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Norwegian Public Roads
Administration

Recent impressions from EPS projects in Japan

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Recent impressions from EPS projects in Japan

- ✦ The NPRA awards an annual travel grant, aiming to increase knowledge in road related subjects
- ✦ The aim of the trip was to learn new ways to use EPS in road construction, and to strengthen the relationship between Japan and Norway prior to the EPS 2011 conference
- ✦ Japan and Norway have been working together for over 25 years in the use of EPS in road construction

Excursion: Yamagata Expressway



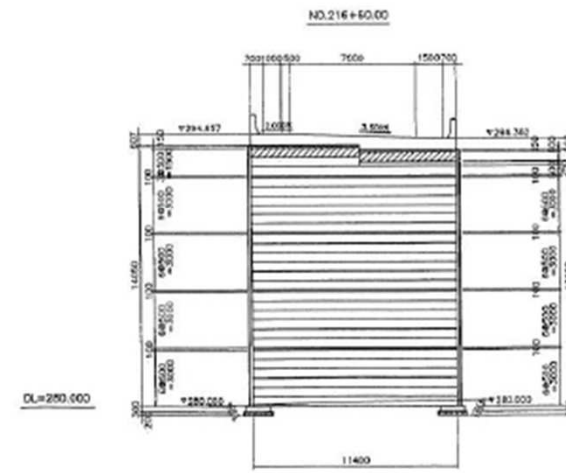
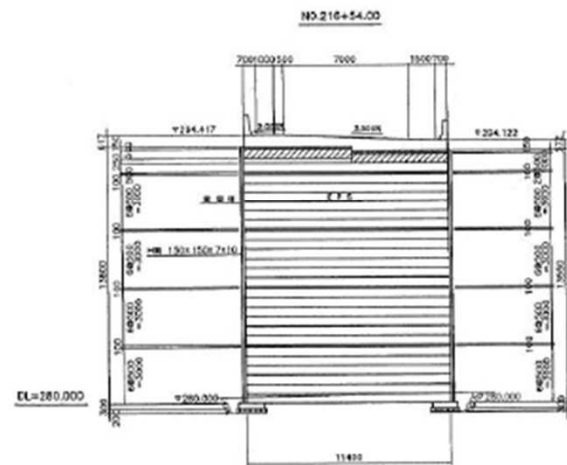
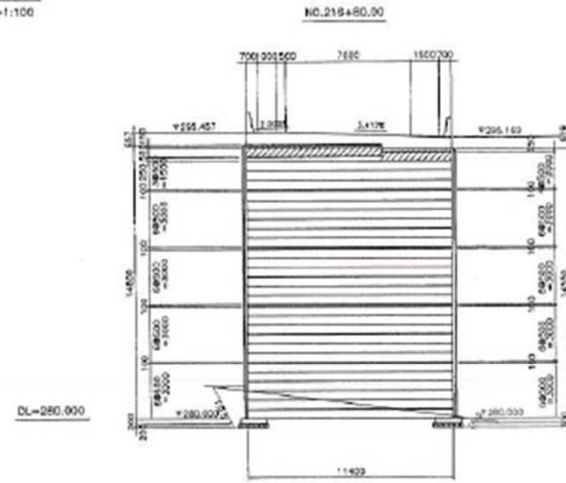
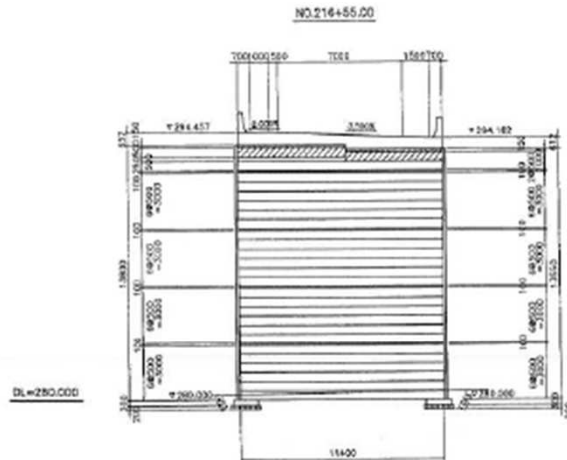
Yamagata Expressway

- ✧ The area has experienced a big slide in the past
- ✧ Slope inclination: between 15 and 18 degrees
- ✧ Sedimentary soil and colluvial deposits
- ✧ High groundwater table
- ✧ EPS was chosen because:
 - Short construction period
 - Few and small measures to ensure slope stability
 - Low total cost as a result of the above
- ✧ Total length: about 135m
- ✧ Max height: 16m

④ : H研究連絡付タンナー、金具
 : ル・タンの解凍用、000-20

Yamagata Expressway

横断面(2)
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Excursion: Otari Road – Nagano Prefecture



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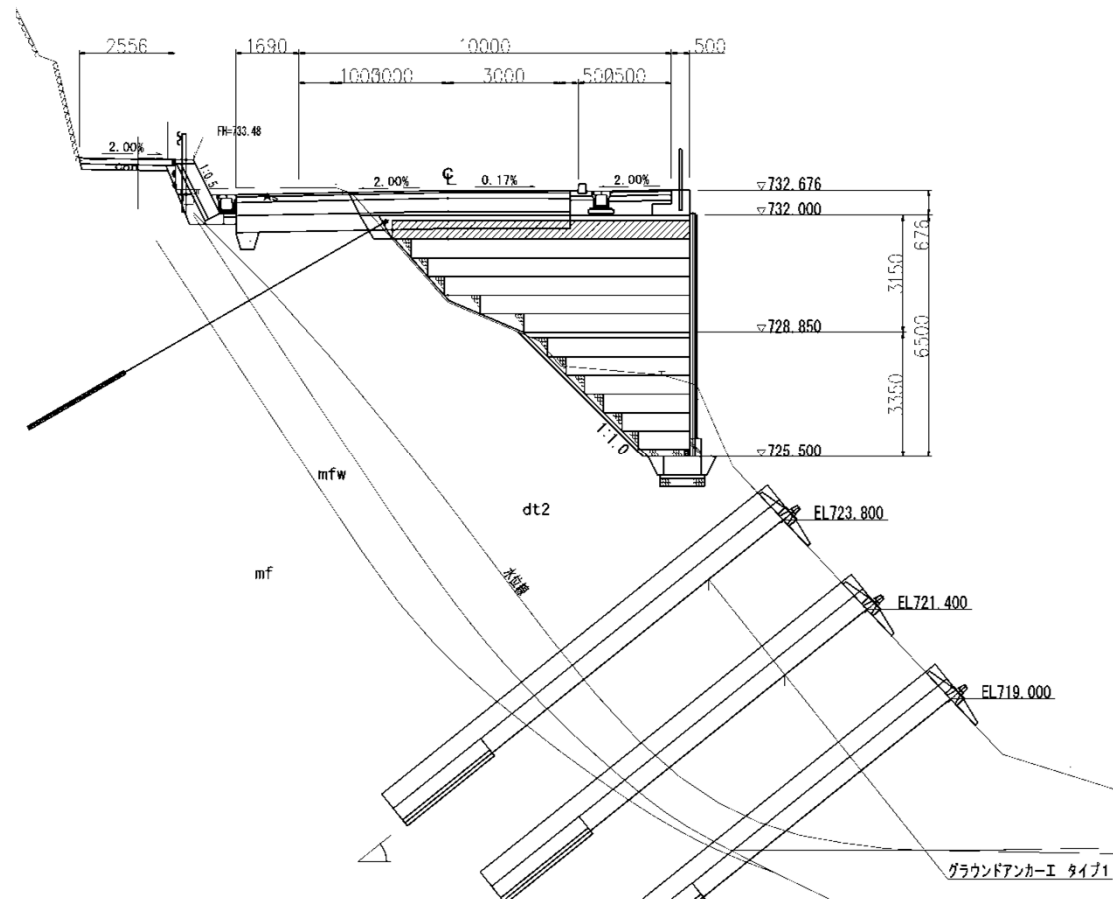


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Otari Road - Nagano Prefecture

- ✧ The area is very prone to mudslides and avalanches
- ✧ It was estimated during design that the probability of an earthquake, with a magnitude of 8 or more, would occur over the next 30 years was 14%
- ✧ The area is covered with 10 – 20 m scree layer
- ✧ Slope inclination: about 40 degrees
- ✧ EPS was chosen because :
 - Primary stability issues
 - Time and cost saving
- ✧ Total length of section: 1.2km
- ✧ Max height: 17m
- ✧ Construction time with EPS: 1500m³ pr. month
- ✧ Volum EPS: 30 000 m³

Principle drawing, steep slope construction



Otari Road - Nagano Prefecture

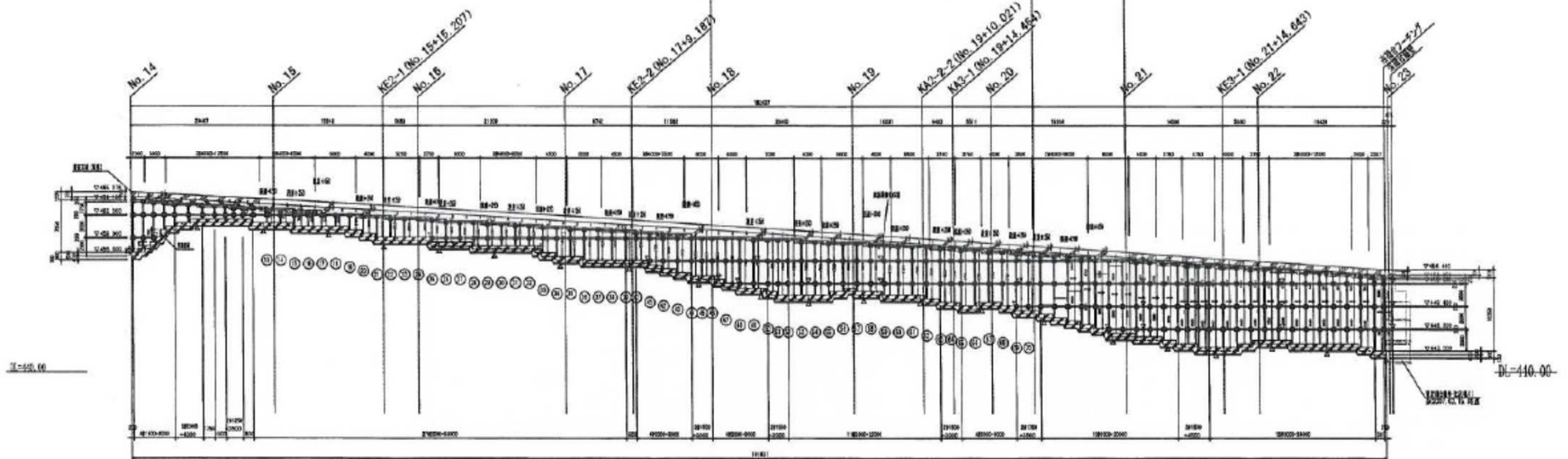
EPS軽量盛土工法
支柱展開図 (I工区)

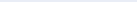
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No. 14~No. 23付近

外沢道路その2工事
No.18 ~ No.20+6.816

擁付施工区間
支柱施工済み





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Conclusion and personal impressions

- The Japanese way of building EPS embankments is very standardized
 - Primary considerations are technical, not aesthetic
 - Shorter construction period, lower costs
- Detailed – nothing is left to chance
 - Higher efficiency
- Innovative
 - Anti-buoyancy blocks
- Earthquakes

Thank you for your attention.
Questions?

