

# D&H CANAL LOOP TRAIL FEASIBILITY STUDY



JUNE 2020



## SITE ANALYSIS MEMO

### Five Locks Walk Trail Extension Feasibility Study

D&H Canal Historical Society

15 February 2020

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### Introduction and Background

The Delaware and Hudson (D&H) Canal was designated a National Historic Landmark in 1966, while the Five Locks Walk specifically was added in 1969. In 1999, the High Falls locks--16 through 20--were cleared and refurbished to the greatest extent possible. These five locks were built in 1850, as part of a new route designed to accommodate increased traffic and larger canal boats. This section also included a loading quay, still visible just past lock 16. The canal locks were constructed of Shawangunk conglomerate, an indigenous stone. Each lock measured 90' long, 15' wide, and 15' deep, and provided an average change in elevation of 12.6'.

The canal towpath is approximately one-half mile in length. It can be accessed, free of charge, during daylight hours year-round. The trail begins adjacent to the D&H Canal House (1315 Route 213, High Falls, NY 12440), and a short walk from the existing museum (23 Mohonk Ave. in High Falls). When hiking the towpath, the following rules are posted: Pets must be leashed; NO motorized vehicles are allowed; Respect private property and avoid restricted areas; and Be prepared for uneven terrain, and for seasonal hazards like ticks and poison ivy.

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### Physical Inventory and Analysis

#### Introduction

Before the D&H Canal Historical Society could develop strategies to extend the existing 5 Locks Walks and expand its use within the community, an assessment of the proposed loop trail path was evaluated to determine the path's various opportunities and constraints. Barton & Loguidice visited the site, analyzed current conditions and generated a list of opportunities and constraints.

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#### Opportunities

The existing Five Locks Walk is located in a central position within the hamlet of High Falls in the Town of Marbletown and acts a great introduction and experience of the historic D&H Canal. The natural extension of this existing trail would run along a loop, approximately 1.5 miles long, along the existing trail continuing northwest along De Pew Road and then northeast along Berme Road and then returning along Route 213 and Old Route 213 (through the soon to be improved Grady Park, through a portion of the High Falls business district, ending at the new D&H Canal Museum



at the start of the Five Locks Walk. There is great potential here, through a series of existing elements, proposed improvements, and enhanced physical linkages, to create a strong community linear park which coincides nicely with concurrent passive recreation enhancements within the hamlet.

#### *Existing Five Locks Walk*

This existing walk is well maintained and runs along a restored portion of the D&H Canal with much existing stonework to enhance the users' experience. There are many highlights and features along this trail to attract residents and visitors to the trail.

There is an existing kiosk with user information, as well as, trailhead signage at the beginning of the walk at the new D&H Canal Museum and at the current terminus of the trail at De Pew Road.

The lineal trail is located within walking distance of businesses in High Falls and near the local attraction of the Rondout Creek. The planned development of this Loop Trail would further enhance the existing trail and provide connections to additional local features and passive recreation areas.

#### *De Pew Road*

De Pew Road is a minimally used local road that allows pedestrians to walk safely here encountering very few vehicles. Existing fire hydrants run along the north side of the road indicating that the Town's right of way extends to include these hydrants at a minimum. Having the opportunity to use this right of way to develop the loop trail would further provide a safe trail for pedestrians.

A local orchard is located along this stretch of road providing interest and additional possible attractions along the trail through access to the orchard from this side, a possible farm stand along the loop trail, and a possible cut through to Grady Park. These possible additional features along this part of the loop trail should be further explored.

Also, the Old Rosendale Cement Kiln is located below De Pew Road where it intersects with Berme Road. The possibility of adding signage and a set of stairs to access this site feature should be explored.

#### *Berme Road*

Berme Road is another rural road along the proposed loop trail though it has considerably more traffic than De Pew Road. The existing shoulder on the east side of the road is possibly ample





enough for portions of this stretch to accommodate the proposed loop trail to allow for an off-road trail and a separation of uses between pedestrians and vehicles.

Berme Road follows alongside Rondout Creek offers constant views of the creek along this stretch of the proposed trail. Additional existing attractions along this portion of the loop trail include the Old Rosendale Cement Kiln (further southwest along Berme Road at the intersection with De Pew Road) and an existing D&H Canal Tow Path off road between Berme Road and Rondout Creek.

These natural and manmade features should be highlighted and featured through connections and signage.

#### *Route 213 / Old Route 213 / Grady Park*

At the intersection of Berme Road and Route 213 there is an existing triangle area that is currently a memorial for a local resident. This area is an ideal location for a pocket park and information kiosk along the loop trail.

Sidewalks are proposed for the north side of Route 213 but there appears to be ample room along the south side up to the intersection of Old Route 213 within the right of way to continue the loop trail to avoid having to cross Route 213.

At the intersection of Route 213 and Old Route 213 is the start of Grady Park. This park is currently being studied to design improvements to the park. The loop trail could continue along this stretch through the proposed park allowing pedestrians to be off the road entirely for this portion.

Though a crosswalk would be proposed across Route 213 to connect to the start of the Conservancy Creek Walk.

At the opposite end of Grady Park is the existing park where the local flea market is held, providing an additional attraction along the loop trail.

#### *Business District*

Continuing through the parking lot and again across Old Route 213, the loop trail would go through a portion of the existing business district providing amenities to trail users and increased pedestrian traffic for local businesses.





### *Parking*

Possible areas for public parking have been defined along the proposed loop. Public parking to allow residents and visitors to easily access the local amenities is an asset to any community.

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### *Constraints*

#### *Existing Five Locks Walk*

This existing walk is narrower than 10' and has limited signage and seating along its route. There are many existing historic artifacts along this route that are not presented to the users currently.

These constraints are minimal and can be easily addressed but further improving the existing assets.

#### *De Pew Road*

The portion of De Pew Road that slopes down to meet Berme Road is located on a curve with adjacent steep slopes on either side providing minimal site lines for users as well as limited availability to locate the loop trail off of the vehicular road.

This portion of the road needs to be studied further.

#### *Berme Road*

Berme Road has considerably more traffic than De Pew Road and does not have consistently good sight lines along the proposed loop trail, specifically south to the Old Rosendale Cement Kiln. The Kiln is located off of the proposed loop trail and is hidden from the everyday user. This area needs to be studied further to determine how to take advantage of this asset.

The existing shoulder to the east of the road where the loop trail is currently proposed has some existing trees and steep grades adjacent to it, which may require tree removals and retaining walls to construct the loop trail off-road for the entire length of where it is proposed along Berme Road.

The existing D&H Canal Tow Path off road between Berme Road and Rondout Creek is located on private property. Ideally the proposed loop trail would travel across Berme Road and then along this off road tow path along Berme Road to provide the best connection with Rondout Creek, as well as, provide the safest route for users. The use of this portion of private property or a portion of it to provide access to the Creek will need to be investigated further.



### *Route 213 / Old Route 213 / Grady Park*

Route 213 is a busy State highway where the speed limit is still 45mph over the bridge before reducing to 30mph at Grady Park. Ideally the reduction to a 30mph speed limit would happen to the west of the bridge into Town to allow for slower traffic along this stretch. Due to the proximity of the proposed loop trail along this State highway a wood guiderail would be recommended to separate the pedestrian use from the vehicular use.

The memorial at the intersection of Berme Road and Route 213 could impose some restrictions on the possible design improvements for this area.

Grady Park is being designed and developed under a separate design study making coordination more difficult and requiring cooperation between the design consultants.

### *Business District*

This area is not well defined with a clear separation of uses. A redesign of this area should be studied to ensure a safe pathway for pedestrians while maintaining the number of existing parking spaces.

### *Parking*

One of the possible areas for public parking is located on private property and would require cooperation from that owner.

### *Maintenance*

While the D&H Canal Historical Society currently maintains the Five Locks Walk, extending the walk into a loop trail will require further maintenance.

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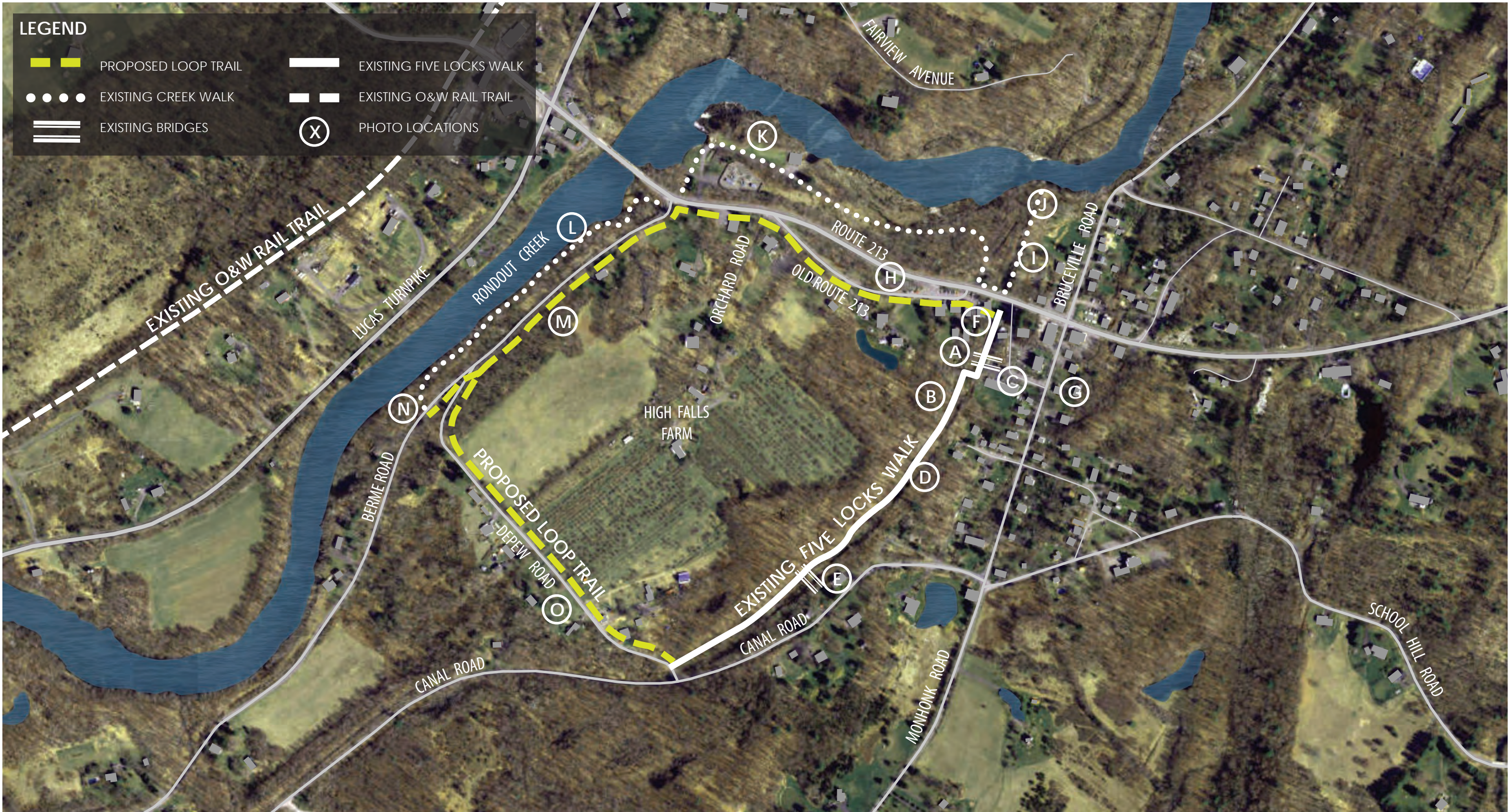
### *Site Analysis Plan*

The D&H CANAL LOOP TRAIL EXISTING CONDITIONS MAP and associated existing conditions photos, as well as, the D&H CANAL LOOP TRAIL SITE FEATURES MAP on the following pages shows the areas of opportunities and constraints and further shows observations from a site walk through.



**LEGEND**

- PROPOSED LOOP TRAIL
- EXISTING FIVE LOCKS WALK
- EXISTING CREEK WALK
- EXISTING BRIDGES
- X PHOTO LOCATIONS



**D&H CANAL LOOP TRAIL**  
EXISTING CONDITIONS MAP

- |                              |                          |                               |                        |                               |
|------------------------------|--------------------------|-------------------------------|------------------------|-------------------------------|
| (A) FIVE LOCKS WALK ENTRANCE | (D) FIVE LOCKS WALK      | (G) EXISTING D&H CANAL MUSEUM | (J) AQUEDUCT BRIDGE    | (M) BERME ROAD                |
| (B) FIVE LOCKS WALK          | (E) TRAIL BRIDGE         | (H) OLD LOCK 17               | (K) RONDOUT CREEK      | (N) OLD ROSENDALE CEMENT KILN |
| (C) TRAIL BRIDGE             | (F) NEW D&H CANAL MUSEUM | (I) D&H TELEGRAPH OFFICE      | (L) D&H CANAL TOW PATH | (O) DEPEW ROAD                |





# D&H CANAL LOOP TRAIL EXISTING CONDITIONS MAP

Barton & Loguidice  
February 2020

(A) FIVE LOCKS WALK ENTRANCE

(C) TRAIL BRIDGE

(E) TRAIL BRIDGE

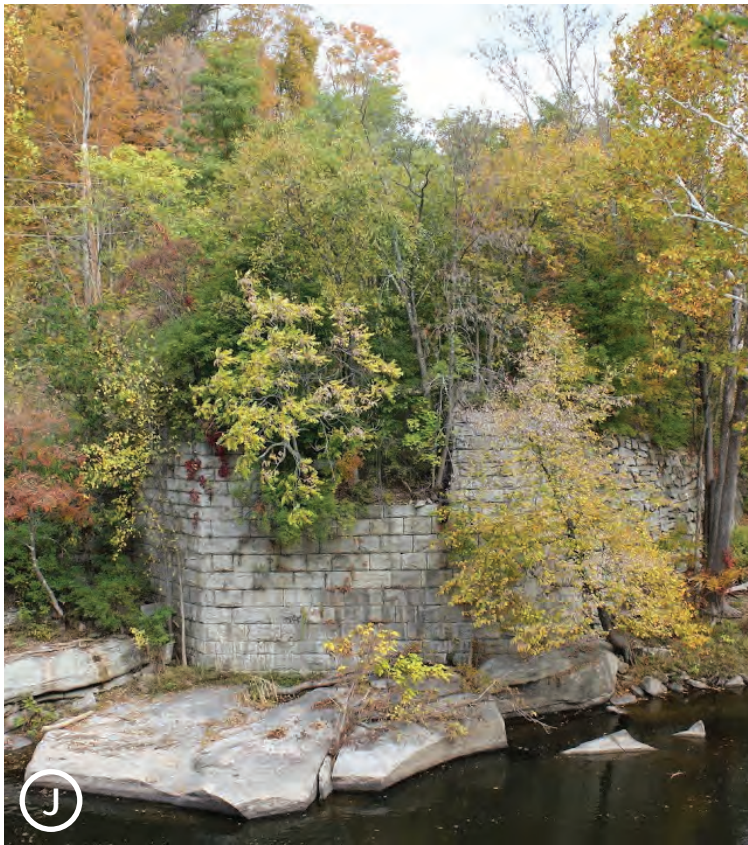
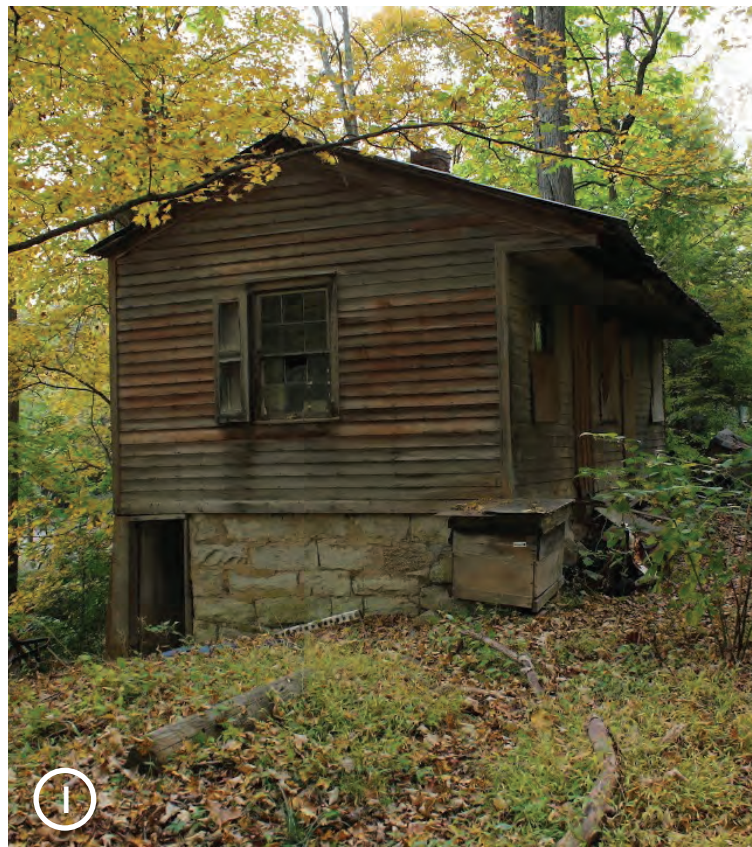
(G) EXISTING D&H  
CANAL MUSEUM

(B) FIVE LOCKS WALK

(D) FIVE LOCKS WALK

(F) NEW D&H CANAL  
MUSEUM





**D&H CANAL LOOP TRAIL**  
**EXISTING CONDITIONS MAP**

Barton & Loguidice  
February 2020

**(H)** OLD LOCK 17

**(J)** AQUEDUCT BRIDGE

**(I)** D&H TELEGRAPH OFFICE

**(K)** RONDOUT CREEK





# D&H CANAL LOOP TRAIL EXISTING CONDITIONS MAP

Barton & Loguidice  
February 2020

**(L)** D&H CANAL TOW PATH

**(M)** BERME ROAD

**(N)** OLD ROSENDALE  
CEMENT KILN

**(O)** DEPEW ROAD

**(\*)** EXISTING MATERIALS TO BE  
RE-USED & INCORPORATED  
INTO FINAL DESIGN





# D&H CANAL LOOP TRAIL

## SITE ANALYSIS MAP

Barton & Loguidice  
February 2020

### LEGEND

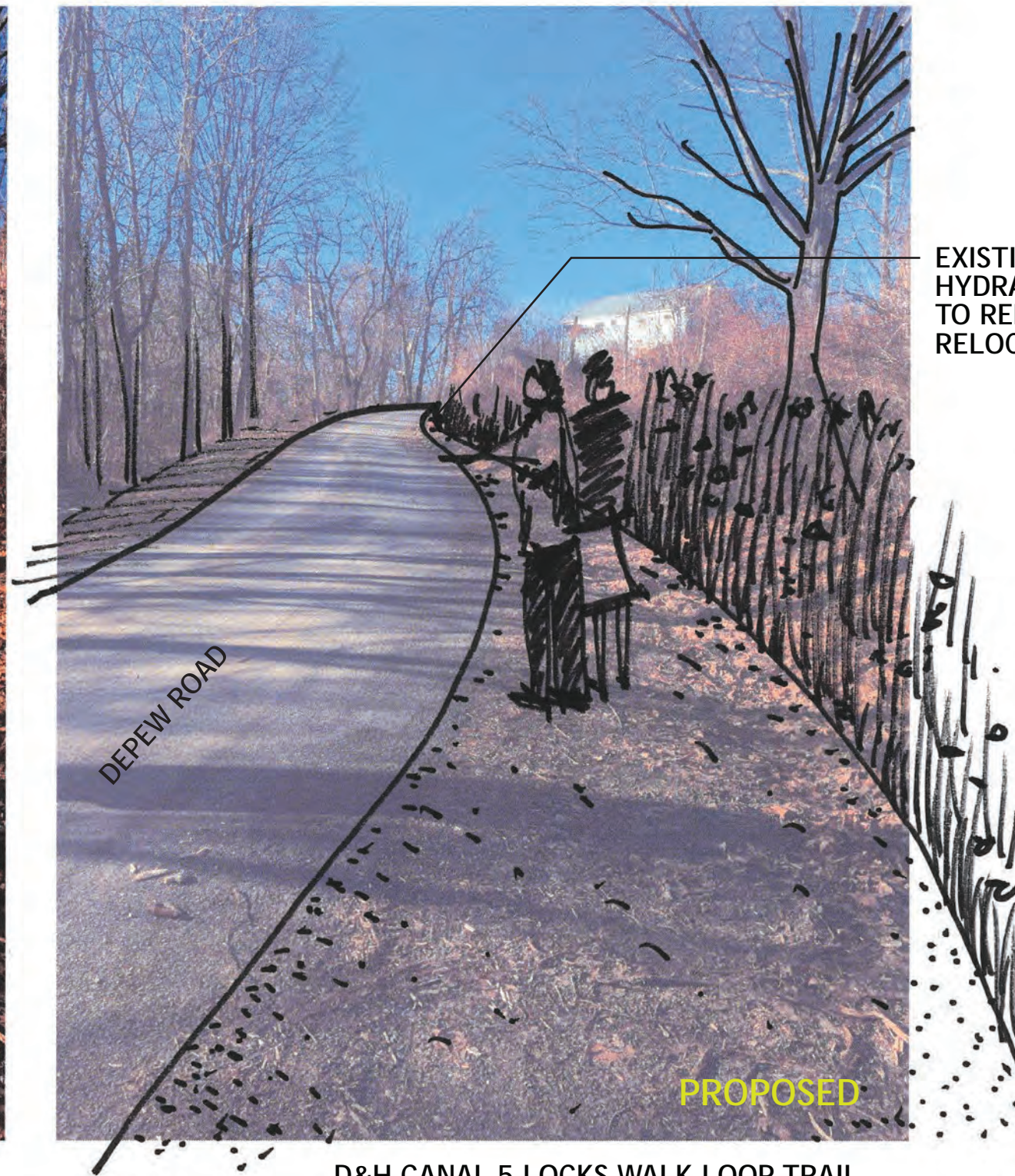
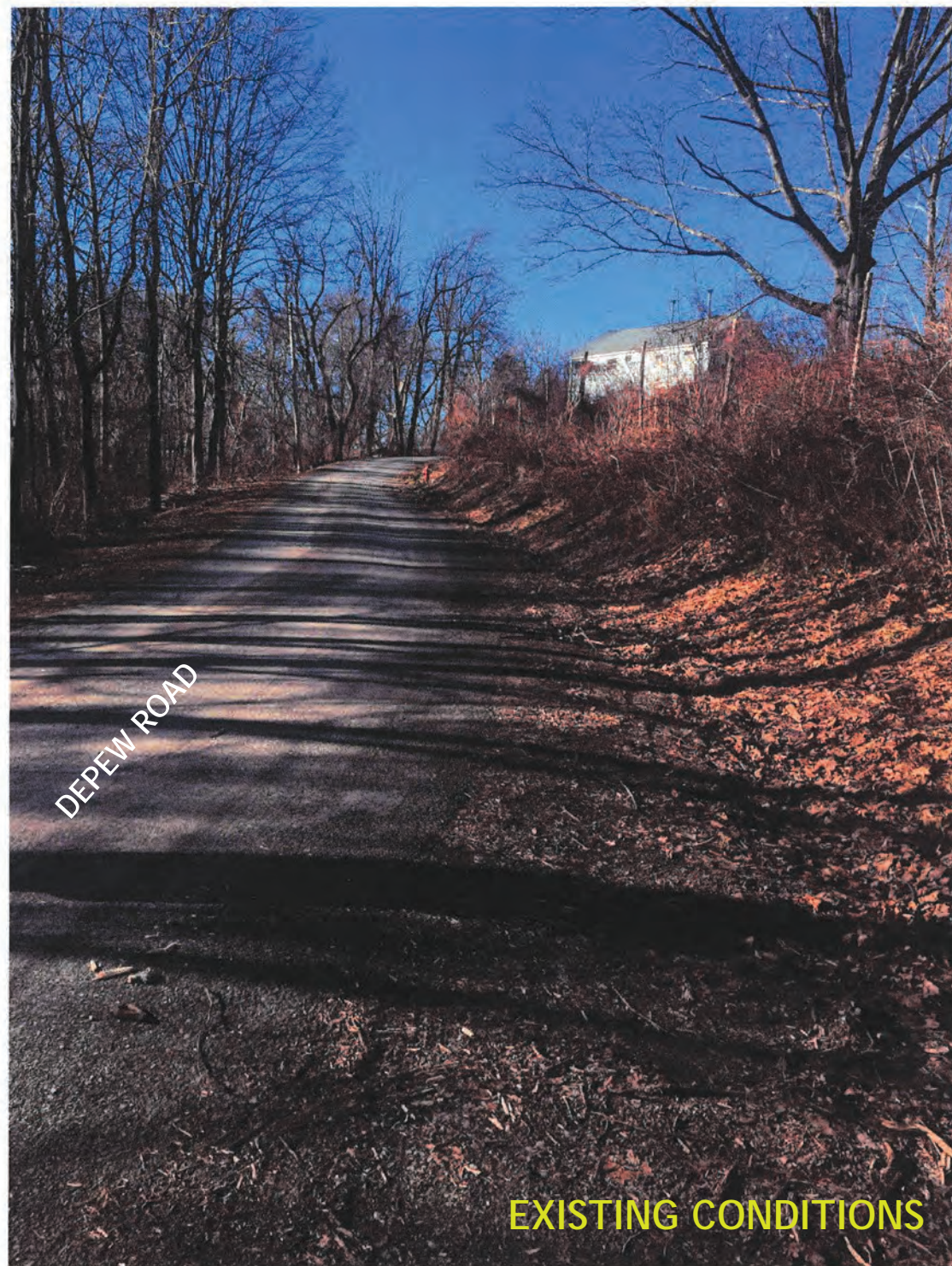
- ▬▬▬ PROPOSED LOOP TRAIL
- PROPOSED CREEK WALK
- ≡≡≡ PROPOSED CROSSWALK

- + EXISTING SITE FEATURES
- EXISTING WAYFINDING SIGNAGE

- FOCAL POINTS / PLAZA AREAS
- POTENTIAL CONNECTION POINTS

- PROPOSED WAYFINDING SIGNAGE
- P POTENTIAL PARKING AREAS





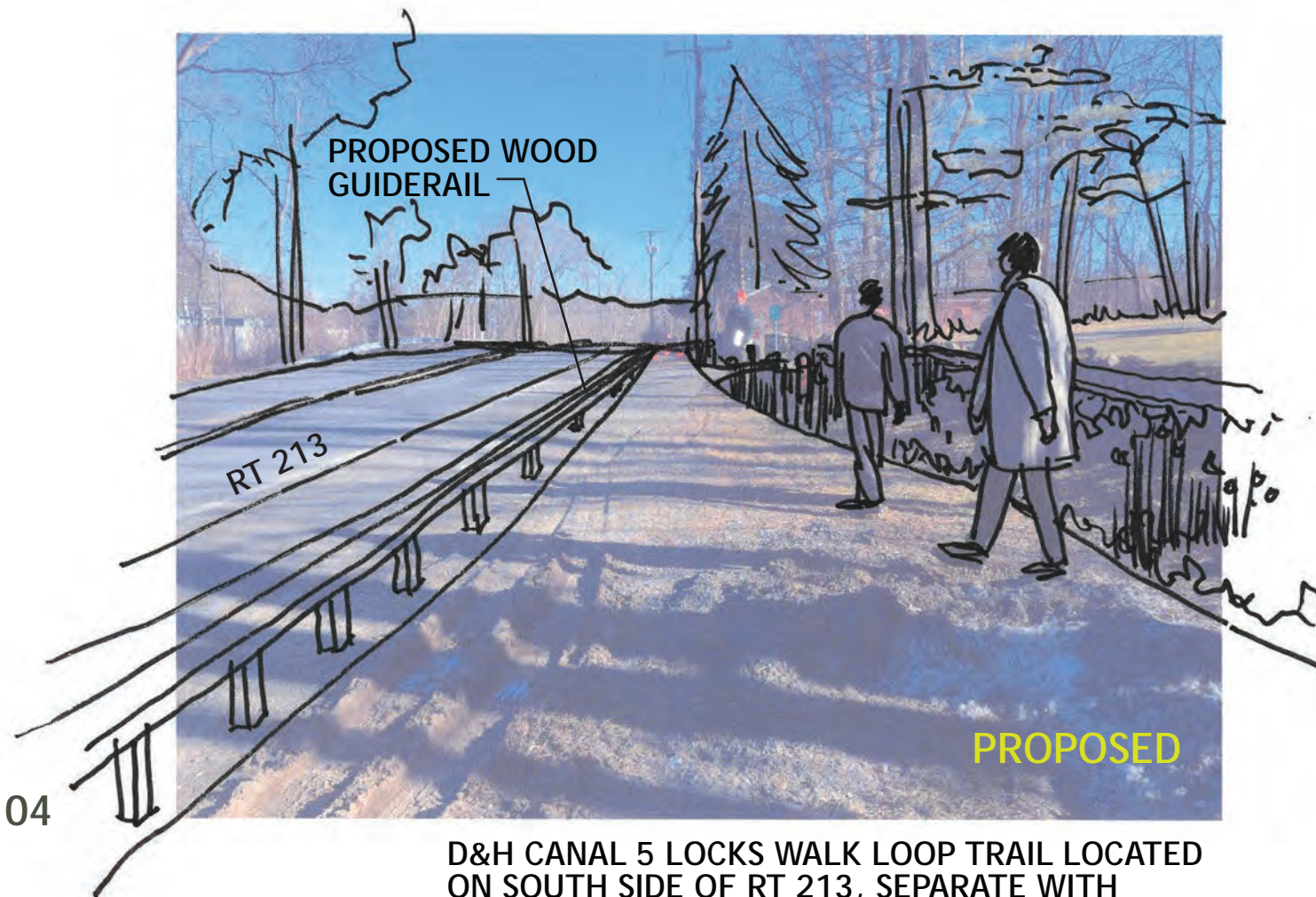
D&H CANAL 5 LOCKS WALK LOOP TRAIL  
LOCATED ON NORTH SIDE OF DEPEW ROAD  
(TOWN ROW)

## D&H CANAL LOOP TRAIL

### SKETCH 01

Barton & Loguidice  
February 2020





**D&H**  
SKETCH 03 & 04

Barton & Loguidice  
February 2020

D&H CANAL 5 LOCKS WALK LOOP TRAIL LOCATED ON SOUTH SIDE OF RT 213, SEPARATE WITH GUIDERAIL

PROPOSED POCKET PARK ALONG D&H CANAL 5 LOCKS WALK LOOP TRAIL AT INTERSECTION OF RT 213 & BERME ROAD





EXISTING CONDITIONS



PROPOSED D&H CANAL 5 LOCKS  
WALK LOOP TRAIL LOCATED ON  
SOUTHEAST SIDE OF BERME ROAD

PROPOSED

# D&H CANAL LOOP TRAIL

## SKETCH 04











Barton & Loguidice  
February 2020

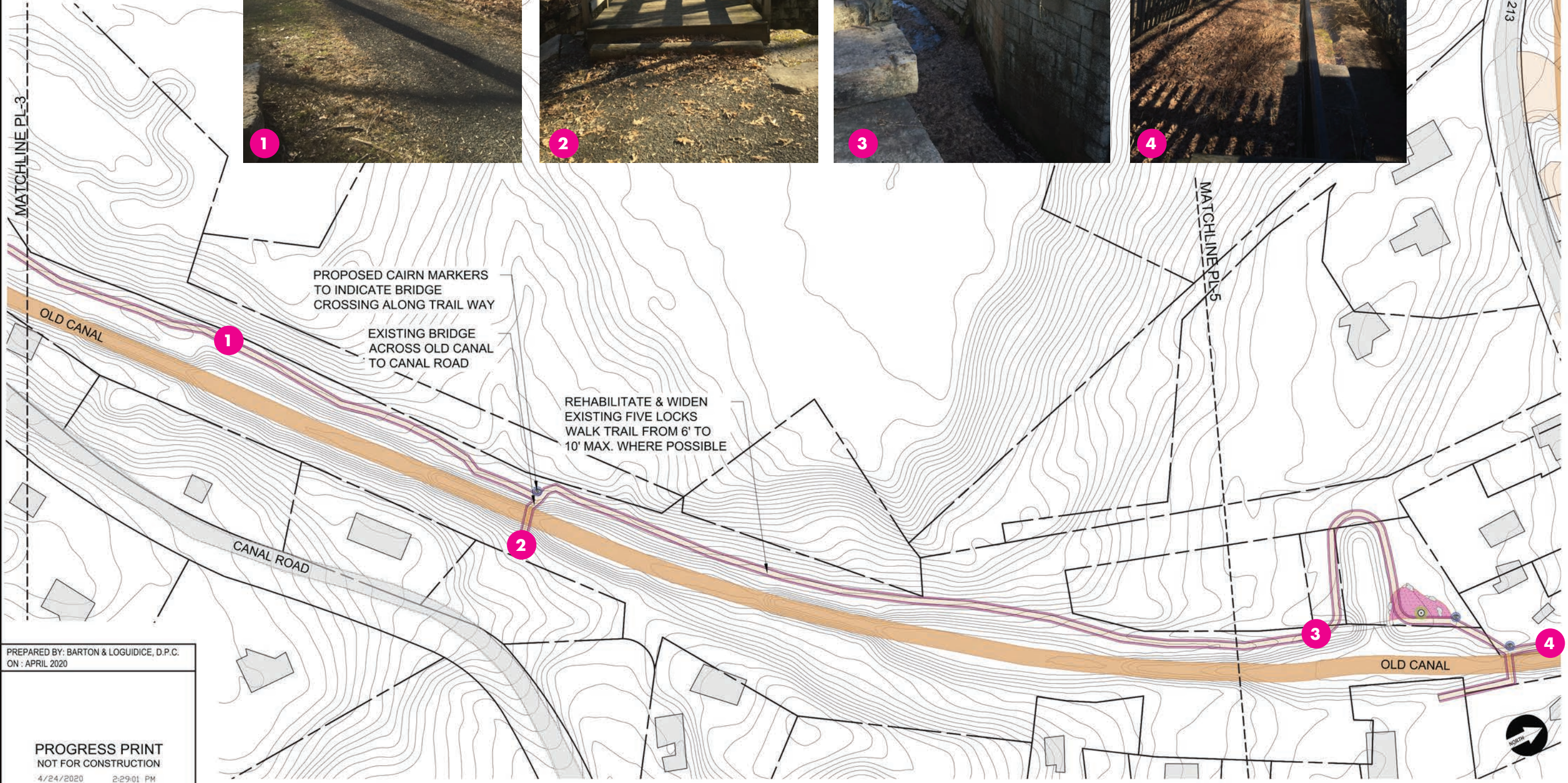






**LEGEND**

-  EXISTING TREE REMOVAL
-  EXISTING STONE WALL
-  EXISTING HYDRANT
-  EXISTING CANAL
-  EXISTING 5 LOCKS WALK TRAIL
-  PROPOSED TRAILHEAD CAIRN
-  PROPOSED MILL STONE TRAIL MARKER
-  PROPOSED D&H LOOP TRAIL
-  PROPOSED POCKET PARK / TRAILHEAD AREA
-  PROPOSED CREEK TOWPATH TRAIL & ACCESS



PREPARED BY: BARTON & LOGUIDICE, D.P.C.  
ON: APRIL 2020

**PROGRESS PRINT**  
NOT FOR CONSTRUCTION  
4/24/2020 2:29:01 PM

1 SITE LAYOUT PLAN 1  
PL-2 Scale: 1"=60'-0"

NO. DATE BY REVISION

**Barton & Loguidice**  
UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW ARTICLE 145 SECTION 7209











TRAIL FEASIBILITY STUDY  
D&H FIVE LOCKS WALK  
HAMLET OF HIGH FALLS  
ULSTER COUNTY, NEW YORK

CONCEPTUAL LAYOUT PLAN

SCALE: AS NOTED  
DATE ISSUED: 04/2020  
DRAWING PL-2



**LEGEND**

-  EXISTING TREE REMOVAL
-  EXISTING STONE WALL
-  EXISTING HYDRANT
-  EXISTING CANAL
-  EXISTING 5 LOCKS WALK TRAIL
-  PROPOSED TRAILHEAD CAIRN
-  PROPOSED MILL STONE TRAIL MARKER
-  PROPOSED D&H LOOP TRAIL
-  PROPOSED POCKET PARK / TRAILHEAD AREA
-  PROPOSED CREEK TOWPATH TRAIL & ACCESS



PREPARED BY: BARTON & LOGUIDICE, D.P.C.  
ON : APRIL 2020

**PROGRESS PRINT**  
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4/24/2020 2:26:43 PM

1 SITE LAYOUT PLAN 2  
PL-3 Scale: 1"=60'-0"

NO. DATE BY REVISION

**Barton & Loguidice**  
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TRAIL FEASIBILITY STUDY  
D&H FIVE LOCKS WALK  
HAMLET OF HIGH FALLS  
ULSTER COUNTY, NEW YORK

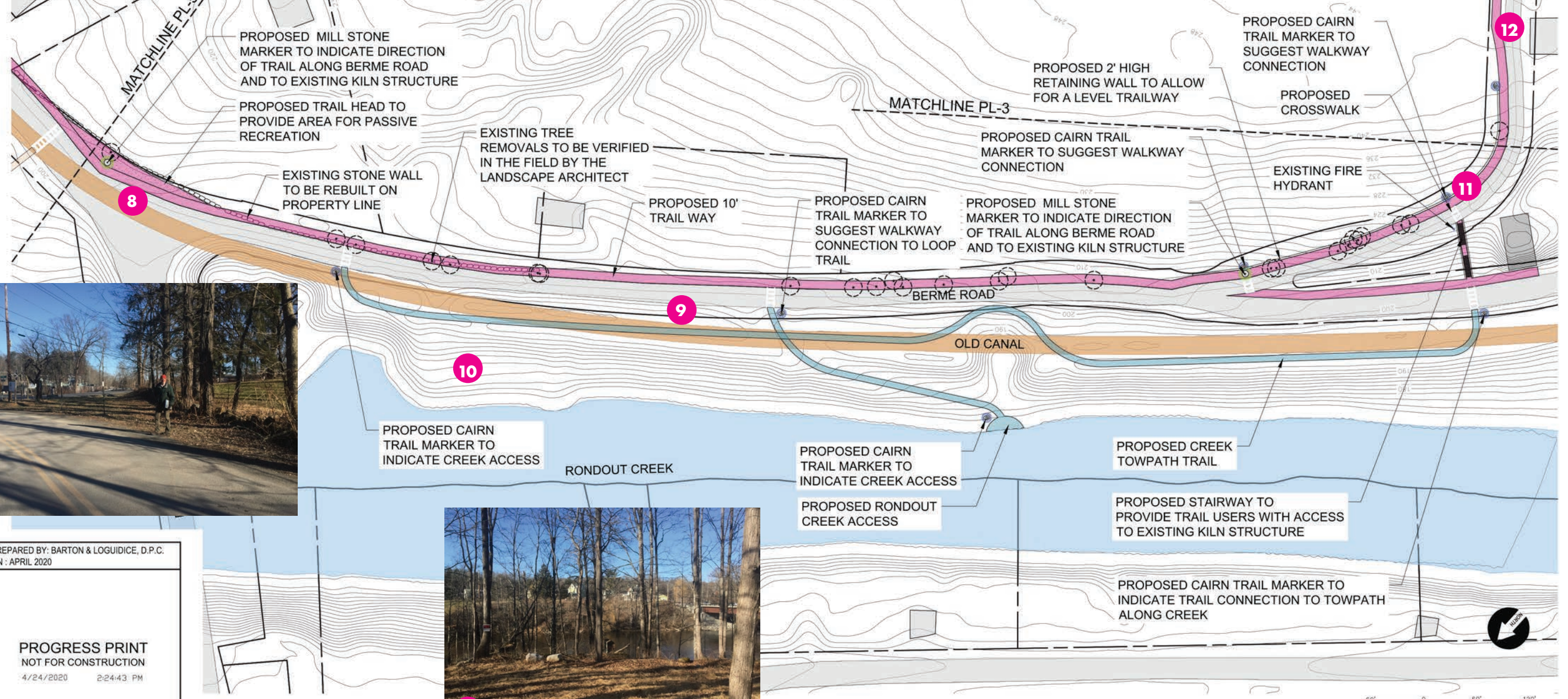
CONCEPTUAL LAYOUT PLAN

SCALE: AS NOTED  
DATE ISSUED: 04/2020  
DRAWING PL-3



**LEGEND**

- EXISTING TREE REMOVAL
- EXISTING STONE WALL
- EXISTING HYDRANT
- EXISTING CANAL
- EXISTING 5 LOCKS WALK TRAIL
- PROPOSED TRAILHEAD CAIRN
- PROPOSED MILL STONE TRAIL MARKER
- PROPOSED D&H LOOP TRAIL
- PROPOSED POCKET PARK / TRAILHEAD AREA
- PROPOSED CREEK TOWPATH TRAIL & ACCESS



PREPARED BY: BARTON & LOGUIDICE, D.P.C.  
ON: APRIL 2020

**PROGRESS PRINT**  
NOT FOR CONSTRUCTION  
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1 SITE LAYOUT PLAN 3  
PL-4 Scale: 1"=60'-0"



NO. DATE BY REVISION

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TRAIL FEASIBILITY STUDY  
D&H FIVE LOCKS WALK  
HAMLET OF HIGH FALLS  
ULSTER COUNTY, NEW YORK

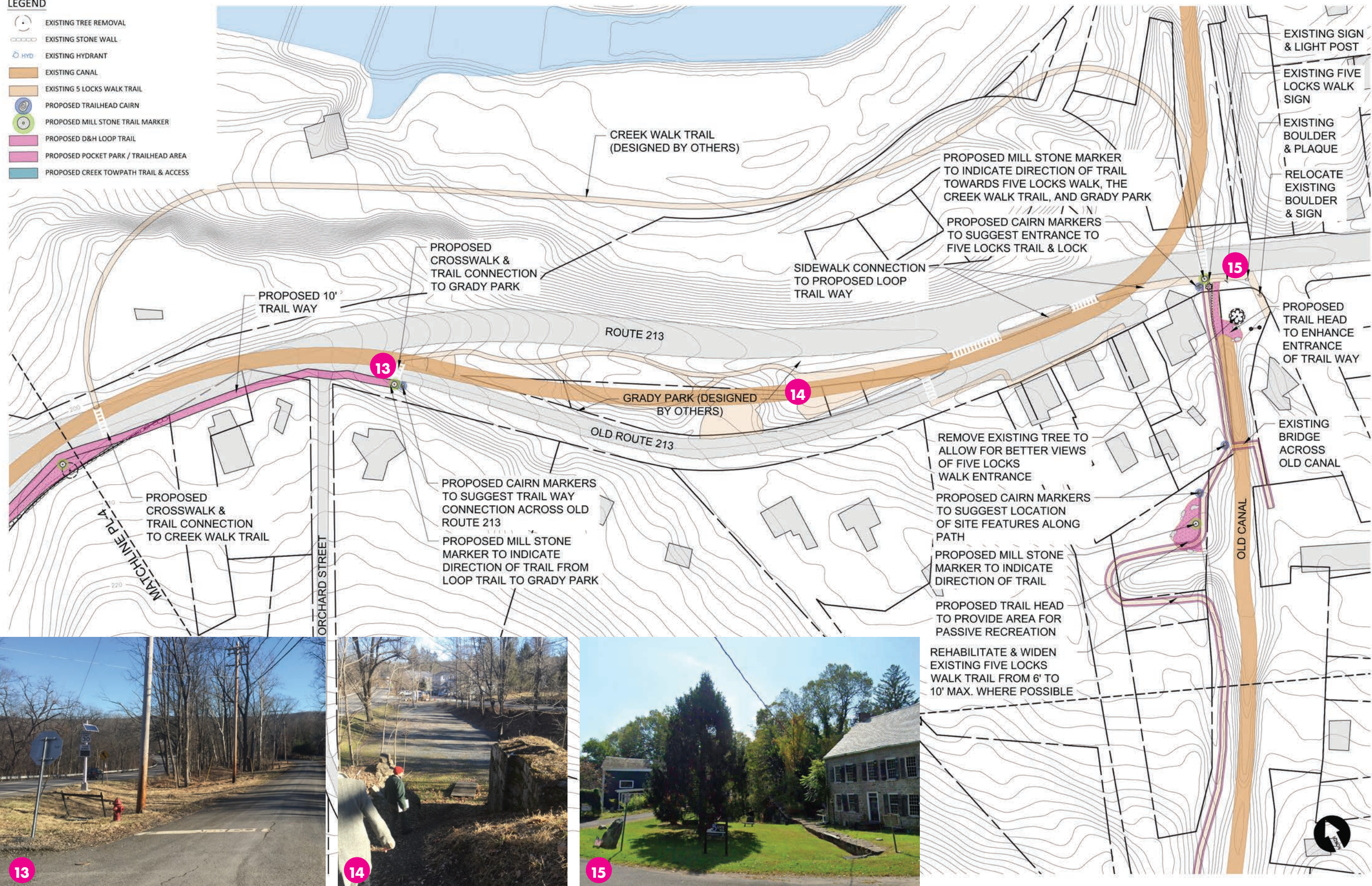
CONCEPTUAL LAYOUT PLAN

SCALE: AS NOTED  
DATE ISSUED: 04/2020  
DRAWING PL-4



**LEGEND**

-  EXISTING TREE REMOVAL
-  EXISTING STONE WALL
-  EXISTING HYDRANT
-  EXISTING CANAL
-  EXISTING 5 LOCKS WALK TRAIL
-  PROPOSED TRAILHEAD CAIRN
-  PROPOSED MILL STONE TRAIL MARKER
-  PROPOSED D&H LOOP TRAIL
-  PROPOSED POCKET PARK / TRAILHEAD AREA
-  PROPOSED CREEK TOWPATH TRAIL & ACCESS



NO.	DATE	BY	REVISION

**Barton & Loguidice**  
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TRAIL FEASIBILITY STUDY  
 D&H FIVE LOCKS WALK  
 HAMLET OF HIGH FALLS  
 ULSTER COUNTY, NEW YORK

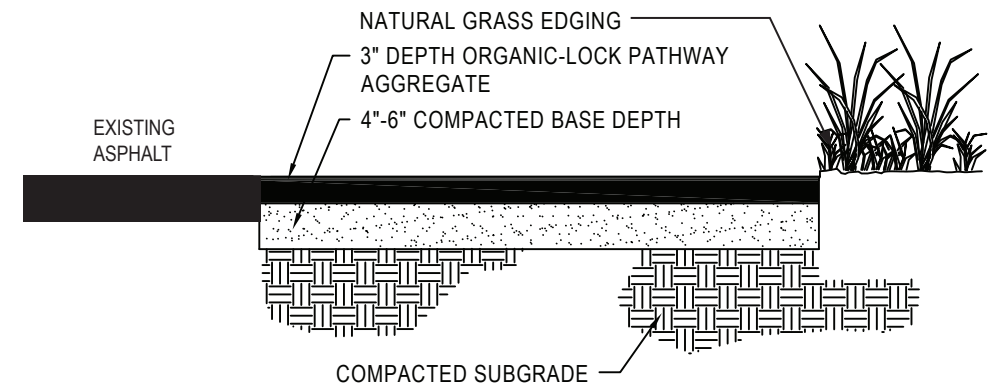
CONCEPTUAL LAYOUT PLAN

SCALE: AS NOTED  
 DATE ISSUED: 04/2020  
 DRAWING: PL-5

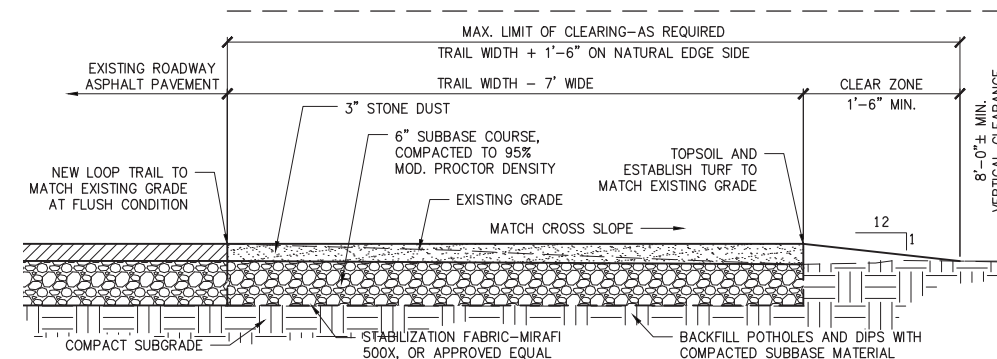
1 SITE LAYOUT PLAN 4  
 PL-5 Scale: 1"=60'-0"







SECTION  
**ORGANIC-LOCK TRAIL WAY DETAIL**



- STONE DUST TRAIL NOTES:**
1. CONTRACTOR SHALL CLEAR AND GRUB FROM EDGE OF THE EXISTING ROADWAY TO A MINIMUM OF 1'-6" ON THE NATURAL EDGE SIDE AND TO A HEIGHT OF 8'-0". CONTRACTOR IS REQUIRED TO CUT LIMBS AT THE BRANCH BASE, UTILIZING ACCEPTED HORTICULTURAL PRACTICES. ANY EX. TREES NOT INDICATED ON THE PLANS FOR REMOVAL WHICH ARE 6"Ø OR LARGER WITHIN THE 1'-6" CLEAR ZONE SHALL BE TAGGED. APPROVAL FOR THE REMOVAL OF TAGGED TREES SHALL BE GIVEN BY THE OWNER.
  2. TRAIL CROSS SLOPE SHALL BE 1% (1/8"/FT) MIN. TO 2% (1/4"/FT) MAX. CROSS SLOPE SHALL MIMIC EXISTING GRADE TO ALLOW POSITIVE DRAINAGE.
  3. MAXIMUM SLOPE ALONG THE LENGTH OF THE TRAIL SHALL NOT EXCEED 5.0% (1:20) WHEREVER POSSIBLE, OR AS DIRECTED.
  4. MINIMUM CLEAR WIDTH OF THE TRAIL SHALL BE 7'; 10" MAXIMUM.
  5. THE FINISHED PROFILE OF THE TRAIL SHALL BE CONSTRUCTED SO AS TO MINIMIZE BUMPS, DIPS, OR OTHER DIFFICULT TO TRAVERSE IRREGULARITIES, AS DETERMINED BY THE OWNER.
  6. THE CONTRACTOR SHALL BALANCE THE REUSE OF THE AVAILABLE EXCAVATED MATERIAL AS EMBANKMENT, REDUCING THE AMOUNT OF DISPOSED MATERIAL. THE EXCAVATED MATERIAL NECESSARY FOR THE TRAIL SUBBASE SHALL BE PLACED TO EACH SIDE OF THE TRAIL, GRADED AND COMPACTED. ALL EXCESS AND/OR UNSUITABLE EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF SITE, OR AS DIRECTED BY OWNER.

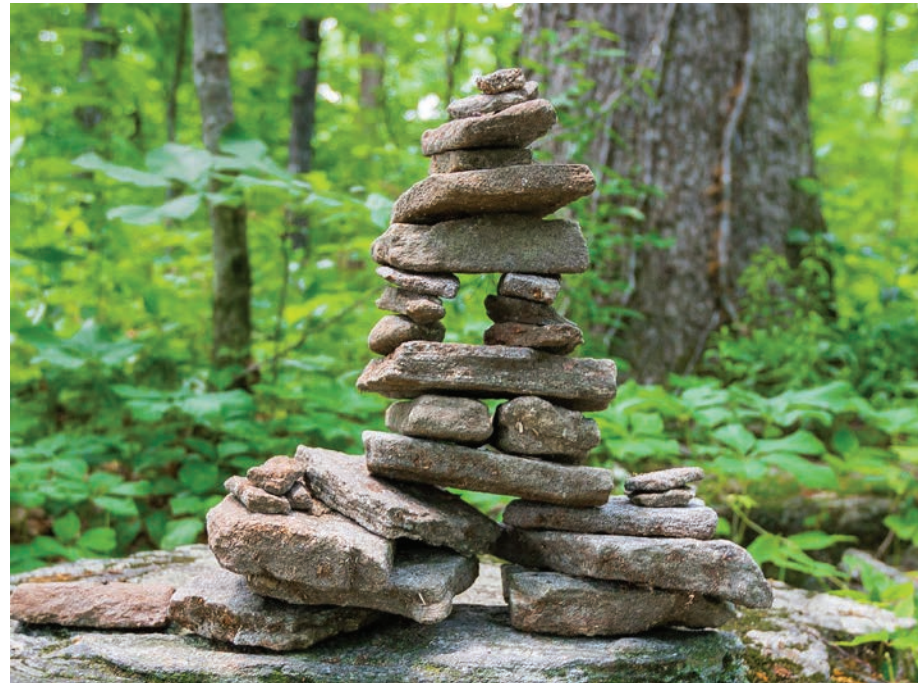


**D&H CANAL LOOP TRAIL**  
**PROPOSED MATERIALS**

**STONE DUST TRAIL WAY DETAIL**

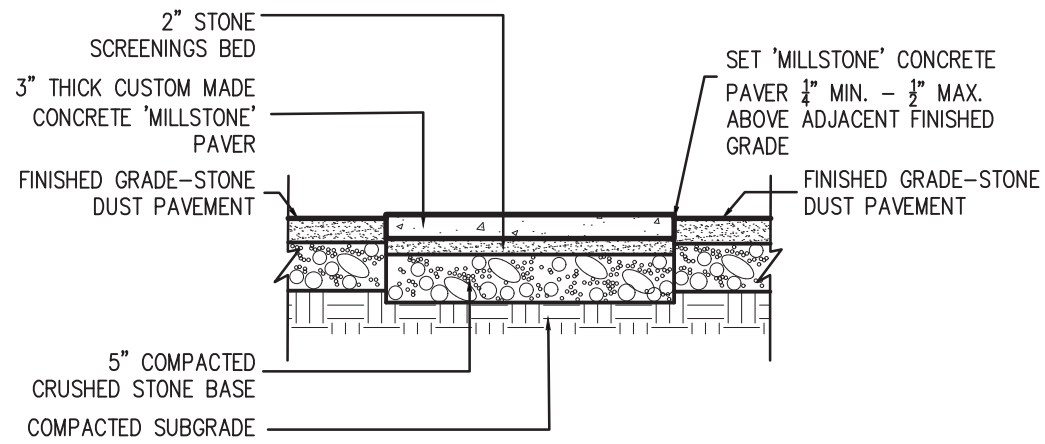
**STONE DUST TRAIL WAY**





**PROPOSED CAIRN TRAIL MARKERS -  
USE SALVAGED STONE FOUND ALONG  
EXISTING TRAIL & PROPOSED LOOP TRAIL**

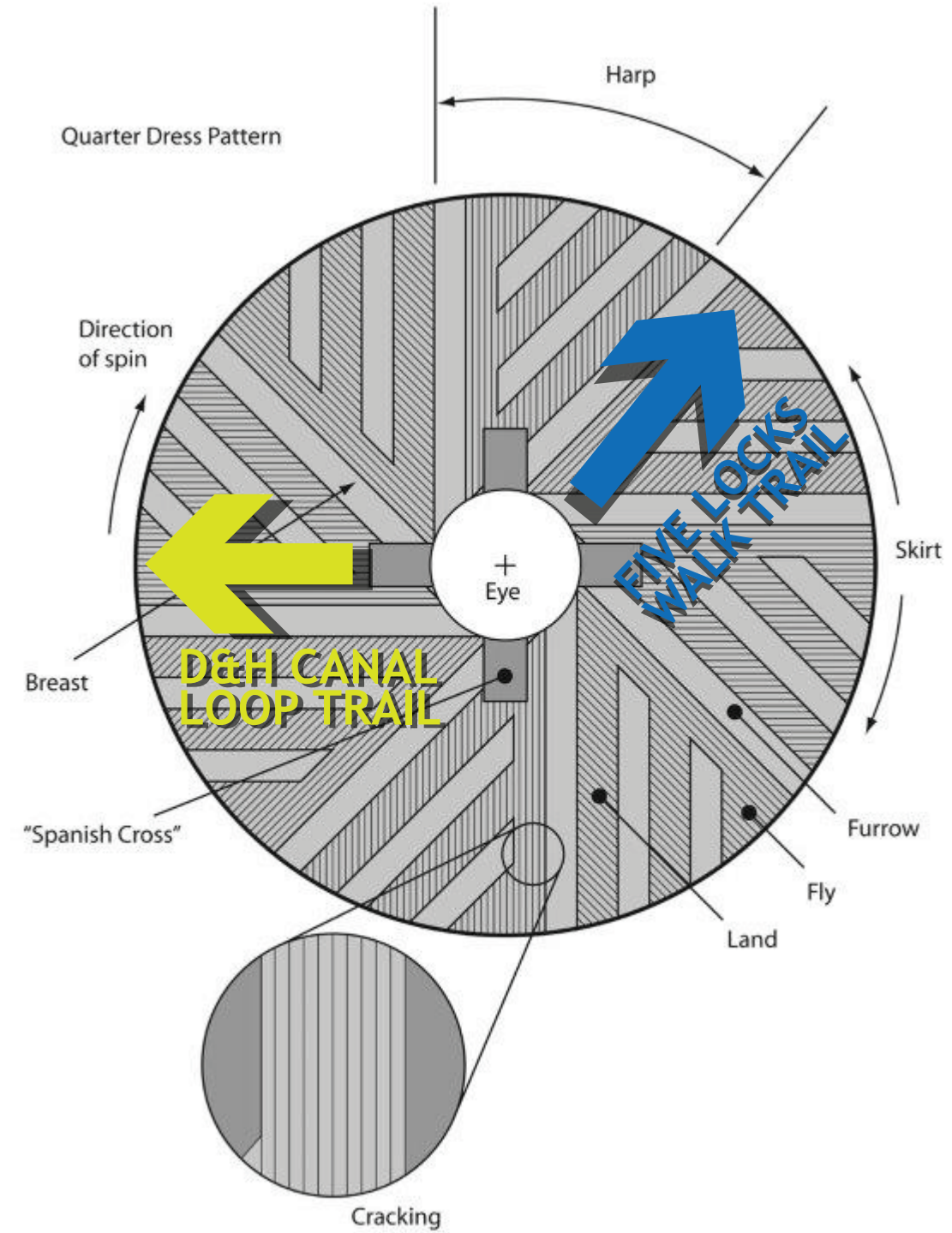
**D&H CANAL LOOP TRAIL  
PROPOSED MATERIALS**



**MILL STONE MARKER DETAIL**



**EXISTING SALVAGED MILL STONES**



**CUSTOM CONCRETE MARKERS  
STAMPED TO MIMIC MILL STONE  
PATTERN & PROVIDE WAYFINDING**





**D&H CANAL LOOP TRAIL**  
**PROPOSED MATERIALS**

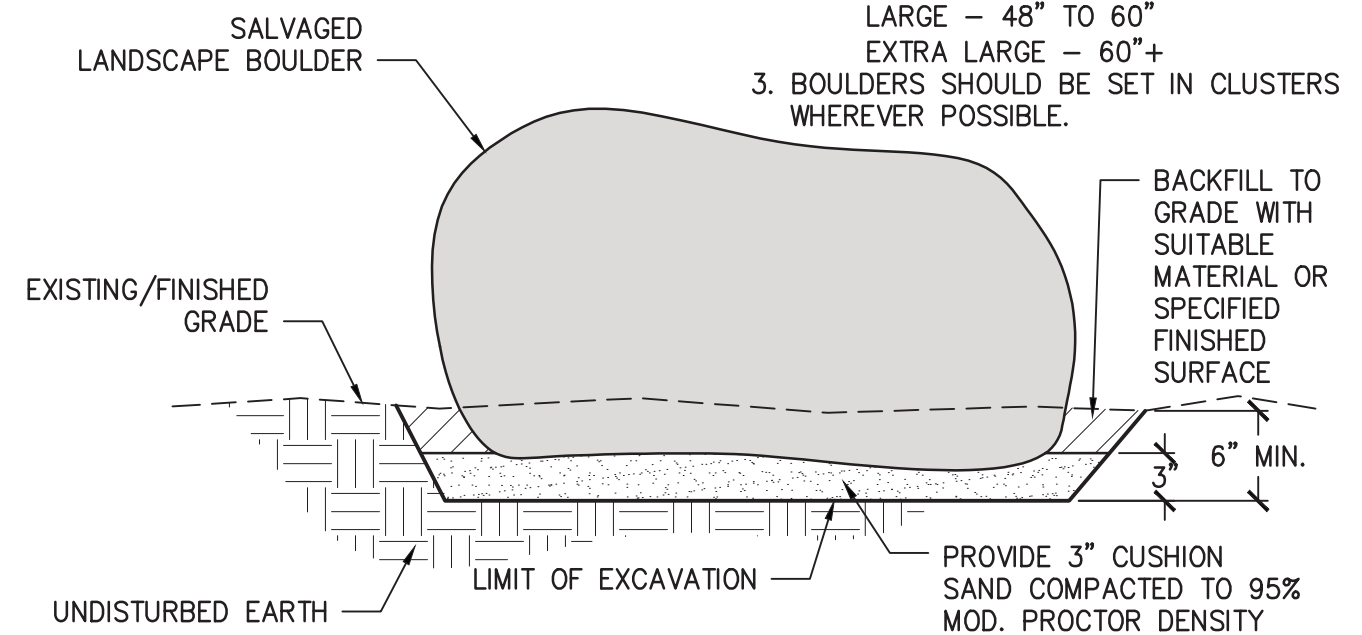
**PROPOSED STAIRWAY**  
**(SEE APPENDIX FOR DOCK**  
**DOCTORS INFO**



**EXISTING BOULDERS - SALVAGED & RELOCATED FOR SEATING IN TRAIL HEAD AREAS**

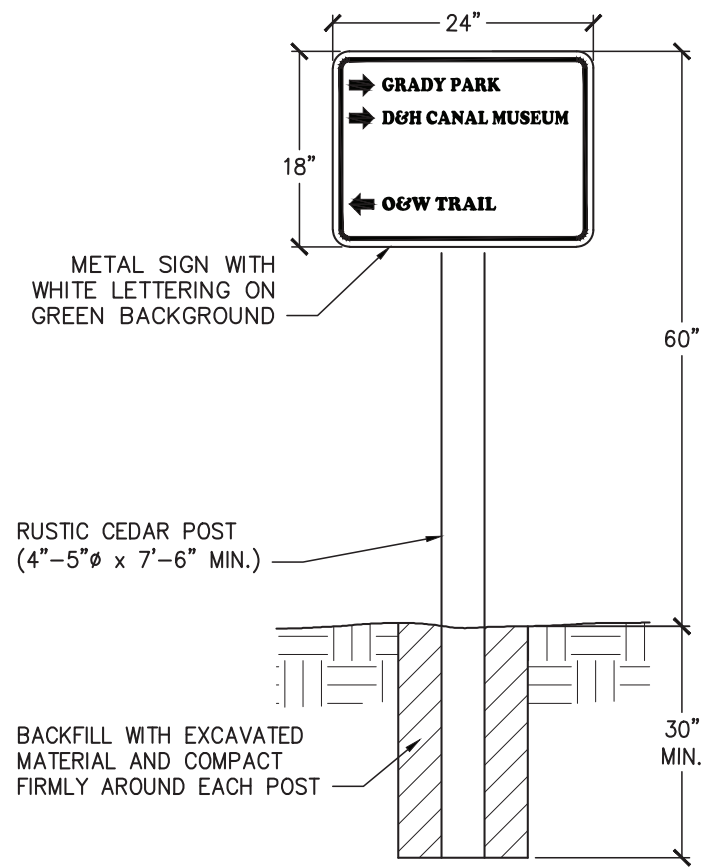


- LANDSCAPING BOULDER NOTES:**
1. PROVIDE LANDSCAPE BOULDERS AT LOCATIONS SHOWN ON PLANS.
  2. BOULDERS SHALL BE PROVIDED IN THE FOLLOWING TYPICAL SIZES:  
 SMALL - 24" TO 36"  
 MEDIUM - 36" TO 48"  
 LARGE - 48" TO 60"  
 EXTRA LARGE - 60"+
  3. BOULDERS SHOULD BE SET IN CLUSTERS WHEREVER POSSIBLE.

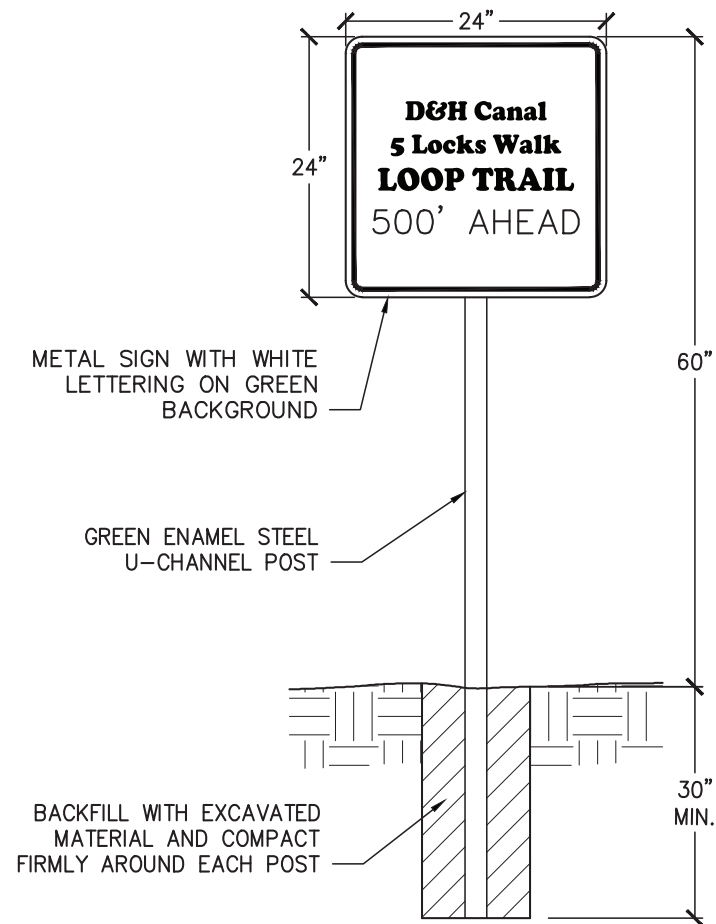


**PROPOSED BOULDER SEATING DETAIL**

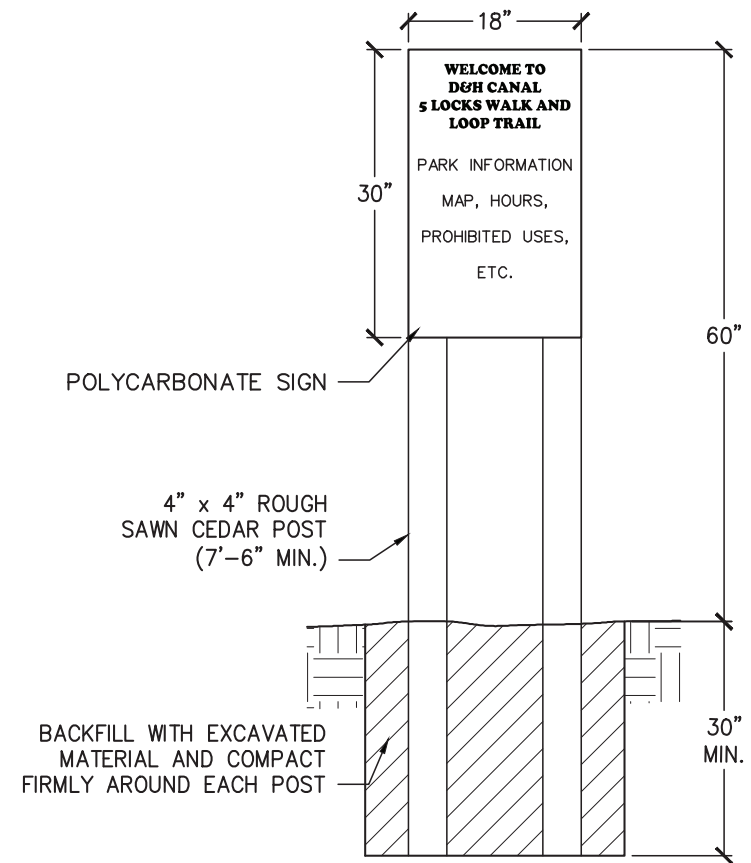




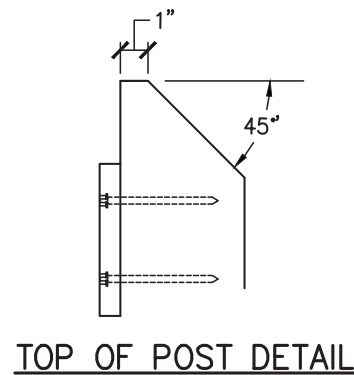
**INTERNAL DIRECTIONAL SIGN**



**HIGHWAY DIRECTIONAL SIGN**



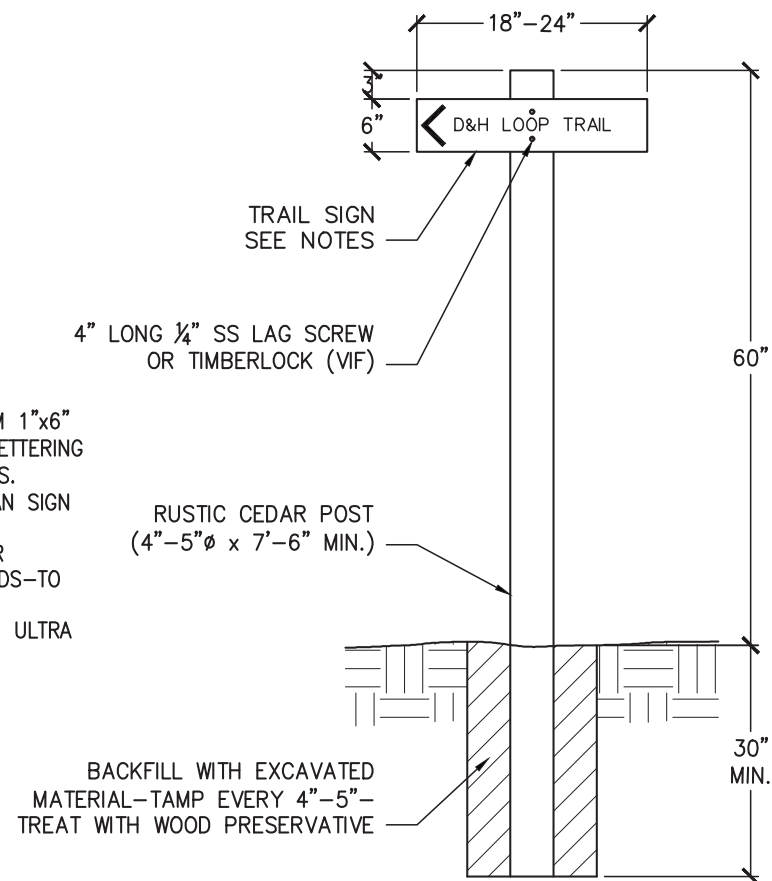
**ORIENTATION & RULES SIGN**



**TOP OF POST DETAIL**

**TRAIL SIGN NOTES:**

1. SIGN TO BE MANUFACTURED FROM 1"x6" CEDAR LENGTH DETERMINED BY LETTERING WITH APPROX. 2" SPACE ON ENDS.
2. LETTERING DONE USING CRAFTSMAN SIGN PRO LETTERING KIT.
3. ARROW TO BE COLOR CODED FOR DIRECTION AS PER SIGN STANDARDS-TO BE DETERMINED.
4. SIGN TO BE FINISHED IN PENOFIN ULTRA PREMIUM RED LABEL EXTERIOR PENETRATING OIL FINISH.



**TRAIL SIGN**

**D&H CANAL LOOP TRAIL  
PROPOSED MATERIALS**





The community has been invited to provide input on the plan via a StoryMap linked to the website.



Trail Feasibility Study funded in part by the Hudson River Valley Greenway.