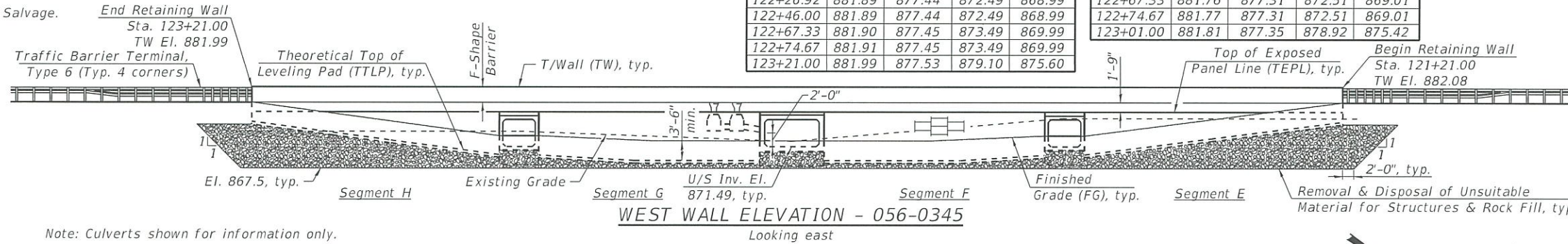


Benchmark: Set iron rod with cap, 1' north of east guardrail end, 41' east of power pole. Elev. 876.894

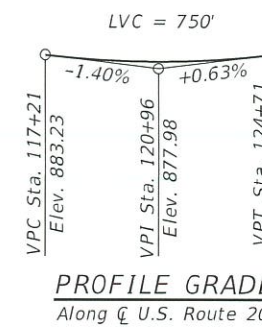
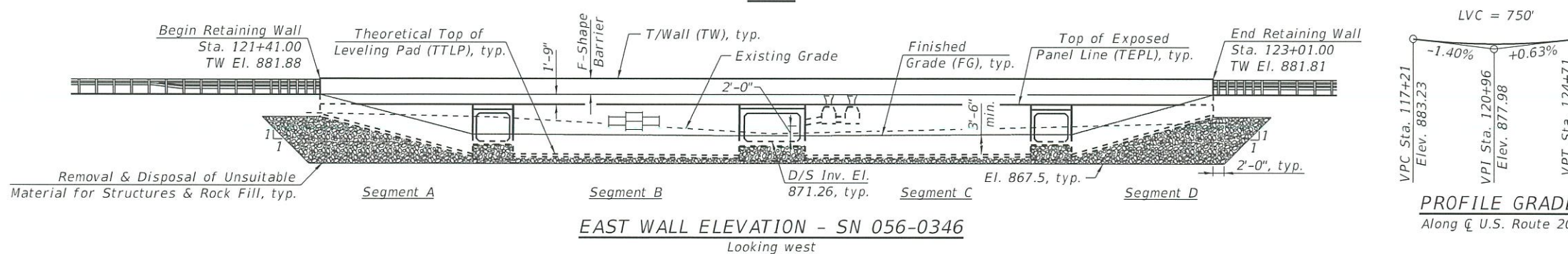
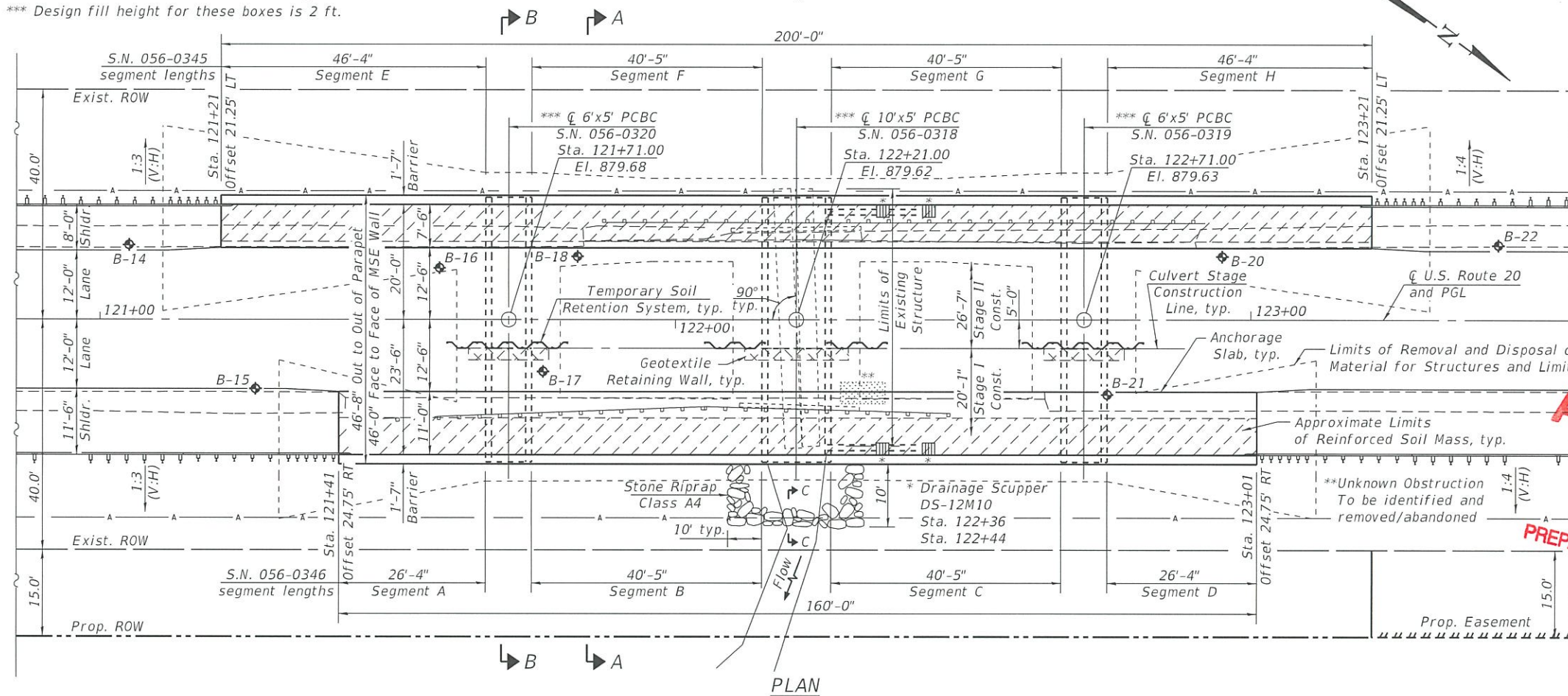
Existing Structure: S.N. 056-0087, 8' x 4' cast in place concrete box culvert, approx. 32' in length with concrete headwalls and attached guardrail. Two 36" CMP culverts lie within the box culvert, approximate length of CMP 45' each.

One lane of traffic to be maintained using staged construction.

No Salvage.



Note: Culverts shown for information only.
 *** Design fill height for these boxes is 2 ft.

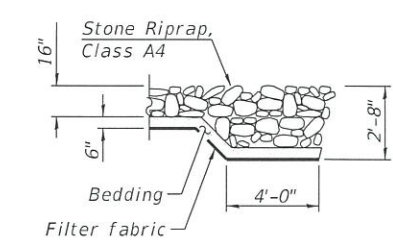


DESIGN SPECIFICATIONS
 2017 AASHTO LRFD Bridge Design
 Specifications Customary U.S. Units, 8th Edition

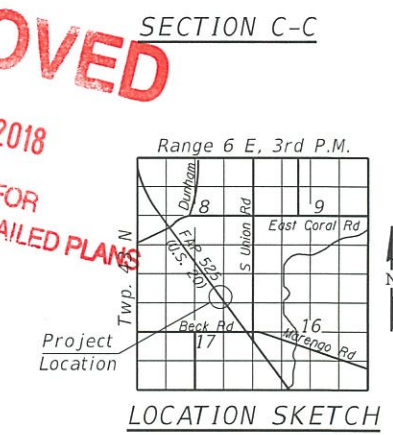
LOADING HL-93
 Allow 50#/sq. ft. for future wearing surface.

HIGHWAY CLASSIFICATION
 U.S. Rte. 20 - F.A.P. Rte. 525
 Functional Class: Strategic Regional Arterial
 ADT: 8,900 (2018)
 ADTT: 1,424 (2018)
 DHV: 890 (2018)
 Design Speed: 55 m.p.h.
 Posted Speed: 55 m.p.h.
 2-Way Traffic
 Directional Distribution: 50:50

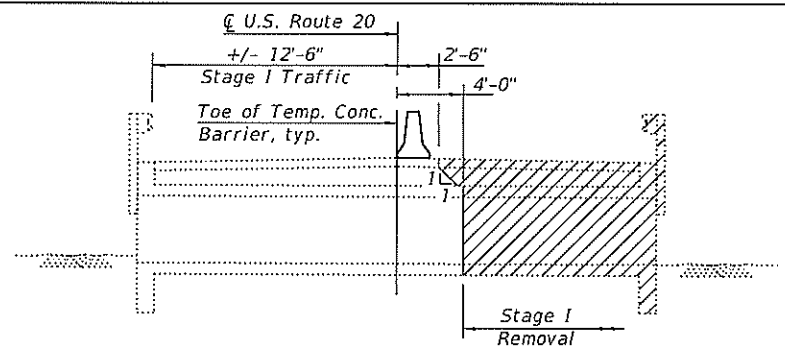
DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
PRECAST UNITS
 $f'_c = 4,500$ psi (Precast Panels)
 $f'_c = 5,000$ psi (Precast Box Culverts)
 $f_y = 65,000$ psi (Welded Wire Reinforcement)



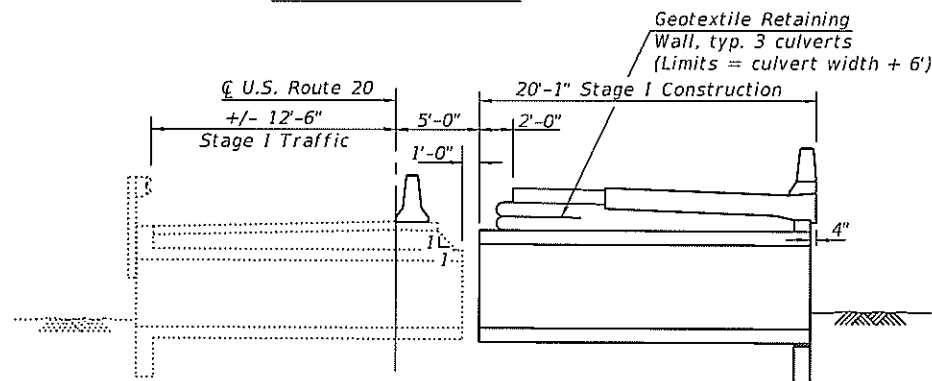
APPROVED
 APR 09 2018
 AS A BASIS FOR
 PREPARATION OF DETAILED PLANS



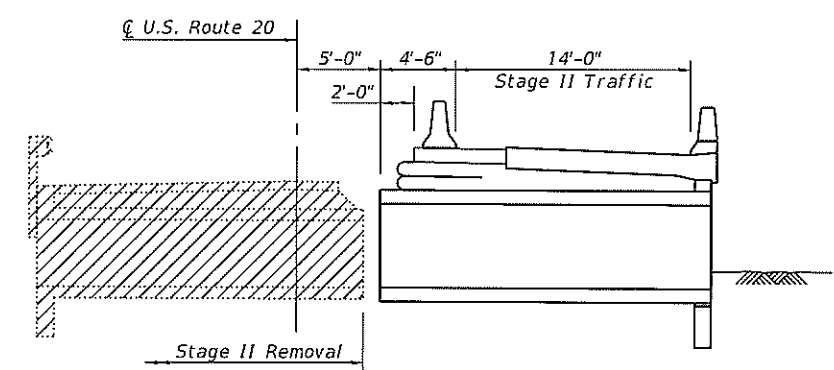
GENERAL PLAN & ELEVATION
U.S. ROUTE 20 RETAINING WALLS
STRUCTURE NO. 056-0345 & 056-0346
F.A.P. RTE. 525 - SEC 2016-092B&R
McHENRY COUNTY
STATION 121+21 TO 123+21



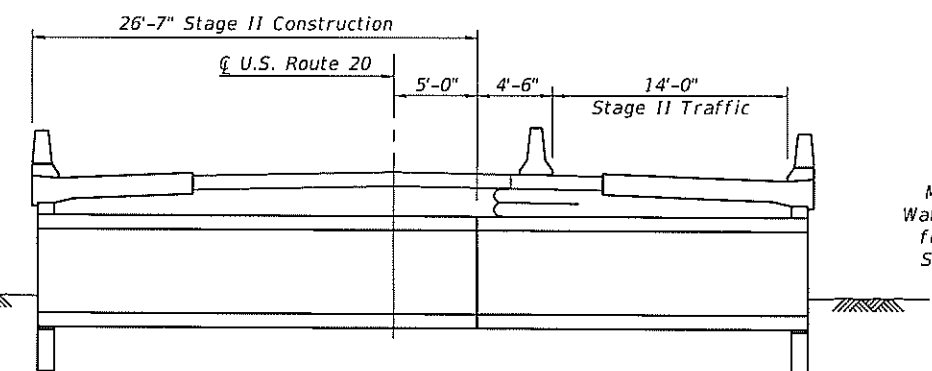
STAGE I REMOVAL



STAGE I CONSTRUCTION

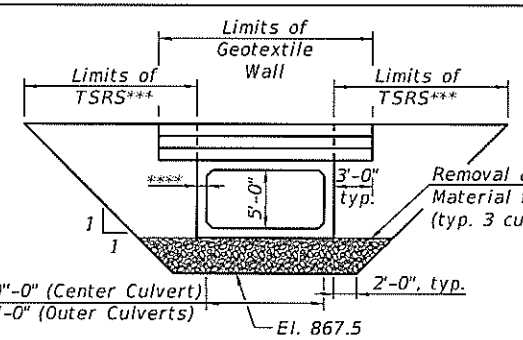


STAGE II REMOVAL



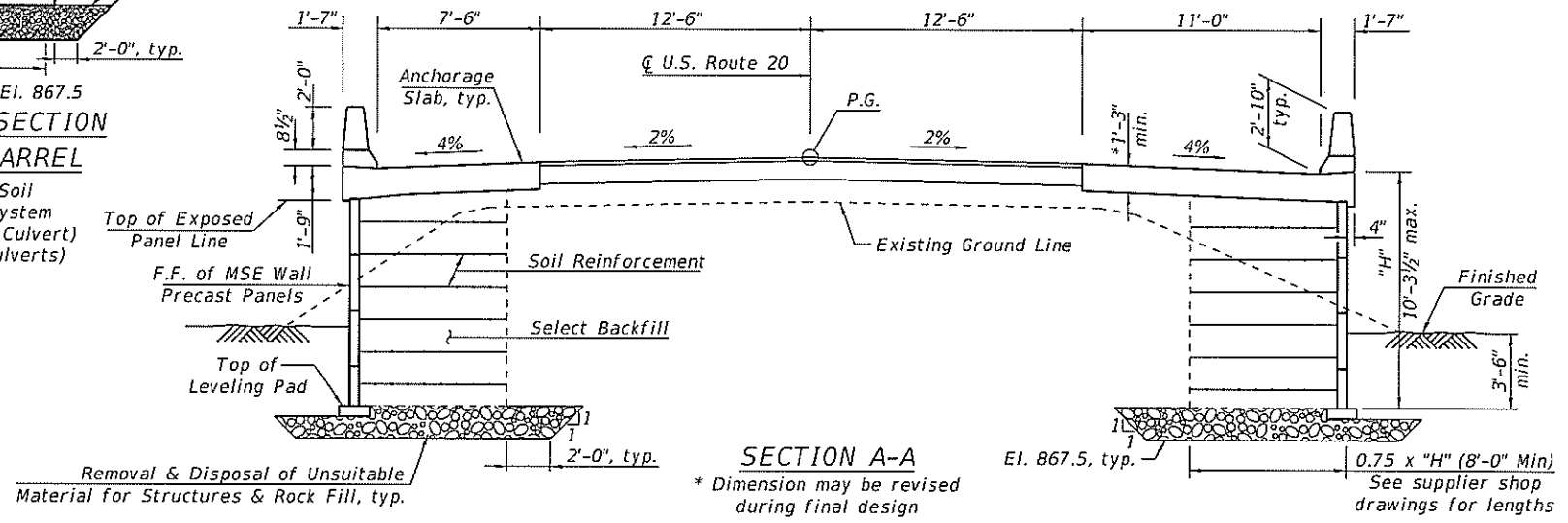
STAGE II CONSTRUCTION

CONSTRUCTION STAGING DETAILS



TYPICAL SECTION THRU BARREL

*** Temporary Soil Retention System
 **** 10" (Center Culvert)
 7" (Outer Culverts)

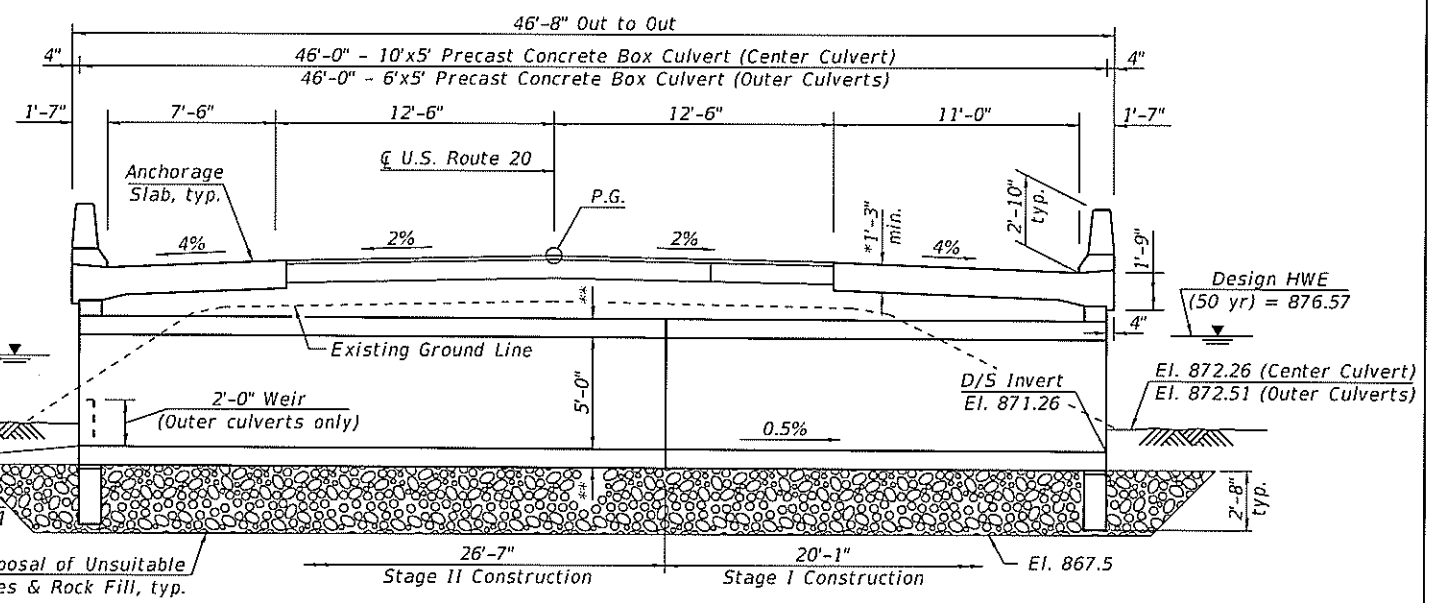


SECTION A-A

* Dimension may be revised during final design

Removal & Disposal of Unsuitable Material for Structures & Rock Fill, typ.

0.75 x "H" (8'-0" Min)
 See supplier shop drawings for lengths

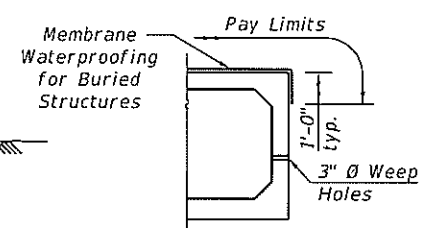


SECTION B-B

* Dimension may be revised during final design

** 10" (Center Culvert)
 Top Slab 8" (Outer Culverts)
 Bottom Slab 7" (Outer Culverts)

Removal & Disposal of Unsuitable Material for Structures & Rock Fill, typ.



WATERPROOFING

WATERWAY INFORMATION

Drainage Area = 1.76 Sq. Mi. Low Grade Elev. 879.62 @ Sta. 122+37

Flood	Freq. Yr.	Q C.F.S.	Opening Ft ²		Nat. H.W.E.		Head - Ft. Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	10	162	29	45	875.09	0.01	0.01	875.10	875.10
Base	50	396	32	76	876.57	0.94	0.27	877.51	876.84
Overtopping	100	543	32	76	876.81	0.89	0.39	877.70	877.20
Max. Calc.	>10, <50	658	32	76	876.98	0.89	1.17	877.87	878.15

2-yr Q = 107 CFS 10-yr velocity = 6 ft/s (exist.) 5 ft/s (prop.)

DETAILS

U.S. ROUTE 20
 STRUCTURE NO. 056-0345 & 056-0346
 F.A.P. RTE. 525 - SEC 2016-092B&R
 McHENRY COUNTY
 STATION 121+21 TO 123+21

BAXTER & WOODMAN
 Consulting Engineers

USER NAME =	DESIGNED - BLB	REVISED -
PLDT SCALE =	CHECKED - CDL	REVISED -
PLDT DATE =	DRAWN - BLB	REVISED -
	CHECKED - CDL	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
525	2016-092B&R	McHENRY		
			CONTRACT NO. 62D36	

ILLINOIS FED. AID PROJECT