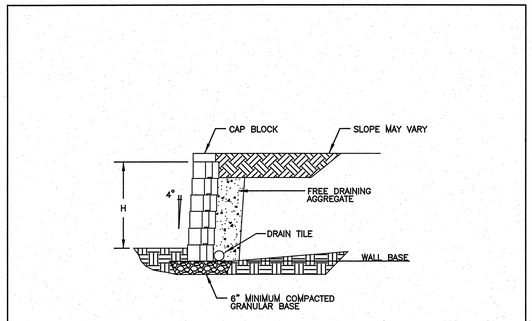
V-GRA.DWG



ANCHOR VERTICA UNREINFORCED WALL
(SCALE 3/8"=1'-0")

GENERAL NOTES

1. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over-excavation. Over excavation shall be filled with compacted infill material, or as directed by the site soil engineer.
2. Site soil engineer will observe the excavation and approve prior to placement of bearing pad material.
3. Over-excavated areas in front of wall face shall be filled with compacted infill material as directed by the site soil engineer.
4. Contractor shall verify location of existing structures and utilities prior to excavation.
5. Contractor shall ensure all surrounding structures are protected from effects of wall excavation.
6. Levelling pad shall be placed as shown on the construction drawings with a minimum thickness of 6 inches.
7. Soil levelling pad material shall be compacted to provide a level, hard surface on which to place the first course of units. Compaction will be with mechanical plate compactors to densities specified by the site soil engineer.
8. Levelling pad shall be prepared to insure intimate contact of retaining wall unit with pad.
9. First course of SRW units shall be placed on the bearing pad. The units shall be checked for level and alignment. The first course is the most important to insure accurate and acceptable results.
10. Insure that units are in full contact with base.
11. Units are placed side by side for full length of straight wall alignment. Alignment may be done by means of a string line or offset from base line to the rear of the SRW unit. Adjust unit spacing for curved sections according to manufacturer's recommendation.
12. Place unit fill.
13. Place and compact fill behind and within units to densities specified by the site soil engineer.
14. Clean all excess debris from top of units and install next course. Ensure each course is completely filled prior to proceeding to next course.
15. The geosynthetic reinforcement shall be installed at the wall height, horizontal location, and to the extent as shown on the project construction plans, or as directed by the engineer.
16. The geosynthetic reinforcement shall be laid horizontally on compacted infill and connected to the concrete SRW units.
17. Correct orientation (roll direction) of the geosynthetic reinforcement shall be verified by the Contractor.
18. The geosynthetic reinforcement shall be pulled taut and free of wrinkles prior to placement of soil fill. The geosynthetic may be secured in place with staples, pins, sandbags or fill as required by fill properties, fill placement procedures, or weather conditions, or as directed by the engineer.
19. The procedure for tensioning geosynthetic reinforcement shall be uniform throughout wall length and height.
20. Lay each successive course of SRW units ensuring that shear connectors are engaged.
21. Repeat procedures to the extent of the wall height.
22. Uppermost row of SRW units or caps shall be glued to underlying units with an adhesive, as recommended by the manufacturer.
23. Surface drainage during and after construction of the wall shall be provided to minimize water infiltration in the reinforced soil zone.

GENERAL NOTES

1. *THE GENERAL CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE BEGINNING WORK.*
2. *REPAIR AND REPLACE ALL EXISTING SIDEWALKS AND PAVING TO REMAIN THAT ARE THAT ARE DAMAGED DUE TO CONSTRUCTION.*
3. *ALL AREAS OF CONSTRUCTION SHALL BE FENCED AND SECURED THROUGH OUT THE PROJECT. THE CONTRACTOR SHALL VERIFY EXTENT OF FENCING REQUIRED DUE TO STAGING AREAS, JOBSITE TRAILER LOCATIONS, ETC.*
4. *CONTRACTOR SHALL PROVIDE THE STRUCTURAL DESIGN FOR THE RETAINING WALL SYSTEMS SELECTED BY THE OWNER AND FURNISH THE DESIGN TO THE ENGINEER FOR HIS REVIEW. DESIGN SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS. DESIGN SHALL CONSIDER LOCAL STABILITY, GLOBAL STABILITY, AND SURCHARGE DUE TO VEHICULAR LOADING.*
5. *CONTRACTOR SHALL PREPARE SHOP DRAWINGS INDICATING ELEVATIONS, LOCATIONS AND LENGTHS OF GRID, DRAINAGE SYSTEM, AND BACKFILL MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE WALL.*

Section 02276

ANCHOR VERTICA RETAINING WALL SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
1. Work includes furnishing and installing concrete segmental block retaining wall units to the lines and grades designated on the construction drawings and as specified herein.

B. Related Sections
1. Section – Geosynthetic Wall Reinforcement
2. Section – Backfill
3. Section – Drainage Fill
4. Section – Landscaping Turf
5. Section – Drain Tile

1.02 REFERENCES

A. American Society of Testing and Materials
1. ASTM C90-90; Hollow Load Bearing Masonry Units
2. ASTM C666-90 (Mod.); Test Method for Resistance of Concrete to Rapid Freezing and Thawing (modified to 50 cycles)
3. ASTM D698-91; Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort
4. ASTM D1557-91; Test Method for Laboratory Compaction Characteristicsof Soil Using Modified Effort
5. ASTM D448-86; Standard Classification for Sizes of Aggregate for Road and Bridge Construction
6. ASTM D4253, D4254; Standard Test Methods for Maximum and Minimum Index Density

1.03 SUBMITTALS

A. Submit the following in accordance with Section 01300:
1. Manufacturer's literature: Materials description and installation instructions.
2. Shop drawings: Retaining wall system design including wall heights, geosynthetic reinforcement and drainage layout provisions.
3. Samples
   a. Furnish one (1) unit in the color and face pattern specified if requested by the Architect. If approved, unit may be used in the finished work.
   b. 12 inches square or larger piece of geosynthetic reinforcement specified.
4. Manufacturer's certification and test reports stating moisture absorption and compressive strength in accordance with ASTM C90-90 requirements in Section 1.02.

1.04 DELIVERY, STORAGE AND HANDLING

A. The Contractor shall check the materials upon delivery to assure that proper material has been received.

B. Deliver and handle materials in such manner as to prevent damage. Store above ground on wood pallets or blocking. Remove damaged or otherwise unsuitable material, when so determined, from the site.
1. Faces of the concrete units shall be free of chips, cracks and stains.
2. The Contractor shall prevent excessive mud, wet cement, epoxy and like material, which may affix themselves, from coming in contact with the materials.

1.05 EXTRA MATERIALS

A. Furnish Owner with three (3) replacement units identical to those installed on the Project.

1.06 DEFINITIONS

A. Geosynthetic reinforcement is a material specifically fabricated for use as a soil reinforcement.

B. Concrete retaining wall units are as detailed on the drawings and are specified under Section 02276: Anchor Vertica Retaining Wall Units.

C. Free draining aggregate is a material used within, around and behind the concrete wall units.

D. Backfill is the soil which is used as fill behind the drainage aggregate and within the reinforced soil mass if applicable.

E. Foundation soil is the soil mass supporting the leveling and reinforced zone of the retaining wall system.

PART 2 PRODUCTS

2.01 MATERIALS

A. High strength, high density concrete units, freeze-thaw resistant with top locator providing a 4 degree set back from plane with each course, "Anchor Vertica Retaining Wall Units" as manufactured under the license of Anchor Wall Systems.
1. Concrete wall units shall meet requirements of ASTM C90-90 except compressive strength shall be a minimum of 3,000 psi and the maximum water absorption shall be limited to 7.0 percent.
2. The concrete wall units shall have adequate freeze thaw resistance in accordance with ASTM C666- 90, modified to 50 cycles.
3. Exterior dimensions may vary. Concrete wall units are required to have a minimum of 1.0 square foot of face area.
4. Color as selected by Architect from manufacturer's standard selections.
5. Face pattern: Geometry: Beveled or Straight; Texture: Smooth or Rock/Split Face.
6. The concrete units shall be positively interlocked with integral shear connections.
7. Anchor Vertica unit dimensions shall not vary more than +/- 1/16 inch from that in any molded dimension.

B. Geosynthetic reinforcement: Polyester woven fiber geogrid, polyethylene or premium polypropelene expanded sheet geogrid woven geotextile for use as soil reinforcement.

C. Base: Material shall consist of drainage aggregate, sands, gravel and/or concrete as shown on the construction drawings. A minimum of 6 inches of compacted base is required.

D. Drainage aggregate: Fill between units shall consist of free-draining coarse aggregate in accordance with ASTM 448-86; Standard Classification for Sizes of Aggregate for Road and Bridge Construction, designation 57, 67, 6, 7 or 8.

E. Backfill: Materials are on-site soils unless otherwise specified in the drawings.

F. Drain tile: Drain tile shall be used if required by the Project Engineer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which the retaining wall is to be erected and notify the Engineer or Architect in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 EXCAVATION

A. The Contractor shall excavate to the lines and grades shown on the construction drawings. Over-excavation shall not be paid for and replacement with compacted fill and/or wall system components will be required at the Contractor's expense. The Contractor shall be careful not to disturb base beyond the lines shown.

3.03 FOUNDATION PREPARATION

A. Foundation soil shall be excavated as required for footing or base dimension shown on the construction drawings, or as directed by the Engineer.

B. Foundation soil shall be examined by the Engineer to ensure that the actual foundation soil strength meets or exceeds the design that required on the construction drawings. Soil not meeting the required strength shall be removed and replaced with acceptable material.

C. Over-excavated areas shall be filled with compacted backfill material.

D. Foundation soil shall be proof-rolled prior to fill and geosynthetic reinforcement placement.

3.04 BASE COURSE PREPARATION

A. Base materials shall be placed as shown on the construction drawings with a minimum thickness of 6 inches.

B. Base materials shall be installed upon undisturbed soils.

C. Material shall be compacted so as to provide a level, hard surface on which to place the first course of units. Compaction will be performed to specifications as required by the Project Architect or Engineer.

D. Base materials shall be prepared to ensure complete contact of retaining wall unit with base. Gaps shall not be allowed.

E. Base materials shall be to the depths and widths shown. The contractor may opt for using reduced depth of sands and/or gravel and a 1" to 2" concrete toppings. Concrete shall be lean, unreinforced and a maximum of two inches thick. Where a reinforced footing is required, place below the frost line.

3.05 ERECTION

A. Erect units in accordance with manufacturer's recommendations and as specified herein.

B. First course of concrete wall units shall be placed on the prepared base material. Units shall be checked for level and alignment. The top of all units in base course shall be at the same elevation.

C. Ensure that concrete wall units are in full contact with base.

D. Concrete wall units shall be placed side by side for full length of wall alignment. Alignment may be done by using a string line or offset of wall line.

E. Fill all voids within and between concrete wall units with free-draining aggregate.

F. A minimum of 12 inches of free draining aggregate shall be placed behind the concrete wall units.

G. Remove all excess fill from top of concrete wall units and install next course. Ensure drainage aggregate and backfill are compacted before installation of next course.

H. Install each succeeding course so the side slots are in contact with the locator. Pull the units forward until the side slot of the unit touches the back of the locator of the previous course. Backfill as each course is completed.

I. Install geosynthetic reinforcement in accordance with retaining wall manufacturer's recommendations.

3.06 CAP UNIT INSTALLATION

A. Apply construction adhesive to the top surface of the unit below and place the cap unit in desired position.

B. Cap units may need to be cut to obtain the proper fit.

C. Backfill and compact to finish grade.

3.07 ADJUSTING AND CLEANING

A. Damaged units should be replaced with new units during construction.

B. Contractor shall remove debris caused by this construction and leave adjacent paved areas broom clean.

END OF SECTION

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RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed 8.11.09 Date

Glenn Engineering Corporation

RETAINING WALL DETAILS
SCALE: AS SHOWN

SHWGROUP
ARCHITECTS | ENGINEERS | PLANNERS

CIVIL:
GLENN ENGINEERING, INC.

STRUCTURAL:
SHW GROUP LLP

MEP:
ESTES, McCLURE & ASSOCIATES

LANDSCAPING:
RAMSEY LANDSCAPE ARCHITECTS

FOOD SERVICE:
JMK DESIGNS

FINAL PLANS FOR PERMITTING AND CONSTRUCTION

STATE OF TEXAS
MIKE GLENN
35059
REGISTERED
PROFESSIONAL
ENGINEER
8-11-09

Rockwall ISD

ROCKWALL HIGH SCHOOL
ROCKWALL, TEXAS

CHECKED:
File:

ISSUE: 5/27/2008

Revisions:
1 ADDENDA #1 - MARCH 17, 2008
2 ADDENDA #2 - MARCH 25, 2008
3 ADDENDA #3 - APRIL 1, 2008
4 CITY REVIEW COMMENTS - APRIL 22, 2008
5 CITY REVIEW COMMENTS - SEPT. 09, 2008
6 RECORD SET - MARCH 04, 2009
7 REVISED RECORD SET - JUNE 04, 2009

Sheet Title:
RETAINING WALL DETAILS

CR 1.02

SHW Project: 4107.049.00

Plotted: Aug 11, 2009, 1:43 PM by user: rick - Saved: 8/11/2009 by user: rick
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