

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	PIER	N. ABUT.	SUPER.	TOTAL
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-10-0051	LS	-----	-----	-----	-----	1
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 105+28	LS	-----	-----	-----	-----	1
205.1000	EXCAVATION FOR STRUCTURES BRIDGES B-10-0229	LS	-----	-----	-----	-----	200
210.0100	BACKFILL STRUCTURE	CY	100	-----	100	168	280
502.0100	CONCRETE MASONRY BRIDGES	CY	37	-----	37	345	345
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	-----	6,510
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,360	1,790	2,360	29,400	33,100
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,850	-----	1,850	-----	22
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	-----	11	-----	20
550.0500	PILE POINTS	EACH	6	8	6	-----	1,040
550.1100	PIILING STEEL HP 10-INCH x 42 LB	LF	300	440	300	-----	100
606.0300	PIPRAP HEAVY	CY	50	-----	50	-----	160
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	-----	80	-----	4
614.0130	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	-----	2	-----	210
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	100	-----	110	-----	-----
9.00	NON-BID ITEMS	SIZE	-----	-----	-----	-----	1/2" & 3/4"
	FILLER						

width Factor = $\frac{40.9}{30.9} = 1.05$
length Factor = $\frac{29}{68.75} = .42$

Area Factor = $(.36)(1.05) = .44$

Ⓢ = structure approach slab

Rip Rap = $120 \times 22 + 27 \times 2 = 195$
200 CY

Fabric $124 \times 2649 = 360$

Note: Structure approach slab exceeds deck area

Alt Twin Box

Triple box with top as driving Street

7.5m

10/31/15

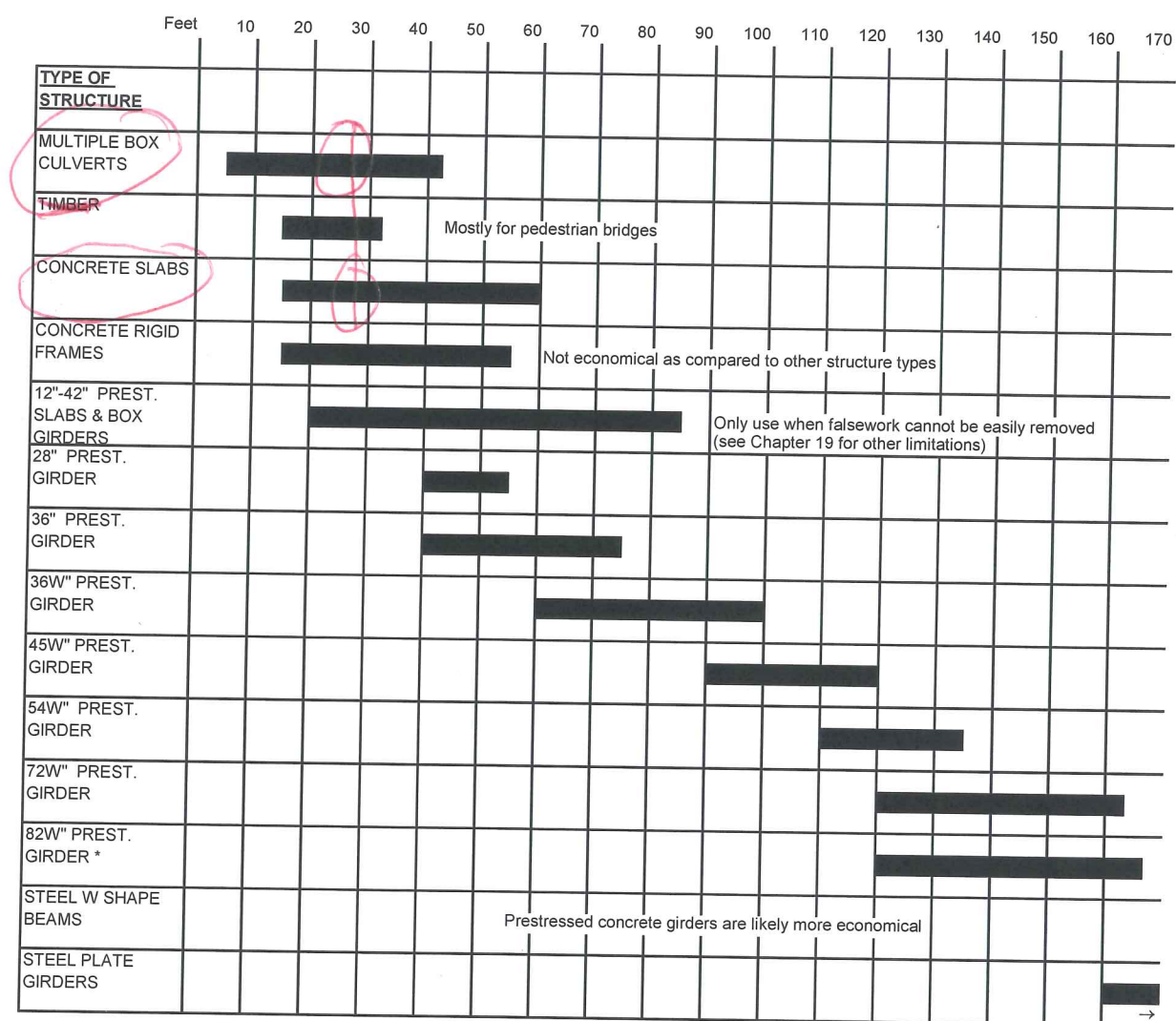
C-55-37

$\rightarrow (2237)(1.05)(100)(.42) + 112 = 260 \text{ CY}$
 $\rightarrow (345)(.44) + (2720)(.42) = 330 \text{ CY}$
 $1.05 = 6836$
 $(1850)(22)(1.05) + (29400)(.44) + 18,410 = 35,341$
 $22 \times 1.05 = 23$
 $72 \times 1.05 = 75.6 = 14$
 $600 \times 1.05 = 630$



2-55-37

5.2 Economic Span Lengths



*Currently there is a moratorium on the use of 82W" prestressed girders in Wisconsin

Figure 5.2-1
Economic Span Lengths

Project 7040-03-75 , Category 0020

203.0210.S Abatement Asbestos Material
(structure)01. B-10-0051

LS 1.00 1,800.00 \$1,800.00 1.00 100.00% \$0.00 0.00 \$0.00

Item No.	Description	Units	Authorized Quantity	Cumulative Quantity Paid To Date	Unit Price	Amount Paid To Date	Cumulative Total Qty Placed	%Complete	Stockpile Material Allowance	Quantity This Estimate	Amount This Estimate
----------	-------------	-------	------------------------	--	------------	------------------------	-----------------------------------	-----------	------------------------------------	---------------------------	-------------------------

Project 7040-03-75 , Category 0020

203.0600.S Rem Old Str Ovr Water-Min-Debris
(sta)02. 105+28

LS 1.00 15,000.00 \$25,000.00 1.00 100.00% \$0.00 0.00 \$0.00

206.1000 Exc For Structure Bridges (structure)02.
B-10-0229

LS 1.00 14,000.00 \$14,000.00 1.00 100.00% \$0.00 0.00 \$0.00

210.0100 Backfill StructureBackfill Structure

CY 200 159.00 18.00 \$2,862.00 159.00 79.50% \$0.00 0.00 \$0.00

502.0100 Concrete Masonry BridgesConcrete
Masonry Bridges

CY 280 280.00 650.00 \$123,760.00 280.00 100.00% \$0.00 0.00 \$0.00

502.3200 Protective Surface TreatmentProtective
Surface Treatment

SY 345 345.00 3.00 \$990.00 349.00 101.16% \$0.00 0.00 \$0.00

505.0405 Bar Steel Reinforcement Hs
BridgesBar Steel Reinforcement Hs
Bridges

LB 6510 6,507.00 1.23 \$8,003.61 6,507.00 99.95% \$0.00 0.00 \$0.00

505.0605 Bar Steel Reinf Hs Coated BridgeBar
Steel Reinf Hs Coated Bridge

LB 33100 33,115.00 1.23 \$40,731.45 33,115.00 100.05% \$0.00 0.00 \$0.00

516.0500 Rubberized Membrane
WaterproofingRubberized Membrane
Waterproofing

SY 22 14.75 40.00 \$922.00 14.75 67.05% \$0.00 0.00 \$0.00

550.0500 Pile PointsPile Points

EACH 20 20.00 100.00 \$2,000.00 20.00 100.00% \$0.00 0.00 \$0.00

550.1100 Piling Steel Hp 10-inch X 42 LbPiling
Steel Hp 10-inch X 42 Lb

LF 1040 933.60 39.00 \$36,410.40 933.60 89.77% \$0.00 0.00 \$0.00

606.0300 Riprap HeavyRiprap Heavy

CY 100 131.00 45.00 \$5,895.00 131.00 131.00% \$0.00 0.00 \$0.00

612.0406 Pipe Underdrain Wrapped 6-inchPipe
Underdrain Wrapped 6-inch

LF 160 148.00 6.00 \$888.00 148.00 92.50% \$0.00 0.00 \$0.00

614.0150 Anchor Assemblies Sit Plate Beam
GuardAnchor Assemblies Sit Plate
Beam Guard

EACH 4 4.00 50.00 \$200.00 4.00 100.00% \$0.00 0.00 \$0.00

Estimate Detail for 20140610012 ; Estimate 0009 ; Pay Period Date 10/08/15

Item No.	Description	Units	Authorized Quantity	Cumulative Quantity Paid To Date	Unit Price	Amount Paid To Date	Cumulative Total Qty Placed	%Complete	Stockpile Material Allowance	Quantity This Estimate	Amount This Estimate
Project 7040-03-75 , Category 0020											
628.6005	Turbidity BarriersTurbidity Barriers	SY	50	49.00	37.80	\$1,862.20	49.00	98.00%	\$0.00	0.00	\$0.00
645.0120	Geotextile Fabric Type HrGeotextile Fabric Type Hr	SY	210	205.00 360	3.25	1175 1175-360=815	265.00	126.19%	\$0.00	0.00	\$0.00
650.6500	Construction Staking Structure Layout02. B-10-0229	LS	1	1.00	1,000.00	\$1,000.00	1.00	100.00%	\$0.00	0.00	\$0.00
715.0502	Incentive-Strength Conc StructuresIncentive Strength Conc Structures	DOL	1680	0.00	1.00	\$0.00	0.00	00.00%	\$0.00	0.00	\$0.00
805.5500	Pile SplicesPile Splices	DOL	1	1.00	351.00	\$351.00	1.00	100.00%	\$0.00	0.00	\$0.00

Stainless Steel Rebar = $1430 \times 3.25 = 4648$ Not required

8309.710 294.002

we 305,000 300,000



Project ID : 8949-04-08

Route : USH 012

Title : BALDWIN - MENOMONIE

Sub Title : CULVERTS C-55-9001, 9002 & 0014

Region : NORTHWEST

County : ST. CROIX

Structure # 1

Existing Structure

- Existing structure ID
- Existing structure type
- Year constructed
- Latest year of rehab
- Current condition
- Bridge sufficiency number
- Rate score
- Vertical clearance
- Clear roadway width
- Last inspection date
- Posted load rating
- Inventory rating
- Feature on
- Feature over/under
- Location
- Existing Skew
- Existing Structure Sq/FT

Existing Utilities

Existing Lighting

Proposed Structure Work

Proposed structure work **	Box Culvert - Multi Cell
Related Construction Project ID	8949-04-78
Proposed structure ID	C-55-0037
Spans or Cells	2
Proposed aesthetic value **	No aesthetics
Skew	Not on Skew
Widening	No Widening
Curved Superstructure	Not Curved or Tapered
Twin Structure	
Structure Survey Report	
Steel Tub Girders	

012

C-55-9001

Super Elevation Transition on Structure	
Non-Standard Pier (Straddle bent, integral cap)	
Utility/Lighting Accommodation	
Sign Structure Mounted on Structure	
Raised Sidewalks	
Bridge Painting (with other structure work)	
Tapered Superstructure	
Staged Construction	
Structural approach slab	
BOS Estimated Design Hours	150
Estimated structure cost	\$ 200,000
Proposed Utilities	
Proposed Lighting	
Additional Information	
Additional work required	
Approach slabs	
Approach work	
Canoe/boat landing	
Consultant design structure	
Dam	
Existing foundations	
Fisherman's platform	
Gauging station (USGS)	
High cost bridge	
Pedestrian/bike lanes	
Snowmobiles	
Comments	
C-55-0037 is replacing C-55-9001 located 0.1 miles east of 220th St.	
Last updated by HARRIS, KYLE J on 04/09/2015	



route: 012W county: ST. CROIX date: 11/05/2013 plm: 120.869

Lat: 44.96622235 Long: -92.35638258 Elev: 1069.42 ft.

\\doteauplog1p\photolog\RG5\012W_R5_2013\Front\Dir_123\F_12389.jpg

Copyright 2015 Mandli Communications, Inc.

New 18 C-55-0037
Old 10 C-55-9001

Plan Sta 51+04
20' slab, 28' Rdwy

Appears
overland,
not well
defined
channel



route: 012E county: ST. CROIX date: 11/06/2013 plm: 019.330

Lat: 44.96627354 Long: -92.35686759 Elev: 1050.62 ft.

\\doteauplog1p\photolog\Rg5\012E_R5_2013\Front\Dir_019\F_01959.jpg

Copyright 2015 Mandli Communications, Inc.

C-55-9001 010
New C-55-37

DESIGN/FINAL COMPUTATIONS

DT2138 2005 (Replaces ED408)

Wisconsin Department of Transportation

culvert H.B. STA. 51+84	New ID # C-55-0037
20' span	old ID # C-55-9001
28' Roadway	
Bridge Floor Elevation = 1147.12 - 1 46	
Bottom Footing Elevation = 1137.1 -	
ground elevation = 1141.4	area of opening
4' opening height	4' x 20' = 80 ft ²
20' opening width	$\pi r^2 = 80 \text{ ft}^2$
	$r = 4.51'$
	$r = 4.5'$
	$s = R$

Project/Structure No.	Hwy No.	County	Computed by	Date
Name of Road			Checked by	Date
Title block			Sheet	Of

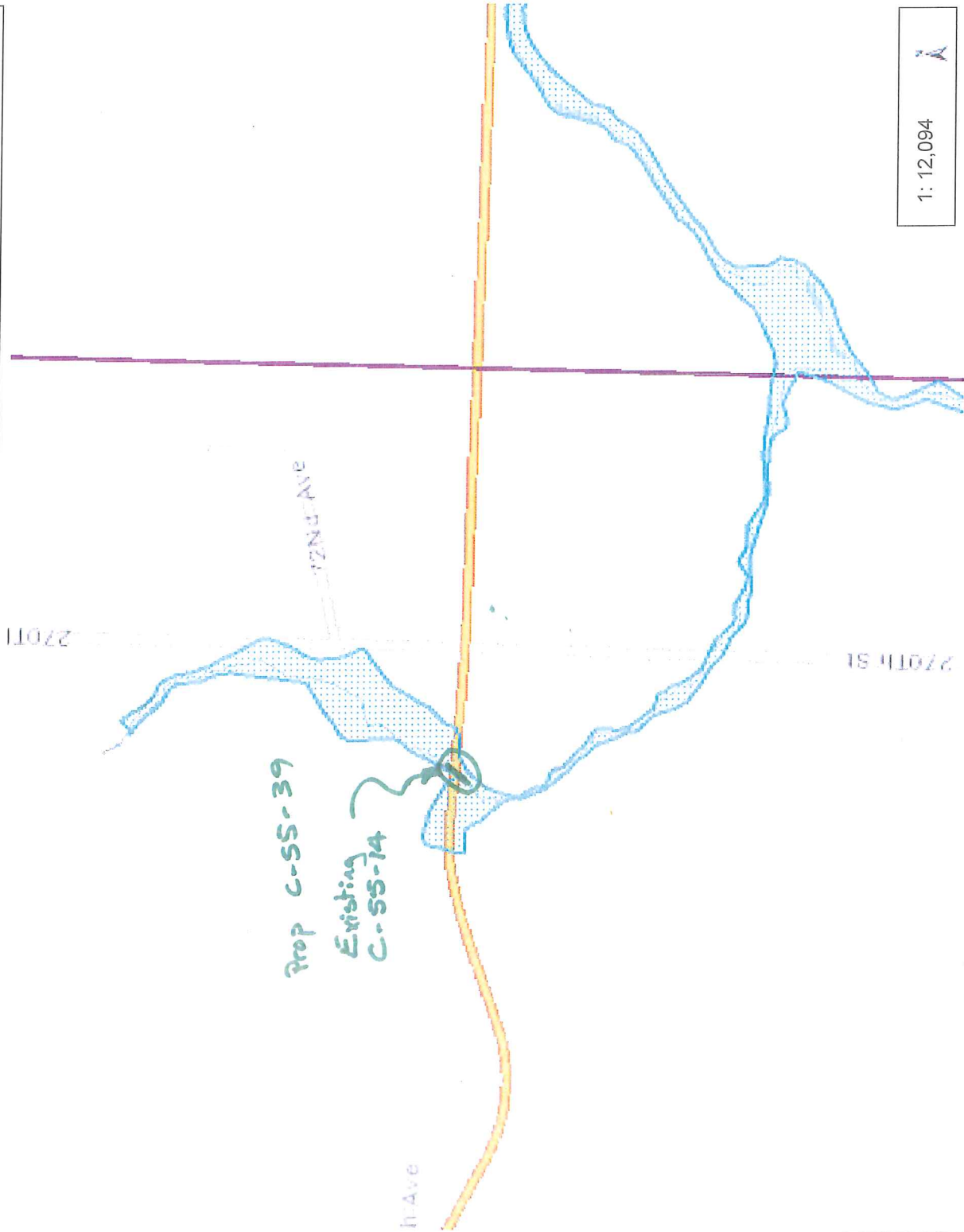


Surface Water Data Viewer Map



Legend

- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Cross Sections
- Floodway
- Base Flood Elevations
- FIRM Panel Index
- Rivers and Streams
- Open Water



1: 12,094



Notes

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/org/legal/>

0.4 Miles



0.4
NAD_1983_HARN_Wisconsin_TM
© Latitude Geographics Group Ltd.

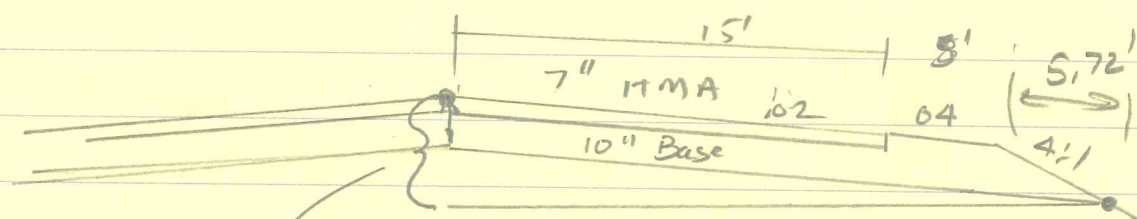
C-55-9001 / C-55-37

$$\text{max Original opening} = 20' \times \left[\overset{4.5' \pm}{(47.12 - 10.25)} - 4.4 \right] = 90 \text{ ft}^2$$

$$\text{Current opening, max} = 20 \times 3.8' = 76 \text{ ft}^2$$

$$3RC3 = 24' + 6' \text{ Shoulders} = 36'$$

$$C4 \text{ width} = 24' + 8' \text{ Shoulders} = 40' \text{ Total}$$



→ E to Gravel Shoulder =
 $17\frac{1}{2}'' + (45.72)(.02) = 2.33$

E to top of pipe or precast on inlet edge (upstream) = $2.33'$

Existing Available opening height = $1.6' + 3.4' + .4' \overset{\pm \text{ pipe side}}{- .3'} - 2.3 =$

→ $2.8'$

Cmc. Pipe Arch $27'' \times 44'' = 27'' + \overset{\text{pipe wall}}{4''} = 31'' = 2.6'$

Raise Road using -0.1% Gr $\approx +.33 = 3.1'$

→ $31'' \times 51'' = 33'' + 4\frac{1}{2}'' = 3.0'$

→ opening size $\approx 9\frac{1}{2} \text{ ft}^2 \pm$

use Slab Span Bridge or Box culvert w/

Top as driving surface

$\Rightarrow \frac{26 \text{ ft}^2}{9\frac{1}{2} \text{ ft}^2}$

8 pipes for equivalent opening

C-55-37

As-built

$L = 11,000 \pm$

$H = 1245 - 1142 = 123' \pm$

$A = 850 \text{ acres} \pm$

$L_1 = 7000'$

$L_2 = 4000$

$H_1 = 58'$

$H_2 = 65'$

Avg slope = $\frac{58+65}{7000+4000} \times 100 = 1.2\%$

$T_C = \left(\frac{5500}{61.5} \right) \times 34 \times 2 = 68 \text{ minutes}$

$\times 2 \text{ crossed surfaces}$

$\swarrow$
 $1/2$

$T_C = 136 \text{ minutes}$

$C = .21$

$I_{SD} = 1.6$

$I_{LS} = 1.4$

$Q_{50} = (1.6)(.21)(850) = 286 \text{ cfs}$

$Q_{LS} = 250$

$3 \times 43" \times 68" \times 60'$

$Q_{100} = 286 \left(\frac{1.8}{1.6} \right) = 323 \text{ cfs} \pm$

Above for preliminary assessment of flow
based on rational method $\Rightarrow$ do not
use for design

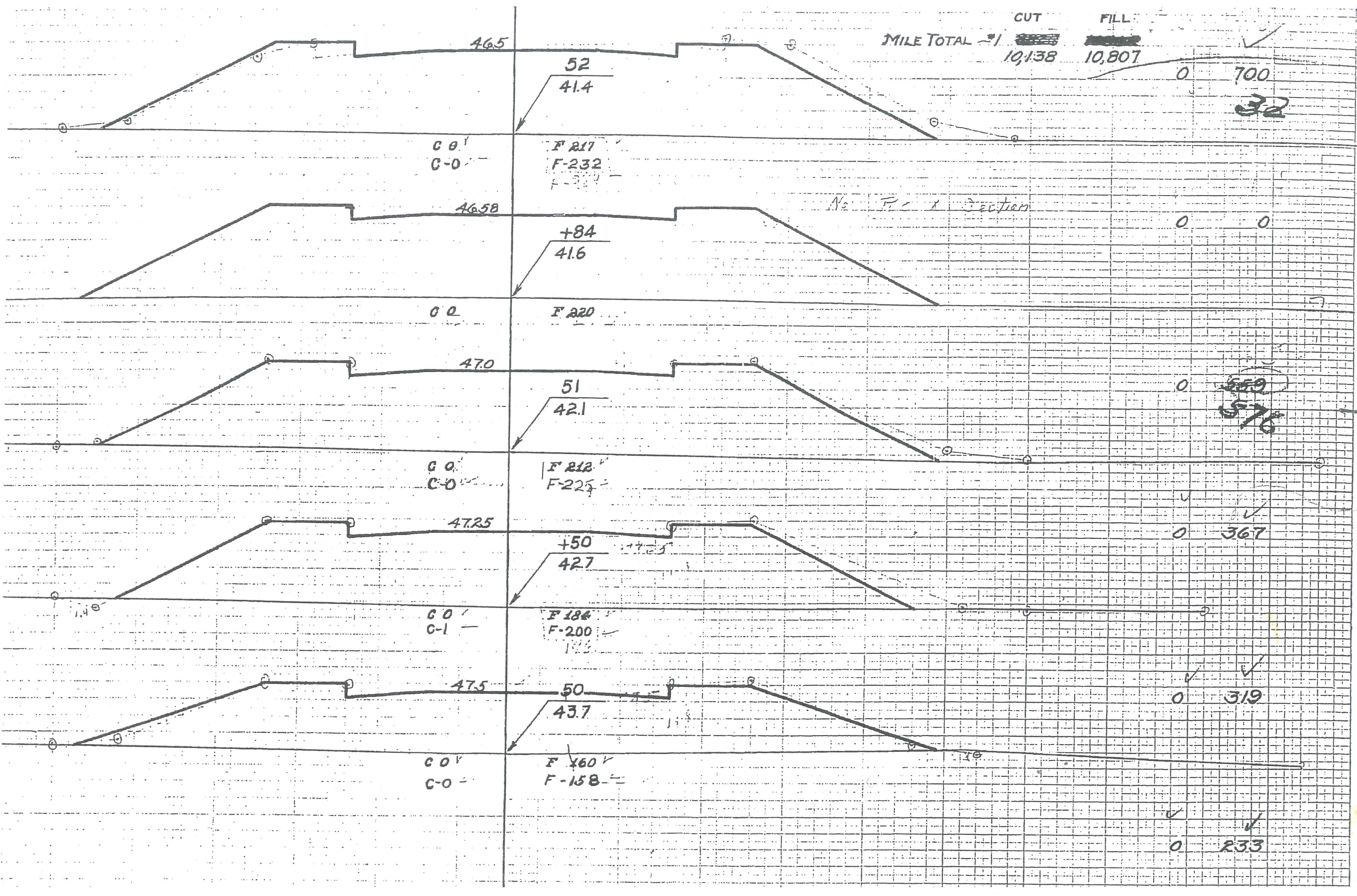
PSE Date:
Let Date:
NET C/L MILES: 0.130

SCHEDULE OF BID ITEMS WISDOT STANDARD SPECIFICATIONS 2015 EDITION					
TOTAL BID ITEMS	43	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE COST
203.0200		REMOVING OLD STRUCTURE (51+84, C-55-9001)	1	LS	\$2,000.00 \$2,000.00
204.0100		REMOVING ASPHALTIC SURFACE	222	SY	\$5.00 \$1,111.11
204.0110		REMOVING ASPHALTIC SURFACE	600	SY	\$4.00 \$2,400.00
204.0165		REMOVING GUARDRAIL	600	LF	\$3.00 \$1,800.00
205.0100		EXCAVATION COMMON	3200	CY	\$12.00 \$38,400.00
211.0100		PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT)	1	LS	\$5,000.00 \$5,000.00
305.0110		BASE AGGREGATE DENSE 3/4-INCH	60	TON	\$20.00 \$1,200.00
305.0120		BASE AGGREGATE DENSE 1 1/4-INCH	60	TON	\$30.00 \$1,814.81
305.0500		SHAPING SHOULDERS	10.8	STA	\$100.00 \$1,080.00
455.0605		TACK COAT	2.5	GAL	\$15.00 \$37.50
465.0105		ASPHALTIC SURFACE	36	TON	\$145.00 \$5,252.63
465.0115		ASPHALTIC SURFACE DETOURS	100	TON	\$120.00 \$12,000.00
522.0160		CULVERT PIPE REINFORCED CONCRETE CLASS III 60-INCH	70	LF	\$175.00 \$12,250.00
522.1060		IRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 60-INCH	2	EACH	\$2,500.00 \$5,000.00
606.0200		RIPRAP MEDIUM	7.78	CY	\$60.00 \$466.67
614.0920		SALVAGED RAIL	600	LF	\$2.00 \$1,200.00
614.2300		MGS GUARDRAIL 3	200	LF	\$18.00 \$3,600.00
614.2610		MGS GUARDRAIL TERMINAL EAT	4	EACH	\$2,500.00 \$10,000.00
619.1000		MOBILIZATION	1	EACH	\$6,500.00 \$6,500.00
625.0500		SALVAGED TOPSOIL	1400	SY	\$1.75 \$2,450.00
628.1504		SILT FENCE	700	LF	\$2.00 \$1,400.00
628.1520		SILT FENCE MAINTENANCE	700	LF	\$0.34 \$238.00
628.1905		MOBILIZATIONS EROSION CONTROL	1	EACH	\$200.00 \$200.00
628.1910		MOBILIZATIONS EMERGENCY EROSION CONTROL	1	EACH	\$150.00 \$150.00
628.2004		EROSION MAT CLASS I TYPE B	1400	SY	\$1.50 \$2,100.00
628.7504		TEMPORARY DITCH CHECKS	100	LF	\$7.25 \$725.00
628.7555		CULVERT PIPE CHECKS	2	EACH	\$20.00 \$40.00
629.0210		FERTILIZER TYPE B	1.59	CWT	\$100.00 \$158.76
630.0120		SEEDING MIXTURE NO. 20	45	LB	\$11.00 \$498.96
630.0200		SEEDING TEMPORARY	68	LB	\$4.00 \$272.16
633.5200		MARKERS CULVERT END	2	EACH	\$40.00 \$80.00
634.0416		POSTS WOOD 4X4-INCH X 16-FT	1	EACH	\$75.00 \$75.00
634.0805		POSTS TUBULAR STEEL 2X2-INCH X 5-FT	4	EACH	\$100.00 \$400.00
637.2210		SIGNS TYPE II REFLECTIVE H	18	SF	\$17.00 \$310.25
638.2602		REMOVING SIGNS TYPE II	5	EACH	\$125.00 \$625.00

Checked By:
Date:

CUT FILL
MILE TOTAL ~~31~~ 10,138 ~~10,807~~ 10,807

0 700
32



PROJECT

ZJ.

12-10-25

NOTE BOOK

TEMPORARY

AREAS

NO.

AREAS CHECKED

NEW CENTER LINE

ELEVATION OF NEW SUBGRADE

55

45.8

C 22

F 24

F-51

4

54

439

C 0

C-3

F 71

F-84

53

42.3

C 0

C-0

F 161

F-153

52

41.4

465

CUT

FILL

MILE TOTAL

10,138

10,807

YAR
CUT

100

41

C=72
F=25
T=35

14(25)

2W

