TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		287	287
Filter Fabric	Sq. Yd.		440	440
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		223	223
Concrete Structures	Cu. Yd.		72.3	72.3
Concrete Superstructure	Cu. Yd.	89.3		89.3
Bridge Deck Grooving	Sq. Yd.	409		409
Protective Coat	Sq. Yd.	473		473
Concrete Superstructure (Approach Slab)	Cu. Yd.	83.4		83.4
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1296		1296
Reinforcement Bars, Epoxy Coated	Pound	47880	14410	62290
Steel Railing, Type SM	Foot	144		144
Furnishing Steel Piles HP 12x53	Foot		450	450
Driving Piles	Foot		450	450
Test Pile Steel HP 12x53	Each		2	2
Pile Shoes	Each		12	12
Name Plates	Each		1	1
Anchor Bolts, 1"	Each	24		24
Granular Backfill for Structures	Cu. Yd.		150	150
Geocomposite Wall Drain	Sq. Yd.		70	70
Pipe Underdrain for Structures 4"	Foot		140	140

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts (in painted areas and ASTM A325 Type 3 in unpainted areas). Bolts ¾ in. Ø, holes $^{13}/_{16}$ in. Ø, unless otherwise noted.

Calculated weight of Structural Steel = 73,340 lbs (M270 Grade 50)
Calculated weight of Structural Steel = 3,850 lbs (M270 Grade 36)

No Field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ⅛ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

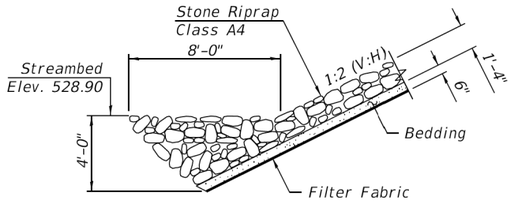
The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the Field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Gray, Munsell No. 5B 7/1.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

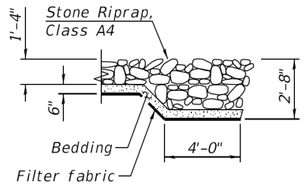
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

~~Structural steel shall be painted for a distance equal to the depth of the embedment into the concrete cap plus 18 in. Painted areas shall be primed in the shop with a Department-approved zinc rich primer. Field painting will not be required.~~ 1



SECTION A-A



SECTION B-B

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

DESIGN STRESSES

FIELD UNITS

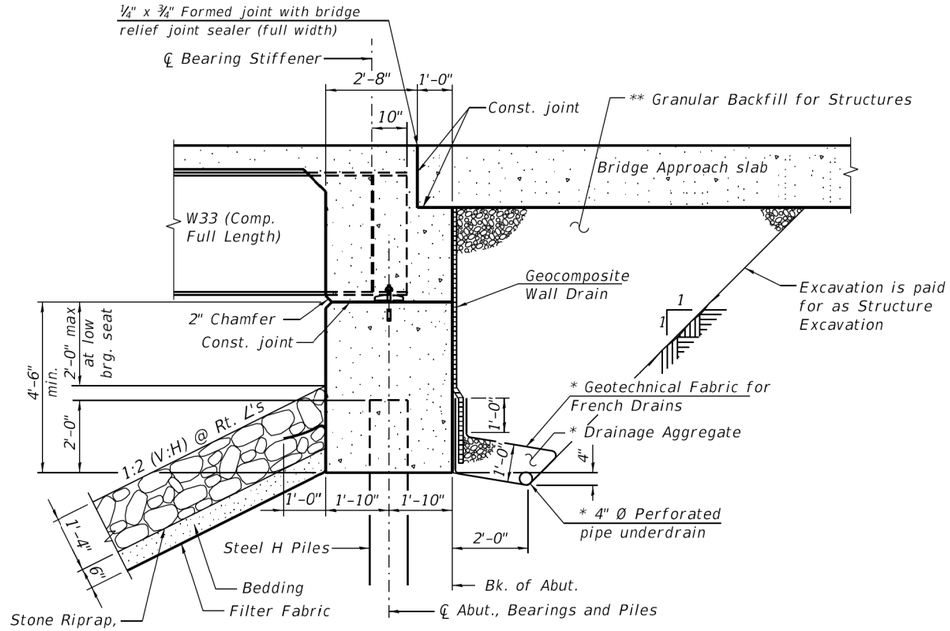
f'c = 3,500 psi
f'c = 5,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)
fy = 36,000 psi (M270 Grade 36)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.16g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.38g
Soil Site Class = D



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. ℄'s)

* Include in the cost of Pipe Underdrains for Structures.

** Granular Backfill for Structures shall follow Std. Spec. 586 except the coarse aggregate shall be Grade CA7, CA11, or CA14. Granular backfill behind the abutments shall be compacted according to Article 205.06 of the Standard Specifications.

Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend toward the creek until intersecting with the slope. The pipes shall drain into concrete headwalls. These headwalls shall be located within the riprap slope protection system and directed perpendicular to the channel. Use of elbows or other fittings may be required to redirect the drainage system around the wingwall. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

SILVER CREEK
BUILT 202_ BY
MADISON COUNTY
SECTION 16-18113-00-BR
T.R. 101 STA. 37+26.88
STRUCTURE NO. 060-3367
LOADING HL-93

NAME PLATE

See Std. 515001

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)		
	W. Abut.	E. Abut.	Item 113
Q100	533.76	533.76	8
Q200	533.76	533.76	
Design	533.76	533.76	
Check	533.76	533.76	

WATERWAY INFORMATION

Drainage Area = 35.1 sq. mi. Low Grade Elev. 535.07 @ Sta. 32+13.08 Prop. Low Grade Elev. 535.39 @ Sta. 31+16.30

Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	4656	362	535	537.2	0.3	0.5	537.5	537.7
Design	15	5426	371	550	537.4	0.3	0.5	537.7	537.9
Base	100	8573	408	606	538.2	0.3	0.4	538.5	538.6
	200	9738	421	626	538.5	0.3	0.4	538.8	538.9
Overtopping									
Max. Calc.	500	11285	435	651	538.8	0.3	0.4	539.1	539.2