

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-1151	DUPAGE	27	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 60J34		

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES, SUMMARY OF QUANTITIES & HMA REQUIREMENTS
3	DETOUR PLAN
4	ROADWAY & PAVEMENT MARKING PLAN
5	ROADWAY DETAILS
6-24	STRUCTURAL PLANS
25-27	DISTRICT 1 DETAILS

**IDOT STANDARDS**

STD. NO.	DESCRIPTION
000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
630001-08	STEEL PLATE BEAM GUARDRAIL
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER

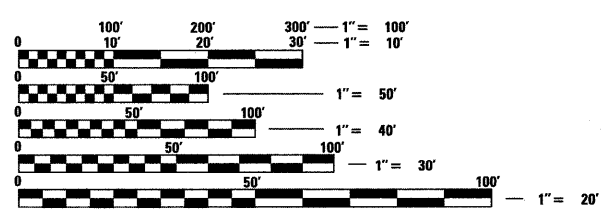
**DISTRICT 1 DETAILS** - INCLUDED AS PLAN SHEETS 25-27.

DETAIL	DESCRIPTION
TC-11	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)
TC-13	DISTRICT ONE TYPICAL PAVEMENT MARKINGS
TC-17	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES PARTIAL RAMP CLOSURES

**TRAFFIC DATA**

ADT = 12,200 VEHICLES  
POSTED SPEED LIMIT = 30 MPH

**PROJECT LOCATED IN THE VILLAGE OF ITASCA**



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.

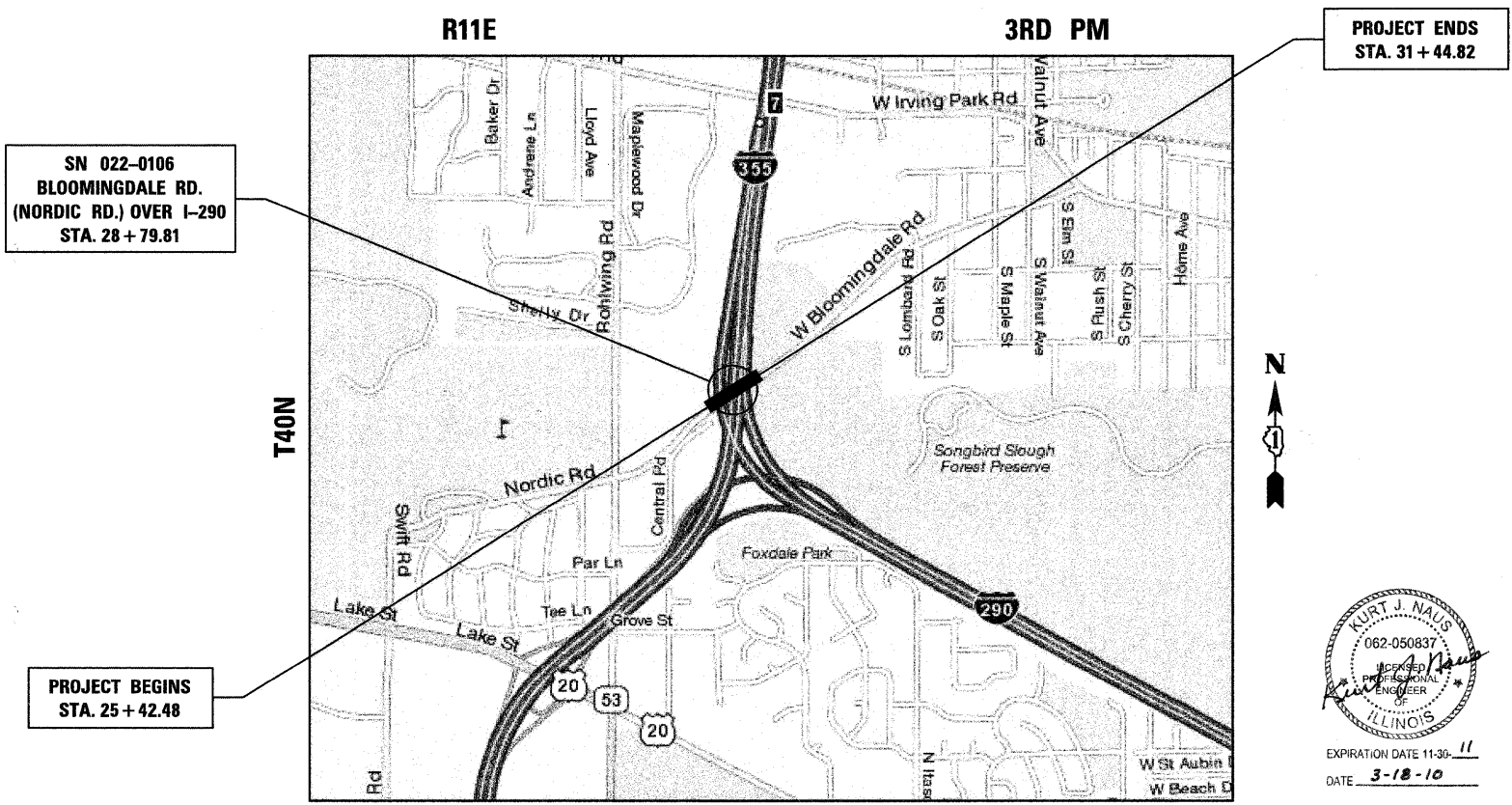
**J.U.L.I.E.**  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

**PROJECT ENGINEER: CRAIG BAUER (847) 705-4265**  
**PROJECT MANAGER: LONG TRAN (847) 705-4232**

**CONTRACT NO. 60J34**

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**PROPOSED**  
**HIGHWAY PLANS**

**FAI-290 (I-290 / EISENHOWER EXPRESSWAY)**  
**SECTION 2009-1151**  
**AT BLOOMINGDALE ROAD**  
**BRIDGE DECK OVERLAY & JOINT REPAIRS**  
**DUPAGE COUNTY**  
**C-91-224-10**



**KURT J. NAUS**  
062-050837  
REGISTERED PROFESSIONAL ENGINEER  
OF ILLINOIS  
EXPIRATION DATE 11-30-11  
DATE 3-18-10

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**

SUBMITTED MARCH 18, 2010

Diana M. O'Keefe DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER  
April 9 2010

Scott E. Stitt, P.E. ACTING ENGINEER OF DESIGN AND ENVIRONMENT  
April 9 2010

Christine M. Reed DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS**

**benesch**  
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450

**ADDISON TOWNSHIP**  
**LAYOUT MAP**  
**SCALE: 1 IN = 0.2 MI**  
**GROSS LENGTH OF PROJECT = 602.34 LIN FT = 0.114 MILES**  
**NET LENGTH OF PROJECT = 602.34 LIN FT = 0.114 MILES**

**GENERAL NOTES**

- BEFORE STARTING WORK, THE CONTRACTOR SHALL CALL JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION (J.U.L.I.E.) AT (800) 892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED UTILITIES. 72 HOUR ADVANCE NOTIFICATION IS REQUIRED.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES AS REQUIRED.
- THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.
- THE CONTRACTOR SHALL SWEEP AND CLEAN THE PAVEMENT SURFACE PER ARTICLE 107.15 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
- DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS. STATIONS ARE SHOWN FOR REFERENCE ONLY AND ARE APPROXIMATE.
- BEFORE BEGINNING WORK, THE CONTRACTOR SHALL RETAIN AND RECORD (FOR FUTURE REFERENCES), ALL EXISTING PAVEMENT MARKING LINES IN ORDER THAT THESE LOCATIONS CAN BE RE-ESTABLISHED FOR STRIPING. EXACT LOCATIONS OF ALL STRIPING SHALL BE AS DIRECTED BY THE ENGINEER.
- ALL PAVEMENT MARKINGS SHALL BE PLACED THROUGHOUT THE PROJECT ACCORDING TO DISTRICT ONE TYPICAL PAVEMENT MARKINGS.
- ALL GUARDRAIL, CURB, AND PAVED DITCH REPLACEMENT LIMITS WILL BE VERIFIED IN THE FIELD BY THE ENGINEER.
- DRAINAGE STRUCTURE ADJUSTMENTS AND CLEANING WILL BE VERIFIED IN THE FIELD BY THE ENGINEER.
- SAW CUTTING PRIOR TO ANY REMOVAL ITEMS NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER SHALL BE CONSIDERED INCLUDED IN THE COST OF THE ITEMS BEING REMOVED.
- THE CONTRACTOR SHALL USE CARE IN REMOVING OR EXCAVATING NEAR ALL EXISTING ITEMS WHICH WILL REMAIN. ANY DAMAGE DONE TO EXISTING ITEMS BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- TRAFFIC CONTROL AND PROTECTION REQUIRED FOR PROTECTIVE SHIELD INSTALLATION, PROTECTION AND MAINTENANCE OF EXISTING UNDERPASS LIGHTING, BEARING REPLACEMENT OR SUBSTRUCTURE CONCRETE REPAIR IS INCLUDED IN "TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)". DISTRICT ONE DETAIL TC-17, TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES PARTIAL RAMP CLOSURES, SHALL BE USED FOR CLOSING THE WB I-290 RIGHT SHOULDER FOR THE BEARING REPLACEMENT AND SUBSTRUCTURE CONCRETE REPAIR AT PIER 3.

**HOT-MIX ASPHALT REQUIREMENTS**

(FOR APPROACH PAVEMENT AND SHOULDER RESURFACING)

MIXTURE TYPE	THICKNESS	VOIDS
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL 9.5 mm)	1 1/2"	4% @ 70 GYR
LEVELING BINDER (MACHINE METHOD), N70 (IL 9.5 mm)	3/4" - 2 1/4"	4% @ 70 GYR

THE UNIT WEIGHT USED TO CALCULATE ALL HMA MIXTURE QUANTITIES IS 112 LBS/SQYD/IN.

THE "AC TYPE" FOR NON-POLYMERIZED HMA MIXES SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.

FOR "PERCENT OF RAP", SEE DISTRICT ONE SPECIAL PROVISIONS.

**SUMMARY OF QUANTITIES**

SPECIALTY ITEM	CODE NUMBER	ITEM	UNIT	URBAN TOTAL QUANTITY	ROADWAY	BRIDGE
					100% STATE	100% STATE
				1000	X271-2A	
	28000510	INLET FILTERS	EACH	4	4	
	40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	60	60	
	40600635	LEVELING BINDER (MACHINE METHOD), N70	TON	32	32	
	40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	301	301	
	40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	26	26	
	44004000	PAVED DITCH REMOVAL	FOOT	97	97	
	50102400	CONCRETE REMOVAL	CU YD	23.2		23.2
	50157300	PROTECTIVE SHIELD	SQ YD	2,933		2,933
	50300255	CONCRETE SUPERSTRUCTURE	CU YD	26.9		26.9
	50300260	BRIDGE DECK GROOVING	SQ YD	2,384		2,384
	50300300	PROTECTIVE COAT	SQ YD	2,986		2,986
	50300530	FLOOR DRAIN EXTENSION	EACH	6		6
	50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	3,950		3,950
	50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	12		12
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,940		2,940
	52000110	PREFORMED JOINT STRIP SEAL	FOOT	115.0		115.0
	52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12		12
	52100520	ANCHOR BOLTS, 1"	EACH	12		12
	52100540	ANCHOR BOLTS, 1 1/2"	EACH	12		12
	58700300	CONCRETE SEALER	SQ FT	797		797
	60300105	FRAMES AND GRATES TO BE ADJUSTED	EACH	4	4	
	63300540	REMOVAL AND REPLACEMENT OF STEEL PLATE BEAM GUARD RAIL, SINGLE RAIL	FOOT	13	13	
	67000200	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	
	70106800	CHANGEABLE MESSAGE SIGN	CAL MO	9	9	
	70300240	TEMPORARY PAVEMENT MARKING - LINE 6"	FOOT	500	500	
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	500	500	
*	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	400	400	
*	78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	2,106	2,106	
*	78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	4	4	
*	78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	12	12	
*	78200530	BARRIER WALL MARKERS, TYPE C	EACH	40	40	
*	78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	4	4	
	XZ193500	BRIDGE DECK <i>MICROSILICA</i> CONCRETE OVERLAY, 2 1/4"	SQ YD	2,466		2,466
*	XD323574	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	3	3	
	XD325115	ADJUSTING DRAINAGE SCUPPERS, TYPE B	EACH	4		4
	XD325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	191		191
	XD328653	PAVED DITCH (SPECIAL)	SQ YD	23	23	
	XD328765	CLEANING AND PAINTING EXPOSED REBAR (SPECIAL)	SQ FT	50		50
	X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1	1	
	X7013820	TRAFFIC CONTROL SURVEILLANCE, EXPRESSWAYS	CAL DA	30	30	
	X8210305	PROTECTION AND MAINTENANCE OF EXISTING UNDERPASS LIGHTING	L SUM	1	1	
	Z0006204	BRIDGE DECK HYDRO-SCARIFICATION, 1/2"	SQ YD	2,466		2,466
	Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1	
	Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	5.0		5.0
	Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	9.3		9.3
	Z0018500	DRAINAGE STRUCTURES TO BE CLEANED	EACH	1	1	
	Z0030260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	1	1	
	Z0053750	RETROFIT CONCRETE PARAPET	FOOT	1,035		1,035

FILE NAME =	DESIGNED - EJA	REVISED -
	DRAWN - EJA	REVISED -
USER NAME =	CHECKED - AJP	REVISED -
PLOT DATE = 03/22/2010	DATE - 3/19/10	REVISED -

**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, SUMMARY OF QUANTITIES  
& HMA REQUIREMENTS**

*\*Specialty Items*

SCALE: N.T.S. SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 2
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60J34	

**LEGEND**

**ROUTE MARKERS**

FOR U.S. ROUTES  
M1-40-2424

FOR ILLINOIS ROUTES  
M1-50-2424

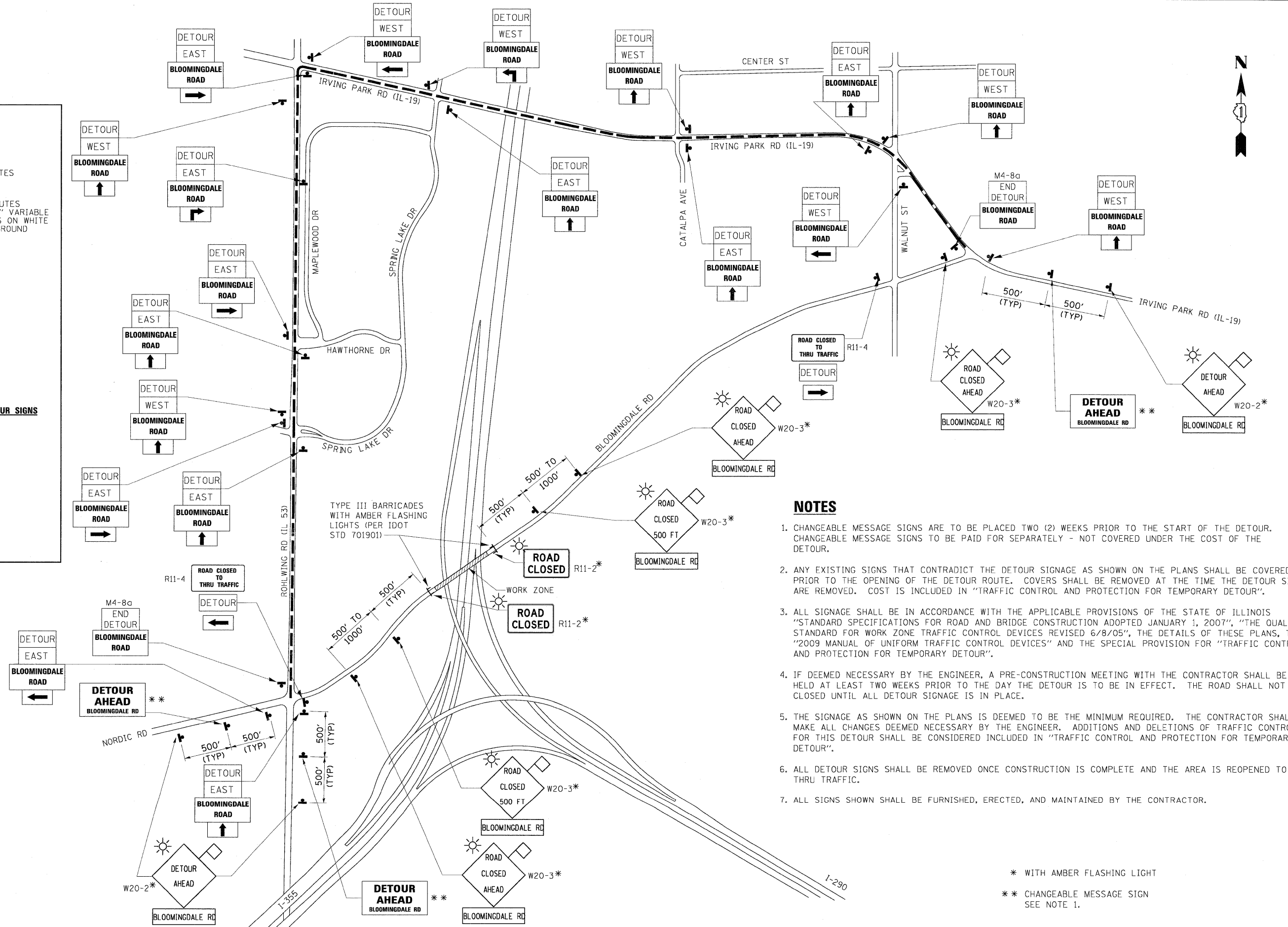
MAIN STREET  
R.R. UNMARKED ROUTES  
SPECIAL 24" x 18" VARIABLE  
4" BLACK LETTERS ON WHITE  
REFLECTIVE BACKGROUND

**ARROW SIGNS**

- M5-1L-2115
- M5-1R-2115
- M6-1L-2115
- M6-1R-2115
- M6-3-2115

**CARDINAL DIRECTION & DETOUR SIGNS**

- NORTH M3-1-219
- EAST M3-2-219
- SOUTH M3-3-219
- WEST M3-4-219
- DETOUR M1-7-219



**NOTES**

1. CHANGEABLE MESSAGE SIGNS ARE TO BE PLACED TWO (2) WEEKS PRIOR TO THE START OF THE DETOUR. CHANGEABLE MESSAGE SIGNS TO BE PAID FOR SEPARATELY - NOT COVERED UNDER THE COST OF THE DETOUR.
2. ANY EXISTING SIGNS THAT CONTRADICT THE DETOUR SIGNAGE AS SHOWN ON THE PLANS SHALL BE COVERED PRIOR TO THE OPENING OF THE DETOUR ROUTE. COVERS SHALL BE REMOVED AT THE TIME THE DETOUR SIGNS ARE REMOVED. COST IS INCLUDED IN "TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR".
3. ALL SIGNAGE SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2007", "THE QUALITY STANDARD FOR WORK ZONE TRAFFIC CONTROL DEVICES REVISED 6/8/05", THE DETAILS OF THESE PLANS, THE "2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AND THE SPECIAL PROVISION FOR "TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR".
4. IF DEEMED NECESSARY BY THE ENGINEER, A PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR SHALL BE HELD AT LEAST TWO WEEKS PRIOR TO THE DAY THE DETOUR IS TO BE IN EFFECT. THE ROAD SHALL NOT BE CLOSED UNTIL ALL DETOUR SIGNAGE IS IN PLACE.
5. THE SIGNAGE AS SHOWN ON THE PLANS IS DEEMED TO BE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL MAKE ALL CHANGES DEEMED NECESSARY BY THE ENGINEER. ADDITIONS AND DELETIONS OF TRAFFIC CONTROL FOR THIS DETOUR SHALL BE CONSIDERED INCLUDED IN "TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR".
6. ALL DETOUR SIGNS SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE AREA IS REOPENED TO THRU TRAFFIC.
7. ALL SIGNS SHOWN SHALL BE FURNISHED, ERECTED, AND MAINTAINED BY THE CONTRACTOR.

\* WITH AMBER FLASHING LIGHT  
\*\* CHANGEABLE MESSAGE SIGN  
SEE NOTE 1.

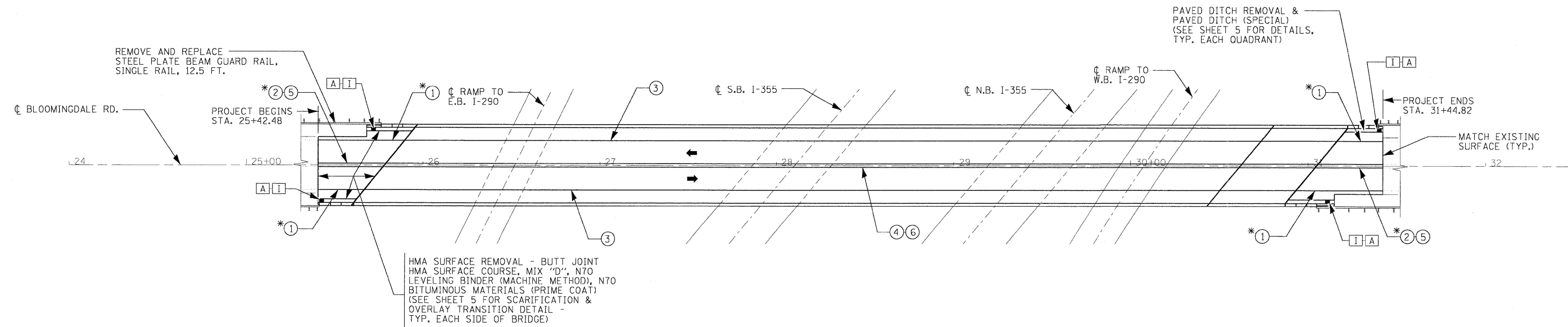
FILE NAME =	DESIGNED - EJA	REVISED -
USER NAME =	DRAWN - EJA	REVISED -
PLOT DATE = 03/22/2010	CHECKED - AJP	REVISED -
	DATE - 3/19/10	REVISED -

**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>BLOOMINGDALE ROAD DETOUR PLAN</b>	
SCALE: N.T.S.	SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 290	SECTION 2009-1151	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 3
FED. ROAD DIST. NO. ILLINOIS			CONTRACT NO. 60J34	



**LEGEND**

- ① THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE EDGE LINE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (YELLOW DOUBLE LINE)
- ③ POLYUREA PAVEMENT MARKING TYPE 1 - LINE 4" (WHITE EDGE LINE)
- ④ POLYUREA PAVEMENT MARKING TYPE 1 - LINE 4" (YELLOW DOUBLE LINE)
- ⑤ RAISED REFLECTIVE PAVEMENT MARKERS
- ⑥ RAISED REFLECTIVE PAVEMENT MARKERS (BRIDGE)
- A FRAMES AND GRATES TO BE ADJUSTED
- I INLET FILTER
- \* APPLIED TO HMA SURFACE

**NOTES**

1. SEE IDOT DISTRICT 1 DETAIL TC-11 "RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT)" FOR PLACEMENT AND TYPE OF RAISED REFLECTIVE PAVEMENT MARKERS.
2. SEE IDOT DISTRICT 1 DETAIL TC-13 "DISTRICT ONE TYPICAL PAVEMENT MARKINGS" FOR PLACEMENT AND TYPE OF PAVEMENT MARKINGS.

FILE NAME =	DESIGNED - EJA	REVISED -
USER NAME =	DRAWN - EJA	REVISED -
PLOT DATE = 03/22/2010	CHECKED - AJP	REVISED -
	DATE - 3/19/10	REVISED -

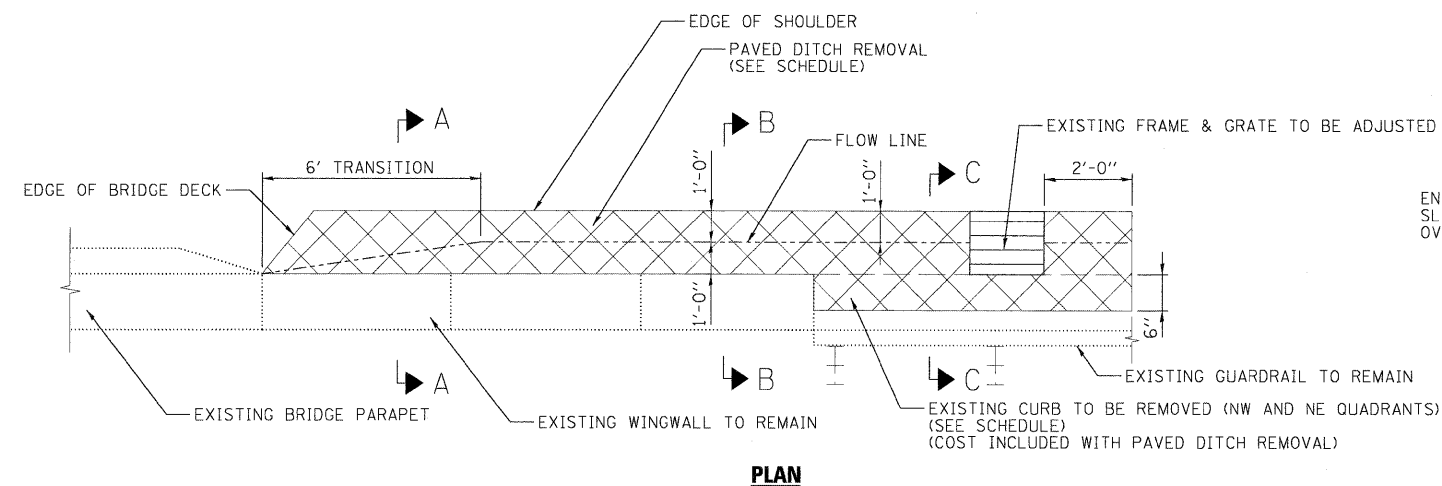
**benesch**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

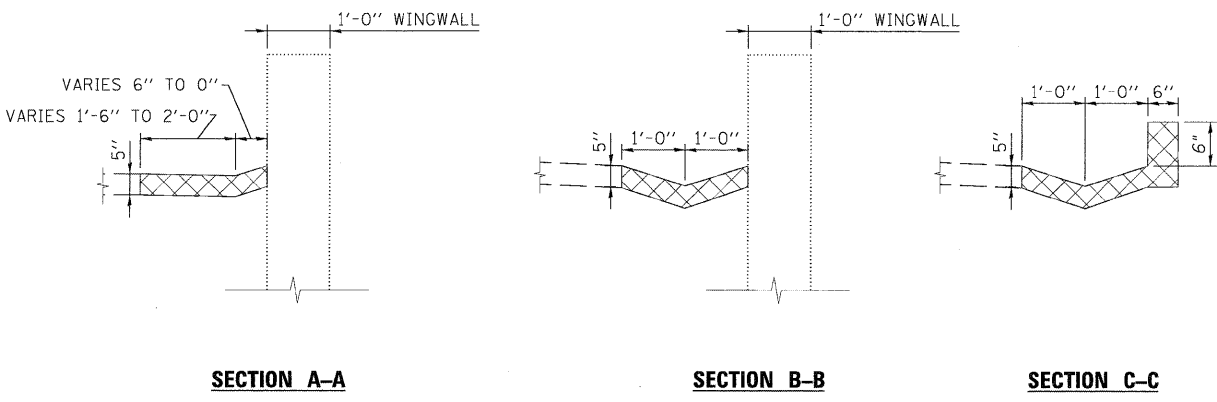
**BLOOMINGDALE ROAD  
ROADWAY & PAVEMENT MARKING PLAN**

SCALE: 1" = 30' SHEET NO. 1 OF 1 SHEETS STA. 25+42.48 TO STA. 31+44.82

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-1151	DUPAGE	27	4
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60J34	



**PLAN**



**SECTION A-A**

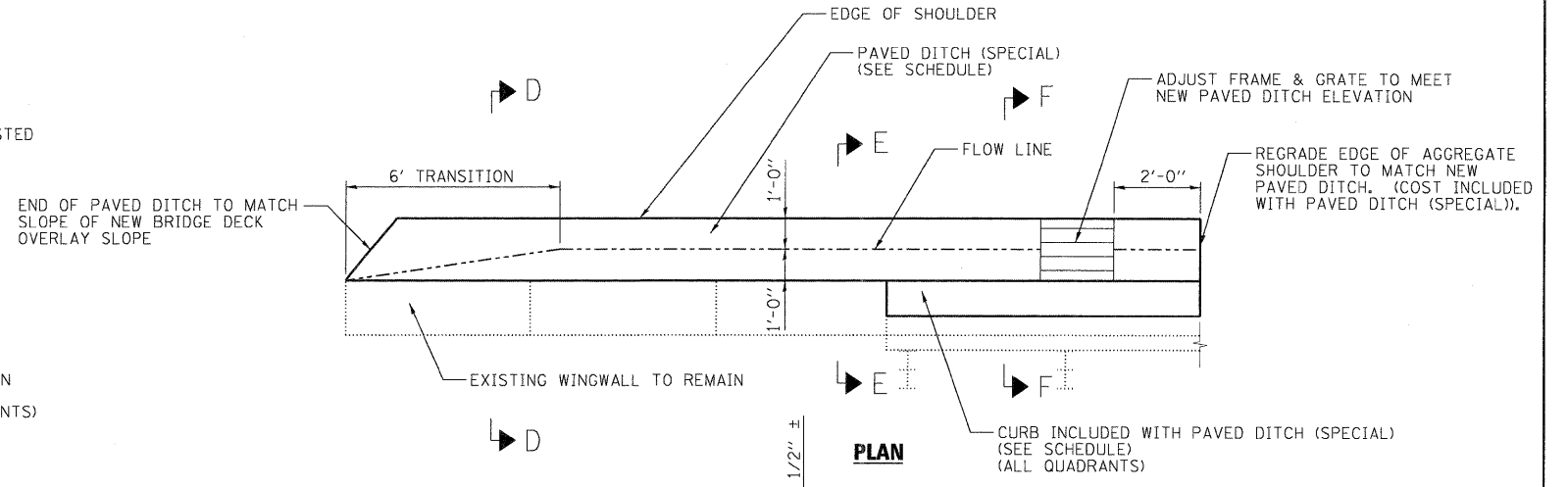
**SECTION B-B**

**SECTION C-C**

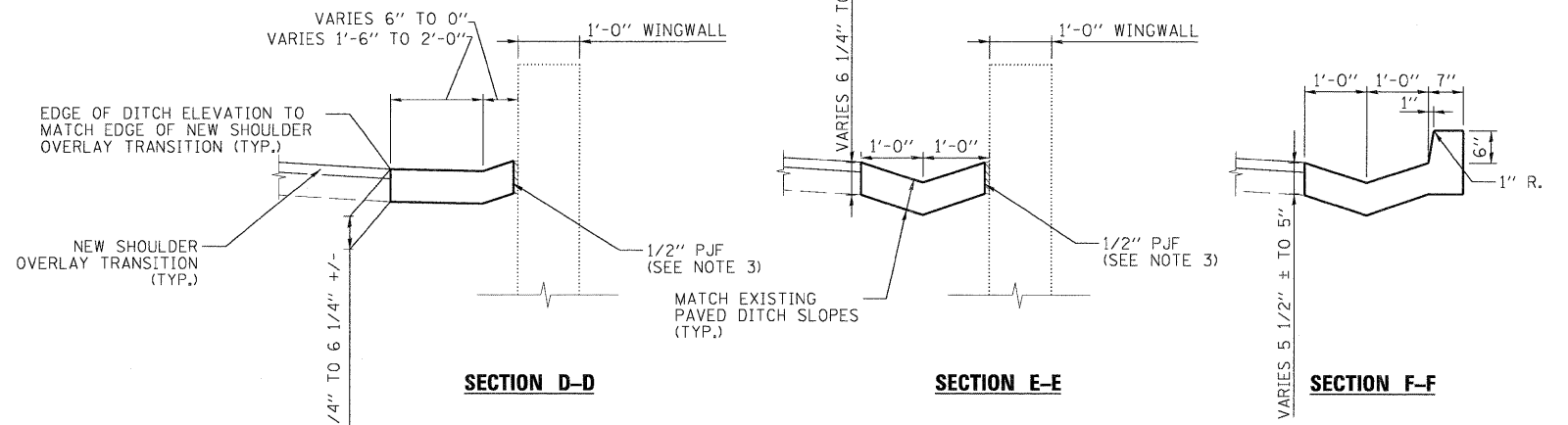
☒ PAVED DITCH REMOVAL

**PAVED DITCH REMOVAL DETAILS**

(SOUTHEAST QUADRANT SHOWN - OTHER QUADRANTS SIMILAR)



**PLAN**



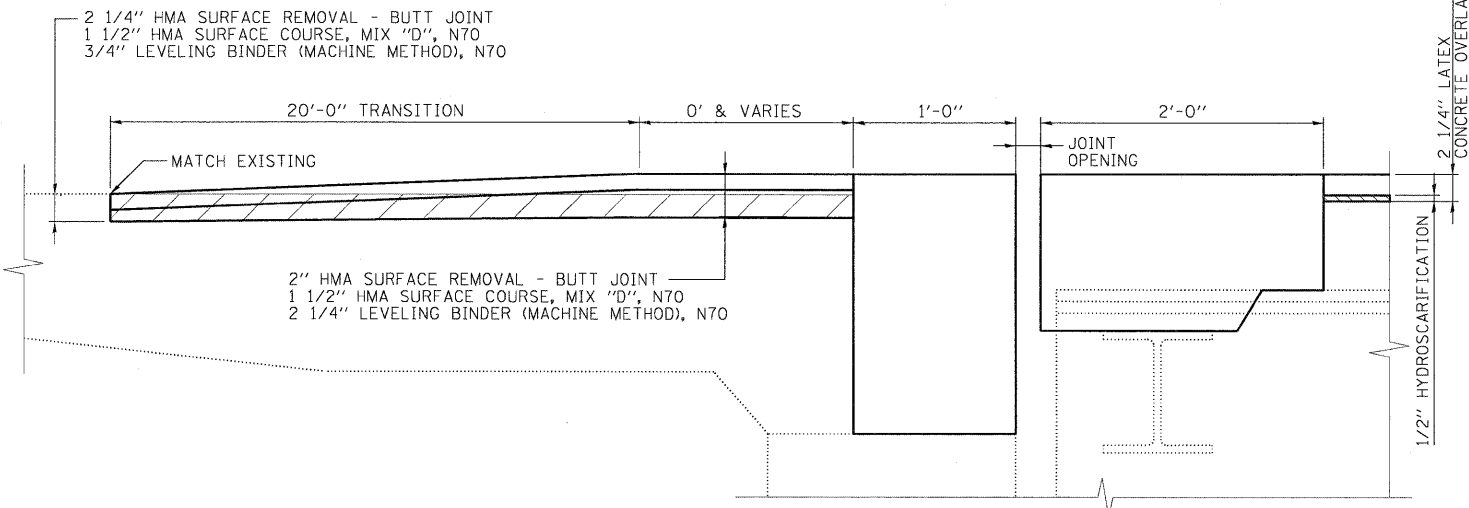
**SECTION D-D**

**SECTION E-E**

**SECTION F-F**

**PROPOSED PAVED DITCH DETAILS**

(SOUTHEAST QUADRANT SHOWN - OTHER QUADRANTS SIMILAR)



**SCARIFICATION & OVERLAY TRANSITION DETAIL**

(WEST APPROACH SHOWN - EAST APPROACH SIMILAR FOR TRANSITION ONLY)

**PAVED DITCH SCHEDULE OF QUANTITIES**

LOCATION	PAVED DITCH REMOVAL (LF)	PAVED DITCH (SPECIAL) (SY)	CURB REMOVAL (LF)*	NEW CURB (LF)*
NORTHWEST QUADRANT	27	6.0	8	8
SOUTHWEST QUADRANT	24	5.8	0	7
NORTHEAST QUADRANT	25	5.6	7	7
SOUTHEAST QUADRANT	21	5.1	0	5

\* FOR INFORMATION ONLY. COST INCLUDED WITH PAVED DITCH REMOVAL AND PAVED DITCH (SPECIAL).

**NOTES**

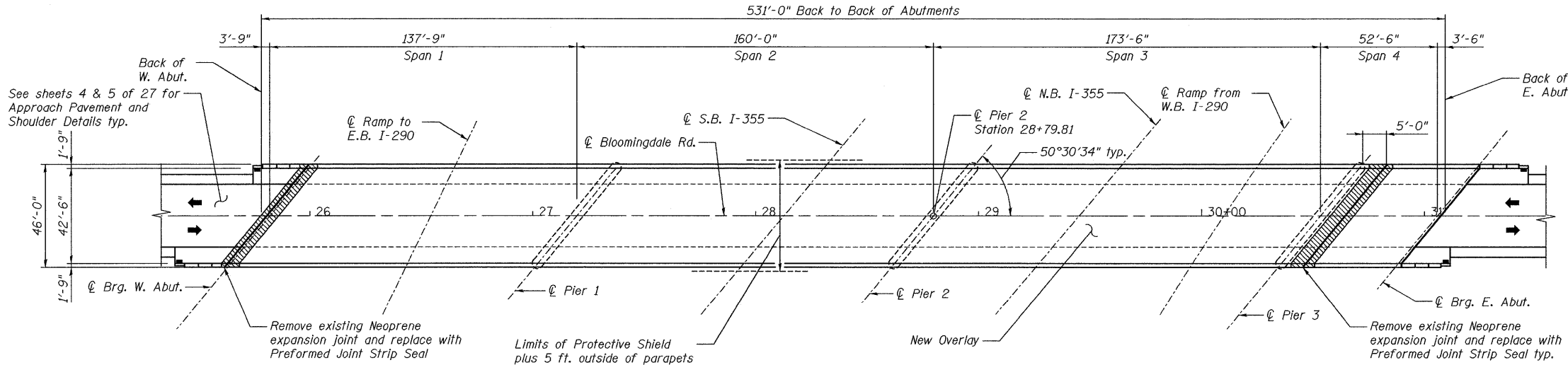
1. WORK THIS SHEET WITH SHEET 4.
2. EACH OF THE FOUR (4) DRAINAGE STRUCTURES LOCATED AT THE PAVED DITCHES SHALL BE CLEANED FOLLOWING THE PAVED DITCH RECONSTRUCTION AND APPROACH PAVEMENT RESURFACING. SEE SPECIAL PROVISION "CLEANING EXISTING DRAINAGE STRUCTURES."
3. PJF DENOTES PREFORMED JOINT FILLER. COST INCLUDED WITH "PAVED DITCH (SPECIAL)".
4. PAVED DITCH CROSS SLOPES SHOULD MATCH THAT OF EXISTING PAVED DITCHES.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**Existing Structure:**  
The bridge is a four-span continuous, composite plate girder bridge with a pin and link connection in Span 4 and an 8-inch reinforced concrete deck with no overlay. The original structure was built in 1969. In 1996, the pin and link connection was replaced. In 2004, the structure was patched and the expansion joints were reconstructed to neoprene expansion joints.

A detour will be utilized to maintain traffic during construction.

No salvage.



**PLAN**

**DESIGN SPECIFICATIONS**

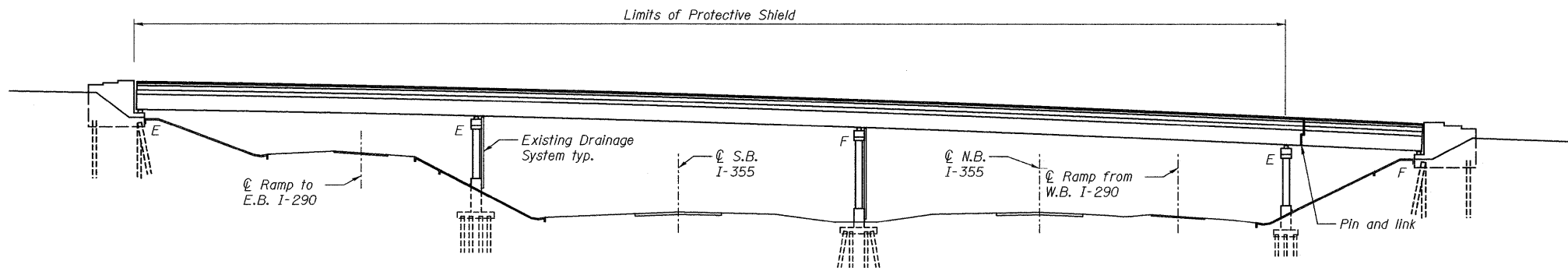
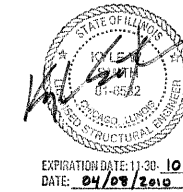
2002 AASHTO Standard Specifications  
for Highway Bridges, 17th Edition

**DESIGN STRESSES**

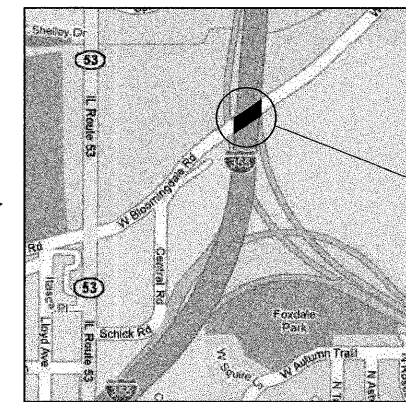
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**SCOPE OF WORK**

1. Bridge deck hydro-scarification.
2. Bridge deck patching.
3. Mill and resurface approach pavement and shoulders.
4. Reconstruct deck joints at West Abutment and at expansion joint near Pier 3 with preformed joint strip seals.
5. Eliminate alternating floor drains and add extensions to remaining floor drains.
6. Adjust drainage scuppers to elevation of new overlay.
7. Remove existing aluminum railing and construct parapet retrofit.
8. Place new microsilica concrete overlay on deck.
9. Remove bearings at West Abutment and Pier 3 and replace with elastomeric bearings.
10. Structural repair of concrete at Abutments and Pier 3.
11. Apply protective coat to parapets and deck.
12. Apply concrete sealer to West Abutment seat and backwall and Pier 3 seat.
13. Remove and reconstruct concrete paved ditches along the sides of each approach slab.



**ELEVATION**



**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION  
BLOOMINGDALE ROAD OVER I-290  
DUPAGE COUNTY  
STATION 28+79.81  
STRUCTURE NO. 022-0106**

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

**benesch**

alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 1 19 SHEETS	F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 6
	CONTRACT NO. 60J34			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

1. All new Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts (in painted areas and M164 Type 3 in unpainted areas). Holes shall be subpunched or subdrilled 1/16" diameter and reamed in the field to 3/16" diameter for 3/4" diameter bolts, unless otherwise noted.
2. Calculated weight of Structural Steel = 3,950 lbs.
3. No field welding is permitted except as specified in the contract documents.
4. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. 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 qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch 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.

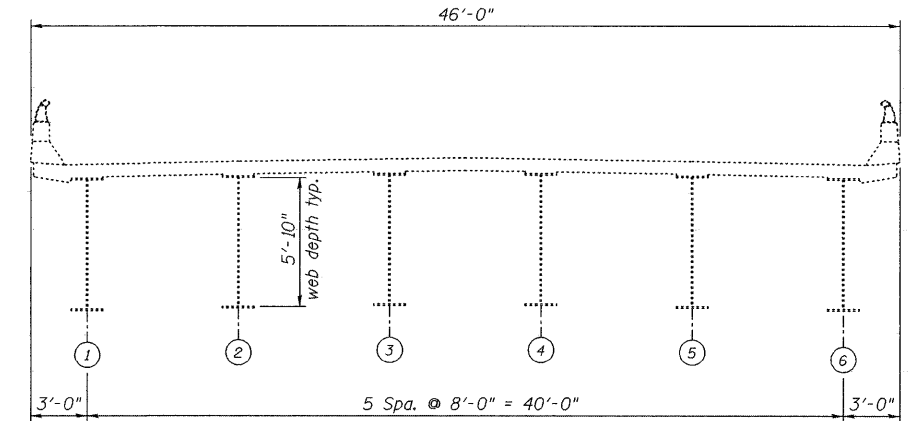
7. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations 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.
8. Concrete Sealer shall be applied to the West Abutment backwall and seats. Concrete sealer shall also be applied to the Pier 3 seats. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application. Cost included with Concrete Sealer.
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
10. All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost for steel bearing extension painting included with Furnishing and Erecting Structural Steel. Cost for floor drain extension painting included with Floor Drain Extension.
11. Existing Structural Steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".
12. A detour shall be utilized to maintain traffic during construction.
13. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
14. Protective Coat shall be applied to the new Microsilica Concrete Overlay on the deck. Protective Coat shall also be applied to the top and inside faces of the parapets and wingwalls.
15. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.
16. For Maintenance of Lighting System and Protection and Maintenance of Existing Underpass Lighting, see Special Provisions.
17. The final grades and cross-slopes for the Microsilica Concrete Overlay and expansion joint reconstruction shall conform to the existing grades plus the net increase in deck thickness specified in the plans. Any preliminary survey required for the Contractor to conform to these grades and to fabricate the preformed joint strip seal expansion joints shall not be paid for separately but shall be included in the cost of the major items of work involved.

**INDEX OF SHEETS**

- |       |   |
|-------|---|
| 1     | General Plan and Elevation                          |
| 2     | General Notes, Bill of Material and Index of Sheets |
| 3     | Bridge Deck Repairs                                 |
| 4     | Parapet Retrofit Details                            |
| 5     | Expansion Joint Repairs 1 of 2                      |
| 6     | Expansion Joint Repairs 2 of 2                      |
| 7     | Expansion Joint Details                             |
| 8     | Preformed Joint Strip Seal                          |
| 9     | Bearing Details 1 of 2                              |
| 10    | Bearing Details 2 of 2                              |
| 11    | Substructure Repairs                                |
| 12    | Drain Scupper Adjustment Details                    |
| 13-19 | Existing Plan Information                           |

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	23.2		23.2
Protective Shield	Sq Yd	2,933		2,933
Concrete Superstructure	Cu Yd	26.9		26.9
Bridge Deck Grooving	Sq Yd	2,384		2,384
Protective Coat	Sq Yd	2,986		2,986
Floor Drain Extension	Each	6		6
Furnishing and Erecting Structural Steel	Pound	3,950		3,950
Jack and Remove Existing Bearings	Each	12		12
Reinforcement Bars, Epoxy Coated	Pound	2,940		2,940
Preformed Joint Strip Seal	Foot	115.0		115.0
Elastomeric Bearing Assembly, Type II	Each	12		12
Anchor Bolts, 1"	Each	12		12
Anchor Bolts, 1 1/2"	Each	12		12
Concrete Sealer	Sq Ft		797	797
Bridge Deck Microsilica Concrete Overlay 2 1/4"	Sq Yd	2,466		2,466
Adjusting Drainage Scuppers, Type B	Each	4		4
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft		191	191
Cleaning and Painting Exposed Rebar (Special)	Sq Ft	50		50
Bridge Deck Hydro-Scarification, 1/2"	Sq Yd	2,466		2,466
Deck Slab Repair (Full Depth, Type I)	Sq Yd	5.0		5.0
Deck Slab Repair (Full Depth, Type II)	Sq Yd	9.3		9.3
Retrofit Concrete Parapet	Foot	1,035		1,035



**EXISTING DECK CROSS SECTION**  
(Looking East)

**GENERAL NOTES, BILL OF MATERIAL  
AND INDEX OF SHEETS  
STRUCTURE NO. 022-0106**

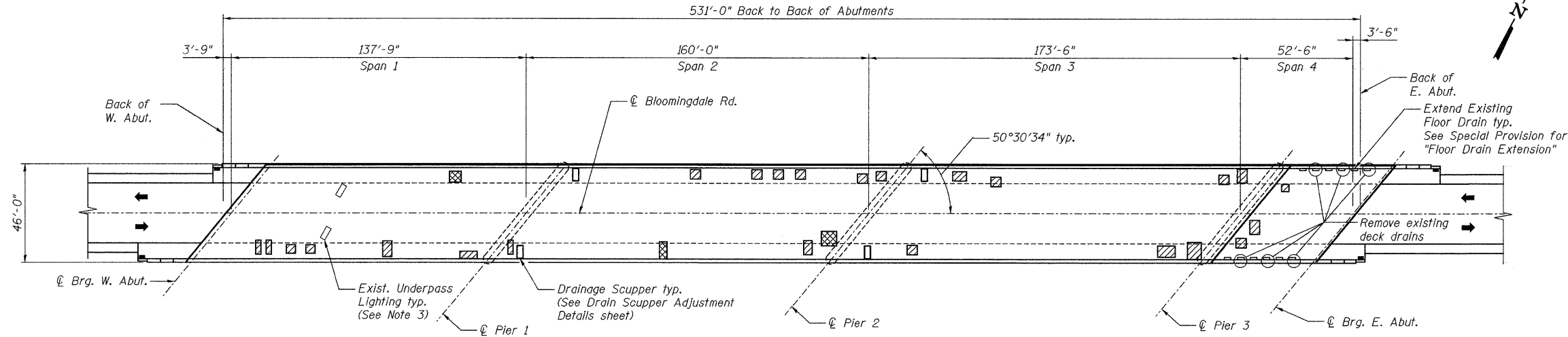
DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

**benesch**

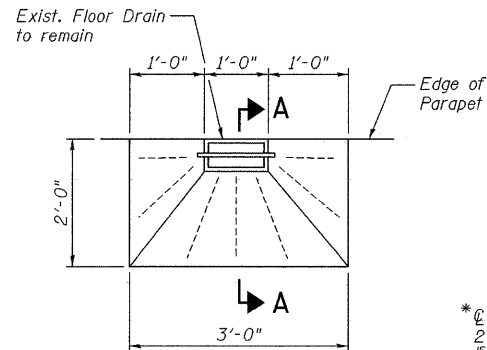
**alfred benesch & company**  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-665-0450 Job No. 10032.13

SHEET NO. 2  19 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-115I	DUPAGE	27	7
CONTRACT NO. 60J34					
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

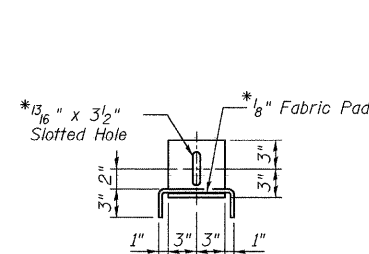


PLAN

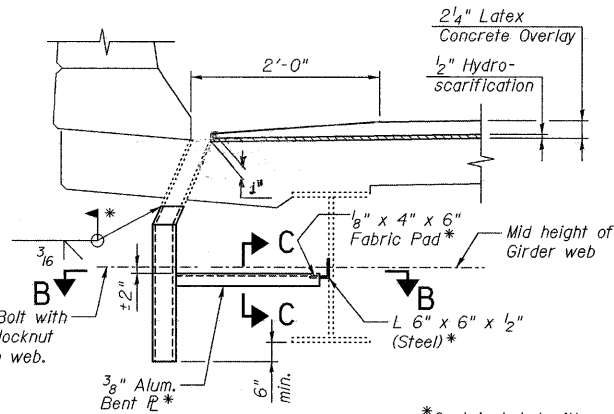


PLAN

CONCRETE OVERLAY AT FLOOR DRAINS TO REMAIN

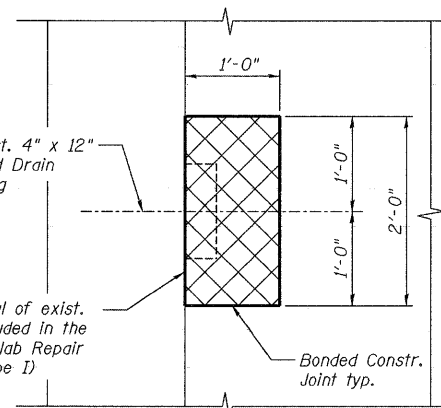
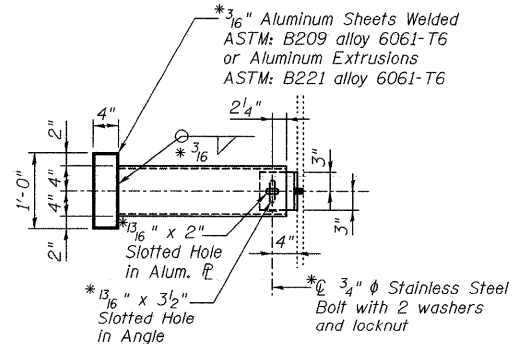


SECTION C-C

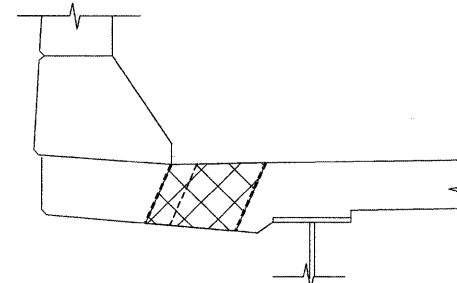


SECTION A-A

SECTION B-B

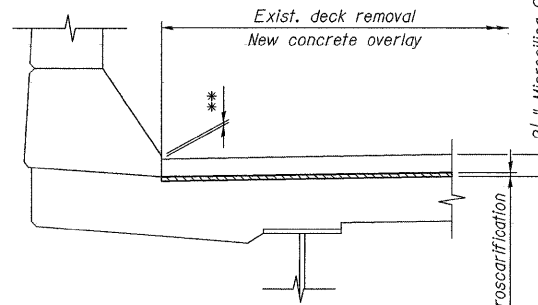


PLAN - DRAIN REMOVAL  
(6 total)



SECTION AT DRAIN

\*\* Contractor shall increase scarification thickness or reduce overlay thickness as directed by the Engineer to ensure this dimension is never less than 0".



SCARIFICATION & OVERLAY  
DETAIL AT PARAPET

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	16.9▲
	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5.0
	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	9.3
	Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	50
	Protective Shield	Sq. Yd.	2,933
	Bridge Deck Grooving	Sq. Yd.	2,384
	Protective Coat	Sq. Yd.	2,986
	Bridge Deck Microsilica Concrete Overlay, 2 1/4"	Sq. Yd.	2,466
	Bridge Deck Hydro-Scarification, 1/2"	Sq. Yd.	2,466
	Floor Drain Extension	Each	6

▲ For information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Microsilica Concrete Overlay."

Notes:

- Deck repair areas are estimated based on an IDOT inspection in October of 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield required for scarification operations and deck slab and/or parapet repairs shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield, see General Plan and Elevation sheet.
- Extreme care shall be taken not to damage existing underpass lighting during construction. See Special Provision for "Protection and Maintenance of Existing Underpass Lighting".
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Microsilica Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 1/2".
- Proposed bolt holes in the existing Girder shall be subpunched or subdrilled 13/16" diameter and reamed in the field to 5/8" diameter. Cost included with Floor Drain Extension.

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

benesch

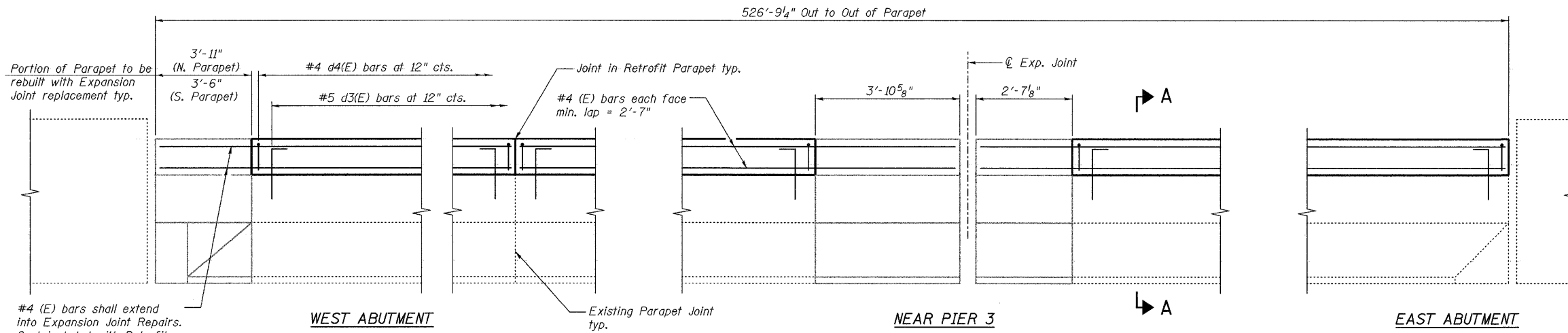
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 3 19 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-115I	DUPAGE	27	8
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60J34					

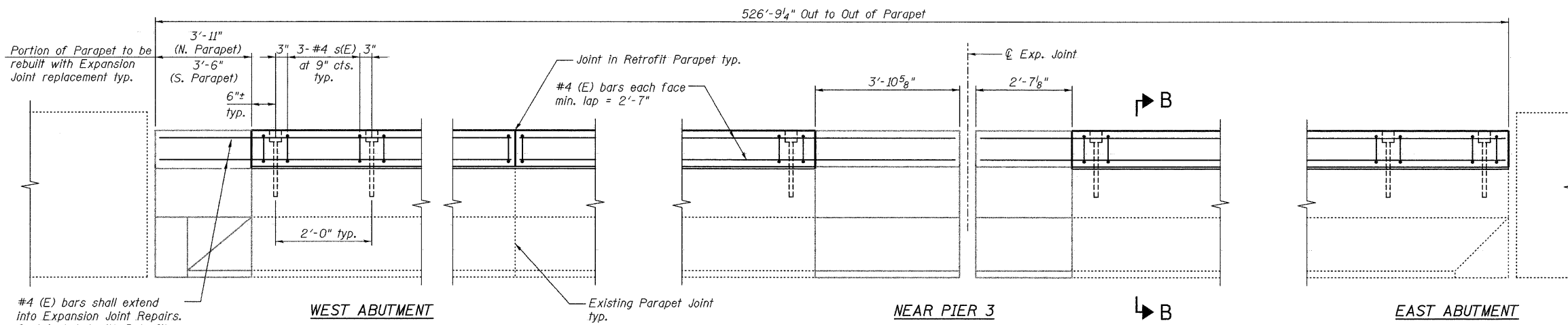
BRIDGE DECK REPAIRS  
STRUCTURE NO. 022-0106



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**INSIDE ELEVATION OF PARAPET**  
(Cast-In-Place Alternate)



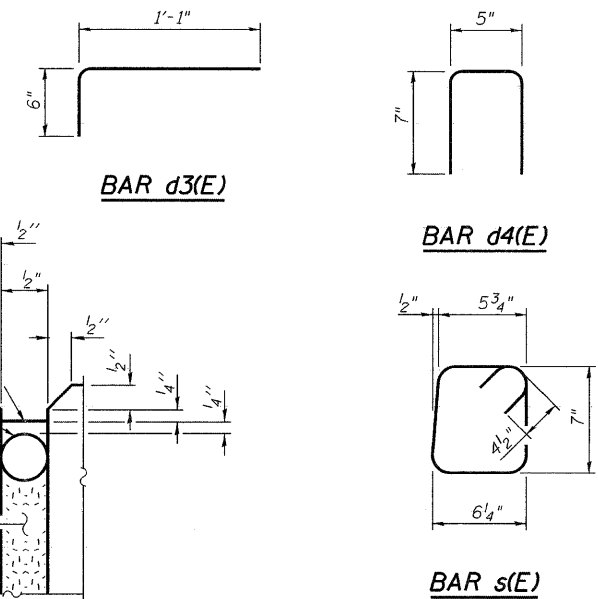
**INSIDE ELEVATION OF PARAPET**  
(Precast Alternate)

**Notes:**

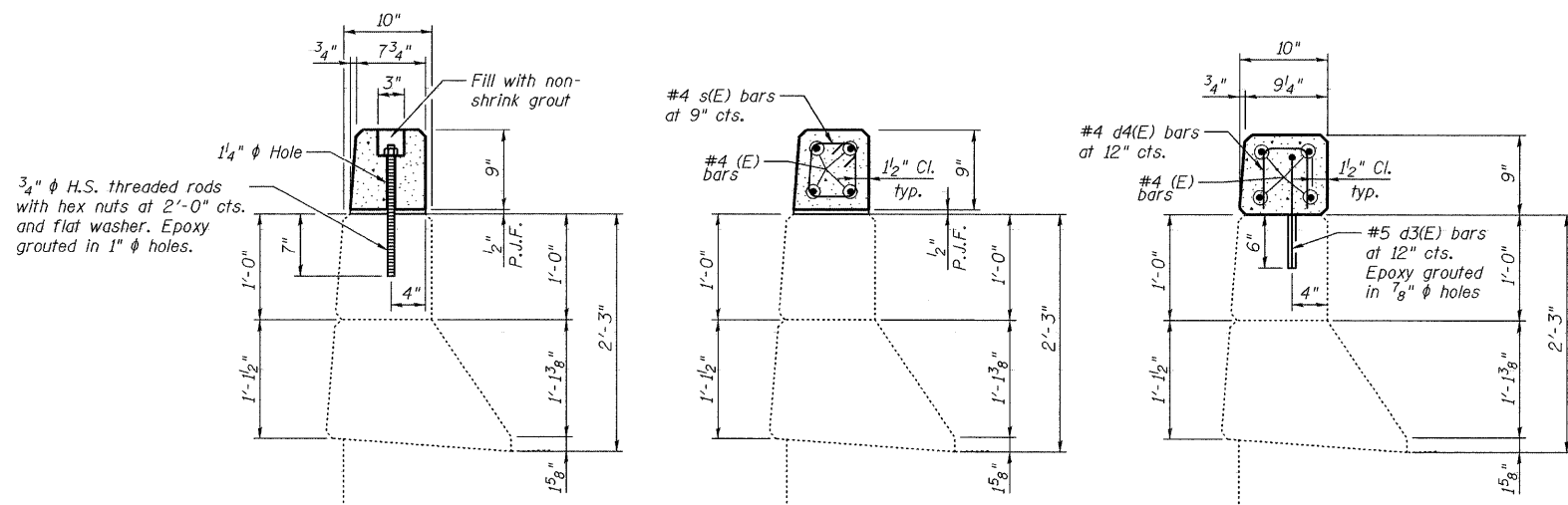
- Class SI Concrete shall be used throughout for Cast-in-Place option.
- Class PC Concrete shall be used throughout for Precast option.
- All exposed edges shall be chamfered 3/4".
- Cost of all materials, labor and equipment to complete the work as detailed and as specified in the Special Provisions shall be included in the cost of "Retrofit Concrete Parapet".
- The Contractor shall use the capsule or adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these rods in pre-drilled holes according to the manufacturer's recommendations and procedures.
- The capsule or adhesive cartridge shall be sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amount of adhesive chemical. The threaded rod stud with nut & washers shall conform to ASTM A307.
- Epoxy grout d3(E) bars in 7/8" φ x 6" (min.) holes. The grout and the method of application shall be approved by the Department. (See Section 584 of the Standard Specifications). Cost included with "Retrofit Concrete Parapet".
- Retrofit Concrete Parapet shall be used on both sides of the bridge the full length of the bridge less portions poured with expansion joint repairs.
- The existing railing shall be removed along the entire length of the parapet and disposed of according to Article 501.05 of the Standard Specifications. Cost included with Retrofit Concrete Parapet.
- Work this sheet with Expansion Joint Details sheet.

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Retrofit Concrete Parapet	Foot	1,035



**JOINT DETAIL**



**PRECAST ALTERNATE**  
(Showing Attachment)

**PRECAST ALTERNATE**  
(Showing Reinforcement)

**CAST-IN-PLACE ALTERNATE**

**SECTION B-B**

**SECTION A-A**

**PARAPET RETROFIT DETAILS**  
**STRUCTURE NO. 022-0106**

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

**benesch**

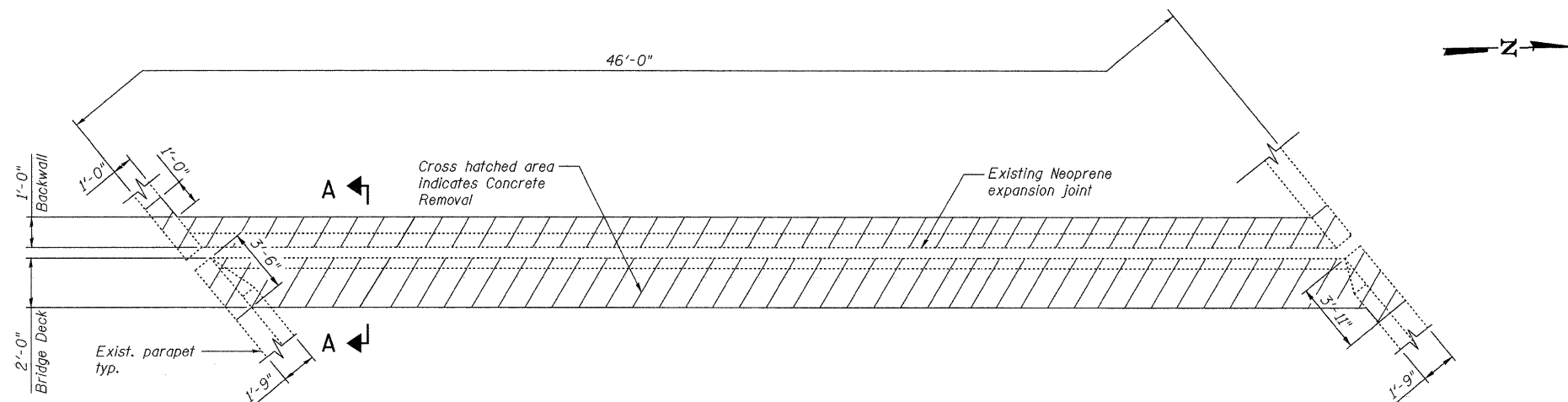
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 4 19 SHEETS	F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 9
	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

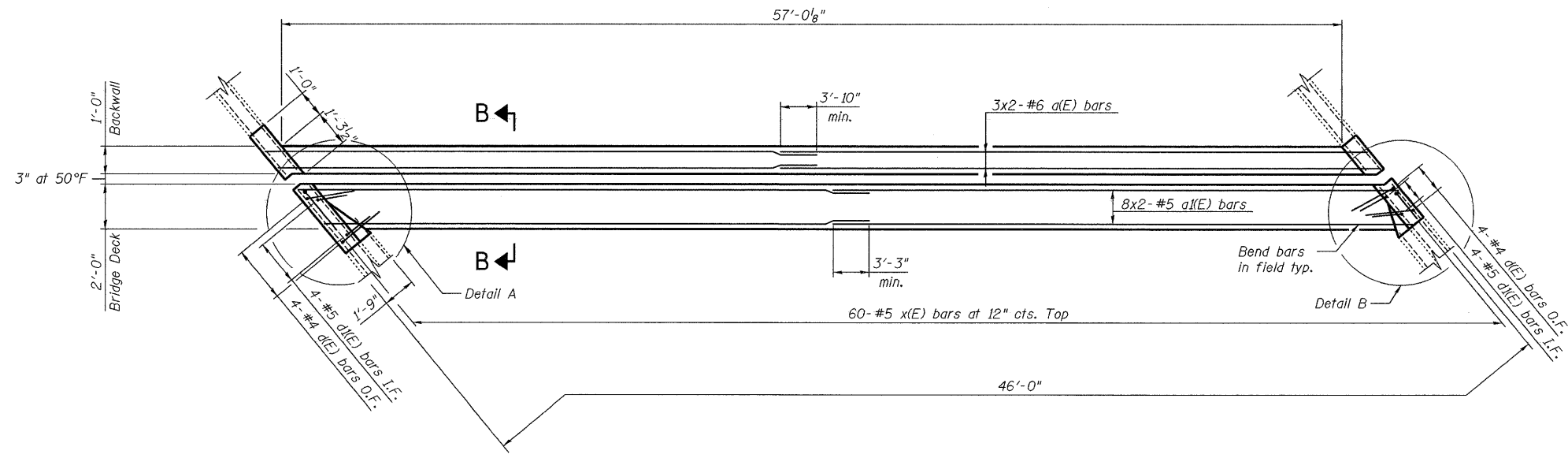
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**

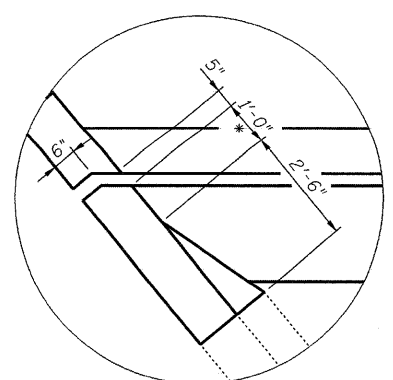
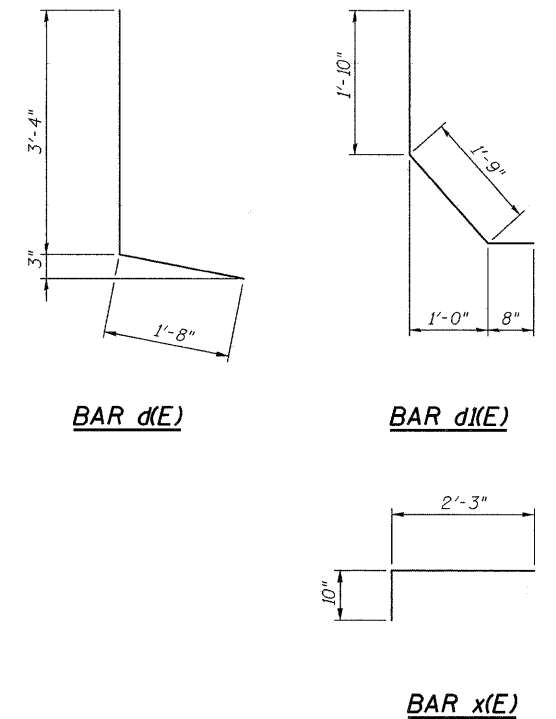
Bar	No.	Size	Length	Shape
a(E)	6	#6	31'-5"	—
a1(E)	16	#5	31'-2"	—
d(E)	8	#4	5'-0"	┌
d1(E)	8	#5	4'-3"	└
x(E)	60	#5	3'-1"	┌
Item	Unit	Total		
Concrete Removal	Cu. Yd.	10.0		
Concrete Superstructure	Cu. Yd.	11.4		
Reinforcement Bars, Epoxy Coated	Pound	1,060		



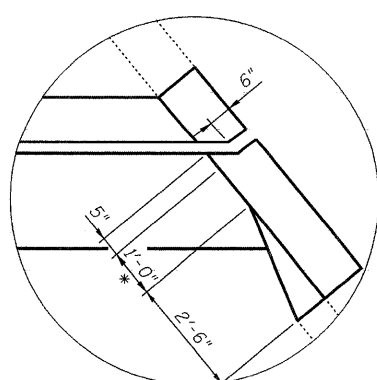
**EXISTING PARTIAL PLAN AT WEST ABUTMENT**



**PROPOSED PARTIAL PLAN AT WEST ABUTMENT**



**DETAIL A**



**DETAIL B**

\*Parapet transition shall begin a minimum of 1'-0" from the expansion joint to allow for sliding plate installation. See Section B-B on the Preformed Joint Strip Seal sheet.

**Notes:**

- I.F. denotes Inside Face.  
O.F. denotes Outside Face.
- x(E) bar spacing measured along skew.
- Bars indicated thus 3x2-#6 etc. indicates 3 lines of bars with 2 lengths per line.
- Work this sheet with Expansion Joint Details sheet and Preformed Joint Strip Seal sheet.

**EXPANSION JOINT REPAIRS 1 OF 2  
STRUCTURE NO. 022-0106**

DESIGNED -	JLS/MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

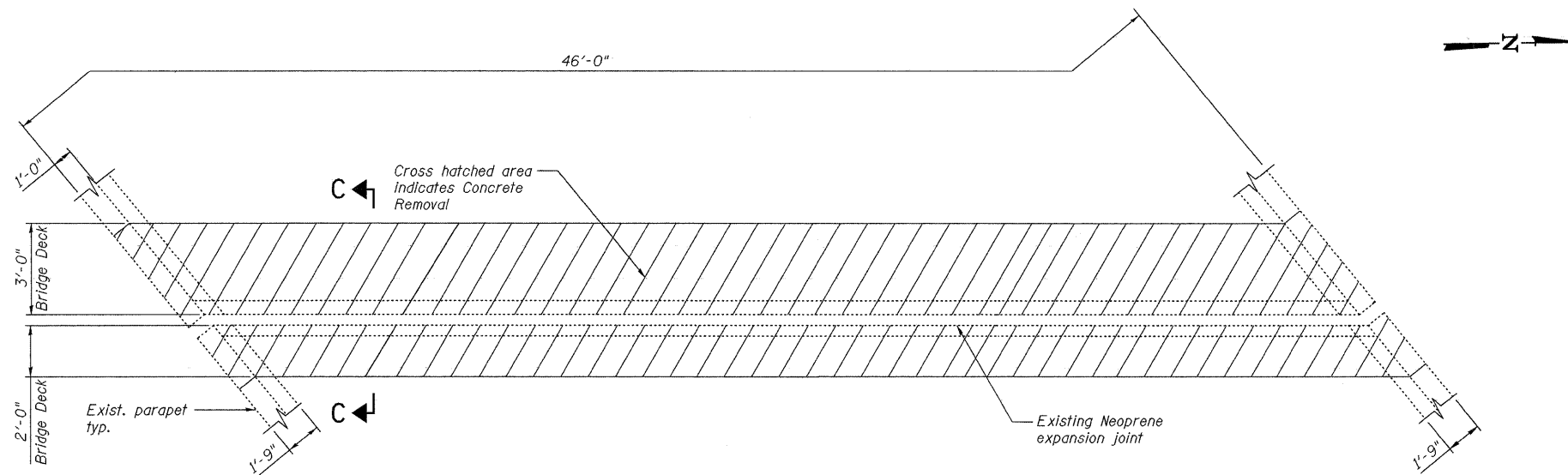
**benesch**  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 5 19 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-115I	DUPAGE	27	10
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60J34					

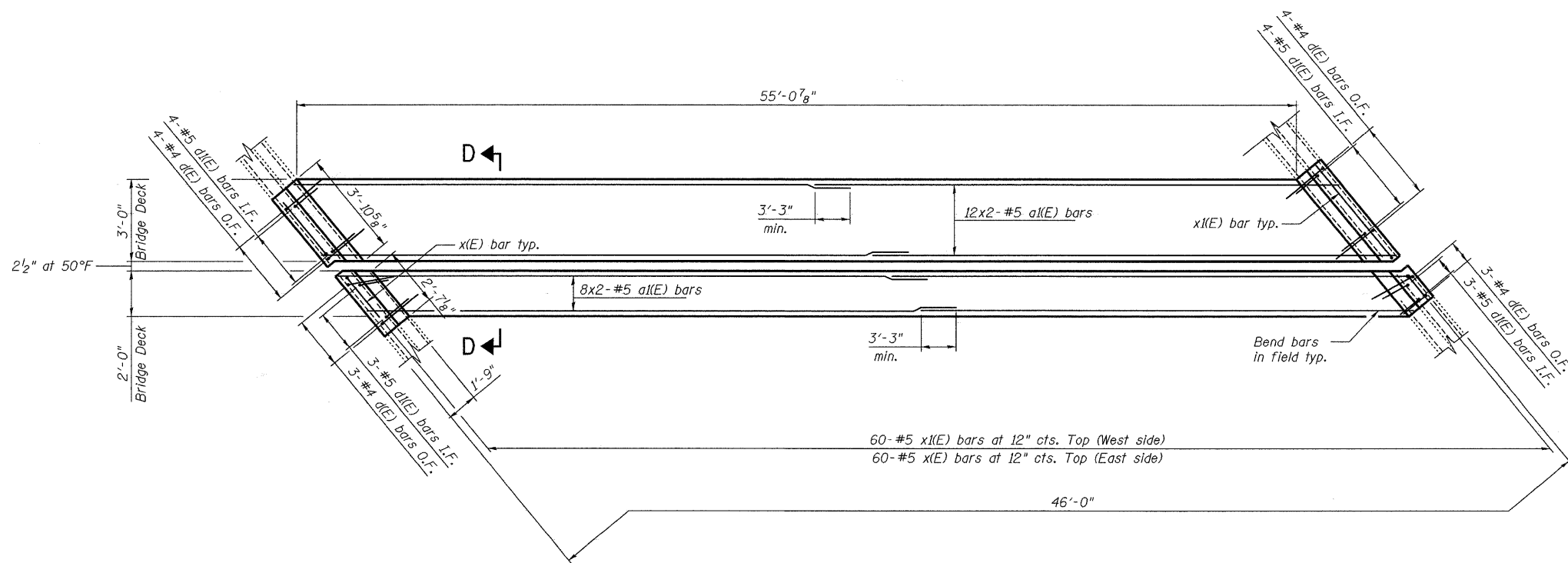
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**BILL OF MATERIAL**

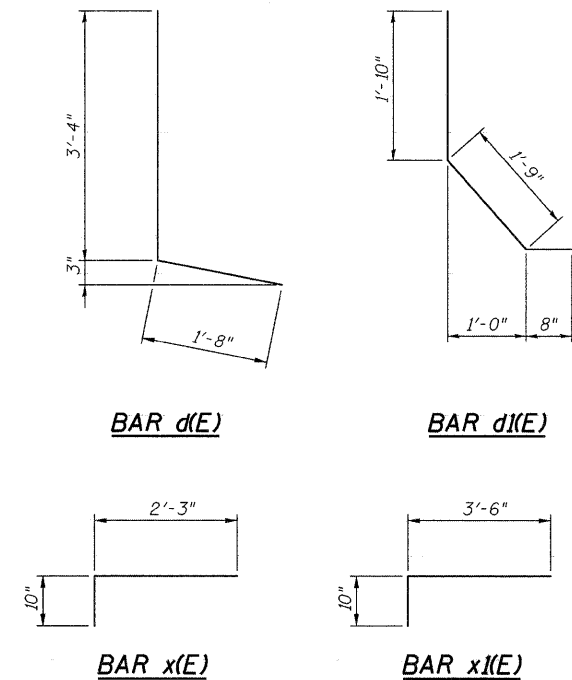
Bar	No.	Size	Length	Shape
a(E)	40	#5	31'-2"	—
d(E)	14	#4	5'-0"	└
d(E)	14	#5	4'-3"	└
x(E)	60	#5	3'-1"	└
x(E)	60	#5	4'-4"	└
Item		Unit	Total	
Concrete Removal		Cu. Yd.	13.2	
Concrete Superstructure		Cu. Yd.	15.5	
Reinforcement Bars, Epoxy Coated		Pound	1,880	



**EXISTING PARTIAL PLAN AT LINK NEAR PIER 3**



**PROPOSED PARTIAL PLAN AT LINK NEAR PIER 3**



**Notes:**

- I.F. denotes Inside Face.  
O.F. denotes Outside Face.
- x(E) and x(E) bar spacing measured along skew.
- Bars indicated thus 3x2-#6 etc. indicates 3 lines of bars with 2 lengths per line.
- Work this sheet with Expansion Joint Details sheet and Preformed Joint Strip Seal sheet.

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

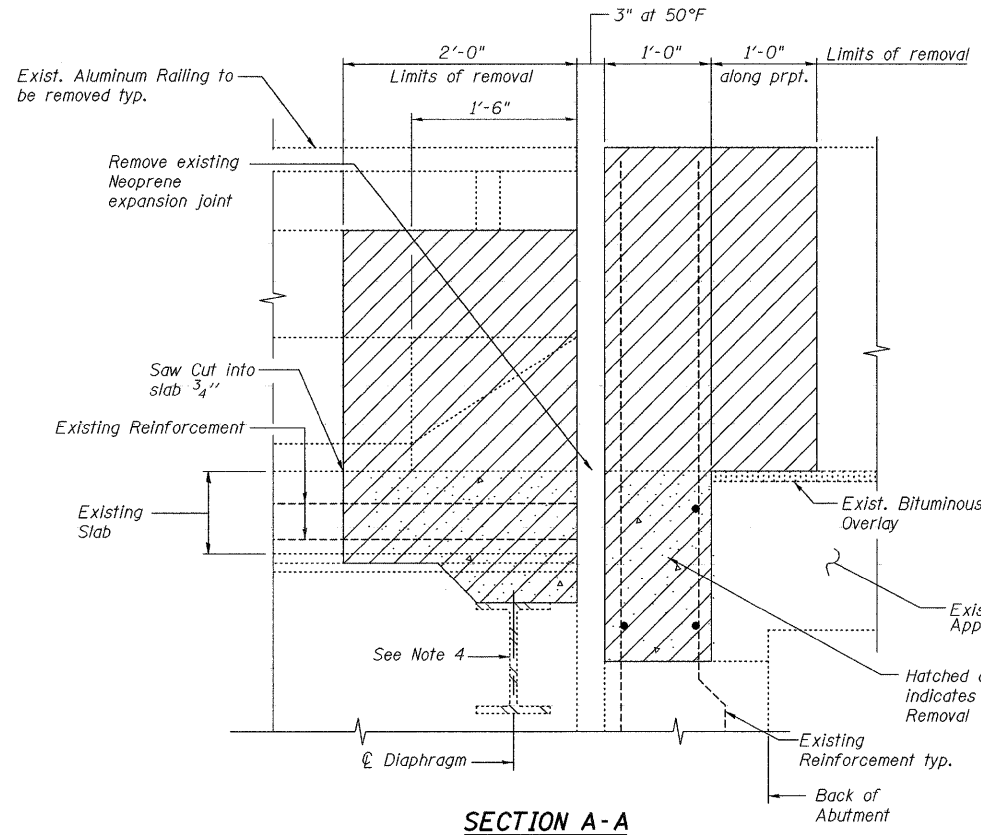
**benesch**

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

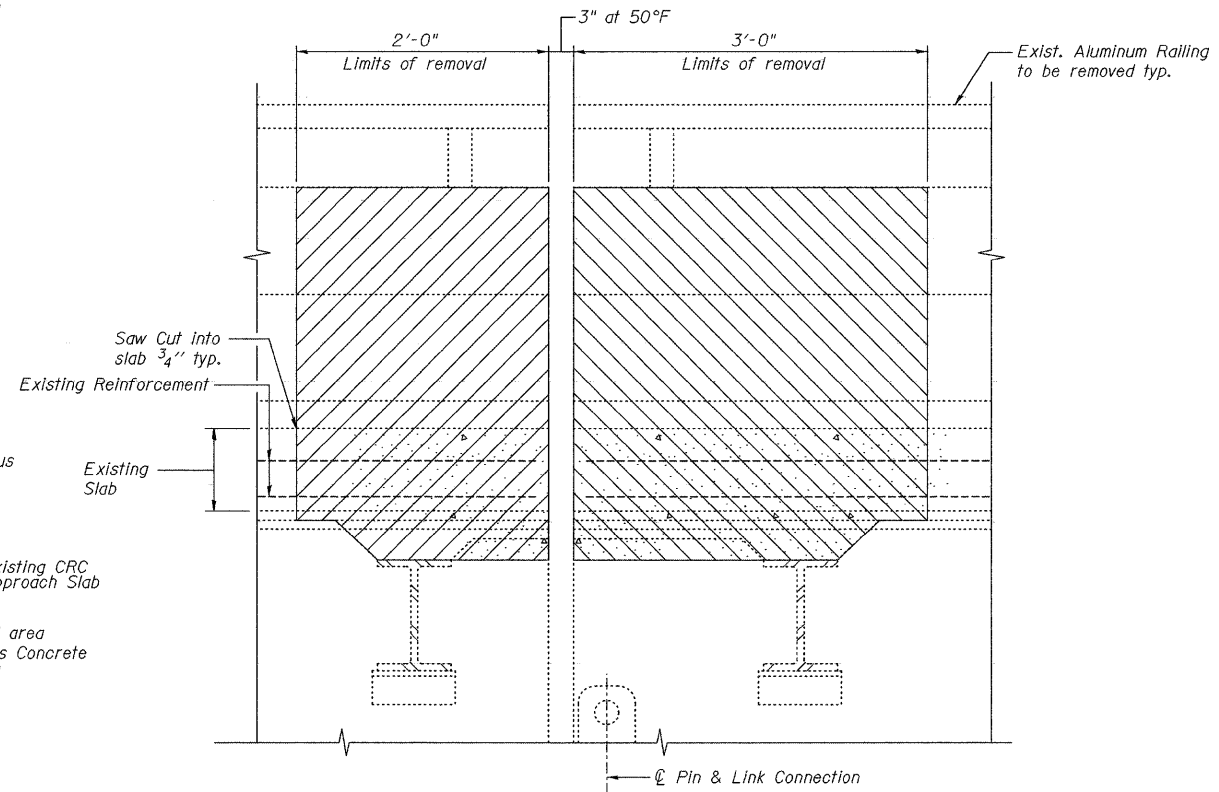
SHEET NO. 6 19 SHEETS	F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 11
	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

**EXPANSION JOINT REPAIRS 2 OF 2  
STRUCTURE NO. 022-0106**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



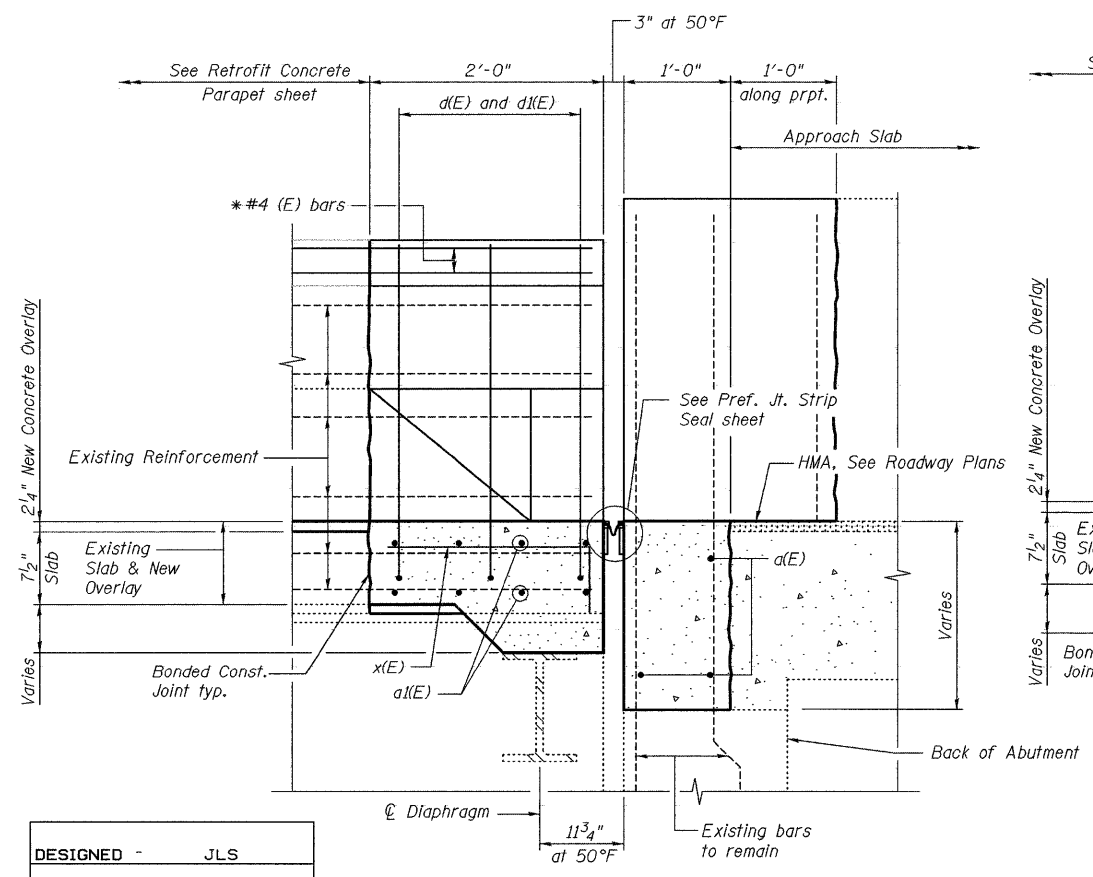
SECTION A-A



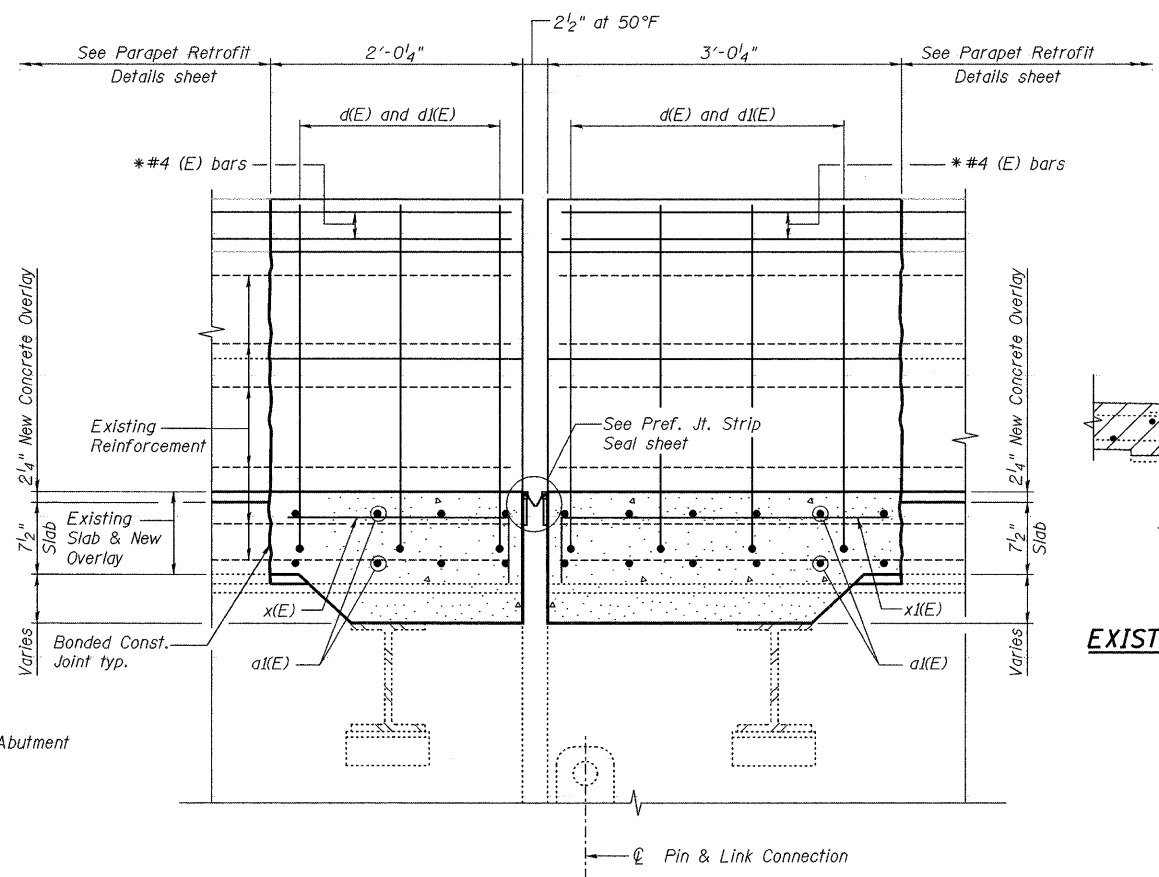
SECTION C-C

**Notes:**

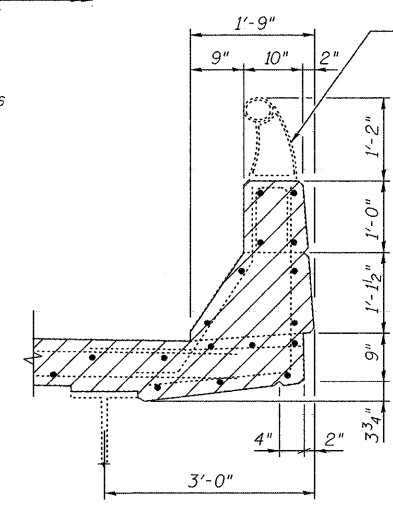
- Existing reinforcement bars extending into the concrete removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- Contractor may remove and reinstall the existing diaphragm members as necessary to complete the required concrete removal and reconstruction. Cost included with Concrete Removal.
- Work this sheet with Expansion Joint Repairs sheets, Preformed Joint Strip Seal sheet and Parapet Retrofit Details sheet.



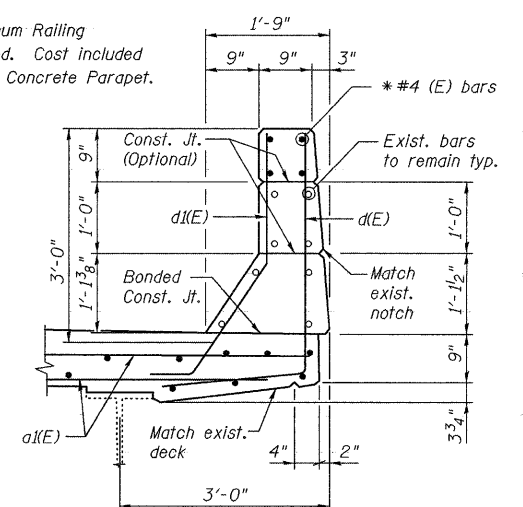
SECTION B-B



SECTION D-D



EXISTING PARAPET SECTION



PROPOSED PARAPET SECTION

\* Bars extend into Parapet Retrofit. See Parapet Retrofit Details sheet.

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

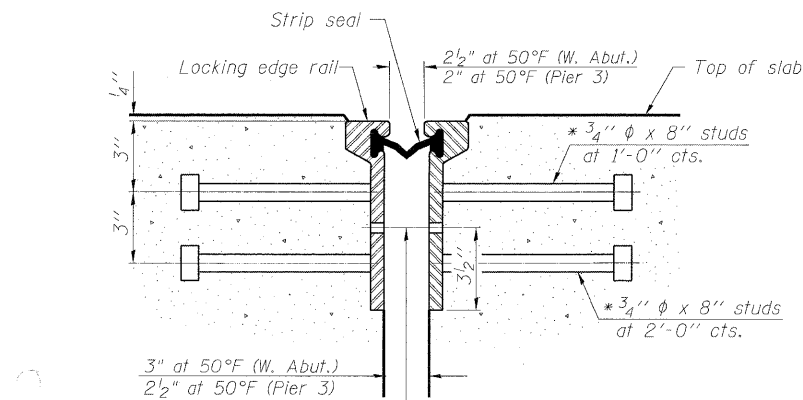
**benesch**

alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 7 19 SHEETS	F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 12
	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

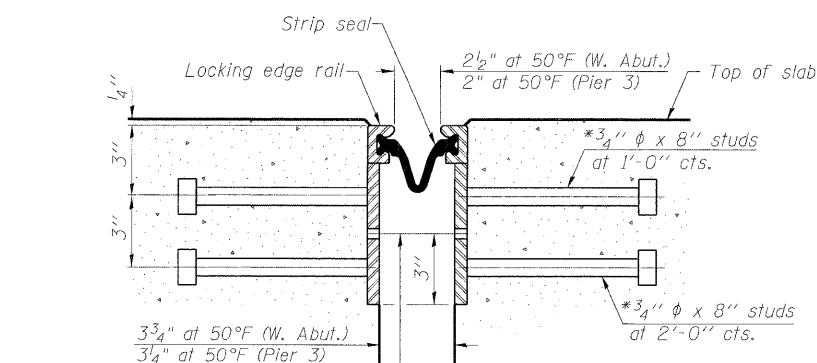
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



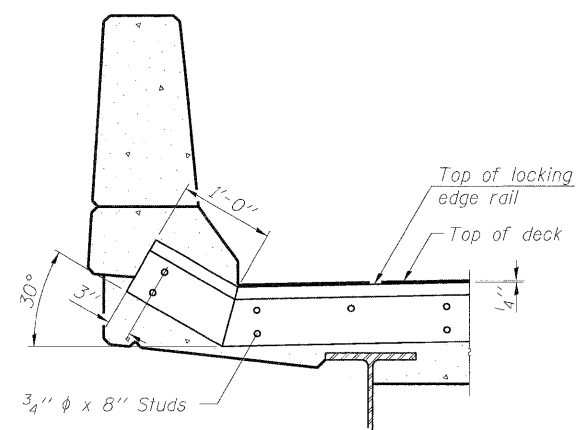
$\frac{7}{16}$ "  $\phi$  holes at 4'-0" cts. for  $\frac{3}{8}$ "  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU  
ROLLED RAIL JOINT

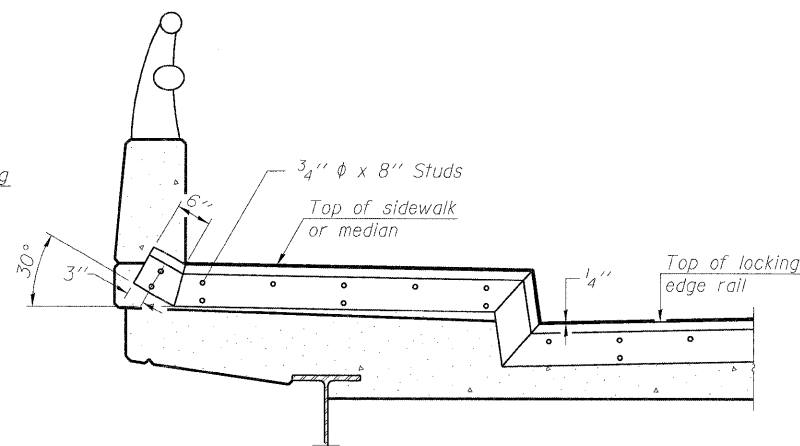


$\frac{7}{16}$ "  $\phi$  holes at 4'-0" cts. for  $\frac{3}{8}$ "  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU  
WELDED RAIL JOINT



AT PARAPET  
See Section A-A for end treatment of skews > 30°.



AT SIDEWALK OR MEDIAN  
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.

TYPICAL END TREATMENTS

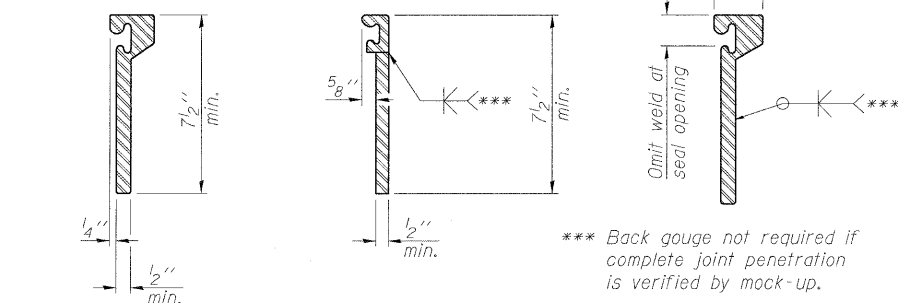
Notes:

The strip seal shall be made continuous and shall have a minimum thickness of  $\frac{1}{4}$ ". 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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.

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. Maximum space between rail segments at stage lines shall be  $\frac{3}{16}$ ", sealed with a suitable sealant.



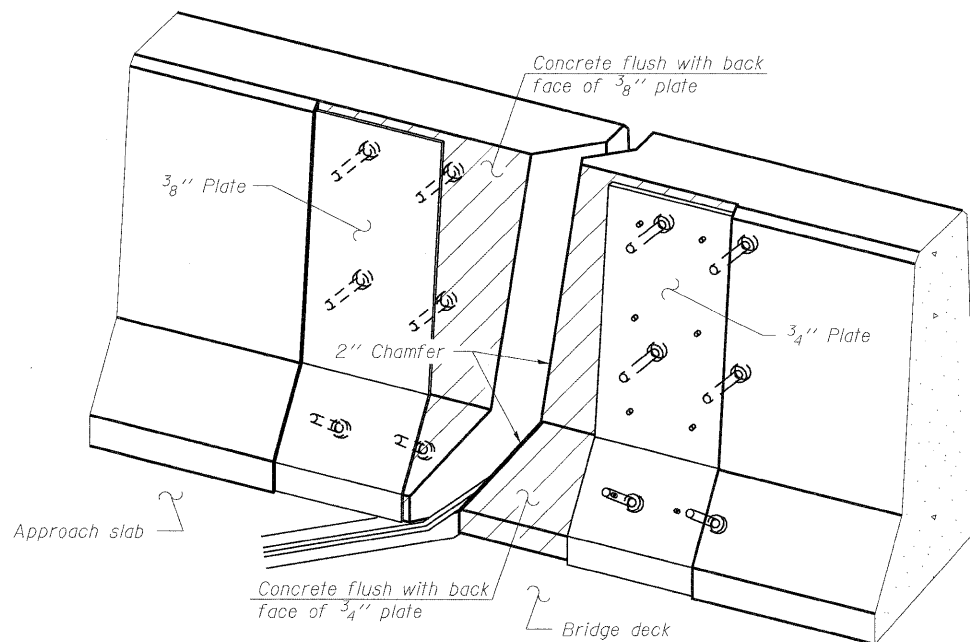
ROLLED  
EXTRUDED RAIL

WELDED RAIL

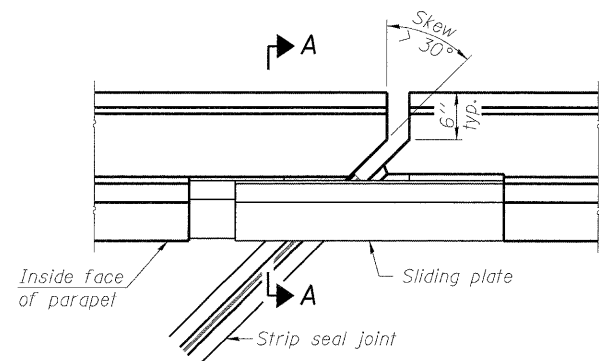
LOCKING EDGE  
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

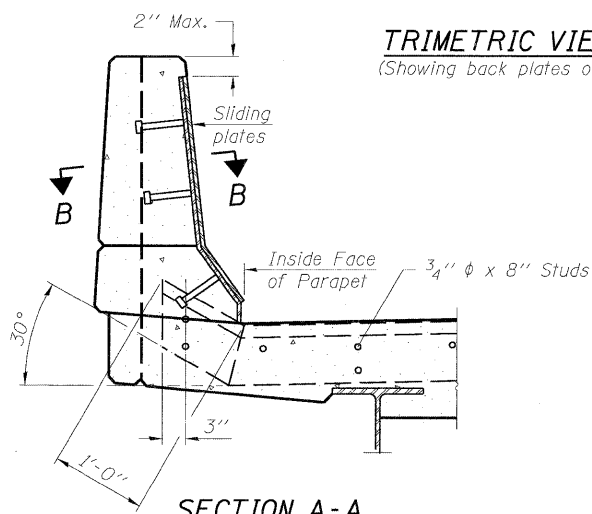
LOCKING EDGE RAILS



TRIMETRIC VIEW  
(Showing back plates only)

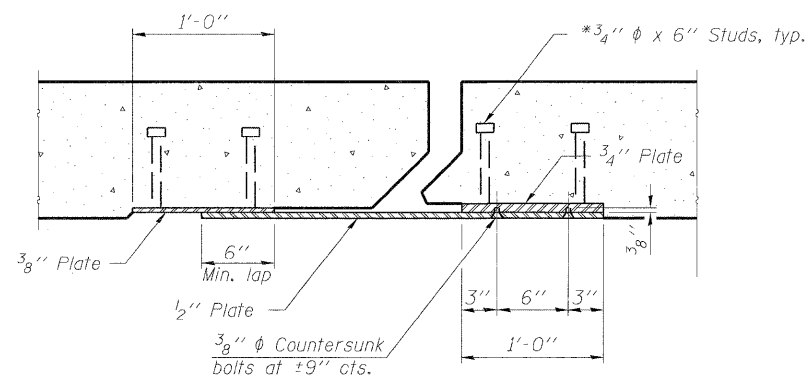


PLAN



SECTION A-A

POINT BLOCK DETAILS  
(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	115.0

PREFORMED JOINT STRIP SEAL  
STRUCTURE NO. 022-0106

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

EJ-SSJ

11-1-09

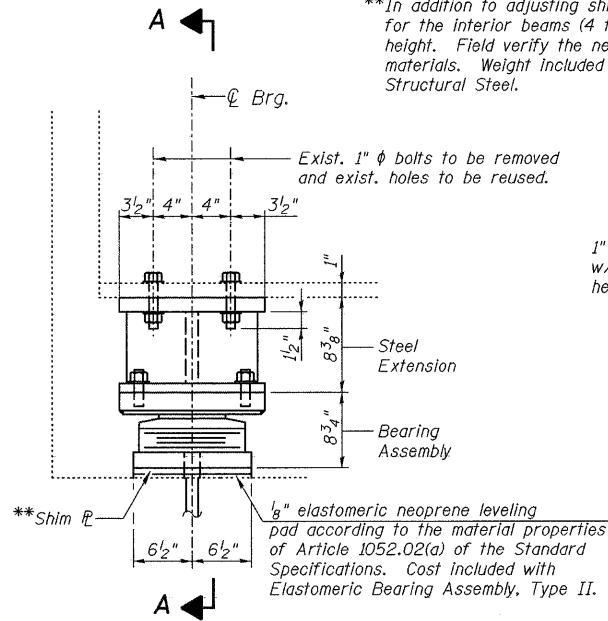
**benesch**

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0460 Job No. 10032.13

SHEET NO. 8 19 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-1151	DUPAGE	27	13
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60J34					

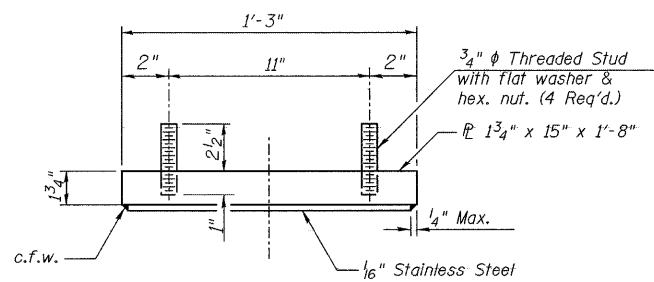
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\*\*In addition to adjusting shims, a 1" thick shim will be needed for the interior beams (4 thus) due to a variable existing bearing height. Field verify the need for additional shims prior to ordering materials. Weight Included with Furnishing and Erecting Structural Steel.

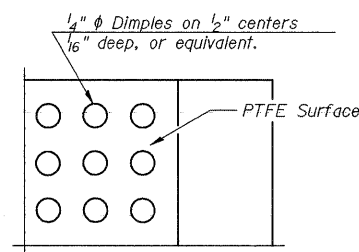


ELEVATION AT W. ABUT.

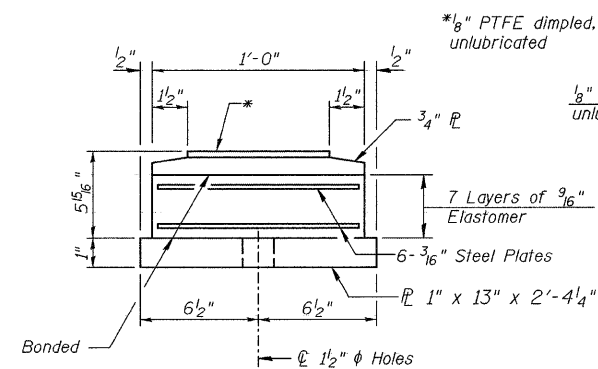
TYPE II ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE



BOTTOM BEARING ASSEMBLY

SECTION THRU PTFE

EXISTING BEAM REACTION TABLE

LOCATION	DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL LOAD
West Abutment	71.2	53.0	10.0	134.2

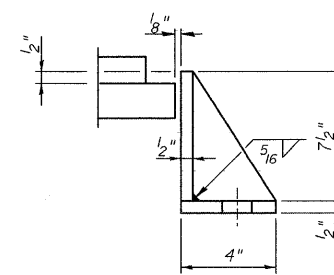
Notes:

- See Special Provision for "Jack and Remove Existing Bearings".
- The minimum jack capacity for lifting the beams, at each bearing location, shall be 143 kips at the West Abutment under Dead Load only.
- Areas of existing beams that are to be in contact with proposed bearing assemblies shall be cleaned and painted according to "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

EXISTING BEARING REMOVAL AT WEST ABUTMENT

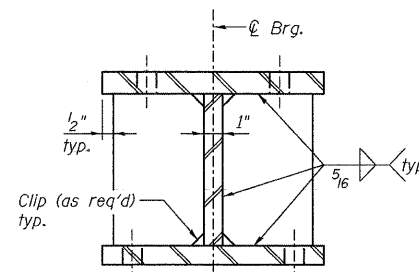
Cost included with Jack and Remove Existing Bearings.

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

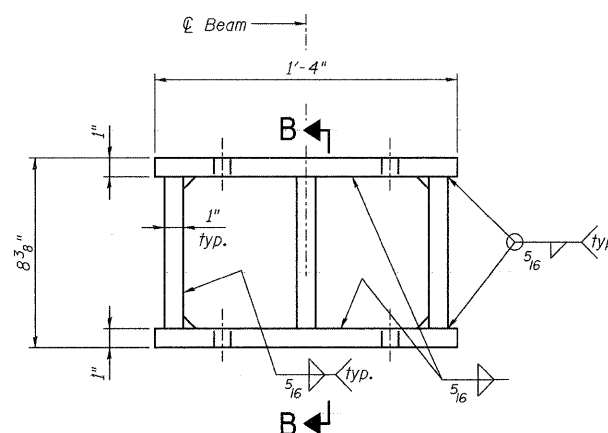


SIDE RETAINER

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

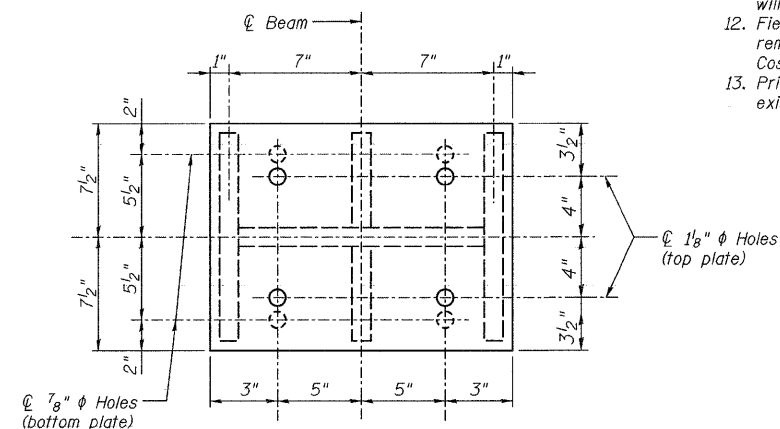


SECTION B-B

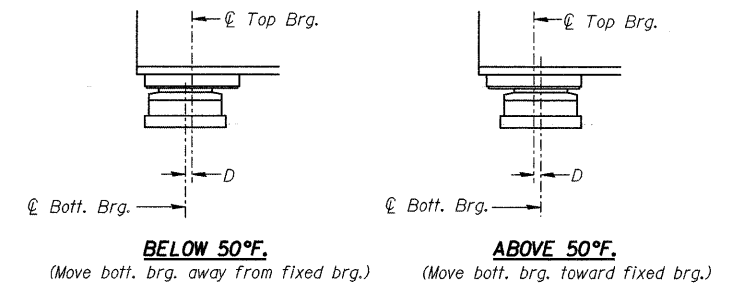


ELEVATION STEEL EXTENSION

(Weight included with Furnishing and Erecting Structural Steel.)



PLAN STEEL EXTENSION



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

Notes:

- See Special Provision for "Jack and Remove Existing Bearings".
- The minimum jack capacity for lifting the beams, at each bearing location, shall be 143 kips at the West Abutment under Dead Load only.
- 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.
- Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after bearings are in place. Side retainers shall be placed after bolts are installed.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
- The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- The structural steel plates of the Bearing Assembly and Steel 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 bearing details.
- The anchor bolt size and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.
- Field drilling for holes is not anticipated, but if necessary, diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.
- Prior to ordering any material, the Contractor shall verify in the field all existing bearing heights and required Steel Extension dimensions.

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	6
Elastomeric Bearing Assembly, Type II	Each	6
Anchor Bolts, 1"	Each	12
Furnishing and Erecting Structural Steel	Pound	1,860

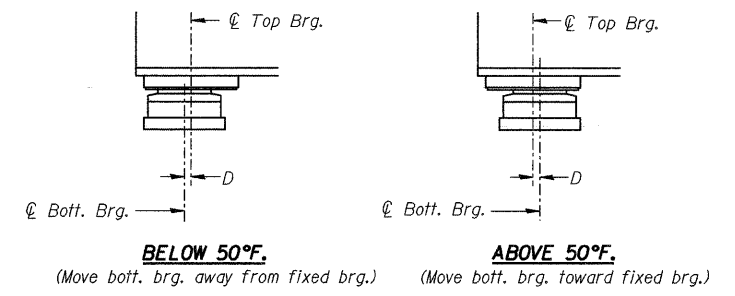
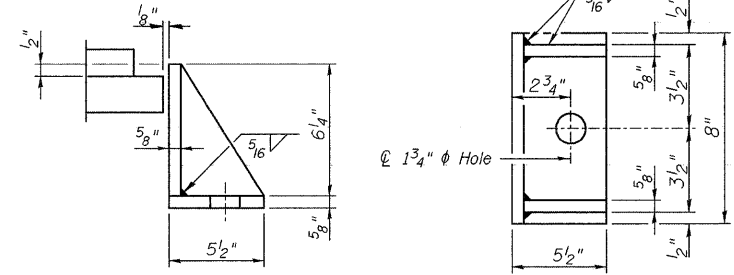
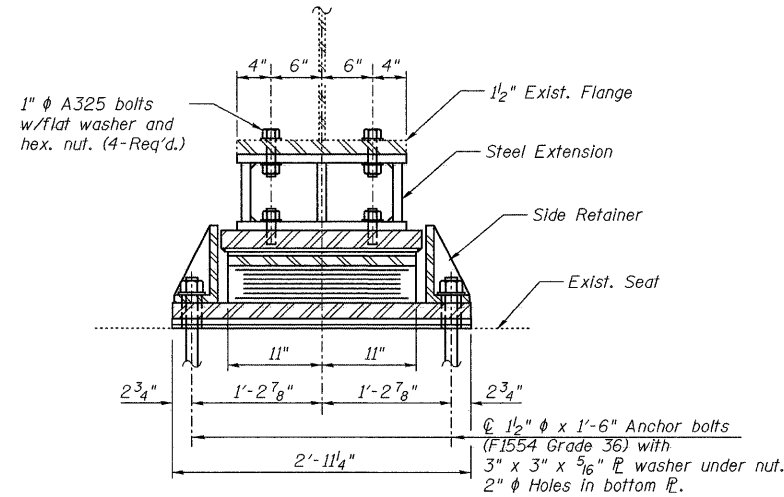
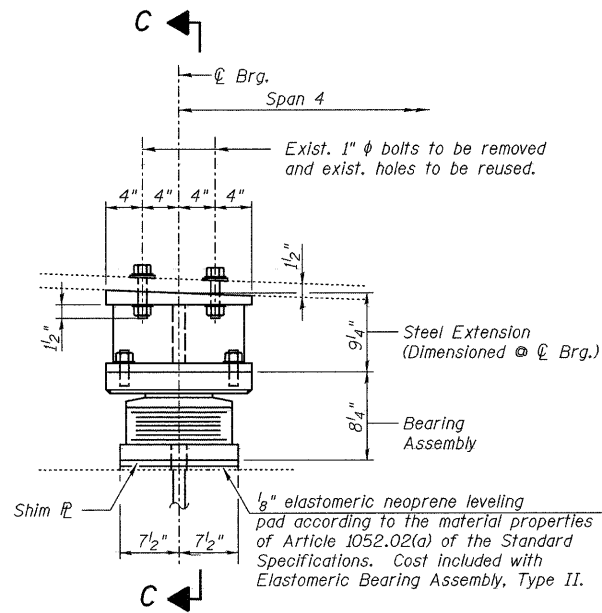
BEARING DETAILS 1 OF 2  
STRUCTURE NO. 022-0106

SHEET NO. 9 19 SHEETS	F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 14
	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

benesch

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**SETTING ANCHOR BOLTS AT EXP. BRG.**

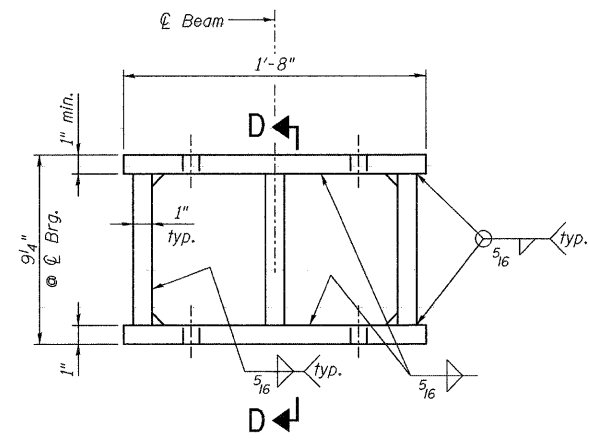
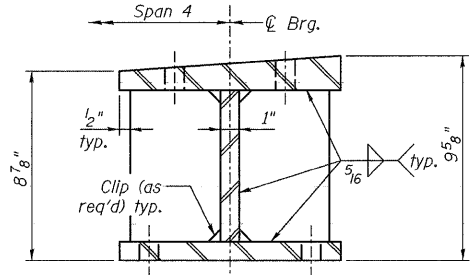
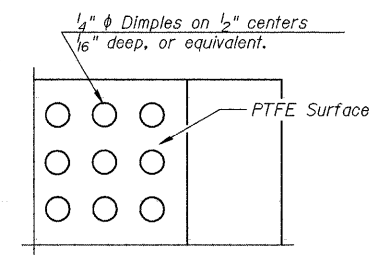
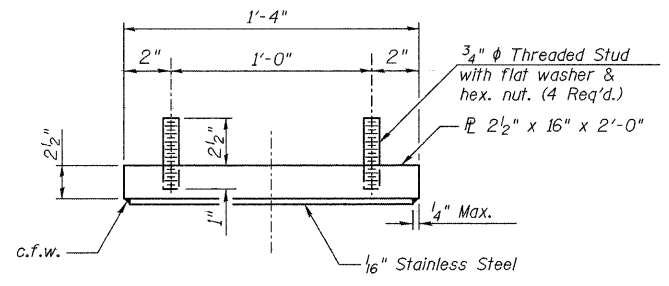
D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

**Notes:**

- See Special Provision for "Jack and Remove Existing Bearings".
- Jacking and cribbing for beams at Pier 3 shall be performed such that they can remain supported while the specified structural repairs are performed. Cost included with Jack and Remove Existing Bearings. See Substructure Repairs sheet.
- The minimum jack capacity for lifting the beams, at each bearing location, shall be 280 kips at Pier 3 under Dead Load only.
- 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.
- Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after bearings are in place. Side retainers shall be placed after bolts are installed.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
- The 1/2" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 1/2" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- The structural steel plates of the Bearing Assembly and Steel 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 bearing details.
- The anchor bolt size and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.
- Field drilling for holes is not anticipated, but if necessary, diaphragm removal and reinstallation may be required to facilitate drilling holes.
- Cost included with Furnishing and Erecting Structural Steel. Prior to ordering any material, the Contractor shall verify in the field all existing bearing heights and required Steel Extension dimensions.

**ELEVATION AT PIER 3**  
(Looking North)

**TYPE II ELASTOMERIC EXP. BRG.**

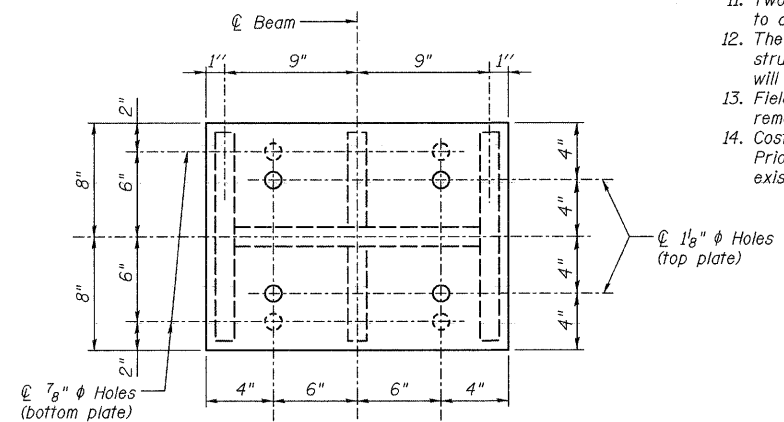
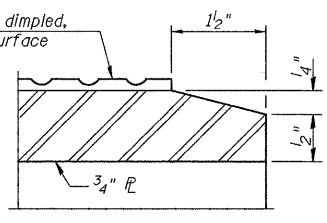
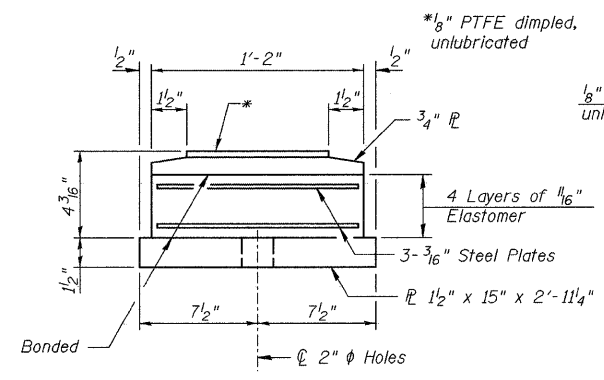


**TOP BEARING ASSEMBLY**

**PLAN-PTFE SURFACE**

**SECTION D-D**

**ELEVATION STEEL EXTENSION**



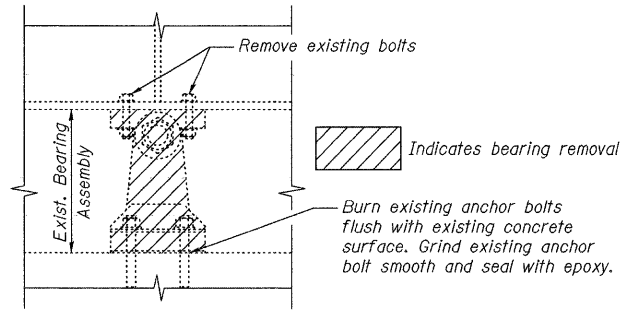
**BOTTOM BEARING ASSEMBLY**

**SECTION THRU PTFE**

**PLAN STEEL EXTENSION**

**EXISTING BEAM REACTION TABLE**

LOCATION	DEAD LOAD	LIVE LOAD	IMPACT LOAD	TOTAL LOAD
Pier 3	139.8	74.5	15.7	230.0



DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

**benesch**  
alfred benesch & company  
Engineers - Surveyors - Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 10 19 SHEETS	F.A.I. RTE. 290	SECTION 2009-115I	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 15
	CONTRACT NO. 60J34			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

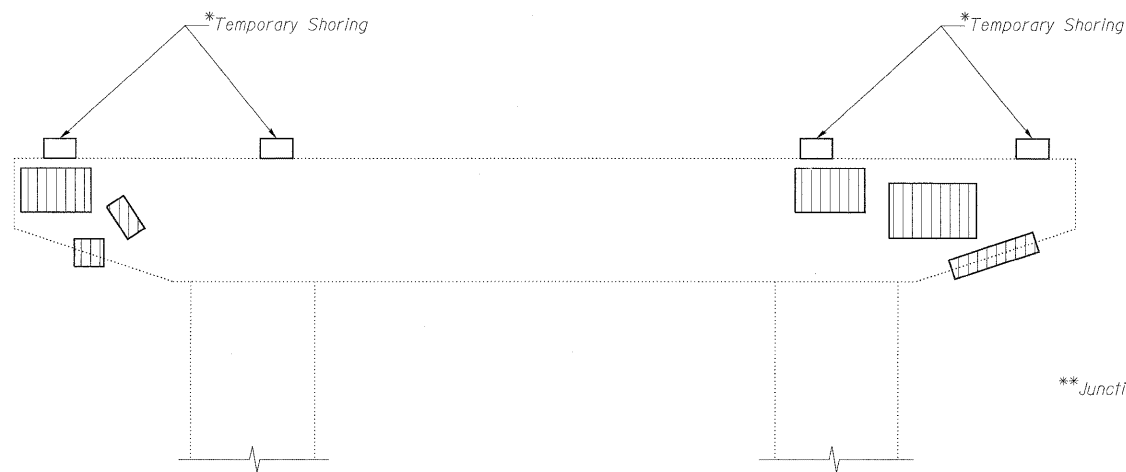
**BILL OF MATERIAL**

Item	Unit	Total
Jack and Remove Existing Bearings	Each	6
Elastomeric Bearing Assembly, Type II	Each	6
Anchor Bolts, 1 1/2"	Each	12
Furnishing and Erecting Structural Steel	Pound	2,090

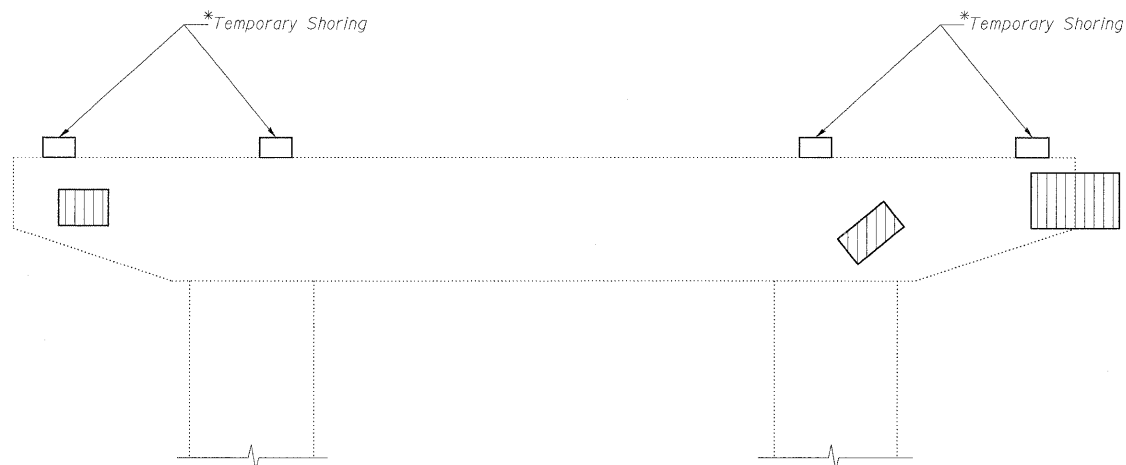
**BEARING DETAILS 2 OF 2**  
**STRUCTURE NO. 022-0106**

x:\100000s\10032\engineering\documents-contract-60j34\sr\_022\_0106\_b.loomingdale\_r.d\10106-60J34-010-Brg-Assembly-2.dgn 14:31:54 04/08/2010

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**PIER 3 REPAIRS - EAST FACE**  
(Looking West)



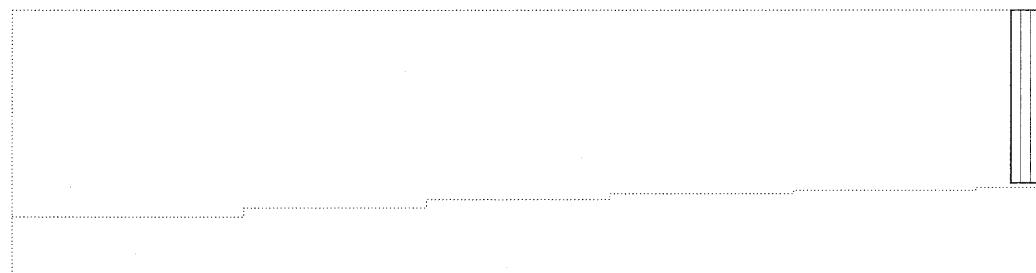
**PIER 3 REPAIRS - WEST FACE**  
(Looking East)

\*Substructure repairs to be completed simultaneously with bearing replacement at Pier 3.  
Cost for Temporary Shoring is included with Jack and Remove Existing Bearings.  
See General Notes sheet for Pier 3 reaction table.



**WEST ABUTMENT**

\*\*Extreme care shall be taken not to damage existing junction box or conduits.  
See Special Provision for "Protection and Maintenance of Existing Underpass Lighting".



**EAST ABUTMENT**

**BILL OF MATERIAL**

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	191
	Concrete Sealer	Sq. Ft.	797

**Note:**

Substructure repair areas are estimated based on IDOT field notes from October of 2009. Actual repair areas and locations shall be determined by the Engineer and shown on the As-Built plans.

DESIGNED -	JLS
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

**benesch**

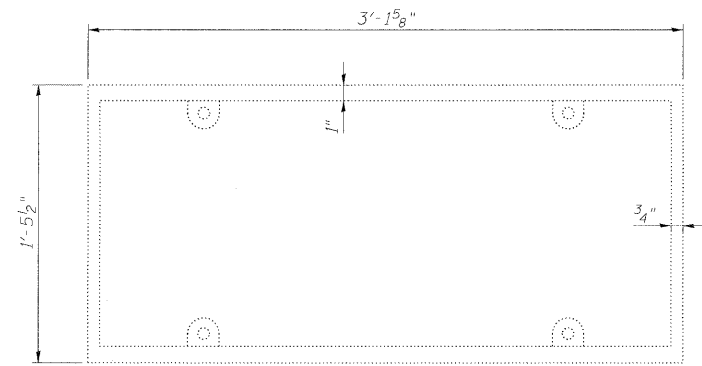
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-955-0450 Job No. 10032.13

SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-115I	DUPAGE	27	16
19 SHEETS	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

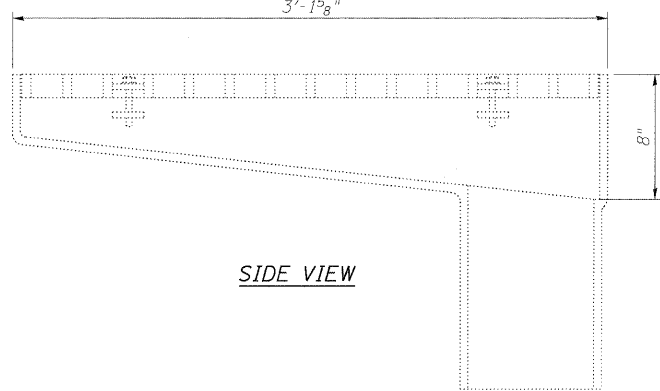
**SUBSTRUCTURE REPAIRS**  
**STRUCTURE NO. 022-0106**



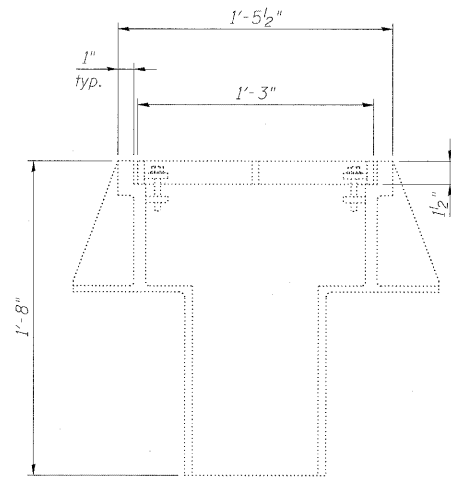
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



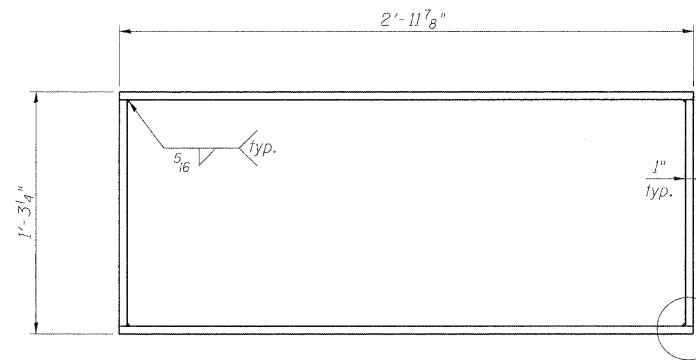
PLAN



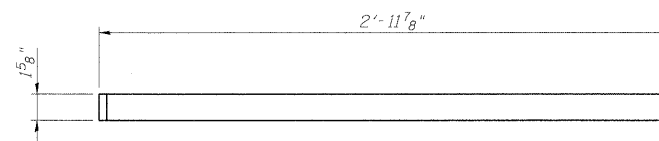
SIDE VIEW



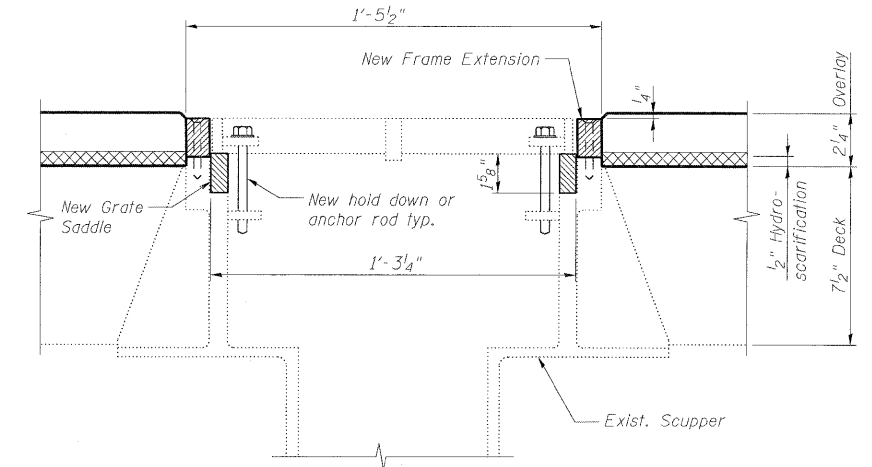
SECTION



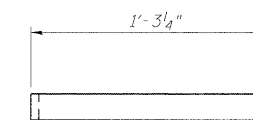
PLAN



SIDE VIEW

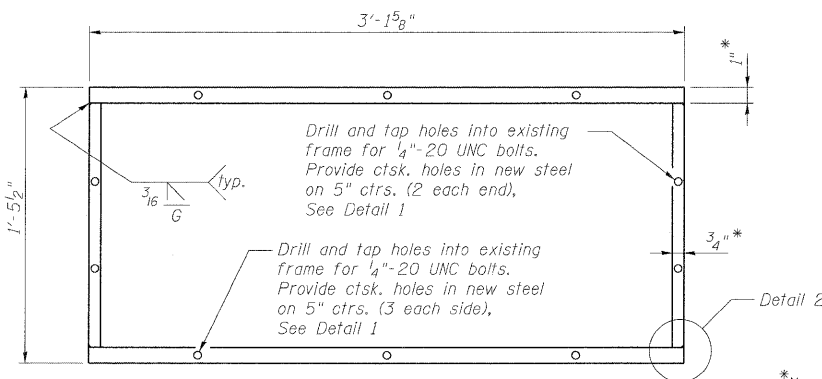


SECTION THRU EXTENDED SCUPPER

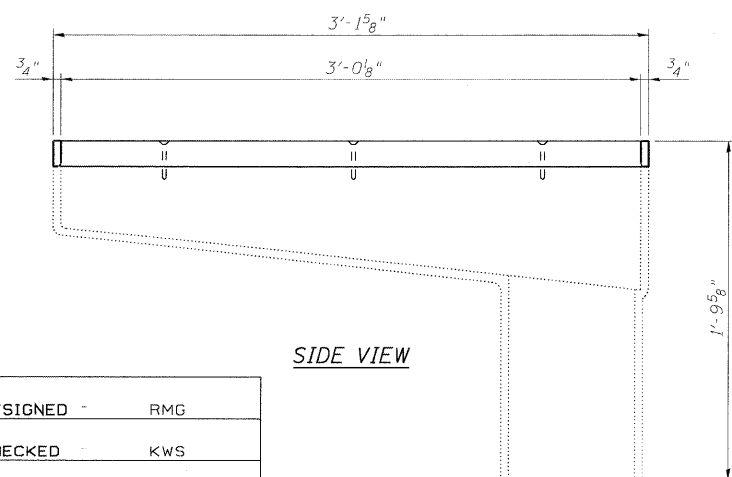


END VIEW

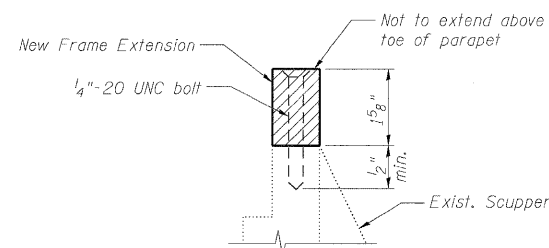
EXISTING DRAIN SCUPPER



PLAN

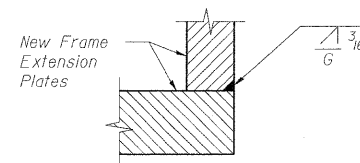


SIDE VIEW

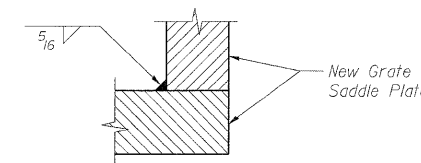


DETAIL 1

\*New material thickness shall match existing material thickness.



DETAIL 2



DETAIL 3

GRATE SADDLE

Notes:

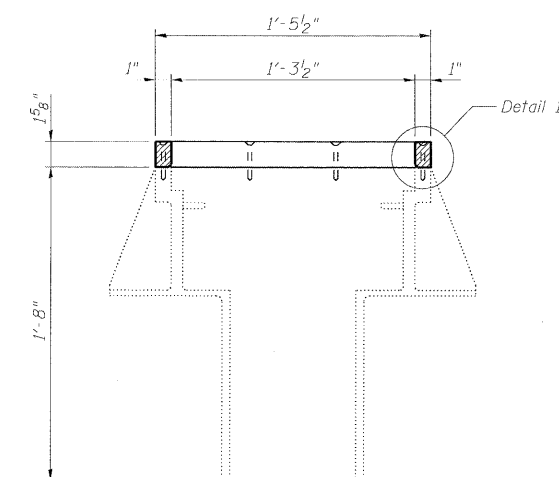
1. Material for extension and drain saddle shall conform to ASTM A36 (AASHTO M183) and shall be galvanized according to AASHTO Mill.
2. Bolts, anchor rods, nuts and washers shall conform to the requirements of ASTM A307 and shall be galvanized according to AASHTO M 232. As an alternate, bolts, anchor rods, nuts and washers may be stainless steel according to Article 1006.29(d) of the Standard Specifications.
3. The Contractor shall take appropriate measures to assure that Protective Coat is not applied to scuppers.
4. For scupper locations see Bridge Deck Repairs sheet.
5. Hold down bolts or anchor rods shall be long enough to accommodate adjusted height of grate and the diameter shall be chosen to utilize the existing holes.
6. Contractor to verify all existing material size, dimensions and thickness before ordering materials.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Adjusting Drainage Scuppers, Type B	Each	4

DESIGNED -	RMG
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

DRAIN SCUPPER - FRAME EXTENSION



SECTION

**benesch**

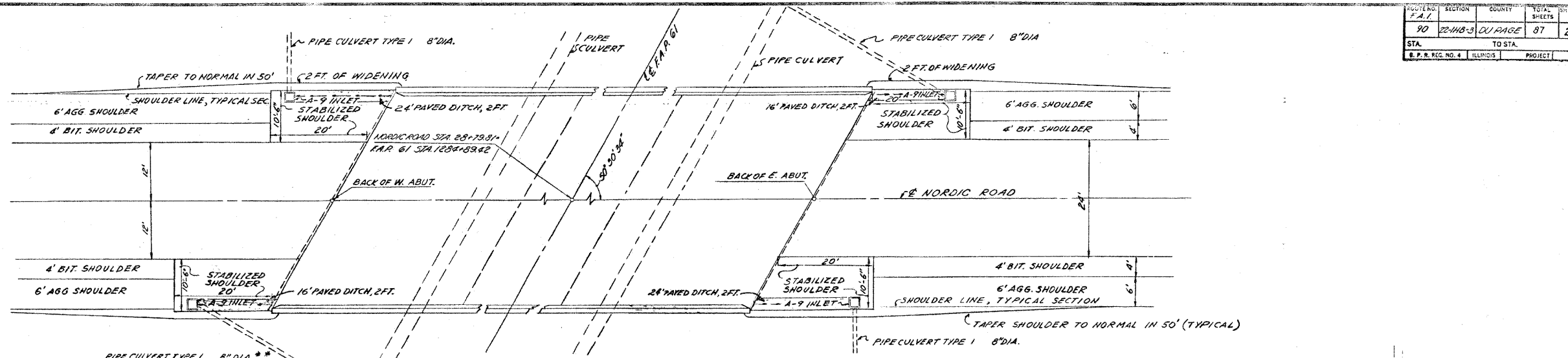
alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-566-0450 Job No. 10032.13

SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-1151	DUPAGE	27	17
19 SHEETS	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

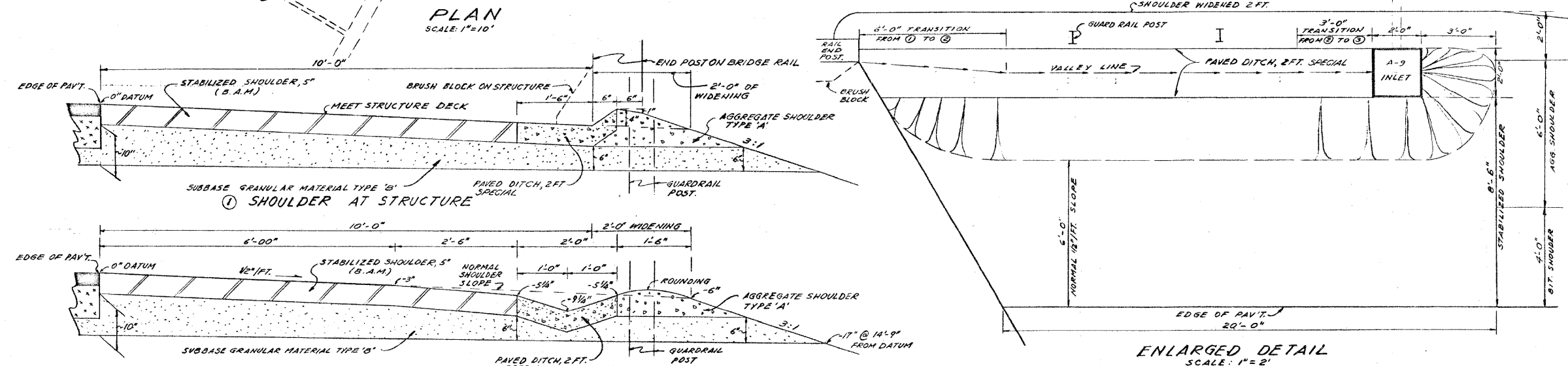
DRAIN SCUPPER ADJUSTMENT DETAILS  
STRUCTURE NO. 022-0106

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

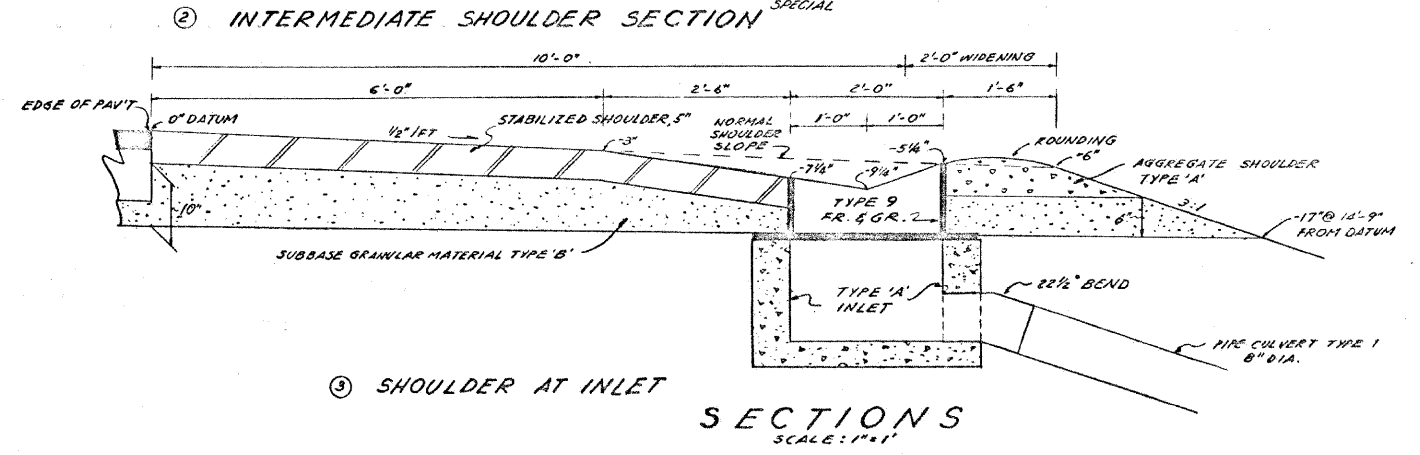
ROUTE NO. F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90	22-11B-3	DUPAGE	87	20
STA.	TO STA.			
ILLINOIS	PROJECT			



PLAN  
SCALE: 1"=10'



ENLARGED DETAIL  
SCALE: 1"=2'



SECTIONS  
SCALE: 1"=1'

**SPECIAL DETAILS**  
NORDIC ROAD  
SHOULDER TREATMENT AT  
BRIDGE  
F.A.I. ROUTE 90 SECTION 22-11B-3  
DUPAGE COUNTY

FOR INFORMATION ONLY

**benesch**

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-955-0450 Job No. 10032.13

SHEET NO. 13	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-115I	DUPAGE	27	18
19 SHEETS	CONTRACT NO. 60J34				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

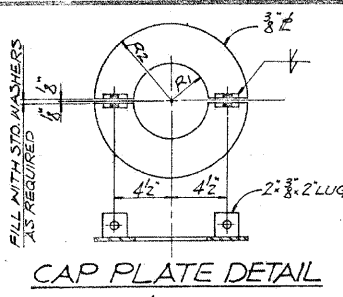
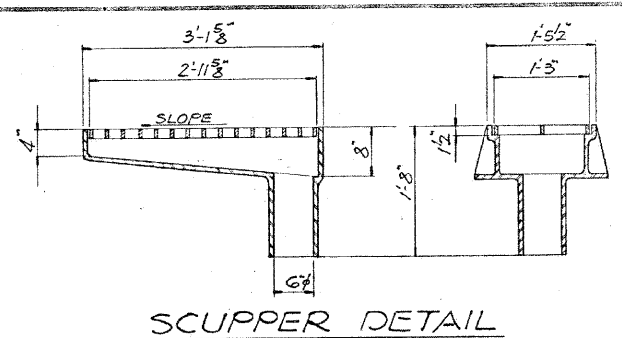
EXISTING PLAN INFORMATION 1 OF 7  
STRUCTURE NO. 022-0106

15:48:48 02/22/2010 x:\10000s\10032\engineering\documents\contract-60j34\sn\_022\_0106\_bloomdale-rd\0106-60J34-013-Exstplan\_01.dgn

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

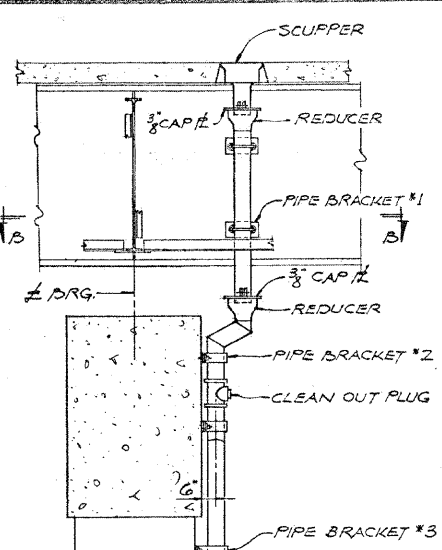
SHEET 2 OF 23

PROJECT NO.	22-1HB-3	COUNTY	DUPAGE	TOTAL SHEETS	27
F.A.I. RTE.	90	DU PAGE	87	23	
STA.	TO STA.				
F.P.R. REG. NO. 4	ILLINOIS	PROJECT			



CAP PLATE TABLE

	R1	R2
R#1	3 3/8"	6 3/8"
R#2	3 3/8"	9"



**GENERAL NOTES**

ALL REINFORCEMENT BARS SHALL BE LAPPED 24 DIAMETERS UNLESS OTHERWISE SHOWN.

FIELD CONNECTIONS SHALL BE BOLTED USING HIGH STRENGTH BOLTS. BOLTS 3/4" DIAMETER, OPEN HOLES 13/16" DIAMETER, UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL WELDMENTS OF EQUAL SECTIONS AND STRENGTH MAY BE SUBSTITUTED FOR CASTINGS AT THE OPTION OF THE CONTRACTOR, SUBJECT TO APPROVAL BY THE ENGINEER PRIOR TO FABRICATION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED THE CONTRACTOR FOR THIS SUBSTITUTION.

ROADWAY EXPANSION GUARDS SHALL BE ASSEMBLED IN THE PROPER POSITION WITH THE ENDS IN PLACE AND SHALL BE LEFT ASSEMBLED FOR SHOP INSPECTION.

EXCEPT AS OTHERWISE PROVIDED, ALL STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RED LEAD PAINT AND TWO FIELD COATS OF PAINT. SEE SPECIAL PROVISIONS FOR FIELD PAINT.

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM OF FLANGE OF GIRDERS NOR ON THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

ANCHOR BOLTS SHALL BE SET BEFORE BOLTING CROSS FRAMES OVER SUPPORTS.

SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC 6" X 6" MESH, WEIGHING 58# PER 100 SQ. FT.

THE CONTRACTOR SHALL DRIVE ONE CONCRETE TEST PILE IN A PERMANENT LOCATION AT EACH ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

THE CONTRACTOR SHALL DRIVE ONE TIMBER TEST PILE IN THE VICINITY OF EACH PIER AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE TIMBER PILES.

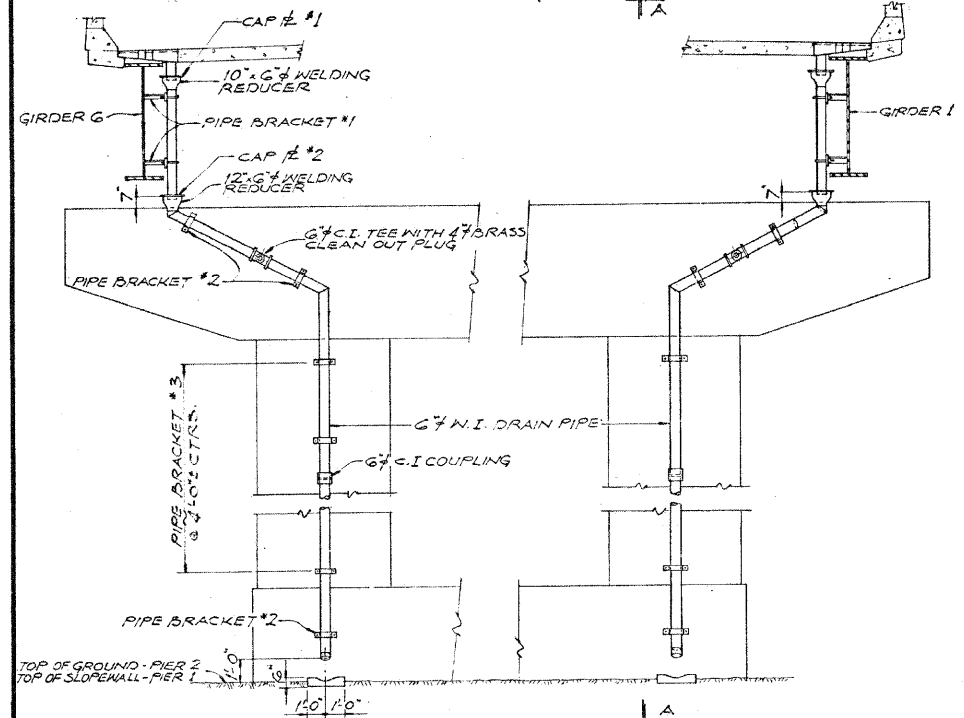
CONCRETE PILES AT ABUTMENTS SHALL BE DRIVEN IN HOLES PRECORED THROUGH THE EMBANKMENT IN ACCORDANCE WITH ARTICLE 513.09 (c) OF THE STANDARD SPECIFICATIONS.

PERMANENT FORMS WILL NOT BE PERMITTED IN FORMING THE CONCRETE FLOOR.

THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.

CLASS A EXCAVATION FOR STRUCTURES INCLUDES EXCAVATION FOR SLOPE WALL.

THE CONCRETE RAIL SECTION ABOVE THE MANDATORY CONSTRUCTION JOINT AT THE TOP OF THE SLAB SHALL BE CONSTRUCTED OF CLASS X CONCRETE, EXCEPT THE AGGREGATES SHALL CONFORM TO THE REQUIREMENTS OF HANDRAIL CONCRETE.



**DRAINAGE NOTES**

MATERIALS. SCUPPERS SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 710.17 OF THE STANDARD SPECIFICATIONS.

WROUGHT IRON PIPE SHALL BE STANDARD WEIGHT PIPE CONFORMING TO A.S.T.M. SPECIFICATION A72. ALL FITTINGS SUCH AS ELBOWS AND REDUCERS SHALL BE WROUGHT IRON WELDING FITTINGS UNLESS OTHERWISE SHOWN.

CAST IRON FITTINGS SHALL CONFORM TO A.S.T.M. SPECIFICATION A126.

THE PIPE BRACKETS SUPPORTING THE WROUGHT IRON PIPE TO CONCRETE MEMBERS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH A.S.T.M. SPECIFICATION A123.

AFTER INSTALLATION, THE PIPE AND ITS SUPPORTS SHALL BE CLEANED AND PAINTED WITH ONE COAT OF RED LEAD PAINT AND TWO COATS OF ALUMINUM PAINT.

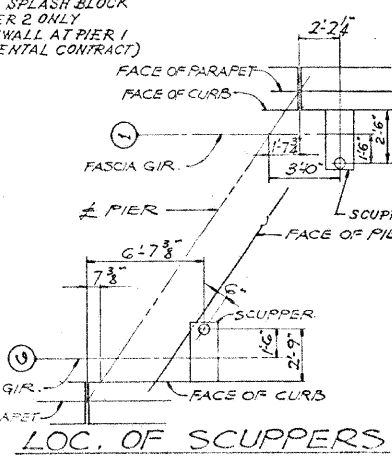
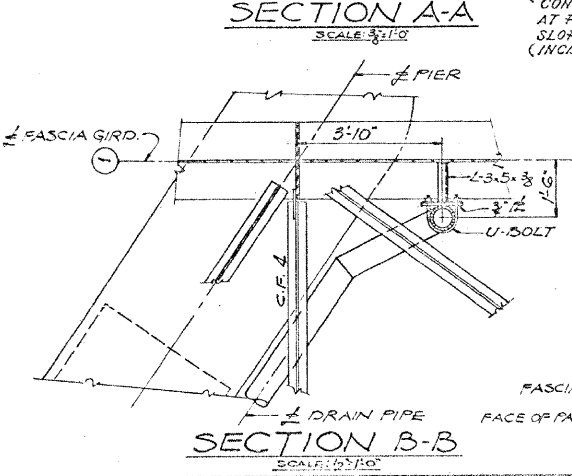
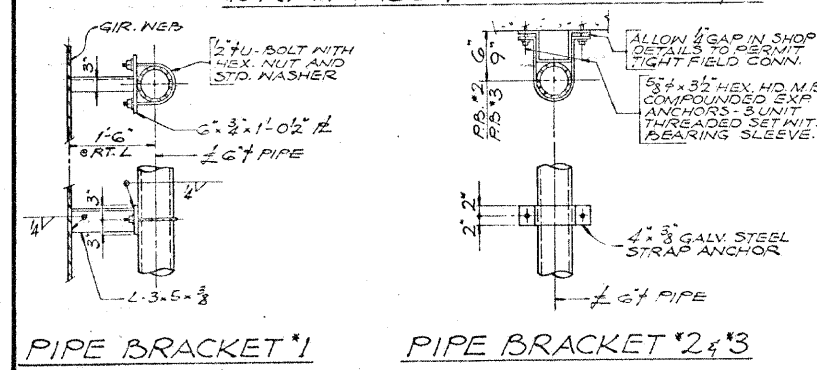
METHOD OF MEASUREMENT. THE ACTUAL NUMBER OF LINEAR FEET OF WROUGHT IRON PIPE, INCLUDING FITTINGS, FURNISHED AND INSTALLED IN THE WORK, WILL BE MEASURED FOR PAYMENT IN PLACE ALONG THE CENTERLINE OF THE PIPE FROM END TO END THROUGH ALL FITTINGS. AT BENDS, MEASUREMENT WILL BE TAKEN TO THE INTERSECTION OF LONGITUDINAL AXES OF THE RUN.

SCUPPERS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR CAST IRON SCUPPERS, WHICH PRICE SHALL BE PAYMENT IN FULL FOR FURNISHING AND PLACING THE CASTINGS COMPLETE.

**QUANTITIES**

TOTAL	SUPER	SUB	UNIT	ITEM
575	-	575	CU. YD.	CLASS A EXCAVATION FOR STRUCTURES
2,901	2,901	-	SQ. YD.	PROTECTIVE COAT
1,554.7	724.4	830.3	CU. YD.	CLASS X CONCRETE
1	1	-	LUMP SUM	FURNISHING & ERECTING STRUCTURAL STEEL
4,656	4,656	-	EACH	STUD SHEAR CONNECTORS
1,054	1,054	-	LIN. FT.	ALUMINUM RAILING
322,770	211,840	110,930	LB.	REINFORCEMENT BARS
5,040	-	5,040	LIN. FT.	FURNISHING CREOSOTED PILES 20.1 FT. TO 38 FT.
2,740	-	2,740	LIN. FT.	FURNISHING CONCRETE PILES
5,040	-	5,040	LIN. FT.	DRIVING TIMBER PILES
2,740	-	2,740	LIN. FT.	DRIVING CONCRETE PILES
3	-	3	EACH	TEST PILE TIMBER
2	-	2	EACH	TEST PILE CONCRETE
2	-	2	EACH	NAME PLATES
1,302	-	1,302	SQ. YD.	SLOPE WALL, 4 INCH
1	-	1	L.S.	BRIDGE SEAT SEALANT
197	-	197	LIN. FT.	WROUGHT IRON PIPE, 6 INCH
4	4	-	EACH	CAST IRON SCUPPERS
210	-	210	LIN. FT.	GALVANIZED RIGID STEEL CONDUIT, 2 INCH DIAMETER

Calculated weight of Structural Steel = 1,108,020 POUNDS



QUANTITIES, GENERAL NOTES & DRAINAGE DETAILS  
NORDIC RD.  
OVER F.A.I. RTE. 90 & F.A. RTE. 61  
PROJECT  
SECTION 22-1HB-3  
DU PAGE COUNTY  
STATION 28+79.81

ALFRED BENESCH & COMPANY  
CONSULTING ENGINEERS  
105 WABASH AVE., CHICAGO, ILLINOIS

FOR INFORMATION ONLY

**benesch**  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-666-0450 Job No. 10032.13

SHEET NO. 14	F.A.I. RTE. 290	SECTION 2009-1151	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 19
19 SHEETS			CONTRACT NO. 60J34		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

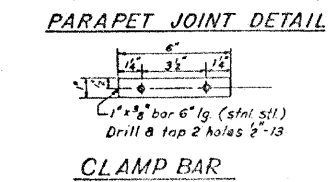
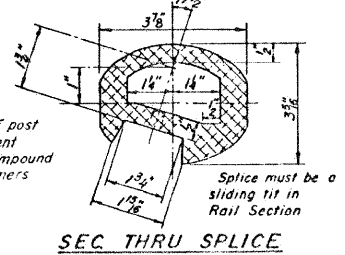
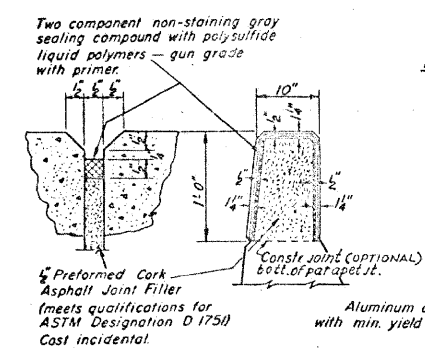
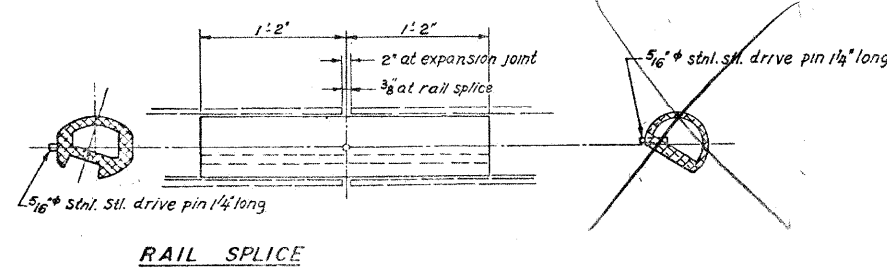
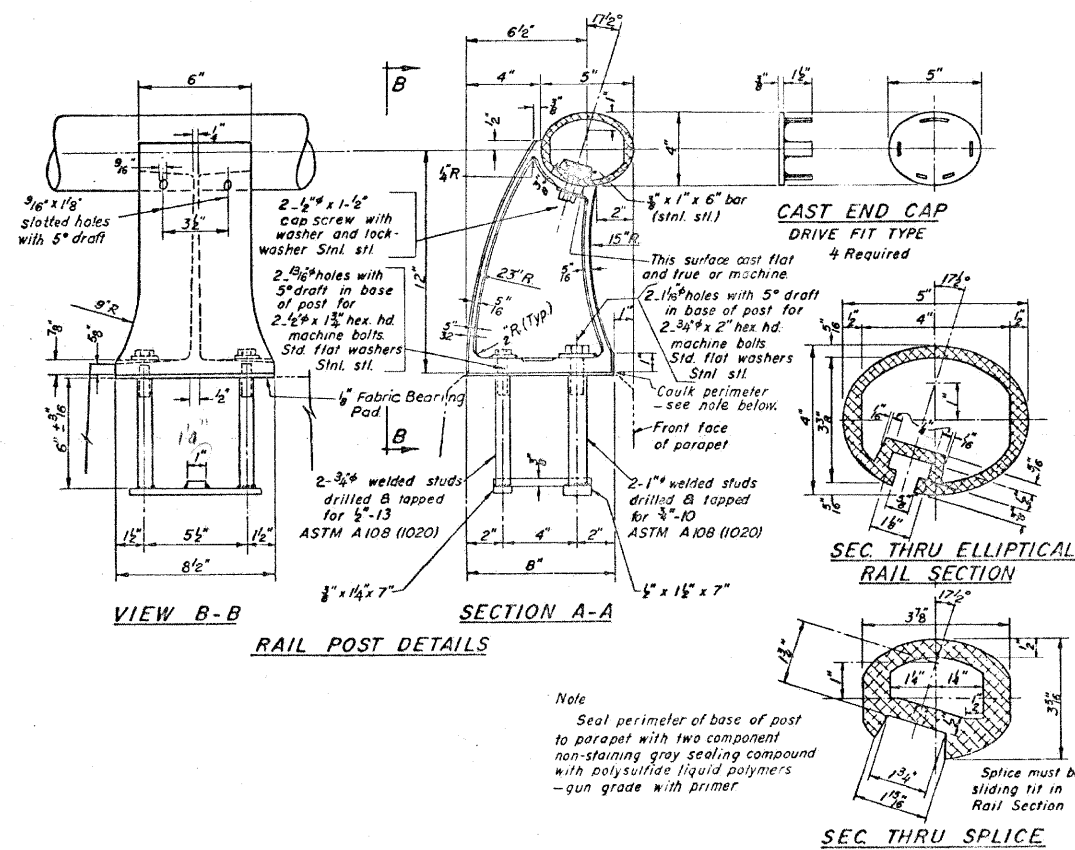
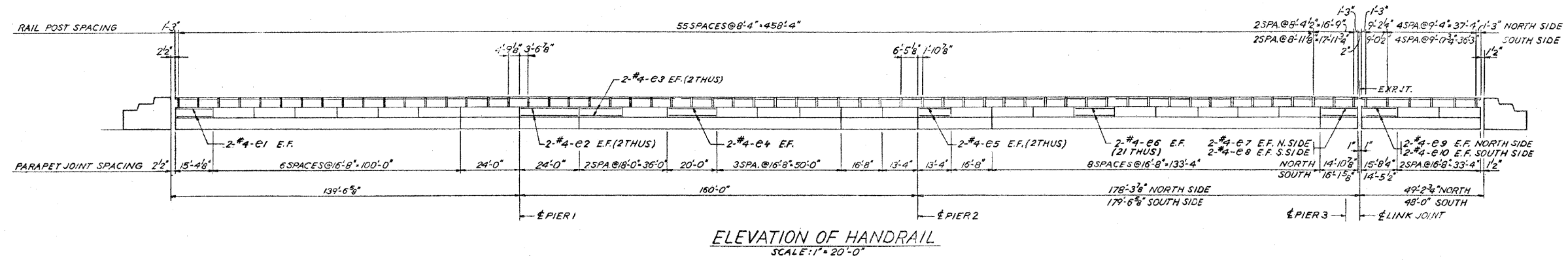
EXISTING PLAN INFORMATION 2 OF 7  
STRUCTURE NO. 022-0106

x:\10000s\10032\engineering\documents\contract\_60j34\sn\_022\_0106\_b\comingdale\_r-d\0106-60j34-014-Exisplan\_02.dgn 15:46:52 03/22/2010

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 22-118-3	DUPAGE	DUPAGE	87	28
STA.	TO STA.			
B.P.R. REG. NO. 4	ILLINOIS	PROJECT		

SHEET 7 OF 23



**NOTES:**  
ALL ALUMINUM ALLOY EXTRUDED RAIL SHALL BE SUPPLIED IN MODULAR LENGTHS OF 30 FEET, EXCEPT AT THE END OF BRIDGE OR OVER OPEN JOINTS. BRIDGE DECK WHERE THE RAIL SHALL BE ATTACHED TO A MINIMUM OF 2 POSTS. IF THE RAIL IS ON A HORIZONTAL CURVE OF 2,300 FOOT RADIUS OR LESS, THE MODULAR LENGTHS MAY BE REDUCED BUT SHALL BE ATTACHED TO A MINIMUM OF 2 POSTS.  
ALL JOINTS IN RAIL SHALL BE SPICED PER DETAIL. PROVIDE 1/4" AND 2-1/2" ALUMINUM SHIMS FOR 25% OF THE POSTS. RAIL ELEMENT SHALL BE PARALLEL TO GRADE - HIGH SPOTS SHALL BE GROUND, AND LOW SPOTS SHIMMED.  
Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

**PARAPETS & RAILS**  
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
e1	8	#4	15'-0"	
e2	16	#4	23'-9"	
e3	16	#4	17'-9"	
e4	8	#4	19'-9"	
e5	16	#4	13'-0"	
e6	168	#4	16'-3"	
e7	4	#4	14'-6"	
e8	4	#4	15'-9"	
e9	4	#4	15'-3"	
e10	4	#4	14'-0"	
Class X Concrete			Cu. Yds.	34.0
Reinforcement Bars			Lbs.	2,750
Aluminum Railing			Lin. Ft.	7,054

**ALUMINUM RAILING**  
NORDIC RD.  
OVER F.A.I. RTE. 90 & F.A.P. RTE. 61  
PROJECT  
SECTION 22-118-3  
DUPAGE COUNTY  
STATION 28+79.81

ALFRED BENESCH & COMPANY CONSULTING ENGINEERS  
10 SOUTH WABASH AVENUE CHICAGO, ILLINOIS

FOR INFORMATION ONLY

**benesch**  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-655-0450 Job No. 10032.13

SHEET NO. 15	F.A.I. RTE. 290	SECTION 2009-1151	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 20
19 SHEETS	CONTRACT NO. 60J34		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

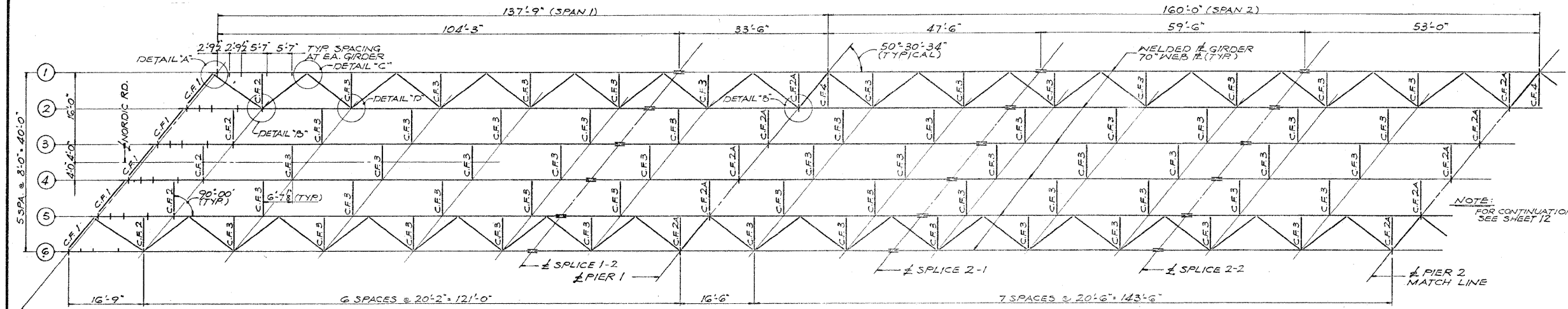
EXISTING PLAN INFORMATION 3 OF 7  
STRUCTURE NO. 022-0106

15:48:56 x:\10000\10032\engineering\_documents\_contract\_60j34\asn\_022\_0106\_bloomingdale\_r.d\0106-60J34-015-Exisplan\_03.dgn 03/23/2010

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET 11 OF 23

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 90	22-IHB-3	DUPAGE	87	32
STA.	TO STA.			
P.F. & REG. NO. 4	ILLINOIS	PROJECT		

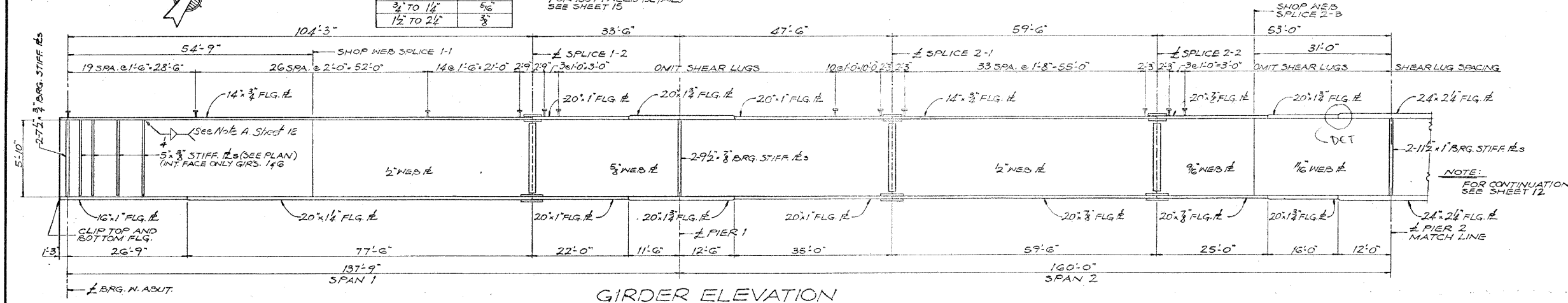


**WELD TABLE**

FLANGE PLATE SIZE	FILLET WELD SIZE
1/2" TO 1 1/2"	3/8"
3/4" TO 1 3/4"	5/8"
1 1/2" TO 2 1/2"	3/4"

NOTE: FOR BUTTWELD DETAILS SEE SHEET 15

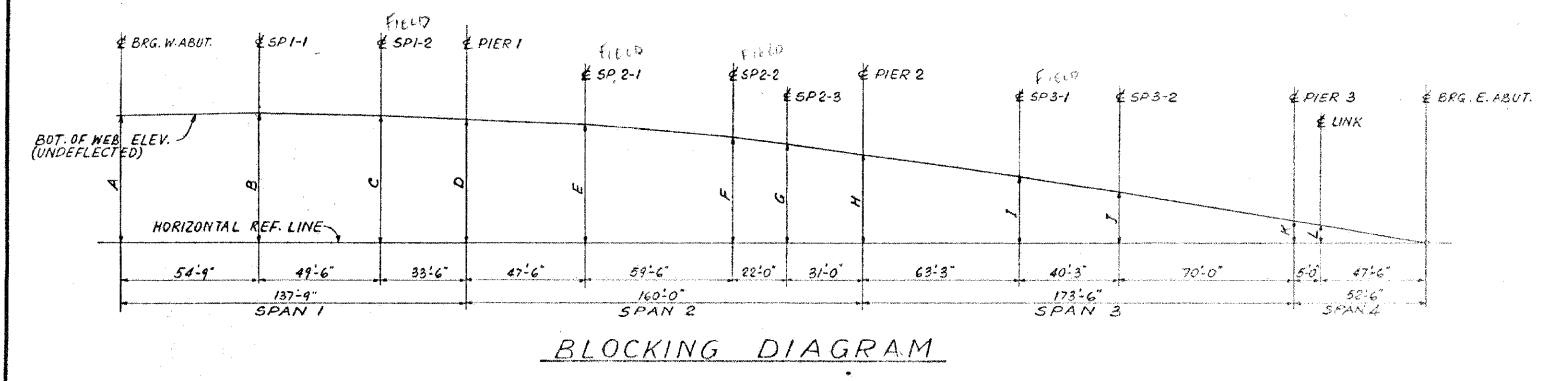
**FRAMING PLAN**  
SCALE: 3/32"=1'-0"



**GIRDER ELEVATION**

**BLOCKING DIMENSIONS**

GIRDER	A	B	C	D	E	F	G	H	I	J	K	L
1	16'-1 1/2"	16'-4 1/2"	15'-10"	15'-2 1/2"	14'-4"	12'-3 1/2"	11'-11 1/2"	10'-5 1/2"	8'-3 1/2"	6'-4 1/2"	2'-6 3/4"	2'-3 3/4"
2	15'-8 3/8"	16'-0 1/2"	15'-6 1/2"	14'-11 1/2"	14'-11 1/2"	12'-7 1/2"	11'-10"	10'-7 1/2"	8'-3 1/2"	6'-4 1/2"	2'-6 3/4"	2'-3 3/4"
3	15'-4 1/2"	15'-8 3/8"	15'-3 3/8"	14'-9"	13'-11 1/2"	12'-5 3/4"	11'-8 1/4"	10'-7"	8'-3"	6'-4 1/2"	2'-6 3/4"	2'-3 3/4"
4	14'-11 1/2"	15'-4 1/2"	15'-0 1/2"	14'-6 1/2"	13'-9 1/2"	12'-3 1/2"	11'-7 1/2"	10'-6"	8'-2 1/2"	6'-4 1/2"	2'-6 3/4"	2'-3 3/4"
5	14'-7 1/2"	15'-0 1/2"	14'-8 1/2"	14'-3 1/2"	13'-6 1/2"	12'-1 1/2"	11'-5 1/2"	10'-4 1/2"	8'-2 1/2"	6'-4 1/2"	2'-6 3/4"	2'-3 3/4"
6	14'-2 1/2"	14'-8 1/2"	14'-5 1/2"	14'-0"	13'-4 1/2"	12'-0 1/2"	13'-4 1/2"	10'-3 3/4"	8'-2"	6'-4 1/2"	2'-6 3/4"	2'-3 3/4"



**BLOCKING DIAGRAM**

FRAMING PLAN  
NORDIC RD.  
OVER F.A.I. RTE. 90 & F.A.P. RTE. 61  
PROJECT  
SECTION 22-IHB-3  
DUPAGE COUNTY  
STATION 28+79.81

ALFRED BENESCH & COMPANY  
CONSULTING ENGINEERS  
10 S. WABASH AVE. CHICAGO, ILL. 60601

FOR INFORMATION ONLY

**benesch**  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-566-0450 Job No. 10032.13

SHEET NO. 16	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	2009-1151	DUPAGE	27	21
19 SHEETS	CONTRACT NO. 60J34		ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 4 OF 7  
STRUCTURE NO. 022-0106

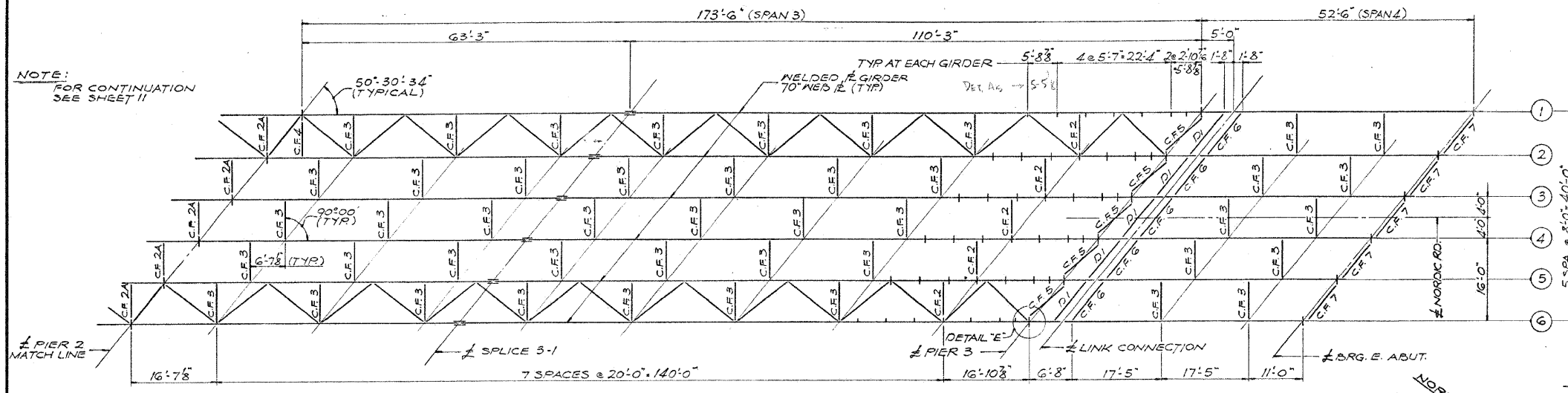
x:\10000s\10032\engineering-documents-contract-60j34\asn-022-0106-bloomingdale-rd\0106-60J34-016-Exstplan\_04.dgn 15:49:00 03/22/2010

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

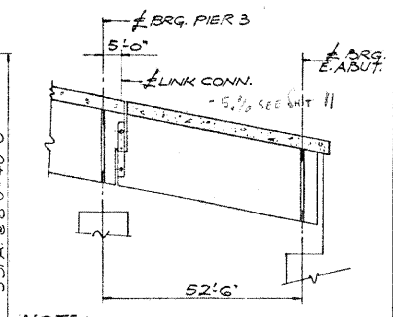
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
F.A.I. RTE. 22-115B-3	DU PAGE	87	33
STA.	TO STA.		
F.P. & REG. NO. 4	ILLINOIS	PROJECT	

SHEET 12 OF 23

NOTE:  
FOR CONTINUATION  
SEE SHEET 11



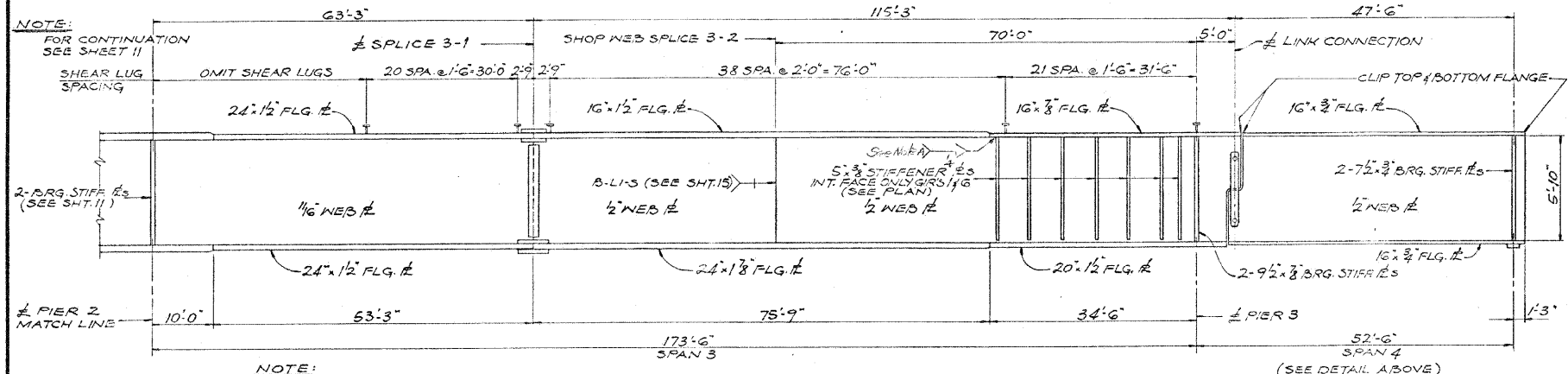
FRAMING PLAN  
SCALE: 3/8" = 1'-0"



NOTE:  
BEARING STIFFENER AT PIER 3, LINK CONNECTION AND BEARING STIFFENER AND END OF GIRDER AT EAST ABUTMENT TO BE TRULY VERTICAL, OTHERS AT RIGHT ANGLE TO FLANGES.

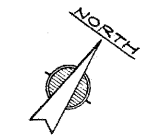
DETAIL FOR SPAN 4

NOTE:  
FOR CONTINUATION  
SEE SHEET 11



GIRDER ELEVATION

NOTE:  
FOR SIZES OF FILLET WELDS  
SEE SHEET 11  
FOR BUTTWELD DETAILS SEE SHT. 15



STRESS TABLE

MOMENTS (K)							
	SPAN 1	PIER 1	SPAN 2	PIER 2	SPAN 3	PIER 3	SPAN 4
D.L.	+1495	-2592	-446	-3882	+2814	-137	+295
S.D.L.	+392	-506	+217	-725	+629	-34	+73
L.L.	+1340	-1422	+1197	-1864	+1967	-202	+424
IMP.	+255	-281	+209	-319	+330	-42	+119
SDL+LL+I	+1987	-2592	+1623	-2206	+2926	-246	+616
TOTAL	+3282	-4785	+2069	-6790	+5740	-415	+909

SECTION PROPERTIES							
STEEL SECTION	Is	Isx	Srs	Sbs	Ic n=10	Erc	Sac
	52.013	107.973	25.601	160.637	97.558	66.016	41.799
	1180	2938	1120	4312	2227	1529	1171
	1872	2938	1481	4312	3299	2261	1171
	6986	—	5814	—	7737	—	—
	2585	—	2060	—	3968	—	—

REACTIONS (K)					
	W. ABUT.	PIER 1	PIER 2	PIER 3	E. ABUT.
D.L.	57.0	182.3	234.4	113.9	24.9
S.D.L.	14.2	41.0	48.6	25.9	6.1
L.L.	53.0	103.2	115.4	74.5	46.1
IMP.	10.0	18.9	19.7	15.7	13.0
TOTAL	134.2	325.4	418.1	230.0	90.1

Note A: Weld as shown to the compression flanges of Girders 1 & 6 only. Clip corners to clear flange to web welds.

TOP OF WEB ELEVATIONS (FOR FABRICATION ONLY)

GIRDER	BRG. W.A.	SP. 1-1	SP. 1-2	PIER 1	SP. 2-1	SP. 2-2	SP. 2-3	PIER 2	SP. 3-1	SP. 3-2	PIER 3	LINK	BRG. E.A.
1	737.268	737.513	736.992	736.370	735.489	733.845	733.699	731.889	729.433	727.568	723.718	723.443	721.157
2	737.398	737.697	737.225	736.637	735.803	734.217	733.434	732.314	729.521	728.064	724.215	723.539	721.653
3	737.481	737.834	737.411	736.854	736.049	734.542	733.820	732.691	730.360	728.519	724.670	724.394	722.108
4	737.432	737.839	737.445	736.943	736.203	734.735	734.045	732.936	730.468	728.845	725.000	724.784	722.438
5	737.251	737.719	737.387	736.899	736.205	734.796	734.128	733.050	730.894	729.059	725.204	724.928	722.642
6	737.022	737.538	737.242	736.806	736.160	734.810	734.163	733.116	730.973	729.216	725.367	725.091	722.805

SHEAR (K)

	SPAN 1				SPAN 2					
	W. ABUT.	1/4	1/2	3/4	PIER 1	PIER 1	1/4	1/2	3/4	PIER 2
D.L.	57.0	19.6	18.3	56.5	97.5	82.8	37.4	7.0	53.6	103.6
S.D.L.	14.2	5.4	3.6	12.6	21.6	19.4	9.0	1.3	11.7	22.1
L.L.	48.8	33.4	28.0	42.0	59.3	58.8	39.4	25.6	43.3	62.9
IMP.	9.3	6.4	5.3	8.0	10.9	10.8	6.8	4.5	7.5	10.8
SDL+LL+I	72.3	45.2	36.9	62.6	91.8	89.0	55.2	31.4	62.5	95.8
TOTAL	129.3	64.8	55.2	119.1	189.3	173.8	72.6	38.1	116.1	199.4

	SPAN 3				SPAN 4					
	PIER 2	1/4	1/2	3/4	PIER 3	LINK	1/4	1/2	3/4	E. ABUT.
D.L.	130.8	74.9	20.6	32.6	82.8	24.9	16.4	2.6	16.4	24.9
S.D.L.	26.5	15.3	3.9	7.3	18.5	6.1	1.0	0.6	4.0	6.1
L.L.	67.5	46.9	28.6	35.1	56.5	42.0	33.5	19.1	33.5	42.0
IMP.	11.5	7.9	4.8	5.9	9.5	11.9	9.5	5.4	9.5	11.9
SDL+LL+I	105.5	70.1	37.3	48.3	84.5	60.0	47.0	25.1	47.0	60.0
TOTAL	236.3	145.0	57.9	80.9	167.3	82.9	63.1	27.7	63.4	81.9

FRAMING PLAN  
NORDIC RD.  
OVER F.A.I. RTE. 90 & F.A.P.RTE. 61  
PROJECT  
SECTION 22-115B-3  
DU PAGE COUNTY  
STATION 28+79.81

ALFRED BENESCH & COMPANY  
CONSULTING ENGINEERS  
10 S. WABASH AVE. CHICAGO, ILLINOIS

FOR INFORMATION ONLY

benesch  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-566-0450 Job No. 10032.13

SHEET NO. 17	F.A.I. RTE. 290	SECTION 2009-1151	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 22
19 SHEETS	CONTRACT NO. 60J34		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

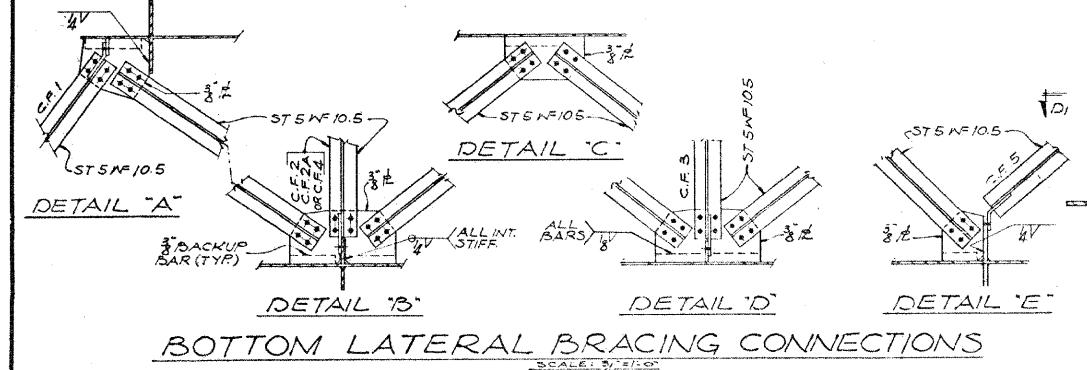
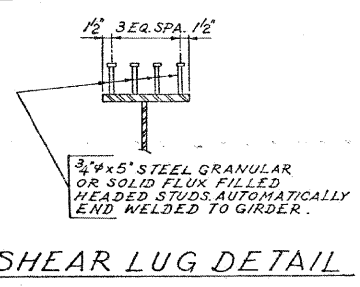
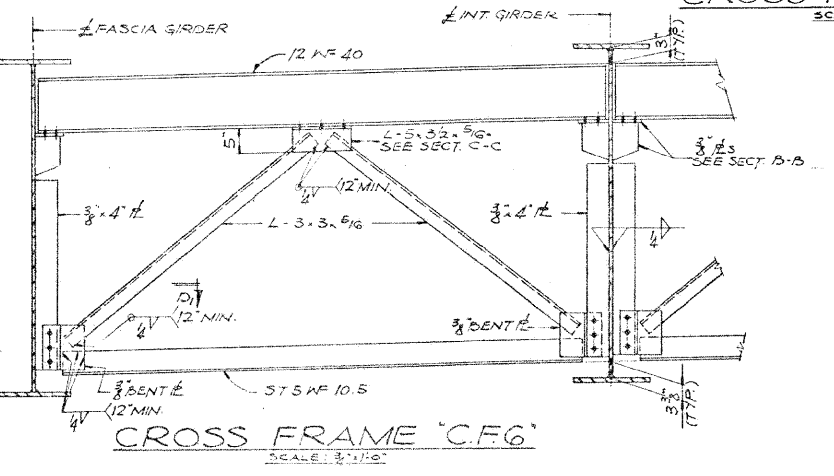
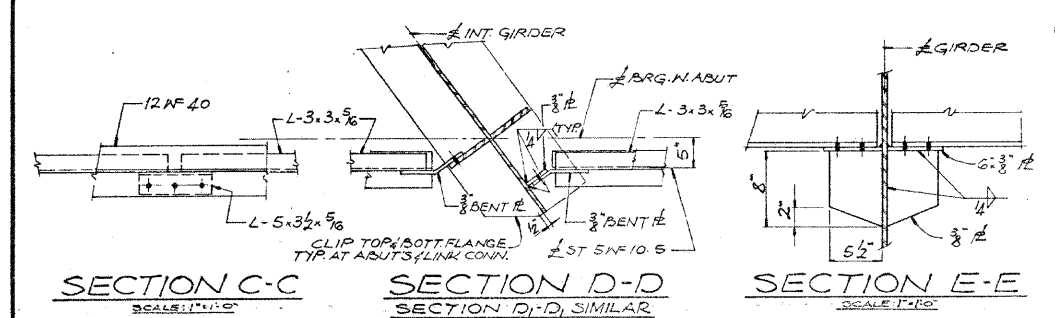
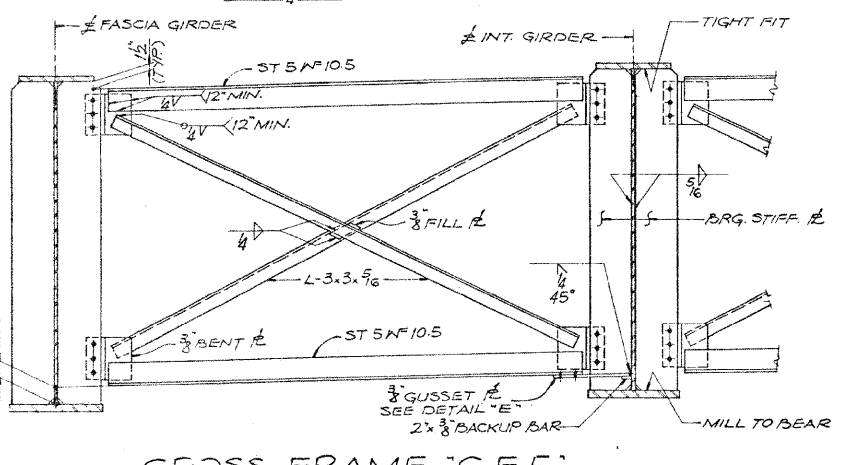
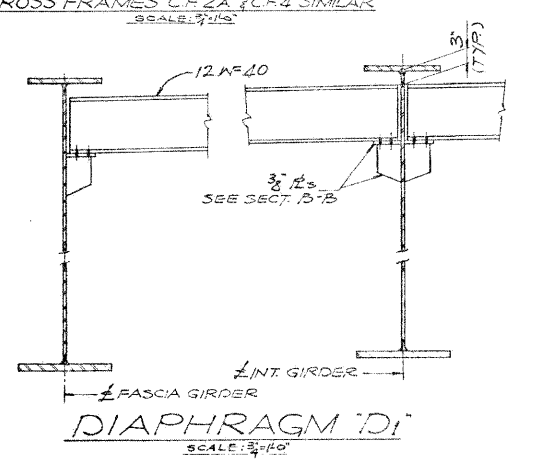
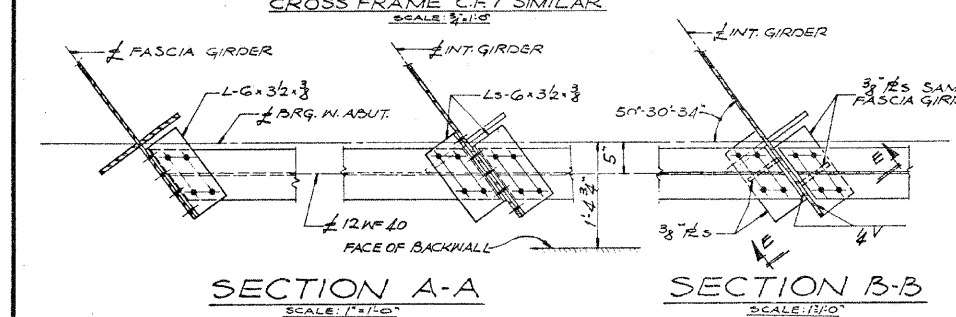
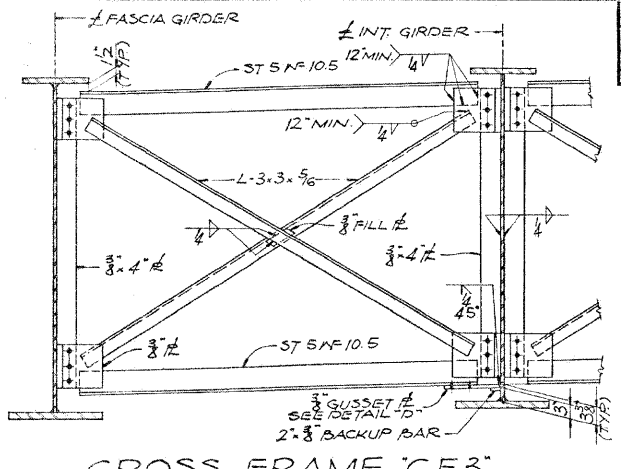
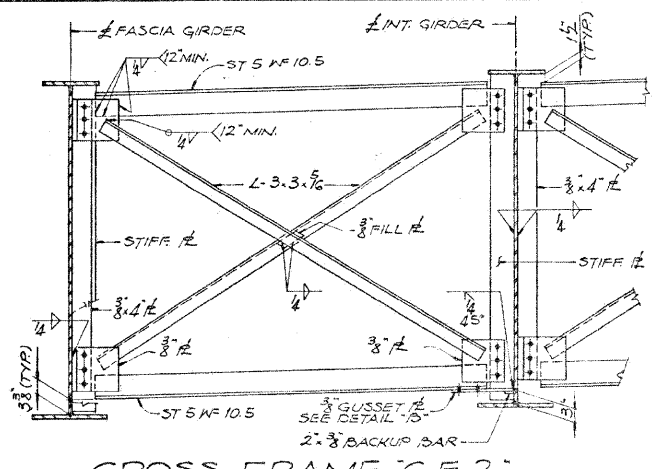
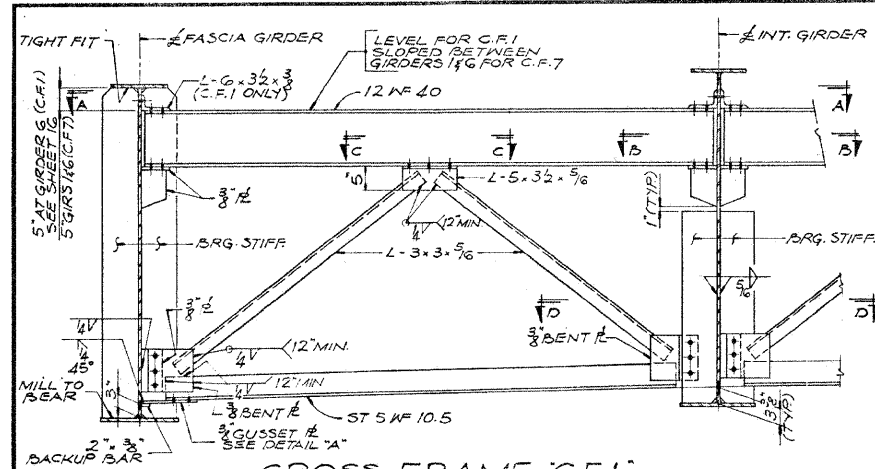
EXISTING PLAN INFORMATION 5 OF 7  
STRUCTURE NO. 022-0106

03/22/2010 15:49:03 x:\10000s\10032\engineering-documents-contract-60j34\asn\_022\_0106\_bloomingdale-rd\0106-60J34-017-Existplan\_05.dgn

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 90	22-HB-3	DUPAGE	87	34
STA.	TO STA.			
E.P.A. REG. NO. 4	ILLINOIS		PROJECT	

SHEET 13 OF 23



STEEL DETAILS  
NORDIC RD.  
OVER F.A.I. RTE 90 & F.A.P. RTE 61  
PROJECT  
SECTION 22-1HB-3  
DU PAGE COUNTY  
STATION 28+79.81

ALFRED BENESCH & COMPANY  
CONSULTING ENGINEERS  
10 S. WABASH AVE., CHICAGO, ILLINOIS

FOR INFORMATION ONLY

**benesch**  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312.565-0450 Job No. 10032.13

SHEET NO. 18	F.A.I. RTE. 290	SECTION 2009-1151	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 23
CONTRACT NO. 60J34					
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

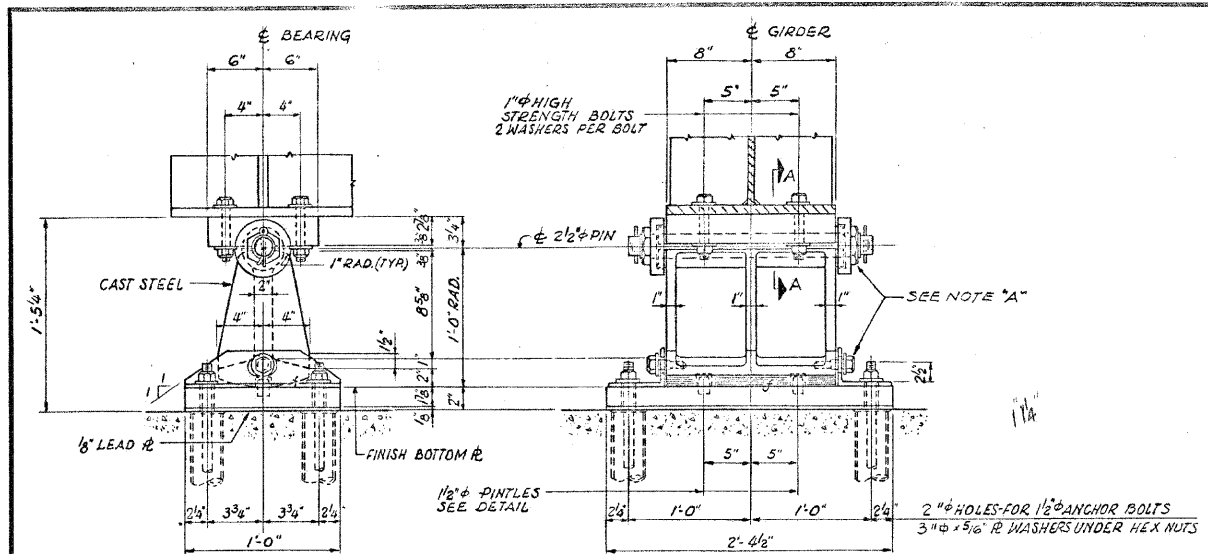
EXISTING PLAN INFORMATION 6 OF 7  
STRUCTURE NO. 022-0106

x:\10000s\10032\engineering-documents\contract-60J34\asn\_022\_0106\_bloomingdale-rd\0105-60J34-018-Exstplan\_06.dgn 15:49:07 03/22/2010

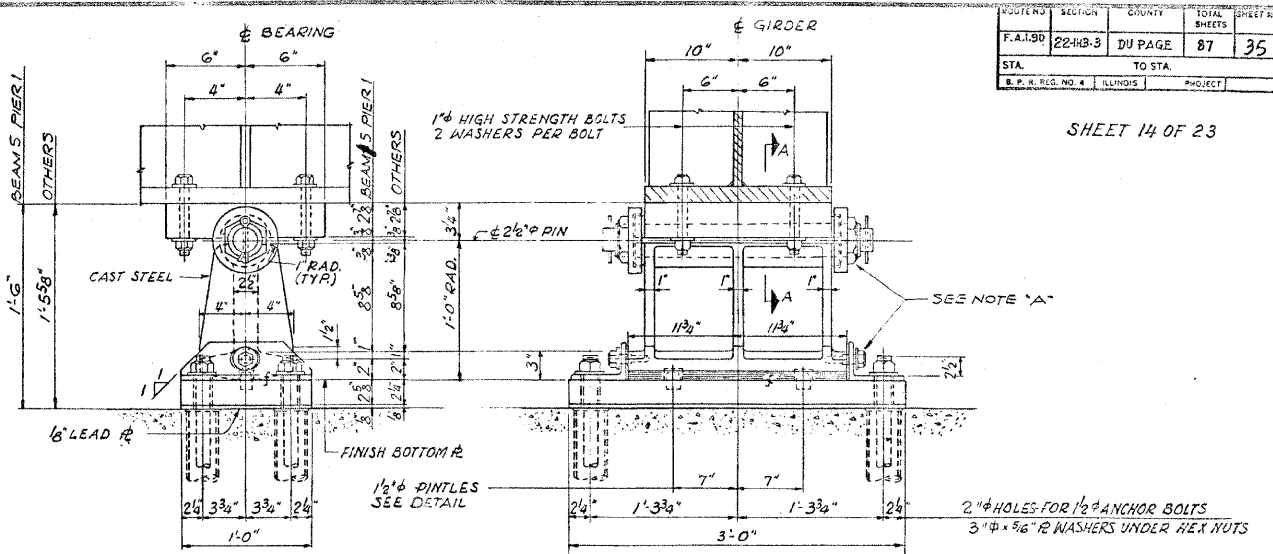
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.R.T.E.	22-11B-3	DUPAGE	87	35
STA.	TO STA.			
S. P. R. REG. NO. 4 ILLINOIS PROJECT				

SHEET 14 OF 23

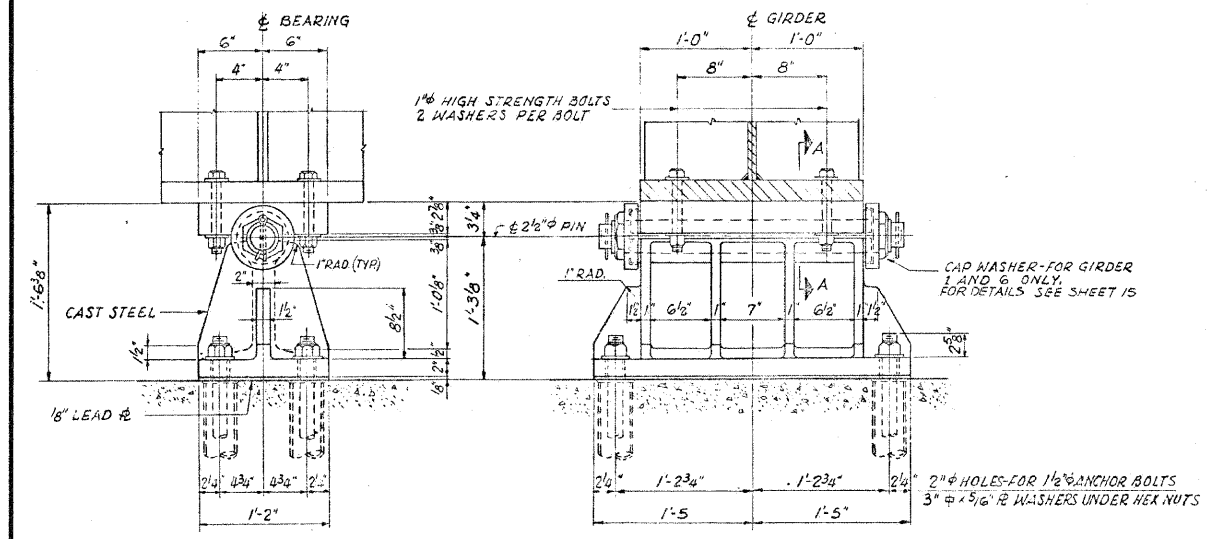


**EXPANSION BEARINGS WEST ABUTMENT.**  
SCALE: 1/2"=1'-0"

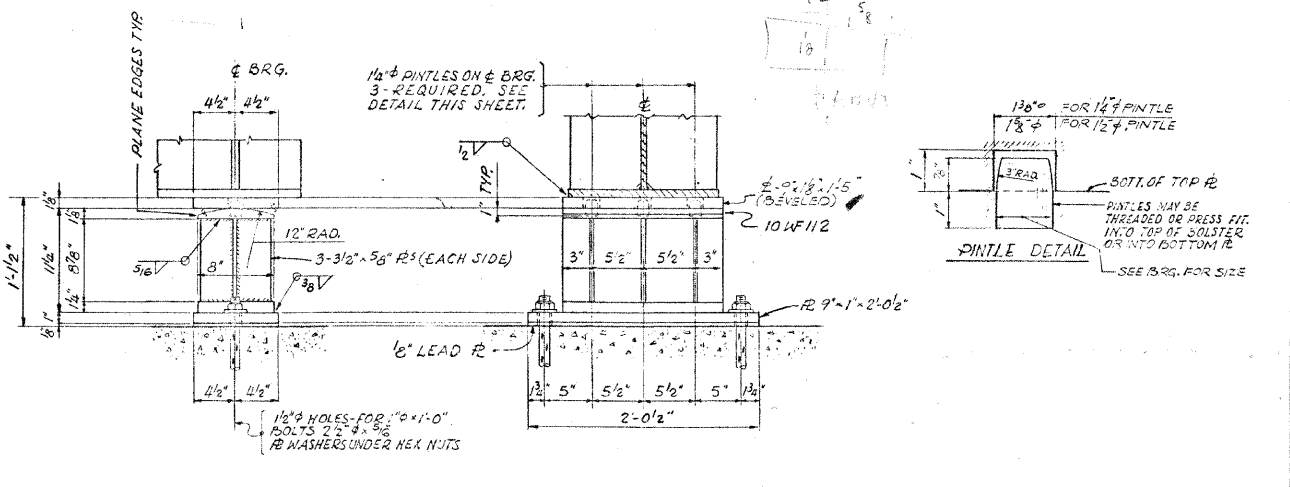


**EXPANSION BEARINGS PIER 1 AND 3**  
SCALE: 1/2"=1'-0"

**NOTE "A"**  
BEARING SHOWN WITH CAP WASHER ON PIN AND SHOULDER BOLT CONNECTIONS AT GIRDERS 1 & 2. OMIT CAP WASHERS, SHOULDER BOLTS & 4" x 4" x 2 L AT GIRDERS 3, 4 & 5. FOR DETAILS OF PINS & SHOULDER BOLTS SEE SHEET 15



**FIXED BEARINGS PIER 2**  
SCALE: 1/2"=1'-0"



**FIXED BEARINGS EAST ABUTMENT.**  
SCALE: 1/2"=1'-0"

**NOTE**  
CAST STEEL SHALL CONFORM TO A.S.T.M. A486-65, CLASS 70, NORMALIZE.  
PINS SHALL BE FORGED STEEL CONFORMING TO A.S.T.M. A235, CLASS F.  
PIPE SLEEVES SHALL CONFORM TO A.S.T.M. A53, TYPE E OR S, GRADE A OR B.  
ALL OTHER MATERIAL SHALL CONFORM TO A.S.T.M. A36 EXCEPT AS OTHERWISE NOTED.  
CASTINGS, PINTLES, BEARING PLATES, LEAD PLATES, ANCHOR BOLTS AND MISCELLANEOUS ITEMS SHALL BE FABRICATED AND SET IN ACCORDANCE WITH SECTION 507 OF THE STANDARD SPECIFICATIONS AND ARE INCLUDED IN THE QUANTITY OF STRUCTURAL STEEL. ESTIMATED WEIGHT OF BEARINGS IS 27,070 POUNDS WHICH INCLUDES 7,530 POUNDS OF CAST STEEL.

<b>STEEL DETAILS</b>	
NORDIC RD.	
OVER F.A.I.R.T.E. 90 & F.A.P.R.T.E. 61	
PROJECT	
SECTION 22-11B-3	
DU PAGE COUNTY	
STATION 28+79.81	

ALFRED BENESCH & COMPANY  
CONSULTING ENGINEERS  
10 S. WABASH AVE. CHICAGO, ILLINOIS

FOR INFORMATION ONLY

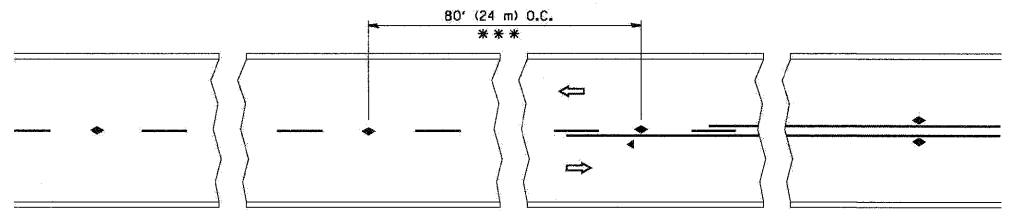
**benesch**  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-565-0450 Job No. 10032.13

SHEET NO. 19	F.A.I.R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
19 SHEETS	290	2009-1151	DUPAGE	27	24
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60J34					

EXISTING PLAN INFORMATION 7 OF 7  
STRUCTURE NO. 022-0106

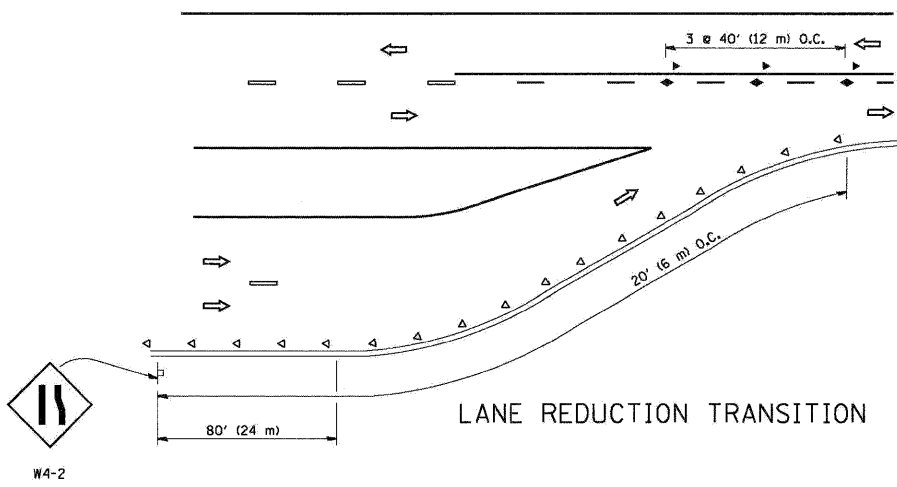
03/22/2010 15:49:11 x:\10000s\10032\engineering-documents-contract-60j34\sn-022-0106-bloomingdale-rd\0106-60J34-019-Existplan\_07.dgn



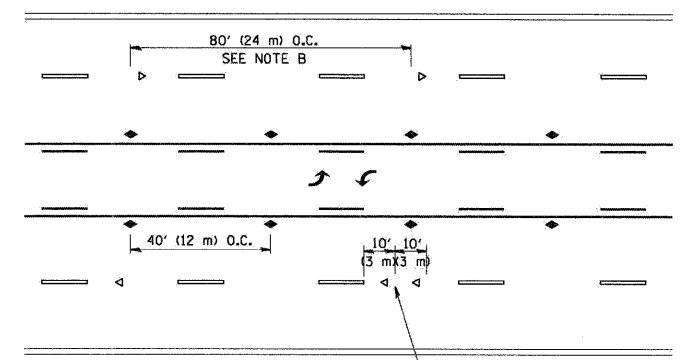


\*\*\* REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

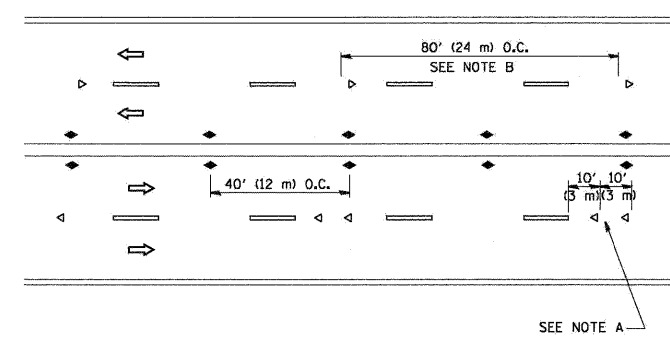
TWO-LANE/TWO-WAY



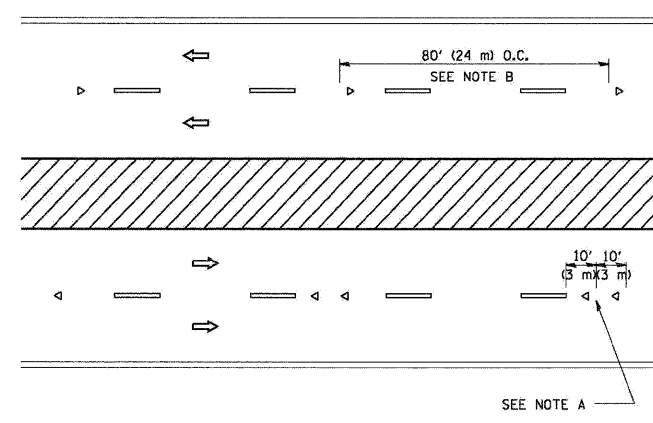
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

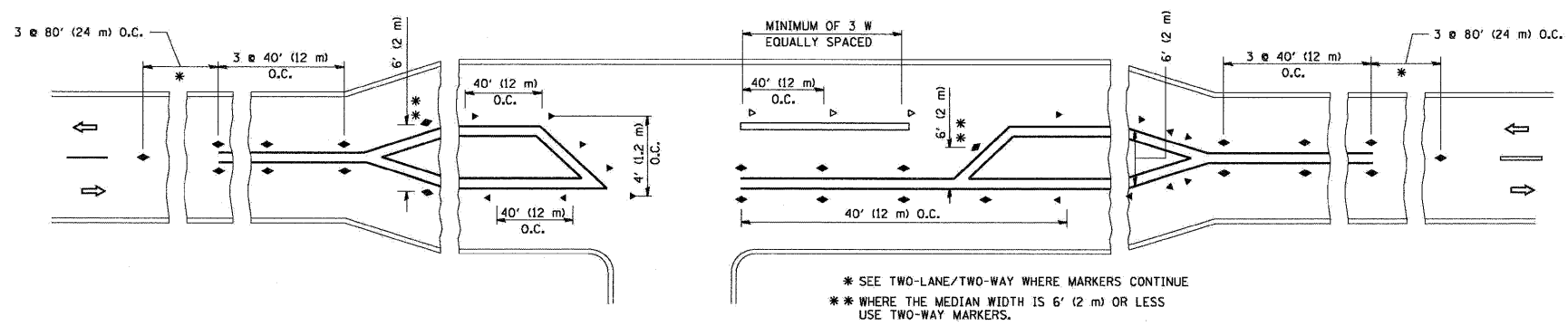
1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◀ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.
- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.

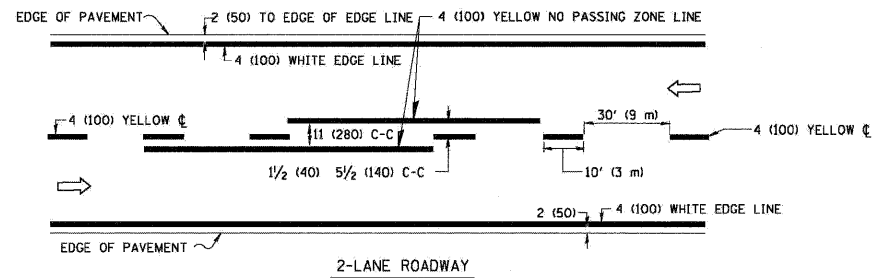


LEFT TURN

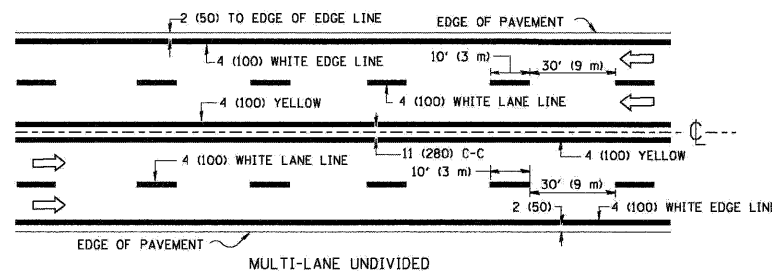
All dimensions are in Inches (millimeters) unless otherwise shown.

TC-11

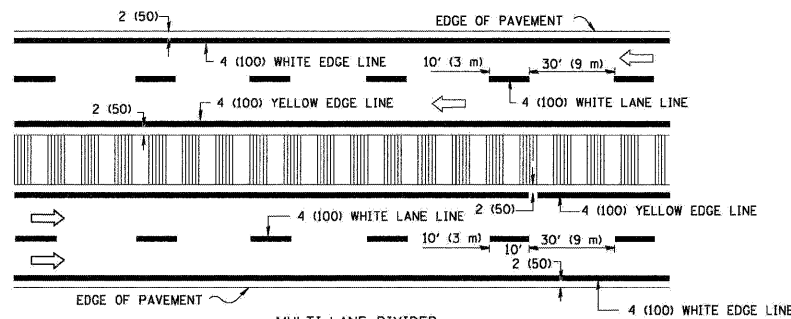
FILE NAME =	DESIGNED - AJP	REVISED -	<b>benesch</b>	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT 1 DETAILS TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)</b>			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME =	DRAWN - AJP	REVISED -						290	2009-1151	DUPAGE	27	25
PLOT DATE = 03/22/2010	CHECKED - KJN	REVISED -						CONTRACT NO. 60J34				
DATE - 3/19/10	REVISED -	REVISED -	SCALE: N.T.S.	SHEET NO. 1 OF 3 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT				



2-LANE ROADWAY



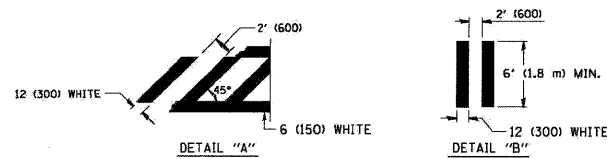
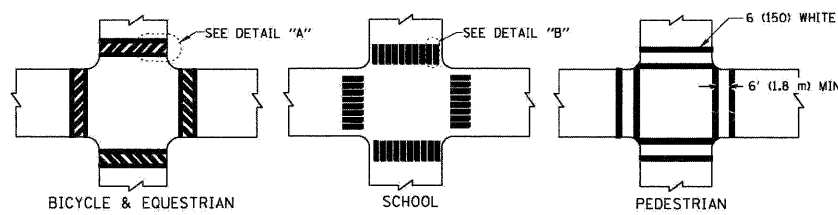
MULTI-LANE UNDIVIDED



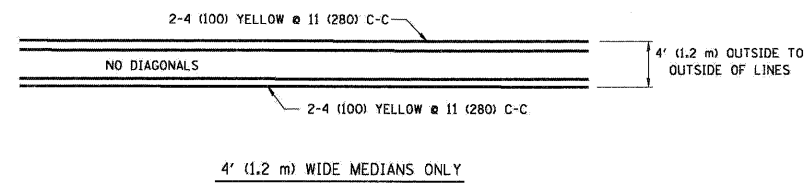
MULTI-LANE DIVIDED WITH MOUNTABLE MEDIAN

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

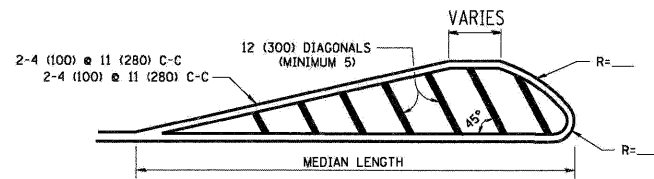
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING



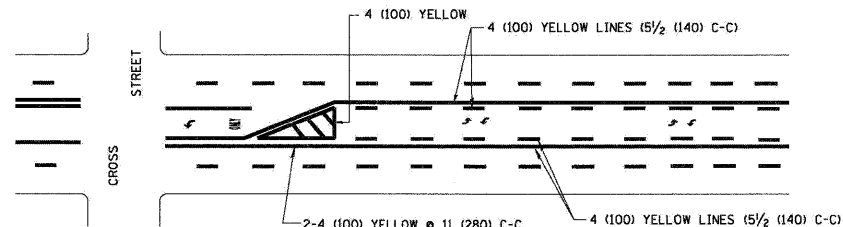
4' (1.2 m) WIDE MEDIANS ONLY



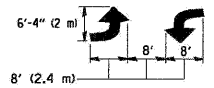
FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))  
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)  
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

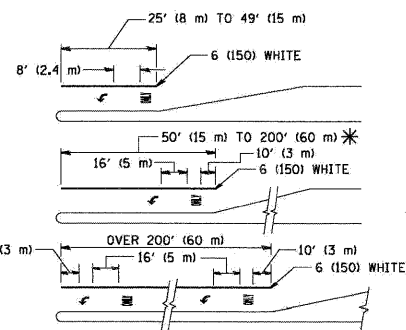


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

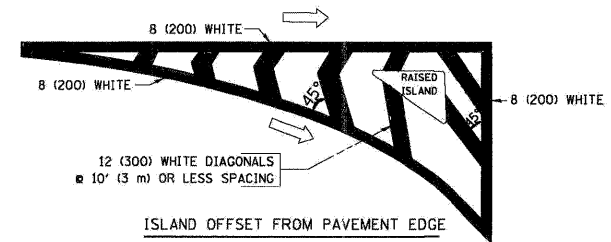


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.  
AREA = 15.6 SQ. FT. (1.5 m<sup>2</sup>) ONLY AREA = 20.8 SQ. FT. (1.9 m<sup>2</sup>)

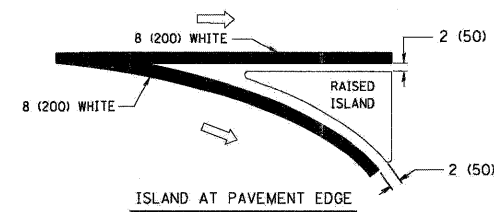
\* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



ISLAND AT PAVEMENT EDGE

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	4 (100)	SOLID	YELLOW	5 1/2 (140) C-C FROM SKIP-DASH CENTERLINE
NO PASSING ZONE LINES FOR BOTH DIRECTIONS	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 6 (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" IS 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 =	DESIGNED - AJP	REVISED -
USER NAME =	DRAWN - AJP	REVISED -
PLOT DATE = 03/22/2010	CHECKED - KJN	REVISED -
	DATE - 3/19/10	REVISED -

benesch

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

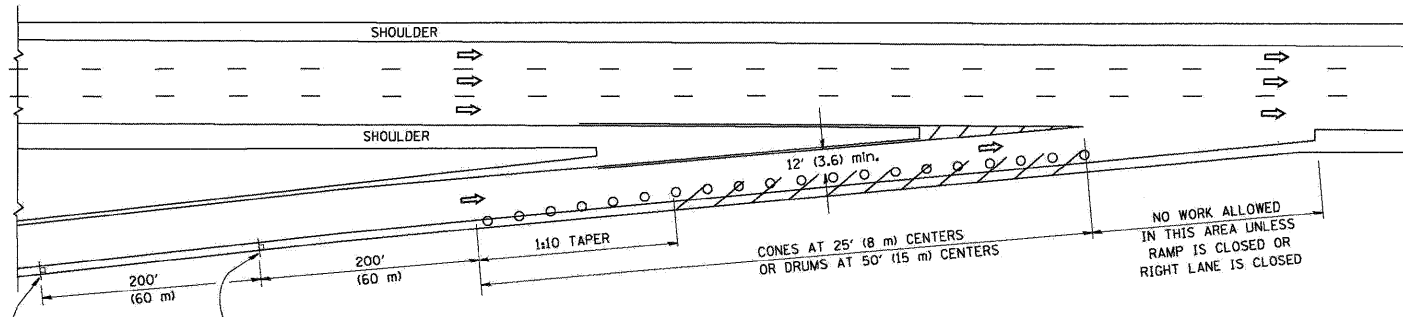
DISTRICT 1 DETAILS  
DISTRICT ONE TYPICAL PAVEMENT MARKINGS

SCALE: N.T.S. SHEET NO. 2 OF 3 SHEETS STA. TO STA.

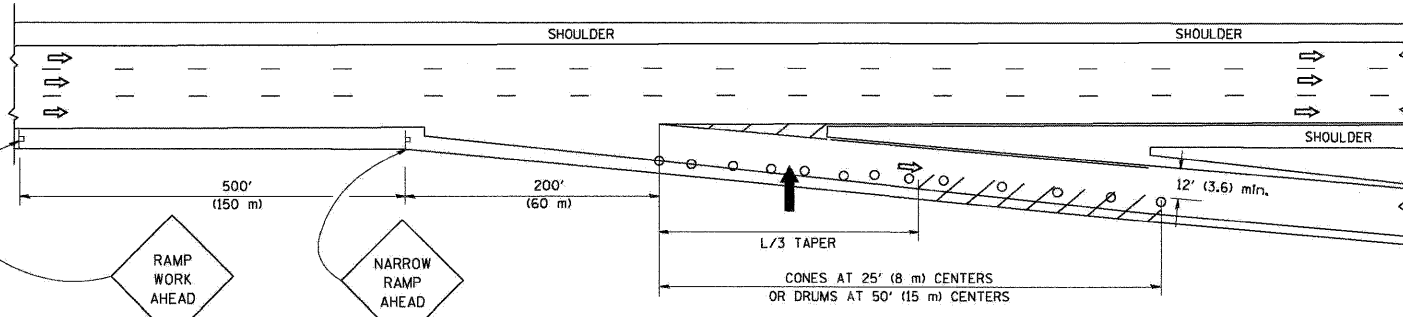
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
290	2009-1151	DUPAGE	27	26
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60J34	

PARTIAL RAMP CLOSURE DETAILS

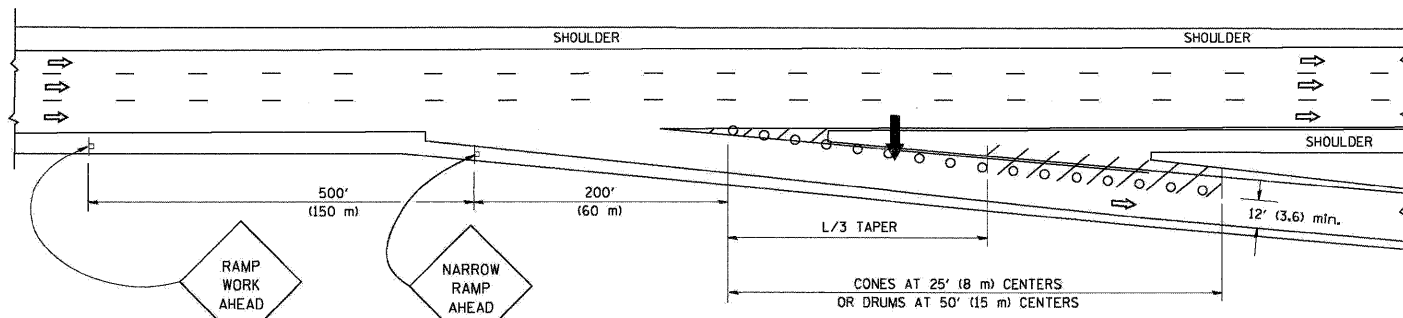
SHOULDER CLOSURE DETAILS



TYPICAL ENTRANCE RAMP



TYPICAL EXIT RAMP



TYPICAL EXIT RAMP

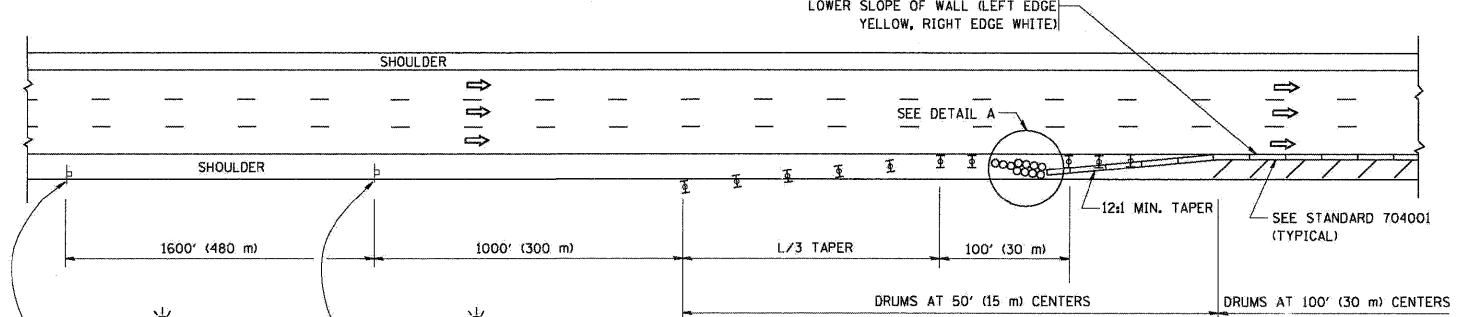
SYMBOLS

- ARROWBOARD
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

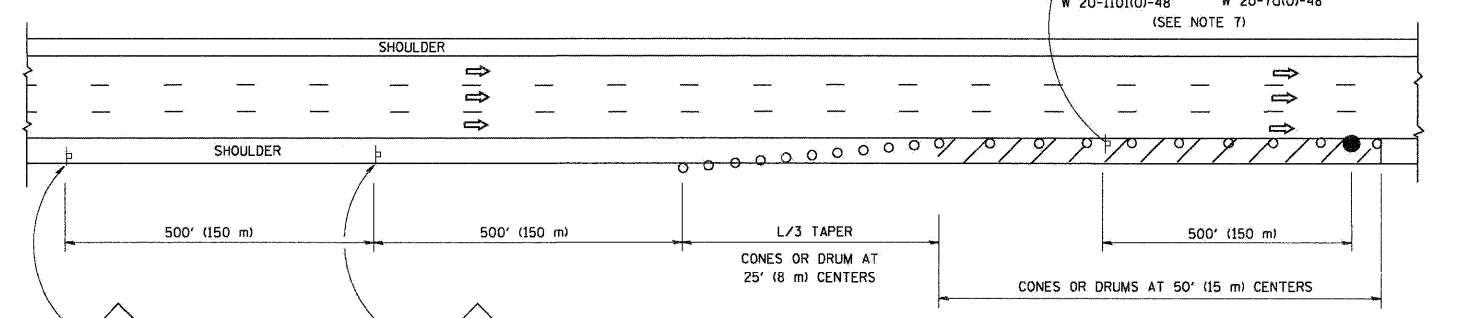
GENERAL NOTES

1. THE "L" DISTANCE EQUALS:
 

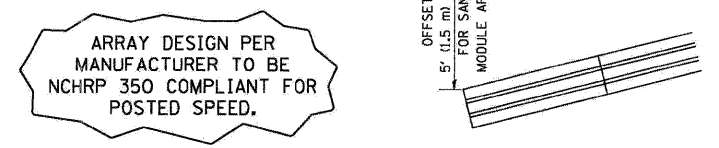
SPEED LIMIT	FORMULAS
45 mph (80 km/h) OR GREATER:	METRIC ENGLISH L=0.65(W)(S) L=(W)(S)
W = WIDTH OF OFFSET IN FEET (METERS)	
S = NORMAL POSTED SPEED MPH (KM/H)	
2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.



PERMANENT SHOULDER CLOSURE



DAYTIME SHOULDER CLOSURE



DETAIL "A"  
IMPACT ATTENUATOR, TEMPORARY  
(SEE NOTE 5)

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

FILE NAME =	DESIGNED - AJP	REVISED -
USER NAME =	DRAWN - AJP	REVISED -
PLOT DATE = 03/22/2010	CHECKED - KJN	REVISED -
	DATE - 3/19/10	REVISED -

**benesch**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DISTRICT 1 DETAILS  
TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES  
PARTIAL RAMP CLOSURES

SCALE: N.T.S. SHEET NO. 3 OF 3 SHEETS STA. TO STA.

F.A.I. RTE. 290	SECTION 2009-1151	COUNTY DUPAGE	TOTAL SHEETS 27	SHEET NO. 27
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60J34	