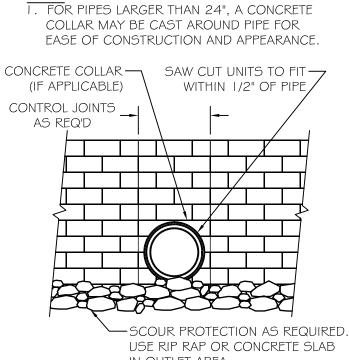
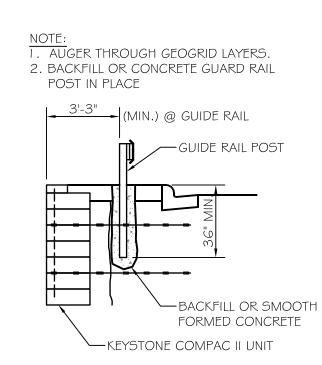


CRUSHED STONE UNIT COMPACT WITH HAND OPERATED PLATE COMPACTOR FILL ALL VOIDS INCLUDING PIN HOLES AFTER BLOCKS ARE ALIGNED. ALIGN EACH BLOCK COURSE PRIOR TO PLACING ADDITIONAL COURSE.

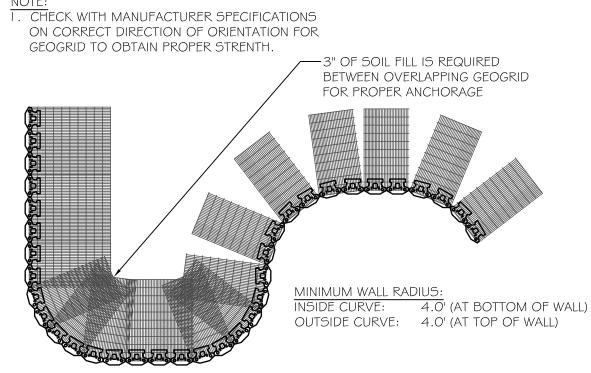
NOTES:



IN OUTLET AREA. TYPICAL PIPE OUTLET DETAIL



TYPICAL GUIDE RAIL DETAIL



GEOGRID INSTALLATION ON CURVES

#### FENCE POST -DESIGN BY OTHERS ~8"Øx42" DEEP PVC SLEEVE, GROUT SOLID. INSTALL CONCURRENT WITH WALL AND GEOGRID. CUT HOLE IN GEOGRID FOR SLEEVE. -BACKSLOPE IN ACCORDANCE TYPICAL KEYSTONE -3'-0" MIN ── 4" CAP UNITS W/ KEYSTONE WITH SITE PLAN BUT CANNOT EXCEED SLOPE SPECIFIED IN TABLE THIS SHEET. "KAPSEAL" ELASTOMERIC POLYMER ADHESIVE TO TOP BLOCK COURSE SEE WALL ELEVATIONS FACE BATTER — TYPICAL | 2" KEYSTONE -COMPAC II UNITS SEE PROFILE FOR LOCATION TYPICAL GEOGRID REINFORCING BLASTED LEDGE OR NATIVE SOIL ATTACH GEOGRID OVER — EXCAVATION LIMITS BLOCK PINS AND PULL TIGHT SLOPE EXCAVATION PER PRIOR TO PLACING BACKFILL. EOGRID EMBEDMENT DEPTH (Le OSHA REQUIREMENTS SEE ELEVATION DWGS FOR LENGTHS. /ARIES WITH WALL HEIGHT. SEE 🦳 AINING WALL PROFILES MEASURED -FROM EXPOSED FACE OF BLOCK. -UNREINFORCED BACKFILL SEE TABLE FOR REQUIREMENTS SEE WALL ELEVATION DWGS FOR — REQUIRED EMBEDMENT. MIRAFI 140N FILTER FABRIC -4" PERFORATED P.V.C. SDR35 DRAIN PIPE. 3/4" CRUSHED STONE (1.5 CF/LF) SLOPE GRADE AWAY NEED PUNCHED NONWOVEN GEOTEXTILE WRAP FROM WALL PER SITE PLAN (MIRAFI 140N) CONTINUOUS. EXTEND TO ENDS (4% MIN RECOMMENDED) OF WALL AND/OR BENEATH WALL TO DAYLIGHT DISCHARGE AT MAX 50FT INTERVALS ALTERNATE U.D. LOCATION I. CONSTRUCT WALL AND FILL MATERIALS ON ENGINEER APPROVED, UNDISTURBED NATIVE SOILS. ANY REQUIRED BACKFILL DUE TO UNSUITABLE MATERIALS OR OVER EXCAVATIONS WILL BE REPLACED WITH COMPACTED GRAVEL TO 95% MODIFIED -PLACE BOTTOM COURSE LEVEL OVER A CONTINUOUS MAT OF CONSOLIDATED 3/4" CONSOLIDATED CRUSHED STONE BED. 8" DEEP BY 30" WIDE (MIN.). PLACE STONE ON UNDISTURBED NATIVE SOILS WITH A LAYER OF FILTER FABRIC (EQUAL TO MIRAFI 140N) 2. PLACE BACKFILL IN MAX. 8" COMPACTED LIFTS TO MIN. OF 95% MODIFIED PROCTOR @ BASE AND SIDES. DO NOT PLACE FILTER FABRIC BETWEEN STONE AND BLOCK. DENSITY. MOISTURE ADJUST BACKFILL TO ACHIEVE SPECIFIED DENSITY. 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED TO THE WALLS INDISTURBED NATIVE SOIL OR LEDGE. IF UNSUITABLE REMOVE AND FROM ANY ONSITE BLASTING CONDUCTED SUBSEQUENT TO START OF WORK ON WALLS. REPLACE WITH APPROVED WELL GRADED GRANULAR MATERIAL

MEETING REINFORCED ZONE BACKFILL SPECIFICATIONS.

# TYPICAL KEYSTONE WALL SECTION

#### 1. SHOP DRAWING ACTION STAMP:

1.1. THIS IS AN ENGINEERED SHOP DRAWING DESIGN BASED UPON INFORMATION PROVIDED BY OTHERS. THE WALL DESIGN DEPICTED HEREIN SHOULD BE REVIEWED BY THE SITE DESIGNER OR OTHERWISE RESPONSIBLE ENTITY TO VERIFY COMPLIANCE WITH THE GENERAL INTENT OF THE SITE DESIGN WITH RESPECT TO GRADING, WALL ALIGNMENT AND GEOMETRY, WALL STEPS, ETC. 1.2. THIS DESIGN IS BASED UPON INFORMATION PROVIDED BY OTHERS. SHOULD VARIATIONS BE ENCOUNTERED THE CONTRACTOR, SITE DESIGNER OF RECORD, OR OTHER RESPONSIBLE ENTITY SHALL NOTIFY THE OWNER/ENGINEER AND ASSOCIATED DESIGN PARTNERS, INC, (ADP) TO MAKE

APPROPRIATE ADJUSTMENTS.

### 2. WALL DESIGN NOTES:

2.1 THE WALL DESIGN(S) REPRESENTED HEREIN ARE BASED ON THE PROCEDURES DESCRIBED IN THE INDUSTRY STANDARD PUBLICATION NCMA TR127A "DESIGN MANUAL FOR SEGMENTAL RETAINGING WALLS, 2ND ED".

2.2 IN ACCORDANCE WITH NCMA TR127A "DESIGN MANUAL FOR SEGMENTAL RETAINGING WALLS, 2ND ED" SEC. 5.1.4, EXTERNAL GLOBAL STABILITY HAS NOT BEEN ADDRESSED AS PART OF THIS RETAINING WALL DESIGN. EXTERNAL GLOBAL STABILITY CALCULATIONS ARE TYPICALLY PROVIDED BY THE OWNER'S GEOTECHNICAL ENGINEER OF RECORD.

2.3 THE WALL STABILITY ANALYSES IS BASED ON SOIL DESIGN VALUES AS REPRESENTED IN SW COLE GEOTECH REPORT DATED 6-11-14, OR ASSUMED BASED UPON ANTICIPATED SUBSURFACE CONDITIONS. A SUMMARY OF DESIGN VALUES IS INCLUDED IN THE DESIGN VALUES TABLE (BELOW) AND IN THE ATTACHED WALL DESIGN COMPUTATIONS. THE PROJECT GEOTECHNICAL ENGINEER SHOULD REVIEW THE VALUES REPRESENTED HEREIN, AND NOTIFY ASSOICATED DESIGN PARTNERS AND/OR THE SITE CONTRACTOR IF MODIFICATIONS TO THE SOIL DESIGN PARAMETERS IS NECESSARY.

## 3. FILL SOIL COMPACTION:

3.1. ALL GRANULAR SOIL FILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D1557 MODIFIED

3.2. STONE IN WALL BASE PAD AND IN FILL LOCATIONS TO BE CONSOLIDATED TO 100% OF DRY RODDED UNIT WIEIGHT PER ASTM C-29. ROUNDED ROCK OR PEA STONE IS SPECIFICALLY NOT ALLOWED AT CRUSHED STONE FILL LOCATIONS.

## 4. GENERAL:

4.1. PLACE KEYSTONE BLOCKS ON A 8" DEEP BASE FOOTING OF CONSOLIDATED 3/4" CRUSHED STONE. LEAN CONCRETE MAY ALSO BE USED FOR THE BASE FOOTING. IF LEAN CONCRETE IS USED IT SHALL BE PLACED ON 6" OF CRUSHED STONE, WITH SMOOTH FORMED VERTICAL

SURFACES, BELOW ANTICIPATED FROST DEPTH. 4.2. LOCK GEOGRID INTO BLOCKS BY HOOKING GRID MATERIAL OVER THE FIBERGLASS PINS IN THE KEYSTONE BLOCK.

4.3. INSTALL GEOGRID REINFORCING FABRIC AT LOCATIONS AND ELEVATIONS SHOWN ON THE PROFILE ELEVATION DRAWINGS. 4.4. ROLL GEOGRID OUT WITH STRONG FIBER (MACHINE DIRECTION) DIRECTION PERPENDICULAR TO WALL FACE TO EMBEDMENT LENGTH (LE) AS SPECIFIED ON THE PROFILE ELEVATIONS. IMPORTANT: GRID MUST BE LAID SMOOTH, FREE OF WRINKLES, <u>PULLED TAUT AND STAKED</u> PRIOR TO FILL PLACEMENT.

4.5. PLACE A MINIMUM OF 6" OF SOIL OVER GRID BEFORE ALLOWING MACHINERY ON THE REINFORCEMENT AREA. 4.6. GENERAL SOIL COMPACTION GUIDELINES: SITE EXCAVATION CONTRACTOR IS RESPONSIBLE FOR THE METHODS AND RESULTS OF THE COMPACTION PROCESS. THE FOLLOWING IS A SUGGESTED METHOD OF INSTALLATION.

SHOWN ON SITE DESIGN PLANS. VARIATIONS OF MORE THAN 1'-0" WILL EFFECT THE DESIGN OF THIS WALL. (SEE NOTE #1.2)

4.6.1. PLACE SOIL IN MAXIMUM 8" LOOSE LIFT THICKNESS AND COMPACT TO 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557, MODIFIED PROCTOR. USE ONLY HAND OPERATED ROLLER OR PLATE COMPACTORS WITHIN 5' OF THE BACK OF WALLS FOR LESS THAN 15' HIGH AND WITHIN 10' OF WALLS GREATER THAN 15' HIGH.

4.7. LAY SUCCESSIVE COURSES OF BLOCK AND LAYERS OF GEOGRID ACCORDING TO PLANS AND PROFILE ELEVATIONS. 4.8. NOTIFY ENGINEER IMMEDIATELY IF ACTUAL SITE GRADES/CONTOURS DIFFER BY MORE THAN 1'-0" FROM THOSE INDICATED ON THESE SITE PLANS. VERTICAL AND HORIZONTAL DIMENSIONS AND THIS SPECIFIC WALL(S) DESIGN IS BASED UPON APPROXIMATE SITE GRADES TAKEN FROM SITE PLANS PREPARED BY OTHERS. IT IS COMMON FOR ACTUAL GRADES TO DIFFER FROM THOSE AS REPRESENTED BY CONTOURS OR SPOT GRADES

4.9. CONTRACTOR TO PROVIDE TWO DENSITY TESTS PER COMPACTED LIFT TO ENSURE CONFORMANCE WITH GRADATION AND COMPACTION SPECIFICATIONS INDICATED. CONTRACTOR TO PROVIDE SEIVE ANALYSIS AND SHEAR TEST FOR ALL PROPOSED BACKFILL. SUBMIT FINAL TEST REPORTS FOR COMPACTION TESTING TO ASSOCIATED DESIGN PARTNERS, INC. FOR OUR RECORDS AND ALSO SUBMIT FINAL TEST REPORTS TO THE OWNER FOR THEIR RECORDS.

# PROJECT SPECIFIC DESIGN VALUES

DETAIL REFERENCE LETTER	DESIGN VALUES DESCRIPTION	E/P A/C	VALUE	UNITS	CONSTRUCTION COMPLIANCE CONFIRMED
NS)	NATIVE SOIL SUBGRADE ALLOWABLE BEARING CAPACITY	E/A	3000	P.S.F.	
	NATIVE SOIL SUBGRADE INTERNAL FRICTION ANGLE	E/A	28°	DEGREES	
	NATIVE SOIL SUBGRADE UNIT WEIGHT TOTAL ±5 P.C.F.	E/A	120	P.C.F.	
	NATIVE SOIL SUBGRADE COHESION	E/A	N/A	P.C.F.	
MDOT 703.06a TYPE A	REINFORCED FILL MATERIAL INTERNAL FRICTION ANGLE	P	32	DEGREES	
	REINFORCED FILL MATERIAL UNIT WEIGHT TOTAL ±5 P.C.F.	P	125	P.C.F.	
	REINFORCED FILL MATERIAL MAXIMUM PARTICLE SIZE	Р	3	INCHES	
	REINFORCED FILL MATERIAL MAXIMUM FINES PASSING 200 SIEVE	P	5	PERCENT	
MDOT 703.19 GRANULAR BORROW	UNREINFORCED BACKFILL MATERIAL INTERNAL FRICTION ANGLE	P	28	DEGREES	
	UNREINFORCED BACKFILL UNIT WEIGHT	P	120	P.C.F.	
	UNREINFORCED BACKFILL MATERIAL MAXIMUM PARTICAL SIZE	P	6	INCHES	
	UNREINFORCED BACKFILL MATERIAL MAXIMUM FINES PASSING 200 SIEVE	P	20	PERCENT	
CS MDOT 703.12	CRUSHED STONE UNIT FILL MEDIAN PARTICLE SIZE	Р	3/4	INCHES	
B5	TOP OF WALL MAXIMUM BACKSLOPE ANGLE	Р	5	DEGREES	
FB	FACE BATTER	P	4.0	DEGREES	
K	SIZE OF KEYSTONE UNITS STANDARD OR COMPAC (SMALL)	Р	STRAIGHT-FACE COMPAC II	BLOCK	COLOR: NATURAL

E - EXISTING CONDITION OR VALUE

P - PROPOSED CONDITION OR VALUE

A - ASSUMED VALUE BASED UPON ANTICIPATED SITE CONDITIONS D - DERIVED VALUE GIVEN BY OTHERS BASED UPON EXPLORATION, TESTING, OR OBSERVATION

PCF - POUNDS PER CUBIC FOOT PSF - POUNDS PER SQUARE FOOT



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SIGN VAL DETAILS LAGASH BREWINDUSTRIAL WAY,

STONE WALL SE CONSTRUCTION

	DATE				
REVISIONS	DESCRIPTION				
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DATE: 8-13-15 SCALE : AS NOTED DESIGN BY: ASW DRAWN BY: RSC FILE #: 15256-RT.DWG PROJECT NUMBER:

**15256** 

SHEET NO: RT1