



**TOWN OF NEWBURGH
PLANNING BOARD
TECHNICAL REVIEW COMMENTS**

PROJECT NAME: AMENDED SUBDIVISION 3 MARINERS COURT-PAPALEO
CLEARING & GRADING PERMIT
PROJECT NO.: 24-35
PROJECT LOCATION: SECTION 121, BLOCK 1, LOT 7
REVIEW DATE: 27 APRIL 2026
MEETING DATE: 7 MAY 2026
PROJECT REPRESENTATIVE: DAVID NIEMOTKO, ARCHITECT

1. During a previous technical work session with representatives of the Town of Newburgh it was noted the applicant would retain the services of a Geotechnical Engineer regarding placement of the walls on the previously placed fill material.
2. Resolution of the issue regarding construction in the area with NYSDEC's potential habitat for threatened or endangered species (Bald Eagles) must be addressed prior to any approvals.
3. Limits of disturbance should be expanded to depict all areas disturbed. Previous access to Mariners Court were identified as being disturbed.
4. Rights to connect to the Town drainage easement on the adjoining parcel must be clarified. Information pertaining to the easement should be provided to the Planning Board Attorney for review.

Respectfully submitted,

MHE Engineering, D.P.C.

A handwritten signature in blue ink that reads 'Patrick J. Hines'.

Patrick J. Hines
Principal

A handwritten signature in blue ink that reads 'Quinn Mullarkey'.

Quinn M. Mullarkey, P.E.
Senior Engineer

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David Niemotko Architects

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April 20, 2026

John P. Ewasutyn, Chairperson
Town of Newburgh Planning Board
21 Hudson Valley Professional Plaza
Newburgh, NY 12550
via: Hand Delivery & Email

Re: 3 Mariners Court, Newburgh, NY 12550 – Grading and Fill Permit [SBL: 121-1-7]
Site Plan Application #2024-35

Board Members:

Please accept this submission for planning board review. The design has changed substantially including terraced retaining walls that are much less in height than previous submissions. The attached plans have been revised per the planning board engineer's comment letter dated December 5, 2024, and additional discussions. Below are our responses and the numbering below corresponds directly with their letter:

1. The survey of the subject property has been updated to reflect the existing conditions. Please see the attached survey, last revised 2/5/2026.
2. See #1.
3. See #1.
4. A submission to the NYSDEC regarding protected species within the vicinity of the project was made on 3/26/2026. No response has been received.
5. Please see the retaining wall detail on sheet C-3.
6. Acknowledged.
7. The scope of the project has been revised to include connecting the culvert into the existing drainage system and the limits of disturbance have been revised accordingly.
8. Acknowledged.
9. Geotechnical evaluation – the new design limits the height of the walls and allows for **reinforced soils which includes a "geo-grid" fabric. This is defined by the following:**
Reinforced soil is a composite material combining natural soil with reinforcing elements to enhance stability, strength, and load-bearing capacity.
Definition and Concept

Reinforced soil is a modern civil engineering technique where natural soil (*please note that imported suitable soils will be used which enhances the design since it does not depend on the native soils*) strengthened by integrating man-made or natural reinforcing materials such as geosynthetics, metal strips, or fibers. Imported fill shall meet the specifications outlined on page 4 note E of the Terra-Crete Specification

Book. This combination improves the soil's mechanical behavior, making it less prone to deformation and capable of withstanding external loads and environmental factors. Essentially, the soil and reinforcement act together as a composite material, distributing loads more evenly and increasing shear strength

We look forward to continuing this process towards approval. If you have any additional questions or comments, feel free to contact us at your earliest convenience.

Sincerely,



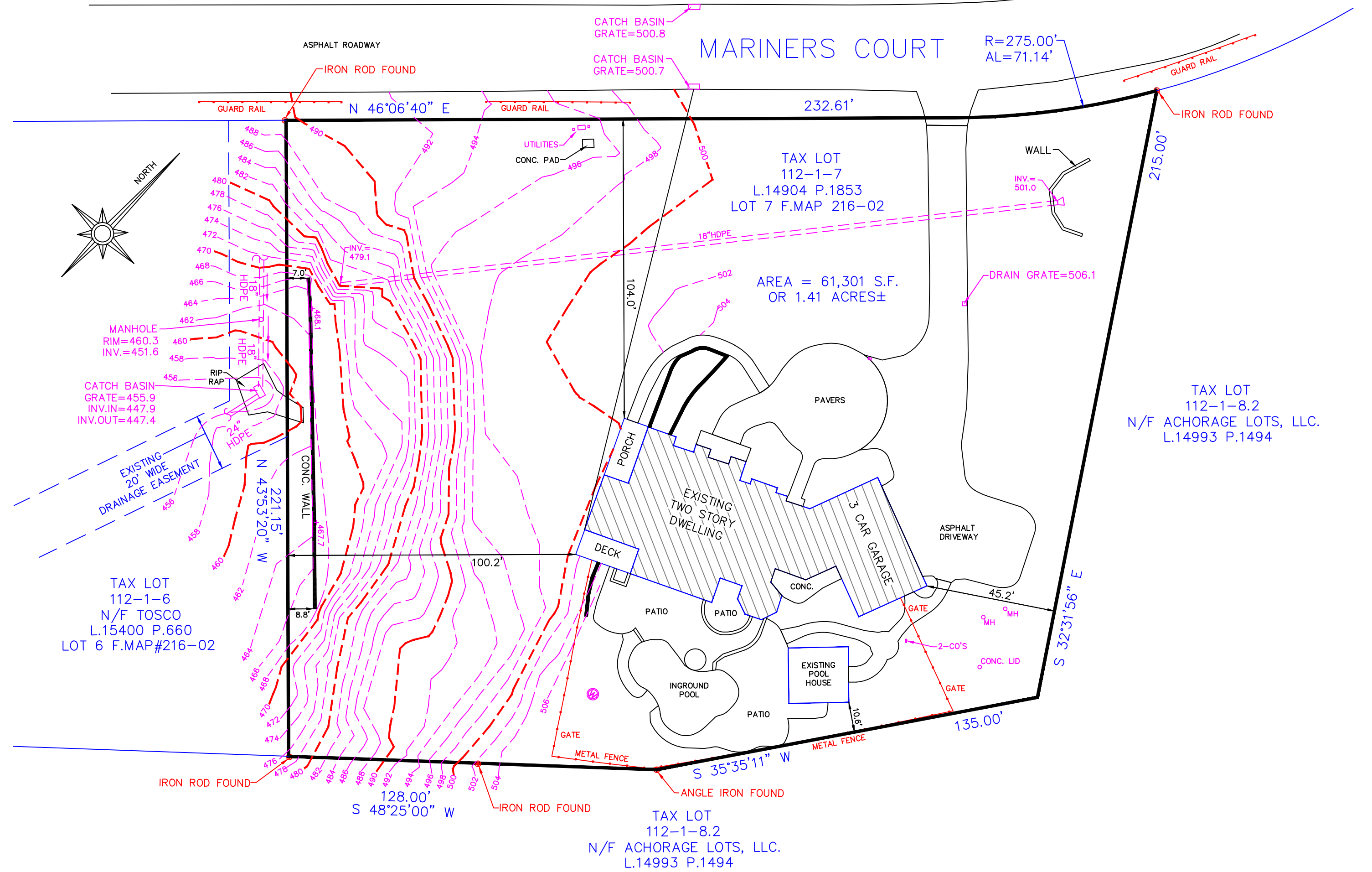
David Niemotko, Registered Architect

Attachments: (12) Updated Survey prepared by Heritage Land Surveying PC revised 4-4-26
(12) Revised Site Plans C-1 to C-3 dated 4-20-2026
(12) Terra-Crete Specification Book

CC: Benedetto Papaleo, Owner

REFERENCES:

- TOWN OF NEWBURGH TAX MAP SECTION 112.
- DEEDS FILED IN THE ORANGE COUNTY CLERK'S OFFICE:
L.14904 P.1853
L.14993 P.1494
L.15400 P.660
- MAPS FILED IN THE ORANGE COUNTY CLERK'S OFFICE:
MAP No. 216-02



LEGEND

	DENOTES EXISTING UTILITY POLE
	DENOTES EXISTING WATER VALVE
	DENOTES EXISTING GAS VALVE
	DENOTES EXISTING SPOT GRADE
	DENOTES EXISTING CONTOUR LINE

REVISIONS:
3/3/26-DRAINAGE INFO
4/4/26-DRAINAGE INFO



DATUM: ASSUMED



I HEREBY CERTIFY THAT:
THIS MAP OR PLAT IS BASED UPON THE FIELD NOTES OF THE SURVEY AND OTHER REFERENCES SHOWN.
ALL RECORDED EASEMENTS OR RIGHTS-OF-WAY AS SHOWN IN THE TITLE REPORT AND OTHER REFERENCES ARE SHOWN.
ALL OBSERVABLE EVIDENCE OF EASEMENTS ON THE GROUND ARE SHOWN.
ALL OBSERVABLE, ABOVE GROUND EVIDENCE OF BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS ARE SHOWN.
UNAUTHORIZED ALTERATION TO A MAP BEARING A LICENSED PROFESSIONAL LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
THIS CERTIFICATION IS NOT AN EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, IT IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF, BASED ON EXISTING FIELD EVIDENCE AND DOCUMENTARY EVIDENCE AVAILABLE.
CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
PLAN PREPARED PURSUANT TO SECTION 7208m OF THE NEW YORK STATE EDUCATION LAW.
SUBJECT TO THE FINDINGS OF AN UP-TO-DATE TITLE REPORT.

Darren Stridiron
DARREN J. STRIDIRON, PROFESSIONAL LAND SURVEYOR
NEW YORK STATE LICENSE No. 050487

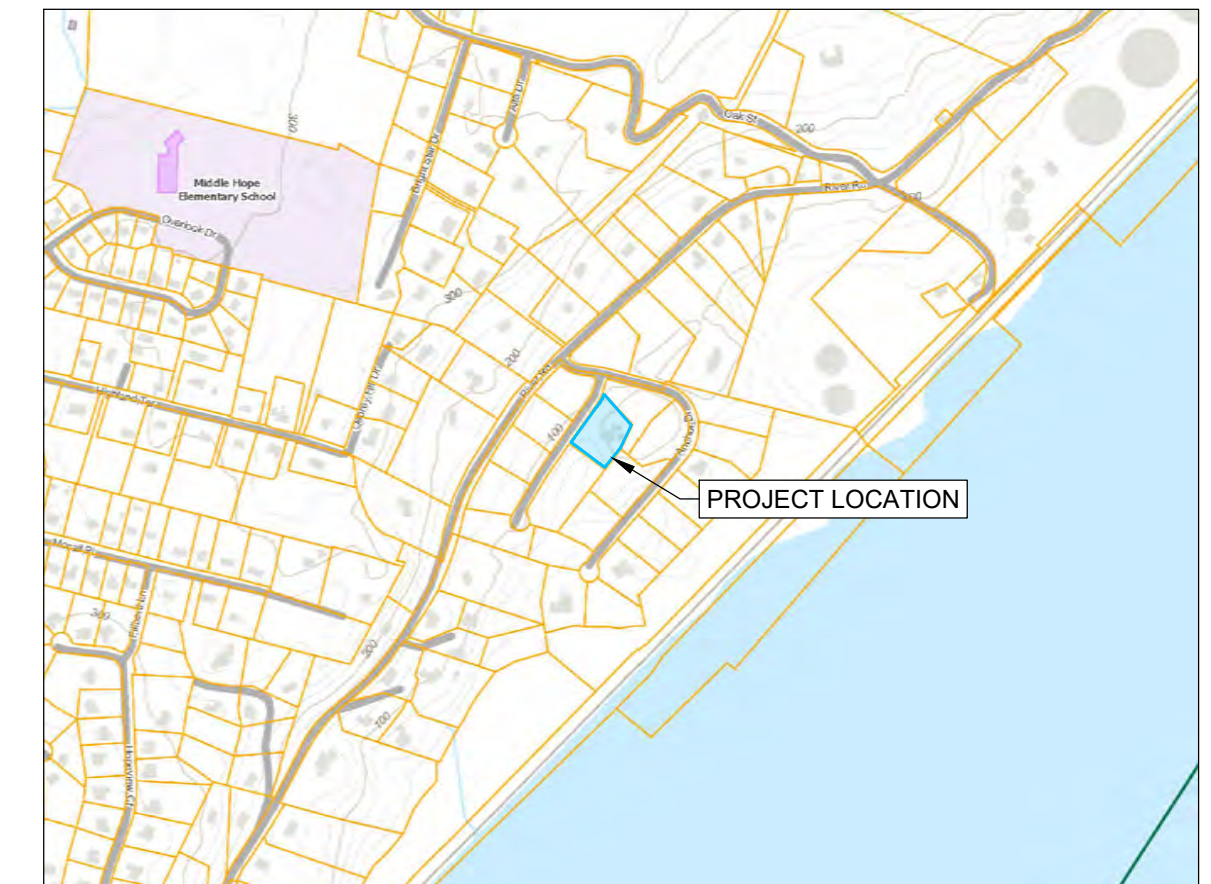
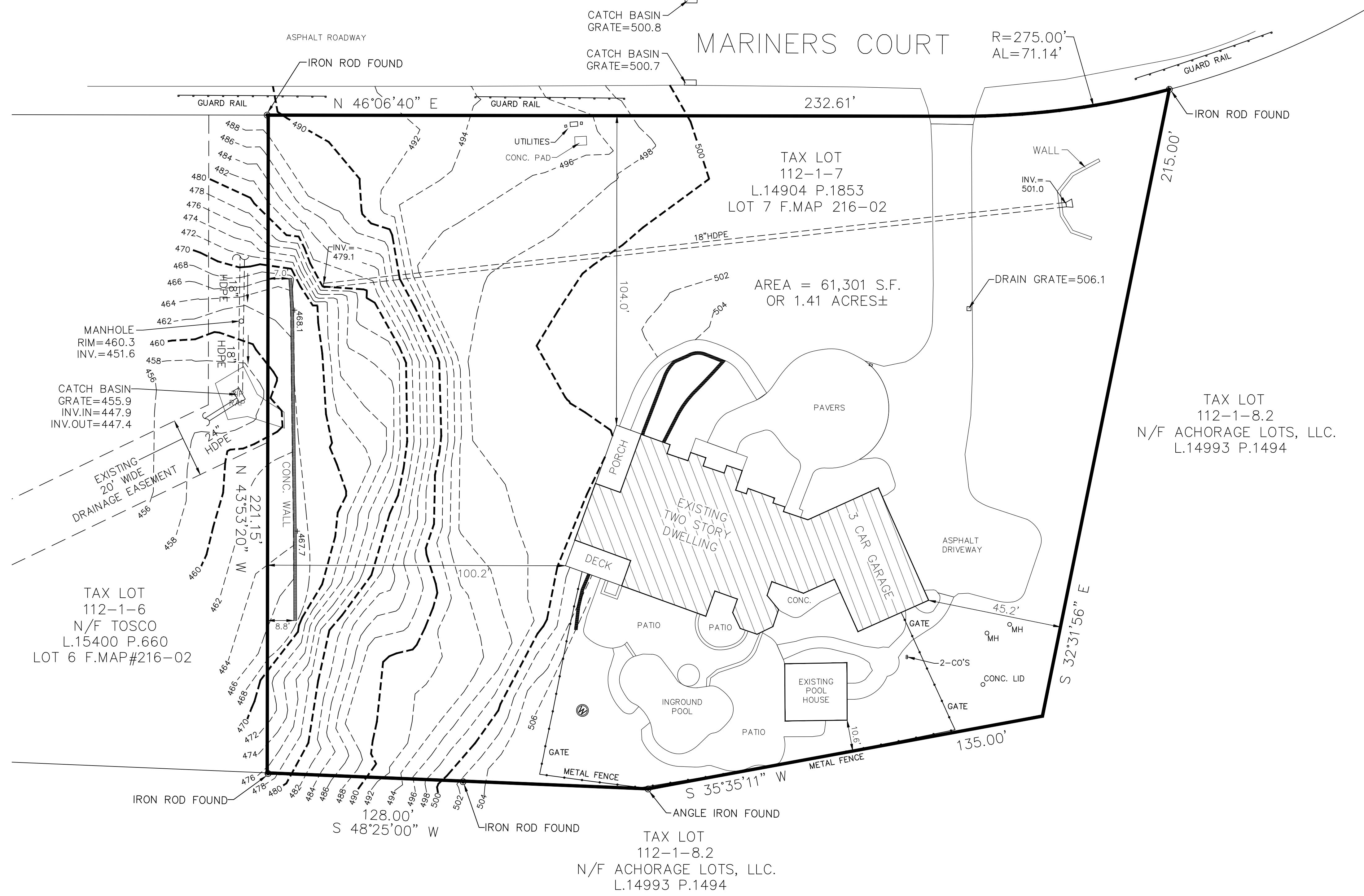
HERITAGE LAND SURVEYING, P.C.

155 PRESSLER RD, WALLKILL, NEW YORK 12589
TEL (845)234-2310 heritagesurveypc.com e-mail: heritagesurvey@hotmail.com

BOUNDARY & PARTIAL TOPOGRAPHIC SURVEY

**3 MARINERS COURT
LOCATED AT
TAX LOT 112-1-7
TOWN OF NEWBURGH
COUNTY OF ORANGE, NEW YORK**

Date 12/2/25	Work Order	Drawing No.	SHEET
Scale 1" = 30'	2025-175	SURVEY	1



2 VICINITY MAP
C-1 SCALE: 1"=1000'

- REFERENCES:**
- VICINITY MAP TAKEN FROM ORANGE COUNTY GIS SERVICES, TOWN OF NEWBURGH, 2024.
 - PLAN BASED ON MAP TITLED "BOUNDARY & PARTIAL TOPOGRAPHIC SURVEY- 3 MARINERS COURT" BY HERITAGE LAND SURVEYING, P.C. DATED 12/02/25, LAST REVISED 04/04/26.

SHEET LIST	
SHEET NO.	TITLE
C-1	EXISTING CONDITIONS PLAN
C-2	GRADING & EROSION CONTROL PLAN
C-3	DETAILS



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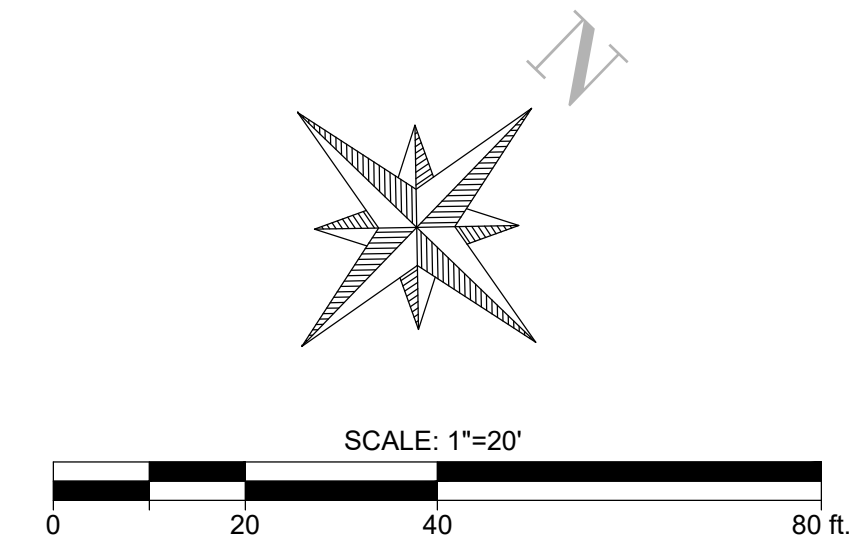
EXISTING CONDITIONS PLAN
SITE GRADING AND FILL PLAN
 3 MARINERS COURT
 NEWBURGH, NY 12550
BEN PAPAEO
 468 RIVER RD
 NEWBURGH, NY 12550

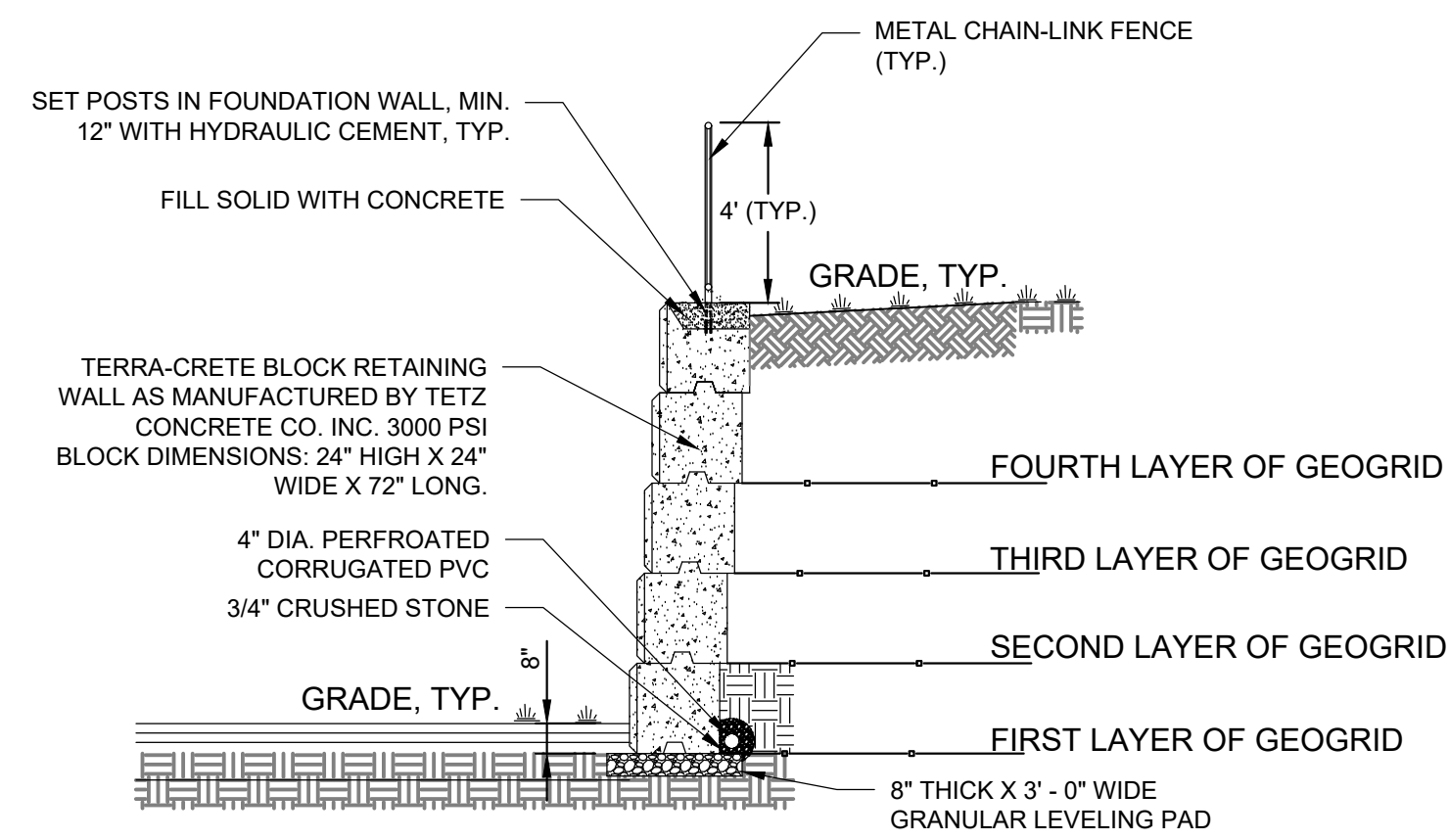
SCALE:
 DRAWN BY: J.S.
 CHECKED BY: D.N.
 JOB #
 PLOT DATE: 12/10/2025

SHEET No.
C-1
 PAGE 1 OF 3

1 EXISTING CONDITIONS PLAN
C-1 SCALE: 1"=20'

- NOTES:**
- LOT OWNER: BENEDETTO & BEATA PAPAEO
 - OWNER ADDRESS: 3 MARINERS COURT NEWBURGH, NY 12550
 - LOT ID: 121-1-7, TOWN OF NEWBURGH
 - LOT AREA: 1.4 Ac.
 - NO WETLANDS LOCATED ON PROPERTY.
 - UNAUTHORIZED ALTERATION OR ADDITION TO THESE PLANS IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.





RETAINING WALL SECTION

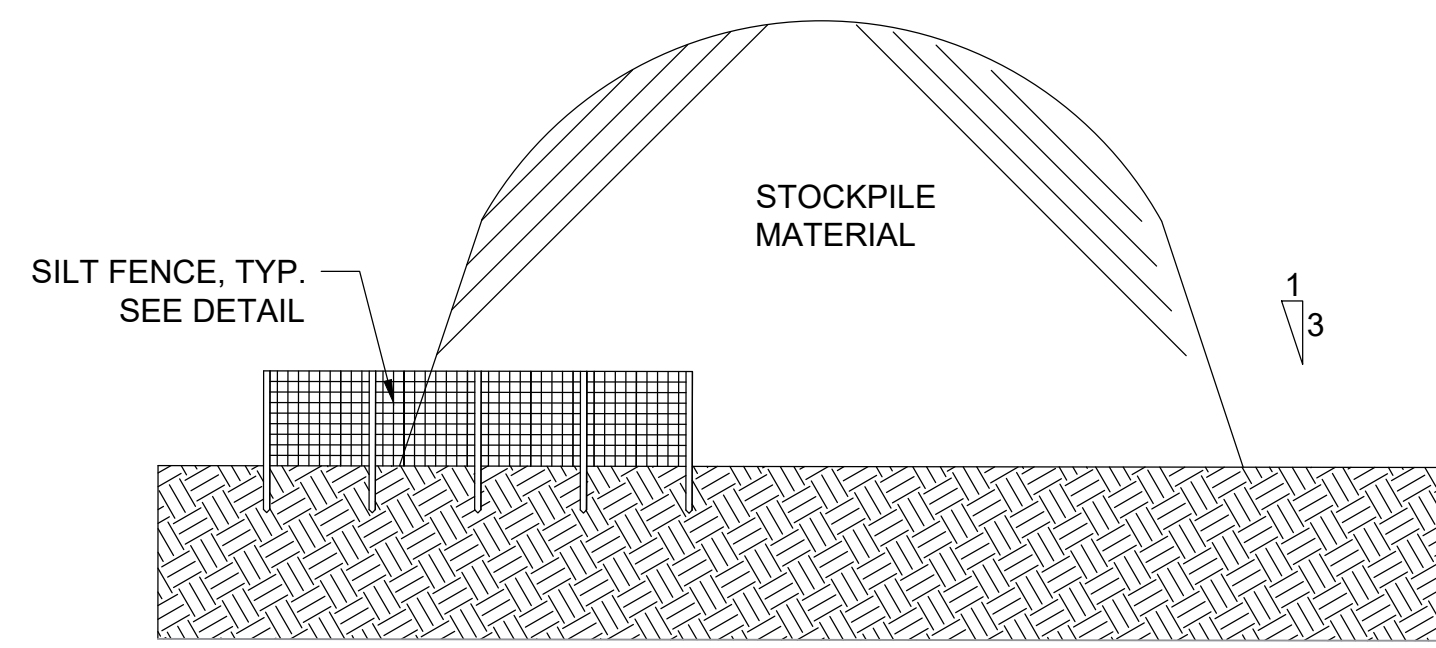
SCALE: NTS

TERRA-CRETE RETAINING WALL NOTES

1. INSTALL AS PER MANUFACTURERS SPECIFICATIONS.
2. BACKFILL MUST BE AN ENGINEERED PRODUCT - COMPACTED IN LIFTS TO A 95% MIN. DENSITY AND A MOISTURE CONTENT OF 0% TO 3%.
3. DESIGN IS BASED ON A 30 DEGREE FRICTION ANGLE OF SOIL.
4. GEOGRID MUST BE SRW-7 SERIES, OR EQUAL.

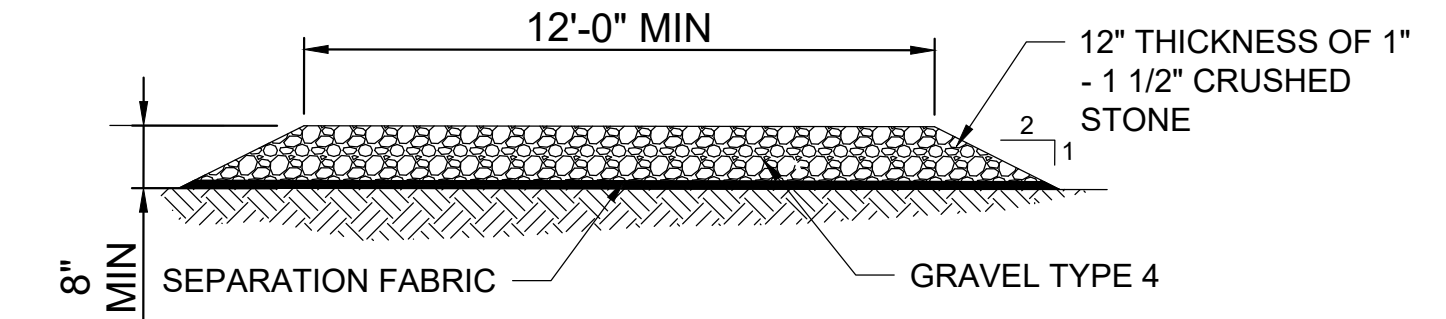
RETAINING WALL - GEOGRID DESIGN

- | | |
|-------------------------|--|
| 1. NUMBER OF BLOCKS 2 - | NO GEOGRID LAYER |
| 2. NUMBER OF BLOCKS 3 - | FIRST LAYER OF GEOGRID - 5'-0" WIDE
SECOND LAYER OF GEOGRID - 6'-6" WIDE |
| 3. NUMBER OF BLOCKS 4 - | FIRST LAYER OF GEOGRID - 6'-0" WIDE
SECOND LAYER OF GEOGRID - 6'-0" WIDE
THIRD LAYER OF GEOGRID - 7'-6" WIDE |
| 4. NUMBER OF BLOCKS 5 - | FIRST LAYER OF GEOGRID - 7'-0" WIDE
SECOND LAYER OF GEOGRID - 7'-0" WIDE
THIRD LAYER OF GEOGRID - 7'-0" WIDE
FOURTH LAYER OF GEOGRID - 9'-0" WIDE |



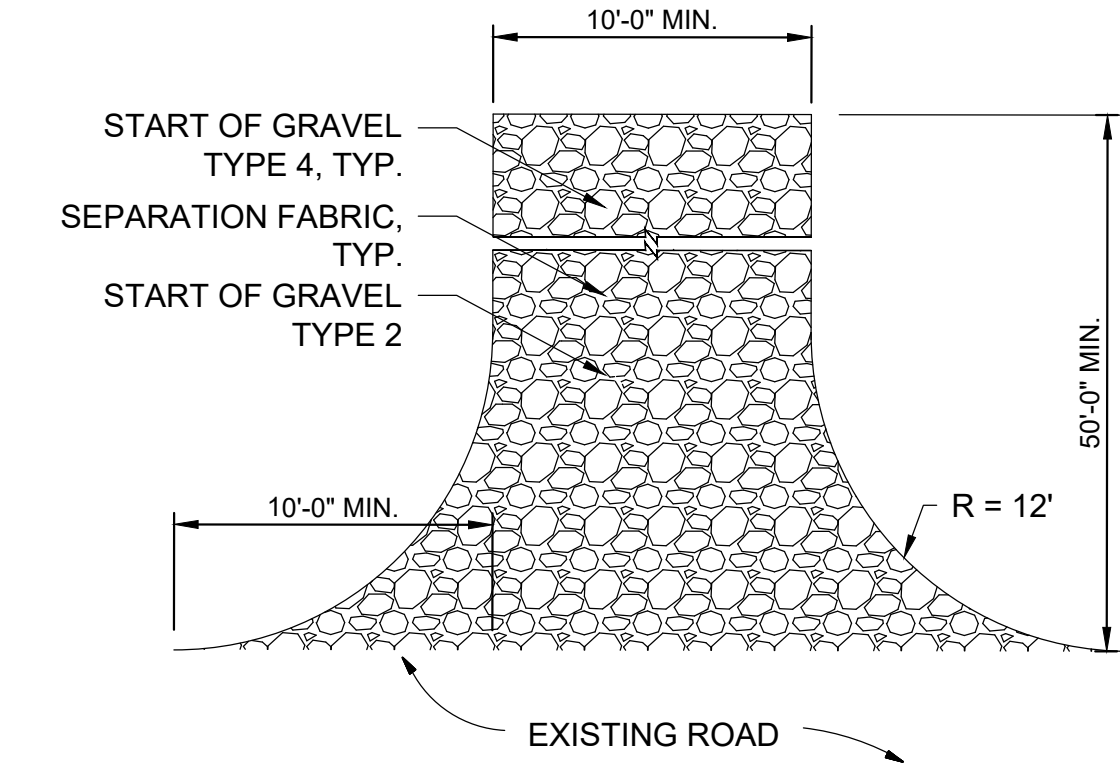
TYPICAL STOCKPILE DETAIL

SCALE: NTS



PROFILE

- NOTE:
1. EXISTING DRAINAGE ROUTE SHALL BE MAINTAINED BY INSTALLING CULVERTS AT CROSSINGS.
 2. STAGING AND STOCKPIILING ARE CAN BE MADE OF THE SAME MATERIALS.

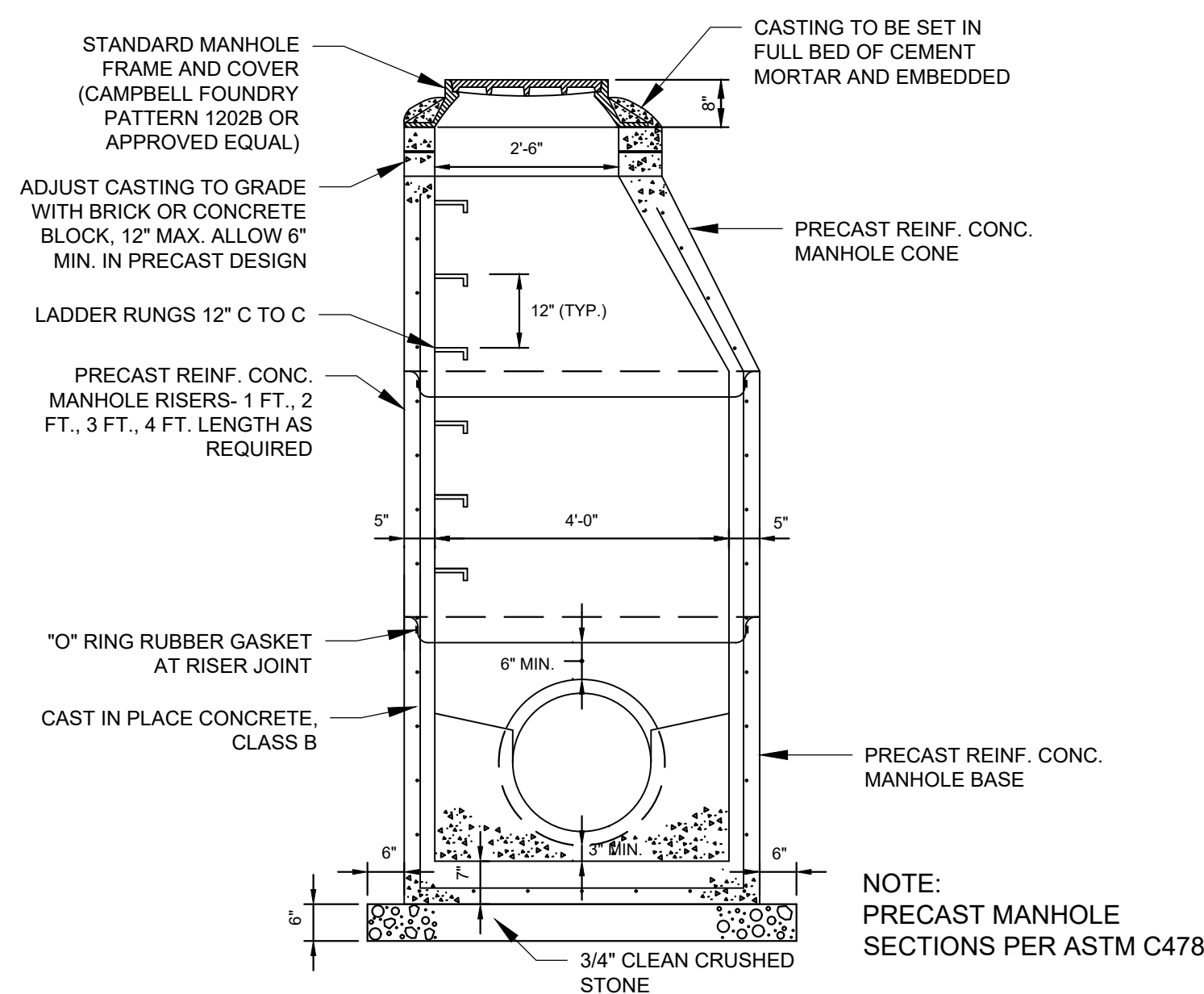


STABILIZED CONSTRUCTION ENTRANCE & STAGING AREA

SCALE: NTS

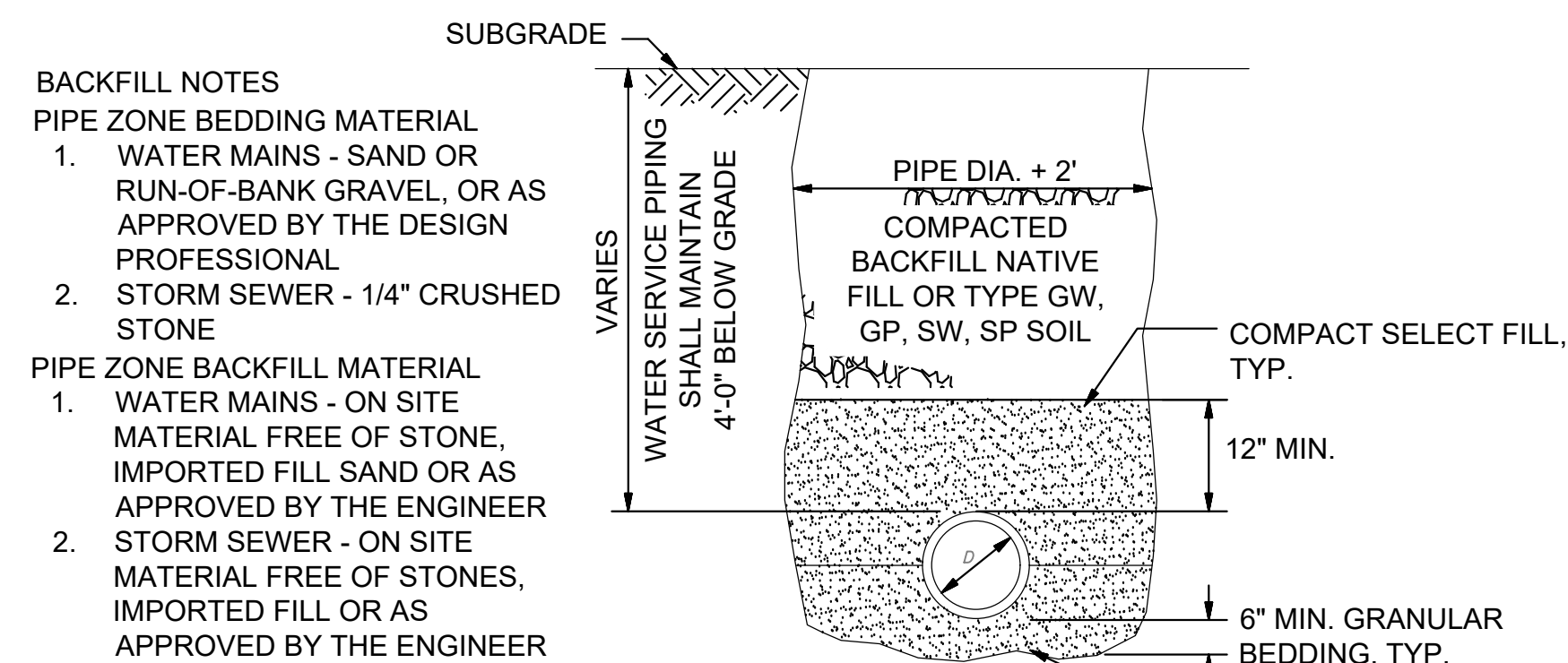
NOTES

1. ENTRANCE TO BE MAINTAINED AS CONDITIONS DEMAND TO PREVENT TRACKING OF SEDIMENT ONTO THE PUBLIC ROAD OR R.O.W.
2. SPILLED OR DROPPED SEDIMENT TO BE REMOVED IMMEDIATELY.
3. A CRUSHED STONE, VEHICLE WHEEL CLEANING AREA SHALL BE INSTALLED WHERE THE CONSTRUCTION ACCESS ROAD INTERSECTS A PUBLIC ROAD. THE AREA SHALL BE COMPOSED OF CRUSHED STONE WITH A FILTER FABRIC UNDERNEATH THE ENTIRE AREA. SEE PLAN FOR DIMENSIONS.
4. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL PIPED UNDERNEATH WITH MOUNTABLE BERMS ALONGSIDE.



STORM MANHOLES, PRECAST

SCALE: N.T.S.



BACKFILL NOTES

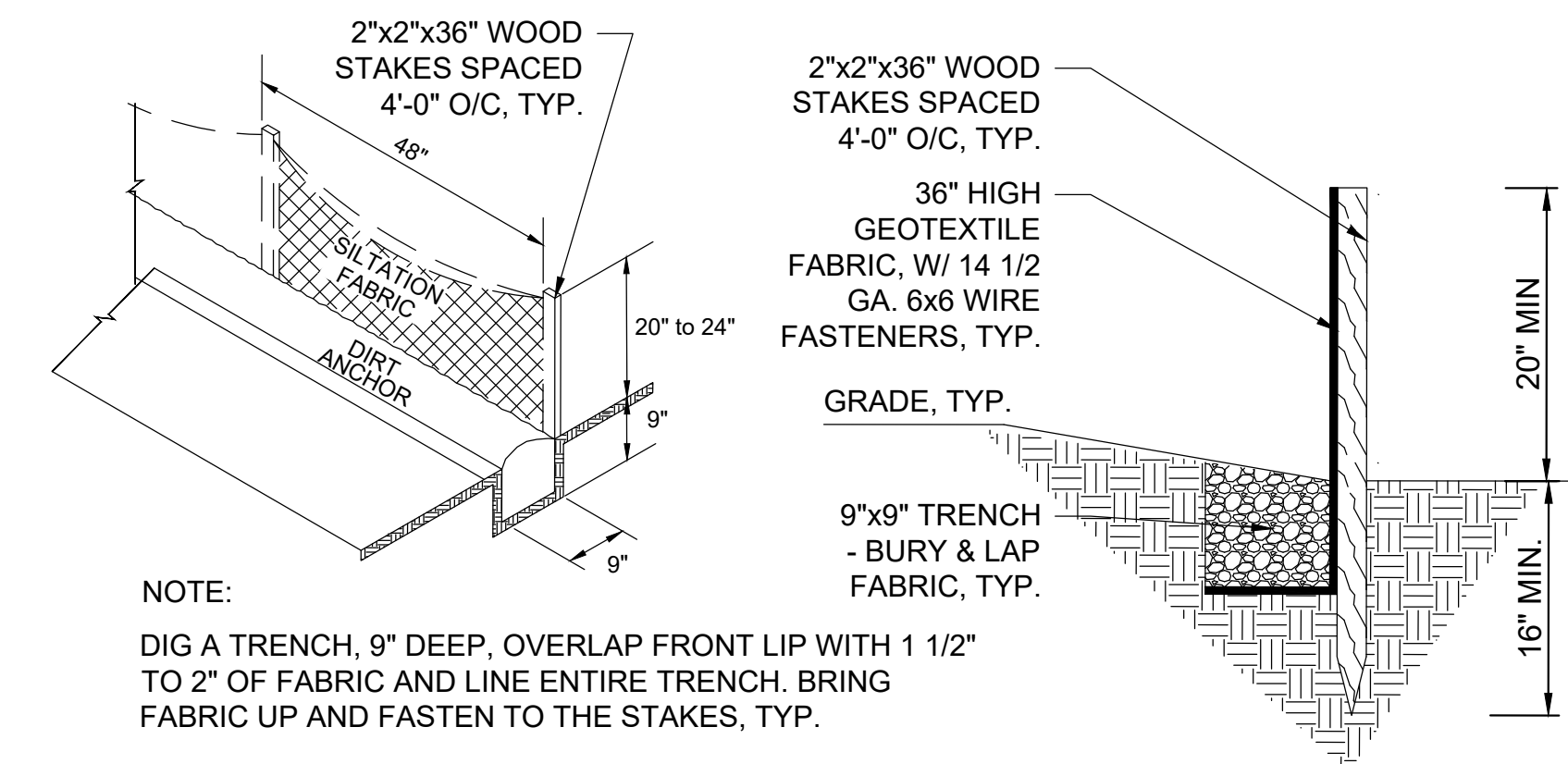
- PIPE ZONE BEDDING MATERIAL**
1. WATER MAINS - SAND OR RUN-OF-BANK GRAVEL, OR AS APPROVED BY THE DESIGN PROFESSIONAL
 2. STORM SEWER - 1/4" CRUSHED STONE
- PIPE ZONE BACKFILL MATERIAL**
1. WATER MAINS - ON SITE MATERIAL FREE OF STONE, IMPORTED FILL SAND OR AS APPROVED BY THE ENGINEER
 2. STORM SEWER - ON SITE MATERIAL FREE OF STONES, IMPORTED FILL OR AS APPROVED BY THE ENGINEER

UNPAVED AREAS PIPE BEDDING-BACKFILL DETAILS

SCALE: NTS

NOTES:

1. TRENCH SIDE SLOPE STABILIZATION AND JOB SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR. COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.



NOTE:

DIG A TRENCH, 9" DEEP, OVERLAP FRONT LIP WITH 1 1/2" TO 2" OF FABRIC AND LINE ENTIRE TRENCH. BRING FABRIC UP AND FASTEN TO THE STAKES, TYP.

SILT FENCE DETAIL

SCALE: NTS

NOTES

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 12" O/C AT TOP AND MID SECTION.
3. ALL SILT FENCES SHALL RUN PARALLEL TO THE CONTOUR OF THE LAND.
4. ALL SILT FENCING SHALL MEET THE MINIMUM REQUIREMENTS AS STATED UNLESS OTHERWISE NOTED AND APPROVED BY THE BUILDING INSPECTOR AND/OR MUNICIPAL ENGINEER.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP ALONG THE SILT FENCE.
6. THE MAXIMUM TRIBUTARY DRAINAGE AREA FOR THE OVER FLOW TO A SILT FENCE SHALL NOT EXCEED 1/3 ACRE PER 100 L.F. OF FENCE.
7. MIRAFI 100X OR APPROVED EQUAL.

REVISION
DATE: 01.08.2026
SUBMISSION: PB SUBMISSION
DATE: 04.20.2026
SUBMISSION: PB SUBMISSION
No. 1-2



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CONSTRUCTION DETAILS
SITE GRADING AND FILL PLAN
3 MARINERS COURT
NEWBURGH, NY 12550
BEN PAPAEO
468 RIVER RD
NEWBURGH, NY 12550

SHEET TITLE:
SCALE:
DRAWN BY: J.S.
CHECKED BY: D.N.
JOB #
PLOT DATE: 12/10/2025

SHEET No.
C-3
PAGE 3 OF 3

TERRA-CRETE

LANDSCAPE BLOCK

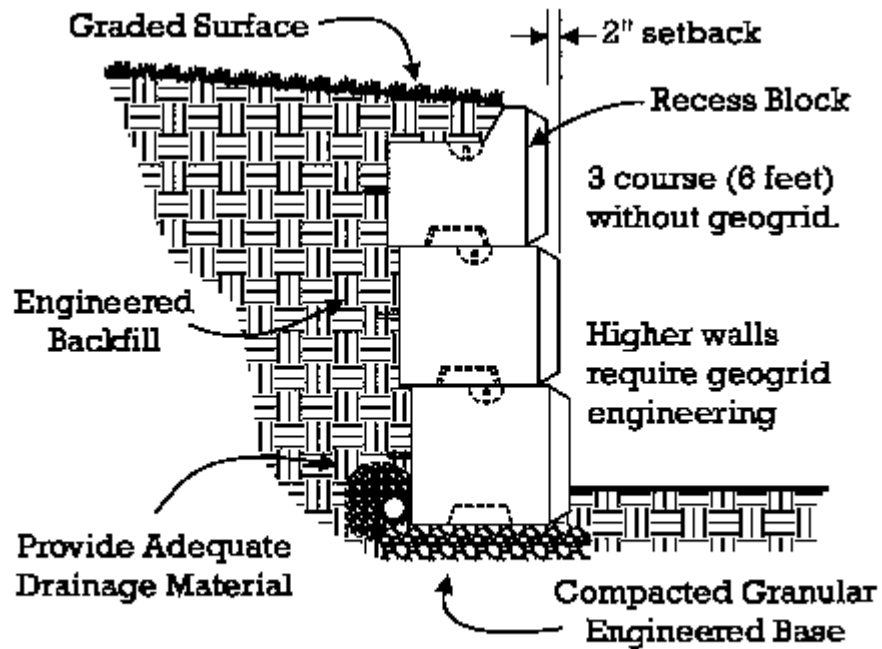


Retaining Walls Made Easy



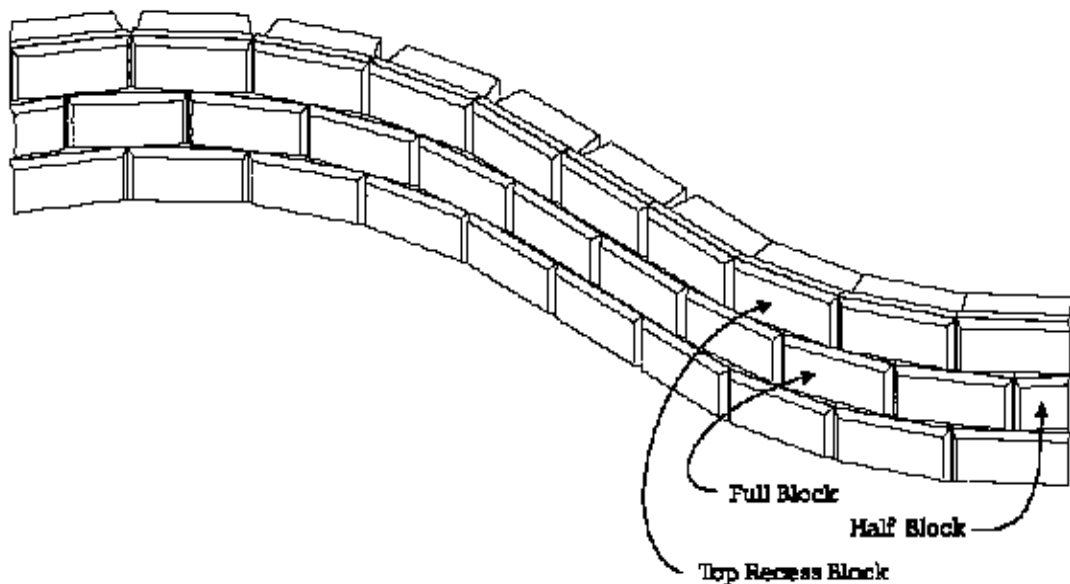
DICK'S CONCRETE CO., INC.
**“THE ORIGINAL PRODUCER AND SUPPLIER
WITH OVER 10 YEARS EXPERIENCE”**
(845) 374-5966

3 courses (6 feet) without geogrid. Higher walls can be constructed with geogrid engineering.



TYPICAL WALL ELEVATION DETAIL

Tapered sides allow for 17 foot radius curved wall. Inside or Outside curves can be constructed.



Terra-Crete Landscape blocks have an attractive, natural appearance that blends into the landscape.



Fast and Easy to Install!

**Let the Machine
Do the Work!**



Minimal Labor!

**INSTALLATION SPECIFICATIONS AND PROCEDURE FOR TERRA-CRETE
SEGMENTAL RETAINING WALL**

I. CONCRETE

- A. All concrete will be mixed to achieve a minimum 3,000 psi compressive strength in 28 days. In areas of freeze/thaw cycles, adequate protection by air entrainment must be provided as determined by the Engineer.

II. GENERAL

- A. Work shall consist of construction of a retaining wall system in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
- B. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.
- C. Base leveling pad material shall consist of a compacted crushed stone base or non-reinforced concrete as determined by the Engineer.
- D. Unit drainage fill shall consist of clean 1" minus crushed stone meeting the following gradation tested in accordance with ASTM D-422:

<u>Seive Size</u>	<u>Percent Passing</u>
1 inch	100
¾ inch	75 - 100
No. 4	0 - 10
No. 50	0 - 5

- 1. One cubic foot, minimum, of drainage fill shall be used for each square foot of wall face. Drainage fill shall be placed between and behind units to meet this requirement.

- E. Reinforced backfill shall be free of debris and meet the following gradation tested in accordance with ASTM D-422:

<u>Seive Size</u>	<u>Percent Passing</u>
2 inch	75 - 100
¾ inch	75 - 100
No. 40	0 - 60
No. 200	0 - 35

- 1. The maximum aggregate size shall be limited to ¾" unless field tests have been performed to evaluate potential strength reductions to the geogrid design due to damage during construction.

2. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.
 3. Contractor shall submit reinforced fill sample and laboratory test results to the owner's engineer for approval prior to the use of any proposed reinforced fill material.
- F. Geogrid soil reinforcement shall consist of high tenacity geogrids or geotextiles manufactured specifically for soil reinforcement applications. The type, strength, and location shall be on the construction drawings.
- G. Drainage collection pipe shall be a perforated or slotted, pvc or corrugated HDPE pipe. The pipe and drainage aggregate may be wrapped with a geotextile fabric that will function as a filter. Drainage pipe shall conform to ASTM D-3034 and/or ASTM D-1248.

III. EXECUTION

Excavation

- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall inspect the excavation and approve prior to placement of leveling material or fill soils. Proof roll foundation area as directed to determine if remedial work is required.
- B. Following excavation for the leveling pad and/or reinforced soil zone, the soil shall be examined by the owner's engineer to assure the actual foundation soil strength meets or exceeds the assumed designed bearing strength. Soils not meeting the required strength shall be removed and replaced with soil meeting the design criteria, as directed by the owner's engineer.

Base Leveling Pad

- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the concrete wall unit.
- B. Soil leveling pad materials shall be compacted to a minimum of 95% of the maximum Standard Proctor density per ASTM D-698.
- C. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

Modular Unit Installation

- A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
- B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
- C. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
- D. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed one course.

Structural Geogrid Installation

- A. All materials shall be installed at the proper elevation and orientation as shown in the wall detail on the construction plans or as directed by the owner's engineer. The wall units and geosynthetic reinforcement shall be installed in general accordance with the manufacturer's recommendations.
- B. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- C. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the owner's engineer.
- D. The geogrid shall be laid horizontally on compacted backfill and attached to the concrete wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
- E. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

Reinforced Backfill Placement

- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
- B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8-10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
- C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be dry of optimum, + 0% - 3%.
- D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the soil side of the modular concrete unit.
- E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
- G. At the end of each day's operation, the contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from the wall face. The contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

As-built Construction Tolerances

- A. Vertical alignment - 1.5" over any 10 ft. distance.
Wall Batter - within 2 degrees of design batter.
- B. Horizontal alignments +/- 1.5" over any 10 ft. distance. Corners, bends, curves +/- 1 ft. to theoretical location.
- C. Maximum horizontal gap between erected units shall be ½ inch.

Field Quality Control

- A. The owner shall engage inspection and testing services, including independent laboratories, to provide quality assurances and testing services during construction. This does not relieve the contractor from securing the necessary construction control testing during construction.
- B. Testing and inspections services shall only be performed by qualified and experienced technicians and engineers.
- C. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

Terra Crete & SRW7 Geogrid Placement Tables

Sample designs, 27 degree friction angle soil

These charts are applicable for site soils when the friction angle is 27 degrees or higher and the moist unit weight is 120 lbs. per cubic foot. That is typical for inorganic clays of low to medium plasticity. Site soils are assumed for the reinforced soil, backfill soil, and foundation soil.

Site Configuration: Flat at top and bottom of wall, no surcharge							
Exposed Height	Total Height	Number of Block Courses	Number of Geogrid Layers	Block course that geogrid is placed on top of and length of geogrid. (Block course/geogrid length)			
3'-6"	4'-0"	2	0				
5'-6"	6'-0"	3	0				
7'-6"	8'-0"	4	3	Under 1 st /6'-0"	1 st /6'-0"	2 nd /7'-0"	
9'-6"	10'-0"	5	4	Under 1 st /7'-0"	1 st /7'-0"	2 nd /7'-0"	3 rd /8'-6"

Site Configuration: Flat at top and bottom of wall, 100 PSF surcharge(Light Traffic)							
Exposed Height	Total Height	Number of Block Courses	Number of Geogrid Layers	Block course that geogrid is placed on top of and length of geogrid. (Block course/geogrid length)			
3'-6"	4'-0"	2	0				
5'-6"	6'-0"	3	2	Under 1 st /5'-0"	1 st /6'-6"		
7'-6"	8'-0"	4	3	Under 1 st /6'-0"	1 st /6'-0"	2 nd /7'-6"	
9'-6"	10'-0"	5	4	Under 1 st /7'-0"	1 st /7'-0"	2 nd /7'-0"	3 rd /9'-0"

Site Configuration: Flat at bottom of wall, 3 horizontal to 1 vertical slope at top of wall							
Exposed Height	Total Height	Number of Block Courses	Number of Geogrid Layers	Block course that geogrid is placed on top of and length of geogrid. (Block course/geogrid length)			
3'-6"	4'-0"	2	0				
5'-6"	6'-0"	3	2	Under 1 st /8'-6"	1 st /8'-6"		
7'-6"	8'-0"	4	3	Under 1 st /8'-0"	1 st /8'-0"	2 nd /8'-0"	
9'-6"	10'-0"	5	4	Under 1 st /10'-6"	1 st /10'-6"	2 nd /10'- 6"	3 rd /10'-6"

Sample designs, 30 degree friction angle soil

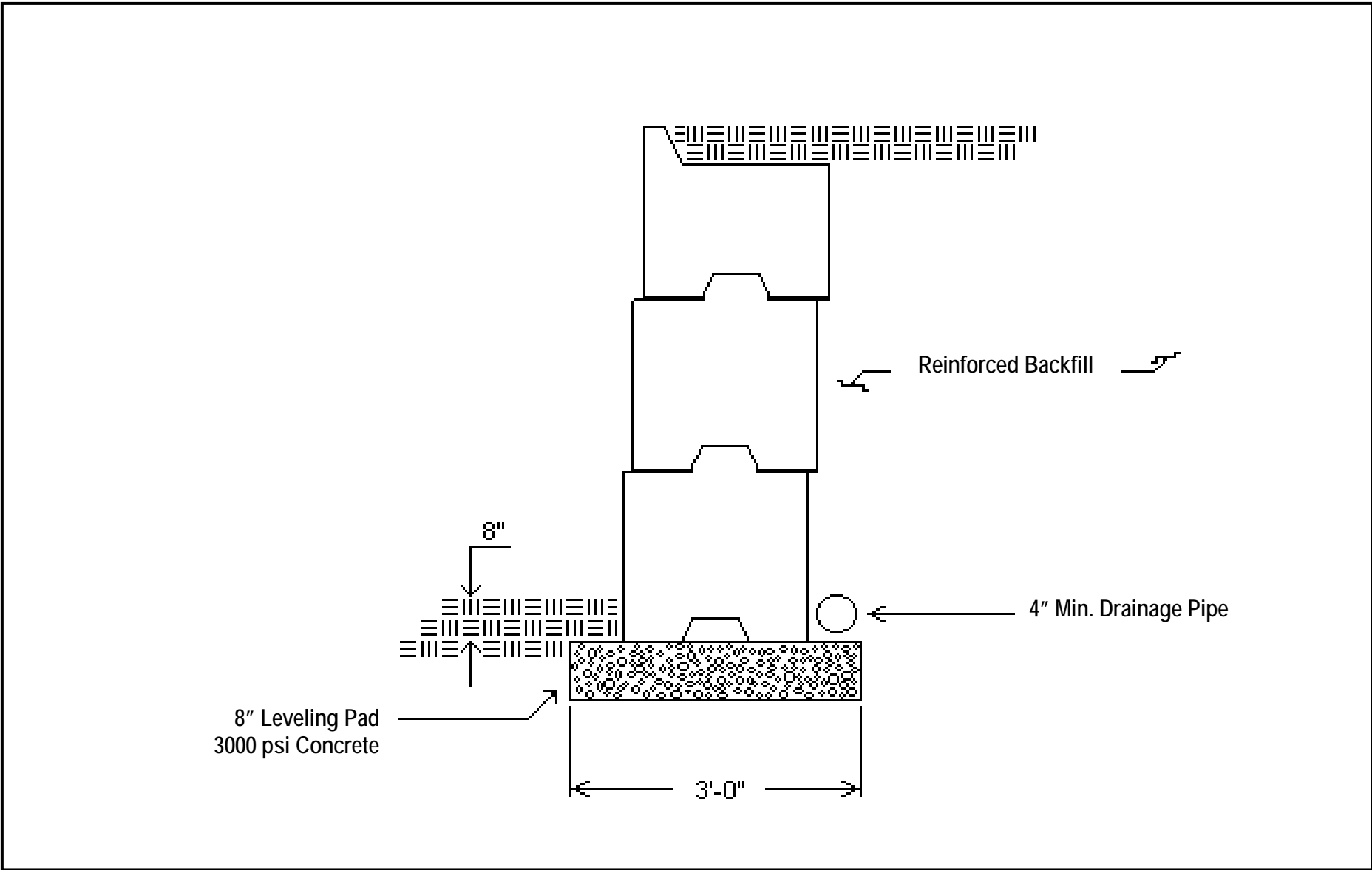
These charts are applicable for site soils when the friction angle is 30 degrees or higher and the moist unit weight is 125 lbs. per cubic foot. That is typical for silty sands. Site soils are assumed for the reinforced soil, backfill, and foundation soil

Site Configuration: Flat at top and bottom of wall, no surcharge							
Exposed Height	Total Height	Number of Block Courses	Number of Geogrid Layers	Block course that geogrid is placed on top of and length of geogrid. (Block course/geogrid length)			
3'-6"	4'-0"	2	0				
5'-6"	6'-0"	3	0				
7'-6"	8'-0"	4	3	Under 1 st /6'-0"	1 st /6'-0"	2 nd /6'-6"	
9'-6"	10'-0"	5	4	Under 1 st /7'-0"	1 st /7'-0"	2 nd /7'-0"	3 rd /7'-6"

Site Configuration: Flat at top and bottom of wall, 100 PSF surcharge(Light Traffic)							
Exposed Height	Total Height	Number of Block Courses	Number of Geogrid Layers	Block course that geogrid is placed on top of and length of geogrid. (Block course/geogrid length)			
3'-6"	4'-0"	2	0				
5'-6"	6'-0"	3	2	Under 1 st /4'-6"	1 st /5'-6"		
7'-6"	8'-0"	4	3	Under 1 st /6'-0"	1 st /6'-0"	2 nd /7'-0"	
9'-6"	10'-0"	5	4	Under 1 st /7'-0"	1 st /7'-0"	2 nd /7'-0"	3 rd /8'-0"

Site Configuration: Flat at bottom of wall, 3 horizontal to 1 vertical slope at top of wall							
Exposed Height	Total Height	Number of Block Courses	Number of Geogrid Layers	Block course that geogrid is placed on top of and length of geogrid. (Block course/geogrid length)			
3'-6"	4'-0"	2	0				
5'-6"	6'-0"	3	2	Under 1 st /5'-0"	1 st /6'-0"		
7'-6"	8'-0"	4	3	Under 1 st /6'-6"	1 st /6'-6"	2 nd /7'-6"	
9'-6"	10'-0"	5	4	Under 1 st /9'-0"	1 st /9'-0"	2 nd /9'-0"	3 rd /9'-0"

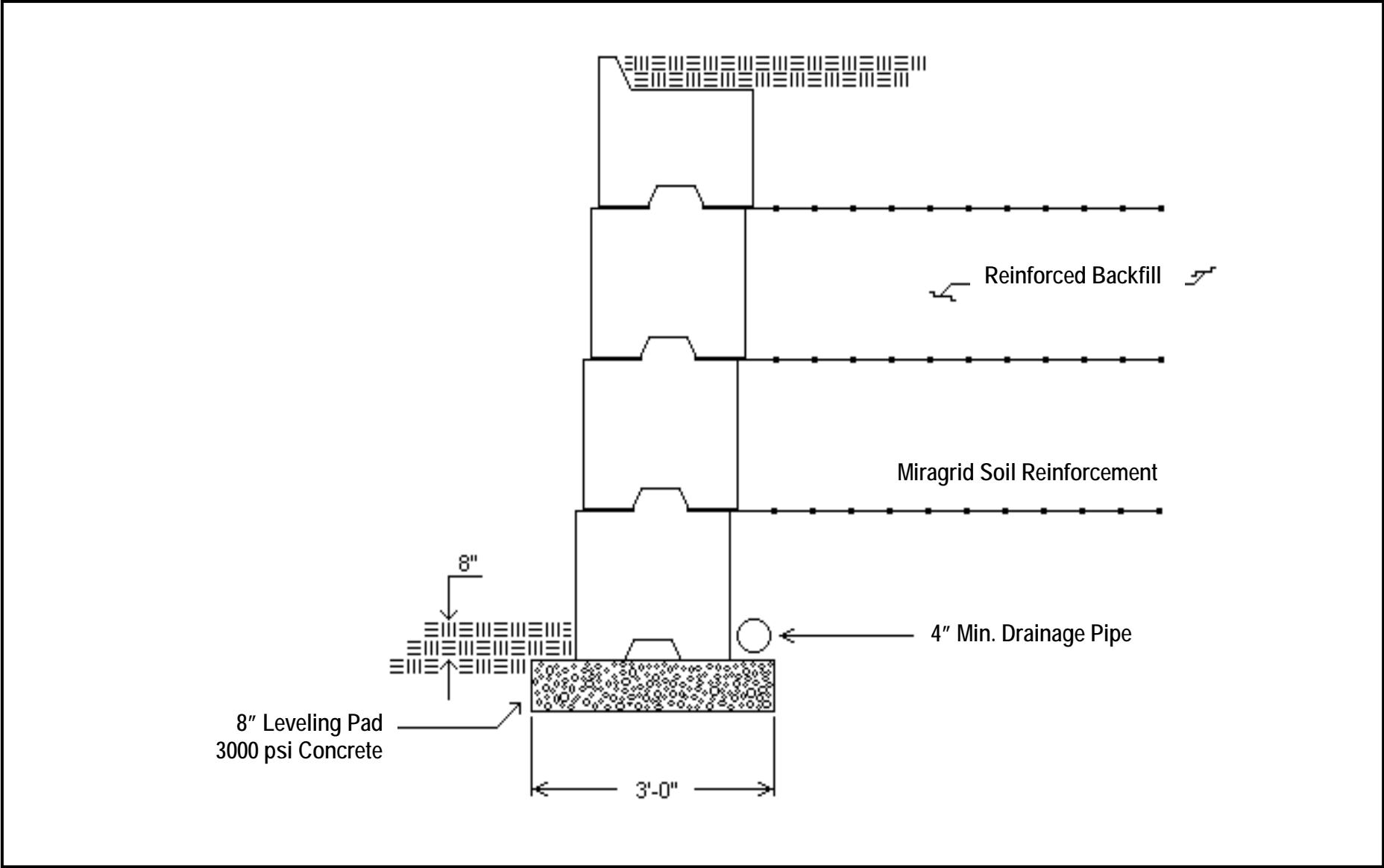
- 1) Sample designs are to be used for preliminary design only when actual soil, site geometry, and surcharge conditions are conservatively represented by the assumption table in all situations. A qualified engineer using actual design conditions for the proposed site should perform the final as-build design.
- 2) Sample designs have been prepared exclusively for the use of SRW™ 7 series geogrid.
- 3) MINIMUM FACTORS OF SAFETY: 1.5 for internal reinforcement pullout and tensile overstress, 1.5 for external sliding, 2.0 for external overturning and bearing capacity. NO provision or analysis included for global stability or seismic design.
- 4) Sample designs require adequate drainage provisions for both the reinforced wall fill and retained backfill.
- 5) Geogrid must be one continuous piece from the face of the retaining wall block to the back of the reinforced soil mass. No splicing of geogrid. Geogrid must butt together at edges but must not be overlapped. Geogrid must be pulled taught and fastened before backfill is placed. Geogrid is in the roll direction.
- 6) Follow the installation instructions that are supplied with the retaining wall system that you are purchasing. (Which should include foundation preparation, block alignment, core filling of block, drainage rock placement, backfill placement, and compaction.)
- 7) See your local building department for permitting requirements.
- 8) Each design is to be used up to the indicated height only. When the retaining wall exceeds that height a higher design shall be used.
- 9) When the retaining wall steps up at the bottom of the wall, bottom geogrid layers should be moved up with the steps and not dropped off until the next layer of geogrid is encountered.
- 10) Light traffic is auto or empty pickup truck loading. Any vehicle traffic or parking loads exceeding light traffic vehicle weights at the top of the retaining wall shall require a special site specific preliminary design.
- 11) If there is a slope at the bottom of the wall, additional embedment depth of the bottom courses and additional geogrid may be required.
- 12) If your site does not fit the above site configurations, call SRW Products at (800)752-9326 for a free site specific preliminary design.



6'-0" WALL HEIGHT

NO SOIL REINFORCEMENT USE

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8'-0" WALL HEIGHT

SOIL REINFORCEMENT USED

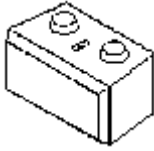
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Terra-Crete Block Styles

FULL BLOCK



24 x 24 x 48 inch landscape block. The block has tapered sides for laying straight or curved walls. The bottom notch is offset to allow the wall to terrace back 2 inches with every course.

Block Weight: 2,550 lbs.
Volume: 17 cu. ft.

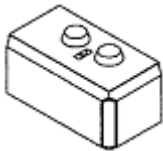
HALF BLOCK



24 x 24 x 24 inch landscape block. The block has tapered sides for laying straight or curved walls. The bottom notch is offset to allow the wall to terrace back 2 inches with every course.

Block Weight: 1,200 lbs.
Volume: 8 cu. ft.

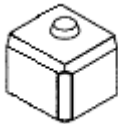
FULL CORNER BLOCK



24 x 24 x 48 inch landscape corner block. The block has straight sides with a finished rock face on the front and on one side. A right hand corner block is pictured.

Block Weight: 2,850 lbs.
Volume: 19 cu. ft.

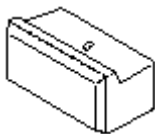
HALF CORNER BLOCK



24 x 24 x 24 inch landscape corner block. The block has straight sides with a finished rock face on the front and on one side. A right hand corner block is pictured.

Block Weight: 1425 lbs.
Volume: 9.5 cu. ft.

FULL TOP BLOCK



24 x 24 x 48 inch landscape top block. The 6 inch recess in the top allows for backfill to be filled

Block Weight: 2,200 lbs.
Volume: 14.67 cu. ft.

over the top of the block. Eliminates the need for a top cap.

HALF TOP BLOCK

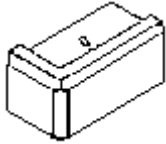


24 x 24 x 24 inch landscape top block. The 6 inch recess in the top allows for backfill to be filled over the top of the block. Eliminates the need for a top cap.

Block Weight: 975 lbs.
Volume: 6.5 cu. ft.

Terra-Crete Block Styles

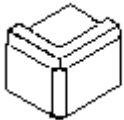
FULL TOP CORNER BLOCK



24 x 24 x 48 inch landscape top corner block. The 6 inch recess in the top allows for backfill to be filled over the top of the block. The block has straight sides with a finished rock face on the front and one side. A left hand top corner block is pictured.

Block Weight: 2400 lbs.
Volume: 16 cu. ft.

HALF TOP CORNER BLOCK



24 x 24 x 24 inch landscape top corner block. The 6 inch recess in the top allows for backfill to be filled over the top of the block. The block has straight sides with a finished rock face on the front and one side. A left hand top corner block is pictured.

Block Weight: 1200 lbs.
Volume: 8 cu. ft.

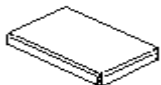
TOP CAP BLOCK



The landscape top cap block is 8 inches high, 48 inches wide at the front and 42 inches wide at the back. Stacked head to toe, blocks will lie straight. Laid front facing out, will curve back. Laid back facing out, will curve in.

Block Weight: 1125 lbs.
Volume: 7.5 cu. ft.

STEP BLOCK

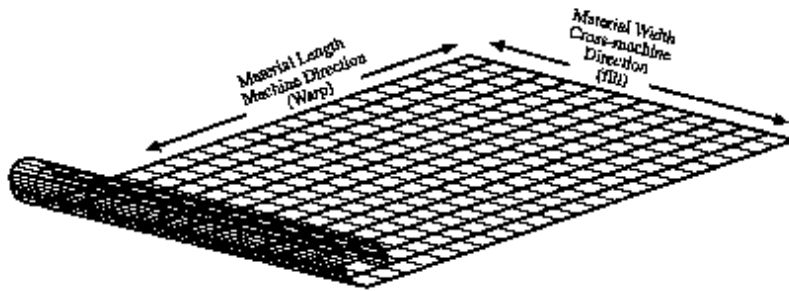


The landscape step is 30" deep x 48" wide with a 7" high riser. Has a rock face on the front and both sides of the step.

Block Weight: 875 lbs.
Volume: 6 cu. ft.

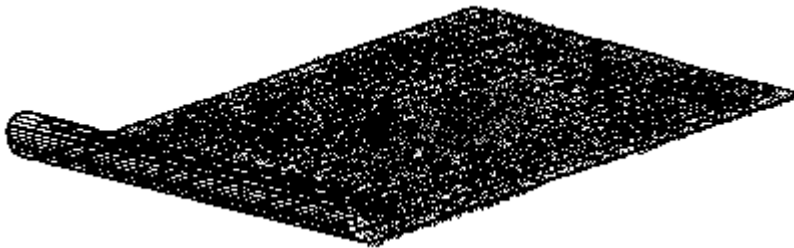
We Also Stock The Following.....

GEOGRID



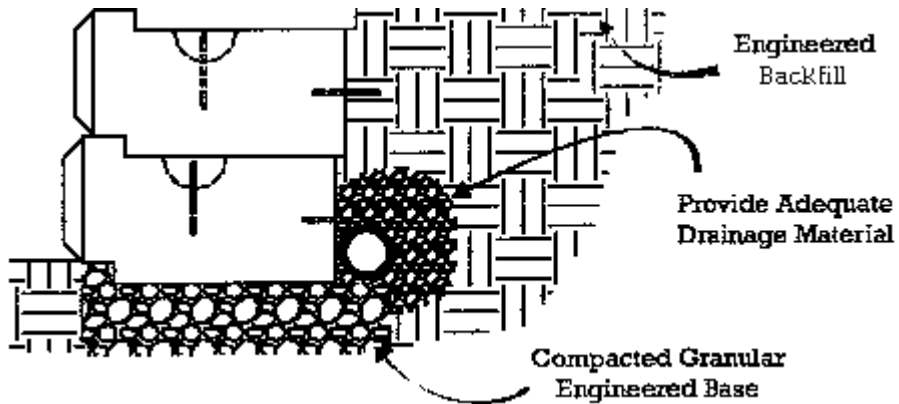
Mirifi 5XT & 8XT

FILTER FABRIC



Mirifi N-Series

DRAINAGE STONE, GRANULAR BASE, BACKFILL, AND 4" DRAINAGE PIPE



TERRA-CRETE

LANDSCAPE BLOCK



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