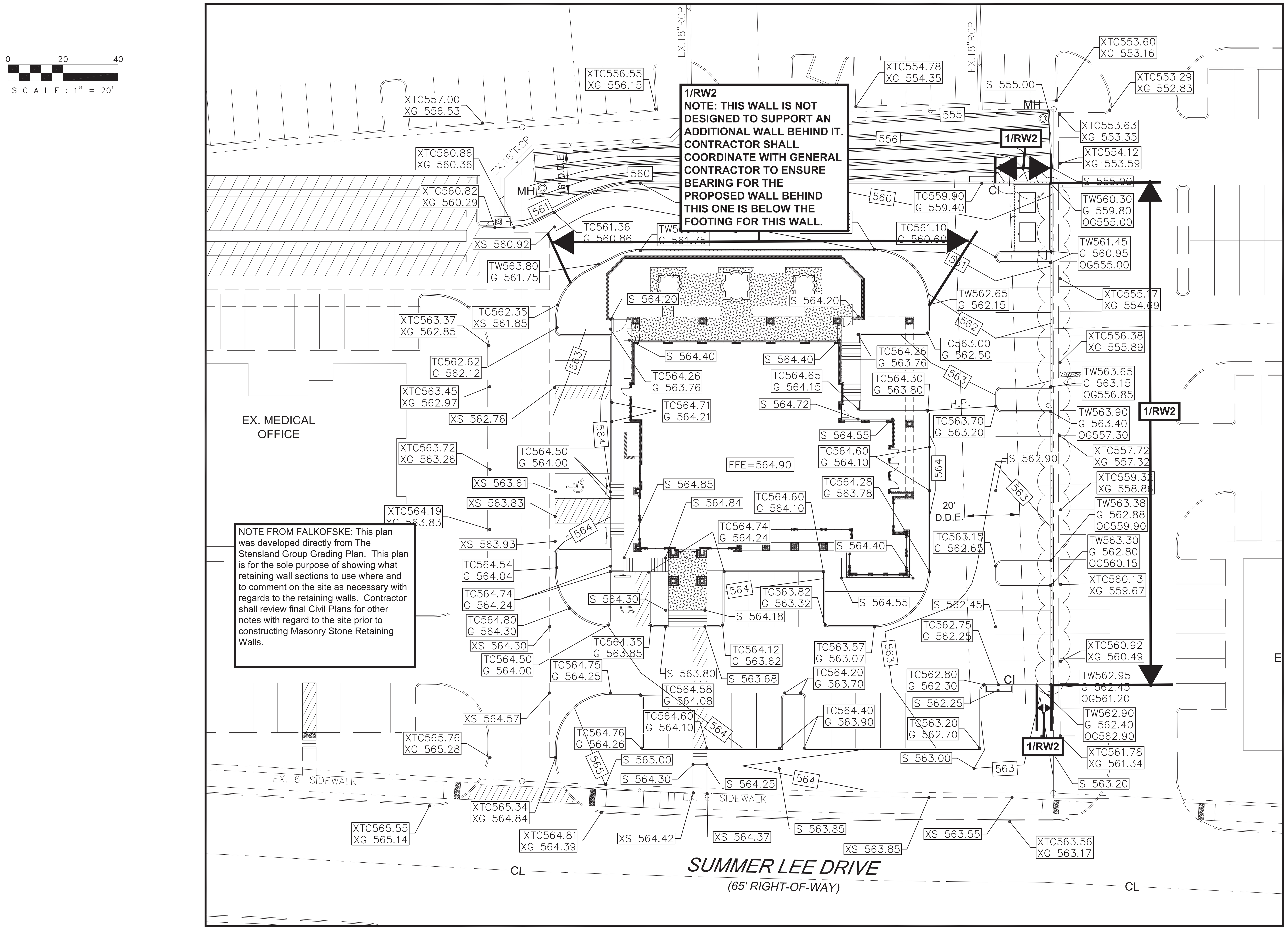

MASONRY RETAINING WALLS – SITE PLAN
ROCKWALL OFFICE BUILDING
SUMMER LEE DRIVE AND OAK DRIVE
ROCKWALL, TEXAS

TEXAS – ERW SITE SOLUTION
FORT WORTH, TEXAS

NO.	DATE	REVISION	BY

	DATE	BY
DES.	03-20-18	AMB
DRN.	03-20-18	EG
CHK.	03-20-18	AMB

Falkofske Engineering, Inc.
Structural Engineering Consultants
TX Reg. Engineering Firm F-4038
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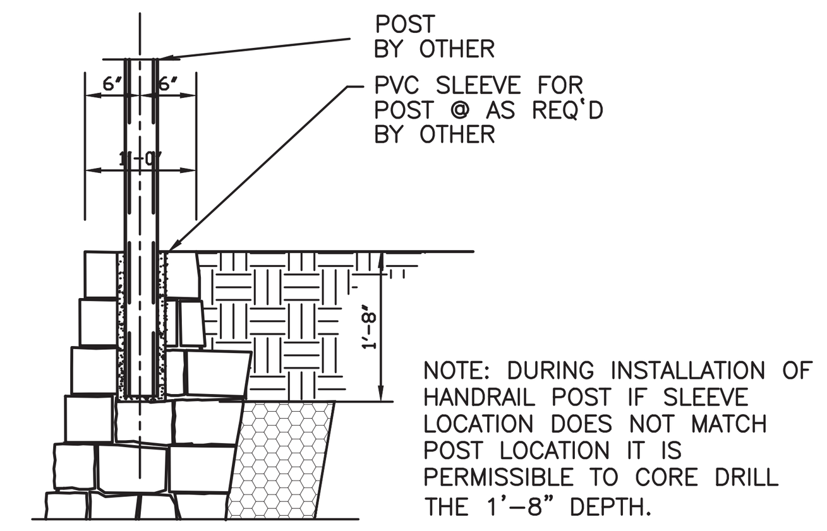
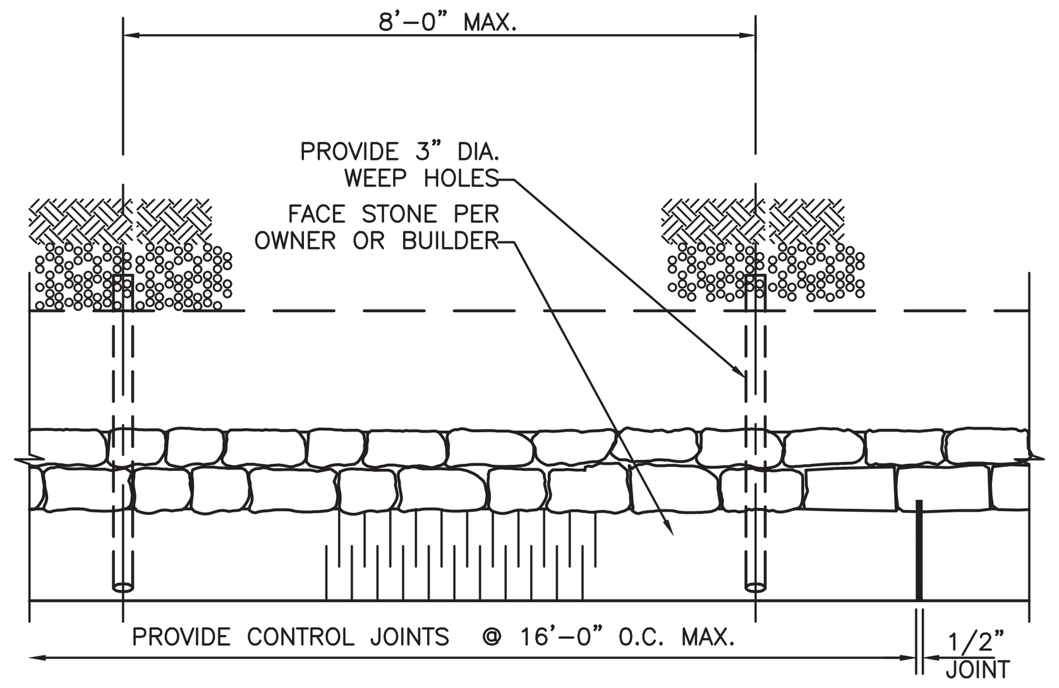
STATE OF TEXAS
AARON M. PERKES
107154
LICENSED
PROFESSIONAL ENGINEER
3-20-18

JOB NO. 168.18

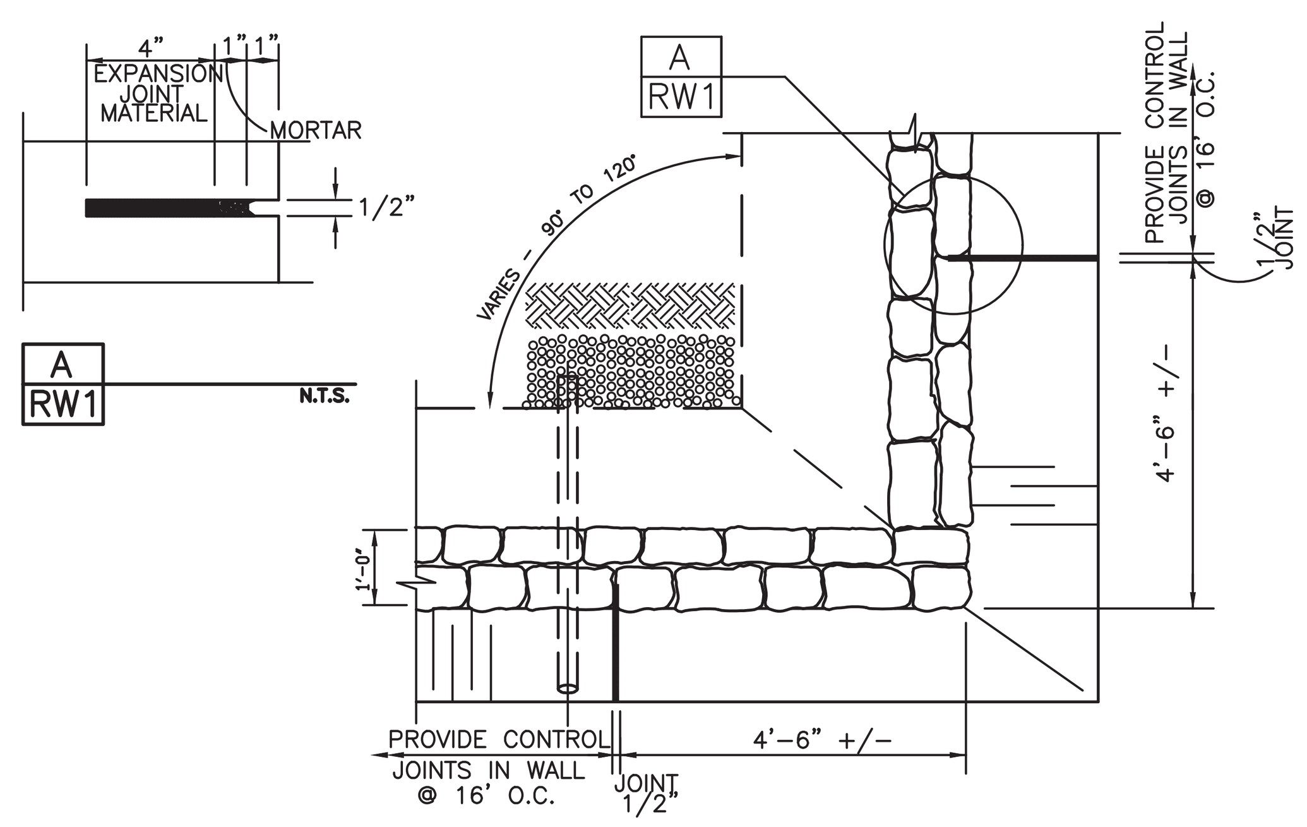
SP1



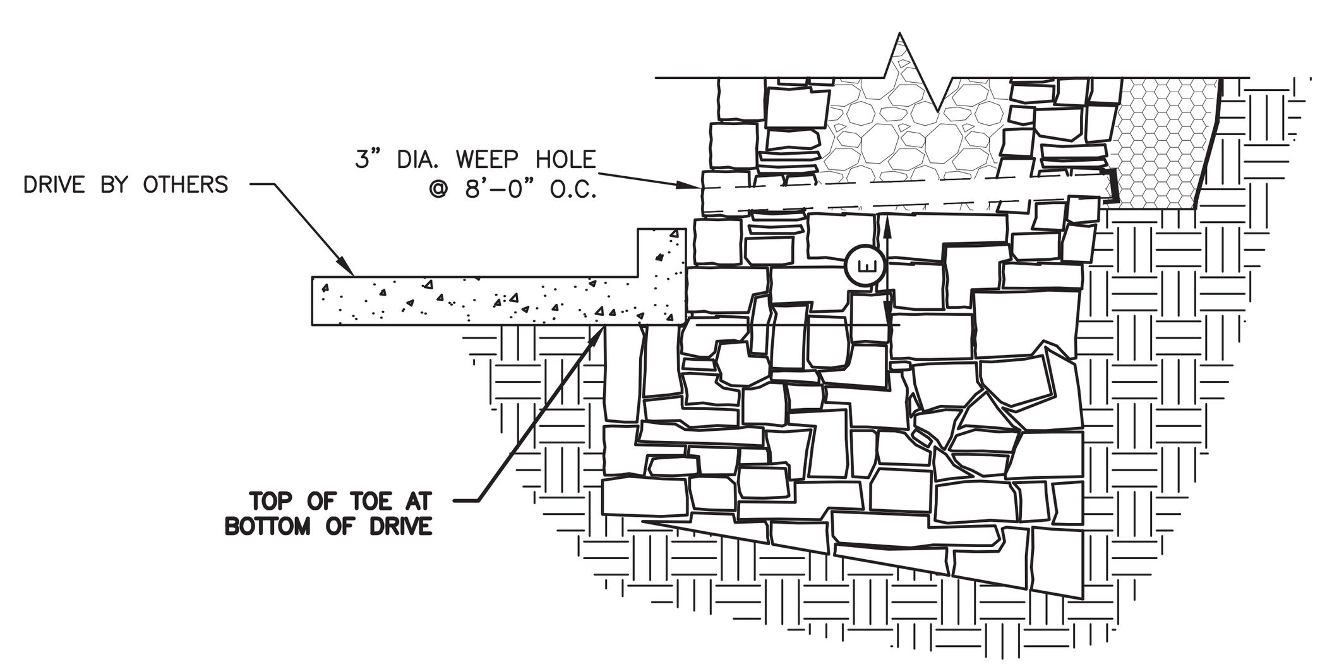
1 RW1 WALL SECTION W/HANDRAIL POST CONTRACTOR OPTION N.T.S.



2 RW1 TYPICAL PLAN VIEW AT BASE N.T.S.



3 RW1 TYPICAL PLAN VIEW AT CORNERS N.T.S.



4 RW1 CROSS SECTION OF WALL WITH DRIVE ON TOP OF TOE N.T.S.

1. Design Building Code

International Building Code, 2015 Edition

2. Geotechnical Report

Firm: ECS Southwest, LLP
Report No. 19:7170 Dated: August 7, 2017
Allowable Bearing Capacity 1500 psf

Note:
All of the above noted bearing capacities are anticipated throughout the site. Each wall section has a design for multiple bearing capacity options. It will be field verified which bearing condition to use based on the conditions of the soil at the base of the wall during excavation. If the bearing capacity changes along the length of the retaining wall it is permitted to change bearing capacity designs as needed.

3. Geotechnical Criteria

Bearing on Hard Natural Undisturbed Clayey Soils

Allowable Bearing = 1500 psf, min.
Friction Angle Between Base of Wall and Soil - 19 deg

Backfill Soil Parameters:
Backfill Soil - Natural Clays or Fill Soils
Backfill Angle of Internal Friction PHI = 26 deg

Base Soil Parameters:
Soil at Toe - Natural, Undisturbed Soils
Angle of Internal Friction PHI = 26 deg

The use of very wet or very dry backfill soil should be avoided. The use of heavy equipment within 3'-0" of the wall could damage the wall and should be avoided.

Locate base of walls on undisturbed or properly compacted soil.

4. Materials:

Rock for Wall Construction:

Average density of masonry stone wall varies from 135 pcf to 145 pcf. Size of stone within wall varies from 4" to 18". Crushed concrete is acceptable to be used in the wall construction in place of natural stone. Face stone to be coordinated between contractor and owner/developer.

Drainage Zone Materials:

Drainage zone materials may be composed of clean gravel or stone ranging from 1" to 5". Crushed concrete is acceptable provided it is clean and generally free of dust or other deleterious materials. Drainage zone shall be wrapped with filter fabric. Filter fabric shall be Mirafi 140N or approved equal.

Portland Cement Mortar for Retaining Wall Construction.

The portland cement mortar used for construction of the masonry stone retaining walls shall be provided with the following proportions per cubic yard of concrete. The portland cement mortar supplier shall provide "batch tickets" clearly indicating that the appropriate amount of materials are provided in each concrete mixer truck load. The batch tickets shall clearly indicate the amount batched, the date, the project name and shall be provided to Falkofske Engineering, Inc. for review, documentation, and file.

Contents	Amount per cubic yard	
Type 1 Portland cement:	376	lbs
Type F Fly Ash	94	lbs
Fine Aggregate (sand):	3250	lbs
Potable Water	235	lbs
Admixture Eucon 100	48	oz average

Concrete retarders such as "Eucon 100 Retarder" may be used at the discretion of the masonry wall contractor. A greater amount of retarder (about 64 ounces) is typically used during hot periods and a less amount of retarder (about 32 ounces) is typically used during cool weather.

Please note that the above proportions will provide a portland cement mortar with a compressive strength of about f'c = 2500 psi. Falkofske Engineering, Inc. does not require any concrete testing provided the above proportions are verified by way of the "batch tickets".

5. Construction Reviews

Falkofske Engineering, Inc. shall be called for construction review of masonry wall.

6. Retaining Wall Design Constraints

Retaining walls should not have solid fence placed on top of wall other than that shown on these plans.
Retaining walls shall not have additional surcharge placed above wall other than that shown on these plans.
Retaining walls shall not have slope at base or top of wall that exceed that which is shown on these plans.
The retaining walls noted above require special design.

Minor variations in the construction of the retaining walls from these documents may be accepted at the discretion of the design engineer.

NO.	DATE	REVISION	BY

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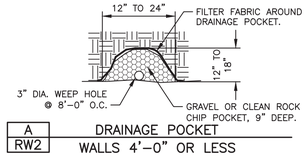
MASONRY RETAINING WALLS – NOTES & STANDARD DETAILS
ROCKWALL OFFICE BUILDING
SUMMER LEE DRIVE AND OAK DRIVE
ROCKWALL, TEXAS

TEXAS – ERW SITE SOLUTION
FORT WORTH, TEXAS

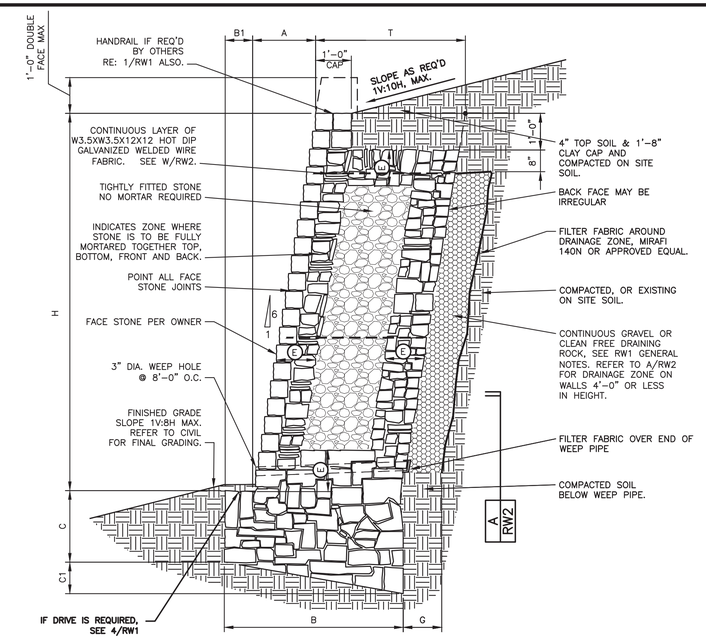
STATE OF TEXAS
AARON M. PERKES
107154
LICENSED
PROFESSIONAL ENGINEER
3-20-18

JOB NO. 168.18

RW1



A / RW2 — DRAINAGE POCKET
WALLS 4'-0" OR LESS



MASONRY WALL SCHEDULE

1500 psf – BEARING CAPACITY (STIFF NATURAL UNDISTURBED SOILS SEE GENERAL NOTES SHEET RW1)

WALL HEIGHT H	BASE WIDTH B	TOE B1	BASE DEPTH (TOE) C	BASE DEPTH (HEEL) C1	BATTER A	FULLY MORTARED ZONE E	THICKNESS OF WALL T	DRAINAGE ZONE THICKNESS G	BEARING CAPACITY
1'-0"	1'-0"	0'-0"	0'-6"	0'-2"	0'-2"	FULLY MORTARED	1'-0"	SEE A/RW2	1500 psf
2'-0"	1'-2"	0'-2"	0'-9"	0'-3"	0'-4"	FULLY MORTARED	1'-0"	SEE A/RW2	
3'-0"	1'-7"	0'-3"	0'-9"	0'-4"	0'-6"	FULLY MORTARED	1'-4"	SEE A/RW2	
4'-0"	2'-3"	0'-4"	1'-0"	0'-5"	0'-8"	FULLY MORTARED	1'-11"	SEE A/RW2	
5'-0"	2'-9"	0'-5"	1'-3"	0'-6"	0'-10"	0'-8"	2'-4"	1'-0"	
6'-0"	3'-5"	0'-7"	1'-6"	0'-8"	1'-0"	0'-10"	2'-10"	1'-0"	
7'-0"	4'-1"	0'-9"	1'-9"	0'-9"	1'-2"	0'-10"	3'-4"	1'-0"	

WALL DESIGN CRITERIA

BEARING Qa	SLOPE TOP β	SLOPE BOT β1	ACTIVE PRESSURE Ka	PASSIVE PRESSURE Kp	FRICTION ANGLE BASE δ	SLOPE OF BACK OF WALL η	SURCHARGE q
1500PSF	5.71 deg	7.13 deg	26 deg	26 deg	17 deg	99.46 deg	0 psf

USE THIS SCHEDULE FOR 1/RW2

1 / RW2 — TYPICAL WALL SECTION – 1V:10H MAX SLOPE ABOVE WALL
1V:8H MAX SLOPE BELOW WALL
BEARING IN CLAYEY OR SANDY SOILS
1/2" = 1'-0"

NO.	DATE	REVISION	BY

DES. — DATE 03-20-18 — BY AMB
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MASONRY RETAINING WALLS
ROCKWALL OFFICE BUILDING
SUMMER LEE DRIVE AND OAK DRIVE
ROCKWALL, TEXAS

TEXAS – ERW SITE SOLUTION
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RW2