

Public Works Committee

5. 1.

Meeting Date: 06/16/2015

Submitted For: Len Linton, Engineering/Public Works

By: Len Linton, Engineering/Public Works

Title:

Consider Drainage Options for 173rd Avenue and Gibbon Street Area

Purpose/Background:

The Deerwood plat was recorded in 1974. This was prior to the incorporation of the City of Ramsey. The plat dedicated drainage and utility easements over some of the existing wetlands. The documents on file do not show any culverts under the roads. Storm water management was not required when recording plats at that time.

Frank and Cassandra Miske, 17421 Gibbon St NW, contacted the City in the spring of 2014 with high water concerns. They stated that water was coming up through the floor from the adjacent wetlands. Staff visited the site and observed that the surrounding wetlands were full and the water level was near the road two lots to the north. Staff is not aware of water flowing over Gibbon Street in 2014.

The area is land locked, there are no overland drainage routes unless the water level exceeds the lowest openings of the homes in the area. The FEMA flood map shows flood plain to the north of this area over the existing wetlands. This determination was not done with the detailed analysis method. Several residents came to a public works committee meeting later in the year and again in the first part of 2015. The Public works committee requested that additional research be done on potential solutions and that the results be brought back to the committee.

Staff visited the site in May and June 2015. The first visit was to drive through the area and get an overview of the constraints in the neighborhood. Staff looked at the area on Iguana Street where jacked pipe could be installed. Staff also looked at Gibbon Street and noted that water was flowing from west to east between 17540 and 17511 Gibbon Street through a culvert under the road. This culvert was under water in 2014, staff felt there was a culvert based on vegetation patterns but could not see it.

The second trip was to visit with the Miske's and discuss the preliminary findings. Water was still flowing through the culvert, although it appeared to be at slower rate as the eastern pond had filled up since the previous visit.

All elevations used in this analysis were obtained from LIDAR sources. LIDAR is relatively accurate; however, heavy vegetative cover can give false results. Water was positively flowing from west to east in 2015 as noted above. The flow direction in 2014 was not readily apparent, there may have been a slight east to west flow at this area, indicating that water may flow to the north when the level is high enough.

Timeframe:

This discussion is anticipated to take 45 minutes.

Observations/Alternatives:

Staff identified two possible solutions for the March 2015 Public Works meeting. The first was to construct a pipe to the southwest to connect to an existing county ditch. The second was to clean the county ditch through the wetland to the north and east to provide an outlet for the area.

Option 1: This would require installing a pipe in an existing drainage and utility easement. The initial plan was to install approximately 800 feet of pipe by jacking to avoid the large trees in the easement and the deep cut under Iguana Street. This was determined to be infeasible after further investigation. The jacking pit would need to be placed in one wetland and the receiving pit and pipe fusing area would need to be in the second area. Both areas are over 400 feet from the nearest road. Access would require acquisition of additional easements. The fused pipe may

tend to sink into the wetland prior to being pulled back. The City did a project in 2012 where the boring machine was placed on upland in an existing easement extending to the street. The welding of the pipe was done on planking extended from an existing road. The jacked length was approximately 800 feet. The total project cost was \$160,000. The Gibbon street project would require additional easements and restoration of all disturbed lawn surfaces.

Option 2: This option looked at cleaning the existing county ditch that runs north of this development. This option is not feasible because it would require lowering the existing surface area of some wetlands up to 2 feet. This is not permitted under the Wetland Conservation Act.

Option 3: The Miske's suggested using a different set of drainage and utility easements to run the water to the west. Evaluation of this route indicated that there are two high areas that would need to have pipe installed and that there is minimal elevation difference between the beginning and ending points. This route is not feasible.

Option 4: Staff evaluated extending storm sewer pipe south in the Gibbon Street ROW then west in the 173rd Avenue right of way to provide drainage from the area. This appears to be feasible. The location and elevation of existing small utilities must be determined to better define the scope of this process. The normal water level of the existing wetland east of Gibbon Street should also be determined when evaluating the overall feasibility of this project. The pipe installation for this project is estimated at \$275,000 - \$300,000. This does not include acquisition of additional easements if needed.

Funding Source:

Funding would come from the Stormwater Utility Fee.

Recommendation:

Staff recommends further analysis of Option 4 to determine the overall feasibility the project. If the project were determined to be feasible it should be added to the Capital Improvement Plan so that it can be evaluated during the budget review process.

Action:

Motion to recommend the City Council consider ordering a feasibility study for Gibbon Street - 173rd Avenue Drainage concerns.

Attachments

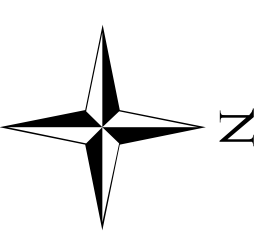
[Aerial Map](#)

[Plan Profile](#)

Form Review

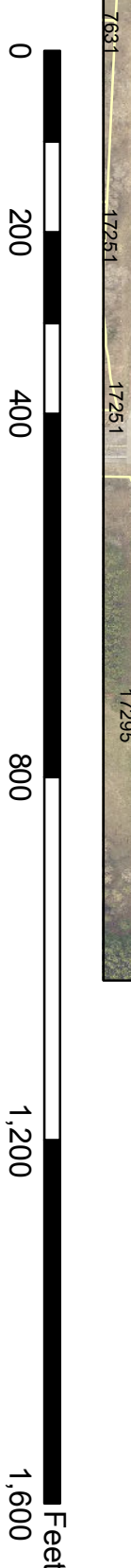
Inbox	Reviewed By	Date
Bruce Westby	Bruce Westby	06/11/2015 01:30 PM
Grant Riemer	Grant Riemer	06/11/2015 02:01 PM
Kurt Ulrich	Jo Thieling	06/11/2015 03:30 PM
Form Started By: Len Linton		Started On: 06/09/2015 09:45 AM
Final Approval Date: 06/11/2015		

GIBBON STREET DRAINAGE OPTIONS



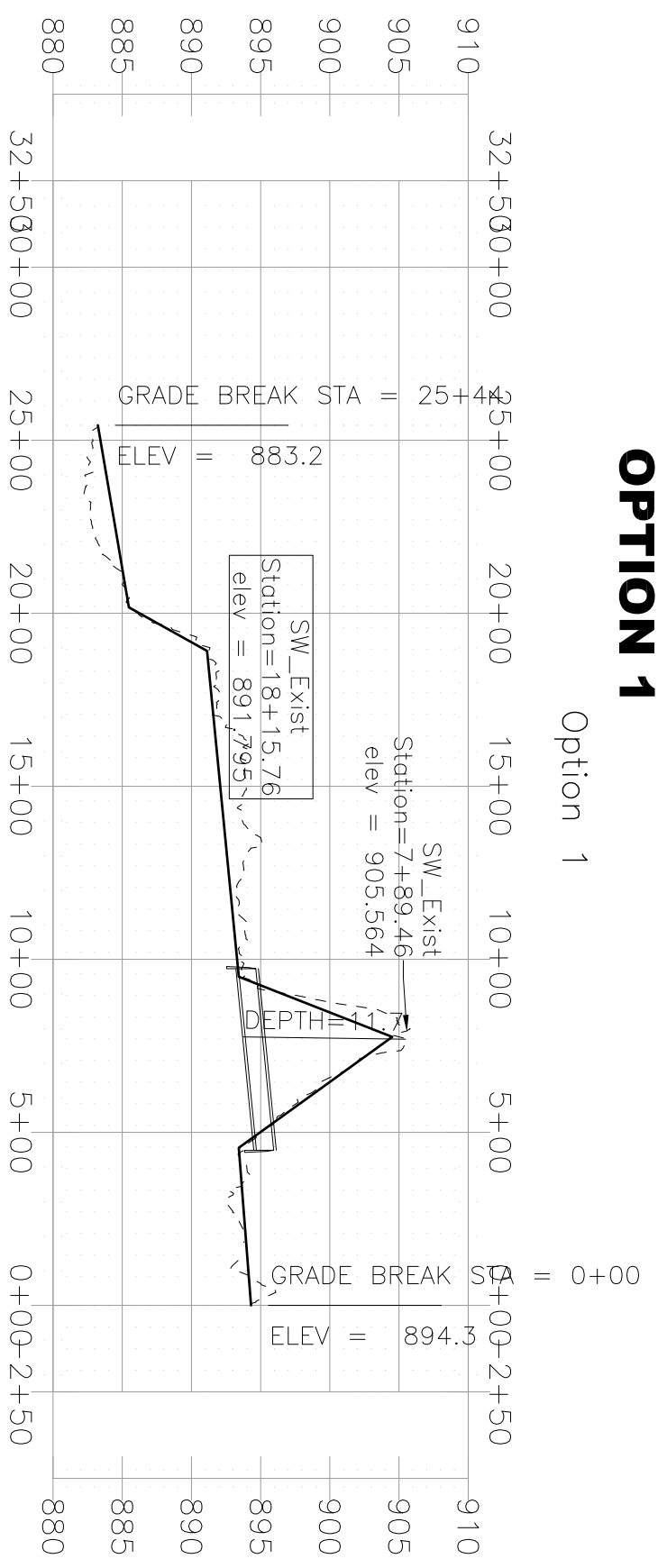
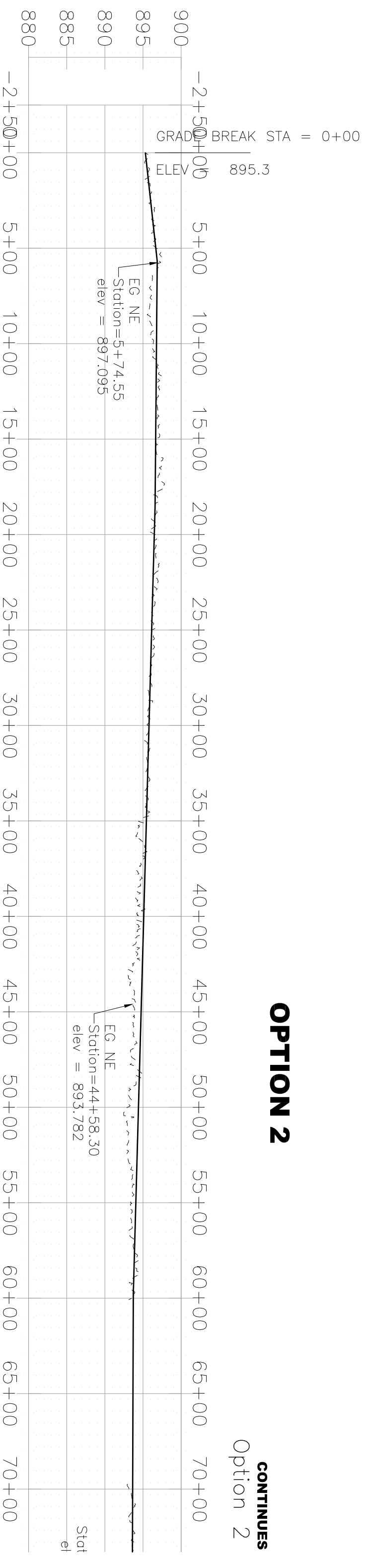
Legend

- Potential Drainage Routes
- 1 PCT ANNUAL CHANCE FLOOD HAZARD
- Parcels



This map is based on the 2013 FEMA Flood Zone Study for Alaska County, Minnesota. The FEMA Study was prepared for Final Adoption by Alaska County of the City of Ramsey. This map must be considered as preliminary.

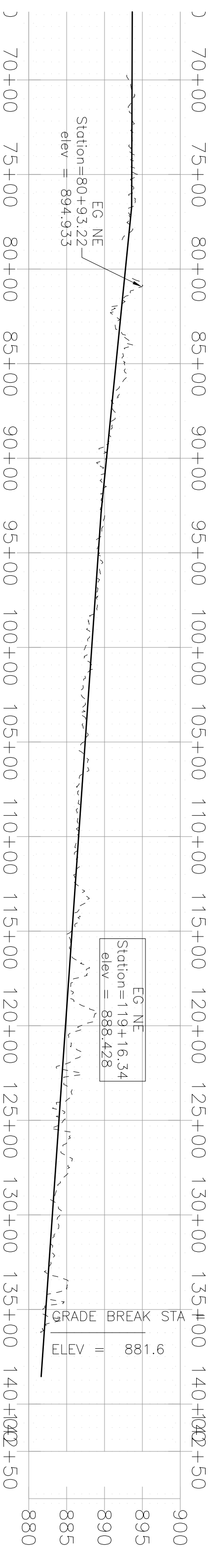
GIBBON STREET



GIBBON STREET

OPTION 2 (CONTINUED)

Option 2



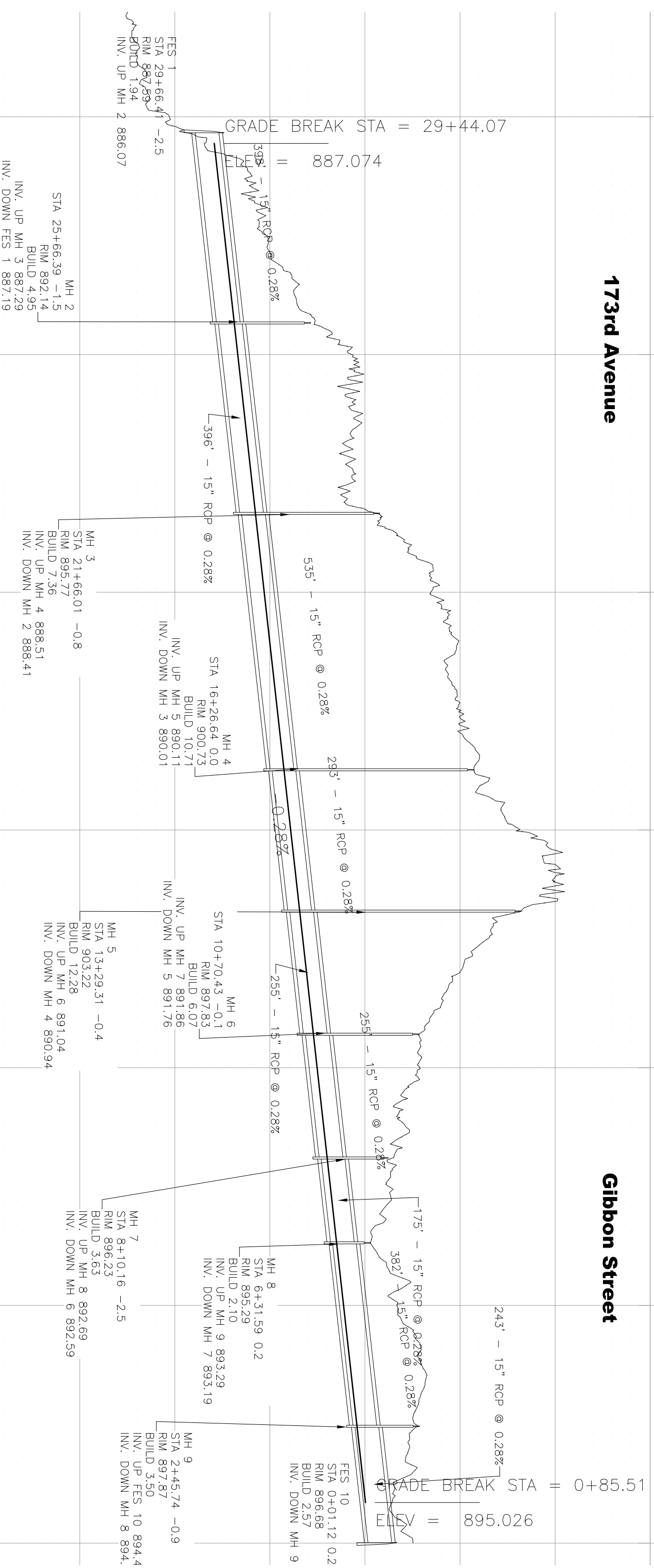
GIBBON STREET

Option 4

30+00 25+00 20+00 15+00 10+00 5+00 0+00

173rd Avenue

Gibbon Street



Option 3

Option 3

