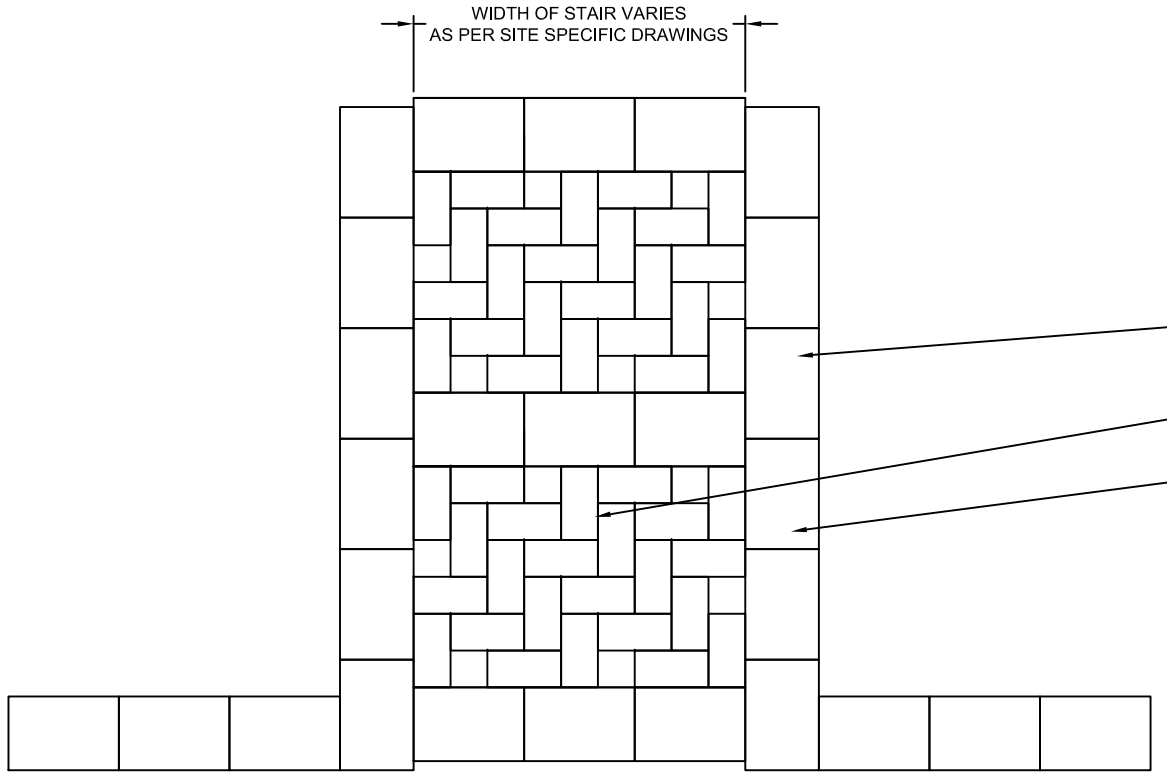
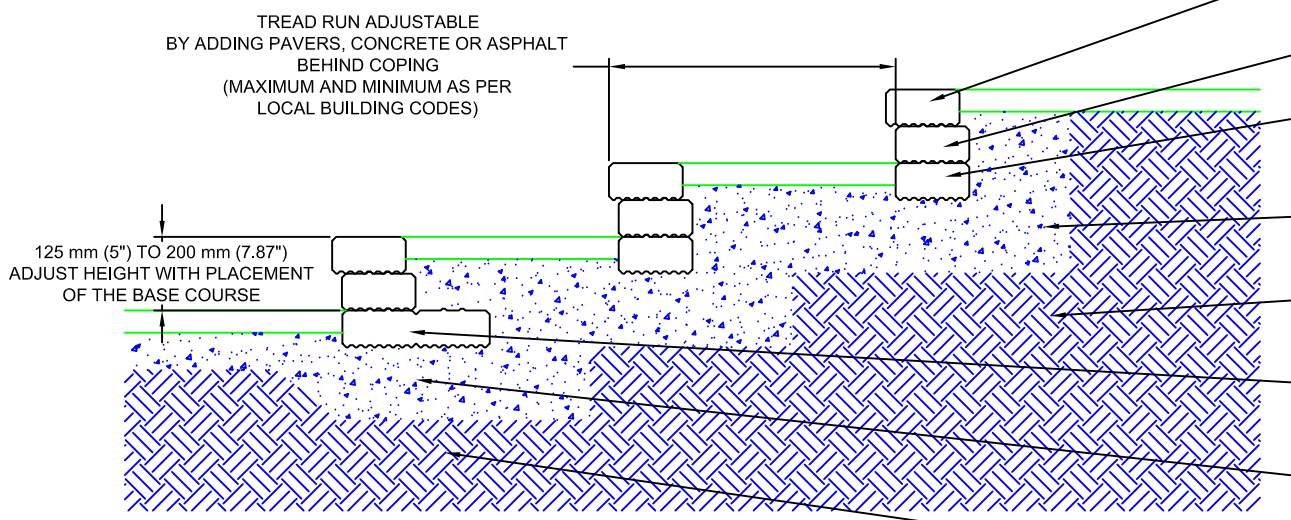



PLAN VIEW

CUT RETURN WALLS AS NECESSARY

INFILL TREAD RUN BY ADDING PAVERS (TREAD RUN ADJUSTABLE)
REFER TO LOCAL BUILDING CODES FOR MAXIMUM AND MINIMUM DISTANCES

RETURN WALLS FOR SUPPORT OF STAIRS (IF NECESSARY)




CROSS-SECTION

Wallstone 12" COPING UNIT AS STEP UNIT (4 COURSES)
ALL COURSES TO BE ADHERED TOGETHER USING LANDSCAPE ADHESIVE

Wallstone STANDARD UNIT
ALL COURSES TO BE ADHERED TOGETHER USING LANDSCAPE ADHESIVE

BASE REQUIRES MINIMUM ONE COURSE Wallstone STANDARD UNIT
ALL COURSES TO BE ADHERED TOGETHER USING LANDSCAPE ADHESIVE

FREE-DRAINING 0-19 mm (0-3/4") WELL GRADED CRUSHED ANGULAR
MATERIAL WITH LESS THAN 8% PASSING THE No. 200 SIEVE COMPACTED
TO MINIMUM 98% S.P.M.D.D.

ORIGINAL COMPETENT RETAINED SOIL ASSUMED TYPE II

BASE REQUIRES MINIMUM ONE COURSE Wallstone DOUBLE UNIT
AT BOTTOM STEP
ALL COURSES TO BE ADHERED TOGETHER USING LANDSCAPE ADHESIVE

MINIMUM 200 mm (8') OF 0-19 mm (0-3/4") WELL GRADED CRUSHED ANGULAR
MATERIAL WITH LESS THAN 8% PASSING THE No. 200 SIEVE COMPACTED
TO MINIMUM 98% S.P.M.D.D.

ORIGINAL COMPETENT SOIL OR COMPACTED STRUCTURAL FILL (BY OTHERS)
TO HAVE A MINIMUM BEARING CAPACITY OF 150 kPa (3000 psf)

GENERAL NOTES:

1) EXCAVATE FOR FOOTING TO MINIMUM DEPTH OF 300 mm (12 in), OR UNTIL COMPETENT SOIL IS REACHED OR FILL WITH COMPACTED STRUCTURAL FILL (BY OTHERS). THE FOUNDING SOIL MUST BE INSPECTED BY THE GEOTECHNICAL ENGINEER TO CONFIRM ADEQUATE BEARING CAPACITY, SLOPE STABILITY AND GLOBAL STABILITY. WHERE REQUIRED BY GEOTECHNICAL ENGINEER, PLACE ENGINEERED FILL COMPRISING OF APPROVED GRANULAR MATERIAL PLACED IN 250 mm (10") LIFTS AND COMPACTED TO 98% S.P.M.D.D. BACKFILLING AND COMPACTION TO BE CARRIED OUT UNDER GEOTECHNICAL SUPERVISION. PERMACON IS NOT RESPONSIBLE FOR RETAINING A GEOTECHNICAL ENGINEER TO OVERSEE CONSTRUCTION OF RETAINING WALL.

2. EXCAVATION TO ALLOW FOR THE THICKNESS OF THE WALL PLUS A SUFFICIENT DISTANCE TO ALLOW FOR COMPACTED GRANULAR BACKFILL BEHIND THE WALL. EXCAVATE ON A SUITABLE BACK ANGLE DEEP ENOUGH TO REACH ORIGINAL COMPETENT SOIL.

3. PLACE 200 mm (8") OF 0-19 mm (0-3/4") WELL GRADED CRUSHED ANGULAR GRANULAR MATERIAL WITHIN FOOTING EXCAVATION AND COMPACT TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY. BASE MATERIAL TO HAVE LESS THAN 8% PASSING THE No. 200 SIEVE.

4. LEVEL THE FIRST COURSE AND PLACE TOP FLUSH WITH THE DESIRED FINISHED GRADE IN FRONT OF THE WALL. SLOPES AT TOE OF WALL MAY REQUIRE MORE UNITS TO BE BURIED (CONSULT QUALIFIED PROFESSIONAL ENGINEER FOR GUIDANCE).

5. THE STAIR RISE CAN BE ADJUSTED BY THE PLACEMENT OF THE BASE COURSE. REFER TO LOCAL BUILDING CODES FOR THE MAXIMUM AND MINIMUM STAIR RISERS.

6. THE STAIR RUN CAN BE ADJUSTABLE BY ADDING PAVERS/CONCRETE OR ASPHALT BEHIND THE COPING. REFER TO LOCAL BUILDING CODES FOR THE MAXIMUM AND MINIMUM STAIR RUN.

7. WALL APPEARANCE TO BE SPLIT FACE AND COLOR TO BE DETERMINED BY OWNER.

8. BACKFILL THE STEPS AND RETURN WALLS WITH FREE-DRAINING SAND AND GRAVEL MATERIAL AS THE HEIGHT INCREASES, IDEALLY EVERY ONE OR TWO COURSES. AT NO TIME SHOULD THE HEIGHT EXCEED 2 COURSES WITHOUT BACKFILLING UNLESS OTHERWISE DIRECTED BY THE ENGINEER. BACKFILL MUST BE COMPACTED TO 95% S.P.M.D.D. BACKFILL MATERIAL TO HAVE LESS THAN 8% PASSING No. 200 SIEVE.

9. ALL CONSTRUCTION OPERATIONS INCLUDING BACKFILLING AND COMPACTION TO BE COMPLETED UNDER GEOTECHNICAL SUPERVISION.

10. POOR SOIL CONDITIONS AND EXCESSIVE MOISTURE MAY REQUIRE ALTERNATE DRAINAGE REQUIREMENTS AND DESIGN MODIFICATIONS.

11. THE TOP MUST BE LANDSCAPED TO PROMOTE SURFACE RUNOFF OVER THE TOP OF THE STEPS AND RETURN WALLS. NO UNUSUAL SURCHARGE LOADING SHOULD BE ADJACENT TO THE TOP OF THE STEPS AND RETURN WALLS.

12. APPROPRIATE RESTRAINT MUST BE PROVIDED AS PER LOCAL BUILDING CODES. PROVISIONS OF A RESTRAINT AND/OR HANDRAIL ON TOP OF THE RETURN WALLS AND ADJACENT TO THE STEPS MAY REQUIRE DESIGN MODIFICATIONS.

13. ALL PRODUCT NAMES AND STYLIZED REPRESENTATIONS ARE TRADEMARKS OF PERMACON, OR APPROVED FOR USE BY PERMACON COMPANIES.

14. ALL PRODUCTS ILLUSTRATED ARE SUBJECT TO PATENTS AS FOLLOWS:
Wallstone - CANADA 1,307,675
- USA 4,860,505

15. THE APPLICABILITY OF THESE RETAINING WALL SECTIONS MUST BE REVIEWED ON A SITE SPECIFIC BASIS BY A QUALIFIED PROFESSIONAL ENGINEER.

SOIL PARAMETERS USED IN DESIGNS:
REINFORCED SOIL: $\phi$ = 35 DEGREES, $\gamma$ = 22 kN/m3 (140 pcf)
RETAINED SOIL: $\phi$ = 28 DEGREES, $\gamma$ = 19 kN/m3 (120 pcf)

| REV. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 0 | JAN 12/09 | ISSUED FOR USE | DPS |

DRAWING:
Wallstone Wall
STAIR DETAIL OPTION No. 1
ADJUSTABLE RISE AND RUN WITH PAVER TREADS

PROJECT:
Wallstone Wall
STANDARD ENGINEERING

Wallstone™

NAVASCAPE
BY PERMACON

DESIGN ENGINEER:
PML Peto MacCallum Ltd.
CONSULTING ENGINEERS

| DRAWN BY: | CH'D BY: |
|---|---|
| DPS | |

DATE: JANUARY 12, 2009

SCALE: NOT TO SCALE

FILE NAME: WS-STAIR DETAIL OPTION No.1.dwg

DRAWING No.
Wallstone - STAIR DETAIL OPTION No. 1