SPAN WIRE TRAFFIC SIGNAL INSTALLATION TO STEEL POLES

SEE TRAFFIC SIGNAL AND CASE SIGN INSTALLATION ON SPAN WIRE DETAIL (WASH-1, PAGE 4)

STEEL POLE TOP

POLE CONTACT HEIGHT (POCH) AS SHOWN ON PLANS

SEE SPAN WIRE INSTALLATION DETAIL WASH-1, PAGE 2

SEE ANCHOR BASE STEEL STRAIN POLE DETAIL WASH-1 PAGE 3

FINISH PLAN GRADE

STEEL POLE, SIZE AS SHOWN ON PLANS

2 - MIN. 18” DIA. COILS FOR FUTURE ADJUSTMENTS OF SIGNAL SPAN (IF REQUIRED)

SEE SIDE OF STEEL POLE CONTROLER CABINET BRACKET DETAIL WASH-1, PAGE 3

No. | ITEM
--- | ---
1. | TRAFFIC SIGNAL HEADS (No. & TYPE AS INDICATED)
2. | SPAN WIRE HANGER
3. | *5/16” EXTRA HIGH STRENGTH SPAN WIRE
4. | 3” SERVICE CAP (WEATHER HEAD)
5. | P.J. TRAFFIC SIGNAL CABLE(S) (AS SPECIFIED)
6. | PREFORMED LASHING RODS
7. | SPAN WIRE CLAMP
8. | INSTALL SPAN WIRE PREFORMED (ARMOR ROD) UNDER EACH SPAN HANGER
9. | WIRE CLIPS OR PREFORMED GUY GRIP DEAD ENDS
10. | CARRIAGE BOLT, OVAL EYE NUT AND THIMBLE

NOTES:
* Difference in elevations between the center of red signal lenses must be less than six (6) inches.

* Different signal arrangements, such as five separate heads w/case sign, may be required.
  See plan details for specific arrangements.

* All traffic signal installation shall conform to the Michigan Manual of Uniform Traffic Control Devices, or as directed by the Engineer.

* All grounds shall provide less than 10 ohm resistance to ground.
SPAN WIRE TRAFFIC SIGNAL AND WEATHER HEAD INSTALLATION TO STEEL POLES

3" CONDUIT, 6" to 8" LENGTH
3" WEATHER HEAD (METAL)

3 LAYER TAPE AROUND T.S. CABLE AND THIMBLE
PREFORMED DEAD END
3 LAYER TAPE AROUND END OF DEAD END AND SPAN WIRE
CONNECTOR FOR GROUND WIRE
3 LAYER TAPE AROUND END OF LASHING ROD, SPAN WIRE, AND T.S. CABLE

SEE DETAIL BELOW

PREFORMED LASHING ROD
TWO (2) MIN. 18" DIA. COILS OF TRAFFIC SIGNAL CABLE

3' TAIL FOR ADJUSTMENT
MULTICONDUCTOR TRAFFIC SIGNAL CABLE(S) (NO SPLICES ALLOWED BETWEEN SIGNAL HEAD & CONTROLLER BOX)
GROUND WIRE
OVAL EYE NUT AND THIMBLE (SEE DETAIL THIS PAGE)
POLE BAND (SEE DETAIL THIS PAGE)

OPTIONAL PORCELAIN STRAIN INSULATOR
MULTICONDUCTOR SIGNAL CABLE LASHING ROD SHALL TERMINATE EITHER SIDE OF STRAIN INSULATOR.

POLE BAND DETAIL
(ASME A36 STEEL)

TWO (2) 5/8"-1 INC x 2-3/4" LONG HEX HEAD BOLT, LOCK WASHER, FLAT WASHER AS REQ'D, AND HEX NUT (A325 GALVANIZED)

1/4"
3/4"
3/4"
1-1/4"
2-1/2"

1/5/8"
3/4"
1-1/2"

1/5/8"

POLE BAND DETAIL
(ASME A36 STEEL)

TWO (2) 5/8"-1 INC x 2-3/4" LONG HEX HEAD BOLT, LOCK WASHER, FLAT WASHER AS REQ'D, AND HEX NUT (A325 GALVANIZED)

1/4"
3/4"
3/4"
1-1/4"
2-1/2"

1/5/8"
3/4"
1-1/2"

1/5/8"

POLE BAND DETAIL
(ASME A36 STEEL)

TWO (2) 5/8"-1 INC x 2-3/4" LONG HEX HEAD BOLT, LOCK WASHER, FLAT WASHER AS REQ'D, AND HEX NUT (A325 GALVANIZED)

1/4"
3/4"
3/4"
1-1/4"
2-1/2"

1/5/8"
3/4"
1-1/2"

1/5/8"

POLE BAND DETAIL
(ASME A36 STEEL)

TWO (2) 5/8"-1 INC x 2-3/4" LONG HEX HEAD BOLT, LOCK WASHER, FLAT WASHER AS REQ'D, AND HEX NUT (A325 GALVANIZED)

1/4"
3/4"
3/4"
1-1/4"
2-1/2"

1/5/8"
3/4"
1-1/2"

1/5/8"
SPAN WIRE TRAFFIC SIGNAL INSTALLATION ON WOOD POLES

NO SCALE

SEE TRAFFIC SIGNAL AND CASE SIGN INSTALLATION ON SPAN WIRE DETAIL (WASH-1, PAGE 3)

POLE CONTACT HEIGHT (POCH) AS SHOWN ON PLANS

SEE TS CONFIGURATION DETAIL AND BRACKET ARM MOUNTED VEHICULAR "LOW LEVEL" TRAFFIC SIGNAL DETAIL WASH-12, PAGE 2

2 - MIN. 18" DIA. COILS FOR FUTURE ADJUSTMENTS OF SIGNAL SPAN (IF REQUIRED)

WOOD POLE SIZE & CLASS AS SHOWN ON PLANS (TYP.)

SEE SPAN WIRE INSTALLATION DETAIL WASH-2, PAGE 2

SEE WOOD POLE CONTROLLER CABINET DETAIL WASH-10, PAGE 3 OR 4

GROUND ROD(S) (TYP.)

GROUND ROD(S) (TYP.)

No. ITEM
1. TRAFFIC SIGNAL HEADS (NO. & TYPE AS INDICATED)
2. SPAN WIRE HANGER
3. *5/16" EXTRA HIGH STRENGTH SPAN WIRE
4. PREFORMED LASHING RODS
5. *GUY THIMBLE
6. P.J. TRAFFIC SIGNAL CABLE (AS SPECIFIED)
7. *5/8" EYEBOLT
8. INSTALL SPAN WIRE PREFORMED (ARMOR ROD) UNDER EACH SPAN HANGER
9. *PREFORMED GUY GRIP DEAD ENDS
10. 3" SERVICE CAP (WEATHER HEAD)
11. 3" PVC (SCHEDULE 80)

* BY POWER COMPANY

NOTES:
* DIFFERENCE IN ELEVATIONS BETWEEN THE CENTER OF RED SIGNAL LENSES SHALL BE LESS THAN SIX (6) INCHES.
* DIFFERENT SIGNAL ARRANGEMENTS, SUCH AS FIVE SEPARATE HEADS W/CASE SIGN, MAY BE REQUIRED. SEE PLAN DETAILS FOR SPECIFIC ARRANGEMENTS.
* ALL TRAFFIC SIGNAL INSTALLATION SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, OR AS DIRECTED BY THE ENGINEER.
SPAN WIRE INSTALLATION ON WOOD POLE

NO SCALE

*5/8" THRU BOLT WITH OVAL EYE NUT
*THIMBLE
3 LAYER TAPE AROUND T.S. CABLE AND THIMBLE
*PREFORMED DEAD END
3 LAYER TAPE AROUND END OF
DEAD END AND SPAN WIRE
3 LAYER TAPE AROUND END OF LASHING
ROD, SPAN WIRE, AND T.S. CABLE
PREFORMED LASHING ROD
5/16" STEEL SPAN CABLE

SEE DETAIL BELOW

TWO (2) MIN. 18" DIA. COILS OF
TRAFFIC SIGNAL CABLE
*3' TAIL FOR ADJUSTMENT
MULTICONDUCTOR TRAFFIC SIGNAL CABLE,
STAPLED TO WOOD POLE. (NO SPLICES ALLOWED
BETWEEN SIGNAL HEAD AND CONTROLLER BOX.)
*3/4" MACHINE BOLT AND 3/4"
SQUARE NUT-10 USS NC, WITH WASHER
3" PVC SERVICE WEATHER CAP (WEATHER HEAD)

SAG FOR Drip LOOP, 9" RADIUS, MINIMUM.
(TYP., TRAFFIC SIGNAL CABLE)

3" PVC CONDUIT MIN

*CLEVIS THIMBLE (TYP.)
*CURVED SQUARE WASHER
3" x 3" x 1/4" - 13/16" HOLE
*POLE GUY PLATE (TYP.)
*GUY STRAND
*PREFORMED DEAD END

OPTIONAL
PORCELAIN STRAIN INSULATOR

MULTICONDUCTOR SIGNAL CABLE
LASHING ROD SHALL TERMINATE EITHER
SIDE OF STRAIN INSULATOR.

NOTES:
ALL CONDUIT SHOWN SHALL BE SCHEDULE 80 PVC (POLYVINYLCHLORIDE),
UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.

THERE IS NO GAP BETWEEN THE 5/16" STEEL CABLE SPAN AND THE
MULTICONDUCTOR TRAFFIC SIGNAL CABLE. THE LASHING ROD MUST HOLD
THE TWO TOGETHER.

* BY POWER COMPANY
SINGLE OR DOUBLE SPAN TRAFFIC SIGNAL TO WOOD POLE FIT UP (DETAIL)

NO SCALE

3" PVC SERVICE ENTRANCE CAP (WEATHERHEAD)

SAG FOR Drip LOOP 9" RADIUS MIN. (TRAFFIC SIGNAL SECONDARY SERVICE CABLES)

3" PVC CONDUIT RISER

WOOD POLE

GALVANIZED STEEL, 2 HOLE, 3" RIDIC PIPE CLAMP (3'-0" SPACING) (TYP.)

3" PVC C-BODY

3" PVC 90 DEG. SWEEP ON 24" MIN. RADIUS,

DIRECT BURIAL CONDUIT, (1) 3",

FINISH PLAN GRADE

NOTES:

* ALL CONDUIT SHALL BE SCHEDULE 80 PVC (POLYVINYL CHLORIDE) UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.

* 3" CONDUIT REQUIRED UNLESS SPECIFIED ON PLANS

CONDUIT AT WOOD POLE - DETAIL

NO SCALE

3" PVC C-BODY

FINISH PLAN GRADE

WOOD POLE

3" CONDUIT

3" 90 DEG. SWEEP ON 24" MIN. RADIUS
DOUBLE SPAN WIRE TRAFFIC SIGNAL ON WOOD POLES - DETAIL

NO SCALE

POLE CONTACT HEIGHT (POCH) AS SHOWN ON PLANS

CASE SIGN OR TRAFFIC SIGNAL AS SHOWN ON PLANS

SEE DOUBLE SPAN WIRE INSTALLATION DETAIL WASH-5, PAGE 2 AND SECONDARY SERVICE POLE DETAIL WASH-5, PAGE 3

WOOD POLE SIZE & CLASS AS SHOWN ON PLANS (Typ.)

* BY DETROIT EDISON

GROUND ROD

---

TRAFFIC SIGNAL AND CASE SIGN INSTALLATION ON SPAN WIRE DETAIL

NO SCALE

SIGNAL CABLE TO BY-PASS HANGER (If smooth size of cotter pin)

ANCHOR ROD

2 LAYER TAPE OVER LASHING ROD (Typ.)

ENTRANCE FACING AWAY FROM CONTROLLED POLE

WIRELOM

SIGNAL BRACKET

WIRE LOOM

HEAVY DUTY LOCK NUT WITH LOCK WASHER

BOLT-ON HUB

CASE SIGN

---

TRAFFIC SIGNAL AND CASE SIGN INSTALLATION ON DOUBLE SPAN WIRE DETAIL

NO SCALE

ANCHOR ROD (Typ.)

2 SIGNAL HANGERS (Typ.)

3 LAYER TAPE OVER LASHING ROD (Typ.)

2 MIN. 1/8" DIA. COILS

HEAVY DUTY LOCK NUT

BOLT-ON HUB

CASE SIGN

---

555 N. ZEEB RD.
ANN ARBOR, MI 48103-1556
734-761-1500
FAX 734-761-3330

INITIALS Date

DRAWN BY J.O.M Sept '03

REvised BY J.S.W. FEB. '09

CHECKED BY B.M.S. JULY '07

APPROVED BY B.M.S. JULY '07

PLAN DATE: 09/27/2006 WASH-5
1 OF 2

DOUBLE SPAN WIRE TRAFFIC SIGNAL ON WOOD POLES
DOUBLE SPAN WIRE INSTALLATION - DETAIL

NO SCALE

*5/8" THRU BOLT WITH OVAL EYE NUT (TYP.)
*THIMBLE (TYP.)
*PRE FORMED DEAD END (TYP.)
3 LAYER TAPE AROUND END OF DEAD END AND SPAN WIRE (TYP.)

SEE DETAIL BELOW

*3" TAIL FOR ADJUSTMENT (TYP.)
*3/4" MACHINE BOLT AND 3/4" SQUARE NUT TO USS NC, WITH WASHER

3 LAYER TAPE AROUND T.S. CABLE AND THIMBLE
3 LAYER TAPE AROUND END OF LASHING ROD, SPAN WIRE, AND T.S. CABLE

PERFORMED LASHING ROD

SEE DETAIL BELOW

TWO (2) MIN. 18" DIA. COILS OF TRAFFIC SIGNAL CABLE

MULTICONDUCTOR TRAFFIC SIGNAL CABLE
STAPLED TO WOOD POLE. (NO SPLICES ALLOWED BETWEEN SIGNAL HEAD AND CONTROLLER BOX.)

3" PVC SERVICE WEATHER CAP (WEATHER HEAD)
SAG FOR DIP LOOP, 9" RADIUS, MINIMUM (TYP., TRAFFIC SIGNAL CABLE)

3" PVC CONDUIT MIN

NOTES:
ALL CONDUIT SHOWN SHALL BE SCHEDULE 80 PVC (POLYVINYLCHLORIDE), UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.

THERE IS NO GAP BETWEEN THE 5/16" STEEL CABLE SPAN AND THE MULTICONDUCTOR TRAFFIC SIGNAL CABLE. THE LASHING ROD MUST HOLD THE TWO TOGETHER.

* BY POWER COMPANY

OPTIONAL
*PORCELAIN STRAIN INSULATOR

LASHING ROD SHALL TERMINATE EITHER SIDE OF STRAIN INSULATOR.
SPAN WIRE INSTALLATION ON WOOD POLE

NO SCALE

3 LAYER TAPE AROUND T.S. CABLE AND THIMBLE
3 LAYER TAPE AROUND END OF DEAD END AND SPAN WIRE
3 LAYER TAPE AROUND END OF LASHING ROD, SPAN WIRE, AND T.S. CABLE
PREFORMED LASHING ROD

*5/16" STEEL SPAN CABLE
SEE DETAIL BELOW

TWO (2) MIN. 18" DIA. COILS OF TRAFFIC SIGNAL CABLE

*3" TAIL FOR ADJUSTMENT
MULTICONDUCTOR TRAFFIC SIGNAL CABLE STAPLED TO WOOD POLE (NO SPLICES ALLOWED BETWEEN SIGNAL HEAD AND CONTROLLER BOX.)

3" PVC SERVICE WEATHER CAP (WEATHER HEAD)

SAG FOR DRIP LOOP, 9" RADIUS, MINIMUM
(TYP., TRAFFIC SIGNAL & SECONDARY SERVICE CABLES)

GALVANIZED STEEL, 2 HOLE, 1-1/2" RIGID PIPE CLAMP (3"-6" SPACING)
(TYP.)

2" PVC CONDUIT

OPTIONAL
PORCELAIN STRAIN INSULATOR

MULTICONDUCTOR SIGNAL CABLE
LASHING ROD SHALL TERMINATE EITHER SIDE OF STRAIN INSULATOR.

NOTES:
ALL CONDUIT SHOWN SHALL BE SCHEDULE 80 PVC (POLYVINYLCHLORIDE). UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.

THERE IS NO GAP BETWEEN THE 5/16" STEEL CABLE SPAN AND THE MULTICONDUCTOR TRAFFIC SIGNAL CABLE. THE LASHING ROD MUST HOLD THE TWO TOGETHER.

* BY POWER COMPANY

CONTROLLER CABINET FOR FLASHER - DETAIL

NO SCALE

WOOD POLE

2" CONDUIT

CONTROLLER CABINET FOR FLASHING BEACON

No. 6 BARE COPPER GROUND WIRE

DRILL & CALK HOLE IN BOTTOM OF CABINET

2" LE'S CAN ROTATE TO FIT

PLASTIC MOLDING

3/4" COPPER CLAD STEEL GROUND ROD CLAMP
6" TO 12" BELOW TOP OF GROUND

FINISH PLAN GRADE

3/4" X 10' COPPER CLAD STEEL GROUND ROD
TRAFFIC SIGNAL STEEL POLE CAMERA MOUNTINGS

BRACKET ARM MOUNT

CAMERA

3-1/2" STAINLESS STEEL BANDS

MAST ARM MOUNT

CAMERA

3-1/2" STAINLESS STEEL BANDS

MAST ARM STD. MOUNT

DRILL & TAP 3 HOLES FOR 3/8" STAINLESS STEEL BOLTS & WASHERS

ZIP TIED TO BRACKET

DRILL 1-3/8" HOLE IN LOWER BACK SIDE OF STEEL POLE AND PLACE 1" INSIDE DIAMETER RUBBER GROMMET

3-1/2" STAINLESS STEEL BANDS
TERMINAL BLOCK WIRING CONNECTIONS (COLOR CODED) OF THE PEDESTRIAN AND VEHICULAR TRAFFIC SIGNAL AND CASE SIGN LAMPS WITH FIELD CABLES FROM THE TRAFFIC SIGNAL CONTROLLER OR SIDE OF POLE CABINET

TRAFFIC SIGNALS WITH CASE SIGNS
*7 CONDUCTOR TRAFFIC SIGNAL CABLE
[1–7/C #16 P.J. (NSA 20–1)]

TO CASE SIGN LAMPS
C.S.
BLACK
WHITE
(NEUTRAL WIRE)

TERMINAL BLOCK LOCATED
INSIDE RED SIGNAL LAMP
SECTIONAL COMPARTMENT
FROM CONTROLLER
OR SIDE OF POLE
CABINET
*BLACK
WHITE/W/BLACK STRIPE

TO SIGNAL LAMPS
R Y G
RED
YELLOW
GREEN
(NEUTRAL WIRE)

TERMINAL BLOCK LOCATED
INSIDE YELLOW SIGNAL LAMP
SECTIONAL COMPARTMENT
FROM CONTROLLER
OR SIDE OF POLE
CABINET
*RED
*ORANGE
*GREEN
*WHITE (NOT USED/TAPE)
*WHITE
PHASES “1, 3, 5, AND 7” (SEE PHASING DIAGRAM DETAIL)

PEDESTRIAN TRAFFIC SIGNALS
*7 CONDUCTOR TRAFFIC SIGNAL CABLE
[1–7/C #16 P.J. (NSA 20–1)]

MINOR SIDE STREET
TO PEDESTRIAN LAMPS
WALK
DONT WALK
WHITE (NEUTRAL)

TERMINAL BLOCK LOCATED
INSIDE PED SIGNAL HEAD
FROM CONTROLLER
OR SIDE OF POLE
CABINET
*BLUE
*BLACK

MAJOR SIDE STREET
TO PEDESTRIAN LAMPS
WALK
DONT WALK
PEDESTRIAN PUSH BUTTON

TERMINAL BLOCK LOCATED
INSIDE PED SIGNAL HEAD
FROM CONTROLLER
OR SIDE OF POLE
CABINET
*GREEN
*RED
PHASES “2 AND OR 6” (SEE PHASING DIAGRAM DETAIL)
*ORANGE
*WHITE W/ BLACK STRIPE

TRAFFIC SIGNALS
*4 CONDUCTOR TRAFFIC SIGNAL CABLE
[1–4/C #16 P.J. (NSA 20–1)]

TO SIGNAL LAMPS
R Y G
RED
YELLOW
GREEN
(NEUTRAL WIRE)

TERMINAL BLOCK LOCATED
INSIDE YELLOW SIGNAL LAMP
SECTIONAL COMPARTMENT
FROM CONTROLLER
OR SIDE OF POLE
CABINET
YELLOW
GREEN
WHITE (NEUTRAL)
PHASES “2, 4, 6, AND 8” (SEE PHASING DIAGRAM DETAIL)

ILLUMINATED STREET NAME SIGNS AND LUMINARES
2 CONDUCTOR TRAFFIC SIGNAL CABLE
[1–2/C #14 P.J. (NSA 20–1)]

ILLUMINATED SIGN OR LUMINARE
BLACK
WHITE (NEUTRAL)

FROM CONTROLLER
OR SIDE OF POLE
CABINET
TERMINAL BLOCK LOCATED
INSIDE STREET NAMES AND LUMINARES
BLACK
WHITE (NEUTRAL)
### Controller Cabinet with Side of Pole Cabinets

#### 20 Conductor

<table>
<thead>
<tr>
<th>Wire Color</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Black</td>
<td>Cabinet Power</td>
</tr>
<tr>
<td>Black w/Red Stripe</td>
<td>Case Signs</td>
</tr>
<tr>
<td>Blue w/Black Stripe</td>
<td>Luminaires</td>
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<tr>
<td>Red w/Green Stripe</td>
<td>Street Name Signs</td>
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<tr>
<td>White</td>
<td>Neutral</td>
</tr>
<tr>
<td>White w/Black Stripe</td>
<td>Neutral</td>
</tr>
<tr>
<td>White w/Red Stripe</td>
<td>Neutral, Alt. When Needed Right Turn Red</td>
</tr>
<tr>
<td>Red w/Black Stripe</td>
<td>Left Turn Red</td>
</tr>
<tr>
<td>Orange w/Black Stripe</td>
<td>Left Turn Yellow</td>
</tr>
<tr>
<td>Green w/Black Stripe</td>
<td>Left Turn Green</td>
</tr>
<tr>
<td>Red</td>
<td>Thru Red</td>
</tr>
<tr>
<td>Orange</td>
<td>Thru Yellow</td>
</tr>
<tr>
<td>Green</td>
<td>Thru Green</td>
</tr>
<tr>
<td>White w/Red Stripe</td>
<td>Right Turn Red, Alt. When Needed Right Turn Red</td>
</tr>
<tr>
<td>Orange w/Red Stripe</td>
<td>Right Turn Yellow</td>
</tr>
<tr>
<td>Blue w/Red Stripe</td>
<td>Right Turn Green</td>
</tr>
<tr>
<td>Red w/White Stripe</td>
<td>Main Ped Red</td>
</tr>
<tr>
<td>Green w/White Stripe</td>
<td>Main Ped Green</td>
</tr>
<tr>
<td>Black w/White Stripe</td>
<td>Side Ped Red</td>
</tr>
<tr>
<td>Blue w/White Stripe</td>
<td>Side Ped Green</td>
</tr>
<tr>
<td>Blue</td>
<td>3 Top Bar Relay</td>
</tr>
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</table>

#### 10 Conductor

<table>
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<tr>
<th>Wire Color</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Red</td>
<td>Relay Outputs - Lft</td>
</tr>
<tr>
<td>Green</td>
<td>Relay Outputs - Adv</td>
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<tr>
<td>Red w/Black Stripe</td>
<td>Relay Outputs - Adv</td>
</tr>
<tr>
<td>Green w/Black Stripe</td>
<td>Relay Outputs - Adv</td>
</tr>
<tr>
<td>Orange</td>
<td>Ped Push Button</td>
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<tr>
<td>White w/Black Stripe</td>
<td>Ped Push Button</td>
</tr>
<tr>
<td>Blue</td>
<td>Log.GND</td>
</tr>
<tr>
<td>Orange w/Black Stripe</td>
<td>Not Used</td>
</tr>
<tr>
<td>White</td>
<td>Not Used</td>
</tr>
<tr>
<td>Black</td>
<td>Not Used</td>
</tr>
</tbody>
</table>

NOTE: Optional wiring as directed by engineer.
A more detailed phasing diagram will be provided at the preconstruction meeting.
BASE MOUNTED TRAFFIC SIGNAL CONTROLLER FOUNDATION AND CABINET (DETAIL)

Foundation Plan:
- Drill 3/4" x 4" hole for anchor and bolt (typ.)
- 4" deep concrete slab
- 48" deep conc. foundation

Foundation Elevation View:
- NEMA TS2
- Raised 15" metal base extension
- Caulk inside, outside & under cabinet with all substrates caulking sealant

Notes:
*Direction of conduit exiting the foundation is not necessarily as shown. Construct conduit to exit the foundation as shown on the plan or as directed by the Engineer.
*All conduit shown shall be Schedule 80 PVC (Polyvinyl Chloride) unless otherwise specified or directed by the Engineer.
*Conduit shall have 90° sweep on 36" radius

All grounds shall provide less than 10 ohm resistance to ground

Washtenaw County Road
555 N. Zeeb Rd.
Ann Arbor, MI 48103–1556
734-761-1500
Fax 734-761-3239

Base Mounted Traffic Signal Controller Foundation & Cabinet

Drawn by: J.D.M Sept '03
Revised by: A.J.G. July '07
Checked by: B.M.S. July '07
Approved by: B.M.S. July '07
Plan Date: 12-06-2006
Wash-10 1 of 4
2-3/8" STAINLESS STEEL
LAG BOLTS & WASHER (TYP.)

DRILL HOLES IN BACK OF CABINET
TO MATCH WOOD POLE CABINET
MOUNTING BRACKET (TYP.)

2-5/16" OR 3/8" STAINLESS
STEEL BOLT & WASHERS (TYP.)

3" PVC CONDUIT

WOOD POLE

CABINET GROUNDING TERMINAL BUS

CABINET (SIZE AS SPECIFIED)

#6 (MIN.) COPPER INSULATED GROUND WIRE FROM DISCONNECT TO BUSBAR IN CONTROLLER CABINET

BUSHING & LOCK NUTS

3" PVC ENTRANCE "T"

GALVANIZED STEEL 2 HOLE,
3" RIGID PIPE CLAMP (3' 0"
SPACING, TYP.)

3" PVC CONDUIT

3" ENTRANCE LB., PVC

FINISH GRADE

DISTANCE TO FINISH GRADE

3' FOR CONTROLLER CABINET

1'-6" MIN.
3'-0" MAX.

DIRECT BURIAL CONDUIT, (1) 3", AS SHOWN ON PLANS

NOTES:
USE CONDUIT SIZE SPECIFIED (MIN.) UNLESS CURRENT NATIONAL ELECTRIC CODE INDICATES A LARGER SIZE IS REQUIRED.
ALL CONDUIT SHALL BE SCHEDULE 80 PVC (POLYVINYL CHLORIDE) UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
INSTALL NO. 6 COPPER INSULATED GROUND WIRE FROM DISCONNECT TO CABINET GROUNDING TERMINAL BUS.
NOTES:

USE CONDUIT SIZE SPECIFIED (MIN.) UNLESS CURRENT NATIONAL ELECTRIC CODE INDICATES A LARGER SIZE IS REQUIRED. ALL CONDUIT SHALL BE SCHEDULE 80 PVC (POLYVINYL CHLORIDE) UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.

INSTALL No. 6 COPPER INSULATED GROUND WIRE FROM DISCONNECT TO CABINET GROUNDING TERMINAL BUS.
TEMPORARY SIDE OF WOOD POLE SIGNAL CONTROLLER CABINET

2-3/8" STAINLESS STEEL LAG BOLTS & WASHER (TYP.)

DRILL HOLES IN BACK OF CABINET TO MATCH WOOD POLE CABINET MOUNTING BRACKET (TYP.)

2-5/16" OR 3/8" STAINLESS STEEL BOLT & WASHERS (TYP.)

3" PVC CONDUIT

WOOD POLE

CABINET GROUNDING TERMINAL BUS

GALVANIZED STEEL 2 HOLE, 3" RIGID PIPE CLAMP (3' 0" SPACING, TYP.)

3" PVC ENTRANCE "T"

CABINET (SIZE AS SPECIFIED)

#6 (MIN.) COPPER INSULATED GROUND WIRE FROM DISCONNECT TO BUSBAR IN CONTROLLER CABINET

BUSHING & LOCK NUTS

CONTINUOUS WIRE FROM BUS TO GROUND ROD

3" ENTRANCE LB., PVC

3/4" x 10' COPPER CLAD STEEL GROUND ROD

FINISH GRADE

3' 0" TO GRADE

NOTES:
USE CONDUIT SIZE SPECIFIED (MIN.) UNLESS CURRENT NATIONAL ELECTRIC CODE INDICATES A LARGER SIZE IS REQUIRED. ALL CONDUIT SHALL BE SCHEDULE 80 PVC (POLYVINYL CHLORIDE) UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
INSTALL 3/4" x 10' COPPER CLAD GROUND ROD, AS REQUIRED, TO PROVIDE LESS THAN 10 OHM RESISTANCE TO GROUND. INSTALL NO. 6 COPPER GROUND WIRE FROM GROUND ROD TO CABINET GROUNDING TERMINAL BUS.
BRACKET ARM MOUNTED
VEHICULAR TRAFFIC SIGNAL (DETAIL)
NO SCALE

TOP MOUNTING BRACKET
- DRILL STEEL POLE TO INSERT "RIVNUT" FASTENER (TYP.)
  (UNISTRUT DETROIT SERVICE CO. OR APPROVED EQUAL)
- MOUNTING BRACKET, TYPICAL (SEE DETAIL THIS PAGE)
  TEE BRACKET
  SAW TOOTH WASHER
  RUBBER GASKET
  HEAVY DUTY LOCK NUT
  WITH FLAT WASHER
  PIPE NIPPLE
  ONE-WAY, 3-SECTION
  TRAFFIC SIGNAL HEAD
  RUN MULTICONDUCTOR TRAFFIC
  SIGNAL CABLE INSIDE POLE TO
  TRAFFIC SIGNAL CONTROLLER

BOTTOM MOUNTING BRACKET
- STEEL MAST ARM/STRAIN POLE

MOUNTING BRACKET DETAIL
- FASTEN MOUNTING BRACKET TO STEEL
  SIGNAL POLE WITH 3/8" x 5" HEX
  STAINLESS STEEL HEAD BOLT AND
  STAINLESS STEEL WASHER, FLAT HEAD
  "RIVNUT" FASTENER — UNIFIED THREAD
  SYSTEM, TYPICAL (2 MINIMUM OF EACH)
- TAPPED FOR 1 1/2" PIPE
TOP MOUNTING BRACKET

PLASTIC MOLDING
MOUNTING BRACKET, TYPICAL (SEE DETAIL THIS PAGE)
TEE BRACKET
SAW TOOTH WASHER
RUBBER GASKET

HEAVY DUTY LOCK NUT
WITH FLAT WASHER
PIPE NIPPLE
MULTICONDUCTOR TRAFFIC SIGNAL CABLE STAPLED TO WOOD POLE
BELOW MOLDING WITH SAG FOR Drip LOOP (9” RADIUS, MIN.).
RUN CABLE UP POLE TO WEATHER
HEAD AND BACK TO CONTROLLER.
ONE-WAY, 3-SECTION TRAFFIC SIGNAL HEAD

WOOD POLE
PIPE NIPPLE
HEAVY DUTY LOCK NUT
WITH FLAT WASHER

PIECE BUSHING
AND CAP (TYP.)

BOTTOM MOUNTING BRACKET

MOUNTING BRACKET DETAIL

TAPPED FOR 1 1/2” PIPE
INSTALL 1-1/4” PIPE BUSHING
WITH CAP OR CLOSE HOLE WITH
1-1/4” PIPE PLUG

3/8” x 3” STAINLESS LAG
BOLT & WASHER (2 PER BRACKET, MINIMUM)
BRACKET ARM MOUNTED
PEDESTRIAN TRAFFIC SIGNAL (DETAIL)

TOP MOUNTING BRACKET

- Drill steel pole to insert "RIVNUT" fastener (typ.)
- (Unistrut Detroit Service Co. or approved equal)
- Mounting bracket, typical (see detail this page)

- TEE BRACKET
- SAW TOOTH WASHER
- RUBBER GASKET

- HEAVY DUTY LOCK NUT
- WITH FLAT WASHER

- PIPE NIPPLE

- PEDESTRIAN TRAFFIC SIGNAL HEAD

- RUN MULTICONDUCTOR TRAFFIC SIGNAL CABLE INSIDE POLE TO SIDE OF POLE, CABINET

- PIPE NIPPLE
- HEAVY DUTY LOCK NUT
- WITH FLAT WASHER

- TEE BRACKET

BOTTOM MOUNTING BRACKET

MOUNTING BRACKET DETAIL

- Fasten mounting bracket to steel signal pole with 3/8" x 3" stainless steel hex head bolt and washer and flat head "RIVNUT" fastener - unified thread system, typical (2 minimum of each)

- TAPPED FOR 1 1/2" PIPE
BRACKET ARM MOUNTED PEDESTRIAN TRAFFIC SIGNAL (DETAIL)

NO SCALE

TOP MOUNTING BRACKET

PLASTIC MOLDING

MOUNTING BRACKET, TYPICAL (SEE DETAIL THIS PAGE)

TEE BRACKET

SAW TOOTH WASHER

RUBBER GASKET

HEAVY DUTY LOCK NUT WITH FLAT WASHER

PIPE NIPPLE

MULTICONDUCTOR TRAFFIC SIGNAL CABLE STAPLED TO WOOD POLE BELOW MOLDING WITH SAG FOR DRIP LOOP (9" RADIUS, MIN.). RUN CABLE UP POLE TO WEATHER HEAD AND BACK TO CONTROLLER.

PEDESTRIAN TRAFFIC SIGNAL HEAD

WOOD POLE

PIPE NIPPLE

HEAVY DUTY LOCK NUT WITH FLAT WASHER

PIPE BUSHING AND CAP (TYP.)

TEE BRACKET

1' BOTTOM HEIGHT

BOTTOM MOUNTING BRACKET

MOUNTING BRACKET DETAIL

TAPPED FOR 1 1/2" PIPE

INSTALL 1-1/4" PIPE BUSHING WITH CAP OR CLOSE HOLE WITH 1-1/4" PIPE PLUG

3/8" x 3" STAINLESS LAG BOLT & WASHER (2 PER BRACKET, MINIMUM)
**TRAFFIC SIGNAL HANDHOLE**

**NO SCALE**

**HANDHOLE PLAN**

Frame and bolt down cover shall be East Jordan Iron Works, #2860 PT (frame type 1) or an approved equal.

**HANDHOLE ELEVATION**

- Seal with 1" (min.) Butyl tape where casting frame meets concrete structure to prevent water infiltration.
- 1/2" threaded insert (typ.)
- Prefabricated reinforced concrete handhole
- No. & size of knockouts as required (see plan)
- 5" dia. sump
- 3-1/2" to 3-3/4" 22-1/2" 4-1/8" (typ.)

**INSTALLATION DETAIL**

- Install to finish grade
- Place 3" of topsoil on backfill
- Backfill with Class II granular material unless otherwise directed by the engineer
- Conduit
- Non-shrink grout seal (typ.)
- Handhole bedding, 6" of Class II material (compacted)
- 6" (typ.)

**NOTES:**

The conduit shall only protrude the required amount of distance to install the bell end.

The material and workmanship shall be in accordance with current M.D.O.T. standard specifications.

The inner surface of the handhole shall be smooth.

Heavy duty covers shall be castings which meet the requirements of the current specifications for Gray iron castings ASTM designation A40 and shall have a minimum strength as provided for class No. 30 Gray iron castings. All castings shall be cleaned by sand blasting.

The seating face of the cover and the seat for the same on the frame, if required, shall be ground or machined so that the cover shall have an even bearing on the seat to prevent rocking or tilting.

The castings shall be free of pouring faults, blow holes, cracks, and other imperfections. They shall be sound, true to form and thickness, clean and neatly finished, and shall be coated with tar pitch varnish.

Number and size of conduit opening(s) shall be provided as required, see plans.

Conduit arrangement shown on plans may be modified with approval by the engineer.

Plug all unused entrance holes and seal around holes entered.

Size, quantity, and type of PVC conduit shall be as shown on the plans. Method of PVC conduit installation shall be as shown on the plans, as specified in the proposal, or as directed by the engineer.

The non-shrink grout shall be placed inside and outside of the concrete handhole.
CONDUIT TRENCH NOT UNDER ROADWAY

CONDUIT/INNERDUCT BORES UNDER ROADWAY

CONDUIT TRENCH IN THE INFLUENCE OF ROADWAY

NOTE:
SIZE, QUANTITY, AND TYPE OF PVC CONDUIT SHALL BE AS SHOWN ON THE PLANS.

NOTE:
MARKING TAPE SHALL HAVE PROPER LOGO AS SUPPLIED BY THE ENGINEER AND INSTALLED BY THE CONTRACTOR.

NOTE:
MARKING TAPE SHALL HAVE PROPER LOGO AS SUPPLIED BY THE ENGINEER AND INSTALLED BY THE CONTRACTOR.
STEEL MAST ARM POLE FOUNDATION, TYPE III MAST ARM POLE, MAST ARM, AND LUMINAIRE

NOTE: Traffic signals shall be mounted to the mast arm. Traffic signal faces shall be directed parallel to the centerline of the road that they control, and mounted in the center of the lane they control on multi-lane roadways.

3/4" Dia. Hole Factory Drilled in Outboard Tube. Field Drill Inboard Tube to assure snug fit. (Orientation shall be horizontal).

Sample Pole & Arm Tags Detail B
To be attached to pole or arm 4" from base of tube (stamped in 3/8" characters) attached to pole/arm with (4) #8x3/8 SS Type U drive screws each
STEEL MAST ARM POLE FOUNDATION ANCHOR BOLTS DETAILS AND MOUNTING DETAILS

CONTRACTOR TO FIELD DRILL 1 3/8" HOLE IN POLE AND PLACE 1" RUBBER GROMMET
1 1/4" DIAM. HOLE IN FRONT CLAMP FOR WIRING

LUMINAIRE ARM

(4) 1/2" X 5" (A325) BOLTS WITH (2) HEX NUTS & (2) LOCK WASHERS

7/8"
2 1/2"

TOP OF POLE CAP
C-HOOK (FOR WIRE SUPPORT & LIFTING)

3/4" SCH. 40 PIPE X 2" LG FOR LIFTING & GALVANIZING

ORIENTATION OF PIPE 180° FROM H. HOLE AT BASE & C-HOOK OPPOSITE PIPE
NOTE SEAM WELDS SHOULD BE 90° ± FROM HANDBOLE AT BASE
TOP OF POLE DETAIL F

LUMINAIRE CLAMP DETAIL E

CONTRACTOR TO FIELD DRILL 3 1/2" HOLE IN POLE AND PLACE 3" DIA. CLOSE NIPPLE PIPE
4" DIAM. HOLE IN FRONT CLAMP HALF SHELL FOR WIRING

5/16" MIN.
3/16"
5/16" X 2" STEEL BACK-UP RING

ARM WELD DETAIL G

3/4" SCH. 40 PIPE X 2" LG FOR LIFTING
1/4"

INBOARD ARM END SECTION DETAIL I

(4) 3/4" SCH. 40 PIPE X 3/4" LG. WELDED TO BACK PLATE
(4) 5/8" DIA. X 3 1/2" LG. HEX. HEAD BOLTS (11/16" DIA. HOLES IN POLE, FIELD DRILLED)

(4) 3/8" THK. PLATE TOP AND BOTTOM

(4) 3/8" THK. PLATE SIDE GUSSETS

MAST ARM CLAMP DETAIL H

3/8" X 24 3/4" STEEL CLAMP HALF SHELLS

3/16" DIA. HOLE THRU PIPE & BOLT FOR 1/8" X 1/2" COTTER PIN

NO SCALE
STEEL MAST ARM POLE HANDBOLES, CABINET BRACKET & POLE BASE DETAILS
NO SCALE

ANCHOR BASE STEEL STRUCK POLE

1/2" THICK PLATE PLATE AND GUSSETS ARE ASME MATERIAL

CABINET MOUNTING BRACKET DETAIL C

GROUNDING PROVISION NUT
REINFORCED/C474 WELDED TO HANDBOLES FRAME W/SST
1/2"-13 SQ NUT AND SST HEX BOLT 3/4" L.G.

1/4"x1/2" SLE BACK-UP BAR TO SECURE HANDBOLES COVER

3/8" MAX.

11GA. COVER WITH 1/4"-20 SST MACH. SCR. & SST CHAIN

3/4" X 3 1/2" BAR

6" x 1/2" BAR HANDBOLES DETAIL

DETAIL C

BASE DETAIL WITH DETECTOR CABINET

(4) 2" ANCHOR BOLTS BY OTHERS

20° B.C.

2° RAD. TYP.

20° B.C.

2° RAD. TYP.

(4) 2 1/4" DIA. H OLES

BASE DETAIL

(4) 2 1/4" DIA. HOLES

BASE DETAIL

CABINET MOUNT BRACKETS Ø 270

6"x10" BAR HANDBOLES SEE DETAIL

8 1/4"}

BASE DETAIL WITH CONTROLLER CABINET

(4) 2" ANCHOR BOLTS BY OTHERS

20° B.C.

2° RAD. TYP.

20° B.C.

2° RAD. TYP.

BASE DETAIL
3-SECTION TRAFFIC SIGNAL INSTALLATION ON MAST ARM (DETAIL)

NO SCALE

3-SECTION TRAFFIC SIGNAL, 12", WITH 12"x 27" CASE SIGN

NOTE:
* FASTEN BACKPLATE TO THE SIGNAL HEAD WITH HEX HEAD SELF-TAPPING SCREWS AND WASHERS, USING THE PERFORMED HOLES ON THE BACK OF EACH SIGNAL SECTION (4 SCREWS PER SECTION).

* SEE MANUFACTURER RECOMMENDATION FOR TORQUE SETTING ON CABLE MOUNT CLAMP KITS
5 SECTION TRAFFIC SIGNAL

NOTE:
* FASTEN BACKPLATE TO THE SIGNAL HEAD WITH HEX HEAD SELF-TAPPING SCREWS AND WASHERS, USING THE PERFORMED HOLES ON THE BACK OF EACH SIGNAL SECTION (4 SCREWS PER SECTION).
* SEE MANUFACTURER RECOMMENDATION FOR TORQUE SETTING ON CABLE MOUNT CLAMP KITS
STEEL MAST ARM POLE FOUNDATION

#6 AWG GROUND WIRE
DOUBLE NUT CONSTRUCTION

1-1/2” & 2-3” CONDUIT 90’
SWEEP ON 36” RADIUS

2” ANCHOR BOLTS (TYPICAL)
SEE OPTION 1 & 2 DETAILS
WASH-17 PAGE 2 AND 3

3.5” CONCRETE

BOLT TIE ROD (TYPICAL)
SEE DETAILS WASH-17,
PAGE 2 OR 3

ANCHORE BOLTS WITHIN
3” TO 12” OF BOTTOM

24” MIN.

42” DIAMETER

NOTES:

* FOUNDATION DEPTH FOR SINGLE MAST ARM USE 16.0’ MIN.

* FOUNDATION DEPTH FOR DOUBLE MAST ARM USE 18.5’ MIN.

ALTERNATE 42” DIAMETER FOUNDATION DEPTHS CAN BE DESIGNED BASED ON MDOT SIG-280-A
FOUNDATION DEPTH AND SOIL TABLE AND SUBMITTED FOR EVALUATION AND APPROVAL OF THE ENGINEER.

ALL GROUNDS SHALL PROVIDE LESS THAN 10 OHM RESISTANCE TO GROUND
Notes:
1. Anchor bolts shall be set and held
vertical at the correct location and
at the proper elevation with a 3/4" steel
(or approved equal) template, a minimum
of 24 hours after the concrete
placement has been completed. Each set
of four bolts shall be tied together by
welding into a basket with #6 bar circle
or approved equal. This is in addition to
the steel template.

2. (4) Anchor bolts with (2) Hex nuts.
(2) washers per bolt with threaded end
galvanized a minimum 20° per ASTM A153

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Anchor bolts - 2" dia. equally spaced
at 90° on a 20" dia. bolt circle.

20" dia. bolt circle (typ.)

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PLAN VIEW

Steel template must be kept
horizontal at all times
after installation

---

ELEVATION

#4 steel reinforcement
bar circle located outside
vertical steel bars.

---

MAST ARM FOUNDATION (OPTION 1: WITH CAGE)
NOTES:

1. ANCHOR BOLTS SHALL BE SET AND HELD VERTICAL AT THE CORRECT LOCATION AND AT THE PROPER ELEVATION WITH A 3/4" STEEL (OR APPROVED EQUAL) TEMPLATE A MINIMUM OF 24 HOURS AFTER THE CONCRETE PLACEMENT HAS BEEN COMPLETED. EACH SET OF FOUR BOLTS SHALL BE TIED TOGETHER BY WELDING INTO A BASKET WITH #6 BAR CIRCLE OR APPROVED EQUAL. THIS IS IN ADDITION TO THE STEEL TEMPLATE.

2. (4)− ANCHOR BOLTS WITH (2) HEX NUTS, (2) WASHERS PER BOLT WITH THREAD END GALVANIZED A MINIMUM 20" PER ASTM A153 (NO BEVELED WASHERS NEEDED TO PROVIDE THE POLE UPRIGHT TILT BACK TO OFFSET ARM POLE DEFLECTION, THE ARM TO POLE UPRIGHT CONNECTION 3% RISE IS FABRICATED TO COMPENSATE FOR THIS DEFLECTION.)

NOTE: STEEL TEMPLATE MUST BE KEPT HORIZONTAL AT ALL TIMES AFTER INSTALLATION.

ANCHOR BOLT CAGE SHALL BE SHOP FABRICATED FROM #6 BAR CIRCLE OR 3/4" SQUARE STOCK OR APPROVED EQUAL WELDED TO INSIDE OF ACHORE BOLTS TO HOLD ALIGNMENT.

HEAVY HEX NUTS, (8) REQUIRED FOR TEMPLATE AND ANCHOR BOLT CAGE ASSEMBLY FLAT WASHERS

WITHIN 12" OF BOTTOM

MAST ARM FOUNDATION (OPTION 2: WITHOUT CAGE)
FOUNDATION ANCHOR BOLT DETAIL
OPTION 1: WITH CAGE

NUT AND WASHER ARE ASTM A307, HOT DIPPED, GALV., PER ASTM A153

NOTE:
ANCHOR BOLT MATERIAL REFER TO SECTION 908.15 A AND B OF THE MICHIGAN STANDARD SPECIFICATIONS FOR CONSTRUCTION

FOUNDATION ANCHOR BOLT DETAIL
OPTION 2: WITHOUT CAGE

NUT AND WASHER ARE ASTM A307, HOT DIPPED, GALV., PER ASTM A153

NOTE:
ANCHOR BOLT MATERIAL REFER TO SECTION 908.15 A AND B OF THE MICHIGAN STANDARD SPECIFICATIONS FOR CONSTRUCTION
PEDESTRIAN PEDESTAL FOR PUSHBUTTON AND FOUNDATION

NO SCALE

PEDESTAL FOR PEDESTRIAN PUSH BUTTON

CAP FOR 4" POLE
60363-T6 ALLOY, 4" X .250"
WILL SCHEDULE 40-3.73 $/FT
SPUN FINISH

PEDESTRIAN PUSHBUTTON SIGNS
(MOUNTED DIRECTLY ABOVE
PUSHBUTTON OR OFFSET TO FIT
ON 4" POLE (SEE SIDE VIEW
PANEL FOR MOUNTING)

PEDESTRIAN PUSHBUTTONS
CAULK WITH ALL SUBSTRATES
CAULKING SEALANT

STAINLESS STEEL
HEX HEAD BOLT,
3/8"-16 x 1"

COVER HELD IN
PLACE WITH A
SOCKET BUTTON HEAD
STAINLESS STEEL SCREW,
5/16" -18 x 1"

SQUARE ALUMINUM BASE

SIDE VIEW

SQUARE BASE
BOTTOM PLAN

PEDESTRIAN PUSHBUTTON SIGN
(SIDE MOUNT DETAIL)

STAINLESS STEEL BOLT 1 1/2"
STAINLESS STEEL WASHER
NYLON WASHER

PEDESTRIAN PUSH BUTTON FOUNDATION
USING 48" PEDESTAL HELIX FOUNDATION

TOP STEEL PLATE OF
PEDESTAL HELIX FOUNDATION

12-3/4" DW BOLT CIRCLE

1" DIA. X
2-1/2" TO 3"
LONG FULL
THREADED BOLTS

INSTALL 1-1/4" MIN. CONDUIT
FOR RETROITS RUN INTO NEAREST
HANDBOLES

48" PEDESTAL HELIX FOUNDATION

ELEVATION
RECTANGULAR RAPID FLASHING BEACON

8 FT ILLUMINATED (LED) CROSS WALK SIGN
WITH BOTTOM (LED) STREET LIGHT
INSTALL OVER CENTERLINE OF ROAD (TWO WAY
HANGING) OR CENTERED OVER ONE WAY MULTI
LANES ROADS (ONE WAY ARM MOUNTED)

DRILL 1-3/8" HOLE
AND PLACE 1" INSIDE
DIA. RUBBER GROMMET

W11-2 (36" X 36")
RECTANGULAR RAPID FLASHING BEACON (RRFB)

SEE SIGNS FOR RFP PAGE 2 DETAIL J

PEDESTRIAN PUSHBUTTON

SEE WASH-16, Pg 1-5 FOR
MAST ARM STD. AND ARM
DETAILS - CATEGORY III

FINISH PLAN GRADE

FOR FOUNDATION
SEE TRAFFIC SIGNAL MAST ARM
STANDARD FOUNDATION (WASH-17)
Sign Code W11–2 (36”x36”) y/g
Include Sign Back Plate
Between Sign and Pole
Use MDOT typical for hole spacing

RECTANGULAR RAPID FLASHING BEACON (RRFB)

Sign Code W16–7PR (24”x12”) y/g
Include Sign Back Plate
Between Sign and Pole
Use MDOT typical for hole spacing

Sign Code Special (12”x18”) y/g

Sign Code R10–25 (9”x12”) w/b

ALL PEDESTRIAN & PUSHBUTTON SIGNS
(SIDE MOUNT DETAIL)

RRFB With Signs on Mast Arm Pole

STAINLESS STEEL BOLT 3/8”x1 1/2”
ALUMINUM RIVET–NUT 3/8”
STAINLESS STEEL WASHER NYLON WASHER

FROM WALKABLE SURFACE 42”
RECTANGULAR RAPID FLASHING BEACON

PEDESTAL FOR PEDESTRIAN PUSH BUTTON

6063-6 ALLOY, 4" x .250"
WALL SCHEDULE 40-3.73 #/FT
SPUN FINISH

SIGN CODE W11-2
20" x 20"
y/g
Include Sign Back Plate
Between Sign and Pole
Use MDT typical for hole spacing

RECTANGULAR RAPID
FLASHING BEACON (RRFB)

SIGN CODE W16-7PR
(24" x 12") y/g
Include Sign Back Plate
Between Sign and Pole
Use MDT typical for hole spacing

SIGN CODE SP (12" x 18") y/g

SIGN CODE SP (9" x 12") w/b

PEDESTRIAN PUSHBUTTON
CAULK WITH ALL SUBSTRATES
CAULKING SEALANT

STAINLESS STEEL
HEX HEAD BOLT,
3/8"-16 x 1"

SQUARE ALUMINUM BASE
COVER HELD IN
PLACE WITH A
SOCKET BUTTON HEAD
STAINLESS STEEL SCREW
5/16" - 18 x 1"

SQUARE ALUMINUM BASE

SQUARE BASE
BOTTOM PLAN

PEDESTAL FOUNDATION

NOTES:
GROUNDING SYSTEM SHALL MEASURE 10 OHMS OR LESS TO GROUND. ALL
SCREWS, BOLTS AND PIPE THREAD SHALL
BE GREASED WITH NON-CONDUCTIVE
CONDUCTIVE GREASE. ANCHOR BOLTS
ARE TO BE ASTM 307 STEEL (4 REQ'D).

12-3/4" DIA.
BOLT CIRCLE

3/4" DIA. x 18" LONG
ANCHOR BOLT (Typ.)
(SEE DETAIL)

6 STRANDED BARE COPPER
GROUND WIRE OF SUFFICIENT
LENGTH FOR CONNECTION TO
GROUND LUG OR STUD

INSTALL 2" CONDUIT

INSTALL 2ND CONDUIT MIN.
1/8" FOR GROUND CABLE

USE NON-SOLDER TYPE CONNECTOR

3/4" x 10" COPPER CLAD
GROUND ROOD(S) A MIN. OF 1/2" FROM
FLOOR, BELOW GRADE (MAY BE
INSTALLED INSIDE NEAREST
HANDHELD), OR AS DIRECTED BY THE
ENGINEER.

ELEVATION

ANCHOR BOLT DETAIL

NUT, 3/4" H. S. HEX HEAD
GALVANIZED (4 REQ'D)

WASHER, 3/4" DIA. STANDARD
FLAT GALVANIZED (6 REQ'D)

NUT, 3/4" H. S. HEX HEAD
GALVANIZED (4 REQ'D)

3/4" DIA. GALVANIZED

3-1/2"

SIDE VIEW

STAINLESS STEEL
BOLT 3/8"x1 1/2"

ALUMINUM
Rivet-Nut-3/8"

STAINLESS STEEL WASHER
NYLON WASHER

ALL PEDESTRIAN & PUSHBUTTON SIGNS
(SIDE MOUNT DETAIL)