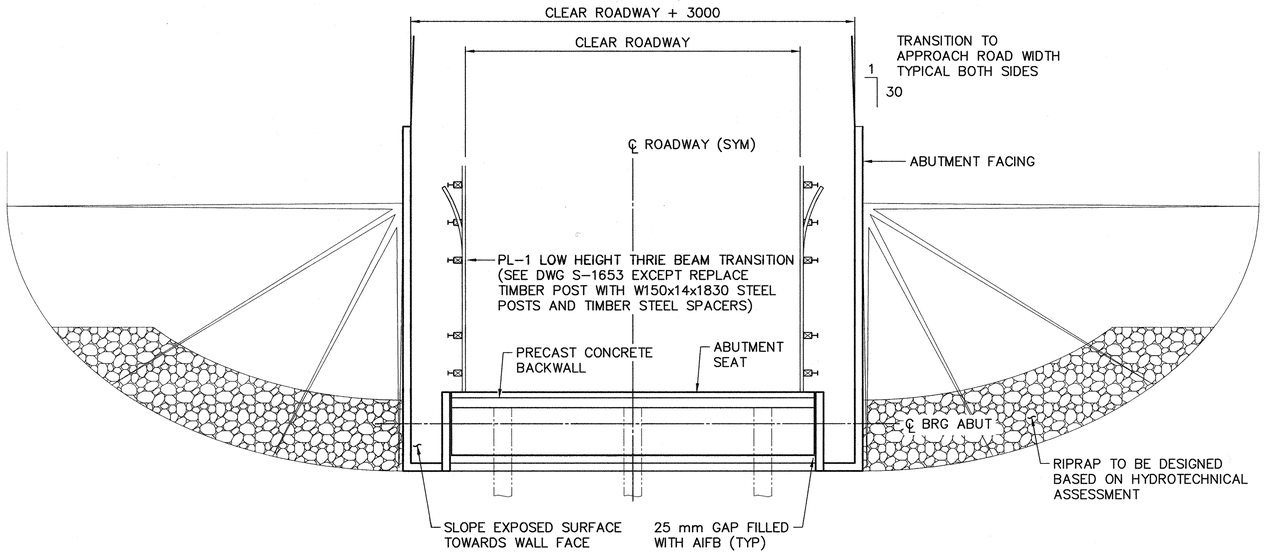
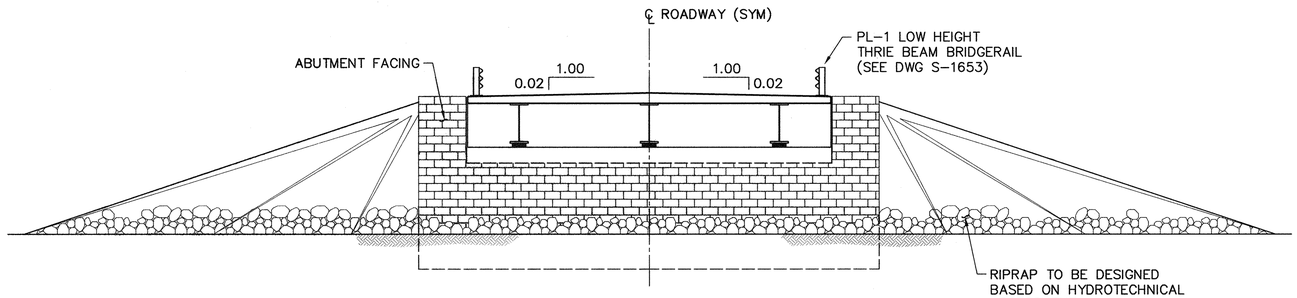


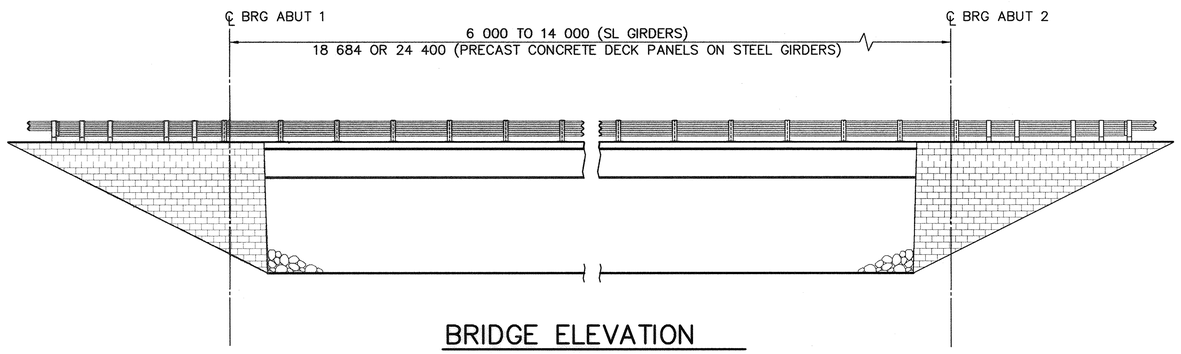
ABUTMENT PLAN

2-LANE PRECAST CONCRETE DECK PANELS ON STEEL GIRDERS SHOWN. SQUARE ABUTMENT SHOWN. SKEW ABUTMENT SIMILAR.



ABUTMENT ELEVATION

2-LANE PRECAST CONCRETE DECK PANELS ON STEEL GIRDERS SHOWN. SQUARE ABUTMENT SHOWN. SKEW ABUTMENT SIMILAR. 1:75



BRIDGE ELEVATION

PRECAST CONCRETE DECK PANELS ON STEEL GIRDERS SHOWN. 1:100

GRS NOTES

GENERAL

- THESE DRAWINGS ARE DEVELOPED TO PROVIDE TYPICAL DETAILS FOR GEOSYNTHETIC REINFORCED SOIL (GRS) ABUTMENTS FOR USE ON SINGLE SPAN BRIDGES ON LOCAL GRAVEL ROADS WITH LOW TRAFFIC VOLUME AND NO DE-ICING SALT EXPOSURE, AND OVER SMALL STREAM WITH MINIMAL RISK OF ABUTMENT SCOURING.
- THE DETAILS SHALL BE USED IN ACCORDANCE WITH THE "LOCAL ROAD BRIDGE DESIGN GUIDELINES" PROVIDED BY ALBERTA TRANSPORTATION.
- THE USERS OF THESE DRAWINGS SHALL PROVIDE A COMPLETE SET OF DRAWINGS INCLUDING A SITE SPECIFIC GENERAL LAYOUT DRAWING TO SHOW:
  - BRIDGE LOCATION MAP
  - BRIDGE GENERAL ARRANGEMENT IN PLAN AND ELEVATION
  - BRIDGE SPAN AND CLEAR ROADWAY WIDTH
  - STREAM CHARACTERISTICS
  - ROADWAY ALIGNMENT, PROFILE AND STATIONING
  - FILL/CUT LIMITS
  - BRIDGERAIL AND APPROACH GUARDRAIL LAYOUT
  - SCOUR PROTECTION WORKS
- THE DESIGN SHALL BE CARRIED OUT BY A PROFESSIONAL ENGINEER AND CHECKED BY A SECOND INDEPENDENT PROFESSIONAL ENGINEER. THE DRAWINGS SHALL BE STAMPED BY THE DESIGNER AND THE CHECKER.
- A FINAL RECORD DRAWING REVISION OF THE DRAWINGS SHALL RECORD ANY CHANGES MADE DURING CONSTRUCTION.
- GRS ABUTMENTS MAY BE CONSTRUCTED BEHIND EXISTING BRIDGE FOUNDATIONS. USE OF EXISTING FOUNDATIONS MAY BE BENEFICIAL AS SCOUR PROTECTION.

SUPERSTRUCTURE OPTIONS

- ALBERTA TRANSPORTATION STANDARD SL GIRDERS WITH GIRDER LENGTHS OF 6 m TO 14 m AND STANDARD SKEWS OF 0, 15, 30 AND 45 DEGREES. (DRAWINGS S-1723 TO S-1749)
- LOW VOLUME STANDARD BRIDGE WITH PRECAST CONCRETE PANELS ON STEEL GIRDERS.
- TYPICAL DETAILS FROM THESE DRAWINGS SHALL ONLY BE USED FOR SINGLE SPAN BRIDGES.

DESIGN

- THE USER OF THESE DRAWINGS SHALL PERFORM A THOROUGH RISK ASSESSMENT TO CONSIDER ALL GEOTECHNICAL, HYDROTECHNICAL, AND AND STRUCTURAL RISKS.
- GRS ABUTMENT DESIGNS SHALL BE SITE SPECIFIC IN ACCORDANCE WITH THE TYPICAL DETAILS SHOWN ON THESE DRAWINGS AND THE FOLLOWING DOCUMENTS:
  - CAN/CSA S6-06 INCLUDING SUPPLEMENTS 1, 2 AND 3.
  - ALBERTA TRANSPORTATION "LOCAL ROAD BRIDGE DESIGN GUIDELINES", MAY 2014.
  - FHWA GUIDELINE "GEOSYNTHETIC REINFORCED SOIL INTEGRATED BRIDGE SYSTEM INTERIM IMPLEMENTATION GUIDE", JUNE 2012.
- DESIGN LIVE LOAD: CL-800

GEOTECHNICAL CONSIDERATIONS

- A SITE SPECIFIC GEOTECHNICAL INVESTIGATION SHALL BE COMPLETED BY A QUALIFIED PROFESSIONAL GEOTECHNICAL ENGINEER PRIOR TO THE CONCEPTUAL DESIGN PHASE IN ORDER TO ESTABLISH THE SOIL CHARACTERISTICS AT THE SITE – THE PRESENCE AND THE EXTENT OF BOULDERS, HARD OR SOFT FORMATIONS, WATER TABLES, ARTESIAN CONDITIONS AND OTHER VARIABLES – AS THESE COULD SIGNIFICANTLY IMPACT THE CONSTRUCTION OF THE SUBSTRUCTURE AND ITS REQUIRED PERFORMANCE AND STRENGTH IF NOT IDENTIFIED.
- THE GRS ABUTMENT SHALL BE CHECKED BY THE GEOTECHNICAL ENGINEER FOR SLIDING, OVERTURNING AND GLOBAL STABILITY SPECIFIC FOR EACH BRIDGE LOCATION.

HYDROTECHNICAL CONSIDERATIONS

- IT IS THE RESPONSIBILITY OF OTHERS USING THESE DRAWINGS TO COMPLETE A SITE SPECIFIC HYDROTECHNICAL ASSESSMENT BY A QUALIFIED PROFESSIONAL ENGINEER WITH HYDROTECHNICAL EXPERTISE IN ACCORDANCE WITH THE "LOCAL ROAD BRIDGE DESIGN GUIDELINES". THE ASSESSMENT SHALL ESTABLISH POTENTIAL ISSUES WITH STREAM FLOW CHARACTERISTICS, HYDRAULIC CAPACITY, STREAM STABILITY, SCOUR MITIGATION AND RIPRAP REQUIREMENTS TO DETERMINE THE SUITABILITY OF THE DESIGN ASSUMPTIONS LISTED ON THESE DRAWINGS, AND SUPPLEMENT THE DRAWINGS WHERE REQUIRED.
- GRS ABUTMENTS ARE AT RISK FOR WASH OUT UNDER FLOOD CONIDITIONS. SCOUR OR UNDERMINING OF THE FOUNDATIONS OF THE GRS COMPOSITE MASS IS A KEY DESIGN CONSIDERATION. SECURITY AGAINST SCOUR FAILURE SHALL BE BUILT INTO THE DESIGN OF THE ABUTMENT.
- THE CLASS AND DEPTH OF HEAVY ROCK RIPRAP SHALL BE DETERMINED BY THE SITE SPECIFIC HYDROTECHNICAL ASSESSMENT.
- HEAVY ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF SECTION 10, "HEAVY ROCK RIPRAP", IN THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION.
- NON-WOVEN GEOTEXTILE FILTER FABRIC SHALL BE PLACED UNDER ALL HEAVY ROCK RIPRAP.

CONSTRUCTION

- REFERENCE FOR CONSTRUCTION PROCEDURES CAN BE FOUND IN FHWA GUIDELINE, "GEOSYNTHETIC REINFORCED SOIL INTEGRATED BRIDGE SYSTEM INTERIM IMPLEMENTATION GUIDE", JUNE 2012.

REV	DATE	REVISION	BY
6			
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4			
3			
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RECOMMENDED DIRECTOR BRIDGE ENGINEERING
D Williamson

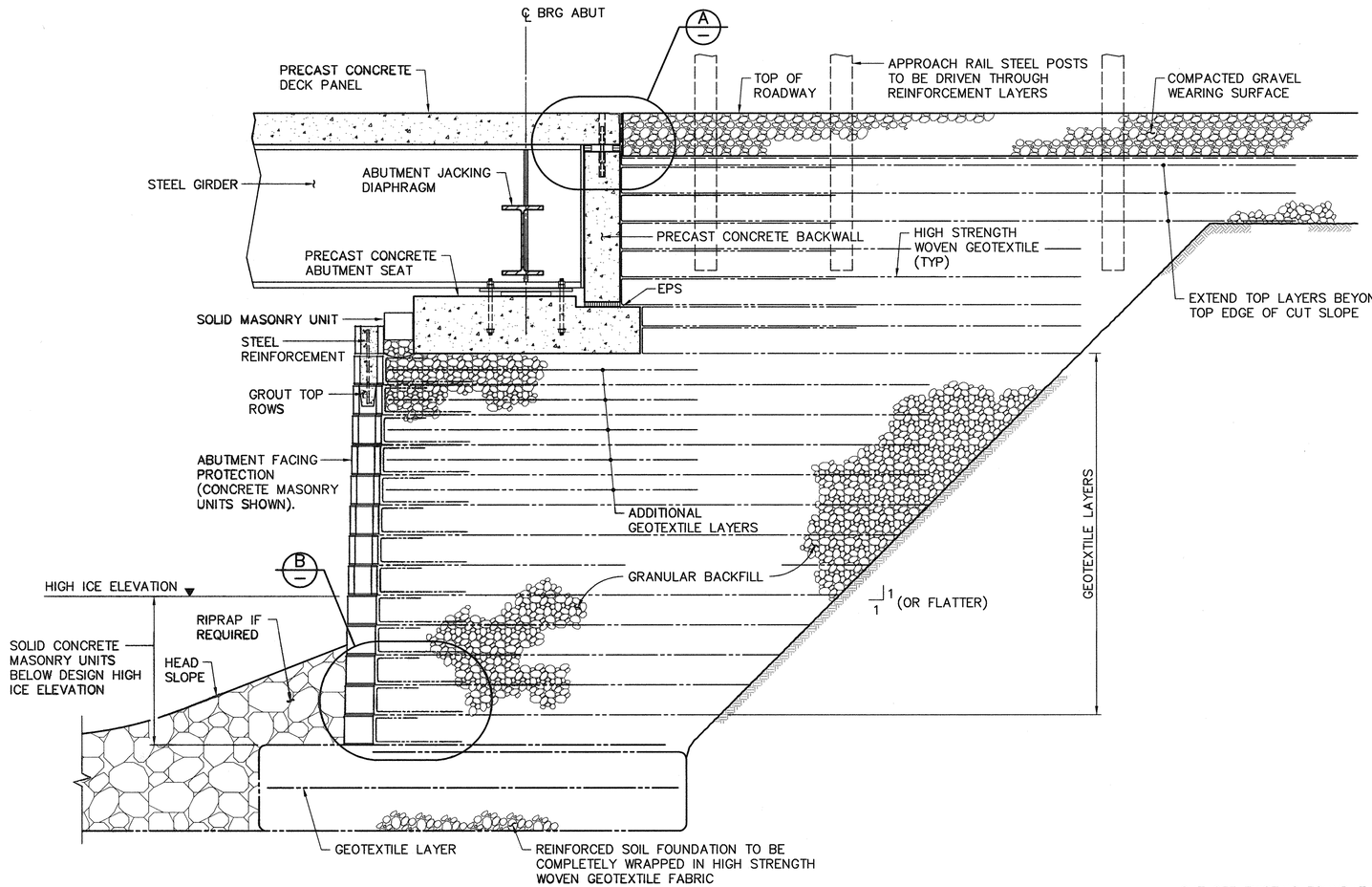
APPROVED EXECUTIVE DIRECTOR TECHNICAL STANDARDS BRANCH
Sarah Hall
DATE FEB. 18/15

Alberta Transportation

LOW VOLUME STANDARD BRIDGE GRS ABUTMENT ALTERNATIVE TYPICAL DETAILS SHEET 1

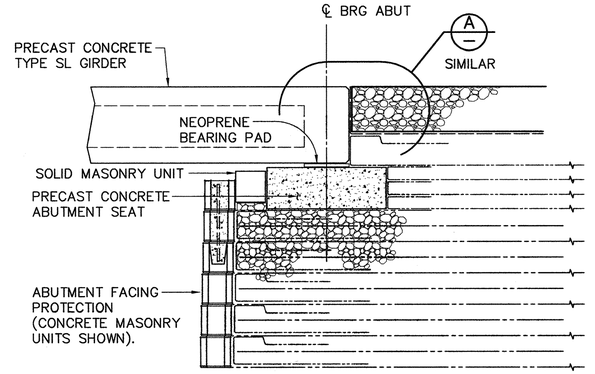
AT BARCODE	DATE	SHEET	DRAWING
	2015-01-29	1 OF 2	LRTD-1001

DRAWING | HIGHWAY | CONTRACT | DESCRIPTION | PHOTO | DATE | BY | SURVEYED | DEPARTMENT BAR CODE



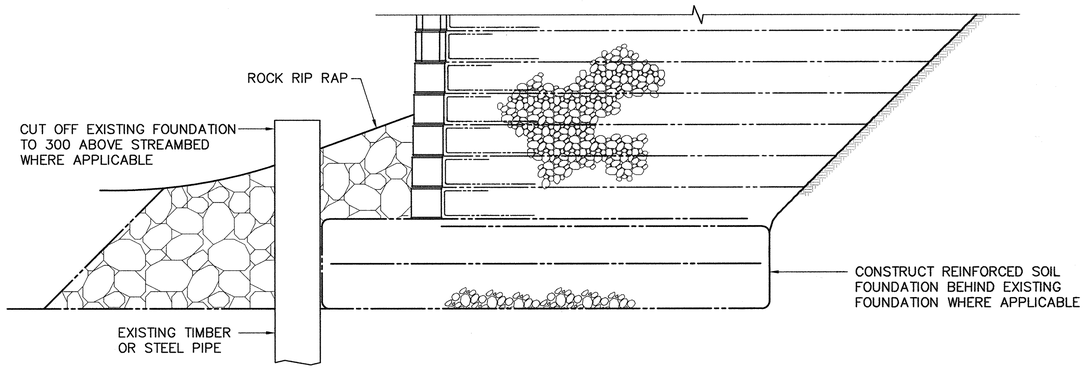
ABUTMENT DETAIL FOR STEEL GIRDER STANDARD BRIDGE

1:20



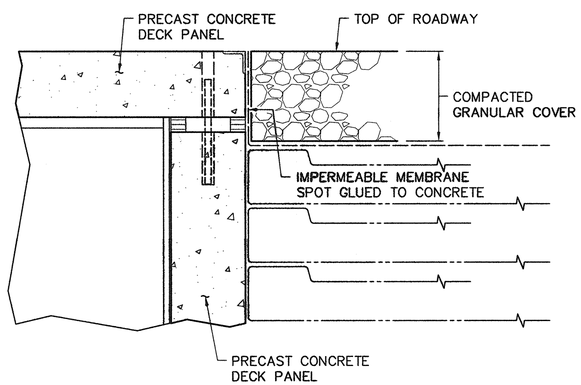
ABUTMENT DETAIL FOR SL GIRDER STANDARD BRIDGE

1:20



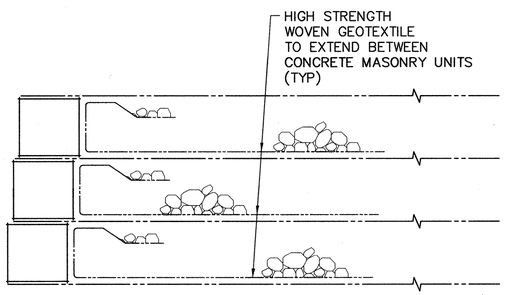
ALTERNATIVE ABUTMENT PLACEMENT FOR BRIDGE REPLACEMENTS

1:20



A — DETAIL

1:10



B — TYPICAL DETAIL

1:10

REV	DATE	REVISION	BY
6			
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RECOMMENDED DIRECTOR BRIDGE ENGINEERING
D Williamson

APPROVED EXECUTIVE DIRECTOR TECHNICAL STANDARDS BRANCH
Mosh Jodi
DATE FEB.18/15

Alberta Transportation

LOW VOLUME STANDARD BRIDGE GRS ABUTMENT ALTERNATIVE TYPICAL DETAILS SHEET 2

AT BARCODE	DATE	SHEET	DRAWING
	2015-01-29	2 OF 2	LRTD-1002

DRAWING | HIGHWAY | CONTRACT | DESCRIPTION | PHOTO | DATE | BY | SURVEYED | DEPARTMENT BAR CODE