

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 ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY 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 THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12" 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 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.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE 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. UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEMS SHALL BE INSTALLED AND MADE OPERATIONAL AT TEMPORARY TRAFFIC SIGNAL INSTALLATIONS WHERE UPS IS INSTALLED AT THE EXISTING TRAFFIC SIGNAL. TEMPORARY TRAFFIC SIGNALS AT INTERSECTIONS WITH FIRE STATION ACTUATED EMERGENCY VEHICLE PRE-EMPTION OR WHEN INDICATED ON THE PLANS.
8. TRAFFIC SIGNAL MANAGEMENT SYSTEMS SHALL BE MAINTAINED IN OPERATION AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. REQUIRED EQUIPMENT SHALL BE AS SHOWN ON THE PLANS AND THE CONTRACTOR SHALL PLACE THE EQUIPMENT IN OPERATION TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY RESPONSIBLE FOR THE TRAFFIC SIGNAL MANAGEMENT SYSTEM.
9. DETECTION AT TEMPORARY TRAFFIC SIGNALS SHALL BE INCLUDED FOR ALL APPROACHES OF THE INTERSECTION UNLESS INDICATED OTHERWISE ON THE PLANS. THE DETECTION SYSTEM MUST MEET THE SPECIFICATIONS OF DISTRICT 1 AND THE CONTRACTOR SHALL PLACE THE DETECTORS INTO OPERATION TO THE SATISFACTION OF THE ENGINEER.
10. WHEN PAN, TILT, ZOOM CAMERAS ARE INSTALLED AT THE EXISTING INTERSECTION OR ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THE CAMERAS TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY RESPONSIBLE FOR THE CAMERAS.
11. ALL LABOR AND MATERIAL REQUIRED TO COMPLY WITH THESE REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR TEMPORARY TRAFFIC SIGNAL INSTALLATION.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT EACH 1

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE COUNTY AND SHALL BE DELIVERED BY THE CONTRACTOR TO THE COUNTY YARD AS PER THE TRAFFIC SIGNAL SPECIFICATIONS OR AS DIRECTED BY THE COUNTY TRAFFIC ENGINEER.

- 1 EACH CONTROLLER AND CABINET COMPLETE
- 1 EACH UNINTERRUPTIBLE POWER SUPPLY (UPS)

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

- AGENCY: MCDOT
- 1 EACH LIGHT DETECTOR AMPLIFIER
 - 2 EACH LIGHT DETECTOR

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE OF THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 4 EACH TRAFFIC SIGNAL WOOD POLE
- 9 EACH TRAFFIC SIGNAL HEADS
- 9 EACH PEDESTRIAN SIGNAL HEADS
- 2 EACH PEDESTRIAN PUSH BUTTONS
- 2 EACH TRAFFIC SIGNAL CONTROLLER AND CABINET (COMPLETE)
- 1 EACH LIGHT DETECTOR
- 2 EACH CONFIRMATION BEACON

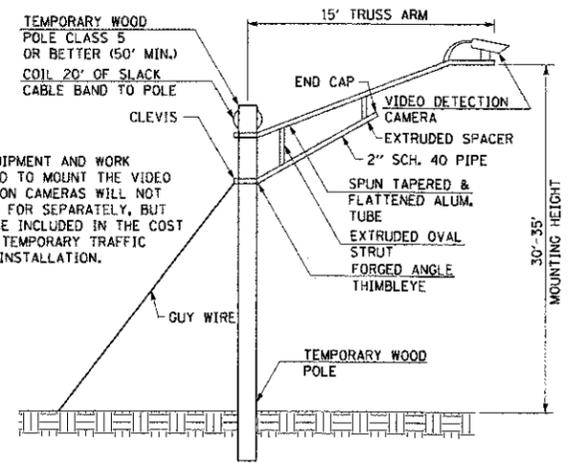
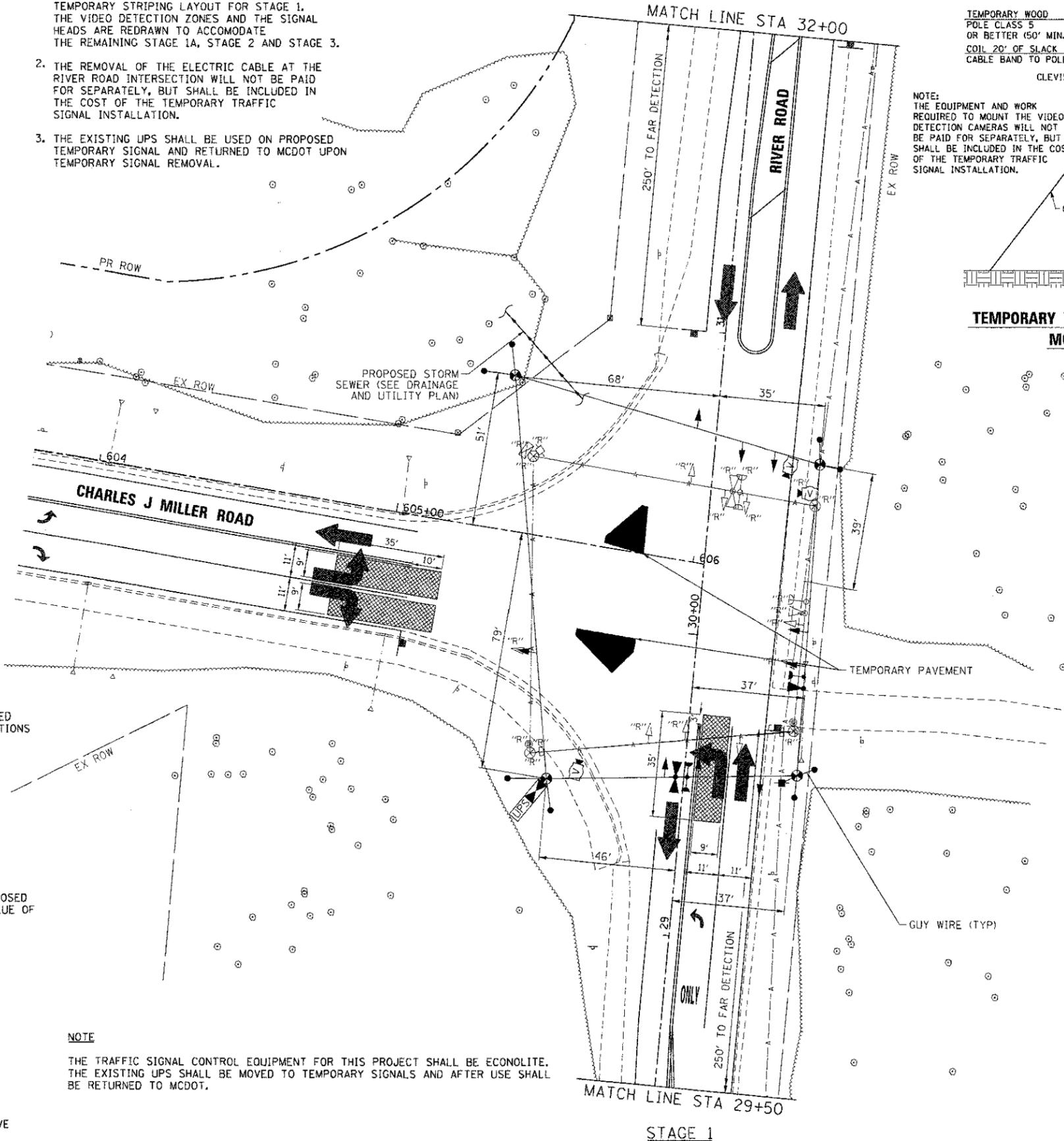
CONSTRUCTION NOTES

ALL PEDESTRIAN SIGNAL HEADS SHALL BE BAGGED AND DISCONNECTED WHEN EXISTING PAVEMENT IS REMOVED.

ALL PEDESTRIAN SIGNALS SHALL REMAIN BAGGED UNTIL THE PAVEMENT IS RESTORED TO PROVIDE A SAFE CROSSING AREA.

FINAL CAMERA POSITION TO BE DETERMINED BY THE CONTRACTOR'S CAMERA REPRESENTATIVE TO INSURE CORRECT ZONE COVERAGE, INCLUDING FAR-OUT DETECTION.

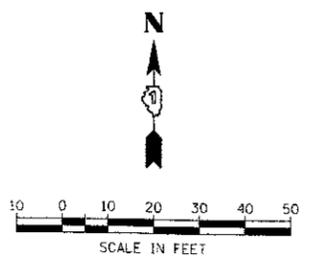
- NOTES:**
1. VIDEO DETECTION ZONES AND SIGNAL HEADS SHOWN ON THIS SHEET ARE BASED ON THE TEMPORARY STRIPING LAYOUT FOR STAGE 1. THE VIDEO DETECTION ZONES AND THE SIGNAL HEADS ARE REDRAWN TO ACCOMMODATE THE REMAINING STAGE 1A, STAGE 2 AND STAGE 3.
 2. THE REMOVAL OF THE ELECTRIC CABLE AT THE RIVER ROAD INTERSECTION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE TEMPORARY TRAFFIC SIGNAL INSTALLATION.
 3. THE EXISTING UPS SHALL BE USED ON PROPOSED TEMPORARY SIGNAL AND RETURNED TO MCDOT UPON TEMPORARY SIGNAL REMOVAL.



NOTE: THE EQUIPMENT AND WORK REQUIRED TO MOUNT THE VIDEO DETECTION CAMERAS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE TEMPORARY TRAFFIC SIGNAL INSTALLATION.

NOTE

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE ECONOLITE. THE EXISTING UPS SHALL BE MOVED TO TEMPORARY SIGNALS AND AFTER USE SHALL BE RETURNED TO MCDOT.



COMPANY NAME: HRGreen.com
 PROJECT CONTACT: HRGreen.com
 DATE PLOTTED: 7/23/2012 11:36:29 AM
 FILE NAME: 090071-rsig-0301-river.dgn
 PLOT DRIVER: pdf.plt
 PLOT TABLE: s10mder-g1-frons.tbl



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PLOT SCALE = 1" = 20'	CHECKED -	REVISED -
PLOT DATE = 7/23/2012	DATE = 7/23/12	REVISED -

**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

**TEMPORARY TRAFFIC SIGNAL PLAN
CHARLES J. MILLER ROAD AND RIVER ROAD**

SCALE: 1" = 20' SHEET NO. 1 OF 4 SHEETS STA. TO STA.

F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 101
CONTRACT NO. 63633			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

COMPANY NAME: HRGreen
 PROJECT CONTACT: J. Jettans
 DATE PLOTTED: 7/23/2012 11:56:30 AM
 FILE NAME: 090071-151p-030a-river.dgn
 PLOT DRIVER: pdfplot
 PEN TABLE: standard-trans.tbl

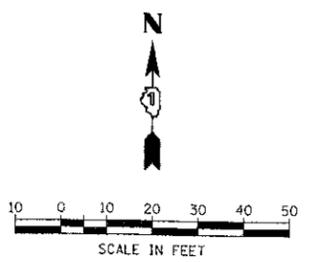
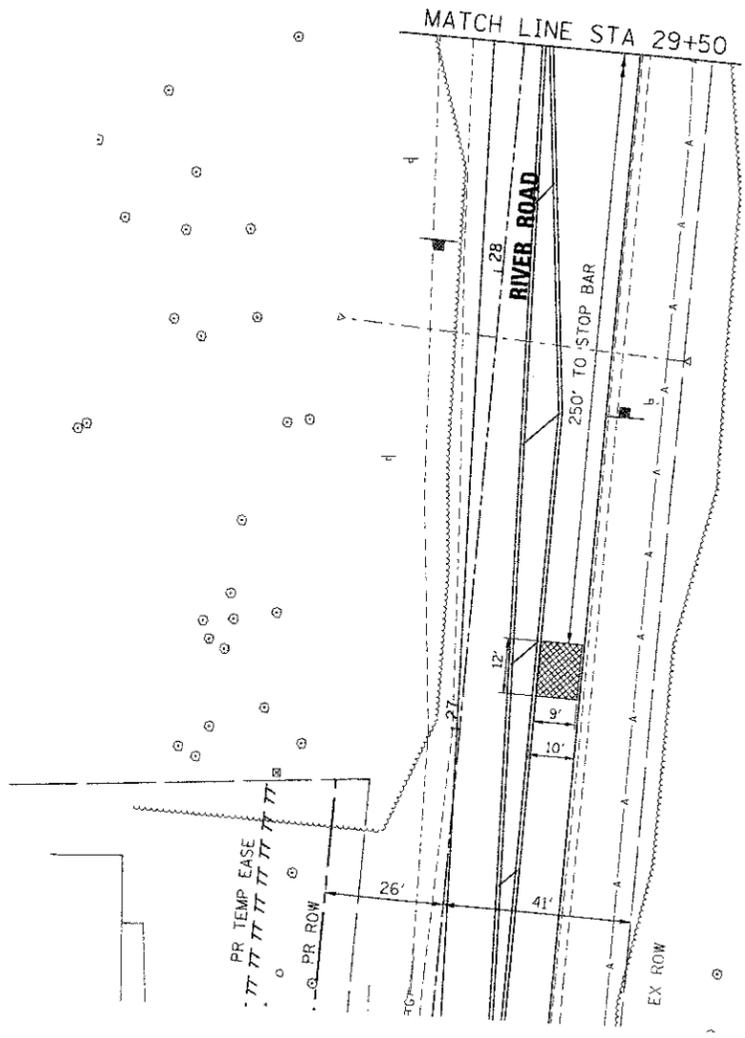
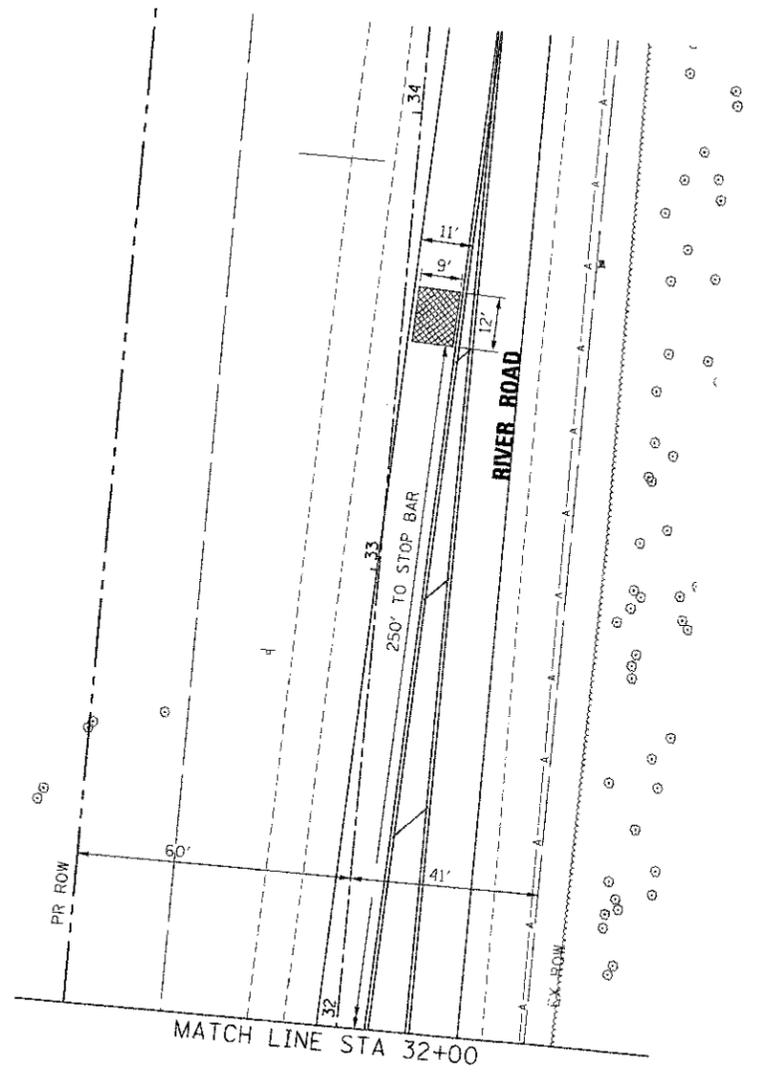


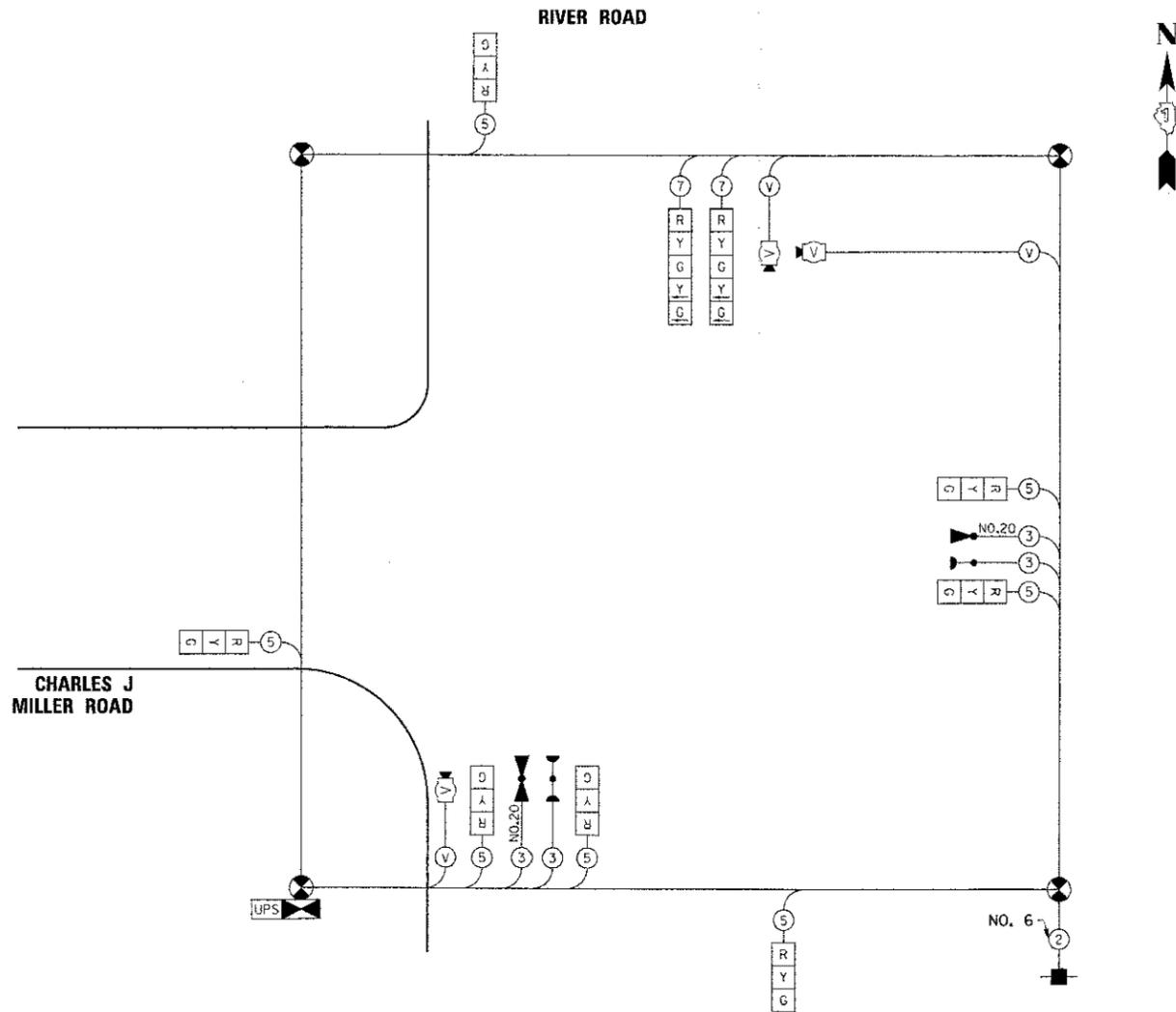
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PLOT SCALE = 1" = 20'	CHECKED -	REVISED -
PLOT DATE = 7/23/2012	DATE = 7/23/12	REVISED -

**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

TEMPORARY TRAFFIC SIGNAL PLAN			
CHARLES J. MILLER ROAD AND RIVER ROAD			
SCALE: 1" = 20'	SHEET NO. 2 OF 4 SHEETS	STA.	TO STA.

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	102
CONTRACT NO. 63633				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				





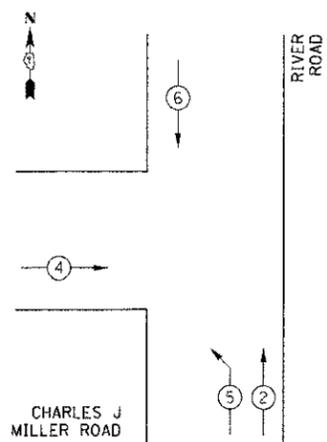
TEMPORARY CABLE PLAN

M.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					
TYPE	NO. LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		INCAND.	LED		
SIGNAL (RED)	9	17	0.50		76.5
(YELLOW)	9	25	0.25		56.25
(GREEN)	9	15	0.25		33.75
ARROW	4	12	0.10		4.8
CONTROLLER	1	100	1.00		100
VIDEO SYSTEM	1	15	1.00		15
TOTAL =					286.3

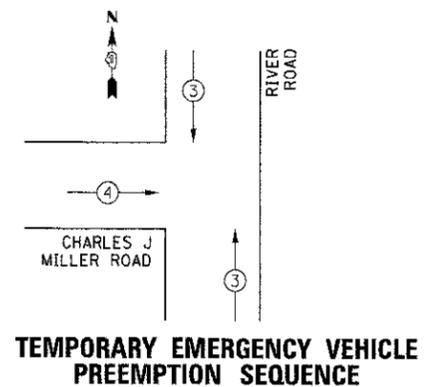
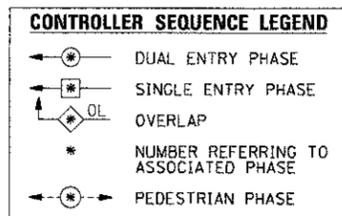
ENERGY COSTS TO: MCHENRY COUNTY DIVISION OF TRANSPORTATION
16111 NELSON ROAD
WOODSTOCK, IL 60098

ENERGY SUPPLY CONTACT: MIKE LENOX
PHONE: 815-420-2869
COMPANY: COMMONWEALTH EDISON

TRMPORARY CONTROLLER SEQUENCE



TEMPORARY PHASE DESIGNATION DIAGRAM



TEMP. EMERGENCY VEHICLE PREEMPTORS

PROPOSED EMERGENCY VEHICLE PREEMPTORS	3	4
MOVEMENT	↑	→

COMPANY NAME: HRGreen
PROJECT CONTACT: HRGreen.com
DATE PLOTTED: 7/23/2012 11:56:05 AM
FILE NAME: 090071-149-03a3-river.dgn
PLOT DRIVER: pstjdh
PEN TABLE: standard-truss.tbl



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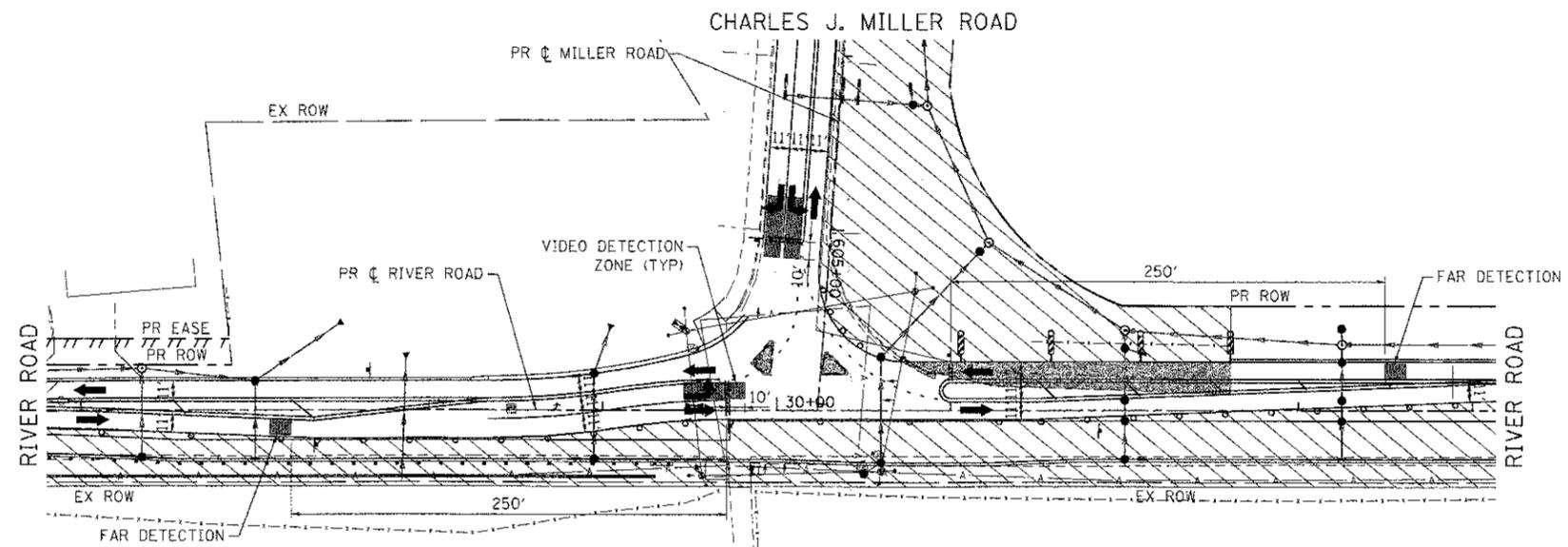
MCHENRY COUNTY DIVISION OF TRANSPORTATION

TEMPORARY CABLE PLAN AND PHASE DESIGNATION CHARLES J. MILLER ROAD AND RIVER ROAD

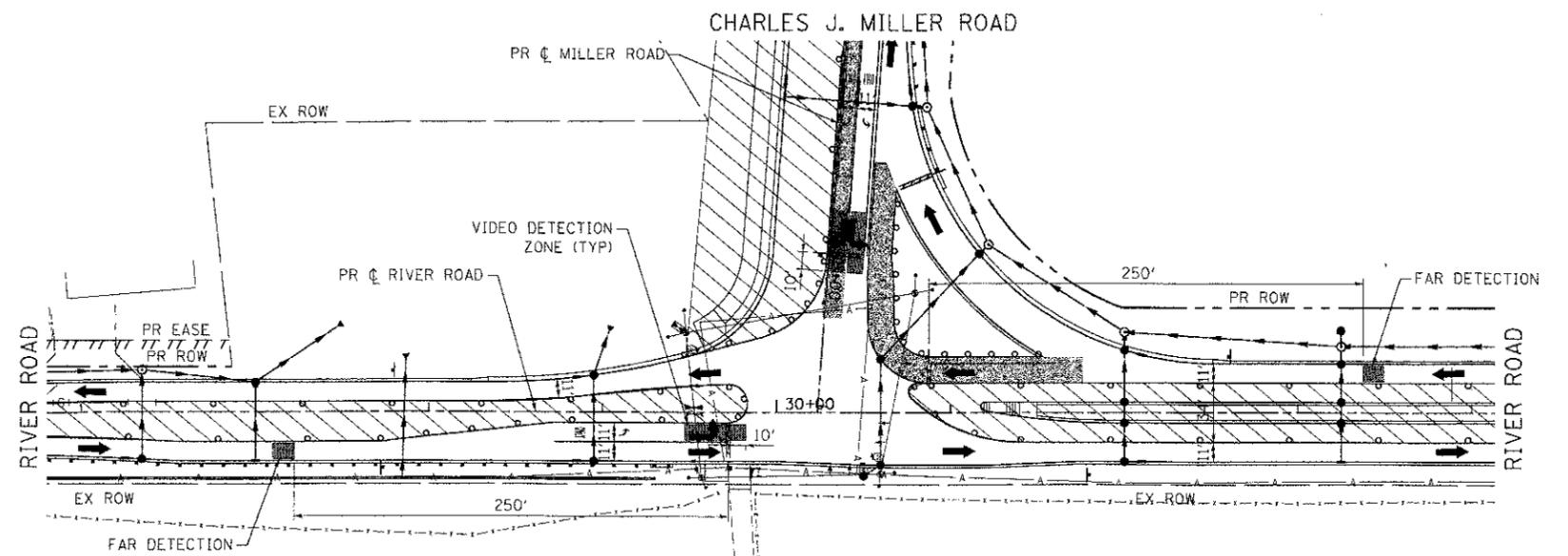
SCALE: SHEET NO. 3 OF 4 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	103
CONTRACT NO. 63633				

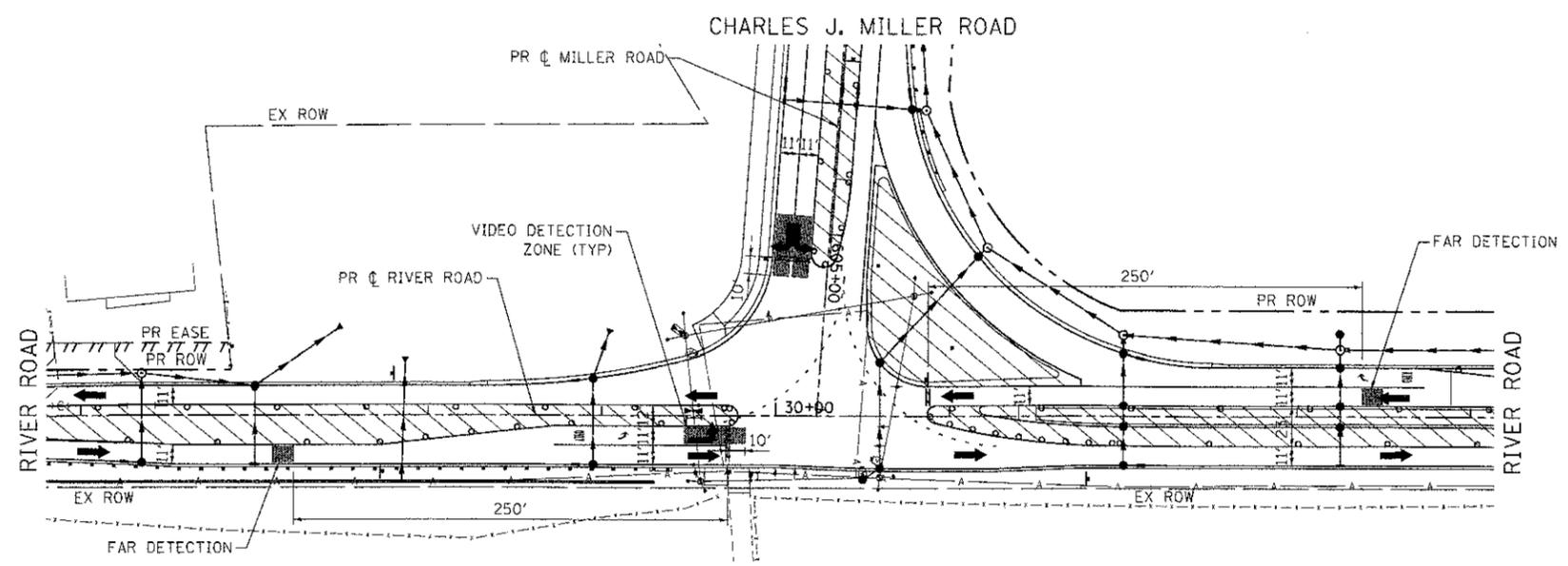
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



STAGE 1A



STAGE 2

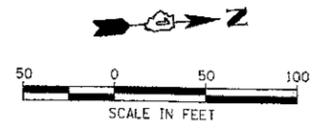


STAGE 3

LEGEND:

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

NOTE:
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.



COMPANY NAME: HRGreen
 PROJECT CONTACT: jettens
 CLIENT: MCHENRY COUNTY
 DATE PLOTTED: 7/23/2012 10:36:53 AM
 FILE NAME: 090071-hsr-0304-river.dgn
 PLOT DRIVER: perfsoft
 PEN TABLE: 3/standard-frms.tbl



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PLOT DATE = 7/23/2012	DATE = 7/23/12	REVISED -

**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

**TEMPORARY TRAFFIC SIGNAL STAGING - STAGE 1A, STAGE 2, STAGE 3
CHARLES J. MILLER ROAD AND RIVER ROAD**

SCALE: 1" = 50' SHEET NO. 4 OF 4 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	104
CONTRACT NO. 63633				
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 LAWNS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

THE VIDEO DETECTION EQUIPMENT FOR THIS PROJECT SHALL BE AUTOSCOPE AS REQUIRED BY THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.

THE TRAFFIC SIGNAL CONTROL EQUIPMENT SHALL BE "ECONOLITE" AS REQUIRED BY THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.

NOTE:

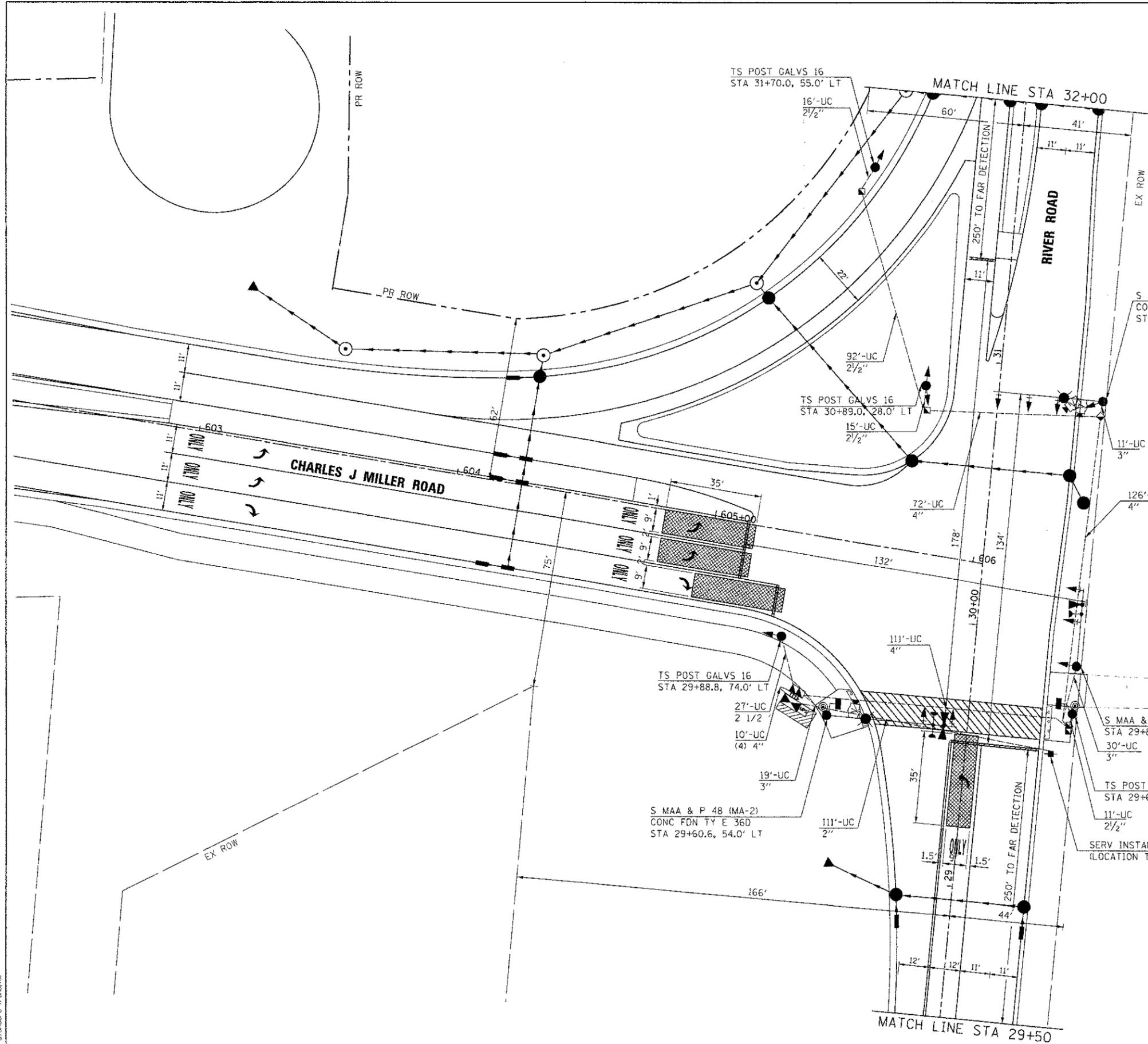
THE EMERGENCY VEHICLE PREEMPTION EQUIPMENT FOR THIS PROJECT SHALL BE OPTICON OR AN APPROVED EQUAL AS REQUIRED BY THE MCHENRY TOWNSHIP FIRE DEPARTMENT.

NOTE:

STOP BARS ARE NOT TO BE PLACED PRIOR TO PROPOSED TRAFFIC SIGNALS BEING OPERATIONAL. THEY MUST BE IN PLACE, HOWEVER, AT THE TIME OF TURN-ON.

NOTE:

NEW LED CONFIRMATION BEACONS IN ACCORDANCE WITH THE SPECIFICATIONS FOR EVP SHALL BE INCLUDED IN THE COST OF THE UNINTERRUPTABLE POWER SUPPLY, SPECIAL.



COMPANY NAME: HRGreen
 PROJECT CONTACT: jattana
 CLIENT: MCHENRY COUNTY DIVISION OF TRANSPORTATION
 DATE PLOTTED: 7/23/2012 11:57:02 AM
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 PLOT DRIVER: pdt.plt
 PEN TABLE: standard-trans.tbl



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PLOT SCALE = 1" = 20'	CHECKED -	REVISED -
PLOT DATE = 7/23/2012	DATE = 7/23/12	REVISED -

**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

**TRAFFIC SIGNAL INSTALLATION PLAN
 CHARLES J. MILLER ROAD AND RIVER ROAD**

F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 105
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		CONTRACT NO. 63633

SCALE: 1" = 20' SHEET NO. 1 OF 4 SHEETS STA. TO STA.

COMPANY NAME: HRGreen
 PROJECT CONTACT: jastano
 DATE PLOTTED: 7/23/2012 10:30:00 AM
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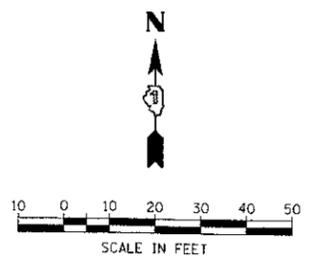
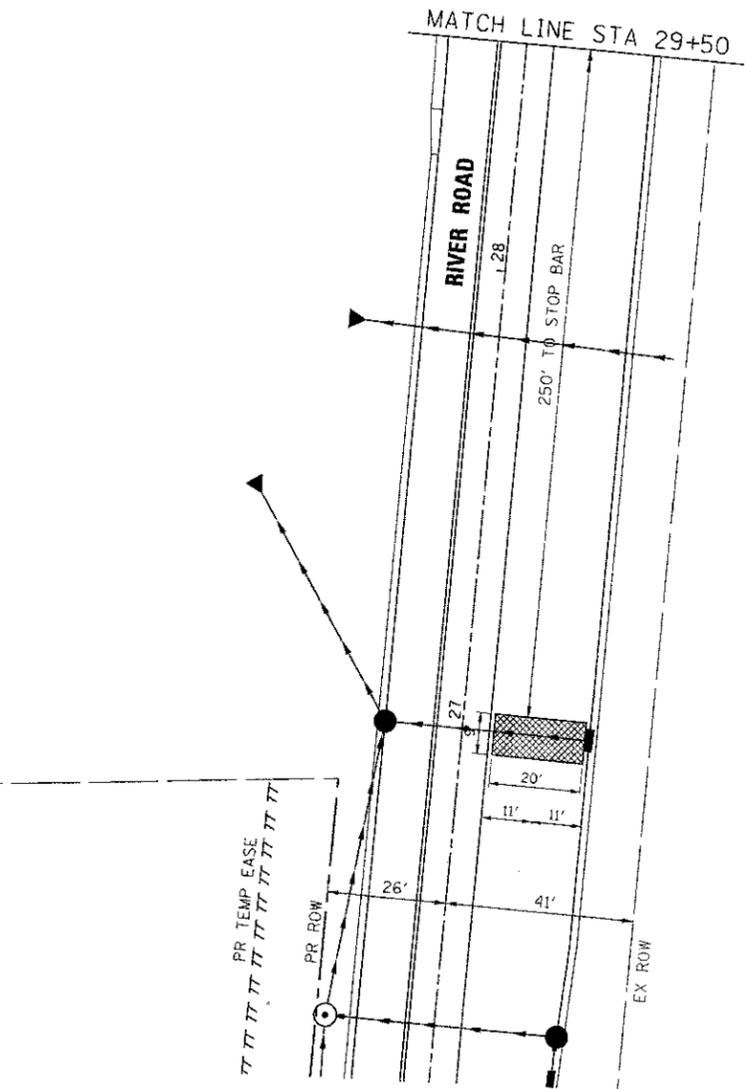
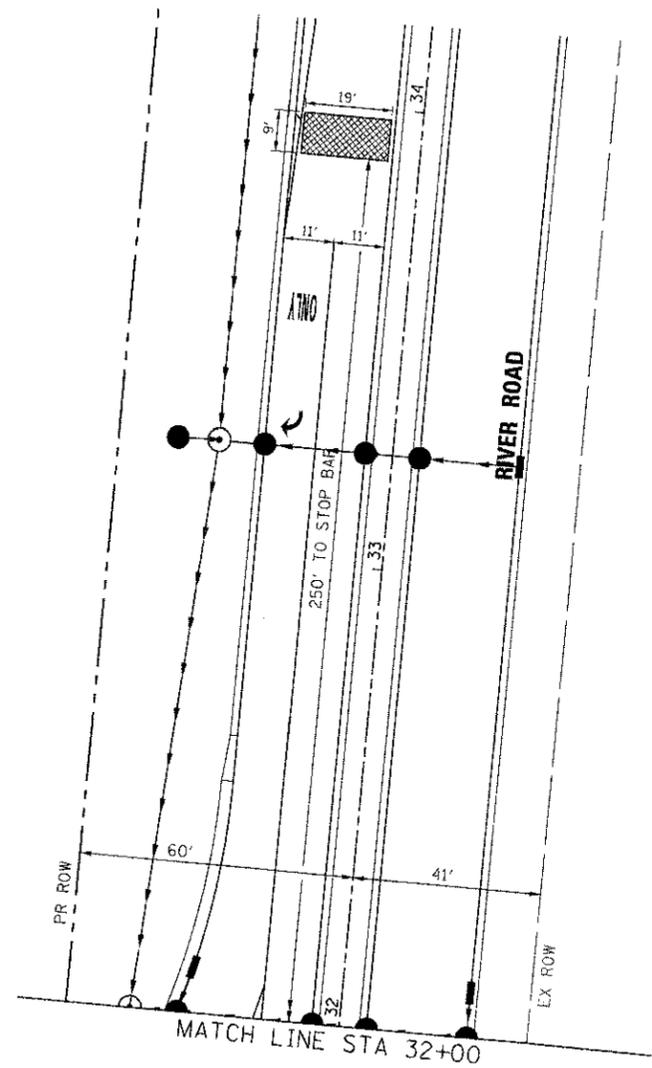
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PLOT SCALE = 1" = 20'	CHECKED -	REVISED -
PLOT DATE = 7/23/2012	DATE = 7/23/12	REVISED -

**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

**TRAFFIC SIGNAL INSTALLATION PLAN
CHARLES J. MILLER ROAD AND RIVER ROAD**

SCALE: 1" = 20' SHEET NO. 2 OF 4 SHEETS STA. TO STA.

F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 106
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 63633		

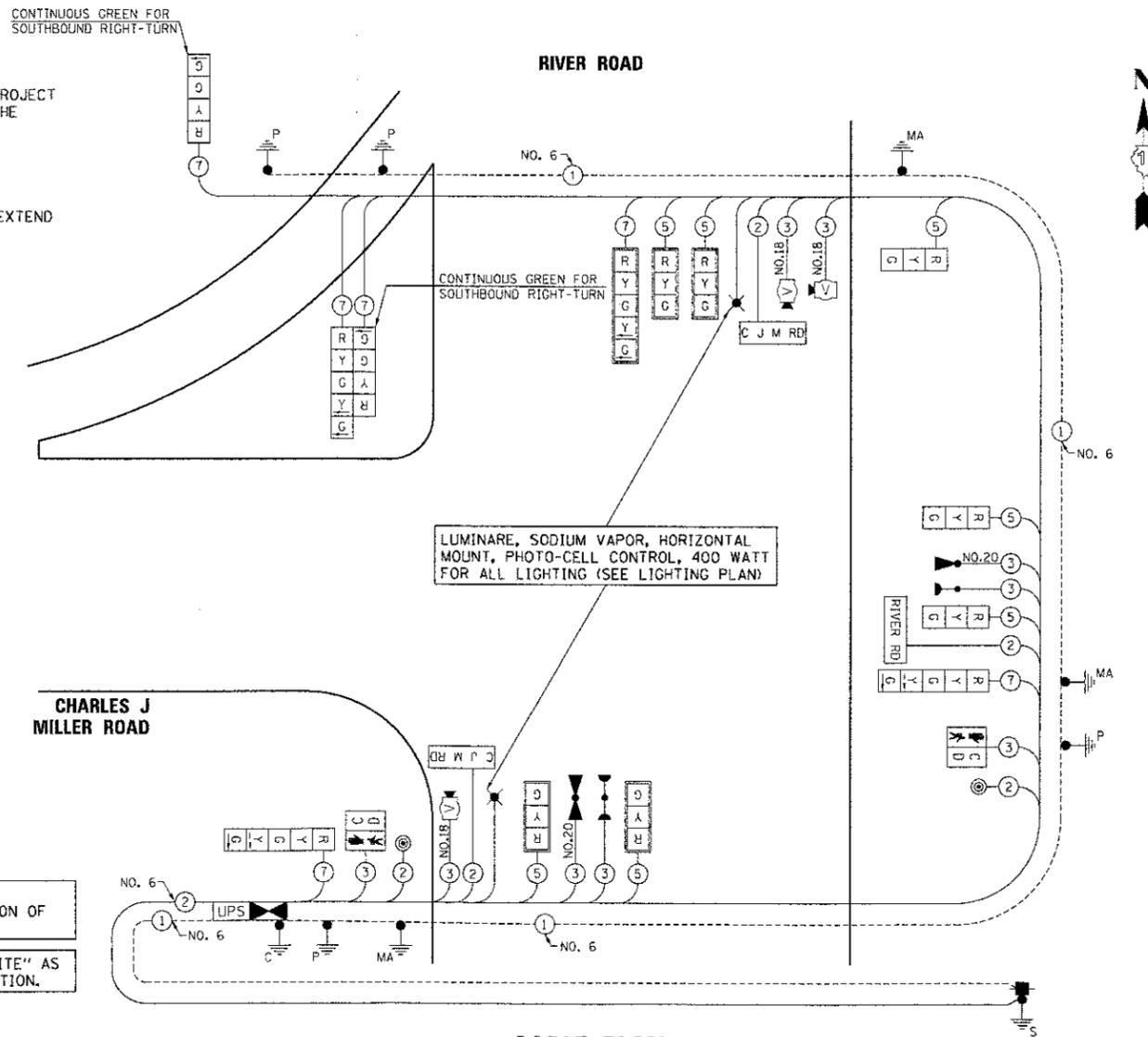


NOTE:
THE EMERGENCY VEHICLE PREEMPTION EQUIPMENT FOR THIS PROJECT SHALL BE TOMAR OR AN APPROVED EQUAL AS REQUIRED BY THE MCHENRY TOWNSHIP FIRE DEPARTMENT.

NOTE:
THE END OF THE TRACER CABLE SHALL BE CONTINUOUS AND EXTEND INTO THE CONTROLLER CABINET.

THE VIDEO DETECTION EQUIPMENT FOR THIS PROJECT SHALL BE AUTOSCOPE AS REQUIRED BY THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.

THE TRAFFIC SIGNAL CONTROL EQUIPMENT SHALL BE "ECONOLITE" AS REQUIRED BY THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.

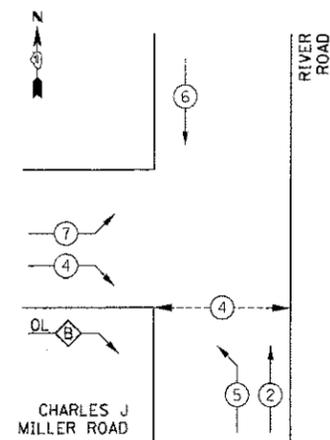


CABLE PLAN

SCHEDULE OF QUANTITIES

PAY ITEM DESCRIPTION	UNIT	RIVER ROAD
SERVICE INSTALLATION - POLE MOUNTED	EACH	1
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	102
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.	FOOT	172
UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	21
UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	309
HANDHOLE	EACH	3
DOUBLE HANDHOLE	EACH	2
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL	EACH	1
UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	835
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	557
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1,639
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	1,869
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 18 3C	FOOT	729
ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	126
ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR NO. 6 1C	FOOT	726
TRAFFIC SIGNAL POST, GALVANIZED STEEL 10 FT.	EACH	1
TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	3
STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 42 FT.	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 48 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	16
CONCRETE FOUNDATION, TYPE C	FOOT	4
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	36
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	4
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	3
SIGNAL HEAD, LED, 1-FACE, 4-SECTION, BRACKET MOUNTED	EACH	1
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	2
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	1
SIGNAL HEAD, LED, 2-FACE, 1-4 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	1
PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	2
TRAFFIC SIGNAL BACKPLATE, LOUVERED	EACH	5
LIGHT DETECTOR	EACH	2
LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	2
TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
ILLUMINATED SIGN, LED	EACH	3
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	326
VIDEO DETECTION SYSTEM COMPLETE INTERSECTION	L SUM	1
TEMPORARY TRAFFIC SIGNAL TIMING	EACH	1

CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

OVERLAP PHASE	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

CONTROLLER SEQUENCE LEGEND

- ← ⊙ → DUAL ENTRY PHASE
- ← ⊙ SINGLE ENTRY PHASE
- ← ⊙ OL OVERLAP
- * NUMBER REFERRING TO ASSOCIATED PHASE
- ← ⊙ → PEDESTRIAN PHASE

EMERGENCY VEHICLE PREEMPTION SEQUENCE

PROPOSED EMERGENCY VEHICLE PREEMPTORS	
PROPOSED EMERGENCY VEHICLE PREEMPTORS	3 4
MOVEMENT	↑ ↓ →

M.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					
TYPE	NO. LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		INCAND.	LED		
SIGNAL (RED)	12		17	0.50	102
(YELLOW)	12		25	0.25	75
(GREEN)	12		15	0.25	45
ARROW (NORMAL)	8		12	0.10	9.6
ARROW (SB RIGHT)	2		12	1.00	24
PED. SIGNAL	2		25	1.00	50
CONTROLLER	1		100	1.00	100
UPS	1		25	1.00	25
VIDEO SYSTEM	1		15	1.00	15
LED ST. NAME SIGN	3		64	0.50	96
TOTAL =					541.6

ENERGY COSTS TO: MCHENRY COUNTY DIVISION OF TRANSPORTATION
16111 NELSON ROAD
WOODSTOCK, IL 60098

ENERGY SUPPLY CONTACT: MIKE LENOX
PHONE: 815-420-2869
COMPANY: COMMONWEALTH EDISON

COMPANY NAME: HRGreen
 PROJECT CONTACT: HRGreen.com
 CLIENT: MCHENRY COUNTY DIVISION OF TRANSPORTATION
 DATE PLOTTED: 7/23/2012 10:27:13 AM
 FILE NAME: 090071-sig-03c-river.dgn
 PLOT DRIVER: pldt.plt
 PEN TABLE: Standard-Trans.tbl



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**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

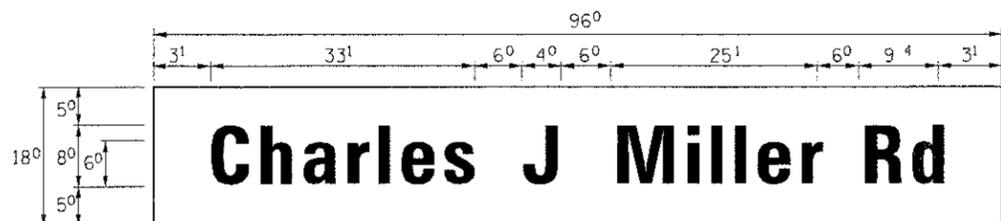
**CABLE AND PHASE DESIGNATION DIAGRAM
CHARLES J. MILLER ROAD AND RIVER ROAD**

SCALE: 1" = 20' SHEET NO. 3 OF 4 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	107

CONTRACT NO. 63633

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

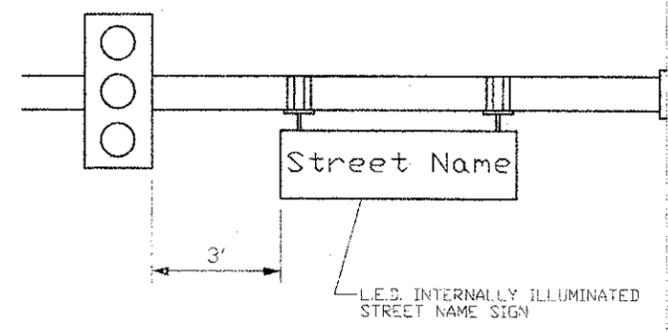


12.00 Sq. Ft each
 2 Required
 Design Series C



6.00 Sq. Ft each
 1 Required
 Design Series D

NOTE: ALL DIMENSIONS ARE SHOWN IN INCHES



REGULAR STEEL MAST ARM ASSEMBLY AND POLE
 NOTE: L.E.D. ILLUMINATED STREET NAME SIGNS
 AVAILABLE ONLY IN 2 FOOT INCREMENTS.

IMPORTANT NOTE:
 THE L.E.D. ILLUMINATED STREET NAME SIGNS WILL BE INSTALLED
 ON CHARLES J. MILLER ROAD AND RIVER ROAD UNDER THE
 MCHENRY COUNTY DIVISION OF TRANSPORTATION JURISDICTION

COMPANY NAME: HRGreen
 PROJECT CONTACT: HRGreen.com
 DATE PLOTTED: 7/23/2012 11:37:17 AM
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PLOT DATE = 7/23/2012	DATE = 7/23/12	REVISED -

**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

**DETAIL SHEET
 MAST ARM MOUNTED STREET NAME SIGNS**

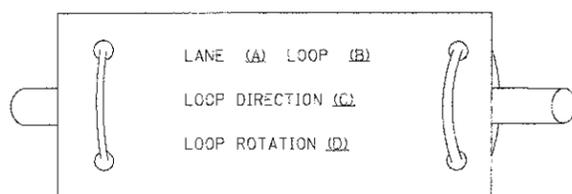
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.			CONTRACT NO. 63633	
ILLINOIS FED. AID PROJECT				

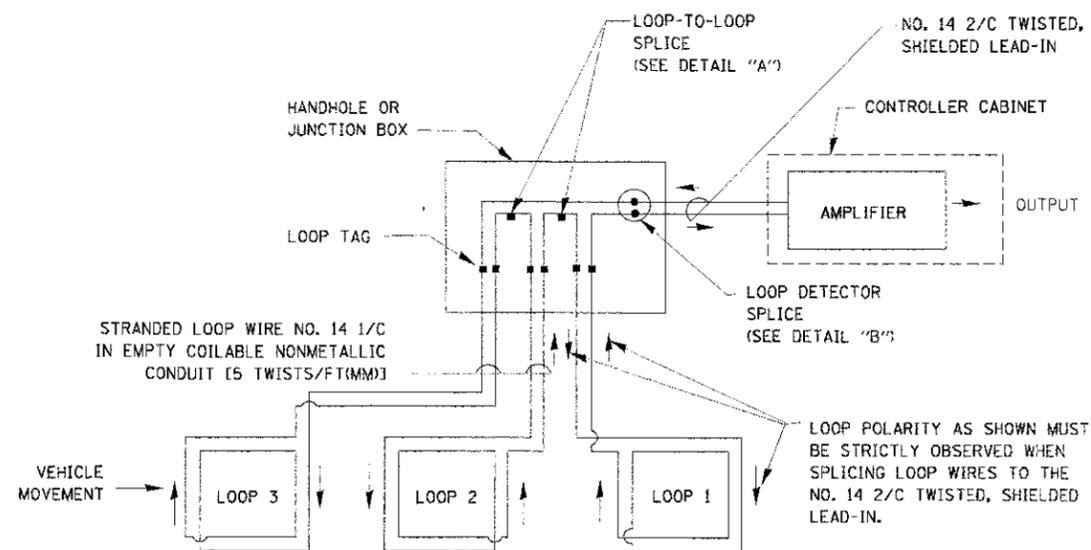
LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

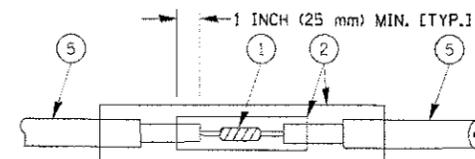


- A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

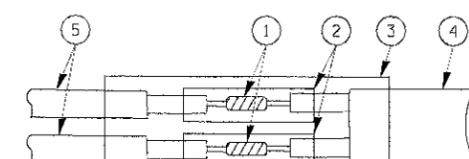


DETECTOR LOOP WIRING SCHEMATIC

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm). IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.

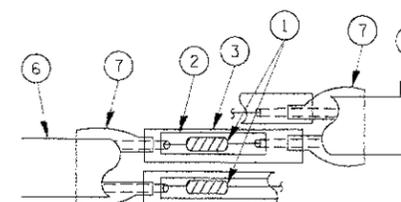


DETAIL "A"
LOOP-TO-LOOP SPLICE

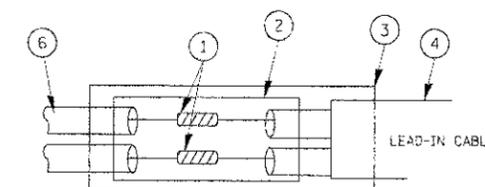


DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE



PREFORMED LOOP

DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

- 1 WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.
- 2 WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- 3 WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- 4 NO. 14 2/C TWISTED, SHIELDED CABLE.
- 5 LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.
- 6 PREFORMED LOOP
- 7 XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

COMPANY NAME: HRGreen.com
PROJECT CONTACT: j.tettens
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MCHENRY COUNTY
DIVISION OF TRANSPORTATION

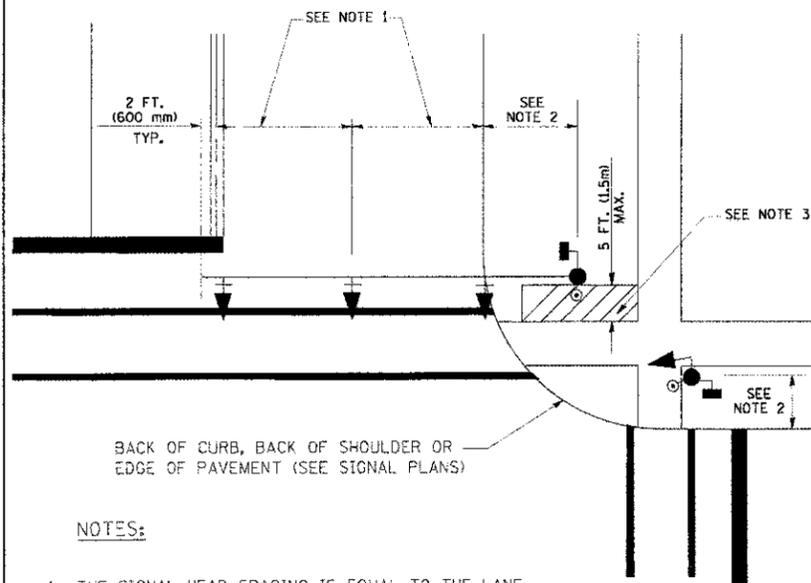
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: SHEET NO. 1 OF 6 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	109
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 63633	

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

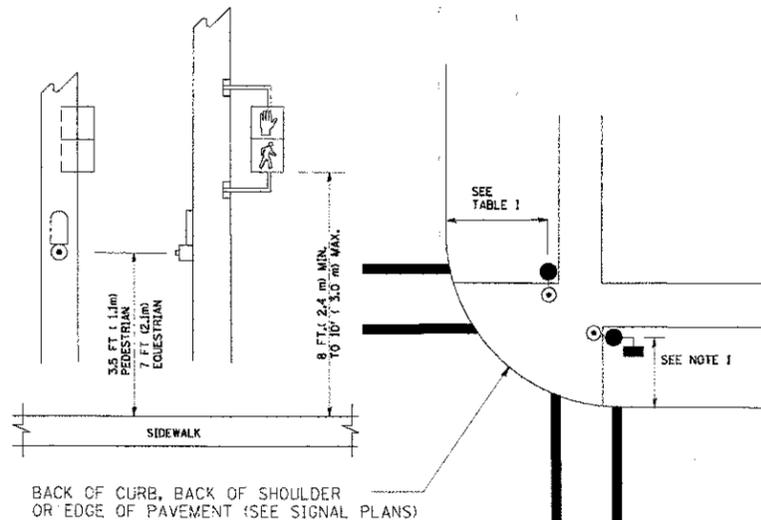
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



NOTES:

1. THE SIGNAL HEAD SPACING IS EQUAL TO THE LANE WIDTH OR AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
2. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
3. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE MAST ARM SHAFT OR THE SIGNAL POST.
4. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
5. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

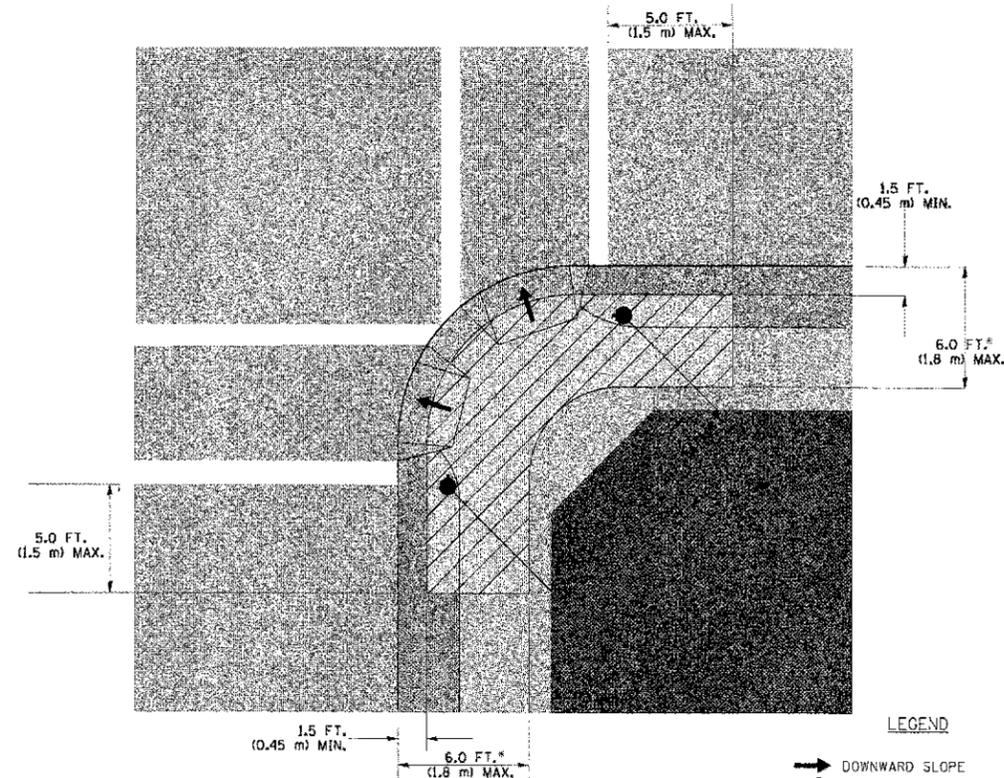
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



NOTES:

1. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
2. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE PEDESTRIAN SIGNAL POST OR THE PEDESTRIAN PUSH BUTTON POST.
3. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
4. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

RECOMMENDED PUSHBUTTON LOCATIONS



LEGEND

- DOWNWARD SLOPE
- PEDESTRIAN PUSHBUTTON
- ▨ RECOMMENDED PUSHBUTTON LOCATIONS

- WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
- WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPARATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

NOTES:

1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
3. THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT. (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.
4. THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.
5. THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

TRAFFIC SIGNAL EQUIPMENT OFFSET

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
CONTROLLER CABINET	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.
SERVICE INSTALLATION, GROUND MOUNT	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.

NOTES:

1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM DISTANCE FROM THE EDGE OF PAVEMENT TO THE ROADWAY SIDE OF THE FOUNDATION.
4. ANY CHANGES TO THE OFFSETS OF THE FOUNDATIONS, FROM THE MINIMUM DISTANCES LISTED IN THE "TRAFFIC SIGNAL EQUIPMENT OFFSET" CHART AND THE TRAFFIC SIGNAL INSTALLATION PLAN, COULD AFFECT THE PLACEMENT OF THE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND THE PEDESTRIAN PUSHBUTTONS. THE SIGNAL HEAD PLACEMENT ON THE MAST ARMS SHALL REMAIN AS PER THE TRAFFIC SIGNAL INSTALLATION PLAN AND THE "TRAFFIC SIGNAL MAST ARM AND SIGNAL POST" DETAIL ABOVE. THE PROPOSED MAST ARM LENGTHS MAY NEED TO BE REVISED TO MEET THE ABOVE REQUIREMENTS. THE PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS MUST MEET THE REQUIREMENTS UNDER THE DETAILS ON THIS SHEET.

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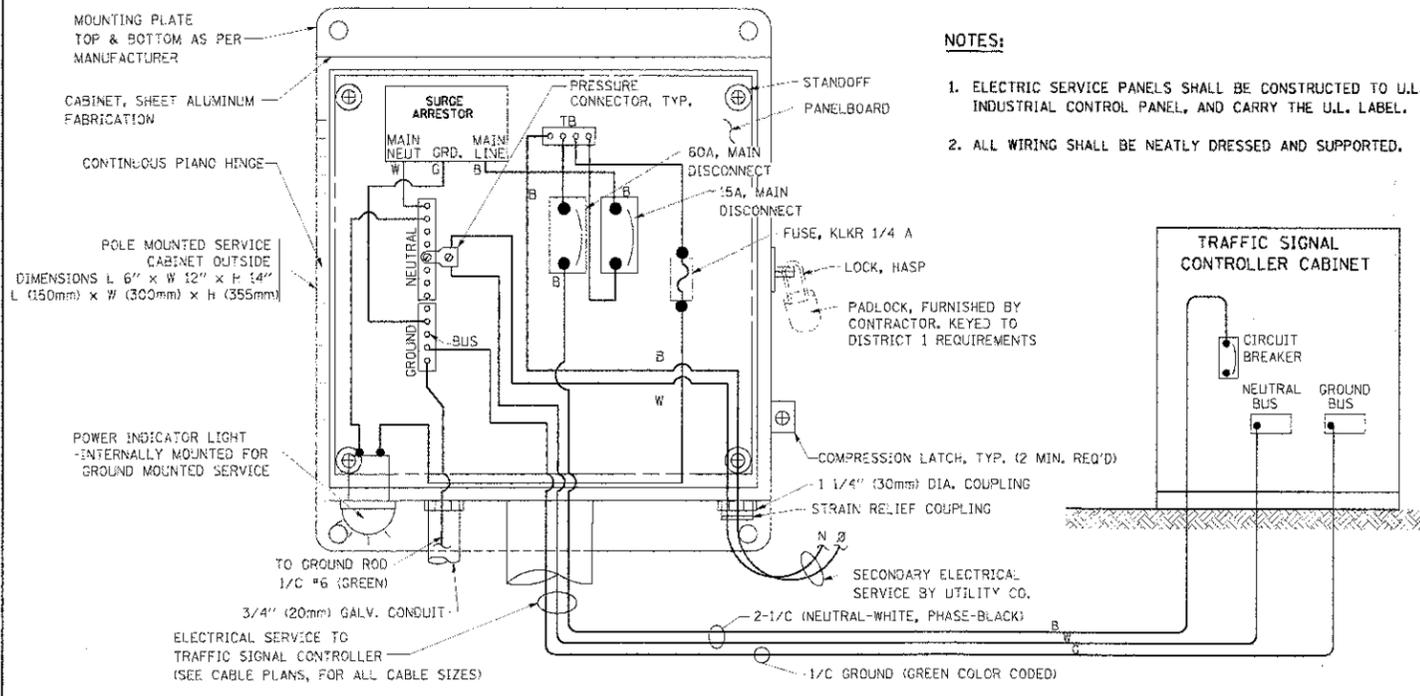
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**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

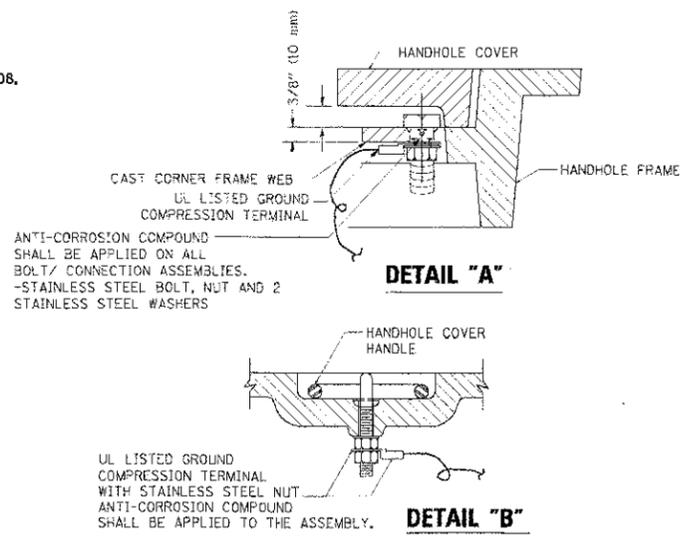
**DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

SCALE: SHEET NO. 2 OF 6 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	110
CONTRACT NO. 63633			ILLINOIS FED. AID PROJECT	

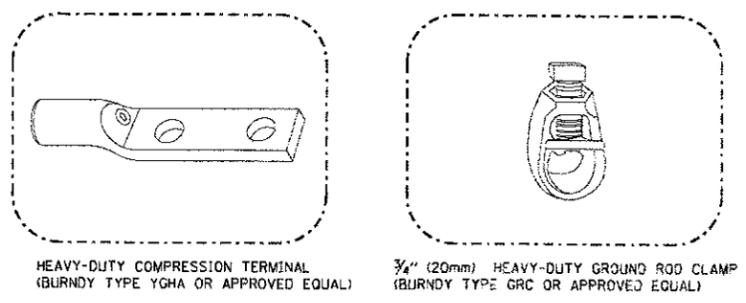
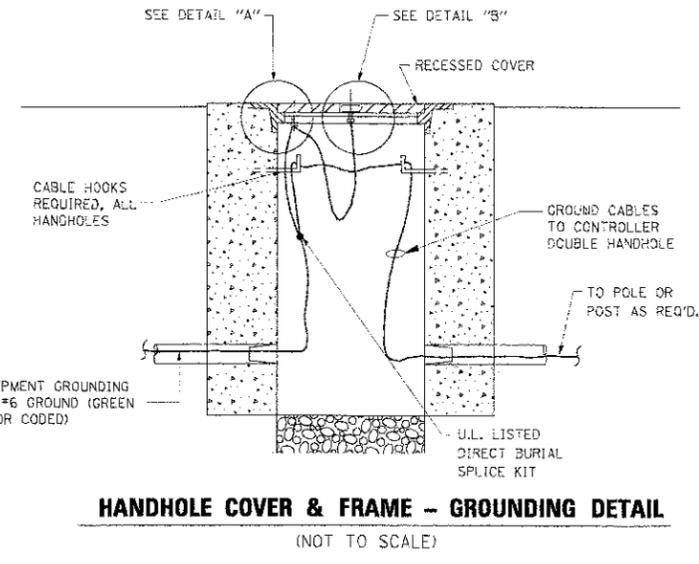
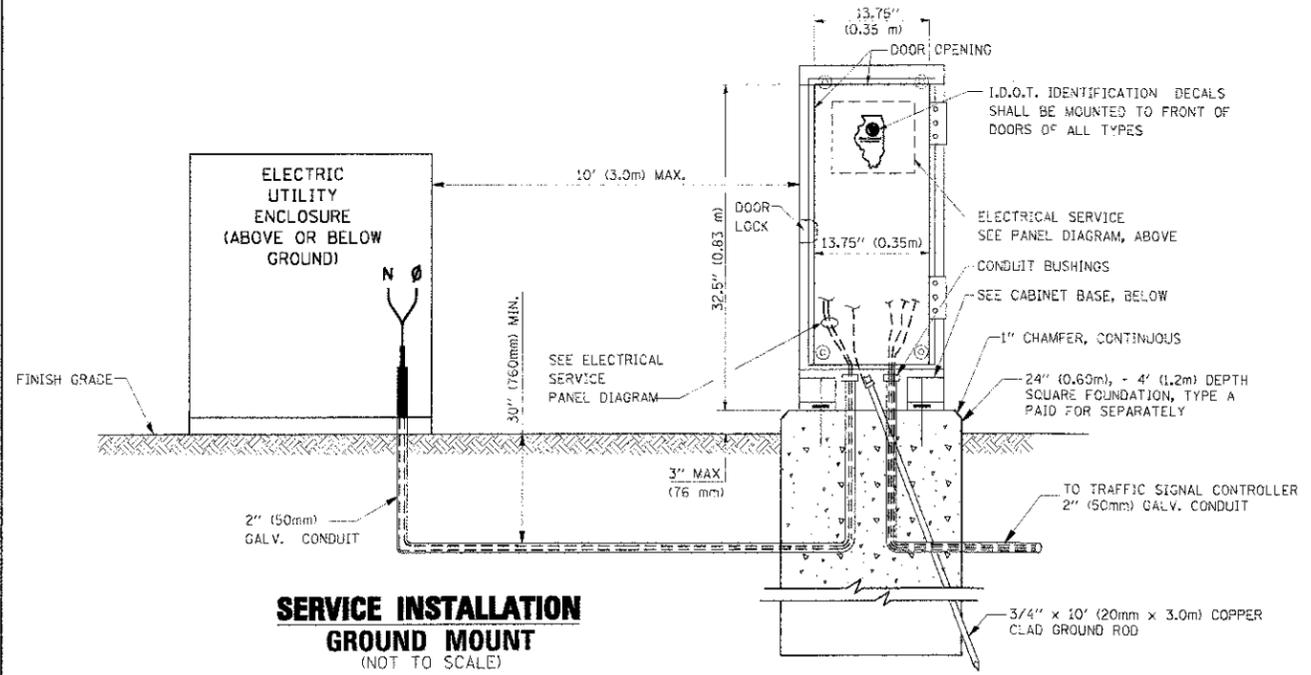


- NOTES:**
1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
 2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

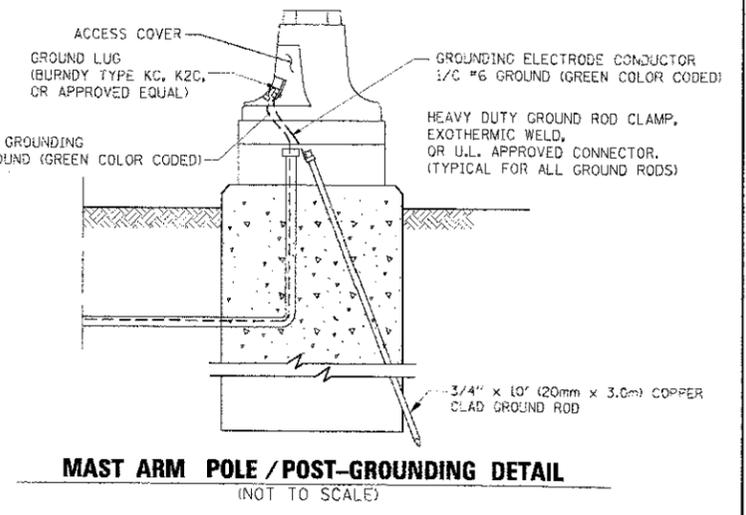
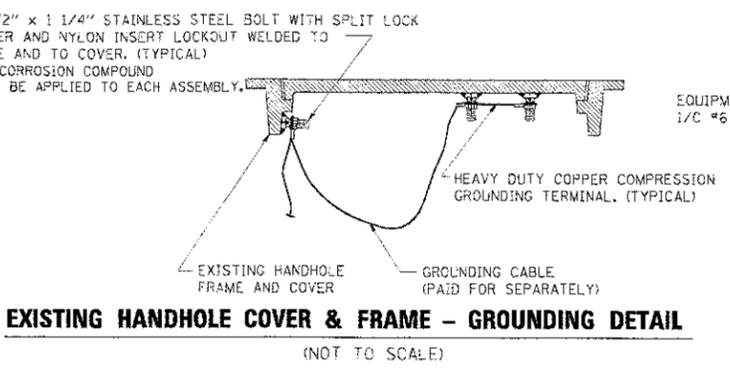


- NOTES:**
- GROUNDING SYSTEM**
1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4" DIA. x 10'-0" (20mm x 3.0m) LONG, COPPER CLAD. ONE GROUND ROD SHALL BE INSTALLED AT ALL POST FOUNDATIONS, POLE FOUNDATIONS, CONTROLLER CABINET FOUNDATION AND ELECTRICAL SERVICE INSTALLATION AS INDICATED ON THE CABLE PLAN. IF THERE ARE ANY SPECIAL CONDITIONS SUCH AS SUB-SURFACE CONDITIONS OR INSTALLATION PROBLEMS, THE RESIDENT ENGINEER SHALL BE NOTIFIED OR CONTACT THE BUREAU OF TRAFFIC, ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT ONE AT (647) 705-4139.
 2. THE NEUTRAL CONDUCTOR AND THE GROUND CONDUCTOR SHALL BE CONNECTED IN THE SERVICE INSTALLATION. AT NO OTHER POINT IN THE TRAFFIC SIGNAL SYSTEM SHALL THE NEUTRAL AND GROUND CONDUCTORS BE CONNECTED.
 3. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
 4. THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.

ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE) SERVICE INSTALLATION POLE MOUNT (SHOWN) (NOT TO SCALE)

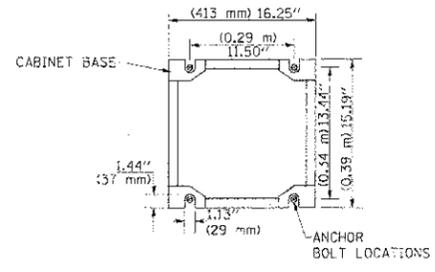


- NOTES:**
- ALL CLAMPS SHALL BE BRONZE OR COPPER, U.L. APPROVED.
 - GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



SERVICE INSTALLATION GROUND MOUNT (NOT TO SCALE)

CABINET - BASE BOLT PATTERN (NOT TO SCALE)



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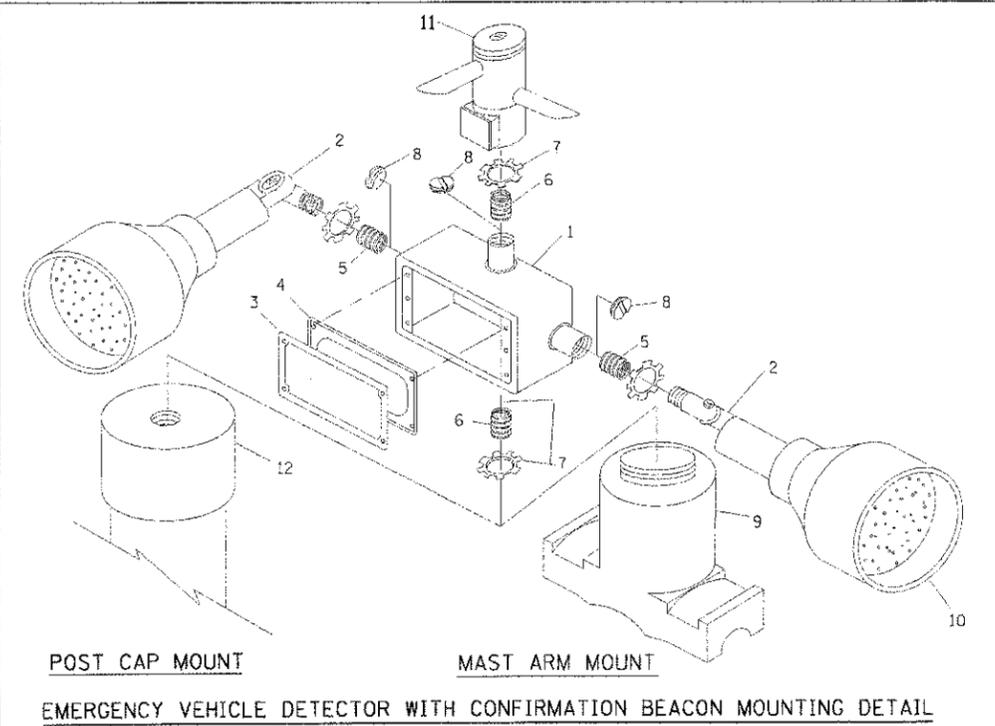
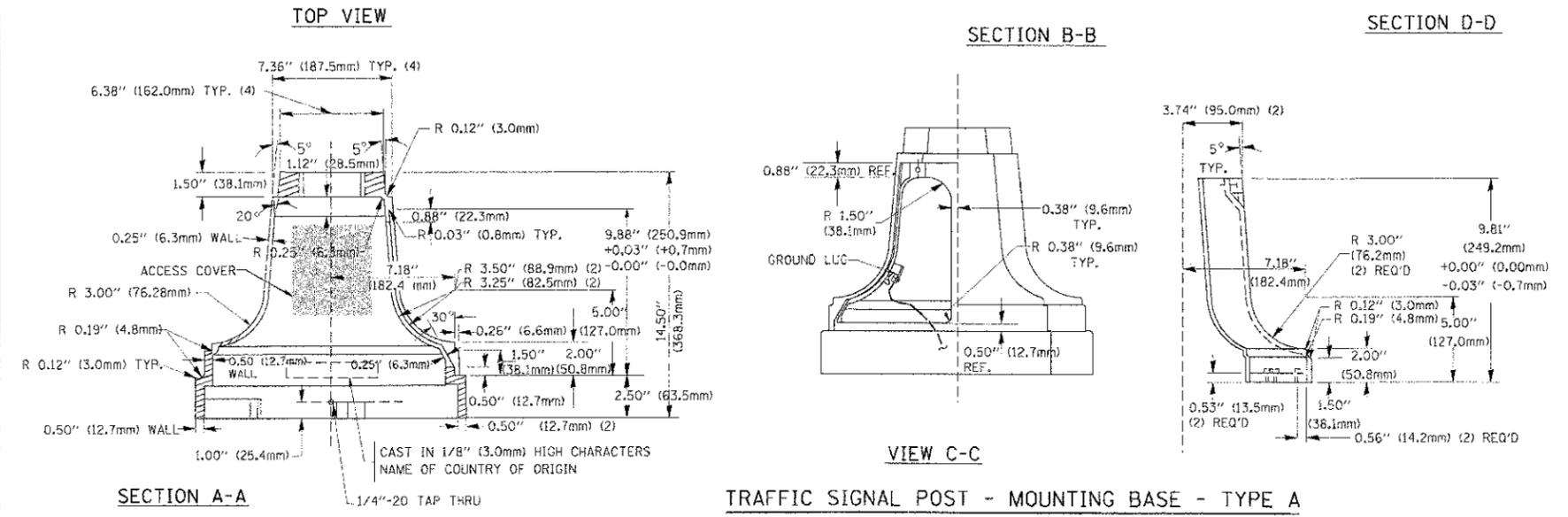
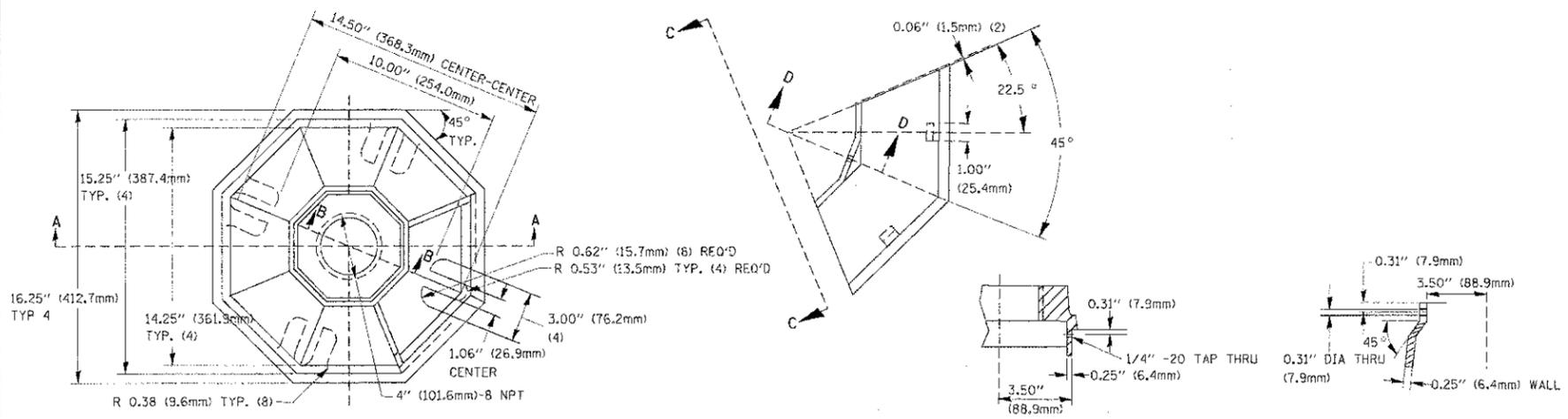


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MCHENRY COUNTY DIVISION OF TRANSPORTATION

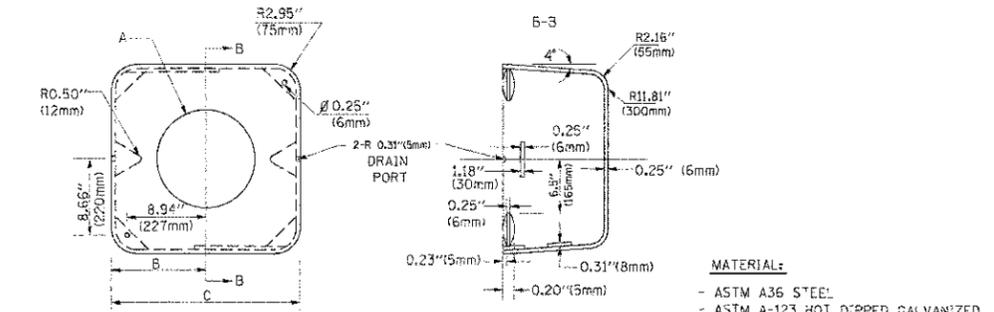
DISTRICT ONE	
STANDARD TRAFFIC SIGNAL DESIGN DETAILS	
SCALE:	SHEET NO. 3 OF 6 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	111
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 63633		



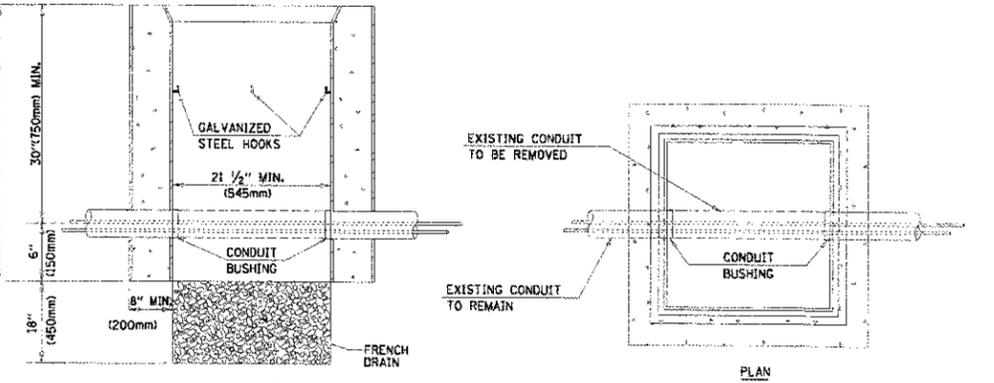
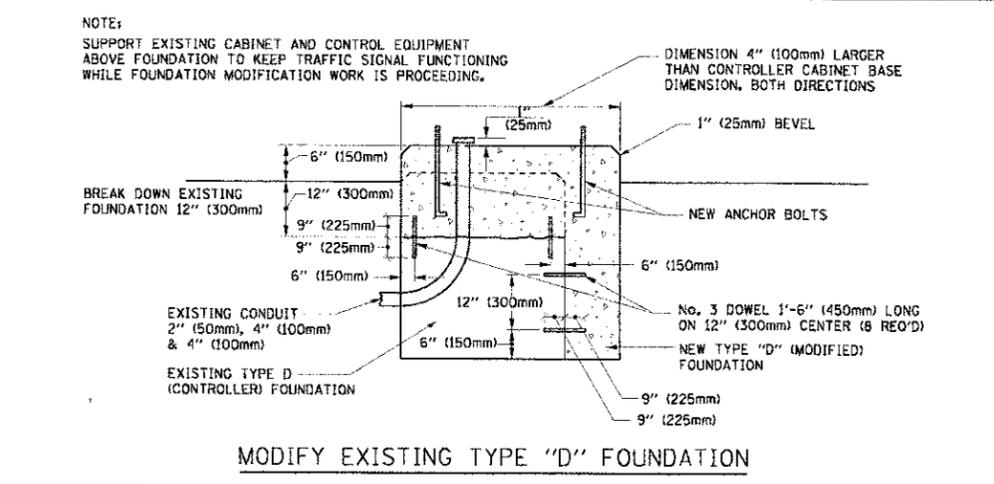
ITEM NO.	IDENTIFICATION
1	OUTLET BOX - GALV. 21 CU IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4\" (19 mm) CLOSE NIPPLE
7	3/4\" (19 mm) LOCKNUT
8	3/4\" (19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

- NOTES:**
- ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
 - ITEM #1- QZ/GEDNEY FSX-1-50 OR EQUIVALENT
ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
 - WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4\" (19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



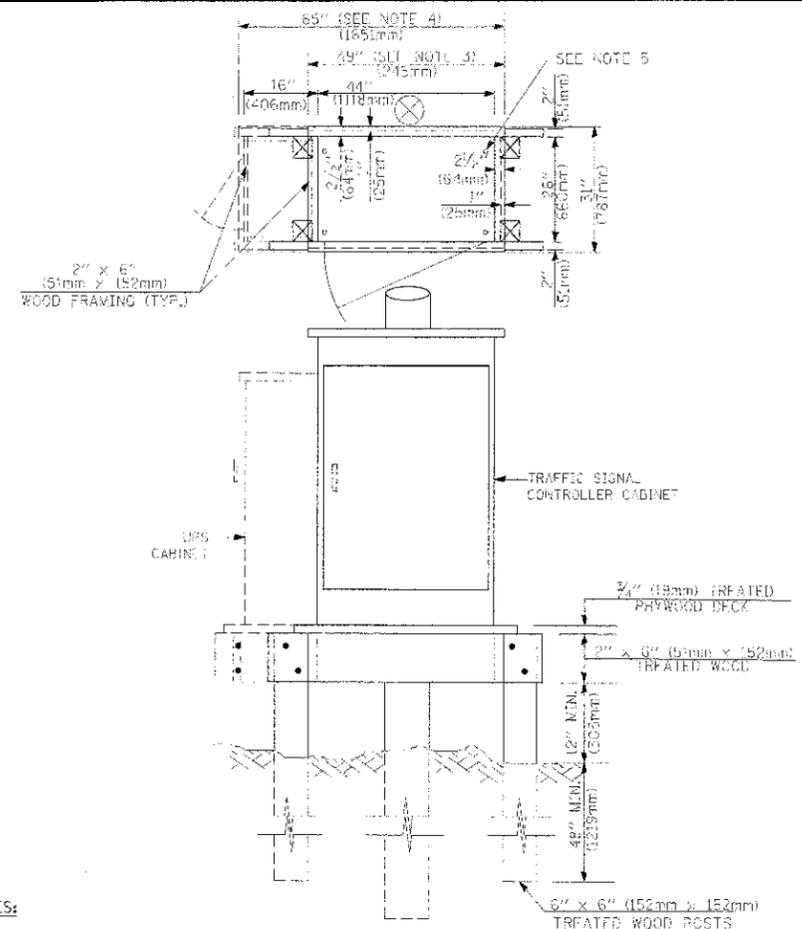
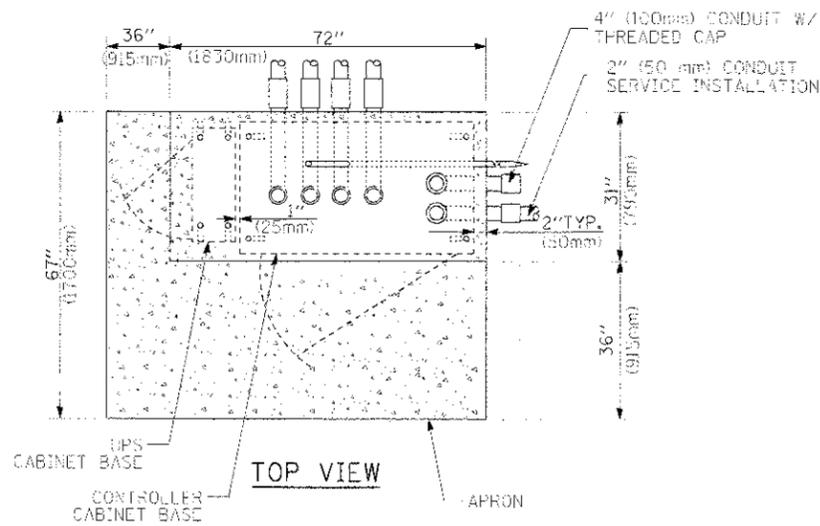
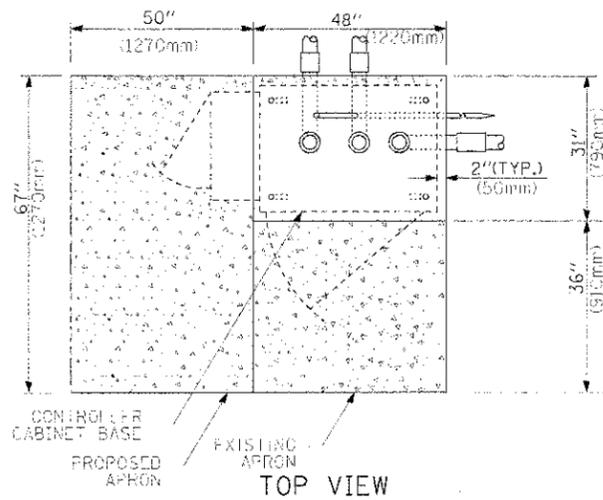
A	B	C	HEIGHT	WEIGHT
VARIABLES	9.5\" (241mm)	19\" (483mm)	7\" (178mm) - 12\" (300mm)	53 lbs (24kg)
VARIABLES	10.75\" (273mm)	21.5\" (546mm)	7\" (178mm) - 12\" (300mm)	68 lbs (31 kg)
VARIABLES	13.0\" (330mm)	26\" (660mm)	7\" (178mm) - 12\" (300mm)	81 lbs (37 kg)
VARIABLES	18.5\" (470mm)	37\" (940mm)	7\" (178mm) - 12\" (300mm)	126 lbs (57 kg)

- NOTES:**
- DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
 - THE SUPPLIER SHALL VERIFY THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
 - THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.



- NOTES:**
- HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
 - REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCIDENTAL TO THE HANDHOLE.

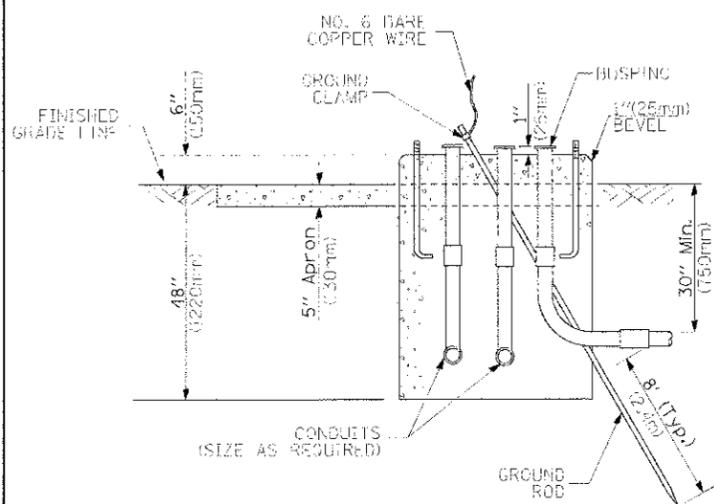
COMPANY NAME: HRGreen.com
 PROJECT CONTACT: j.tjones
 DATE PLOTTED: 7/23/2012 11:45:00 AM
 PLOT FILE: 09071-sig-det04.dgn
 PLOT NUMBER: 09071-sig-det04.dgn
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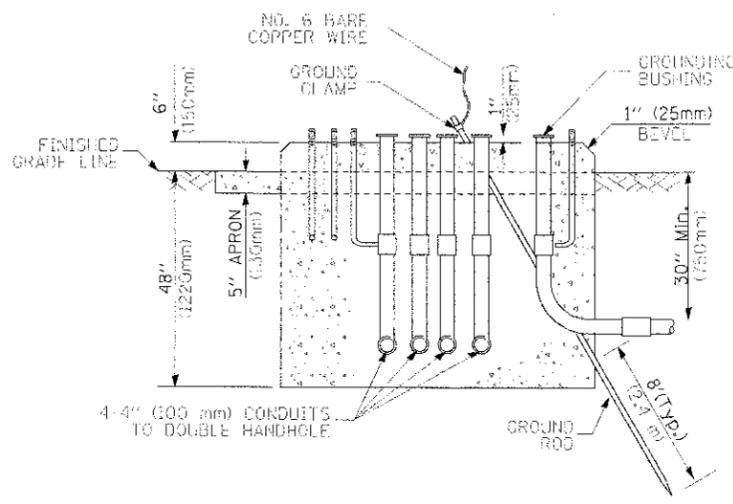
NOTES:

1. BASED ON CONTROLLER CABINET TYPE IV WITH BASE DIMENSIONS OF 26" x 44" (660mm x 1118mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
2. BASED ON UNINTERRUPTIBLE POWER SUPPLY CABINET WITH BASE DIMENSIONS OF 16" x 25" (406mm x 635mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
3. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
4. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
5. DRILLED HOLES THROUGH THE PLATFORM BASE TO MATCH THE CONTROLLER CABINET BOLT TEMPLATE. FASTEN THE CONTROLLER CABINET TO THE PLATFORM WITH CARRIAGE BOLTS, WASHERS AND NUTS.
6. FASTEN ALL SUPPORT WOOD FRAMING TO THE WOOD POSTS WITH 2 LAG SCREWS FOR EACH CONNECTION.

TEMPORARY SIGNAL CONTROLLER WOOD SUPPORT PLATFORM



TYPE D FOR GROUND MOUNTED CONTROLLER CABINET AND UPS BATTERY CABINET



TYPE C FOR GROUND MOUNTED CONTROLLER CABINET AND UPS BATTERY CABINET

CABLE SLACK LENGTH	FEET	METER
HANDHOLE	6.5	2.0
DOUBLE HANDHOLE	13.0	4.0
SIGNAL POST	2.0	0.6
MAST ARM	2.0	0.6
CONTROLLER CABINET	1.5	0.5
FIBER OPTIC AT CABINET	13.0	4.0
ELECTRIC SERVICE AT (CABINET OR SERVICE LOCATION)	1.5	0.5
GROUND CABLE (SIGNAL POST, MAST ARM, CABINET)	1.5	0.5
GROUND CABLE (BETWEEN FRAME AND COVER)	5.0	1.6

CABLE SLACK

VERTICAL CABLE LENGTH	FEET	METER
MAST ARM POLE (MAST ARM MOUNTED SIGNAL HEAD) (L = MAST ARM LENGTH - DISTANCE TO SIGNAL HEAD FROM END OF ARM)	20.0+L	6.0+L
BRACKET MOUNTED (MAST ARM POLE OR SIGNAL POLE)	13.0	4.0
PEDESTRIAN PUSH BUTTON	6.0	2.0
SERVICE INSTALLATION POLE MOUNT TO SERVICE DROP	13.5	4.1
SERVICE INSTALLATION POLE MOUNT TO GROUND	13.5	4.1
SERVICE INSTALLATION GROUND MOUNT	6.0	2.0
FOUNDATION (SIGNAL POST, MAST ARM POLE, CONTROLLER CABINET, SERVICE-GROUND MOUNT)	3.0	1.0

VERTICAL CABLE LENGTH

FOUNDATION	DEPTH
TYPE A - Signal Post	4'-0" (1.2m)
TYPE C - CONTROLLER W/ UPS	4'-0" (1.2m)
TYPE D - CONTROLLER	4'-0" (1.2m)
SERVICE INSTALLATION, GROUND MOUNT, TYPE A - SQUARE	4'-0" (1.2m)

DEPTH OF FOUNDATION

MAST ARM LENGTH	FOUNDATION DEPTH	FOUNDATION DIAMETER	SPIRAL DIAMETER	QUANTITY OF REBARS	SIZE OF REBARS
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 55' (16.8 m) and up to 65' (19.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 65' (19.8 m) and less than 75' (22.9 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

NOTES:

1. These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive Strength (QU) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
4. For mast arm assemblies with dual arms refer to state standard 878001.

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

COMPANY NAME: HRGreen.com
 PROJECT CONTACT: HRGreen
 DATE PLOTTED: 7/23/2012 11:46:51 AM
 FILE NAME: 090071-sig-det05.dgn
 PLOT DRIVER: pdf.plt
 PEN TABLE: standard-tran.ctb

TRAFFIC SIGNAL LEGEND

ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED				
CONTROLLER CABINET				EMERGENCY VEHICLE LIGHT DETECTOR				ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1/C, UNLESS NOTED OTHERWISE							
RAILROAD CONTROL CABINET				CONFIRMATION BEACON				COAXIAL CABLE							
COMMUNICATIONS CABINET				HANDHOLE				VENDOR CABLE FOR CAMERA							
MASTER CONTROLLER				HEAVY DUTY HANDHOLE				COPPER INTERCONNECT CABLE, NO. 18 3 PAIR TWISTED, SHIELDED							
MASTER MASTER CONTROLLER				DOUBLE HANDHOLE				FIBER OPTIC CABLE NO. 62.5/125, MM12F							
UNINTERRUPTIBLE POWER SUPPLY				JUNCTION BOX				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM12F							
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNT				GALVANIZED STEEL CONDUIT IN TRENCH (T) OR PUSHED (P)				FIBER OPTIC CABLE NO. 62.5/125, MM12F							
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT				TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE				FIBER OPTIC CABLE NO. 62.5/125, (NUMBER OF FIBERS & TYPE TO BE NOTED ON PLANS)							
STEEL MAST ARM ASSEMBLY AND POLE				COMMON TRENCH				GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE							
ALUMINUM MAST ARM ASSEMBLY AND POLE				COILABLE NONMETALLIC CONDUIT (EMPTY)				CONTROLLER CABINET AND FOUNDATION TO BE REMOVED							
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE				SYSTEM ITEM				STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED							
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA				INTERSECTION ITEM				ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED							
SIGNAL POST				REMOVE ITEM				STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED							
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM				RELOCATE ITEM				SIGNAL POST AND FOUNDATION TO BE REMOVED							
GUY WIRE				ABANDON ITEM				INTERSECTION & SAMPLING (SYSTEM) DETECTOR							
SIGNAL HEAD				12" (300mm) TRAFFIC SIGNAL SECTION				SAMPLING (SYSTEM) DETECTOR							
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)				12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE				EXISTING INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR							
SIGNAL HEAD WITH BACKPLATE				SIGNAL FACE				EXISTING PREFORMED INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR							
SIGNAL HEAD OPTICALLY PROGRAMMED				SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD				PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR							
FLASHER INSTALLATION (S DENOTES SOLAR POWER)				12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL				PREFORMED SAMPLING (SYSTEM) DETECTOR							
PEDESTRIAN SIGNAL HEAD				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED				RAILROAD SYMBOLS							
PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID				EXISTING			PROPOSED				
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR				PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER				RAILROAD CONTROL CABINET							
ILLUMINATED SIGN "NO LEFT TURN"				RADIO INTERCONNECT				RAILROAD CANTILEVER MAST ARM							
ILLUMINATED SIGN "NO RIGHT TURN"				RADIO REPEATER				FLASHING SIGNAL							
DETECTOR LOOP, TYPE I				DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED				CROSSING GATE							
PREFORMED DETECTOR LOOP				GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)				CROSSBUCK							
MICROWAVE VEHICLE SENSOR															
VIDEO DETECTION CAMERA															
VIDEO DETECTION ZONE															
PAN, TILT, ZOOM CAMERA															
WIRELESS DETECTOR SENSOR															
WIRELESS ACCESS POINT															

COMPANY NAME: HRGreen
 PROJECT CONTACT: HRGreen.com
 DATE PLOTTED: 7/23/2012 11:46:35 AM
 CLIENT: MCHENRY COUNTY
 FILE NAME: 090071-sig-det06.dgn
 PLOT DRIVER: pd1.plt
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HRGreen.com
 Illinois Professional Design Firm
 #194-021322

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PLOT SCALE =	CHECKED = DAD	REVISED
PLOT DATE = 7/23/2012	DATE = 10-28-09	REVISED

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: SHEET NO. 6 OF 6 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	114
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63633	

GENERAL ELECTRICAL PLAN NOTES

1. THIS PROJECT INCLUDES THE INSTALLATION OF INTERSECTION LIGHTING AT MILLER RD. AND RIVER RD. (INCLUDING BRIDGE LIGHTING).
 2. THE CONTRACTOR SHALL CONTACT THE ELECTRIC UTILITY COMPANY TO COORDINATE THE ELECTRIC SERVICE WORK.
 3. THE CONTRACTOR SHALL SUBMIT FOR THE RESIDENT ENGINEER'S REVIEW WITHIN 30 DAYS AFTER CONTRACT EXECUTION, EIGHT COPIES OF APPROVED MANUFACTURER'S PRODUCT DATA AND DETAILED SHOP DRAWINGS TO THE RESIDENT ENGINEER.
 4. TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE LIGHT POLES, THE LIGHT POLES SHALL NOT BE ERECTED AND/OR LEFT TO STAND WITHOUT LUMINAIRE. NOTE THAT THE LIGHT POLES WILL NOT BE PAID FOR UNTIL THE POLES ARE FULLY APPROVED AND THE LUMINAIRES ARE INSTALLED.
 5. THE QUANTITIES OF RACEWAY WHERE INDICATED IN THESE PLANS ARE APPROXIMATIONS ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND SHALL INSTALL RACEWAYS IN COMPLETE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
 6. THE CONTRACTOR SHALL NOTIFY J.U.L.I.E. TO LOCATE AND MARK/STAKE ALL UNDERGROUND UTILITIES.
 7. THE CONTRACTOR SHALL NOTIFY THE CITY OF MCHENRY/MCHENRY COUNTY TO LOCATE AND MARK/STAKE ALL CITY OWNED AND COUNTY OWNED UNDERGROUND UTILITIES.
 8. TRENCHES FOR LIGHTING RACEWAYS SHALL HAVE A MINIMUM DEPTH OF 30".
 9. WHERE SEPARATE CIRCUIT RUNS ARE TO BE INSTALLED PARALLEL WITH EACH OTHER, ONE COMMON TRENCH SHALL BE USED AND SHALL BE MEASURED ONLY ONCE FOR PAYMENT, AS TRENCH AND BACKFILL FOR ELECTRICAL WORK.
 10. THE CONTRACTOR SHALL COORDINATE THE FOUNDATION HEIGHTS WITH THE FINISHED ELEVATION SO FOUNDATION DOES NOT PROTRUDE BEYOND SPECIFIED REQUIREMENTS. (SEE LIGHT POLE FOUNDATION, METAL DETAIL).
 11. AT THE COMPLETION OF THE PROJECT THE LIGHTING SYSTEMS SHALL BE OWNED AND MAINTAINED BY MCHENRY COUNTY.
 12. LIGHTING SYSTEM INSTALLATION SHALL CONFORM TO THE LATEST IDOT STANDARDS, NEC AND LOCAL CODES.
 13. ALL ELECTRICAL EQUIPMENT AND PRODUCTS SHALL BE U/L LISTED AND LABELED.
 14. THE CONTRACTOR SHALL SUBMIT FOUR (4) SETS OF FULL SIZED COMPLETE AND ACCURATE "RECORD DRAWINGS" TO THE ENGINEER FOR REVIEW AND COMMENT, AS SPECIFIED. THE "RECORD DRAWINGS" SHALL BE UPDATED ON A REGULAR BASIS AND DEPICT ALL ROADWAY LIGHTING MATERIAL INSTALLATIONS WITH ANY CHANGES INDICATED IN RED. "REPRODUCIBLE RECORD DRAWINGS" SHALL BE SUBMITTED AT LEAST 7 DAYS BEFORE SCHEDULING A FINAL INSPECTION.
15. GROUND RODS SHALL BE FURNISHED AND INSTALLED AS REQUIRED AT LIGHT POLE PER PLAN. THE COST SHALL BE INCLUDED WITH PAY ITEM LIGHT POLE, 40 FT MH 15 FT DAVIT ARM. GROUND RODS SHALL BE FURNISHED AND INSTALLED AS REQUIRED PER PLAN FOR EACH LIGHTING CONTROLLER. THE COST SHALL BE INCLUDED WITH THE PAY ITEM LIGHTING CONTROLLER.
16. EXISTING LIGHTING SHALL REMAIN OPERATIONAL AS TEMPORARY LIGHTING ON BRIDGE UNTIL PROPOSED LIGHTING IS INSTALLED AND OPERATIONAL ON NEW BRIDGE.
17. ALL UNIT DUCT FOR LIGHTING RUNS SHALL CONTAIN AN INSULATED, GRAY TRACER WIRE 1/C, NO. 14, IN DUCT STRANDED. THE COST OF THE TRACER WIRE SHALL BE INCLUDED IN THE COST OF PAY ITEM UNIT DUCT, 600V, 3-1/C NO. 6, 1/C NO. 8 GROUND (XLP-TYPE USE), 1" DIA. POLYETHYLENE. SEE DETAILS FOR CONNECTIONS.

PROFESSIONAL ENGINEER'S SIGN & SEAL

FOR LIGHTING SHEETS: LTC-01 TO LTC-09

Syed S. Ali 7/19/12

SYED ALI **PE**
EXPIRES 11-30-2013



LEGEND

- LIGHTING UNIT: 40 FT MH, 6 FT MA 310W HPS, MCIII LUMINAIRE ON BRIDGE STRUCTURE
- LIGHTING UNIT: 40 FT MH, 12 FT MA 310W HPS, MCIII LUMINAIRE WITH BREAKAWAY DEVICE
- COMBINATION SIGNAL/LIGHTING UNIT
40 FT, 15 FT MA, 310W HPS MCIII LUMINAIRE
- LIGHTING UNIT TO BE REMOVED
- UNIT DUCT 3 1/C #6 WITH 1/C #8 GROUND, GRAY TRACER WIRE,
1/C NO. 14 STRANDED
- ELECTRIC CABLE IN CONDUIT 3-1/C #1/0
(EPR-TYPE USE) INSTALLED IN TRENCH
- UTILITY SERVICE CONNECTION, POLE MOUNTED
- LIGHTING CONTROLLER
- RIGID GALVANIZED STEEL CONDUIT IN TRENCH
OR PUSHED AS INDICATED
- GROUND ROD

COMPANY NAME: AMES Engineering, Inc.
 CLIENT CONTACT: [Redacted]
 DATE PLOTTED: 7/19/2012 2:17:41 PM
 FILE NAME: 090074-10-01.dgn
 PLOT DRIVER: pdf.plt
 PEN TABLE: standard-trans.tbl

<p>AMES Engineering, Inc. CONSULTING ENGINEERS 1341 Warren Avenue Downers Grove, IL 60515 (630) 737-1187 (t) (708) 470-2891 (f) www.amesengineering.com</p>	USER NAME = sparnal	DESIGNED - BL	REVISED -
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	PLOT DATE = 7/19/2012	DATE - 5/29/12	REVISED -

**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

**CHARLES J. MILLER ROAD LIGHTING PLAN
GENERAL NOTES AND LEGEND**

SCALE: N.T.S. SHEET NO. 1 OF 9 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	115
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

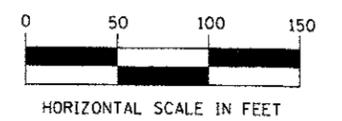
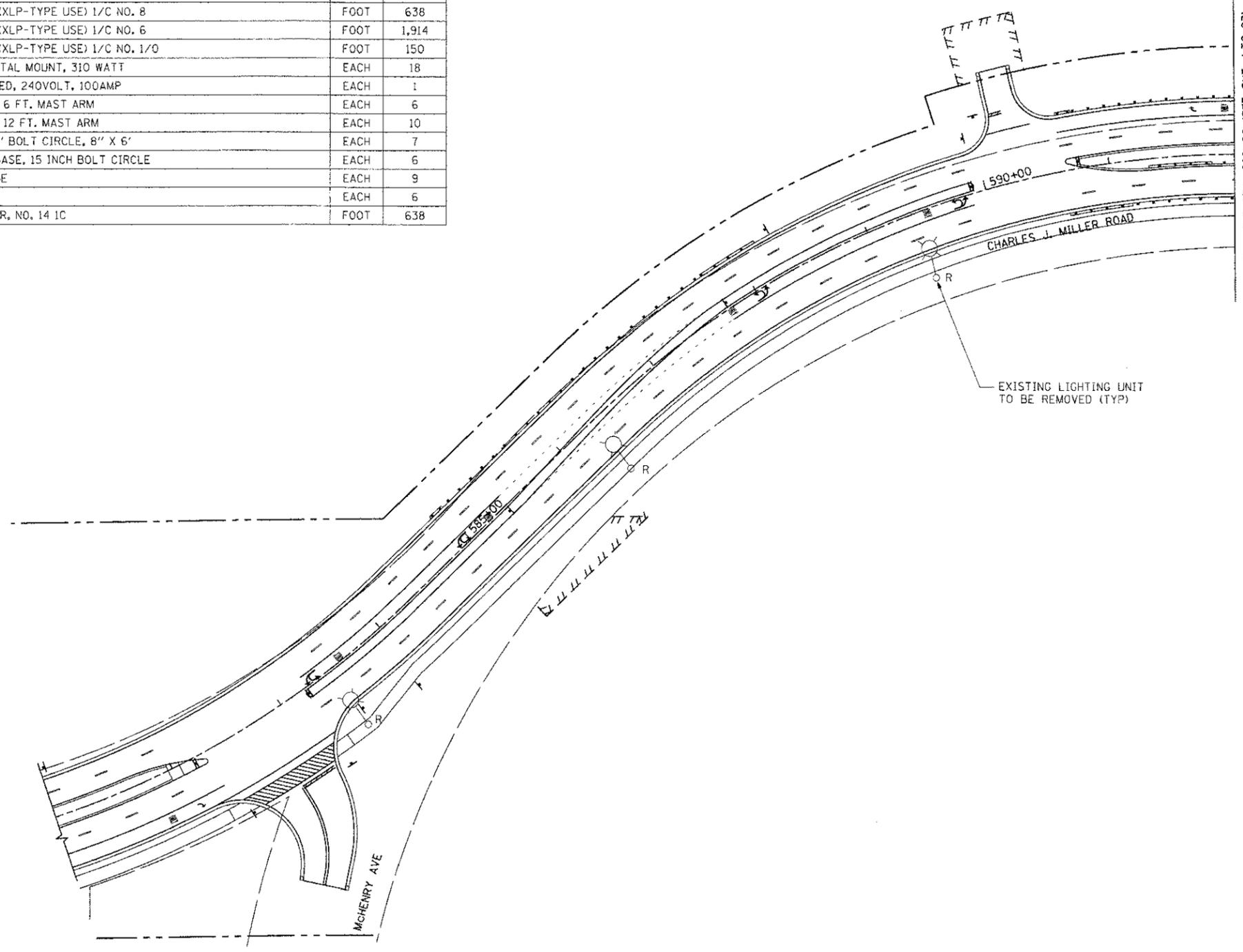
CONTRACT NO. 63633

LTC-01

SUMMARY OF QUANTITIES - ROADWAY LIGHTING IMPROVEMENT

PAY ITEM	DESCRIPTION	UNIT	QUANTITY
80400100	ELECTRIC SERVICE INSTALLATION	EACH	1
80400200	ELECTRIC UTILITY SERVICE CONNECTION	L SUM	1
81028200	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	50
81028240	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	155
81200230	CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC	FOOT	620
81300830	JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 18" X 18" X 8"	EACH	4
81603050	UNIT DUCT, 600V, 3-1C NO.6, 1/C NO.8 GROUND, (XLP-TYPE USE), 1" DIA. POLYETHYLENE	FOOT	2,225
81702120	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 8	FOOT	638
81702130	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6	FOOT	1,914
81702160	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 1/0	FOOT	150
82102310	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 310 WATT	EACH	18
82500350	LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP	EACH	1
83008200	LIGHT POLE, ALUMINUM, 40 FT. M.H., 6 FT. MAST ARM	EACH	6
83008500	LIGHT POLE, ALUMINUM, 40 FT. M.H., 12 FT. MAST ARM	EACH	10
83600355	LIGHT POLE FOUNDATION, METAL, 15" BOLT CIRCLE, 8" X 6'	EACH	7
83800205	BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE	EACH	6
84200500	REMOVAL OF LIGHTING UNIT, SALVAGE	EACH	9
84200804	REMOVAL OF POLE FOUNDATION	EACH	6
87300925	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	FOOT	638

• REQUIRES SPECIAL PROVISIONS



COMPANY NAME: AMES Engineering, Inc.
 PROJECT CONTACT: J. J. Jettone
 DATE PLOTTED: 7/23/2012 11:50:35 AM
 FILE NAME: 090074-LTg-02.dgn
 PLOT DRIVER: pdt.plt
 PLOT TABLE: standard-trans.tbl

AMES Engineering, Inc.
 CONSULTING ENGINEERS
 1341 Warren Avenue
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 (630) 737-1887 (630) 470-8881 (F)
 www.amesengineeringinc.com

USER NAME = jettone	DESIGNED - BL	REVISED -
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PLOT SCALE = 1"=50'	CHECKED - SA	REVISED -
PLOT DATE = 7/23/2012	DATE - 7/23/12	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

SUMMARY OF QUANTITIES AND LIGHTING PLAN - STA. 581+00 TO STA. 592+00 - CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS

F.A.U. R.T.E. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 116
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63633	

LTG-02

PROPOSED JUNCTION BOX STAINLESS STEEL SURFACE MOUNTED TO STRUCTURE (TYP.) TOTAL 4 FURNISHED AND INSTALLED BY ELECTRIC CONTRACTOR

UNIT DUCT, 600V
2-1/C NO. 10 (XLP-TYPE USE)
3/4" DIA. POLYETHYLENE
(FOR RWIS SEE SHEET 190)

ROADWAY WEATHER INFORMATION SYSTEM
STA. 592+50
(SEE RWIS DETAIL)

PROPOSED CONDUIT EMBEDDED IN STRUCTURE
2" PVC (FURNISHED AND INSTALLED BY BRIDGE CONTRACTOR)
WEST JUNCTION BOX TO BD5

PROPOSED CONDUIT EMBEDDED IN STRUCTURE
2" PVC (FURNISHED AND INSTALLED BY BRIDGE CONTRACTOR) ELECTRIC CABLE
3 1/C #6 AND 1/C #8 GROUND WITHIN
BD5 TO EAST JUNCTION BOX

2" CONDUIT EMBEDDED IN STRUCTURE
2 1/C #10 (TYP)
FOR RWIS DETAILS SEE SHEET 135 & 190

PROPOSED LIGHTING UNIT 40 FT MA,
6 FT MA 310W HPS, MCIII LUMINAIRE
MOUNTED ON BRIDGE STRUCTURE (TYP.)

PROPOSED LIGHTING UNIT,
40 FT MH, 12 FT MA 310W HPS
MCIII LUMINAIRE WITH
BREAKAWAY DEVICE (TYP.)

PROPOSED JUNCTION BOX EMBEDDED
IN STRUCTURE 8"x8"x6" (TYP) TOTAL 2

2" CONDUIT FOR SENSOR CABLES (BETWEEN RWIS
AND PARAPET). SEE RWIS DETAILS ON SHEET 190
(INCLUDED IN THE COST OF UNDERGROUND CONDUIT,
GALVANIZED STEEL, 2" DIA.).

EXISTING LIGHTING UNIT MOUNTED
ON BRIDGE TO BE REPLACED WITH
PROPOSED LIGHTING UNIT, 40 FT MH,
6 FT MA 310W HPS MCIII LUMINAIRE (TYP)

STA. 597+80
PROPOSED POLE FOR RWIS
SENSOR. SEE RWIS DETAIL
SHEET. REFER TO VAISALA
RWIS LX INSTALLATION
INSTRUCTIONS AND DETAILS
FOR SENSOR MOUNTING
DETAILS AND PROCEDURES.

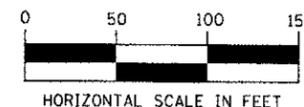
UNIT DUCT, 600V
2-1/C NO. 10 (XLP-TYPE USE)
3/4" DIA. POLYETHYLENE

COMBINATION SIGNAL/LIGHT POLE
SEE SIGNAL PLANS (TYP.)

STA. 25+79
BF2, 7.7' SETBACK
SEE NOTE 5 AND 7

NOTES:

- BRIDGE LIGHT POLE FOUNDATION BOLT CIRCLE SHALL MATCH PROPOSED POLE BOLT CIRCLE. CONTRACTOR SHALL CONFIRM LIGHT POLE BASE ANCHOR SLOTS ARE SIZED TO ACCOMMODATE THE EXISTING BOLTS IN BRIDGE STRUCTURE.
- SEE STRUCTURAL DRAWINGS FOR FOUNDATION IN BRIDGE STRUCTURE.
- SEE STRUCTURAL DRAWINGS TO COORDINATE LOCATION OF CONDUIT AND JUNCTION BOXES IN STRUCTURE.
- SETBACKS INDICATED ARE FROM BACK OF CURB TO CENTER OF POLE.
- NO BREAKAWAY DEVICE REQUIRED.
- SEE BILL OF MATERIALS FOR RWIS FOR ALL ITEMS ASSOCIATED WITH POWER TO THE RWIS.
- SEE RIVER ROAD RETAINING WALL ELEVATION AND FOOTING PLAN DETAIL FOR LIGHT POLE FOUNDATION DETAILS (SHEET 167)



7/23/2012 14:50:44 AM
09071-L1g-03.dgn
pof,cat
Standard-Trans.tbl

AMES Engineering, Inc.
CONSULTING ENGINEERS
1341 Warren Avenue
Downers Grove, IL 60515
(630) 737-1957 (F) (630) 470-9891 (C)
www.amesengineering.com

USER NAME = jattene
FILE NAME = 09071-L1g-03.dgn
PLOT SCALE = 1"=50'
PLOT DATE = 7/23/2012

DESIGNED -	BL	REVISED -	
DRAWN -	RV/MSA	REVISED -	
CHECKED -	SA	REVISED -	
DATE -	7/23/12	REVISED -	

**MCHENRY COUNTY
DIVISION OF TRANSPORTATION**

**LIGHTING PLAN - STA. 592+00 TO RIVER ROAD
CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS**

SCALE: 1"=50' SHEET NO. 3 OF 9 SHEETS STA. 592+00 TO STA. 606+03

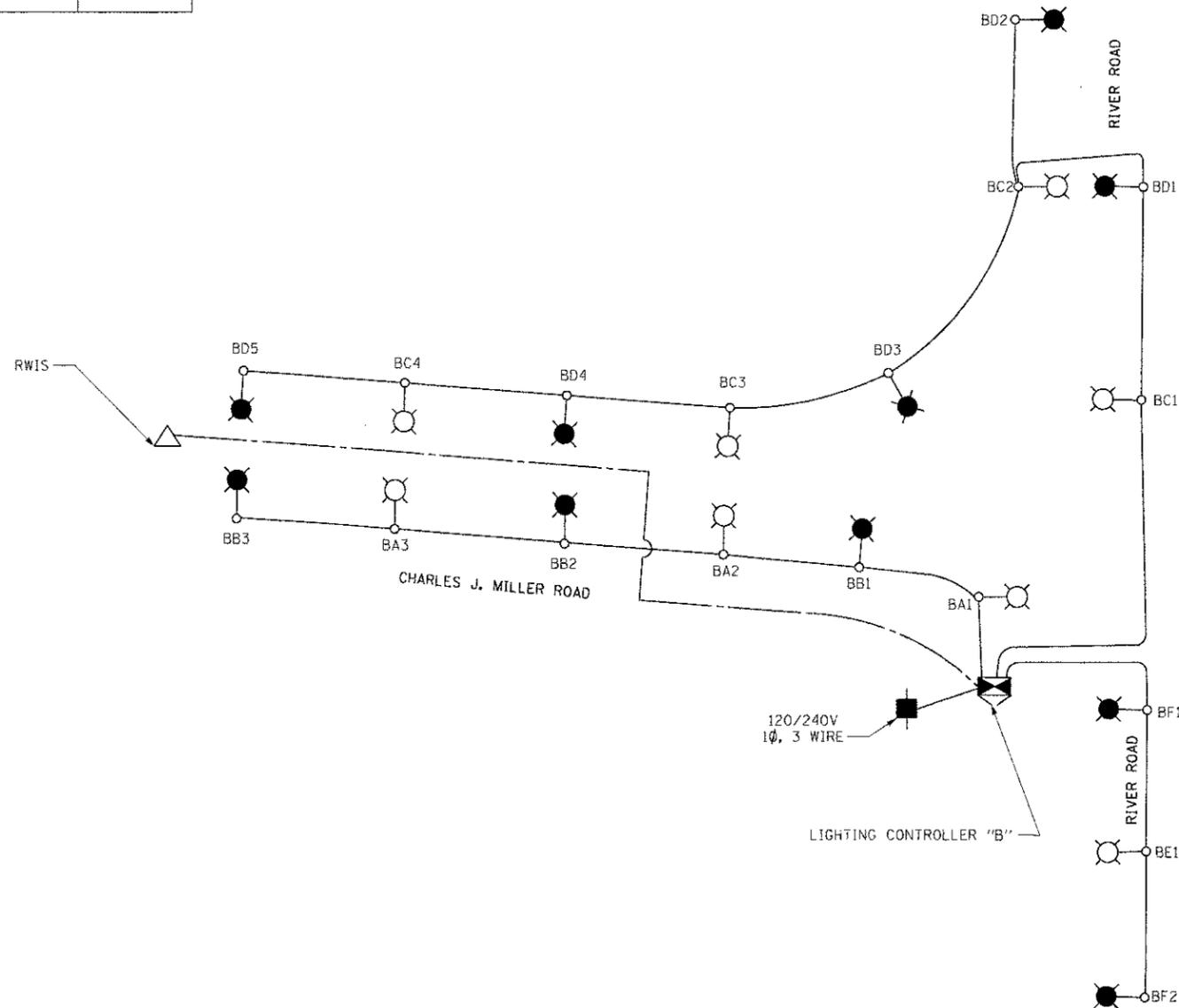
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3860	09-00372-00-PW	MCHENRY	252	117
FED. ROAD DIST. NO.			ILLINOIS/FED. AID PROJECT	

LTC-03

CONTRACT NO. 63633

CONTROLLER "B" @ RIVER ROAD

RED			BLACK		
CIRCUIT	AMPS @ 240V	VA	CIRCUIT	AMPS @ 240V	VA
A	4.5	1080	B	4.5	1080
C	6.0	1440	D	7.5	1800
E	1.5	360	F	1.5	360
G	SPARE	SPARE	H	SPARE	SPARE
TOTAL	12.0	2880	TOTAL	13.5	3240
TOTAL LOAD 25.5A					



LEGEND

- 310 WATT HPS LUMINAIRE, 240V, RED CIRCUIT
- 310 WATT HPS LUMINAIRE, 240V, BLACK CIRCUIT
- UNIT DUCT 3 1/2 #6 WITH 1/2 #8 GROUND TRACER NO. 14 IC IN 1" DIA. POLYTHYLENE
- LIGHTING CONTROLLER
- 1" CONDUIT, 2 1/2 # 10 POWER TO RWIS
- ROADWAY WEATHER INFORMATION SYSTEM

COMPANY NAME: AMES Engineering, Inc.
 PROJECT CONTACT: J. Jettone
 DATE PLOTTED: 7/23/2012 11:05:49 AM
 FILE NAME: 090071-L19-24.dgn
 PLOT DRIVER: pdfcut
 PEN TABLE: standard-trans.tbl

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USER NAME = jettone	DESIGNED - BL	REVISED -
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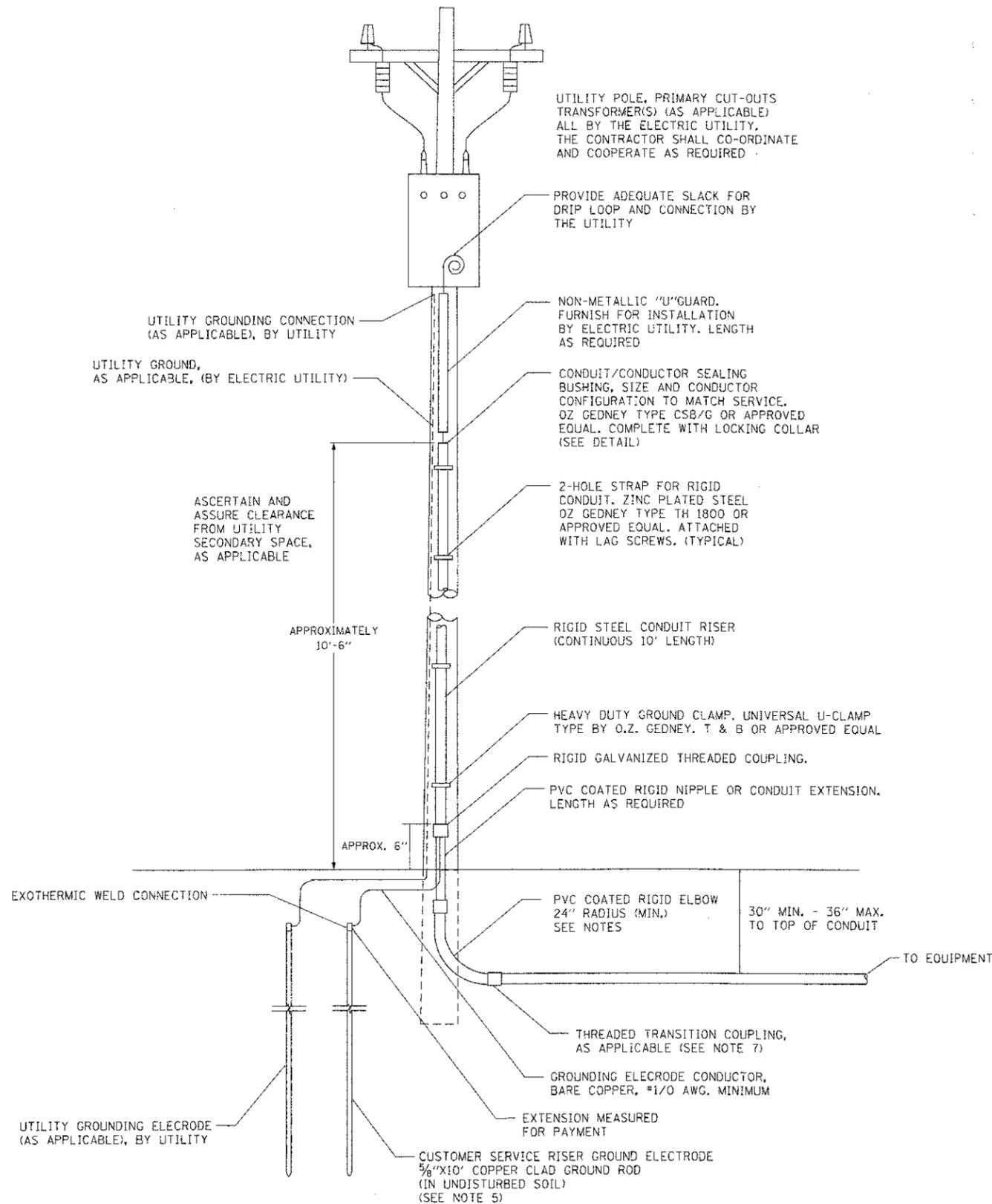
**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

**LIGHTING PLAN - WIRING DIAGRAM
 CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS**

SCALE: N.T.S. SHEET NO. 4 OF 9 SHEETS STA. TO STA.

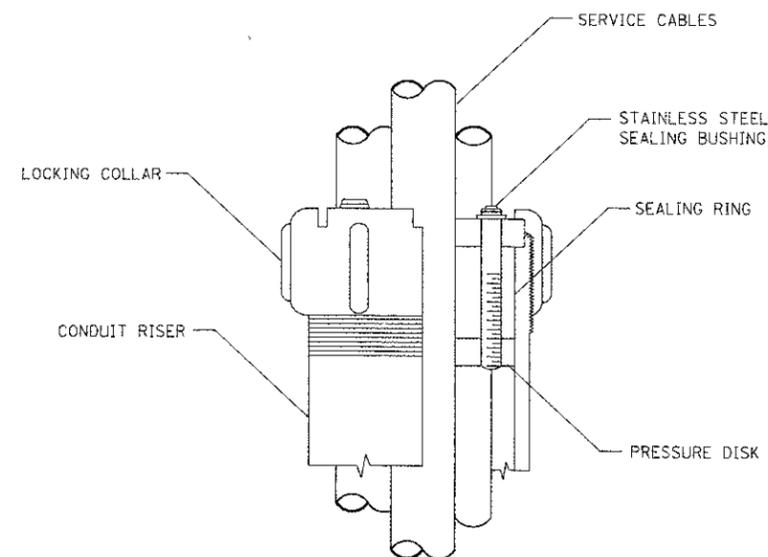
F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
386Q	09-00372-00-PW	MCHENRY	252	118
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 63633	

LTG-04



NOTES:

- SERVICE VOLTAGE SHALL BE 120/240V AS INDICATED ON SHEET LTG-02 AND 04.
- UNLESS OTHERWISE INDICATED, ITEMS AND WORK SHALL BE INCLUDED AND PAID AS PART OF ELECTRIC UTILITY SERVICE INSTALLATION.
- CONDUIT AND CONNECTOR DIAMETER SHALL MATCH THE DIAMETER OF THE SERVICE CONDUCTOR RACEWAY AS INDICATED.
- PVC COATED RACEWAYS AND ACCESSORIES SHALL BE CAREFULLY INSTALLED WITH MFR RECOMMENDED TOOLS AND PROCEDURES TO AVOID DAMAGE. ANY DAMAGE SHALL BE REPAIRED WITH COMPATIBLE PVC TOUCH-UP MATERIAL TO THE SATISFACTION OF THE ENGINEER OR THE DAMAGED MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL OBTAIN INSPECTION AND APPROVAL BY THE ENGINEER OF SERVICE RISER GROUND ELECTRODE, RISER ELBOW, NIPPLE AND CONNECTION TO SERVICE CONDUCTOR RACEWAY EXTENSION BEFORE BACK FILL AND SHALL ALSO OBTAIN INSPECTION OF SERVICE RISER AND SEALING BUSHING BEFORE UTILITY "U" GUARD INSTALLATION AND SERVICE CONNECTION.
- THE SERVICE METER SOCKET, AS APPLICABLE, MOUNTED ELSEWHERE AS INDICATED SHALL BE INCLUDED AND PAID AS PART OF THE ELECTRICAL UTILITY SERVICE INSTALLATION PAY ITEM.
- THE SERVICE CONDUCTOR RACEWAY SHALL BE AS INDICATED AND SHALL BE MEASURED SEPARATELY FOR PAYMENT. WHEN THE RACEWAY IS PVC-COATED RIGID GALVANIZED STEEL, THE COUPLING SHALL BE THE SAME. WHEN THE RACEWAY IS PVC CONDUIT (IN CONCRETE), THE COUPLING SHALL BE A METALLIC TO NON METALLIC ADAPTER. WHEN THE RACEWAY IS ENCASED IN CONCRETE, THE CONCRETE SHALL EXTEND TO COVER THE COUPLING.
- PLANS AND DETAILS INDICATE THE GENERAL NATURE AND REQUIREMENTS, THEY DO NOT SHOW EVERY ACCESSORY AND ATTACHMENT, AND THEY DO NOT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS AND SPECIAL PROVISIONS TO ASCERTAIN UTILITY REQUIREMENTS AND TO COORDINATE ACCORDINGLY, FURNISHING ALL ITEMS AND WORK NOT PROVIDED BY THE UTILITY, BUT NECESSARY FOR A COMPLETE SERVICE INSTALLATION IS REQUIRED AND SHALL BE INCLUDED IN THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.



SEALING BUSHING DETAIL

COMPANY NAME: AMES Engineering, Inc.
 PROJECT CONTACT: CONSULTING ENGINEERS
 CLIENT: 1341 Warren Avenue
 DATE PLOTTED: 7/23/2012 11:50:55 AM
 FILE NAME: 090071-Ltg-05.dgn
 PLOT DRIVER: pdf.plt
 PEN TABLE: standard-trans.tbl

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PLOT SCALE = N.T.S.	CHECKED - SA	REVISED -
PLOT DATE = 7/23/2012	DATE - 7/23/12	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

ELECTRIC SERVICE INSTALLATION ABOVE GROUND (BE-220)
CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS

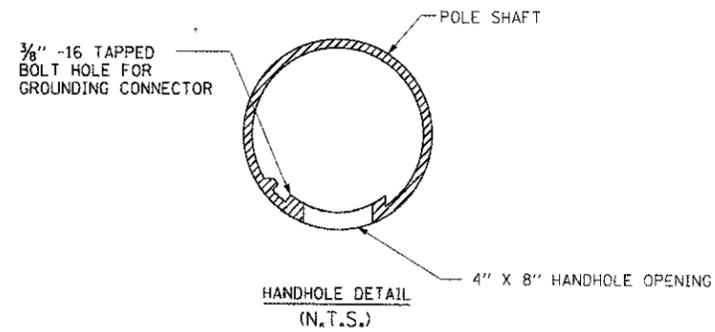
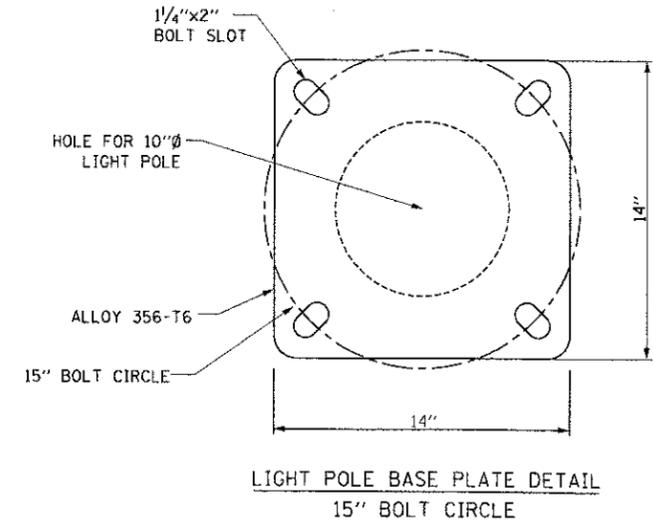
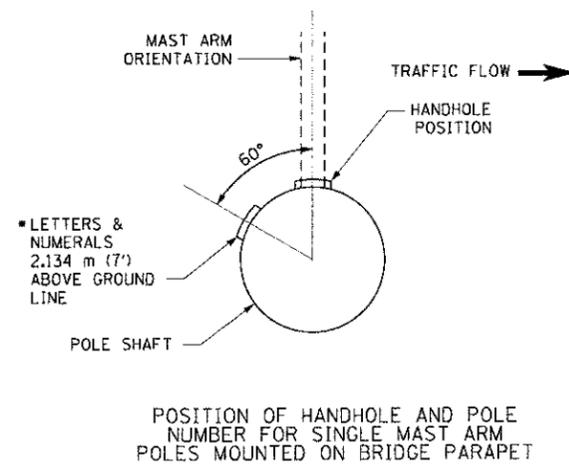
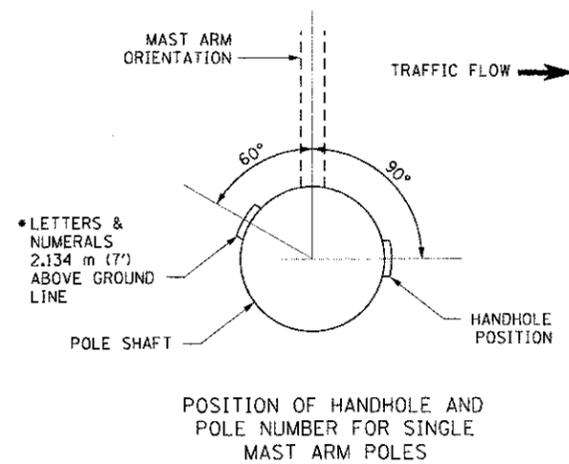
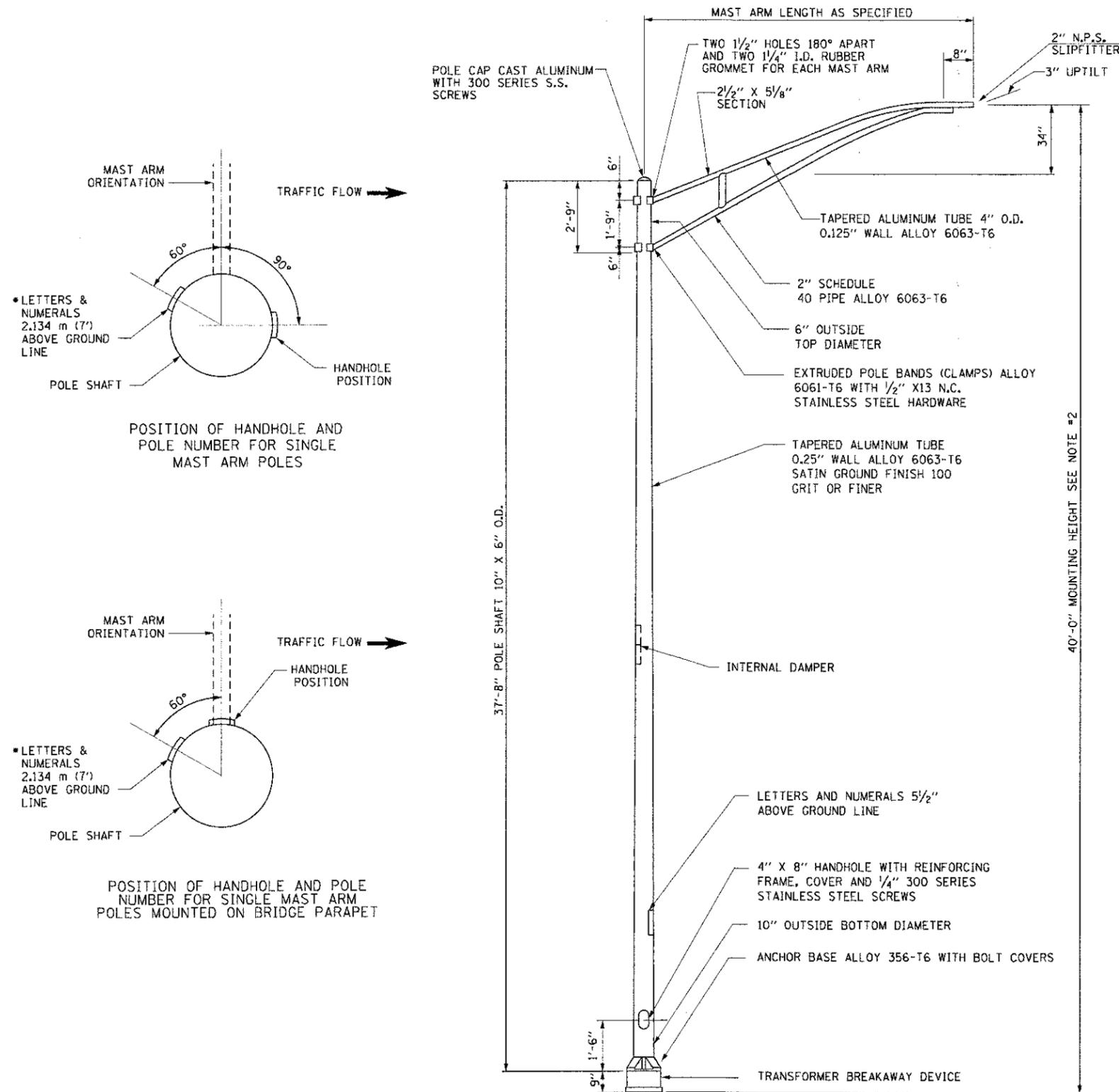
F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 119
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63633	

LTG-05

SCALE: N.T.S. SHEET NO. 5 OF 9 SHEETS STA. TO STA.

NOTES:

1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE CENTERLINE OF THE TENON TO THE BOTTOM OF THE ANCHOR BASE.
3. THE LIGHT POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
4. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR, BURNDY K2C23, T & B SP4DL OR APPROVED EQUAL.
5. LIGHT POLES WILL NOT BE INSTALLED WITHOUT MAST ARMS AND LUMINAIRES.
6. LIGHT POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.
7. LIGHTING UNIT IDENTIFICATION NUMBERS SHALL BE INSTALLED BEFORE THE LIGHTING UNIT IS ENERGIZED.



COMPANY NAME: AMES Engineering, Inc.
 PROJECT CONTACT: CONSULTING ENGINEERS
 CLIENT: 1341 Warren Avenue
 DATE PLOTTED: 7/23/2012 11:50:55 AM
 FILE NAME: 090911-Ltg-06.dgn
 PLOT DRIVERS: dcf.plt
 PEN TABLE: standard-trans.tbl

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PLOT SCALE = N.T.S.	CHECKED - SA	REVISED -
PLOT DATE = 7/23/2012	DATE - 7/23/12	REVISED -

**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

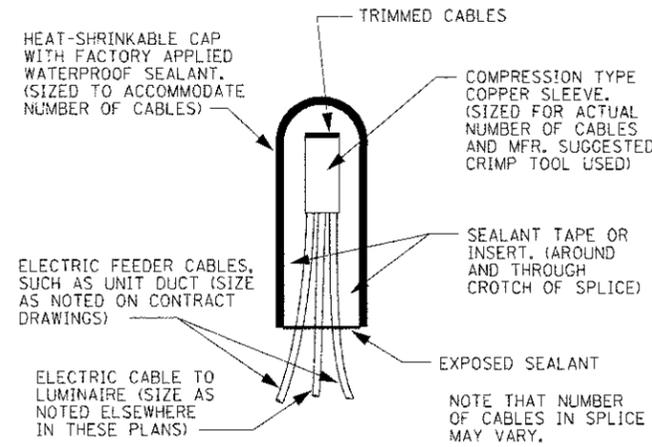
**ALUMINUM LIGHT POLE 40'-0" MOUNTING HEIGHT
 CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS**

SCALE: N.T.S. SHEET NO. 6 OF 9 SHEETS STA. TO STA.

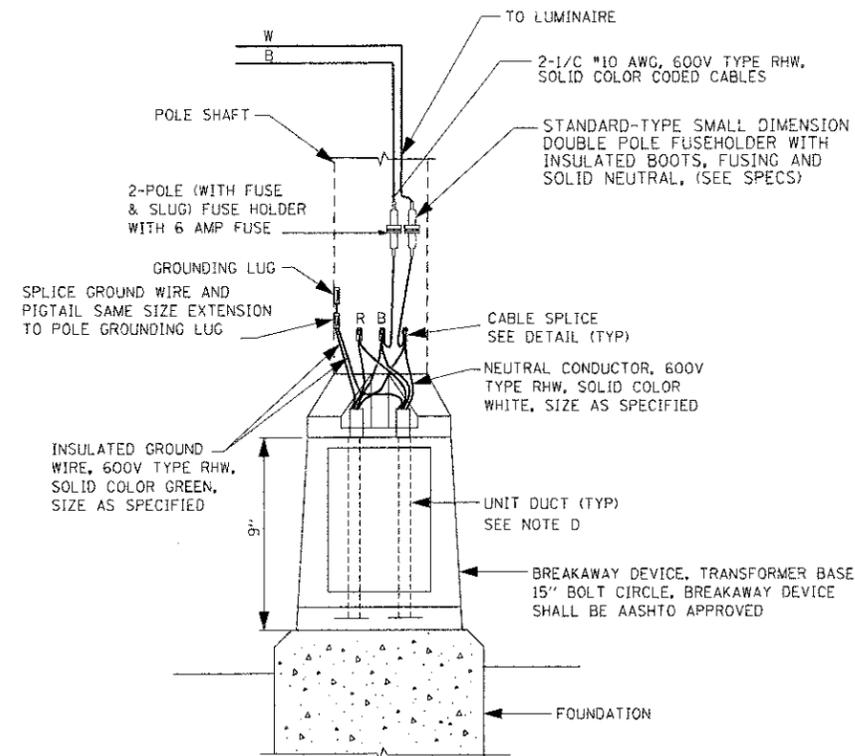
F.A.U. RTE. 3860		SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 120
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		

LTC-06

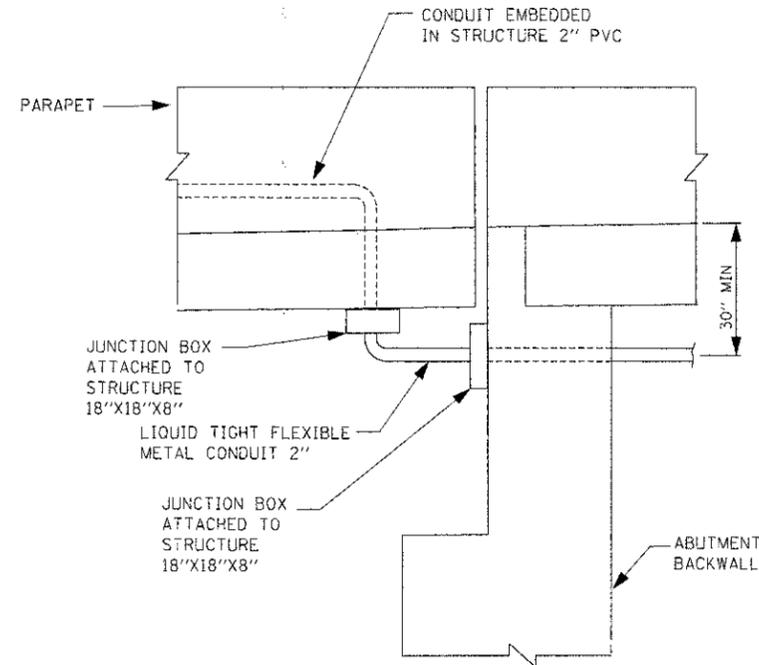
CONTRACT NO. 63633



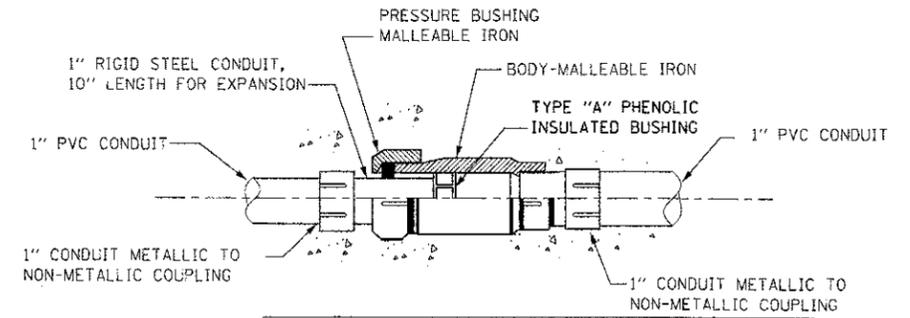
SPlicing DETAIL
N.T.S.



POLE BASE WIRING DIAGRAM
SINGLE MAST ARM
N.T.S.

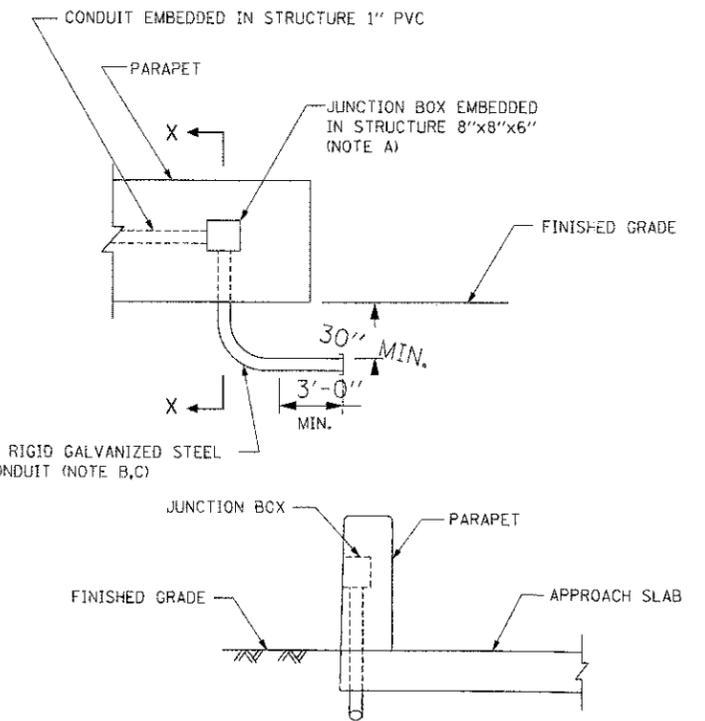


JUNCTION BOX ATTACHED TO STRUCTURE



NOTE:
ALL CONDUIT FITTINGS, AND COUPLINGS SHALL BE INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE

CONDUIT EXPANSION FITTING
USE 0-2 GEDNEY AX-8-250,
OR APPROVED EQUAL



SECTION X-X

JUNCTION BOX EMBEDDED IN STRUCTURE

NOTES:

- A. JUNCTION BOXES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATION IS REQUIRED WITH BRIDGE CONTRACTOR.
- B. CONDUIT EMBEDDED IN STRUCTURE SHALL BE FURNISHED AND INSTALLED BY THE BRIDGE CONTRACTOR. COORDINATION WITH THE ELECTRICAL CONTRACTOR IS REQUIRED. COORDINATE CONDUIT PLACEMENT TO TERMINATE OUTSIDE OF PAVEMENT.
- C. COST OF GALVANIZED STEEL RACEWAY SHALL BE INCLUDED WITH JUNCTION BOX EMBEDDED IN STRUCTURE.
- D. TRACER CABLE #14 IC SHALL BE INCLUDED IN THE UNIT DUCT AT NO ADDITIONAL COST. TRACER CABLE SHALL BE SPLICED IN POLES (WITH WIRE NUT) AND GROUNDED AT ENDS. TRACER WIRE SHALL BE CONNECTED TO POLE GROUND ONLY IN POLES AT END OF RUNS. IN REMAINING POLES, TRACER WIRE SHALL BE SPLICED AT UPPER HANDHOLE AND ROUTED THROUGH AND INTO LIGHTING CABINET UNGROUNDED.
- E. COST OF LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ALL ITEMS REQUIRED TO ATTACH JUNCTION BOX TO STRUCTURE SHALL BE INCLUDED IN THE COST OF JUNCTION BOX ATTACHED TO STRUCTURE.

COMPANY NAME: AMES Engineering, Inc.
PROJECT CONTRACT: 1341 Warren Avenue
CLIENT: Downers Grove, IL 60515
DATE PLOTTED: 7/23/2012 11:51:04 AM
FILE NAME: 09071-Ltg-01.dgn
PLOT DRIVER: pdf.plt
PEN TABLE: standard.ctb

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Downers Grove, IL 60515
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USER NAME = jettana	DESIGNED - BL	REVISED -
FILE NAME = 09071-Ltg-01.dgn	DRAWN - RV/MSA	REVISED -
PLOT SCALE = N.T.S.	CHECKED - SA	REVISED -
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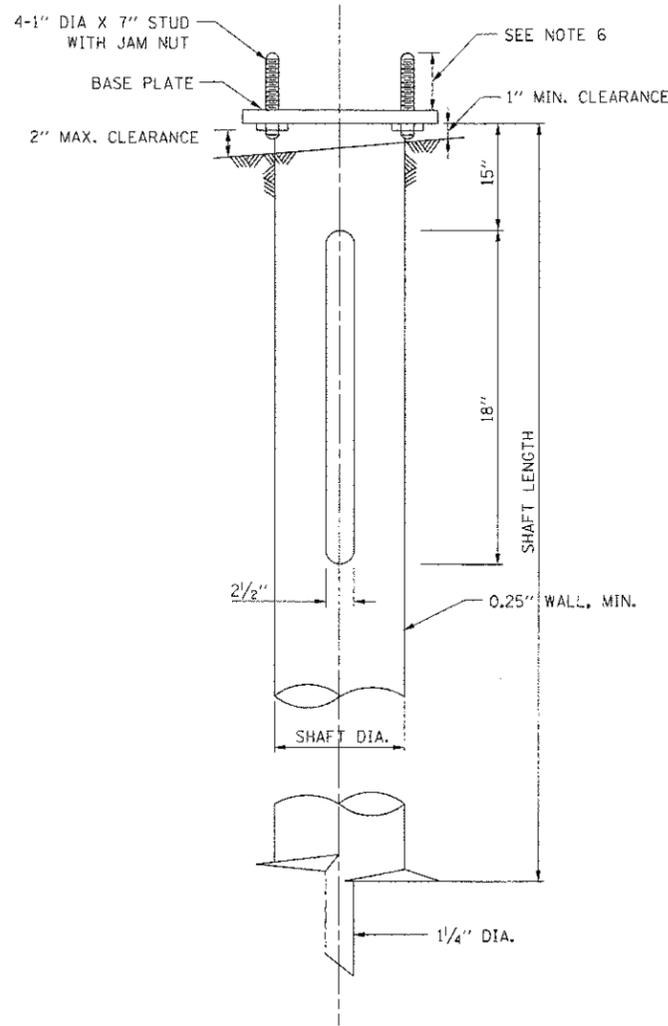
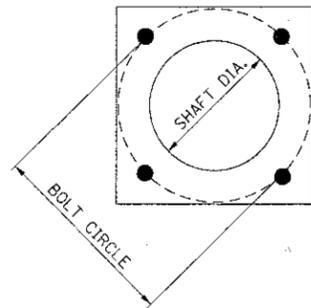
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

MISCELLANEOUS ELECTRICAL DETAILS
CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS

SCALE: N.T.S. SHEET NO. 7 OF 9 SHEETS STA. TO STA.

F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 121
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63633	

LTC-07



NOTES:

1. ALL DIMENSION IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. ALL MATERIAL SHALL BE GALVANIZED ACCORDING TO AASHTO M111, UNLESS OTHERWISE SPECIFIED.
3. ALL WELDS SHALL BE CONTINUOUS AND NOT LESS THAN 1/4" (6.35 MM) FILLET WELDS. THE WELDED FOUNDATION SHALL BE CAPABLE OF WITHSTANDING 10,000 FT/LBS (13558.18 nm) OF INSTALLATION TORQUE APPLIED ABOUT THE AXIS OF THE FOUNDATION.
4. THE HELIX FOUNDATION SHAFT SHALL BE INSTALLED VERTICAL AND THE BASE PLATE SHALL BE IN LEVEL. THE BREAKAWAY COUPLINGS AND HARDWARE SHALL NOT BE USED TO ALIGN THE POLE INSTALLATION.
5. THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE INSTALLATION OF THE LIGHT POLE.
6. THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF THE BASE PLATE WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS.
7. ANY VOIDS WITHIN THE METAL FOUNDATION SHALL BE FILLED WITH FINE AGGREGATE.
8. METAL FOUNDATIONS SHALL BE INSTALLED IN UNDISTURBED SOIL. PREDRILLING A PILOT HOLE AND/OR BACKFILLING AROUND THE FOUNDATION IS NOT ALLOWED.
9. THE METAL FOUNDATION SHALL NOT BE INSTALLED TO A TORQUE WHICH EXCEEDS THE MANUFACTURER'S MAXIMUM TORQUE RATING NOR SHALL IT BE INSTALLED TO AN INSTALLATION TORQUE VALUE OF LESS THAN 3,500 FT LB (4,750 KNM), METAL FOUNDATIONS THAT ARE NOT INSTALLED TO FULL INSTALLATION DEPTH OR DO NOT ACHIEVE THE MINIMUM INSTALLATION TORQUE SHALL BE REMOVED AND REPLACED WITH A CONCRETE FOUNDATION AT NO ADDITIONAL COST.
10. THE BASE PLATE SHALL BE PERPENDICULAR TO THE SHAFT AXIS ($\pm 1^\circ$) AND THE HOLE CENTERLINE SHALL BE CONCENTRIC (± 0.188) TO THE SHAFT AXIS.
11. THE PILOT AND SHAFT AXIS SHALL BE CONCENTRIC (± 0.125) AND IN LINE ($\pm 2^\circ$).
12. THE BASE PLATE SHALL BE STAMPED WITH THE MANUFACTURER'S NAME AND DATE OF MANUFACTURE.

HELIX FOUNDATION SIZE

POLE MOUNTING HEIGHT	BOLT CIRCLE	SHAFT DIAMETER	SHAFT LENGTH	BASE PLATE
30 FT.	11 1/2"	8 5/8"	6 FT.	12"X12"X1"
31 FT. TO 35 FT.	11 1/2"	8 5/8"	6 FT.	12"X12"X1"
36 FT. TO 40 FT.	15"	8 5/8"	6 FT.	15"X15"X1 1/4"
41 FT. TO 45 FT.	15"	8 5/8"	6 FT.	15"X15"X1 1/4"
46 FT. TO 50 FT.	15"	10"	8 FT.	15"X15"X1 1/4"

METAL HELIX FOUNDATION MATERIALS

ITEM	METAL REQUIREMENT
BASE PLATE	AASHTO M 270M, GRADE 36 (M 270M, GRADE 250)
SHAFT	ASTM A 252, GRADE 2 (PHOSPHOROUS 0.04% MAXIMUM, SULFUR 0.05% MAXIMUM)
HELIX SCREW	AASHTO M 183 (ASTM A 635)
PILOT POINT	AASHTO M 270 (ASTM A 575)
ANCHOR RODS/STUDS	AASHTO M 314 (ASTM F 1554)
HEXAGON NUTS	AASHTO M 291 (ASTM A 563) GRADE DH OR AASHTO M 292 (ASTM A 194) GRADE 2H
WASHERS	AASHTO M 293 (ASTM F 436)

COMPANY NAME: AMES Engineering, Inc.
 PROJECT CONTACT: J. J. Jettone
 CLIENT: MCHENRY COUNTY
 DATE PLOTTED: 7/23/2012 11:51:09 AM
 FILE NAME: 090071-Ltg-08.dgn
 PLOT DRIVER: pdfplot
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USER NAME = j.jettone	DESIGNED - BJL	REVISED -
FILE NAME = 090071-Ltg-08.dgn	DRAWN - RV/MSA	REVISED -
PLOT SCALE = N.T.S.	CHECKED - SA	REVISED -
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SCALE: N.T.S.	SHEET NO. 8 OF 9 SHEETS	STA. TO STA.
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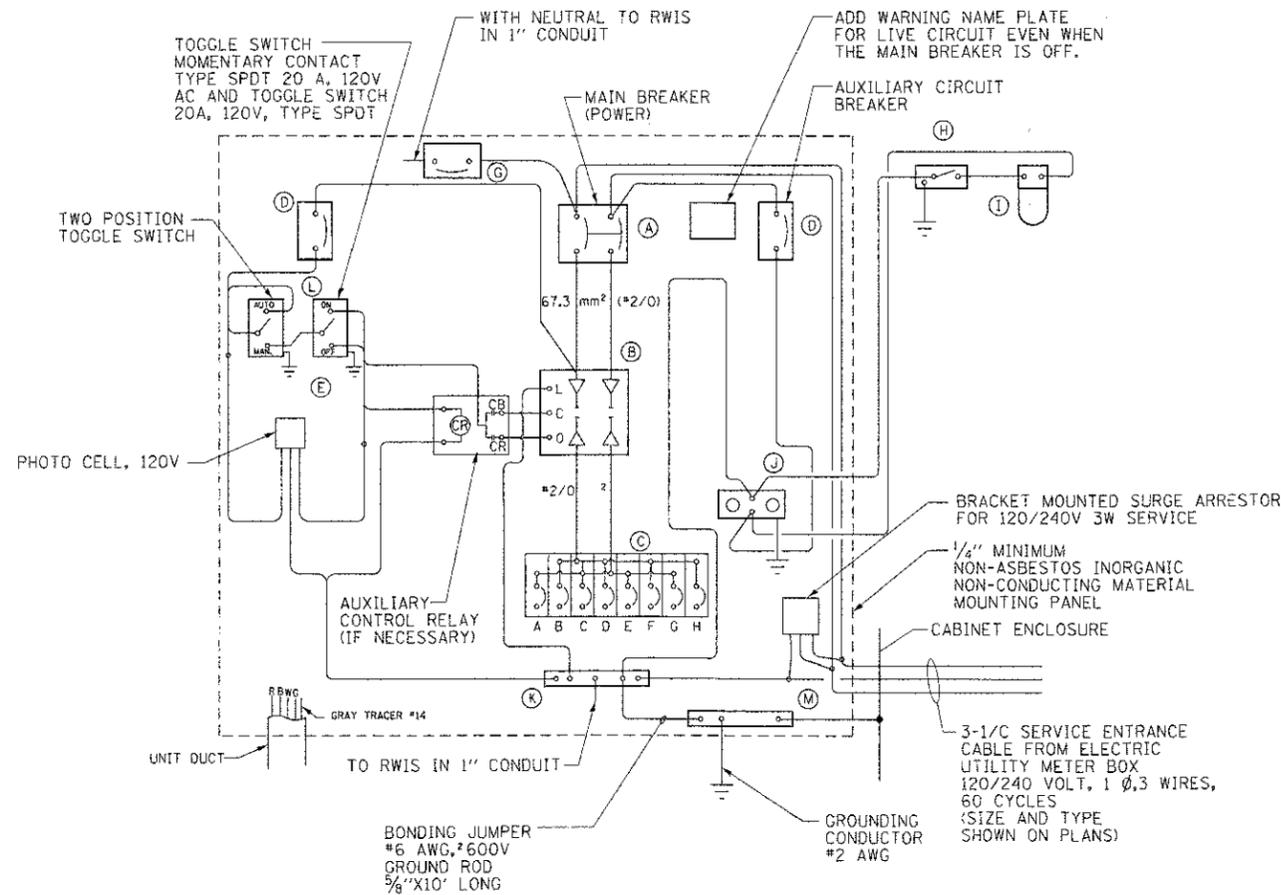
**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

**LIGHT POLE FOUNDATION, METAL
 CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS**

F.A.J. RTEL	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	122
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

PANEL EQUIPMENT

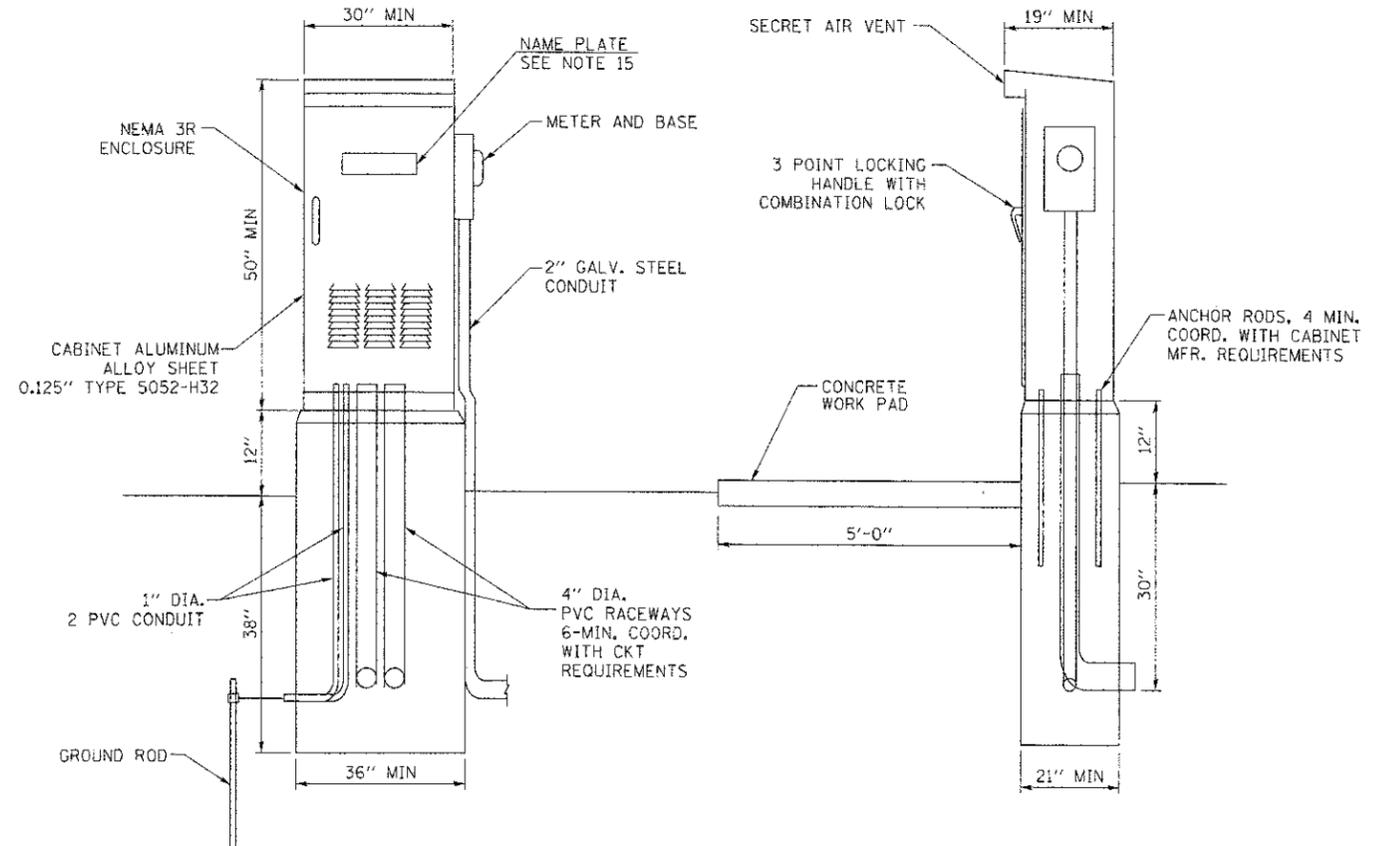
BILL OF MATERIAL		
ITEM	QTY.	DESCRIPTION
A	1	MAIN CIRCUIT BREAKER, 2 POLE, 600 VOLT 100AMP. FRAME, 100AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-22000 AMP. AT 240 VOLT.
B	1	REMOTE CONTROL SWITCH, ELECTRICALLY OPERATED, MECHANICALLY HELD, 2 POLE, SINGLE THROW, 100 AMP., 600 VOLTS CONTROL CIRCUITS 240 VOLT, ASCO 920.
C	8	CIRCUIT BREAKERS, 1 POLE, 277V., 100AMP. FRAME 50AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-14,000 AMP. AT 120 V.
D	2	CONTROL CIRCUIT-CIRCUIT BREAKER, 1 POLE, 240 V., 100AMP. FRAME, 15AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-14,000 AMP. AT 120 V.
E	1	PHOTECCELL, 120V
G	1	CONTROL CIRCUIT-CIRCUIT BREAKER, 1 POLE, 240 V., 100AMP. FRAME, 20AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-14,000 AMP. AT 120 V.
H	1	SPST 20A SWITCH ON DOOR, TO TURN LIGHT ON WHEN DOOR IS OPEN.
I	1	INCANDESCENT LIGHTING FIXTURE ENCLOSED AND GASKETED WITH 60 WATT, 120 V. LAMP.
J	1	20 A., 120 V., DUPLEX RECEPTACLE, GFCI.
K	1	COPPER NEUTRAL BUS 6.35 mm (1/4") X 25.4 mm (1") X 304.8 mm (12") LONG MOUNTED ON PANEL WITH LUGS AND 4 SPARE LUGS.
L	1	TOGGLE SWITCHES MOUNTED IN 101.6 mm (4") X 101.6 mm (4") BOX.
M	1	COPPER GROUND BUS 6.35 mm (1/4") X 25.4 (1") X 304.8 mm (12") LONG MOUNTED ON PANEL WITH LUGS AND SPARE LUGS.
N	1	SURGE ARRESTOR



WIRING DIAGRAM

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.
- FOUNDATION SIZE SHALL BE COORDINATED WITH CABINET SIZE AND MFR.
- DOOR SHALL BE CONSTRUCTED FROM SAME TYPE OF MATERIAL AND THICKNESS AS CABINET.
- DOOR SHALL BE EQUIPPED WITH THREE POINT LATCHING MECHANISM WITH NYLON ROLLERS AT TOP THE BOTTOM.
- DOOR HINGE SHALL BE A HEAVY GAUGE CONTINUOUS HINGE WITH A 6.35 mm (1/4") DIA. STAINLESS STEEL HINGE PIN.
- ALL EXTERNAL HARDWARE SHALL BE STAINLESS STEEL.
- CONTROL WIRING TO BE #12 AWG, 600V, TYPE "SIS" GRAY SWITCH BOARD WIRE, STRANDED COPPER.
- METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET, NEAR TO THE SERVICE POLE.
- CABINETS SHALL BE PRIMED AND PAINTED AS SPECIFIED.
- THE HEADS OF CONNECTORS SCREWS SHALL BE PAINTED WHITE FOR NEUTRAL BAR CONNECTION AND GREEN FOR GROUND BAR CONNECTORS.
- ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED.
R = RED BL = BLUE W = WHITE
B = BLACK Y = YELLOW G = GREEN
- PROVIDE SEALING GROMMETS FOR ALL OPEN WIRING EXTENDED FROM DEVICES IN BOXES OR CABINETS WITHIN THE CONTROL CABINET.
- ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
- THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL "ENCLOSED INDUSTRIAL CONTROL PANEL".
- 304.8 mm (12") X 406.4 mm (16") STAINLESS STEEL EXTERIOR NAMEPLATE SHALL BE ENGRAVED TO "LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.
- SERVICE DISCONNECT SHOULD HAVE UL LABEL AND THE EQUIPMENT SHOULD BE SUITABLE FOR SERVICE ENTRANCE EQUIPMENT.



COMPANY NAME: AMES Engineering, Inc.
PROJECT CONTACT: jastena
DATE PLOTTED: 7/23/2012 11:56:43 AM
FILE NAME: 090071-Ltg-09.dgn
PLOT DRIVER: default
PEN TABLE: standard-trans.tbl

<p>AMES Engineering, Inc. CONSULTING ENGINEERS 1341 Warren Avenue Downers Grove, IL 60515 (630) 737-1987 (F); (630) 470-8881 (H) www.amesengineering.com</p>	USER NAME = jastena FILE NAME = 090071-Ltg-09.dgn PLOT SCALE = N.T.S. PLOT DATE = 7/23/2012	DESIGNED - BL DRAWN - RV/MSA CHECKED - SA DATE - 7/23/12	REVISED - REVISED - REVISED - REVISED -
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MCHENRY COUNTY
DIVISION OF TRANSPORTATION

LIGHTING CONTROLLER
CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS

SCALE: N.T.S. SHEET NO. 9 OF 9 SHEETS STA. TO STA.

F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 123
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63633	

LTG-09

GENERAL NOTES

- Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts in painted areas and A325 Type 3 in unpainted areas. Bolts 7/8 in. φ, holes 15/16 in. φ, unless otherwise noted.
- Calculated weight of Structural Steel = 768,180 Pounds
- All structural steel shall be AASHTO M 270 Grade 50 W (except expansion joints which shall be AASHTO M 270 Grade 36). All structural steel shall be cleaned as specified in Article 506.07.
- 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.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- Concrete Sealer shall be applied to the designated areas of the abutments.
- The Contractor shall mask bridge piers down to within 1'-0" of the water line. Pier masking must be in-place between bearing installation and the casting of the deck concrete.
- All structural steel within a distance of 10 ft. each way from the deck joints shall be painted as specified in Article 506.08 and 506.09. The paint system outlined in 506.08(b) (a/e/u) shall be used. All exposed steel surfaces of bearing assemblies and retainers for abutments and piers (see S-24 and S-25) shall also be painted as outlined in this note.
- 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.
- The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans. A Permit from the McHenry County Stormwater Commission must be obtained prior to the start of construction.
- Seal coat thickness design is based on the Cofferdam Water Surface Elevation (CWSE). Cofferdam design shall be submitted to the Engineer for approval in accordance with the Special Provision for "Cofferdams".
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- Slip Forming of the parapets is not allowed.
- Existing Steel Sheet Pile walls are to remain in place. Design details are not available. Contractor shall assume walls are not adequate to support superimposed construction loads.

CHARLES J. MILLER ROAD
OVER THE FOX RIVER
BUILT 2013 BY
McHENRY COUNTY DIVISION OF TRANSPORTATION
SEC. 09-00372-00-PW
F.A.U. RT. 3860 STATION 597+81.17
STR. NO. 056-3190 LOADING HL-93

NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

For SN 056-3190 only (See S-39 for SN 056-3149)

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Dumped Riprap, Class A4	Sq. Yd.		82	82
Filter Fabric	Sq. Yd.		173	173
Concrete Removal	Cu. Yd.		6.2	6.2
Structure Excavation	Cu. Yd.		27	27
Cofferdam Excavation	Cu. Yd.		424	424
Cofferdam (Type 2) (Location - 1)	Each		1	1
Cofferdam (Type 2) (Location - 2)	Each		1	1
Cofferdam (Type 2) (Location - 3)	Each		1	1
Cofferdam (Type 2) (Location - 4)	Each		1	1
Concrete Structures	Cu. Yd.	18.4	378.7	397.1
Concrete Superstructure	Cu. Yd.	775.1		775.1
Bridge Deck Grooving	Sq. Yd.	2,075		2,075
Seal Coat Concrete	Cu. Yd.		149.5	149.5
Concrete Encasement	Cu. Yd.		7.7	7.7
Protective Coat	Sq. Yd.	2,817		2,817
Furnishing and Erecting Structural Steel	L. Sum		1	1
Stud Shear Connectors	Each	10,688		10,688
Reinforcement Bars	Pound		36,830	36,830
Reinforcement Bars, Epoxy Coated	Pound	212,540	9,210	221,750
Bar Splicers	Each		56	56
Slope Wall 6 Inch	Sq. Yd.		200	200
Furnishing Steel Piles HPI0X42	Foot		1,070	1,070
Furnishing Steel Piles HPI2X53	Foot		2,854	2,854
Driving Piles	Foot		3,924	3,924
Test Pile Steel HPI0X42	Each		2	2
Test Pile Steel HPI2X53	Each		4	4
Pile Shoes	Each		36	36
Name Plates	Each		1	1
Preformed Joint Strip Seal	Foot	30.0		30.0
Finger Plate Expansion Joint, 5"	Foot	28.0		28.0
Elastomeric Bearing Assembly, Type II	Each		4	4
Elastomeric Bearing Assembly, Type III	Each		4	4
Anchor Bolts, 1"	Each		64	64
Anchor Bolts, 1 1/4"	Each		8	8
Concrete Sealer	Sq. Ft.		784.4	784.4
Geocomposite Wall Drain	Sq. Yd.		48	48
Furnishing High Load Multi-Rotational Bearings, Guided Expansion, 450K	Each	12		12
High Load Multi-Rotational Bearings, Guided Expansion, 450K (Erect Only)	Each	12		12
Porous Granular Embankment, Special	Cu. Yd.		103	103
Drainage Scupper, DS-11	Each		4	4
Drainage Scupper, DS-33	Each		4	4
Drainage System	L. Sum		1	1
Temporary Sheet Piling	Sq. Ft.		740	740
Pipe Underdrains for Structures 4"	Foot		72	72

INDEX OF SHEETS

- SN 056-3190
- S - 1 General Plan and Elevation
 - S - 2 Bill of Materials and General Notes
 - S - 3 Slope Wall Details
 - S - 4 Substructure and Cofferdam Layout Plan
 - S - 5 Top of Deck Slab Elevations
 - S - 6 Top of Deck Slab Elevations
 - S - 7 Top of Deck Slab Elevations
 - S - 8 West Approach Slab Elevations
 - S - 9 East Approach Slab Elevations
 - S - 10 Deck Plan and Cross Section
 - S - 11 Superstructure Details
 - S - 12 Superstructure Details - Light Pole Base
 - S - 13 Deck Drainage System
 - S - 14 Drainage Scupper (DS-11)
 - S - 15 Drainage Scupper (DS-33)
 - S - 16 Bridge Approach Slab Details
 - S - 17 Bridge Approach Slab Details
 - S - 18 Preformed Joint Strip Seal Expansion Joint Details
 - S - 19 Finger Plate Expansion Joint Details
 - S - 20 Finger Plate Expansion Joint Details
 - S - 21 Steel Framing Plan
 - S - 22 Girder Elevation and Details
 - S - 23 Camber Diagram and Diaphragm Details
 - S - 24 Bearing Details - Abutments
 - S - 25 Bearing Details - Piers
 - S - 26 West Abutment Plan and Elevation
 - S - 27 West Abutment Details
 - S - 28 East Abutment Plan and Elevation
 - S - 29 East Abutment Details
 - S - 30 Pier 1 Details
 - S - 31 Pier 2 Details
 - S - 32 Pier 3 Details
 - S - 33 Pier 4 Details
 - S - 34 Bar Splicer Details
 - S - 35 Pile Details
 - S - 36 Boring Logs
 - S - 37 Boring Logs
 - S - 38 Boring Logs

- SN 056-3149
- S - 39 General Plan and Elevation - Bill of Materials
 - S - 40 Expansion Joint Replacement Details - West Abutment
 - S - 41 Expansion Joint Replacement Details - East Abutment

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.
	742.20	730.50	725.00	725.00	727.00	742.09

WATERWAY INFORMATION

Drainage Area = 1256 SQ. MI. Low Grade Elev. 741.56 @ Sta. 590+50

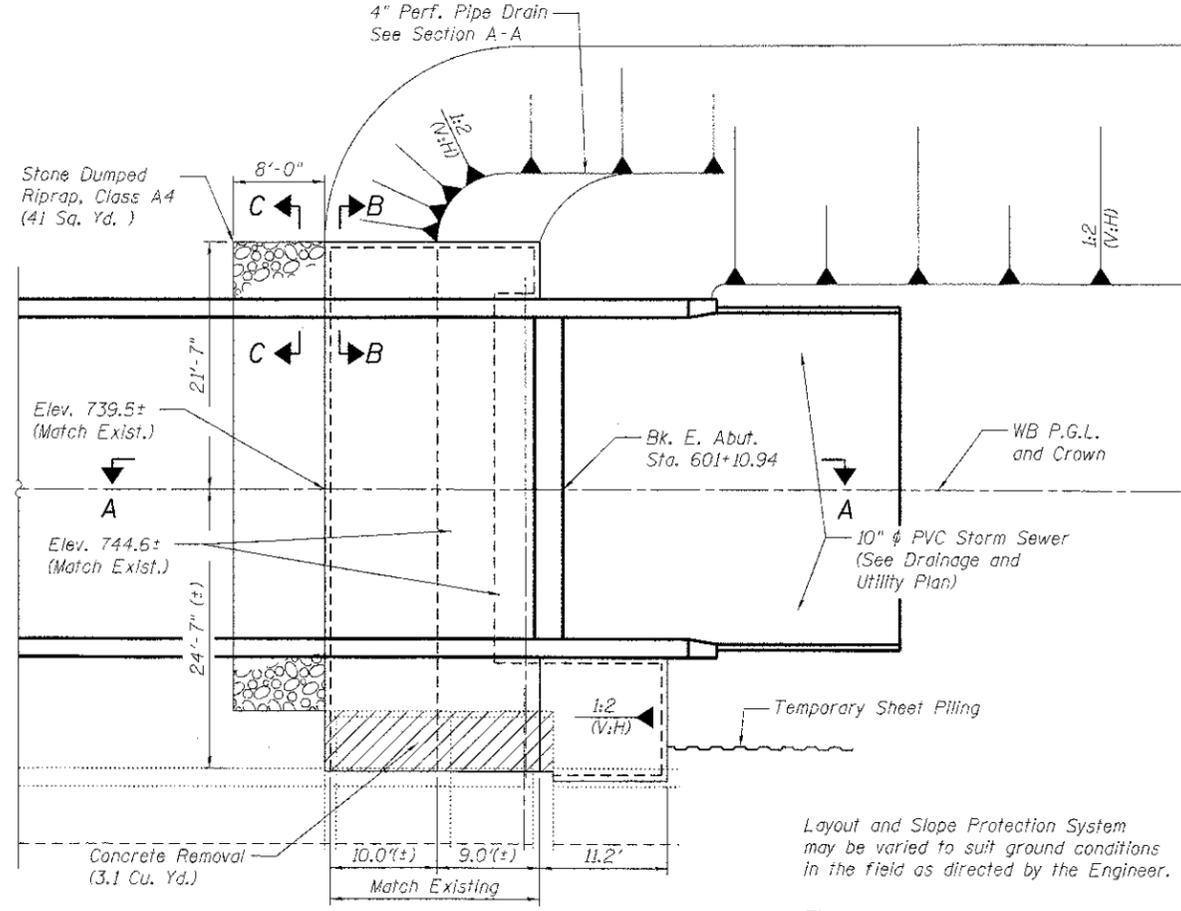
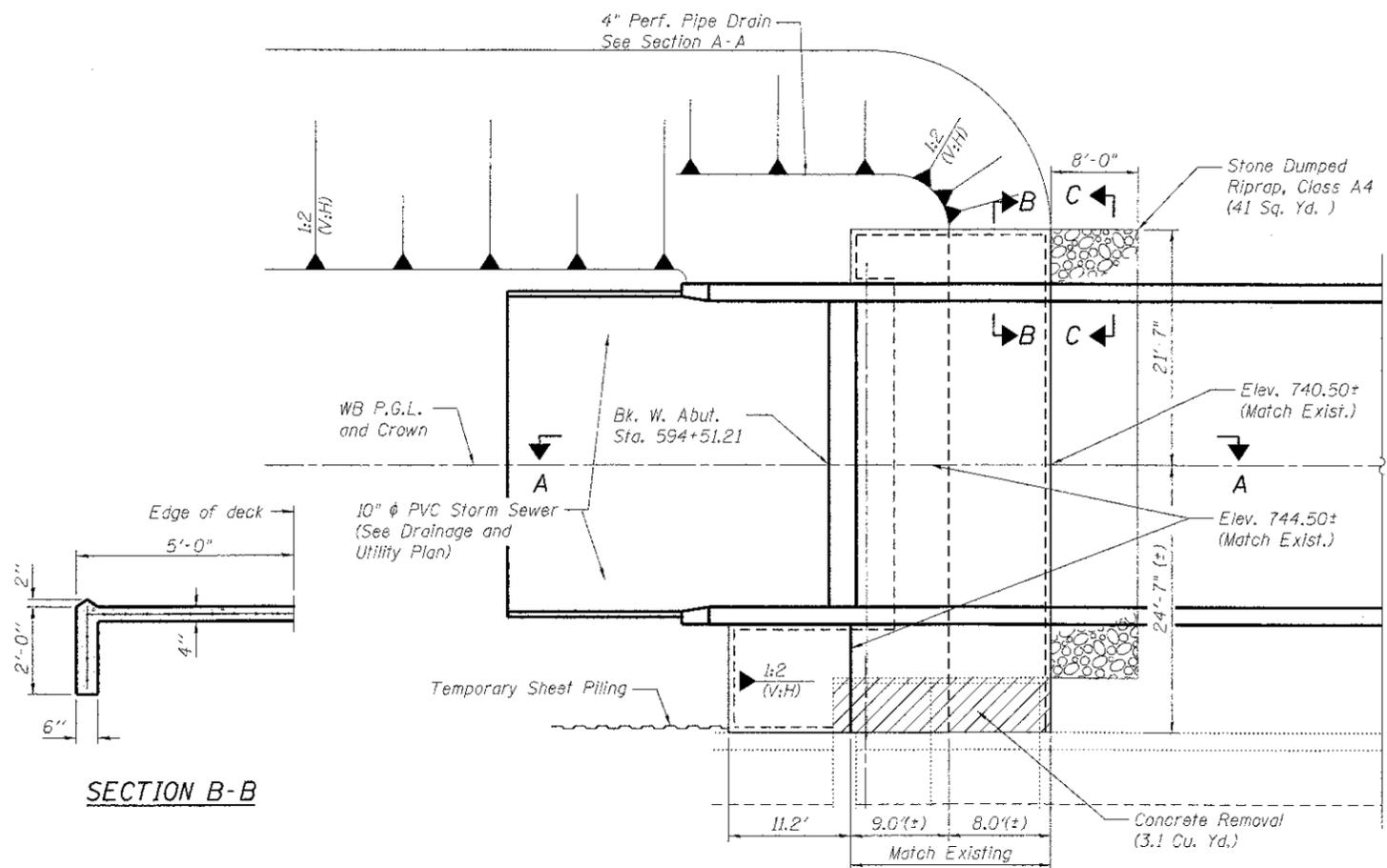
Flood	Freq. Yr.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater E.	
		Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
	10	4,370	3,158	3,158	738.3	0.0	0.0	738.3	738.3
Design	50	6,300	3,500	3,500	739.0	0.0	0.0	739.0	739.0
Base	100	7,420	3,729	3,729	739.5	0.0	0.0	739.5	739.5
	500	10,110	4,200	4,200	740.3	0.0	0.0	740.3	740.3

BILL OF MATERIALS AND GENERAL NOTES
STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



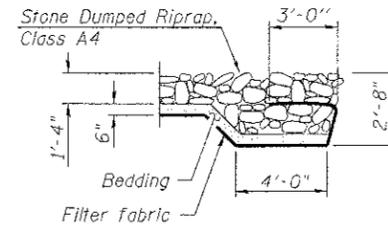
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-02	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 125
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT	
CONTRACT NO.		63633	



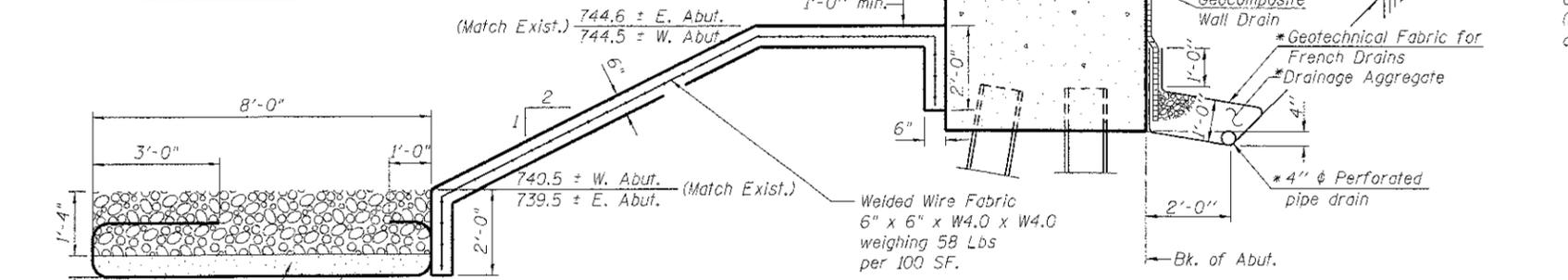
WEST ABUTMENT SLOPEWALL
(94 Sq. Yd.)

EAST ABUTMENT SLOPEWALL
(106 Sq. Yd.)

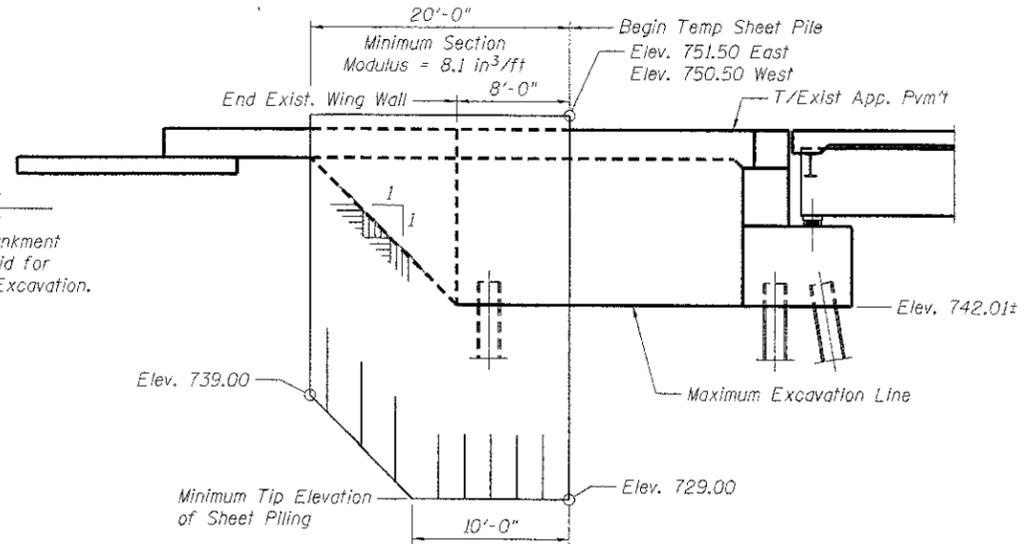
Layout and Slope Protection System may be varied to suit ground conditions in the field as directed by the Engineer.
Tie the new slope wall concrete to existing slope wall with #5 x 3'-0" long epoxied-in dowels on 18" cts. and 6" embedment, typ.



SECTION C-C



SECTION A-A THRU PILE SUPPORTED STUB ABUTMENT
(Horiz. dim. @ Rt. L's)



TEMPORARY SHEET PILING

(380 S.F. - West Abut.)
(360 S.F. - East Abut.)

SLOPE WALL DETAILS
STRUCTURE NO. 056-3190

*Included in the cost of Pipe Underdrains for Structures.

Note:
All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipes shall extend under the wingwall, until intersecting the north side slope. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



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WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-03	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 126
CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT

FILE NAME: 090707_Slope.dgn
PLOT DRIVER: plot.plt
PEN TABLE: Standard-Trans.tbl

GENERAL NOTES

- All In-Stream work, including placement and removal of In-Stream Access to piers, Cofferdam construction and removal and stream restoration, must be completed outside of spawning season (mid April through June) and boating season (mid May through mid September).
- The Contractor shall be responsible for signage and buoys to establish a no-wake zone in the vicinity of the construction zone during spring, summer and fall months. See specifications.
- The Contractor shall be responsible for signage and flashing barricades, etc., for safety to snowmobiles in the vicinity of the construction zone during winter months. See specifications.
- The Contractor shall be responsible for a survey of the work zone upon project completion to demonstrate that the river has been restored to the condition prior to commencement of construction.
- The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR 3704 Floodway Construction permit number allowing permanent construction as shown in the contract plans.
- Work shall conform to all provisions of the Erosion Control Plan.
- Haul Roads, In-Stream Work Pads and Causeways, if needed, shall be constructed in accordance with the Recurring Special Provision Check Sheet #8.
- Contractor shall review and adhere to the ACOE permit stipulations (copy in Special Provision). Note especially restrictions on the disposal of water pumped from the coffer dams.
- If Contractor elects to utilize a haul road, he shall schedule his work or provide earth retention to prevent intrusion into existing wetlands beyond the Proposed Right of Way Line.

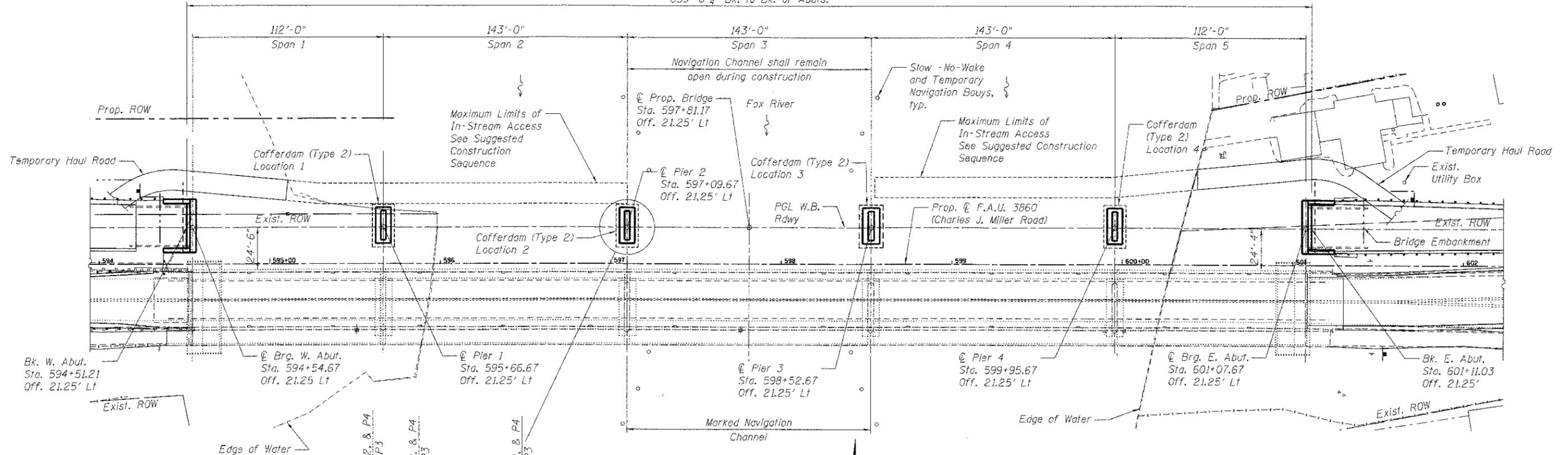
BILL OF MATERIALS

Item	Unit	Total
Cofferdam (Type 2) (Location - 1)	Each	1
Cofferdam (Type 2) (Location - 2)	Each	1
Cofferdam (Type 2) (Location - 3)	Each	1
Cofferdam (Type 2) (Location - 4)	Each	1
SEAL COAT CONCRETE	Cu. Yd.	149.5

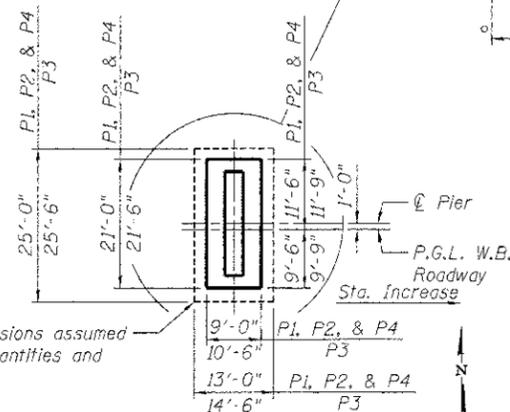
SUGGESTED CONSTRUCTION SEQUENCE

- Place East and West Abutment Embankment to Bottom of Abutment.
- Place Temporary Haul Roads, if required.
- Place Temporary In-Stream Access to Piers 1 and 4, if required.
- Construct Pier 1 and Pier 4 Cofferdams.
- Construct Pier 1 and Pier 4.
- Place Temporary In-Stream Access to Piers 2 and 3, if required.
- Remove Pier 1 and Pier 4 Cofferdams.
- Construct Pier 2 and Pier 3 Cofferdams.
- Construct Pier 2 and Pier 3.
- Remove Pier 2 and Pier 3 Cofferdams.
- Construct East and West Abutments.
- Construct Slopedalls and Place Riprap at East and West Abutments.
- Erect Structural Steel.
- Form and Cast Concrete Superstructure.
- Remove All Temporary In-Stream Access to Piers.
- Clean-up and Restore.
- Replace Joints, Patch Deck and Paint Beam Ends of Existing Bridge (SN 056-3149).

659'-8 3/4" Bk. to Bk. of Abuts.



SUBSTRUCTURE LAYOUT AND COFFERDAM PLAN



PIER LAYOUT DETAIL

SUBSTRUCTURE AND COFFERDAM, LAYOUT PLAN
STRUCTURE NO. 056-3190

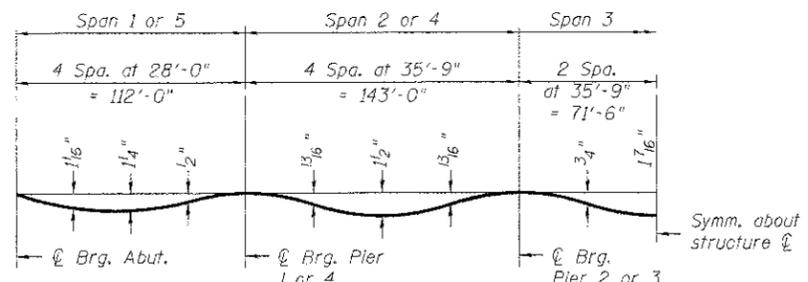
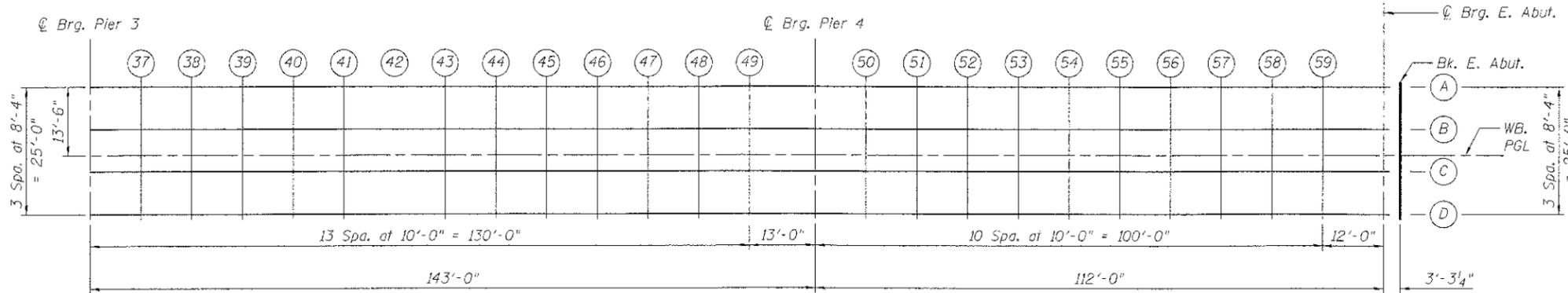
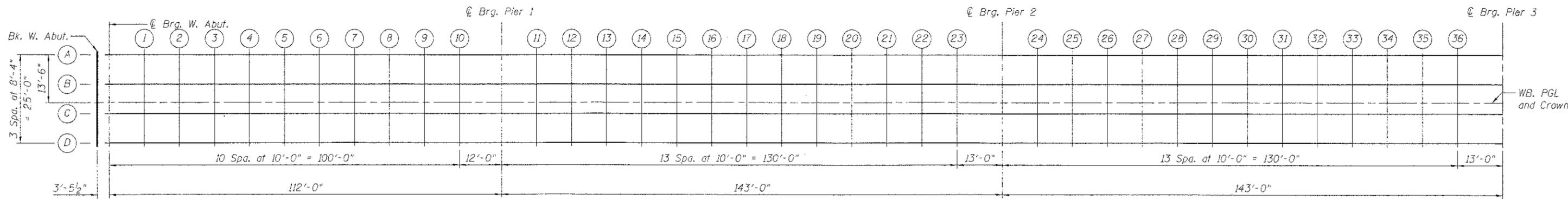
DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

FILE NAME: 090077-056-3190.DWG
PLOT NUMBER: 04/24/12
PEN TABLE: Standard-1/28-01



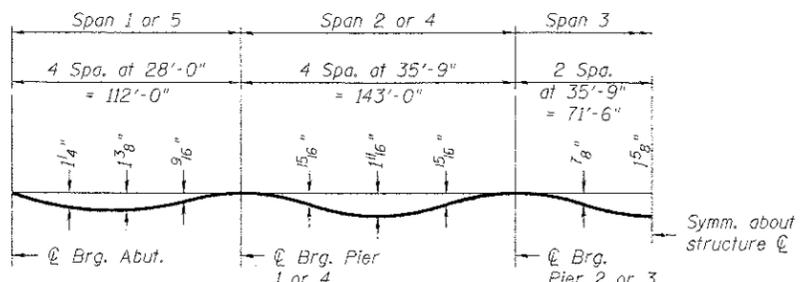
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WB CHARLES J. MILLER ROAD BRIDGE			DATE: 7/23/12		
SHEET NO.	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-04	3860	09-00372-00-PW	McHENRY	252	127
S-41 SHEETS			CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



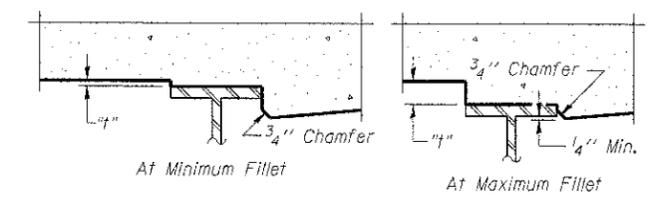
DEAD LOAD DEFLECTION DIAGRAM - EXTERIOR GIRDERS A & D
(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on following sheets.



DEAD LOAD DEFLECTION DIAGRAM - INTERIOR GIRDERS B & C
(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on following sheets.



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

FILLET HEIGHTS

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



SHEET NO. S-05		WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12		
		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-41 SHEETS		3860	09-00372-00-PW	McHENRY	252	128
		FED. ROAD DIST. NO. 1 ILLINOIS		FED. AID PROJECT		
		CONTRACT NO.		63633		

TOP OF DECK SLAB ELEVATIONS
STRUCTURE NO. 056-3190

BEAM A

BEAM B

WB. PROFILE GRADE LINE

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	594+51.21	-13.50	751.14	751.14
CL. BRG. W. ABUT.	594+54.67	-13.50	751.28	751.28
1	594+64.67	-13.50	751.68	751.72
2	594+74.67	-13.50	752.08	752.15
3	594+84.67	-13.50	752.48	752.58
4	594+94.67	-13.50	752.87	752.98
5	595+04.67	-13.50	753.25	753.35
6	595+14.67	-13.50	753.61	753.71
7	595+24.67	-13.50	753.96	754.04
8	595+34.67	-13.50	754.29	754.35
9	595+44.67	-13.50	754.62	754.65
10	595+54.67	-13.50	754.93	754.94
CL. BRG. PIER 1	595+66.67	-13.50	755.28	755.28
11	595+76.67	-13.50	755.56	755.57
12	595+86.67	-13.50	755.83	755.85
13	595+96.67	-13.50	756.08	756.13
14	596+06.67	-13.50	756.32	756.40
15	596+16.67	-13.50	756.55	756.65
16	596+26.67	-13.50	756.76	756.88
17	596+36.67	-13.50	756.96	757.02
18	596+46.67	-13.50	757.15	757.27
19	596+56.67	-13.50	757.32	757.43
20	596+66.67	-13.50	757.48	757.57
21	596+76.67	-13.50	757.63	757.68
22	596+86.67	-13.50	757.76	757.79
23	596+96.67	-13.50	757.88	757.89
CL. BRG. PIER 2	597+09.67	-13.50	758.01	758.01
24	597+19.67	-13.50	758.10	758.11
25	597+29.67	-13.50	758.18	758.20
26	597+39.67	-13.50	758.24	758.29
27	597+49.67	-13.50	758.29	758.36
28	597+59.67	-13.50	758.33	758.42
29	597+69.67	-13.50	758.35	758.46
30	597+79.67	-13.50	758.36	758.48
31	597+89.67	-13.50	758.35	758.47
32	597+99.67	-13.50	758.34	758.44
33	598+09.67	-13.50	758.31	758.39
34	598+19.67	-13.50	758.26	758.32
35	598+29.67	-13.50	758.20	758.24
36	598+39.67	-13.50	758.13	758.15
CL. BRG. PIER 3	598+52.67	-13.50	758.02	758.02
37	598+62.67	-13.50	757.92	757.93
38	598+72.67	-13.50	757.81	757.83
39	598+82.67	-13.50	757.68	757.73
40	598+92.67	-13.50	757.54	757.62
41	599+02.67	-13.50	757.38	757.48
42	599+12.67	-13.50	757.21	757.33
43	599+22.67	-13.50	757.03	757.16
44	599+32.67	-13.50	756.84	756.96
45	599+42.67	-13.50	756.63	756.74
46	599+52.67	-13.50	756.41	756.50
47	599+62.67	-13.50	756.17	756.23
48	599+72.67	-13.50	755.92	755.96
49	599+82.67	-13.50	755.66	755.68
CL. BRG. PIER 4	599+95.67	-13.50	755.30	755.30
50	600+05.67	-13.50	755.01	755.02
51	600+15.67	-13.50	754.71	754.73
52	600+25.67	-13.50	754.39	754.44
53	600+35.67	-13.50	754.06	754.13
54	600+45.67	-13.50	753.71	753.80
55	600+55.67	-13.50	753.35	753.46
56	600+65.67	-13.50	752.98	753.09
57	600+75.67	-13.50	752.59	752.69
58	600+85.67	-13.50	752.20	752.27
59	600+95.67	-13.50	751.81	751.85
CL. BRG. E. ABUT.	601+07.67	-13.50	751.35	751.35
BK. E. ABUT.	601+10.94	-13.50	751.23	751.23

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	594+51.21	-5.17	751.27	751.27
CL. BRG. W. ABUT.	594+54.67	-5.17	751.41	751.41
1	594+64.67	-5.17	751.81	751.86
2	594+74.67	-5.17	752.21	752.29
3	594+84.67	-5.17	752.61	752.72
4	594+94.67	-5.17	753.00	753.12
5	595+04.67	-5.17	753.38	753.50
6	595+14.67	-5.17	753.74	753.85
7	595+24.67	-5.17	754.09	754.18
8	595+34.67	-5.17	754.42	754.49
9	595+44.67	-5.17	754.75	754.78
10	595+54.67	-5.17	755.06	755.07
CL. BRG. PIER 1	595+66.67	-5.17	755.41	755.41
11	595+76.67	-5.17	755.69	755.70
12	595+86.67	-5.17	755.96	755.99
13	595+96.67	-5.17	756.21	756.27
14	596+06.67	-5.17	756.45	756.54
15	596+16.67	-5.17	756.68	756.79
16	596+26.67	-5.17	756.89	757.02
17	596+36.67	-5.17	757.09	757.23
18	596+46.67	-5.17	757.28	757.41
19	596+56.67	-5.17	757.45	757.57
20	596+66.67	-5.17	757.61	757.71
21	596+76.67	-5.17	757.76	757.92
22	596+86.67	-5.17	757.89	758.03
23	596+96.67	-5.17	758.01	758.02
CL. BRG. PIER 2	597+09.67	-5.17	758.14	758.14
24	597+19.67	-5.17	758.23	758.24
25	597+29.67	-5.17	758.31	758.34
26	597+39.67	-5.17	758.37	758.43
27	597+49.67	-5.17	758.42	758.50
28	597+59.67	-5.17	758.46	758.57
29	597+69.67	-5.17	758.48	758.61
30	597+79.67	-5.17	758.49	758.62
31	597+89.67	-5.17	758.48	758.61
32	597+99.67	-5.17	758.47	758.58
33	598+09.67	-5.17	758.44	758.53
34	598+19.67	-5.17	758.39	758.45
35	598+29.67	-5.17	758.34	758.37
36	598+39.67	-5.17	758.26	758.28
CL. BRG. PIER 3	598+52.67	-5.17	758.15	758.15
37	598+62.67	-5.17	758.05	758.06
38	598+72.67	-5.17	757.94	757.97
39	598+82.67	-5.17	757.81	757.87
40	598+92.67	-5.17	757.67	757.76
41	599+02.67	-5.17	757.51	757.63
42	599+12.67	-5.17	757.34	757.48
43	599+22.67	-5.17	757.16	757.30
44	599+32.67	-5.17	756.97	757.11
45	599+42.67	-5.17	756.76	756.88
46	599+52.67	-5.17	756.54	756.64
47	599+62.67	-5.17	756.30	756.37
48	599+72.67	-5.17	756.06	756.10
49	599+82.67	-5.17	755.79	755.81
CL. BRG. PIER 4	599+95.67	-5.17	755.43	755.43
50	600+05.67	-5.17	755.14	755.15
51	600+15.67	-5.17	754.84	754.87
52	600+25.67	-5.17	754.52	754.57
53	600+35.67	-5.17	754.19	754.27
54	600+45.67	-5.17	753.84	753.95
55	600+55.67	-5.17	753.48	753.60
56	600+65.67	-5.17	753.11	753.23
57	600+75.67	-5.17	752.72	752.83
58	600+85.67	-5.17	752.33	752.41
59	600+95.67	-5.17	751.94	751.99
CL. BRG. E. ABUT.	601+07.67	-5.17	751.48	751.48
BK. E. ABUT.	601+10.94	-5.17	751.36	751.36

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	594+51.21	0.00	751.35	751.35
CL. BRG. W. ABUT.	594+54.67	0.00	751.49	751.49
1	594+64.67	0.00	751.89	751.94
2	594+74.67	0.00	752.29	752.37
3	594+84.67	0.00	752.69	752.80
4	594+94.67	0.00	753.08	753.20
5	595+04.67	0.00	753.46	753.58
6	595+14.67	0.00	753.82	753.93
7	595+24.67	0.00	754.17	754.26
8	595+34.67	0.00	754.51	754.57
9	595+44.67	0.00	754.83	754.86
10	595+54.67	0.00	755.14	755.15
CL. BRG. PIER 1	595+66.67	0.00	755.49	755.49
11	595+76.67	0.00	755.77	755.78
12	595+86.67	0.00	756.04	756.07
13	595+96.67	0.00	756.29	756.35
14	596+06.67	0.00	756.53	756.62
15	596+16.67	0.00	756.7568	756.874
16	596+26.67	0.00	756.97	757.10
17	596+36.67	0.00	757.17	757.31
18	596+46.67	0.00	757.36	757.49
19	596+56.67	0.00	757.53	757.65
20	596+66.67	0.00	757.69	757.79
21	596+76.67	0.00	757.84	757.90
22	596+86.67	0.00	757.97	758.01
23	596+96.67	0.00	758.09	758.10
CL. BRG. PIER 2	597+09.67	0.00	758.23	758.23
24	597+19.67	0.00	758.31	758.32
25	597+29.67	0.00	758.39	758.42
26	597+39.67	0.00	758.45	758.51
27	597+49.67	0.00	758.50	758.59
28	597+59.67	0.00	758.54	758.65
29	597+69.67	0.00	758.56	758.69
30	597+79.67	0.00	758.57	758.70
31	597+89.67	0.00	758.57	758.69
32	597+99.67	0.00	758.55	758.66
33	598+09.67	0.00	758.52	758.61
34	598+19.67	0.00	758.47	758.54
35	598+29.67	0.00	758.42	758.45
36	598+39.67	0.00	758.35	758.36
CL. BRG. PIER 3	598+52.67	0.00	758.23	758.23
37	598+62.67	0.00	758.13	758.14
38	598+72.67	0.00	758.02	758.05
39	598+82.67	0.00	757.89	757.95
40	598+92.67	0.00	757.75	757.84
41	599+02.67	0.00	757.59	757.71
42	599+12.67	0.00	757.42	757.56
43	599+22.67	0.00	757.24	757.39
44	599+32.67	0.00	757.05	757.19
45	599+42.67	0.00	756.84	756.96
46	599+52.67	0.00	756.62	756.72
47	599+62.67	0.00	756.38	756.45
48	599+72.67	0.00	756.14	756.18
49	599+82.67	0.00	755.87	755.89
CL. BRG. PIER 4	599+95.67	0.00	755.51	755.51
50	600+05.67	0.00	755.22	755.23
51	600+15.67	0.00	754.92	754.95
52	600+25.67	0.00	754.60	754.65
53	600+35.67	0.00	754.27	754.35
54	600+45.67	0.00	753.92	754.03
55	600+55.67	0.00	753.56	753.68
56	600+65.67	0.00	753.19	753.31
57	600+75.67	0.00	752.81	752.92
58	600+85.67	0.00	752.41	752.49
59	600+95.67	0.00	752.02	752.07
CL. BRG. E. ABUT.	601+07.67	0.00	751.56	751.56
BK. E. ABUT.	601+10.94	0.00	751.44	751.44

**TOP OF DECK SLAB ELEVATIONS
STRUCTURE NO. 056-3190**

WB CHARLES J. MILLER ROAD BRIDGE

DATE: 7/23/12

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH

BEAM C

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	594+51.21	3.17	751.31	751.31
CL. BRG. W. ABUT.	594+54.67	3.17	751.44	751.44
1	594+64.67	3.17	751.84	751.89
2	594+74.67	3.17	752.24	752.32
3	594+84.67	3.17	752.64	752.75
4	594+94.67	3.17	753.03	753.15
5	595+04.67	3.17	753.41	753.53
6	595+14.67	3.17	753.77	753.88
7	595+24.67	3.17	754.12	754.21
8	595+34.67	3.17	754.46	754.52
9	595+44.67	3.17	754.78	754.81
10	595+54.67	3.17	755.09	755.10
CL. BRG. PIER 1	595+66.67	3.17	755.44	755.44
11	595+76.67	3.17	755.72	755.73
12	595+86.67	3.17	755.99	756.02
13	595+96.67	3.17	756.24	756.30
14	596+06.67	3.17	756.48	756.57
15	596+16.67	3.17	756.71	756.82
16	596+26.67	3.17	756.92	757.06
17	596+36.67	3.17	757.12	757.26
18	596+46.67	3.17	757.31	757.44
19	596+56.67	3.17	757.48	757.60
20	596+66.67	3.17	757.64	757.74
21	596+76.67	3.17	757.79	757.85
22	596+86.67	3.17	757.92	757.96
23	596+96.67	3.17	758.04	758.05
CL. BRG. PIER 2	597+09.67	3.17	758.18	758.18
24	597+19.67	3.17	758.26	758.27
25	597+29.67	3.17	758.34	758.37
26	597+39.67	3.17	758.40	758.46
27	597+49.67	3.17	758.45	758.54
28	597+59.67	3.17	758.49	758.60
29	597+69.67	3.17	758.51	758.64
30	597+79.67	3.17	758.52	758.65
31	597+89.67	3.17	758.52	758.65
32	597+99.67	3.17	758.50	758.61
33	598+09.67	3.17	758.47	758.56
34	598+19.67	3.17	758.42	758.49
35	598+29.67	3.17	758.37	758.40
36	598+39.67	3.17	758.30	758.31
CL. BRG. PIER 3	598+52.67	3.17	758.18	758.18
37	598+62.67	3.17	758.08	758.09
38	598+72.67	3.17	757.97	758.00
39	598+82.67	3.17	757.84	757.90
40	598+92.67	3.17	757.70	757.79
41	599+02.67	3.17	757.54	757.66
42	599+12.67	3.17	757.38	757.51
43	599+22.67	3.17	757.19	757.34
44	599+32.67	3.17	757.00	757.14
45	599+42.67	3.17	756.79	756.91
46	599+52.67	3.17	756.57	756.67
47	599+62.67	3.17	756.33	756.40
48	599+72.67	3.17	756.09	756.13
49	599+82.67	3.17	755.82	755.84
CL. BRG. PIER 4	599+95.67	3.17	755.47	755.47
50	600+05.67	3.17	755.17	755.18
51	600+15.67	3.17	754.87	754.90
52	600+25.67	3.17	754.55	754.60
53	600+35.67	3.17	754.22	754.30
54	600+45.67	3.17	753.87	753.98
55	600+55.67	3.17	753.51	753.63
56	600+65.67	3.17	753.14	753.26
57	600+75.67	3.17	752.75	752.87
58	600+85.67	3.17	752.36	752.44
59	600+95.67	3.17	751.97	752.02
CL. BRG. E. ABUT.	601+07.67	3.17	751.51	751.51
BK. E. ABUT.	601+10.94	3.17	751.39	751.39

BEAM D

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	594+51.21	11.50	751.18	751.18
CL. BRG. W. ABUT.	594+54.67	11.50	751.31	751.31
1	594+64.67	11.50	751.71	751.75
2	594+74.67	11.50	752.11	752.18
3	594+84.67	11.50	752.51	752.61
4	594+94.67	11.50	752.90	753.01
5	595+04.67	11.50	753.28	753.39
6	595+14.67	11.50	753.64	753.74
7	595+24.67	11.50	753.99	754.07
8	595+34.67	11.50	754.33	754.38
9	595+44.67	11.50	754.65	754.68
10	595+54.67	11.50	754.96	754.97
CL. BRG. PIER 1	595+66.67	11.50	755.31	755.31
11	595+76.67	11.50	755.59	755.60
12	595+86.67	11.50	755.86	755.88
13	595+96.67	11.50	756.11	756.16
14	596+06.67	11.50	756.35	756.43
15	596+16.67	11.50	756.58	756.68
16	596+26.67	11.50	756.79	756.91
17	596+36.67	11.50	756.99	757.12
18	596+46.67	11.50	757.18	757.30
19	596+56.67	11.50	757.35	757.46
20	596+66.67	11.50	757.51	757.60
21	596+76.67	11.50	757.66	757.72
22	596+86.67	11.50	757.79	757.82
23	596+96.67	11.50	757.91	757.92
CL. BRG. PIER 2	597+09.67	11.50	758.05	758.05
24	597+19.67	11.50	758.13	758.14
25	597+29.67	11.50	758.21	758.23
26	597+39.67	11.50	758.27	758.32
27	597+49.67	11.50	758.32	758.40
28	597+59.67	11.50	758.36	758.45
29	597+69.67	11.50	758.38	758.49
30	597+79.67	11.50	758.39	758.51
31	597+89.67	11.50	758.39	758.50
32	597+99.67	11.50	758.37	758.47
33	598+09.67	11.50	758.34	758.42
34	598+19.67	11.50	758.29	758.35
35	598+29.67	11.50	758.24	758.27
36	598+39.67	11.50	758.17	758.18
CL. BRG. PIER 3	598+52.67	11.50	758.05	758.05
37	598+62.67	11.50	757.95	757.96
38	598+72.67	11.50	757.84	757.86
39	598+82.67	11.50	757.71	757.76
40	598+92.67	11.50	757.57	757.65
41	599+02.67	11.50	757.41	757.51
42	599+12.67	11.50	757.24	757.36
43	599+22.67	11.50	757.06	757.19
44	599+32.67	11.50	756.87	756.99
45	599+42.67	11.50	756.66	756.77
46	599+52.67	11.50	756.44	756.53
47	599+62.67	11.50	756.20	756.27
48	599+72.67	11.50	755.96	755.99
49	599+82.67	11.50	755.69	755.71
CL. BRG. PIER 4	599+95.67	11.50	755.33	755.33
50	600+05.67	11.50	755.04	755.05
51	600+15.67	11.50	754.74	754.76
52	600+25.67	11.50	754.42	754.47
53	600+35.67	11.50	754.09	754.16
54	600+45.67	11.50	753.74	753.83
55	600+55.67	11.50	753.38	753.49
56	600+65.67	11.50	753.01	753.12
57	600+75.67	11.50	752.62	752.72
58	600+85.67	11.50	752.23	752.30
59	600+95.67	11.50	751.84	751.88
CL. BRG. E. ABUT.	601+07.67	11.50	751.38	751.38
BK. E. ABUT.	601+10.94	11.50	751.26	751.26

TOP OF DECK SLAB ELEVATIONS
STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

E-S

11-1-09

WB CHARLES J. MILLER ROAD BRIDGE

DATE: 7/23/12



HRGreen.com
Illinois Professional Design Firm
184-001322

SHEET NO. S-07	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	3860	09-00372-00-PW	McHENRY	252	130
S-41 SHEETS				CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

NORTH GUTTER LINE

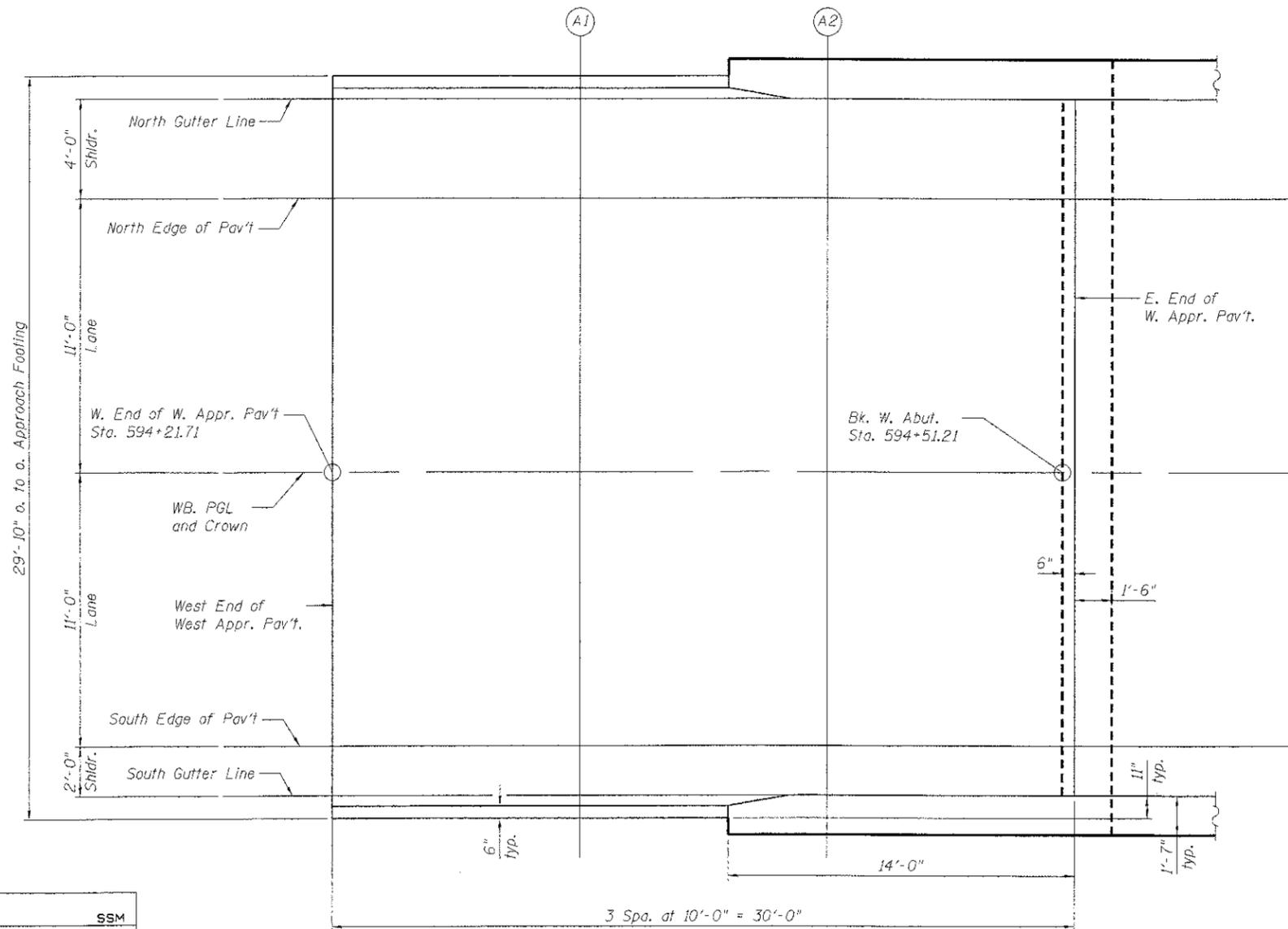
Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End W. Appr. Pav't.	594+21.71	-15.00	749.94
A1	594+31.71	-15.00	750.34
A2	594+41.71	-15.00	750.74
E. End W. Appr. Pav't.	594+51.71	-15.00	751.14

NORTH EDGE OF PAVEMENT

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End W. Appr. Pav't.	594+21.71	-11.00	750.00
A1	594+31.71	-11.00	750.40
A2	594+41.71	-11.00	750.80
E. End W. Appr. Pav't.	594+51.71	-11.00	751.20

WEST BOUND PROFILE GRADE LINE

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End W. Appr. Pav't.	594+21.71	0.00	750.17
A1	594+31.71	0.00	750.57
A2	594+41.71	0.00	750.97
E. End W. Appr. Pav't.	594+51.71	0.00	751.37



SOUTH EDGE OF PAVEMENT

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End W. Appr. Pav't.	594+21.71	11.00	750.00
A1	594+31.71	11.00	750.40
A2	594+41.71	11.00	750.80
E. End W. Appr. Pav't.	594+51.71	11.00	751.20

SOUTH GUTTER LINE

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End W. Appr. Pav't.	594+21.71	13.00	749.97
A1	594+31.71	13.00	750.37
A2	594+41.71	13.00	750.77
E. End W. Appr. Pav't.	594+51.71	13.00	751.17

**WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 056-3190**

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



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184-001322

WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-08	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 131
FED. ROAD DIST. NO. 1 ILLINOIS		FED. AID PROJECT	
CONTRACT NO. 63633			

FILE NAME: 090712.dwg
PLOT DEVICE: standard-plotter.tbl
PLOT TABLE: standard-plotter.tbl

NORTH GUTTER LINE

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End E. Appr. Pav't.	601+10.44	-15.00	751.23
A3	601+20.44	-15.00	750.87
A4	601+30.44	-15.00	750.52
E. End E. Appr. Pav't.	601+40.44	-15.00	750.18

NORTH EDGE OF PAVEMENT

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End E. Appr. Pav't.	601+10.44	-11.00	751.29
A3	601+20.44	-11.00	750.93
A4	601+30.44	-11.00	750.58
E. End E. Appr. Pav't.	601+40.44	-11.00	750.24

WEST BOUND PROFILE GRADE LINE

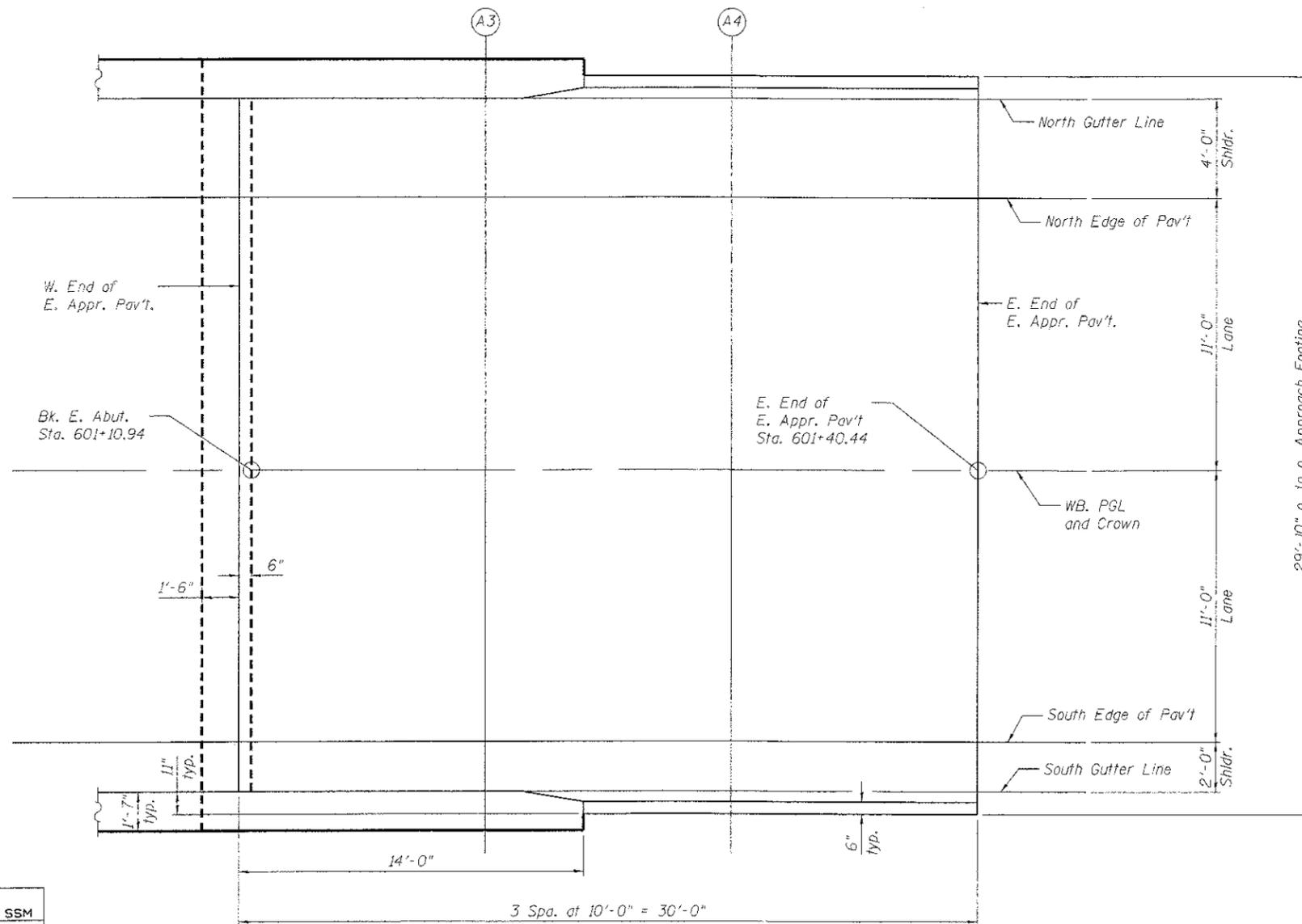
Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End E. Appr. Pav't.	601+10.44	0.00	751.46
A3	601+20.44	0.00	751.10
A4	601+30.44	0.00	750.75
E. End E. Appr. Pav't.	601+40.44	0.00	750.41

SOUTH EDGE OF PAVEMENT

Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End E. Appr. Pav't.	601+10.44	11.00	751.29
A3	601+20.44	11.00	750.93
A4	601+30.44	11.00	750.58
E. End E. Appr. Pav't.	601+40.44	11.00	750.24

SOUTH GUTTER LINE

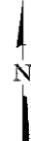
Location	Station	Offset to WB P.G.L.	Theoretical Grade Elevations
W. End E. Appr. Pav't.	601+10.44	13.00	751.26
A3	601+20.44	13.00	750.90
A4	601+30.44	13.00	750.55
E. End E. Appr. Pav't.	601+40.44	13.00	750.21



**EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 056-3190**

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

PLAN



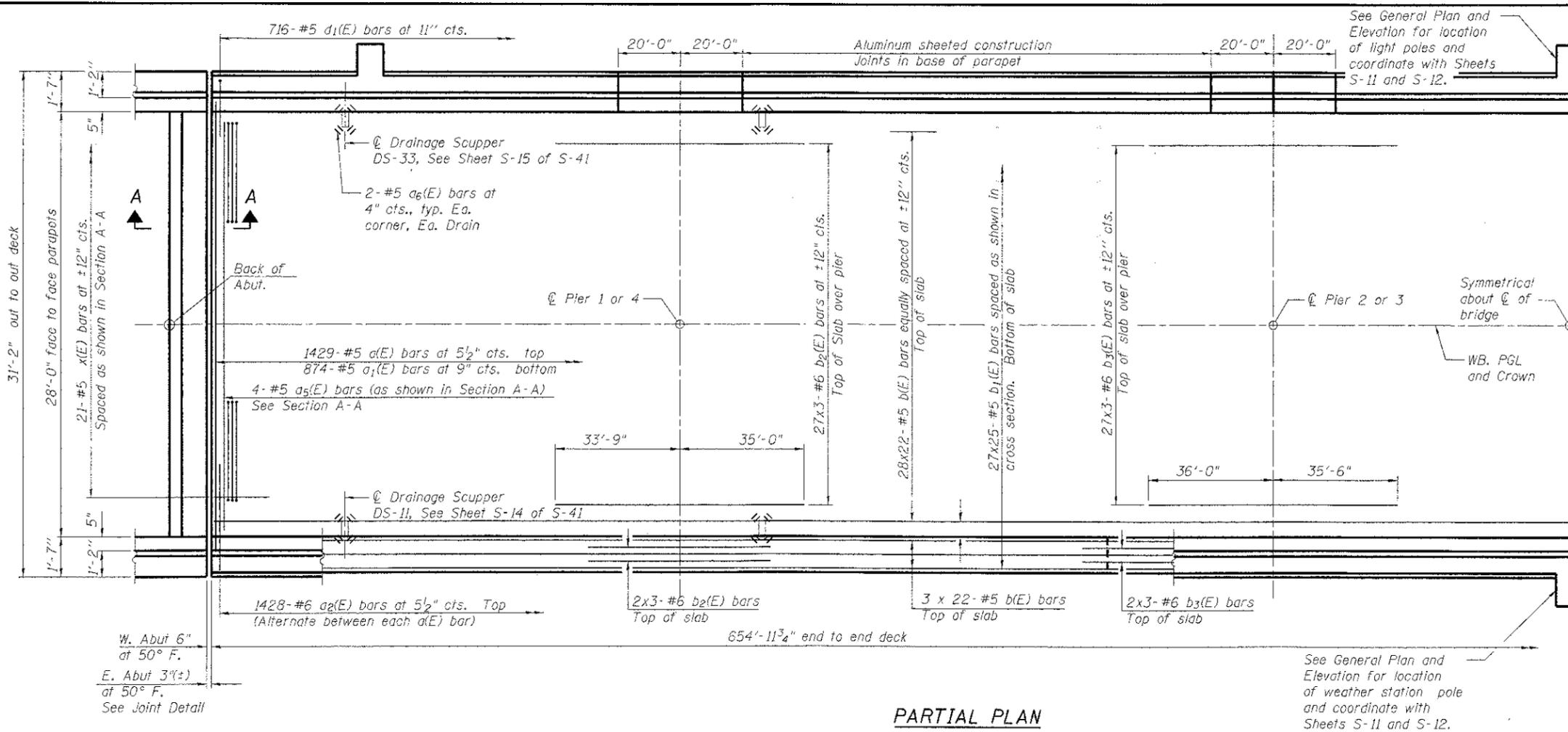
HRGreen.com
Illinois Professional Design Firm
184-001322

WB CHARLES J. MILLER ROAD BRIDGE

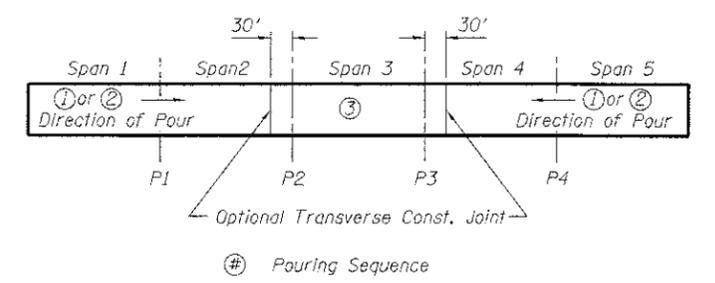
DATE: 7/23/12

SHEET NO. S-09	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	3860	09-00372-00-PW	McHENRY	252	132
S-41 SHEETS			CONTRACT NO. 63833		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

FILE NAME: 090707-ds6602.dgn
PLOT DEVICE: pdfplot
PEN TABLE: standard.ctb, pens.tbl



PARTIAL PLAN

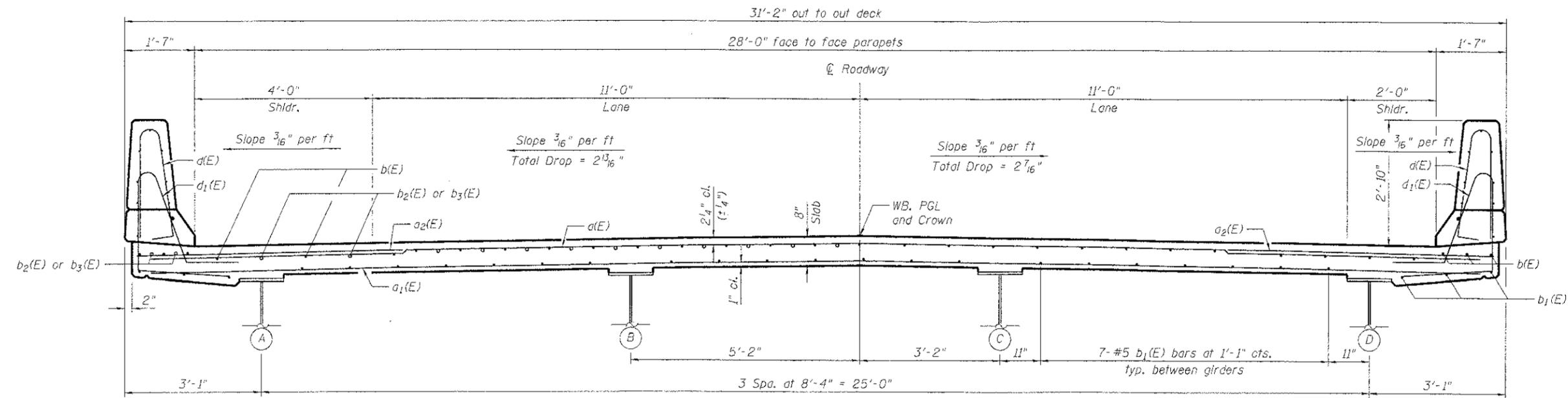


DECK POURING SEQUENCE

When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:

- 1) At least 72 hours shall have elapsed from the end of the previous pour.
- 2) The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

Notes:
See Sheet S-11 of S-41 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet S-11 of S-41 for parapet reinforcement.



NEAR PIER

NEAR MIDSPAN

CROSS SECTION
(Looking East)

DECK PLAN AND CROSS SECTION
STRUCTURE NO. 056-3190

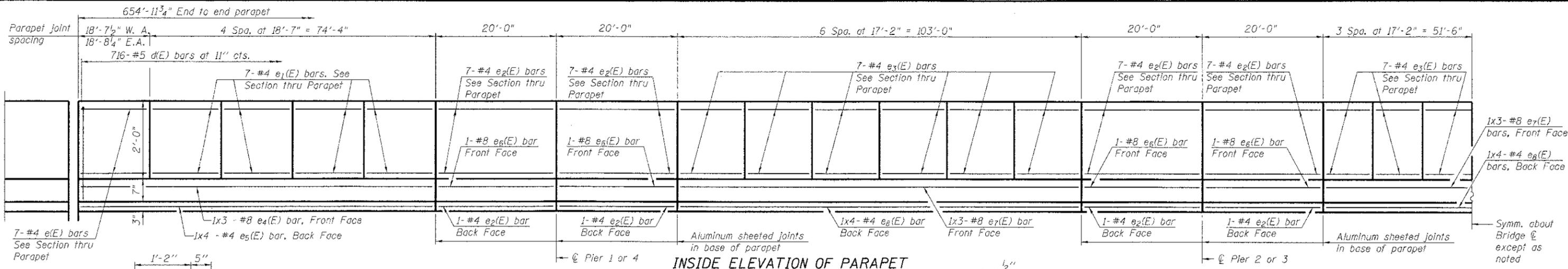
MINIMUM BAR LAP

(Deck)
#5 bar = 2'-7"
#6 bar = 3'-1"

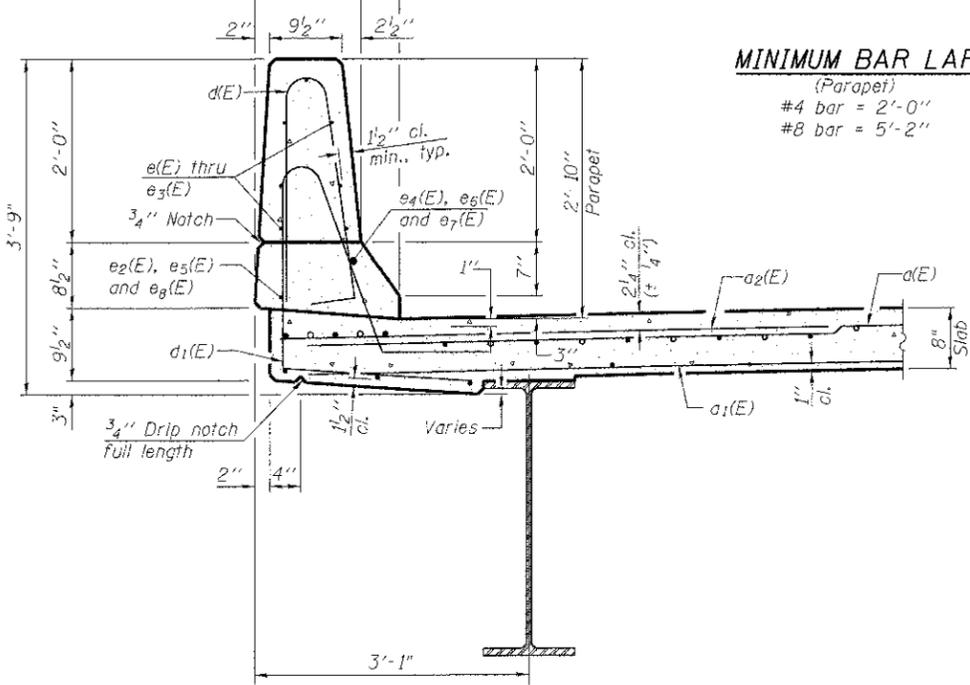
DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

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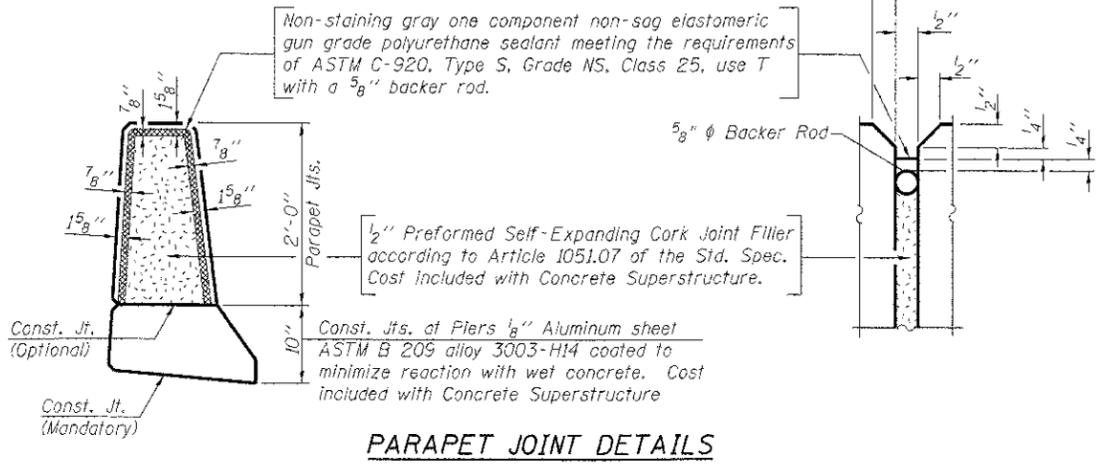
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-10	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 133
CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT



INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET

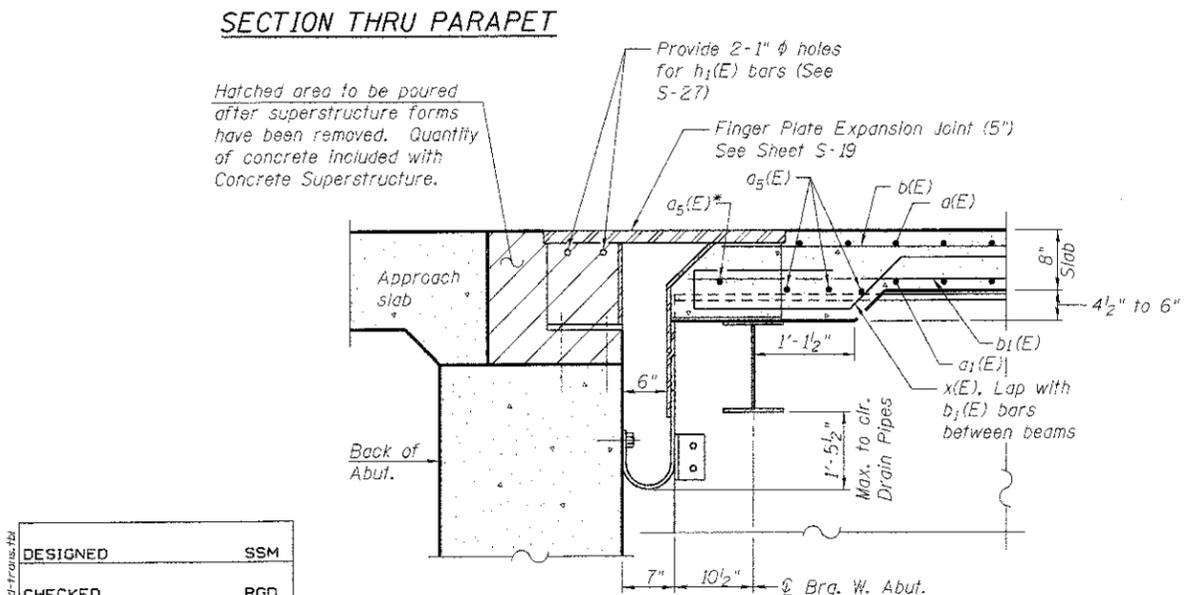


PARAPET JOINT DETAILS

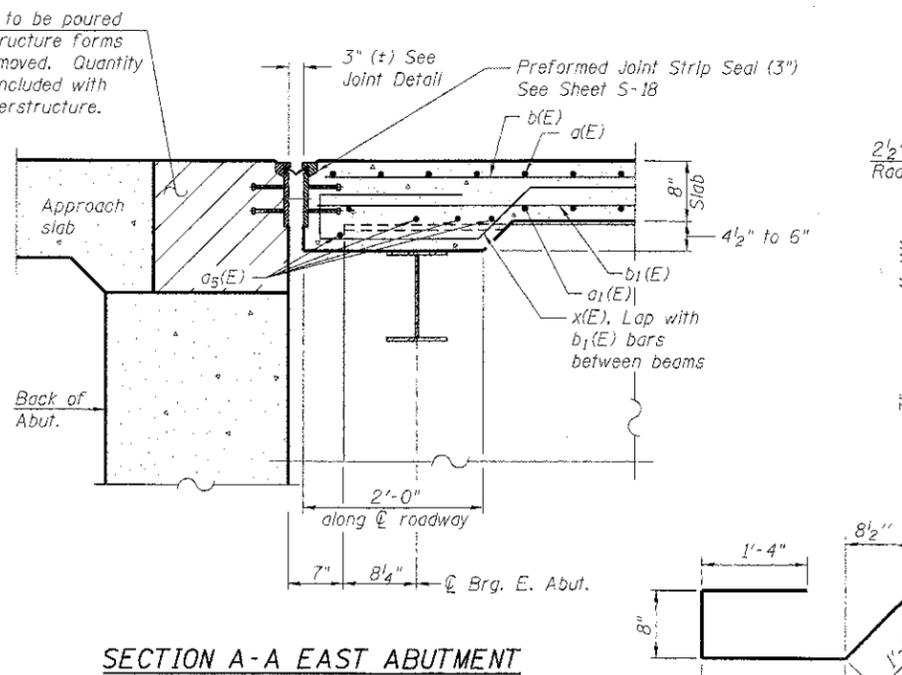
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
a(E)	1,429	#5	30'-5"	—	
a1(E)	874	#5	29'-10"	—	
a2(E)	2,856	#6	5'-6"	—	
a3(E)	8	#5	30'-6"	—	
a4(E)	64	#5	2'-0"	—	
b(E)	748	#5	32'-3"	—	
b1(E)	675	#5	28'-8"	—	
b2(E)	186	#6	25'-0"	—	
b3(E)	186	#6	25'-11"	—	
d(E)	1,432	#5	5'-7"	—	
d1(E)	1,432	#5	7'-8"	—	
d2(E)	12	#6	4'-5"	—	
d3(E)	20	#6	8'-11"	—	
e(E)	28	#4	18'-5"	—	
e1(E)	112	#4	18'-4"	—	
e2(E)	112	#4	19'-9"	—	
e3(E)	252	#4	16'-11"	—	
e4(E)	12	#8	34'-5"	—	
e5(E)	15	#4	24'-9"	—	
e6(E)	16	#8	19'-9"	—	
e7(E)	18	#8	37'-9"	—	
e8(E)	24	#4	27'-3"	—	
x(E)	42	#5	7'-2"	—	
Concrete Superstructure				Cu. Yd.	686.7
Reinforcement Bars, Epoxy Coated				Pound	191,450
Bridge Deck Grooving				Sq. Yd.	1,901
Protective Coat				Sq. Yd.	2,596

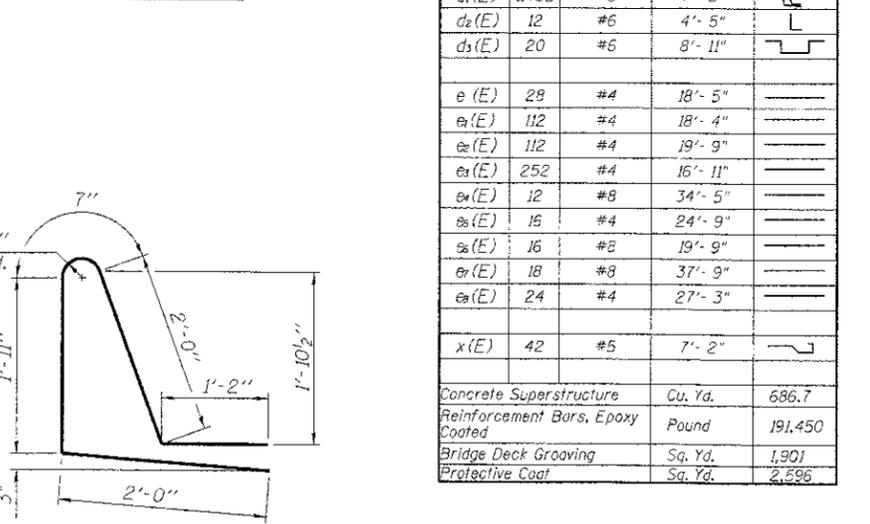
SUPERSTRUCTURE BILL OF MATERIAL



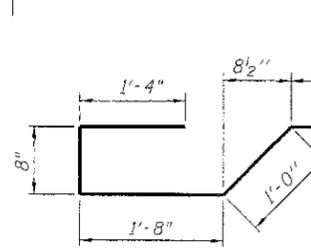
SECTION A-A WEST ABUTMENT



SECTION A-A EAST ABUTMENT



BAR d1(E)



BAR x(E)

Bars indicated thus 1 x 7 - #8 etc. indicates 1 line of bars with 7 lengths per line.

**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 056-3190**

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

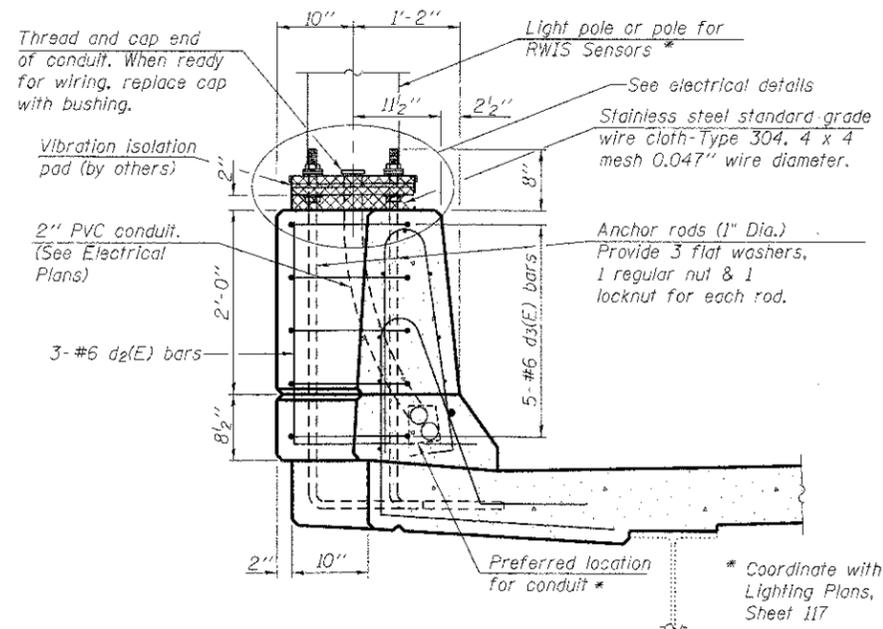
* Provide 1" Hole in all Stools for a5(E)

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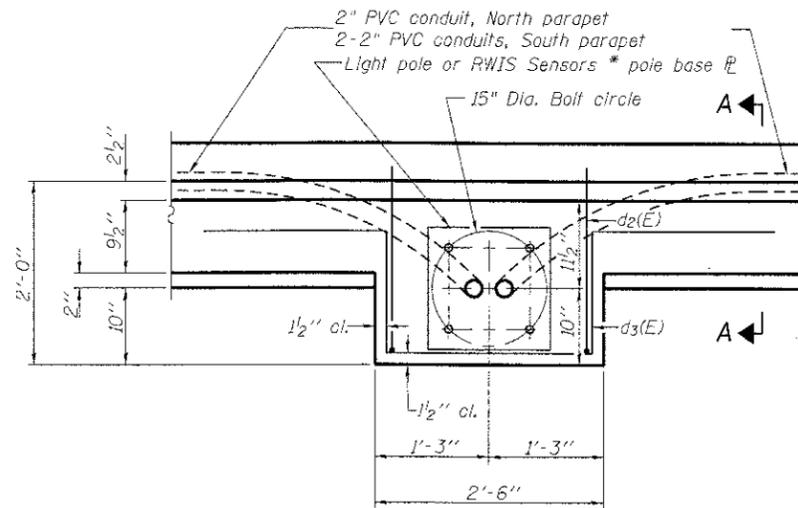
WB CHARLES J. MILLER ROAD BRIDGE

SHEET NO. 5-11	F.A.U R.F.E. 3860	SECTION 09-00372-C0-PW	COUNTY McHENRY	TOTAL SHEETS 252	SHEET NO. 134
5-41 SHEETS			CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

FILE NAME: 09/07/12-0001.dgn
PLOT DRIVER: pdl.plt
PEN TABLE: standard.ctb

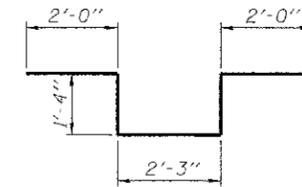


SECTION A-A

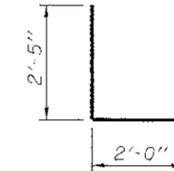


PLAN

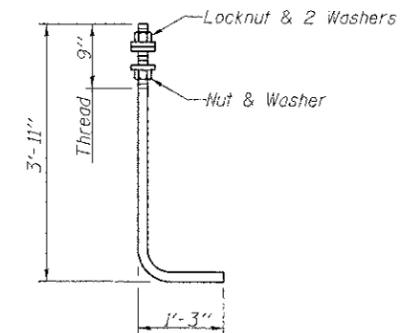
Note:
Cost of anchor rods and conduit is included with Concrete Superstructure.
Refer to General Plan and Elevation for location, (4 locations). Coordinate with S-11 and Electrical Plans.



BAR d3(E)



BAR d2(E)



ANCHOR ROD - 1" DIA.

(ASTM F 1554 Grade 105)

* See RWIS Detail sheet, Sheet 190 of 252

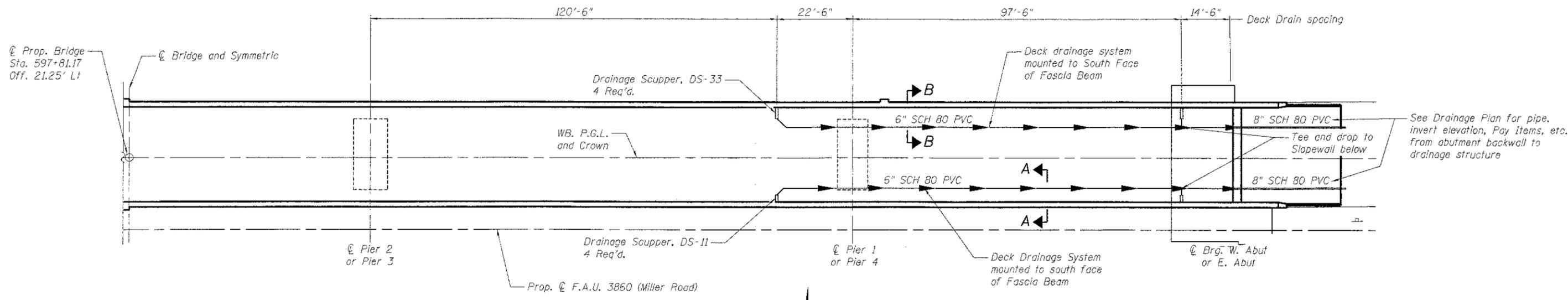
**SUPERSTRUCTURE DETAILS - LIGHT POLE BASE
STRUCTURE NO. 056-3190**

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

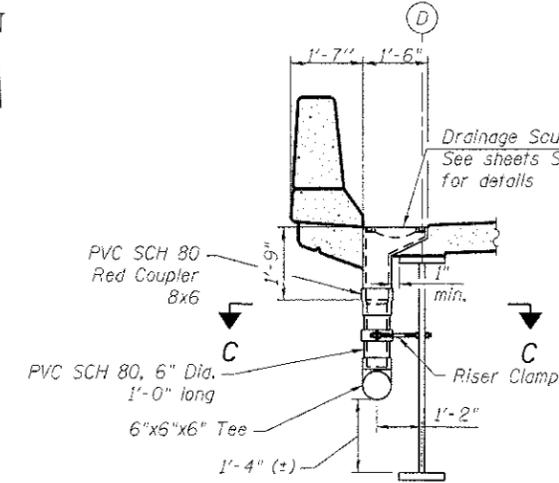
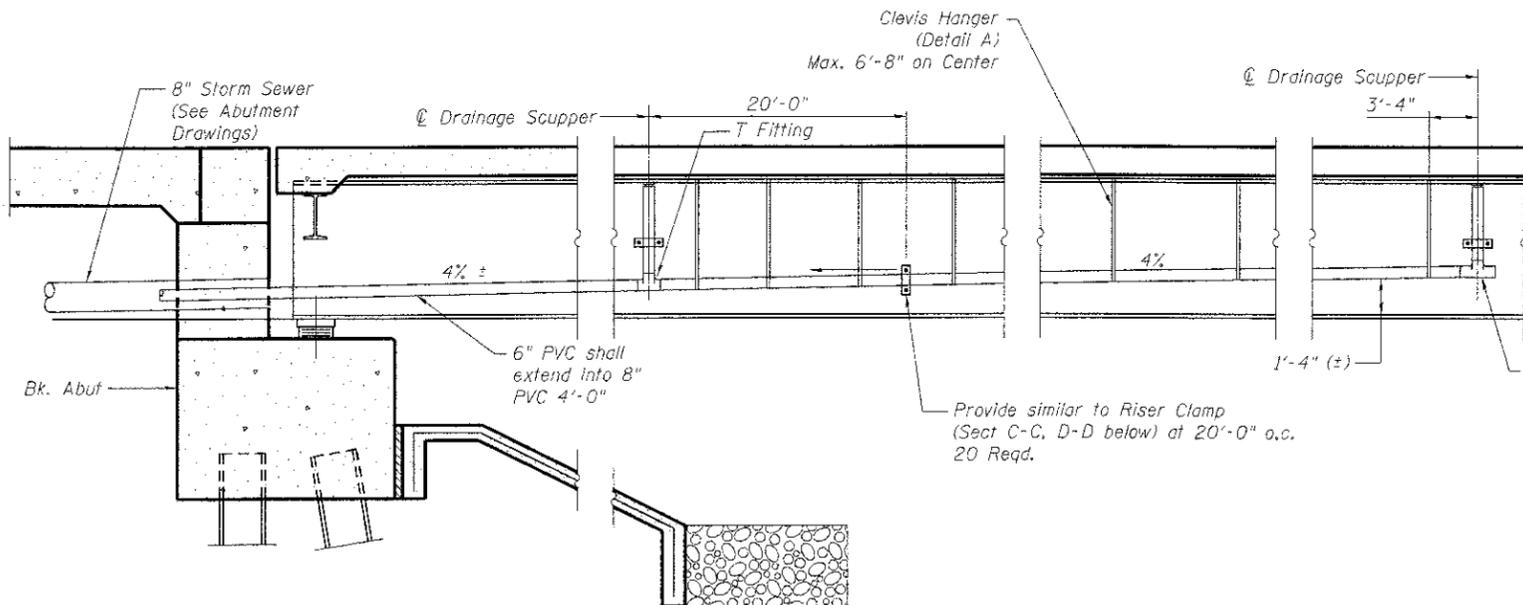


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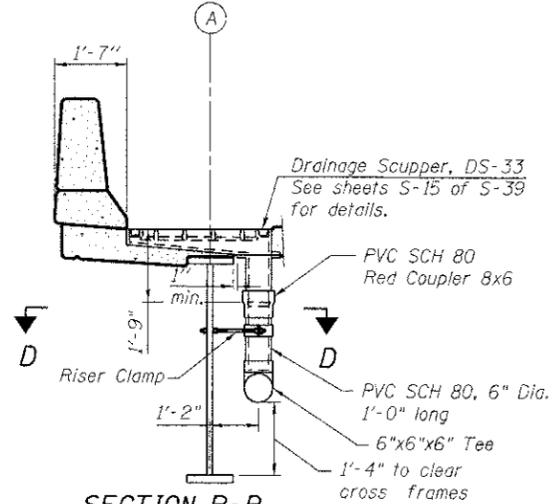
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12		
SHEET NO. S-12	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY	TOTAL SHEETS 252
S-41 SHEETS		CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



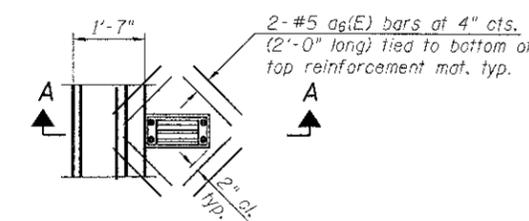
**DECK DRAINAGE SYSTEM
HALF PLAN**
Symmetrical about \bar{C} of Bridge



SECTION A-A

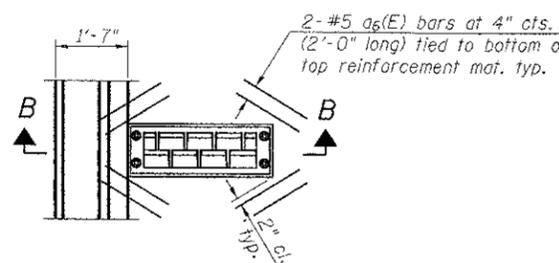


SECTION B-B



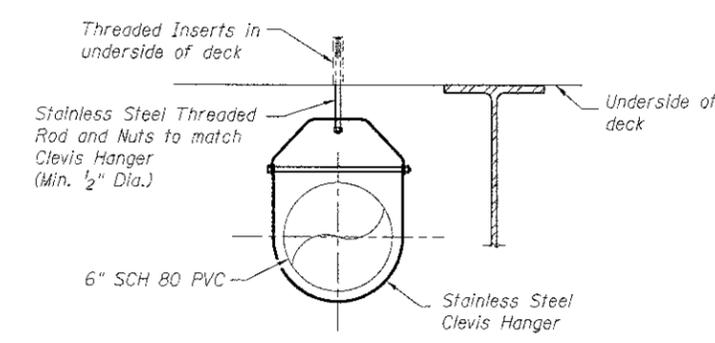
PLAN

Note: Cut longitudinal reinforcement to clear drainage scuppers.



PLAN

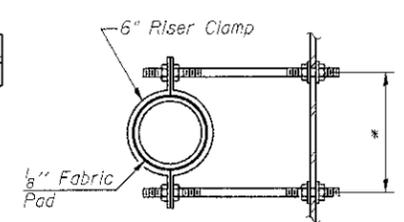
Note: Cut longitudinal reinforcement to clear drainage scuppers.



DETAIL A
Not to Scale

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drainage System	L. Sum	1



**SECTION C-C
SECTION D-D**
(Opposite Hand)

* Dimension as required by Riser Clamp

**DECK DRAINAGE SYSTEM
STRUCTURE NO. 056-3190**

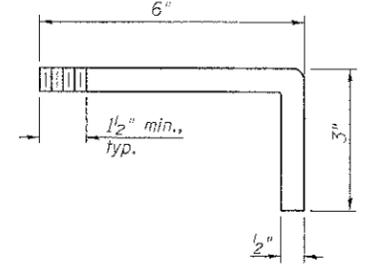
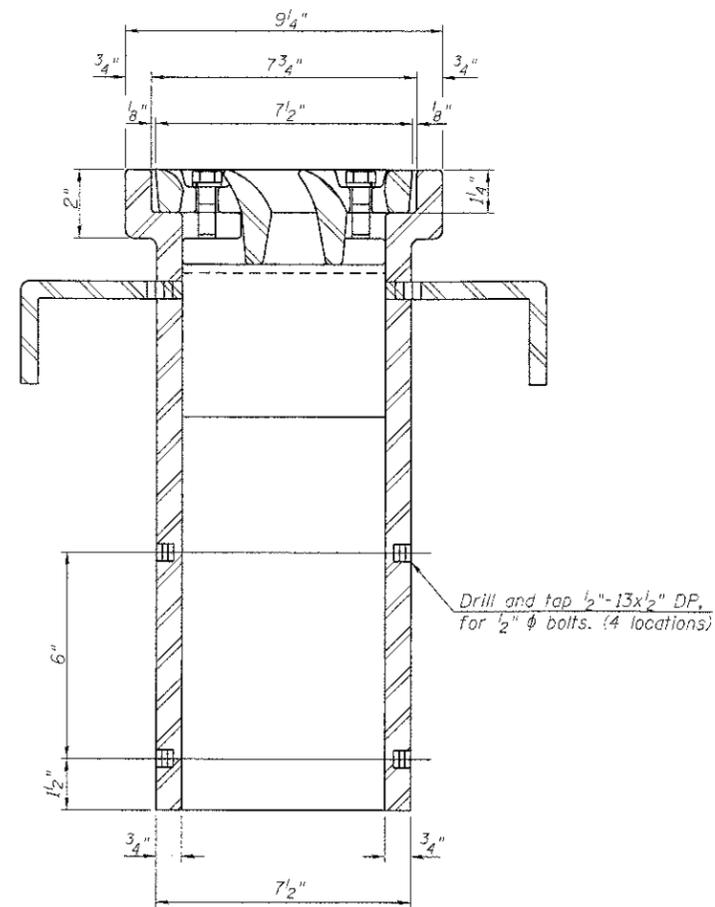
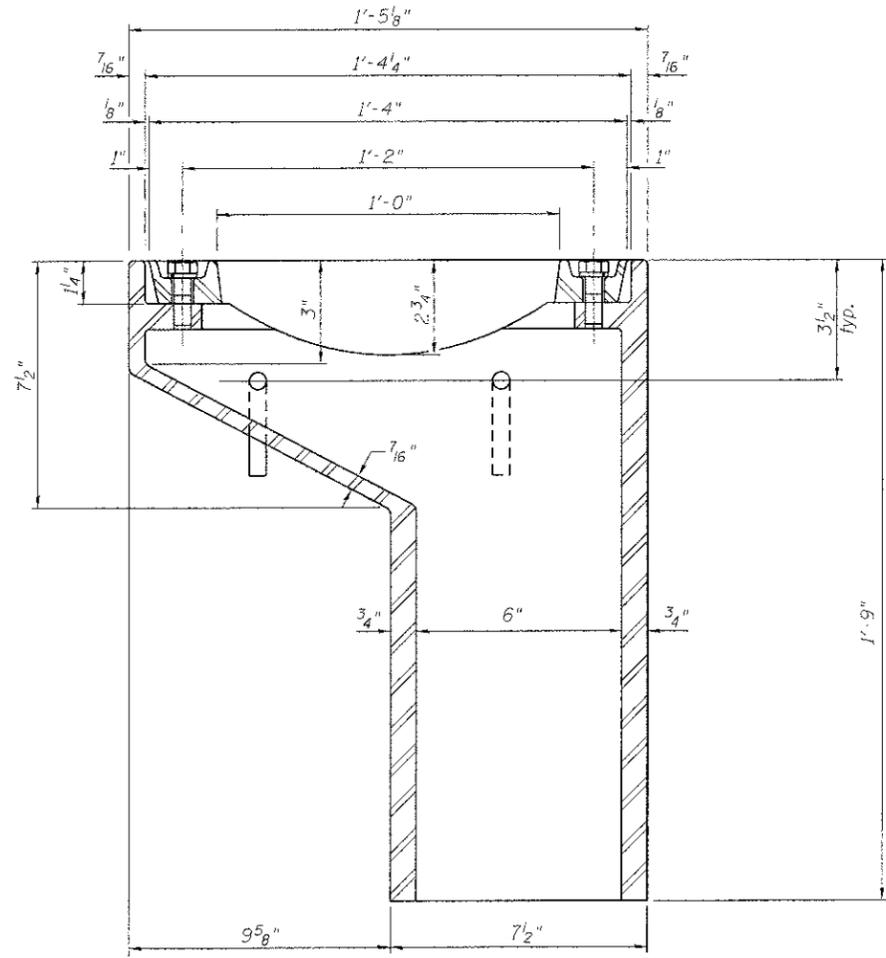
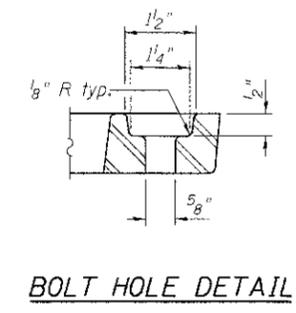
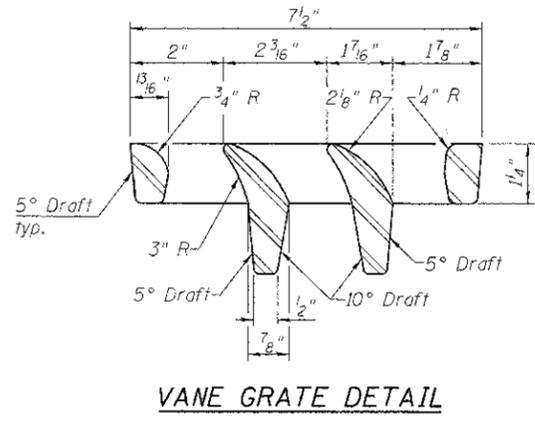
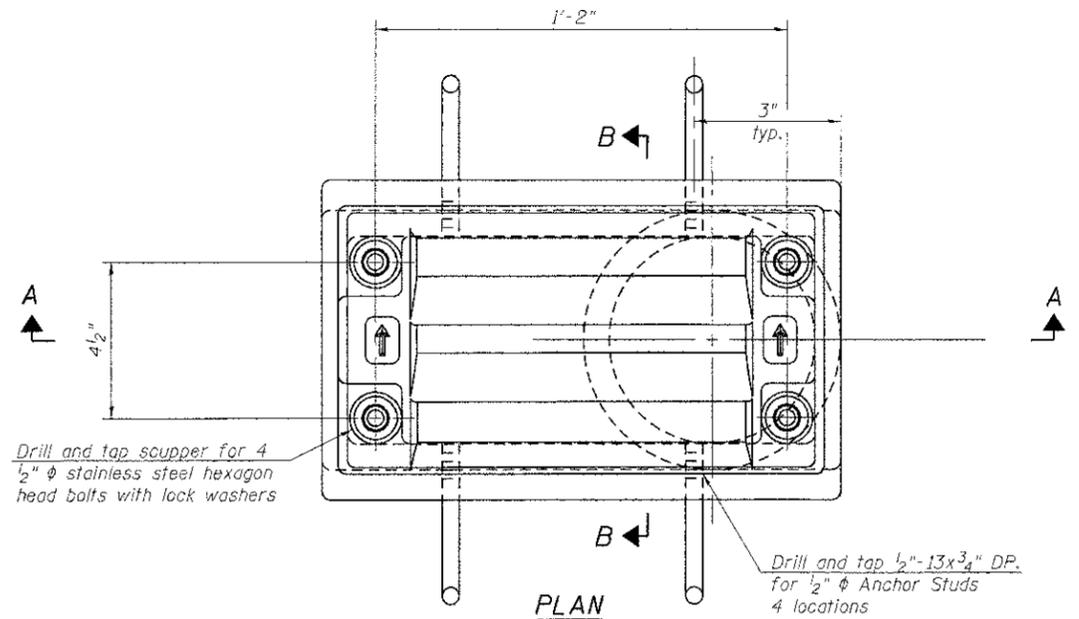
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-13	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 136
CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT



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DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

FILE NAME: 05027-01-01.dwg
PLOT DRIVER: pldrvr
PEN TABLE: standard.tbl



SECTION A-A
See sheet S-13 of S-41 for scupper location relative to parapet.

SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	4

**DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 056-3190**

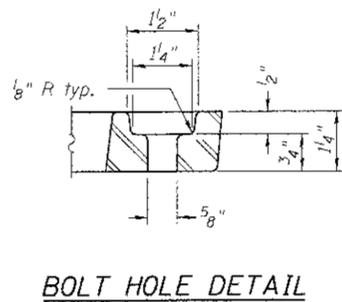
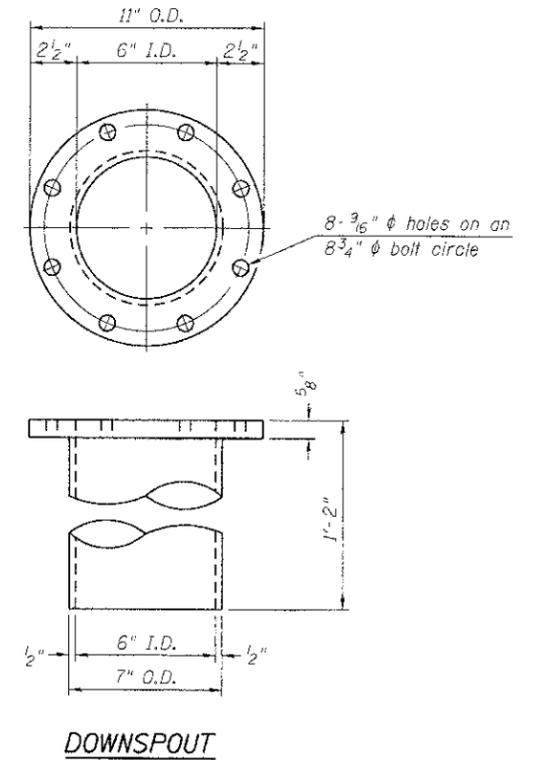
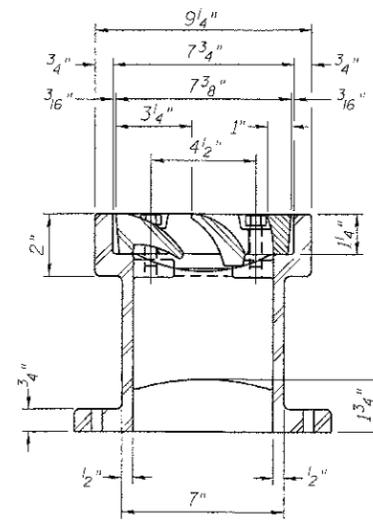
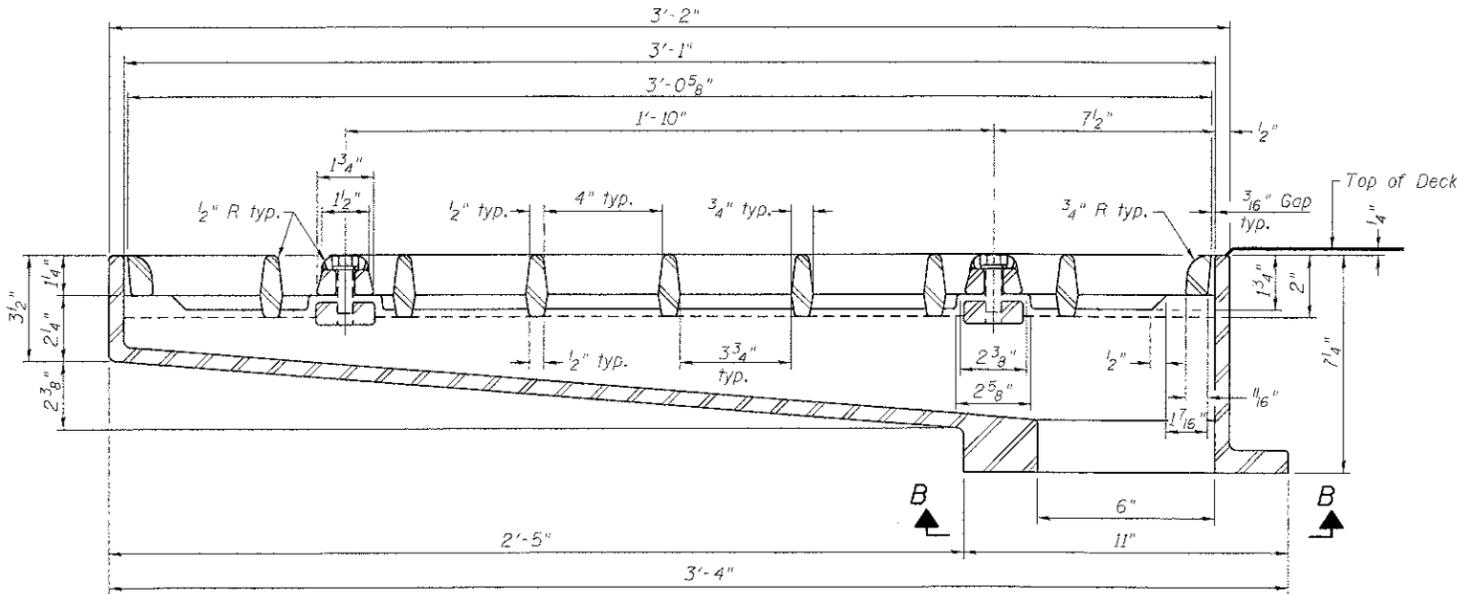
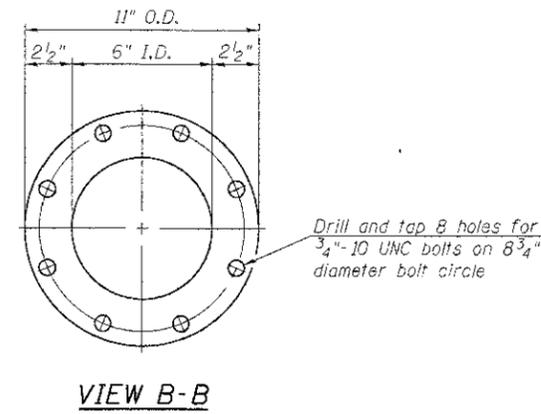
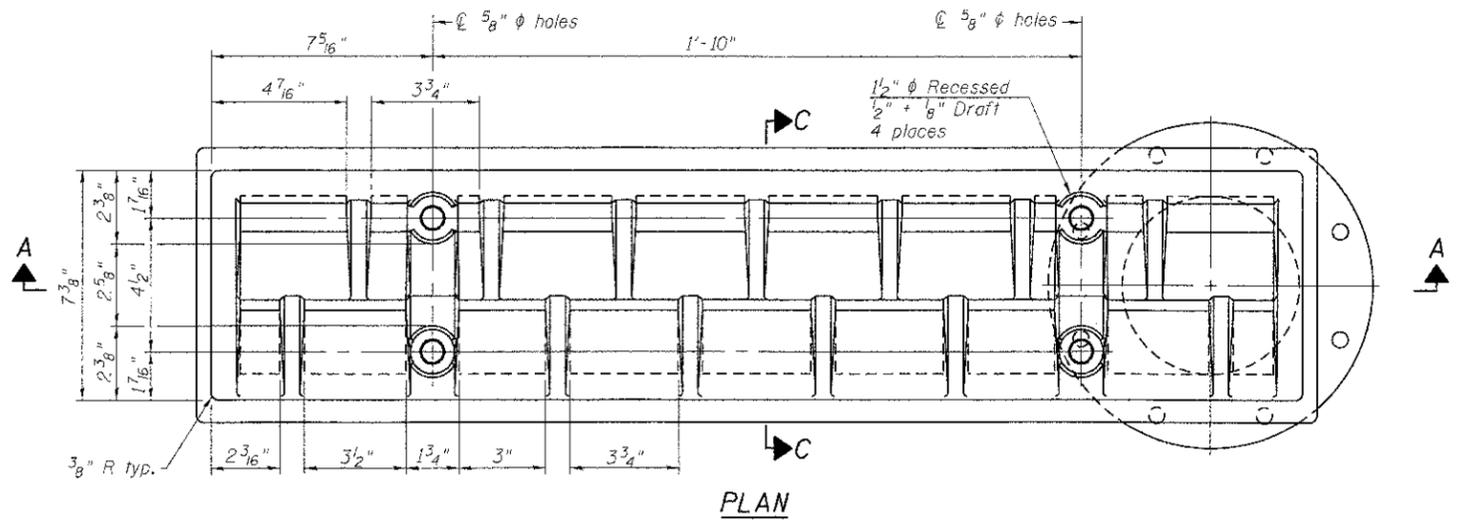
DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

DS-11 11-1-09

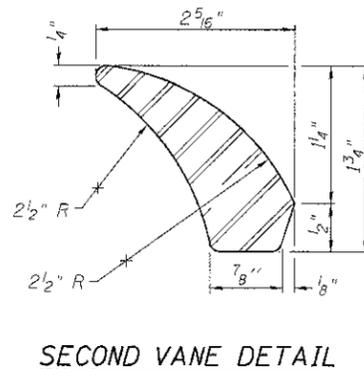
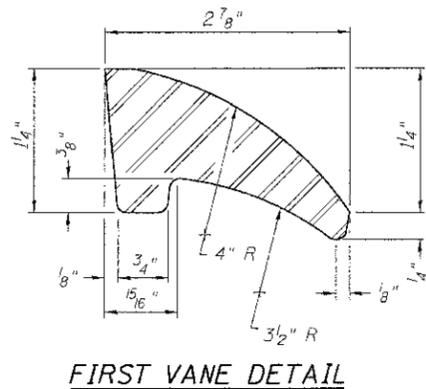
WB CHARLES J. MILLER ROAD BRIDGE DATE: 7/23/12



SHEET NO. S-14	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	3860	09-00372-00-PW	McHENRY	252	137
S-41 SHEETS	CONTRACT NO.			63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



See sheet S-13 of S-41 for scupper location relative to parapet.



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	4

DRAINAGE SCUPPER, DS-33
STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

DS-33 11-1-09

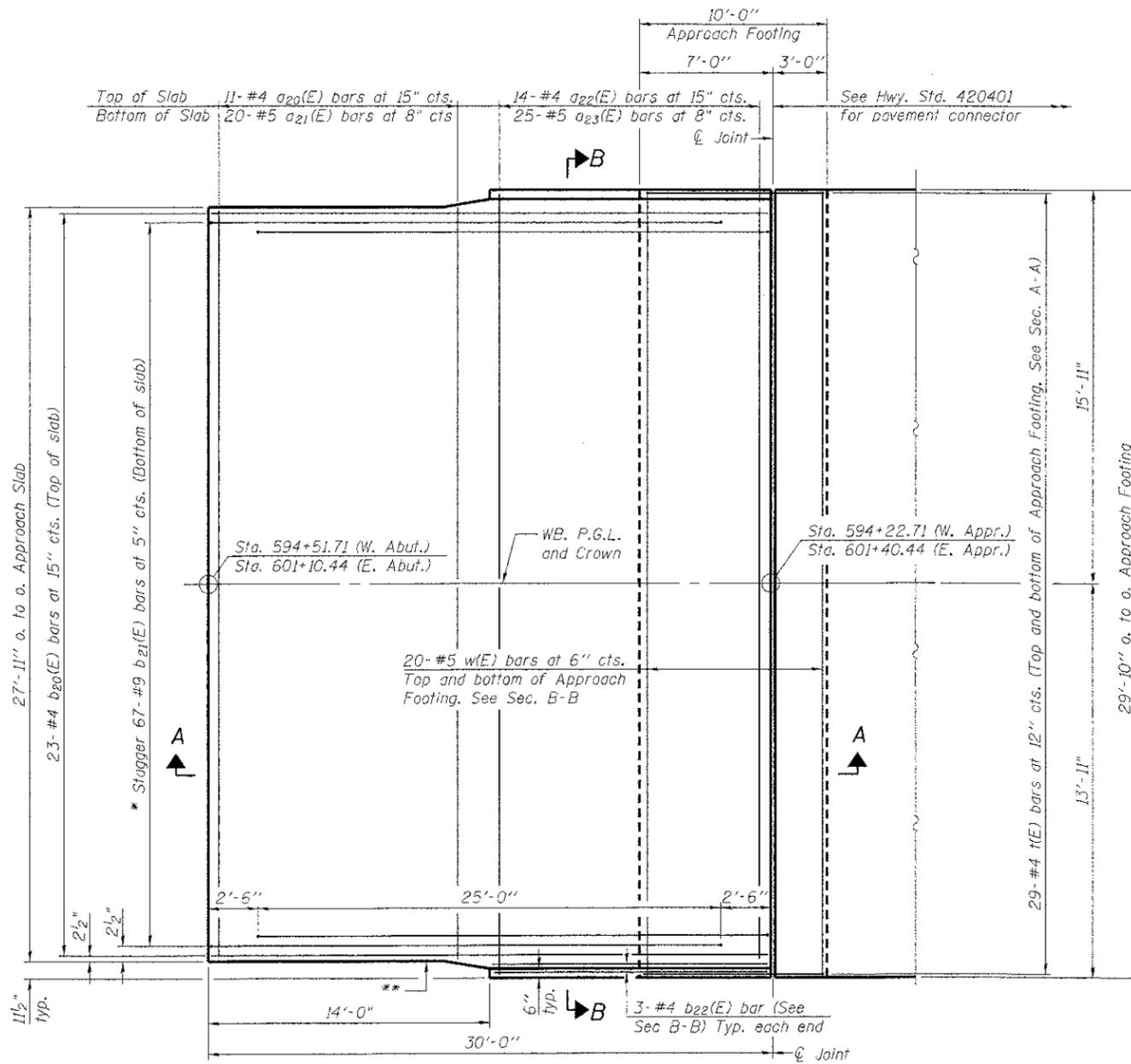


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SHEET NO. S-15		SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
S-41 SHEETS		09-00372-00-PW		McHENRY	252	138
WB CHARLES J. MILLER ROAD BRIDGE				DATE: 7/23/12		
F.A.U. RTE. 3860				CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT						

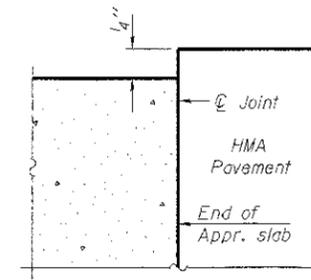
Notes:
All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.
Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.
Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.
Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.
See Sheet S-13 of S-41 for Drainage System Details.

Notes:
 See sheet S-17 of S-41 for Sections A-A & B-B.
 $a_{20}(E)$ and $a_{21}(E)$ bar spacings measured along C.Rdwy.
 East Approach Pavement shown. West Approach Pavement
 opposite hand.



PLAN

- * 7/11 #9 $b_{21}(E)$ bars as required to maintain clearance.
- ** 1/2" Closed Cell Joint Filler according to Article 1051.08 of the Standard Specifications; Full depth of slab, full length of parapet. Typical each parapet.



FLEXIBLE PAVEMENT

DETAIL A

BRIDGE APPROACH SLAB DETAILS
 STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

BA-0 11-1-09

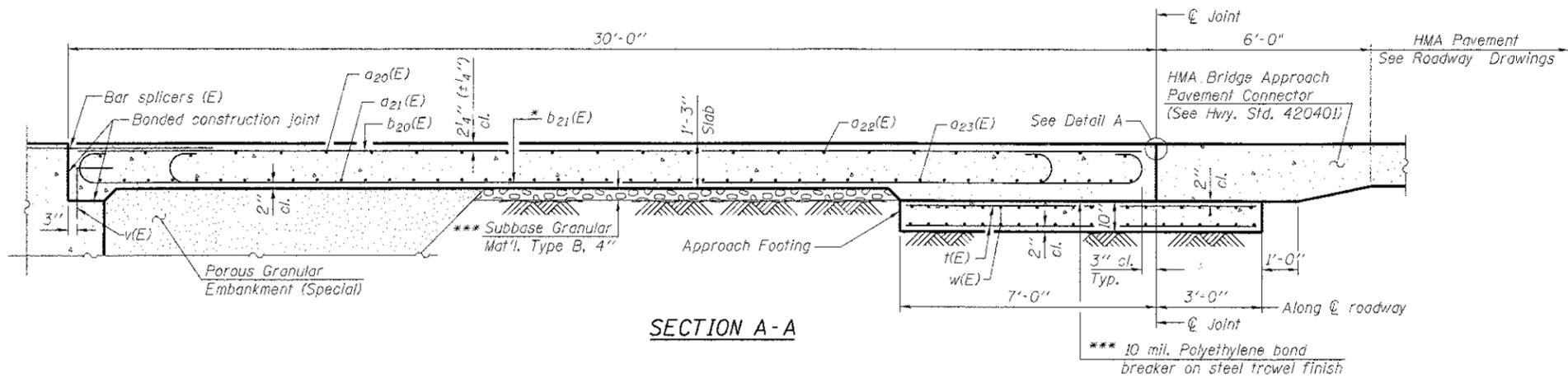


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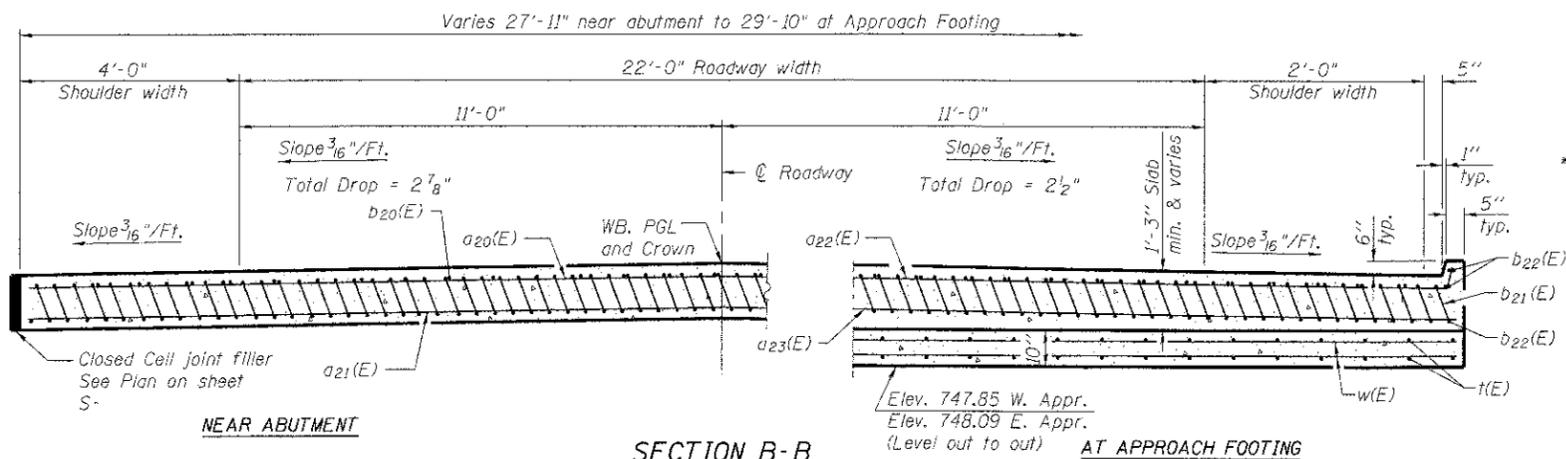
WB CHARLES J. MILLER ROAD BRIDGE

DATE: 7/23/12

SHEET NO. S-16 S-41 SHEETS	F.A.U. R.F.E. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY	TOTAL SHEETS 252	SHEET NO. 139
	CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	



SECTION A-A



SECTION B-B
(See Plan for dimensions not shown)

* Tilt #9 b₁(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.

Notes:
 See sheet S-16 of S-41 for Detail A.

Approach slab 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.

The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.

For bar splicer details, see sheet S-34 of S-41.

Cost of excavation for approach footing included with Concrete Structures.

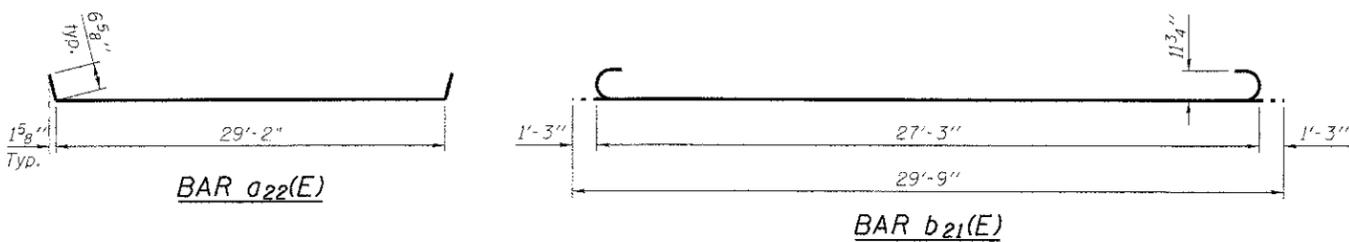
For Porous Granular Embankment (Special) and drainage treatment details, see sheet S-3 of S-41.

See Roadway Details and Cross Sections for Subgrade and Embankment Construction including:

- 1) Benching Detail for Embankment Widening
- 2) Removal of Unsuitable Materials.

**TWO APPROACHES
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a ₂₀ (E)	22	#4	27'-7"	—
a ₂₁ (E)	40	#5	27'-7"	—
a ₂₂ (E)	28	#4	30'-3"	—
a ₂₃ (E)	50	#5	29'-6"	—
b ₂₀ (E)	46	#4	29'-8"	—
b ₂₁ (E)	134	#9	29'-9"	—
b ₂₂ (E)	12	#4	15'-8"	—
t (E)	58	#4	9'-8"	—
w (E)	80	#5	29'-6"	—
Concrete Superstructure			Cu. Yd.	88.4
Concrete Structures			Cu. Yd.	18.4
Reinforcement Bars, Epoxy Coated			Pound	21,090
Protective Coat			Sq. Yd.	221
Bridge Deck Grooving			Sq. Yd.	174



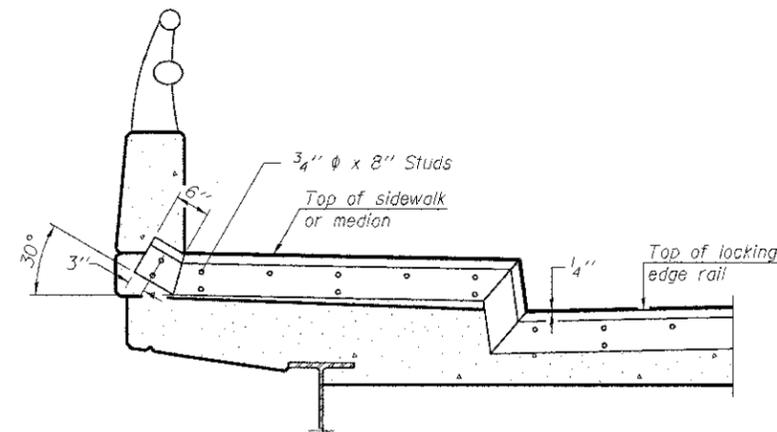
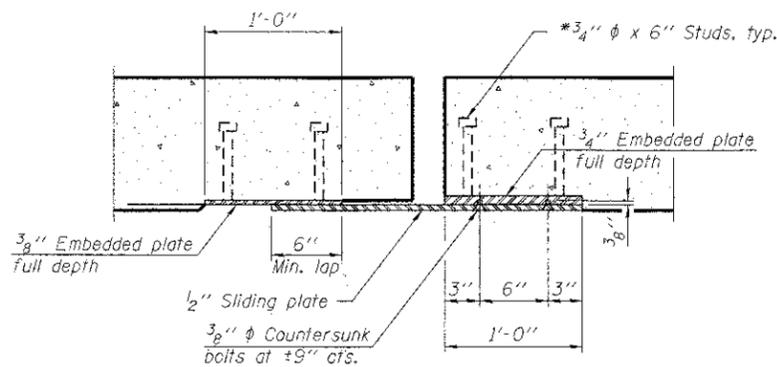
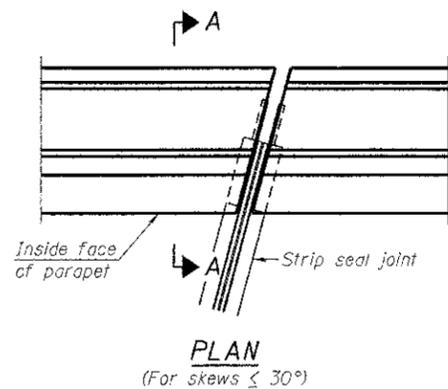
DESIGNED	SSM
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BA-0 11-1-09

**BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 056-3190**

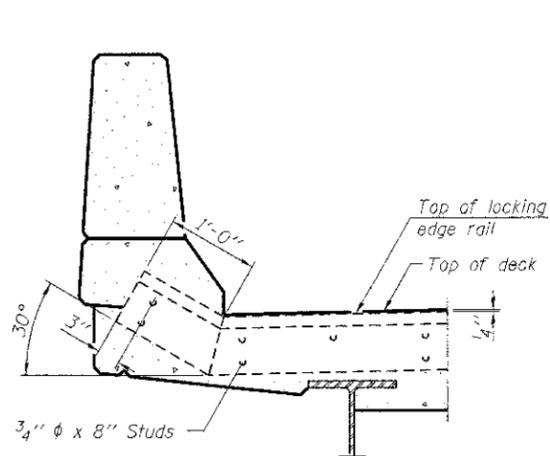
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-17	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 140
FED. ROAD DIST. NO. 1 ILLINOIS		CONTRACT NO. 63633	
FED. AID PROJECT			



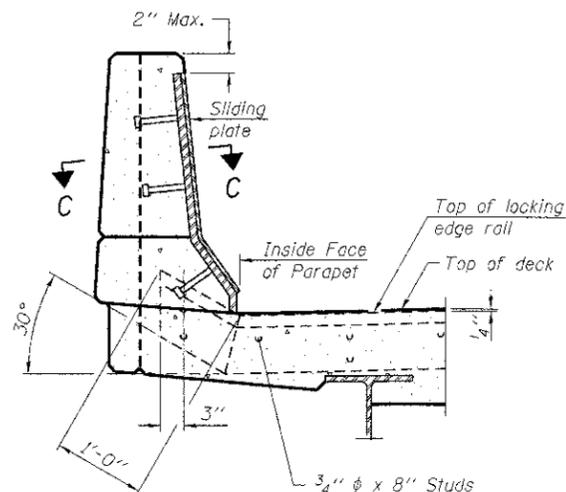


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

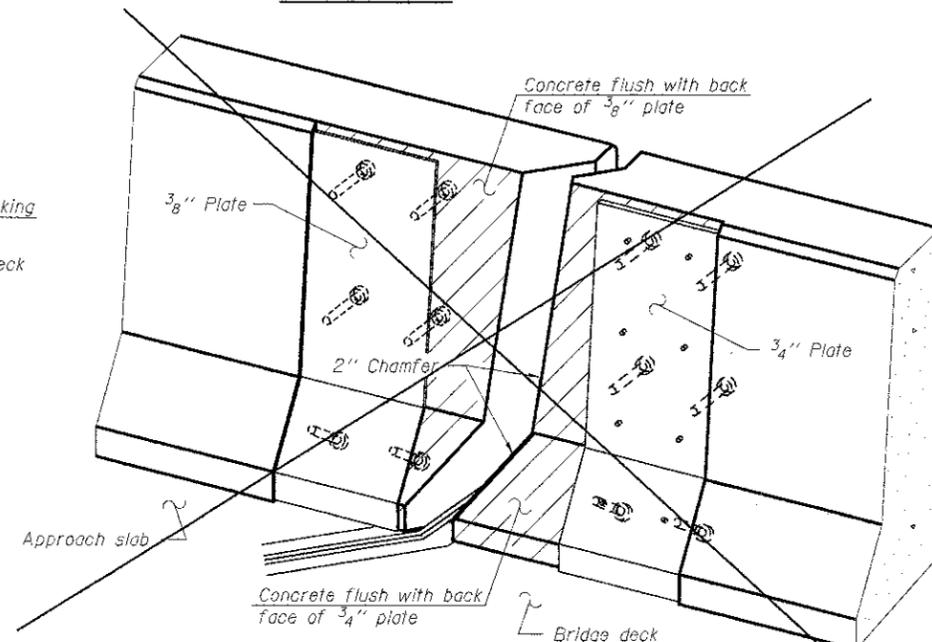
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A



SECTION B-B



TRIMETRIC VIEW (Showing back plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

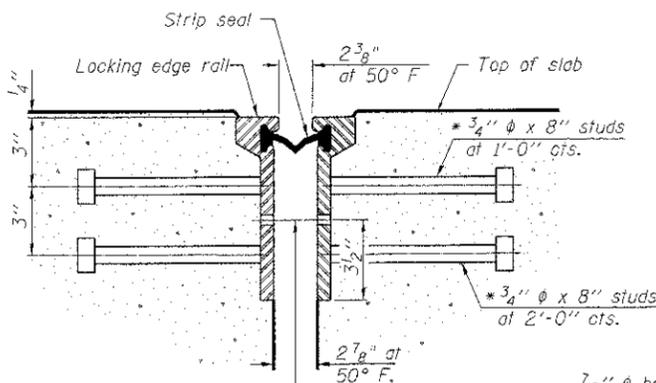
The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

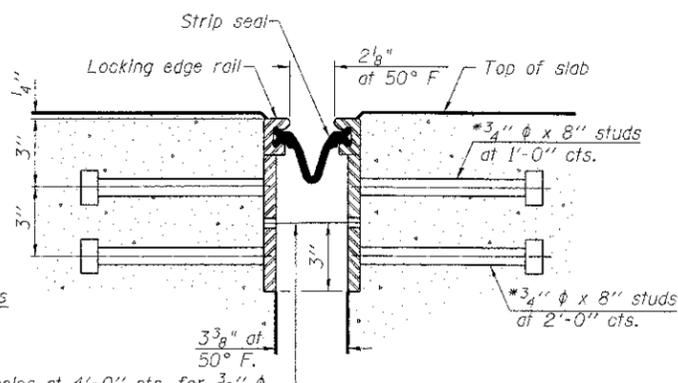
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

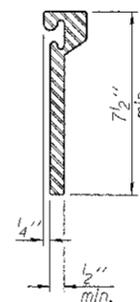
Parapet plates and anchorage studs included in the cost of Preformed Joint Strip Seal.



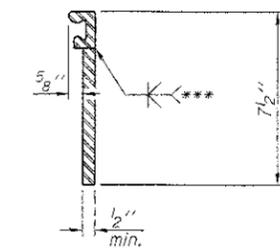
SECTION THRU ROLLED RAIL JOINT



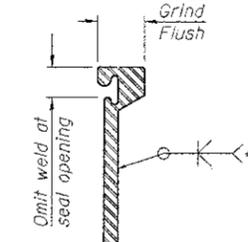
SECTION THRU WELDED RAIL JOINT



ROLLED EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE RAIL SPLICE

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

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

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

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

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal, 3"	Foot	30

LOCKING EDGE RAILS



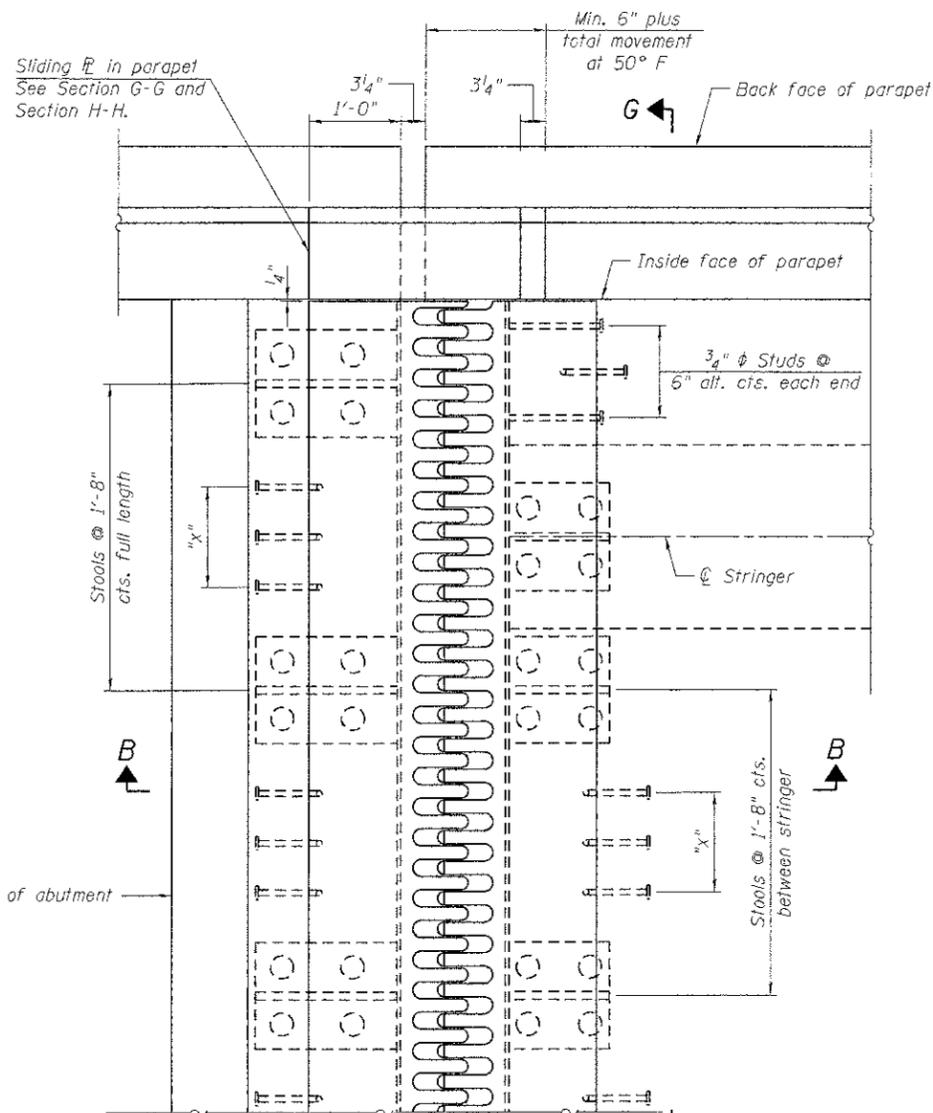
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DATE: 7/23/12

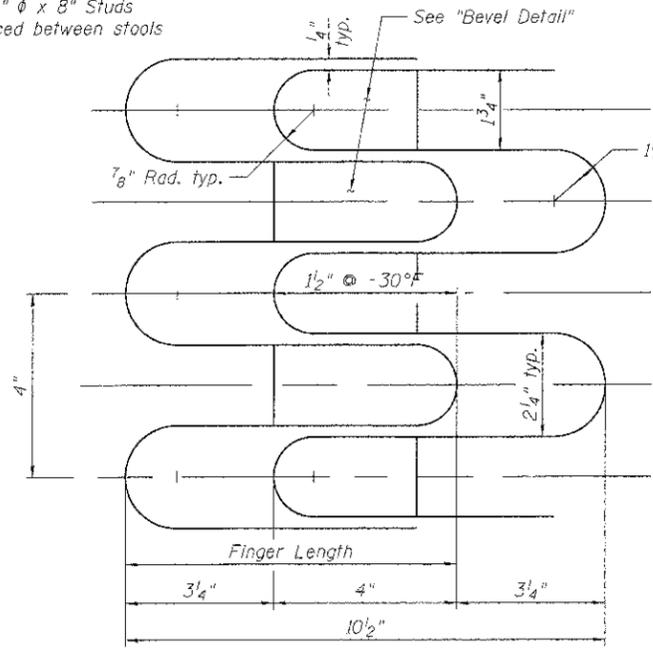
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S-1B	3860	09-00372-00-PW	McHENRY	252	141
CONTRACT NO.				63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

FILE NAME: 090717.dwg
PLOT DRIVER: plot.plt
PLOT TABLE: Standard.ctb

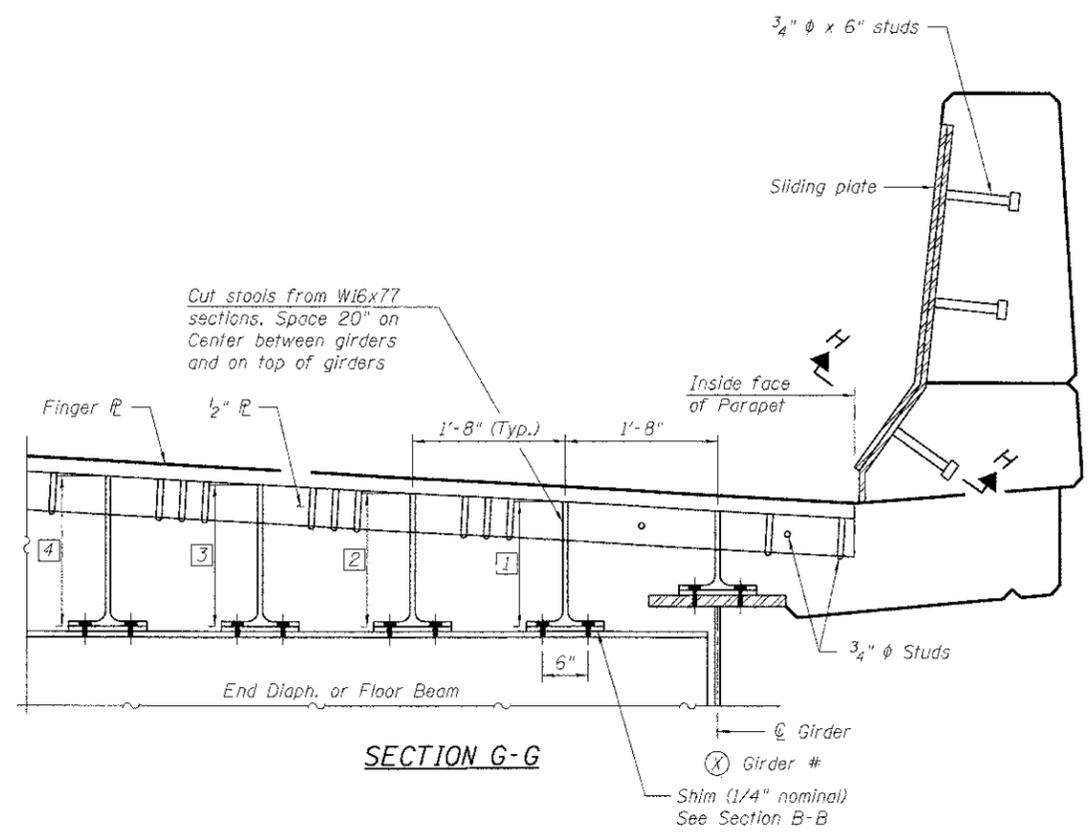


PLAN

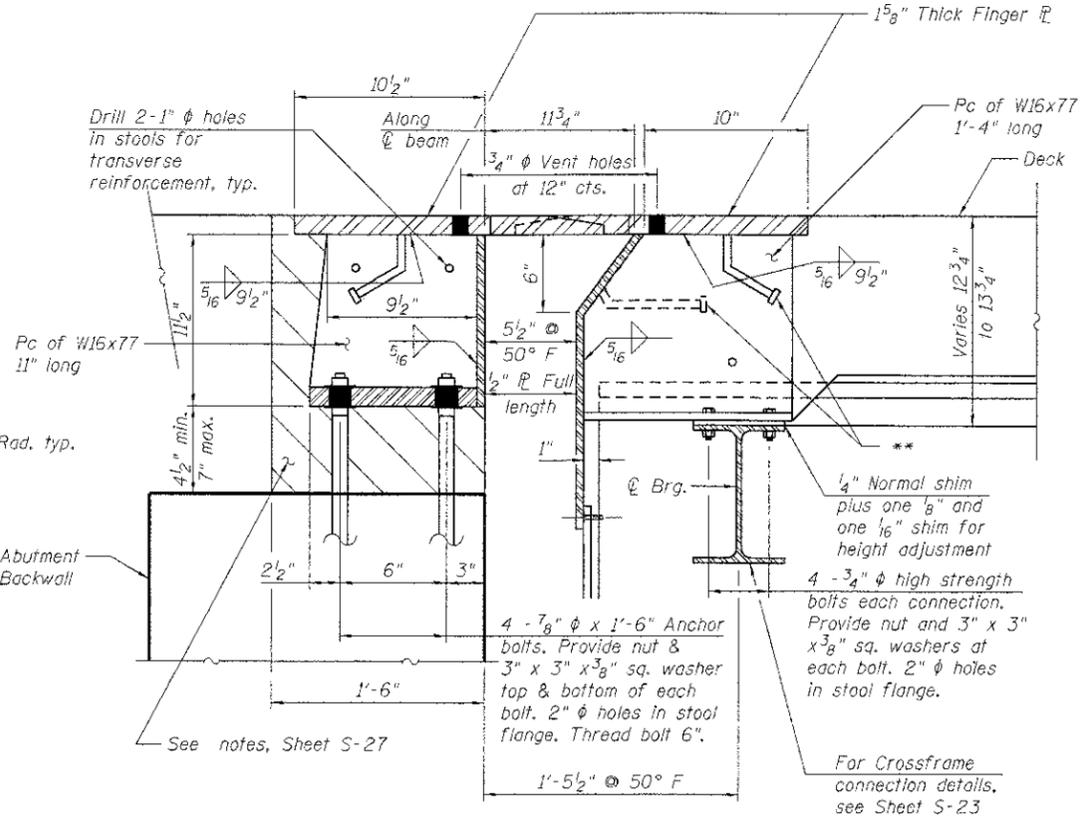
"X" = 3-3/4" ϕ x 8" Stud
evenly spaced between stools



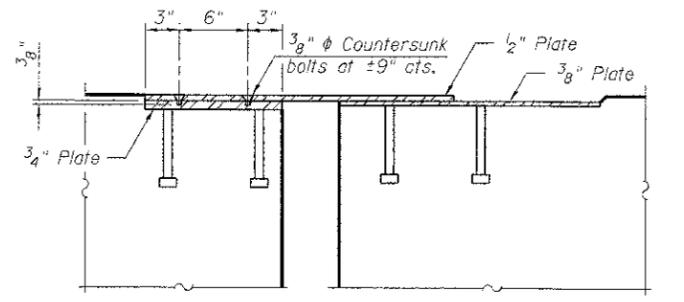
JOINT OPENING AND GEOMETRY DETAIL



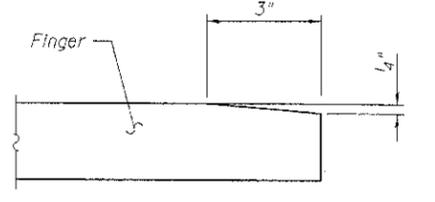
SECTION G-G



SECTION B-B



SECTION H-H



BEVEL DETAIL

** 3/4" ϕ x 8" granular or solid flux filled headed studs conforming to Art. 1006.32 of the Std. Specifications.

1. Finger plate expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
2. Parapet and Sliding Plate detail as shown in Section G-G, Section H-H and Sheet S-18. Parapet Plates and anchorage studs shall be included in the contract unit price for Finger Plate Expansion Joint, 5'.

STOOL HEIGHTS FROM (A) TO PGL

(A)	1	2	3	4
6' 7/8"	10' 7/8"	11' 4"	11' 2"	11' 7/8"
(B)	1	2	3	P.G.L.
6' 7/8"	10' 3/4"	11' 5/8"	11' 3/8"	

STOOL HEIGHTS FROM (D) TO PGL

(D)	1	2	3	4
6' 7/8"	10' 7/8"	11' 4"	11' 2"	11' 7/8"
(C)	1	P.G.L.		
6' 7/8"	11' 4"			

FINGER PLATE EXPANSION JOINT DETAILS
STRUCTURE NO. 056-3190

WB CHARLES J. MILLER ROAD BRIDGE

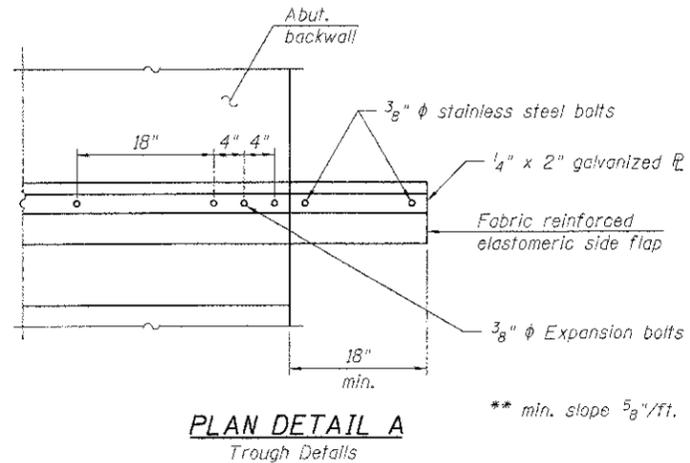
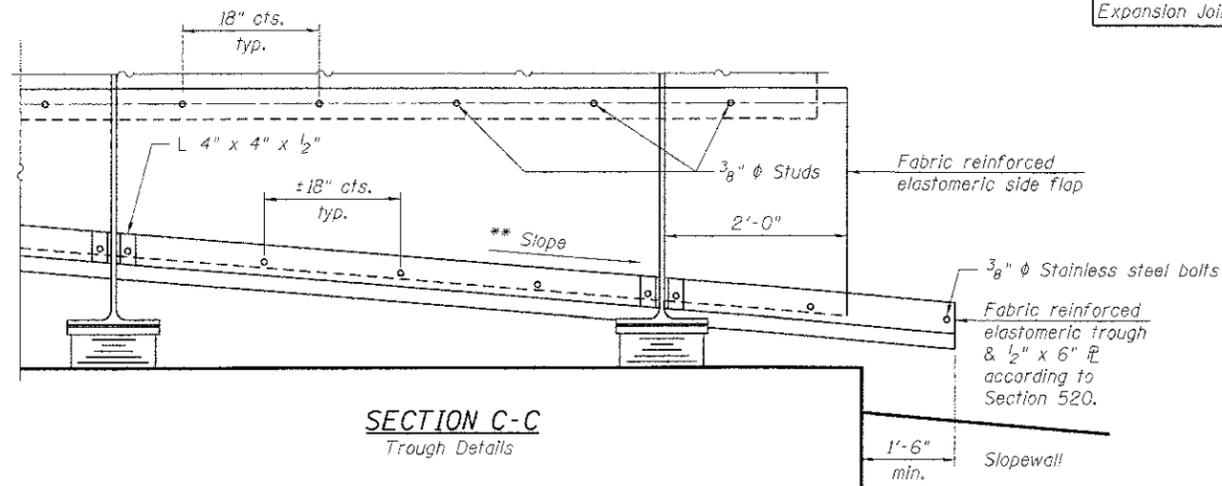
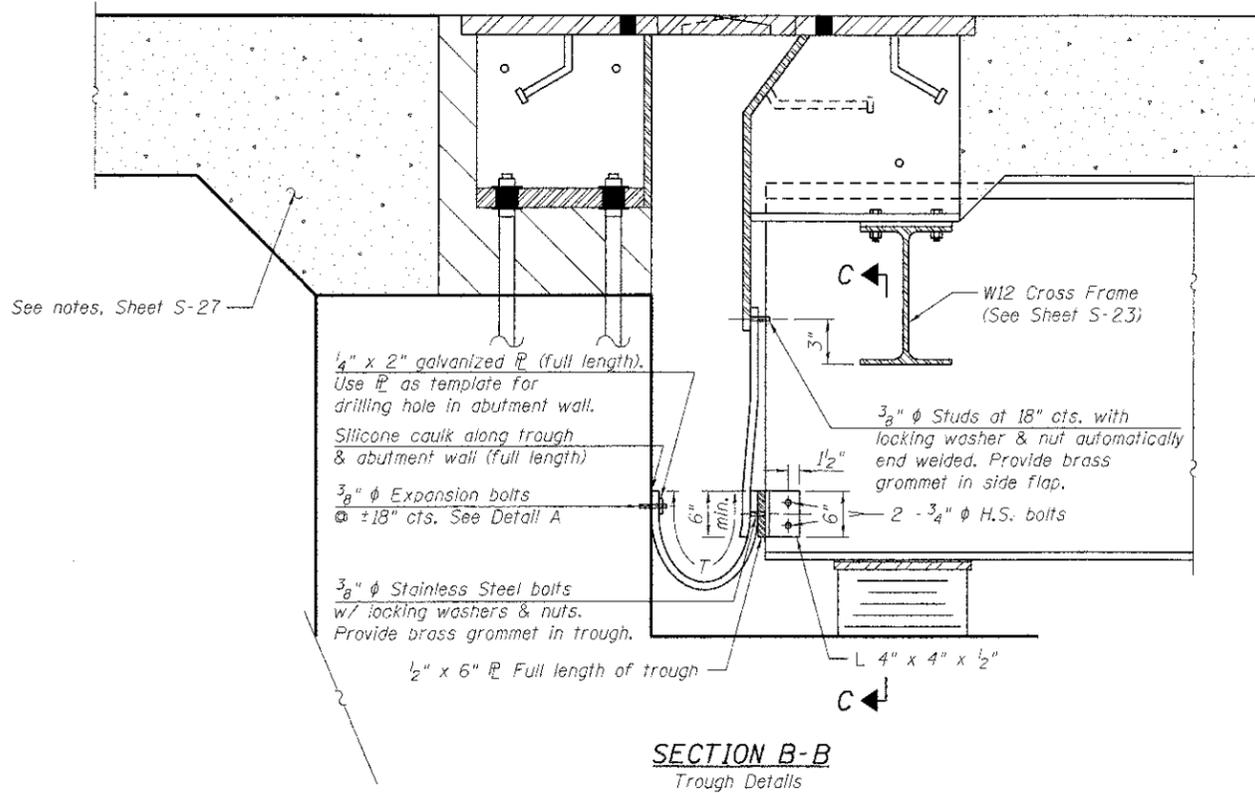
DATE: 7/23/12

SHEET NO. S-19	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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S-41 SHEETS	CONTRACT NO.			63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

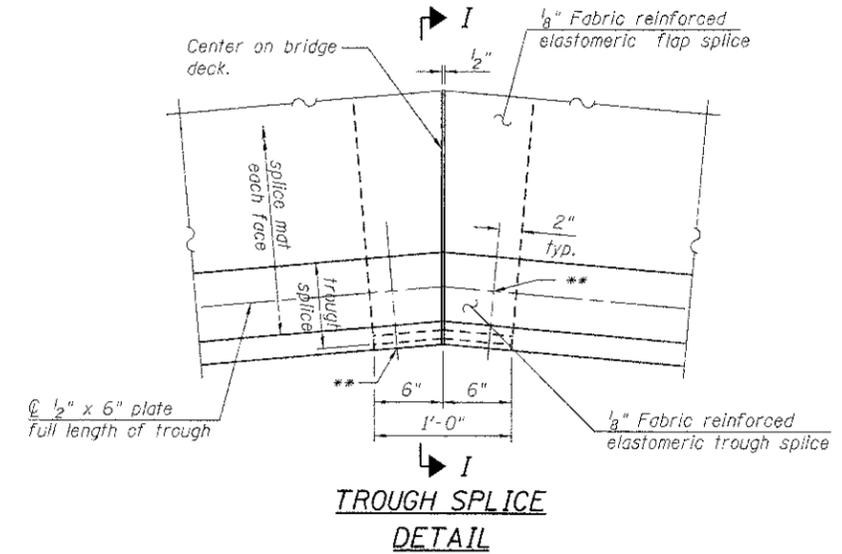
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DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

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PLOT DRIVER: sspplot
PEN TABLE: standard-trans.tbl

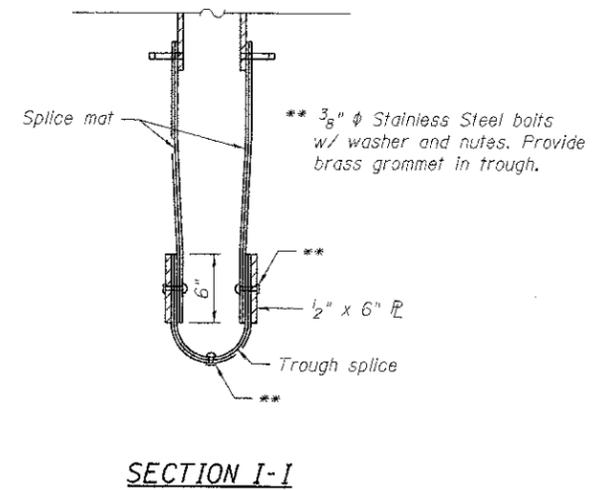


Note:
Trough must pass over deck drainage system piping (See Sheet S-13)



BILL OF MATERIAL

Item	Unit	Total
Finger Plate	Foot	28
Expansion Joint, 5"		



FINGER PLATE EXPANSION JOINT DETAILS
STRUCTURE NO. 056-3190

WB CHARLES J. MILLER ROAD BRIDGE

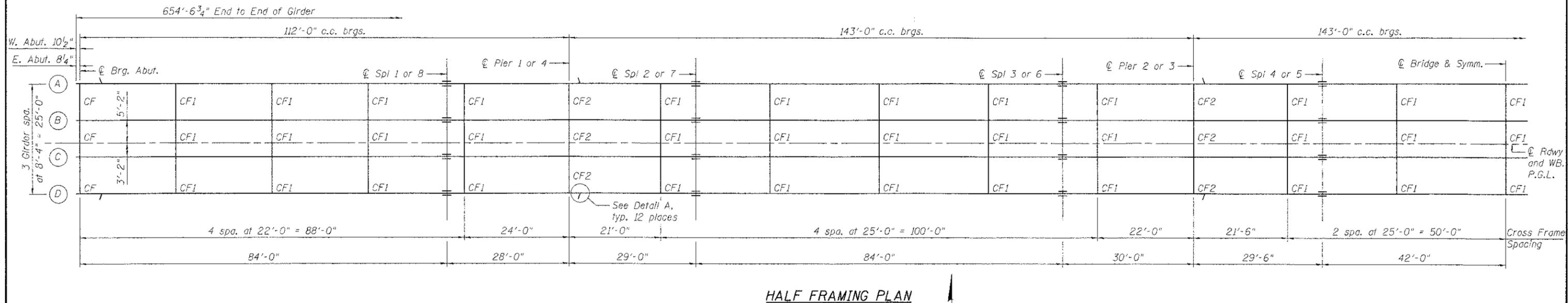
DATE: 7/23/12

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S-41			CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

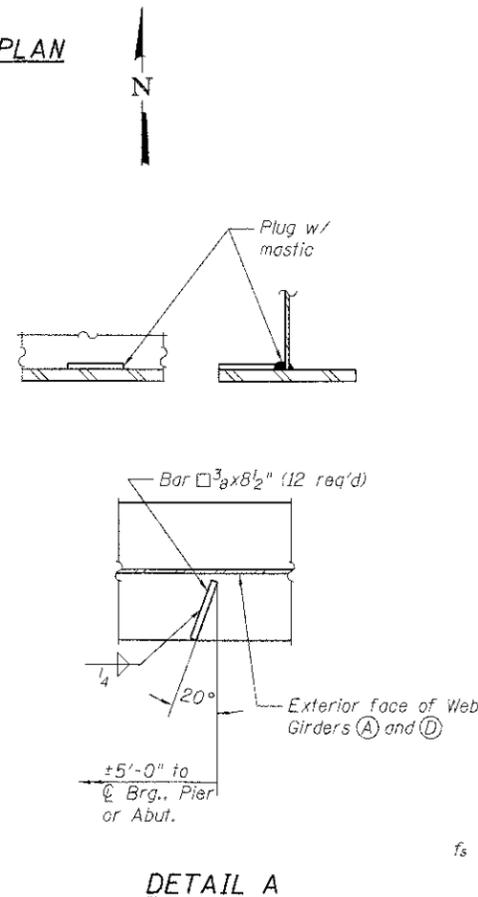
DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



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	0.4 Span 1 or 0.6 Span 5		Pier 1 or 4		0.5 Span 2 or Span 4		Pier 2 or 3		0.5 Span 3		
	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	
I_s	(in ⁴)	28476	28476	48055	48055	29592	29592	51290	51290	29592	29592
$I_d(n)$	(in ⁴)	71487	68572	-	-	75496	72329	-	-	75496	72329
$I_d(3n)$	(in ⁴)	52111	49598	-	-	54595	51911	-	-	54595	51911
S_s	(in ³)	1260.0	1260.0	1796.5	1796.5	1347.7	1347.7	1908.5	1908.5	1347.7	1347.7
$S_d(n)$	(in ³)	1684.1	1667.5	-	-	1798.5	1780.9	-	-	1798.5	1780.9
$S_d(3n)$	(in ³)	1552.8	1531.0	-	-	1659.0	1635.7	-	-	1659.0	1635.7
DC1	(k/ft)	1.130	1.005	1.222	1.097	1.137	1.012	1.237	1.112	1.137	1.012
M_{DC1}	(ft-k)	857.9	760.4	2048.9	1822.3	812.2	722.5	2132	1899.1	775.9	689.3
DC2	(k/ft)	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
M_{DC2}	(ft-k)	194.9	193.2	359.5	363.8	204.0	200.2	382.7	386.2	192.5	189.0
DW	(k/ft)	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
M_{DW}	(ft-k)	303.1	300.5	559.3	565.8	317.4	311.3	595.2	600.7	299.4	293.9
M_{LL+IM}	(ft-k)	1791.9	2200.8	1699.9	2135.6	1915.6	2486.0	1831.6	2359.3	1936.4	2512.8
M_u (Strength I)	(ft-k)	4906.5	5494.1	6824.4	7318.7	5098.8	5970.8	7241.4	7886.5	5048.2	5936.1
$\phi_r M_r$	(ft-k)	6463.6	6510.4	7485.2	7485.2	6947.2	7005.1	7951.9	7951.9	6966.0	7021.7
f_s DC1	(ksi)	8.2	7.3	13.7	12.2	7.2	6.4	13.4	11.9	6.9	6.2
f_s DC2	(ksi)	1.5	1.5	2.4	2.4	1.5	1.5	2.4	2.4	1.4	1.4
f_s DW	(ksi)	2.3	2.3	3.7	3.8	2.3	2.3	3.7	3.8	2.2	2.2
f_s 1.3(LL + IM)	(ksi)	16.6	20.6	14.8	18.6	16.6	21.8	15.0	19.3	16.8	22.0
f_s (Service II)	(ksi)	28.6	31.7	34.6	36.9	27.6	31.9	34.6	37.4	27.2	31.7
f_s (Total)(Strength I)	(ksi)	38.0	42.2	45.6	48.9	36.7	42.6	45.5	49.6	36.2	42.3
V_r	(k)	41.4	41.6	-	-	44.6	44.8	-	-	44.7	44.9



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).

Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (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.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$

$\phi_r M_r$: 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).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_L + IM$

f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$

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

NOTES

- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
- This bridge superstructure was designed assuming non-composite behavior in the negative moment regions (consistent with IDOT practice prior to 2012). Slab reinforcement was extended and headed shear studs were added to the negative moment regions later in order to take advantage of composite behavior.

**STEEL FRAMING PLAN
STRUCTURE NO. 056-3190**

	Abutments		Pier 1 or 4		Pier 2 or 3		
	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	
R_{DC1}	(k)	44.94	39.84	164.43	146.51	166.69	148.77
R_{DC2}	(k)	9.39	9.35	31.74	31.78	32.34	32.33
R_{DW}	(k)	14.61	14.55	49.37	49.43	50.3	50.29
R_{LL+IM}	(k)	100.28	94.29	192.43	181.33	199.23	187.7
R_{TOTAL}	(k)	169.22	158.03	437.97	409.06	448.56	419.1

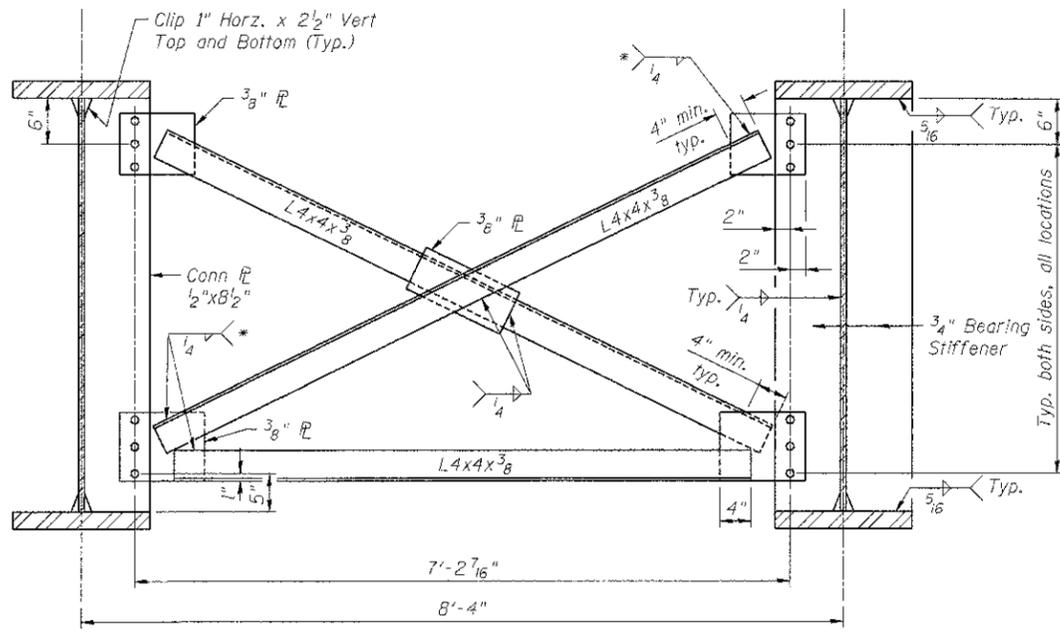
DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



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WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-21	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 144
FED. ROAD DIST. NO. 1 ILLINOIS		FED. AID PROJECT	
CONTRACT NO.		63633	

FILE NAME: 090071-framing.dwg
PLOT DRIVER: pcfplot
OPEN TABLE: standard-trans.tbl



AT CONN. P. (CF1)

AT BEARING STIFFENER (CF2)

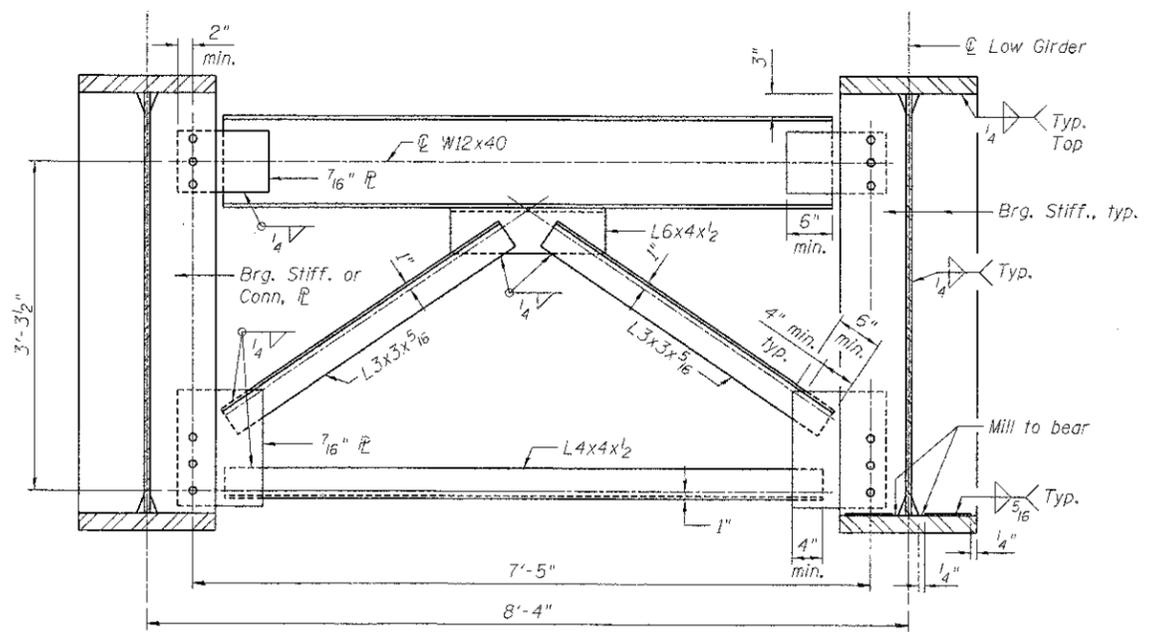
TYPICAL INTERIOR CROSS FRAME

Not to Scale
(CF1 - 59 Required)
(CF2 - 12 Required)

* Fillet weld angles along 3 sides on one face of gusset plate, typ. each end of each angle.

Notes: Detail 15/16" φ holes for all 3/4" bolts.

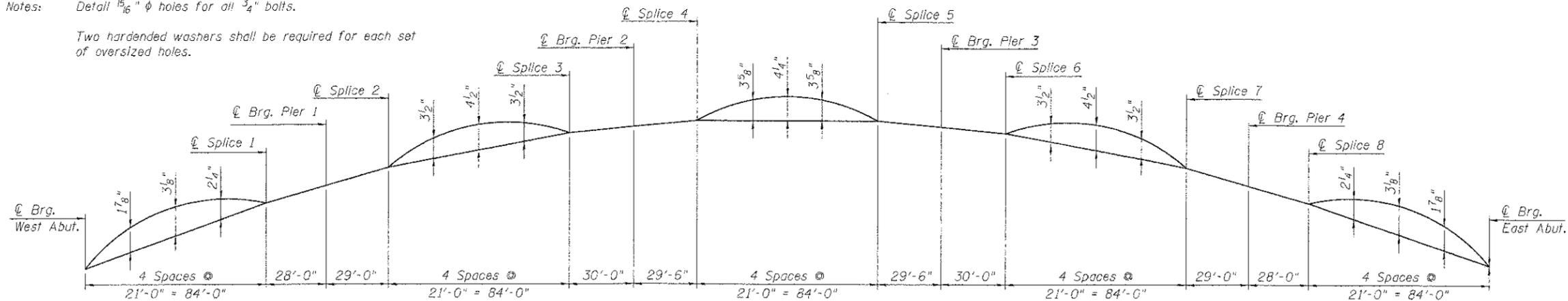
Two hardened washers shall be required for each set of oversized holes.



TYPICAL END CROSS FRAME - CF

(6 Required)

Notes: Detail 15/16" φ holes for all 3/4" bolts.
1 1/16" φ holes for all 7/8" φ bolts.
Two hardened washers shall be required for each set of oversized holes.



CAMBER DIAGRAM

Girder	CL Brg. W. Abut.	CL Field Splice #1	CL Brg. Pier 1	CL Field Splice #2	CL Field Splice #3	CL Brg. Pier 2	CL Field Splice #4	CL Field Splice #5	CL Brg. Pier 3	CL Field Splice #6	CL Field Splice #7	CL Brg. Pier 4	CL Field Splice #8	CL Brg. E. Abut.
A	750.491	753.565	754.349	755.161	756.784	757.069	757.349	757.340	757.069	756.793	755.230	754.389	753.577	750.539
B	750.621	753.695	754.479	755.291	756.914	757.199	757.480	757.471	757.199	756.923	755.360	754.519	753.707	750.669
C	750.652	753.727	754.511	755.323	756.945	757.231	757.511	757.502	757.231	756.955	755.392	754.551	753.739	750.701
D	750.522	753.596	754.380	755.192	756.815	757.100	757.381	757.372	757.100	756.824	755.261	754.420	753.608	750.570

TOP OF WEB ELEVATIONS

(For Fabrication Only)

CAMBER DIAGRAM AND DIAPHRAM DETAILS
STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



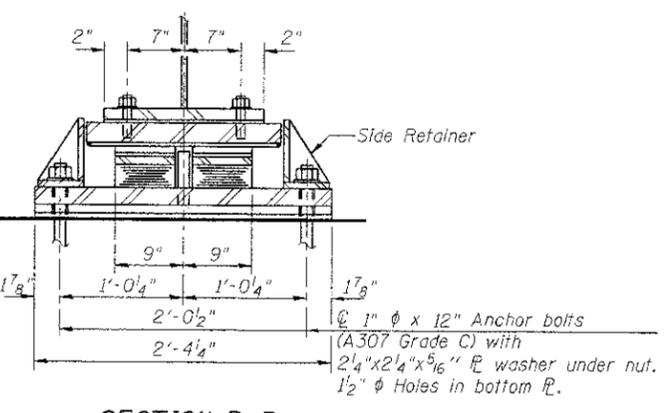
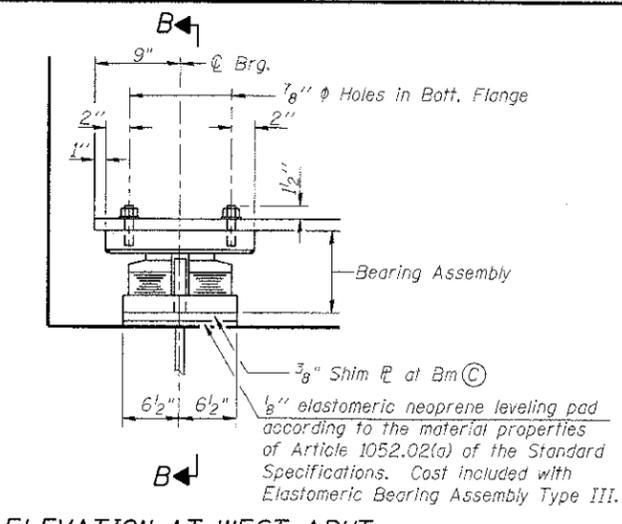
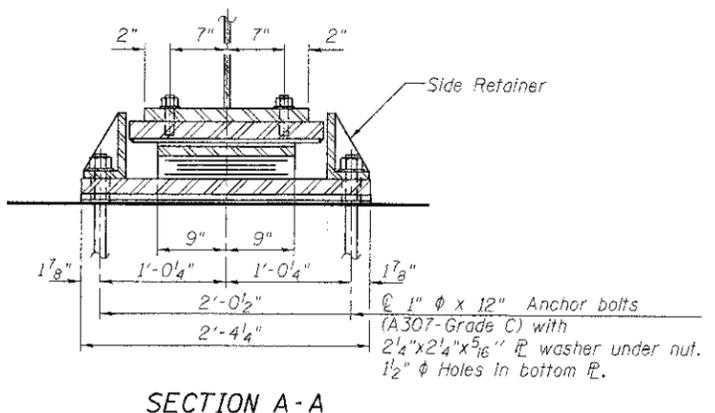
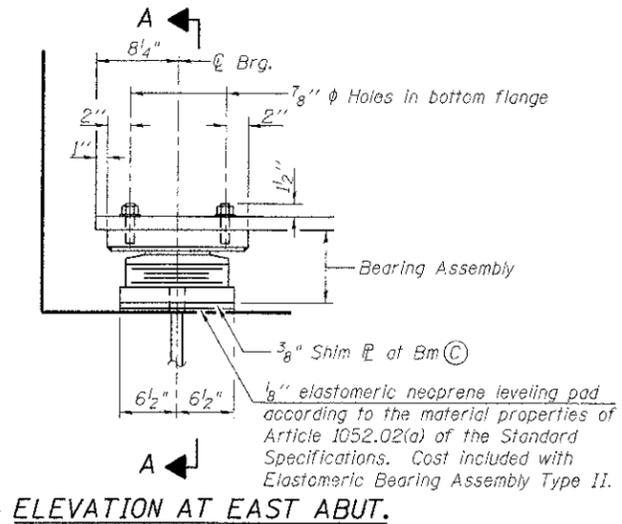
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WB CHARLES J. MILLER ROAD BRIDGE

DATE: 7/23/12

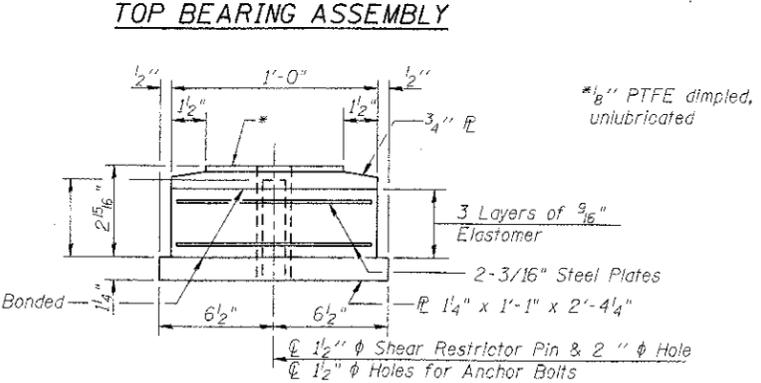
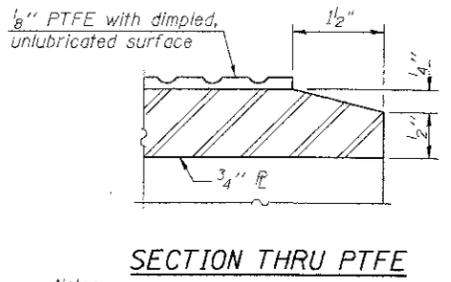
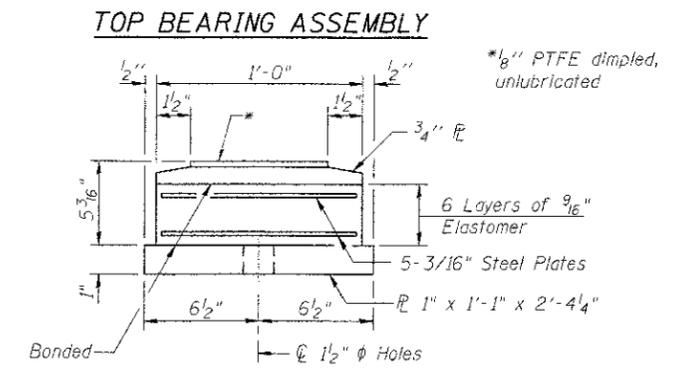
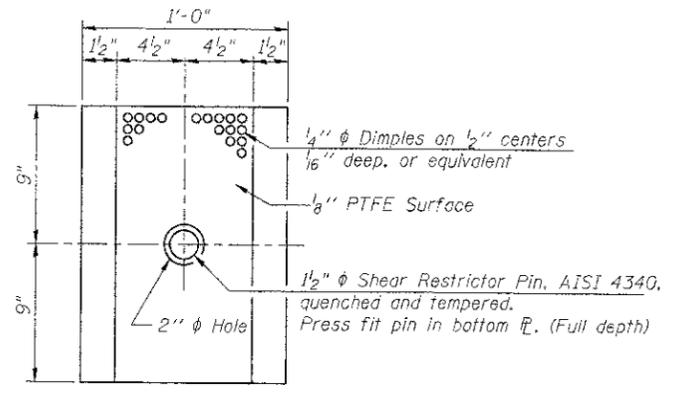
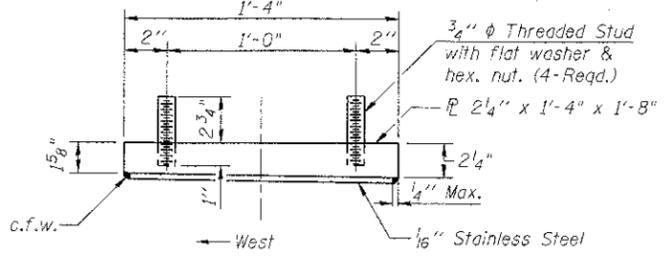
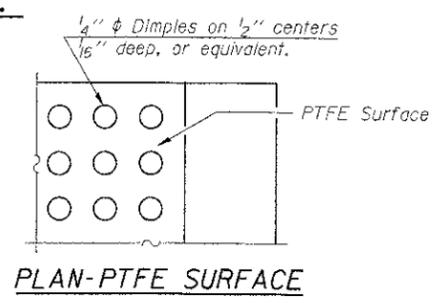
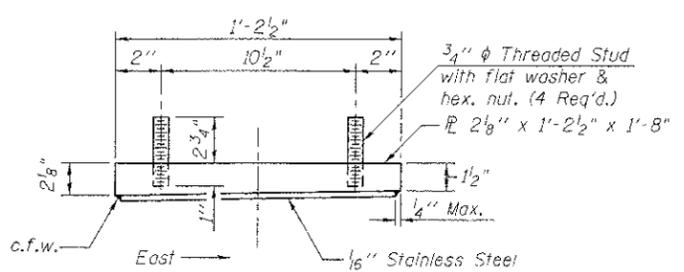
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S-41 SHEETS	CONTRACT NO. 63633		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		

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PLOT TABLES: standard.tbl

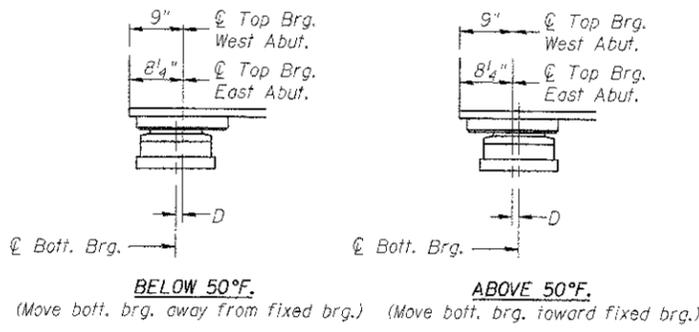
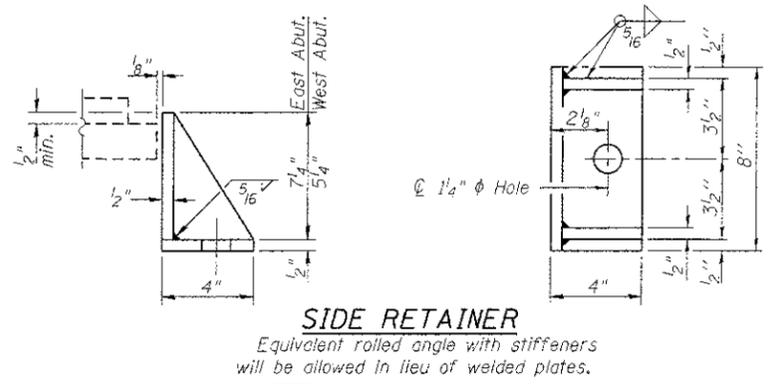


TYPE II ELASTOMERIC EXP. BRG.

TYPE III ELASTOMERIC EXP. BRG.



Notes:
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Anchor bolts at fixed abutments may be either cast in place or installed in holes drilled after the supported member is in place.
 Anchor bolts for Type II and Type III bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
 Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, as specified.
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
 Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.



BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	4
Elastomeric Bearing Assembly, Type III	Each	4
Anchor Bolts, 1"	Each	16

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

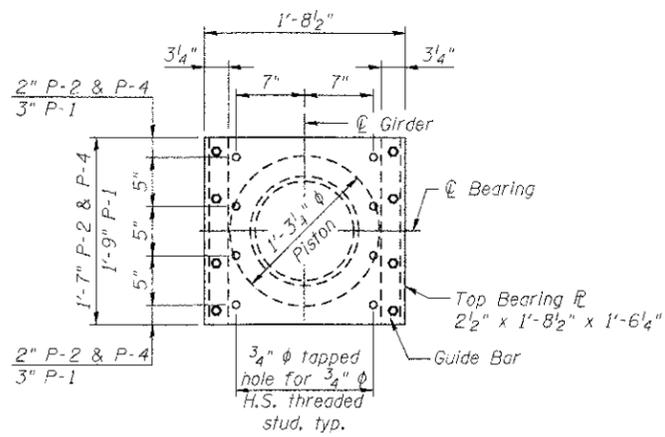
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 STRUCTURE NO. 056-3190**

WB CHARLES J. MILLER ROAD BRIDGE DATE: 7/23/12

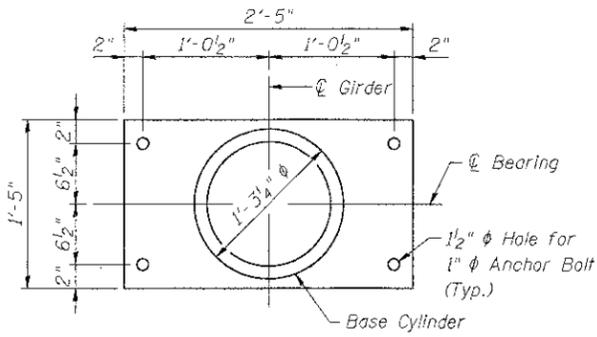
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S-41 SHEETS			CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



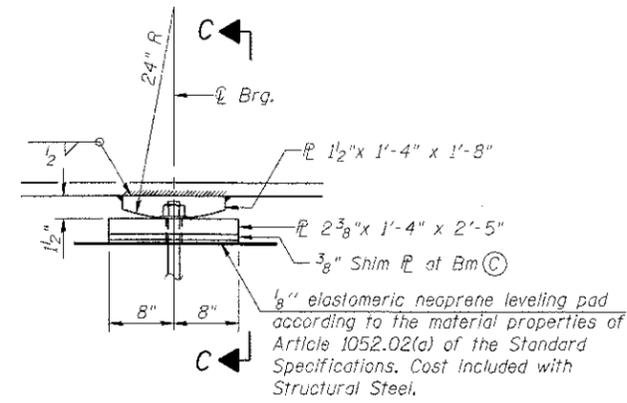
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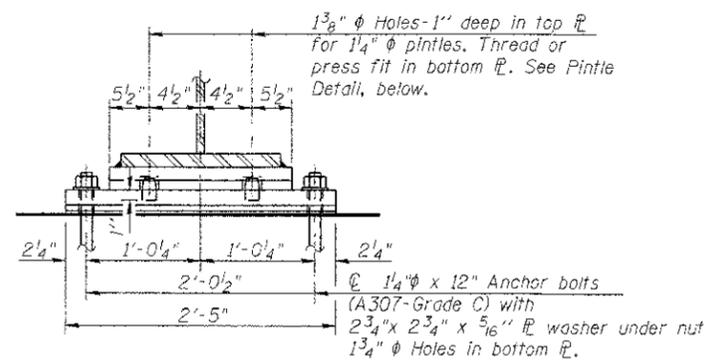
TOP BEARING P AND PISTON PLAN



BOTTOM BEARING P AND BASE CYLINDER PLAN

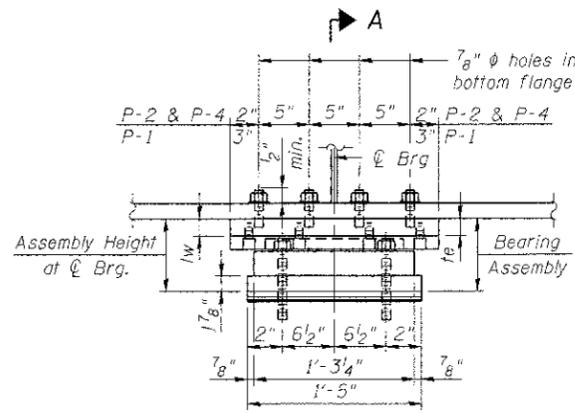


ELEVATION AT PIER 3

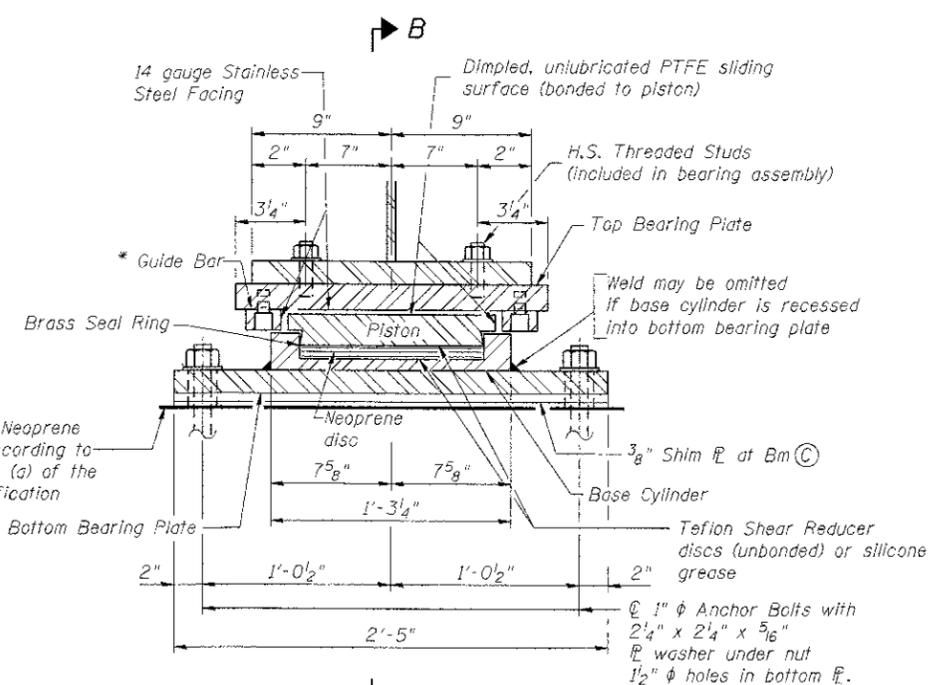


SECTION C-C

* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

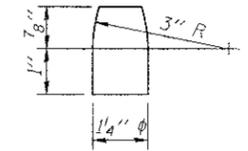


ELEVATION AT PIERS 1, 2 AND 4

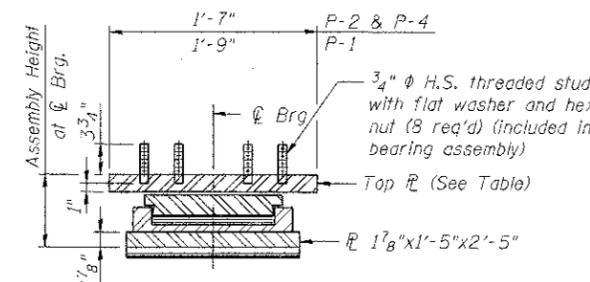


SECTION A-A

FIXED BEARING

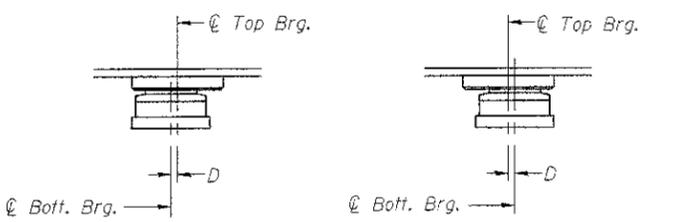


PINTLE



SECTION B-B
(Guide Bar omitted for clarity)

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
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.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.



BELOW 50°F. (Move bott. brg. away from fixed brg.)
ABOVE 50°F. (Move bott. brg. toward fixed brg.)

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

BILL OF MATERIAL

Item	Unit	Total
Furnishing High Load Multi-Rotational Bearings, Guided Expansion, 450K	Each	12
High Load Multi-Rotational Bearings, Guided Expansion, 450K (Erect Only)	Each	12
Anchor Bolts, 1 1/4"	Each	8
Anchor Bolts, 1"	Each	48

Pier	Bearing Data (LRFD)		
1	Vertical design load	430K	
	Total required movement	3 5/8"	
	Lateral design load (H _w)	86K	
	Design Rotation (θ _w)	0.373°	
2	Vertical design load	430K	
	Total required movement	1 13/16"	
	Lateral design load (H _w)	86K	
	Design Rotation (θ _w)	0.417°	
4	Vertical design load	430K	
	Total required movement	1 13/16"	
	Lateral design load (H _w)	86K	
	Design Rotation (θ _w)	0.373°	

Pier	t _w	t _e	Top Plate Size	Assembly Height at C of Brg.
1	2 1/8"	2 3/4"	2 3/4" x 1'-8 1/2" x 1'-9"	9 5/16"
2	2 1/4"	2 7/16"	2 7/16" x 1'-7" x 1'-8 1/2"	9 1/4"
4	2 13/16"	2 1/4"	2 13/16" x 1'-7" x 1'-8 1/2"	9 7/16"

Notes: The plates of the Bearing Assembly shall be AASHTO M270, Grade 50W.

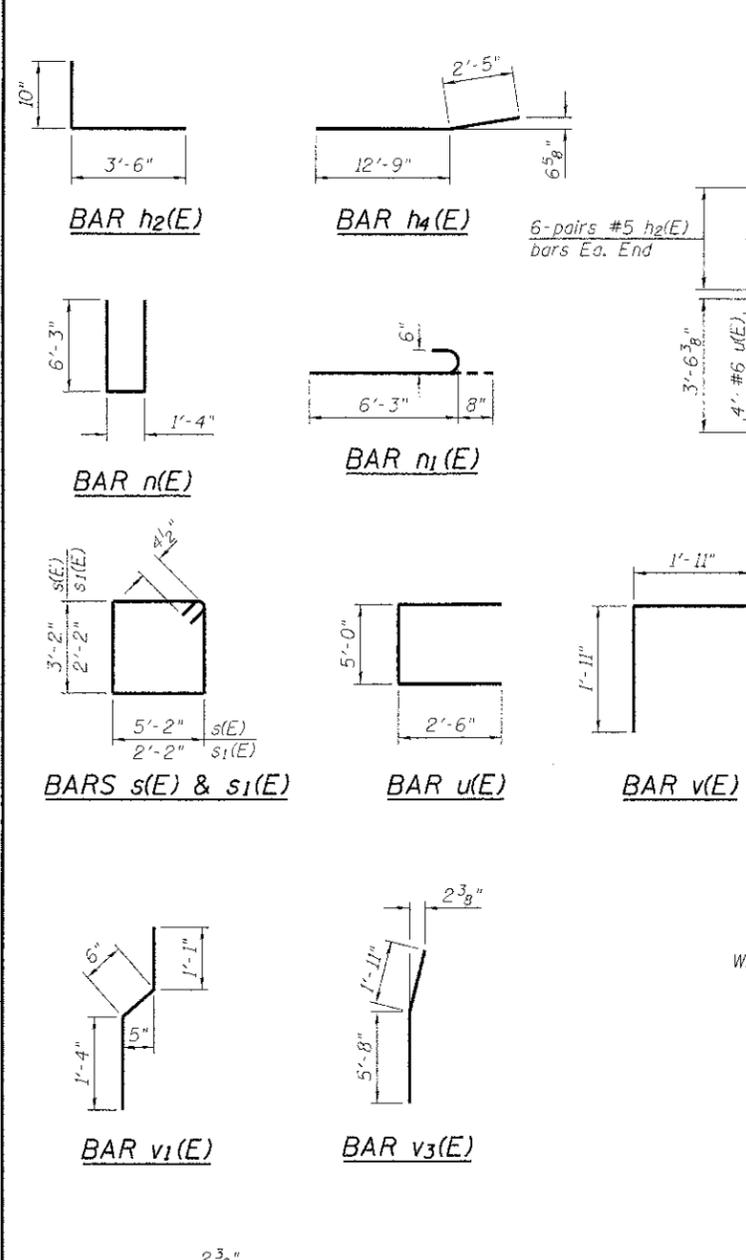
BEARING DETAILS - PIERS
STRUCTURE NO. 056-3190

WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-25	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 148
CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT



DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

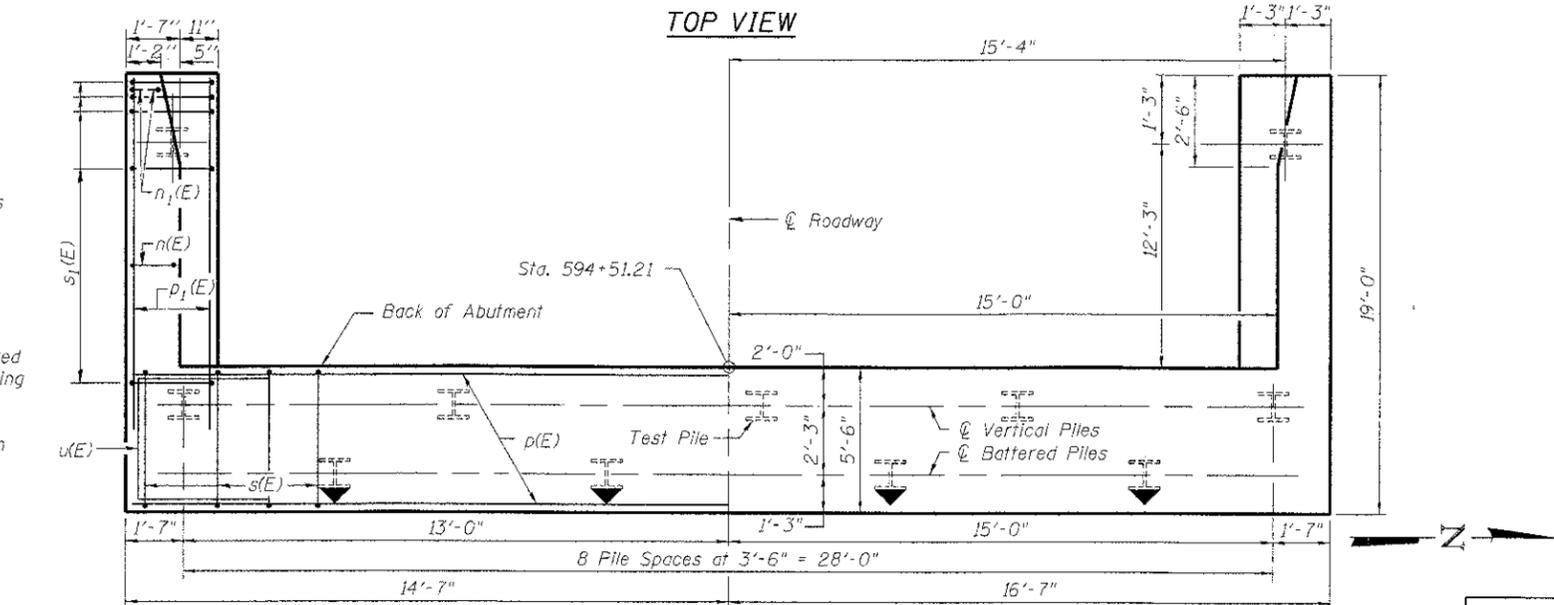
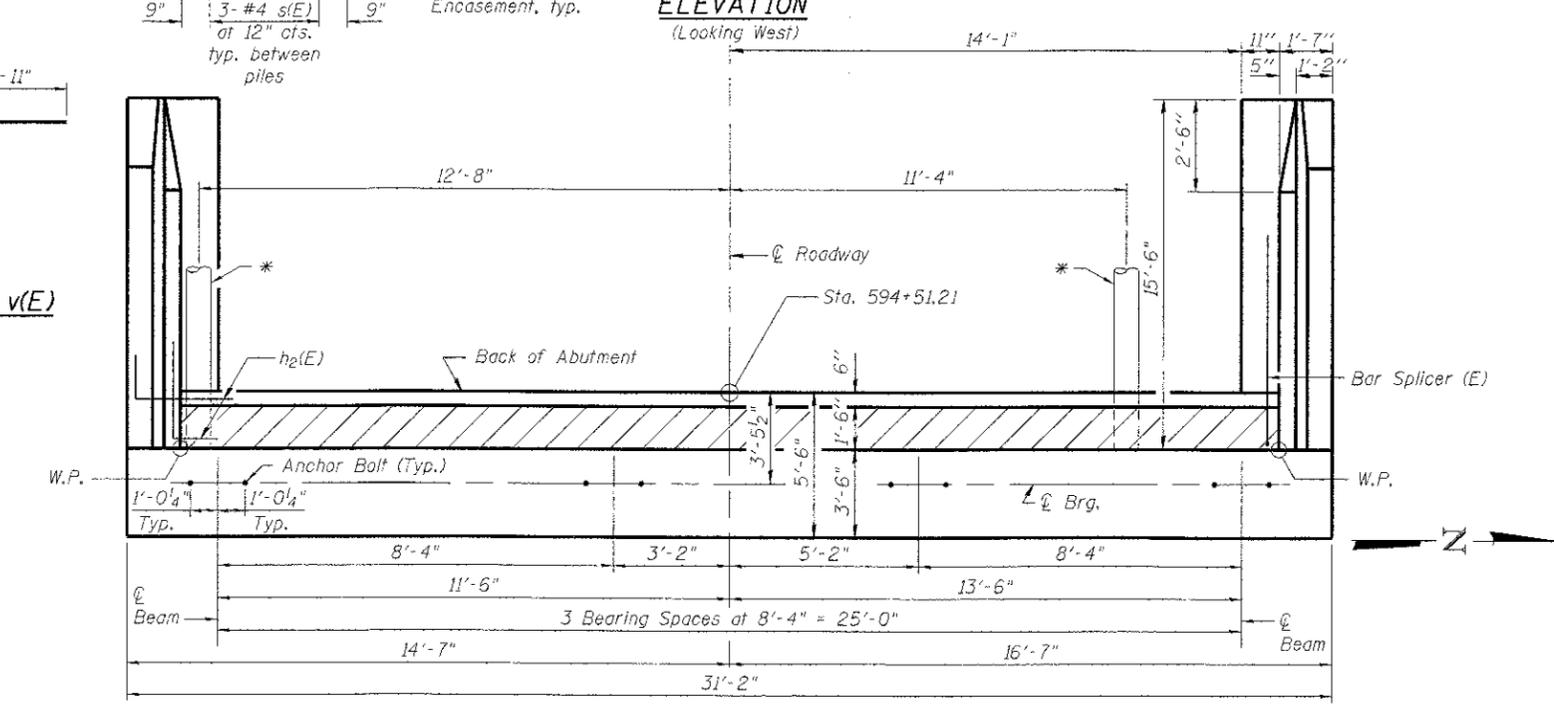
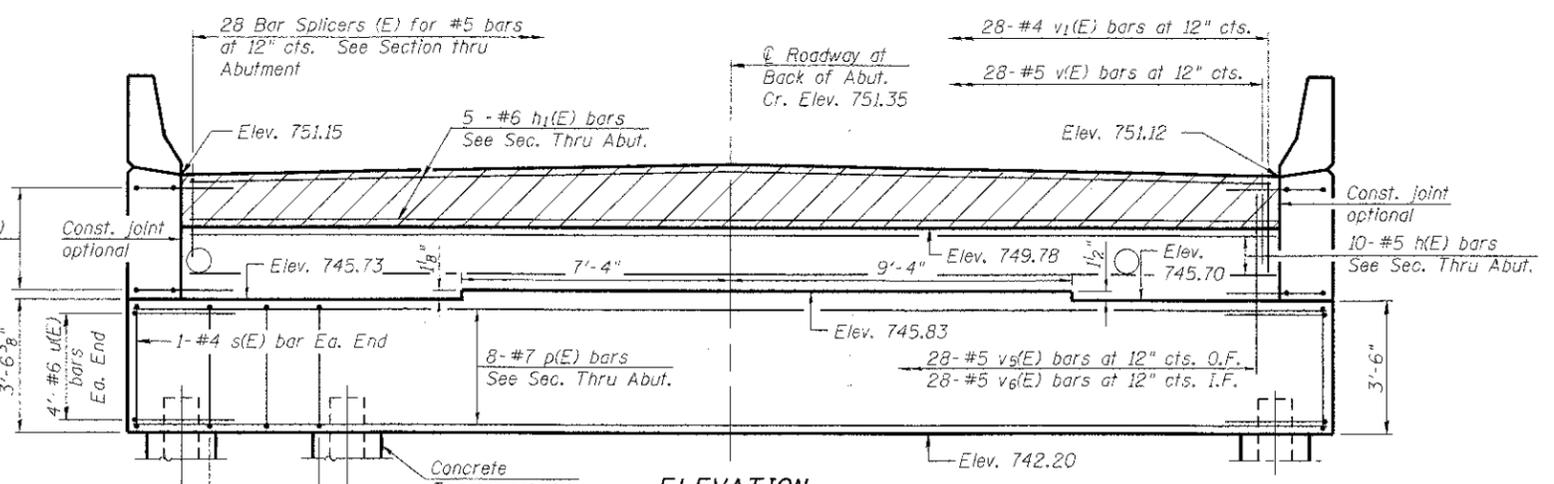
FILE NAME: 050717-00-01.dwg
PLOT DATE: 07/23/12
PEN TABLE: Standard Colors
SCALE: As Shown



PILE DATA
 Type: Steel-HP 10x42
 Nominal Required Bearing: 280 kips
 Factored Resistance Available: 137 kips
 Est. Length: 62 ft.
 No. Production Piles: 10
 No. Test Piles: 1

Note:
 Piles for West Abutment shall be driven through 18 inch diameter pre-cored holes extending 12 inches into the existing grade, considering removal of topsoil, according to Article 512.09(c) of the Standard Specifications. Cost included in Driving Piles.

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



* Storm Sewer, Class B, Type 2, 8" PVC.
 Invert Elev. at Backwall = 747.65
 See West Approach Slab Plans (S-08) for
 Layout, Coordinate W/6" PVC on Deck
 Drainage Plan, End Cross Frame and
 Trough Detail. Pitch at 4%.

**ABUTMENT
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h (E)	10	#5	27'-8"	—
h1 (E)	5	#6	27'-8"	—
h2 (E)	24	#5	4'-4"	└
h3 (E)	24	#4	15'-2"	—
h4 (E)	16	#4	15'-2"	—
n (E)	26	#6	13'-10"	—
n1 (E)	12	#6	6'-11"	—
p (E)	8	#7	30'-10"	—
p1 (E)	12	#7	18'-8"	—
s (E)	26	#4	17'-5"	└
s1 (E)	34	#4	9'-5"	└
u (E)	8	#6	10'-0"	—
v (E)	28	#5	3'-10"	└
v1 (E)	28	#4	2'-11"	—
v2 (E)	32	#6	8'-0"	—
v3 (E)	6	#6	7'-7"	—
v4 (E)	26	#6	8'-4"	—
v5 (E)	28	#5	5'-8"	—
v6 (E)	28	#5	7'-4"	—
Structure Excavation		Cu. Yd.	13	
Concrete Structures		Cu. Yd.	50.8	
Reinforcement Bars, Epoxy Coated		Pound	4,600	
Furnishing Steel Piles HPI0X42		Foot	620	
Driving Piles		Foot	620	
Test Pile Steel HPI0X42		Each	1	
Concrete Encasement		Cu. Yd.	3.9	
Concrete Sealer		Sq. Ft.	392.2	

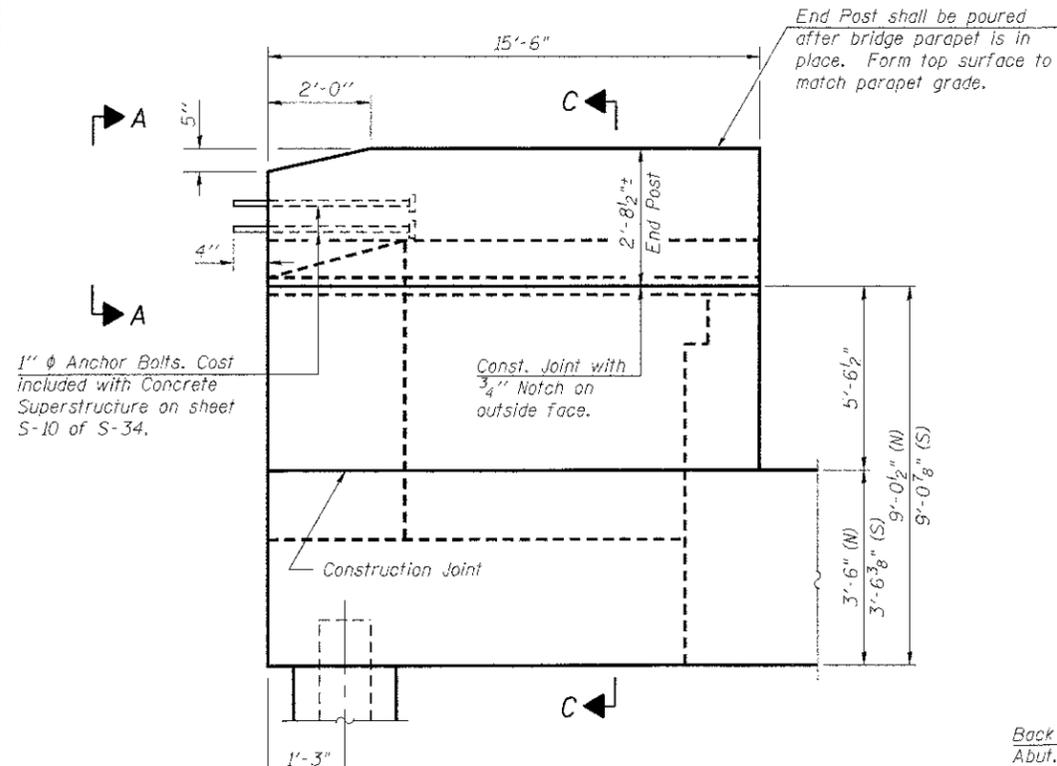
For details of Bar Splicers, see S-34 of S-41.
 For details of piles and Concrete Encasement, see sheet S-35 of S-41.

**WEST ABUTMENT PLAN AND ELEVATION
 STRUCTURE NO. 056-3190**

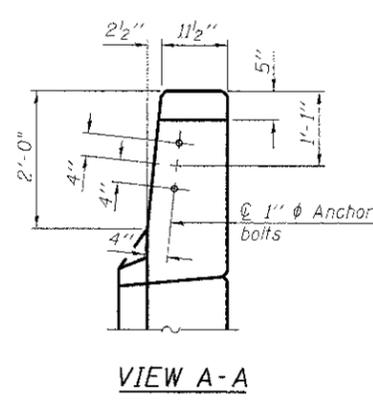
PLAN - PILE CAP



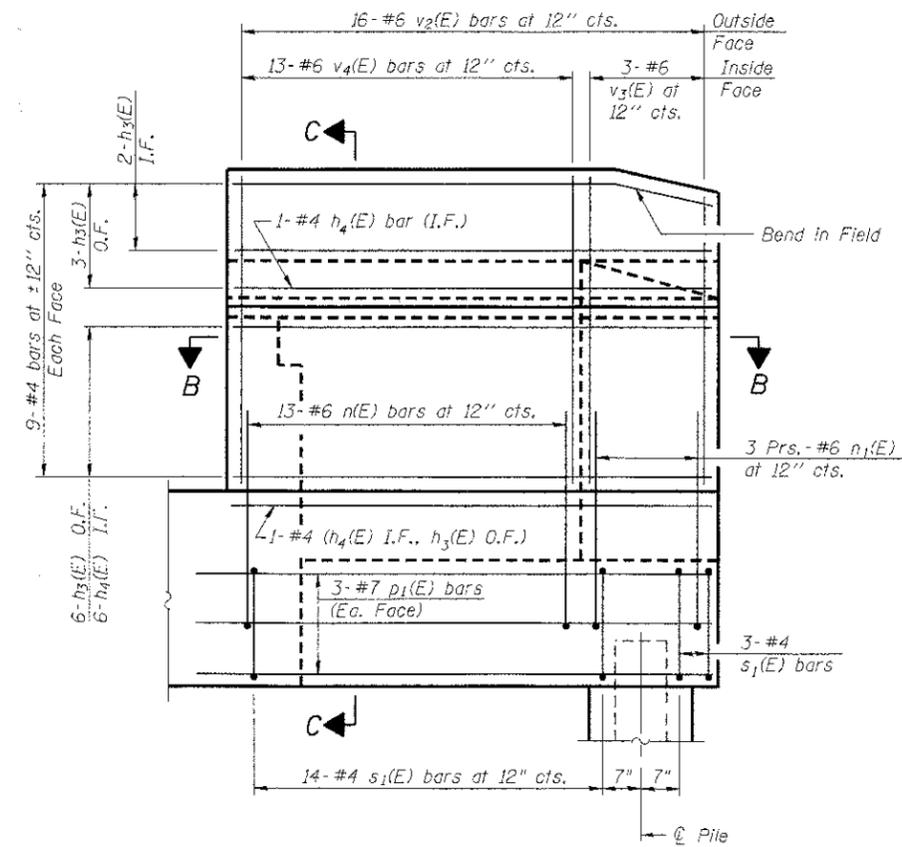
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-26	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 149
CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS



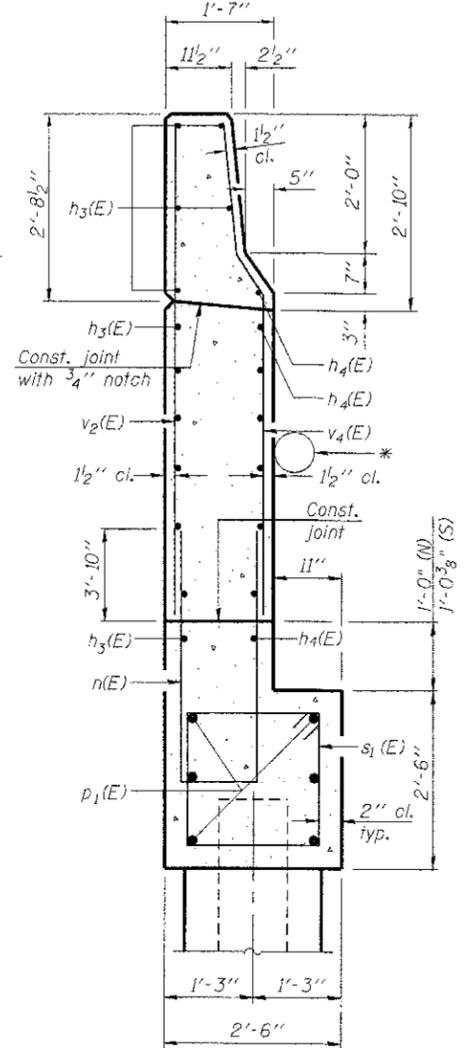
WING WALL ELEVATION
Showing Dimensions



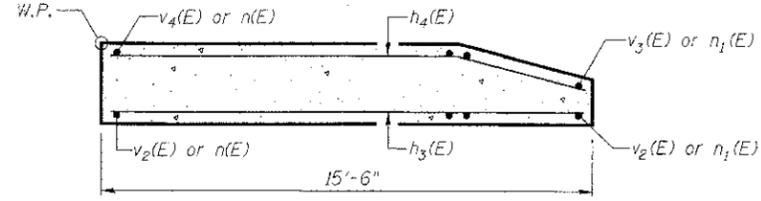
VIEW A-A



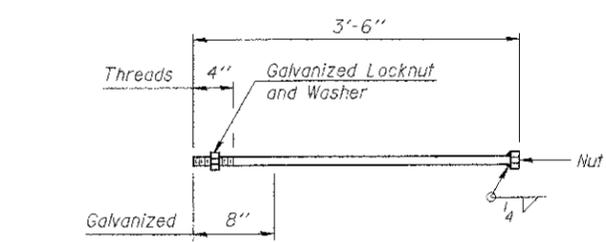
WING WALL ELEVATION
Showing Reinforcement



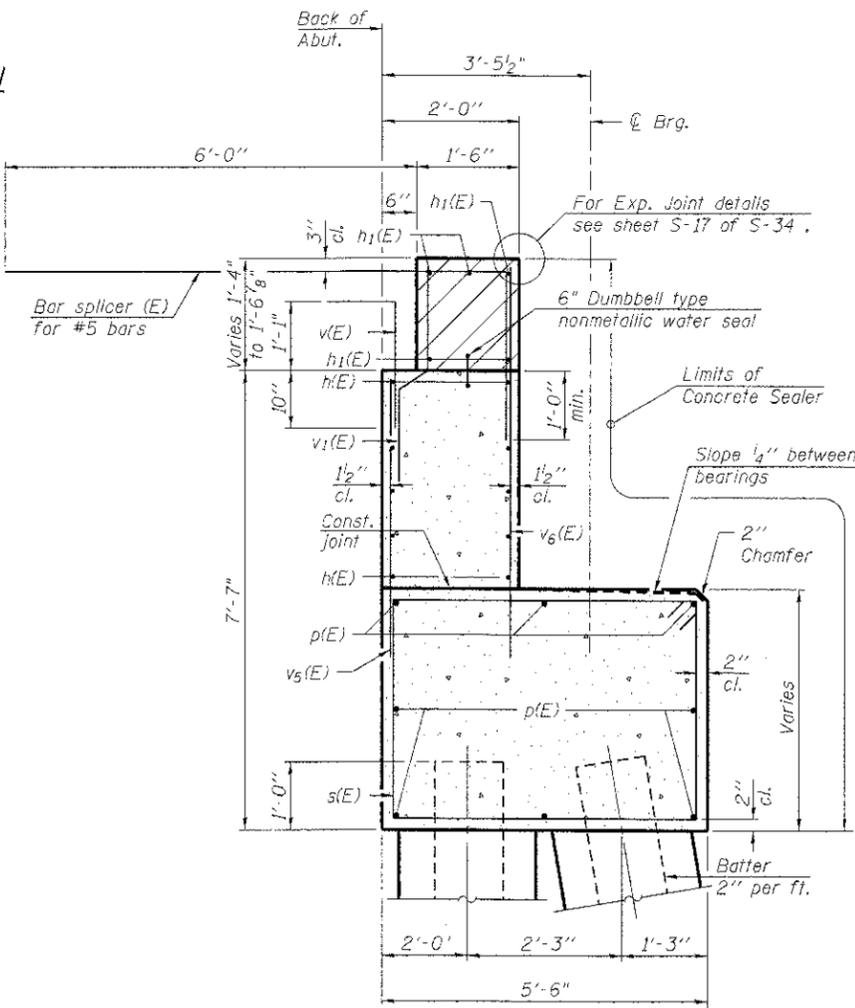
SECTION C-C



SECTION B-B



1" diameter ANCHOR BOLT



SEC. THRU ABUT.

Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet S-11 of S-41.
For Concrete Encasement details, see sheet S-35 of S-41.

* Storm Sewer, Class B, Type 2, 8" PVC.
Invert Elev. at Backwall = 747.65
See West Approach Slab Plans (S-08) for Layout. Coordinate W/6" PVC on Deck Drainage Plan, End Cross Frame and Trough Detail. Pitch at 4%.

WEST ABUTMENT DETAILS
STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

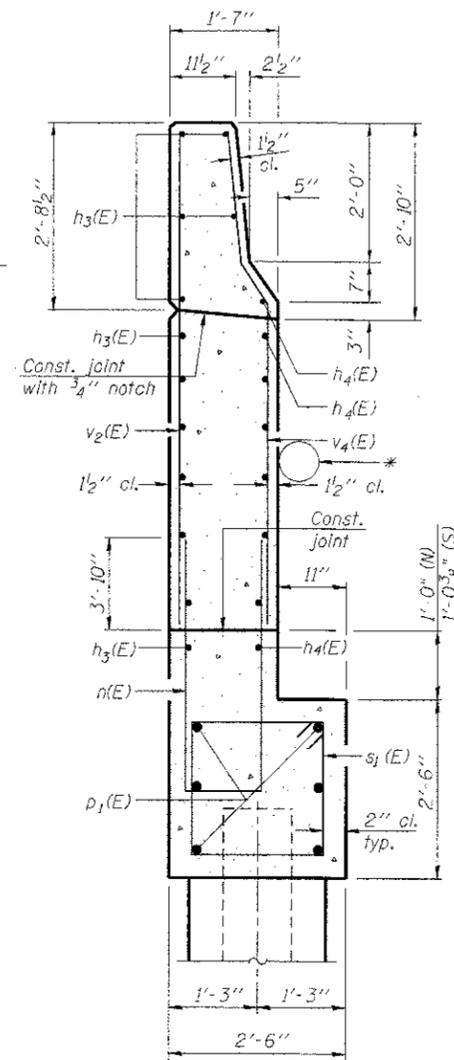
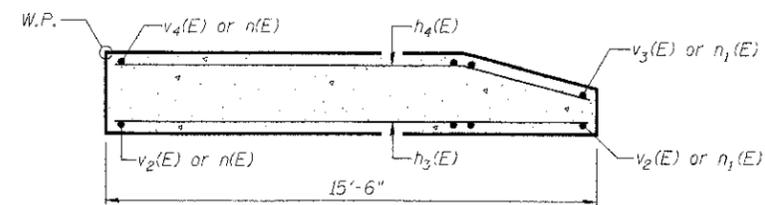
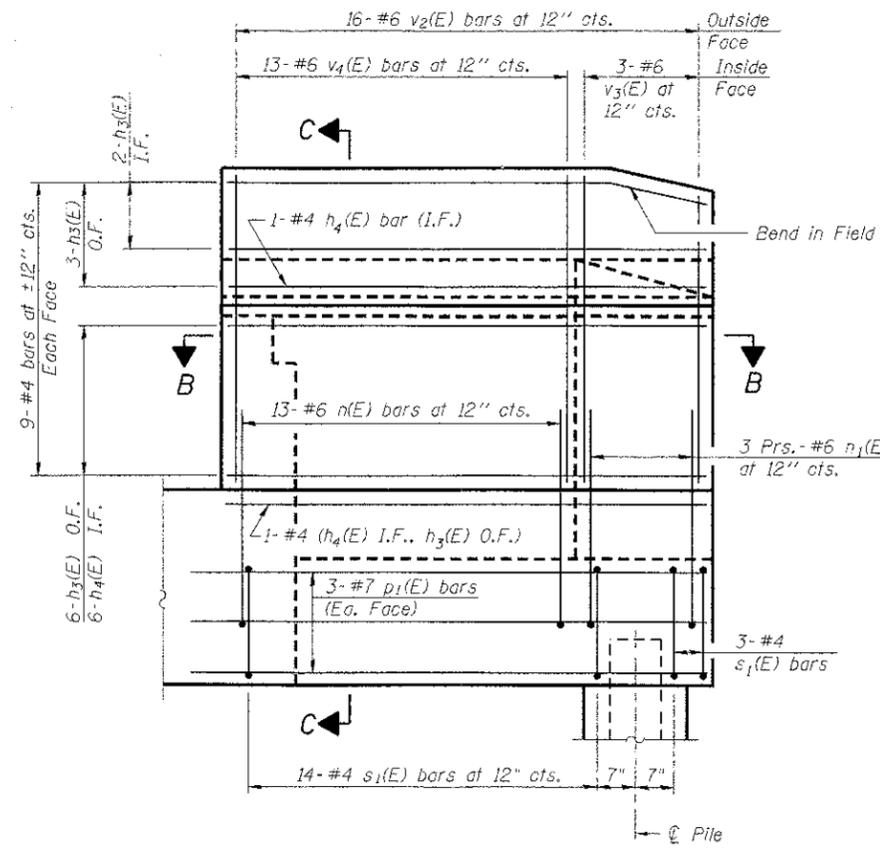
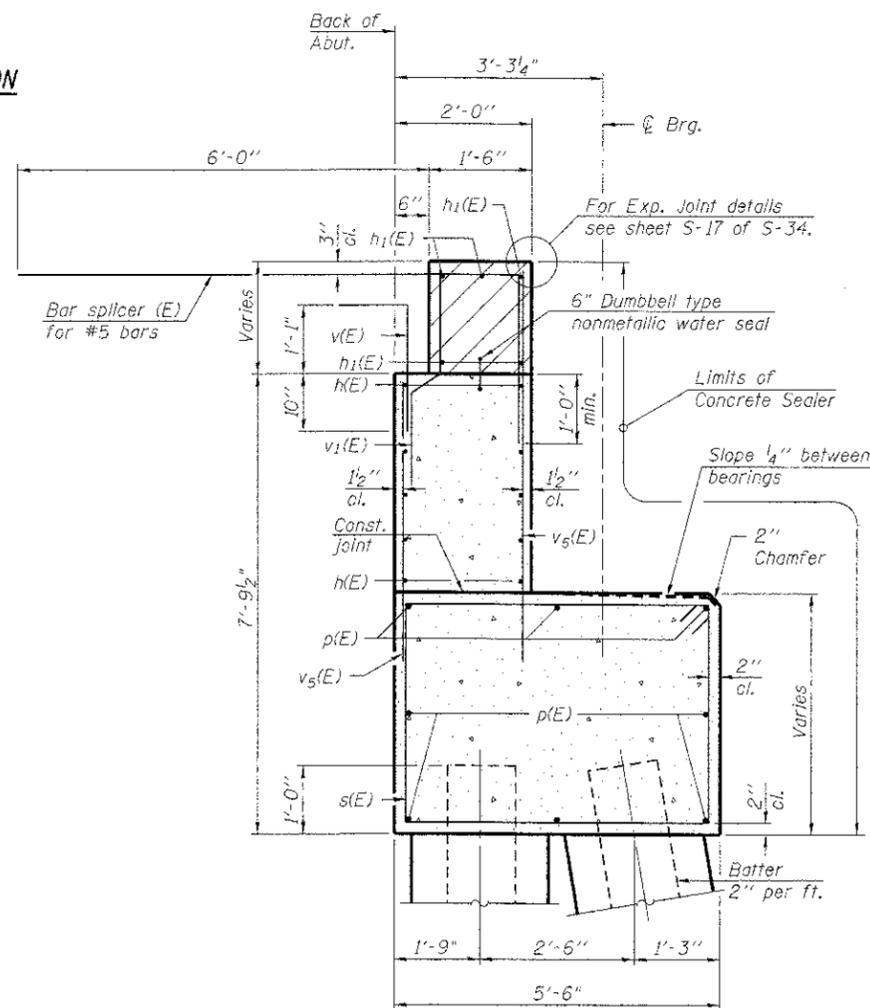
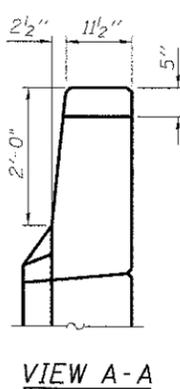
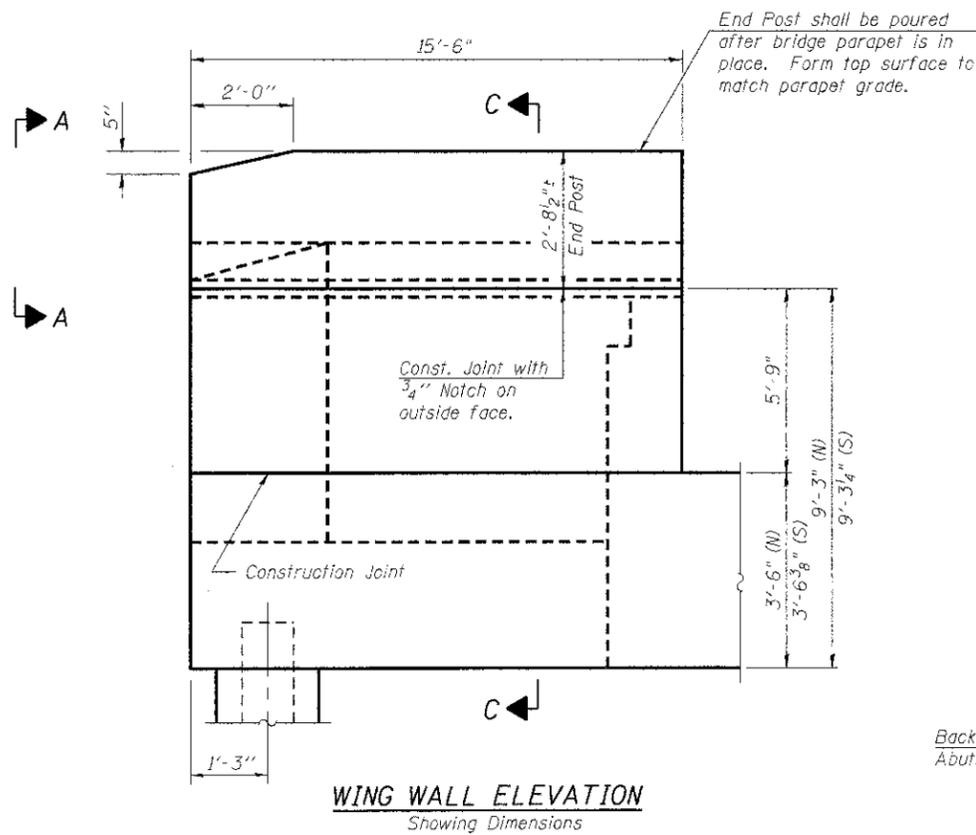
11-1-09

A-1-D



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Illinois Professional Design Firm
184-001322

WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-27	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 150
CONTRACT NO. 63633			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT



Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure. Space reinforcement in cap to miss anchor bolts. Pour steps monolithically with cap. Quantity of concrete in end post included with Concrete Superstructure on sheet S-11 of S-41. For Concrete Encasement details, see sheet S-35 of S-41.

* Storm Sewer, Class B, Type 2, 8" PVC. Invert Elev. at Backwall = 747.65. See East Approach Slab Plans (S-09) for Layout. Coordinate W/6" PVC on Deck Drainage Plan, End Cross Frame and Trough Detail.

EAST ABUTMENT DETAILS
STRUCTURE NO. 056-3190

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

A-1-D 11-1-09

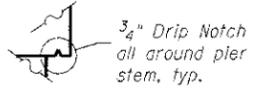


WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-29	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 152
FED. ROAD DIST. NO. 1 ILLINOIS			CONTRACT NO. 63633
FED. AID PROJECT			

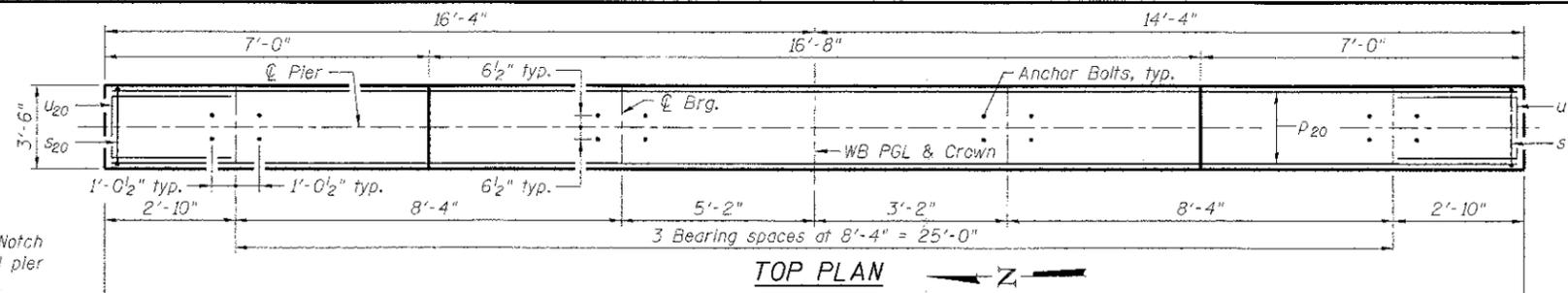
Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 For details of piles, see sheet S-35 of S-41.

MINIMUM BAR LAP
 (Pier)

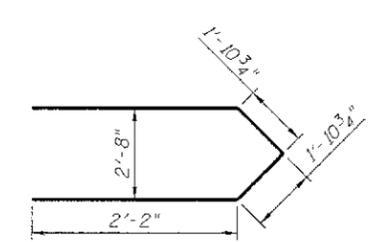
#5 bar = 2'-2"
 #8 bar = 3'-8"



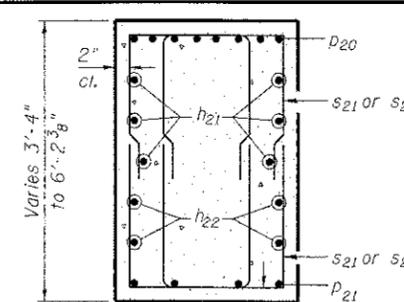
DRIP NOTCH DETAIL



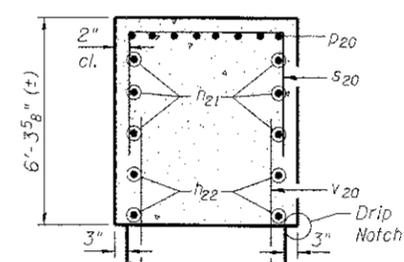
TOP PLAN



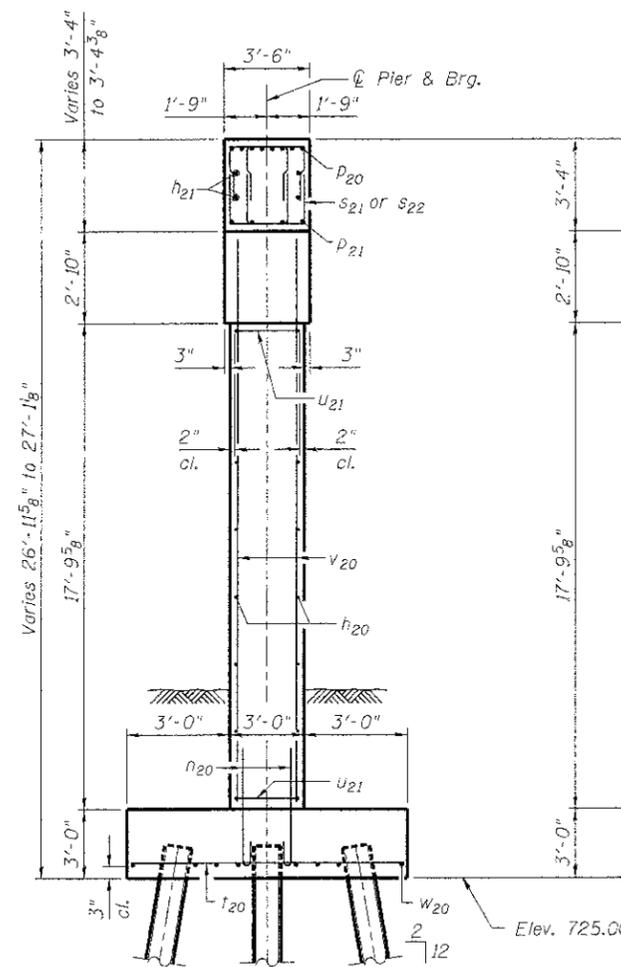
BAR U21



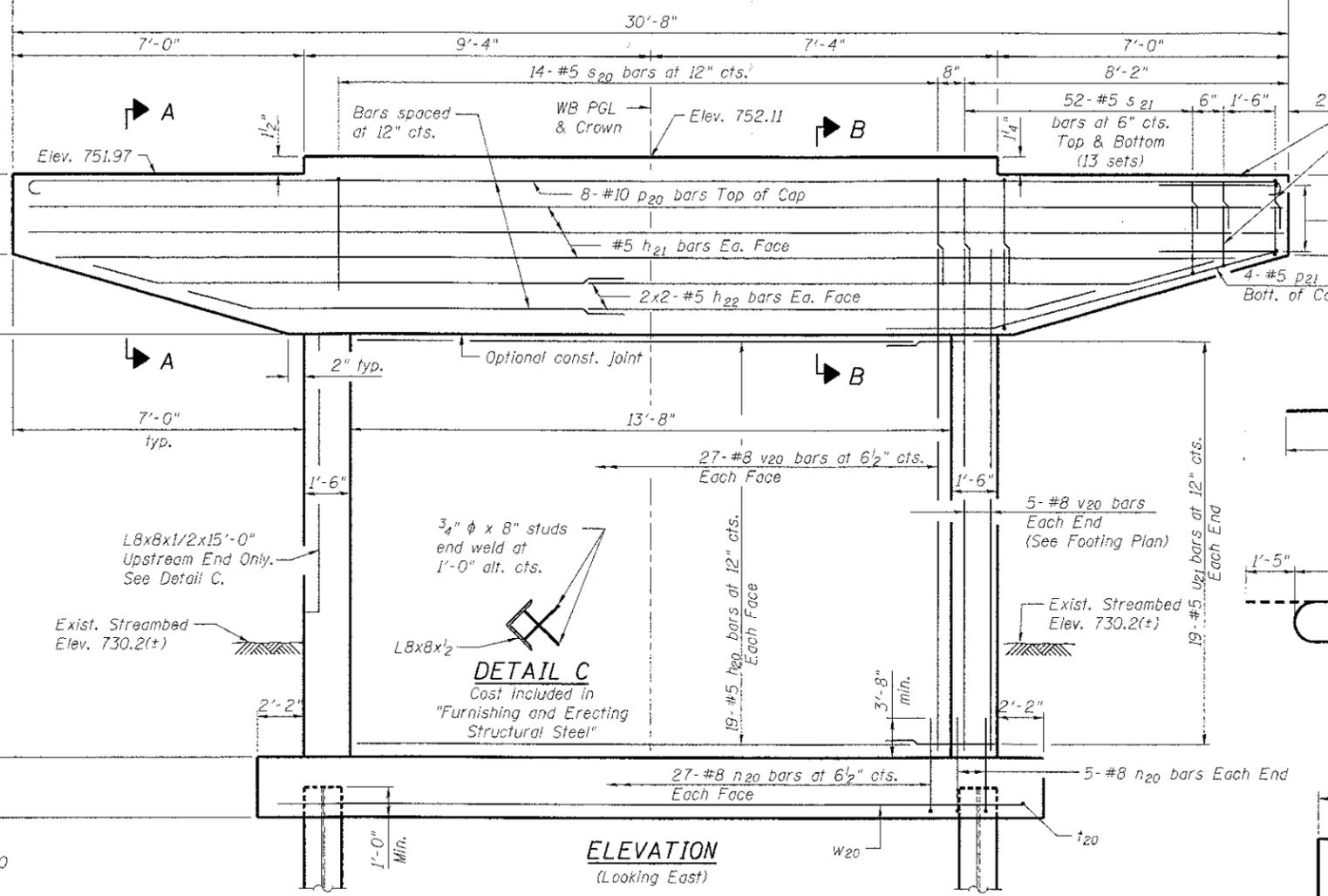
SECTION A-A



SECTION B-B



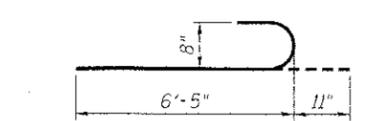
END VIEW



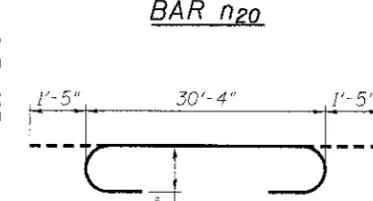
ELEVATION
 (Looking East)



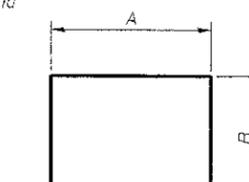
DETAIL C
 Cost included in "Furnishing and Erecting Structural Steel"



BAR n20



BAR p20



BARS

A & B DIMENSIONS

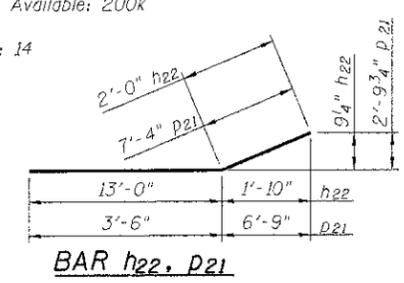
Bar	A	B
u20	3'-0 1/2"	2'-1"
s20	3'-2"	5'-5"
s21	2'-4"	4'-0"
s22	2'-4"	3'-1"

BILL OF MATERIAL

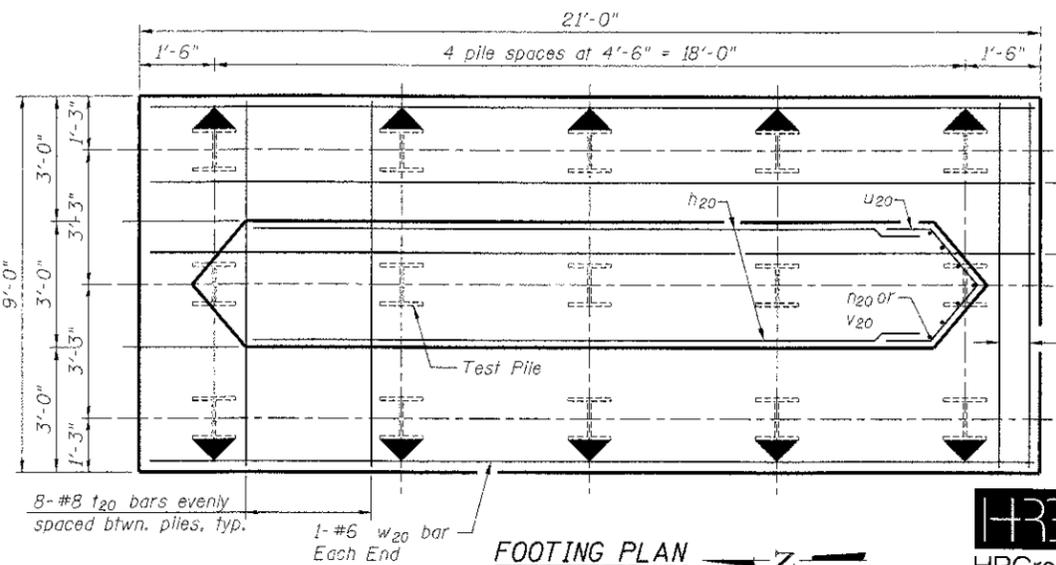
Bar	No.	Size	Length	Shape	
n20	38	#5	13'-4"	—	
n21	6	#5	30'-4"	—	
n22	8	#5	15'-0"	—	
n20	64	#8	7'-4"	U	
p20	8	#10	33'-2"	U	
p21	8	#5	10'-10"	U	
s20	14	#5	14'-0"	□	
s21	104	#5	10'-4"	□	
s22	16	#5	8'-6"	□	
t20	36	#8	8'-8"	—	
u20	8	#6	7'-3"	—	
u21	38	#5	8'-2"	—	
v20	64	#8	20'-9"	—	
w20	8	#6	20'-8"	—	
Concrete Structures				Cu. Yd.	73.3
Reinforcement Bars				Pound	9,840
Furnishing Steel Piles HP12X53				Foot	588
Pile Shoes				Each	15
Driving Piles				Foot	588
Test Pile Steel HP12X53				Each	1
Cofferdam (Type 2) (Location - 2)				Each	1
Cofferdam Excavation				Cu. Yd.	99
Seal Coat Concrete				Cu. Yd.	36.1

PILE DATA

Type: Steel - HP12x53
 Nominal Required Bearing: 400k
 Factored Resistance Available: 200k
 Est. Length: 42'
 No. Production Piles: 14
 No. Test Piles: 1



BAR h22, p21



FOOTING PLAN

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

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 Illinois Professional Design Firm
 # 184-001322

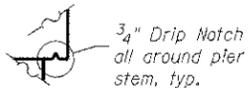
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-31	F.A.U. RTE.	SECTION	COUNTY
S-41 SHEETS	3860	09-00372-00-PW	McHENRY
TOTAL SHEETS		SHEET NO.	
252		154	
CONTRACT NO.			63633
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 For details of piles, see sheet S-35 of S-41.

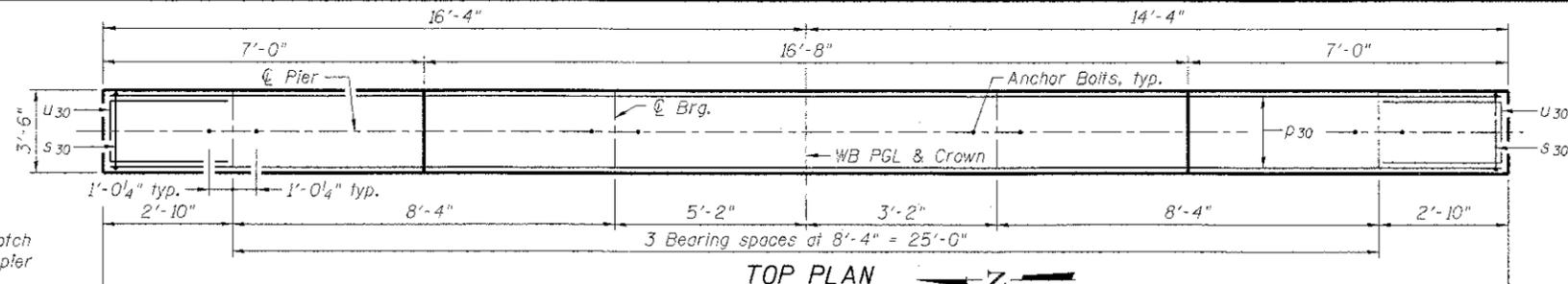
MINIMUM BAR LAP

(Pier)

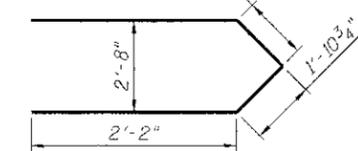
- #5 bar = 2'-2"
- #8 bar = 3'-8"



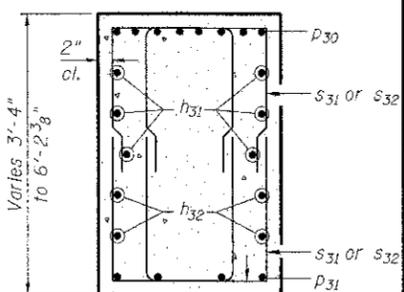
DRIP NOTCH DETAIL



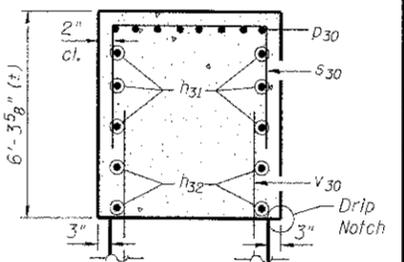
TOP PLAN



BAR U31



SECTION A-A



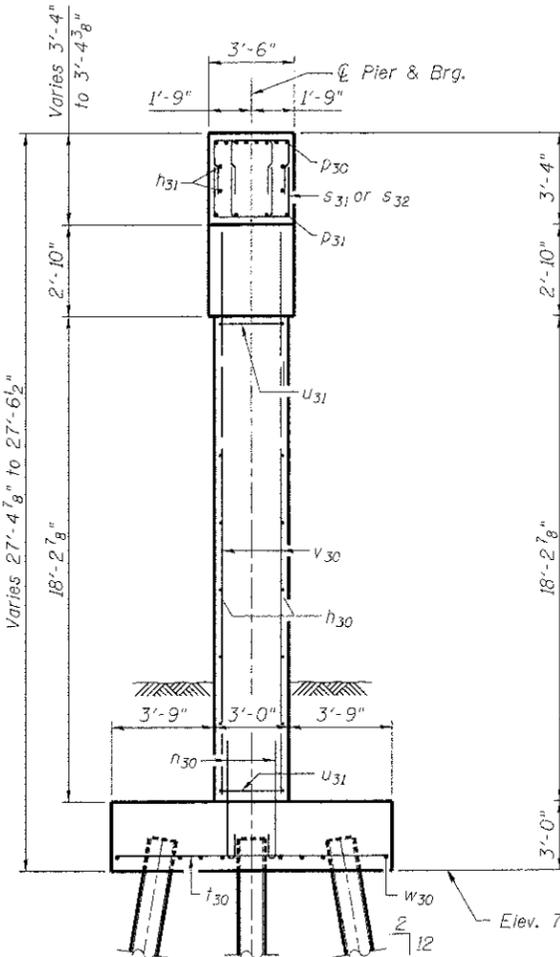
SECTION B-B

PIER 3

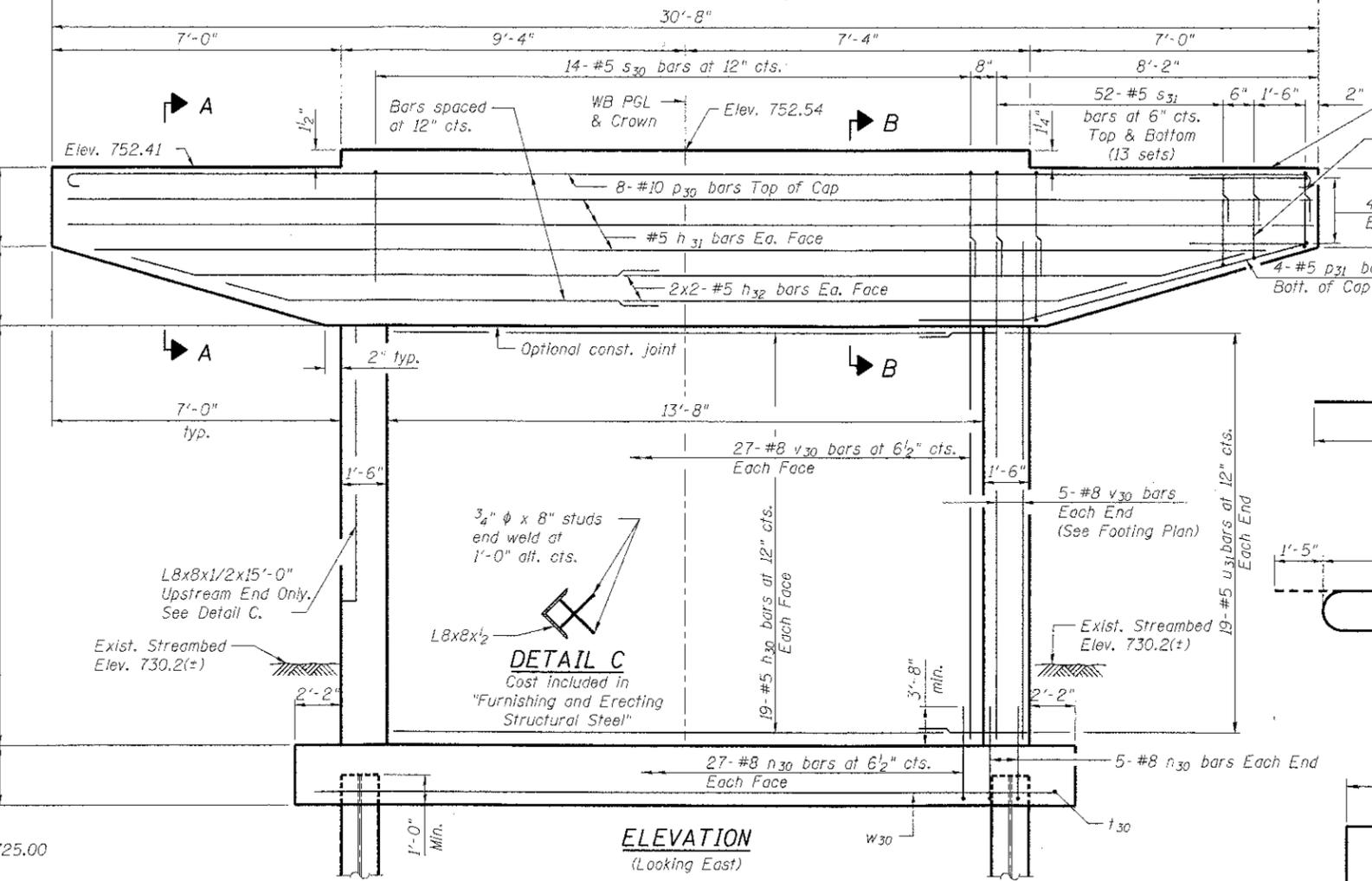
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h30	38	#5	13'-4"	—
h31	6	#5	30'-4"	—
h32	8	#5	15'-0"	—
n30	64	#8	7'-4"	—
D30	8	#10	33'-2"	—
D31	8	#5	10'-10"	—
S30	14	#5	14'-0"	—
S31	104	#5	10'-4"	—
S32	16	#5	8'-6"	—
t30	36	#8	10'-2"	—
U30	8	#6	7'-3"	—
U31	38	#5	8'-2"	—
V30	64	#8	21'-2"	—
W30	10	#6	21'-2"	—

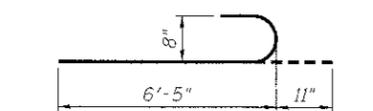
Concrete Structures	Cu. Yd.	78.2
Reinforcement Bars	Pound	10,120
Furnishing Steel Piles HP12X53	Foot	760
Driving Piles	Foot	760
Test Pile Steel HP12X53	Each	1
Pile Shoes	Each	21
Cofferdam (Type 2) (Location - 3)	Each	1
Cofferdam Excavation	Cu. Yd.	113
Seal Coat Concrete	Cu. Yd.	41.1



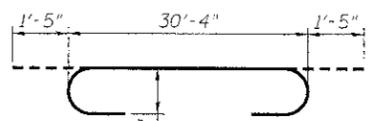
END VIEW



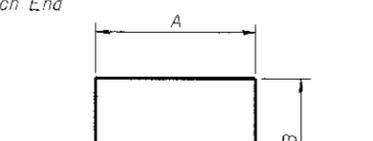
ELEVATION
(Looking East)



BAR n30



BAR p30



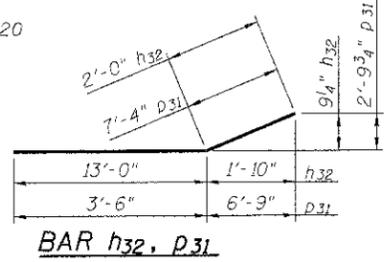
BARS

A & B DIMENSIONS

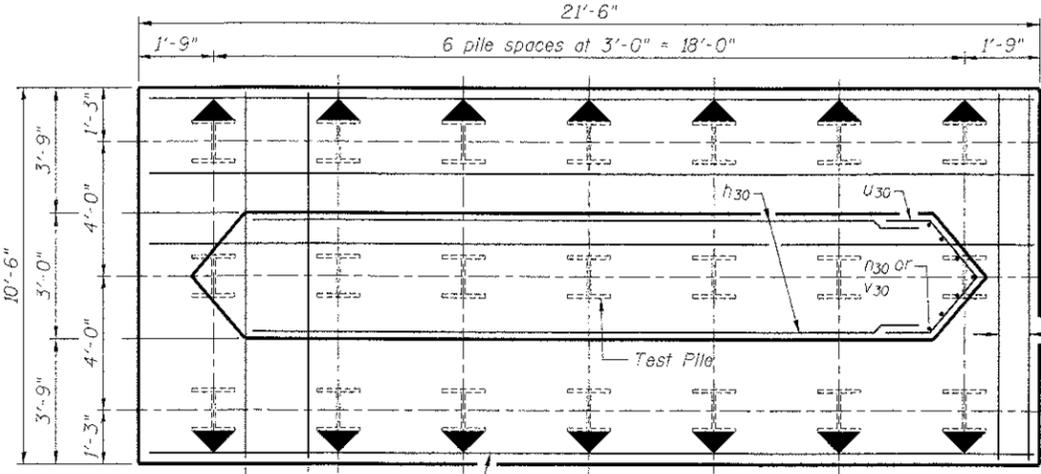
Bar	A	B
U30	3'-0 1/2"	2'-1"
S30	3'-2"	5'-5"
S31	2'-4"	4'-0"
S32	2'-4"	3'-1"

PILE DATA

Type: Steel - HP12x53 with Pile Shoes
 Nominal Required Bearing: 390k
 Factored Resistance Available: 195k
 Est. Length: 38'
 No. Production Piles: 20
 No. Test Piles: 1



BAR h32, p31



FOOTING PLAN

4-#6 w30 bars evenly spaced b/wn. piles, typ.
 3-#8 t30 bars Each End

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	RCD

FILE NAME: 09007-per-0309
 PLOT DRIVER: p4r.bat
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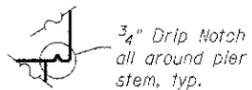
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 #184-001322

WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-32	F.A.U. RTE.	SECTION	COUNTY
S-41 SHEETS	3860	09-00372-00-PW	McHENRY
		TOTAL SHEETS	SHEET NO.
		252	155
CONTRACT NO.			63633
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			

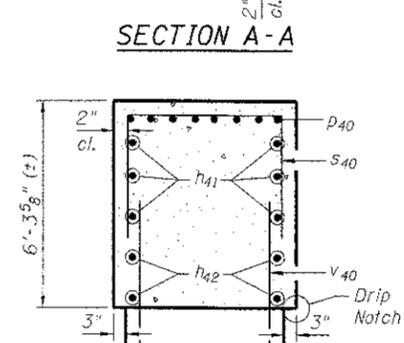
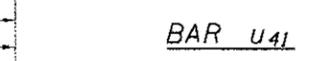
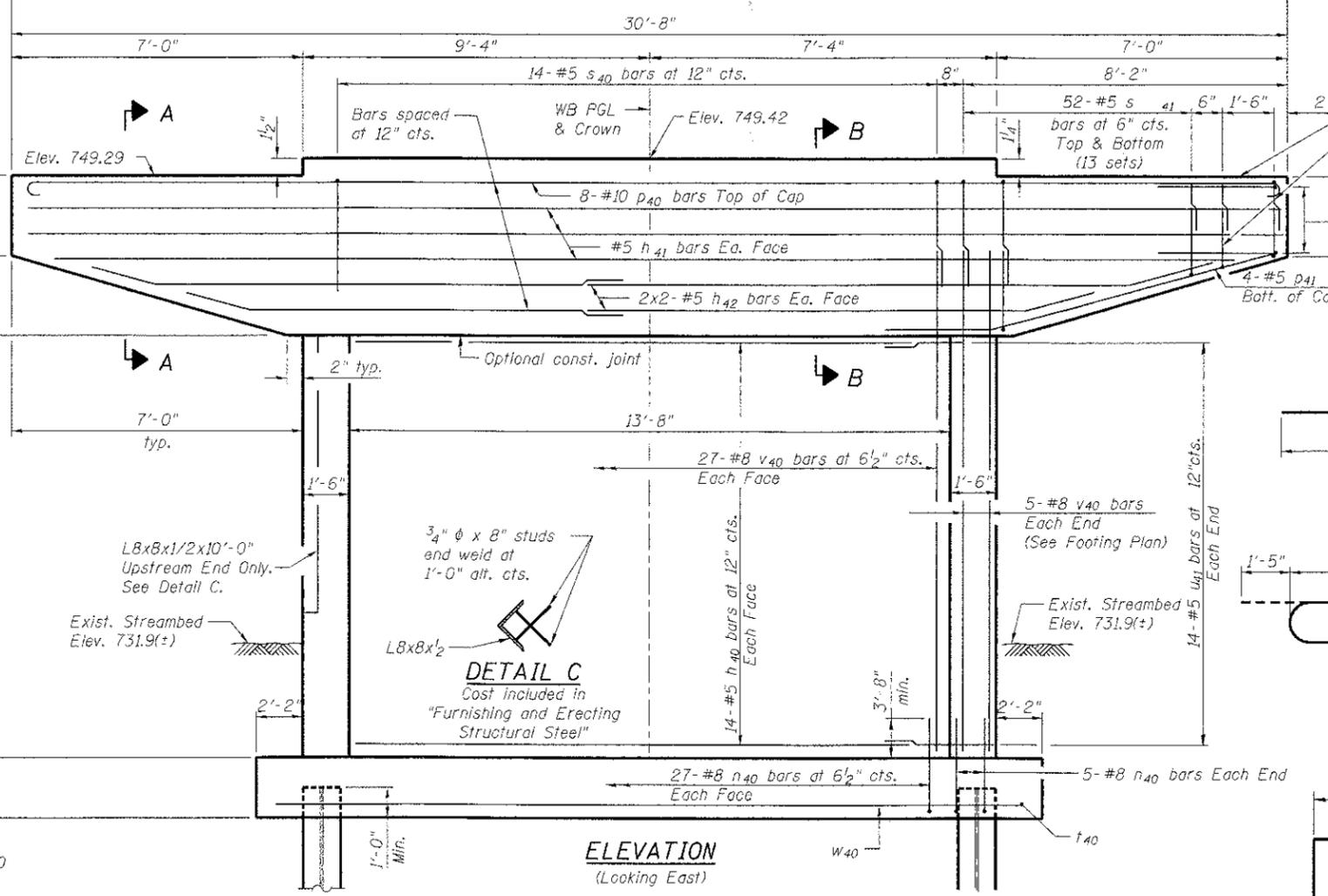
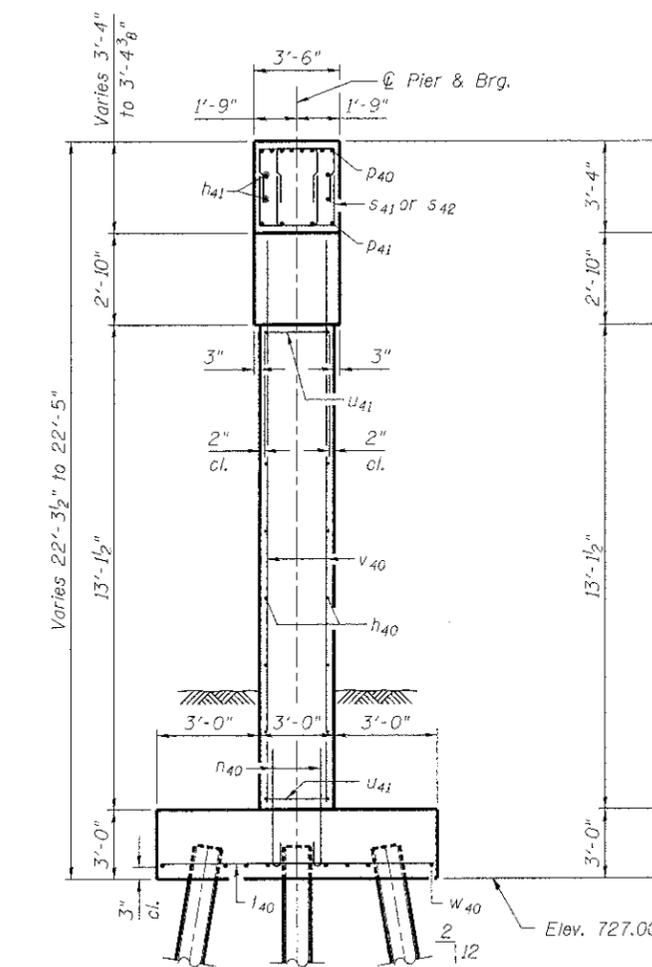
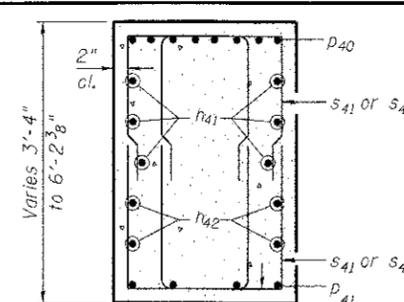
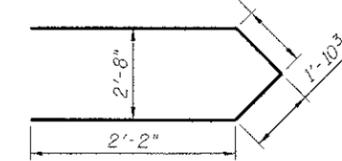
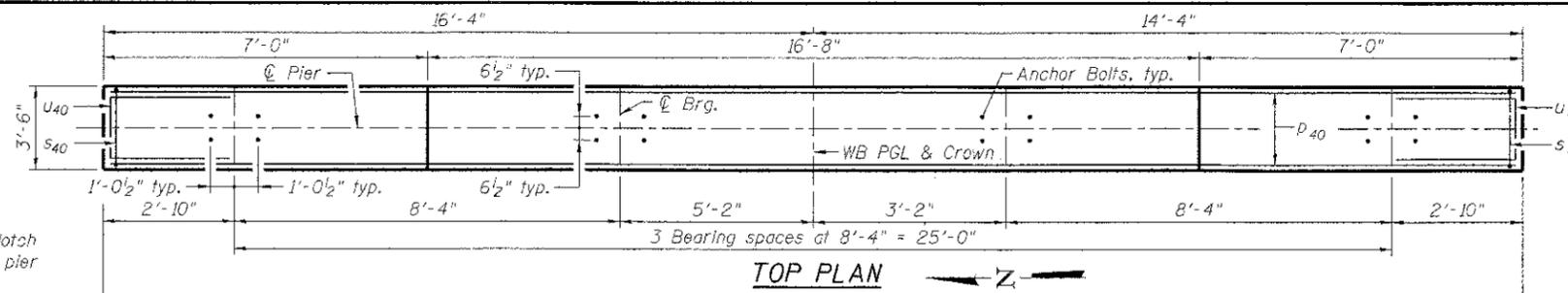
Notes:
 Space reinforcement in cap to miss anchor bolts.
 Four steps monolithically with cap.
 For details of piles, see sheet S-35 of S-41.

MINIMUM BAR LAP

(Pier)
 #5 bar = 2'-2"
 #8 bar = 3'-8"



DRIP NOTCH DETAIL

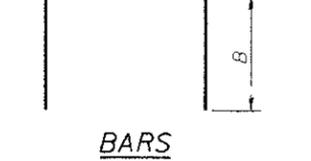
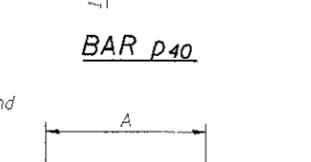
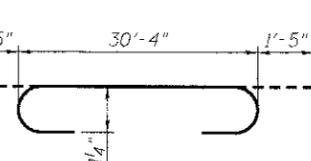
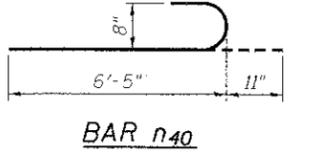


PIER 4

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
n40	28	#5	13'-4"	—
h41	6	#5	30'-4"	—
h42	8	#5	15'-0"	—
h40	64	#8	7'-4"	—
p40	8	#10	33'-2"	—
p41	8	#5	10'-10"	—
s40	14	#5	14'-0"	□
s41	104	#5	10'-4"	□
s42	16	#5	8'-6"	□
t40	36	#8	8'-8"	—
u40	8	#6	7'-3"	—
u41	28	#5	8'-2"	—
v40	64	#8	16'-0"	—
w40	8	#6	20'-8"	—

Concrete Structures	Cu. Yd.	65.5
Reinforcement Bars	Pound	8,800
Furnishing Steel Piles HP12X53	Foot	826
Driving Piles	Foot	826
Test Pile Steel HP12X53	Each	1
Cofferdam (Type 2) (Location - 4)	Each	1
Cofferdam Excavation	Cu. Yd.	96
Seal Coat Concrete	Cu. Yd.	36.1

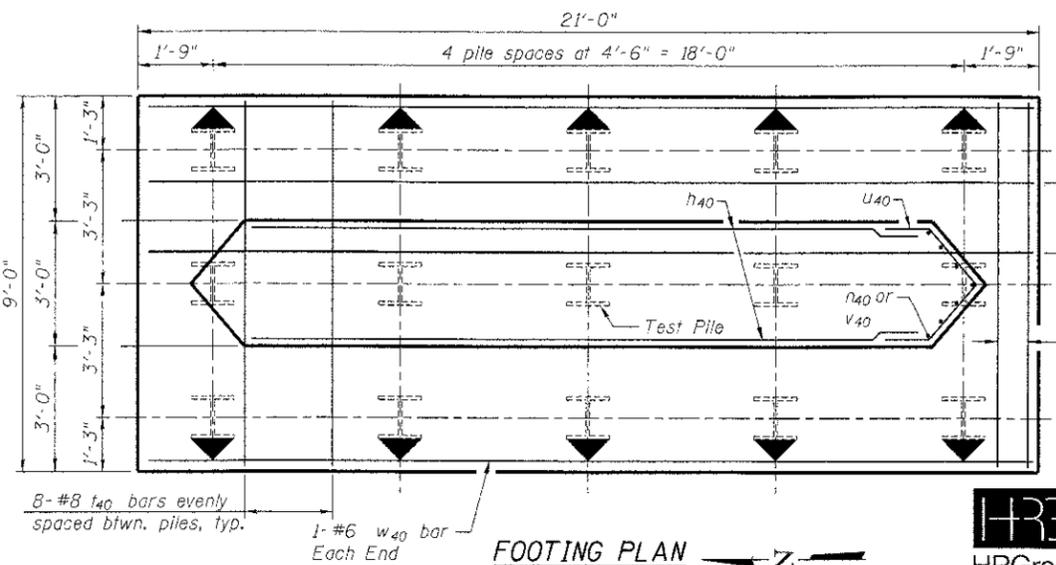
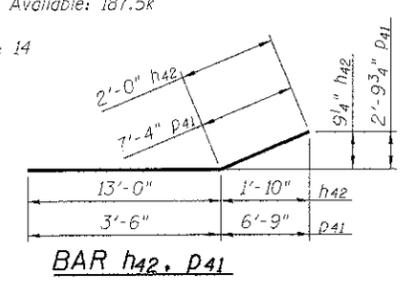


A & B DIMENSIONS

Bar	A	B
u40	3'-0 1/2"	2'-1"
s40	3'-2"	5'-5"
s41	2'-4"	4'-0"
s42	2'-4"	3'-1"

PILE DATA

Type: Steel - HP12x53
 Nominal Required Bearing: 375k
 Factored Resistance Available: 187.5k
 Est. Length: 59'
 No. Production Piles: 14
 No. Test Piles: 1



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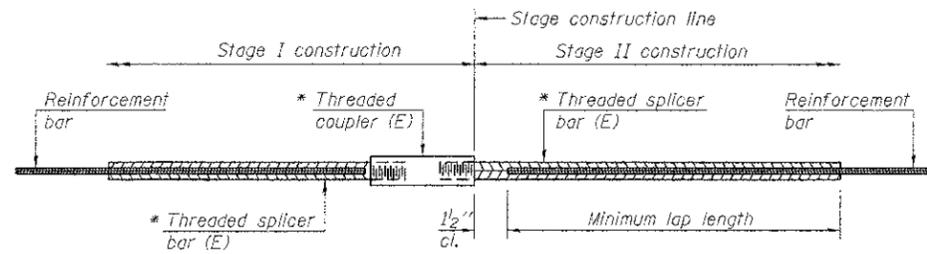
WB CHARLES J. MILLER ROAD BRIDGE

SHEET NO.	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-33	386D	09-00372-00-PW	McHENRY	252	156
S-41					

DATE: 7/23/12

CONTRACT NO.	FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT
63633		

DESIGNED	JMW
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



STANDARD BAR SPLICER ASSEMBLY

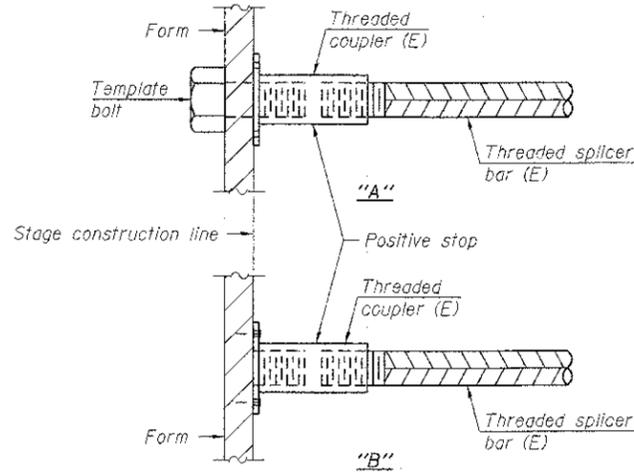
Bar size to be spliced	Minimum Lap Lengths			
	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5"	1'-11"	2'-1"	2'-4"
5	1'-9"	2'-5"	2'-7"	2'-11"
6	2'-1"	2'-11"	3'-1"	3'-6"
7	2'-9"	3'-10"	4'-2"	4'-8"
8	3'-8"	5'-1"	5'-5"	6'-2"
9	4'-7"	6'-5"	6'-10"	7'-9"

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

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

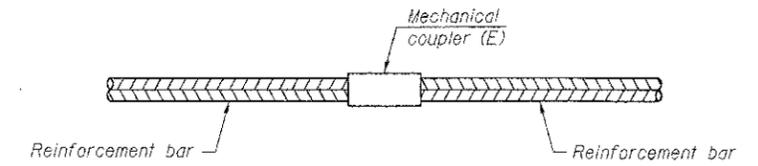
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



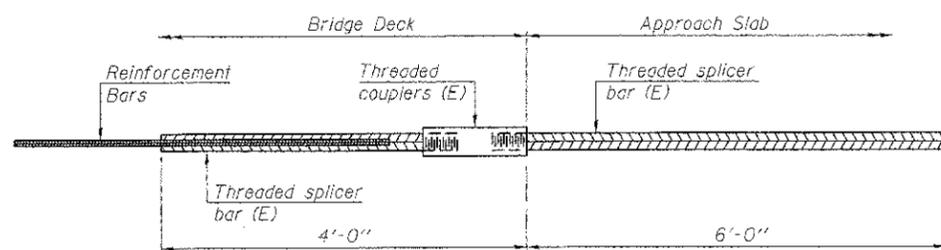
INSTALLATION AND SETTING METHODS

"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.



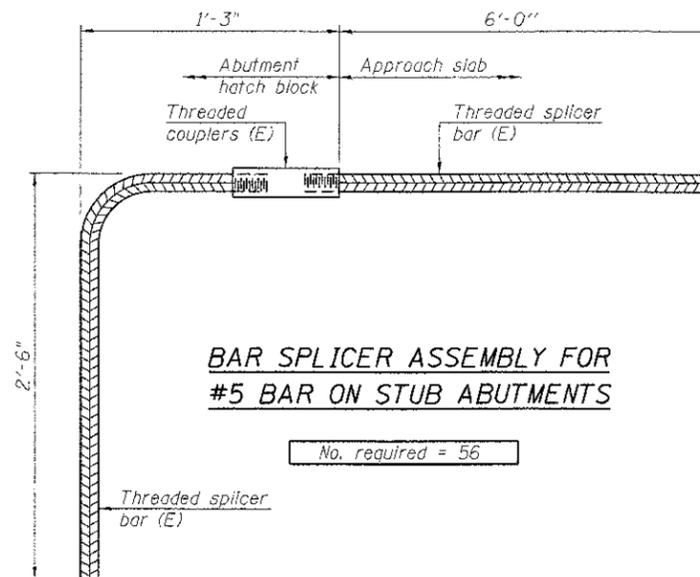
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



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

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 56

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.

**BAR SPLICER DETAILS
 STRUCTURE NO. 056-3190**

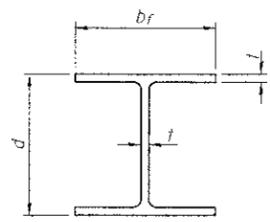
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CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

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 BSD-1 11-1-09



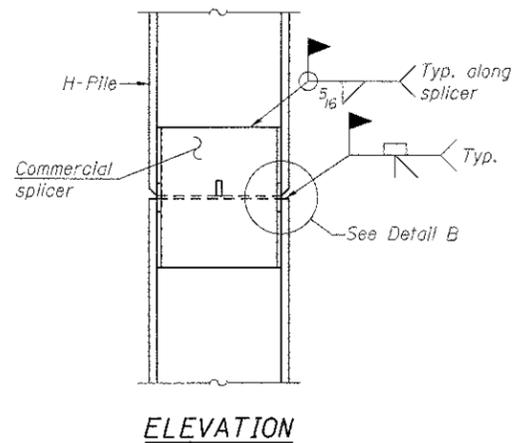
HRGreen.com
 Illinois Professional Design Firm
 # 184-001322

WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-34	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 157
FED. ROAD DIST. NO. 1 ILLINOIS		CONTRACT NO. 63633	
FED. AID PROJECT			

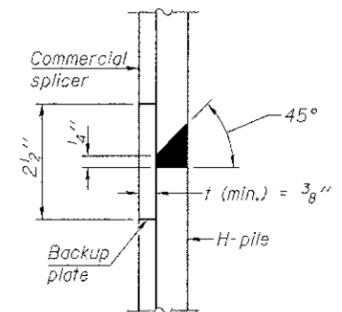


STEEL PILE TABLE

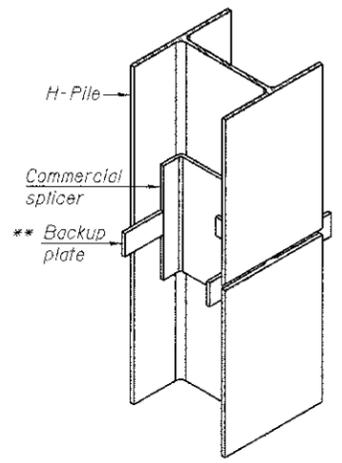
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 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

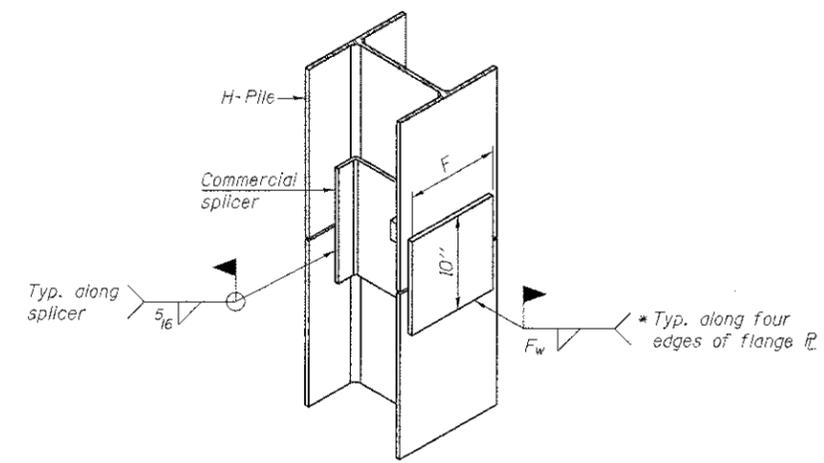


DETAIL "B"



ISOMETRIC VIEW

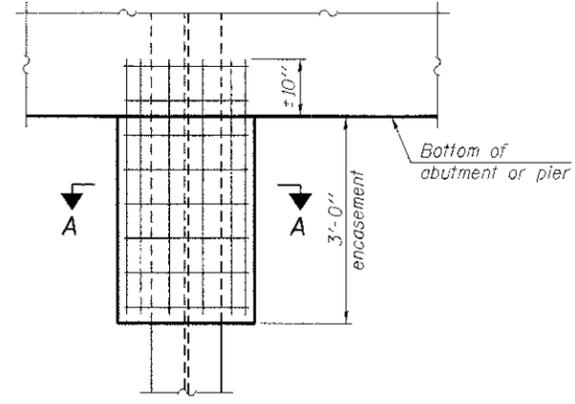
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

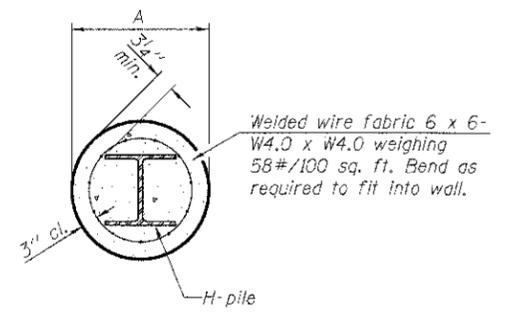
WELDED COMMERCIAL SPLICE ALTERNATE

- * 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.).



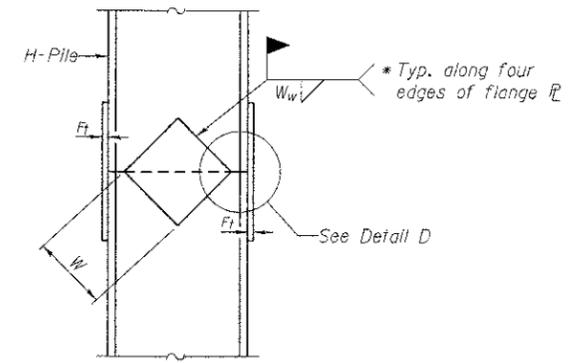
ELEVATION

PILE ENCASEMENT

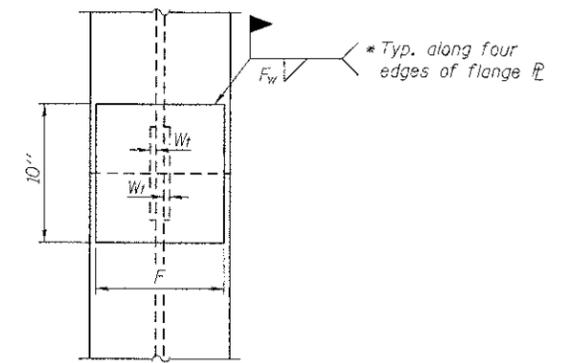


SECTION A-A

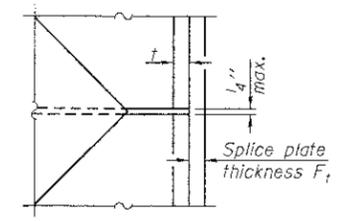
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	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"

**PILE DETAILS
STRUCTURE NO. 056-3190**

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



WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-35	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 158
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT	
CONTRACT NO.		63633	

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

F-HP 11-1-09



SOIL BORING LOG

ROUTE 09-00068-00-PV LOCATION On West approach to Fox River Bridge LOGGED BY DM

SECTION 09-00068-00-PV LOCATION On West approach to Fox River Bridge

COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)
S-1 5944.40	0			Surface Water Elev. _____ ft	0		
				Stream Bed Elev. _____ ft			
S-1 5944.40	0			Groundwater Elev. _____ ft	0		
				First Encounter _____ ft			
	0			Upon Completion _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Offset _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Medium stiff brown SANDY LOAM, damp; A-2-5(1)	0		
	6		4.4		6		13.0
	749.00				12		
	2			Loose to medium dense dark brown SAND, medium grain; damp to moist; A-1-2(0)	2		
	3				3		
	6		8.1		6		18.7
	4				4		
	14				14		
	3			Dense to medium dense brown SAND, saturated; A-1-2(0)2-4	3		
	236.00				236.00		
	4		11.8		4		8.8
	5				5		
	745.00				10		
	6			Medium dense gray brown SAND with gravel and stone chips, moist to wet; A-1-2(0)	6		
	10		12.0		10		
	9				9		
	11		4.4		11		18.5
	10				10		
	739.00		5.5		13		
	3			Medium dense to dense brown SAND, saturated; A-1-2(0)2-4	3		
	6		20.8		6		14.7
	8				8		
	3				3		
	6		13.3		6		
	8				8		
	711.00				20		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer). The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T205) BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

ROUTE 09-00068-00-PV LOCATION On West approach to Fox River Bridge LOGGED BY DM

SECTION 09-00068-00-PV LOCATION On West approach to Fox River Bridge

COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)
S-1 5944.40	0			Surface Water Elev. _____ ft	0		
				Stream Bed Elev. _____ ft			
S-1 5944.40	0			Groundwater Elev. _____ ft	0		
				First Encounter _____ ft			
	0			Upon Completion _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Offset _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Dense gray SAND with gravel, saturated; A-2	0		
	6		12.3		6		
	10				10		
	12				12		
	3			Dense brown SANDY LOAM, saturated; A-1-b (continued)	3		
	7				7		
	9		11.5		9		
	13				13		
	20				20		
	28				28		18.8
	33				33		
	761.00				761.00		
	0			Dense brown SANDY LOAM, saturated; A-1-b	0		
	12		11.8		12		
	14				14		
	12				12		
	14				14		
	10				10		
	18				18		
	12				12		
	18				18		
	20		13.0		20		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer). The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T205) BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

ROUTE 09-00068-00-PV LOCATION On West Bank of Fox River LOGGED BY DM

SECTION 09-00068-00-PV LOCATION On West Bank of Fox River

COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)
S-2 5954.70	0			Surface Water Elev. _____ ft	0		
				Stream Bed Elev. _____ ft			
S-2 5954.70	0			Groundwater Elev. _____ ft	0		
				First Encounter _____ ft			
	0			Upon Completion _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Offset _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Black TOPSOIL	0		
	2				2		
	10		18.0	Soft Gray CLAY LOAM, some organics present, very moist; A-4 (C)	10		
	12				12		
	3			Hit water at 1 foot	3		
	1			Very soft, fine SANDY LOAM, very moist to wet; A-2-4 (0)	1		
	5		33.0		5		
	4				4		
	9		24.7		9		
	11				11		
	733.10				733.10		
	6			Medium dense to dense brown SAND, traces of gravel, saturated; A-1-2(0)	6		
	8		9.9		8		
	13				13		
	9				9		
	14		7.9		14		
	16				16		
	7				7		
	9		10.3		9		
	15				15		
	11				11		
	14		10.2		14		
	10				10		
	11		25.8		11		
	18				18		
	702.00				702.00		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer). The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T205) BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

ROUTE 09-00068-00-PV LOCATION On West Bank of Fox River LOGGED BY DM

SECTION 09-00068-00-PV LOCATION On West Bank of Fox River

COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE CONTENT (%)
S-2 5954.70	0			Surface Water Elev. _____ ft	0		
				Stream Bed Elev. _____ ft			
S-2 5954.70	0			Groundwater Elev. _____ ft	0		
				First Encounter _____ ft			
	0			Upon Completion _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Offset _____ ft			
	0			Ground Surface Elev. _____ ft			
	0			Dense to medium dense brown Gravelly SAND with stones; wet; A-1-2(0)	0		
	8				8		
	9		6.8		9		
	12				12		
	4			Dense to medium dense gray SAND with gravel, saturated; A-1-2(0) (continued)	4		
	6				6		
	10.5				10.5		
	4				4		
	5		18.2		5		
	6				6		
	11				11		
	5				5		
	10		17.5		10		
	13				13		
	7				7		
	9		8.8		9		
	14				14		
	21		15.5		21		
	5				5		
	6		16.1		6		
	672.00				672.00		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer). The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T205) BBS, from 137 (Rev. 8-99)

DESIGNED	SSM
CHECKED	RCD
DRAWN	WJH
CHECKED	RCD

SOIL BORING LOGS STRUCTURE NO. 056-3190

WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-36	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS		TOTAL SHEETS 252	
		SHEET NO. 159	
		CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT	



HRGreen.com
Illinois Professional Design Firm
184-001322

FILE NAME: 090077-SB01.dgn
PLOT DRIVER: pdfplot
PEN TABLE: standard.ctb

ROUTE 09-00372-00-PW LOCATION On East Bank of River
 COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE %	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE %	UCS psi	SPT Blows
S-5 Station 36.000 Left (N) Ground Surface Elev. 737.50	0			Black TOPSOIL	0				
	1	5		Loose SAND & Gravel, some organics present, very moist, A-4 (0)	1	79			7.8
	2	9	9.6		2	16			4.8
	3	3	26.3		3	26			16.5
	4	3	12.2		4	16			9.3
	5	3	18.4		5	31		9.3	
	6	7			6	28			
	7	5	9.6		7	13		685.00	509
	8	7			8	17			
	9	15	16.1		9	21			
	10	3			10	10			
	11	2	18.3		11	17			14.2
	12	3			12	20			
	13	12	5.7		13	10			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208) BBS, from 137 (Rev. 8-99)

ROUTE 09-00372-00-PW LOCATION On East Bank of River
 COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE %	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE %	UCS psi	SPT Blows
S-5 Station 36.000 Left (N) Ground Surface Elev. 737.50	0			Medium dense to dense brown SAND, traces of gravel; saturated; A-1-a(0) (continued)	0				
	1	13			1	20			
	2	16	16.3		2	30			
	3	19			3	42			
	4	20			4	48			
	5	24			5	24			
	6	17			6	31		9.3	
	7	19			7	28			
	8	13			8	13		685.00	509
	9	17			9	17			
	10	21	13.2		10	21			
	11	10			11	10			
	12	21			12	21			
	13	10			13	10			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208) BBS, from 137 (Rev. 8-99)

ROUTE 09-00372-00-PW LOCATION Between East abutment and East bank of river
 COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE %	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE %	UCS psi	SPT Blows
S-8 Station 30.000 Left (N) Ground Surface Elev. 740.00	0			Black TOPSOIL	0				
	1	4		Loose SAND & Gravel, very moist, A-4 (0)	1	5			16.9
	2	8	7.9		2	10			10.6
	3	2		Loose gray SAND with Gravel, very moist to wet, A-1-a (0)	3	11			13.5
	4	3	17.6		4	12			13.9
	5	11			5	17			11.4
	6	15	15.9		6	23			
	7	15			7	34			
	8	9			8	46			
	9	16	9.6		9	23			
	10	20			10	34			
	11	9			11	14			
	12	15	16.4		12	16			9.7
	13	16			13	21			
14	6	21.7		14	33				
15	5			15	33				
16	11			16	14				
17	15	12.5		17	16			9.7	
18	16			18	22				
19	6	15.9		19	14				
20	7			20	16				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208) BBS, from 137 (Rev. 8-99)

ROUTE 09-00372-00-PW LOCATION Between East abutment and East bank of river
 COUNTY McHenry County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH ft	BLOW COUNT	MOISTURE %	DESCRIPTION	DEPTH ft	BLOW COUNT	MOISTURE %	UCS psi	SPT Blows
S-8 Station 30.000 Left (N) Ground Surface Elev. 740.00	0			Dense to very dense Gravelly SAND with pockets of Loam; saturated; A-1-a(0)	0				
	1	20			1	33			10.6
	2	46			2	46			
	3	11			3	11			13.5
	4	12			4	12			13.9
	5	17			5	17			11.4
	6	23			6	23			
	7	34			7	34			
	8	46			8	46			
	9	14			9	14			
	10	16	9.7		10	16			9.7
	11	21			11	21			
	12	33			12	33			
	13	14			13	14			
14	16			14	16				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208) BBS, from 137 (Rev. 8-99)

DESIGNED	SSM
CHECKED	ROD
DRAWN	WJH
CHECKED	RGD

SOIL BORING LOGS
 STRUCTURE NO. 056-3190

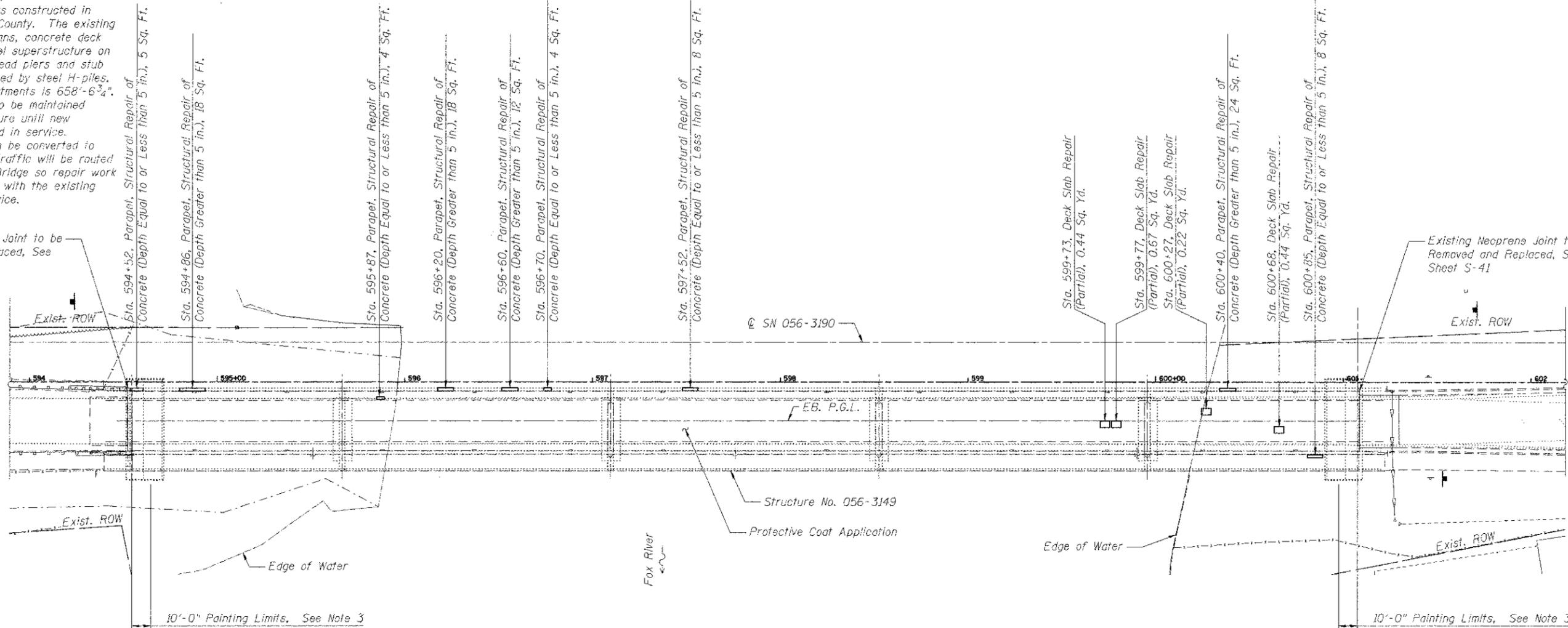
WB CHARLES J. MILLER ROAD BRIDGE		DATE: 7/23/12	
SHEET NO. S-38	F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY McHENRY
S-41 SHEETS	TOTAL SHEETS 252		SHEET NO. 161
CONTRACT NO. 63633		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	



FILE NAME: 09007-3801.dgn
 PLOT DRIVER: pdf.plt
 PEN TABLE: s10color.ctb

Existing Structure: S.N. 056-3149 was constructed in 1989 by McHenry County. The existing structure is 5 spans, concrete deck on continuous steel superstructure on concrete hammerhead piers and stub abutments supported by steel H-piles. Back to Back Abutments is 658'-6 3/4". Two way traffic to be maintained on existing structure until new structure is placed in service. Structure will then be converted to two lanes, EB. Traffic will be routed to the Proposed Bridge so repair work can be performed with the existing bridge out of service.

Existing Neoprene Joint to be Removed and Replaced, See Sheet S-40



Existing Neoprene Joint to be Removed and Replaced, See Sheet S-41

Notes:

- All deck repairs shall be in accordance with Guide Bridge Special Provision 28 Deck Slab Repair (Partial).
- Parapet repairs shall be in accordance with Guide Bridge Special Provision 53 Structural Repair of Concrete to the depth indicated on the plan.
- The cleaning and painting of existing steel shall conform to the Guide Bridge Special Provision CLEANING AND PAINTING EXISTING STEEL STRUCTURES. All exposed steel beam, diaphragm, stiffener and bearing surfaces within 10' -0" of each end of each beam shall be cleaned and painted in accordance with the above specification. The surface preparation shall conform to specification section Surface Preparation (HOLD POINT), Section c) Commercial Grade Power Tool Cleaning. The paint system shall conform to specification section d) System 4- PS/EM/AC-for Overcoating an Existing System or specification section f) System 6-MCU-for Overcoating an Existing System. This work shall be paid for at the contract lump sum price for CLEANING AND PAINTING STEEL BRIDGE NO. 1, and shall include all Costs for Containment and Disposal of Non-Lead Paint Cleaning Residues according to GBSP 60.
- Protective Coat shall be applied to the entire surface of the deck of the existing Charles J. Miller Road Bridge crossing after patching and to the roadway face of each parapet in accordance with Article 503.19 of The Standard Specifications except that the 14 day minimum concrete curing time shall be replaced with a 72 hour cure for Class PP Concrete Patches. All debris shall be removed from the deck and from the existing deck drains as part of the Deck Cleaning Process and the cost of this work shall be included in the unit price for Protective Coat.

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

PLAN



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	2.5		2.5
Concrete Superstructure	Cu. Yd.	2.1		2.1
Protective Coat	Sq. Yd.	2879.8		2879.8
Reinforcement Bars, Epoxy Coated	Pound	180		180
Neoprene Expansion Joint 4"	Foot	44		44
Neoprene Expansion Joint 6 1/2"	Foot	44.3		44.3
Cleaning and Painting Steel Bridge No. 1	L Sum	1		1
Structural Repair of Concrete (Depth Equal to or Less Than 5 in.)	Sq. Ft.	9		9
Structural Repair of Concrete (Depth Greater Than 5 in.)	Sq. Ft.	66		66
Deck Slab Repair (partial)	Sq. Yd.	3.3		3.3
Polymer Concrete	Cu. Ft.	10.6		10.6

GENERAL PLAN AND ELEVATION
EB. CHARLES J. MILLER ROAD
OVER FOX RIVER
SUPERSTRUCTURE REPAIRS
STRUCTURE NO. 056-3149 (EXISTING)
McHENRY COUNTY

To the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO Standard Specifications for Highway Bridges".

Structural Engineer Expires: 11/30/2012
HRGreen



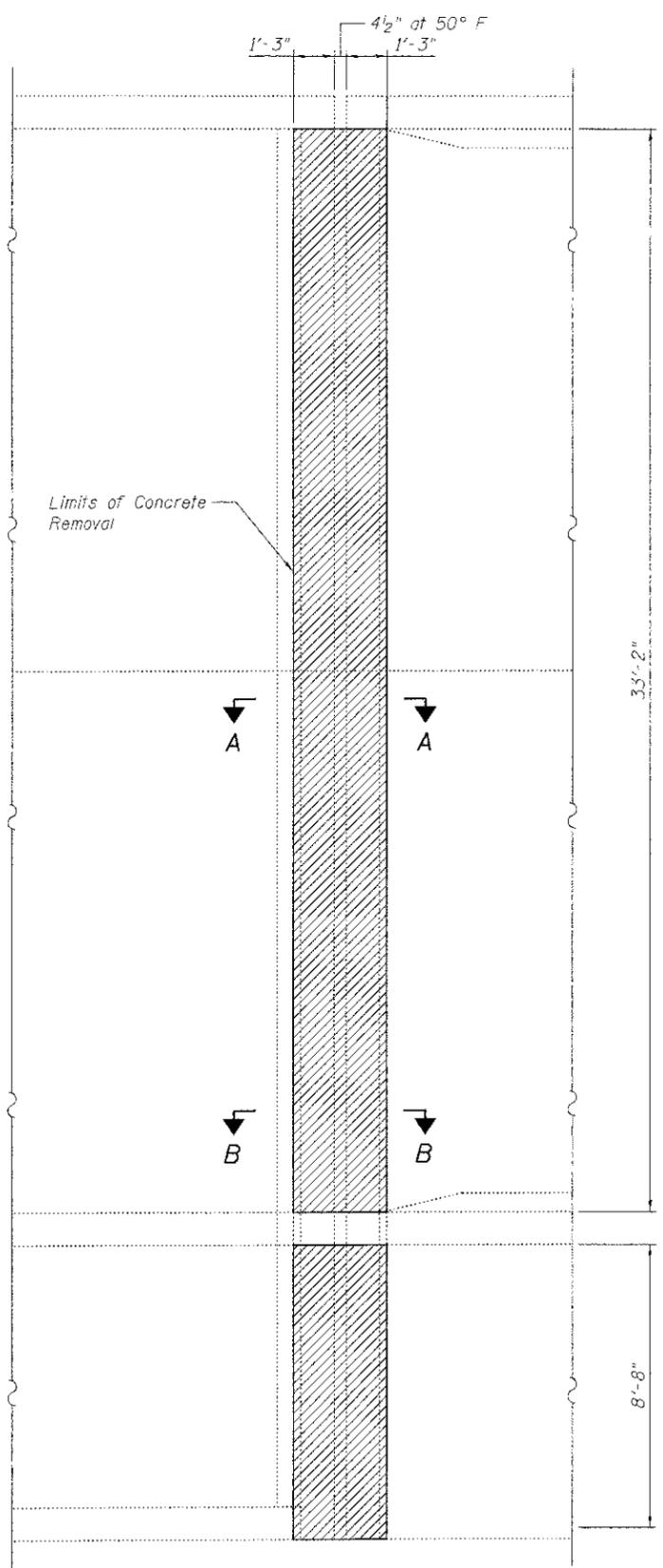
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Illinois Professional Design Firm
184-001322

DATE: 7/23/12

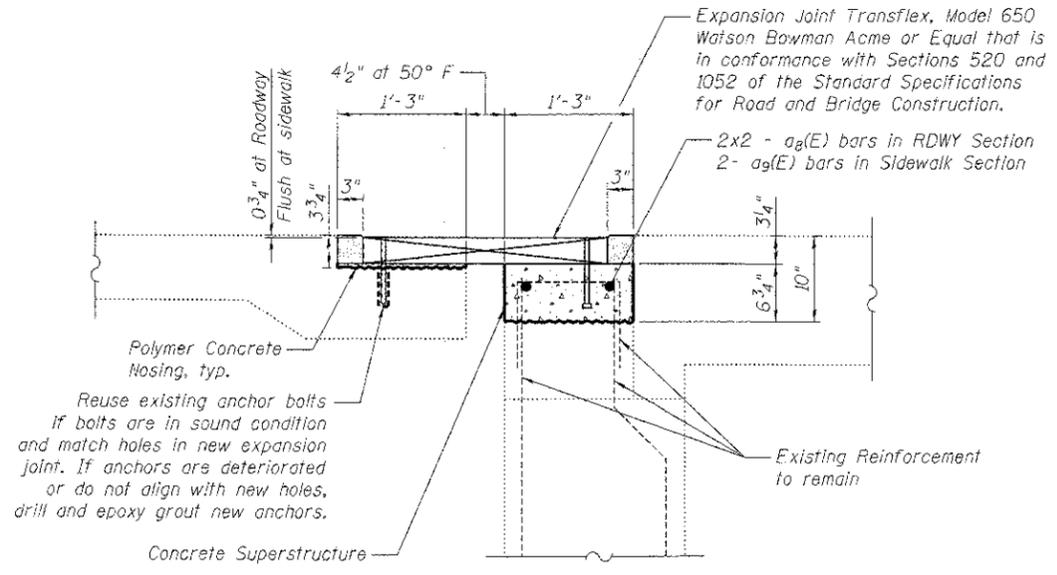
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S-41 SHEETS	3860	09-00372-00-PW	McHENRY	252	162
			CONTRACT NO.	63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

BILL OF MATERIAL

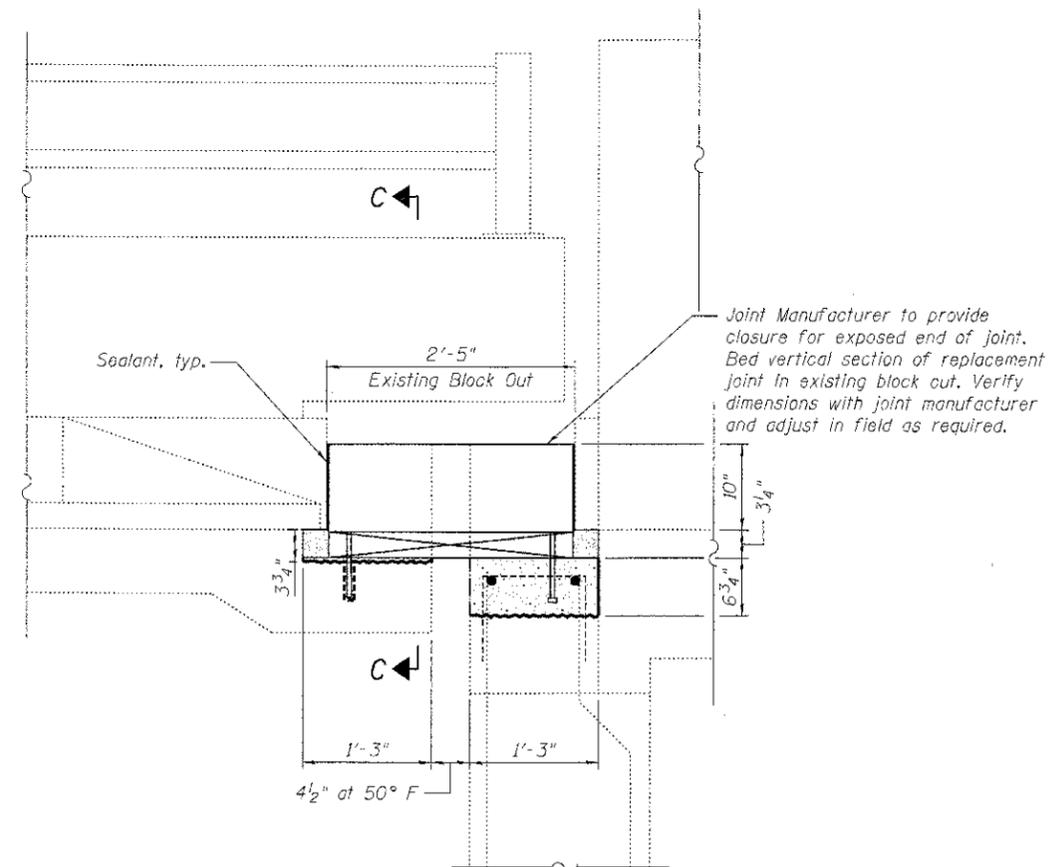
Bar	No.	Size	Length	Shape
$a_8(E)$	4	#5	17'-10"	—
$a_9(E)$	2	#5	8'-8"	—
Concrete Removal			Cu. Yd.	1.3
Concrete Superstructure			Cu. Yd.	1.1
Polymer Concrete			Cu. Ft.	6.2
Reinforcement Bars, Epoxy Coated			Pound	90
Neoprene Expansion Joint 6 1/2"			Foot	44.3



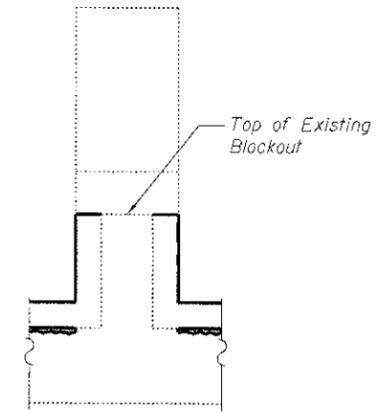
PLAN - WEST ABUTMENT



SECTION A-A



SECTION B-B



SECTION C-C

Reuse existing anchor bolts if bolts are in sound condition and match holes in new expansion joint. If anchors are deteriorated or do not align with new holes, drill and epoxy grout new anchors.

Expansion Joint Transflex, Model 650 Watson Bowman Acme or Equal that is in conformance with Sections 520 and 1052 of the Standard Specifications for Road and Bridge Construction.

2x2 - $a_8(E)$ bars in RDWY Section
2 - $a_9(E)$ bars in Sidewalk Section

Existing Reinforcement to remain

Joint Manufacturer to provide closure for exposed end of joint. Bed vertical section of replacement joint in existing block out. Verify dimensions with joint manufacturer and adjust in field as required.

**EXPANSION JOINT REPLACEMENT DETAILS
WEST ABUTMENT
STRUCTURE NO. 056-3149**

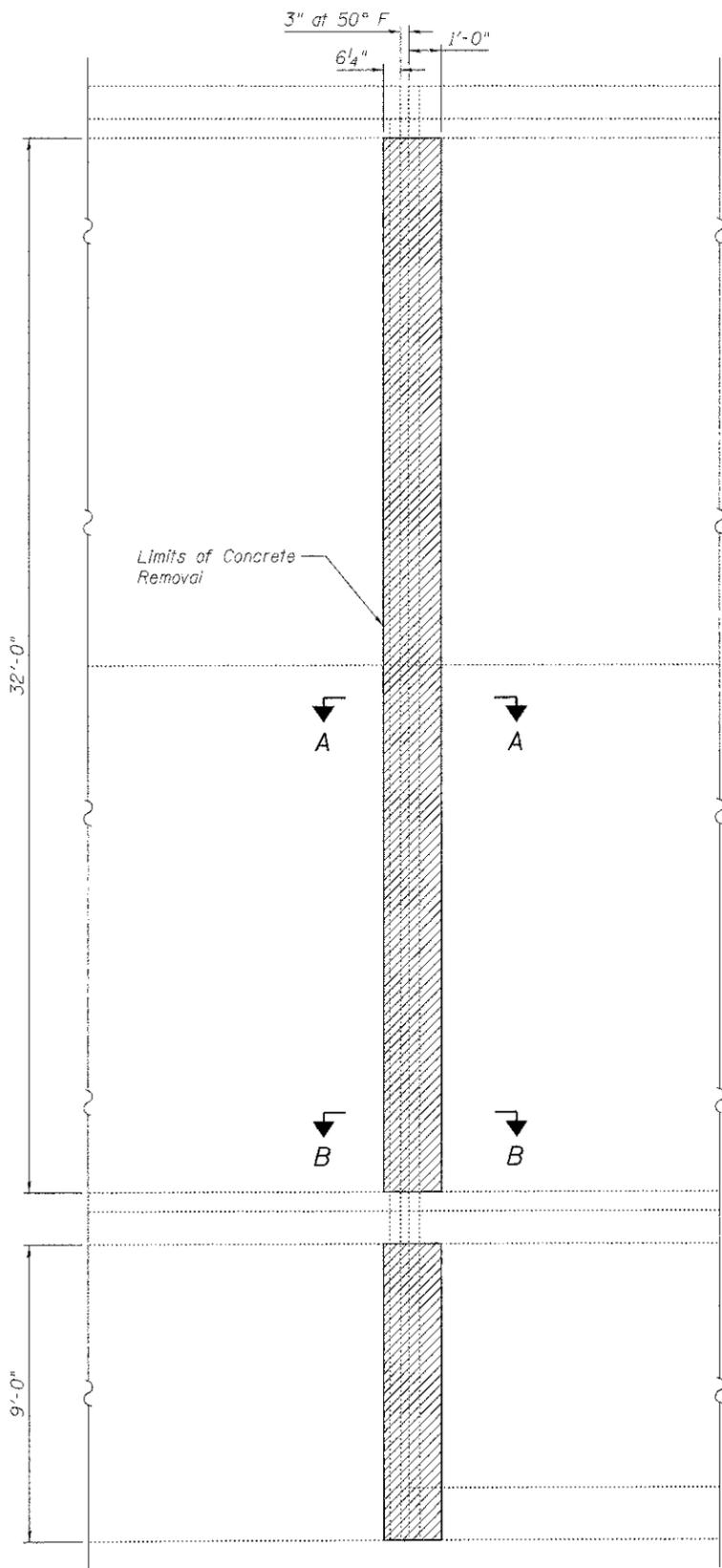
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DRAWN	WJH
CHECKED	RGD

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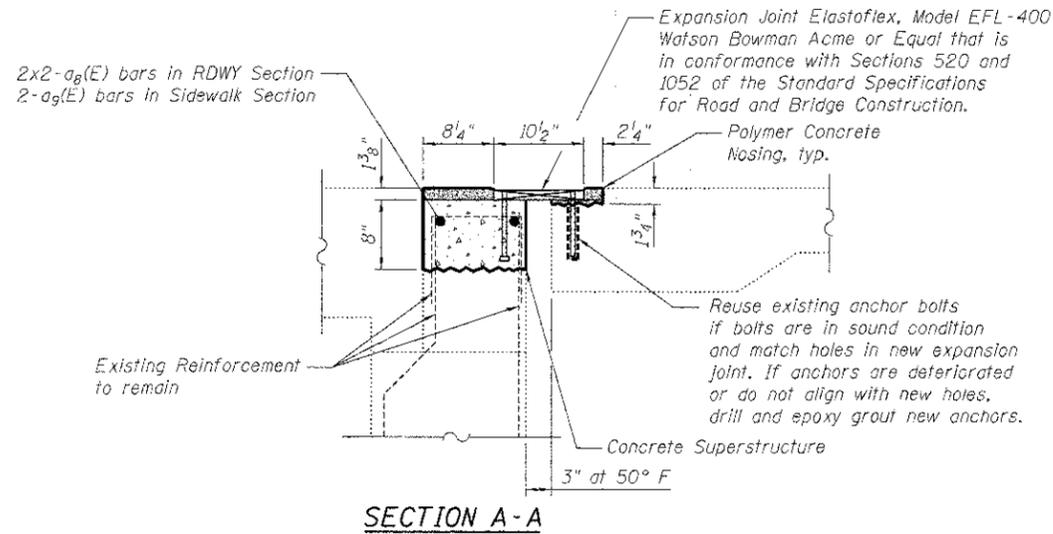
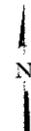


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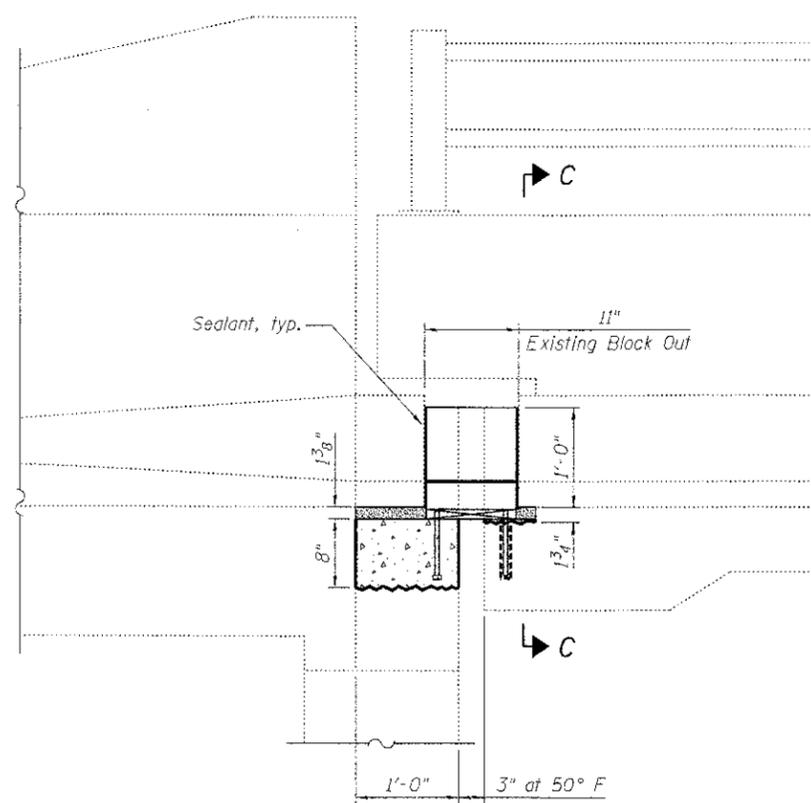
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
3860	09-00372-00-PW	McHENRY	252	163	
S-41 SHEETS			CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					



PLAN - EAST ABUTMENT



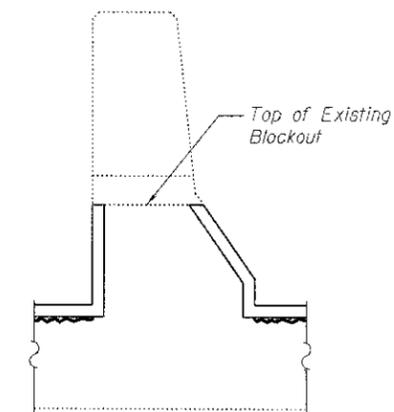
SECTION A-A



SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$\#8(E)$	4	#5	17'-10"	—
$\#9(E)$	2	#5	8'-8"	—
Concrete Removal		Cu. Yd.	1.2	
Concrete Superstructure		Cu. Yd.	1.0	
Polymer Concrete		Cu. Ft.	4.4	
Reinforcement Bars, Epoxy Coated		Pound	90	
Neoprene Expansion Joint 4"		Foot	44.0	



SECTION C-C

**EXPANSION JOINT REPLACEMENT DETAILS
EAST ABUTMENT
STRUCTURE NO. 056-3149**

DESIGNED	SSM
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD



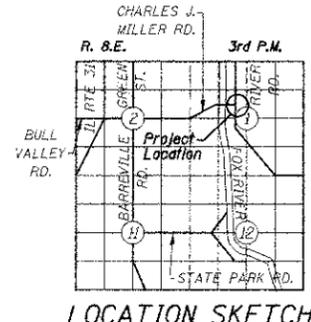
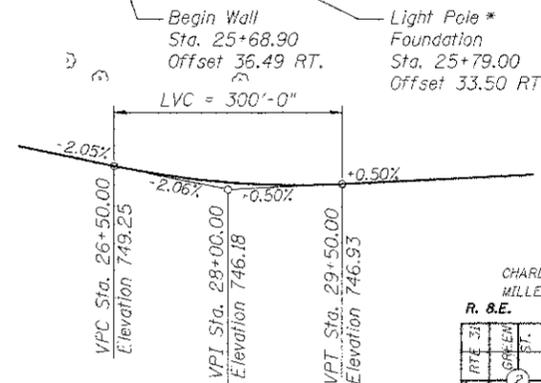
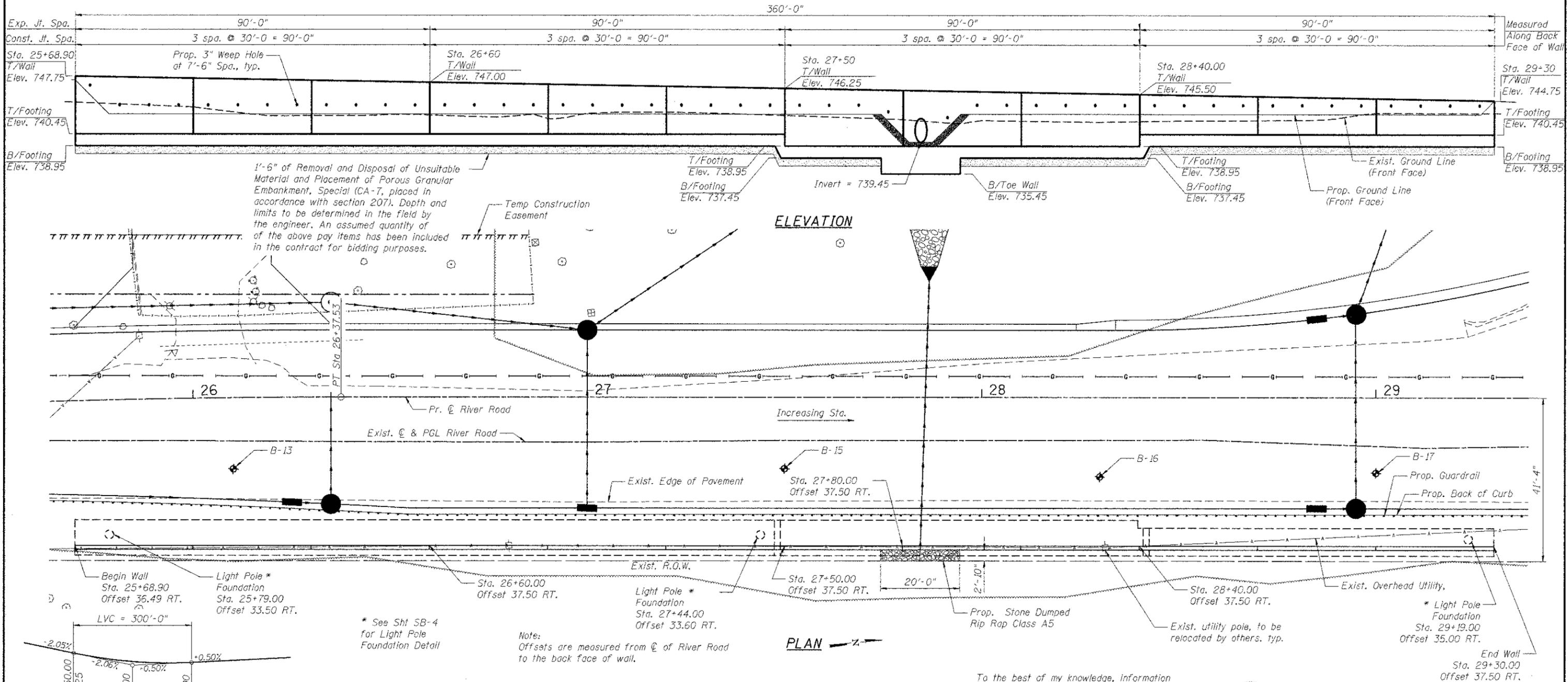
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Illinois Professional Design Firm
184-001322

EB CHARLES J. MILLER ROAD BRIDGE

DATE: 7/23/12

SHEET NO. S-41	F.A.U RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-41 SHEETS	3860	09-00372-00-PW	MCHENRY	252	164
			CONTRACT NO.	63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

Benchmark:
 BM 1: Railroad spike in the west face of powerpole at the east side of River Road and the centerline of Charles J. Miller Road extended.
 Elevation = 748.38 (NAVD 88)
 BM 2: Railroad spike in the south face of powerpole at the northeast corner of Charles J. Miller Road and McHenry Avenue.
 Elevation = 745.83 (NAVD 88)



DESIGN SPECIFICATIONS
 2010 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)
 Max. Soil pressure under footing = 1,360 psf

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal and Disposal of Unsuitable Material	Cu. Yd.	210
Porous Granular Embankment, Special	Cu. Yd.	905
Stone Dumped Riprap, Class A5	Sq. Yd.	12
Structure Excavation	Cu. Yd.	1085
Concrete Structures	Cu. Yd.	256.0
Reinforcement Bars Epoxy Coated	Pound	29,380
Geocomposite Wall Drain	Sq. Yd.	160

To the best of my knowledge, information and belief, this retaining wall design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges".

Michael J. Green
 Structural Engineer Expires 11/30/2012
 HR Green, Inc.



GENERAL PLAN AND ELEVATION
RIVER ROAD RETAINING WALL
 FAU. RTE. 89, SEC. 09-00372-00-PW
 McHENRY COUNTY
 STATION 25+68.90 TO 29+30

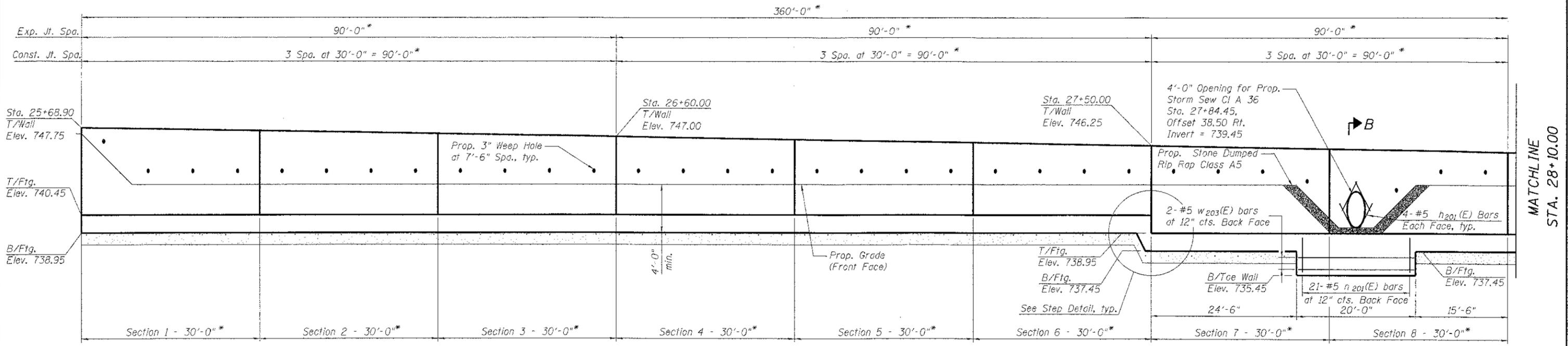
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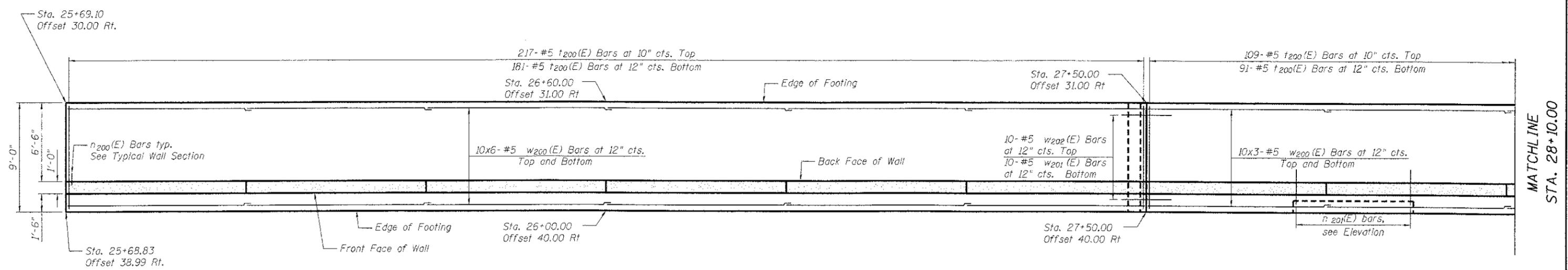
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CONTRACT NO.				63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

DATE: 7/23/12



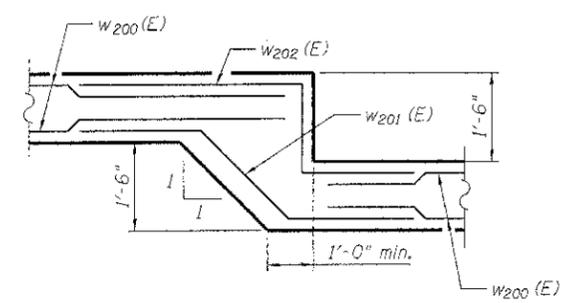
ELEVATION

(See next sheet for section B-B)



FOOTING PLAN

* Measured along back face



STEP DETAIL

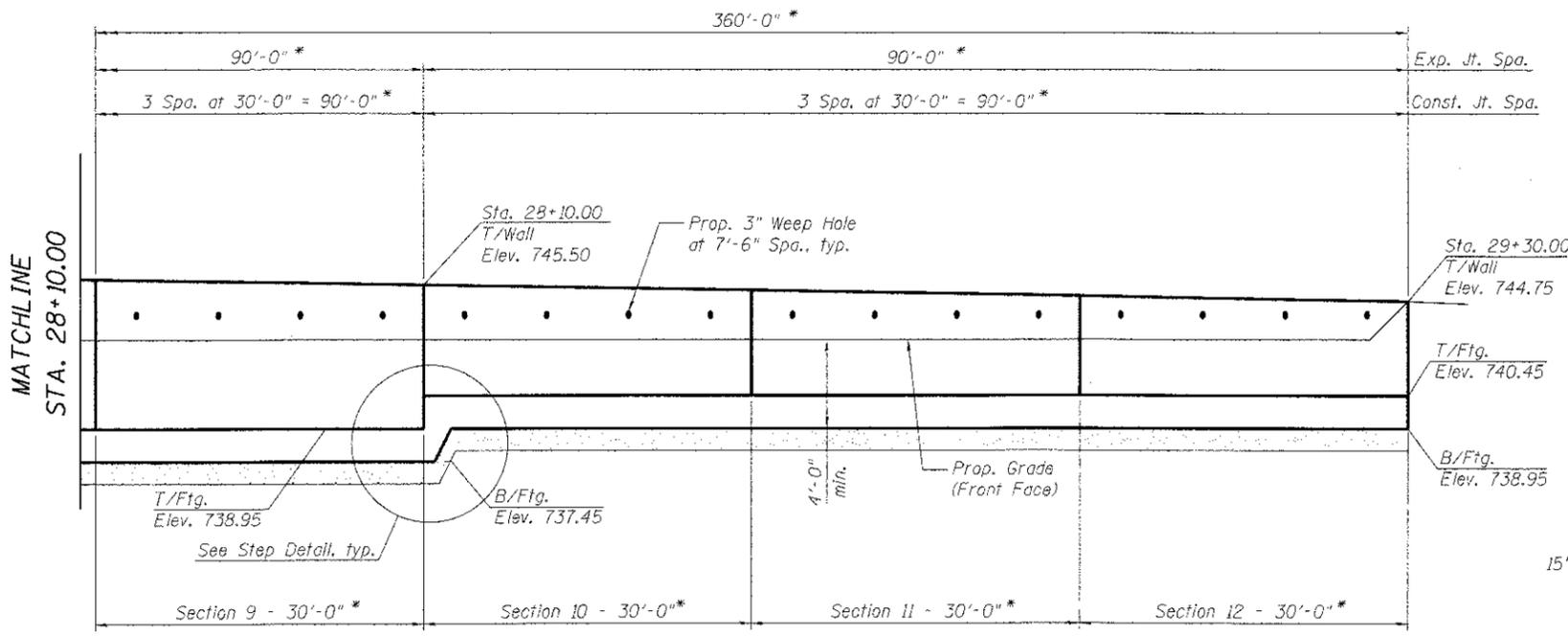
RIVER ROAD RETAINING WALL
 WALL ELEVATION
 & FOOTING PLAN

DESIGNED	JPG
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

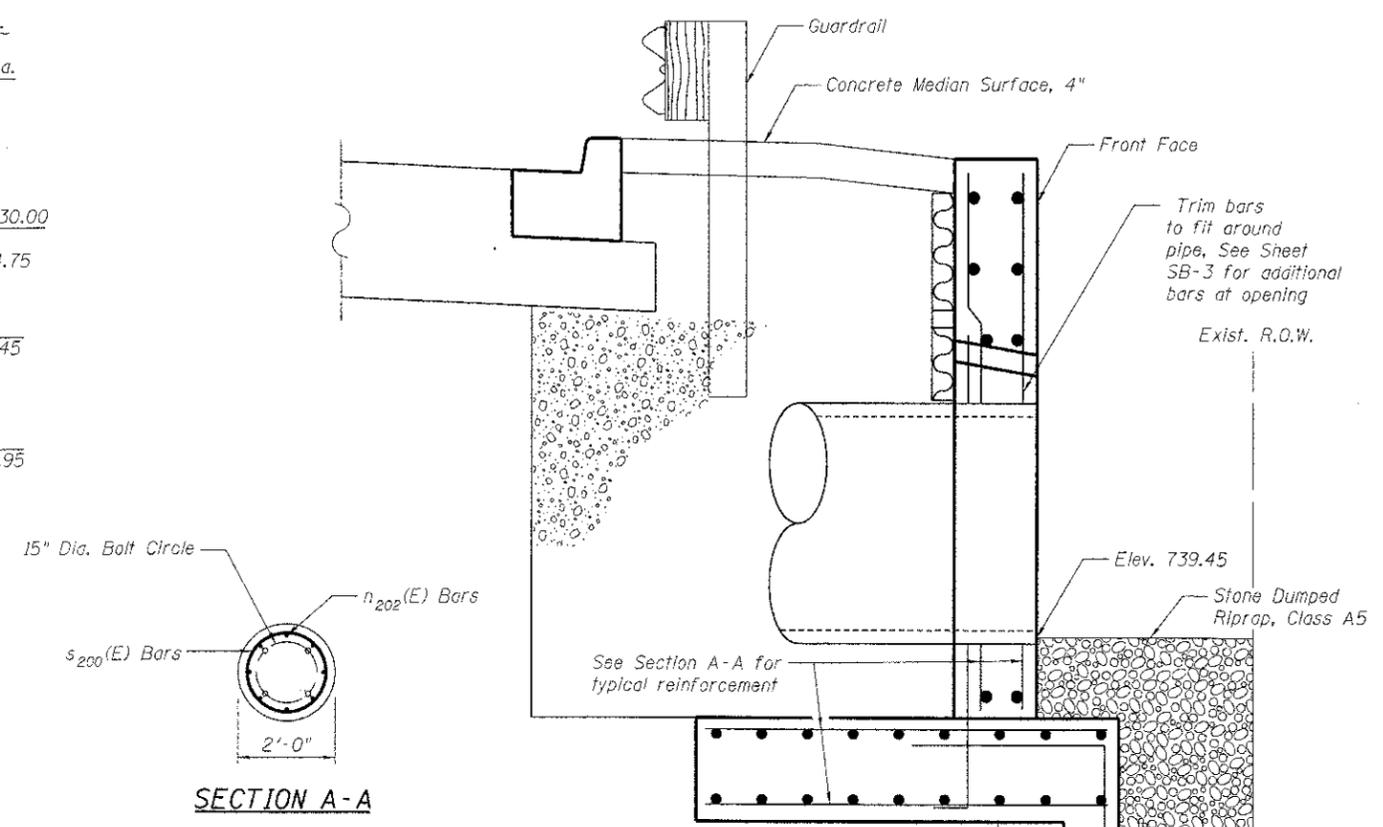
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SHEET NO. SB-2	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SB-7 SHEETS	CONTRACT NO.			63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

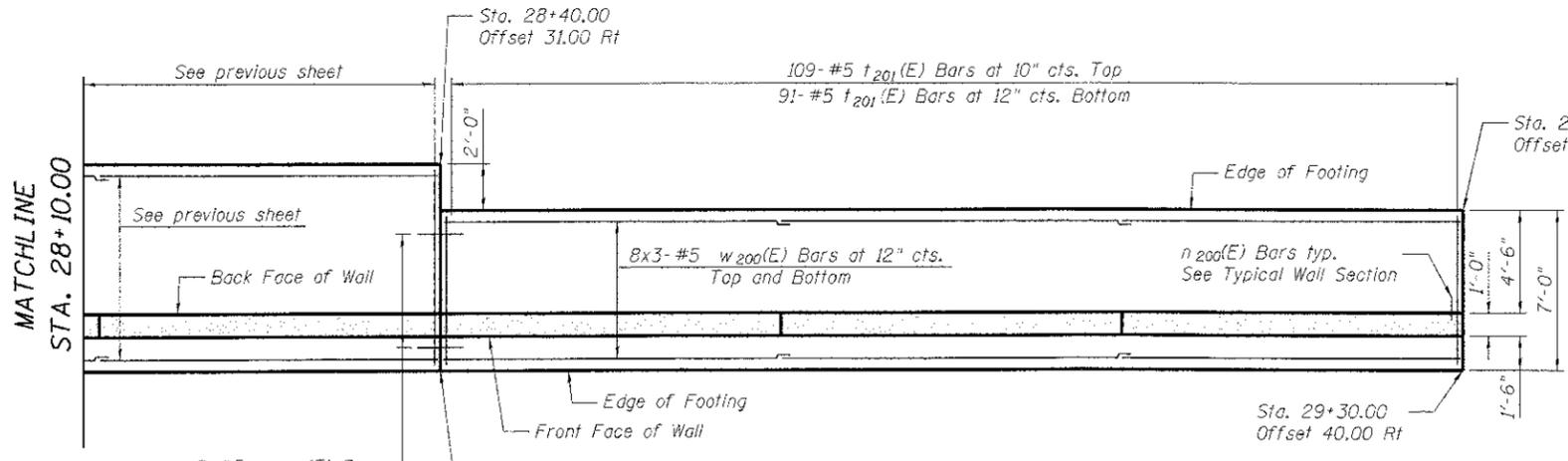
DATE: 7/23/12



ELEVATION

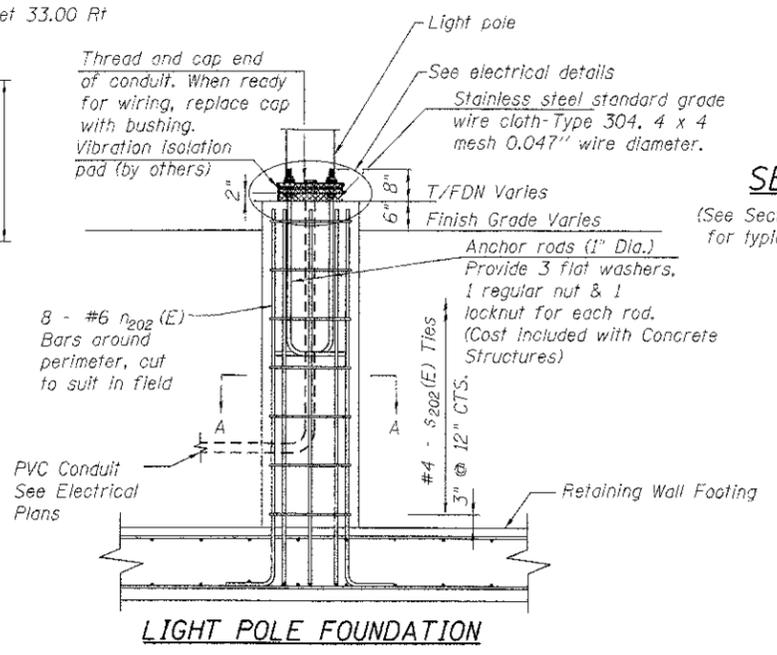


SECTION A-A



FOOTING PLAN

* Measured along back face



LIGHT POLE FOUNDATION

(See General Plan and Lighting Plans)

SECTION B-B

(See Section A-A, on the next sheet, for typical section details)

ANCHOR ROD - 1" DIA.
 (ASTM F 1554 Grade 105)

RIVER ROAD RETAINING WALL WALL ELEVATION & FOOTING PLAN

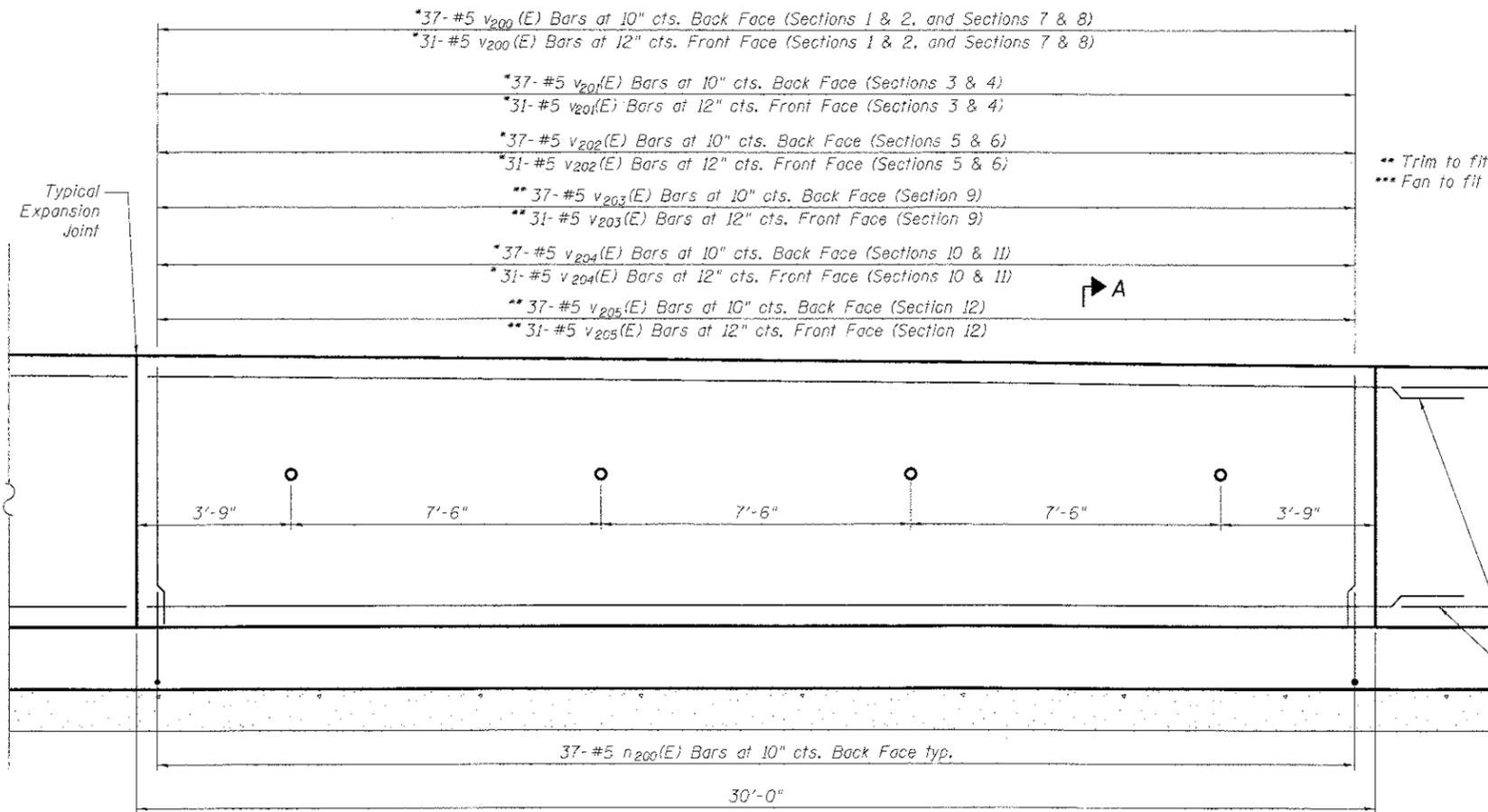
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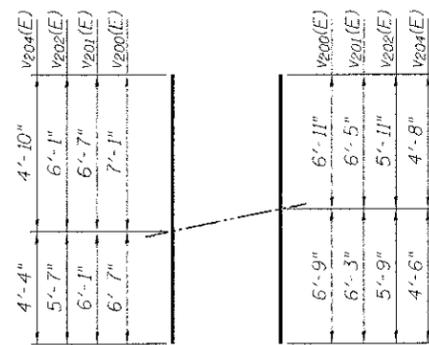
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FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

DATE: 7/23/12

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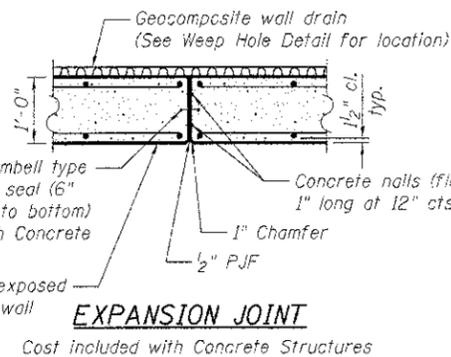


TYPICAL WALL SECTION



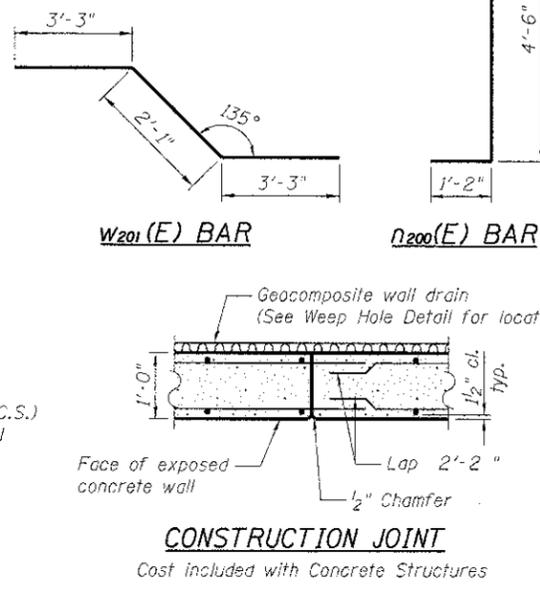
V200(E), V201(E), V202(E) and V204(E) BARS FIELD CUTTING DIAGRAM

* Order V200(E), V201(E), V202(E), & V204(E) bars full length. Cut to fit and use remainder in adjacent wall section. For example Section 1 remainders used in Section 2.



EXPANSION JOINT

Cost included with Concrete Structures



CONSTRUCTION JOINT

Cost included with Concrete Structures

** Trim to fit
*** Fan to fit

... 8 #5 h200(E) Bars evenly spaced Each Face (Sections 1,2,3,7,8 & 9)
... 7 #5 h200(E) Bars evenly spaced Each Face (Sections 4,5 & 6)
... 6 #5 h200(E) Bars evenly spaced Each Face (Sections 10,11 & 12)

Typical Splice at Construction Joint

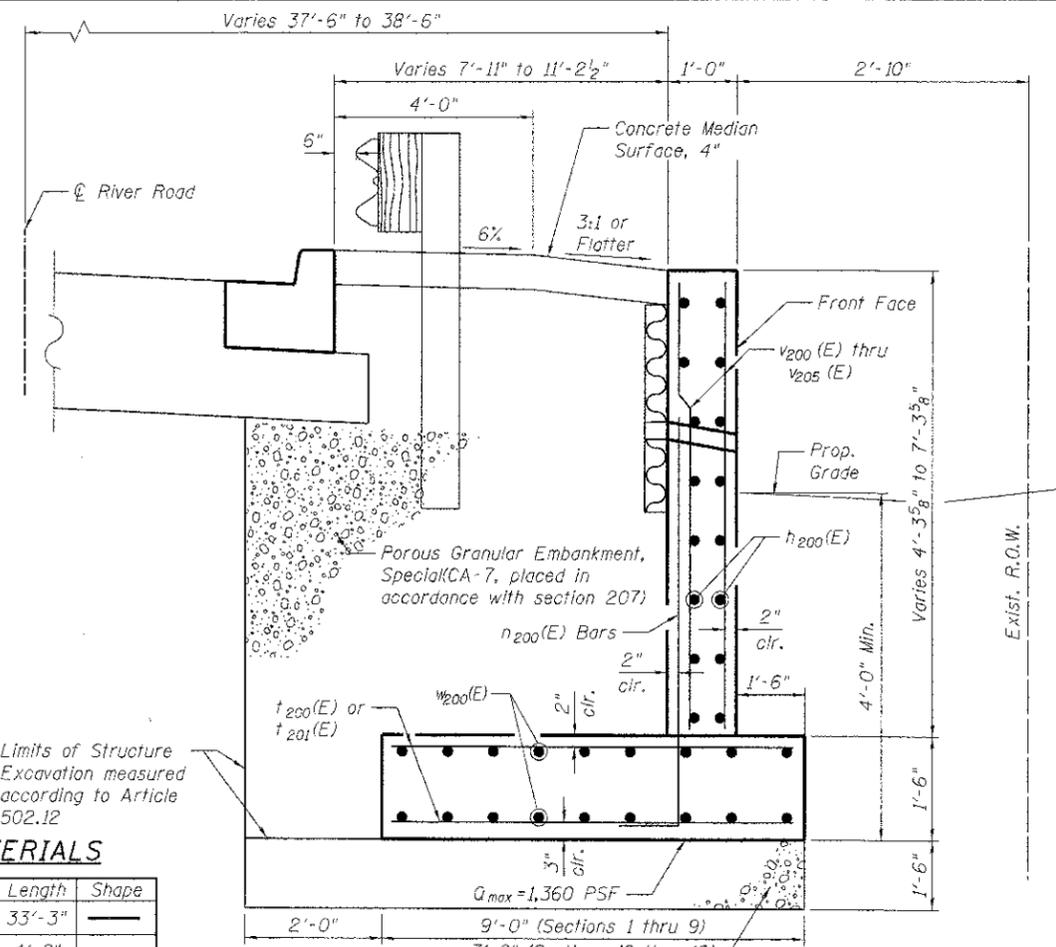
Limits of Structure Excavation measured according to Article 502.12

BILL OF MATERIALS

Bar	No.	Size	Length	Shape
V200	174	# 5	33'-3"	—
V201	8	# 5	4'-8"	—
V200	444	# 5	5'-8"	—
V201	21	# 5	6'-2"	—
V202	24	# 6	9'-5"	—
S200	20	# 4	6'-3"	○
T200	598	# 5	8'-8"	—
T201	200	# 5	6'-8"	—
V200	136	# 5	13'-8"	—
V201	68	# 5	12'-8"	—
V202	68	# 5	11'-8"	—
V203	68	# 5	6'-4"	—
V204	68	# 5	9'-2"	—
V205	68	# 5	4'-4"	—
W200	228	# 5	33'-3"	—
W201	18	# 5	8'-7"	—
W202	18	# 5	8'-0"	—
W203	2	# 5	19'-8"	—
Porous Granular Embankment, Special	Cu. Yd.		905	
Structure Excavation Concrete Structures	Cu. Yd.		1085	
Reinforcement Bars, Epoxy Coated	Pound		255.0	
Geocomposite Wall Drain	Sq. Yd.		160	

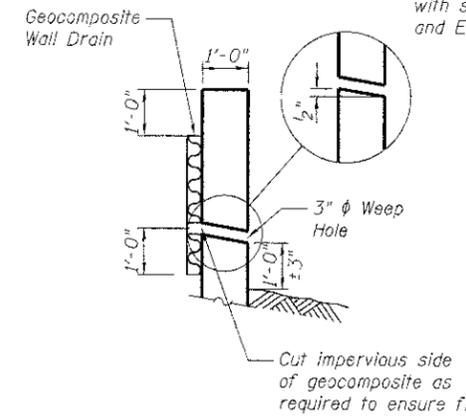
MINIMUM BAR LAP

#5 Bar = 3'-3"



SECTION A-A (Not to Scale)

Removal and Disposal of Unsuitable Material and placement of Porous Granular Embankment, Special (CA-7), placed in accordance with section 207. See General Plan and Elevation.



WEEP HOLE DRAIN DETAIL

RIVER ROAD RETAINING WALL TYPICAL SECTION & DETAILS

SHEET NO. SB-5	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	89	09-00372-00-PW	McHENRY	252	168
SB-7 SHEETS		CONTRACT NO.			63633
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

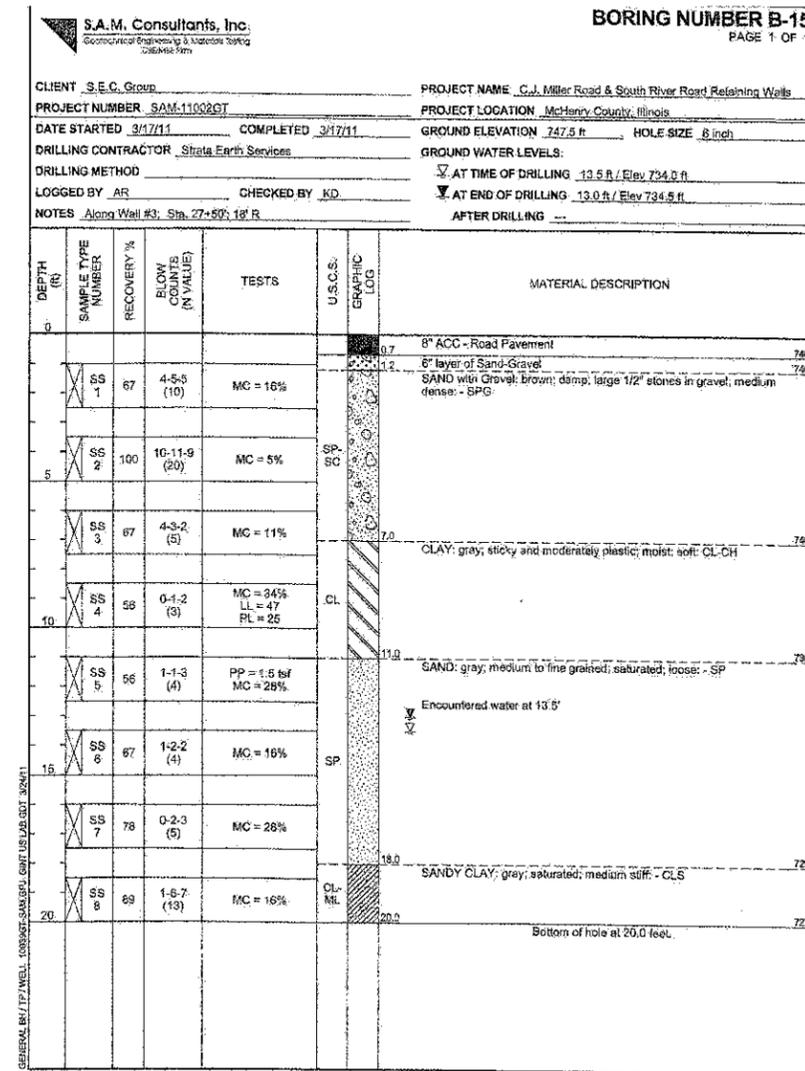
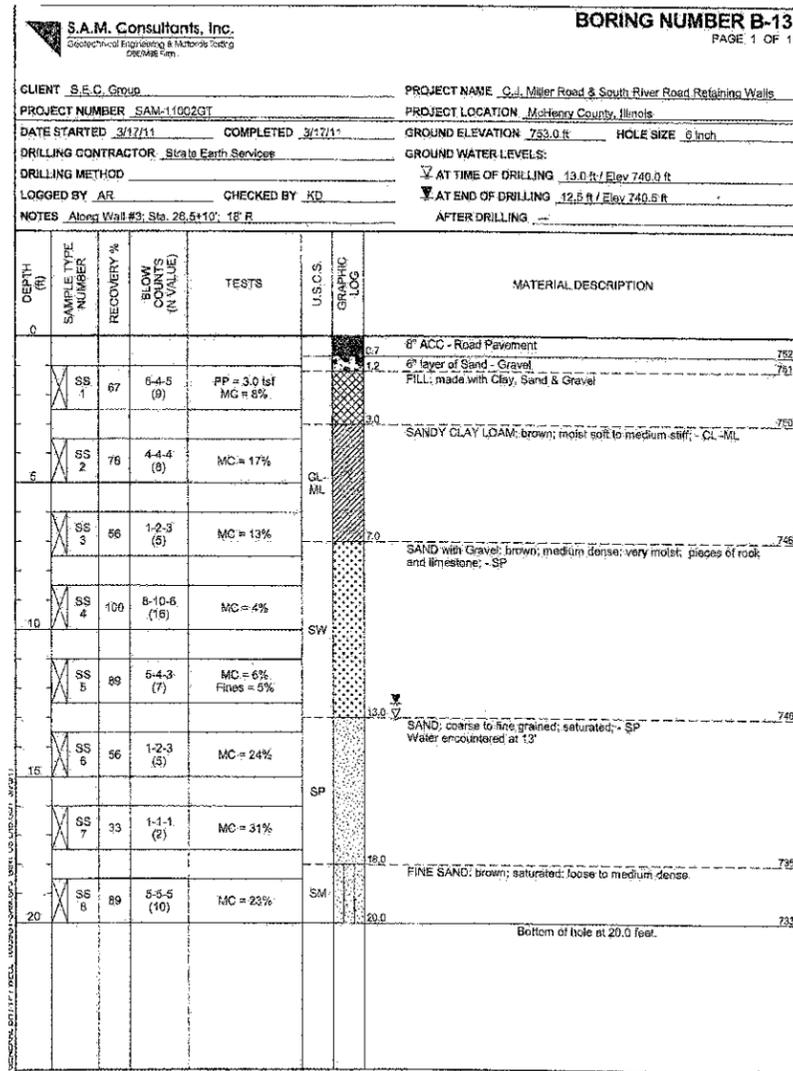
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DRAWN	WJH
CHECKED	RGD

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**RIVER ROAD RETAINING WALL
SOIL BORING LOGS**

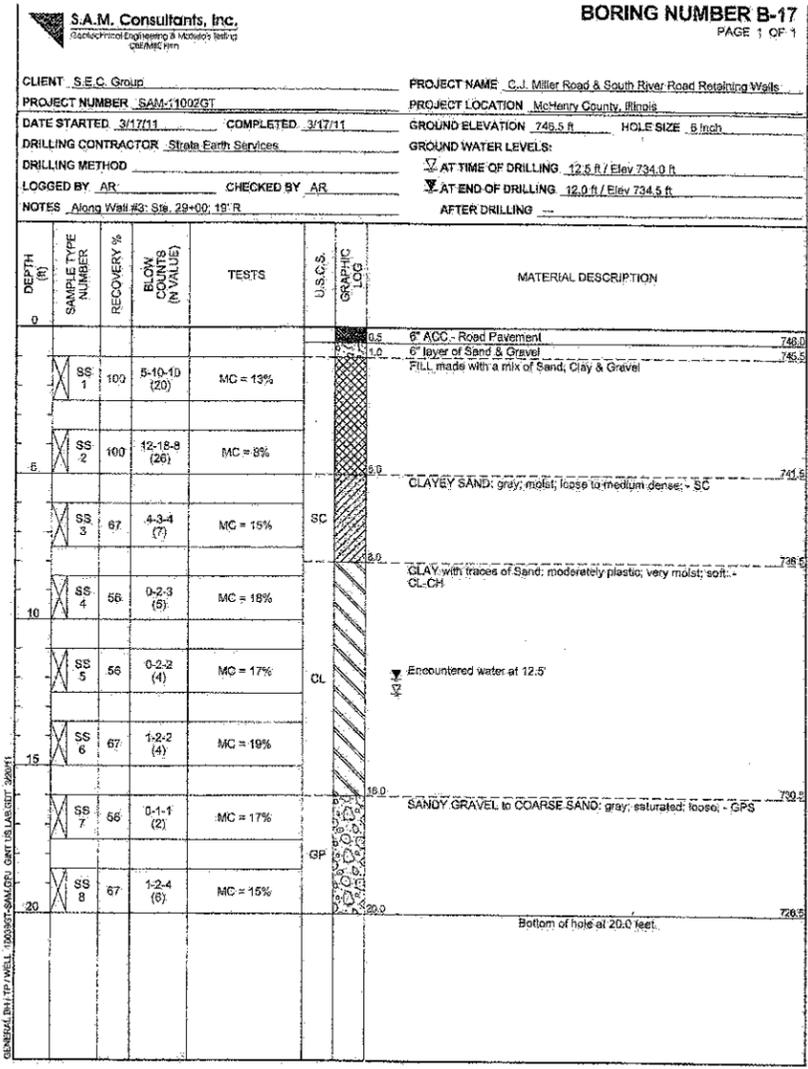
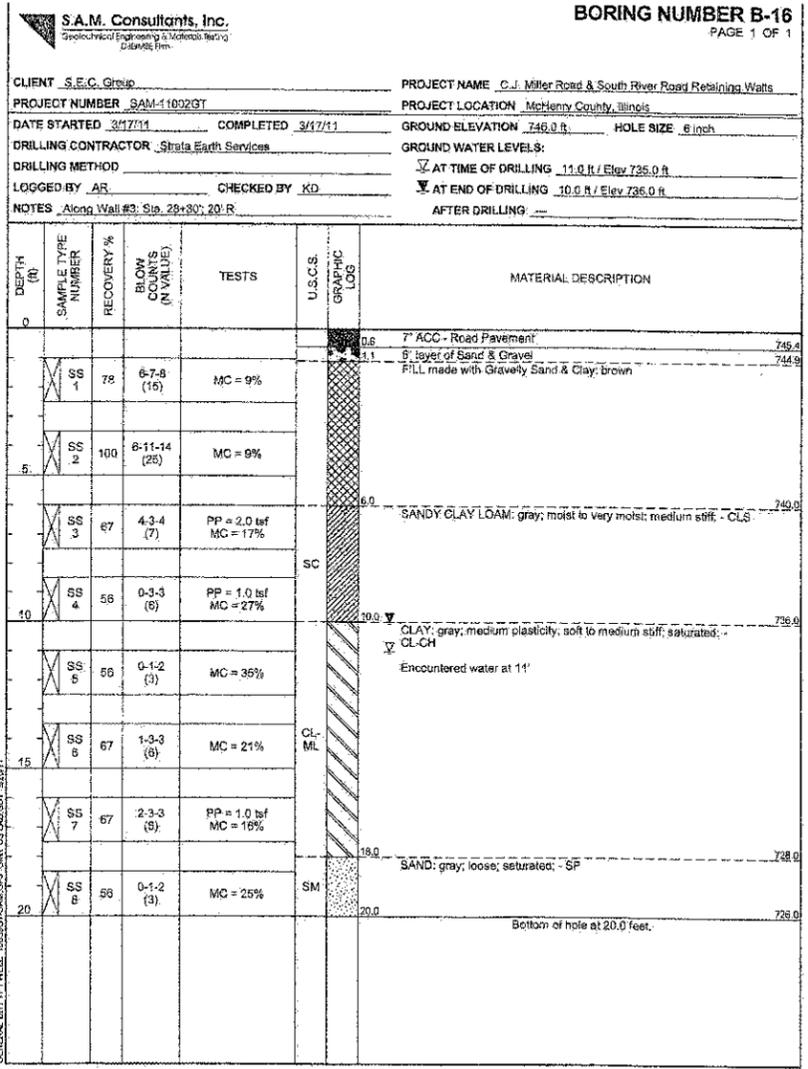
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DATE: 7/23/12



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184-001322

SHEET NO. SB-6 SB-7 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	89	09-00372-00-PW	McHENRY	252	169
CONTRACT NO.				63633	
FED. ROAD DIST. NO. 1 [ILLINOIS] FED. AID PROJECT					



**RIVER ROAD RETAINING WALL
SOIL BORING LOGS**

DESIGNED	JPG
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DRAWN	WJH
CHECKED	RGD



DATE: 7/23/12

SHEET NO. SB-7	F.A.U. RTE. 89	SECTION 09-00372-00-PW	COUNTY McHENRY	TOTAL SHEETS 252	SHEET NO. 170
SB-7 SHEETS			CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

Benchmark:
 BM 1: Railroad spike on the north face of powerpole at southwest corner of Charles J. Miller Road and Green Street (Barreville Road). Elevation = 805.79 (NAVD 88)
 BM 2: Railroad spike on the west face of powerpole at southwest corner of Route 31 (Front Street) and Miller Road (Bull Valley Road). Elevation = 831.23 (NAVD 88)

Existing Structure:
 Consists of a 83'-0" long, single 6' W x 3' H cell, cast in place concrete culvert.

Proposed Structure:
 The Proposed Culvert will be constructed during Staged Construction, according to the Roadway Maintenance of Traffic plan.

INDEX OF SHEETS

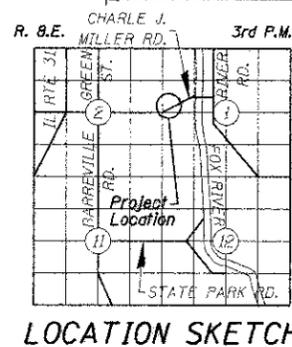
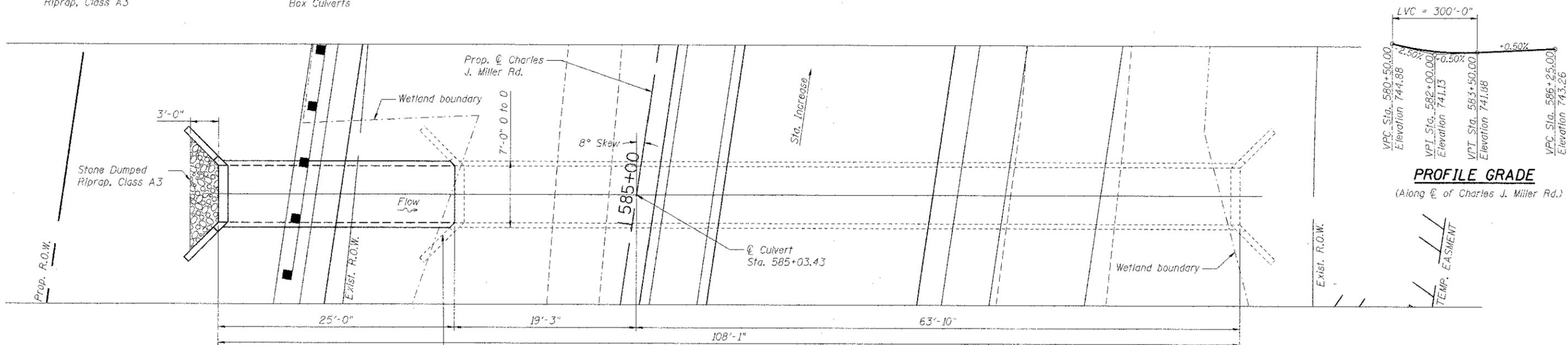
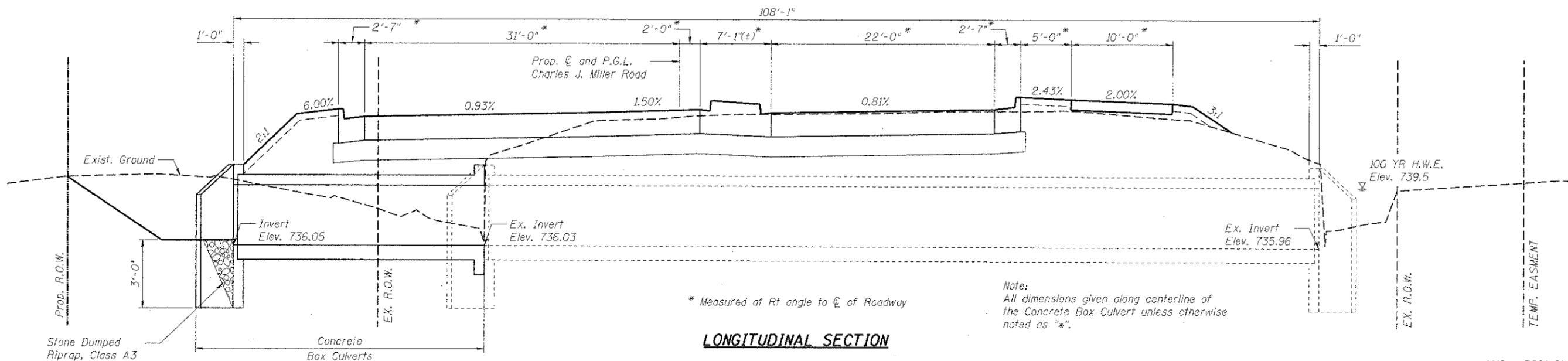
- SC-01 General Plan and Elevation
- SC-02 General Notes, Details and Bill of Materials
- SC-03 Culvert Extension Details

LOADING HL-93
 Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
 2010 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)



Existing Name Plate to be removed and delivered to MCDOT Construction Manager

To the best of my knowledge, information and belief, this culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO Standard Specifications for Highway Bridges".



Structural Engineer
 HRGreen
 Expires: 11/30/2012

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert	U.S. Invert
	732.96	733.05

DESIGNED	JPG
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

GENERAL PLAN AND ELEVATION
CHARLES J. MILLER ROAD BOX CULVERT
 FAU. RTE. 3860, SEC. 09-00372-00-PW
 McHENRY COUNTY
 STATION 585+03.43

DATE: 7/23/12

SHEET NO.	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SC-1	3860	09-00372-00-PW	McHENRY	252	171
SC-3					

CONTRACT NO. 63633

FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT

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 # 184-001322

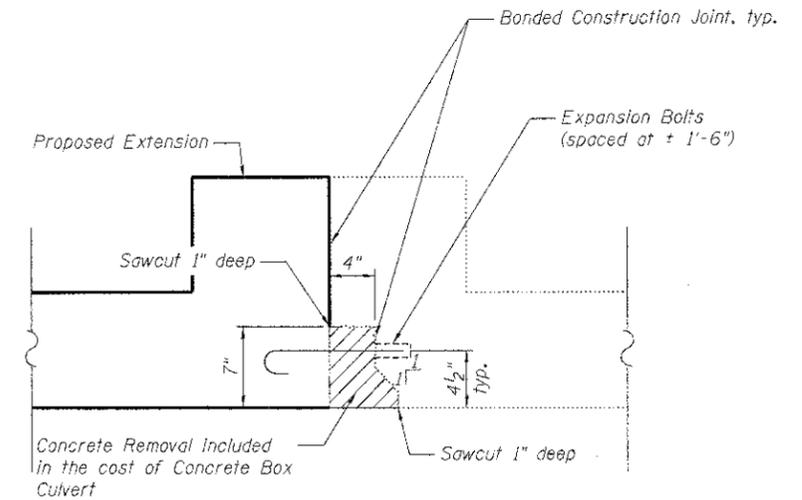
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GENERAL NOTES

1. CONCRETE BOX CULVERTS shall be paid for as noted in Article 540.08, and The Contract Unit Price for CONCRETE BOX CULVERTS shall be in accordance with Section 540 and include all porous granular bedding material, cast in place wingwalls, headwalls, excavation, and backfill.
2. Contractor shall maintain stream flow in accordance with the Standard Specifications Article 502.
3. Diversion and Construction activities shall not be permitted to cause water levels upstream to rise above elevation = 739.00.
4. Reinforcement bars shall conform to the requirements of ASTM A 760 Gr 60.
5. Cover from the face of Concrete to Reinforcement bars shall be 3" from surfaces formed against earth and 2" for all other surfaces unless shown otherwise.
6. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

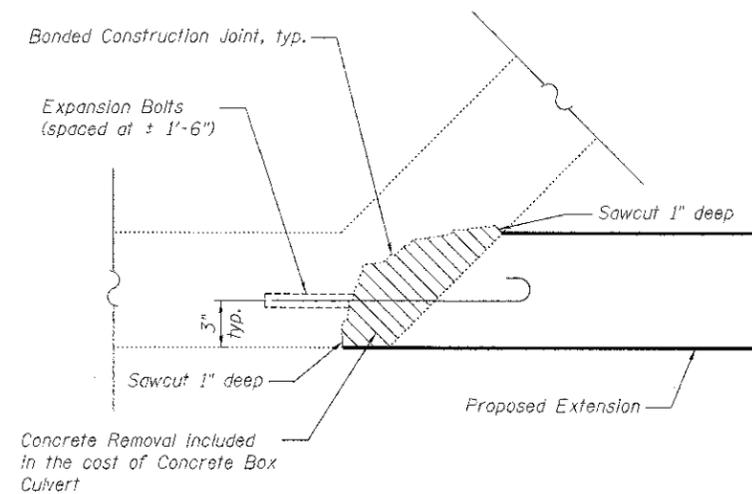
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stone Dumped Rip Rap, Class A3	Ton	3
Expansion Bolt, 3/4 inch	Each	16
Concrete Box Culverts	Cu. Yd.	14.0
Reinforcement Bars	Pound	2,720
Box Culverts to be Cleaned	Each	1



EXPANSION BOLT DETAIL

At existing upstream headwall



EXPANSION BOLT DETAIL

At existing wingwalls

GENERAL NOTES

DESIGNED	JPG
CHECKED	RGD
DRAWN	WJH
CHECKED	RGD

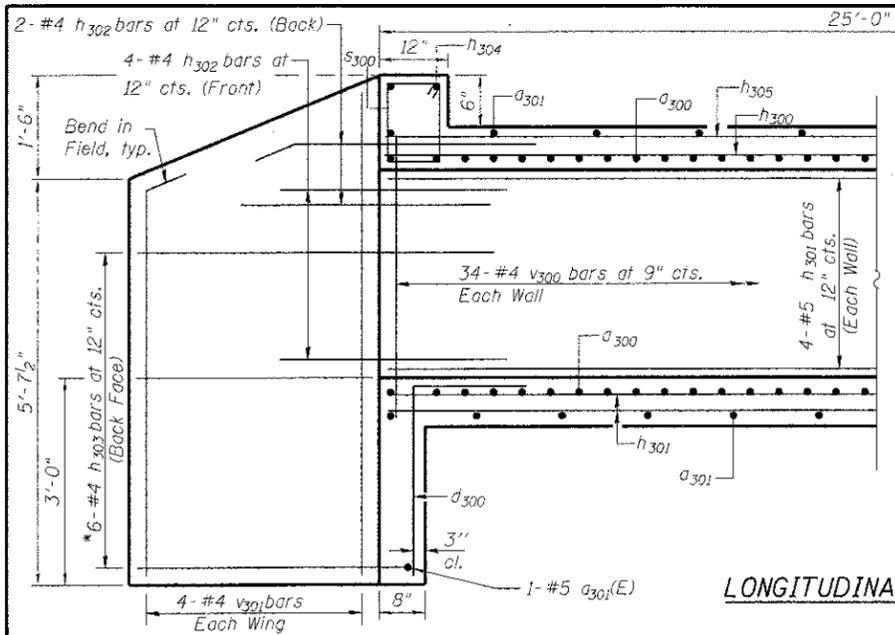


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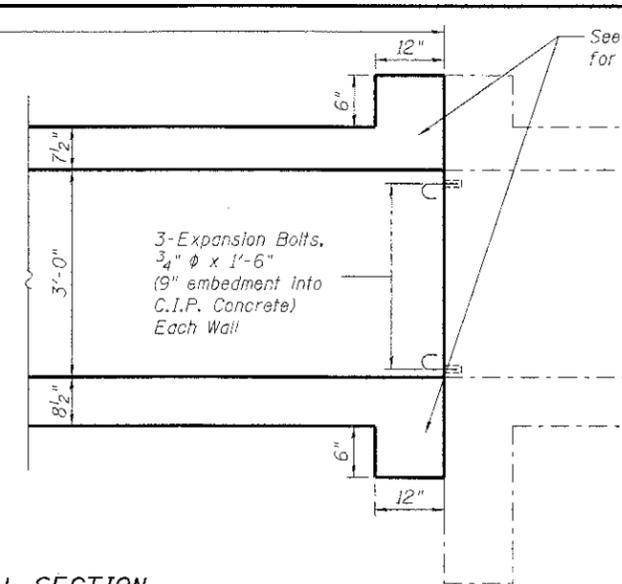
CHARLES J. MILLER ROAD BOX CULVERT

DATE: 7/23/12

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FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

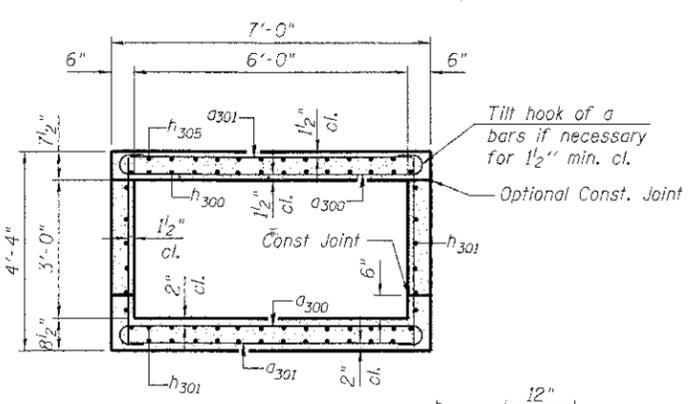


LONGITUDINAL SECTION

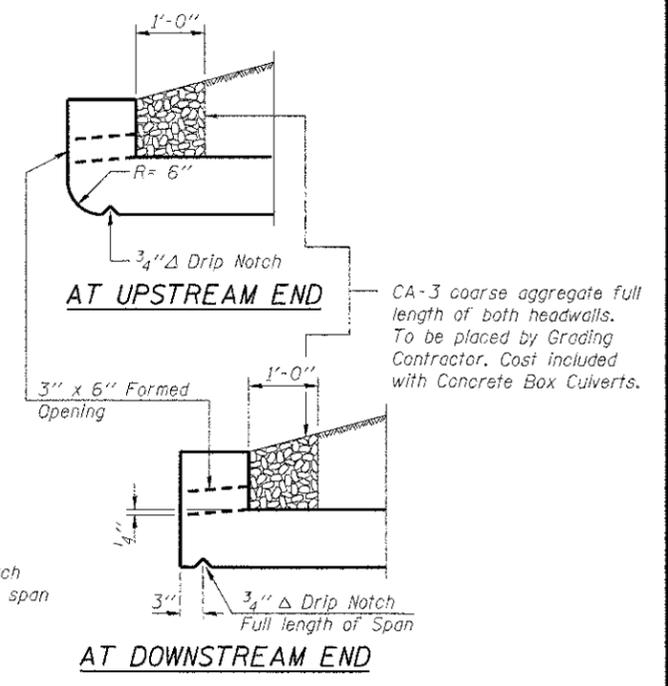


SECTION THRU BARREL

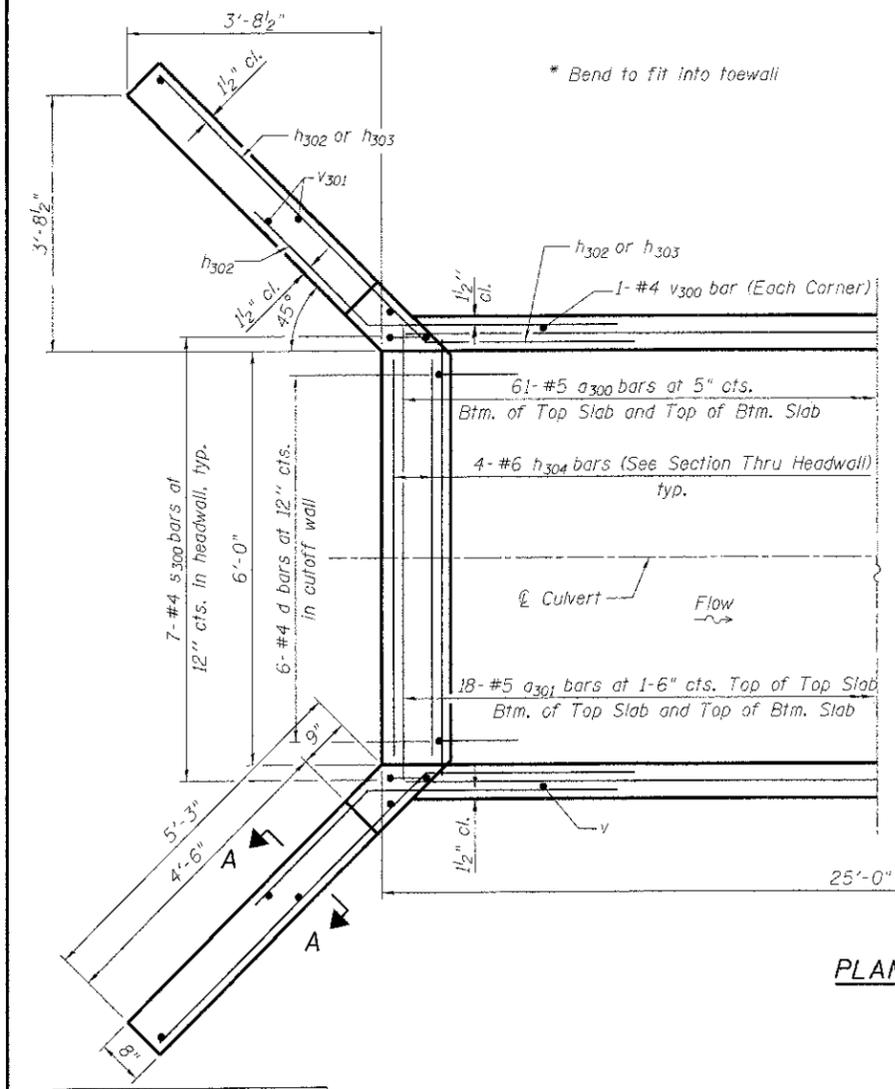
MIN. BAR LAP
#4 bars = 1'-9"



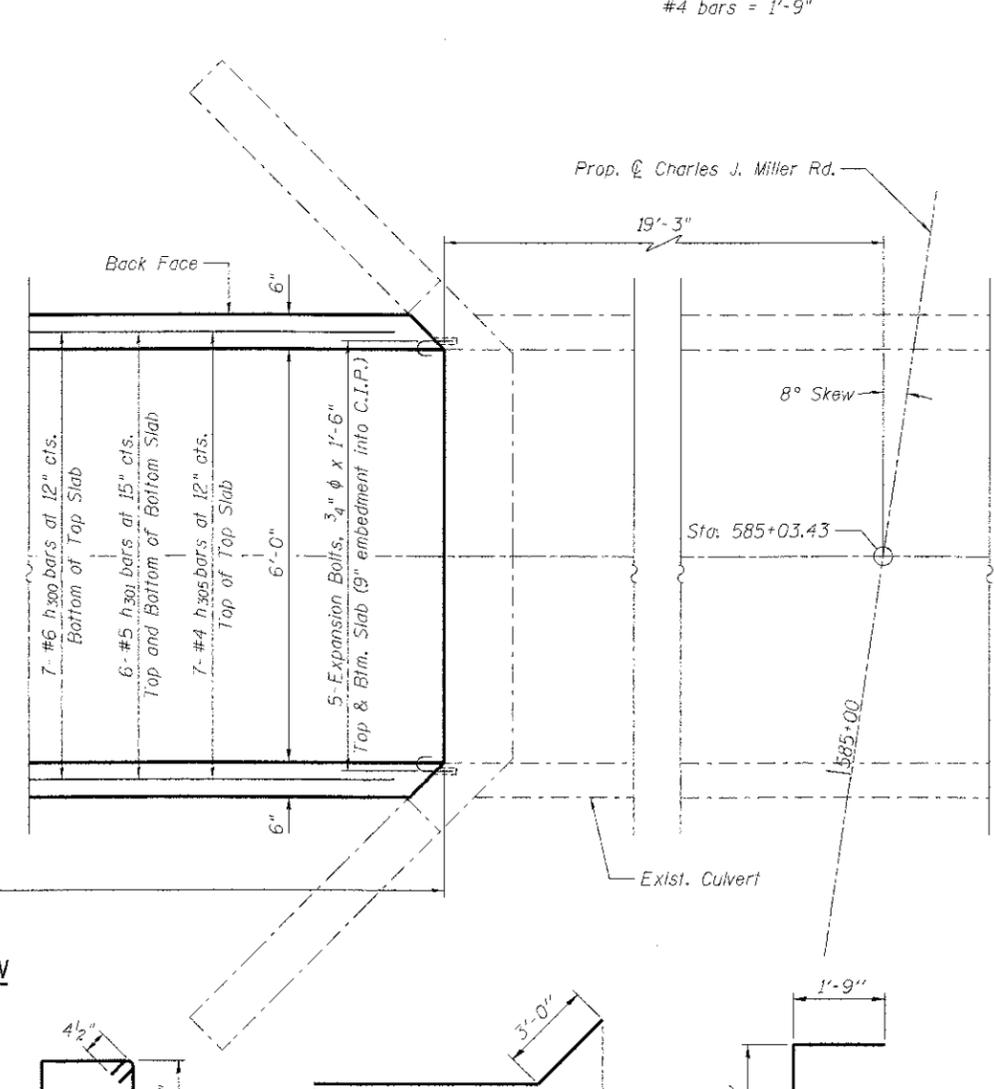
SECTION THRU HEADWALLS



DRAIN DETAIL



PLAN



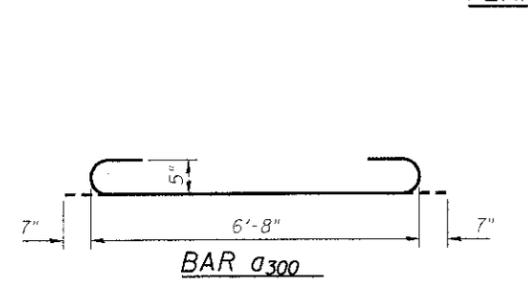
SECTION A-A

BILL OF MATERIAL

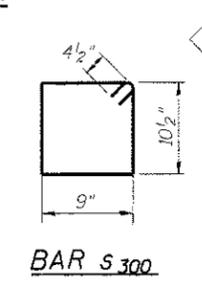
Bar	No.	Size	Length	Shape
a300	122	# 5	7'-10"	
a301	37	# 5	6'-3"	
d300	6	# 4	4'-6"	
h300	7	# 6	24'-9"	
h301	22	# 5	24'-9"	
h302	12	# 4	8'-0"	
h303	12	# 4	8'-4"	
h304	12	# 6	6'-0"	
h305	7	# 4	24'-9"	
s300	21	# 4	4'-0"	
v300	70	# 4	4'-0"	
v301	8	# 4	6'-9"	
Stone Dumped Riprap, Class A3		Ton	3	
Reinforcement Bars		Pound	2,720	
Expansion Bolts 3/4"		Each	14	
Concrete Box Culverts		Cu. Yd.	14.0	
Cleaning Culverts		Each	1	

CULVERT DETAILS

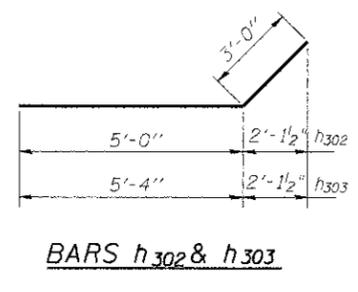
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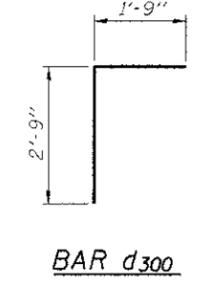
BAR a300



BAR s300



BARS h302 & h303

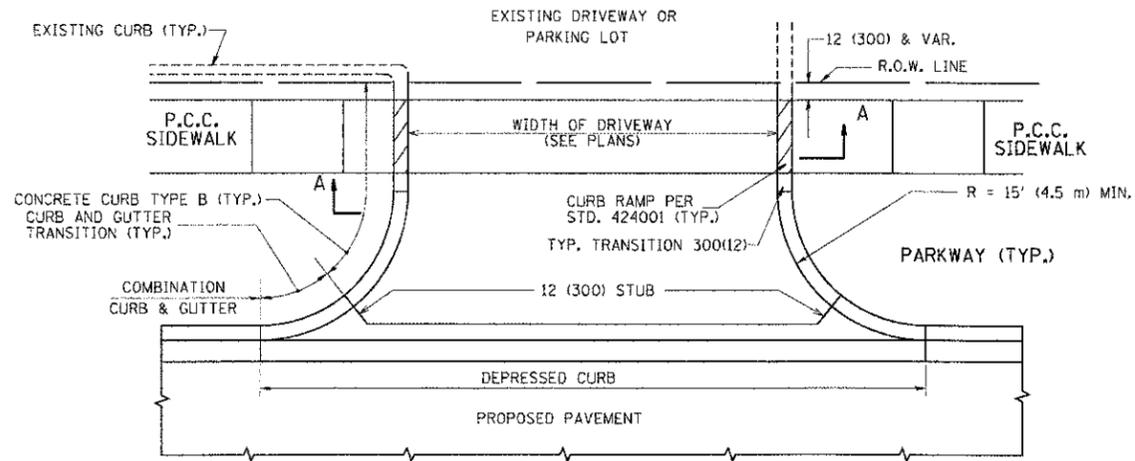


BAR d300

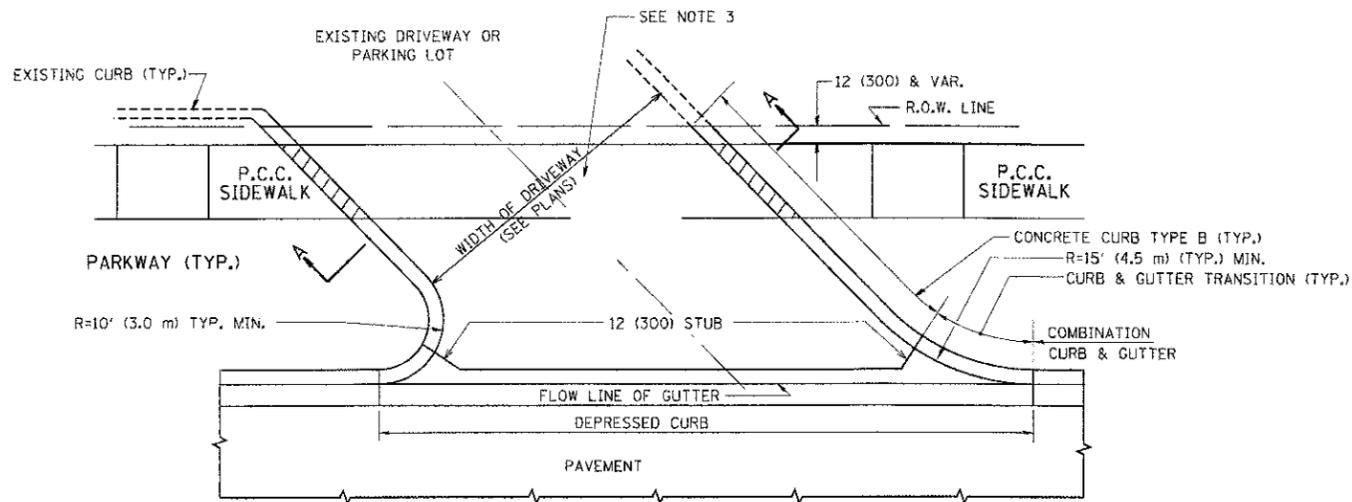


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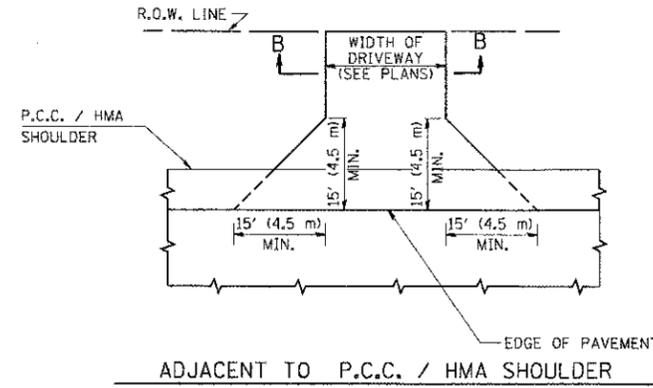
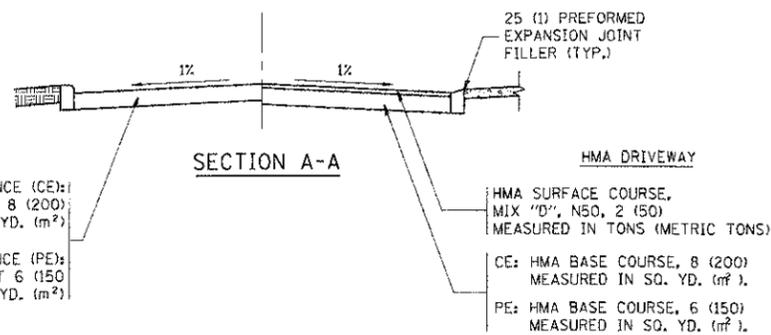
CHARLES J. MILLER ROAD BOX CULVERT		DATE: 7/23/12	
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SC-3 SHEETS		TOTAL SHEETS 252	SHEET NO. 173
FED. ROAD DIST. NO. 1 ILLINOIS		CONTRACT NO. 63633	
FED. AID PROJECT			



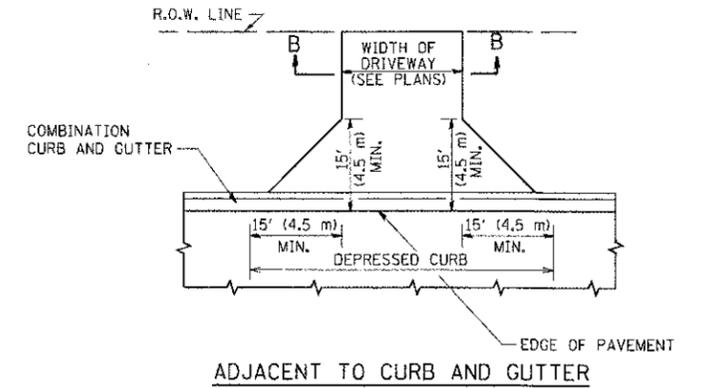
WITH CONCRETE CURB, TYPE B



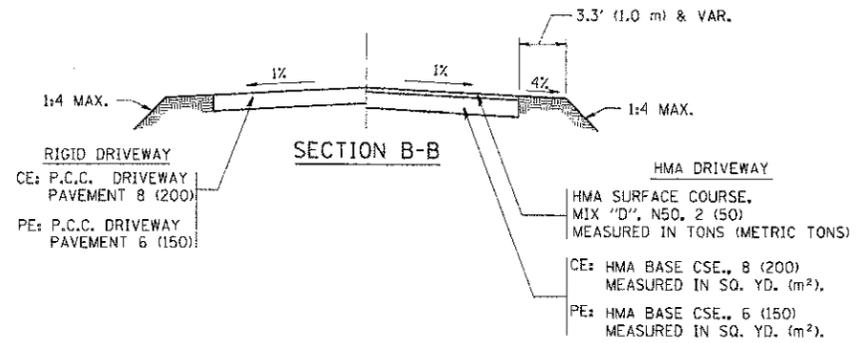
WITH CONCRETE CURB, TYPE B



ADJACENT TO P.C.C. / HMA SHOULDER



ADJACENT TO CURB AND GUTTER



RURAL FIELD ENTRANCE (FE)

HMA SURFACE COURSE,
MIX "D", N50, 2 (50)
MEASURED IN TONS (METRIC TONS)

AGGREGATE BASE CSE., TYPE B, 8 (200)
MEASURED IN SQ. YD. (m²).

GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 4 FEET (1.2 METERS) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

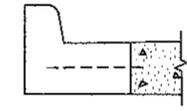
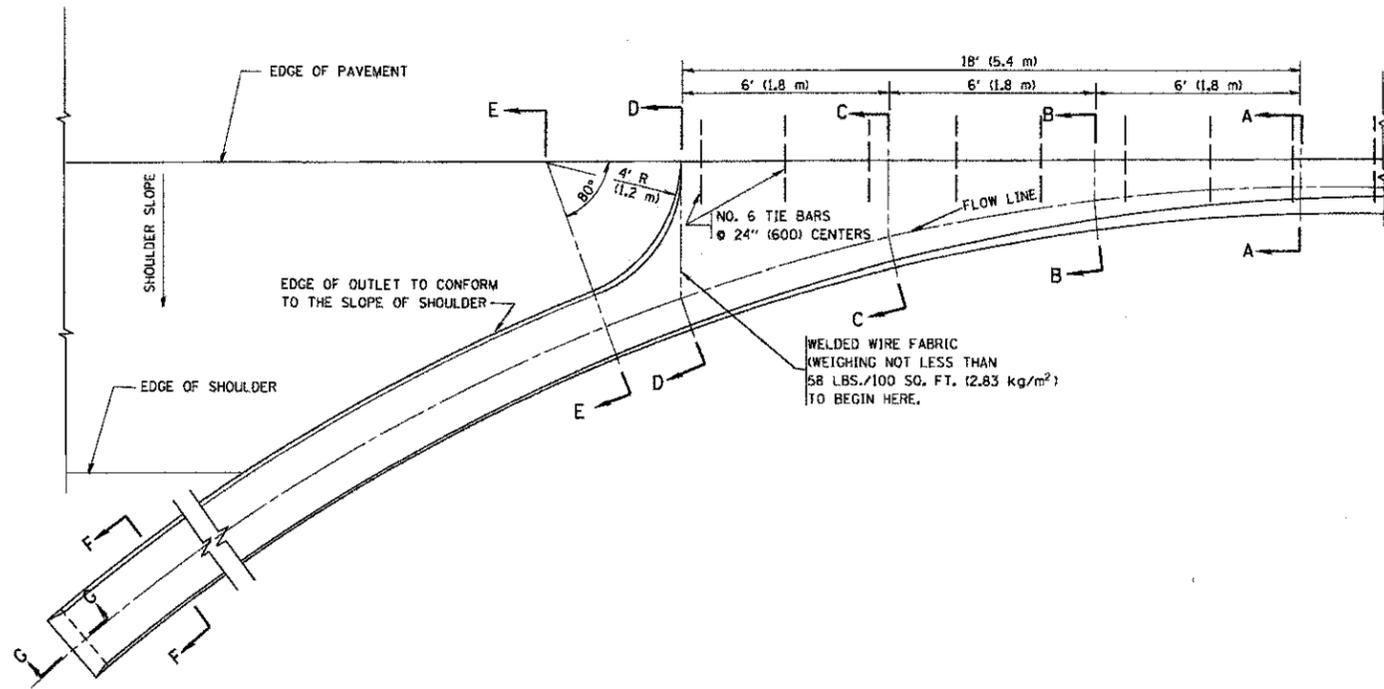
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		CHECKED -	REVISED - R. BORO 06-11-08
		DATE - 11-04-95	REVISED - R. BORO 09-06-11

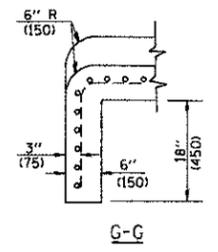
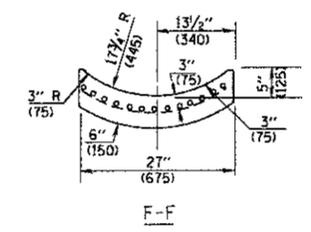
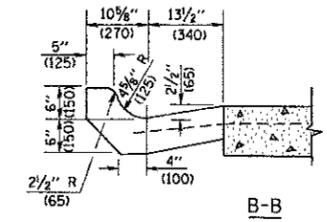
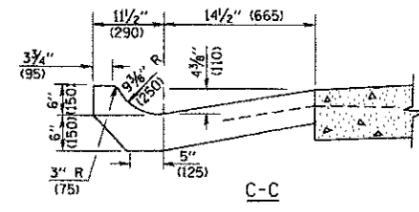
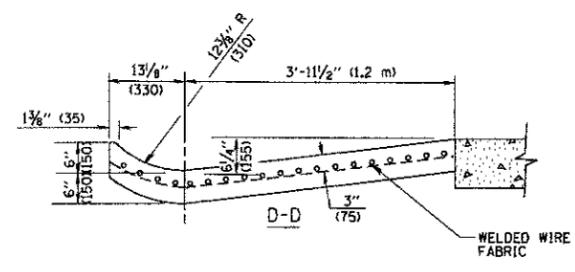
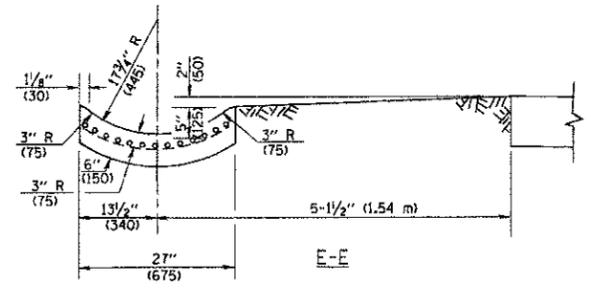
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DRIVEWAY DETAILS - DISTANCE BETWEEN R.O.W. AND FACE OF CURB & EDGE OF SHOULDER >= 15' (4.5 m)	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS
STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	174
BD0156-07 (BD-01)			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



* DIMENSIONS OF THE CURB & GUTTER AT SECTION A-A ARE SHOWN ON STATE STANDARD 606001. FOR DETAILS OF OUTLET FOR CONCRETE CURB & GUTTER, TYPE B-6.24 (B-15.60) SEE STATE STANDARD 606006.



GENERAL NOTES

GUTTER OUTLET SHALL BE TIED TO THE PAVEMENT IN ACCORDANCE WITH DETAILS FOR LONGITUDINAL CONSTRUCTION JOINT SHOWN ON STANDARD 420001.

TIE BARS SHALL BE NO. 20 (NO.6) AT 24" (600) CENTERS UNLESS OTHERWISE SHOWN.

IF THE AVERAGE GRADE OF PAVEMENT FOR THE DISTANCE FROM SECTION A-A TO D-D EXCEEDS 2%, THIS DISTANCE SHALL BE INCREASED 6' (1.8 m) FOR EACH 1% INCREASE IN GRADE.

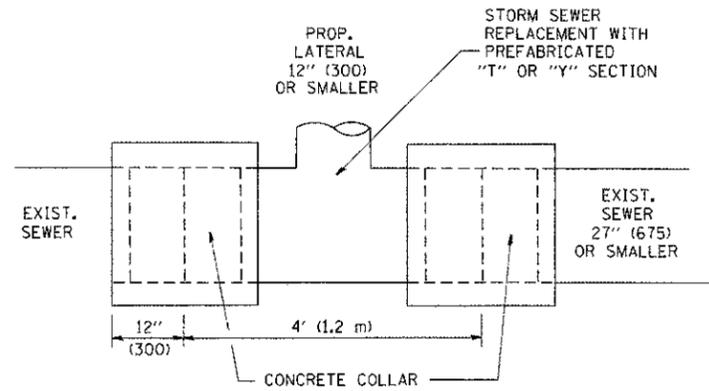
QUANTITIES

FOR SECTION A-A TO E-E AND CURTAIN WALL = 1.25 CU. YDS. (0.96 m³) CLASS SI CONCRETE (OUTLET) FOR 9" (225) PAV'T, 1.27 CU. YDS. (0.96 m³) CLASS SI CONCRETE (OUTLET) FOR 10" (250) PAV'T.
 FOR SECTION F-F = 0.045 CU. YDS. (0.03 m³) CLASS SI CONCRETE PER FT. (m).

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

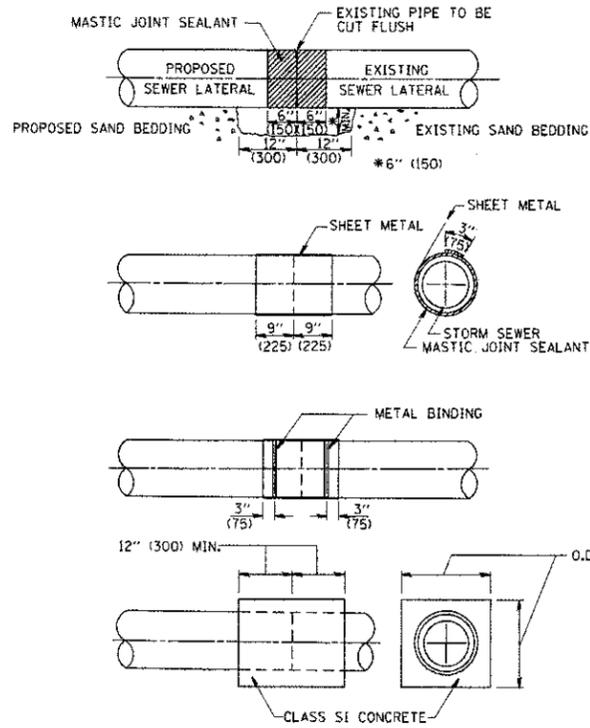
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PLOT DATE = 1/4/2009	DATE - 08-04-86	REVISED -	REVISED -									



DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER

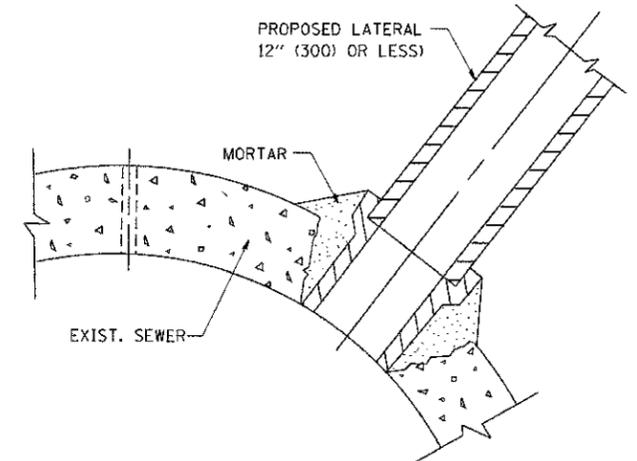


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12" x 6" (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERENCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

- THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.
- CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".
 - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS. THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

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

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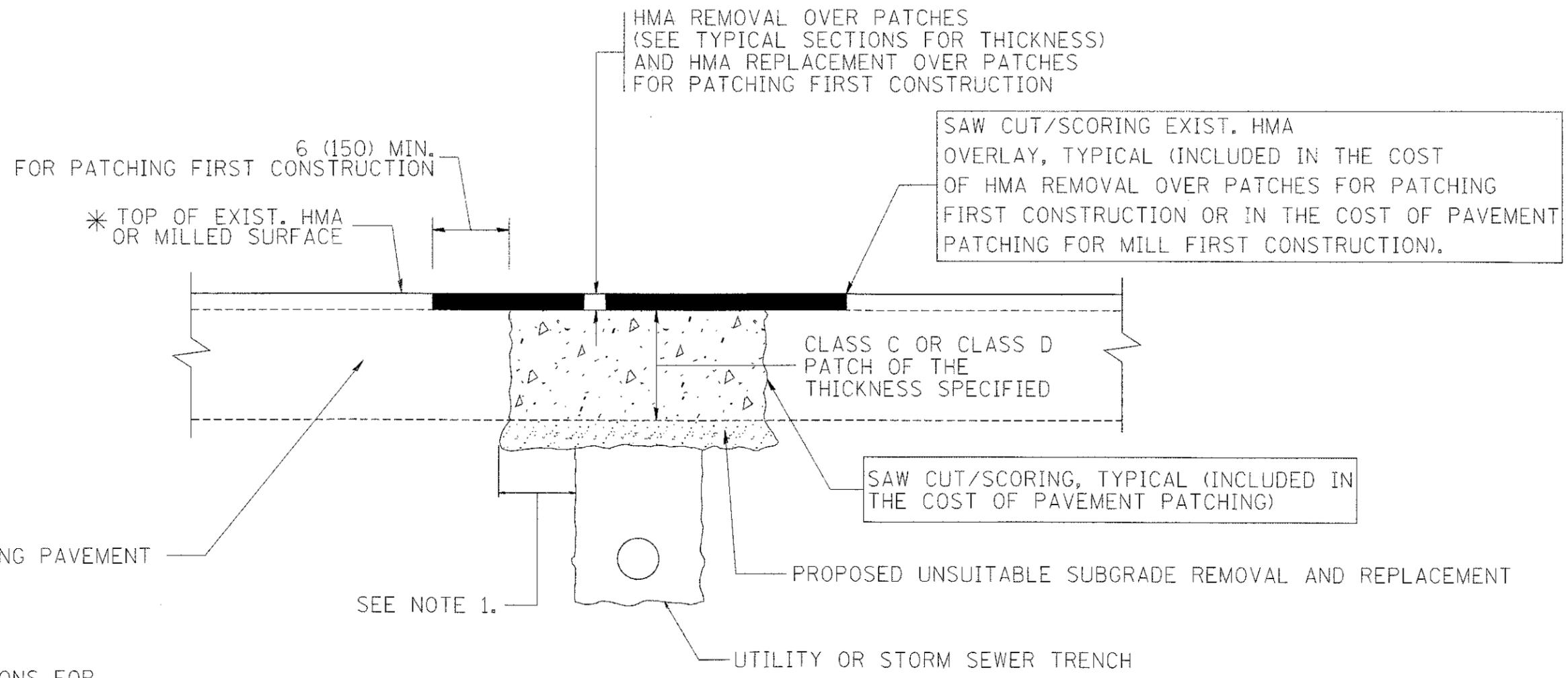
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DESIGNED - M. DE YONG	REVISED - M. DE YONG 05-08-92
DRAWN -	REVISED - R. SHAH 09-09-94
PLOT SCALE = 60.000' / IN.	REVISED - R. SHAH 10-25-94
CHECKED -	REVISED - R. SHAH 06-12-96
PLOT DATE = 1/4/2008	DATE - 07-25-90

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	176
BD500-01 (BD-7)			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 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.

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

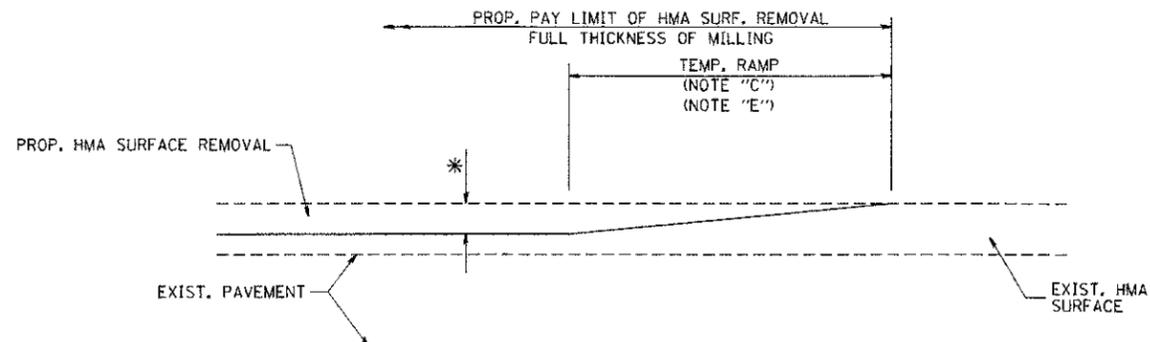
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		PLOT SCALE = 50.000' / 1"	REVISED - R. BORO 09-04-07
		PLOT DATE = 10/27/2008	REVISED - K. ENG 10-27-08

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

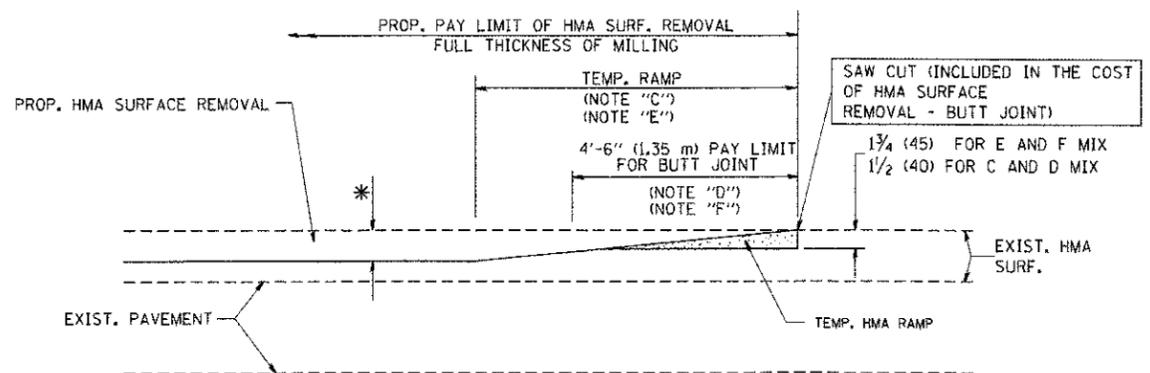
PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT			
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	177
BD400-04 (BD-22)			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



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

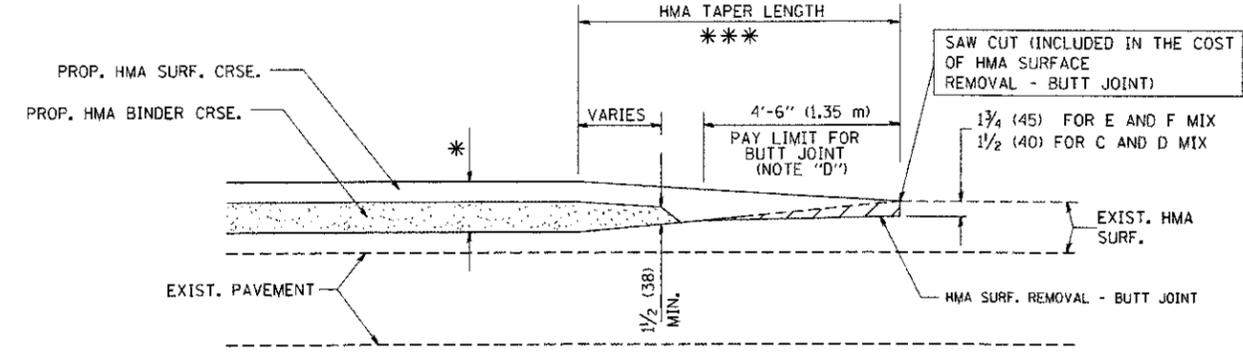
OPTION 1



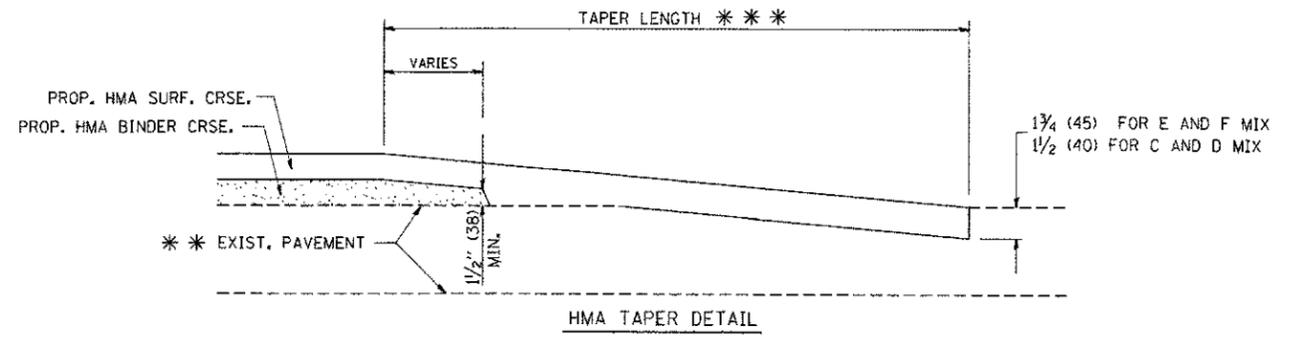
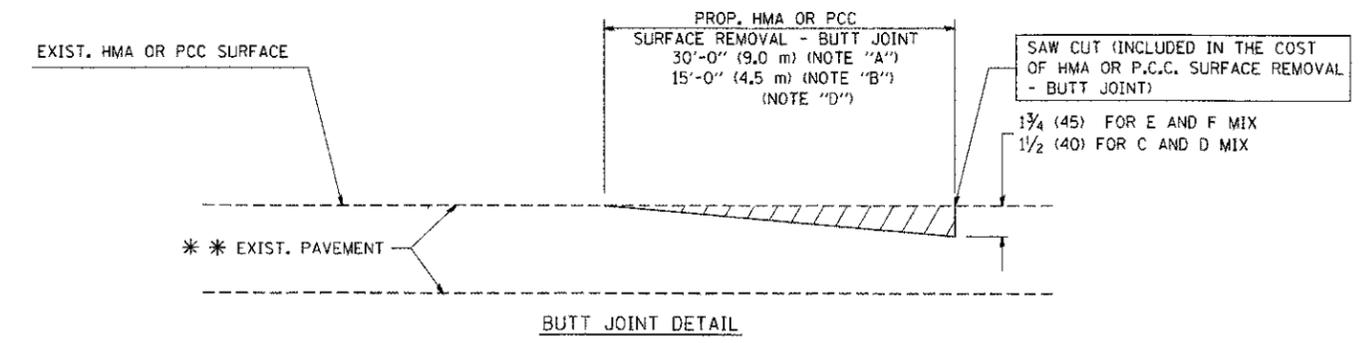
HMA CONSTRUCTED TEMPORARY RAMP
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 2

TYPICAL TEMPORARY RAMP



TYPICAL BUTT JOINT AND HMA TAPER
FOR MILLING AND RESURFACING



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.

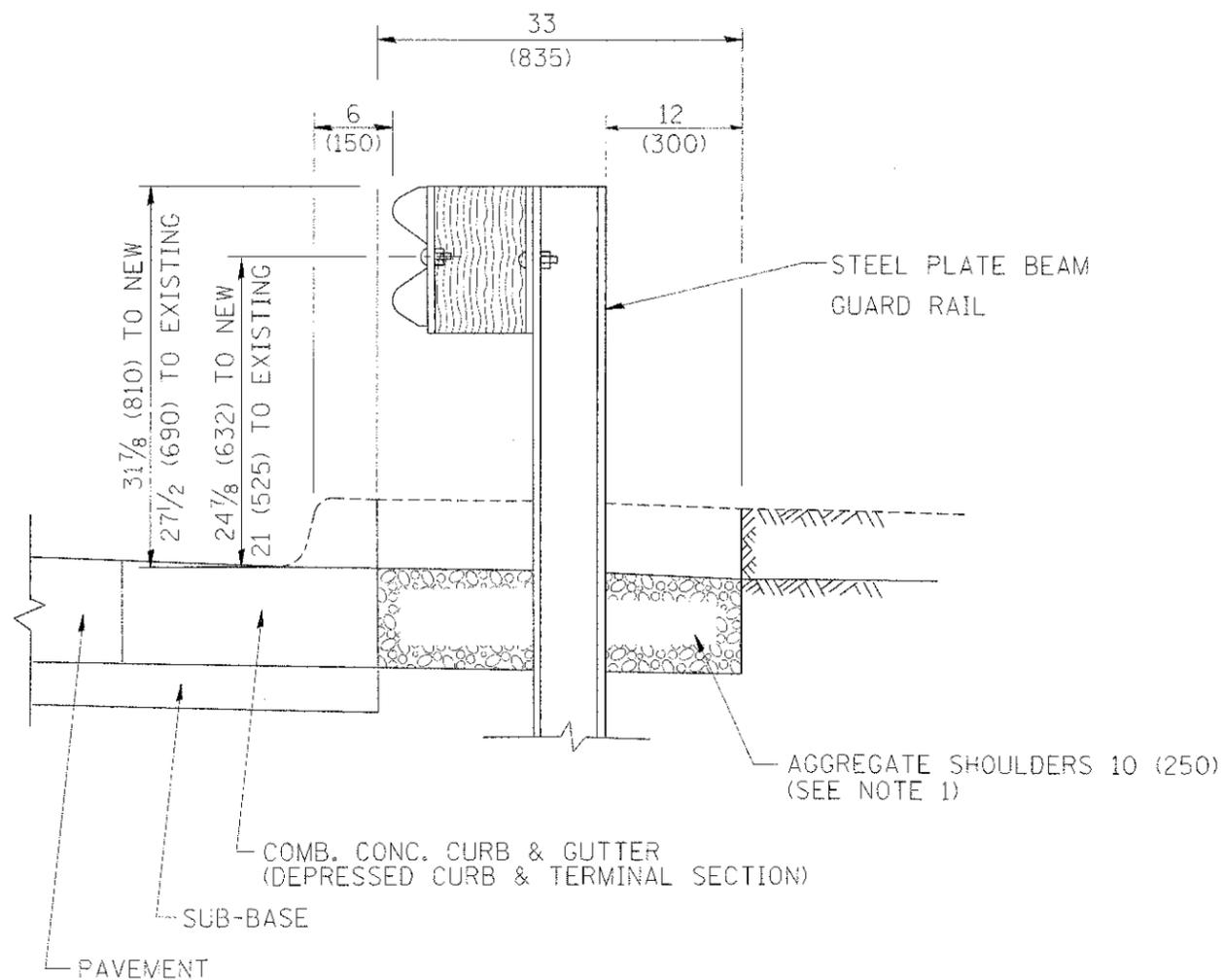
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		DRAWN -	REVISED - A. ABBAS 03-21-97
		CHECKED -	REVISED - M. GOMEZ 04-06-01
		DATE - 06-13-90	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA.	TO STA.
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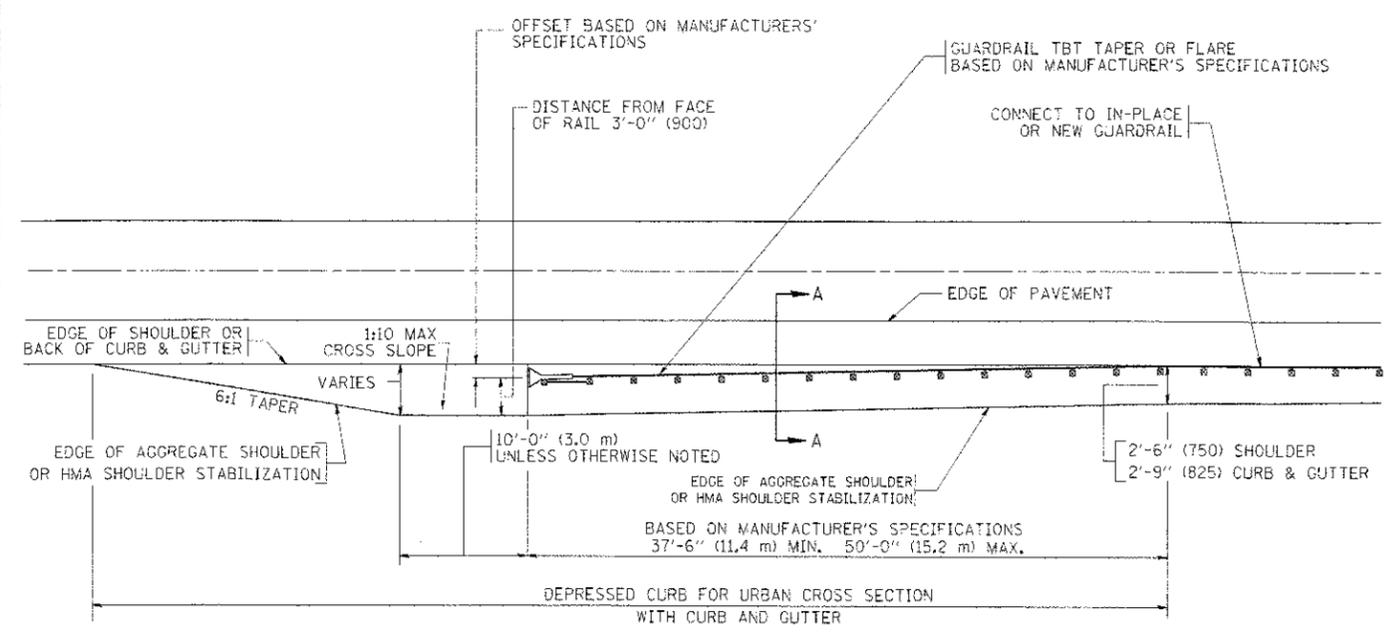
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	178
BD400-05 BD32			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



SECTION A-A

- NOTES:
1. THE AGGREGATE SHOULDER, 10" OR HMA SHOULDER, 6" (IF REQUIRED) SHALL EXTEND UNDER THE TRAFFIC BARRIER TERMINAL.
 2. "EXISTING" GUARDRAIL REFERS TO CONNECTING TERMINAL SECTION TO GUARD RAILING PRIOR TO THE MIDWEST GUARDRAIL SYSTEM.
 3. THE CONTRACTOR SHALL VERIFY THE TYPE/HEIGHT OF GUARDRAIL IN-PLACE BEFORE ORDERING THE NEW TERMINAL SECTION. COST INCLUDED WITH THE COST OF THE TERMINAL. THE TERMINAL SECTION HEIGHT TO BE PLACED MUST MATCH THE HEIGHT OF THE IN-PLACE GUARDRAIL.

**DETAILS FOR STEEL PLATE BEAM
GUARD RAIL ADJACENT TO CURB AND GUTTER**
[FOR ROADWAY SPEED 35 MPH (60 kmh) TO 45 MPH (70 kmh)]



**DEPRESSED CURB AND GUTTER AND
SHOULDER TREATMENT AT TBT TY. 1 SPL.**

BASIS OF PAYMENT: HMA SHOULDERS 6 (150) (IF REQUIRED) WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SHOULDERS 6" (150 mm)".

STEEL PLATE BEAM GUARD RAIL AND TRAFFIC BARRIER TERMINAL, OF THE TYPE SPECIFIED WILL BE PAID FOR SEPARATELY.

TBT = TRAFFIC BARRIER TERMINAL
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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pet/lat
standard-trans.tbl

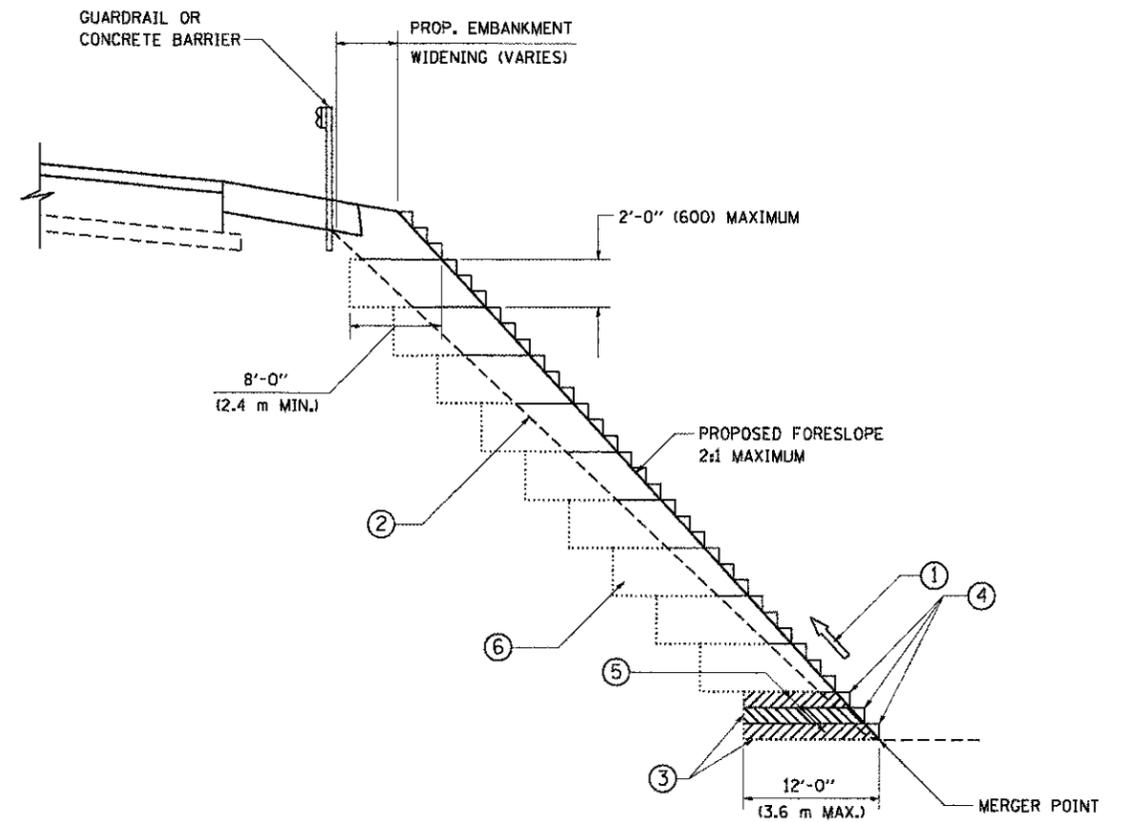
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		DRAWN -	REVISED -
			R. BORO 01-01-07
		CHECKED -	REVISED -
			R. BORO 12-08-2008
		DATE -	REVISED -
		09-22-90	R. BORO 09-14-2009

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DETAILS FOR DEPRESSED CURB & GUTTER AND
SHOULDER TREATMENT AT TBT TY 1 SPL.**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	179
BD600-10 (BD 34)			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT				



**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).

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

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		CHECKED - S.E.B.	REVISED -
		DATE - 06-16-04	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

BENCHING DETAIL FOR EMBANKMENT WIDENING	
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS
STA.	TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
386C	09-00372-00-PW	MCHENRY	252	180
BD-51		CONTRACT NO.	63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

OMITTED SHEET

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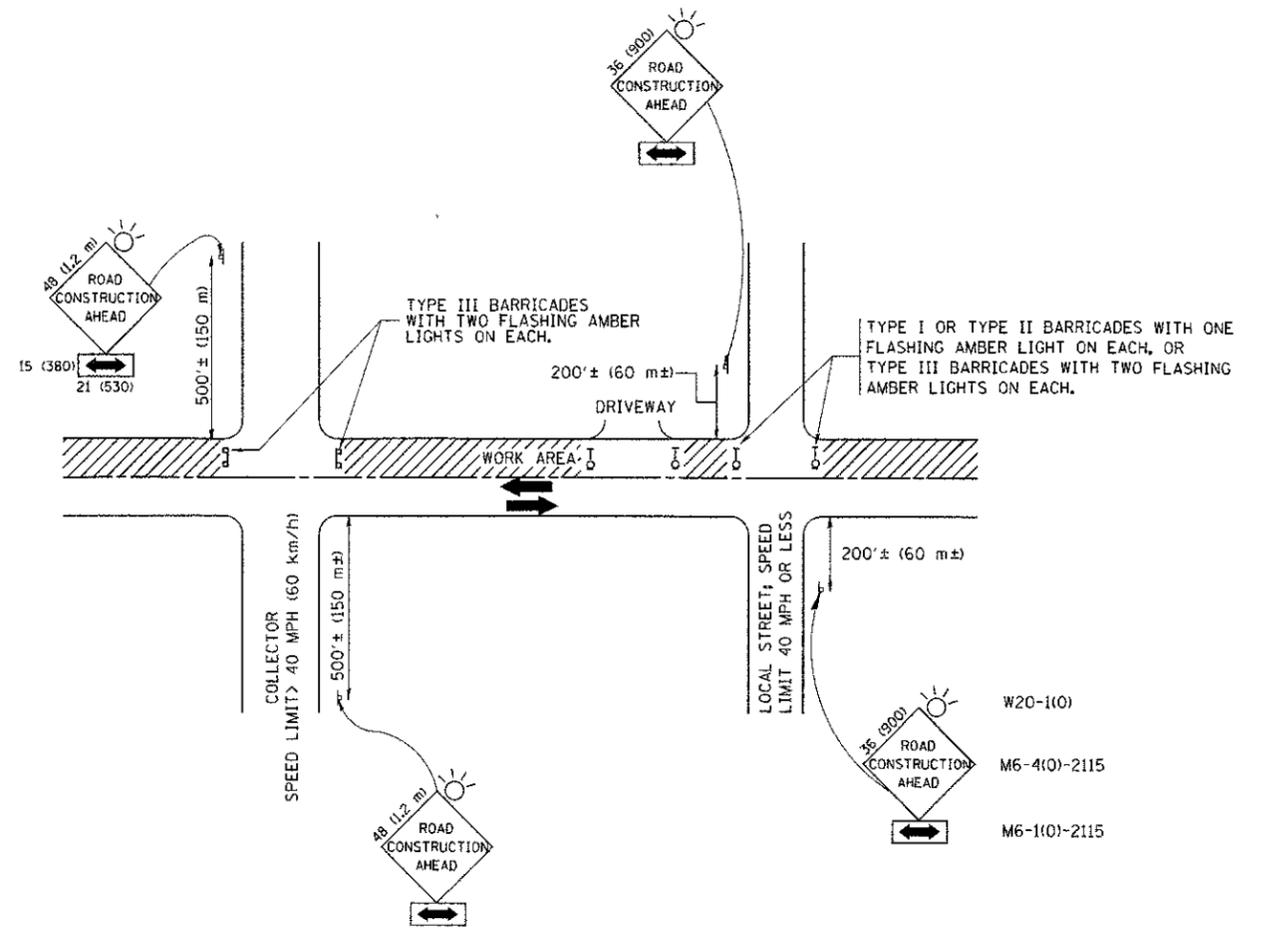
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PLOT DATE = 7/23/2012	DATE - 7/23/12	REVISED -

**MCHENRY COUNTY
 DIVISION OF TRANSPORTATION**

**IDOT DISTRICT 1 DETAILS
 CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	181
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				CONTRACT NO. 63633



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

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS:
 1. 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:
 - a) 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.
 - b) 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.
 2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) 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.
 - b) 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.
 3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:

USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.

 - C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.
 - D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

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

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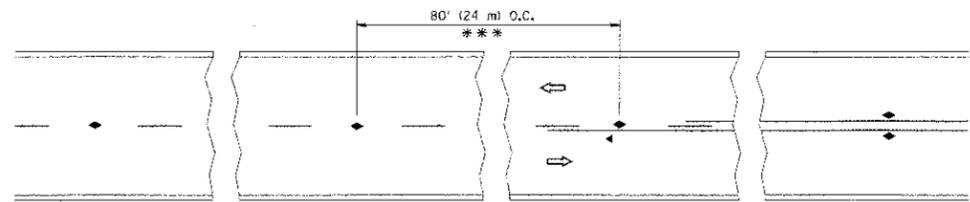
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		CHECKED -	REVISED - A. HOUSEH 10-15-96
		DATE - 06-89	REVISED - T. RAMMACHER 01-06-00

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

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

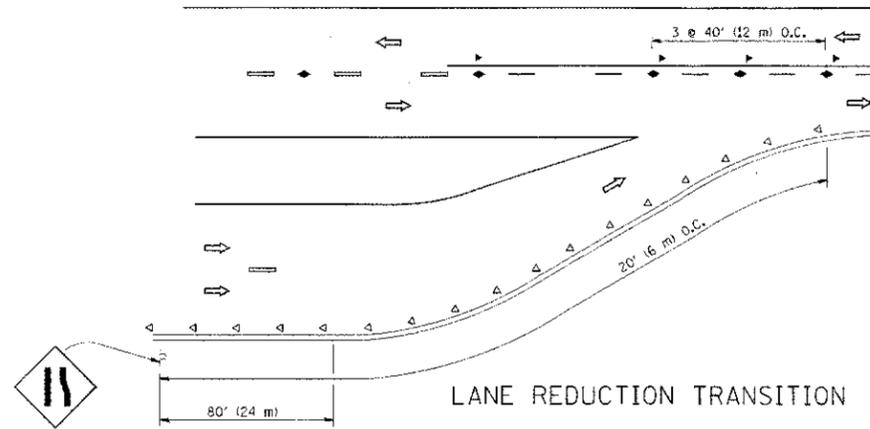
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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TC-10				CONTRACT NO. 63633
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

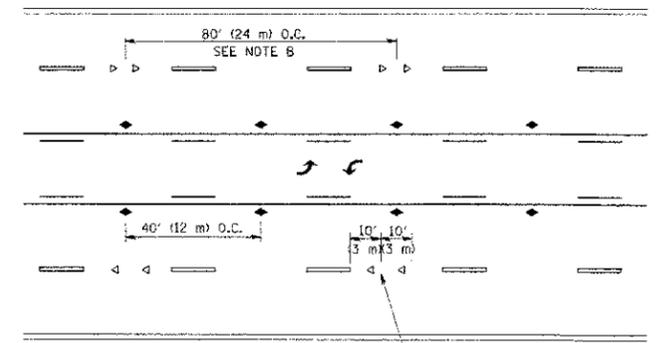


*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

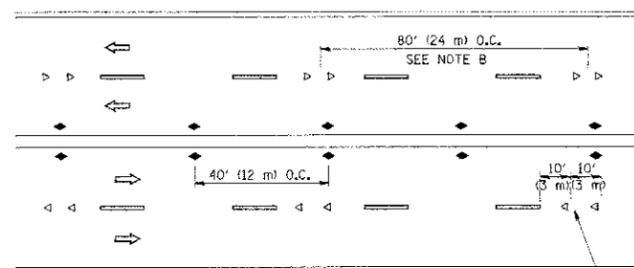
TWO-LANE/TWO-WAY



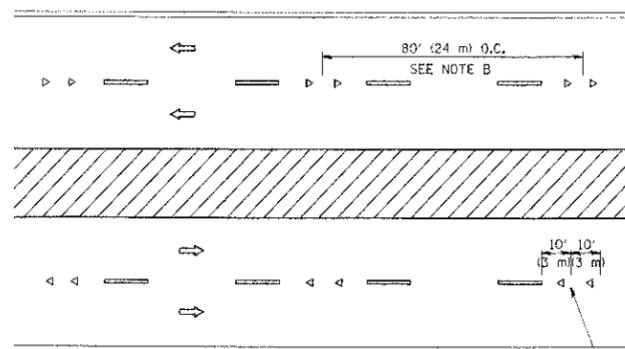
LANE REDUCTION TRANSITION



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

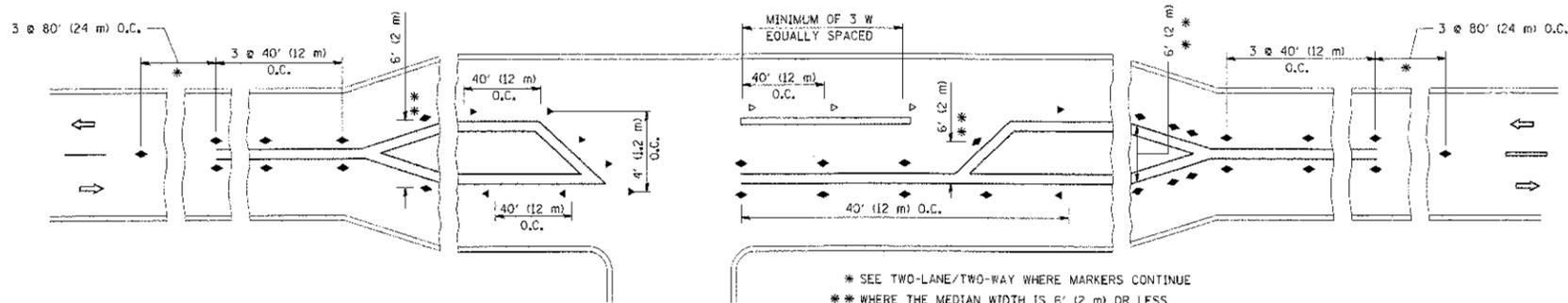
- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◁ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

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 SHALL BE INCLUDED IN THE PLANS WHEN STANDARD SPECIFICATIONS ARE NOT BEING USED.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.



LEFT TURN

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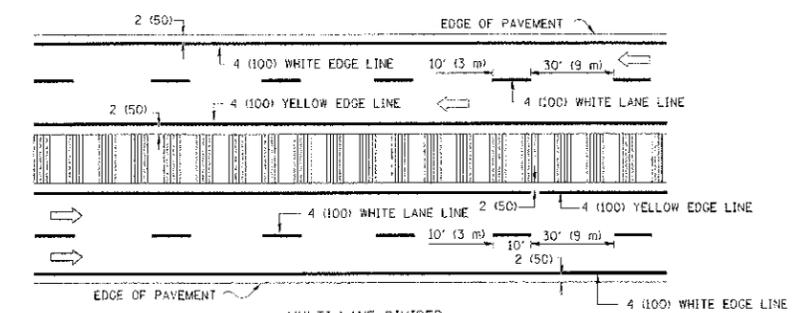
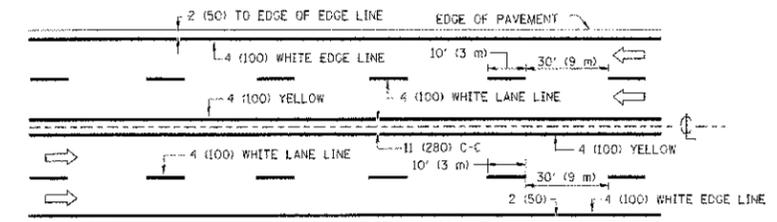
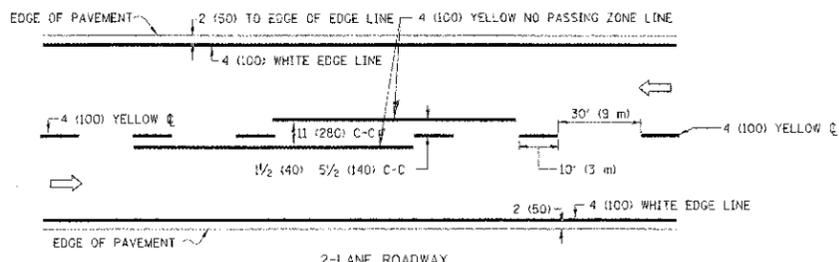
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DATE PLOTTED		CHECKED -	REVISED - T. RAMMACHER 01-06-00
FILE NAME		DATE -	REVISED - C. JUCIUS 09-09-09
PLOT DRIVER			
PEN TABLE			

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TYPICAL APPLICATIONS
 RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)

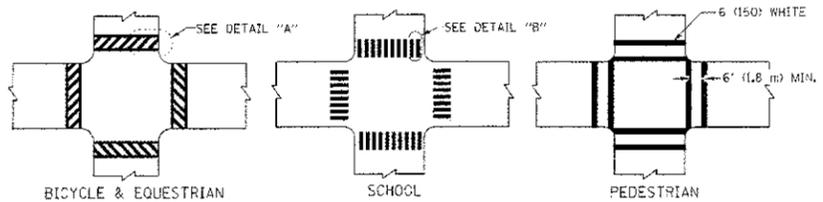
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			TC-11		CONTRACT NO. 63633		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							

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

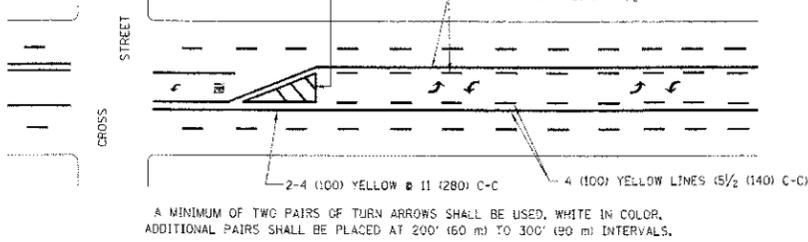
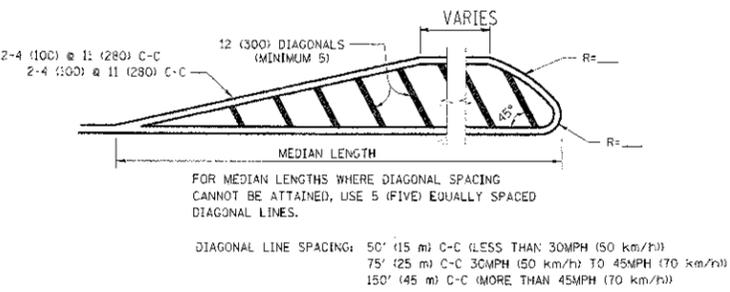
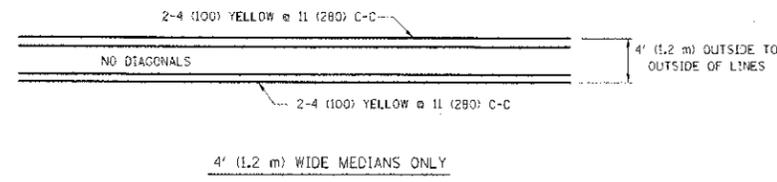


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

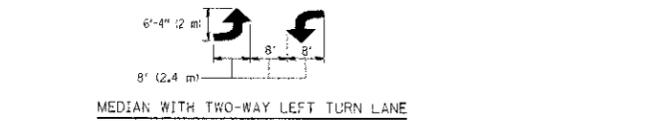
TYPICAL LANE AND EDGE LINE MARKING



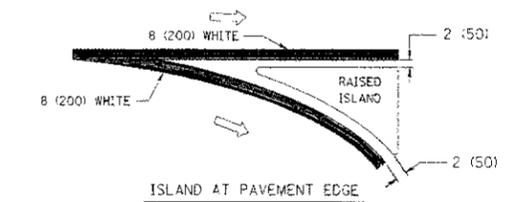
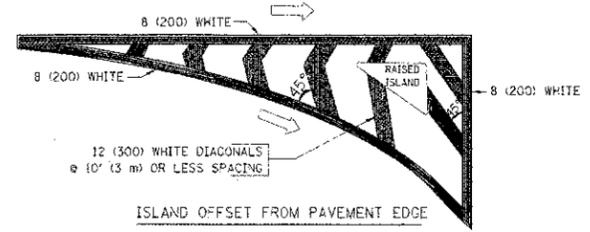
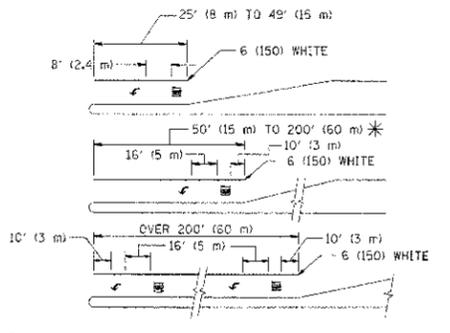
TYPICAL CROSSWALK MARKING



TYPICAL PAINTED MEDIAN MARKING



TYPICAL TURN LANE MARKING



TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION	4 (100)	SOLID	YELLOW	5/2 (140) C-C FROM SKIP-DASH CENTERLINE
NO PASSING ZONE LINES: FOR BOTH DIRECTIONS	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100)	SKIP-DASH	WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
LANE LINES (EXTENSIONS ON FREEWAYS)	5 (125)	SKIP-DASH	WHITE	
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	SKIP-DASH AND SOLID	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE
TWO WAY LEFT TURN MARKING	8' (2.4m) LEFT ARROW	IN PAIRS	WHITE	SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN)	2 @ 6 (150)	SOLID	WHITE	NOT LESS THAN 6' (1.8 m) APART
CROSSWALK LINES (BIKE & EQUESTRIAN)	12 (300) @ 45°	SOLID	WHITE	2' (600) APART
CROSSWALK LINES (LONGITUDINAL BARS (SCHOOL))	12 (300) @ 90°	SOLID	WHITE	SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 2' (600) 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°	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m²) EACH "X"=54.0 SQ. FT. (5.0 m²)
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.

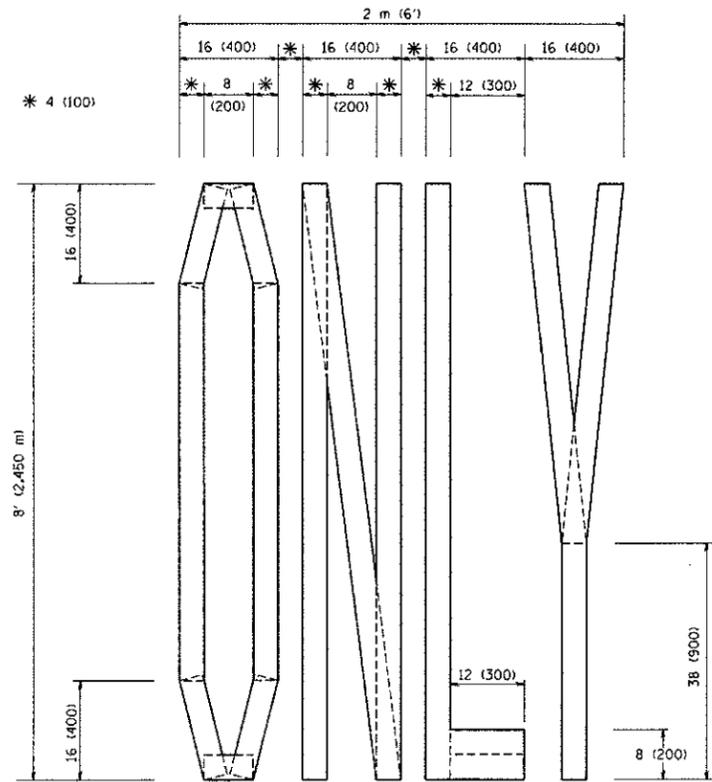
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 PEN TABLE: standard-trans.tbl

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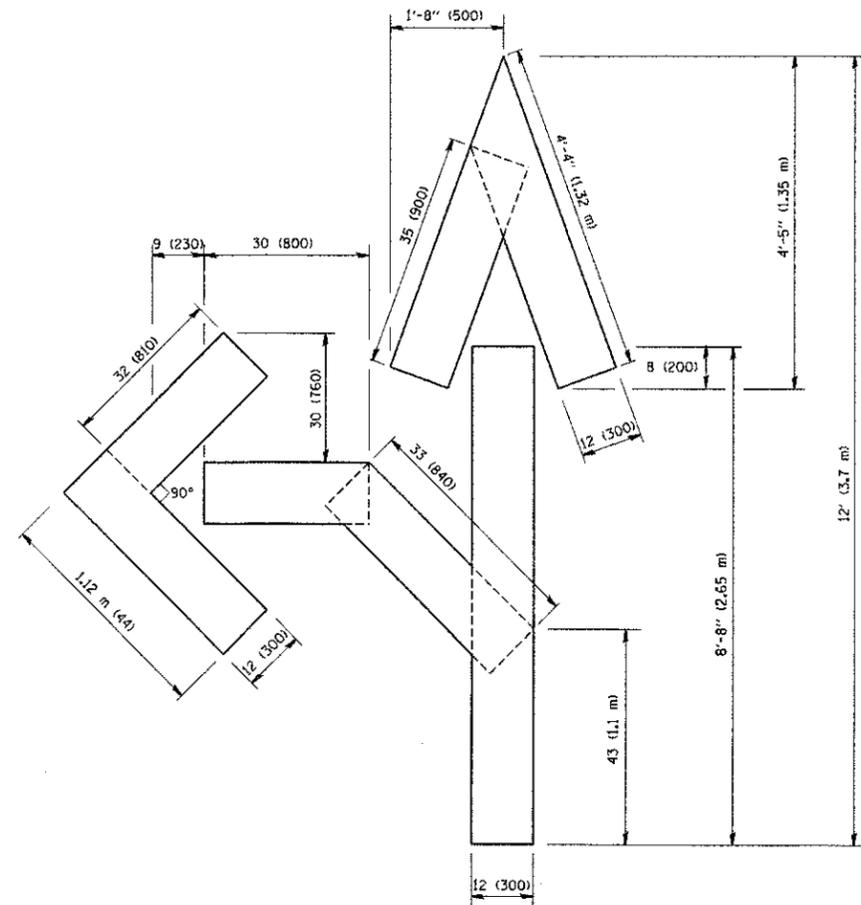
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TYPICAL PAVEMENT MARKINGS		3860	09-00372-00-PW	MCHENRY	252	184
SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. TO STA.	CONTRACT NO. 63633	

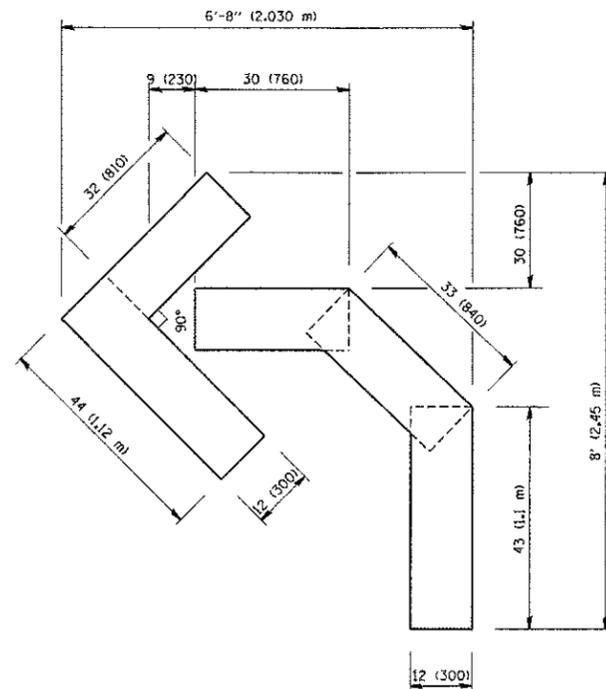
DISTRICT ONE		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TYPICAL PAVEMENT MARKINGS		3860	09-00372-00-PW	MCHENRY	252	184
SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. TO STA.	CONTRACT NO. 63633	



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)

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

COMPANY NAME: MCHENRY
 PROJECT CONTACT: 09-00372-00-PW
 DATE PLOTTED: 09/07/08 10:07 PM
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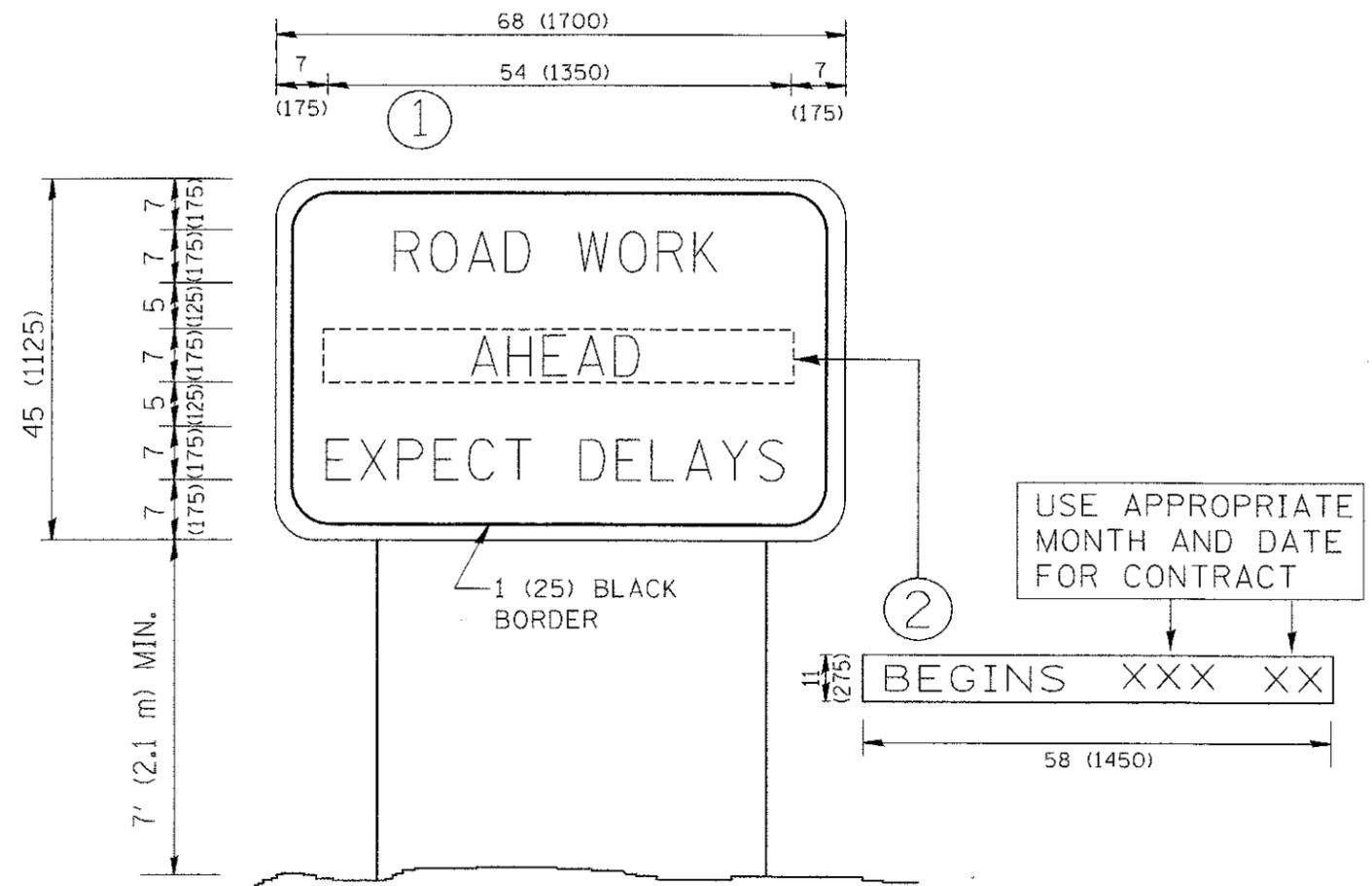
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		DESIGNED - CHECKED -	REVISOR - REVISOR -
		DATE - 09-18-94	REVISOR - E. GOMEZ 08-28-00

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING LETTERS AND SYMBOLS
 FOR TRAFFIC STAGING

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. - RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	185
TC-16			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 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.

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

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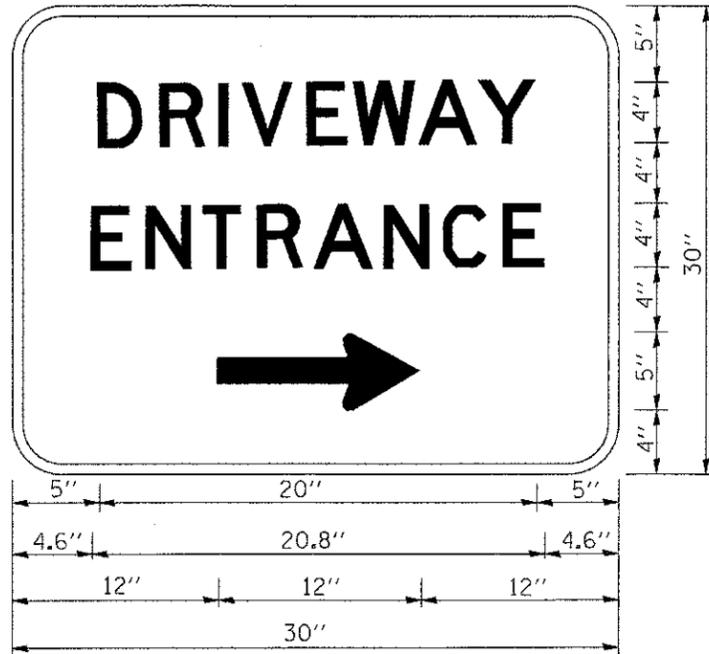
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		CHECKED -	REVISED - T. RAMMACHER 02-02-99
		DATE -	REVISED - C. JUCIUS 01-31-07
PLOT SCALE = 80.000 / 1 IN.			
PLOT DATE = 1/4/2008			

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ARTERIAL ROAD
 INFORMATION SIGN**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	186
TC-22			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



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".

COMPANY NAME: MCHENRY
 PROJECT CONTRACT: 09-00372-00-PW
 DATE PLOTTED: 7/23/2012 1:28:05 PM
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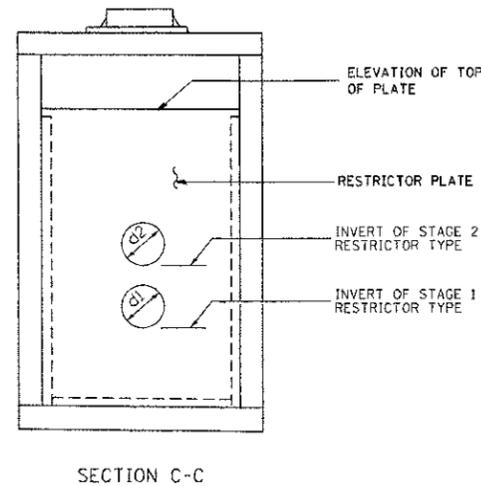
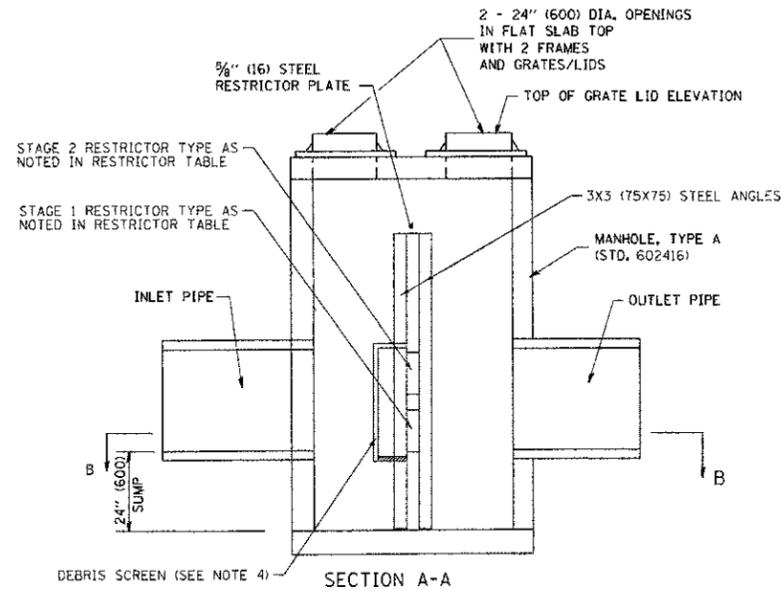
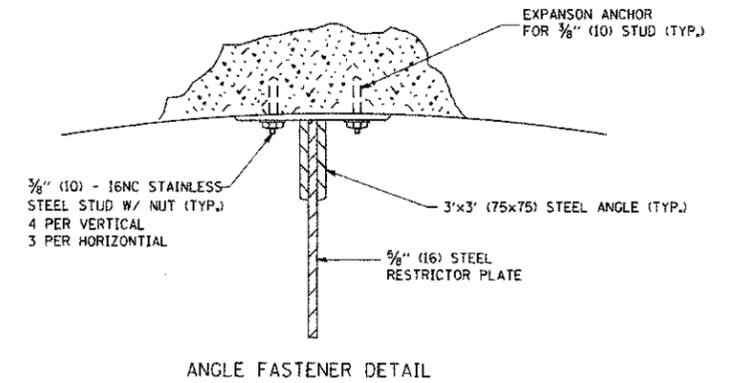
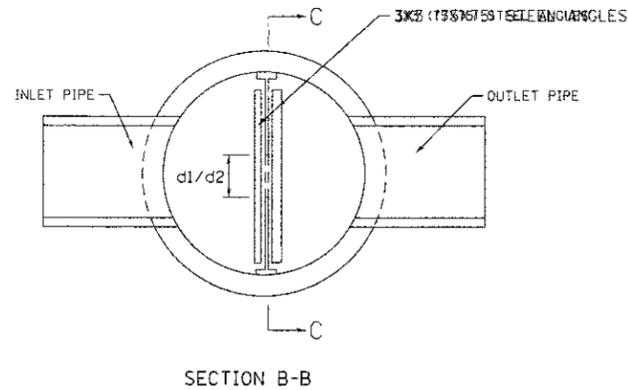
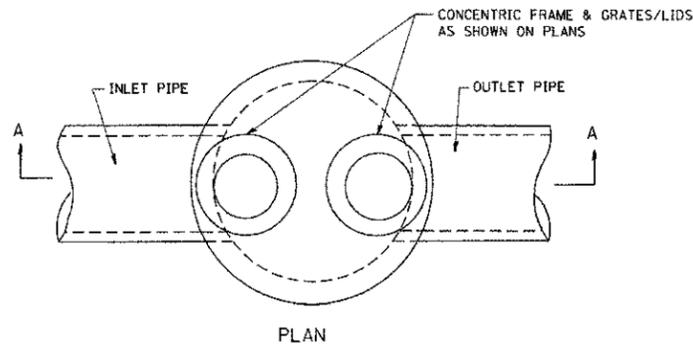
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PLOT SCALE = 50,000 ' / IN.	CHECKED -	REVISED -	REVISED -
PLOT DATE = 1/4/2008	DATE -	REVISED -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

DRIVEWAY ENTRANCE SIGNING

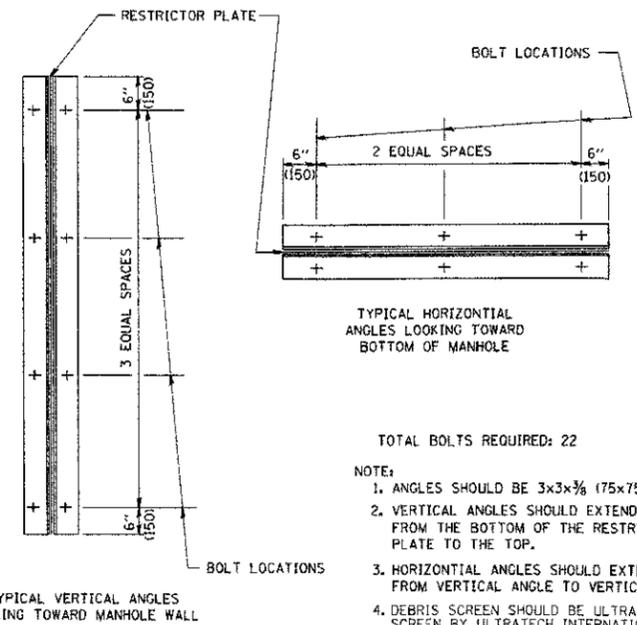
SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	187
TC-26			CONTRACT NO. 63633	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



- NOTES:
1. ALL STEEL ANGLES AND PLATES TO BE GALVANIZED AFTER FABRICATION.
 2. ALL RESTRICTOR PLATES, ANGLES AND HARDWARE TO BE INCLUDED IN THE COST OF THE MANHOLE.
 3. BASIS OF PAYMENT: "MANHOLES, TYPE A, 6 FT. (1.8 m)-DIAMETER, TYPE I FRAME, CLOSED LID, RESTRICTOR PLATE" EACH

ROUTE (ST#)	STATION	MANHOLE DIAMETER (FEET)	FRAME AND GRATE	RESTRICTOR TYPE	INSIDE RESTRICTOR DIAMETER - STAGE 1 (INCHES) d1	INVERT OF RESTRICTOR DIAMETER - STAGE 1	INSIDE RESTRICTOR DIAMETER - STAGE 2 (INCHES) d2	INVERT OF RESTRICTOR DIAMETER - STAGE 2	ELEVATION OF TOP OF PLATE
MILLER ROAD (159)	580+00.00 LT	8	TIF CL	2	4	739.40	6	739.90	742.90



- TOTAL BOLTS REQUIRED: 22
- NOTE:
1. ANGLES SHOULD BE 3x3x3/8 (75x75x75)
 2. VERTICAL ANGLES SHOULD EXTEND FROM THE BOTTOM OF THE RESTRICTOR PLATE TO THE TOP.
 3. HORIZONTAL ANGLES SHOULD EXTEND FROM VERTICAL ANGLE TO VERTICAL ANGLE.
 4. DEBRIS SCREEN SHOULD BE ULTRA-DEBRIS SCREEN BY ULTRATECH INTERNATIONAL (OR EQUAL) WWW.STORMWATERPRODUCTS.COM

RESTRICTOR TYPE					
1	2	3	4	5	6
RE-ENTRANT TUBE	SHARP EDGED	SQUARE EDGED	RE-ENTRANT TUBE	SQUARE EDGED	ROUNDED
LENGTH: 1/2 TO 1 DIA.		STREAM CLEARS SIDES	LENGTH: 2-1/2 DIA.	LENGTH: 2-1/2 DIA.	
C=.52	C=.61	C=.61	C=.73	C=.82	C=.98

VALUES OF "C" FOR CIRCULAR AND SQUARE ORIFICES

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

COMPANY NAME: HRGreen
 PROJECT CONTACT: jstano
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 FILE NAME: 090071-det-06.dgn
 PLOT DRIVER: pdfplot
 PEN TABLE: standard-trans.tbl



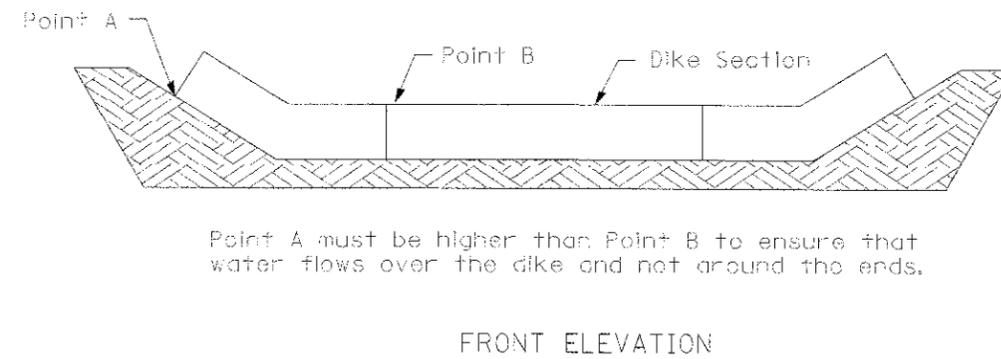
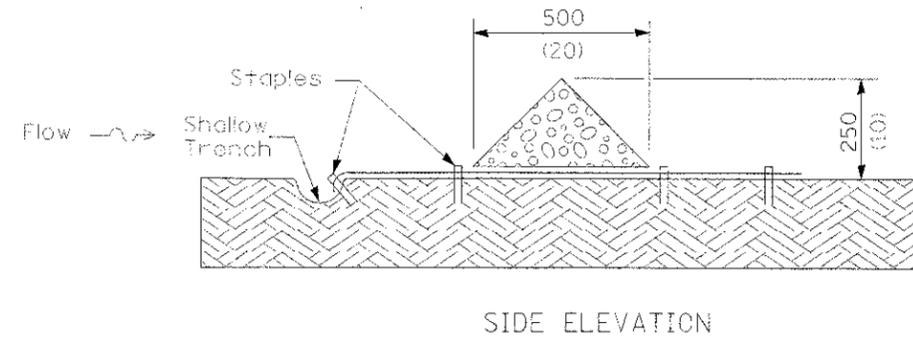
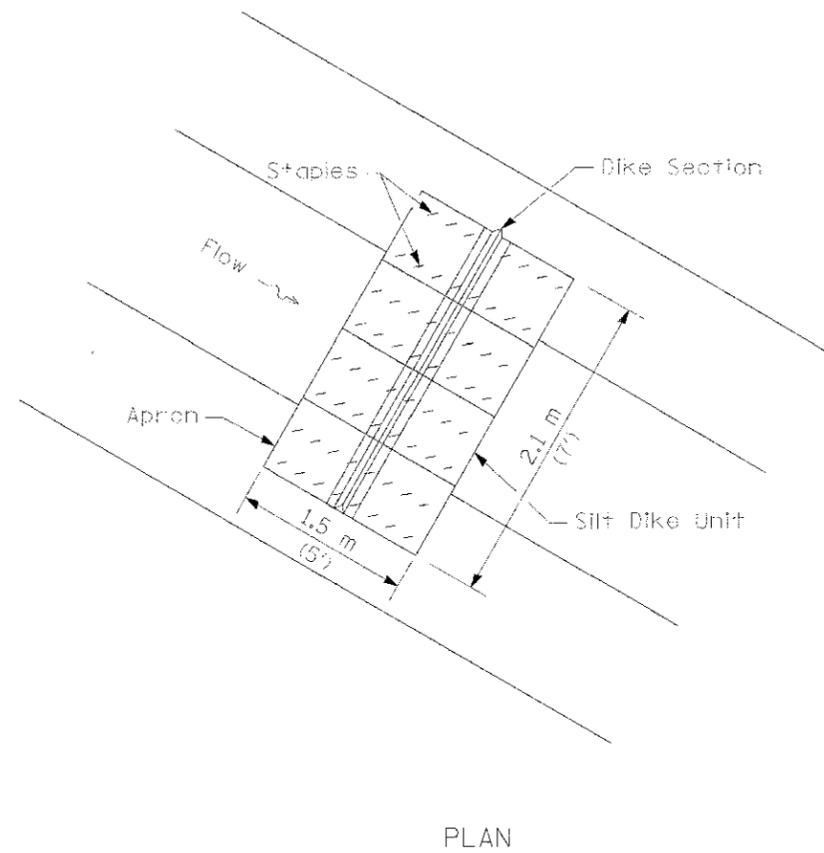
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PLOT SCALE = N.T.S.	CHECKED - JLP	REVISED -
PLOT DATE = 7/23/2012	DATE - 7/23/12	REVISED -

MCHENRY COUNTY
 DIVISION OF TRANSPORTATION

MANHOLE WITH
 RESTRICTOR PLATE

SCALE: NONE.	SHEET NO.	OF SHEETS	STA.	TO STA.
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3860	09-00372-00-PW	MCHENRY	252	188
CONTRACT NO. 63633				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



URETHANE FOAM/GEOTEXTILE DITCH CHECK

NOTES

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

McHENRY COUNTY
 09-00372-00-PW
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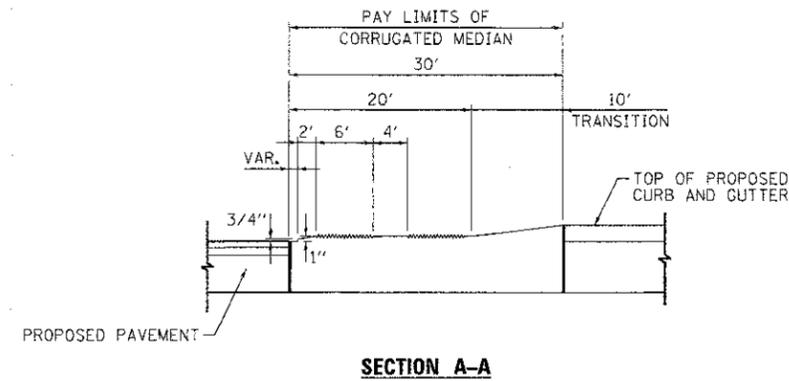
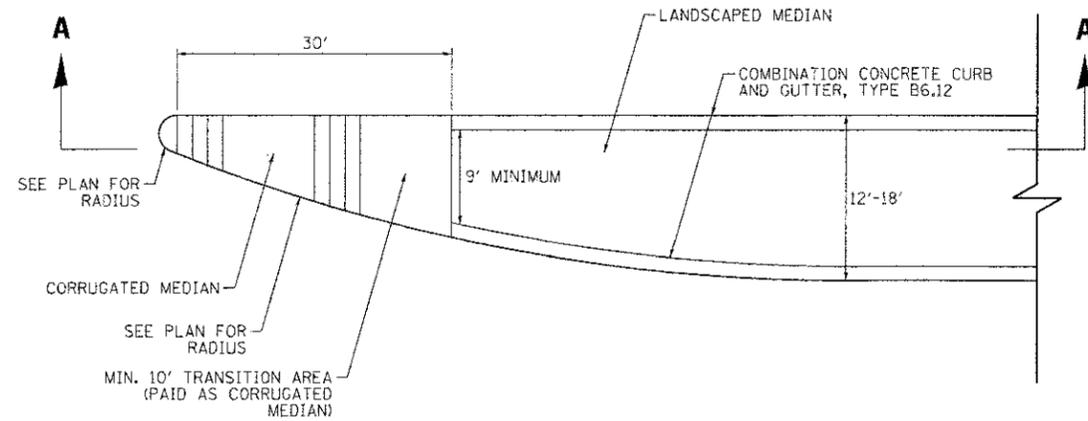
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	PLGT DATE = #DATE#	DATE -	REVISED -

**McHENRY COUNTY
 DIVISION OF TRANSPORTATION**

URETHANE FOAM/GEOTEXTILE DITCH CHECK DETAIL

SCALE: NTS SHEET NO. OF SHEETS STA. TO STA.

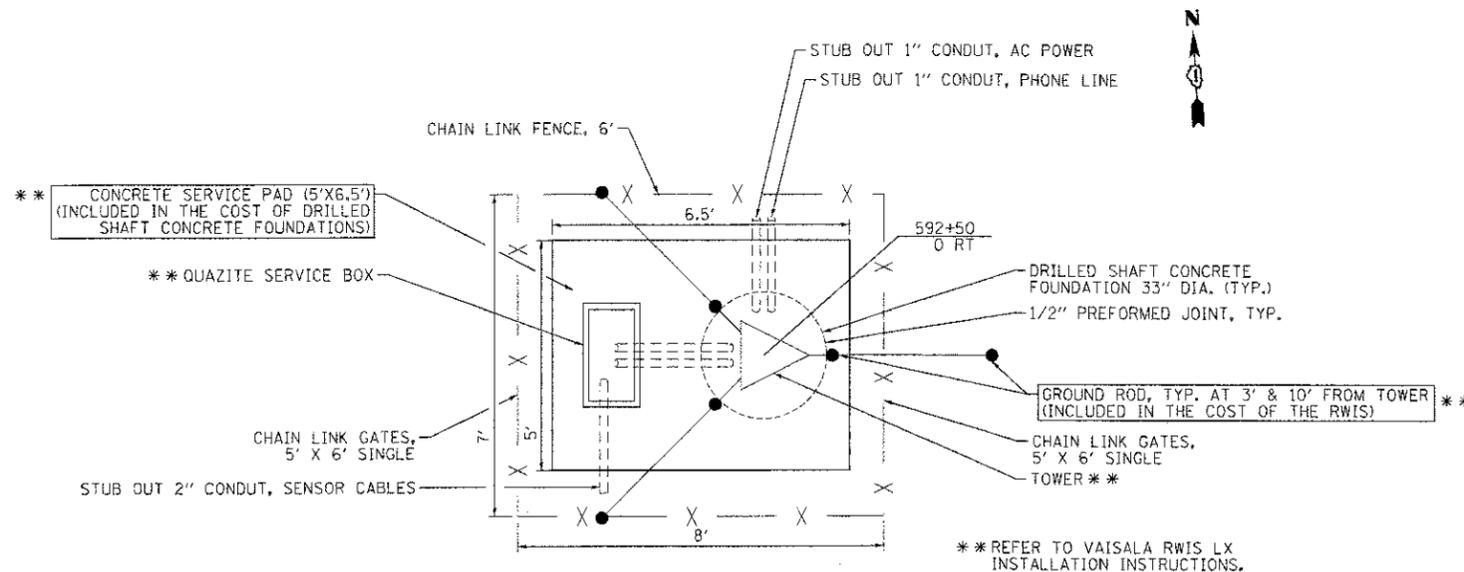
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3960	09-00372-00-PW	McHENRY	252	189
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63633	



CORRUGATED MEDIAN DETAIL
AT INTERSECTIONS

(NOTE: CORRUGATED MEDIAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST VERSION OF IDOT HIGHWAY STANDARD 606306)

ROADWAY WEATHER INFORMATION SYSTEM (RWIS)



SERVICE PAD INSTALLATION DETAIL
N.T.S.

1. CONTRACTOR SHALL PROCURE RWIS AS INDICATED IN THE CONTRACT SPECIAL PROVISIONS. CONTRACTOR SHALL INSTALL RWIS AS IN THE VAISALA INSTRUCTIONS. SITE CONTRACTOR SHALL PROVIDE BREAKER BOX WITH ALL COMPONENTS AS DETAILED ON VAISALA DRAWING DOC 220144. CONTRACTOR SHALL ALSO INSTALL ALL GROUNDING.
2. CONCRETE PAD AND CONCRETE TOWER BASE TO BE PAID FOR AS CONCRETE STRUCTURES. REINFORCEMENT SHALL BE PAID FOR AS WELDED WIRE FABRIC, OF THE SIZE SPECIFIED.
3. SEE SHEET 117 AND 135 FOR ADDITIONAL DETAILS.

TOTAL BILL OF MATERIAL - RWIS

ITEM	UNIT	QUANTITY
CHAIN LINK FENCE, 6'	FOOT	20
CHAIN LINK GATES, 5'X6' SINGLE	EACH	2
DRILLED SHAFT CONCRETE FOUNDATION	CU YD	4 *
UNDERGROUND CONDUIT, GALVANIZED STEEL 2" DIA.	FOOT	239
CONDUIT EMBEDDED IN STRUCTURE, 1" DIA., PVC	FOOT	700
UNIT DUCT, 600V, 2-1C NO. 10 (XLP-TYPE USE) 3/4" DIA. POLYETHYLENE	FOOT	750
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	FOOT	1,400
WELDED WIRE FABRIC, 6X6	SQ YD	4 *
LIGHT POLE, ALUMINUM, 40 FT. M.H.	EACH	1
PROCUREMENT AND INSTALLATION OF RWIS	L SUM	1

* CONTRACTOR TO SUBMIT FOUNDATION DESIGN PER THE RWIS (VAISALA) MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS TO THE ENGINEER & FOLLOW ALL APPLICABLE PROVISIONS OF ARTICLE 734 & ARTICLE 516 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS (2012 EDITION)

COMPANY NAME: HRGreen
PROJECT CONTACT: HRGreen.com
CLIENT: MCHENRY COUNTY
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PLOT DRIVER: pdf.plt
PEN TABLE: standard.trans.tbl



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PLOT DATE = 7/23/2012	DATE - 7/23/12	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

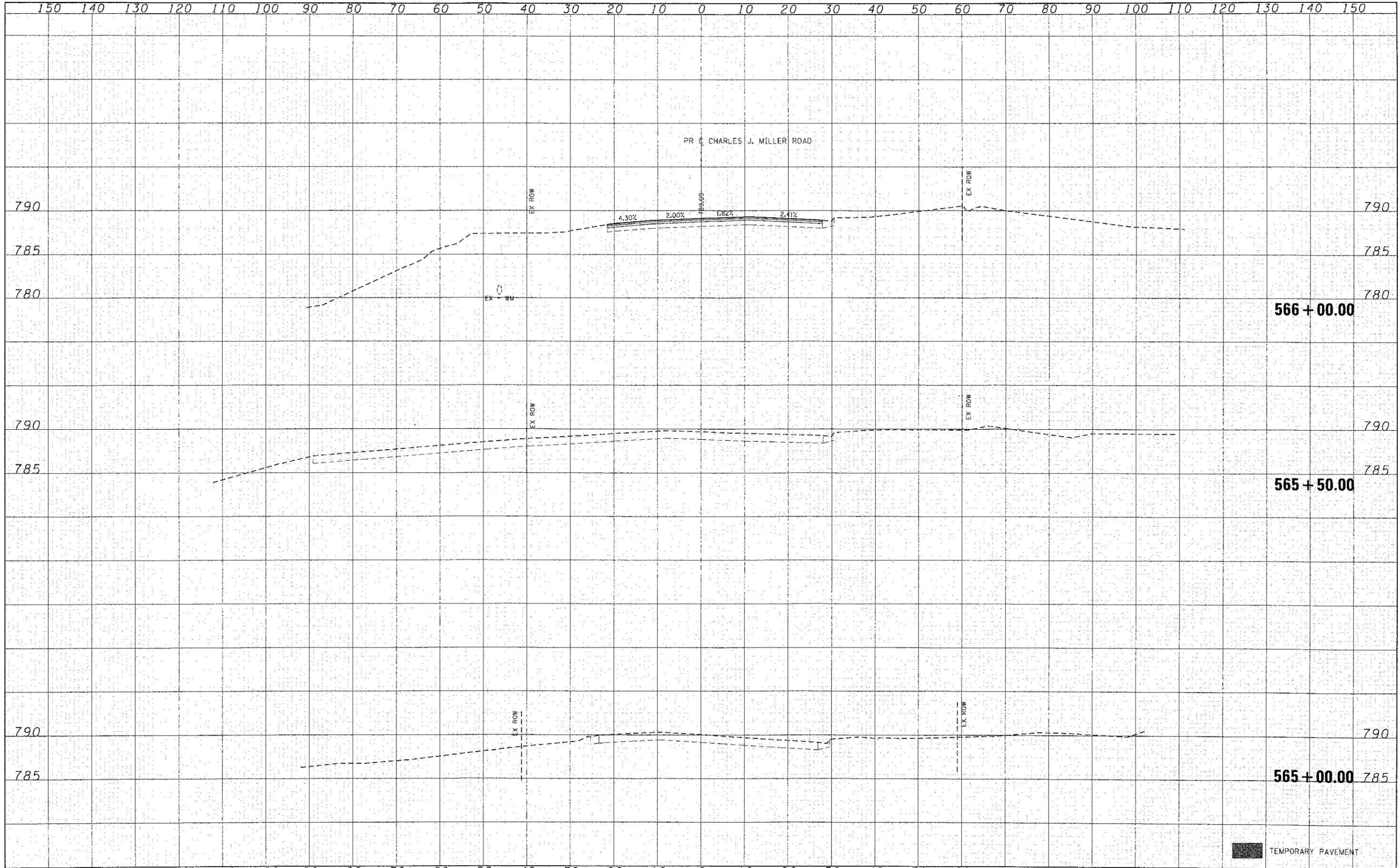
ROADWAY WEATHER INFORMATION SYSTEM (RWIS) AND CORRUGATED MEDIAN DETAIL - CHARLES J. MILLER ROAD ROADWAY IMPROVEMENTS

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

F.A.U. RTE. 3860	SECTION 09-00372-00-PW	COUNTY MCHENRY	TOTAL SHEETS 252	SHEET NO. 190
CONTRACT NO. 63633			ILLINOIS FED. AID PROJECT	

DATE	
BY	
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NOTE BOOK	
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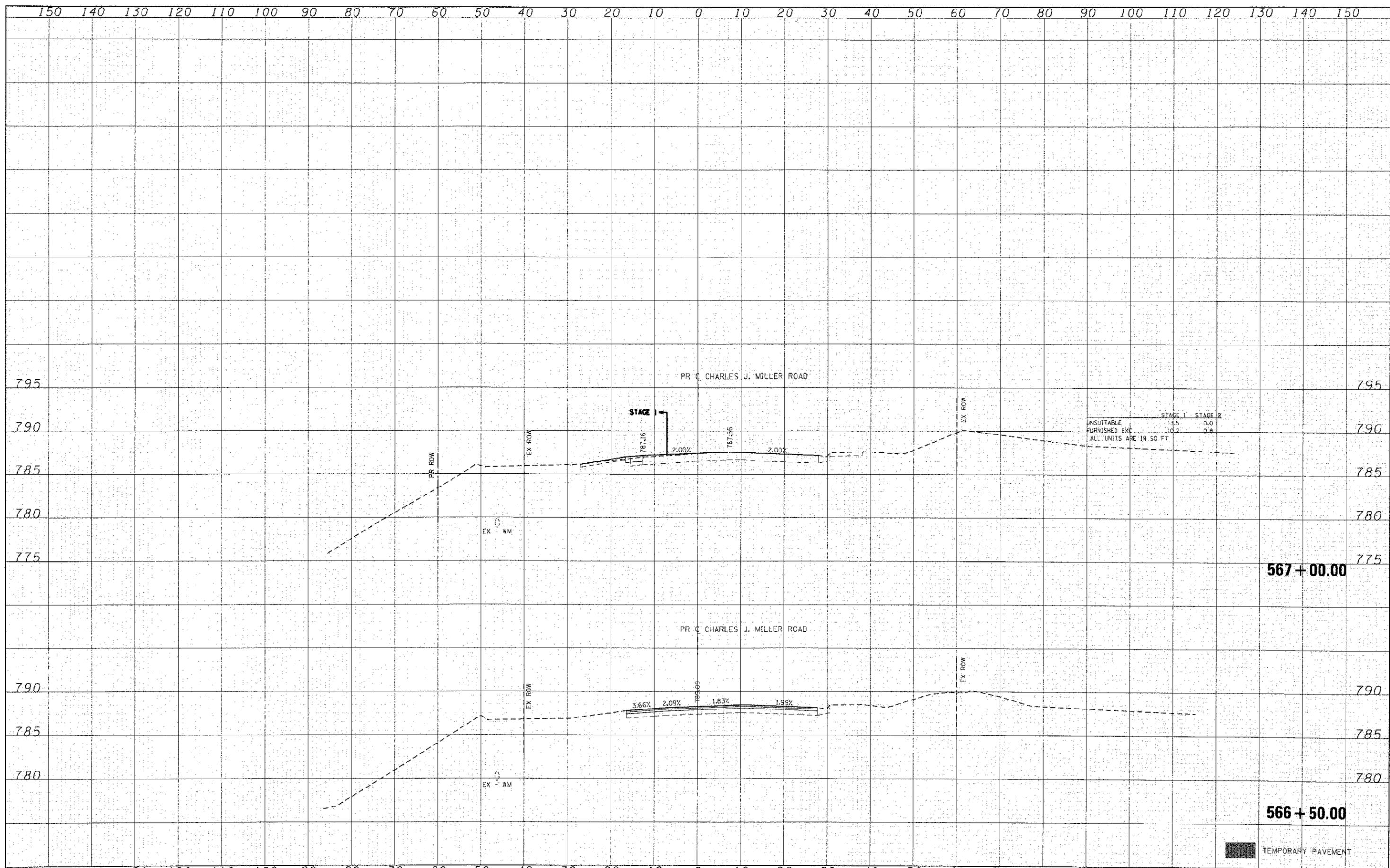
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BY	
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NOTE BOOK	
NO.	



TEMPORARY PAVEMENT

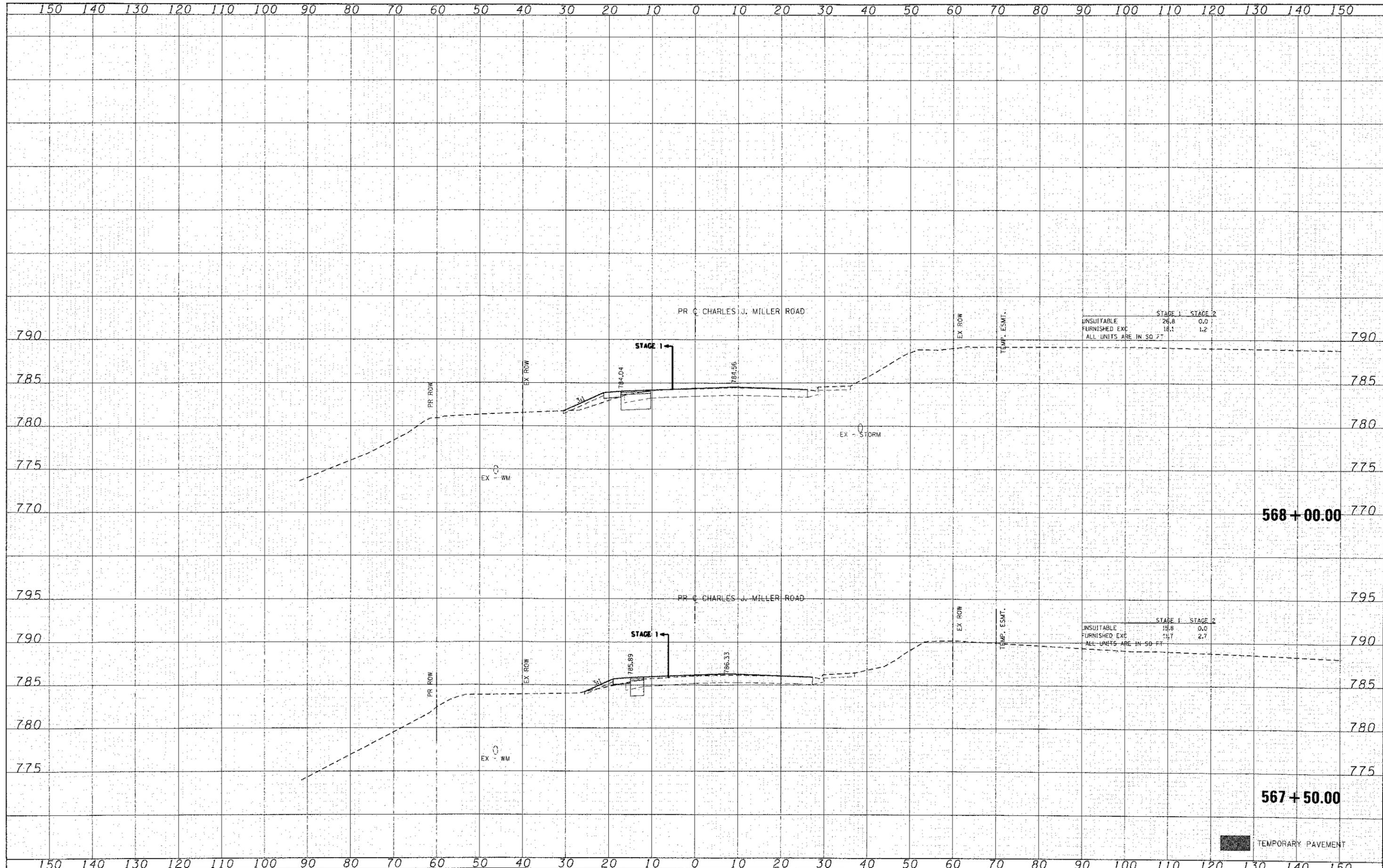
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BY	
FINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	
PLANNING	
DESIGN	
CONSTRUCTION	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	
PLANNING	
DESIGN	
CONSTRUCTION	



FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS	TEMPERATURE		
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ORIGINAL SURVEY	SURVEYED	BY	DATE
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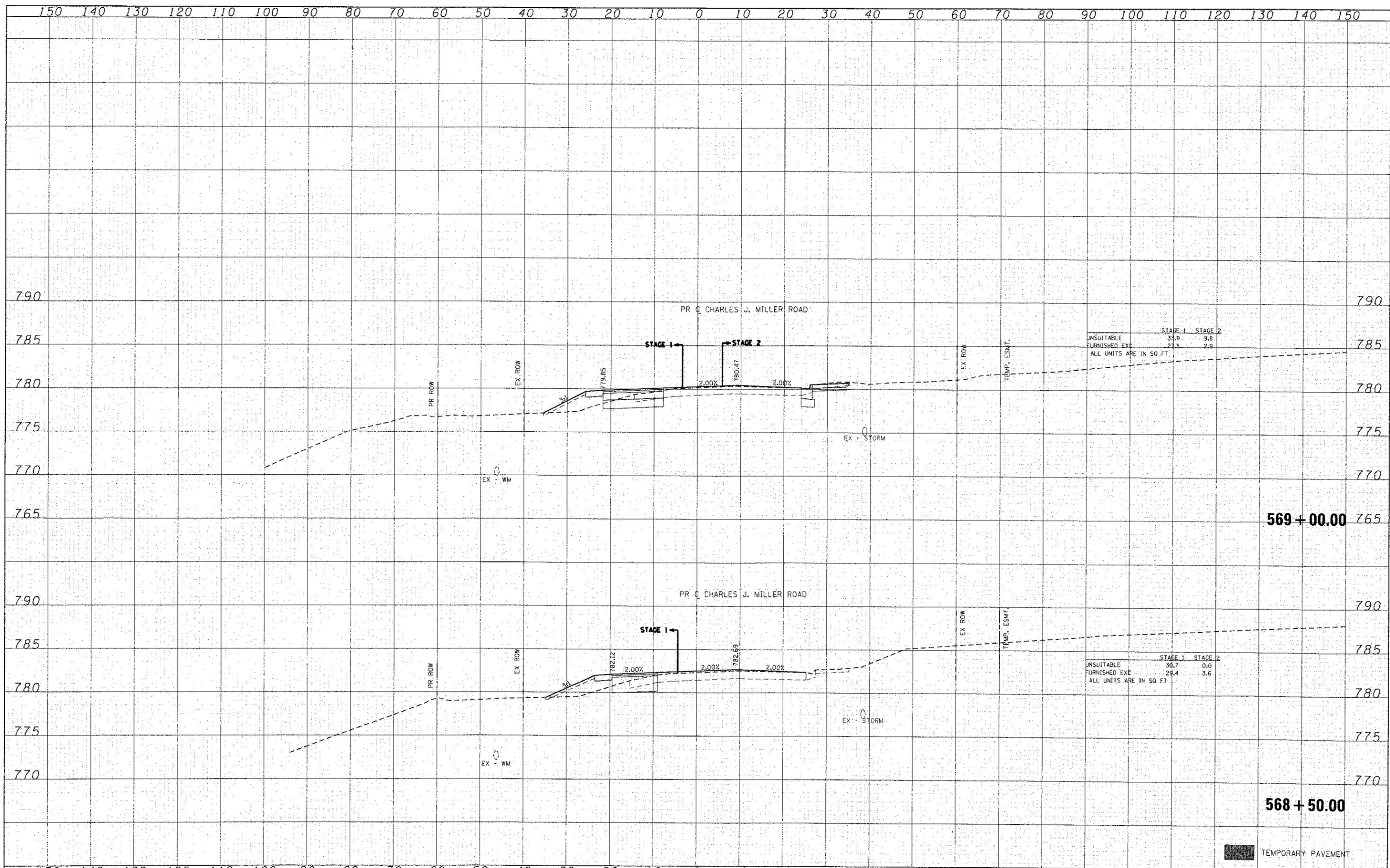


	STAGE 1	STAGE 2
INSUITABLE	26.8	0.0
FURNISHED EXC	18.1	1.2
ALL UNITS ARE IN SQ FT		

	STAGE 1	STAGE 2
INSUITABLE	19.8	0.0
FURNISHED EXC	11.7	2.7
ALL UNITS ARE IN SQ FT		

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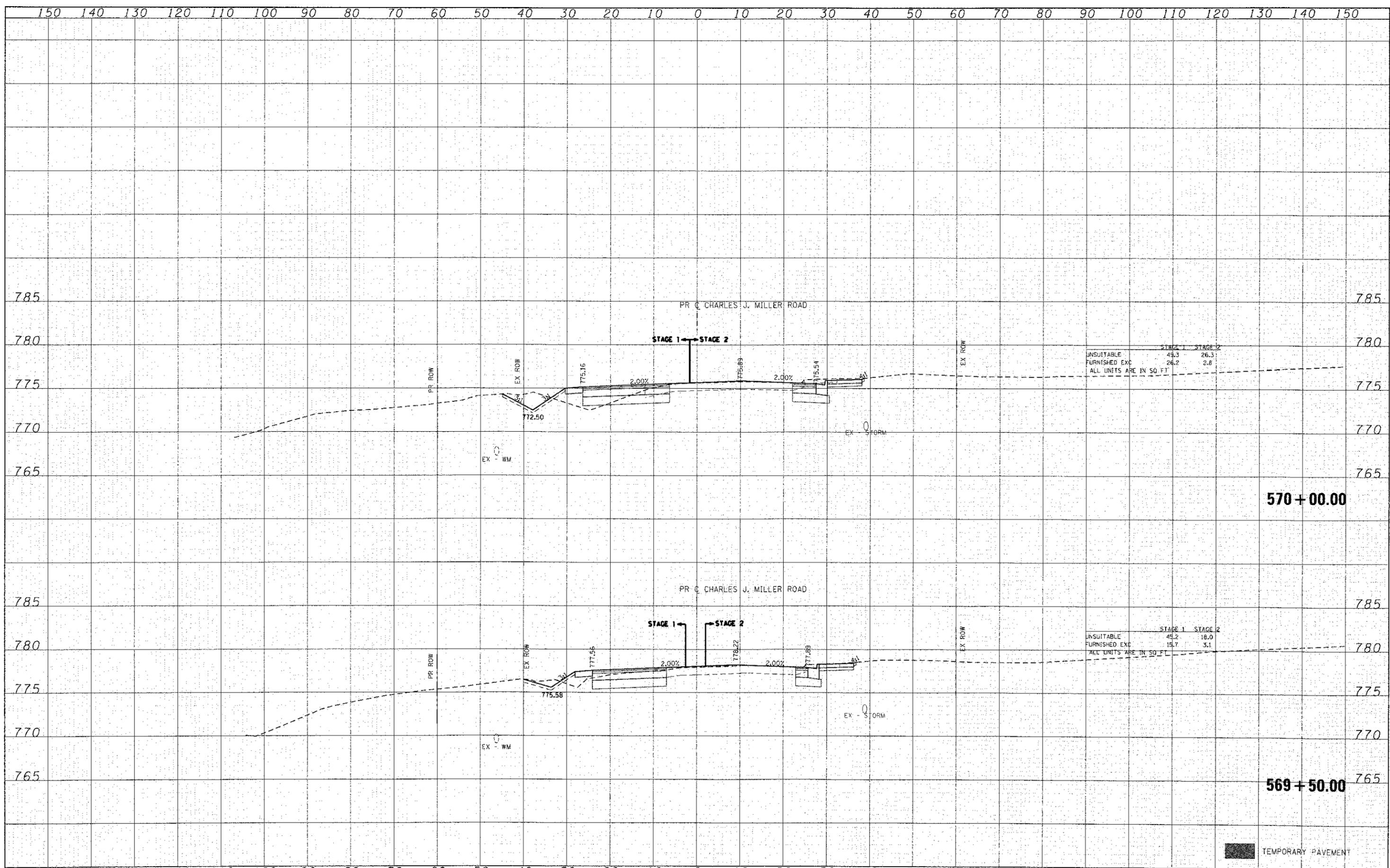
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ORIGINAL	
SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



	HRGreen.com Illinois Professional Design Firm #164-091322	USER NAME = jattane PLOT SCALE = 1" = 10' PLOT DATE = 7/23/2012	DESIGNED - CMH DRAWN - SVJ CHECKED - JLP DATE - 5/29/12	REVISED - REVISED - REVISED - REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	PROPOSED CROSS SECTIONS CHARLES J. MILLER ROAD	SCALE: 1" = 10' SHEET NO. 4 OF 62 SHEETS STA. 568+50.00 TO STA. 569+00.00	<table border="1"> <tr> <th>F.A. RTE.</th> <th>SECTION</th> <th>COUNTY</th> <th>TOTAL SHEETS NO.</th> <th>SHEET NO.</th> </tr> <tr> <td>3860</td> <td>09-00372-00-PW</td> <td>MCHENRY</td> <td>252</td> <td>194</td> </tr> </table>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.	3860	09-00372-00-PW	MCHENRY	252	194	CONTRACT NO. 63633
	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.			SHEET NO.												
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FEDERAL ROAD DIST. NO. [IL] IN ILLINOIS FED. AID PROJECT																			

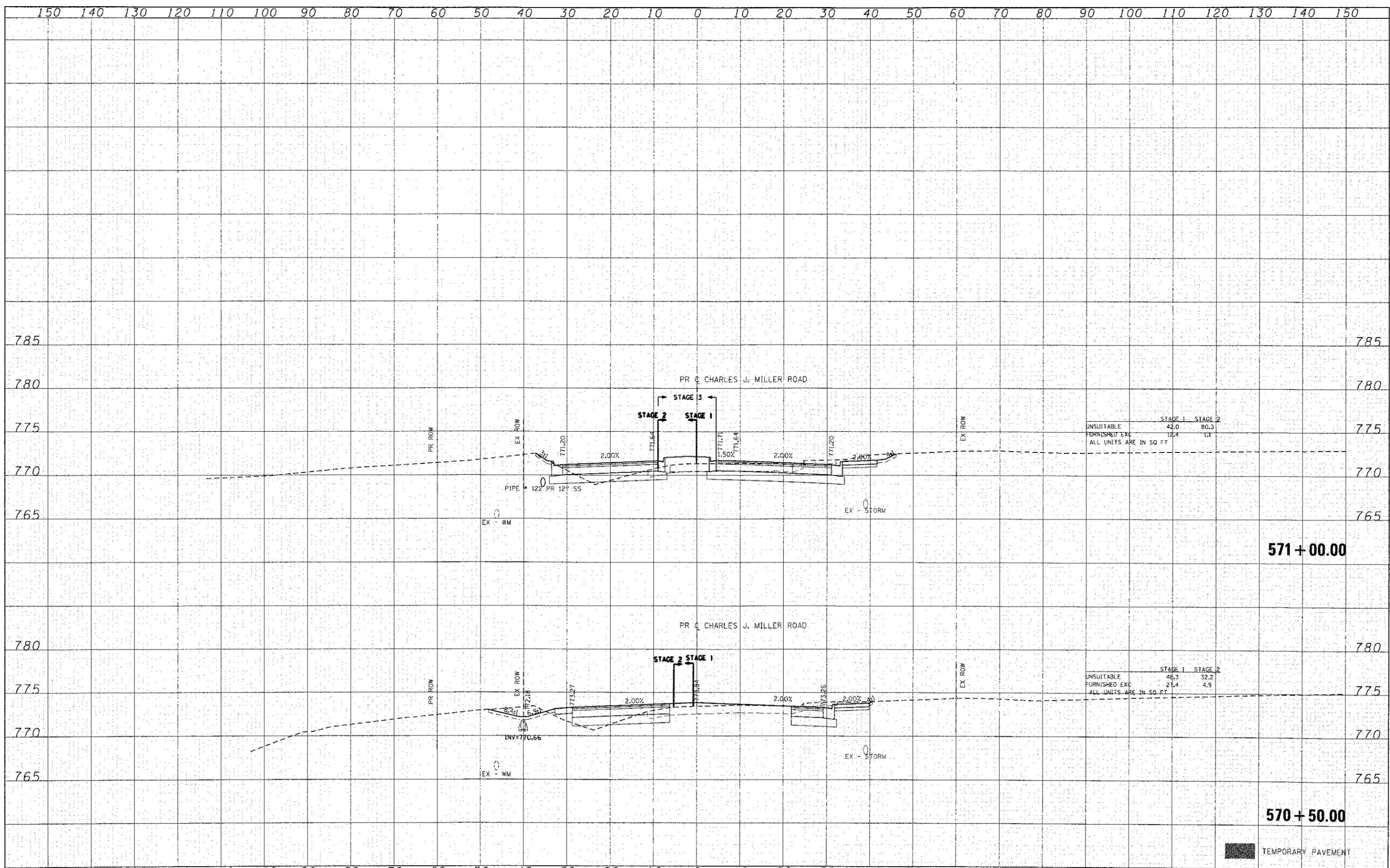
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BY	
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NOTE BOOK	
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DATE	
BY	
ORIGINAL SURVEY	
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NOTE BOOK	
AREAS CHECKED	



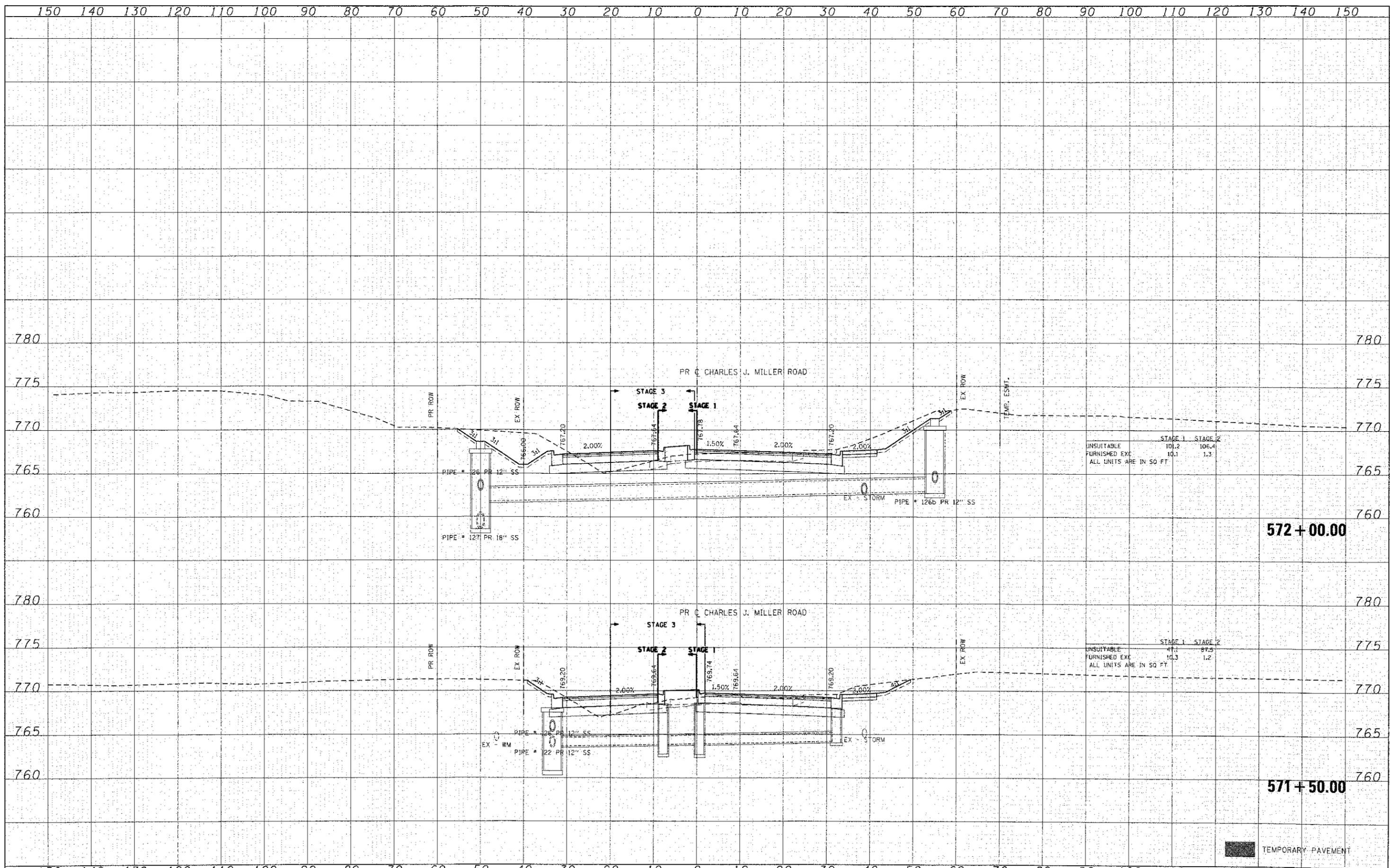
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ORIGINAL SURVEY	DATE
SURVEYED	
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NOTE BOOK	
AREAS CHECKED	



FINAL SURVEYED	DATE
SKETCH	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	

ORIGINAL SURVEYED	DATE
SKETCH	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	



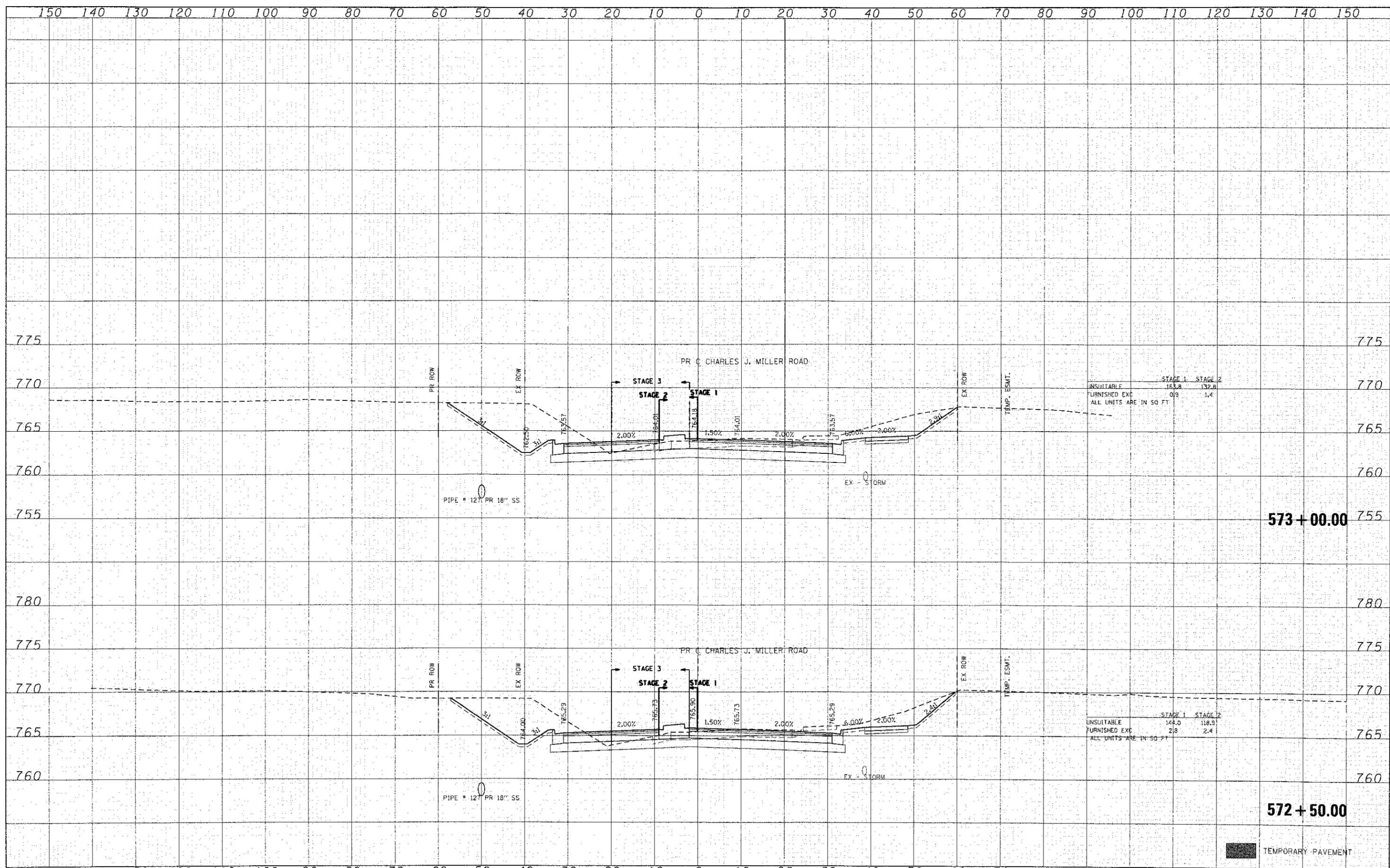
	STAGE 1	STAGE 2
UNSUITABLE	101.2	106.4
FURNISHED EXC	10.1	1.3
ALL UNITS ARE IN SQ FT		

	STAGE 1	STAGE 2
UNSUITABLE	41.1	81.5
FURNISHED EXC	10.3	1.2
ALL UNITS ARE IN SQ FT		

TEMPORARY PAVEMENT

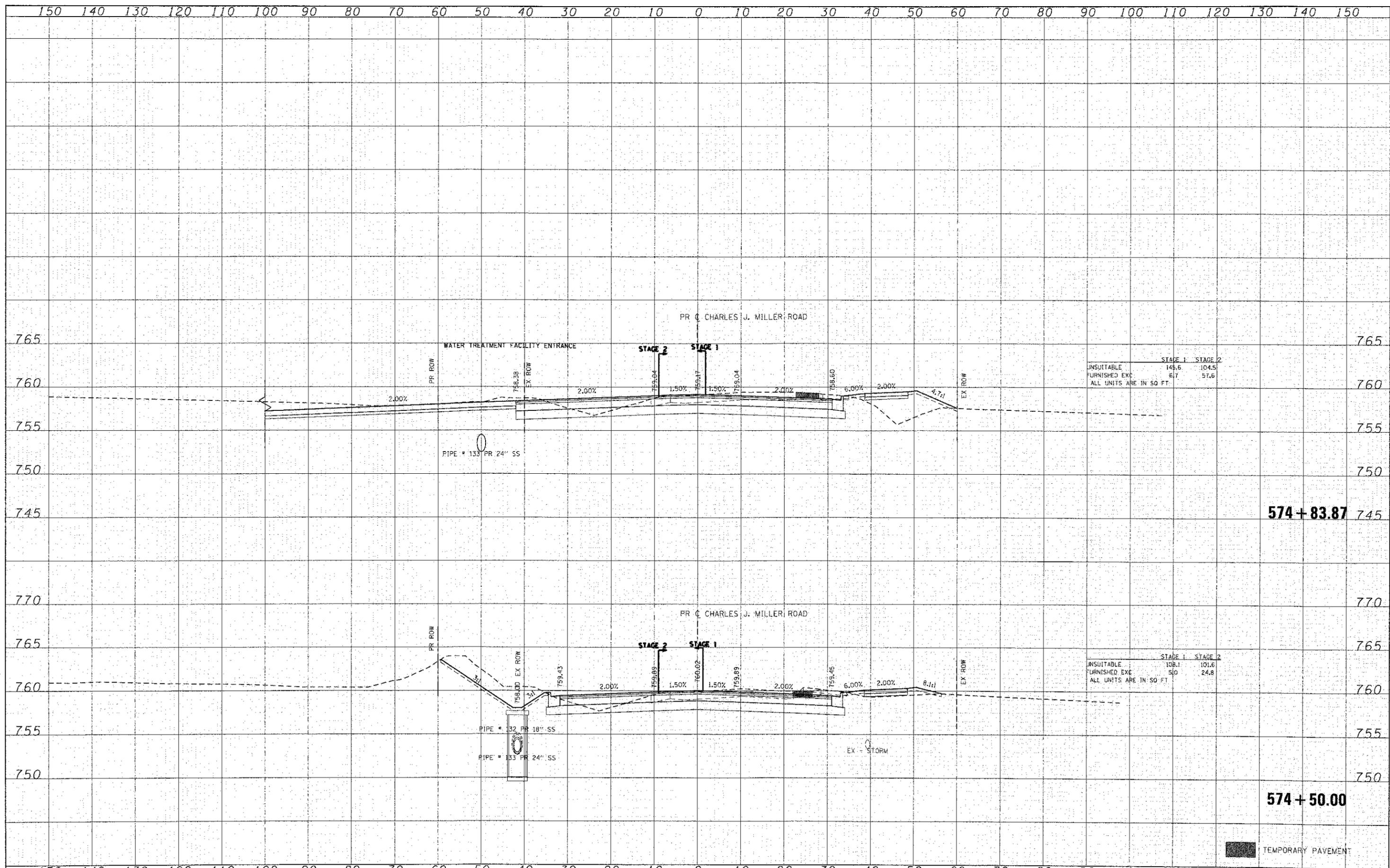
DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
USER NAME	
PLOT SCALE	
PLOT DATE	

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
USER NAME	
PLOT SCALE	
PLOT DATE	



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

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



HRGreen.com Illinois Professional Design Firm #184-001932	USER NAME = jastana PLOT SCALE = 1" = 10' PLOT DATE = 7/23/2012	DESIGNED - CMH DRAWN - SVJ CHECKED - JLP DATE - 5/29/12	REVISED - REVISED - REVISED - REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	PROPOSED CROSS SECTIONS CHARLES J. MILLER ROAD	SCALE: 1" = 10' SHEET NO. 10 OF 62 SHEETS STA. 574+50.00 TO STA. 574+83.87	<table border="1"> <tr> <th>F.A. RTE.</th> <th>SECTION</th> <th>COUNTY</th> <th>TOTAL SHEETS</th> <th>SHEET NO.</th> </tr> <tr> <td>3860</td> <td>09-00372-00-PW</td> <td>MCHENRY</td> <td>252</td> <td>200</td> </tr> </table>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	3860	09-00372-00-PW	MCHENRY	252	200
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.													
3860	09-00372-00-PW	MCHENRY	252	200													

CONTRACT NO.	63633
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT