

CORRESPONDENCE/MEMORANDUM \_\_\_\_\_ State of Wisconsin

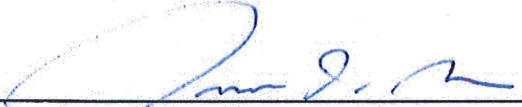
Date: January 24, 2012

To: Beth Cannestra  
Director, Bureau of Project Development  
Attn: Don Greuel, Project Services Chief

From: Jim Rohe, PE  
Southwest Region, La Crosse Office

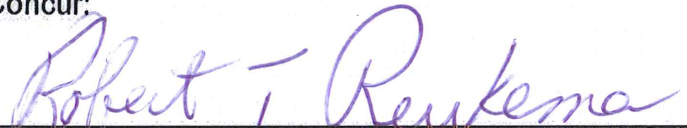
Subject: DESIGN STUDY REPORT  
Project I.D. 5783-03-00/71  
Village of Gays Mills  
Dellamater Hollow Cr & Kickapoo Br  
STH 131  
Crawford County

Having considered the economic and social effects of this project, its impact on the environment, and its consistency with the goals of community planning, we request your approval of the attached study report.

  
\_\_\_\_\_  
Region Project Development Chief

3/9/12  
Date

Concur:

*for*   
\_\_\_\_\_  
Bureau of Project Development,  
Project Services Chief

3/13/2012  
Date

## **DESIGN STUDY REPORT**

Project I.D. 5783-03-00/71  
Village of Gays Mills  
Dellamater Hollow Cr & Kickapoo Br  
STH 131  
Crawford County

## DESIGN STUDY REPORT

### 1.0 Project Description and Need

1.1. Federal Oversight Project; No

#### 1.2. PROJECT LENGTH & TERMINI

Project Length: 0.30 Miles

Termini/Limits:

Village of Gays Mills (STH 131)

Dellamater Hollow Cr. B-12-618 & Kickapoo River Bridge B-12-137

#### 1.3. FUNCTIONAL CLASSIFICATION/ACCESS CONTROL

Roadway Name	Funct. Class (Arterial, Collector or Local)	Rural, Urban or Transitional	Corridors 2020 or Backbone (No or State which)	NHS Route (Yes or No)	Long Truck Route (No or state Federal or State)	Access Control Tier	On Ped Trans. Plan (Yes or No)	On Bike Trans. Plan (Yes or No)
STH 131	Major Collector	Transitional	No	No	No	N/A	No	No

#### 1.4.NEED FOR PROJECT

The proposed improvement project is located on STH 131 in Crawford County and is located 1.2 miles north of the intersection of STH 171 with STH 131, at Brockway Drive. The existing bridge structure on STH 131, B-12-618 is a single span structure with steel deck girders and wood pilings. This structures substructure is rated at 3 and there is section loss in 4 of the wood pilings on the south abutment. The deck is experiencing 25% delimitation and the last improvement to this structure was done in 1997 with a bituminous overlay. Additional work associated with this project is located 0.5 miles west of the STH 171 & STH 131 intersection on STH 171 at B-12-137 over the Kickapoo River. The structure's approach slabs are settling due to flooding in 2007 and 2008. Additionally there was a scour hole that developed along pier 2 of the structure due to the loss of heavy riprap during the 2007 & 2008 floods.

### 2.0 PRESENT FACILITY

#### 2.1.POSTED SPEED

Roadway or Roadway Segment	Posted Speed	Advisory Speed
STH 131 (B-12-618)	55	N/A
STH 171 (B-12-137)	25	15

#### 2.2.GEOMETRICS

##### 2.2.1. \* Horizontal Alignment Features Outside of Desirable or Minimum Design Standards.

* Horizontal Feature (Curve, P.I. Def., etc.)	Location (Stationing)	* Size (Radius, P.I. Deflection, etc.)*	* Super-Elevation (s.e.)	Speed Rating
Horizontal Curve (B-12-137)	STH 171 7+00 – 9+00	165.00	None	25 MPH

\*Controlling Criteria

CORRESPONDENCE/MEMORANDUM

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**Date:** 10-3-2012

**To:** WisDOT PDS  
*Robert Reukema, PE – Project Services Chief*  
*Jim Rohe, PE – Section Chief*  
*Johnny Gerbitz, FHWA*  
*Joe Gregas, PE – Project Manager*

**From:** Tom Oldenburg

**Subject:** 5783-03-00/71  
Wuazeka – Soldiers Grove  
Dellamater Hollow Creek Bridge  
STH 131  
Crawford County

Per the new FHWA Roadside Standards, the new MGS Guard Rail will be installed on the proposed structure B-12-0079. This installation will require that the proposed bridge location be pushed north along the STH 131 alignment from station 118+75 (approx.) to station 120+25, approximately 150-feet up station (north). This is required due to the standards for the MGS rail and because there has not been a crash test for a short radius of the MGS rail at this time. At this time, it is not yet known when a test will be completed in regards to a short radius design for the MGS rail.

There were three alternatives looked at prior to the approval of alternative no. 3.

Alternative 1 – Use existing beam guard standards and short radius end treatments. This was not viable. Future beam guard replacements and proximity to existing intersection made this alternative a non viable solution. This alternative did not address the non standard issues in regards to the intersection or beam guard.

Alternative 2 – use existing beam guard standards (non MGS Rail) and insert a Design Exception for this installation. This alternative relocated the structure further to the north similar to alternate-3. This alternative was turned down because the cost savings of pushing the structure another 20-feet north and installing new MGS rail standards far outweighed Alternative-2 benefits and there is still non-conforming beam guard used on the new structure.

Alternative 3 – we would have new MGS Rail on structure, improved intersection geometry and meet current design standards for roadside barriers with the MGS rail. The cost savings in the long run and the ability to meet all the new standards for the intersection and beam guard with the MGS rail make this alternative the selected alternative in which WisDOT will move ahead with. WisDNR is okay with the proposed channel re-alignment as well.

### Alternate 3 Design Changes

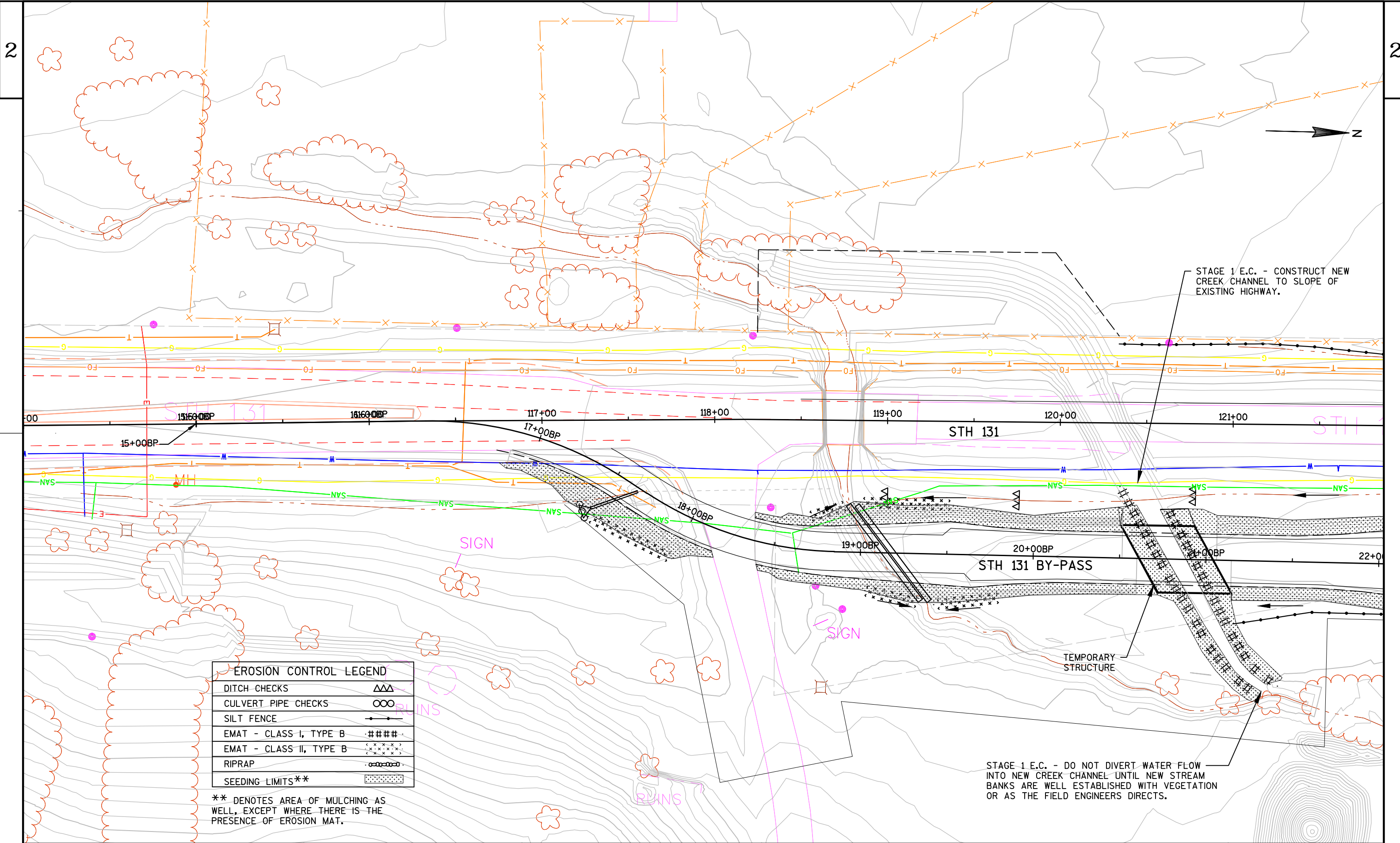
The new location of the structure will allow for all four quadrants of the rail to be MGS rail per the standard specifications for MGS rail. All tapers from the structure will be standard except that the south east quadrant will be at a taper of 10:1 in the last 53'-1 ½" feet of the rail, the EAT portion. This is well within the FHWA Roadside Design Guidelines with calls for a maximum taper allowable of 7:1. The overall MGS rail system length on all four quadrants will be 105'-0 ¼".

Intersection design – the design of the Type B2 intersection will be a modified design. A portion of the 100-foot outgoing taper will be designed to follow the EAT at a 10:1 taper. This entire area will be paved fully to the face of beam guard. See intersection design drawings for layout of this modified type B2 intersection.

Proposed creek channel re-alignment. WisDNR has no issues with the proposed creek channel re-alignment. The only request that the DNR has is that the creek channel be allowed to vegetate for as long as possible prior to diverting the water into the new creek channel and to minimize riprap if possible as well.

Please use this Memo as an amendment to the existing DSR signed on March 13, 2012. The overall design concept for this design study report has not changed with this amendment. We are still replacing the existing structure but are locating the structure up station (120+50) in order to be able to install the MGS rail. There are no changes to the programmatic environmental report or any additional wetlands affected with this design change.

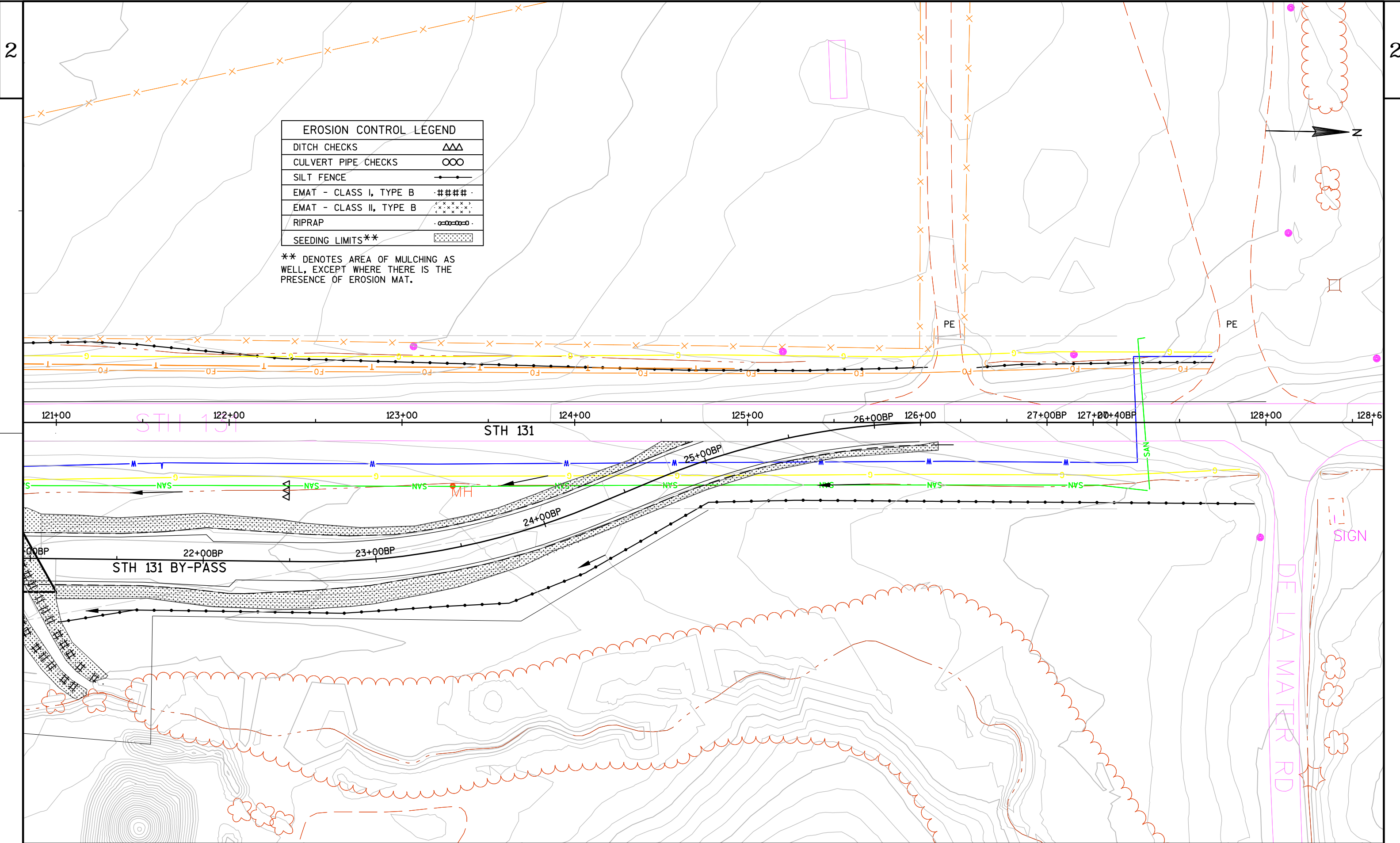
Tom Oldenburg  
Project Leader



EROSION CONTROL LEGEND	
DITCH CHECKS	△△△
CULVERT PIPE CHECKS	○○○
SILT FENCE	— — —
EMAT - CLASS I, TYPE B	####
EMAT - CLASS II, TYPE B	××××
RIPRAP	— × — × — ×
SEEDING LIMITS**	.....

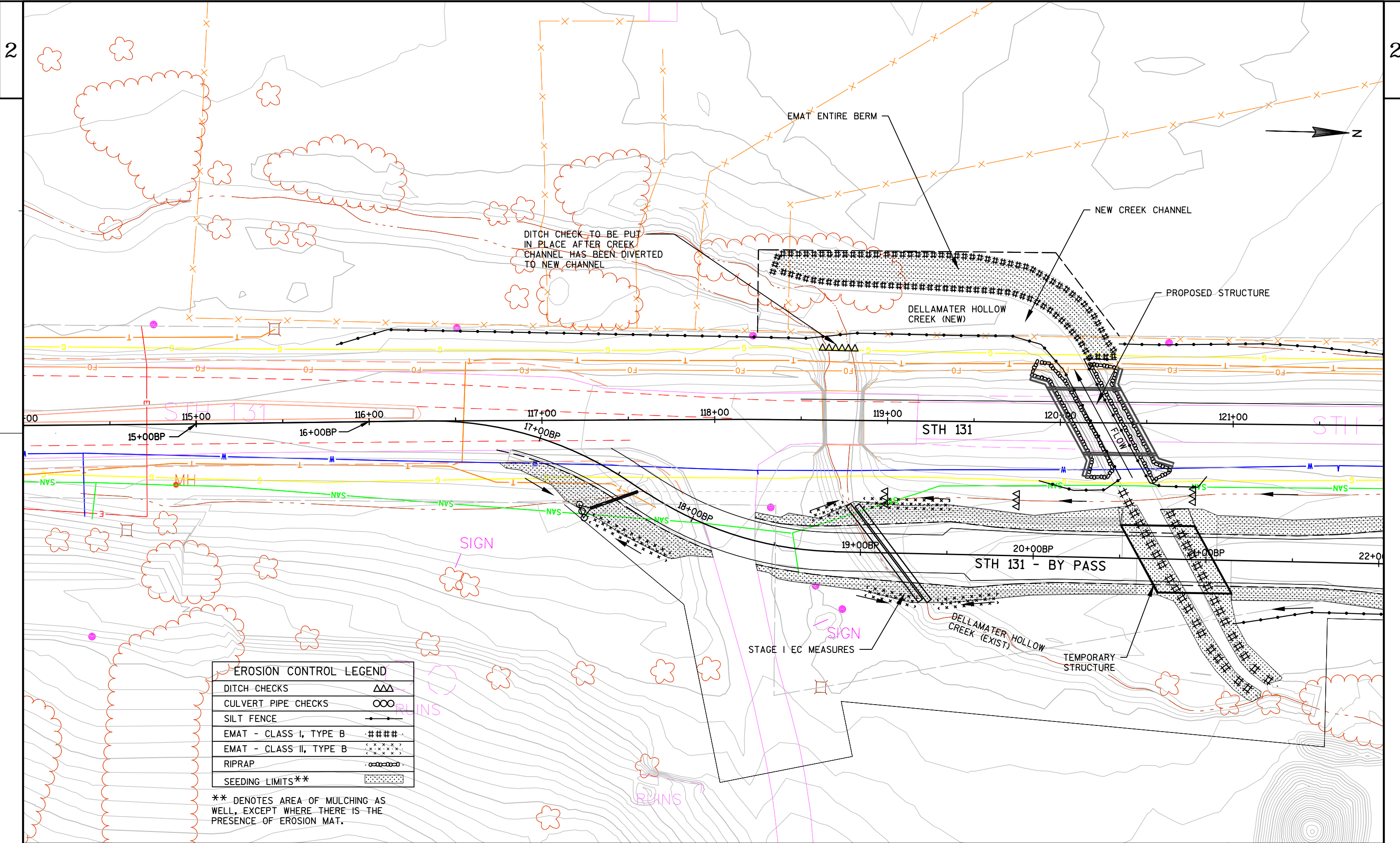
\*\* DENOTES AREA OF MULCHING AS WELL, EXCEPT WHERE THERE IS THE PRESENCE OF EROSION MAT.





EROSION CONTROL LEGEND	
DITCH CHECKS	△△△
CULVERT PIPE CHECKS	○○○
SILT FENCE	—●—●—●—●—
EMAT - CLASS I, TYPE B	·####·
EMAT - CLASS II, TYPE B	·×××××·
RIPRAP	·○○○○○·
SEEDING LIMITS**	▨

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NEW CREEK CHANNEL

STH

**SIGN**

## RUINS

EXISTING SILT FENCE AND ———  
EROSION MAT TO REMAIN IN  
PLACE FROM STAGE 1.  
EXTEND EMAT AND SILT FENCE  
AFTER OLD CREEK CHANNEL IS  
FILLED.

EROSION CONTROL LEGEND	
DITCH CHECKS	△△△
CULVERT PIPE CHECKS	○○○
SILT FENCE	—●—
EMAT - CLASS I, TYPE B	·#####·
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RIPRAP	·○○○○·
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