED PLANS AND CALCULATIONS FOR ALL RETAINING WALLS PRIOR TO INSTALLATION.

NYLOPLAST 18" DRAIN BASIN: 2818AG _ _ X



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1899CGP	7001-110-212
STANDARD	MEETS H-20	1899CGS	7001-110-213
SOLID COVER	MEETS H-20	1899CSC	7001-110-214
DOME	N/A	1899CGD	7001-110-215
DROP IN GRATE	LIGHT DUTY	1907DI	7001-110-074

NOTE: CONTRACTOR TO PROVIDE APPROPRIATE WATERTIGHT ADAPTER FOR A-2000 PIPE.

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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DRAWN BY	EBC	MATERIAL	
DATE	04-03-06		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	03-14-16		
DWG SIZE	A	SCALE 1:30	SHEET 1 OF 1

Nyloplast
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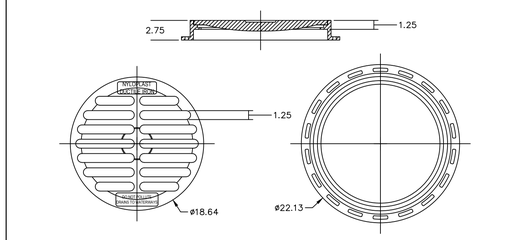
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: 18 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-191 REV E

1899CGS

APPROX. DRAIN AREA = 116.72 SQ IN
APPROX. WEIGHT WITH FRAME = 68.50 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-029

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DRAWN BY	EBC	MATERIAL	DUCTILE IRON
DATE	3-8-06		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	3-13-10		
DWG SIZE	A	SCALE 1:10	SHEET 1 OF 1

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FAX (770) 932-2490
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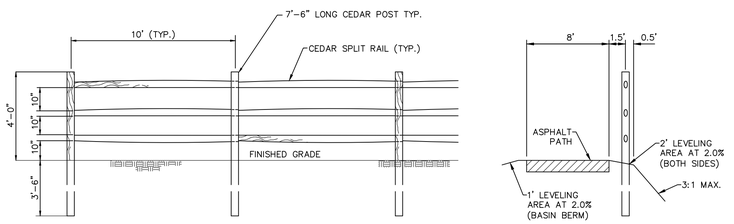
TITLE: 18 IN STANDARD GRATE ASSEMBLY - TYPE C

DWG NO. 7001-110-213 REV C

NYLOPLAST 18" DRAIN BASIN DETAIL
(NOT TO SCALE)



NOTES:

1. ALL RAILS AND POSTS TO BE CEDAR. POSTS TO BE SET IN CONCRETE.

3-RAIL SPLIT RAIL FENCE DETAIL
(NOT TO SCALE)

PRELIMINARY
NOT FOR CONSTRUCTION

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Valley Forge, Pennsylvania

REV/	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

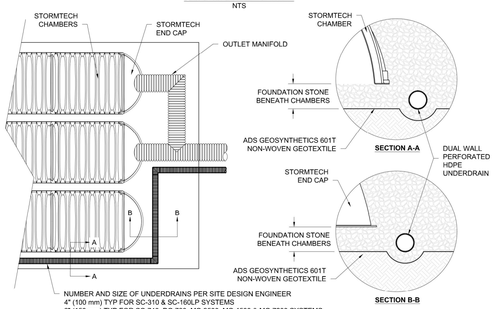
CONSTRUCTION DETAILS 5

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

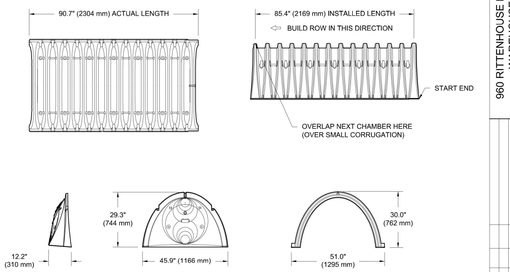
DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-905
39 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-901 CONSTRUCTION DETAILS.dwg, 11/3/2023 8:48 AM, Robert Dzurenda

UNDERDRAIN DETAIL
NTS



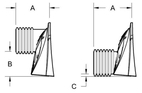
SC-740 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740ECEZ*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740ECEZ THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

960 RITTENHOUSE ROAD WAREHOUSE
LOWER PROVIDENCE TWP, PA, USA
DATE: 09/21/23 DRAWN: SVO
PROJECT #: S374921 CHECKED: JPR

DESCRIPTION	DRW.	CHK.	DATE
THE CONTRACTOR SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE SITE DESIGN ENGINEER OF ANY DISCREPANCIES BETWEEN THIS DRAWING AND THE SITE SPECIFIC PLAN.			

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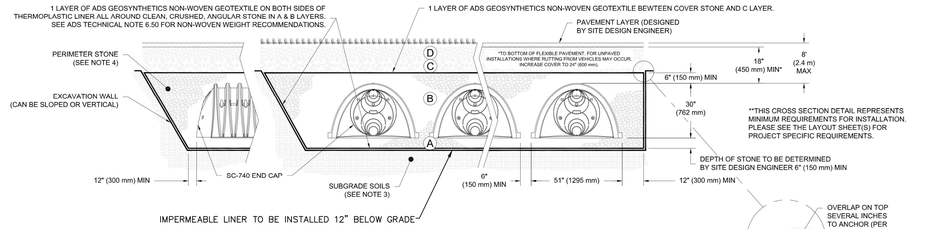
SHEET 5 OF 5

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

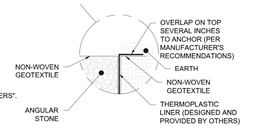
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



THERMOPLASTIC LINER DETAIL

960 RITTENHOUSE ROAD WAREHOUSE
LOWER PROVIDENCE TWP, PA, USA
DATE: 09/21/23 DRAWN: XXX
PROJECT #: S374921 CHECKED: JPR

DESCRIPTION	DRW.	CHK.	DATE
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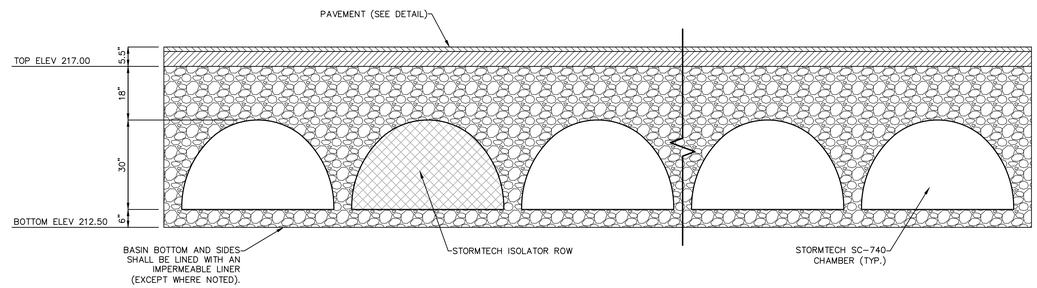
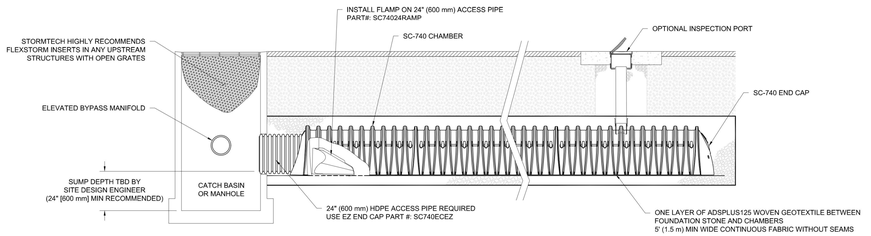
SHEET 3 OF 5



UNDERGROUND BASIN 1 DETAILS
SCALE: 1" = 2'



SC-740 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

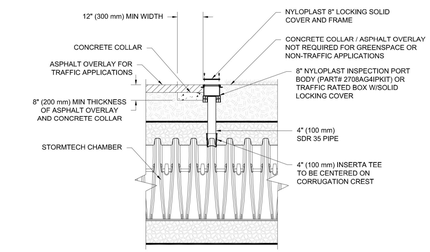
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)
NTS

960 RITTENHOUSE ROAD WAREHOUSE
LOWER PROVIDENCE TWP, PA, USA
DATE: 09/21/23 DRAWN: SVO
PROJECT #: S374921 CHECKED: JPR

DESCRIPTION	DRW.	CHK.	DATE
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SHEET 4 OF 5

SERIAL NO. 20222781727
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Pennsylvania One Call System, Inc
1-800-242-1776

PRELIMINARY
NOT FOR CONSTRUCTION

REL DESIGN, INC.,
Architects & Engineers
Planning . Design
Valley Forge, Pennsylvania

REV.	DATE	DESCRIPTION
B	11/03/23	TOWNSHIP RESUBMISSION
A	09/22/23	TOWNSHIP SUBMISSION

CONSTRUCTION DETAILS 6

CLIENT: 960 RITTENHOUSE ROAD ASSOCIATES, LLC
PROJECT: 960 RITTENHOUSE ROAD WAREHOUSE
LOCATION: AUDUBON, MONTGOMERY COUNTY, PA

DRAWN: RAD
A/E: WRM
Q/C: WRM
SCALE: AS SHOWN
WORK ORDER NO.: 2324
DRAWING NO.: C-906
40 OF 40

Q:\2023\2324 - Farmhouse Development\Civil\CAD\C-901 CONSTRUCTION DETAILS.dwg, 11/3/2023 8:48 AM, Robert Daurenda