

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP 541 (GRAND AVENUE)  
OVER IL 137 (AMSTUTZ EXPY)  
SECTION: 9 HB-I-1  
BRIDGE DECK OVERLAY  
LAKE COUNTY  
PROJECT: C-91-124-08

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	9 HB-I-1	LAKE	26	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO.	60D90	

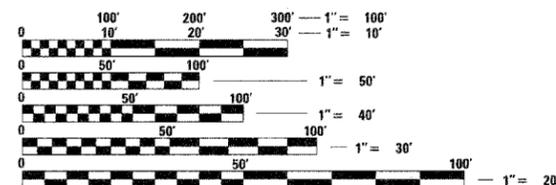
D-91-124-08

FOR INDEX OF SHEETS, SEE SHEET NO. 2

**TRAFFIC DATA**

EXISTING ADT  
GRAND AVENUE - 4,200 (2006)  
SPEED LIMIT 30 MPH - GRAND AVENUE

IMPROVEMENT LOCATED  
IN THE CITY OF WAUKEGAN

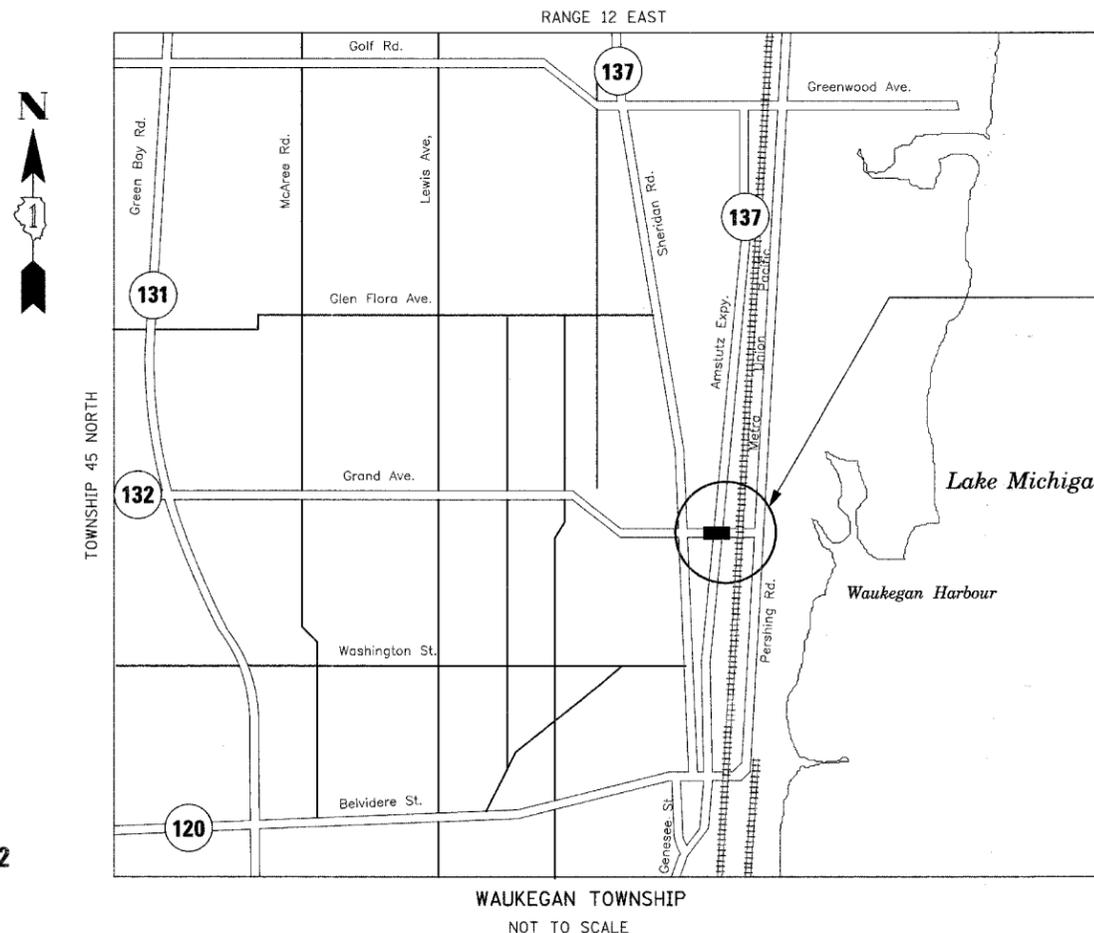


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

PROJECT ENGINEER PETER JOHNSTON, P.E. (773) 399-0112  
PROJECT MANAGER KEN ENG, P.E. (847) 705-4247

CONTRACT NO. 60D90



PROJECT LOCATION

*Peter M. Johnston*  
3-20-08  
PETER M. JOHNSTON  
REGISTERED PROFESSIONAL ENGINEER  
OF ILLINOIS  
Expired  
11-30-09

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
SUBMITTED *Mark 23* 20 08  
*Don Oki*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER  
*May 9, 20 08*  
*Eric E. Haral*  
ENGINEER OF DESIGN AND ENVIRONMENT  
*May 9, 20 08*  
*Christine M. Reed*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

GROSS AND NET LENGTH OF IMPROVEMENT: 325 FT (0.062 MILES)

INDEX OF SHEETS

1	COVER
2	INDEX OF SHEETS, GENERAL NOTES AND HIGHWAY STANDARDS
3	SUMMARY OF QUANTITIES
4	DETOUR PLAN
5	ROADWAY PLAN
6	ROADWAY SECTIONS
7	PAVEMENT MARKING PLAN
8-21	BRIDGE PLANS SN 049-0118
22	BUTT JOINT AND HMA TAPER DETAILS
23	HOT-MIX ASPHALT TAPER AT EDGE OF P.C.C. PAVEMENT
24	DISTRICT ONE TYPICAL PAVEMENT MARKINGS
25	FREEWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS
26	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

+ HIGHWAY STANDARDS

NO.	DESCRIPTION
000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
701901	TRAFFIC CONTROL DEVICES
780001-01	TYPICAL PAVEMENT MARKINGS

GENERAL NOTES

1. THE STRUCTURE WILL RETAIN EXISTING BRIDGE NUMBER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY DURING CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED FOR NON-EMERGENCY WORK. THE J.U.L.I.E. NUMBER IS 800-892-0123.
3. THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT PERMISSION FROM THE DEPARTMENT.
4. WHEN ARTIFICIAL LIGHTING IS USED IN NIGHT OPERATIONS, THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.
5. FOR PAVEMENT MARKING, REFER TO DISTRICT ONE TYPICAL MARKINGS FOR DETAILS NOT SHOWN.
6. MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS.
7. THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC CONTROL SUPERVISER AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.
8. HOT-MIX ASPHALT TAPERS WILL BE INSTALLED AT THE ENDS OF ALL RESURFACING (WHERE RESURFACING MEETS EXISTING PAVEMENT), IN ACCORDANCE WITH THE "BUTT JOINT AND HMA TAPER DETAILS" SHEET INCLUDED IN THE PLANS, UNLESS OTHERWISE SPECIFIED.

HOT MIX ASPHALT MIXTURE REQUIREMENTS

OPERATION	MIXTURE TYPE	AC TYPE	AIR VOIDS
ROADWAY	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL 9.5 mm, N70	PG 64-22	4% @ 70 GYR
PARTIAL DEPTH PATCHING	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL 9.5 mm, N70, 1 1/2" MIN.	PG 64-22	4% @ 70 GYR

THE UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT SURFACE MIXTURES IS 112 LBS/SQ YD/IN

H:\Jobs\2006\20063028-43\CAD\DOT Trans\dgn\00\index-43\_V8.dgn 3/31/2008 11:48:25 AM



GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.  
CHICAGO, ILLINOIS

FILE NAME =	USER NAME = .USER.	DESIGNED - MW	REVISED -
*FILE*		DRAWN - EUB	REVISED -
	PLOT SCALE = 10.0000 "/ IN.	CHECKED - RJS	REVISED -
	PLOT DATE = 3/31/2008	DATE - 3/27/08	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**INDEX OF SHEETS, GENERAL NOTES  
AND HIGHWAY STANDARDS**

SCALE: NTS	SHEET NO. OF 26 SHEETS	STA. TO STA.	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			541	9 HB-1-1	LAKE	26	2
			FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60D90				

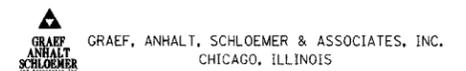
H:\Jobs\2006\20063028-43\CAD\DOT Trans\dgn\00\index-43\_V8.dgn 3/31/2008 11:48:25 AM

SUMMARY OF QUANTITIES

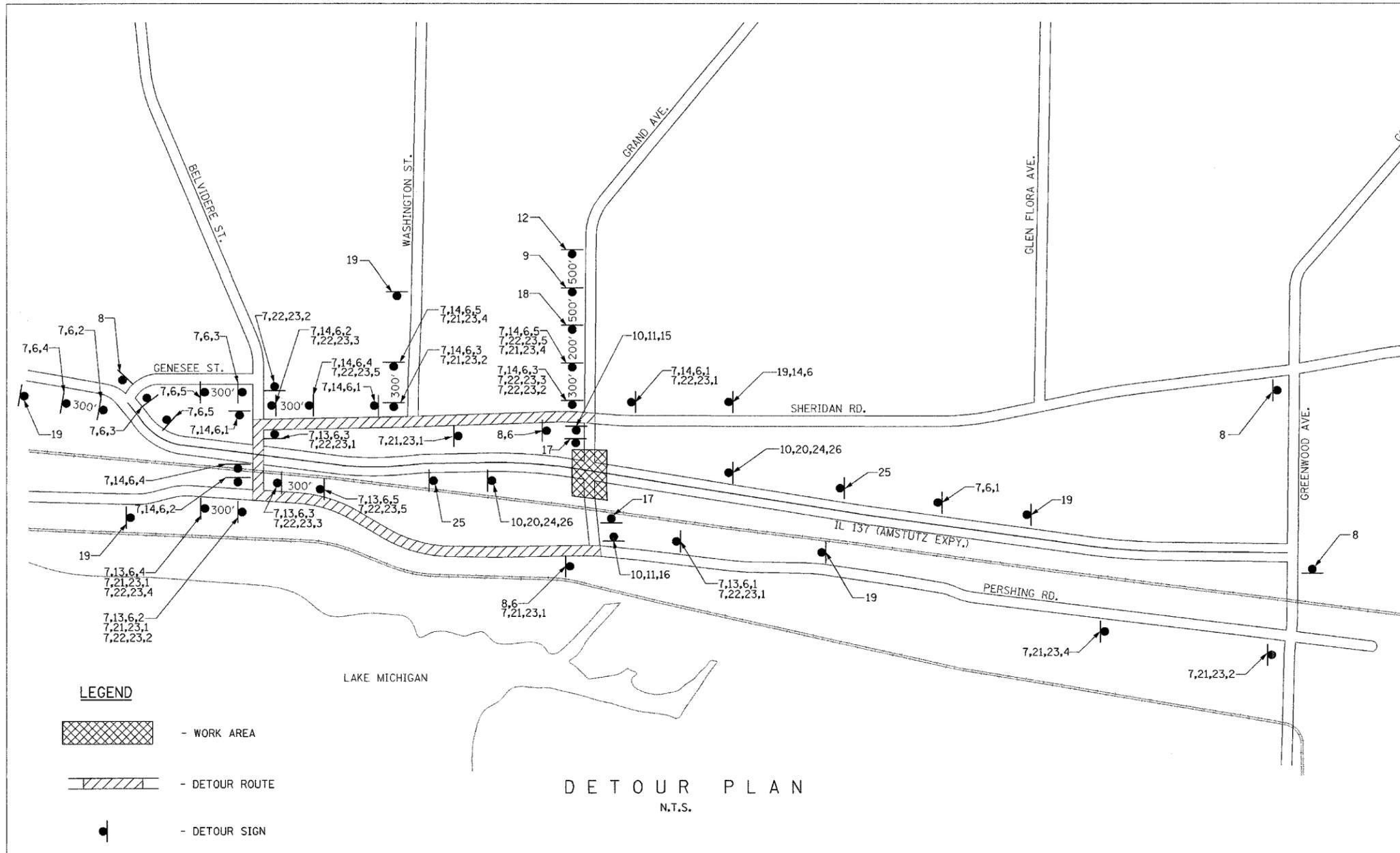
ITEM	PAY ITEM DESCRIPTION	UNIT	URBAN		
			100% STATE TOTAL QUANTITY	ROADWAY QUANTITY 1000-2A	BRIDGE QUANTITY X071-2A
40600200	BITUMINOUS MATERIALS (PRIME COAT)	TON	2	2	
40600400	MIXTURE FOR CRACKS, JOINTS AND FLANGEWAYS	TON	4	4	
40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	298	298	
44000198	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH	SQ YD	932	932	
44300200	STRIP REFLECTIVE CRACK CONTROL TREATMENT	FOOT	2,036	2,036	
50102400	CONCRETE REMOVAL	CU YD	120		120
50157300	PROTECTIVE SHIELD	SQ YD	1,362		1,362
50300255	CONCRETE SUPERSTRUCTURE	CU YD	132		132
50300260	BRIDGE DECK GROOVING	SQ YD	1,130		1,130
50300300	PROTECTIVE COAT	SQ YD	1,630		1,630
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5,880		5,880
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	27		27
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	15,980		15,980
52000110	PREFORMED JOINT STRIP SEAL	FOOT	488		488
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	27		27
52100520	ANCHOR BOLTS, 1"	EACH	50		50
52100540	ANCHOR BOLTS, 1 1/2"	EACH	4		4
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	4	4	
67100100	MOBILIZATION	L SUM	1	1	
70102550	TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR	EACH	1	1	
* 78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	146	146	
* 78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	1,605	1,605	
* 78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	425	425	
* 78000500	THERMOPLASTIC PAVEMENT MARKING - LINE 8"	FOOT	481	481	
* 78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	20	20	
* 78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	43	43	
* 78006110	PREFORMED THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	398	398	
* 78006130	PREFORMED THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	173	173	
* 78006140	PREFORMED THERMOPLASTIC PAVEMENT MARKING - LINE 8"	FOOT	149	149	
* 78006180	PREFORMED THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	41	41	
* 78100100	RAISED REFLECTIVE PAVEMENT MARKERS	EACH	59	59	
* 78100105	RAISED REFLECTIVE PAVEMENT MARKERS (BRIDGE)	EACH	44	44	
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	103	103	
X0320887	POLYMER CONCRETE	CU FT	14		14
X0321743	SILICONE JOINT SEALER, 1"	FOOT	83		83
X0322489	BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/2 INCHES	SQ YD	1,058		1,058
X0325303	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	80		80
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	818		818
X4400100	PORTLAND CEMENT CONCRETE SURFACE REMOVAL (VARIABLE DEPTH)	SQ YD	333	333	
X4421000	PARTIAL DEPTH PATCHING	TON	51	51	
X4422025	PARTIAL DEPTH REMOVAL 2"	SQ YD	452	452	
Z0006204	BRIDGE DECK HYDRO-SCARIFICATION 1/2"	SQ YD	1,016		1,016
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1	
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	3		3
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	32		32
X0326096	ALUMINUM RAILING, SPECIAL	FOOT	26		26

\*Specialty Items

H:\Jobs\2006\2006-3028-43\CAD\DOT Trans\dm\00\Ssummary of Quantities-43\_V8.dgn 3/25/2008 2:58:58 PM



FILE NAME =	USER NAME = #USER#	DESIGNED - MW	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILE#		DRAWN - EUB	REVISED -			541	9 HB-1-1	LAKE	26	3	
	PLOT SCALE = #SCALE#	CHECKED - RJS	REVISED -			CONTRACT NO. 60D90					
	PLOT DATE = 3/25/2008	DATE - 3/27/08	REVISED -			SCALE: NTS	SHEET NO. OF 26 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT		



**DETOUR NOTES**

1. IDOT SHALL BE NOTIFIED 72 HOURS PRIOR TO PUTTING THE DETOUR IN EFFECT AND IMMEDIATELY AFTER THE DETOUR HAS BEEN REMOVED.
2. LAKE COUNTY SHALL BE NOTIFIED AT LEAST TWO WEEKS PRIOR TO PLACING DETOUR POSTING.
3. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE ALL TEMPORARY SIGN SUPPORTS. AFTER REMOVING THE SUPPORTS, THE CONTRACTOR SHALL FILL HOLES (IF ANY) AND RESTORE THE GROUND TO ITS ORIGINAL CONDITION AND ELEVATION. PLACING OF GRAVEL, SOD, OR SEED SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR".
4. ALL SIGNS, SUPPORTS AND POSITIONING SHALL BE IN ACCORDANCE WITH THE ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. ALL WARNING SIGNS IN TEMPORARY TRAFFIC CONTROL ZONES SHALL HAVE A BLACK LEGEND ON AN ORANGE BACKGROUND, UNLESS OTHERWISE NOTED.
6. ALL EXISTING SIGNS THAT CONFLICT WITH THE DETOUR SHALL BE COVERED.
7. EACH TYPE III BARRICADE SHALL BE EQUIPPED WITH TWO FLASHING AMBER LIGHTS.
8. THE CONTRACTOR SHALL ERECT SIGN NOS. 17 AND 24 AT LEAST ONE WEEK IN ADVANCE OF THE CLOSURE.
9. SEE DISTRICT ONE "TYPICAL MARKING FOR CLOSING STATE HIGHWAYS", TC-21 FOR ADDITIONAL DETAILS.
10. SEE DISTRICT ONE "FREEWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS", TC-08. COST TO BE INCLUDED IN THE PRICE OF TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR.
11. ALL SIGNS AND BARRICADES SHALL BE CONSIDERED INCIDENTAL TO TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR.

- LEGEND**
- WORK AREA
  - DETOUR ROUTE
  - DETOUR SIGN

**DETOUR PLAN**  
N.T.S.

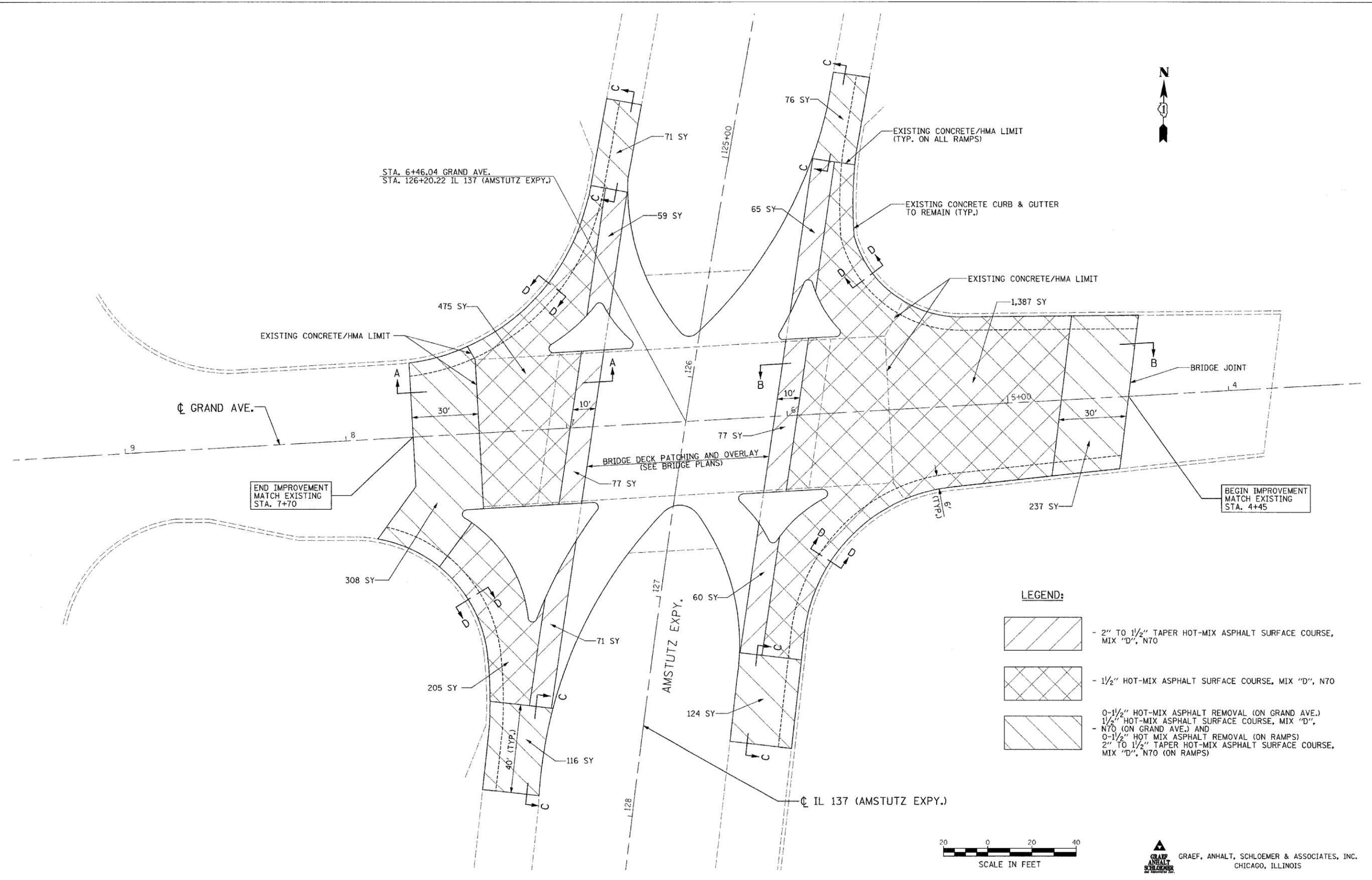
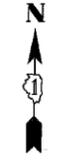
**DETOUR SIGNAGE LEGEND**

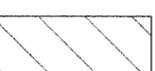
1. M6-3-2115	2. M6-1L-2115	3. M6-1R-2115	4. M5-1L-2115	5. M5-1R-2115	6. M1-I100	7. M1-7-219	8. M4-8a	9. C24-13	10. TYPE III BARRICADES WITH FLASHERS	11. R11-2	12. C24-14	13. M3-4-219	14. M3-2-219	15. M4-10R	16. M4-10L
17. M3-4	18. C24-12	19.	20. E5-2a	21. M3-1-219	22. M3-3-219	23. M1-50	24. M3-4a	25.	26. R5-1						

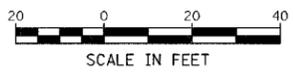
H:\Jobs\2006\20063028-43\CAD\IDOT Trans\dgm\00\Detour-43-V8.dgn  
 3/25/2008 10:25:59 PM

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.  
 CHICAGO, ILLINOIS

FILE NAME =	USER NAME = .USER.	DESIGNED - MW	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>				<b>DETOUR PLAN</b>				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILE#		DRAWN - EUB	REVISED -									541	9 HB-I-1	LAKE	26	4
PLOT SCALE = 20,0000' / IN.	CHECKED - RJS	REVISED -		SCALE: NTS				SHEET NO. OF 26 SHEETS STA. TO STA.		CONTRACT NO. 60D90						
PLOT DATE = 3/25/2008	DATE - 3/27/08	REVISED -								FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT						



- LEGEND:**
-  - 2" TO 1 1/2" TAPER HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70
  -  - 1 1/2" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70
  -  - 0-1 1/2" HOT-MIX ASPHALT REMOVAL (ON GRAND AVE.)  
1 1/2" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (ON GRAND AVE.) AND  
0-1 1/2" HOT MIX ASPHALT REMOVAL (ON RAMPS)  
2" TO 1 1/2" TAPER HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (ON RAMPS)



**GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.**  
CHICAGO, ILLINOIS

H:\Jobs\2006\20063028-43\CAD\DOT Trams\dgm\00\Plan-43\_V8.dgn  
 3/25/2008 11:06 PM

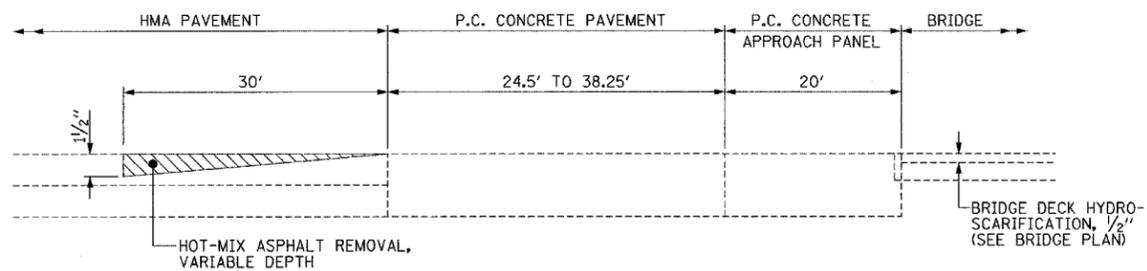
FILE NAME =	USER NAME = .USER	DESIGNED - MW	REVISED -
#FILE#		DRAWN - EUB	REVISED -
	PLOT SCALE = 20,0000' / IN.	CHECKED - RJS	REVISED -
	PLOT DATE = 3/25/2008	DATE - 3/27/08	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

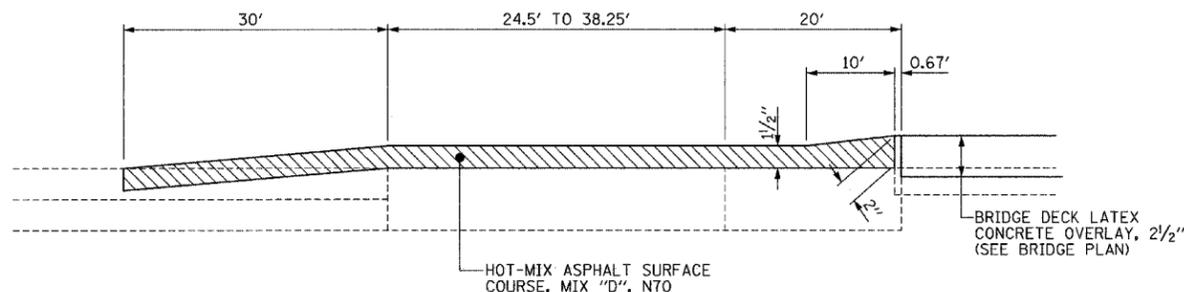
**ROADWAY PLAN**

SCALE: 1"=20' SHEET NO. OF 26 SHEETS STA. TO STA.

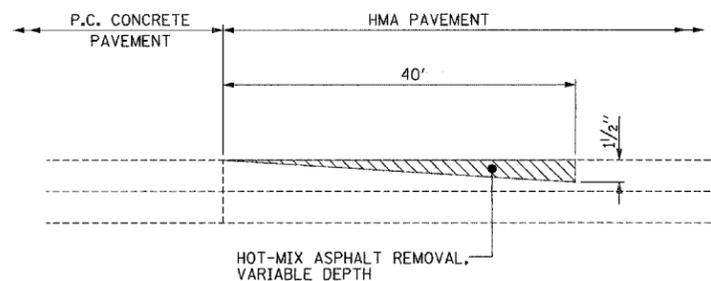
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	9 HB-1-1	LAKE	26	5
CONTRACT NO. 60D90				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				



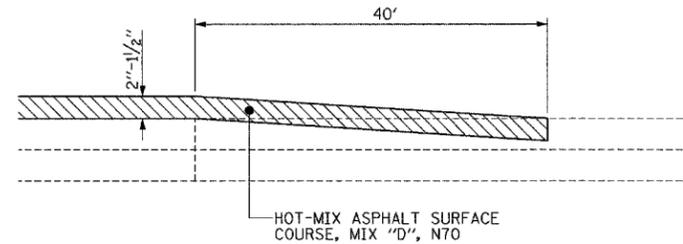
EXISTING SECTION A-A  
N.T.S.



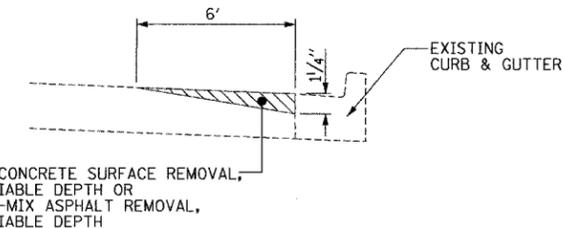
PROPOSED SECTION A-A  
N.T.S.



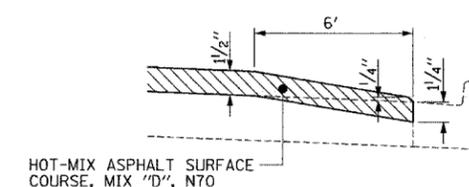
EXISTING SECTION C-C  
N.T.S.



PROPOSED SECTION C-C  
N.T.S.



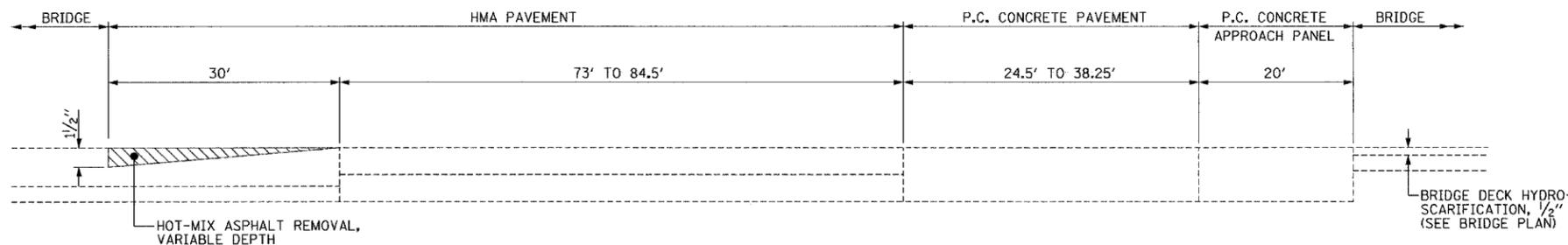
EXISTING SECTION D-D  
N.T.S.



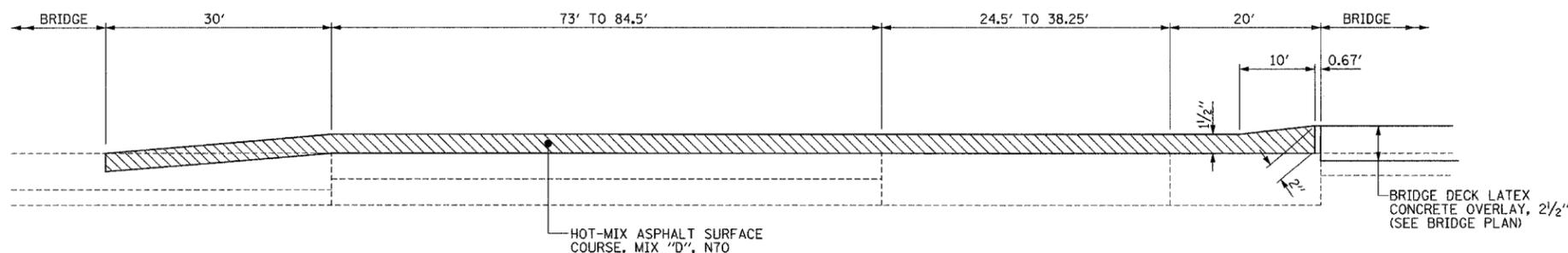
PROPOSED SECTION D-D  
N.T.S.

NOTES:

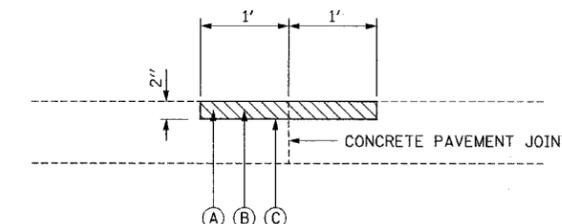
1. REFER TO 'HMA TAPER AT EDGE OF P.C.C. PAVEMENT' DETAIL.
2. REMOVE 0-1 1/2" OF CROSSWALK RAMP SURFACE LOCATED ON ISLANDS.



EXISTING SECTION B-B  
N.T.S.



PROPOSED SECTION B-B  
N.T.S.



- (A) PARTIAL DEPTH REMOVAL, 2"
- (B) PARTIAL DEPTH PATCHING
- (C) STRIP REFLECTIVE CRACK CONTROL TREATMENT

PARTIAL DEPTH PATCHING  
ALONG JOINT DETAIL  
N.T.S.

**GRAEF ANHALT SCHLOEMER**  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.  
CHICAGO, ILLINOIS

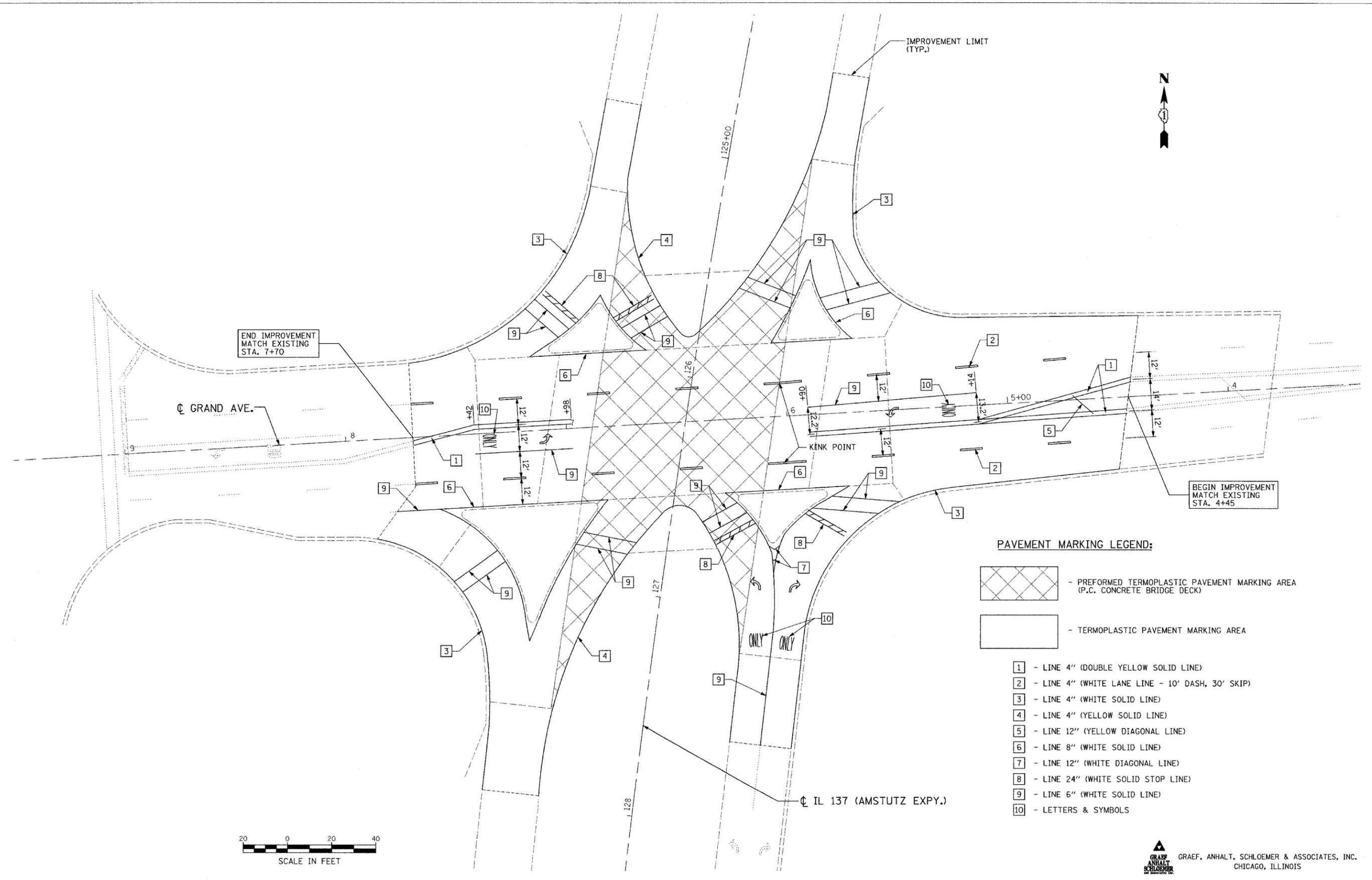
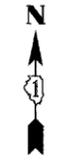
H:\Jobs\2006\20063028-43\CAD\DOT Trans\ dgn\00\Roadway\sect-43\_V8.dgn 3/25/2008 11:59 PM

FILE NAME =	USER NAME = USER	DESIGNED - MW	REVISED -
#FILE#		DRAWN - EUB	REVISED -
	PLOT SCALE = 10,000' / IN.	CHECKED - RJS	REVISED -
	PLOT DATE = 3/25/2008	DATE - 3/27/08	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROADWAY SECTIONS  
SCALE: NTS SHEET NO. OF 26 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	9 HB-1-1	LAKE	26	6
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 60D90	



END IMPROVEMENT MATCH EXISTING STA. 7+70

CL GRAND AVE.

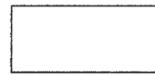
IMPROVEMENT LIMIT (TYP.)

BEGIN IMPROVEMENT MATCH EXISTING STA. 4+45

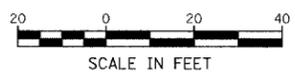
KINK POINT

CL IL 137 (AMSTUTZ EXPY.)

**PAVEMENT MARKING LEGEND:**

-  - PREFORMED TERMOPLASTIC PAVEMENT MARKING AREA (P.C. CONCRETE BRIDGE DECK)
-  - TERMOPLASTIC PAVEMENT MARKING AREA

- 1 - LINE 4" (DOUBLE YELLOW SOLID LINE)
- 2 - LINE 4" (WHITE LANE LINE - 10' DASH, 30' SKIP)
- 3 - LINE 4" (WHITE SOLID LINE)
- 4 - LINE 4" (YELLOW SOLID LINE)
- 5 - LINE 12" (YELLOW DIAGONAL LINE)
- 6 - LINE 8" (WHITE SOLID LINE)
- 7 - LINE 12" (WHITE DIAGONAL LINE)
- 8 - LINE 24" (WHITE SOLID STOP LINE)
- 9 - LINE 6" (WHITE SOLID LINE)
- 10 - LETTERS & SYMBOLS



H:\jbs2006\20063028-43\CAD\DOT Trans\dgm\00\pavMark-43\_V8.dgn  
 3/25/2008 11:01:19 PM

FILE NAME =	USER NAME = USERL	DESIGNED - MW	REVISED -
#FILEL#		DRAWN - EUB	REVISED -
		CHECKED - RJS	REVISED -
		DATE - 3/27/08	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

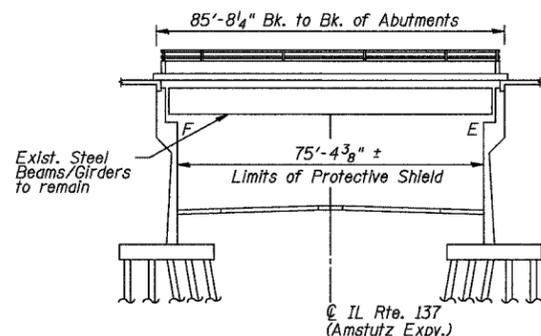
**PAVEMENT MARKING PLAN**

SCALE: 1"=20' SHEET NO. OF 26 SHEETS STA. TO STA.

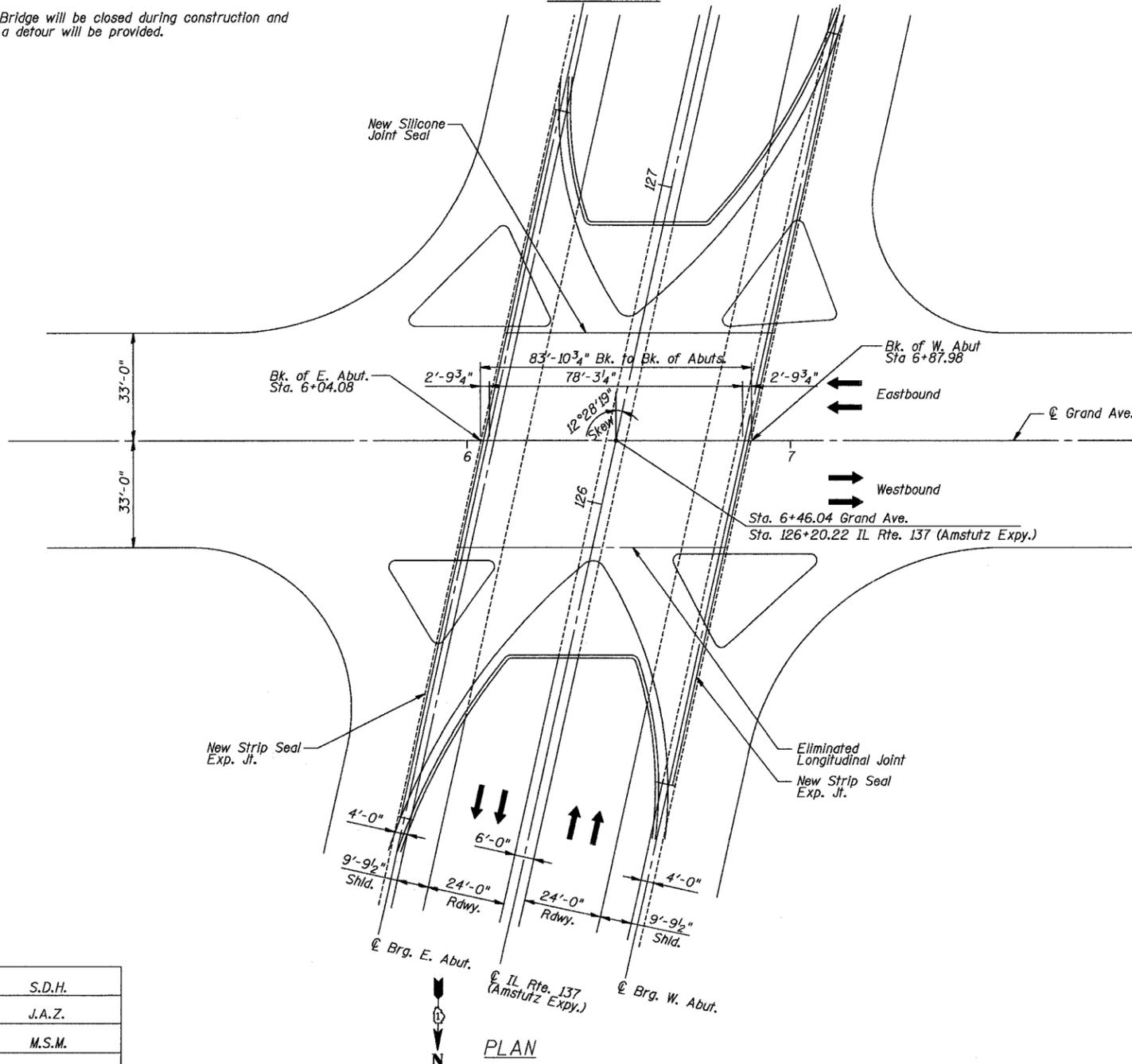
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC. CHICAGO, ILLINOIS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	541	9 HB-1-1	LAKE	26	7
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60D90		

**SCOPE OF WORK:**

1. Hydro-scarification, deck slab repair and placement of latex concrete overlay.
2. Removal and replacement of bearings at West Abutment.
3. Removal and replacement of transverse joints at East and West Abutments.
4. Removal and elimination of longitudinal joint at existing north longitudinal joint. Removal and replacement of longitudinal joint at existing south longitudinal joint.
5. Aluminum railing repair.
6. Bridge will be closed during construction and a detour will be provided.



**ELEVATION**



**PLAN**

DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

**DESIGN SPECIFICATIONS**

AASHTO 17th Edition, 2002

**IL RTE. 137 (AMSTUTZ EXPY.)**

**CURVE DATA**

P.I. = 129+25.08  
 $\Delta$  = 18°20'36"  
D = 1°00'00"  
R = 5729.58'  
T = 925.08'  
L = 1834.34'  
E = 74.20'  
S.E. = 0.03 ft/ft.

**DESIGN STRESSES**

Field Units  
 $f'_c = 3,500$  psi  
 $f'_y = 60,000$  psi (Reinforcement)

**GENERAL NOTES**

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts  $\frac{3}{4}$ "  $\phi$ , holes  $\frac{13}{16}$ "  $\phi$ , unless otherwise noted.  
All structural steel shall be AASHTO M270 Grade 36.  
No field welding is permitted except as specified in the contract documents.  
Reinforcement bars shall conform to the requirements of ASTM A706 Gr 60 (IL Modified). See Special Provisions.  
Reinforcement bars designated (E) shall be epoxy coated.  
Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.  
As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by an individual acceptable to the Engineer. Any cracks that cannot be removed by grinding  $\frac{1}{4}$  in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.  
Cleaning and field painting of structural steel shall be done under a separate painting contract.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

All structural steel at expansion joints shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type I. Cost included with Preformed Joint Strip Seal.

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on As-Built Plans.  
All new fasteners shall be high strength bolts. Holes shall be subpunched or subdrilled  $\frac{1}{16}$ " dia. and reamed in the field to  $\frac{13}{16}$ " dia. for  $\frac{3}{4}$ " dia. bolts, unless otherwise noted.

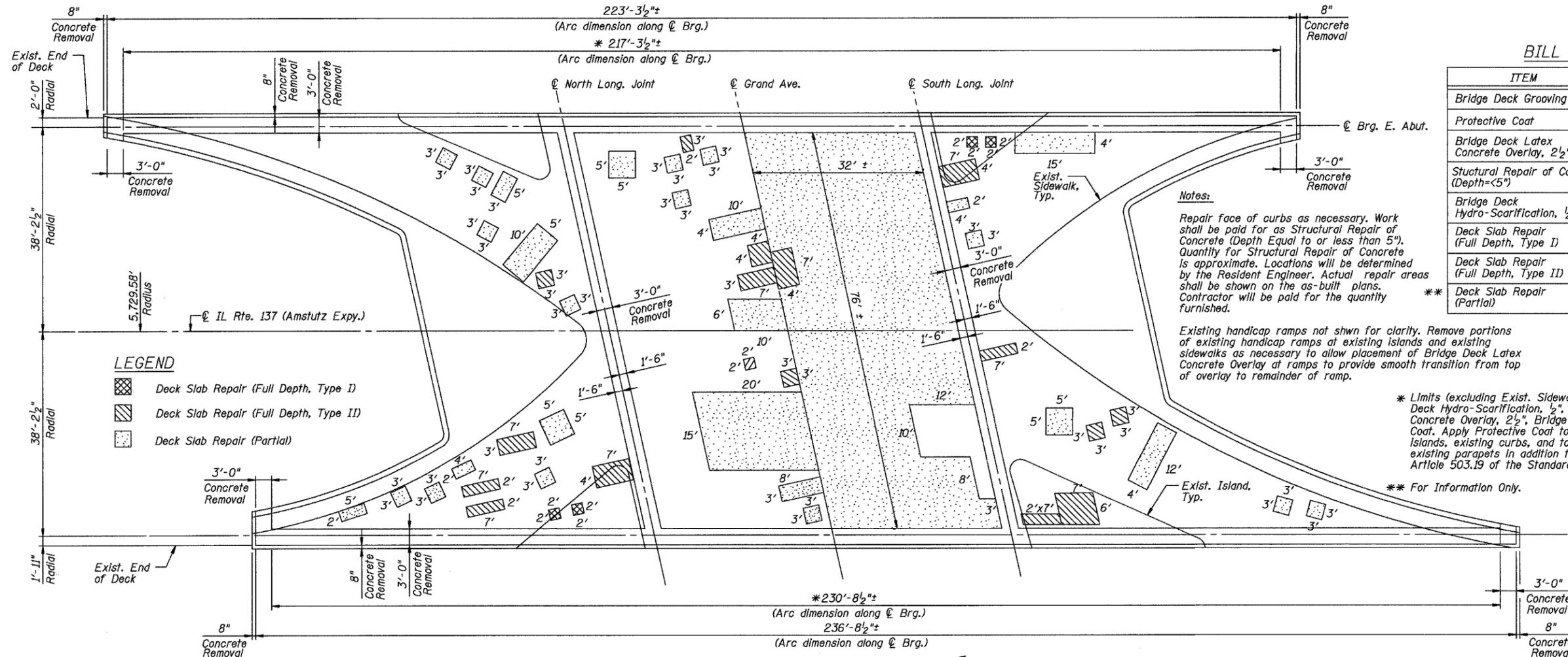
Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
CONCRETE REMOVAL	CU. YD.	120.0
PROTECTIVE SHIELD	SQ. YD.	1,362
CONCRETE SUPERSTRUCTURE	CU. YD.	132.0
BRIDGE DECK GROOVING	SQ. YD.	1,130
PROTECTIVE COAT	SQ. YD.	1,630
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5,880
JACK AND REMOVE EXISTING BEARINGS	EACH	27
REINFORCEMENT BARS, EPOXY COATED	POUND	15,980
PREFORMED JOINT STRIP SEAL	FOOT	488
ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	27
ANCHOR BOLTS, 1"	EACH	50
ANCHOR BOLTS, 1 1/2"	EACH	4
POLYMER CONCRETE	CU. FT.	14
SILICONE JOINT SEALER, 1"	FOOT	83
BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/2"	SQ. YD.	1,058
STRUCTURAL REPAIR OF CONCRETE (DEPTH >5")	SQ. FT.	80
STRUCTURAL REPAIR OF CONCRETE (DEPTH <5")	SQ. FT.	818
BRIDGE DECK HYDRO-SCARIFICATION, 1/2"	SQ. YD.	1,016
DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ. YD.	3
DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ. YD.	32
ALUMINUM RAILING, SPECIAL	FOOT	26



GENERAL PLAN & ELEVATION  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-1-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS



**LEGEND**

	Deck Slab Repair (Full Depth, Type I)
	Deck Slab Repair (Full Depth, Type II)
	Deck Slab Repair (Partial)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Bridge Deck Grooving	Sq. Yd.	962
Protective Coat	Sq. Yd.	1,381
Bridge Deck Latex Concrete Overlay, 2 1/2"	Sq. Yd.	1,058
Structural Repair of Concrete (Depth < 5")	Sq. Ft.	25
Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	1,016
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	3
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	32
Deck Slab Repair (Partial)	Sq. Yd.	343

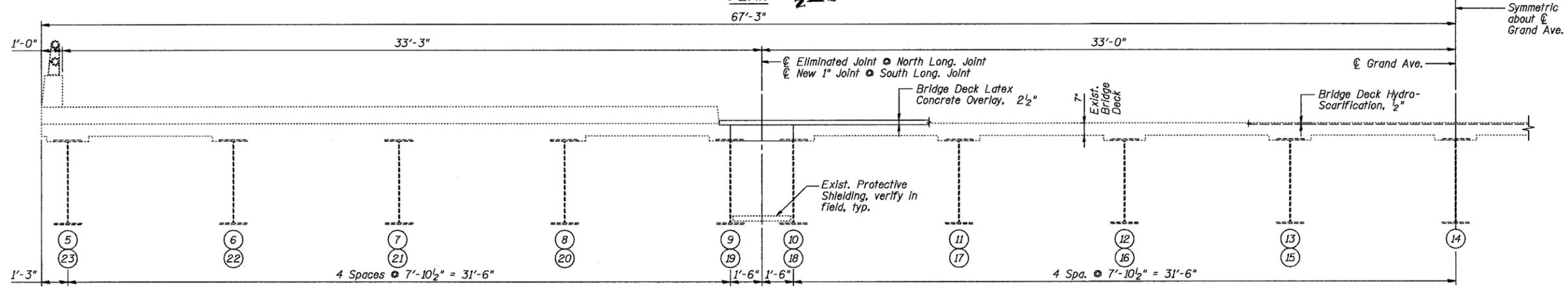
**Notes:**  
 Repair face of curbs as necessary. Work shall be paid for as Structural Repair of Concrete (Depth Equal to or less than 5"). Quantity for Structural Repair of Concrete is approximate. Locations will be determined by the Resident Engineer. Actual repair areas shall be shown on the as-built plans. Contractor will be paid for the quantity furnished.

Existing handicap ramps not shown for clarity. Remove portions of existing handicap ramps at existing islands and existing sidewalks as necessary to allow placement of Bridge Deck Latex Concrete Overlay at ramps to provide smooth transition from top of overlay to remainder of ramp.

\* Limits (excluding Exist. Sidewalks & Exist. Islands) of Bridge Deck Hydro-Scarification, 1/2", Bridge Deck Latex Concrete Overlay, 2 1/2", Bridge Deck Grooving & Protective Coat. Apply Protective Coat to the existing sidewalks, existing islands, existing curbs, and top and inside vertical faces of existing parapets in addition to the areas specified in Article 503.19 of the Standard Specifications.

\*\* For Information Only.

**PLAN**  
67'-3"



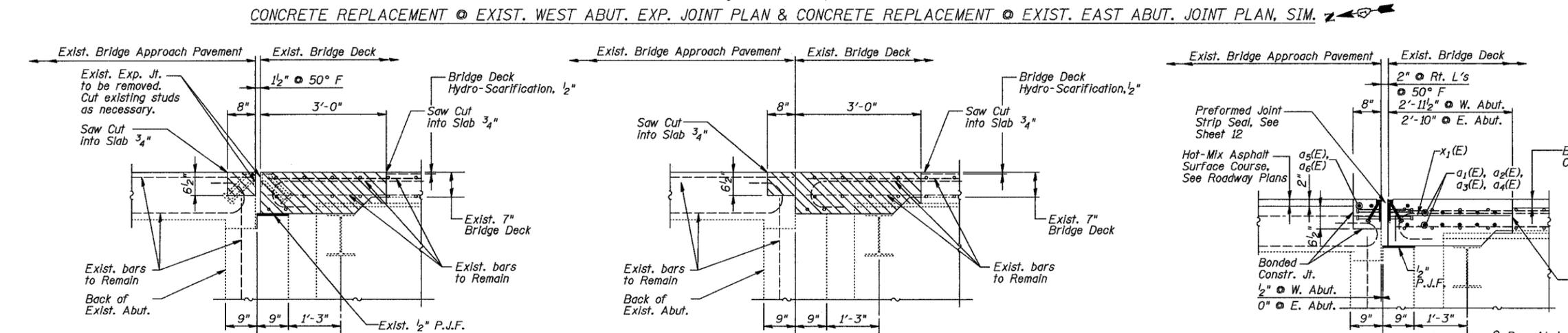
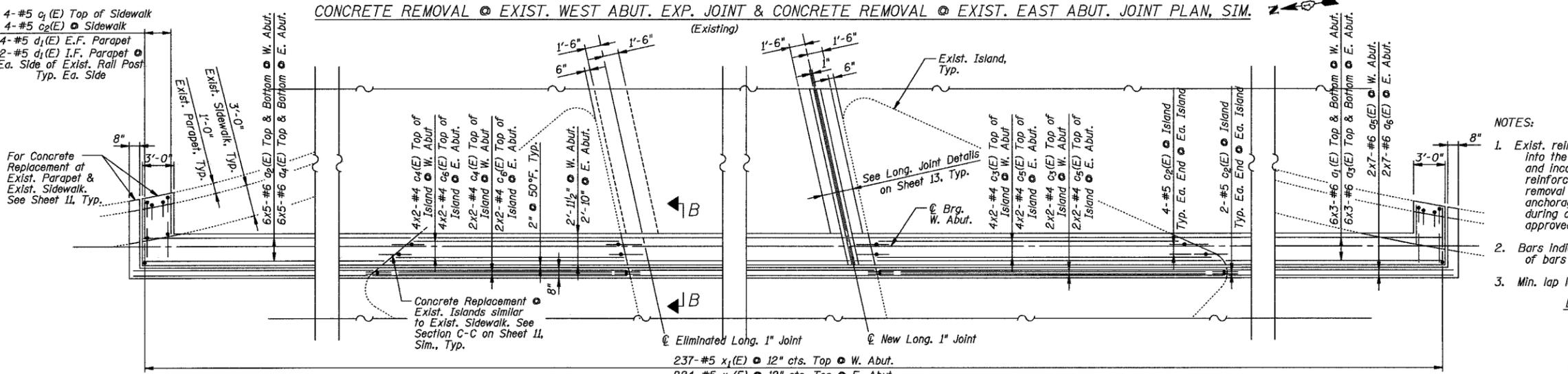
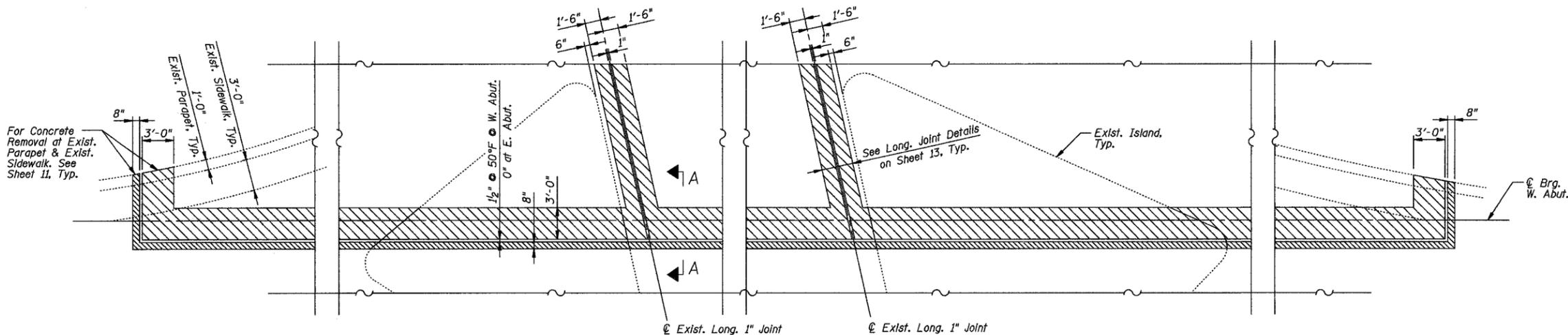
**HALF DECK CROSS SECTION**  
(Looking East Near Midspan)

DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

**DECK PLAN & CROSS SECTION**  
 FAP 541 (GRAND AVE.) OVER  
 IL RTE. 137 (AMSTUTZ EXPY.)  
 SECTION 9 HB-1-1  
 LAKE COUNTY  
 STATION 6+46.04  
 S.N. 049-0118  
 DATE: 03-27-08  
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
 CHICAGO ILLINOIS

### BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	36	#6	33'-2"	—
a2(E)	60	#6	30'-5"	—
a3(E)	36	#6	25'-0"	—
a4(E)	60	#6	32'-8"	—
a5(E)	14	#6	36'-0"	—
a6(E)	14	#6	34'-1"	—
c1(E)	16	#5	3'-8"	—
c2(E)	64	#5	2'-7"	—
c3(E)	12	#4	9'-2"	—
c4(E)	12	#4	8'-8"	—
c5(E)	12	#4	7'-8"	—
c6(E)	12	#4	6'-8"	—
d1(E)	40	#5	2'-5"	L
x1(E)	461	#5	3'-3"	—
Concrete Removal		Cu. Yd.	108.0	
Concrete Superstructure		Cu. Yd.	121.5	
Bridge Deck Grooving		Sq. Yd.	123	
Protective Coat		Sq. Yd.	200	
Reinforcement Bars		Pound	12,460	
Epoxy Coated				



DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

**SECTION A-A**  
(West Abutment)  
(Existing)

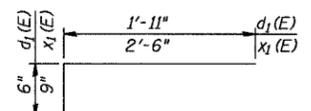
**SECTION A-A**  
(East Abutment)  
(Existing)

**SECTION B-B**  
(West & East Abutment)

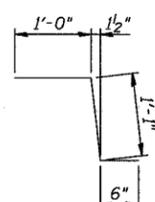
Note:  
Dimensions are based on a Rolled Rail Strip Seal Joint.  
If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Base Sheet E.J-SSJ as shown on Sheet 12.

- NOTES:
1. Exist. reinforcement bars & shear studs extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Any shear studs that are damaged during concrete removal shall be replaced with approved equal. Cost included with Concrete Removal.
  2. Bars Indicated thus 6x3-#6 etc. Indicates 6 lines of bars with 3 lengths per line.
  3. Min. lap lengths:

Bar Size	Lap
#4	1'-8"
#6	2'-7"

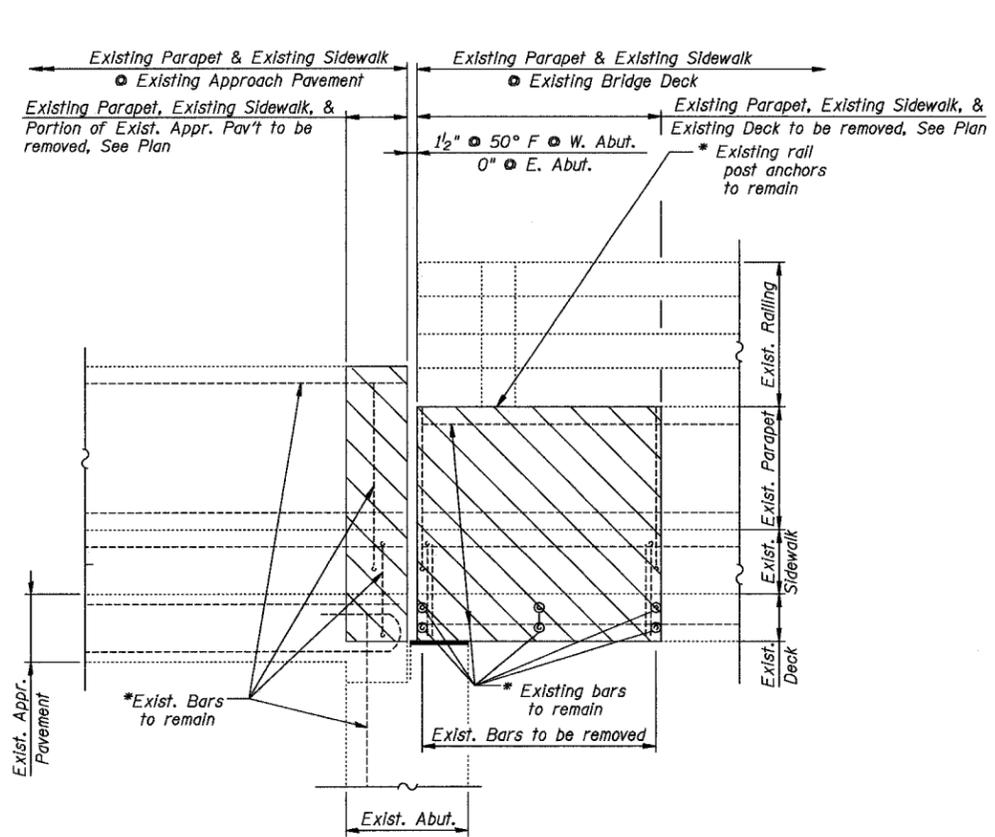


BAR d1(E), x1(E)

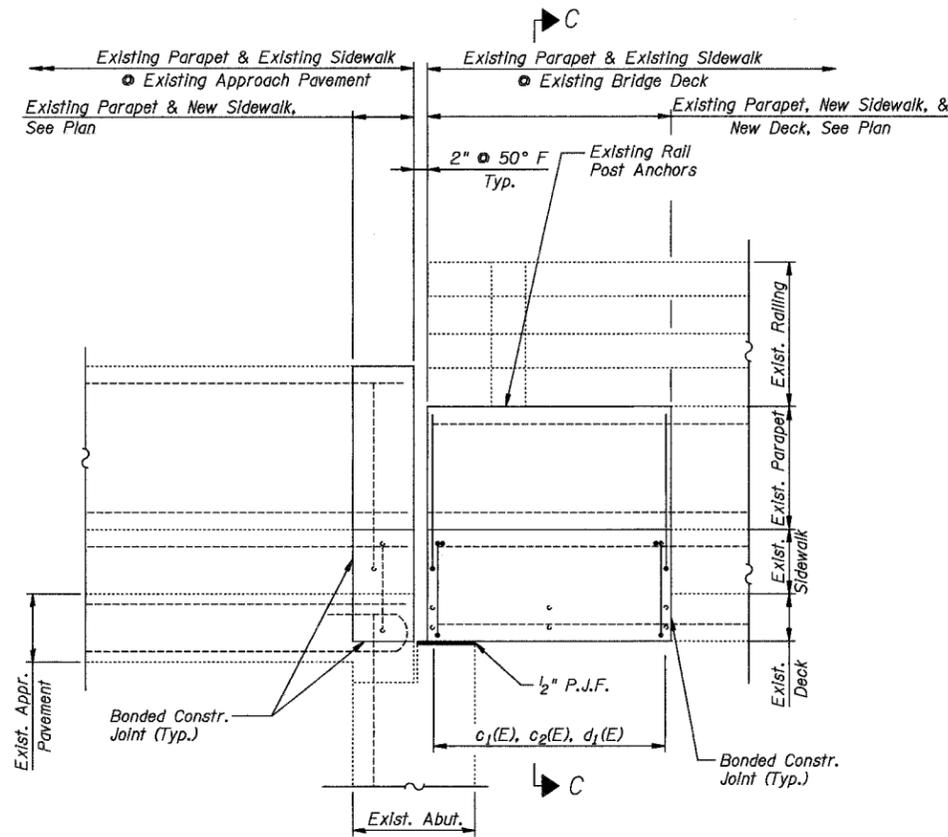


BAR c2(E)

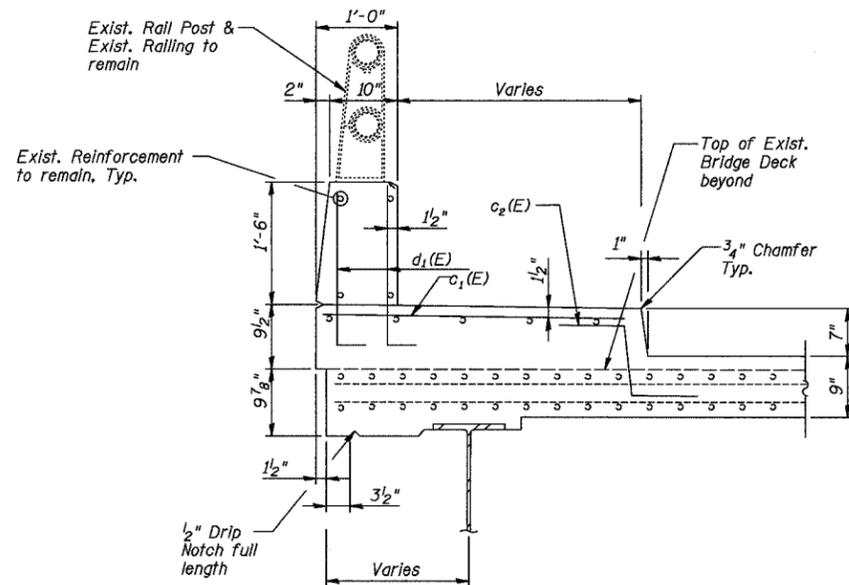
TRANSVERSE JOINT DETAILS  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-1-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS



**CONCRETE REMOVAL @ EXISTING PARAPET & EXISTING SIDEWALK ELEVATION**  
(Existing)



**CONCRETE REPLACEMENT @ EXISTING PARAPET & EXISTING SIDEWALK ELEVATION**



**SECTION C-C**

DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

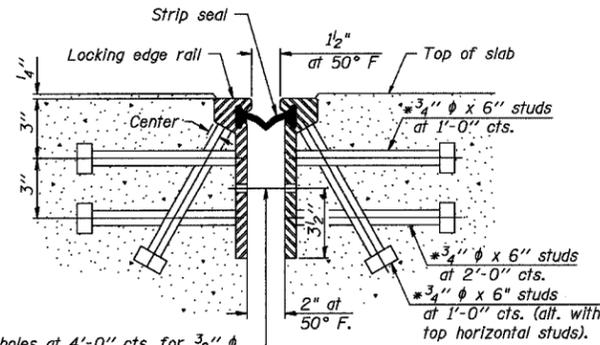
**NOTES:**

- \* Exist. reinforcement bars & rail post anchors extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars or rail post anchors that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Cost included with Concrete Removal.
- ▨ Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut 3/4" prior to the removal of concrete.
- Work this sheet with Sheet 10.

PARAPET & SIDEWALK SECTIONS & DETAILS  
 FAP 541 (GRAND AVE.) OVER IL RTE. 137 (AMSTUTZ EXPY.)  
 SECTION 9 HB-1-1  
 LAKE COUNTY  
 STATION 6+46.04  
 S.N. 049-0118

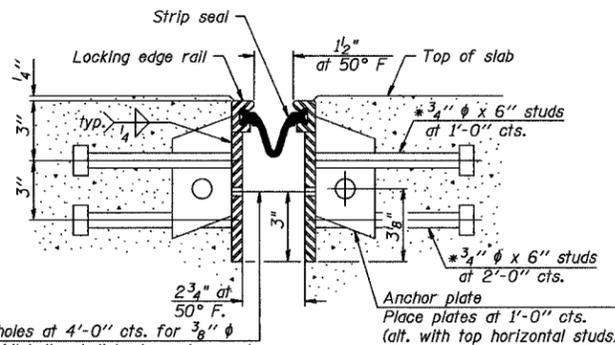
DATE: 03-27-08  
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
 CHICAGO ILLINOIS

\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or clipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT

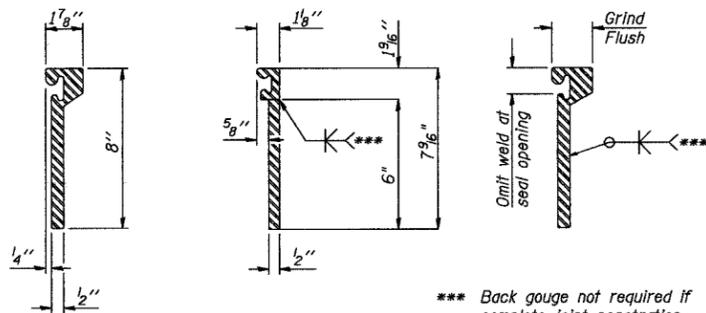


7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or clipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches. The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints. The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

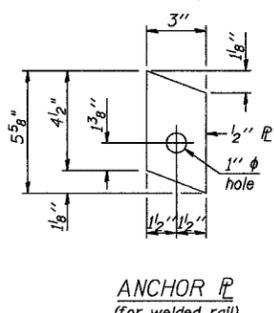


ROLLING RAIL (EXTRUDED) RAIL WELDED RAIL

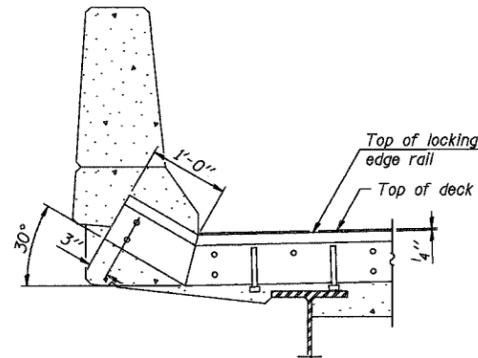
\*\*\* Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

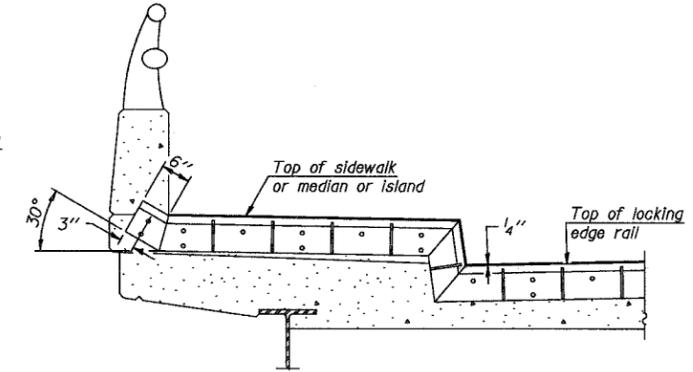
The inside of the locking edge rail groove shall be free of weld residue.



ANCHOR PLATE (for welded rail)



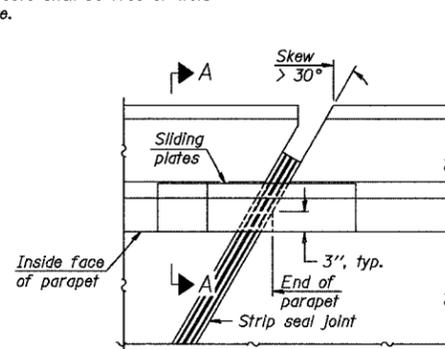
AT PARAPET



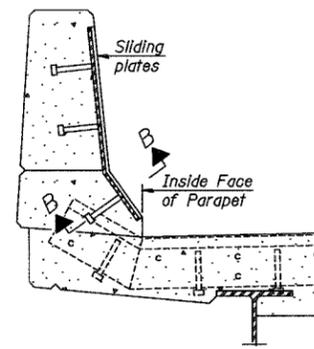
AT SIDEWALK OR MEDIAN OR ISLAND

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

LOCKING EDGE RAILS

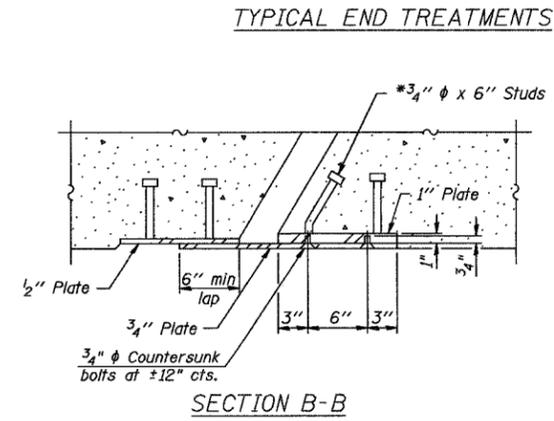


PLAN



SECTION A-A

POINT BLOCK DETAILS (for skews > 30°)



SECTION B-B

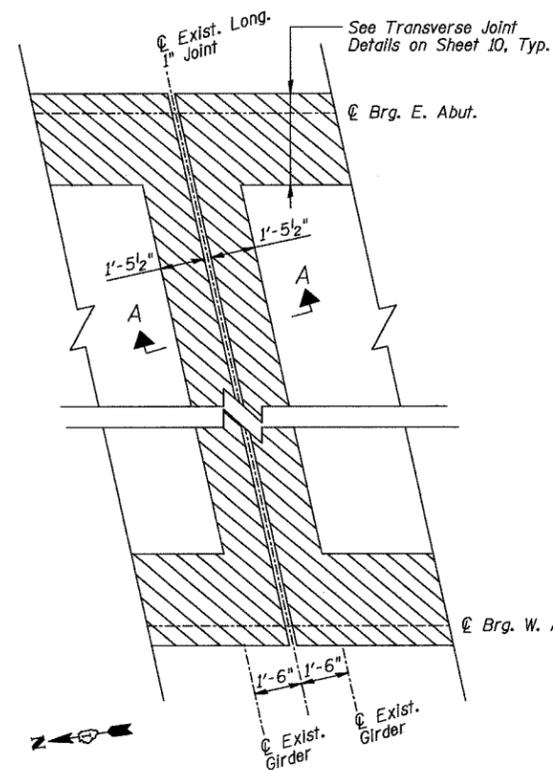
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	488

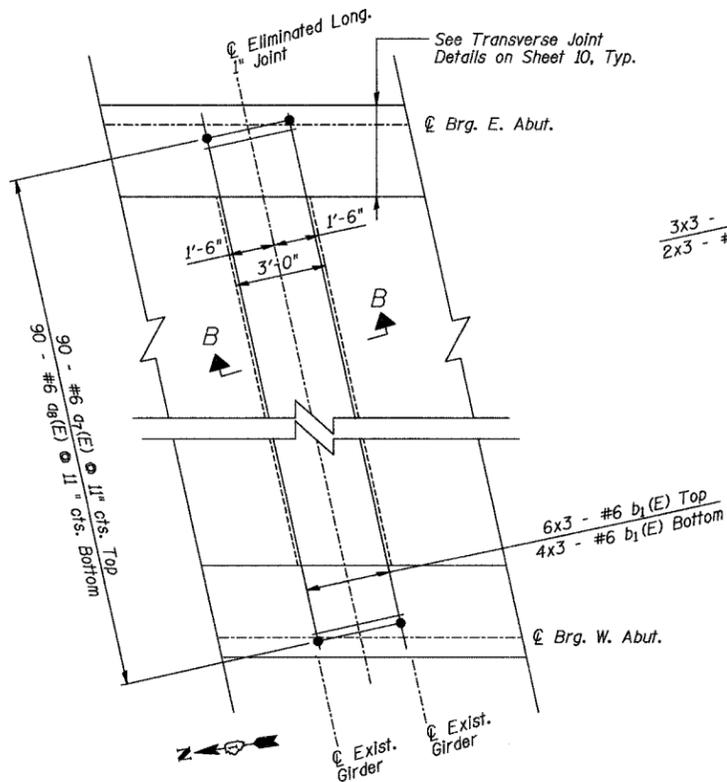
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	EJ-SSJ S.D.H.

9-3-07

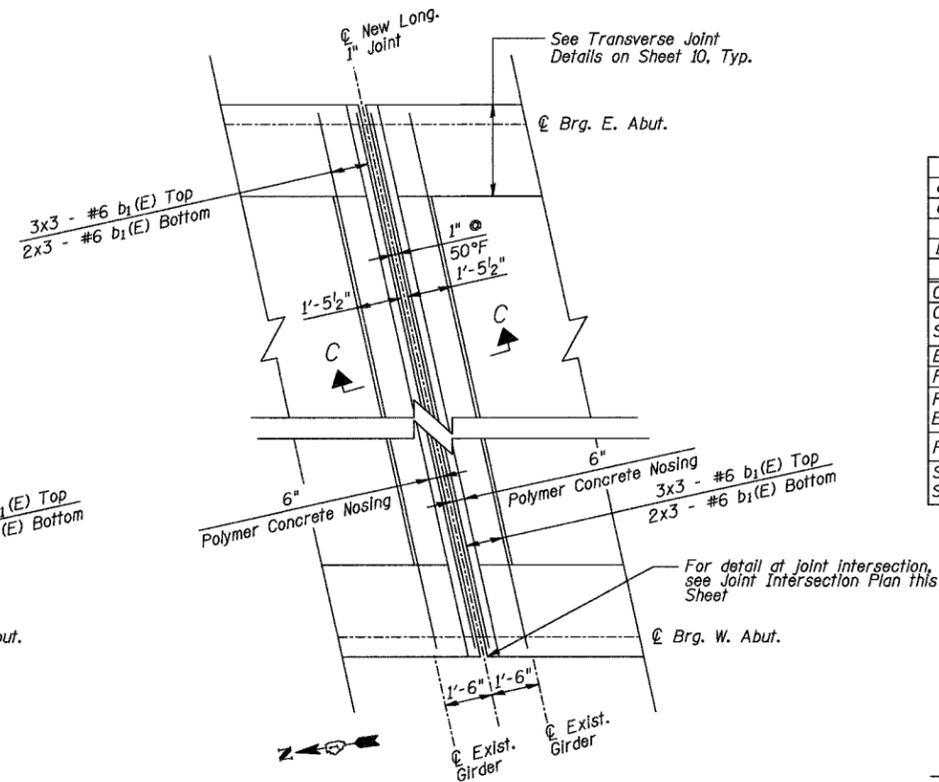
PREFORMED JOINT STRIP SEAL  
 FAP 541 (GRAND AVE.) OVER  
 IL RTE. 137 (AMSTUTZ EXPY.)  
 SECTION 9 HB-I-1  
 LAKE COUNTY  
 STATION 6+46.04  
 S.N. 049-0118  
 DATE: 03-27-08  
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
 CHICAGO ILLINOIS



**CONCRETE REMOVAL @ EXIST. LONG. JOINT PLAN**  
(Applicable at North & South Longitudinal Joints)  
(Existing)



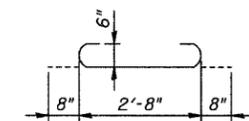
**LONGITUDINAL JOINT ELIMINATION PLAN**  
(Applicable at North Longitudinal Joint)



**LONGITUDINAL JOINT REPLACEMENT PLAN**  
(Applicable at South Longitudinal Joint)

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a <sub>7</sub> (E)	90	#6	2'-8"	—
a <sub>8</sub> (E)	90	#6	4'-0"	⊔
b <sub>1</sub> (E)	60	#6	29'-0"	—
Concrete Removal		Cu. Yd.	12.0	
Concrete Superstructure		Cu. Yd.	10.5	
Bridge Deck Grooving		Sq. Yd.	45	
Protective Coat		Sq. Yd.	49	
Reinforcement Bars, Epoxy Coated		Pound	3,520	
Polymer Concrete		Cu. Ft.	14	
Silicone Joint Sealer, 1"		Foot	83	



BAR a<sub>8</sub>(E)

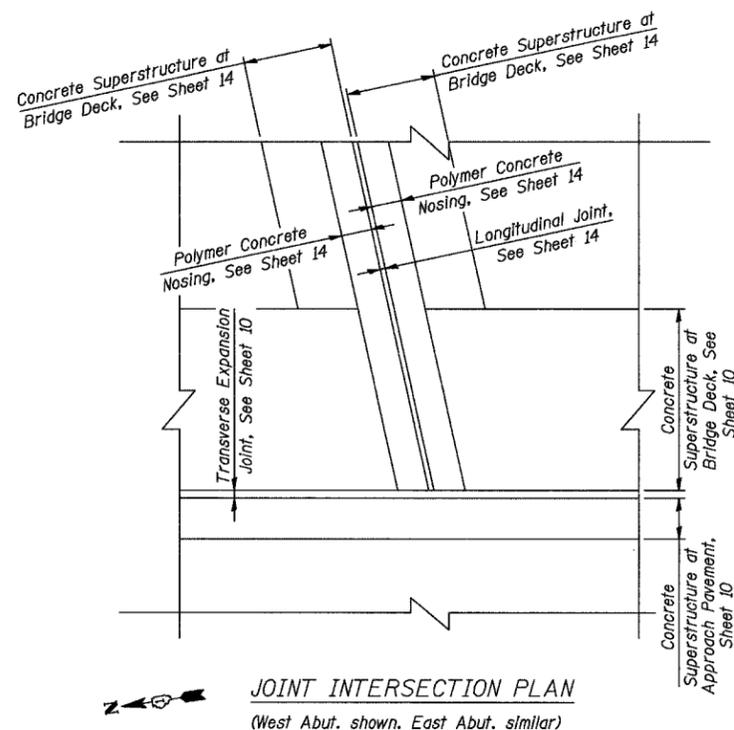
**LEGEND**

⊔ - Concrete Removal

**NOTES:**

- Exist. reinforcement bars & shear studs extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Any shear studs that are damaged during concrete removal shall be replaced with approved equal. Cost included with Concrete Removal.
- For Sections A-A, B-B, & C-C, see Sheet 14.
- Bars indicated thus 6x3 - #6 etc. indicates 6 lines of bars with 3 lengths per line.
- Minimum lap lengths:

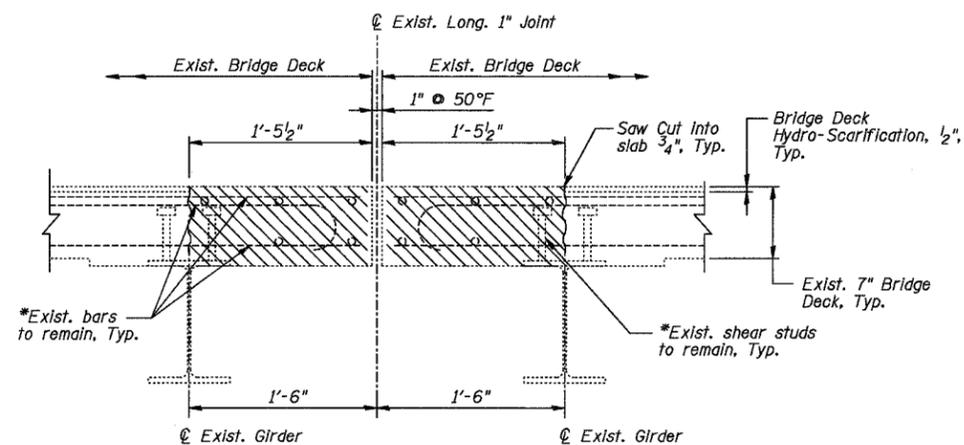
Bar Size	Lap
#6	2'-7"



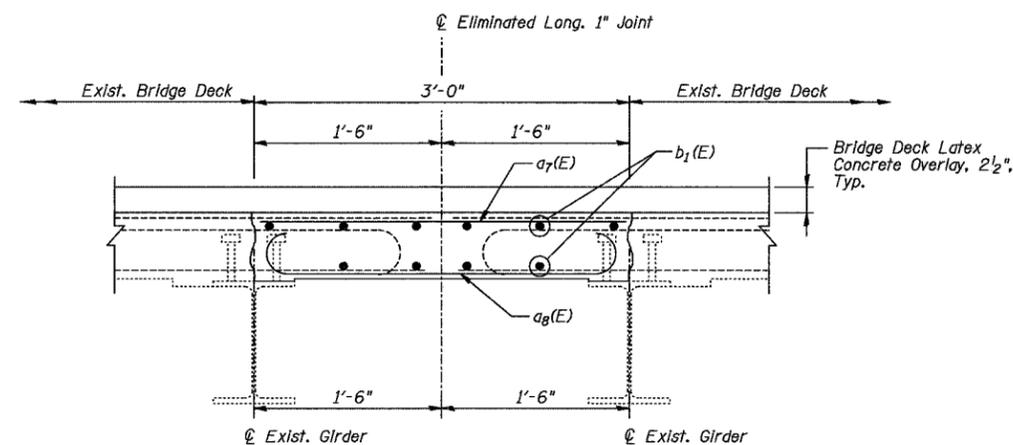
**JOINT INTERSECTION PLAN**  
(West Abut. shown. East Abut. similar)

DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

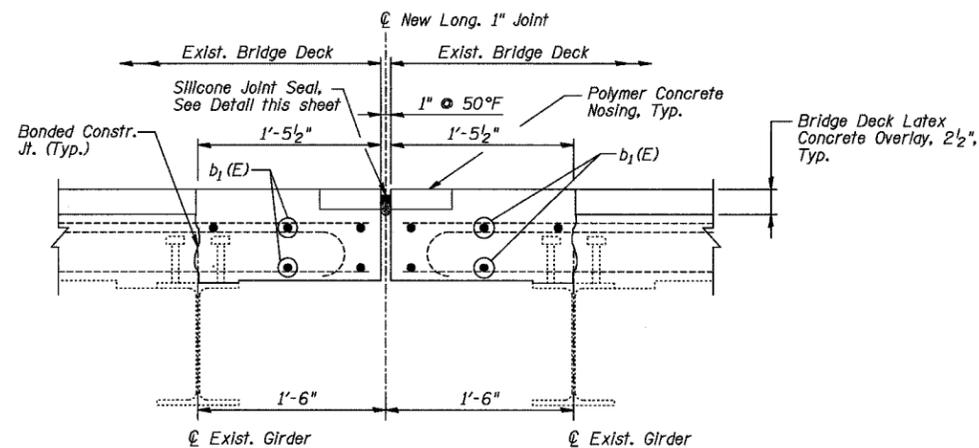
LONGITUDINAL JOINT DETAILS I  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-I-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS



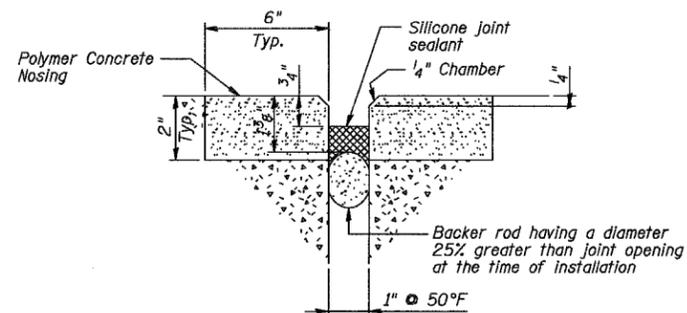
SECTION A-A  
(Existing)



SECTION B-B



SECTION C-C



SILICONE JOINT SEAL

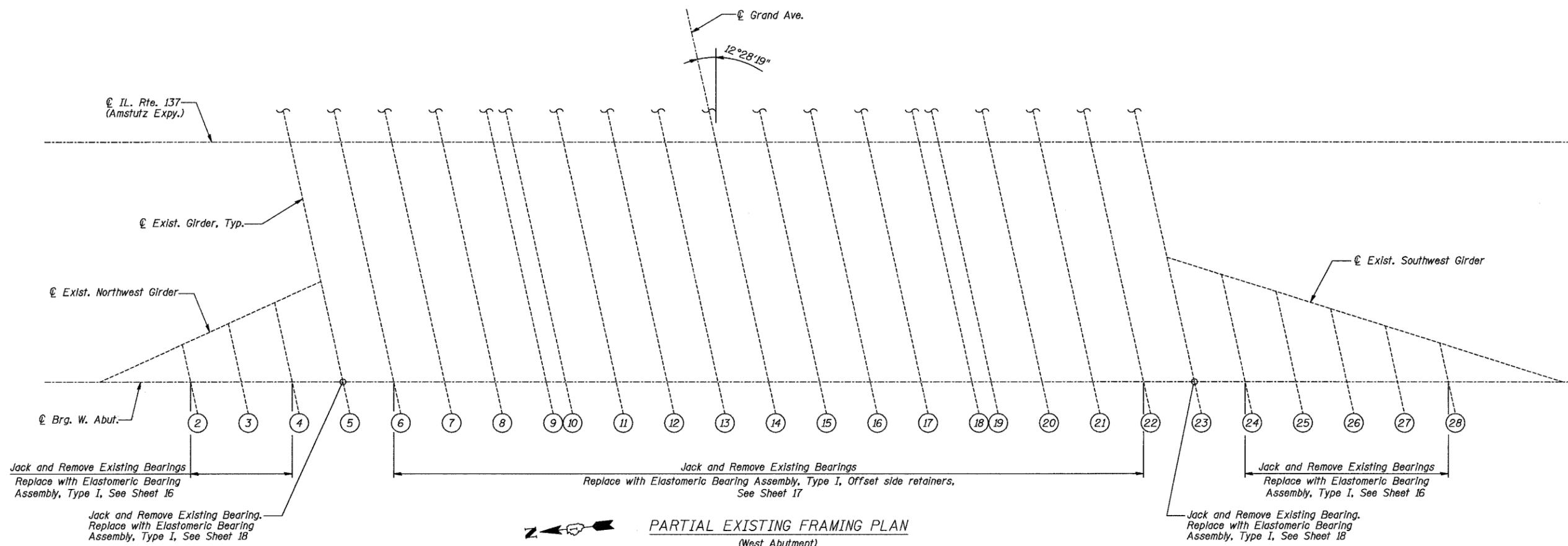
NOTES:

1. Exist. reinforcement bars & shear studs extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Any shear studs that are damaged during concrete removal shall be replaced with approved equal. Cost included with Concrete Removal.
2. Work this sheet with Sheet 13.

DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

LONGITUDINAL JOINT DETAILS II  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-I-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS

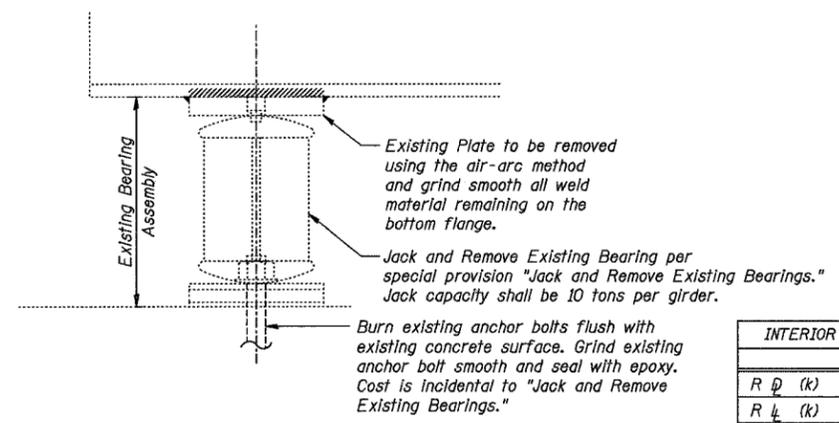
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	9 HB-1-1	LAKE	26	15
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
Contract No. 60090				



**PARTIAL EXISTING FRAMING PLAN**  
(West Abutment)

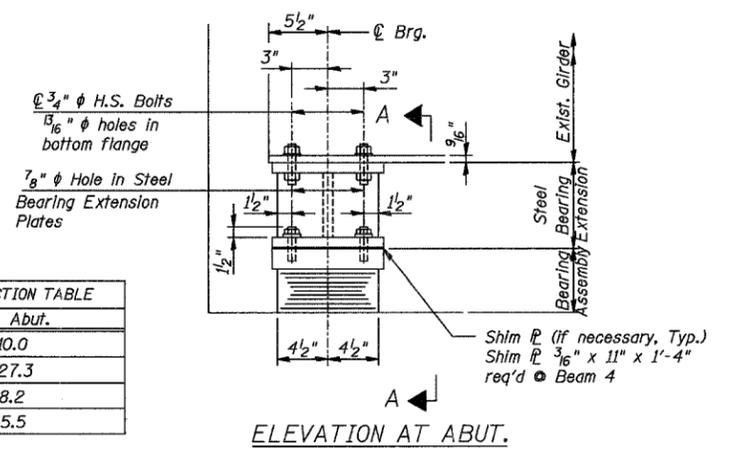
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

PARTIAL EXISTING FRAMING PLAN  
 FAP 541 (GRAND AVE.) OVER  
 IL RTE. 137 (AMSTUTZ EXPY.)  
 SECTION 9 HB-1-1  
 LAKE COUNTY  
 STATION 6+46.04  
 S.N. 049-0118  
 DATE: 03-27-08  
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
 CHICAGO ILLINOIS

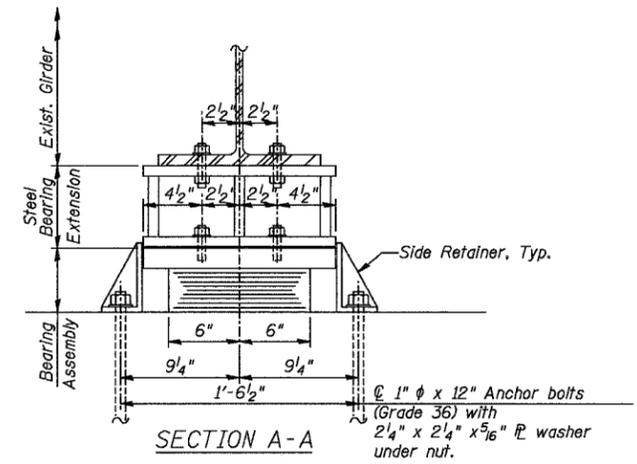


EXISTING BEARING REMOVAL DETAIL AT W. ABUT.  
GIRDERS 2 THRU 4 & 24 THRU 28

INTERIOR GIRDER REACTION TABLE	
	W. Abut.
R @ (k)	10.0
R 4 (k)	27.3
Imp. (k)	8.2
R <sub>total</sub> (k)	45.5

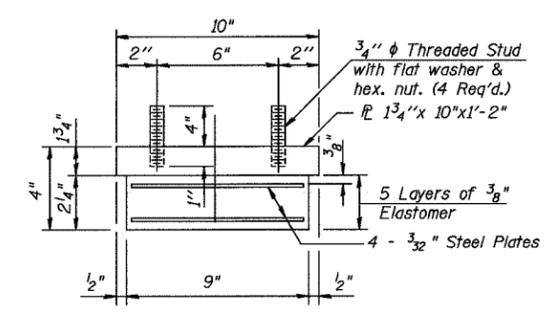


ELEVATION AT ABUT.



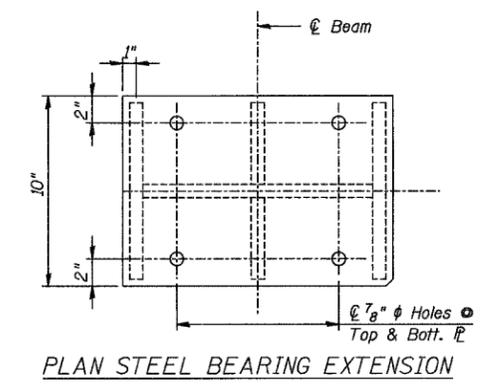
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. AT W. ABUT.  
GIRDERS 2 THRU 4 & 24 THRU 28

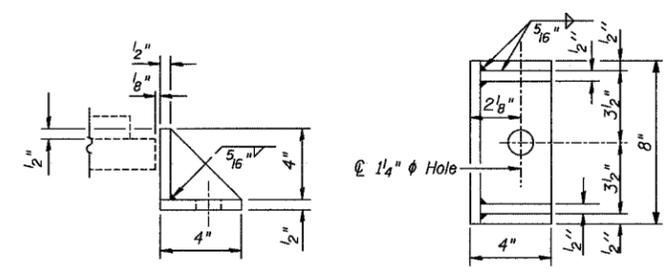


BEARING ASSEMBLY

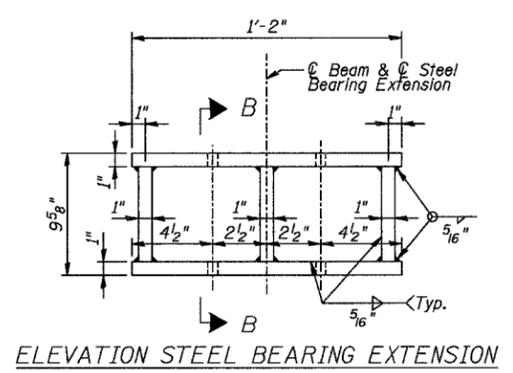
Note:  
Shim plates shall not be placed under Bearing Assembly.



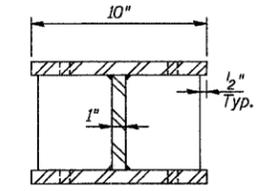
PLAN STEEL BEARING EXTENSION



SIDE RETAINER  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ELEVATION STEEL BEARING EXTENSION



SECTION B-B

STEEL BEARING EXTENSION

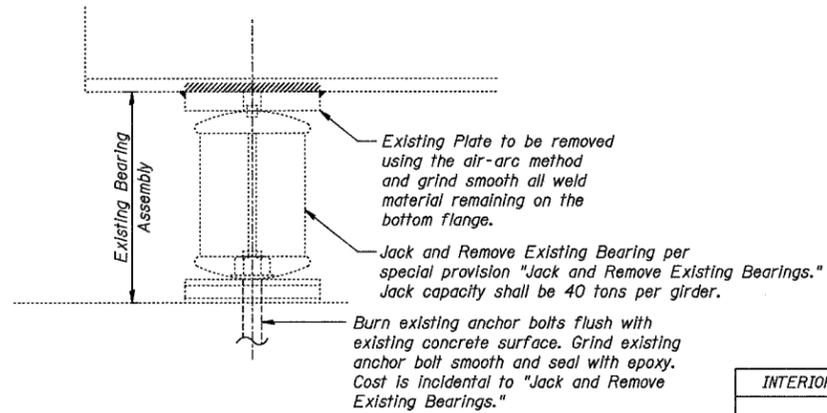
Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Steel bearing extensions, shim plates, and connection bolts are included with Furnishing and Erecting Structural Steel.  
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
The structural steel plates of the Bearing Assembly and the Steel Bearing Extension shall conform to the requirements of AASHTO M 270 Grade 36.  
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the bearing details.  
All bearing plates, steel bearing extensions, side retainers, anchor bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232 (as applicable).  
Prior to ordering any material, the Contractor shall verify in the field all bearing height dimensions.  
Diaphragm removal and replacement may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	1,380
Jack and Remove Existing Bearings	Each	8
Elastomeric Bearing Assembly, Type I	Each	8
Anchor Bolts, 1"	Each	16

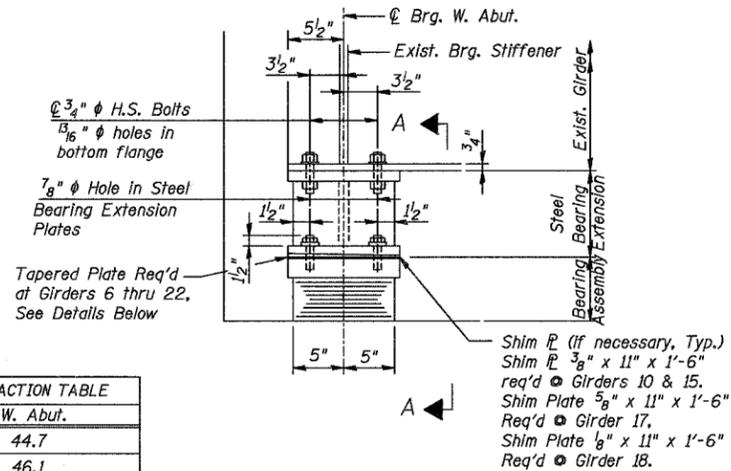
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

TYPE I ELASTOMERIC BEARING  
GIRDERS 2 THRU 4 & 24 THRU 28  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-I-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS

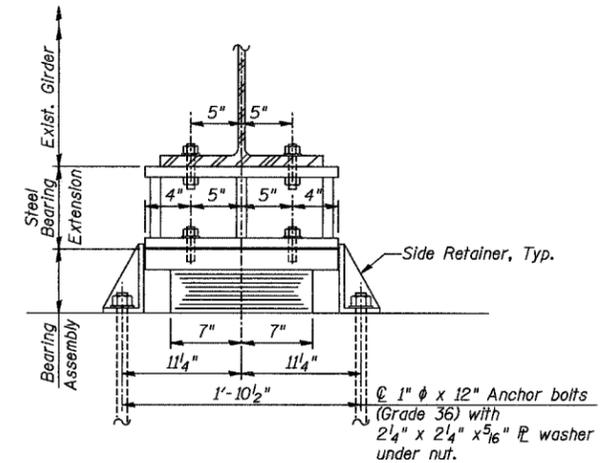


EXISTING BEARING REMOVAL DETAIL AT W. ABUT.  
GIRDERS 6 THRU 22

INTERIOR GIRDER REACTION TABLE	
	W. Abut.
R @ (k)	44.7
R 1/4 (k)	46.1
Imp. (k)	11.4
R Total (k)	102.2

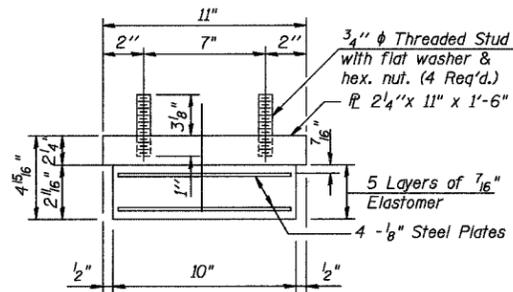


ELEVATION AT ABUT.



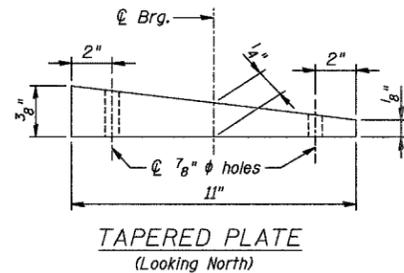
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. AT W. ABUT.  
GIRDERS 6 THRU 22

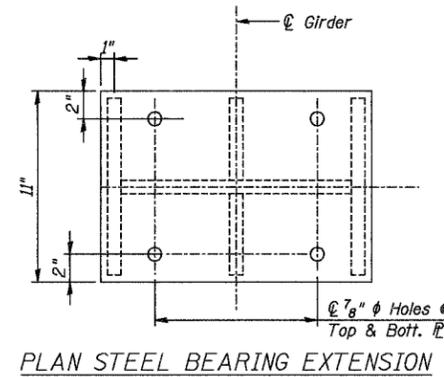


BEARING ASSEMBLY

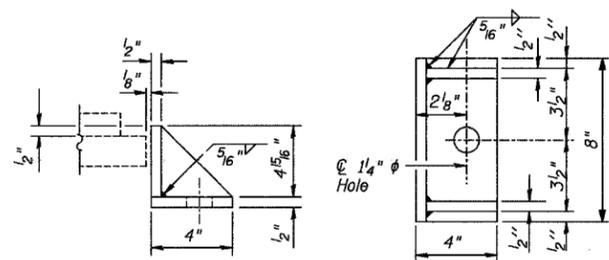
Note:  
Shim plates shall not be placed under Bearing Assembly.



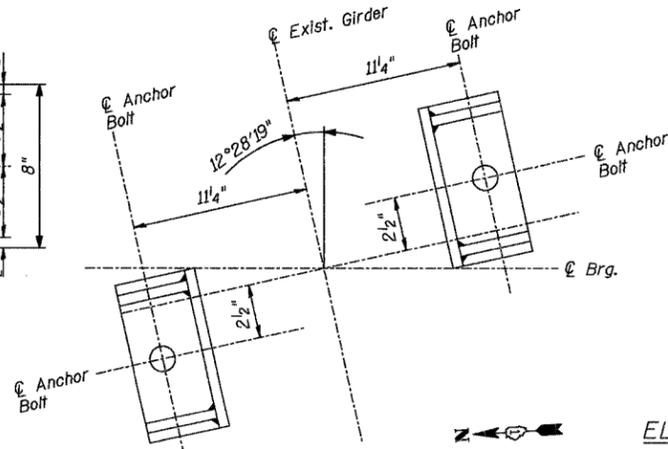
TAPERED PLATE  
(Looking North)



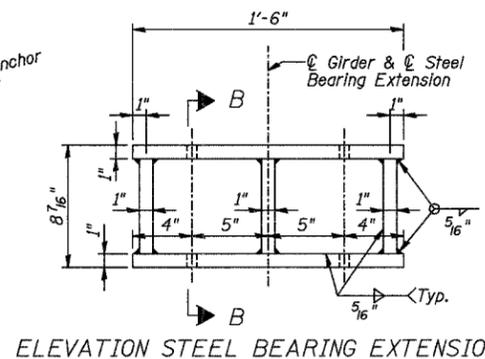
PLAN STEEL BEARING EXTENSION



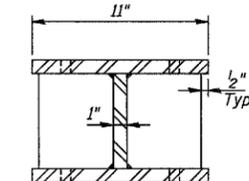
SIDE RETAINER  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



OFFSET SIDE RETAINER PLAN



ELEVATION STEEL BEARING EXTENSION



SECTION B-B

STEEL BEARING EXTENSION

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications. Steel bearing extensions, shim plates, and connection bolts are included with Furnishing and Erecting Structural Steel.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I. The structural steel plates of the Bearing Assembly and the Steel Bearing Extension shall conform to the requirements of AASHTO M 270 Grade 36.

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the bearing details.

All bearing plates, steel bearing extensions, side retainers, anchor bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232 (as applicable).

Prior to ordering any material, the Contractor shall verify in the field all bearing height dimensions.

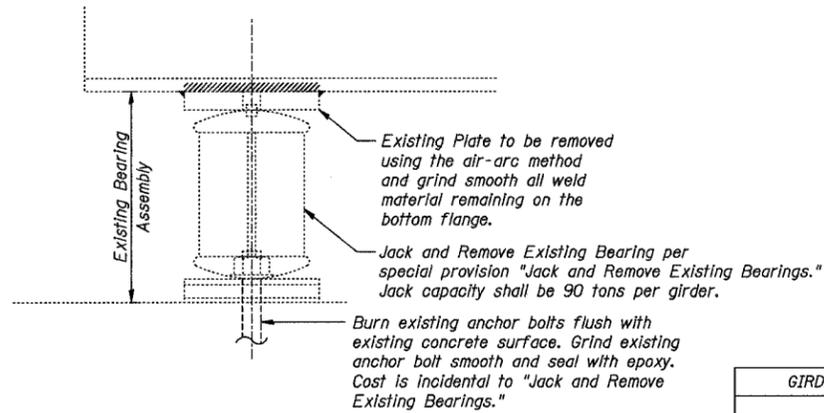
Diaphragm removal and replacement may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	3,880
Jack and Remove Existing Bearings	Each	17
Elastomeric Bearing Assembly, Type I	Each	17
Anchor Bolts, 1"	Each	34

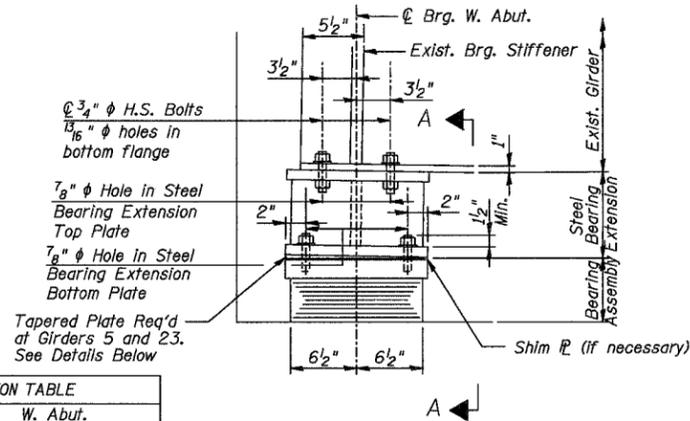
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

TYPE I ELASTOMERIC BEARING  
GIRDERS 6 THRU 22  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-I-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS

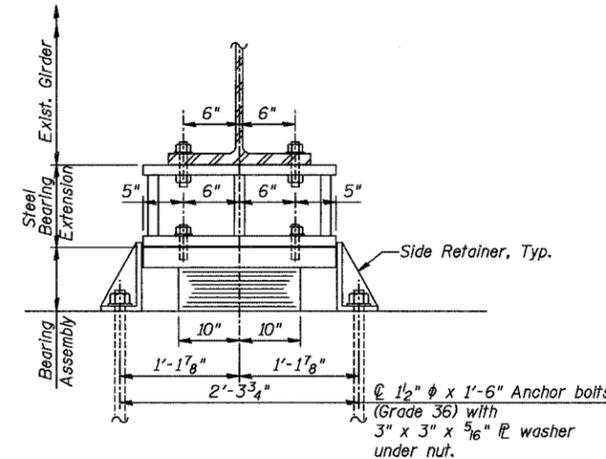


EXISTING BEARING REMOVAL DETAIL AT W. ABUT.  
GIRDERS 5 AND 23

GIRDER REACTION TABLE	
	W. Abut.
R <sub>D</sub> (k)	110.1
R <sub>L</sub> (k)	45.2
Imp. (k)	11.1
R <sub>Total</sub> (k)	166.4

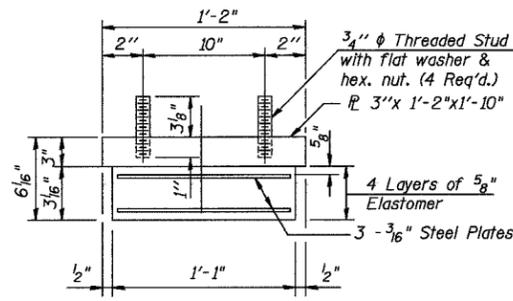


ELEVATION AT ABUT.



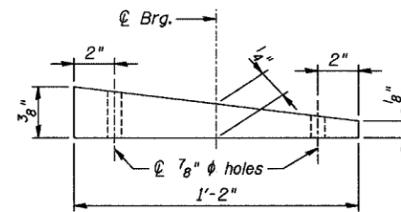
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. AT W. ABUT.  
GIRDERS 5 AND 23

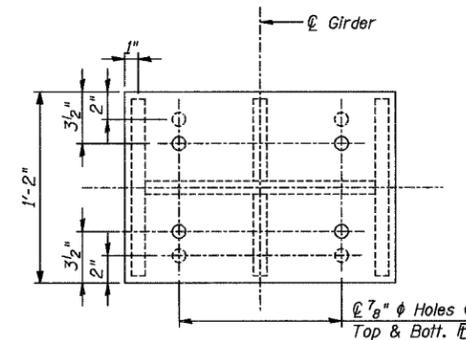


BEARING ASSEMBLY

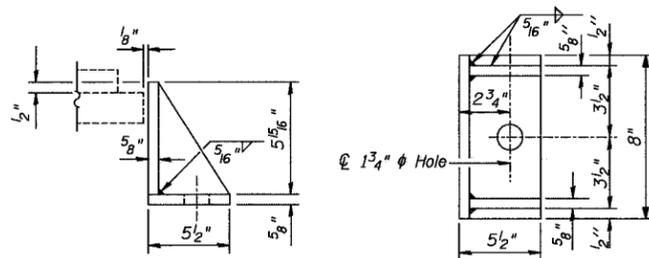
Note:  
Shim plates shall not be placed under Bearing Assembly.



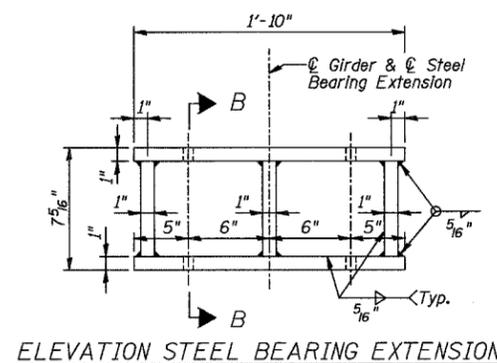
TAPERED PLATE  
(Looking North)



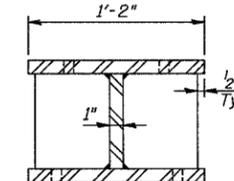
PLAN STEEL BEARING EXTENSION



SIDE RETAINER  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ELEVATION STEEL BEARING EXTENSION



SECTION B-B

STEEL BEARING EXTENSION

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Steel bearing extensions, shim plates, and connection bolts are included with Furnishing and Erecting Structural Steel.  
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.  
The structural steel plates of the Bearing Assembly and the Steel Bearing Extension shall conform to the requirements of AASHTO M 270 Grade 36.  
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the bearing details.  
All bearing plates, steel bearing extensions, side retainers, anchor bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232 (as applicable).  
Prior to ordering any material, the Contractor shall verify in the field all bearing height dimensions.  
Diaphragm removal and replacement may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

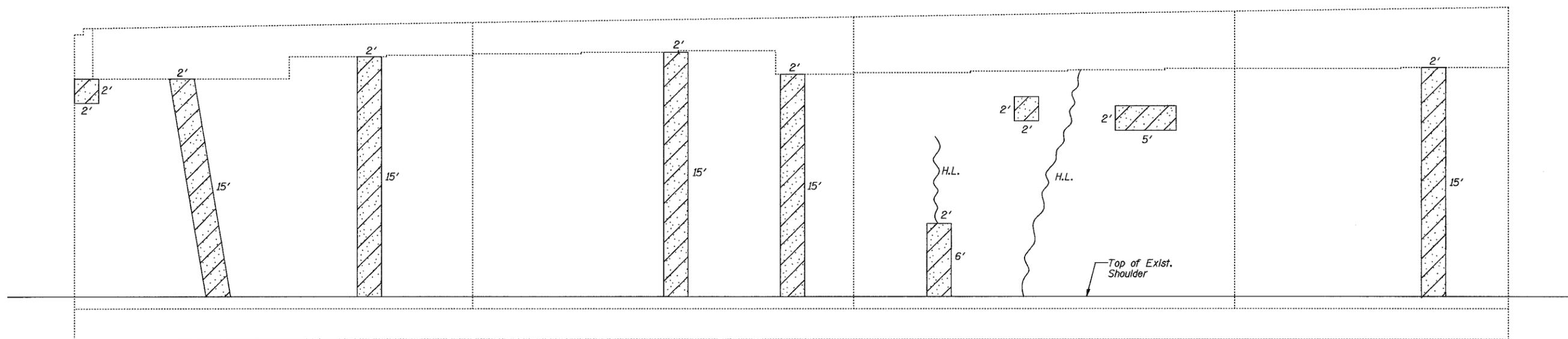
BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	620
Jack and Remove Existing Bearings	Each	2
Elastomeric Bearing Assembly, Type I	Each	2
Anchor Bolts, 1/2"	Each	4

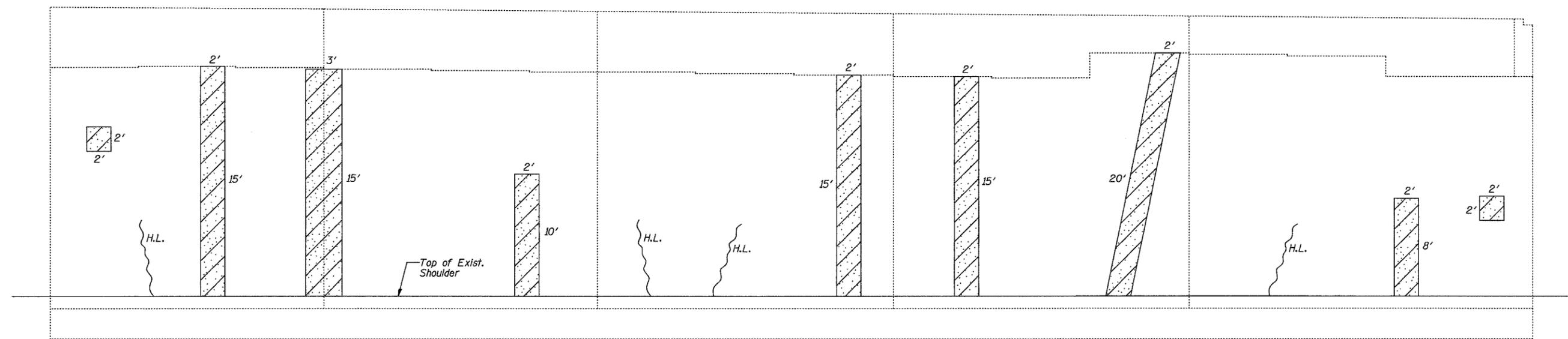
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

TYPE I ELASTOMERIC BEARING  
GIRDERS 5 AND 23  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-1-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS





EXIST. WEST ABUTMENT ELEVATION, SOUTH HALF  
(Looking West)



EXIST. WEST ABUTMENT ELEVATION, NORTH HALF  
(Looking West)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Greater than 5")	Sq. Ft.	40
Structural Repair of Concrete (Depth Equal to or Less than 5")	Sq. Ft.	399

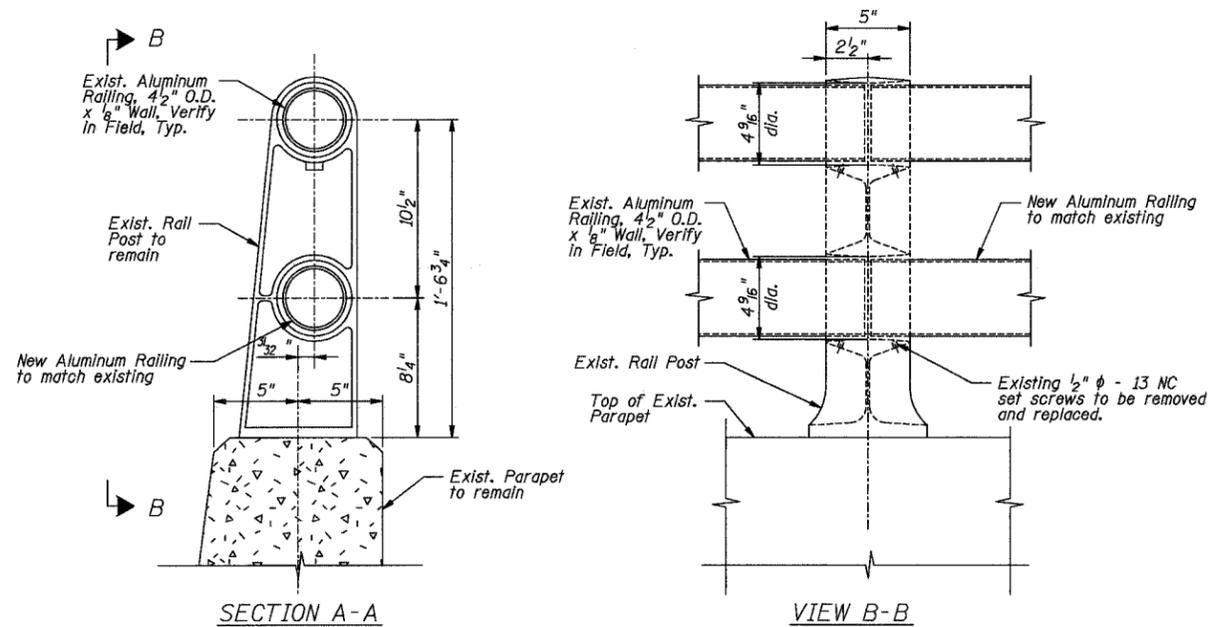
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

Note:  
Quantities for Structural Repair of Concrete are approximate. Quantity of Structural Repair of Concrete (Depth Equal to or less than 5") was estimated from field observations. Quantity of Structural Repair of Concrete (Depth Greater than 5") is assumed to be 10% of the quantity for Structural Repair of Concrete (Depth Equal to or less than 5"). The actual repair areas will be determined by the Resident Engineer. Actual repair locations shall be shown on the as-built plans. The Contractor will be paid for the quantity furnished.

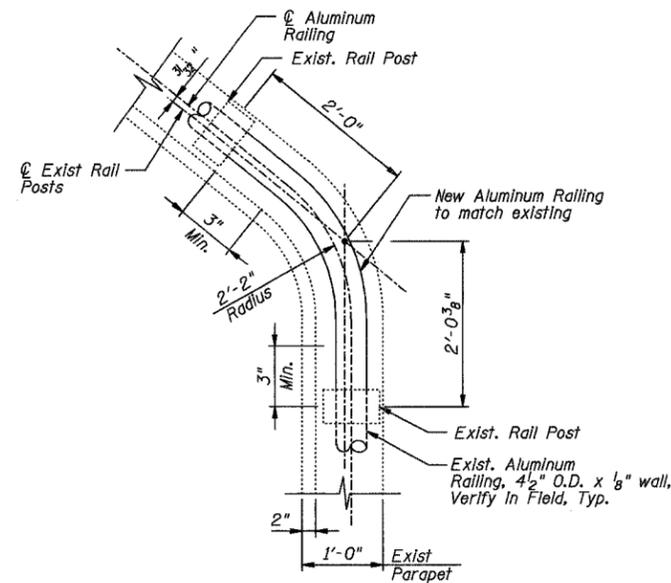
LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5")
- Hairline Crack

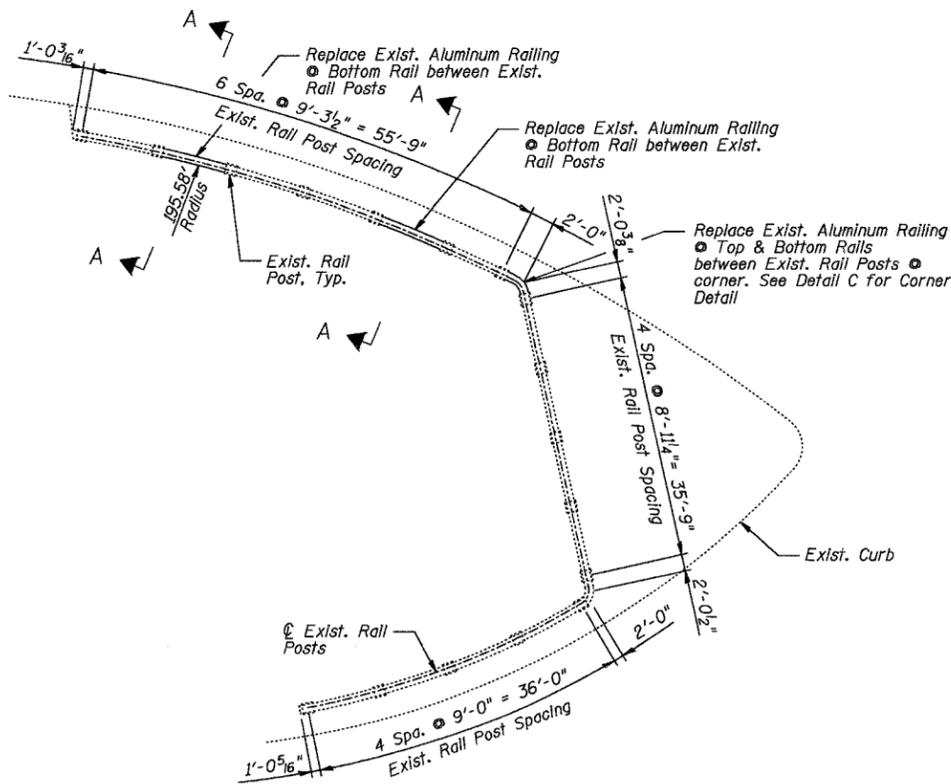
SUBSTRUCTURE REPAIR  
WEST ABUTMENT  
FAP 541 (GRAND AVE.) OVER  
IL RTE. 137 (AMSTUTZ EXPY.)  
SECTION 9 HB-I-1  
LAKE COUNTY  
STATION 6+46.04  
S.N. 049-0118  
DATE: 03-27-08  
GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
CHICAGO ILLINOIS



RAIL POST DETAILS



DETAIL C



EXISTING NORTH RAILING PLAN

Notes:

Outside diameter and thickness of Aluminum Railing shall match existing aluminum railing. Prior to ordering any material, Contractor shall verify in the field all necessary dimensions.

All Aluminum Railing shall be according to Article 1006.30 of the Standard Specifications.

The contract unit price per lineal foot for Aluminum Railing, Special shall include the removal of existing railing specified and the furnishing, fabrication, transportation, and erection of all new railing.

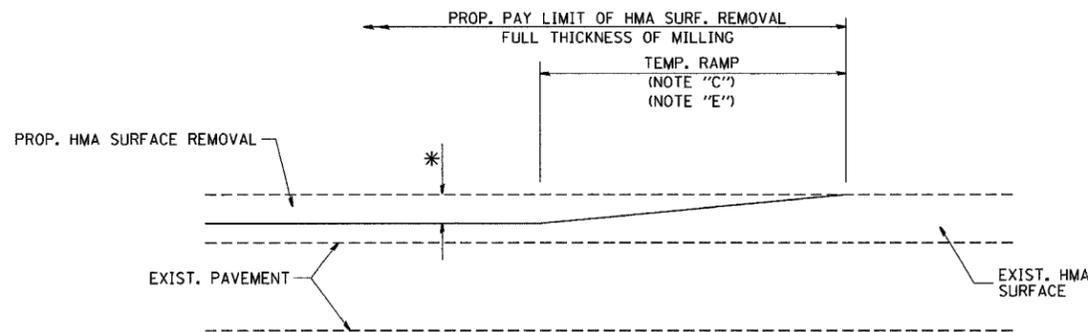
Set screws shall be of Aluminum conforming to ASTM Specification B-211 alloy 2024-T4.

BILL OF MATERIAL

Item	Unit	Total
Aluminum Railing, Special	Foot	26

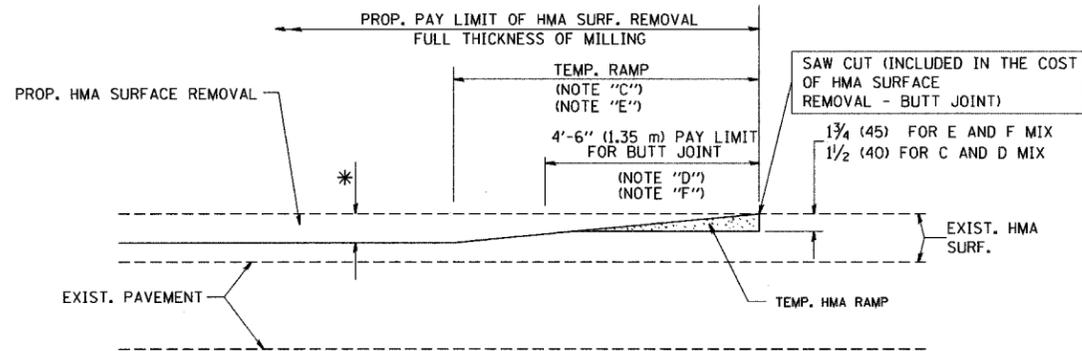
DESIGNED	S.D.H.
CHECKED	J.A.Z.
DRAWN	M.S.M.
CHECKED	S.D.H.

ALUMINUM RAILING REPAIR  
 FAP 541 (GRAND AVE.) OVER  
 IL RTE. 137 (AMSTUTZ EXPY.)  
 SECTION 9 HB-1-1  
 LAKE COUNTY  
 STATION 6+46.04  
 S.N. 049-0118  
 DATE: 03-27-08  
 GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
 CHICAGO ILLINOIS



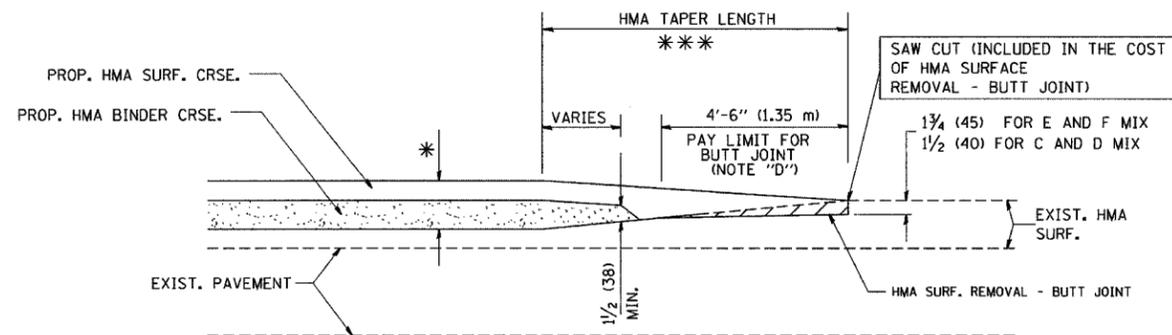
MILLED TEMPORARY RAMP  
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

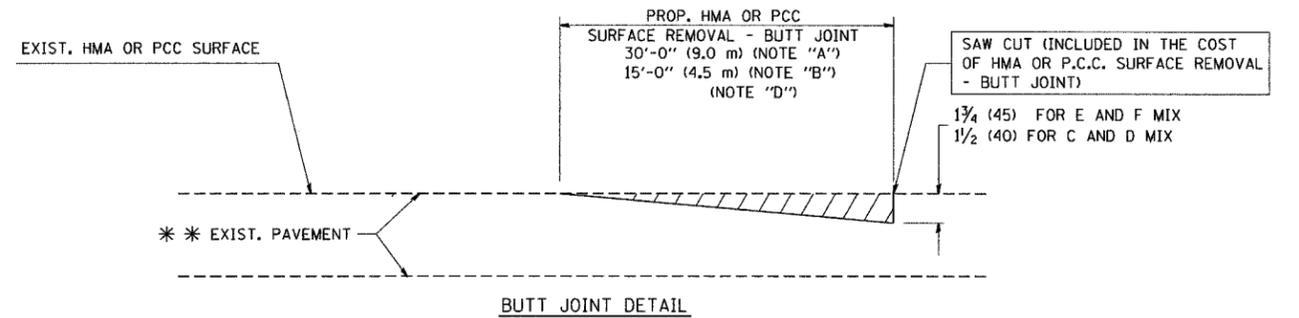


HMA CONSTRUCTED TEMPORARY RAMP  
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

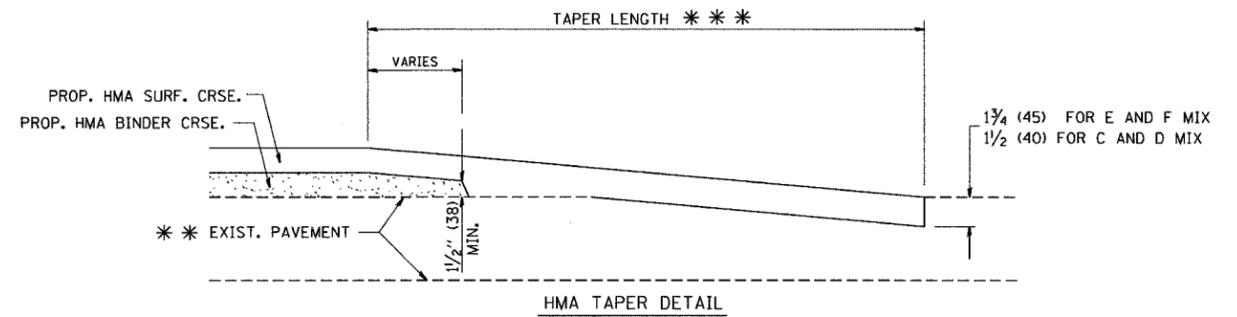
OPTION 2  
TYPICAL TEMPORARY RAMP



BUTT JOINT AND HMA TAPER  
TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

\*\*\* PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
  - B: MINOR SIDE ROADS.
  - C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
  - D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
  - E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.
  - F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT
  - G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".
- \* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- \*\*\* 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")  
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT:

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT".

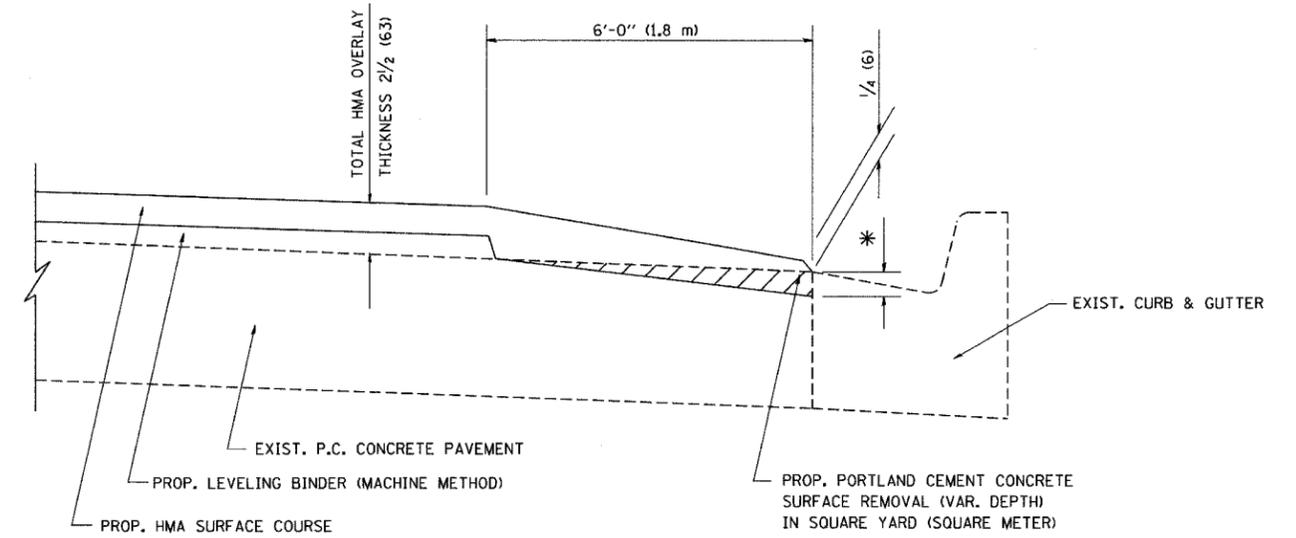
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd32.dgn	USER NAME = geglionbt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.0000' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. TO STA.	
		BUTT JOINT AND HMA TAPER DETAILS			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
54	9 H8-I-1	LAKE	26	22
BD400-05 BD32			CONTRACT NO.	
FED. ROAD DIST. NO. 1 [ILLINOIS] FED. AID PROJECT				



HMA TAPER AT  
EDGE OF P.C.C PAVEMENT

HMA SURFACE		LEVELING BINDER	
MIX	THICKNESS	THICKNESS	* MILLING AT GUTTER FLAG
C OR D	1 1/2 (38)	1 (25)	1/4 (33)
F	1 3/4 (44)	3/4 (19)	1/2 (38)

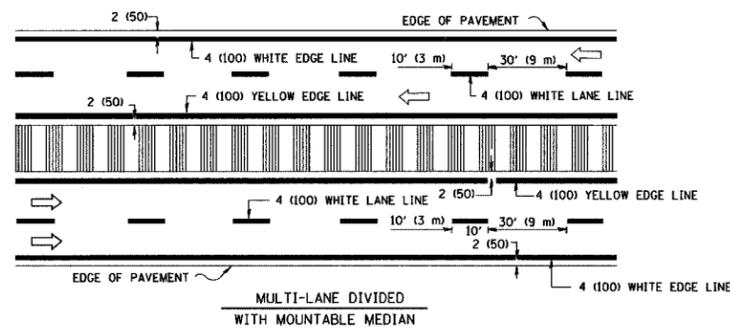
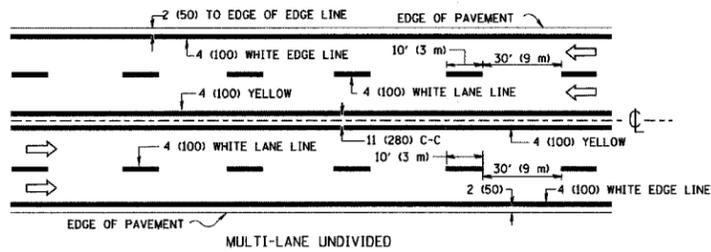
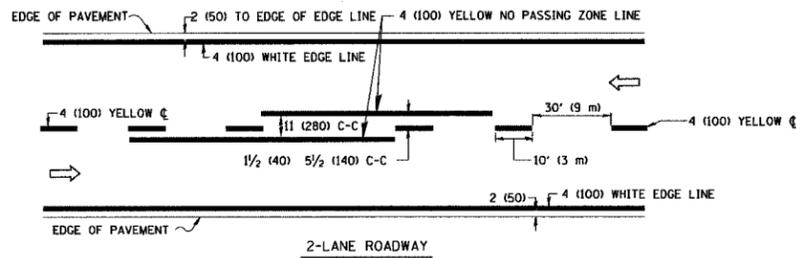
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\dstatd\22x34\bd33.dgn	USER NAME = geglienobt	DESIGNED - R. SHAH	REVISED - R. SHAH 10-25-94
		DRAWN - JIS	REVISED - A. ABBAS 05-05-99
	PLOT SCALE = 50.0000' / IN.	CHECKED - A. ABBAS	REVISED - E. GOMEZ 12-21-00
	PLOT DATE = 1/4/2008	DATE - 09-10-94	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

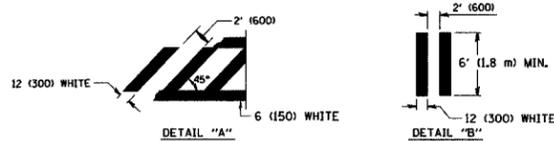
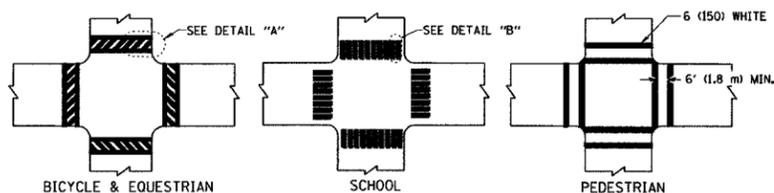
HMA TAPER AT EDGE OF P.C.C PAVEMENT			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	9 HB-I-1	LAKE	26	23
BD400-06 (BD33)		CONTRACT NO.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

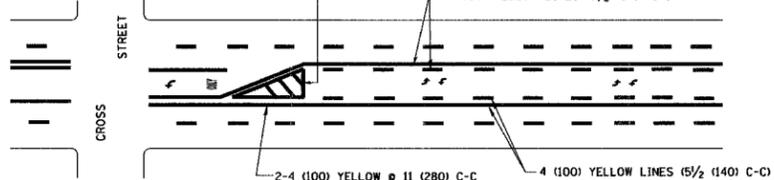
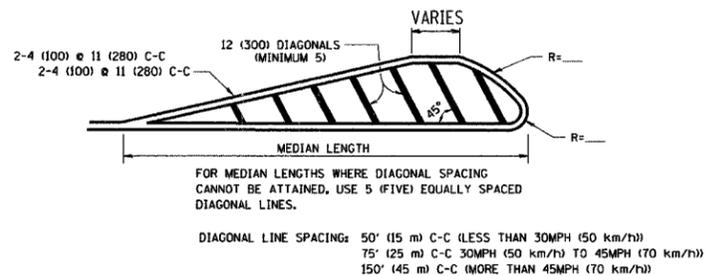
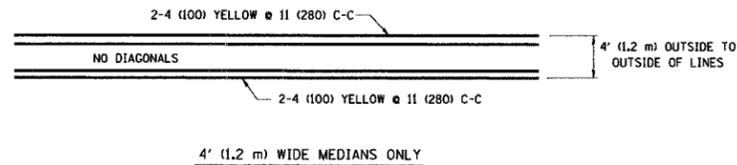


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

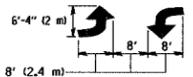
**TYPICAL LANE AND EDGE LINE MARKING**



**TYPICAL CROSSWALK MARKING**

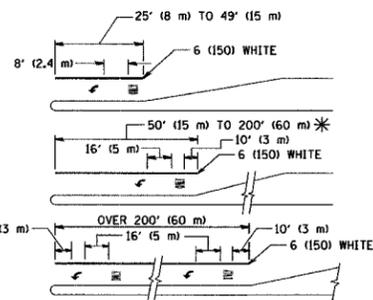


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



**TYPICAL PAINTED MEDIAN MARKING**

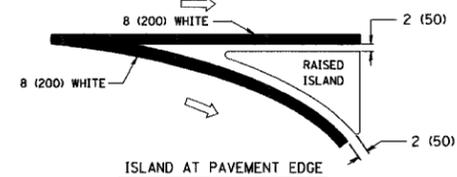
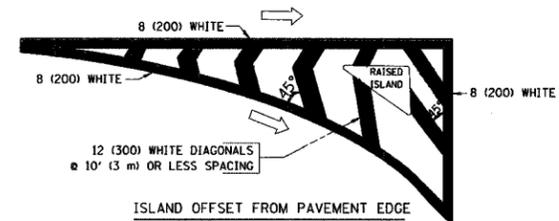
**TYPICAL LEFT (OR RIGHT) TURN LANE**



FULL SIZE LETTERS 8" (2.4 m) AND ARROWS SHALL BE USED. AREA = 15.6 SQ. FT. (1.5 m<sup>2</sup>) ONLY AREA = 20.8 SQ. FT. (1.9 m<sup>2</sup>)

\* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

**TYPICAL TURN LANE MARKING**



**TYPICAL ISLAND MARKING**

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5 1/2 (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5 1/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h) 30' (9 m) C-C OVER 45MPH (70 km/h)
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" 15 6" (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m <sup>2</sup> ) EACH "X"=54.0 SQ. FT. (5.0 m <sup>2</sup> )
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

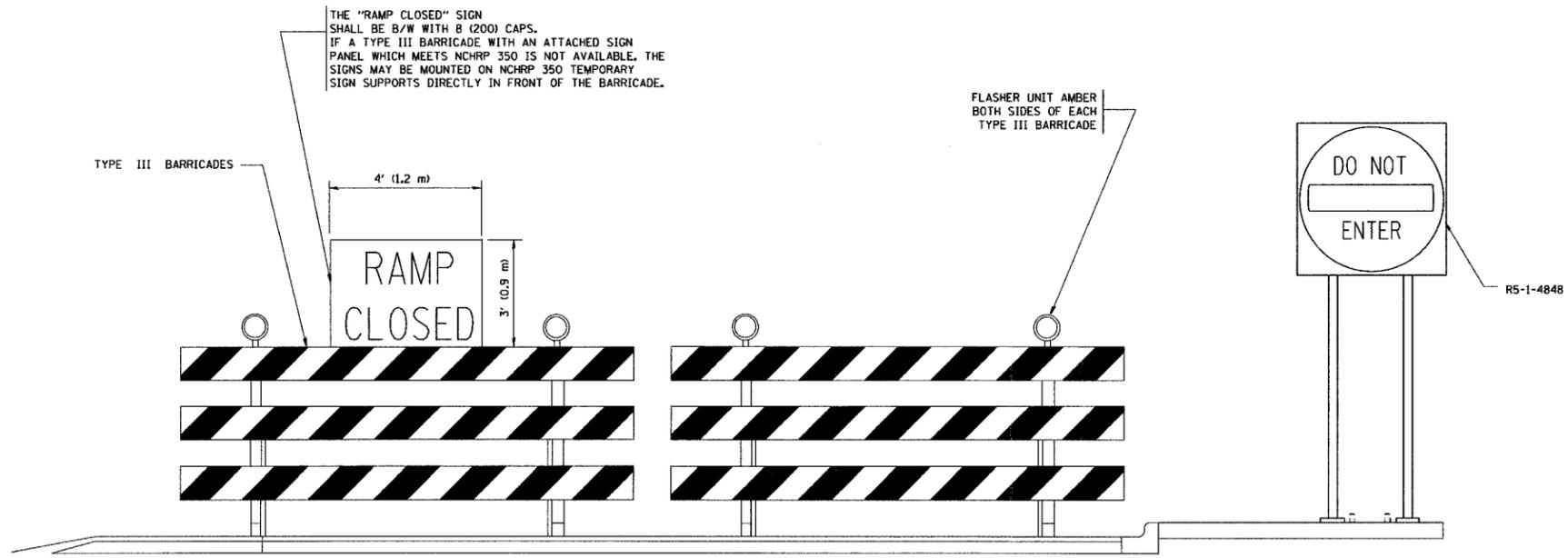
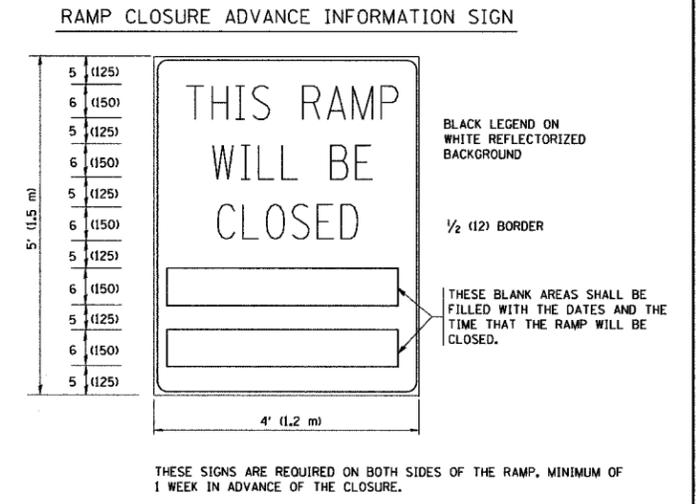
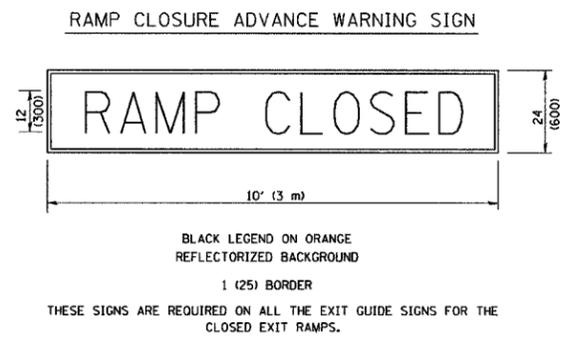
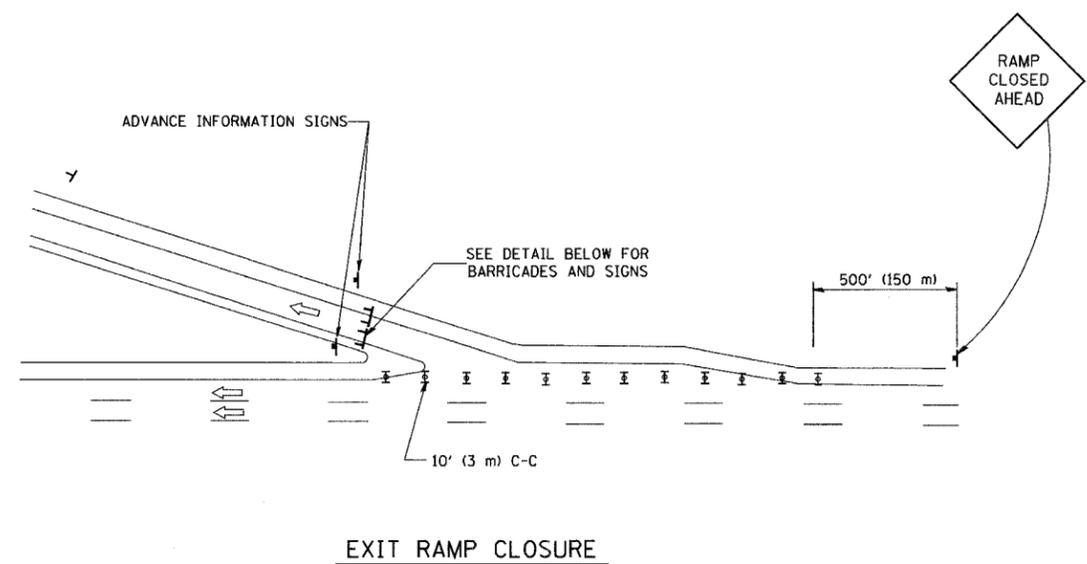
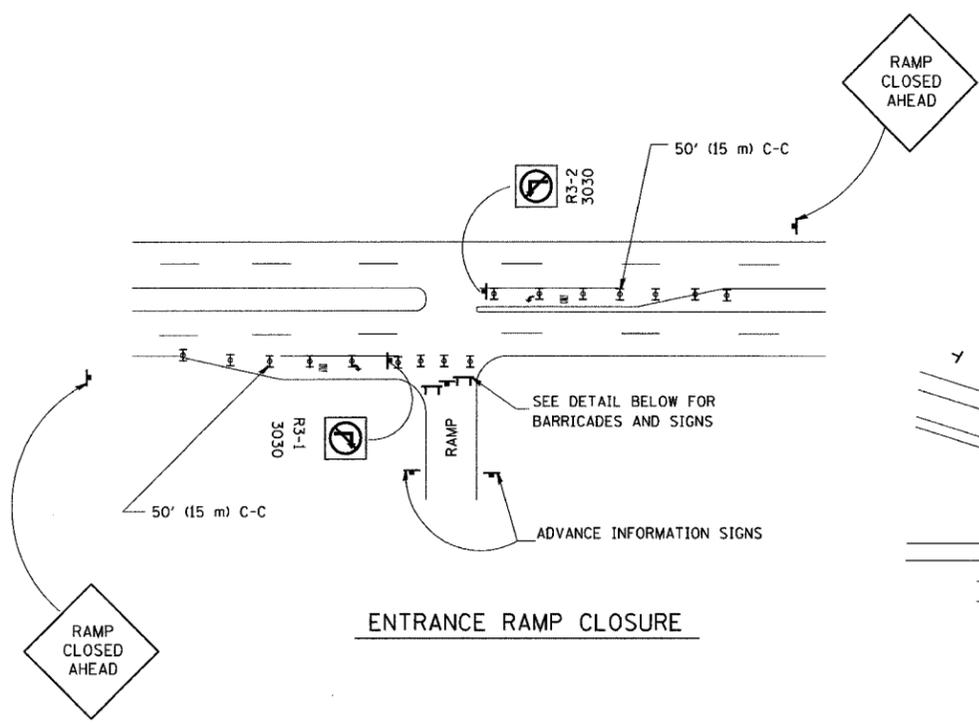
FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = W:\diststd\22x34\vc13.dgn	USER NAME = goglienob	DESIGNED - EVERS	REVISED - T. RAMMACHER 10-27-94
		DRAWN -	REVISED - A. HOUSEH 10-09-96
		CHECKED -	REVISED - A. HOUSEH 10-17-96
		DATE - 03-19-90	REVISED - T. RAMMACHER 01-06-00

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

DISTRICT ONE				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TYPICAL PAVEMENT MARKINGS				541	9 HB-I-1	LAKE	26	24
SCALE: NONE				TC-13		CONTRACT NO.		
SHEET NO. 1 OF 1 SHEETS				STA. TO STA.		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

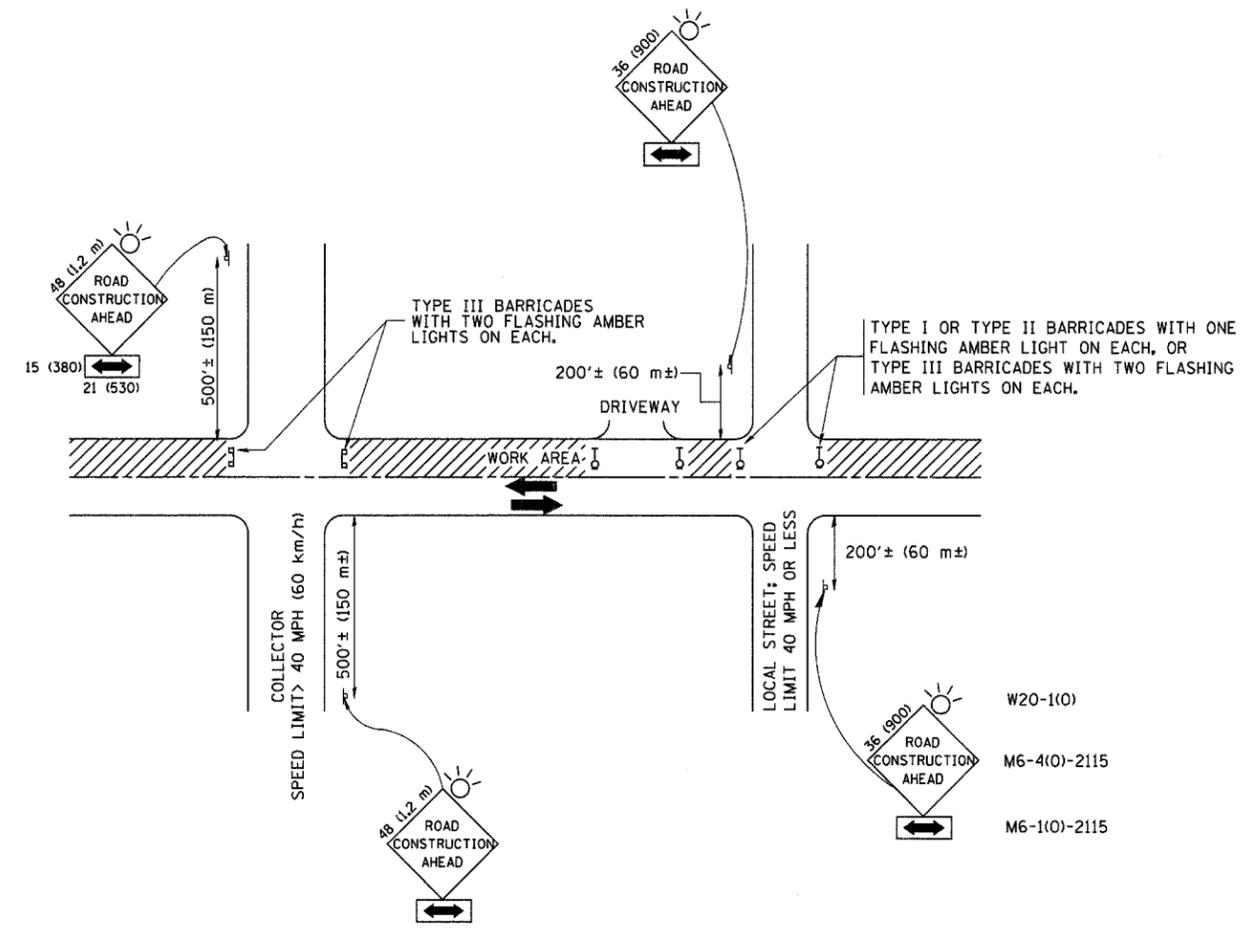


- SYMBOLS**
- ▬ TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
  - ▬ TYPE III BARRICADE WITH FLASHING LIGHT

- GENERAL NOTES:**
1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
  2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
  3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
  4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
  5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
  6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
  7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY FOUR (24) HOURS IN LENGTH.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\to08.dgn	USER NAME = gaglienobt	DESIGNED - DWS	REVISED - DWS 12-94	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>FREWAY ENTRANCE AND EXIST RAMP CLOSURE DETAILS</b>			F.A.P. RTE. 541	SECTION 9 HR-I-1	COUNTY LAKE	TOTAL SHEETS 26	SHEET NO. 25
PLOT SCALE = 58,000' / IN.	DRAWN - -	CHECKED - -	REVISED - DWS/JAF 12-02		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	<b>TC-08</b>			
PLOT DATE = 1/4/2008	DATE - 02-83	REVISED - JAF 02-06	REVISED - SPB 01-07		FED. ROAD DIST. NO. 1 [ILLINOIS] FED. AID PROJECT							



TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS
- SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
    - ONE ROAD CONSTRUCTION AHEAD SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
    - THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
  - SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
    - ONE ROAD CONSTRUCTION AHEAD SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
    - THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
  - WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:
- USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.
- C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.
- D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in millimeters (inches) unless otherwise shown.

FILE NAME = W:\diststa\22x34\to10.dgn	USER NAME = geglianobt	DESIGNED - LHA	REVISED - J. OBERLE 10-18-95	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS</b>			F.A.P. RTE. 541	SECTION 9 HB-I-1	COUNTY LAKE	TOTAL SHEETS 26	SHEET NO. 26
	PLOT SCALE = 50,000 ' / IN.	CHECKED -	REVISED - A. HOUSEH 03-06-96		SCALE: NONE	SHEET NO. 1 OF 1	SHEETS	STA.	TO STA.	CONTRACT NO.		
	PLOT DATE = 1/4/2008	DATE - 06-89	REVISED - T. RAMMACHER 01-06-00		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							