

# LUCAS COUNTY

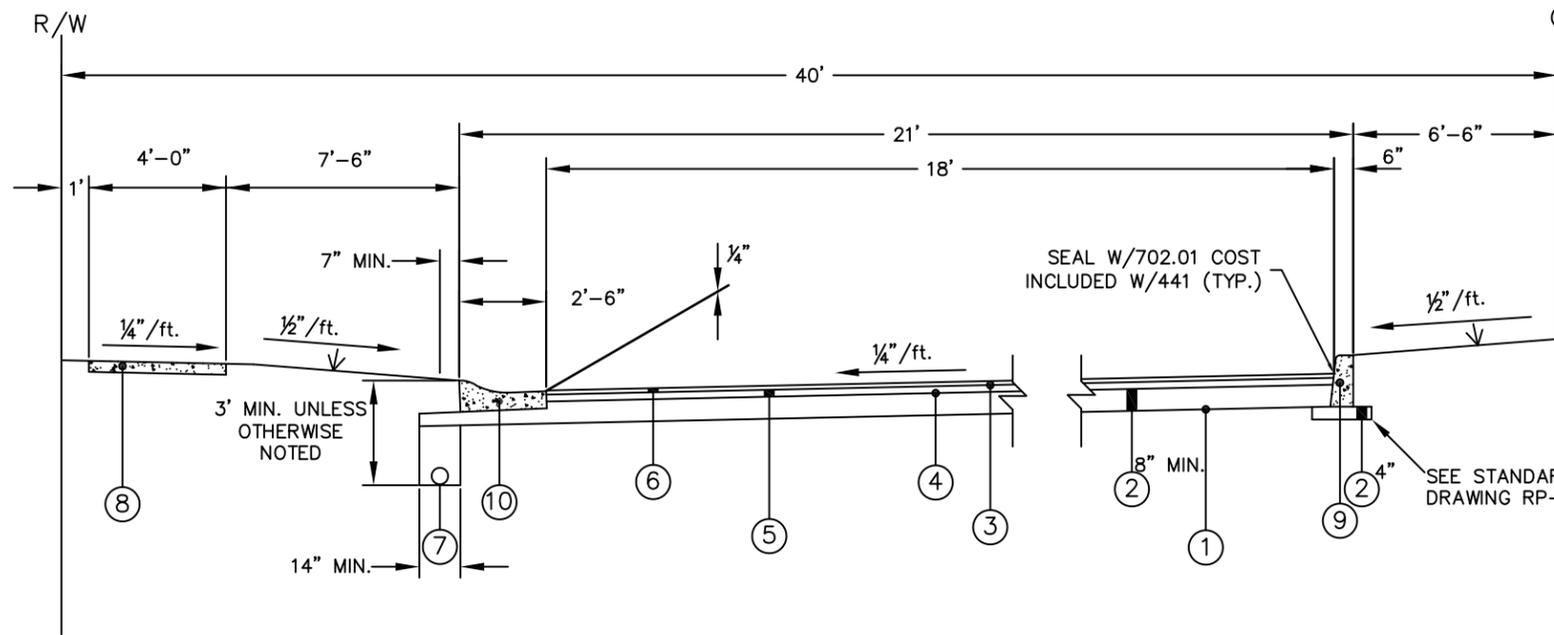
## STANDARD CONSTRUCTION DRAWINGS

SEAL

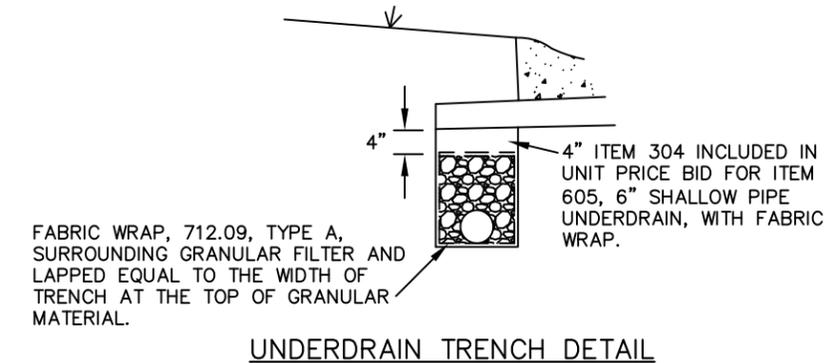
*Keith Earley*

KEITH G. EARLEY, P.E., P.S.  
LUCAS COUNTY ENGINEER





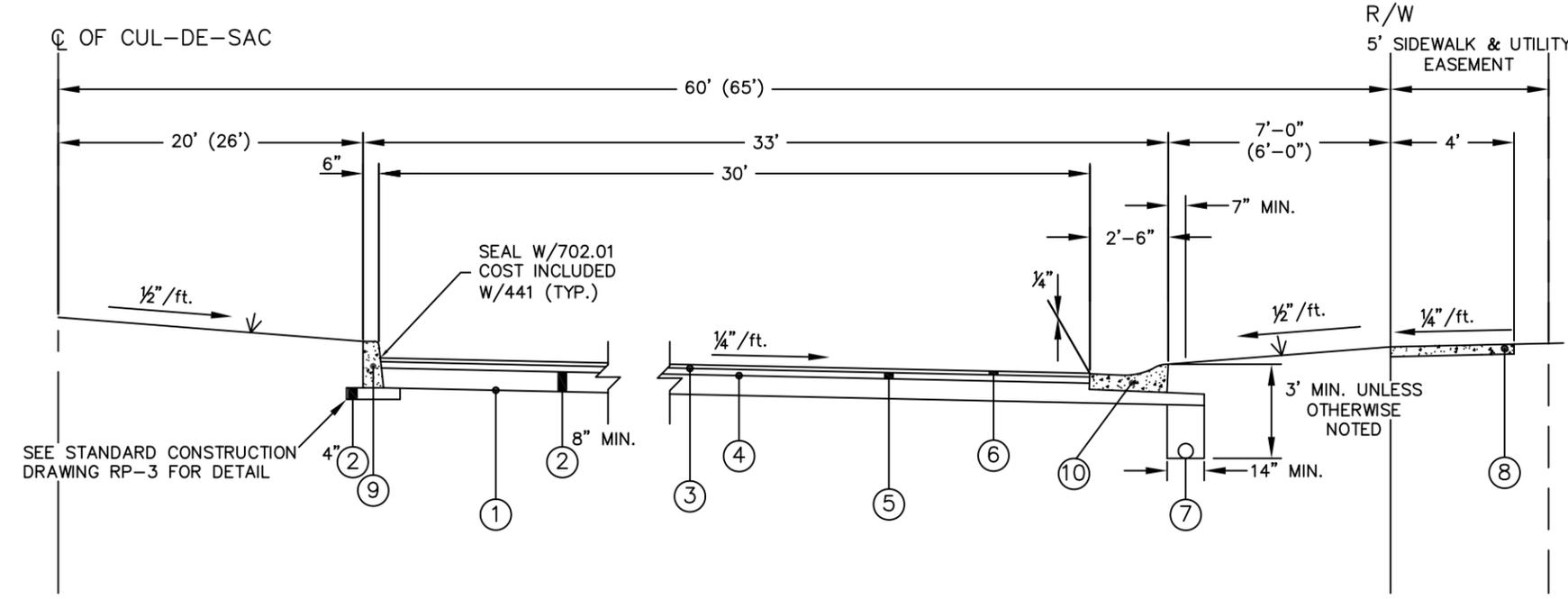
TYPICAL BLVD. HALF SECTION  
NEW RESIDENTIAL STREET



UNDERDRAIN TRENCH DETAIL

LEGEND

- ① ITEM 204 SUBGRADE COMPACTION
- ② ITEM 304 AGGREGATE BASE
- ③ ITEM 407 TACK COAT FOR INTERMEDIATE COURSE (@ A RATE OF 0.04 GAL./S.Y.)
- ④ ITEM 408 PRIME COAT (@ A RATE OF 0.4 GAL./S.Y.)
- ⑤ ITEM 441 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- ⑥ ITEM 441 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG 64-22
- ⑦ ITEM 605 6" SHALLOW PIPE UNDERDRAINS, 707.31 OR 707.41 W/ FABRIC WRAP & 6" TYPE F, 707.33, 707.42 OR 707.45 AT ALL STRUCTURES
- ⑧ ITEM 608 4" CONCRETE WALK / 6" CONCRETE WALK AT DRIVEWAYS (SEE STANDARD CONSTRUCTION DRAWING RP-3)
- ⑨ ITEM 609 CURB, TYPE A (SEE STANDARD CONSTRUCTION DRAWING RP-3)
- ⑩ ITEM 609 CURB, TYPE F (SEE STANDARD CONSTRUCTION DRAWING RP-3)



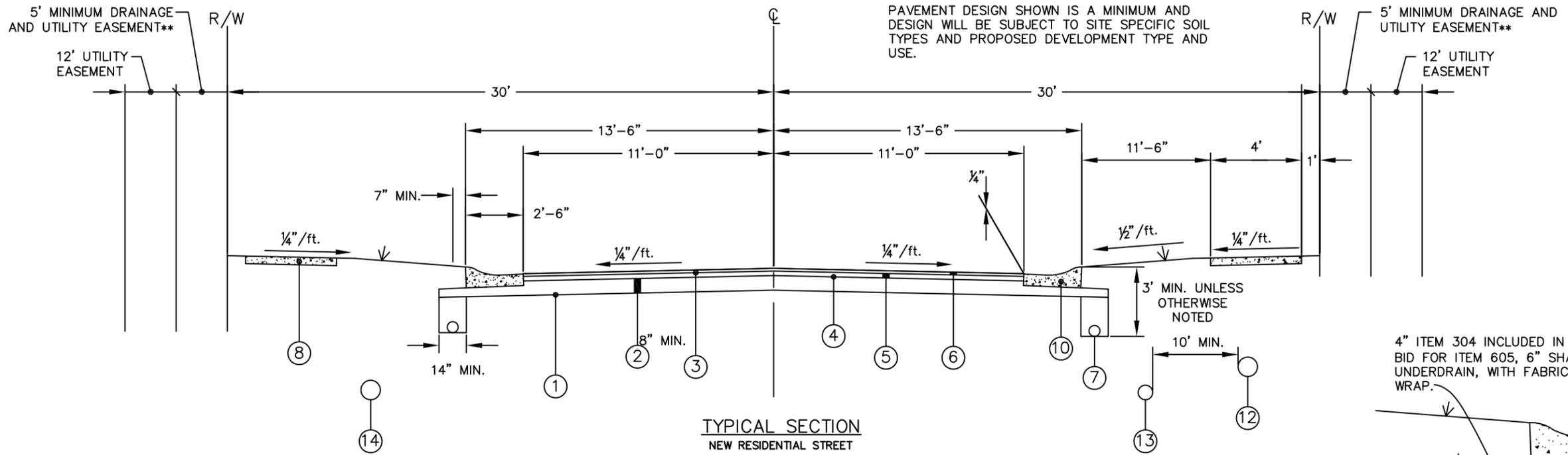
TYPICAL CUL-DE-SAC HALF SECTION  
NEW RESIDENTIAL STREET  
(SEE STANDARD CONSTRUCTION DRAWING RP-2)

PAVEMENT DESIGN SHOWN IS A MINIMUM AND DESIGN WILL BE SUBJECT TO SITE SPECIFIC SOIL TYPES AND PROPOSED DEVELOPMENT TYPE AND USE.

TYPICAL SECTIONS

LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

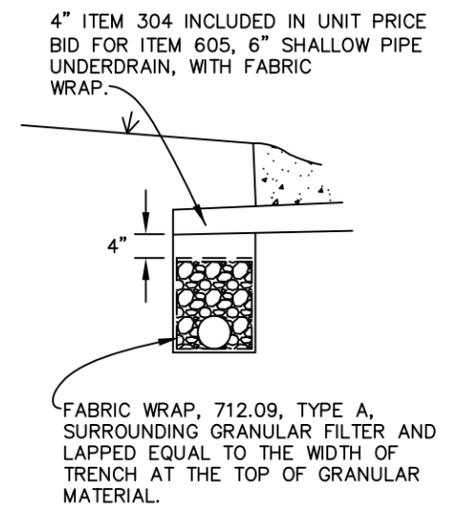
RP-1



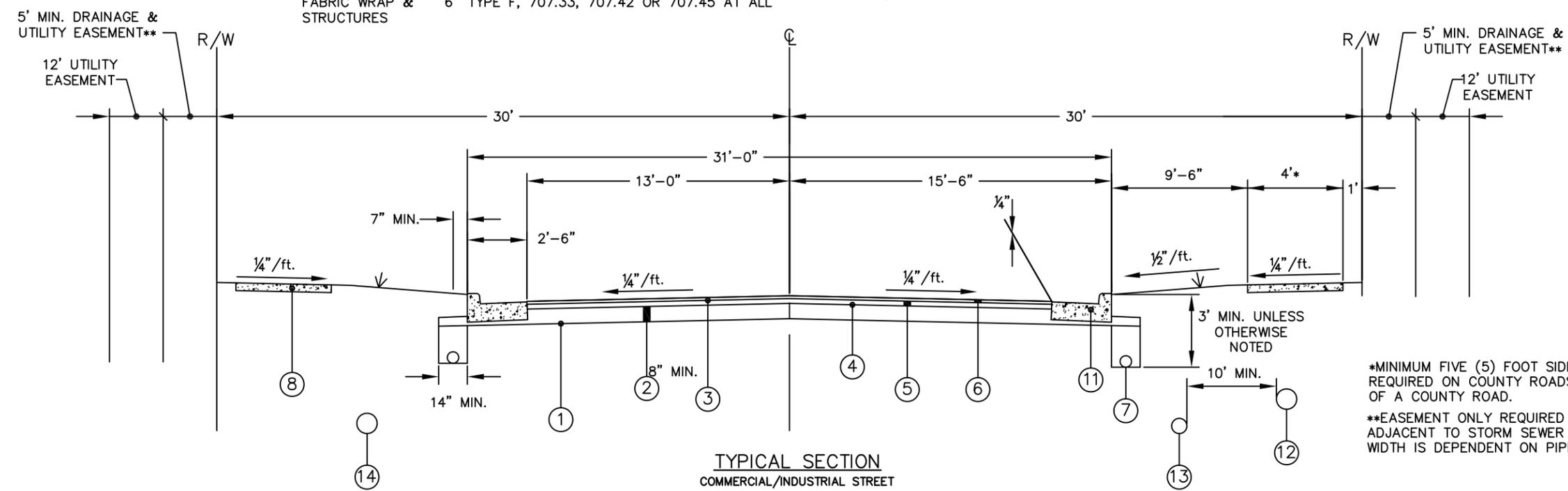
TYPICAL SECTION  
NEW RESIDENTIAL STREET

LEGEND

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- ② ITEM 304 AGGREGATE BASE
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- ⑧ ITEM 608 4" CONCRETE WALK / 6" CONCRETE WALK AT DRIVEWAYS (SEE STANDARD CONSTRUCTION DRAWING RP-3)
- ⑨ ITEM 609 CURB, TYPE A—NOT SHOWN THIS SHEET (SEE STANDARD CONSTRUCTION DRAWING RP-3)
- ⑩ ITEM 609 CURB, TYPE F (SEE STANDARD CONSTRUCTION DRAWING RP-3)
- ⑪ ITEM 609 COMBINATION CURB AND GUTTER, TYPE 2
- ⑫ STORM SEWER (28'-29' RT.)
- ⑬ WATER LINE (18'-19' RT.)
- ⑭ SANITARY SEWER (22'-23' LT.)



UNDERDRAIN TRENCH DETAIL



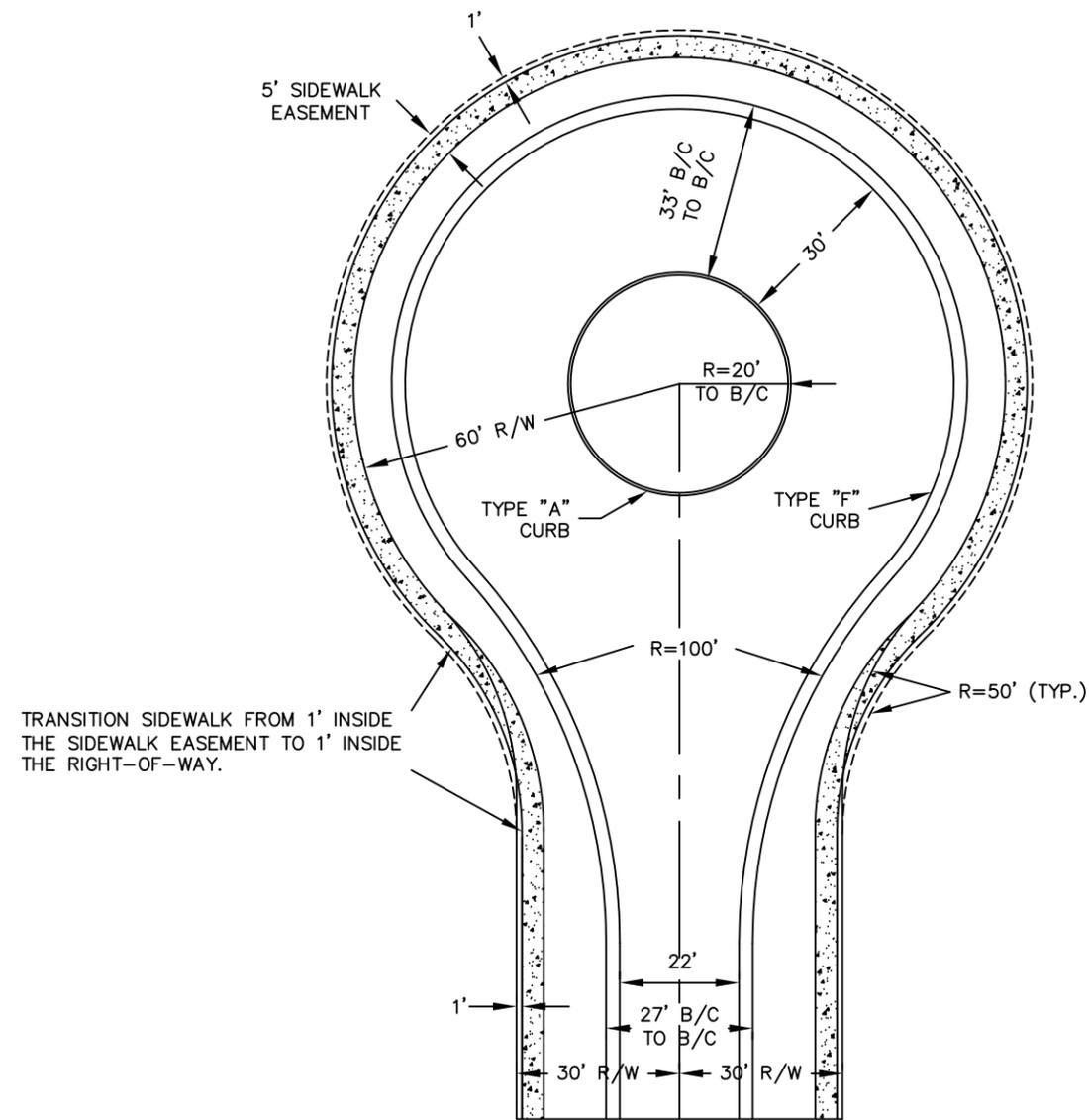
TYPICAL SECTION  
COMMERCIAL/INDUSTRIAL STREET

\*MINIMUM FIVE (5) FOOT SIDEWALK WIDTHS REQUIRED ON COUNTY ROADS OR EXTENSIONS OF A COUNTY ROAD.  
\*\*EASEMENT ONLY REQUIRED AT LOCATIONS ADJACENT TO STORM SEWER MAINLINE. EASEMENT WIDTH IS DEPENDENT ON PIPE SIZE AND LOCATION.

TYPICAL SECTIONS

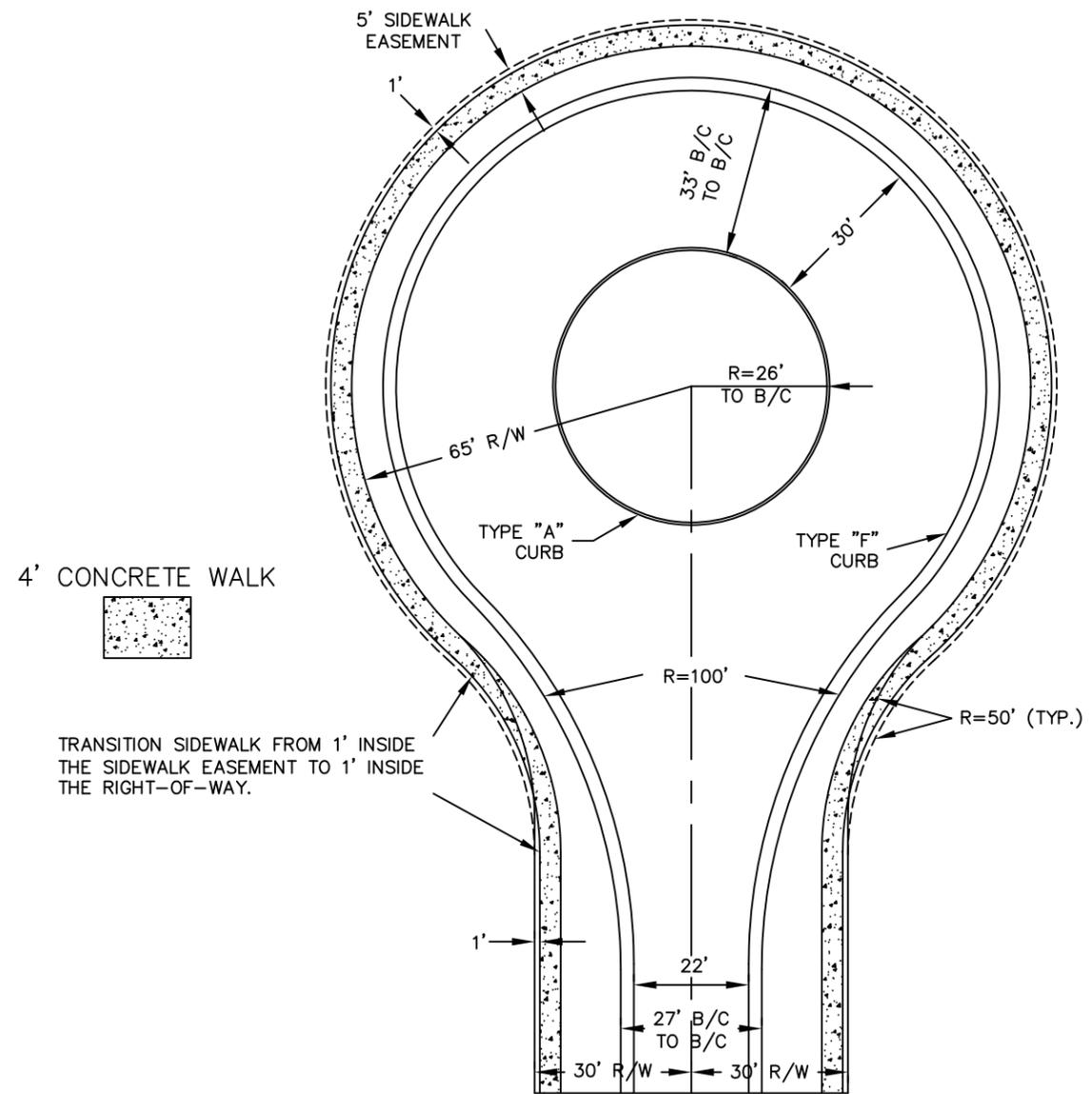
LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

RP-1



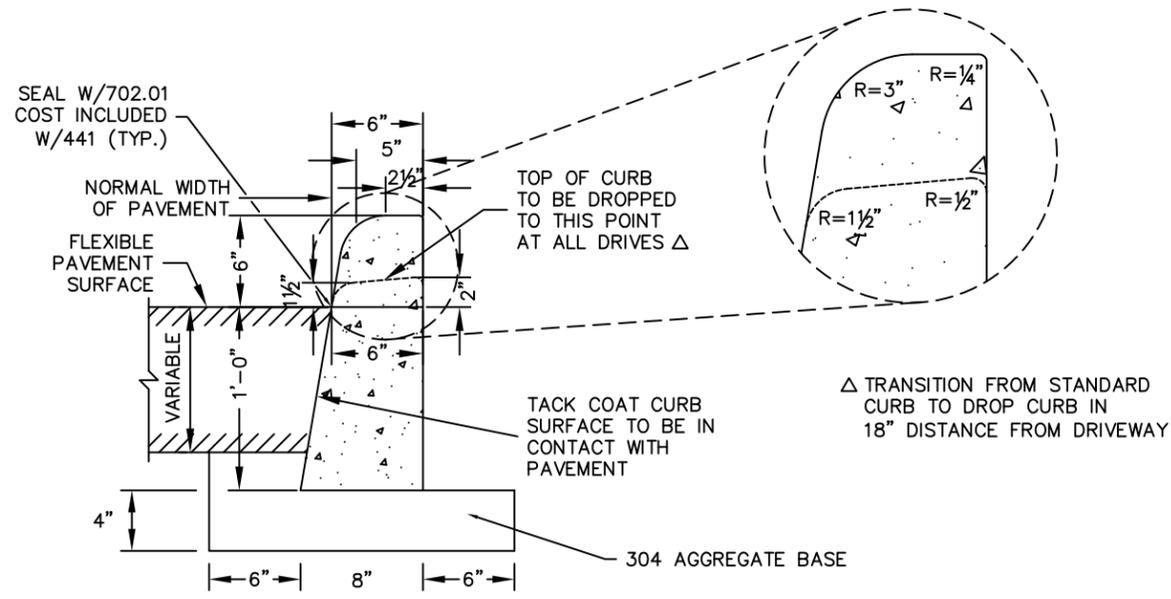
NOTES:

1. FOR RESIDENTIAL DEVELOPMENT. COMMERCIAL AND INDUSTRIAL CUL-DE-SACS WILL BE DESIGNED FOR ANTICIPATED TRUCK USAGE.
2. THIS DETAIL IS APPLICABLE WHEN THE LENGTH OF THE CUL-DE-SAC STREET IS NOT GREATER THAN 700 FEET.

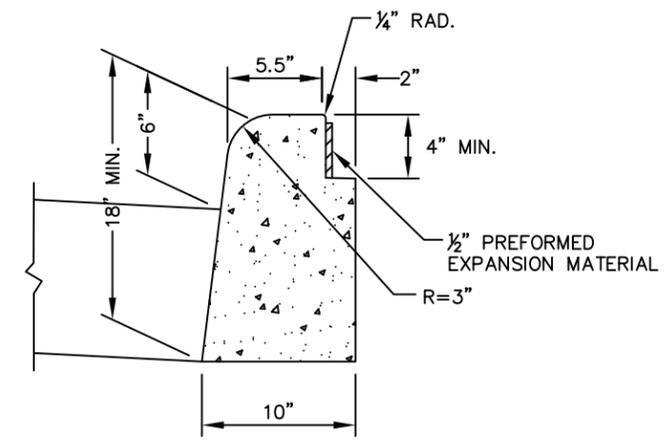


NOTES:

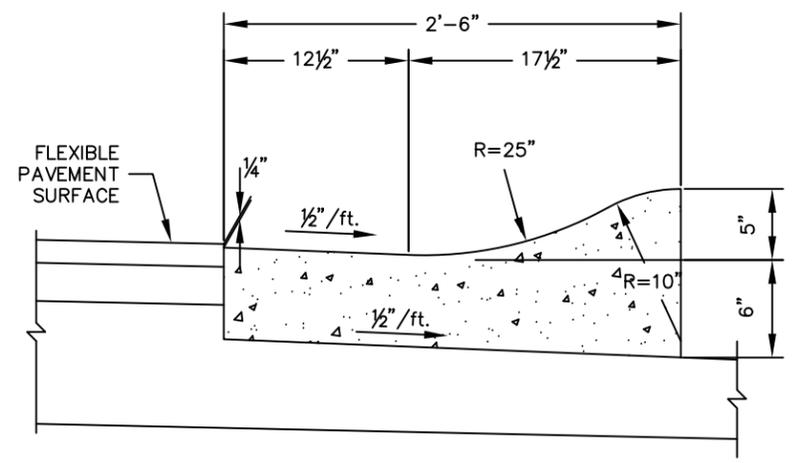
1. FOR RESIDENTIAL DEVELOPMENT. COMMERCIAL AND INDUSTRIAL CUL-DE-SACS WILL BE DESIGNED FOR ANTICIPATED TRUCK USAGE.
2. THIS DETAIL IS APPLICABLE WHEN THE LENGTH OF THE CUL-DE-SAC STREET EXCEEDS 700 FEET.



ITEM 609 CURB, TYPE A



ITEM 609 CURB, TYPE A-1

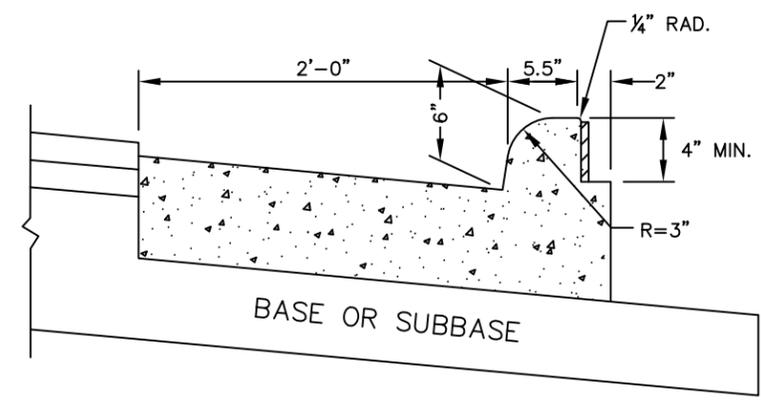


ITEM 609 CURB, TYPE F

**NOTES**  
CURB, TYPE F SHALL BE CONSTRUCTED  
ACCORDING TO ITEM 609.04 OF THE  
CURRENT STATE OF OHIO DEPARTMENT  
OF TRANSPORTATION CONSTRUCTION AND  
MATERIAL SPECIFICATIONS, EXCEPT FOR  
THE FOLLOWING:

CONSTRUCT 1/4" WIDE CONTRACTION  
JOINTS AT EIGHT FOOT (8') INTERVALS  
TO A DEPTH OF TWO INCHES (2").

CONSTRUCT 1" EXPANSION JOINTS AT  
250' INTERVALS IN ACCORDANCE WITH  
OHIO DEPT. OF TRANSPORTATION  
ROADWAY STD. DWG. BP-2.2.



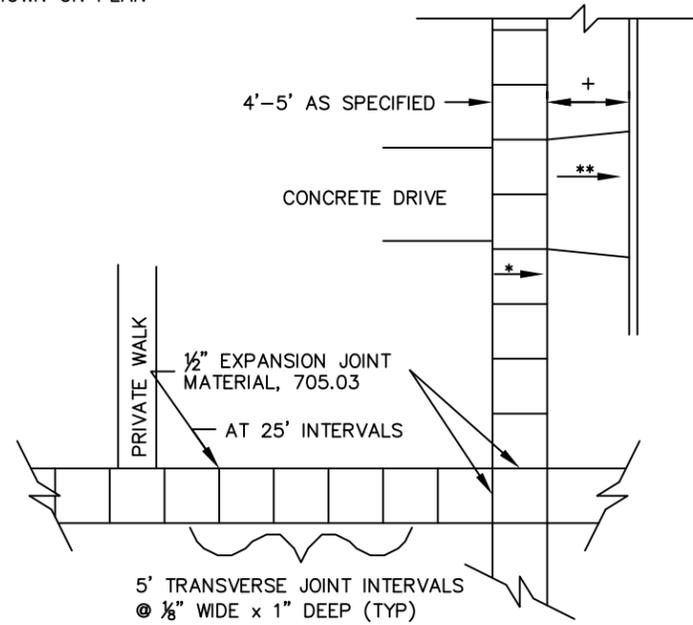
ITEM 609 COMBINATION CURB & GUTTER,  
TYPE B-1

CONCRETE CURB DETAILS

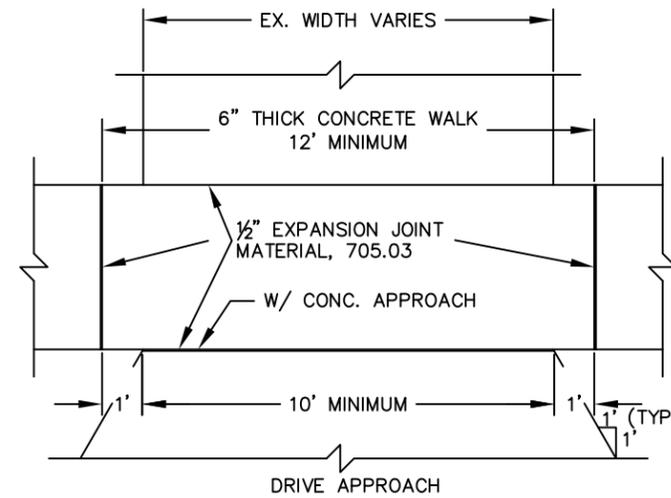
LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

RP-3

\* TRANSVERSE SLOPE @ 1/4" PER FT. (MAX.)  
 \*\*TRANSVERSE SLOPE @ 1/2" PER FT. (TYP)  
 + OFFSET AS SHOWN ON PLAN



SIDEWALK DETAIL



SIDEWALK THROUGH DRIVEWAY DETAIL

NOTES  
 GENERAL: THE DESIGN DETAILS SHOWN  
 HEREON SHALL GOVERN THE  
 CONSTRUCTION OF DRIVEWAYS UNLESS  
 OTHERWISE SHOWN IN THE PROJECT  
 PLANS.

JOINTS: IN ADDITION TO THE JOINTS  
 SHOWN HEREON, IMPRESSED JOINTS  
 SHALL BE PLACED IN PORTLAND CEMENT  
 CONCRETE DRIVEWAYS AT INTERVALS  
 NOT TO EXCEED 10' IN THE PORTION OF  
 THE DRIVEWAY BACK OF THE APPROACH.  
 FOR ASPHALT DRIVEWAYS, OMIT 1"  
 EXPANSION JOINT AND IMPRESSED  
 JOINTS.

THICKNESS: MINIMUM RESIDENTIAL  
 THICKNESS REQUIRED SHALL BE 6" FOR  
 PORTLAND CEMENT CONCRETE  
 DRIVEWAYS OR 2" OF ASPHALT ON 6"  
 OF AGGREGATE BASE FOR ASPHALT  
 DRIVEWAYS.

\*IMPRESSED JOINTS FOR PORTLAND  
 CEMENT CONCRETE DRIVEWAYS SHALL BE  
 1/4" MINIMUM WIDTH BY 2" DEPTH.

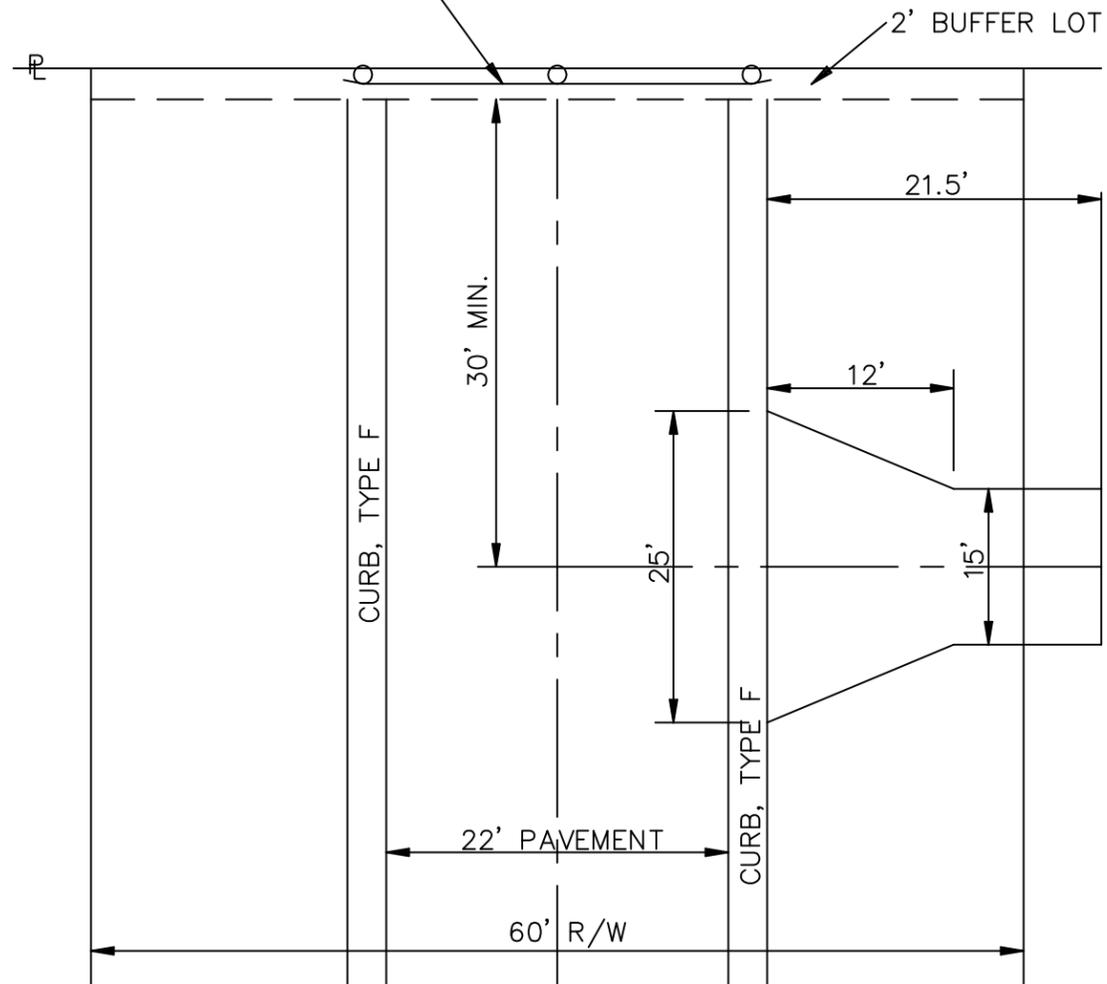
WALK DETAILS

LUCAS COUNTY STANDARD  
 CONSTRUCTION DRAWINGS

RP-3

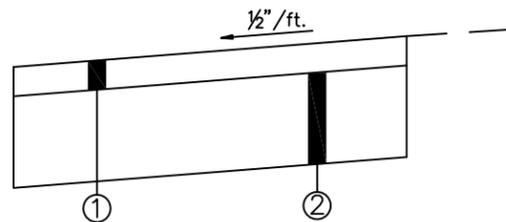
TURNAROUND, TYPE A

GUARDRAIL BARRICADE (SEE STANDARD CONSTRUCTION DRAWING RP-6)



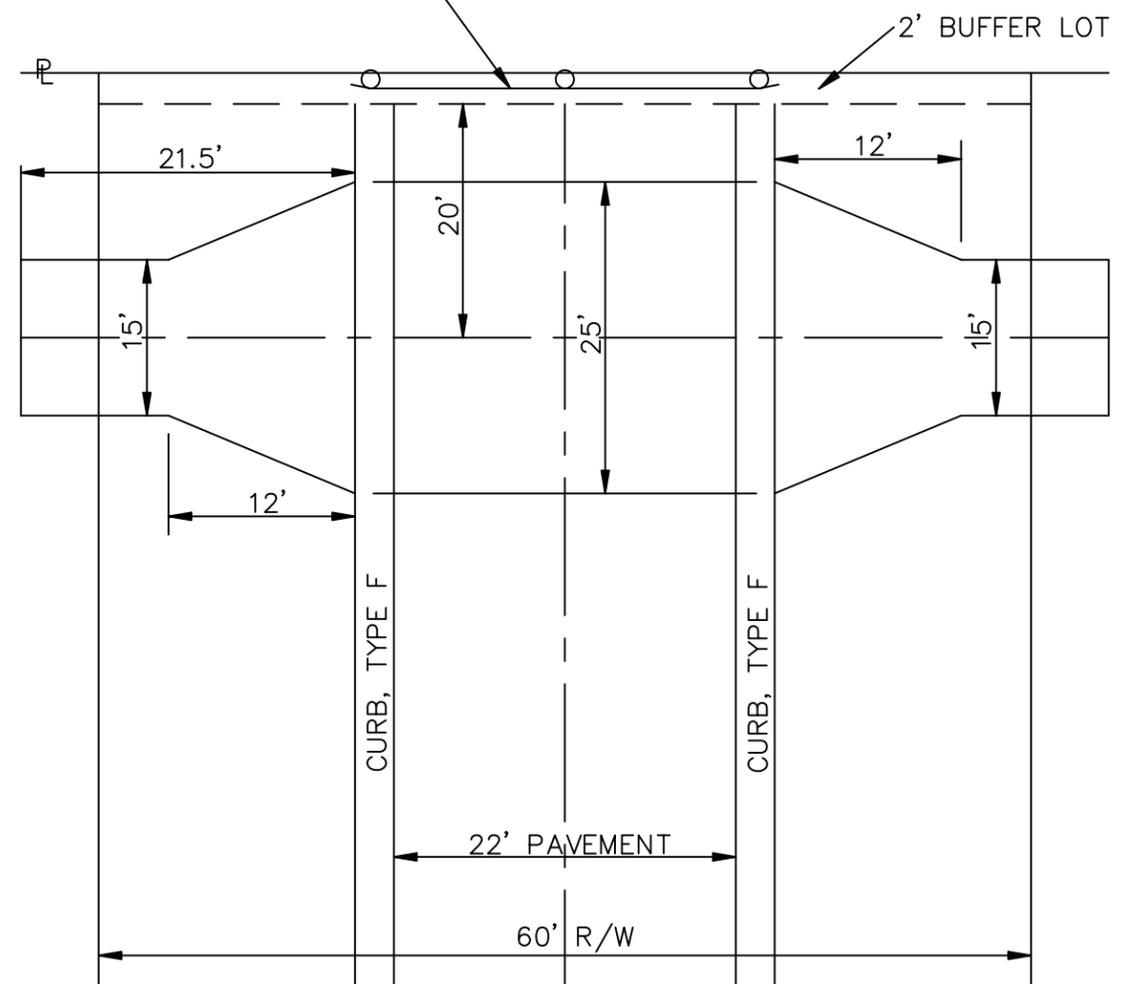
TYPICAL SECTION FOR TYPE A

- ① ITEM 441 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 OR TYPE 2
- ② ITEM 304 8" AGGREGATE BASE



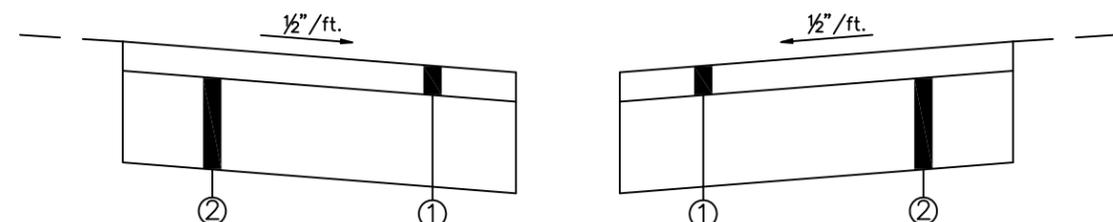
TURNAROUND, TYPE B

GUARDRAIL BARRICADE (SEE STANDARD CONSTRUCTION DRAWING RP-6)

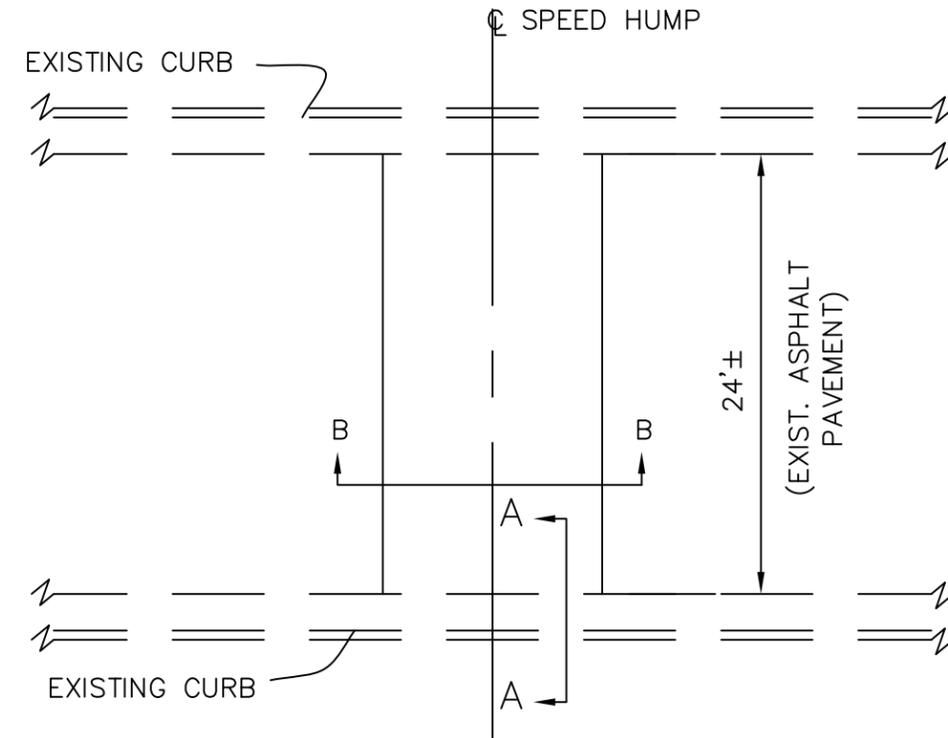
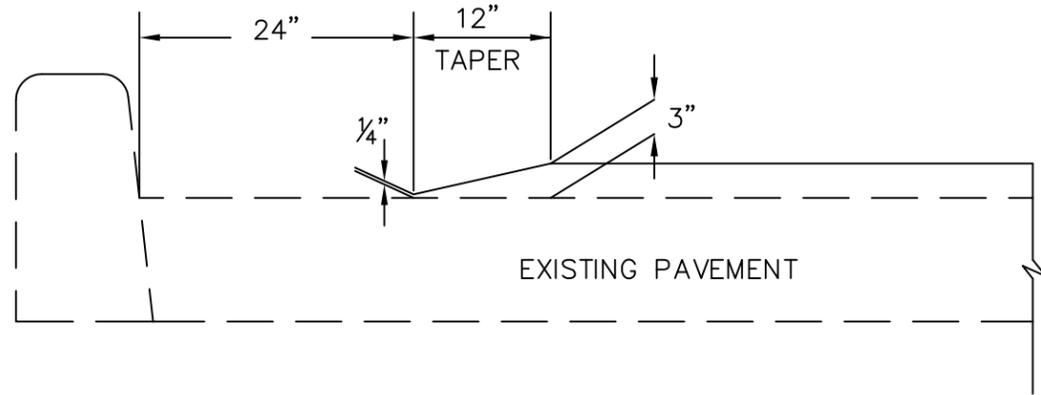


TYPICAL SECTION FOR TYPE B

- ① ITEM 441 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 OR TYPE 2
- ② ITEM 304 8" AGGREGATE BASE

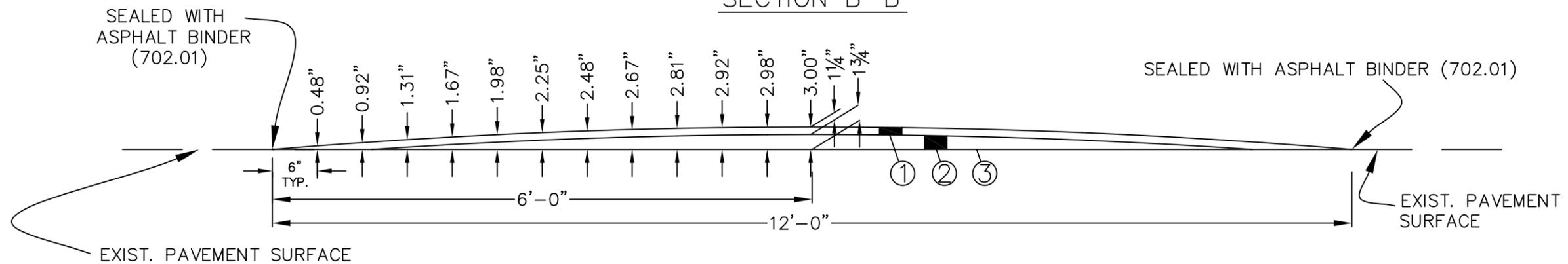


SECTION A-A



PLAN VIEW

SECTION B-B



SPEED HUMP DETAIL

- ① ITEM 441- 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG 64-22
- ② ITEM 441- 1/4" TO 1 3/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG 64-22
- ③ ITEM 407- TACK COAT (@ 0.075 GAL/S.Y.)

**NOTES**  
SEE ODOT STANDARD DRAWING MGS-1.1, MGS-2.1 AND TC-41.20 FOR ADDITIONAL DETAILS AND SPECIFICATIONS NOT COVERED ON THIS DRAWING.

RAIL: USE W-BEAM RAIL MEETING AASHTO M 180 TYPE II CLASS A, AS SPECIFIED IN CMS 606.

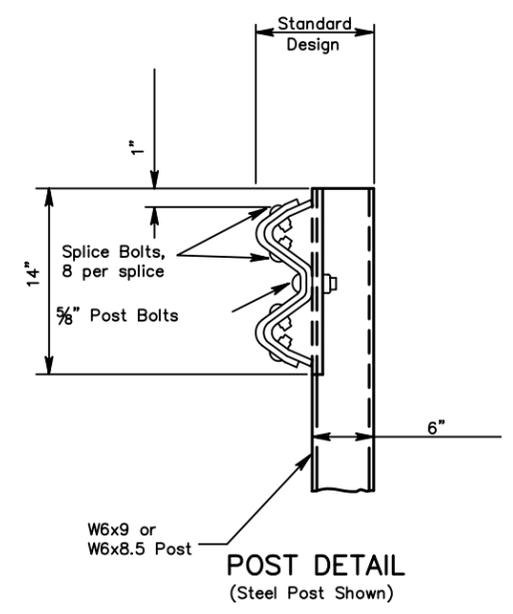
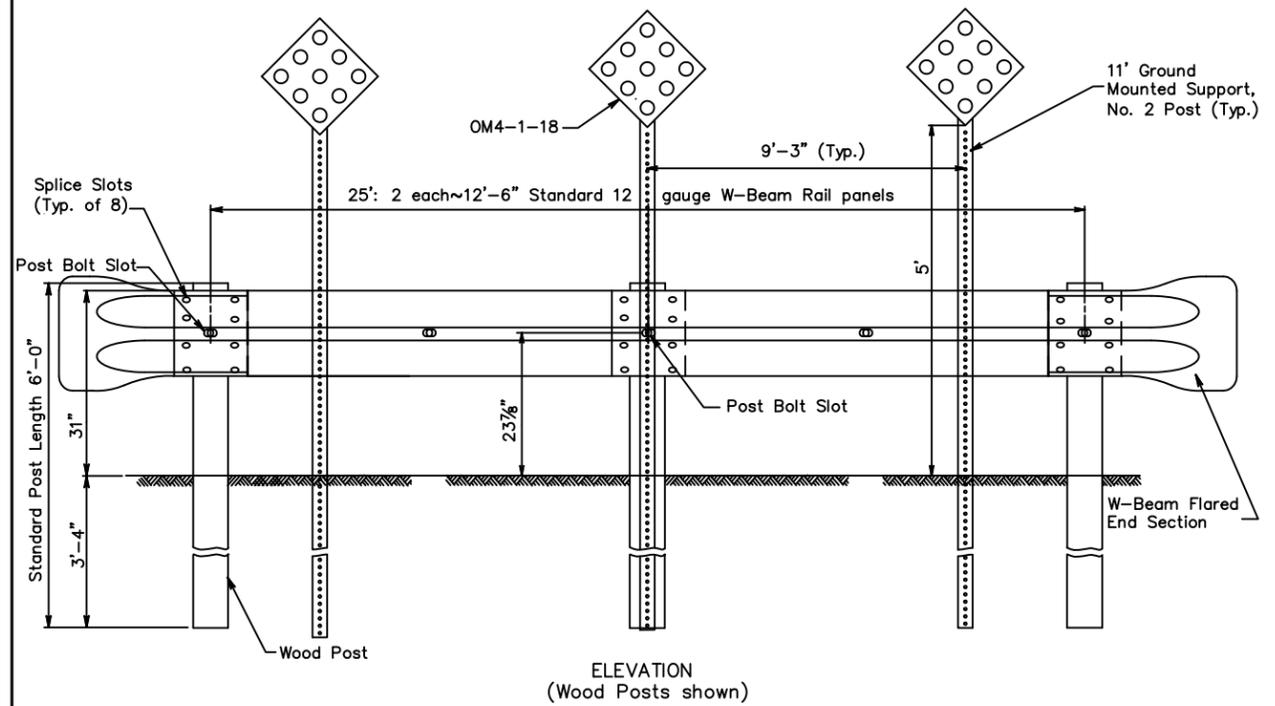
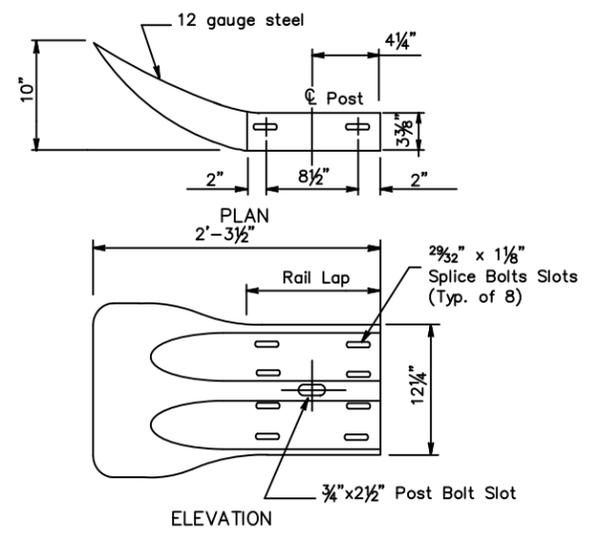
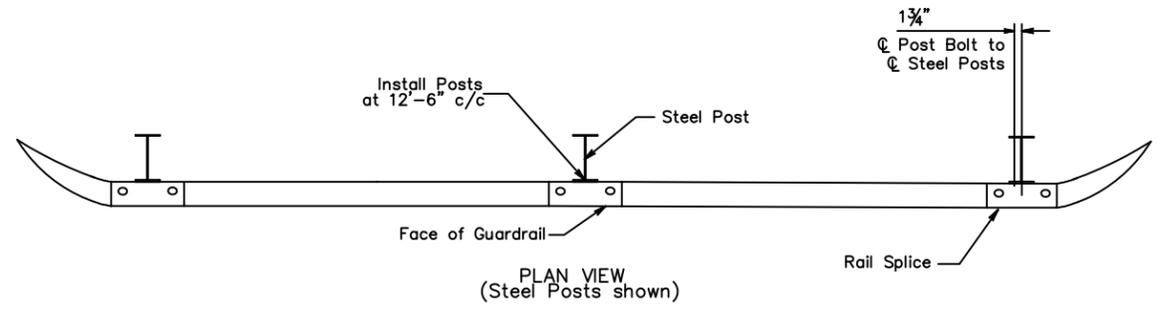
POSTS: POSTS MAY BE CONSTRUCTED OF WOOD OR STEEL. WOOD POSTS MAY BE ROUND OR 6"x8" SQUARE-SAWED. THE ROUND POSTS SHALL BE 8"±1" IN DIAMETER AT THE TOP AND NOT MORE THAN 3" LARGER AT THE BUTT WITH A UNIFORM TAPER. POSTS SHALL BE PRESSURE-TREATED AS PER CMS 710.14. BORE BOLT HOLES AND, IF REQUIRED, TRIM THE TOPS OF POSTS AFTER THE POSTS ARE SET. STEEL POSTS ARE TO BE W6X9 OR W6X8.5 GALVANIZED STEEL. USE THE SAME TYPE OF POST THROUGHOUT THE LENGTH OF THE PROJECT UNLESS OTHERWISE SPECIFIED IN THE PLANS OR PERMITTED BY THE ENGINEER. ALL POSTS ARE 6'-0" LONG UNLESS SPECIFIED OTHERWISE IN THE CONTRACT DOCUMENT. POSTS MAY BE SET IN DRILLED HOLES OR MAY BE DRIVEN TO GRADE.

ALTERNATE POSTS: ENGINEERED GUARDRAIL POSTS HAVING MET NCHRP 350 CRITERIA, AND LISTED ON THE OFFICE OF MATERIALS MANAGEMENT'S APPROVED LIST ARE PERMITTED AS AN EQUAL ALTERNATE WHEN INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND WITHIN THE LIMITATIONS SHOWN ON THE APPROVED LIST.

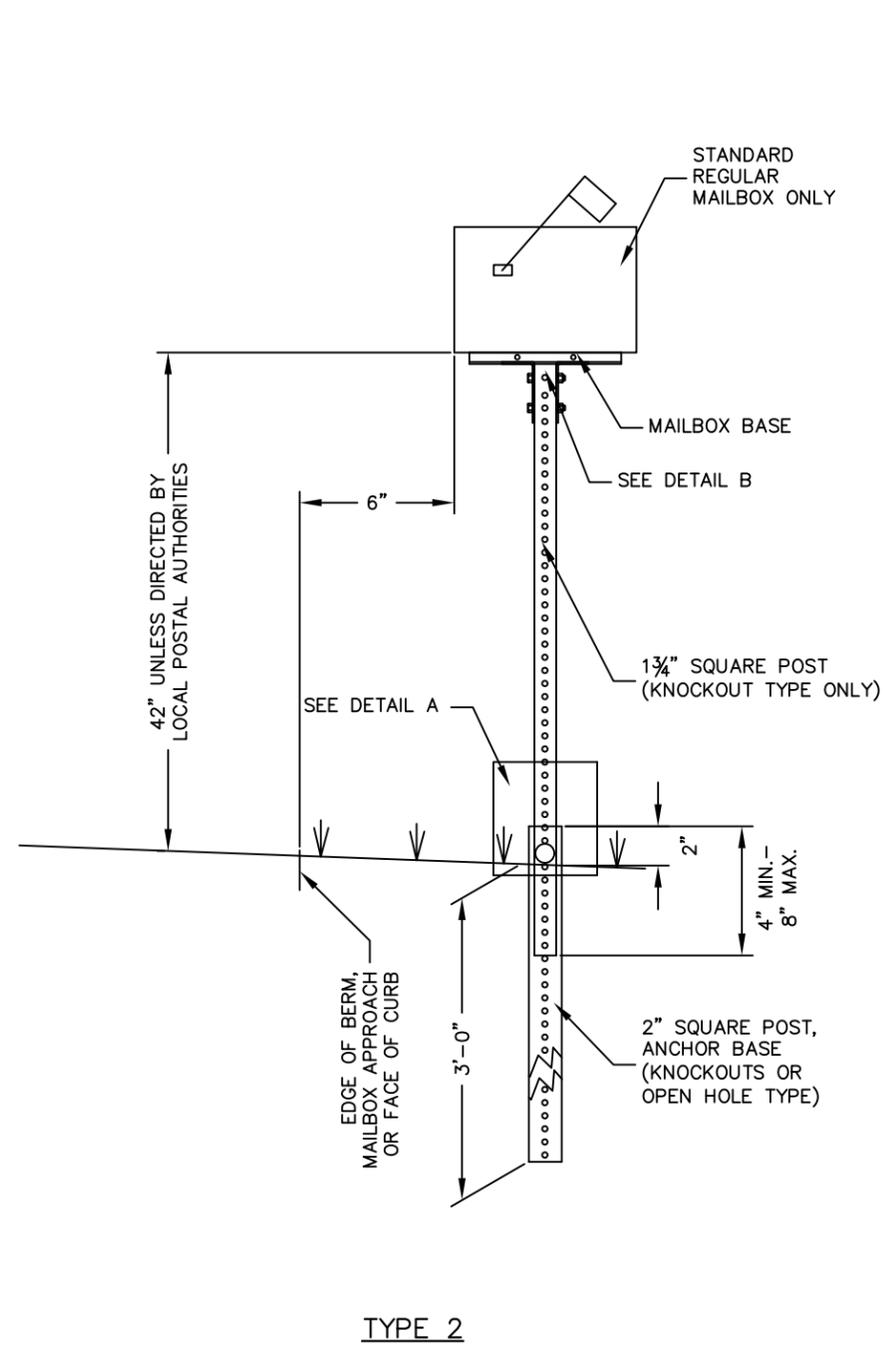
WASHERS: INSTALL APPROPRIATE SIZED STANDARD GALVANIZED STEEL WASHERS ON THE NUT SIDE OF BOLTS INSTALLED ON WOOD POSTS.

GUARDRAIL HEIGHT: FOR INITIAL INSTALLATION, CONSTRUCT THE GUARDRAIL WITHIN ±1" OF THE STANDARD HEIGHT, H, OR 31" TO THE TOP OF W-BEAM RAIL.

PAYMENT: ALL LABOR, EQUIPMENT AND MATERIALS INCLUDING GUARDRAIL PANELS, FLARED END SECTIONS, GUARDRAIL POSTS, OBJECT MARKER SIGNS AND SIGN POSTS SHALL BE INCLUDED IN THE ITEM SPECIAL, EACH GUARDRAIL BARRICADE.



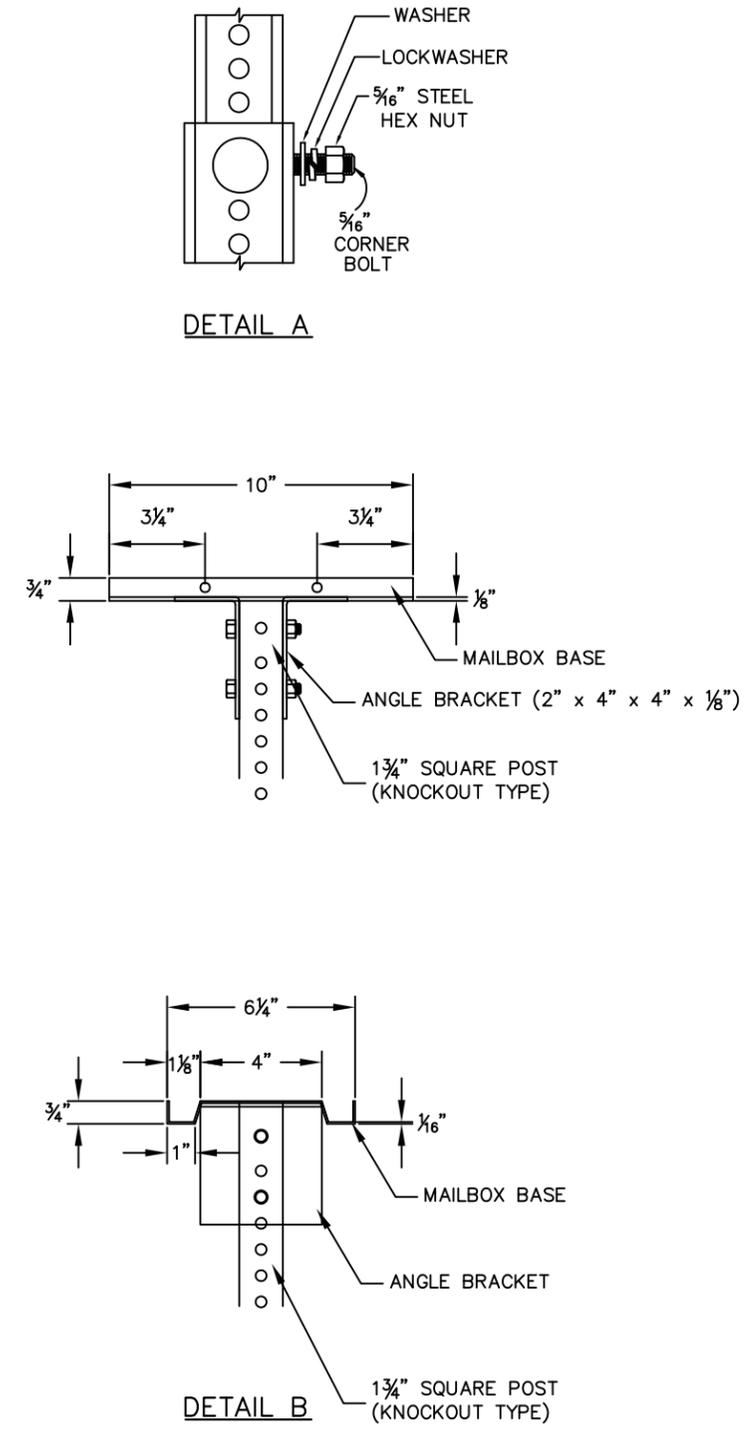
GUARDRAIL BARRICADE DETAILS



TYPE 2

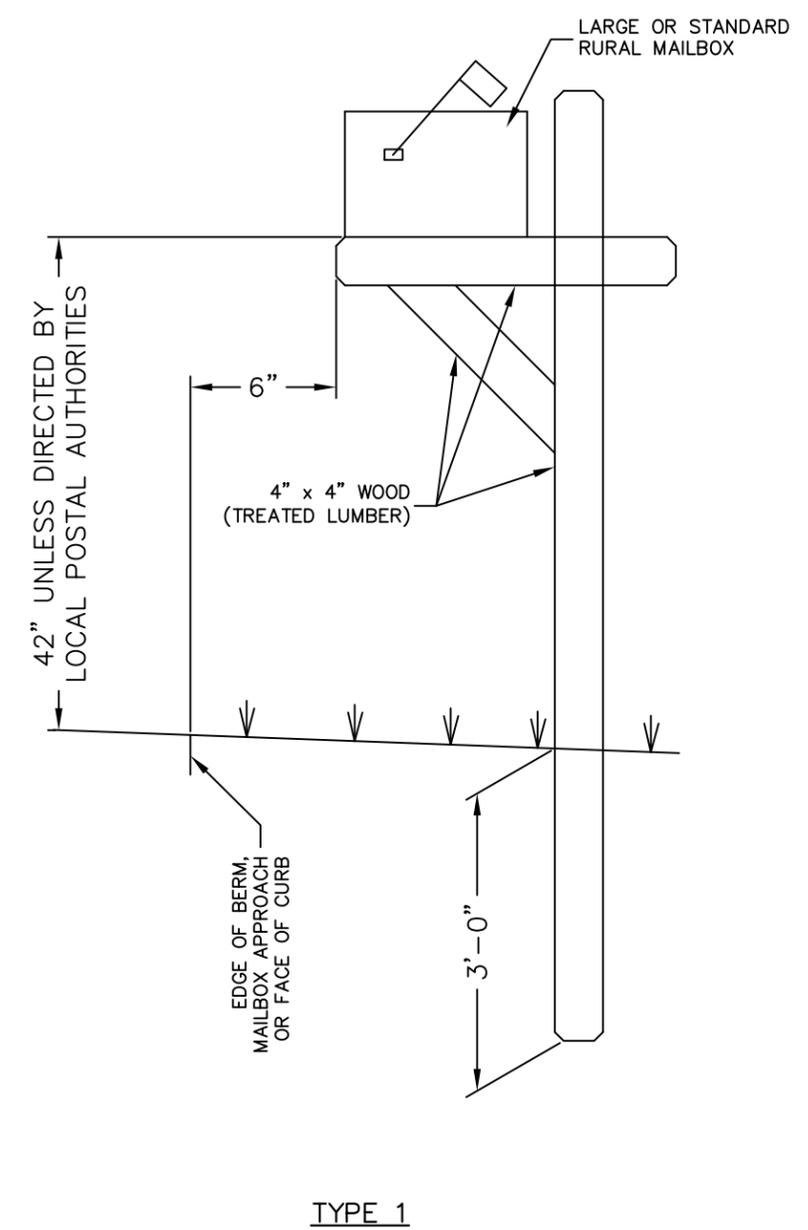
NOTES:  
LUCAS COUNTY ROAD MAINTENANCE  
TYPICAL INSTALLATION.

TYPE 2 POSTS SHALL BE INSTALLED  
ON PROJECT UNLESS OTHERWISE  
DIRECTED BY THE ENGINEER, OR IF  
A TYPE 1 IS REQUIRED BY THE  
PROPERTY OWNER.



DETAIL A

DETAIL B



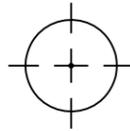
TYPE 1

LOCAL SUPPLIER OF BRACKET IS

WATERVILLE SHEET METAL CO. INC.  
1210 WATERVILLE-MONCLOVA RD.  
WATERVILLE, OH 43566  
(419)878-5050

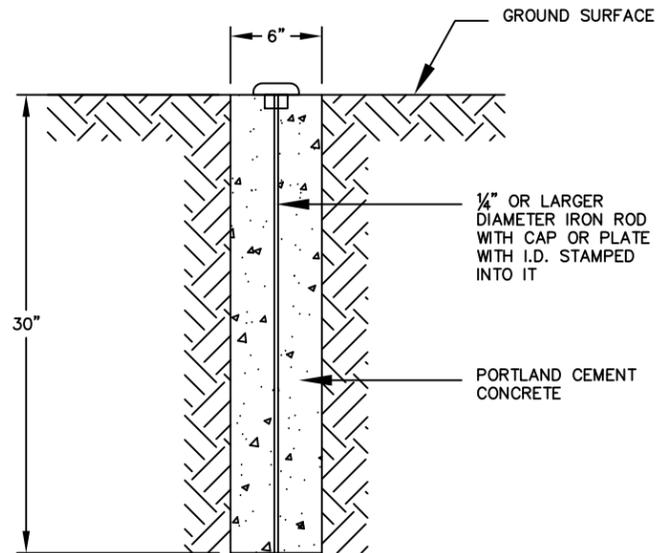
OR EQUAL AS APPROVED BY THE LUCAS  
COUNTY ENGINEER.

MAILBOX SUPPORT DETAILS



A MONUMENT SHALL BE PLACED AT EACH CHANGE IN DIRECTION ON THE BOUNDARY OF THE PLAT, AND ONE SUCH MONUMENT SHALL BE PLACED ON THE CENTERLINE OF RIGHT-OF-WAY OF EACH STREET INTERSECTION, AND AT THE BEGINNING AND END OF ALL STREET CURVES.

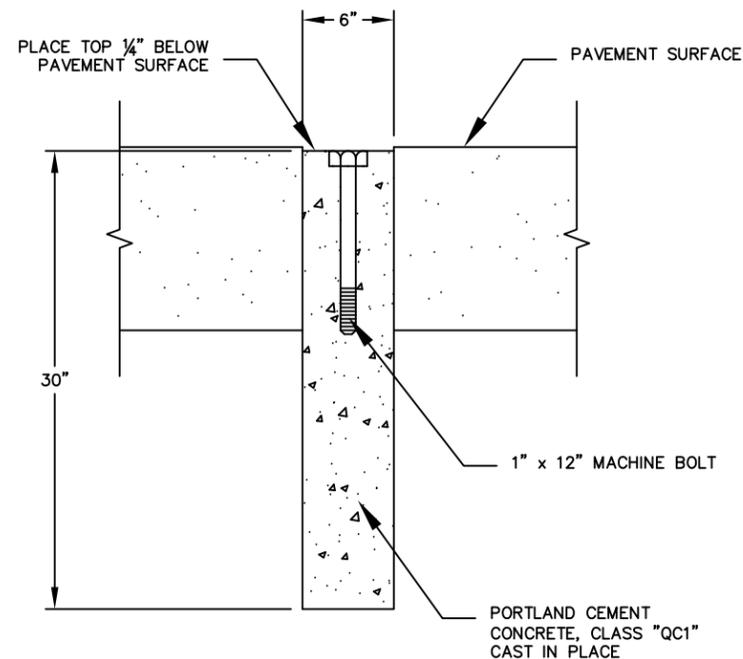
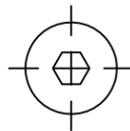
A TYPE A MONUMENT SHALL BE PLACED IN ALL UNPAVED AREAS. A TYPE B MONUMENT SHALL BE PLACED IN ALL PAVED AREAS.



### CONCRETE MONUMENT, TYPE A

A CYLINDRICAL CONCRETE MARKER SIX (6") INCHES IN DIAMETER AND THIRTY (30") INCHES IN LENGTH WITH A QUARTER (1/4") INCH MINIMUM DIAMETER IRON ROD CAST AT THE CENTRAL AXIS OF THE CYLINDER. SAID MARKER SHALL BE PLACED IN A VERTICAL POSITION WITH ITS TOP BEING LEVEL WITH THE SURFACE OF THE SURROUNDING GROUND.

THE TYPE A MONUMENT SHALL BE IDENTIFIED WITH A DURABLE MARKER (I.E. CAP, PLATE) BEARING THE SURVEYOR'S OHIO REGISTRATION NUMBER AND/OR NAME OR COMPANY NAME PER ORC 4733-37-03.



### CONCRETE MONUMENT, TYPE B

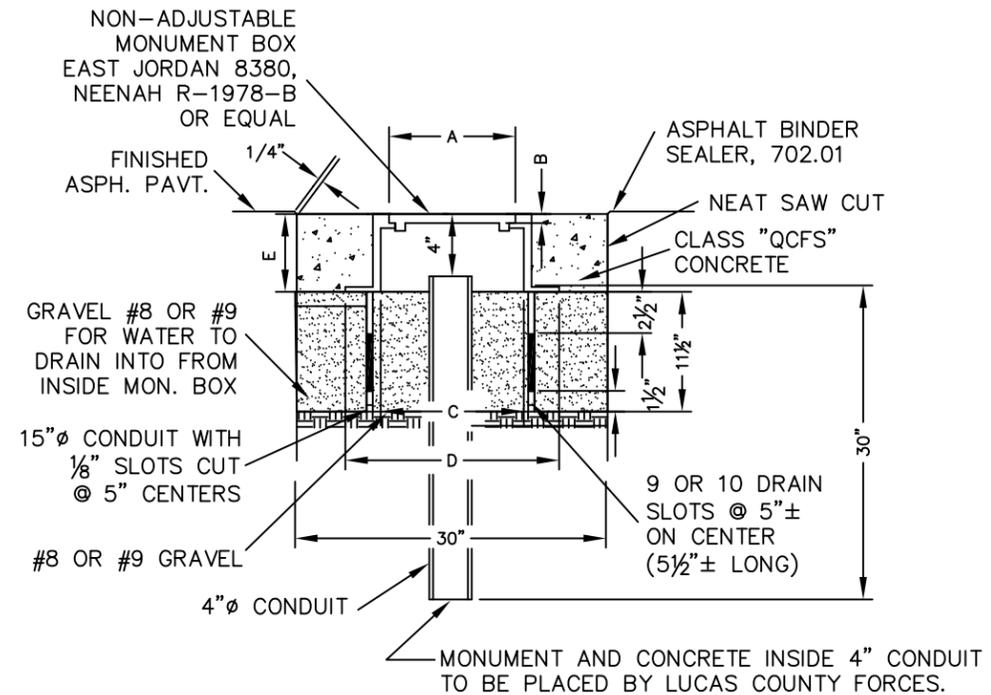
A CYLINDRICAL CONCRETE MARKER AS DESCRIBED UNDER TYPE A EXCEPT THAT A MACHINE TYPE IRON BOLT (WITHOUT NUT) OF ONE (1") INCH IN DIAMETER BY TWELVE (12") INCHES IN LENGTH SHALL BE PLACED IN A VERTICAL POSITION WITH THE HEAD OF THE BOLT UPWARD AND LEVEL WITH THE SURFACE OF THE PAVEMENT. A POINT SHALL BE MARKED ON THE HEAD OF THE BOLT TO INDICATE THE EXACT POINT REFERRED TO ON THE FINAL PLAT.

### MONUMENT ASSEMBLIES, TYPE 1 AND TYPE 2

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING DETAILS.

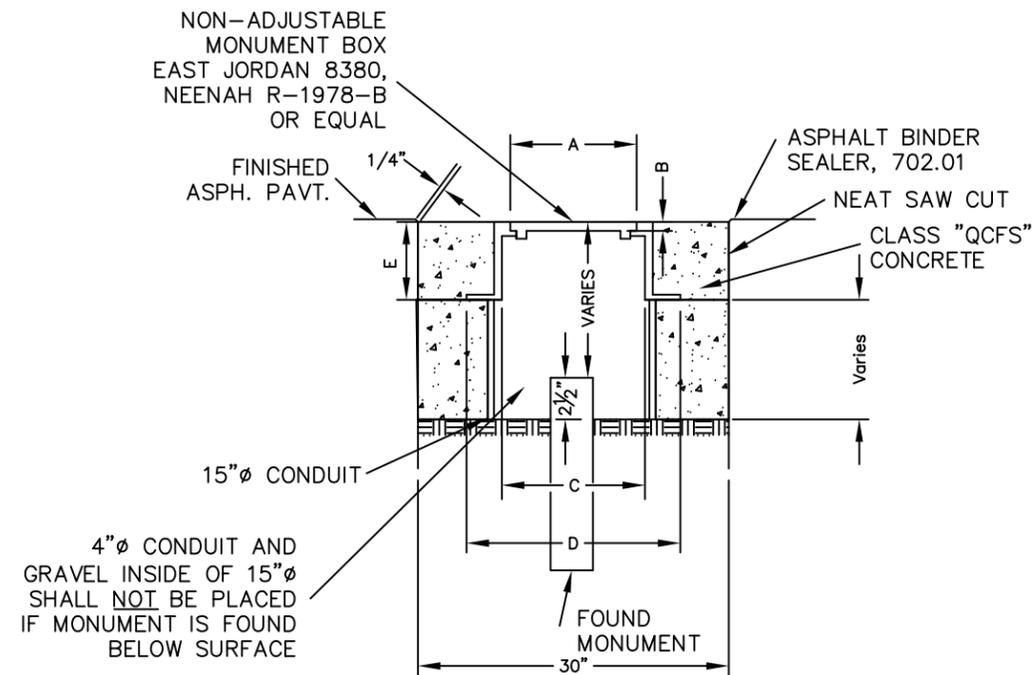
THE LUCAS COUNTY ENGINEERS OFFICE HAS REFERENCED ALL CONTROL POINTS TO RECEIVE A MONUMENT ASSEMBLY. THE LUCAS COUNTY ENGINEERS OFFICE WILL PROVIDE THE SHORT REFERENCES FOR MONUMENT ASSEMBLY INSTALLATION UPON RECEIVING A THREE (3) WORKING DAY NOTICE.

ALL WORK INVOLVED IN THE INSTALLATION OF THE MONUMENT ASSEMBLY, SHALL BE PAID FOR AT THE CONTRACT PRICE, COMPLETE IN PLACE.



### MONUMENT ASSEMBLY, TYPE 1

USE THIS IF THERE IS NO EXISTING MONUMENT BELOW.



### MONUMENT ASSEMBLY, TYPE 2

USE THIS IF THERE IS AN EXISTING MONUMENT BELOW.

MONUMENT MODEL	A	B	C	D	E
EAST JORDAN 8380	12 3/16"	7/8"	11"	20 5/8"	7 1/2"
NEENAH R-1978-B	12"	3/4"	10 5/8"	20 1/2"	7 3/8"

ROADWAY & R/W MONUMENTS

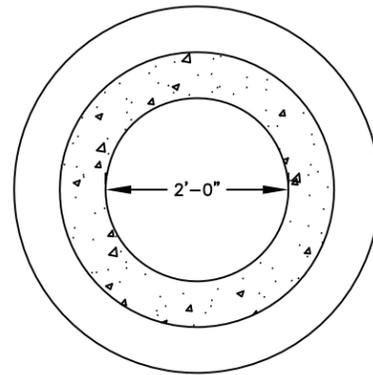
LUCAS COUNTY STANDARD CONSTRUCTION DRAWINGS

RP-8

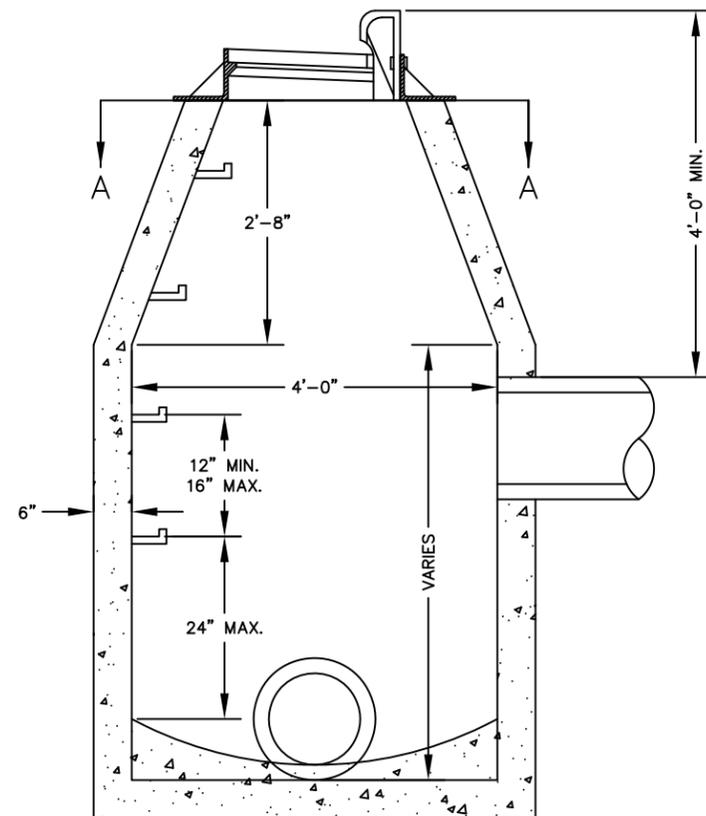
### CURB INLET CASTING

NEENAH R-3159-A,  
EAST JORDAN 7020 WITH  
M2 SINUSOIDAL GRATE & T1  
BACK, AS SHOWN, OR  
EQUAL

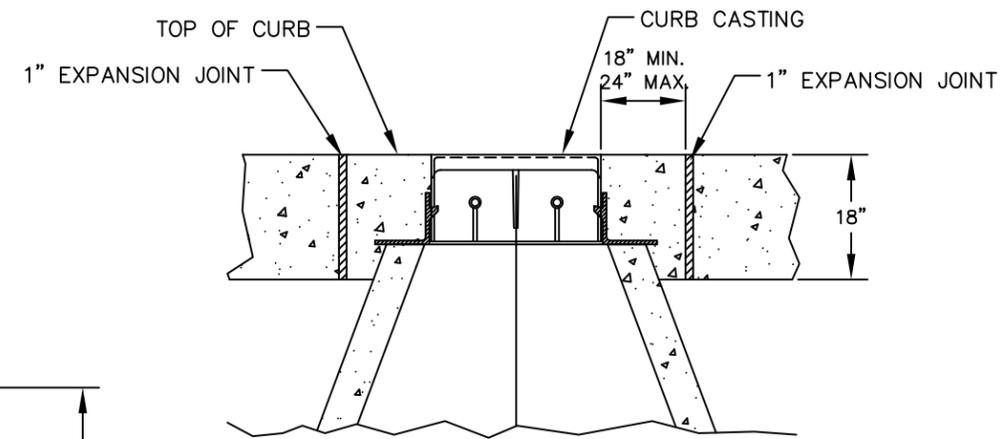
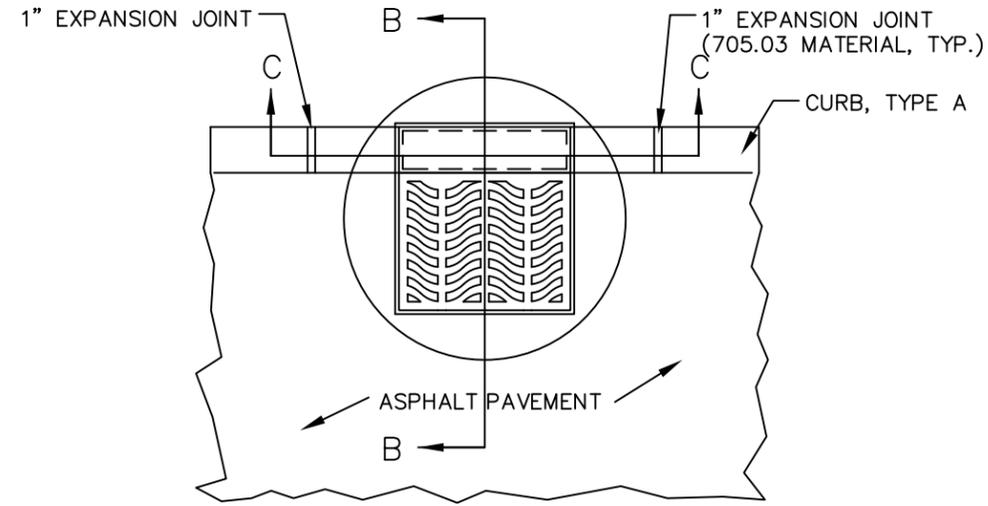
NOTE: THIS CASTING IS NOT TO BE USED  
WITH "TYPE F" MOUNTABLE CURB.



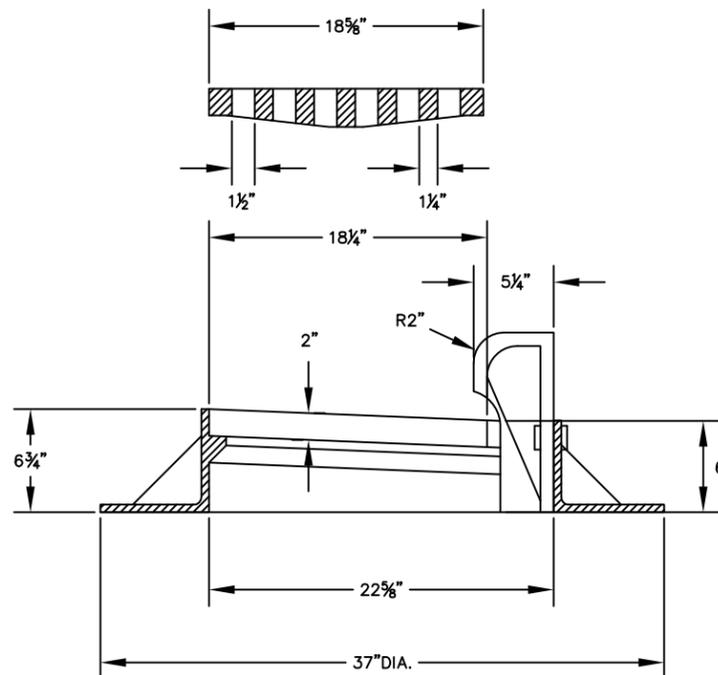
SECTION A-A



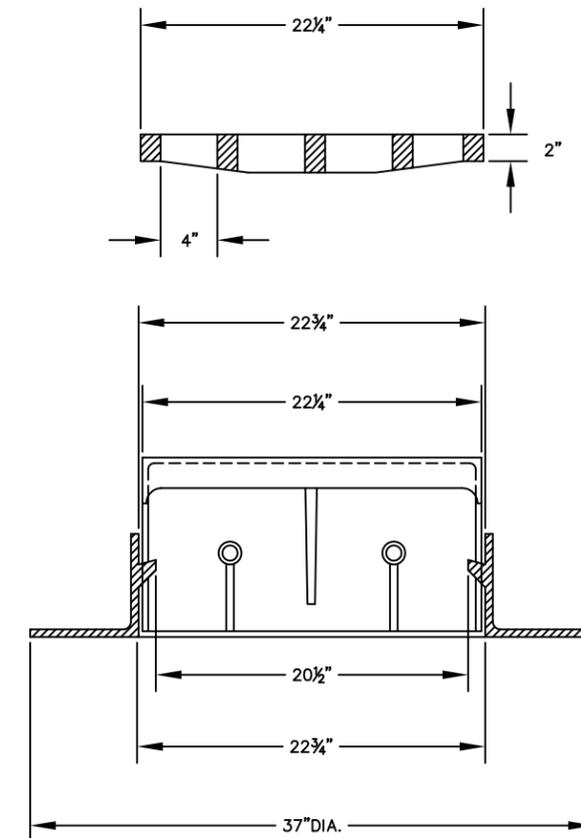
SECTIONAL ELEVATION



SECTION C-C



SECTION B-B



SECTION C-C

### NOTES

**CASTINGS:** THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN.

THE FOLLOWING TEXT SHALL BE CAST INTO THE TOP OF THE CURB CASTING:

**"DUMP NO WASTE" AND "DRAINS TO WATERWAY"**

TEXT SHALL BE PRINTED IN BOLD, CAPITAL LETTERS WITH A MINIMUM HEIGHT OF 3/4". "WATERWAY" MAY BE SUBSTITUTED WITH "STREAM", "RIVER", "LAKE", ETC. ACTUAL PLACEMENT AND LOGO MAY VARY PER MANUFACTURER.

**BEARING AREAS:** THE FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING.

**WALLS:** WHEN USED IN PLACE OF CONCRETE, BRICK SIDE WALLS SHALL BE 8" NOMINAL THICKNESS.

**PRECAST CONSTRUCTION:** CONCRETE SHALL MEET THE REQUIREMENTS OF CMS 706.13. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

**OPENINGS:** PIPE OPENINGS SHALL BE THE O.D. OF THE PIPE BEING SUPPLIED PLUS 2" WHEN FABRICATED OR FIELD CUT. FILL ANY VOIDS PER CMS 601.

**DEPTH:** STRUCTURE SHALL BE CONSTRUCTED SO THAT THE MINIMUM DEPTH FROM T/C TO TOP OF CONDUIT IS FOUR FEET (4').

**BLOCKOUTS:** BLOCKOUTS SHALL BE PAVED WITH CLASS QC1 CONCRETE IN CURB AND GUTTER AND PAID FOR AS A PART OF THE CURB AND GUTTER WITH NO DEDUCTION IN CURB AND GUTTER QUANTITIES BECAUSE OF THE CASTINGS.

**STEPS:** STEPS SHALL BE PROVIDED WHERE THE DEPTH EXCEEDS 6" AND SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 611 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

**PAYMENT:** ALL MATERIALS AND LABOR, INCLUDING EXCAVATION AND BACKFILLING, SHALL BE PAID UNDER FOR ITEM 611 TYPE A-1 CATCH BASIN.

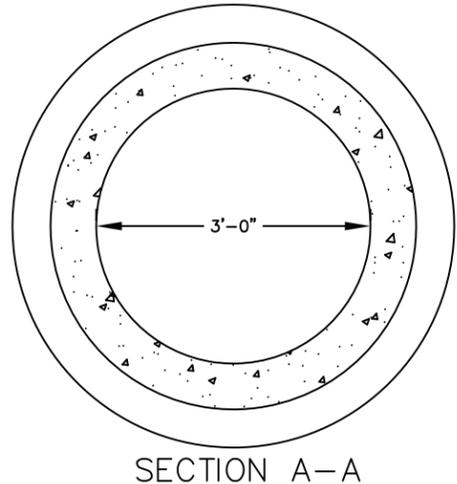
04/17/07  
11/25/13  
02/06/14  
03/11/15

TYPE A-1 CATCH BASIN

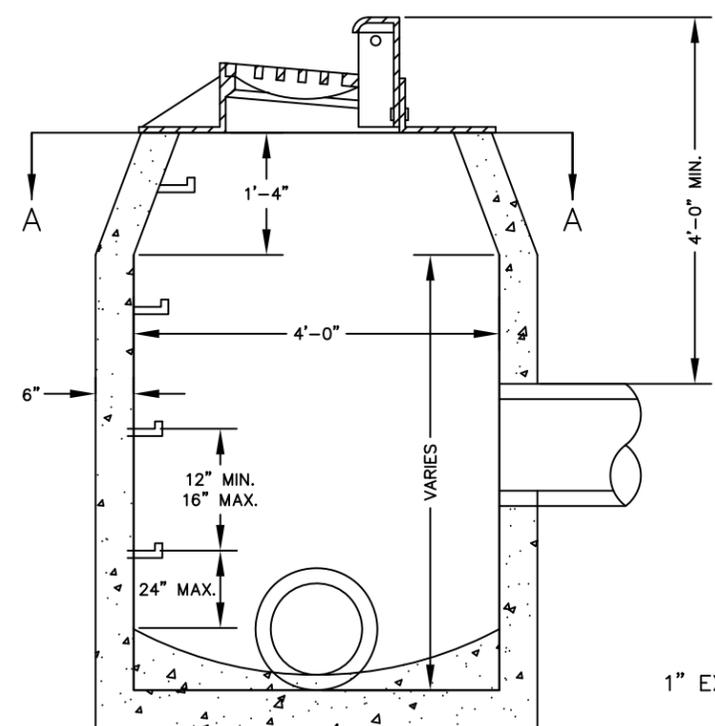
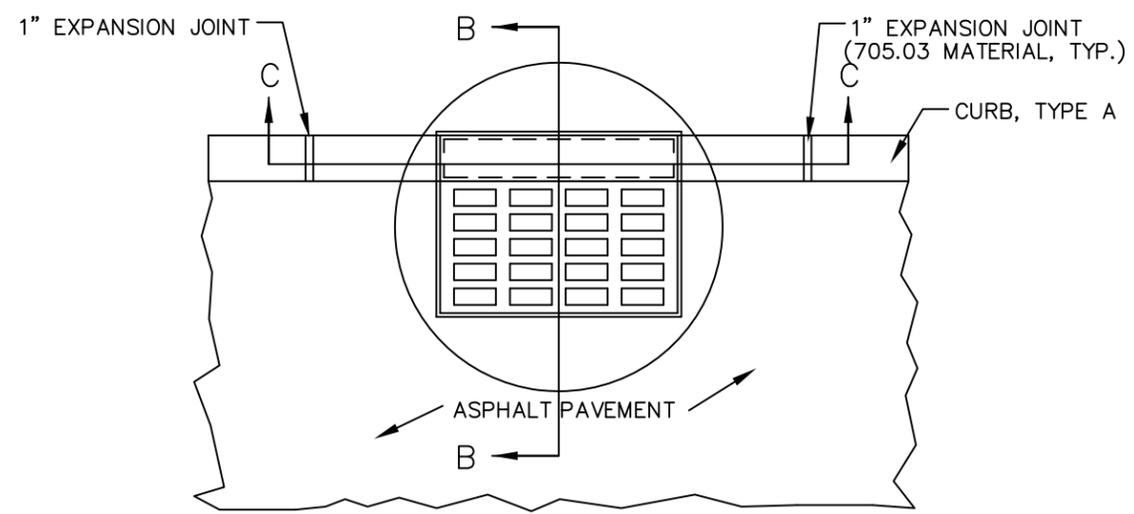
LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

CB-1

12 26



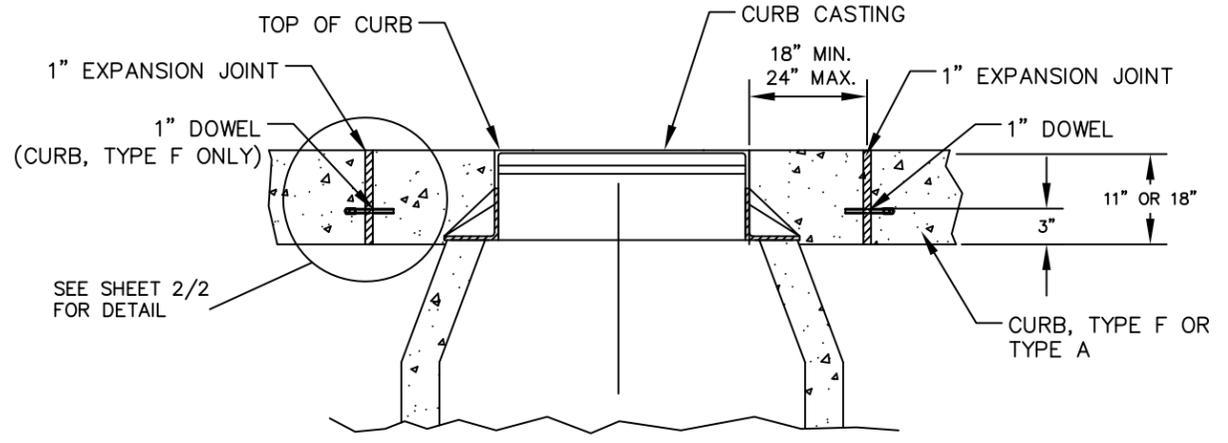
SECTION A-A



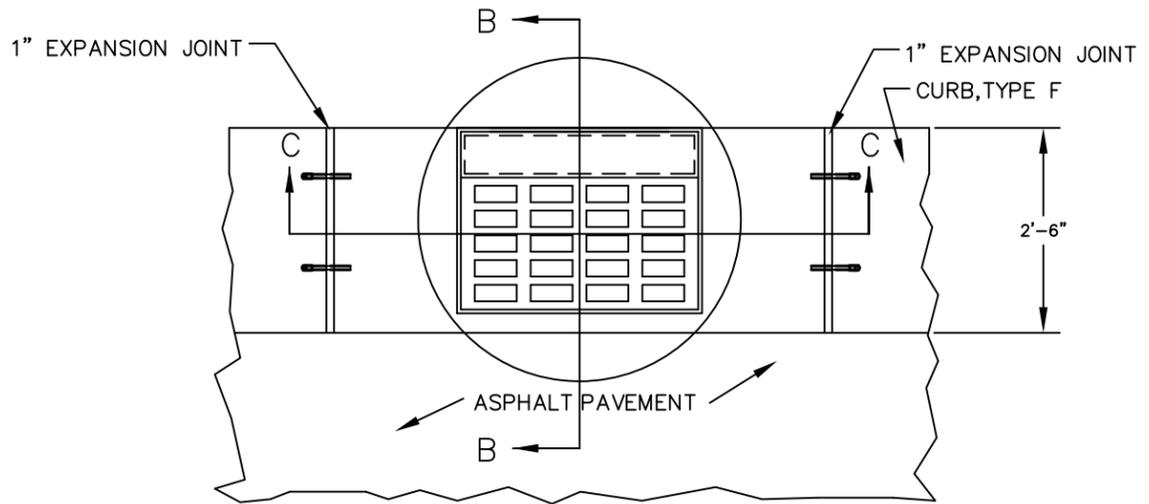
SECTIONAL ELEVATION  
CURB INLET CASTING

A-2 (USE WITH CURB, TYPE A)  
NEENAH R-3246-F, AS SHOWN, EAST JORDAN 7037 WITH M2 GRATE & T1 BACK, OR EQUAL

A-4 (USE WITH CURB, TYPE F)  
NEENAH R-3246-E, AS SHOWN, EAST JORDAN 7037 WITH M2 GRATE & T2 BACK, OR EQUAL



SECTION C-C



TYPE A-2/A-4 CATCH BASIN

LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

CB-2

# NOTES

**CASTINGS:** THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN.

THE FOLLOWING TEXT SHALL BE CAST INTO THE TOP OF THE CURB CASTING:

**"DUMP NO WASTE" AND "DRAINS TO WATERWAY"**

TEXT SHALL BE PRINTED IN BOLD, CAPITAL LETTERS WITH A MINIMUM HEIGHT OF 3/4". "WATERWAY" MAY BE SUBSTITUTED WITH "STREAM", "RIVER", "LAKE", ETC. ACTUAL PLACEMENT AND LOGO MAY VARY PER MANUFACTURER.

**BEARING AREAS:** THE FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING.

**WALLS:** WHEN USED IN PLACE OF CONCRETE, BRICK SIDE WALLS SHALL BE 8" NOMINAL THICKNESS.

**PRECAST CONSTRUCTION:** CONCRETE SHALL MEET THE REQUIREMENTS OF CMS 706.13. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

**OPENINGS:** PIPE OPENINGS SHALL BE THE O.D. OF THE PIPE BEING SUPPLIED PLUS 2" WHEN FABRICATED OR FIELD CUT. FILL ANY VOIDS PER CMS 601.

**DEPTH:** STRUCTURE SHALL BE CONSTRUCTED SO THAT THE MINIMUM DEPTH FROM T/C TO TOP OF CONDUIT IS FOUR FEET (4').

**DOWELS:** FOUR 1"x18" DOWELS ARE REQUIRED FOR CONCRETE GUTTER BLOCKOUT.

REFER TO CMS 451.08 B AND 709.13 FOR DOWEL SPECIFICATIONS.

APPLIES TO A-4 CATCH BASIN ONLY.

**BLOCKOUTS:** BLOCKOUTS SHALL BE PAVED WITH CLASS QC1 CONCRETE IN CURB AND GUTTER AND PAID FOR AS A PART OF THE CURB AND GUTTER WITH NO DEDUCTION IN CURB AND GUTTER QUANTITIES BECAUSE OF THE CASTINGS.

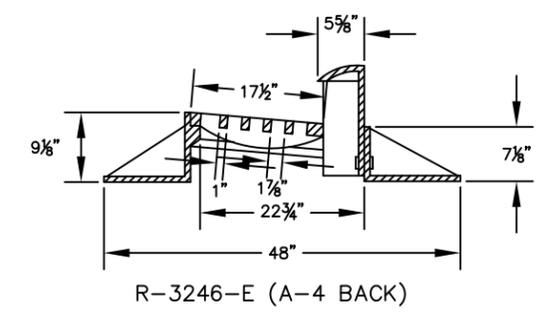
**STEPS:** STEPS SHALL BE PROVIDED WHERE THE DEPTH EXCEEDS 6' AND SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 611 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

**PAYMENT:** ALL MATERIALS AND LABOR, INCLUDING EXCAVATION AND BACKFILLING, SHALL BE PAID FOR UNDER ITEM 611 TYPE A-2 OR A-4 CATCH BASIN.

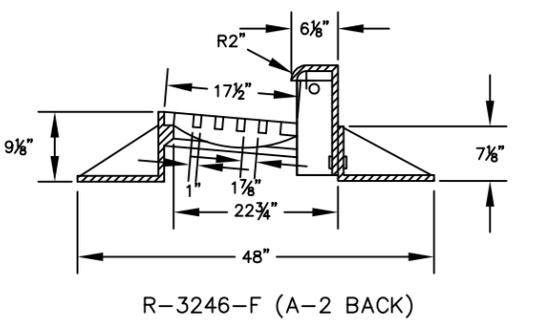
TYPE A-2/A-4 CATCH BASIN

LUCAS COUNTY STANDARD CONSTRUCTION DRAWINGS

CB-2

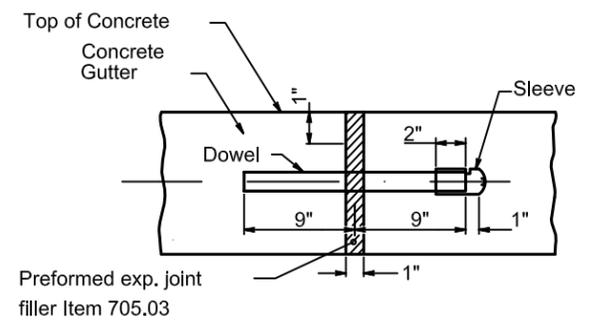


R-3246-E (A-4 BACK)



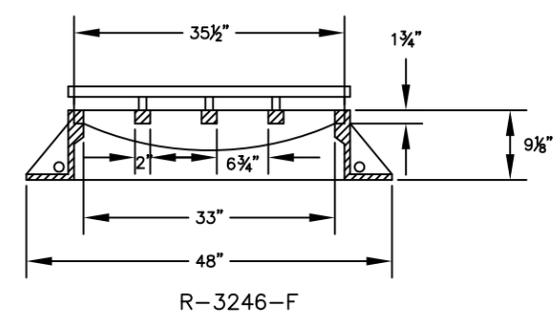
R-3246-F (A-2 BACK)

SECTION B-B



Preformed exp. joint filler Item 705.03

SECTION THROUGH EXP. JOINT



R-3246-F

SECTION C-C

# NOTES

**GRATE:** THE BI-DIRECTIONAL FLOW GRATE SHALL BE PROVIDED UNLESS THE CATCH BASIN IS LOCATED IN A FLOW THROUGH GUTTER. IN A FLOW THROUGH GUTTER A ONE DIRECTIONAL FLOW GRATE SHALL BE PROVIDED.

**CASTINGS:** THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN.

THE FOLLOWING TEXT SHALL BE CAST INTO THE TOP OF THE CURB CASTING:

**"DUMP NO WASTE" AND "DRAINS TO WATERWAY"**

TEXT SHALL BE PRINTED IN BOLD, CAPITAL LETTERS WITH A MINIMUM HEIGHT OF 3/4". "WATERWAY" MAY BE SUBSTITUTED WITH "STREAM", "RIVER", "LAKE", ETC. ACTUAL PLACEMENT AND LOGO MAY VARY PER MANUFACTURER.

**BEARING AREAS:** THE FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING.

**WALLS:** WHEN USED IN PLACE OF CONCRETE, BRICK SIDE WALLS SHALL BE 8" NOMINAL THICKNESS.

**PRECAST CONSTRUCTION:** CONCRETE SHALL MEET THE REQUIREMENTS OF CMS 706.13. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

**OPENINGS:** PIPE OPENINGS SHALL BE THE O.D. OF THE PIPE BEING SUPPLIED PLUS 2" WHEN FABRICATED OR FIELD CUT. FILL ANY VOIDS PER CMS 601.

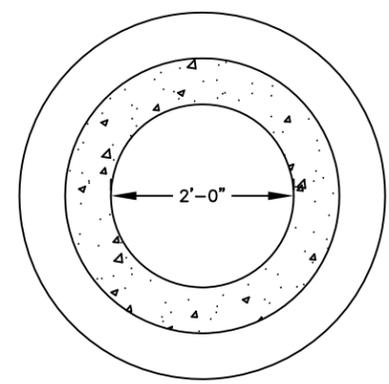
**DEPTH:** STRUCTURE SHALL BE CONSTRUCTED SO THAT THE MINIMUM DEPTH FROM T/C TO TOP OF CONDUIT IS FOUR FEET (4').

**DOWELS:** FOUR 1"x18" DOWELS ARE REQUIRED FOR CONCRETE GUTTER BLOCKOUT. REFER TO CMS 451.08 B AND 709.13 FOR DOWEL SPECIFICATIONS.

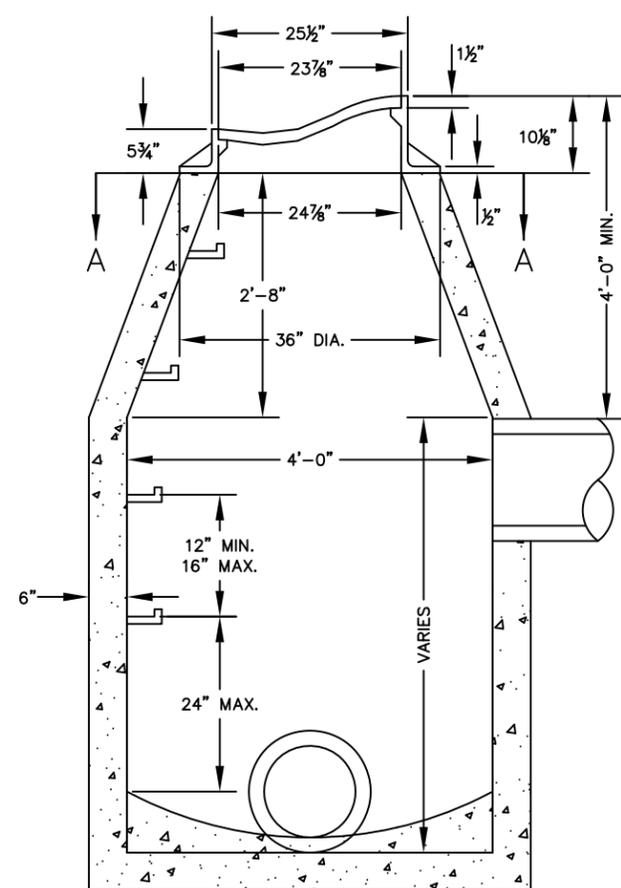
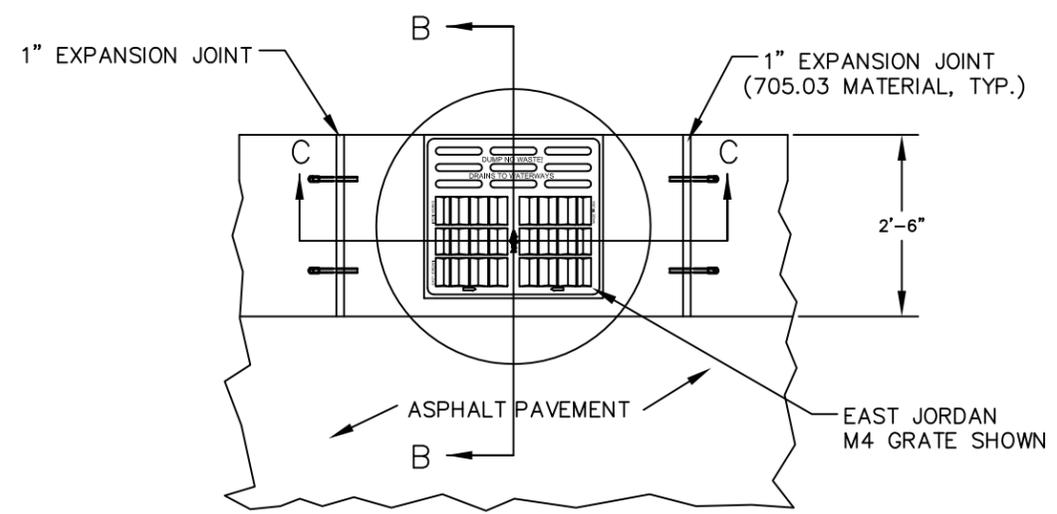
**BLOCKOUTS:** BLOCKOUTS SHALL BE PAVED WITH CLASS QC1 CONCRETE IN CURB AND GUTTER AND PAID FOR AS A PART OF THE CURB AND GUTTER WITH NO DEDUCTION IN CURB AND GUTTER QUANTITIES BECAUSE OF THE CASTINGS.

**STEPS:** STEPS SHALL BE PROVIDED WHERE THE DEPTH EXCEEDS 6' AND SHALL MEET THE REQUIREMENTS OF ITEM 611 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

**PAYMENT:** ALL MATERIALS AND LABOR, INCLUDING EXCAVATION AND BACKFILLING, SHALL BE PAID FOR UNDER ITEM 611 TYPE A-3 CATCH BASIN.



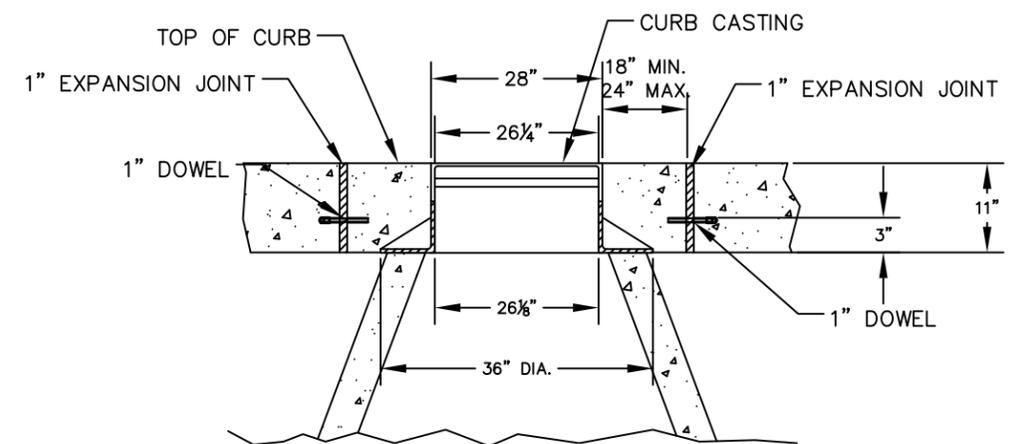
SECTION A-A



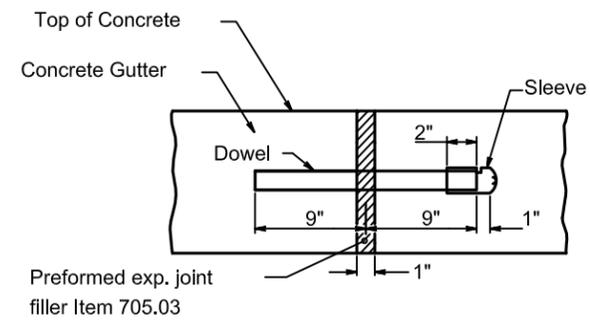
SECTIONAL ELEVATION  
 CURB INLET CASTING

NEENAH R-3501-L2,  
 EAST JORDAN 7495Z2 WITH  
 M1, M2 OR M4 GRATE, AS  
 SHOWN OR EQUAL

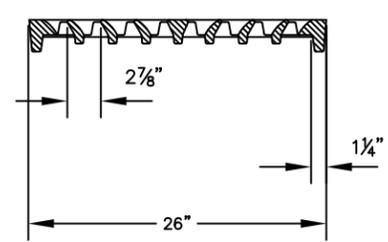
NOTE: THIS CASTING MUST BE USED WITH  
 "TYPE F" MOUNTABLE CURB.



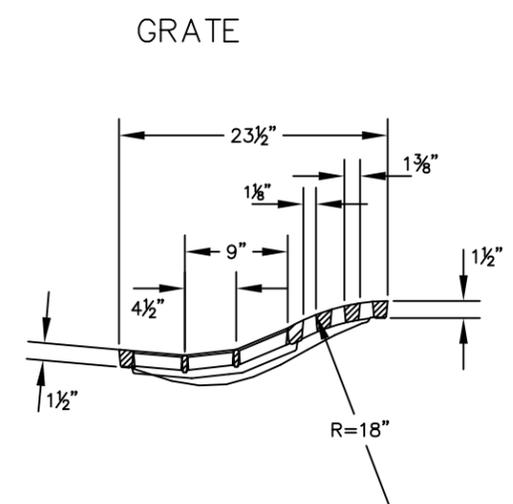
SECTION C-C



SECTION THROUGH EXP. JOINT



SECTION C-C



SECTION B-B

NOTES

1. TYPE 1 SIGNS ARE TO BE USED WHEN AT LEAST ONE APPROACH TO THE INTERSECTION HAS A SPEED LIMIT OF 35 MPH OR GREATER AND AT LEAST 1 INTERSECTING ROAD HAS 4 OR MORE LANES OF TRAVEL.
2. TYPE 2 SIGNS ARE TO BE USED WHEN AT LEAST ONE APPROACH TO THE INTERSECTION HAS A SPEED LIMIT OF 35 MPH OR GREATER AND THE INTERSECTING ROADS HAVE 2-3 LANES OF TRAVEL.
3. TYPE 3 SIGNS ARE TO BE USED WHEN ALL APPROACHES OF TRAFFIC TO THE INTERSECTION HAVE A SPEED LIMIT LESS THAN 35 MPH AND ALL ROADS HAVE LESS THAN 4 LANES OF TRAVEL.
4. HORIZONTAL SPACING BETWEEN OBJECTS MAY VARY DEPENDING ON THE REQUIRED WIDTH OF THE SIGN, BUT SHOULD NOT BE LESS THAN 1-INCH.
5. ALL TEXT KERNING SHOULD REMAIN AS CLOSE TO 100% AS POSSIBLE, BUT MAY BE REDUCED TO A MINIMUM OF 60% OF ORIGINAL TEXT KERNING.
6. ALL UNITS OF MEASURE ARE IN INCHES, UNLESS OTHERWISE NOTED.
7. WHEN A SIGN REQUIRES TWO ROWS OF TEXT, BOTH TEXT OBJECTS SHOULD BE "LEFT ALIGNED" RELATIVE TO EACH OTHER.
8. WHEN A SIGN REQUIRES TWO ROWS OF TEXT, THE TEXT OBJECT WITH THE GREATER LENGTH IS TO BE POSITIONED SO THAT THERE IS EQUAL DISTANCE ON EITHER SIDE OF THE TEXT OBJECT.
9. USE TYPE G REFLECTIVE SHEETING COMPLYING WITH ODOT CMS 730.19 FOR WHITE PORTIONS OF FACE ON SIGNS. USE GREEN EC FILM COMPLYING WITH ODOT CMS 730.23 FOR GREEN PORTIONS OF FACE ON SIGNS.
10. REFERENCE THE LUCAS COUNTY ENGINEER'S STANDARD CONSTRUCTION DRAWINGS FOR SIGN BLANK DETAIL.

\*NOTE: USE TWO LINES OF TEXT WHEN ONE LINE IS GREATER THAN 36".

03/06  
04/17/07  
02/29/12  
11/27/12  
11/25/13  
02/06/14

ROAD NAME SIGN DETAIL

FONTS: TYPE 1

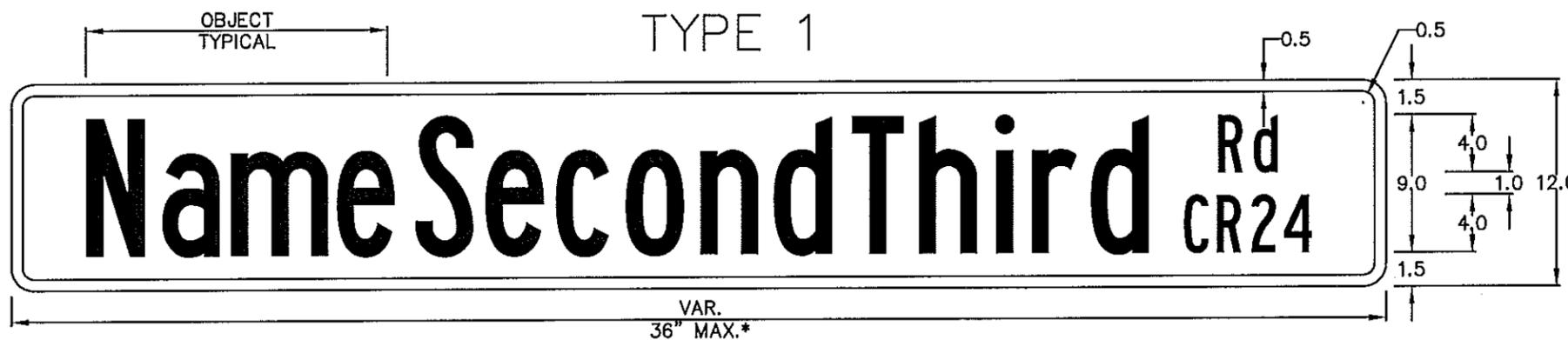
ROAD NAME: HIGHWAY, TYPE B  
ROAD EXTENSION: HIGHWAY, TYPE B  
ROAD NUMBER: HIGHWAY, TYPE B

FONTS: TYPE 2 & 3

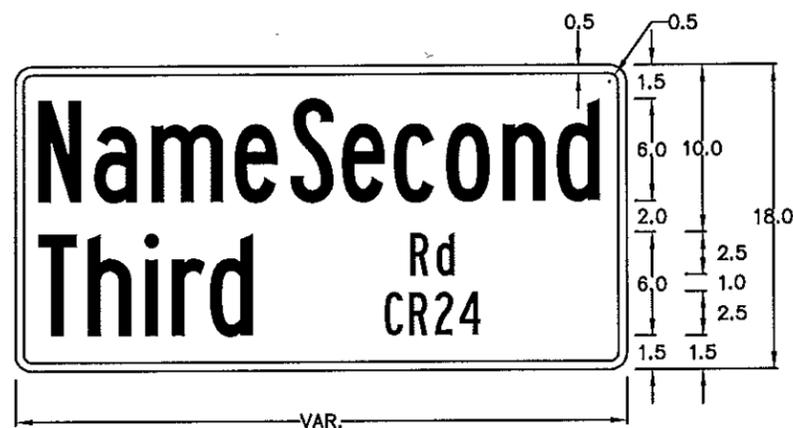
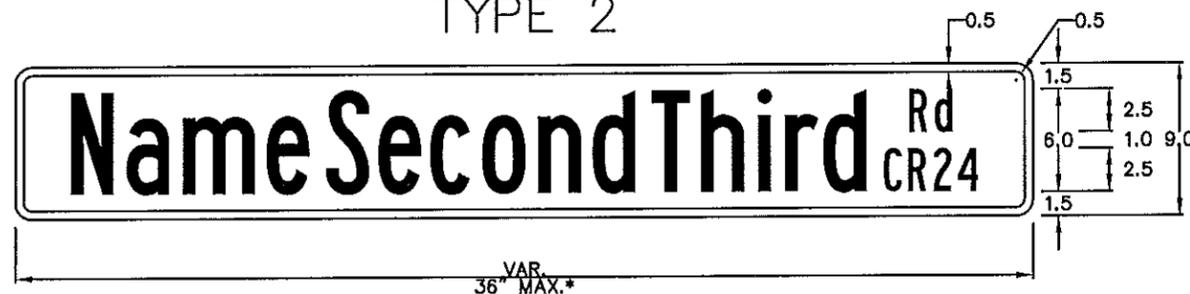
ROAD NAME: HIGHWAY, TYPE C  
ROAD EXTENSION: HIGHWAY, TYPE C  
ROAD NUMBER: HIGHWAY, TYPE C

COLORS:

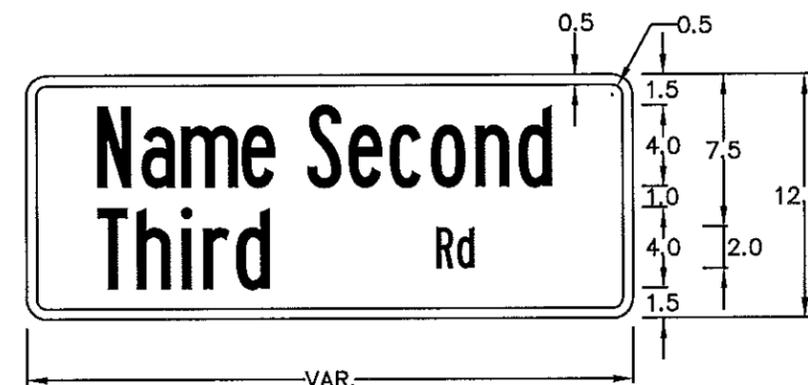
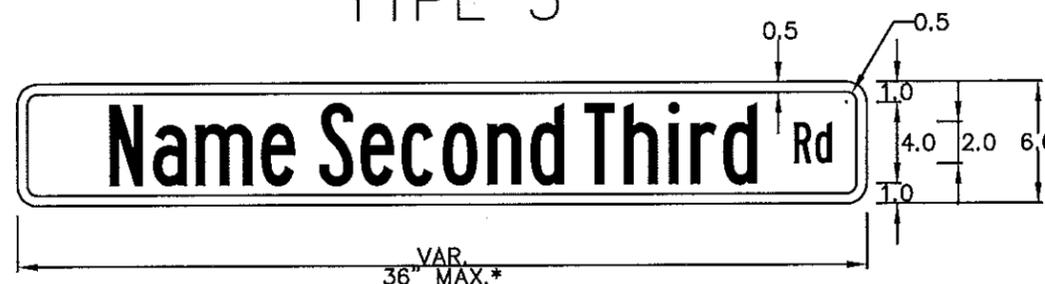
LEGEND: WHITE  
BACKGROUND: GREEN  
BORDER: WHITE



TYPE 2



TYPE 3



LUCAS COUNTY STANDARD CONSTRUCTION DRAWINGS

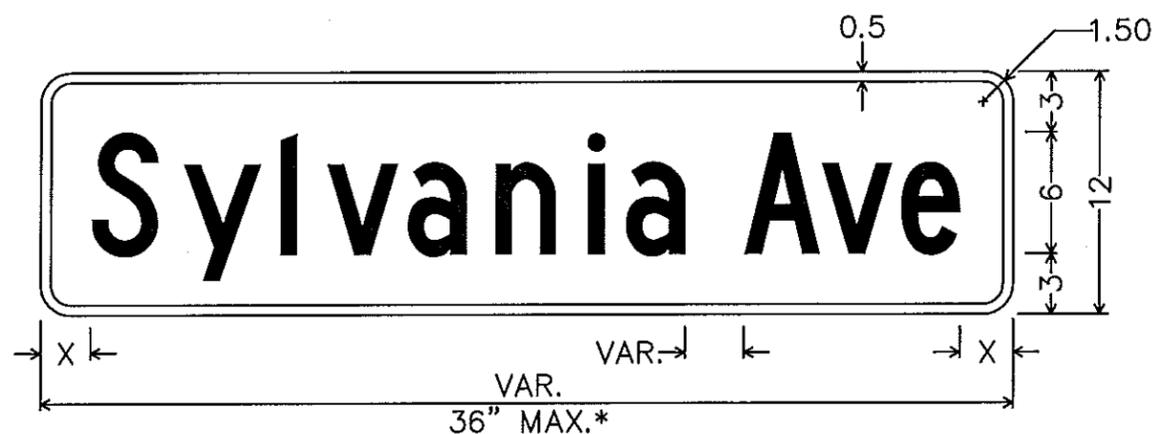
TR-1

NOTES

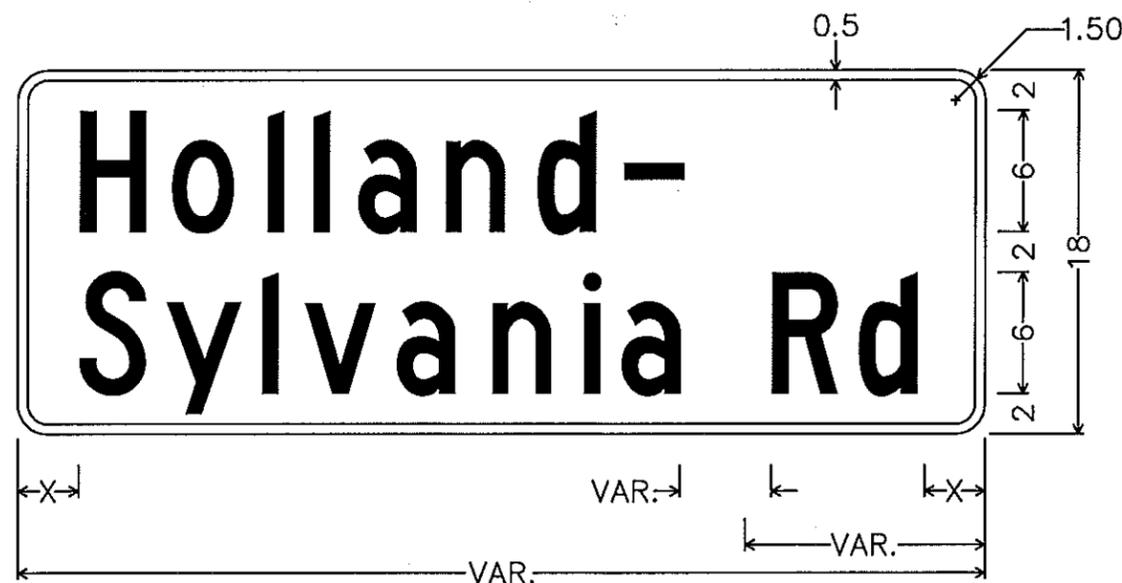
1. ADVANCED ROAD NAME SIGNS ARE TO BE INSTALLED WITH ADVANCED LANE CONTROL SIGNS AT A LOCATION CONSISTENT WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. SIGN WIDTH SHOULD MATCH THE WIDTH OF THE ADVANCED LANE CONTROL SIGN IT IS TO BE INSTALLED ABOVE. THIS MAY REQUIRE REDUCING OBJECT SPACING OR TEXT KERNING.
3. THE ROAD EXTENSION ABBREVIATION SHOULD BE INCLUDED ON THE SIGN, BUT MAY BE EXCLUDED WHEN SPACE IS RESTRICTED BY THE SIGN WIDTH AND INCLUSION OF THE ROAD EXTENSION ABBREVIATION WOULD REQUIRE A REDUCTION IN FONT SIZE.
4. ALL ROAD EXTENSION ABBREVIATIONS SHALL BE CONSISTENT WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
5. HORIZONTAL SPACING BETWEEN OBJECTS MAY VARY DEPENDING ON THE REQUIRED WIDTH OF THE SIGN, BUT SHOULD NOT BE LESS THAN 1-INCH.
6. ALL TEXT KERNING SHOULD REMAIN AS CLOSE TO 100% AS POSSIBLE, BUT MAY BE REDUCED TO A MINIMUM OF 60% OF ORIGINAL TEXT KERNING.
7. ALL UNITS OF MEASURE ARE IN INCHES, UNLESS OTHERWISE NOTED.
8. WHEN A SIGN REQUIRES TWO ROWS OF TEXT, BOTH TEXT OBJECTS SHOULD BE "LEFT ALIGNED" RELATIVE TO EACH OTHER.
9. THE TEXT OBJECT IS TO BE POSITIONED SO THAT THERE IS AN EQUAL DISTANCE (X) ON EITHER SIDE OF THE TEXT OBJECT.
10. WHEN A SIGN REQUIRES TWO ROWS OF TEXT, THE TEXT OBJECT WITH THE GREATER LENGTH IS TO BE POSITIONED SO THAT THERE IS EQUAL DISTANCE ON EITHER SIDE OF THE TEXT OBJECT.
11. USE TYPE G REFLECTIVE SHEETING COMPLYING WITH ODOT CMS 730.19 FOR WHITE PORTIONS OF FACE ON SIGNS. USE GREEN EC FILM COMPLYING WITH ODOT CMS 730.23 FOR GREEN PORTIONS OF FACE ON SIGNS.
12. REFERENCE THE LUCAS COUNTY ENGINEER'S STANDARD CONSTRUCTION DRAWINGS FOR SIGN BLANK DETAIL.

FONTS:

ROAD NAME: 6" TYPE C  
ROAD EXTENSION: 6" TYPE C

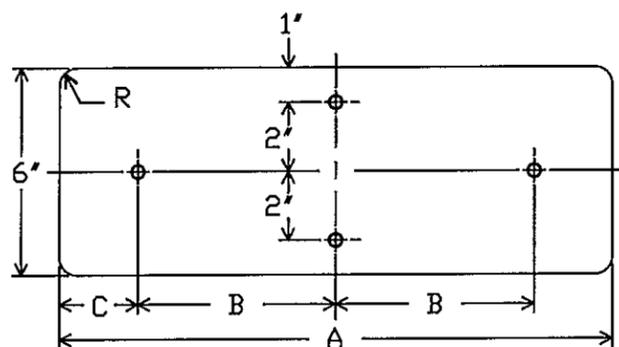


COLORS: LEGEND - WHITE  
BACKGROUND - GREEN  
BORDER - WHITE

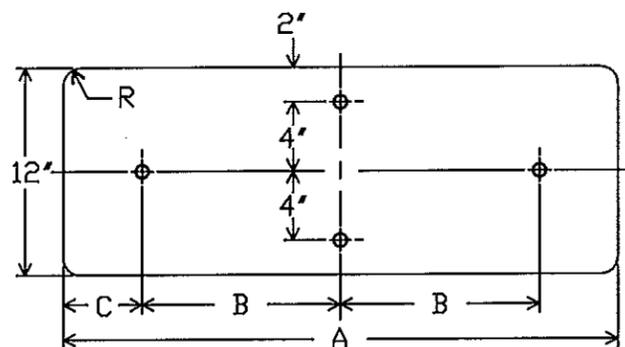


COLORS: LEGEND - WHITE  
BACKGROUND - GREEN  
BORDER - WHITE

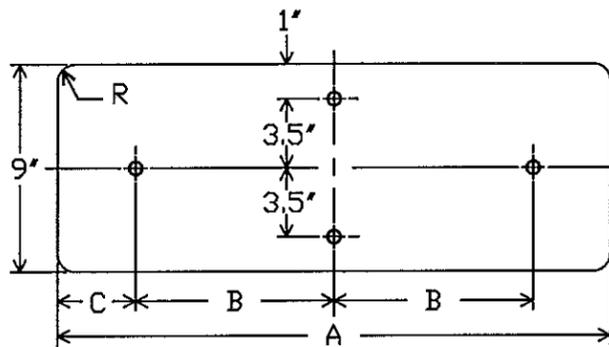
\*NOTE: USE TWO LINES OF TEXT WHEN ONE LINE IS GREATER THAN 36".



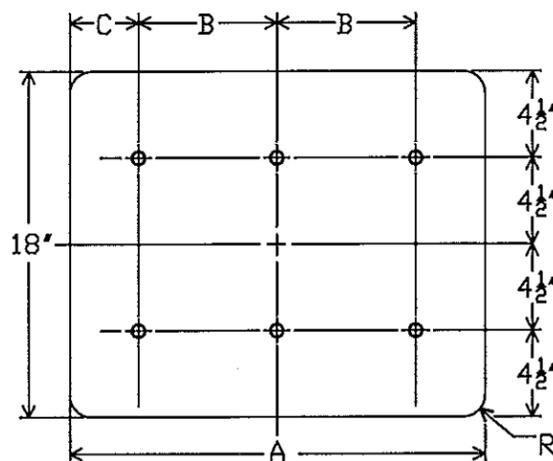
A	B	C	R	GAUGE	SQ.FT.
18	4.5	4.5	1.00	0.080	0.750
24	5.5	6.5	1.00	0.080	1.000
30	8.5	6.5	1.00	0.080	1.250
36	12	6	1.00	0.080	1.500
42	12	9	1.00	0.080	1.750



A	B	C	R	GAUGE	SQ.FT.
24	5.5	6.5	1.50	0.080	2.000
30	8.5	6.5	1.50	0.080	2.500
36	12	6	1.50	0.080	3.000
42	12	9	1.50	0.080	3.500
48	15	9	1.50	0.080	4.000



A	B	C	R	GAUGE	SQ.FT.
24	5.5	6.5	1.50	0.080	1.500
30	8.5	6.5	1.50	0.080	1.875
36	12	6	1.50	0.080	2.250
42	12	9	1.50	0.080	2.625
48	15	9	1.50	0.080	3.000



A	B	C	R	GAUGE	SQ.FT.
24	5.5	6.5	1.50	0.080	3.00
30	8.5	6.5	1.50	0.080	3.75
36	12	6	1.50	0.080	4.50
42	12	9	1.50	0.080	5.25
48	15	9	1.50	0.080	6.00

### NOTES

1. FOR EACH DETAIL SHOWN, ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
2. ALL BOLT HOLES SHALL BE 3/8" IN DIAMETER, AND MAY BE DRILLED OR PUNCHED TO FINISHED SIZE.
3. DIMENSIONS BETWEEN BOLT HOLES SHALL BE TO TOLERANCE OF +/- 1/32".
4. ALL RADIUS CORNERS ARE 1.5".
5. ALL ALUMINUM SHEETS AND PLATES SHALL BE IN ACCORDANCE WITH THE CURRENT OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

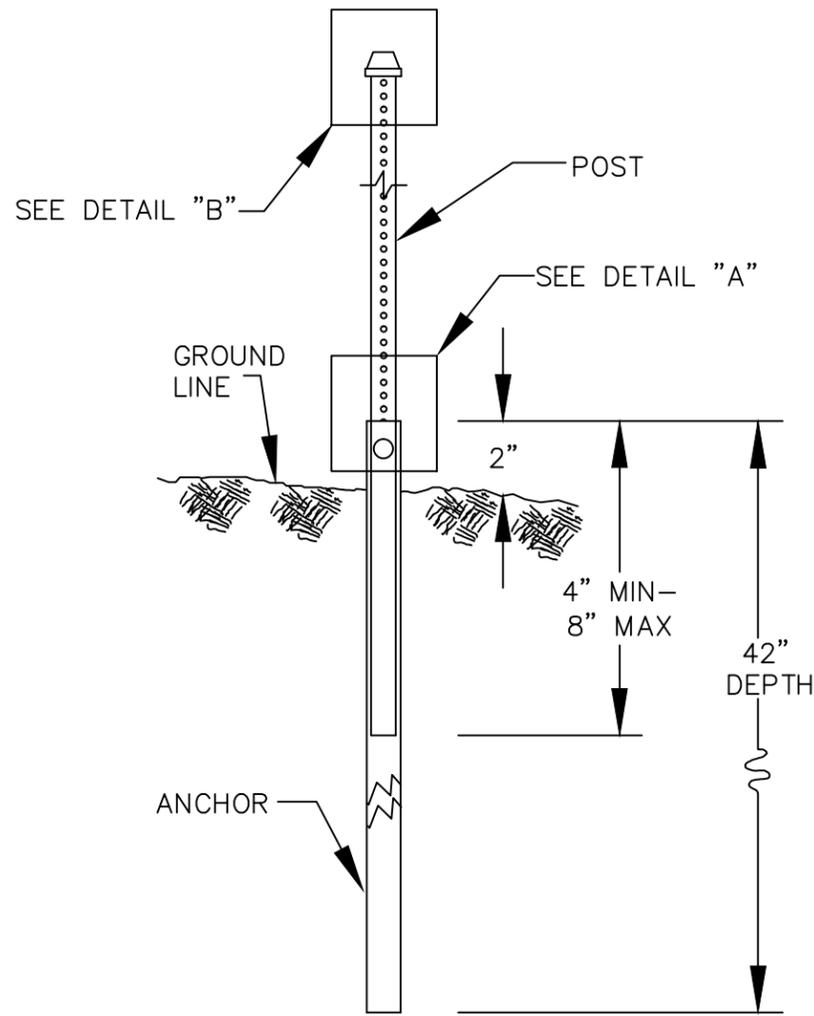
730.11 ALUMINUM SHEET AND PLATE.

FURNISH SHEETS FOR EXTRUSHEET PANELS ACCORDING TO ASTM B 209 (B 209M), 3003-H18, OR 5052-H38. FURNISH SHEETS FOR FLAT SHEET AND OVERLAY SIGNS, ACCORDING TO ASTM B 209 (B 209M), 3004-H38, 5052-H38, OR 6061-T6. FURNISH PLATES FOR SIGN SUPPORT STRUCTURES ACCORDING TO ASTM B 209 (B 209M), 6061-T6.

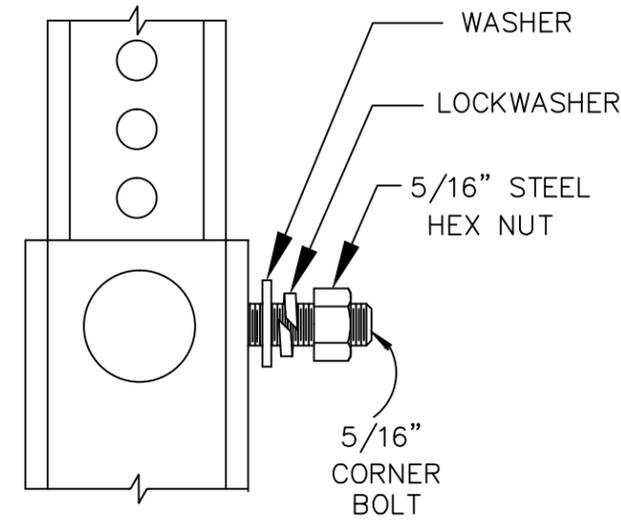
SIGN BLANK DETAIL

LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

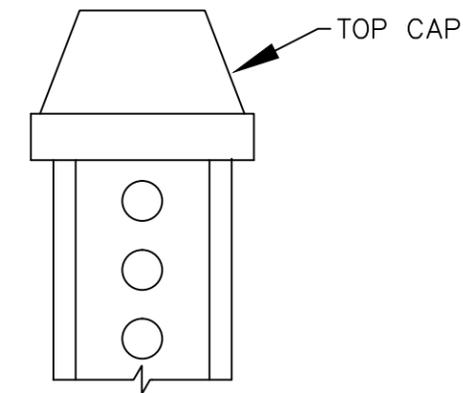
TR-3



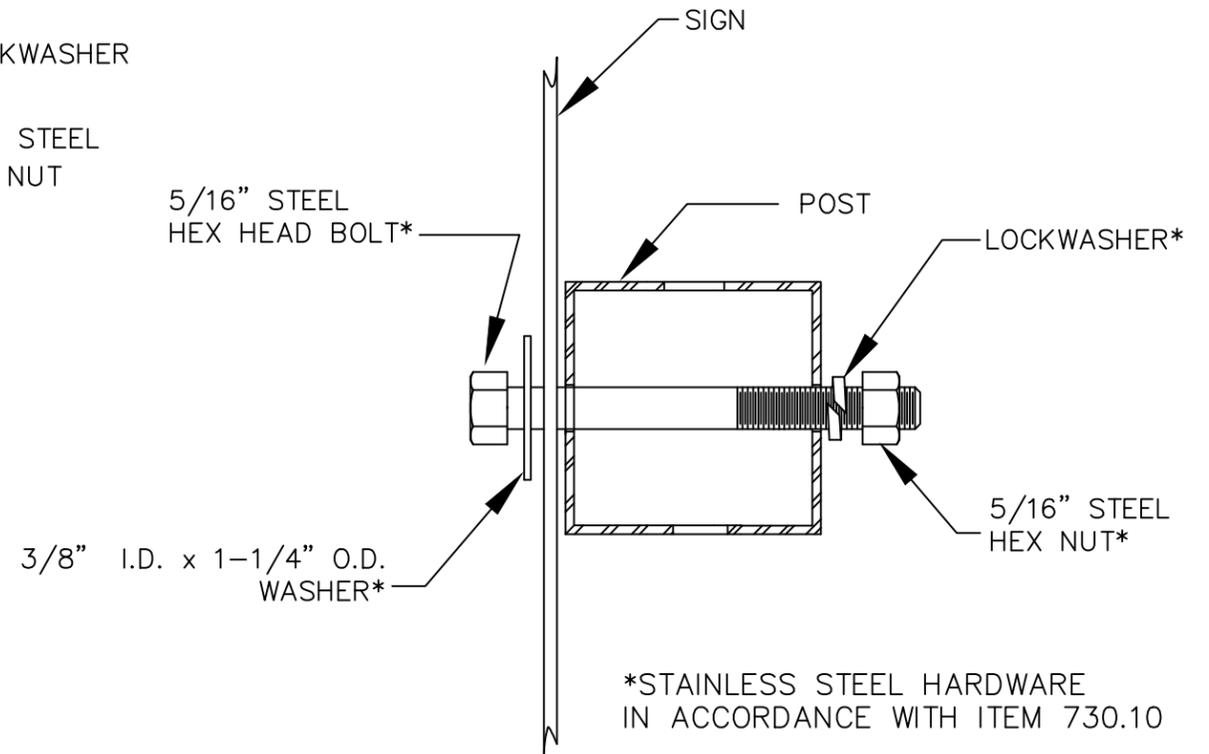
TYPICAL SQUARE POST ANCHOR  
 BASE INSTALLATION



DETAIL "A"



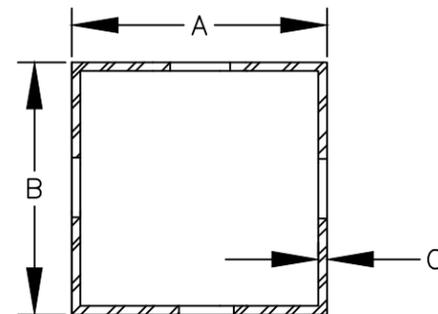
DETAIL "B"



SQUARE POST  
 SIGN ATTACHMENT DETAIL

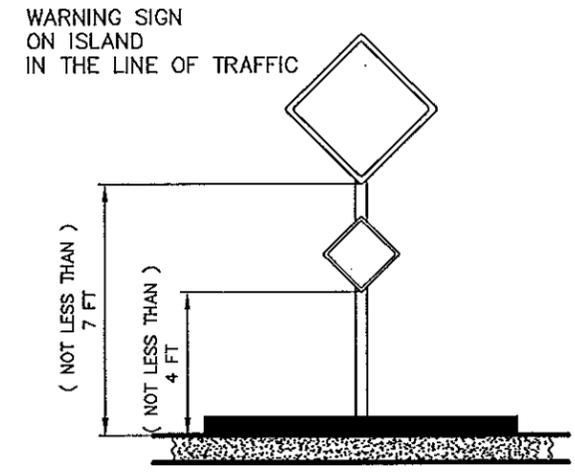
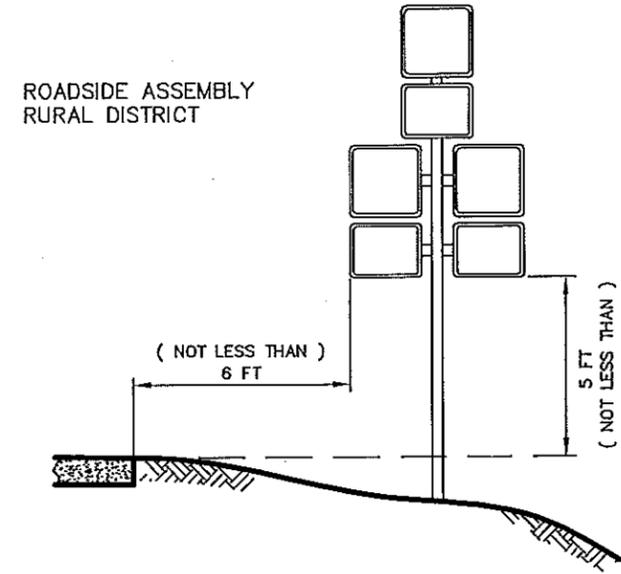
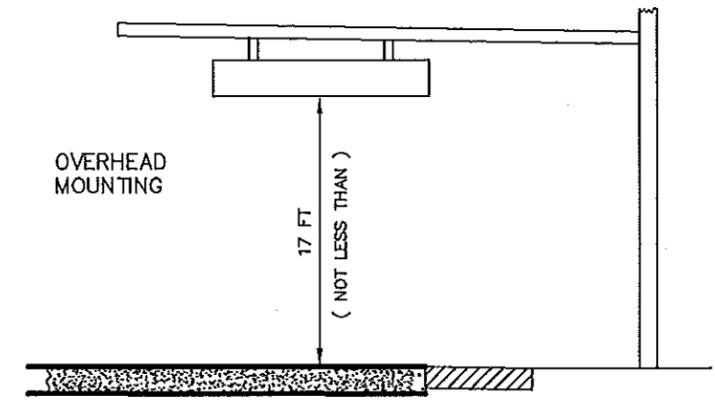
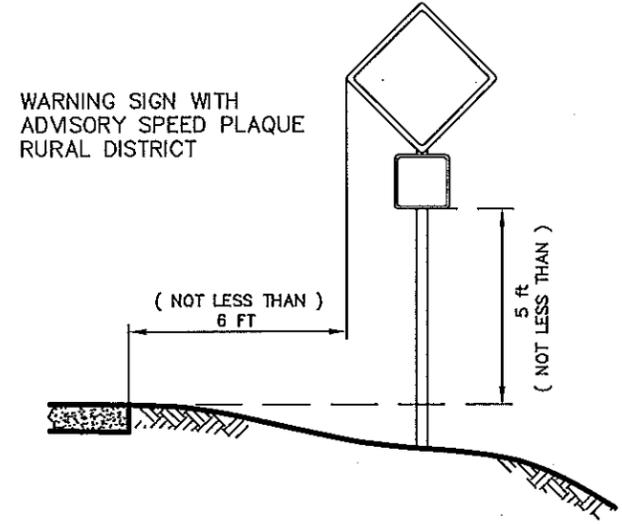
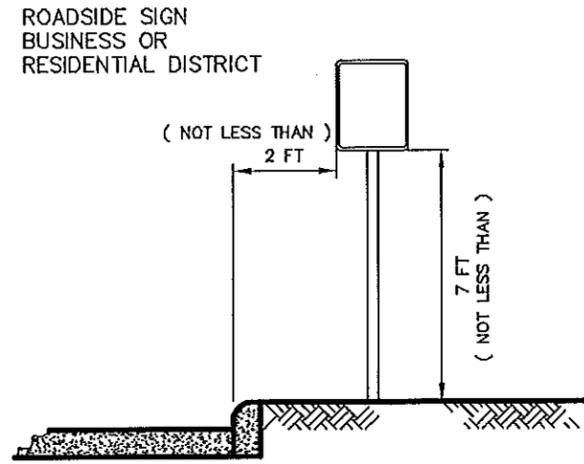
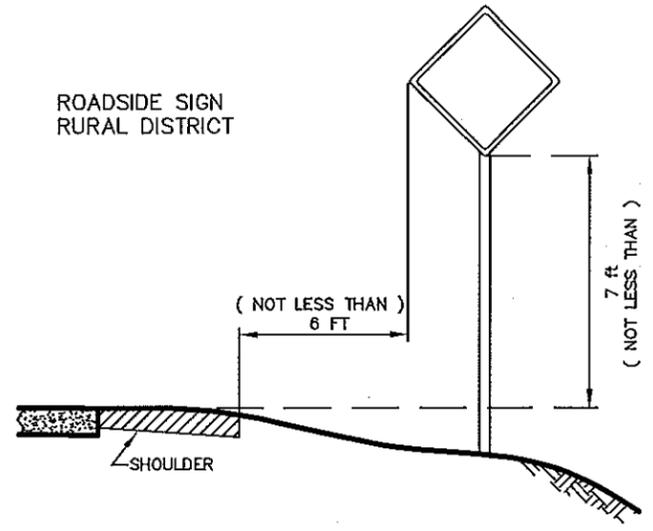
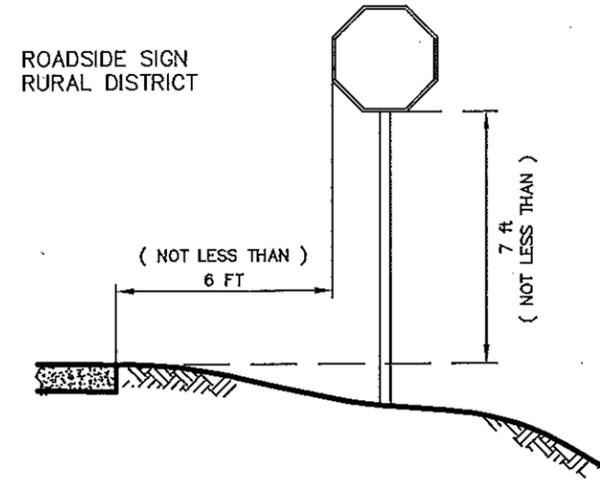
NOTES:

1. USE OF ANCHOR BASE IS REQUIRED IN LIEU OF SINGLE POST INSTALLATION.
2. ANCHOR SQUARE POST MAY HAVE DIE-CUT KNOCKOUTS OR OPEN HOLES.
3. SQUARE POST ABOVE GROUND LEVEL SHALL BE KNOCKOUT TYPE.
4. ITEMS PROVIDED SHALL COMPLY WITH THE CURRENT ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS ITEM 630.



TYPE S

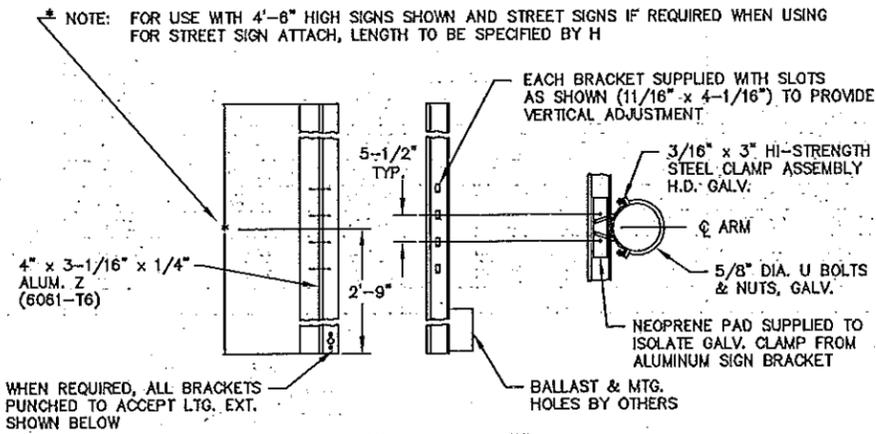
POST NO.	TYPE	POST DIMENSIONS (IN)			ANCHOR DIMENSIONS (IN)			NUMBER OF POSTS PERMITTED IN SEVEN FOOT PATH IN EXPOSED LOCATIONS
		A	B	C	A	B	C	
2	S	1.750	1.750	0.083	2.000	2.000	0.105	2
3	S	2.000	2.000	0.083	2.250	2.250	0.105	2
4	S	2.500	2.500	0.105	3.000	3.000	0.188	1



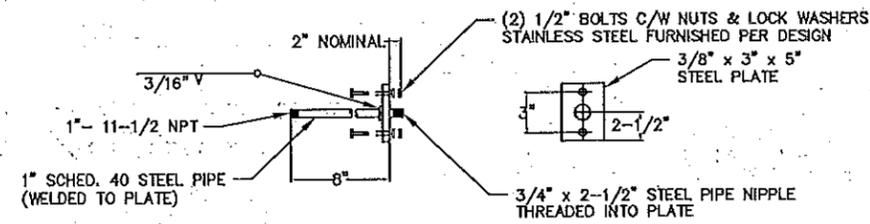
TYPICAL SIGN LOCATION DETAIL

LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

TR-5



SIGN BRACKET DETAIL



NOTE: PLASTIC THREAD PROTECTORS FURNISHED FOR ALL EXPOSED THREADS

NOTE: EXTENSION TO BE HOT DIP GALV. AFTER FABRICATION

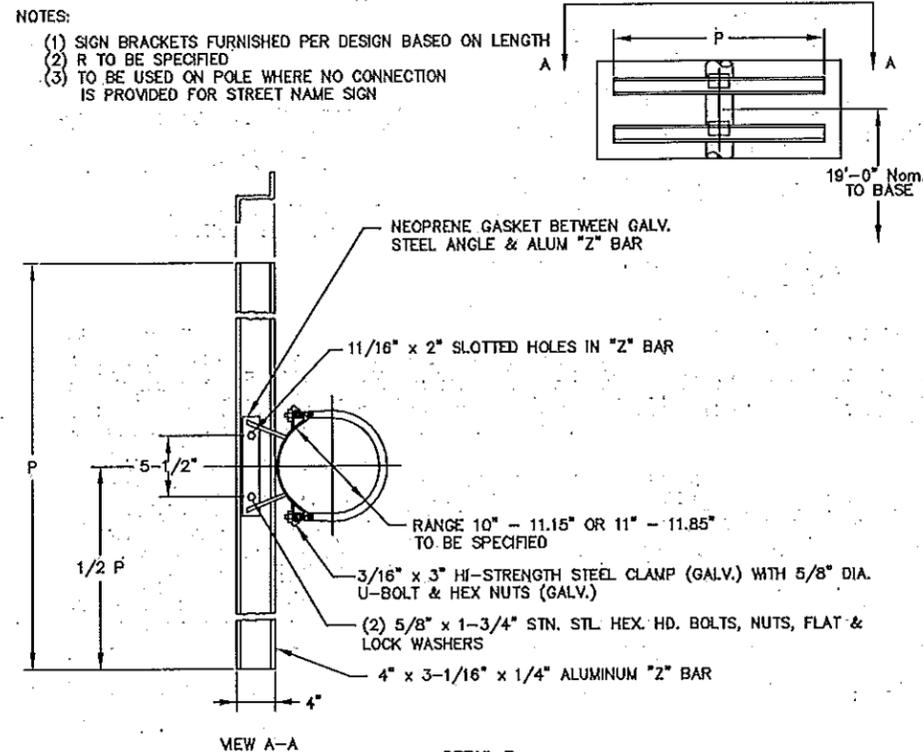
DESIGN NO.	"B"	EFFECTIVE SIGN HEIGHT
B-29	2'-9"	3' - 5'
B-33	3'-3"	5' - 6'-6"
B-43	4'-3"	7' - 10'

SIGN LTG. EXTENSION DETAIL

DETAIL A  
SIGN BRACKET AND LIGHTING EXTENSION DETAIL

NOTES:

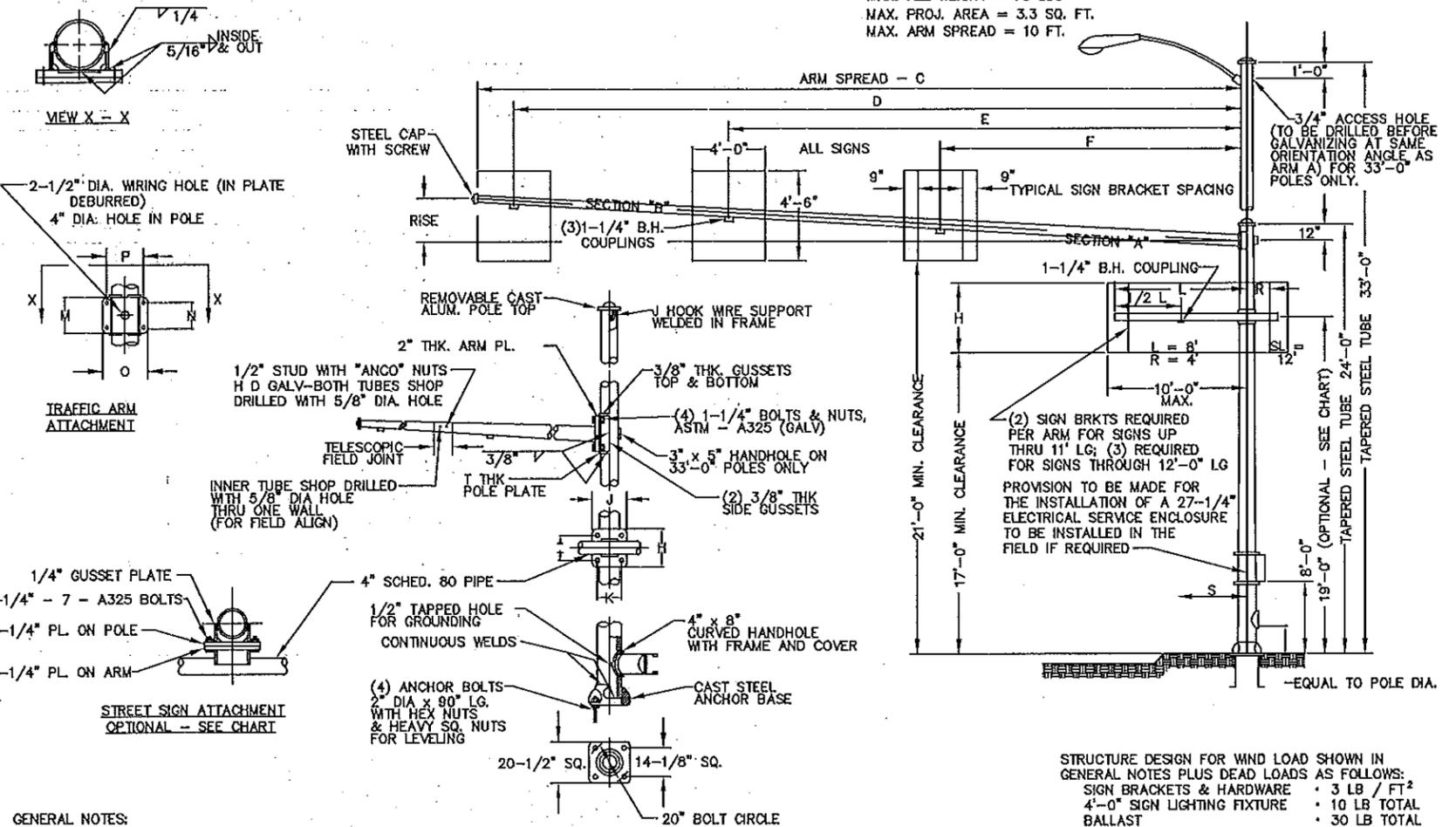
- (1) SIGN BRACKETS FURNISHED PER DESIGN BASED ON LENGTH
- (2) R TO BE SPECIFIED
- (3) TO BE USED ON POLE WHERE NO CONNECTION IS PROVIDED FOR STREET NAME SIGN



DETAIL B  
SIGN BRACKET ASSEMBLY

DESIGN NO'S.				POLE GA. & DIAMETER	TRAFFIC ARM					FOUND. TYPE			
33'-0" POLE		24'-0" POLE			ARM SIZES		TYPICAL DIMENSIONS						
STREET SIGN ATTACH.		STREET SIGN ATTACH.							RISE				
WITH	WITHOUT	WITH	WITHOUT			C	D	E	F	G	MIN.	MAX.	
85 LW	85 LO	85 SW	85 SO	7 & 7E - 13"	7&7E-9.0"x4.24"x34'-0"	34'	32'-0"	20'-6"	8'-6"		11"	22"	M
95 LW	95 LO	95 SW	95 SO	7 & 7E - 13"	7&7E-9.0"x3.96"x36'-0"	36'	34'-0"	22'-6"	10'-6"		11"	23"	M
105 LW	105 LO	105 SW	105 SO	OE - 14"	7&7E-10.0"x6.5"x25'-0"	7E- 7.0"x5.04"x14'-0"	38'	36'-0"	24'-6"	12'-6"	12"	24"	P
115 LW	115 LO	115 SW	115 SO	OE - 14"	7&7E-10.0"x6.5"x25'-0"	7E- 7.0"x4.76"x16'-0"	40'	38'-0"	26'-6"	14'-8"	13"	25"	P
125 LW	125 LO	125 SW	125 SO	OE - 14"	7&7E-10.0"x6.5"x25'-0"	7E- 7.0"x4.48"x18'-0"	42'	40'-0"	28'-6"	16'-6"	12"	28"	P
135 LW	135 LO	135 SW	135 SO	OE - 14"	7&7E-10.0"x6.5"x25'-0"	7E- 7.0"x4.48"x20'-0"	44'	42'-0"	30'-6"	18'-6"	13"	29"	P

STREET LIGHT LUMINAIRE BY OTHERS  
MAX. ALL WEIGHT = 75 LBS  
MAX. PROJ. AREA = 3.3 SQ. FT.  
MAX. ARM SPREAD = 10 FT.

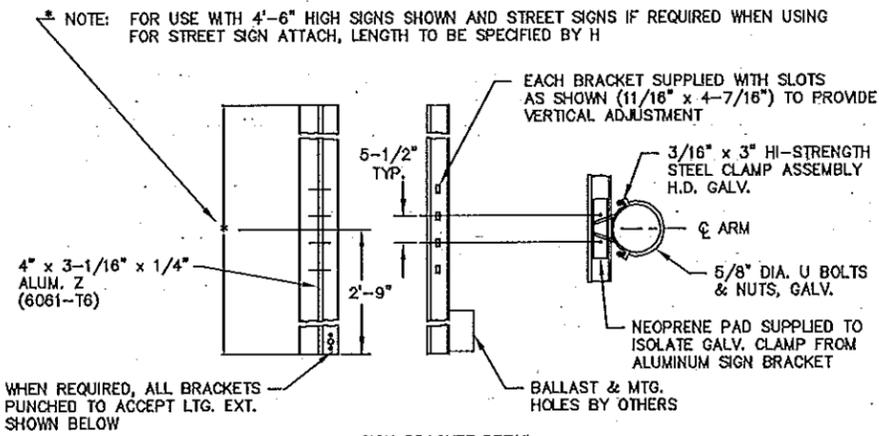


GENERAL NOTES:

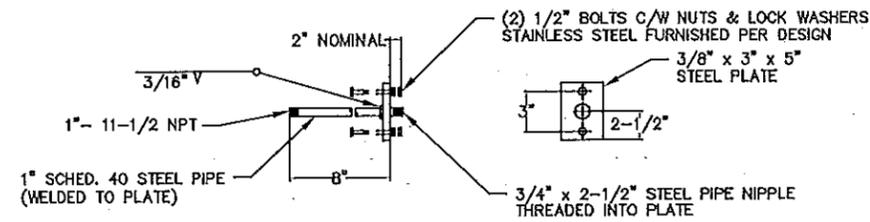
1. SIGN LIGHTING EXTENSION AND SIGN BRACKET DETAILS SHOWN ON DETAIL A
2. STRUCTURES ARE DESIGNED TO SUPPORT SIGN SIZES SHOWN PLUS LUMINAIRE & BALLAST WEIGHTS INDICATED IN ACCORDANCE WITH SPECIFICATION FOR DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS BY AASHO (1961) FOR A WIND PRESSURE OF 35 P.S.F.
3. L, R, SIGN HEIGHT (H), AND STREET SIGN LIGHTING BRACKET EXTENSION Z DIMENSIONS TO BE SPECIFIED \*
4. POLE DESIGNATIONS SHALL BE AS FOLLOWS, FOR EXAMPLE:  
95 LW B-33  
95 LW = POLE DESIGN NO. 95\_W  
B-33 = 3'-3" B DIMENSIONS FOR ALL SIGN LIGHTING BRACKET EXTENSIONS
5. THE BID ITEM FOR EACH CANTILEVER SIGN SUPPORT SHALL INCLUDE THE MAST ARM, AN UPRIGHT POLE SHAFT, AN ANCHOR BASE, POLE SHAFT EXTENSION FOR A LUMINAIRE MOUNTING (WHEN REQUIRED), FOUR ANCHOR BOLTS AND NUTS, SIGN BRACKET ASSEMBLY, (SIGN BRACKET AND CLAMPS) AND ANY OTHER HARDWARE, ATTACHMENTS, MODIFICATIONS, AND ACCESSORIES REQUIRED TO MAKE A COMPLETE INSTALLATION AS SHOWN HEREON
6. ALL UPRIGHT POLE SHAFTS AND MAST ARMS SHALL BE ROUND IN CROSS SECTION AND BE UNIFORMLY TAPERED FROM BUTT TO TIP APPROXIMATELY ONE INCH IN DIAMETER FOR EACH SEVEN LINEAL FEET IN LENGTH (0.14 INCHES PER FOOT)
7. SEE LUCAS COUNTY ENGINEER'S STANDARD CONSTRUCTION DRAWING POLE AND PEDESTAL FOUNDATION DETAILS.
8. L + R = STREET SIGN LENGTH, (SL)

STREET SIGN ATTACHMENT					TRAFFIC ARM					
POLE DIA.	H	I	J	K	ARM DIA.	M	N	O	P	T
7 & 7E - 13"	11"	8-1/2"	17"	14-3/8"	7 & 7E - 10"	21"	11"	19-1/2"	15-1/2"	2"
OE - 14"	12"	9-1/2"	18"	15-3/8"	7 & 7E - 9"	19"	9"	18"	14"	1-1/4"

STRUCTURE DESIGN FOR WIND LOAD SHOWN IN GENERAL NOTES PLUS DEAD LOADS AS FOLLOWS:  
SIGN BRACKETS & HARDWARE • 3 LB / FT<sup>2</sup>  
4'-0" SIGN LIGHTING FIXTURE • 10 LB TOTAL  
BALLAST • 30 LB TOTAL



SIGN BRACKET DETAIL



SIGN LTG. EXTENSION DETAIL

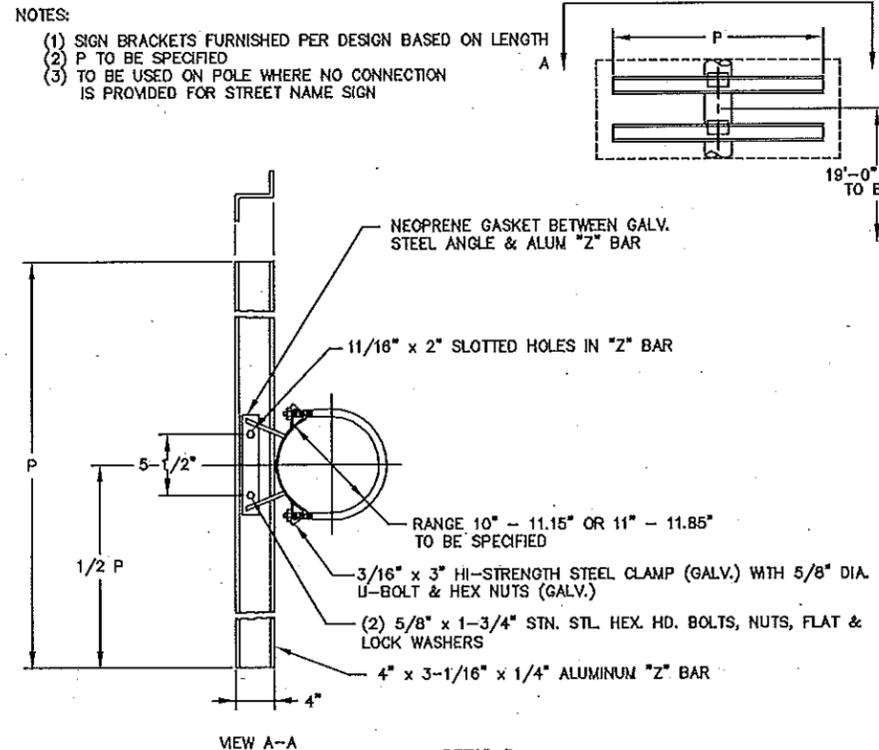
DETAIL A  
SIGN BRACKET AND LIGHTING EXTENSION DETAIL

DESIGN NO.	"B"	EFFECTIVE SIGN HEIGHT
B-29	2'-9"	3' - 5'
B-33	3'-3"	5' - 6'-6"
B-43	4'-3"	7' - 10'-6"

NOTE: PLASTIC THREAD PROTECTORS FURNISHED FOR ALL EXPOSED THREADS

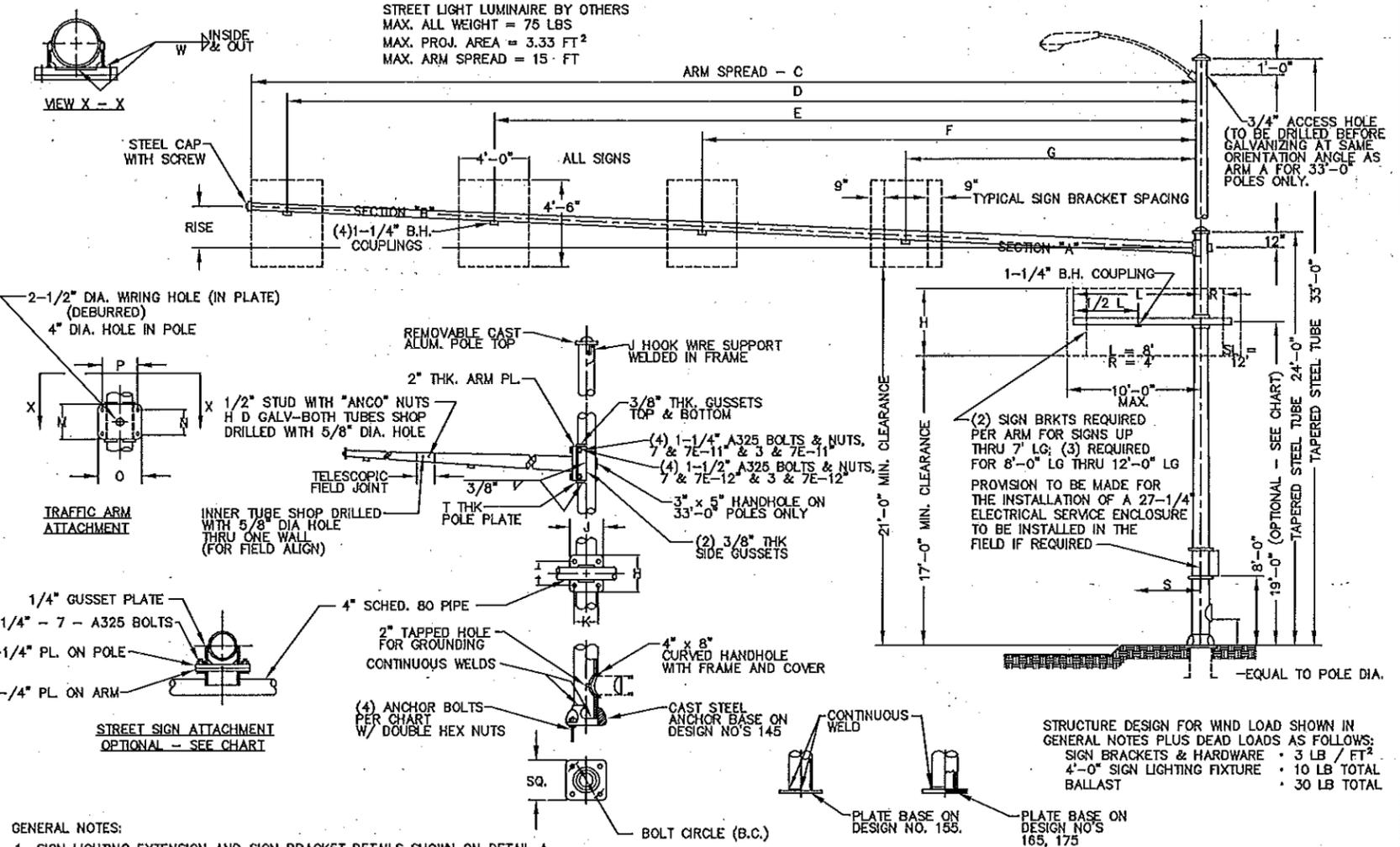
NOTE: EXTENSION TO BE HOT DIP GALV. AFTER FABRICATION

- NOTES:
- (1) SIGN BRACKETS FURNISHED PER DESIGN BASED ON LENGTH
  - (2) P TO BE SPECIFIED
  - (3) TO BE USED ON POLE WHERE NO CONNECTION IS PROVIDED FOR STREET NAME SIGN



DETAIL B  
SIGN BRACKET ASSEMBLY

DESIGN NO'S.				POLE GA. & DIAMETER	TRAFFIC ARM							FOUND. TYPE		
33'-0" POLE		24'-0" POLE			ARM SIZES		TYPICAL DIMENSIONS			RISE				
STREET SIGN ATTACH. WITH		STREET SIGN ATTACH. WITHOUT				C	D	E	F	G	MIN.	MAX.		
145 LW	145 LO	145 SW	145 SO	OE - 15"	7&7E-11.0"x7.5"x25'-0"	7E- 8.0"x4.92"x22'-0"	46'	44'	34'	22'	10'	15"	29"	Q
155 LW	155 LO	155 SW	155 SO	OE - 16.5"	7&7E-12.0"x8.47"x25'-3"	7E- 9.0"x5.64"x24'-0"	48'	46'	36'	24'	12'	16"	30"	R
165 LW	165 LO	165 SW	165 SO	7 & 7E - 16.5"	3&7E-12.0"x8.47"x25'-3"	3E- 9.14"x5.50"x26'-0"	50'	48'	38'	26'	14'	17"	32"	S
175 LW	175 LO	175 SW	175 SO	7 & 7E - 16.5"	3&7E-12.0"x8.47"x25'-3"	3E- 9.14"x5.22"x28'-0"	52'	50'	40'	28'	16'	17"	32"	S

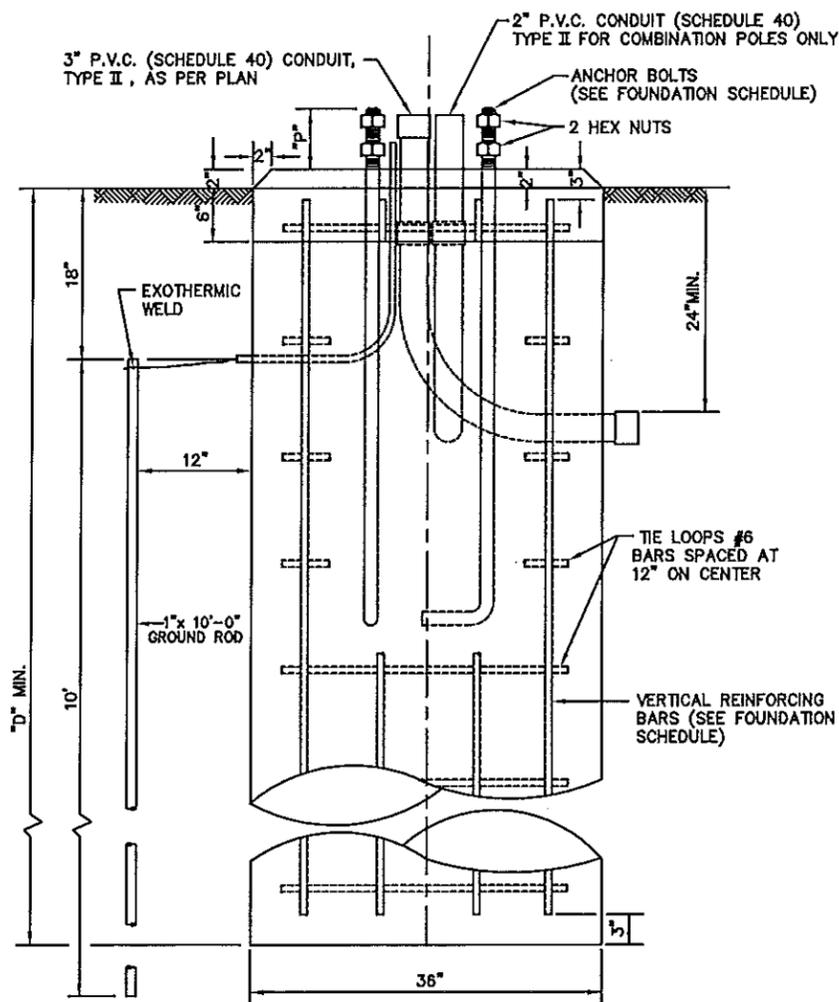
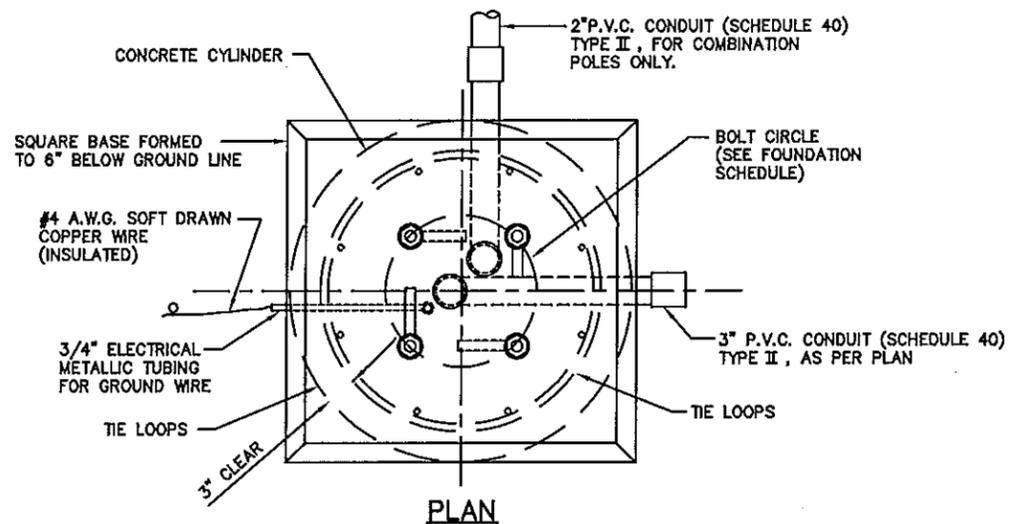


GENERAL NOTES:

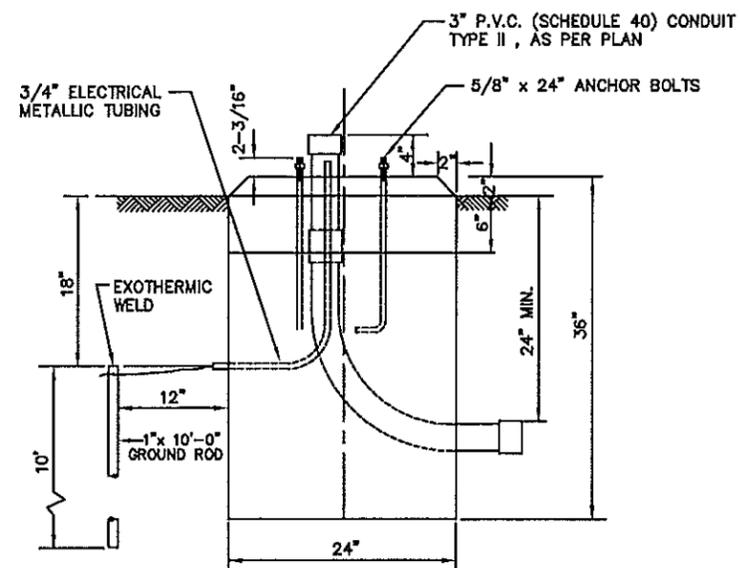
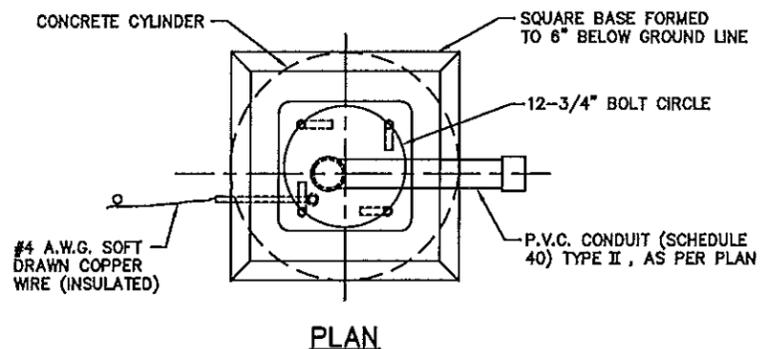
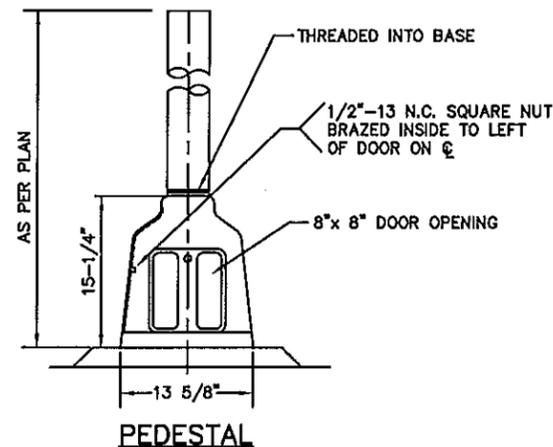
1. SIGN LIGHTING EXTENSION AND SIGN BRACKET DETAILS SHOWN ON DETAIL A
2. STRUCTURES ARE DESIGNED TO SUPPORT SIGN SIZES SHOWN PLUS LUMINAIRE & BALLAST WEIGHTS INDICATED IN ACCORDANCE WITH SPECIFICATION FOR DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS BY AASHO (1961) FOR A WIND PRESSURE OF 35 P.S.F.
3. L, R, SIGN HEIGHT (H), AND STREET SIGN LIGHTING BRACKET EXTENSION Z DIMENSIONS TO BE SPECIFIED \*
4. POLE DESIGNATIONS SHALL BE AS FOLLOWS, FOR EXAMPLE:  
175 LW / B 33  
175 LW = POLE DESIGN NO. 175 LW  
B 33 = 3'-3" B DIMENSIONS FOR ALL SIGN LIGHTING BRACKET EXTENSIONS
5. THE BID ITEM FOR EACH CANTILEVER SIGN SUPPORT SHALL INCLUDE THE MAST ARM, AN UPRIGHT POLE SHAFT, AN ANCHOR BASE, POLE SHAFT EXTENSION FOR A LUMINAIRE MOUNTING (WHEN REQUIRED), FOUR ANCHOR BOLTS AND NUTS, SIGN BRACKET ASSEMBLY, (SIGN BRACKET AND CLAMPS) AND ANY OTHER HARDWARE, ATTACHMENTS, MODIFICATIONS, AND ACCESSORIES REQUIRED TO MAKE A COMPLETE INSTALLATION AS SHOWN HEREON
6. ALL UPRIGHT POLE SHAFTS AND MAST ARMS SHALL BE ROUND IN CROSS SECTION AND BE UNIFORMLY TAPERED FROM BUTT TO TIP APPROXIMATELY ONE INCH IN DIAMETER FOR EACH SEVEN LINEAL FEET IN LENGTH (0.14 INCHES PER FOOT)
7. SEE LUCAS COUNTY ENGINEER'S STANDARD CONSTRUCTION DRAWING POLE AND PEDESTAL FOUNDATION DETAILS.
8. L + R = STREET SIGN LENGTH, (SL)

POLE DIA.	STREET SIGN ATTACHMENT				TRAFFIC ARM							
	H (in.)	I (in.)	J (in.)	K (in.)	ARM DIA.	M (in.)	N (in.)	O (in.)	P (in.)	ARM R (in.)	POLE R (in.)	W (in.)
OE - 15"	13	10	14-1/2	10-1/4	7 & 7E - 11"	23	12	20-1/2	16-1/2	2	2	3/8
OE - 16.5"	15	12	16-1/2	11-1/2	7 & 7E - 12"	24	13	22	18	2	2	5/16
7 & 7E - 16.5"	15	12	16-1/2	11-1/2	3 & 7E - 12"	30	13	22	18	2	2	5/16

BASE PLATE DATA			
POLE DIA.	B.C. (in.)	SQ. (in.)	ANC. BOLTS
OE - 15"	22	23	2" x 90"
OE - 16.5"	23-1/2	24-1/2	2-1/4" x 96"
7 & 7E - 16.5"	23-1/2	24-1/2	2-1/4" x 96"



**ELEVATION**  
**ANCHOR BASE POLE FOUNDATION**

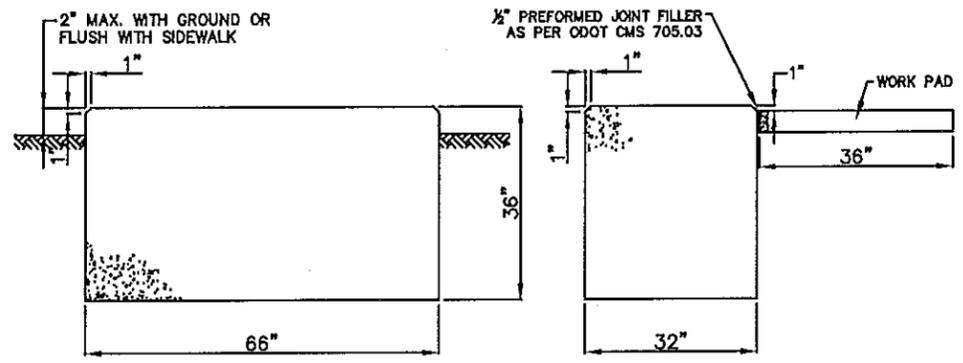


**ELEVATION**  
**ANCHOR BASE PEDESTAL FOUNDATION**

**NOTES:**

1. CONDUIT SIZE, NUMBER AND ORIENTATION SHALL BE PROVIDED IN THE FOUNDATION AS SHOWN ON THE PLANS.
2. AN ADDITIONAL 2" P.V.C. CONDUIT (SCHEDULE 40) SHALL BE PROVIDED IN EACH COMBINATION POLE FOUNDATION FOR LIGHTING. IF POWER TO THE LUMINAIRES IS NOT TO BE PROVIDED AS PART OF THIS PROJECT, THIS CONDUIT SHALL BE CAPPED AT BOTH ENDS.
3. MODIFICATION TO THE FOUNDATION WILL BE REQUIRED WHEN SOIL WITH LOAD BEARING CAPACITY OF LESS THAN 2000 POUNDS PER SQUARE FOOT IS ENCOUNTERED. MODIFICATION TO THE FOUNDATION IS SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. FOUNDATION SHALL BE CAST-IN-PLACE WITH CLASS QC1 CONCRETE. THE FOUNDATION SQUARE BASE (CAP) SHALL BE FORMED TO 6" BELOW GROUND LINE AND BE BUILT AS AN INTEGRAL PART OF FOUNDATION.
5. ALL ANCHOR BOLTS SHALL BE PROVIDED WITH STANDARD GALVANIZED STEEL HEX NUTS, LEVELING NUTS, PLAIN AND LOCKWASHERS. ANCHOR BOLTS SHALL BE SECURED DURING THE PLACEMENT OF CONCRETE TO ENSURE ACCURATE BOLT CIRCLE AND BOLT PROJECTION "P".
6. WHEN THE FOUNDATION IS PLACED ADJACENT TO A PAVED SURFACE, 1/2" PREFORMED EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE FOUNDATION AND THE ADJACENT PAVED SURFACE. IN ADDITION;  
FOR POLES: THE TOP OF THE FOUNDATION SHALL BE FLUSH WITH THE ADJACENT SURFACE AND SLOPED TO DRAIN.  
FOR PEDESTALS: THE AREA OF CONTACT WITH THE PEDESTAL BASE SHALL BE LEVEL. IF ADJACENT PAVED SLOPE, THE REMAINDER OF THE FOUNDATION TOP SHALL BE BEVELED TO MEET THE ADJACENT SURFACE.

FOUNDATION TYPE	POLE SIZE	"D" MIN.	BOLT CIRCLE	ANCHOR BOLT SIZE	Vert. Reinf. Bars	PROJECTION "P"	CONC. CYLIND.	
A	7GA. 9.0'	9'	12-1/2"	1-1/4" x 48"	3/4"	8	5-1/8"	2.41
B	7GA. 10.0'	10'	13-1/2"	1-1/2" x 60"	3/4"	8	5-7/8"	2.87
C	7GA. 11.0'	10'	15"	1-1/2" x 60"	3/4"	8	6-1/8"	2.87
D	7GA. 12.0'	10'	18"	1-1/2" x 60"	3/4"	8	6-1/2"	2.87
E	7GA. 13.0'	10'	18"	1-1/2" x 60"	1"	16	6-3/4"	2.87
F	3GA. 9.0'	12'	12-1/2"	1-1/2" x 60"	3/4"	8	5-1/8"	3.20
G	3GA. 10.0'	12'	13-1/2"	1-1/2" x 60"	3/4"	8	5-7/8"	3.20
H	3GA. 11.0'	12'	15"	1-3/4" x 90"	3/4"	8	6-1/8"	3.20
J	3GA. 12.0'	12'	18"	1-3/4" x 90"	3/4"	8	6-3/4"	3.20
K	3GA. 13.0'	12'	18"	1-3/4" x 90"	3/4"	16	7"	3.20
L	0GA. 13.0'	13'	18"	2" x 90"	3/4"	16	7-1/4"	3.46
M	7+70A.13.0'	13'	20"	2" x 90"	3/4"	16	7-3/4"	3.46
N	3+30A.13.0'	13'	22"	2-1/4" x 98"	3/4"	16	8"	3.46
O	3+30A.15.0'	15'	22"	2-1/2" x 114"	3/4"	16	8-3/4"	3.46
P	0GA. 14.0'	13'	20"	2" x 90"	3/4"	16	7-3/4"	3.46
Q	0GA. 15.0'	13'	22"	2" x 90"	3/4"	16	8-1/4"	3.46
R	0GA. 16.5'	13'	23-1/2"	2-1/4" x 98"	3/4"	16	8"	3.46
S	7+70A.16.5'	13'	23-1/2"	2-1/4" x 98"	3/4"	16	8"	3.46

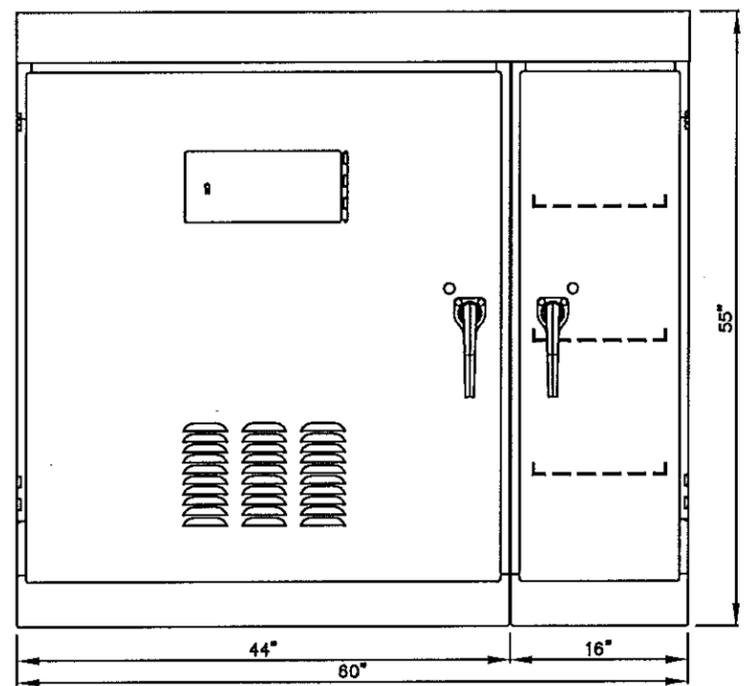


**CABINET FOUNDATION DETAIL**  
ELEVATION VIEW

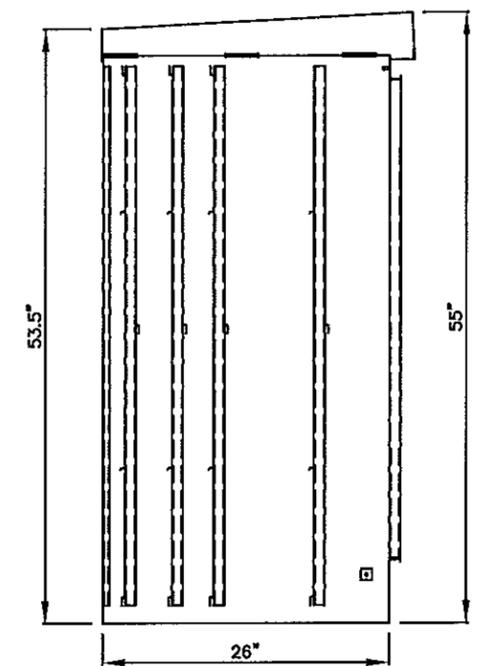
NOTES:

1. THE DIMENSIONS SHOWN REPLACES THAT IN ODOT SCD TC-83.20. ALL OTHER REQUIREMENTS OF SCD TC-83.20 APPLY.

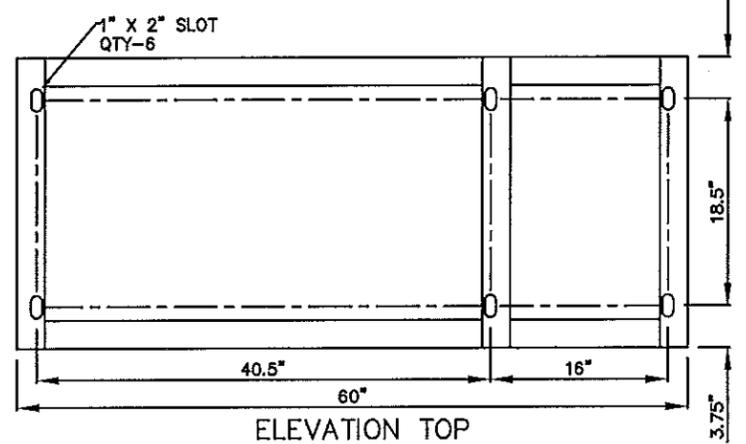
ITEM	L	W	D	C.Y.	S.Y.
FOUNDATION	66"	32"	36"	1.63	N.A.
WORK PAD	66"	36"	4"	N.A.	1.83



ELEVATION FRONT VIEW



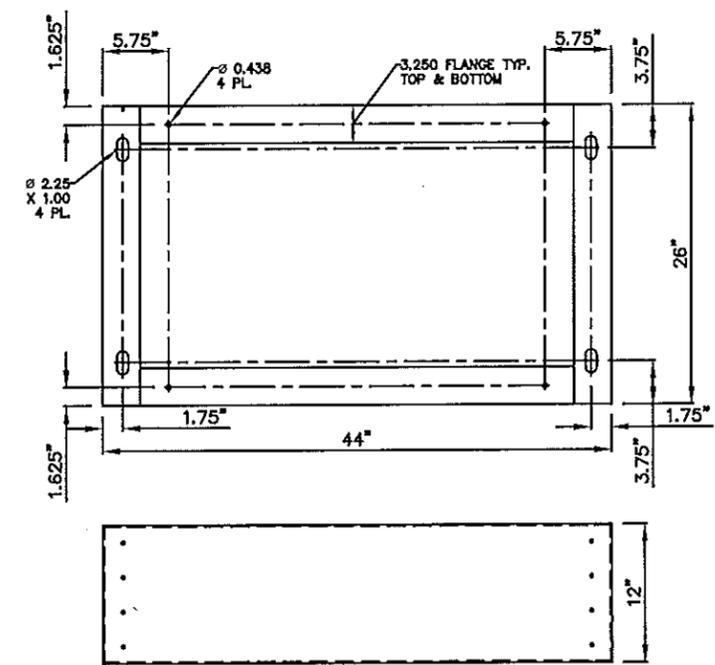
ELEVATION SIDE VIEW



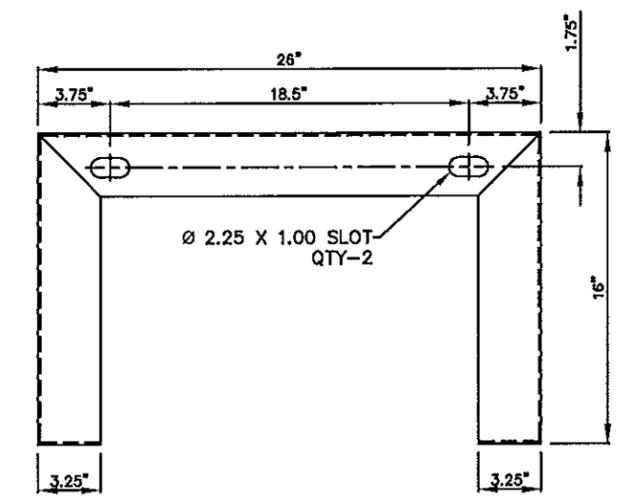
ELEVATION TOP  
**CONTROLLER & UPS  
CABINET LAYOUT**

SEPARATE BID ITEMS:

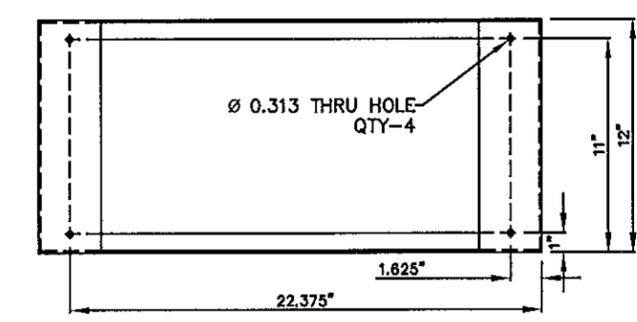
- 633 EA CABINET RISER
- 633 EA CONTROLLER WORK PAD
- 633 EA CABINET FOUNDATION
- 633 EA CONTROLLER MISC.: UNINTERRUPTABLE POWER SUPPLY, (UPS), 1000 WATT
- 633 EA CONTROLLER UNIT, TYPE TS2/A1, WITH CABINET, TYPE TS2, AS PER PLAN

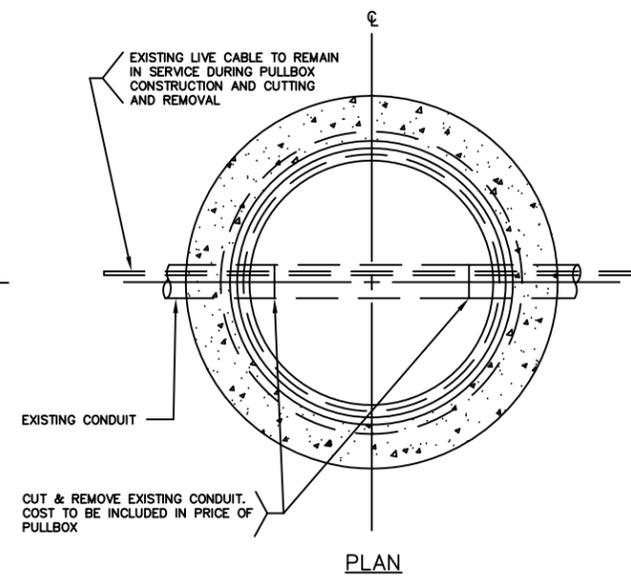
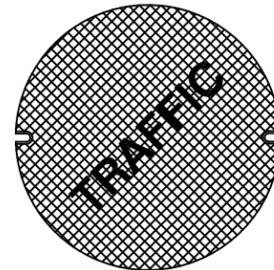
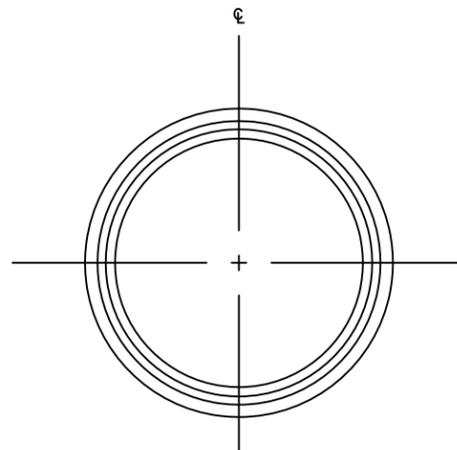
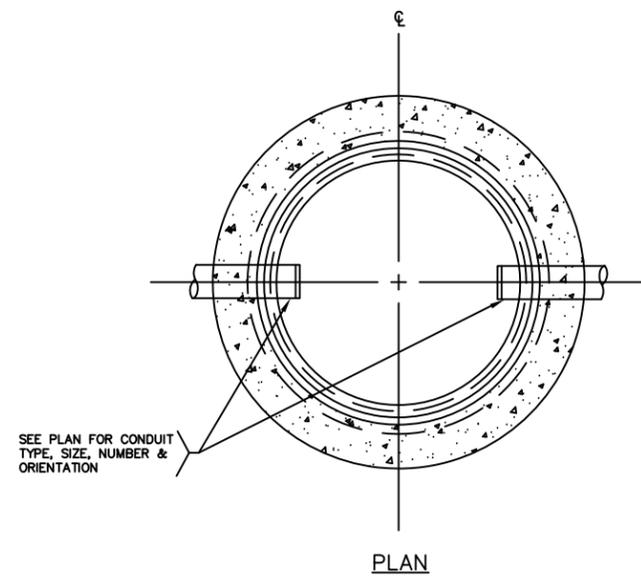


**CONTROLLER CABINET RISER  
LAYOUT**



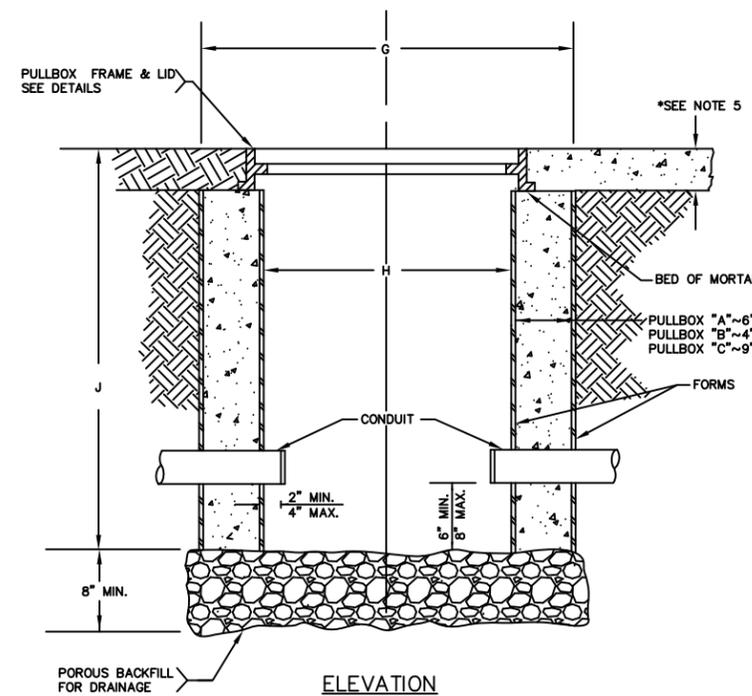
**UPS CABINET RISER LAYOUT**



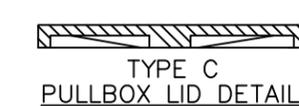
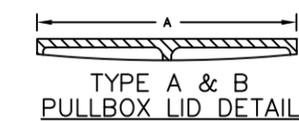
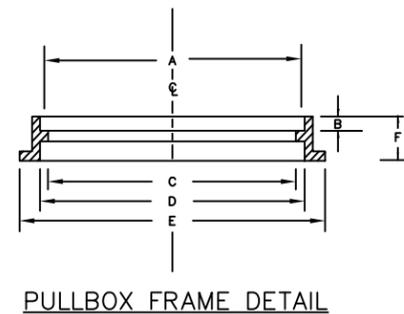


NOTES:

- PULLBOX FRAME AND LID SHALL BE NEENAH OR APPROVED EQUAL  
 TYPE A PULLBOX: R-1792-FL, SOLID LID  
 TYPE B PULLBOX: R-1792-DL, SOLID LID  
 TYPE C PULLBOX: R-1788-D, SOLID LID
- PULLBOX FRAME SHALL BE SET IN A BED OF MORTAR ATOP PULLBOX.
- FORMS SHALL BE TUBULAR WITH 3/8 INCH WALL THICKNESS, SPIRALLY WOUND, LAMINATED FIBER AND CONCENTRICALLY PLACED. DIMENSIONS SHOWN ARE I.D. FORMS WILL REMAIN IN PLACE UPON COMPLETION OF CONSTRUCTION.
- CONCRETE SHALL BE CLASS QC1 MEETING STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS, ITEM 499. CONCRETE FOR PULLBOXES SHALL BE POURED IN PLACE.
- POROUS BACKFILL SHALL BE NO. 6 COARSE AGGREGATE MEETING STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS, ITEM 703.
- WHEN PULLBOX IS INSTALLED IN PAVED AREAS, AN ADEQUATE AREA SHALL BE REMOVED BY SAW CUTTING OR BY REMOVAL BACK TO AN EXPANSION JOINT. PAVEMENT MATCHING THE SURROUNDING AREA SHALL BE PLACED FROM THE PULLBOX RIM DOWN TO THE BOTTOM OF EXISTING PAVEMENT.
- THE LID SHALL HAVE THE WORD "TRAFFIC" CAST IN THE TOP SURFACE IN 1 OR 2 INCH LETTERS.

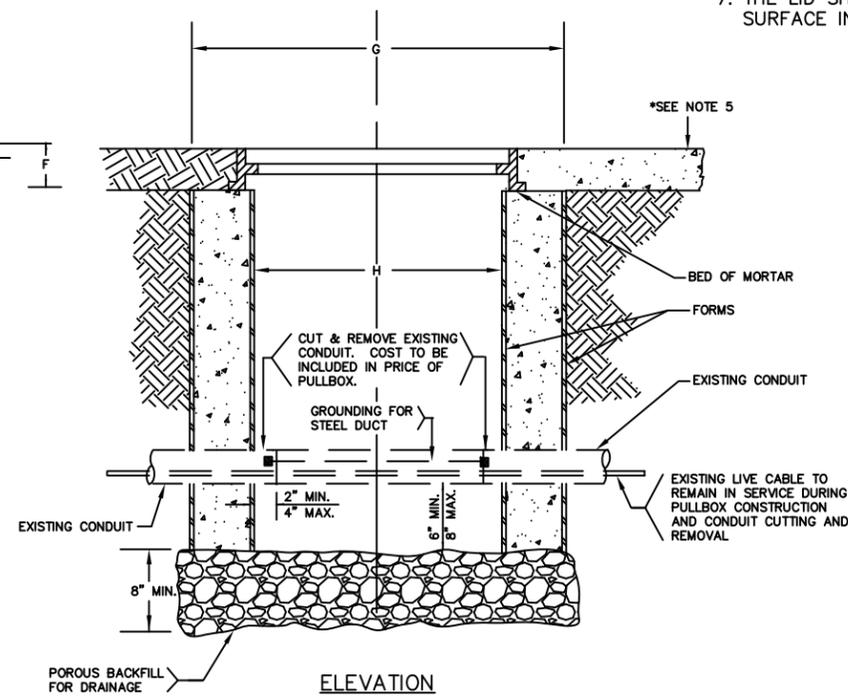


CONCRETE PULLBOX



DIMENSION TABLE

PULLBOX TYPE	DIMENSIONS IN INCHES									TYPICALLY USED IN
	A	B	C	D	E	F	G	H	J	
A	25 1/4	1 1/2	23 1/2	25 1/2	29 1/2	4	36	24	36	WALK OR EARTH
B	18 1/4	1 1/2	16 1/2	18 1/2	22 1/2	4	24	16	24	WALK OR EARTH
C	23 5/8	3	21 1/8	24 5/8	34 3/4	7	42	24	36	PAVEMENT



CONCRETE PULLBOX

INSTALLED OVER EXISTING DUCT

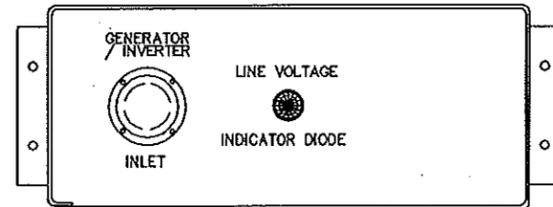
MATERIAL SPECIFICATIONS FOR GENERATOR / INVERTER POWER PANEL EQUIPMENT

GENERATOR INLET - THE INLET SHALL BE 30 AMP, 125/250V, LOCKING, FOUR (4) WIRE GROUNDING AND MEET THE NEMA CONFIGURATION NUMBER L14-30-P 30A 125/250V SPECIFICATION. THE INLET SHALL BE A HUBBELL CATALOG #2715.

HEAVY DUTY POWER RELAY - SHALL BE 30 AMP, 120 VAC, DPDT AN SHALL BE AN OMRON, MODEL (MGN2C-M). (THE MG SERIES DUST COVER IS REQUIRED) TO ORDER, CALL 1-800-556-6766

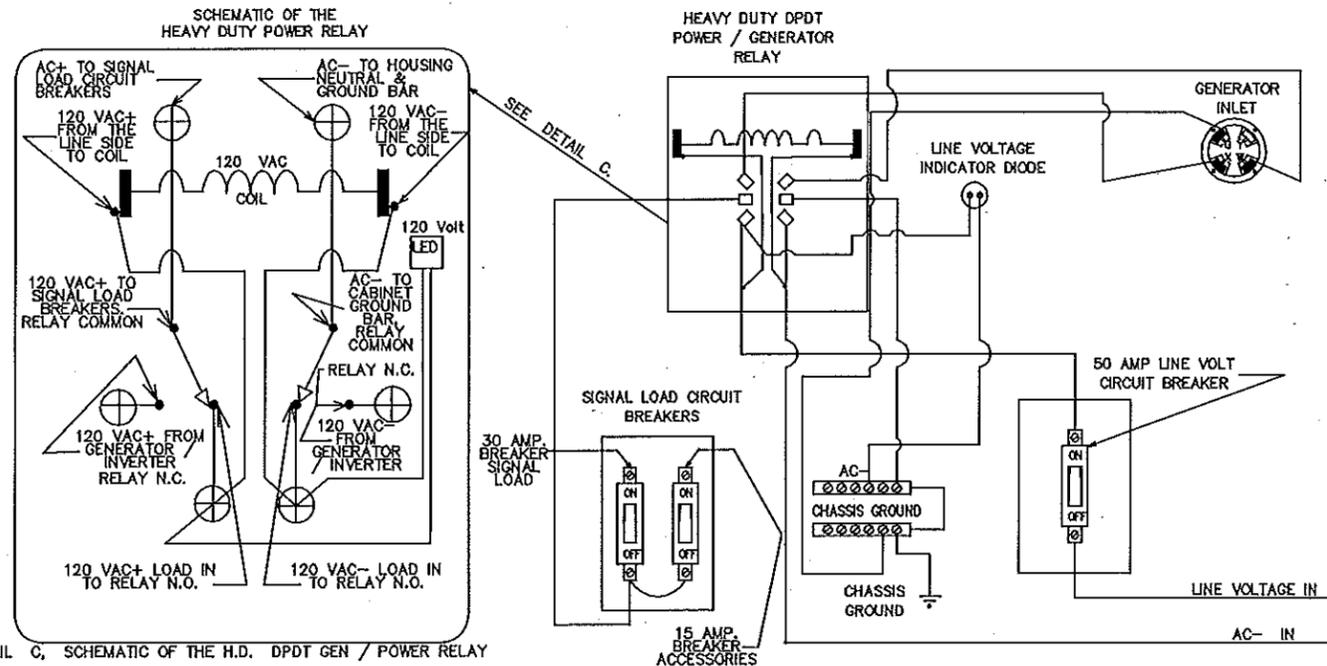
LINE VOLTAGE INDICATOR LIGHT - THE INDICATOR LIGHT SHALL BE A 120 V AC LIGHT EMITTING DIODE WITH A RED LENS.

LINE VOLTAGE CIRCUIT BREAKER - THE CIRCUIT BREAKER SHALL BE SINGLE POLE SINGLE THROW AND A MINIMUM OF 30 AMPS. THE AMPERAGE SHALL BE INCREASED TO ACCOMODATE GREATER LOADS, IF NECESSARY. THE GAUGE OF THE POWER CABLE SHALL BE OF PROPER SIZE PER THE N.E.C.



FRONT VIEW OF GENERATOR / INVERTER POWER PANEL

5\*(134)

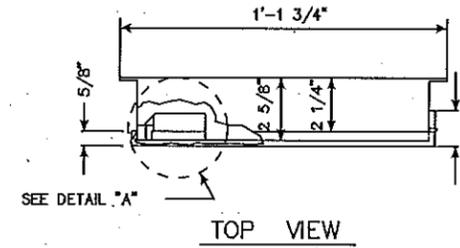


ELECTRICAL HOOKUP DETAIL FOR THE GENERATOR POWER PANEL

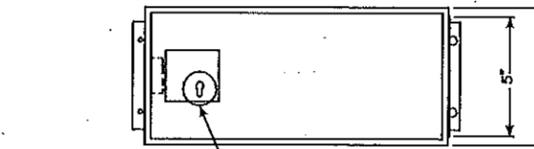
GENERATOR POWER PANEL ENCLOSURE

NOTES:

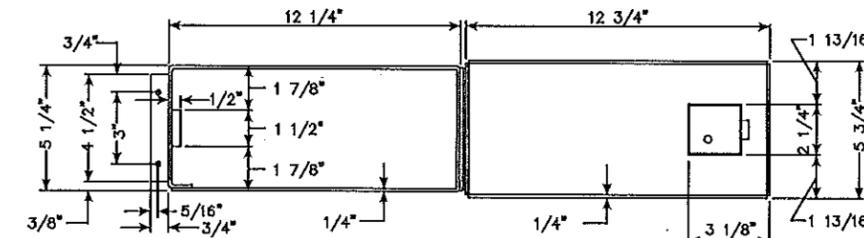
1. THE ENCLOSURE SHALL BE CONSTRUCTED OF 1/8" THICK ALUMINUM.
2. THE LOCK SHALL BE THE STANDARD POLICE DOOR TYPE, KEYED WITH THE STANDARD FLASHER DOOR SKELETON KEY.
3. THE DOOR SHALL BE SEALED WITH A FOAM RUBBER GASKET TO PREVENT MOISTURE FROM ENTERING THE ENCLOSURE.
4. THE ENCLOSURE SHALL BE MOUNTED ONTO THE OUTSIDE OF THE CONTROLLER CABINET WITH NON-ACCESSIBLE BOLTS AND SEALED WITH A HIGH QUALITY SILICON CAULK AT ALL SURFACES TOUCHING THE CABINET.
5. THE HINGE SHALL BE OF STAINLESS STEEL OR EQUIVALENT CORROSIVE-RESISTANT MATERIAL.



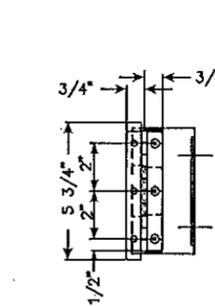
TOP VIEW



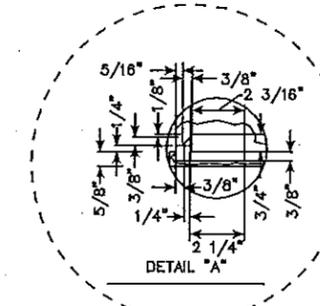
FRONT VIEW CLOSED DOOR



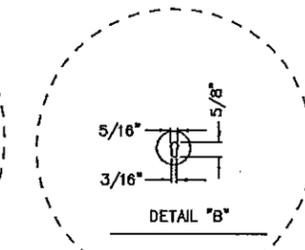
FRONT VIEW OPEN DOOR



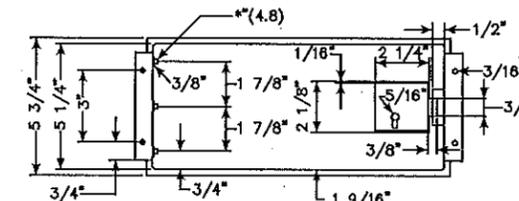
RIGHT SIDE VIEW  
CLOSED DOOR



DETAIL "A"



DETAIL "B"



BACK VIEW CLOSED DOOR

GENERATOR POWER PANEL

LUCAS COUNTY STANDARD  
CONSTRUCTION DRAWINGS

TR-12