DESIGN, SPECIFICATIONS, AND **GENERAL NOTES**

Geotechnical Information:

This retaining wall design is based on geotechnical information taken from: USDA Soll Survey - Rockwall County. The decision whether to obtain a site specific geotechnical report and the choice of retaining wall design is made by the builder and its client, based upon economic considerations balanced against acceptable risk, soil type, retaining wall geometry, structural loadings, etc. It should be noted that the risk of soil settlement and/or heaving is associated with all types of retaining walls and there is no such thing as a zero risk retaining wall design. A global stability analysis of the overall slope has not been performed during this design. It is recommended that the global stability of the slope be confirmed by a geotechnical engineer.

Design is in compliance with IBC section 1610

Material Strengths and Properties:

Backfill Equivalent Fluid Pressure: 45 lbs/ft3 Bearing Pressure: Qarow = 1500 lbs/ft2 Mortar. Type S (f 'c = 1800 psi)

Existing Utilities:

Locating all existing utilities was outside the scope of our firm's services for this project. The contractor should call 1-800-dig-tess before construction commences to verify the location of existing utilities. Contact this Engineer if the location(s) of any existing utilities will coincide and / or conflict with any excavations and / or specifications by this engineer.

Site Conditions:

This retaining walt plan is based on site conditions as reported by the client and from any field inspections that have been made by this engineering firm. If any structures or excavations occur within 1-1/2 times the height of the retaining wall, notify this Engineer for recommendations

Temporary Slopes:

Temporary slope by contractor or developer, as required for safety. Temporary slopes in fill or native soil shall be constructed per civil Engineer's specifications.

Drain:

On retaining walls 3 ft. high or less, the 4" diameter N 12 ADS perforated pipe may be omitted, but the porous drain area must still be wrapped with Mirafi 140 N geosynthetic (or equal) and the 2" (or 4") thru face drain pipe provided.

All fill behind geosynthetic filter drain to be native soil free of organics and deleterious materials, compacted in lifts not exceeding 12 inches to minimum 90% standard proctor at (+/-) 3% of optimum moisture content. Compaction tests by others. No rock greater than 6" maximum dimension, disperse smaller rock to avoid nesting

Control Joints:

Construction / temperature joints are recommended at 25' o.c.

Maintenance and Management Letter:

Accompanying Gravity Stone Retaining Wall Maintenance and Management letter is part of these plans and specifications. Contact our office if a copy of this letter is required.

Inspection Requirements and Recommendations:

These inspections will be performed by or under the direction of the design Engineer

- 1. Pre-construction site inspection to determine if any exceptional conditions exist that could affect the retaining wall design.
- 2. Inspection to review the sub-base, dimensions (base width and embedment depth), goesynthetic placement, ADS drain pipe and through face drainage.
- 3. Inspection to review the geosynthetic filter drain (including porous drain area).
- 4. Inspection to review final grades to establish proper
- 5. All walls with heights equal to or greater than 4 feet must have an inspection performed under the supervision of this engineer and must meet current code and city

GRAVITY STONE RETAINING WALL

NO SCALE

REAR OF WALL MAY SLOPE TO CAP (12" MIN,) OR BE VERTICAL

DRAINAGE SWALE BEHIND WALL, SLOPE FINISH GRADE TO SWALE AT TOP OF WALL. SLOPE SWALE TO DRAIN WATER FROM BEHIND WALL, NOTIFY THIS ENGINEER IF GRADE SLOPE IS GREATER THAN 4:1.

SEED ALL SLOPES 4:1 OR LESS. INSTALL CURLEX (OR EQUAL) SLOPE PROTECTION ON SLOPES GREATER THAN 4:1.

12" THICK LAYER OF ON-SITE CLAY OR SIMILAR TO COVER FILTER DRAIN. THIS CLAY LAYER IS TO EXTEND A MINIMUM OF 8'-O" BEHIND THE RETAINING WALL.

WRAP EXPOSED RUBBLE STONES WITH MIRAFI 140 N GEOSYNTHETIC (OR EQUAL) - LAP AT TOP AND BOTTOM AS SHOWN, IF ALTERNATE GEOSYNTHETIC IS TO BE USED, A COPY OF THE TECHNICAL DATA SHEET FOR THE ALTERNATE GEOSYNTHETIC MUST BE PROVIDED TO OUR FIRM FOR REVIEW.

CONTINUOUS 4" DIAMETER N 12 ADS PERFORATED PIPE - TO BE INSTALLED AT, OR SLIGHTLY ABOVE, FINAL GRADE. IF PARALLEL OR THRU FACE DRAINAGE CANNOT BE ACHIEVED, NOTIFY THIS ENGINEER.

6 MIL POLY RUNNING

ENGINEER INSPECTION OF WALL MAY BE

REQUIRED BY LOCAL MUNICIPALITY, NOTIFY

AND SCHEDULE INSPECTION WITH ENGINEER

PRIOR TO COMMENCING CONSTRUCTION.

IF USED, OPTIONAL 1 X 4 REDWOOD

AFTER MORTAR SETS

JOINT MAY REMAIN OR BE REMOVED

STONE

RUBBLE STONE AREA BELOW PVC DRAIN

EXPOSED FACE

(THRU RUBBLE STONE AND

OR ATTACHED TO REAR OF

(AT FACE STONE)AND

CONTINUE TO REAR OF

CONTINUOUS

FACE STONE)

REDWOOD

WALL

CONTROL / EXPANSION JOINT

NO SCALE

FORM SMOOTH BASE FOR PVC DRAIN PIPE

3

6" PIPE TO BE SURFACED WITH MORTAR TO

VARIES

(12" MIN.)

6" THICK (TYPICAL) FACE STONE VENEER

RUBBLE STONE WITH TYPE "S" MORTAR

POROUS DRAIN AREA (RUBBLE STONE WITHOUT MORTAR - 6" MINIMUM WIDTH AT BASE, 6" MINIMUM WIDTH AT TOP)

4" DIAMETER PVC DRAIN PIPE AT 72" O.C. MAX. OR 2" DIAMETER PVC DRAIN PIPE AT 48" O.C. MAX. SLOPE TO DRAIN. EXTEND DRAIN PIPE THROUGH GEOSYNTHETIC INTO GRAVEL DRAIN.

> IF WATER IS DRAINED THRU OR OVER WALL CONSTRUCT A CONCRETE SPLASH BLOCK 3' WIDE X 4' LONG X 6" THICK (SPLASH BLOCK MAY BE CONSTRUCTED OF GRAVEL, CONCRETE OR STONE AND MORTAR),

SLOPE GRADE AT BASE FOR DRAINAGE AWAY FROM WALL - MAX, SLOPE 4:1 - NOTIFY THIS ENGINEER IF EROSION CONTROL IS REQUIRED OR IF SLOPE IS GREATER THAN 4:1

DRAIN SLOPE TO BE CONCAVE

12 MIL PVC POND LINER BELOW SPLASH BLOCK

SEE GRADING/DRAINAGE PLANS BY DOUPHRATE \$ ASSOCIATES (PROJECT# 9919-4RTWL) FOR WALL HEIGHTS & LOCATIONS.

WALL DIMENSIONS TABLE AT LOTS

HEIGHT ABOVE GRADE	Α	1'-0"	2'-0"	3'-0"	4'-0"	5'-O"	6'-0"	7'-0"	8'-O"	9'-0"	10'-0"	1 '-O"	1 21-O2	I 3'-O"	I 4'-O"	I 5'-O"
WIDTH OF BASE	8	1'-6"	1'-6"	2'-0"	2'-0"	2'-6"	2'-9"	3'-0"	3'-6"	4'-0"	4'-6"	5¹-Oª	5'-6"	6'-O"	6'-6"	6'-9"
DEPTH BELOW GRADE*	С	1'-0"	1'-0"	11-0"	1'-0"	1'-O"	1'-O"	1'-0"	1'-0"	1'-O"	}'-O"	1'-6"	1'-6"	1'-6"	2'-0"	2'-0"
DEPTH SLOPED TOE*	B/3	6"	6"	O'-8"	0'-8"	1'-O"	1'-0"	1'-4"	1'-6"	11-8"	1'-8"	2'-3"	2'-4"	2'-4"	2'-6"	2'-6"
TOTAL HEIGHT OF WALL**	Н	2'-6"	3'-6"	4¹-8ª	5'-8"	7'-O*	<i>හ</i> _0"	9¹-4ª	10'-6"	11'-8"	12'-8"	14'-9"	15'-10"	16'-10"	18'-6"	19'-6"

 MINIMUM DEPTH, UNLESS ROCK IS ENCOUNTERED. UPON ENCOUNTERING ROCK - NOTIFY THIS ENGINEER

** TOTAL HEIGHT OF WALL INCLUDING HEIGHT ABOVE GRADE AND DEPTH BELOW GRADE.

WALL DIMENSIONS TABLE AT DETENTION

			RAC	IM				
HEIGHT ABOVE GRADE	A	8'-O"	9-0"	10'-0"	11-0	l 2'-0"	13'-0"	14'-0"
WIDTH OF BASE	В	3'-6"	4¹-0"	4'-6"	5'-Q"	5'-6*	6'-O"	6'-6"
DEPTH BELOW GRADE*	С	21-0"	2'-0"	2'-0"	21-6"	2'-6"	2'-6"	3¹-0*
DEPTH SLOPED TOE*	8/3	1'-6"	1'-8"	11-8	2'-3"	2'-4"	2'-4"	2'-6"
TOTAL HEIGHT OF WALL**	н	1'-6"	12'-8"	13-8"	15'-9"	16-10	17'-10"	19'-6"

* MINIMUM DEPTH, UNLESS ROCK IS ENCOUNTERED. UPON ENCOUNTERING ROCK - NOTIFY THIS ENGINEER

** TOTAL HEIGHT OF WALL INCLUDING HEIGHT ABOVE GRADE AND DEPTH BELOW GRADE.

ZENGINEERIN

WHITES TEXAS STONE ENTERPRISES LAKEVIEW SUMMIT, PHASE 4 ROCKWALL, TEXAS

2015-0244

SHEET C1

RETAINING WALL