MINOR SUBDIVISION, USE VARIANCE, AND PRELIMINARY & FINAL SITE PLANS

FOR

LOT 16 BLOCK 4200
"62 OLD LEDGEWOOD ROAD"

LOT 16.03 BLOCK 4200
"60 OLD LEDGEWOOD ROAD"

LOT 19 BLOCK 4200
"60 OLD LEDGEWOOD ROAD"

LOT 20 BLOCK 4200
"280 OLD LEDGEWOOD ROAD"

SITUATED IN :
THE TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

LIST OF PROPERTY OWNERS WITHIN 200 FT. OF LOT 16 BLOCK 4200

BLOCK	LOT	PROPERTY OWNER	BLOCK	LOT	PROPERTY OWNER
4200	16	SPEICHER, MICHAEL 62 OLD LEDGEWOOD RD FLANDERS, NJ 07836	4200	20	SPEICHER, MICHAEL W 55 NAUGHRIGHT RD LONG VALLEY, NJ 07853
4200	16.01	TURNER, MICHAEL & GANGEMI, NICOLA 12 BIRCH ST RANDOLPH, NJ 07869	4300	1	305 MANHATTAN LIMITED LIABILITY COM 45 LEWIS AVE JERSEY CITY, NJ 07306
4200	16.02	TURNER, MICHAEL & GANGEMI, NICOLA 12 BIRCH ST RANDOLPH, NJ 07869	4300	18	BOROUGH OF NETCONG 23 MAPLE AVE NETCONG, NJ 07857
4200	16.03	OLD LEDGEWOOD PROPERTIES LLC 62 OLD LEDGEWOOD RD FLANDERS, NJ 07869	4300	2	305 MANHATTAN LLC 45 LEWIS AVE JERSEY CITY, NJ 07306
4200	19	UNKNOWN			

LIST OF PROPERTY OWNERS WITHIN 200 FT. OF LOT 16.03 BLOCK 4200

BLOCK	LOT	PROPERTY OWNER	BLOCK	LOT	PROPERTY OWNER
4200	16	SPEICHER, MICHAEL 62 OLD LEDGEWOOD RD FLANDERS, NJ 07836	4200	20	SPEICHER, MICHAEL W 55 NAUGHRIGHT RD LONG VALLEY, NJ 07853
4200	16.01	TURNER, MICHAEL & GANGEMI, NICOLA 12 BIRCH ST RANDOLPH, NJ 07869	4300	1	305 MANHATTAN LIMITED LIABILITY COM 45 LEWIS AVE JERSEY CITY, NJ 07306
4200	16.02	TURNER, MICHAEL & GANGEMI, NICOLA 12 BIRCH ST RANDOLPH, NJ 07869	4300	2	305 MANHATTAN LLC 45 LEWIS AVE JERSEY CITY, NJ 07306
4200	16.03	OLD LEDGEWOOD PROPERTIES LLC 62 OLD LEDGEWOOD RD FLANDERS, NJ 07836	4300	3	MOONEY, GEORGE H & GRACE 47 OLD LEDGEWOOD RD FLANDERS, NJ 07836
4200	19	UNKNOWN			

LIST OF PROPERTY OWNERS WITHIN 200 FT. OF LOT 19 BLOCK 4200

BLOCK	LOT	PROPERTY OWNER	BLOCK	LOT	PROPERTY OWNER
4200	16	SPEICHER, MICHAEL 62 OLD LEDGEWOOD RD FLANDERS, NJ 07836	4200	20	SPEICHER, MICHAEL W 55 NAUGHRIGHT RD LONG VALLEY, NJ 07853
4200	16.03	OLD LEDGEWOOD PROPERTIES LLC 62 OLD LEDGEWOOD RD FLANDERS, NJ 07836	4300	1	305 MANHATTAN LIMITED LIABILITY COM 45 LEWIS AVE JERSEY CITY, NJ 07306
4200	19	UNKNOWN	4300	18	BOROUGH OF NETCONG 23 MAPLE AVE NETCONG, NJ 07857

LIST OF PROPERTY OWNERS WITHIN 200 FT. OF LOT 20 BLOCK 4200

BLOCK	LOT	PROPERTY OWNER	BLOCK	LOT	PROPERTY OWNER
4200	16	SPEICHER, MICHAEL 62 OLD LEDGEWOOD RD FLANDERS, NJ 07836	4200	16.03	OLD LEDGEWOOD PROPERTIES LLC 62 OLD LEDGEWOOD RD FLANDERS, NJ 07869
4200	16.02	TURNER, MICHAEL & GANGEMI, NICOLA 12 BIRCH ST RANDOLPH, NJ 07869	4200	19	UNKNOWN
			4200	20	SPEICHER, MICHAEL W 55 NAUGHRIGHT RD LONG VALLEY, NJ 07853

LIST OF PUBLIC UTILITIES

BRUCE D. SMITH
HACKETTSTOWN MUNICIPAL
UTILITIES AUTHORITY
PO BOX 450
HACKETTSTOWN, NJ 07840

R. ALBANESE
NEW JERSEY NATURAL GAS
1415 WYCKOFF ROAD
WALL, NJ 07719

BRUCE REYNOLDS
COLUMBIA GAS TRANSMISSION CORP
1470 POORHOUSE ROAD
DOWNINGTOWN, PA 19335-3642

MT. OLIVE TOWNSHIP
WATER & SEWER DEPT
PO BOX 450
204 FLANDERS-DRAKESTOWN RD
MT. OLIVE, NJ 07828

NJ DEPT OF TRANSPORTATION
1035 PARKWAY DR CN 600
TRENTON, NJ 08625

PUBLIC SERVICE
ELECTRIC & GAS COMPANY
MANAGER-CORPORATE PROPERTIES
80 PARK PLAZA, T6B
NEWARK, NJ 07102

NEW JERSEY- AMERICAN WATER CO. INC
PO BOX 5627
CHERRY HILL, NJ 08034

APPLIED WASTEWATER MGMT
2 CLERICO LN
HILLSBOROUGH, NJ 08844

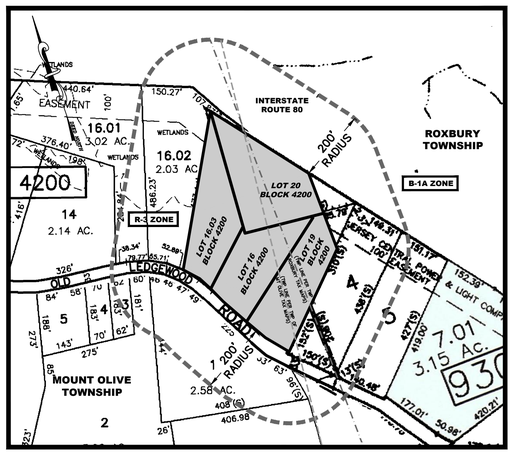
SHEET INDEX

BOARD APPROVAL BOX:

CHAIRMAN — DATE

ENGINEER — DATE

SECRETARY — DATE



KEY MAP

GRAPHIC SCALE

-200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

GENERAL NOTES

1.) APPLICANT/OWNER: MICHAEL SPEICHER
280 OLD LEDGEWOOD ROAD
FLANDERS, N.J. 07836
(973) 219-0692

2.) THE SUBJECT PROPERTIES ARE KNOWN AS LOTS 16, 16.03, 19 & 20 BLOCK 4200 AS SHOWN ON SHEET 42 OF THE TOWNSHIP OF MOUNT OLIVE TAX MAPS. LOT 16 BLOCK 4200 CONTAINS 41,964 S.F. OR 0.96 ACRES. LOT 16.03 BLOCK 4200 CONTAINS 50,609 S.F. OR 1.16 AC. LOT 19 BLOCK 4200 CONTAINS 44,531 S.F. OR 1.02 ACRES. LOT 20 BLOCK 4200 CONTAINS 51,773 S.F. OR 1.19 ACRES. THEIR COMBINED TOTAL AREA IS 188,877 S.F. OR 4.34 AC.

3.) LOTS 19 & 20 BLOCK 4200 WERE PREVIOUSLY RECONFIGURED PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY AND FINAL SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA-20-004, APPROVED 5/9/22, MEMORIALIZED 7/11/22. SUBDIVISION PLAT TO BE FILED AFTER FINAL APPROVAL FROM ROXBURY TWP.

4.) LOCATIONS AND TOPOGRAPHY TIE IN PER FIELD WORK PERFORMED BY CIVIL ENGINEERING, INC., ON 12/29/14-01/12/15. VERTICAL DATUM (NAVD88) ESTABLISHED BY GLOBAL POSITIONING METHODOLOGY.

5.) DUE TO THE CONFLICTING NATURE OF THE TOWNSHIP LINES AS THEY CROSS LOTS 16, 19, AND 20 IN MOUNT OLIVE AND LOT 4 IN ROXBURY TOWNSHIP, A NEW MUNICIPAL ENFORCEMENT LINE BETWEEN MOUNT OLIVE TOWNSHIP AND ROXBURY TOWNSHIP HAS BEEN AGREED TO. THE LINE IS SHOWN PER MUNICIPAL AGREEMENT PLANS, PREPARED BY CIVIL ENGINEERING INC., JAMES G GLASSON, NJPE #37703, DATED 5/12/21, LAST REVISED 7/28/21. LINE APPROVED BY MOUNT OLIVE TOWNSHIP RESOLUTION #302, ADOPTED 11/9/21. LINE APPROVED BY ROXBURY TOWNSHIP RESOLUTION #2021-328, ADOPTED 12/14/21.

6.) WETLANDS FLAGS A0-A11 AS DELINEATED BY WANDER ECOLOGICAL CONSULTANTS AND LOCATED BY CIVIL ENGINEERING INC., ON 4/28/21.

7.) WETLANDS FLAGS W1-W6 AS DELINEATED BY WANDER ECOLOGICAL CONSULTANTS AND LOCATED BY CIVIL ENGINEERING INC., ON 4/28/21.

8.) WETLANDS FLAGS A0-A11 & W1-W6 (AND ASSOCIATED BUFFERS) SHOWN ON PLANS PER 8/22/22 NJDEP FRESHWATER WETLANDS LETTER OF INTERPRETATION, LINE VERIFICATION FILE NO. 1400-15-0001.1, ACTIVITY NUMBER: FWW21001.

9.) WATER IS CURRENTLY SUPPLIED TO THE EXISTING DWELLING ON LOT 16 BLOCK 4200 (MOUNT OLIVE) BY AN EXISTING ON SITE WELL.

10.) SANITARY SEWERAGE IS PROVIDED TO THE EXISTING DWELLING BY A PRIVATE SEPTIC DISPOSAL SYSTEM, LOCATED IN THE REAR YARD. THIS SYSTEM WILL BE REMOVED AND/OR ABANDONED IN PLACE AND A NEW SYSTEM IS PROPOSED TO SUPPORT BOTH THE PROPOSED NEW BUILDING AND THE EXISTING CONVERTED DWELLING.

11.) ELECTRICAL, TELEPHONE & CABLE SERVICE IS PROVIDED BY EXISTING OVERHEAD CONNECTIONS TO THE EXISTING UTILITY POLE LOCATED WITHIN THE OLD LEDGEWOOD ROAD RIGHT OF WAY.

12.) REFUSE PICKUP TO BE CONTRACTED WITH A PRIVATE HAULER.

13.) NO SOIL SHALL BE REMOVED FROM THE SITE WITHOUT PRIOR APPROVAL FROM THE MORRIS COUNTY SOIL CONSERVATION DISTRICT AND THE TOWNSHIP ENGINEER.

14.) ALL SOIL EROSION AND SEDIMENT CONTROL PROCEDURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH NJ STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.

15.) CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO ANY CONSTRUCTION.

16.) CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE SAFETY CODES. APPLICABLE SAFETY CODES SHALL MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO OF THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S "OCCUPATIONAL SAFETY AND HEALTH STANDARDS "(OSHA),"SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" OF THE STATE OF NEW JERSEY, DEPARTMENT OF LABOR AND INDUSTRY, BUREAU OF ENGINEERING SAFETY; "CONSTRUCTION SAFETY CODE", AND "MAINTENANCE, CONSTRUCTION AND DEMOLITION," AND "BUILDING CODE".

17.) ALL SOIL TESTING FOR STRUCTURAL COMPONENTS TO BE DONE BY OTHERS. THIS INCLUDES BUT IS NOT LIMITED TO STRUCTURAL STABILITY, FOOTING DESIGN, PRESENCE OR ABSENCE OF BURIED OR UNSUITABLE MATERIAL AND DEPTH TO ROCK. SITE DESIGN ENGINEER ACCEPTS NO LIABILITY FOR LOST TIME OR ADDITIONAL EXPENSE DUE TO CHANGES OCCURRING FROM AFORESAID CONDITIONS.

18.) BUILDER/OWNER/CONTRACTOR OR AUTHORIZED REPRESENTATIVE ACCEPTS RESPONSIBILITY FOR BUILDING ELEVATIONS SHOWN ON APPROVED ENGINEERING DESIGN PLANS. IF CHANGES ARE REQUESTED ONCE EXCAVATION HAS BEGUN, THE SITE DESIGN ENGINEER MUST BE NOTIFIED IMMEDIATELY. THE ENGINEER ACCEPTS NO LIABILITY FOR ANY LOST TIME OR ADDITIONAL EXPENSE DUE TO ELEVATION CHANGES OCCURRING FROM FIELD MODIFICATIONS.

19.) AS BUILT PLAN TO BE COMPLETED & SUBMITTED PRIOR TO REQUESTING A FINAL CERTIFICATE OF OCCUPANCY.

PROPOSAL

THE EXISTING LOTS (LOTS 16, 16.03, 19 & 20 BLOCK 4200) ARE LOCATED ON OLD LEDGEWOOD ROAD, IN THE R-3 RESIDENTIAL ZONE. THE FOUR CONNECTING LOTS HAVE ALL BEEN DEVELOPED, EITHER PARTIALLY OR FULLY. LOT 16 BLOCK 4200 WAS FULLY DEVELOPED AS A RESIDENTIAL USE WITH AN EXISTING ONE AND A HALF STORY DWELLING (1,079 S.F. FOOTPRINT) AND PAVED DRIVEWAY (3,582 S.F.). THE REMAINING THREE LOTS HAVE ALL BEEN PARTIALLY DEVELOPED WITH UNAPPROVED GRAVEL AREAS WITH NO OTHER STRUCTURES. LOT 16.03 BLOCK 4200 CONTAINS A GRAVEL AREA THAT CONNECTS TO THE PAVED DRIVEWAY OF LOT 16. LOTS 19 & 20 BLOCK 4200 EACH CONTAIN LARGE GRAVEL AREAS THAT ARE CONNECTED TO LOT 4 BLOCK 9303 (ROXBURY TOWNSHIP), WHICH IS THE PLACE OF BUSINESS OF "SERVICE TIRE TRUCK CENTERS". THIS CONNECTION PROVIDES THE ONLY ACCESS POINT TO OLD LEDGEWOOD ROAD FROM THE GRAVEL AREAS ON LOTS 19 & 20. WHILE THESE LOTS ARE IN A RESIDENTIAL ZONE, THE SURROUNDING LOTS IN THE AREA HAVE BEEN DEVELOPED AS COMMERCIAL BUSINESSES THAT INCLUDE THE PREVIOUSLY MENTIONED SERVICE TIRE TRUCK CENTERS, ALONG WITH VERIZON, GEORGE L. MOHR EXCAVATING, AND WEST CHESTER MACHINERY & SUPPLY.

THE OWNER WISHES TO CONSOLIDATE LOTS 16, 16.03, 19 & 20 BLOCK 4200 INTO ONE SINGLE LOT AND REDEVELOP THOSE LOTS INTO THE NEW HOME OF SPEICHER EXCAVATING, INC. THE EXISTING INGRESS/EGRESS CONNECTION TO OLD LEDGEWOOD ROAD THROUGH LOT 4 BLOCK 9303) WILL BE REMOVED, AND A NEW ACCESS DRIVEWAY WILL BE CONSTRUCTED OFF OF A REALIGNED AND REGRADED SECTION OF OLD LEDGEWOOD ROAD. THE EXISTING DWELLING WILL BE RENOVATED (WITH NO CHANGE TO FOOTPRINT) INTO THE OFFICE FOR SPEICHER EXCAVATING, INC. AND A NEW WAREHOUSE BUILDING (10,010 S.F.) IS PROPOSED. THE WAREHOUSE WILL BE USED FOR EQUIPMENT STORAGE AND MAINTENANCE AND BE ACCESSIBLE FROM OLD LEDGEWOOD ROAD THROUGH A NEW COMMERCIAL DRIVEWAY AND PARKING LOT. THE PARKING LOT WILL CONNECT BOTH BUILDINGS AND PROVIDE PARKING FOR BOTH. THE REAR GRAVEL PARKING LOT BEHIND THE NEW WAREHOUSE WILL PROVIDE STORAGE FOR HEAVY MACHINERY AND MATERIALS.

THE EXISTING WELL WILL REMAIN TO PROVIDE WATER TO THE EXISTING DWELLING AND WILL ALSO BE USED TO SUPPLY WATER TO THE PROPOSED NEW BUILDING. THE EXISTING SEPTIC SYSTEM FOR THE ONE AND A HALF STORY DWELLING WILL BE REMOVED AND/OR ABANDONED IN PLACE AND A NEW COMBINED SYSTEM IS PROPOSED FOR BOTH BUILDINGS. A NEW UTILITY LINE WILL BE RUN UNDERGROUND TO THE NEW ACCESSORY WAREHOUSE FROM AN EXISTING POLE IN THE OLD LEDGEWOOD ROAD RIGHT OF WAY. A NEW STORMWATER MANAGEMENT SYSTEM CONSISTING OF CATCH BASINS, MANHOLES AND AN UNDERGROUND STORM DRAINAGE SYSTEM (UNDER THE PROPOSED PARKING LOT) IS PROPOSED TO HANDLE STORMWATER RUNOFF. THE SITE WILL BE FINISHED WITH EXTERIOR LIGHTING FOR THE PARKING LOTS AND NEW BUILDING, AND LANDSCAPING. THIS USE WILL REQUIRE BULK VARIANCES AND A USE VARIANCE FOR APPROVAL.

BUSINESS NOTES

SPEICHER EXCAVATING, INC. IS COMMERCIAL EXCAVATING CONTRACTOR THAT OPERATES IN THE TRI STATE AREA. THE COMPANY CURRENTLY HAS 50 EMPLOYEES AND HAS EMPLOYEES ON THE PROPERTY FROM 6AM TO 6PM, MONDAY THROUGH FRIDAY WITH OCCASIONAL HOURS ON SATURDAY. FIVE EMPLOYEES WILL WORK IN THE OFFICE AND 4 MORE WILL WORK IN THE BUILDING/YARD AS EITHER MECHANICS OR DRIVERS. ALL OTHER EMPLOYEES REPORT DIRECTLY TO JOBSITES ON ANY GIVEN DAY. ANY EMPLOYEE TRAFFIC TO THE SITE IS BY APPOINTMENT ONLY.

THE FRONT PAVED PARKING LOT WILL BE USED BY THE OFFICE EMPLOYEES AND VISITORS, WITH 9 SPACES ALLOTED FOR THE 4 EMPLOYEES, PLUS ANY PUBLIC TRAFFIC. THE REAR PAVED PARKING AREA CONTAINS 17 SPACES ALLOTED FOR THE 4 WAREHOUSE EMPLOYEES/DRIVERS, ANY OTHER SPACES ARE AVAILABLE FOR EMPLOYEE VEHICLES AWAITING SERVICE OR FOR TEMPORARY PARKING OF EMPLOYEES PICKING UP OR DROPPING OFF MATERIALS/EQUIPMENT. THE REAR GRAVEL PARKING LOT WILL BE USED TO STORE MACHINERY AND MATERIALS. VEHICLES STORED IN THE YARD WILL INCLUDE 2 'LOWBOY' STYLE TRACTOR TRAILERS, 3 DUMP TRUCKS AND 2-3 UTILITY VEHICLES.

ZONE REQUIREMENTS

LOTS 16, 16.03, 19 & 20 ARE LOCATED IN THE R-3 RESIDENTIAL ZONE AND ARE SUBJECT TO THE FOLLOWING:

LOT:	REQUIRED	EXISTING LOT 16	EXISTING LOT 16.03	EXISTING LOT 19	EXISTING LOT 20	PROPOSED NEW LOT 16
MINIMUM LOT SIZE	1 ACRE	0.961 AC.	1.16 AC.	1.02 AC.	1.192 AC.	4.336 AC.
MINIMUM LOT WIDTH @ SETBACK	80 FT.	150.23 FT.	113.26 FT.	144.13 FT.	333.90 FT.	407.40 FT.
MAXIMUM LOT COVERAGE	30%	13.29%	3.83%	38.77%*	31.01%*	37.80%★
MAXIMUM BUILDING COVERAGE	20%	3.13%	0%	0%	0%	5.99%

PRINCIPAL BUILDING:	REQUIRED	EXISTING	EXISTING	EXISTING	EXISTING	PROPOSED
MINIMUM FRONT YARD SETBACK	40 FT.	41.62 FT.	N/A	N/A	N/A	41.62 FT.
MINIMUM SIDE YARD SETBACK	20 FT.	90.26 FT.(L)/25.61 FT.(R)	N/A	N/A	N/A	194.50 FT.(L)/162.00 FT.(R)
MINIMUM REAR YARD SETBACK	40 FT.	155.70 FT.	N/A	N/A	N/A	373.40 FT.
MAXIMUM HEIGHT	35 FT.	26.15 FT.	N/A	N/A	N/A	23.04 FT.

ACCESSORY STRUCTURE:	REQUIRED	EXISTING	EXISTING	EXISTING	EXISTING	PROPOSED
MINIMUM FRONT YARD SETBACK	60 FT.	N/A	N/A	N/A	N/A	218.7 FT.
MINIMUM OTHER YARD SETBACK	1.5 FT. X HEIGHT	N/A	N/A	N/A	N/A	79.4 FT. (R)/178.5 FT. (L)
MINIMUM SETBACK TO PRINCIPAL STRUCTURE	15 FT.	N/A	N/A	N/A	N/A	144.7 FT.
MAXIMUM HEIGHT	15 FT.	N/A	N/A	N/A	N/A	29.37 FT.★

THE PROPOSED LOT HAS ALSO BEEN ANALYZED USING THE LI (LIGHT INDUSTRIAL) ZONING REQUIREMENTS, AS MULTIPLE SURROUNDING LOTS IN THE R-3 RESIDENTIAL ZONE HAVE BEEN DEVELOPED AS COMMERCIAL OR INDUSTRIAL USES:

LOT:	REQUIRED	PROPOSED NEW LOT 16
MINIMUM LOT SIZE	3 ACRES	4.336 AC.
MINIMUM LOT WIDTH	250 FT.	407.40 FT.
MINIMUM LOT DEPTH	250 FT.	437.87 FT.
MAXIMUM LOT COVERAGE	55%	37.80%
MAXIMUM FLOOR AREA RATIO	0.3	0.06

PRINCIPAL BUILDING:	REQUIRED	PROPOSED
MINIMUM FRONT YARD SETBACK	100 FT.	41.62 FT.★
MINIMUM SIDE YARD SETBACK	50 FT.	194.50 FT.(L)/162.00 FT.(R)
MINIMUM REAR YARD SETBACK	50 FT.	373.40 FT.
MAXIMUM HEIGHT	40 FT.	23.04 FT.

ACCESSORY STRUCTURE:	REQUIRED	PROPOSED
MINIMUM FRONT YARD SETBACK	125 FT.	218.7 FT.
MINIMUM OTHER YARD SETBACK	25 FT.	79.4 FT. (R)/178.5 FT. (L)
MINIMUM SETBACK TO PRINCIPAL STRUCTURE	25 FT.	144.7 FT.
MAXIMUM HEIGHT	15 FT.	29.37 FT. ★

*EXISTING NON-CONFORMING CONDITION
★ PROPOSED VARIANCE CONDITION
A USE VARIANCE IS REQUIRED FOR THE COMMERCIAL USE IN A RESIDENTIAL ZONE

NEW JERSEY HIGHLANDS ACT APPLICABILITY

THE SUBJECT PROPERTY IS LOCATED WITHIN THE BOUNDARIES OF THE NJ HIGHLANDS ACT "PLANNING" AREA. PROPERTIES LOCATED IN THIS AREA ARE NOT SUBJECT TO A HIGHLANDS DETERMINATION OR AN EXEMPTION.

VARIANCES REQUIRED (UNDER R-3 ZONING)

LOT:	REQUIRED	PROPOSED NEW LOT 16 BLOCK 4200
MAXIMUM LOT COVERAGE	30%	37.80%★
ACCESSORY STRUCTURE:	**REQUIRED**	**PROPOSED NEW LOT 16 BLOCK 4200**
MAXIMUM HEIGHT	15 FT.	29.37 FT.★
PROPOSED FREESTANDING SIGN		

VARIANCES REQUIRED (UNDER LI ZONING)

PRINCIPAL BUILDING:	REQUIRED	PROPOSED NEW LOT 16 BLOCK 4200
MINIMUM FRONT SETBACK	100 FT.	41.62 FT.★
ACCESSORY STRUCTURE:	**REQUIRED**	**PROPOSED NEW LOT 16 BLOCK 4200**
MAXIMUM HEIGHT	15 FT.	29.37 FT.★
PROPOSED FREESTANDING SIGN SETBACK	30 FT.	10 FT. ★
FENCE:	**REQUIRED**	**PROPOSED NEW LOT 16 BLOCK 4200**
MAXIMUM HEIGHT	6 FT.	8 FT. ★
MATERIAL IN THE FRONT YARD	NO CHAIN LINK ALLOWED	CHAIN LINK★

REQUESTED DESIGN EXCEPTIONS

- PARKING LOT BUFFER FROM STREETS AND RESIDENTIAL ZONES (NONE PROPOSED)
- GRAVEL PARKING LOT ON SIDES AND REAR OF PROPOSED BUILDING
- OUTDOOR STORAGE NOT IN AN INDUSTRIAL ZONE

PREPARED BY :

CIVIL ENGINEERING INC.

1 COVE STREET
BUDD LAKE, N.J. 07828
Telephone: (973) 426-1776
Fax: (973) 426-0716

JAMES G. GLASSON
PROFESSIONAL ENGINEER, N.J. LIC. NO. 37703

Rev. No.	Description	By	Date
1.	REVISE PER 3-11-23 BOARD ENGINEER'S REPORT, 3-10-23 DIRECTOR OF PLANNING REPORT, 3-13-23 HABITAT BY DESIGN REPORT, 10-11-22 MCSCD COMMENTS, AND 9-21-23 PUBLIC HEARING	WBB/CWH	10/27/23

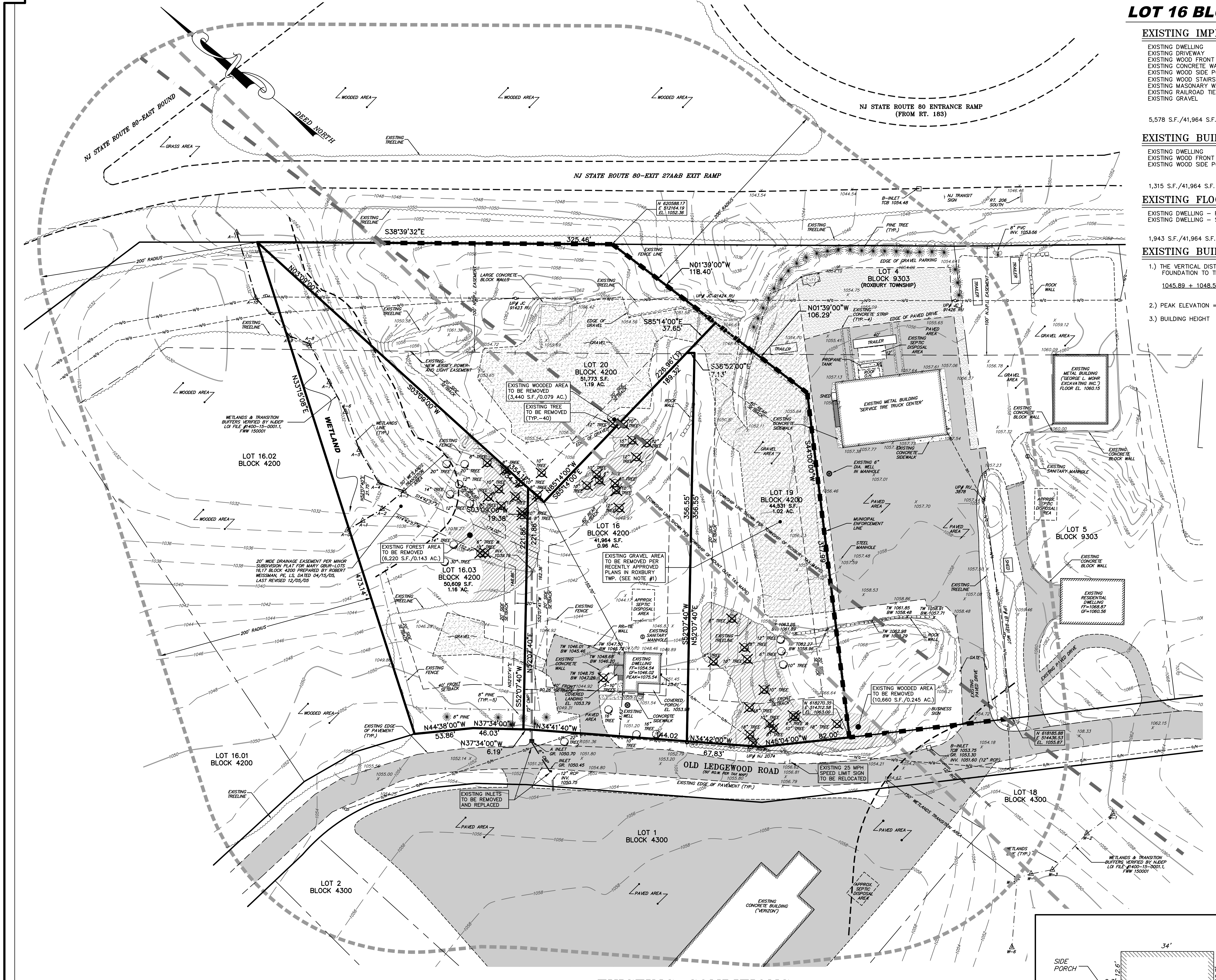
CIVIL ENGINEERING, INC.

1 COVE STREET
BUDD LAKE, N.J. 07828
Telephone: (973) 426-1776
Fax: (973) 426-0716
N.J. - C of A #24GA27922000

COVER SHEET
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'

TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332



EXISTING CONDITIONS

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

LOT 16 BLOCK 4200

EXISTING IMPERVIOUS COVERAGE

EXISTING DWELLING	1,079 S.F.
EXISTING DRIVEWAY	3,582 S.F.
EXISTING WOOD FRONT PORCH	160 S.F.
EXISTING CONCRETE WALK	232 S.F.
EXISTING WOOD SIDE PORCH	76 S.F.
EXISTING WOOD STAIRS (2)	37 S.F.
EXISTING MASONARY WALL	36 S.F.
EXISTING RAILROAD TIE WALL	24 S.F.
EXISTING GRAVEL	352 S.F.
TOTAL	5,578 S.F.

5,578 S.F./41,964 S.F. = 0.1329 OR 13.29%

EXISTING BUILDING COVERAGE

EXISTING DWELLING	1,079 S.F.
EXISTING WOOD FRONT PORCH	160 S.F.
EXISTING WOOD SIDE PORCH	76 S.F.
TOTAL	1,315 S.F.

1,315 S.F./41,964 S.F. = 0.0313 OR 3.13%

EXISTING FLOOR AREA RATIO

EXISTING DWELLING – FIRST FLOOR	1,079 S.F.
EXISTING DWELLING – SECOND FLOOR	864 S.F.
TOTAL	1,943 S.F.

1,943 S.F./41,964 S.F. = 0.046

EXISTING BUILDING HEIGHT CALCULATION

1.) THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE FIVE (5) FEET FROM THE FOUNDATION TO THE LEVEL OF THE HIGHEST POINT OF THE ROOF SURFACE.

$$\frac{1045.89 + 1048.55 + 1051.08 + 1051.06 + 1050.34}{5} = \text{EL. } 1049.38$$

2.) PEAK ELEVATION = EL. 1075.54

3.) BUILDING HEIGHT = PEAK ELEVATION – AVERAGE GRADE

= EL. 1075.54 – EL. 1049.38 = 26.15 FT.

LOT 16.03 BLOCK 4200

EXISTING IMPERVIOUS COVERAGE

EXISTING GRAVEL	1,942 S.F.

1,942 S.F./50,609 S.F. = 0.0383 OR 3.83%

LOT 19 BLOCK 4200

EXISTING IMPERVIOUS COVERAGE

EXISTING GRAVEL	17,143 S.F.
EXISTING CONCRETE BORDER WALL	124 S.F.
TOTAL	17,267 S.F.

17,267 S.F./44,531 S.F. = 0.3877 OR 38.77%

LOT 20 BLOCK 4200

EXISTING IMPERVIOUS COVERAGE

EXISTING GRAVEL	16,056 S.F.

16,056 S.F./51,773 S.F. = 0.3101 OR 31.01%

COMBINED LOTS

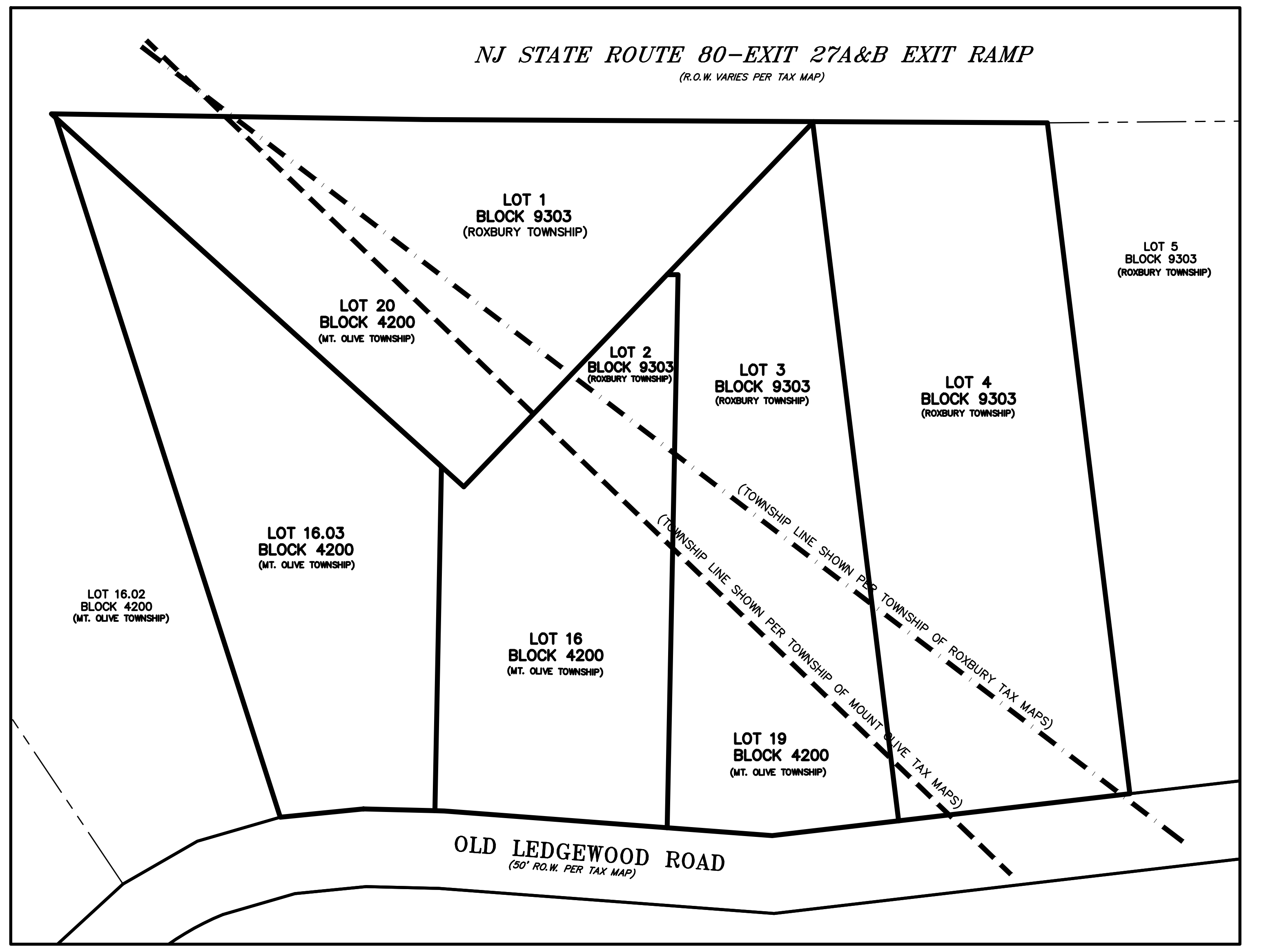
EXISTING IMPERVIOUS COVERAGE

EXISTING DWELLING	1,079 S.F.
EXISTING DRIVEWAY	3,582 S.F.
EXISTING WOOD FRONT PORCH	160 S.F.
EXISTING CONCRETE WALK	232 S.F.
EXISTING WOOD SIDE PORCH	76 S.F.
EXISTING WOOD STAIRS (2)	37 S.F.
EXISTING MASONARY WALL	36 S.F.
EXISTING RAILROAD TIE WALL	24 S.F.
EXISTING GRAVEL	35,493 S.F.
EXISTING CONCRETE BORDER WALL	124 S.F.
TOTAL	40,843 S.F.

40,843 S.F./188,877 S.F. = 0.2162 OR 21.62%

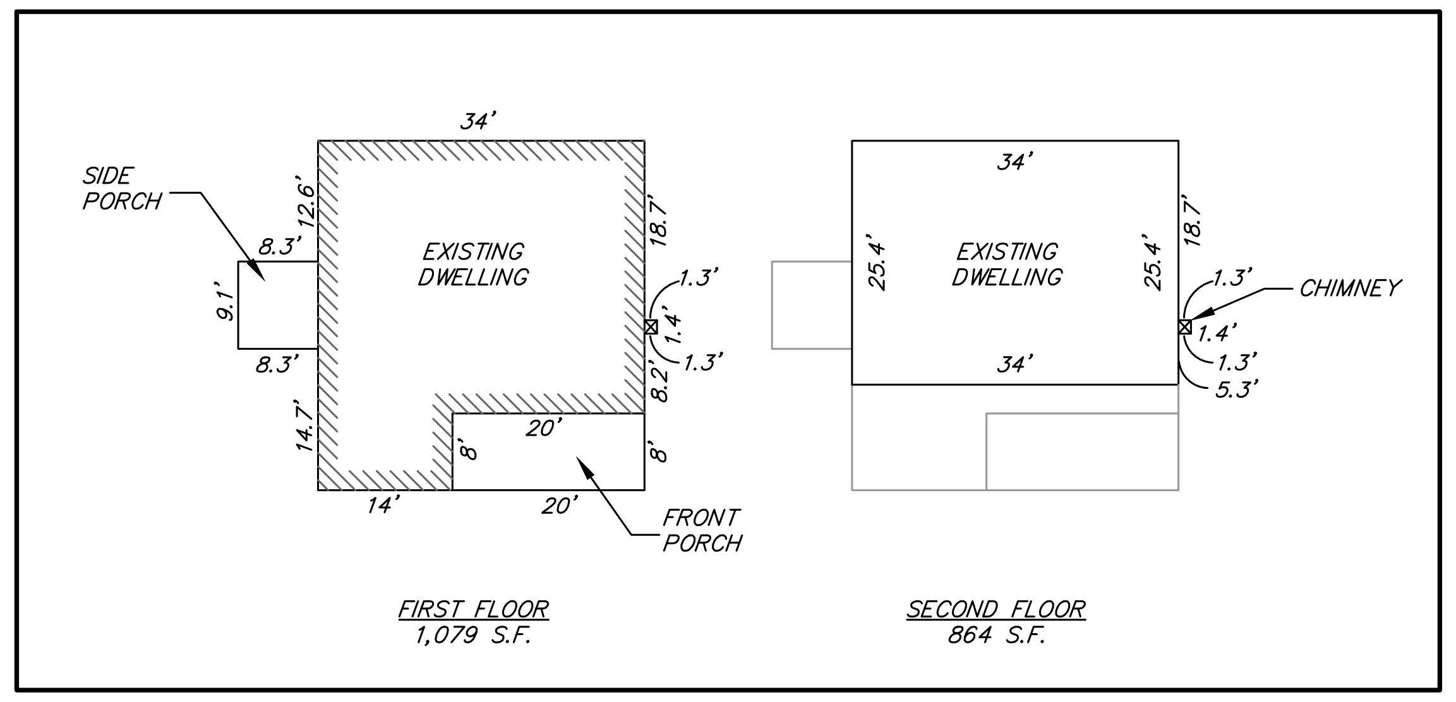
KEY

▨ AREA OF TREE CANOPY TO BE REMOVED (0.466 AC.)



LOT BOUNDARIES PRIOR TO RECENT SUBDIVISION

SCALE: 1" = 80'



EXISTING DWELLING DETAIL (LOT 16 BLOCK 4200)

SCALE: 1" = 20'

GENERAL NOTES:

1.) LOT DIMENSIONS FOR LOT 19 BLOCK 4200 MT. OLIVE TOWNSHIP, (A.K.A. LOT 3 BLOCK 9303 IN ROXBURY TOWNSHIP), LOT 20 BLOCK 4200 IN MT. OLIVE TOWNSHIP, (A.K.A. LOT 1 BLOCK 9303 IN ROXBURY TOWNSHIP) AND LOT 4 BLOCK 9303 (MT. OLIVE TOWNSHIP) PER RECENT APPROVED SITE PLAN AND SUBDIVISION PROPOSED IMPROVEMENTS PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA-20-004, APPROVED 5/9/22, MEMORIALIZED 7/11/22. SUBDIVISION PLAT TO BE FILED AFTER FINAL APPROVAL FROM ROXBURY TWP.
2.) LOT DIMENSIONS FOR LOT 16 BLOCK 4200 (MT. OLIVE TOWNSHIP) PER SURVEY PREPARED BY CIVIL ENGINEERING, INC., ROBERT H. JORDAN, Jr. NJPLS No. 34485, DATED 05/24/13, LAST REVISED 5/17/22.
3.) LOT DIMENSIONS FOR LOT 16.03 BLOCK 4200 (MT. OLIVE TOWNSHIP) PER SURVEY PREPARED BY CIVIL ENGINEERING, INC., ROBERT H. JORDAN, Jr. NJPLS No. 34485, DATED 05/24/13, LAST REVISED 5/17/22.
4.) LOCATIONS AND TOPOGRAPHY TIE IN PER FIELD WORK PERFORMED BY CIVIL ENGINEERING, INC., ON 12/29/14–01/12/15. VERTICAL DATUM ESTABLISHED BY GLOBAL POSITIONING METHODOLOGY.
5.) WETLANDS FLAGS A0–A11 AS DELINEATED BY WANDER ECOLOGICAL CONSULTANTS AND LOCATED BY CIVIL ENGINEERING INC., ON 4/28/21.
6.) WETLANDS FLAGS W1–W6 AS DELINEATED BY WANDER ECOLOGICAL CONSULTANTS AND LOCATED BY CIVIL ENGINEERING INC., ON 4/28/21.
7.) WETLANDS FLAGS A0–A11 & W1–W6 (AND ASSOCIATED BUFFERS) SHOWN ON PLANS PER 8/22/22 NJDEP FRESHWATER WETLANDS LETTER OF INTERPRETATION, LINE VERIFICATION FILE NO. 1400–15–0001.1, ACTIVITY NUMBER: FWW21001.
8.) MUNICIPAL ENFORCEMENT LINE SHOWN AS PER MUNICIPAL AGREEMENT PLANS, PREPARED BY CIVIL ENGINEERING INC., JAMES G GLASSON, NJPE #37703, DATED 5/12/21, LAST REVISED 7/28/21.
9.) ROXBURY TOWNSHIP & MOUNT OLIVE TOWNSHIP ZONE LINES PER THEIR RESPECTIVE TAX MAPS.

Robert H. Jordan Jr.
ROBERT H. JORDAN Jr.
PROFESSIONAL LAND SURVEYOR, N.J. LIC. NO. 34485

JAMES G. GLASSON
PROFESSIONAL ENGINEER, N.J. LIC. NO. 37703

Rev. No.	Description	By	Date
1.	REVISE PER 3-11-23 BOARD ENGINEER'S REPORT, 3-10-23 DIRECTOR OF PLANNING REPORT, 3-13-23 HABITAT BY DESIGN REPORT, 10-11-22 MCSCD COMMENTS, AND 9-21-23 PUBLIC HEARING	WBB/CWH	10/27/23

CIVIL ENGINEERING, INC.
1 COVE STREET
BUDD LAKE, N.J. 07828
Telephone: (973) 426-1776
Fax: (973) 426-0716
N.J. – C of A #24GA27922000

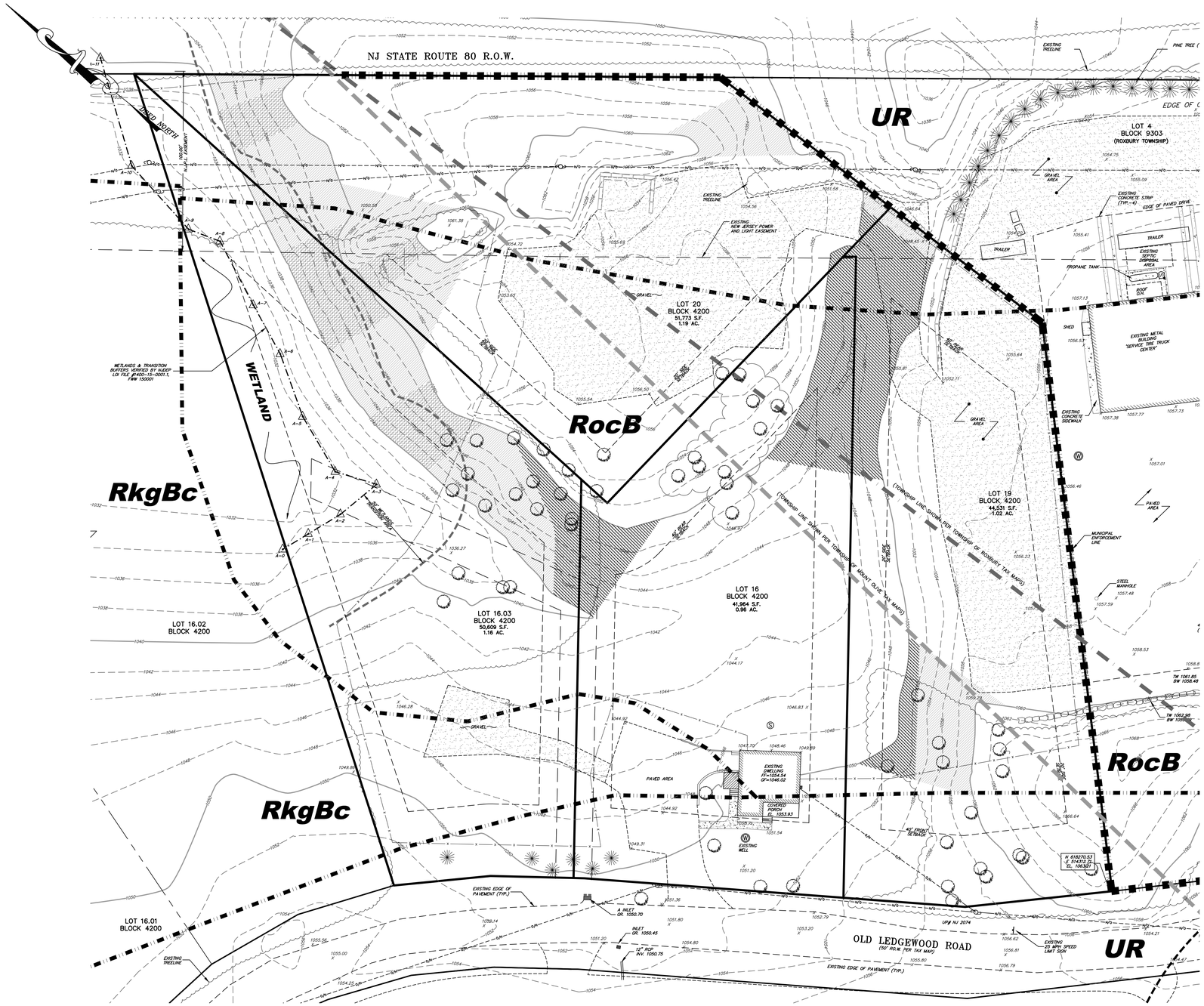
SHEET 2 OF 19

EXISTING CONDITIONS
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'

TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

L:\5332 – Speicher–Old Ledgewood Rd–Mt.Olive\dwg\Site Plan\Rev 1\5332–2 Existing Conditions Plan Rev 1.dwg
PS: Civil Inc.ctb



ENVIRONMENTAL PLAN

GRAPHIC SCALE

-30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SOIL CATEGORIES:

APPROX. SOIL BOUNDARY LINE PER USDA WEB SOIL SURVEY

UR URBAN LAND

RocB ROCKAWAY GRAVELLY SANDY LOAM, 3 TO 8 PERCENT SLOPES

RkgBc RIDGEBURY STONY LOAM, NEW JERSEY HIGHLANDS, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY

COMBINED LOTS

SLOPE CALCULATIONS

	0 – 14.9% SLOPE	158,702 S.F.
	15 – 24.9% SLOPE	25,280 S.F.
	25% AND GREATER SLOPE	4,895 S.F.

CRITICAL AREAS DISTURBANCE

	PROPOSED IMPERVIOUS COVERAGE IN AREAS OF 15–25% SLOPES	9,990 S.F.
	PROPOSED IMPERVIOUS COVERAGE IN AREAS OF >25% SLOPES	0 S.F.

TOTAL PROPOSED IMPERVIOUS COVERAGE (SEE SHEET 6) = 71,396 S.F.

9,990 S.F. / 71,396 S.F. = 13.99% OF IMPERVIOUS COVERAGE PROPOSED WITHIN MODERATE SLOPE AREA

MAXIMUM ALLOWED = 15% PER R–3 ZONING STANDARDS
= 27.5% PER LI ZONING STANDARDS

REVISE PER 3–11–23 BOARD ENGINEER'S REPORT, 3–10–23 DIRECTOR OF PLANNING REPORT, 3–13–23 HABITAT BY DESIGN REPORT, 10–11–22 MCSCD COMMENTS, 1. AND 9–21–23 PUBLIC HEARING WBB/CWH 10/27/23

Rev. No.	Description	By	Date

JAMES G. GLASSON
PROFESSIONAL ENGINEER, N.J. LIC. NO. 37703

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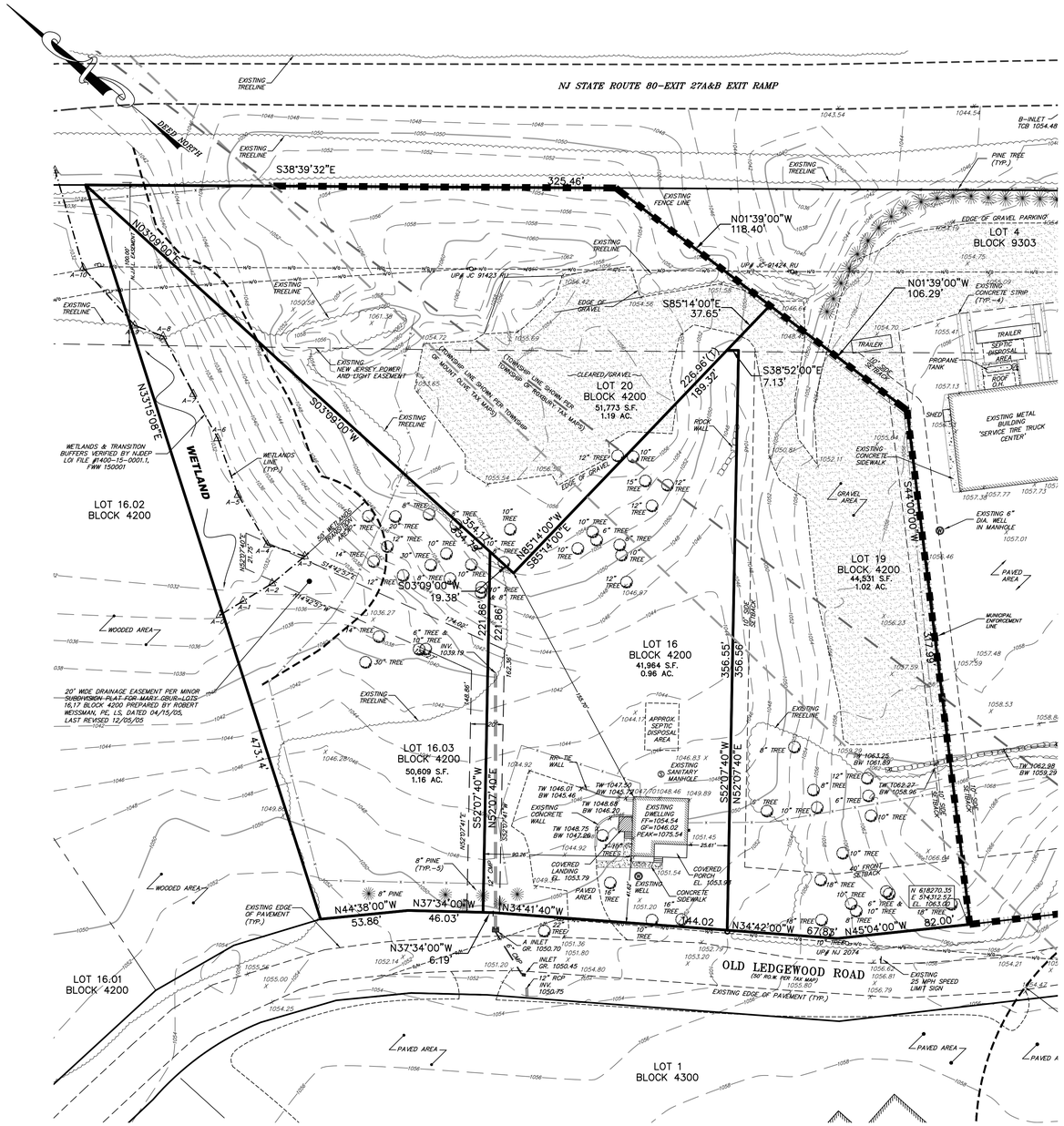
SHEET 3 OF 19

ENVIRONMENTAL PLAN
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'

TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332



EXISTING CONDITIONS

GRAPHIC SCALE

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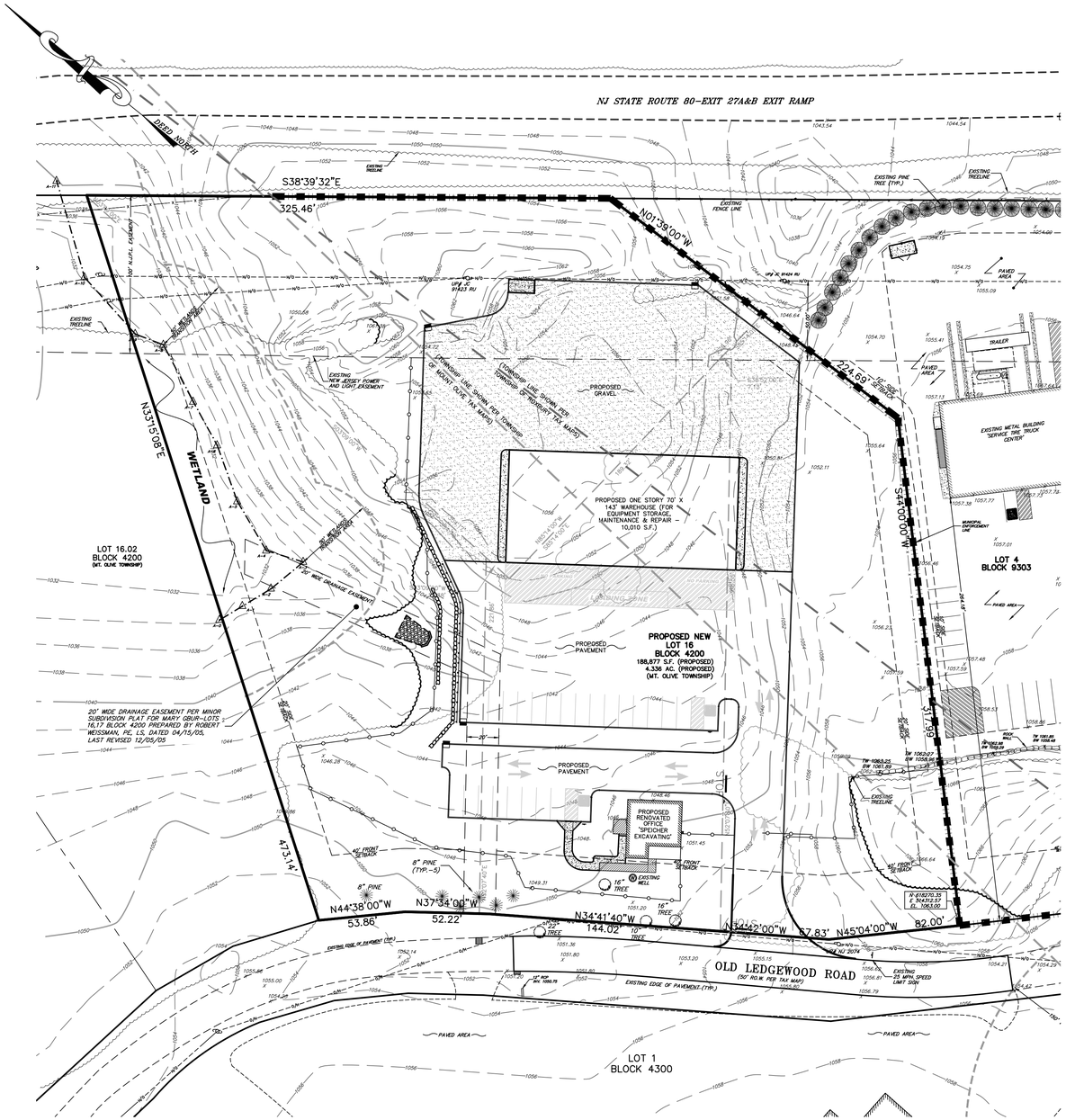
(IN FEET)
1 inch = 40 ft.



PROPOSED LAYOUT WITH LOT CONSOLIDATION

GRAPHIC SCALE

-40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOTE

CONDITIONS SHOWN ON ADJACENT LOT 4 BLOCK 9303 (ROXBURY TOWNSHIP) PROPOSED LAYOUT VIEW PER RECENT APPROVED SITE PLAN AND SUBDIVISION PROPOSED IMPROVEMENTS PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA-20-004, APPROVED 5/9/22, MEMORIALIZED 7/11/22

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ROBERT H. JORDAN Jr.
PROFESSIONAL LAND SURVEYOR, N.J. LIC. NO. 34485

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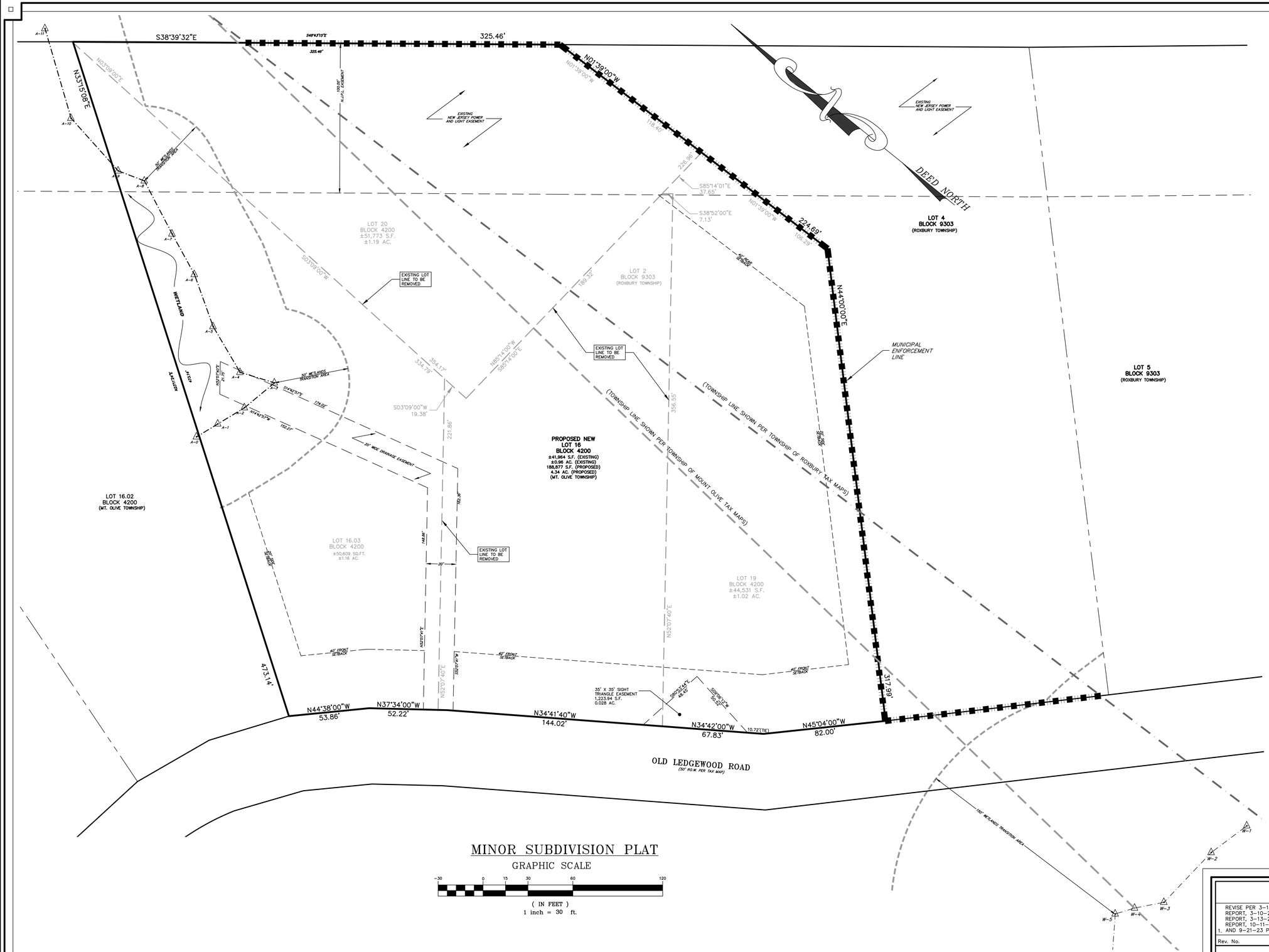
SHEET 4 OF 19

LOT CONSOLIDATION PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'

TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

L:\5332 – Speicher-Old Ledgewood Rd-Mt.Olive\dwg\Site Plan\5332-4 Lot Consolidation Plan.dwg
PS: Civil Inc.ctb



MINOR SUBDIVISION PLAT

GRAPHIC SCALE

-30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

GENERAL NOTES

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8.) ROXBURY TOWNSHIP & MOUNT OLIVE TOWNSHIP ZONE LINES PER THEIR RESPECTIVE TAX MAPS.
9.) SUBDIVISION TO BE FILED BY DEED, DESCRIPTIONS AND DEEDS TO BE PROVIDED PRIOR TO FILING.
10.) PROPOSED NEW LOT NUMBER APPROVED BY MT. OLIVE TOWNSHIP TAX ACCESSOR JOHN MARCHIONE PER EMAIL CORRESPONDENCE 11/6/19.

Rev. No.	Description	By	Date
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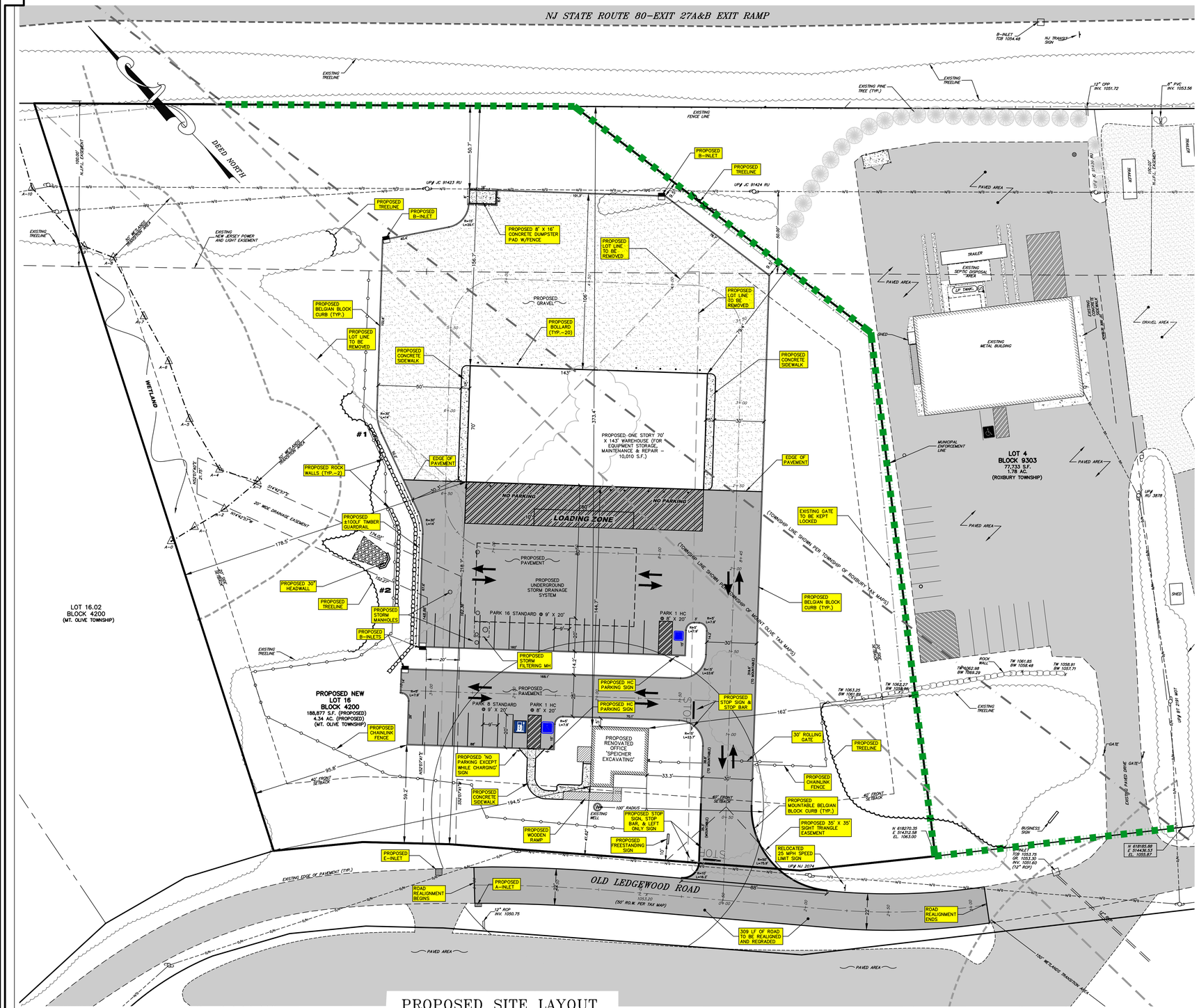
MINOR SUBDIVISION PLAT
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'

TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332



PROPOSED SITE LAYOUT

GRAPHIC SCALE

-30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

PROPOSED IMPERVIOUS COVERAGE (NEW LOT 16 BLOCK 4200)

EXISTING DWELLING	1,079 S.F.
EXISTING WOOD FRONT PORCH	160 S.F.
EXISTING WOOD SIDE PORCH	76 S.F.
PROPOSED CONCRETE SIDEWALK	393 S.F.
PROPOSED WOOD HANDICAP RAMP	192 S.F.
PROPOSED CURB	800 S.F.
PROPOSED PAVEMENT	30,902 S.F.
PROPOSED CONCRETE SIDEWALK (AT BUILDING)	692 S.F.
PROPOSED BUILDING	10,010 S.F.
PROPOSED GRAVEL	27,080 S.F.
PROPOSED CONCRETE HEADWALL	12 S.F.
TOTAL	71,396 S.F.

71,396 S.F./188,877 S.F. = 0.3780 OR 37.80%

PROPOSED BUILDING COVERAGE (NEW LOT 16 BLOCK 4200)

EXISTING DWELLING	1,079 S.F.
EXISTING WOOD FRONT PORCH	160 S.F.
EXISTING WOOD SIDE PORCH	76 S.F.
PROPOSED WAREHOUSE BUILDING	10,010 S.F.
TOTAL	11,325 S.F.

11,325 S.F./188,877 S.F. = 0.0599 OR 5.99%

PROPOSED FLOOR AREA RATIO (NEW LOT 16 BLOCK 4200)

EXISTING DWELLING – FIRST FLOOR	1,079 S.F.
EXISTING DWELLING – SECOND FLOOR	864 S.F.
PROPOSED WAREHOUSE BUILDING – FIRST FLOOR	10,010 S.F.
TOTAL	11,953 S.F.

11,953 S.F./188,877 S.F. = 0.06

COMPANY EMPLOYEES NOTE

SPEICHER EXCAVATING CURRENTLY EMPLOYS 50 PEOPLE. THE PROPOSED RENOVATED OFFICE WILL HAVE 5 FULL TIME EMPLOYEES AND THE PROPOSED NEW WAREHOUSE WILL HAVE 4 FULL TIME EMPLOYEES, PERFORMING MAINTENANCE AND REPAIRS ON THE COMPANY VEHICLES. AN ADDITIONAL 2 EMPLOYEES ARE UTILIZED AS DRIVERS AND WILL PARK AT THE SITE AND TRANSPORT MACHINERY (USING COMPANY VEHICLES) TO JOB SITES. ALL OTHER EMPLOYEES GO DIRECTLY TO JOB SITES ON A DAILY BASIS AND WILL NOT REQUIRE PARKING AT THIS SITE.

ELECTRIC VEHICLE PARKING REQUIREMENTS (PER STATEWDE MUNICIPAL ELECTRIC VEHICLE ORDINANCE)

PROPOSED NUMBER OF PARKING SPACES	NUMBER OF EV/MR PARKING SPACES REQUIRED	NUMBER OF EV/MR ACCESSIBLE PARKING SPACES REQUIRED
1–50	1	0
51–75	2	0
76–100	3	0
101–150	4	1
151+	4% (MIN.) OF TOTAL	5% (MIN.) OF TOTAL

THIS CATEGORY APPLIES

ELECTRIC VEHICLE PARKING SPACE NOTES

* ALL PROPOSED ELECTRIC VEHICLE PARKING SPACES (DESIGNATED AS EV ON PLANS) SHALL BE BE EITHER 'EVSE' (ELECTRIC VEHICLE SUPPLY/SERVICE EQUIPMENT) SPACES WITH ALL CHARGING EQUIPMENT/CABLES WIRED AND INSTALLED OR 'MAKE READY' SPACES WITH ALL ELECTRICAL INFRASTRUCTURE PRE-WIRED TO THE PROPOSED PARKING SPACE LOCATION, FOR LEVEL 2 EVSE AND DIRECT CURRENT FAST CHARGERS. ALL 'MAKE READY' PARKING SPACES TO BE FULLY UPGRADED TO 'EVSE' SPACES WITHIN 6 YEARS OF INITIAL CERTIFICATE OF OCCUPANCY FOR PROPOSED BUSINESS.

PARKING REQUIREMENTS

PARKING SPACE SIZE – 9 FT. X 20 FT OR 10 FT. X 18 FT.

EXISTING BUILDING – 1,943 G.F.A.

FIRST FLOOR – OFFICE AREA (1,079 S.F.)	4.5 P.S. PER 1,000 S.F.	1,0794 S.F. / 1,000 S.F. X 4.5	=	5 SPACES REQUIRED
SECOND FLOOR – STORAGE AREA (864 S.F.)	NONE REQUIRED		=	0 SPACES REQUIRED

PROPOSED BUILDING – 10,010 G.F.A.

FIRST FLOOR – WAREHOUSE (10,010 S.F.)	1 P.S. PER EMPLOYEE	4 EMPLOYESS	= 4 SPACES REQUIRED
		TOTAL	9 SPACES REQUIRED

PARKING PROVIDED

VAN ACCESSIBLE HANDICAP SPACE – 8 FT. X 20 FT.	2 SPACES PROVIDED
STANDARD PARKING SPACE – 9 FT. X 20 FT.	23 SPACES PROVIDED
STANDARD EVSE PARKING SPACE* – 9 FT. X 20 FT.	2 SPACES PROVIDED*
TOTAL	27 SPACES PROVIDED

*PER 2021 MODEL STATEWIDE MUNICIPAL ELECTRIC VEHICLE (EV) ORDINANCE, A VEHICLE PARKING SPACE DESIGNATED AS ELECTRIC VEHICLE SUPPLY/SERVICE EQUIPMENT (EVSE) OR MAKE READY SHALL COUNT AS AT LEAST 2 PARKING SPACES FOR THE PURPOSE OF COMPLYING WITH A MINIMUM PARKING SPACE REQUIREMENT.

LOADING SPACE REQUIREMENTS

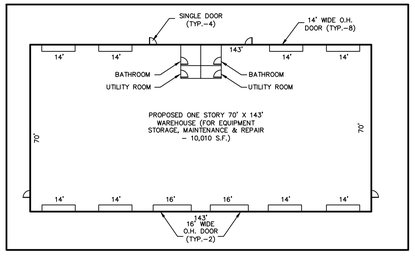
REQUIRED – 1 SPACE – 10' x 60'

LOADING SPACE PROVIDED

PROVIDED – 1 SPACE – 10' x 60'

NOTE

CONDITIONS SHOWN ON ADJACENT LOT 4 BLOCK 9303 PER RECENT APPROVED SITE PLAN AND SUBDIVISION PROPOSED IMPROVEMENTS PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA-20-004, APPROVED 5/9/22, MEMORIALIZED 7/11/22



PROPOSED BUILDING DIMENSIONS

SCALE: 1" = 30'

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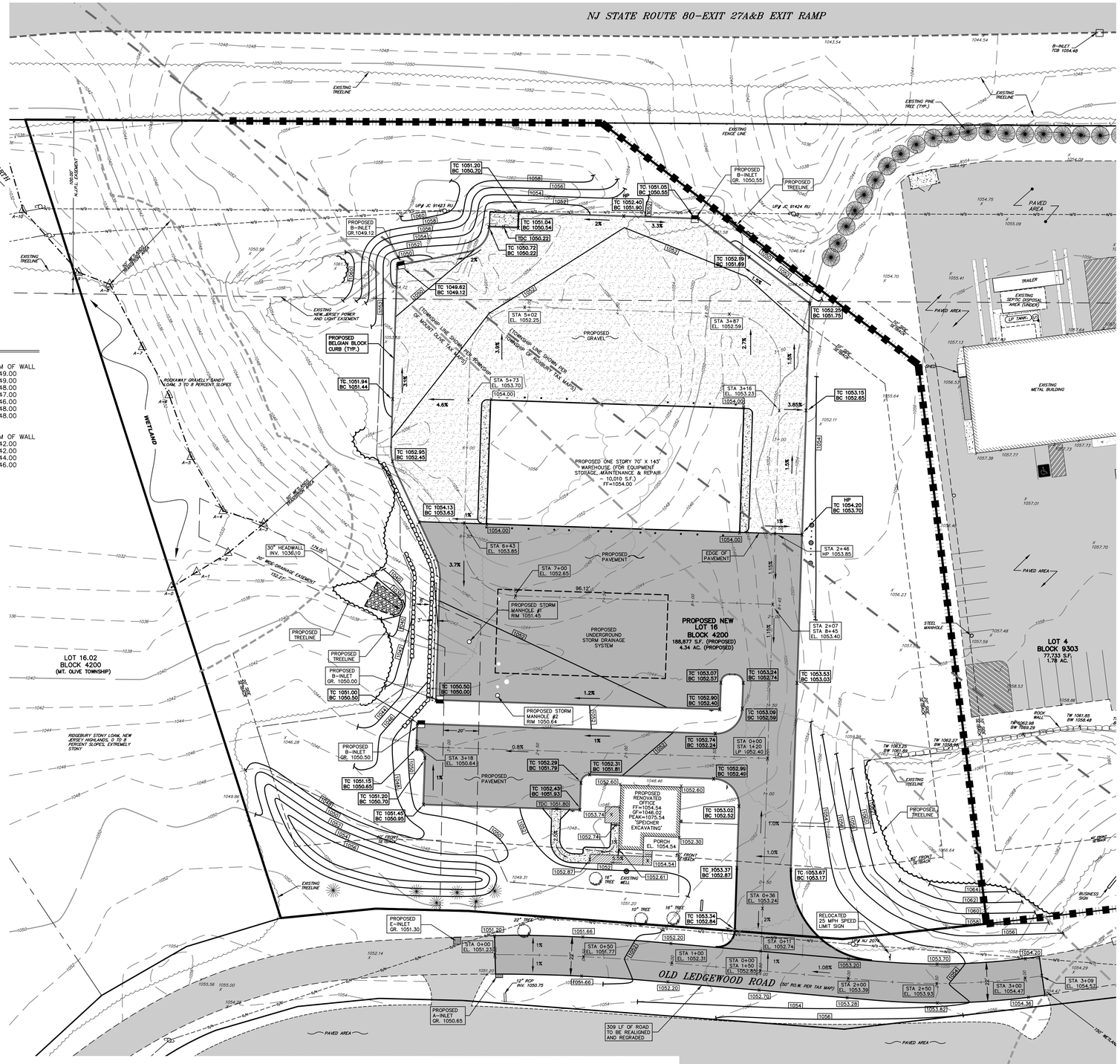
SHEET 6 OF 19

PROPOSED SITE PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332



PROPOSED GRADING PLAN

RETAINING WALL GRADES

PROPOSED ROCK WALL #1 – 155LF

POINT No.	TOP OF WALL	BOTTOM OF WALL
A	TW 1052.50	BW 1049.00
B	TW 1053.00	BW 1049.00
C	TW 1052.00	BW 1048.00
D	TW 1051.00	BW 1047.00
E	TW 1050.00	BW 1046.00
F	TW 1050.00	BW 1048.00
G	TW 1050.00	BW 1048.00

PROPOSED ROCK WALL #2 – 60LF

POINT No.	TOP OF WALL	BOTTOM OF WALL
H	TW 1045.00	BW 1042.00
I	TW 1046.00	BW 1042.00
J	TW 1046.50	BW 1044.00
K	TW 1047.00	BW 1046.00

PROPOSED BUILDING HEIGHT CALCULATION – OFFICE

1.) THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE FIVE (5) FEET FROM THE FOUNDATION TO THE LEVEL OF THE HIGHEST POINT OF THE ROOF SURFACE.

$\frac{1052.50 + 1052.75 + 1052.30 + 1052.45}{4}$ = EL. 1052.50

2.) PEAK ELEVATION = EL. 1075.54

3.) BUILDING HEIGHT = PEAK ELEVATION – AVERAGE GRADE

= EL. 1075.54 – EL. 1052.50 = 23.04 FT.

PROPOSED BUILDING HEIGHT CALCULATION – WAREHOUSE

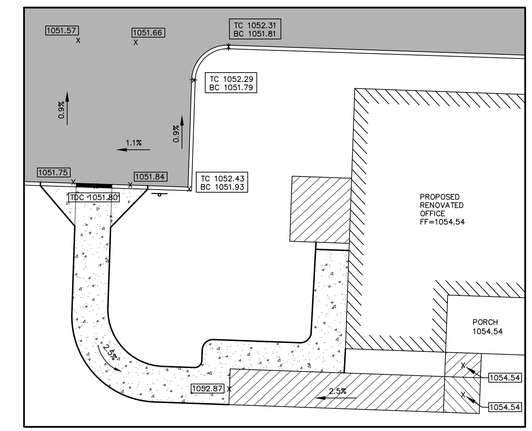
1.) THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE FIVE (5) FEET FROM THE FOUNDATION TO THE LEVEL OF THE HIGHEST POINT OF THE ROOF SURFACE.

$\frac{1053.90 + 1053.90 + 1053.82 + 1053.93}{4}$ = EL. 1053.88

2.) PEAK ELEVATION = FF + 29.25 FT. = EL. 1054.00 + 29.25 FT. = EL. 1083.25

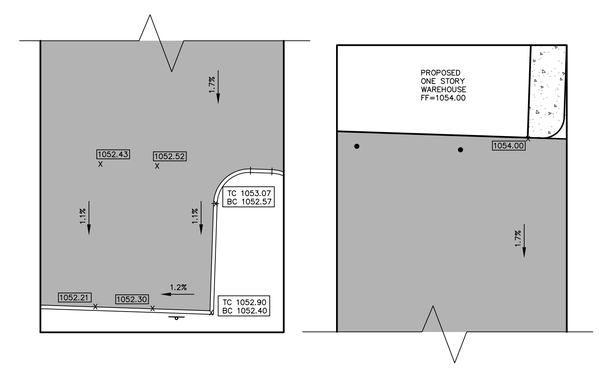
3.) BUILDING HEIGHT = PEAK ELEVATION – AVERAGE GRADE

= EL. 1083.25 – EL. 1053.88 = 29.37 FT.



HANDICAP ACCESSIBLE PATH TO OFFICE DETAIL

SCALE: 1" = 10'



HANDICAP ACCESSIBLE PATH TO WAREHOUSE DETAIL

SCALE: 1" = 10'

NOTE

CONDITIONS SHOWN ON ADJACENT LOT 4 BLOCK 9303 PER RECENT APPROVED SITE PLAN AND SUBDIVISION PROPOSED IMPROVEMENTS PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA–20–004, APPROVED 5/9/22, MEMORIALIZED 7/11/22

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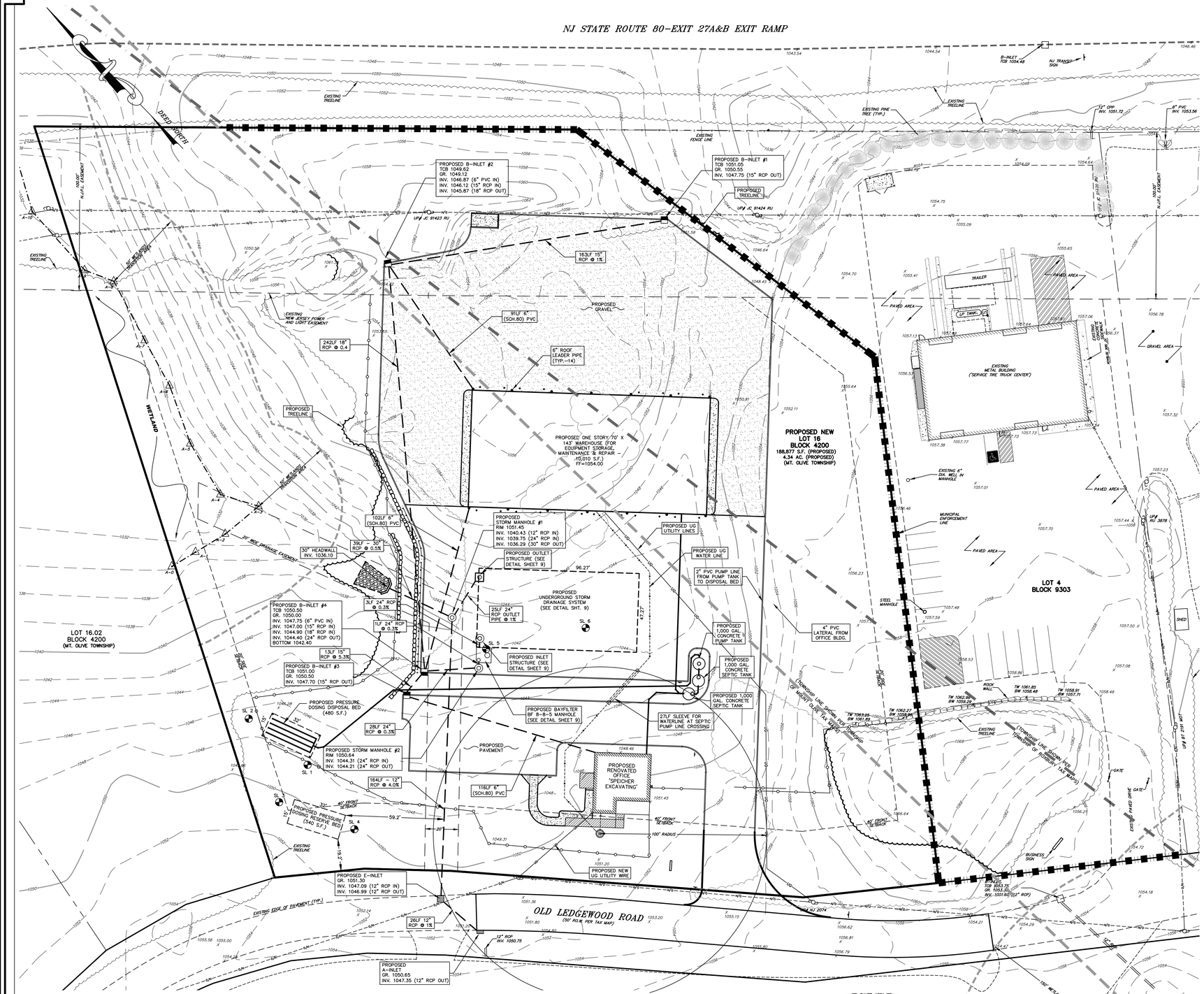
SHEET 7 OF 19

PROPOSED GRADING PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

L:\5332 – Speicher–Old Ledgewood Rd–Mt.Olive\dwg\Site Plan\Rev 1\5332–7 Grading Plan Rev 1.dwg PS: Civil Inc.ctb



PROPOSED UTILITY PLAN

GRAPHIC SCALE

–30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

UTILITY NOTES:

1.) CONTRACTOR TO VERIFY ALL LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2.) REFUSE PICKUP (TRASH & RECYCLABLES) TO BE CONTRACTED BY A PRIVATE HAULER.
3.) WATER TO BE PROVIDED TO THE NEW BUILDING BY A PROPOSED NEW CONNECTION TO THE EXISTING PRIVATE WELL, LOCATED IN THE FRONT YARD.
4.) SANITARY SEWERAGE TO BE PROVIDED BY A SINGLE PROPOSED NEW SEPTIC DISPOSAL SYSTEM FOR BOTH THE EXISTING AND PROPOSED BUILDINGS. APPLICATION TO BE MADE TO THE MOUNT OLIVE HEALTH DEPARTMENT (UNDER SEPARATE COVER) FOR APPROVAL.
5.) ELECTRIC, CATV & PHONE TO BE PROVIDED BY PROPOSED UNDERGROUND LINE(S) FROM THE EXISTING UTILITY POLE LOCATED IN THE OLD LEDGEWOOD ROAD RIGHT OF WAY.
6.) SOIL LOGS PERFORMED ON JUNE 9, 2020 BY JAMES GLASSON, P.E. #37703 OF CIVIL ENGINEERING INC., AND WITNESSED BY BOB STAHLHUT OF THE MOUNT OLIVE HEALTH DEPARTMENT.

SEPTIC REQUIREMENTS

PROPOSED OFFICE (1,079 S.F.)

1ST FLOOR – 1,079 S.F. OFFICE AREA @ 0.125 GAL./S.F. — 1,079 X 0.125 = 134.87 GAL./DAY
2ND FLOOR – 840 S.F. STORAGE — 0.00 GAL./DAY

PROPOSED WAREHOUSE (10,010 S.F.)

4 EMPLOYEES @ 15 GAL./DAY EA. — 4 X 15 = 60.00 GAL./DAY

198.87 GAL./DAY

BED AREA REQUIRED

USE 350 GAL./DAY MINIMUM PER N.J.A.C. 7:9A–7.4

350 GAL./DAY x 1.33 (STATE FACTOR FOR PUMP SYSTEM) = 465.50 S.F. BED AREA REQUIRED

480 S.F. PROPOSED (15 FT. X 32 FT.)

SEPTIC TANK SIZE REQUIRED

350 GAL./DAY x 1.5 = 525 GALLON SEPTIC TANK REQUIRED

1,000 GALLON SEPTIC TANK PROPOSED (2)

PUMP TANK SIZE REQUIRED

DOSE VOLUME = 25Q = 87.50 GALLONS
RESERVE VOLUME = 350.00 GALLONS
151.30 GALLONS IN DELIVERY LINE

588.80 GALLON PUMP TANK REQUIRED

1,000.0 GALLON PUMP TANK PROPOSED

SEPTIC PROVIDED

PROPOSED TWO 1,000 GAL. CONCRETE SEPTIC TANKS AND 1,000 GALLON CONCRETE PUMP TANK WITH A PRESSURE DOSING 480 S.F. SEPTIC BED AREA.

SOIL LOGS 1, 2, 3 & 4 FOR SEPTIC SYSTEM DESIGN

SOIL LOG 1 – PERFORMED JUNE 9, 2020
0" - 10" TOPSOIL, 10YR 3/3
10" - 47" SANDY CLAY LOAM, 10YR 5/8; 10% GRAVEL, 5% COBBLE, 5% STONE; SUBANGULAR BLOCKY, FRIABLE
47" - 132" SANDY LOAM, 10YR 5/6; 15% GRAVEL, 10% COBBLE, 5% STONE; SINGLE GRAIN, LOOSE
ROOTS TO BOTTOM
SAMPLE @ 53"
NO WATER, NO SEEPAGE, NO MOTTLING, NO LEDGE

SOIL LOG 2 – PERFORMED JUNE 9, 2020
0" - 12" TOPSOIL, 10YR 3/3
12" - 55" SANDY CLAY LOAM, 10YR 5/8; 10% GRAVEL, 5% COBBLE, 2% STONE; SUBANGULAR BLOCKY, FRIABLE
55" - 150" SANDY LOAM, 10YR 5/6; 20% GRAVEL, 5% COBBLE, 2% STONE; SINGLE GRAIN, LOOSE
ROOTS TO BOTTOM
SAMPLE @ 61"
NO WATER, NO SEEPAGE, NO MOTTLING, NO LEDGE

SOIL LOG 3 – PERFORMED JUNE 9, 2020
0" - 47" FILL
47" - 62" ORIGINAL TOPSOIL, 10YR 3/3
62" - 95" SANDY CLAY LOAM, 10YR 5/8; 10% GRAVEL, 10% COBBLE, 5% STONE; SUBANGULAR BLOCKY, FRIABLE
95" - 147" SANDY LOAM, 10YR 5/6; 15% GRAVEL, 10% COBBLE, 10% STONE; SINGLE GRAIN, LOOSE
ROOTS TO 95"
SAMPLE @ 101"
NO WATER, NO SEEPAGE, NO MOTTLING, NO LEDGE

SOIL LOG 4 – PERFORMED JUNE 9, 2020
0" - 68" FILL
68" - 78" ORIGINAL TOPSOIL, 10YR 3/3
78" - 108" SANDY CLAY LOAM, 10YR 5/8; 10% GRAVEL, 5% COBBLE, 5% STONE; SUBANGULAR BLOCKY, FRIABLE
108" - 158" SANDY LOAM, 10YR 5/6; 15% GRAVEL, 10% COBBLE, 10% STONE; SINGLE GRAIN, LOOSE
ROOTS TO BOTTOM
SAMPLE @ 114"
NO WATER, NO SEEPAGE, NO MOTTLING, NO LEDGE

SOIL LOGS 5 & 6 FOR INFILTRATION AREA

SOIL LOG ST 5 – PERFORMED JUNE 9, 2020
0" - 23" TOPSOIL, 10YR 3/1
23" - 45" SANDY CLAY LOAM, 10YR 5/8; 10% GRAVEL, 5% COBBLE, 5% STONE; SUBANGULAR BLOCKY, FRIABLE
45" - 136" SANDY LOAM, 10YR 6/8; 20% GRAVEL, 10% COBBLE, 2% STONE; SINGLE GRAIN, LOOSE
ROOTS TO BOTTOM
SAMPLE @ 51"
SEEPAGE @ 102"
PERC @ 51"–RESULT – 8.7 IN./HR.
MOTTLING @ 100"–BOTTOM - FEW, MEDIUM, DISTINCT 2.5Y 7/1 TO 5YR 5/8
NO WATER, NO LEDGE

SOIL LOG ST 6 – PERFORMED JUNE 9, 2020
0" - 24" TOPSOIL, 10YR 3/1
24" - 54" SANDY CLAY LOAM, 10YR 5/8; 10% GRAVEL, 5% COBBLE, 5% STONE; SUBANGULAR BLOCKY, FRIABLE
54" - 140" SANDY LOAM, 10YR 6/8; 20% GRAVEL, 10% COBBLE, 2% STONE; SINGLE GRAIN, LOOSE
ROOTS TO BOTTOM
SAMPLE @ 60"
SEEPAGE @ 104"
PERC @ 60"–RESULT – 8.3 IN./HR.
MOTTLING @ 102"–BOTTOM - FEW, MEDIUM, DISTINCT 2.5Y 7/1 TO 5YR 5/8
NO WATER, NO LEDGE

NOTE

CONDITIONS SHOWN ON ADJACENT LOT 4 BLOCK 9303 PER RECENT APPROVED SITE PLAN AND SUBDIVISION PROPOSED IMPROVEMENTS PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA–20–004, APPROVED 5/9/22, MEMORIALIZED 7/11/22

Rev. No.	Description	By	Date
	REVISE PER 3–11–23 BOARD ENGINEER'S REPORT, 3–10–23 DIRECTOR OF PLANNING REPORT, 3–13–23 HABITAT BY DESIGN REPORT, 10–11–22 MCSCD COMMENTS, 1. AND 9–21–23 PUBLIC HEARING	WBB/CWH	10/27/23

JAMES G. GLASSON
PROFESSIONAL ENGINEER, N.J. LIC. NO. 37703

CIVIL ENGINEERING, INC.
1 COVE STREET
BUDD LAKE, N.J. 07828
Telephone: (973) 426–1776
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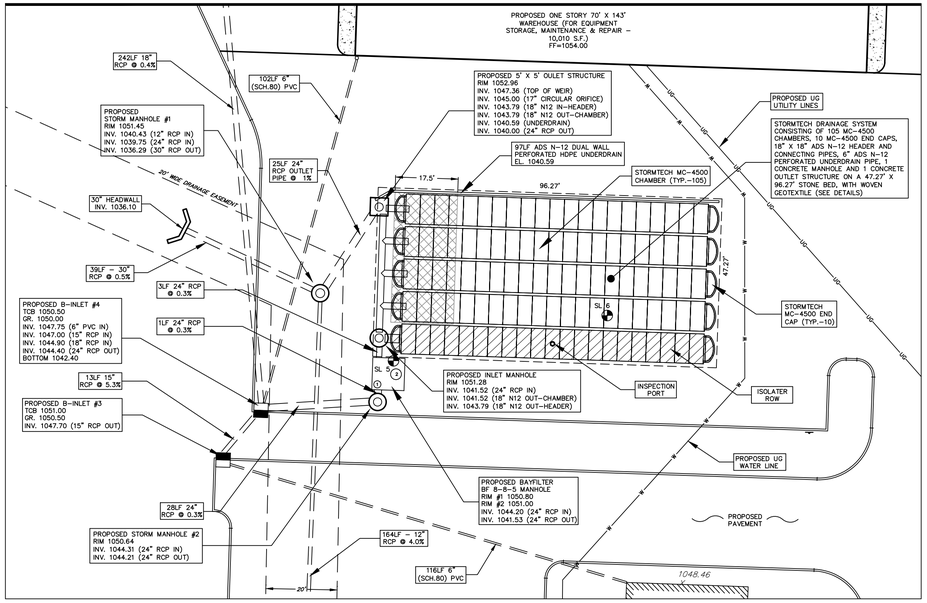
N.J. – C of A #24GA27922000

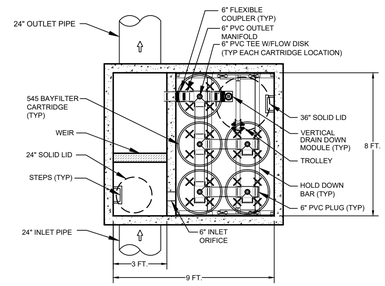
PROPOSED UTILITY PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

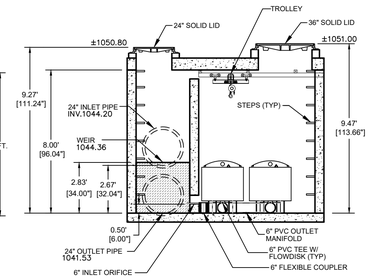


PROPOSED UNDERGROUND DRAINAGE SYSTEM LAYOUT

SCALE: 1" = 20'

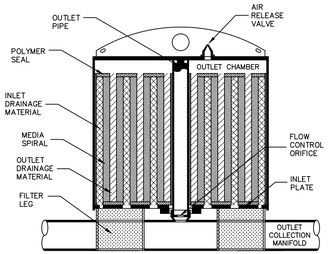


TOP VIEW



SECTION VIEW

BAYFILTER BF–1 6–9–5 STORM FILTERING MH DETAIL
(N.T.S.)



THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 90 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS INLINE WITH AN INTERNAL BYPASS THAT ROUTES HIGH INTENSITY STORMS AROUND THE CARTRIDGES. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION.

BAYFILTER FILTER CARTRIDGE UNIT DETAIL
(N.T.S.)

BAYSAVER BAYFILTER SPECIFICATIONS

PRODUCTS

A. INTERNAL COMPONENTS: ALL COMPONENTS INCLUDING CONCRETE STRUCTURE(S), PVC MANIFOLD PIPING AND FILTER CARTRIDGES, SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES LLC, 1030 DEER HOLLOW DRIVE, MOUNT AIRY, MD (800.229.7283).

B. PVC MANIFOLD PIPING: ALL INTERNAL PVC PIPE AND FITTINGS SHALL MEET ASTM D1785. MANIFOLD PIPING SHALL BE PROVIDED TO THE CONTRACTOR PARTIALLY PRE-CUT AND PRE-ASSEMBLED.

C. FILTER CARTRIDGES: EXTERNAL SHELL OF THE FILTER CARTRIDGES SHALL BE SUBSTANTIALLY CONSTRUCTED OF POLYETHYLENE OR EQUIVALENT MATERIAL ACCEPTABLE TO THE MANUFACTURER. FILTRATION MEDIA SHALL BE ARRANGED IN A SPIRAL LAYERED FASHION TO MAXIMIZE AVAILABLE FILTRATION AREA. AN ORIFICE PLATE SHALL BE SUPPLIED WITH EACH CARTRIDGE TO RESTRICT THE FLOW RATE TO A MAXIMUM OF 45 GPM.

D. FILTER MEDIA: FILTER MEDIA SHALL BE BY BAYSAVER TECHNOLOGIES LLC AND SHALL CONSIST OF THE FOLLOWING MIX: A BLEND OF ZEOLITE, PERLITE AND ACTIVATED ALUMINA.

E. PRECAST CONCRETE VAULT: CONCRETE STRUCTURES SHALL BE PROVIDED ACCORDING TO ASTM C. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C478, C857 AND C858. PRECAST CONCRETE SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES, LLC.

PERFORMANCE

A. THE STORMWATER FILTER SYSTEM SHALL BE AN OFFLINE DESIGN CAPABLE OF TREATING 100% OF THE REQUIRED TREATMENT FLOW AT FULL SEDIMENT LOAD CONDITIONS.

B. THE STORMWATER FILTER SYSTEM'S CARTRIDGES SHALL HAVE NO MOVING PARTS.

C. THE STORMWATER TREATMENT UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 85% OF SUSPENDED SOLIDS, 65% OF TOTAL PHOSPHORUS, 65% OF TURBIDITY, 40% OF TOTAL COPPER, AND 40% OF TOTAL ZINC BASED ON FIELD DATA COLLECTED IN COMPLIANCE WITH THE TECHNOLOGY ACCEPTANCE RECIPROCITY PARTNERSHIP TIER II TEST PROTOCOL.

D. THE STORMWATER FILTRATION SYSTEM SHALL REDUCE INCOMING TURBIDITY (MEASURED AS NTUs) BY 50% OR MORE AND SHALL NOT HAVE ANY COMPONENTS THAT LEACH NITRATES OR PHOSPHATES.

E. THE STORMWATER FILTRATION CARTRIDGE SHALL BE EQUIPPED WITH A HYDRODYNAMIC BACKWASH MECHANISM TO EXTEND THE FILTER'S LIFE AND OPTIMIZE ITS PERFORMANCE.

F. THE STORMWATER FILTRATION SYSTEM SHALL BE DESIGNED TO REMOVE A MINIMUM OF 65% OF THE INCOMING TOTAL PHOSPHORUS (TP) LOAD.

G. THE STORMWATER FILTRATION SYSTEM'S CARTRIDGES SHALL HAVE A TREATED SEDIMENT CAPACITY FOR 80% TSS REMOVAL BETWEEN 150-350 LBS.

BAYFILTER MAINTENANCE

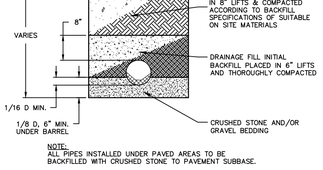
- THE BAYFILTER SYSTEM REQUIRES PERIODIC MAINTENANCE TO CONTINUE OPERATING AT ITS PEAK EFFICIENCY DESIGN. THE MAINTENANCE PROCESS COMPRISES THE REMOVAL AND REPLACEMENT OF EACH BAYFILTER CARTRIDGE AND THE CLEANING OF THE VAULT OR MANHOLE WITH A VACUUM TRUCK. FOR BEST RESULTS, BAYFILTER MAINTENANCE SHOULD BE PERFORMED BY A CERTIFIED MAINTENANCE CONTRACTOR. A QUICK CALL TO AN ADS ENGINEER OR CUSTOMER SERVICE REPRESENTATIVE WILL PROVIDE YOU WITH A LIST OF RELIABLE CONTRACTORS IN YOUR AREA.
- WHEN BAYFILTER IS INITIALLY INSTALLED, WE RECOMMEND THAT AN INSPECTION BE PERFORMED ON THE SYSTEM IN THE FIRST SIX (6) MONTHS. AFTER THAT, THE INSPECTION CYCLE TYPICALLY FALLS INTO A BIANNUAL PATTERN GIVEN NORMAL STORM OCCURRENCE AND ACTUAL SOLIDS LOADS.
- WHEN BAYFILTER EXHIBITS FLOWS BELOW DESIGN LEVELS, THE SYSTEM SHOULD BE INSPECTED AND MAINTAINED AS SOON AS PRACTICAL. REPLACING A BAYFILTER CARTRIDGE SHOULD BE CONSIDERED AT OR ABOVE THE LEVEL OF THE MANIFOLD.

MAINTENANCE PROCEDURES

1. REMOVE THE MANHOLE COVERS AND OPEN ALL ACCESS HATCHES.
2. BEFORE ENTERING THE SYSTEM MAKE SURE THE AIR IS SAFE PER OSHA STANDARDS OR USE A BREATHING APPARATUS. USE LOW O2, HIGH CO, OR OTHER APPLICABLE WARNING DEVICES PER REGULATORY REQUIREMENTS.
3. USING A VACUUM TRUCK, REMOVE ANY LIQUID AND SEDIMENTS THAT CAN BE REMOVED PRIOR TO ENTRY.
4. USING A SMALL LIFT OR THE BOOM OF THE VACUUM TRUCK, REMOVE THE USED CARTRIDGES BY LIFTING THEM OUT.
5. ANY CARTRIDGES THAT CANNOT BE READILY LIFTED CAN BE EASILY SLID ALONG THE FLOOR TO A LOCATION THEY CAN BE LIFTED VIA A BOOM LIFT.
6. WHEN ALL THE CARTRIDGES HAVE BEEN REMOVED, IT IS NOW PRACTICAL TO REMOVE THE BALANCE OF THE SOLIDS AND WATER. LOOSEN THE STAINLESS CLAMPS ON THE FERNCO COUPLINGS FOR THE MANIFOLD AND REMOVE THE DRAINPIPES AS WELL. CAREFULLY CAP THE MANIFOLD AND THE FERNCO'S AND RINSE THE FLOOR, WASHING AWAY THE BALANCE OF ANY REMAINING COLLECTED SOLIDS.
7. CLEAN THE MANIFOLD PIPES, INSPECT, AND REINSTALL.
8. INSTALL THE EXCHANGE CARTRIDGES AND CLOSE ALL COVERS.
9. THE USED CARTRIDGES MUST BE SENT BACK TO ADS FOR EXCHANGE/RECYCLING AND CREDIT ON UNDAMAGED UNITS.

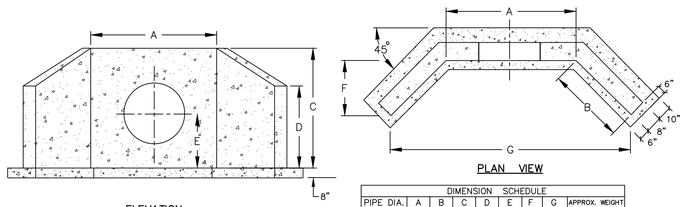
BAYFILTER INSTALLATION NOTES

1. CONTACT UTILITY LOCATOR TO MARK ANY NEARBY UNDERGROUND UTILITIES AND MAKE SURE IT IS SAFE TO EXCAVATE.
2. REFERENCE THE SITE PLAN AND STAKE OUT THE LOCATION OF THE BAYFILTER VAULT.
3. EXCAVATE THE HOLE, PROVIDING ANY SHEETING AND SHORING NECESSARY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS.
4. LEVEL THE SUB-GRADE TO THE PROPER ELEVATION. VERIFY THE ELEVATION AGAINST THE MANHOLE DIMENSIONS, THE INVERT ELEVATIONS, AND THE SITE PLANS. ADJUST THE BASE AGGREGATE, IF NECESSARY.
5. HAVE THE SOIL BEARING CAPACITY VERIFIED BY A LICENSED/ENGINEER FOR THE REQUIRED LOAD BEARING CAPACITY. ON SOLID SUB-GRADE, SET THE FIRST SECTION OF THE BAYFILTER PRE-CAST VAULT.
6. CHECK THE LEVEL AND ELEVATION OF THE FIRST SECTION TO ENSURE IT IS CORRECT BEFORE ADDING ANY RISER SECTIONS.
7. IF ADDITIONAL SECTION(S) ARE REQUIRED, ADD A WATERTIGHT SEAL TO THE FIRST SECTION OF THE BAYFILTER VAULT. SET ADDITIONAL SECTION(S) OF THE VAULT, ADDING A WATERTIGHT SEAL TO EACH JOINT.
8. INSTALL THE PVC OUTLET MANIFOLD.
9. INSTALL THE PVC OUTLET PIPE IN BAYFILTER VAULT.
10. INSTALL THE INLET PIPE TO THE BAYFILTER VAULT.
11. AFTER THE SITE IS STABILIZED, REMOVE ANY ACCUMULATED SEDIMENT OR DEBRIS FROM THE VAULT AND INSTALL THE FLOW DISKS, DRAINDOWN MODULES (IF APPLICABLE), AND THE BAYFILTER CARTRIDGES.
12. PLACE FULL SET OF HOLD DOWN BARS AND BRACKETS INTO PLACE.



NOTE:
ALL PIPES INSTALLED UNDER PAVED AREAS TO BE BACKFILLED WITH CRUSHED STONE TO PAVEMENT SUBBASE.

TYPICAL PIPE BEDDING DETAIL
(N.T.S.)



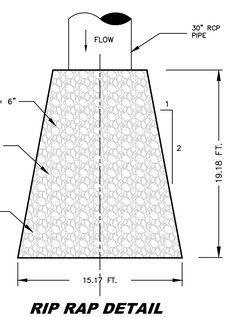
ELEVATION

PLAN VIEW

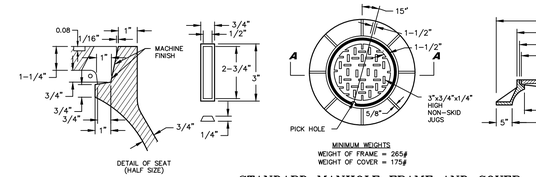
NOTES:
1. ALL EXPOSED EDGES TO HAVE 1" BEVELED CORNERS
2. CONCRETE TO TEST 4000 PSI @ 28 DAYS
3. REINFORCING – NO. 4 BARS AT 12" O.C.E.W.
4. EXPOSED PORTIONS OF WALL TO BE RUBBED & FLOATED.

DIMENSION SCHEDULE								
PIPE DIA.	A	B	C	D	E	F	G	APPROX. WEIGHT
12"	36"	30"	54"	40"	36"	22"	78"	5445 LBS.
15"	48"	30"	60"	45"	37.5"	22"	92"	6400 LBS.
18"	48"	30"	60"	45"	39"	22"	92"	6400 LBS.
24"	60"	36"	64"	48"	42"	26"	112"	7250 LBS.
30"	72"	36"	72"	54"	45"	26"	124"	9276 LBS.
36"	78"	48"	78"	60"	48"	35"	144"	11623 LBS.
48"	84"	48"	90"	66"	54"	35"	150"	12402 LBS.

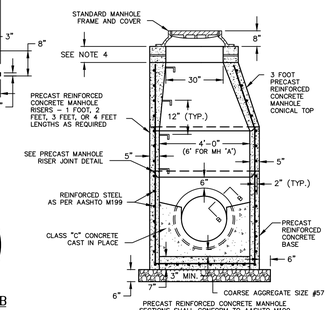
CONCRETE HEADWALL DETAIL
(N.T.S.)



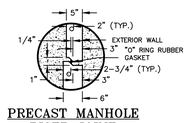
RIP RAP DETAIL
(SEE DRAINAGE REPORT FOR CALCULATIONS)
(N.T.S.)



STANDARD MANHOLE FRAME AND COVER
(N.T.S.)



PRECAST CONCRETE MANHOLE
(N.T.S.)



PRECAST MANHOLE
RISER JOINT
(N.T.S.)

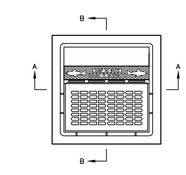
STORM MANHOLE
DETAILS
(N.T.S.)

SECTION B–B
(N.T.S.)

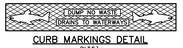
GENERAL NOTES

1.) MANHOLES MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK, OR PRECAST CONCRETE.
2.) WHEN THE DEPTH OF A MANHOLE EXCEEDS 10 FEET AS MEASURED FROM TOP OF COVER TO INVERT, THE WALLS OF BRICK, CONCRETE, OR CONCRETE BLOCK BELOW A DEPTH OF 8 FEET SHALL BE 12 INCHES THICK. THE OVERALL HORIZONTAL DIMENSIONS SHALL BE INCREASED 12 INCHES AND THE DEPTH OF THE FOUNDATION INCREASED TO 12 INCHES. WHEN ROCK IS ENCOUNTERED THE HORIZONTAL DIMENSION AND DEPTH OF THE FOUNDATION SHALL NOT BE INCREASED. THE THICKNESS OF PRECAST CONCRETE MANHOLE WALLS DOES NOT HAVE TO BE INCREASED IF THE DEPTH OF THE MANHOLE EXCEEDS 10 FEET.
3.) CASTINGS OF PRECAST MANHOLES SHALL BE ADJUSTED TO GRADE WITH COURSES OF BRICK OR CONCRETE BLOCK, AS REQUIRED, 12 INCHES MAXIMUM.
4.) AS AN ALTERNATE TO THE STANDARD MANHOLE FRAME AND COVER, A 39 INCH DIAMETER FRAME WITH 4 INCH FLANGE MAY BE FURNISHED WITH ALL OTHER DIMENSIONS AND WEIGHTS REMAINING THE SAME.
5.) IN A BRICK, CONCRETE, OR CONCRETE BLOCK MANHOLE, THE INVERT SHALL BE CONSTRUCTED IN TWO STAGES.
6.) AS AN ALTERNATIVE, COPOLMYER POLYPROPYLENE PLASTIC LADDER RUNGS MY BE FURNISHED IN PRECAST MANHOLES AND INLETS.
7.) STANDARD MANHOLE FRAME AND COVER SHOWN IN CD–603–8.1 SHALL BE DESIGNED FOR THE TRUCK LIVE LOAD (HS–25 TRUCK WHEEL LOAD) AS ADOPTED FOR NJDOT BRIDGES. IF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS ARE USED THEN THE DESIGN SHALL CONFORM TO THE AASHTO LRFD HL–93 ADHICULAR LIVE LOADING OR THE NJDOT PERMIT VEHICLE, WHICHEVER GOVERNS.
8.) MANHOLES LOCATED UNDER PARKING AREA TO MEET NOTES 6. & 7. ABOVE, ALL OTHER MANHOLES TO BE EXEMPT.

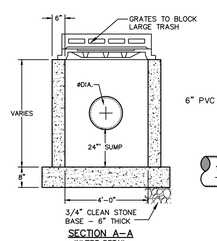
STORM MANHOLE DETAILS
(N.T.S.)



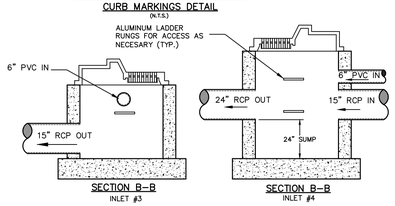
NOTES:
1. FOOTER TO BE N.J.D.T. CLASS "B" CONCRETE. (4000 PSI)
2. INVERT TO BE CLASS "B" CONCRETE. (4000 PSI)
3. IF WALL CONSTRUCTION IS OTHER THAN CONCRETE, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
4. FRAME AND GRATE TO BE NO. 2618 WITH TYPE "N" ECO GRATE, AS MANUFACTURED BY CAMPBELL FOUNDRY CO., OR EQUAL.
5. CURB DESIGN TO BE TYPE "B", WITH GRATES DESIGNED TO BLOCK LARGE TRASH AND "DUMP NO WASTE – DRAINS TO WATERWAYS" MACHINED INTO CURB TOP, AS MANUFACTURED BY CAMPBELL FOUNDRY CO., OR EQUAL., COMPLIANT WITH NJ STORMWATER MANAGEMENT REGULATIONS.
6. PROVIDE 3/4" DIA. W.I. LADDER RUNGS, 12" O.C.
7. WHEN ADDITIONAL DEPTH IS SCHEDULED, WALLS BELOW DEPTH OF 8'–0" MEASURED FROM THE INLET GUTTER TO INVERT, SHALL BE 12" THICK. THE FOUNDATION DIMENSIONS SHALL BE INCREASED TO 12" IN WIDTH AND TO 12" IN DEPTH.
8. ALL INLETS TO BE PRECAST CONCRETE AND DESIGNED TO HANDLE A MINIMUM OF AN H–20 LOADING.



CURB MARKINGS DETAIL
(N.T.S.)



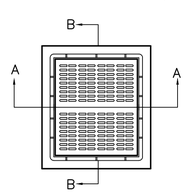
SECTION A–A
INVERT DETAIL



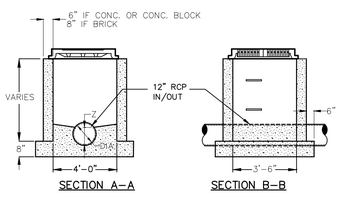
SECTION B–B
INLET #3

SECTION B–B
INLET #4

TYPE "B" INLET DETAILS
(N.T.S.)



GENERAL NOTES:
1. FOOTER TO BE N.J.D.T. CLASS "D" CONCRETE.
2. INVERT TO BE CLASS "C" CONCRETE.
3. IF WALL CONSTRUCTION IS OTHER THAN CONCRETE, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
4. FRAME AND GRATE TO BE NO. 3440 AS MANUFACTURED BY CAMPBELL FOUNDRY CO., OR EQUAL.
5. PROVIDE 3/4" DIA. W.I. LADDER RUNGS, 18" O.C.
6. WHEN ADDITIONAL DEPTH IS SCHEDULED, WALLS BELOW DEPTH OF 8'–0" (MEASURED FROM THE INLET GUTTER TO INVERT) SHALL BE 12" THICK. THE FOUNDATION DIMENSIONS SHALL BE INCREASED TO 12" IN WIDTH AND TO 12" IN DEPTH.
7. 6W#2D FOR DOUBLE "E" CONSTRUCTIONS.



SECTION A–A

SECTION B–B

TYPE "E" INLET DETAIL
(N.T.S.)

GENERAL NOTES

GENERAL NOTES:
1.) FOOTER TO BE N.J.D.T. CLASS "D" CONCRETE.
2.) INVERT TO BE CLASS "C" CONCRETE.
3.) IF WALL CONSTRUCTION IS OTHER THAN CONCRETE THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
4.) GRATE TO BE NO. 2617 0362 AND FRAME TO BE NO. 3432 AS MANUFACTURED BY CAMPBELL FOUNDRY CO., OR APPROVED EQUAL.
5.) PROVIDE 3/4" DIA. W.I. LADDER RUNGS, 18" O.C.
6.) WHEN ADDITIONAL DEPTH IS SCHEDULED, WALLS BELOW DEPTH OF 8'–0" MEASURED FROM THE INLET GUTTER TO INVERT, SHALL BE 12" THICK. THE FOUNDATION DIMENSIONS SHALL BE INCREASED TO 12" IN WIDTH AND TO 12" IN DEPTH.

TYPE "A" INLET DETAIL
(N.T.S.)

Rev. No.	Description	By	Date
	REVISE PER 3–11–23 BOARD ENGINEER'S REPORT, 3–10–23 DIRECTOR OF PLANNING REPORT, 3–13–23 HABITAT BY DESIGN REPORT, 10–11–22 MCSCD COMMENTS, 1. AND 9–21–23 PUBLIC HEARING	WBB/CWH	10/27/23

JAMES G. GLASSON
PROFESSIONAL ENGINEER, N.J. LIC. NO. 37703

CIVIL ENGINEERING, INC.
1 COVE STREET
BUDD LAKE, N.J. 07828
Telephone: (973) 426–1776
Fax: (973) 426–0716
N.J. – C of A #24GA27922000

SHEET 9 OF 19

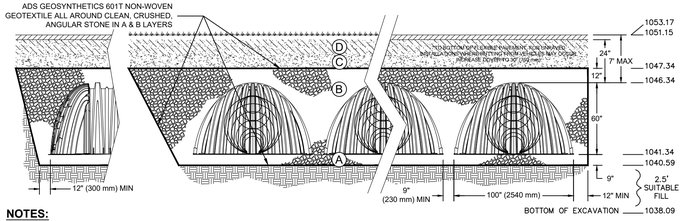
PROPOSED STORMWATER DESIGN PLAN
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

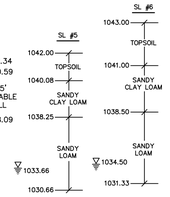
Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 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 24" (600 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 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
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, 4	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, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

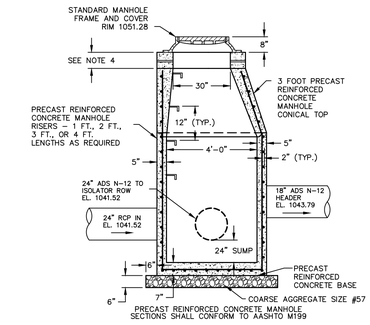
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 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.



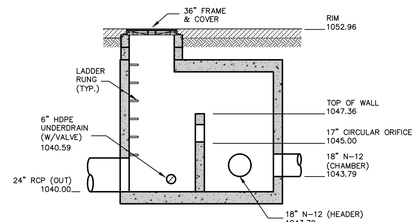


NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-4500 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 3".
   - 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 500 LBS/IN/IN. 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.



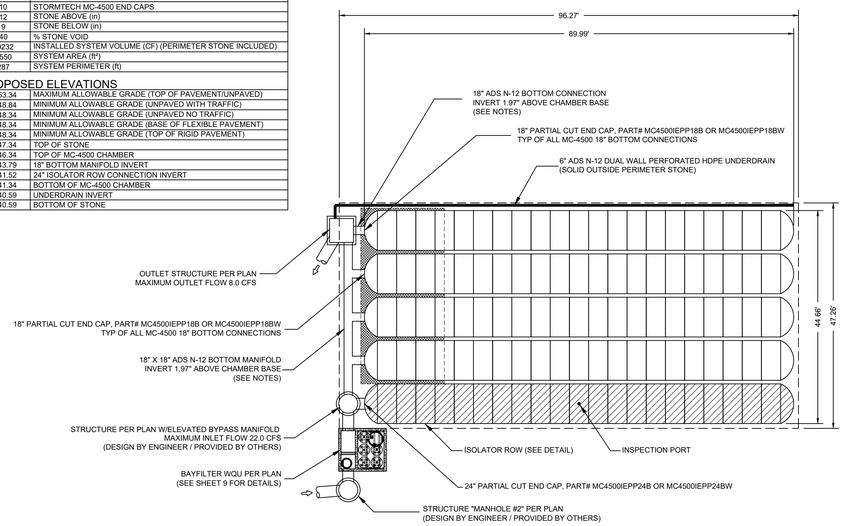
INLET MANHOLE – SECTION VIEW
(N.T.S.)



5' x 5' OUTLET STRUCTURE DETAIL
(N.T.S.)

PROPOSED LAYOUT	
105	STORMTECH MC-4500 CHAMBERS
10	STORMTECH MC-4500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
19232	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
4550	SYSTEM AREA (ft²)
287	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
1053.34	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
1048.84	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
1048.34	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
1048.34	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
1048.34	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
1047.34	TOP OF STONE
1046.34	TOP OF MC-4500 CHAMBER
1043.79	18" BOTTOM MANIFOLD INVERT
1041.52	24" ISOLATOR ROW CONNECTION INVERT
1041.34	BOTTOM OF MC-4500 CHAMBER
1040.59	UNDERDRAIN INVERT
1040.59	BOTTOM OF STONE



MC-4500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. 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 3".
   - 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 500 LBS/IN/IN. 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.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT – NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

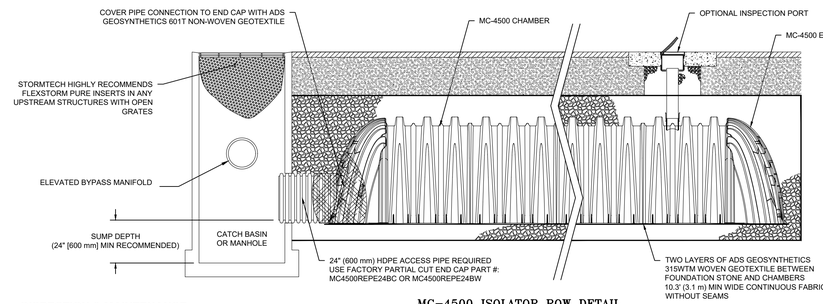
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

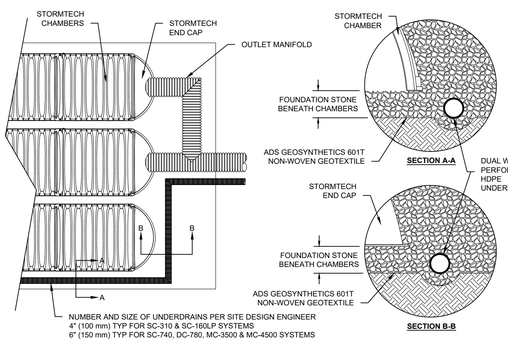
1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



MC-4500 ISOLATOR ROW DETAIL
NTS



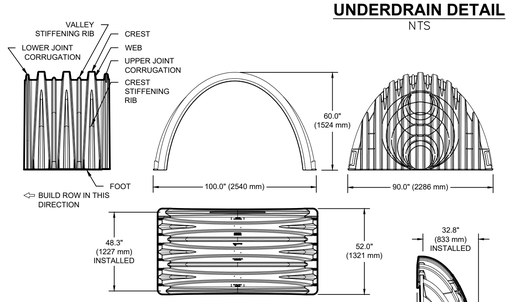
UNDERDRAIN DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW 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 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 ROWS
B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW 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 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.



NOMINAL CHAMBER SPECIFICATIONS

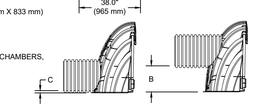
SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 48.3"	(2540 mm X 1524 mm X 1227 mm)
CHAMBER STORAGE	106.5 CUBIC FEET	(3.01 m³)
MINIMUM INSTALLED STORAGE*	162.6 CUBIC FEET	(4.60 m³)
WEIGHT (NOMINAL)	125.0 lbs.	(56.7 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

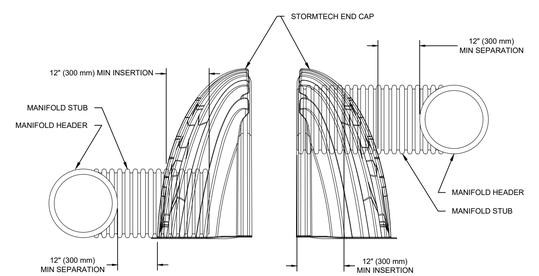


CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

PART #	STUB	B	C
MC4500IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC4500IEPP06B		---	0.86" (22 mm)
MC4500IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC4500IEPP08B		---	1.01" (26 mm)
MC4500IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC4500IEPP10B		---	1.33" (34 mm)
MC4500IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC4500IEPP12B		---	1.55" (39 mm)
MC4500IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC4500IEPP15B		---	1.70" (43 mm)
MC4500IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC4500IEPP18TW			
MC4500IEPP18B		---	1.97" (50 mm)
MC4500IEPP18BW			
MC4500IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC4500IEPP24TW			
MC4500IEPP24B		---	2.26" (57 mm)
MC4500IEPP24BW			
MC4500IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC4500IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC4500IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

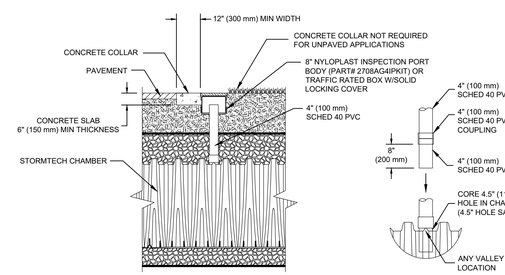
NOTE: ALL DIMENSIONS ARE NOMINAL

MC-4500 TECHNICAL SPECIFICATION
(N.T.S.)



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-SERIES END CAP INSERTION DETAIL
(N.T.S.)



NOTES:
1. INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED (4" PVC NOT PROVIDED BY ADS).

CONNECTION DETAIL
NTS

4" PVC INSPECTION PORT DETAIL
(N.T.S.)

ADS PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	JUSTIN PICCILLO 917-716-6420 JUSTIN.PICCILLO@ADS-PIPE.COM
ADS SALES REP:	### ######## ###.########@ADS-PIPE.COM
PROJECT NO:	######

Rev. No.	Description	By	Date
	REVISE PER 3-11-23 BOARD ENGINEER'S REPORT, 3-10-23 DIRECTOR OF PLANNING REPORT, 3-13-23 HABITAT BY DESIGN REPORT, 10-11-22 MCSCD COMMENTS, 1. AND 9-21-23 PUBLIC HEARING	WBB/CWH	10/27/23

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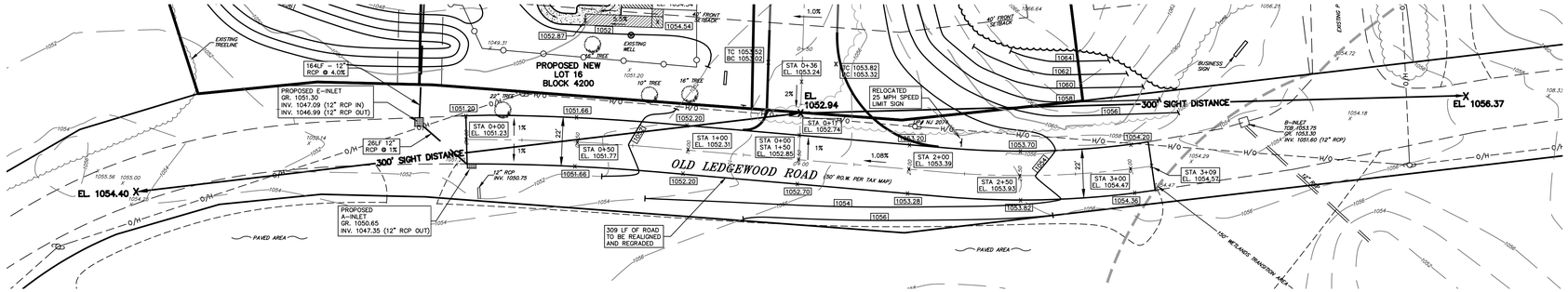
SHEET 10 OF 19

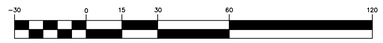
PROPOSED UNDERGROUND STORM SYSTEM DETAILS FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

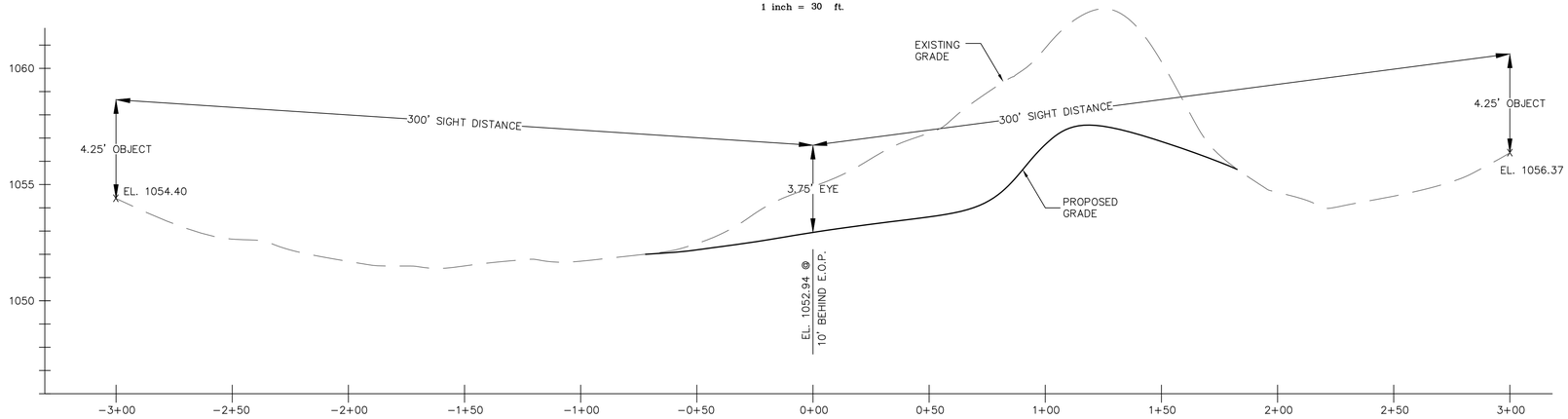


PROPOSED SITE ACCESS & OLD LEDGEWOOD ROAD RECONSTRUCTION PLAN

GRAPHIC SCALE



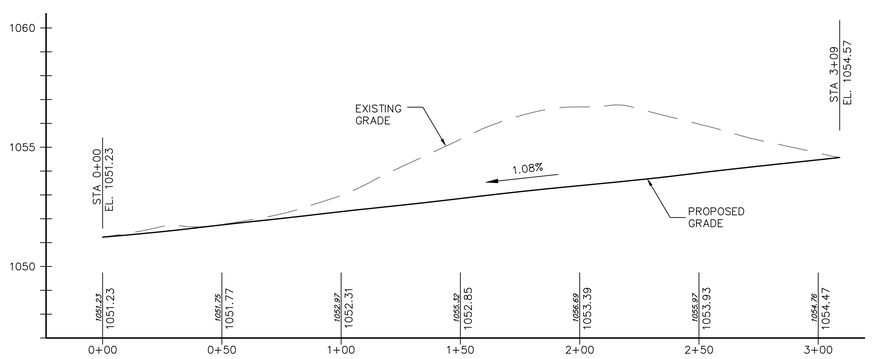
(IN FEET)
1 inch = 30 ft.



SIGHT DISTANCE PROFILE AT SITE ACCESS

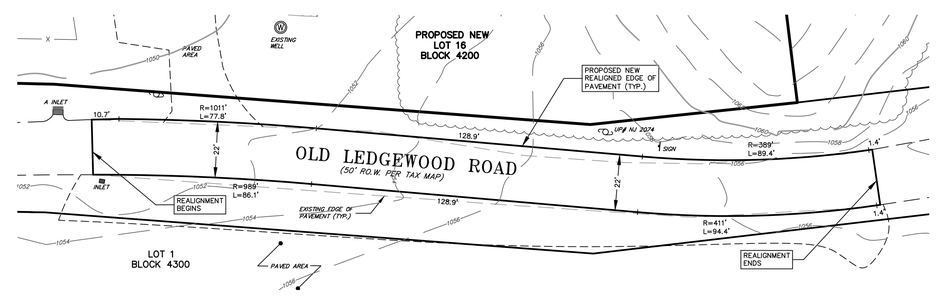
SCALE 1" = 30' HORIZ.
1" = 3' VERT.

25MPH ZONE REQUIRES 300 FT. SIGHT DISTANCE IN EACH DIRECTION.



REALIGNED AND REGRADED ROAD PROFILE OF SECTION OF OLD LEDGEWOOD ROAD, STA 0+00 TO STA 3+09

SCALE 1" = 30' HORIZ.
1" = 3' VERT.



OLD LEDGEWOOD ROAD REALIGNMENT DETAIL

(N.T.S.)

REVISE PER 3-11-23 BOARD ENGINEER'S
REPORT, 3-10-23 DIRECTOR OF PLANNING
REPORT, 3-13-23 HABITAT BY DESIGN
REPORT, 10-11-22 MCSCD COMMENTS,
1. AND 9-21-23 PUBLIC HEARING WBB/CWH 10/13/23

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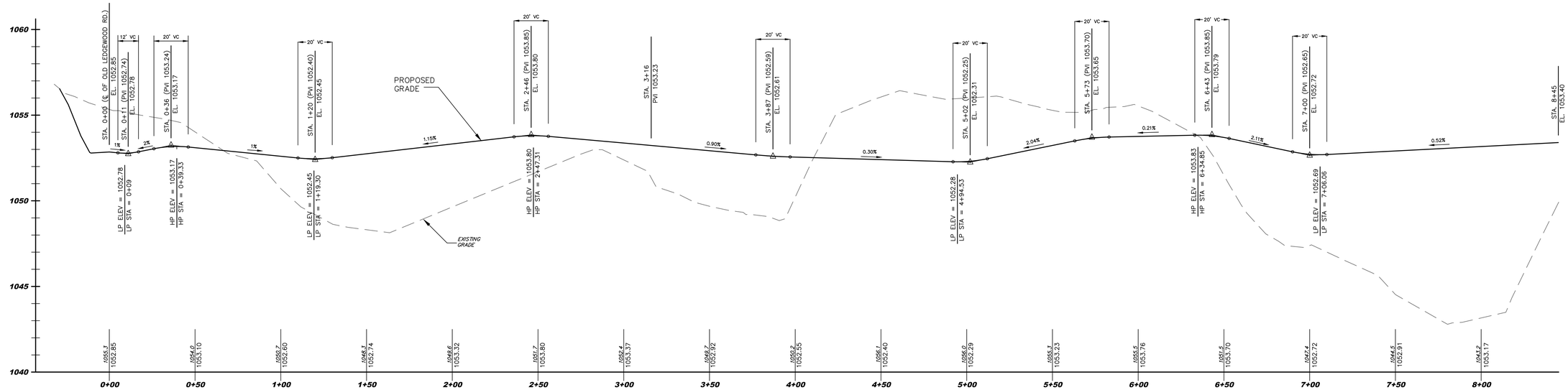
SHEET 11 OF 19

SITE ACCESS & OLD LEDGEWOOD
ROAD REALIGNMENT PLAN
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

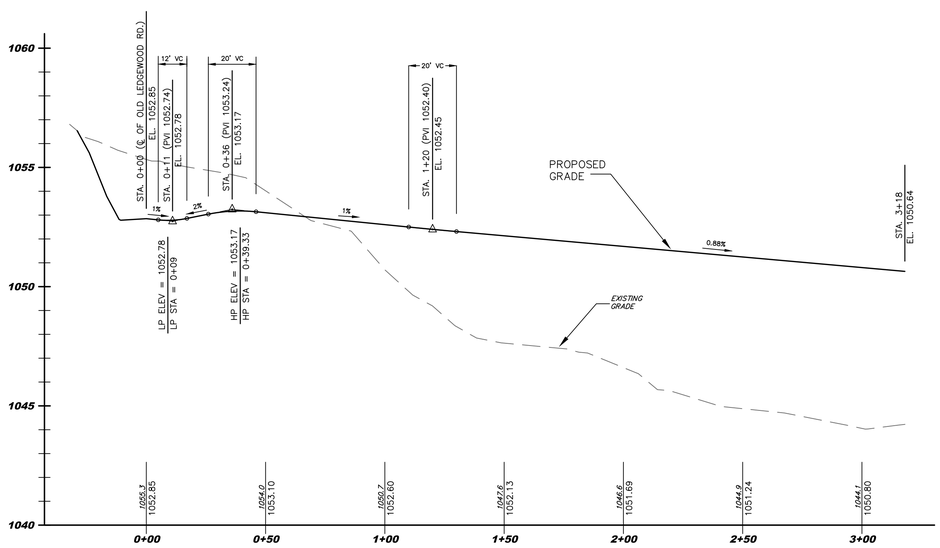
J:\5332 - Speicher-Old Ledgewood Rd-Mt Olive\dwg\Site Plan\Rev 1\5332-11 Sight Distance Plan Rev 1.dwg PS: Civil Inc.ctb



DRIVEWAY PROFILE – STA 0+00 TO STA 8+45 (UPPER PARKING LOT)

SCALE 1" = 30' HORIZ.
1" = 3' VERT.

NOTE:
CHANGES IN VERTICAL GRADES SHALL BE MADE WITH SMOOTH VERTICAL CURVES NOT LESS THAN (12) FEET IN LENGTH



DRIVEWAY PROFILE – STA 0+00 TO STA 3+18 (LOWER PARKING LOT)

SCALE 1" = 30' HORIZ.
1" = 3' VERT.

NOTE:
CHANGES IN VERTICAL GRADES SHALL BE MADE WITH SMOOTH VERTICAL CURVES NOT LESS THAN (12) FEET IN LENGTH

REVISE PER 3-11-23 BOARD ENGINEER'S REPORT, 3-10-23 DIRECTOR OF PLANNING REPORT, 3-13-23 HABITAT BY DESIGN REPORT, 10-11-22 MCSCD COMMENTS, 1. AND 9-21-23 PUBLIC HEARING WBB/CWH 10/27/23

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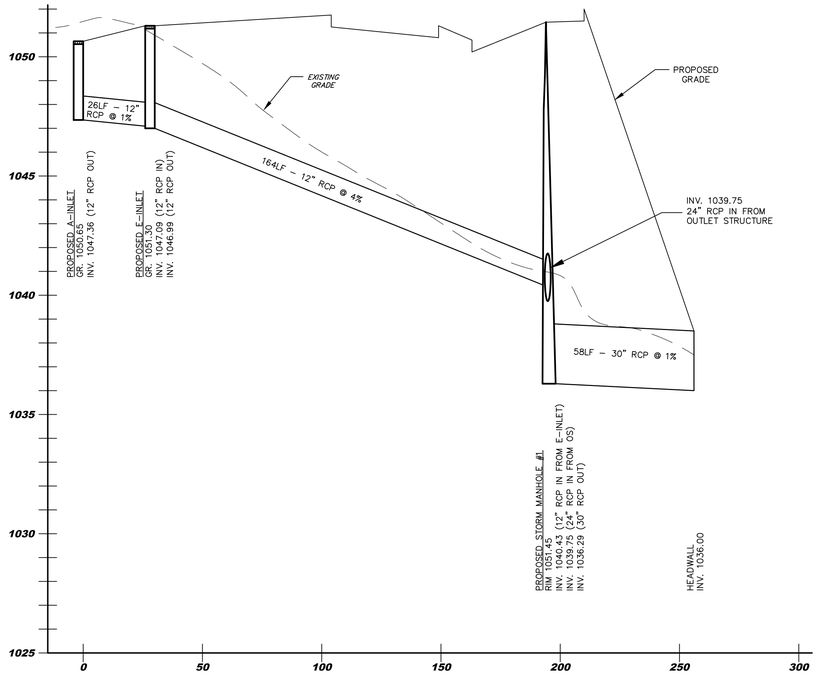
SHEET 12 OF 19

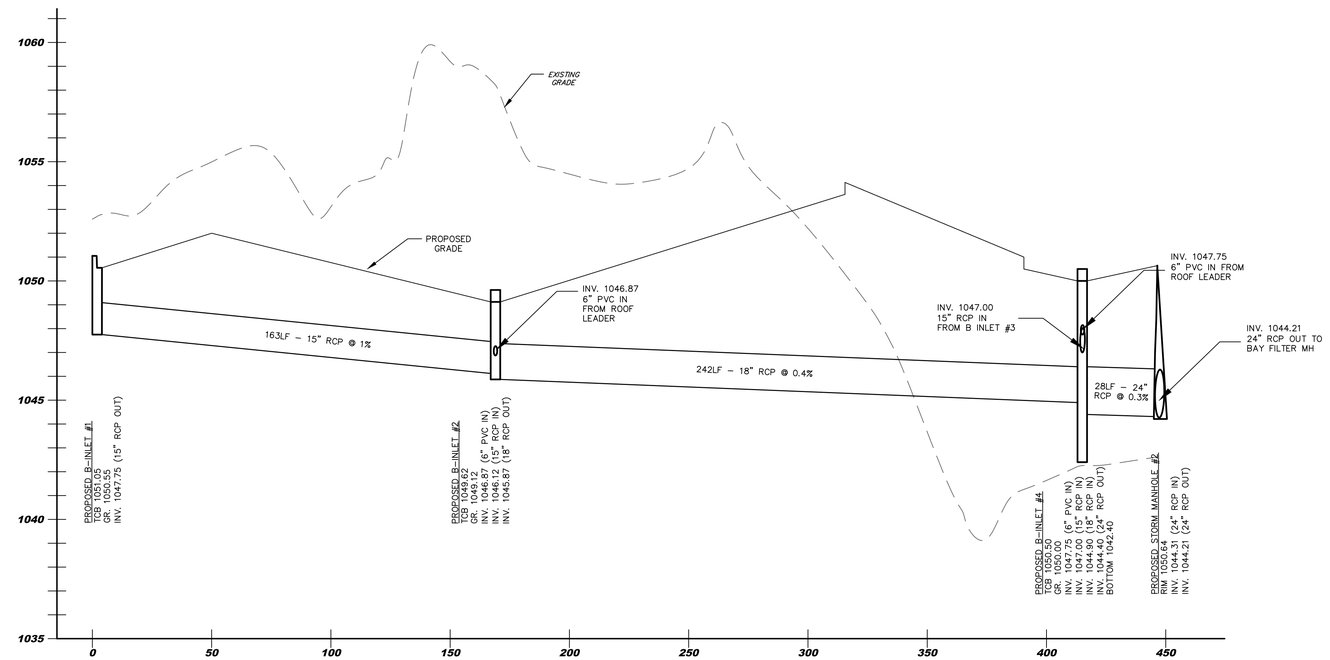
DRIVEWAY PROFILES
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332



A–INLET TO HEAD WALL

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



B–INLET #1 TO STORM MH #2

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

REVISE PER 3–11–23 BOARD ENGINEER'S
REPORT, 3–10–23 DIRECTOR OF PLANNING
REPORT, 3–13–23 HABITAT BY DESIGN
REPORT, 10–11–22 MCSCD COMMENTS,
1. AND 9–21–23 PUBLIC HEARING WBB/CWH 10/27/23

Rev. No.	Description	By	Date

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N.J. – C of A #24GA27922000

SHEET 13 OF 19

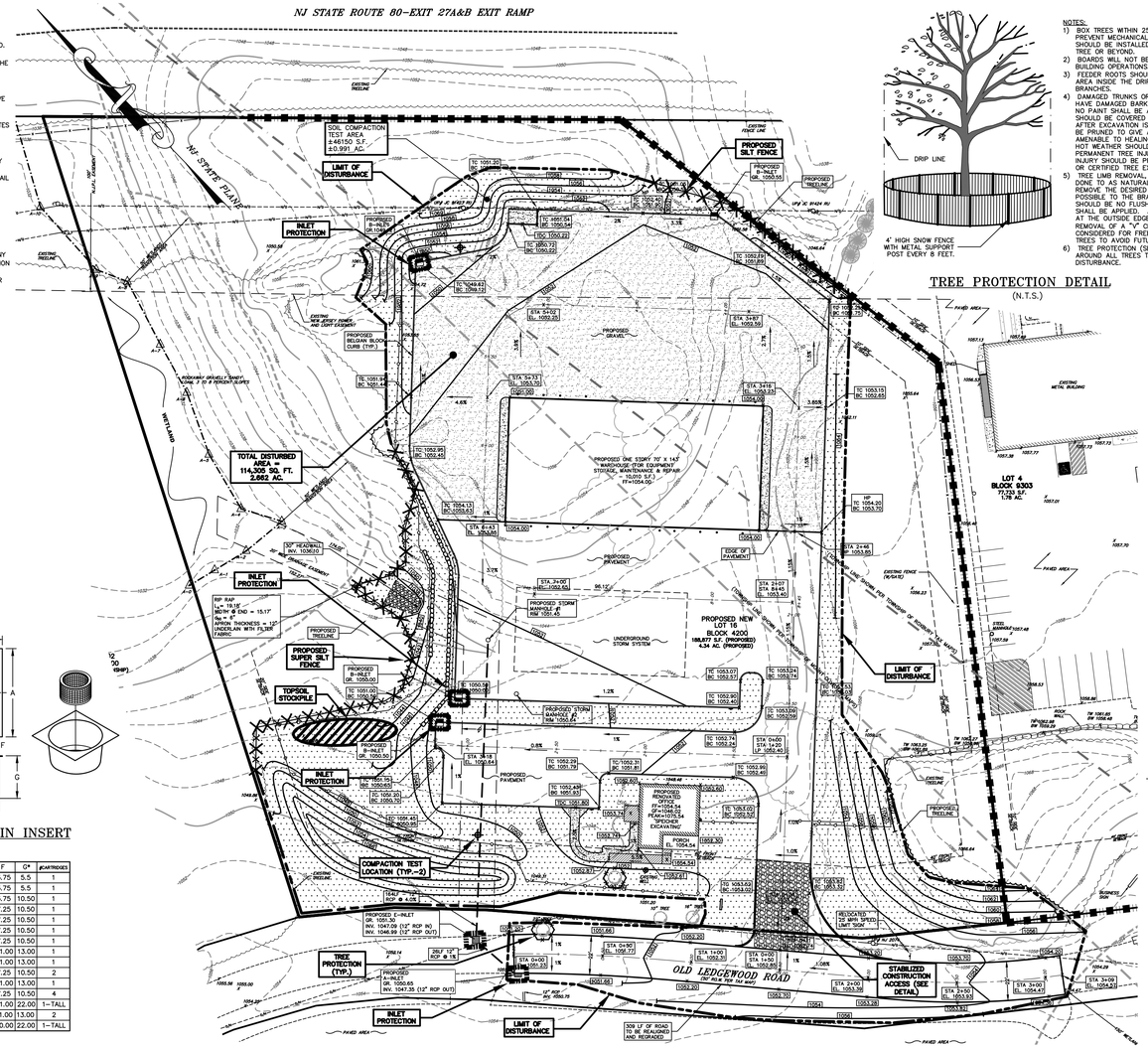
STORM SEWER PROFILES
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'

TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

MORRIS COUNTY SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH STRAW OR HAY AND TACKED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 21 BELOW.
3. PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE NOTE 22 BELOW.
4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE 21 BELOW.
5. TEMPORARY DIVERSION BERMS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EASEMENT AREAS. SEE THE DIVERSION DETAIL.
6. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER". SPECIFIED RATES AND LOCATIONS SHALL BE AS ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
7. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
8. ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE INSPECTED & MAINTAINED DAILY.
9. STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL HAVE A SILT FENCE PROPERLY ENTRENCHED AT TOE OF SLOPE.
10. A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL FOR CHART AND DIMENSIONS.
11. ALL NEW ROADWAYS WILL BE TREATED WITH A SUITABLE SUBBASE UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.
12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
13. BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS REQUIRED.
14. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR APPROVED MATERIAL. SEE THE DEWATERING DETAIL.
15. ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE.
16. DURING AND AFTER CONSTRUCTION, THE APPLICANT WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF THE DRAINAGE STRUCTURES, VEGETATIVE COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT.
17. ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN, OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION, ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.
18. THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.
19. THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.
20. TOPSOIL STOCKPILE PROTECTION
    - A. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS/1000 S.F.
    - B. APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS/1000 S.F.
    - C. APPLY PERENNIAL RYEGRASS AT A RATE OF 1 LB/1000 S.F. AND ANNUAL RYEGRASS AT A RATE OF 1 LB/1000 S.F.
    - D. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS/1000 S.F.
    - E. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
    - F. PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
21. TEMPORARY STABILIZATION SPECIFICATIONS
    - A. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS/1000 S.F.
    - B. APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS/1000 S.F.
    - C. APPLY PERENNIAL RYEGRASS AT 1 LB/1,000 SF AND ANNUAL RYEGRASS AT 1 LB/1,000 SF.
    - D. MULCH STOCKPILE WITH HAY OR STRAW. APPLY AT A RATE OF 90 LBS/1000 S.F.
    - E. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
22. PERMANENT STABILIZATION SPECIFICATIONS
    - A. APPLY TOPSOIL TO A DEPTH OF 5" (UNSETTLED).
    - B. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS./1000 S.F. AND WORK FOUR INCHES (4") INTO SOIL.
    - C. APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS./1000 S.F.
    - D. APPLY HARD FESCUE AT 2.7 LBS./1,000 SF, CREEPING RED FESCUE 0.7 LBS/1,000 SF, AND PERENNIAL RYEGRASS AT 0.25 LBS/1,000 SF
    - E. MULCH WITH HAY OR STRAW. APPLY AT A RATE OF 90 LBS/1000 S.F.
    - F. APPLY LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.



SOIL EROSION & SEDIMENT CONTROL PLAN

GRAPHIC SCALE

-40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

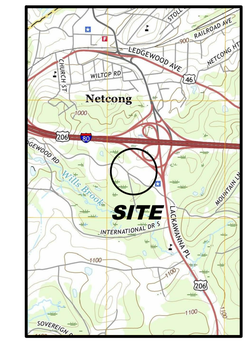
NOTES:
1) BOX TREES WITHIN 25 FT OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING BARRIER SHOULD BE INSTALLED AT THE DRIP LINE OF A TREE OR BEYOND.
2) BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
3) FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE BRANCHES.
4) DAMAGED TRUNKS OR EXPOSED ROOTS SHALL HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A FORESTER OR CERTIFIED TREE EXPERT.
5) TREE LIMB REMOVAL, WHEN NECESSARY WILL BE DONE TO AS NATURAL TARGET PRUNING TO REMOVE THE DESIRED BRANCH AS CLOSE AS POSSIBLE TO THE BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS. NO TREE PAINT SHALL BE APPLIED. ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR. REMOVAL OF A "V" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES TO AVOID FUTURE SPLITTING DAMAGE.
6) TREE PROTECTION (SEE DETAIL) TO BE USED AROUND ALL TREES TO REMAIN WITHIN LIMIT OF DISTURBANCE.

TREE PROTECTION DETAIL

(N.T.S.)

LOCATION PLAN SOIL SURVEY

SCALE: N.T.S.

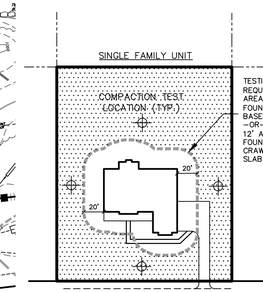


LOCATION PLAN FROM U.S.G.S.

SCALE: 1"=2000'

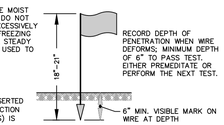
SOIL DE-COMPACTION AND TESTING REQUIREMENTS

A. SOIL COMPACTION TESTING REQUIREMENTS
   1. SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
   2. AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
   3. COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. LOCATION ID'S SHALL BE USED TO COMPLETE THE COMPACTION REMEDIATION FORM, AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE TOWNSHIP.
   4. IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL, MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.
B. COMPACTION TESTING METHODS
   1. PROBING WIRE TEST (SEE DETAIL)
   2. HANDHELD PENETROMETER TEST (SEE DETAIL)
   3. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL REQUIRED)
   4. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL REQUIRED)
   5. NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO TOWNSHIP APPROVAL.
   6. DETAILED REQUIREMENTS FOR EACH COMPACTION TESTING METHOD CAN BE FOUND IN SECTION 19 "STANDARD FOR LAND GRADING" OF THE NJ STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION.
   7. SOIL COMPACTION TESTING IS NOT REQUIRED IF/WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.
C. PROCEDURES FOR SOIL COMPACTION MITIGATION
   1. PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
   2. RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAY BE SUBSTITUTED SUBJECT TO TOWNSHIP APPROVAL.



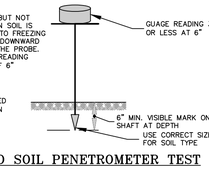
TYPICAL SOIL COMPACTION TESTING LOCATIONS

N.T.S.



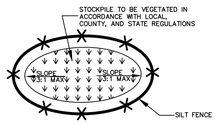
PROBING WIRE TEST
15.5 GA. STEEL WIRE (SURVEY FLAG)

N.T.S.



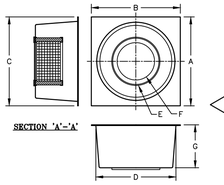
HANDHELD SOIL PENETROMETER TEST

N.T.S.



TOPSOIL STOCKPILE DETAIL

(N.T.S.)



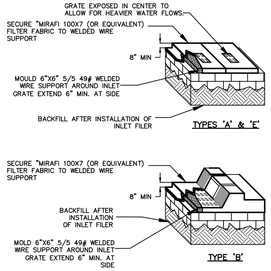
SECTION 'A'-'A'

"TRITON" CATCH BASIN INSERT

(N.T.S.)

MODEL	A*	B*	C	D	E	F	G*	#CARTRIDGES
TR1212	13.00	13.00	11.00	11.00	6.75	3.75	5.5	1
TR1212RP	#13.00		#11.00		6.75	3.75	5.5	1
TR1616	18.00	18.00	14.00	14.00	6.75	3.75	10.50	1
TR1818	20.00	20.00	17.00	17.00	10.50	7.25	10.50	1
TR1818RP	#20.00		#20.00		10.50	7.25	10.50	1
TR1824	19.00	25.00	17.00	17.00	10.50	7.25	10.50	1
TR2024	21.00	25.00	17.00	17.00	10.50	7.25	10.50	1
TR2424SR	26.00	26.00	21.00	21.00	14.00	11.00	13.00	1
TR2480	#26.00		#21.00		14.00	11.00	13.00	1
TR2436	26.00	38.00	17.00	30.00	10.50	7.25	10.50	2
TR3030	33.00	33.00	21.00	21.00	14.00	11.00	13.00	1
TR3636	40.00	40.00	34.00	34.00	10.50	7.25	10.50	4
TR3680	#40.00		#40.00		14.00	11.00	22.00	1--TALL
TR2448	26.00	52.00	21.00	42.00	14.00	11.00	13.00	2
TR4848	52.00	52.00	42.00	42.00	24.00	20.00	22.00	1--TALL

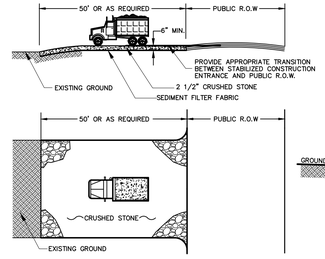
NOTES:
1.) ALL DIMENSIONS ARE IN INCHES
2.) UNITS ARE CONSTRUCTED FROM HIGH DENSITY POLYETHYLENE PLASTIC WITH UV INHIBITORS.
3.) MEDIA CARTRIDGES CAN BE INTERCHANGED WITH GEOTRAP SERIES AS SITE CONDITIONS CHANGE.
4.) LOW PROFILE FILTERS ARE ALSO AVAILABLE FOR SHALLOW CATCH BASINS.
5.) CUSTOM SIZES ARE AVAILABLE TO FIT MOST APPLICATIONS.
6.) OPTIONAL TDG TRASH GUARDS AVAILABLE.
7.) DUAL STAGE AND DUAL CAPACITY FILTERS ALSO AVAILABLE.
8.) DIM 'A' AND 'B' CAN BE TRIMMED TO FIT.
9.) CUSTOM INSTALL BRACKETS ARE AVAILABLE AS NEEDED.



1. CONTRACTOR SHALL FREQUENTLY INSPECT FABRIC FILTER TO MAINTAIN IN PROPER CONDITION, REPLACE FILTER PROMPTLY WHEN IRREPARABLE, AND REMOVE ACCUMULATED SEDIMENT WHEN NECESSARY.
2. A 2 FOOT SECTION OF FRAME SHALL REMAIN WITHOUT FILTER FABRIC TO CONVEY HIGHER FLOWS OF WATER SAFELY INTO SEWER SYSTEM.
3. CONTRACTOR TO REMOVE FABRIC AND MESH WHEN AREA DRAINING TOWARD INLET HAS BEEN STABILIZED.

TEMPORARY CONSTRUCTION FILTER DETAIL

(N.T.S.)



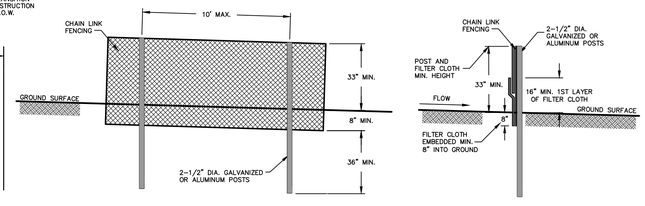
"TRITON" SIZING CHART

CONSTRUCTION ENTRANCE DETAIL

(N.T.S.)

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COURSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT.	100 FT.
2 TO 5%	100 FT.	200 FT.
> 5%	ENTIRE SURFACE STABILIZED WITH FABC BASE COURSE*	

* AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY



SUPER SILT FENCE DETAIL

SUPER SILT FENCE TO BE REQUIRED IF:
-CONTRIBUTING DRAINAGE AREA IS GREATER THAN 1 AC. OR;
-FLOW IS GREATER THAN 150 FT. OR;
-SLOPE IS GREATER THAN 5% WITHIN 30 FT. ADJACENT TO FENCE

(N.T.S.)

SOIL EROSION LEGEND

- CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SILT FENCE
- SUPER SILT FENCE
- TOPSOIL STOCKPILE
- TREE PROTECTION
- INLET FILTER
- SOIL COMPACTION TESTING AREA
- SOIL COMPACTION TESTING LOCATION

DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GAL/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPREAD	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARD.		
ADDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE – TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
SPRINKLING – SITE IS SPRINKLED UNTIL THE SURFACE IS WET.
BARRIERS – SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.
CALCIUM CHLORIDE – SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.
STONE – COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

SEQUENCE OF CONSTRUCTION

		TIME FRAME IN DAYS
1.)	INSTALL FABRIC FILTER FENCES, AND WHEEL CLEARING APRON.	2
2.)	REMOVE SECTION OF OLD LEDGEWOOD RD. REGRADE, REALIGN AND REPAVE.	14
3.)	REMOVE GRAVEL AND STOCKPILE FOR USE AS BASE/FILL.	5
4.)	REMOVE TREES AND STUMP SITE AS REQUIRED.	2
5.)	STRIP TOPSOIL, STOCKPILE AND STABILIZE.	5
6.)	BRING BUILDING AND PARKING AREAS TO ROUGH GRADE, INCLUDING NEW ENTRANCE.	7
7.)	INSTALL STORM SEWER DRAINAGE SYSTEM.	10
8.)	INSTALL CATCH BASINS AND PIPING, INCLUDING ALL TRITON CATCH BASIN INSERTS. CONNECT TO DRAINAGE SYSTEM.	14
9.)	BEGIN BUILDING CONSTRUCTION	10
10.)	INSTALL REMAINING SITE UTILITIES – SEPTIC SYSTEM, WATER LINES, UG ELECTRIC/TELEPHONE, & ROOF DRAIN.	21
11.)	INSTALL CURBING.	5
12.)	INSTALL POLE MOUNTED LIGHTING.	5
13.)	ADDITIONAL FINE GRADING OF PARKING AREAS.	3
14.)	INSTALL STABILIZED BASE COURSE WITHIN PARKING AREA AND ENTRANCE.	2
15.)	COMPLETE BUILDING CONSTRUCTION, INCLUDING BUILDING MOUNTED LIGHTS.	20
16.)	INSTALL REMAINING IMPROVEMENTS INCLUDING FENCE & DUMPSTER PAD.	5
17.)	FINAL GRADING SITE AND STABILIZATION INCLUDING TOPSOILING	21
18.)	PAVE UPPER AND LOWER PARKING LOTS.	5
19.)	APPLY GRAVEL TO REAR PARKING AREA AND BRING TO FINAL GRADE.	3
20.)	REMOVE EXISTING DRIVEWAY, TOPSOIL, SEED & MULCH.	2
21.)	LANDSCAPING.	2
22.)	REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES AND CLEAN RIP RAP APRON AT H .	3

NOTE

CONDITIONS SHOWN ON ADJACENT LOT 4 BLOCK 9303 PER RECENT APPROVED SITE PLAN AND SUBDIVISION PROPOSED IMPROVEMENTS PER PLANS TITLED MINOR SUBDIVISION AND PRELIMINARY SITE PLANS BY CIVIL ENGINEERING, INC., JAMES G. GLASSON, NJPE 37703, DATED 11/20/19, LAST REVISED 6/10/22, AS APPROVED BY ROXBURY TOWNSHIP, RESOLUTION #ZBA-20-004, APPROVED 5/9/22, MEMORIALIZED 7/11/22

JAMES G. GLASSON
PROFESSIONAL ENGINEER, N.J. LIC. NO. 37703

Rev. No.	Description	By	Date
	REVISE PER 3-11-23 BOARD ENGINEER'S REPORT, 3-10-23 DIRECTOR OF PLANNING REPORT, 3-13-23 HABITAT BY DESIGN REPORT, 10-11-22 MCSCD COMMENTS, 1. AND 9-21-23 PUBLIC HEARING	WBB/CWH	10/27/23

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Fax: (973) 426-0716
N.J. – C of A #24GA27922000

SHEET 14 OF 19

SOIL EROSION & SEDIMENT CONTROL PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

PROPOSED LIGHTING LAYOUT

GRAPHIC SCALE

−30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

LIGHTING NOTES:

1.) ALL SITE LIGHTING WITH THE EXCEPTION OF MINIMUM ILLUMINATION REQUIRED FOR SECURITY PURPOSES SHALL BE TIMECLOCK OPERATED BASED UPON BUSINESS HOURS.

2.) ALL MOUNTING HEIGHTS TO BE MEASURED FROM LENS TO FINAL GRADE BELOW. ALL FIXTURES TO BE MOUNTED AT 18 FT.

3.) ALL LIGHTING FIXTURES & LIGHTING CALCULATIONS GENERATED BY DIVERSIFIED NEW JERSEY. FOR ADDITIONAL SUPPORT AND ORDERING INFO, CONTACT MATTHEW KENNY, DIVERSIFIED NEW JERSEY, 55 LANE ROAD, SUITE 360, FAIRFIELD, NJ 07004. CELL: 973–885–1205, EMAL: MKENNY@DIVNJ.COM – **NO SUBSTITUTION**.

4.) ALL FIXTURES (BUILDING & POLE MOUNTED) TO BE MANUFACTURED BY HUBBEL OUTDOOR AND TO BE SINGLE ARRANGEMENT.

5.) ALL POLE MOUNTED FIXTURES TO BE MOUNTED A MINIMUM OF 3' FROM CURB LINE.

Luminaire Schedule

Symbol	Qty	Arrangement	Fixture Type	Fixture Description	Catalog Number	LLF	Total Watts	Delivered Lumens	Photometric File Name	Mounted Height (lens to grade)
A	3	SINGLE	WM2	WALL MOUNTED AREA LIGHT, TYPE 2	RAR1-80L-25-3K7-2-WB	0.900	25.4	3240	RAR1-80L-25-3K7-2.ies	18 ft.
B	2	SINGLE	WM4	WALL MOUNTED AREA LIGHT, TYPE 4W	RAR1-80L-25-3K7-4W-WB	0.900	25.4	3209	RAR1-80L-25-3K7-4W.ies	18 ft.
C	1	SINGLE	P2	POLE LIGHT TYPE 2, MOUNTED ON 18' POLE	RAR1-80L-25-3K7-2	0.900	25.4	3240	RAR1-80L-25-3K7-2.ies	18 ft.
D	2	SINGLE	P5	POLE LIGHT TYPE 5QW, MOUNTED ON 18' POLE	RAR1-80L-25-3K7-5QW	0.900	25.4	3282	RAR1-80L-25-3K7-5QW.ies	18 ft.
E	2	SINGLE	P5A	POLE LIGHT TYPE 5QW WITH 6' ARM, MOUNTED ON 18' POLE	RAR1-80L-25-3K7-5QW-6' ARM	0.900	25.4	3282	RAR1-80L-25-3K7-5QW.ies	18 ft.

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE TO ZERO	Illuminance	Fc	0.09	1.5	0.0	N.A.	N.A.
DRIVE & LOT_1	Illuminance	Fc	0.50	1.3	0.3	1.67	4.33

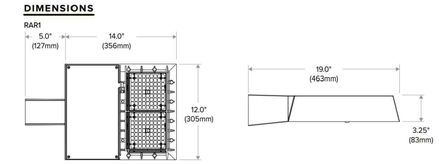
BASIC LIGHT DISTRIBUTION PATTERN

HUBBEL 'RATIO' LIGHTING FIXTURE

(N.T.S.)

DIMENSIONS

RAR1



HUBBEL 'RATIO' RAR1 LIGHTING FIXTURE DIMENSIONS

(N.T.S.)

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SHEET 15 OF 19

PROPOSED LIGHTING PLAN
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JC	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

L:\5332 – Speicher–Old Ledgewood Rd–Mt.Olive\dwg\Site Plan\Rev 1\5332–15 Lighting Plan Rev 1.dwg PS: Civil Inc.ctb

PROPOSED LANDSCAPING PLAN

GRAPHIC SCALE

–30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

LANDSCAPING NOTES:

1.) ALL BEDS (OUTLINED) TO BE PLANTED WITH HARDWOOD MULCH.
2.) ALL PLANT MATERIALS, PLANTING PRACTICES AND SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE "AMERICAN STANDARD FOR NURSERY STOCK" PROMULGATED BY THE AMERICAN ASSOCIATION OF NURSEYMAN STANDARDS.
3.) TREE STAKES AND WIRES SHALL BE REMOVED AFTER ONE YEAR FROM THE TIME OF INSTALLATION.
4.) LAWN AREAS SHALL BE TOPSOILED, SEEDED AND MULCHED.
5.) WHILE NO SPECIES OF TREE, SHRUB, OR GROUNDCOVER IS 100% DEER RESISTANT ALL SPECIES SPECIFIED HAVE BEEN VERIFIED TO BE DEER RETARDANT.
6.) AREAS WHERE GROUNDCOVER SPECIES ARE PROPOSED, PLANTING IS TO BE DONE AS TO "FILL" THE ENTIRE PROPOSED PLANTING AREA.

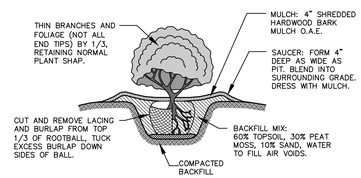
TREE REPLACEMENT REQUIRED PER §550–75 SCHEDULE A

QUANTITY REQUIRED / AC.	EXISTING CANOPY REMOVED*	QUANTITY REQUIRED	SIZE (MINIUMUM)	QUANTITY PROPOSED
50	0.466 AC.	24	2.5"–3" CALIPER B&B TREE	27
50	0.466 AC.	24	1" CALIPER B&B TREES	29
100	0.466 AC.	47	6–9' WHIPS	48
100	0.466 AC.	47	3 GAL. SHRUB	47

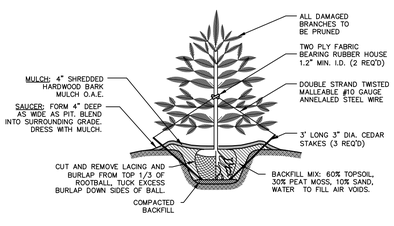
* SHOWN AND QUANTIFIED ON SHEET 2 (0.466 AC.)

PLANTING LEGEND:

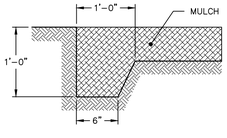
SYMBOL	BOTANICAL NAME	COMMON NAME	KEY	QUANTITY	CALIPER	HEIGHT	ROOT	COMMENT
	PICEA ABIES	NORWAY SPRUCE	PA	27	2–1/2"	7'–8'	B&B	EVERGREEN
	ACER RUBRUM 'RED SUNSET'	RED MAPLE	AR	13	1"	3'–4'	B&B	DECIDUOUS
	ACER SACCHARUM	SUGAR MAPLE	AS	12	1"	3'–4'	B&B	DECIDUOUS
	SALIX NIGRA	BLACK WILLOW	SN	4	1"	3'–4'	B&B	DECIDUOUS
	CORNUS SERICEA 'CARDINAL'	RED TWIG DOGWOOD	CS'C'	20	–	WHIP	3 GALLON+	DECIDUOUS
	CORNUS SERICEA 'FLAVIRAMEA'	YELLOW TWIG DOGWOOD	CS'F'	18	–	WHIP	3 GALLON+	DECIDUOUS
	BETULA NIGRA	RIVER BIRCH CLUMP	BN	5	–	WHIP	3 GALLON+	DECIDUOUS
	AMELANCHIER CANDENSIS	SHADBLOW SERVICEBERRY	SS	5	–	WHIP	3 GALLON+	DECIDUOUS
	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	FG	20	–	–	3 GALLON	DECIDUOUS
	ILEX VERTICILLATA	WINTERBERRY HOLLY	IV	21	–	–	3 GALLON	DECIDUOUS
	JUNIPEROUS CHINENSIS 'PARSONII'	PARSON'S JUNIPER	JC	6	–	–	3 GALLON	EVERGREEN
	NATIVE SHORTGRASS/WILDFLOWER MIX	ERNIST MIX 153 (SHOWY NORTHEAST NATIVE WILDFLOWER AND GRASS MIX – ERNMX–15)						
	HARDWOOD MULCH							
	GRASS AREA							



TYPICAL SHRUB PLANTING
(N.T.S.)



CONIFER/DECIDUOUS TREE PLANTING
(N.T.S.)



MULCH PLANT BED EDGE
(N.T.S.)

EASEMENT NOTE

SIGHT TRIANGLE EASEMENTS SUBJECT TO GRADING, PLANTING AND CONSTRUCTION RESTRICTIONS AS PROVIDED FOR IN THE MOUNT OLIVE LAND USE ORDINANCE. WITHIN A SIGHT TRIANGLE, NO GRADING, PLANTING OR STRUCTURE SHALL BE ERECTED OR MAINTAINED MORE THAN 30 INCHES ABOVE THE CENTER–LINE GRADE OF EITHER INTERSECTING STREET OR DRIVEWAY OR LOWER THAN EIGHT FEET ABOVE THEIR CENTER LINES, INCLUDING UTILITY POLES (BUT EXCLUDING STREET NAME SIGNS AND OFFICIAL TRAFFIC REGULATION SIGNS). WHERE ANY STREET OR DRIVEWAY INTERSECTION INVOLVES EARTH BANKS OR VEGETATION, INCLUDING TREES, THE OWNER SHALL TRIM SUCH VEGETATION AND TREES AS WELL AS ESTABLISH PROPER EXCAVATION AND GRADING TO PROVIDE THE SIGHT TRIANGLE.

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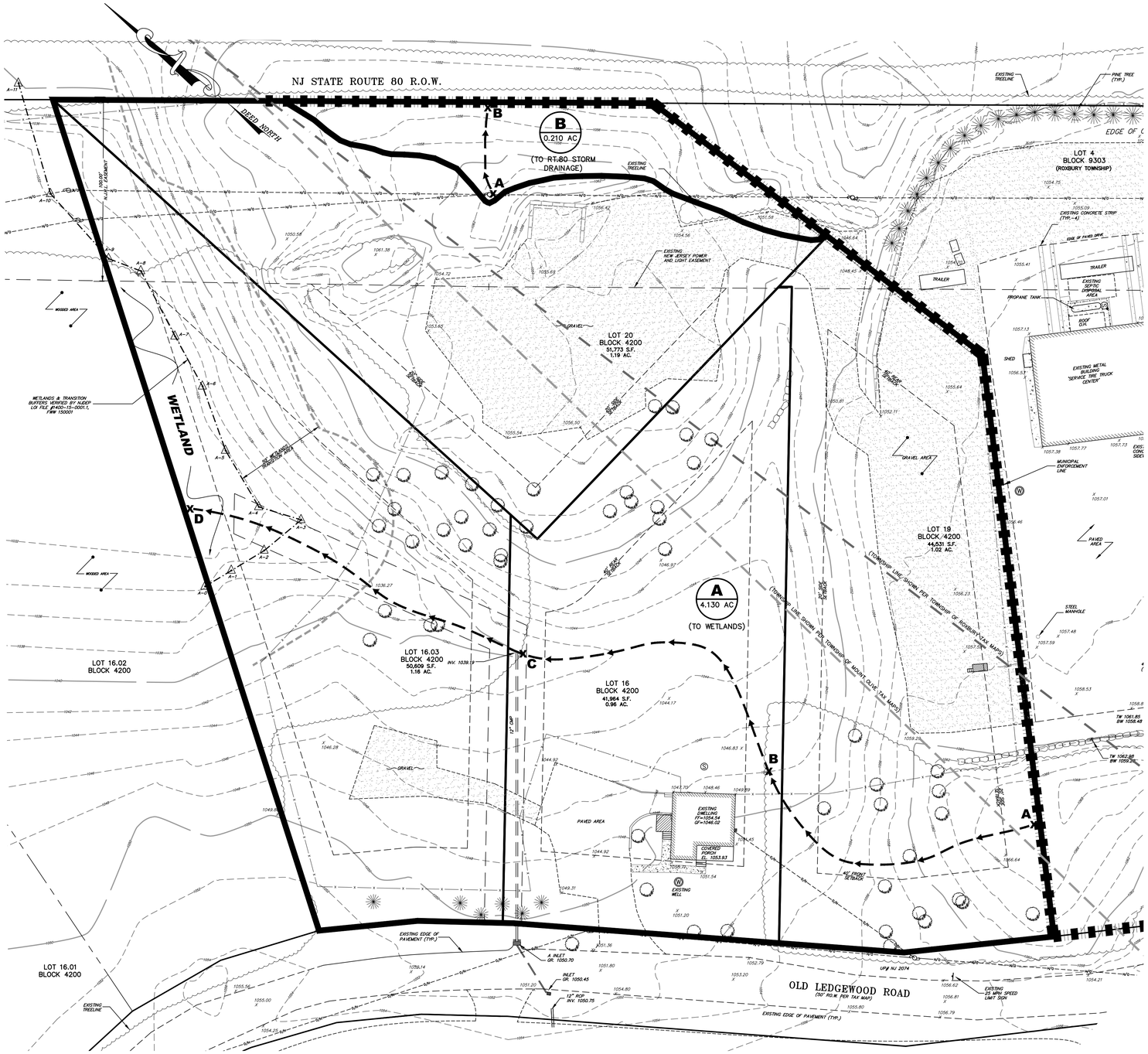
SHEET 16 OF 19

PROPOSED LANDSCAPING PLAN
FOR:
LOTS 16, 16.03,
19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JG	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

L:\5332 – Speicher–Old Ledgewood Rd–Mt.Olive\dwg\Site Plan\Rev 1\5332–16 Landscaping Plan Rev 1.dwg PS: Civil Inc.ctb



PRE DEVELOPMENT AREAS

	IMPERVIOUS (INCLUDES PAVEMENT, CONCRETE, GRAVEL & ROOF)	WOODS	GRASS	TOTAL
AREA A	0.929 AC.	1.238 AC.	1.963 AC.	4.130 AC.
AREA B	0.008 AC.	0.009 AC.	0.193 AC.	0.210AC.
			TOTAL	4.340 AC.

DRAINAGE AREAS LEGEND:

- A / 1.38 AC — DRAINAGE AREA DESIGNATION; TOTAL AREA (AC)
- TIME OF CONCENTRATION FLOW PATH
- XA — BEGINNING/ENDING OF FLOW PATH
- DRAINAGE AREA BOUNDARY

PRE DEVELOPMENT DRAINAGE AREA PLAN

GRAPHIC SCALE

-30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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SHEET 17 OF 19

PRE DEVELOPMENT DRAINAGE AREA PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JC	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

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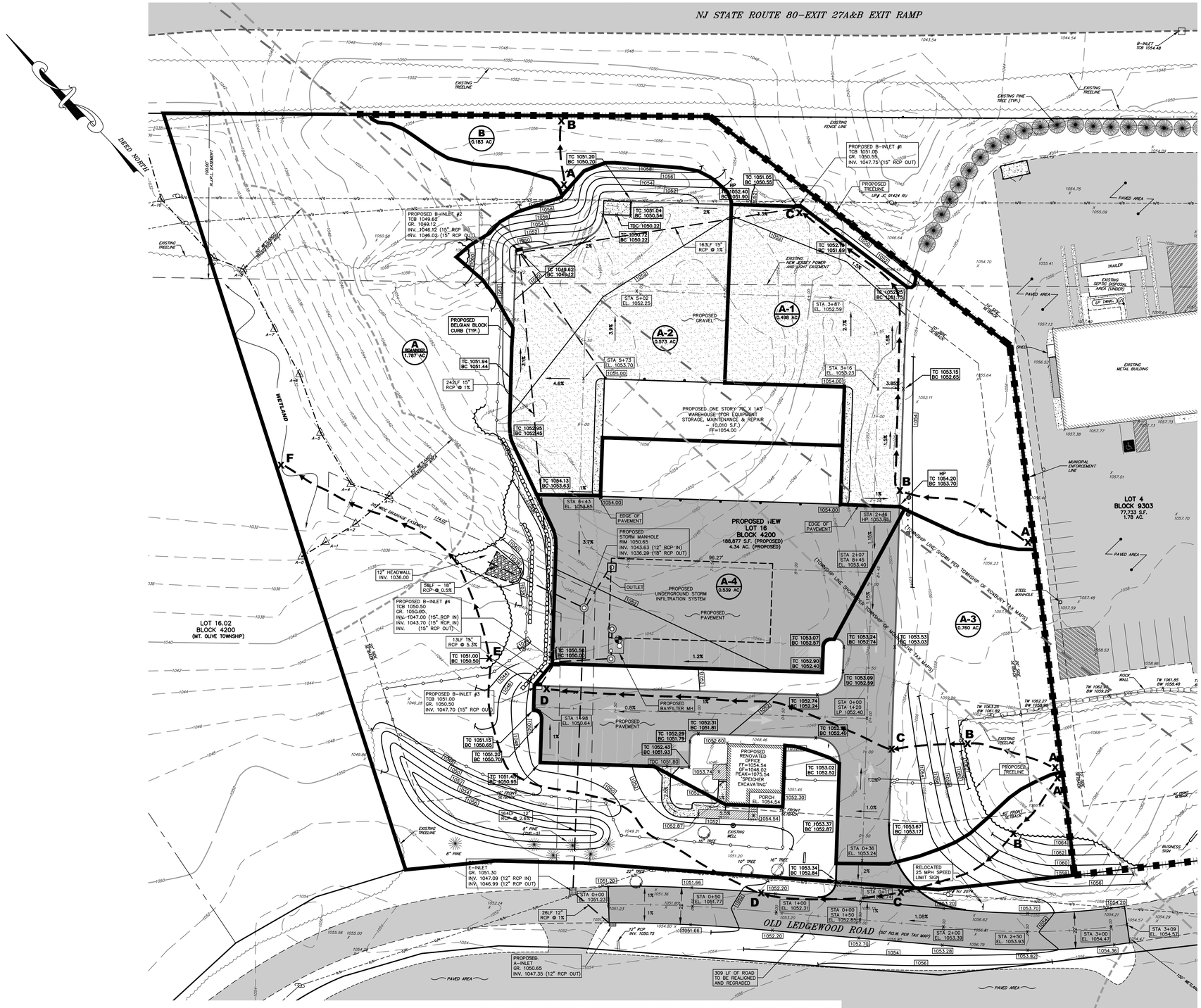

POST DEVELOPMENT DRAINAGE AREA PLAN

GRAPHIC SCALE

-30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

POST DEVELOPMENT AREAS

	IMPERVIOUS (INCLUDES PAVEMENT, CONCRETE, GRAVEL & ROOF)	WOODS	GRASS	TOTAL
AREA A (REMAINDER)	0.029 AC.	0.668 AC.	1.090 AC.	1.787 AC.
AREA A-1	0.284 AC.	---	0.214 AC.	0.498 AC.
AREA A-2	0.478 AC.	---	0.095 AC.	0.573 AC.
AREA A-3	0.309 AC.	0.054 AC.	0.397 AC.	0.760 AC.
AREA A-4	0.539 AC.	---	---	0.539 AC.
AREA B	---	---	0.183 AC.	0.183 AC.
			TOTAL	4.340 AC.

AREAS A-1, A-2, A-3, A-4 TO UNDERGROUND STORM SYSTEM

DRAINAGE AREAS LEGEND:

A / 1.38 AC — DRAINAGE AREA DESIGNATION; TOTAL AREA (AC)

TIME OF CONCENTRATION FLOW PATH

X_A — BEGINNING/ENDING OF FLOW PATH

DRAINAGE AREA BOUNDARY

REVISE PER 3-11-23 BOARD ENGINEER'S REPORT, 3-10-23 DIRECTOR OF PLANNING REPORT, 3-13-23 HABITAT BY DESIGN REPORT, 10-11-22 MCSCD COMMENTS, 1. AND 9-21-23 PUBLIC HEARING WBB/CWH 10/13/23

Rev. No.	Description	By	Date

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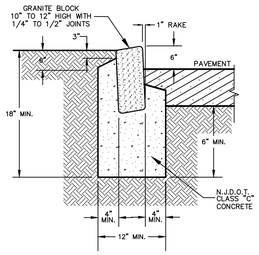
SHEET 18 OF 19

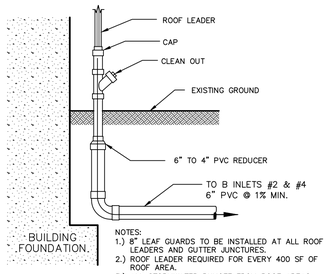
POST DEVELOPMENT DRAINAGE AREA PLAN
FOR:
LOTS 16, 16.03, 19 & 20 BLOCK 4200
'OLD LEDGEWOOD ROAD'
TOWNSHIP OF MOUNT OLIVE
MORRIS COUNTY, NEW JERSEY

Checked By:	JC	Date:	9/15/22
Drawn By:	WBB	Project No:	5332

L:\5332 - Speicher-Old Ledgewood Rd-Mt.Olive\dwg\Site Plan\Rev 1\5332-18 Post Development Drainage Plan Rev 1.dwg PS: Civil Inc.ctb

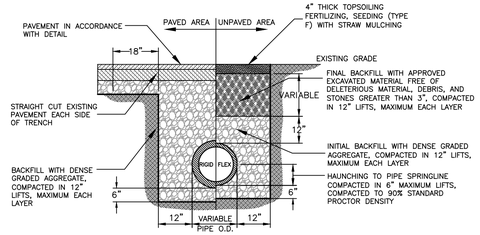


BELGIAN BLOCK CURB DETAIL
(N.T.S.)



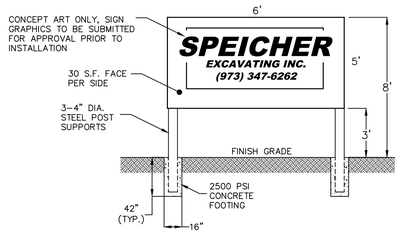
NOTES:
1.) 8" LEAF GUARDS TO BE INSTALLED AT ALL ROOF LEADERS AND GUTTER JUNCTURES.
2.) ROOF LEADER REQUIRED FOR EVERY 400 SF OF ROOF AREA.
3.) ALL STORMWATER RUNOFF FROM ROOF AREAS SHALL BE TRANSPORTED TO STORM SYSTEM.

ROOF LEADER DETAIL
(N.T.S.)

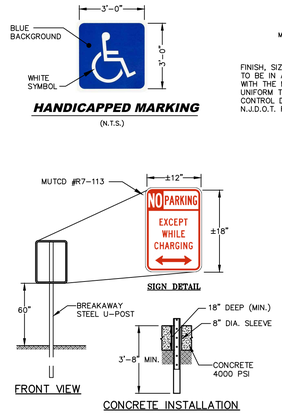


NOTES:
1. REINFORCED CONCRETE CULVERT PIPE, MINIMUM 15" DIAMETER, SHALL BE UTILIZED IN ALL COUNTY RIGHT OF WAYS WHETHER PAVED OR UNPAVED.
2. CONTRACTOR SHALL HAND COMPACT DGA BENEATH THE HAUNCHES OF FLEXIBLE PIPE TO ENSURE INSTALLATION MEETS OR EXCEEDS MANUFACTURERS SPECIFICATIONS.
3. IF NO OTHER CONTROLLING FACTORS EXIST, ALL CONCRETE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ACTIVE STANDARD ASTM C14779. ALL THERMOPLASTIC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ACTIVE STANDARD ASTM D2321.
4. SOIL IN THE OUTER BEDDING, HAUNCH, AND LOWER SIDE ZONES SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE MAJORITY OF SOIL IN THE OVERFILL ZONE. SOIL SHALL BE COMPACTED WITHIN 2% OF OPTIMUM WATER CONTENT.
5. BACKFILLING WITH EXCAVATED MATERIAL SHALL NOT BE PERMITTED IN TRENCHES FOR STORM SEWERS AND ALL OTHER UTILITIES.
6. TYPE OF SEEDING SHALL MEET THE MORRIS COUNTY SOIL CONSERVATION DISTRICT REQUIREMENTS.
7. SURFACE COURSE PAVEMENT SHALL BE PLACED IN TWO STAGES IN ACCORDANCE WITH THE FOLLOWING:
   A. STAGE 1–2" HMA 9.5M64 SHALL BE COMPACTED FLUSH TO EXISTING PAVEMENT.
   B. STAGE 2–AFTER 8 MONTHS, THE TRENCH WIDTH PLUS 36" SHALL BE MILLED 2" DEEP AND SHALL BE RESURFACED WITH 2" HMA 9.5M64

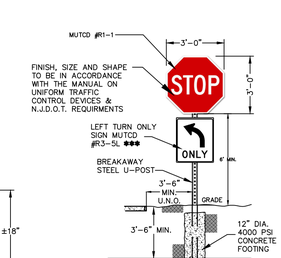
TRENCH OPENING DETAIL
(N.T.S.)



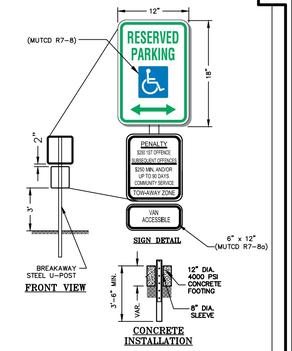
FREE STANDING SIGN DETAIL
(N.T.S.)



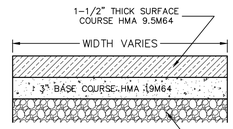
EV PARKING SIGN
(N.T.S.)



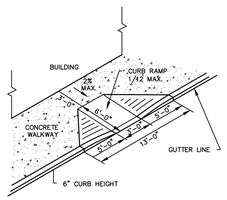
STOP SIGN DETAIL
(N.T.S.)
*** LEFT TURN ONLY SIGN TO BE MOUNTED ONLY ON STOP SIGN FOR OLD LEGEWOOD ROAD



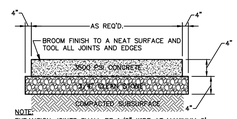
HANDICAPPED SIGN
NOTE: SIGN TO SPECIFY "VAN ACCESSIBLE", EITHER ON TOP PORTION OR WITH ADDITIONAL (R7–8a) SIGN
(N.T.S.)



PAVEMENT DETAIL
(FOR LOWER PARKING LOT)
(N.T.S.)

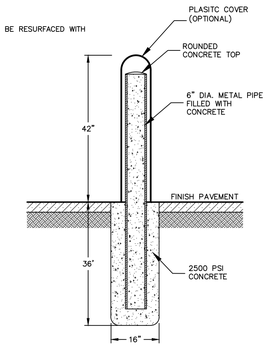


HANDICAPPED RAMP
(N.T.S.)

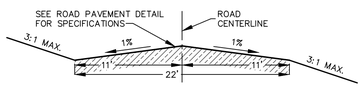


NOTE:
EXPANSION JOINTS SHALL BE 1/2" WIDE AT MAXIMUM 6' INTERVALS. JOINTS SHALL BE FILLED WITH A CELLULAR COMPRESSION MATERIAL, RECESSED 1/4" FROM TOP.

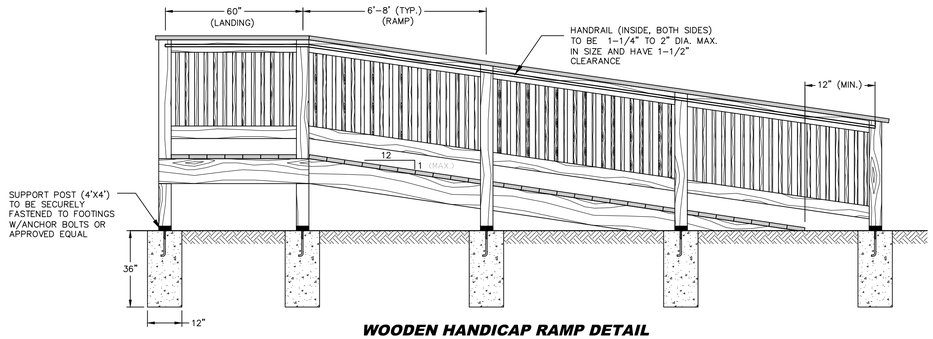
CONCRETE SIDEWALK DETAIL
(N.T.S.)



CONCRETE BOLLARD DETAIL
(N.T.S.)



TYPICAL ROAD SECTION DETAIL
(N.T.S.)

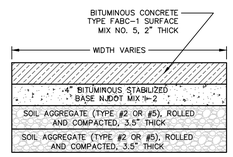


WOODEN HANDICAP RAMP DETAIL
(N.T.S.)

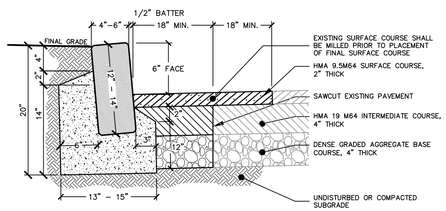
RAMP NOTES
1.) ADA STANDARDS REQUIRE A 1:12 RAMP SLOPE RATIO WHICH EQUALS 4.8 DEGREES SLOPE OR ONE FOOT OF WHEELCHAIR RAMP FOR EACH INCH OF RISE. FOR INSTANCE, A 30 INCH RISE REQUIRES A 30 FOOT HANDICAP WHEELCHAIR RAMP.
2.) ADA GUIDELINES REQUIRE A MINIMUM 5' X 5' FLAT, UNOBSTRUCTED AREA AT THE TOP AND BOTTOM OF THE RAMP.
3.) ADA STANDARDS REQUIRE WHEELCHAIR RAMPS TO HAVE A MINIMUM WIDTH OF 36 INCHES OF CLEAR SPACE ACROSS THE WHEELCHAIR RAMP.
4.) ADA CODE COMPLIANCE REQUIRE A MINIMUM TURN PLATFORM SIZE OF 5' X 5'.
5.) ADA GUIDELINES FOR WHEELCHAIR RAMPS ALLOW A MAXIMUM RUN OF 30 FEET OF WHEELCHAIR RAMP BEFORE A REST OR TURN PLATFORM.
6.) ADA RAMP GUIDELINES REQUIRE ADA RAMP HANDRAILS THAT ARE BETWEEN 34" AND 38" IN HEIGHT ON BOTH SIDES OF THE WHEELCHAIR RAMPS.

HANDRAIL NOTES
IF A RAMP RUN HAS A RISE GREATER THAN 6 IN (150 MM) OR A HORIZONTAL PROJECTION GREATER THAN 72 IN (1830 MM), THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. HANDRAILS SHALL HAVE THE FOLLOWING FEATURES:

1.) HANDRAILS SHALL BE PROVIDED ALONG BOTH SIDES OF RAMP SEGMENTS. THE INSIDE HANDRAIL ON SWITCHBACK OR DOGLEG RAMPS SHALL ALWAYS BE CONTINUOUS.
2.) IF HANDRAILS ARE NOT CONTINUOUS, THEY SHALL EXTEND AT LEAST 12 IN (305 MM) BEYOND THE TOP AND BOTTOM OF THE RAMP SEGMENT AND SHALL BE PARALLEL WITH THE FLOOR OR GROUND SURFACE.
3.) THE CLEAR SPACE BETWEEN THE HANDRAIL AND THE WALL SHALL BE 1–1/2 IN (38 MM).
4.) GRIPPING SURFACES SHALL BE CONTINUOUS.
5.) TOP OF HANDRAIL GRIPPING SURFACES SHALL BE MOUNTED BETWEEN 34 IN AND 38 IN (865 MM AND 965 MM) ABOVE RAMP SURFACES.
6.) ENDS OF HANDRAILS SHALL BE EITHER ROUNDED OR RETURNED SMOOTHLY TO FLOOR, WALL, OR POST.
7.) HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

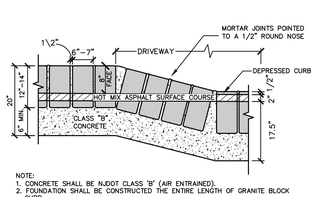


ROAD PAVEMENT DETAIL
(N.T.S.)



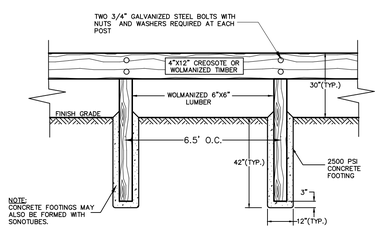
NOTE:
1. CONCRETE SHALL BE NJDOT CLASS 'B' (AIR ENTRAINED).
2. FOUNDATION SHALL BE CONSTRUCTED THE ENTIRE LENGTH OF GRANITE BLOCK CURB.

GRANITE BLOCK CURB DETAIL
(N.T.S.)

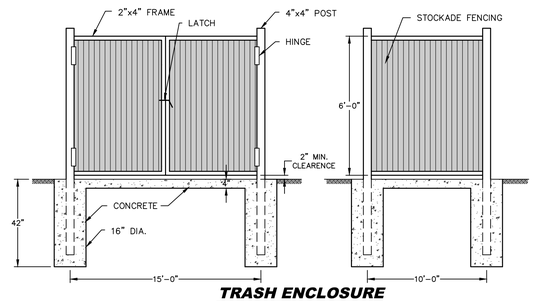


NOTE:
1. CONCRETE SHALL BE NJDOT CLASS 'B' (AIR ENTRAINED).
2. FOUNDATION SHALL BE CONSTRUCTED THE ENTIRE LENGTH OF GRANITE BLOCK CURB.
3. MORTAR SHALL CONSIST OF ONE (1) PART PORTLAND CEMENT TO TWO (2) PARTS FINE AGGREGATES. WATER SHALL BE ADDED TO FORM THE PROPER CONSISTENCY.
4. MORTAR SHALL NOT BE TEMPERED OR USED AFTER IT HAS BEGUN TO SET.

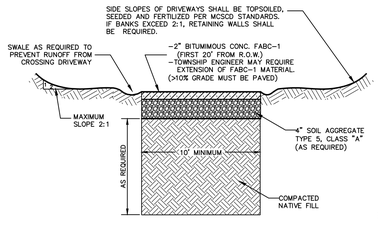
GRANITE BLOCK CURB DETAIL
(N.T.S.)



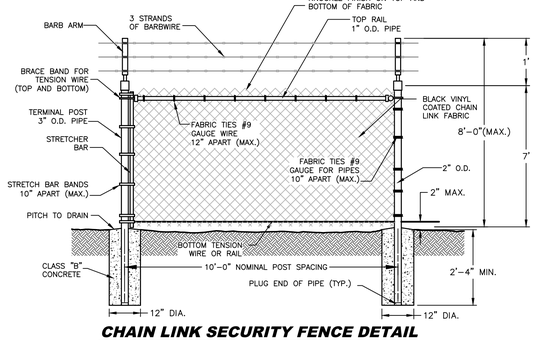
TIMBER GUARDRAIL DETAIL
(N.T.S)



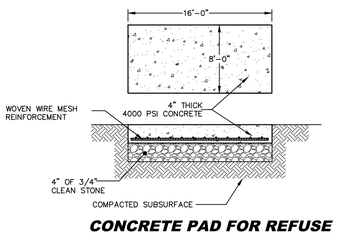
TRASH ENCLOSURE
(N.T.S.)



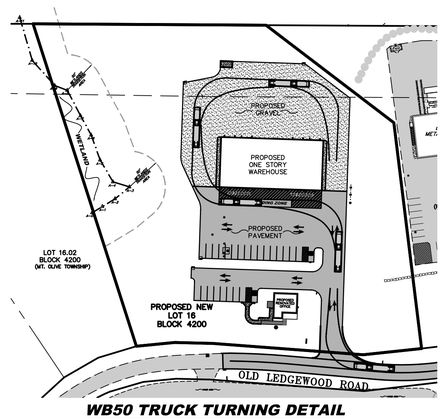
DRIVEWAY DETAIL
(N.T.S.)



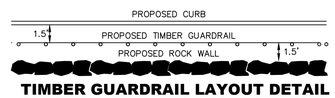
CHAIN LINK SECURITY FENCE DETAIL
(N.T.S.)



CONCRETE PAD FOR REFUSE AREA ENCLOSURE
(N.T.S.)



WB50 TRUCK TURNING DETAIL
(SCALE: 1=100')



TIMBER GUARDRAIL LAYOUT DETAIL
(N.T.S)

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L:\5332 – Speicher–Old Ledgewood Rd–Mt Olive\dwg\Site Plan\Rev 1\5332–19 Details Rev 1.dwg PS: Civil Inc.ctb