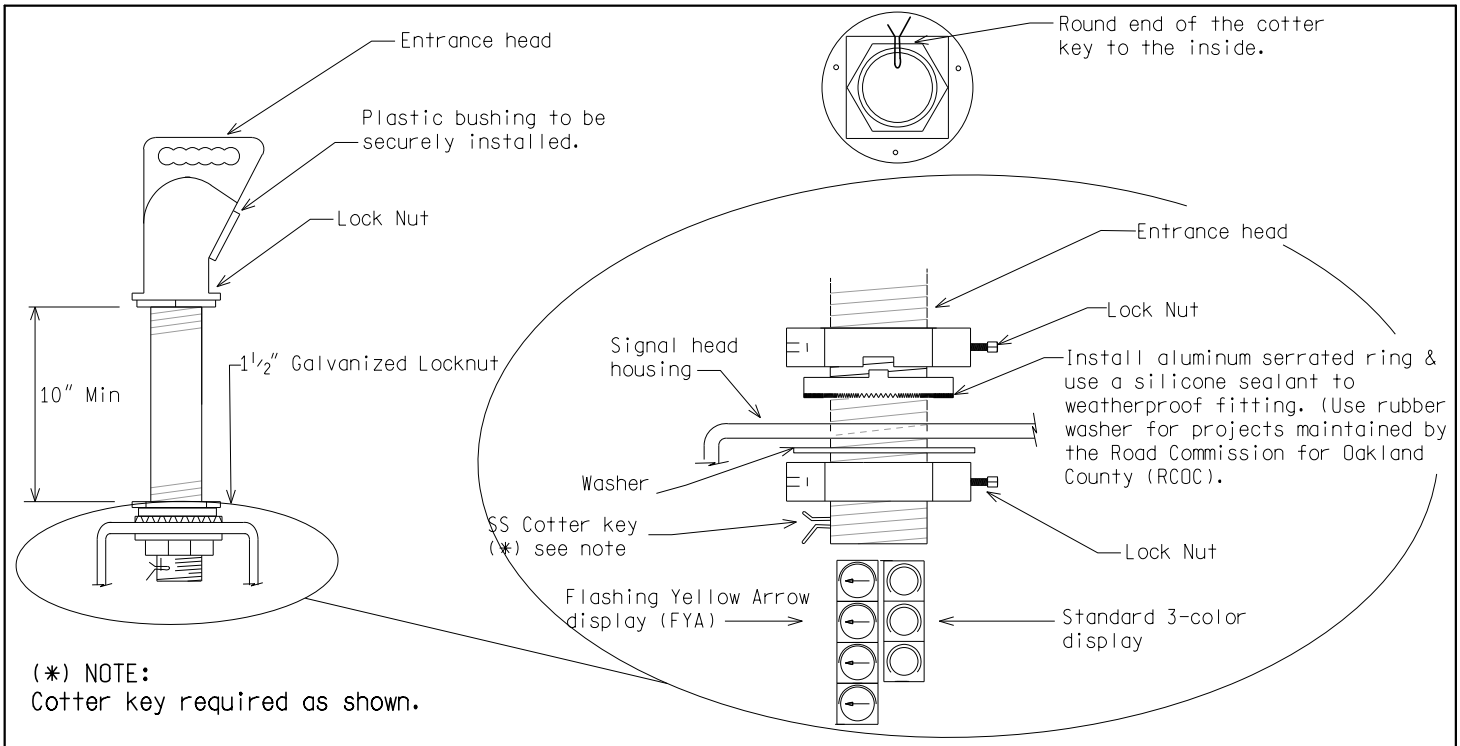
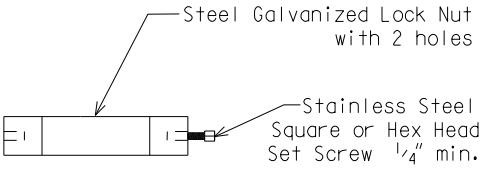
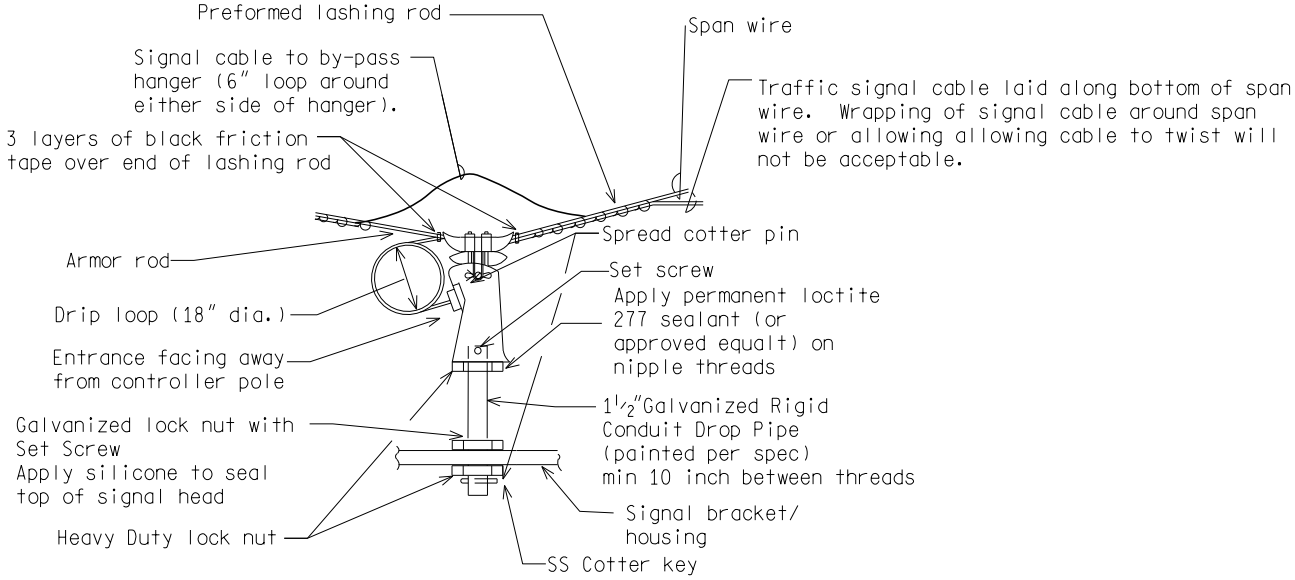


(*) NOTE:
Cotter key required as shown.

ONE-WAY TRAFFIC SIGNAL HEAD



OH SIGNAL LOCK NUT DETAIL



HANGER ATTACHMENT

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG300A.dgn Rev. 11/13/20

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

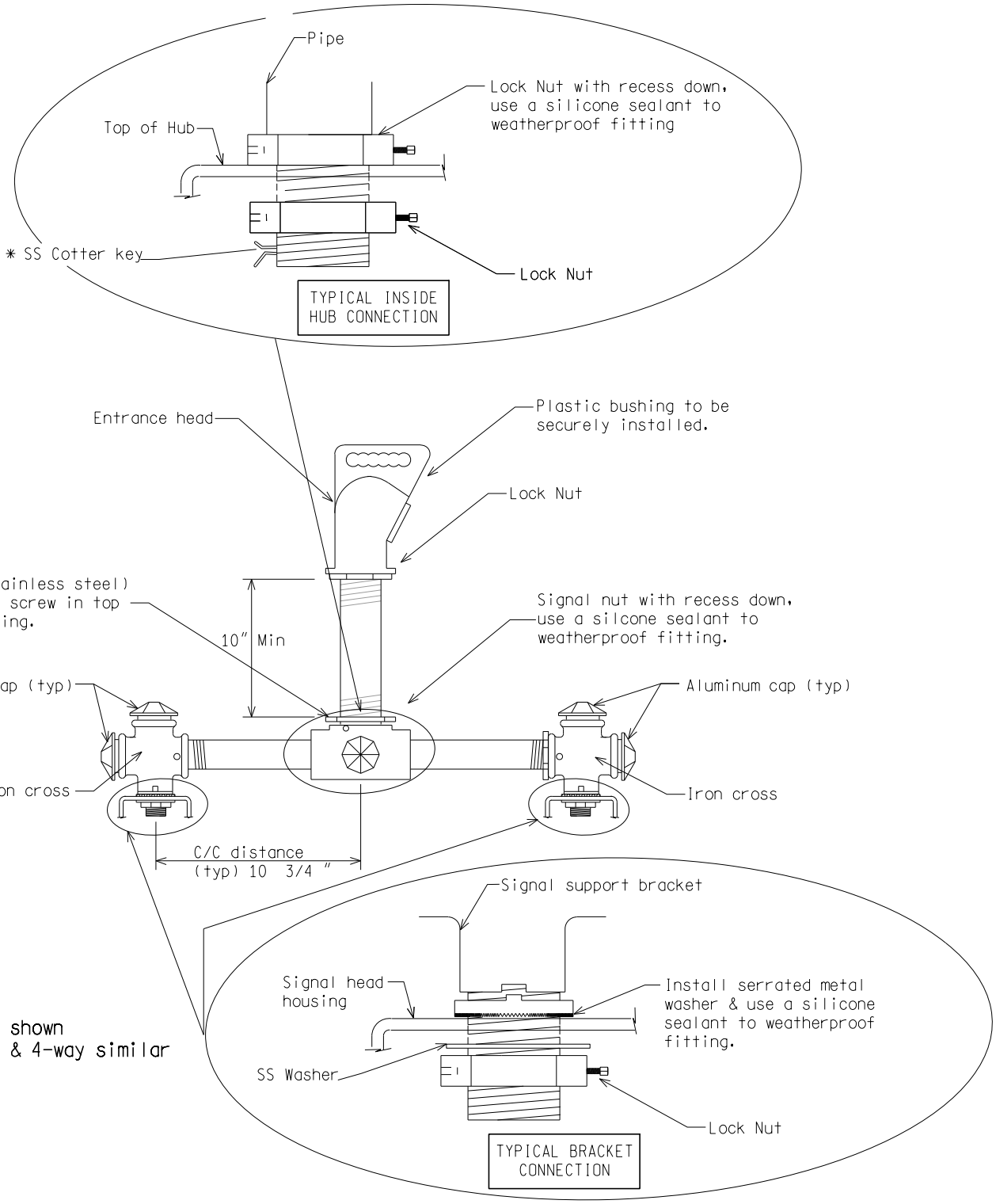
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

SPAN WIRE MOUNTED T.S. BRACKET ASSEMBLY

PLAN DATE

SIG-300-A

SHEET 1 of 3



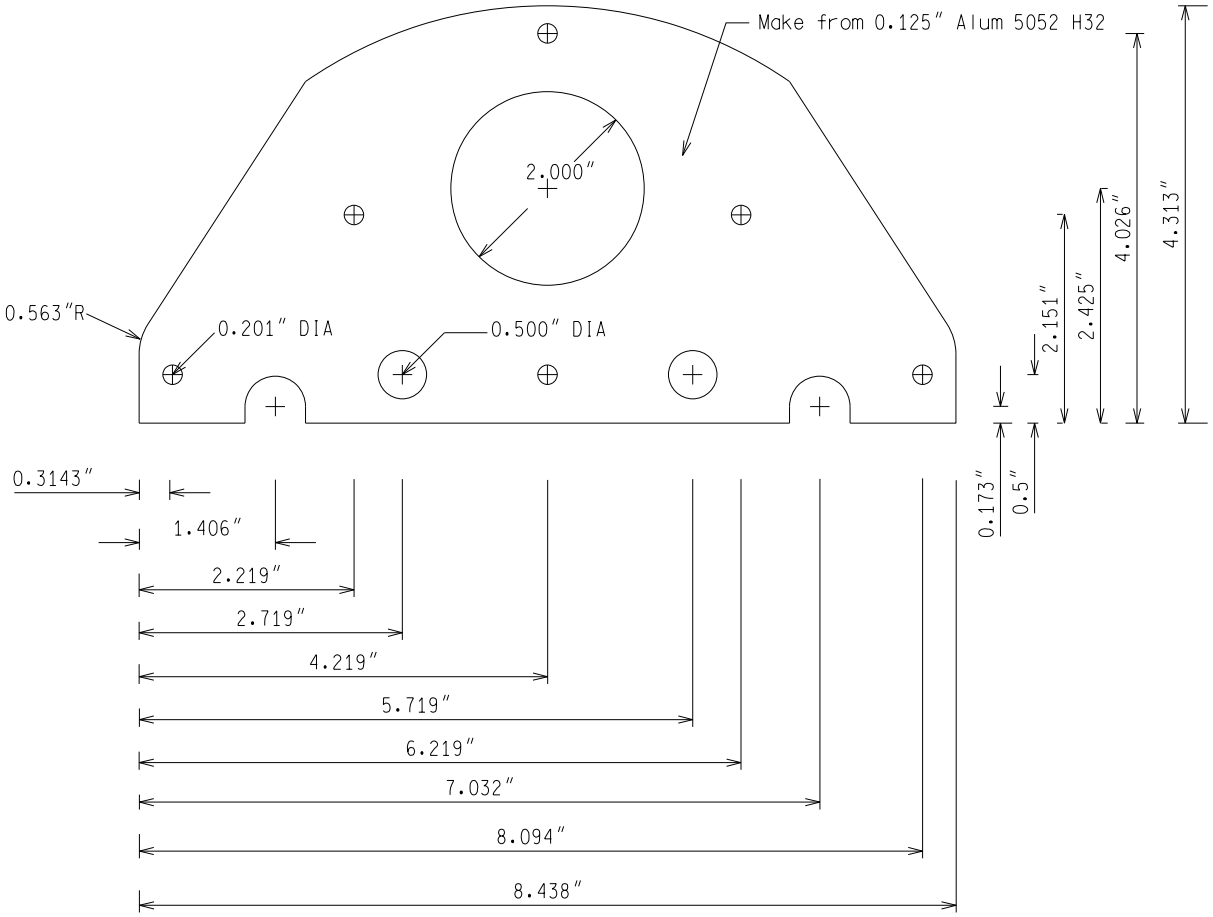
NOTE:
2-way T.S. shown
3-way T.S. & 4-way similar

MULTIPLE-WAY TRAFFIC SIGNAL HEAD(S)

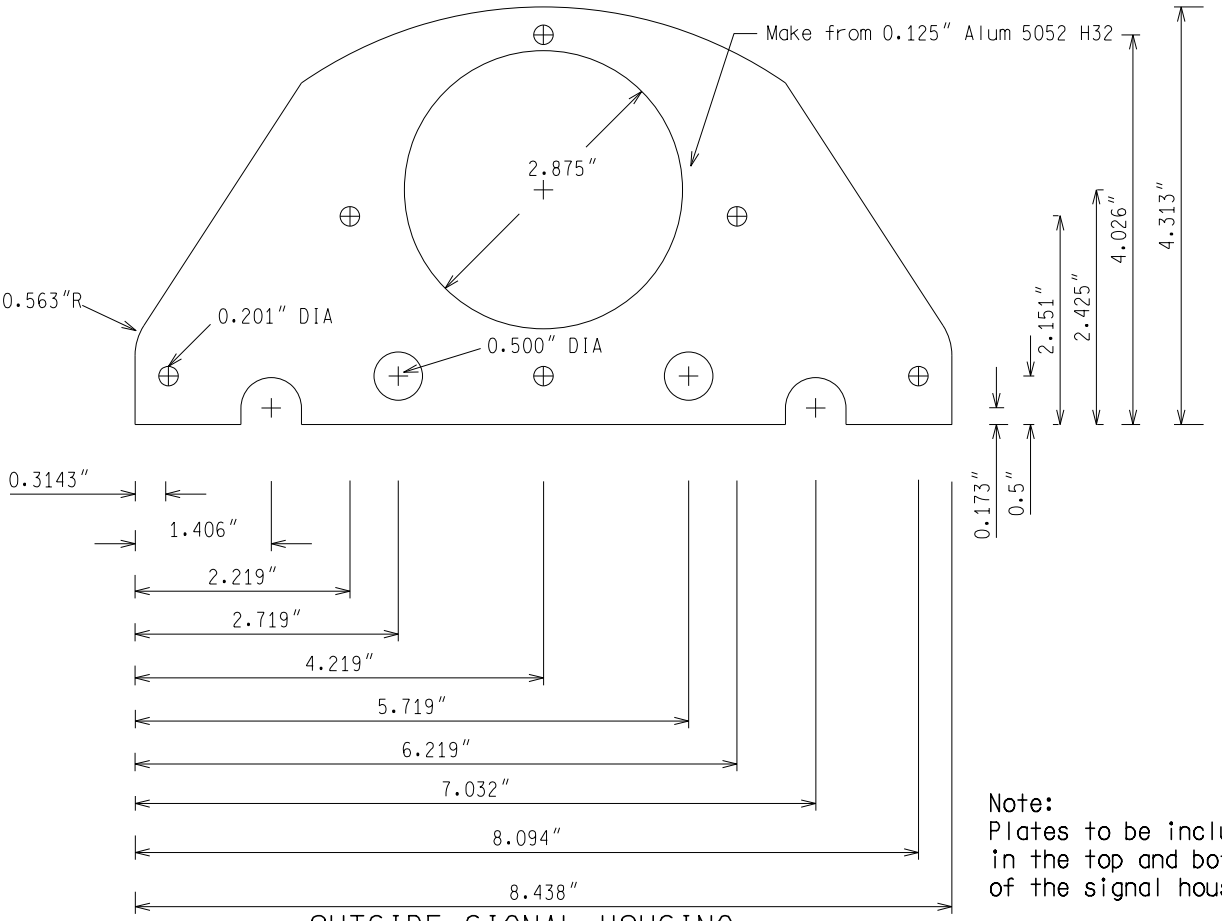
NOTE:
1) Exterior surface of all mounting assemble located below span clamps, including stems, lock nuts, and related hardware must match the current FHWA Highway yellow color tolerance chart per the Standard Specifications for Construction.

2) Tolerance within $\pm 1/8$" for all bracketing.

NOT TO SCALE



INSIDE SIGNAL HOUSING



OUTSIDE SIGNAL HOUSING

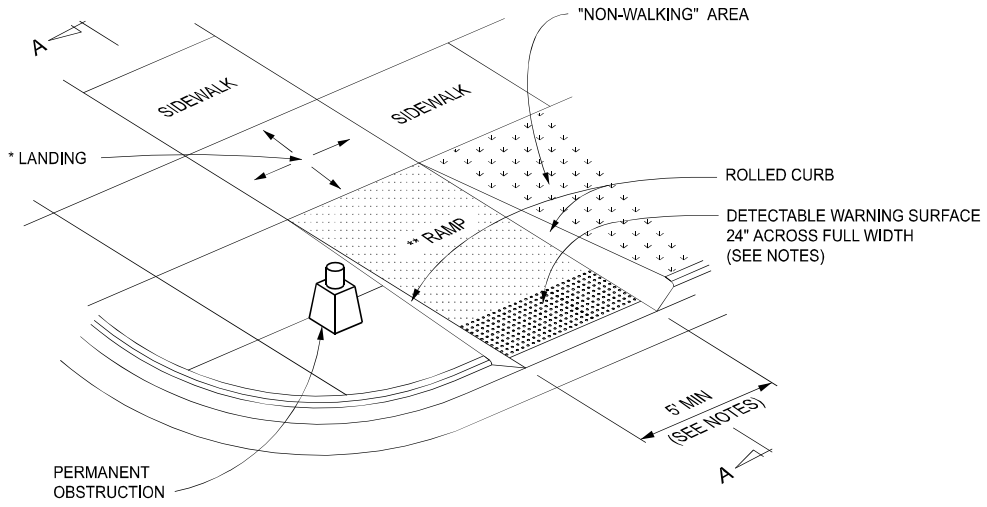
Note:
Plates to be included in the top and bottom of the signal housing.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-300-A	SHEET 3 of 3
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG300A.dgn Rev. 11/13/20		PLAN DATE		

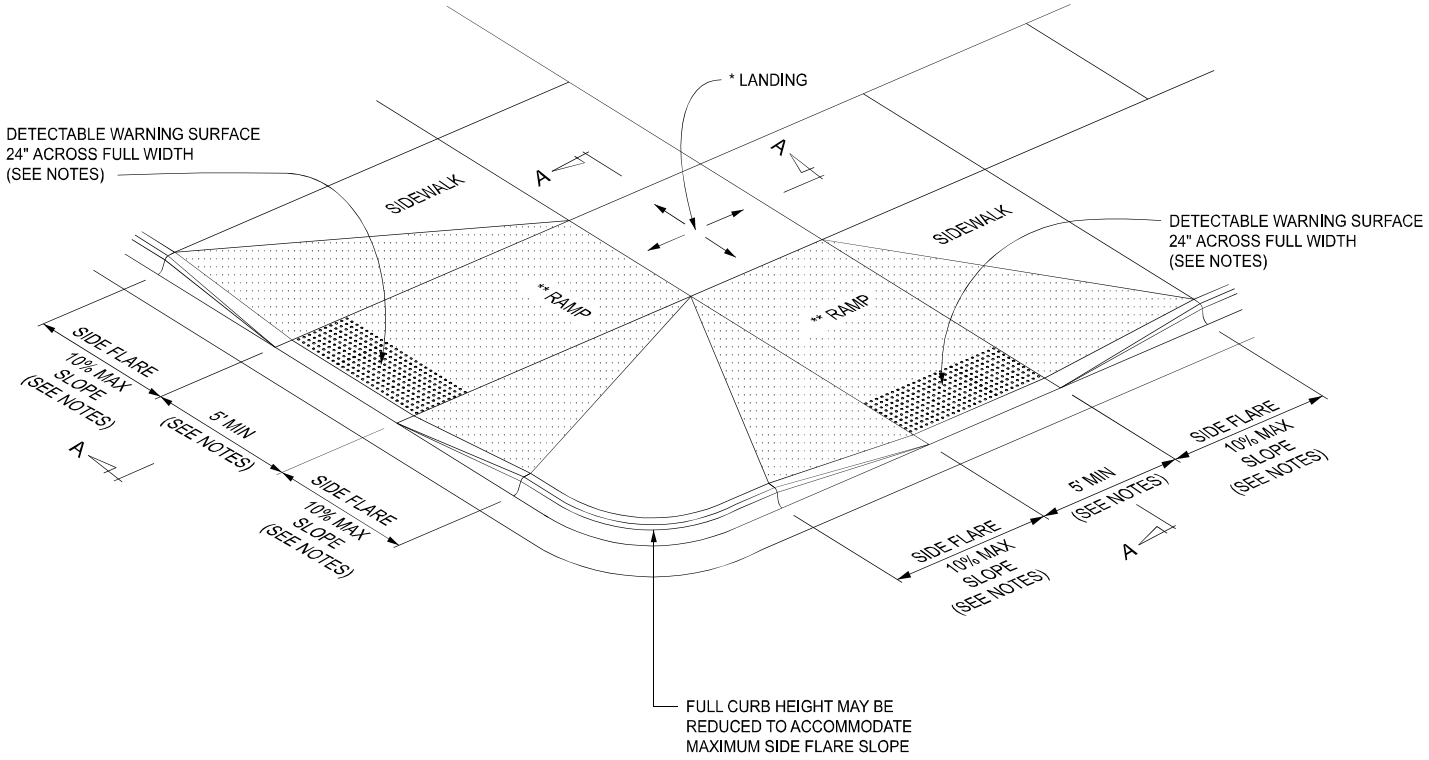
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE R

(ROLLED SIDES)



CURB RAMP TYPE F

(FLARED SIDES, TWO RAMPS SHOWN)

APPROVED BY: E-SIGNED by JASON GUTTING on 2024-09-24 12:54:17 EDT
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: E-SIGNED by Demetrius Parker on 2024-09-10 07:51:29 EDT
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

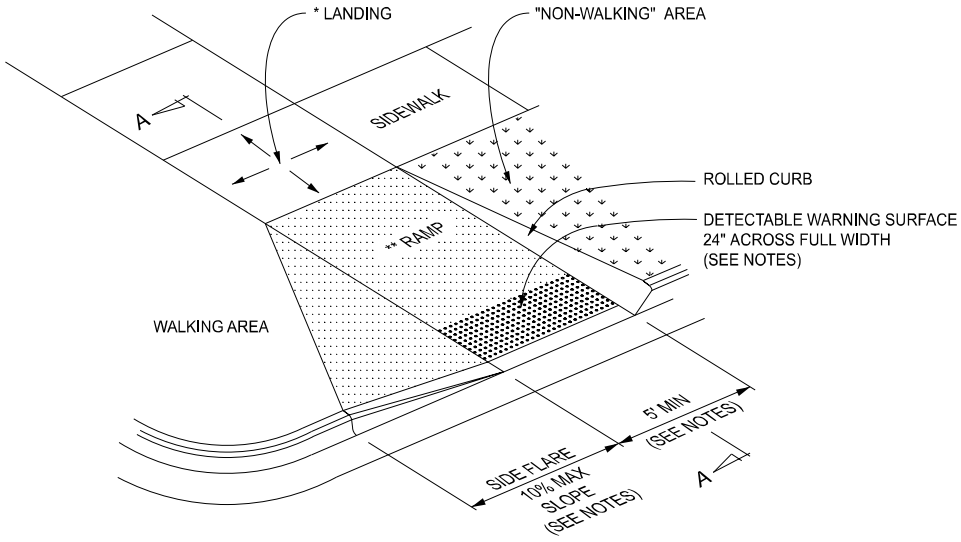
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

12/18/2024	06/21/2014	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 7

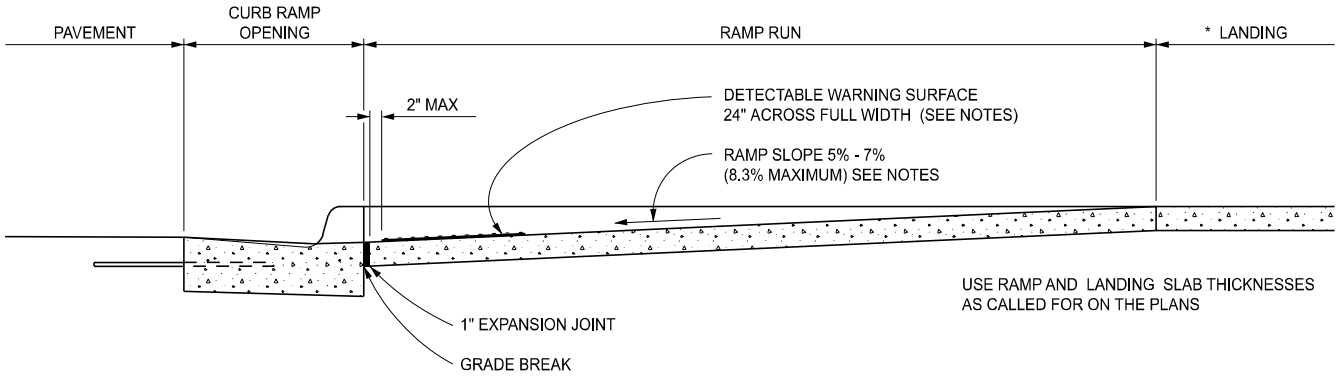
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE RF

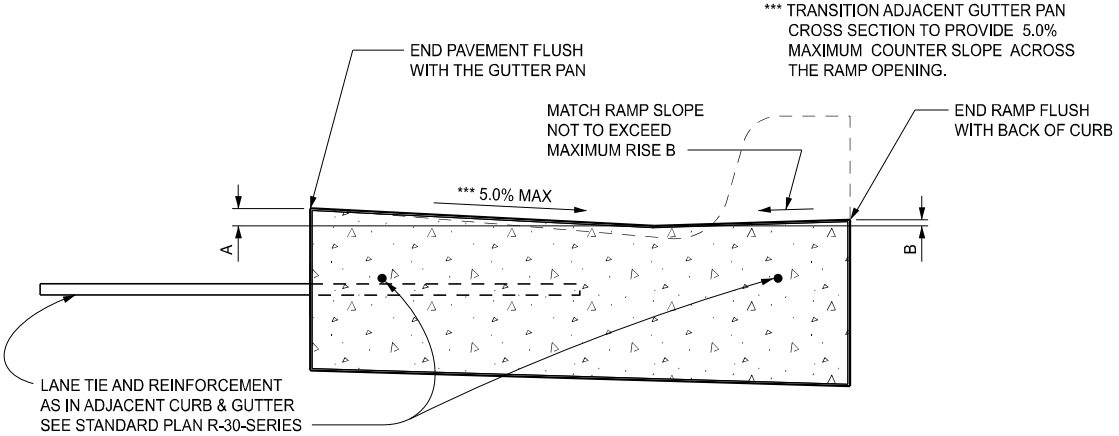
(ROLLED / FLARED SIDES)



SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES)	
	A	B
B1	¾	1
B2	¾	1
B3	¾	1
D1	¾	1
D2	¾	1
D3	¾	1
C1	½	½
C2	½	½
C3	¾	½
C4	¾	½
C5	1	½
C6	1	½
F1	½	½
F2	½	½
F3	¾	½
F4	¾	½
F5	1	½
F6	1	½

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES



SECTION THROUGH CURB RAMP OPENING

(TYPICAL ALL RAMP TYPES)

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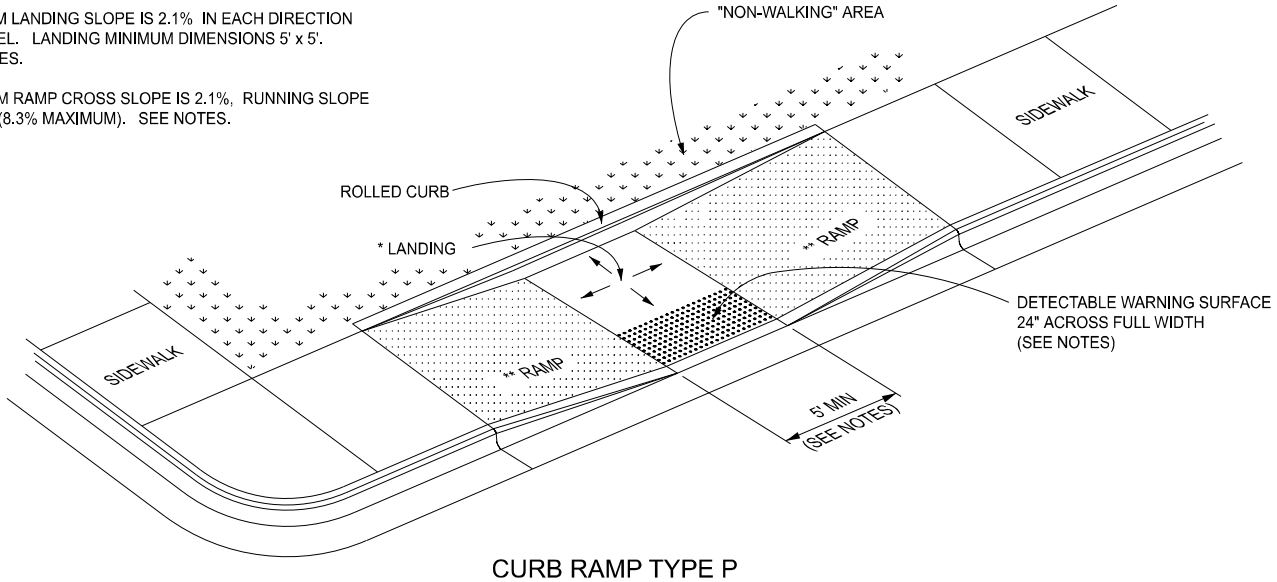
STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

12/18/2024	06/21/2014	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 7

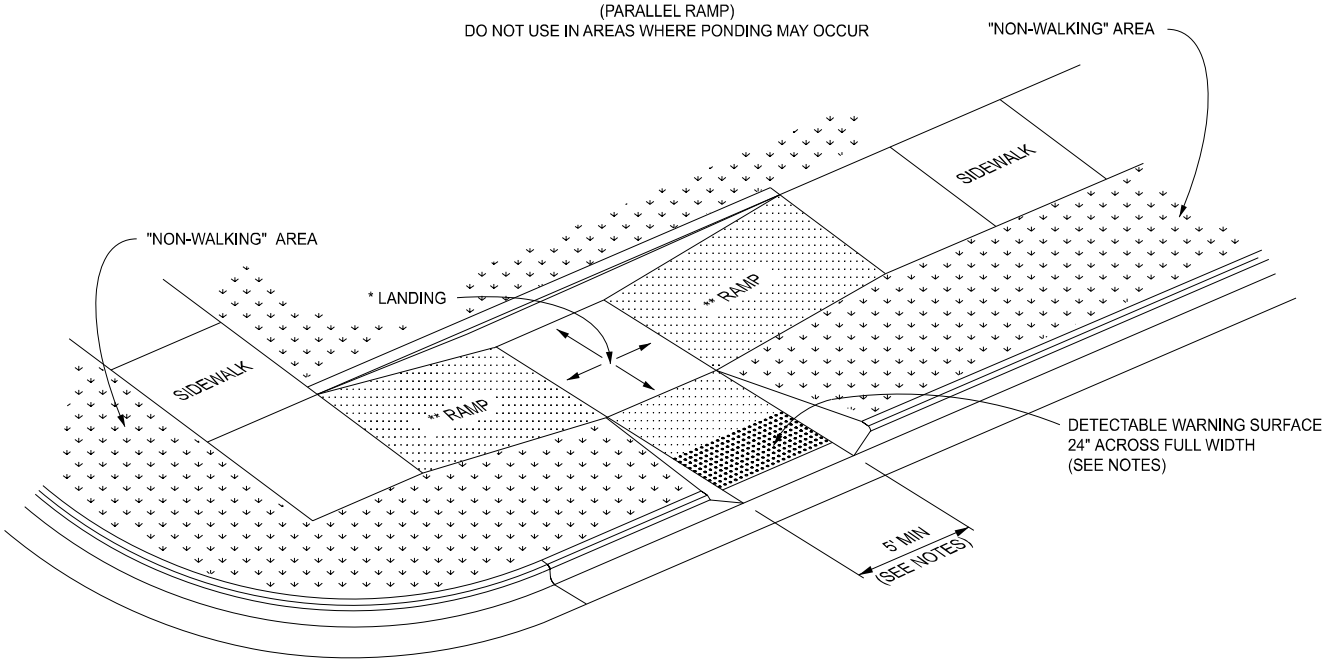
* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



CURB RAMP TYPE P

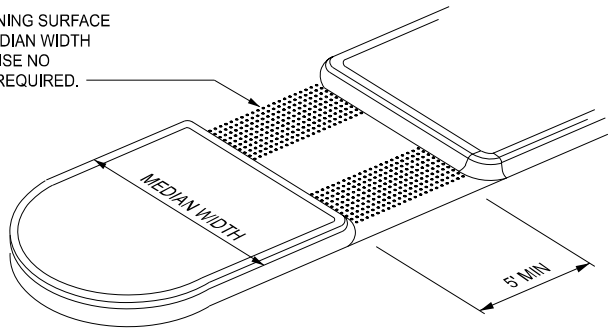
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



CURB RAMP TYPE C

(COMBINATION RAMP)

USE 24" DETECTABLE WARNING SURFACE ACROSS FULL WIDTH IF MEDIAN WIDTH IS AT LEAST 6'-0". OTHERWISE NO DETECTABLE WARNING IS REQUIRED.



CURB RAMP TYPE M

(MEDIAN ISLAND)

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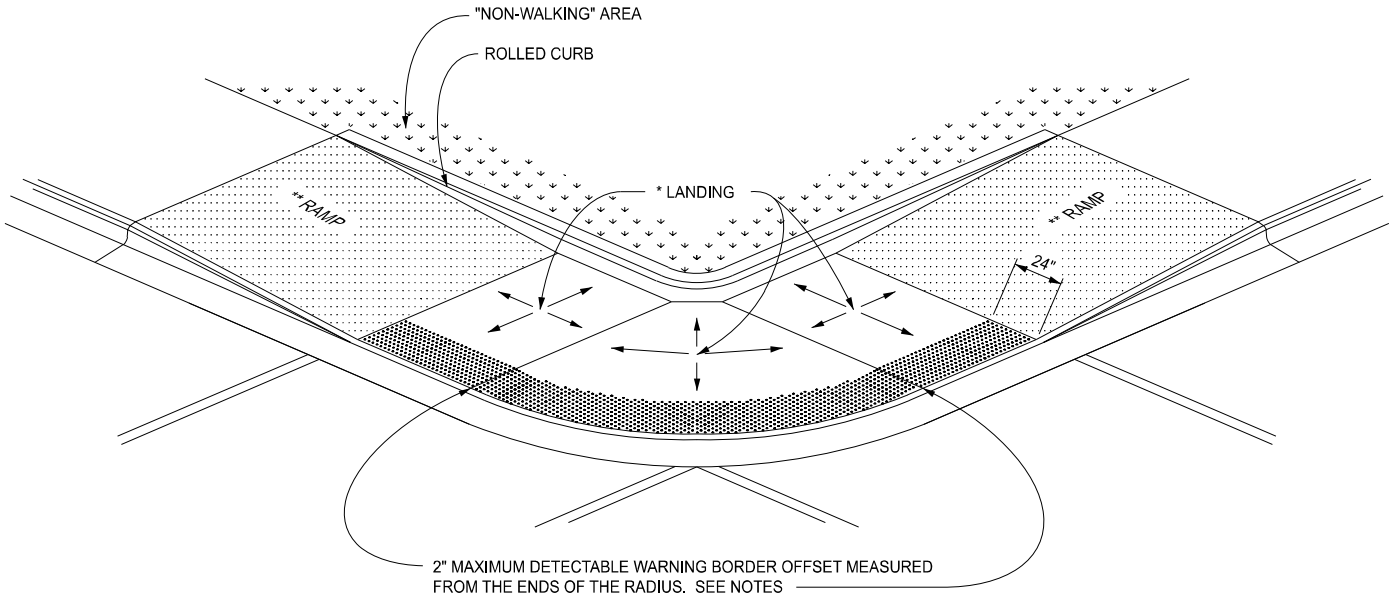
STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

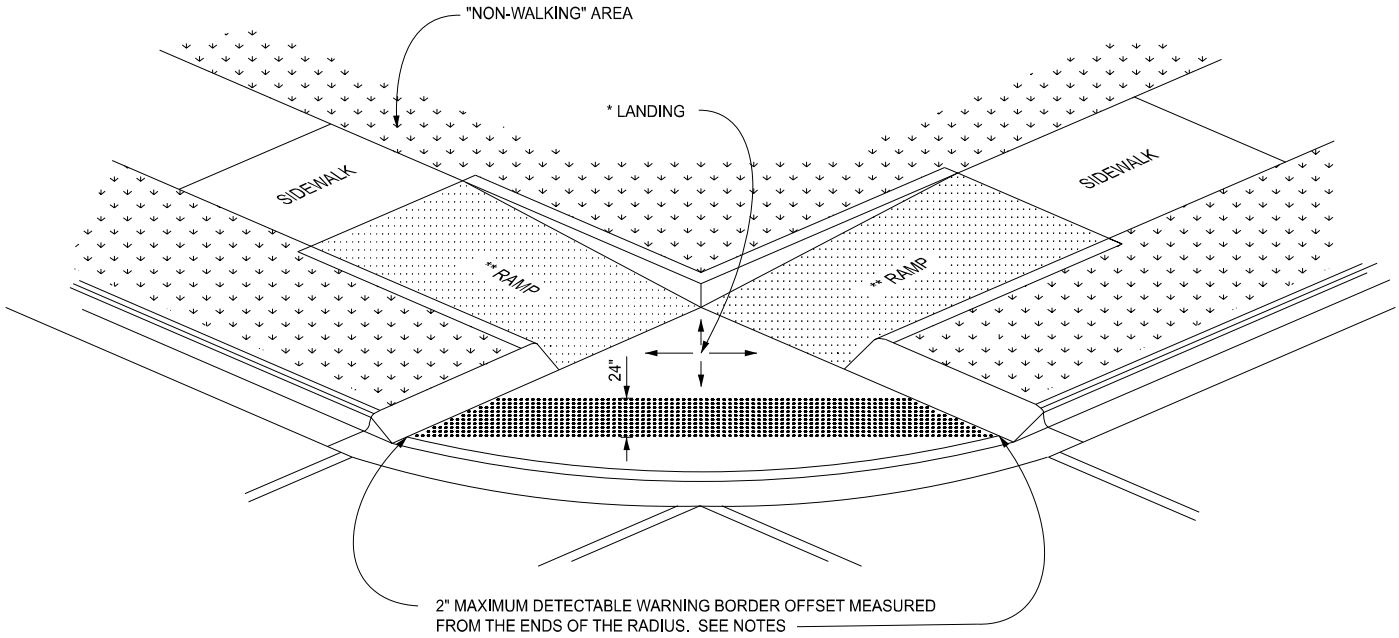
12/18/2024	06/21/2024	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		3 OF 7

* MAXIMUM LANDING SLOPE IS 2.1% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.1%, RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

CURB RAMP TYPE D

(DEPRESSED CORNER)

USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

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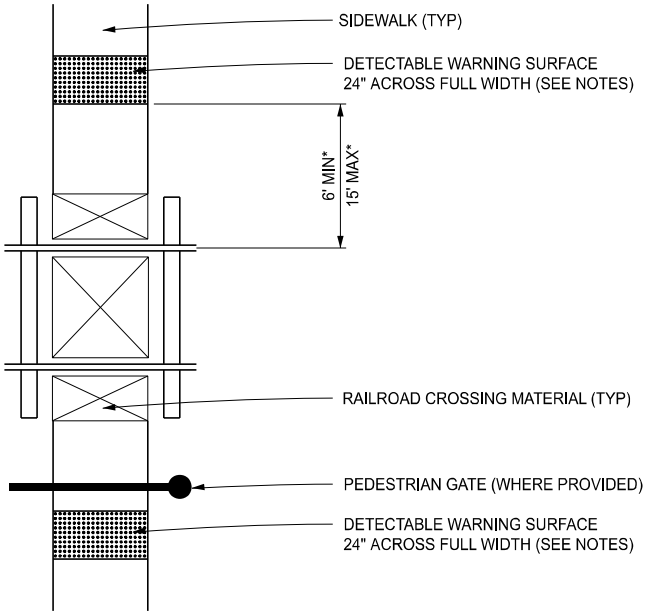
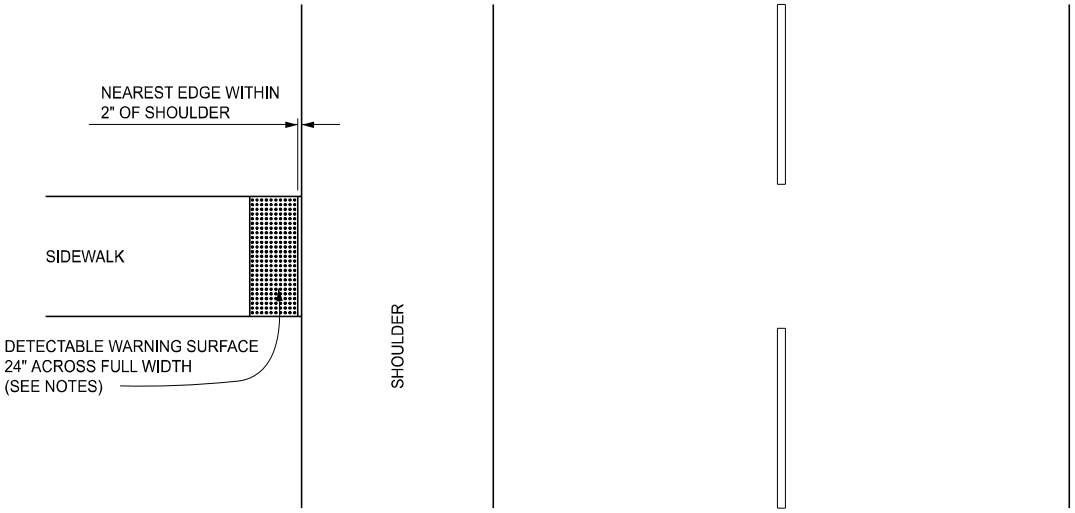
STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

12/18/2024	06/21/2024	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		4 OF 7

* LOCATE THE DETECTABLE WARNING SURFACE SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



DETECTABLE WARNING AT RAILROAD CROSSING



DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

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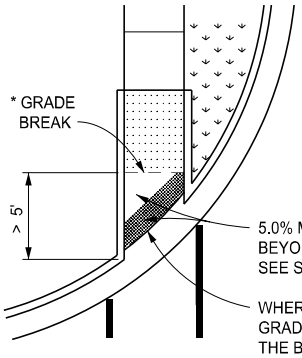
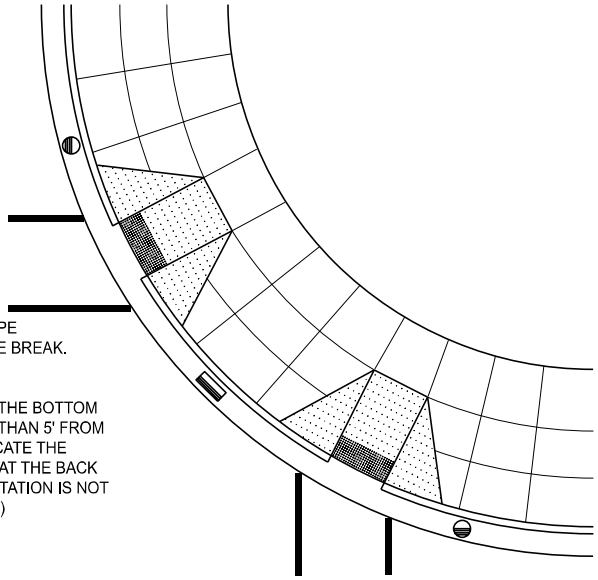
STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

12/18/2024	06/21/2024	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		5 OF 7



CURB RAMP LOCATED IN RADIUS (TYPE R SHOWN)
(GRADE BREAK OFFSET GREATER THAN 5')

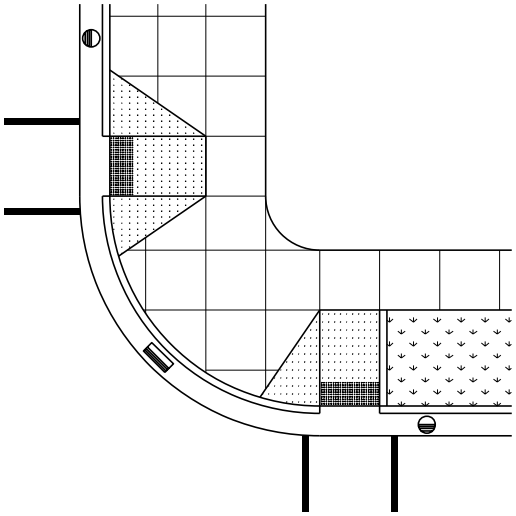


CURB RAMP PERPENDICULAR TO RADIAL CURB (TYPE F SHOWN)

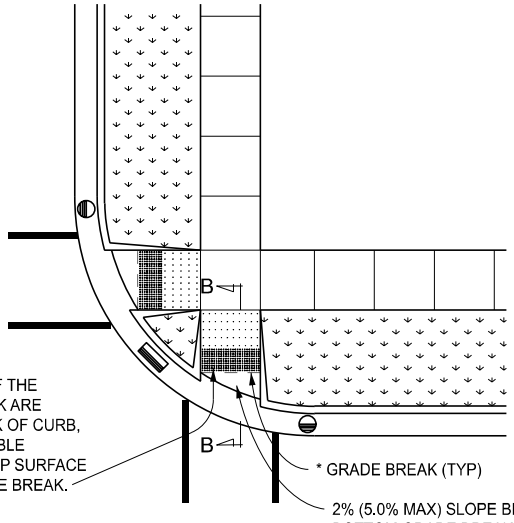
(USE WITH RADIAL CURB WHEN THE CROSSWALK AND CURB RAMP ARE NOT ALIGNED)

LEGEND

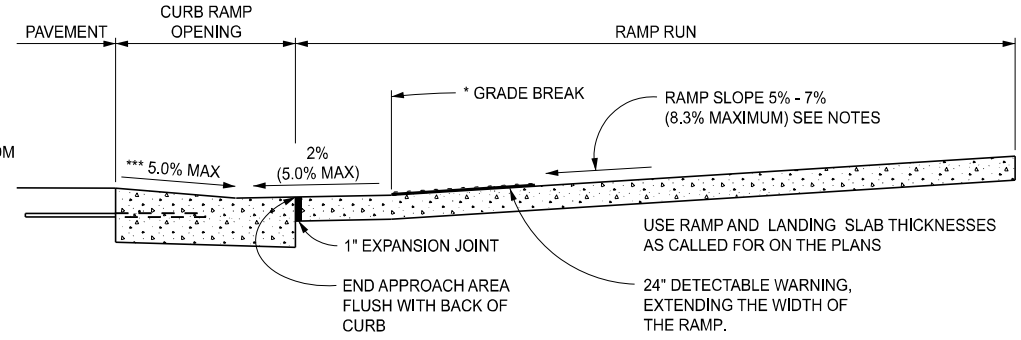
- SLOPED SURFACE
- DETECTABLE WARNING
- "NON-WALKING" AREA
- CROSSWALK MARKING
- PREFERRED LOCATION OF DRAINAGE INLET (TYP)
- ALTERNATE LOCATION OF DRAINAGE INLET (TYP)



CURB RAMP PERPENDICULAR TO TANGENT CURB
(TYPE F AND TYPE RF SHOWN)



CURB RAMP LOCATED IN RADIUS (TYPE R SHOWN)
(GRADE BREAK OFFSET LESS THAN 5')



* ENSURE GRADE BREAKS AT THE TOP AND BOTTOM OF CURB RAMPS BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.

*** TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.

SEE SHEET 2 FOR CURB RAMP OPENING DETAILS.

SECTION B-B

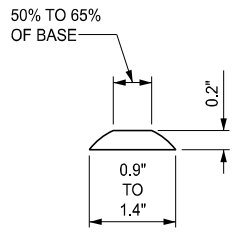
CURB RAMP ORIENTATION

MDOT Michigan Department of Transportation

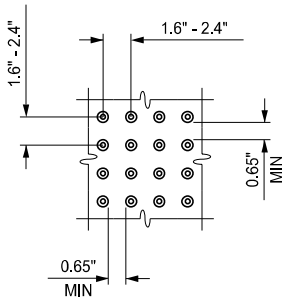
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
CURB RAMP AND DETECTABLE WARNING DETAILS

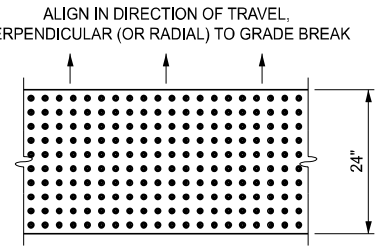
12/18/2024	06/21/2024	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		6 OF 7



DOME SECTION



DOME SPACING



DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

APPLY DETAILS SPECIFIED ON THIS PLAN TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

LOCATE CURB RAMPS AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

PROVIDE RAMPS AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. PROVIDE RAMPS AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

PROVIDE SURFACE TEXTURE TO THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

RAMP THE SIDEWALK WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

ENSURE A UNIFORM GRADE ON THE RAMP. SLOPE THE RAMP IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL, WHERE CONDITIONS PERMIT.

INCREASE RAMP WIDTH, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

REDUCE RAMP WIDTH TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4' WHEN 5' MINIMUM WIDTHS ARE NOT FEASIBLE.

CURB RAMPS WITH A RUNNING SLOPE ≤ 5% DO NOT REQUIRE A TOP LANDING. HOWEVER, FOR ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP, INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2.1% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

ENSURE DETECTABLE WARNING SURFACE COVERS A MINIMUM OF 24" IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING, EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. IF A BORDER IS DESIRED, OFFSET THE BORDER 2" MAXIMUM ALONG THE EDGES OF THE DETECTABLE WARNING. FOR RADIAL CURB, MEASURE THE OFFSET FROM THE ENDS OF THE RADIUS.

DO NOT EXCEED A RAMP CROSS SLOPE OF 2.1% FOR NEW ROADWAY CONSTRUCTION. FOR ALTERATIONS TO EXISTING ROADWAYS, TRANSITION THE CROSS SLOPE TO MEET AN EXISTING ROADWAY GRADE. APPLY THE CROSS SLOPE TRANSITION UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, NO RAMP OR SERIES OF RAMPS IS REQUIRED TO EXCEED 15 FEET IN LENGTH, NOT INCLUDING LANDINGS OR TRANSITIONS.

DO NOT PLACE DRAINAGE STRUCTURES IN LINE WITH RAMPS. GIVE PRECEDENCE TO THE LOCATION OF THE RAMP, OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. LIMIT OPENINGS TO ½" OR LESS. PLACE ELONGATED OPENINGS SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

ENSURE THE TOP OF THE JOINT FILLER (FOR ALL RAMP TYPES) IS FLUSH WITH THE ADJACENT CONCRETE.

LOCATE CROSSWALK AND STOP LINE MARKINGS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SEE THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR SPECIFIC DETAILS FOR MARKING APPLICATIONS.

PROVIDE FLARED SIDES WITH A MAXIMUM SLOPE OF 10%, MEASURED ALONG THE ROADSIDE CURB LINE, WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE CURB RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE NOT REQUIRED, CONSIDER FLARED SIDES IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

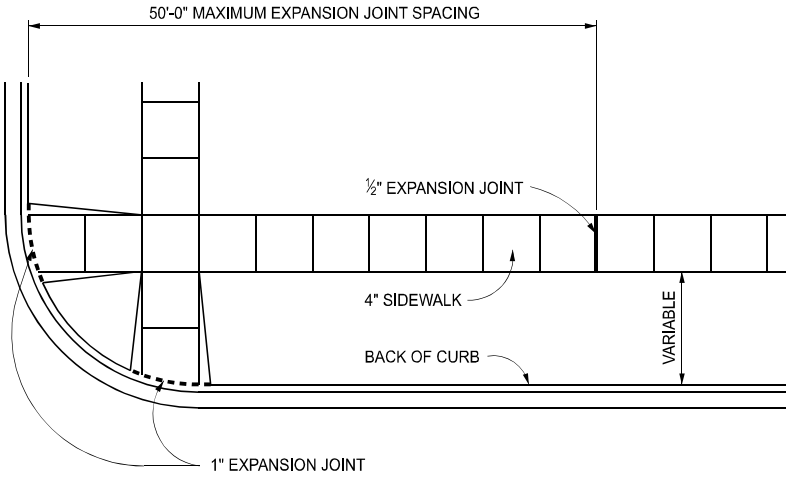
INSTALL DETECTABLE WARNING PLATES USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

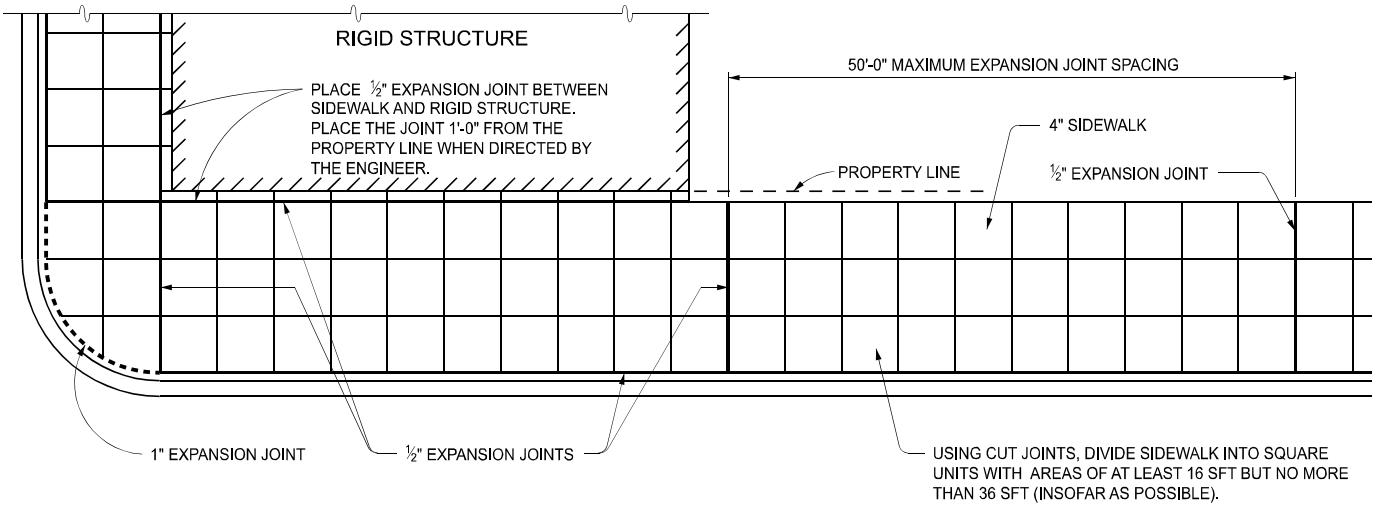
MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

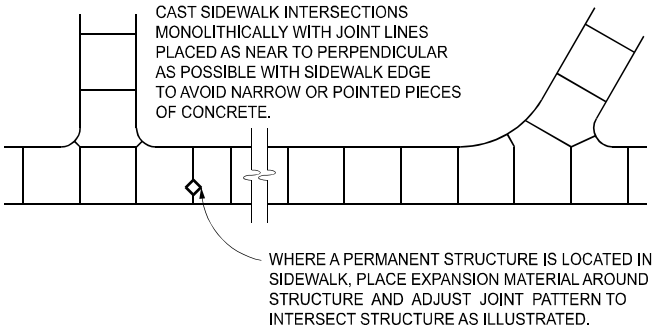
STANDARD PLAN FOR
CURB RAMP AND
DETECTABLE WARNING DETAILS

12/18/2024	06/21/2024	R-28-K	SHEET
FHWA APPROVAL	PLAN DATE		7 OF 7

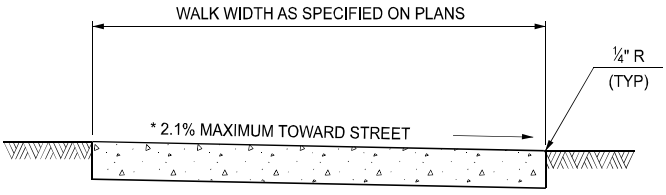




LOCATION OF JOINTS IN CONCRETE SIDEWALK



TYPICAL SIDEWALK JOINT LAYOUTS



* SEE NOTES

4" CONCRETE SIDEWALK

APPROVED BY: E-SIGNED by JASON GUTTING on 2024-09-24 12:55:49 EDT
DIRECTOR, BUREAU OF FIELD SERVICES

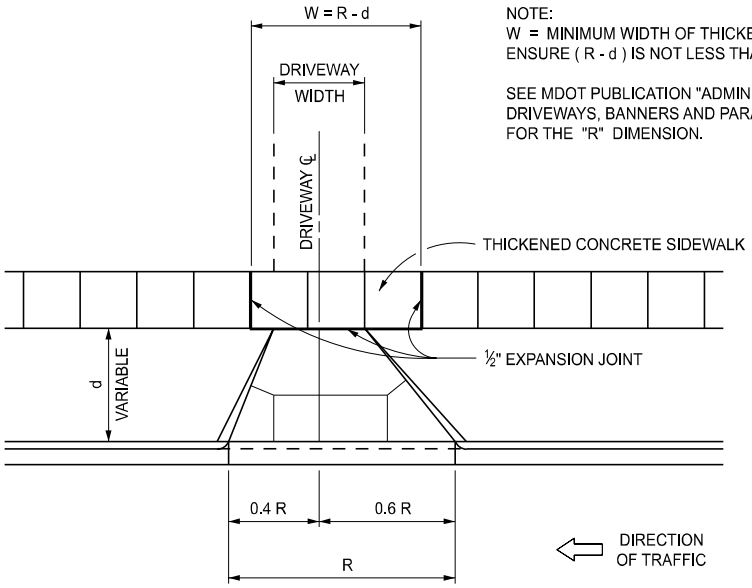
APPROVED BY: E-SIGNED by Demetrius Parker on 2024-09-24 09:51:28 EDT
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

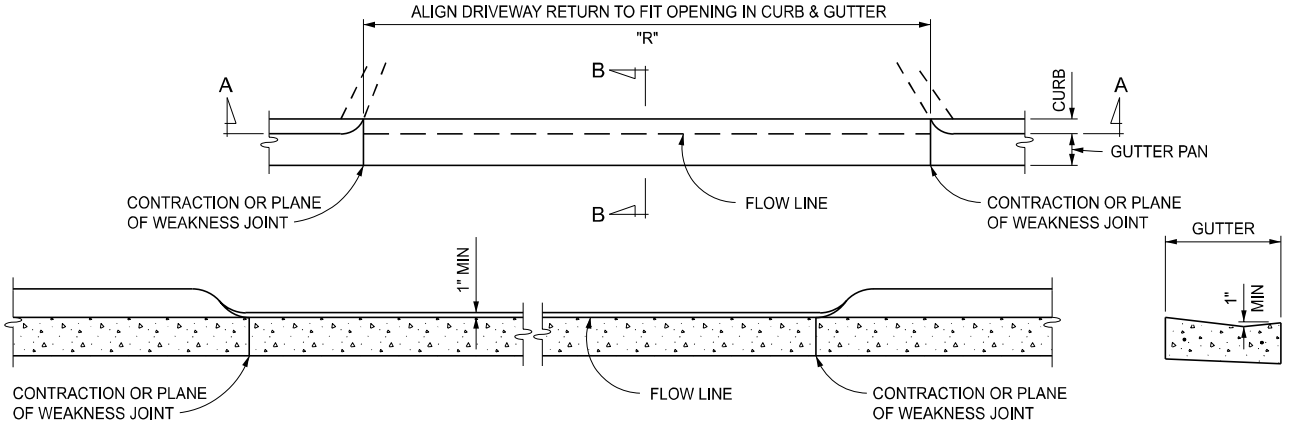
12/18/2024	06/12/2024	R-29-J	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 4



NOTE:
W = MINIMUM WIDTH OF THICKENED CONCRETE SIDEWALK. ENSURE (R - d) IS NOT LESS THAN DRIVEWAY WIDTH.

SEE MDOT PUBLICATION "ADMINISTRATIVE RULES REGULATING DRIVEWAYS, BANNERS AND PARADES ON OR OVER HIGHWAYS" FOR THE "R" DIMENSION.

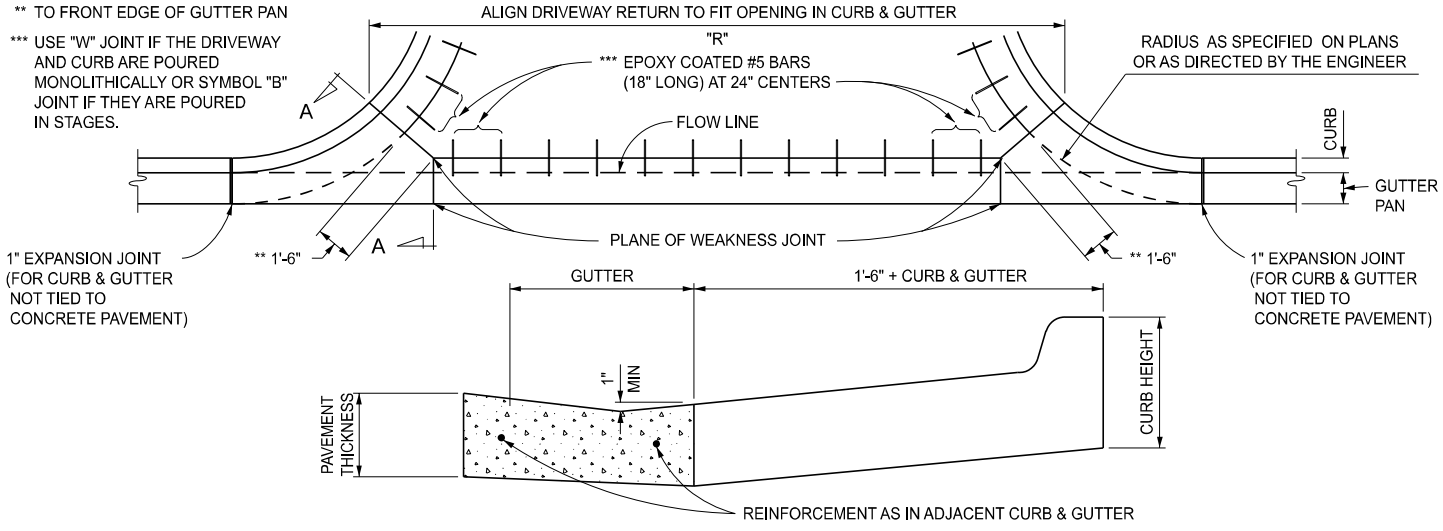
CONCRETE DRIVEWAY OPENING LAYOUT



SECTION A - A

SECTION B - B

CONCRETE DRIVEWAY OPENING, DETAIL L



SECTION A - A

CONCRETE DRIVEWAY OPENING, DETAIL M

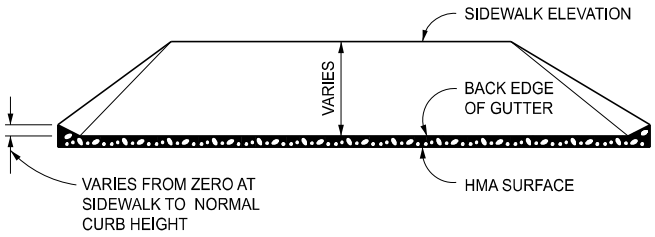
NOTE:
ENSURE LONGITUDINAL LANE TIES ARE CONTINUOUS THROUGH THE DRIVEWAY OPENING IN ROADWAYS WITH CONCRETE PAVEMENTS AND ADJUST THE SPACING OF THE #5 BARS IN CONCRETE DRIVEWAYS TO AVOID CONFLICT WITH THE LONGITUDINAL LANE TIES.

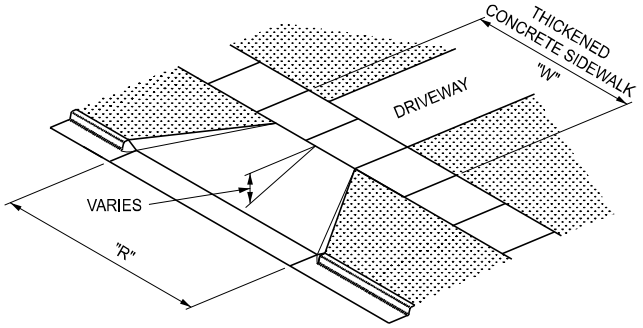
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

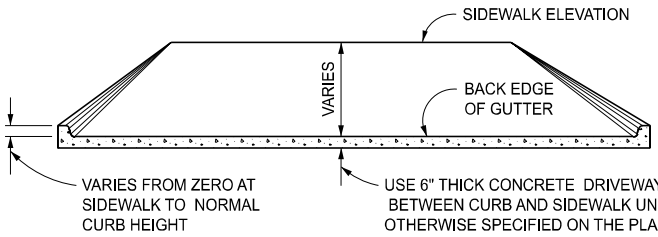
12/18/2024	06/12/2024	R-29-J	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 4

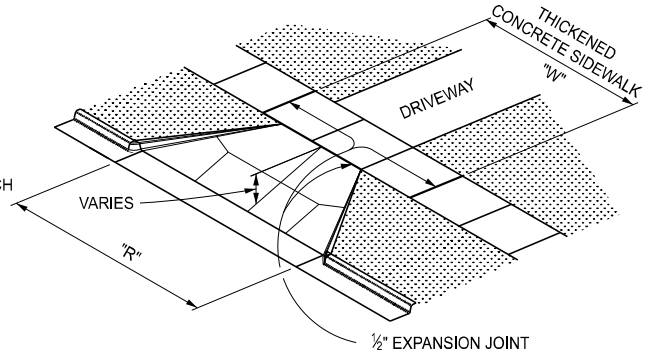




HMA DRIVEWAY APPROACH

(TO BE USED WITH DETAIL L)



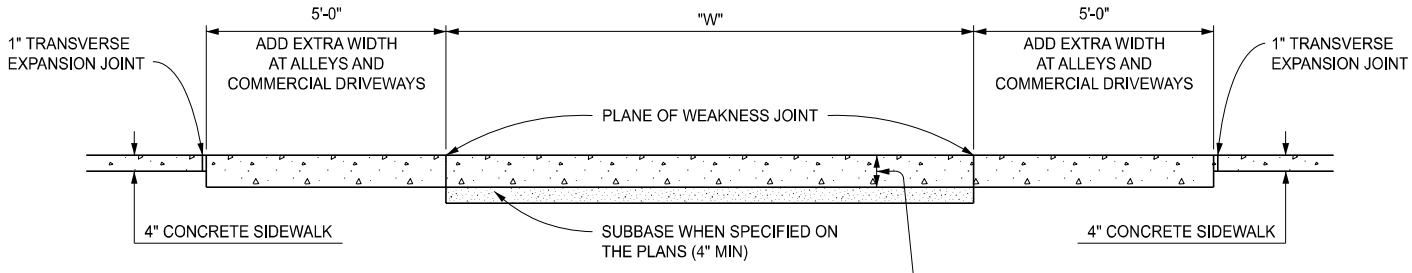


NOTES:
INCLUDE MONOLITHIC CURB IN THE CONCRETE DRIVEWAY APPROACH QUANTITY.

SEE CHART ON THIS SHEET WHEN REINFORCEMENT IS REQUIRED (SPECIFIED ON THE PLANS).

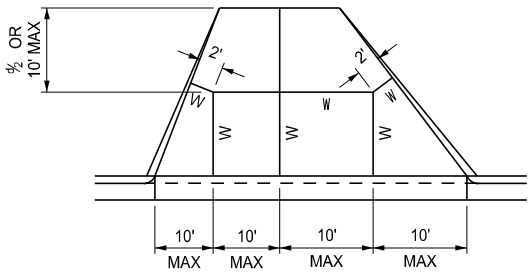
CONCRETE DRIVEWAY APPROACH

(TO BE USED WITH DETAIL L OR M)



WHEN CONCRETE DRIVEWAY APPROACH IS SPECIFIED, MATCH THICKENED CONCRETE SIDEWALK THICKNESS TO THICKNESS OF CONCRETE DRIVEWAY APPROACH. WHEN HMA DRIVEWAY APPROACH IS SPECIFIED, USE 6" MINIMUM FOR THICKENED CONCRETE SIDEWALK THICKNESS.

THICKENED CONCRETE SIDEWALK



ADJUST DRIVEWAY JOINTS AS NEEDED TO ALIGN WITH ANY COINCIDING TRANSVERSE PAVEMENT JOINTS,

USE JOINT LAYOUT AS INDICATED OR AS DIRECTED BY THE ENGINEER.

INTERMEDIATE DRIVEWAY JOINT DETAILS

REINFORCEMENT FOR CONCRETE DRIVEWAYS		
CONCRETE DRIVEWAY THICKNESS	WIRE SIZE (6" x 6" MESH)	AVERAGE WEIGHT (LBS/100 SFT)
LESS THAN 8"	W1.4	21
	W2.9	42
8" OR GREATER	USE WIRE FABRIC REINFORCEMENT SPECIFIED ON STANDARD PLAN R-37-SERIES	

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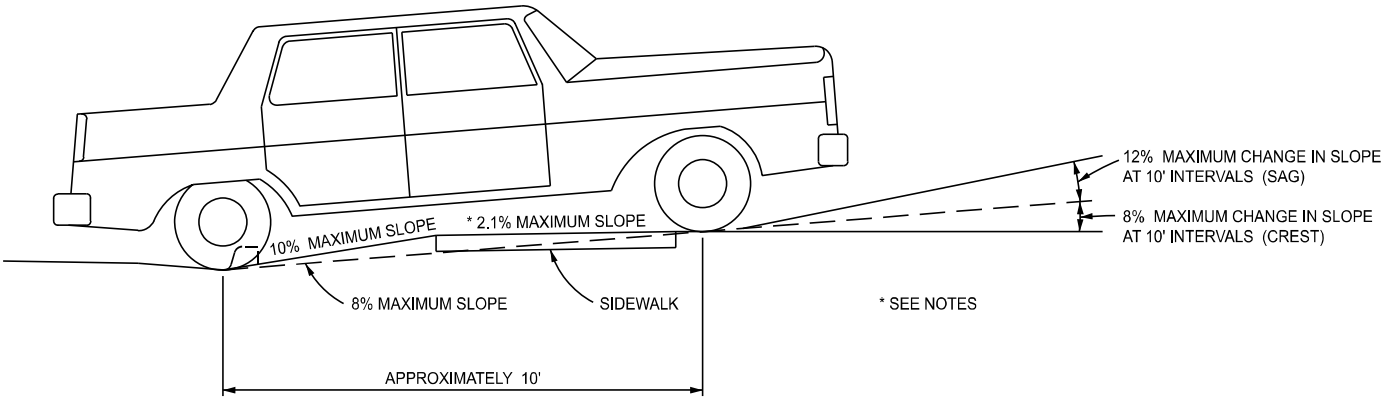
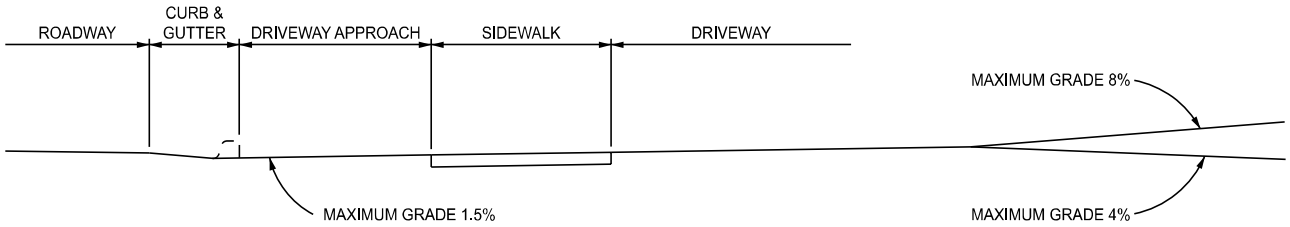
STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES,
AND CONCRETE SIDEWALK

12/18/2024	06/12/2024	R-29-J	SHEET
FHWA APPROVAL	PLAN DATE		3 OF 4



LOW VOLUME COMMERCIAL OR RESIDENTIAL DRIVEWAY SLOPES



COMMERCIAL DRIVEWAY PROFILE FOR MAJOR TRAFFIC GENERATORS

NOTES:

SEE MDOT PUBLICATION "ADMINISTRATIVE RULES REGULATING DRIVEWAYS, BANNERS, AND PARADES ON OR OVER HIGHWAYS" AND GEOMETRIC DESIGN GUIDE G-680-SERIES, "COMMERCIAL DRIVEWAYS"FOR DRIVEWAY DESIGN.

SEE STANDARD PLAN R-30-SERIES FOR CURB AND GUTTER DETAILS.

LIMIT TRANSVERSE SIDEWALK SLOPES TO 2.1% MAXIMUM. PROVIDE LONGITUDINAL DRAINAGE IF THE TRANSVERSE SLOPE IS REQUIRED TO BE LESS THAN 1.5%.

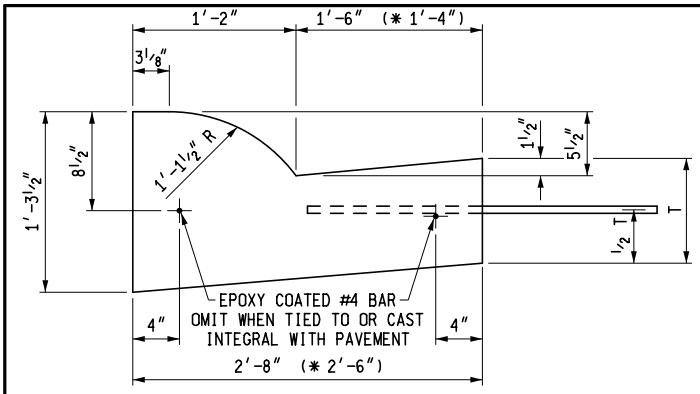
CONSIDER THE TYPES OF VEHICLES USING THE DRIVE WHEN SETTING GRADES FOR COMMERCIAL DRIVES.

MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

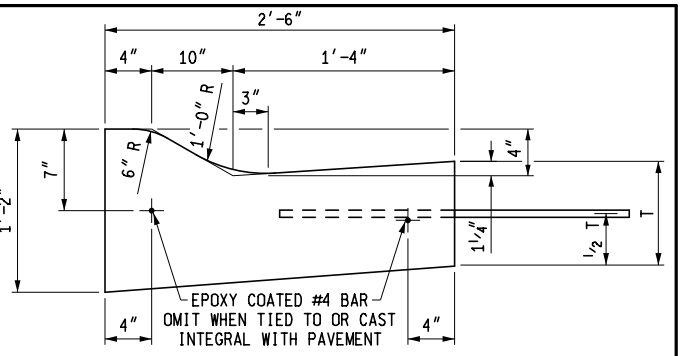
12/18/2024	06/12/2024	R-29-J	SHEET
FHWA APPROVAL	PLAN DATE		4 OF 4



(* GUTTER PAN WIDTH MAY BE REDUCED WHEN APPROVED BY THE ENGINEER)

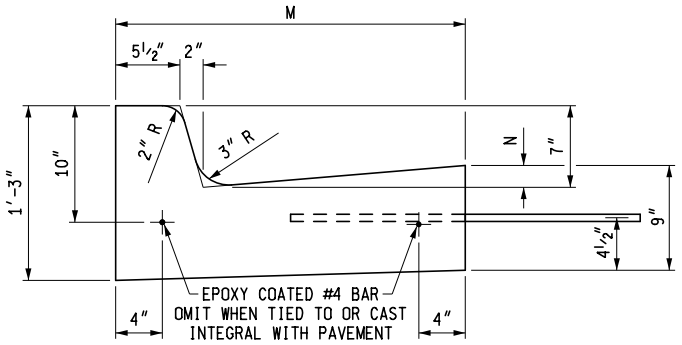
DETAIL	DIMENSION T	LANE TIES	CONCRETE CYD / LFT	CONCRETE CYD / LFT
B1	9″	AS SHOWN	0.0900	(* 0.0855)
B2	9″	OMITTED	0.0900	(* 0.0855)
B3	10″	AS SHOWN	0.0941	(* 0.0894)

B



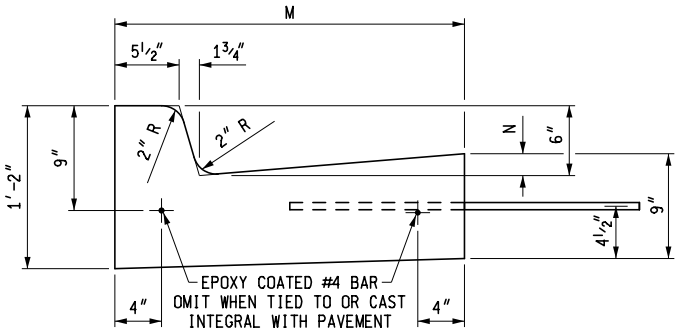
DETAIL	DIMENSION T	LANE TIES	CONCRETE CYD / LFT
D1	9″	AS SHOWN	0.0788
D2	9″	OMITTED	0.0788
D3	10″	AS SHOWN	0.0826

D



DETAIL	DIMENSION M	DIMENSION N	LANE TIES	CONCRETE CYD / LFT
C1	1′-6″	7/8″	AS SHOWN	0.0506
C2	1′-6″	7/8″	OMITTED	0.0506
C3	2′-0″	1 3/8″	AS SHOWN	0.0632
C4	2′-0″	1 3/8″	OMITTED	0.0632
C5	2′-6″	1 7/8″	AS SHOWN	0.0757
C6	2′-6″	1 7/8″	OMITTED	0.0757

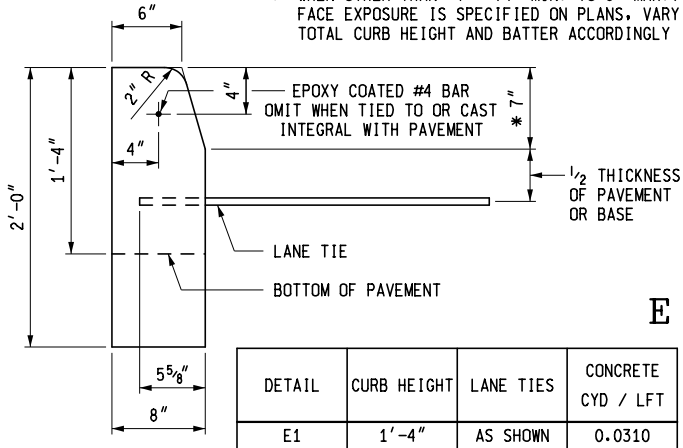
C



DETAIL	DIMENSION M	DIMENSION N	LANE TIES	CONCRETE CYD / LFT
F1	1′-6″	7/8″	AS SHOWN	0.0484
F2	1′-6″	7/8″	OMITTED	0.0484
F3	2′-0″	1 3/8″	AS SHOWN	0.0610
F4	2′-0″	1 3/8″	OMITTED	0.0610
F5	2′-6″	1 7/8″	AS SHOWN	0.0737
F6	2′-6″	1 7/8″	OMITTED	0.0737

F

* WHEN OTHER THAN 7″ (4″ MIN. TO 9″ MAX.) FACE EXPOSURE IS SPECIFIED ON PLANS, VARY TOTAL CURB HEIGHT AND BATTER ACCORDINGLY



E

DETAIL	CURB HEIGHT	LANE TIES	CONCRETE CYD / LFT
E1	1′-4″	AS SHOWN	0.0310
E2	1′-4″	OMITTED	0.0310
E4	2′-0″	OMITTED	0.0477

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

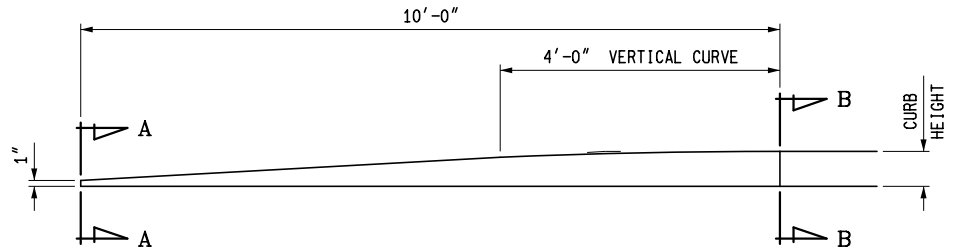
APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

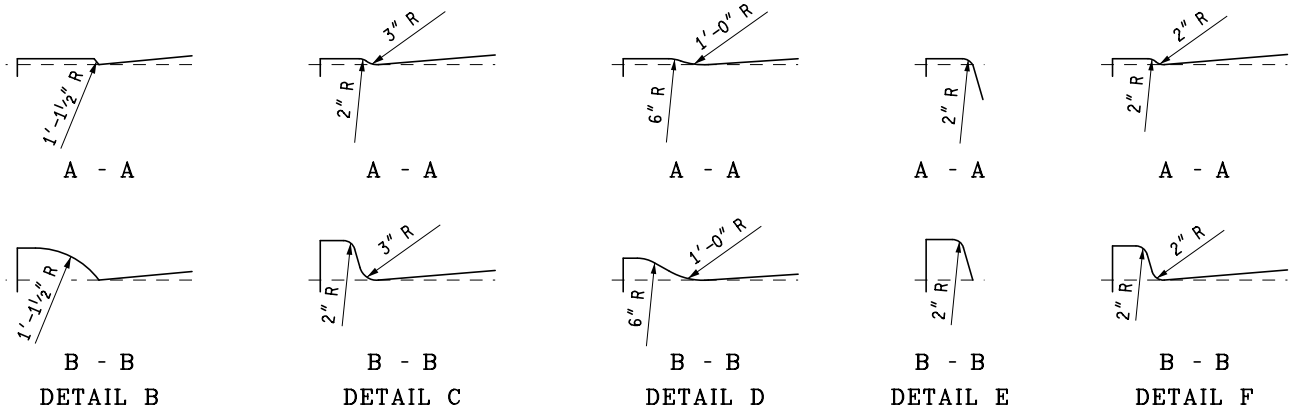
APPROVED BY: _____
DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

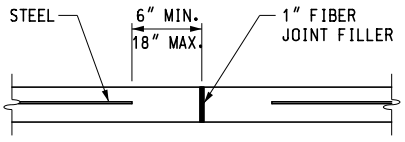
CONCRETE CURB AND CONCRETE CURB & GUTTER

9-30-2014 F.H.W.A. APPROVAL	2-6-2014 PLAN DATE	R-30-G	SHEET 1 OF 2

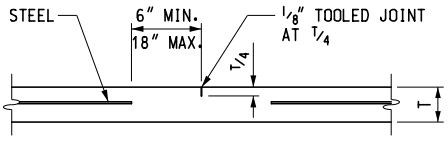




CONCRETE CURB, CURB AND GUTTER ENDINGS



1″ FIBER JOINT FILLER



CONTRACTION JOINT

NOTES:

CURB AND GUTTER RADII SHALL BE DIMENSIONED TO THE FRONT EDGE OF THE GUTTER PAN OR EDGE OF PAVEMENT.

CONCRETE CURB AND GUTTER ENDINGS WILL BE PAID FOR IN LINEAR FEET OF THE ADJACENT CURB DETAIL.

JOINTS SHALL BE PLACED AT RIGHT ANGLES TO THE EDGE OF CONCRETE CURB AND GUTTER.

JOINTS DETAILED ON THE PLANS SHALL SUPERSEDE THOSE SPECIFIED ON THIS STANDARD PLAN.

BOTTOM SLOPE OF CURB AND GUTTER STRUCTURE MAY BE THE SAME SLOPE AS BOTTOM OF PAVEMENT. BACK OF CURB AND VERTICAL EDGE OF GUTTER PAN MAY HAVE A MAXIMUM ½″ BATTER TO FACILITATE FORMING.

WHEN CURB AND GUTTER IS CAST INTEGRALLY, SEE CURRENT STANDARD PLAN R-31-SERIES.

ALL JOINTS FOR CURB OR CURB AND GUTTER ARE INCLUDED IN THE PAY ITEM FOR THE CURB OR CURB AND GUTTER.

JOINTS IN CURB OR CURB AND GUTTER NOT TIED TO CONCRETE PAVEMENT; ADJACENT TO CONCRETE BASE COURSE; OR ADJACENT TO HMA PAVEMENT:

A. PLACE 1″ FIBER JOINT FILLER AT 400′ MAXIMUM INTERVALS.

B. PLACE 1″ FIBER JOINT FILLER AT SPRING POINTS OF INTERSECTING STREETS.

C. PLACE ½″ ISOLATION JOINT AT CATCH BASINS PER STANDARD PLAN R-37-SERIES.

D. PLACE CONTRACTION JOINTS AT 40′ MAXIMUM INTERVALS.

JOINTS IN CURB OR CURB AND GUTTER TIED TO JOINTED PAVEMENT

A. PLACE 1″ FIBER JOINT FILLER OPPOSITE ALL TRANSVERSE EXPANSION JOINTS IN PAVEMENT.

B. PLACE ½″ ISOLATION JOINT AT CATCH BASINS PER STANDARD PLAN R-37-SERIES.

C. PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT.

D. A SYMBOL (B) JOINT SHALL BE PLACED BETWEEN CURB OR CURB AND GUTTER AND ADJACENT CONCRETE PAVEMENT AS SPECIFIED ON STANDARD PLAN R-41-SERIES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE CURB AND CONCRETE CURB & GUTTER

9-30-2014 F.H.W.A. APPROVAL	2-6-2014 PLAN DATE	R-30-G	SHEET 2 OF 2

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

(COMPREHENSIVE DETAILS ARE LOCATED IN SECTION 6 OF THE SOIL EROSION & SEDIMENTATION CONTROL MANUAL)

A = SLOPES

B = STREAMS AND WATERWAYS

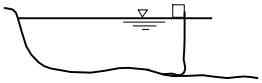
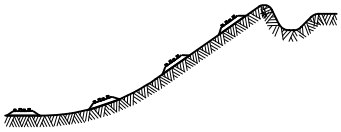
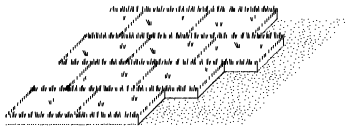
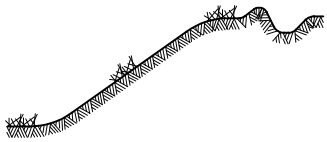
C = SURFACE DRAINAGEWAYS

D = ENCLOSED DRAINAGE (INLET & OUTFALL CONTROL)

E = LARGE FLAT SURFACE AREAS

F = BORROW AND STOCKPILE AREAS

G = DNRE PERMIT MAY BE REQUIRED

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
1	 TURBIDITY CURTAIN	A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse. The still water area contains the sediments within the construction limits.		●					
2	 GRUBBING OMITTED	Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gullying. Discourages off-road vehicle use.	●				●		
3	 PERMANENT/TEMPORARY SEEDING	Inexpensive but effective erosion control measure to stabilize flat areas and mild slopes. Permits runoff to infiltrate soil, reducing runoff volumes. Proper preparation of the seed bed, fertilizing, mulching and watering is critical to its success.	●		●		●	●	
4	 DUST CONTROL	Dust control can be accomplished by watering, and/or applying calcium chloride. The disturbed areas should be kept to a minimum. PERMANENT/TEMPORARY SEEDING (KEY 3) should be applied as soon as possible.	●				●	●	
5	 SODDING	Provides immediate vegetative cover such as at spillways and ditch bottoms. Proper preparation of the topsoil, placement of the sod, and watering is critical to its success.	●				●	●	
6	 VEGETATED BUFFER STRIPS	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection of sediments by filtering runoff. Assists in the establishment of a permanent vegetative cover.	●				●		

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

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Kirk T. Steudle

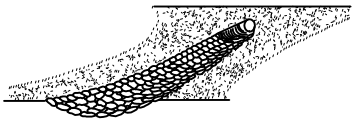
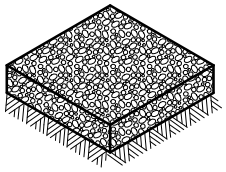
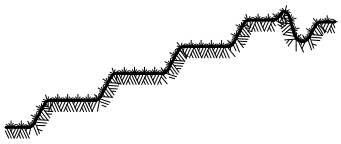
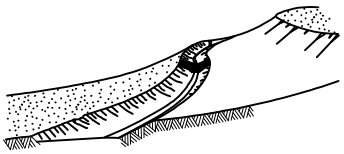
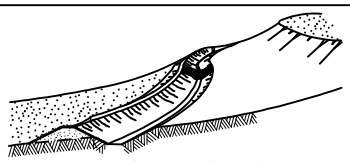
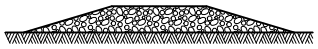
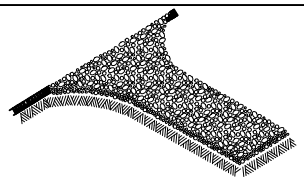
APPROVED BY: John C. Friend
ENGINEER OF DELIVERY

APPROVED BY: Mark A Van Portfleet
ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

SOIL EROSION & SEDIMENTATION CONTROL MEASURES

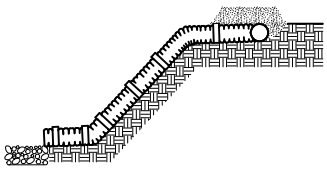
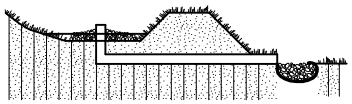
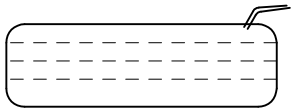
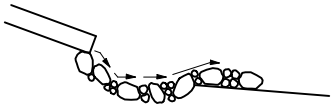
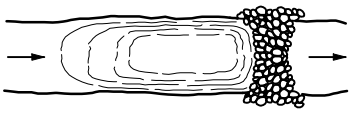
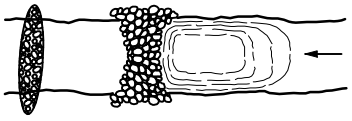
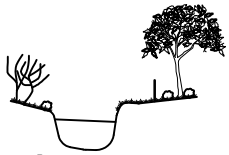
9-10-2010	6-3-2010	R-96-E	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
7	 RIPRAP	Used where vegetation cannot be established. Very effective in protecting against high velocity flows. Should be placed over a geotextile liner.	●	●	●	●			●
8	 AGGREGATE COVER	Can be used in any area where a stable condition is needed for construction operations, equipment storage or in heavy traffic areas. Reduces potential soil erosion and fugitive dust by stabilizing raw areas.	●				●	●	
9	 BENCHES	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection and filtering of sediments. Provides access for stabilizing slopes.	●					●	
10	 DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Collects and diverts runoff to properly stabilized drainage ways. Works well with INTERCEPTING DITCH (KEY 11)	●				●	●	
11	 INTERCEPTING DITCH	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Works well with DIVERSION DIKE (KEY 10)	●				●	●	
12	 INTERCEPTING DITCH AND DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying.	●				●	●	
13	 GRAVEL FILTER BERM	Useful in filtering flow prior to its reentry into a lake, stream or wetland. Works well with SEDIMENT TRAP (KEY 20) and TEMPORARY BYPASS CHANNEL (KEY 35). Not to be used in lieu of a CHECK DAM (KEY 37) in a ditch.	●		●			●	
14	 GRAVEL ACCESS APPROACH	Provides a stable access to roadways minimizing fugitive dust and tracking of materials onto public streets and highways.					●	●	

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 2 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
15	 SLOPE DRAIN SURFACE	Excellent device for carrying water down slopes without creating an erosive condition. Generally used in conjunction with DIVERSION DIKE (KEY 10), INTERCEPTING DITCH (KEY 11) and INTERCEPTING DITCH AND DIVERSION DIKE (KEY 12) to direct flow to a stable discharge area or SEDIMENT TRAP (KEY 20).	●		●				
16	 TREES, SHRUBS AND PERENNIALS	Trees, shrubs and perennials can provide low maintenance long term erosion protection. These plants may be particularly useful where site aesthetics are important along the roadside slopes.	●				●		
17	 PIPE DROP	Effective way to allow water to drop in elevation very rapidly without causing an erosive condition. Also works as a sediment collector device. May be left in place as a permanent erosion control device.	●		●				
18	 DEWATERING WITH FILTER BAG	It may be necessary to dewater from behind a cofferdam or construction dam to create a dry work site. Discharged water must be pumped to a filter bag. A GRAVEL FILTER BERM (KEY 13) may be placed downslope of the filter bag to provide additional filtration prior to entering any stream or wetland.		●					●
19	 ENERGY DISSIPATORS	A device to prevent the erosive force of water from eroding soils. Used at outlets of culverts, drainage pipes or other conduits to reduce the velocity of the water. Prevents structure scouring and undermining.	●	●	●	●			
20	 SEDIMENT TRAP	Used to intercept concentrated flows and prevent sediments from being transported off site or into a watercourse or wetland. The size of a Sediment Trap is 5 cubic yards or less. Works well when used with CHECK DAM (KEY 37).	●		●	●			
21	 SEDIMENT BASIN	A Sediment Basin is used to trap sediments from an upstream construction site. Requires periodic inspections, repairs, and maintenance. Where practical, sediments should be contained on site. A Sediment Basin should be the last choice of sediment control. The size of a Sediment Basin is greater than 5 cubic yards.		●					●
22	 VEGETATIVE BUFFER AT WATERCOURSE	This practice is used to maintain a vegetative buffer adjacent to a watercourse. When utilized with SILT FENCE (KEY 26) it will, under normal circumstances, prevent sediment from leaving the construction site.	●	●	●		●	●	

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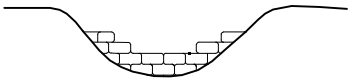
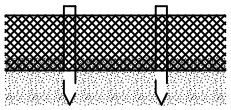
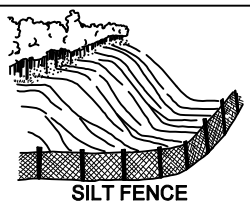
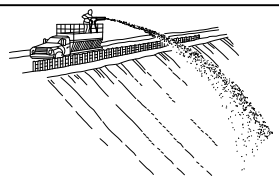
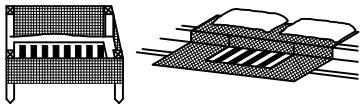
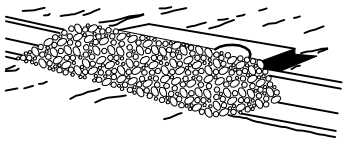
KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
23	 STREAM RELOCATION	A detail depicting the proper procedures for stream relocation. Maintains same width, depth, and flow velocity as the natural stream. Revegetate banks with PERMANENT/TEMPORARY SEEDING (KEY 3), MULCHING AND MULCH ANCHORING (KEY 28), MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS (KEY 33) and woody plants to shade the stream.		●					●
24	 SAND AND STONE BAGS	Sand and stone bags are a useful tool in the prevention of erosion. Can be used to divert water around a construction site by creating a DIVERSION DIKE (KEY 10). Works well for creating a CONSTRUCTION DAM (KEY 36) and temporary culvert end fill.	●	●	●	●	●	●	●
25	 SAND FENCE AND DUNE STABILIZATION	A Sand Fence traps blowing sand by reducing wind velocities. Can be used to prevent sand from blowing onto roads. Must be maintained until sand source is stabilized.	●				●	●	
26	 SILT FENCE	A permeable barrier erected below disturbed areas to capture sediments from sheet flow. Can be used to divert small volumes of water to stable outlets. Ineffective as a filter and should never be placed across streams or ditches where flow is concentrated.	●				●	●	
27	 PLASTIC SHEETS OR GEOTEXTILE COVER	Plastic Sheets can be used to create a liner in temporary channels. Can also be used to create a temporary cover to prevent erosion of stockpiled materials.	●	●	●			●	
28	 MULCHING AND MULCH ANCHORING	Anchored mulch provides erosion protection against rain and wind. Mulch must be used on seeded areas to promote water retention and growth. Should be inspected after every rainstorm and repaired as necessary until vegetation is well established.	●		●		●	●	
29	 INLET PROTECTION FABRIC DROP	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Can be used in median and side ditches where vegetation will be disturbed. Allows for early use of drainage systems prior to project completion.			●		●		
30	 INLET PROTECTION GEOTEXTILE AND STONE	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Should be used in paved areas where drainage structures are existing or proposed. Allows for early use of drainage systems prior to project completion.			●		●		

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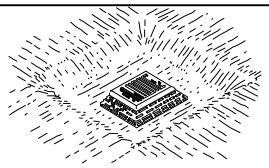
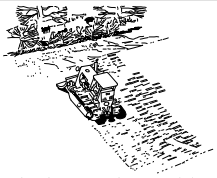
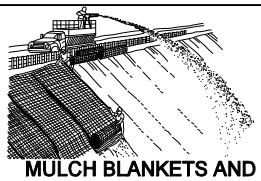
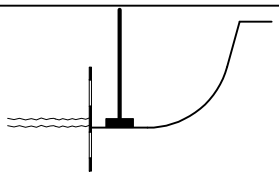
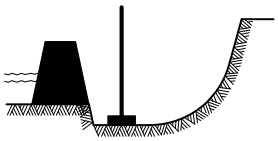
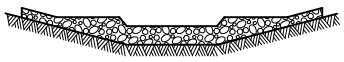
KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
31	 INLET PROTECTION SEDIMENT TRAP	An Inlet Protection Sediment Trap is a temporary device that can be used in areas where medium flows are anticipated. Effective in trapping small quantities of sediments prior to water entering the drainage system. Can be used in areas such as median and side ditches.			●		●		
32	 SLOPE ROUGHENING AND SCARIFICATION	A simple and economical way to reduce soil erosion by wind and water. Can be accomplished by harrowing with a disk, back blading, or tracking with a dozer perpendicular to the slope.	●				●	●	
33	 MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS	Mulch blankets provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion. High velocity mulch blankets work well for stabilizing the bottom of ditches in waterways.	●		●		●	●	
34	 COFFERDAM	Used to create a dry construction area and protect the stream from raw erodible areas. Must be pumped dry or dewatered according to DEWATERING WITH FILTER BAG (KEY 18).		●					●
35	 TEMPORARY BYPASS CHANNEL	Utilized when a dry construction area is needed. Isolates stream flows from raw erodible areas minimizing erosion and subsequent siltation. Can incorporate SEDIMENT BASIN (KEY 21), CHECK DAM (KEY 37), and GRAVEL FILTER BERM (KEY 13) to remove sediments from water. Construction sequence of events may be necessary.		●					●
36	 CONSTRUCTION DAM	Used to create a dry or slack water area for construction. Isolates the stream from raw erodible areas. Can be created out of any non-erodible materials such as SAND AND STONE BAGS (KEY 24), a gravel dike with clay core or plastic liner, steel plates or plywood.		●					●
37	 CHECK DAM	Can be constructed across ditches or any area of concentrated flow. Protects vegetation in early stages of growth. A Check Dam is intended to reduce water velocities and capture sediment. A Check Dam is not a filtering device.	●		●			●	

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NOTES:

THIS STANDARD PLAN WILL SERVE AS A KEY IN THE SELECTION OF THE APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS. THIS PLAN ALSO PROVIDES THE KEY TO THE NUMBERED EROSION CONTROL ITEMS SPECIFIED ON THE CONSTRUCTION PLANS. REFER TO THE MDOT SOIL EROSION & SEDIMENTATION CONTROL MANUAL, SECTION 6 FOR SPECIFIC DETAILS, CONTRACT ITEMS (PAY ITEMS), AND PAY UNITS.

COLLECTED SILT AND SEDIMENT SHALL BE REMOVED PERIODICALLY TO MAINTAIN THE EFFECTIVENESS OF THE SEDIMENT TRAP, SEDIMENT BASIN, AND SILT FENCE. AGGREGATES PLACED IN STREAMS SHOULD CONTAIN A MINIMUM OF FINES.

TEMPORARY EROSION AND SEDIMENTATION CONTROL PROVISIONS SHALL BE COORDINATED WITH THE PERMANENT CONTROL MEASURES TO ASSURE EFFECTIVE CONTROL OF SEDIMENTS DURING CONSTRUCTION OF THE PROJECT.

ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER VEGETATION ESTABLISHMENT OR AT THE DISCRETION OF THE ENGINEER. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE SILTATION IN NEARBY DRAINAGE COURSES.

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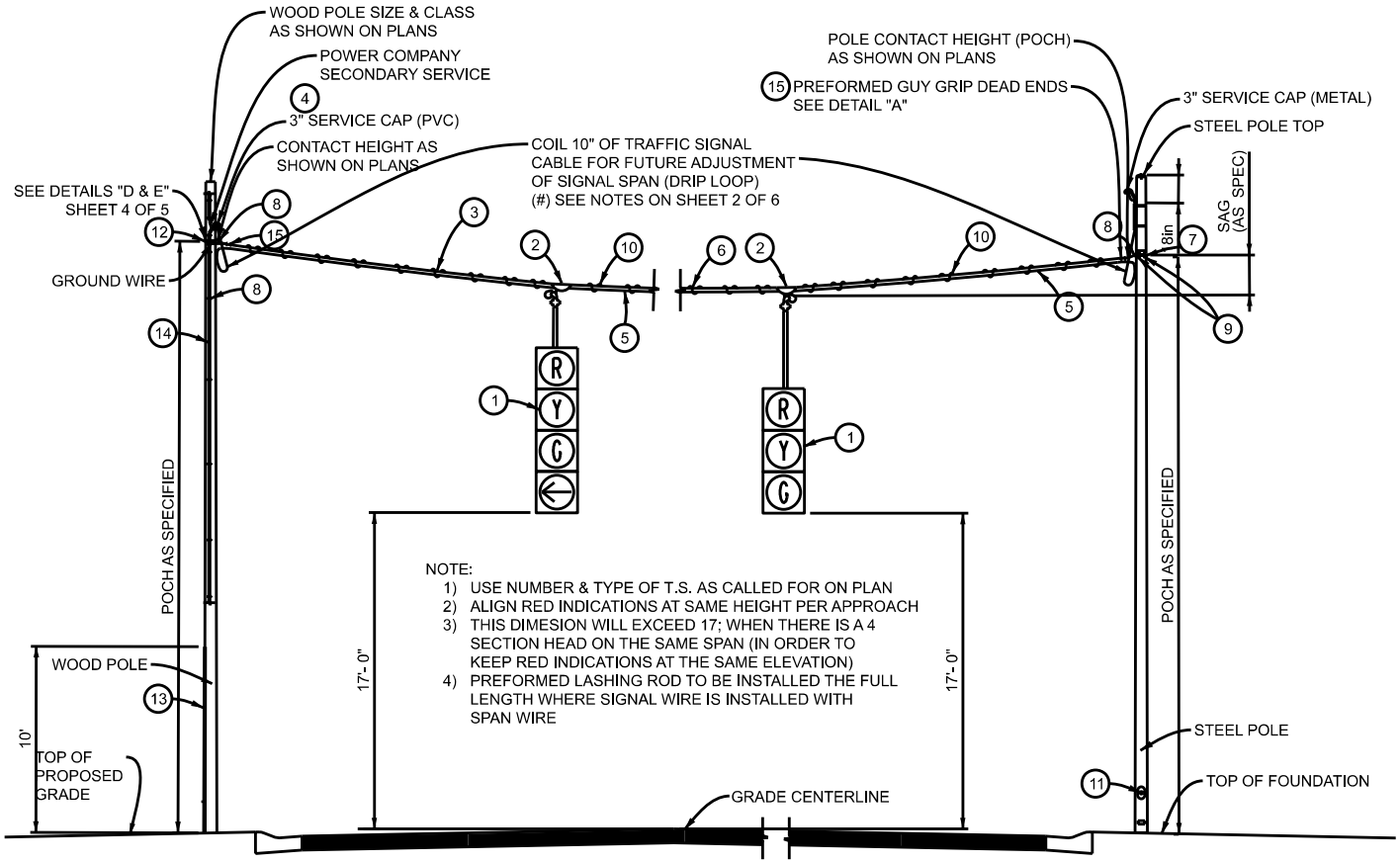
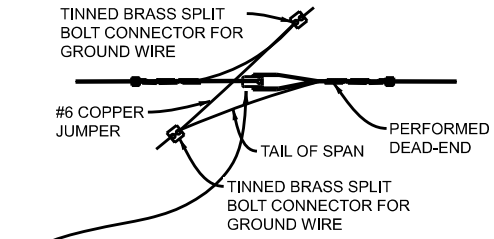


1 DETAIL - TYPICAL SPAN WIRE INSTALLATION T.S.
NTS STEEL POLE & WOOD POLES

NO.	ITEM
1	TRAFFIC SIGNAL (NO. HEADS AS INDICATED)
2	SPAN WIRE HANGER
3	5/16" EXTRA HIGH STRENGTH SPAN WIRE
4	3" SERVICE CAP (WEATHERHEAD), (METAL FOR STEEL AND PVC FOR WOOD POLES)
5	P.J. TRAFFIC SIGNAL CABLE (AS SPECIFIED)
6	PREFORMED LASHING RODS
7	POLE BAND CLAMP (STEEL POLE)
8	GUY THIMBLE (2" DIA.)
9	(2) 5/8" X 4" LONG BOLT, NUT, WASHERS PER POLE BAND CLAMP (STEEL POLE)
10	INSTALL SPAN WIRE PREFORMED (ARMOR ROD) UNDER EACH SPAN HANGER
11	ACCESS HAND HOLE ALL NEW & EXISTING STEEL POLES
12	5/8" EYEBOLT, OVAL EYE AND NUT
13	WOOD MOULDING OR PLASTIC DUCT (10' FROM GROUND LEVEL)
14	3" SCHEDULE 80 PVC OR RIGID METAL (*) SEE NOTE ON SHEET 2 OF 5
15	PREFORMED GUY GRIP DEAD ENDS



DETAIL - COPPER JUMPER
NTS

NOTE:
PORCELAIN STRAIN INSULATOR (IF REQUIRED SHALL MEET THE CODES AND PLACEMENT REQUIREMENTS OF THE LOCAL UTILITY CO.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

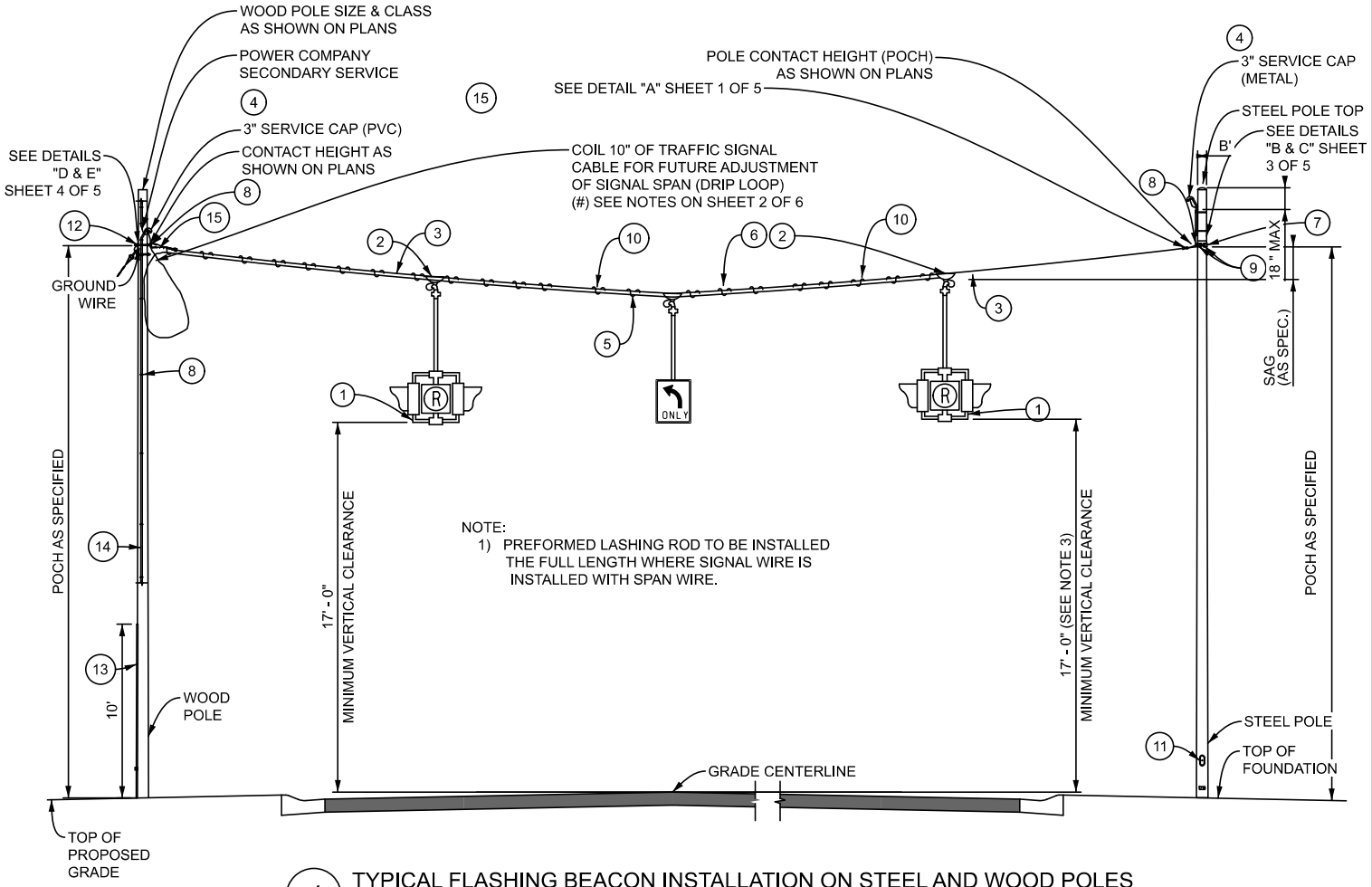
APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C, WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 1 OF 7



1 TYPICAL FLASHING BEACON INSTALLATION ON STEEL AND WOOD POLES
NTS

NO.	ITEM
1	TRAFFIC SIGNAL (NO. HEADS AS INDICATED)
2	SPAN WIRE HANGER
3	5/16" EXTRA HIGH STRENGTH SPAN WIRE
4	3" SCHEDULE 80 PVC OR RIGID METAL (*) SEE NOTE ON SHEET 2 OF 5
5	P.J. TRAFFIC SIGNAL CABLE (AS SPECIFIED)
6	PREFORMED LASHING RODS
7	POLE BAND CLAMP (STEEL POLE)
8	GUY THIMBLE (2" DIA.)
9	(2) 5/8" X 4" LONG BOLT, NUT, WASHERS PER POLE BAND CLAMP (STEEL POLE)
10	INSTALL SPAN WIRE PREFORMED (ARMOR ROD) UNDER EACH SPAN HANGER
11	ACCESS HAND HOLE ALL NEW & EXISTING STEEL POLES
12	5/8" EYEBOLT, OVAL EYE AND NUT
13	WOOD MOULDING OR PLASTIC DUCT (10' FROM GROUND LEVEL)
14	3" SERVICE CAP (WEATHERHEAD), (METAL FOR STEEL AND PVC FOR WOOD POLES)
15	PREFORMED GUY GRIP DEAD ENDS

NOTES:
(*) FOR PROJECTS MAINTAINED BY THE WAYNE CO. DEPARTMENT OF PUBLIC SERVICES (WCDPS), USE RIGID METAL FOR CONDUIT(S) FROM GRADE LEVEL TO 10' (MIN.) ABOVE GRADE OR AS DIRECTED BY THE ENGINEER.

(#) FOR PROJECTS MAINTAINED BY THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC), USE DRIP LOOP (WITHOUT COIL) FOR FUTURE ADJUSTMENT OF SIGNAL SPAN.

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

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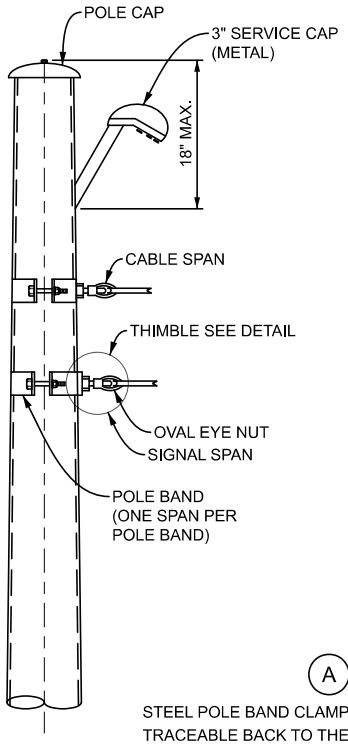
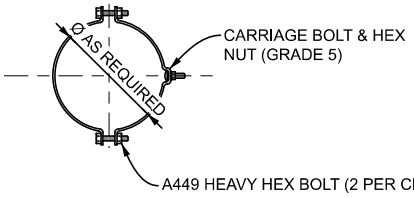
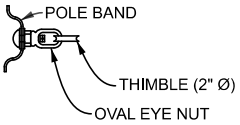
			SECT

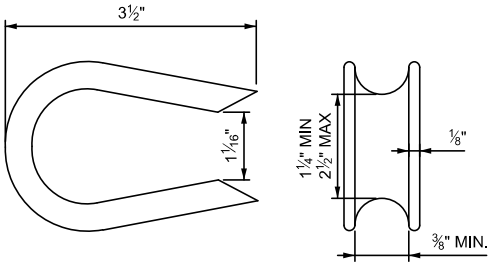


A DETAIL - POLE BAND CLAMP ON STEEL POLE

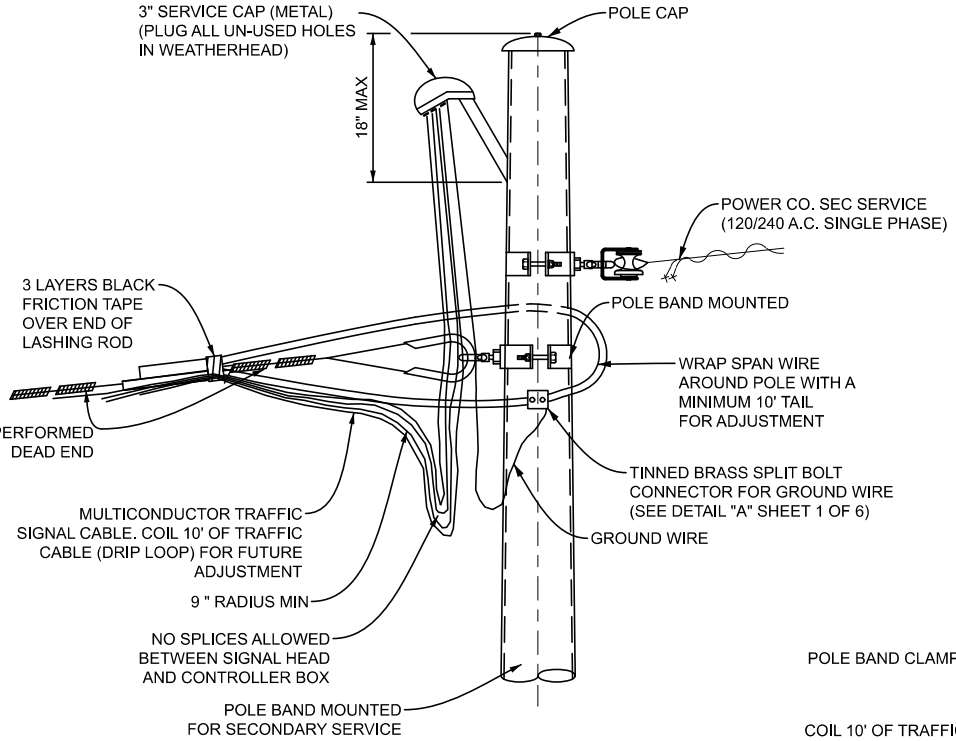
STEEL POLE BAND CLAMPS MUST BE STAMPED WITH IDENTIFICATION THAT IS TRACEABLE BACK TO THE MANUFACTURER, WHICH CAN BE USED TO DETERMINE THE MONTH AND YEAR OF CLAMP MANUFACTURE. THE STAMPING METHOD MUST BE A LOW STRESS STAMPING METHOD. THE STAMP CANNOT BE LOCATED NEAR THE BOLTED FLANGE, MUST BE LOCATED NEAR THE CENTER OF THE CLAMP ON THE BACK SIDE FACING AWAY FROM TRAFFIC, AND BE VISIBLE AFTER GALVANIZING. ALL BEND RADII ARE TO BE A MINIMUM OF 1.5 TIMES THE POLE BAND THICKNESS.



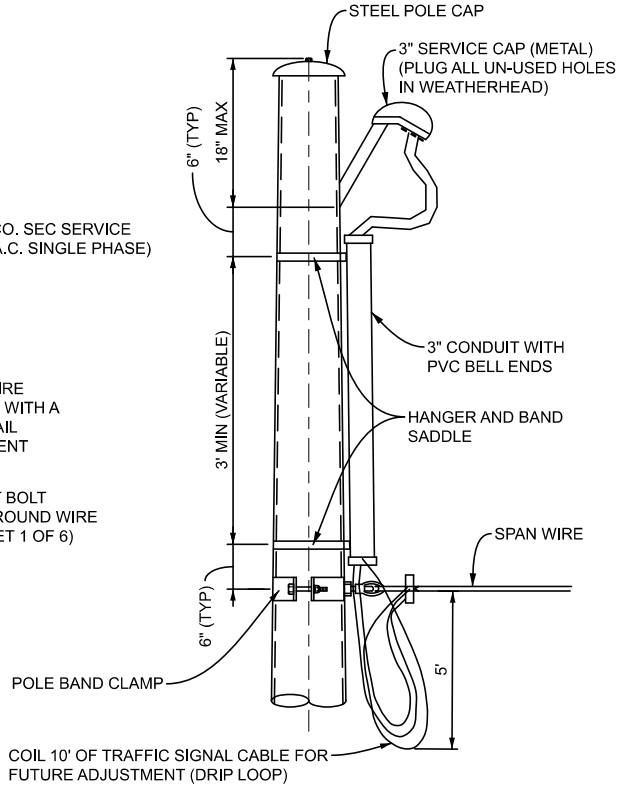




B DETAIL - THIMBLE



C DETAIL-CABLING ON STEEL POLE



D DETAIL - SERVICE CABLE ON STEEL POLE

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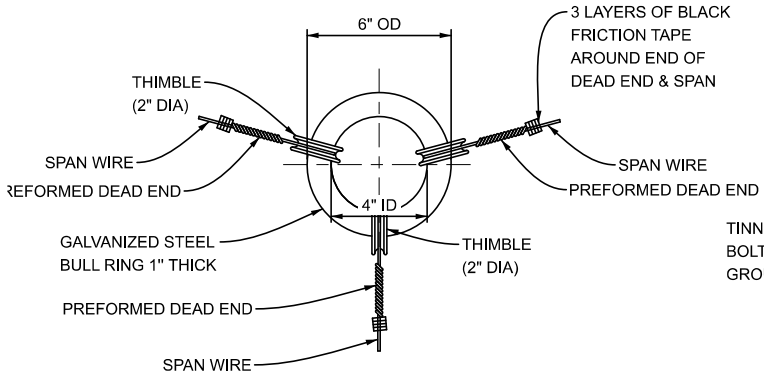
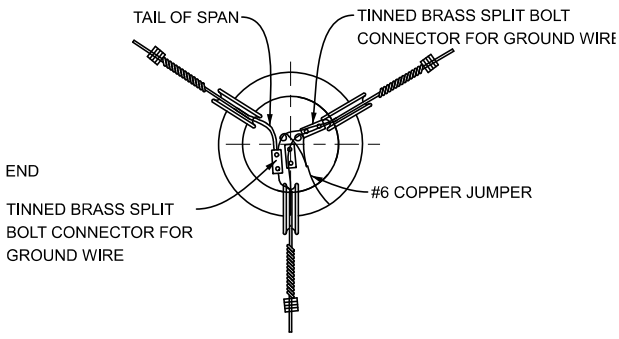
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 3 OF 7

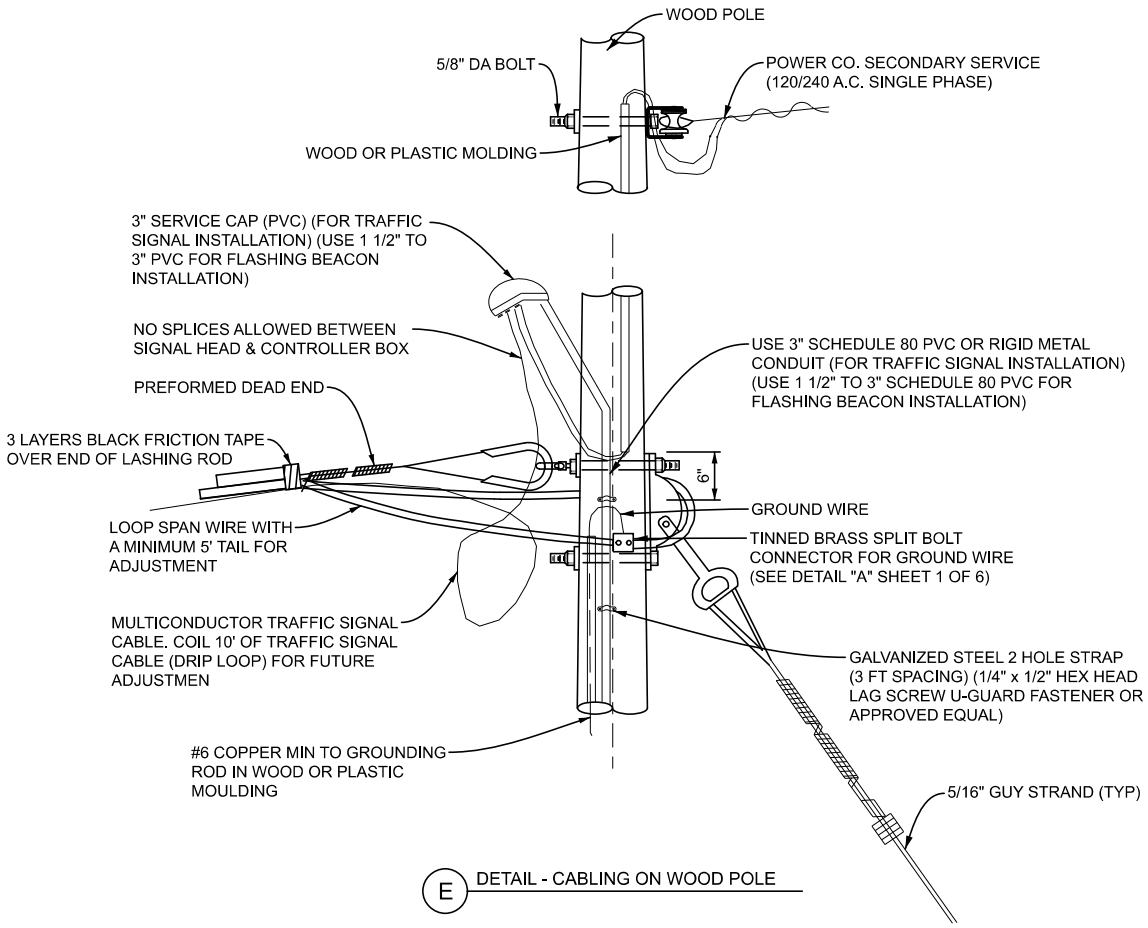


DETAIL
3-WAY TIE OFF BULL RING



DETAIL COPPER JUMPER
3-WAY TIE OFF

NOTE:
PORCELAIN STRAIN INSULATOR (IF REQUIRED) SHALL MEET THE CODES AND PLACEMENT REQUIREMENTS OF THE LOCAL UTILITY CO.



E DETAIL - CABLING ON WOOD POLE

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 4 OF 7
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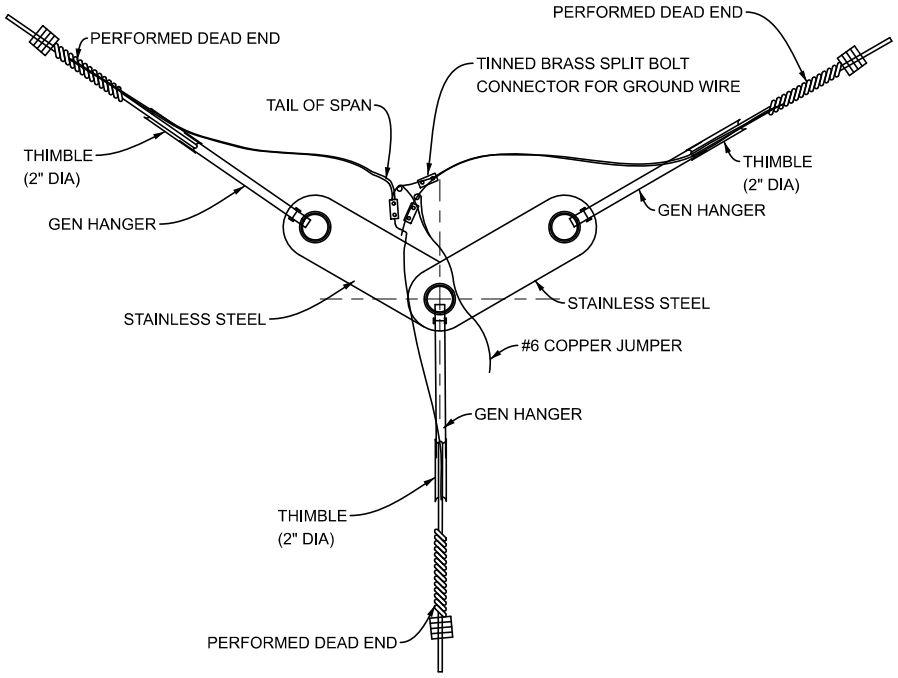
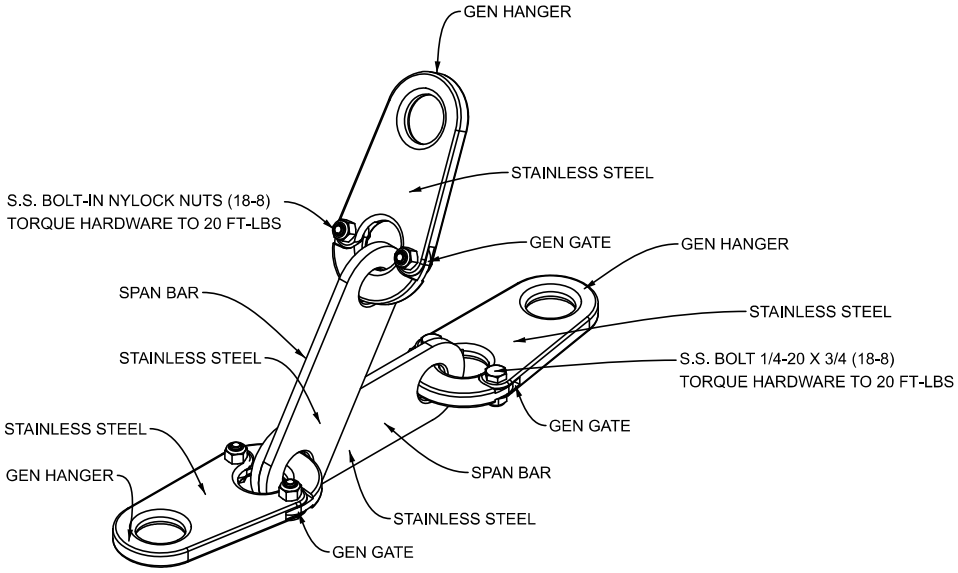
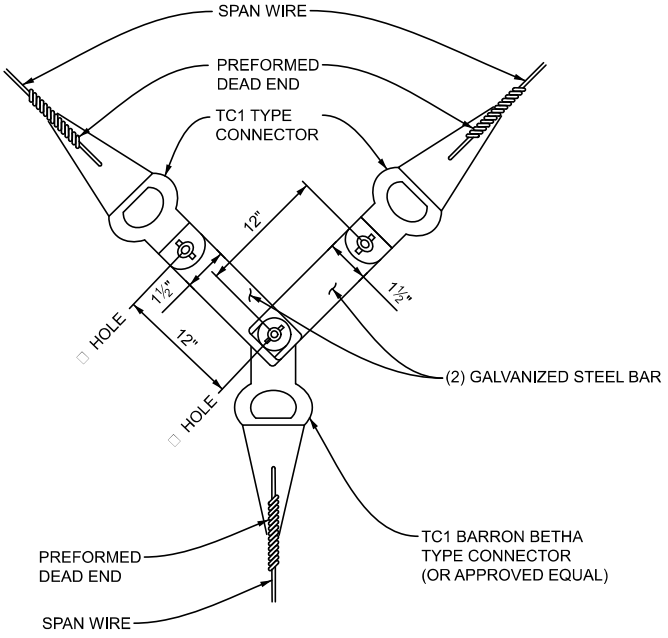


DETAIL COPPER JUMPER
3-WAY TIE OFF

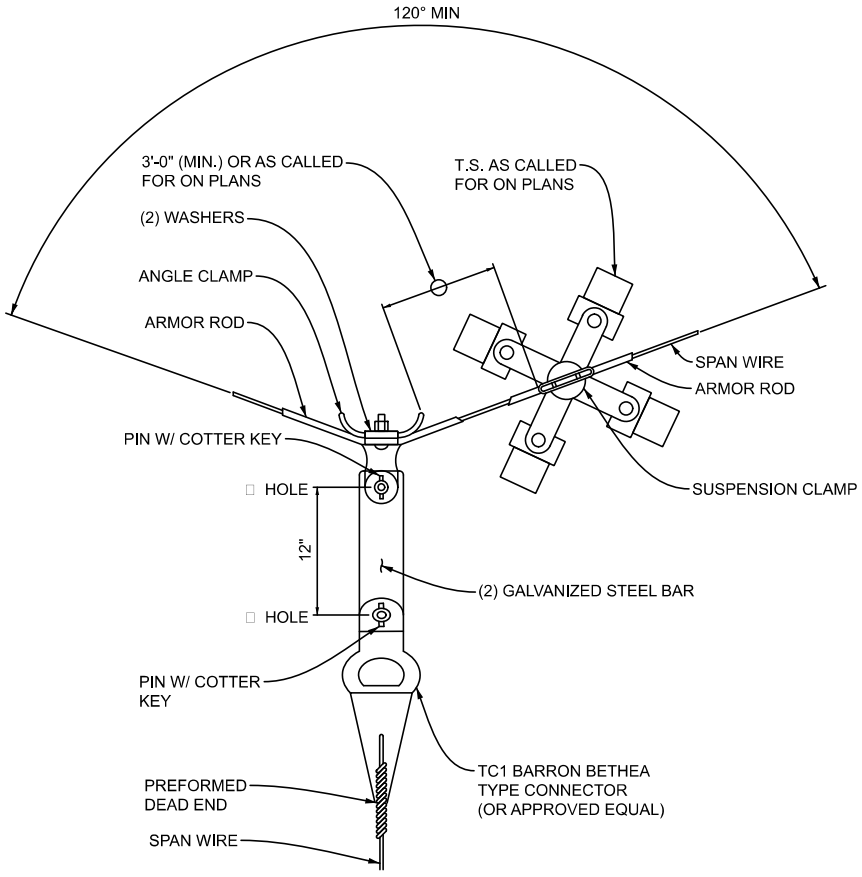


DETAIL SPAN HANGER ASSEMBLY (ALTERNATE)

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR SPAN WIRE CASING DETAILS			
	(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 5 OF 7



PULL-OFF CONNECTION DETAIL (ALTERNATE)
FOR 3-WAY SUSPENSION



PULL-OFF CONNECTION DETAIL (ALTERNATE)
FOR 3-WAY SUSPENSION

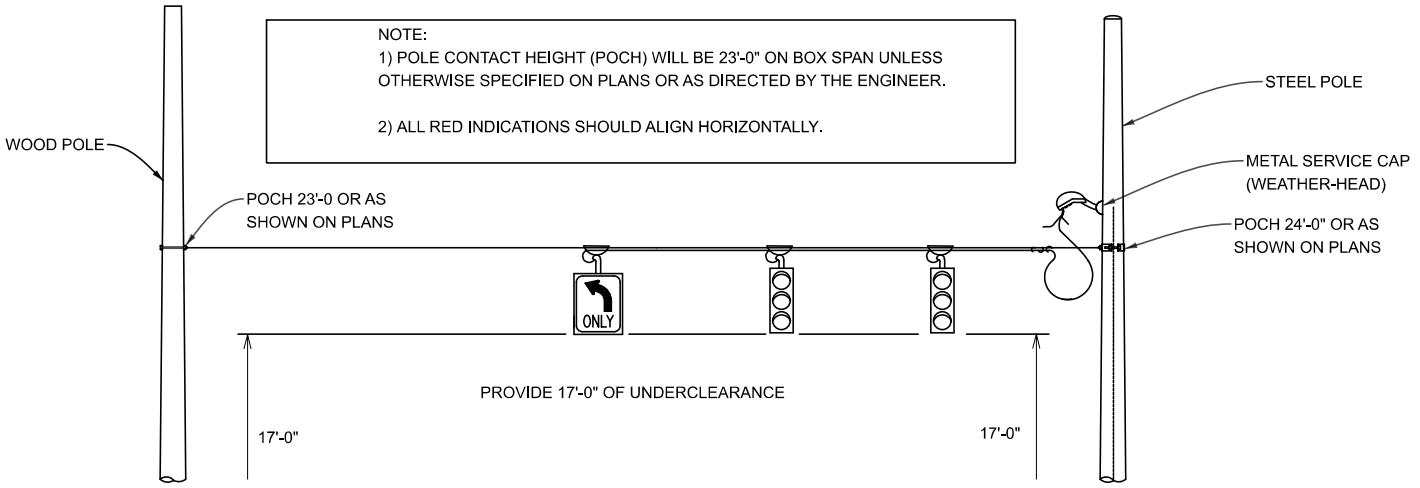
MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

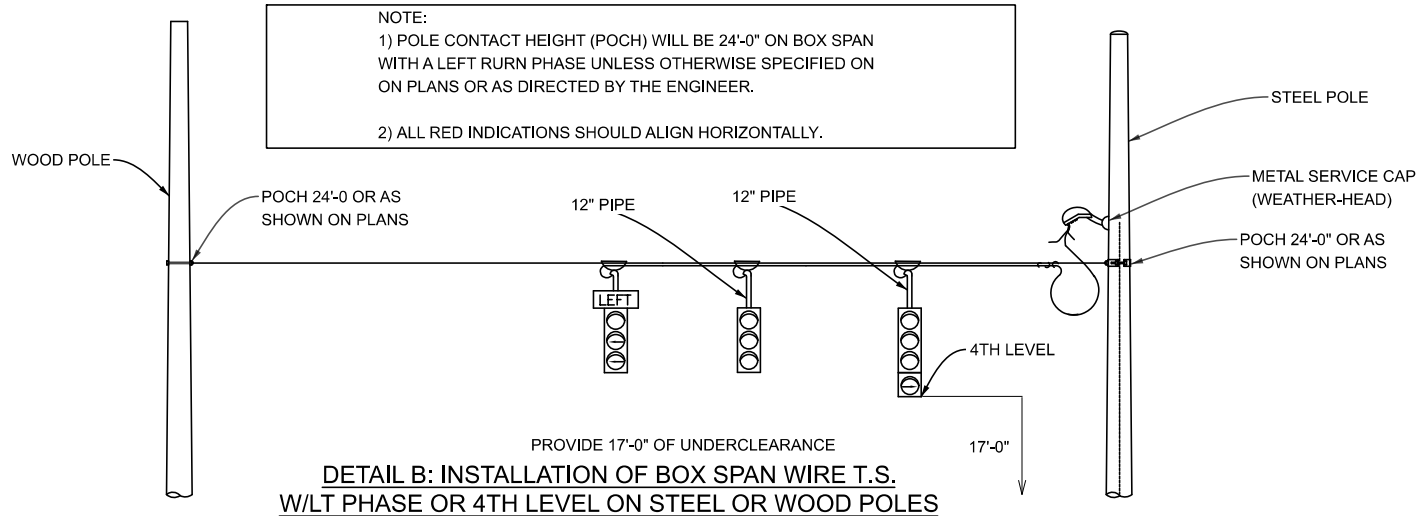
STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 6 OF 7

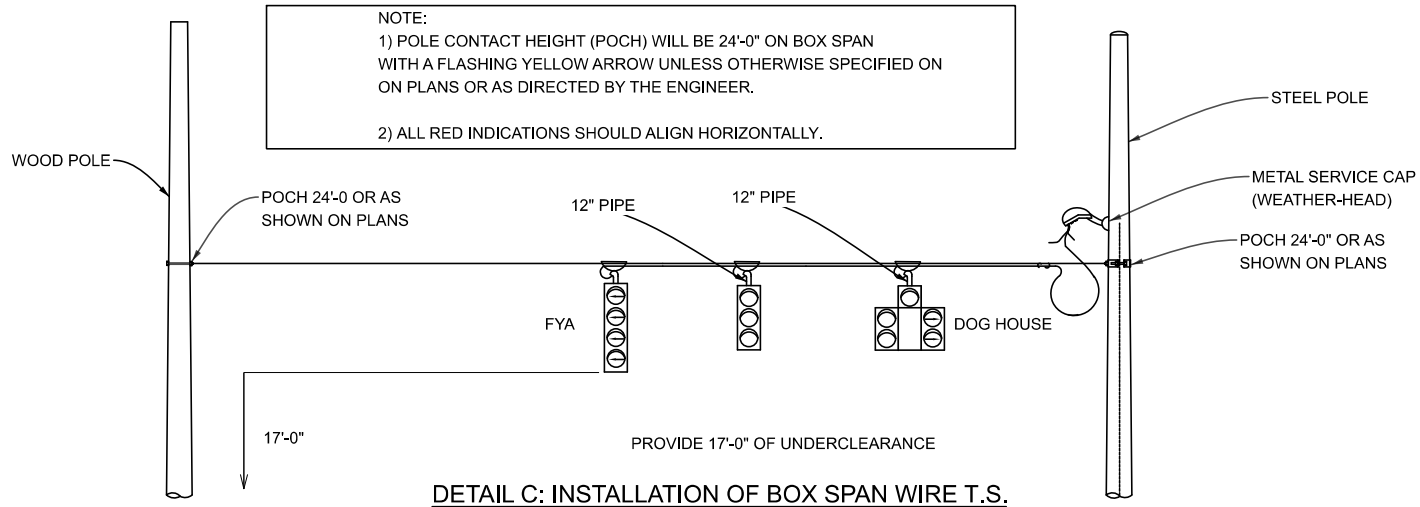
SECT



DETAIL INSTALLATION OF BOX SPAN WIRE T.S. ON STEEL OR WOOD POLES



DETAIL B: INSTALLATION OF BOX SPAN WIRE T.S.
W/LT PHASE OR 4TH LEVEL ON STEEL OR WOOD POLES



DETAIL C: INSTALLATION OF BOX SPAN WIRE T.S.
FYA AND DOGHOUSE ON STEEL OR WOOD POLES

BOX SPAN WIRE T.S ON STEEL OR WOOD POLES FOR USE ON OAKLAND COUNTY ROADS ONLY

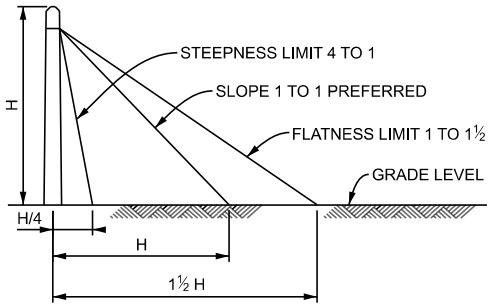
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

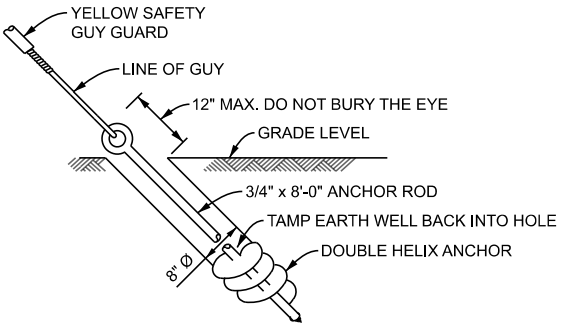
STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 7 OF 7

SECT



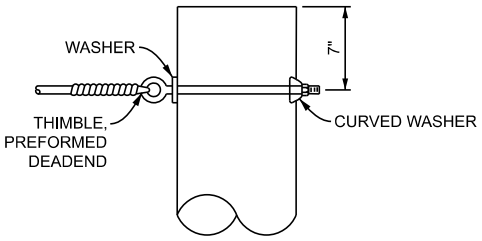
A DETAIL - ANCHOR GUY SLOPE LIMITS
N.T.S.



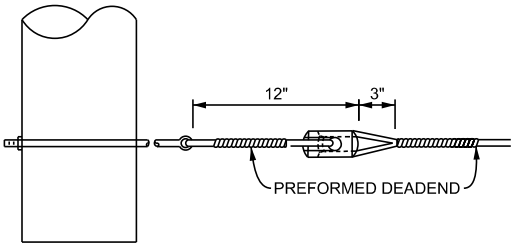
NOTE:

1. USE DOUBLE HELIX ANCHOR ACCORDING TO SOIL CONDITION AS DIRECTED BY THE ENGINEER.

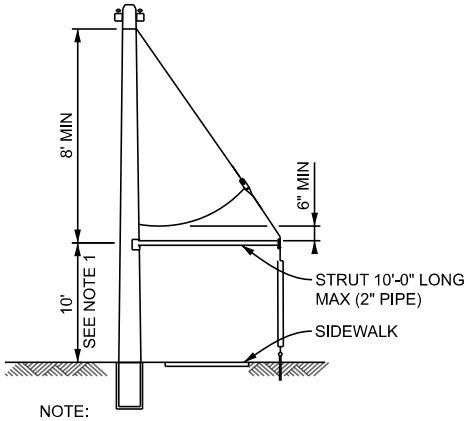
B DETAIL - GUY ANCHOR
N.T.S.



C DETAIL - POLE GUY
N.T.S.



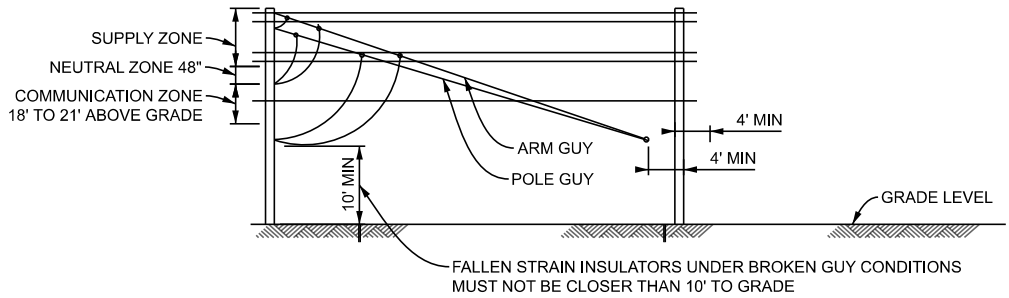
E DETAIL - ARM GUY
N.T.S.



NOTE:

1. THIS DIMENSION TO BE 10' UNLESS OTHERWISE SPECIFIED.

D DETAIL - GUY STRUT
N.T.S.



F DETAIL - STRAIN INSULATOR POSITIONS IN GUY WIRES
N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

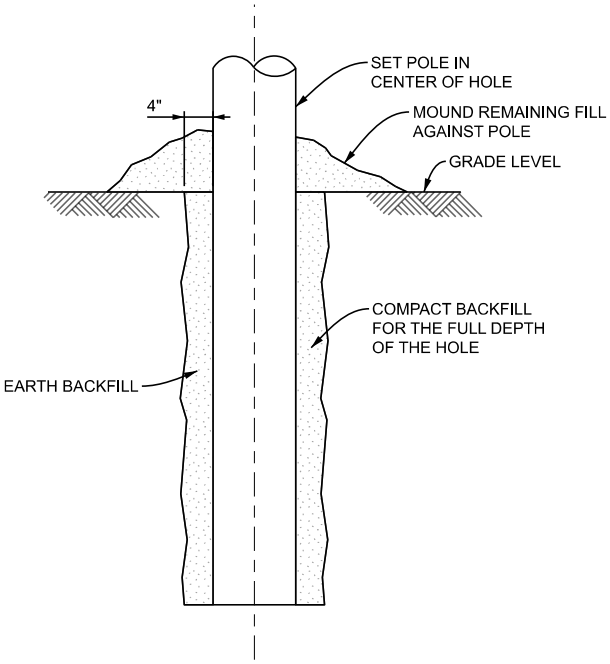
APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

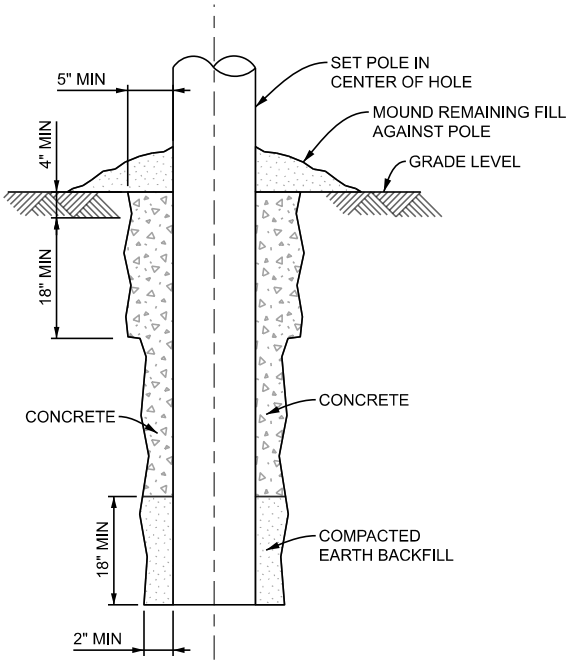
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
WOOD POLE GUYS
AND SETTING DEPTH

(SPECIAL DETAIL) FHWA APPROVAL	10/29/2024 PLAN DATE	SIG-050-A	SHEET 1 OF 2



G DETAIL - WOOD POLE INSTALLATION
N.T.S.



H SELF SUPPORTING
DETAIL - WOOD POLE IN CONCRETE
N.T.S.

WOOD POLE SETTING DEPTHS	
POLE HEIGHT	SETTING DEPTH
30'	6.0'
35'	6.0'
40'	6.0'
45'	6.5'
50'	7.0'
55'	7.5'
60'	8.0'

NOTES:

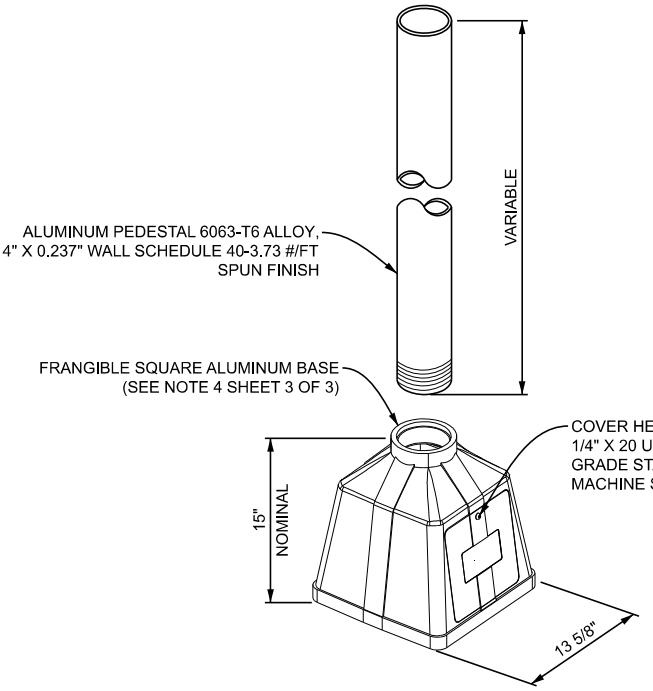
1. REFERENCE STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 819.03.

MDOT Michigan Department of Transportation

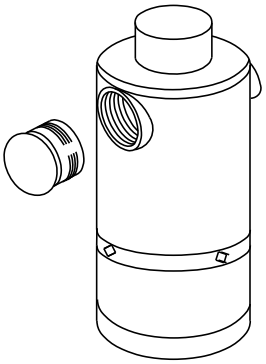
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
WOOD POLE GUYS
AND SETTING DEPTH

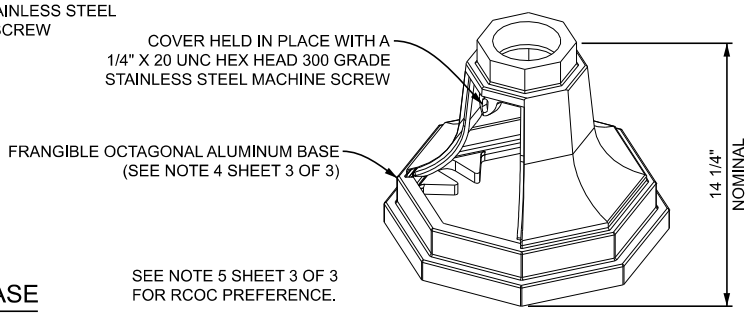
(SPECIAL DETAIL) FHWA APPROVAL	10/29/2024 PLAN DATE	SIG-050-A	SHEET 2 OF 2



A DETAIL - SQUARE ALUMINUM BASE
N.T.S.

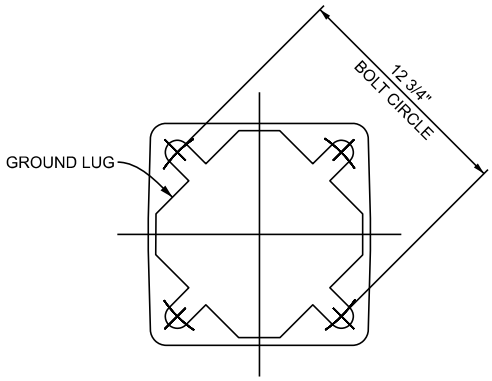


C POST TOP
DETAIL - (SLIP FITTER)
N.T.S.

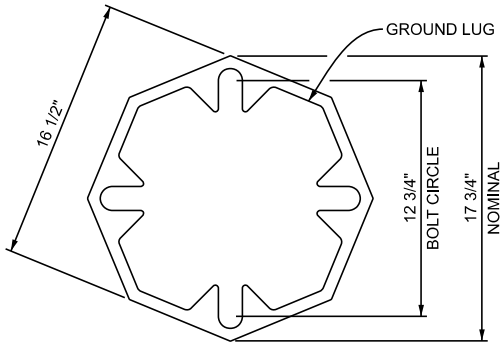


SEE NOTE 5 SHEET 3 OF 3
FOR RCOC PREFERENCE.

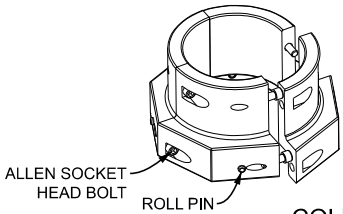
D DETAIL - OCTOGONAL BASE
N.T.S.



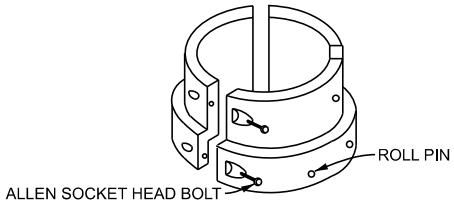
B DETAIL - SQUARE BASE BOTTOM PLAN
N.T.S.



E DETAIL - OCTOGONAL BASE BOTTOM PLAN
N.T.S.



F COLLAR
DETAIL - (OCTOGANAL BASE)
N.T.S.



G COLLAR
DETAIL - (SQUARE BASE)
N.T.S.

NOTE:
USE PEDESTAL COLLAR FOR PEDESTAL LENGTH
GREATER THAN OR EQUAL TO 14' (TYPICAL FOR
3 COLOR TRAFFIC SIGNALS WITH PEDESTRIAN SIGNALS).

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

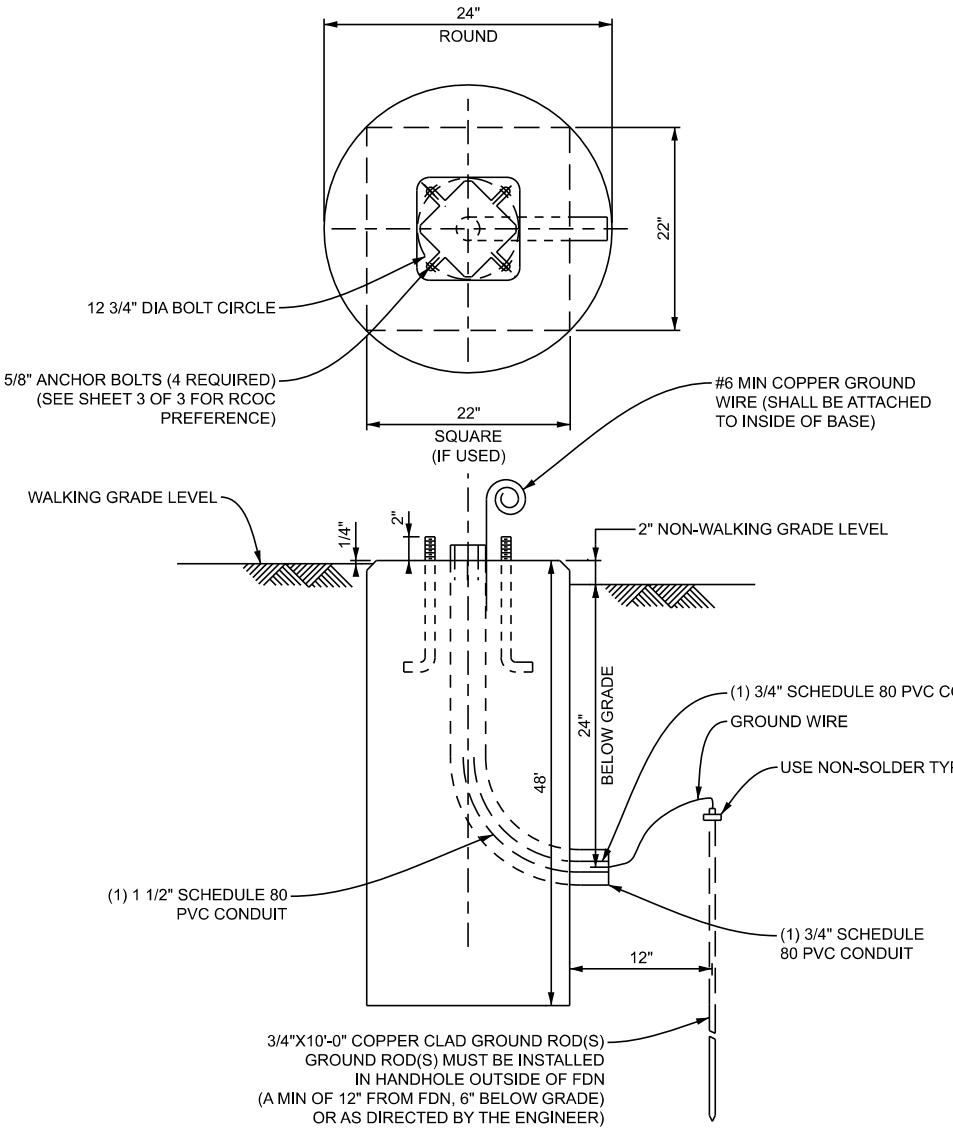
APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

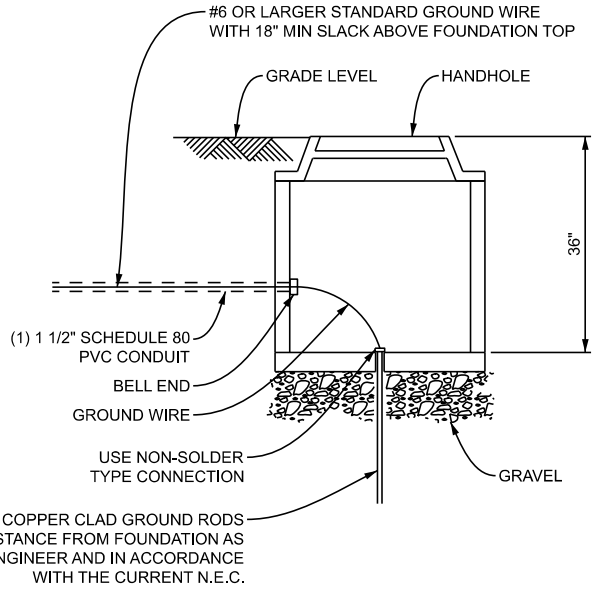
STANDARD PLAN FOR
PEDESTAL FOUNDATION

(SPECIAL DETAIL) FHWA APPROVAL	10/29/2024 PLAN DATE	SIG-070-A	SHEET 1 OF 3



H DETAIL - PEDESTAL FOUNDATION

N.T.S. SEE NOTES 1, 2 & 3 ON SHEET 3 OF 3



I DETAIL - HANDHOLE

N.T.S.

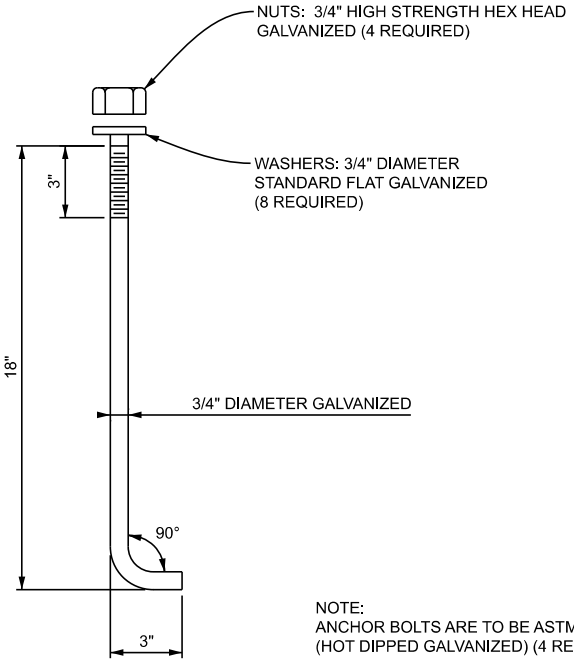
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

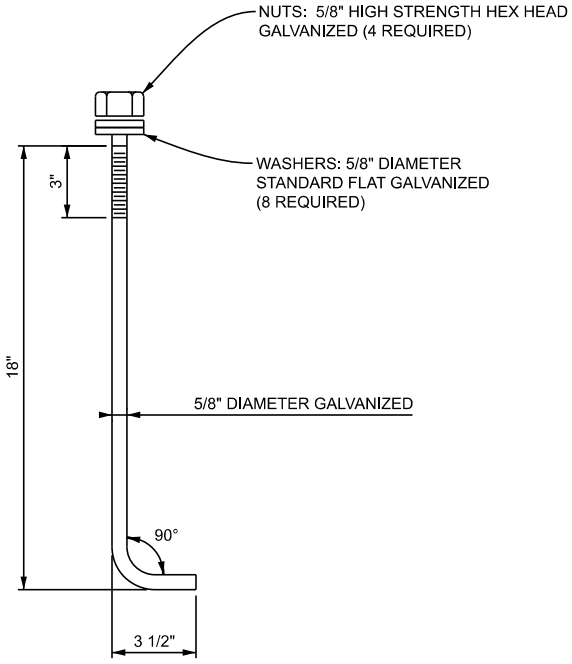
STANDARD PLAN FOR
PEDESTAL FOUNDATION

(SPECIAL DETAIL) FHWA APPROVAL	10/29/2024 PLAN DATE	SIG-070-A	SHEET 2 OF 3

SECT



NOTE:
ANCHOR BOLTS ARE TO BE ASTM-F1554 GRADE 36
(HOT DIPPED GALVANIZED) (4 REQUIRED)



FOR USE ON MDOT TRUNKLINE

FOR USE ON OAKLAND COUNTY ROADS ONLY

J DETAIL - ANCHOR BOLT DETAIL
N.T.S.

NOTES:
1) ALTERNATE FOUNDATION MAY BE CONSTRUCTED 22"X22" SQUARE - 48" DEEP.

2) GROUNDING SYSTEM SHALL MEASURE 10 OHM OR LESS TO GROUND.

3) CONSTRUCTION JOINTS NOT PERMITTED IN FOUNDATION.

4) PEDESTAL BASE MUST MEET THE REQUIREMENTS OF NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP 350) OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND HAVE FEDERAL HIGHWAY ADMINISTRATION (FHWA) ACCEPTANCE. PEDESTAL BASE MUST ALSO BE CERTIFIED TO HAVE A 4-INCH MAXIMUM STUB HEIGHT AFTER THE SUPPORT HAS BROKEN AWAY FROM ITS BASE, AS SPECIFIED IN THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS AND THE AASHTO ROADSIDE DESIGN GUIDE.

5) USE THE OCTAGONAL BASE AS A PREFERENCE BY THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC), FOR USE ON OAKLAND COUNTY ROADS ONLY.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

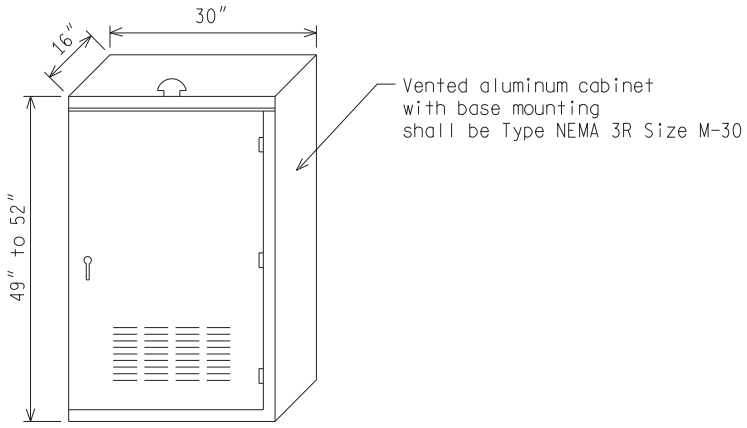
APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT
Michigan Department of Transportation

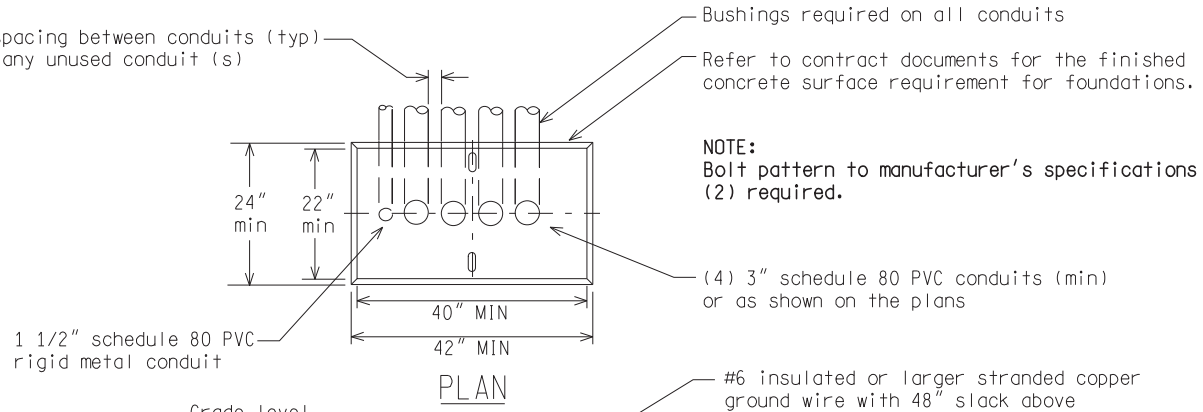
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

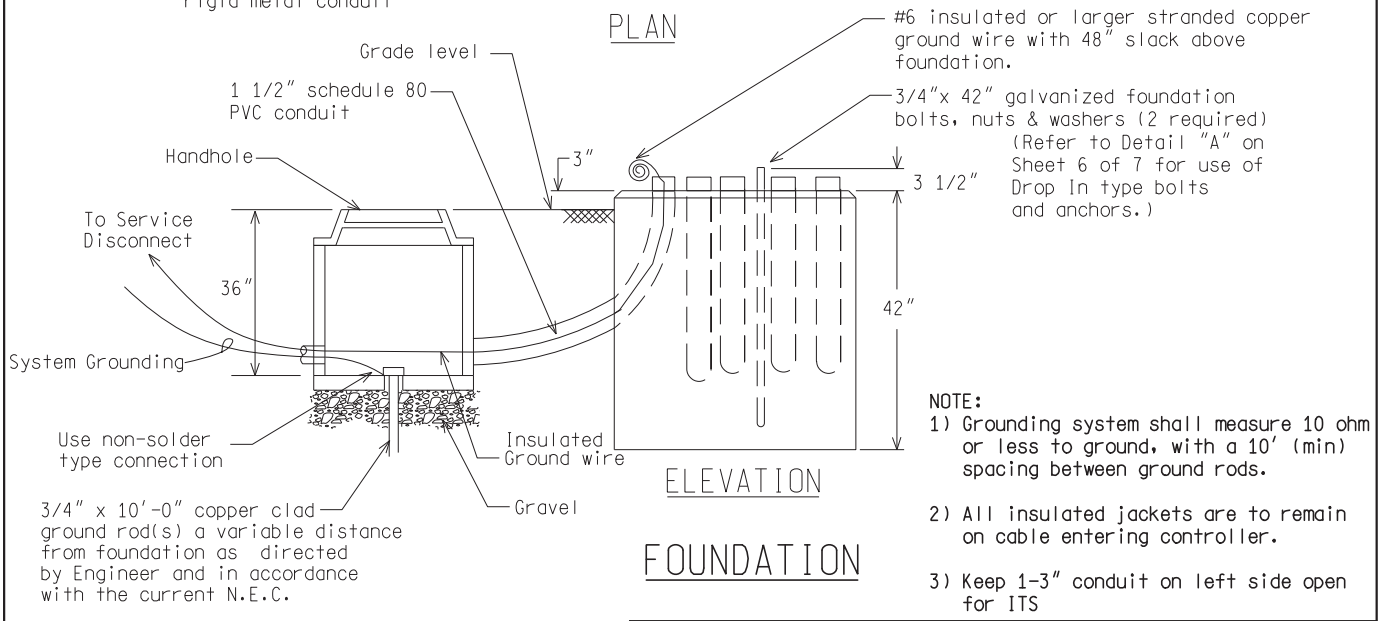
STANDARD PLAN FOR
PEDESTAL FOUNDATION

(SPECIAL DETAIL) FHWA APPROVAL	10/29/24 PLAN DATE	SIG-070-A	SHEET 3 OF 3



BASE MOUNTED TRAFFIC SIGNAL CONTROLLER CABINET





NOTE:
1) Grounding system shall measure 10 ohm or less to ground, with a 10′ (min) spacing between ground rods.

2) All insulated jackets are to remain on cable entering controller.

3) Keep 1-3″ conduit on left side open for ITS

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG110A.dgn Rev. 02/16/17

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY:

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

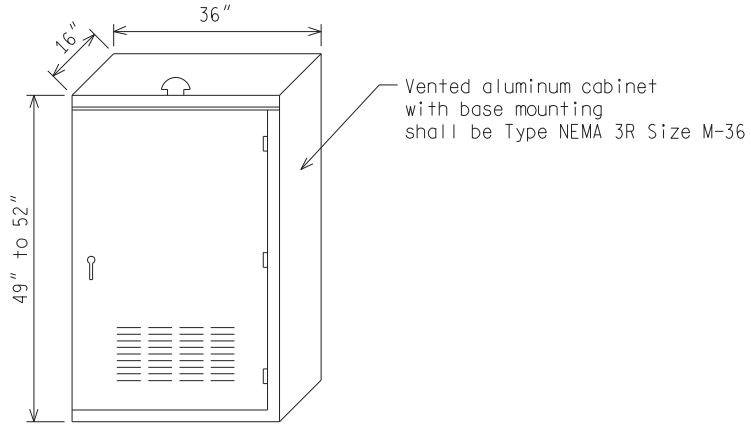
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

BASE MOUNTED T.S.
CONTROLLER CABINET/FOUNDATIONS

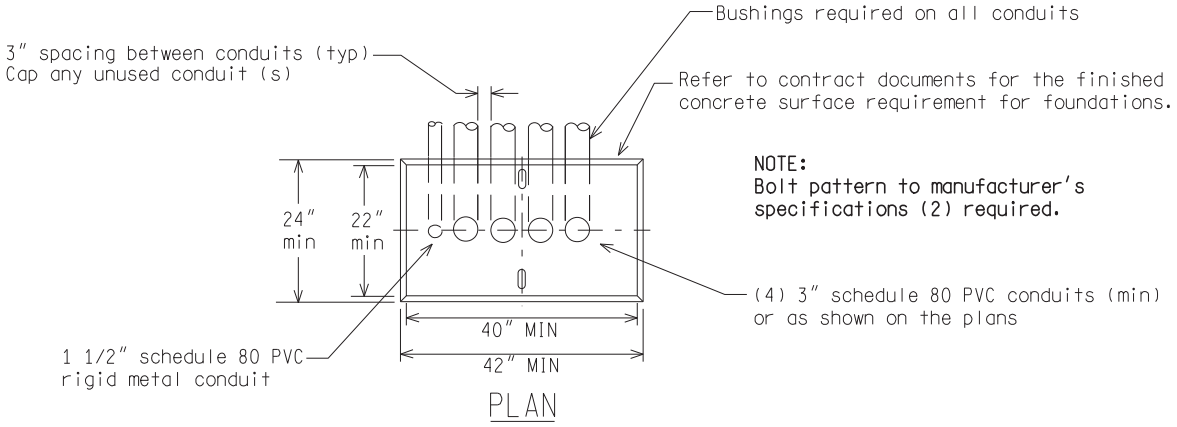
PLAN DATE

SIG-110-A

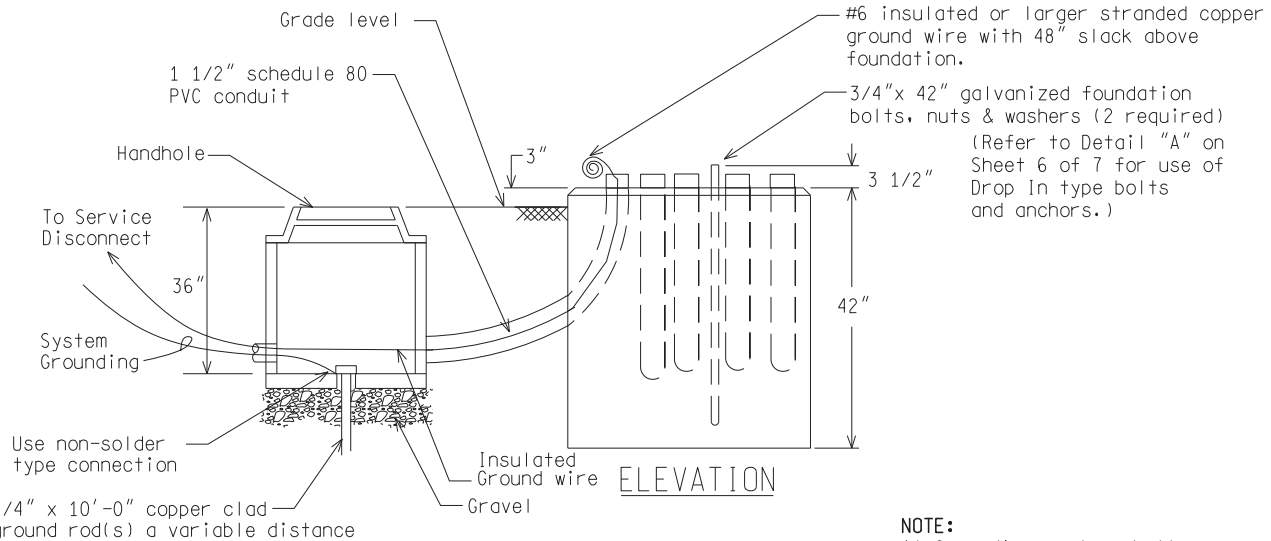
SHEET 1 of 7



BASE MOUNTED TRAFFIC SIGNAL CONTROLLER CABINET



PLAN



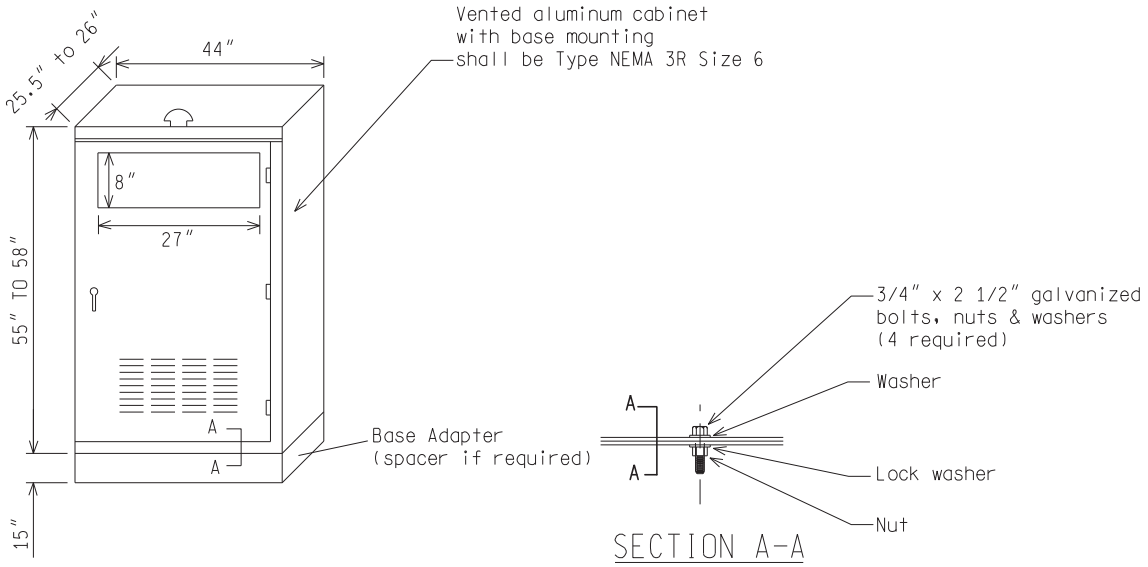
FOUNDATION

NOTE:
1) Grounding system shall measure 10 ohm or less to ground, with a 10' (min) spacing between ground rods.

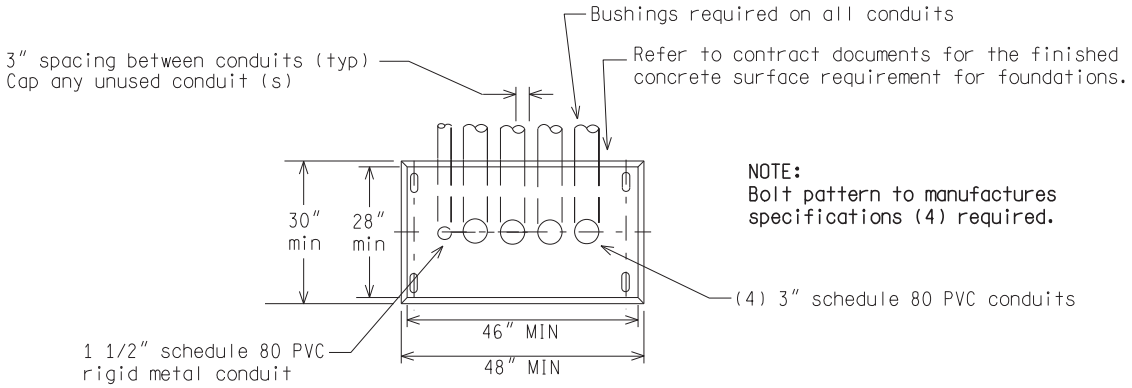
2) All insulated jackets are to remain on cable entering controller.

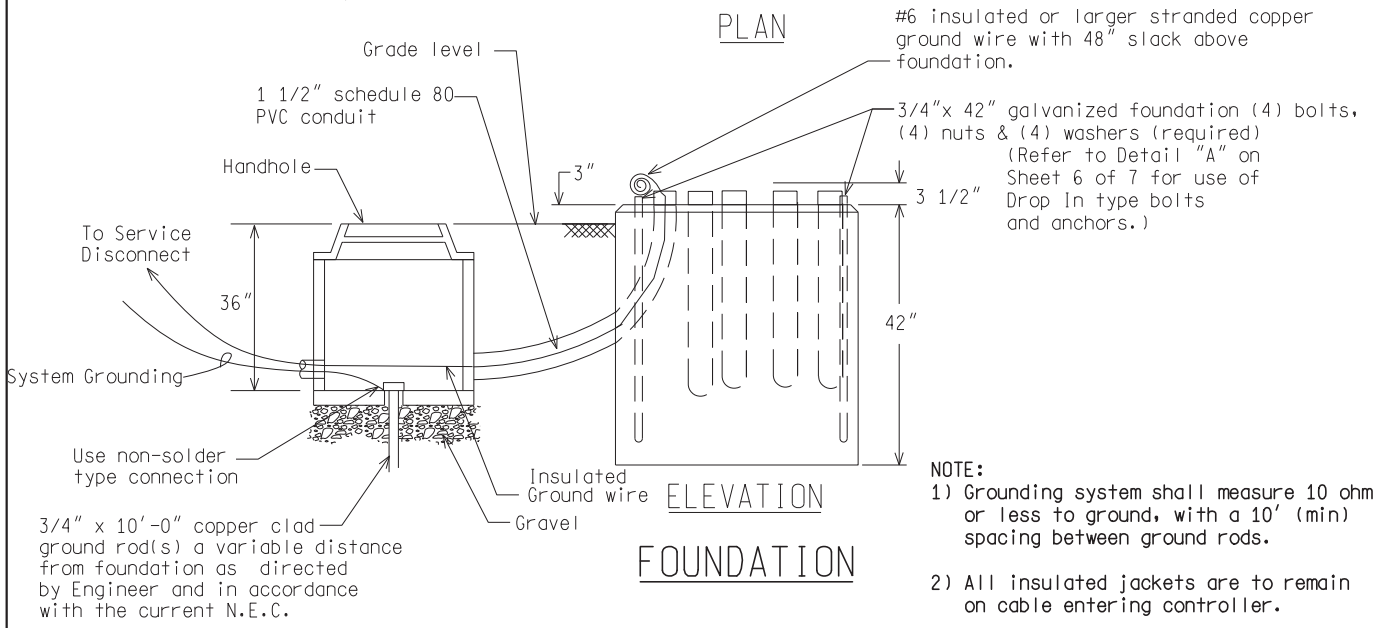
3) Keep 1-3" conduit on left side open for ITS

NOT TO SCALE



BASE MOUNTED TRAFFIC SIGNAL CONTROLLER CABINET





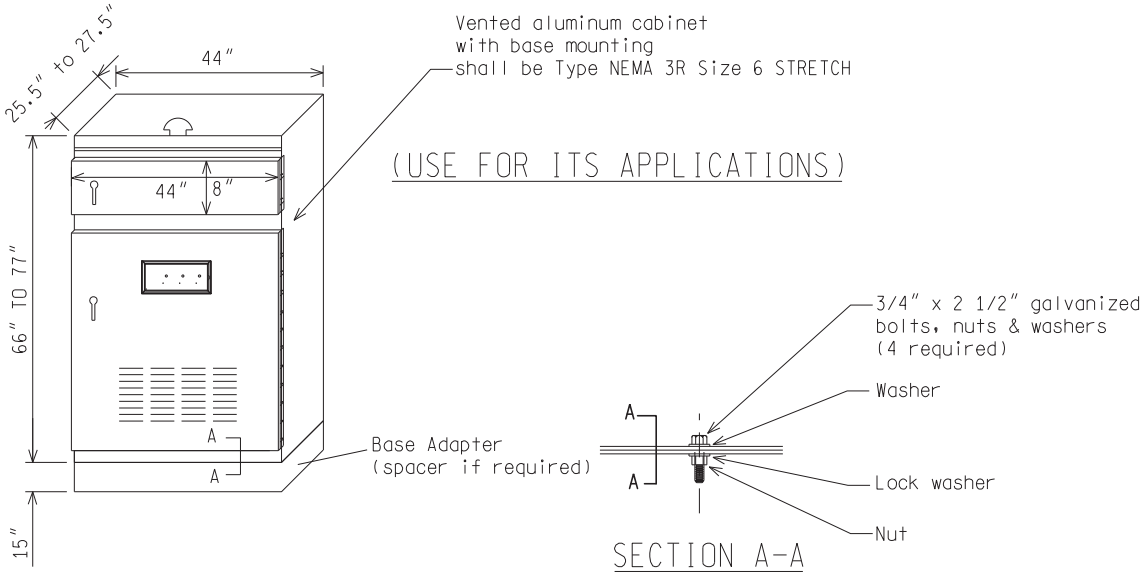
NOTE:
1) Grounding system shall measure 10 ohm or less to ground, with a 10' (min) spacing between ground rods.

2) All insulated jackets are to remain on cable entering controller.

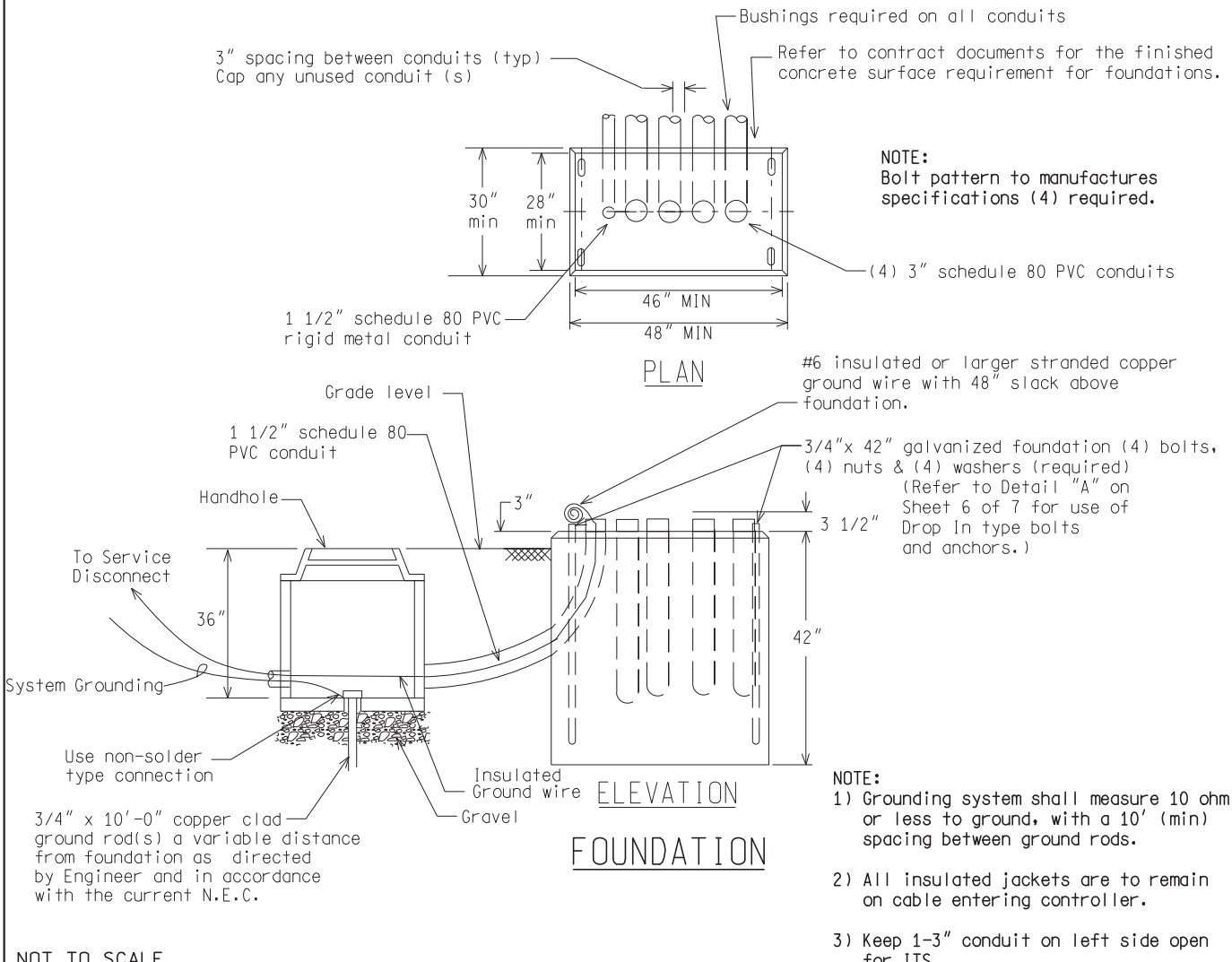
3) Keep 1-3" conduit on left side open for ITS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File:RefDoc/TR/Signals/Web/Sp Det/Fin/SIG110A.dgn Rev.02/16/17		PLAN DATE	SIG-110-A	SHEET 3 of 7



BASE MOUNTED TRAFFIC SIGNAL ITS CONTROLLER CABINET (IF USED)



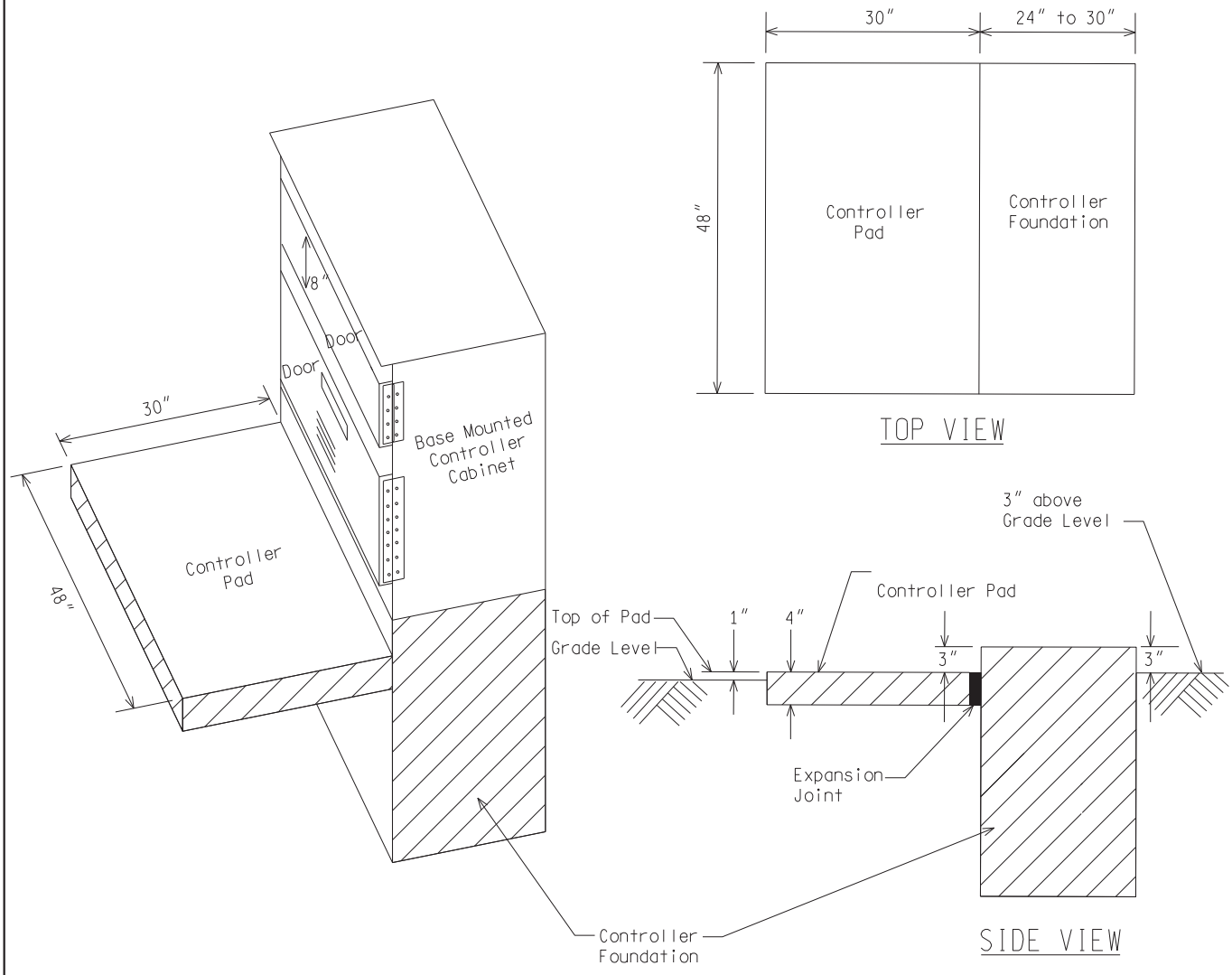
NOTE:
1) Grounding system shall measure 10 ohm or less to ground, with a 10' (min) spacing between ground rods.

2) All insulated jackets are to remain on cable entering controller.

3) Keep 1-3" conduit on left side open for ITS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG110A.dgn Rev. 02/16/17		PLAN DATE	SIG-110-A	SHEET 4 of 7

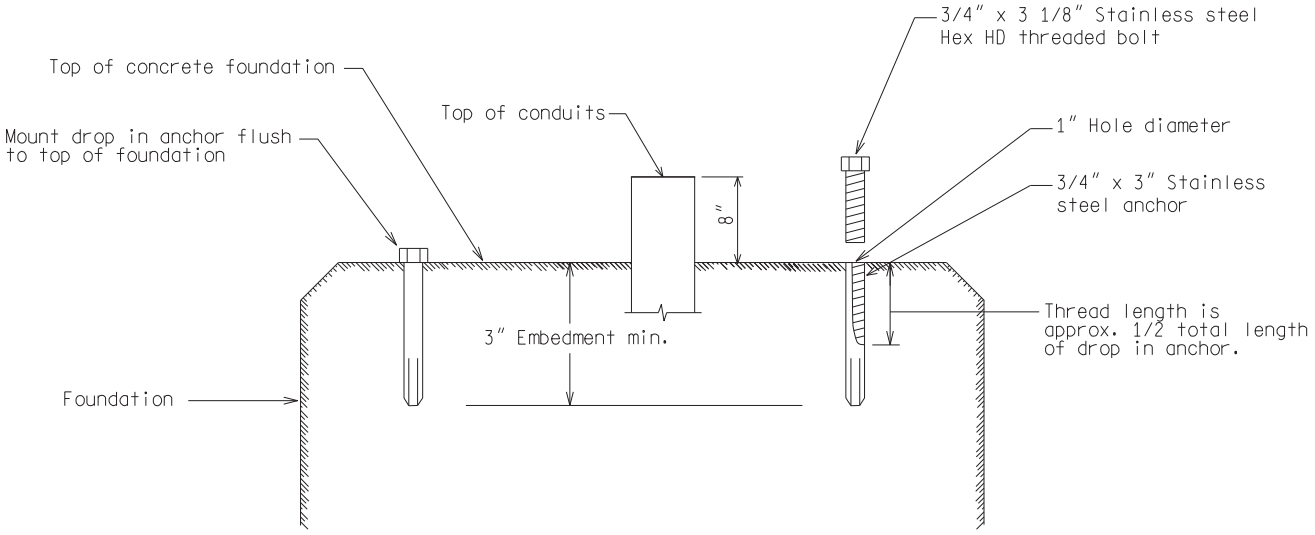


BASE MOUNTED CONTROLLER PAD

NOTE:
Payment for controller pad to be included in controller foundation pay item.
Controller cabinet door to open toward pad.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-110-A	SHEET 5 of 7
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG110A.dgn Rev. 02/16/17		PLAN DATE		

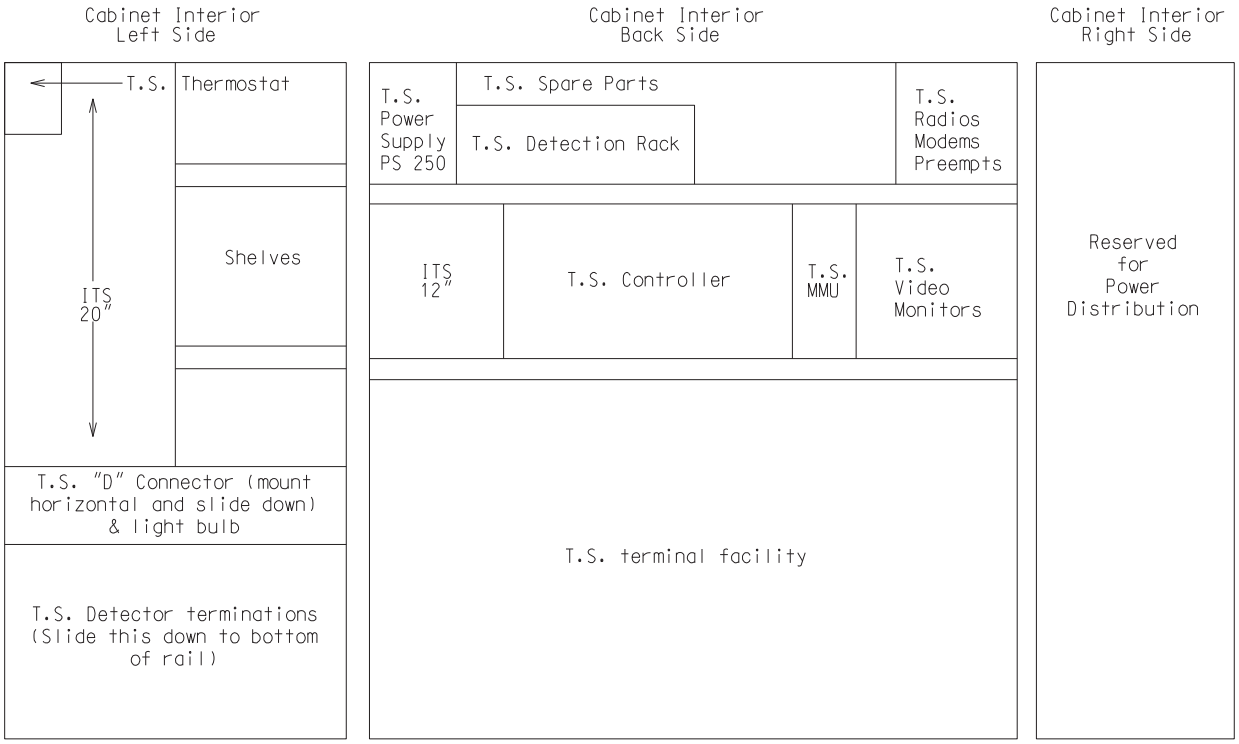


Notes:
1. Use AISI 300 Series Stainless Steel for all bolts and anchors.
2. Use Drop In foundation bolts and anchors as directed by the Engineer.

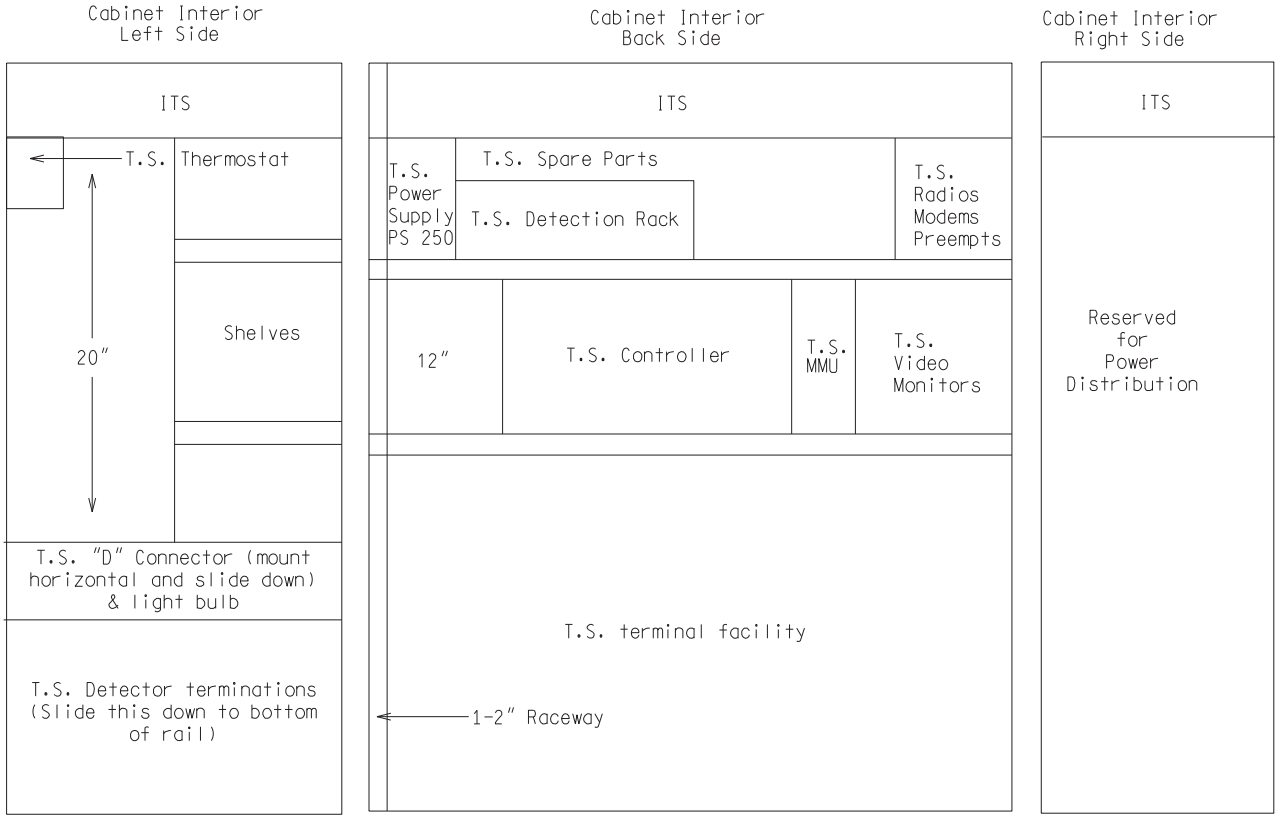
ALTERNATIVE DETAIL "A": DROP IN FOUNDATION BOLTS & ANCHORS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-110-A	SHEET 6 of 7
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG110A.dgn Rev. 02/16/17		PLAN DATE		



TRAFFIC SIGNAL NEMA 3R SIZE 6 CABINET REQUIREMENTS

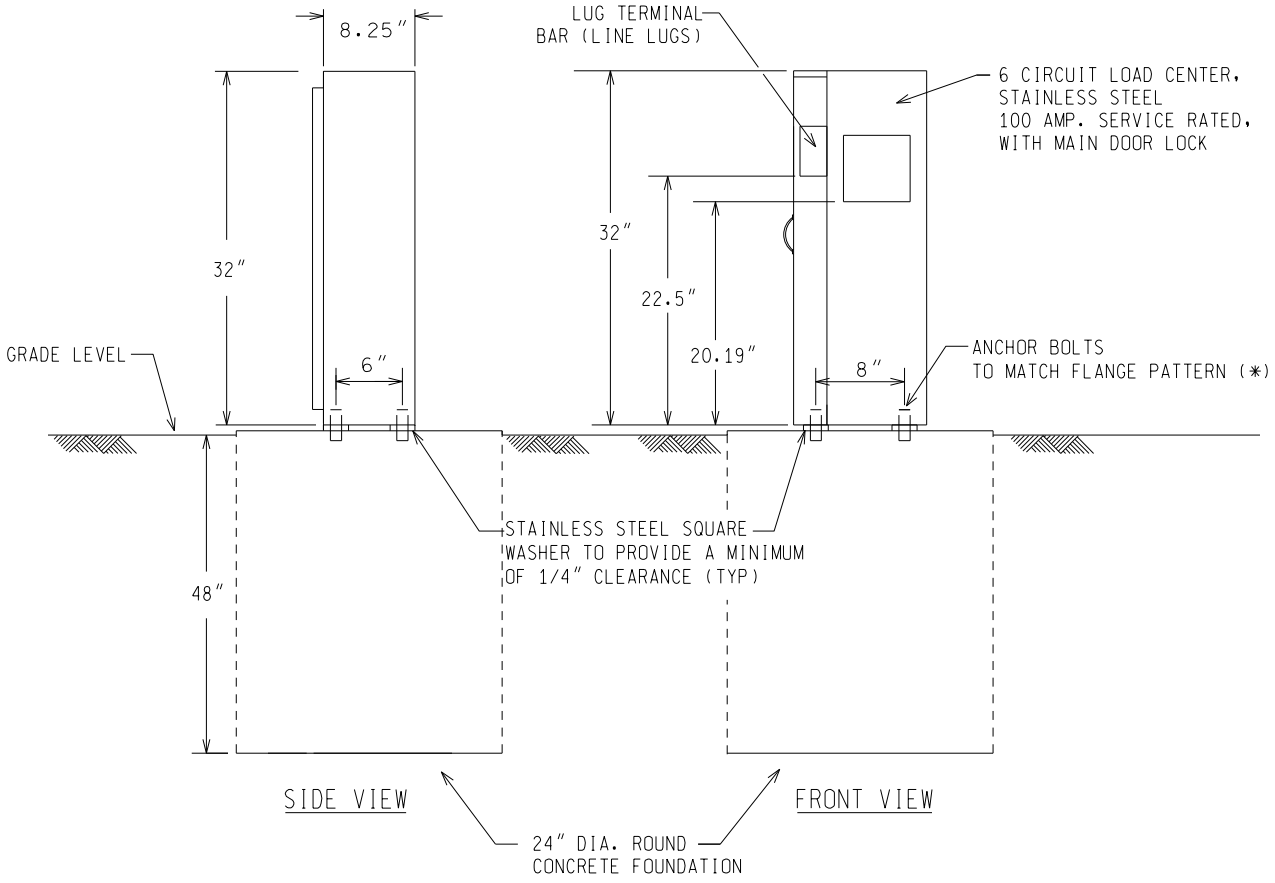


TRAFFIC SIGNAL NEMA 3R SIZE 6 STRETCH CABINET REQUIREMENTS FOR ITS APPLICATIONS

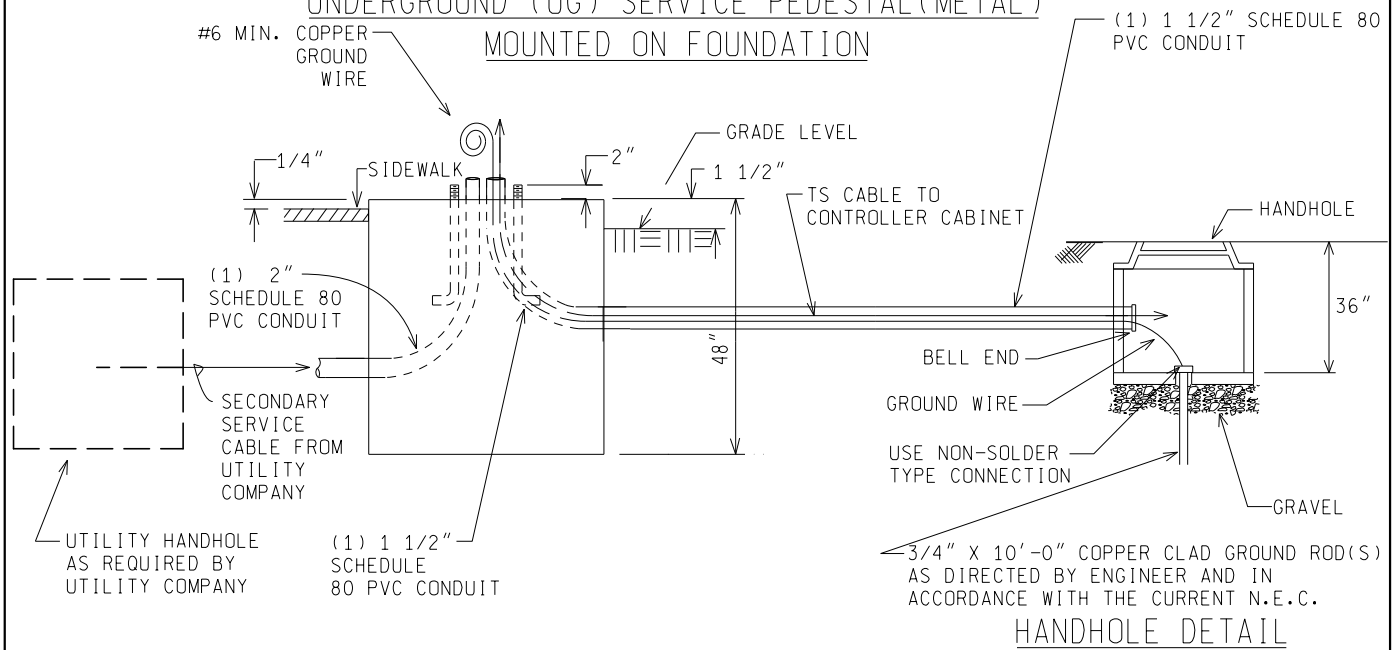
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-110-A	SHEET 7 of 7
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG110A.dgn Rev. 02/16/17		PLAN DATE		

(*) NOTE: STAINLESS STEEL ANCHOR BOLTS OR STAINLESS STEEL DROP INS, TO BE USED ON EXISTING FOUNDATIONS WITH PROPER GRADE AND SIZE.



UNDERGROUND (UG) SERVICE PEDESTAL(METAL) MOUNTED ON FOUNDATION



HANDHOLE DETAIL

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG210B.dgn Rev. 02/06/18

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DSP

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

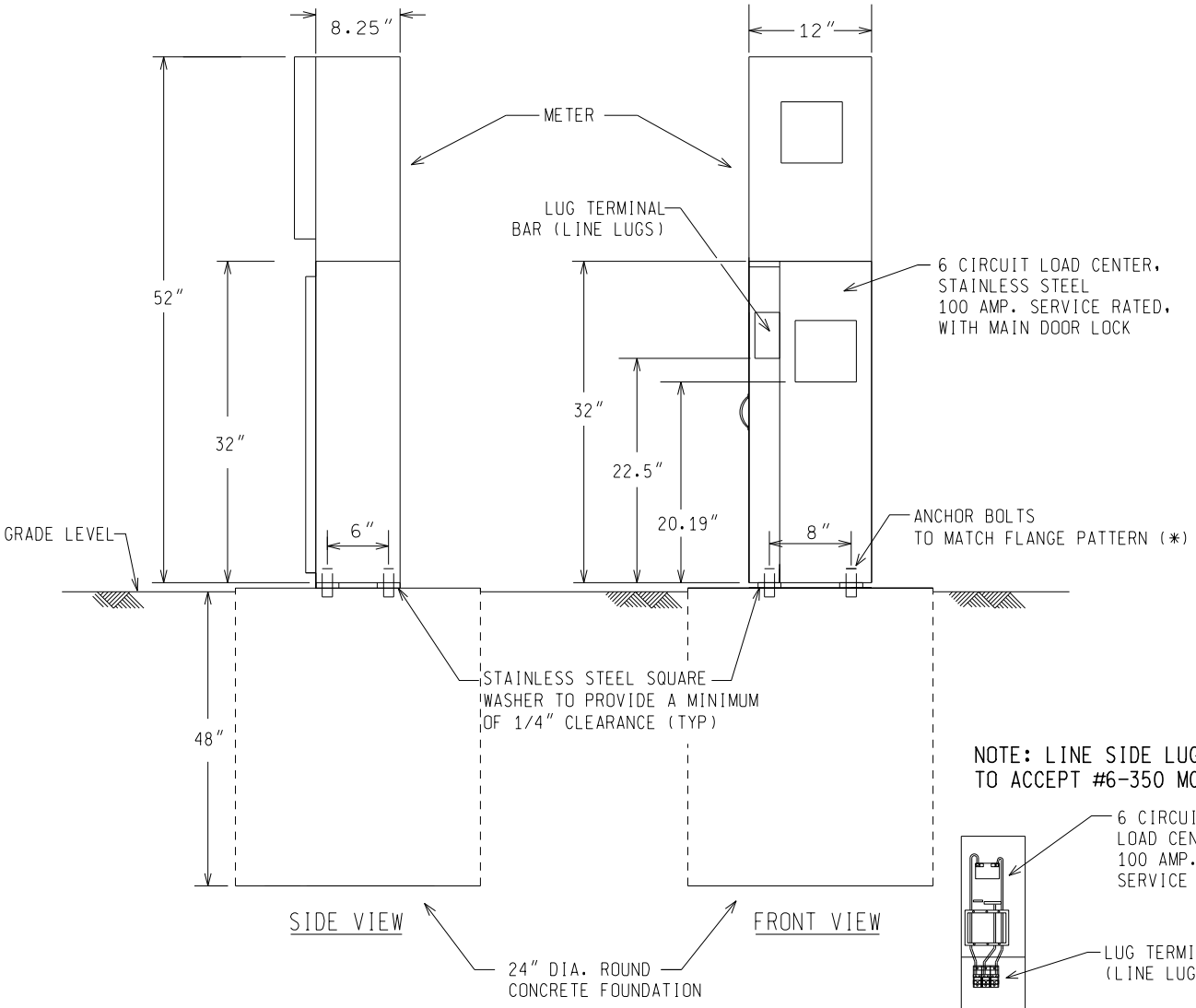
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

UNDERGROUND SERVICE METERED AND UNMETERED

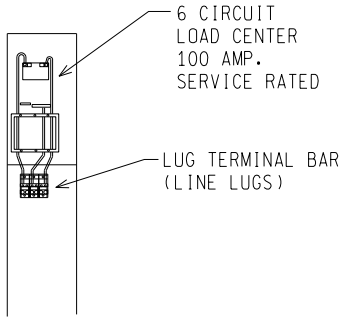
PLAN DATE

SIG-210-B

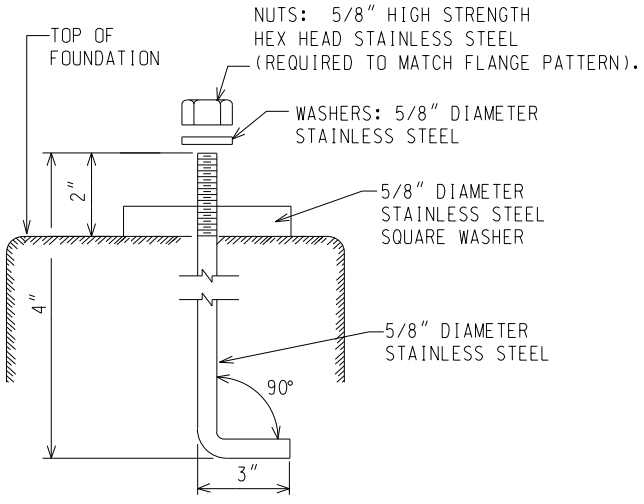
SHEET 1 of 3



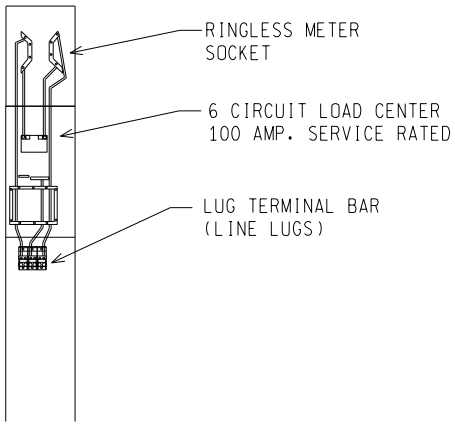
NOTE: LINE SIDE LUGS TO ACCEPT #6-350 MCM AWG



DETAIL WIRING DIAGRAM
(UNMETERED)



ANCHOR BOLT DETAIL

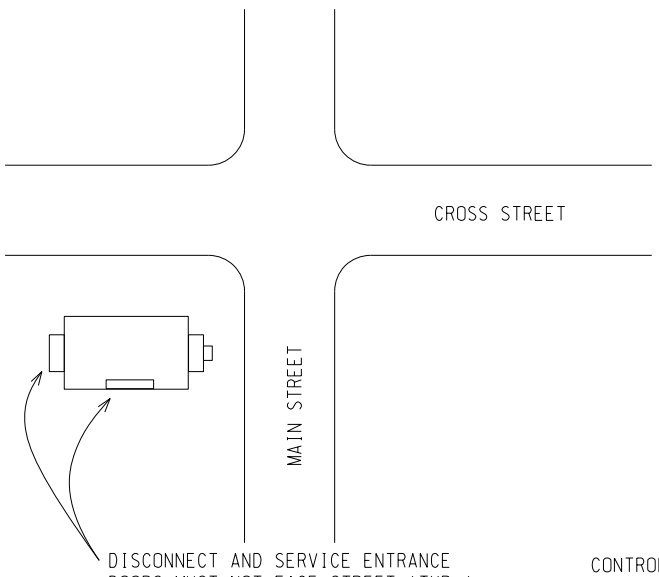


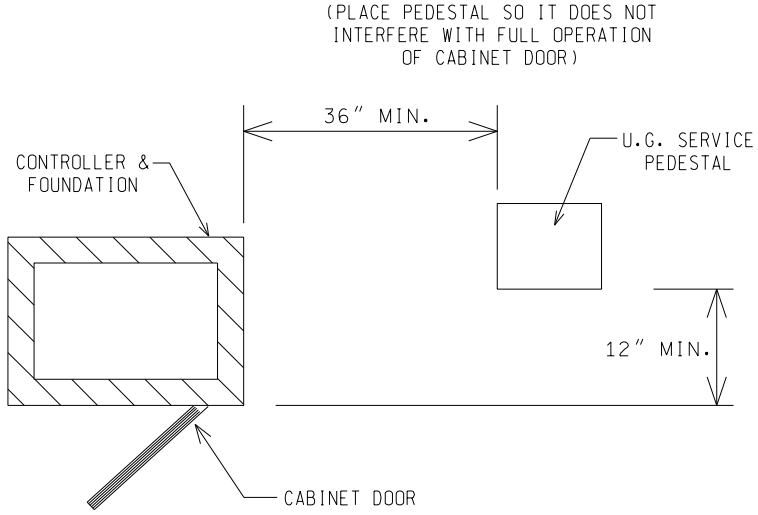
DETAIL WIRING DIAGRAM
(METERED)

NOT TO SCALE

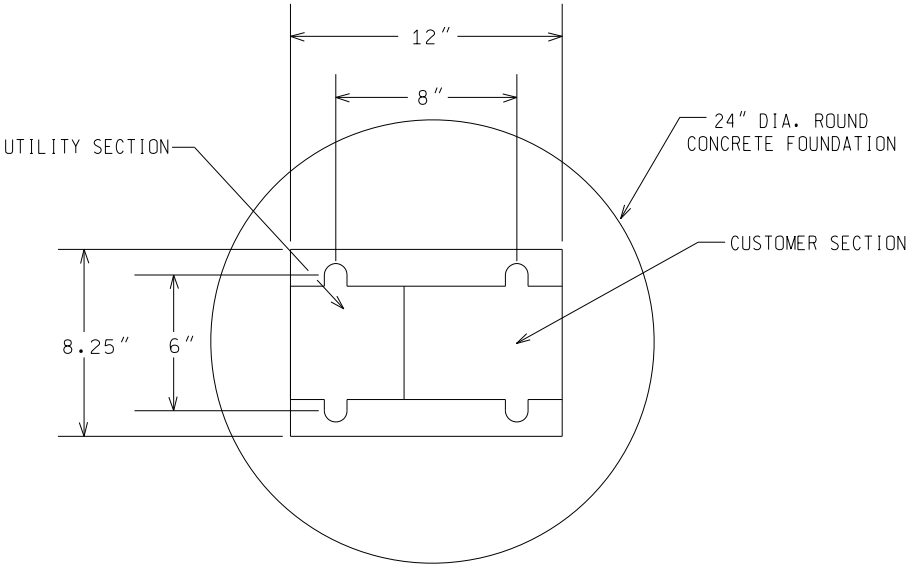
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-210-B	SHEET 2 of 3
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG210B.dgn Rev. 02/06/18		PLAN DATE		

PREFERRED SITE ORIENTATION PLAN





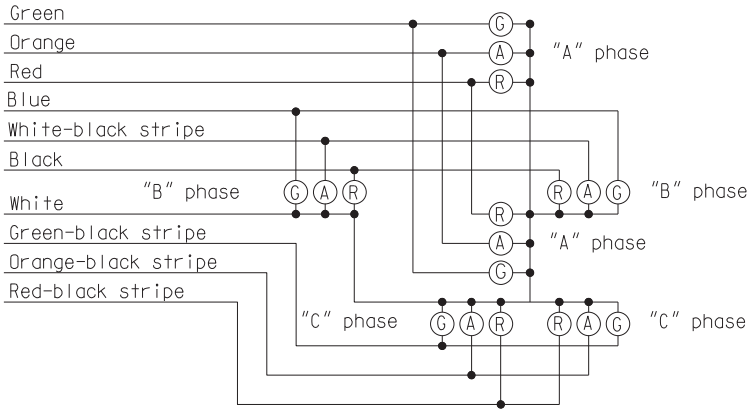
PREFERRED PEDESTAL & FOUNDATION ORIENTATION PLAN



BOLT PATTERN LAYOUT

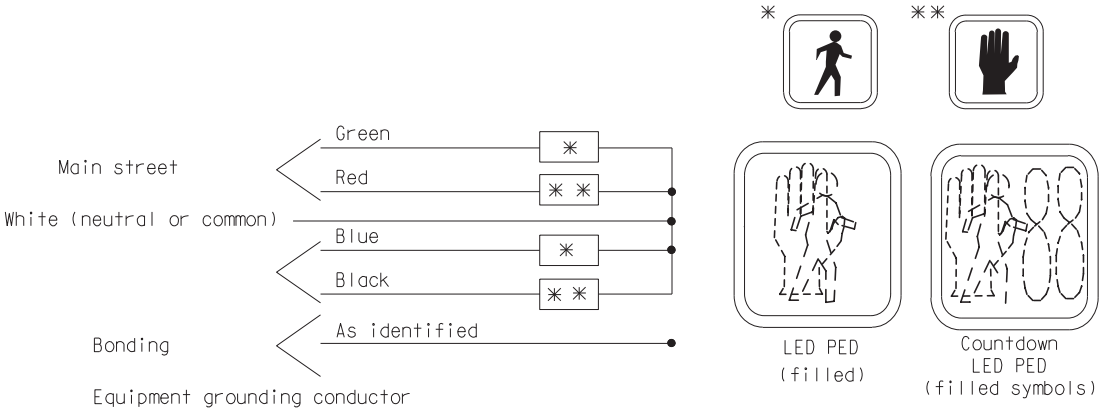
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-210-B	SHEET 3 of 3
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG210B.dgn Rev. 02/06/18		PLAN DATE		



COLOR CODE FOR WIRING CONNECTING TRAFFIC SIGNAL LAMPS

NOTE:No splices allowed between traffic signal head and controller.



COLOR CODE FOR WIRING CONNECTING PEDESTRIAN SIGNAL LAMPS
(WALKING PERSON - HAND SYMBOL)

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

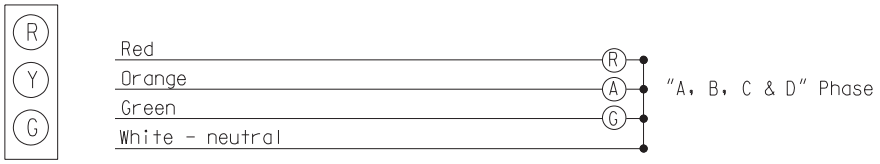
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

COLOR CODE WIRING/ EQUIPMENT GROUNDING

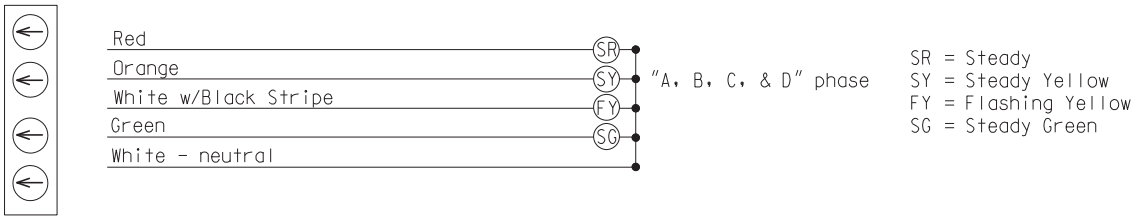
PLAN DATE

SIG-230-A

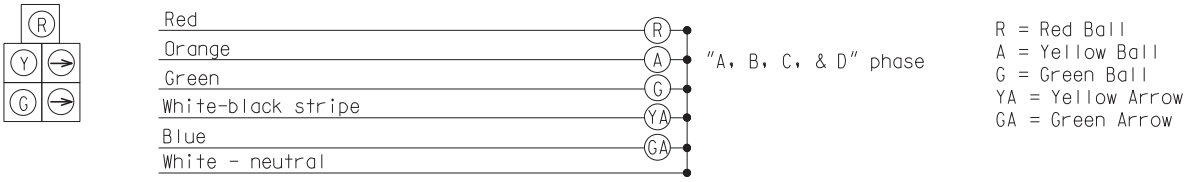
SHEET 1 of 6



STANDARD - 3 COLOR SIGNAL DISPLAY



FLASHING YELLOW ARROW (FYA) - 4 COLOR SIGNAL DISPLAY

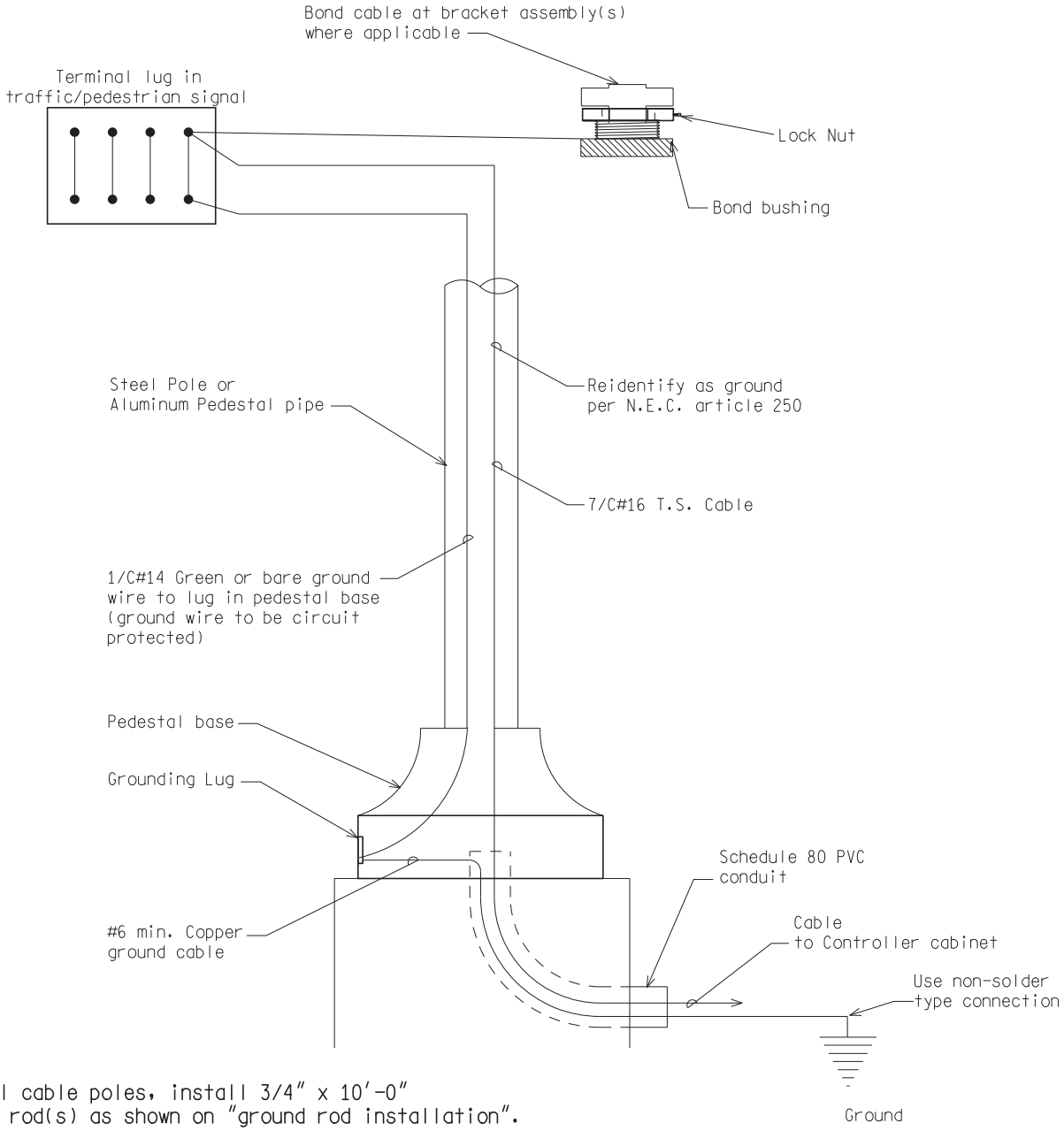


DOG HOUSE W/RIGHT TURNS - 5 COLOR SIGNAL DISPLAY

COLOR CODE FOR WIRING CONNECTING TRAFFIC SIGNAL LAMPS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-230-A	SHEET 2 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17		PLAN DATE		

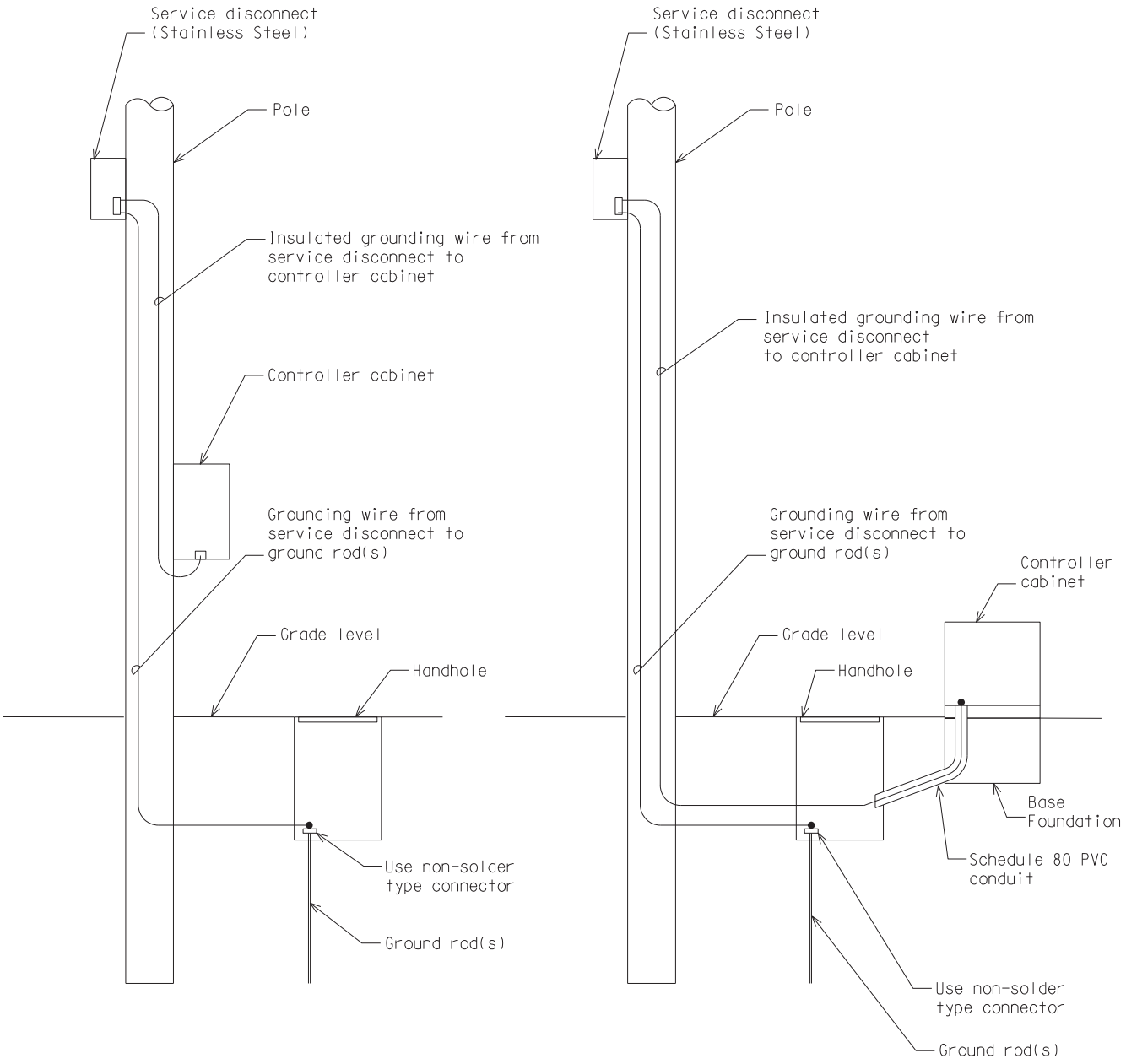


NOTE:
For all cable poles, install 3/4" x 10'-0"
ground rod(s) as shown on "ground rod installation".
Connect ground rod(s) with #6 min. copper wire to
messenger wire with non-solder type connection.

STEEL POLE/PEDESTAL GROUNDING DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-230-A	SHEET 3 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17				



GROUNDING

Install 3/4 " x 10'-0" copper clad ground rod(s) as required to provide less than 10 OHM resistance to ground.

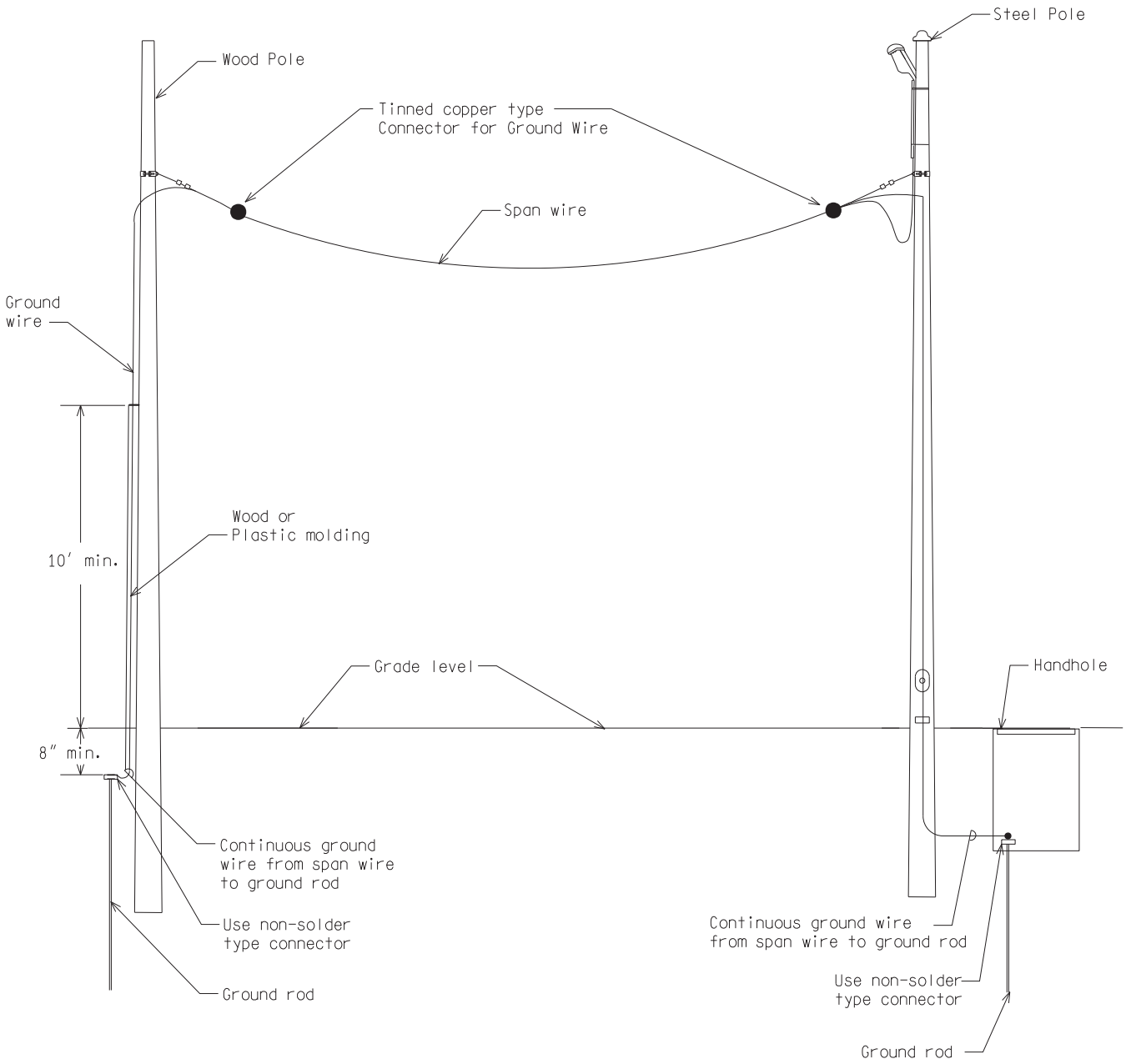
Grounding wire #6 AWG min. bare copper grounding wire shall be installed to meet N.E.C. and utility company specs.

Ground wire from disconnect to ground rod to be in moulding (wood pole or post) or inside the pole (steel). Ground wire from disconnect to controller cabinet to be in conduit (wood pole, wood post, and steel pole).

CONTROLLER CABINET GROUNDING DETAIL

NOT TO SCALE

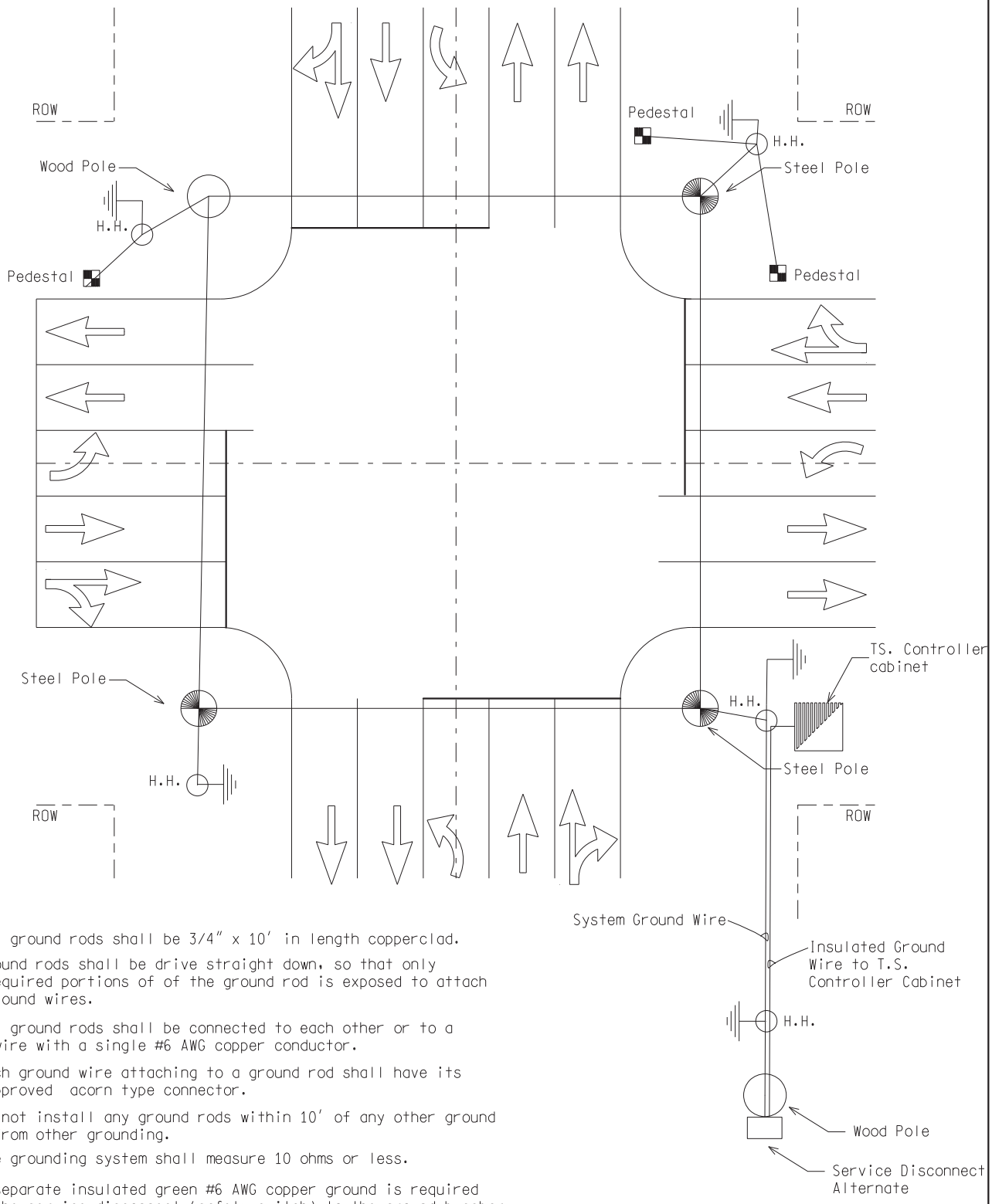
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17		PLAN DATE	SIG-230-A	SHEET 4 of 6



SPAN WIRE GROUNDING DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17		PLAN DATE	SIG-230-A	SHEET 5 of 6



1) All ground rods shall be 3/4" x 10' in length copperclad.

2) Ground rods shall be drive straight down, so that only the required portions of of the ground rod is exposed to attach the ground wires.

3) All ground rods shall be connected to each other or to a span wire with a single #6 AWG copper conductor.

4) Each ground wire attaching to a ground rod shall have its own approved acorn type connector.

5) Do not install any ground rods within 10' of any other ground rods from other grounding.

6) The grounding system shall measure 10 ohms or less.

7) A separate insulated green #6 AWG copper ground is required from the service disconnect (safety switch) to the ground bussbar in the controller cabinet.

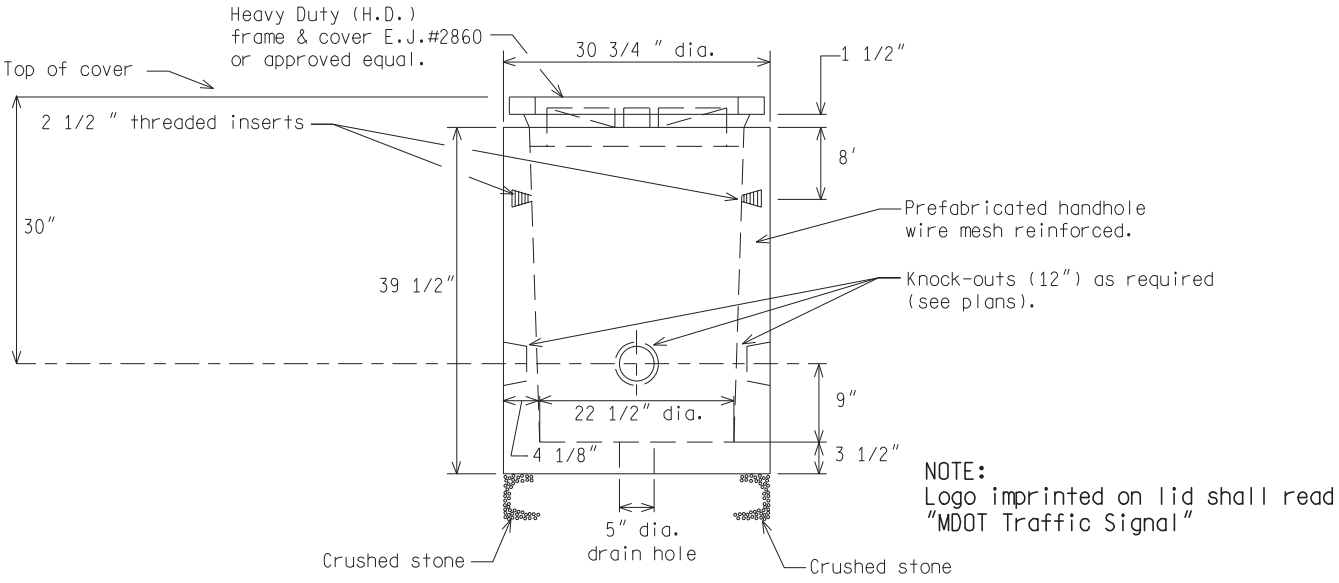
8) Ground rod for each steel pole, wood pole, pedestal and/or traffic signal controller cabinet shall be located in the adjacent handhole as indicated on the plans or as directed by the Engineer.

9) All metal bases must be connected to a ground rod with a #6 ground wire.

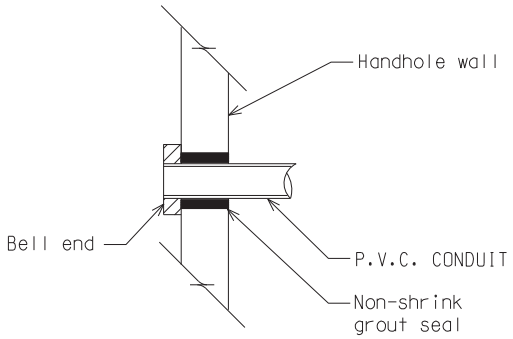
SYSTEM GROUNDING DETAL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17		PLAN DATE	SIG-230-A	SHEET 6 of 6



2' PRECAST ROUND HANDHOLE WITH FLOOR



TYPICAL CONDUIT ENTRANCE
AT HANDHOLE

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG240A.dgn Rev. 02/16/17

MDOT Michigan Department of Transportation

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

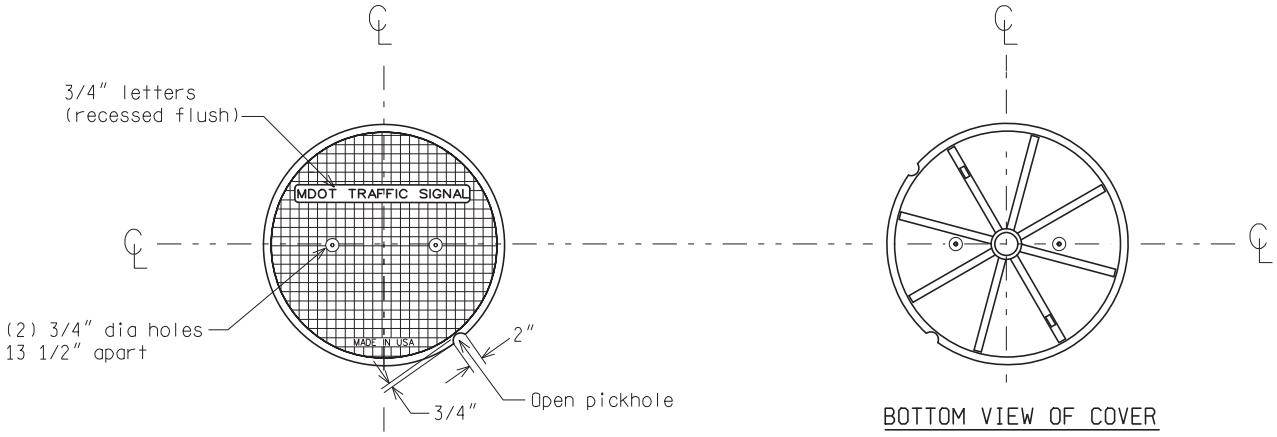
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

HANDHOLE- PRECAST, POLYMER CONCRETE

PLAN DATE

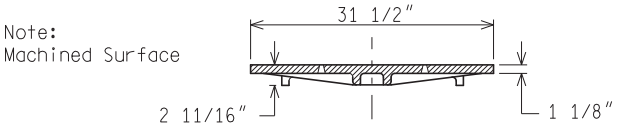
SIG-240-A

SHEET
1 of 6

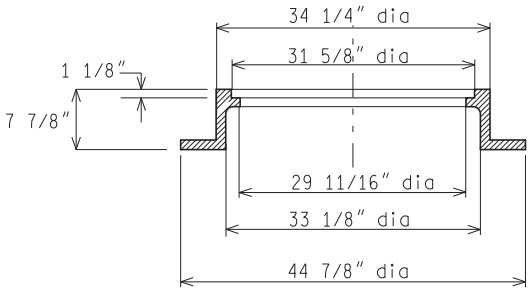


TOP VIEW OF COVER

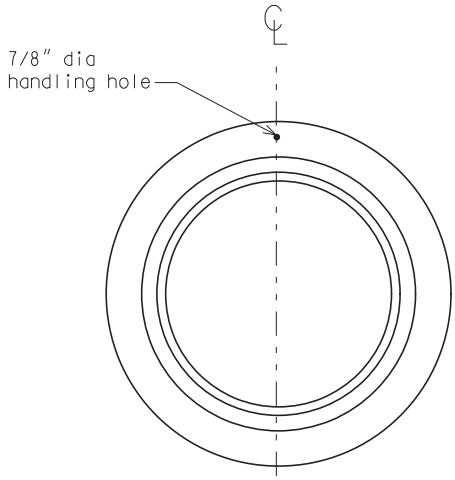
BOTTOM VIEW OF COVER



COVER SECTION



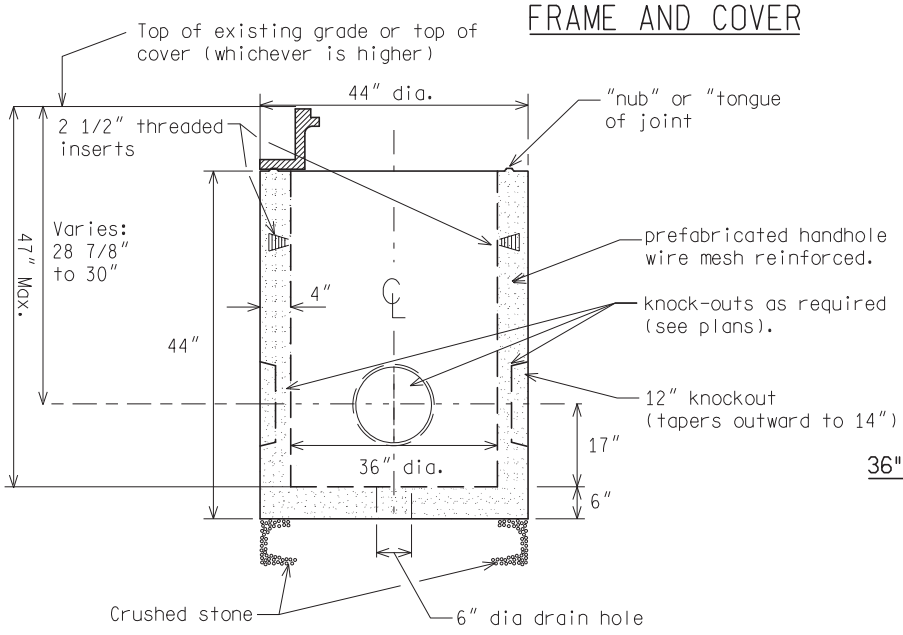
FRAME SECTION



TOP VIEW OF FRAME

The H. D. frame and cover shall be manufactured by East Jordan Iron Works, Model 1220 or approved equal.

FRAME AND COVER



3' DIAMETER ROUND PRECAST CONCRETE HANDHOLE

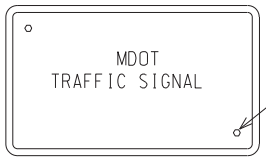
NOTE:
Logo imprint may read "Traffic Signal" for non MDOT Installation

36" PRECAST ROUND HANDHOLE SECTION DETAIL

NOT TO SCALE

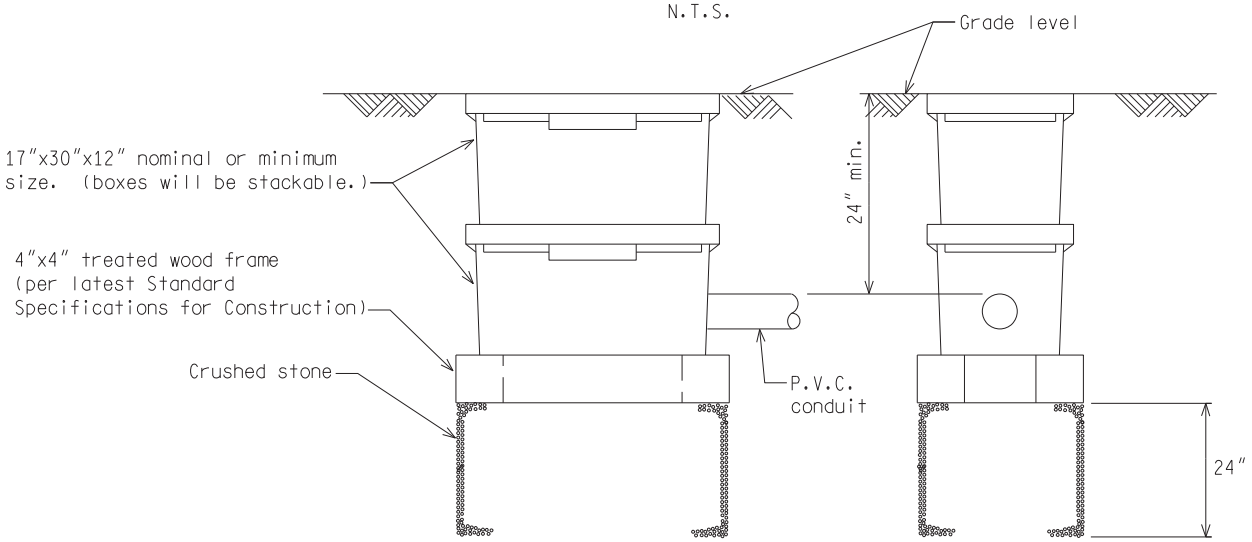
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-240-A	SHEET 2 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG240A.dgn Rev. 02/16/17		PLAN DATE		

NOTE:
Logo imprint may read "Traffic Signal" for non MDOT installations



3/8 "-16NC stainless steel Hex bolt & washer

COVER
N.T.S.



POLYMER CONCRETE HANDHOLE

NOTES PERTAIN TO PRECAST OR BRICK:

1) The material and workmanship shall be in accordance with the current M.D.O.T. Standard Specifications for Construction.

2) All concrete masonary shall be grade 30M.

3) The inner surface of the handhole shall be smooth.

4) Heavy Duty covers shall be castings which meet the requirements of the current specifications for gray iron castings ASTM designation A48 and shall have a minimum strength as provided for Class No. 30 gray iron castings.

5) All castings shall be cleaned by sand blasting.

6) 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 its seat to prevent rocking or tilting.

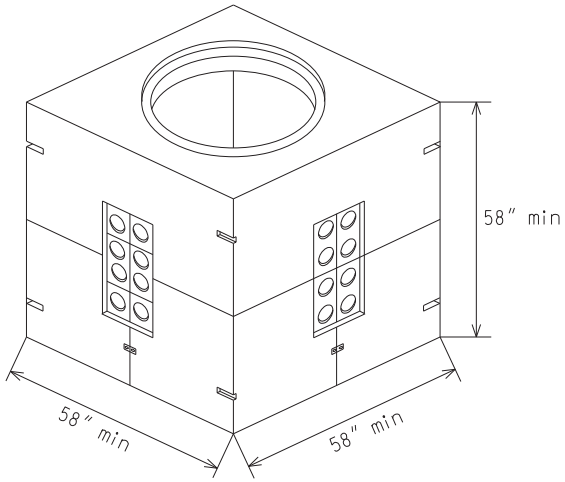
7) The castings shall be free of pouring faults, blow holes, cracks,and other imperfections. They shall be sound, true to form and thickness, clean and neatly finished and shall be coated with tar pitch varnish.

8) Light Duty cover shall be bolted to frame with not less than 2 countersunk Hex head bronze bolts.

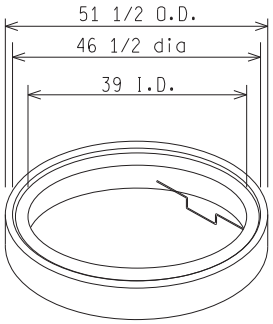
9) The Heavy Duty cover & frame shall be East Jordan Iron Works #8206 Neenah Foundry, #R-6662-HP for square cover or East Jordan Iron Works #2860 Type "A", Neenah Foundry #R-6052 D for circular cover or an approved equal.

10) Handhole shall be equipped with cable rack and hooks to train cable.

NOT TO SCALE



NOTE:
Galvanized step is standard with grade ring ASTM C478.



Dimensions	
A	Min Wt. (lbs)
6	440
9	650
12	860

	Length	Width	Height
Inside	48	48	48
Outside	58	58	58
Recommended Hole size	82	82	--

GRADE RING WITH 39" I.D. & 46 1/2" RECESS

	Min Thickness
Wall	5
Roof	5
Floor	5

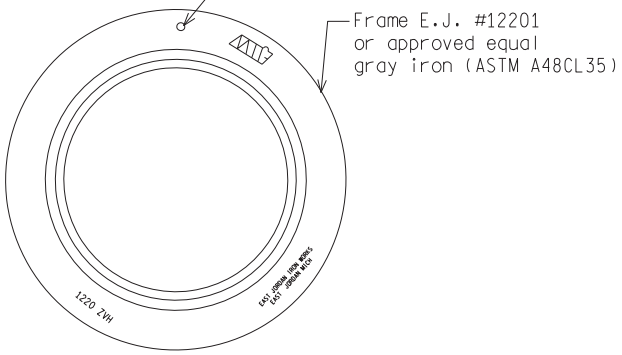
	Min Weight lbs
Top	3300
Bottom	3850
Total	7150

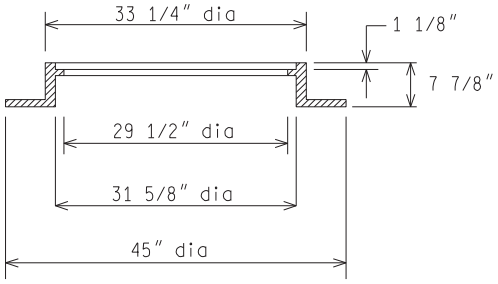
4' x 4' x 4' PRECAST CONCRETE HANDHOLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-240-A	SHEET 4 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG240A.dgn Rev. 02/16/17		PLAN DATE		

NOTE:
Logo imprint it on cover shall read "MDOT Traffic Signal" for MDOT installations



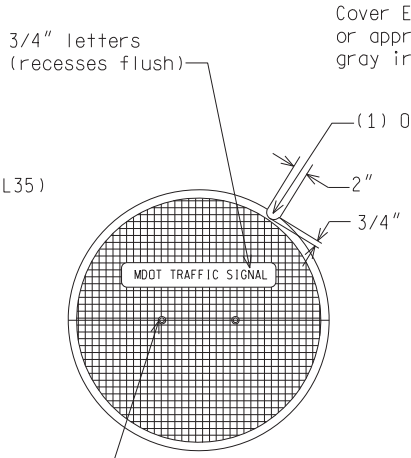


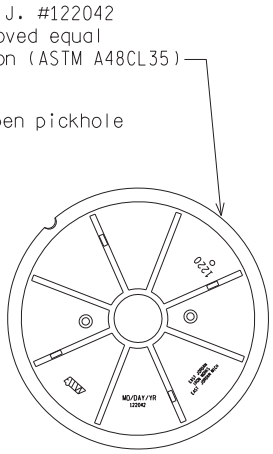
FRAME SECTION

MANHOLE FRAME (HEAVY DUTY)

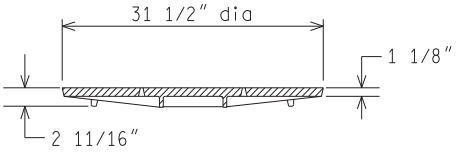
Estimated weight 410 lbs

NOTE:
Machined surface





BOTTOM VIEW OF COVER



COVER SECTION

NOTE:
Machined surface

MANHOLE COVER (HEAVY DUTY)

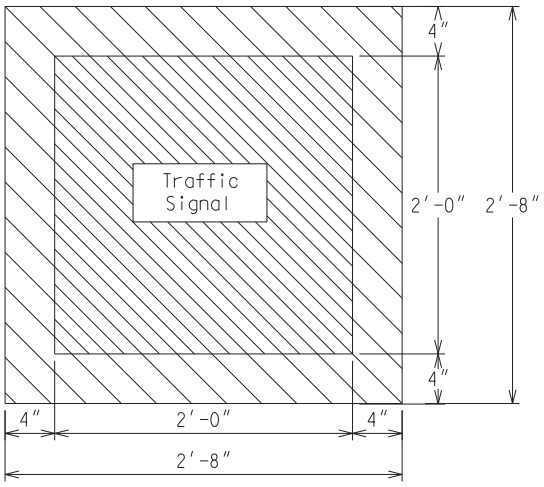
Estimated weight 245 lbs

4' x 4' x 4' PRECAST CONCRETE HANDHOLE

NOT TO SCALE

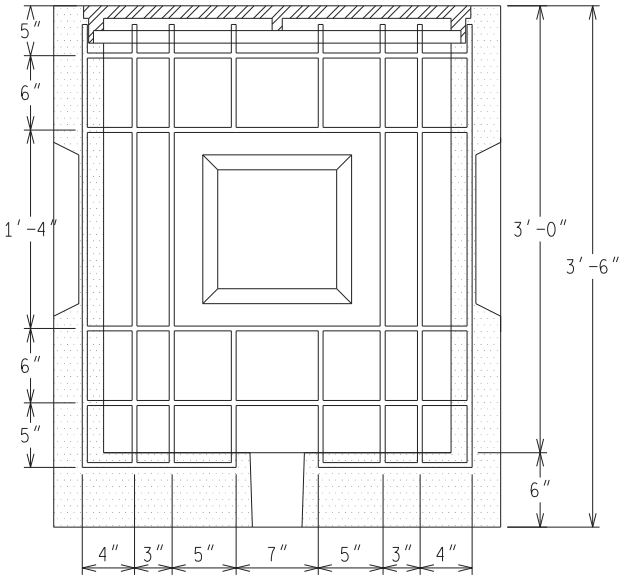
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG240A.dgn Rev. 02/16/17		PLAN DATE	SIG-240-A	SHEET 5 of 6

Concrete: 4500 p.s.i. @ 28 days
Reinforcement: Grade 60 rebar
All bars are #4



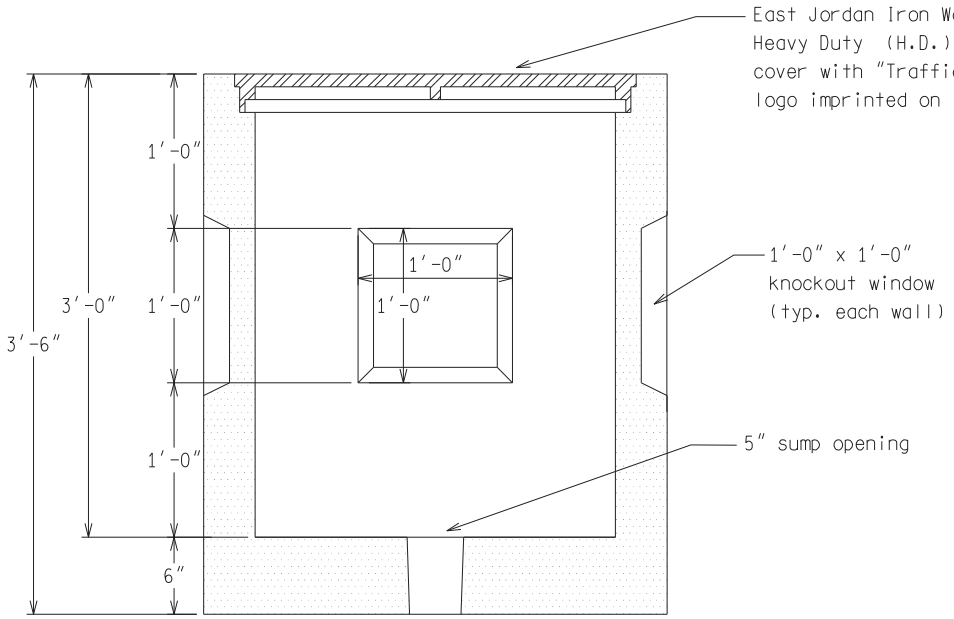
PLAN VIEW

With out frame & cover



SECTION VIEW

Typ. reinforcement all walls



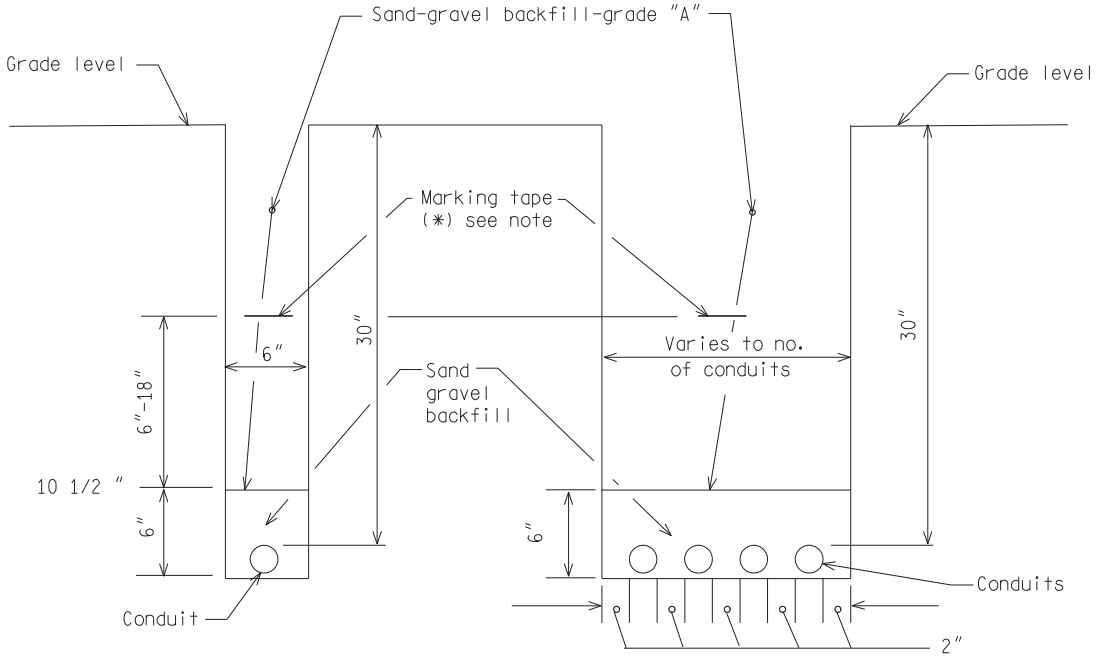
SECTION VIEW

2' x 2' SQUARE x 3' HANDHOLE

For use on Oakland County roads only.

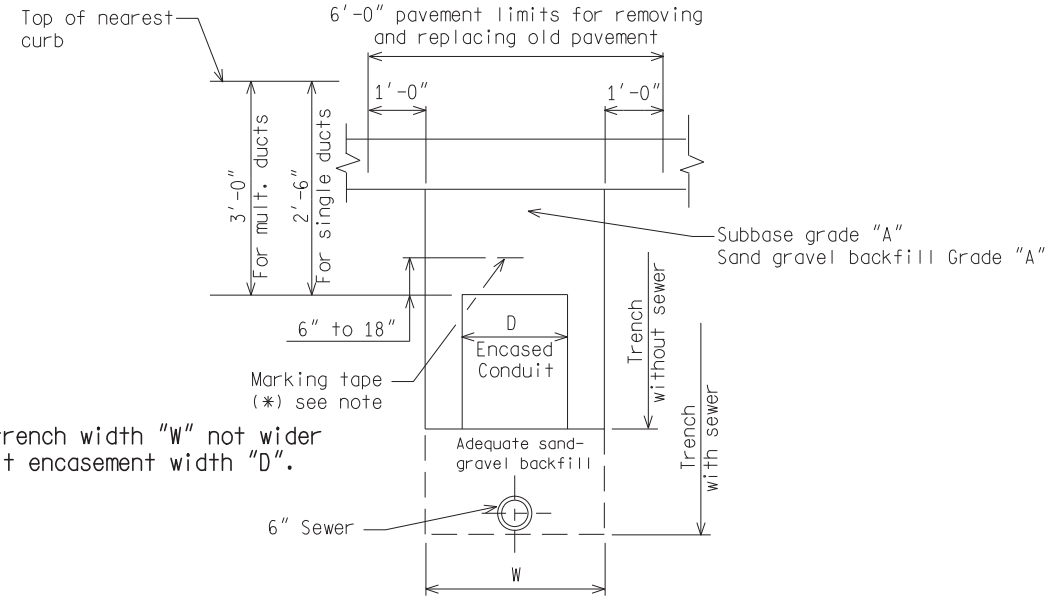
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-240-A	SHEET 6 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG240A.dgn Rev. 02/16/17				



(*) NOTE:
Marking tape shall have proper logo as supplied by the Engineer and installed by the Contractor.

DIRECT BURIAL CONDUIT(S)/CABLE(S)



NOTE:
Preferred trench width "W" not wider than conduit encasement width "D".

TYPICAL SECTION OF TRENCH
ENCASED CONDUIT

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG250A.dgn Rev. 02/16/17

MDOT Michigan Department of Transportation

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

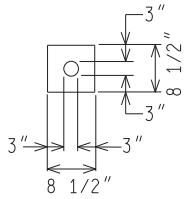
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

CONDUIT
(DIRECT BURIAL/ENCASED)

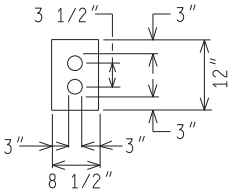
PLAN DATE

SIG-250-A

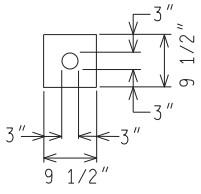
SHEET
1 of 2



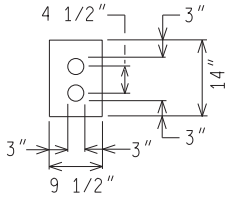
1 2″ CONDUIT



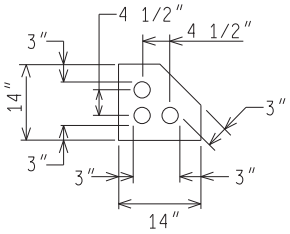
2 2″ CONDUIT



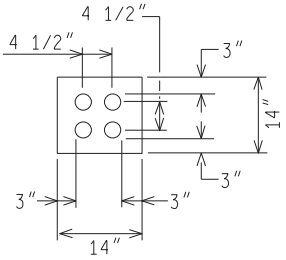
ONE
2 1/2″ CONDUIT



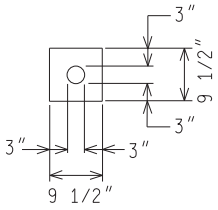
TWO
2 1/2″ CONDUIT



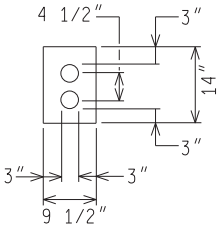
THREE
2 1/2″ CONDUIT



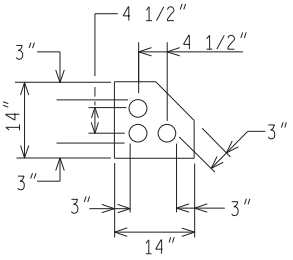
FOUR
2 1/2″ CONDUIT



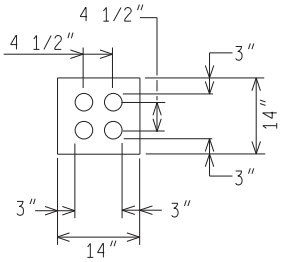
1 3″ CONDUIT



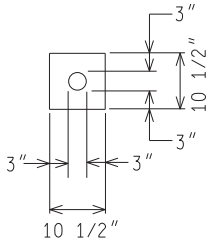
2 3″ CONDUIT



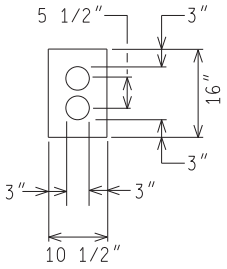
3 3″ CONDUIT



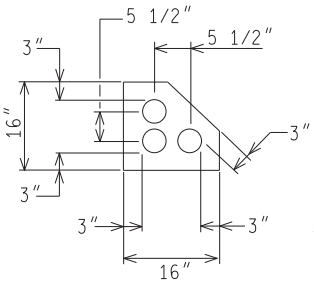
4 3″ CONDUIT



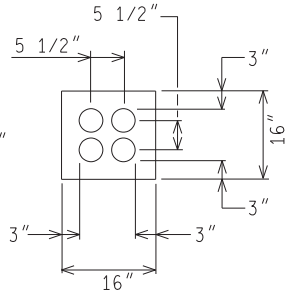
1 4″ CONDUIT



2 4″ CONDUIT



3 4″ CONDUIT

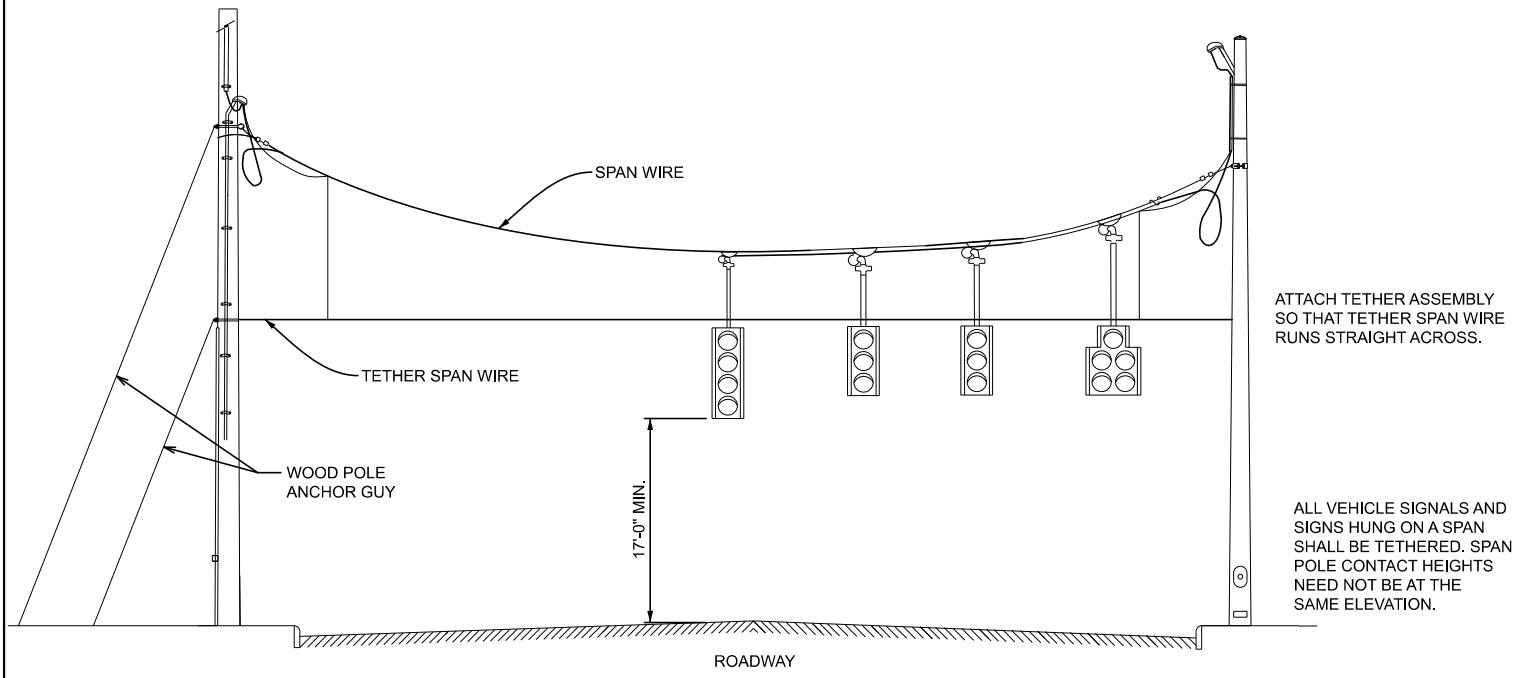


4 4″ CONDUIT

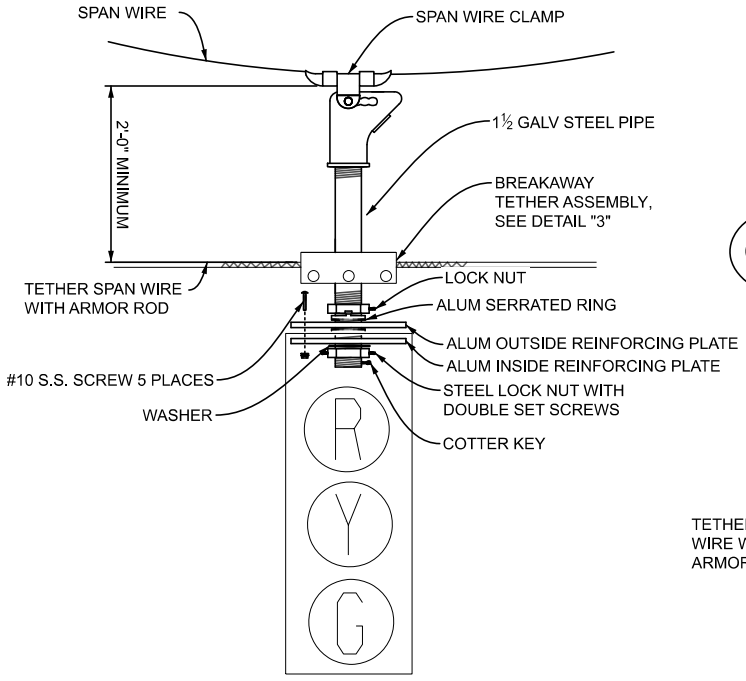
ENCASED CONDUIT SECTIONS

NOT TO SCALE

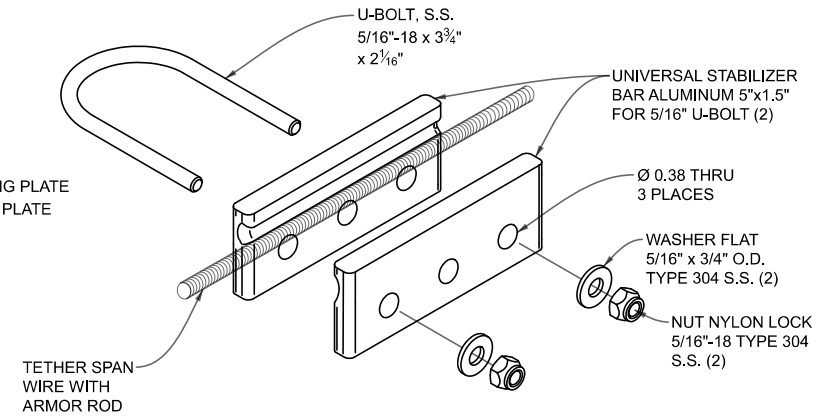
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-250-A	SHEET 2 of 2
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG250A.dgn Rev. 02/16/17		PLAN DATE		



1 DETAIL - TOP TETHER



2 DETAIL - SPAN WIRE INSTALLATION



3 DETAIL - BREAKAWAY TETHER ASSEMBLY FOR TOP OF SIGNAL HEAD

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

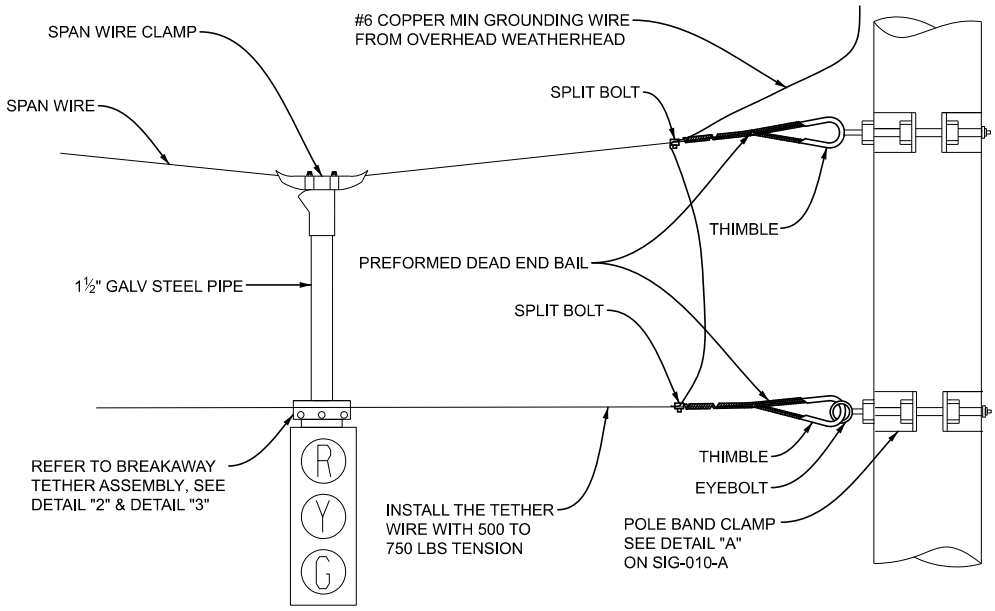
APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT
Michigan Department of Transportation

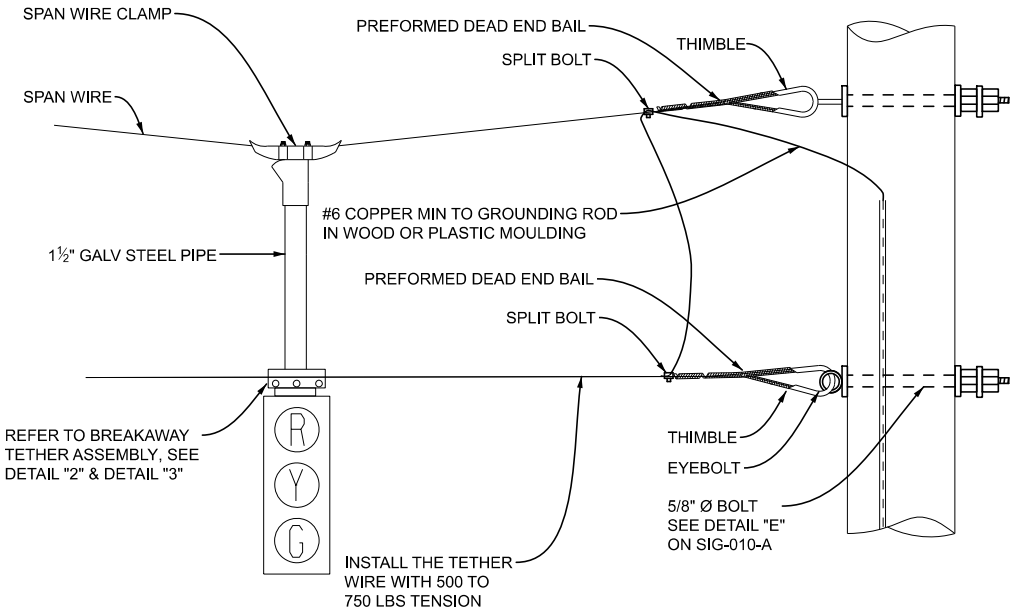
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE TOP TETHER DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-305-D	SHEET 1 OF 5



4 TOP TETHER SPAN WIRE STEEL POLE CONNECTION



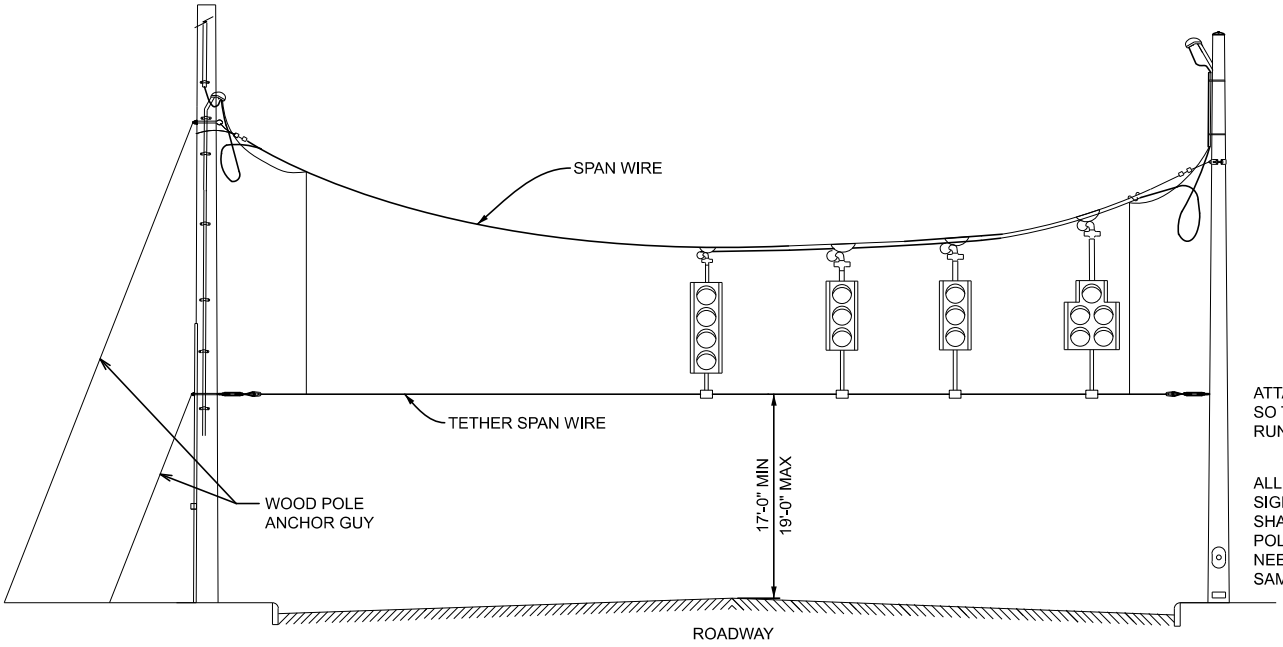
5 TOP TETHER SPAN WIRE WOOD POLE CONNECTION

MDOT Michigan Department of Transportation

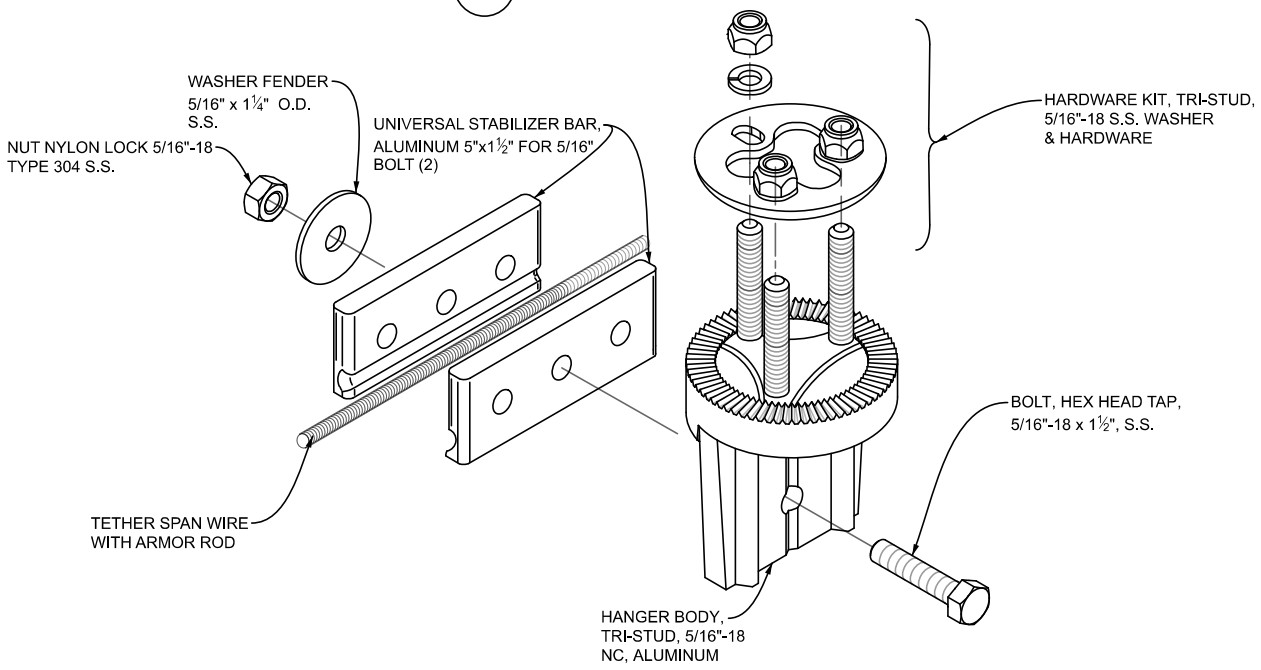
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
TOP TETHER CONNECTION DETAILS

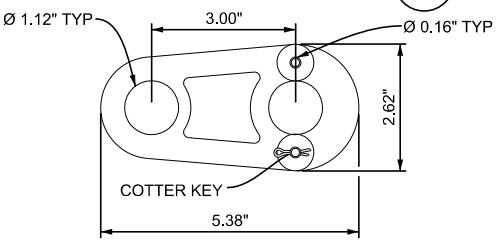
(SPECIAL DETAIL)	07/27/23	SIG-305-D	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 5
			SECT



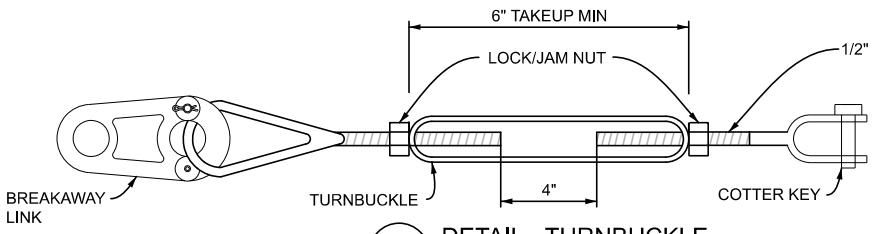
6 BOTTOM TETHER INSTALLATION



7 DETAIL - TETHER ASSEMBLY TRI-STUD BREAKAWAY

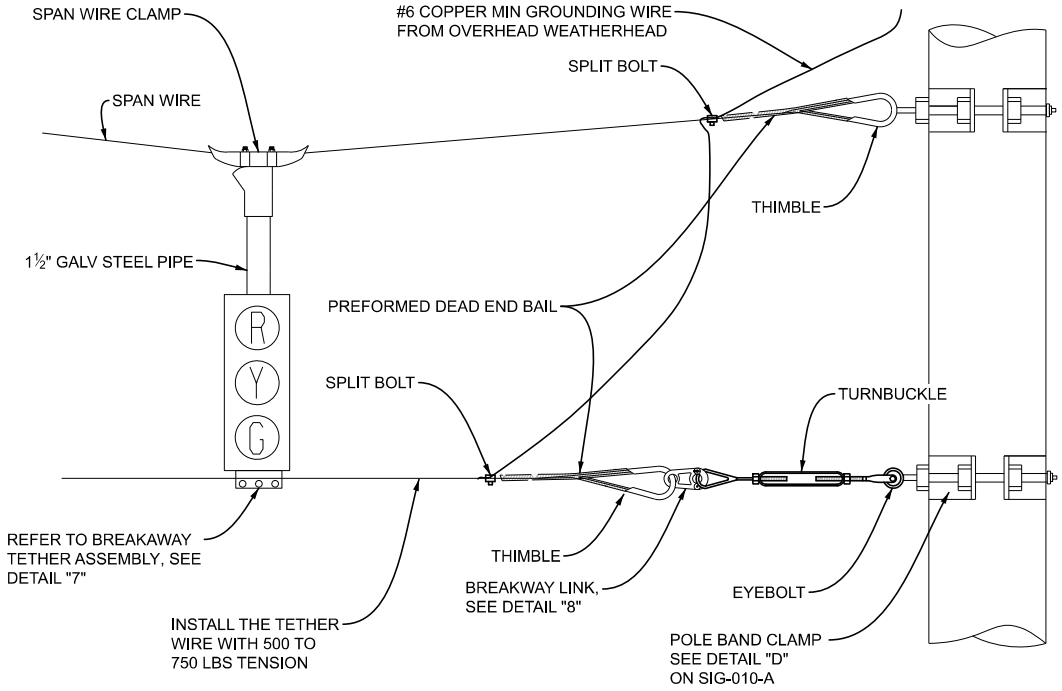


8 DETAIL - BREAKAWAY TETHER ASSEMBLY FOR BOTTOM OF SIGNAL HEAD

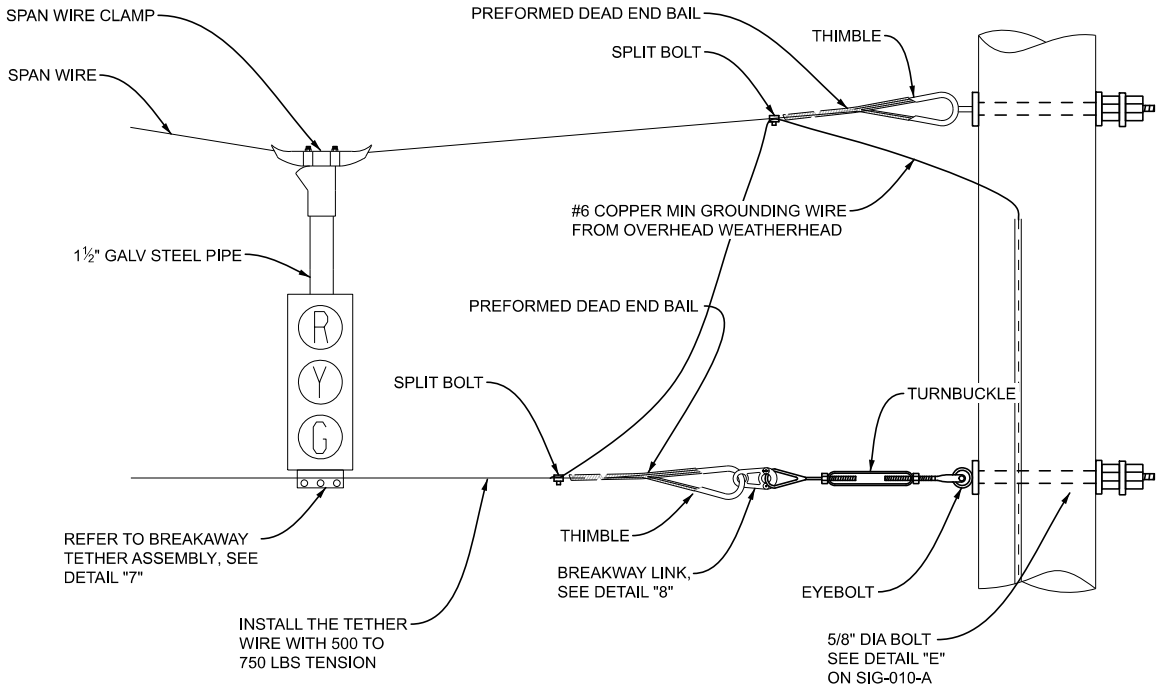


9 DETAIL - TURNBUCKLE

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR SPAN WIRE BOTTOM TETHER DETAILS		
(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-305-D	SHEET 3 OF 5



10 BOTTOM TETHER SPAN WIRE STEEL POLE CONNECTION



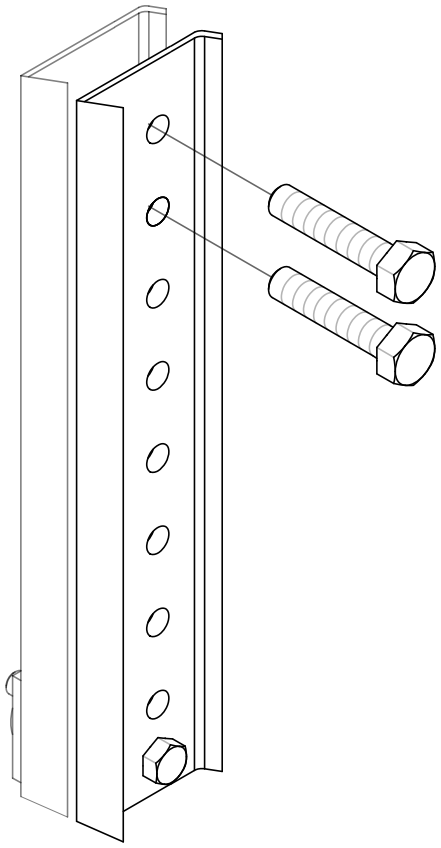
11 BOTTOM TETHER SPAN WIRE WOOD POLE CONNECTION

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BOTTOM TETHER CONNECTION DETAILS

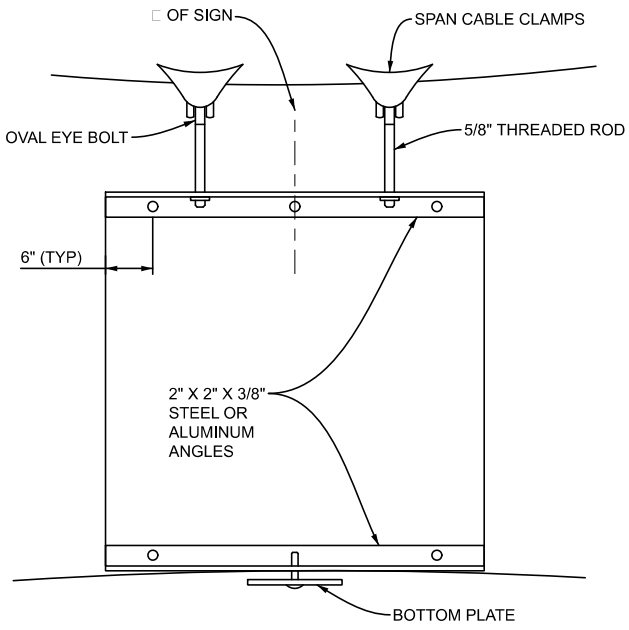
(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-305-D	SHEET 4 OF 5
			SECT



12 EXTENDER OPTION 8", 11", 19", 24", & 72 (CUT TO LENGTH)

NOTES:

1. BREAKAWAY LINK AND TURNBUCKLE ARE REQUIRED AT BOTH ENDS OF ALL BOTTOM TETHER SPANS. IF BREAKAWAY LINK BEGINS TO YIELD DURING INSTALLATION, IT SHALL BE REMOVED AND REPLACED. THE WIRE TENSION SHALL BE ADJUSTED TO MINIMIZE MOVEMENT OF SIGNAL HEADS IN HIGH WINDS. TYPICAL TENSION IS 500 TO 750 LBS.
2. INSTALL GROUND WIRE AT BOTH ENDS OF TOP AND BOTTOM TETHERING.
3. IF SIGNAL ORIENTATION IS NOT PERPENDICULAR TO SPAN AND TETHER WIRE, THEN USE AN ANCHOR EXTENSION. CLAMP ASSEMBLY MUST BE ATTACHED TO THE FLAT SIDE OF THE EXTENDER BAR.
4. GROUNDING WIRE ANCHOR HEIGHT TO THE SPAN WIRE IS ADJUSTED IN THE FIELD BEFORE BREAKAWAY LINK IS INSTALLED. GROUNDING WIRE LENGTH SHALL BE ADJUSTED SO THAT THE MINIMUM VERTICAL CLEARANCE OF THE SAGGING TETHER WIRE ABOVE THE PAVEMENT WITHOUT THE BREAKAWAY LINK INSTALLED IS AT LEAST 14'. GROUNDING WIRE SHALL CONTAIN ENOUGH SLACK FOR HEAD TO SWAY IN HIGH WINDS. GROUNDING WIRE SHALL BE ATTACHED TO THE SPAN WIRE USING A TINNED COPPER SPLIT BOLT.
5. TRAFFIC SIGNAL HOUSING REINFORCEMENT PLATES ARE REQUIRED WHEN TETHERING.
   - A. TOP TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP OF THE POLYCARBONATE HOUSING. (2 PLATES TOTAL)
   - B. BOTTOM TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP AND BOTTOM OF POLYCARBONATE HOUSING. (4 PLATES TOTAL)
   - C. BOTTOM TETHERING 5-SECTION HEADS REQUIRES REINFORCEMENT PLATES ON THE TOP AND BOTTOM OF THE POLYCARBONATE HOUSING (12 TOTAL) AND AN ALUMINUM TRI-STUD UPPER ARM ASSEMBLY IN PLACE OF THE BOTTOM BRACKET.
   - D. IF POLYCARBONATE HOUSING CONNECTS TO AN ALUMINUM CASE SIGN, REINFORCEMENT PLATES MUST BE USED AT THE CONNECTION.



13 DETAIL - OVERHEAD LANE ASSIGNMENT SIGN CONNECTION

NOTES:

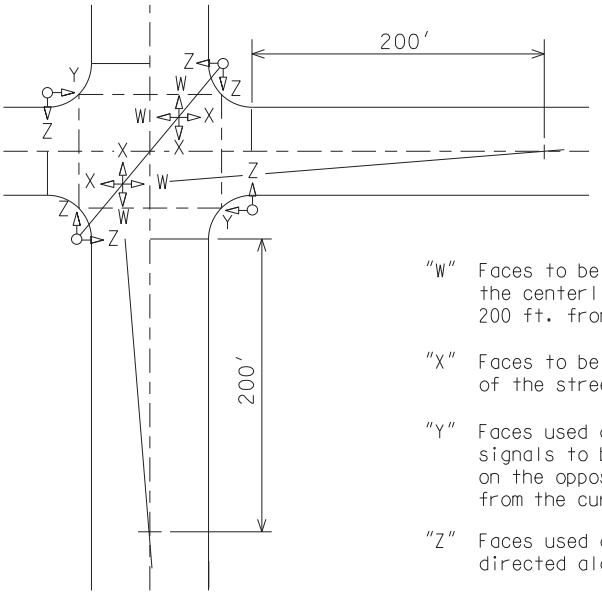
1. ALUMINUM ANGLES SHALL BE USED FOR ALUMINUM SIGNS (TYPE III).
2. STEEL OR ALUMINUM ANGLES MAY BE USED ON PLYWOOD SIGNS (TYPE II).

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
EXTENDER OPTION AND OVERHEAD LANE ASSIGNMENT SIGN CONNECTION DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-305-D	SHEET 5 OF 5



NOTE:
Where field conditions require deviation from these standards, Engineer will furnish specific directional setting for signals at time of installation.

"W" Faces to be directed to intersect a point on the centerline of the street they control 200 ft. from the stop bar.

"X" Faces to be directed parallel to the centerline of the street they control.

"Y" Faces used as starting signals with near side signals to be directed to intersect a point on the opposite stop bar approximately 4 ft. from the curb.

"Z" Faces used as pedestrian signals to be directed along crosswalks.

DIAGONAL SPAN WIRE STANDARD FOR DIRECTIONAL SETTINGS OF TRAFFIC SIGNALS

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG310A.dgn Rev. 02/16/17

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

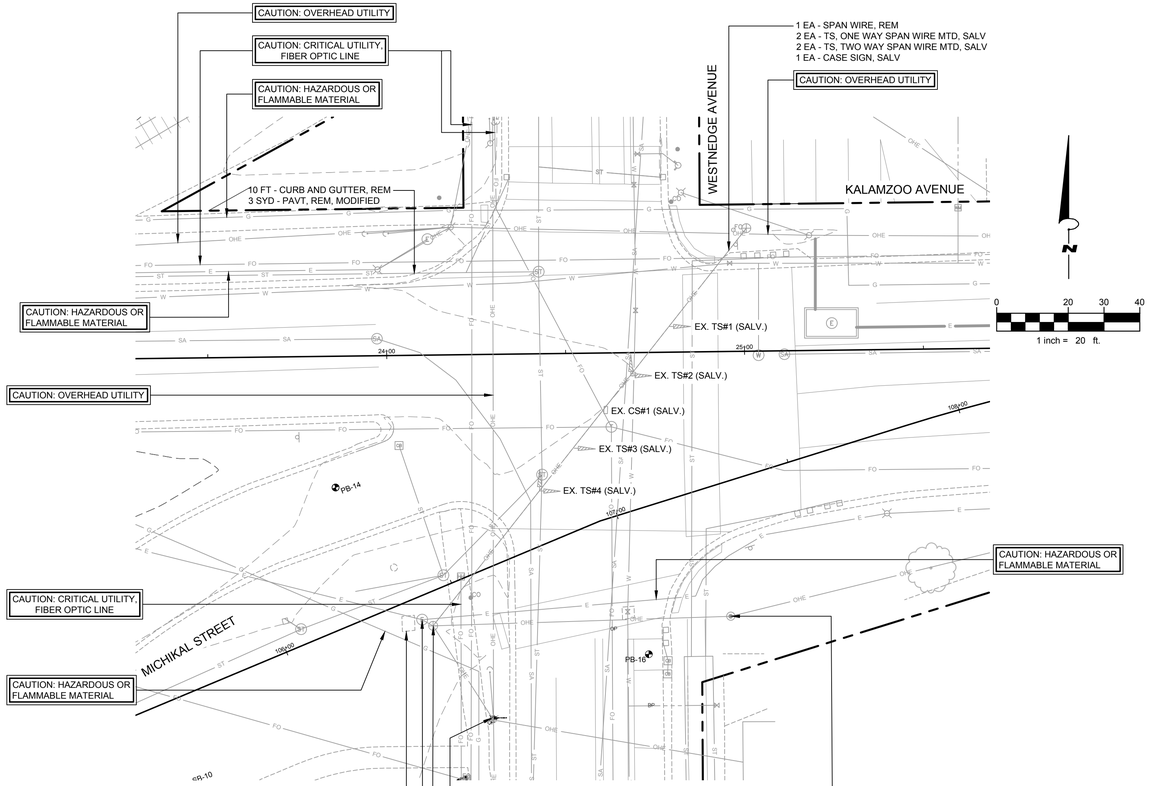
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

ALIGNMENT OF TRAFFIC SIGNAL HEADS (DIAGONAL)

PLAN DATE

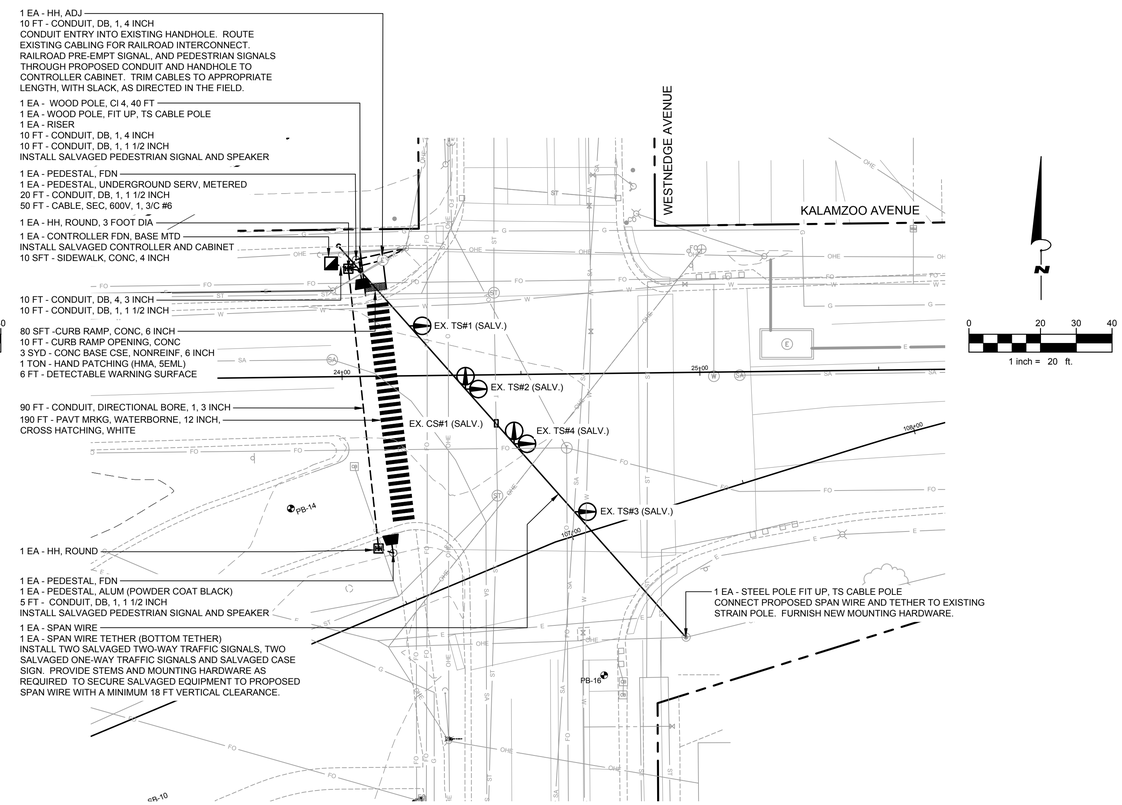
SIG-310-A

SHEET 1 of 1



EXISTING CONDITIONS AND REMOVAL

SCALE: 1" = 20'



PROPOSED SIGNAL PLAN

SCALE: 1" = 20'

EXISTING SIGNALS NORTH OF THE AMTRAK RAILROAD ARE NOT SHOWN, SHALL REMAIN IN PLACE, AND BE RECONNECTED TO THE PROPOSED CONTROLLER.

PROJECT SPECIFIC NOTES

MDOT SPECIFICATIONS
THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION, FREQUENTLY USED SPECIAL PROVISIONS, STANDARD PLANS, SPECIAL DETAILS, AND MAINTAINING TRAFFIC TYPICALS ARE HEREBY INCORPORATED INTO THIS CONTRACT.

MMUTCD
THE PLACING OF TRAFFIC CONTROL SIGNS, SIGNALS, AND PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), AS AMENDED.

STANDARDS
ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.

ELECTRICAL SERVICE INSPECTION
FOR ELECTRICAL SERVICE INSPECTION, CONTACT THE MICHIGAN DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES. COST FOR THE INSPECTION IS NOT A SEPARATE PAY ITEM AND IS INCLUDED IN THE PAY ITEM: CONTROLLER CABINET, MODIFIED.

GUY WIRES
INSTALL NEW GUY WIRES BETWEEN WITH A RATIO BETWEEN 1:1 AND 1:4

WHERE SPACE CONSTRAINTS DO NOT PERMIT ANCHORING WITHIN THE RIGHT-OF-WAY/EASEMENT OR WHERE A MINIMUM OF 10'-0" VERTICAL CLEARANCE CANNOT BE MAINTAINED OVER A PEDESTRIAN OR NON-MOTORIZED PATH, INSTALL A STRUT-TYPE GUY WIRE OF SUFFICIENT LENGTH TO MAINTAIN PROPER CLEARANCES.

THE CONTRACTOR SHALL HAND DIG TO LOCATED UNDERGROUND UTILITIES PRIOR TO USE OF POWER TOOLS OR EQUIPMENT.

CABLING/WIRING
ALL OVERHEAD WIRES & UNDERGROUND CABLES SHALL CONSIST OF COPPER CONDUCTORS AS PER THE SPECIFICATIONS.

WHERE EXISTING SIGNALS OR EQUIPMENT ARE SALVAGED OR RELOCATED, INSTALL NEW WIRING FROM THE CONTROL CABINET TO THE LOCATION OF THE SIGNAL EQUIPMENT.

THE CONTRACTOR SHALL FURNISH AND INSTALL AN ADDITIONAL 20 FEET OF SIGNAL CABLE FOR EACH PEDESTRIAN AND VEHICLE SIGNAL AS DIRECTED BY THE ENGINEER.

ALL WIRES & CABLES SHALL BE TAGGED IN A PERMANENT MANNER INDICATING THE SOURCE & USE OF EACH THIS SHALL BE DONE IN ALL MANHOLES, HANDHOLES & CABINETS WHERE THESE CABLES OR WIRES ENTER, EXIT, AND ARE TERMINATED.

NO SPLICING OF CABLES IS ALLOWED ON THIS PROJECT.

CONSTRUCTION PHASING
MAINTAIN TRAFFIC IN ACCORDANCE WITH MDOT MAINTAINING TRAFFIC TYPICALS 160-INT-LD-CLT-MID AND 163-INT-LD-OUT.

CONDUITS
ALL CONDUIT BENDS SHALL HAVE MINIMUM RADII IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (N.E.C.)

ALL JACKED-BORED, OPEN CUT OR DIRECT BURIAL CONDUIT CALLED FOR ON PLANS IS THE PREFERRED METHOD OF INSTALLATION. IF THE METHOD OF CONDUIT INSTALLATION IS IMPOSSIBLE TO CONSTRUCT OR IF THE CONTRACTOR PREFERS TO USE ANY OTHER METHOD, THE CHANGE OF METHOD MAY BE MADE UPON APPROVAL BY THE PROJECT ENGINEER.

THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING OR ANTICIPATING THE NEED OR DESIRE TO INSTALL THE CONDUIT BY ANY OTHER METHOD AND INCLUDE THE COST IN HIS CONTRACT BID.

NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR ANY CHANGE IN THE METHOD OF CONDUIT INSTALLATION.

THE CONTRACTOR SHALL LOCATE, PROTECT, AND (WHERE APPROPRIATE) UTILIZE PREVIOUSLY INSTALLED TRAFFIC SIGNAL CONDUIT FOR USE AS PART OF THIS PROJECT.

WHEN PLACING NEW HANDHOLE ON EXISTING CONDUIT, INSTALL SWEEPS, BREAK OUT CONDUIT, AND ADAPT HANDHOLE AS NEEDED. INCLUDED WITH PAYMENT FOR NEW HANDHOLE.

INNERDUCT
CONTRACTOR MUST INSTALL A CONTINUOUS FLEXIBLE NON-METALLIC TUBING (INNERDUCT) FOR LOW VOLTAGE COMMUNICATION TYPE CABLE FROM THE DEVICE TO THE CONTROLLER CABINET. INNERDUCT IS NOT REQUIRED IF COMMUNICATION CABLE IS 600V RATED.

SIGNALS

INCLUDED CONSTRUCTION
IN ACCORDANCE WITH SECTION 820.04.A OF THE STANDARD SPECIFICATIONS, THE UNIT PRICES FOR WORK RELATED TO TRAFFIC SIGNAL ITEMS INCLUDE EXCAVATION AND BACKFILL (INCLUDING BACKFILL OF REMOVED ITEMS), TURF RESTORATION, STORAGE AND DISPOSAL OF WASTE MATERIAL, PLACING MARKING TAPE, AND CHANGES IN THE METHOD OF CONDUIT INSTALLATION REQUESTED BY THE CONTRACTOR.

NOTIFICATION TO MAINTAINING AGENCIES
CONTACT THE MAINTAINING AGENCY SEVEN (7) WORKING DAYS PRIOR TO START OF CONSTRUCTION AND SEVEN (7) WORKING DAYS PRIOR TO SIGNAL ACTIVATION.

CABINET SETUP AND CONTROLLER TIMING
TRAFFIC SIGNAL CONTROLLERS SHALL BE SETUP AND PROGRAMMED BY A FACTORY AUTHORIZED DEALER WITH TIMING PLANS FURNISHED BY THE ENGINEER OR MAINTAINING AGENCY. TRAFFIC SIGNAL CONTROLLERS SHALL BE FURNISHED WITH A COMPLETE SET OF INSTALLATION PLANS AND OWNERS MANUAL. THE ITEM FOR CONTROLLER AND CABINET, SALV SHALL INCLUDE ALL WORK REQUIRED TO SALVAGE ALL EXISTING EQUIPMENT IN THE CABINET AND PLACE IN SERVICE AT THE PROPOSED LOCATION.

FACILITIES NOT ON PLANS
EXISTING O.H. & T.S. FACILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS

SIGNAL EQUIPMENT DISPOSAL
DISPOSAL OF ALL TRAFFIC SIGNAL EQUIPMENT IS INCLUDED IN THE REMOVAL PAY ITEMS AND SHALL ALSO INCLUDE THE FOLLOWING:
1. NOTIFICATION TO THE MAINTAINING AGENCY THAT TRAFFIC SIGNAL EQUIPMENT IS BEING REMOVED.
2. TEMPORARY STORAGE OF EQUIPMENT AS DIRECTED BY THE ENGINEER ALLOWING THE MAINTAINING AGENCY 48 HOURS TO SALVAGE ANY EQUIPMENT.
3. PROPER DISPOSAL OF ANY EQUIPMENT CONTAINING ENVIRONMENTALLY SENSITIVE MATERIALS (MERCURY RELAY SWITCHES FOR EXAMPLE)
4. DISABLING OR DESTRUCTION OF ALL REMAINING EQUIPMENT TO THE SATISFACTION OF THE ENGINEER SUCH THAT IT CANNOT BE REUSED OR RESOLD.
5. PROPER DISPOSAL OF ALL REMAINING EQUIPMENT.

PLAN DEVIATIONS DURING CONSTRUCTION
NO CHANGES FROM PLANS IN LOCATION OF SUPPORTING STRUCTURES, SIGNAL HEAD PLACEMENT OR TRAFFIC SIGNAL EQUIPMENT WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE MAINTAINING AGENCY.

SIGNAL HEAD LANDING POINT
ENSURE EACH TRAFFIC SIGNAL HEAD ASSEMBLY HAS ITS OWN LANDING POINT WITH ALL NEUTRALS CONNECTED TOGETHER WITH A METAL TYPE JUMPER.

TRAFFIC SIGNAL MOUNTING
ALL PERMANENT TRAFFIC SIGNALS SHALL BE MOUNTED SUCH THAT 18'-0" UNDERCLEARANCE IS MAINTAINED AT ALL TIMES.

FIELD ADJUSTMENT OF TRAFFIC SIGNAL EQUIPMENT MAY BE REQUIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT.

ALL TRAFFIC SIGNAL FITTINGS (SCREWS, NUTS, BOLTS, PINNACLES, ETC.) SHALL BE GREASED WITH NON-OXIDE TYPE GREASE.

NOTES

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2020 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.

THE PLACING OF PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS SHALL BE DONE IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS AMENDED.

IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, ALL CONTRACTORS SHALL CALL MISS DIG @ 811 OR 800-482-7171 FOR PROTECTION OF UNDERGROUND UTILITIES A MINIMUM OF THREE FULL WORKING DAYS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO BEGINNING EACH EXCAVATION IN ANY AREA. 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.

CONSTRUCTION WILL BE OCCURRING IN THE PROJECT AREA FOR THE KALAMAZOO EVENT CENTER AND ARCADIA CREEK RELOCATION PROJECT. EXISTING SITE CONDITIONS MAY VARY FROM WHAT IS SHOWN DUE TO THIS WORK. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE THEIR WORK WITH THESE PROJECTS. ADDITIONAL COMPENSATION WILL NOT BE PROVIDED FOR EFFORTS REQUIRED TO COORDINATE WITH ADJACENT PROJECTS OR DUE TO CHANGED SITE CONDITIONS.

POCH TABLE - SPAN 1

ITEM	DESCRIPTION	POCH HT. (ft)	STEM LENGTH (ft)	DIST. ALONG SPAN (ft)
POLE (NW)	PROP, WOOD POLE, 40 FT	32.5	-	0
EX. TS#1	1W-3C	-	6.58	20
EX. TS#2	2W-3C	-	2.33	45
EX. CS#1	4W ILLUMINATED	-	1.25	57
EX. TS#4	2W-3C	-	0.92	65
EX. TS#3	1W-3C	-	1.67	90
POLE (SE)	EX. STEEL POLE	28.5	-	137

MINIMUM VERTICAL CLEARANCE IS 18FT
POCH CALCULATIONS BASED ON 1,300 LBS TENSION

ELECTRICAL WIRING NOTES:

ELECTRIC SERVICE
600V 3/C #6AWG SEC

RAILROAD INTERCONNECT
600V 14/C #14AWG P.J. (AREMA)

TRAFFIC SIGNAL (1W-3C):
5/C #16AWG P.J.

TRAFFIC SIGNAL (2W-3C):
7/C #16AWG P.J.

4-WAY ILLUMINATED CASE SIGN
4/C #16AWG P.J.

PEDESTRIAN SIGNAL (ONE WAY)
7/C #16AWG P.J.

PEDESTRIAN SIGNAL (TWO WAY)
7/C #16AWG P.J.

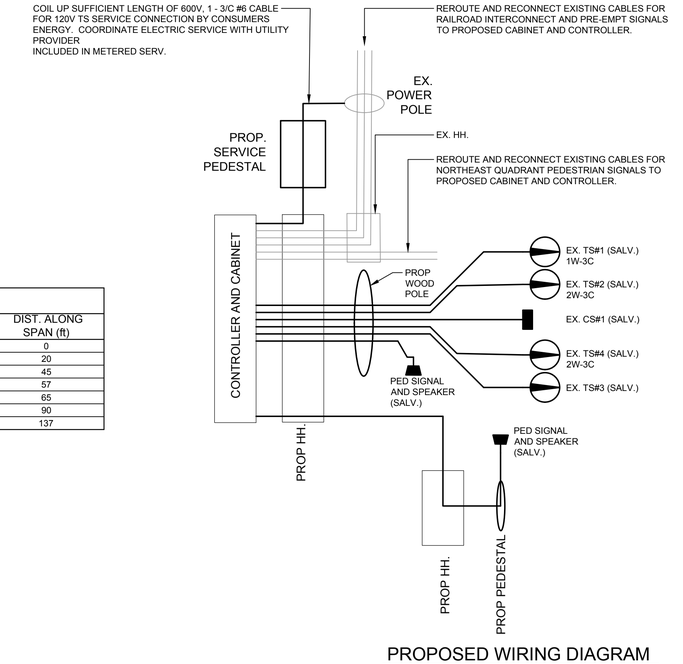
ELECTRICAL REQUIREMENTS

OPENINGS	38
CYCLIC WATTAGE	3666
STEADY WATTAGE	250

NOTES:

CONTRACTOR SHALL COORDINATE NEW ELECTRIC SERVICE WITH CONSUMERS ENERGY.

CONTRACTOR SHALL PROVIDE THE ENGINEER AND UTILITY WITH THE STEADY WATTAGE REQUIREMENTS WHEN COORDINATING THE POWER.



PROPOSED WIRING DIAGRAM

N.T.S.

WIGHTMAN
1670 LINCOLN RD.
ALLEGAN, MI. 49010
269.673.8465
www.gowightman.com

STATE OF MICHIGAN
Patrick Thomas Schwyn
License No. 6201309426
LICENSED PROFESSIONAL ENGINEER
6/9/2025
PATRICK T. SCHWYN
6201309426

PROJECT NAME:

KALAMAZOO AVENUE AND WESTNEDGE AVENUE TEMPORARY SIGNAL

CITY OF KALAMAZOO
415 E STOCKBRIDGE AVENUE
KALAMAZOO, MI 49001

01 6/9/2025 PTS
ISSUED FOR BID

REVISIONS

DATE: JUNE, 2025
SCALE: AS NOTED

TRAFFIC SIGNAL PLAN

JOB No. 242435
C001
OF 1