

RETAINING WALL

Canyon Ranch Unit 3

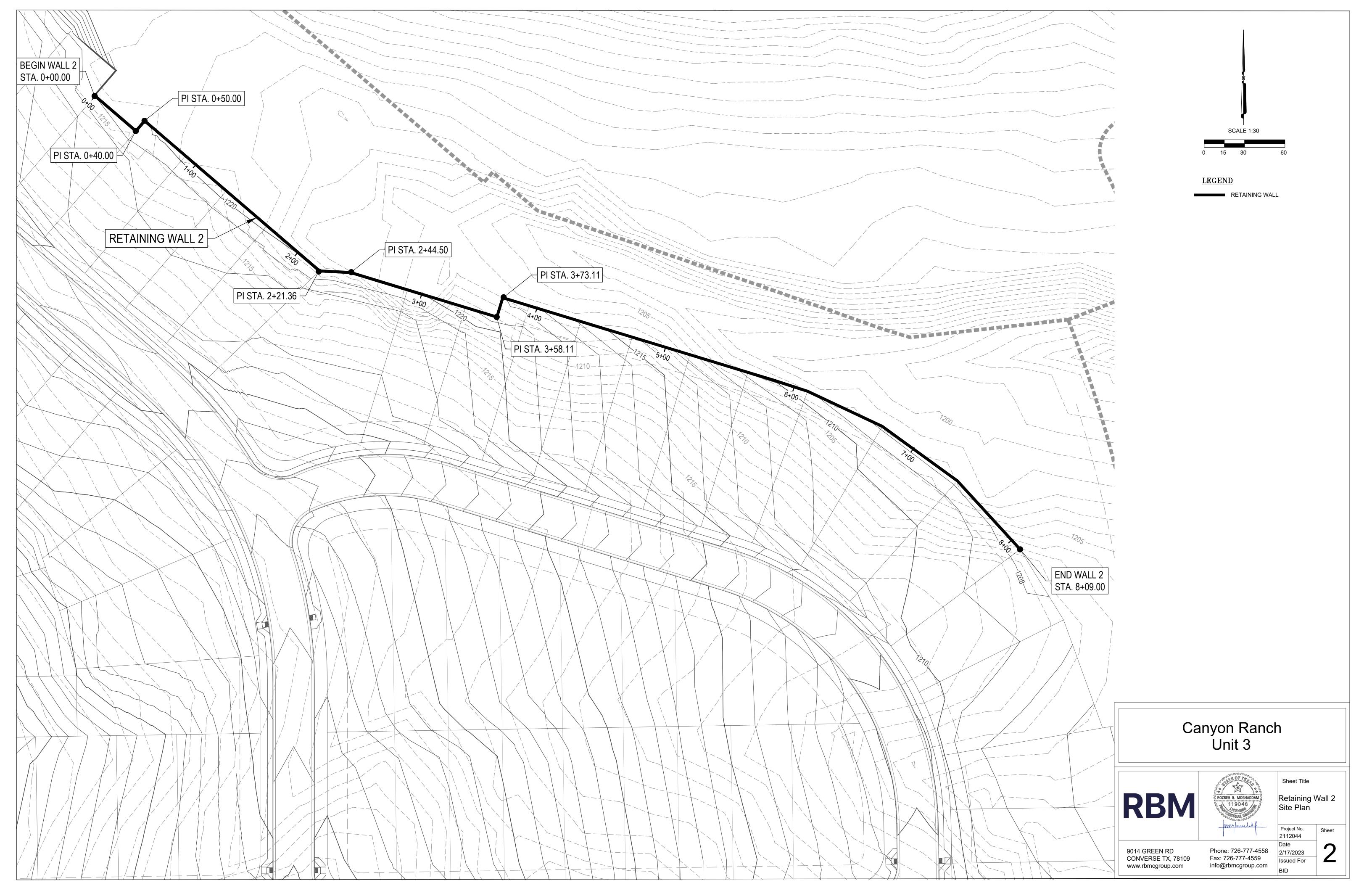


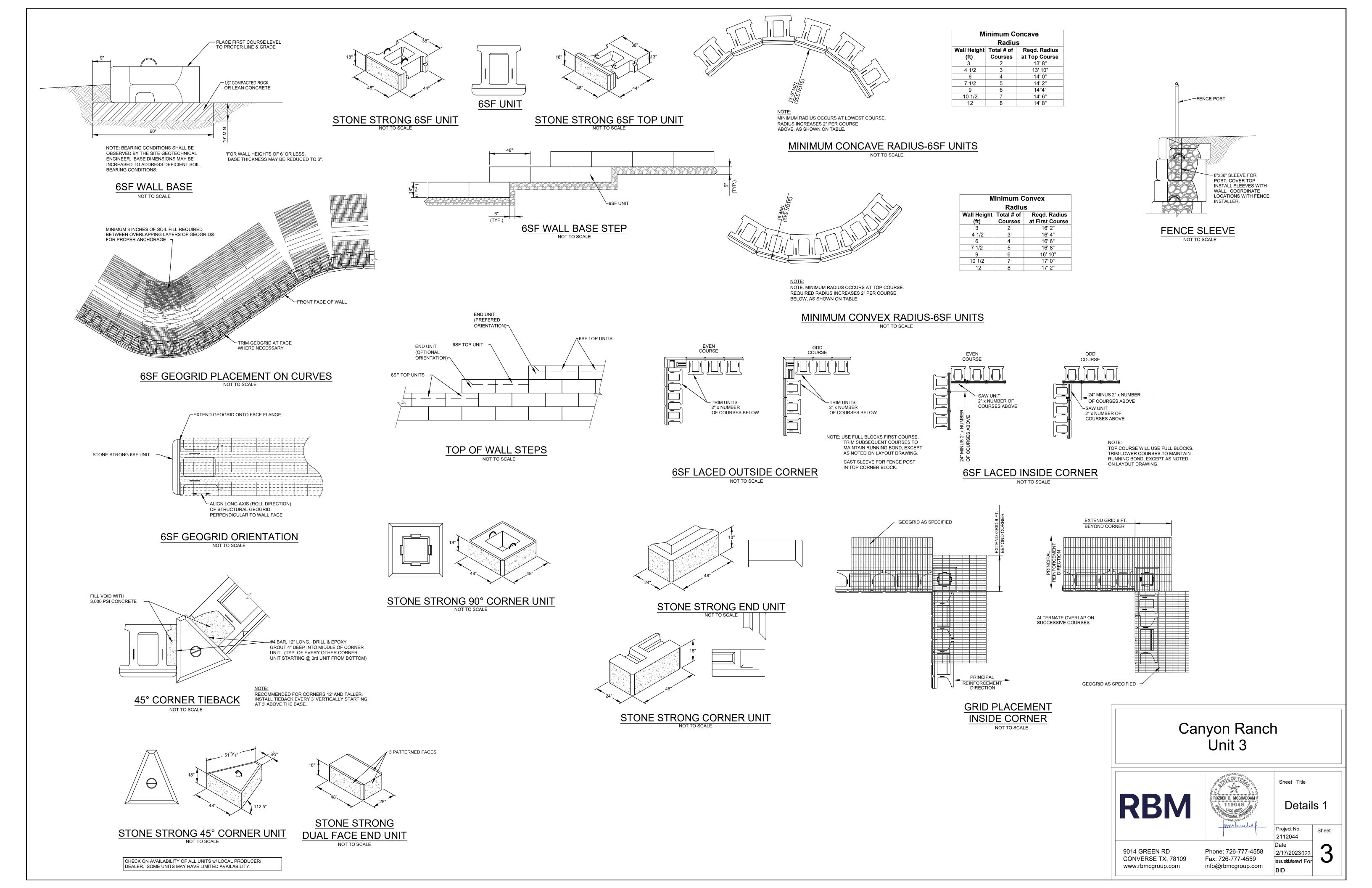
Phone: 726-777-4558 Fax: 726-777-4559 info@rbmcgroup.com

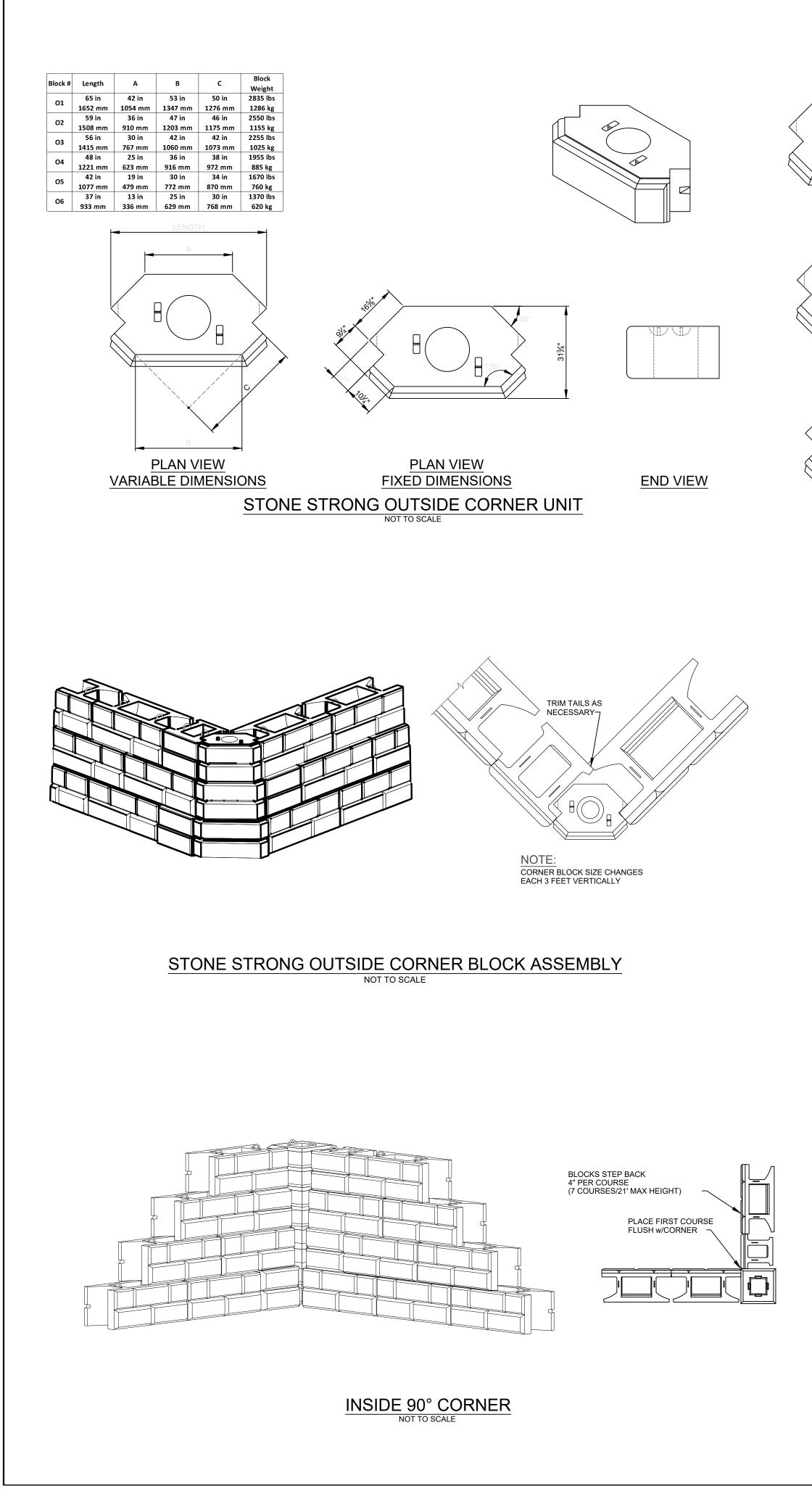
Sheet Title

Retaining Wall 1 Site Plan

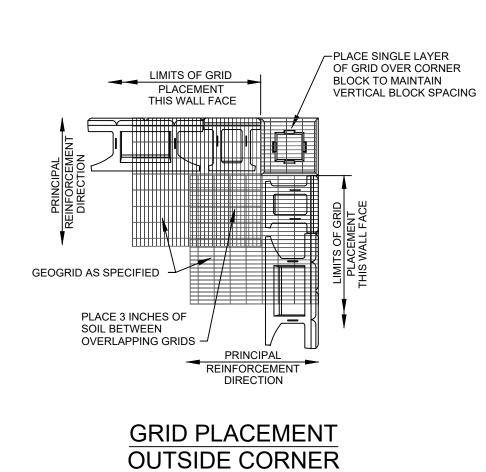
Project No.	Sheet
2112044	
Date	
2/17/2023	
Issued For	
BID	



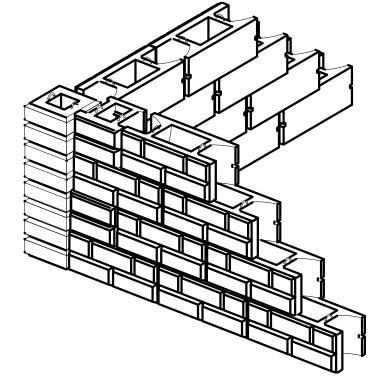


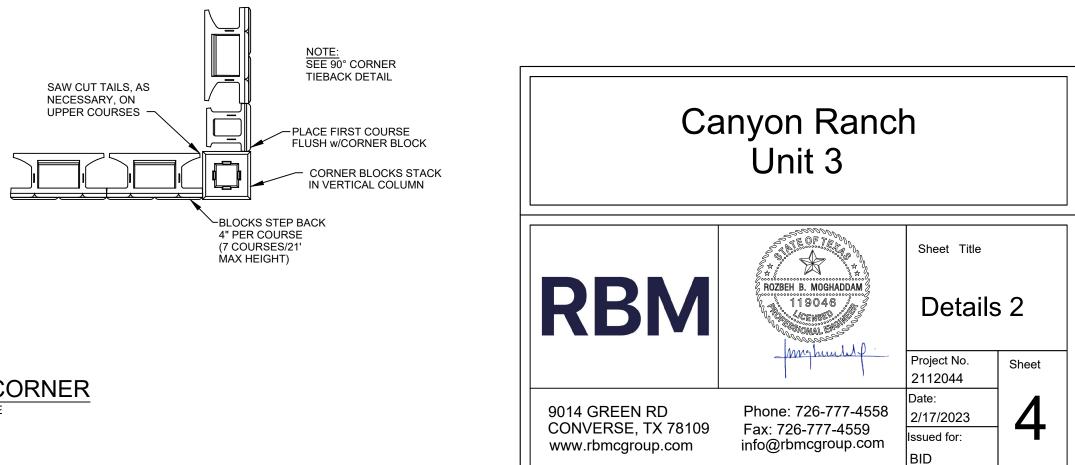




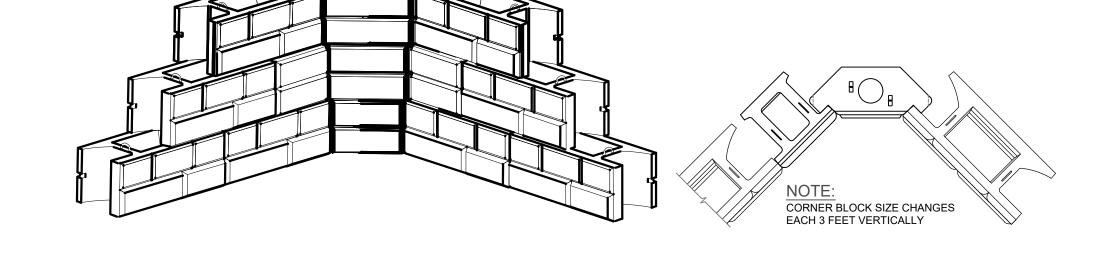


NOT TO SCALE

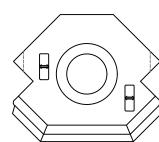




STONE STRONG INSIDE CORNER BLOCK ASSEMBLY NOT TO SCALE



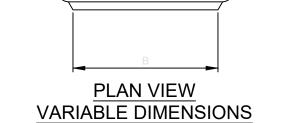


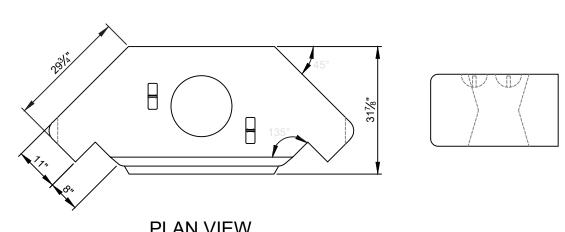


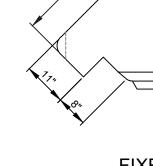
BLOCK NUMBER O5







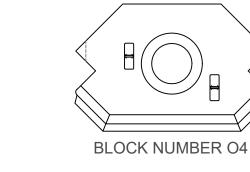


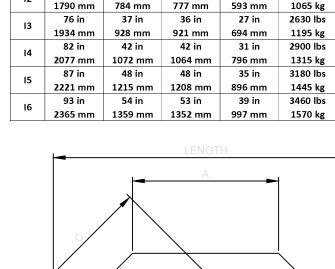


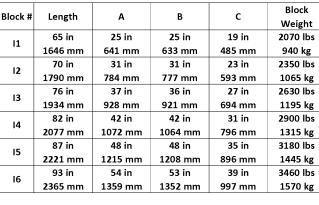


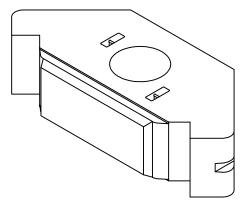
BLOCK NUMBER O1

BLOCK NUMBER O2

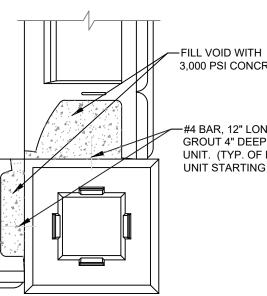








END VIEW



3,000 PSI CONCRETE

- #4 BAR, 12" LONG. DRILL & EPOXY GROUT 4" DEEP INTO MIDDLE OF CORNER UNIT. (TYP. OF EVERY OTHER CORNER UNIT STARTING @ 3rd UNIT FROM BOTTOM)

90° CORNER TIEBACK NOT TO SCALE

NOTE: RECOMMENDED FOR CORNERS 12' AND TALLER. INSTALL TIEBACK EVERY 3' VERTICALLY STARTING AT 3' ABOVE THE BASE.

	CONSTRUCTION	NOTES	<u>[ES</u>	
1.0	MATERIALS	4.0	BLOCK PLACEMENT	
1.1	BACKFILL SOILS / DRAINAGE STONE	4.1	THE ALLOWABLE HORIZONTAL AND \	
1.1.1	REINFORCED BACKFILL MATERIAL (GRAVEL) SPECIFIED BELOW SHALL BE FREE DRAINING. REINFORCED BACKFILL MATERIALS SHALL BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE AND SHALL MEET THE PHYSICAL PROPERTY REQUIREMENTS DEFINED IN	5.0	WALLS SHALL BE LIMITED TO 1.5 inch	
	SECTION 6.0. THE REINFORCED BACKFILL MATERIAL SHALL BE CRUSHED ANGULAR STONE MEETING THE FOLLOWING GRADATION: SIEVE SIZE PERCENT PASSING 2 inch 100	5.1	FOR WALLS NOT INCORPORATING FF BACKFILL SURFACE SHALL BE GRADI PERCENT SLOPE AND A TEMPORARY WALL CREST TO PREVENT SURFACE GRADING SHALL BE PERFORMED AT	
	1 inch 30-100 3/4 inch 10-70 1/2 inch 0-40 No. 4 0-10	5.2	AT THE END OF EACH WORKDAY, BA SMOOTH WHEEL ROLLER TO MINIMIZ BACKFILL.	
1.1.2	ON-SITE FILL ON-SITE FILL MATERIAL SHALL BE ON-SITE OR IMPORTED COMPRESSIBLE SOIL CLASSIFIED PER THE UNIFIED SOIL CLASSIFICATION SYSTEM AS LOW PLASTICITY (MAX PI=25),	5.3	PERMANENT SURFACE WATER DIVER AND PROVIDED BY THE OWNER OR C	
1.2	COMPACTED TO 95% STD. PROCTOR DENSITY. THE PORTION OF THE REINFORCED BACKFILL MATERIAL PASSING THE No. 40 SIEVE SHALL HAVE A LIQUID LIMIT OF LESS THAN 40 AND A PLASTICITY INDEX OF LESS THAN 20. REINFORCED BACKFILL MATERIAL SHALL BE CLASSIFIED PER THE UNIFIED SOIL CLASSIFICATION SYSTEM AS LOW PLASTICITY OR NON-PLASTIC SOILS.	5.4	THE RETAINING WALL HAS BEEN DES REINFORCED BACKFILL MATERIAL SH WATER (SEEPAGE). IF GROUND WAT BE CONTACTED IMMEDIATELY.	
1.3	GEOGRID REINFORCING SHALL BE MIRAFI GEOGRID MANUFACTURED BY THE TENCATE CORPORATION OR STRATAGRID MANUFACTURED BY THE STRATAGRID CORPORATION. DESIGNS PRESENTED HEREIN ARE VALID FOR MIRAFI GEOGRID, STRATAGRID, OR APPROVED	5.5	CARE SHALL BE TAKEN NOT TO CON DRAINAGE STONE WITH FINE-GRAINE DESIGN PARAMETERS	
	EQUAL.	6.1	DESIGN OF THE RETAINING WALLS IS	
1.4 1.5	WALL FACING SHALL BE STONE STRONG 6SF BLOCKS MANUFACTURED BY STONE STRONG, LLC. BLOCK SHALL BE PLACED PER MANUFACTURE'S SPECIFICATIONS. GEOTEXTILE FABRIC SHALL BE MIRAFI 140N OR APPROVED EQUAL.	0.1	DESIGN OF THE RETAINING WALLS IS	
2.0	TECHNICAL REQUIREMENTS			
2.1	PRIOR TO CONSTRUCTION OF THE GEOGRID REINFORCED WALL, THE CONTRACTOR SHALL CLEAR AND GRUB THE REINFORCED BACKFILL ZONE, REMOVING TOPSOILS, BRUSH, SOD OR OTHER ORGANIC OR DELETERIOUS MATERIALS. ANY UNSUITABLE SOILS SHALL BE OVER-EXCAVATED, REPLACED AND COMPACTED WITH REINFORCED BACKFILL MATERIAL		REINFORCED BACKFILL (GRAVEL) RETAINED SOILS FOUNDATION SOILS	
	TO PROJECT SPECIFICATIONS OR AS OTHERWISE DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER. SUBGRADE SHALL BE COMPACTED AS DESIGNATED IN THE	6.2	FACTORS OF SAFETY:	
	GEOTECHNICAL ENGINEER. SOBGRADE SHALL BE COMPACTED AS DESIGNATED IN THE GEOTECHNICAL REPORT OR A MINIMUM OF 95% STANDARD PROCTOR DENSITY.	6.2.1	INTERNAL STABILITY:	
2.2	BACKFILL MATERIALS SHALL BE PLACED FROM THE BACK OF THE BLOCK FACING UNITS TOWARDS THE ENDS OF THE GEOGRID TO ENSURE FURTHER TENSIONING.		MINIMUM FACTOR OF SAFETY FOR G MINIMUM FACTOR OF SAFETY FOR G MINIMUM FACTOR OF SAFETY FOR S	
2.3	BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 6 INCHES IN UNCOMPACTED THICKNESS FOR HEAVY COMPACTION EQUIPMENT. FILL SHALL BE COMPACTED AS SPECIFIED IN THESE PLANS OR TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH TXDOT TEST METHOD		GEOGRID SOIL-GEOGRID INTERACTION COEFF PERCENT COVERAGE OF GEOGRID	
	TEX-114-E AT MOISTURE CONTENT NO GREATER THAN 2 PERCENTAGE POINTS ABOVE OR BELOW OPTIMUM.	6.2.2	EXTERNAL STABILITY:	
2.4	ONLY HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN THREE FEET OF THE BACK FACE OF WALL AND FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 6 INCHES	<u> </u>	MINIMUM FACTOR OF SAFETY FOR S MINIMUM FACTOR OF SAFETY FOR O	
	IN UNCOMPACTED THICKNESS. COMPACTION SHALL BE ACHIEVED BY AT LEAST THREE PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM. THE	6.3	SURCHARGE LOADING	
	SPECIFIED LIFT THICKNESSES SHALL BE ADJUSTED AS WARRANTED BY THE TYPE OF COMPACTION EQUIPMENT ACTUALLY USED. CARE SHALL BE EXERCISED DURING THE COMPACTION PROCESS TO AVOID MISALIGNMENT OF THE BLOCK UNITS. FREE-DRAINING REINFORCED BACKFILL (AS SPECIFIED IN NOTE 1.1.1) DOES NOT REQUIRE DENSITY TESTING.	7.0 7.1	SPECIAL PROVISIONS THE DESIGN PRESENTED HEREIN IS	
	COMPACTION FOR THIS TYPE OF MATERIAL SHALL CONTINUE UNTIL THERE IS NO EVIDENCE OF FURTHER COMPACTION, OR AS DIRECTED BY THE OWNER'S GEOTECHNICAL ENGINEER.	7.2	CONDITIONS, GROUNDWATER COND LOCATIONS AND GEOMETRY OF EXIS THE WALLS MUST BE VERIFIED BY TH	
2.5	DENSITY TESTING METHODS, FREQUENCY AND VERIFICATION OF MATERIAL SPECIFICATIONS AND COMPACTION SHALL BE THE RESPONSIBILITY OF THE OWNER'S GEOTECHNICAL ENGINEER, UNDER THE DIRECTION OF THE OWNER.	7.3	THE OWNER OR OWNER'S REPRESE	
2.6	THE CONTRACTOR SHALL HAVE AN APPROVED SET OF CONSTRUCTION DRAWINGS AND CONTRACT SPECIFICATIONS ON-SITE AT ALL TIMES DURING CONSTRUCTION OF THE GEOGRID REINFORCED RETAINING WALL.		VERIFYING THAT THE ACTUAL SITE C PRIOR TO AND DURING CONSTRUCT SHALL BE ON-SITE TO ASSURE THE F FOLLOWED.	
3.0	GEOGRID PLACEMENT	7.4	THE SOIL DESIGN PARAMETERS STA REPORT TITLED "SUBSURFACE EXPL	
3.1	GEOGRID SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS.		STREETS, CANYON RANCH SUBDIVIS PREPARED BY INTEC OF SAN ANTON	
3.2	GEOGRID EMBEDMENT LENGTH (GEL) SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS. REINFORCED BACKFILL ZONE LENGTH IS MEASURED FROM THE FRONT FACE OF THE WALL EXTENDING TO THE TAIL OF THE GEOGRIDS.	7.5	IF ANY ROCK FORMATIONS AND/OR CONSTRUCTION OF THIS WALL, IMME REPRESENTATIVE.	
3.3	GEOGRID REINFORCEMENT SHALL BE CONTINUOUS THROUGHOUT THE DESIGNATED EMBEDMENT LENGTH(S).	7.6	ANY REVISIONS TO DESIGN PARAME GEOMETRY SHALL REQUIRE DESIGN CONSTRUCTION.	
3.4	THE CONNECTION OF THE GEOGRID TO THE BLOCK SHALL BE A POSITIVE-MECHANICAL CONNECTION.	7.7	THIS DESIGN IS VALID ONLY FOR THE COMAL COUNTY, TEXAS.	
3.5	TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM FILL THICKNESS OF SIX INCHES IS REQUIRED FOR OPERATION OF	8.0	OWNER'S RESPONSIBILITIE	
	TRACKED VEHICLES OVER THE GEOGRID. TURNING OF TRACKED VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND/OR THE GEOGRID.	8.1	OWNER SHALL BE RESPONSIBLE FO FORTH ON THESE DRAWINGS ARE M RESPONSIBILITIES BY OWNER TO OV	
3.6	RUBBER-TIRED VEHICLES MAY PASS OVER THE GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.	8.2	OWNER OF RESPONSIBILITY OF CON HEREIN ARE MET. OWNER (OR OWNER-DESIGNATED R DESCRIBED IN PREVIOUS SECTIONS	
3.7	UNIAXIAL GEOGRID SHALL BE ROLLED OUT WITH THE LONG AXIS OF THE APERTURES	8.2.1	PERMANENT SURFACE WATER DIVE	
3.7	(MACHINE DIRECTION) PERPENDICULAR TO THE WALL FACE. UNIAXIAL GEOGRIDS SHALL BE CUT NEXT TO THE CROSS-MACHINE DIRECTION BAR. THE	8.2.2	CONFIRMATION OF GEOMETRY AND WALL (SECTION 7.0).	
3.0	CROSS-MACHINE DIRECTION BAR SHALL BE PLACED AND PULLED TAUT PRIOR TO FILL PLACEMENT.	8.2.3	ASSURING CONFORMITY WITH CONS CONSTRUCTION BY ON-SITE INSPEC	

- 3.9 A MINIMUM OF 3 INCHES OF FILL MATERIAL SHALL BE REQUIRED BETWEEN LAYERS OF UNIAXIAL GEOGRID AND FILTER FABRIC UNLESS OTHERWISE SHOWN.
- 3.10 NO CHANGES TO THE GEOGRID LAYOUT INCLUDING, BUT NOT LIMITED TO LENGTH, GEOGRID TYPE OR ELEVATION SHALL BE MADE WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF GEOSOLUTIONS INC.

VERTICAL TOLERANCE FOR THE ERECTION OF THE n IN 10.0 FEET OF LENGTH OR HEIGHT.

REE-DRAINING CRUSHED STONE BACKFILL, THE DED AWAY FROM THE WALL FACE A MINIMUM OF 2 SOIL BERM SHALL BE CONSTRUCTED NEAR THE E WATER RUNOFF FROM OVERTOPPING THE WALL. T THE END OF EACH WORK DAY.

ACKFILL SURFACE SHALL BE COMPACTED WITH A ZE PONDING OF WATER AND SATURATION OF THE

RSION AND/OR COLLECTION SHALL BE AS REQUIRED OWNER'S REPRESENTATIVE.

SIGNED ON THE ASSUMPTION THAT THE SHALL BE FREE OF SUBSURFACE DRAINAGE OF TER IS ENCOUNTERED, GEOSOLUTIONS INC. SHALL

NTAMINATE THE GEOTEXTILE FABRIC AND/OR IED SOILS OR OTHER DELETERIOUS MATERIALS.

BASED ON THE FOLLOWING PARAMETERS:

EL)	EFFECTIVE FRICTION ANGLE 34° 28° 28°	EFFECTIVE COHESION 0 psf 0 psf 0 psf	MOIST UNIT WT 125 pcf 125 pcf 125 pcf
FOR GEOGRID FOR GEOGRID FOR SLIDING A	PULLOUT	REQUIRED S = 1.5 = 1.5 = 1.5	D ACTUAL = 2.20 = 6.78 = 2.33
COEFFICIENT GRID		= 0.7 = 100	
FOR SLIDING A		= 1.5 = 2.0	= 1.97 = 4.07
		= 100 p	sf

S BASED ON SOIL PARAMETERS, FOUNDATION DITIONS, AND LOADINGS STATED IN SECTION 6.0.

STING STRUCTURES AND GRADE ABOVE AND BELOW THE OWNER OR OWNER'S REPRESENTATIVE PRIOR

ENTATIVE IS RESPONSIBLE FOR REVIEWING AND CONDITIONS ARE AS DESCRIBED IN SECTION 6.0 TION. THE OWNER OR OWNER'S REPRESENTATIVE PROVISIONS IN THE CONSTRUCTION NOTES ARE

ATED IN SECTION 6.0 ARE BASED ON THE GEOTECHNICAL PLORATION AND PAVEMENT ANALYSIS, PROPOSED NEW SION, COMAL COUNTY, TEXAS" DATED DECEMBER 10,2020 NIO, LLP.

GROUNDWATER ARE ENCOUNTERED DURING THE IEDIATELY CONTACT THE OWNER OR OWNER'S

ETERS STATED IN SECTION 6.0 OR STRUCTURE I MODIFICATIONS PRIOR TO PROCEEDING WITH

E CANYON RANCH UNIT 3 PROJECT,

ES

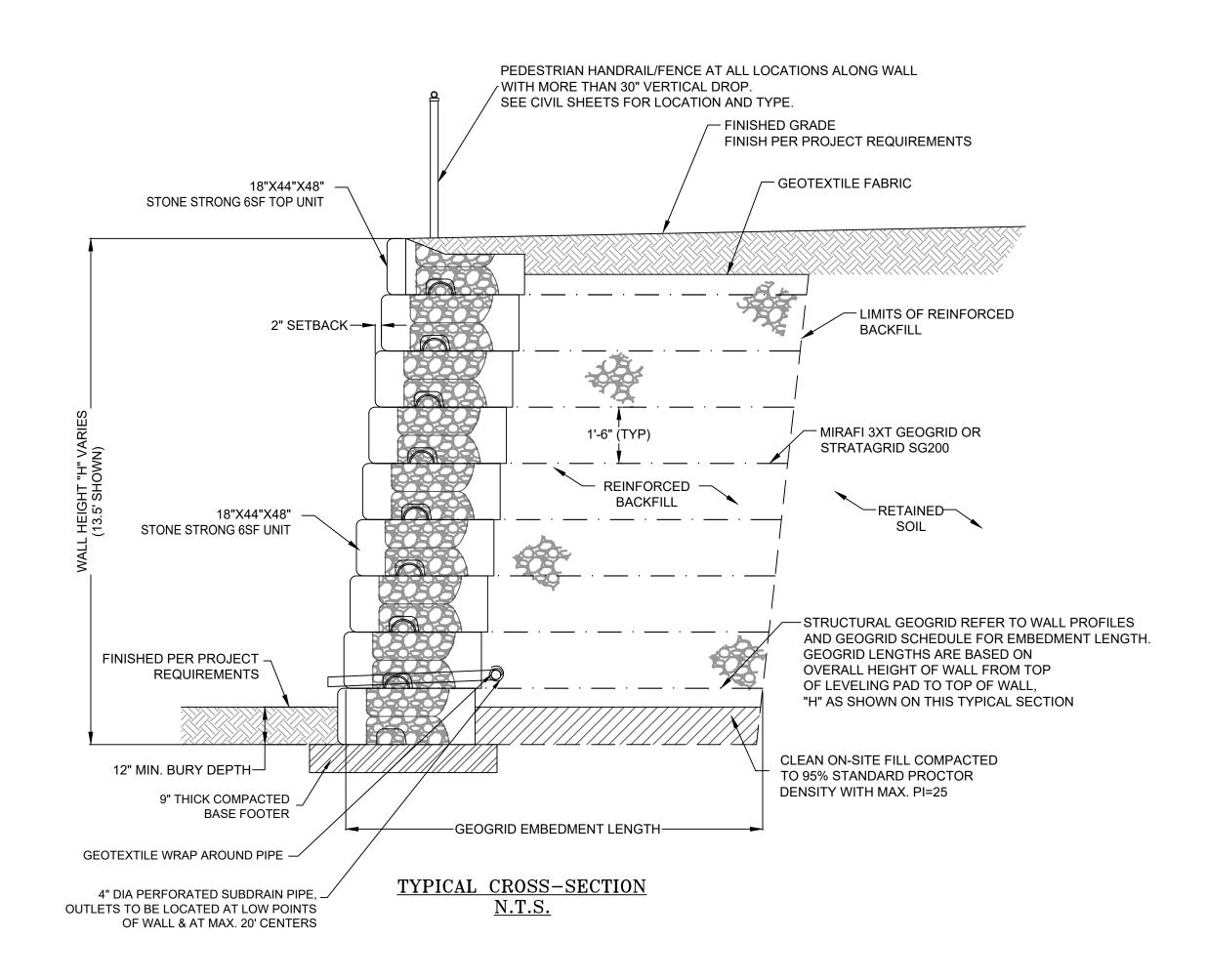
OR CONFIRMING THAT ALL REQUIREMENTS SET MET. ASSIGNMENT OR DELEGATION OF OWNER'S REPRESENTATIVE SHALL NOT RELIEVE ONFIRMING THAT ALL REQUIREMENTS SET FORTH

REPRESENTATIVES) RESPONSIBILITIES, AS S OF THESE NOTES, SHALL INCLUDE:

ERSION (SECTION 5.0).

D LOADING CONDITIONS FOR AREAS ADJACENT TO

ISTRUCTION DRAWINGS AND NOTES DURING CTION (SECTION 7.0).



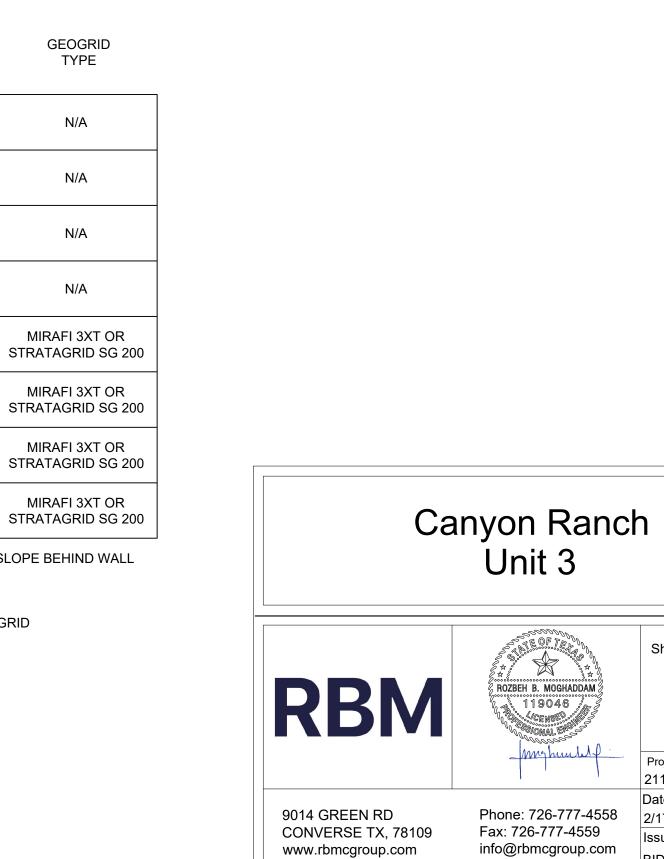
GEOGRID SCHEDULE

HEIGHT OF WALL "H"	NO. OF LAYERS	GEOGRID EMBEDMENT LENGTH	
3.0	N/A	N/A	
4.5'	N/A	N/A	
6.0'	N/A	N/A	
7.5'	N/A	N/A	
9.0'	6	8.0'	
10.5'	7	9.0'	
12.0'	8	10.0'	
13.5'	9	11.0'	

NOTES: 1) STEP TOP OF WALL TO CORRESPOND WITH SLOPE BEHIND WALL

2) MINIMUM 8' GEOGRID LENGTH

3) WALLS WITH "H"< 7.5' DO NOT REQUIRE GEOGRID



Sheet Title

BID

Notes

Project No. Sheet 2112044 Date 2/17/2023 Issued For

GEOGRID	_ · _ · _ · _ · _ · _
FINISHED GRAI	
EXISTING GRAI	
GEOGRID ELEV	XXX.XX
GEOGRID CHAI	1
STONE STRON	
STONE STRON	
TW = TOP OF W	
TLP = TOP OF L	
	1260
Гор of Wall 1254.20	1255 _T
veling Pad 1251.20	Top of Lev
	1250
	1245
	1240
STATIONS	

EGEND

DE AT TOP OF WALL

DE AT BOTTOM OF WALL

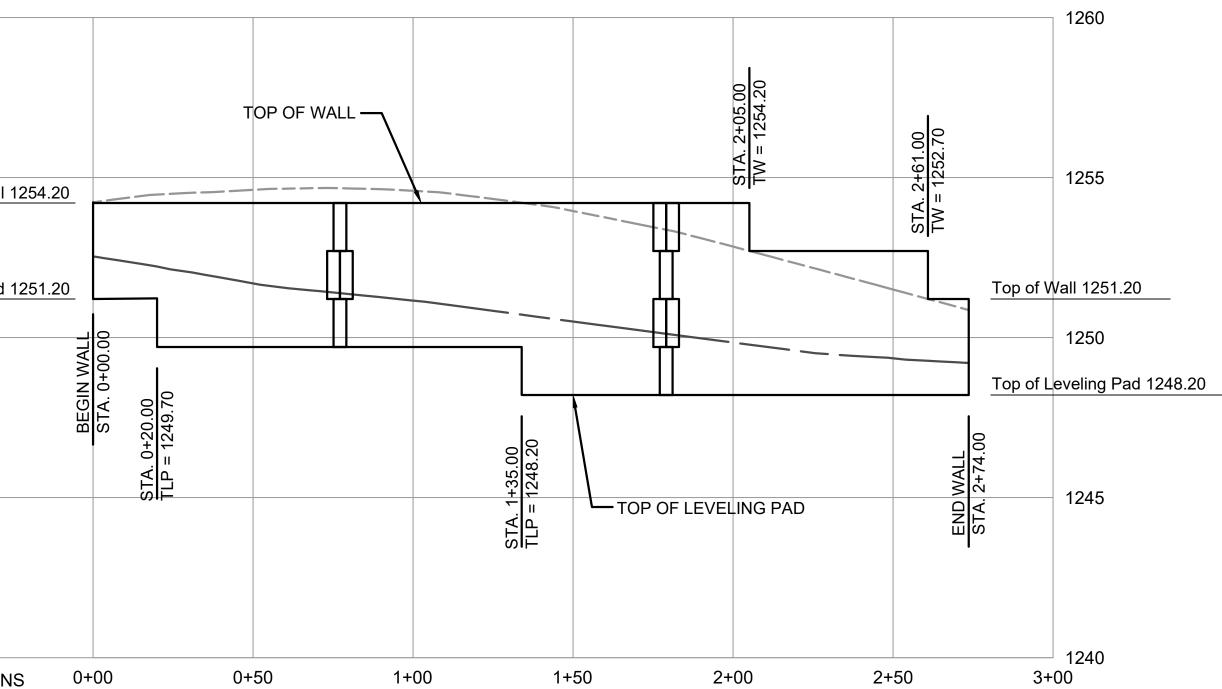
VATION

ANGE OR TERMINATION POINT

NG WALL UNIT

WALL

LEVELING PAD



 RETAINING WALL 1

 Sta. 0+00.00 to Sta. 2+74.00

 Scale:

 Horizontal: 1"=30'

 Vertical: 1"= 3'

Canyon Ranch Unit 3



9014 GREEN RD CONVERSE TX, 78109 www.rbmcgroup.com

ROZBEH B. MOGHADDAM

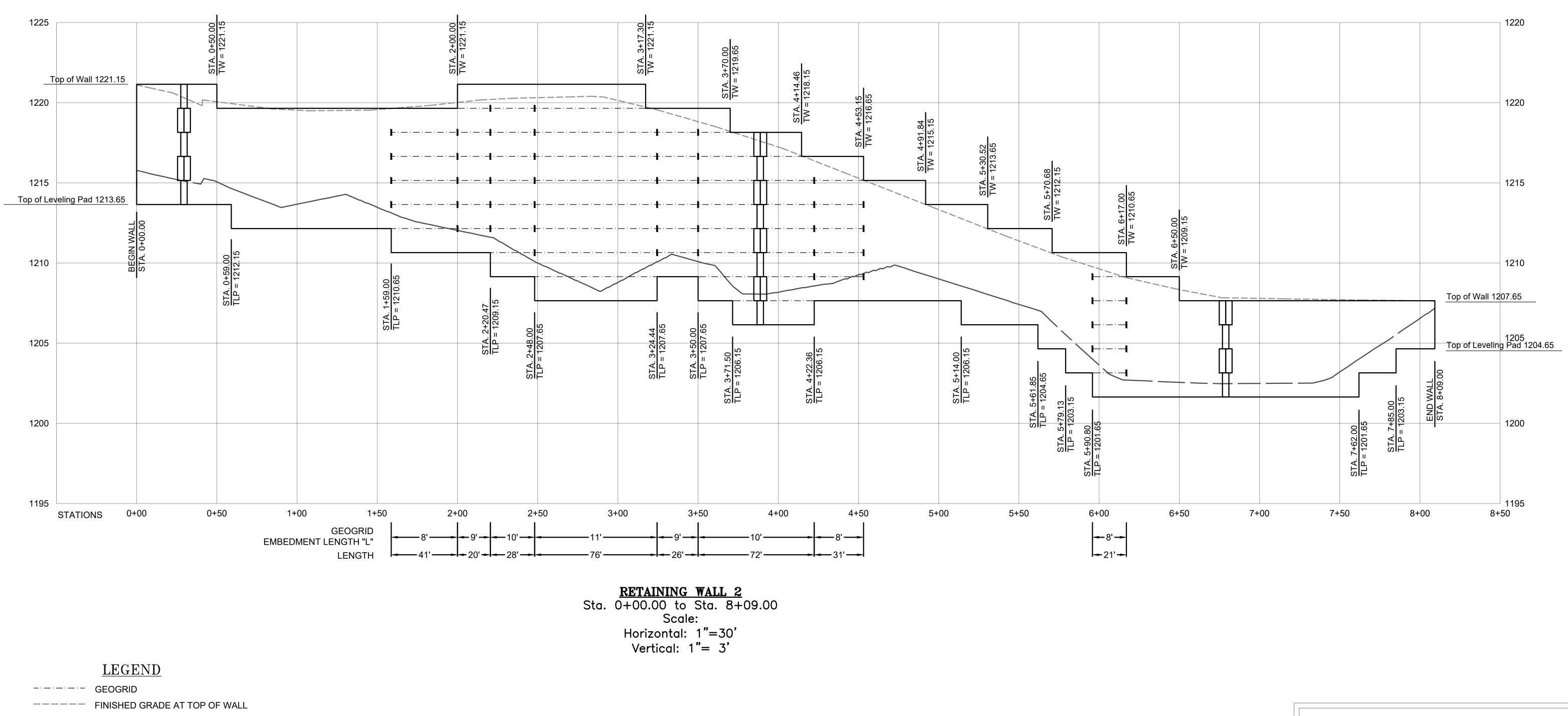
Phone: 726-777-4558 Fax: 726-777-4559 info@rbmcgroup.com

Sheet Title

BID

Retaining Wall Section Plan

Project No. 2112044 Sheet Date 2/17/2023 6 Issued For



GEOGRID ELEVATION

EXISTING GRADE AT BOTTOM OF WALL

GEOGRID CHANGE OR TERMINATION POINT

ΧΧΧ.ΧΧ

STONE STRONG WALL UNIT

TW = TOP OF WALL TLP = TOP OF LEVELING PAD

