

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 60F64		

D-91-178-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATIONS

DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

F.A.P. ROUTE 324 /IL ROUTE 23

SECTION: 24 B-2

OVER COON CREEK

(0.5 MILES SOUTH OF I-90)

BRIDGE REPLACEMENT

PROJECT: *BRF-0324(020)*

McHENRY COUNTY

C-91-178-09



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED DECEMBER 20, 2010

Diane M. O'Keefe se
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

February 4 2011
Scott E. Stitt, P.E.
acting ENGINEER OF DESIGN AND ENVIRONMENT

February 4 2011
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

CONCO, INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

STATE OF ILLINOIS
REGISTERED PROFESSIONAL ENGINEER
081-005150-5

WILLIAM H. EGG
REGISTERED PROFESSIONAL ENGINEER
081-005150-5

William H. Egg
Expires 11-30-12

William H. Egg
Expires 11-30-11

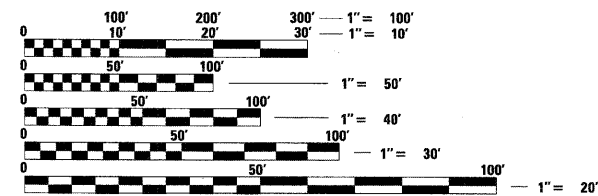
PROJECT LOCATED IN THE CITY OF
MARENGO IN McHENRY COUNTY, IL

FOR INDEX OF SHEETS, SEE SHEET NO. 2

DESIGN DESIGNATION
OTHER PRINCIPAL ARTERIAL

ADT 2400 (2007)
POSTED SPEED LIMIT 55 MPH
DESIGN SPEED LIMIT 60 MPH

EXISTING SN 056-0012
PROPOSED SN 056-0277

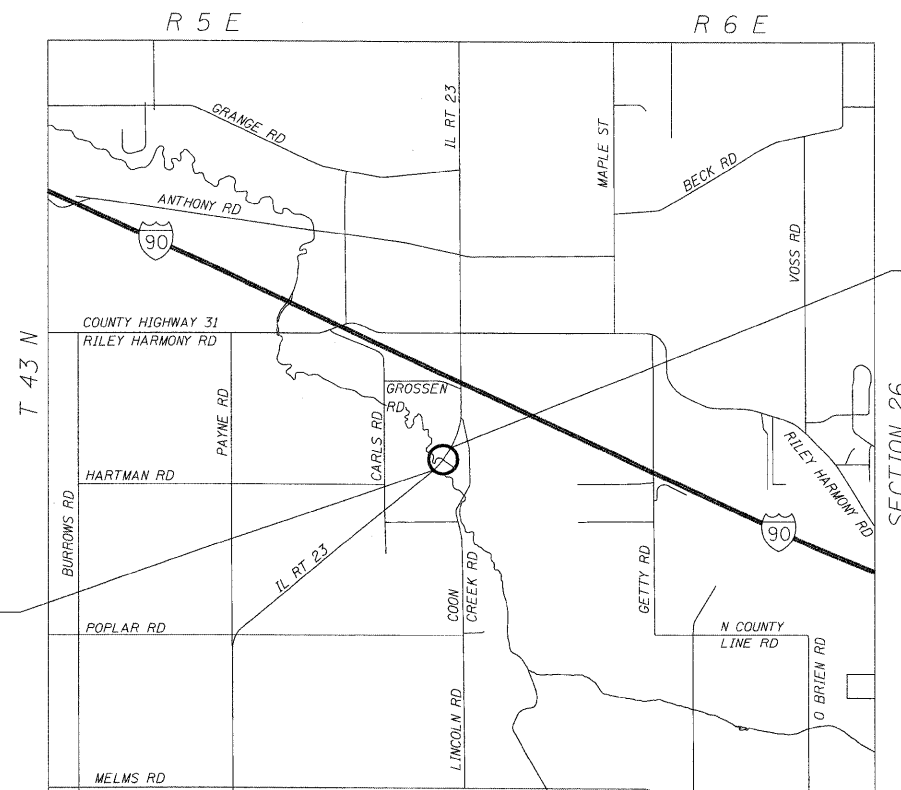


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT MANAGER: ISAAC KWARTENG (847) 705-4230
PROJECT ENGINEER: ALIX BRICE (847) 705-4552

CONTRACT NO. 60F64



PROJECT BEGINS
STA. 88+00

PROJECT ENDS
STA. 103+55

RILEY TOWNSHIP
LOCATION MAP



NET AND GROSS LENGTH OF PROJECT = 1555.0' = 0.295 MI

SHEET NO. TITLE

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2	GENERAL NOTES, STATE STANDARDS AND INDEX OF SHEETS
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14-16	EXISTING AND PROPOSED PLAN
17-18	EXISTING AND PROPOSED PROFILE
19-20	PAVEMENT MARKING PLAN
21-22	EROSION CONTROL PLAN
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25	CABLE PLAN
26-28	TEMPORARY LIGHTING DETAILS
29-54	STRUCTURAL PLANS
55-66	CROSS SECTIONS
67	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT
68	BUTT JOINT AND HMA TAPER DETAILS
69	DETAILS FOR DEPRESSED CURB & GUTTER AND SHOULDER TREATMENT AT TBT TY 1 SPL.
70	BENCHING CONSTRUCTION DETAIL
71	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS (TC-10)
72	RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT) (TC-11)
73	DISTRICT ONE TYPICAL PAVEMENT MARKINGS (TC-13)
74	PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING (TC-16)
75	ARTERIAL ROAD INFORMATION SIGN (TC-22)
76	DRIVEWAY ENTRANCE SIGNING (TC-26)
	HIGHWAY STANDARDS

STATE STANDARDS

SHEET NO. TITLE

000001-00	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT REBARS
001006	DECIMAN OF AN INCH AND OF A FOOT
280001-05	TEMPORARY EROSION CONTROL SYSTEMS
420401-08	BRIDGE APPROACH PAVEMENT CONNECTOR
442201-03	CLASS C AND CLASS D PATCHES
515001-03	NAME PLATE FOR BRIDGES
601101-01	CONCRETE HEADWALL FOR PIPE DRAIN
630001-09	STEEL PLATE BEAM GUARD RAIL
630101-09	GUARDRAIL MOUNTED ON EXISTING CULVERTS
630301-05	SHOULDER WIDENING FOR TYPE I (SPECIAL) GUARDRAIL TERMINALS
631031-09	TRAFFIC BARRIER TERMINAL, TYPE 6
635001-01	DELINEATORS
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
637001-04	PERMANENT SURVEY MARKERS
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5M) AWAY
701006-03	OFF-RD OPERATIONS, 2L, 2W, 15' (4.5M) TO 24" (600MM) FROM PAVEMENT EDGE
701011-02	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY FOR SPEEDS > 45 MPH
701301-04	LANE CLOSURE 2L, 2W SHORT TIME OPERATIONS
701306-03	LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE 2L, 2W MOVING OPERATIONS - DAY ONLY
701321-11	LANE CLOSURE 2L, 2W, BRIDGE REPAIR WITH BARRIER
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-02	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS
729001-01	APPLICATION OF TYPES A & B METAL POSTS (FOR SIGN & MARKERS)
780001-02	TYPICAL PAVEMENT MARKINGS
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001-01	UNINTERRUPTABLE POWER SUPPLY (UPS)

GENERAL NOTES

ALL ELEVATIONS ARE BASED ON UNITED STATES COAST AND GEODETIC SURVEY DATUM.

DIMENSIONS ARE IN ENGLISH UNITS UNLESS OTHERWISE NOTED.

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, AND GAS FACILITIES (48 HOURS NOTIFICATION IS REQUIRED).

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.

ANY REFERENCE TO STANDARDS IN THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS.

WHEN ARTIFICIAL LIGHTING IS UTILIZED IN NIGHT OPERATIONS, THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING PROPERTIES.

THE RESIDENT ENGINEER SHALL CONTACT MS. DEBBIE HANLON, AREA TRAFFIC ENGINEER, AT (847) 438-2300 AT A MINIMUM OF 2 WEEKS PRIOR TO THE PLACEMENT OF PERMANENT PAVEMENT MARKINGS.

THE CONTRACTOR SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO BEGINNING WORK.

BEFORE BEGINNING ANY WORK, THE CONTRACTOR SHALL RETAIN AND RECORD FOR FUTURE REFERENCE, ALL EXISTING PAVEMENT MARKING LINES (AND RAISED REFLECTIVE MARKERS) IN ORDER THAT THESE LOCATIONS CAN BE RE-ESTABLISHED FOR STRIPING. EXACT LOCATIONS OF ALL PAVEMENT MARKINGS SHALL BE DIRECTED BY THE ENGINEER.

THIS PROJECT REQUIRES A US ARMY CORPS OF ENGINEERS 404 PERMIT. THE PERMIT ISSUED TO THE DEPARTMENT DOES NOT COVER IN-STREAM WORK BY THE CONTRACTOR; THEREFORE AFTER AWARD, THE CONTRACTOR WILL NEED TO COORDINATE AND HAVE HIS WORK PLAN APPROVED BY THE CORPS. GUIDELINES ON ACCEPTABLE IN STREAM WORK TECHNIQUES CAN BE FOUND ON THE CORPS WEBSITE [HTTP://WWW.LRC.USACE.ARMY.MIL/](http://www.lrc.usace.army.mil/)

ALL WORK IS TO BE COMPLETED BY THE COMPLETION DATE. THE COMPLETION DATE FOR THIS CONTRACT IS NOVEMBER 30, 2011.

COMMITMENTS

THERE SHALL BE NO IN-STREAM WORK FROM APRIL 1ST THROUGH JUNE 30TH SO AS TO NOT IMPACT THE SPAWNING SEASON OF THE IOWA DARTER.



DESIGNED - MJY	REVISED -
DRAWN - ST, TSC	REVISED -
CHECKED - MJY, SLV	REVISED -
DATE - 12/30/2010	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, STATE STANDARDS AND INDEX OF SHEETS
IL ROUTE 23 OVER COON CREEK

SCALE: NONE SHEET NO. 1 OF 1 SHEET STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	2
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

SUMMARY OF QUANTITIES			80% FEDERAL, 20% STATE			
CODE NO.	ITEM	UNIT	URBAN TOTAL	ROADWAY 0004	BRIDGE 0011	0004
20200100	EARTH EXCAVATION	CU YD	527	527		
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	868	868		
20300100	CHANNEL EXCAVATION	CU YD	1257	1257		
20700220	POROUS GRANULAR EMBANKMENT	CU YD	3720	3720		
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	345	345		
21101815	COMPOST FURNISH AND PLACE, 4"	SQ YD	3628			3628
25000310	SEEDING, CLASS 4	ACRE	0.8			0.8
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	72			72
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	72			72
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	72			72
25100115	MULCH, METHOD 2	ACRE	0.8	0.8		
25100630	EROSION CONTROL BLANKET	SQ YD	3628	3628		
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	80	80		
28000305	TEMPORARY DITCH CHECKS	FOOT	153	153		
28000400	PERIMETER EROSION BARRIER	FOOT	2889	2889		
28000510	INLET FILTERS	EACH	2	2		
28100107	STONE RIPRAP, CLASS A4	SQ YD	1414		1414	
28200200	FILTER FABRIC	SQ YD	1414		1414	
31101100	SUBBASE GRANULAR MATERIAL, TYPE B	CU YD	4	4		
40600200	BITUMINOUS MATERIALS (PRIME COAT)	TON	5	5		
40600300	AGGREGATE (PRIME COAT)	TON	25	25		
40600400	MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS	TON	8	8		
40600635	LEVELING BINDER (MACHINE METHOD), N70	TON	57	57		
40600982	HOT-MIX ASPHALT SURFACE REMOVAL-BUTT JOINT	SQ YD	24	24		
40601005	HOT-MIX ASPHALT REPLACEMENT OVER PATCHES	TON	17	17		

* SPECIALTY ITEMS

SUMMARY OF QUANTITIES			80% FEDERAL, 20% STATE			
CODE NO.	ITEM	UNIT	URBAN TOTAL	ROADWAY 0004	BRIDGE 0011	0004
40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	453	453		
40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	302	302		
40701966	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 14 1/4"	SQ YD	2416	2416		
42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	134	134		
44000100	PAVEMENT REMOVAL	SQ YD	4246	4246		
44002209	HOT-MIX ASPHALT REMOVAL OVER PATCHES, 2 1/4"	SQ YD	128	128		
44004250	PAVED SHOULDER REMOVAL	SQ YD	1835	1835		
44201749	CLASS D PATCHES, TYPE I, 9 INCH	SQ YD	27	27		
44201753	CLASS D PATCHES, TYPE II, 9 INCH	SQ YD	41	41		
44201757	CLASS D PATCHES, TYPE III, 9 INCH	SQ YD	60	60		
44300200	STRIP REFLECTIVE CRACK CONTROL TREATMENT	FOOT	1515	1515		
48203021	HOT-MIX ASPHALT SHOULDERS, 6"	SQ YD	2921	2921		
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1		1	
50200100	STRUCTURE EXCAVATION	CU YD	500		500	
50300225	CONCRETE STRUCTURES	CU YD	212.4		212.4	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	377.9		377.9	
50300260	BRIDGE DECK GROOVING	SQ YD	1020		1020	
50300280	CONCRETE ENCASEMENT	CU YD	11.3		11.3	
50300300	PROTECTIVE COAT	SQ YD	1177		1177	
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1	
50500505	STUD SHEAR CONNECTORS	EACH	3927		3927	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	114720		114720	
50800515	BAR SPLICERS	EACH	891		891	
51201600	FURNISHING STEEL PILES HP12X53	FOOT	1130		1130	
51202305	DRIVING PILES	FOOT	1130		1130	

LOCO INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - MJY	REVISED -
DRAWN - ST, TSC	REVISED -
CHECKED - MJY, SLV	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES
IL ROUTE 23 OVER COON CREEK**

SCALE: NONE SHEET NO. 1 OF 2 SHEETS STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	MCHENRY	76	3
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

SUMMARY OF QUANTITIES			80% FEDERAL, 20% STATE			
CODE NO.	ITEM	UNIT	URBAN TOTAL	ROADWAY 0004	BRIDGE 0011	LANDSCAPING 0004
51203600	TEST PILE STEEL HPI2X53	EACH	4		4	
51204650	PILE SHOES	EACH	32		32	
51500100	NAME PLATES	EACH	1		1	
52100520	ANCHOR BOLTS, 1"	EACH	56		56	
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	72		72	
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	2	2		
60107600	PIPE UNDERDRAINS, 4"	FOOT	68	68		
60108100	PIPE UNDERDRAINS 4" (SPECIAL)	FOOT	50	50		
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	1531	1531		
63000025	STEEL PLATE BEAM GUARDRAIL, ATTACHED TO STRUCTURES	FOOT	28	28		
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4		
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4		
63200310	GUARDRAIL REMOVAL	FOOT	1186	1186		
67000400	ENGINEER FIELD OFFICE, TYPE A	CAL MO	9	9		
67100100	MOBILIZATION	L SUM	1	1		
70101800	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		
70106700	TEMPORARY RUMBLE STRIPS	EACH	6	6		
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	12	12		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1200	1200		
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1200	1200		
* 78000200	THERMOPLASTIC PAVEMENT MARKING-LINE 4"	FOOT	7985	7985		
* 78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	816	816		
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	50	50		
* 78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	6		6	
* 78200410	GUARDRAIL MARKERS, TYPE A	EACH	62	62		

* SPECIALTY ITEMS

SUMMARY OF QUANTITIES			80% FEDERAL, 20% STATE			
CODE NO.	ITEM	UNIT	URBAN TOTAL	ROADWAY 0004	BRIDGE 0011	LANDSCAPING 0004
* 78200510	BARRIER WALL MARKERS, TYPE A	EACH	49	49		
* 78200520	BARRIER WALL MARKERS, TYPE B	EACH	74	74		
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4		
78300100	PAVEMENT MARKING REMOVAL	SQ FT	2934	2934		
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	56	50	6	
X0326276	TEMPORARY LIGHTING FOR SINGLE LANE STAGING	L SUM	1	1		
X2070304	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	164		164	
X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	3	3		
X4401198	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH	SQ YD	2157	2157		
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1		1	
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1		1	
X7030300	WET REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE, TYPE III	FOOT	6871	6871		
Z0001050	AGGREGATE SUBGRADE 12"	SQ YD	2416	2416		
Z0004552	APPROACH SLAB REMOVAL	SQ YD	107		107	
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1		
Z0026407	TEMPORARY SHEET PILING	SQ FT	1164		1164	
Z0030240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	2	2		
Z0030340	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 2	EACH	2	2		
Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	206	206		
X0322919	CLEAN EXISTING STRUCTURES	EACH	1	1		
Z0042002	POROUS GRANULAR EMBANKMENT, SUBGRADE	CU YD	109	109		
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	160		160	

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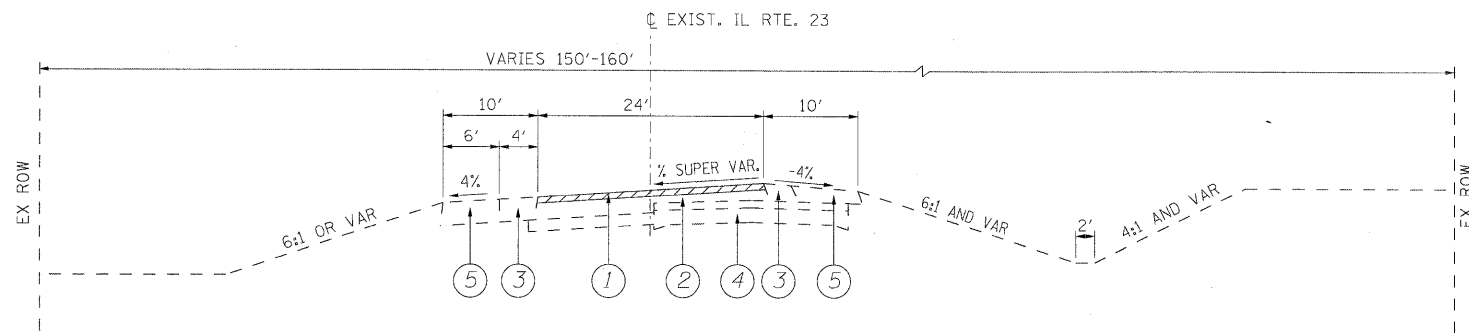
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES
IL ROUTE 23 OVER COON CREEK**

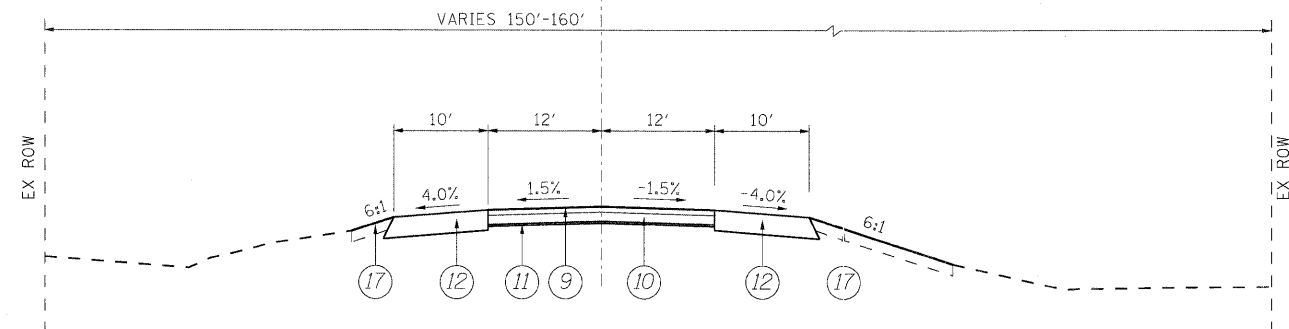
SCALE: NONE SHEET NO. 2 OF 2 SHEETS STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	MCHENRY	76	4
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

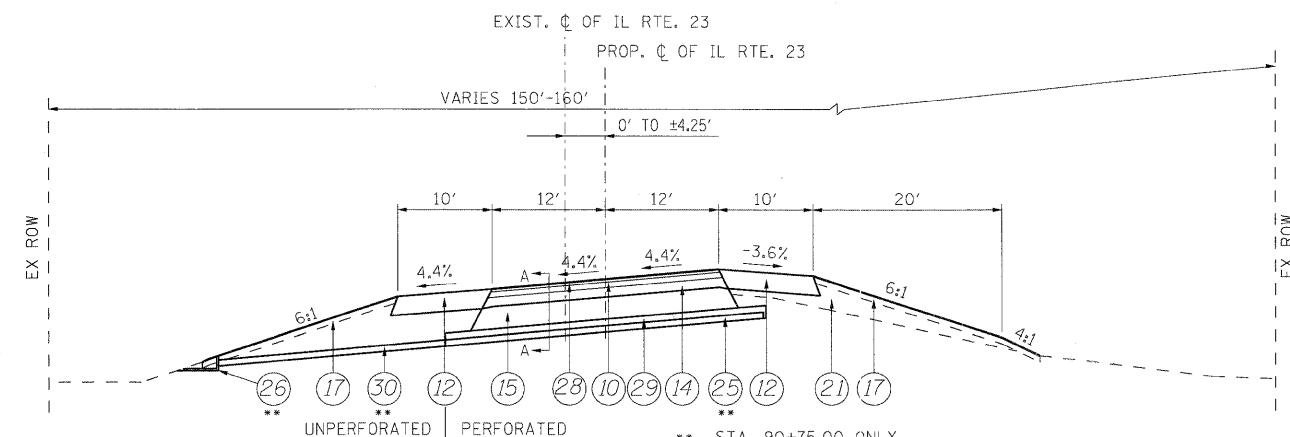
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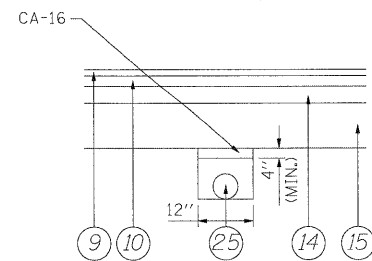
EXISTING TYPICAL SECTION
 SUPERELEVATED SECTION LOOKING NORTH
 STA 89+87.10 to 94+64.15
 STA 96+08.17 to 103+55.00
 PROP. C. OF IL RTE. 23



PROPOSED TYPICAL SECTION
 RESURFACING SECTION FACING NORTH
 STA. 88+00.00 to 90+50.00
 STA 101+00 TO 103+55.00



PROPOSED TYPICAL SECTION
 SUPERELEVATED RECONSTRUCTION FACING NORTH
 STA 90+50.00 to 91+80.00



SECTION A-A

GENERAL NOTES:

CA-16 SHALL NOT BE PAID FOR SEPERATELY AND INCLUDED IN THE SUBBASE GRANULAR MATERIAL, TYPE B PAY ITEM.

LEGEND

- 1 EXIST. BITUMINOUS SURFACE (HMA SURFACE REMOVAL VARIABLE DEPTH)
- 2 EXIST. STABILIZED BASE (BAM)
- 3 EXIST. BITUMINOUS SHOULDER REMOVAL
- 4 EXIST. PCC PAVEMENT, ± 8"
- 5 EXIST. AGGREGATE SHOULDER (VARIABLE DEPTH TO BE REMOVED)
- 6 EXIST. PPC DECK BEAMS
- 7 EXIST. 5" CONCRETE WEARING SURFACE
- 8 EXIST. CONCRETE PARAPET
- 9 PROPOSED HMA SURFACE COURSE, MIX "D", N70, 1 1/2"
- 10 PROPOSED HMA BINDER COURSE, IL-19.0, N70, 2 1/4"
- 11 PROPOSED HMA LEVELING BINDER, MM, N70, 3/4" MIN.
- 12 PROPOSED HMA SHOULDER, 6"
- 13 PROPOSED AGGREGATE WEDGE SHOULDER, TYPE B, 6"
- 14 PROPOSED HMA BASE COURSE, IL-19.0, 10" (IN 3 LIFTS)
- 15 PROPOSED AGGREGATE SUBGRADE, 12"
- 16 PROPOSED STEEL PLATE BEAM GUARDRAIL, TYPE A (6 FOOT POSTS)
- 17 PROPOSED COMPOST FURNISH AND PLACE, 4"
- 18 PROPOSED W27 STEEL BEAMS
- 19 PROPOSED 8" P.C. CONCRETE DECK
- 20 PROPOSED P.C. CONCRETE PARAPETS, PAID AS CONCRETE SUPERSTRUCTURE
- 21 POROUS GRANULAR EMBANKMENT
- 22 TEMPORARY CONCRETE BARRIER
- 23 WET REFLECTIVE TEMPORARY TAPE, TYPE III, 4"
- 24 RELOCATE TEMPORARY CONCRETE BARRIER
- 25 PIPE UNDERDRAINS 4"
- 26 CONCRETE HEADWALLS FOR PIPE DRAINS
- 27 POROUS GRANULAR EMBANKMENT, SUBGRADE
- 28 PROPOSED HMA SURFACE COURSE, MIX "D", N70, 2"
- 29 CA-16
- 30 PIPE UNDERDRAINS 4" (SPECIAL)

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

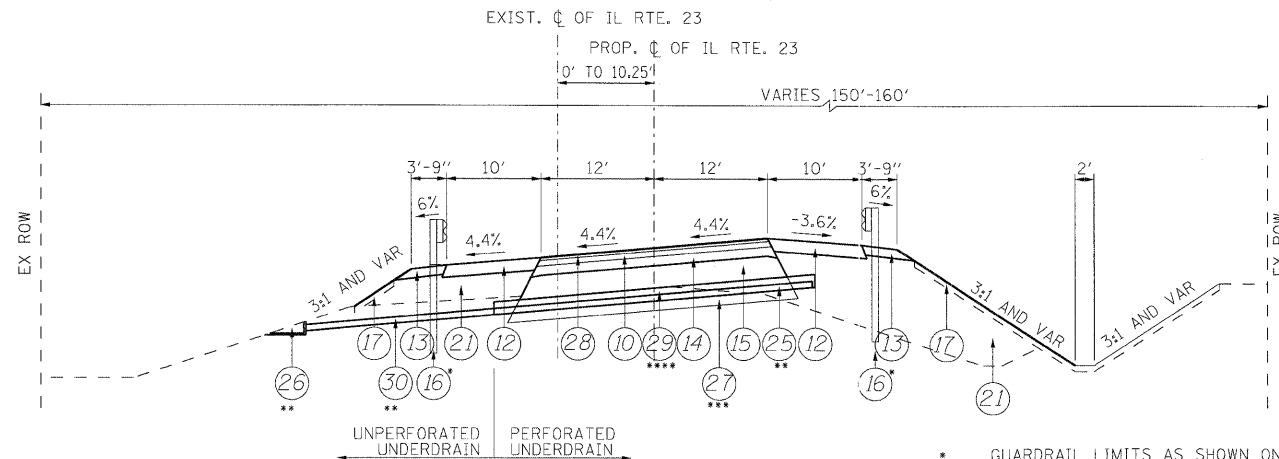
MIXTURE TYPE	DESIGN AIR VOIDS	THICKNESS
ROADWAY RESURFACING		
HMA SURFACE COURSE, MIX "D", N70 (IL-9.5 mm)	4% @ 70 GYR	1 1/2"
HMA BINDER CSE, IL-19.0, N70	4% @ 70 GYR	2 1/4"
LEVELING BINDER (MACHINE METHOD), N70	4% @ 70 GYR	3/4" MIN.
ROADWAY RECONSTRUCTION - FULL DEPTH PAVEMENT		
HMA SURFACE COURSE, MIX "D", N70 (IL-9.5 mm)	4% @ 70 GYR	2"
HMA BINDER CSE, IL-19.0, N70	4% @ 70 GYR	2 1/4"
HMA BASE CSE (HMA BINDER IL-19 mm)	4% @ 70 GYR	10"
BRIDGE APPROACH PAVEMENT CONNECTOR FLEXIBLE, 15" - FULL DEPTH		
HMA SURFACE COURSE, MIX "D", N70 (IL-9.5 mm)	4% @ 70 GYR	2"
HMA BINDER CSE, IL-19.0, N70	4% @ 70 GYR	3"
HMA BASE CSE (HMA BINDER IL-19 mm)	4% @ 70 GYR	10"
SHOULDER		
HMA SURFACE COURSE, MIX "D", N70 (IL-9.5 mm)	4% @ 70 GYR	1 1/2"
HMA BINDER CSE, IL-19.0, N70	4% @ 70 GYR	4 1/2"
PAVEMENT PATCHING		
CLASS D PATCH (HMA BINDER IL-19 mm)	4% @ 70 GYR	9"
HMA REPLACEMENT OVER PATCHES (HMA BINDER IL-19 mm)	4% @ 70 GYR	2 1/4" MIN.

NOTES:

THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE COURSE MIXTURES IS 112 LBS/SQ-YD/IN.

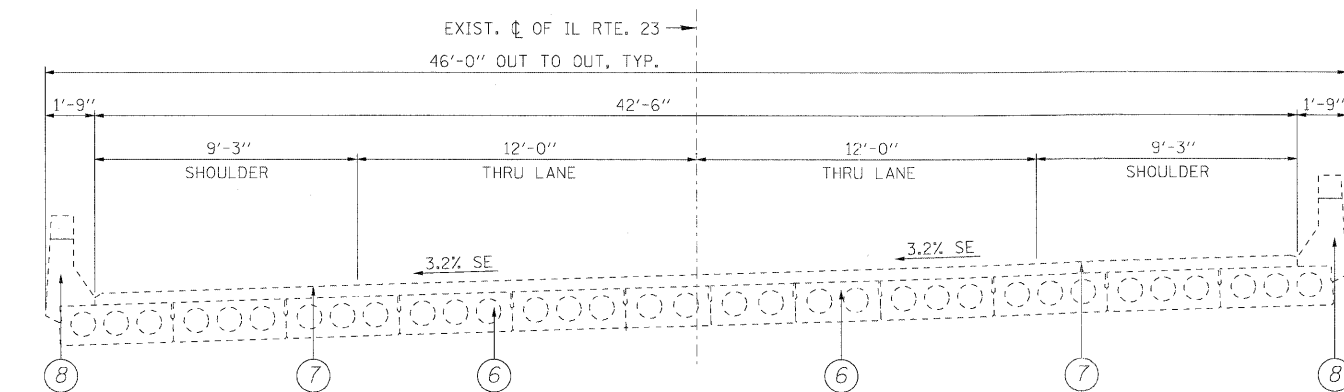
THE CONTRACTOR SHALL PATCH FIRST BEFORE MILLING.

"AC TYPE" FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 70 -22" AND FOR NON-POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64 -22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS. FOR "PERCENT OF RAP" SEE DISTRICT ONE SPECIAL PROVISIONS.

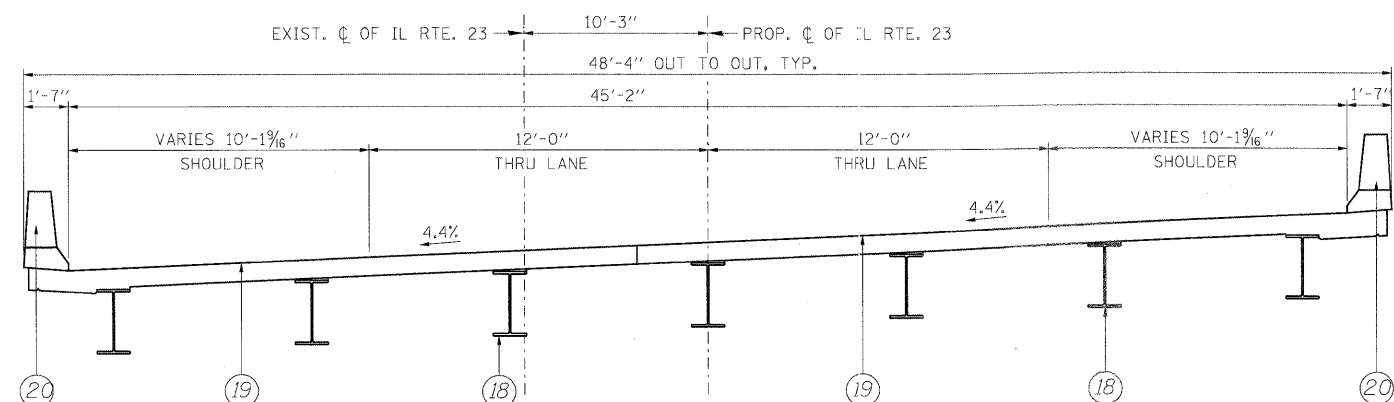


PROPOSED TYPICAL SECTION
 SUPERELEVATED RECONSTRUCTION FACING NORTH
 BEHIND GUARDRAIL
 STA 91+80.00 to 94+64.15
 STA 96+08.17 to 101+00.00

- * GUARDRAIL LIMITS AS SHOWN ON PLANS.
- ** STA. 100+50.00 ONLY (SEE SECTION ON SHEET 5).
- *** POSSIBILITY OF 12" UNDERCUT BETWEEN STA. 100+00 TO 101+00; IF REQUIRED, ADD GEOTECHNICAL FABRIC FOR GROUND STABILIZATION.
- **** CA-16 SHALL BE INCLUDED IN THE SUBBASE GRANULAR MATERIAL TYPE B PAY ITEM.



EXISTING TYPICAL BRIDGE SECTION
 LOOKING NORTH

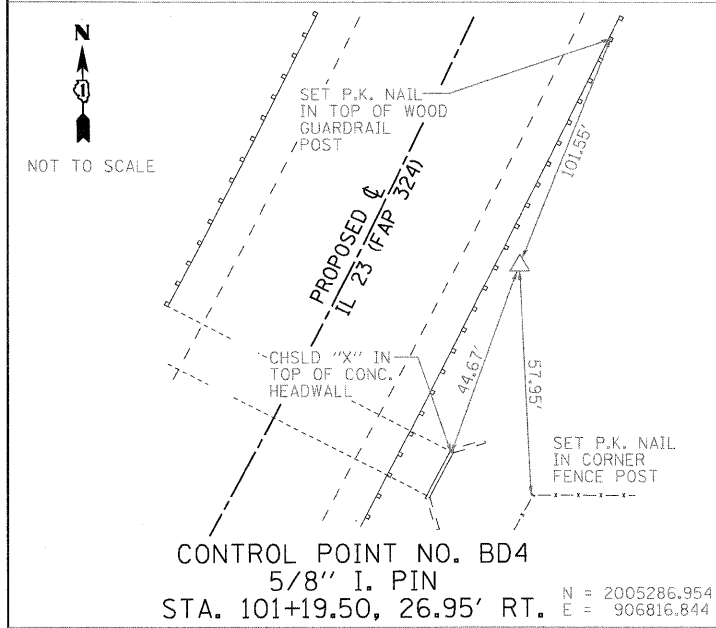
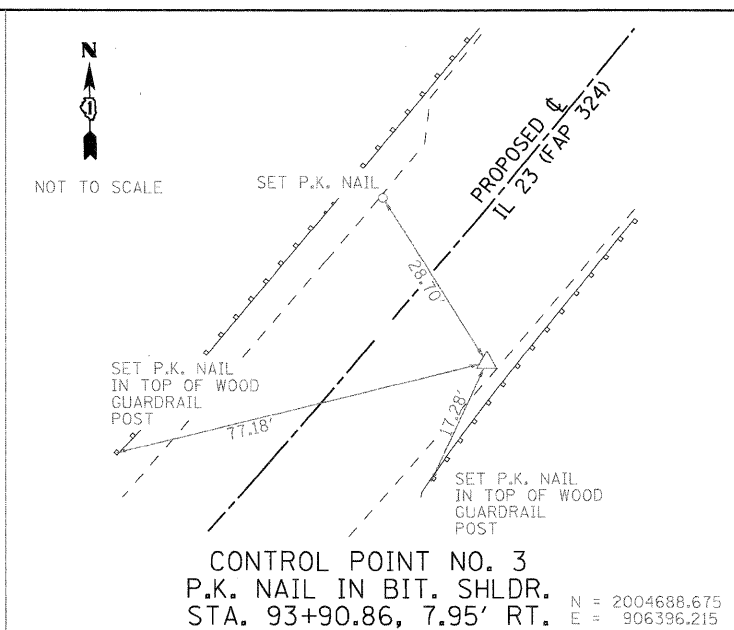
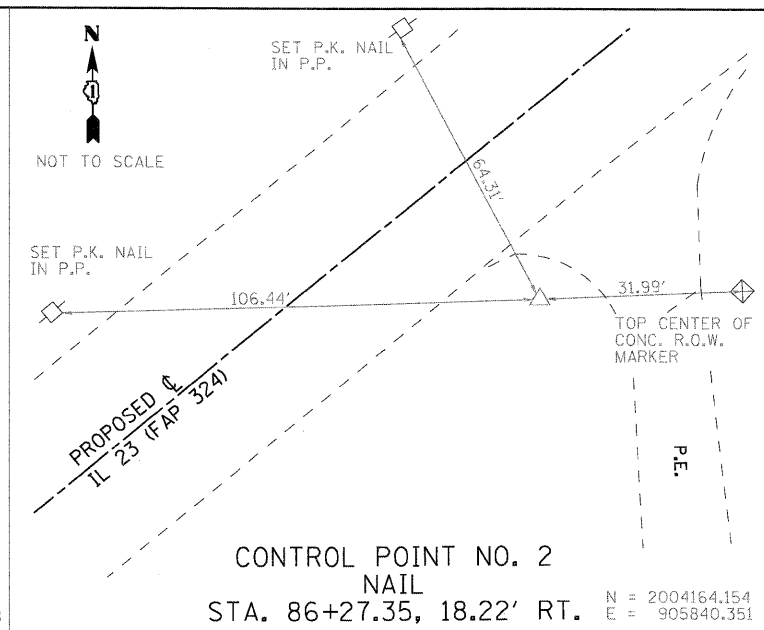
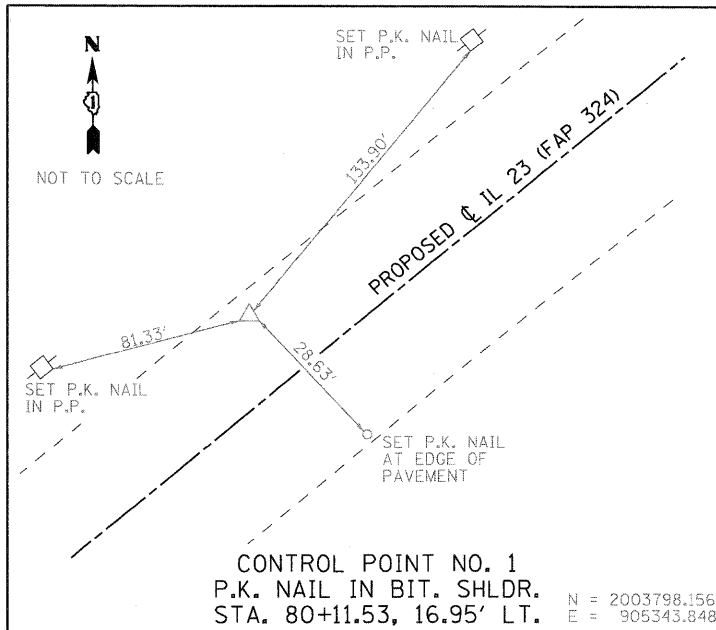


PROPOSED TYPICAL BRIDGE SECTION
 LOOKING NORTH
 STA 94+64.15 to 96+08.17

LEGEND

- 1 EXIST. BITUMINOUS SURFACE (HMA SURFACE REMOVAL VARIABLE DEPTH)
- 2 EXIST. STABILIZED BASE (BAM)
- 3 EXIST. BITUMINOUS SHOULDER REMOVAL
- 4 EXIST. PCC PAVEMENT, ± 8"
- 5 EXIST. AGGREGATE SHOULDER (VARIABLE DEPTH TO BE REMOVED)
- 6 EXIST. PPC DECK BEAMS
- 7 EXIST. 5" CONCRETE WEARING SURFACE
- 8 EXIST. CONCRETE PARAPET
- 9 PROPOSED HMA SURFACE COURSE, MIX "D", N70, 1 1/2"
- 10 PROPOSED HMA BINDER COURSE, IL-19.0, N70, 2 1/4"
- 11 PROPOSED HMA LEVELING BINDER, MM, N70, 3/4" & VARIES
- 12 PROPOSED HMA SHOULDER, 6"
- 13 PROPOSED AGGREGATE WEDGE SHOULDER, TYPE B, 6"
- 14 PROPOSED HMA BASE COURSE, IL-19.0, 10"
- 15 PROPOSED AGGREGATE SUBGRADE, 12"
- 16 PROPOSED STEEL PLATE BEAM GUARDRAIL, TYPE A (6 FOOT POSTS)
- 17 PROPOSED COMPOST FURNISH AND PLACE, 4"
- 18 PROPOSED W27 STEEL BEAMS
- 19 PROPOSED 8" P.C. CONCRETE DECK
- 20 PROPOSED P.C. CONCRETE PARAPETS, PAID AS CONCRETE SUPERSTRUCTURE
- 21 POROUS GRANULAR EMBANKMENT
- 22 TEMPORARY CONCRETE BARRIER
- 23 WET REFLECTIVE TEMPORARY TAPE, TYPE III, 4"
- 24 RELOCATE TEMPORARY CONCRETE BARRIER
- ** 25 PIPE UNDERDRAINS 4"
- 26 CONCRETE HEADWALLS FOR PIPE DRAINS
- *** 27 POROUS GRANULAR EMBANKMENT, SUBGRADE
- 28 PROPOSED HMA SURFACE COURSE, MIX "D", N70, 2"
- **** 29 CA-16
- ** 30 PIPE UNDERDRAINS 4" (SPECIAL)

EARTHWORK						
STAGE	LOCATION	EARTH EXCAVATION CU YD	ADJ. EXCAVATION 15% CU YD	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL CU YD	EMBANKMENT CU YD	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) CU YD
1	STA. 88+00 to 94+50	79	67	337	1467	-1400
2	STA. 88+00 to 94+50	83	70.5	109	568	-497.5
1	STA. 96+50 to 103+55	168	143	295	1073	-930
2	STA. 96+50 to 103+55	197	167.5	127	612	-444.5
	TOTAL	527	448	868	3720	-3272

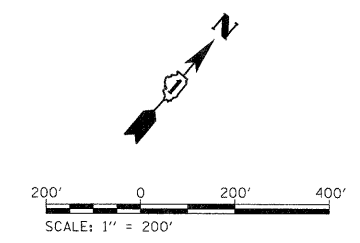
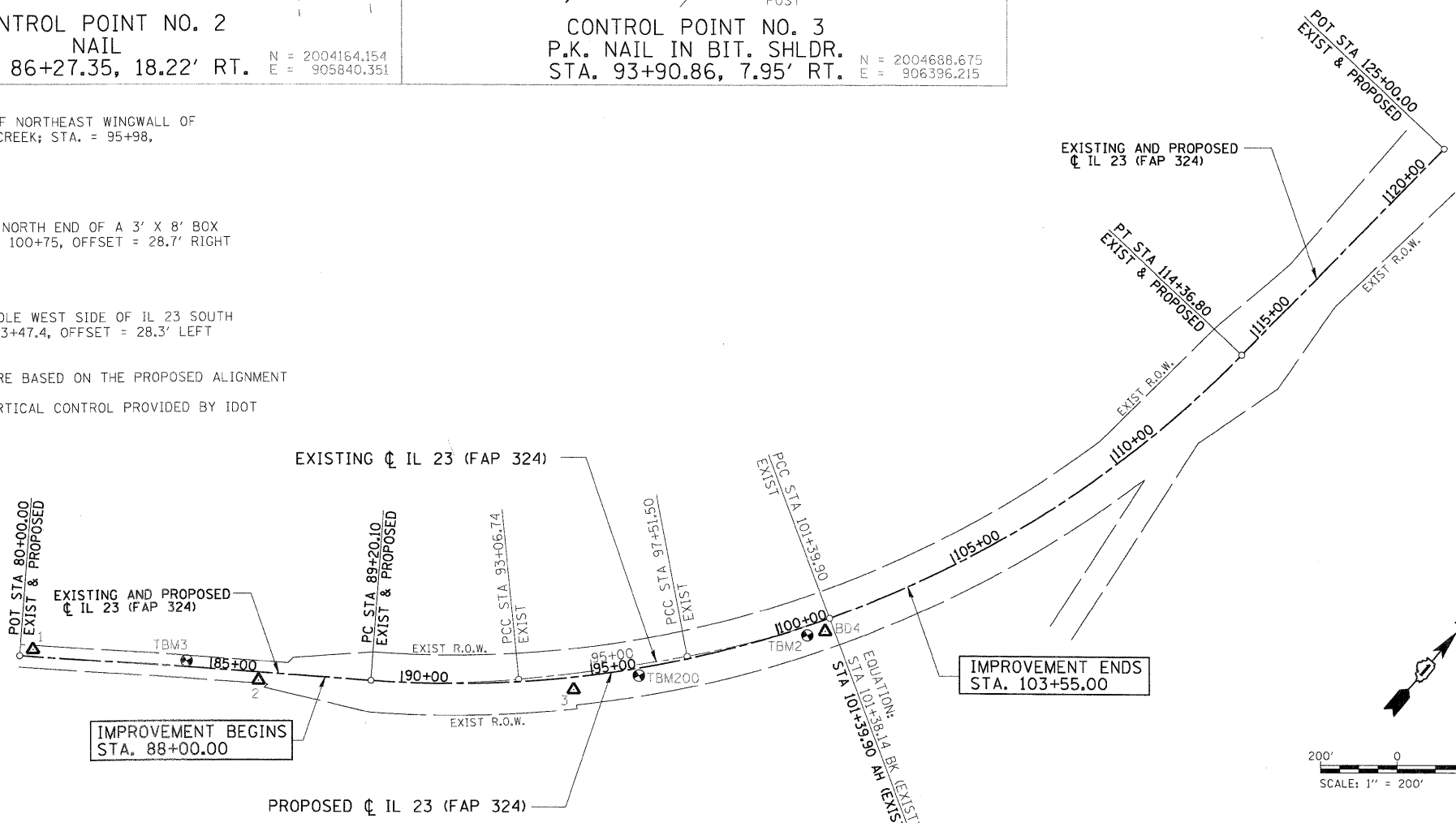


BENCHMARK TBM200
FOUND "□" CUT IN TOP OF NORTHEAST WINGWALL OF IL 23 BRIDGE OVER COON CREEK; STA. = 95+98, OFFSET = 13.5' RIGHT ELEV. = 814.83

BENCHMARK TBM2
CHISELLED "X" IN TOP OF NORTH END OF A 3' X 8' BOX CULVERT HEADWALL; STA. = 100+75, OFFSET = 28.7' RIGHT ELEV. = 812.22

BENCHMARK TBM3
RR SPIKE IN 3RD POWER POLE WEST SIDE OF IL 23 SOUTH OF COON CREEK; STA. = 83+47.4, OFFSET = 28.3' LEFT ELEV. = 821.18

NOTE: STATION/OFFSETS ARE BASED ON THE PROPOSED ALIGNMENT
NOTE: HORIZONTAL AND VERTICAL CONTROL PROVIDED BY IDOT



PROPOSED CURVE DATA

PI STA. =102+66.15
Δ =50° 20' 02" (LT)
D =2° 00' 00"
R =2,864.79'
T =1,346.05'
L =2,516.70'
E =300.47'
P.C. STA =89+20.10
P.T. STA =114+36.80

EXISTING CURVE DATA

PI STA. =91+13.88	PI STA. =95+29.27	PI STA. =99+45.28	PI STA. =107+99.66
Δ =9° 39' 57" (LT)	Δ =5° 03' 51" (LT)	Δ =9° 39' 57" (LT)	Δ =25° 56' 17" (LT)
D =2° 30' 00"	D =1° 08' 19"	D =2° 30' 00"	D =2° 00' 00"
R =2,291.83'	R =5,032.06'	R =2,291.83'	R =2,864.79'
T =193.78'	T =222.53'	T =193.78'	T =659.76'
L =386.64'	L =444.77'	L =386.64'	L =1,296.90'
E =8.18'	E =4.92'	E =8.18'	E =74.99'
P.C. STA. =89+20.10	P.C. STA. =93+06.74	P.C. STA. =97+51.50	P.C. STA. =101+39.90
P.T. STA. =93+06.74	P.T. STA. =97+51.50	P.T. STA. =101+38.14	P.T. STA. =114+36.80

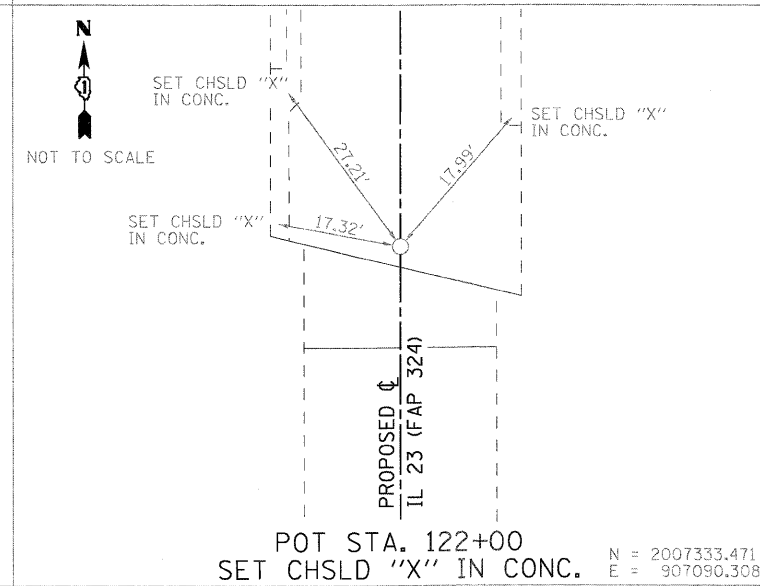
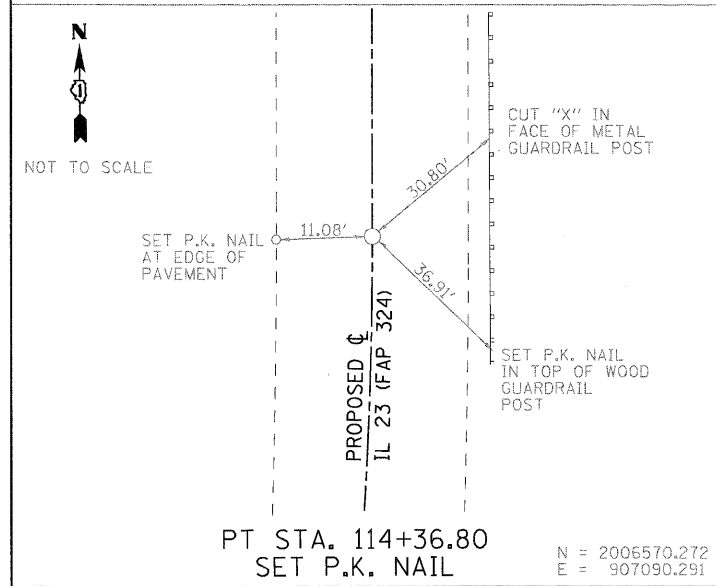
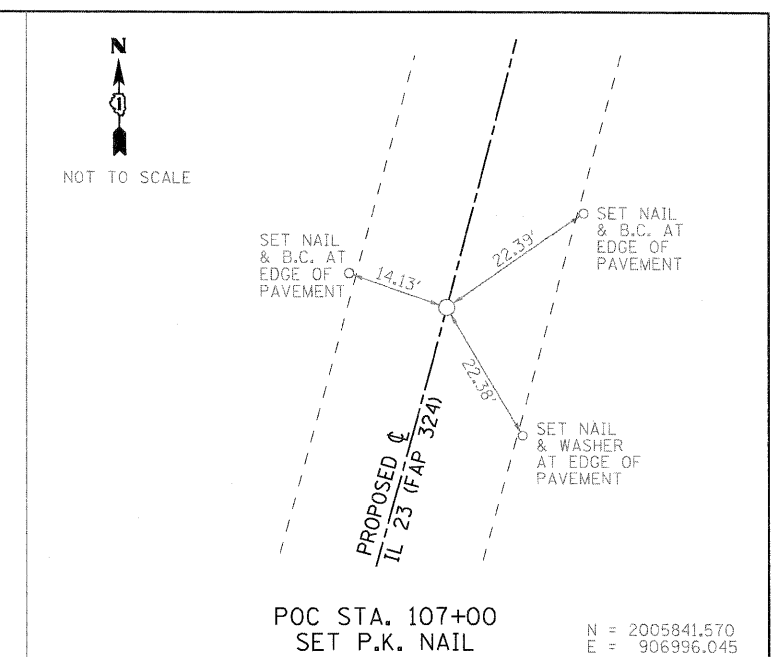
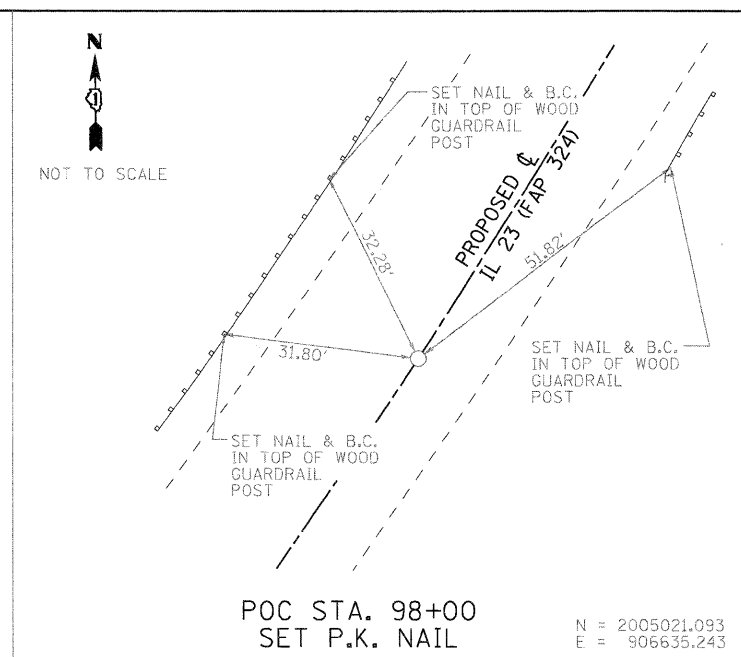
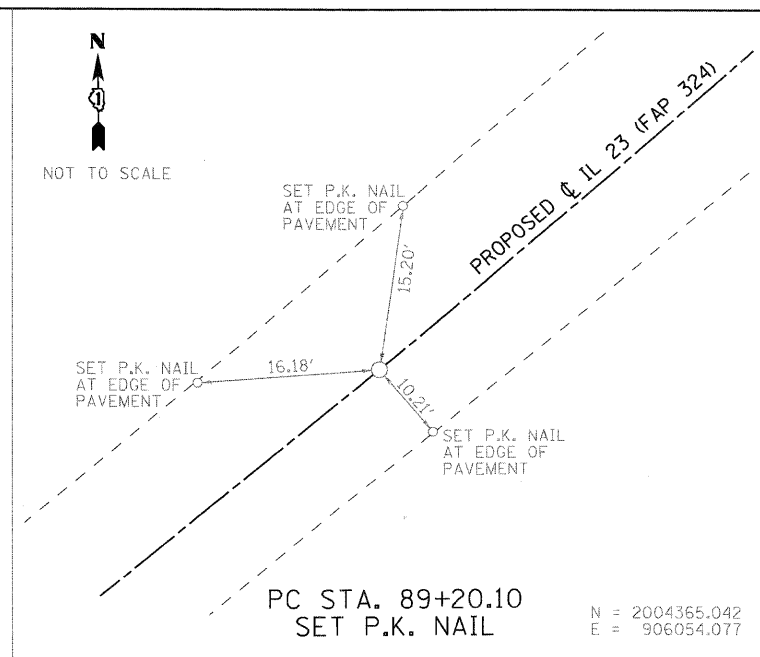
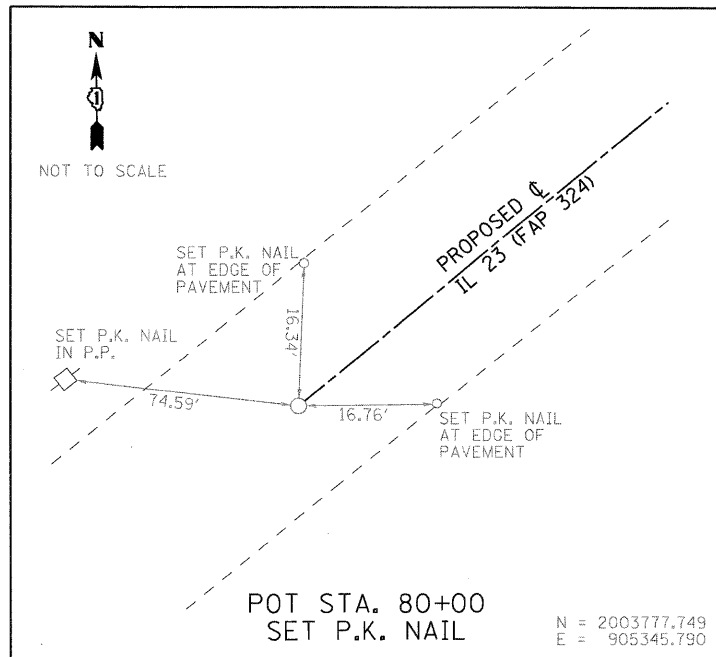
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		CHECKED - GLW	REVISED -
		DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ALIGNMENT, TIES & BENCHMARKS
IL ROUTE 23 OVER COON CREEK**

SCALE: 1" = 200' SHEET NO. 1 OF 2 SHEETS STA. 80+00.00 TO STA. 122+00.00

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY MCHENRY	TOTAL SHEETS 76	SHEET NO. 7
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

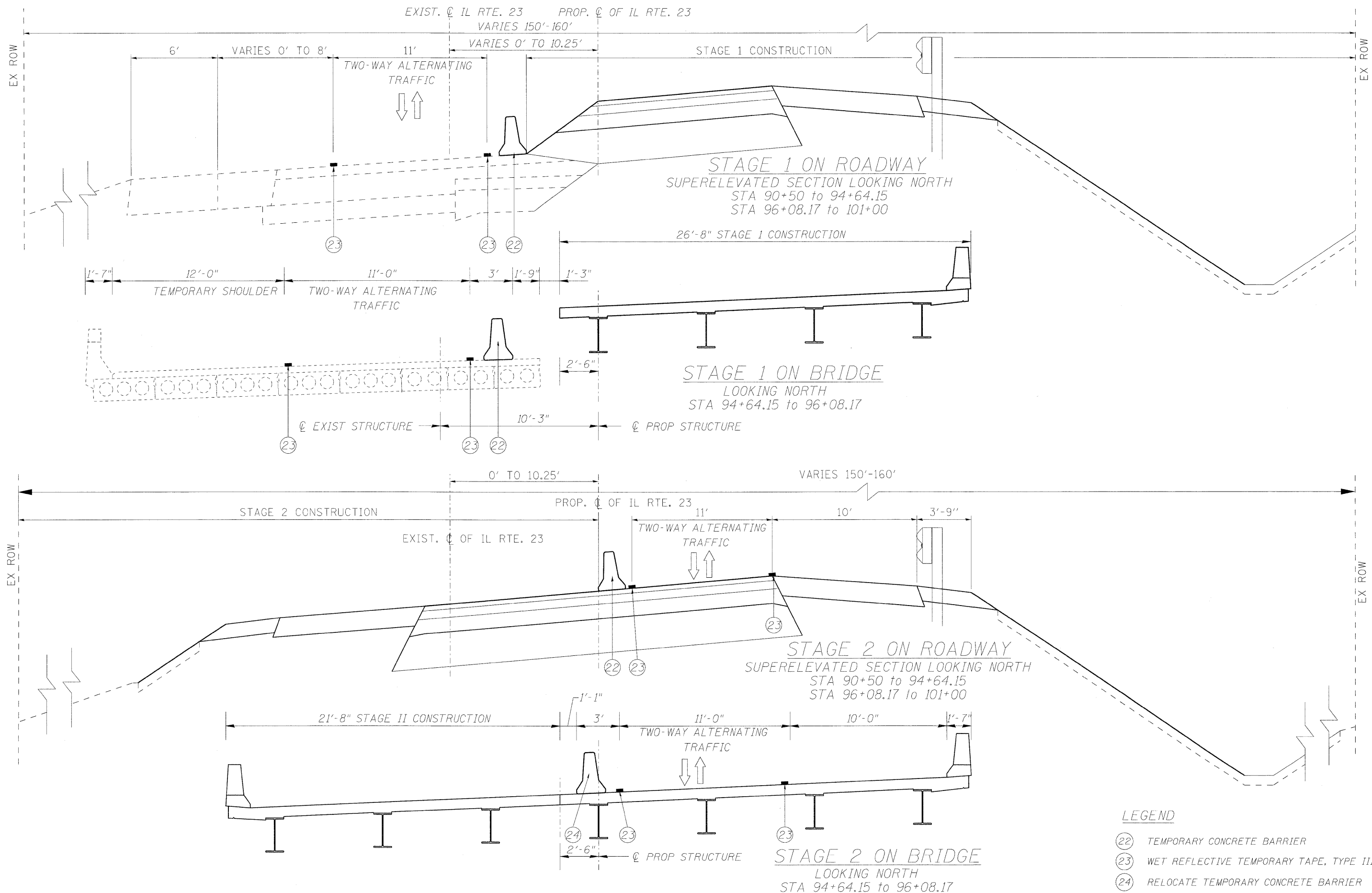


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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

ALIGNMENT, TIES & BENCHMARKS IL ROUTE 23 OVER COON CREEK		
SCALE: NTS	SHEET NO. 2 OF 2 SHEETS	STA. 80+00.00 TO STA. 122+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	MCHENRY	76	8
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



- LEGEND**
- (22) TEMPORARY CONCRETE BARRIER
 - (23) WET REFLECTIVE TEMPORARY TAPE, TYPE III, 4"
 - (24) RELOCATE TEMPORARY CONCRETE BARRIER

LONCO, INC.
 CONSULTING ENGINEERS
 1560 WALL ST, SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - SLV
 DRAWN - SLV
 CHECKED - MJY, ST
 DATE - 12/30/2010

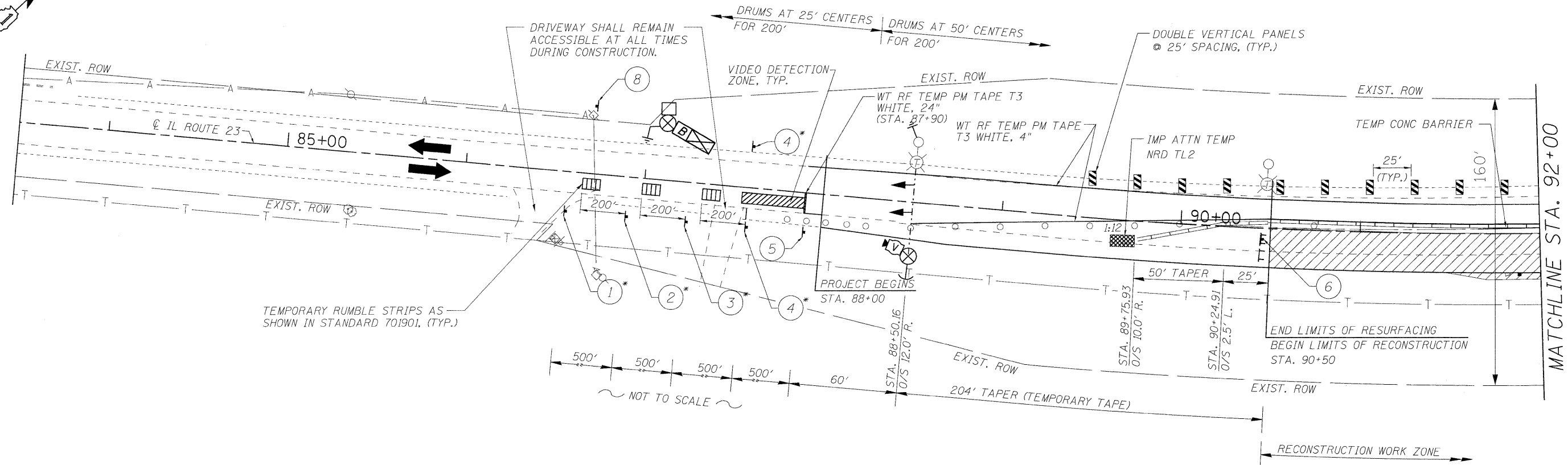
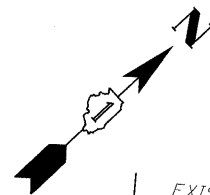
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS
 IL ROUTE 23 OVER COON CREEK**

SCALE: NONE SHEET NO. 1 OF 1 SHEET STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	9
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



LEGEND

- WORK ZONE
- BARRICADE W/ STEADY BURN LIGHT
- TYPE III BARRICADE WITH FLASHING LIGHTS
- SIGN
- IMPACT ATTENUATORS
- CONCRETE BARRIER
- DOUBLE VERTICAL PANEL
- 400 W, 120V, MCIII HPS, WITH PHOTO CELL 15' MA, 50' MH ON WOOD POLE CLASS 4
- TEMPORARY TRAFFIC CONTROLLER WITH UPS AND BOTTOM PLATE MOUNTED TO WOOD POLE
- TEMPORARY VIDEO DETECTOR
- TEMPORARY LED TRAFFIC SIGNAL HEAD, NUMBER OF SECTION AND DISPLAY AS REQUIRED
- TEMPORARY RUMBLE STRIPS PER STANDARD 701901

NOTES:

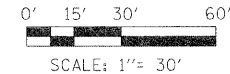
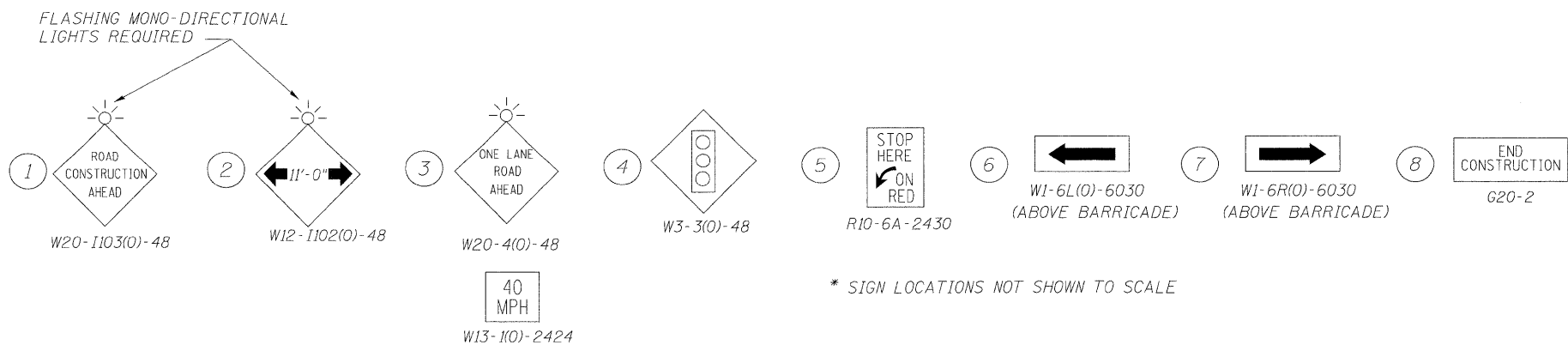
BARRICADE AND PANEL SPACING SHALL BE 25' CENTERS IN TAPER SECTIONS AND 50' CENTERS IN TANGENT SECTIONS.

VERTICAL PANELS SHALL BE USED WHEN BARRICADES CANNOT BE PLACED ON THE EXISTING PAVEMENT OR PAVED SHOULDER.

ALL SIGNS, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE ACCORDING TO SECTION 701 OF THE STANDARD SPECIFICATIONS AND SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "TRAFFIC CONTROL AND PROTECTION, SPECIAL."

STAGE 1

1. INSTALL TRAFFIC CONTROL AND TEMPORARY CONCRETE BARRIER IN ACCORDANCE WITH STAGE 1 MAINTENANCE OF TRAFFIC.
2. REMOVE EAST PORTION OF EXISTING SUPERSTRUCTURE, AND EXISTING APPROACH PAVEMENT.
3. INSTALL NEW BEAMS, CONCRETE DECK AND PARAPET WALLS.
4. CONSTRUCT NEW CONCRETE APPROACH SLABS AND APPROACH PAVEMENT.
5. CONSTRUCT PROPOSED ROADWAY IMPROVEMENTS ON EAST SIDE OF IL ROUTE 23.



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1560 WALL ST, SUITE 222
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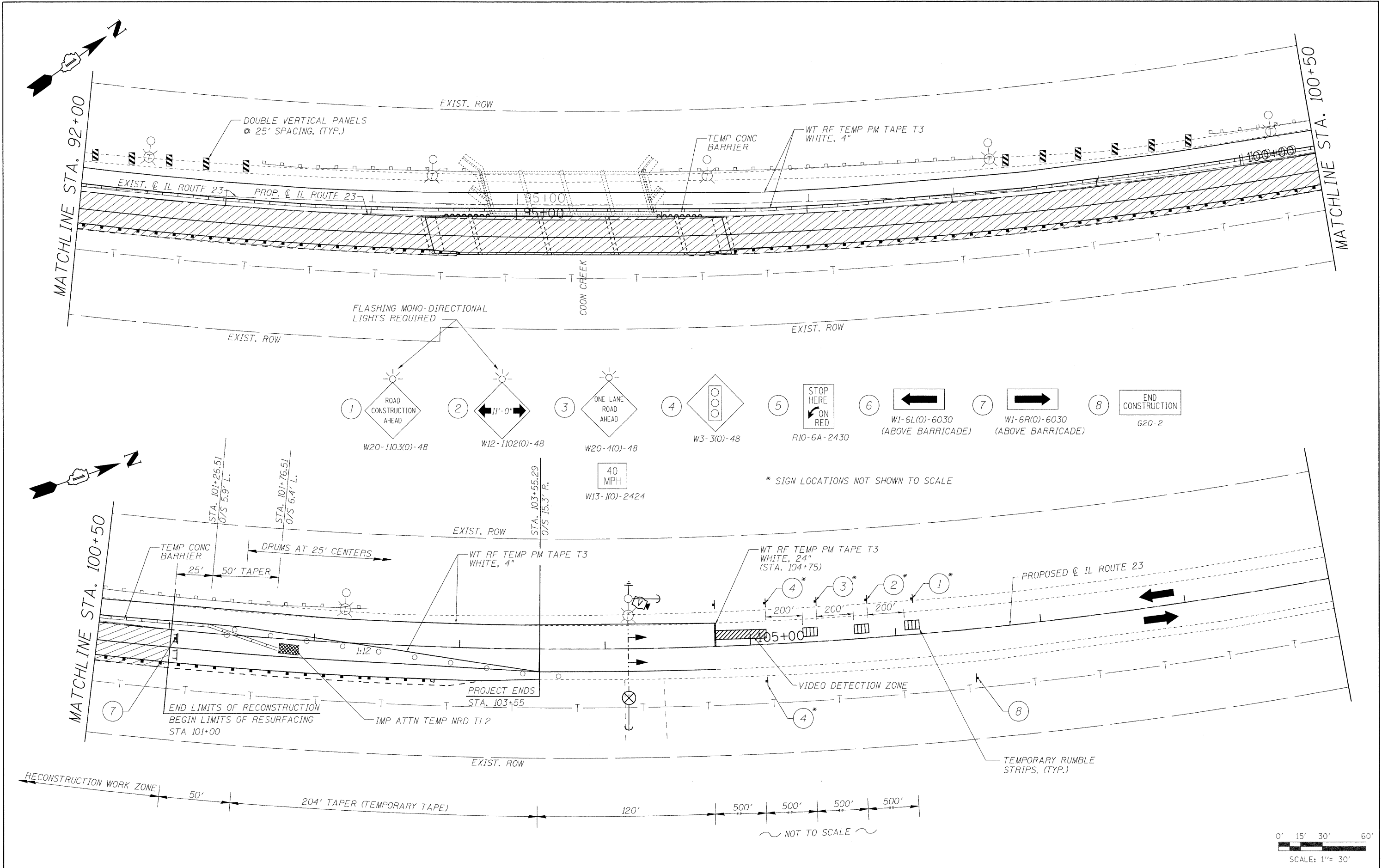
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CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CONSTRUCTION STAGING PLAN - STAGE 1
IL ROUTE 23 OVER COON CREEK**

SCALE: 1" = 30' SHEET NO. 1 OF 2 STA. 88+00 TO STA. 92+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	10
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



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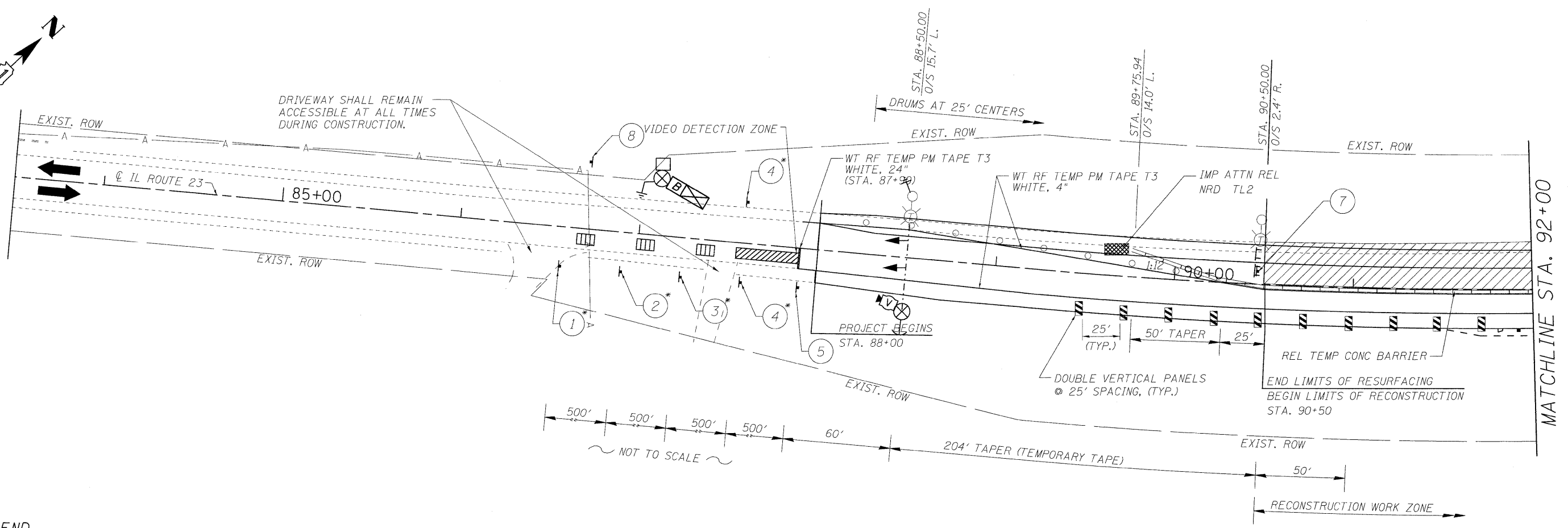
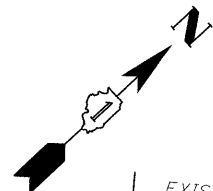
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DRAWN - SLV	REVISED -
CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**CONSTRUCTION STAGING PLAN - STAGE 1
 IL ROUTE 23 OVER COON CREEK**

SCALE: 1" = 30' SHEET NO. 2 OF 2 STA. 92+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	11
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



LEGEND

- WORK ZONE
- BARRICADE W/ STEADY BURN LIGHT
- TYPE III BARRICADE WITH FLASHING LIGHTS
- SIGN
- IMPACT ATTENUATORS
- CONCRETE BARRIER
- DOUBLE VERTICAL PANEL
- 400 W, 120V, MCIII HPS, WITH PHOTO CELL 15' MA, 50' MH ON WOOD POLE CLASS 4
- TEMPORARY TRAFFIC CONTROLLER WITH UPS AND BOTTOM PLATE MOUNTED TO WOOD POLE
- TEMPORARY VIDEO DETECTOR
- TEMPORARY LED TRAFFIC SIGNAL HEAD, NUMBER OF SECTION AND DISPLAY AS REQUIRED
- TEMPORARY RUMBLE STRIPS

NOTES:

BARRICADE AND PANEL SPACING SHALL BE 25' CENTERS IN TAPER SECTIONS AND 50' CENTERS IN TANGENT SECTIONS.

VERTICAL PANELS SHALL BE USED WHEN BARRICADES CANNOT BE PLACED ON THE EXISTING PAVEMENT OR PAVED SHOULDER.

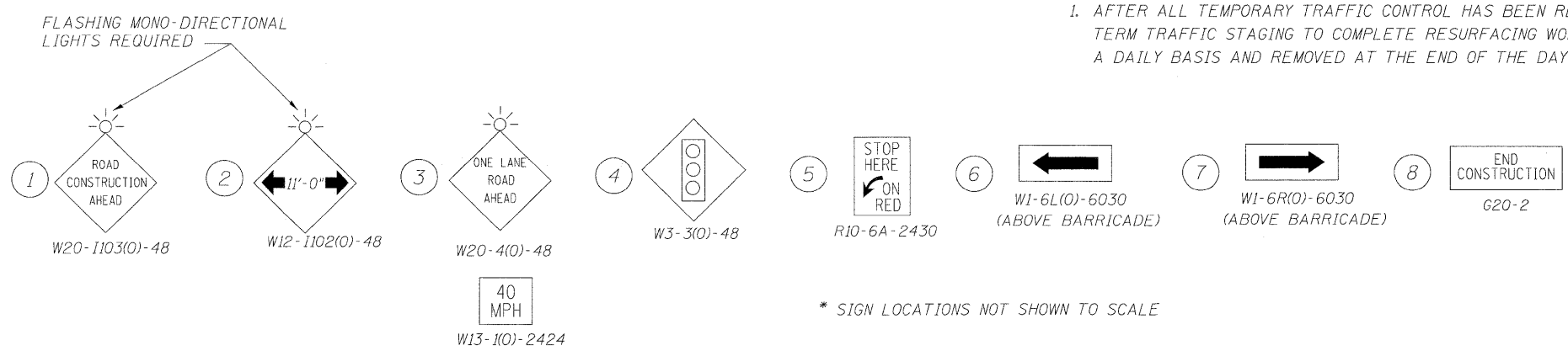
ALL SIGNS, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE ACCORDING TO SECTION 701 OF THE STANDARD SPECIFICATIONS AND SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "TRAFFIC CONTROL AND PROTECTION, SPECIAL."

STAGE 2

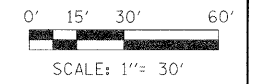
1. INSTALL TRAFFIC CONTROL AND TEMPORARY CONCRETE BARRIER IN ACCORDANCE WITH STAGE 2 MAINTENANCE OF TRAFFIC.
2. REMOVE WEST PORTION OF EXISTING SUPERSTRUCTURE, AND EXISTING APPROACH PAVEMENT.
3. INSTALL NEW BEAMS, CONCRETE DECK AND PARAPET WALLS.
4. CONSTRUCT NEW CONCRETE APPROACH SLABS AND APPROACH PAVEMENT.
5. CONSTRUCT PROPOSED ROADWAY IMPROVEMENTS ON WEST SIDE OF IL ROUTE 23.

STAGE 3

1. AFTER ALL TEMPORARY TRAFFIC CONTROL HAS BEEN REMOVED FROM THE SITE SHORT TERM TRAFFIC STAGING TO COMPLETE RESURFACING WORK CAN BE IMPLEMENTED ON A DAILY BASIS AND REMOVED AT THE END OF THE DAY.



* SIGN LOCATIONS NOT SHOWN TO SCALE



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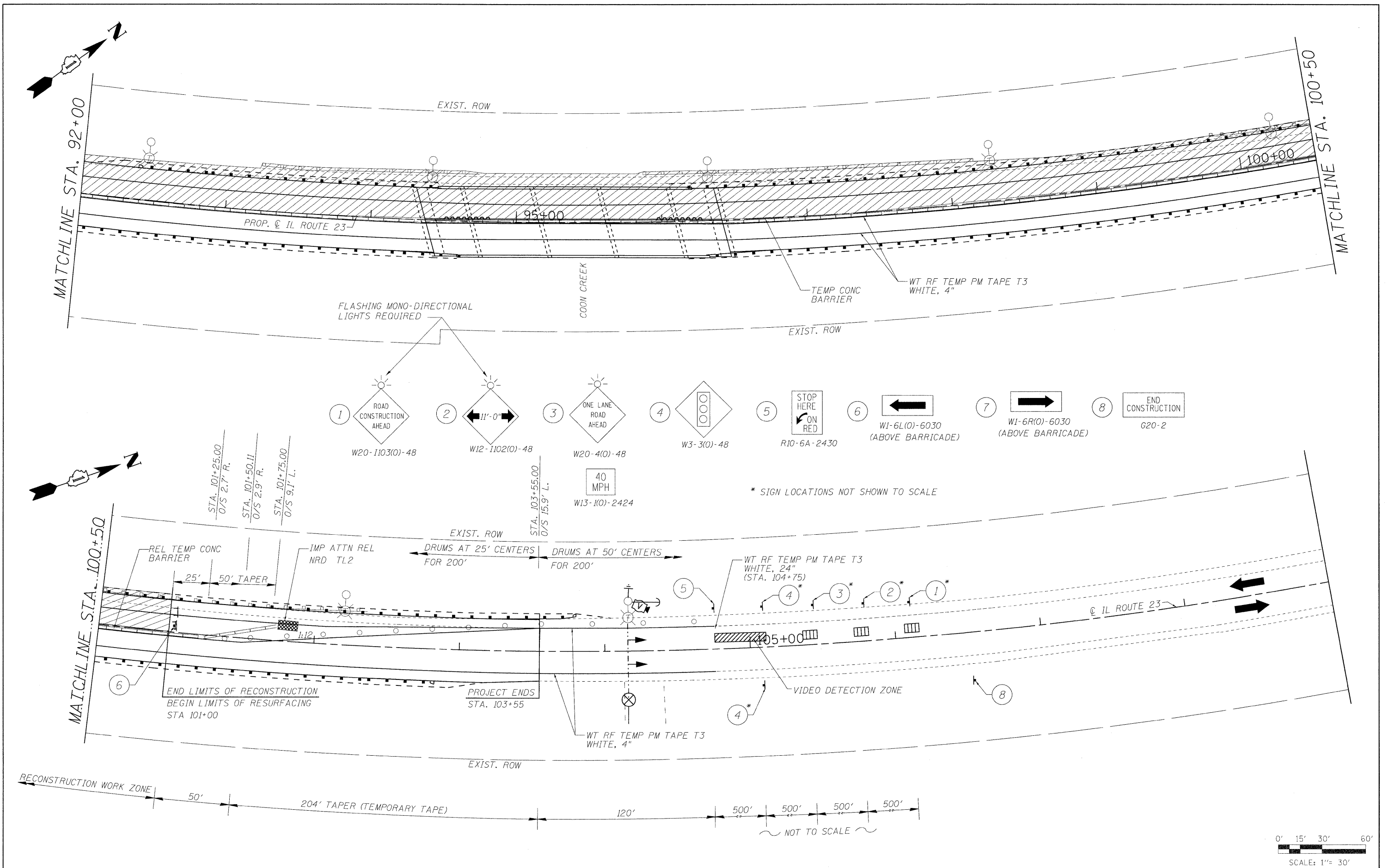
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DRAWN - SLV	REVISED -
CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CONSTRUCTION STAGING PLAN - STAGE 2
IL ROUTE 23 OVER COON CREEK**

SCALE: 1" = 30' SHEET NO. 1 OF 2 STA. 88+00 TO STA. 92+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	12
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



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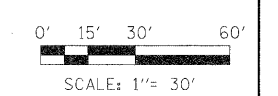
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DRAWN - SLV	REVISED -
CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**CONSTRUCTION STAGING PLAN - STAGE 2
 IL ROUTE 23 OVER COON CREEK**

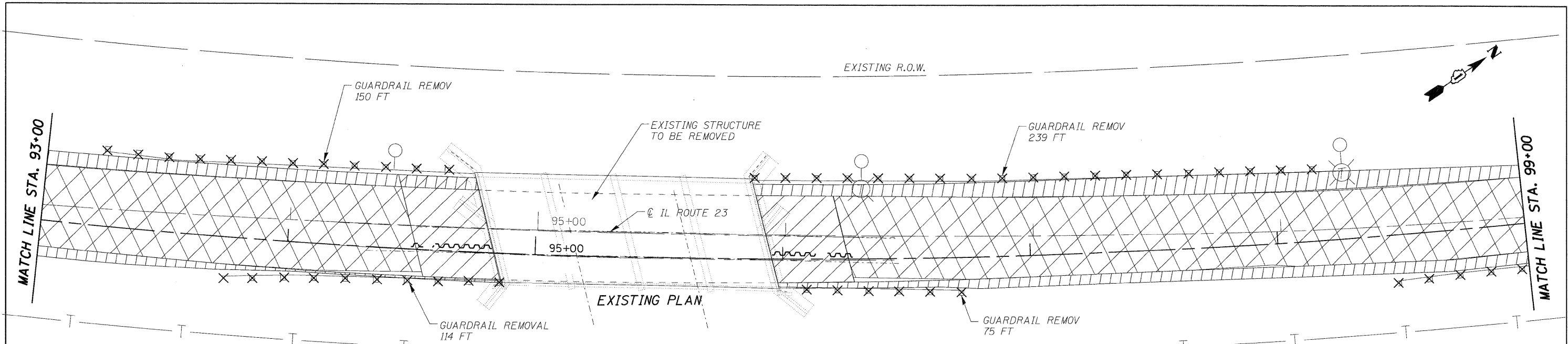
SCALE: 1" = 30' SHEET NO. 2 OF 2 STA. 92+00 TO STA. 103+55

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 13
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



PLAN	SURVEYED	DATE
	PLOTTED	BY
	NOTES CHECKED	
	FILED	
	CADD FILE NAME	
	NO.	

PR. FILE	SURVEYED	DATE
	PLOTTED	BY
	NOTES CHECKED	
	FILED	
	STRUCTURE NOTATIONS OK'D	
	NO.	

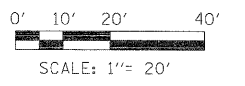
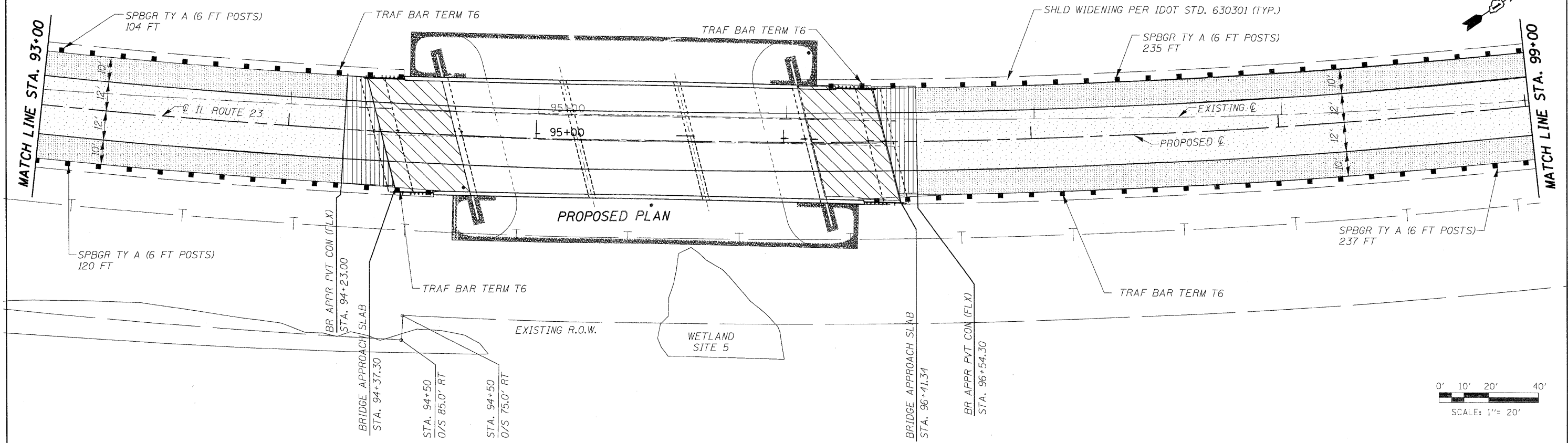


EXISTING PLAN LEGEND

- HMA SURF REM BUTT JT
- PAVED SHLD REMOVAL
- HMA SURF REM VAR DP
- PAVEMENT REM
- APPROACH SLAB REM 2 @ 30'-0" BY 46'-0"

PROPOSED PLAN LEGEND

- BR APPR PVT CON (FLX)
- BRIDGE APPROACH SLAB, PAID AS CONCRETE SUPERSTRUCTURE, 2 @ 30'-0" BY 48'-4"
- BIT MATLS PR CT, HMA SC "D" N70, 1 1/2", HMA BC IL-19.0 N70, 2 1/4", & LEV BIND MM N70, 3/4"
- HMA SC "D" N70, 2", HMA BC IL-19.0 N70, 2 1/4", HMA BASE CSE 10, & AGG SUBGRADE 12 SHALL BE PAYED FOR AS HMA PAVT FD 14 1/4"
- BIT MATLS PR CT, & HMA SHOULDERS 6



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DESIGNED	- M.JY, ST	REVISED	-
DRAWN	- ST	REVISED	-
CHECKED	- M.JY	REVISED	-
DATE	- 12/30/2010	REVISED	-

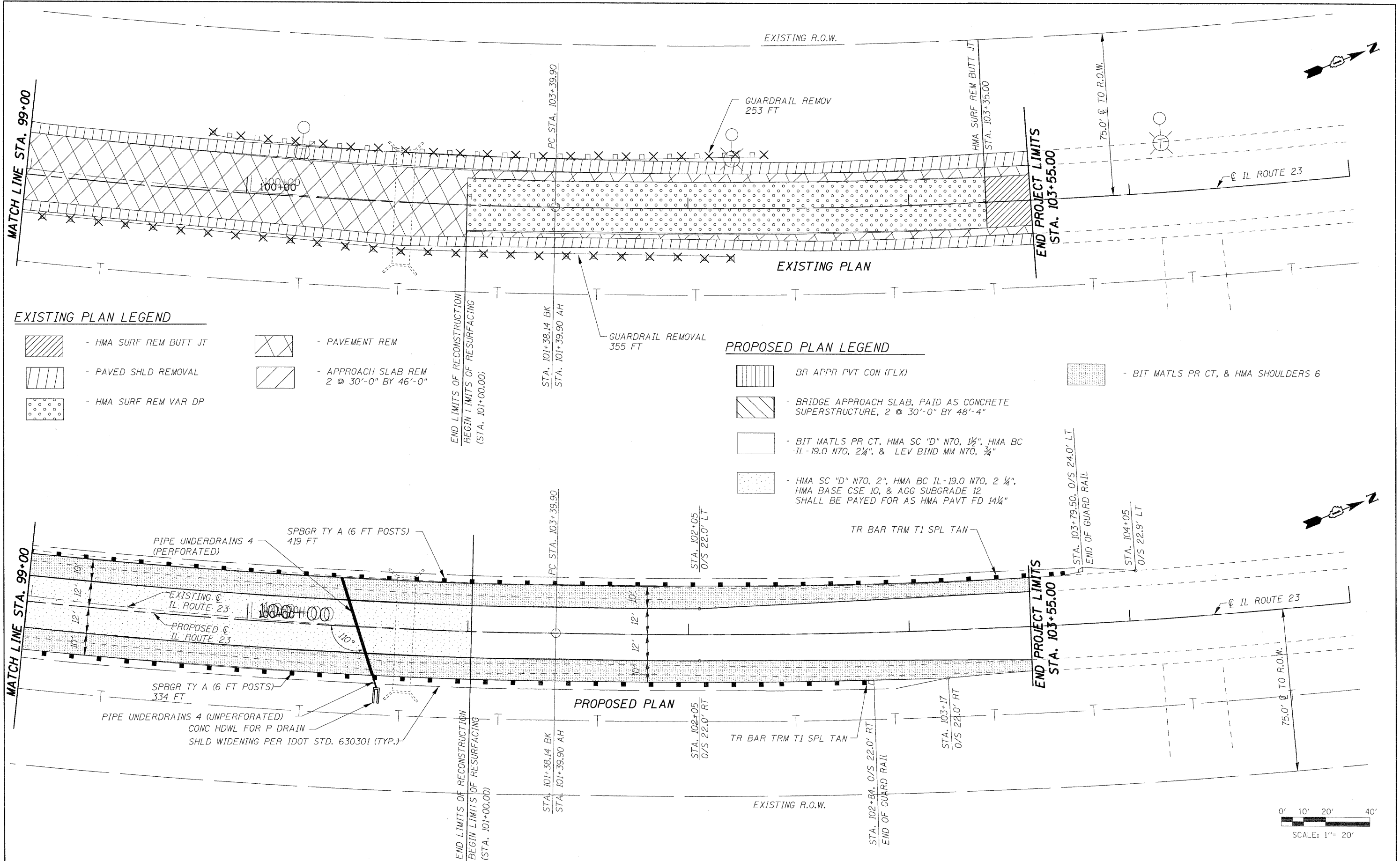
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EXISTING AND PROPOSED PLAN IL ROUTE 23 OVER COON CREEK	
SCALE: 1" = 20'	SHEET NO. 2 OF 3
STA. 93+00 TO STA. 99+00	

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 15
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	
BY	
REVISIONS	
PLANNED	
CHECKED	
NO. 1	
NO. 2	
NO. 3	
NO. 4	
NO. 5	

DATE	
BY	
REVISIONS	
PLANNED	
CHECKED	
NO. 1	
NO. 2	
NO. 3	
NO. 4	
NO. 5	



LONGO, INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - MJY, ST
DRAWN - ST
CHECKED - MJY
DATE - 12/30/2010

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AND PROPOSED PLAN
IL ROUTE 23 OVER COON CREEK

SCALE: 1" = 20'

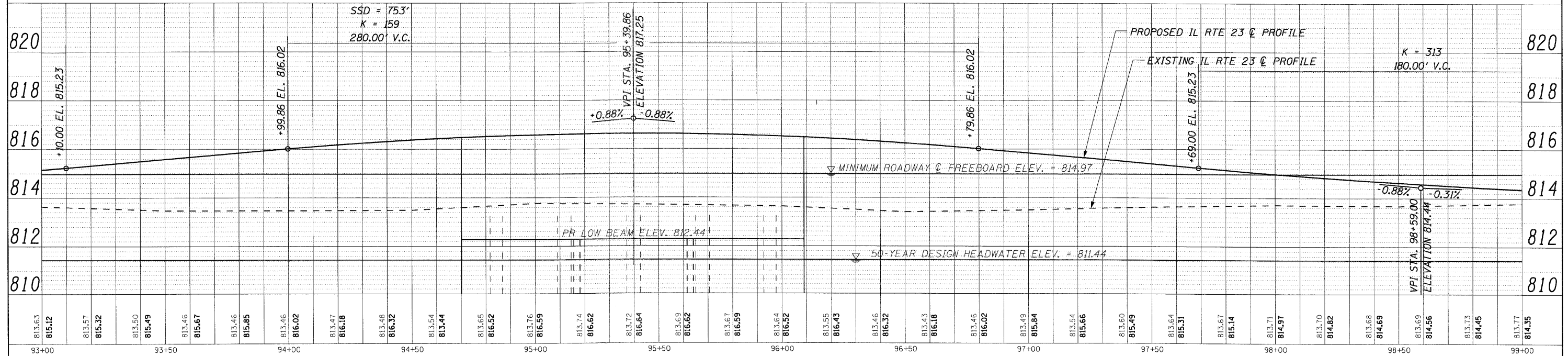
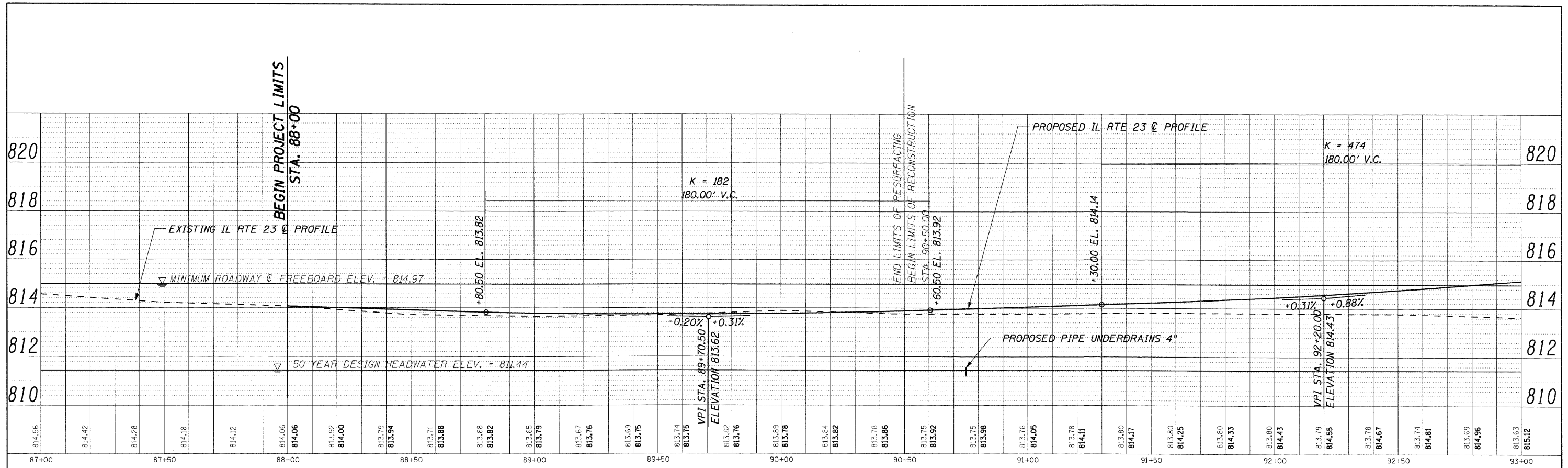
SHEET NO. 3 OF 3

STA. 99+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	16
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHKD	
	NO.	

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	ROAD FILE NAME	
	NO.	



LONCO, INC.
CONSULTING ENGINEERS
1560 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - MJY, ST
DRAWN - ST
CHECKED - MJY
DATE - 12/30/2010

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AND PROPOSED PROFILE
IL ROUTE 23 OVER COON CREEK

SCALE: 1" = 20'

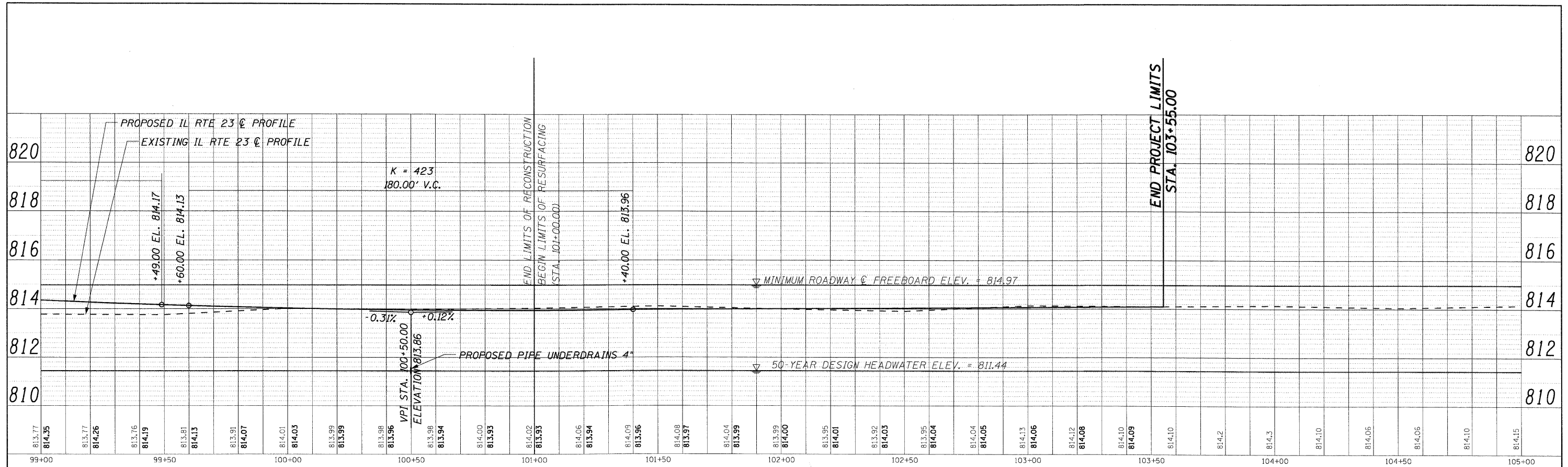
SHEET NO. 1 OF 2

STA. 88+00 TO STA. 99+00

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 17
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PLAN	REVIEWED	DATE
	ALIGNED	
	CHECKED	
	NO. _____	
	NOTE BOOK	
	NO. _____	
	DATE	

PROFILE	REVIEWED	DATE
	GRADES CHECKED	
	STRUCTURE NOTATIONS CH'KD	
	NO. _____	
	NOTE BOOK	
	NO. _____	
	DATE	



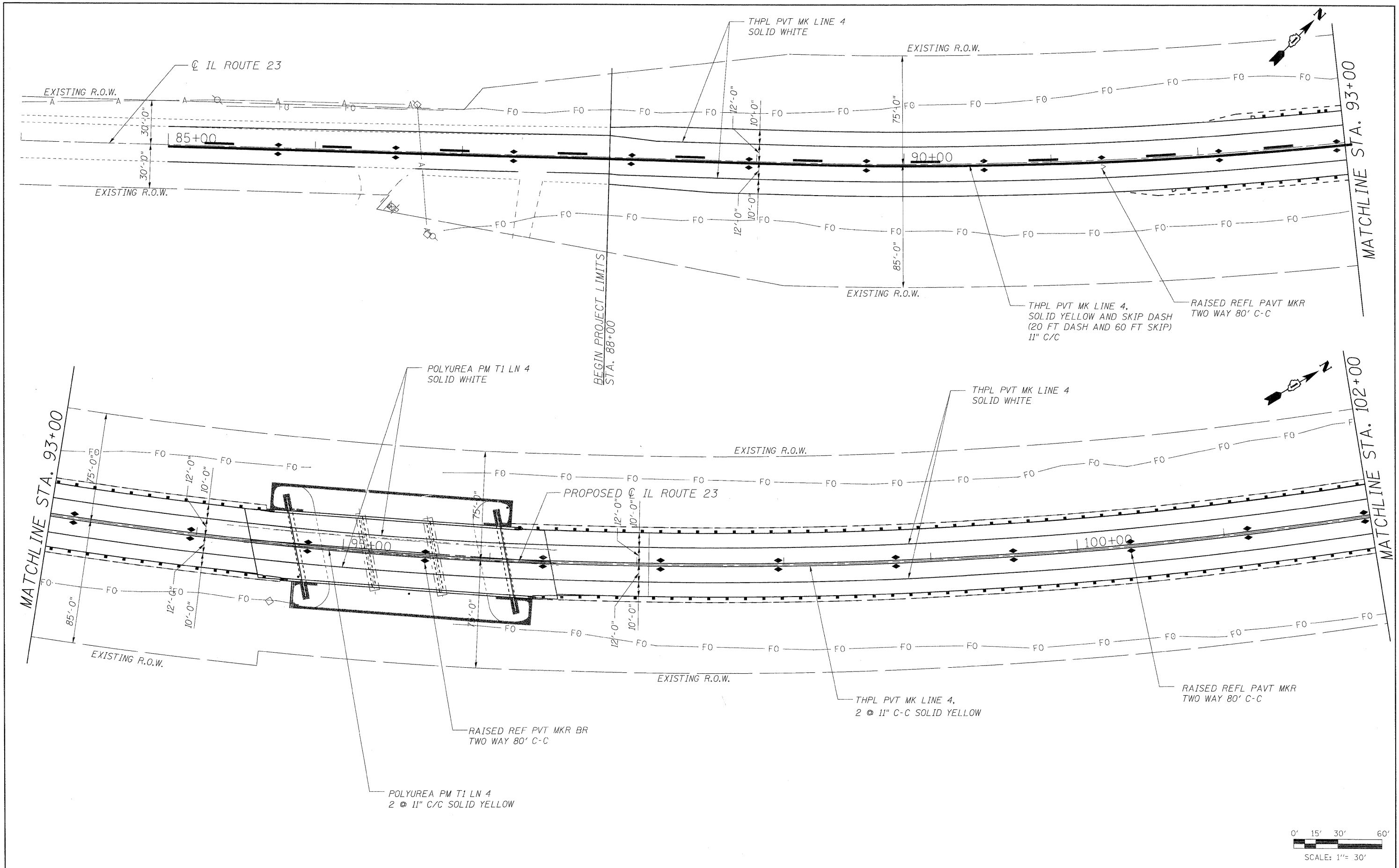
LOCO, INC.
 CONSULTING ENGINEERS
 1500 WALL ST, SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - MJY, ST	REVISED -
DRAWN - ST	REVISED -
CHECKED - MJY	REVISED -
DATE - 12/30/2010	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AND PROPOSED PROFILE	
IL ROUTE 23 OVER COON CREEK	
SCALE: 1" = 20'	SHEET NO. 2 OF 2
STA. 99+00 TO STA. 103+55	

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 18
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



LONCO INC.
 CONSULTING ENGINEERS
 1560 WALL ST. SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: 630/577-9100

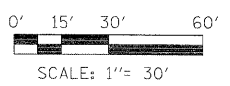
DESIGNED - ST, MJY	REVISED -
DRAWN - ST	REVISED -
CHECKED - MJY	REVISED -
DATE - 12/30/2010	REVISED -

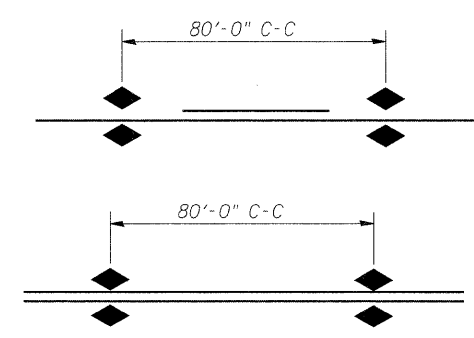
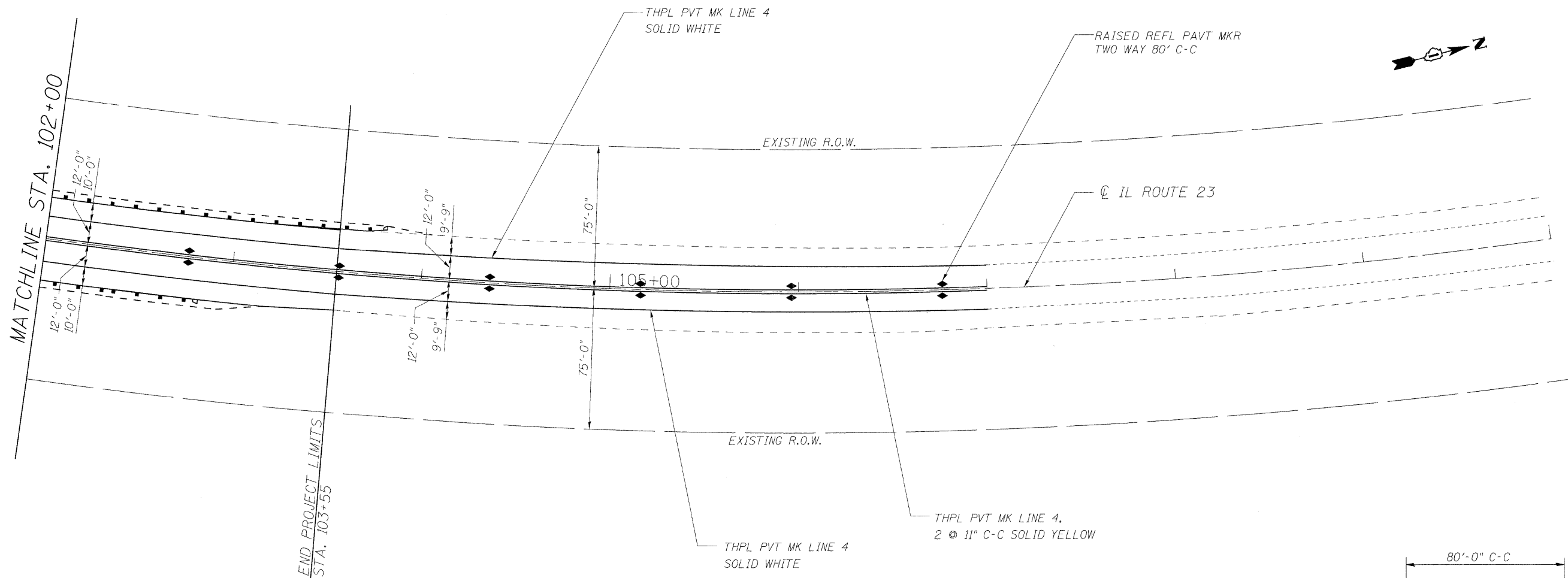
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
 IL ROUTE 23 OVER COON CREEK**

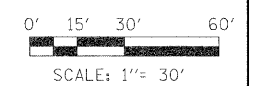
SCALE: 1" = 30' SHEET NO. 1 OF 2 STA. 88+00 TO STA. 102+00

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 19
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				





LANE PAVEMENT MARKER DETAILS
 SEE STATE STANDARD NO. 780001-01
 SEE DISTRICT STANDARD NO. TC-11



LOXCO, INC.
 CONSULTING ENGINEERS
 1560 WALL ST., SUITE 222
 NAPERVILLE, ILLINOIS 60563 Ph: (630) 577-9100

DESIGNED - ST, MJY	REVISED - 01/20/2011
DRAWN - ST	REVISED -
CHECKED - MJY	REVISED -
DATE - 12/30/2010	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

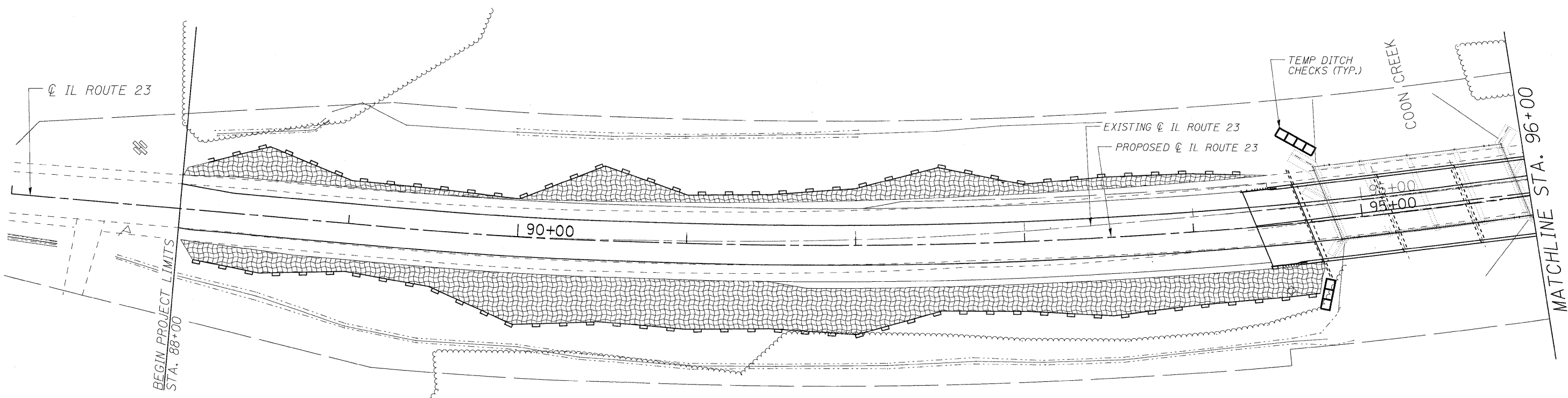
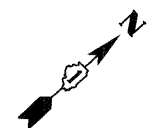
PAVEMENT MARKING PLAN
IL ROUTE 23 OVER COON CREEK

SCALE: 1" = 30' SHEET NO. 2 OF 2 STA. 102+00 TO STA. 103+55

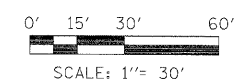
F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 20
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

TEMPORARY EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL PERIMETER EROSION BARRIER PRIOR TO STRIPPING OF VEGETATION.
2. TEMPORARY DITCH CHECKS SHALL BE INSTALLED IMMEDIATELY AFTER GRADING IS COMPLETED. DITCH CHECKS ARE BASED ON ONE (1) INSTALLATION AND THREE (3) REPLACEMENTS OVER THE DURATION OF THE CONTRACT. THESE ITEMS WILL BE PAID FOR LINEAL FOOT FOR THE ORIGINAL INSTALLATION. REGARDLESS OF THE TYPE OF CONFIGURATION USED.
3. RUNOFF FROM EXCAVATED AREAS SHALL LEAVE THE SITE THROUGH SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL ADJUST HIS OPERATION AND IMPLEMENT EROSION CONTROL MEASURES ACCORDINGLY.
4. THE PERMIT ISSUED TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION DOES NOT COVER IN-STREAM WORK BY THE CONTRACTOR. AFTER AWARD, THE CONTRACTOR WILL NEED TO COORDINATE AND HAVE A WORK PLAN APPROVED BY THE US ARMY CORPS OF ENGINEERS (USACOE). GUIDELINES ON ACCEPTABLE IN STREAM WORK TECHNIQUES CAN BE FOUND ON THE USACOE WEBSITE: <http://www.lrc.usace.army.mil/>.
5. THE CONTRACTOR SHALL SURROUND ANY NECESSARY EARTH STOCKPILES WITH PERIMETER EROSION BARRIER.
6. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AT ALL TIMES. EROSION CONTROL DEVICES SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS OR WITHIN 24 HOURS AFTER A 13 MM (0.5 INCH) RAINFALL OR SNOWFALL.
7. THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS AS SOON AS PRACTICAL AFTER CONSTRUCTION ACTIVITIES IN THAT AREA HAVE BEEN CONCLUDED. AREAS THAT HAVE STEEP SLOPES OR WILL NOT RECEIVE PERMANENT LANDSCAPING, SHALL BE TEMPORARILY SEEDED. ALL FLATTER AREAS OR AREAS WHERE NO FURTHER WORK IS TO OCCUR FOR ONE MONTH OR MORE SHALL BE SEEDED AND COVERED WITH EROSION CONTROL BLANKET WITHIN SEVEN (7) CALENDAR DAYS.



- LEGEND**
- COMPOST FURNISH AND PLACE, 4" W/ SEEDING, CL 4 AND EROSION CONTROL BLANKET
 - PERIMETER EROSION BARRIER
 - TEMPORARY DITCH CHECKS (STD 280001)



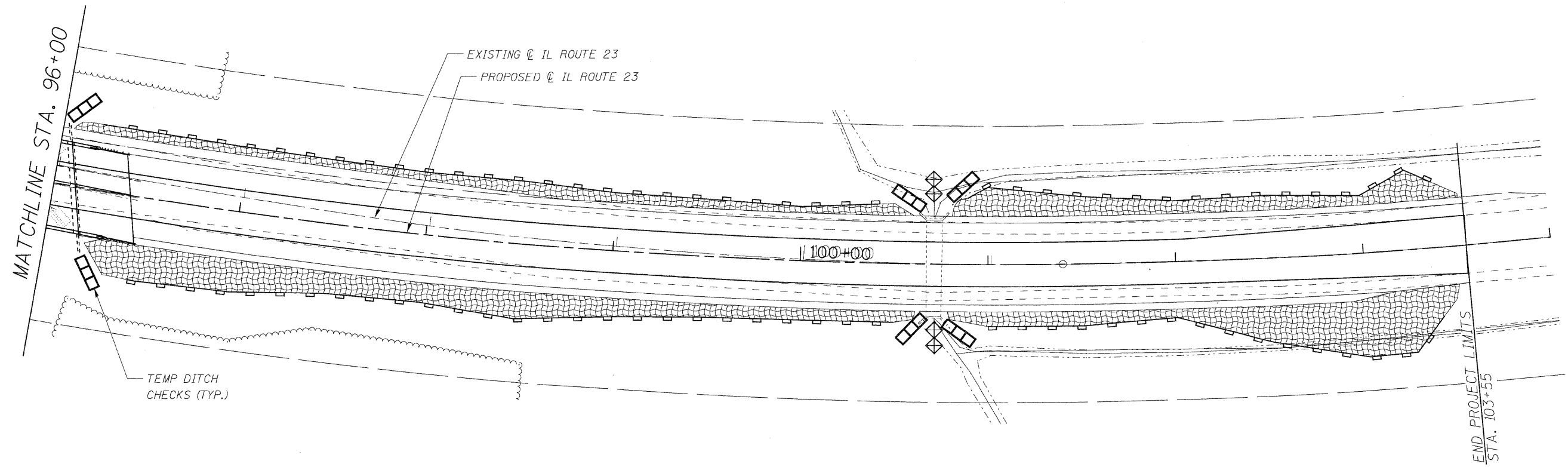
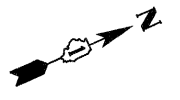
LOWCO INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - MJY	REVISED -
DRAWN - ST, TSC	REVISED -
CHECKED - MJY, SLV	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EROSION CONTROL PLAN
IL ROUTE 23 OVER COON CREEK**
SCALE: 1" = 30' SHEET NO. 1 OF 2 STA. 88+00 TO STA. 96+00





F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 21
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

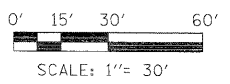


TEMPORARY EROSION CONTROL SEQUENCE OF CONSTRUCTION

1. ESTABLISH TEMPORARY EROSION CONTROL AND ERECT PERIMETER EROSION CONTROL BARRIER AS SHOWN ON THE PLANS PRIOR TO EARTHWORK.
2. IMPLEMENT SEDIMENT AND EROSION CONTROL DEVICES FOR STOCKPILE AREAS AS REQUIRED.
3. SETUP CONSTRUCTION STAGING OF PROPOSED DRAINAGE FACILITIES AND INSTALL TEMPORARY DITCH CHECKS IMMEDIATELY AFTER DITCH GRADING IS COMPLETED.
4. INSTALL PERMANENT LANDSCAPING IN CONJUNCTION WITH CONSTRUCTION STAGING.
5. CLEAN DRAINAGE FACILITIES AND REMOVE TEMPORARY EROSION DEVICES WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED.

LEGEND

-  COMPOST FURNISH AND PLACE, 4" W/ SEEDING, CL 4 AND EROSION CONTROL BLANKET
-  PERIMETER EROSION BARRIER
-  TEMPORARY DITCH CHECKS (STD 280001)
-  INLET PROTECTION



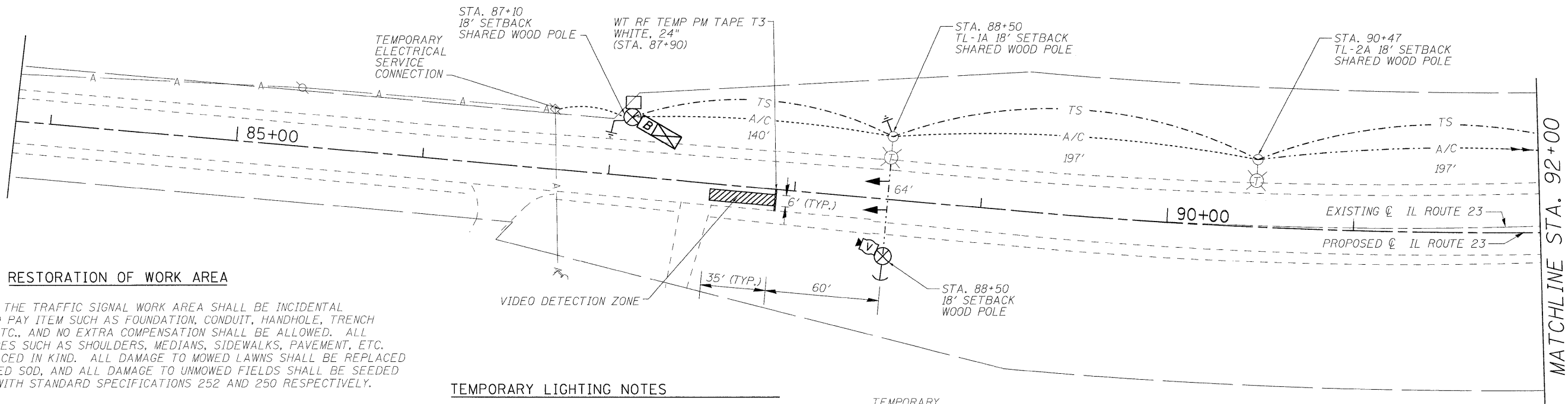
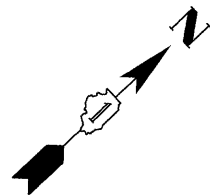
LOXCO, INC.
 CONSULTING ENGINEERS
 1980 WALL ST., SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - MJY	REVISED -
DRAWN - ST, TSC	REVISED -
CHECKED - MJY, SLV	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**EROSION CONTROL PLAN
 IL ROUTE 23 OVER COON CREEK**
 SCALE: 1" = 30' SHEET NO. 2 OF 2 STA. 96+00 TO STA. 103+55

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 22
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



RESTORATION OF WORK AREA

RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDING IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTES FOR TEMPORARY TRAFFIC SIGNALS

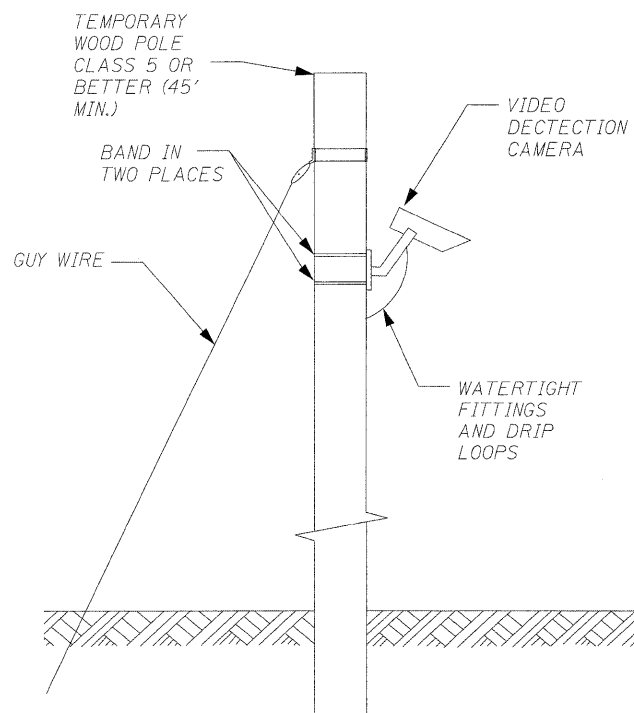
- ① ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL (S) SHALL BE FURNISHED BY THE CONTRACTOR.
- ② ONLY CONTROLLERS SUPPLIED BY ONE OF THE DISTRICT APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY IDOT DISTRICT 1, INSTALLED IN A NEMA TS1 OR TS2 CABINET. ONLY ONE BRAND OF CONTROLLER WILL BE ACCEPTED FOR ANY ONE CONTRACT.
- ③ ALL TRAFFIC SIGNAL SECTIONS SHALL BE 12" (300mm). HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD. ALL SIGNAL HEADS SHALL BE L.E.D.
- ④ ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
- ⑤ ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM USING SIMILAR BRAND CONTROL EQUIPMENT.
- ⑥ THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL. AT THE TIME OF THE TURN ON, IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN ON.
- ⑦ CONTROLLER WITH STEEL BASE CABINET AND BATTERY BACK-UP CABINET SHALL BE MOUNTED ON A SERVICE ENTRANCE POLE.
- ⑧ UN-INTERRUPTABLE POWER SUPPLY (UPS) SHALL BE INCLUDED IN "TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION" PAY ITEM.
- ⑨ 10 WOOD POLES INSTALLED BY THE TRAFFIC CONTRACTOR (SEE TEMPORARY TRAFFIC SIGNAL PLANS FOR LOCATIONS).

TEMPORARY LIGHTING NOTES

- ① TEMPORARY LUMINAIRE, SODIUM VAPOR, 400 WATT, 240V, HORIZONTAL-MOUNT, PHOTO-CELL, TYPE II DISTRIBUTION.
- ② TEMPORARY LIGHTING TO BE REMOVED AS DIRECTED BY IDOT WHEN ROADWAY CONSTRUCTION IS COMPLETE.
- ③ ALL SYSTEMS ARE TO BE REQUIRED TO REMAIN OPERATIONAL DURING STAGED CONSTRUCTION.
- ④ GROUND EVERY THIRD POLE WITH TEMPORARY LUMINAIRE UNLESS NOTED OTHERWISE ON PLAN.
- ⑤ TEMPORARY POLES SHALL BE 60 FEET UNLESS OTHERWISE NOTED.

TEMPORARY TRAFFIC SIGNAL & LIGHTING LEGEND

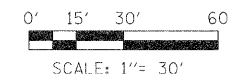
- 400 W, 240V, MCII HPS, WITH PHOTO CELL 20' MA, 50' MH ON WOOD POLE CLASS 4
- 2-1/4#4, AERIAL CABLE WITH MESSENGER WIRE UNLESS OTHERWISE NOTED
- TEMPORARY LIGHTING UNIT NUMBER - ONE CIRCUIT A
-
-
-
-
-
-
-

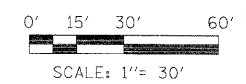
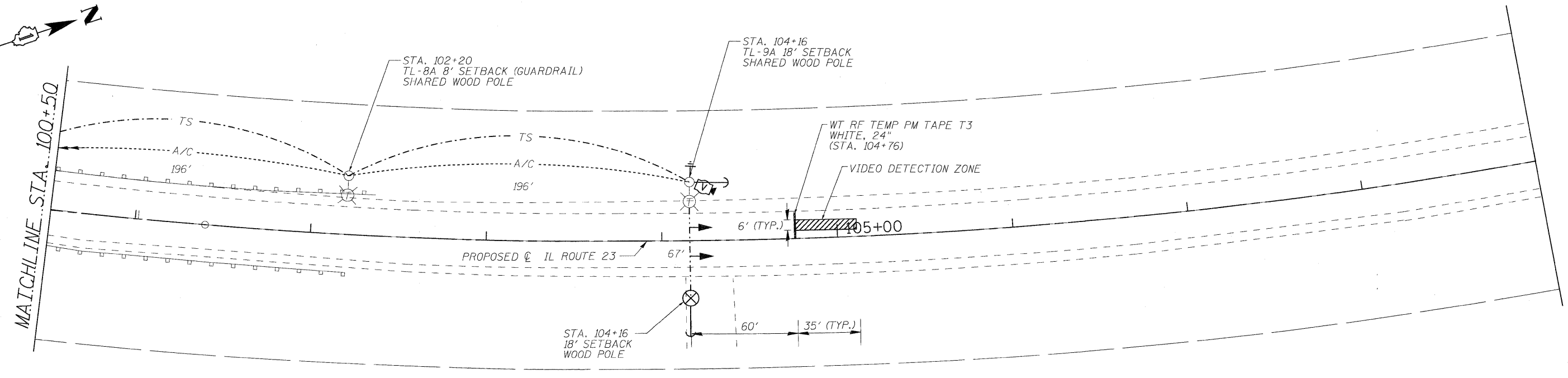
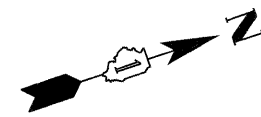
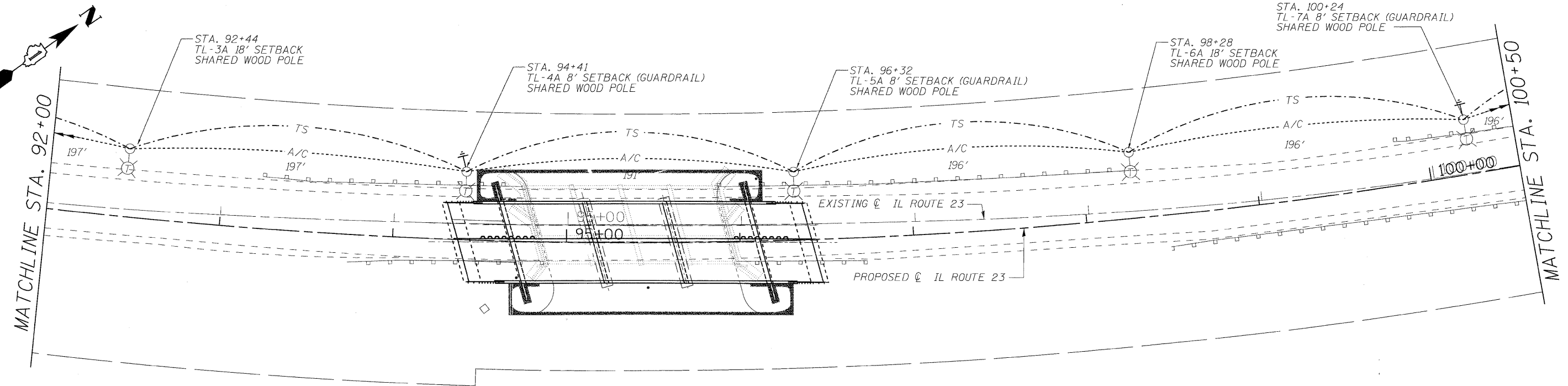
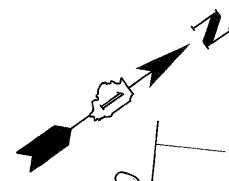


SCHEDULE OF QUANTITIES

ITEM	UNIT	TOTAL
AERIAL CABLE, 2-1/4 NO. 4 WITH MESSENGER WIRE	FOOT	1414
REMOVAL OF TEMPORARY LIGHTING UNITS	EACH	9
REMOVAL OF ELECTRIC SERVICE INSTALLATION	EACH	1
TEMPORARY ELECTRIC SERVICE CONNECTION	EACH	1
TEMPORARY ELECTRIC SERVICE INSTALLATION	EACH	1
REMOVAL OF TEMPORARY WOOD POLE, SALVAGE	EACH	3
TEMPORARY WOOD POLE, 60 FT, CLASS 4, 20 FT. MAST ARM	EACH	9
COMBINATION POLE MOUNTED ELECTRIC SERVICE BOX	EACH	1
TEMPORARY LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 400 W, TYPE II DISTRIBUTION	EACH	9
TEMPORARY WOOD POLE, 60 FOOT, CLASS 4	EACH	3
GROUND ROD, 5/8" DIA, X 10 FEET	EACH	5

NOTE: THIS WORK SHOWN IS FOR ESTIMATING PURPOSE ONLY. TEMPORARY LIGHTING WILL BE PAID UNDER "TEMPORARY LIGHTING FOR SINGLE LANE STAGING."





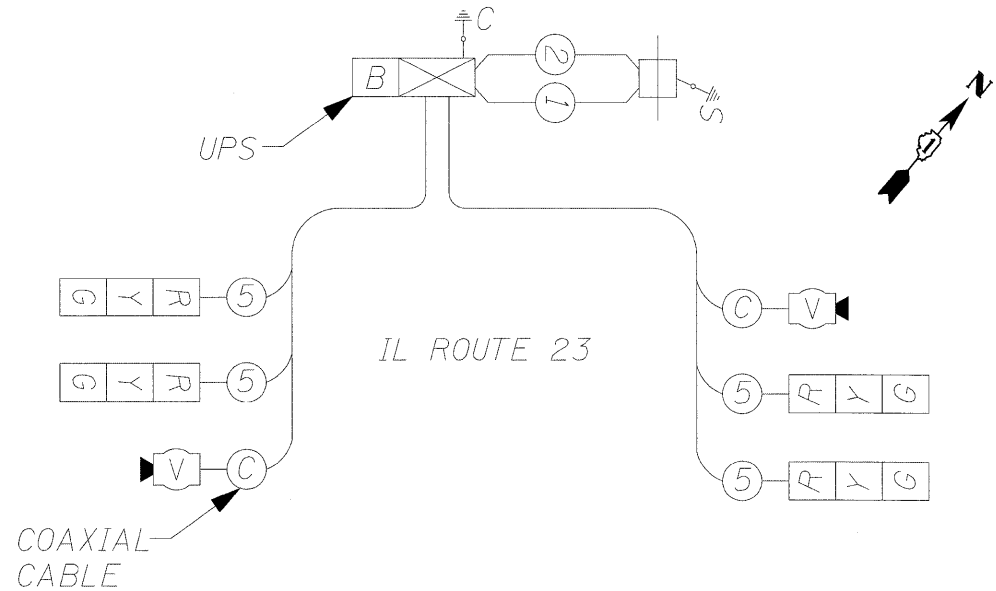
LOCO INC.
CONSULTING ENGINEERS
1580 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - SLV	REVISED -
DRAWN - SLV	REVISED -
CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL AND LIGHTING PLAN
IL ROUTE 23 OVER COON CREEK
SCALE: 1" = 30' SHEET NO. 2 OF 2 STA. 92+00 TO STA. 103+55

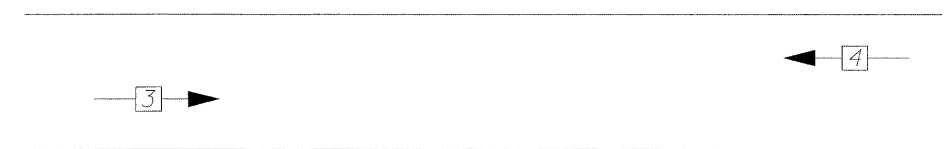
F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 24
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



TEMPORARY CABLE PLAN
NOT TO SCALE

TRAFFIC SIGNAL SEQUENCE						
PHASE	A			B		
INTERVAL	1	2	3	4	5	6
NORTHBOUND	G	Y	R	R	R	R
SOUTHBOUND	R	R	R	G	Y	R

TEMPORARY CONTROLLER SEQUENCE



TEMPORARY PHASE DESIGNATION DIAGRAM

LEGEND

- ←[*]→ SINGLE ENTRY PHASE
- * NUMBER REFERES TO ASSOCIATED PHASE

TEMPORARY CABLE LEGEND

- ⑤ - INDICATES NUMBER OF CONDUCTORS IN CABLE. ALL CONDUCTORS TO BE NUMBER 14 AWG WIRE UNLESS OTHERWISE NOTED.
- [R]
[Y]
[G] - SIGNAL FACE
- ⚡-S- TEMPORARY GROUND ROD AT POST OR MAST ARM POLE
- ⚡-C- TEMPORARY GROUND ROD AT CONTROLLER

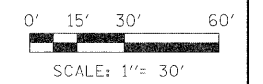
CONSTRUCTION NOTES

- ① THE PHASING SHALL BE DEACTIVATED AS REQUIRED DURING CONSTRUCTION STAGING.
- ② LED SIGNAL HEADS SHALL BE USED FOR ALL TEMPORARY TRAFFIC SIGNALS.

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					
TYPE	NO. LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		INCAND	LED		
SIGNAL (RED)	4	135	17	0.50	34.00
(YELLOW)	4	135	25	0.25	25.00
(GREEN)	4	135	15	0.25	15.00
VIDEO CAMERA	2	15	1	1.00	30.00
CONTROLLER	1	100	100	1.00	100.00
ENERGY COST TO:					TOTAL = 204.00

ILLINOIS DEPARTMENT OF TRANSPORTATION
201 WEST CENTER COURT
SCHAUMBURG, ILLINOIS 60196-1096
CONTACT: MR. DALE BALLINGER
PHONE: 815 724 5717
COMPANY: COM. EDISON

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (0.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (0.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'+L-2= (6m+L-0.6m)=
E - M. ARM POLE		SIGNAL POST	2 (1.0)	BRACKET MOUNTED	13 (0.5)
24" (600 mm)	10 (3.0)	CONTROLLER CAB.	1 (0.5)	PED. PUSHBUTTON	4 (1.2)
30" (750 mm)	10 (3.0)	FIBER OPTIC	13 (4.0)	ELECTRIC SERVICE	13.5 (4.1)
36" (900 mm)	15 (4.6)	ELECTRIC SERVICE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
		GROUND CABLE	1 (0.5)	POST MOUNTED	6 (1.8)



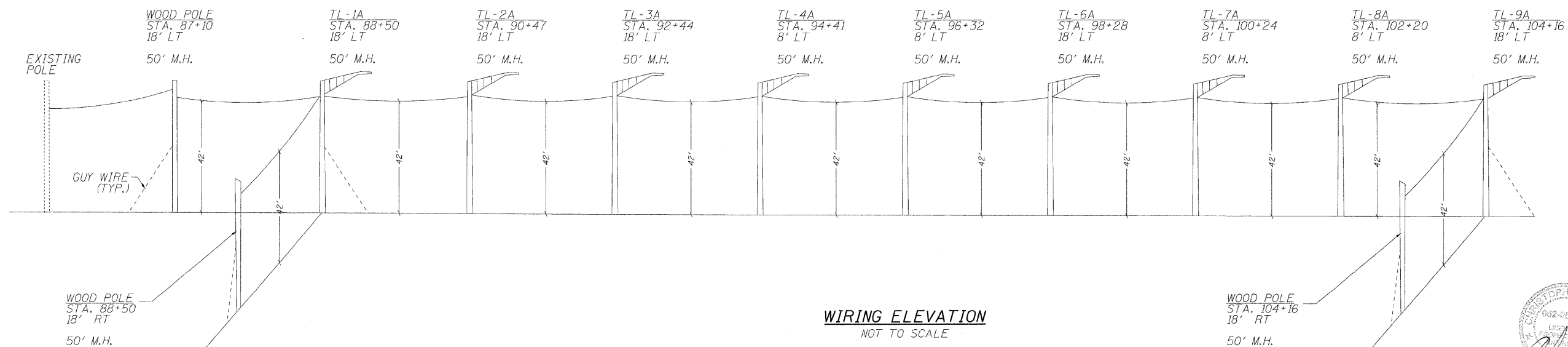
ELECTRICAL SYMBOLS FOR PROPOSED WORK	
SYMBOLS	DESCRIPTION
	TEMPORARY LIGHTING UNIT; POLE MOUNTED, SINGLE ARM AND LUMINAIRE. POLE SHALL BE 50' HEIGHT UNLESS NOTED OTHERWISE. CIRCUIT NUMBER STATION NUMBER AS INDICATED (TYP.) MOUNTING HEIGHT MAST ARM LENGTH LUMINAIRE WATTAGE
--- A/C ---	AERIAL ELECTRIC CABLE, 2-1/C #4 WITH MESSENGER WIRE
	GROUND ROD
	TEMPORARY WOOD POLE
	POLE GUYING
— A —	COMED AERIAL POWER LINE
— E —	EXISTING COMED UNDERGROUND POWER LINE

LIGHTING INDEX OF SHEET

SHEET NO.	DESCRIPTIONS
26	TEMPORARY LIGHTING - GENERAL NOTES, INDEX AND SYMBOLS
27	TEMPORARY LIGHTING DETAILS
28	TEMPORARY LIGHTING DETAILS

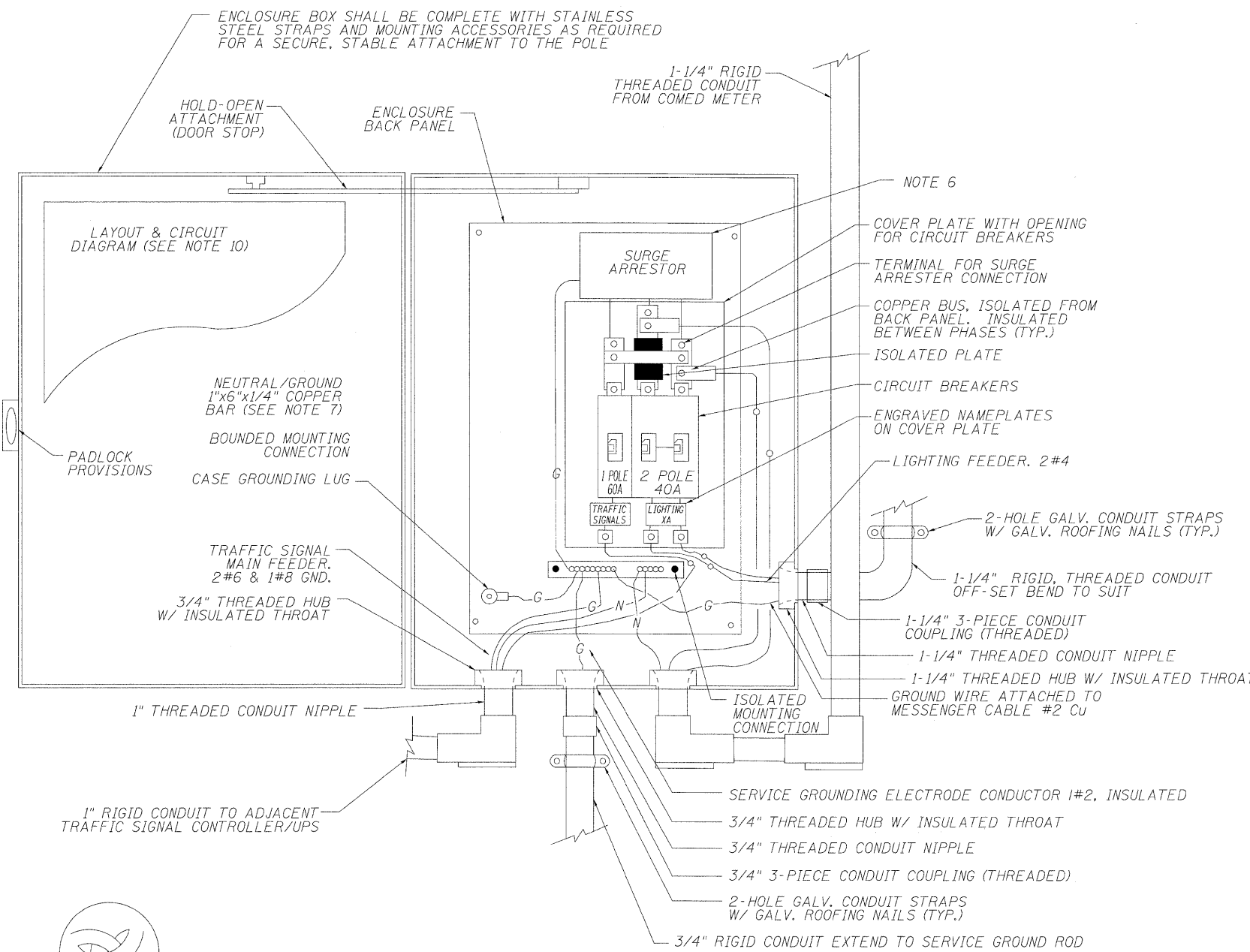
ELECTRICAL GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT THE ELECTRIC UTILITY COMPANY TO COORDINATE THE ELECTRICAL SERVICE WORK.
2. TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE LIGHT POLES, THE LIGHT POLES SHALL NOT BE ERECTED AND/OR LEFT TO STAND WITHOUT LUMINAIRES. NOTE THAT THE LIGHT POLES WILL NOT BE PAID FOR UNTIL THE POLES ARE FULLY APPROVED AND THE LUMINAIRES ARE INSTALLED.
3. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE A SOLID, SOFT DRAWN VC NO. 2 BARE COPPER CONDUCTOR INSTALLED ACCORDING TO THE NEC REQUIREMENT FOR BONDING OF COPPER GROUND RODS, DISCONNECT SWITCHES, TRAFFIC SIGNAL CONTROLLER, LUMINAIRES AND BARE MESSENGER CABLE.
4. SPECIAL CARE SHALL BE TAKEN DURING AUGER OPERATIONS IN ORDER TO NOT DAMAGE EXISTING FIBER OPTIC CABLES AND ANY UTILITIES AND/OR TREES ALONG IL ROUTE 23 WITHIN THE PROJECT LIMITS.
5. ALL TEMPORARY LIGHTING UNITS SHALL BE INSTALLED ON WOOD POLES.
6. ALL SETBACKS SHOULD BE TAKEN FROM THE EDGE OF TRAVELED PAVEMENT.
7. TEMPORARY WOOD POLES SHALL BE ERECTED TO MAINTAIN PROPOSED LUMINAIRE HEIGHT ABOVE ROADWAY PER PLANS.
8. A GROUND ROD SHALL BE INSTALLED AS SHOWN ON THE TEMPORARY LIGHTING PLANS.



11/30/10

COST OF TEMPORARY POLE CAP MODIFICATION AND CONNECTION HARDWARE SHALL BE INCIDENTAL TO AERIAL CABLE PAY ITEM.



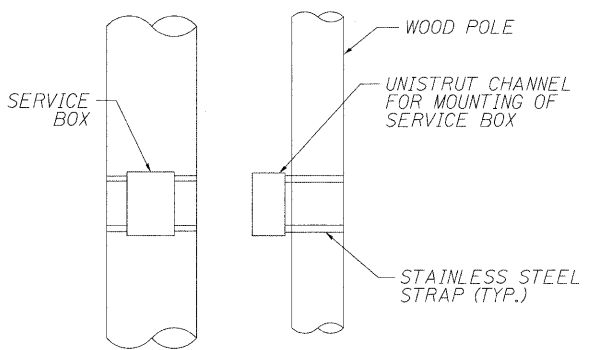
- NOTES**
- ELECTRICAL SERVICE SHALL BE OF THE VOLTAGE INDICATED OR DESIGNED BY THE ENGINEER, SERVICE DROP CABLE SHALL BE COMPATIBLE WITH THE SERVICE ACCORDINGLY. SOME INSTALLATIONS MAY CALL FOR SERVICE ENTRANCE EQUIPMENT SUITABLE FOR 3-WIRE SERVICE EVEN THOUGH INITIALLY WIRED FOR 2-WIRE SERVICE.
 - THE POLE-MOUNTED ELECTRICAL SERVICE BOX DETAIL DEPICTS THE BASIC CONSTRUCTION OF THE EQUIPMENT. SLIGHT MODIFICATIONS APPLY FOR DIFFERING SERVICES AND APPLICATIONS.
 - THE ELECTRICAL SERVICE EQUIPMENT ASSEMBLY SHALL BE UL LISTED AS SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT.
 - THE ELECTRICAL SERVICE EQUIPMENT SHALL BE A NEMA 4X STAINLESS STEEL, NOMINALLY 12"W x 16"H x 8"D, WITH A PIANO-HINGED DOOR, STEEL BACK PANEL, FAST-ACTING STAINLESS STEEL ENCLOSURE CLAMPS, PADLOCK PROVISIONS AND DOOR STOP. HOFFMAN CATALOG NO. A-16HI208SS6LP/A-16 P12/A-DSTOPK/C-PMK12, OR APPROVED EQUAL.
 - CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC BOLT-ON TYPE WITH A MINIMUM INTERRUPTING CAPACITY OF 25,000 SYMMETRICAL AMPERES AT 120 VOLTS. THEY SHALL BE LOCKABLE IN THE "OFF" POSITION FOR COMPLIANCE WITH OSHA LOCK-OUT/TAG-OUT REQUIREMENTS. HANDLES SHALL BE TRIP FREE.
 - THE SURGE PROTECTOR SHALL BE SUITABLE FOR 240/120 VOLT SINGLE PHASE 60HZ AC ELECTRICAL SERVICE, WITH A SURGE ENERGY CAPABILITY OF 2160 JOULES OR BETTER AT 8/20 MICROSECONDS, RATED -40 TO 60 DEGREES C., WITH LED OPERATING INDICATORS, AND SHALL BE UL LISTED PER UL 1449, CUTLER-HAMMER CMOV230L065XST OR APPROVED EQUAL.
 - BUS BARS, CONNECTORS AND LUGS SHALL BE COPPER, INSULATED AND ISOLATED, AND CONFIGURED TO PREVENT SHORTED CONDITIONS FROM TIGHTENING TERMINATIONS, ETC. THE OVERALL BUS SECTION SHALL BE CONFIGURED BEHIND AN INSULATING BARRIER SHIELD WHICH IS REMOVABLE FOR ACCESS TO CONNECTIONS, OR THE ASSEMBLY SHALL BE A MANUFACTURED SPECIALTY PANELBOARD. CUTLER-HAMMER PRL2A OR APPROVED EQUAL.
 - THE COMBINATION GROUND AND NEUTRAL BAR SHALL BE CONFIGURED WITH SEPARATE GROUND AND NEUTRAL SECTIONS AND SPARE TERMINALS AS INDICATED. THE HEADS OF GROUND SCREWS SHALL BE PAINTED GREEN, THE HEADS OF NEUTRAL SCREWS SHALL BE PAINTED WHITE. THE SERVICE NEUTRAL AND SERVICE GROUNDING ELECTRODE CONDUCTOR SHALL BE TERMINATED ADJACENT TO EACH OTHER AT THE DIVIDE BETWEEN THE SECTIONS AND WIRING SHALL BE TERMINATED ONLY UPON THE APPROPRIATE SECTION.
 - THE WIRING TERMINALS, INCLUDING THE GROUND/NEUTRAL BAR SHALL BE ARRANGED TO PROVIDE ADEQUATE ROOM FOR PERFORMING FIELD TERMINATIONS.
 - A PLASTIC LAMINATED LAYOUT AND CIRCUIT DIAGRAM SHALL BE MECHANICALLY SECURED TO THE INTERIOR SIDE OF THE ENCLOSURE DOOR.
 - A 2-COLOR ENGRAVED PLASTIC NAMEPLATE, ATTACHED WITH SCREWS, AND ENGRAVED AS INDICATED, SHALL BE PROVIDED FOR EACH MAIN BREAKER.
 - LUGS AND CONNECTORS SHALL BE RATED FOR 75 DEGREE C CONDUCTOR.
 - THE EXACT MOUNTING HEIGHT OF THE BOX SHALL BE FIELD DETERMINED TO AVOID OBSTRUCTIONS AND PUBLIC ACCESS.

**COMBINATION POLE-MOUNTED ELECTRIC SERVICE BOX
GENERAL LAYOUT DIAGRAM**

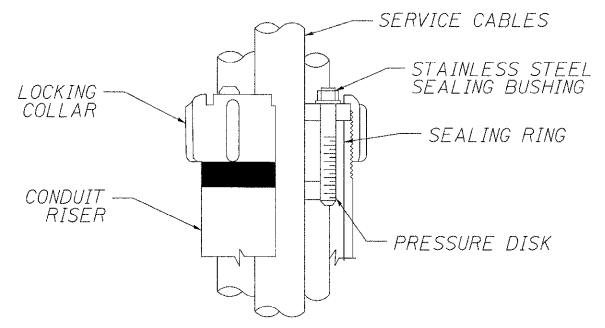
NOT TO SCALE



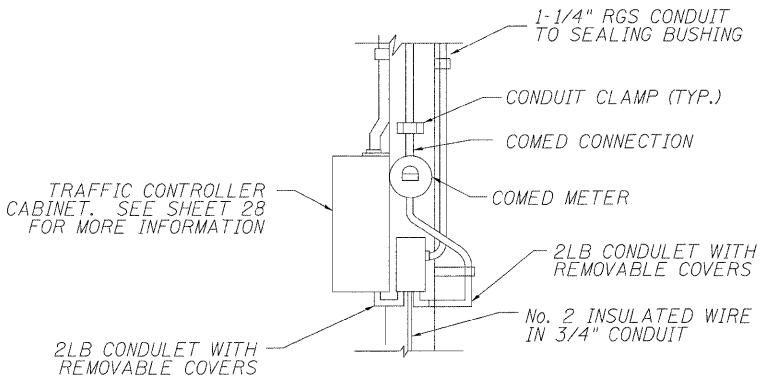
6" DECAL ON FRONT COVER



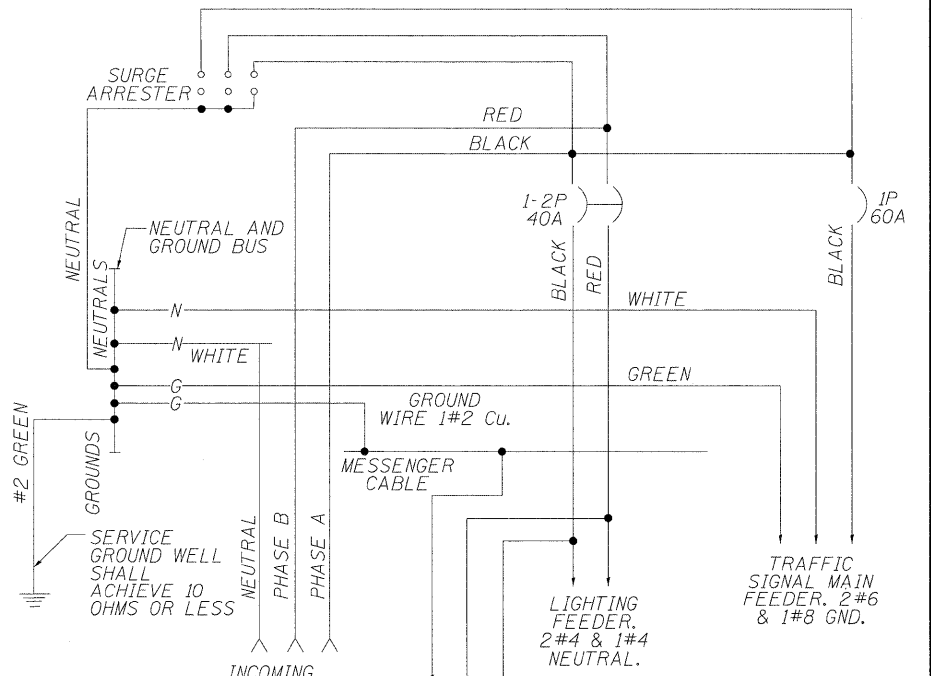
SERVICE BOX MOUNTING DETAIL
NOT TO SCALE



SEALING BUSHING DETAIL
NOT TO SCALE



SERVICE ENTRANCE DETAIL
NOT TO SCALE



SCHEMATIC DIAGRAM
NOT TO SCALE

LONGO, INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 PH 630.331.577-9100

DESIGNED - SLV	REVISED - 01/20/2011
DRAWN - SLV	REVISED -
CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

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DEPARTMENT OF TRANSPORTATION**

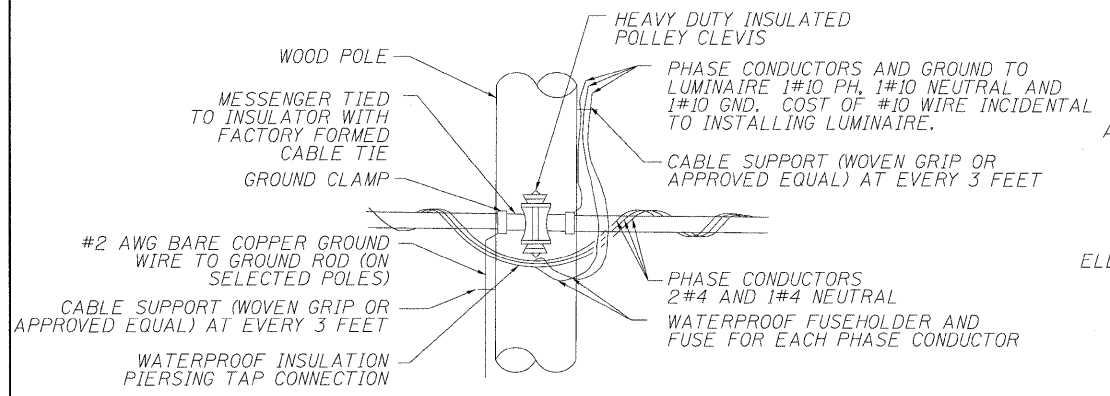
**TEMPORARY LIGHTING DETAILS
IL ROUTE 23 OVER COON CREEK**

SCALE: NONE SHEET NO. 2 OF 3 STA. 88+00 TO STA. 103+55

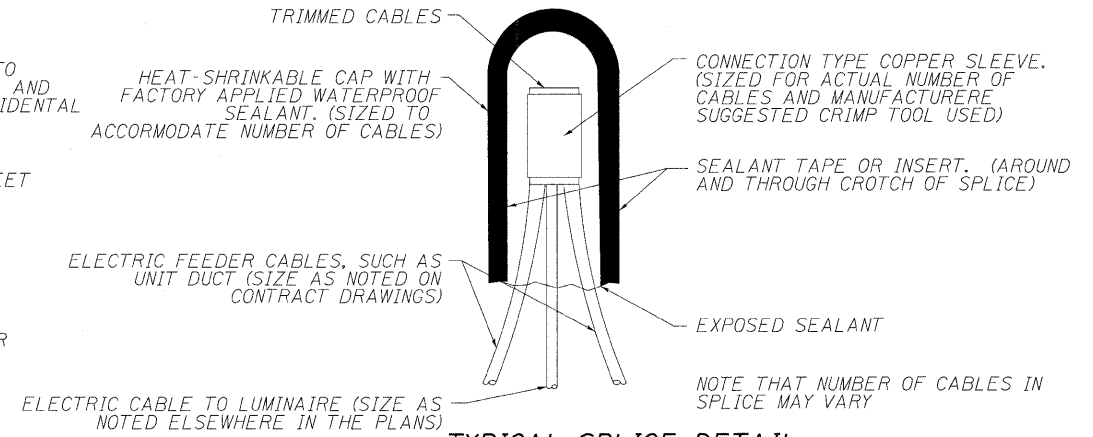
F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 27
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

1/13/11
1/13/11

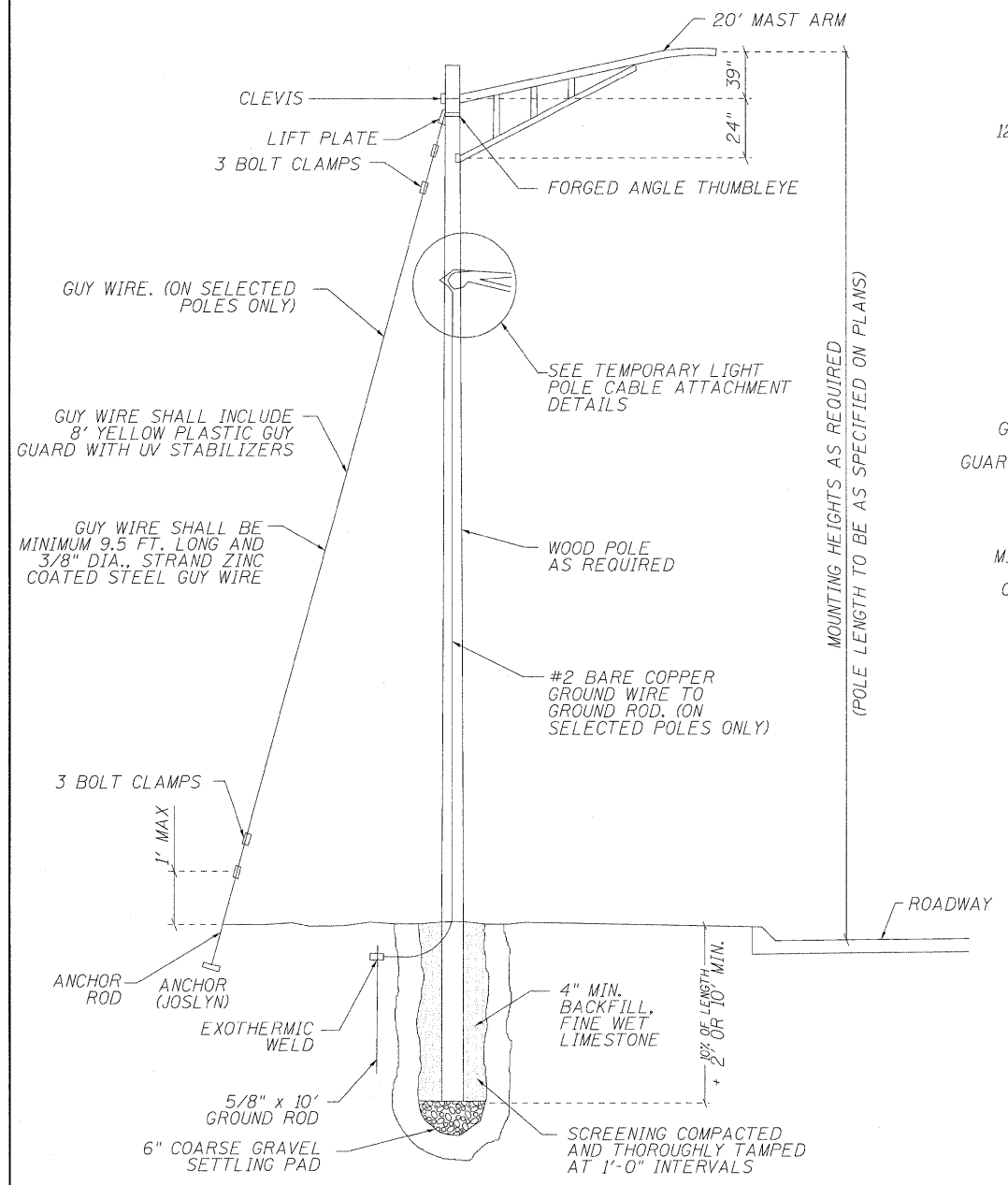
COST OF TEMPORARY POLE CAP MODIFICATION AND CONNECTION HARDWARE SHALL BE INCIDENTAL TO AERIAL CABLE PAY ITEM.



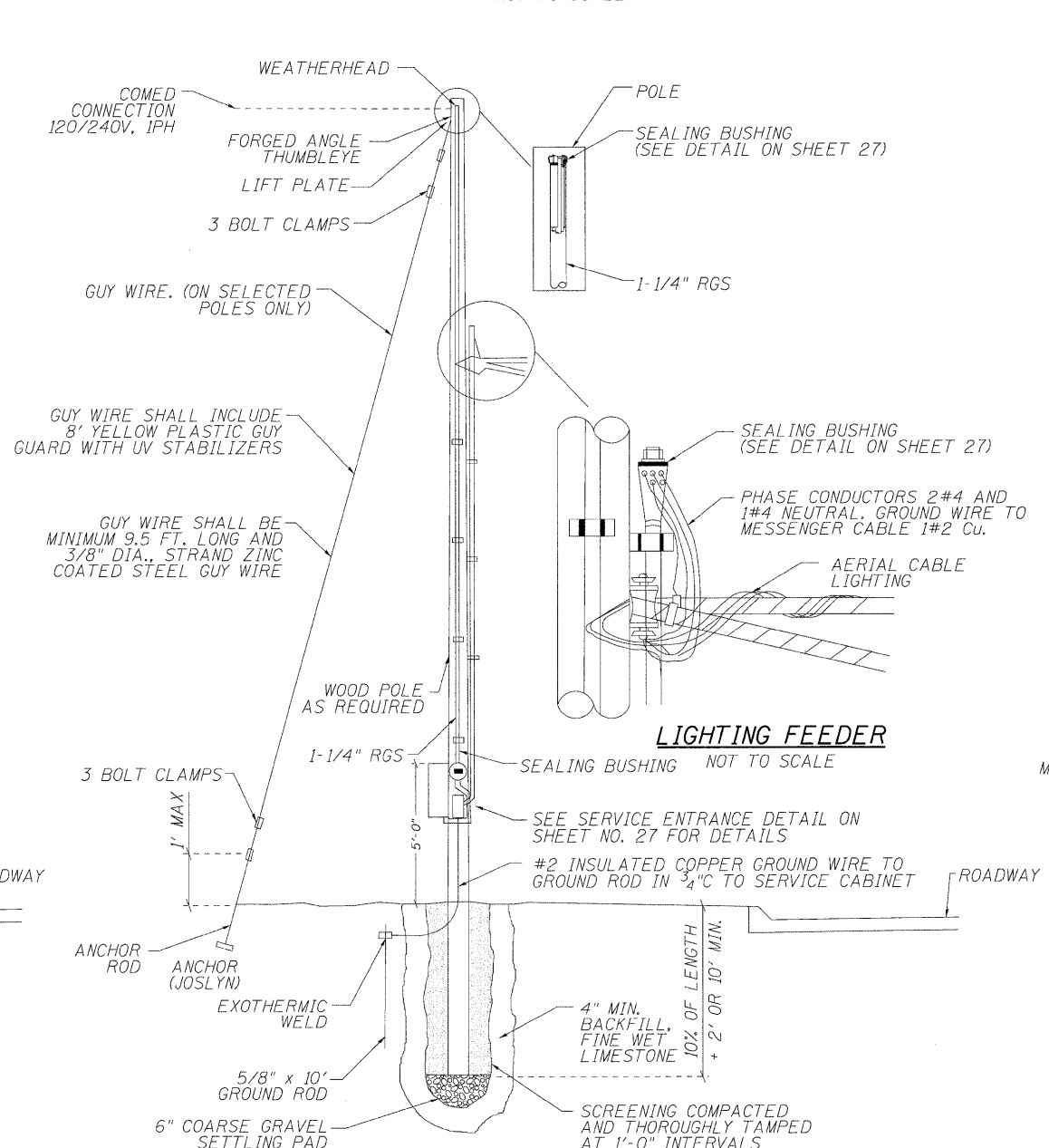
TEMPORARY LIGHT POLE CABLE ATTACHMENT DETAILS
NOT TO SCALE



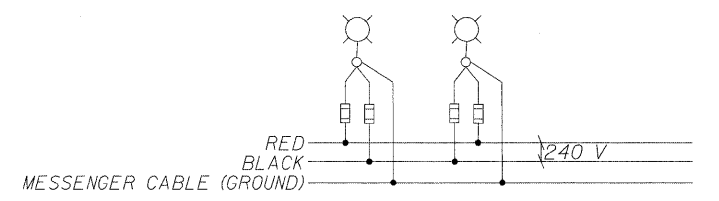
TYPICAL SPLICE DETAIL
NOT TO SCALE



TEMPORARY LIGHT POLE DETAIL
NOT TO SCALE



SERVICE ENTRANCE POLE DETAIL
NOT TO SCALE



TYPICAL POLE TO POLE SINGLE LINE WIRING DIAGRAM
NOT TO SCALE

LONGO, INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - SLV	REVISED - 01/20/2011
DRAWN - SLV	REVISED -
CHECKED - MJY, ST	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY LIGHTING DETAILS
IL ROUTE 23 OVER COON CREEK**

SCALE: NONE SHEET NO. 3 OF 3 STA. 88+00 TO STA. 103+55

F.A.P. RTE. 324	SECTION 24 B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 28
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Chap
1/30/11
EJC
1/30/11

GENERAL NOTES

- Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ in. ϕ , holes $\frac{15}{16}$ in. ϕ , unless otherwise noted.
- Calculated weight of Structural Steel (M270, Grade 50) = 106910 lbs.
Calculated weight of Structural Steel (M270, Grade 36) = 9,880 lbs.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4. See Special Provision for "Cleaning and Painting New Metal Structures".
- Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
- Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
- Slip forming of the parapets is not allowed.
- The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.
- If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the existing beams or new deck, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Removal of Existing structures.
- Current Ratings on file for Existing Structure
Inventory: HS 12
Operating: HS 20
Live Load Restrictions : No

INDEX OF SHEETS

- General Plan and Elevation
- General Data and Bill of Material
- Substructure Layout and Slope Protection
- Stage Construction Details
- Temporary Concrete Barrier for Stage Construction
- Top of Deck Elevations (1 of 3)
- Top of Deck Elevations (2 of 3)
- Top of Deck Elevations (3 of 3)
- Top of South Approach Slab Elevations
- Top of North Approach Slab Elevations
- Superstructure
- Superstructure Details (1 of 2)
- Superstructure Details (2 of 2)
- Bridge Approach Slab Details (1 of 2)
- Bridge Approach Slab Details (2 of 2)
- Framing Plan
- Framing Details
- Bearing Details
- South Abutment
- North Abutment
- Piers 1 and 2
- HP Pile Details
- Bar Splicer Assembly Details
- Cantilever Forming Brackets
- Boring Log (1 of 2)
- Boring Log (2 of 2)

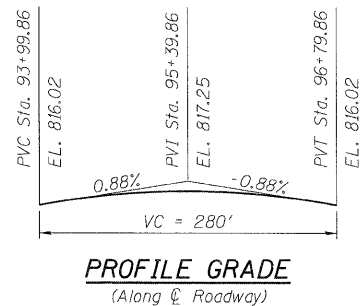
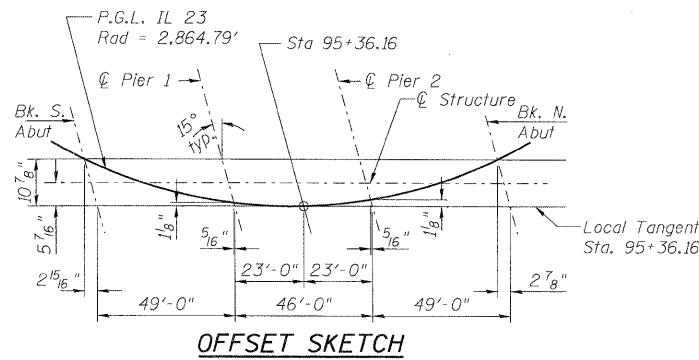
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	APPR. SLAB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		1414		1414
Filter Fabric	Sq. Yd.		1414		1414
Removal of Existing Structures	Each	1			1
Structure Excavation	Cu. Yd.		500		500
Concrete Structures	Cu. Yd.		183.4	29.0	212.4
Concrete Superstructure	Cu. Yd.	237.0		140.9	377.9
Bridge Deck Grooving	Sq. Yd.	720		300	1020
Concrete Encasement	Cu. Yd.		11.3		11.3
Protective Coat	Sq. Yd.	845		332	1177
Furnishing and Erecting Structural Steel	L. Sum	1			1
Stud Shear Connectors	Each	3927			3927
Reinforcement Bars, Epoxy Coated	Pound	57960	19230	37530	114720
Bar Splicers	Each	577	92	222	891
Furnishing Steel Piles HP12x53	Foot		1130		1130
Driving Piles	Foot		1130		1130
Test Pile Steel HP12x53	Each		4		4
Pile Shoes	Each		32		32
Name Plates	Each	1			1
Anchor Bolts, 1"	Each		56		56
Geocomposite Wall Drain	Sq. Yd.		72		72
Porous Granular Embankment, Special	Cu. Yd.		164		164
Underwater Structure Excavation Protection - Location 1	Each		1		1
Underwater Structure Excavation Protection - Location 2	Each		1		1
Temporary Sheet Piling	Sq. Ft.		1164		1164
Pipe Underdrains for Structures 4"	Foot		160		160

WATERWAY INFORMATION

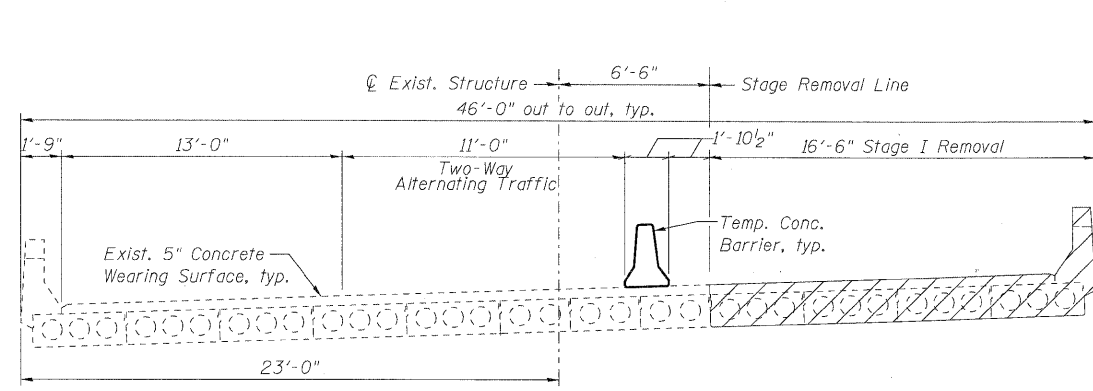
Drainage Area = 83.2 mi² Exist. Low Grade Elev. = 813.26 ft. @ Sta. 94+00
 Prop. Low Grade Elev. = 813.42 ft. @ Sta. 89+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	4028	762.8	848.0	809.72	1.00	0.99	810.72	810.71
Base	50	5174	819.2	919.3	810.28	1.26	1.16	811.54	811.44
Overtopping	>500	5394	828.3	930.9	810.37	1.31	1.20	811.68	811.57
Max. Calc.	500	5927	852.4	961.9	810.61	1.48	1.28	812.09	811.89

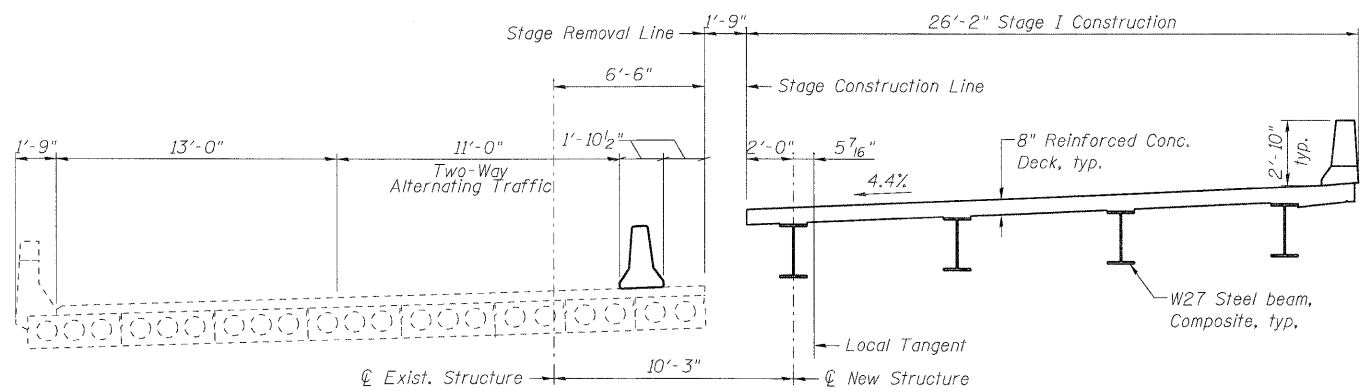


DESIGN SCOUR ELEVATION TABLE

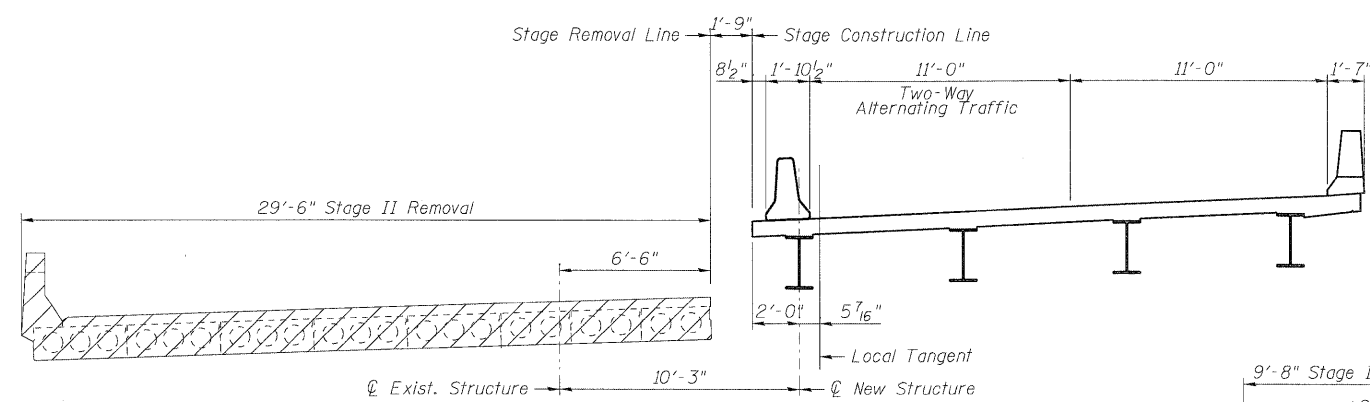
Design Scour Elevation (Ft.)	S. Abut	Pier 1	Pier 2	N. Abut
	808.95	782.71	782.71	808.98



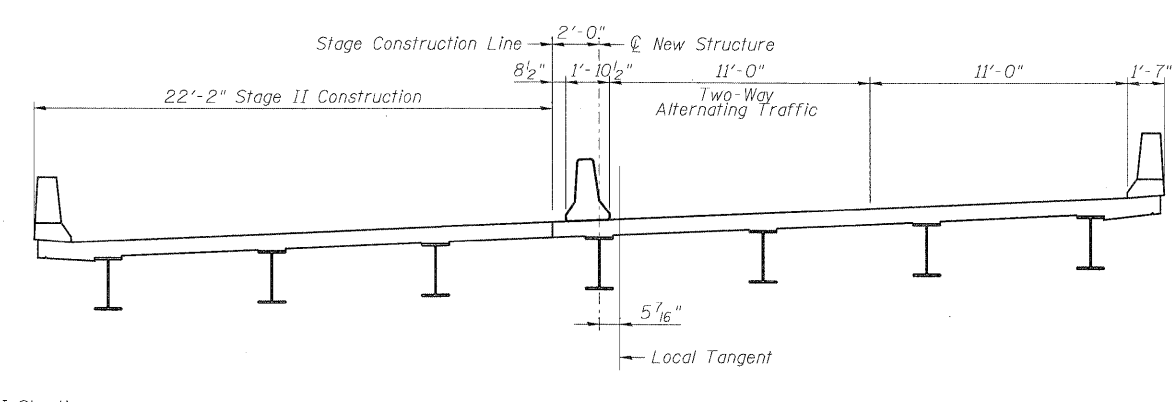
STAGE I REMOVAL



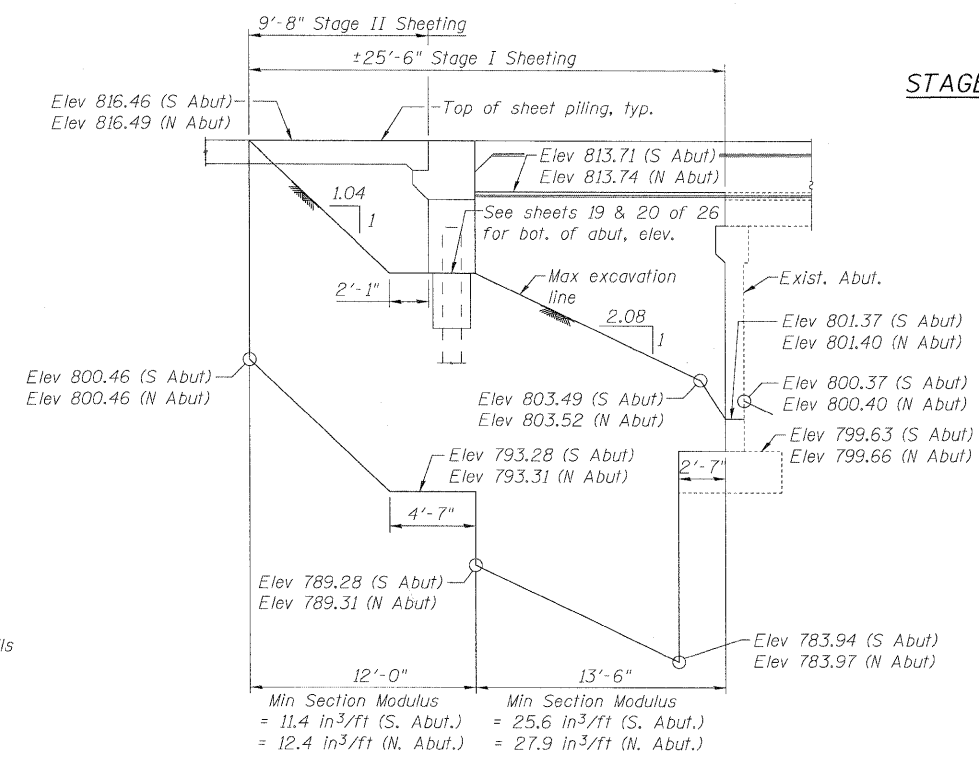
STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION



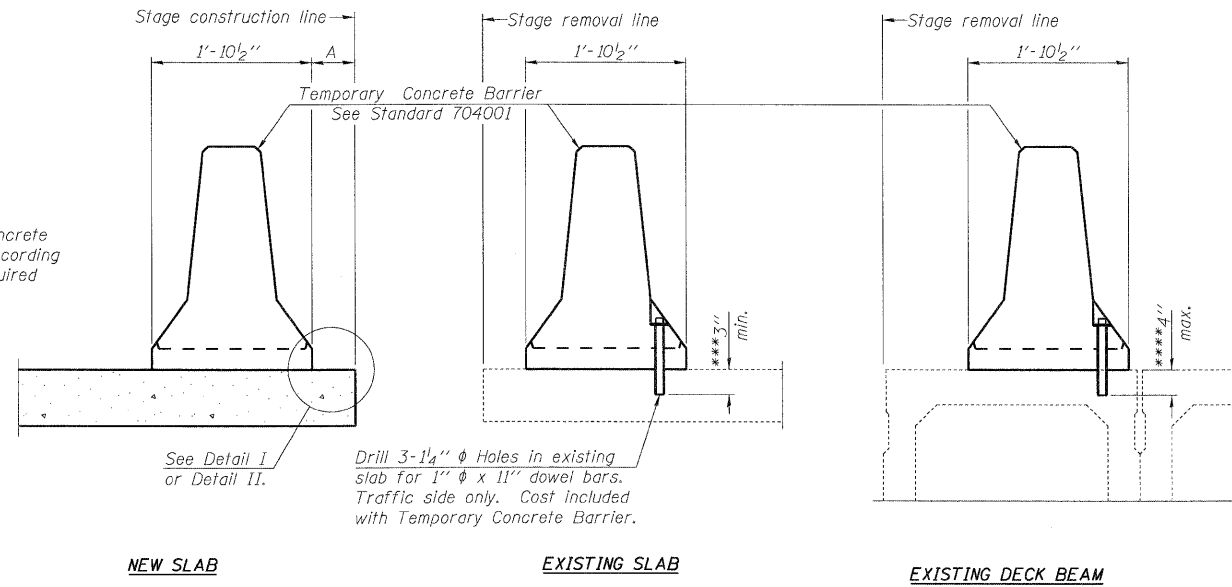
SHEET PILE ELEVATION

(South Abutment shown looking west, North Abutment Similar)

NOTES
 All Cross Sections looking North.
 Hatched area indicates Removal of Existing structures.
 Cost of removing existing concrete wearing surface, parapet, and PPC deck beams are included with Removal of Existing structures.
 For quantity of Temporary Concrete Barrier see Roadway Plans.
 For Temporary Concrete Barrier details see Sheet 5 of 26.

Note:
 If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
 The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

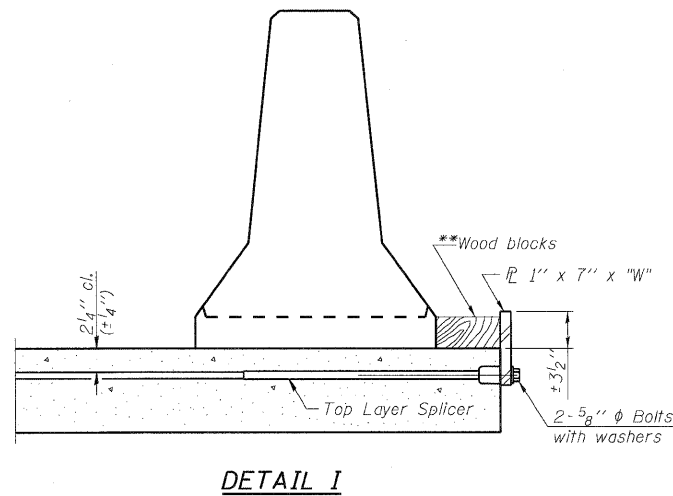
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel R_c to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate ϕ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel R_c to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ϕ of each barrier panel.

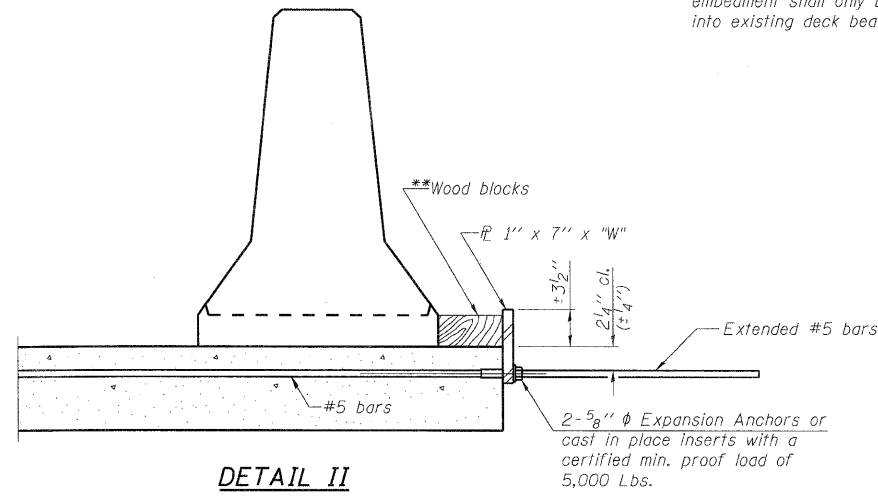
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



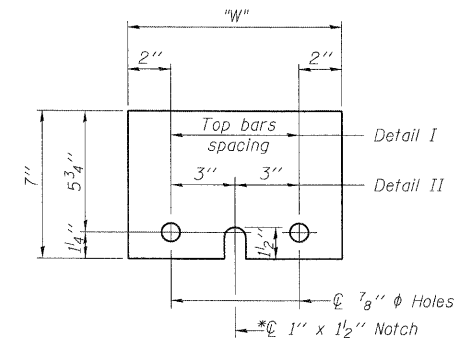
DETAIL I



DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"



STEEL RETAINER R_c 1" x 7" x "W"

* Required only with Detail II

R-27

7-1-10

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1560 WALL ST., SUITE 222
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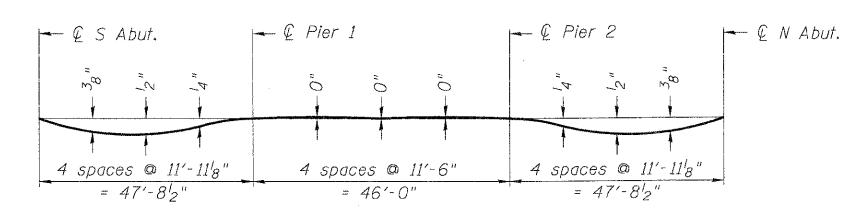
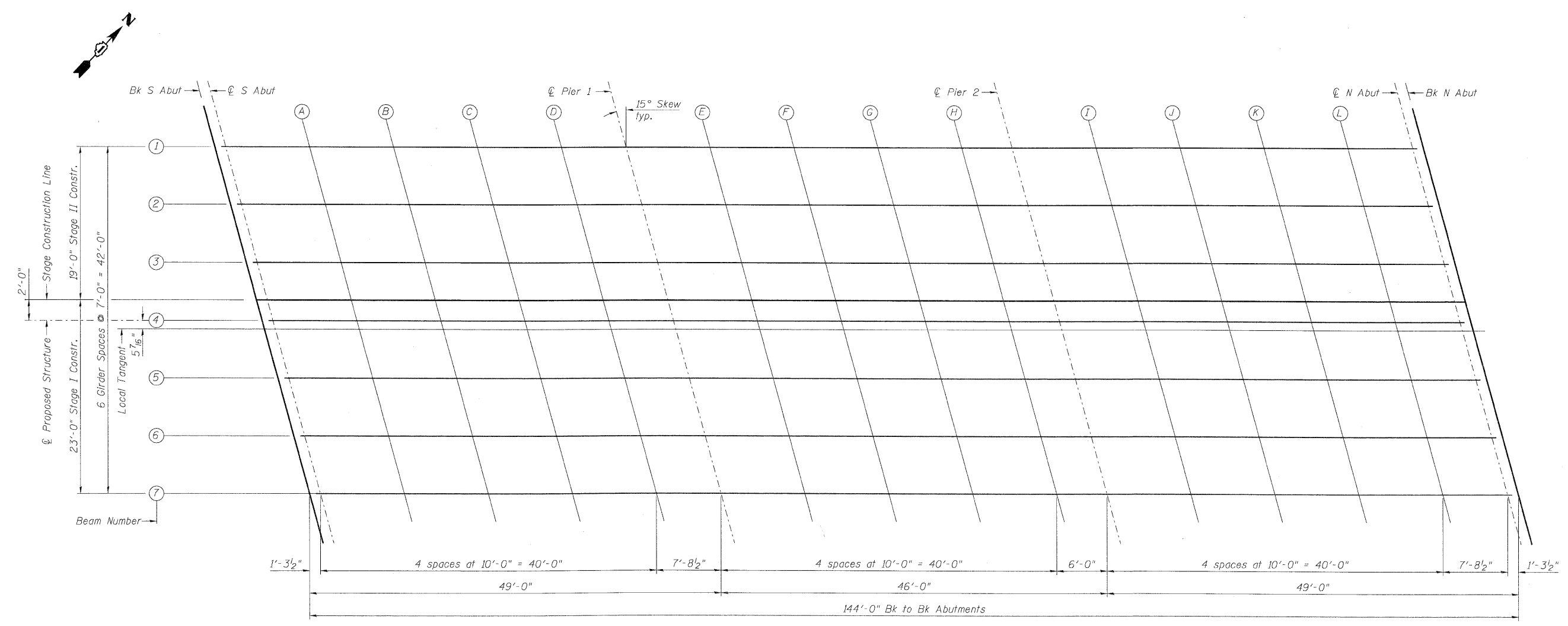
DESIGNED -	SLV	REVISED -	
CHECKED -	MJM	REVISED -	
DRAWN -	SLV	REVISED -	
CHECKED -	DJB	REVISED -	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 056-0277**

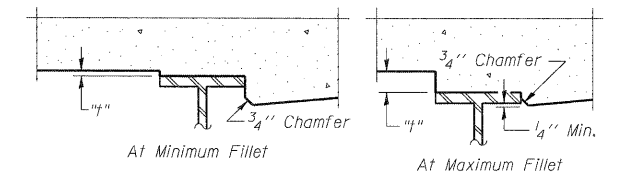
SHEET NO. 5 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-2	McHENRY	76	33
D-91-178-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection", Shown on Sheet 7.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on the plans. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on the plans, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

LONCO, INC.
CONSULTING ENGINEERS
1560 WALL ST, SUITE 222
NAPERVILLE, ILLINOIS 60563 Ph: (630) 577-9100

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CHECKED - MJM	REVISED -
DRAWN - SLV	REVISED -
CHECKED - DJB	REVISED -

STATE OF ILLINOIS
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TOP OF DECK ELEVATIONS (1 OF 2)
STRUCTURE NO. 056-0277

SHEET NO. 6 OF 26 SHEETS

F.A.P. RTE. 324	SECTION 24B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 34
D-91-178-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+57.85	-20.39	815.53	815.53
☉ S Abut	94+59.15	-20.43	815.53	815.53
A	94+69.22	-20.68	815.57	815.60
B	94+79.29	-20.89	815.60	815.64
C	94+89.36	-21.07	815.63	815.66
D	94+99.43	-21.22	815.65	815.66
☉ Pier 1	95+07.20	-21.31	815.66	815.66
E	95+17.27	-21.39	815.68	815.68
F	95+27.35	-21.44	815.69	815.69
G	95+37.42	-21.45	815.69	815.69
H	95+47.50	-21.43	815.69	815.69
☉ Pier 2	95+53.54	-21.40	815.69	815.69
I	95+63.62	-21.32	815.68	815.70
J	95+73.69	-21.21	815.67	815.70
K	95+83.76	-21.06	815.65	815.69
L	95+93.84	-20.88	815.63	815.65
☉ N Abut	96+01.60	-20.71	815.60	815.60
Bk N Abut	96+02.90	-20.68	815.60	815.60

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+59.92	-13.44	815.84	815.84
☉ S Abut	94+61.22	-13.48	815.85	815.85
A	94+71.27	-13.72	815.88	815.91
B	94+81.31	-13.93	815.92	815.95
C	94+91.36	-14.11	815.94	815.97
D	95+01.41	-14.24	815.96	815.98
☉ Pier 1	95+09.15	-14.33	815.98	815.98
E	95+19.20	-14.40	815.99	815.99
F	95+29.25	-14.45	816.00	816.00
G	95+39.30	-14.45	816.00	816.00
H	95+49.35	-14.42	816.00	816.00
☉ Pier 2	95+55.38	-14.39	816.00	816.00
I	95+65.43	-14.30	815.99	816.00
J	95+75.48	-14.19	815.97	816.01
K	95+85.53	-14.03	815.95	815.99
L	95+95.58	-13.84	815.93	815.95
☉ N Abut	96+03.32	-13.67	815.91	815.91
Bk N Abut	96+04.62	-13.64	815.90	815.90

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+61.99	-6.50	816.16	816.16
☉ S Abut	94+63.28	-6.53	816.16	816.16
A	94+73.30	-6.77	816.20	816.23
B	94+83.33	-6.97	816.23	816.27
C	94+93.35	-7.13	816.25	816.29
D	95+03.37	-7.27	816.27	816.29
☉ Pier 1	95+11.10	-7.34	816.29	816.29
E	95+21.12	-7.41	816.30	816.30
F	95+31.15	-7.45	816.31	816.31
G	95+41.18	-7.45	816.31	816.31
H	95+51.20	-7.41	816.31	816.30
☉ Pier 2	95+57.22	-7.38	816.30	816.30
I	95+67.24	-7.29	816.29	816.31
J	95+77.27	-7.16	816.28	816.31
K	95+87.29	-7.00	816.26	816.30
L	95+97.31	-6.80	816.23	816.25
☉ N Abut	96+05.04	-6.63	816.21	816.21
Bk N Abut	96+06.33	-6.60	816.21	816.21

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+63.46	-1.53	816.39	816.39
☉ S Abut	94+64.75	-1.56	816.39	816.39
A	94+74.75	-1.80	816.42	816.45
B	94+84.76	-1.99	816.45	816.49
C	94+94.76	-2.15	816.48	816.51
D	95+04.77	-2.28	816.50	816.51
☉ Pier 1	95+12.48	-2.36	816.51	816.51
E	95+22.49	-2.42	816.52	816.52
F	95+32.50	-2.45	816.53	816.53
G	95+42.51	-2.45	816.53	816.53
H	95+52.52	-2.41	816.53	816.52
☉ Pier 2	95+58.52	-2.37	816.52	816.52
I	95+68.53	-2.27	816.51	816.53
J	95+78.54	-2.14	816.49	816.53
K	95+88.54	-1.98	816.47	816.51
L	95+98.55	-1.77	816.45	816.47
☉ N Abut	96+06.26	-1.60	816.43	816.43
Bk N Abut	96+07.55	-1.56	816.42	816.42

☉ IL Rt. 23

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+63.91	0.00	816.45	816.45
☉ S Abut	94+65.21	0.00	816.46	816.46
A	94+75.28	0.00	816.50	816.53
B	94+85.33	0.00	816.54	816.58
C	94+95.38	0.00	816.57	816.61
D	95+05.41	0.00	816.60	816.61
☉ Pier 1	95+13.14	0.00	816.61	816.61
E	95+23.15	0.00	816.63	816.62
F	95+33.16	0.00	816.63	816.64
G	95+43.16	0.00	816.64	816.64
H	95+53.15	0.00	816.63	816.63
☉ Pier 2	95+59.14	0.00	816.62	816.62
I	95+69.11	0.00	816.61	816.63
J	95+79.08	0.00	816.59	816.62
K	95+89.03	0.00	816.56	816.60
L	95+98.98	0.00	816.53	816.55
☉ N Abut	96+06.64	0.00	816.50	816.50
Bk N Abut	96+07.93	0.00	816.49	816.49

BEAM 4 & ☉ STRUCTURE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+64.04	0.46	816.48	816.48
☉ S Abut	94+65.34	0.42	816.48	816.48
A	94+75.33	0.19	816.51	816.54
B	94+85.33	0.00	816.54	816.58
C	94+95.33	-0.16	816.57	816.60
D	95+05.33	-0.29	816.59	816.60
☉ Pier 1	95+13.04	-0.36	816.60	816.60
E	95+23.04	-0.42	816.61	816.61
F	95+33.04	-0.45	816.61	816.62
G	95+43.04	-0.45	816.62	816.62
H	95+53.04	-0.40	816.61	816.61
☉ Pier 2	95+59.04	-0.36	816.61	816.61
I	95+69.04	-0.26	816.60	816.62
J	95+79.04	-0.13	816.58	816.62
K	95+89.04	0.04	816.56	816.60
L	95+99.04	0.24	816.54	816.56
☉ N Abut	96+06.74	0.42	816.51	816.51
Bk N Abut	96+08.04	0.45	816.51	816.51

BEAM 5

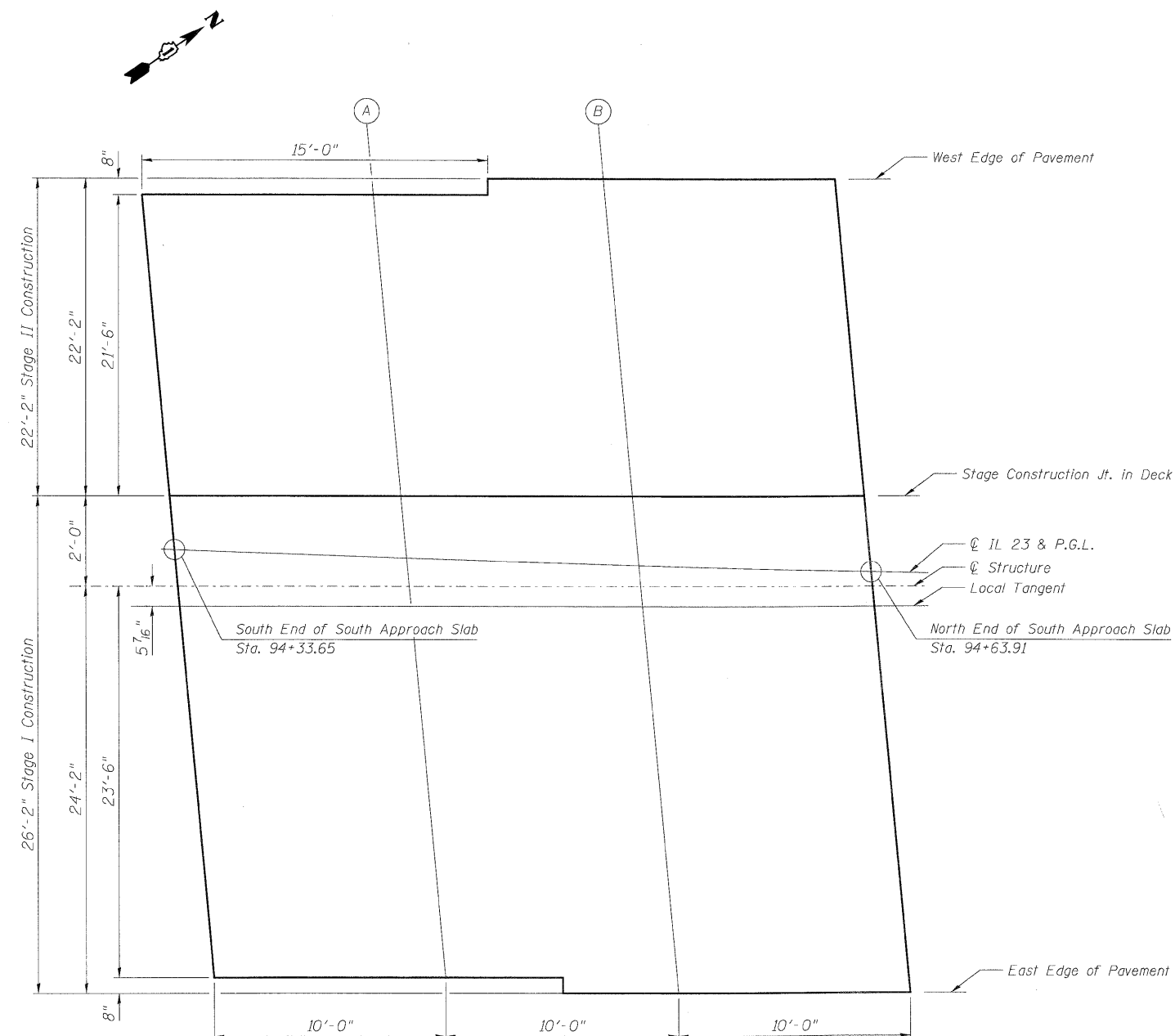
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+66.09	7.41	816.79	816.79
☉ S Abut	94+67.38	7.38	816.80	816.80
A	94+77.35	7.15	816.83	816.85
B	94+87.33	6.96	816.86	816.89
C	94+97.30	6.81	816.88	816.91
D	95+07.28	6.69	816.90	816.91
☉ Pier 1	95+14.96	6.63	816.91	816.91
E	95+24.94	6.57	816.92	816.92
F	95+34.92	6.55	816.92	816.92
G	95+44.89	6.56	816.92	816.92
H	95+54.87	6.61	816.92	816.92
☉ Pier 2	95+60.86	6.65	816.91	816.91
I	95+70.83	6.76	816.90	816.92
J	95+80.81	6.90	816.89	816.92
K	95+90.78	7.07	816.87	816.90
L	96+00.76	7.28	816.84	816.86
☉ N Abut	96+08.44	7.46	816.82	816.82
Bk N Abut	96+09.73	7.49	816.81	816.81

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+68.12	14.36	817.11	817.11
☉ S Abut	94+69.41	14.33	817.11	817.11
A	94+79.36	14.11	817.14	817.17
B	94+89.31	13.93	817.17	817.21
C	94+99.26	13.79	817.19	817.22
D	95+09.21	13.67	817.21	817.22
☉ Pier 1	95+16.88	13.61	817.22	817.22
E	95+26.83	13.56	817.23	817.23
F	95+36.79	13.55	817.23	817.23
G	95+46.74	13.57	817.23	817.23
H	95+56.69	13.62	817.23	817.22
☉ Pier 2	95+62.66	13.67	817.22	817.22
I	95+72.62	13.78	817.21	817.23
J	95+82.57	13.93	817.19	817.23
K	95+92.52	14.10	817.17	817.21
L	96+02.46	14.32	817.14	817.16
☉ N Abut	96+10.13	14.51	817.12	817.12
Bk N Abut	96+11.42	14.54	817.11	817.11

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk S Abut	94+70.15	21.31	817.42	817.42
☉ S Abut	94+71.44	21.28	817.43	817.43
A	94+81.36	21.08	817.46	817.48
B	94+91.29	20.90	817.48	817.52
C	95+01.21	20.76	817.50	817.54
D	95+11.14	20.66	817.52	817.53
☉ Pier 1	95+18.79	20.60	817.53	817.53
E	95+28.72	20.56	817.54	817.53
F	95+38.65	20.55	817.54	817.54
G	95+48.58	20.57	817.54	817.54
H	95+58.51	20.64	817.53	817.53
☉ Pier 2	95+64.46	20.69	817.53	817.53
I	95+74.39	20.80	817.51	817.53
J	95+84.32	20.96	817.50	817.53
K	95+94.24	21.14	817.47	817.51
L	96+04.17	21.36	817.45	817.47
☉ N Abut	96+11.81	21.55	817.42	817.42
Bk N Abut	96+13.10	21.59	817.42	817.42



PLAN

West Edge of Pavement

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr Slab	94+26.88	-21.89'	815.27
A	94+36.95	-22.25'	815.32
B	94+47.30	-21.67'	815.41
N. End S. Appr Slab	94+57.37	-21.96'	815.46

Stage Construction Joint

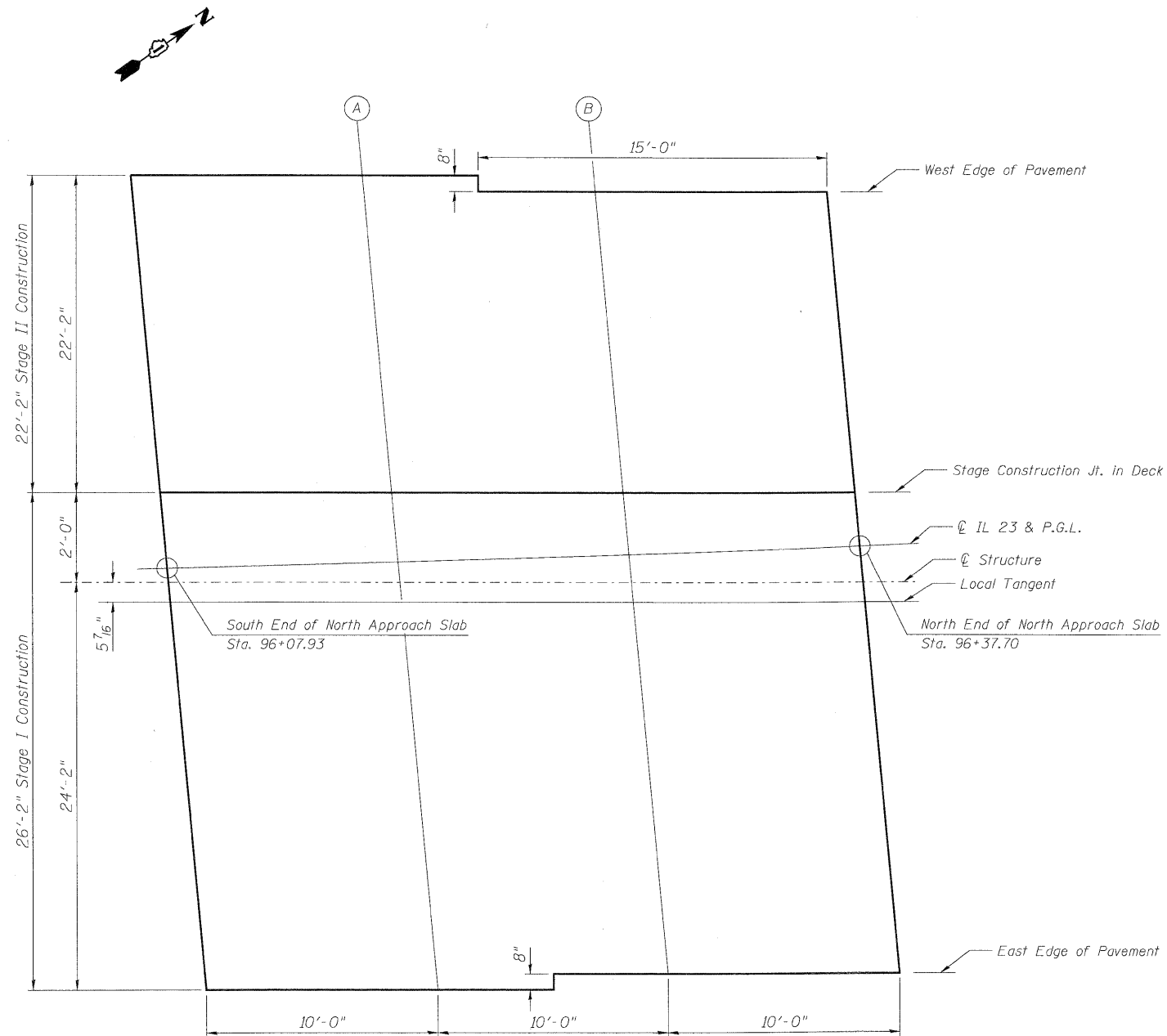
Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr Slab	94+33.46	-0.61'	816.25
A	94+43.46	-0.95'	816.30
B	94+53.46	-1.26'	816.35
N. End S. Appr Slab	94+63.46	-1.53'	816.39

CL IL 23 & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr Slab	94+33.65	0.00'	816.28
A	94+43.75	0.00'	816.35
B	94+53.83	0.00'	816.40
N. End S. Appr Slab	94+63.91	0.00'	816.45

East Edge of Pavement

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr Slab	94+41.14	24.64'	817.41
A	94+51.05	24.32'	817.46
B	94+60.69	23.13'	817.46
N. End S. Appr Slab	94+70.61	22.89'	817.49



PLAN

West Edge of Pavement

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr Slab	96+02.51	-22.27'	815.53
A	96+12.58	-22.03'	815.50
B	96+22.44	-22.66'	815.42
N. End N. Appr Slab	96+32.51	-22.35'	815.38

Stage Construction Joint

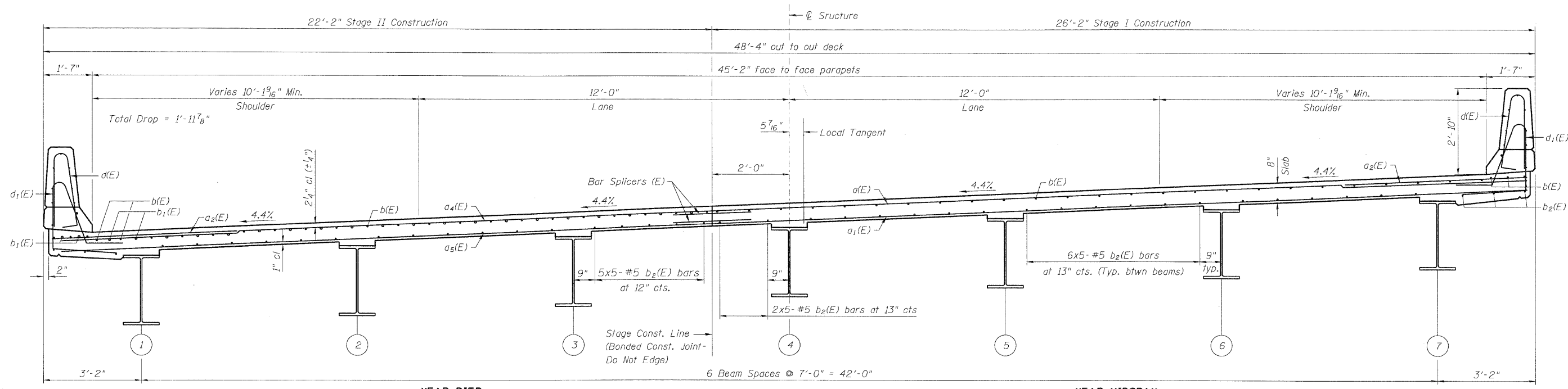
Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr Slab	96+07.55	-1.56'	816.42
A	96+17.55	-1.30'	816.39
B	96+27.55	-1.00'	816.35
N. End N. Appr Slab	96+37.55	-0.66'	816.31

IL 23 & P.G.L.

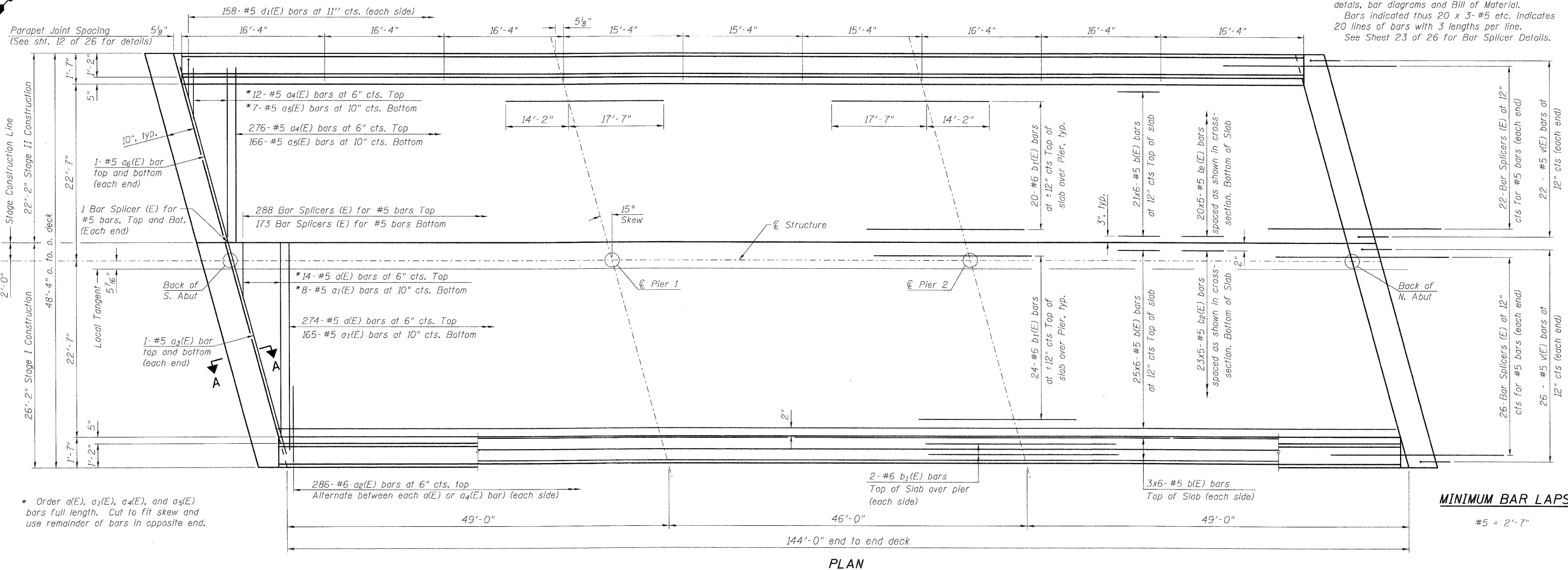
Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr Slab	96+07.93	0.00'	816.49
A	96+17.86	0.00'	816.44
B	96+27.78	0.00'	816.39
N. End N. Appr Slab	96+37.70	0.00'	816.34

East Edge of Pavement

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr Slab	96+13.47	23.18'	817.49
A	96+23.39	23.47'	817.45
B	96+33.51	24.72'	817.45
N. End N. Appr Slab	96+43.42	25.07'	817.40



Notes:
 See Sheet 12 of 26 for parapet details.
 See sheet 13 of 26 for Section A-A, diaphragm details, bar diagrams and Bill of Material.
 Bars indicated thus 20 x 3-#5 etc. Indicates 20 lines of bars with 3 lengths per line.
 See Sheet 23 of 26 for Bar Splicer Details.



LONGO, INC.
 CONSULTING ENGINEERS
 1660 WALL ST., SUITE 232
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - SLV	REVISED -
CHECKED - MJM	REVISED -
DRAWN - SLV	REVISED -
CHECKED - DJB	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

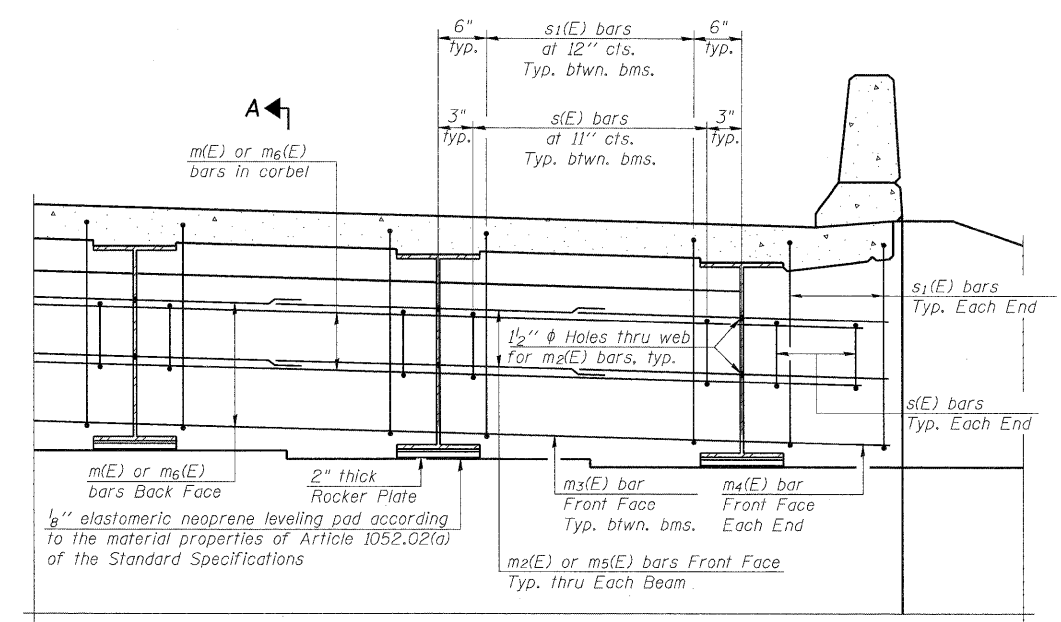
**SUPERSTRUCTURE
 STRUCTURE NO. 056-0277**

SHEET NO. 11 OF 26 SHEETS

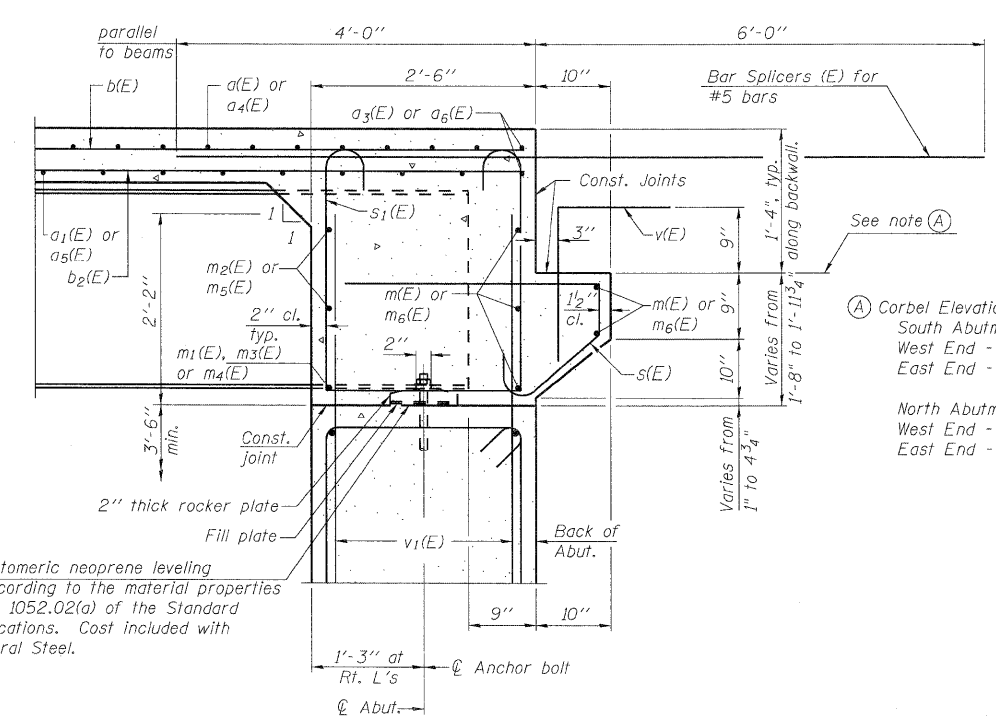
F.A.P. RTE. 324	SECTION 24B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 39
D-91-178-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	288	#5	25'-8"	
a ₁ (E)	173	#5	25'-0"	
a ₂ (E)	572	#6	6'-6"	
a ₃ (E)	4	#5	26'-7"	
a ₄ (E)	288	#5	21'-8"	
a ₅ (E)	173	#5	21'-0"	
a ₆ (E)	4	#5	22'-5"	
b(E)	312	#5	26'-2"	
b ₁ (E)	96	#6	31'-9"	
b ₂ (E)	215	#5	30'-11"	
d(E)	316	#5	5'-7"	
d ₁ (E)	316	#5	7'-11"	
e(E)	42	#4	15'-0"	
e ₁ (E)	84	#4	16'-0"	
e ₂ (E)	4	#8	25'-7"	
e ₃ (E)	8	#8	27'-1"	
e ₄ (E)	4	#4	24'-0"	
e ₅ (E)	8	#4	25'-6"	
m(E)	10	#6	26'-8"	
m ₁ (E)	2	#6	4'-10"	
m ₂ (E)	16	#6	10'-8"	
m ₃ (E)	10	#6	6'-11"	
m ₄ (E)	4	#6	2'-11"	
m ₅ (E)	12	#6	8'-6"	
m ₆ (E)	10	#6	22'-6"	
s(E)	112	#5	5'-5"	
s ₁ (E)	98	#4	8'-2"	
v(E)	96	#5	3'-6"	
Bridge Deck Grooving		Sq. Yd.	720	
Bar Splicers		Each	577	
Protective Coat		Sq. Yd.	845	
Concrete Superstructure		Cu. Yd.	237.0	
Reinforcement Bars, Epoxy Coated		Pound	57960	

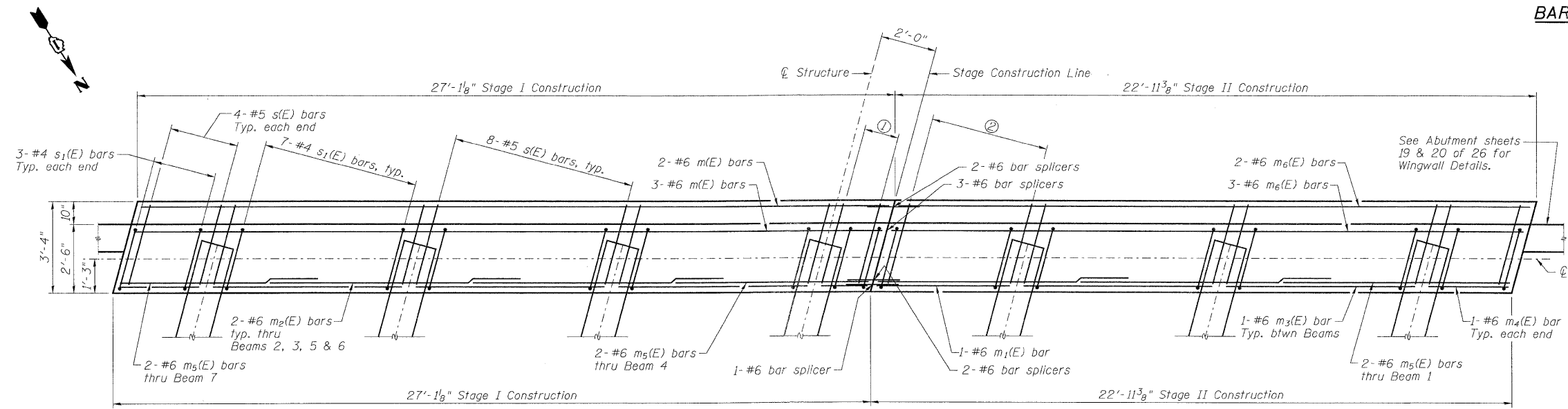


DIAPHRAGM ELEVATION AT ABUTMENT



SECTION A-A
Dimensions at right angles to abutment, except as shown.

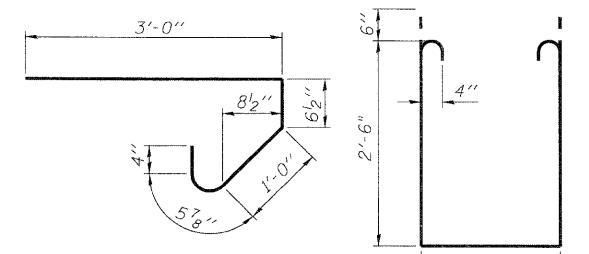
Notes:
Reinforcement bars in diaphragm are billed with Superstructure.
Concrete in diaphragm is included with Concrete Superstructure.
The s(E) and s₁(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
For bearing details see sht 18 of 26.
For location of holes thru web see Sheet 17 of 26.



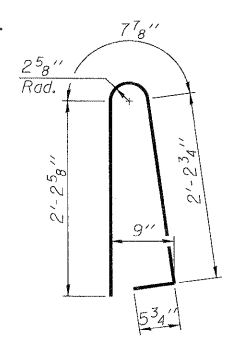
DIAPHRAGM PLAN
(South Abutment shown, North Abutment similar)

- ① 3- #5 s(E) bars, 3- #4 s₁(E) bars
- ② 5- #5 s(E) bars, 5- #4 s₁(E) bars

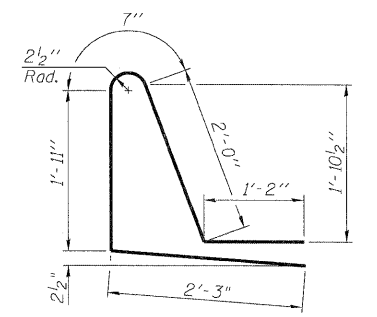
BAR v(E)



BAR s(E)



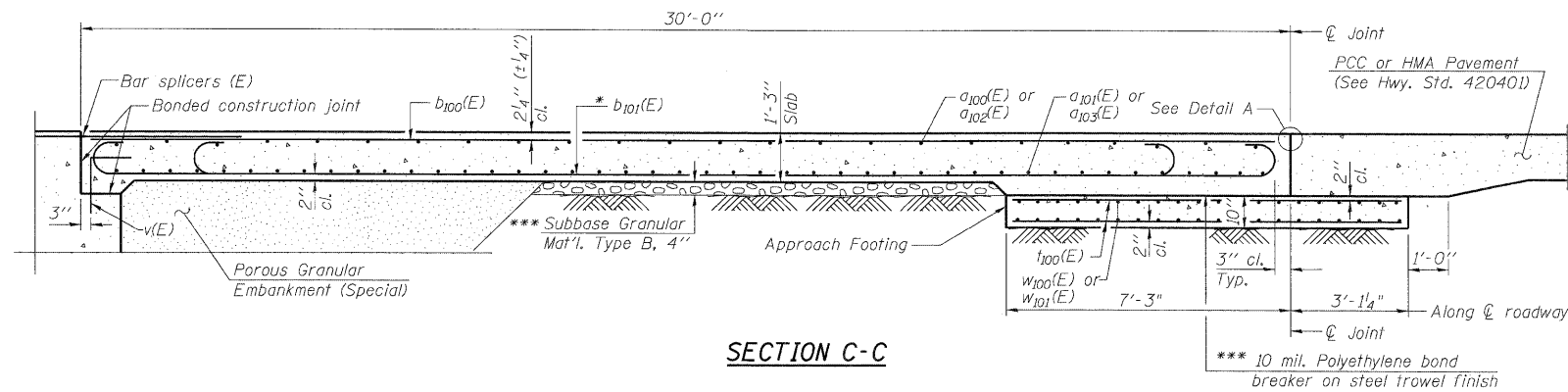
BAR s1(E)



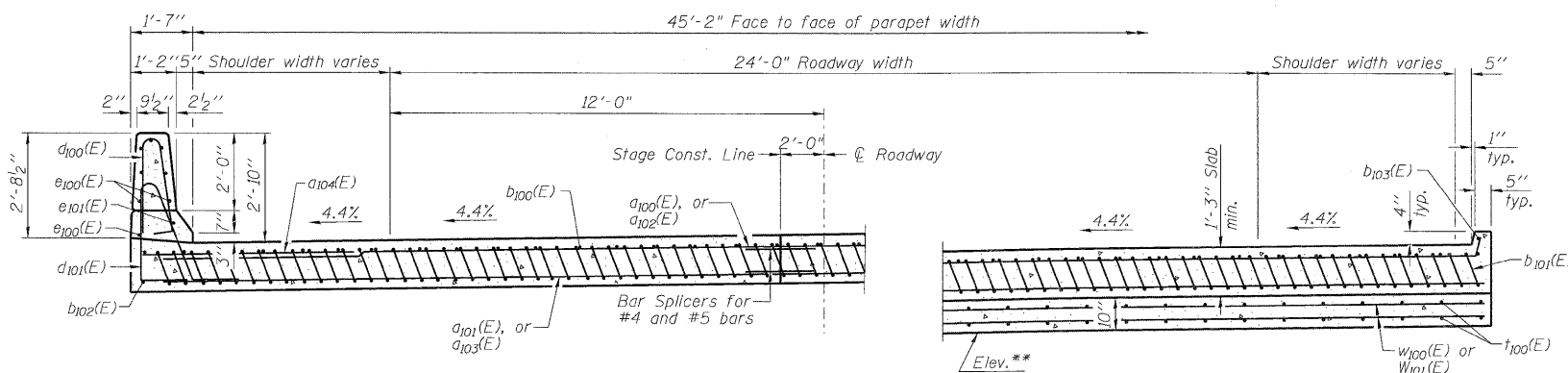
MIN BAR LAP
#6 bar = 3'-4"

BAR d(E)

BAR d1(E)



SECTION C-C



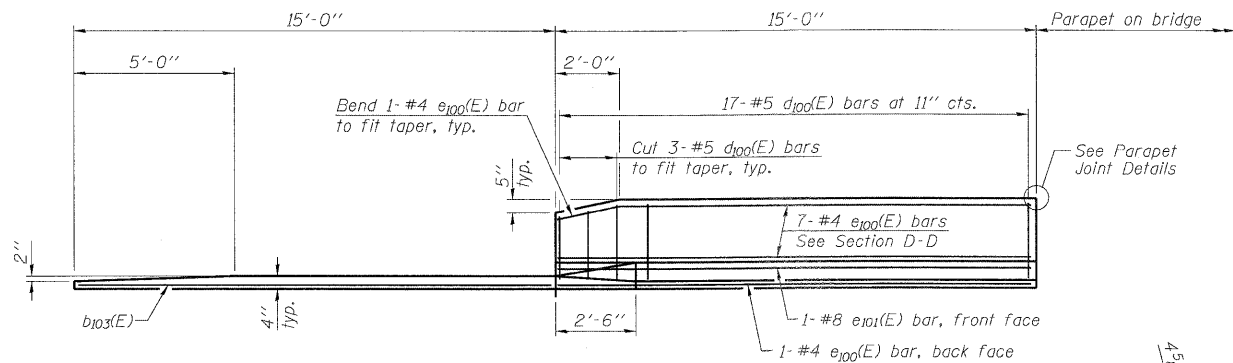
NEAR ABUTMENT

SECTION D-D

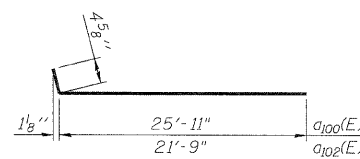
AT APPROACH FOOTING

(See Plan for dimensions not shown)

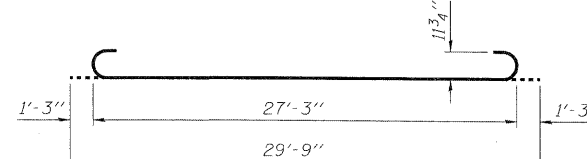
**Elev. 812.96 (west edge of pvmt), Elev. 814.98 (east edge of pvmt) north appr. slab fig.
Elev. 812.85 (west edge of pvmt), Elev. 814.99 (east edge of pvmt) south appr. slab fig.
(Footing cross slope to match superelevation of roadway)



VIEW E-E



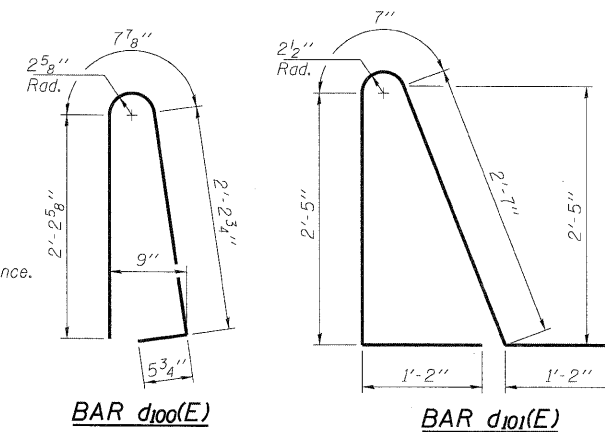
BAR a100(E) & a102(E)



BAR b101(E)

Notes:

See sheet 14 of 26 for Detail A and View B-B.
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheet 13 of 26.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 23 of 26.
Cost of excavation for approach footing included with Concrete Structures.
For Porous Granular Embankment (Special) and drainage treatment details, see sheet 3 of 26.
For additional parapet details, see sheet 12 of 26.

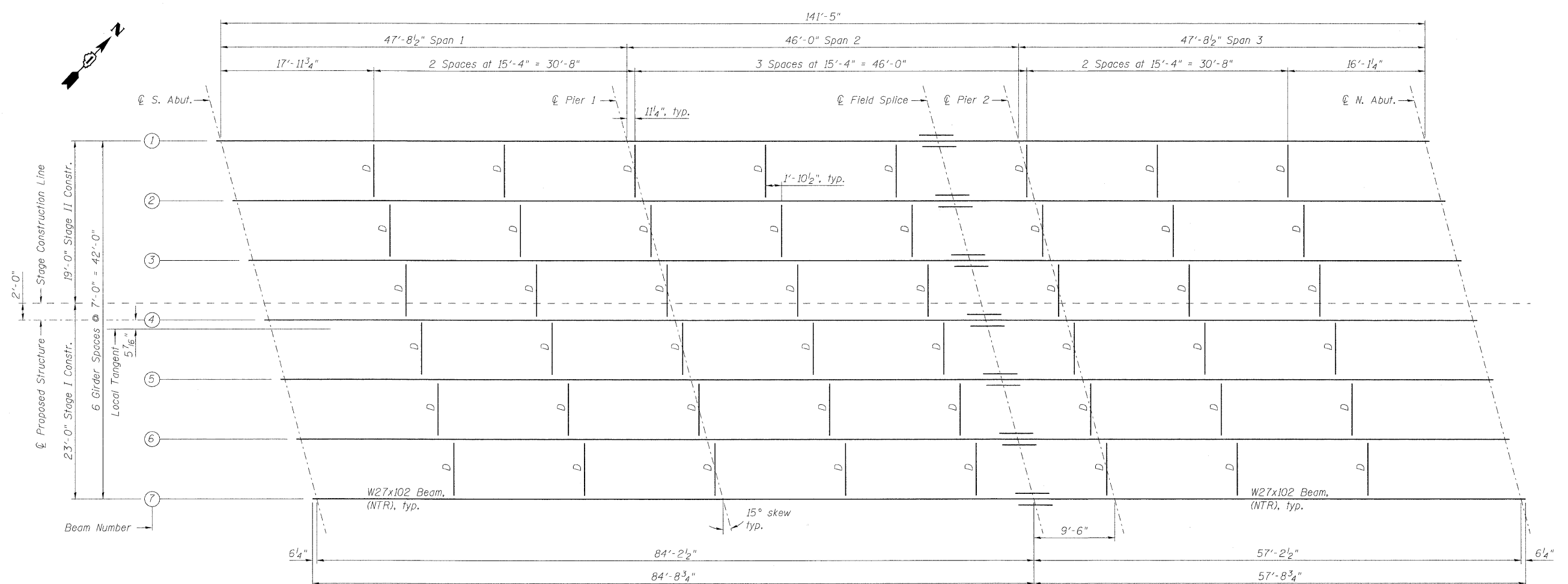


BAR d100(E)

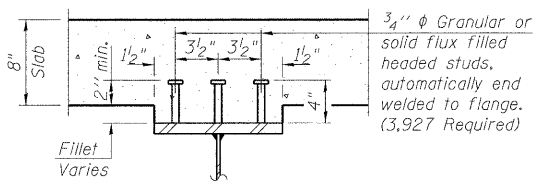
BAR d101(E)

**TWO APPROACHES
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a100(E)	50	#4	26'-4"	—
a101(E)	92	#5	25'-11"	—
a102(E)	50	#4	22'-2"	—
a103(E)	92	#5	21'-9"	—
a104(E)	48	#6	6'-6"	—
b100(E)	74	#4	29'-8"	—
b101(E)	224	#9	29'-9"	—
b102(E)	4	#4	14'-8"	—
b103(E)	4	#4	14'-6"	—
d100(E)	68	#5	5'-7"	U
d101(E)	68	#5	7'-11"	U
e100(E)	32	#4	14'-8"	—
e101(E)	4	#8	14'-8"	—
t100(E)	188	#4	10'-0"	—
w100(E)	80	#5	25'-11"	—
w101(E)	80	#5	21'-9"	—
Bridge Deck Grooving		Sq. Yd.	300	
Concrete Superstructure		Cu. Yd.	140.9	
Concrete Structures		Cu. Yd.	29.0	
Protective Coat		Sq. Yd.	332	
Reinforcement Bars, Epoxy Coated		Pound	37530	
Bar Splicers		Each	222	

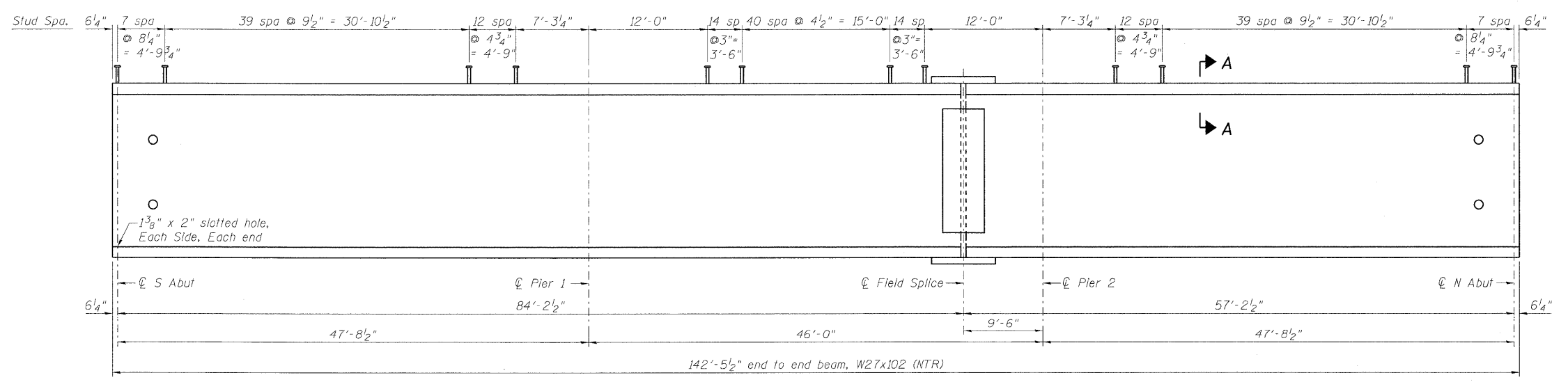


FRAMING PLAN

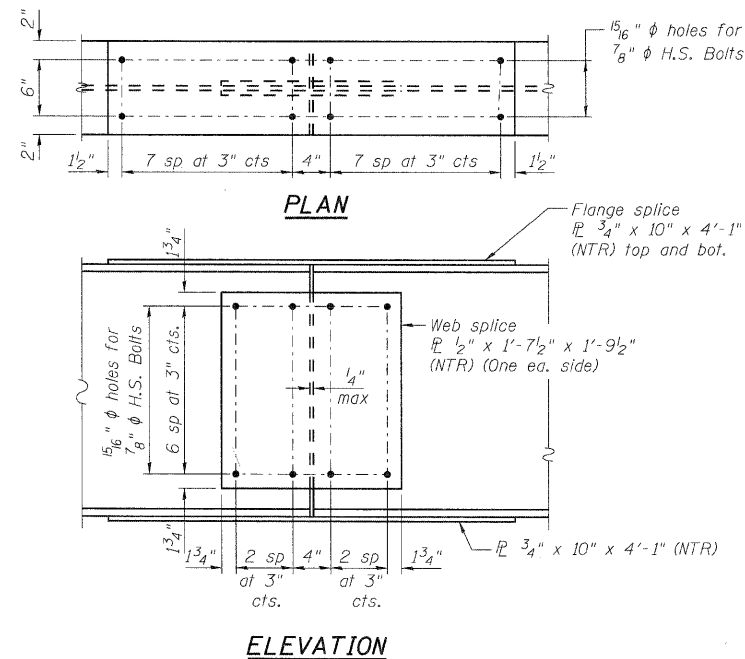
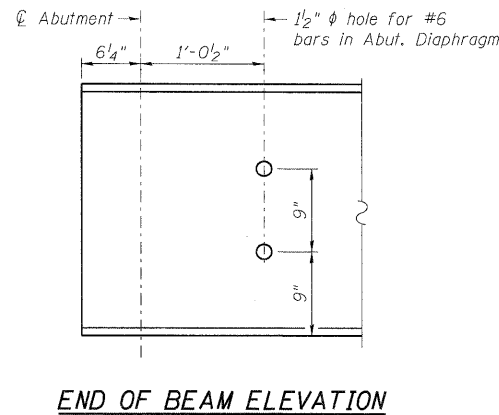


SECTION A-A

Notes:
 All beams shall be AASHTO M270 Grade 50.
 See sheet 17 of 26 for Field Splice Details, Diaphragm details and Table of Moments and Shears.
 All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



BEAM ELEVATION

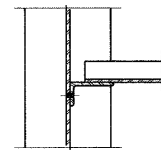


INTERIOR GIRDER MOMENT TABLE			
	0.4 Sp. 1 or 0.6 Sp. 3	Pier	0.5 Span 2
I_s	(in ⁴) 3620	3620	3620
$I_c(n)$	(in ⁴) 10739	—	10739
$I_c(3n)$	(in ⁴) 8029	—	8029
S_s	(in ³) 267	267	267
$S_c(n)$	(in ³) 410	—	410
$S_c(3n)$	(in ³) 372	—	372
DC1	(k/')	0.835	0.835
M _{DC1}	(k)	184	37
DC2	(k/')	0.15	0.15
M _{DC2}	(k)	33	7
DW	(k/')	0.35	0.35
M _{DW}	(k)	77	15
M _{ℓ + IM}	(k)	389	346
M _u (Strength I)	(k)	1068	683
* $\phi_r M_n, \phi_r M_{nc}$	(k)	1115	2185
f_s DC1	(ksi)	8.3	1.7
f_s DC2	(ksi)	1.5	0.2
f_s DW	(ksi)	3.5	0.5
f_s 1.3(ℓ + IM)	(ksi)	22.7	13.1
f_s (Service II)	(ksi)	36.0	15.5
V _r	(k)	—	15.1

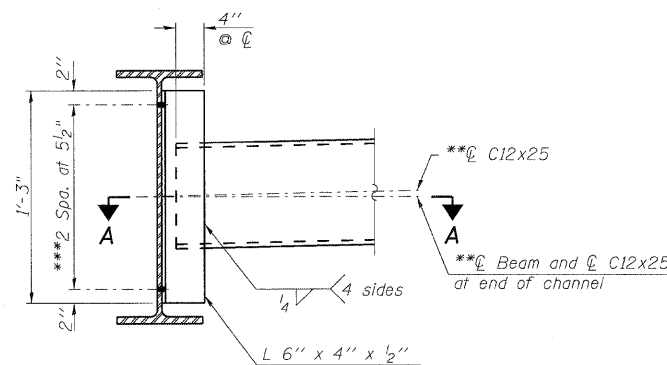
* Compact sections

TOP OF BEAM ELEVATIONS					
Beam No.	S. Abut.	Pier 1	Splice	Pier 2	N. Abut.
1	814.82	814.87	814.91	814.91	814.89
2	815.14	815.19	815.22	815.22	815.20
3	815.45	815.50	815.53	815.53	815.50
4	815.77	815.81	815.84	815.83	815.80
5	816.08	816.11	816.14	816.13	816.10
6	816.40	816.43	816.45	816.45	816.41
7	816.71	816.74	816.76	816.75	816.71

For fabrication use only.



SECTION A-A



DIAPHRAGM D
(48 required)

Note:

Two hardened washers required for each set of oversized holes.

**C12x30 are permitted to facilitate material acquisition.

Calculated weight of structural steel is based on C12x25.

The alternate, if utilized, shall be provided at no additional cost to the Department.

***3/4" ϕ HS bolts, 5/16" ϕ holes. Diaphragms at stage construction

line shall be finger tightened prior to the deck slab pouring and then fully tightened after completion of the pour. Also see note regarding diaphragms at stage construction line regarding long slotted holes.

NOTES

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2. All splice plate material shall be AASHTO M 270 Grade 50. All diaphragm, connecting angles, and bearing stiffeners shall be AASHTO M270 Grade 36.

NOTES FOR DIAPHRAGMS AT STAGE CONSTRUCTION LINE

To accommodate the deflection during Stage II deck placement, use standard long slotted holes (1 3/8" x 1 7/8") in the diaphragm connector angle at only one side of diaphragm.

Bolts in slots shall be finger tight until the second stage pour is complete. Position slots so bolts start at one end of slot with no concrete load and finish near the opposite end of slot under deck dead load, allowing maximum displacement without laterally stressing the main members.

A plate washer or continuous bar of at least 5/16" thickness with standard holes shall be provided at the long slotted holes.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	L. Sum	I
Stud Shear Connectors	Each	3927

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in⁴ and in³).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{ℓ + IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{ℓ + IM}

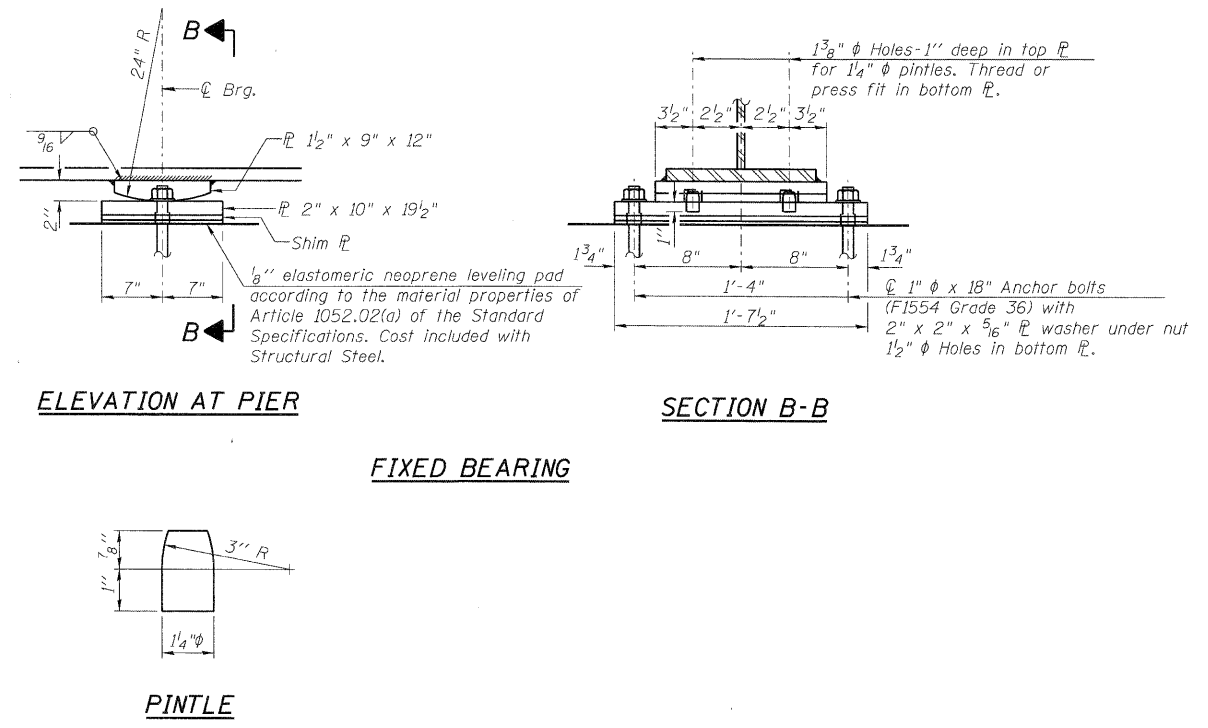
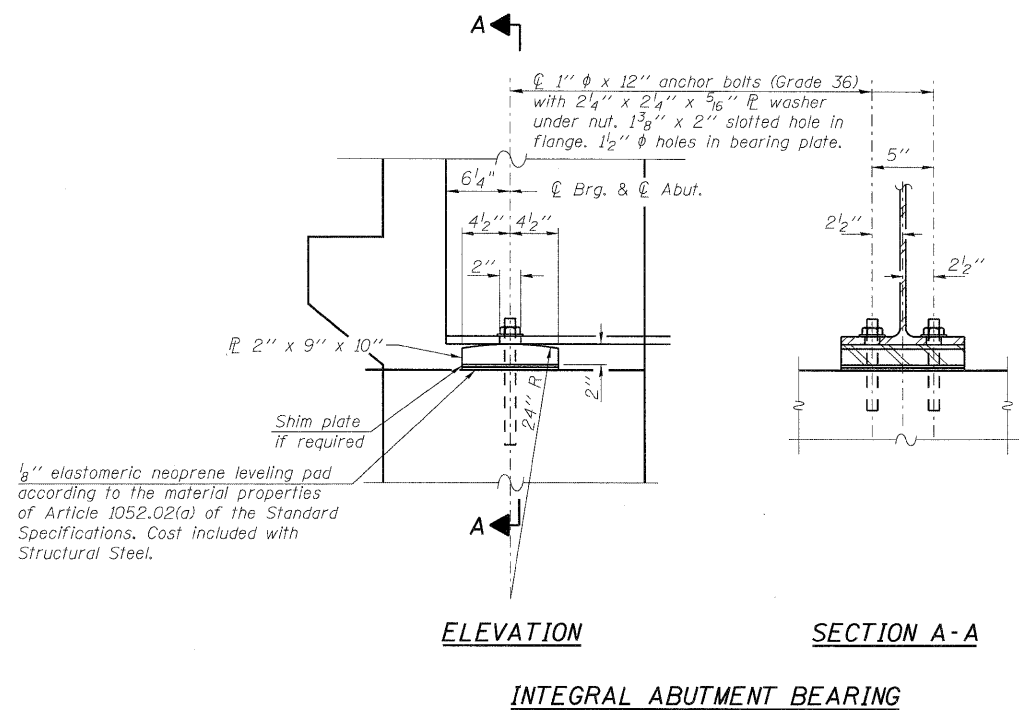
$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_r M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{ℓ + IM}

V_r: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier
R _{DC1}	(k) 16.3	43.5
R _{DC2}	(k) 2.6	6.9
R _{DW}	(k) 6.8	18.4
R _{ℓ + IM}	(k) 68.9	99.3
R _{Total}	(k) 94.6	168.1



Notes:

All bearing plate material shall be AASHTO M270 Grade 50, except shim plates.

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 at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

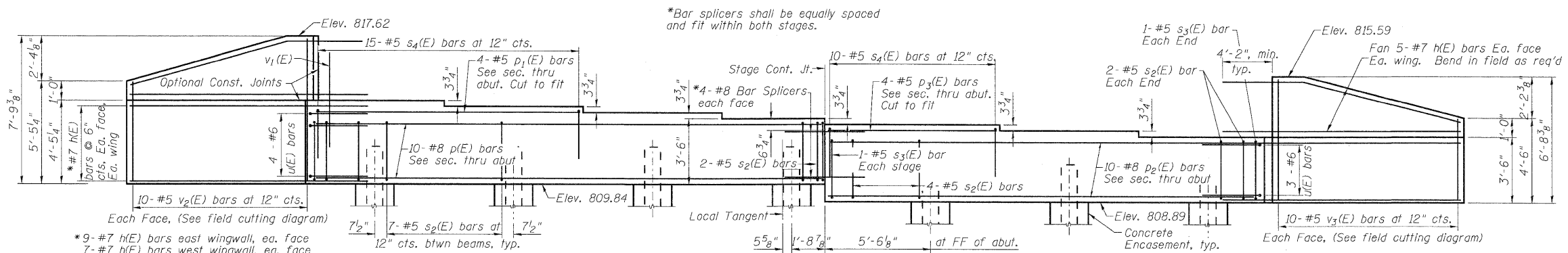
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BILL OF MATERIAL

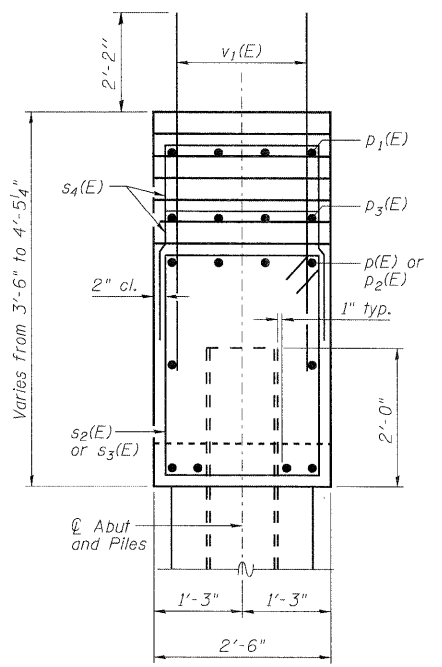
Item	Unit	Total
Anchor Bolts, 1"	Each	56

DESIGNED - SLV	REVISED -
CHECKED - MJM	REVISED -
DRAWN - SLV	REVISED -
CHECKED - DJB	REVISED -

F.A.P. RTE. 324	SECTION 24B-2	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 46
D-91-178-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				



ELEVATION
(Looking South)



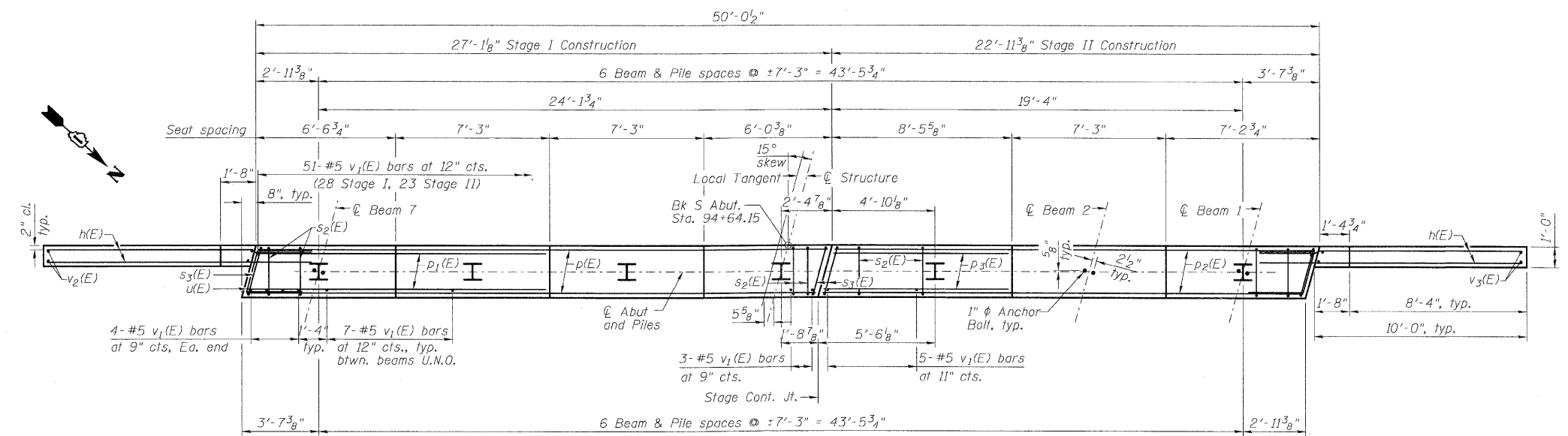
SEC. THRU ABUT.
(Dimensions at Rt. L's)

BEAM SEAT ELEVATION TABLE

Location	Elev.
Beam 1	812.39
Beam 2	812.71
Beam 3	813.02
Beam 4	813.34
Beam 5	813.65
Beam 6	813.97
Beam 7	814.28

BILL OF MATERIAL

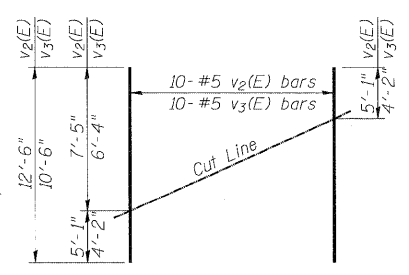
Bar	No.	Size	Length	Shape
h(E)	52	#7	14'-0"	—
p(E)	10	#8	26'-10"	—
p1(E)	4	#5	14'-2"	—
p2(E)	10	#8	21'-8"	—
p3(E)	4	#5	8'-10"	—
s2(E)	45	#5	11'-7"	□
s3(E)	4	#5	11'-9"	□
s4(E)	25	#5	6'-6"	□
u(E)	7	#6	7'-3"	┘
v1(E)	102	#5	4'-4"	—
v2(E)	10	#5	12'-6"	—
v3(E)	10	#5	10'-6"	—
Structure Excavation		Cu. Yd.	202	
Concrete Structures		Cu. Yd.	28.1	
Porous Granular Embankment (Special)		Cu. Yd.	82	
Geocomposite Wall Drain		Sq. Yd.	36	
Pipe Underdrains for Structures 4"		Foot	80	
Reinforcement Bars, Epoxy Coated		Pound	4420	
Bar Splicers		Each	8	
Furnishing Steel Piles HP 12x53		Foot	276	
Driving Piles		Foot	276	
Test Pile Steel HP 12x53		Each	1	
Pile Shoes		Each	7	
Concrete Encasement		Cu. Yd.	2.5	



PLAN

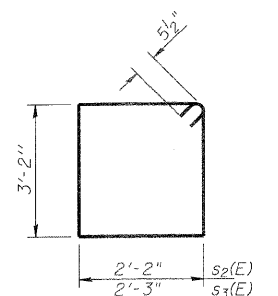
PILE DATA

Type: Steel HP 12x53 w/ metal shoes
 Nominal Required Bearing: 345 kips
 Factored Resistance Available: 190 kips
 Est. Length: 46 ft.
 No. Production Piles: 6
 No. Test Piles: 1

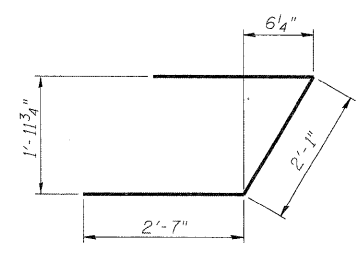


FIELD CUTTING DIAGRAM

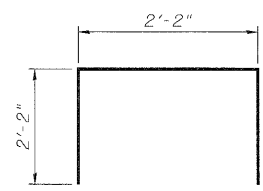
Order v2(E) and v3(E) full length. Cut as shown and use remainder of bars in opposite face.



BARS s2(E) & s3(E)

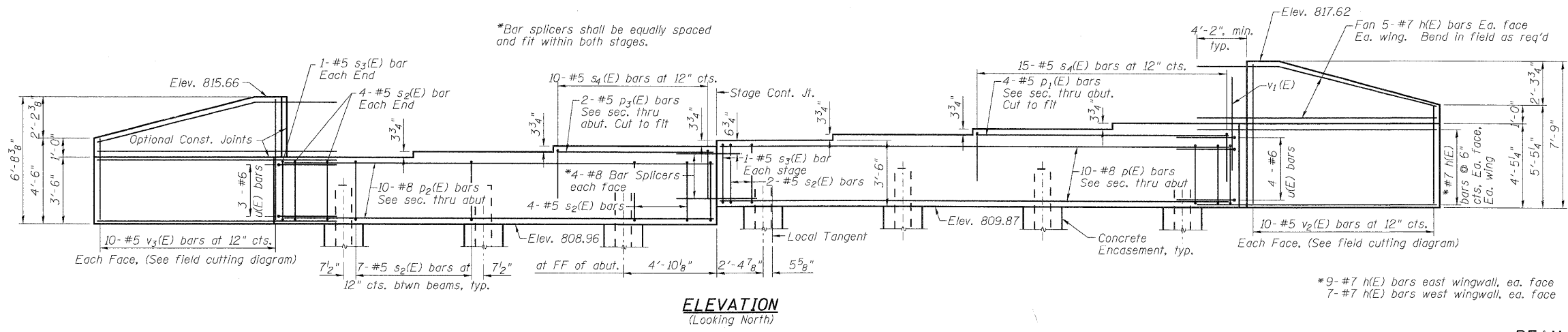


BAR u(E)

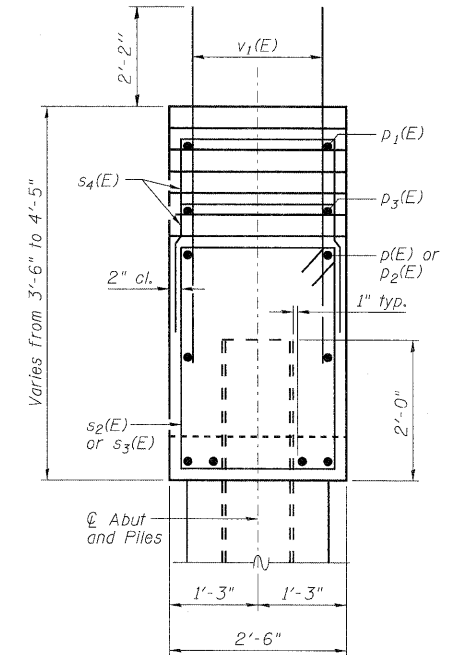


BAR s4(E)

Notes:
 Pour steps monolithically with cap.
 Space reinforcement in cap to miss anchor bolts.
 For details of Bar Splicers, see Sheet 23 of 26
 For details of Piles and Concrete Encasement, see Sheet 22 of 26
 For details of Integral Abutment Bearing, see Sheet 18 of 26
 For drainage details, see Section Thru Integral Abutment on Sheet 3 of 26



ELEVATION
(Looking North)



SEC. THRU ABUT.
(Dimensions at Rt. L's)

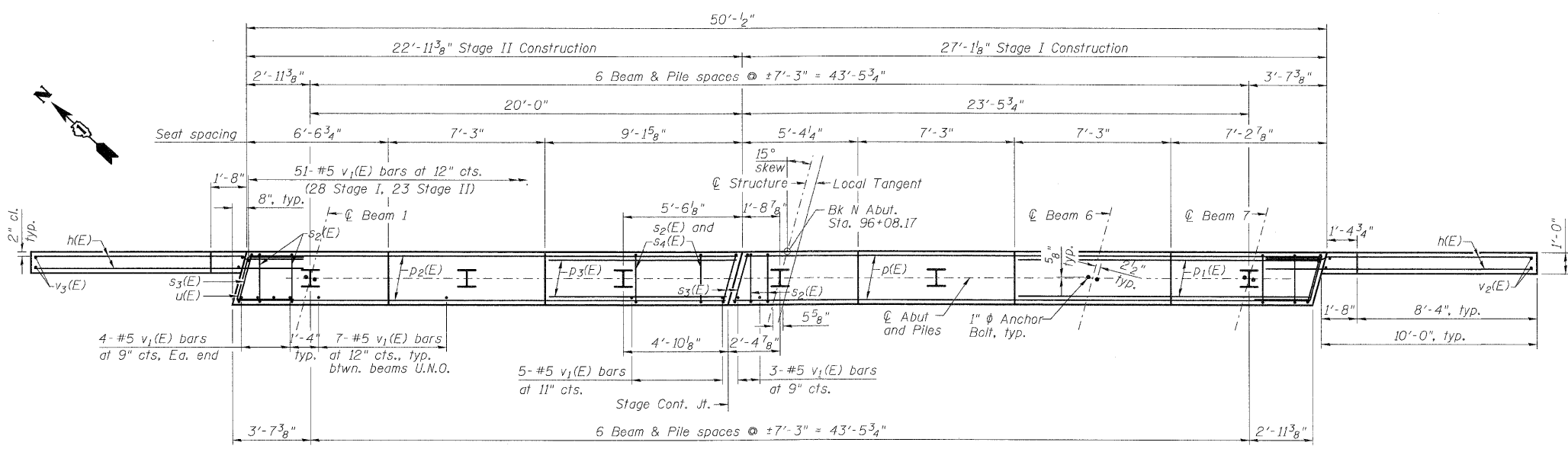
BEAM SEAT ELEVATION TABLE

Location	Elev.
Beam 1	812.46
Beam 2	812.77
Beam 3	813.07
Beam 4	813.37
Beam 5	813.67
Beam 6	813.98
Beam 7	814.28

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	52	#7	14'-0"	
p(E)	10	#8	26'-10"	
p1(E)	4	#5	14'-2"	
p2(E)	10	#8	21'-8"	
p3(E)	4	#5	8'-10"	
s2(E)	45	#5	11'-7"	□
s3(E)	4	#5	11'-9"	□
s4(E)	25	#5	6'-6"	□
u(E)	7	#6	7'-3"	└
v1(E)	102	#5	4'-4"	
v2(E)	10	#5	12'-6"	
v3(E)	10	#5	10'-6"	
Structure Excavation		Cu. Yd.	202	
Concrete Structures		Cu. Yd.	28.1	
Porous Granular Embankment (Special)		Cu. Yd.	82	
Geocomposite Wall Drain		Sq. Yd.	36	
Pipe Underdrains for Structures 4"		Foot	80	
Reinforcement Bars, Epoxy Coated		Pound	4420	
Bar Splicers		Each	8	
Furnishing Steel Piles HP 12x53		Foot	246	
Driving Piles		Foot	246	
Test Pile Steel HP 12x53		Each	1	
Pile Shoes		Each	7	
Concrete Encasement		Cu. Yd.	2.5	

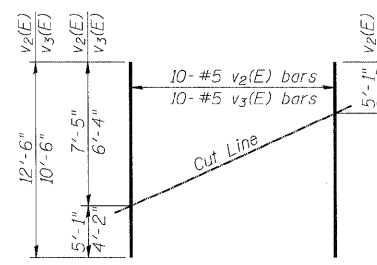
Notes:
 Pour steps monolithically with cap.
 Space reinforcement in cap to miss anchor bolts.
 For details of Bar Splicers, see Sheet 23 of 26
 For details of Piles and Concrete Encasement, see Sheet 22 of 26
 For details of Integral Abutment Bearing, see Sheet 18 of 26
 For drainage details, see Section Thru Integral Abutment on Sheet 3 of 26



PLAN

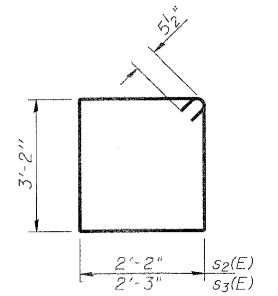
PILE DATA

Type: Steel HP 12x53 w/ metal shoes
 Nominal Required Bearing: 345 kips
 Factored Resistance Available: 190 kips
 Est. Length: 41 ft.
 No. Production Piles: 6
 No. Test Piles: 1

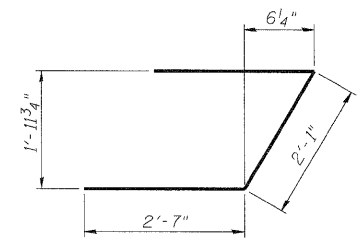


FIELD CUTTING DIAGRAM

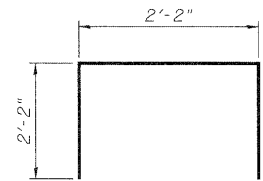
Order v2(E) and v3(E) full length. Cut as shown and use remainder of bars in opposite face.



BARS s2(E) & s3(E)

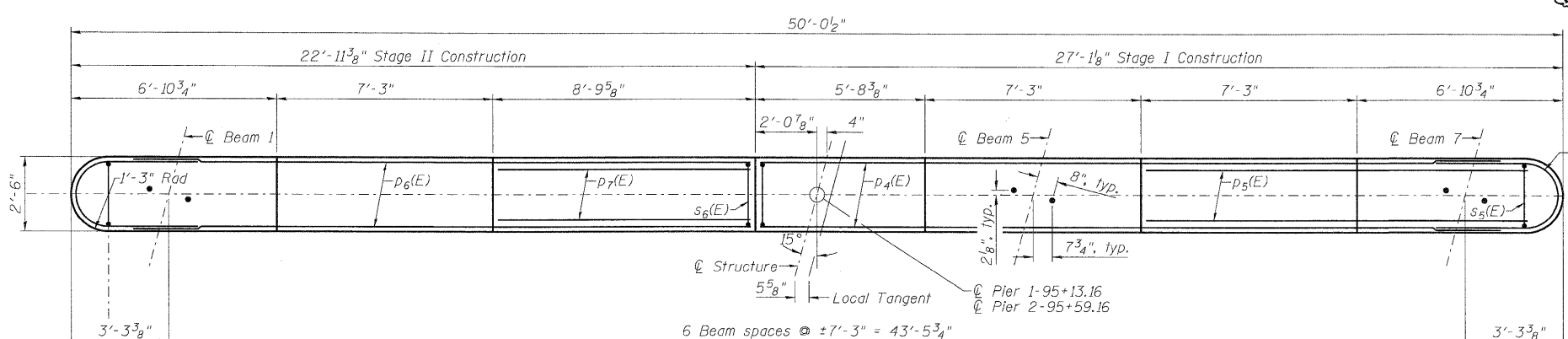
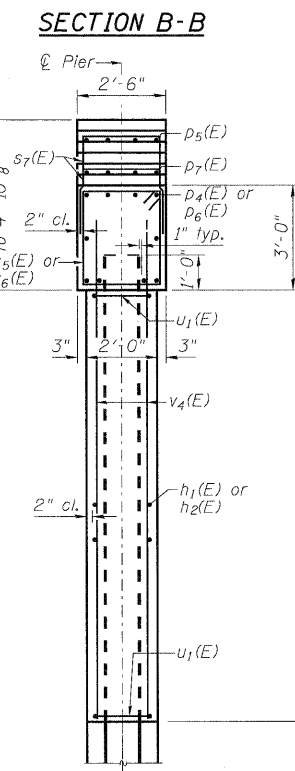
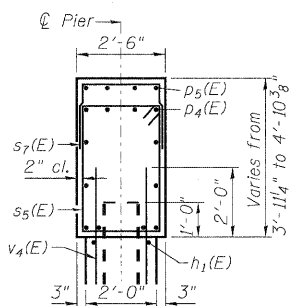
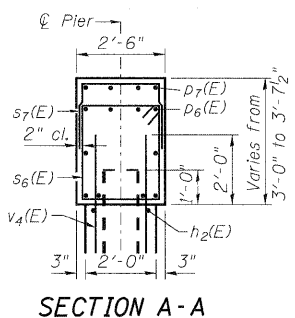


BAR u(E)

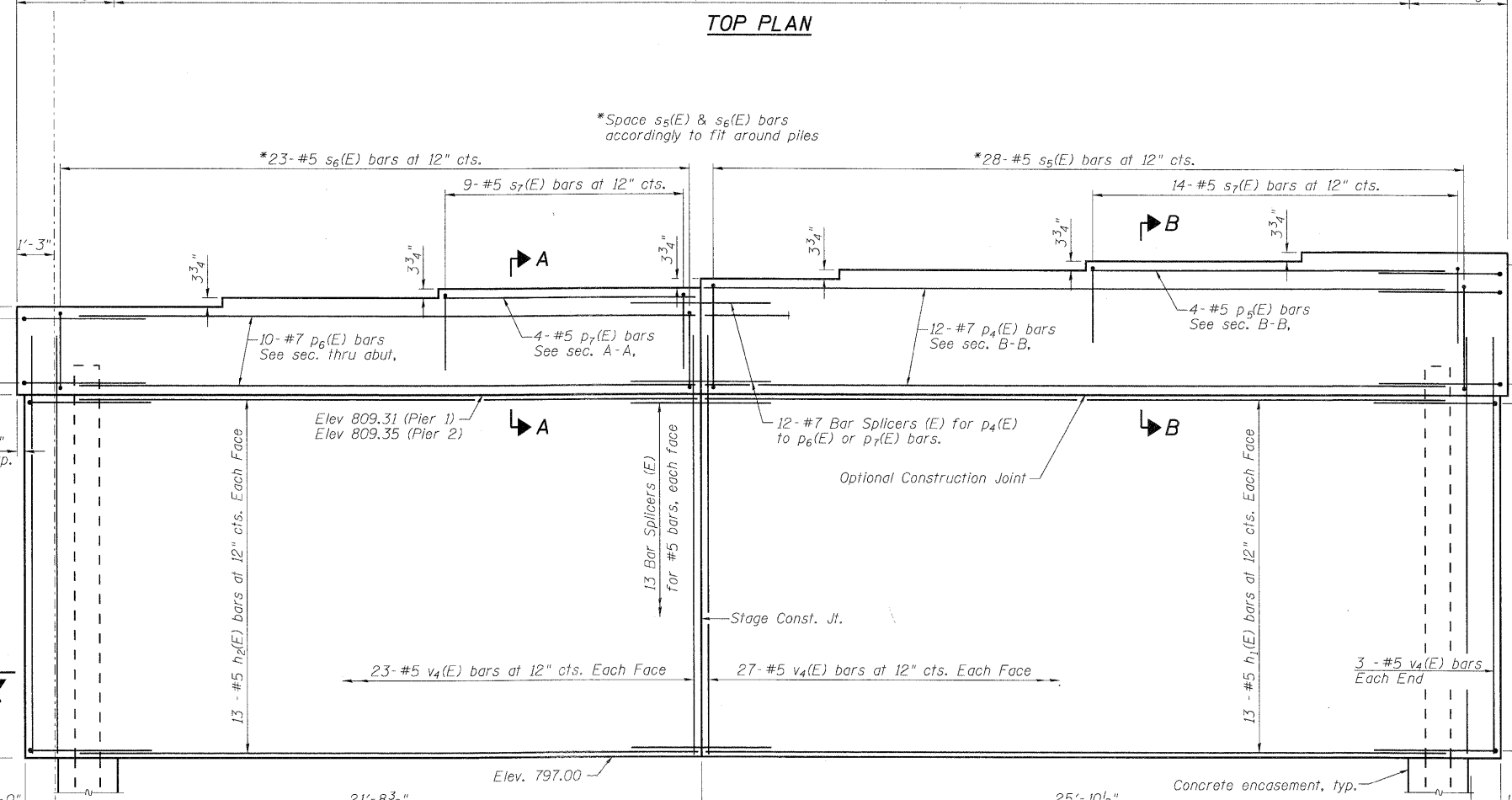


BAR s4(E)

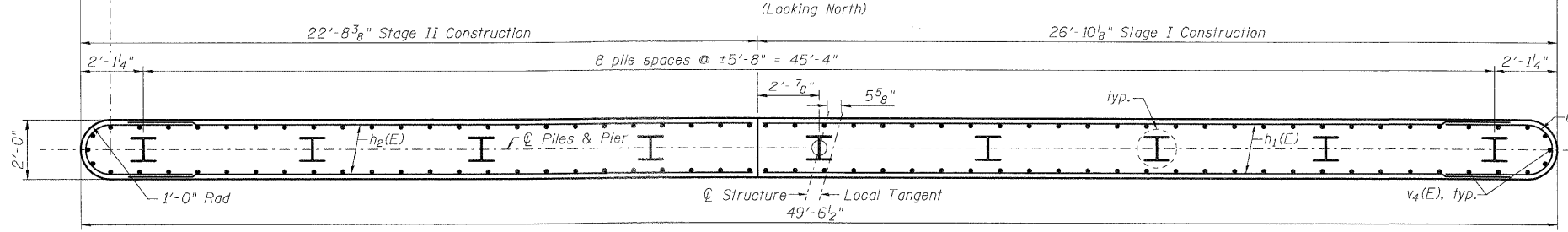
Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 For details of piles, see sheet 22 of 26.
 See Sheet 23 of 26 for Bar Splicer Details.
 If a portion of the pier wall or concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.



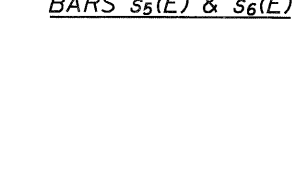
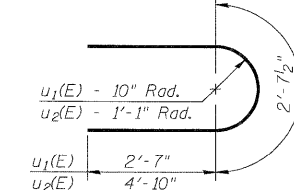
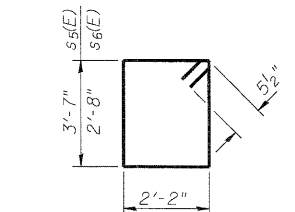
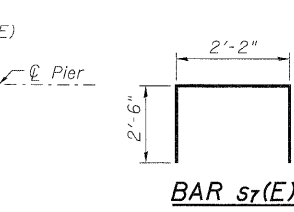
TOP PLAN



ELEVATION
(Looking North)



SECTION C-C



BEAM SEAT ELEVATION TABLE

Location	Pier 1	Pier 2
Beam 1	812.31	812.35
Beam 2	812.63	812.66
Beam 3	812.94	812.96
Beam 4	813.25	813.27
Beam 5	813.55	813.57
Beam 6	813.87	813.88
Beam 7	814.17	814.19

TWO PIERS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	52	#5	25'-7"	—
h2(E)	52	#5	21'-5"	—
p4(E)	24	#7	25'-7"	—
p5(E)	8	#5	12'-7"	—
p6(E)	20	#7	21'-5"	—
p7(E)	8	#5	8'-3"	—
s5(E)	56	#5	12'-5"	□
s6(E)	46	#5	10'-7"	□
s7(E)	46	#5	7'-2"	□
u1(E)	52	#5	7'-10"	U
u2(E)	16	#7	13'-1"	U
v4(E)	212	#5	14'-2"	—
Structure Excavation		Cu. Yd.	96	
Concrete Structures		Cu. Yd.	127.2	
Reinforcement Bars, Epoxy Coated		Pound	10390	
Bar Splicers		Each	76	
Furnishing Steel Piles HP 12x53		Foot	608	
Driving Piles HP 12x53		Foot	608	
Test Pile Steel HP 12x53		Each	2	
Pile Shoes		Each	18	
Concrete Encasement		Cu. Yd.	6.3	
Underwater Structure Excavation Protection - Location 1		Each	1	
Underwater Structure Excavation Protection - Location 2		Each	1	

PILE DATA

Type: HP 12x53 w/ metal shoes
 Nominal Required Bearing: 419 kips
 Factored Resistance Available: 192 kips
 Est. Length: 38 ft.
 No. Production Piles: 16
 No. Test Piles: 2

LOCO, INC.
 CONSULTING ENGINEERS
 1550 WALL ST., SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

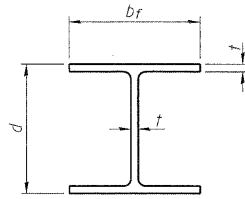
DESIGNED - SLV, SDD
 CHECKED - MJM
 DRAWN - SLV
 CHECKED - DJB

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

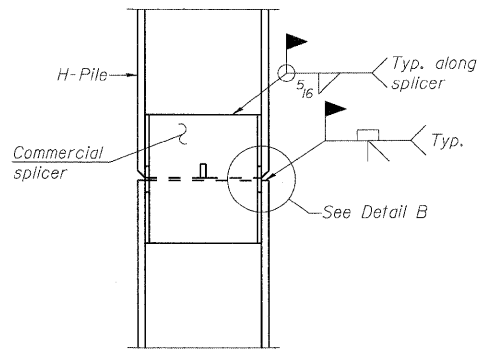
PIERS 1 AND 2
 STRUCTURE NO. 056-0277
 SHEET NO. 21 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-2	McHENRY	76	49
	D-91-178-09			CONTRACT NO. 60F64
				ILLINOIS FED. AID PROJECT

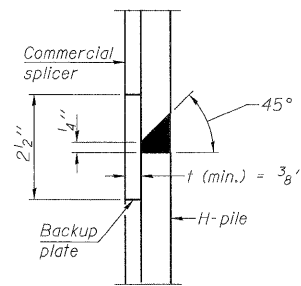


STEEL PILE TABLE

Designation	Depth <i>d</i>	Flange width <i>b_f</i>	Web and Flange thickness <i>t</i>	Encasement diameter <i>A</i>
HP 14x117	14 1/4"	14 7/8"	1 5/8"	30"
x102	14"	14 3/4"	1 1/6"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/6"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

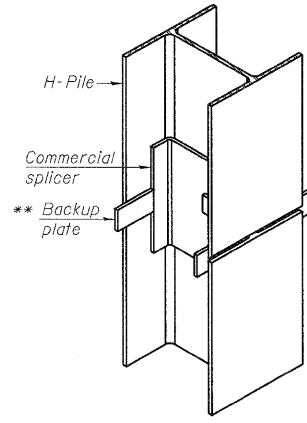


ELEVATION

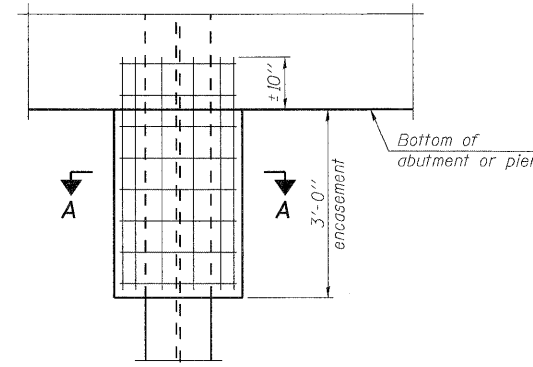


DETAIL "B"

WELDED COMMERCIAL SPLICE

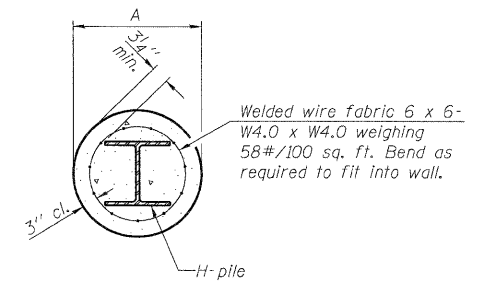


ISOMETRIC VIEW



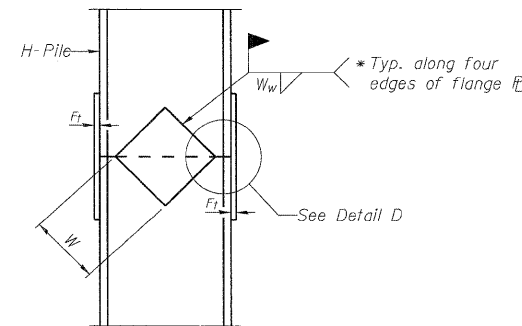
ELEVATION

PILE ENCASEMENT

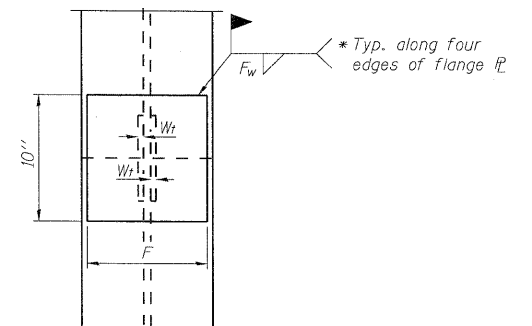


Note:
Forms for encasement may be omitted when soil conditions permit.

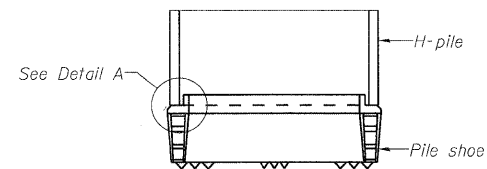
SECTION A-A



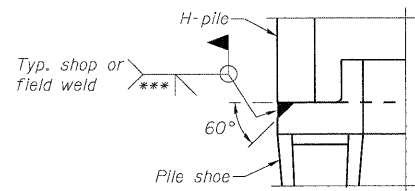
ELEVATION



END VIEW

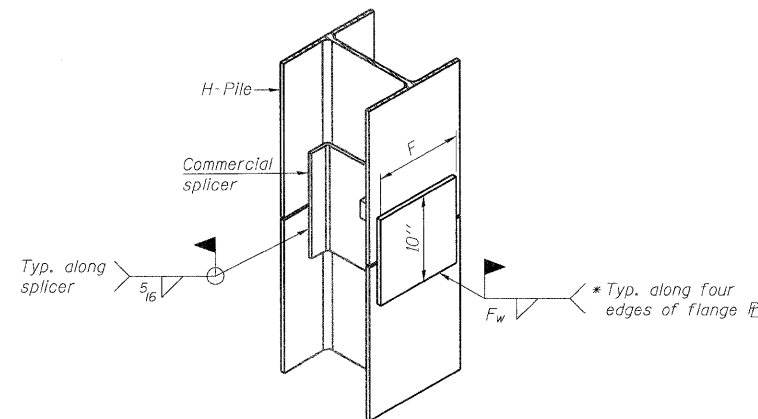


ELEVATION



DETAIL A

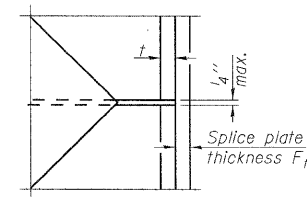
H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	1/6"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	1/6"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	1/6"	6 1/2"	5 8/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP 7-1-10

LOCO, INC.
CONSULTING ENGINEERS
1560 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - SLV
CHECKED - MJM
DRAWN - SLV
CHECKED - DJB

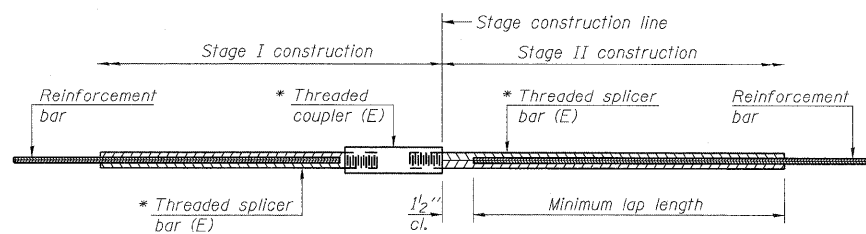
REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**HP PILE DETAILS
STRUCTURE NO. 056-0277**

SHEET NO. 22 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-2	McHENRY	76	50
D-91-178-09		CONTRACT NO. 60F64		
ILLINOIS FED. AID PROJECT				



STANDARD BAR SPLICER ASSEMBLY

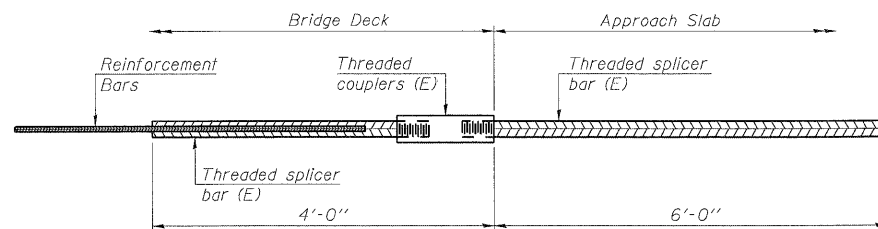
Bar size to be spliced	Minimum Lap Lengths				
	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1/2" + thread length

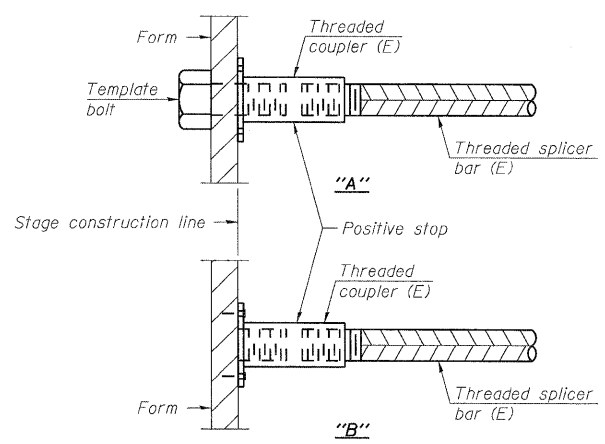
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Concrete Deck	#5	465	Table 3
Top of Approach Slabs	#4	50	Table 3
Bottom of Approach Slabs	#5	92	Table 3
Approach Slab Foundations	#5	80	Table 3
Bk. of S. Abut. Diaphragm	#6	5	Table 3
Bk. of N. Abut. Diaphragm	#6	5	Table 3
South Abutment	#8	8	Table 4
North Abutment	#8	8	Table 4
Piers 1 & 2	#5	52	Table 4
Pier Caps 1 & 2	#7	24	Table 4



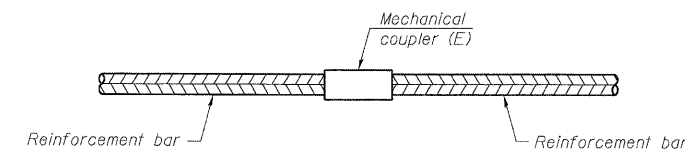
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required = 96



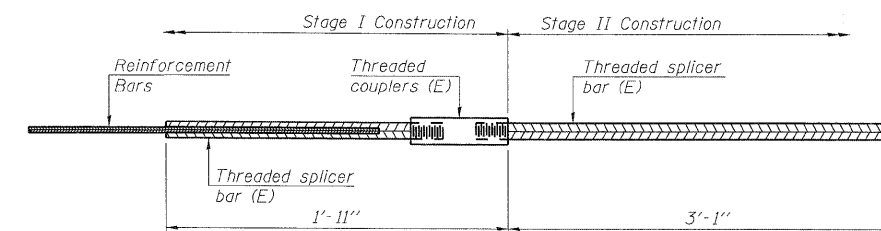
INSTALLATION AND SETTING METHODS

"A": Set bar splicer assembly by means of a template bolt.
 "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



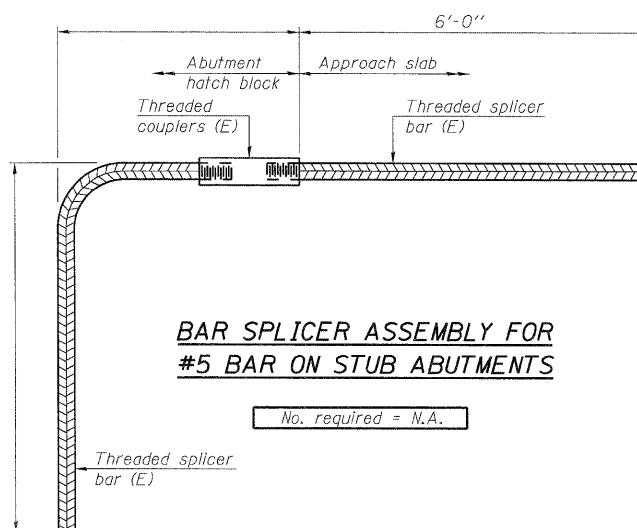
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #6 BAR IN FRONT FACE OF ABUTMENT DIAPHRAGMS

No. required = 6



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = N.A.

NOTES

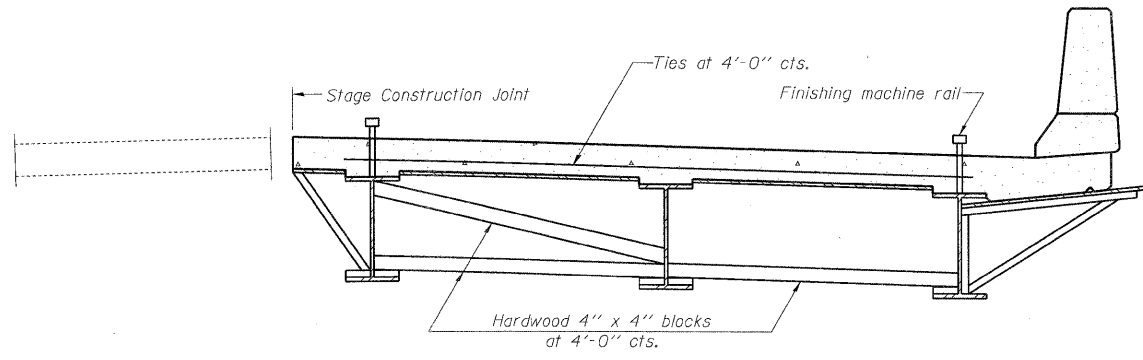
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See special provision for Mechanical Splicers.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.

The finishing machine rails shall be placed on the top flange of the exterior beams.

The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.



**FORM BRACES FOR
STAGE CONSTRUCTION**

LONCO, INC.
CONSULTING ENGINEERS
1560 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED -	SLV	REVISED -	
CHECKED -	MJM	REVISED -	
DRAWN -	SLV	REVISED -	
CHECKED -	DJB	REVISED -	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CANTILEVER FORMING BRACKETS FOR SUPERSTRUCTURES WITH
W27 BEAMS AND SMALLER**

STRUCTURE NO. 056-0277

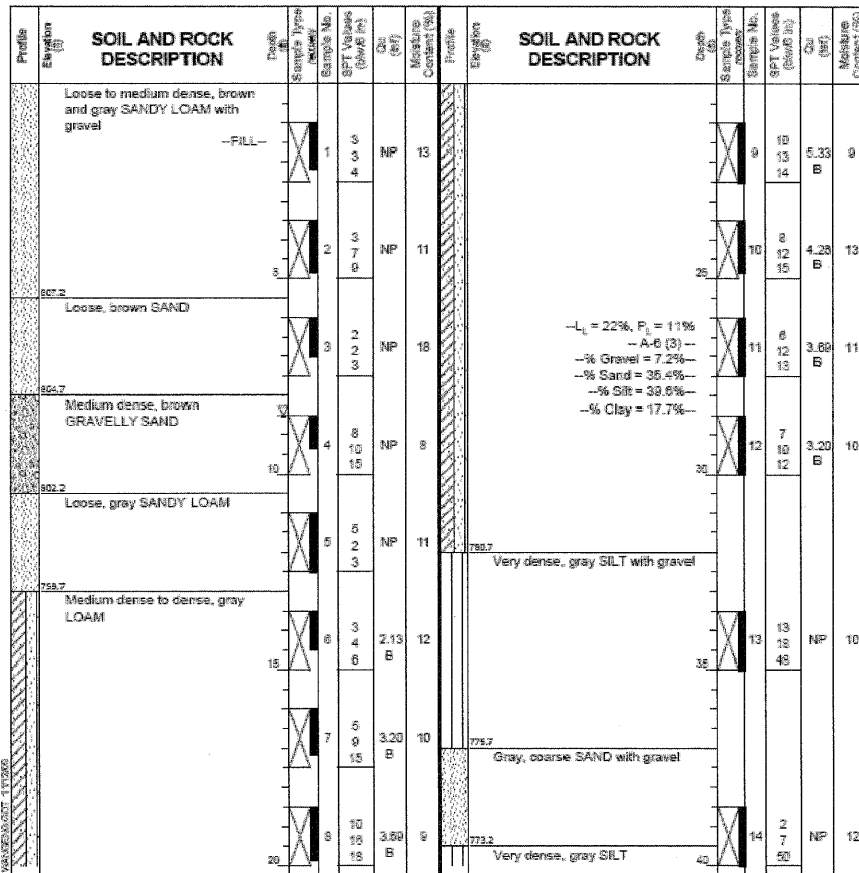
SHEET NO. 24 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-2	McHENRY	76	52
D-91-178-09			CONTRACT NO. 60F64	
[ILLINOIS] FED. AID PROJECT				

Wang Engineering, Inc.
 Consulting Geotechnical Engineers
 wangeng@wangeng.com
 1146 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-8928
 Fax: 630 953-8938

BORING LOG B-1 Page 1 of 2
 WEI Job No.: 486-02-01
 Client: Collins Engineers, Inc.
 Project: FAU 324 (IL Route 23) over Coon Creek
 Location: McHenry County, Illinois

Date: NGVD
 Elevation: 812.70 ft
 North: 2004684.37 ft
 East: 806492.51 ft
 Station: 96+05.07
 Offset: 30.3 LT

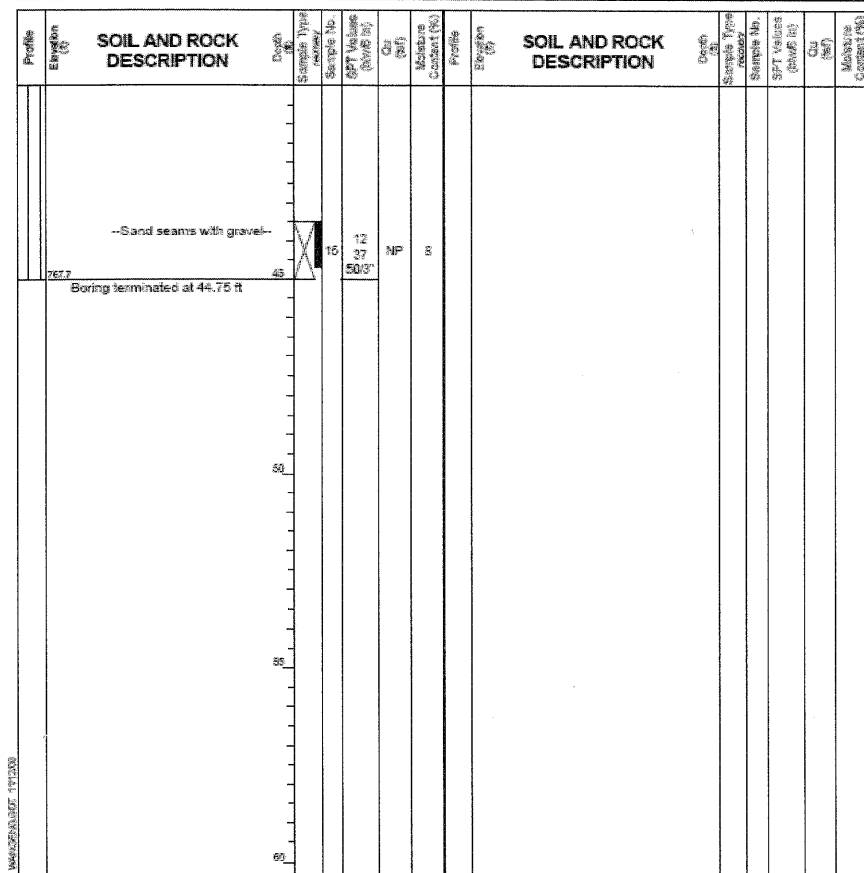


GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-08-2009	Complete Drilling	09-09-2009
Drilling Contractor	Wang Testing Service	Drill Rig	Diedrich D-50 ATV
Driller	J&G	Logger	A.Kurnia
Checked by	MLS	Drilling Method	4.25-inch ID HSA; Boring Backfilled Upon Completion
While Drilling	W	At Completion of Drilling	WASH
Time After Drilling	NA	Depth to Water	NA

Wang Engineering, Inc.
 Consulting Geotechnical Engineers
 wangeng@wangeng.com
 1146 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-8928
 Fax: 630 953-8938

BORING LOG B-1 Page 2 of 2
 WEI Job No.: 486-02-01
 Client: Collins Engineers, Inc.
 Project: FAU 324 (IL Route 23) over Coon Creek
 Location: McHenry County, Illinois

Date: NGVD
 Elevation: 912.70 ft
 North: 2004684.37 ft
 East: 806492.51 ft
 Station: 96+05.07
 Offset: 30.3 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-08-2009	Complete Drilling	09-09-2009
Drilling Contractor	Wang Testing Service	Drill Rig	Diedrich D-50 ATV
Driller	J&G	Logger	A.Kurnia
Checked by	MLS	Drilling Method	4.25-inch ID HSA; Boring Backfilled Upon Completion
While Drilling	W	At Completion of Drilling	WASH
Time After Drilling	NA	Depth to Water	NA

Wang Engineering, Inc.
 Consulting Geotechnical and Environmental Engineers
 wangeng@wangeng.com
 1146 N Main Street
 Lombard, IL 60148
 Telephone: 630 653-8928
 Fax: 630 653-8938

BORING LOG B-2 Page 1 of 2
 WEI Job No.: 486-02-01
 Client: Collins Engineers, Inc.
 Project: FAU 324 (IL Route 23) over Coon Creek
 Location: McHenry County, Illinois

Date: NGVD
 Elevation: 812.13 ft
 North: 2004745.29 ft
 East: 909456.79 ft
 Station: 94+73.29
 Offset: 17.8 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)
825.5	Loose, dark brown SANDY LOAM --FILL--	1	NP	1	10	NP	825.5	--% Sand = 48.8%-- --% Silt = 34.0%-- --% Clay = 14.2%--	10	NP	9	NP	9
825.5	Loose, dark brown to black SILTY LOAM with sand seams --FILL--	2	NP	2	10	NP	825.5		10	NP	9	NP	9
824.1	Loose, dark brown SILTY LOAM with organic matter --BURIED TOPSOIL-- --A-2-4 (0)-- --% Gravel = 18.4%-- --% Sand = 55.3%-- --% Silt = 25.0%-- --% Clay = 2.0%--	4	NP	4	12	NP	824.1		12	NP	11	NP	14
821.5	Medium dense, gray GRAVELLY SAND Stiff, gray CLAY LOAM	5	NP	5	10	NP	821.5		10	NP	11	NP	11
821.5		6	NP	6	10	NP	821.5		10	NP	11	NP	11
821.5		7	NP	7	10	NP	821.5		10	NP	11	NP	11
821.5		8	NP	8	10	NP	821.5		10	NP	11	NP	11
821.5		9	NP	9	10	NP	821.5		10	NP	11	NP	11
821.5		10	NP	10	10	NP	821.5		10	NP	11	NP	11
821.5		11	NP	11	10	NP	821.5		10	NP	11	NP	11
821.5		12	NP	12	10	NP	821.5		10	NP	11	NP	11
821.5		13	NP	13	10	NP	821.5		10	NP	11	NP	11
821.5		14	NP	14	10	NP	821.5		10	NP	11	NP	11
821.5		15	NP	15	10	NP	821.5		10	NP	11	NP	11
821.5		16	NP	16	10	NP	821.5		10	NP	11	NP	11
821.5		17	NP	17	10	NP	821.5		10	NP	11	NP	11
821.5		18	NP	18	10	NP	821.5		10	NP	11	NP	11
821.5		19	NP	19	10	NP	821.5		10	NP	11	NP	11
821.5		20	NP	20	10	NP	821.5		10	NP	11	NP	11

GENERAL NOTES

Begin Drilling: 09-09-2009 Complete Drilling: 09-10-2009
 Drilling Contractor: Wang Testing Service Drill Rig: Diedrich D-50 ATV
 Driller: J&G Logger: A.Kurnia Checked by: MLS
 Drilling Method: 4.25-inch ID HSA; Boring Backfilled Upon Completion

WATER LEVEL DATA

While Drilling: 10.00 ft
 At Completion of Drilling: 8.00 ft
 Time After Drilling: 24-HR hours
 Depth to Water: 8.00 ft

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering, Inc.
 Consulting Geotechnical and Environmental Engineers
 wangeng@wangeng.com
 1146 N Main Street
 Lombard, IL 60148
 Telephone: 630 653-8928
 Fax: 630 653-8938

BORING LOG B-2 Page 2 of 2
 WEI Job No.: 486-02-01
 Client: Collins Engineers, Inc.
 Project: FAU 324 (IL Route 23) over Coon Creek
 Location: McHenry County, Illinois

Date: NGVD
 Elevation: 812.13 ft
 North: 2004745.29 ft
 East: 909456.79 ft
 Station: 94+73.29
 Offset: 17.8 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)
825.5	Medium dense, gray SANDY GRAVEL	15	NP	5	11	NP	825.5		15	NP	6	NP	6
825.5		16	NP	6	11	NP	825.5		16	NP	6	NP	6
825.5		17	NP	7	11	NP	825.5		17	NP	6	NP	6
825.5		18	NP	8	11	NP	825.5		18	NP	6	NP	6
825.5		19	NP	9	11	NP	825.5		19	NP	6	NP	6
825.5		20	NP	10	11	NP	825.5		20	NP	6	NP	6
825.5		21	NP	11	11	NP	825.5		21	NP	6	NP	6
825.5		22	NP	12	11	NP	825.5		22	NP	6	NP	6
825.5		23	NP	13	11	NP	825.5		23	NP	6	NP	6
825.5		24	NP	14	11	NP	825.5		24	NP	6	NP	6
825.5		25	NP	15	11	NP	825.5		25	NP	6	NP	6
825.5		26	NP	16	11	NP	825.5		26	NP	6	NP	6
825.5		27	NP	17	11	NP	825.5		27	NP	6	NP	6
825.5		28	NP	18	11	NP	825.5		28	NP	6	NP	6
825.5		29	NP	19	11	NP	825.5		29	NP	6	NP	6
825.5		30	NP	20	11	NP	825.5		30	NP	6	NP	6
825.5		31	NP	21	11	NP	825.5		31	NP	6	NP	6
825.5		32	NP	22	11	NP	825.5		32	NP	6	NP	6
825.5		33	NP	23	11	NP	825.5		33	NP	6	NP	6
825.5		34	NP	24	11	NP	825.5		34	NP	6	NP	6
825.5		35	NP	25	11	NP	825.5		35	NP	6	NP	6
825.5		36	NP	26	11	NP	825.5		36	NP	6	NP	6
825.5		37	NP	27	11	NP	825.5		37	NP	6	NP	6
825.5		38	NP	28	11	NP	825.5		38	NP	6	NP	6
825.5		39	NP	29	11	NP	825.5		39	NP	6	NP	6
825.5		40	NP	30	11	NP	825.5		40	NP	6	NP	6
825.5		41	NP	31	11	NP	825.5		41	NP	6	NP	6
825.5		42	NP	32	11	NP	825.5		42	NP	6	NP	6
825.5		43	NP	33	11	NP	825.5		43	NP	6	NP	6
825.5		44	NP	34	11	NP	825.5		44	NP	6	NP	6
825.5		45	NP	35	11	NP	825.5		45	NP	6	NP	6
825.5		46	NP	36	11	NP	825.5		46	NP	6	NP	6
825.5		47	NP	37	11	NP	825.5		47	NP	6	NP	6
825.5		48	NP	38	11	NP	825.5		48	NP	6	NP	6
825.5		49	NP	39	11	NP	825.5		49	NP	6	NP	6
825.5		50	NP	40	11	NP	825.5		50	NP	6	NP	6
825.5		51	NP	41	11	NP	825.5		51	NP	6	NP	6
825.5		52	NP	42	11	NP	825.5		52	NP	6	NP	6
825.5		53	NP	43	11	NP	825.5		53	NP	6	NP	6
825.5		54	NP	44	11	NP	825.5		54	NP	6	NP	6
825.5		55	NP	45	11	NP	825.5		55	NP	6	NP	6
825.5		56	NP	46	11	NP	825.5		56	NP	6	NP	6
825.5		57	NP	47	11	NP	825.5		57	NP	6	NP	6
825.5		58	NP	48	11	NP	825.5		58	NP	6	NP	6
825.5		59	NP	49	11	NP	825.5		59	NP	6	NP	6
825.5		60	NP	50	11	NP	825.5		60	NP	6	NP	6

GENERAL NOTES

Begin Drilling: 09-09-2009 Complete Drilling: 09-10-2009
 Drilling Contractor: Wang Testing Service Drill Rig: Diedrich D-50 ATV
 Driller: J&G Logger: A.Kurnia Checked by: MLS
 Drilling Method: 4.25-inch ID HSA; Boring Backfilled Upon Completion

WATER LEVEL DATA

While Drilling: 10.00 ft
 At Completion of Drilling: 8.00 ft
 Time After Drilling: 24-HR hours
 Depth to Water: 8.00 ft

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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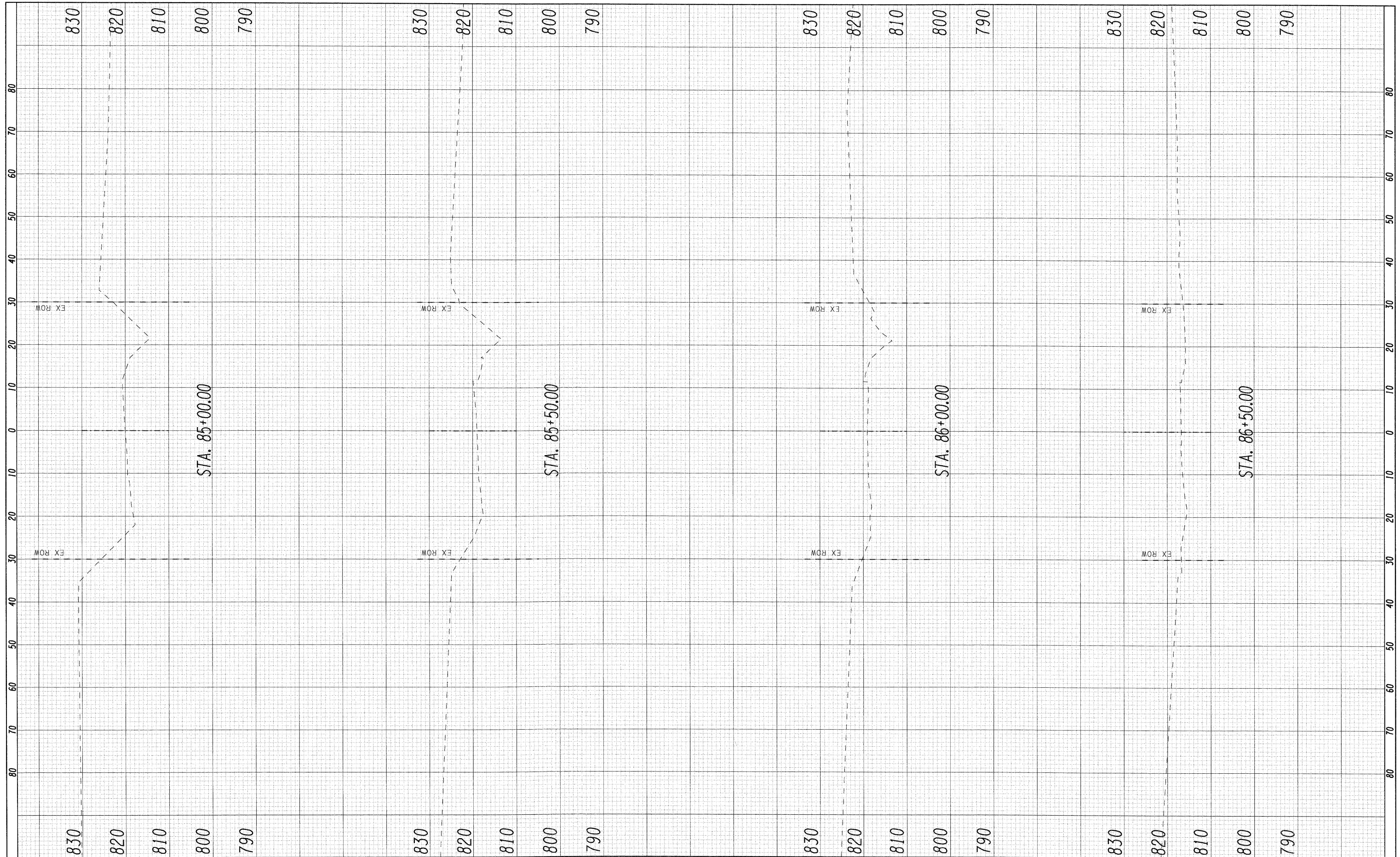
BORING LOG B-3 Page 1 of 1
 WEI Job No.: 486-02-01
 Client: Collins Engineers, Inc.
 Project: FAU 324 (IL Route 23) over Coon Creek
 Location: McHenry County, Illinois

Date: NGVD
 Elevation: 804.20 ft
 North: 2004760.66 ft
 East: 909506.16 ft
 Station: 95+38.49
 Offset: 28.5 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)
825.2	Fine SAND --STREAMBED--	2	NP	1	10	NP	825.2	--L _c = 20%, P _l = 11%-- --A-4 (2)-- --% Gravel = 9.1%-- --% Sand = 34.4%-- --% Silt = 40.2%-- --% Clay = 16.3%--	2	NP	8	NP	10
825.2	GRAVELLY SAND --AUGER CUTTING-- --A-3 (0)-- --% Gravel = 30.3%-- --% Sand = 66.8%-- --% Silt and Clay = 4.1%--	3	NP	2	10	NP	825.2		3	NP	8	NP	10
825.2	Loose to medium dense, dark brown to gray, fine to medium SAND with clay	4	NP	3	10	NP	825.2		4	NP	8	NP	10
825.2		5	NP	4	10	NP	825.2		5	NP	8	NP	10
825.2		6	NP	5	10	NP	825.2		6	NP	8	NP	10
825.2		7	NP	6	10	NP	825.2		7	NP	8	NP	10
825.2		8	NP	7	10	NP	825.2		8	NP	8	NP	10
825.2		9	NP	8	10	NP	825.2		9	NP	8	NP	10
825.2		10	NP	9	10	NP	825.2		10	NP	8	NP	10
825.2		11	NP	10	10	NP	825.2		11	NP	8	NP	10
825.2		12	NP	11	10	NP	825.2		12	NP	8	NP	10
825.2		13	NP	12	10	NP	825.2		13	NP	8	NP	10
825.2		14	NP	13	10	NP	825.2		14	NP	8	NP	10
825.2		15	NP	14	10	NP	825.2		15	NP	8	NP	10
825.2		16	NP	15	10	NP	825.2		16	NP	8	NP	10
825.2		17	NP	16	10	NP	825.2		17	NP	8	NP	10
825.2		18	NP	17	10	NP	825.2		18	NP	8	NP	10
825.2		19	NP	18	10	NP	825.2		19	NP	8	NP	10
825.2		20	NP	19	10	NP	825.2		20	NP	8	NP	10
825.2		21	NP	20	10	NP	825.2		21	NP	8	NP	10
825.2		22	NP	21	10	NP	825.2		22	NP	8	NP	10
825.2		23	NP	22	10	NP	825.2		23	NP	8	NP	10
825.2		24	NP	23	10	NP	825.2		24	NP	8	NP	10
825.2		25	NP	24</									

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		



LONGO INC.
CONSULTING ENGINEERS
1560 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: 630/577-9100

DESIGNED - ST
DRAWN - ST
CHECKED - MJY, SLV
DATE - 12/30/2010

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REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

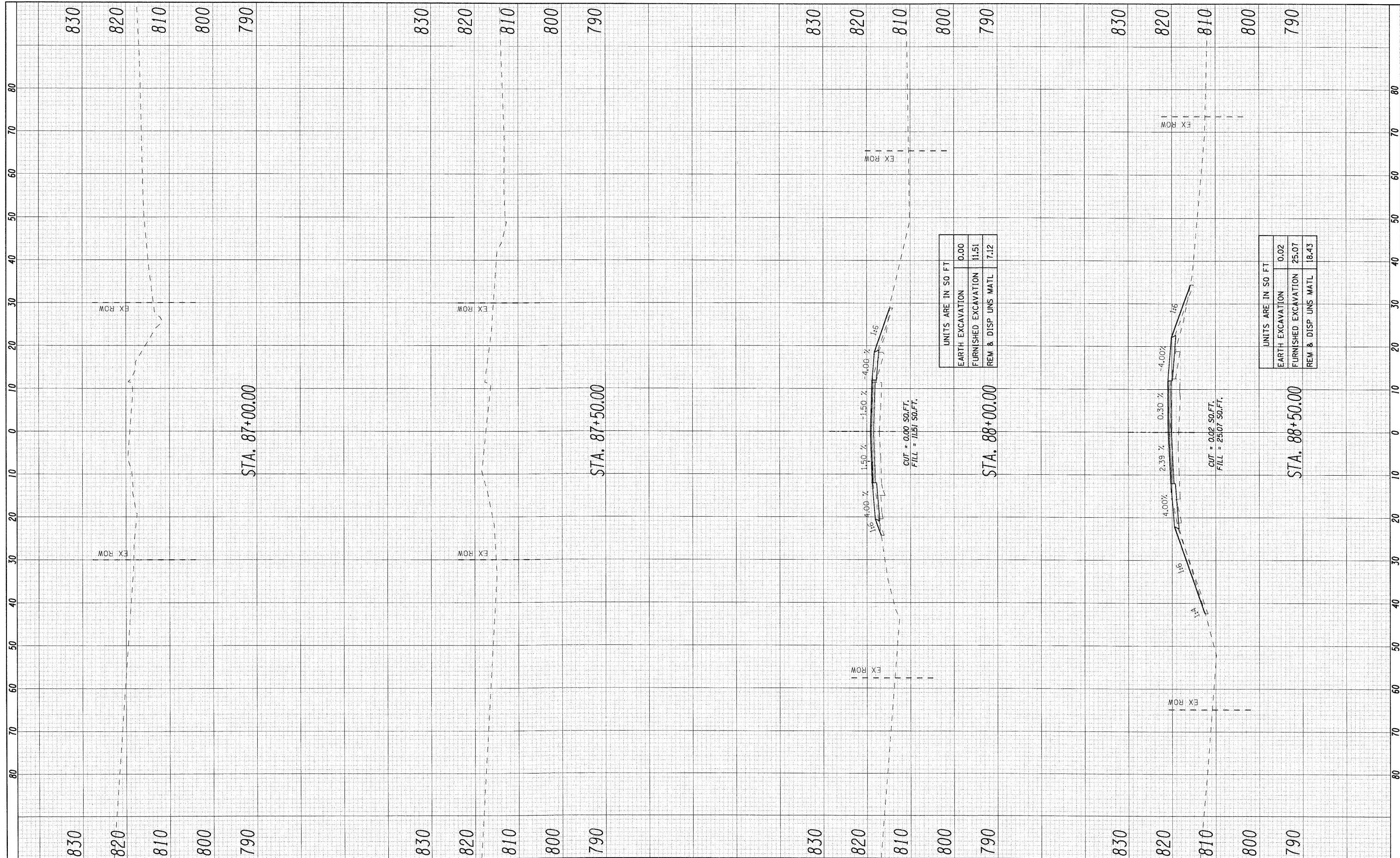
**CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK**

SCALE: 1" = 20' SHEET NO. 1 OF 12 SHEETS STA. 85+00 TO STA. 86+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	55
D-91-116-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SUBMITTED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY	REVIEWED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		



UNITS ARE IN SQ FT	
EARTH EXCAVATION	0.00
FURNISHED EXCAVATION	11.51
REM & DISP UNS MATL	7.12

UNITS ARE IN SQ FT	
EARTH EXCAVATION	0.02
FURNISHED EXCAVATION	25.07
REM & DISP UNS MATL	18.43

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CHECKED - MJY, SLV	REVISED -
DATE - 12/30/2010	REVISED -

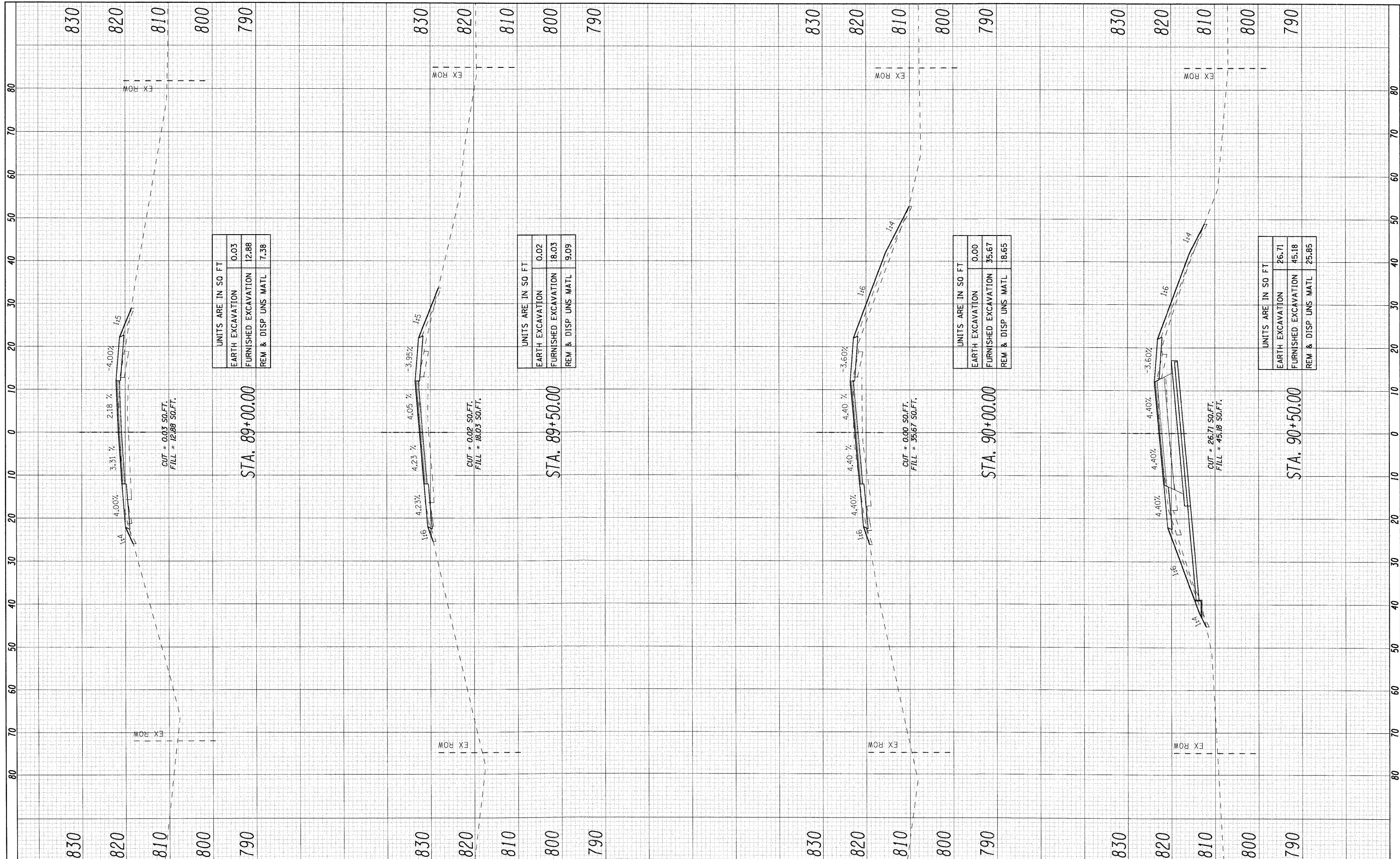
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK**
SCALE: 1" = 20' SHEET NO. 2 OF 12 SHEETS STA. 87+00 TO STA. 88+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	56
D-91-116-09		CONTRACT NO. 60F64		
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	TEMPLATE	
	AREAS	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
NO.	TEMPLATE	
	AREAS	
	CHECKED	



UNITS ARE IN SO FT

EARTH EXCAVATION	0.03
FURNISHED EXCAVATION	12.88
REM & DISP UNS MATL	7.38

UNITS ARE IN SO FT

EARTH EXCAVATION	0.02
FURNISHED EXCAVATION	18.03
REM & DISP UNS MATL	9.09

UNITS ARE IN SO FT

EARTH EXCAVATION	0.00
FURNISHED EXCAVATION	35.67
REM & DISP UNS MATL	18.65

UNITS ARE IN SO FT

EARTH EXCAVATION	26.71
FURNISHED EXCAVATION	45.18
REM & DISP UNS MATL	25.85

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DATE - 12/30/2010

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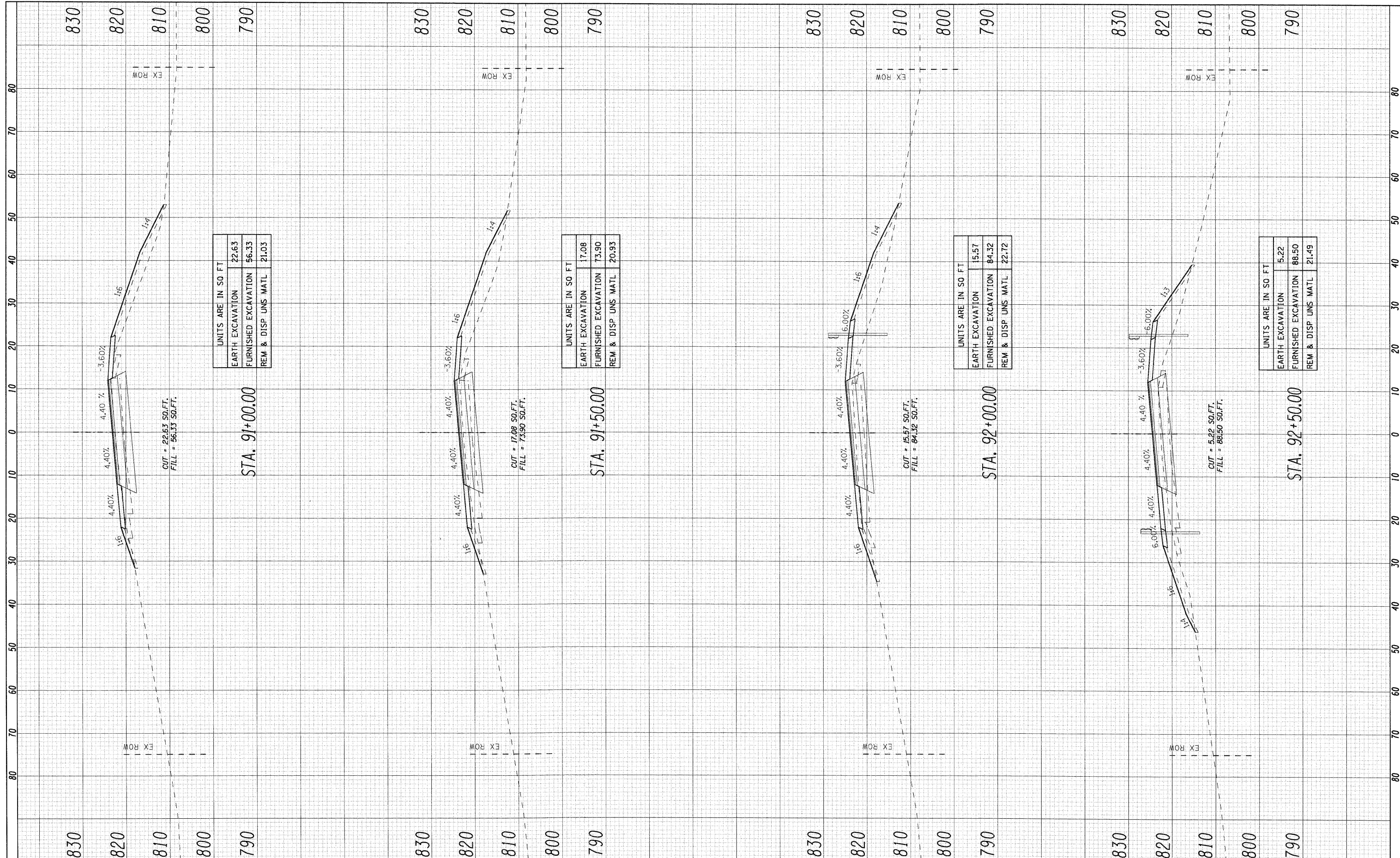
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK**
SCALE: 1" = 20'
SHEET NO. 3 OF 12 SHEETS
STA. 89+00 TO STA. 90+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	57
D-91-116-09		CONTRACT NO. 60F64		
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		



UNITS ARE IN SQ FT

EARTH EXCAVATION	22.63
FURNISHED EXCAVATION	56.33
REM & DISP UNS MATL	21.03

UNITS ARE IN SQ FT

EARTH EXCAVATION	17.08
FURNISHED EXCAVATION	73.90
REM & DISP UNS MATL	20.93

UNITS ARE IN SQ FT

EARTH EXCAVATION	15.57
FURNISHED EXCAVATION	84.32
REM & DISP UNS MATL	22.72

UNITS ARE IN SQ FT

EARTH EXCAVATION	5.22
FURNISHED EXCAVATION	88.50
REM & DISP UNS MATL	21.49

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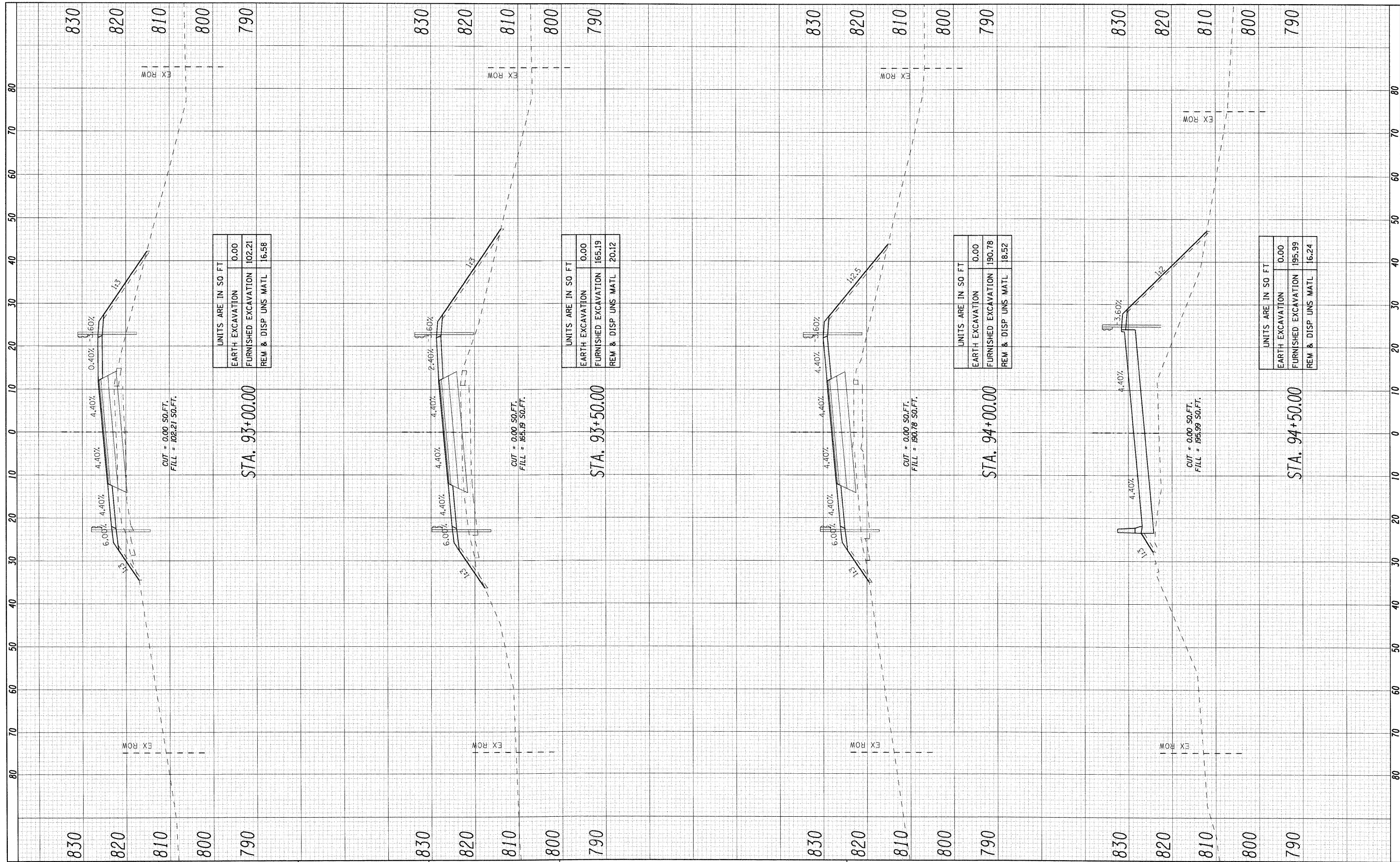
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK**
SCALE: 1" = 20'
SHEET NO. 4 OF 12 SHEETS
STA. 91+00 TO STA. 92+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	58
D-91-116-09		CONTRACT NO. 60F64		
[ILLINOIS] FED. AID PROJECT				

FINAL	SURVEYED	DATE
NO.	PLOTTED	BY
NOTE BOOK	TEMPLATE	
AREAS	CHECKED	

ORIGINAL	SURVEYED	DATE
NO.	PLOTTED	BY
NOTE BOOK	TEMPLATE	
AREAS	CHECKED	



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 DATE - 12/30/2010

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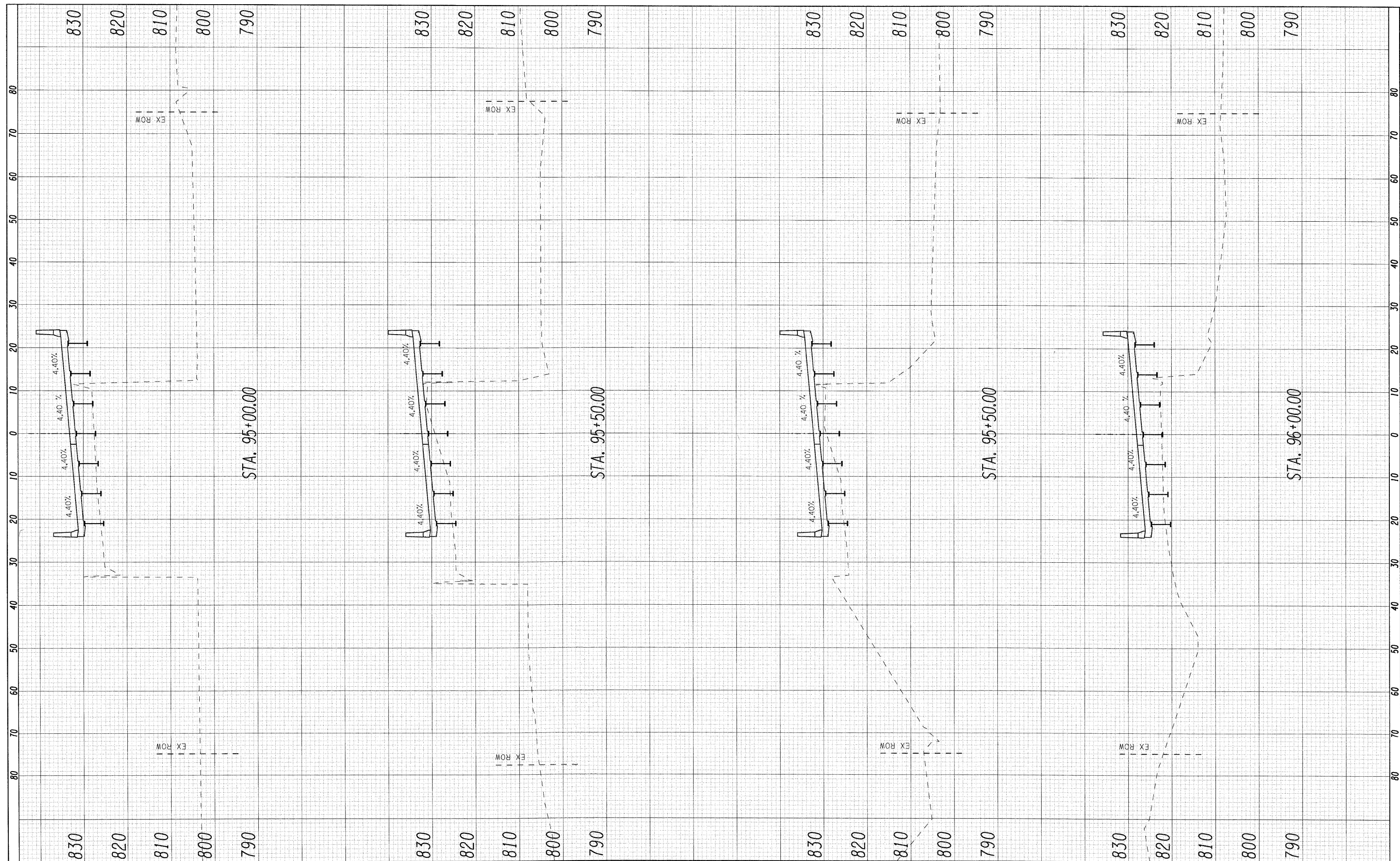
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
 IL ROUTE 23 OVER COON CREEK**
 SCALE: 1" = 20'
 SHEET NO. 5 OF 12 SHEETS
 STA. 93+00 TO STA. 94+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	248-1	McHENRY	76	59
D-91-116-09		CONTRACT NO. 60F64		
ILLINOIS FED. AID PROJECT				

FINAL SURVEY SURVEYED PLOTTED NOTE BOOK NO. _____ DATE _____ BY _____

ORIGINAL SURVEY SURVEYED PLOTTED NOTE BOOK NO. _____ DATE _____ BY _____



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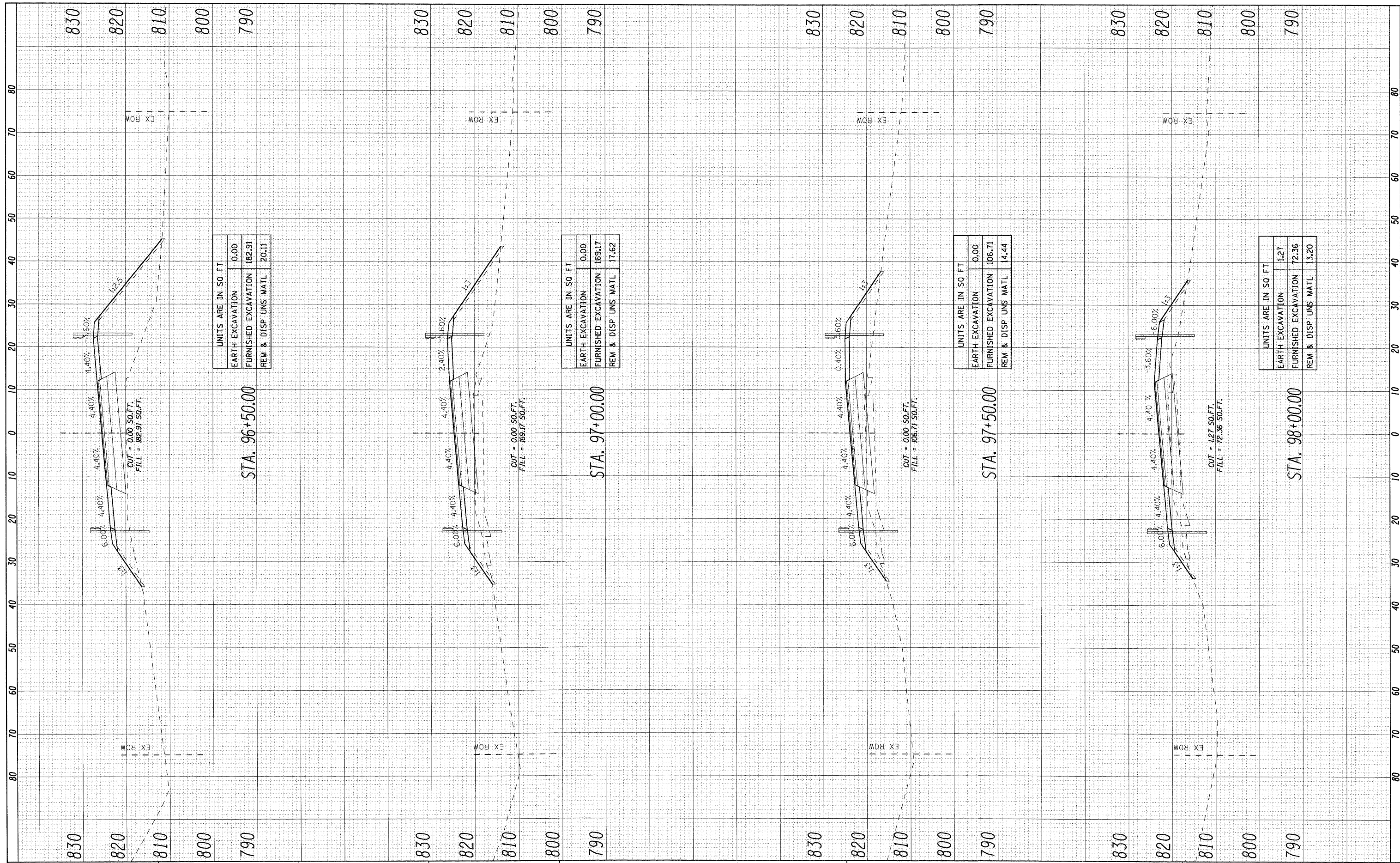
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK**
SCALE: 1" = 20'
SHEET NO. 6 OF 12 SHEETS
STA. 95+00 TO STA. 96+00

F.A.P. RTE. 324	SECTION 24B-1	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 60
D-91-116-09		CONTRACT NO. 60F64		
ILLINOIS FED. AID PROJECT				

FINAL SURVEY SURVEYED BY DATE
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ORIGINAL SURVEY SURVEYED BY DATE
 NO. BOOK PLOTTED TEMPLATE AREAS CHECKED



UNITS ARE IN SQ FT

EARTH EXCAVATION	0.00
FURNISHED EXCAVATION	182.91
REM & DISP UNS MATL	20.11

UNITS ARE IN SQ FT

EARTH EXCAVATION	0.00
FURNISHED EXCAVATION	169.17
REM & DISP UNS MATL	17.62

UNITS ARE IN SQ FT

EARTH EXCAVATION	0.00
FURNISHED EXCAVATION	106.71
REM & DISP UNS MATL	14.44

UNITS ARE IN SQ FT

EARTH EXCAVATION	1.27
FURNISHED EXCAVATION	72.36
REM & DISP UNS MATL	13.20

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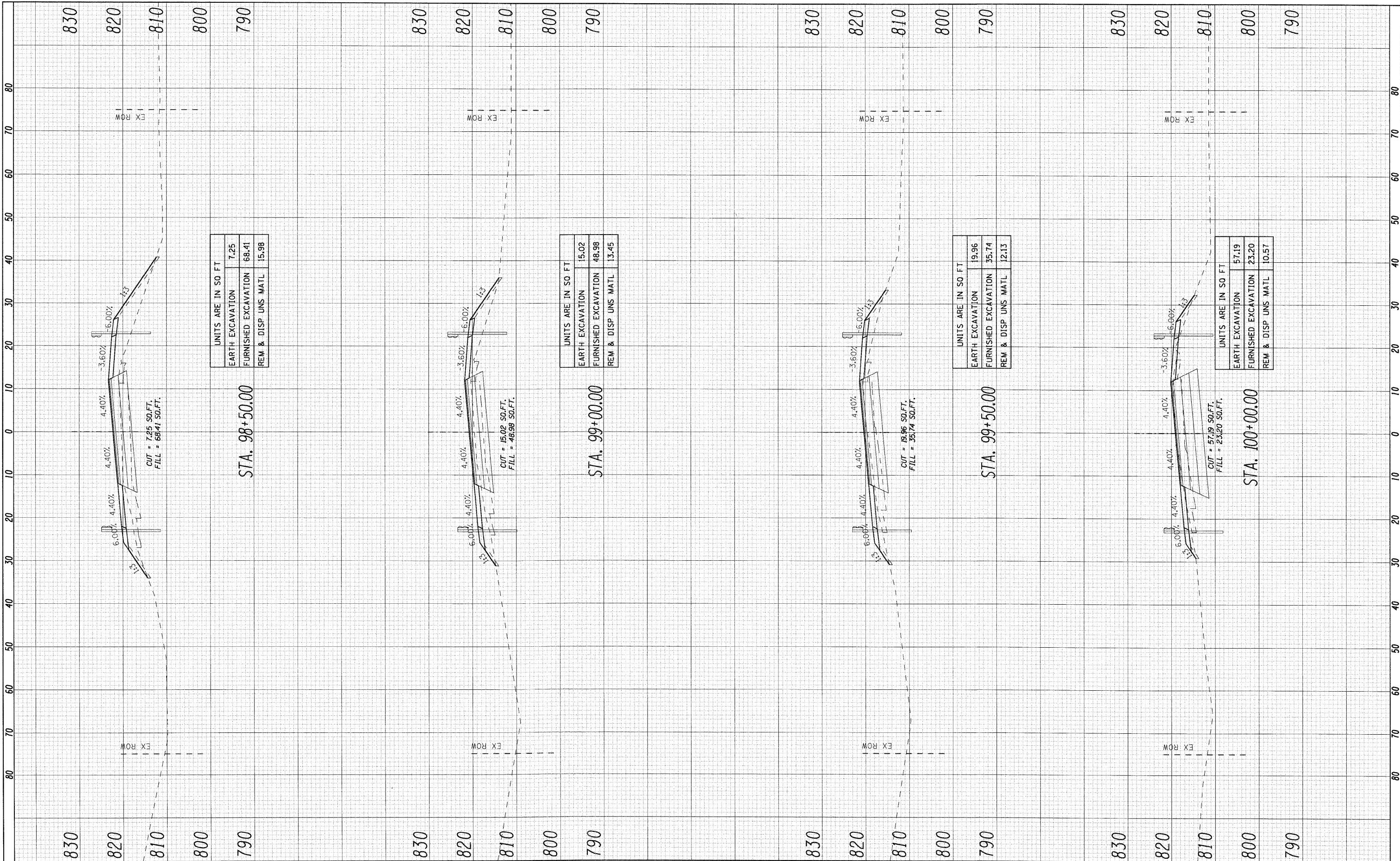
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK
 SCALE: 1" = 20' SHEET NO. 7 OF 12 SHEETS STA. 96+50 TO STA. 98+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	248-1	McHENRY	76	61
D-91-116-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				

FINAL SURVEY SURVEYED PLOTTED DATE
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ORIGINAL SURVEY SURVEYED PLOTTED DATE
 NO. NOTE BOOK TEMPLATE AREAS CHECKED



UNITS ARE IN SQ. FT.

EARTH EXCAVATION	7.25
FURNISHED EXCAVATION	68.41
REM. & DISP. UNS. MATL.	15.98

STA. 98+50.00

UNITS ARE IN SQ. FT.

EARTH EXCAVATION	15.02
FURNISHED EXCAVATION	48.98
REM. & DISP. UNS. MATL.	13.45

STA. 99+00.00

UNITS ARE IN SQ. FT.

EARTH EXCAVATION	19.96
FURNISHED EXCAVATION	35.74
REM. & DISP. UNS. MATL.	12.13

STA. 99+50.00

UNITS ARE IN SQ. FT.

EARTH EXCAVATION	57.19
FURNISHED EXCAVATION	23.20
REM. & DISP. UNS. MATL.	10.57

STA. 100+00.00

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 CHECKED - MJY, SLV
 DATE - 12/30/2010

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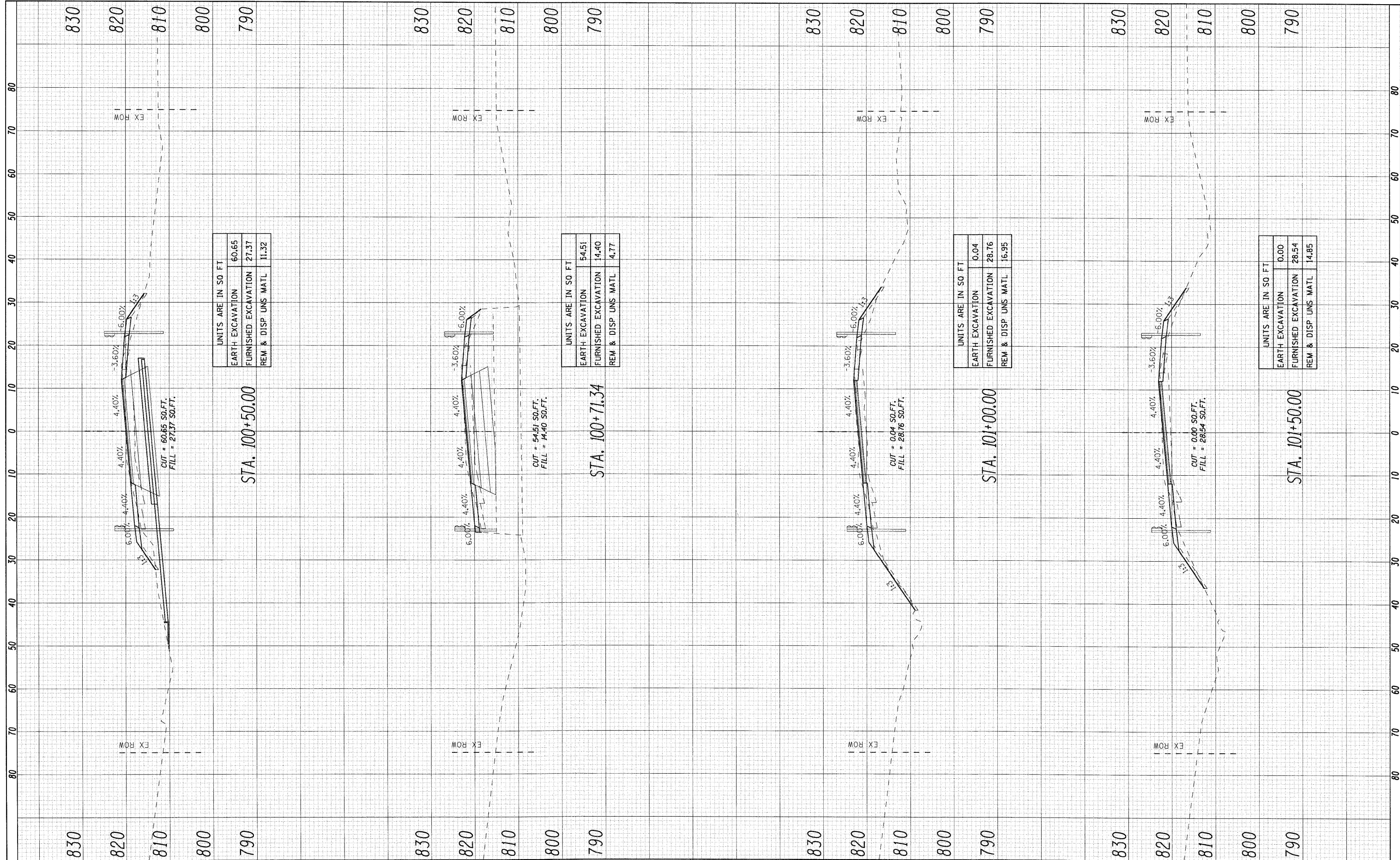
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
 IL ROUTE 23 OVER COON CREEK
 SCALE: 1" = 20'
 SHEET NO. 8 OF 12 SHEETS
 STA. 98+50 TO STA. 100+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	62
D-91-116-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				

DATE: _____ BY: _____
 ORIGINAL SURVEY PLOTTED _____
 NOTE BOOK PLATE AREAS CHECKED _____
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DATE: _____ BY: _____
 ORIGINAL SURVEY PLOTTED _____
 NOTE BOOK PLATE AREAS CHECKED _____
 NO. _____



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 CHECKED - MJJ, SLV
 DATE - 12/30/2010

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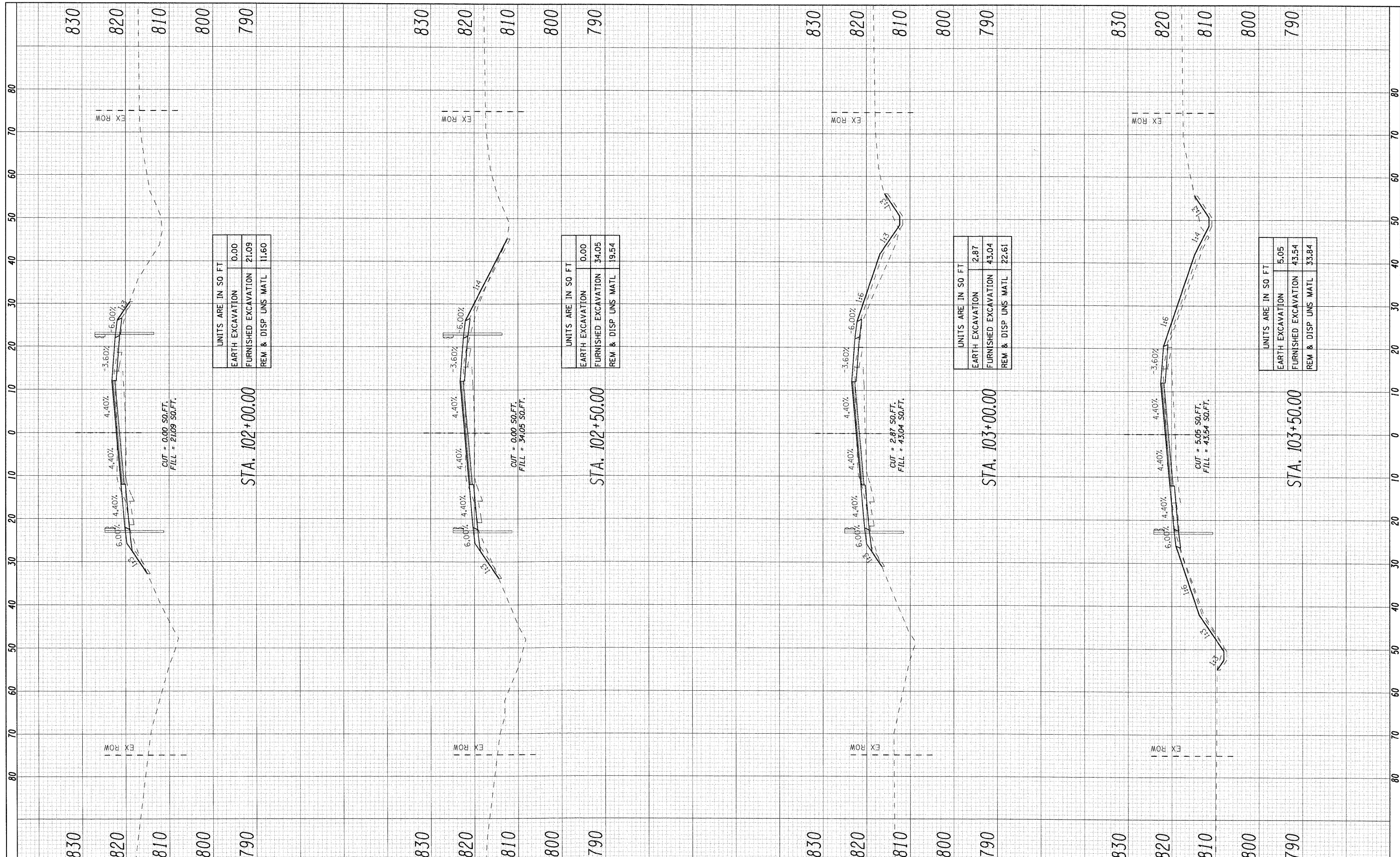
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS
 IL ROUTE 23 OVER COON CREEK**
 SCALE: 1" = 20' SHEET NO. 9 OF 12 SHEETS STA. 100+50 TO STA. 101+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	63
D-91-116-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				

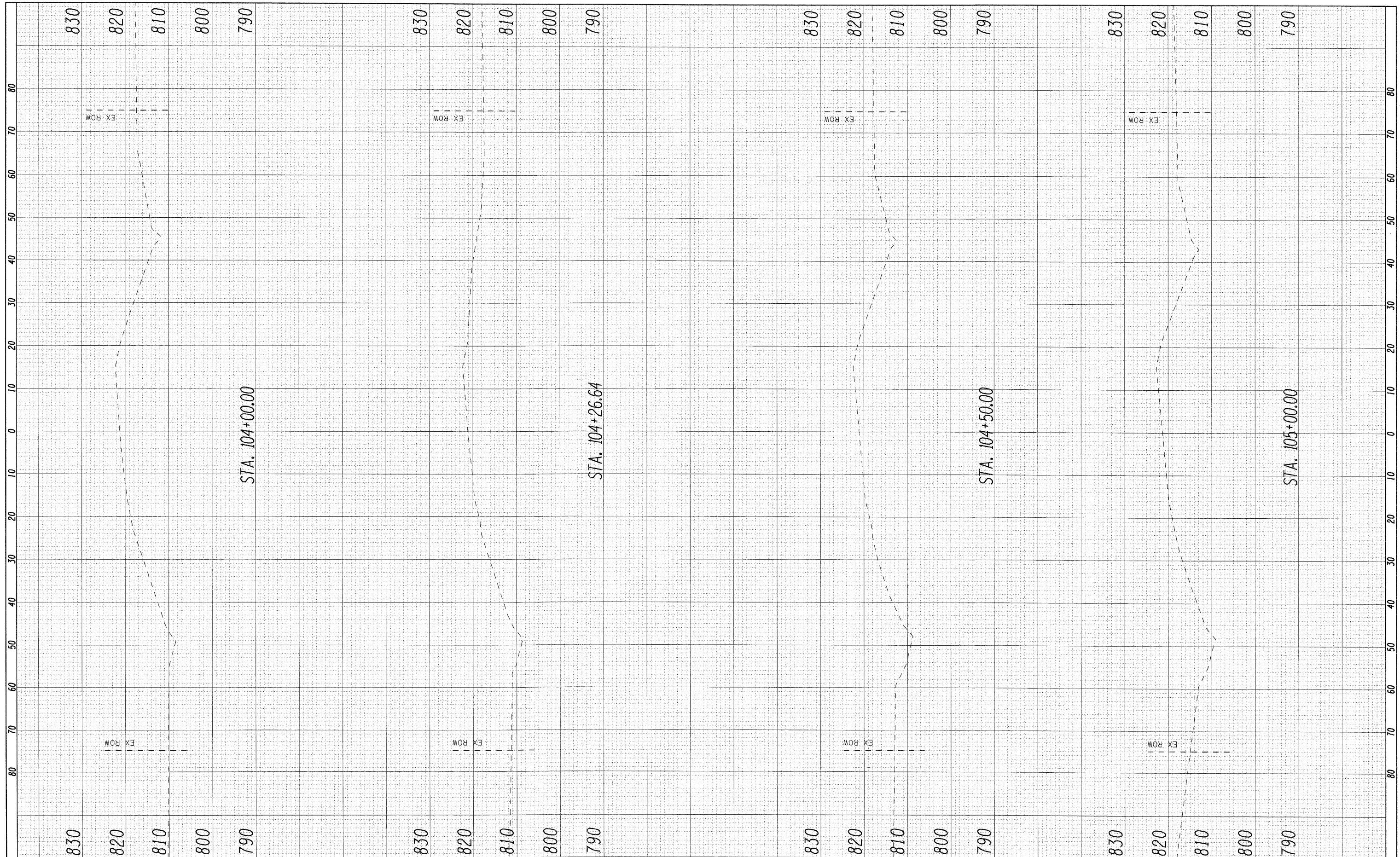
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS	TEMPLATE		
NO.	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS	TEMPLATE		
NO.	AREAS CHECKED		



FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED		
	TEMPLATE AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED		
	TEMPLATE AREAS CHECKED		



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CHECKED - MJY, SLV	REVISED -
DATE - 12/30/2010	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

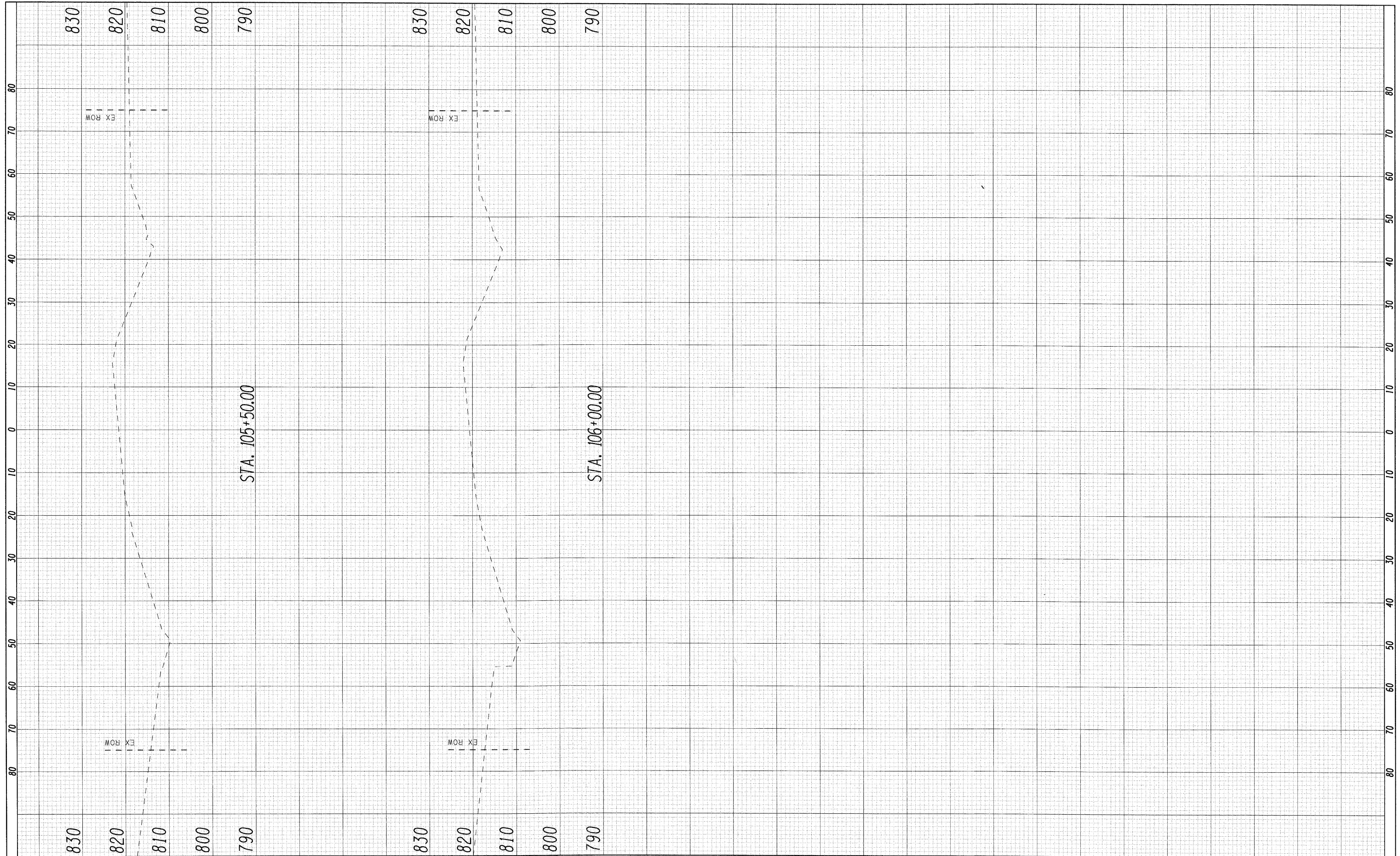
**CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK**

SCALE: 1" = 20' SHEET NO. 11 OF 12 SHEETS STA. 104+00 TO STA. 105+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24B-1	McHENRY	76	65
D-91-116-09		CONTRACT NO. 60F64		
ILLINOIS FED. AID PROJECT				

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		



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 DATE - 12/30/2010

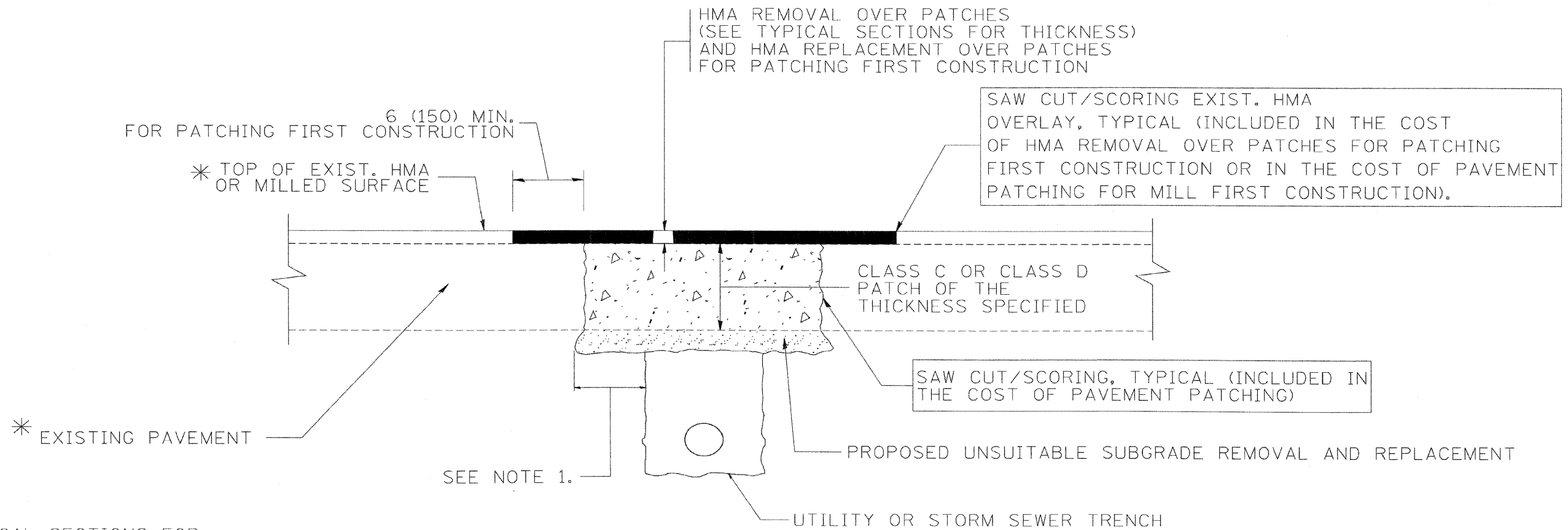
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 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL ROUTE 23 OVER COON CREEK

SCALE: 1" = 20' SHEET NO. 12 OF 12 SHEETS STA. 105+50 TO STA. 106+00

F.A.P. RTE. 324	SECTION 24B-1	COUNTY McHENRY	TOTAL SHEETS 76	SHEET NO. 66
D-91-116-09			CONTRACT NO. 60F64	
ILLINOIS FED. AID PROJECT				



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

NOTES:

1. THE WIDTH OF THE FULL DEPTH PATCH OVER A TRENCH SHALL BE 12 (300) WIDER ON EACH SIDE OF THE TRENCH.
2. FOR METHOD OF MEASUREMENT AND BASIS OF PAYMENT, SEE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL".

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

1. MILL HMA FIRST IF THERE IS AT LEAST 4 1/2 INCHES OR MORE OF HMA MATERIAL ON TOP OF THE EXISTING PAVEMENT OR IF THE PAVEMENT IS FULL DEPTH HMA. A MINIMUM OF 2 INCHES OF HMA MATERIAL SHALL BE IN PLACE AFTER MILLING.
2. REMOVE AND REPLACE WITH FULL DEPTH CLASS D PATCHES TO TOP OF MILLED SURFACE.

REVISED	-	A. ABBAS	04-27-98
REVISED	-	R. BORO	01-01-07
REVISED	-	R. BORO	09-04-07
REVISED	-	K. ENG	10-27-08

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

PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT

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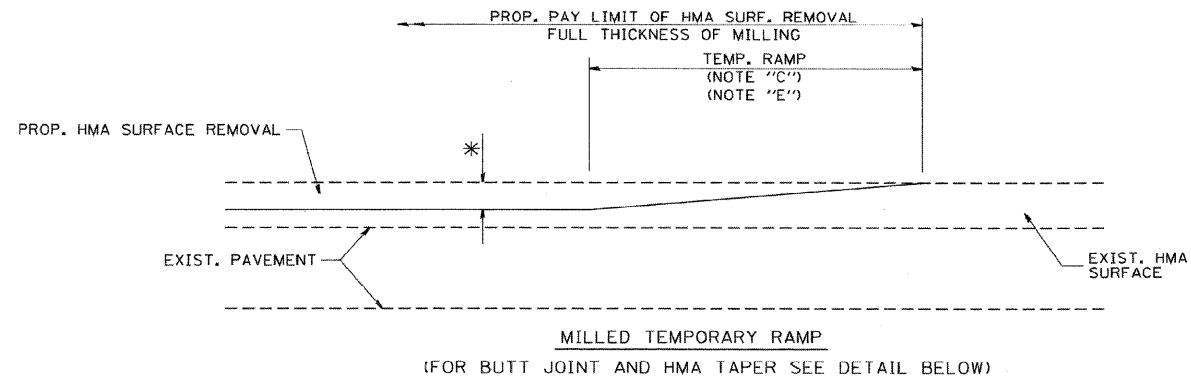
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DRAWN	-	ST	REVISED	-
CHECKED	-	MJY, SLV	REVISED	-
DATE	-	12/30/2010	REVISED	-

**STATE OF ILLINOIS
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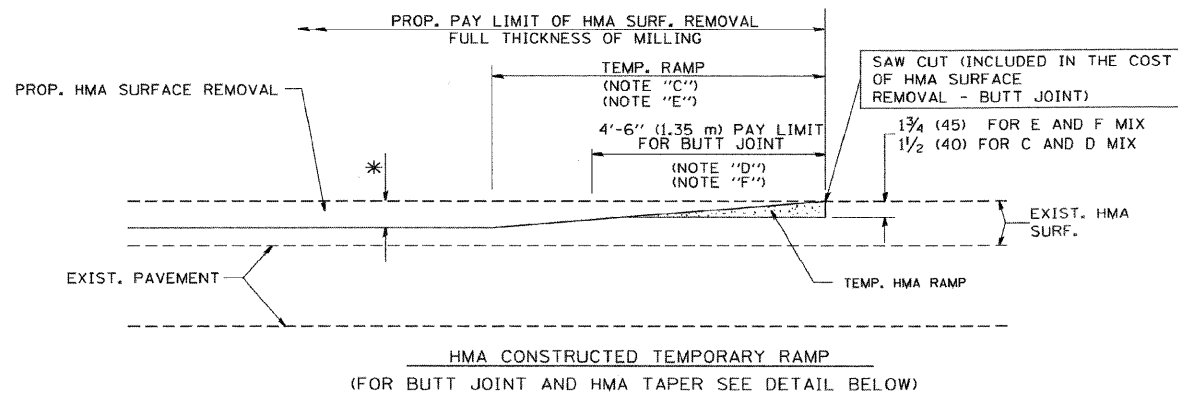
**DISTRICT ONE DETAIL SHEETS
IL ROUTE 23 OVER COON CREEK**

SCALE: SHEET NO. 1 OF 10 SHEETS STA. 88+00 TO STA. 103+55

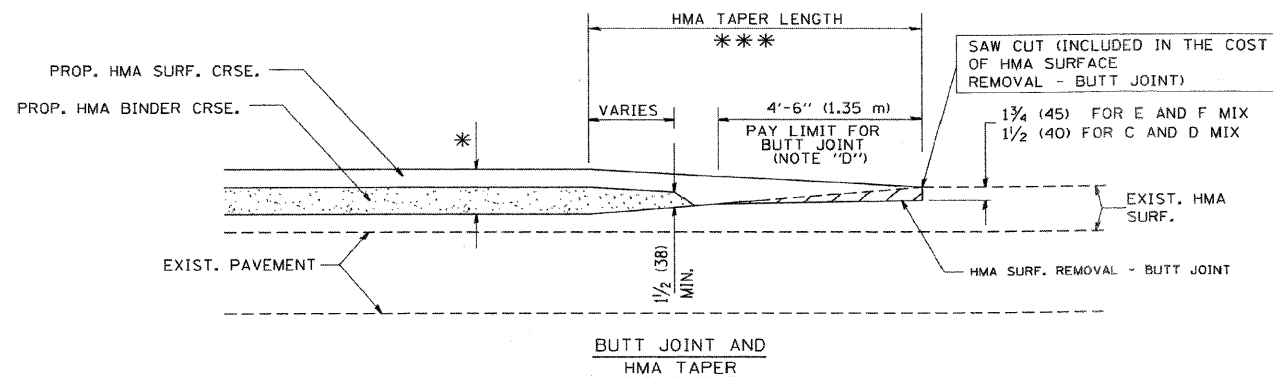
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	67
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



OPTION 1

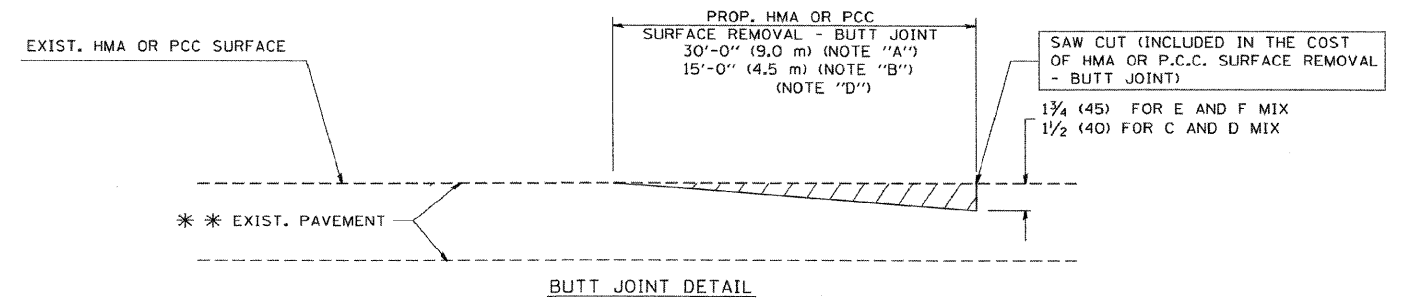


OPTION 2
TYPICAL TEMPORARY RAMP

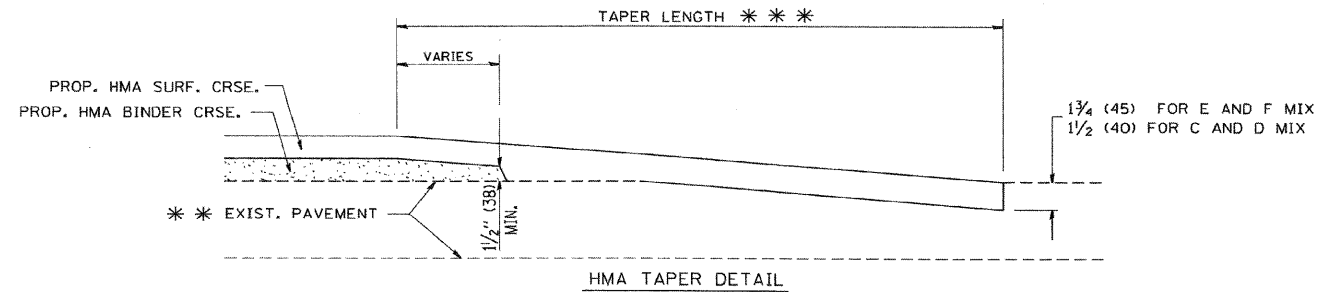


TYPICAL BUTT JOINT AND HMA TAPER
FOR MILLING AND RESURFACING

REVISED	-	R. SHAH	10-25-94
REVISED	-	A. ABBAS	03-21-97
REVISED	-	M. GOMEZ	04-06-01
REVISED	-	R. BORO	01-01-07



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER
FOR RESURFACING ONLY

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

NOTES

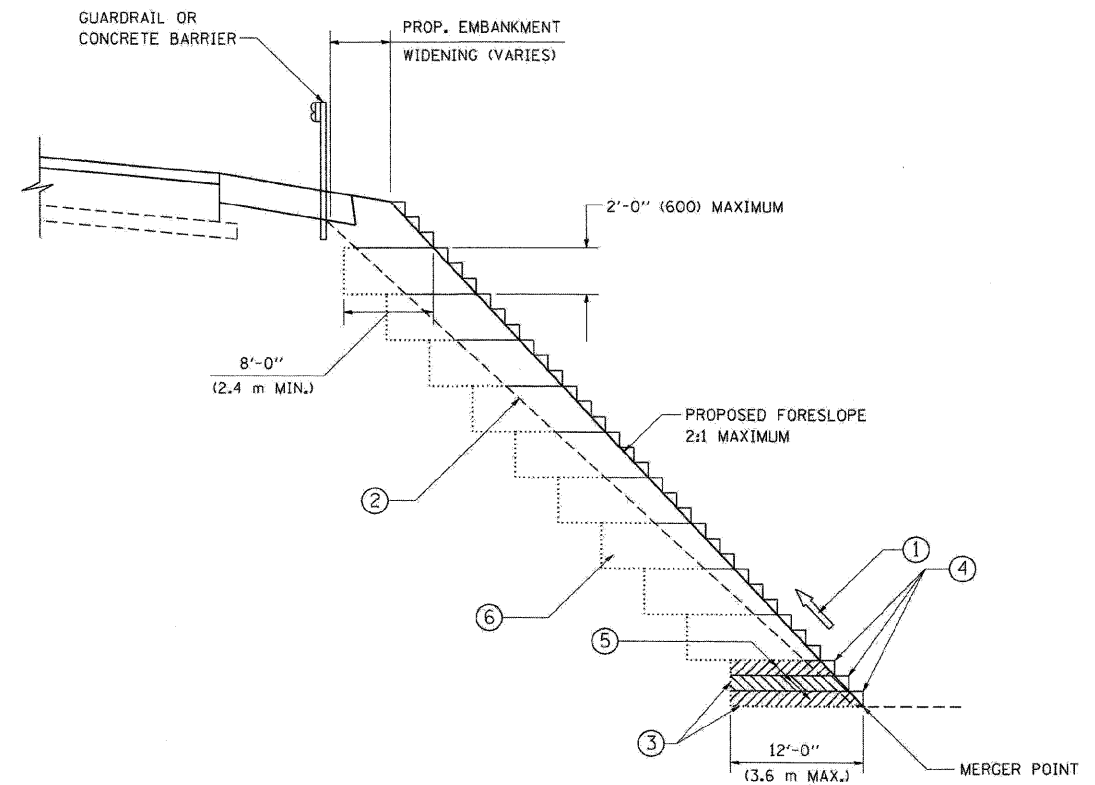
- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
- B: MINOR SIDE ROADS.
- C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
- D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
- E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0"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

BASIS OF PAYMENT:

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

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

BUTT JOINT AND HMA TAPER DETAILS



TYPICAL BENCHING DETAIL
FOR EMBANKMENT

NOTES:

- ① CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
- ② EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
- ③ BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
- ④ TRIM TO FINAL SLOPE.
- ⑤ EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
- ⑥ EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- ⑦ SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

DESIGNED	-
DRAWN	- CADD
CHECKED	- S.E.B.
DATE	- 06-16-04

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

BENCHING CONSTRUCTION DETAIL

LOCO, INC.
CONSULTING ENGINEERS
1560 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: 630/577-9100

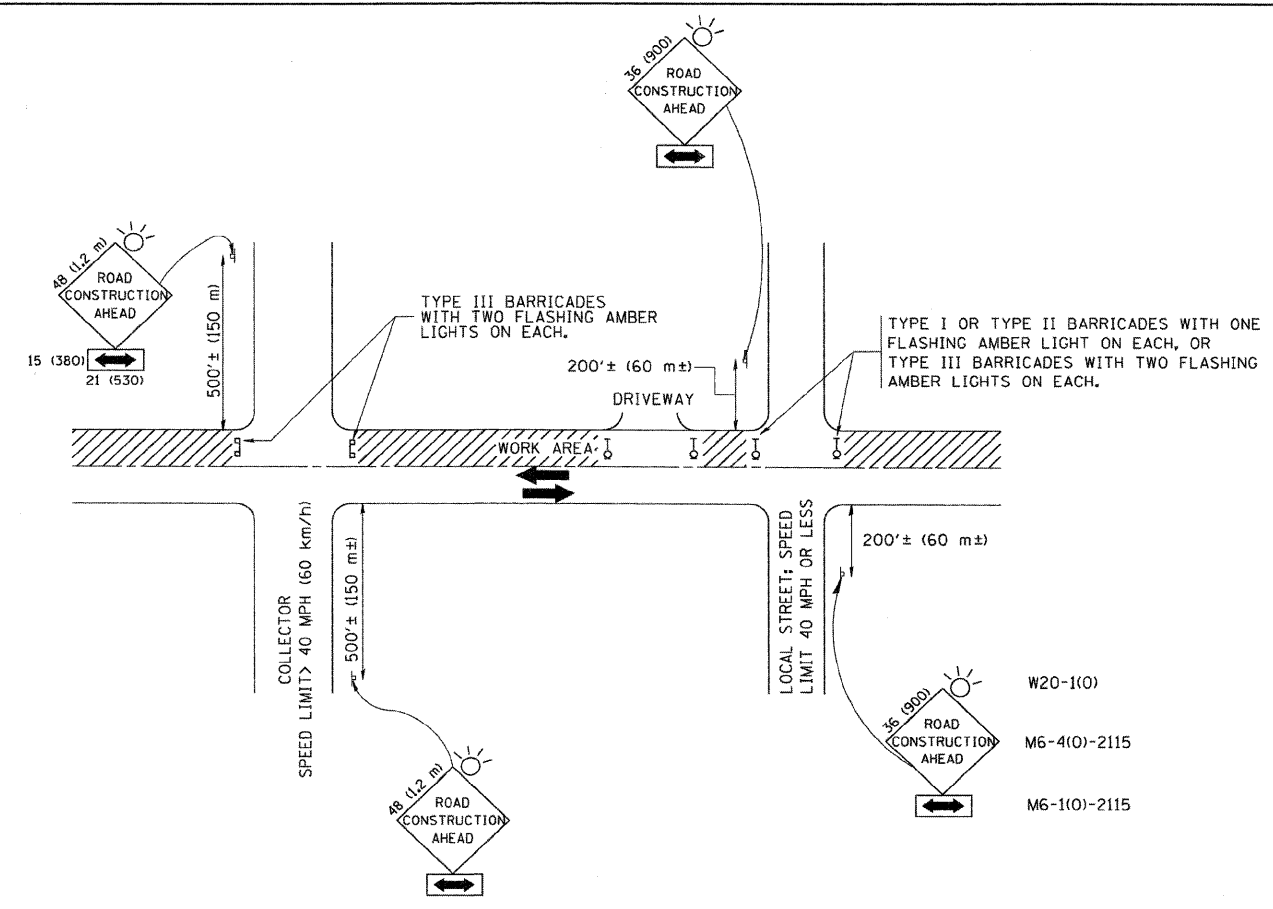
DESIGNED	- ST	REVISED	-
DRAWN	- ST	REVISED	-
CHECKED	- MJY, SLV	REVISED	-
DATE	- 12/30/2010	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE DETAIL SHEETS
IL ROUTE 23 OVER COON CREEK

SCALE: SHEET NO. 4 OF 10 SHEETS STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	70
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



NOTES:

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

REVISED	- J. OBERLE	10-18-95
REVISED	- A. HOUSEH	03-06-96
REVISED	- A. HOUSEH	10-15-96
REVISED	- T. RAMMACHER	01-06-00

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

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

LONCO, INC.
CONSULTING ENGINEERS
1560 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

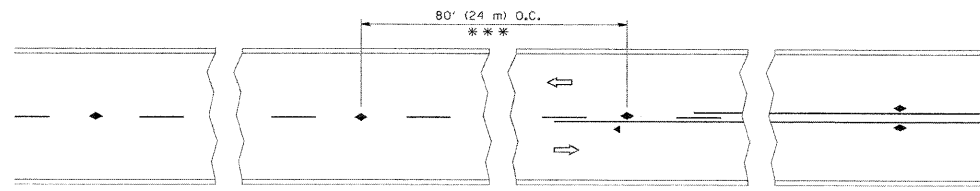
DESIGNED	- ST	REVISED	-
DRAWN	- ST	REVISED	-
CHECKED	- MJY, SLV	REVISED	-
DATE	- 12/30/2010	REVISED	-

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE DETAIL SHEETS
IL ROUTE 23 OVER COON CREEK**

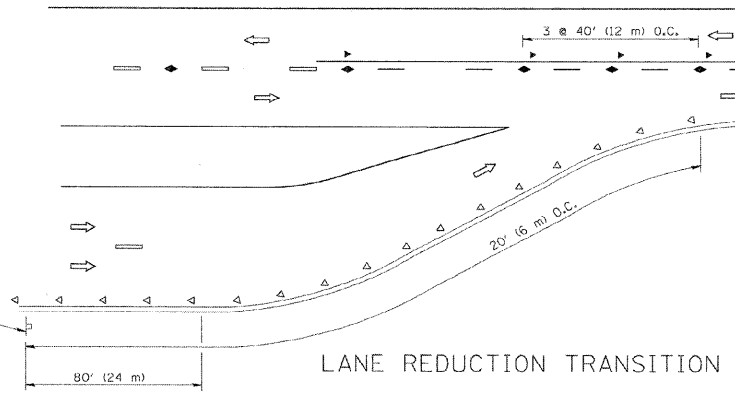
SCALE:	SHEET NO. 5 OF 10 SHEETS	STA. 88+00 TO STA. 103+55
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	71
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

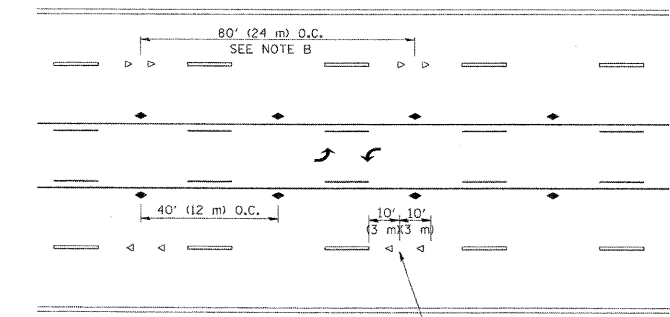


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

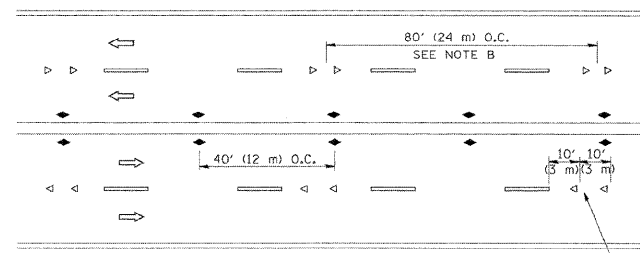
TWO-LANE/TWO-WAY



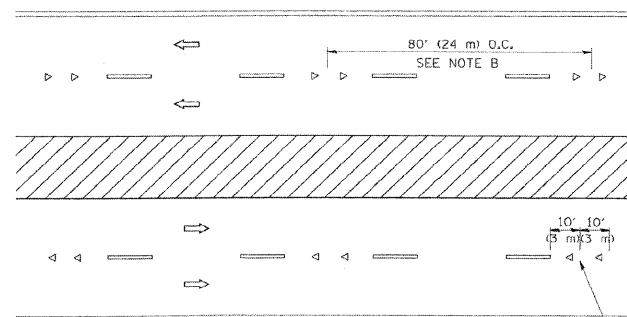
LANE REDUCTION TRANSITION



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

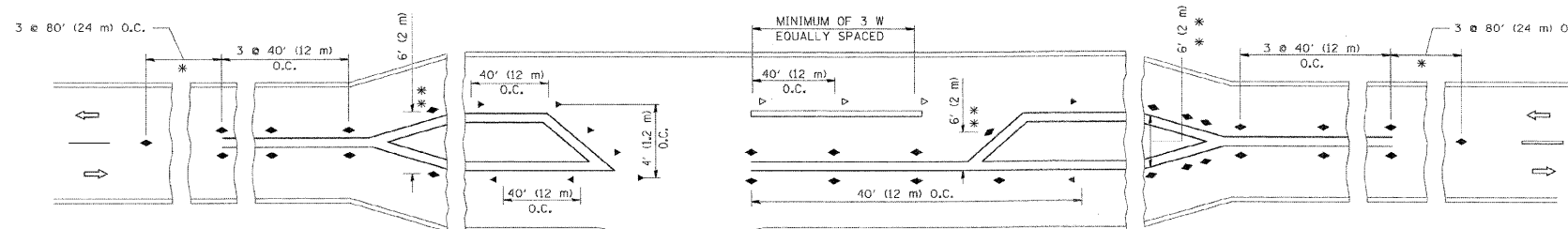
LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- 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.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.

REVISED - T. RAMMACHER 09-19-94
 REVISED - T. RAMMACHER 03-12-99
 REVISED - T. RAMMACHER 01-06-00
 REVISED - C. JUCIUS 09-09-09



LEFT TURN

* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE
 ** WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

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

RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)

LONCO, INC.
 CONSULTING ENGINEERS
 1960 WALL ST. SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

DESIGNED - ST
 DRAWN - ST
 CHECKED - MJY, SLV
 DATE - 12/30/2010

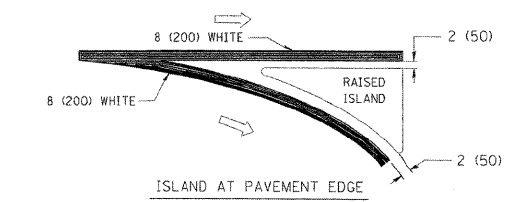
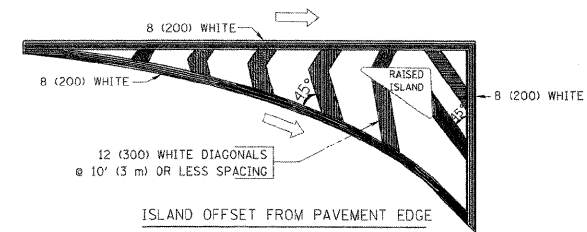
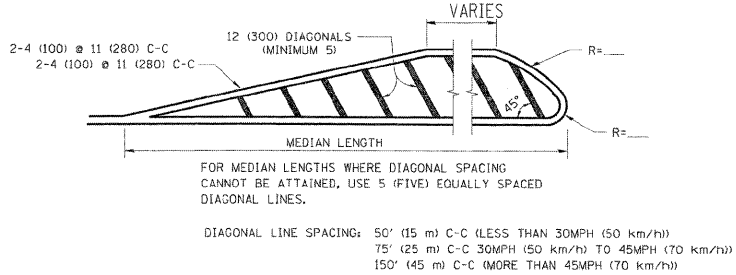
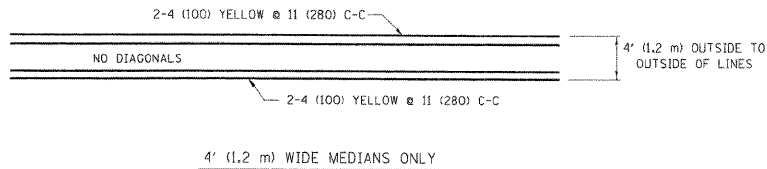
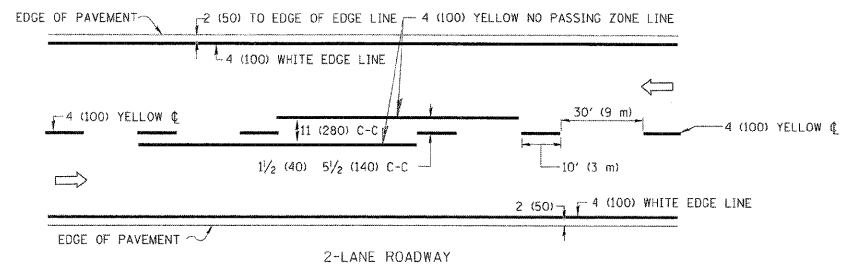
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

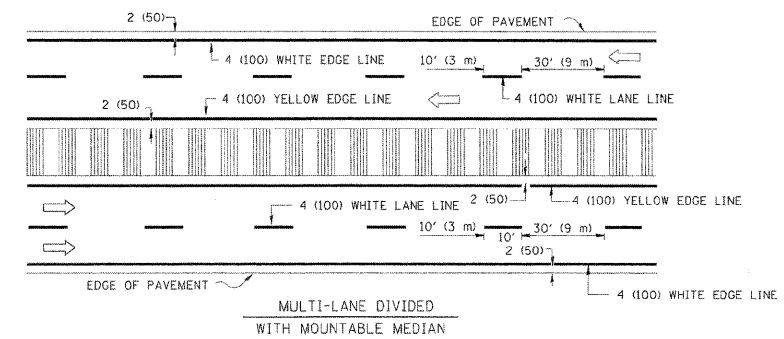
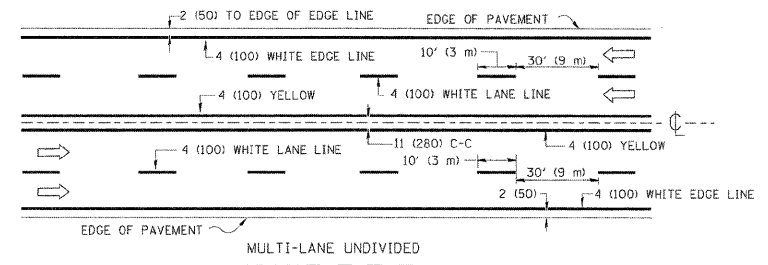
DISTRICT ONE DETAIL SHEETS
 IL ROUTE 23 OVER COON CREEK

SCALE: SHEET NO. 6 OF 10 SHEETS STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	72
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

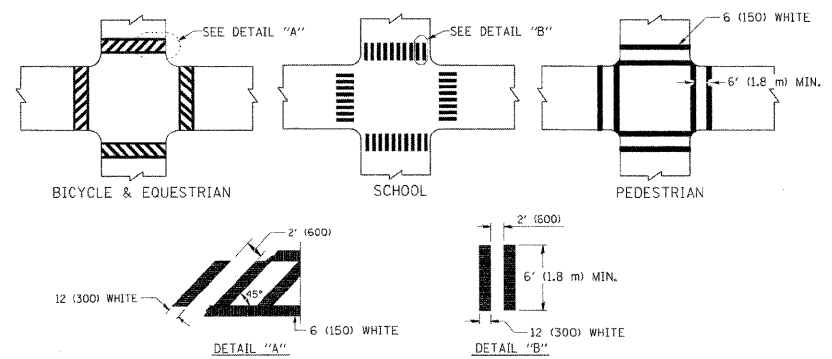


TYPICAL ISLAND MARKING

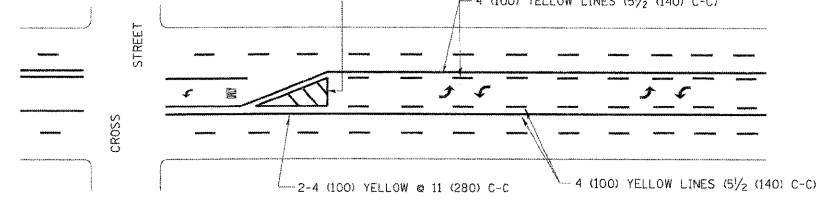


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

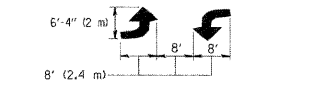
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING

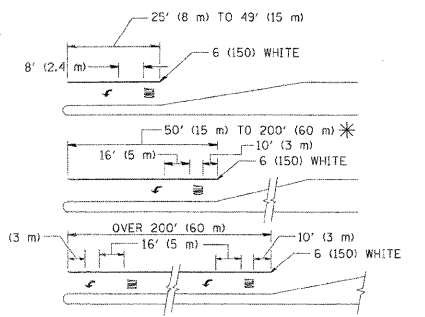


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



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 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)

* 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

REVISED	-I. RAMMACHER	10-27-94
REVISED	-C. JUCIUS	09-09-09
REVISED	-	
REVISED	-	

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5 1/2 (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C CMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5 1/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE.
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES "RR" 15' 5" (4.8 m) LETTERS 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m ²) EACH "X"=54.0 SQ. FT. (5.0 m ²)
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.

DISTRICT ONE TYPICAL PAVEMENT MARKINGS

LOCO, INC.
CONSULTING ENGINEERS
1960 WALL ST., SUITE 222
NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

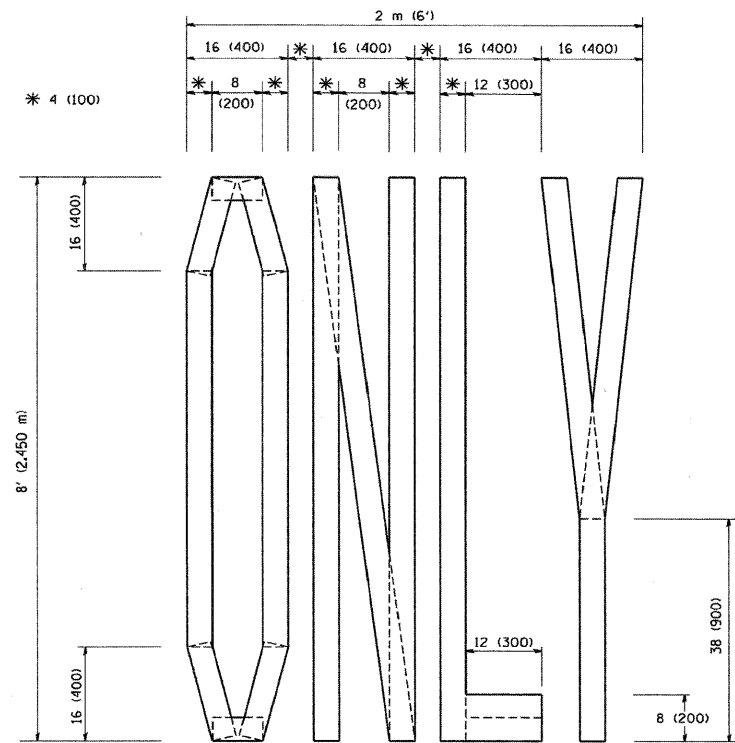
DESIGNED - ST
DRAWN - ST
CHECKED - MJY, SLV
DATE - 12/30/2010

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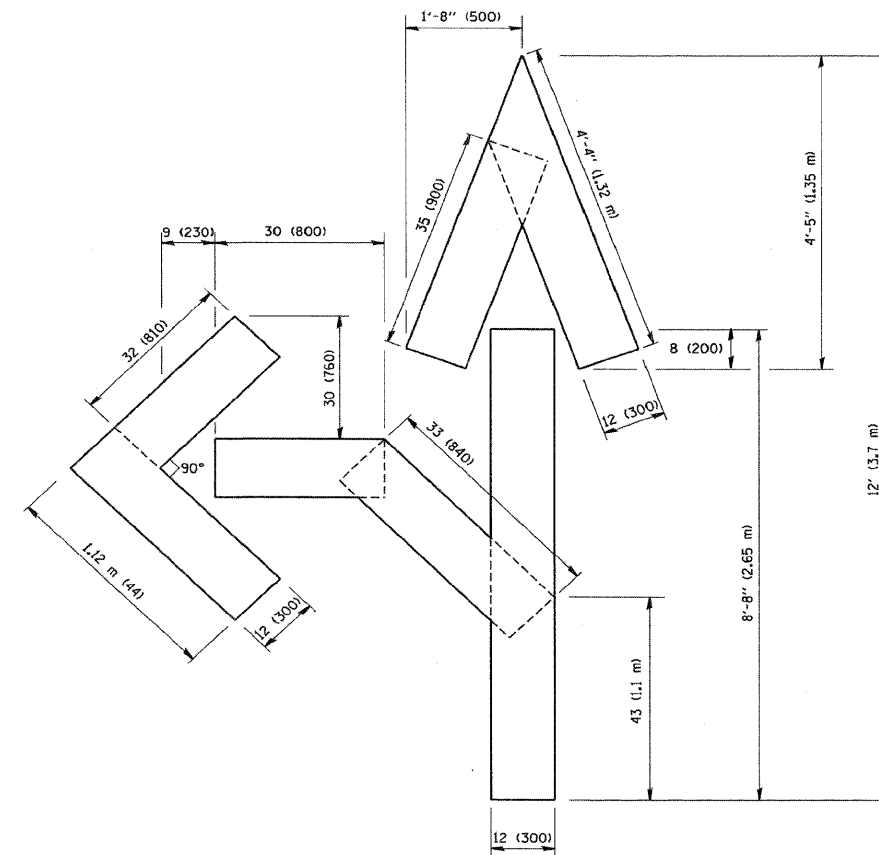
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE DETAIL SHEETS
IL ROUTE 23 OVER COON CREEK
SCALE: SHEET NO. 7 OF 10 SHEETS STA. 88+00 TO STA. 103+55

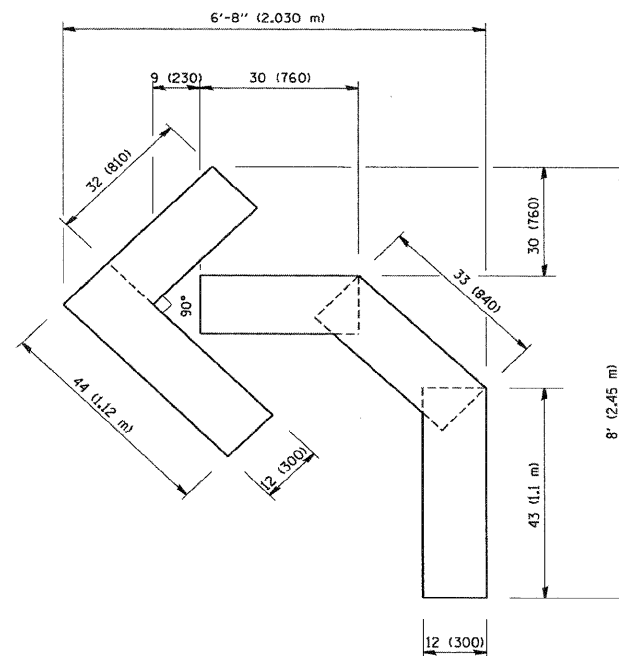
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	73
D-91-178-09			CONTRACT NO. 60F64	
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				



QUANTITY
 4 (100) LINE = 64.1 ft. (19.7 m)
 21.1 sq. ft. (1.97 sq. m)



QUANTITY
 4 (100) LINE = 82.5 ft. (25.3 m)
 27.5 sq. ft. (2.53 sq. m)



QUANTITY
 4 (100) LINE = 45.5 ft. (13.9 m)
 15.2 sq. ft. (1.39 sq. m)

REVISED	- T. RAMMACHER	06-05-96
REVISED	- T. RAMMACHER	11-04-97
REVISED	- T. RAMMACHER	03-02-98
REVISED	- E. GOMEZ	08-28-00

PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING

LONCO, INC.
 CONSULTING ENGINEERS
 1560 WALL ST., SUITE 222
 NAPERVILLE, ILLINOIS 60563 PH: (630) 577-9100

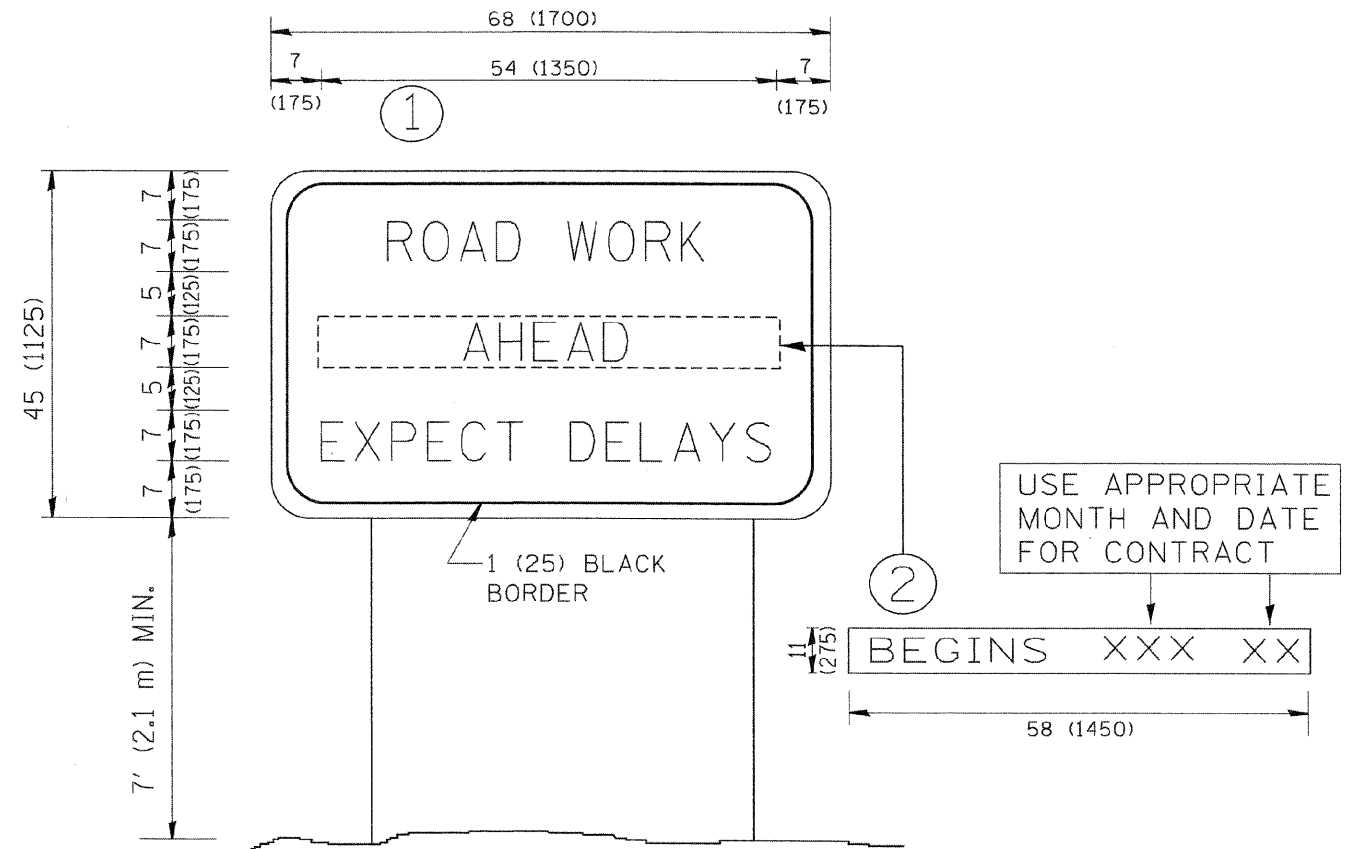
DESIGNED	- ST	REVISED	-
DRAWN	- ST	REVISED	-
CHECKED	- MJY, SLV	REVISED	-
DATE	- 12/30/2010	REVISED	-

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE DETAIL SHEETS
 IL ROUTE 23 OVER COON CREEK**

SCALE: SHEET NO. 8 OF 10 SHEETS STA. 88+00 TO STA. 103+55

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
324	24 B-2	McHENRY	76	74
D-91-178-09		CONTRACT NO. 60F64		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



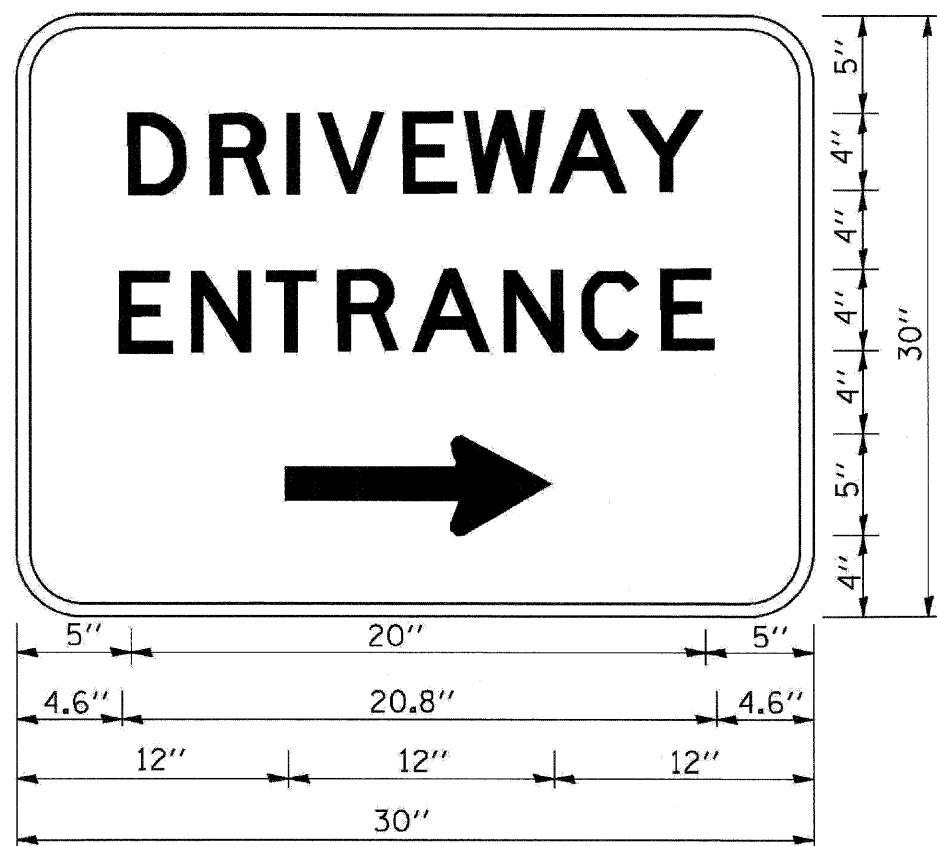
NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

REVISED	-	R. MIRS 09-15-97
REVISED	-	R. MIRS 12-11-97
REVISED	-	T. RAMMACHER 02-02-99
REVISED	-	C. JUCCIUS 01-31-07

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

ARTERIAL ROAD INFORMATION SIGN



3.0" RADIUS, 0.5" BORDER, WHITE ON GREEN; REFLECTORIZED
 "DRIVEWAY" D; "ENTRANCE" D; STANDARD ARROW CUSTOM 12.0" x 5.0"

NOTES:

1. HALF OF THE SIGNS WILL REQUIRE A LEFT HAND FACING ARROW.
2. TWO SIGNS SHALL BE USED AT EACH COMMERCIAL ENTRANCE PLACED BACK-TO-BACK: ONE WITH A RIGHT HAND ARROW (SHOWN) SHALL BE PLACED ON THE NEAR RIGHT SIDE THE DRIVEWAY AND ONE WITH A LEFT HAND ARROW SHALL BE PLACED ON THE FAR LEFT SIDE OF THE DRIVEWAY.
3. SIGNS TO BE PAID FOR AS ITEM "TEMPORARY INFORMATION SIGNING".

DRIVEWAY ENTRANCE SIGNING

REVISED	-	C. JUCIUS 02-15-07
REVISED	-	
REVISED	-	
REVISED	-	