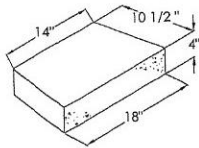


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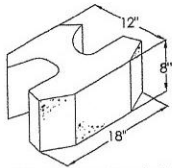
V-24-0003

FEB 6 2024

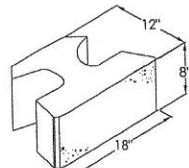
PLANNING & ZONING



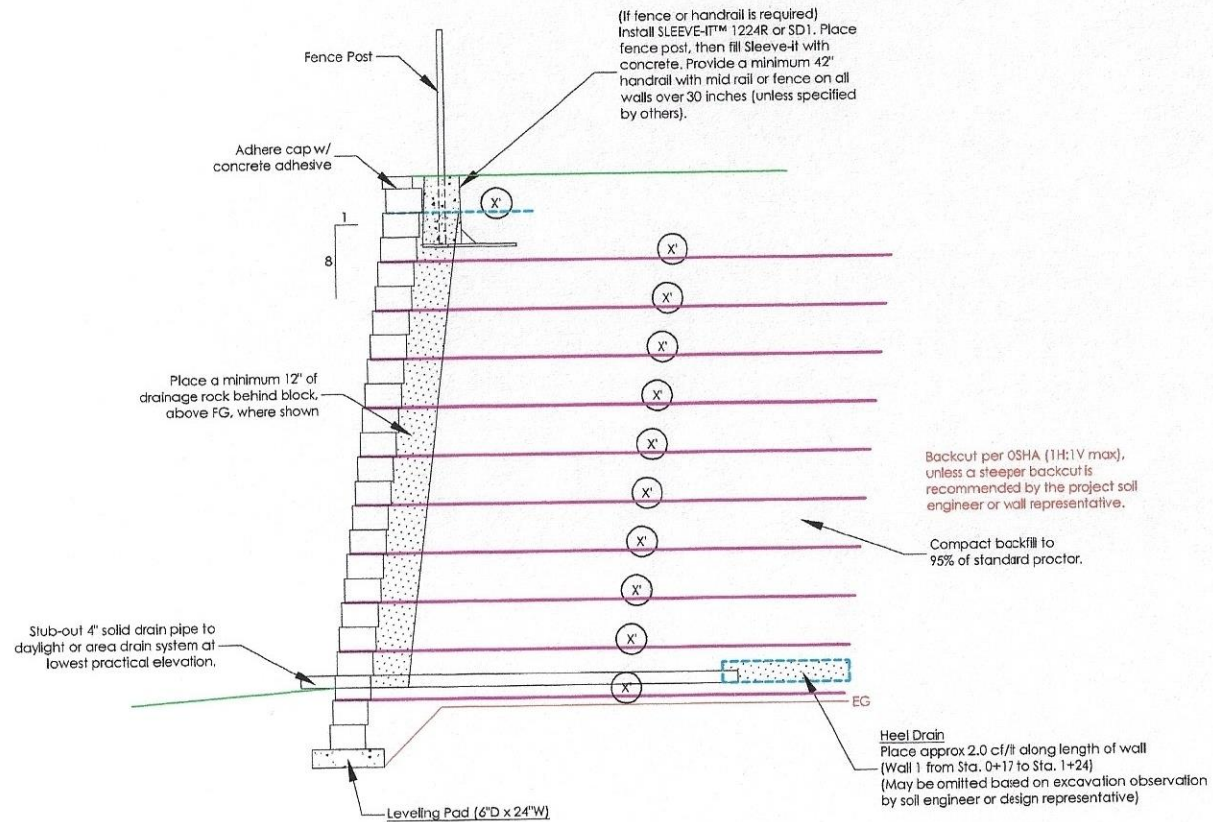
Universal Cap - Front



Classic 8 unit (Beveled)

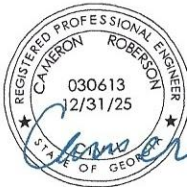


Classic 8 unit (Straight)



Typical Cross Section Detail

Contact David Geiger at (678) 300-4810 prior to wall construction in order to organize site observations.
24-Hour Contact: Bill Morgan at (404) 925-6524 or morgan996@hotmail.com



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Print Name: Cameron Roberson

Date: 1/25/2024 license # 030613

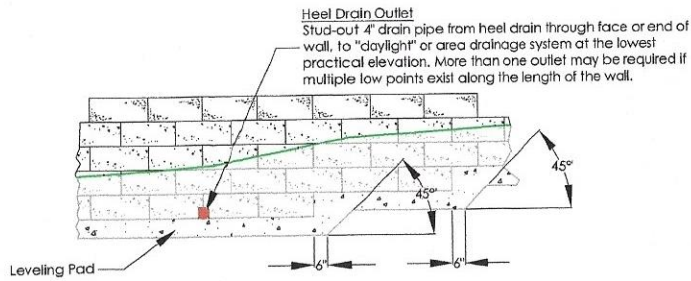
No.	Date	Revision



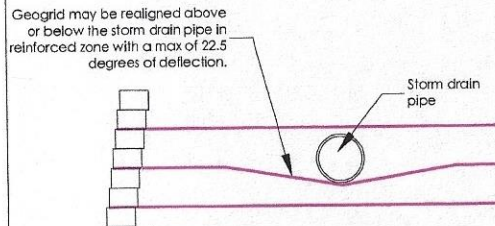
Legend	
	Geogrid, See Wall Profiles & Specs
	Finish Grade
	Mikrolit 140N or equiv.

Project Name & Location:	Morgan Residence 720 Paul's Walk Johns Creek, GA 30097
Client:	Bill Morgan
Drawn By:	KJB
Checked By:	CER
Sheet:	3 of 7
Date:	1/25/2024
Project Number:	23-0462

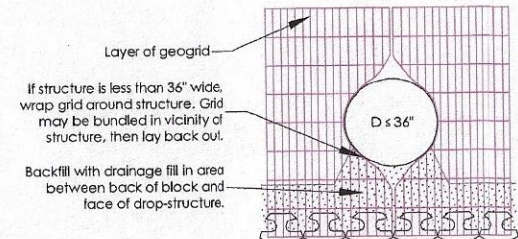
Typical Cross Section



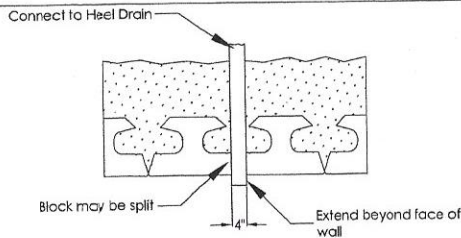
Drain Outlet & Leveling Pad Step Detail - Profile View



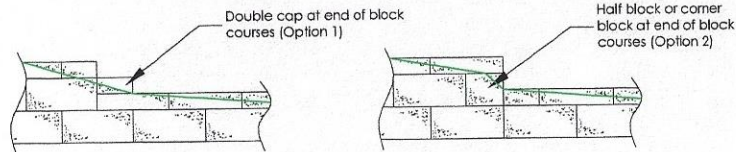
Horizontal Structure within Reinforced Zone Detail - Section View



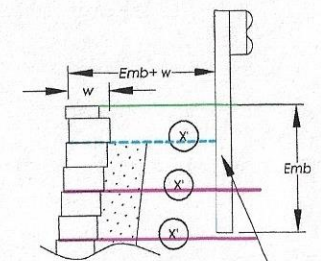
Vertical Structures within Reinforced Zone Detail - Plan View



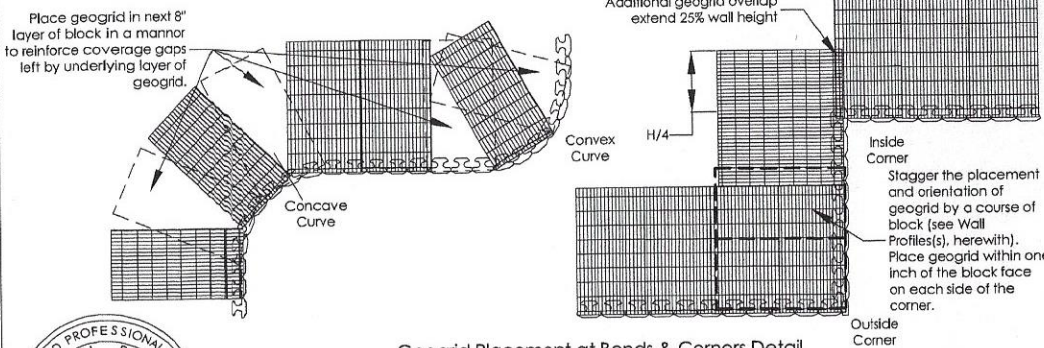
Drain Outlet Detail - Plan View



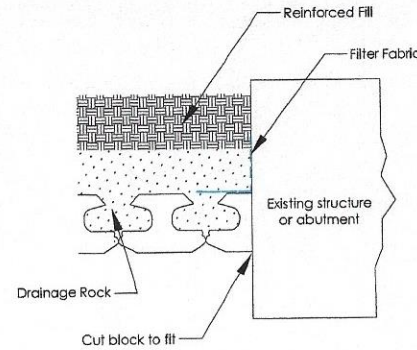
Capping Detail Options - Profile View



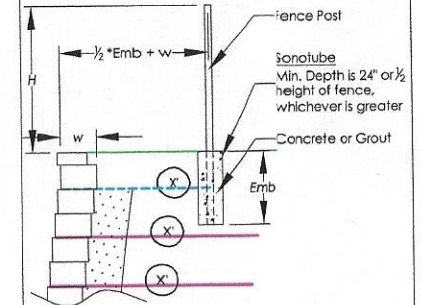
Guardrail Detail



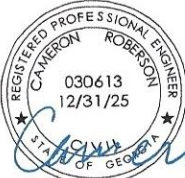
Geogrid Placement at Bends & Corners Detail



Abutment Detail



Alternate Fence Detail



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Print Name: Cameron Robertson
Date: 1/25/2024 License # 030613

No.	Date	Revision



Legend	
	Leveling Pad
	Drainage Rock
	Grid/Fabric Length (Measured from face of wall)
	Geogrid, See Wall Profiles & Specs
	Finish Grade
	Mitrail 140N or equiv.

Project Name & Location:
Morgan Residence
720 Paul's Walk
Johns Creek, GA 30097

Drawn By: KJB
Checked By: CER
Date: 1/25/2024
Project Number: 23-0462

Sheet Name:
Typical Details

Sheet: 4 of 7

PART 1: DESIGN PARAMETERS

1.01 Design Codes, Manuals, and Testing Standards

- A. National Concrete Masonry Association (NCMA)
- B. International Building Code, 2018 Edition with 2020 & 2022 GA State Amendments
- C. American Society for Testing and Materials

1.02 Minimum Factors of Safety (F.S.)

- A. F.S. Sliding: 1.5
- B. F.S. Overturning: 2.0
- C. F.S. Bearing Capacity: 5.0
- D. F.S. Global Stability (Internal Compound Stability): 1.5
- E. F.S. Connection Capacity: 1.5
- F. F.S. Geogrid Tensile Overstress: 1.5
- G. F.S. Geogrid Pullout: 1.5

1.03 Soil Parameters

- A. Foundation Soils: $\phi = 30^\circ$; $c = 100$ psf; $\gamma = 120$ pcf
 - B. Retained Soils: $\phi = 30^\circ$; $c = 100^*$ psf; $\gamma = 120$ pcf
 - C. Reinforced Soils: $\phi = 30^\circ$; $c = 100^*$ psf; $\gamma = 120$ pcf
- (* indicates value discounted in static analysis)

1.04 Design Surcharge Loading

- A. Dead Load: NA
- B. Live Load: 75 psf

1.05 Maximum Applied Bearing Pressure

- A. Maximum Applied Bearing Pressure: 2,170 psf at Wall 1 Sta 0+80

PART 2: COMPONENTS

2.01 Manufactured Products

- A. Blocks shall be Rockwood Classic 8 concrete segmental retaining wall system. The Owner shall specify the color and face finish.
- B. Geogrid shall be Stratagrid SGI 40 or equivalent. Geogrid length, X, shall be as shown on Wall Profile(s).
- C. Filter Fabric shall be Mirafi 140N or equivalent.
- D. Unless Specified herein, refer to manufacturers installation guide and/or the most recent version of the NCMA's Segmental Retaining Walls Best Practices Guide. Contact MSE should additional details be needed.

2.02 Foundation Soils

- A. Foundation soils must be found competent at design excavation grade, EG, by project soils engineer or contractor.

2.03 Base Leveling Pad Material

- A. Base leveling pad material shall consist of compacted aggregate base or non-reinforced concrete. Aggregate base material shall meet the following gradation in accordance with ASTM D-422:

Sieve Size	Percent Passing
1 inch	100
no. 4	35 - 70
no. 200	5 - 15

2.04 Drainage Fill Material

- A. Drainage fill material shall consist of crushed rock meeting the following gradation in accordance with ASTM D-422:

Sieve Size	Percent Passing
3 inch	100
1/2 inch	0 - 25
no. 200	0 - 5

2.05 Backfill Material

- A. Backfill shall consist of soil that is free of debris and deleterious material. Backfill shall meet the following gradation in accordance with ASTM D-422:

Sieve Size	Percent Passing
3 inch	100
no. 40	25 - 80
no. 200	0 - 55

- B. Optimum moisture content (w_{opt}) shall be less than or equal to (5) the Plastic Limit (PL) minus seven (7) per ASTM D-698 and ASTM D-4318.
- C. The peak effective shear strength of the backfill, as determined in accordance with ASTM D-4767, shall exceed a shear strength envelope defined by the friction angle, as listed in Section 1.03 C, through a normal stress of 2500 psf.
- D. The Contractor shall obtain independent laboratory test results to verify that the backfill meets the requirements of 2.05 A, through C.

2.06 Drainage Pipe

- A. If required, drainage pipe shall be PVC pipe manufactured in accordance with ASTM D-3034 or corrugated HDPE pipe manufactured in accordance with ASTM D-1248. Drainage pipe shall be perforated, slotted, or non-perforated as shown in the construction drawings.

PART 3: CONSTRUCTION

3.01 Excavation

- A. The Contractor shall excavate to the lines and grades shown on the construction drawings. The Contractor and/or Owner's representative shall inspect the excavation and approve/disapprove its competency as a foundation soil prior to placement of the leveling pad or backfill.
- B. The foundation soil shall be compacted to a minimum of 95 % of the maximum density per ASTM D-698.
- C. If seepage or evidence of past seepage is observed in the excavation, the Contractor shall consult the Owner and Mortarless Systems Engineering (MSE) in order to add or modify a drainage system to mitigate future seepage.

3.02 Base Leveling Pad

- A. Leveling pad material shall be placed to the lines and grades shown on MSE's construction drawings, to a minimum thickness and width as shown on the Project Details, extending laterally a minimum of 6', both in front of and behind the block.
- B. Leveling pad materials shall be compacted to a minimum of 95 % of the maximum density per ASTM D-698.
- C. Leveling pad shall be prepared to ensure full contact to the base surface of the block.

3.03 Block Installation

- A. First course of units shall be placed on the leveling pad at the appropriate line and grade as shown on the construction drawings. Alignment and level shall be checked in all directions. Ensure that all units are in full contact with the leveling pad 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 drainage fill within the cores and a minimum of 12" behind blocks. Place backfill behind drainage fill in lifts no greater than 6 to 12 inches and compact to a minimum of 95 % of the maximum density per ASTM D-698. After placement of backfill, compact drainage fill by probing.
- D. Do not stack more than two courses of block prior to placing and compacting drainage fill and backfill.

3.04 Geogrid Installation

- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- B. Geogrid shall be placed at the type, lengths, and elevations shown on these construction drawings or as directed by MSE for field changes.
- C. The geogrid shall be laid horizontally from within 2 inches of the face of the block back across compacted backfill. Place the next course of blocks over the geogrid. The geogrid shall be pulled taut and anchored prior to placing additional drainage fill or backfill.
- D. Geogrid shall be continuous throughout their embedment length. Geogrid shall be placed side-by-side or overlapped with 3" backfill between to provide 100% coverage of each designed geogrid level where possible. Geogrid shall not be spliced along its designed embedment length.

3.05 Backfill Placement

- A. Backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack and installation damage in the geogrid.
- B. Backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 to 12 inches (depending on soil type and soil processing) where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required compaction.
- C. Backfill shall be uniformly process and moisture conditioned. The moisture content shall be at optimum moisture content +/- 2%, and compacted to 95% of the maximum density, per ASTM 598.
- D. Only lightweight hand-operated equipment shall be allowed within 4 feet from the face of the block.
- E. Tracked construction equipment shall not be operated directly upon the geogrid. A minimum of 6 inches of backfill is required over the geogrid prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the backfill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid 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 backfill away from the blocks and drainage fill in order to direct runoff away from wall face. The Contractor shall ensure surface runoff from adjacent areas does not enter the wall construction site.

3.06 Drainage System Installation

- A. Drainage systems, both internal to the wall and surficial, shall be determined based upon site conditions by the Contractor in consultation with the Owner and the Design Engineer.
- B. Within the time of construction, the Contractor must ensure that all surficial drainage is directed away from the wall system by use of drainage swales, area drains, or other competent measures.
- C. Within the lifetime of the wall, the Owner must ensure that all surficial drainage is directed away from the wall system, unless otherwise directed by MSE.

3.07 Cap Installation

- A. Caps shall be adhered to underlying blocks and caps with a concrete adhesive.

3.08 As-Built Construction Tolerances

- A. Vertical Alignment: the top of the wall shall be within 0.17' (2") from design grade.
- B. Wall Batter: within 2.5 degrees of design batter, excluding a negative batter.
- C. Horizontal alignment: the bottom of the wall (B.W.), at design B.W. grade, shall be within 1 foot of design alignment.
- D. Maximum horizontal gap between erected blocks shall not exceed 1/2 inch at completion of construction.

3.09 Field Quality Control

- A. The Owner and Contractor shall engage inspection and testing services (quality control) during construction to ensure project specifications are met. The lack of quality control by the Owner does not relieve the Contractor from meeting project specifications.
- B. Quality control should include, but not be limited to: foundation soil inspection; verification of geotechnical design parameters; and verification that construction is in general compliance with the design drawings and project specifications. (Quality Assurance is usually best performed by the site geotechnical engineer.)
- C. Only qualified and experienced technicians and engineers shall perform testing and inspection services.
- D. It is the site owner's responsibility to maintain the completed SRW per the recommendations of the National Concrete Masonry Association's (NCMA) Design Manual for Segmental Retaining Walls, 3rd Edition, Section 13.5.6 through Section 13.6, and NCMA's Roles and Responsibilities in Segmental Retaining Wall Projects, TEK-15-3A.



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 Print Name: Cameron Robertson
 Date: 1/25/2024 License # 030613

No.	Date	Revision

Mortarless Systems Engineering, Inc.
 325 Alliance Place NE
 Rochester, MN 55904
 Phone: 507-535-3502
 Fax: 507-529-2879

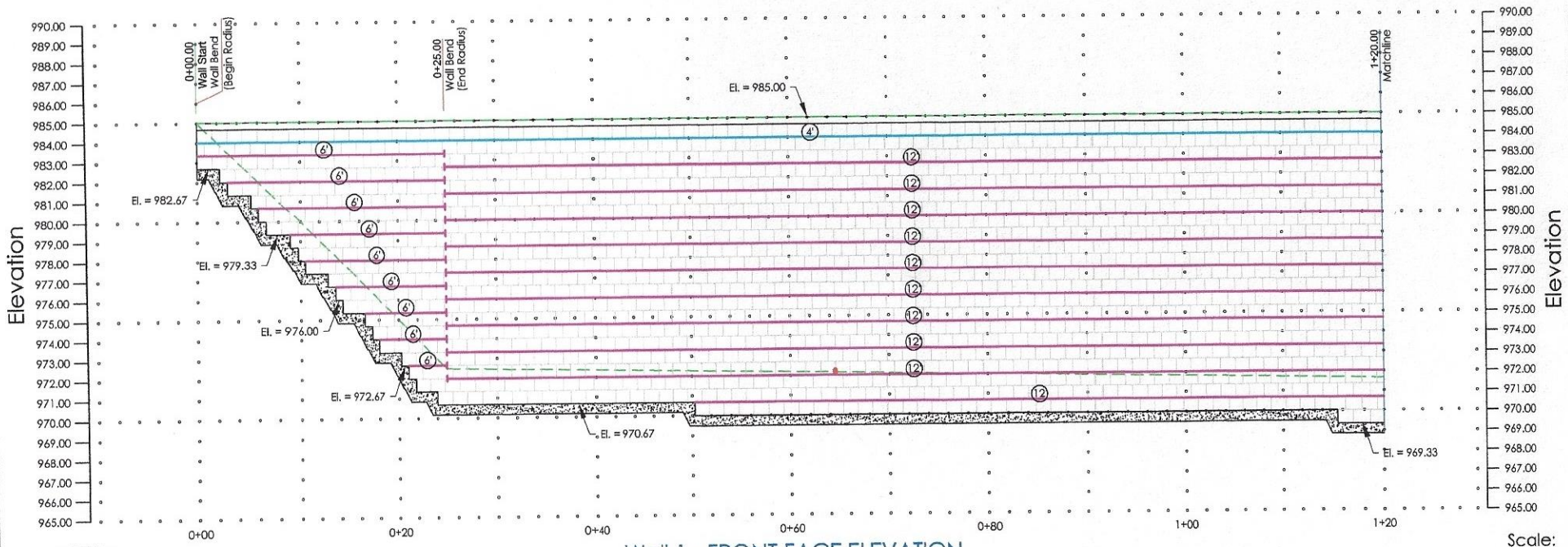
Legend

Project Name & Location:
 Morgan Residence
 720 Paul's Walk
 Johns Creek, GA 30097

Sheet Name:
Project Specifications

Client:	Bill Morgan
Drawn By:	KJB
Checked By:	CER
Sheet:	5 of 7
Date:	1/25/2024
Project Number:	23-0462

In order for the reinforced soil to transition from an at-rest to active earth pressure condition, the wall must rotate about the base. Lateral deflection at the top of the wall should be anticipated on the order of 0.005H to 0.02H. As such, gapping between units, especially at outside wall bends and curves, will likely occur.



Wall 1 - FRONT FACE ELEVATION

Scale:
H: 1" = 10'
V: 1" = 5'



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Print Name: Cameron Robertson
Signature: *Cameron Robertson*
Date: 1/23/2024 License # 030613

No.	Date	Revision

MSE
Mortars Systems Engineering, Inc.
335 Algonka Place NE
Rochester, MN 55906
Phone: 507-535-5502
Fax: 507-559-2877

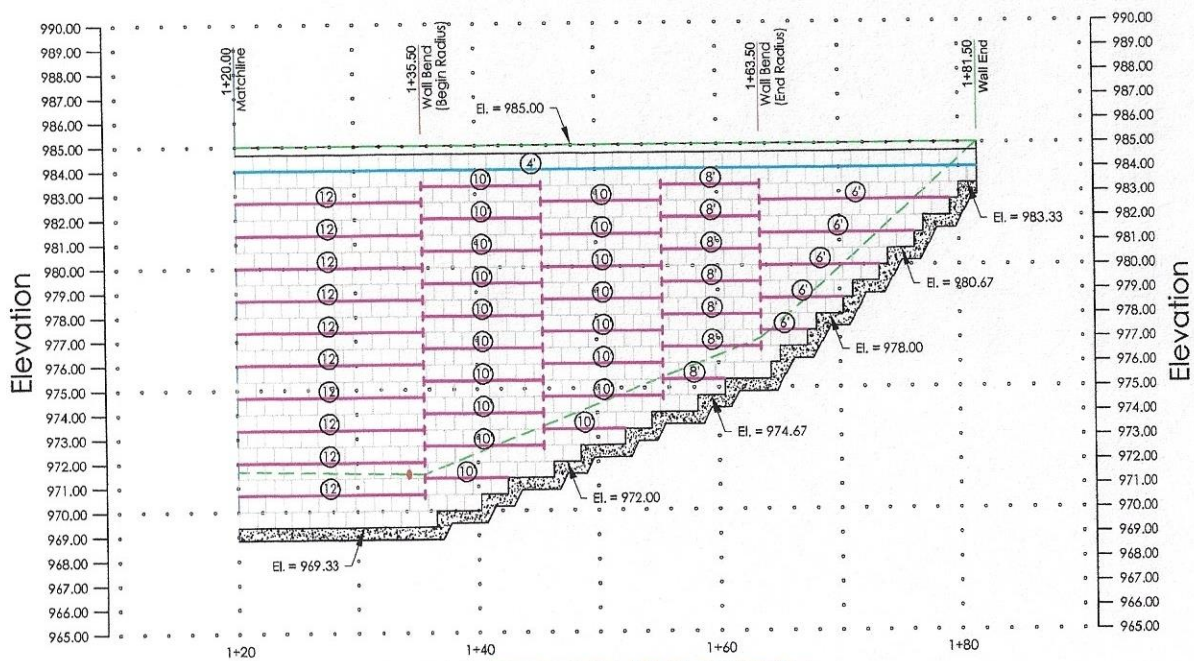
Legend

Levelling Pad	Stratagrid SGU40 or equiv.
Grid/Fabric Length (Measured from face of wall)	Finish Grade
Heel Drain Outlet	Mirafill 140N or equiv.

Project Name & Location:
Morgan Residence
720 Paul's Walk
Johns Creek, GA 30097
Sheet Name:
Wall Profile(s)

Client:
Bill Morgan
Drawn By: KJB Checked By: CER
Sheet: 6 of 7
Date: 1/25/2024
Project Number: 23-0462

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Print Name: Cameron Roberson
Signature: *Cameron Roberson*
Date: 1/25/2024 License # 030613

No.	Date	Revision



Legend	
	Leveling Pad
	Grid/Fabric Length (Measured from face of wall)
	Heel Drain Outlet
	Stratagrid S/GU60 or equiv.
	Finish Grade
	Mirafill 140N or equiv.

Project Name & Location:	Morgan Residence 720 Paul's Walk Johns Creek, GA 30097
Client:	Bill Morgan
Drawn By:	KJB
Checked By:	CER
Sheet:	7 of 7
Date:	1/25/2024
Project Number:	23-0462

Wall Profile(s)