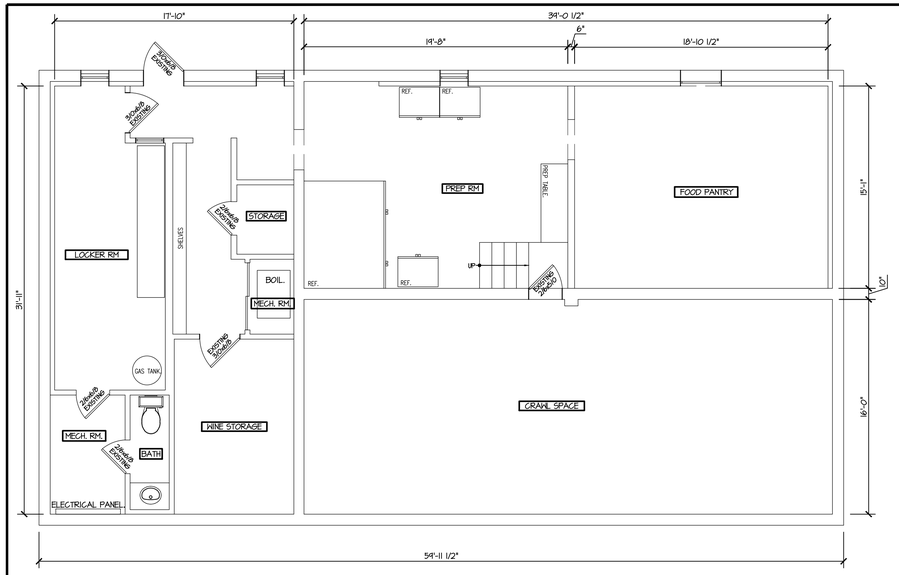
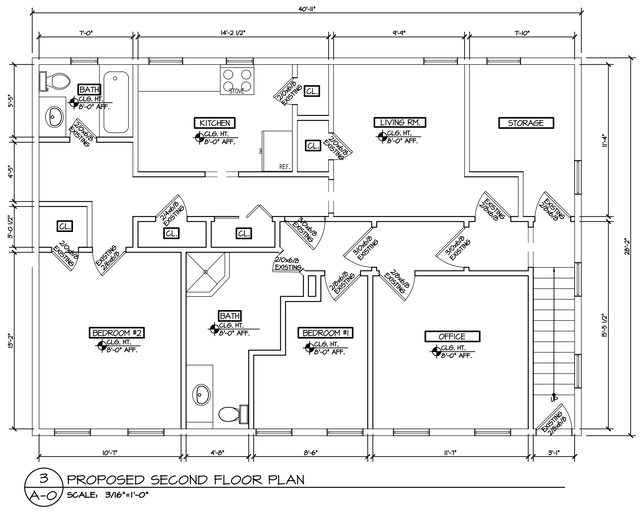
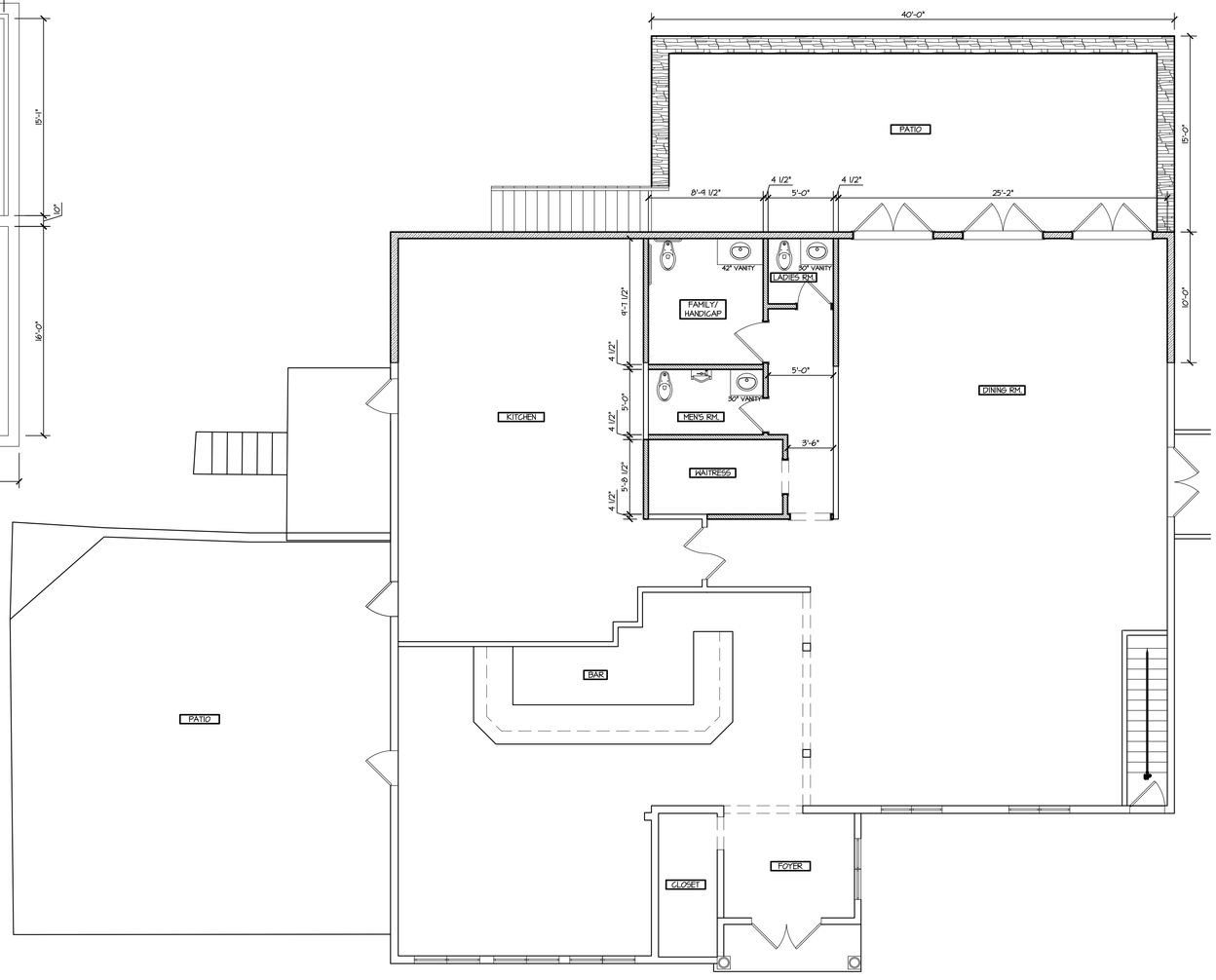


1 A-0 PROPOSED BASEMENT PLAN
SCALE: 3/16"=1'-0"



3 A-0 PROPOSED SECOND FLOOR PLAN
SCALE: 3/16"=1'-0"



2 A-0 PROPOSED FIRST FLOOR PLAN
SCALE: 3/16"=1'-0"

REVISION	DATE

Seal:

REGISTERED ARCHITECT
JOSEPH R. CROCCO
15890
STATE OF NEW YORK

joseph r. crocco architects
new york connecticut new jersey massachusetts
4 macdonald avenue, suite 5
armonk, new york 10504
(914) 273-2774 fax (914) 273-2776

PROPOSED ALTERATION/ ADDITION:

FOR:
GAVI
15 OLD RTE 22
ARMONK, NY

Dwg. Name:
PROPOSED FLOOR PLANS

Project No:
23004

Date:
APRIL 4, 2023

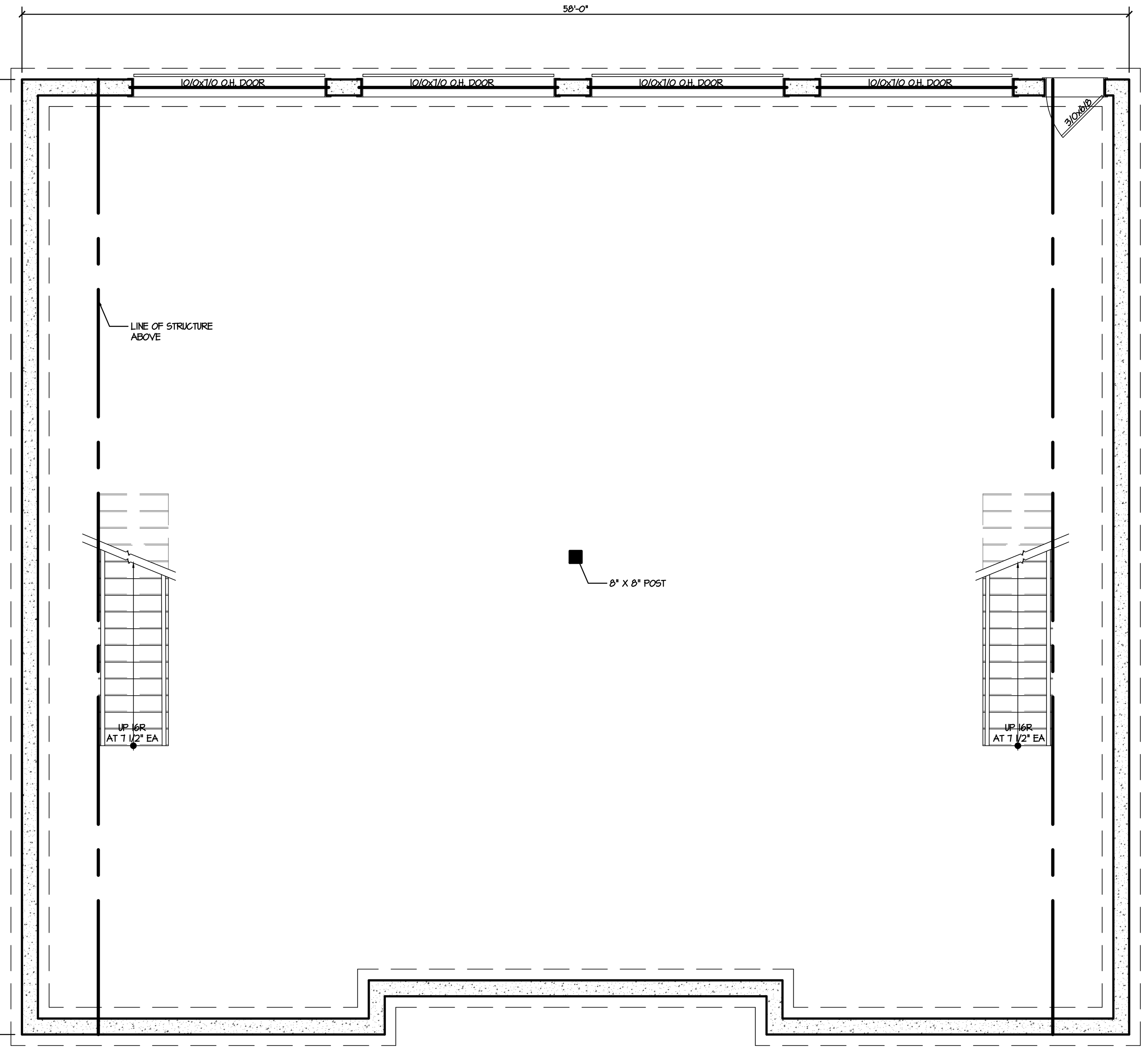
Sheet Number:
A-0

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED:

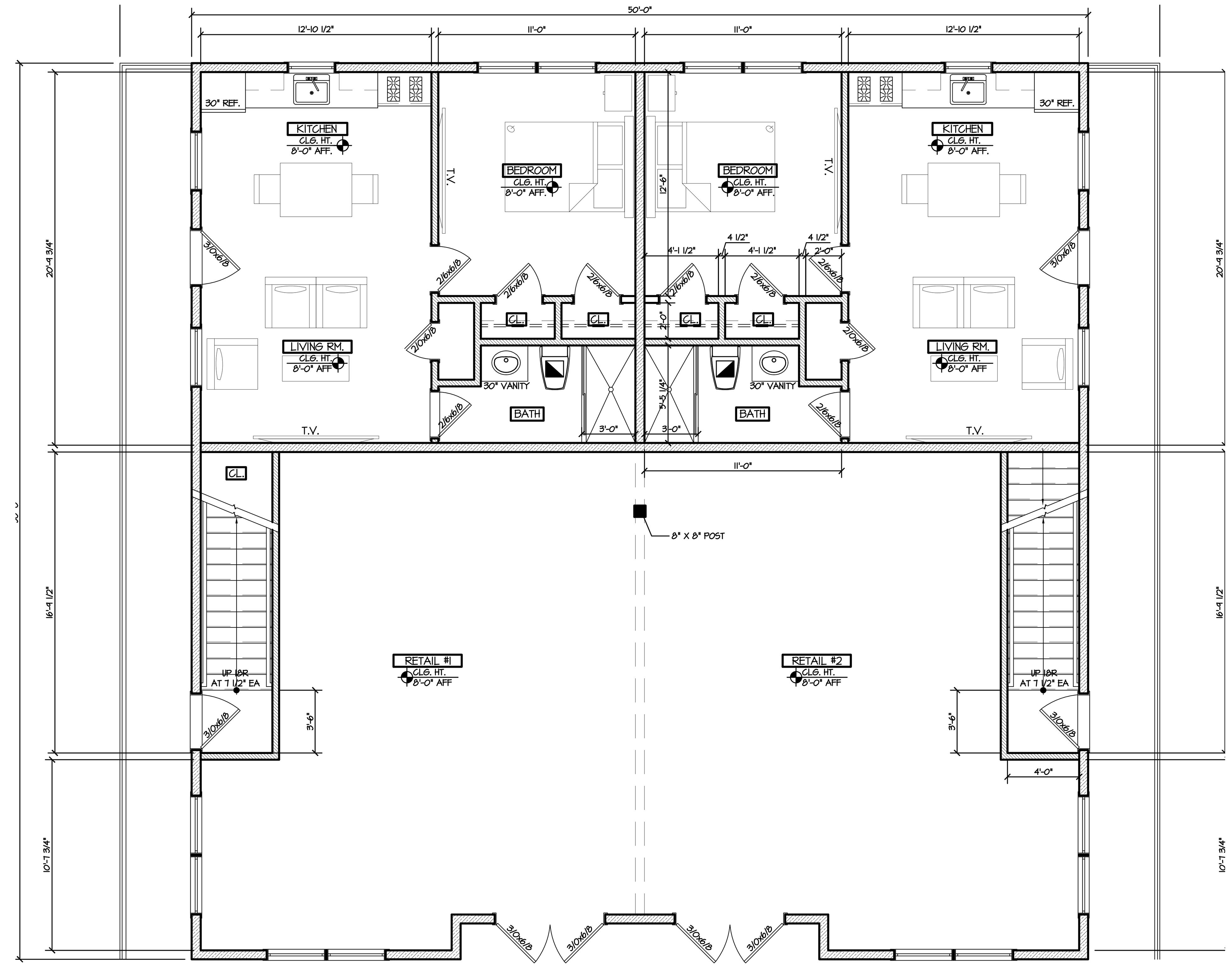
_____ DATE _____
CHRISTOPHER CARTHY, CHAIR
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

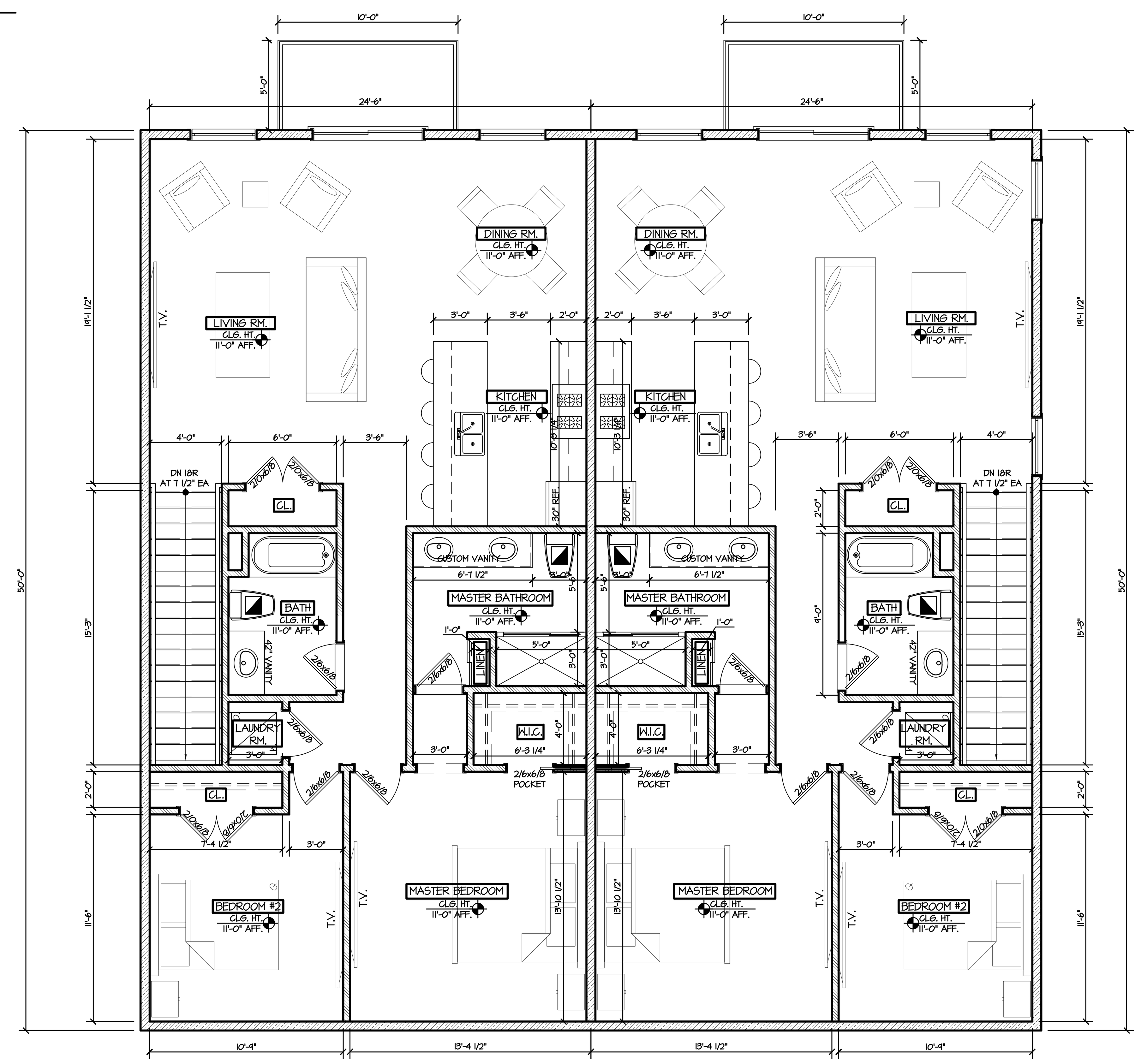
_____ DATE _____
JOSEPH CERMELE, P.E.
KELLARD SESSIONS CONSULTING P.C.
CONSULTING TOWN ENGINEERS



1 / A-1 PROPOSED BASEMENT PLAN
SCALE: 3/16"=1'-0"



2 / A-1 PROPOSED FIRST FLOOR PLAN
SCALE: 3/16"=1'-0"



3 / A-1 PROPOSED SECOND FLOOR PLAN
SCALE: 3/16"=1'-0"

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED:

DATE ________

CHRISTOPHER CARTHY, CHAIR
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

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JOSEPH CERMELE, P.E.
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CONSULTING TOWN ENGINEERS

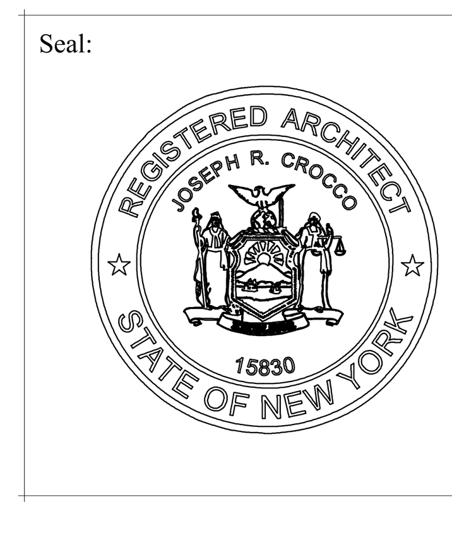
DO NOT SCALE DWGS. USE GIVEN DIMENSIONS ONLY. IF NOT SHOWN, VERIFY CORRECT DIMENSIONS WITH THE ARCHITECT. THE CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & CONDITIONS AT THE SITE. PLEASE NOTIFY ARCHITECT OF ANY DISCREPANCIES.

UNAUTHORIZED ADDITION OR ALTERATION OF THIS PLAN IS A VIOLATION OF SECTION 7209(2) OF THE NEW YORK STATE EDUCATION LAW.

THE ARCHITECT WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHER'S FAILURE TO OBTAIN AND/OR FOLLOW THE ARCHITECT'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

REVISION	DATE

Seal:



joseph r. crocco architects
new york connecticut new jersey massachusetts
4 macdonald avenue, suite 5
armonk, new york 10504
(914) 273-2774 fax (914) 273-2776

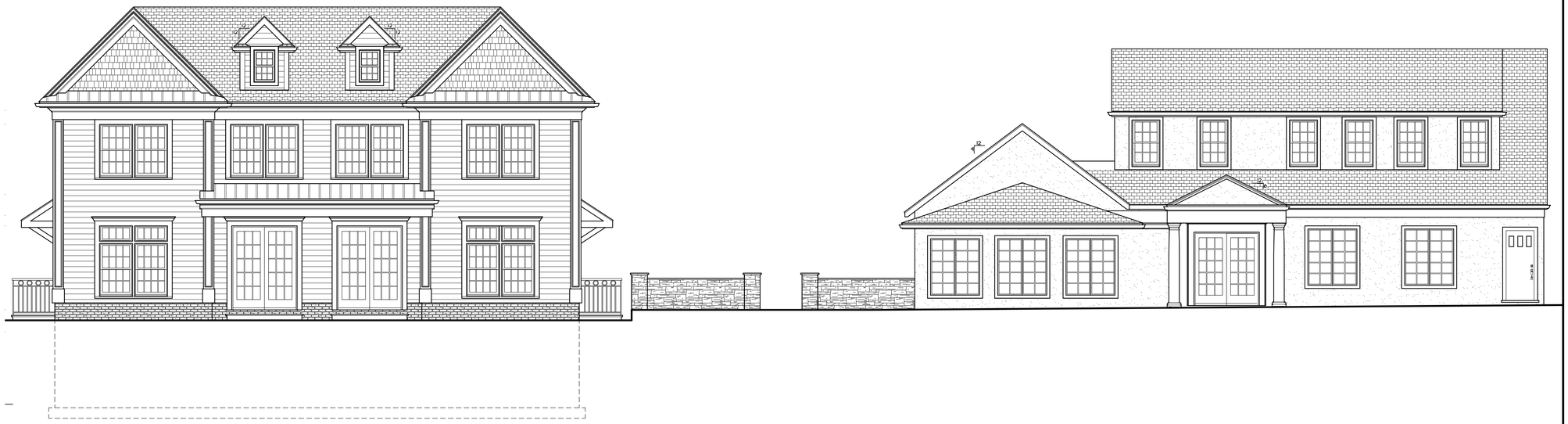
PROPOSED MIXED USE STRUCTURE:
FOR:
15 OLD RTE 22
ARMONK, NY

Dwg. Name: PROPOSED FLOOR PLANS

Project No: 23004

Sheet Number: A-1

Date: APRIL 4, 2023



1 A-2 PROPOSED STREET SCAPE
SCALE: 3/16"=1'-0"

2 A-2 PROPOSED FRONT ELEVATION
SCALE: 1/4"=1'-0"

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED:

_____ DATE _____
CHRISTOPHER CARTHY, CHAIR
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

_____ DATE _____
JOSEPH CERMELE, P.E.
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REVISION	DATE

Seal:

REGISTERED ARCHITECT
JOSEPH R. CROCCO
15830
STATE OF NEW YORK

joseph r. crocco architects
new york connecticut new jersey massachusetts
4 macdonald avenue, suite 5
armonk, new york 10504
(914) 273-2774 fax (914) 273-2776

PROPOSED MIXED USE STRUCTURE:

FOR:

15 OLD RTE 22
ARMONK, NY

Dwg. Name:
ELEVATIONS

Project No:
23004

Date:
APRIL 4, 2023

Sheet Number:
A-2

1 A-3 PROPOSED RIGHT SIDE ELEVATION
SCALE: 3/16"=1'-0"

2 A-3 PROPOSED LEFT SIDE ELEVATION
SCALE: 3/16"=1'-0"

3 A-3 PROPOSED REAR ELEVATION
SCALE: 1/4"=1'-0"

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(914) 273-2774 fax (914) 273-2776

PROPOSED MIXED USE STRUCTURE:

FOR:

15 OLD RTE 22
ARMONK, NY

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED:

_____ DATE _____
CHRISTOPHER CARTHY, CHAIR
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

_____ DATE _____
JOSEPH CERMELE, P.E.
KELLARD SESSIONS CONSULTING P.C.
CONSULTING TOWN ENGINEERS

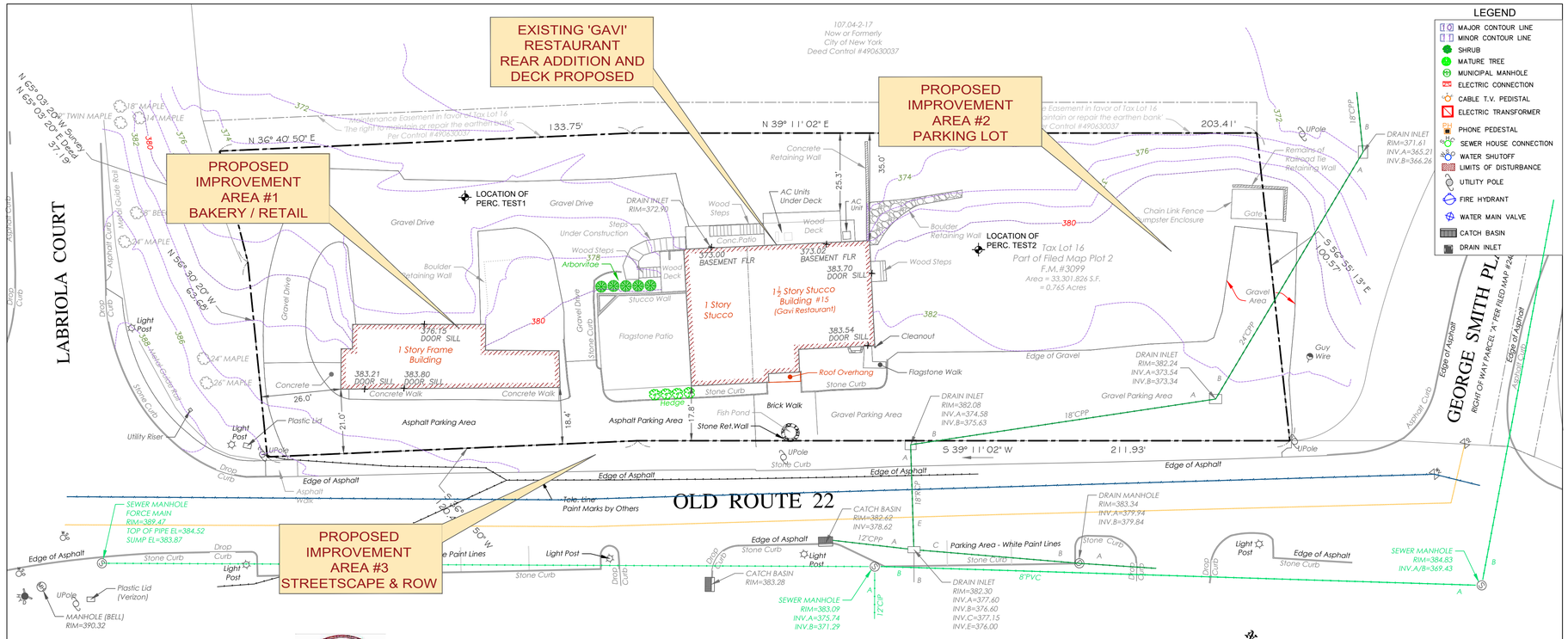
Dwg. Name:
ELEVATIONS

Project No:
23004

Date:
APRIL 4, 2023

Sheet Number:
A-3

EXISTING CONDITIONS - TOPOGRAPHICAL SITE PLAN



PROJECT LOCATION MAP

AERIAL IMAGERY OF EXISTING CONDITIONS - NORTHERLY VIEW

TC MERRITTS LAND SURVEYORS
394 BEDFORD ROAD • PLEASANTVILLE • NY 10570
(914) 769-8003 • survey@tcmerritts.com

STATE OF NEW YORK — DANIEL THOMAS MERRITT — 050604 — LICENSED LAND SURVEYOR

Surveyed: December 23, 2021
Map Prepared: December 27, 2021

MAP OF PROPERTY SITUATED AT
TOWN OF NORTH CASTLE–WESTCHESTER COUNTY, N.Y.
TAX IDENTIFICATION #: 107.04-02-16

GRAPHIC SCALE

20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES, PLEASE CONTACT THE APPROPRIATE AGENCIES.

GENERAL SITE DATA:

PROPERTY INFORMATION & OWNER:

GAVI RESTAURANT
15 OLD ROUTE 22
ARMONK, N.Y. 10504
TAX ID: 107.04-2-16

1. ZONING DISTRICT & USE:

RB- ROADSIDE BUSINESS DISTRICT

2. ZONING BULK REQUIREMENTS:

FOR ROADSIDE BUSINESS DISTRICT USE:

- LOT AREA (MIN) -	30,000 SF
- TOTAL BUILDING COVERAGE	25% (8,325 SF)
- LOT DEPTH (MIN) -	300 FEET
- FRONT YARD (MIN) -	10 FEET
- SIDE (MIN ONE) -	10 FEET
- REAR (MIN) -	10 FEET
- HEIGHT (MAX STORIES) -	2.0 STORIES
- TOTAL PARKING PROPOSED =	54 SPACES
- PARKING REQ'D ADA (1 PER 50 PER USE) =	3 SPACES
- TOTAL PARKING REQ'D (AS PER 355-57) =	58 SPACES
- TREES REQ'D (AS PER 355-56H) =	6 TREES

3. LAND USE DEVELOPED AREA SUMMARY:

EXISTING LOT AREA -	33,302 SF
EXISTING TOTAL BUILDING COVERAGE -	3,640 SF (10.9%)
EXISTING IMP. COVERAGE -	8,601 SF (25.8%)
EXISTING PARKING PROVIDED -	35+/- EST.

4. UTILITY SERVICES:

WATER -	ARMONK WATER DISTRICT #4
SEWER -	ARMONK SEWER DISTRICT #2
GAS -	CON EDISON COMPANY OF NY

5. ENVIRONMENTAL CRITICAL AREAS:

- LOCAL STEEP SLOPES - NONE
- FEMA SFHA - NONE
- FRESHWATER WETLANDS - NONE
- WATERCOURSES - NONE

6. NRCS - USDA SOIL CLASSIFICATION:

Soil Type: Ub - Udorthents, smoothed

Hydrologic Soils: Group B
Slope: 0 to 8 percent slopes
Depth to restrictive feature: 40 to 60 inches
Drainage class: Moderate to Well drained
Depth to water table: 80 inches +

SITE PHOTOS - EXISTING CONDITIONS


Photo #1 - Street View Old Rte 22


Photo #2 - Street View Gavi Restaurant

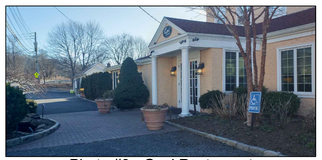


Photo #3 - Gavi Restaurant


Photo #4 - Proposed Bakery


Photo #5 - Rear Yard Proposed Bakery


Photo #6 - Side Yard Gavi Restaurant


Photo #7 - Driveway Entrance Proposed Bakery

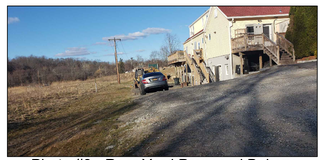


Photo #8 - Rear Yard Proposed Bakery


Photo #9 - Proposed Parking Lot Gavi Restaurant

GENERAL NOTES:

SCOPE: THE PURPOSE OF THIS MAP IS TO PRESENT AN ASSESSMENT OF EXISTING CONDITIONS FOR THE ROADSIDE BUSINESS PROPERTY RESIDENTIAL PROPERTY LOCATED AT 15 OLD ROUTE 22 IN THE TOWN OF NORTH CASTLE, NY. PROPOSED ON THE SUBJECT PROPERTY IS THE RECONSTRUCTION OF A VACANT BUILDING TO SERVE AS FOOD SERVICE/ RETAIL USE WITH ACCESSORY RESIDENTIAL UNITS ALONG WITH OTHER SITE IMPROVEMENTS RELATED TO CONSTRICTION OF PAVED PARKING LOTS, ACCESS DRIVEWAYS, WALKWAYS, MODULAR BLOCK GRAVITY RETAINING WALLS AND STORMWATER MANAGEMENT SYSTEMS AS REQUIRED BY CODE. A REAR ADDITION AND RAISED DECK IS PROPOSED FOR THE EXISTING RESTAURANT. AS THE PROPERTY IS ZONED AS NON-RESIDENTIAL ROADSIDE BUSINESS, ALL PROJECTS INVOLVING THIS DEGREE OF IMPROVEMENT REQUIRES SITE PLAN APPROVAL FROM THE TOWN PLANNING BOARD AS PRESENTED IN CHAPTER 355 OF TOWN CODE. THE PROPOSED USE IS CONSISTENT WITH LOCAL ZONING.

1. **MAPPING:** THE BASE MAP DEPICTED HEREIN WAS PREPARED FROM A LAND SURVEY PREPARED BY TC MERRITTS LAND SURVEYORS OF PLEASANTVILLE, NEW YORK, DATED OCTOBER 29, 2020 AND FROM AN ARCHITECTURAL CONCEPTUAL SITE PLAN PREPARED BY JOSEPH R. CROCCO ARCHITECTS.
2. **PLANNING BOARD APPROVALS:** THE INTENT OF THE THIS SUBMISSION IS TO SEEK APPROVAL FROM THE PLANNING BOARD FOR A SITE PLAN APPROVAL FOR THE AFOREMENTIONED PROPOSED BUILDING AND SITE IMPROVEMENTS. THE INTENT OF THE SUBMISSION IS TO MEET ALL ZONING REQUIREMENTS WHERE POSSIBLE AND OBTAIN VARIANCES AS NEEDED WITH GUIDANCE FROM THE TOWN.
3. **RELEVANT TOWN CODE:** TOWN OF NORTH CASTLE CODE CHAPTER 355 REGULATES ZONING, OFF STREET PARKING AND SITE PLAN APPROVAL AND CHAPTER 267 PROVIDE STATUTE ON LAND DEVELOPMENT ACTIVITY AND REQUIRED STORMWATER POLLUTION AND PREVENTION PLANNING (SWPPP).
4. **CURRENT CONDITIONS:** THE EXISTING PROPERTY HAS 33,302 SQUARE FEET OF LAND WHICH CONTAINS TWO ROADSIDE BUSINESS ZONED BUILDINGS; ONE VACANT AND ANOTHER OPERATING AS A RESTAURANT. THE PROPERTY CONTAINS MULTIPLE OFF STREET PARKING SPACES WITHIN GRAVEL/UNPAVED DESIGNATED LOCATIONS TO ACCOMMODATE CURRENT USE AND IS SERVED BY MUNICIPAL SEWER, WATER AND NATURAL GAS. ROAD FRONTAGE IS PROVIDED ALONG OLD ROUTE 22. THE BUILDINGS AND DEVELOPED AREAS APPEAR MEET ZONING LOT COVERAGE AND DIMENSIONAL REQUIREMENTS FOR SIDE, FRONT YARD SETBACKS FOR THE RB ZONING DISTRICT. REAR YARD SETBACK IS PRE-EXISTING NON-CONFORMING.
5. **CRITICAL/SENSITIVE AREAS:** THIS PROPERTY DOES NOT CONTAIN ANY FRESHWATER WETLANDS,WETLAND BUFFER AREAS, STEEP SLOPES OR AND FEMA DESIGNATED SPECIAL FLOODPLAIN HAZARD AREAS.
6. **LIMITATIONS:** THIS PLAN IS NOT TO BE CONSTRUED TO SUPERCEDE ANY APPROVALS BY THE TOWN OF NORTH CASTLE PLANNING BOARD OR OTHER LAND USE BOARDS FOR SITE PLAN OR COMPLETE ZONING/CODE COMPLIANCE, FACILITY USE, OPERATION OR DESIGN. THIS MAP WAS PREPARED STRICTLY TO ASSESS THE CURRENT AND PROPOSED CONDITIONS CONSISTENT WITH THIS APPLICATION BEFORE THE LOCAL PLANNING BOARD.

ZONING SCHEDULE (RB) - BULK REQUIREMENTS

SCHEDULE ITEM	REQUIRED	EXISTING	PROPOSED
Lot Area (min)	30,000 s.f.	33,302 s.f.	N/C
Street Frontage (min)	100 ft.	212 ft.	N/C
Lot Depth	300 ft.	100 ft.	N/C
Front Yard	10 ft.	17.8 ft.	10.0 ft.
Yard (1 Side)	10 ft.	26.0 ft.	56.3 ft.
Yard (Rear)	10 ft. *	35.0 ft.	25 ft.
Max Coverage (Building)	25% (8,325 s.f.)	10.9% (3,640 s.f.)	14.7% (4,900 s.f.)
Building Height (Feet)	24 ft.	24 ft.	N/C
Building Height (Stories)	2.0	2.0	N/C
Max FAR	0.30	0.30	0.40
Impervious Coverage	n/a	25.8% (8,601 s.f.)	77.2% (25,693 s.f.)

* As per Zoning Schedule in Section 355-29E(1)a

Know what's below.
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DAVID A. GOESSL, PE
CIVIL ENGINEER
622 SPROUT BROOK ROAD
PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

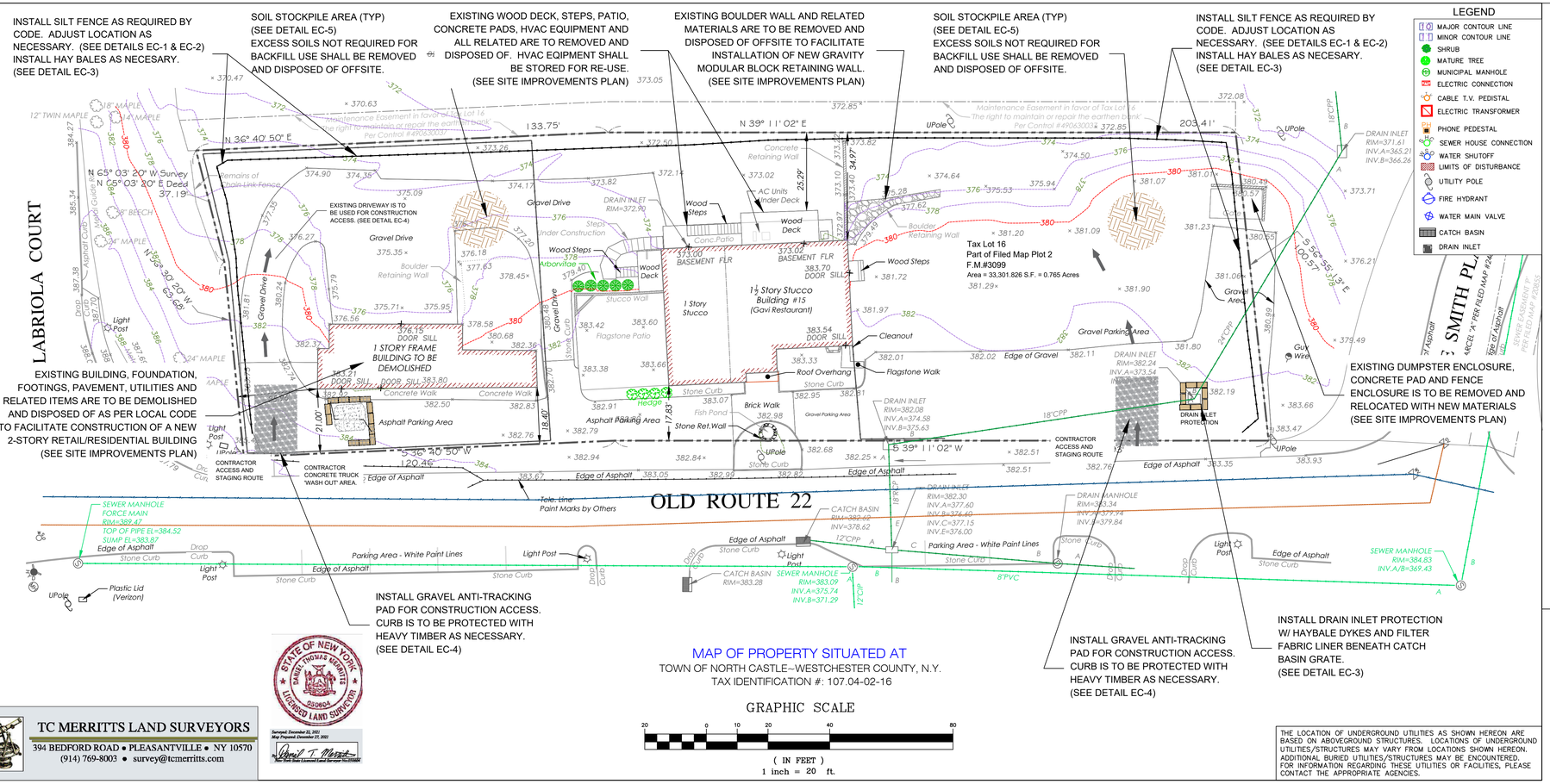
DATE: APRIL 26, 2023 SCALE: 1"= 20 FEET SHEET: 1 OF 9

STATE OF NEW YORK — DAVID ALLEN GOESSL — 091017 — LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023

NOTE: ADDITIONAL PLANIMETRIC SURVEY DATA SHOWN HERIEN ON THIS PLAN OF THE PROPERTY OF 15 OLD ROUTE 22, TOWN OF NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK, 10504 WAS PREPARED FROM CONCEPTUAL PLANS PREPARED BY JOSEPH R. CROCCO ARCHITECTS, WESTCHESTER COUNTY GIS DATA, REFERENCED LAND SURVEY AND RECORDED DEED FOR SAID PROPERTY. ENGINEER ACCEPTS NO LIABILITY TO ERRORS AND OMISSIONS PROVIDED ON REFERENCED MAP SOURCES.

EROSION AND SEDIMENT CONTROL PLAN WITH PROPOSED DEMOLITION & REMOVALS



INSTALLATION & MAINTENANCE OF EROSION CONTROL

CONSTRUCTION SCHEDULE: NOTIFY APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 5 DAYS PRIOR TO START

1. PRE-CONSTRUCTION EROSION CONTROL MEASURES
   - Install all erosion control measures prior to start of construction.
   - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish. All pre-construction measures shall be in full conformance with any NYSDEC SWPPP permits that may be issued for the project.
2. MAINTENANCE ACTIVITIES DURING ALL PHASES OF CONSTRUCTION
   - After any rain causing runoff Contractor to inspect haybales, etc. and remove any excessive sediment, and inspect stockpiles and correct any problems with seed establishment.
   - Inspections shall be documented in writing and submitted to the appropriate Municipal Agency having jurisdiction.
   - Inspections for NYSDEC SWPPP permitting shall be documented and filed on the job for access and viewing and with the appropriate Town officials
3. STOCKPILING OF SOILS AND ROUGH GRADING OF SITE
   - Strip topsoil and stockpile soil for reuse and properly dispose of all excess soils.
   - Stockpile excavation subgrade materials and properly dispose of all excess soils.
   - Seed stockpiles with 1 lb. total annual rye or mix as per engineer.
   - Perform rough grading activities as soon as practical. Call for Inspections as required.
4. FINE GRADING OF SITE
   - Remove all remaining excess soils from site. Compact all graded materials as required.
   - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
   - Perform all additional fine grading activities as required. Call for reinspection.
5. ESTABLISHMENT OF TURF, FINAL LANDSCAPING AND PLANTINGS
   - Spread topsoil evenly over areas to be seeded. Hand rake level.
   - Broadcast 1:25 lb. Bag of Jonathan Green Tall Fescue mix or equal over areas to be seeded. Apply straw mulch and water within 2 days of completion of top placement. Application Rate 20 lbs per acre.
   - Install turf (optional) landscaping materials and any replacement trees.
   - Demobilize all equipment and materials from site as necessary. Erosion controls may be removed upon 80% established uniform density of restorative turf and plantings.
   - Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.

FINAL INSPECTION
- Perform any as-built drawings, land surveys and or engineering certifications. Submit documents to the appropriate Municipal Agency having jurisdiction. Contractor/Owner shall file Notice of Termination for any open NYSDEC SWPPP permit(s).
- Call for inspection from the appropriate Municipal Agency having jurisdiction at least 2 days prior to finish.
- Remove all erosion control measures upon establishment of turf or as per the Municipal Agency having jurisdiction.

CONTRACTOR CERTIFICATION FOR SWPPP/SWEC COMPLIANCE:

THE UNDERSIGNED HEREBY CERTIFIES AND AGREES TO COMPLY WITH THE TERMS AND CONDITIONS OF THE STORM WATER, POLLUTION PREVENTION PLAN AND AGREES TO IMPLEMENT ANY AND ALL CORRECTIVE ACTIONS IDENTIFIED BY THE NYSDEC QUALIFIED INSPECTOR AND/OR TOWN ENGINEER AND/OR BUILDING INSPECTOR DURING ALL SITE INSPECTIONS. FURTHERMORE THE UNDERSIGNED UNDERSTANDS THAT THE OWNER AND/OR PERMIT HOLDER SHALL COMPLY WITH ALL LOCAL CODES FOR STORMWATER MANAGEMENT AND ALL TERMS AND CONDITIONS OF NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM ACTIVE CONSTRUCTION SITES AS IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION(S) OF WATER QUALITY STANDARDS.

NAME:_____

SIGNATURE:_____

DATED:_____

OWNER ACKNOWLEDGEMENT FOR POST CONSTRUCTION MAINTENANCE & COMPLIANCE:

1. **PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE APPLICANT SHALL PROVIDE A MAINTENANCE SCHEDULE AND PROCEDURES FOR ALL PROPOSED STORMWATER MANAGEMENT INFRASTRUCTURE.**
2. **PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE APPLICANT SHALL SUBMIT A STORMWATER AS-BUILT SURVEY THAT INCLUDES TOPOGRAPHY AND THE LOCATION, RIM ELEVATIONS AND INVERT ELEVATIONS OF ALL ON-SITE STORMWATER FACILITIES FOR REVIEW BY THE TOWN.**
3. **PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, A CONSTRUCTION, MAINTENANCE AND INSPECTION DECLARATION FOR THE STORMWATER MANAGEMENT FACILITIES INSTALLED, IN A FORM SATISFACTORY TO THE TOWN, SHALL BE FULLY EXECUTED AND SUBMITTED TO THE TOWN.**

NAME:_____

SIGNATURE:_____

DATED:_____

THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES, PLEASE CONTACT THE APPROPRIATE AGENCIES.

TC MERRITTS LAND SURVEYORS
394 BEDFORD ROAD • PLEASANTVILLE • NY 10570
(914) 769-8003 • survey@tcmerritts.com

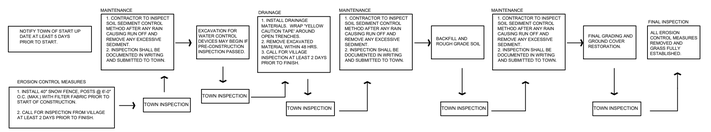
STATE OF NEW YORK DANIEL THOMAS MERRITTS 050904 LICENSED LAND SURVEYOR

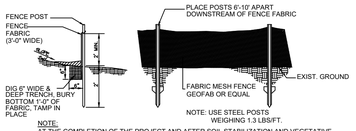
Surveyed: December 22, 2021
Map Prepared: December 27, 2021

MAP OF PROPERTY SITUATED AT
TOWN OF NORTH CASTLE–WESTCHESTER COUNTY, N.Y.
TAX IDENTIFICATION #: 107.04-02-16

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

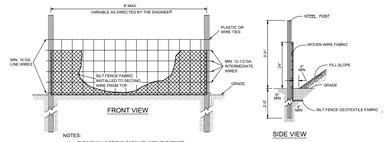
EROSION CONTROL SCHEDULE AND DETAILS





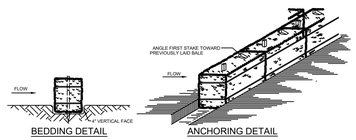
NOTE:
AT THE COMPLETION OF THE PROJECT AND AFTER SOIL STABILIZATION AND VEGETATIVE GROWTH HAVE BEEN ASSURED, THE SILT FENCE MUST BE COMPLETELY REMOVED AND THE EMBEDMENT TRENCH RESTORED TO A NATURAL CONDITION.

EC-1 SILT FENCE DETAIL
SCALE : NOT TO SCALE



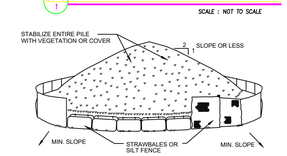
NOTES:
1. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
2. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
3. SEE NYSDEC DESIGN MANUAL FOR CONSTRUCTION SPECIFICATIONS FOR APPLICATION AND PLANNING CONSIDERATION.
4. SILT FENCE SHOULD NOT BE USED ALONE BELOW GRADED SLOPES GREATER THAN 10' IN HEIGHT.
5. SILT FENCE SHALL BE REMOVED WHEN, CLEAN AT 50 % CAPACITY AND REPLACE AS NECESSARY.

EC-2 ALT. SILT FENCE DETAIL
SCALE : NOT TO SCALE



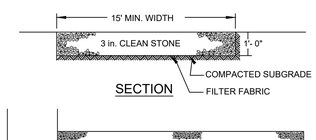
INSTALLATION NOTES
1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.

EC-3 HAYBALE DETAIL
SCALE : NOT TO SCALE



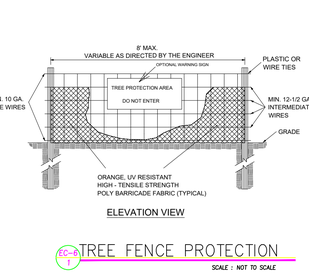
INSTALLATION NOTES
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. SOILS OR FILL TO BE STOCKPILED ON SITE DURING CUTTING AND FILLING ACTIVITIES SETBACKS FROM TEMPORARY DRAINAGE SWALES.
3. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
4. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
5. STOCKPILES REMAINING IN PLACE FOR MORE THAN A WEEK SHOULD BE SEEDED AND MULCHED OR COVERED WITH GEOTEXTILE FABRIC SURROUNDED BY SILT FENCE.
6. SEE SPECIFICATIONS (NYSDEC MANUAL) FOR INSTALLATION OF SILT FENCE.

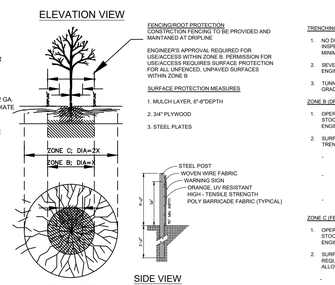
EC-5 SOIL STOCKPILE DETAIL
SCALE : NOT TO SCALE



INSTALLATION NOTES
1. STONE SIZE - USE 1" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - 25 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

EC-4 STABILIZED CONSTRUCTION ENTRANCE
SCALE : NOT TO SCALE





FENCING/ROOT PROTECTION
CONSTRUCTION FENCING TO BE PROVIDED AND MAINTANED AT DRIPLINE

ENGINEER'S APPROVAL REQUIRED FOR USE/ACCESS WITHIN ZONE B. PERMISSION FOR USE/ACCESS REQUIRES SURFACE PROTECTION FOR ALL UNPAVED, UNPAVED SURFACES WITHIN ZONE B

SURFACE PROTECTION MEASURES

1. MULCH LAYER, 6"-8"DEPTH
2. 3/4" PLYWOOD
3. STEEL PLATES

TRENCHING/EXCAVATION ZONE A (CRITICAL ROOT ZONE)

1. NO DISTURBANCE ALLOWED WITHOUT SITE-SPECIFIC INSPECTION AND APPROVAL OF METHODS TO MINIMIZE ROOT DAMAGE.
2. SEVERANCE OF ROOTS LARGER THAN 2"DIA REQUIRES ENGINEER'S APPROVAL.
3. TUNNELING REQUIRED TO INSTALL LINES 3'-0" BELOW GRADE OR DEEPER.

ZONE B (DRIPLINE)

1. OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO ENGINEERS APPROVAL.
2. SURFACE PROTECTION MEASURES REQUIRED TRENCHING ALLOWED AS FOLLOWS:
   - EXCAVATION BY HAND OR WITH HAND DRIVEN TRENCHER MAY BE REQUIRED.
   - LIMIT TRENCH WIDTH: DO NOT DISTURB MORE THAN 25% OF ROOTS IN ZONE B IN UNDISTURBED CONDITION.
   - TUNNELING MAY BE REQUIRED FOR TRENCHES DEEPER THAN 3'-0"

ZONE C (FEEDER ROOT ZONE)

1. OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO ENGINEER'S APPROVAL.
2. SURFACE PROTECTION MEASURES MAY BE REQUIRED. TRENCHING WITH HEAVY EQUIPMENT ALLOWED AS FOLLOWS:
   - MINIMIZE TRENCH WIDTH
   - MAINTAIN 2/3 OR MORE OF ZONE C IN UNDISTURBED CONDITION.

EC-6 TREE FENCE PROTECTION
SCALE : NOT TO SCALE

DAVID A. GOESSL, PE
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622 SPROUT BROOK ROAD
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PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

DATE: APRIL 26, 2023 SCALE: 1"= 20 FEET SHEET: 2 OF 9

STATE OF NEW YORK DAVID KLEN GOESSL 081017 LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023

ANY UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A SEAL OF A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209 OF THE NYS EDUCATION LAW.

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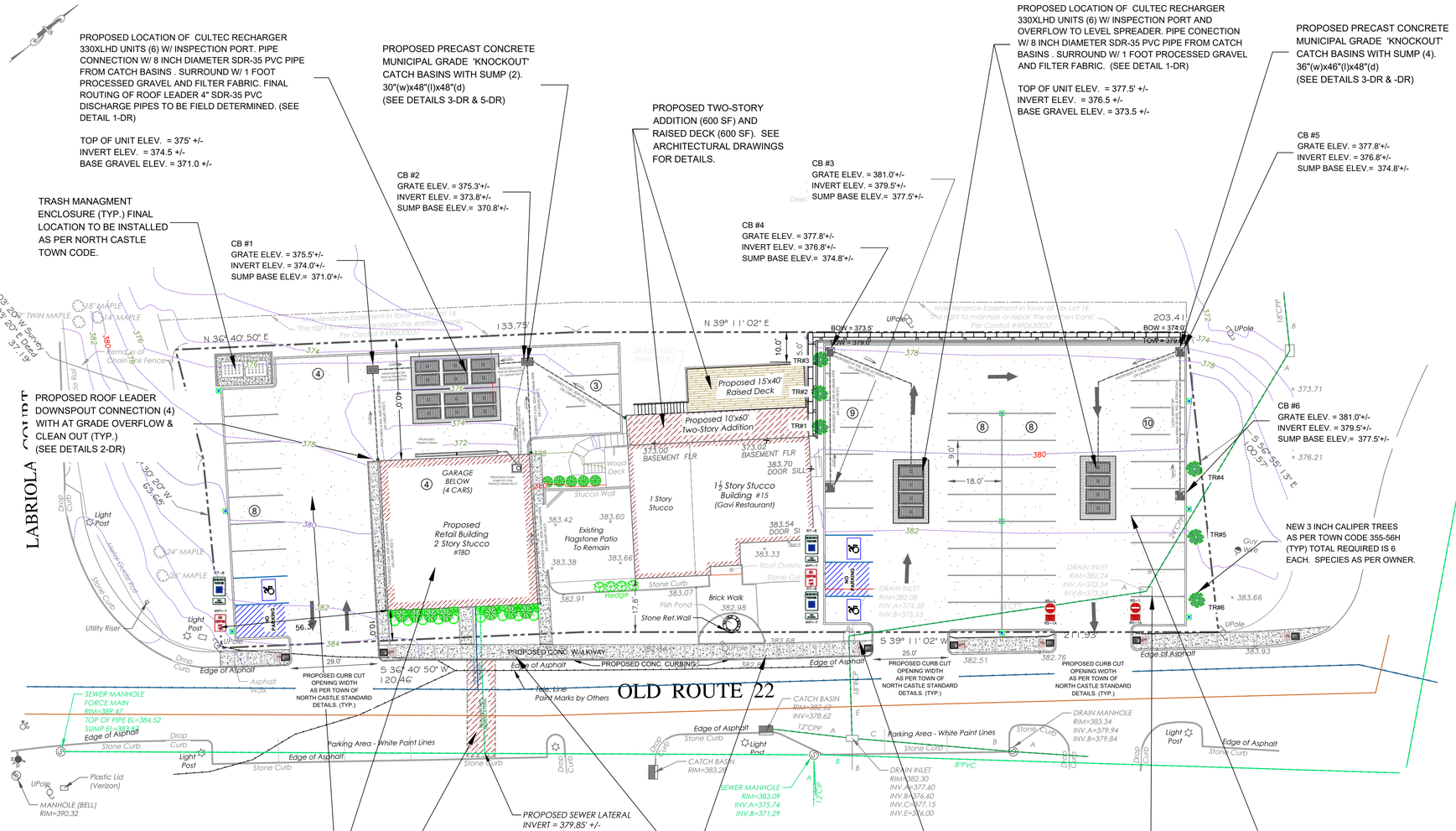
PROPOSED CONDITIONS - SITE IMPROVEMENTS AND DRAINAGE PLAN



PROPOSED 2,500 SF COMMERCIAL / RETAIL BUILDING WITH ASPHALT PARKING LOT (7,074 SF), CONCRETE SIDEWALK (320 SF), CURB (350 LF), OUTDOOR LIGHTING (3 EA) AND RELATED SITE IMPROVEMENTS. REFER TO THE ARCHITECT'S DRAWINGS FOR DESIGN DETAILS

TYPICAL ROAD EXCAVATION AREA FOR UTILITIES. ROAD BACKFILL MATERIALS AND FINAL RESTORATION AS PER TOWN OF NORTH CASTLE STANDARD DETAILS. NUMBER OF SERVICE LINES, SPECIFICATIONS AND LOCATION OF SEWER CONNECTION AS PER TOWN OFFICIALS. (SEE DETAILS 1-U & 2-U)

PROPOSED 1,375 SF OF 5-FOOT WIDTH MUNICIPAL CONCRETE SIDEWALK AND 290 LINEAR FEET OF 6-INCH WIDTH MUNICIPAL CONCRETE CURB INCLUDING 6 CONCRETE ADA COMPLIANT RAMPS. CONCRETE COMPRESSIVE STRENGTH 4,000 PSI AS PER NORTH CASTLE HIGHWAY SPECIFICATIONS. (SEE DETAILS C-1 THRU C-5)

EXISTING MUNICIPAL CATCH BASINS (2) SHALL BE MODIFIED OR ALTERED OR REPLACED AS PER NORTH CASTLE HIGHWAY DEPARTMENT REQUIREMENTS.

PROPOSED 11,500 SF ASPHALT CONCRETE PARKING LOT, CONCRETE CURB (360 LF), DRAINAGE, OUTDOOR LIGHTING (6 EA) AND RELATED SITE IMPROVEMENTS. (SEE DETAIL C-6)

NEW 3 INCH CALIPER TREES AS PER TOWN CODE 355-56H (TYP) TOTAL REQUIRED IS 6 EACH. SPECIES AS PER OWNER.

GENERAL CONSTRUCTION NOTES:

1. The Applicant shall secure all of the necessary permits from the Town of North Castle to ensure compliance with Local, County and State Building, Highway and Sanitary Codes. The Applicant is responsible to contact the Building Department to schedule an inspection of the sediment and erosion control practices prior to the start of construction.
2. During work and upon completion, the Applicant shall schedule all of the necessary inspections and certificates of approval with the Town of North Castle officials.
3. The Applicant shall secure the services of a NYS licensed land surveyor as necessary to stake out the exact location of proposed improvements and as required by the Town for record documents.
4. The Applicant shall verify location of all underground utilities by calling Dig Safe NY @ 1-(800) 962-7962 to ensure that there are no conflicts with existing systems. Private installations shall also be identified as required.
5. Any existing utilities, pavement, sidewalk, curbing, grass areas etc., disturbed and/or damages during construction, must be replaced and/or repaired at the Applicant's expense.
6. The Applicant shall secure the work zone through proper placement of construction fencing materials, cones, barricades, and caution tape.
7. All debris, excess soils and waste materials, as a result of this proposed improvement, shall be removed from site and disposed of properly.All construction fuels and chemicals shall be transported in approved sealed containers and shall be removed from the site by the Contractor daily.
8. All fill material shall consist of clean soils, or soil-rock mixture free from organic matter, construction debris or other deleterious material. Materials shall contain no rock or lump over 6" in greatest dimension and not more than 15% of the rocks or lumps shall be larger than 2.5" in greatest dimension.
9. Should unforeseen conditions or circumstances develop or other causes necessitate changes to the approved plans, the Applicant shall notify the Design Engineer of record.
10. All erosion controls and protective measures shall conform to the "New York State Standards and Specifications for Erosion and Sediment Control." The Town Inspector may specify additional sediment and erosion control measures to safeguard the public right of way and adjacent properties.All areas of disturbance shall be restored at the earliest practical date and/or immediately upon suspension of work. Temporary erosion and sediment control measures shall not be removed until site stabilization (80% uniform density of permanent vegetation or permanent mulch/stone) has been achieved.
11. Construction erosion control and protection measures shall be inspected by a qualified engineer or trained individual having received NYSDEC 4-hour erosion and sediment control training at a minimum of weekly and following all rain events greater than 0.5 inch.

STORMWATER SYSTEM NOTES:

1. The Applicant shall safeguard the limits of improvements through proper installation of silt fencing and hay bales downgrade from all excavation areas and stockpiles soil and gravels materials.
2. The Contractor shall verify all field dimensions and drainage layouts prior to performing any installation. Any discrepancies shall be immediately reported to the Engineer of record.
3. The Contractor shall verify depth upon excavation for suitable soils and consult with the Design Engineer prior to installing any drainage systems. The Design Engineer will verify soil percolation rates and prior test results at the time of construction. Any design changes to the storm water system during construction due to unforeseen circumstances such as shallow groundwater, rock, utility conflict etc., must be resubmitted to the Town of North Castle Building and Engineering Departments for approval prior to construction.
4. The Contractor shall schedule required inspections at least 48 hours in advance to both Engineer of record and Town Inspector, and that no work shall be covered or concealed until the required inspections are passed.
5. Stormwater drainage systems shall be installed along the proposed pathway as indicated on the plans. Pipe materials for catch basin and roof leader downspouts shall be SDR-35 PVC (or Sch. 40) piping. Underground infiltrating stormwater chamber(s) shall not be buried within ten feet of a building foundation nor ten feet from any adjacent developed property or right of way. The proposed drainage system is designed to handle a 24 hour, 100 year design storm in accordance with NYSDEC Stormwater Design Manual for net impervious surfaces created by the proposed parking lots, paved surfaces and building improvements and shall be phased with this work to be commenced upon completion of the proposed building, site regrading and Redi-Rock retaining walls as to avoid incidental damage from construction and heavy equipment.
6. The proposed stormwater system consists of 12 Cultec 330XLHD Chambers for the retail portion of the property and another 8 Cultec 330XLHD Chambers for the paved parking lot adjacent to Gavi Restaurant. All chambers are to be set level and include interconnections consisting of 6" diameter PVC (or HDPE) piping. The garage lower level of the retail building will contain an exterior trench drain with flow into a new sump pump pit with final discharge to the new drywells.
7. The proposed location of the drywell systems shall be in the rear and right side yards maintaining minimum 10 foot setbacks from building and property lines. Owner/Contractor shall contact the Design Engineer should conflict(s) exist.

OWNER POST CONSTRUCTION MAINTENANCE:

1. The owner shall inspect all roof leader downspouts fittings, inspection ports and cleanout caps once per year to ensure proper connections are in place.
2. The owner shall inspect and remove all debris from the grate of any open yard drain and catch basins regularly with additional emphasis during the fall and winter months.
3. The owner shall inspect and remove all accumulated debris from the sumps of any catch basin or yard drain at a minimum of once per year. Adjust frequency as necessary.
4. Storm water facilities shall be maintained in accordance with best management practices and and Cultec maintenance literature. The owner shall have the said system inspected and certified at 5-year intervals (minimum) or in accordance to local codes whichever is more stringent.

TC MERRITTS LAND SURVEYORS
394 BEDFORD ROAD • PLEASANTVILLE • NY 10570
(914) 769-8003 • survey@tcmerritts.com

STATE OF NEW YORK — DAVID THOMAS MERRITTS — 050604 — LICENSED LAND SURVEYOR
Surveyed: December 22, 2021
Map Prepared: December 27, 2021
Daniel T. Merritts
New York State Licensed Land Surveyor No.050604

MAP OF PROPERTY SITUATED AT
TOWN OF NORTH CASTLE–WESTCHESTER COUNTY, N.Y.
TAX IDENTIFICATION #: 107.04-02-16

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

THE LOCATION OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES, PLEASE CONTACT THE APPROPRIATE AGENCIES.

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DATE: APRIL 26, 2023 SCALE: 1"= 15 FEET SHEET: 3 OF 11

STATE OF NEW YORK — DAVID ALLEN GOESSL — 081017 — LICENSED PROFESSIONAL ENGINEER

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1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
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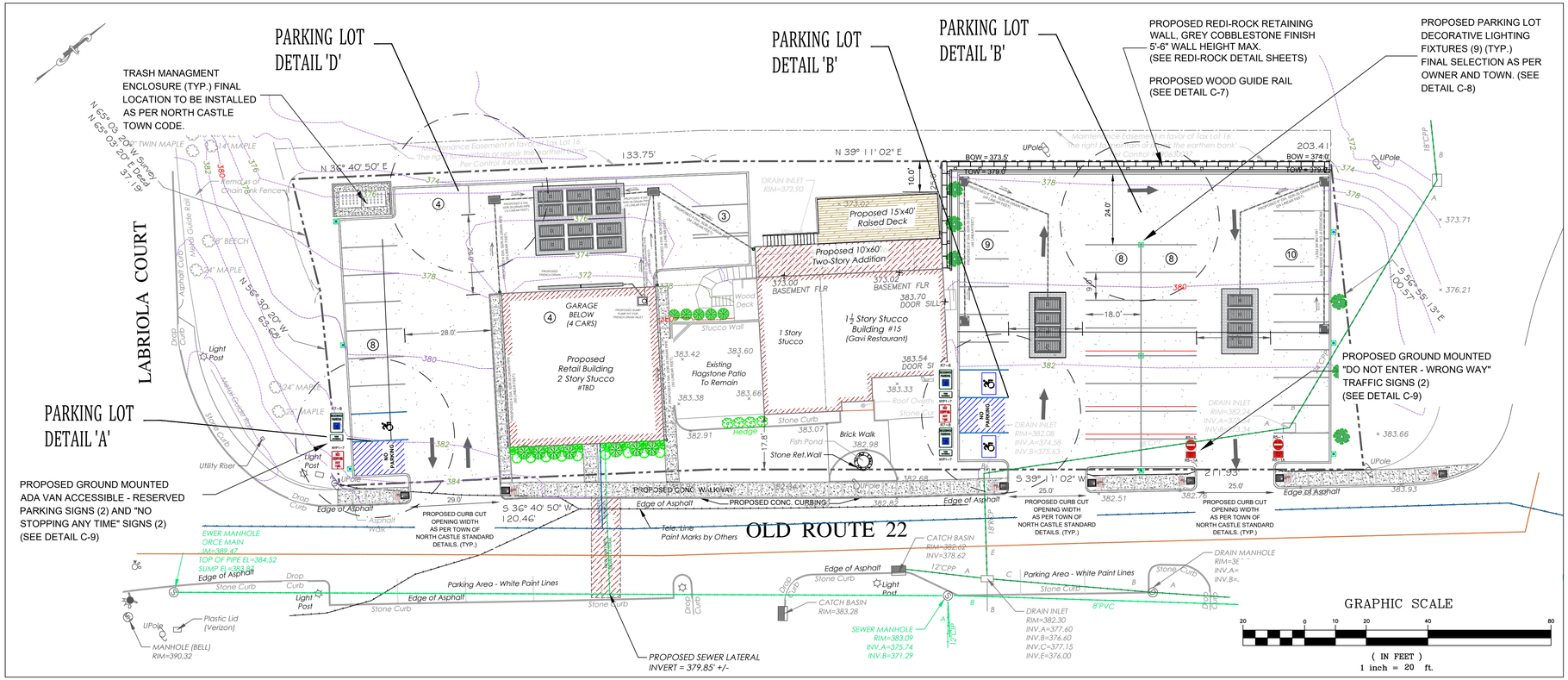
PARKING LOT LAYOUT PLAN



SIGN AND SYMBOL INDEX

R7-8 — VAN ACCESSIBLE ADA SIGN MUTCD R7-8 - 2 EACH

NYP1-7 — VAN ACCESSIBLE "NO STOPPING ANY TIME" SIGN MUTCD NYP1-7 - 2 EACH

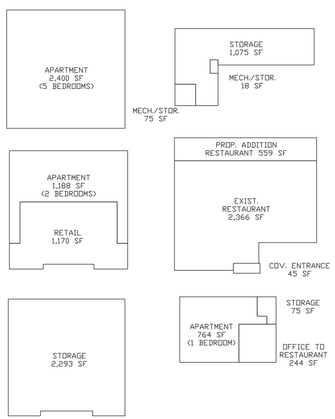
R5-1 — TRAFFIC PROHIBITION "DO NOT ENTER" SIGN - MUTCD R5-1 2 EACH

R5-1A — TRAFFIC PROHIBITION "WRONG WAY" SIGN - MUTCD R5-1A - 2 EACH

VAN ACCESSIBLE ADA PAVEMENT MARKING SYMBOL - 2 EACH

NO PARKING — VAN ACCESSIBLE NO PARKING PAVEMENT MARKING SYMBOL - 2 EACH

DIRECTIONAL ARROW PAVEMENT MARKING SYMBOL - 5 EACH



PARKING SPACE ANALYSIS (355-57):

MINIMUM OFF STREET PARKING PER USE:

-	ACCESSORYY APARTMENT	1 PER BEDROOM
-	RESTAURANT	1 PER 75 SF
-	RETAIL	1 PER 200 SF
-	OFFICE	1 PER 250 SF
-	STORAGE	1 PER 1,200 SF

AREA USE ANALYSIS:

- ACCESSORY APARTMENT (8 ROOMS)
- RESTAURANT SPACE = 2,366 + 559 = 2,925 SF
- RETAIL SPACE = 1,170 SF
- OFFICE = 244 SF
- STORAGE = 2,293 + 1,075 + 18 + 75 +75 = 3,536 SF

PARKING REQUIREMENT ANALYSIS:

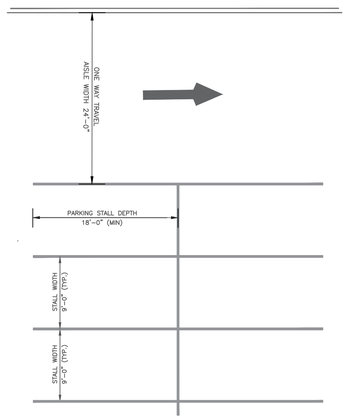
- APARTMENT - 8 SPACES
- RESTAURANT - 2,925SF @ 1/75SF = 39 SPACES
- RETAIL - 1,170SF @ 1/200SF = 5.85 SPACES
- OFFICE - 244SF @ 1/250SF = 0.98 SPACES
- STORAGE - 3,536SF @ 1/1,200SF = 2.94 SPACES

TOTAL PARKING REQUIRED = 56.77 SPACES (ROUND 58)

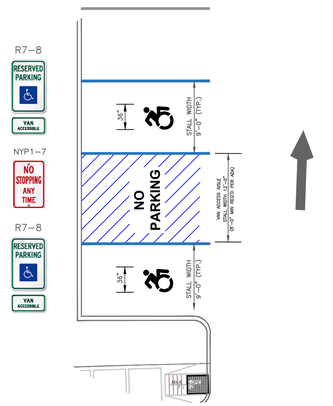
-	TOTAL PARKING PROPOSED =	53 SPACES
-	PARKING REQ'D ADA (1 PER 50 PER USE)	3 SPACES

PARKING LOT DETAIL 'A'

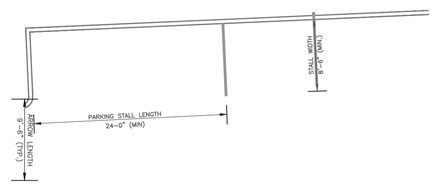
PARKING LOT DETAIL 'B'



PARKING LOT DETAIL 'C'



PARKING LOT DETAIL 'D'



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STATE OF NEW YORK DAVID KLEIN GOESSL 081017 LICENSED PROFESSIONAL ENGINEER

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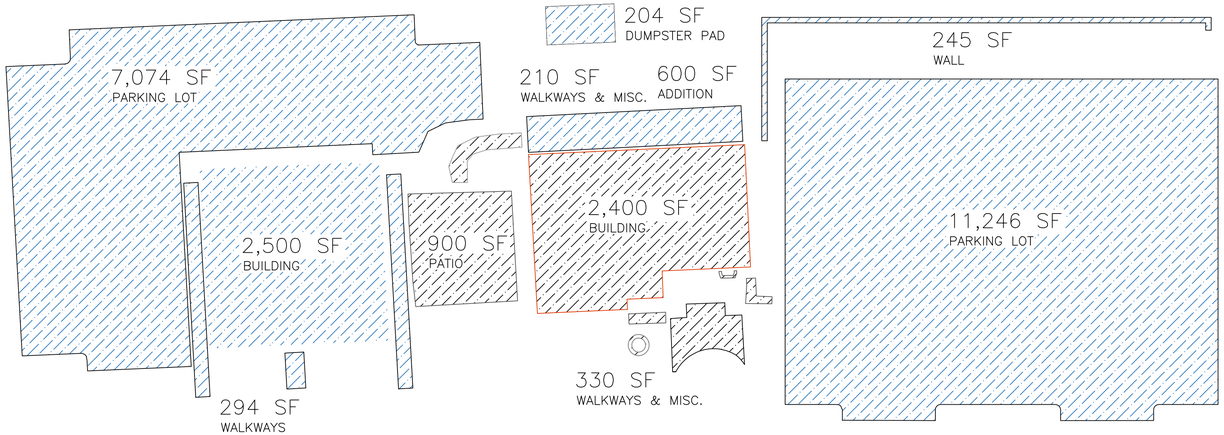
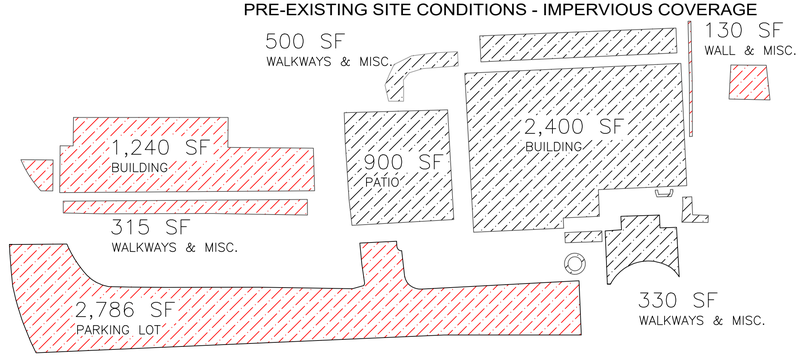
POST-DEVELOPMENT SITE CONDITIONS - IMPERVIOUS COVERAGE



PRE-EXISTING SITE CONDITIONS - IMPERVIOUS COVERAGE



PRE-EXISTING COVERAGE:

BUILDING AREA = 3,640 SF
PARKING LOT PAVEMENT = 2,786 SF
WALL & MISC. = 130 SF
PATIO AREA = 900 SF
WALKWAYS & MISC. = 1,145 SF

LOT AREA = 33,302 SF
PRE-EXISTING IMPERVIOUS AREA = 8,601 SF
REMAINING "LAWN" AREAS = 24,701 SF

POST-DEVELOPED COVERAGE:

BUILDING AREA = 5,500 SF
PARKING LOT PAVEMENT = 18,320 SF
WALL & MISC. = 245 SF
PATIO AREA = 900 SF
WALKWAYS & MISC. = 834 SF
DUMPSTER PAD = 204 SF

LOT AREA = 33,302 SF
POST-DEVELOPED IMPERVIOUS AREA = 26,003 SF
REMAINING "LAWN" AREAS = 7,299 SF

NET INCREASE = 17,402 SF

FINAL PERCOLATION AND DEEP TEST PIT DATA:

TEST DATE: TBD
WEATHER: TBD
PRE-SOAK TBD
WITNESS: N/A

DEEP TEST PIT:

** CONTRACTOR SHALL PROVIDE DESIGN ENGINEER WITH ADDITIONAL DEEP TEST PIT DATA AT TIME OF CONSTRUCTION.

PERCOLATION TEST #1
(3 RUNS PERFORMED)

FINAL RUN RESULTS:
START TIME: TBD
END TIME: TBD

START DEPTH
FROM SURFACE: 0"
END DEPTH
FROM SURFACE: 3"
RESULT: TBD / 3"DROP

PERCOLATION TEST #2
(3 RUNS PERFORMED)

FINAL RUN RESULTS:
START TIME: TBD
END TIME: TBD

START DEPTH
FROM SURFACE: 0"
END DEPTH
FROM SURFACE: 3"
RESULT: TBD / 3"DROP

PERCOLATION TEST #3
(3 RUNS PERFORMED)

FINAL RUN RESULTS:
START TIME: TBD
END TIME: TBD

START DEPTH
FROM SURFACE: 0"
END DEPTH
FROM SURFACE: 3"
RESULT: TBD / 3"DROP

(FOR DESIGN, USE 20 MIN PER 1 INCH DROP IN FRONT YARD)

Constant Slope

Smooth Wall PVC	GPM with 1%	Flow Velocity (ft/sec)	GPM with 2%	Flow Velocity (ft/sec)	GPM with 3%	Flow Velocity (ft/sec)	GPM with 4%	Flow Velocity (ft/sec)	GPM with 5%	Flow Velocity (ft/sec)
1/2"	0.6	0.9	0.8	1.3	1	1.7	1.2	2	1.4	2.2
3/4"	1.6	1.2	2.4	1.7	3	2.2	3.5	2.5	3.9	2.9
1"	3.5	1.4	5.1	2.1	6.4	2.6	7.4	3	8.4	3.4
1 1/4"	6.3	1.7	9.2	2.4	11.4	3	13.4	3.5	15.1	3.9
1 1/2"	10.2	1.9	14.8	2.7	18.5	3.4	21.6	3.9	24.3	4.4
2"	21.7	2.2	31.6	3.2	39	4	46	4.7	52	5.3
3"	63	2.9	92	4.2	114	5.2	133	6.1	151	6.8
* 4"	135	3.4	196	5	244	6.2	284	7.3	321	8.2
* 6"	391	4.4	568	6.4	707	8	826	9.4	932	10.6

PIPE SIZE ADEQUACY: FOR PROPOSED 4" DIAMETER PVC PIPE SET AT 2% SLOPE, DESIGN FLOW RATE AS PROVIDED BY MANUFACTURER IS 196 GALLONS PER MINUTE. 24 HOUR DESIGN VOLUME IS 276 CUBIC FEET WHICH IS EQUIVALENT 2,065 GALLONS. USING CONVERSION FACTOR, STANDARDIZED PER MINUTE VOLUME IS 1.43 GALLONS PER MINUTE. AS SUCH, THE PROPOSED DISCHARGE ROUTED TO THE DESIGNED CULTEC DRAINAGE SYSTEM ARE SIZED ACCORDINGLY.

DRAINAGE MODELING (AS PER NYSDEC SWDM)

STORMWATER DRAINAGE DESIGN
FOR
15 OLD ROUTE 22
ARMONK, NY 10504

The proposed storm water modeling utilized is for a net zero increase in site surface runoff. The modeling will capture surface water runoff from the increased impervious surfaces for the new building, paved parking areas, walkways and related. The total net increase of developed impervious surface areas, equating to 17,402 square feet, is modeled using the 24 hour, 100 year design storm of 9.17 inches. Proposed drainage consists of onsite percolation using Cultec Recharger drywells beneath the paved parking areas of the property surrounded by one foot of crushed processed gravel. Water quality pretreatment is proposed with use catch basin "drop in basket" type filters for the 6 proposed catch basins coupled with 1'-6" sumps provided in each of the basins.

LOT AREA FOR DESIGN:

DESCRIPTION	SQUARE FEET	CONVERSION	ACRES
Total Lot Area	33,302	43,560	0.765

PRE-DEVELOPMENT – EXISTING CONDITIONS

DESCRIPTION	SQUARE FEET	CONVERSION	ACRES	CURVE NUMBER
Total Lot Area	33,302	43,560	0.765	---
Buildings	3,640	43,560	0.084	98
Parking Lot	2,786	43,560	0.064	98
Patios, Walks & Wa	2,175	43,560	0.050	98
Open Space	24,701	43,560	0.567	72

COMPOSITE CURVE NUMBER = 78.7
TOTAL IMPERVIOUS AREAS = 8,686 SF

POST-DEVELOPMENT – PROPOSED CONDITIONS

DESCRIPTION	SQUARE FEET	CONVERSION	ACRES	CURVE NUMBER
Total Lot Area	33,302	43,560	0.765	---
Buildings	5,500	43,560	0.126	98
Parking Lot	18,320	43,560	0.421	98
Patios, Walks & Wa	1,979	43,560	0.045	98
Dumpster Pad	204	43,560	0.005	98
Open Space	7,299	43,560	0.168	72

COMPOSITE CURVE NUMBER = 92.3
TOTAL IMPERVIOUS AREAS = 24,848 SF

WATER QUANTITY VOLUME ANALYSIS:

- Reference NYSDEC Stormwater Design Manual Chapter 4 and NRCS TR-55 Modeling for Urban Hydrology for Small Watersheds
- Design Storm used is 25 year, 24 hour

- Pre-Developed Composite Curve Number (CN) 78.7
- Post-Developed Composite Curve Number (CN) 92.3
- Rainfall Intensity (I), 100 Year,24 Hr Storm 9.17 Inches/day
- Pre-Developed Impervious Area (A) 8,686 ft^2
- Post-Developed Impervious Area (A) 24,848 ft^2

Using the TR-55 SCS Runoff Equation

Max Retention (S) = 1,000/(CN) -10
Runoff (Q) = (P – 0.2S)^2/(P+0.8S)
Runoff Volume (V) = Q x A

1.) Pre-Development Runoff Determination

Pre-Development S 2.704 Inches
Pre-Development Q 6.49 Inches

Pre-Development Vs = 4,699.7 Cubic Feet

2.) Post-Development Runoff Determination

Post-Development S 0.834 Inches
Post-Development Q 8.21 Inches

Post-Development Vs = 16,989.9 Cubic Feet

3.) Water Quantity Volume for Storage

Storage Volume = Vs post – Vs pre
Stor. Volume = 12,290.18 Cubic Feet

WATER QUALITY VOLUME ANALYSIS:

- Reference NYSDEC Stormwater Design Manual Chapter 4, Section 4.2

WQv = (P x Rv x A) / 12 — 90 % Rainfall Event (P) = 1.5 Inches
% Impervious Cover (I) = 0.75 %
Rv = 0.05 + 0.009 x I — Site Area (A) = 0.7645 Acres
Rv = 0.057 Acre-Ft

WQv = 0.00544 Acre-Ft
WQv = 236.78 Cubic Feet

RRv(min) = (P x Rv x A<= I) / 12 — Hydrologic Soil B, S = 0.4
New Impervious Cover (A<= = 0.5704 Acres

RRv(min) = 0.0016223 Acre-Ft

RRv(min) = 70.67 Cubic Feet

NOTES:

1. WQv is greater than RRv(min)
2. Storage provided by drywells is greater than WQv

SOIL PERCOLATION RATE:

a) Area of Percolation (A_p):

1) Surface Area of Cylinder (A_c)
Perc Hole Depth 32
Diameter = 4 Inches
Water Depth ($h_{w@}$ = 0 Inches
$A_c = \pi D h_{w@}$
A_c= 0.00 ft^2

2) Cylinder Bottom Area
$A_b = \pi r^2$
A_b= 0.087 ft^2

3) Percolation Area
$A_p = A_c + A_b$
A_p= 0.09

b) Volume of Percolation (V_p):

h= 1 inches
$V_p = A_p * h$
V_p= 0.007 ft^2

c) Soil percolation rate (Sr):

Time 12.00 minutes

S=volume / area / time
S_r= 0.00694 ft^3/ft^2/min
S_r= 10.00 ft^3/ft^2/day
-25%clogging factor adjustment
S_r= 7.50 ft^3/ft^2/day

VOLUME PER DRYWELL (Vw):

Cultec Recharger Stormwater Chamber, Model # 330 XLHD

Chamber Volume (CF)	Stone Length (inches)	Stone Width (inches)	Stone Height (inches)	Stone Volume (CF)	# Units	Total Volume (CF)
52.27	126.00	76.00	42.50	73.30	1	125.57

Total Storage Provided, Vw = V_w= 125.57 ft^3

24-HOUR PERCOLATION VOLUME PER DRYWELL (Vp):

Percolation Volume of Drywell V_p= 498.75 ft^2

OF SIDES EXPOSED 2
OF ENDS EXPOSED 2
BOTTOM AREA UNIT 30.33 SF
BOTTOM AREA OF GRAVEL: 66.50 SF

TOTAL 24-HOUR VOLUME PER DRYWELL (Vt):

Cultec Recharger Stormwater Chamber, Model # 330 XLHD
V_t= volume of drywells (Vw) + percolation volume (Vp)
V_t= 624.32 ft^3

NUMBER OF DRYWELLS REQUIRED (DWR):

DW_R= Required Volume of Storage (Vs) / Total Volume per Dryvell (Vt)

DW_R= 19.69 (Round to 20 Units)

WATER QUALITY VOLUME ANALYSIS (WQv & Vt):

- Reference NYSDEC Stormwater Design Manual Chapter 4, Sections 4.2 and 4.3

Water Quality Volume (WQv) = 236.78 Cubic Feet
Total Volume (Vt) of SMP's Provided = 8,740.48 Cubic Feet NOTE: Storage provided by drywells is greater than WQv

- Reference NYSDEC Stormwater Design Manual Chapter 6, Sections 6.2 and 6.3

Water Quality Volume (WQv) = 236.78 Cubic Feet
48 Hour Perc. Volume of Drywells (Vpx2) x #Units Proposed = 13,965.00 Cubic Feet NOTE: Storage provided by drywells is sufficient for 48 hour dewatering of full WQv

WATER QUALITY VOLUME PRE-TREATMENT ANALYSIS:

- Reference NYSDEC Stormwater Design Manual Chapter 6, Sections 6.4.3

Camp-Hazen Equation $A_s = -1*(Qn/W)n(1-E)$

A_s = 1.91 Square Feet

As = Sedimentation Basin Surface Area (ft^2)
E = Sedimentation Trap Efficiency (90%)
W = Particle Setting Velocity (0.0033FPS)
Qn = Basin Discharge Rate (WQv/24/3600)
WQv = Water Quality Volume

Calculations determine that twenty Cultec Model 330XLHD chambers are sufficient to handle the design impervious surfaces while managing the design water quality volume (WQv). The proposed system meets NYSDEC design criteria for 48-hour infiltration of WQv. Furthermore the field determined infiltration rates meet the minimum design parameters of 0.5 inch/hour. The proposed stormwater management system consists of three sets of chambers surrounded by one foot of ¾ to 1½ inch nominal size processed gravel adjacent to the percolation test pit locations. For NYSDEC water quality pre-treatment qualification, all parking lot catch basins will contain 1-1/2 foot minimum depth sumps and each basin will be retrofitted with "drop in basket" type filters.

PHOTOS - FIELD PERCOLATION TESTING FOR SOILS

TBD
FRONT RIGHT YARD - PERC TEST #1

TBD
FRONT RIGHT YARD - PERC TEST #2

TBD
REAR LEFT YARD - PERC TEST #3

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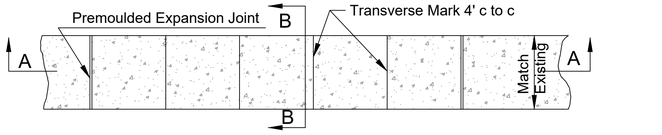
PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

DATE: APRIL 26, 2023 SCALE: NONE SHEET: 5 OF 11

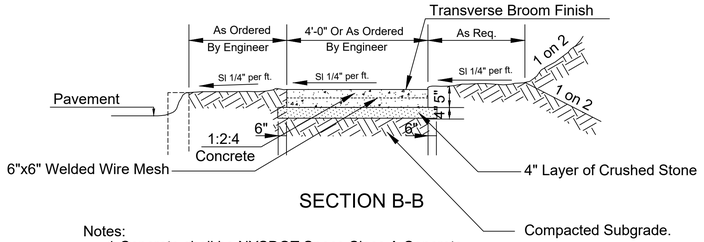
NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023

STANDARD CONSTRUCTION DETAILS



SECTION A-A

NOTES:
1. NEW 4" LAYER OF CRUSHED STONE UNDER NEW CONCRETE SIDEWALK IS INCLUDED UNDER THIS ITEM.

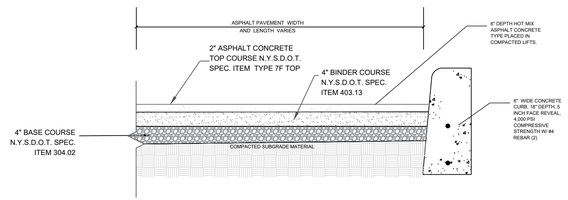


SECTION B-B

Notes:
1. Concrete shall be NYSDOT Specs Class A Concrete.
2. Sidewalks Not At Driveways Shall Be 5 inches Thick On a 4 inch Base of crushed stone, With 6"x6" Welded Wire Mesh.
3. Sidewalks at Driveways Shall Be 7 inches Thick, on a 4 inch Base of crushed stone, With 6"x6" Welded Wire Mesh.

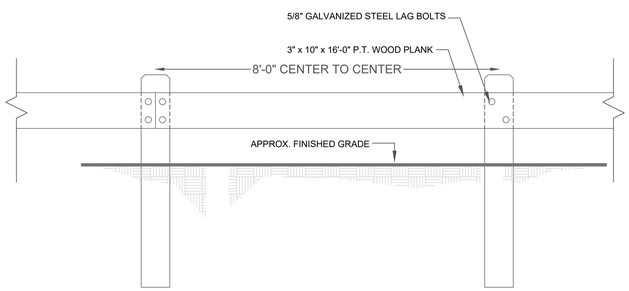
C-1 / 3 CONCRETE SIDEWALK SECTIONS

SCALE : NOT TO SCALE



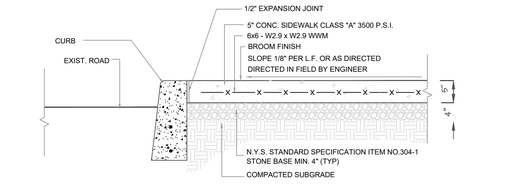
C-6 / 3 ASPHALT PAVEMENT DETAIL

SCALE : NOT TO SCALE



C-7 / 3 WOOD GUIDE RAIL DETAIL

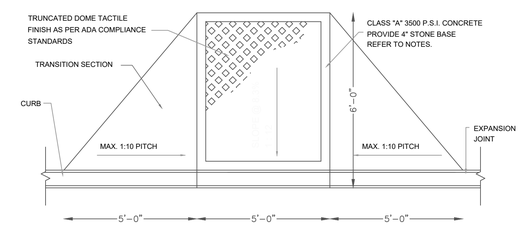
SCALE : NOT TO SCALE



NOTE:
EXPANSION JOINTS SHALL BE 20'-0" O.C. & SCORE JOINTS SHALL BE 4'-0" O.C.

C-2 / 3 5" REINFORCED CLASS "A" CONCRETE SIDEWALK

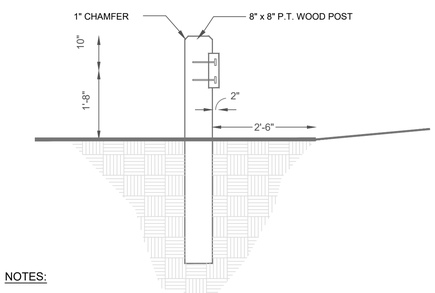
SCALE : NOT TO SCALE



NOTES 1. NEW 4" N.Y.S. STANDARD SPECIFICATION ITEM NO. 304-1 304-1 STONE BASE
2. PEDESTRIAN RAMP INCLUDES ALL WORK INCLUDING TRANSITION SECTIONS & DROP CURB.

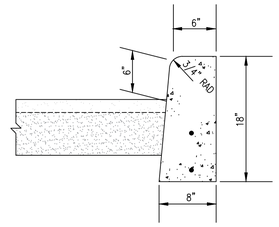
C-4 / 3 PEDESTRIAN RAMP AND DROP CURB DETAIL

SCALE : NOT TO SCALE



NOTES:

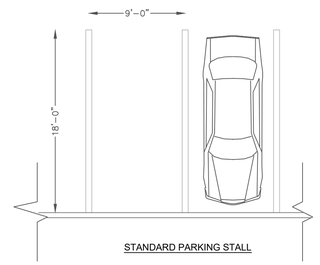
1. ALL WOOD TO BE SEASONED No.1 DOUGLAS FIR, SOUTHERN PINE OR OTHER APPROVED STRUCTURAL LUMBER.
2. ALL WOOD TO BE PRESSURE TREATED.



Note:
1. Concrete Shall Be N.Y.S.D.O.T. Specs. Class "A" Concrete. 4,000 psi comp. strength
2. Drop Curbs For Driveways Shall Have 1-1/2" Reveal.
3. Full Height Curb Sections Shall Have a Min. Reveal of 6-inches along municipal road.

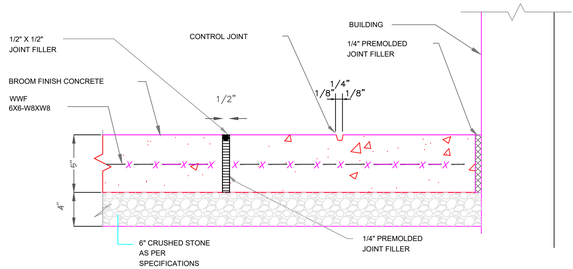
C-3 / 3 CONCRETE CURB STANDARD SECTION

SCALE : NOT TO SCALE



C-10 / 3 DIMENSIONAL SCHEMATIC OF PROPOSED PARKING STALLS

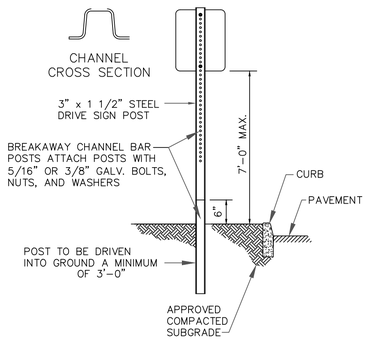
SCALE : NOT TO SCALE



C-5 / 3 TYPICAL SIDEWALK SECTION

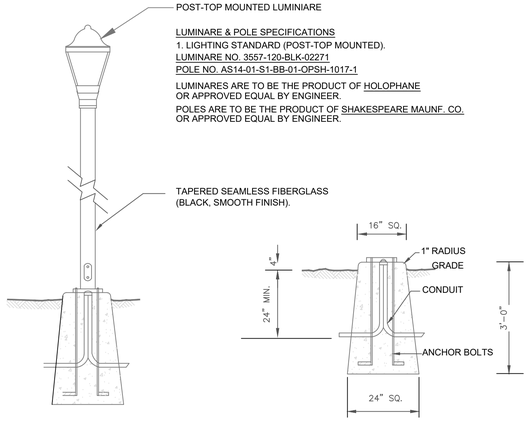
SCALE : NOT TO SCALE

SIGN POST DETAIL
NTS



C-9 / 3 STANDARD SIGN POST DETAIL

SCALE : NOT TO SCALE



LUMINARE & POLE SPECIFICATIONS
1. LIGHTING STANDARD (POST-TOP MOUNTED).
LUMINARE NO. 3557-120-BLK-02271
POLE NO. AS14-01-S1-BB-01-OPSH-1017-1

LUMINARES ARE TO BE THE PRODUCT OF HOLOPHANE OR APPROVED EQUAL BY ENGINEER.

POLES ARE TO BE THE PRODUCT OF SHAKESPEARE MAUNF. CO. OR APPROVED EQUAL BY ENGINEER.

NOTE: LOCATION OF LIGHT POLE TO BE VERIFIED IN FIELD.

NOTES:

1. POLES SHALL BE 14'-0" LENGTH TAPERED SEAMLESS FIBERGLASS WITH HAND HOLE FOR SPLICE AND FUSE HOLDER. POLE IS TO BE ANCHORED TO CONCRETE BASE IN ACCORDANCE WITH MANUF. SPECIFICATIONS.
2. FACE OF POLE TO BE SET BACK A MINIMUM OF 3'-0" BEHIND EDGE OF ASPHALT PAVEMENT.
3. LUMINARIES FOR HIGH PRESSURE SODIUM TO BE MANUFACTURED BY HOLOPHANE, (RSL350).
4. POLE BASES TO BE INSPECTED PRIOR TO INSTALLATION OR BACKFILL.
5. CONCRETE BASE MUST PROJECT A MINIMUM OF 4" ABOVE FINISHED GRADE.
6. ALL EXCAVATION FOR LIGHT POST BASES SHALL BE INSPECTED PRIOR TO BASE INSTALLATION.
7. EACH LIGHT SHOULD BE WIRED SEPARATELY, AND NOT SERIES, AND EACH LAMP SHOULD BE SEPARATELY FUSED.

C-8 / 3 LIGHTING POLE AND BASE DETAIL

SCALE : NOT TO SCALE

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STATE OF NEW YORK · DAVID KLEIN GOESSL · 081017 · LICENSED PROFESSIONAL ENGINEER

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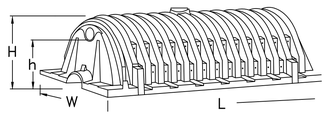
STANDARD DRAINAGE DETAILS

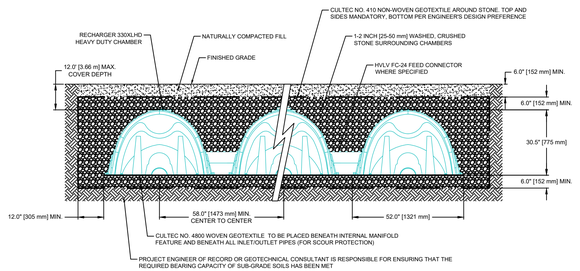
CULTEC 330XLHD INFILTRATING CHAMBERS

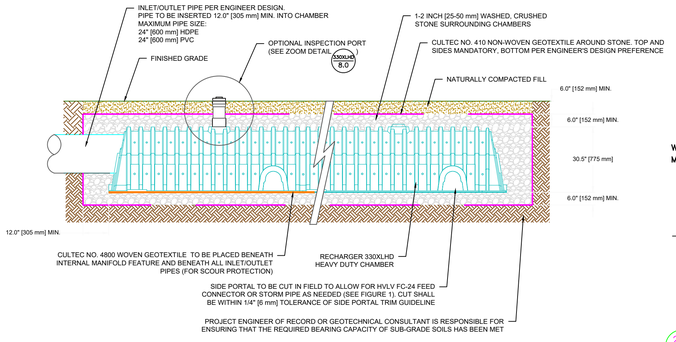
1-DR 3

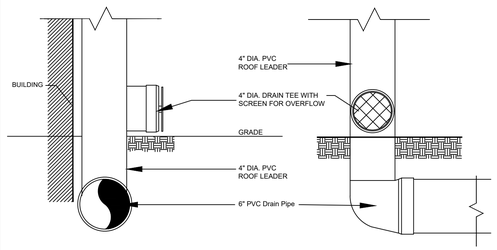
SCALE : NOT TO SCALE

CHAMBER MODEL	RECHARGER 330HD
DIMENSIONS L	84.0"
W	52.0"
H	30.5"
h	22.0"
CAPACITY (gallons)	391.0
(cubic ft.)	52.2







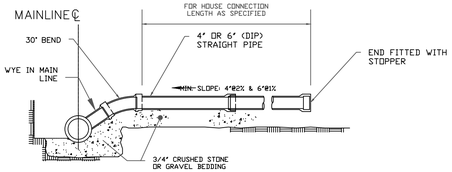


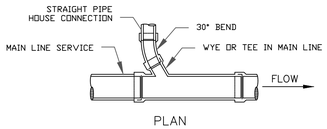
ROOF LEADER OVERFLOW @ GRADE

2-DR 2

SCALE : NOT TO SCALE

UTILITY DETAILS



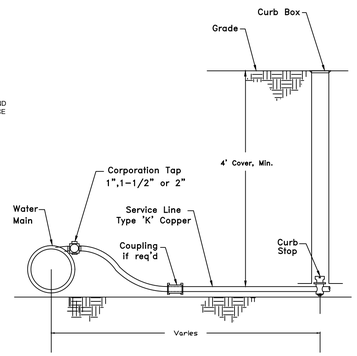


PLAN

STANDARD DETAILS FOR SANITARY SEWER LATERAL

1-U 3

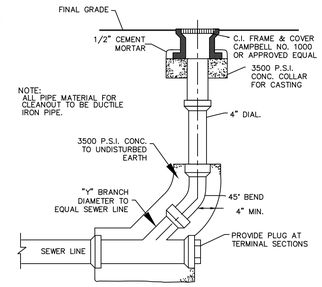
SCALE : NOT TO SCALE



STANDARD DETAILS FOR DOMESTIC WATER SERVICE

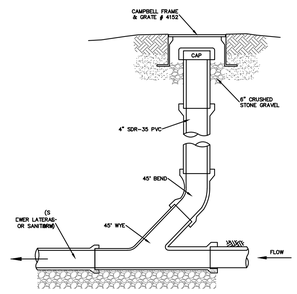
2-U 3

SCALE : NOT TO SCALE



DRAINAGE CLEANOUT IN PAVEMENT DETAIL

NTS

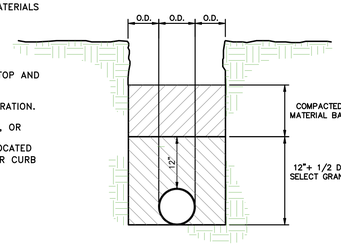


SEWER CLEANOUT DETAIL (GRAVITY)

1. REFER TO PLAN FOR SPECIFIC PIPE SIZING, SLOPE AND SPECIFICATIONS. SANITARY SEWER LATERAL SHALL BE 4" DIAMETER SDR-35 PVC PIPE ON PRIVATE PROPERTY AND MAY BE SPECIFIED AS EXTRA HEAVY CAST IRON PIPE WITHIN THE ROAD AND RIGHT OF WAY.
2. CLEANOUTS SHALL BE PLACED AT EACH SIGNIFICANT PIPE BEND OR CHANGE IN DIRECTION. MAXIMUM SPACE BETWEEN CLEANOUTS IS 50 FEET.
3. PIPE SHALL BE BEDDED WITH CLEAN SAND AND COVERED ONE FOOT WITH SAME. BACKFILL IN ROAD AND RIGHT OF WAY WITH K-CRETE MATERIALS AND SELECT FILL IN ALL OTHER AREAS.

NOTES:

1. CONTRACTOR SHALL CONFIRM CORPORATION, SERVICE TUBING, CURB STOP AND BOX MATERIALS WITH TOWN OF NORTH CASTLE
2. CONTRACTOR PROVIDES ALL EXCAVATION, LABOR, BACKFILL AND RESTORATION.
3. THE CURB BOX SHALL BE LOCATED BETWEEN THE EDGE OF PAVEMENT, OR CURB WHERE CURBS ARE IN PLACE, AND THE PROPERTY LINE. WHERE SIDEWALKS EXIST OR ARE TO BE BUILT, THE CURB STOP SHALL BE LOCATED NO FURTHER THAN THREE (3) FEET FROM THE EDGE OF PAVEMENT, OR CURB WHERE CURBS ARE IN PLACE.

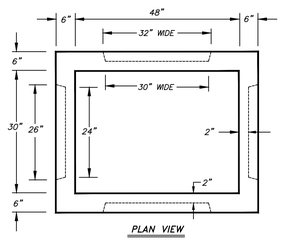


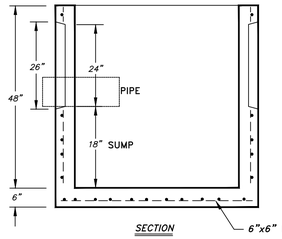
TRENCH BEDDING DETAIL

4-DR 2

SCALE : NOT TO SCALE

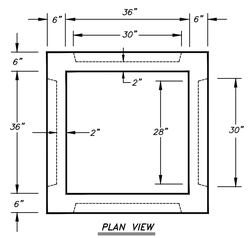
30"x48"x48" 'KNOCKOUT' TYPE CATCH BASIN WITH SUMP

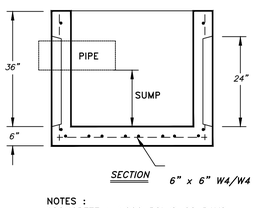




NOTES :
*CONCRETE : 4,000 PSI @ 28 DAYS
*REINFORCING : AS PER ASTM A-185
6" x 6" W4/W4 W.W.M.
*APPROX. WEIGHT : 4,853 LBS.

36"x36"x36" 'KNOCKOUT' TYPE CATCH BASIN





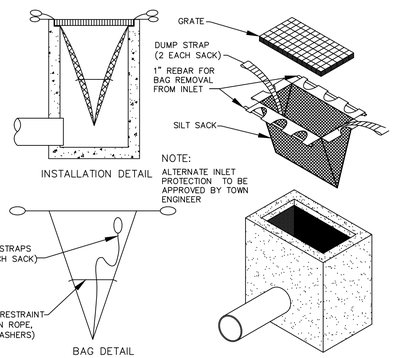
NOTES :
*CONCRETE : 4,000 PSI @ 28 DAYS
*REINFORCING : AS PER ASTM A-185
6" x 6" W4/W4 W.W.M.
*WEIGHTS :
CATCH BASIN - 3,360 LBS.

Precast Concrete Sales Co.
123 Route 303 Valley Cottage , N.Y. 10989
Tel. (845) 268-4949 - Fax (845) 268-4376

STANDARD CONCRETE KNOCKOUT CATCH BASINS

3-DR 3

SCALE : NOT TO SCALE



SILT SACK AT INLET

NTS

STANDARD CATCH BASIN SILT TRAP PROTECTION

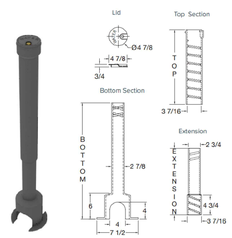
5-DR 3

SCALE : NOT TO SCALE

GENERAL FOUNDRIES

Service / Buffalo Boxes

Screw Type, Large Base



Service Box

PRODUCT NO.	TOP	BOTTOM	RANGE
38093E	18	39	36 - 54
38094E	24	39	42 - 60
38095E	30	39	41 - 64

STANDARD CAST IRON WATER SERVICE CURB STOP ASSEMBLY

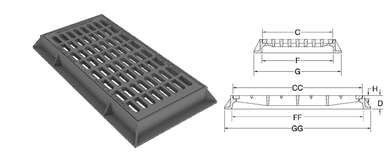
3-U 3

SCALE : NOT TO SCALE

GENERAL FOUNDRIES

Inlet Frames and Grates

Heavy Duty, Built Up Type Frame, Bike Safe Grate

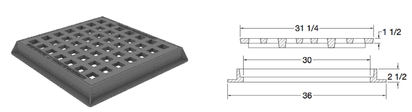


PRODUCT NO.	GRATE DIMENSION C	GRATE DIMENSION CC	FRAME HEIGHT D	INNER FLANGE DIMENSION F	INNER FLANGE DIMENSION FF	OUTER FLANGE DIMENSION G	OUTER FLANGE DIMENSION GG	GRATE THICKNESS H
23404	20-1/2	34-1/8	4	22	32-3/4	28	41-1/4	1-1/4
23405	21-3/4	47-3/4	5	22	48	28	54	1-1/4
23406	21-3/4	35-3/4	5	22	36	28	42	1-1/4
23408	30	49-1/4	5	30-1/4	49-1/2	36	55-1/2	1-1/4
23444	25-3/4	47-3/4	5	26	48	32	54	1-1/4
23449	25-3/4	47-3/4	9	26	48	34	56	1-1/4

GENERAL FOUNDRIES

Catch Basin Frames and Grates

Heavy Duty, Built Up Type Frame, Square Hole Grate



NOTES:
- Dimensions are approximate & in inches
- Gray Iron, Class 35B
- Conforms to ASTM A48 / A48M-03 specifications

PRODUCT NO.
23134

STANDARD CAST IRON FRAME AND GRATE ASSEMBLIES

5-DR 3

SCALE : NOT TO SCALE

DAVID A. GOESSL, PE
CIVIL ENGINEER
622 SPROUT BROOK ROAD
PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

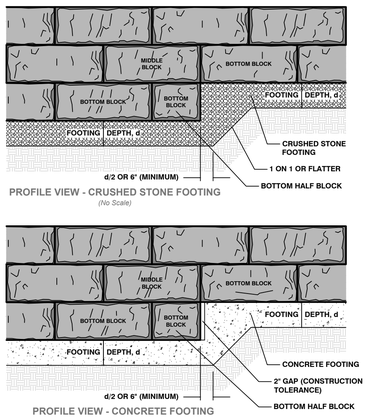
DATE: APRIL 26, 2023 SCALE: NONE SHEET: 7 OF 11

STATE OF NEW YORK · DAVID ALLEN GOESSL · No. 081017 · LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023

STANDARD REDI-ROCK CONSTRUCTION DETAILS

STEP FOOTING DETAILS

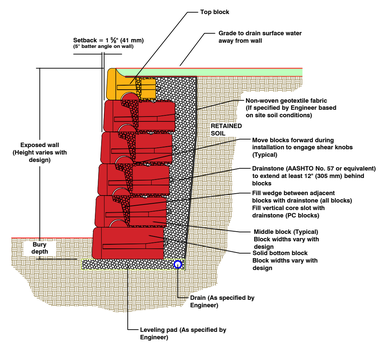


PROFILE VIEW - CRUSHED STONE FOOTING
(No Scale)

PROFILE VIEW - CONCRETE FOOTING
(No Scale)

DRAWN BY: JRJ	TITLE: Step Footing Details		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 06-22-2015			
SHEET: 1 of 1	FILE: 6 Step Footing Details 062215.dwg		

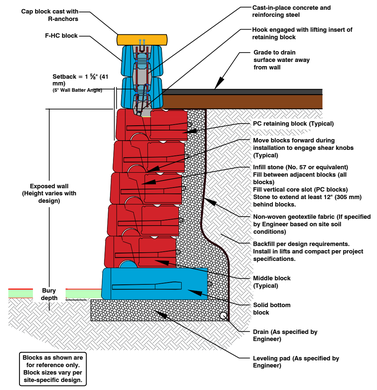
Typical Gravity Wall Section



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY: JRJ	TITLE: Typical Gravity Wall Detail		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 17MAR2016			
SHEET: 1 of 1	FILE: 1 Typical Gravity Wall Detail 031716.dwg		

Typical Gravity Wall Section with Freestanding Hollow Core Coping

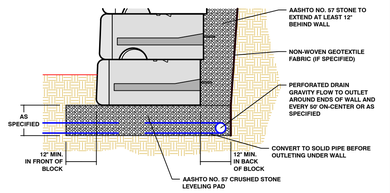


This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

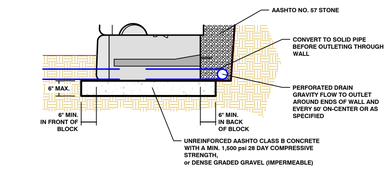
DRAWN BY: NWL	TITLE: Typical Gravity Wall Detail		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 31MAY2018			
SHEET: 1 of 1	FILE: Typical-Gravity-Wall-with-F-HC-Section.dwg		

LEVELING PAD OPTIONS FOR RETAINING WALL BLOCKS

NO SCALE



OPEN-GRADED CRUSHED STONE LEVELING PAD

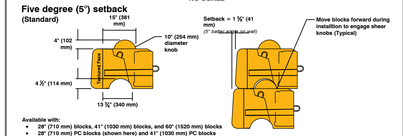


CONCRETE or DENSE GRADED GRAVEL LEVELING PAD

DRAWN BY: JRJ	TITLE: Leveling Pad Options		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 06-22-2015			
SHEET: 1 of 1	FILE: 3 Leveling Pad Options 062215.dwg		

BLOCK-TO-BLOCK SETBACK OPTIONS

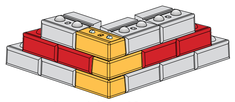
NO SCALE



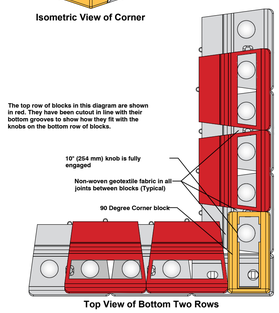
The block-to-block setback available with Redi-Rock is controlled by the size and location of the shear knobs (domes) cast into the blocks. While the 10" (254 mm) diameter knob and the 1 5/8" (41 mm) setback position is the most common configuration, Redi-Rock has three different knob sizes and three different locations available.

DRAWN BY: JRJ	TITLE: Block Setback Options Normal Batter		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 06-22-2015			
SHEET: 1 of 1	FILE: 4 Block Setback Options Normal Batter 062215.dwg		

90° Outside Corner



Isometric View of Corner



Top View of Bottom Two Rows

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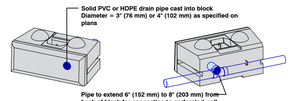
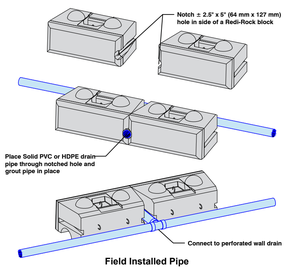
DRAWN BY: JRJ	TITLE: 90° Outside Corner Detail 90° Corner Block Option		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 17MAR2016			
SHEET: 1 of 1	FILE: 1 90deg Outside Corner Detail -Corner Block 031716.dwg		

Wall Drain Weep Hole Options



Custom Pipe Cast into Block

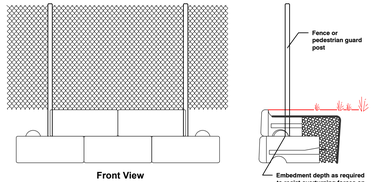


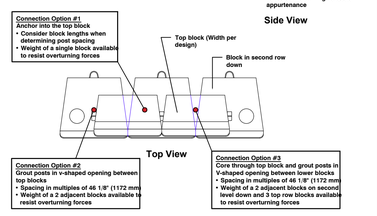
Field Installed Pipe

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY: JRJ	TITLE: Drainage Weep Options		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 06-22-2015			
SHEET: 1 of 1	FILE: 5 Drainage Weep Options 062215.dwg		

Fence or Pedestrian Guard Connection Locations

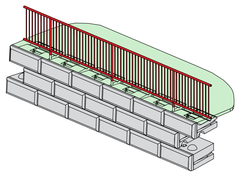


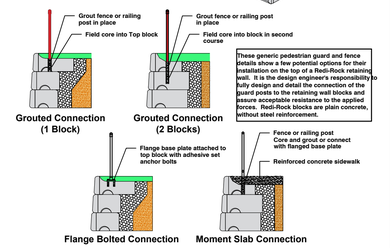


This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY: JRJ	TITLE: Fence or Pedestrian Guard Connection Locations		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 06-22-2015			
SHEET: 1 of 1	FILE: 6 Fence or Pedestrian Guard Connection Locations 062215.dwg		

Fence or Pedestrian Guard Connection Options

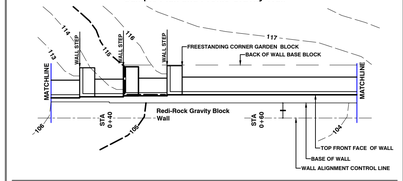


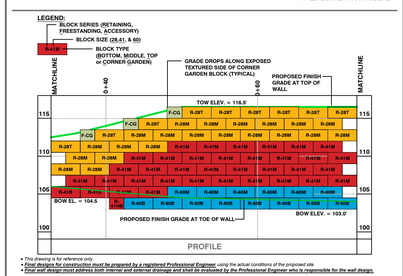


This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY: JRJ	TITLE: Fence or Pedestrian Guard Connection Options		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 06-22-2015			
SHEET: 1 of 1	FILE: 5 Fence or Pedestrian Guard Connection Options 062215.dwg		

Sample Plan and Profile Gravity Wall





- *This drawing is for reference only.*
- *Final designs for construction must be prepared by a registered Professional Engineer, using the actual conditions of the proposed site.*
- *Final wall design must address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the wall design.*

DRAWN BY: JRJ	TITLE:		REDI-ROCK 95481 US 31 SOUTH, CHARLEVOIX, MI 49720 (866) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com
APPROVED BY: JRJ			
DATE: 22MAR2016			
SHEET: 1 of 1	FILE: 2 Sample Plan and Profile Gravity Wall 032216.dwg		

GENERAL CONDITIONS:

1. The applicant/contractor shall consult with a licensed professional civil engineer to verify field and site soil conditions prior to the construction of the proposed Redi-Rock retaining wall system.
2. No soils or geotechnical information was available at the time that these design drawings were prepared. The design engineer does not make any representation to the quality of existing materials on the property.
3. The foundation soils at the base of the wall shall be inspected by the licensed engineer. Any organic or unsuitable soils or improperly compacted embankment materials shall be removed and replaced with materials capable of providing proper bearing capacity.
4. The applicant/contractor shall report any groundwater or surface runoff conditions that may adversely affect the wall as additional provisions may be required in the field as determined by the licensed engineer.
5. The applicant/contractor shall only use suitable soil and gravel materials. Where materials are imported to the [project location, the applicant/contractor shall provide supplier material certifications to demonstrate acceptability. Use of processed/recycled materials may be considered for use.
6. The contractor shall establish and maintain standards for quality control to ensure that the wall construction complies with design plans and manufacturer's specifications.
7. The contractor consult with the design engineer and demonstrate the establishment of all lines, grades and slopes for compliance with the approved plans.

SPECIFIC CONDITIONS:

1. The work to be done includes sourcing, providing and installing Redi-Rock concrete modular gravity retaining wall units to the lines and grades as specified on the design plans in keeping with manufacturer's specifications.
2. The work includes the demolition and proper disposal of all pre-existing materials including timber walls, tree removals, organic soils and brush materials.
3. The work shall include furnishing and installing all related construction materials required for the installation of the Redi-Rock retaining wall system.
4. The the work includes all final restoration and cleanup. As the project progresses, the applicant/contractor shall schedule all necessary inspections with the local building officials and design engineer.

MATERIALS:

1. The wall specified is Redi-Rock gravity wall types of units as specified on the design plans. The wall units shall have a minimum 28-day compressive strength of 4,000 p.s.i. Standard weight concrete shall have 4.5% to 7.5% air entrainment by volume. Density of concrete shall be 145 lbs/cf.
2. Units shall be furnished and delivered free of stains, defects, cracks or chips. Units that contain visible defects such as, but not limited to cracks, seams, staining, form marks, color streaks or other defects shall be repaired to the satisfaction of the owner and/or design engineer or shall be removed and replaced at the contractor's and or supplier's expense.
3. The finish texture and color shall be specified by the owner prior to procuring any Redi-Rock wall materials.
4. Foundation Soils: The soil immediately beneath the retaining wall units and gravel base shall be suitable materials having soils bearing capacity capable of handling the bearing weight of the proposed wall. Unsuitable soils shall be removed and replaced with acceptable materials. Over-excavated areas shall be backfilled and brought to design grade with approved, compacted backfill materials.
5. Backfill Soils: The soils used for retaining wall backfill beyond the limits of drainage aggregate shall be free of debris or organic matter and meet the characteristics of NYSDOT designation of 'select fill.'
6. Aggregate Gravels: The gravels for leveling pad shall be a clean crushed stone or processed stone of gradation size $\frac{3}{4}$" to 2" free of sands and/or fines. The contractor shall submit supplier material certifications to the owner for review and approval. River rock, broken shale, sands or pea gravel materials are not acceptable for use.

QUALITY CONTROL:

1. The contractor shall confirm suitable compacted foundation soils for which a gravel leveling foundation pad of minimum 6" depth may be placed.
2. Compaction of foundation soils, gravel leveling pad and backfill materials shall meet or exceed compactive effort of 95% standard proctor density.
3. Compacted lifts of no greater than 8" depths are to be installed and tamped with a vibratory plate compactor, jumping jack or other suitable equipment.
4. Each course of block wall shall be checked for level and proper alignment. The contractor shall remove and reset materials as necessary to meet manufacturer's design standards and tolerances. Units shall be installed level with a 5 degree batter on the face of wall.
5. Should any unforeseen field condition arise to prevent proper installation of the wall, the contractor shall report such matter to the owner and design engineer.

811 Know what's **below.** **Call** before you dig. 1-(800) 962-7962

DAVID A. GOESSL, PE
CIVIL ENGINEER
622 SPROUT BROOK ROAD
PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

DATE: APRIL 26, 2023 SCALE: NONE SHEET: 8 OF 9

STATE OF NEW YORK DAVID ALLEN GOESSL 081017 LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023

STANDARD REDI-ROCK INSTALLATION NOTES FOR GRAVITY WALLS

1. PURPOSE

This manual is intended to serve as a guide for the proper installation and construction of a Redi-Rock® retaining wall. The recommendations and guidelines presented here are intended to supplement detailed construction documents, plans, and specifications for the project.

2. RESPONSIBILITIES

Redi-Rock supports a Total Quality Management approach to Quality Assurance and Quality Control (QA/QC) in the planning, design, manufacture, installation, and final acceptance of a Redi-Rock wall. This approach requires the responsible party at each stage of the project ensure that proper procedures are followed for their portion of the work. The responsible parties during the construction phase of a Redi-Rock wall include the Contractor, Engineer or Owner's Representative, and Redi-Rock licensed manufacturer. Their specific responsibilities for compliance are as follows:

CONTRACTOR

The Contractor is responsible for providing construction according to the contract documents, plans, and specifications for the project. The Contractor shall ensure that employees engaged in construction of the Redi-Rock wall understand and follow the project plans and specifications, are familiar with construction methods required, and have adequate safety training.

ENGINEER OR OWNER'S REPRESENTATIVE

The Engineer or Owner's Representative is responsible for construction review to assure that the project is being constructed according to the contract documents (plans and specifications). The representative shall fully understand the project plans and specifications and shall perform adequate field verification checks to ensure construction is in conformance with the project requirements. The presence of the Engineer or Owner's representative does not relieve the Contractor of their responsibilities for compliance with the project plans and specifications.

REDI-ROCK LICENSED MANUFACTURER

Redi-Rock blocks are produced by independently-owned licensed manufacturers. The manufacturer is responsible for the production and delivery of Redi-Rock units to the job site in accordance with published material quality, size tolerances, construction documents, plans, and specifications. The licensed manufacturer is responsible for adherence to any project specific QA/QC requirements for the production of precast concrete retaining wall units. Often, additional services—such as installation training classes—are available through the Redi-Rock manufacturer.

3. PRE-CONSTRUCTION CHECKLIST

Before you start construction of a Redi-Rock wall, take the time to complete necessary planning and preparation. This process will help ensure a safe, efficient, and quality installation. It will also help avoid costly mistakes.

☐ SAFETY

Safety is of primary concern to Redi-Rock International. Redi-Rock walls must be installed in a safe manner. All local, state, and federal safety regulations must be followed. In addition, Redi-Rock International greatly encourages installers to set up company programs to help their people stay safe at work. These programs should address items such as: personal protective equipment, maintaining safe slopes and excavations, fall protection, rigging and lifting, and other safety precautions. Safety-training materials specific to your company can be found at **www.osha.gov**, by calling 1-800-321-OSHA (6742), or from your local government safety office.

☐ ENGINEERING AND PERMITS

Obtain necessary engineering and permits for your project. Your local building department is an excellent resource to help determine the requirements for your project.

> **This installation guide is intended to supplement a detailed, site-specific wall design prepared for your project by a Professional Engineer. The construction documents for your project supersede any recommendations presented here.**

☐ REVIEW THE PROJECT PLANS

Take the time to review and understand the project plans and specifications. Make sure that the plans take into account current site, soil, and water conditions. Pay close attention to silty or clayey soils and ground water or surface water on the site as these can significantly increase the forces on the wall. A pre-construction meeting with the wall design engineer, construction inspector, wall contractor, and owner or representative is recommended.

☐ CONSTRUCTION PLANNING

Develop a plan to coordinate construction activities on your site. Make sure your plan specifically addresses how to control surface water during construction.

☐ UTILITY LOCATION

Make sure to have underground utilities located and marked on the ground before starting any construction. Call 8-1-1, go online to **www.call811.com**, or contact your local utility company to schedule utility marking for your project site.

☐ MATERIAL STAGING

Store Redi-Rock blocks in a location close to the proposed wall. Blocks should be kept clean and mud free. Blocks should also be stored in a location which will minimize the amount of handling on the project site.

Store geogrid in a clean, dry location close to the proposed wall. Keep the geogrid covered and avoid exposure to direct sunlight.

Be careful where you stockpile excavation and backfill material. Do not stockpile material over buried utility pipes, cables, or near basement walls which could be damaged by the extra weight.

☐ MATERIAL VERIFICATION

Material planned for use as drainage aggregate between and behind Redi-Rock blocks and structural backfill material proposed for use in the reinforced soil zone of mechanically stabilized earth walls must be inspected and verified to comply with requirements of the construction documents, plans, and specifications.

☐ EQUIPMENT

Make sure you have the proper equipment to handle Redi-Rock blocks and install the wall. Redi-Rock blocks are quite large and heavy. Make sure excavators and other construction equipment are properly sized to handle the blocks safely. **(Figure 1)**

Hand-operated equipment should include, at a minimum: shovels, 2-foot (0.6-meter) level, 4-foot (1.2-meter) level, broom, hammer, tape measure, string, spray paint, laser level, pry or Burke bar, walk-behind vibratory plate compactor (capable of delivering a minimum of 2000 lb (8.9 kN) centrifugal force), and a 16-inch (406-millimeter) concrete cut-off saw. **(Figure 2)**

Personal protective equipment should include, at a minimum: appropriate clothing, steel toe boots with metatarsal protection, eye protection, hard hat, gloves, hearing protection, fall protection rigging, and other items as necessary to ensure a safe working environment.

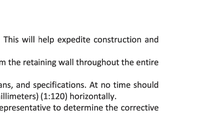


Figure 1

Figure 2

4. SUBGRADE SOILS

Proper base preparation is a critical element in the construction of your retaining wall. Not only is it important to provide a stable foundation for the wall, but a properly prepared base will greatly increase the speed and efficiency of your wall installation. Proper base preparation starts with the subgrade soils.

Existing soils must be removed to the bottom of the leveling pad elevation for the retaining wall.

The base and back of excavation should expose fresh, undisturbed soil or rock. Remove all organic, unsuitable, and disturbed soils that "fall-in" along the base of the wall or the back of the excavation. Always provide safe excavations in accordance with OSHA requirements.

The subgrade soil (below the leveling pad) should be evaluated by the Engineer or Owner's Representative to verify that it meets the design requirements and to determine its adequacy to support the retaining wall. Any unsuitable material shall be excavated and replaced as directed by the on-site representative and per the requirements of the contract drawings, plans, and specifications.

Subgrade soils must be compacted to a density as specified in the contract documents, plans, and specifications but not less than 90% maximum density at ± 2% optimum moisture content as determined by a modified proctor test (ASTM D1557). **(Figures 3 and 4)**

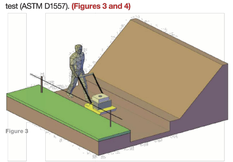


Figure 3

Figure 4

5. LEVELING PAD

Base preparation continues with proper leveling pad construction. Redi-Rock retaining walls can be designed with an open-graded crushed stone, dense-graded crushed stone (GAB), or concrete leveling pad which supports the bottom row of blocks. The choice of which type of leveling pad to use is made by the wall design engineer and depends on several factors including the bearing capacity of the native soil, location of the drain outlet, and conditions at the base of the wall.

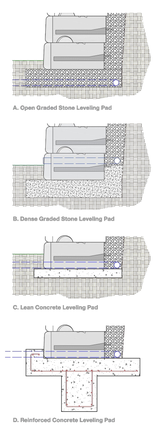
Open-graded crushed stone is typically used in cases where the wall drain can outlet to daylight (by gravity) somewhere below the elevation of the bottom of the leveling pad. **(Figure 6A)** The material should be 1-inch (25-millimeter) diameter and smaller stone. A crushed stone meeting the gradation requirements of ASTM No. 57 with no material passing the No. 200 (74 µm) sieve is preferred. The leveling pad thickness shall be as designed by the wall design engineer. A minimum thickness of 6 inches (152 millimeters) or 12 inches (305 millimeters) is common. The leveling pad should extend at least 6 inches (152 millimeter) in front and 12 inches (305 millimeters) behind the bottom block. Make sure to check your construction documents for details.

Dense-graded crushed stone or graded aggregate base (GAB) material is typically used in cases where the wall drain can only outlet to daylight somewhere above the bottom of the leveling pad. **(Figure 6B)** The material should be dense-graded crushed stone with between 8 and 20% "fines" which will pass through a No. 200 (74 µm) sieve. The leveling pad thickness shall be as designed by the wall design engineer. Minimum dimensions are the same as those for an open-graded crushed stone leveling pad.

The leveling pad material should be placed and compacted to provide a uniform, level pad on which to construct the retaining wall. **(Figure 5)** Proper elevation can be established with a laser level or transit. You can also set two 20' (6 m) long grade (screed) pipes to the desired grade and screed the crushed stone material between the pipes.

Figure 5

Figure 6



Place the stone leveling pad in uniform loose lifts a maximum of 6 inches (152 millimeter) thick. Consolidate the stone with a minimum of three passes with a 24-inch (610-millimeter) wide walk-behind vibrating plate compactor capable of delivering at least 2000 pounds (8.9 kN) of centrifugal force. This should achieve 85% relative density of the stone determined in accordance with ASTM D-4253 and D-4254. In place density of the stone fill should be confirmed using ASTM D-6938. If you don't achieve a minimum of 85% relative density, place the stone in smaller lifts or apply more compaction effort until you do achieve desired density of the stone.

Unless specifically included in the design calculations, do NOT place a thin layer of sand between the leveling pad and bottom block. This layer will reduce the sliding resistance between the leveling pad and bottom block.

In some cases, the wall design requires the construction of a concrete leveling pad. **(Figures 6C and 6D)** Construct the leveling pad according to the detailed plans for your project.

Some designs require a shear key in the bottom of the footing and/or a lip in front of the Redi-Rock blocks. These items would be shown in the project plans.

If steel rebar is to be placed in the footing, secure the bars together with wire ties in the pattern shown in the construction documents. Use rebar supports to hold the rebar structure in the proper position in the footing.

Place wood formwork at the front and back of the concrete leveling pad or footing. The top of the formwork should be placed at the elevation of the top of the concrete footing so you can screed the top smooth in preparation for block placement. It is important that the top surface be smooth and level for full contact of the retaining wall blocks. Place concrete as specified in the wall design. Once the concrete has been allowed to cure to the minimum specified strength, place the bottom blocks and continue construction of the retaining wall.

6. SETTING THE BOTTOM ROW OF WALL BLOCKS

Redi-Rock blocks are typically delivered to the construction site using a flatbed trailer or boom truck. **(Figure 7)** Rubber tired backhoes, loaders, skid steers, or excavators are used to set the retaining wall blocks. **(Figure 8)** Make sure to use the proper sized equipment to handle the large blocks. All lifting chains, rigging, or slings must be OSHA compliant and safety rated for proper working loads.

Properly mark the location of the retaining wall. A string line or offset stakes are typically used to establish horizontal and vertical alignment. If offset stakes are used, the stakes should be placed at least 5 feet (1.5 meters) but no more than 10 feet (3 meters) in front of the face of the retaining wall. A stake should be provided at every elevation change and at a maximum of 50 feet (15 meters) apart.

> **Wall construction should start at a fixed point such as a building wall, 90° corner, or at the lowest elevation of the wall.**

Place the blocks on the prepared leveling pad. Blocks shall be placed in full contact with the leveling pad and other immediately adjacent block units. **(Figure 9)** Block alignment should be established by lining up the "form line" where the face texture meets the steel form finished area at the top of the block, approximately 5 inches (127 millimeters) back from the front face. **(Figure 10)**

Check all blocks for level and alignment as they are placed. Small adjustments to the block location can be made with a large pry or Burke bar. Proper installation of the bottom block course is critical to maintaining the proper installation of all subsequent block courses within acceptable construction tolerance. It also makes installation of the upper rows of blocks much easier and more efficient.

Place and compact backfill in front of the bottom block course prior to placement of subsequent block courses or backfill. This will keep the blocks in place as drainage aggregate and backfill are placed and compacted.

Figure 7

Figure 8

Place an 18 inch x 12 inch (457 millimeter x 305 millimeter) piece of non-woven geotextile fabric in the vertical joint between the blocks to prevent the drainage aggregate and backfill material from migrating through the vertical joints between blocks. **(Figure 11)**

Place washed drainstone or open-graded crushed stone backfill between blocks and at least 12 inch (305 millimeter) behind the wall. A stone meeting the gradation requirements of ASTM No. 57 with no material passing the No. 200 (74 µm) sieve is preferred. Place the stone in uniform loose lifts a maximum of 6 inches (157 millimeter) thick. Consolidate the stone with a minimum of three passes with a 24-inch (610 millimeter) wide, walk-behind, vibrating plate compactor capable of delivering at least 2000 lb (8.9 kN) of centrifugal force. **(Figure 12)** This should achieve 85% relative density of the stone determined in accordance with ASTM D-4253 and D-4254. In place density of the stone fill should be confirmed using ASTM D-6938. If you don't achieve a minimum of 85% relative density, place the stone in smaller lifts or apply more compaction effort until you do achieve desired density of the stone.

Place non-woven geotextile fabric between the drainstone and the remaining backfill material if specified.

Backfill behind the drainage aggregate with material as specified in the project construction documents. Place the lifts as specified, but not to exceed 9 inches (229 millimeter) maximum. Granular backfill shall be compacted to a minimum of 90% maximum density at ± 2% optimum moisture content as determined by a modified proctor test (ASTM D1557). Use proper equipment to insure complete compaction of the backfill material. It may be necessary to wet or dry the backfill material, place the material in smaller lifts, and/or apply more compaction effort to reach 90% maximum density. Do not use any organic, topsoil, frozen, soft, wet, or loose soils when backfilling the wall.

Re-check all units for level and alignment and sweep the top of each course of blocks clean before starting construction of the next course.

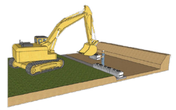


Figure 9

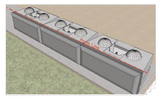


Figure 10

Figure 11

Figure 12

7. INSTALLING THE WALL DRAIN

A drain is placed behind the Redi-Rock wall blocks at the lowest elevation where the pipe can safely outlet to daylight. Drainage aggregate should be placed to the bottom of the drain as shown in the construction documents. A 4-inch (102 millimeter) perforated sock drain is commonly used for the drain pipe. Often the drain is encapsulated with drainage aggregate and wrapped with a non-woven geotextile fabric. The drain should run the entire length of the wall and needs to have proper outlets on the ends and at regularly spaced points along the wall. Solid pipe should be used for weep hole outlets through the face or under the retaining wall. **(Figure 13)**

Care needs to be taken during installation to avoid crushing or damaging the drain pipe or outlets.

8. SETTING UPPER ROWS OF WALL BLOCKS

Once the backfill is fully placed and compacted for the block course below, place the next row of blocks in a running bond configuration with the vertical joint of the lower block units centered under the mid-point of the block units above. If needed, a half block can be used at the end of every other row to maintain a running bond. **(Figure 14)**

Push the Redi-Rock blocks forward until the groove on the bottom of the block comes in full contact with the knobs on the blocks below. Adjacent blocks shall be placed with their front edges tightly abutted together.

Place non-woven geotextile fabric in the vertical joint between the blocks, and place and compact the drainage aggregate and backfill material the same way you did for the bottom row.

Never install more than one course of blocks without placing and compacting drainage aggregate and backfill to the full height of the block units. Placing multiple courses of blocks without backfill will prevent the proper placement and consolidation of the drainage aggregate between the blocks.

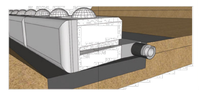


Figure 13

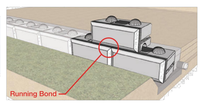


Figure 14

13. CAP INSTALLATION

Cap or step blocks are commonly used on top of freestanding walls to provide a finished look. **(Figure 25)**

Mark the center of the freestanding blocks to monitor the correct running bond spacing.

Secure the cap with construction adhesive, polyurethane sealant, or mortar. If construction adhesive is used, it should meet the requirements of ASTM D3498 and C557 and HUD/FHA Use of Materials Bulletin #60. Two examples are Titebond Heavy Duty Construction Adhesive by Franklin International or PL Premium Construction Adhesive. If polyurethane sealant is used, it should be one-component, highly-flexible, non-priming, gun-grade, high-performance elastomeric polyurethane sealant with movement of ± 25% per ASTM C719, tensile strength greater than 200 psi (1.4 MPa) per ASTM D412, and adhesion to peel on concrete greater than 20 PLI per ASTM C794.

Adhesive or sealants should be applied in 1.5 inch (38 millimeter) diameter round "Hershey Kiss" shaped dollops located in two rows at the top of the freestanding blocks at 8 inches (203 millimeter) on center.

Caps can be cut as needed for proper alignment. If desired, grout the joints between cap blocks after installation with a non-shrink grout.

Figure 25

ADDITIONAL IMPORTANT NOTES:

1. Best practice dictates that wall construction should continue without interruption or delays. This will help expedite construction and minimize the time the excavation is open.
2. The construction site should be graded and maintained to direct surface water runoff away from the retaining wall throughout the entire construction process.
3. Do not exceed the allowable construction tolerances specified in the contract documents, plans, and specifications. At no time should tolerances at the wall face exceed 1" vertically and 1 inch in 10 feet (25.4 millimeters in 3048 millimeters) (1:120) horizontally.
4. Immediately report the following site conditions, if encountered, to the Engineer or Owner's representative to determine the corrective action needed:
   - Any observed groundwater seepage.
   - Surface water run-off directed toward the retaining wall during construction.
   - Erosion or scour of material near the wall.
   - Ponded water near the wall.
   - Wet, soft, or easily compressible soils in the foundation zone.
   - Existing rock that differs in location from that shown on the project plans or rock located above the elevation of the bottom of the leveling pad.
   - Existing or proposed toe or crest slopes that differ from typical cross-sections shown in the project plans.
   - Any other items not specifically mentioned which raise questions or cause concerns during wall construction.

Immediately implement any corrective action before resuming wall construction.

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1-(800) 962-7962

DAVID A. GOESSL, PE
CIVIL ENGINEER
622 SPROUT BROOK ROAD
PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

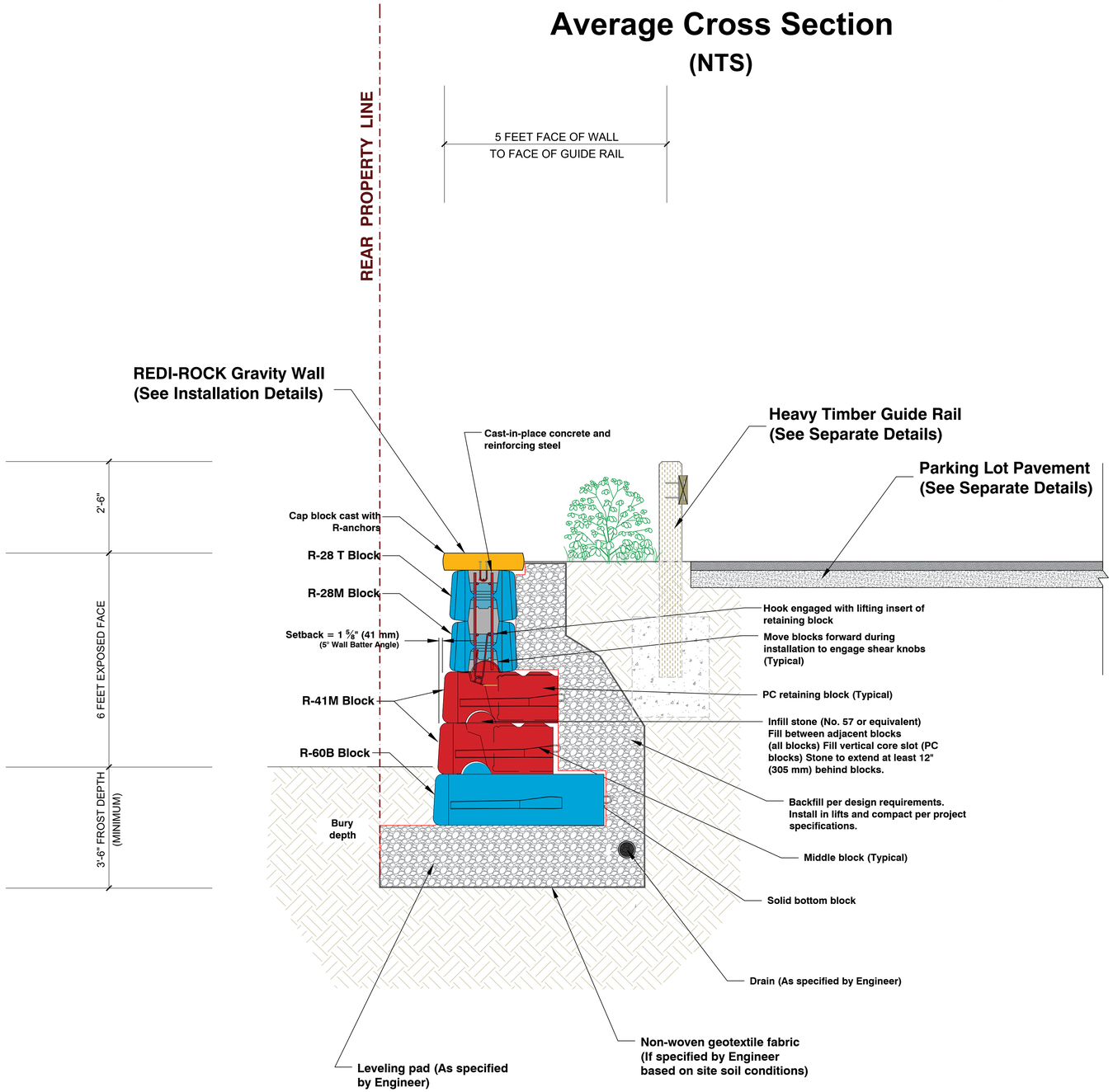
DATE: APRIL 26, 2023 SCALE: NONE SHEET: 9 OF 11

STATE OF NEW YORK · DAVID ALLEN GOESSL · 081017 · LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023

Single Tier Redi-Rock Gravity Wall Section with Freestanding Hollow Core Coping Average Cross Section

(NTS)



DESIGN PARAMETERS

All soils are considered as cohesionless for at rest pressure analysis.

Soil parameters

Sandy Silt

Unit weight :	γ	=	118.0 pcf
Stress-state :	effective		
Angle of internal friction :	φ_{ef}	=	30.00 °
Cohesion of soil :	c_{ef}	=	0.0 psf
Angle of friction struc.-soil :	δ	=	25.00 °
Saturated unit weight :	γ_{sat}	=	125.0 pcf

Well graded gravel (GW), medium dense

Unit weight :	γ	=	133.0 pcf
Stress-state :	effective		
Angle of internal friction :	φ_{ef}	=	38.50 °
Cohesion of soil :	c_{ef}	=	0.0 psf
Angle of friction struc.-soil :	δ	=	25.00 °
Saturated unit weight :	γ_{sat}	=	133.0 pcf

Silty sand (SM)

Unit weight :	γ	=	115.0 pcf
Stress-state :	effective		
Angle of internal friction :	φ_{ef}	=	29.00 °
Cohesion of soil :	c_{ef}	=	100.0 psf
Angle of friction struc.-soil :	δ	=	25.00 °
Saturated unit weight :	γ_{sat}	=	115.0 pcf

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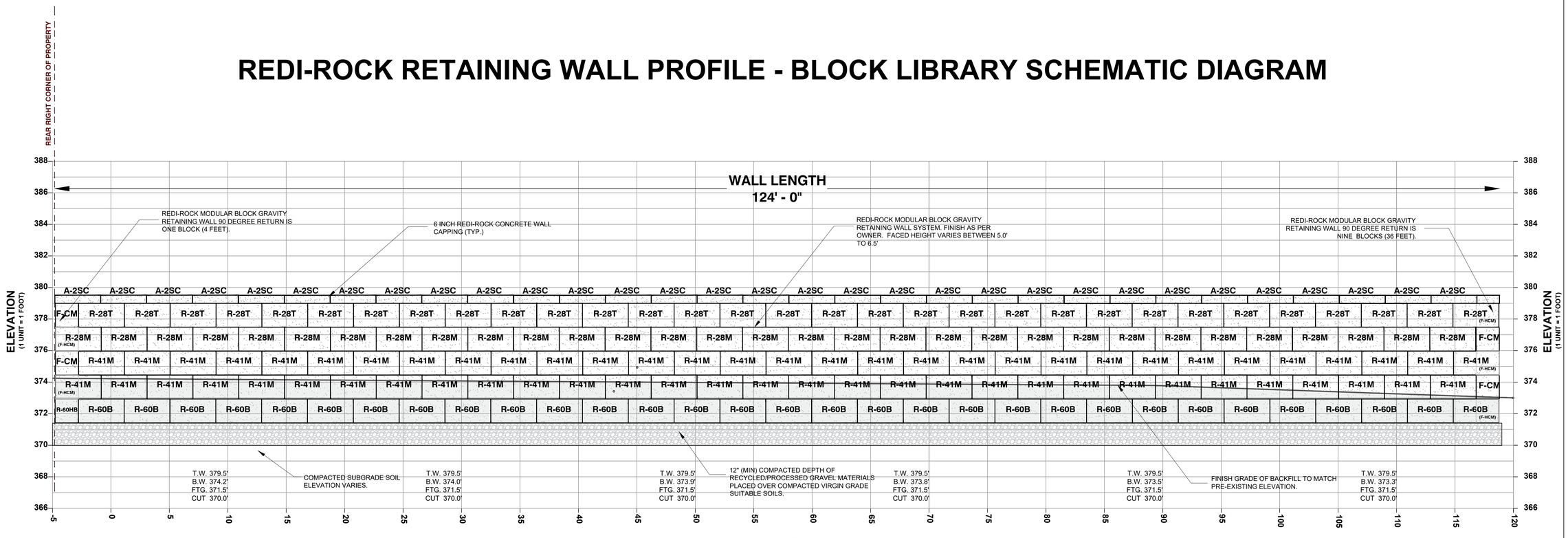
3	ADDED RETAINING WALL DESIGN	September 20, 2023

REDI-ROCK RETAINING WALL PROFILE - BLOCK LIBRARY SCHEMATIC DIAGRAM

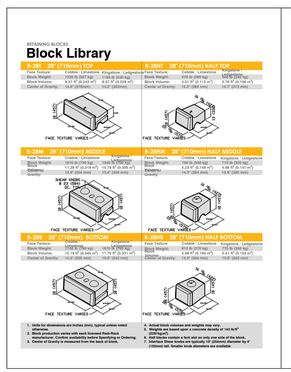


WALL PARTS

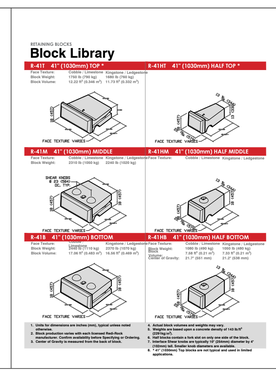
A-2SC	(39)
F-CM	(4)
F-HCM	(5)
R-28T	(39)
R-28M	(39)
R-28HM	(2)
R-41M	(78)
R-41B	(2)
R-41HM	(2)
R-60B	(39)
R-60HM	(2)
TOTAL	(251)

RETAINING Series

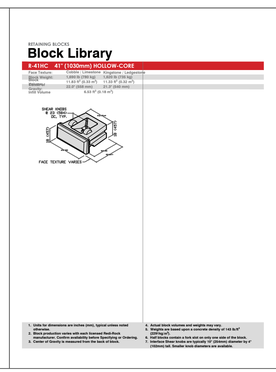
28" Series



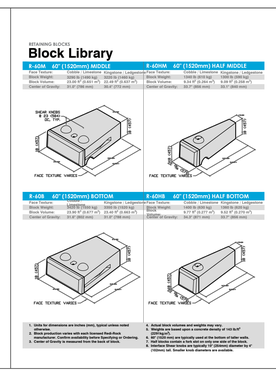
41" Series



41" Series

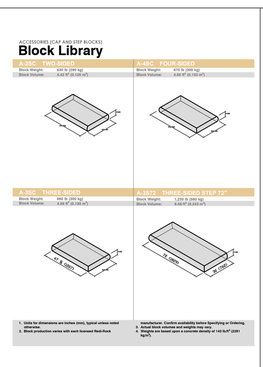


60" Series

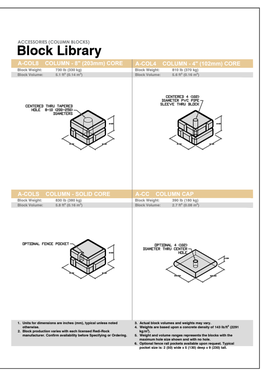


ACCESSORIES Series

CAPS & STEPS



COLUMNS



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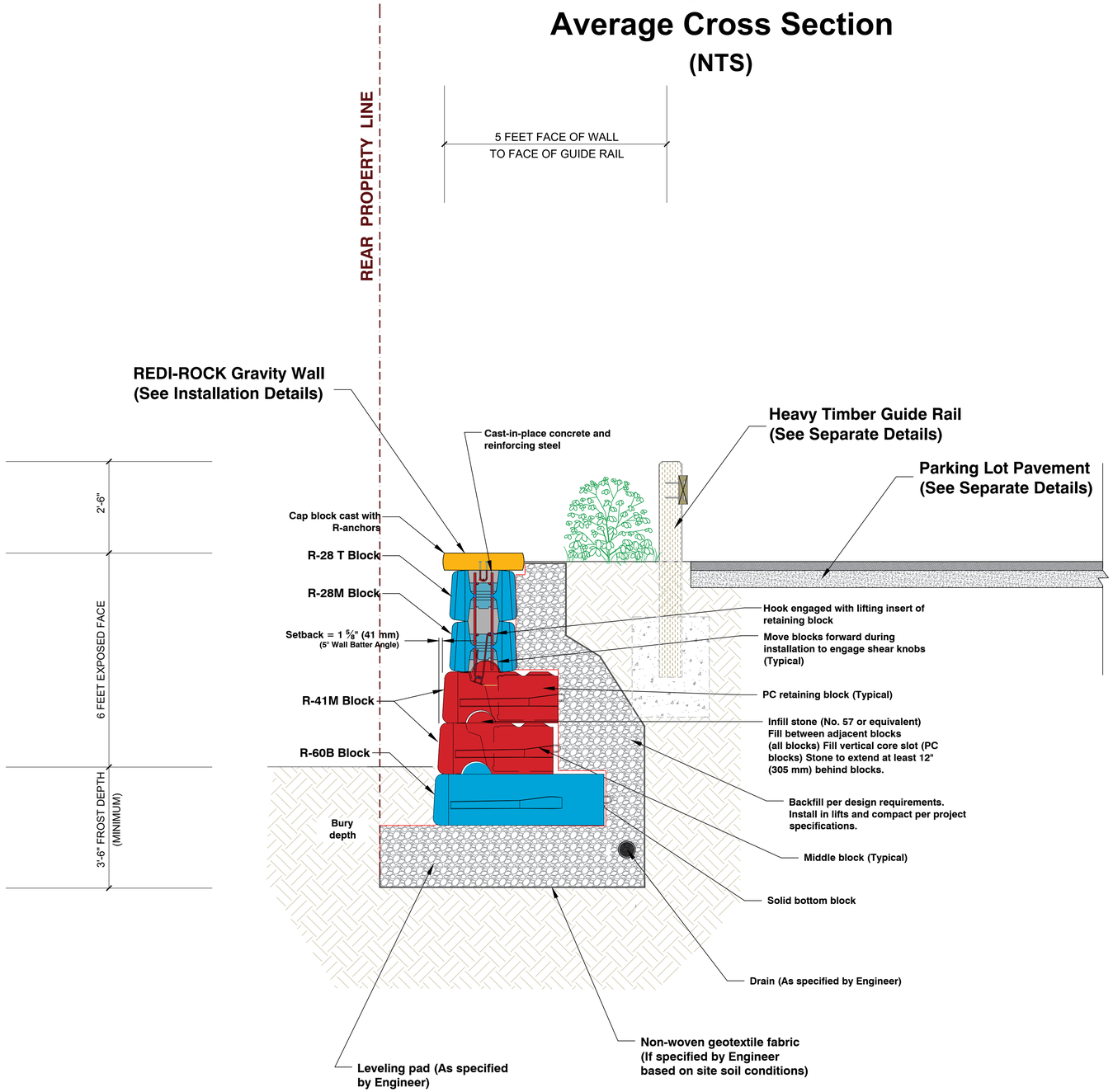

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Angle of friction struc.-soil :	δ	=	25.00 °
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Saturated unit weight :	γ_{sat}	=	133.0 pcf

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Unit weight :	γ	=	115.0 pcf
Stress-state :	effective		
Angle of internal friction :	φ_{ef}	=	29.00 °
Cohesion of soil :	c_{ef}	=	100.0 psf
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Saturated unit weight :	γ_{sat}	=	115.0 pcf

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PUTNAM VALLEY, NY 10579 (914) 227-0258

PROPOSED SITE IMPROVEMENTS TO
GAVI RESTAURANT
15 OLD ROUTE 22, ARMONK, NY 10504

PREPARED BY: DAVID GOESSL, P.E. PREPARED FOR: FRANCO DECARLO

DATE: APRIL 26, 2023 SCALE: NONE SHEET: 9A OF 9

STATE OF NEW YORK · DAVID ALLEN GOESSL · 081017 · LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE
1	ADDED PROPOSED TWO STORY ADDITION	July 18, 2023
	AND RAISED DECK FOR GAVI RESTAURANT	
2	REVISED AS PER TOWN REVIEW COMMENTS	August 19, 2023
3	ADDED RETAINING WALL DESIGN	September 20, 2023

Analysis of Redi Rock wall

Input data

Task : Redi Rock Gravity Wall Engineering Analysis
Part : Proposed Wall with placed backfill including surcharge loads for vehicle, soils and groundwater
Description : 15 Old Route 22, Armonk NY
Customer : Gavi Restaurant
Author : David A. Goessl, PE
Date : 7/22/2023

Settings

USA - Safety factor

Wall analysis

Verification methodology : Safety factors (ASD)
Active earth pressure calculation : Coulomb
Passive earth pressure calculation : Mazindrani (Rankine)
Earthquake analysis : Mononobe-Okabe
Shape of earth wedge : Calculate as skew
Allowable eccentricity : 0.333
Internal stability : Standard - straight slip surface
Reduction coeff. of contact first block - base : 1.00

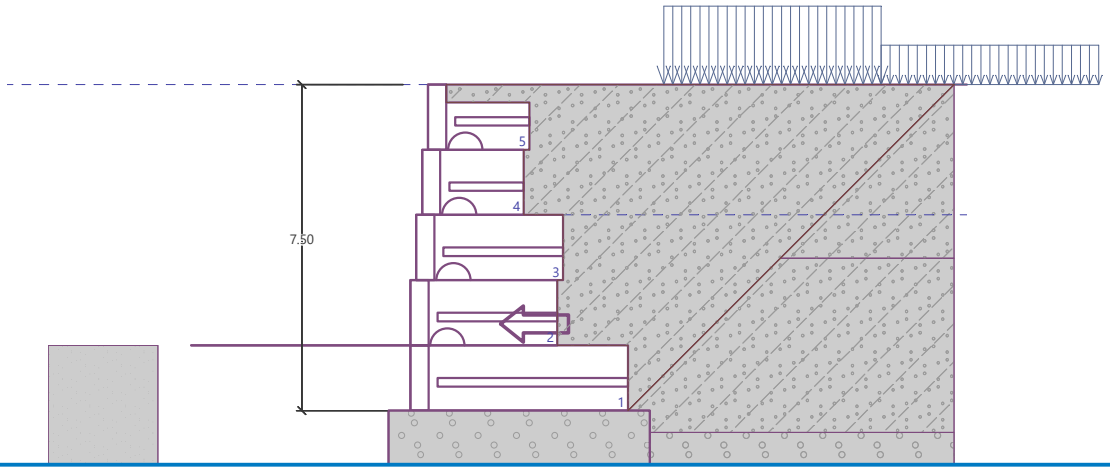
Safety factors			
Seismic design situation			
Safety factor for overturning :	SF_o =	1.00	[–]
Safety factor for sliding resistance :	SF_s =	1.00	[–]
Safety factor for bearing capacity :	SF_b =	1.00	[–]
Safety factor for sliding along geo-reinforcement :	SF_{sr} =	1.00	[–]
Safety factor for geo-reinforcement strength :	SF_{st} =	1.00	[–]
Safety factor for pull out resistance of geo-reinf. :	SF_{po} =	1.00	[–]
Safety factor for connection strength :	SF_{con} =	1.00	[–]

Blocks

No.	Description	Height h [in]	Width w [in]	Unit weight γ [pcf]
1	Block 28	18.00	28.00	120.00
2	Block 41	18.00	40.50	120.00
3	Block 60	18.00	60.00	130.00
4	Top block 24 straight	18.00	24.00	108.00
5	Planter 41	18.00	40.50	120.00
6	Planter 60	18.00	60.00	112.00
7	Top block 28	18.00	28.00	120.00
8	Top block 41	18.00	40.50	120.00
9	Top block 24 straight garden	18.00	24.00	80.00
10	Block R-5236 HC	36.00	52.00	110.00
11	Block R-7236 HC	36.00	72.00	110.00
12	Block R-9636 HC	36.00	96.00	110.00
13	Block R-41 HC	18.00	40.50	110.00

No.	Description	Min. shear strength F_{min} [lbf/ft]	Max. shear strength F_{max} [lbf/ft]	Friction f [°]
1	Block 28	6061.00	11276.00	44.00
2	Block 41	6061.00	11276.00	44.00
3	Block 60	6061.00	11276.00	44.00
4	Top block 24 straight	6061.00	11276.00	44.00
5	Planter 41	6061.00	11276.00	44.00
6	Planter 60	6061.00	11276.00	44.00
7	Top block 28	6061.00	11276.00	44.00
8	Top block 41	6061.00	11276.00	44.00
9	Top block 24 straight garden	6061.00	11276.00	44.00
10	Block R-5236 HC	4550.00	12000.00	44.00
11	Block R-7236 HC	4550.00	12000.00	44.00
12	Block R-9636 HC	4550.00	12000.00	44.00
13	Block R-41 HC	5358.00	12906.00	37.00

Name : Blocks | **Stage - analysis : 1 - 0**



Setbacks

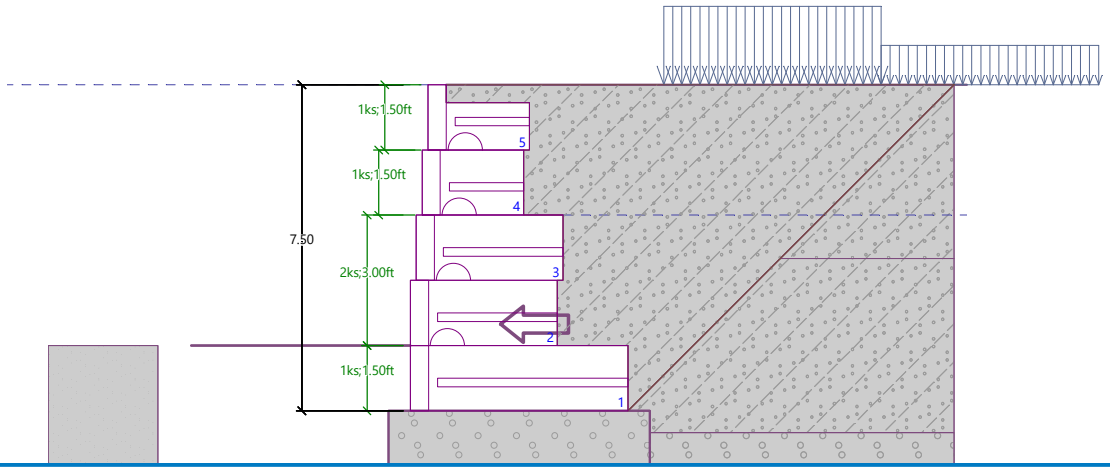
No.	Setback s [in]
1	0.010
2	0.375
3	1.625
4	9.375
5	16.625

Geometry

No. group	Description	Count	Setback s [in]
1	Block 60	1	0.01
2	Block 41	2	1.62

No. group	Description	Count	Setback s [in]
3	Block 28	1	1.62
4	Top block 28	1	-

Name : Geometry | **Stage - analysis : 1 - 0**



Base

Geometry

Upper setback a_1 = 0.50 ft
Lower setback a_2 = 0.50 ft
Height h = 1.50 ft
Width b = 6.00 ft

Material

Soil creating foundation - Well graded gravel (GW), medium dense

Basic soil parameters

No.	Name	Pattern	φ_{ef} [°]	c_{ef} [psf]	γ [pcf]	γ_{su} [pcf]	δ [°]
1	Sandy Silt		30.00	0.0	118.00	62.50	25.00
2	Well graded gravel (GW), medium dense		38.50	0.0	133.00	70.50	25.00
3	Silty sand (SM)		29.00	100.0	115.00	52.50	25.00

All soils are considered as cohesionless for at rest pressure analysis.

Soil parameters

Sandy Silt

Unit weight : γ = 118.0 pcf
Stress-state : effective
Angle of internal friction : φ_{ef} = 30.00 °
Cohesion of soil : c_{ef} = 0.0 psf
Angle of friction struc.-soil : δ = 25.00 °
Saturated unit weight : γ_{sat} = 125.0 pcf

Well graded gravel (GW), medium dense

Unit weight :	γ =	133.0 pcf
Stress-state :	effective	
Angle of internal friction :	φ_{ef} =	38.50 °
Cohesion of soil :	c_{ef} =	0.0 psf
Angle of friction struc.-soil :	δ =	25.00 °
Saturated unit weight :	γ_{sat} =	133.0 pcf

Silty sand (SM)

Unit weight :	γ =	115.0 pcf
Stress-state :	effective	
Angle of internal friction :	φ_{ef} =	29.00 °
Cohesion of soil :	c_{ef} =	100.0 psf
Angle of friction struc.-soil :	δ =	25.00 °
Saturated unit weight :	γ_{sat} =	115.0 pcf

Backfill

Assigned soil : Silty sand (SM)
Slope = 45.00 °

Geological profile and assigned soils

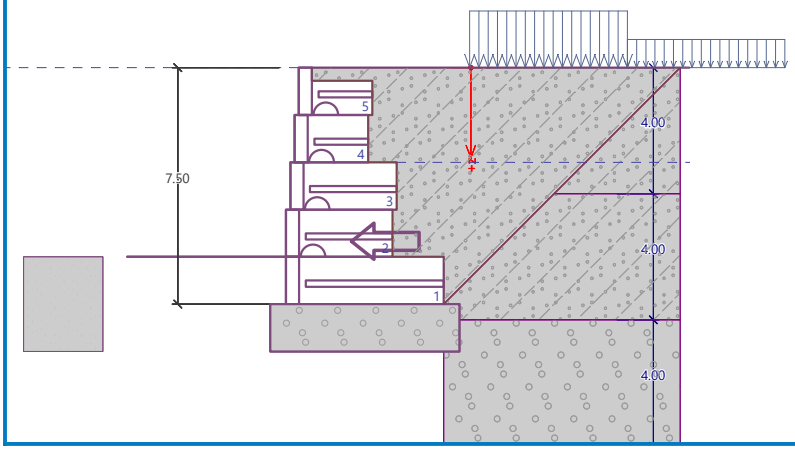
Position information
Terrain elevation = 6.00 ft

Geological profile and assigned soils

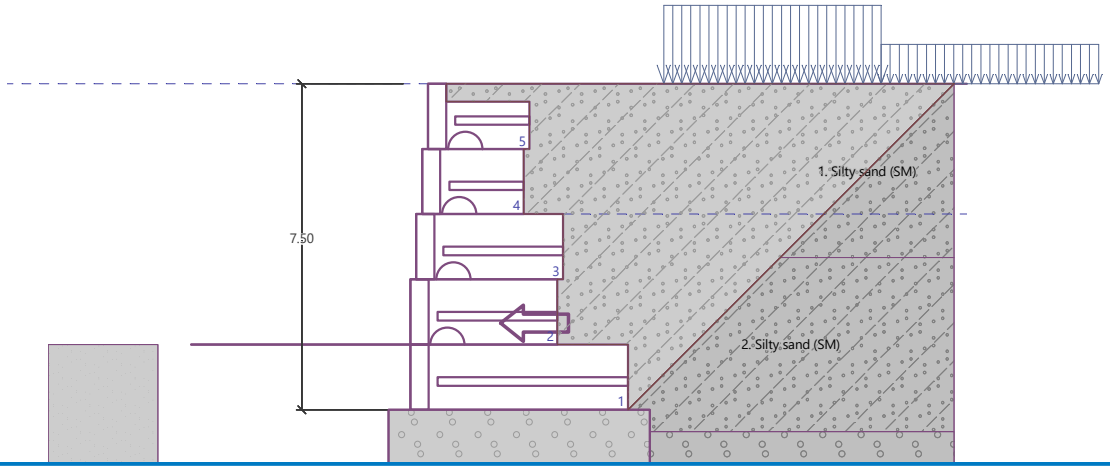
No.	Thickness of layer t [ft]	Depth z [ft]	Elevation [ft]	Assigned soil	Pattern
1	4.00	0.00 .. 4.00	6.00 .. 2.00	Silty sand (SM)	
2	4.00	4.00 .. 8.00	2.00 .. -2.00	Silty sand (SM)	
3	4.00	8.00 .. 12.00	-2.00 .. -6.00	Well graded gravel (GW), medium dense	
4	-	12.00 .. ∞	-6.00 .. -	Sandy Silt	

Name : 25 Rosehill Avenue, Tarrytown, NY | **Stage - analysis : 1 - 0**

Description : Redi Rock Engineering Analysis - Lower Tier Wall with Applied Surcharge Loads



Name : Profile and assignment | **Stage - analysis : 1 - 0**



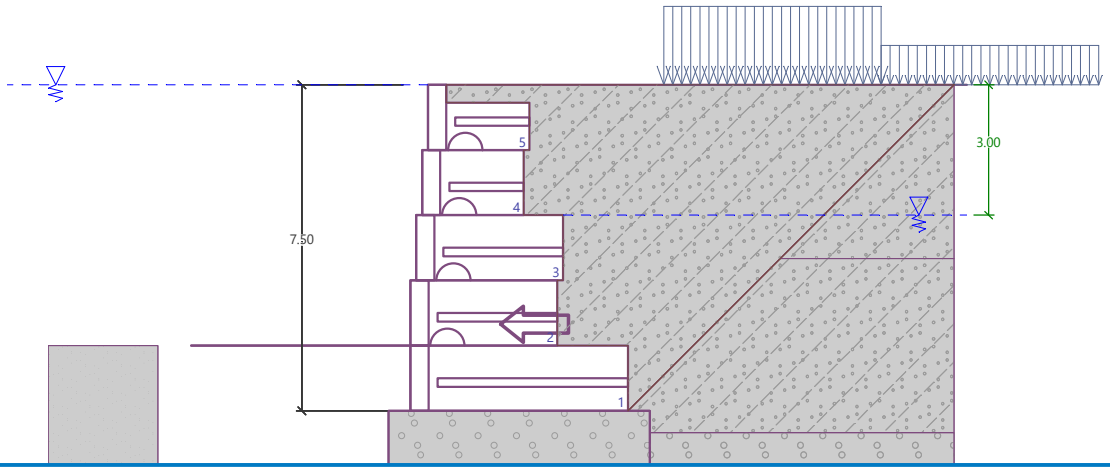
Terrain profile

Terrain behind the structure is flat.

Water influence

GWT behind the structure lies at a depth of 3.00 ft
GWT in front of the structure lies at a depth of 0.00 ft
Subgrade at the heel is not permeable.
Uplift in foot. bottom due to different pressures is not considered.

Name : Water | **Stage - analysis : 1 - 0**

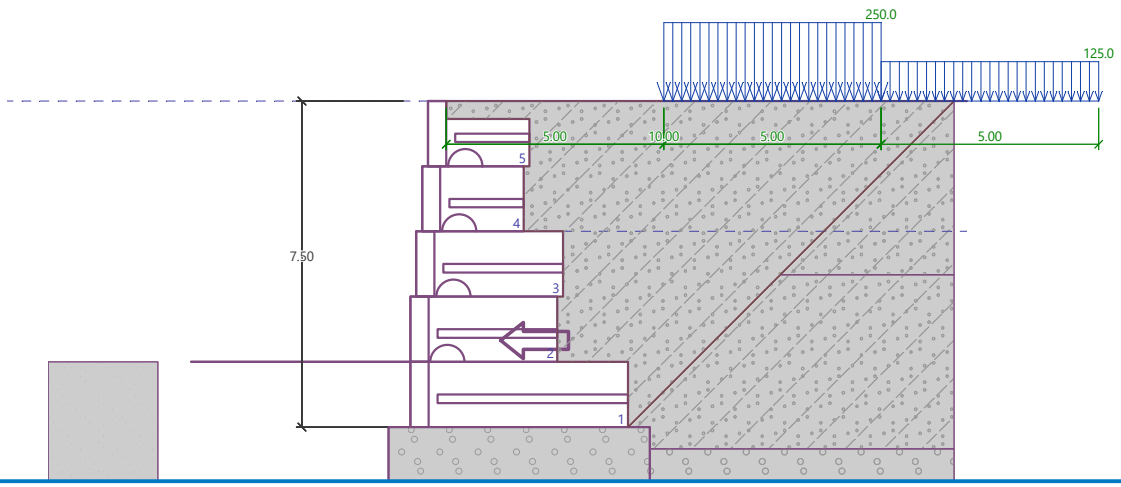


Input surface surcharges

No.	Surcharge new	Surcharge change	Action	Mag.1 [lbf/ft²]	Mag.2 [lbf/ft²]	Ord.x x [ft]	Length l [ft]	Depth z [ft]
1	Yes		permanent	250.00		5.00	5.00	on terrain
2	Yes		permanent	125.00		10.00	5.00	on terrain

No.	Name
1	Vehicle Loading
2	Overburden

Name : Surcharge | **Stage - analysis : 1 - 0**



Resistance on front face of the structure

Resistance on front face of the structure: not considered
Soil on front face of the structure - Sandy Silt
Soil thickness in front of structure h = 3.00 ft

Terrain in front of structure is flat.

Earthquake

Factor of horizontal acceleration K_h = 0.1500
Factor of vertical acceleration K_v = 0.0000

Water below the GWT is restricted.

Settings of the stage of construction

Design situation : seismic
Reduction of soil/soil friction angle : do not reduce

Verification No. 1

Forces acting on construction

Name	F_{hor} [lbf/ft]	App.Pt. z [ft]	F_{vert} [lbf/ft]	App.Pt. x [ft]	Design coefficient
Weight - wall	0.0	-3.96	2471.1	2.52	1.000
Earthq.- constr.	620.9	-3.50	0.0	2.58	1.000
Weight - earth wedge	0.0	-1.78	11.1	5.67	1.000
Earthquake - soil wedge	3.7	-1.78	0.0	5.67	1.000
Weight - earth wedge	0.0	-3.85	109.2	4.46	1.000
Earthquake - soil wedge	35.9	-3.85	0.0	4.46	1.000
Weight - earth wedge	0.0	-6.44	69.5	3.45	1.000
Earthquake - soil wedge	10.4	-6.44	0.0	3.45	1.000
Weight - earth wedge	0.0	-8.79	86.0	2.22	1.000
Earthquake - soil wedge	12.9	-8.79	0.0	2.22	1.000
Active pressure	666.5	-3.05	883.2	5.01	1.000
Water pressure	-1406.2	-3.80	0.0	1.67	1.000
Uplift pressure	0.0	-9.00	0.0	1.32	1.000
Earthq.- act.pressure	598.7	-5.05	802.2	4.48	1.000
Dyn. water pressure at the front	443.0	-3.60	0.0	2.99	1.000
Vehicle Loading	253.5	-3.53	279.2	4.79	1.000
Overburden	68.4	-2.11	65.0	5.47	1.000

Verification of complete wall

Check for overturning stability
Resisting moment M_{res} = 16919.2 lbfft/ft
Overturning moment M_{ovr} = 4844.0 lbfft/ft

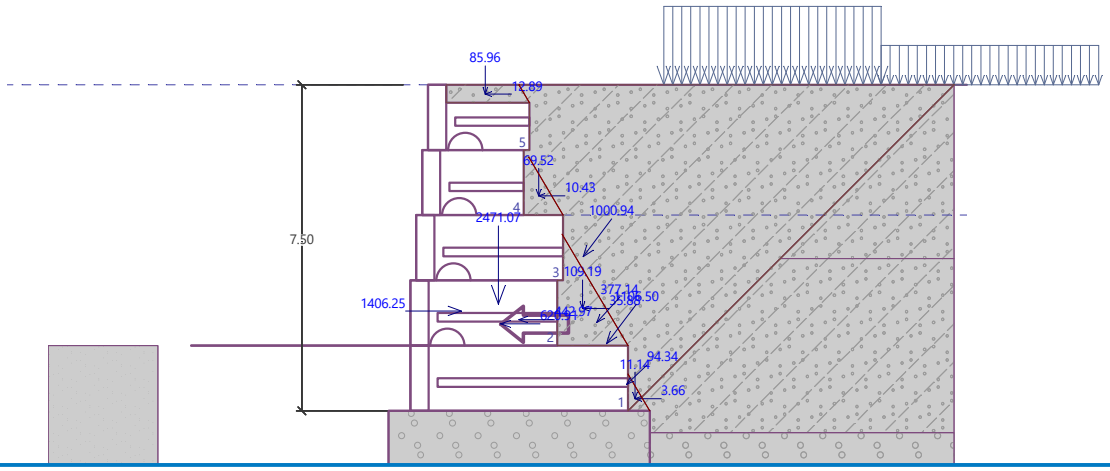
Safety factor = 3.49 > 1.00
Wall for overturning is SATISFACTORY

Check for slip
Resisting horizontal force H_{res} = 3799.44 lbf/ft
Active horizontal force H_{act} = 1307.50 lbf/ft

Safety factor = 2.91 > 1.00
Wall for slip is SATISFACTORY

Overall check - WALL is SATISFACTORY

Name : Verification	Stage - analysis : 1 - 1



Dimensioning No. 1

Forces acting on construction

Name	F_{hor} [lbf/ft]	App.Pt. z [ft]	F_{vert} [lbf/ft]	App.Pt. x [ft]	Design coefficient
Weight - wall	0.0	-3.56	1836.6	1.86	1.000
Earthq.- constr.	451.2	-3.04	0.0	1.92	1.000
Weight - earth wedge	0.0	-2.35	109.2	3.96	1.000
Earthquake - soil wedge	35.9	-2.35	0.0	3.96	1.000
Weight - earth wedge	0.0	-4.94	69.5	2.95	1.000
Earthquake - soil wedge	10.4	-4.94	0.0	2.95	1.000
Weight - earth wedge	0.0	-7.29	86.0	1.72	1.000
Earthquake - soil wedge	12.9	-7.29	0.0	1.72	1.000
Active pressure	434.7	-2.61	618.8	4.15	1.000
Water pressure	-1125.0	-3.06	0.0	1.67	1.000
Uplift pressure	0.0	-7.50	0.0	0.82	1.000
Earthq.- act.pressure	359.4	-4.24	470.8	3.71	1.000
Dyn. water pressure at the front	307.6	-3.00	0.0	2.49	1.000
Vehicle Loading	216.3	-2.61	234.3	4.05	1.000
Overburden	51.7	-1.23	45.2	4.74	1.000

Verification of block No. 1

Check for overturning stability

Resisting moment M_{res} = 9670.3 lbfft/ft
Overturning moment M_{ovr} = 2365.4 lbfft/ft

Safety factor = 4.09 > 1.00
Joint for overturning stability is SATISFACTORY

Check for slip

Resisting horizontal force H_{res} = 2760.46 lbf/ft
Active horizontal force H_{act} = 755.13 lbf/ft

Safety factor = 3.66 > 1.00
Joint for verification is SATISFACTORY

Bearing capacity of foundation soil

Design load acting at the center of footing bottom

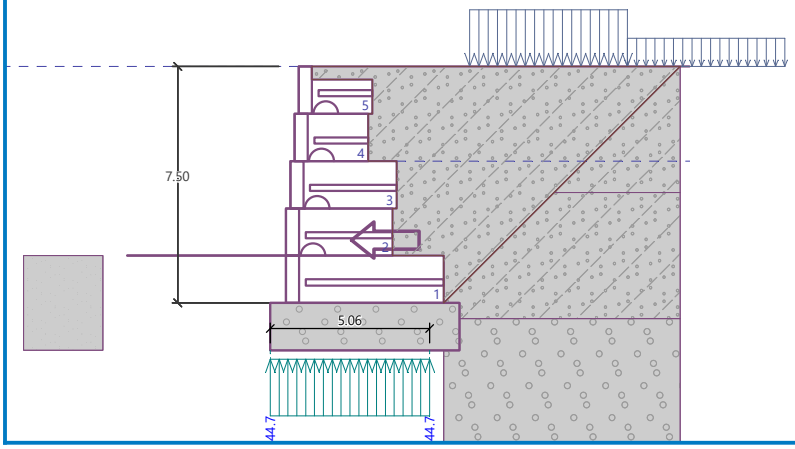
No.	Moment [lbfft/ft]	Norm. force [lbf/ft]	Shear Force [lbf/ft]	Eccentricity [–]	Stress [psf]
1	2254.4	4776.55	1307.50	0.079	944.7

Service load acting at the center of footing bottom

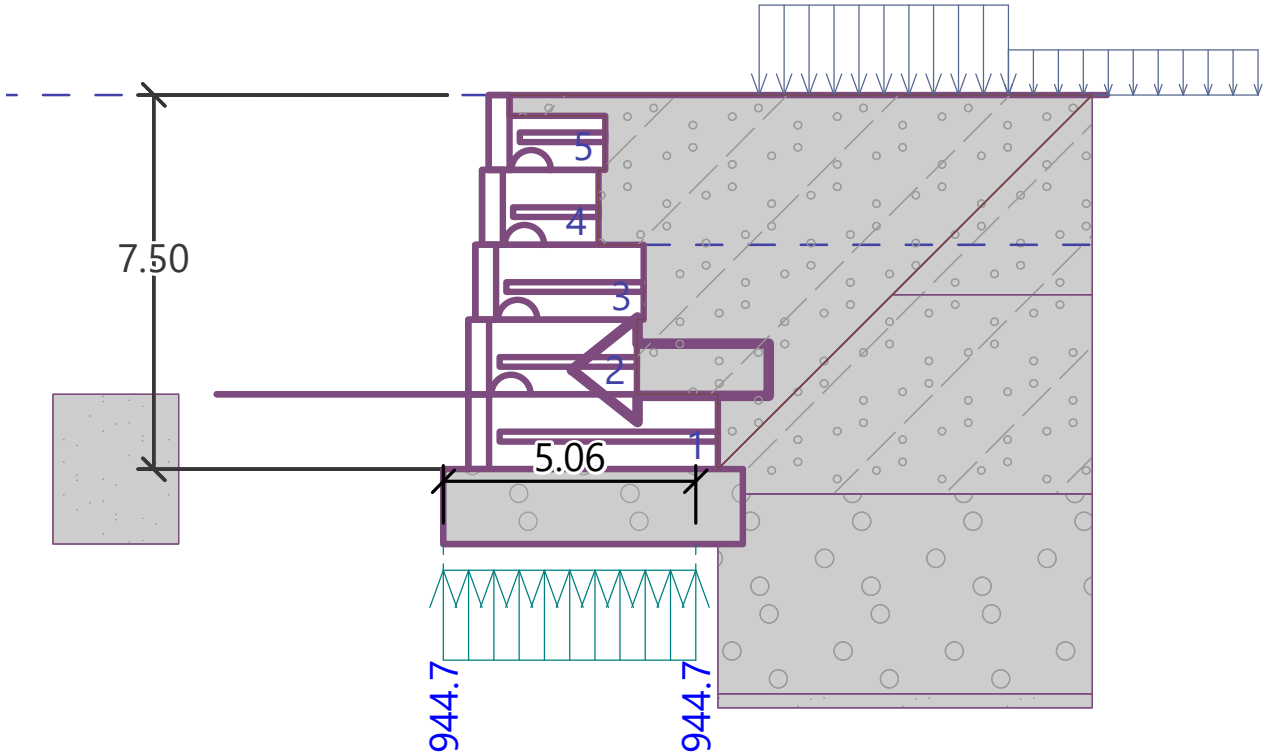
No.	Moment [lbfft/ft]	Norm. force [lbf/ft]	Shear Force [lbf/ft]
1	2254.4	4776.55	1307.50

Name : Bearing cap. | **Stage - analysis : 1 - -1**

Description : Lower Tier Wall Profile with Surcharge Loads



Name : Bearing cap.	Stage - analysis : 1 - -1



Slope stability analysis

Input data (Construction stage 1)

Project

Settings

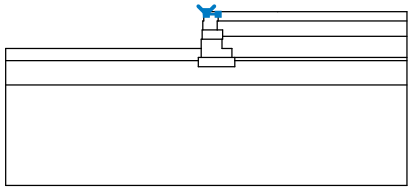
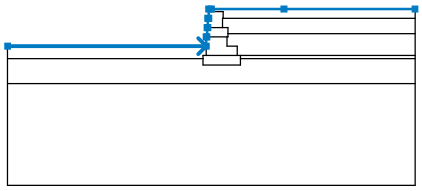
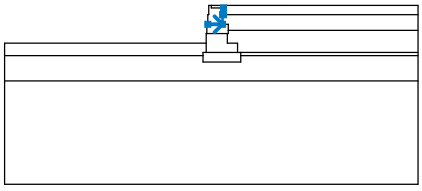
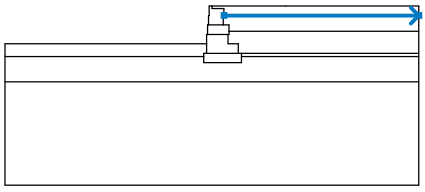
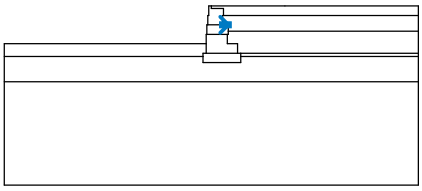
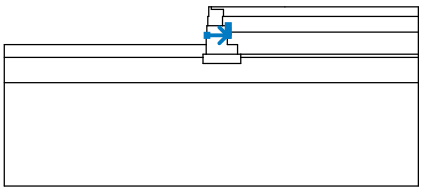
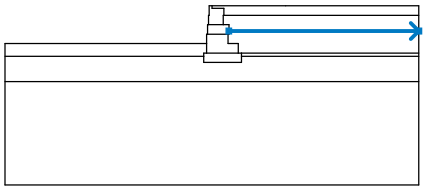
USA - Safety factor

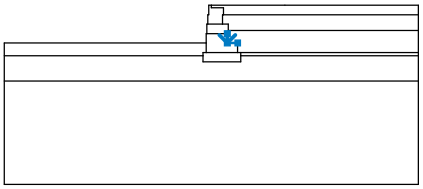
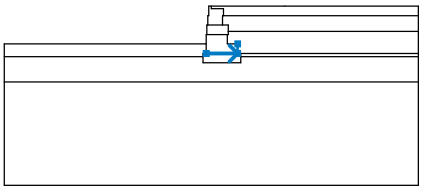
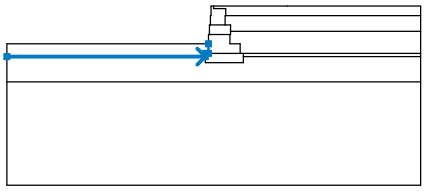
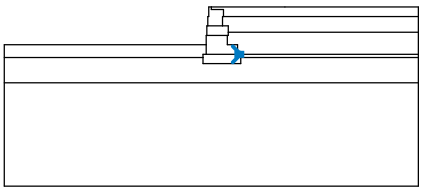
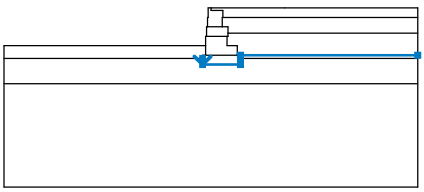
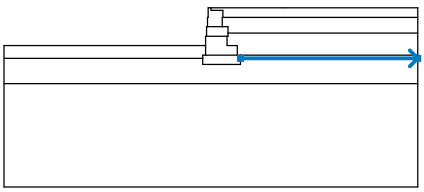
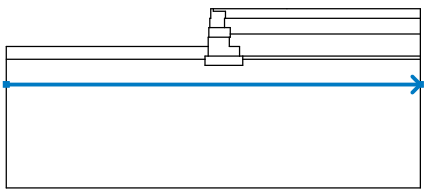
Stability analysis

Verification methodology : Safety factors (ASD)
Earthquake analysis : Standard

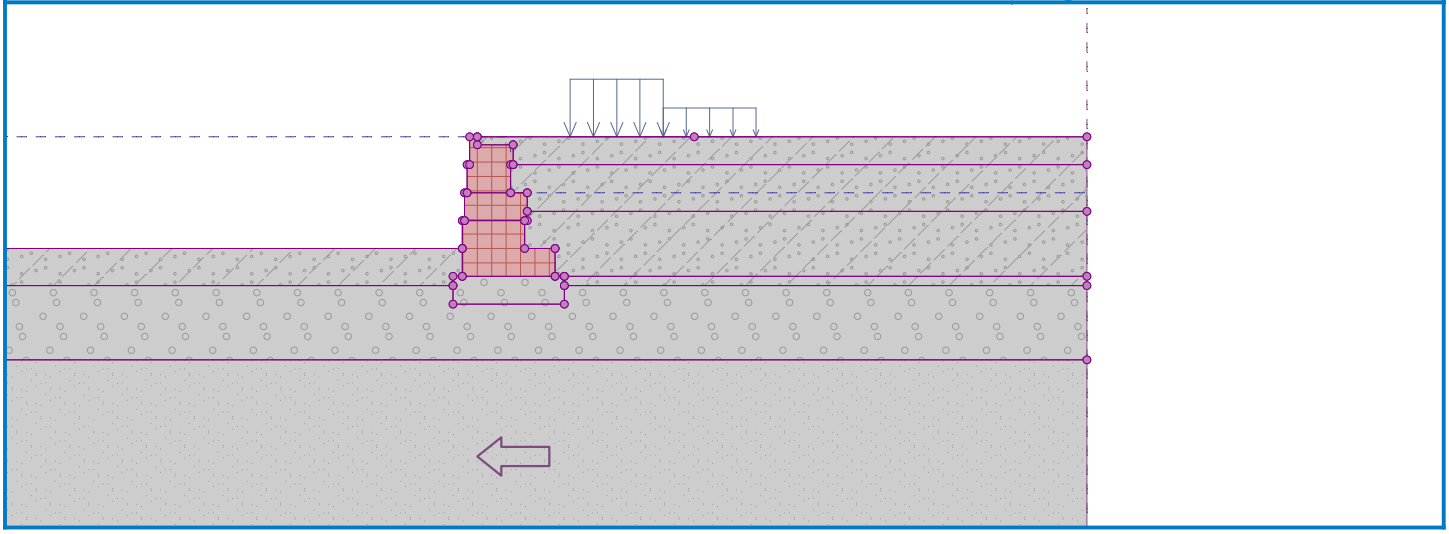
Safety factors			
Seismic design situation			
Safety factor :	SF_s =	1.00	[–]

Interface

No.	Interface location	Coordinates of interface points [ft]					
		x	z	x	z	x	z
1		0.00	6.00	0.00	5.58	1.92	5.58
2		-32.80	0.00	-0.82	0.00	-0.82	1.50
		-0.69	1.50	-0.69	3.00	-0.55	3.00
		-0.55	4.50	-0.42	4.50	-0.42	6.00
		0.00	6.00	11.68	6.00	32.80	6.00
3		-0.55	3.00	1.78	3.00	1.78	4.50
		1.92	4.50	1.92	5.58		
4		1.92	4.50	32.80	4.50		
5		1.78	3.00	2.69	3.00		
6		-0.69	1.50	2.55	1.50	2.69	1.50
		2.69	2.00	2.69	3.00		
7		2.69	2.00	32.80	2.00		

No.	Interface location	Coordinates of interface points [ft]					
		x	z	x	z	x	z
8		2.55	1.50	2.55	0.00	4.18	0.00
9		-0.82	-1.50	4.18	-1.50	4.18	0.00
10		-32.80	-2.00	-1.32	-2.00	-1.32	-1.50
		-0.82	-1.50	-0.82	0.00		
11		4.18	-1.50	4.68	-1.50		
12		-1.32	-2.00	-1.32	-3.00	4.68	-3.00
		4.68	-2.00	4.68	-1.50	32.80	-1.50
13		4.68	-2.00	32.80	-2.00		
14		-32.80	-6.00	32.80	-6.00		

Name : Interfaces	Stage : 1



Soil parameters - effective stress state

No.	Name	Pattern	φ_{ef} [°]	c_{ef} [psf]	γ [pcf]
1	Sandy Silt		30.00	0.0	118.0
2	Well graded gravel (GW), medium dense		38.50	0.0	133.0
3	Silty sand (SM)		29.00	100.0	115.0

Soil parameters - uplift

No.	Name	Pattern	γ_{sat} [pcf]	γ_s [pcf]	n [–]
1	Sandy Silt		125.0		
2	Well graded gravel (GW), medium dense		133.0		
3	Silty sand (SM)		115.0		

Soil parameters

Sandy Silt
Unit weight : γ = 118.0 pcf

Stress-state : effective
Shear strength : Mohr-Coulomb
Angle of internal friction : φ_{ef} = 30.00 °
Cohesion of soil : c_{ef} = 0.0 psf
Saturated unit weight : γ_{sat} = 125.0 pcf

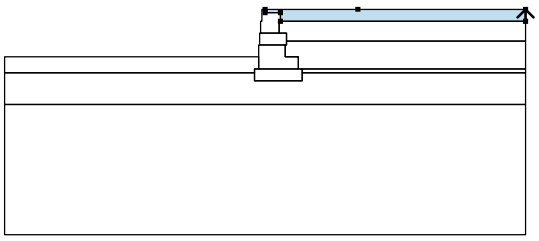
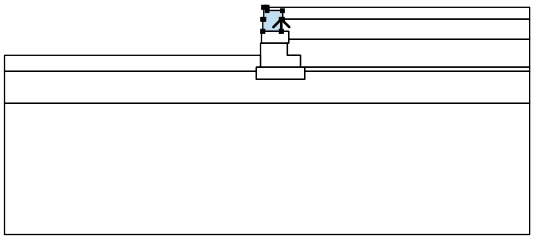
Well graded gravel (GW), medium dense
Unit weight : γ = 133.0 pcf
Stress-state : effective
Shear strength : Mohr-Coulomb
Angle of internal friction : φ_{ef} = 38.50 °
Cohesion of soil : c_{ef} = 0.0 psf
Saturated unit weight : γ_{sat} = 133.0 pcf

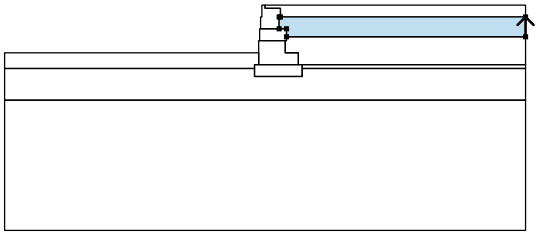
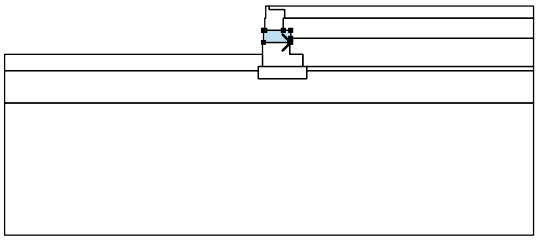
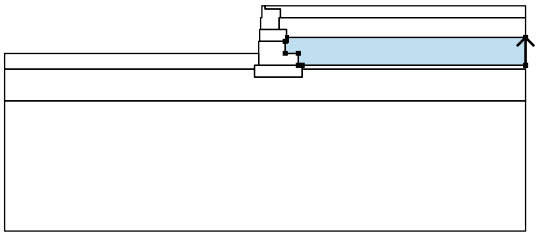
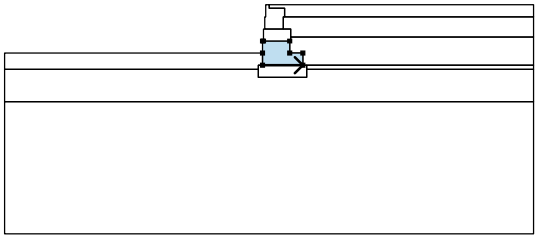
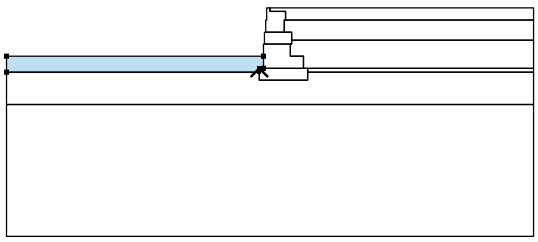
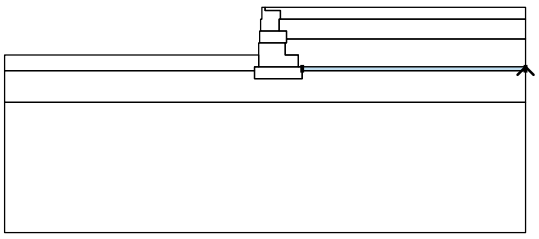
Silty sand (SM)
Unit weight : γ = 115.0 pcf
Stress-state : effective
Shear strength : Mohr-Coulomb
Angle of internal friction : φ_{ef} = 29.00 °
Cohesion of soil : c_{ef} = 100.0 psf
Saturated unit weight : γ_{sat} = 115.0 pcf

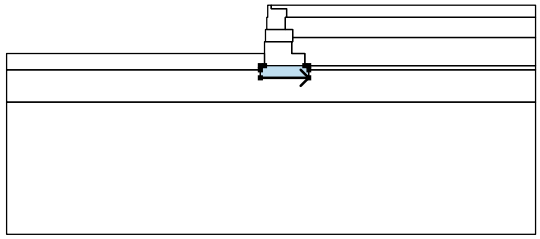
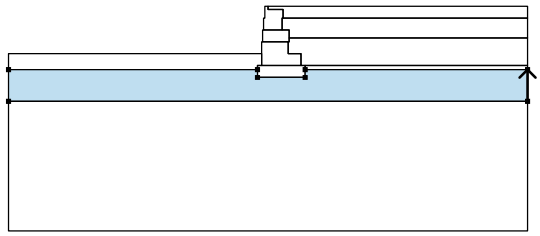
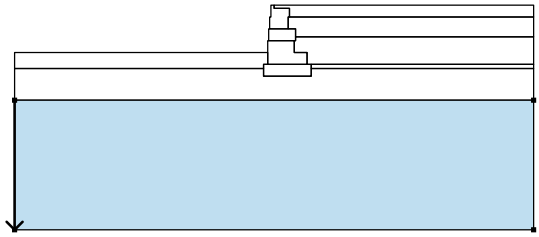
Rigid Bodies

No.	Name	Sample	γ [pcf]
1	Material of structure		120.0

Assigning and surfaces

No.	Surface position	Coordinates of surface points [ft]				Assigned soil
		x	z	x	z	
1		32.80	4.50	32.80	6.00	Silty sand (SM)
		11.68	6.00	0.00	6.00	
		0.00	5.58	1.92	5.58	
		1.92	4.50			
2		1.78	3.00	1.78	4.50	Material of structure
		1.92	4.50	1.92	5.58	
		0.00	5.58	0.00	6.00	
		-0.42	6.00	-0.42	4.50	
		-0.55	4.50	-0.55	3.00	

No.	Surface position	Coordinates of surface points [ft]				Assigned soil
		x	z	x	z	
3		32.80	2.00	32.80	4.50	Silty sand (SM)
		1.92	4.50	1.78	4.50	
		1.78	3.00	2.69	3.00	
		2.69	2.00			
4		2.55	1.50	2.69	1.50	Material of structure
		2.69	2.00	2.69	3.00	
		1.78	3.00	-0.55	3.00	
		-0.69	3.00	-0.69	1.50	
5		32.80	-1.50	32.80	2.00	Silty sand (SM)
		2.69	2.00	2.69	1.50	
		2.55	1.50	2.55	0.00	
		4.18	0.00	4.18	-1.50	
		4.68	-1.50			
6		-0.82	-1.50	4.18	-1.50	Material of structure
		4.18	0.00	2.55	0.00	
		2.55	1.50	-0.69	1.50	
		-0.82	1.50	-0.82	0.00	
7		-1.32	-2.00	-1.32	-1.50	Silty sand (SM)
		-0.82	-1.50	-0.82	0.00	
		-32.80	0.00	-32.80	-2.00	
8		32.80	-2.00	32.80	-1.50	Silty sand (SM)
		4.68	-1.50	4.68	-2.00	

No.	Surface position	Coordinates of surface points [ft]				Assigned soil
		x	z	x	z	
9		-1.32	-3.00	4.68	-3.00	Well graded gravel (GW), medium dense
		4.68	-2.00	4.68	-1.50	
		4.18	-1.50	-0.82	-1.50	
		-1.32	-1.50	-1.32	-2.00	
10		32.80	-6.00	32.80	-2.00	Well graded gravel (GW), medium dense
		4.68	-2.00	4.68	-3.00	
		-1.32	-3.00	-1.32	-2.00	
		-32.80	-2.00	-32.80	-6.00	
11		-32.80	-6.00	-32.80	-22.40	Sandy Silt
		32.80	-22.40	32.80	-6.00	

Surcharge

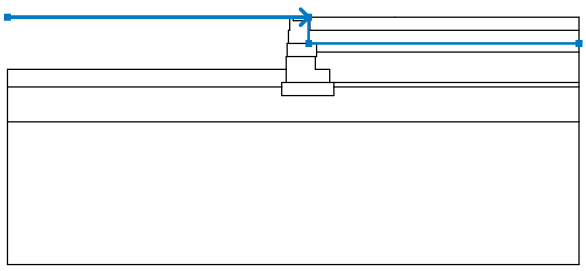
No.	Type	Type of action	Location z [ft]	Origin x [ft]	Length l [ft]	Width b [ft]	Slope α [°]	Magnitude q, q_1, f, F, x	Magnitude q_2, z	Magnitude unit
1	strip	permanent	on terrain	x = 5.00	l = 5.00		0.00	250.0		lbf/ft²
2	strip	permanent	on terrain	x = 10.00	l = 5.00		0.00	125.0		lbf/ft²

Surcharges

No.	Name
1	Vehical Loadinhg
2	soil overburden

Water

Water type : GWT

No.	GWT location	Coordinates of GWT points [ft]					
		x	z	x	z	x	z
1		-32.80	6.00	1.78	6.00	1.78	3.00
		32.80	3.00				

Tensile crack

Tensile crack not input.

Earthquake

Horizontal seismic coefficient : K_h = 0.1500
Vertical seismic coefficient : K_v = 0.0000

Settings of the stage of construction

Design situation : seismic

Results (Construction stage 1)

Analysis 1

Circular slip surface

Slip surface parameters							
Center :	x =	-5.15	[ft]	Angles :	α_1 =	-35.87	[°]
	z =	16.24	[ft]		α_2 =	59.27	[°]
Radius :	R =	20.04	[ft]				
The slip surface after optimization.							

Total weight of soil above the slip surface: 14568.9 lbf/ft
Slope stability verification (Bishop)
Sum of active forces : F_a = 4537.2 lbf/ft
Sum of passive forces : F_p = 8490.9 lbf/ft

Sliding moment : M_a = 90925.2 lbfft/ft
Resisting moment : M_p = 170158.2 lbfft/ft
Factor of safety = 1.87 > 1.00
Slope stability ACCEPTABLE