

MICHIGAN
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

MICHIGAN PROJECT

CONTROL SECTION 10031

JOB NUMBER 102223A

US-31

BENZIE COUNTY

BENZONIA TOWNSHIP

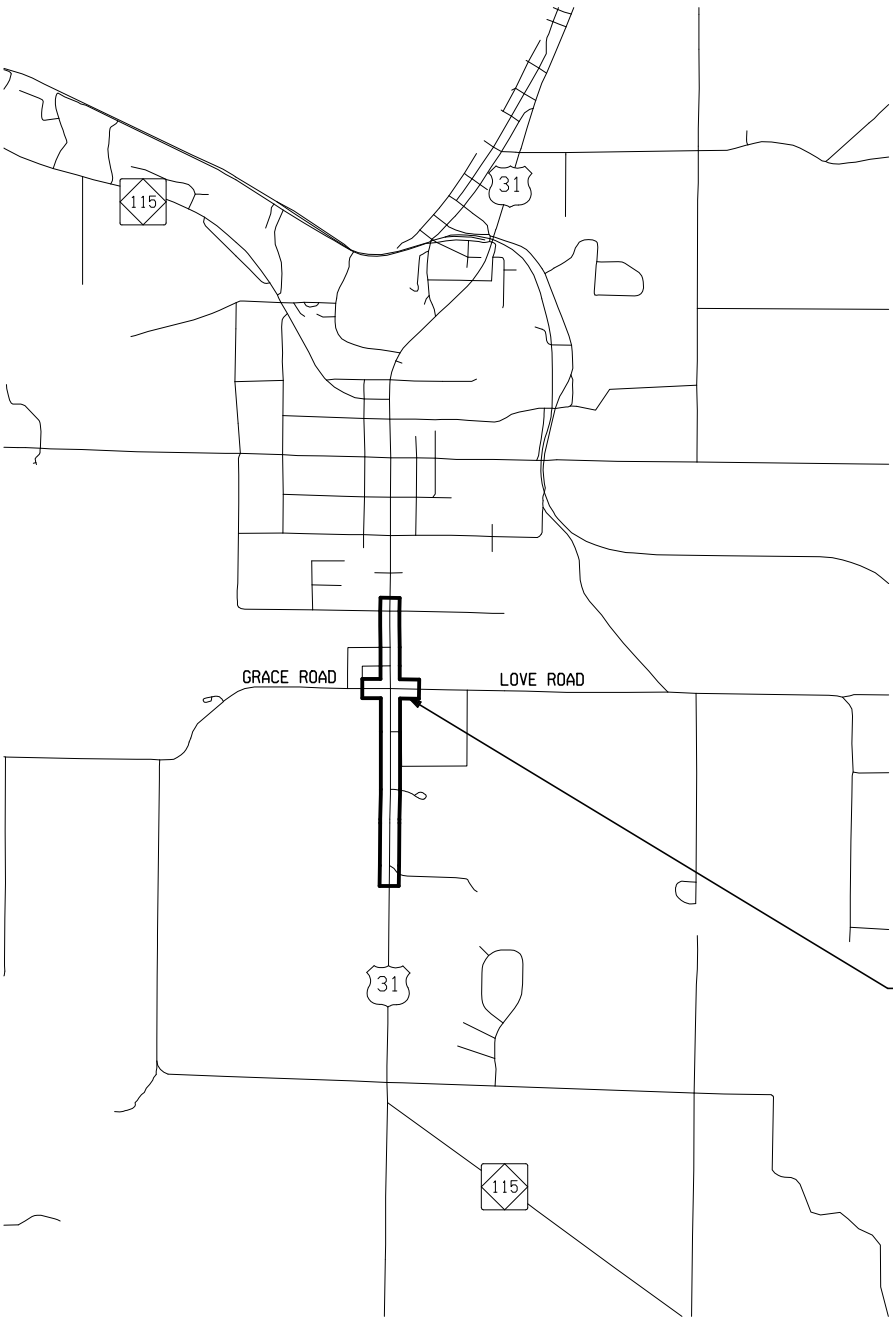
THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2003 STANDARD SPECIFICATIONS FOR CONSTRUCTION. PR #, CS & MILEPOST ARE FROM MGF VERSION #8.

US-31
YEAR 2007
A.D.T. 10000
D.H.V. 842
COMM. % 6
DESIGN SPEED/POSTED SPEED 50/45

PART 1
ROAD
PLANS

SHEET
NUMBERS

TITLE	1
MISCELLANEOUS DETAIL	2-4
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PLAN & PROFILE	7
WIRING DIAGRAM	8



US-31 AT GRACE ROAD
C.S. 10031
J.N. 102223A
P.R. 1074106
M.P. 6.315

0.764 MILES

CONTRACT FOR:

THESE PLANS WERE PREPARED FOR THE
MICHIGAN DEPARTMENT OF TRANSPORTATION
BY



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MI 48226
313-963-5760

REGISTERED PROFESSIONAL ENGINEER

No. DATE

APPROVALS

RECOMMENDED FOR APPROVAL	PROJECT MANAGER -	, P.E.	DATE
RECOMMENDED FOR APPROVAL	DELIVERY ENGINEER -	, P.E.	DATE

MICHIGAN
DEPARTMENT OF TRANSPORTATION
KIRK T. STEUDLE, P.E. - DIRECTOR

APPROVED BY
ENGINEER OF DEVELOPMENT - MARK A. VAN FORT FLEET, P.E. DATE



DESIGN UNIT

PROJECT LOCATION (TSC)

CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS		SHEET NO.
		PROJECT	ITEM	
10031	102223A			1

TITLE SHEET LEGEND

PROPOSED PROJECT	
EXISTING ROADS	
PAVED	
SECTION LINE	
TOWNSHIP LINE	
COUNTY LINE	
CITY OR VILLAGE LIMITS	
RAILROADS	
DETOUR ROUTE	

10031, 75051-102223A

CONTROL SECTION — JOB NUMBER

DATE:

CORRECTED BY:

DATE:

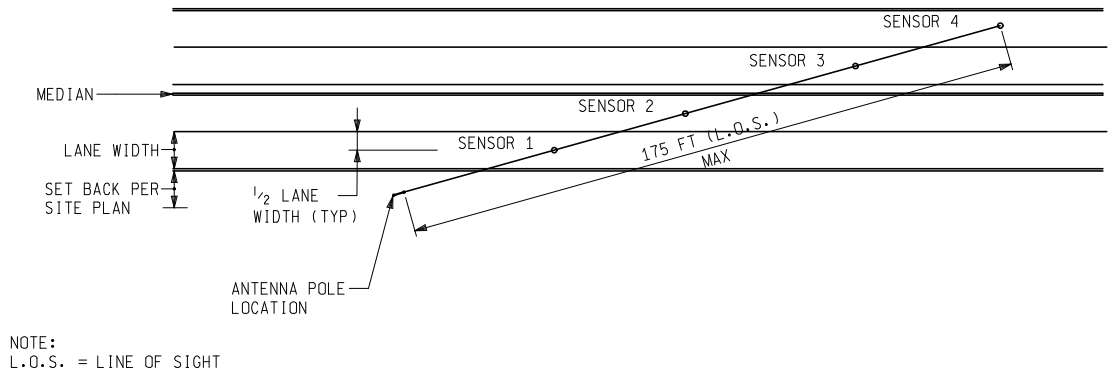
CHECKED BY:

DATE:

DRAWN BY:

FILE NAME:

			FINAL R.O.W.
AUTH	DATE	NO.	REVISION

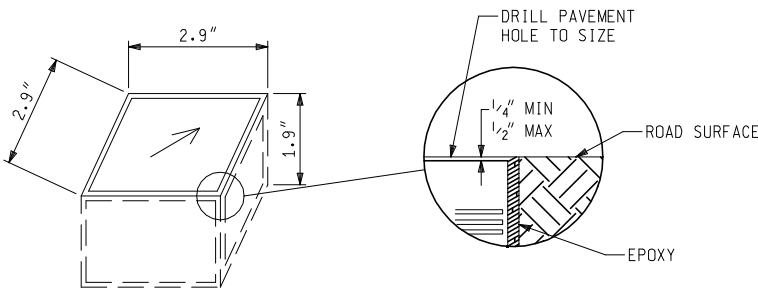


NOTE:
L.O.S. = LINE OF SIGHT

PLAN VIEW
SCALE: NTS

WIRELESS VEHICLE SENSOR NODE
TYPICAL SITE PLAN DESIGN



NOTE:
WIRELESS VEHICLE SENSOR NODE PLACEMENT IS TYPICAL AND SHOWN TO DEPICT MAXIMUM ALLOWABLE DISTANCE FROM THE ACCESS POINT. THE WIRELESS VEHICLE SENSOR NODE MUST BE PLACED IN THE CENTER OF EACH TRAVEL LANE (DETECTION ZONE) OR AS SHOWN ON PLANS.



TYPICAL WIRELESS VEHICLE
SENSOR NODE
SCALE: NTS

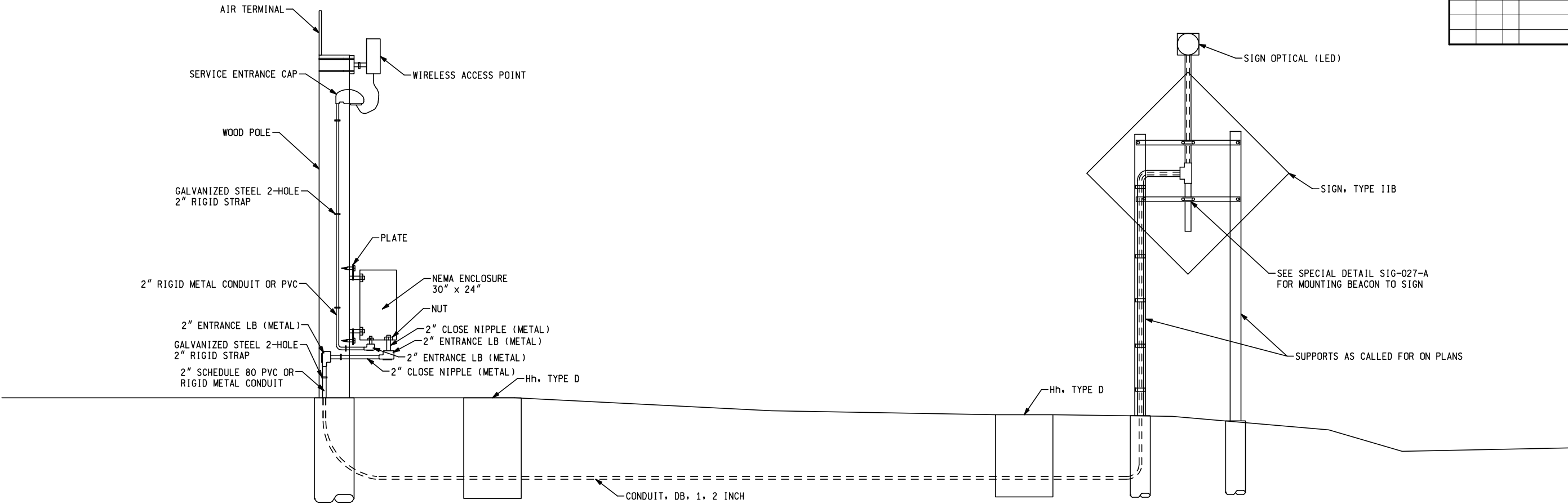
NOTES:
PLACE VEHICLE SENSOR WITH ARROW POINTING IN DIRECTION OF TRAVEL.
PAVEMENT CUT TO BE APPROXIMATELY 4" IN DIAMETER AND 2 1/4" DEEP IN THE PAVEMENT.
HOLE MUST BE FILLED WITH APPROPRIATE FLEXIBLE SEALANT AS RECOMMENDED BY MANUFACTURER.

MISCELLANEOUS DETAILS

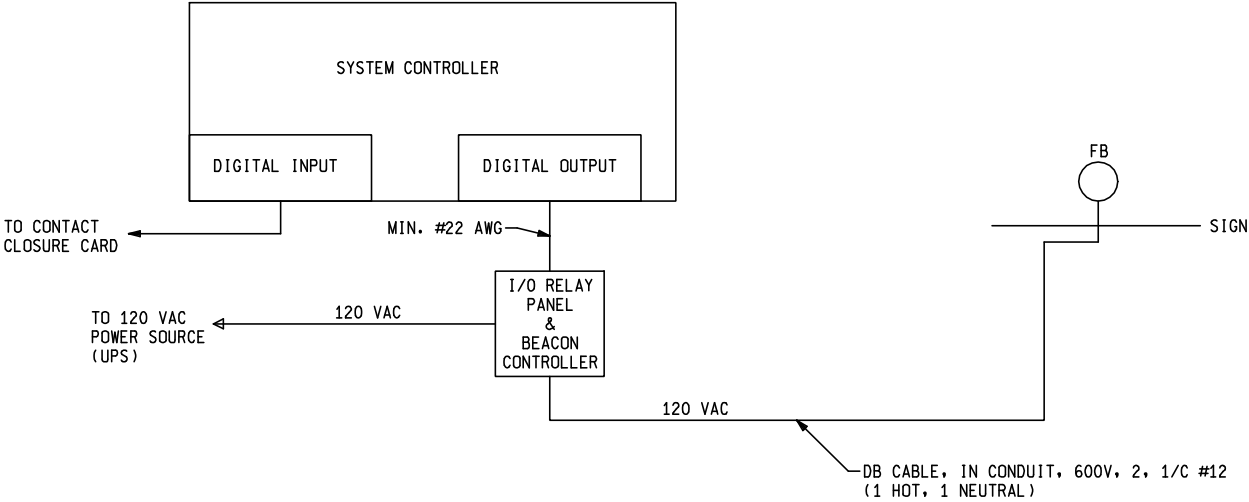
 PARSONS BRINCKERHOFF, INC. 500 GRISWOLD ST, SUITE 2800 DETROIT, MICHIGAN 48226 313-963-5760	 MDOT Michigan Department of Transportation	TYPICAL WIRELESS VEHICLE SENSOR NODE DETAILS				
		DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO. R.O.W CONST.
		08/21/09	10031	102223A		2

DATE: WORKED ON BY: DATE: CHECKED BY: FILE NAME:

FINAL R.O.W.			
AUTH	DATE	NO.	REVISION



TYPICAL STATIC SIGN & FLASHER SIGN PROFILE VIEW
NOT TO SCALE



TYPICAL STATIC SIGN & FLASHER WIRING DIAGRAM
NOT TO SCALE

MISCELLANEOUS DETAILS



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760



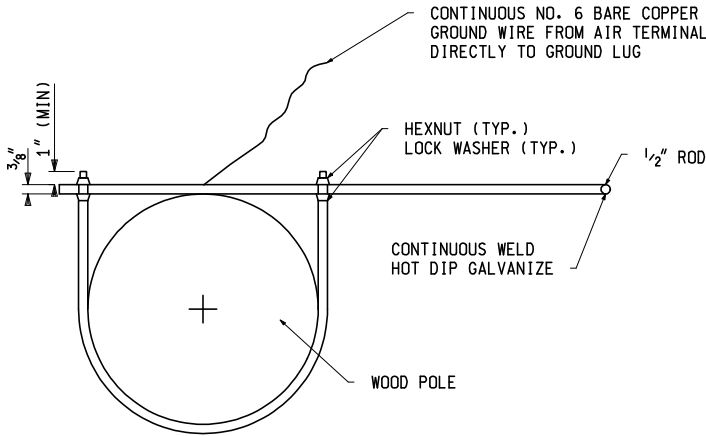
Michigan Department of Transportation

TYPICAL DETAIL SHEET

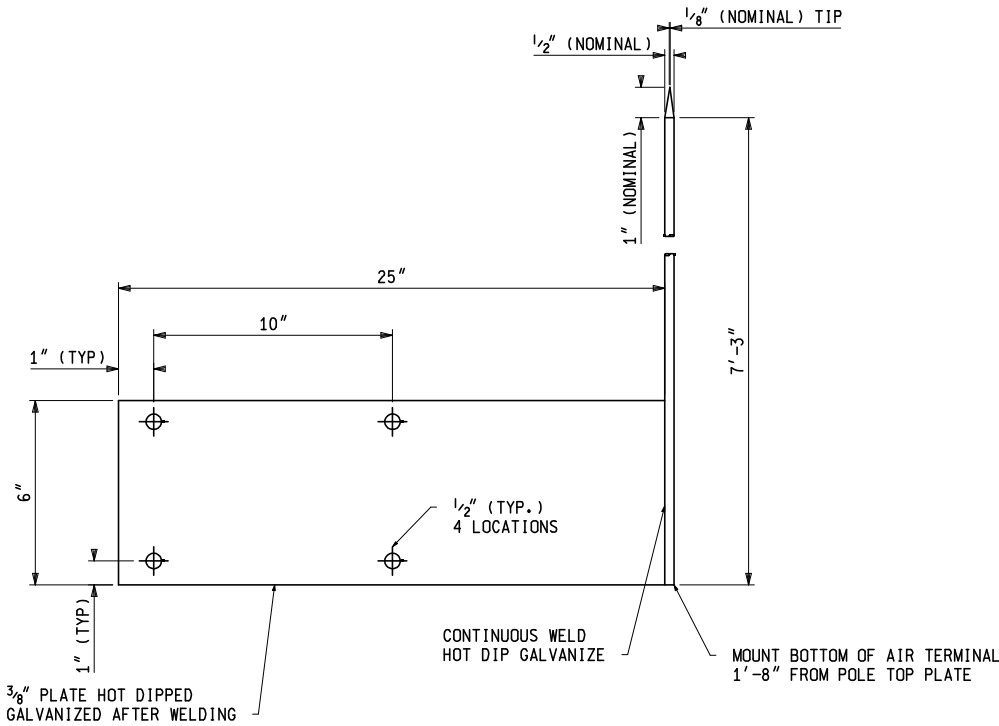
DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
08/21/09	10031	102223A		R.O.W CONST.
				3

DATE: WORKED ON BY: DATE: CHECKED BY: FILE NAME:

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AUTH	DATE	NO.	REVISION





AIR TERMINAL ON WOOD POLE (TOP VIEW)
NOT TO SCALE



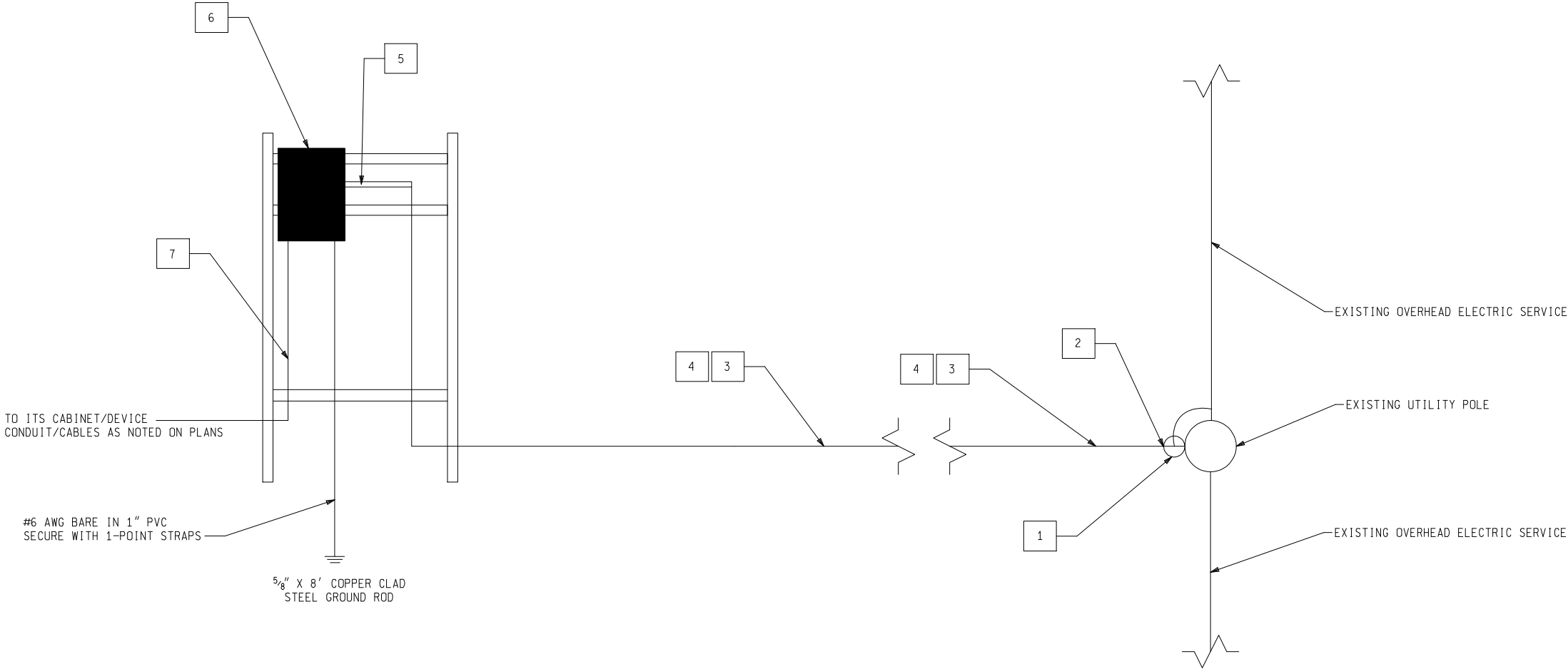
AIR TERMINAL (SIDE VIEW)
NOT TO SCALE

MISCELLANEOUS DETAILS

 PARSONS BRINCKERHOFF, INC. 500 GRISWOLD ST, SUITE 2800 DETROIT, MICHIGAN 48226 313-963-5760	 MDOT Michigan Department of Transportation	TYPICAL ITS EQUIPMENT DETAIL				SHEET NO.	
		DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	R.O.W	CONST.
		08/21/09	10031	102223A			4

DATE: WORKED ON BY: DATE: CHECKED BY: FILE NAME:

			FINAL R.O.W.
AUTH	DATE	NO.	REVISION



GENERAL NOTES

DIAGRAM DEPICTS MINIMUM EQUIPMENT NECESSARY TO PROVIDE CONNECTIVITY. AMEND THE DESIGN AS REQUIRED TO COMPLY WITH THE NATIONAL ELECTRICAL CODE, LOCAL CODES, AND REQUIREMENTS OF THE LOCAL ELECTRICAL UTILITY.

PROVIDE LICENSED ELECTRICIAN EXPERIENCED IN WORK DEPICTED ON PLANS.

THE PAY ITEM "POWER CO. (EST. COST TO CONTRACTOR)" CONSISTS OF LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE POWER AT EACH SITE FROM LOCAL ELECTRICAL UTILITY SERVICE PROVIDER AS REQUIRED ON PLANS.

THE PAY ITEM "METER AND SERVICE DISCONNECT, ITS" CONSISTS OF LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE POWER AT EACH SITE FROM LOCAL ELECTRICAL UTILITY SERVICE PROVIDER'S DEMARCATION TO EACH ITS DEVICE AS REQUIRED ON PLANS.

THE PAY ITEM "SERV DISCONNECT" CONSISTS OF LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE POWER AT EACH SITE FROM LOCAL ELECTRICAL UTILITY SERVICE PROVIDERS DEMARCATION TO EACH ITS DEVICE AS REQUIRED ON PLANS.

SERVICE DISCONNECT CAN BE INSTALLED ON WOOD POLE, SEPARATE RACK, OR AS DIRECTED BY UTILITY COMPANY OR MDOT ENGINEER.

CODED NOTES

1. POLE-MOUNTED UTILITY-PROVIDED TRANSFORMER. SECONDARY: 120/240 VAC SINGLE-PHASE, 60 HZ.

2. CONDUIT RISER: 1-1/2" GALVANIZED RIGID CONDUIT FROM SERVICE FEEDER CONDUIT TO 6 FEET ABOVE FINISHED GRADE. PROVIDE PLASTIC BUSHING. SECURE CONDUIT RISER TO UTILITY POLE WITH 2-POINT STRAPS. LOCATE STRAPS WITHIN 24" ABOVE GRADE AND WITHIN 12" FROM THE TOP OF RISER.

3. SERVICE FEEDER CONDUIT: DIRECT BURIED 1-1/2" GALVANIZED RIGID CONDUIT FROM CONDUIT RISER AT UTILITY POLE TO METER SOCKET ENCLOSURE. MINIMUM COVER: 24". SECURE VERTICAL CONDUIT LEG TO EQUIPMENT STRUCTURE WITH 2-POINT STRAPS. LOCATE STRAPS WITHIN 24" ABOVE GRADE AND WITHIN 12" FROM THE TOP OF RISER.

4. SERVICE LATERAL: CONDUIT/CABLES AS NOTED ON PLANS. PROVIDE AN ADDITION 11-FT COILED EXTENSION AT THE POLE END.

5. SERVICE CONDUCTORS: CABLE AS NOTED ON PLANS IN MINIMUM 1-1/2 GALVANIZED RIGID CONDUIT. PROVIDE MYERS HUB FITTING AT CIRCUIT PANEL AND METER SOCKET PANEL.

6. CIRCUIT PANEL. 100-AMP, 120/240 VAC, SINGLE-PHASE, 3-WIRE, 6-SPACE (FULL-SIZE) MAIN BREAKER PANEL. ENCLOSURE: NEMA 4X. PROVIDE SEPARATE NEUTRAL AND GROUNDING BUS BARS BONDED AS NOTED ON PLANS.

7. ITS CABINET CIRCUIT IN GALVANIZED RIGID CONDUIT. MINIMUM SIZE: 1 1/2" CONDUIT FROM HANDHOLE, UNLESS NOTED ON PLANS. SEE PLANS FOR CONDUIT AND CABLE.

MISCELLANEOUS DETAILS



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760



TYPICAL US-31 POWER SERVICE DETAILS				
DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
08/21/09	10031	102223A		R.O.W CONST.
				6

DATE:

WORKED ON BY:

DATE:

CHECKED BY:

FILE NAME:

<table><tr><td>ENGINEERING REPORT NO</td><td>ENVIRON IMPACT STMT</td></tr><tr><td>METHOD OF SURVEY</td><td>YEAR</td></tr><tr><td>SURVEY ORDER</td><td>YEAR</td></tr><tr><td>AERIAL SURVEY NO</td><td>YEAR</td></tr><tr><td>HORIZ DATUM</td><td>VERT DATUM</td></tr><tr><td>ROAD DESIGN INITIATED</td><td>COMPLETED</td></tr><tr><td>PRELIMINARY PLANS BY</td><td>FINAL PLANS BY</td></tr><tr><td>PLAN REVIEW BY</td><td>DATE</td></tr><tr><td colspan="2">FHWA AREA ENGINEER</td></tr></table>		ENGINEERING REPORT NO	ENVIRON IMPACT STMT	METHOD OF SURVEY	YEAR	SURVEY ORDER	YEAR	AERIAL SURVEY NO	YEAR	HORIZ DATUM	VERT DATUM	ROAD DESIGN INITIATED	COMPLETED	PRELIMINARY PLANS BY	FINAL PLANS BY	PLAN REVIEW BY	DATE	FHWA AREA ENGINEER		<div>UTILITIES</div> <p>THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED ON OUR SURVEYS DATED , 20 . THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.</p> <table><tr><td>NAME OF OWNER</td><td>KIND OF UTILITY</td></tr><tr><td>CS 10031</td><td></td></tr><tr><td>CONSUMERS ENERGY COMPANY ATTN: GREG MORTENSEN 821 HASTINGS ST. TRAVERSE CITY, MI 49686 231-929-6242</td><td>ELECTRIC</td></tr><tr><td>CHERRYLAND ELECTRIC CO. ATTN: FRANK SIEPKER 5930 US-31 S., P.O. BOX 298 GRAWN, MI 49637 231-486-9220</td><td>ELECTRIC</td></tr><tr><td>DTE ENERGY/MICH CON GAS COMPANY ATTN: KEN LAKE 1250 MICH CON LANE, S.W. P.O. BOX 279 KALKASKA, MI 49646 231-2583785</td><td>GAS</td></tr><tr><td>CHARTER COMMUNICATIONS ATTN: RICK ROUSSEAU 701 SOUTH AIRPORT RD. TRAVERSE CITY, MI 49686 231-929-7012 EXT. 100</td><td>CABLE TV</td></tr><tr><td>AT&T (SBC) ATTN: CHUCK HELMBOLDT 142 E. STATE ST., FLOOR 2 WEST TRAVERSE CITY, MI 49684 231-941-2755</td><td>TELECOM</td></tr><tr><td>CS 75051</td><td></td></tr><tr><td>UPPER PENINSULA POWER COMPANY ATTN: TIM TIENAN 225 EAST MUNISING AVENUE, P.O. BOX 9 MUNISING, MI 49862 906-485-2875</td><td>ELECTRIC</td></tr><tr><td>AT&T ATTN: MICHAEL ANDERSON 310 WEST 7TH SAULT STE MARIE, MI 49783 906-632-9901</td><td>TELECOM</td></tr></table>		NAME OF OWNER	KIND OF UTILITY	CS 10031		CONSUMERS ENERGY COMPANY ATTN: GREG MORTENSEN 821 HASTINGS ST. TRAVERSE CITY, MI 49686 231-929-6242	ELECTRIC	CHERRYLAND ELECTRIC CO. ATTN: FRANK SIEPKER 5930 US-31 S., P.O. BOX 298 GRAWN, MI 49637 231-486-9220	ELECTRIC	DTE ENERGY/MICH CON GAS COMPANY ATTN: KEN LAKE 1250 MICH CON LANE, S.W. P.O. BOX 279 KALKASKA, MI 49646 231-2583785	GAS	CHARTER COMMUNICATIONS ATTN: RICK ROUSSEAU 701 SOUTH AIRPORT RD. TRAVERSE CITY, MI 49686 231-929-7012 EXT. 100	CABLE TV	AT&T (SBC) ATTN: CHUCK HELMBOLDT 142 E. STATE ST., FLOOR 2 WEST TRAVERSE CITY, MI 49684 231-941-2755	TELECOM	CS 75051		UPPER PENINSULA POWER COMPANY ATTN: TIM TIENAN 225 EAST MUNISING AVENUE, P.O. BOX 9 MUNISING, MI 49862 906-485-2875	ELECTRIC	AT&T ATTN: MICHAEL ANDERSON 310 WEST 7TH SAULT STE MARIE, MI 49783 906-632-9901	TELECOM	<div>NOTES APPLYING TO ROAD AND BRIDGE STANDARD PLANS</div> <p>WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.</p> <table><tr><td>SOIL EROSION & SEDIMENTATION CONTROL MEASURES</td><td>R-96-D</td></tr></table>		SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-D	<div>MISCELLANEOUS ESTIMATES</div> <p>THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS:</p> <table><tr><td>1 LS</td><td>Project Cleanup</td></tr><tr><td>1 LS</td><td>Contractor Staking, Road Only</td></tr><tr><td>1 Hr</td><td>Staking Plan Errors and Extras, One Person</td></tr><tr><td>1 Hr</td><td>Staking Plan Errors and Extras, Two Person</td></tr><tr><td>1 Hr</td><td>Staking Plan Errors and Extras, Three Person</td></tr><tr><td>12 Syd</td><td>Slope Restoration, Type A</td></tr><tr><td>12 Syd</td><td>Slope Restoration, Type B</td></tr><tr><td>820 Ft</td><td>Erosion Control, Silt Fence</td></tr></table>		1 LS	Project Cleanup	1 LS	Contractor Staking, Road Only	1 Hr	Staking Plan Errors and Extras, One Person	1 Hr	Staking Plan Errors and Extras, Two Person	1 Hr	Staking Plan Errors and Extras, Three Person	12 Syd	Slope Restoration, Type A	12 Syd	Slope Restoration, Type B	820 Ft	Erosion Control, Silt Fence
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<div>GENERAL PLAN NOTES</div> <div>UNDERGROUND UTILITIES</div> <p>FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.</p> <p>MDOT'S FREEWAY LIGHTING SYSTEM AND OTHER MISCELLANEOUS ELECTRICAL SYSTEMS ARE NOT A PART OF MISS DIG.</p> <p>THEREFORE, CONTRACTORS SHALL CONTACT THE MAINTENANCE REPRESENTATIVE AT THE MDOT REGION/TSC OFFICE TO HAVE MDOT ELECTRICAL SYSTEMS STAKED.</p> <div>POLES</div> <p>THE EXACT LOCATION OF POLES WILL BE DETERMINED BY THE ENGINEER.</p> <div>SOIL EROSION MEASURES</div> <p>APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODABLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED/MULCH OR MULCH BLANKET AS DIRECTED BY THE ENGINEER.</p> <div>RECREATIONAL PROPERTIES</div> <p>THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR STORE ANY EQUIPMENT ON ANY PUBLIC RECREATIONAL PROPERTY. ACCESS TO THE RECREATIONAL SITE MUST BE MAINTAINED AT ALL TIMES.</p> <div>SEED MIXTURE</div> <p>THE SYMBOL FOR THE PERMANENT TURF SEED MIXTURE ON THIS PROJECT IS SYMBOL THV.</p>		<div>NOTES APPLYING TO TRAFFIC AND SAFETY STANDARD PLANS</div> <p>WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.</p> <table><tr><td>ROADSIDE SIGN LOCATIONS & SUPPORT SPACING</td><td>SIGN-120-A</td></tr><tr><td>WOOD POSTS</td><td>SIGN-210-A</td></tr></table>		ROADSIDE SIGN LOCATIONS & SUPPORT SPACING	SIGN-120-A	WOOD POSTS	SIGN-210-A	<div>NOTE SHEET</div> <table><tr><td>DATE</td><td>CONT. SEC.</td><td>JOB NO.</td><td>DESIGN UNIT</td><td>SHEET NO.</td></tr><tr><td>08/21/09</td><td>10031</td><td>102223A</td><td></td><td>R.O.W CONST.</td></tr><tr><td></td><td></td><td></td><td></td><td>7</td></tr></table>		DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.	08/21/09	10031	102223A		R.O.W CONST.					7																																							
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7

FILE NAME: WORKED ON BY: DATE:

<div><div>WATER & SEWER SYMBOLS</div><div><div><div><div><div></div></div><div>EXISTING SANITARY CATCH BASIN</div></div><div><div><div></div></div><div>EXISTING STORM CATCH BASIN</div></div><div><div><div></div></div><div>PROPOSED SANITARY CATCH BASIN</div></div><div><div><div></div></div><div>PROPOSED STORM CATCH BASIN</div></div><div><div><div><div>SA</div></div></div><div>EXISTING SANITARY SEWER MANHOLE</div></div><div><div><div><div>SA</div></div></div><div>PROPOSED SANITARY SEWER MANHOLE</div></div><div><div><div><div>ST</div></div></div><div>EXISTING STORM SEWER MANHOLE</div></div><div><div><div><div>ST</div></div></div><div>PROPOSED STORM SEWER MANHOLE</div></div><div><div><div><div>U</div></div></div><div>EXISTING MANHOLE - UNIVERSAL</div></div><div><div><div><div>U</div></div></div><div>PROPOSED MANHOLE - UNIVERSAL</div></div><div><div><div><div></div></div></div><div>EXISTING CULVERT END SECTION</div></div><div><div><div><div></div></div></div><div>PROPOSED CULVERT END SECTION</div></div><div><div><div><div></div></div></div><div>EXISTING HEADWALL</div></div><div><div><div><div></div></div></div><div>PROPOSED HEADWALL</div></div><div><div><div><div></div></div></div><div>WATER SERVICE BOX</div></div><div><div><div><div></div></div></div><div>WATER GATE VALVE BOX</div></div><div><div><div><div></div></div></div><div>WATER MANHOLE</div></div><div><div><div><div></div></div></div><div>WATER METER</div></div><div><div><div><div></div></div></div><div>WATER WELL/ GROUND WATER MONITORING WELL</div></div><div><div><div><div></div></div></div><div>EXISTING FIRE HYDRANT</div></div><div><div><div><div></div></div></div><div>PROPOSED FIRE HYDRANT</div></div><div><div><div><div></div></div></div><div>RIVER BOTTOM</div></div><div><div><div><div></div></div></div><div>PINE TREE</div></div><div><div><div><div></div></div></div><div>TREE</div></div><div><div><div><div></div></div></div><div>RIPRAP</div></div><div><div><div><div></div></div></div><div>SIGN</div></div><div><div><div><div></div></div></div><div>SIGN2</div></div><div><div><div><div></div></div></div><div>STUMP</div></div><div><div><div><div></div></div></div><div>SWAMP</div></div></div></div></div> <div><div>REAL ESTATE SYMBOLS & LINSTYLES</div><div><div><div><div></div></div><div>PROPERTY OWNERSHIP ARROW</div></div><div><div><div></div></div><div>CONTIGUOUS PROPERTY SYMBOL</div></div><div><div><div><div>123456</div></div></div><div>PARCEL NUMBER BOX</div></div><div><div><div><div></div></div></div><div>SECTION CORNER</div></div><div><div><div><div></div></div></div><div>QUARTER QUARTER CORNER</div></div><div><div><div><div></div></div></div><div>QUARTER CORNER</div></div><div><div><div><div></div></div></div><div>HALF QUARTER CORNER</div></div><div><div><div><div></div></div></div><div>ROW MARKER</div></div><div><div><div><div></div></div></div><div>PROPERTY CORNER</div></div><div><div><div><div></div></div></div><div>REFERENCE POINT</div></div><div><div><div><div></div></div></div><div>REFERENCE MARKER</div></div><div><div><div><div></div></div></div><div>CONTROL POINT</div></div><div><div><div><div></div></div></div><div>BENCH MARK</div></div><div><div><div><div></div></div></div><div>GOVERNMENT LINE</div></div><div><div><div><div></div></div></div><div>PARCEL LINES</div></div></div></div>

UTILITIES SYMBOLS

POWER POLE

GUY POLE

LIGHT POLE

LIGHT STANDARD

POWER AND LIGHT POLE

TELEPHONE POLE

TELEPHONE MANHOLE

TELEPHONE PEDESTAL

WALK NO-WALK SIGN

GAS LINE MARKER

GAS VALVE

GAS FILLER PIPE

GAS WELL

OIL WELL

PETROLEUM MARKER

FIBER OPTIC MARKER

ELECTRIC MANHOLE

ELECTRIC HANDHOLE

PHONE OR CALL BOX

MAIL BOX

DEADMAN FOR GUYWIRE

RAILROAD SWITCH BOX

FLASHING RAILROAD SIGN

POWER TOWER

MISCELLANEOUS SYMBOLS

ADJ

ADJUST DRAINAGE STRUCTURE

ADJ-

ADJUST DRAINAGE STRUCTURE W/COVER

ADJ-HYD

ADJUST FIRE HYDRANT

ADJ-B/O

ADJUST DRAINAGE STRUCTURE BY OTHERS

REL-B/O

RELOCATE - BY OTHERS

SR-

SIDEWALK RAMP TYPE

SIDEWALK RAMP WITH DETECTABLE WARNING

CHECK DAM (PROFILES)

DIKE (PROFILES)

H.W.T.

WATER TABLE (PROFILES)

T.H.#

TEST HOLE NO.

123

BEAM G. R. RUN NUMBER (EXISTING)

123

BEAM G. R. RUN NUMBER (PROPOSED)

HAZARDOUS OR FLAMMABLE MATERIAL

USED WITH UNDERGROUND GAS & ELECTRICAL LINES

CAUTION - CRITICAL UNDERGROUND UTILITY

USED WITH UNDERGROUND FIBER OPTICS & TELEPHONE LINES

UNDERGROUND UTILITY LINSTYLES

ELEC

ELECTRICAL LINE

24" GAS

GAS LINE

12" OIL

OIL LINE

TELE

TELEPHONE LINE

36" WM

WATER LINE

CTV

CABLE TV

TELE FO

FIBER OPTICS

POWER TRANSMISSION LINE

ABOVE GROUND UTILITY LINSTYLES

POWER TRANSMISSION LINE

R.O.W. LINSTYLES

xx

EX. LIMITED ACCESS R.O.W.

EXISTING R.O.W.

xx

PROP LIMITED ACCESS R.O.W.

PROP R.O.W.

TOPO LINSTYLES

HEDGE LINE

TREE LINE

x

EXISTING FENCE

x

PROPOSED FENCE

EXISTING GUARD RAIL

PROPOSED GUARD RAIL

EXISTING MEDIAN CABLE BARRIER

PROPOSED MEDIAN CABLE BARRIER

EXISTING DRAINAGE CRS EDGE OF WATER

PROPOSED DRAINAGE CRS EDGE OF WATER

CITY LIMITS

RAILROAD

SOUND ABATEMENT WALL

CONCRETE MEDIAN BARRIER

SLOPE STAKE LINE

PROP 36"

PROPOSED CULVERT/SEWER

EX 12" CMP

EXISTING CULVERT/SEWER

PLAN SHEET DRIVEWAY & MISC PAVEMENTS LEGEND

CONCRETE DRIVEWAY AND SIDEWALK

HMA APPROACH/DRIVEWAY

AGGREGATE DRIVEWAY

MISC CONCRETE PAVEMENT

PLAN SHEET REMOVAL LEGEND

REMOVING HMA

REMOVING SIDEWALK

REMOVING PAVEMENT

COLD-MILLING HMA

HMA BASE CRUSH & SHAPE

REMOVING CURB, GUTTER AND CURB & GUTTER

REMOVING

ABANDONING

SAVE

BULKHEAD

CLEARING

TYPICAL CROSS SECTION LEGEND

REMOVAL OF PAVEMENT, SIDEWALK, & CURB & GUTTER

CRUSH & SHAPE & RUBBLIZE

COLD MILLING

HMA TOP COURSE & WEDGING

HMA LEVELING COURSE

HMA BASE COURSE

AGGREGATE, SUBBASE, SIDEWALK, CURB & GUTTER, BARRIER & VALLEY GUTTER

CONCRETE PAVEMENT & SHOULDERS

FINAL R.O.W.

AUTH

DATE

NO.

REVISION

SPECIAL LEGEND THIS PROJECT

POTENTIAL CONTAMINATED SITE

WETLANDS AREA

ITS CABINET

FLASHING BEACON

HANDHOLE, TYPE D

METER AND SERVICE DISCONNECT

MDOT

MICHIGAN DEPARTMENT OF TRANSPORTATION

LEGEND SHEET

DATE

08/21/09

CONT. SEC.

10031

JOB NO.

102223A

DESIGN UNIT

SHEET NO.

R.O.W

CONST.

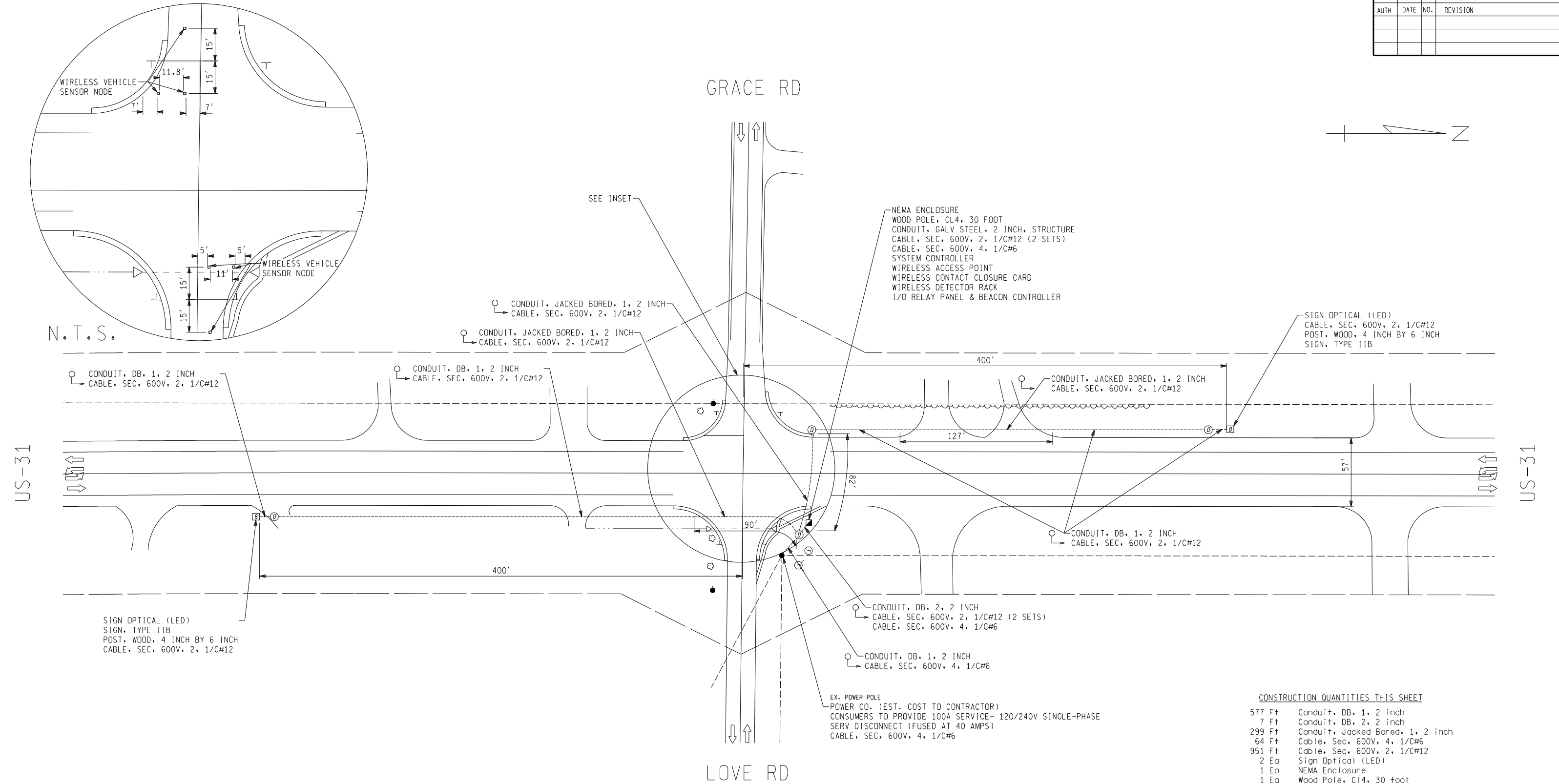
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FINAL R.O.W.		
AUTH	DATE	NO.
REVISION		



NOTES:
THE WIRELESS VEHICLE SENSOR NODES MUST BE PLACED AS SHOWN ABOVE IN THE INSET. THE MAXIMUM ALLOWABLE DISTANCE BETWEEN THE DETECTOR AND ACCESS POINT IS 175'.

THE CONTRACTOR SHALL HAND DIG IN THE VICINITY OF THE EXISTING UTILITIES TO ENSURE NO DAMAGE IS DONE TO EXISTING UTILITIES.

SIGN TYPE IIB AT US-31 SHALL BE A 36 INCH DIAMOND SHAPED SIGN AND A 36 INCH BY 24 INCH RECTANGULAR SHAPED SIGN AS SHOWN ON THE SIGN DETAIL SHEET.

UPPER PENINSULA POWER COMPANY
ATTN: TIM TIENAN
225 EAST MUNISING AVENUE, P.O. BOX 9
MUNISING, MI 49862
906-485-2875

CONSTRUCTION QUANTITIES THIS SHEET	
577 Ft	Conduit, DB, 1, 2 inch
7 Ft	Conduit, DB, 2, 2 inch
299 Ft	Conduit, Jacked Bored, 1, 2 inch
64 Ft	Cable, Sec, 600V, 4, 1/C#6
951 Ft	Cable, Sec, 600V, 2, 1/C#12
2 Ea	Sign Optical (LED)
1 Ea	NEMA Enclosure
1 Ea	Wood Pole, CL4, 30 foot
30 Ft	Conduit, Galv Steel, 2 inch, Structure
6 Ea	Wireless Vehicle Sensor Node
4 Ea	Hh, Type D
5000 Dir	Power Co. (Est. Cost to Contractor)
1 Ea	Serv Disconnect
1 Ea	System Controller
30 Sft	Sign, Type IIB
64 Ft	Post, Wood, 4 inch by 6 inch
1 Ea	Wireless Access Point
1 Ea	Wireless Contact Closure Card
1 Ea	Wireless Detector Rack
1 Ea	I/O Relay Panel & Beacon Controller

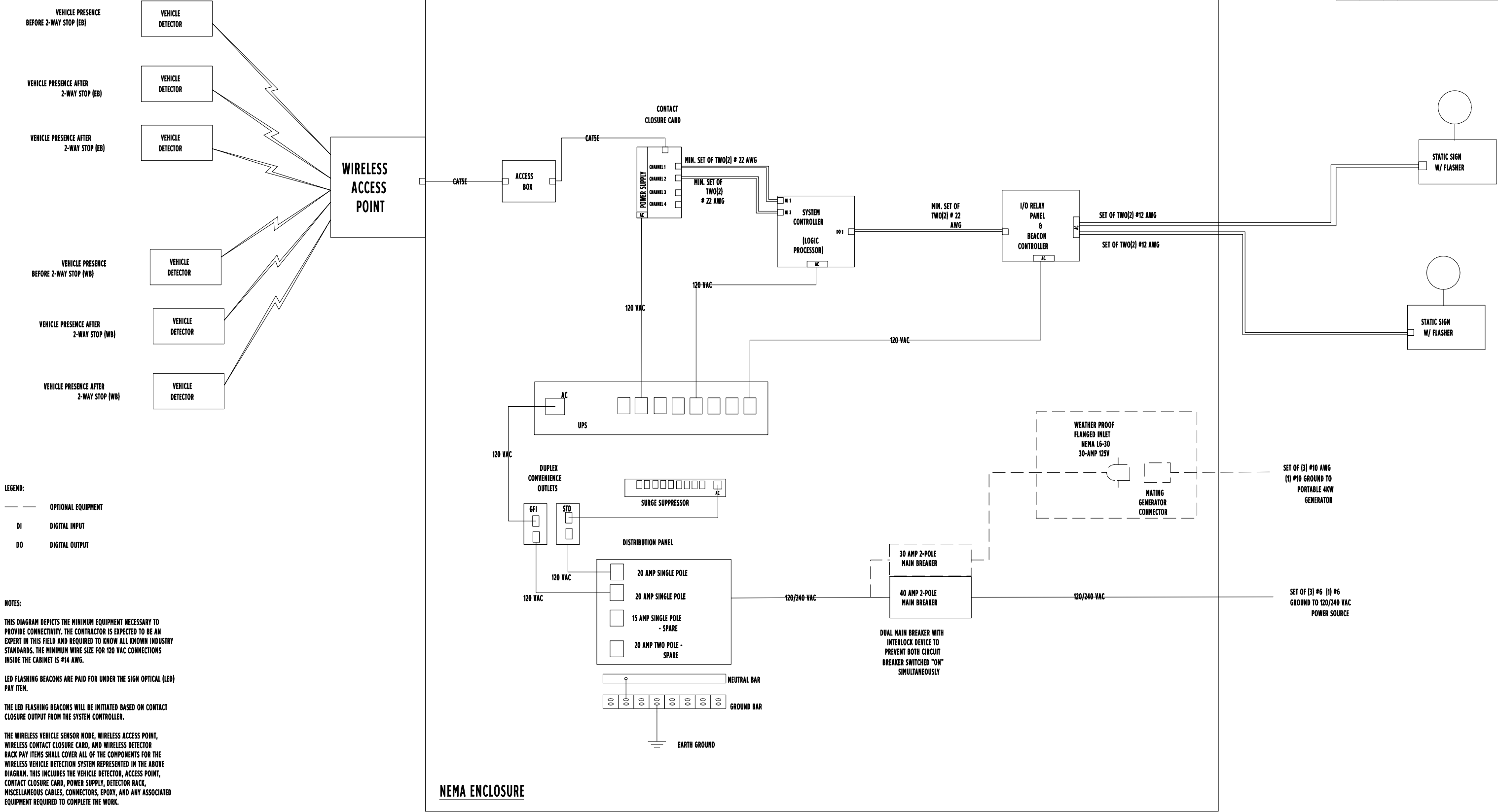
CONSTRUCTION SHEET

PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760



DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
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- LEGEND:
- OPTIONAL EQUIPMENT
 - DI DIGITAL INPUT
 - DO DIGITAL OUTPUT

NOTES:

THIS DIAGRAM DEPICTS THE MINIMUM EQUIPMENT NECESSARY TO PROVIDE CONNECTIVITY. THE CONTRACTOR IS EXPECTED TO BE AN EXPERT IN THIS FIELD AND REQUIRED TO KNOW ALL KNOWN INDUSTRY STANDARDS. THE MINIMUM WIRE SIZE FOR 120 VAC CONNECTIONS INSIDE THE CABINET IS #14 AWG.

LED FLASHING BEACONS ARE PAID FOR UNDER THE SIGN OPTICAL (LED) PAY ITEM.

THE LED FLASHING BEACONS WILL BE INITIATED BASED ON CONTACT CLOSURE OUTPUT FROM THE SYSTEM CONTROLLER.

THE WIRELESS VEHICLE SENSOR NODE, WIRELESS ACCESS POINT, WIRELESS CONTACT CLOSURE CARD, AND WIRELESS DETECTOR RACK PAY ITEMS SHALL COVER ALL OF THE COMPONENTS FOR THE WIRELESS VEHICLE DETECTION SYSTEM REPRESENTED IN THE ABOVE DIAGRAM. THIS INCLUDES THE VEHICLE DETECTOR, ACCESS POINT, CONTACT CLOSURE CARD, POWER SUPPLY, DETECTOR RACK, MISCELLANEOUS CABLES, CONNECTORS, EPOXY, AND ANY ASSOCIATED EQUIPMENT REQUIRED TO COMPLETE THE WORK.

THE FLASHING BEACONS MUST SUPPORT AN ALTERNATING (BLINKING) FUNCTION. TO BE PROVIDED BY ALTERNATING CURRENT TO EACH BEACON.

ELECTRICAL CONNECTIONS MUST BE PERFORMED BY QUALIFIED SYSTEM INSTALLERS IN ACCORDANCE WITH NEC AND LOCAL CODES.

NEMA ENCLOSURE

NOT TO SCALE

PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760

MDOT
Michigan Department of Transportation

TYPICAL ITS CABINET WIRING DIAGRAM				
DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
08/21/09	10031	102223A		R.O.W CONST.
				10

DATE: WORKED ON BY: CHECKED BY: FILE NAME:

MICHIGAN
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

MICHIGAN PROJECT

CONTROL SECTION 75051

JOB NUMBER 102223A

M-77

SCHOOLCRAFT COUNTY

GERMFASK TOWNSHIP

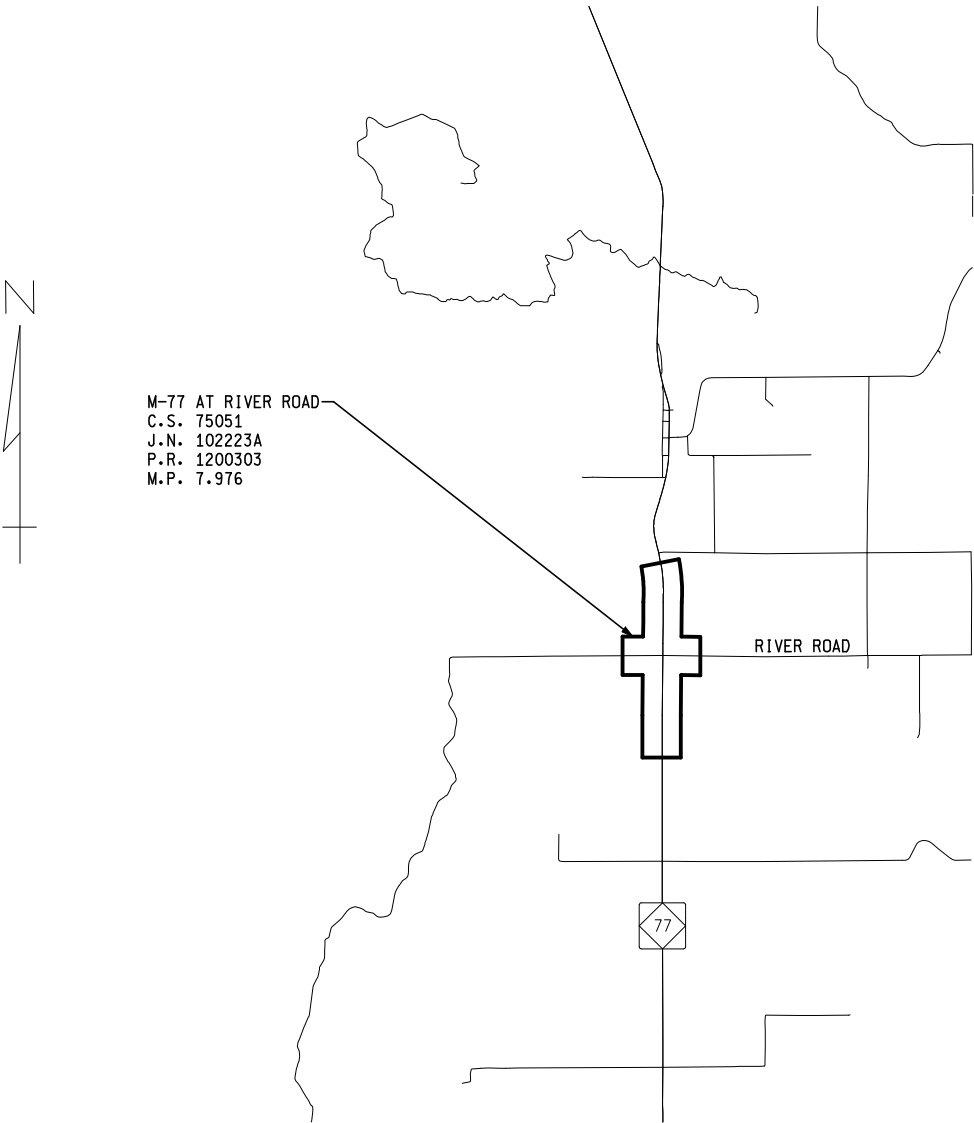
THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2003 STANDARD SPECIFICATIONS FOR CONSTRUCTION. PR #, CS & MILEPOST ARE FROM MGF VERSION #8.

A.D.T. _____ M-77
D.H.V. _____ YEAR
COMM. % _____ 2007
DESIGN SPEED/POSTED SPEED 1500 60/55

TITLE _____	1
MISCELLANEOUS DETAIL _____	2-5
NOTE SHEET _____	6
LEGEND SHEET _____	7
PLAN & PROFILE _____	8
WIRING DIAGRAM _____	9

SHEET
NUMBERS

PART 1
ROAD
PLANS



M-77 AT RIVER ROAD
C.S. 75051
J.N. 102223A
P.R. 1200303
M.P. 7.976

RIVER ROAD

77

TITLE SHEET LEGEND

PROPOSED PROJECT _____	=====
EXISTING ROADS	
PAVED _____	=====
SECTION LINE _____	=====
TOWNSHIP LINE _____	=====
COUNTY LINE _____	=====
CITY OR VILLAGE LIMITS _____	=====
RAILROADS _____	=====
DETOUR ROUTE _____	=====

0.764 MILES

CONTRACT FOR:

THESE PLANS WERE PREPARED FOR THE
MICHIGAN DEPARTMENT OF TRANSPORTATION
BY



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MI 48226
313-963-5760

REGISTERED PROFESSIONAL ENGINEER

No.

DATE

APPROVALS

RECOMMENDED FOR APPROVAL _____	PROJECT MANAGER - _____, P.E.	DATE _____
RECOMMENDED FOR APPROVAL _____	DELIVERY ENGINEER - _____, P.E.	DATE _____

MICHIGAN
DEPARTMENT OF TRANSPORTATION
KIRK T. STEUDLE, P.E. - DIRECTOR

APPROVED BY _____
ENGINEER OF DEVELOPMENT - MARK A. VAN FORT FLEET, P.E. _____ DATE _____



DESIGN UNIT

PROJECT LOCATION (TSC)

CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS		SHEET NO.
		PROJECT	ITEM	
75051	102223A			1

CONTROL SECTION — JOB NUMBER
10031, 75051-102223A

DATE:

CORRECTED BY:

DATE:

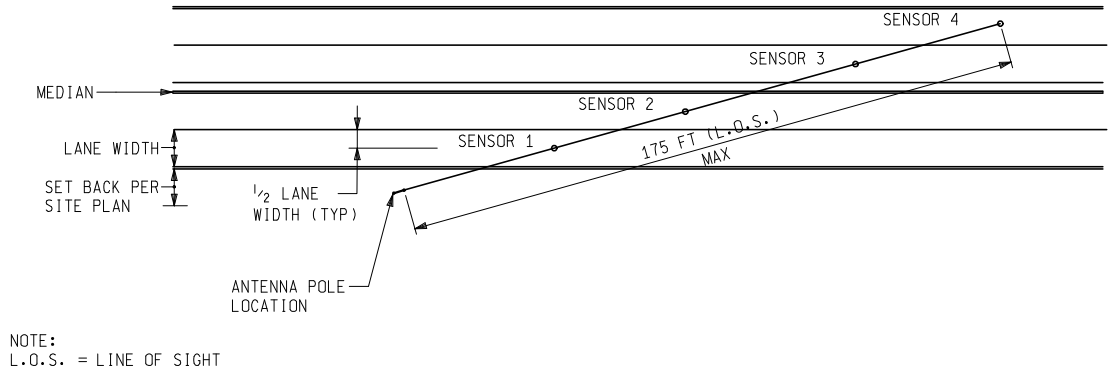
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DATE:

DRAWN BY:

FILE NAME:

			FINAL R.O.W.
AUTH	DATE	NO.	REVISION

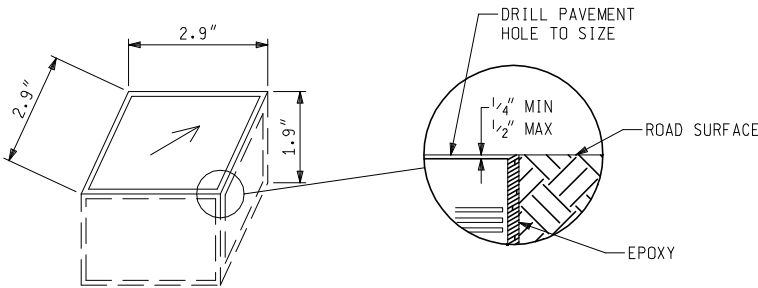


NOTE:
L.O.S. = LINE OF SIGHT

PLAN VIEW
SCALE: NTS

WIRELESS VEHICLE SENSOR NODE
TYPICAL SITE PLAN DESIGN



NOTE:
WIRELESS VEHICLE SENSOR NODE PLACEMENT IS TYPICAL AND SHOWN TO DEPICT MAXIMUM ALLOWABLE DISTANCE FROM THE ACCESS POINT. THE WIRELESS VEHICLE SENSOR NODE MUST BE PLACED IN THE CENTER OF EACH TRAVEL LANE (DETECTION ZONE) OR AS SHOWN ON PLANS.



TYPICAL WIRELESS VEHICLE
SENSOR NODE
SCALE: NTS

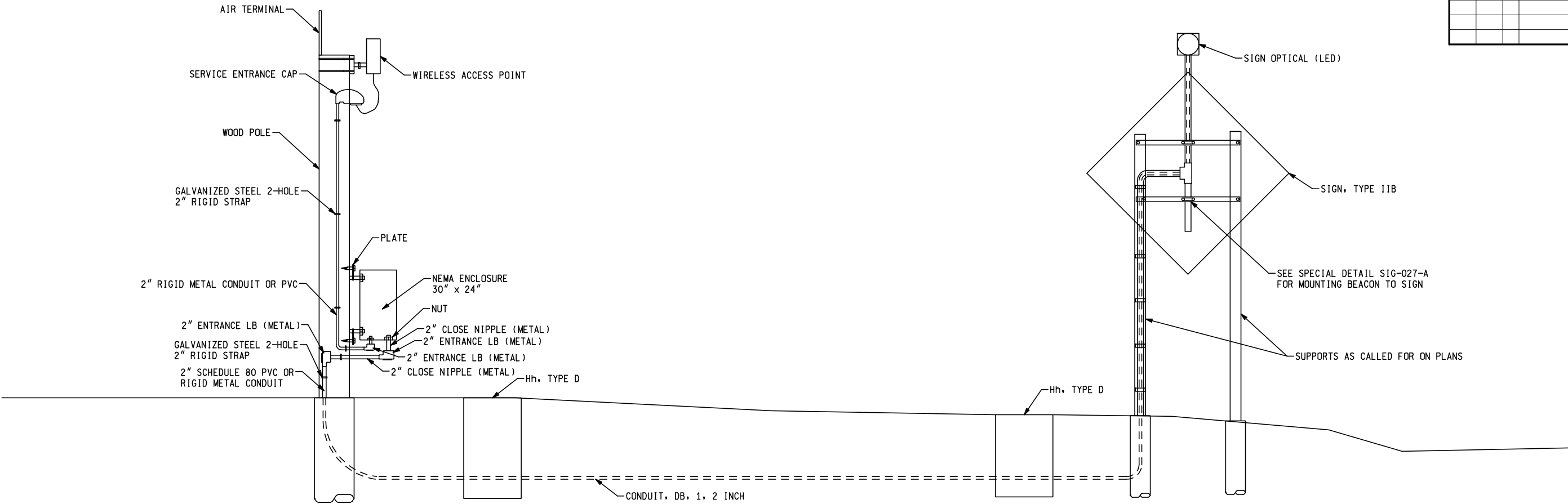
NOTES:
PLACE VEHICLE SENSOR WITH ARROW POINTING IN DIRECTION OF TRAVEL.
PAVEMENT CUT TO BE APPROXIMATELY 4" IN DIAMETER AND 2 1/4" DEEP IN THE PAVEMENT.
HOLE MUST BE FILLED WITH APPROPRIATE FLEXIBLE SEALANT AS RECOMMENDED BY MANUFACTURER.

MISCELLANEOUS DETAILS

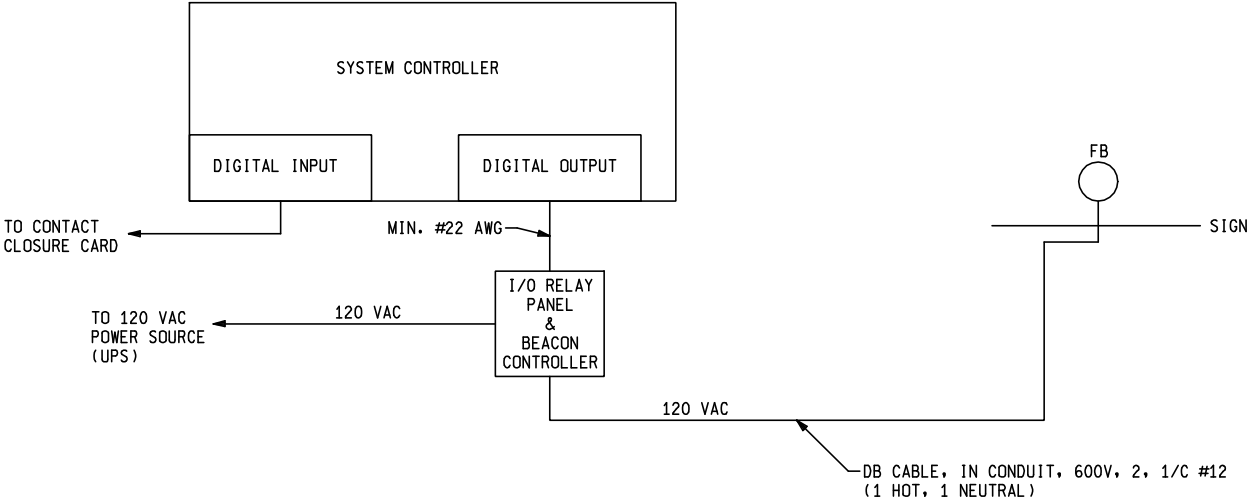
 <div>PARSONS BRINCKERHOFF, INC. 500 GRISWOLD ST, SUITE 2800 DETROIT, MICHIGAN 48226 313-963-5760</div>	 <div>MICHIGAN DEPARTMENT OF TRANSPORTATION</div>	TYPICAL WIRELESS VEHICLE SENSOR NODE DETAILS				
		DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO. R.O.W CONST.
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AUTH	DATE	NO.	REVISION





TYPICAL STATIC SIGN & FLASHER SIGN PROFILE VIEW
NOT TO SCALE



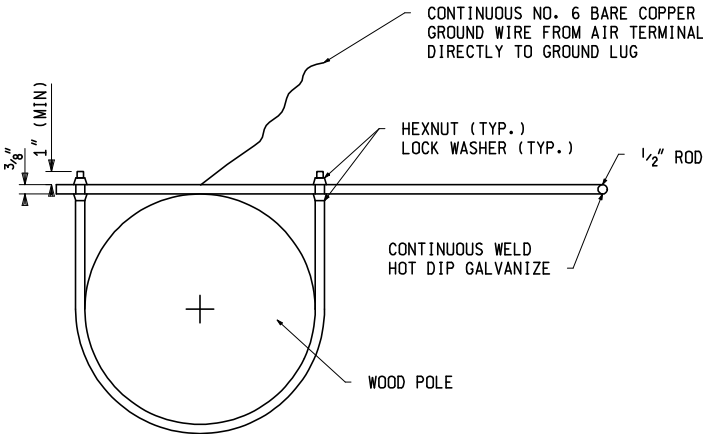
TYPICAL STATIC SIGN & FLASHER WIRING DIAGRAM
NOT TO SCALE

MISCELLANEOUS DETAILS

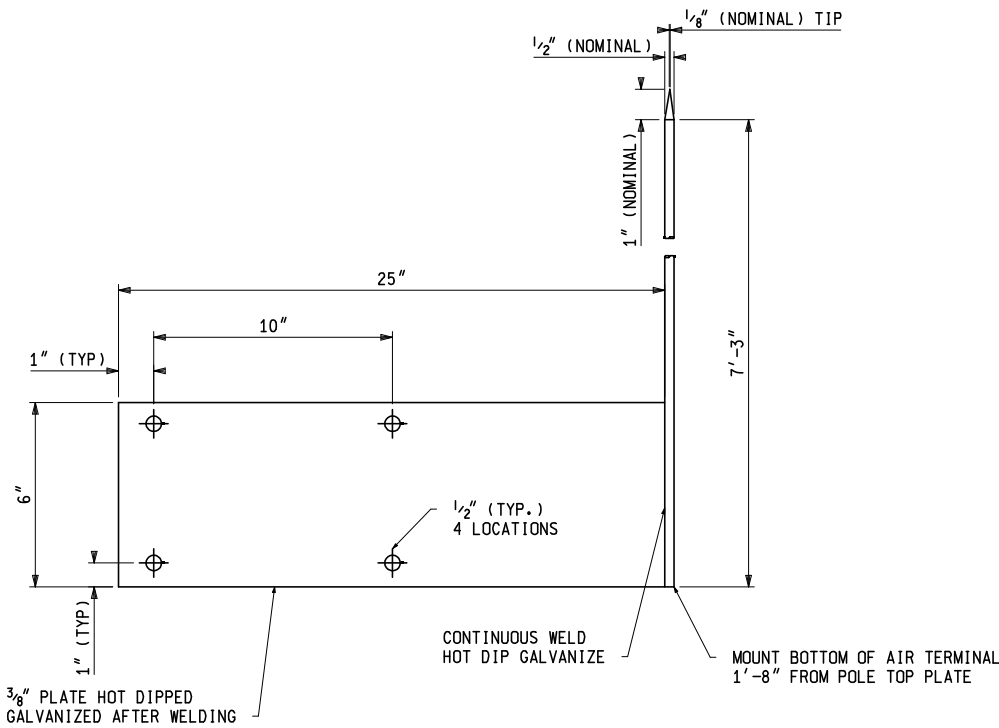
 PARSONS BRINCKERHOFF, INC. 500 GRISWOLD ST, SUITE 2900 DETROIT, MICHIGAN 48226 313-963-5760	 MDOT Michigan Department of Transportation	TYPICAL DETAIL SHEET				
		DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
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AIR TERMINAL ON WOOD POLE (TOP VIEW)
NOT TO SCALE



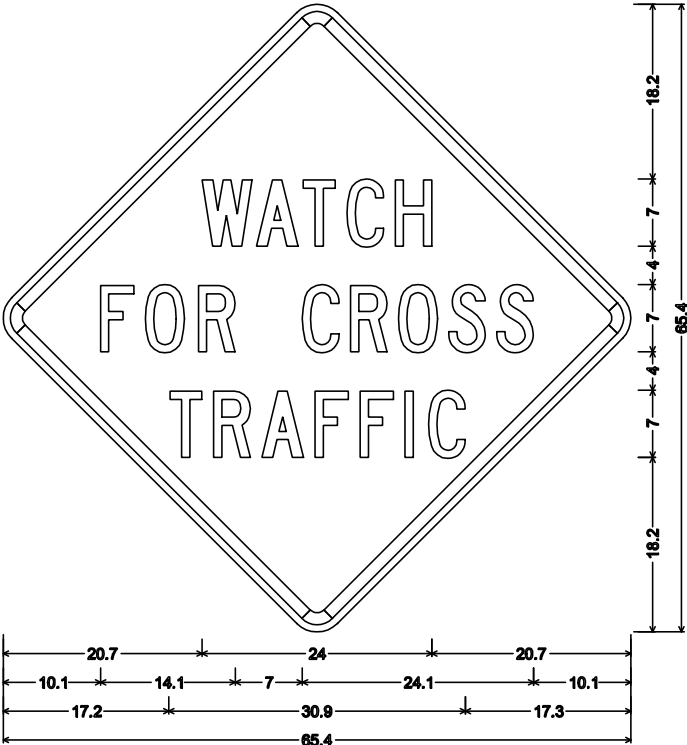
AIR TERMINAL (SIDE VIEW)
NOT TO SCALE

MISCELLANEOUS DETAILS

 PARSONS BRINCKERHOFF, INC. 500 GRISWOLD ST, SUITE 2800 DETROIT, MICHIGAN 48226 313-963-5760	 MDOT Michigan Department of Transportation	TYPICAL ITS EQUIPMENT DETAIL				
		DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
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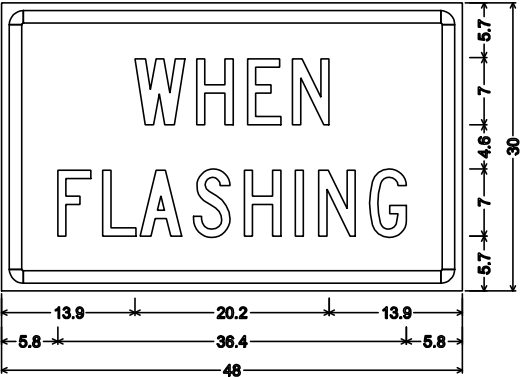
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AUTH	DATE	NO.	REVISION



48.0" across sides 3.0" Radius, 1.3" Border, 0.8" Indent, Black on Yellow;
[WATCH] C; [FOR CROSS] C; [TRAFFIC] C;
Table of letter and object lefts.

W	A	T	C	H			
20.7	26.4	31.1	35.8	40.8			
F	O	R	C	R	O	S	S
10.1	14.8	20.3	31.2	36.2	41.2	46.4	51.4
T	R	A	F	F	I	C	
17.2	21.9	26.9	32.5	37.2	41.9	44.3	




2.3" Radius, 1.3" Border, 0.8" Indent, Black on Yellow;
[WHEN] C; [FLASHING] C;
Table of letter and object lefts.


W	H	E	N				
13.9	20.3	25.6	30.3				
F	L	A	S	H	I	N	G
5.8	10.5	14.4	20.0	25.3	30.6	33.0	38.3

TYPICAL SIGN DETAIL
NOT TO SCALE

MISCELLANEOUS DETAILS



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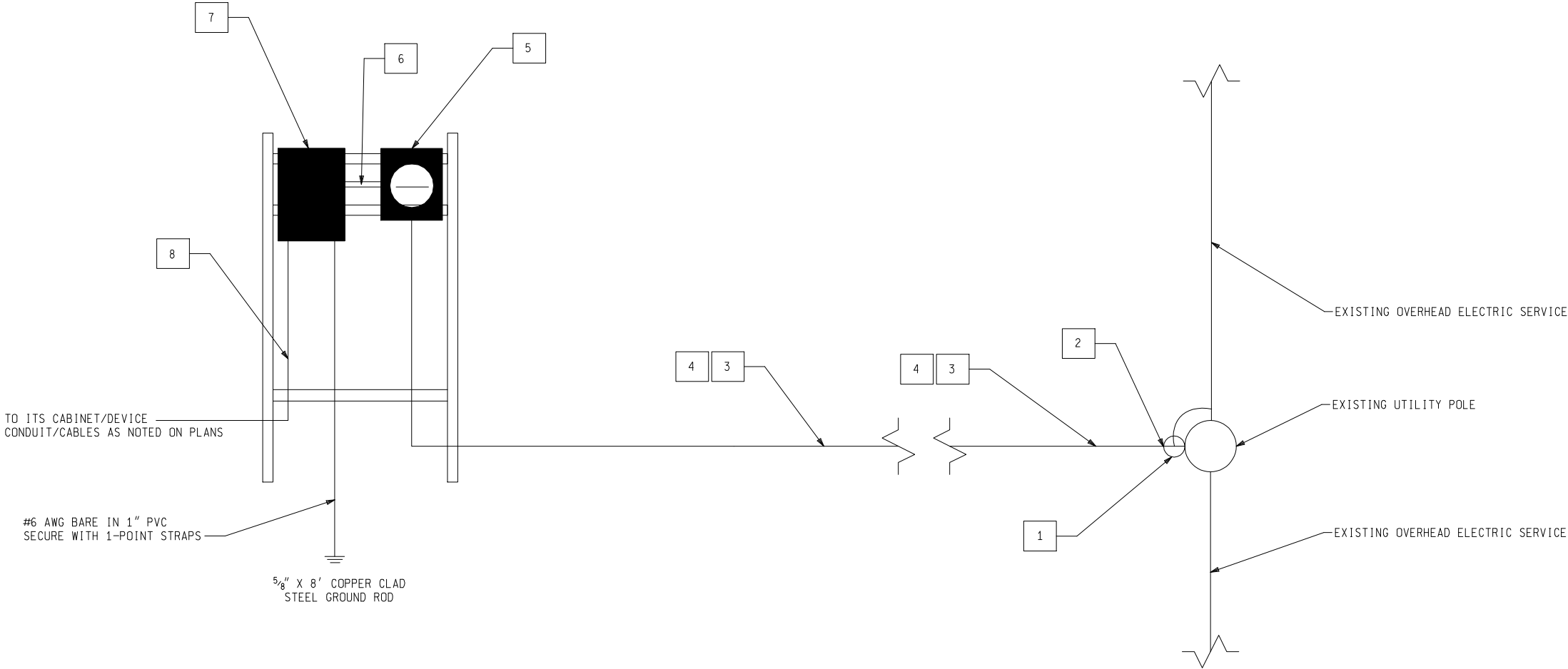
MICHIGAN DEPARTMENT OF TRANSPORTATION

SIGN DETAIL SHEET

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
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AUTH	DATE	NO.	REVISION



GENERAL NOTES

DIAGRAM DEPICTS MINIMUM EQUIPMENT NECESSARY TO PROVIDE CONNECTIVITY. AMEND THE DESIGN AS REQUIRED TO COMPLY WITH THE NATIONAL ELECTRICAL CODE, LOCAL CODES, AND REQUIREMENTS OF THE LOCAL ELECTRICAL UTILITY.

PROVIDE LICENSED ELECTRICIAN EXPERIENCED IN WORK DEPICTED ON PLANS.

THE PAY ITEM "POWER CO. (EST. COST TO CONTRACTOR)" CONSISTS OF LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE POWER AT EACH SITE FROM LOCAL ELECTRICAL UTILITY SERVICE PROVIDER AS REQUIRED ON PLANS.

THE PAY ITEM "METER AND SERVICE DISCONNECT, ITS" CONSISTS OF LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE POWER AT EACH SITE FROM LOCAL ELECTRICAL UTILITY SERVICE PROVIDER'S DEMARCATION TO EACH ITS DEVICE AS REQUIRED ON PLANS.

THE PAY ITEM "SERV DISCONNECT" CONSISTS OF LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE POWER AT EACH SITE FROM LOCAL ELECTRICAL UTILITY SERVICE PROVIDERS DEMARCATION TO EACH ITS DEVICE AS REQUIRED ON PLANS.

METER AND SERVICE DISCONNECT CAN BE INSTALLED ON WOOD POLE, SEPARATE RACK, OR AS DIRECTED BY UTILITY COMPANY OR MDOT ENGINEER.

CODED NOTES

1. POLE-MOUNTED UTILITY-PROVIDED TRANSFORMER. SECONDARY: 120/240 VAC SINGLE-PHASE, 60 HZ.
2. CONDUIT RISER: 1-1/2" GALVANIZED RIGID CONDUIT FROM SERVICE FEEDER CONDUIT TO 6 FEET ABOVE FINISHED GRADE. PROVIDE PLASTIC BUSHING. SECURE CONDUIT RISER TO UTILITY POLE WITH 2-POINT STRAPS. LOCATE STRAPS WITHIN 24" ABOVE GRADE AND WITHIN 12" FROM THE TOP OF RISER.
3. SERVICE FEEDER CONDUIT: DIRECT BURIED 1-1/2" GALVANIZED RIGID CONDUIT FROM CONDUIT RISER AT UTILITY POLE TO METER SOCKET ENCLOSURE. MINIMUM COVER: 24". SECURE VERTICAL CONDUIT LEG TO EQUIPMENT STRUCTURE WITH 2-POINT STRAPS. LOCATE STRAPS WITHIN 24" ABOVE GRADE AND WITHIN 12" FROM THE TOP OF RISER.
4. SERVICE LATERAL: CONDUIT/CABLES AS NOTED ON PLANS. PROVIDE AN ADDITION 11-FT COILED EXTENSION AT THE POLE END.
5. METER SOCKET: 100-AMP 120/240 VAC SINGLE-PHASE. ENCLOSURE: NEMA 4X. PROVIDE SOCKET CONFIGURATION REQUIRED BY ELECTRIC SERVICE UTILITY. METER PROVIDED BY ELECTRIC SERVICE UTILITY. METER SOCKET MAY NOT BE REQUIRED. SEE PLANS FOR REQUIRED EQUIPMENT.
6. SERVICE CONDUCTORS: CABLE AS NOTED ON PLANS IN MINIMUM 1-1/2 GALVANIZED RIGID CONDUIT. PROVIDE MYERS HUB FITTING AT CIRCUIT PANEL AND METER SOCKET PANEL.
7. CIRCUIT PANEL. 100-AMP, 120/240 VAC, SINGLE-PHASE, 3-WIRE, 6-SPACE (FULL-SIZE) MAIN BREAKER PANEL. ENCLOSURE: NEMA 4X. PROVIDE SEPARATE NEUTRAL AND GROUNDING BUS BARS BONDED AS NOTED ON PLANS.
8. ITS CABINET CIRCUIT IN GALVANIZED RIGID CONDUIT. MINIMUM SIZE: 1 1/2" CONDUIT FROM HANDHOLE, UNLESS NOTED ON PLANS. SEE PLANS FOR CONDUIT AND CABLE.

MISCELLANEOUS DETAILS



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760



TYPICAL M-77 POWER SERVICE DETAILS				
DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
08/21/09	75051	102223A		R.O.W CONST.
				6

DATE:

WORKED ON BY:

DATE:

CHECKED BY:

FILE NAME:

ENGINEERING REPORT NO	ENVIRON IMPACT STMT
METHOD OF SURVEY	YEAR
SURVEY ORDER	SURVEY CHIEF
AERIAL SURVEY NO	YEAR
HORIZ DATUM	VERT DATUM
ROAD DESIGN INITIATED	COMPLETED
PRELIMINARY PLANS BY	FINAL PLANS BY
PLAN REVIEW BY	DATE
FHWA AREA ENGINEER	

GENERAL PLAN NOTES

UNDERGROUND UTILITIES

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

MDOT'S FREEWAY LIGHTING SYSTEM AND OTHER MISCELLANEOUS ELECTRICAL SYSTEMS ARE NOT A PART OF MISS DIG.

THEREFORE, CONTRACTORS SHALL CONTACT THE MAINTENANCE REPRESENTATIVE AT THE MDOT REGION/TSC OFFICE TO HAVE MDOT ELECTRICAL SYSTEMS STAKED.

POLES

THE EXACT LOCATION OF POLES WILL BE DETERMINED BY THE ENGINEER.

SOIL EROSION MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODABLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED/MULCH OR MULCH BLANKET AS DIRECTED BY THE ENGINEER.

RECREATIONAL PROPERTIES

THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR STORE ANY EQUIPMENT ON ANY PUBLIC RECREATIONAL PROPERTY. ACCESS TO THE RECREATIONAL SITE MUST BE MAINTAINED AT ALL TIMES.

SEED MIXTURE

THE SYMBOL FOR THE PERMANENT TURF SEED MIXTURE ON THIS PROJECT IS SYMBOL THV.

UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED ON OUR SURVEYS DATED , 20 . THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

NAME OF OWNERKIND OF UTILITY

CS 10031

CONSUMERS ENERGY COMPANY
ATTN: GREG MORTENSEN
821 HASTINGS ST.
TRAVERSE CITY, MI 49686
231-929-6242
ELECTRIC

CHERRYLAND ELECTRIC CO.
ATTN: FRANK SIEPKER
5930 US-31 S., P.O. BOX 298
GRAWN, MI 49637
231-486-9220
ELECTRIC

DTE ENERGY/MICH CON GAS COMPANY
ATTN: KEN LAKE
1250 MICH CON LANE, S.W. P.O. BOX 279
KALKASKA, MI 49646
231-2583785
GAS

CHARTER COMMUNICATIONS
ATTN: RICK ROUSSEAU
701 SOUTH AIRPORT RD.
TRAVERSE CITY, MI 49686
231-929-7012 EXT. 100
CABLE TV

AT&T (SBC)
ATTN: CHUCK HELMBOLDT
142 E. STATE ST., FLOOR 2 WEST
TRAVERSE CITY, MI 49684
231-941-2755
TELECOM

CS 75051

UPPER PENINSULA POWER COMPANY
ATTN: TIM TIENAN
225 EAST MUNISING AVENUE, P.O. BOX 9
MUNISING, MI 49862
906-485-2875
ELECTRIC

AT&T
ATTN: MICHAEL ANDERSON
310 WEST 7TH
SAULT STE MARIE, MI 49783
906-632-9901
TELECOM

NOTES APPLYING TO ROAD AND BRIDGE STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

SOIL EROSION & SEDIMENTATION CONTROL MEASURES R-96-D

NOTES APPLYING TO TRAFFIC AND SAFETY
STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

ROADSIDE SIGN LOCATIONS & SUPPORT SPACING SIGN-120-A

WOOD POSTS SIGN-210-A

MISCELLANEOUS ESTIMATES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS:

1 LS Project Cleanup
1 LS Contractor Staking, Road Only
1 Hr Staking Plan Errors and Extras, One Person
1 Hr Staking Plan Errors and Extras, Two Person
1 Hr Staking Plan Errors and Extras, Three Person
12 Syd Slope Restoration, Type A
12 Syd Slope Restoration, Type B
1020 Ft Erosion Control, Silt Fence



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760



NOTE SHEET

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
08/21/09	75051	102223A		R.O.W CONST. 7

DATE:

WORKED ON BY:

DATE:

CHECKED BY:

FILE NAME:

WATER & SEWER SYMBOLS	
	EXISTING SANITARY CATCH BASIN
	EXISTING STORM CATCH BASIN
	PROPOSED SANITARY CATCH BASIN
	PROPOSED STORM CATCH BASIN
	EXISTING SANITARY SEWER MANHOLE
	PROPOSED SANITARY SEWER MANHOLE
	EXISTING STORM SEWER MANHOLE
	PROPOSED STORM SEWER MANHOLE
	EXISTING MANHOLE - UNIVERSAL
	PROPOSED MANHOLE - UNIVERSAL
	EXISTING CULVERT END SECTION
	PROPOSED CULVERT END SECTION
	EXISTING HEADWALL
	PROPOSED HEADWALL
	WATER SERVICE BOX
	WATER GATE VALVE BOX
	WATER MANHOLE
	WATER METER
	WATER WELL/ GROUND WATER MONITORING WELL
	EXISTING FIRE HYDRANT
	PROPOSED FIRE HYDRANT
	RIVER BOTTOM
	PINE TREE
	TREE
	RIPRAP
	SIGN
	SIGN2
	STUMP
	SWAMP

REAL ESTATE SYMBOLS & LINSTYLES	
	PROPERTY OWNERSHIP ARROW
	CONTIGUOUS PROPERTY SYMBOL
	PARCEL NUMBER BOX
	SECTION CORNER
	QUARTER QUARTER CORNER
	QUARTER CORNER
	HALF QUARTER CORNER
	ROW MARKER
	PROPERTY CORNER
	REFERENCE POINT
	REFERENCE MARKER
	CONTROL POINT
	BENCH MARK
	GOVERNMENT LINE
	PARCEL LINES

UTILITIES SYMBOLS	
	POWER POLE
	GUY POLE
	LIGHT POLE
	LIGHT STANDARD
	POWER AND LIGHT POLE
	TELEPHONE POLE
	TELEPHONE MANHOLE
	TELEPHONE PEDESTAL
	WALK NO-WALK SIGN
	GAS LINE MARKER
	GAS VALVE
	GAS FILLER PIPE
	GAS WELL
	OIL WELL
	PETROLEUM MARKER
	FIBER OPTIC MARKER
	ELECTRIC MANHOLE
	ELECTRIC HANDHOLE
	PHONE OR CALL BOX
	MAIL BOX
	DEADMAN FOR GUYWIRE
	RAILROAD SWITCH BOX
	FLASHING RAILROAD SIGN
	POWER TOWER

MISCELLANEOUS SYMBOLS	
	ADJUST DRAINAGE STRUCTURE
	ADJUST DRAINAGE STRUCTURE W/COVER
	ADJUST FIRE HYDRANT
	ADJUST DRAINAGE STRUCTURE BY OTHERS
	RELOCATE - BY OTHERS
	SIDEWALK RAMP TYPE
	SIDEWALK RAMP WITH DETECTABLE WARNING
	CHECK DAM (PROFILES)
	DIKE (PROFILES)
	WATER TABLE (PROFILES)
	TEST HOLE NO.
	BEAM G. R. RUN NUMBER (EXISTING)
	BEAM G. R. RUN NUMBER (PROPOSED)
	USED WITH UNDERGROUND GAS & ELECTRICAL LINES
	USED WITH UNDERGROUND FIBER OPTICS & TELEPHONE LINES


UNDERGROUND UTILITY LINSTYLES	
	ELECTRICAL LINE
	GAS LINE
	OIL LINE
	TELEPHONE LINE
	WATER LINE
	CABLE TV
	FIBER OPTICS
	POWER TRANSMISSION LINE

R.O.W. LINSTYLES	
	EX. LIMITED ACCESS R.O.W.
	EXISTING R.O.W.
	PROP LIMITED ACCESS R.O.W.
	PROP R.O.W.

TOPO LINSTYLES	
	HEDGE LINE
	TREE LINE
	EXISTING FENCE
	PROPOSED FENCE
	EXISTING GUARD RAIL
	PROPOSED GUARD RAIL
	EXISTING MEDIAN CABLE BARRIER
	PROPOSED MEDIAN CABLE BARRIER
	EXISTING DRAINAGE CRS EDGE OF WATER
	PROPOSED DRAINAGE CRS EDGE OF WATER
	CITY LIMITS
	RAILROAD
	SOUND ABATEMENT WALL
	CONCRETE MEDIAN BARRIER
	SLOPE STAKE LINE
	PROPOSED CULVERT/SEWER
	EXISTING CULVERT/SEWER

PLAN SHEET DRIVEWAY & MISC PAVEMENTS LEGEND	
	CONCRETE DRIVEWAY AND SIDEWALK
	HMA APPROACH/DRIVEWAY
	AGGREGATE DRIVEWAY
	MISC CONCRETE PAVEMENT
PLAN SHEET REMOVAL LEGEND	
	REMOVING HMA
	REMOVING SIDEWALK
	REMOVING PAVEMENT
	COLD-MILLING HMA
	HMA BASE CRUSH & SHAPE
	REMOVING CURB, GUTTER AND CURB & GUTTER
	REMOVING
	ABANDONING
	SAVE
	BULKHEAD
	CLEARING

TYPICAL CROSS SECTION LEGEND	
	REMOVAL OF PAVEMENT, SIDEWALK, & CURB & GUTTER
	CRUSH & SHAPE & RUBBLIZE
	COLD MILLING
	HMA TOP COURSE & WEDGING
	HMA LEVELING COURSE
	HMA BASE COURSE
	AGGREGATE, SUBBASE, SIDEWALK, CURB & GUTTER, BARRIER & VALLEY GUTTER
	CONCRETE PAVEMENT & SHOULDERS



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AUTH	DATE	NO.	REVISION	

SPECIAL LEGEND THIS PROJECT

POTENTIAL CONTAMINATED SITE

WETLANDS AREA

ITS CABINET

FLASHING BEACON

HANDHOLE, TYPE D

METER AND SERVICE DISCONNECT

LEGEND SHEET

DATE

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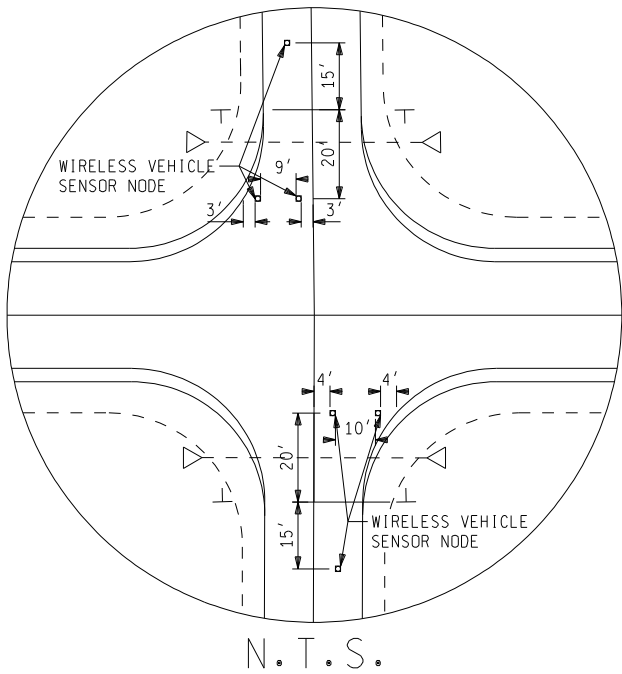
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AUTH	DATE	NO.	REVISION



CONDUIT, JACKED BORED, 1, 2 INCH
CABLE, SEC. 600V, 2, 1/C#12

CONDUIT, JACKED BORED, 1, 2 INCH
CABLE, SEC. 600V, 2, 1/C#12

CONDUIT, DB, 1, 2 INCH
CABLE, SEC. 600V, 2, 1/C#12

CONDUIT, DB, 1, 2 INCH
CABLE, SEC. 600V, 2, 1/C#12

CONDUIT, DB, 2, 2 INCH
CABLE, SEC. 600V, 2, 1/C#12 (2 SETS)
CABLE, SEC. 600V, 4, 1/C#6

CONDUIT, DB, 1, 2 INCH
CABLE, SEC. 600V, 4, 1/C#6

EX. POWER POLE
POWER CO. (EST. COST TO CONTRACTOR
UPPCO TO PROVIDE 60A SERVICE-120/240V
SINGLE-PHASE
CABLE, SEC. 600V, 4, 1/C#6
METER AND SERVICE DISCONNECT, ITS (FUSED AT 40 AMPS)

NEMA ENCLOSURE
WOOD POLE, CL4, 30 FOOT
CONDUIT, GALV STEEL, 2 INCH, STRUCTURE
CABLE, SEC. 600V, 2, 1/C#12 (2 SETS)
CABLE, SEC. 600V, 4, 1/C#6
SYSTEM CONTROLLER
WIRELESS ACCESS POINT
WIRELESS CONTACT CLOSURE CARD
WIRELESS DETECTOR RACK
I/O RELAY PANEL & BEACON CONTROLLER

SIGN OPTICAL (LED)
CABLE, SEC. 600V, 2, 1/C#12
SIGN, TYPE IIB
POST, WOOD, 4 INCH BY 6 INCH

CONSTRUCTION QUANTITIES THIS SHEET

925 Ft	Conduit, DB, 1, 2 inch
14 Ft	Conduit, DB, 2, 2 inch
156 Ft	Conduit, Jacked Bored, 1, 2 inch
181 Ft	Cable, Sec. 600V, 4, 1/C#6
1132 Ft	Cable, Sec. 600V, 2, 1/C#12
2 Ea	Sign Optical (LED)
1 Ea	NEMA Enclosure
1 Ea	Wood Pole, CL4, 30 foot
30 Ft	Conduit, Galv Steel, 2 inch, Structure
6 Ea	Wireless Vehicle Sensor Node
1 Ea	Meter and Service Disconnect, ITS
4 Ea	Hh, Type D
5000 Dir	Power Co. (Est. Cost to Contractor)
1 Ea	System Controller
52 Sft	Sign, Type IIB
64 Ft	Post, Wood, 4 inch by 6 inch
1 Ea	Wireless Access Point
1 Ea	Wireless Contact Closure Card
1 Ea	Wireless Detector Rack
1 Ea	I/O Relay Panel & Beacon Controller

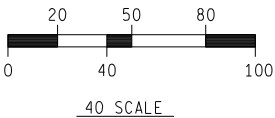
CONSTRUCTION SHEET

NOTES:
THE WIRELESS VEHICLE SENSOR NODES MUST BE PLACED AS SHOWN ABOVE IN THE INSET. THE MAXIMUM ALLOWABLE DISTANCE BETWEEN THE DETECTOR AND ACCESS POINT IS 175'.

THE CONTRACTOR SHALL HAND DIG IN THE VICINITY OF EXISTING UTILITIES TO ENSURE NO DAMAGE IS DONE TO EXISTING UTILITIES.

SIGN TYPE IIB AT M-77 SHALL BE A 48 INCH DIAMOND SHAPED SIGN AND A 48 INCH BY 30 INCH RECTANGULAR SHAPED SIGN AS SHOWN ON THE SIGN DETAIL SHEET.

UPPER PENINSULA POWER COMPANY
ATTN: TIM TIENAN
225 EAST MUNISING AVENUE, P.O. BOX 9
MUNISING, MI 49862
906-485-2875



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
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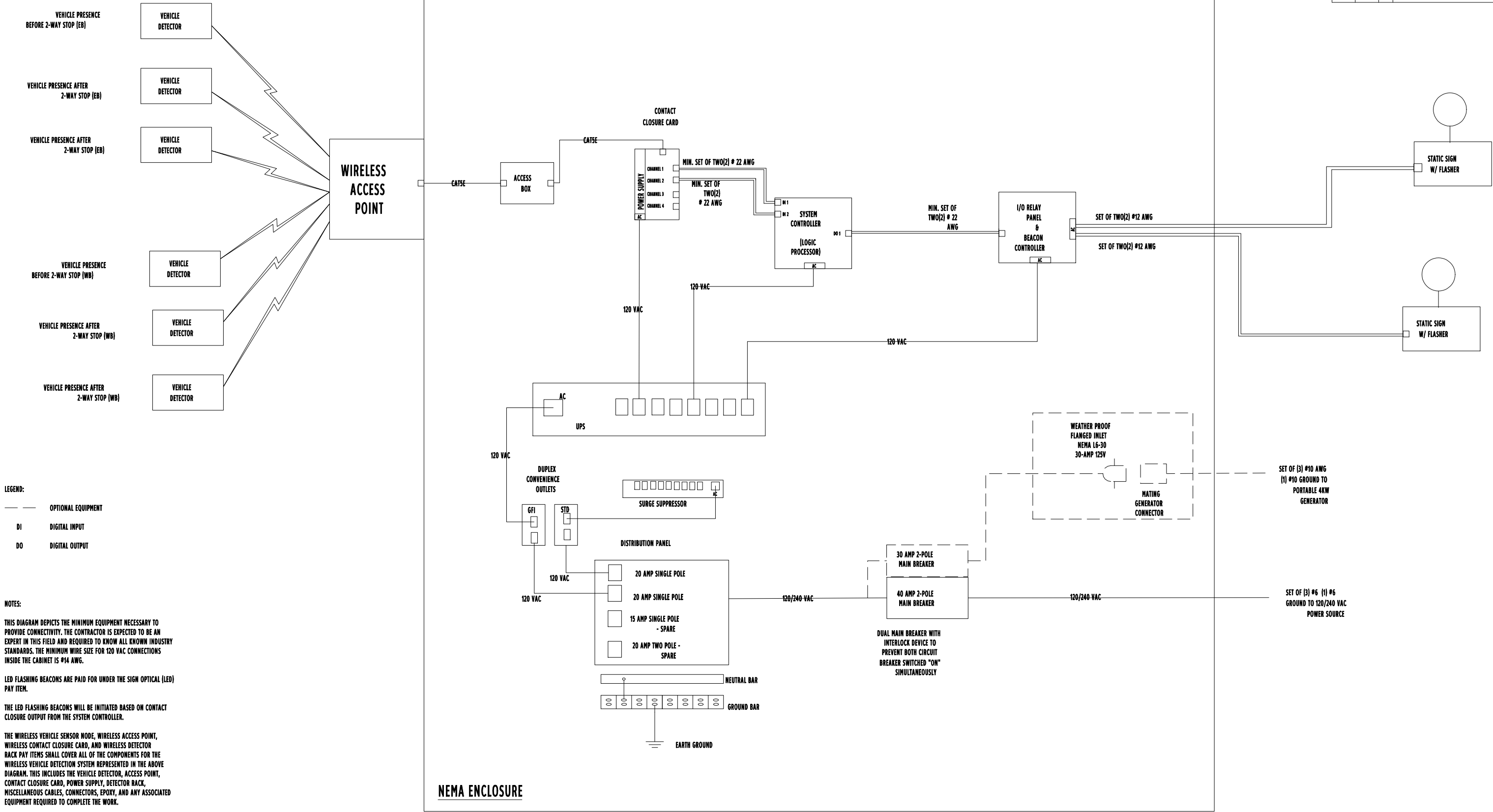
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- LEGEND:
- OPTIONAL EQUIPMENT
 - DI DIGITAL INPUT
 - DO DIGITAL OUTPUT

NOTES:

THIS DIAGRAM DEPICTS THE MINIMUM EQUIPMENT NECESSARY TO PROVIDE CONNECTIVITY. THE CONTRACTOR IS EXPECTED TO BE AN EXPERT IN THIS FIELD AND REQUIRED TO KNOW ALL KNOWN INDUSTRY STANDARDS. THE MINIMUM WIRE SIZE FOR 120 VAC CONNECTIONS INSIDE THE CABINET IS #14 AWG.

LED FLASHING BEACONS ARE PAID FOR UNDER THE SIGN OPTICAL (LED) PAY ITEM.

THE LED FLASHING BEACONS WILL BE INITIATED BASED ON CONTACT CLOSURE OUTPUT FROM THE SYSTEM CONTROLLER.

THE WIRELESS VEHICLE SENSOR NODE, WIRELESS ACCESS POINT, WIRELESS CONTACT CLOSURE CARD, AND WIRELESS DETECTOR RACK PAY ITEMS SHALL COVER ALL OF THE COMPONENTS FOR THE WIRELESS VEHICLE DETECTION SYSTEM REPRESENTED IN THE ABOVE DIAGRAM. THIS INCLUDES THE VEHICLE DETECTOR, ACCESS POINT, CONTACT CLOSURE CARD, POWER SUPPLY, DETECTOR RACK, MISCELLANEOUS CABLES, CONNECTORS, EPOXY, AND ANY ASSOCIATED EQUIPMENT REQUIRED TO COMPLETE THE WORK.

THE FLASHING BEACONS MUST SUPPORT AN ALTERNATING (BLINKING) FUNCTION. TO BE PROVIDED BY ALTERNATING CURRENT TO EACH BEACON.

ELECTRICAL CONNECTIONS MUST BE PERFORMED BY QUALIFIED SYSTEM INSTALLERS IN ACCORDANCE WITH NEC AND LOCAL CODES.

NOT TO SCALE



PARSONS BRINCKERHOFF, INC.
500 GRISWOLD ST, SUITE 2900
DETROIT, MICHIGAN 48226
313-963-5760



Michigan Department of Transportation

TYPICAL ITS CABINET WIRING DIAGRAM				
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DATE: WORKED ON BY: CHECKED BY: FILE NAME:

CONSTRUCTION SHEET