

GENERAL NOTES

- 1) WALL LAYOUT IS BASED UPON A SET OF PLANS ENTITLED "MUNJOY HEIGHTS", DATED DECEMBER 16, 2013, PREPARED BY ACORN ENGINEERING.
- 2) THE CONTRACTOR IS RESPONSIBLE TO LAYOUT THE LOCATION OF THE FACE OF THE BOTTOM BLOCK COURSE AND THE WALL ALIGNMENT.
- 3) THE DESIGN OF THE WALLS ARE SPECIFIC TO THIS SITE AND SHOULD NOT BE USED ON OTHER SITES. DESIGNS ARE BASED ON INTIMATE KNOWLEDGE OF THE PROJECT BY S.G.S. AS A MEMBER OF THE DESIGN TEAM AND A GEOTECHNICAL INVESTIGATION BY S.G.S.
- 4) SOIL INFORMATION WAS OBTAINED FROM A GEOTECHNICAL INVESTIGATION PERFORMED BY S.G.S.
- 5) THE FOLLOWING ASSUMPTIONS WERE USED IN THE DESIGN -
 - A) SLOPE OF GROUND AT BASE AND TOP OF WALL = 2:1 (V MAXIMUM)
 - B) LIVE LOAD SURCHARGE = 100 psf (MSE) & 150 psf (GRAVITY)
 - C) DEAD LOAD SURCHARGE = 500 psf (MSE, TO ACCOUNT FOR FOUNDATIONS)
 - D) SOIL PROPERTIES - GRAVITY WALL
FOUNDATION - EXISTING FILL OR GLACIAL TILL, $u_w = 135$ pcf, $\phi = 33^\circ$
RETAINED - RETAINING WALL BACKFILL (NOTE 22), $u_w = 125$ pcf, $\phi = 32^\circ$
 - E) SOIL PROPERTIES - MSE WALL
FOUNDATION - GRANULAR FILL OVER GLACIAL TILL, $u_w = 130$ pcf, $\phi = 30^\circ$
REINFORCED & RETAINED - RETAINING WALL BACKFILL (NOTE 22), $u_w = 128$ pcf, $\phi = 32^\circ$
 - F) SEISMIC DESIGN COEFFICIENT = 0.08
 - G) MAXIMUM CONTACT PRESSURE BENEATH WALL IS LESS THAN 4000 psf
 - H) GROUNDWATER BELOW BASE OF WALL
 - I) GEOGRID COVERAGE RATIO = 100%

THE CONTRACTOR SHALL COORDINATE INSTALLATION OF THE GRAVITY WALL AND MSE WALLS WITH THE INSTALLATION SOLDIER FILE AND LAGGING WALL AND C.I.F. CONCRETE WALLS WHERE THESE WALL SYSTEMS INTERSECT.

FOUNDATION NOTES

- 6) FOUNDATION EXCAVATION SHALL EXTEND TO UNDISTURBED NATURAL DEPOSITS. ALL EXISTING TOPSOIL, LOOSE MATERIAL, FILL, ORGANIC SOIL, AND OTHER SOFT OR UNSTABLE FOUNDATION SOILS SHALL BE REMOVED FROM THE AREA TO BE OCCUPIED BY THE WALL AND REPLACED WITH CRUSHED STONE OR COMPACTED RETAINING WALL BACKFILL. REMOVE UNSUITABLE FOUNDATION SOILS TO THE LATERAL LIMITS EXTENDING BEYOND THE WALL A DISTANCE EQUAL TO THE DEPTH OF FILL REQUIRED BELOW THE WALL PLUS (1) ONE FOOT. SOFT, WET AND OTHERWISE UNSUITABLE SOIL SHOULD BE BROUGHT TO THE ATTENTION OF SUMMIT GEOENGINEERING SERVICES.
- 7) UPON COMPLETION OF THE EXCAVATION THE NATURAL SUBGRADE SHALL BE COMPACTED BY A MINIMUM OF 4 PASSES USING A VIBRATORY COMPACTOR.
- 8) INSTALL AND COMPACT $\frac{3}{4}$ " CRUSHED STONE FOR BLOCK WALL LEVELING PAD AS SHOWN ON THE WALL CROSS SECTION. EXTEND LEVELING PAD ONE FOOT HORIZONTALLY IN ALL DIRECTIONS BEYOND LIMITS OF PRECAST BLOCK WALL.

WALL INSTALLATION

- 9) A GLOBAL STABILITY ANALYSIS FOR WALL #3 HAS BEEN PERFORMED BY S.G.S. THE STABILITY ANALYSIS IS SPECIFIC TO THE RECON MSE WALL SYSTEM. IF AN ALTERNATIVE WALL SYSTEM IS USED, A NEW GLOBAL STABILITY ANALYSIS SHOULD BE PERFORMED USING THE SPECIFIC PROPERTIES OF THE SELECTED WALL SYSTEM.
- 10) A COMPLETE SET OF APPROVED CONSTRUCTION DRAWINGS AND CONTRACT SPECIFICATIONS SHALL BE ON SITE AT ALL TIMES DURING CONSTRUCTION OF THE MSE AND GRAVITY RETAINING WALL SYSTEMS. THE CONTRACTOR IS RESPONSIBLE TO FOLLOW THE SPECIFICATIONS AND THESE DRAWINGS.
- 11) INSTALL BASE COURSE OF BLOCKS ON PREPARED FOUNDATION LEVELING PAD. ENSURE THAT BASE COURSE IS LEVEL SIDE TO SIDE AND LUMB. ADJUST BLOCKS AS REQUIRED TO PROVIDE A STRAIGHT AND LEVEL BASE COURSE.
- 12) INSTALL $\frac{3}{4}$ " CRUSHED STONE AND RETAINING WALL BACKFILL SOIL BEHIND THE WALL AS INDICATED ON THESE DRAWINGS.
- 13) SLEEP AND CLEAN OFF BLOCK WALL, AND INSTALL NEXT COURSE OF BLOCKS. SHIMS MAY BE REQUIRED TO FLUMB BLOCK. SHIMS SHALL BE APPROVED BY THE WALL SUPPLIERS AND SUMMIT GEOENGINEERING SERVICES (S.G.S.). SHIMS SHALL CONSIST OF A HIGH COMPRESSIVE STRENGTH, SLIP RESISTANT MATERIAL $\frac{1}{4}$ " MAXIMUM THICKNESS BY 4" DEEP BY 8" WIDE MINIMUM.
- 14) THE FOLLOWING TOLERANCES ARE RECOMMENDED:
VERTICAL CONTROL - 1/2" OVER 100' (1/3" MAX.)
HORIZONTAL CONTROL - SAME AS VERTICAL
ROTATION FROM THE PLAN BATTER - +2 DEGREES, -0 DEGREES
BULGING - 1" OVER 100' DISTANCE
- 15) GEOGRIDS SHALL BE INSTALLED AT THE LENGTHS, ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS HEREIN. CHANGES TO GEOGRID LAYOUT ARE NOT PERMISSIBLE WITHOUT THE EXPRESS WRITTEN CONSENT OF S.G.S.
- 16) GEOGRID SHALL BE ROLLED OUT PERPENDICULAR TO THE FACING UNITS. INSTALL GEOGRID IN FULL LENGTH PIECES. PULL GEOGRID TIGHT AND SECURE TO HOLD TENSION ON GEOGRID. INSTALL DRAINAGE AND BACKFILL MATERIAL ON GRID TAKING PRECAUTIONS TO KEEP GEOGRID TIGHT.
- 17) TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID REINFORCEMENT. A MINIMUM BACKFILL COVER OF 6" IS REQUIRED FOR OPERATION OF TRACKED VEHICLES OVER THE GEOGRID REINFORCEMENT. TURNING OF TRACKED VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND/OR GEOGRID REINFORCEMENT. RUBBER-TIRED VEHICLES MAY PASS OVER THE GEOGRID REINFORCEMENT AT SPEEDS LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.
- 18) A MINIMUM OF 3" OF REINFORCED BACKFILL SHALL BE PLACED BETWEEN OVERLAPPING LAYERS OF GEOGRID REINFORCEMENT.
- 19) RETAINING WALL BACKFILL SHALL BE PLACED FROM THE BACK OF THE WALL FACE TOWARD THE ENDS OF THE GEOGRID TO PROMOTE PROPER TENSIONING.
- 20) RETAINING WALL BACKFILL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D1557. THE OWNER SHALL HIRE A TESTING AGENCY TO PERFORM FIELD DENSITY TESTS AT A MINIMUM FREQUENCY OF 1 TEST PER EVERY OTHER LIFT (32') PER 50'. THE MAXIMUM LIFT THICKNESS SHALL BE LIMITED TO 16". ONLY LIGHTWEIGHT EQUIPMENT SHALL BE ALLOWED WITHIN 5' OF THE BACK FACE OF THE GRAVITY & MSE STRUCTURES.
- 21) AT THE END OF EACH WORKDAY, BACKFILL SURFACE SHALL BE GRADED AWAY FROM THE WALL FACE A MINIMUM OF 2% SLOPE. THE BACKFILL SURFACE SHALL BE COMPACTED WITH A SMOOTH DRUM ROLLER TO MINIMIZE PONDING OF WATER AND SATURATION OF THE BACKFILL. A TEMPORARY SOIL BERM SHALL BE CONSTRUCTED NEAR THE CREST OF THE MSE STRUCTURE TO PREVENT SURFACE WATER RUNOFF FROM OVERTOPPING THE MSE STRUCTURE.

MATERIAL SPECIFICATIONS

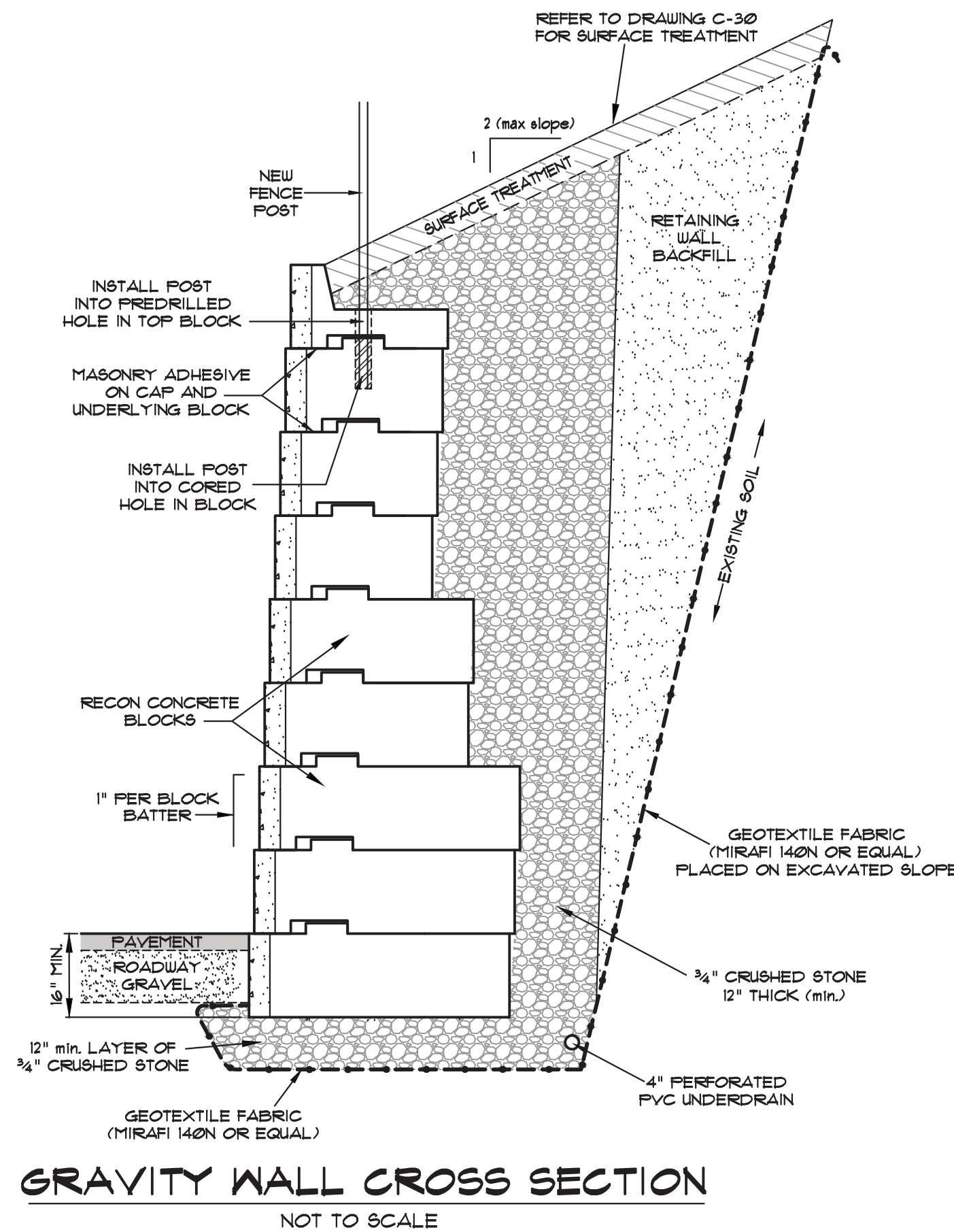
- 22) $\frac{3}{4}$ " CRUSHED STONE SHALL BE CLEAN ANGULAR CRUSHED STONE MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D422.

SIEVE SIZE	PERCENT PASSING
1"	100
$\frac{1}{2}$ "	90 - 100
$\frac{3}{8}$ "	20 - 55
No. 4	0 - 10
No. 8	0 - 5
- 23) RETAINING WALL BACKFILL SHALL BE A FREE DRAINING, WELL GRADED GRANULAR MATERIAL MEETING THE GRADATION REQUIREMENTS OF MDOT 103.20 GRAVEL BORROW.

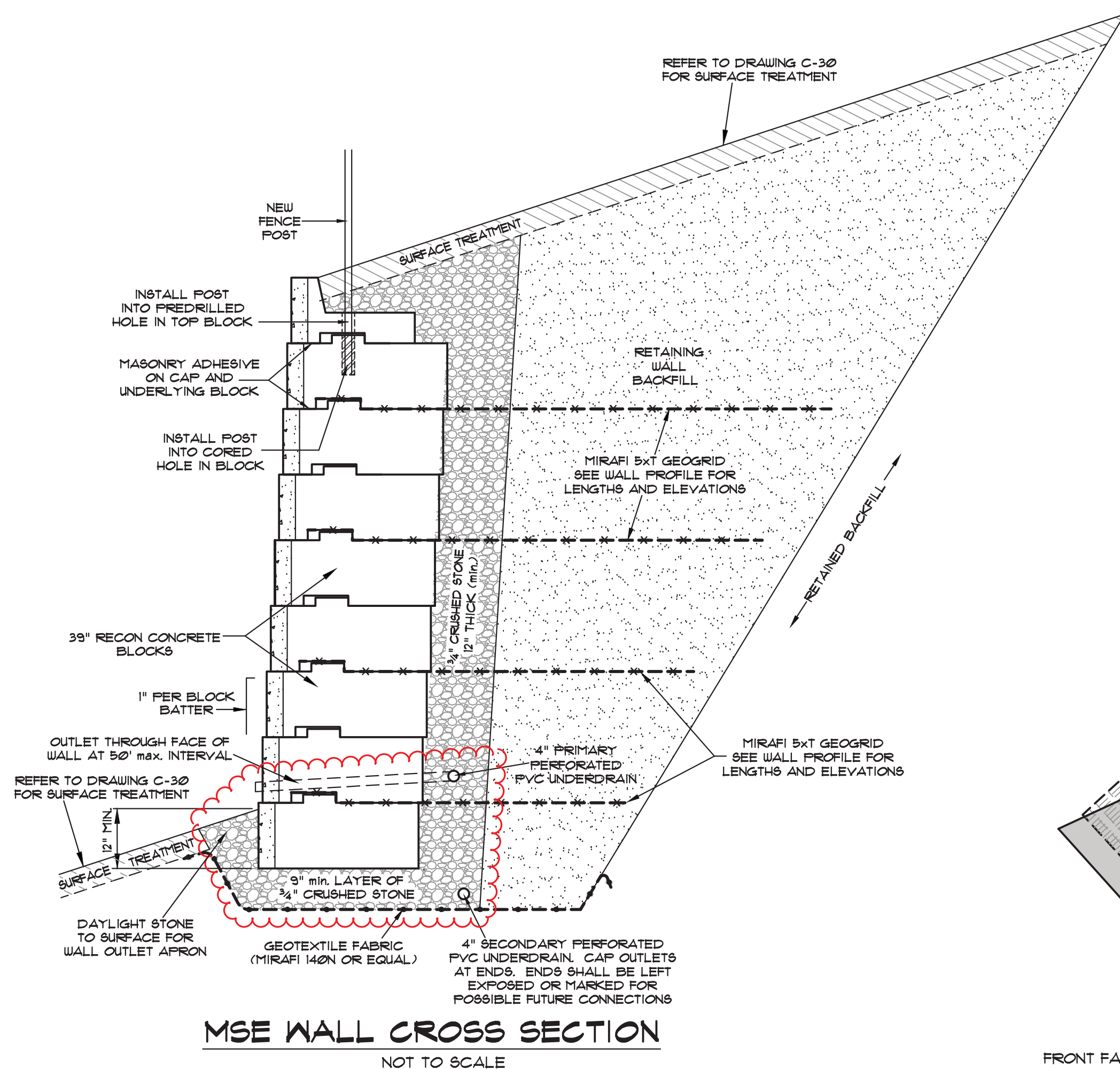
SIEVE SIZE	PERCENT PASSING
3"	100
$\frac{1}{2}$ "	10 - 10
No. 40	0 - 10
No. 200	0 - 10
- 24) RETAINING WALL BACKFILL SHALL BE PLACED IN A MAXIMUM OF 16" LIFTS AND COMPACTED TO 95% IN ACCORDANCE WITH AASHTO T99. THE MAXIMUM PARTICLE SIZE SHALL BE LIMITED TO 4".
- 25) BLOCKS SHALL BE RECON PRECAST CONCRETE BLOCKS AS INDICATED ON THE PROFILE, MANUFACTURED BY SHEA CONCRETE PRODUCTS, AMESBURY, MA.
- 26) GEOGRID SHALL BE 5xT MANUFACTURED BY TENCATE.
- 27) GEOTEXTILE SHALL BE MIRAFI 140N OR EQUIVALENT.

CONSTRUCTION CONTROL

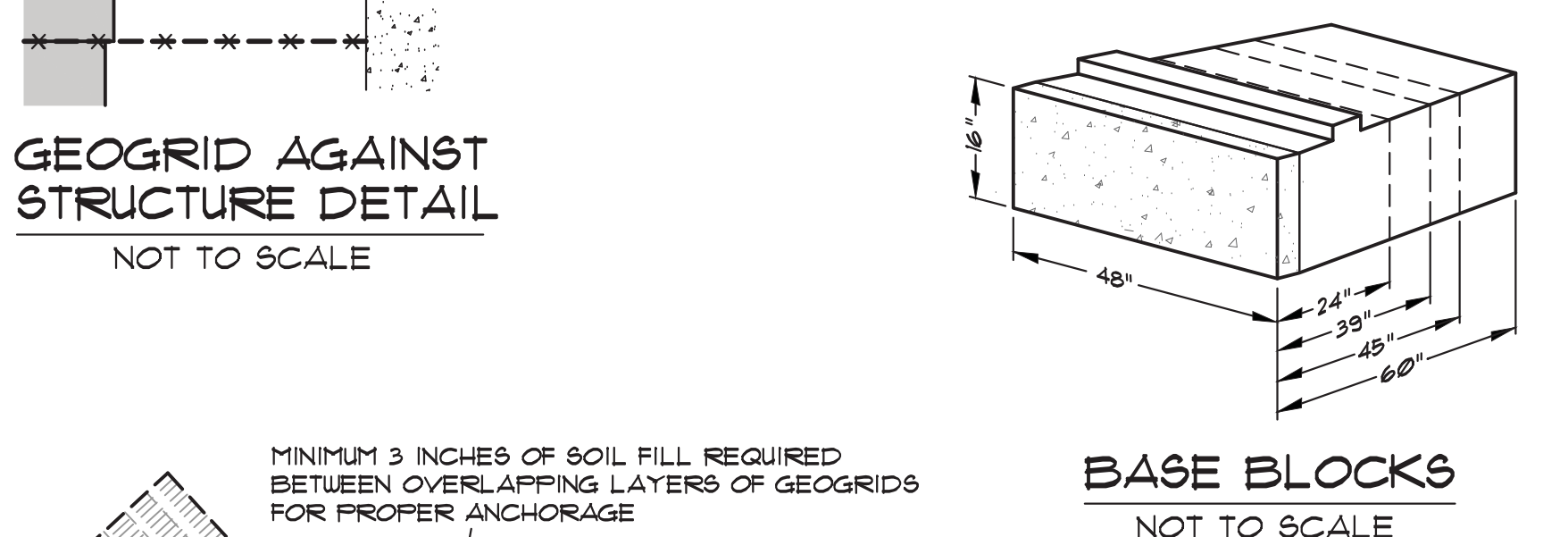
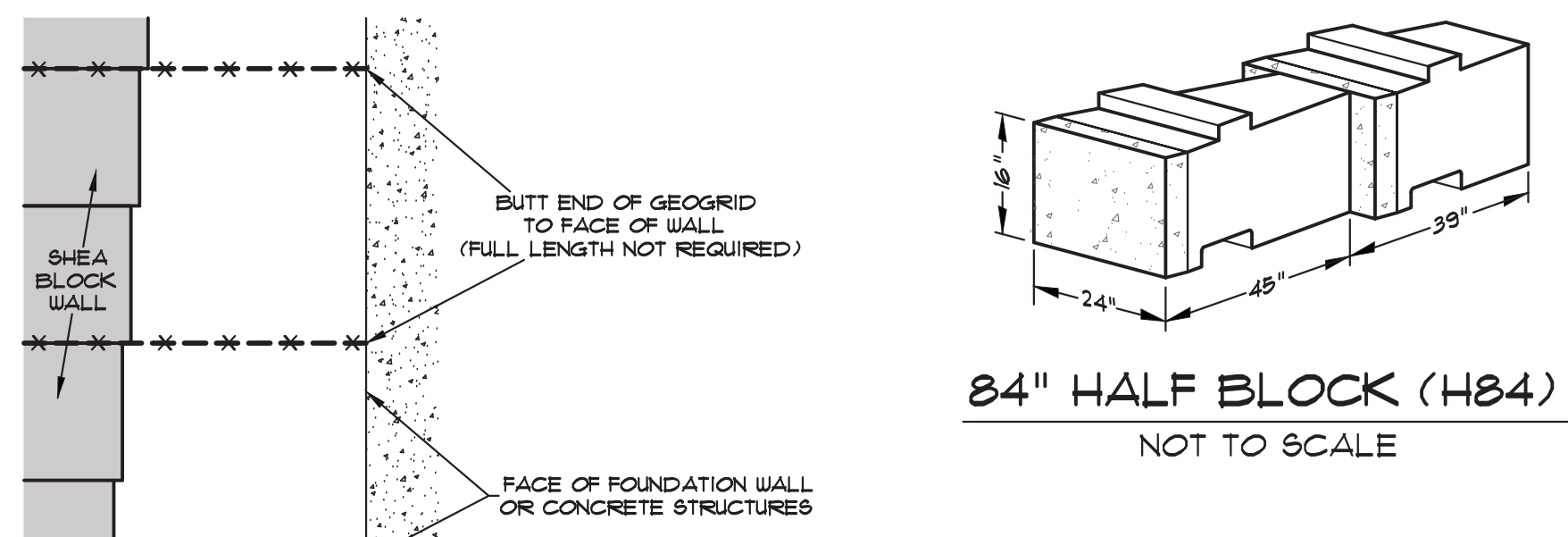
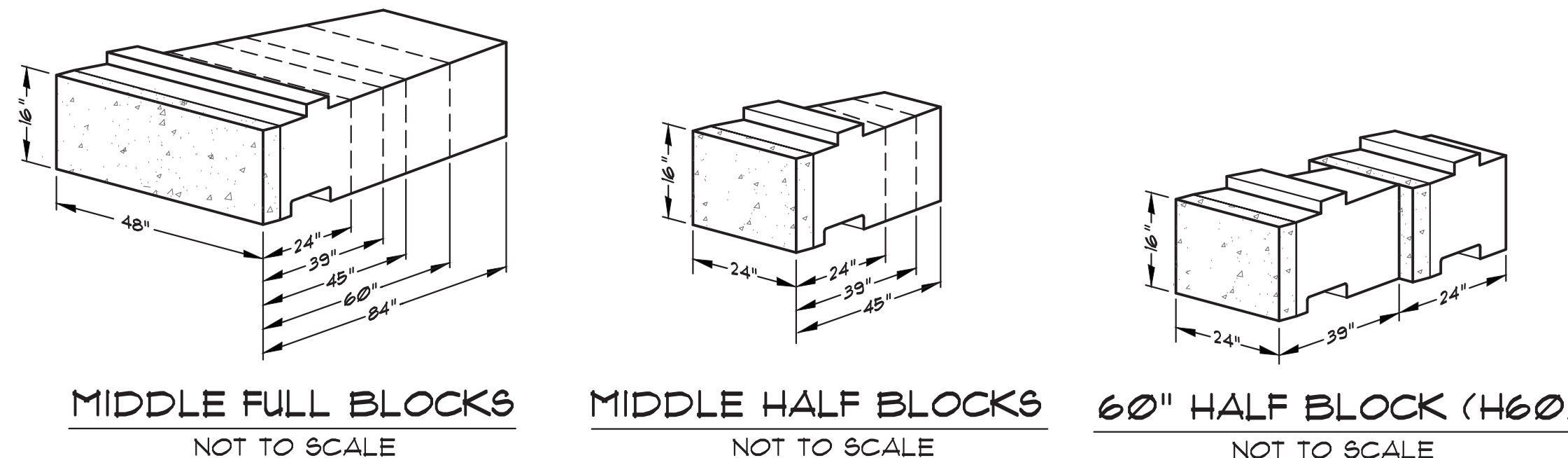
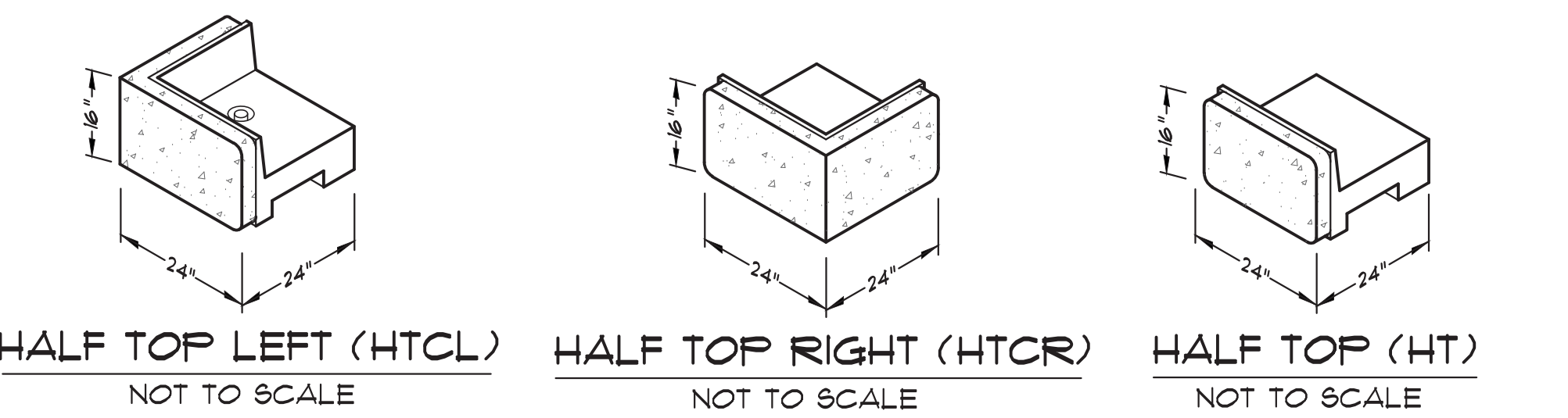
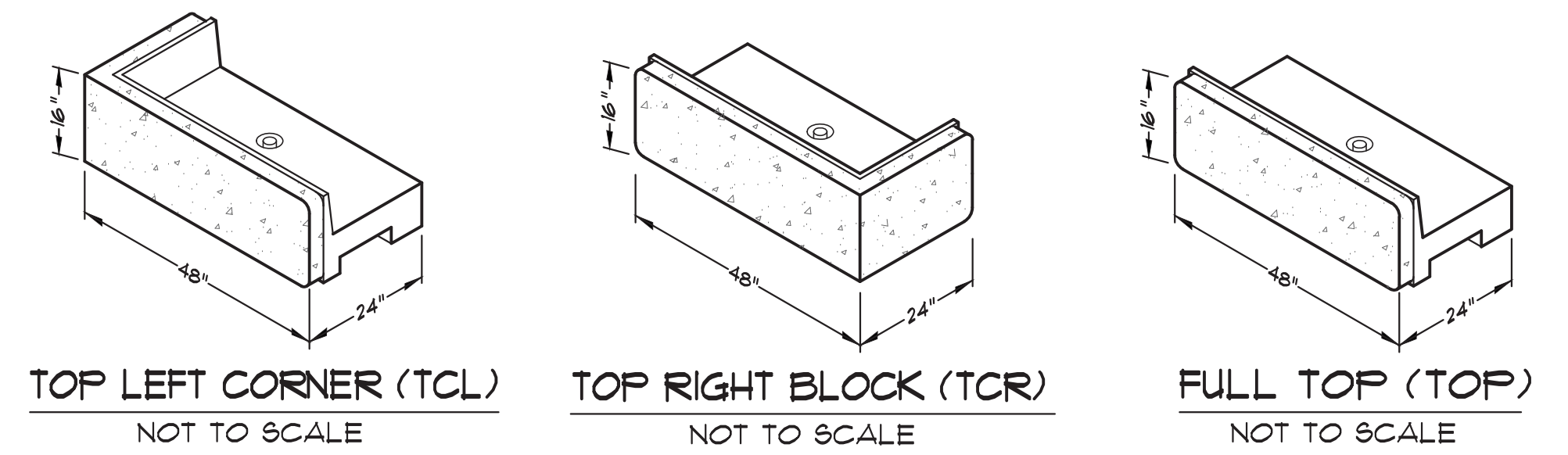
- 28) IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR THEIR REPRESENTATIVE TO ENSURE THAT CONSTRUCTION OF THE WALL AND MATERIALS USED IN THE CONSTRUCTION OF THE WALL ARE IN ACCORDANCE WITH THESE SPECIFICATIONS AND/OR THE CONTRACT SPECIFICATIONS WHICH EVER ARE MORE STRINGENT.
- 29) SHEA CONCRETE AND ITS ENGINEER ACCEPTS NO RESPONSIBILITY NOR LIABILITY IN THE DETERMINATION OF THE ADEQUACY OF SITE MATERIALS AND/OR PROCEDURES.
- 30) PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY THAT ALL ELEVATIONS AND ASSUMED SITE CONDITIONS SHOWN ON THESE DRAWINGS ARE ACCURATE TO THE GIVEN SITE CONDITIONS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF S.G.S. PRIOR TO START OF CONSTRUCTION.



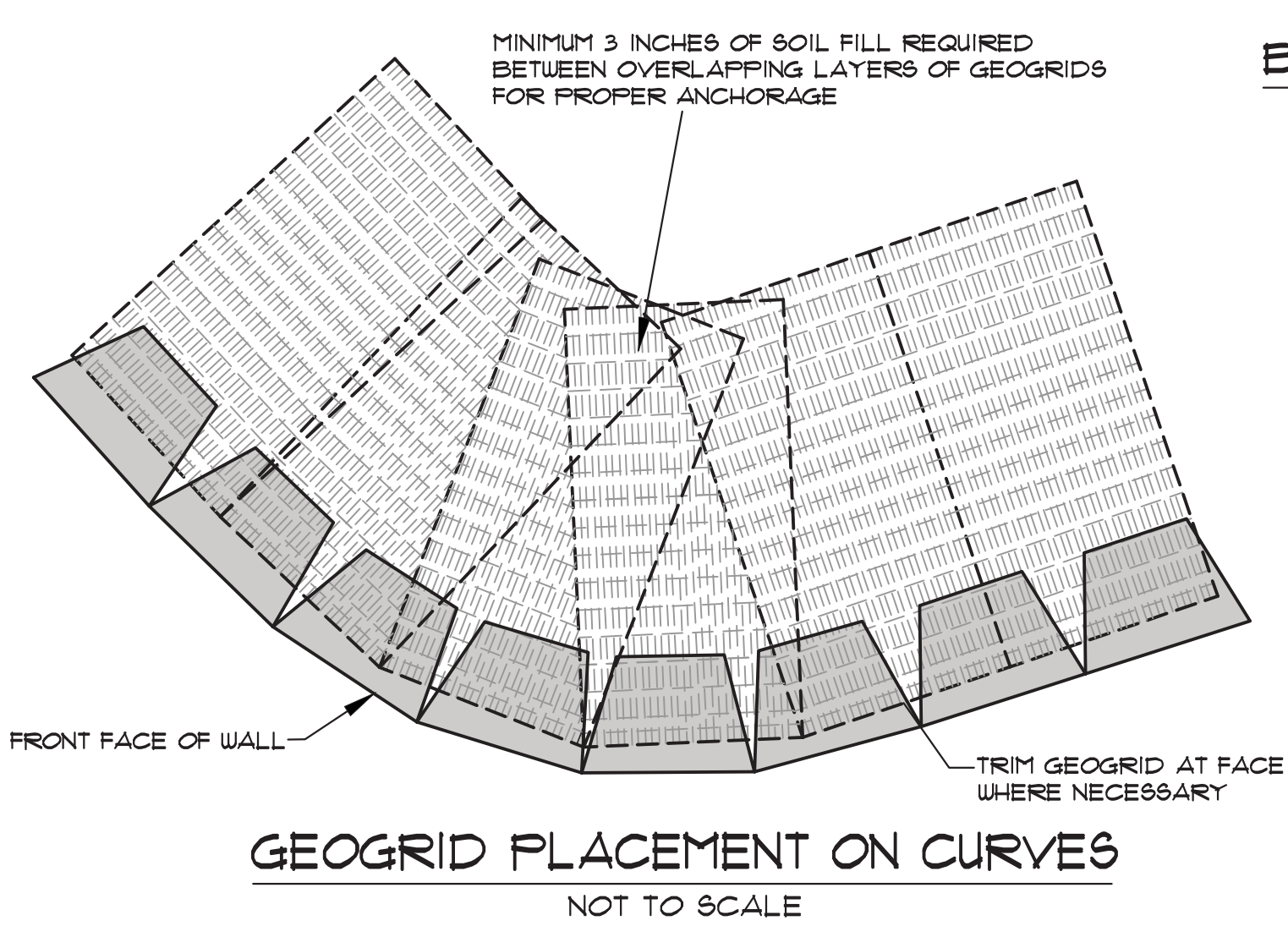
GRAVITY WALL CROSS SECTION
NOT TO SCALE



MSE WALL CROSS SECTION
NOT TO SCALE



GEOGRID AGAINST STRUCTURE DETAIL
NOT TO SCALE



GEOGRID PLACEMENT ON CURVES
NOT TO SCALE

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CONSTRUCTION NOTES & DETAILS
 SCALE: AS NOTED
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 DRAWN BY: KRF
 CHECKED BY: WJMP

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