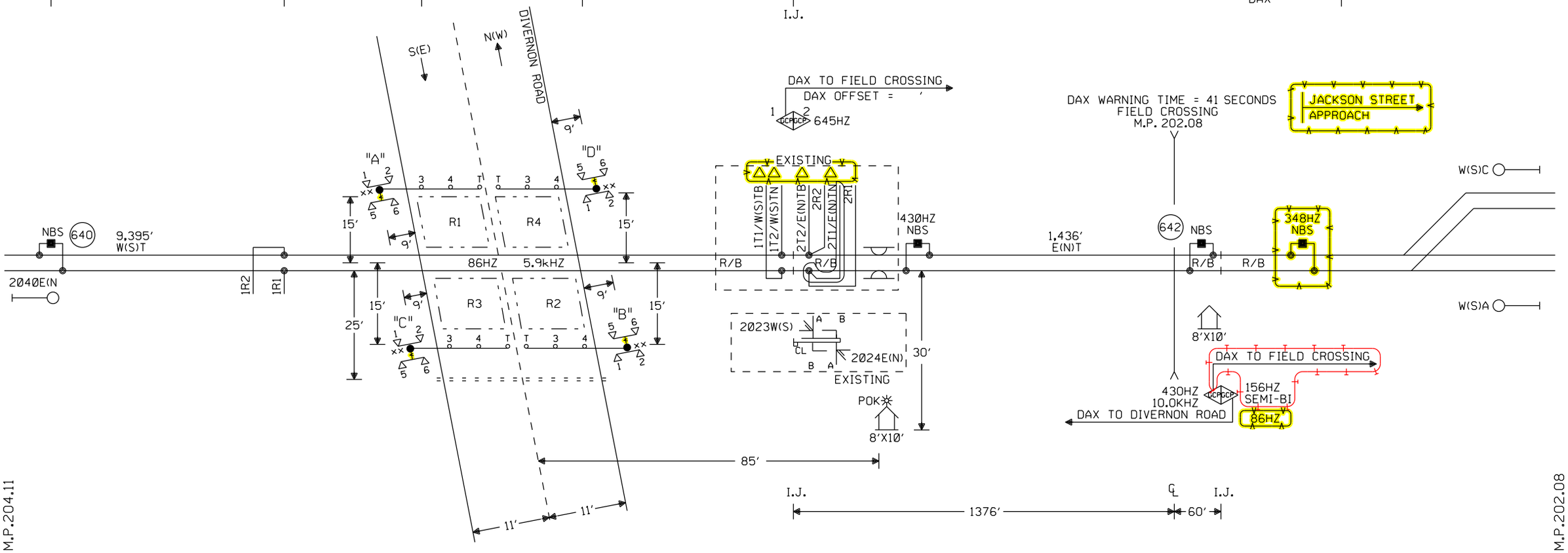
ITCS HIGH SPEED WARNING TIME 86 SECONDS

TO SPRINGFIELD CONN.

TO BLOOMINGTON YARD

PRIME WARNING TIME = 35 SECONDS

4636' 35+5 SEC. @ 79 M.P.H. — 50' — 23' — 67' — I.J. — 4636' 35+5 SEC. @ 79 M.P.H. — DAX



NOTES:

⊗ = TWISTED WIRES
INSULATED 1 TWIST PER FT.
ALL TRACK WIRES 2C. #6

TRANSMITTER AND RECEIVER LEADS TO BE SEPARATED BY AT LEAST 12" IN TRENCH, LENGTHS SHOULD NOT EXCEED MANUFACTURES RECOMMENDATION.

TOP OF FOUNDATION TO BE AT SAME ELEVATION AS THE SURFACE OF THE TRAVELED WAY & NO MORE THAN 4" ABOVE THE SURFACE OF THE GROUND.

ALL BUNGALOW WIRING TO BE #16 AWG FLEX UNLESS OTHERWISE SPECIFIED EXCEPT ALL GROUND WIRE TO BE #6 AWG FLEX OR LARGER.

ALL WIRING IN GATE MECHANISM TO BE #10 "AWG FLEX".

REFER TO UP STANDARD DWG FOR BUNGALOW GROUNDING.

PORTABLE GENERATOR EXTENSION CORD FOR 240V TO 240V IS PROVIDED AS WELL AS A 120V TO 240V ADAPTER.

ALL LIGHTS TO BE 12" ROUNDELS.

= = = = = = 4" X 100' CONDUIT

LIGHTS: LED LIGHTS

GATE A: 20'
GATE B: 20'
GATE C: 20'
GATE D: 20'

xx = BELL

△ = ENSURE TRACK POLARITY IS TRANSPOSED ACROSS ALL INSULATED JOINTS.

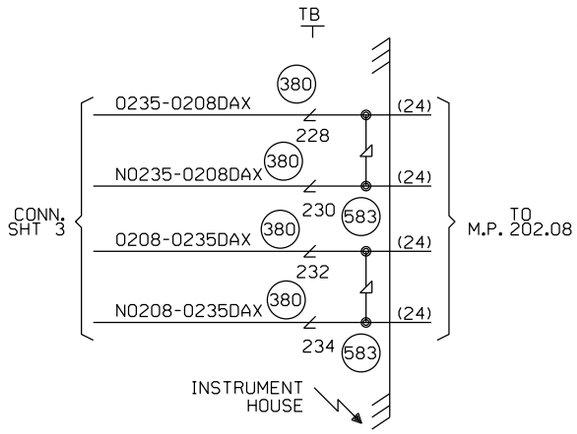
EXIT GATE MANAGEMENT SYSTEM (EGMS) LOOP LOCATION:

1.) 12" FROM CONCRETE CROSSING PANEL. MAY VARY FROM 6" TO 12" DEPENDING ON PAVEMENT QUALITY.
2.) 2' FROM CROSSING CENTERLINE.
3.) 3.5' FROM GATE ARM.
4.) 2' FROM THE EDGE OF THE TRAVELED WAY. MAY BE INCREASED UP TO A MAXIMUM OF 5' WHERE AN IMPROVED SHOULDER OR OTHER EXISTS.
5.) MAXIMUM LOOP WIDTH NOT TO EXCEED 8' AND MINIMUM WIDTH TYPICALLY NOT TO BE LESS THAN 5'. LOOPS BETWEEN TRACKS MUST NOT BE LESS THAN 3'. HOWEVER SMALLER LOOPS ARE ACCEPTABLE.
6.) DISTANCE BETWEEN ADJACENT LOOPS FOR ONE DIRECTION OF TRAFFIC MUST NOT EXCEED 13'.
7.) MAXIMUM LOOP AREA NOT TO EXCEED 144 SQUARE FEET.
8.) MAXIMUM LENGTH OF THE LONGEST SIDE OF A LOOP SHALL NOT EXCEED 28'6".

——— = EGMS LOOP

CONSTRUCTION NOTE:

1. CABIN LOCATION NEEDS TO BE VERIFIED BY ICC PERSONNEL.
2. WHEN PLACING THE HOUSE THE 10' OR LONG SIDE OF THE HOUSE NEEDS TO BE PARALLEL WITH THE TRACKS.
3. TRACK WIRES AT IJ WERE INSTALLED IN TIER 2 PHASE 2.
4. NEW CROSSING EQUIPMENT LOCATED IN NEW HOUSE INSTALLED IN TIER 2 PHASE 2 TO BE PLACED IN SERVICE IN TIER 3 PHASE 1.
5. ADD EXTENSION ARMS TO THE FLASHERS ALLOWING CLEARANCE FOR THE GATE ARM WHEN IN THE VERTICAL POSITION.



W(S) ◄——○——► E(N)

CABLE TABULATION

CABLE NO. 24 7C#14 U.G.B.T. HOUSE TO M.P. 202.08

○ = EXISTING/REVISE ORIGINALS IF A.C.'D

▽▽ = IN
┬┬ = OUT

NEW SHEET

Designed: 04/28/14
TIER 3 PHASE 1
M.P. 202.30 TO M.P. 194.80
HSR SCOPE CHANGE
Rec'd: IS:
WO#: 14052
/NST/MJF

Designed: 3/09/12
TIER 3 PHASE 1
M.P.202.30 TO M.P.194.80
UPGRADE XINGS TO 4 QUAD WITH EGMS.
VARIOUS CP'S
Rec'd: IS:
WO#: 14052
MWK/ /NST/MJF

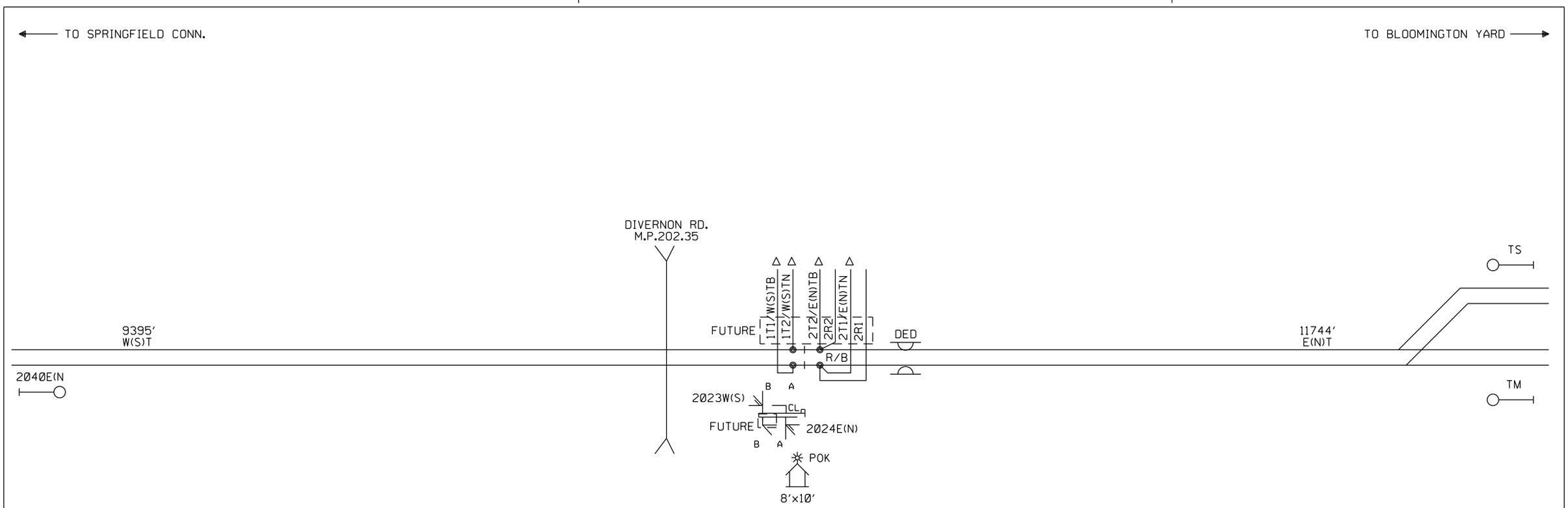
MODIFICATION LEVEL	
Q.A. LAST LEVEL CHECKED	DU
LAST LEVEL MOD THIS TYPICAL	DU
LAST LEVEL BY DESIGNER	DU
CHANGED FROM TYPICAL? rev 01.24.11 4K 2TKEGMS.1	Y

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 01/23/12
Des: NST
Chk: MWK
AFE: 12774

UNION PACIFIC RAILROAD
AUBURN, ILLINOIS
DIVERNON ROAD
SPRINGFIELD SUBDIVISION
Office of AVP Engineering-Signal — Omaha, Nebraska

Sh.: 1
DOT 294354F
MP: 202.35
ID: CSL20235.1X



Δ = ENSURE TRACK POLARITY IS TRANSPOSED ACROSS ALL INSULATED JOINTS.

CONSTRUCTION NOTES:

1. CROSSING EQUIPMENT FOR DIVERNON ROAD TO BE WIRED IN TIER 2 PHASE 2 BUT NOT PUT IN SERVICE UNTIL TIER 3 PHASE 1. EXISTING CROSSING EQUIPMENT TO REMAIN IN SERVICE
2. CABLE FOR GATES AND FLASHERS FOR DIVERNON ROAD TO BE INSTALLED IN TIER 3 PHASE 1
3. TRACK CUT IS EXISTING
4. NEW 8'X10' HOUSE SHOULD BE INSTALLED 30' FROM DIVERNON ROAD AND 25' FROM THE NEAREST RAIL

W(S) ◄——○——► E(N)

TO BE VOIDED
03/09/12
W.O. 14052 NST/MJF

NEW SHEET

					Designed: 01/23/12 TIER 2 PHASE 2 M.P. 216.08 TO M.P. 202.35 UPGRADE XINGS TO 4 QUAD WITH EGMS, VARIOUS CP'S Rec'd: WO#: 12774 IS: MWK/ / /NST/MJF	MODIFICATION LEVEL O.A. LAST LEVEL CHECKED — DU LAST LEVEL MOD THIS TYPICAL — DU LAST LEVEL BY DESIGNER — DU CHANGED FROM TYPICAL? — Y REV 01.24.11 4K 2TKEGMS.1	CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN	Date: 01/23/12 Des: NST Chk: MWK AFE: 12774	UNION PACIFIC RAILROAD AUBURN, ILLINOIS DIVERNON ROAD SPRINGFIELD SUBDIVISION Office of AVP Engineering - Signal Omaha, Nebraska	Sh.: 1 DOT 294354F MP: 202.35 ID: CSL20235.1S

The Incremental Train Control System (ITCS) provides advance activation of the crossings for all ITCS equipped trains travleing over 20 M.P.H. The ITCS is a communication-based train control system that provides enforcement and advanced start of public crossings. ITCS vitally monitors the existing crossings as a basis for determining permissible action and uses a radio frequency (RF) data link with a vital communication protocol to send wayside status to the trains. Enforcement of speed limits is performed vitally by an onboard computer (OBC). The wayside components monitor Crossing Warning Systems and relay the information to the train over the RF network as a list of device statuses. The OBC interprets the statuses and enforces all speed limits and braking based upon those statuses. The OBC must receive an acknowledgment from the crossing, verifying the proper operation of the Crossing Warning System, before the train can proceed at high speed through the crossings aprroach circuit. This is the High Speed OK (HSOK) status. If this status is not true, a 79 M.P.H. target speed limit is placed at the start of the conventional track circuit based approach of the crossing.
Conditions that would cause this to happen are:

- The Advance Start Enable test switch is open.
- The Crossing has been activated longer than 2 3.5 minutes but less than 5 minutes, without a train present on the crossing.
- The loss of communitations longer than 2 minutes 30 seconds.

The most restrictive status in the health status. If the health status for the crossing is not true a 15 M.P.H. target speed limit is placed at the leading island wires of the crossing.
Conditions that would cause this to happen are:

- Activation failure detected. (A No vertical gate not contact indicating de-energized within 10 seconds of request for crossing to activate)

  If this failure has occurred it requires the advance start enable test switch to be opened to reset the box before any further High Speed operation is allowed.
- The crossing has been activated longer than 5 minuts. minutes, without a train present on the crossing.
- The vehicle detector does not indicate clear, or the Gate Down circuit not energized within 20 seconds (Field adjustable) of crossing being requested to activate.
- The vehicle detector health not true. This input consists of the detector loop health, EGMS health, Battery health, and Long Term Occupancy of Vehicle Detector Loop (Greater than 1 minute.)

= IN
= OUT
= IN
= OUT
~~NEW SHEET~~

Designed: 09/29/14
TIER 3 PHASE 1
M.P. 202.30 TO
M.P. 194.80
HSR SCOPE CHANGE
Rec's:
IS's:
WO's: 14052
/NST/MJF

Designed: 3/09/12
TIER 3 PHASE 1
M.P.202.30 TO
M.P.194.80
UPGRADE XINGS TO
4 QUAD WITH EGMS,
VARIOUS CP'S
Rec's:
IS's:
WO's: 14052
MWK/
/NST/MJF

Designed: 01/23/12
TIER 2 PHASE 2
M.P. 216.08 TO
M.P. 202.35
UPGRADE XINGS TO
4 QUAD WITH EGMS,
VARIOUS CP'S
Rec's:
IS:
WO's: 12774
MWK/
/NST/MJF

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 01/23/12
Des: NST
Chk: MWK
AFE: 12774

UNION PACIFIC RAILROAD
AUBURN, ILLINOIS
DIVERNON ROAD
SPRINGFIELD SUBDIVISION
Office of AVP Engineering-Signal Omaha, Nebraska

Sh.: 1A
DOT 294354F
MP: 202.35
ID: CSL20235.1AX