



# Work Plans Undercliff- 3.3- Lower Reroute

April 16, 2018

Prepared For  
OPRHP, Hudson Highlands State Park

Prepared By  
New York-New Jersey Trail Conference



## Annual Project Work Plan - Trails Form

Submit to Park Manager for review and approval prior to commencing work: for ALL trail work beyond standard maintenance practices (blazing, clearing brush from treadway/tree pruning, maintenance of erosion control structures) on existing designated trails.

State Park Name: Hudson Highlands Year: 2018

Organization: The New York-New Jersey Trail Conference

Contact Name: Erik Mickelson

Contact Address: 600 Ramapo Valley Rd.

Contact Phone #: 760-893-9331

Contact Email Address: emickelson@nynjtc.org

Trail Name: Undercliff (before section 3.1)

Description of location of trail section to be worked on (if applicable): see map

GPS coordinates if available. Format: Decimal Degrees; Datum (circle one): NAD27, 83 or WGS84 (preferred) (Lat/Long): 41.44424 N, -73.96925 W, to 35 41.44437 N, -73.96979 W

Type of work (check all that apply):

- Re-alignment/relocation of trail section
- New trail development (includes designating new trails)
- Tread upgrades including installation of water management structures
- Bridge construction/replacement
- Trail Closure/Restoration
- Other: \_\_\_\_\_

Scope of work included in Trails Plan:  Yes  No (If no, requires additional review of proposal)

Description of work: (be specific including rock moving, tree cutting, trail work within 100 ft. of a water body/wetland, bridge work (*may require DEC permit*), construction of switchbacks or retaining walls, culvert and turnpike installation, etc.): Realignment away from overhead hazards, including sidehilling, and stone stairs

Work Schedule: 6/18 until completed, probably weekends between section 3.1 and 3.2 work

Attached map depicting area of work (required).  Digital photo (before)  Digital photo (after).

Submitted by (print): Erik Mickelson Signature: Erik Mickelson

Date: 4/15/18

Approved by Park Manager (print): \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_

-Forward copy to Regional Natural Resource Steward and Capital Facilities Manager.

-Also forward copy to Trails Planning Unit if scope is not part of a Trails Plan.



This plan (3.3) starts below plan 3.1 to avoid potential dangers and overhead risks of an old quarry.

\*Note that the yellow track is the actual trail, and includes the green trail to Brook. The red track is mostly misaligned. Section 3.2 is between the red pins.



## Work Log Item Summary

The following table contains an approximate list of the major trail construction items which will be required for this section of trail. There are other minor items which are not listed here but described in the trail construction work log below.

Item	Unit	Quantity
Trail Length	In. ft.	~200
Sidehill	In. ft.	~104
Stone Steps	each	~54
Stone Cribbing	sq. ft.	
Stepping Stones	each	
Stone Paving	sq. ft.	
Turnpike/Causeway	In. ft.	
Drainage Structures	each	3
Bridges	each	
Crush Fill	cu. ft.	
Surfacing	cu. ft.	

\* Work Log Item Summary is for construction estimate purposes only. Actual project accomplishments may vary.

## General Trail Construction Notes

1. NYNJTC Trail Development Level: 3 (<http://tinyurl.com/h8tv4dy>)

- Trail Use Type: **Foot Travel Only**
- Trail Tread Width Range: **18" - 36"**, tread should be natural surfacing where possible. **Where necessary, tread definition, filling, and removal of loose rock will be performed to keep hikers on trail and remove safety hazards.**
- Running Grade Range: **0-15%**, **Grades above 15% will have steps installed.**
- Corridor: **4'x8'**, **all cuts should be flush to tree or ground. Stumps within treadway should be removed.**
- **Deviations from Trail Development Level Standards:**

2. The trail layout/existing trail improvement follows the general principles of sustainable trail design with the added objective of creating an interesting, scenic, and low maintenance route.
3. Stone harvesting/splitting/shaping will be done in close proximity to the layout without significantly altering the appearance of the surrounding area.
4. Safeguards should be made to protect trailside vegetation including the use of "tree bumpers."
5. All trailside impacted areas must be renovated with leaves, logs, and other on-site organic debris.
6. Visible drill holes on stone should be minimized to the extent possible with cut/split faces mixed in with natural faces.
7. Organic materials/duff must be removed from the ground surface before trail construction commences. These materials must be stockpiled for finishing work and trail closure purposes.
8. Backfill materials may be stone up to 3". To ensure proper drainage, mineral soil should not be used.
9. **Site Specific Notes: This trail is below the existing trail, and should be relatively safe, but traffic control measures should still be used to keep passerby away.**

## Safety Notes

1. Each day will begin with a safety tailgate meeting outlining environmental, flora, fauna, work, communication, site, and tool related hazards and mitigation practices.
2. Animal sighting will be documented and reported to the field manager and OPRHP staff, in particular Jesse Jaycox.
3. Proper personal protective equipment must be worn by all trail workers while on the worksite including long pants, closed-toe shoes, work gloves, eye protection, and hard hats. Ear protection must be worn around power equipment. Dust masks (or respirators with a doctors note) must be worn when drilling rock.

slide #	rise Inches	run in	run ft	step # low	step # high	s-hill in	s-hill ft	other
7							37	drain
8							23	
9							26	drain
10							14	drain
11	66	150		8	9		4	
12	78	200		10	11			
13	47	150		6	7			
14	60	100		7	9			
15	36	175		5	6			
16	40	100		5	6			
17	38	100		5	6			
18	61	150		8	9			
total			96	54	63		104	



These photo references indicate the location of major work items as well as the trail centerline indicated by a solid yellow line shown in each photo.

To effectively use this trail construction work log, place yourself approximately where the photographer stood, note the trees, boulders, or other features in the photo and that will help you reference where the trail is to built/improved. Remember you are looking at photos which are in two dimensions and the field situation is in three dimensions. In addition, expect the view to change over time given more vegetation, downed trees, etc.

Arrows point to the approximate location of the work needed, or the location of a singular structure, such as a drainage structure. Two arrows or lines show the approximate start and finish of on-going structures or types of work, such as stone cribbing, stairs, and sidehill.

Each section to be built will be field staked or pin-flagged where needed by the trail designer prior to construction.

Note: Trail routing assumes a 50 foot corridor on either side of the centerline in which to move or realign the trail. For example, a trail might need to be realigned around a seep, large boulder, or bedrock. If the trail needs to be moved outside of the 50ft corridor due to unforeseen construction constraints, it will be brought to the land manager's attention for approval. A new work log photo with proper proof of approvals will be inserted into this document (at the end as an addendum to the slide/s in question).



37

Bench cut

Close old trail

X

X

X

0

7



60

Continue benching

37

40

8



**86**

**Continue benching**

**60**





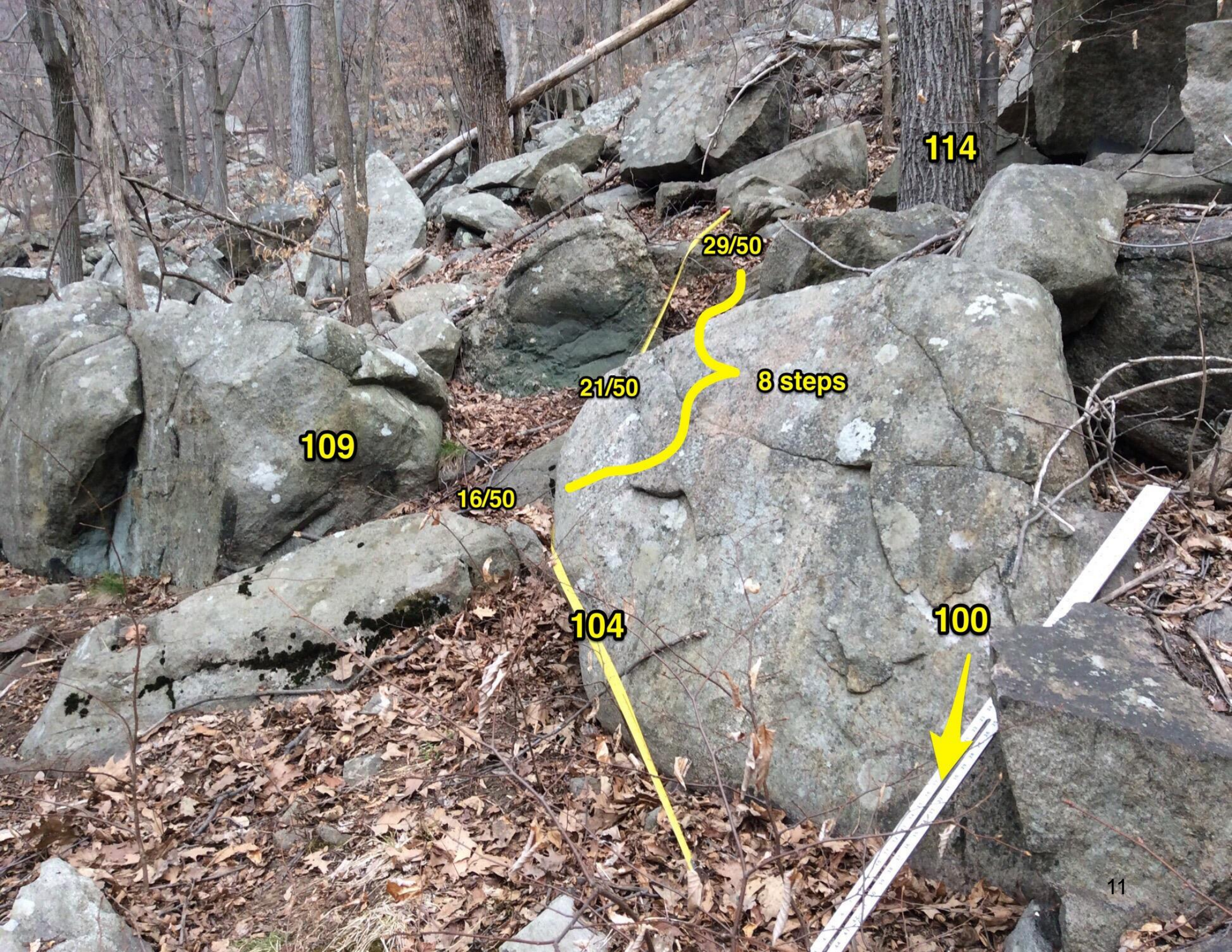
92

100

Continue benching

86

10



**114**

**29/50**

**21/50**

**8 steps**

**109**

**16/50**

**104**

**100**



24/50

19

18

17

10 steps

29/50

**20/50**

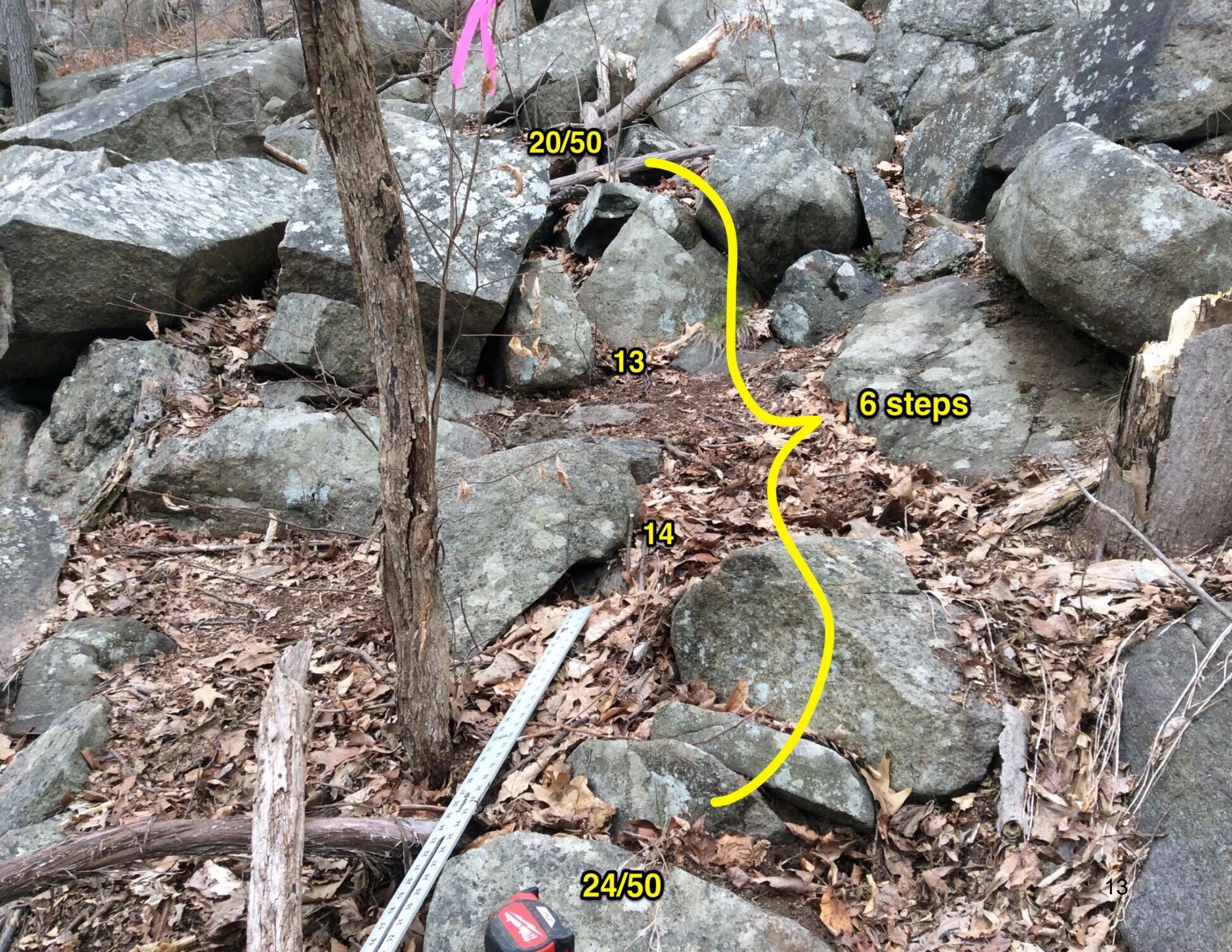
**13**

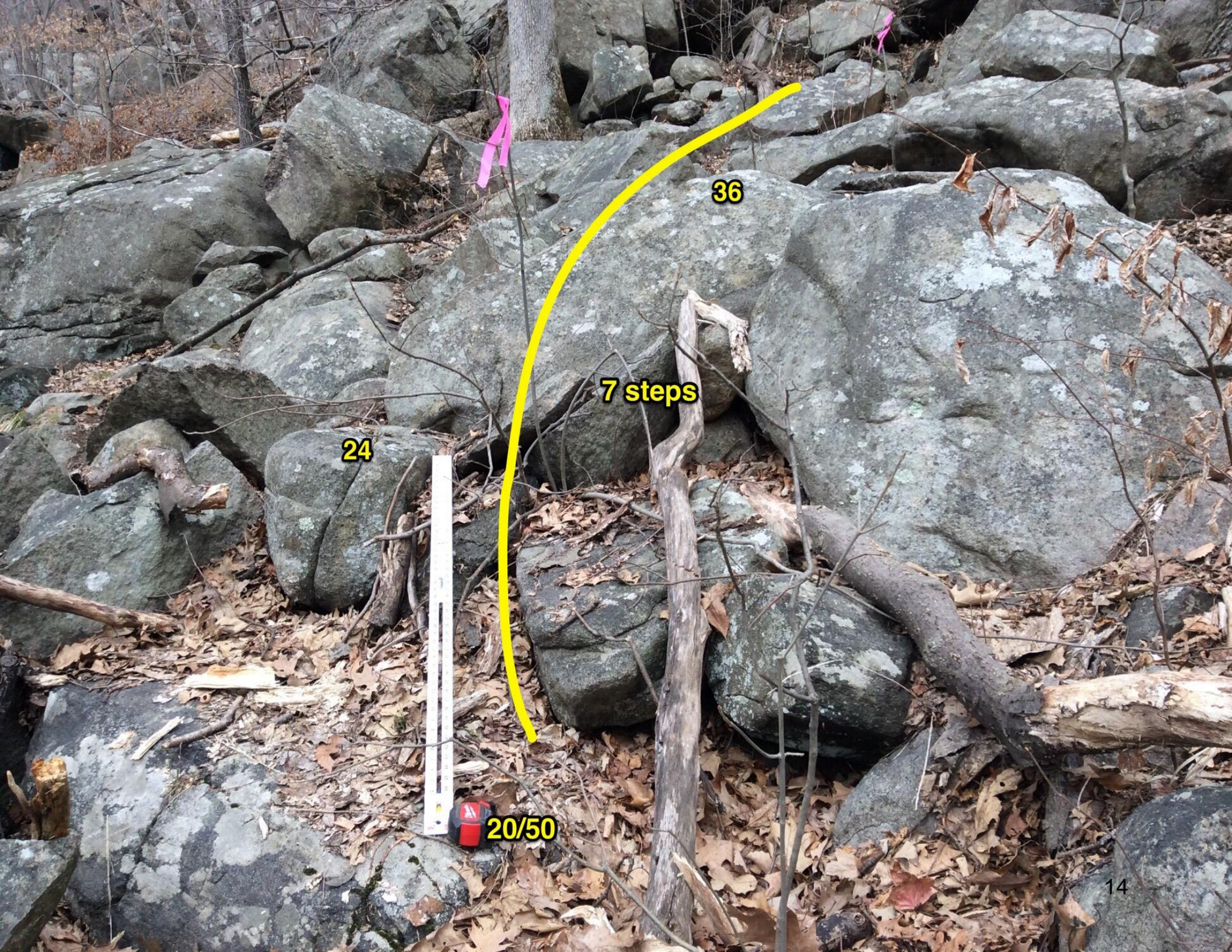
**6 steps**

**14**

**24/50**

13





36

7 steps

24

20/50



17

5 steps

14

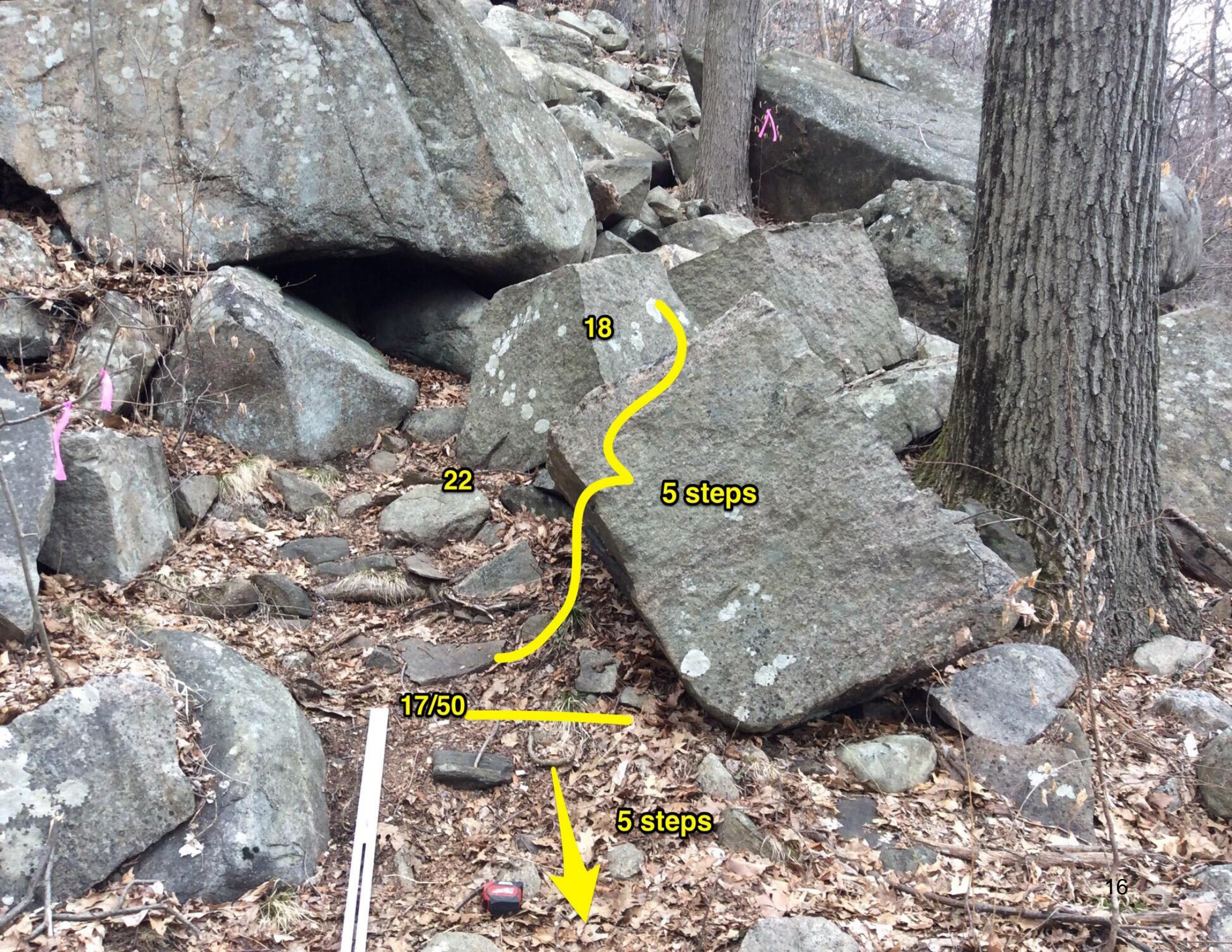
10

-5

7 steps

36/50

15



18

22

5 steps

17/50

5 steps





11

27

5 steps

18/50

**~54 total steps**

**29**

**17**

**8 steps**

**15**

**Close  
old trail**

**X**

**11/50**

**18**

