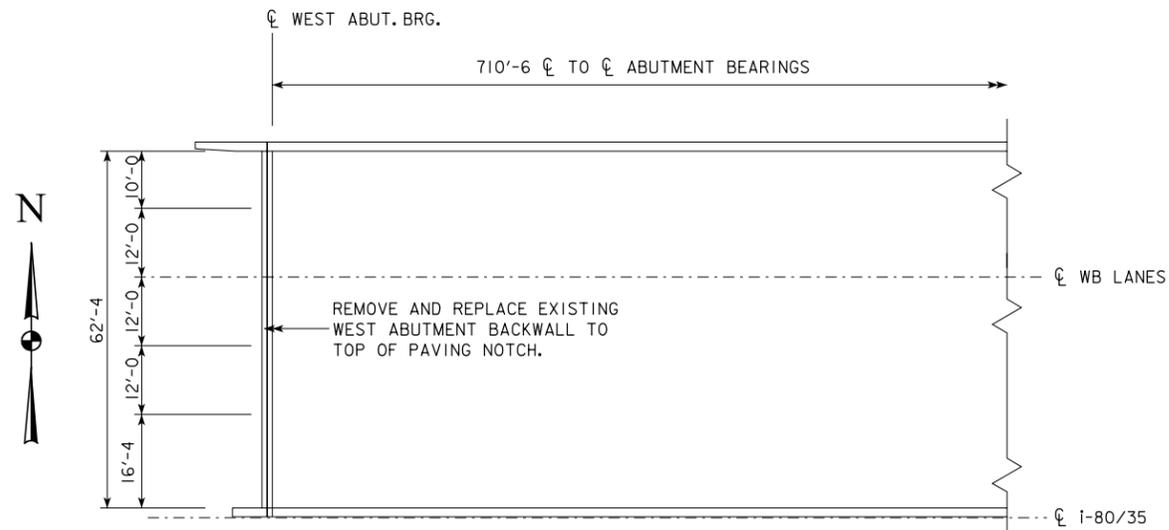


ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	2.1	
3	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	269	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2401-6750001	REMOVALS, AS PER PLAN INCLUDES ALL WORK FOR REMOVAL AND OFF-SITE DISPOSAL OF APPROXIMATELY 1525 POUNDS OF STRUCTURAL STEEL, CONCRETE RUBBLE, ASPHALT CONCRETE PATCH MATERIAL. REMOVAL OF SCHEDULED ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO MATERIAL NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE STATE.
2	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS) INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED.
3	2404-7775005	REINFORCING STEEL, EPOXY COATED



GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE WESTBOUND LANES OF I-80 AND I-35. COPIES OF ORIGINAL DESIGN PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - HIGHWAY DIVISION - IOWA D.O.T. - AMES. REPAIR SHALL CONSIST OF:
REMOVAL OF THE ENTIRE WIDTH OF THE WEST ABUTMENT BACKWALL DOWN TO THE TOP OF THE EXISTING PAVING NOTCH.

THE LUMP SUM BID FOR "REMOVALS, AS PER PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE TOP PORTION OF THE ABUTMENT BACKWALL, PORTION OF THE EXISTING EXPANSION JOINT AND EXISTING ASPHALT CONCRETE IN THE JOINT AREA. REMOVAL OF SCHEDULED ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO ANY STEEL OR CONCRETE NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO EXTRA COST TO THE STATE.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BARS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE TOP OF THE ABUTMENT BACKWALLS AS SHOWN SHALL BE CONSTRUCTED USING STRUCTURAL CONCRETE CLASS O. PROMPTLY AFTER THE CONCRETE HAS BEEN PLACED AND VIBRATED AS PROVIDED IN ARTICLES 2403.03, C, AND 2403.03, D, OF THE STANDARD SPECIFICATIONS, IT SHALL BE HAND FINISHED TO PROVIDE A SMOOTH SURFACE WITH THE PROPER CROWN. THE CONTRACTOR SHALL INSURE THAT THE CONCRETE IS MAINTAINED AT A MINIMUM TEMPERATURE OF 60° F FOR 24 HOURS. THE CONTRACTOR MAY ELECT TO USE FORMWORK WHICH IS MARKED OR TRIMMED TO THE CORRECT ELEVATION AND CROWN TO PROVIDE THE LIMITS FOR THE HAND FINISHING.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST TWO LANE TRAFFIC MAINTAINED AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTE.

SPECIFICATIONS:
DESIGN: AASHTO SERIES OF 2002.
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2009, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002.
CONCRETE IN ACCORDANCE WITH SECTION 8, $f'_c = 3,500$ PSI.
REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.

TRAFFIC CONTROL PLAN

NOTE: THE ROADWAY WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN ON THE ROAD PLANS IN THESE PLANS.

NOTE: ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

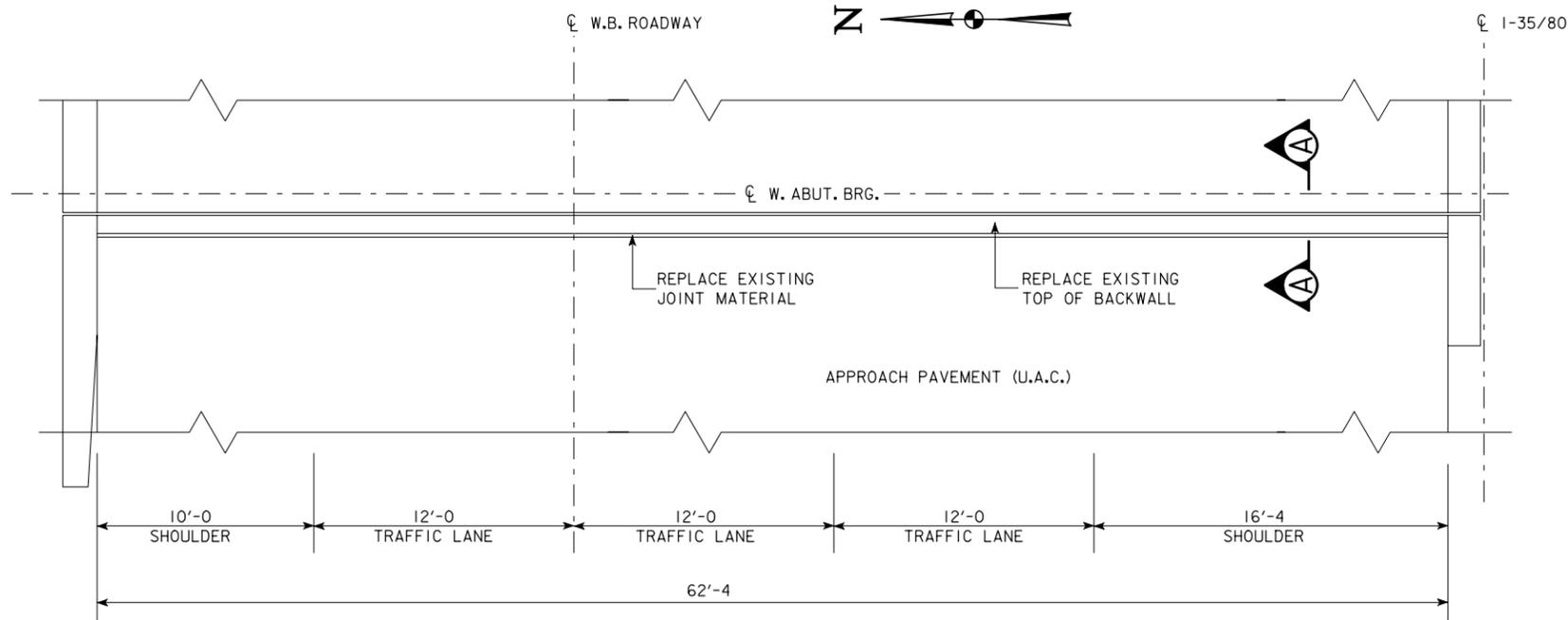
DESIGN HISTORY AT THIS SITE

DES. NO.	TYPE OF WORK
9557	ORIGINAL DESIGN
464	PIER REPAIRS
2965	JOINT REPLACEMENTS
1477	BRIDGE WIDENING
689	BRIDGE WIDENING
2311	JOINT REPAIR-W.B. BRIDGE

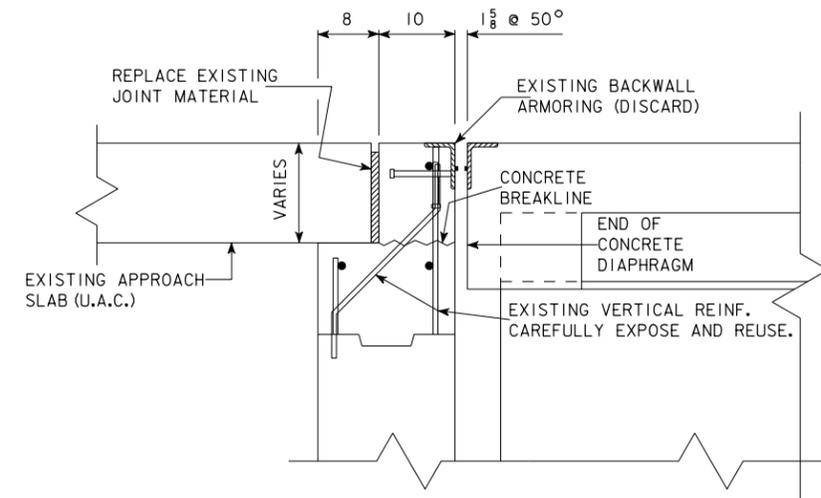
LOCATION

I-80 & I35
OVER DES MOINES RIVER
T-79N, R-24W
SECTION 17
SAYLOR TWP.
POLK COUNTY
MAINT. NO. 7733.ILO80
FHWA NO. 41510

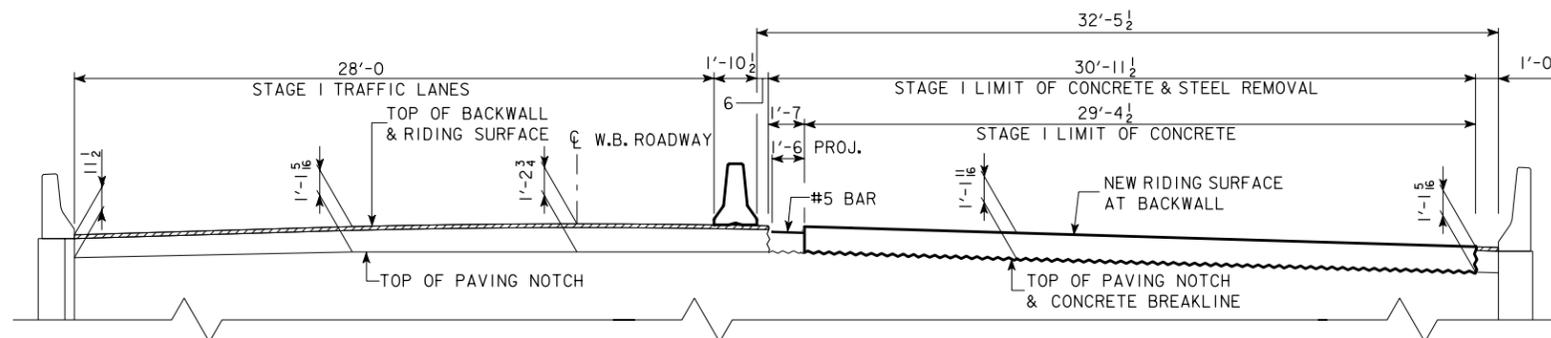
DESIGN FOR REPAIRS TO A
**710'-0" X 62'-4" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**
100'-10 1/2" END SPANS 5 - 101'-9" INTERIOR SPAN
NOTES, QUANTITIES & LOCATION
STA. 842+00.00 SEPTEMBER 2011
POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 1 OF 3 FILE NO. 30670 DESIGN NO. 2311



PART PLAN VIEW-WEST ABUT., W.B. ROADWAY

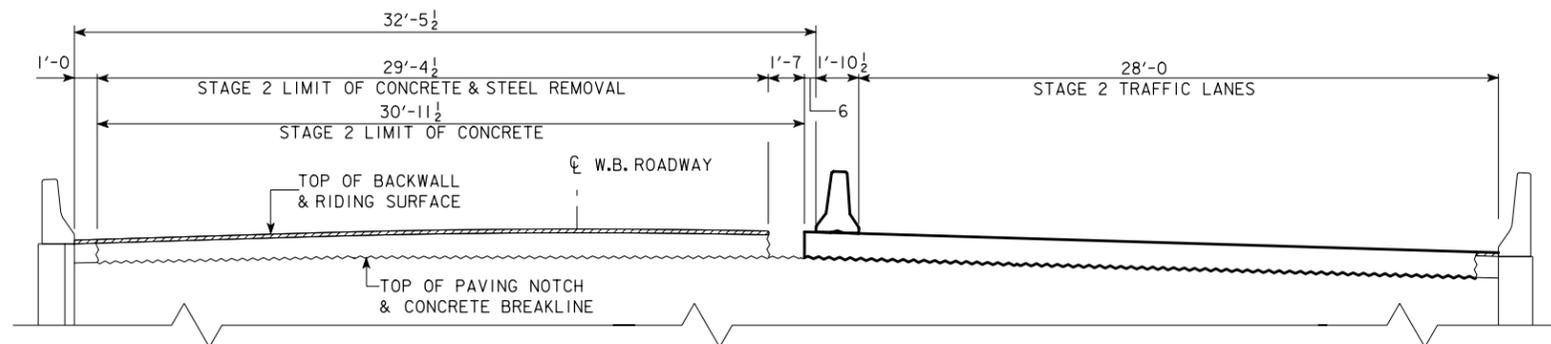


PART SECTION A-A



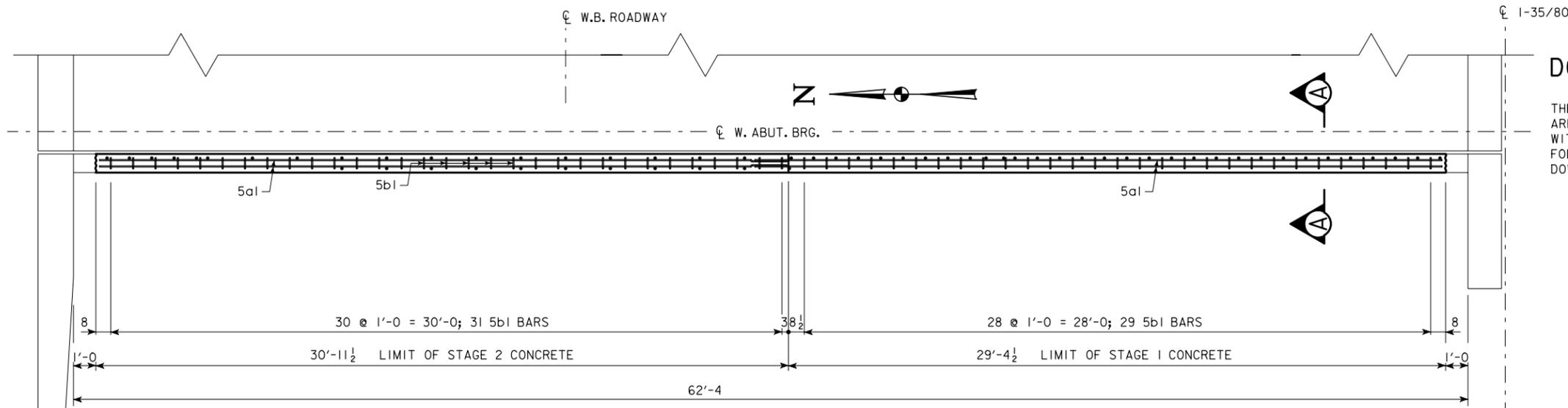
PART REAR ELEVATION-STAGE I
LOOKING EAST

NOTE: DEPTH OF TOP WALL REMOVAL BASED ON POLK DESIGNS 1477 & 689.



PART REAR ELEVATION-STAGE 2
LOOKING EAST

DESIGN FOR REPAIRS TO A
**710'-0 X 62'-4 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 100'-10 1/2 END SPANS 5 - 101'-9 INTERIOR SPAN
STAGING AND REMOVALS
 STA. 842+00.00 SEPTEMBER 2011
POLK COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 2 OF 3 FILE NO. 30670 DESIGN NO. 2311



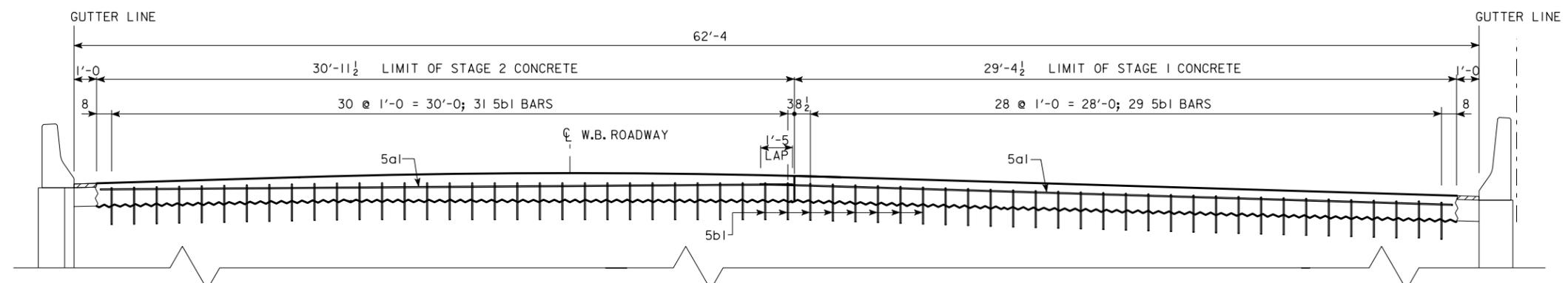
PART PLAN VIEW-WEST ABUT., W.B. ROADWAY

DOWEL SETTING NOTE :

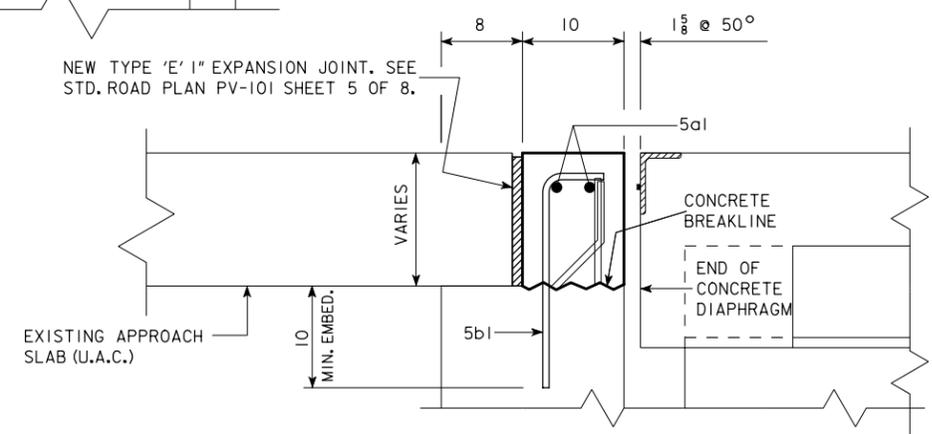
THE 5b1 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. EITHER OF THE FOLLOWING SYSTEMS MAY BE USED AS A BONDING AGENT FOR VERTICAL DOWELS, BUT ONLY SYSTEM "A" MAY BE USED FOR HORIZONTAL DOWELS:

A. POLYMER GROUT SYSTEM SHALL BE IN ACCORDANCE WITH ARTICLE 2301.03, E, OF THE STANDARD SPECIFICATIONS.

B. HYDRAULIC CEMENT GROUT SYSTEMS. DRILLED HOLES ARE TO BE 2 1/2 TIMES THE DOWEL DIAMETER AND ARE TO BE BLOWN CLEAN WITH COMPRESSED AIR IMMEDIATELY PRIOR TO PLACING GROUT. THE HYDRAULIC CEMENT GROUT SHALL BE ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.



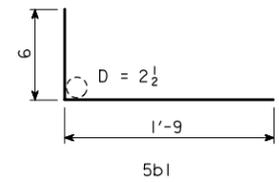
PART REAR ELEVATION-STAGE 1 & 2
LOOKING EAST



PART SECTION A-A

EPOXY COATED REINFORCING BAR LIST					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5a1	BACKWALL, HORIZONTAL-STAGE 1 & STAGE 2	—	4	30'-9	128
5b1	BACKWALL, VERTICAL DOWEL	└	60	2'-3	141
TOTAL (LBS.)					269

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

CONCRETE PLACEMENT SUMMARY	
CONCRETE	TOTAL
STAGE 1	1.1
STAGE 2	1.0
TOTAL (CU. YDS.)	2.1

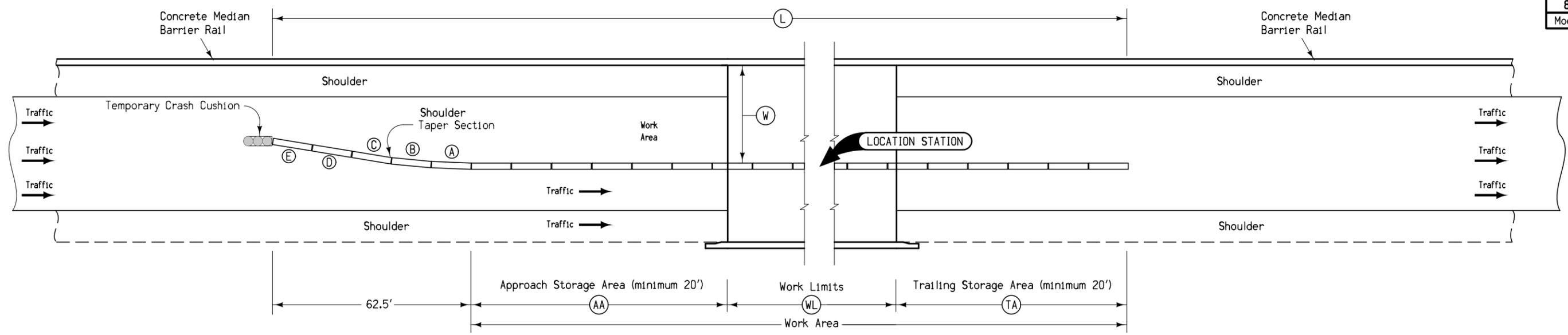
DESIGN FOR REPAIRS TO A
**710'-0 X 62'-4 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 100'-10 1/2 END SPANS 5 - 101'-9 INTERIOR SPAN
REPAIR DETAILS
 STA. 842+00.00 SEPTEMBER 2011
POLK COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 3 FILE NO. 30670 DESIGN NO. 2311



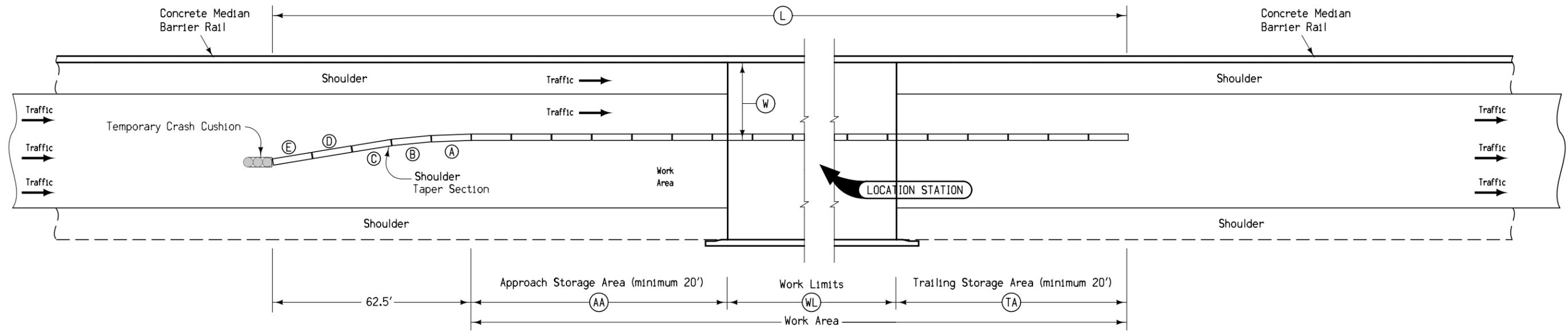
INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.2	Standard Road Plans
C.2 - 3	Tabulations
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes
J.2 - 4	Staging and Traffic Control Sheets
	* Color Plan Sheets

DESIGN DATA URBAN			
2008	AADT	86,800	V.P.D.
20--	AADT	--	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	--	%
	Total		
	Design ESALs		

ROADWAY DESIGN	
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
	<i>James R. Schoenrock</i> 09-28-2011 Signature Date
	James R. Schoenrock Printed or Typed Name
	My license renewal date is December 31, 2011
Pages or sheets covered by this seal: A.1, B.1, C.1-C.3, J.1-J.4	



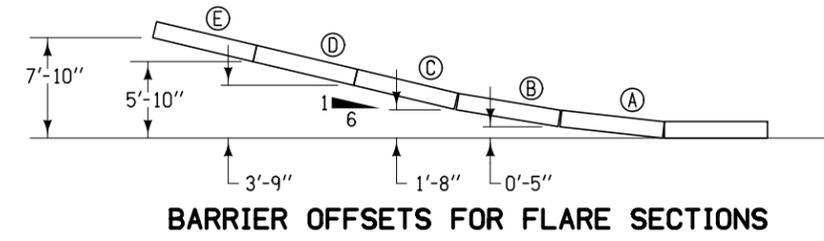
STAGE 1



STAGE 2

(A) Stage 1 (Median Work)
(B) Stage 2 (Outside Work)

Location	Side	(AA)	(WL)	(TA)	(L)	Anchored X	(W)	Remarks
		Feet	Feet	Feet	Feet		Feet	
I-35/I-80 WB	A	37.5	0	37.5	75		32.5	
I-35/I-80 WB	B	37.5	0	37.5	75		30.0	



① Refer to "J" sheets and Tabulations on "C" sheets for additional information.

**TEMPORARY CONCRETE BARRIER LAYOUT
for One-Way Traffic**

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BA-401	04-20-10	Temporary Barrier Rail (Precast Concrete)
BA-500	04-20-10	Temporary Crash Cushions Sand Barrel
PM-110	04-19-11	Line Types
PM-560	04-19-11	Divided Multi-Lane Roadway with no Turn Lanes
SI-881	04-19-11	Special Signs for Workzones
TC-1	10-18-11	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-20-10	Shoulder Closure (Multi-Lane)
TC-418	10-18-11	Lane Closure on Divided Highway
TC-422	10-18-11	Closure of Two Adjacent Lanes on Divided Highway

108-33
04-20-10

TEMPORARY BARRIER RAIL

Refer to BA-400 and BA-401

No.	Station to Station	Length LF	(Select One)		Remarks
			Concrete BA-401	Steel BA-400	
1		137.5	X		I-35/I80 WB STAGE 1
2		137.5	X		I-35/I80 WB STAGE 2
TOTAL:		275.0			Refer to "J" sheets for additional information

108-30
04-20-10

CRASH CUSHIONS

- ① Lane(s) to which the installation is adjacent.
- ② Complete this section when using the Temporary Crash Cushion bid item. Refer to BA-500

No.	Direction of Traffic	Location Station	Side	Obstacle Width FT	Crash Cushion (Select One)*					Sand Barrel Details ②					Earthwork*		Remarks	
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V	W	X	Y	Z	Excavation Class 10 CY	Embankment in Place CY		
										Length FT	Length FT	Length FT	Length FT	Length FT				
1	WB	I-35/I-80	LT		X						-	-	-	-	-			Stage 1 TBR
2	WB	I-35/I-80	RT		X						-	-	-	-	-			Stage 2 TBR

108-23A
08-01-08

TRAFFIC CONTROL PLAN

I-35/80 traffic shall be maintained at all times.

Two lanes of westbound traffic may be closed during the installation/removal of pavement markings and TBR during the following times:

- from Friday 10:00 p.m. to Saturday 6:00 a.m.
- from Sunday 10:00 p.m. to Monday 6:00 a.m.

One lane of westbound traffic may be closed during the construction activities during the following time:

- from Friday 10:00 p.m. to Monday 6:00 a.m.

Westbound lane closures will not be allowed:

- from Monday 6:00 am to Friday 10:00 p.m.

Eastbound traffic shall remain open under normal operation conditions at all times.

108-26A
08-01-08

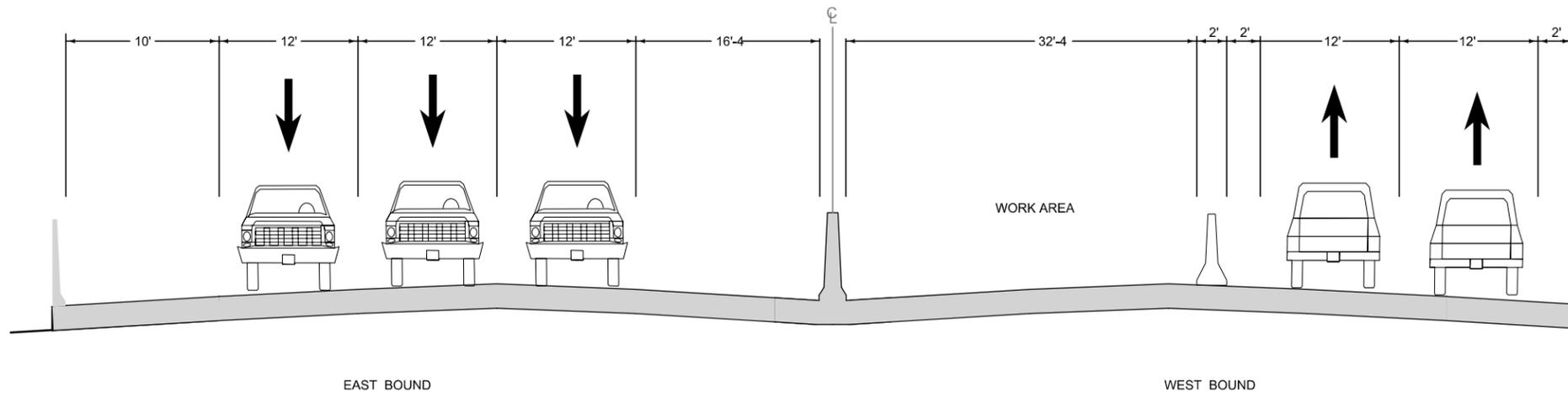
STAGING NOTES

Stage 1

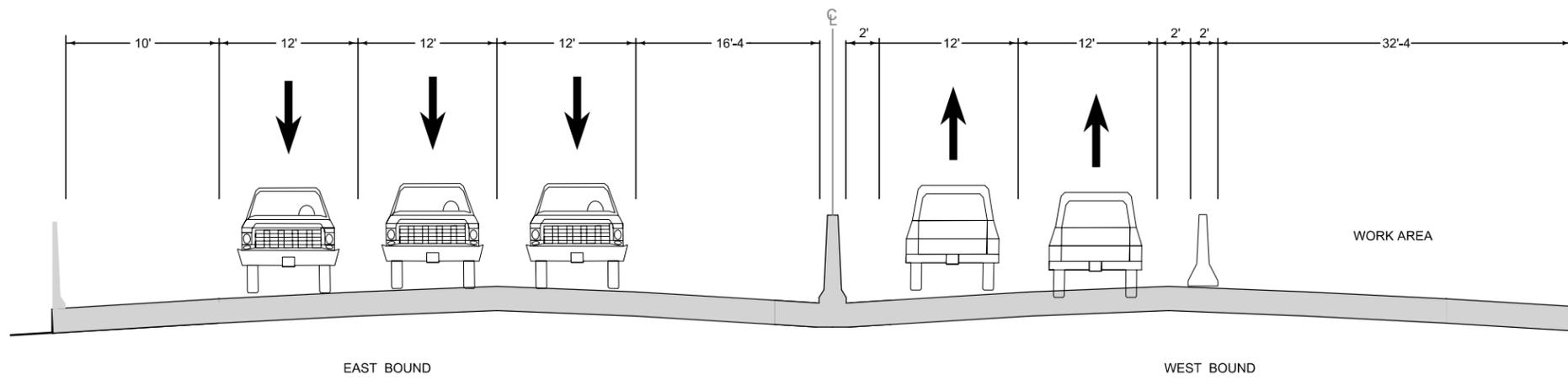
- Shift westbound traffic to outside driving lane and shoulder
- Repair median half of abutment backwall
- Return Traffic to normal operating conditions

Stage 2

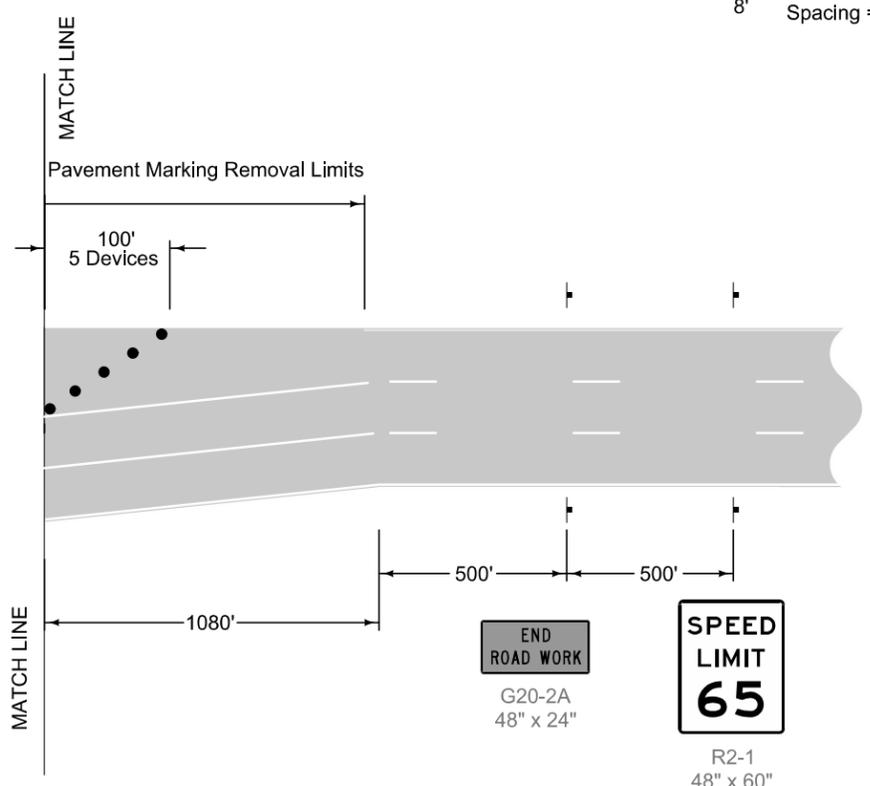
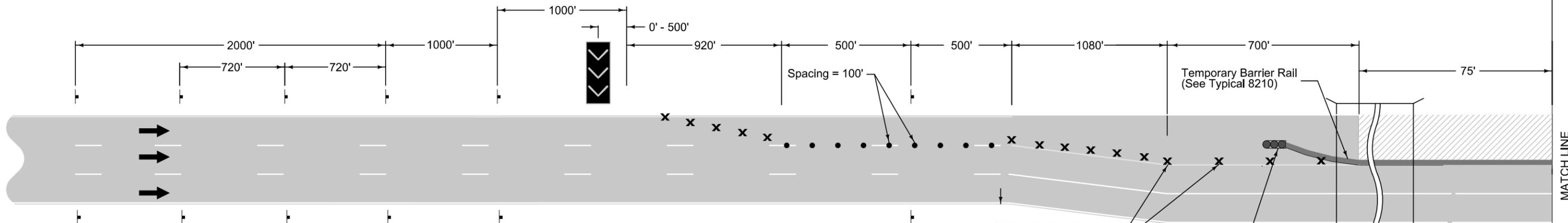
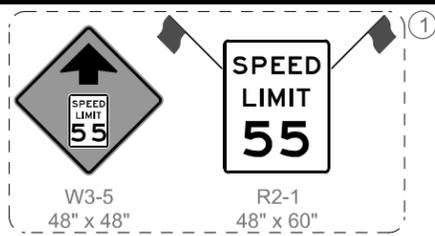
- Shift westbound traffic to median driving lane and shoulder
- Repair outside half of abutment backwall
- Return Traffic to normal operating conditions



STAGE 1



STAGE 2



LEGEND

- ┆ Traffic Sign
- x Drum
- 42" Channelizer
- ◀◀◀ Arrow Panel
- Temporary Floodlighting
- Temporary Crash Cushion
- ▨ Work Area
- ← Direction of Traffic

Place LEFT LANE CLOSED 4 MILES and LEFT LANE CLOSED 2 MILES signs (W20-5) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively.

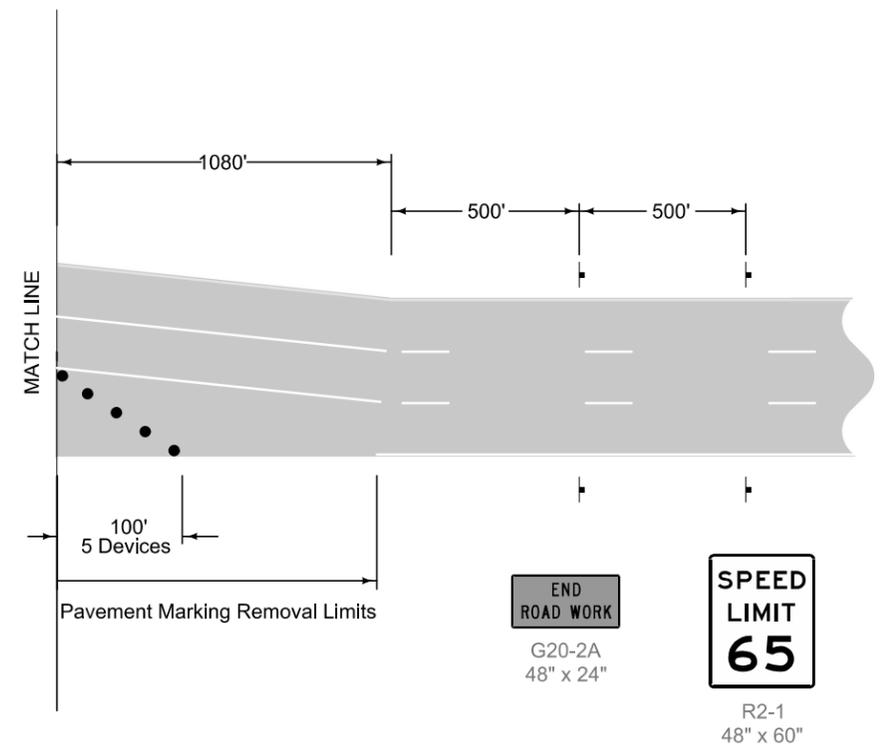
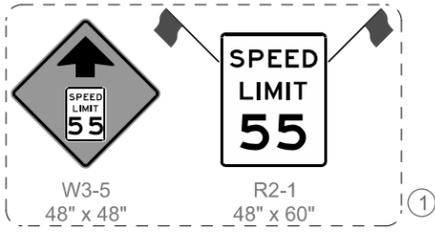
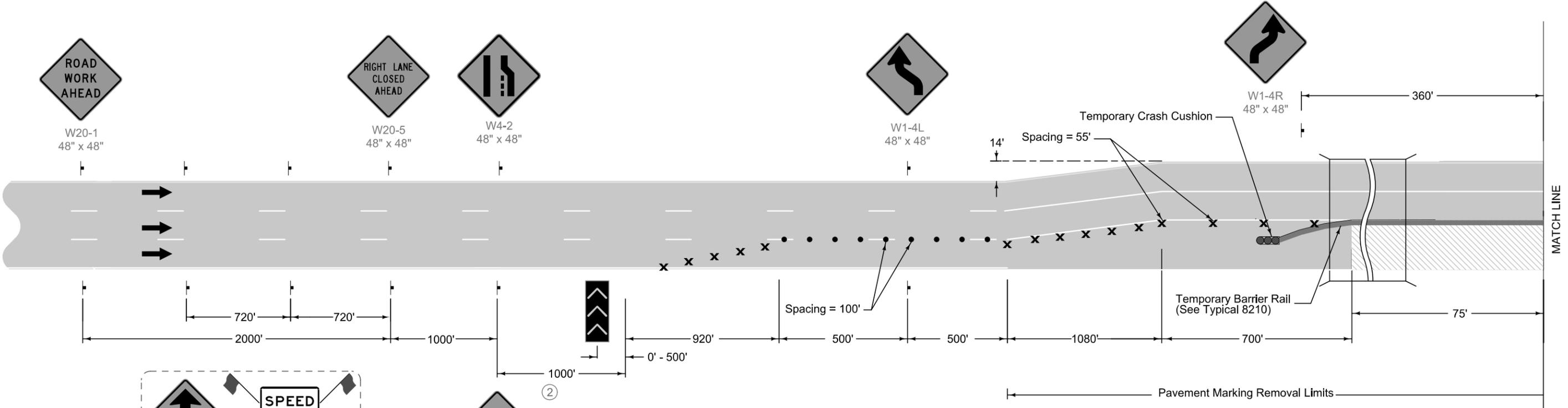
① Place SPEED LIMIT AHEAD sign and SPEED LIMIT 55 sign prior to the lane closure as shown. Place SPEED LIMIT 65 beyond the work area as shown.
Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.

② Refer to SI-881 for sign details.

Contract Items:
 Pavement Marking Items
 Pavement Markings Removed
 Temporary Barrier Rail
 Temporary Crash Cushions
 Traffic control

Tabulations:
 108-22
 108-30
 108-33

STAGE 1
I-35/I-80 WB LEFT LANE CLOSURE



LEGEND	
↑	Traffic Sign
x	Drum
●	42" Channelizer
←←←←	Arrow Panel
○●	Temporary Floodlighting
●●●	Temporary Crash Cushion
▨	Work Area
←	Direction of Traffic

Place RIGHT LANE CLOSED 4 MILES and RIGHT LANE CLOSED 2 MILES signs (W20-5) on both sides of the roadway 4 miles and 2 miles in advance of the lane closure, respectively.

① Place SPEED LIMIT AHEAD sign and SPEED LIMIT 55 sign prior to the lane closure as shown. Place SPEED LIMIT 65 beyond the work area as shown.

Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.

② Refer to SI-881 for sign details.

- Contract Items:
- Pavement Marking Items
 - Pavement Markings Removed
 - Temporary Barrier Rail
 - Temporary Crash Cushions
 - Traffic control

- Tabulations:
- 108-22
 - 108-30
 - 108-33

STAGE 2
I-35/I-80 WB RIGHT LANE CLOSURE