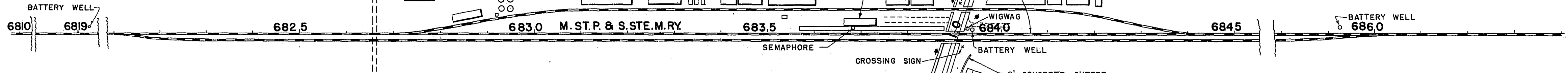
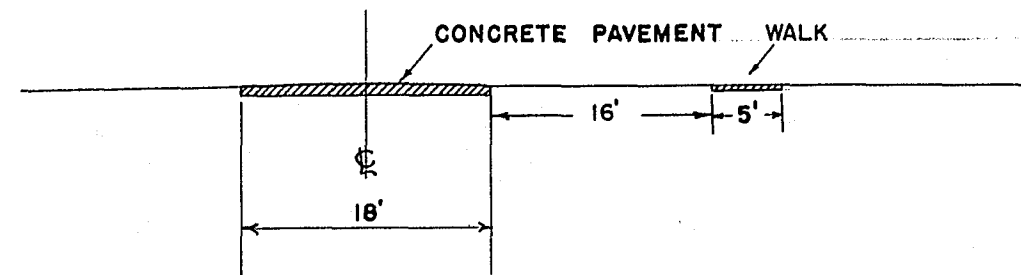
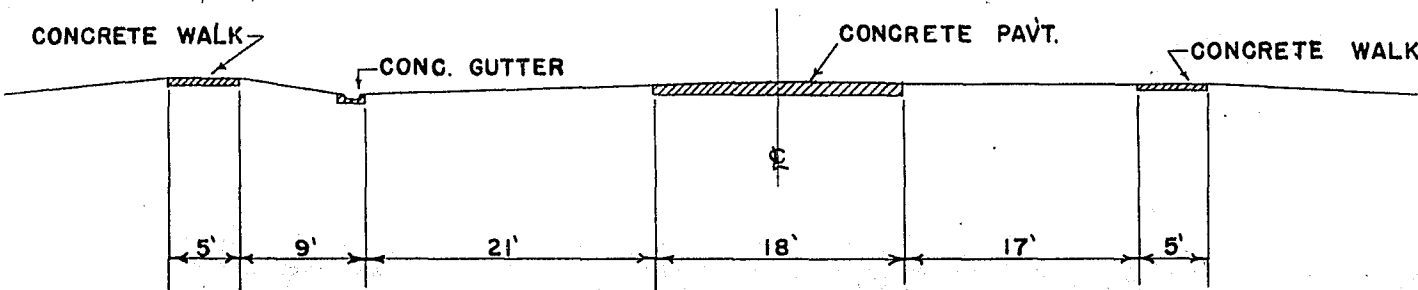


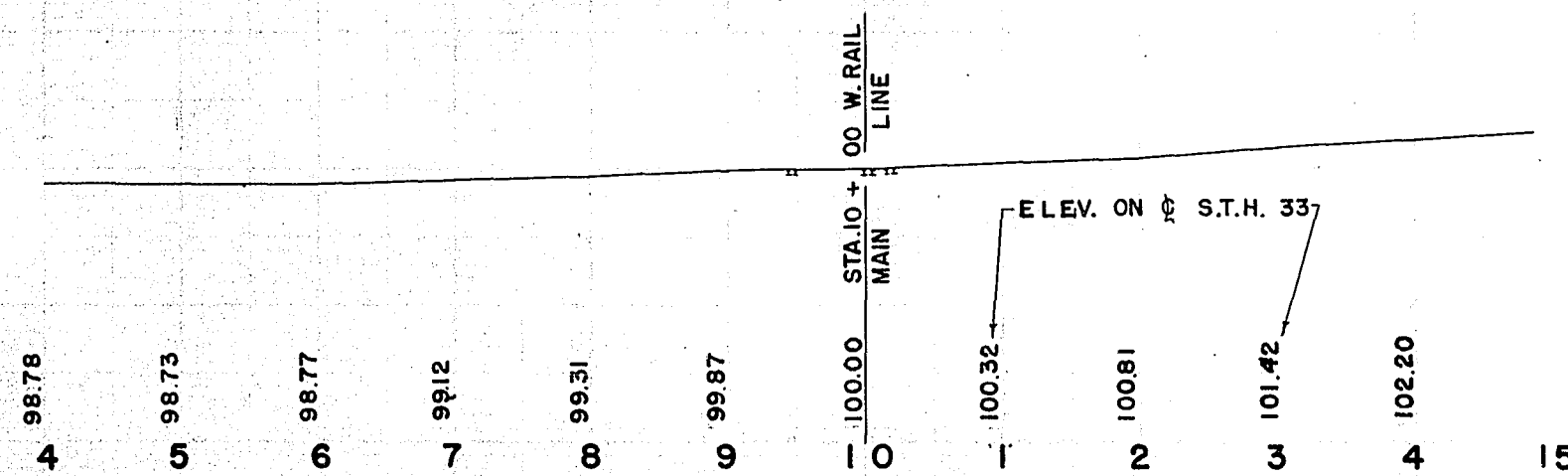
CROSS SECTION STA. 9+00 S.T.H. 33



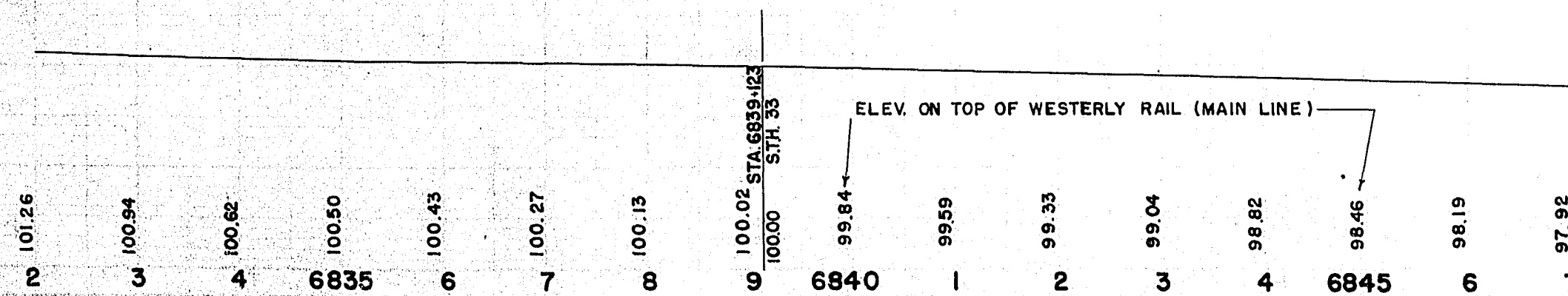
CROSS SECTION STA. 11+00 S.T.H. 33



PROFILE ON C S.T.H. 33

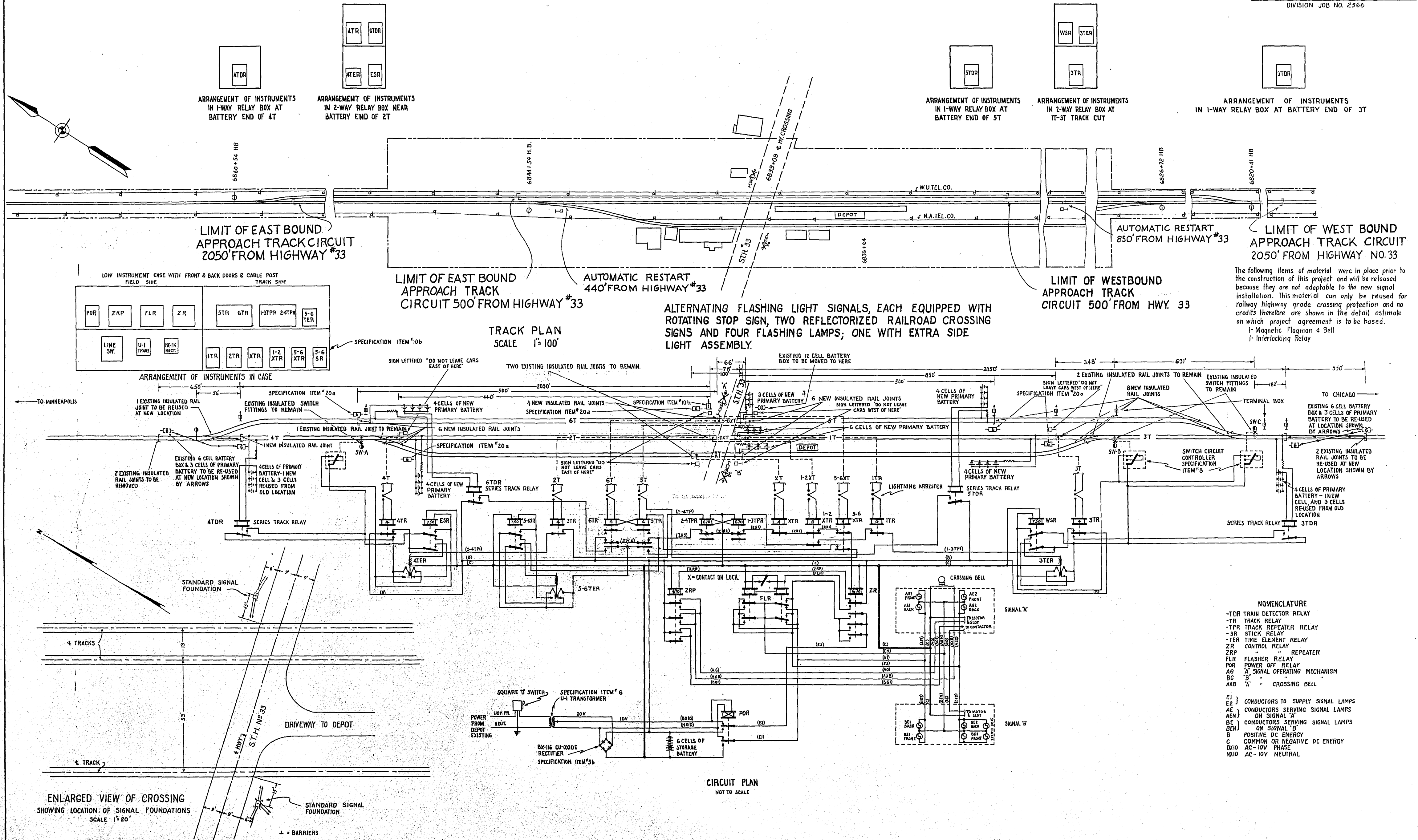


PROFILE ON TOP OF WESTERLY RAIL (MAIN LINE)



FED. ROAD DIST. NO.	STATE	FAGC PROJ. NO.	SHEET NO.	TOTAL SHEETS
4	WIS.	FAGC 444-J-11	4	9

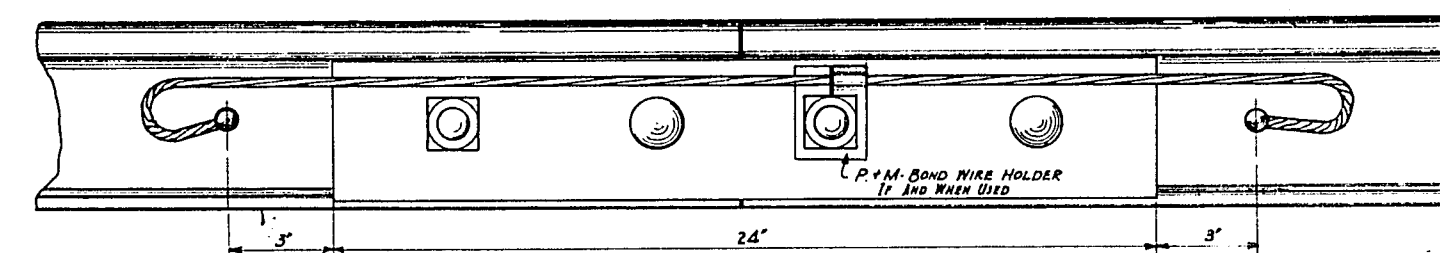
DIVISION JOB NO. 2566



FED. ROAD DIST. NO.	STATE	FAGC PROJ. NO.	SHEET NO.	TOTAL SHEETS
4	WIS.	F.A.G.H. (44A-J U)	5	9

DIVISION JOB NO: 2566...

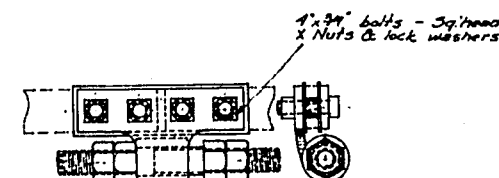
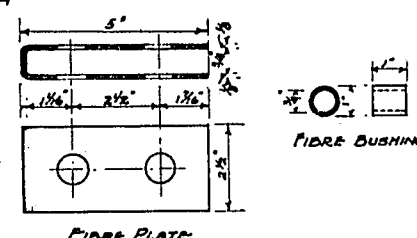
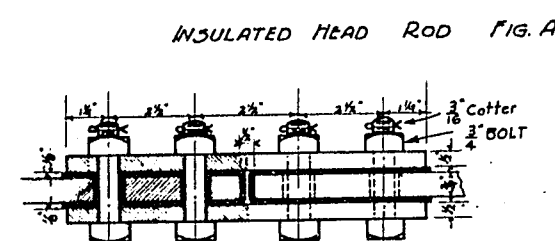
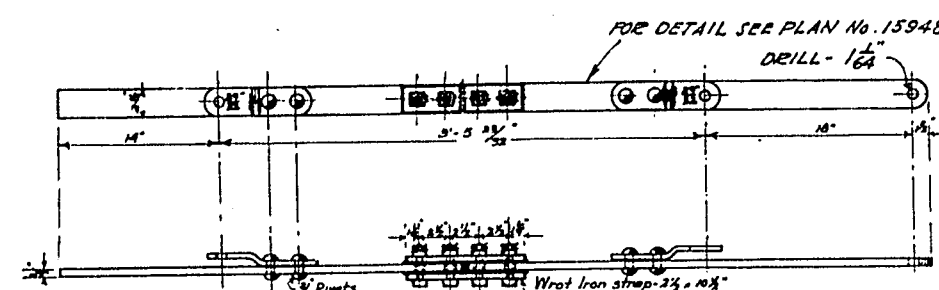
M. ST.P. & S. STE M. RY.
PLAN OF STANDARD
44 INCH STRANDED SIGNAL BOND
OFFICE OF CHIEF ENGINEER
MINNEAPOLIS, MINN.
Scale: 1"=4'



Cable Bond to be placed
on outside of Joint
outside of Angle bar
above bolts with Standard Angle Bars.

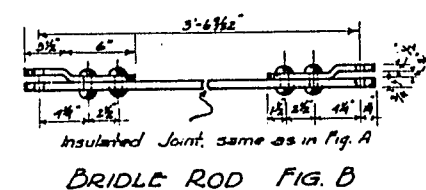
PLAN-20894
FILE-H-11-f-24

M. ST. P. & S. STE. M. RY.
PLAN OF STANDARD
INSULATED ROD PLATES WITH SWITCH ADJUSTMENT
OFFICE OF CHIEF ENGINEER
MINNEAPOLIS, MINN.



R.S.A. #13923 BRACKET COMPL. WITH SLEEVE & NUTS

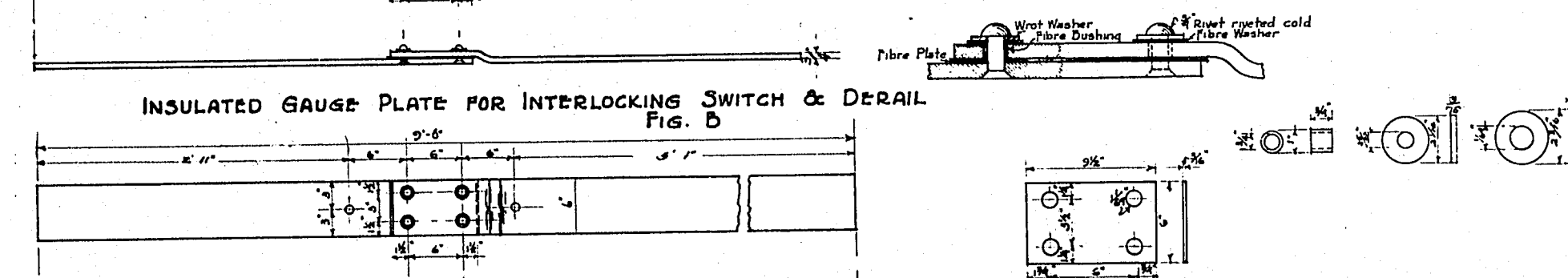
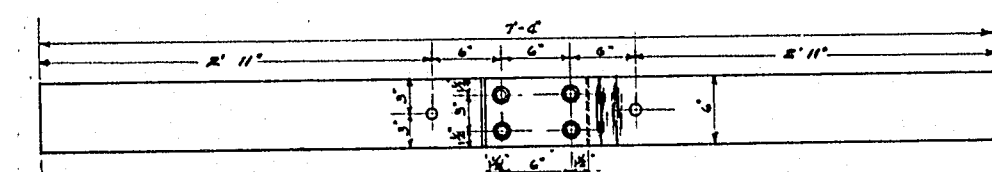
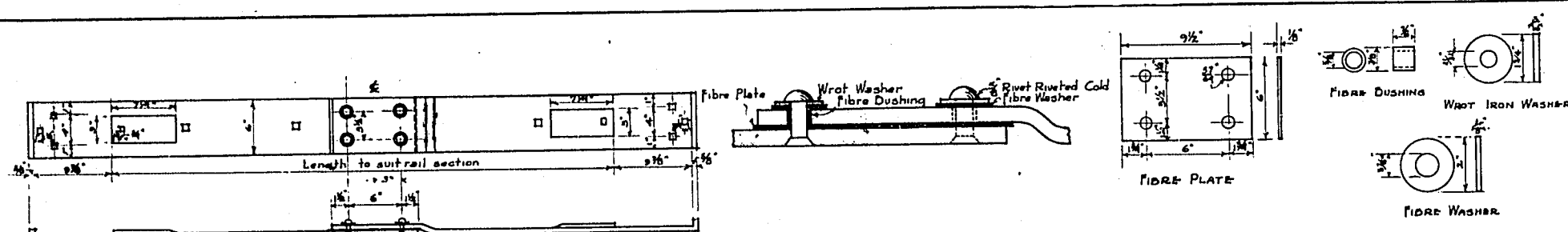
Note - Head rod fig. A where used in connection with interlocking. Insulate same by using R.S.A. #13923 switch adjustment.



Date.....Feb. 14, '19
 Drawn by.....A.G.P.
 Checked.....
 Approved.....
 Chief Engr.

Revised: 9-28-27 To show 1/2" Bolts for Insulation	PLAN- 9745
	FILE-H-1-e-8

MODEL RSI-13

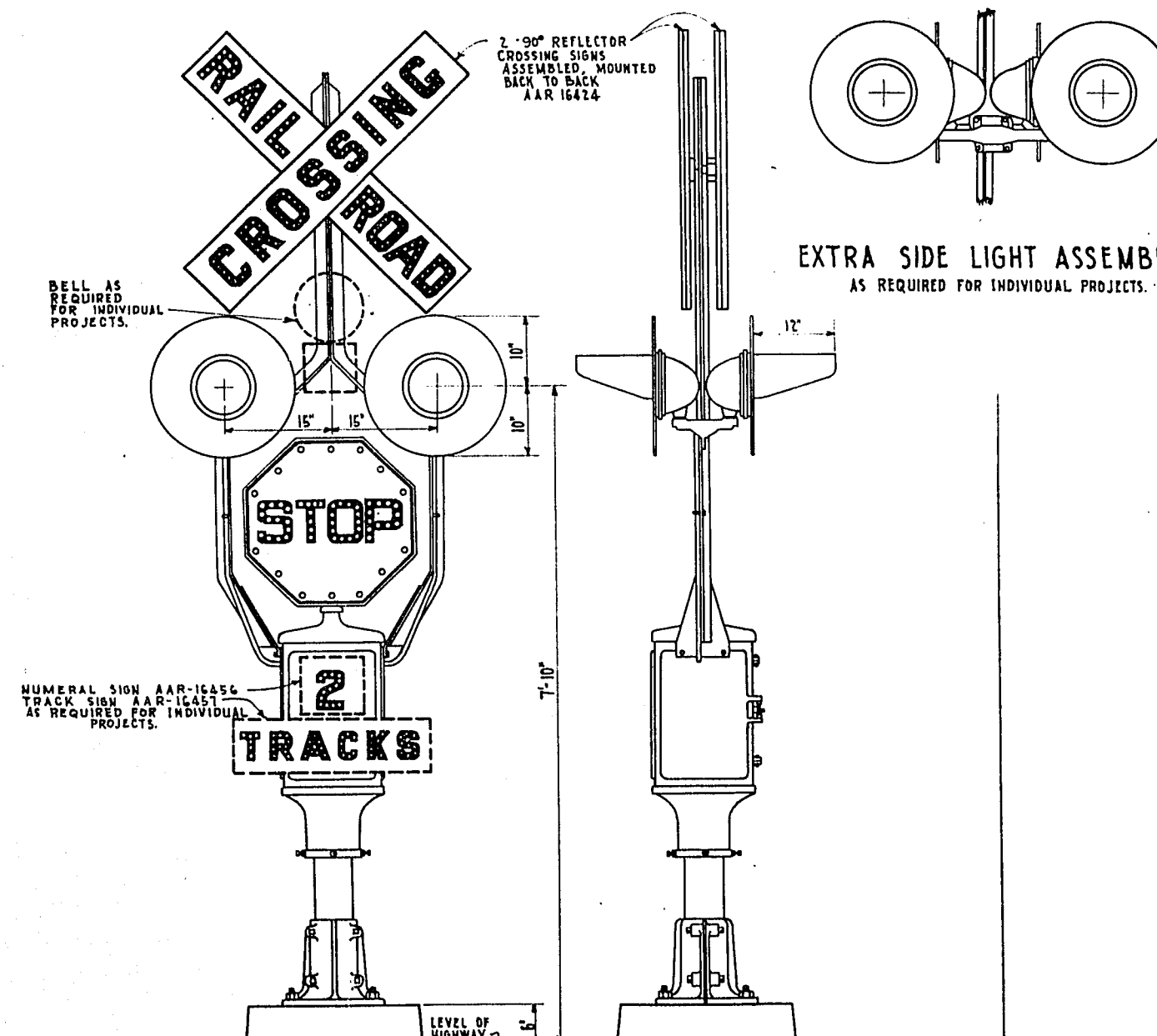


Note -
For Field Assembly use 1-1/4
x 3" Sq. Head bolts with lock
washers.

M. ST. P. & S. ST. M. RY.
PLAN OF STANDARD
INSULATED GAUGE PLATE
OFFICE OF CHIEF ENGINEER
MINNEAPOLIS, MINN.

Date.... Feb. 13, 19
Drawn by.. A.B.F.
Checked..
Approved..

Revised dimensions of insulating gauge plates 2/2/36	Revised dimensions of insulating gauge plate 12/30/39	Plan - 9741
		File - H-1-e-7.



GRISWOLD HIGHWAY CROSSING SIGNAL MODEL RSI-13
WITH FOUR ADJUSTABLE FLASHING LIGHTS.

GEARING

CHROME NICKEL STEEL
SPUR GEARS OPERATING
ON AN ANNUAL GEAR
16 DIAMETRAL PITCH
ENTIRELY ENCLOSED

CIRCUIT CONTROLLER

QUICK BREAK TYPE
POSITIVELY DRIVEN
BY THE MECHANISM

MAGNETIZING COIL

CONSTRUCTED IN ACCORDANCE
WITH A.S.R. SPECIFICATIONS

CLUTCH

ADJUSTABLE DRY PLATE

UNIVERSAL JOINT

MOTOR
DIRECT CURRENT
VERTICAL, SERIES WOUND
BALL BEARING
MOUNTED ROTOR

RUST PROOFING
ALL PARTS OF THE
MECHANISM ARE
RUST-PROOFED BY THE
PARKERIZING PROCESS

CHAIN
NO 4 LIBERTY TWIST L & M
MACHINE CHAIN TEMPER
NON-STRETCHABLE, 1000
BREAKING STRENGTH

GRISWOLD HIGHWAY CROSSING SIGNAL
MECHANISM MODEL RSI-13 PL.T4

FED. ROAD DIST. NO.	STATE	FABC PROJ. NO.	SHEET NO.	TOTAL SHEETS
4	WIS	FAGH 444-J (U)	7	9

DIVISION JOB NO. 2366

- ITEM NO. DESCRIPTION**
1. **ALTERNATELY FLASHING LIGHT SIGNAL WITH ROTATING STOP SIGN**
Griswold Signal Company, Model RS1-13 Signal complete assembled for shipment in accordance with that Company's customary practice, and without limitation because of specific enumeration, including in such assembly certain specific items as follows:
- A. Two 90-degree reflector type Railroad Crossing Signs, Association of American Railroads, Signal Section Specification No. 16424, Drawings No. 1642B and 1645B.
- B. One Reflector type Stop Sign, Manual on Uniform Traffic Control Devices for Streets and Highways, American Association of State Highway Officials, National Conference on Street & Highway Safety, Washington, D.C., reprinted September, 1937, except that reflector units shall be crystal (colorless) for the border and red for the word "STOP". Reflector units to be A.A.R. Signal Section Specifications 15637 and 15637.
- C. Four Lamps, cast iron, housing a chromium plated spun brass reflector supporting bayonet base socket. Door to be hinged to lamp body with screw type lock. Each lamp assembled to include:
- 1 - 20 inch black Background.
 - 1 - 12 inch hood enameled black on top or outside and enameled glossy white on underside.
 - 1 - Red Roundel, 8-3/8 inch with transmission values of 220 to 300 A.A.R. Standard Scale and beam spread of not less than three degrees each side of axial beam at point where intensity of beam is 50% of the axial beam under normal conditions.
 - 1 - 10-volt 18 watt Lamp Bulb, single contact bayonet base.
- D. Operating Mechanism:
- (a) 1 - 10-volt DC Motor with 10-volt Electric Operating Mechanism.
- (b) Dry plate clutch between upper end of vertical armature shaft and motor pinion through universal joint, clutch to consist of a metal disc revolving between two fiber plates and arranged for adjustment by means of four compression springs regulating the pressure between fiber and metal discs.
- (c) Gearing to be of the spur gear type and entirely enclosed, making use of an annular gear with two idler gears working between it and the motor pinion. Annular gear to be stationary, firmly held by the cast iron enclosing gear housing. The idler gears shall have their bearings on a drop forge tee shaft operating in stainless steel ball bearings with driving crank keyed and held in place by threaded and cottered nut. The motor pinion with its connecting shaft from the clutch into the gear housing shall be of one piece construction with the lower end squared into the clutch hub and the other operating in the end of the tee shaft as a bearing. Drop forged shafts and gears shall all be of chrome nickel steel.
- (d) Mechanism shall be self-locking in extreme positions by means of the throw of the driving crank as it moves in the grooved driven crank into the dead center point at both ends of its stroke.
2. **REFLECTOR TYPE MULTIPLE TRACK SIGN**
Association of American Railroads Signal Section Specification Nos. 16456 and 16457, Drawing No. 1645B, carrying numeral as indicated on Estimate of quantities sheet.
3. **EXTRA SIDE LIGHT ASSEMBLY**
Each extra side light assembly to consist of two lamps and each such lamp to be in accordance with Item No. 1 C above.
4. **RAIL**
12-volt Pedestrian Type Bell, Griswold Signal Company, Plate E21-1, for application to Item No. 1 above.
5. **RECTIFIERS**
- (a) Rectifier for charging 6 cells lead storage batteries, A-c Input 110-volts, 60 cycles; D-c Output Min. Volts 8.0, max. 13.5, Min. Amps. 0.08, max. 0.35, Type BX, Size 116, Order Ref. 54985, Gr. 1, Fig. 12, G.R.S.Co.
- (b) Rectifier for charging 4-6 cells lead storage batteries, A-c Input 20-volts, 60 cycles, D-c Output Min. Volts 8.0, max. 13.5, Amps. min. 0.08, max. 0.35, Type BX, Size 116, Order Ref. 54942, Gr. 1, Fig. 18, G.R.S.Co.

- ITEM NO. DESCRIPTION**
6. **TRANSFORMERS**
Transformer for battery charging and signal lighting, Type U, Size 1, 0.300 KVA, 60 cycle, 110 volts, Primary with two 20-volt secondaries, and one 12-volt secondary with standard taps. G.R.S.Co.
7. **RELAYS**
- (a) Flashing Relay, 12-volt D.C., with four dependent front and back contacts, toggle type with adjustable armature stops, non-radio interfering, Type K, Fig. B-5, Plate E-2304, complete with shock absorbing plate, Fig. 13, Plate E-2349, G.R.S.Co.
- (b) Interlocking Relay, complete, D.C., Size 8, Class H, with four dependent front and back contacts on each side, two front contacts on both sides closed in the interlocked position, 4-ohm coils on both sides, Type K, Fig. D, Plate E-2303, complete with shock absorbing plate, Fig. 17, Plate E-2349, G.R.S.Co.
- (c) Interlocking Relay complete, D.C., Size 8, Class H, with four dependent front and back contacts on each side, two front contacts on both sides closed in the interlocked position, 670-ohm on both sides, Type K, Fig. D, Plate E-2303, complete with shock absorbing plate, Fig. 17, Plate E-2349, G.R.S.Co.
- (d) Interlocking Relay complete, D.C., Size 8, Class H, with four dependent front and back contacts on each side, two front contacts on both sides closed in the interlocking position, 4-ohm coils on one side and 670-ohm on other side, Type K, Fig. D, Plate E-2303, complete with shock absorbing plate, Fig. 17, Plate E-2349, G.R.S.Co.
- (e) Neutral Relay, regular releasing, D.C., with two dependent front and back contacts, complete with shock absorbing plate, Size 2, Class A, 4-ohm coils, Type K, Fig. A-3, Plate E-2105, G.R.S.Co.
- (f) Neutral Relay, regular releasing, D.C., with two dependent front and back contacts, Size 2, Class A, 750-ohm coils, complete with shock absorbing plate, Type K, Fig. A-19, Plate E-2105, G.R.S.Co.
- (g) Neutral Relay, regular releasing, D.C., with four dependent front and back contacts, Size 4, Class A, 4-ohm coils, Fig. G-2, Plate E-2109, complete with shock absorbing plate, Fig. 13, Plate E-2349, G.R.S.Co.
- (h) Neutral Relay, regular releasing, D.C., with four dependent front and back contacts, Size 4, Class A, 670-ohm coils, Fig. G-15, Plate E-2109, complete with shock absorbing plate, Fig. 13, Plate E-2349, G.R.S.Co.
- (i) Neutral Relay, D.C. to be used in series with track circuit battery, with special adjustment to secure high dropway, with two dependent front and back contacts, Size 2, Type K, Reference No. 53000-161, Gr. 2, complete with shock absorbing plate for shelf mounting. G.R.S. Company.
- (j) Neutral Relay, regular releasing, D.C., with six dependent front and back contacts, Size 6, Class A, 750-ohm coils, Fig. G-16, Plate E-2115, complete with shock absorbing plate, Fig. 15, Plate E-2349, G.R.S.Co.
- (k) Power Transfer Relay, Size 2, Class A, 12-volt A.C., 60 cycle, with two dependent front and back contacts, Fig. A-3, Plate E-2107, G.R.S.Co.
- (l) Thermal Relay, adjustable, with one normally closed and one normally opened contact, independent of each other, 11-volts, total operating time 90 to 100 seconds, Type T, Class B, Fig. A-3, Plate E-2503, G.R.S.Co.
- (m) Thermal Relay, adjustable, with one normally closed and one normally opened contact, independent of each other, 8 volts, total operating time 85 to 105 seconds, Type T, Class G, Fig. A-13, Plate E-2513, G.R.S.Co.
- (n) Thermal Relay, adjustable, with one normally closed and one normally opened contact, independent of each other, 8 volts, total operating time 170 to 190 seconds, Type T, Class G, Fig. A-1, Plate E-2513, G.R.S.Co.
8. **SWITCH CIRCUIT CONTROLLER**
Model 7 Switch Circuit Controller, 4-way 2-position, (with Alemite-Zerk lubrication fittings) equipped with four dependent front and back contacts operated through rocker arms by four individual cams, Fig. A, Plate K-0137, with crank complete with insulated ball pin, Fig. D, Plate K-0143, and Cap complete with straight coupling for conduit, Fig. M, Plate K-0143, G.R.S.Co.
9. **OPERATING RODS**
- (a) Operating Rod complete for connecting to near switch point. Includes switch lug, bolts, ball pin screw jaw, hex nuts and cotters. A.A.R. standard. Fig. A, Plate K-0125, G.R.S.Co.
- (b) Insulated Operating Rod complete for connecting to far switch point. Includes switch lug, bolts, ball pin screw jaw, hex nuts and cotters. A.A.R. standard. Fig. E, Plate K-0125, G.R.S.Co.

- ITEM NO. DESCRIPTION**
10. **INSTRUMENT CASE** high
- (a) Welded Steel Case/with formed sheet metal front and back doors, pole to be mounted on case, and with water shield as shown in Fig. Y, and with cable post, Fig. A, Plate E-0942, and shelving, Fig. A, Plate E-0940, modified to three shelves on each side and total of two terminal boards. Fig. A-1, Plate E-0932, G.R.S.Co.
- (b) Welded Steel Case, low, with formed sheet metal front and back doors, Fig. A-1, Plate E-0935, pole to be mounted on case, and with water shield as shown in Fig. Y, Plate E-0935, and cable post, Fig. B, Plate E-0942, G.R.S.Co., and shelving, Fig. B, Plate E-0941, modified to two shelves.
11. **RELAY BOXES**
- (a) 1-way Relay Box complete with brackets and bolts for mounting, for fastening to 4" pipe. Includes blank terminal board, bushing for lead wires and "U" bolts. Fig. A, Plate E-0903, G.R.S.Co.
- (b) 2-way Relay Box complete with brackets and bolts for mounting on 4" pipe. Includes blank terminal board, bushing for lead wires and "U" bolts. Fig. B, Plate E-0903, G.R.S.Co.
12. **CABLE POST**
Cable post, 9'6" complete. AAR-11926, Drawing 1192-A.
13. **JUNCTION BOX**
Cast iron 4"x6"x3" deep with cover. Tapped 1-1/2" each end and 1/2" in bottom. Fyle-National Co. RJB4515.
14. **BOND WIRES**
7-strand #12 Copperweld 44" with 3/8" plug, C. Steel Corp.
15. **PARKWAY OUTLETS**
By Co. Drawing No. 20895, Crane Company, Mpls.
16. **AERIAL CABLE WIRE**
- (a) #12 B&S gauge, Solid Copper, 3/64" wall, Okonite insulation, double braided wire.
- (b) #8 B&S gauge, Stranded Copper, 3/64" wall, Okonite insulation, double braided wire.
- (c) #16 B&S gauge, Stranded Copper, Pullman Special Fixture Wire, Okonite insulation.
- (d) #14 B&S gauge, Stranded Copper, Okonite insulation, Brewery Cord.
- (e) #9 B&S gauge, Hard drawn Copper, Bare wire.
- (f) #9 B&S gauge, Hard drawn Copper, triple braided, weatherproof wire.
- (g) #8 B&S gauge, Soft drawn Copper, triple braided, weatherproof wire.
- (h) #8 B&S gauge, Stranded Copper, National Electric Code, Rubber covered, double white outer braided wire.
- (i) #8 B&S gauge, Stranded Copper, National Electric Code, Rubber covered, double black outer braided wire.
17. **UNDERGROUND CABLE**
- (a) 2-Conductor #12 B&S gauge, Solid Copper, 3/64" wall, Okonite insulation, taped and braided, laid up round, lead encased, jute outer covering, steel armored Parkway Cable.
- (b) 8-Conductor, #10 B&S gauge, Solid Copper, 3/64" wall, Okonite insulation, taped and braided, laid up round, lead encased, jute outer covering, steel armored Parkway Cable.
- (c) 3-Conductor, #12 B&S gauge, Solid Copper, 3/64" wall, Okonite insulation, taped and braided, laid up round, lead encased, jute outer covering, steel armored Parkway Cable.
18. **PRIMARY BATTERIES**
- (a) 500 A.H. Primary Battery Cells, complete with glass jars, porcelain covers and wing nuts. Edison Battery Co.
- (b) M-5, 500 A.H. Primary Battery Cells complete with heat resisting, barrel shaped glass jars, porcelain covers and wing nuts. National Carbon Co.
19. **PORTABLE STORAGE BATTERIES**
- (a) DMSO-9, Exide storage battery, Electric Storage Battery Co. 1 cell.
- (b) Type CGSX-56, #22509, 40 ampere hours at 8-hour rate, 6 cell unit, Gould Storage Battery Co.
- (c) Type CGSX-96, #22525, 80 ampere hours at 8-hour rate, 6 cell unit, Gould Storage Battery Co.

FED. ROAD DIST. NO.	STATE	FAGC PROJ. NO.	SHEET NO.	TOTAL SHEETS
4	WIS.	FAGC 444-J (U)	8	9

DIVISION JOB NO.: 2566...

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
20.	BATTERY BOXES (a) Concrete Battery Boxes, AAR-15971, Drawing 1597-A (b) Concrete Battery Boxes, AAR-15972, Drawing 1598-A (c) Concrete Battery Boxes, AAR-15973	30.	GUY ANCHORS (a) Anchor Biersoe 12" #342, Line Material Company. (b) Anchor Rod, Biersoe, 1"x8" with threaded end, #9486, Line Material Company. (c) Guy Thimble for 1" Rod, Hubbard #7595.	48.	CONDUIT FITTINGS (a) Entrance Fitting - Conduit F-163 for 1/2" Conduit complete with holes for 3 wires in insulating cover. (b) Entrance Fitting - Conduit F-263 for 3/4" Conduit complete with holes for 3 wires in insulating cover. (c) Entrance Fitting - Conduit F-363 for 1" Conduit complete with holes for 3 wires in insulating cover. (d) Kll tapped for 1/2" Conduit each end and with opening in back, also fitted with blank metal cover, LB-17. (e) Kll tapped for 3/4" Conduit each end and with opening in back, also fitted with blank metal cover, LB-27. (f) Kll tapped for 1" Conduit each end and with opening in back, also fitted with blank metal cover, LB-37. (g) Outlet Box, octagonal 4" diameter and 2-1/8" deep, with 1/2" knockouts for 1/2" Conduit and ears to secure cover, #54151, page 288, Graybar Elec. Company Catalogue #101. (h) Outlet Box Covers, to fit 4" Outlet Boxes, #54-C-2, page 288, Graybar Electric Co's. Catalogue #101. (i) Galv. Conduit Bushing 1/2" (j) Galv. Conduit Bushing 3/4" (k) Galv. Conduit Bushing 1" (l) Galv. Conduit Bushing 3" (m) Galv. Conduit Bushing 1-1/2" (n) Galv. Conduit Locknuts 1/2" (o) Galv. Conduit Locknuts 3/4" (p) Galv. Conduit Locknuts 1" (q) Galv. Conduit Locknuts 1-1/2" (r) Sheradized Conduit Elbows 1-1/2", Graybar Electric Co.
21.	INSULATED RAIL JOINTS - (Railroad Plan No. 13998-A) (a) Continuous Insulated Rail Joints 10025 Rail Section, See Drilling. (b) Continuous Insulated Rail Joints 9020 Rail Section, See Drilling. (c) Continuous Insulated Rail Joints 8520 Rail Section, See Drilling. (d) Continuous Insulated Rail Joints 8040 Rail Section, See Drilling. (e) Continuous Insulated Rail Joints 8040 Rail Section, W.C. Drilling. (f) Continuous Insulated Rail Joints 8540 Rail Section, See Drilling. (g) Continuous Insulated Rail Joints 8540 Rail Section, W.C. Drilling. (h) Continuous Insulated Rail Joints 8020 Rail Section See Drilling.	31.	GROUND ROD Copperweld Ground Rod, 5/8"x9', #9439, equipped with clamp #9592, Hubbard & Company.	49.	CONDUIT (a) 1/2" Sheraduct Conduit with coupling, Graybar Elec. Co. (b) 3/4" Sheraduct Conduit with coupling, Graybar Elec. Co. (c) 1" Sheraduct Conduit with coupling, Graybar Elec. Co. (d) 1 1/2" Sheraduct Conduit with coupling, Graybar Elec. Co.
22.	INSULATED HEAD RODS - (Railroad Plan No. 9745) (a) 10025 Rail Section (b) 9020 Rail Section (c) 8540 Rail Section (d) 8520 Rail Section (e) 8040 Rail Section (f) 8020 Rail Section	32.	FUSE PLUGS 10-amp. 125 Volt Bus clear window, page 475, Graybar Electric Company.	50.	SWITCHES (a) Single Throw fusible, 250 volt, 30-amp. Safety Switch #45251 with 10-amp. fuses. Square "D" Company. (b) Momentary Contact Switch normally "Off" with conduit and watertight cover, Type FA-327, Crouse-Hinds Company. (c) Momentary Contact Switch normally "On" with conduit and watertight cover, Type FA-326, Crouse-Hinds Co. (d) "On" and "Off" Switch, complete with conduit and watertight cover, Type FA-328, Crouse-Hinds Company. (e) 2-pole Double throw 6-amp. 125-volt Switch with conduit and watertight cover, Type FA-378, Crouse-Hinds Company. (f) 3-way, 20-amp. 125-volt Switch with conduit and watertight cover, Type FA-368, Crouse-Hinds Company. (g) 4-way, 20-amp. 125-volt Switch with conduit and watertight cover, Type FA-388, Crouse-Hinds Company. (h) 2-Button Stop & Start Switch, weatherproof and dustproof, cast iron box and cover, Type N-1410, Allen-Bradley Co. Bulletin 800, page 5.
23.	INSULATED RHIDLE RODS - (Railroad Plan No. 9745) (a) 10025 Rail Section (b) 9020 Rail Section (c) 8520 Rail Section (d) 8540 Rail Section (e) 8040 Rail Section (f) 8020 Rail Section	33.	PANLOOKS Signal Panlooks #1454-U, See standard, Slaymaker Look Company, Lancaster, Pa.	51.	SAND AND GRAVEL Sand and gravel shall comply with requirements for Class "AA" Concrete Masonry, Section 505 of the State Highway Commission of Wisconsin Standard Specifications for Road and Bridge Construction, Edition of 1935, and Supplemental Specifications thereto marked "Approved April 6, 1937".
24.	INSULATED GAUGE PLATES - (Railroad Plan No. 9741) (a) 10025 Rail Section (b) 9020 Rail Section (c) 8520 Rail Section (d) 8540 Rail Section (e) 8040 Rail Section (f) 8020 Rail Section	34.	TAGS (a) One hole black Fibre Tags, A.A.R. Spec. 16222, A.A.R. Drawing 1622A. (b) Two hole black Fibre Tags, similar to A.A.R. Spec. 16222, but having one 3" hole on each end, A.A.R. Drawing 1622A. (c) Aluminum Line Tags, A.A.R. Spec. 16223, A.A.R. Drawing 1622A.	52.	PORTLAND CEMENT Portland Cement shall comply with requirements for Class "AA" Concrete Masonry, Section 505 of the State Highway Commission of Wisconsin Standard Specifications for Road and Bridge Construction, Edition of 1935, and Supplemental Specifications thereto marked "Approved April 6, 1937".
25.	CROSSARMS (a) 10' 10-pin Crossarm, W.U. Standard (b) 6' 6-pin Crossarm, W.U. Standard	35.	EYELETS Bee Wire Terminals #178-1, R.R.A. Corp.	53.	LUMBER Fir Lumber 1"x8" S1S
26.	CROSSARM HARDWARE (a) Galvanized Crossarm Brace 28" long, #8128, Hubbard & Company. (b) 3/8"x2-1/2" Fetter Drive Galv. Lag Screw #9742, Hubbard & Company. (c) 1/2"x4" Fetter Drive Galv. Lag Screw #9754, Hubbard & Company. (d) 3/4"x4" Fetter Drive Galv. Lag Screw Hubbard & Company. (e) Crossarm Pin, Galv. steel 1/2" #8000 Hubbard & Company. (f) 5/8"x14" Galv. Thru bolts #9814, Hubbard & Company. (g) 5/8"x16" Galv. Thru bolts #9816, Hubbard & Company. (h) 5/8"x14" Galv. Double Arming Bolts #9864, Hubbard & Company. (i) 5/8"x14" Galv. Double Arming Bolts #9866, Hubbard & Company. (j) 2" Galv. Square Washers with 11/16" hole #7812, Hubbard & Company.	36.	TAPE (a) Manson Friction Tape, Okonite Company. (b) Okonite Rubber Tape, Okonite Company.	54.	NAILS (a) 8-d Common Wire Nails (b) 14d Staples 3/8"x1-3/4" C.W.
27.	INSULATORS (a) Glass Insulators, Hemingway #42. (b) Porcelain Strain Insulators, #502, Pierce.	37.	WOOD SCREWS (a) 3/4" #8 Blued R.H. Wood Screws. (b) 1 1/2" #10 Blued R.H. Wood Screws.	55.	PIPE (a) 3" Copper bearing Steel Pipe, Chicago Tube & Iron Co. (b) 3" Coupling for above. (c) 1-1/2" Copper bearing Steel Pipe, Chicago Tube & Iron Co. (d) 1-1/2" Coupling for above.
28.	GUY HOOKS As described under #7584, page 29, Graybar Electric Co's. Catalogue #101.	38.	CREATING LEATHER 1/8" Rawhide Belt Lacing.	56.	POLES (a) Western Cedar 30', Class 5, butt treated. (b) Western Cedar 35', Class 5, butt treated.
29.	GUY CLAMPS As described under #7461, page 29, Graybar Electric Co's. Catalogue #101.	39.	CABLE RINGS Raco Cabling Strap, No. 219-3, Page 102, 1929 catalogue, R.R.A. Corp.		
		40.	TERMINALS A.A.R. Terminals #10563 with screws, A.A.R. Drawing #1056-C.		
		41.	ARRESTERS Lightning Arresters, Model B, Fig. A, Plate B-1101, G.R.S. Co.		
		42.	TRACK RESISTANCE Track Resistance Units, 1-ohm LAN Type, Griswold Signal Co.		
		43.	PAINT (a) Valdura Aluminum Paint, 300-mesh, R.C. Duncan Co., Mpls. (b) Rogers Black Paint.		
		44.	CONTROLLER FOR RAILROAD CROSSING SIGNALS Complete with indicator lamps and push buttons, terminals, wiring and for mounting on brackets or telegraph desk. Type RXSC-22, Griswold Signal Co.		
		45.	METER TEST TYPE SERVICE SWITCH 30-amp. 125 volt, Double pole with solid neutral, one main Edison plug type fuse receptacle, test terminals and end plate mounted in steel cabinet with exterior operating handle, all bearing approval of Wisconsin State Electrical Code and National Electric Code, Square "D" Company's #30231.		
		46.	FUSE CABINET 30-amp. 125 volt, with two branch circuits with Edison plug fuse receptacles contained in steel cabinet for surface mounting, Square "D" Company's #39211.		
		47.	ANCHOR BOLTS (a) 3/4"x16" Anchor Bolts, Figure E, RR Plan No. 9771 (b) 7/8"x24" Anchor Bolts, Figure D, RR Plan No. 9771		

FED. ROAD DIST. NO.	STATE	F.A.C. PROJ. NO.	SHEET NO.	TOTAL SHEETS
4	Wis.	FAGH 444-1 (1)	9	9

DIVISION JOB NO.: 2566

ITEM NO. DESCRIPTION

57. RESISTANCE UNIT
Adjustable Resistance Unit, Plate K-1101, Fig. B-4,
General Railway Signal Co.
58. CABLE CLAMP
Cable Clamp for 3/8" O.D. Pipe, Fig. 9, Plate K-0613,
G.R.S.Co.
59. BONDING DRILLS
3/8" with 9/32" shank, #616, Union Twist Drill Company.
60. POLE AND WIRE LINES
Extension of rural electric light or power lines, where
available, to site of railroad crossing signals for light-
ing signals, rectifying alternating to direct current and
charging storage batteries, such extensions to be made by
local utility where practical under their rural line ex-
tension rules.
61. MARKER POST WITH SIGN
Oak post, 4"x4"x6', painted white, with sign lettered as
indicated on estimate.
62. SURFACE CABINET
Columbia, Type A, Surface Cabinet, 12"x15"x6", Graybar Elec.Co.
63. SECONDARY RACKS
Hot Galv. for two wires #250 complete with insulators,
Graybar Elec. Co.
64. STRAIN PLATES
4"x8" #14 Gauge Hot Galv. Hubbard #7575, Graybar Elec. Co.
65. CARRIAGE BOLTS AND NUTS
Hot Galv. 3/8"x4", #9634, Graybar Elec. Co.
66. Twine
Upholsterer's Twine, genuine Italian Flax, Minn.Paper & Cordage Co.
67. OIL
Mobile "B" Oil.
68. M.C.ACETYLENE GAS
Motorcycle tank Prest-o-lite Gas.
69. GASOLINE
70. SOLDER WIRE
#10 Soft Solder Wire, Graybar Elec.Co.
71. PAINT BRUSH
3" wide Flat, 4" bristles, Paint Brush, rubber set.
Janney, Semple Hill & Co.
72. FEDERAL BUSHINGS
Federal Porcelain clamp Bushings 1/2" conduit, knockout size ID
33/64", OD 13/16", 5/8" under head, #4, page 268, Graybar Elec.Co.
73. COPPER SLEEVES
Double tube Copper Sleeves for #9 AWG, Graybar Elec.Co. #225
74. SOLDERING PASTE
No-Korode Soldering Paste, Graybar Elec.Co.
75. EXTRA LONG BONDING CABLES
7-strand #12 Copperweld 14' long with 3/8" plugs on
each end.
76. BARRIERS
Scrap rail in 6' lengths
77. GUY WIRE
Copperweld guy strand 5/16"

ABBREVIATED

- Griswold Signal Company,
Minneapolis, Minnesota.
- General Railway Signal Company,
Chicago, Illinois.
- Pyle-National Company,
Chicago, Illinois.
- Copperweld Steel Corp.,
Glassport, Pa.
- Crane Company,
Minneapolis, Minn.
- The Okonite Company,
Chicago, Illinois.
- Edison Battery Company,
Chicago, Illinois.
- National Carbon Company,
Chicago, Illinois.
- Electric Storage Battery Co.,
Minneapolis, Minnesota.
- Gould Storage Battery Company,
Chicago, Illinois.
- Hubbard & Company,
Pittsburgh, Pa.
- Graybar Electric Company,
Minneapolis, Minnesota.
- Slaymaker Lock Company,
Lancaster, Pa.
- Railroad Accessories Corporation,
Chicago, Illinois.
- R. C. Duncan Company,
Minneapolis, Minnesota.
- Crouse-Hinds Company,
Minneapolis, Minnesota.
- Allen-Bradley Company,
Milwaukee, Wisconsin.
- Chicago Tube & Iron Company,
Chicago, Illinois.
- Union Drill Company,
Athol, Massachusetts.
- Minnesota Paper & Cordage Co.,
Minneapolis, Minnesota.
- Standard Oil Company of Indiana
Whiting, Indiana.
- Janney, Semple-Hill & Company,
Minneapolis, Minnesota.
- Rail Joint Company,
Chicago, Illinois.
- Line Material Company,
Milwaukee, Wisconsin.
- Square "D" Company,
Detroit, Michigan.
- G.R.S.CO
- C.W. Steel Corp.
- R.R.A. Corp.