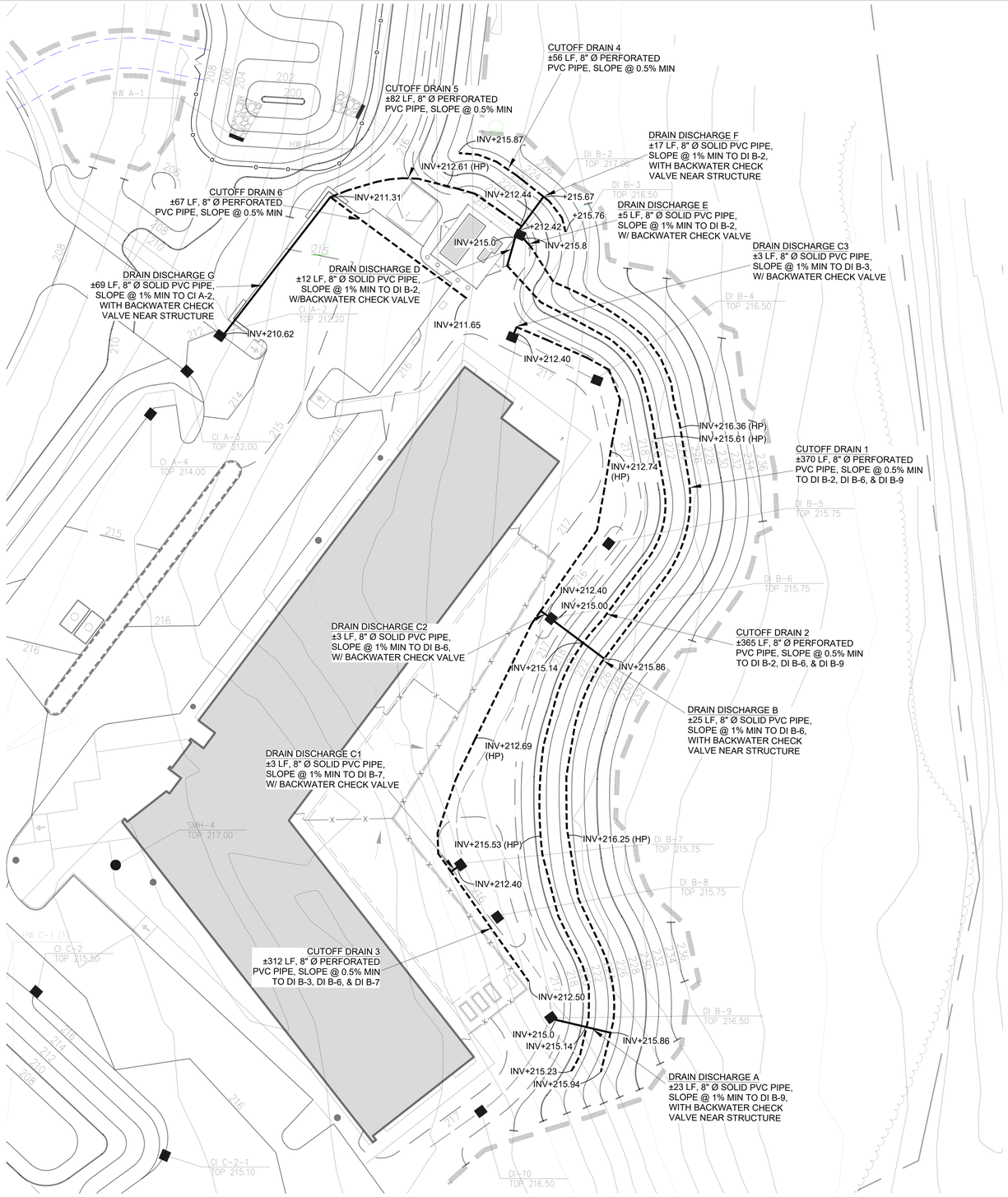


SLOPE CUTOFF DRAIN LOCATION PLAN
SCALE: 1" = 20'

CUTOFF DRAIN SCHEDULE

DRAIN NO.	APPROXIMATE LENGTH	PIPE DIAMETER	MINIMUM TRENCH WIDTH (W) (3)	MINIMUM TRENCH HEIGHT (H) (1,2)
1	370 LF	8"	3'-0"	5'-0"
2	365 LF	8"	2'-6"	3'-0"
3	312 LF	8"	2'-6"	3'-0"
4	56 LF	8"	3'-0"	5'-0"
5	82 LF	8"	2'-6"	3'-0"
6	67 LF	8"	2'-6"	3'-0"

NOTES:

(1) THE TRENCHES FOR DRAINS 1 AND 4 ARE EXPECTED TO BE THE MINIMUM HEIGHT OF 5'-0" FOR THE MAJORITY OF THE DRAIN LINES. HOWEVER, THE TRENCHES ARE ALSO EXPECTED TO BE INSTALLED TO AT LEAST 1'-0" ABOVE THE GROUNDWATER TABLE. IN AREAS, THE TRENCH HEIGHT WILL EXCEED 5'-0".

(2) THE TRENCHES FOR DRAINS 2, 3, 5, AND 6 ARE EXPECTED TO BE 3'-0" IN HEIGHT, BUT MAY BE SLIGHTLY LESS THAN 3'-0" IN HEIGHT IN AREAS SO THAT THE TOP OF THE CRUSHED STONE REMAINS AT LEAST 1'-6" BELOW THE FINISHED GRADE.

(3) THE TRENCH WIDTHS ARE MINIMUM WIDTHS. DEPENDING ON THE INSTALLATION METHOD, WIDER TRENCHES MAY BE EXCAVATED. IN THIS CASE, THE ENTIRE TRENCH SHALL BE FILLED WITH CLEAN CRUSHED STONE THAT IS WRAPPED IN GEOTEXTILE FILTER FABRIC AS SHOWN IN THE TYPICAL CUTOFF DRAIN DETAIL.

SLOPE CUTOFF DRAIN NOTES

A. GENERAL NOTES

1. GENERAL LAYOUT FOR THE SLOPE DRAINAGE PLAN WAS OBTAINED FROM DRAWINGS THAT WERE PREPARED BY JMC PLLC, BR+A CONSULTING ENGINEERS PC, WHICH INCLUDE THE FOLLOWING:

   -GRADING PLAN (C-200)
   -UTILITIES PLAN (C-300)

2. CONTRACTOR SHALL REFER TO CIVIL DRAWINGS FOR GRADING, EXTERIOR UTILITIES, AND STORMWATER STRUCTURE DETAILS.

3. CONTRACTOR SHALL HAVE AN APPROVED SET OF CONSTRUCTION DRAWINGS, SHOP DRAWINGS, AND SPECIFICATIONS ON SITE AT ALL TIMES DURING CONSTRUCTION.

4. ALL OF THE WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND CITY CODES, REGULATIONS, AND REQUIREMENTS. IN CASE OF CONFLICT, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.

5. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING CONSTRUCTION SUBMITTALS (MINIMUM) TO CARLIN-SIMPSON & ASSOCIATES LLC AND THE OWNER'S REPRESENTATIVE: 1) A DETAILED DESCRIPTION OF THE PROPOSED CONSTRUCTION PROCEDURE, INCLUDING EXCAVATION SEQUENCE AND TECHNIQUES; 2) THE DEWATERING PLAN AND THE TEMPORARY DISCHARGE LOCATION(S); 3) SHOP DRAWINGS FOR SUPPORT OF EXCAVATION (SOE) AND/OR DEWATERING SYSTEMS, IF APPLICABLE; 4) MATERIALS TO BE USED IN THE SLOPE DRAINAGE SYSTEM; AND 5) DETAILS REGARDING BACKWATER CHECK VALVES. WORK SHALL NOT BEGIN UNTIL THE APPROPRIATE SUBMITTALS HAVE BEEN RECEIVED, REVIEWED, AND ACCEPTED IN WRITING BY THE ENGINEER.

B. GROUND CONDITIONS

1. THE CONTRACTOR SHALL REFER TO THE BORING LOGS INCLUDED IN THE SUBSURFACE SOIL AND FOUNDATION INVESTIGATION REPORT DATED 20 APRIL 2022 THAT WAS PREPARED BY CARLIN-SIMPSON & ASSOCIATES LLC.

2. THE TEST BORING DATA AS SHOWN ON THE BORING LOCATION PLAN AND BORING LOGS ARE BELIEVED TO BE REPRESENTATIVE OF THE CONDITIONS LIKELY TO BE ENCOUNTERED ON THE SITE. THE BORING LOGS, HOWEVER, ARE NOT GUARANTEED TO REPRESENT ALL CONDITIONS THAT MAY BE ENCOUNTERED AND CONDITIONS MAY VARY BETWEEN BORING LOCATIONS.

3. THE CONTRACTOR SHALL MAKE ITS OWN DEDUCTIONS OF THE SUBSURFACE CONDITIONS WHICH MAY AFFECT THE METHODS OR COST OF CONSTRUCTION OF THE WORK HEREUNDER, AND AGREES THAT IT WILL MAKE NO CLAIMS FOR DAMAGES OR COMPENSATIONS, EXCEPT AS ARE PROVIDED UNDER THE AGREEMENT SHOULD THE CONTRACTOR FIND CONDITIONS DURING THE PROGRESS OF THE WORK SUBSTANTIALLY DIFFERENT FROM THOSE INDICATED ON THE BORINGS.

4. ADDITIONAL BORINGS AND OTHER EXPLORATORY OPERATIONS (I.E. TEST PITS) MAY BE PERFORMED BY THE CONTRACTOR, AT THE CONTRACTOR'S OPTION AND EXPENSE, FOLLOWING THE OWNER'S APPROVAL.

C. SLOPE CUTOFF DRAIN EXCAVATION AND DEWATERING

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK. THE CONTRACTOR SHALL SELECT THE GENERAL CONSTRUCTION SEQUENCE AND THE METHOD OF EXCAVATION.

2. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND TEMPORARY CONSTRUCTION NECESSARY, INCLUDING SUPPORT OF EXCAVATION (SOE) AND TEMPORARY DEWATERING, FOR THE SLOPE DRAIN TRENCH EXCAVATIONS.

3. IT IS EXPECTED THAT THE SLOPE DRAINS WILL BE INSTALLED PRIOR TO CONSTRUCTION OF THE STORMWATER COLLECTION SYSTEM. THEREFORE, THE CONTRACTOR MUST DETERMINE AN APPROPRIATE DISCHARGE LOCATION FOR THE SLOPE DRAINS UNTIL THE STORMWATER COLLECTION AND MANAGEMENT SYSTEMS ARE COMPLETED. THE WATER COULD BE DISCHARGED TO THE TEMPORARY SEDIMENT TRAPS OR TO ANOTHER LOCATION APPROVED BY THE SITE ENGINEER.

4. TEMPORARY CONSTRUCTION EXCAVATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH THE MOST RECENT OSHA GUIDELINES OR APPLICABLE FEDERAL, STATE OR LOCAL CODES. BASED ON THE BORING DATA, THE SITE SOILS SHOULD BE CLASSIFIED AS TYPE C AS DEFINED BY THE OSHA GUIDELINES.

5. TEMPORARY CUT SLOPES SHALL BE 1.5 HORIZONTAL TO 1.0 VERTICAL (1.5H:1.0V) OR FLATTER IN ALL AREAS UNLESS A DIFFERENT SOIL CLASSIFICATION AND SLOPE ARE AUTHORIZED BY AN OSHA-QUALIFIED INSPECTOR.

6. IT IS EXPECTED THAT THE SLOPE AREA WILL BE EXCAVATED IN VERTICAL STAGES AND THAT THE TRENCH EXCAVATIONS WILL BE COMPLETED IN HORIZONTAL SECTIONS THAT ALLOWS THE CONTRACTOR TO PROPERLY CONTROL THE INFLOW OF GROUNDWATER.

7. BEDROCK MAY BE ENCOUNTERED IN AREAS DURING THE EXCAVATIONS FOR THE CUTOFF DRAINS. THE USE OF HYDRAULIC HAMMERS MAY BE REQUIRED TO EXCAVATE THE BEDROCK.

8. DEPENDING ON THE EXCAVATION METHOD, THE RESULTING CUTOFF DRAIN TRENCHES MAY BE WIDER THAN SPECIFIED. IN THIS CASE, THE ENTIRE TRENCH WIDTH SHALL BE FILLED WITH CLEAN CRUSHED STONE THAT IS WRAPPED IN GEOTEXTILE FILTER FABRIC. THE COST FOR THE ADDITIONAL CRUSHED STONE AND FILTER FABRIC WILL BY BORNE BY THE CONTRACTOR.

9. IF REQUIRED, UP TO SIX (6) INCHES OF CRUSHED STONE MAY BE INSTALLED BELOW THE GEOTEXTILE FILTER FABRIC (AND BELOW THE PIPE INVERT ELEVATION) FOR SUBGRADE STABILIZATION.

10. IN THE EVENT THAT THE TEMPORARY CONSTRUCTION EXCAVATIONS ARE EXCAVATED BELOW THE FINISHED SLOPE ELEVATION IN ORDER TO INSTALL THE SLOPE CUTOFF DRAINS, THE FINAL SLOPE SHALL BE BACKFILLED AS FOLLOWS:

    a. THE SLOPE BACKFILL SHALL CONSIST OF EITHER ENGINEER-APPROVED ON-SITE SOIL OR IMPORTED SAND AND GRAVEL FILL. IMPORTED FILL SHALL CONTAIN LESS THAN 20% BY WEIGHT PASSING A NO. 200 SIEVE.

    b. THE FILL SHALL BE PLACED FROM THE BOTTOM UP IN LAYERS NOT EXCEEDING 12 INCHES IN THICKNESS. EACH LAYER MUST BE BENCHED INTO THE EXISTING SLOPE.

    c. EACH LAYER SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM MODIFIED DRY DENSITY (ASTM D1557). FILL LAYERS SHALL BE COMPACTED, TESTED, AND APPROVED BEFORE PLACING SUBSEQUENT LAYERS.

11. EROSION CONTROL BLANKETS OR PERMANENT TURF REINFORCEMENT MATS (TRM) ARE REQUIRED FOR ALL SLOPES STEEPER THAN 3H:1V TO PROTECT THE SLOPE FROM SURFACE EROSION. FOR ALL SLOPES, VEGETATION SHOULD BE ESTABLISHED AS SOON AS POSSIBLE AFTER CONSTRUCTION TO HELP STABILIZE THE SLOPE AND TO MINIMIZE SURFACE EROSION. REFER TO THE CIVIL PLANS AND LANDSCAPE PLANS FOR EROSION CONTROL AND VEGETATION REQUIREMENTS.

D. SLOPE CUTOFF DRAINS

1. THE SLOPE CUTOFF DRAINS SHALL CONSIST OF EIGHT (8) INCH DIAMETER RIGID WALL PERFORATED PVC PIPES WITH HOLES FACING DOWN AND SHALL BE INSTALLED AT THE LOCATIONS AND ELEVATIONS INDICATED ON THIS PLAN WITH A PIPE SLOPE OF APPROXIMATELY 0.5% (MINIMUM) UNLESS OTHERWISE NOTED.

2. THE PIPE SHALL CONSIST OF SCHEDULE 40 PVC.

3. THE CUTOFF DRAIN PIPE SHALL BE SURROUNDED BY 3/4-INCH CLEAN CRUSHED STONE THAT IS WRAPPED IN A GEOTEXTILE FILTER FABRIC (MIRAFI 140N OR EQUIVALENT). ADJACENT FILTER FABRIC PANELS SHALL OVERLAP BY A MINIMUM OF 12 INCHES. REFER TO THE TYPICAL CUTOFF DRAIN DETAIL FOR MORE INFORMATION.

4. THE CRUSHED STONE SHALL EXTEND VERTICALLY AND HORIZONTALLY AS INDICATED IN THE CROSS-SECTIONS AND CUTOFF DRAIN SCHEDULE OR TO APPROXIMATELY 18 INCHES BELOW THE FINISHED GROUND SURFACE ELEVATION, WHICHEVER IS LOWER. THE GEOTEXTILE FILTER FABRIC SHALL BE WRAPPED OVER THE STONE AND THE OVERLYING MATERIAL SHALL CONSIST OF ENGINEER APPROVED ON-SITE SOIL, IMPORTED SAND AND GRAVEL FILL, TOPSOIL, AND/OR ASPHALT PAVEMENT AS PER THE CONTRACT PLANS AND SPECIFICATIONS.

5. THE PERFORATED PVC DRAINPIPES SHALL CONNECT TO AN EIGHT (8) INCH DIAMETER RIGID WALL SOLID PVC PIPE THAT DISCHARGES TO MULTIPLE STORMWATER STRUCTURES AS INDICATED ON THE SLOPE DRAINAGE PLAN. BACKWATER CHECK VALVES ARE REQUIRED FOR EACH DISCHARGE LOCATION. THE BACKWATER CHECK VALVE TYPE IS TO BE SELECTED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE MEP ENGINEER AND GEOTECHNICAL ENGINEER.

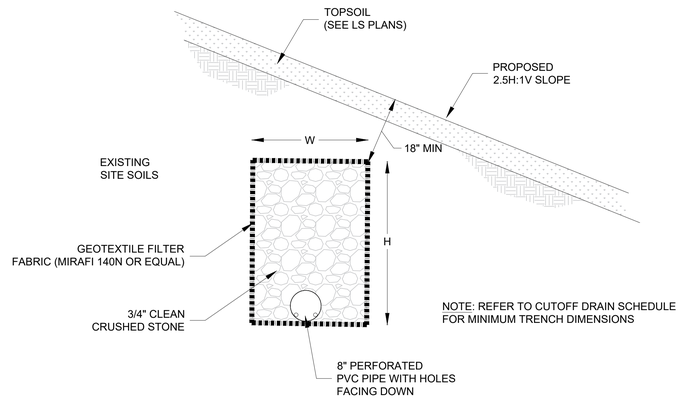
E. QUALITY ASSURANCE AND INSPECTION

1. THE OWNER SHALL RETAIN, AT THEIR COST, CARLIN-SIMPSON & ASSOCIATES LLC TO PERFORM QUALITY ASSURANCE INSPECTION AND MONITORING SERVICES RELATED TO THE INSTALLATION OF SLOPE DRAINAGE SYSTEM AND THE CONSTRUCTION OF THE SOIL SLOPES.

2. CONTRACTOR SHALL ARRANGE FOR AND SCHEDULE ALL REQUIRED INSPECTIONS.

3. THE ABOVE FIELD INSPECTION AND MONITORING WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET THE MORE STRINGENT OF THE CONSTRUCTION DRAWINGS, MANUFACTURER'S REQUIREMENTS, AND THE PROJECT SPECIFICATIONS.

4. CONTRACTOR SHALL TAKE PROMPT ACTION TO PREVENT OR CORRECT ANY CONDITIONS WHICH HAVE RESULTED OR COULD RESULT IN THE SUBMITTAL TO ENGINEER OF ITEMS OR SERVICES WHICH DO NOT CONFORM TO THE QUALITY PERFORMANCE OF THE CONTRACT, THE TESTS SPECIFIED IN THE CONTRACT AND OTHER TESTS AS MAY BE REQUIRED TO SUBSTANTIATE CONFORMANCE.



NOTE: REFER TO CUTOFF DRAIN SCHEDULE FOR MINIMUM TRENCH DIMENSIONS

TYP. SLOPE CUTOFF DRAIN DETAIL
3/4" = 1'-0"

REGENERON
REAL ESTATE & FACILITIES MANAGEMENT

777 Old Saw Mill River Road
Tarrytown, NY 10591-6707
T: 914.847.7400
F: 914.847.7991
www.regeneron.com

Building #17
Campus Expansion Child Day-care Center

899 Old Saw Mill River Road
Mount Pleasant, NY 10591

Project No. B17-DAYCARE

Architect
Gensler
1700 Broadway, Suite 400
New York, NY 10019
(212) 492-1400 Phone
(212) 492-1472 Fax

Structural Engineer

Thornton Tomasetti
120 Broadway, 15th Floor
New York, NY 10271
(917) 661-7800 Phone
(917) 661-7801 Fax

MEP / IT / Security Engineer

Cosentini Associates
498 Seventh Avenue
New York, NY 10018
(212) 615-3600 Phone
(212) 615-3700 Fax

Civil Engineer

JMC
120 Bedford Road
Armonk, NY 10504
(914) 273-5225 Phone
(914) 273-2102 Fax

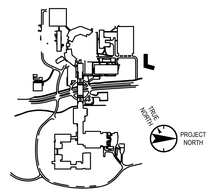
Landscape Architect

Langan
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
(212) 479-5400 Phone
(212) 479-5444 Fax

Geotechnical Engineer

Carlin-Simpson & Associates, LLC
61 Main Street
Sayreville, NJ 08872
(732) 432-5757 Phone
(732) 432-5717 Fax

Key Plan



No.	Date	Description
0	05.13.2022	100% CONSTRUCTION DOCUMENTS
0	05.20.2022	ISSUED FOR PERMIT
1	07.01.2022	100% CONSTRUCTION DOCUMENTS-1

Plot Date: 07.01.2022

Professional Seal and Signature

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Vendor Name: Carlin-Simpson & Associates LLC
Vendor Project No.: 20-166
Discipline: Geotechnical Drawn By: MRA

SLOPE DRAINAGE PLAN

Scale: AS SHOWN Floor:

GT-200

FILE: BIM 360:/006.3608.000 - Regeneron, Day Care Facility Tarrytown/Architecture - 06.3608.000 - TTCX Daycare - v2020.rvt PLOTTED ON 07.01.2022