SUP

PROJECT ID: 1610-07-71

WITH: N/A

COUNTY: ASHLAND

MAY 2014

ORDER OF SHEETS

TOTAL SHEETS = 58

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CITY OF ASHLAND, ELLIS AVENUE
6TH STREET - USH 2
STH 13
ASHLAND

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1610-07-71	WISC 2014206	1

STATE PROJECT NUMBER
1610-07-71

43

N

END PROJECT 1610-07-71
STA. 1171+26.5 STH 13
N.: 021846.98
E.: 150683.25

BEGIN PROJECT 1610-07-71
STA. 1152+67 STH 13

DESIGN DESIGNATION

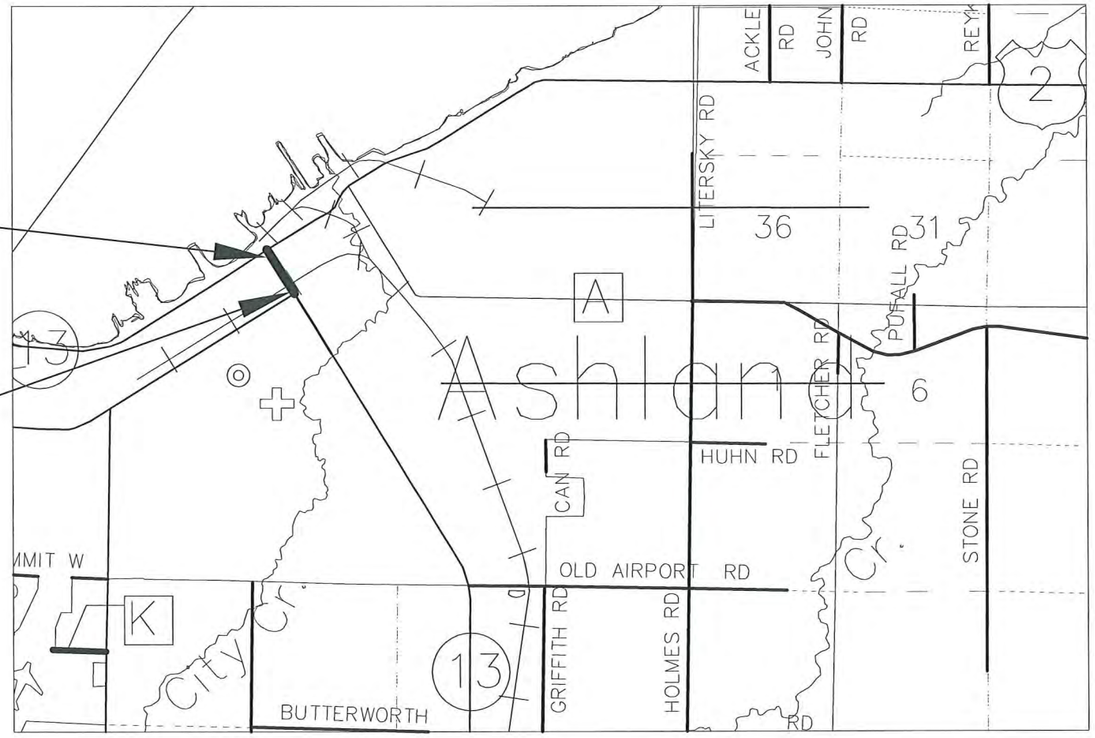
A.A.D.T. 2018	=	9,000
A.A.D.T. 2038	=	10,000
D.H.V.	=	1576
D.D.	=	55-45
T. (DHV)	=	14.5%
DESIGN SPEED	=	30 MPH
ESALS	=	3,200,000

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE



LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.35 MI.

ALL COORDINATES ON THIS PLAN ARE REFERENCED TO THE ASHLAND COUNTY COORDINATE SYSTEM.

ACCEPTED FOR
City of Ashland
02/04/2014 (Date)
DIRECTOR of PUBLIC WORKS (Signature & Title of Official)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NW Region
Designer	Jim Nelson
Project Manager	Phil Keppers, PE
Regional Examiner	Dan Ojibway
Regional Supervisor	Dave Ostrowski, PE
C.O. Examiner	XXX

APPROVED FOR THE DEPARTMENT
DATE: 02/04/14 (Signature)

E

FILE NAME : N:\PDS\C3D\16100701\DESIGN\010101_TI.DWG PLOT DATE : 9/9/2008 8:17 AM PLOT BY : NELSON, JAMES T PLOT NAME : ----------

WISDOT/CADDS SHEET 10

2

LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
AH.	AHEAD
APPROX.	APPROXIMATE
A.E.W.	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
AZ.	AZIMUTH
BK.	BACK
BEG.	BEGIN
B.M.	BENCH MARK
C/L	CENTER LINE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
X-SEC.	CROSS SECTION
CR.	CRUSHED
CFS	CUBIC FEET/SECOND
C.Y., CU. YD.	CUBIC YARD
CULV.	CULVERT
C.P.	CULVERT PIPE
D.O.T.	DEPARTMENT OF TRANSPORTATION
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DISCH. OR DIS.	DISCHARGE
EA.	EACH
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
E.B.S.	EXCAVATION BELOW SUBGRADE
EXIST.	EXISTING
FERT.	FERTILIZE
F.E.	FIELD ENTRANCE
FIN.	FINISHED
FT.	FOOT
F.L.	FLOW LINE
GA.	GAUGE
HORIZ.	HORIZONTAL
CWT.	HUNDREDWEIGHT
INL.	INLET
LT.	LEFT
L.H.F.	LEFT-HAND FORWARD
LIN.	LINEAR
LIN. FT.	LINEAR FOOT
L.S.	LUMP SUM
MAX.	MAXIMUM
MI.	MILE
MISC.	MISCELLANEOUS
N.E.	NORTH EAST
N.W.	NORTH WEST
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.O.T.	POINT ON TANGENT
LB.	POUND
P.E.	PRIVATE ENTRANCE
PROJ.	PROJECT
R.	RANGE
REQ'D	REQUIRED
RT.	RIGHT
R.H.F.	RIGHT-HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHR.	SHRINKAGE
SL.	SLOPE
STD.	STANDARD
S.D.D.	STANDARD DETAIL DRAWINGS
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
S.P.P.A.	STRUCTURAL PLATE PIPE ARCH
STRUCT.	STRUCTURE
SURF.	SURFACE
TEL.	TELEPHONE
TN.	TOWN
T.	TRUCKS (PERCENT OF)
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND
V.	VELOCITY OR DESIGN SPEED
V.C.	VERTICAL CURVE

UTILTIES

Alan Nickel
Century Link - Communications Line
P.O. Box 369
Minong, WI 54859
(715) 378-2131 office
(715) 566-3879 cell
alan.nickel@centurylink.com

Thomas Haase
Charter Communications - Communication Line
2304 S. Main St.
Rice Lake, WI 54868
(715) 234-5314 EXT 252 office
(715) 370-1601 cell
thomas.haase@charter.com

Guy Folsom
Norvado - Communications Line
43750 USH 63
P.O. Box 67
Cable, WI 54821
(715) 798-7123 office
(715) 580-8123 cell
gfolsom@norvado.com

Murray Smerer
Xcel Energy - Electricity, gas
2400 Farm Road
Ashland, WI
(715) 682-6928

Raymond Hyde
Ashland Water Utility
2020 6th St. East
Ashland, WI 54806

Jack Schuster
City of Ashland
Utility Superintendent
(715) 682-71954 office
(715) 209-7194 cell

Pete Empie
Merit Network - Communication
1000 Oakbrook Drive, suite 200
Ann Arbor, MI 48104-6794
(571) 420-1600
pempie@merit.edu

WISCONSIN DNR

WI DEPARTMENT OF NATURAL RESOURCES
Shawn Haseleu
Enviromental Analysis and Review Specialist
810 West Maple Street
Spooner, WI 54801
(715) 635-4228
shawn.haseleu@wisconsin.gov

GENERAL NOTES

REPAIR PATCHING - FOR REPAIR DEPTHS GREATER THEN 4 IN. THE ASPHALT PATCHING MIX SHALL BE PLACED IN TWO LAYERS.

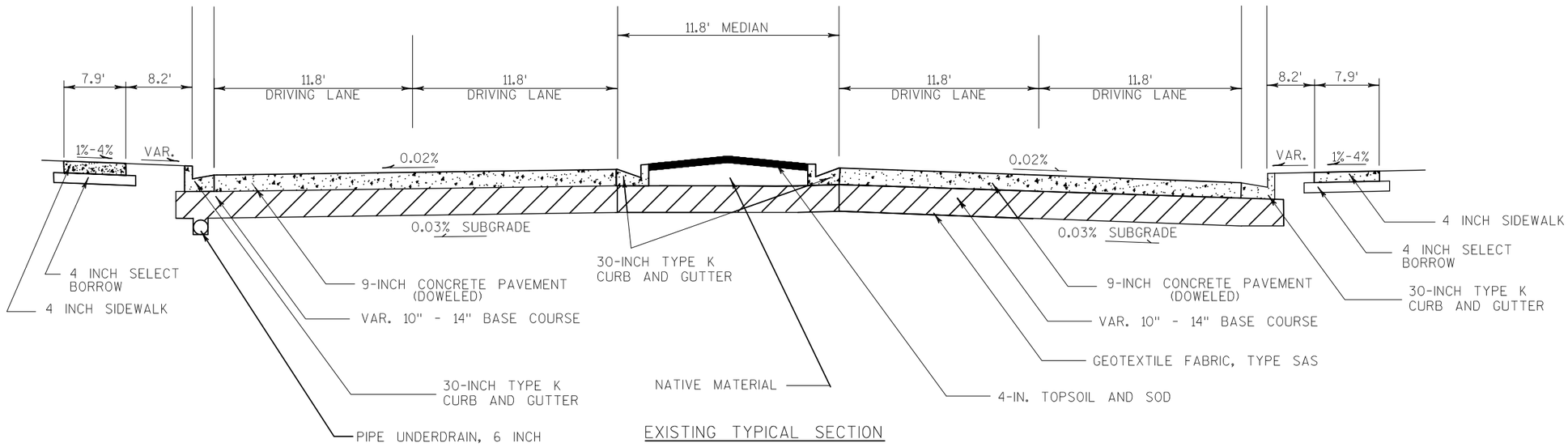
NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING PAVEMENTS AT REMOVAL LIMITS.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

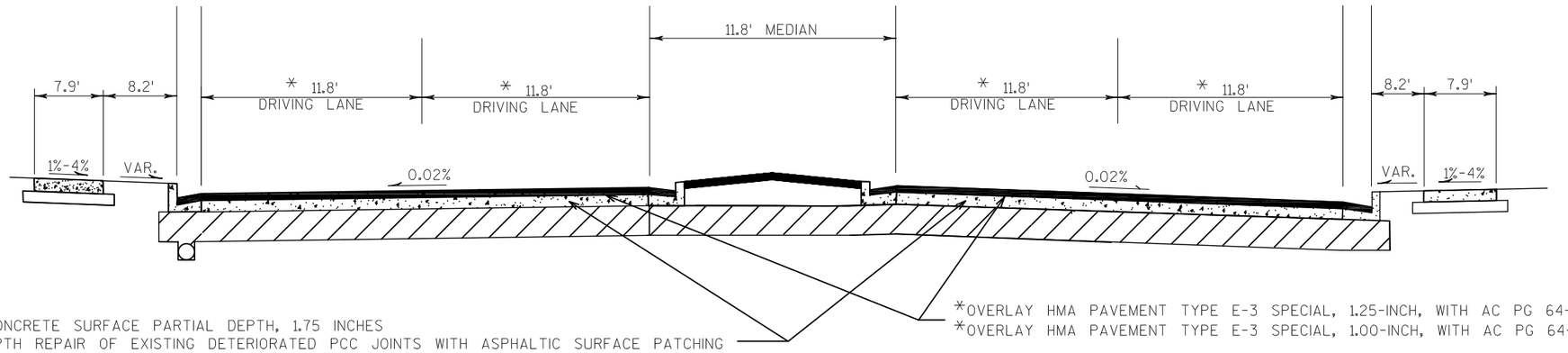
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

NOTE: 3.6 METER (11.8 FT.) LANES WERE CONSTRUCTED IN 2001 UNDER METRIC PROJECT 1610-22-71



EXISTING TYPICAL SECTION

STA 1152+67 TO STA 1166+34.5



*REMOVING CONCRETE SURFACE PARTIAL DEPTH, 1.75 INCHES
*PARTIAL DEPTH REPAIR OF EXISTING DETERIORATED PCC JOINTS WITH ASPHALTIC SURFACE PATCHING

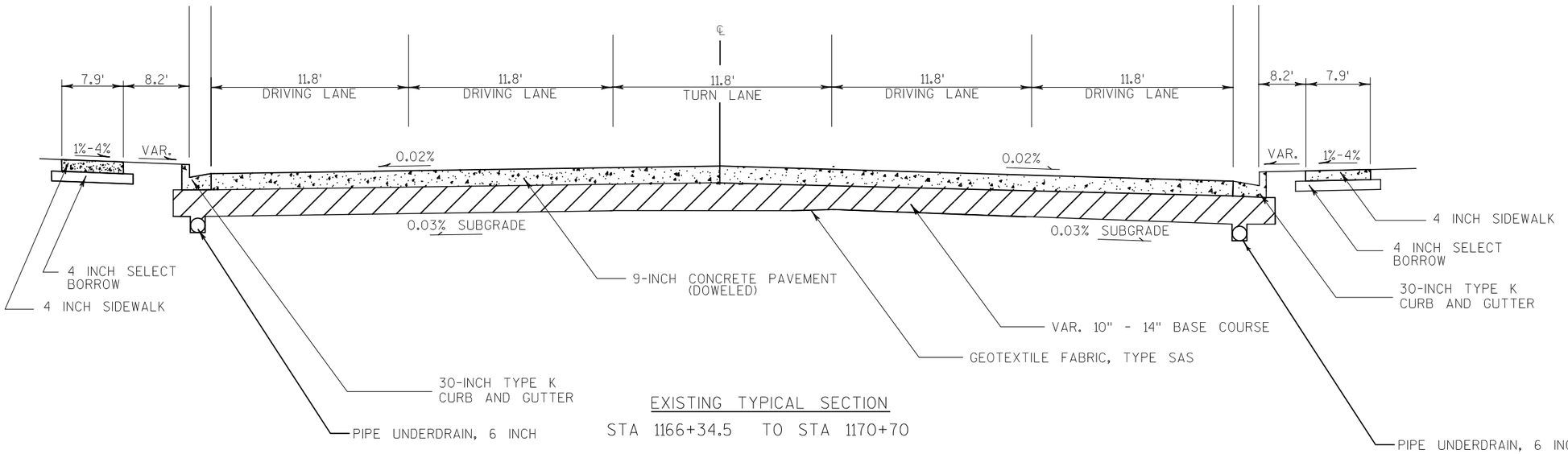
*OVERLAY HMA PAVEMENT TYPE E-3 SPECIAL, 1.25-INCH, WITH AC PG 64-34P, 9.5mm (UPPER LAYER)
*OVERLAY HMA PAVEMENT TYPE E-3 SPECIAL, 1.00-INCH, WITH AC PG 64-34P, 9.5mm (LEVELING LAYER)

FINISHED TYPICAL SECTION

STA 1152+67 TO STA 1166+34.5

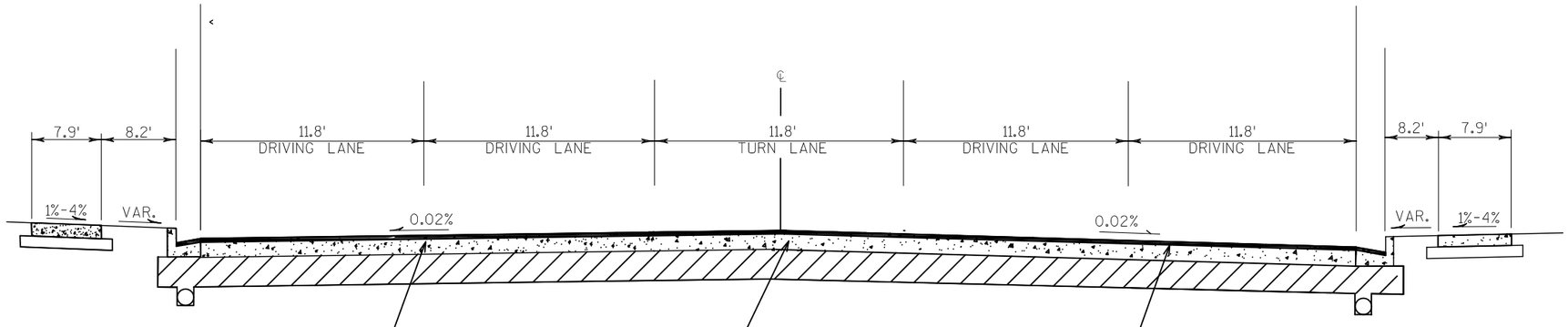
PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	TYPICAL SECTION	SHEET _____ E

NOTE: 3.6 METER (11.8 FT.) LANES WERE CONSTRUCTED IN 2001 UNDER METRIC PROJECT 1610-22-71



EXISTING TYPICAL SECTION

STA 1166+34.5 TO STA 1170+70



REMOVING CONCRETE SURFACE PARTIAL DEPTH, 1.75 INCHES

PARTIAL DEPTH REPAIR OF EXISTING DETERIORATED PCC JOINTS WITH ASPHALTIC SURFACE PATCHING

*OVERLAY HMA PAVEMENT TYPE E-3 SPECIAL, 1.25-INCH, WITH AC PG 64-34P, 9.5mm (UPPER LAYER)
*OVERLAY HMA PAVEMENT TYPE E-3 SPECIAL, 1.00-INCH, WITH AC PG 64-34P, 9.5mm (LEVELING LAYER)

FINISHED TYPICAL SECTION

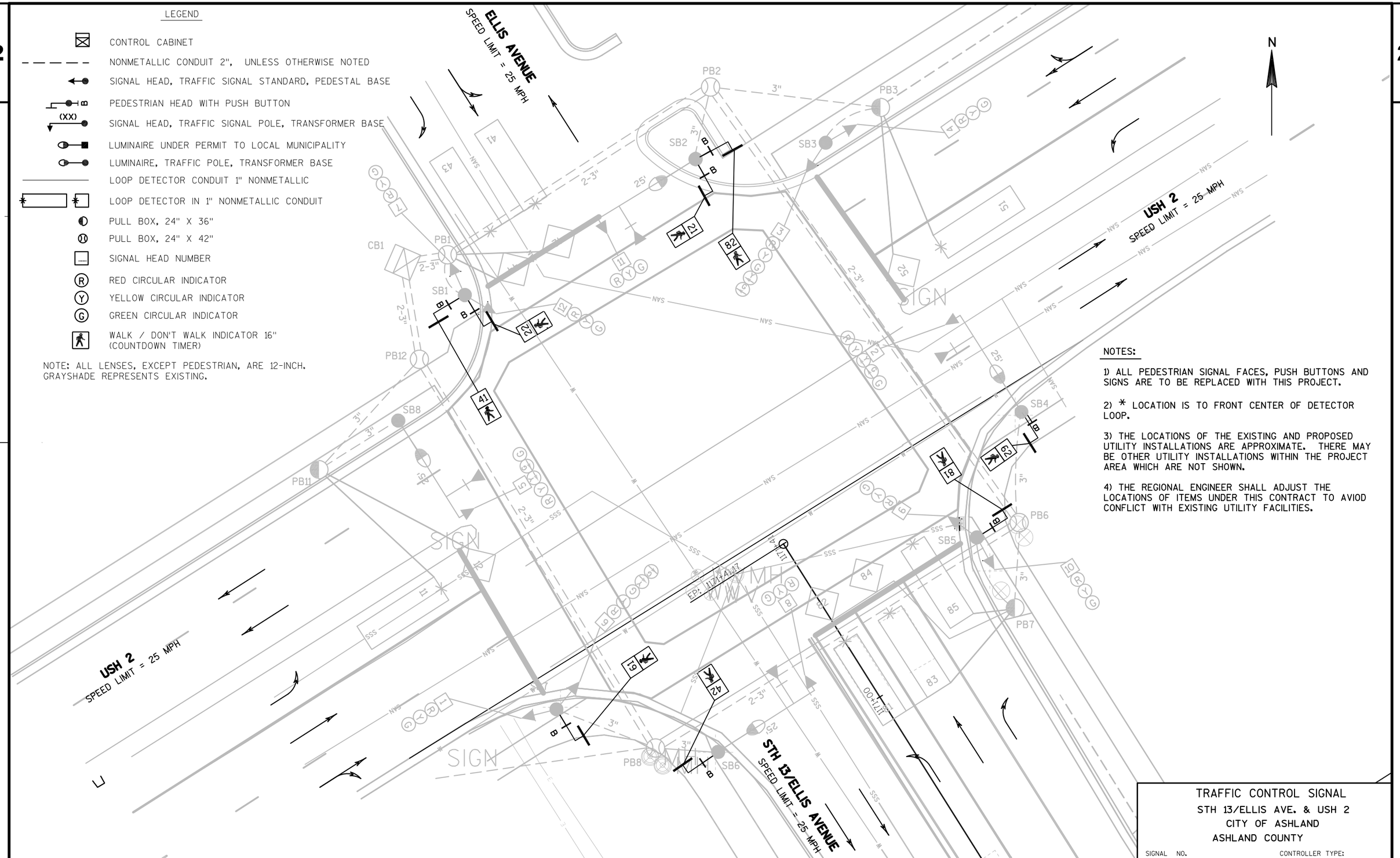
STA 1166+34.5 TO STA 1170+70

PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	TYPICAL SECTION	SHEET _____ E

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- WALK / DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL LENSES, EXCEPT PEDESTRIAN, ARE 12-INCH. GRAYSHADE REPRESENTS EXISTING.



NOTES:

1) ALL PEDESTRIAN SIGNAL FACES, PUSH BUTTONS AND SIGNS ARE TO BE REPLACED WITH THIS PROJECT.

2) * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.

3) THE LOCATIONS OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.

4) THE REGIONAL ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVIOD CONFLICT WITH EXISTING UTILITY FACILITIES.

TRAFFIC CONTROL SIGNAL
STH 13/ELLIS AVE. & USH 2
CITY OF ASHLAND
ASHLAND COUNTY

SIGNAL NO. CONTROLLER TYPE:

PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	TRAFFIC SIGNAL PLAN - USH 2	SHEET 5	E

2

SEQUENCE OF OPERATION

RING 1		HEAD NUMBERS	01 R/W	01 CLEAR TO **			02 R/W	02 CLEAR TO **			03 R/W	03 CLEAR TO **			04 R/W	04 CLEAR TO **			FLASH
	01	2,3	G	Y	-		-	-	-						-	-	-		
	02	4,5,6	R	R	R		G	Y	R						R	R	R		R
	03																		
	04	7,8,9	R	R	R		R	R	R						G	Y	R		R
	05	5,6	-	-	-		-	-	-						-	-	-		
	06	1,2,3	R	R	R		R	R	R						R	R	R		R
	07																		
	08	10,11,12	R	R	R		R	R	R						R	R	R		R
	02P	21,22	DW	DW	DW		*	DW	DW						DW	DW	DW		
	04P	41,42	DW	DW	DW		DW	DW	DW						*	DW	DW		
	06P	61,62	DW	DW	DW		DW	DW	DW						DW	DW	DW		
	08P	81,82	DW	DW	DW		DW	DW	DW						DW	DW	DW		

BARRIER

N

RING 2		HEAD NUMBERS	05 R/W	05 CLEAR TO **			06 R/W	06 CLEAR TO **			07 R/W	07 CLEAR TO **			08 R/W	08 CLEAR TO **		
	01	2,3	-	-	-		-	-	-						-	-	-	
	02	4,5,6	R	R	R		R	R	R						R	R	R	
	03																	
	04	7,8,9	R	R	R		R	R	R						R	R	R	
	05	5,6	G	Y	-		-	-	-						-	-	-	
	06	1,2,3	R	R	R		G	Y	R						R	R	R	
	07																	
	08	10,11,12	R	R	R		R	R	R						G	Y	R	
	02P	21,22	DW	DW	DW		DW	DW	DW						DW	DW	DW	
	04P	41,42	DW	DW	DW		DW	DW	DW						DW	DW	DW	
	06P	61,62	DW	DW	DW		*	DW	DW						DW	DW	DW	
	08P	81,82	DW	DW	DW		DW	DW	DW						*	DW	DW	

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5,6	2,4,8
2	5,6	1,4,8
3	-	-
4	8	1,2,5,6
5	1,2	4,6,8
6	1,2	4,6,8
7	-	-
8	4	1,2,5,6

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11	1	X			1	1				6'X20'	3
12	2	X			1	1				6'X6'	4
21	3	X			2	2			X	6'X20'	3
22	4	X			2	2			X	6'X20'	3
41	5	X			4	4				6'X20'	3
42	6	X			4	4		X		6'X6'	4
43	7	X			4	4				6'X20'	3
44	8	X			4	4				6'X6'	4
51	16	X			5	5				6'X20'	3
52	16	X			5	5				6'X6'	4
61	9	X			6	6			X	6'X20'	3
62	10	X			6	6			X	6'X20'	3
81	11	X			8	8				6'X20'	3
82	12	X			8	8		X		6'X6'	4
83	13	X			8	8				6'X20'	3
84	14	X			8	8				6'X6'	4
85	15	X			8	8		X		6'X20'	3

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN.	
3				
4				
5				
6	X	2	MIN.	
7				
8				

OVERLAPS

O.L. "A" = NONE
O.L. "B" = NONE
O.L. "C" = NONE
O.L. "D" = NONE

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM #:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE DETECTOR	A	B	C	D
MOVEMENT	←	→	↓	↑
PHASE	2+5	6+1	4	8

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

STH 13/ELLIS AVE. & USH 2
CITY OF ASHLAND
ASHLAND COUNTY

SIGNAL NO.

CONTROLLER TYPE:

DATE PAGE NO. OF

2

NOTES:

1) ALL PEDESTRIAN SIGNAL FACES, PUSH BUTTONS AND SIGNS ARE TO BE REPLACED WITH THIS PROJECT.

2) * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP

3) THE LOCATIONS OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.

4) THE REGIONAL ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVIOD CONFLICT WITH EXISTING UTILITY FACILITIES.

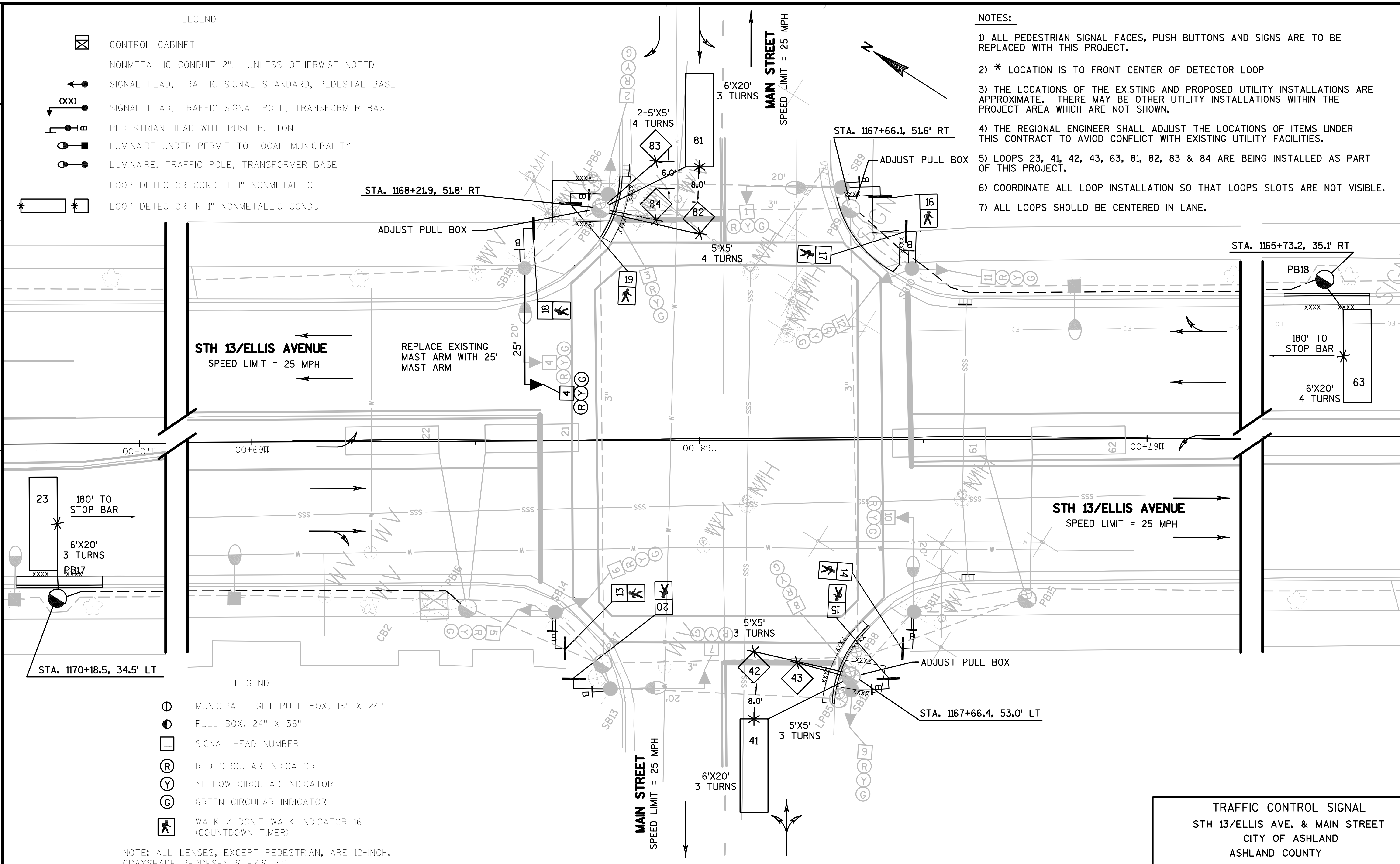
5) LOOPS 23, 41, 42, 43, 63, 81, 82, 83 & 84 ARE BEING INSTALLED AS PART OF THIS PROJECT.

6) COORDINATE ALL LOOP INSTALLATION SO THAT LOOPS SLOTS ARE NOT VISIBLE.

7) ALL LOOPS SHOULD BE CENTERED IN LANE.

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT



LEGEND

- MUNICIPAL LIGHT PULL BOX, 18" X 24"
- PULL BOX, 24" X 36"
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- WALK / DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL LENSES, EXCEPT PEDESTRIAN, ARE 12-INCH. GRAYSHADE REPRESENTS EXISTING.

TRAFFIC CONTROL SIGNAL
STH 13/ELLIS AVE. & MAIN STREET
CITY OF ASHLAND
ASHLAND COUNTY

SIGNAL NO. CONTROLLER TYPE:

PROJECT NO:1610-07-71	HWY:STH 13	COUNTY:ASHLAND	TRAFFIC SIGNAL PLAN - MAIN STREET	SHEET 7	E

FILE NAME : G:\WDOTCO\12029 (2012-2014 DESIGN WORK ORDERS)\WORK ORDER 06 (STH 13 SIGNALS)\CAD\SHEETS PLAN\024001_SP.DWG PLOT DATE : 1/29/2014 PLOT BY : KL ENGINEERING PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

SEQUENCE OF OPERATION

RING 1	HEAD NUMBERS	Ø1 NOT USED	Ø1 R/W	Ø1 CLEAR TO **	Ø2 ⇕	Ø2 R/W	Ø2 CLEAR TO **	Ø3 NOT USED	Ø3 R/W	Ø3 CLEAR TO **	Ø4 ⇔	Ø4 R/W	Ø4 CLEAR TO **	FLASH
Ø1														
Ø2	5,10,12					G	Y R					R	R R	Y
Ø3														
Ø4	1,3,8					R	R R					G	Y R	R
Ø5														
Ø6	4,6,11					R	R R					R	R R	Y
Ø7														
Ø8	2,7,9					R	R R					R	R R	R
Ø2P	13,14					*	DW DW					DW	DW DW	
Ø4P	15,16					DW	DW DW					*	DW DW	
Ø6P	17,18					DW	DW DW					DW	DW DW	
Ø8P	19,20					DW	DW DW					DW	DW DW	

RING 2	HEAD NUMBERS	Ø5 NOT USED	Ø5 R/W	Ø5 CLEAR TO **	Ø6 ⇑	Ø6 R/W	Ø6 CLEAR TO **	Ø7 NOT USED	Ø7 R/W	Ø7 CLEAR TO **	Ø8 ⇐	Ø8 R/W	Ø8 CLEAR TO **
Ø1													
Ø2	5,10,12					R	R R					R	R R
Ø3													
Ø4	1,3,8					R	R R					R	R R
Ø5													
Ø6	4,6,11					G	Y R					R	R R
Ø7													
Ø8	2,7,9					R	R R					G	Y R
Ø2P	13,14					DW	DW DW					DW	DW DW
Ø4P	15,16					DW	DW DW					DW	DW DW
Ø6P	17,18					*	DW DW					DW	DW DW
Ø8P	19,20					DW	DW DW					*	DW DW

BARRIER

N

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	4,8
3		
4	8	2,6
5		
6	2	4,8
7		
8	4	2,6

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
21		FUTURE								6'X20'	
22		FUTURE								6'X20'	
23	1	X			2	2				6'X20'	3
41	2	X			4	4				6'X20'	3
42	2	X			4	4				5'X5'	3
43	3	X			4	4		X		5'X5'	3
61		FUTURE								6'X20'	
62		FUTURE								6'X20'	
63	4	X			6	6				6'X20'	4
81	5	X			8	8				6'X20'	3
82	5	X			8	8				5'X5'	4
83	6	X			8	8		X		5'X5'	4
84	6	X			8	8		X		5'X5'	4

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN.	X
3				
4		8		X
5				
6	X	2	MIN.	X
7				
8		4		X

OVERLAPS

O.L. "A" = NONE
O.L. "B" = NONE
O.L. "C" = NONE
O.L. "D" = NONE

TYPE OF INTERCONNECT COMMUNICATION	
NONE	x
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS- -

TYPE OF PRE-EMPT	
NONE	x
RAILROAD	
EMERGENCY VEHICLE	
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	x
IN SEPARATE DOT LIGHTING CABINET	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)

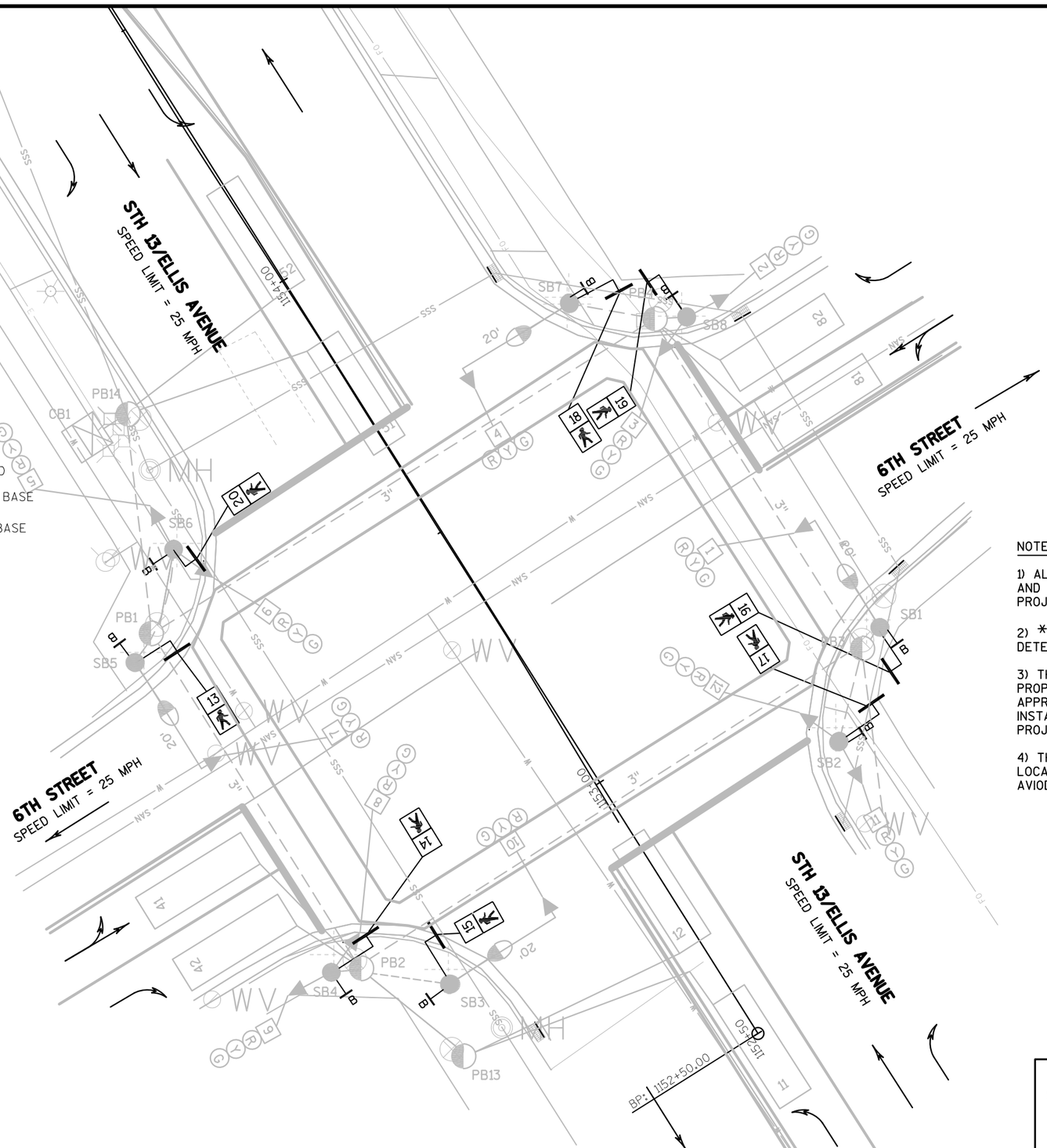
STH 13/ELLIS AVE. & MAIN STREET
CITY OF ASHLAND
ASHLAND COUNTY

SIGNAL NO.

CONTROLLER TYPE:

DATE PAGE NO. OF

2



LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- WALK / DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)

NOTE: ALL LENSES, EXCEPT PEDESTRIAN, ARE 12-INCH. GRAYSHADE REPRESENTS EXISTING.

NOTES:

1) ALL PEDESTRIAN SIGNAL FACES, PUSH BUTTONS AND SIGNS ARE TO BE REPLACED WITH THIS PROJECT.

2) * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP

3) THE LOCATIONS OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.

4) THE REGIONAL ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVIOD CONFLICT WITH EXISTING UTILITY FACILITIES.

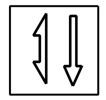
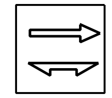
TRAFFIC CONTROL SIGNAL
STH 13/ELLIS AVE. & STH 137/6TH STREET
CITY OF ASHLAND
ASHLAND COUNTY
SIGNAL NO. CONTROLLER TYPE:

PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	TRAFFIC SIGNAL PLAN - STH 137/6TH STREET	SHEET 9	E

FILE NAME : G:\WDOTCO\12029 (2012-2014 DESIGN WORK ORDERS)\WORK ORDER 06 (STH 13 SIGNALS)\CAD\SHEETS PLAN\024001_SP.DWG PLOT DATE : 1/29/2014 PLOT BY : KL ENGINEERING PLOT NAME : ---------- PLOT SCALE : 1 IN:20 FT

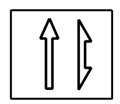
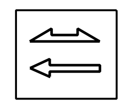
2

SEQUENCE OF OPERATION

Ø1	Ø2	Ø3	Ø4
NOT USED		NOT USED	

RING 1

	HEAD NUMBERS	Ø1 R/W	Ø1 CLEAR TO **	Ø1	Ø2 R/W	Ø2 CLEAR TO **	Ø2	Ø3 R/W	Ø3 CLEAR TO **	Ø3	Ø4 R/W	Ø4 CLEAR TO **	Ø4	FLASH
Ø1														
Ø2	5,10,12				G	Y	R				R	R	R	Y
Ø3														
Ø4	1,3,9				R	R	R				G	Y	R	R
Ø5														
Ø6	4,6,11				R	R	R				R	R	R	Y
Ø7														
Ø8	2,7,8				R	R	R				R	R	R	R
Ø2P	13,14				*	DW	DW				DW	DW	DW	
Ø4P	15,16				DW	DW	DW				*	DW	DW	
Ø6P	17,18				DW	DW	DW				DW	DW	DW	
Ø8P	19,20				DW	DW	DW				DW	DW	DW	

Ø5	Ø6	Ø7	Ø8
NOT USED		NOT USED	

RING 2

	HEAD NUMBERS	Ø5 R/W	Ø5 CLEAR TO **	Ø5	Ø6 R/W	Ø6 CLEAR TO **	Ø6	Ø7 R/W	Ø7 CLEAR TO **	Ø7	Ø8 R/W	Ø8 CLEAR TO **	Ø8
Ø1													
Ø2	5,10,12				R	R	R				R	R	R
Ø3													
Ø4	1,3,9				R	R	R				R	R	R
Ø5													
Ø6	4,6,11				G	Y	R				R	R	R
Ø7													
Ø8	2,7,8				R	R	R				G	Y	R
Ø2P	13,14				DW	DW	DW				DW	DW	DW
Ø4P	15,16				DW	DW	DW				DW	DW	DW
Ø6P	17,18				*	DW	DW				DW	DW	DW
Ø8P	19,20				DW	DW	DW				*	DW	DW

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK,THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	4,8
3		
4	8	2,6
5		
6	2	4,8
7		
8	4	2,6

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	CALLS ONLY	EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11		FUTURE								6'X20'	
12		FUTURE								6'X20'	
21	1	X			2	2			X	6'X6'	3
22	2	X			2	2			X	6'X6'	3
41	3	X			4	4		X		6'X20'	3
42	4	X			4	4		X		6'X20'	2
51		FUTURE								6'X20'	
52		FUTURE								6'X20'	
61	5	X			6				X	6'X6'	4
62	6	X			6				X	6'X6'	3
81	7	X			8			X		6'X20'	3
82	8	X			8			X		6'X20'	2

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN.	X
3				
4		8		X
5				
6	X	2	MIN.	X
7				
8		4		X

OVERLAPS

O.L. "A" = NONE
O.L. "B" = NONE
O.L. "C" = NONE
O.L. "D" = NONE

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM *: SS- -	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)

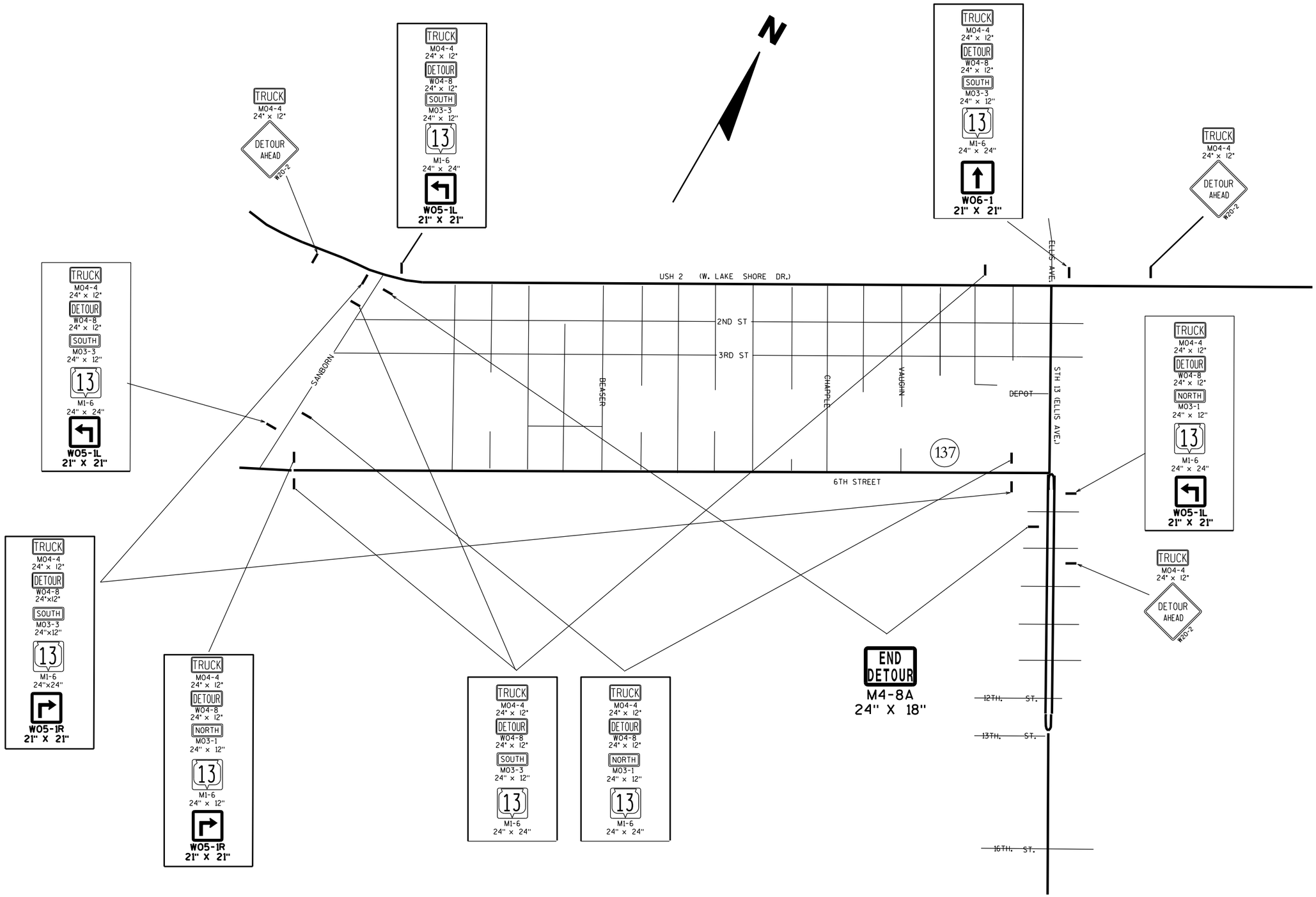
STH 13/ELLIS AVE. &
STH 137/6TH STREET
CITY OF ASHLAND
ASHLAND COUNTY

SIGNAL NO.

CONTROLLER TYPE:

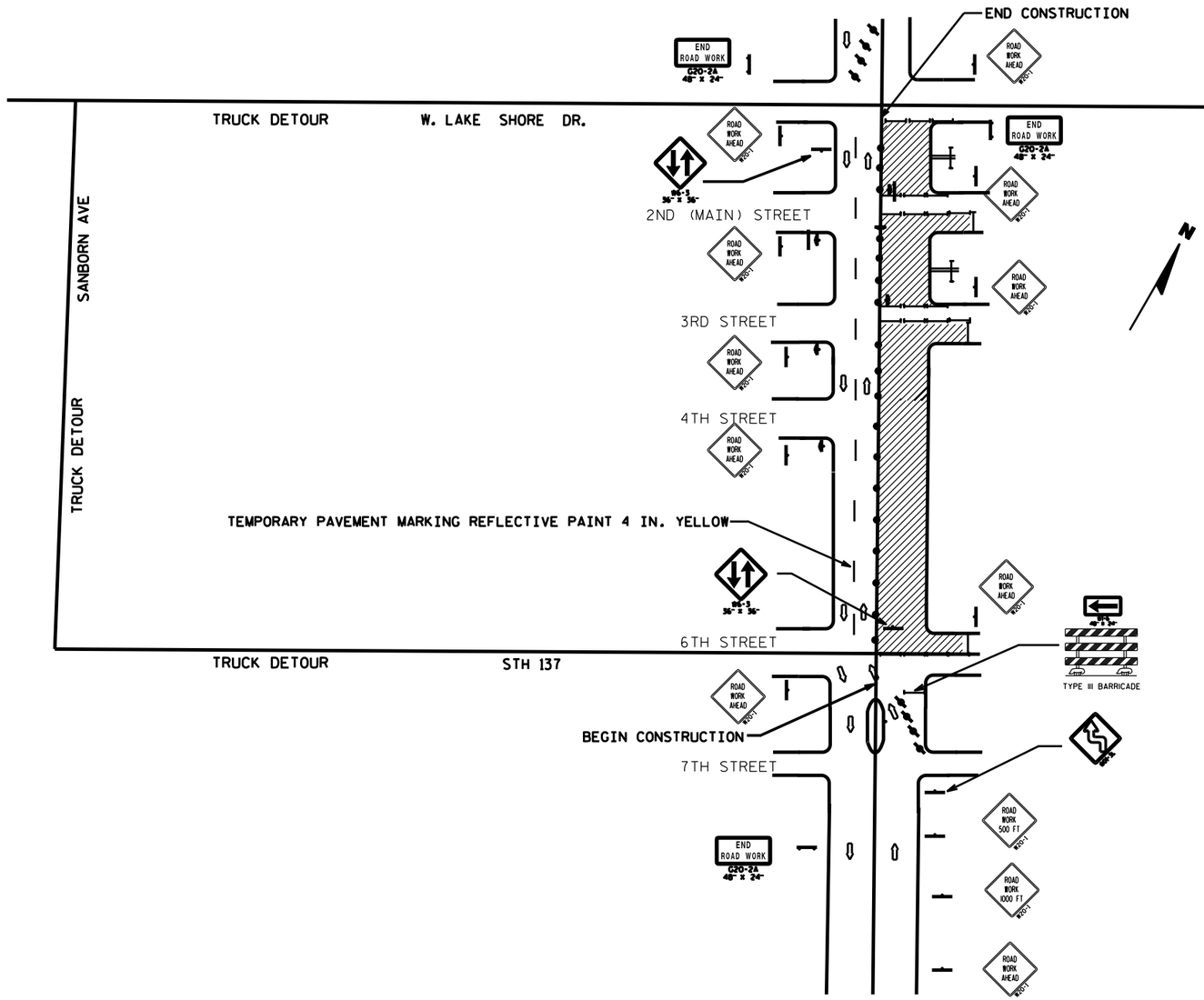
DATE PAGE NO. OF

2



PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - TRUCK DETOUR ROUTE	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$



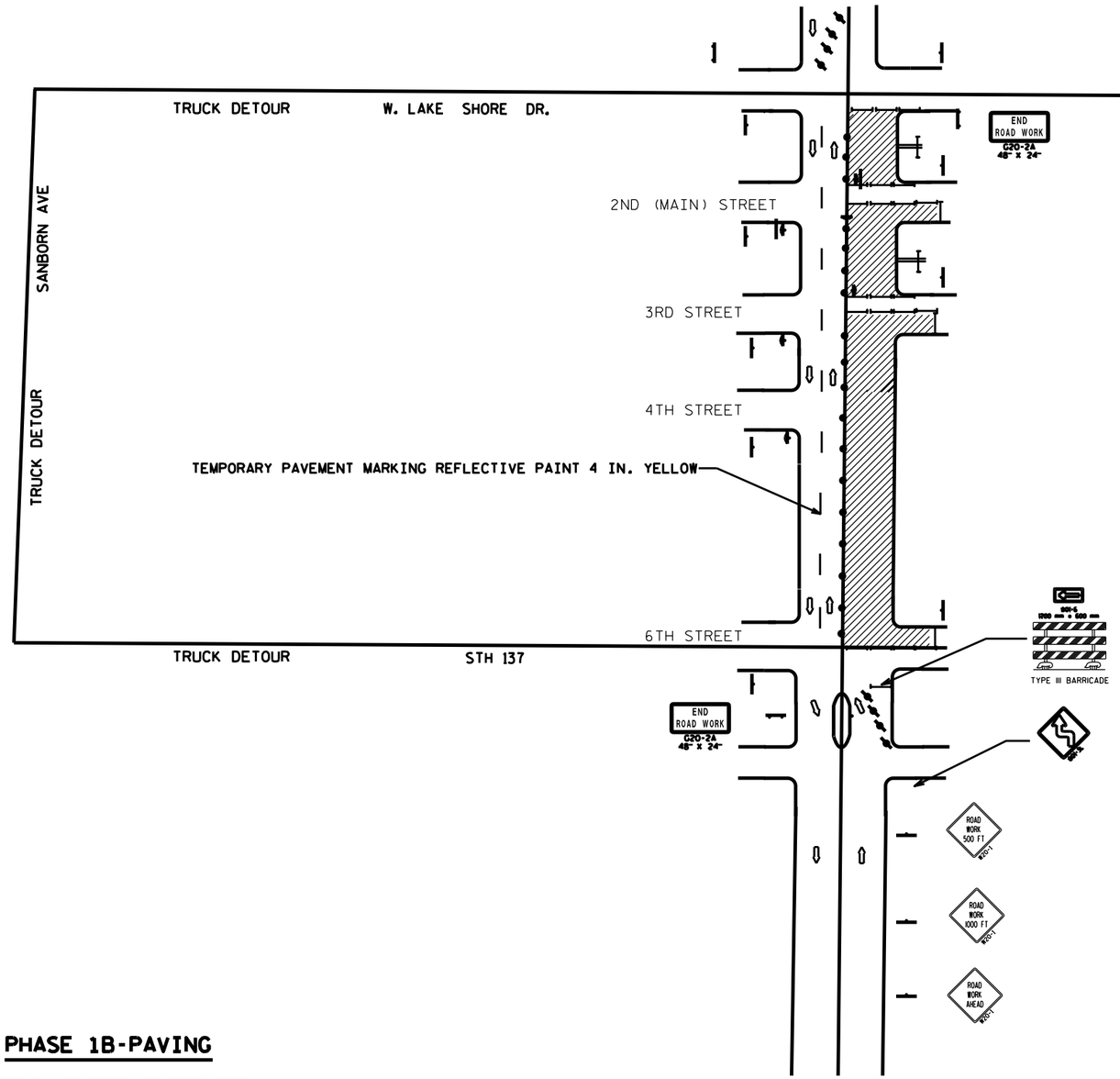
STAGE 1

TRUCK TRAFFIC IS DETOURED TO STH 137, SANBORN AVE, AND USH 2.
RESURFACE EAST HALF OF USH 13, GAPPING INTERSECTING SIDE STREETS.

LEGEND

- DIRECTION OF TRAVEL
- WORK AREA
- DRUMS SPACED AT 50FT. C-C
- DRUMS W/ C LITES SPACED AT 50FT. C-C
- ROAD WORK AHEAD SIGN
- TYPE III BARACADE
- STOP SIGN — R1-1, 30" X 30"
- END ROAD WORK SIGN — C20-2A, 48" X 24"
- TWO WAY TRAFFIC SIGN — R4-3, 36" X 36"
- ROAD WORK 500 FT SIGN — W20-1
- ROAD WORK 1000 FT SIGN — W20-1
- SINGLE NIGHT ARROW ON BARRICADE
- LEFT REVERSE TURN SIGN
- CROSS TRAFFIC DOES NOT STOP SIGN (WITH MAIN ST. STOP SIGNS) — R4-4P, 24" x 12"

PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - NORTH BOUND CONSTRUCTION	SHEET	E



LEGEND

- DIRECTION OF TRAVEL
- WORK AREA
- GRADED UNDER TRAFFIC
- DRUMS SPACED AT 50 FT C-C
- DRUMS W/ C LITES SPACED AT 50 FT C-C
- ROAD WORK AHEAD SIGN
- TYPE III BARACADE
- STOP SIGN
- CROSS TRAFFIC DOES NOT STOP SIGN (WITH MAIN ST. STOP SIGNS)
- END ROAD WORK SIGN

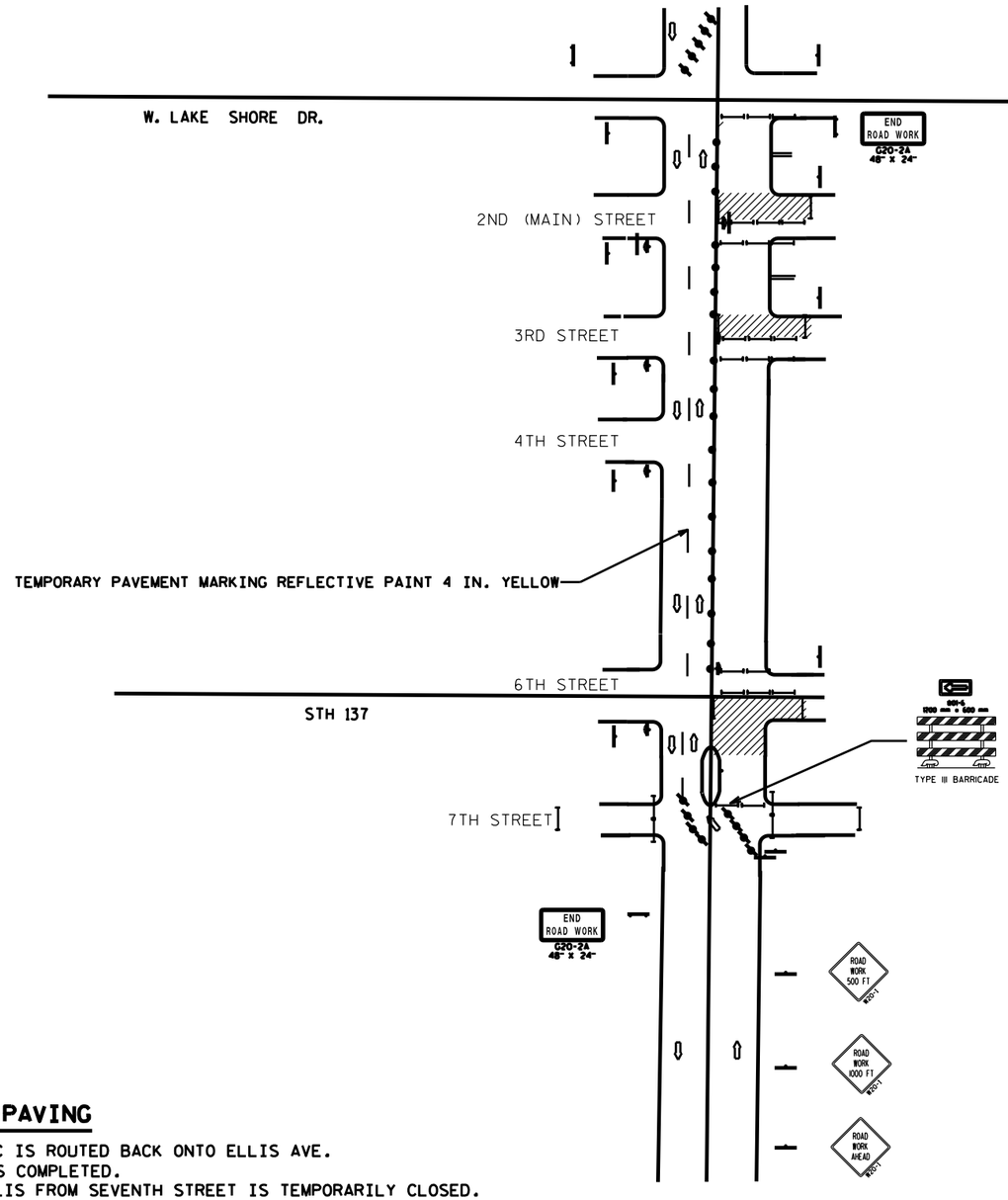
PHASE 1B-PAVING

TRUCK TRAFFIC IS DETOURED.

PAVE EAST HALF OF ROADWAY, GAPPING INTERSECTING SIDE STREETS.

PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - TRUCK DETOUR ROUTE	SHEET 13	E

2



PHASE 1C-PAVING

TRUCK TRAFFIC IS ROUTED BACK ONTO ELLIS AVE.
GAP PAVING IS COMPLETED.
ACCESS TO ELLIS FROM SEVENTH STREET IS TEMPORARILY CLOSED.

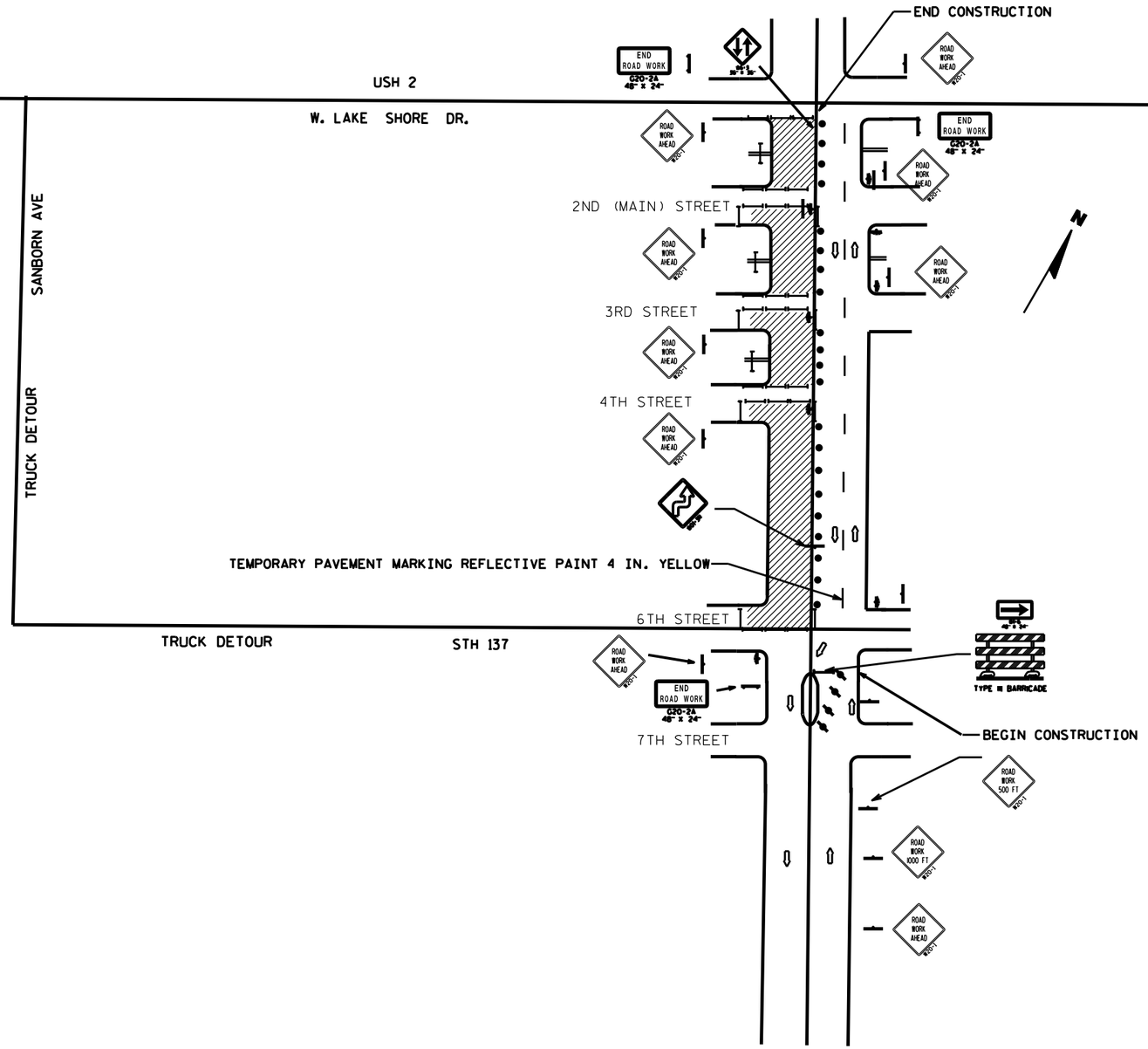
LEGEND

- DIRECTION OF TRAVEL
- WORK AREA
- GRADED UNDER TRAFFIC
- DRUMS SPACED AT 50 FT C-C
- DRUMS W/ C LITES SPACED AT 50 FT C-C
- ROAD WORK AHEAD SIGN (ROAD WORK AHEAD)
- TYPE III BARACADE (TYPE III BARRICADE)
- STOP SIGN (STOP R1-1 30" x 30")
- CROSS TRAFFIC DOES NOT STOP SIGN (WITH MAIN ST. STOP SIGNS) (CROSS TRAFFIC DOES NOT STOP R4-4P 24" x 12")
- END ROAD WORK SIGN (END ROAD WORK G20-2A 48" x 24")

N

PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - TRUCK DETOUR ROUTE	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$



LEGEND

- DIRECTION OF TRAVEL
- WORK AREA
- DRUMS SPACED AT 50FT. C-C
- DRUMS W/ C LITES SPACED AT 50FT. C-C
- ROAD WORK AHEAD SIGN
- TYPE III BARACADE
- STOP SIGN — STOP R1-1 30" X 30"
- END ROAD WORK SIGN — END ROAD WORK G20-2A 48" x 24"
- TWO WAY TRAFFIC SIGN — W6-3 36" x 36"
- ROAD WORK 500 FT SIGN — ROAD WORK 500 FT W20-1 48"x48"
- ROAD WORK 1000 FT SIGN — ROAD WORK 1000 FT W20-1 48"x48"
- SINGLE NIGHT ARROW ON BARRICADE
- LEFT REVERSE TURN SIGN
- CROSS TRAFFIC DOES NOT STOP SIGN (WITH MAIN ST. STOP SIGNS) — CROSS TRAFFIC DOES NOT STOP R4-4P 24" x 12"

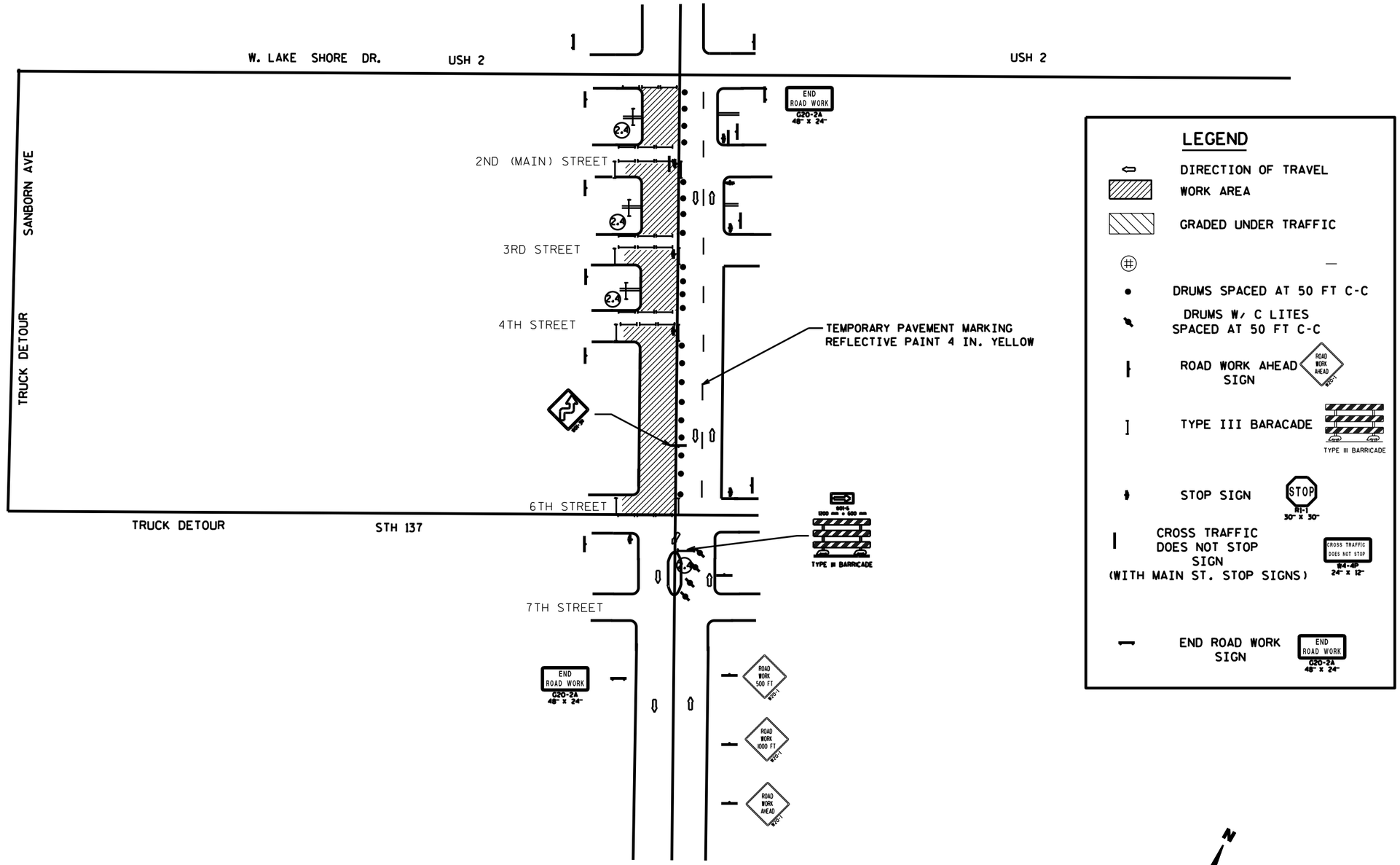
STAGE 2

TRUCK TRAFFIC IS DETOURED TO STH 137, SANBORN AVE, AND USH 2.

RESURFACE THE WEST HALF OF USH 13, GAPPING INERSECTING SIDE STRETS.

PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - SOUTH BOUND CONSTRUCTION	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

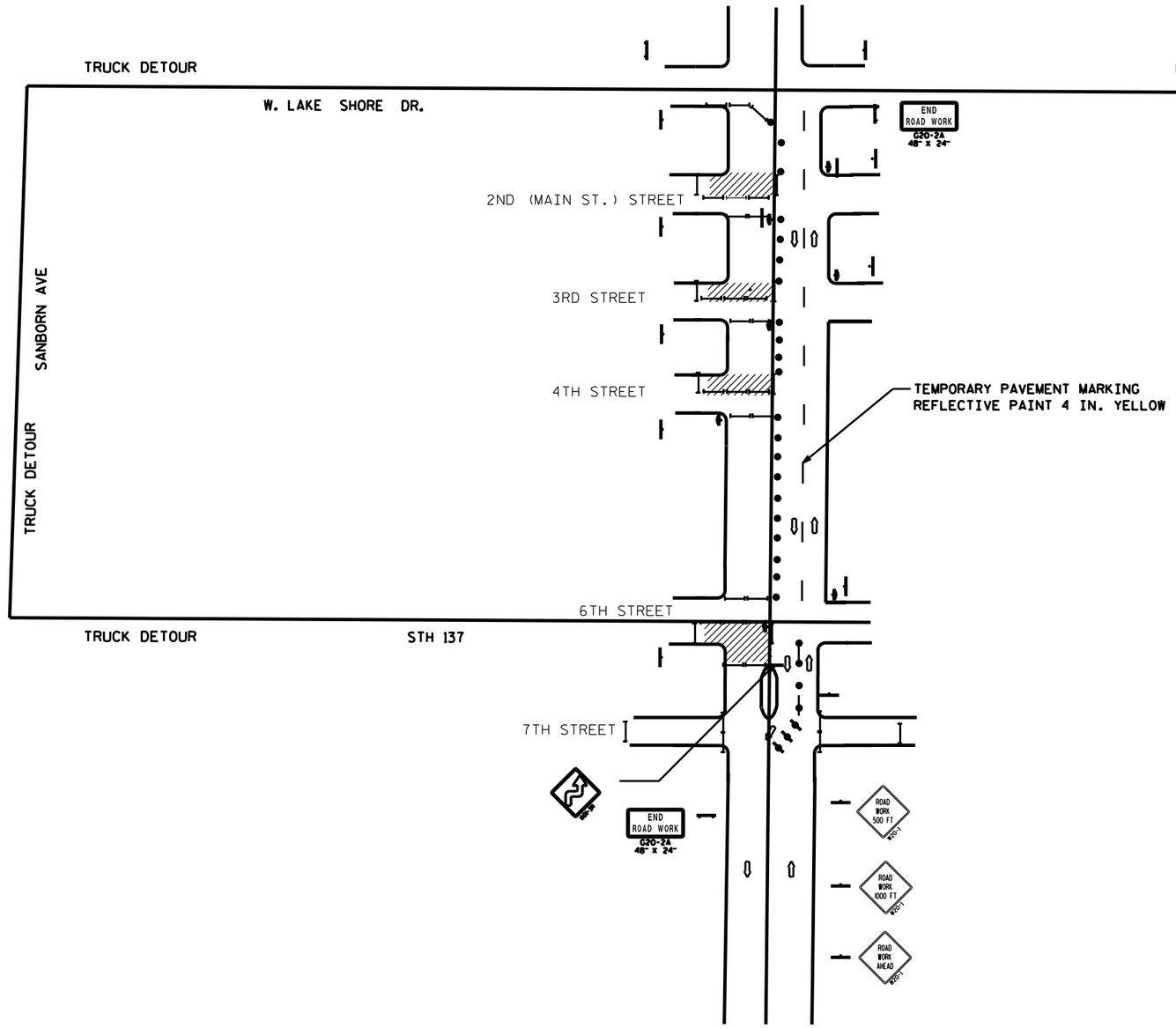


PHASE 2B - PAVING

TRUCK TRAFFIC IS DETOURED TO STH 137, SANBORN AVE, AND USH 2.

PAVE THE WEST HALF OF ROADWAY, GAPPING INERSECTING SIDE STRETS.

PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - TRUCK DETOUR ROUTE	SHEET 16	E



LEGEND

- DIRECTION OF TRAVEL
- WORK AREA
- GRADED UNDER TRAFFIC
- DRUMS SPACED AT 50 FT C-C
- DRUMS W/ C LITES SPACED AT 50 FT C-C
- ROAD WORK AHEAD SIGN (ROAD WORK AHEAD W20-1)
- TYPE III BARACADE (TYPE III BARRICADE)
- STOP SIGN (STOP R1-1 900 mm x 900 mm)
- CROSS TRAFFIC DOES NOT STOP SIGN (WITH MAIN ST. STOP SIGNS) (CROSS TRAFFIC DOES NOT STOP W4-4P 24" x 12")
- END ROAD WORK SIGN (END ROAD WORK G20-2A 48" x 24")

PHASE 2C - PAVING

TRUCK TRAFFIC IS ROUTED BACK ONTO ELLIS AVE.
GAP PAVING IS COMPLETED.
ACCESS TO ELLIS FROM SEVENTH STREET IS TEMPORARILY CLOSED.

PROJECT NO: 1610-07-71	HWY: USH 13	COUNTY: ASHLAND	TRAFFIC CONTROL - TRUCK DETOUR ROUTE	SHEET 17	E

BILL OF MATERIALS

ESTIMATE OF QUANTITIES FOR PERMANENT SIGNING

SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.
 J2-2 48" X 57"	J2-2	48"X57"	1												
 J1-1 24" X 39"	J1-1	24"X39"	1												
 J1-1 24" X 39"	J1-1	24"X39"	1												
 R4-7 24"X30"	R4-7	24"X30"	8												
 R3-2 24"X24"	R3-2	24"X24"	1												

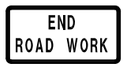
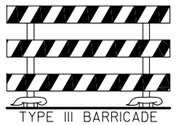
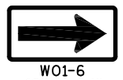
BILL OF MATERIALS

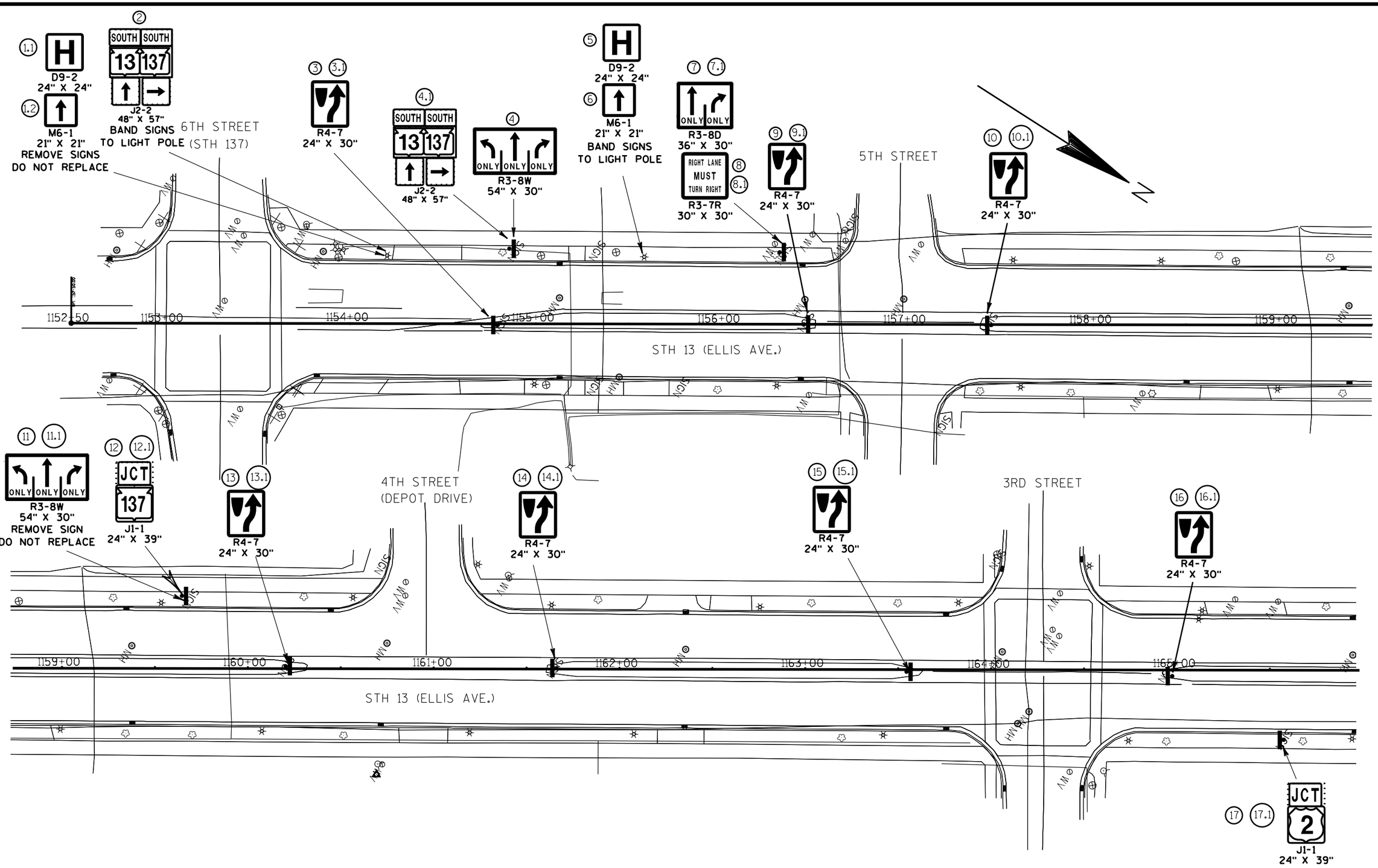
ESTIMATE OF QUANTITIES FOR TRUCK DETOUR ROUTE

SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.
 M4-4 24"X12"	M4-4	24"X12"	10	 W06-1A 21"X21"	W06-1A	21"X21"	1								
 W04-8 24"X12"	W04-8	24"X12"	8		W20-2		3								
 M3-3 24"X12"	M3-3	24"X12"	5	 W04-8A 24"X18"	W04-8A	24"X18"	1								
 M3-1 24"X12"	M3-1	24"X21"	3												
 M1-6 24"X24"	M1-6	24"X24"	8												
 W05-1L 21"X21"	W05-1L	21"X21"	3												
 W05-1R 21"X21"	W05-1R	21"X21"	2												

BILL OF MATERIALS

ESTIMATE OF QUANTITIES FOR TRAFFIC CONTROL

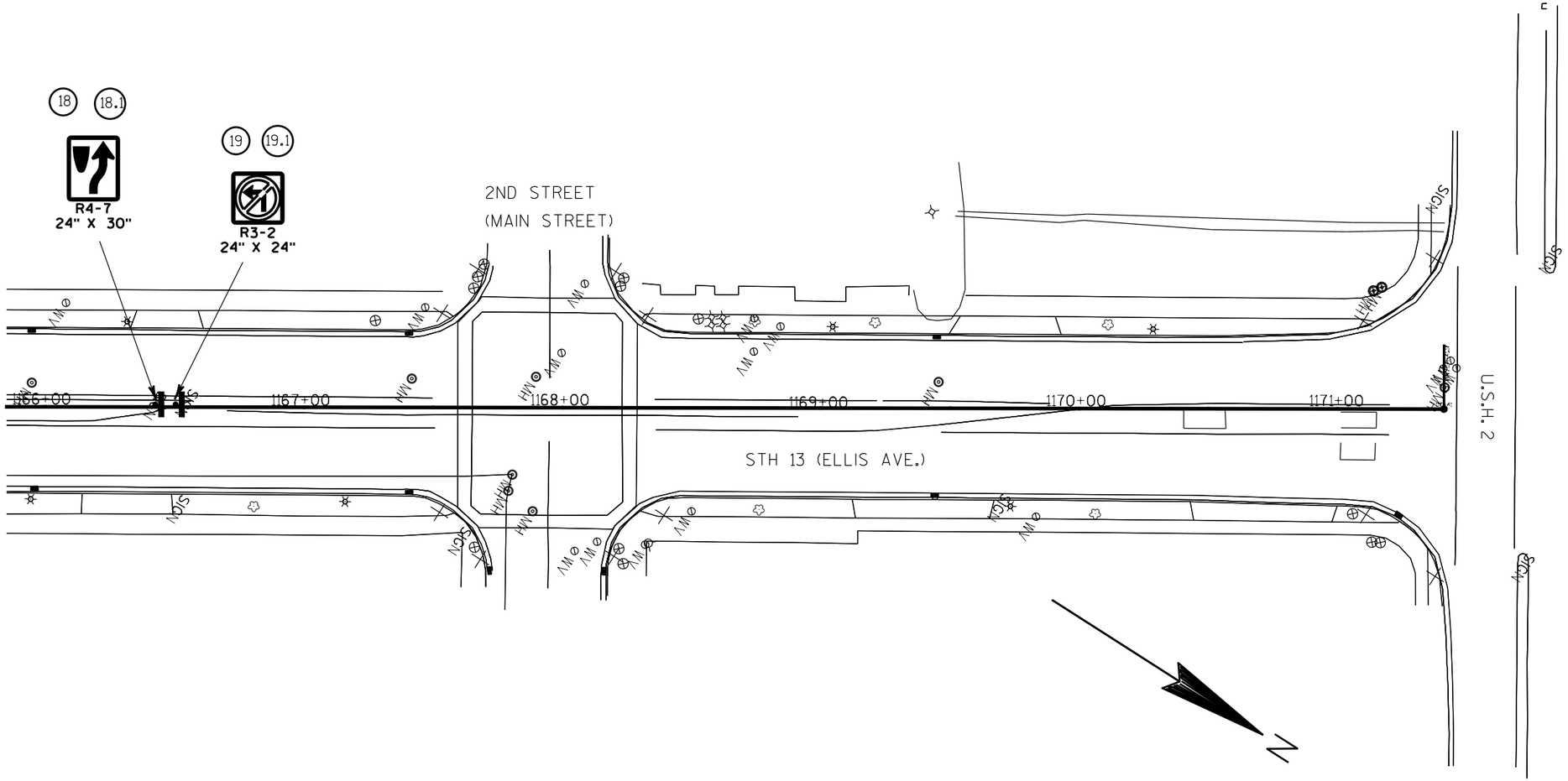
SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.	SIGN	SIGN CODE	SIGN SIZE	NO REQ'D.
	W20-1		10		W01-3R		1								
 R1-1 30" X 30"	R1-1	30"X30"	6		W06-3		2								
 G20-2A 48" X 24"	G20-2A	48"X24"	3	 TYPE III BARRICADE	TYPE III		2								
 W01-6 48"_X_24"	W01-6	48"X24"	1		W4-4P	24"X12"	2								
	W20-1		1												
	W20-1		1												
	W01-3L		1												



PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	PERMANENT SIGNING	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

2



PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	PERMANENT SIGNING	SHEET 22	E

2

3RD STREET

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIPS)

PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)

PAVEMENT MARKING CURB EPOXY (YELLOW)

1162+00 1163+00 1164+00 1165+00 1166+00 1167+00

ONLY

PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

PAVEMENT MARKING EPOXY 8-INCH WHITE

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

2ND STREET

1167+00 50 FT. 1168+00 1169+00 1170+00 1171+00

ONLY

PAVEMENT MARKING WORDS EPOXY

PAVEMENT MARKING ARROWS EPOXY TYPE 2

PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)

PAVEMENT MARKING EPOXY 8-INCH (WHITE)

USH 2

PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	PAVEMENT MARKING	SHEET 24	E

2

2

6TH STREET

5TH STREET

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

PAVEMENT MARKING ARROWS EPOXY TYPE 2

ONLY

PAVEMENT MARKING CROSSWALK EPOXY 24-INCH

PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)

50 FT.

1152+50

1153+00

1154+00

PAVEMENT MARKING EPOXY 8-INCH

1155+00

1156+00

1157+00

PAVEMENT MARKING CURB EPOXY (YELLOW)

ONLY

ONLY

PAVEMANT MARKING WORDS EPOXY

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

50 FT.

PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

PAVEMENT MARKING CROSSWALK, EPOXY 6-INCH

PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIPS)

ØWV

ØWV

ØWV

ØWV

ØWV

ØWV

HW

HW

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

4 IN. CENTERLINE, EPOXY (DOUBLE YELLOW)

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

4TH STREET

DEPOT DRIVE

PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)

PAVEMENT MARKING CROSSWALK, EPOXY 6-INCH

1158+00

1159+00

1160+00

1161+00

1162+00

PAVEMENT MARKING CURB EPOXY (YELLOW)

PAVEMENT MARKING EPOXY 4-INCH (WHITE SKIPS)

PROJECT NO: 1610-07-71	HWY: STH 13	COUNTY: ASHLAND	PAVEMENT MARKING	SHEET	E

FILE NAME : N:\PDS\C3D\16100701\Design\paintdet1.dgn PLOT DATE : 03-MAR-2014 08:51 PLOT BY : dotjtn PLOT NAME : PLOT SCALE : 58.183594:1

DATE 31MAR14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1610-07-71 QUANTITY
0010	204.0100	REMOVING PAVEMENT	SY	645.000	645.000
0020	204.0105	REMOVING PAVEMENT BUTT JOINTS	SY	234.000	234.000
0030	204.0109.S	REMOVING CONCRETE SURFACE PARTIAL DEPTH	SF	106,888.000	106,888.000
0040	204.0150	REMOVING CURB & GUTTER	LF	20.000	20.000
0050	204.0155	REMOVING CONCRETE SIDEWALK	SY	10.000	10.000
0060	213.0100	FINISHING ROADWAY (PROJECT) 01. 1610-07-71	EACH	1.000	1.000
0070	405.0100	COLORING CONCRETE RED	CY	129.000	129.000
0080	415.0060	CONCRETE PAVEMENT 6-INCH	SY	81.000	81.000
0090	416.1725	CONCRETE PAVEMENT REPLACEMENT SHES	SY	500.000	500.000
0100	455.0605	TACK COAT	GAL	594.000	594.000
0110	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	864.000	864.000
0120	465.0110	ASPHALTIC SURFACE PATCHING	TON	15.000	15.000
0130	601.0417	CONCRETE CURB & GUTTER 30-INCH TYPE K	LF	63.000	63.000
0140	611.8110	ADJUSTING MANHOLE COVERS	EACH	17.000	17.000
0150	611.8120.S	COVER PLATES TEMPORARY	EACH	17.000	17.000
0160	619.1000	MOBILIZATION	EACH	1.000	1.000
0170	625.0100	TOPSOIL	SY	272.000	272.000
0180	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	272.000	272.000
0190	629.0205	FERTILIZER TYPE A	CWT	5.000	5.000
0200	630.0140	SEEDING MIXTURE NO. 40	LB	7.000	7.000
0210	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	13.000	13.000
0220	637.2210	SIGNS TYPE II REFLECTIVE H	SF	92.810	92.810
0230	638.2602	REMOVING SIGNS TYPE II	EACH	15.000	15.000
0240	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	14.000	14.000
0250	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000
0260	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1610-07-71	EACH	1.000	1.000
0270	643.0300	TRAFFIC CONTROL DRUMS	DAY	1,836.000	1,836.000
0280	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,326.000	1,326.000
0290	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	2,652.000	2,652.000
0300	643.0900	TRAFFIC CONTROL SIGNS	DAY	918.000	918.000
0310	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 1610-07-71	EACH	1.000	1.000
0320	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	2,295.000	2,295.000
0330	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	3,250.000	3,250.000
0340	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	340.000	340.000
0350	646.0406	PAVEMENT MARKING SAME DAY EPOXY 4-INCH	LF	812.000	812.000
0360	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	7.000	7.000
0370	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	7.000	7.000
0380	647.0456	PAVEMENT MARKING CURB EPOXY	LF	160.000	160.000
0390	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	252.000	252.000
0400	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	8.000	8.000
0410	647.0766	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	LF	1,488.000	1,488.000
0420	647.0796	PAVEMENT MARKING CROSSWALK EPOXY 24-INCH	LF	72.000	72.000
0430	649.0200	TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH	LF	924.000	924.000
0440	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. MAIN ST. INT.	LS	1.000	1.000
0450	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	376.000	376.000
0460	652.0800	CONDUIT LOOP DETECTOR	LF	452.000	452.000
0470	652.0900	LOOP DETECTOR SLOTS	LF	452.000	452.000
0480	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	2.000	2.000
0490	653.0900	ADJUSTING PULL BOXES	EACH	3.000	3.000

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DATE 31MAR14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1610-07-71 QUANTITY
0500	655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	LF	45.000	45.000
0510	655.0700	LOOP DETECTOR LEAD IN CABLE	LF	1,653.000	1,653.000
0520	655.0800	LOOP DETECTOR WIRE	LF	1,530.000	1,530.000
0530	657.0595	TROMBONE ARMS 25-FT	EACH	1.000	1.000
0540	658.0416	PEDESTRIAN SIGNAL FACE 16-INCH	EACH	24.000	24.000
0550	658.0500	PEDESTRIAN PUSH BUTTONS	EACH	24.000	24.000
0560	658.0635	LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	EACH	24.000	24.000
0570	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 01. 6TH STREET/ELLIS AVENUE INTERSECTION	LS	1.000	1.000
0580	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 02. ELLIS AVE & MAIN STREET INT.	LS	1.000	1.000
0590	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 03. USH 2/ELLIS AVE INTERSECTION	LS	1.000	1.000
0600	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	1,200.000	1,200.000
0610	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	300.000	300.000
0620	SPV.0060	SPECIAL 03. REMOVE PEDESTRIAN SIGNAL HEAD	EACH	24.000	24.000
0630	SPV.0060	SPECIAL 04. REMOVE TROMBONE ARM (20-FT)	EACH	1.000	1.000
0640	SPV.0060	SPECIAL 05. REMOVE AND REINSTALL SIGNAL HEAD	EACH	1.000	1.000
0650	SPV.0060	SPECIAL 06. REMOVING PEDESTRIAN PUSH BUTTON	EACH	24.000	24.000
0660	SPV.0060	SPECIAL 07. ADJUSTING WATER VALVES	EACH	16.000	16.000
0670	SPV.0090	SPECIAL 01. CONCRETE CURB & GUTTER CURE & SEAL TREATMENT	LF	63.000	63.000
0680	SPV.0105	SPECIAL 01. PREPARATION OF FOUNDATION FOR ASPHALTIC PAVING OVER PCC SPECIAL	LS	1.000	1.000
0690	SPV.0105	SPECIAL 02. CABINET DETECTION UPGRADES	LS	1.000	1.000
0700	SPV.0195	SPECIAL 01. HMA PAVEMENT TYPE E-3 SPECIAL	TON	1,530.000	1,530.000

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REMOVING PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 SY	REMARKS
0030	1152+95	-	1153+65	6TH STREET	170	COLORED CROSSWALK
0030	1163+95	-	1164+58	3RD STREET	160	COLORED CROSSWALK
0030			1165+30	LT	32	COMMERCIAL ENTRANCE
0030	1167+60	-	1168+30	2ND STREET	170	COLORED CROSSWALK
0030			1169+35	RT	44	COMMERCIAL ENTRANCE
0030			1169+70	LT	37	COMMERCIAL ENTRANCE
0030				LT	32	
				TOTAL 0030	645	

REMOVING PAVEMENT BUTT JOINTS

CATEGORY	STATION	TO	STATION	LOCATION	204.0105 SY	REMARKS
0010	1152+67	-	1152+87	M.L.	52	STAGE 1
0010	1170+20	-	1170+40	M.L.	65	STAGE 1
0010	1152+67	-	1152+87	M.L.	52	STAGE 2
0010	1170+20	-	1170+40	M.L.	65	STAGE 2
				TOTAL 0010	234	

REMOVING CONCRETE SURFACE PARTIAL DEPTH

CATEGORY	STATION	TO	STATION	LOCATION	204.0109.S SF	REMARKS
0010	1152+67	-	1166+34.5	M.L.	71384	
0010	1166+34.5	-	1170+70	M.L.	27872	
0010	1153+50			6TH ST. (LT)	900	
0010	1130+50			6TH ST. (RT)	900	
0010	1156+95			5TH ST. (LT)	900	
0010	1156+95			5TH ST. (RT)	900	
0010	1160+95			4TH ST. (LT)	720	
0010	1164+25			3RD ST. (LT)	792	
0010	1164+25			3RD ST. (RT)	792	
0010	1167+95			2ND ST. (LT)	864	
0010	1167+95			2ND ST. (RT)	864	
				TOTAL 0010	106888	

REMOVING CURB & GUTTER

CATEGORY	APPROX. STATION	TO	APPROX. STATION	LOCATION	204.0150 LF	REMARKS
0010	1166+65	-	1166+70	RT	5	FOR LOOP DETECTOR WIRE TO PULL BOX
0010				SW RADIOUS	5	" " " " " " "
0010	1170+05	-	1170+10	LT	5	" " " " " " "
0010				NE RADIUS	5	" " " " " " "
				TOTAL 0010	20	

REMOVING CONCRETE SIDEWALK

CATEGORY	STATION	TO	STATION	LOCATION	204.0155 SY	REMARKS
0010				MAIN ST/ELLIS AVE INT.	3	NE RADIUS - SEE TRAFFIC SIGNAL SHEET
0010				" " " " "	4	SE RADIUS " " " "
0010				" " " " "	3	SW RADIUS " " " "
				TOTAL 0010	10	

COLORING CONCRETE RED

CATEGORY	STATION	TO	STATION	LOCATION	405.0100 CY	REMARKS
0030	1152+95	-	1153+65	6TH STREET	45	REPLACE EXISTING COLORED CROSSWALKS
0030	1163+95	-	1164+58	3RD STREET	39	" " " "
0030	1167+60	-	1168+30	2ND STREET	45	" " " "
				TOTAL 0030	129	

CONCRETE PAVEMENT 6-INCH

CATEGORY	STATION	TO	STATION	LOCATION	415.0060 SY	REMARKS
0030			1169+35	RT	44	REPLACE EXISTING COMMERCIAL ENTRANCE
0030			1169+70	LT	37	" " " "
				TOTAL 0030	81	

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CONCRETE PAVEMENT REPLACEMENT SHES

CATEGORY	STATION TO STATION	LOCATION	416.1725 SY	REMARKS
0030	1152+95 - 1153+65	6TH STREET	170	REPLACE EXISTING COLORED CROSSWALKS
0030	1163+95 - 1164+58	3RD STREET	160	" " " "
0030	1167+60 - 1168+30	2ND STREET	170	" " " "
		TOTAL 0030	500	

CONCRETE CURB & GUTTER 30-INCH TYPE K

CATEGORY	STATION TO STATION	LOCATION	601.0417 LF	REMARKS
0010	1166+65 - 1166+70	RT	5	SEE TRAFFIC SIGNAL PLAN
0010		SW RADIOUS	5	" " " "
0010	1170+05 - 1170+10	LT	5	" " " "
0010		NE RADIUS	5	" " " "
		TOTAL 0010	20	
0030	1165+15 - 1165+58	LT	43	AT REMOVED NAPA AUTO PARTS ENTRANCE.
		TOTAL 0030	43	

TACK COAT

CATEGORY	STATION TO STATION	LOCATION	455.0605 GAL	REMARKS
0010	1152+67 - 1166+34.5	M.L.	397	
0010	1166+34.5 - 1170+70	M.L.	155	
0010	1153+50	6TH STREET (LT)	5	
0010	1153+50	6TH STREET (RT)	5	
0010	1156+95	5TH STREET (LT)	5	
0010	1156+95	5TH STREET (RT)	5	
0010	1160+95	4TH STREET (LT)	4	
0010	1164+25	3RD STREET (LT)	4	
0010	1164+25	3RD STREET (RT)	4	
0010	1167+95	2ND STREET (LT)	5	
0010	1167+95	2ND STREET (RT)	5	
		TOTAL 0010	594	

CATEGORY	APPROX. STATION	LOCATION	ADJUSTING MANHOLE COVERS 611.8110 EACH	COVER PLATES TEMPORARY 611.8120.S EACH	REMARKS
0010	1155+10	14' LT	1	1	SEE SPECIAL PROVISION ARTICLES 11 AND 12
0010	1155+46	30' RT	1	1	
0010	1156+45	14' LT	1	1	
0010	1156+98	14' LT	1	1	
0010	1159+37	12' LT	1	1	
0010	1160+75	14' LT	1	1	
0010	1162+35	8' LT	1	1	
0010	1164+05	12' LT	1	1	
0010	1164+12	30' RT	1	1	
0010	1164+19	25' RT	1	1	
0010	1165+95	10' LT	1	1	
0010	1167+42	12' LT	1	1	
0010	1167+80	33' RT	1	1	
0010	1167+81	26' RT	1	1	
0010	1167+90	43' RT	1	1	
0010	1167+90	12' LT	1	1	
0010	1169+45	10' LT	1	1	
		TOTAL 0010	17	17	

ASPHALTIC SURFACE PATCHING

CATEGORY	STATION TO STATION	LOCATION	465.0110 TON	REMARKS
0010	1152+67 - 1170+70	UNDISTRIBUITED	15	SEE GENERAL NOTES PAGE FOR REQUIREMENTS.
		TOTAL 0010	15	

TOPSOIL

CATEGORY	APPROX. STATION TO APPROX. STATION	LOCATION	625.0100 SY	REMARKS
0010	1165+70 - 1167+50	RT	120	RESTORE GRASS BOULEVARD (SEE TRAFFIC SIGNAL PLAN)
0010	1168+35 - 1170+15	LT	120	" " " " " " "
		TOTAL 0010	240	
0030	1165+15 - 1165+58	LT	32	AT REMOVED NAPA AUTO PARTS ENTRANCE.
		TOTAL 0030	32	

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EROSION MAT URBAN CLASS I TYPE A

CATEGORY	STATION TO	STATION	LOCATION	628.2006 SY	REMARKS
0010	1165+70	- 1167+50	RT	120	RESTORE GRASS BOULEVARD (SEE TRAFFIC SIGNAL PLAN)
0010	1168+35	- 1170+15	LT	120	" " " " " " "
			TOTAL 0010	240	
0030	1165+15	- 1165+58	LT	32	AT REMOVED NAPA AUTO PARTS ENTRANCE.
			TOTAL 0030	32	

FERTILIZER TYPE A

CATEGORY	STATION TO	STATION	LOCATION	629.0205 CWT	REMARKS
0010	1165+70	- 1167+50	RT	2	RESTORE GRASS BOULEVARD (SEE TRAFFIC SIGNAL PLAN)
0010	1168+35	- 1170+15	LT	2	" " " " " " "
			TOTAL 0010	4	
0030	1165+15	- 1165+58	LT	1	AT REMOVED NAPA AUTO PARTS ENTRANCE.
			TOTAL 0030	1	

SEEDING MIXTURE NO. 40

CATEGORY	STATION TO	STATION	LOCATION	630.0140 LB	REMARKS
0010	1165+70	- 1167+50	RT	3	RESTORE GRASS BOULEVARD (SEE TRAFFIC SIGNAL PLAN)
0010	1168+35	- 1170+15	LT	3	" " " " " " "
			TOTAL 0010	6	
0030	1165+15	- 1165+58	LT	1	AT REMOVED NAPA AUTO PARTS ENTRANCE.
			TOTAL 0030	1	

TRAFFIC CONTROL DRUMS

CATEGORY	STATION TO	STATION	LOCATION	643.0300 DAY	REMARKS
0010			PROJECT	1836	
			TOTAL 0010	1836	

TRAFFIC CONTROL BARRICADES TYPE III

CATEGORY	STATION TO	STATION	LOCATION	643.0420 DAY	REMARKS
0010			PROJECT	1326	
			TOTAL 0010	1326	

TRAFFIC CONTROL WARNING LIGHTS TYPE C

CATEGORY	STATION TO	STATION	LOCATION	643.0715 DAY	REMARKS
0010			PROJECT	2652	
			TOTAL 0010	2652	

TRAFFIC CONTROL SIGNS

CATEGORY	STATION TO	STATION	LOCATION	643.0900 DAY	REMARKS
0010			PROJECT	918	
			TOTAL 0010	918	

TRAFFIC CONTROL DETOUR SIGNS

CATEGORY	STATION TO	STATION	LOCATION	643.3000 DAY	REMARKS
0010			PROJECT	2295	SEE TRUCK DETOUR ROUTE SHEET
			TOTAL 0010	2295	

PAVEMENT MARKING EPOXY 4-INCH

CATEGORY	STATION TO	STATION	LOCATION	646.0106 LF	REMARKS
0010	1153+75	- 1164+00	C.L. - YELLOW	2050	
0010	1164+60	- 1167+60	C.L. - YELLOW	600	
0010	1168+30	- 1171+30	C.L. - YELLOW	600	
			TOTAL 0010	3250	

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PAVEMENT MARKING EPOXY 8-INCH

CATEGORY	STATION TO STATION	LOCATION	646.0126 LF	REMARKS
0010	1152+25 - 1152+75	TURN LANE	50	CHANNELZING - WHITE
0010	1153+75 - 1154+25	" "	50	" "
0010	1167+00 - 1164+50	" "	50	" "
0010	1168+80 - 1169+30	" "	50	" "
0010	1170+40 - 1171+10	" "	140	" "
		TOTAL 0010	340	

PAVEMENT MARKING SAME DAY EPOXY 4-INCH

CATEGORY	STATION TO STATION	LOCATION	646.0406 LF	REMARKS
0010	1153+75 - 1164+00	M.L.	512	
0010	1164+60 - 1167+60	M.L.	150	
0010	1168+30 - 1171+30	M.L.	150	
		TOTAL 0010	812	

PAVEMENT MARKING ARROWS EPOXY TYPE 2

CATEGORY	APPROX STATION	LOCATION	647.0166 EACH	REMARKS
0010	1152+50	LEFT TURN LANE	1	SEE PAINT DETAIL SHEET
0010	1153+80	" " "	1	" " " "
0010	1155+19	RIGHT TURN LANE	1	" " " "
0010	1167+50	LEFT TURN LANE	1	" " " "
0010	1168+70	" " "	1	" " " "
0010	1171+10	" " "	1	" " " "
0010	1171+10	RIGHT TURN LANE	1	" " " "
		TOTAL 0010	7	

PAVEMENT MARKING WORDS EPOXY

CATEGORY	APPROX. STATION	LOCATION	647.0356 EACH	REMARKS
0010	1152+30	LEFT TURN LANE	1	WORD "ONLY" (SEE PAINT DETAIL SHEET)
0010	1154+10	" " "	1	" " " " " "
0010	1155+29	RIGHT TURN LANE	1	" " " " " "
0010	1167+30	LEFT TURN LANE	1	" " " " " "
0010	1169+00	" " "	1	" " " " " "
0010	1170+60	" " "	1	" " " " " "
0010	1170+60	RIGHT TURN LANE	1	" " " " " "
		TOTAL 0010	7	

PAVEMENT MARKING CURB EPOXY

CATEGORY	STATION TO STATION	LOCATION	647.0456 LF	REMARKS
0010	1154+75 - 1155+85	MEDIAN	20	SEE PAINT DETAIL SHEET
0010	1157+60 - 1157+70	MEDIAN	20	" " " "
0010	1158+60 - 1168+70	MEDIAN	20	" " " "
0010	1160+30 - 1160+40	MEDIAN	20	" " " "
0010	1161+75 - 1161+85	MEDIAN	20	" " " "
0010	1163+70 - 1163+80	MEDIAN	20	" " " "
0010	1165+00 - 1165+10	MEDIAN	20	" " " "
0010	1166+60 - 1166+70	MEDIAN	20	" " " "
		TOTAL 0010	160	

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

CATEGORY	APPROX. STATION	LOCATION	647.0566 LF	REMARKS
0010	1152+75	M.L.	36	SEE PAINT DETAIL SHEET
0010	1153+10	6TH STREET (LT)	12	" " " "
0010	1153+50	6TH STREET (RT)	12	" " " "
0010	1153+70	M.L.	36	" " " "
0010	1156+80	5TH STREET (LT)	12	" " " "
0010	1157+10	5TH STREET (RT)	12	" " " "
0010	1160+90	4TH STREET (LT)	12	" " " "
0010	1164+10	3RD STREET (LT)	12	" " " "
0010	1164+22	3RD STREET (RT)	12	" " " "
0010	1167+50	2ND STREET (LT)	12	" " " "
0010	1167+62	2ND STREET (RT)	12	" " " "
0010	1168+40	M.L.	36	" " " "
0010	1171+30	M.L.	36	" " " "
		TOTAL 0010	252	

PAVEMENT MARKING ISLAND NOSE EPOXY

CATEGORY	APPROX. STATION	LOCATION	647.0606 EACH	REMARKS
0010	1154+80	MEDIAN NOSE	1	SEE PAINT DETAIL SHEET
0010	1157+75	" "	1	" " " "
0010	1158+50	" "	1	" " " "
0010	1160+40	" "	1	" " " "
0010	1161+70	" "	1	" " " "
0010	1163+60	" "	1	" " " "
0010	1165+00	" "	1	" " " "
0010	1166+55	" "	1	" " " "
		TOTAL 0010	8	

PAVEMENT MARKING CROSSWALK EPOXY 6-INCH

CATEGORY	STATION	TO	STATION	LOCATION	647.0766 LF	REMARKS
0010	1152+80	-	1153+60	STH 13 & 6TH STREET	384	SEE PAINT DETAIL SHEET
0010	1160+82	-	1161+18	STH 13 & 4TH STREET	72	" " " "
	1156+70	-	1157+06	STH 13 & 5TH STREET	144	" " " "
0010	1163+90	-	1164+75	STH 13 & 3RD STREET	384	" " " "
0010	1167+80	-	1168+65	STH 13 & 2ND STREET	384	" " " "
0010	1171+40			STH 13 & USH 2	120	" " " "
				TOTAL 0010	1488	

PAVEMENT MARKING CROSSWALK EPOXY 24-INCH

CATEGORY	STATION	TO	STATION	LOCATION	647.0796 LF	REMARKS
0010	1155+74			M.L.	72	
				TOTAL 0010	72	

TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	649.0200 LF	REMARKS
0010	1153+75	-	1171+26.5	C.L.	924	STAGE 1 & STAGE 2 (YELLOW DASH)
				TOTAL 0010	924	

SPECIAL 01.(ADJUSTING WATER VALVES)

CATEGORY	APPROX. STATION	LOCATION	SPV.0060 EACH	REMARKS
0030	1153+30	12' LT	1	SEE ARTICLE 14
0030	1153+35	55' LT	1	OF SPECIAL PROVISIONS
0030	1153+37	48' LT	1	
0030	1153+37	47' LT	1	
0030	1157+08	20' LT	1	
0030	1160+85	40' LT	1	
0030	1160+85	47' LT	1	
0030	1164+35	22' LT	1	
0030	1164+40	19' LT	1	
0030	1164+40	42' LT	1	
0030	1164+44	58' RT	1	
0030	1168+00	22' LT	1	
0030	1168+10	50' LT	1	
0030	1168+10	56' RT	1	
0030	1168+19	54' RT	1	
0030	1168+75	22' LT	1	
		TOTAL 0030	16	

SPECIAL 01. (CONCRETE CURB & GUTTER CURE AND SEAL TREATMENT)

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0090 LF	REMARKS
0010	1166+65	-	1166+70	RT	5	SEE TRAFFIC SIGNAL PLAN
0010				SW RADIOUS	5	" " " "
0010	1170+05	-	1170+10	LT	5	" " " "
0010				NE RADIUS	5	" " " "
				TOTAL 0010	20	
0030	1165+15	-	1165+58	LT	43	AT REMOVED NAPA AUTO PARTS ENTRANCE.
				TOTAL 0030	43	

SPECIAL 01.(PREP OF FOUNDATION FOR ASPHALTIC PAVING OVER PCC SPECIAL)

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0105.01 LS	REMARKS
0010	1152+67	-	1171+26.25		1	SEE ARTICLE 15 OF SPECIAL PROVISIONS
				TOTAL 0010	1	

SPECIAL 01.(HMA PAVEMENT TYPE E-3 SPECIAL)

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0195.01 TON	REMARKS
0010	1152+67.0	-	1166+34.5	ML	1022	SEE SPECIAL PROVISIONS
0010	1166+34.5	-	1170+70.0	ML	399	ARTICLE 16
0010	1153+50			6TH ST. (LT)	13	
0010	1153+50			6TH ST. (RT)	13	
0010	1156+95			5TH ST. (LT)	13	
0010	1156+95			5TH ST. (RT)	13	
0010	1160+95			4TH ST. (LT)	11	
0010	1164+25			3RD ST. (LT)	11	
0010	1164+25			3RD ST. (RT)	11	
0010	1167+95			2ND ST. (LT)	12	
0010	1167+95			2ND ST. (RT)	12	
				TOTAL 0010	1530	

3

INSTALL SIGN NUMBER	Approx. Station	Sign Location	Sign Code	Code Description	Sign Width (Inches)	Sign Height (Inches)	Sign Information	637.2210 SIGNS TYPE II REFLECTIVE H (S.F.)	638.2602 REMOVING SIGNS TYPE II (EACH)	REMOVE SIGN NUMBER	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)	634.0616 POSTS WOOD 4X6-INCH X 16-FT (EACH)
	1154+20	Left	D9-2	Hospital	24	24	Remove - Do Not Replace		1	1.1		
	1154+20	Left	M6-1	Ahead Arrow	21	21	Remove - Do Not Replace		1	1.2		
2	1154+20	Left	J2-2	South South 13 137 UA RA	48	57	Band to Light Pole	19.00	1		1	1
3	1154+85	Median	R4-7	Stay Right Arrow	24	30	Replace existing	5.00	1	3.1	1	1
4	1154+90	Left	R3-8W	Three Directional Arrows	54	30	Replaces J2-2	11.25				
	1154+90	Left	J2-2	South South 13 137 UA RA	48	57	Remove - Do Not Replace			4.1		
5	1155+60	Left	D9-2	Hospital	24	24	New - Band to Light Pole	4.0				
6	1155+60	Left	M6-1	Ahead Arrow	21	21	New - Band to Light Pole	3.06				
7	1156+35	Left	R3-8D	Two Directional Arrows	36	30	Replace existing	7.50	1	7.1	1	1
8	1156+35	Left	R3-7R	Right Lane Must Turn Right	30	30	" "	6.25	1	8.1		
9	1156+50	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	9.1	1	1
10	1157+45	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	10.1	1	1
	1159+70	Left	R3-8W	Three Directional Arrows	54	30	Remove - Do Not Replace			11.1	1	
12	1159+70	Left	J1-1	Jct 137	24	39	Replace existing	6.50	1	12.1	1	1
13	1160+25	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	13.1	1	1
14	1161+65	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	14.1	1	1
15	1163+55	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	15.1	1	1
16	1165+00	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	16.1	1	1
17	1165+50	Right	J1-1	Jct 2	24	39	" "	6.50	1	17.1	1	1
18	1166+45	Median	R4-7	Stay Right Arrow	24	30	" "	5.00	1	18.1	1	1
19	1166+50	Median	R3-2	No Left Turn Arrow	24	24	" "	4.00	1	19.1	1	1
							CATEGORY 0010 TOTAL =	92.81	15		14	13
			* NOTE: See permanent signing plan sheets for sign numbers.									

3

TRAFFIC SIGNAL REMOVALS

LOCATION	STATION	LT/RT	SPV.0060.03 REMOVING PEDESTRIAN SIGNAL HEAD (EA)	SPV.0060.04 REMOVING TROMBONE ARM (20-FT) (EA)	SPV.0060.05 REMOVE AND REINSTALL SIGNAL HEAD (EA)	SPV.0060.06 REMOVING PEDESTRIAN PUSH BUTTON (EA)
STH 13/ELLIS AVE & STH 137/6TH ST INTERSECTION						
CATEGORY 0010						
SB1	1152+97	RT	1	--	--	1
SB2	1152+85	RT	1	--	--	1
SB3	1152+84	LT	1	--	--	1
SB4	1152+97	LT	1	--	--	1
SB5	1153+59	LT	1	--	--	1
SB6	1153+70	LT	1	--	--	1
SB7	1153+70	RT	1	--	--	1
SB8	1153+58	RT	1	--	--	1
STH 13/ELLIS AVE & MAIN ST INTERSECTION				--	--	
CATEGORY 0020						
SB9	1167+66	RT	1	--	--	1
SB10	1167+52	RT	1	--	--	1
SB11	1167+52	LT	1	--	--	1
SB12	1167+66	LT	1	--	--	1
SB13	1168+21	LT	1	--	--	1
SB14	1168+32	LT	1	--	--	1
SB15	1168+38	RT	1	1	1	1
SB16	1168+20	RT	1	--	--	1
STH 13/ELLIS AVE & USH 2 INTERSECTION						
CATEGORY 0010						
SB1	1172+27	LT	2	--	--	2
SB2	1172+26	RT	2	--	--	2
SB4	1171+37	RT	1	--	--	1
SB5	1171+20	RT	1	--	--	1
SB6	1171+09	LT	1	--	--	1
SB7	1171+38	LT	1	--	--	1
CATEGORY 0010 TOTAL			**16**	**--**	**--**	**16**
CATEGORY 0020 TOTAL			**8**	**1**	**1**	**8**

TRAFFIC SIGNALS

LOCATION / BASE NUMBER	HEAD NO.	657.0595 TROMBONE ARMS 25-FT (EA)	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH (EA)	658.0500 PEDESTRIAN PUSH BUTTONS (EA)	658.0635 LED MODULE PEDESTRIAN COUNTDOWN TIMER 16-INCH (EA)
STH 13/ELLIS AVE & STH 137/6TH ST INTERSECTION					
CATEGORY 0010					
SB1	20	--	1	1	1
SB2	19	--	1	1	1
SB3	18	--	1	1	1
SB4	17	--	1	1	1
SB5	16	--	1	1	1
SB6	15	--	1	1	1
SB7	14	--	1	1	1
SB8	13	--	1	1	1
STH 13/ELLIS AVE & MAIN ST INTERSECTION					
CATEGORY 0020					
SB9	14	--	1	1	1
SB10	13	--	1	1	1
SB11	20	--	1	1	1
SB12	19	--	1	1	1
SB13	18	--	1	1	1
SB14	17	--	1	1	1
SB15	16	1	1	1	1
SB16	15	--	1	1	1
STH 13/ELLIS AVE & USH 2 INTERSECTION					
CATEGORY 0010					
SB1	22	--	1	1	1
	41	--	1	1	1
SB2	21	--	1	1	1
	82	--	1	1	1
SB4	62	--	1	1	1
SB5	81	--	1	1	1
SB6	42	--	1	1	1
SB7	61	--	1	1	1
CATEGORY 0010 TOTAL		**--**	**16**	**16**	**16**
CATEGORY 0020 TOTAL		**1**	**8**	**8**	**8**

TRAFFIC SIGNAL LOOP DETECTORS

LOCATION / LOOP NO.	*STATION	OFFSET	L/R	SIZE FT	X	FT	NO. OF TURNS	INSTALLATION METHOD	652.0800 CONDUIT LOOP DETECTOR (LF)	652.0900 LOOP DETECTOR SLOTS (LF)	655.0700 LOOP DETECTOR LEAD IN CABLE (LF)	655.0800 LOOP DETECTOR WIRE (LF)
CATEGORY 0020												
STH 13/ELLIS AVE & MAIN ST INTERSECTION												
23	1170+18.0	17	LT	6	X	20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY	60	60	193	180
41	1167+88.0	62.3	LT	6	X	20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY	74	74	121	208
42	1167+88.0	47.2	LT	5	X	5	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY	44	44	121	116
43	1167+77.0	35	LT	5	X	5	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY	32	32	121	92
63	1165+73.0	18	RT	6	X	20	4	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY	62	62	433	236
81	1167+99.5	61.3	RT	6	X	20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY	70	70	166	200
82	1167+99.5	46.2	RT	5	X	5	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY	42	42	166	112
83	1168+10.5	62.4	RT	5	X	5	4	SDD: LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY	36	36	166	100
84	1168+10.5	49.3	RT	5	X	5	4	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY	32	32	166	92
								INCIDENTAL QUANTITY FOR PUSH BUTTON INSTALLATION	--	--	--	194
CATEGORY 0020 TOTAL									**452**	**452**	**1,653**	**1,530**

* LOCATION IS TO THE FRONT CENTER OF DETECTOR LOOP & FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
ALL LOOPS SHOULD BE CENTERED IN TRAFFIC LANE

TRAFFIC SIGNAL CONDUIT

LOCATION	FROM - TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF
CATEGORY 0020		
STH 13/ELLIS AVE & MAIN ST INTERSECTION		
	PB9 - PB18	200
	PB16 - PB17	176
CATEGORY 0020 TOTAL		**376**

TRAFFIC SIGNAL PULLBOXES

LOCATION / PULL BOX NUMBER	STATION	OFFSET	L/R	653.0135 PULL BOXES STEEL 24X36-INCH (EA)	653.0900 ADJUSTING PULL BOXES (EA)
CATEGORY 0020					
STH 13/ELLIS AVE & MAIN ST INTERSECTION					
PB8	1167+66.4	53	LT	--	1
PB9	1167+66.1	51.6	RT	--	1
PB10	1168+21.9	51.8	RT	--	1
PB17	1170+18.5	34.5	LT	1	--
PB18	1166+73.2	35.1	RT	1	--
CATEGORY 0020 TOTAL				**2**	**3**

TRAFFIC SIGNAL LUMP SUM ITEMS

LOCATION	SPV.0105.02 CABINET DETECTION UPGRADES (EA)	650.8500.01 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (LS)	658.5069.01 SIGNAL MOUNTING HARDWARE (LS)	658.5069.02 SIGNAL MOUNTING HARDWARE (LS)	658.5069.03 SIGNAL MOUNTING HARDWARE (LS)
STH 13/ELLIS AVE & STH 137/6TH ST INTERSECTION	--	--	1	--	--
CATEGORY 0010					
STH 13/ELLIS AVE & MAIN ST INTERSECTION	1	1	--	1	--
CATEGORY 0020					
STH 13/ELLIS AVE & USH 2 INTERSECTION	--	--			
CATEGORY 0010			--	--	1
CATEGORY 0010 TOTAL	**--**	**--**	**1**	**--**	**1**
CATEGORY 0020 TOTAL	1	**1**	**--**	**1**	**--**

TRAFFIC SIGNAL CABLE AND WIRE - ABOVE GROUND

LOCATION	FROM SIGNAL BASE - TO SIGNAL HEAD		655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF
CATEGORY 0020			
STH 13/ELLIS AVE & MAIN ST INTERSECTION			
	SB15	4	45
CATEGORY00 0020 TOTAL			**45**

EXISTING COLORED P.C.C. CROSSWALK
AREA'S TO BE REMOVED FULL DEPTH
AND REPLACED WITH CONCRETE PAVEMENT
REPLACEMENT SHES - COLORED (RED) CROSSWALK.

REMOVE ASPHALT ENTRANCE
TO NAPA AUTO PARTS STORE.
REPLACE CURB CUT WITH 30-INCH TYPE K
CURB & GUTTER.
MATCH INTO ADJOINING CURB & GUTTER.
TOPSOIL/SEED/E MAT AREA BETWEEN
CURB AND SIDEWALK.

BEGIN PROJECT 1610-07-71
STA. 1152+67

6TH STREET

EXISTING CONCRETE/ASPHALT JOINT

UNDERGROUND FIBER OPTIC

5TH STREET

EXISTING
CONCRETE/ASPHALT JOINT

STH 13

1152+50 1153+00 1154+00 1155+00 1156+00 1157+00 1158+00 1159+00

F.O.-MH

UNDERGROUND GAS LINE

UNDERGROUND ELEC.

EXISTING
CONCRETE/ASPHALT JOINT

EXISTING CONCRETE/ASPHALT JOINT

UNDERGROUND FIBER OPTIC

UNDERGROUND FIBER OPTIC

4TH STREET
(DEPOT DRIVE)

EXISTING CONCRETE/ASPHALT JOINT

3RD STREET

EXISTING CONCRETE/ASPHALT JOINT

STH 13

1159+00 1160+00 1161+00 1162+00 1163+00 1164+00 1165+00

F.O.-MH

UNDERGROUND FIBER OPTIC

UNDERGROUND GAS LINE

UNDERGROUND GAS LINE

EXISTING CONCRETE/ASPHALT JOINT

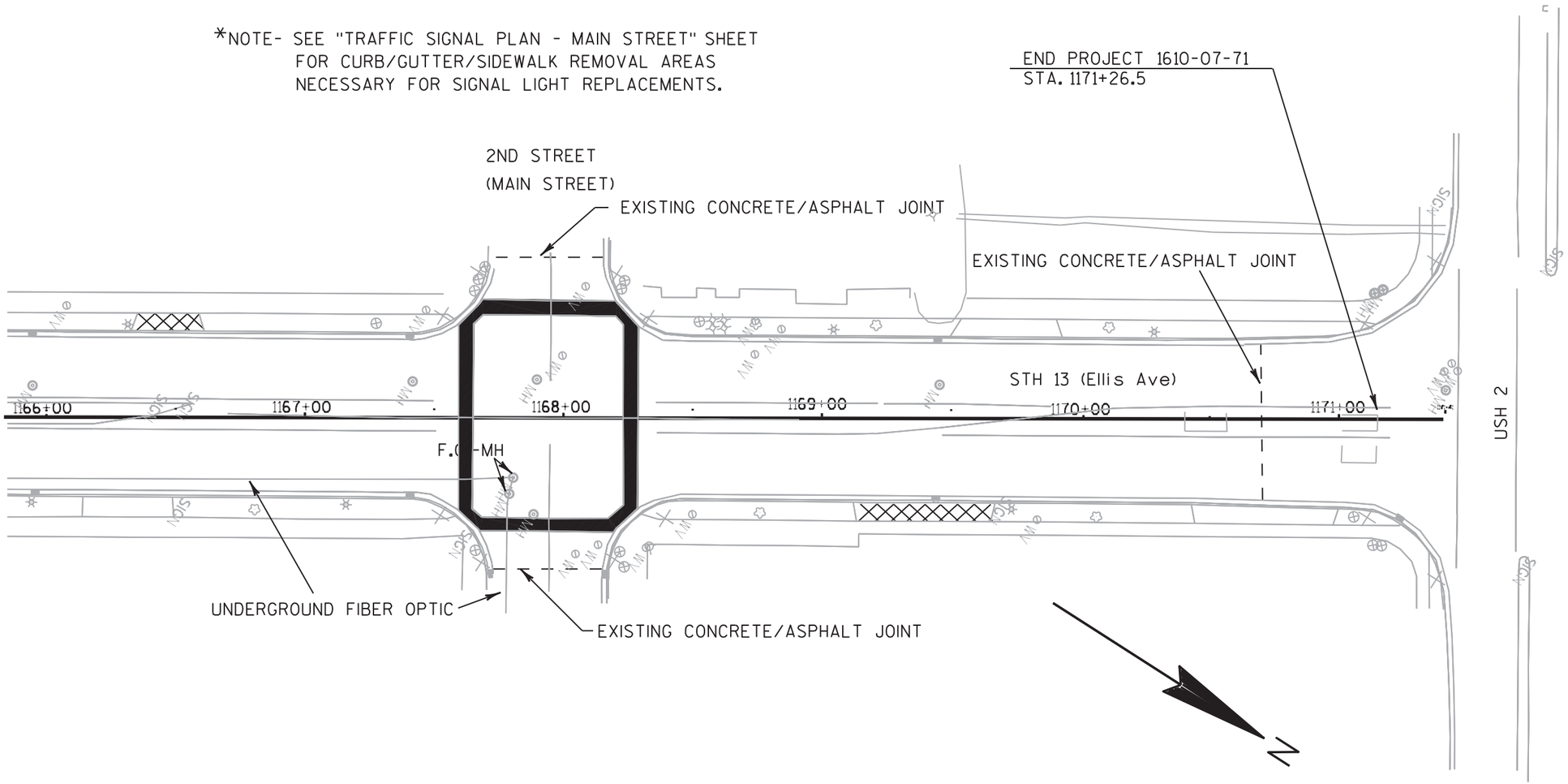
UNDERGROUND FIBER OPTIC

PROJECT NO: 1610-07-71	HWY: STH 13 (Ellis Ave.)	COUNTY: ASHLAND	PLAN	SHEET	E

EXISTING COLORED P.C.C. CROSSWALK
AREA'S TO BE REMOVED FULL DEPTH
AND REPLACED WITH CONCRETE PAVEMENT
REPLACEMENT SHES - COLORED (RED) CROSSWALK.

REMOVE/REPLACE FAILING
CONCRETE APRONS AT
THESE LOCATIONS.

*NOTE- SEE "TRAFFIC SIGNAL PLAN - MAIN STREET" SHEET
FOR CURB/GUTTER/SIDEWALK REMOVAL AREAS
NECESSARY FOR SIGNAL LIGHT REPLACEMENTS.



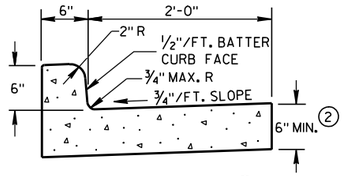
PROJECT NO: 1610-07-71	HWY: STH 13 (Ellis Ave.)	COUNTY: ASHLAND	PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\16100701\Design\020501_pn.dgn PLOT DATE : 28-JAN-2014 13:58 PLOT BY : dotjtn PLOT NAME : PLOT SCALE : 230.8725:1

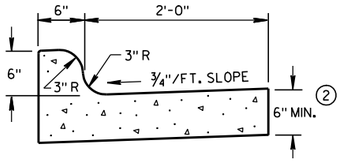
Standard Detail Drawing List

08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
09B02-07	CONDUIT
09B04-10	PULL BOX
09E01-12B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-12G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09F10-03	LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY
09F11-03	LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING

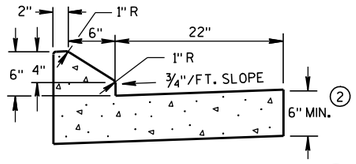
6



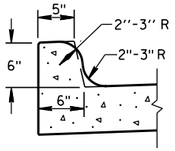
TYPES A & D (1)



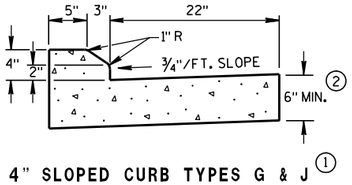
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

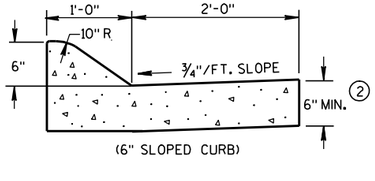


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

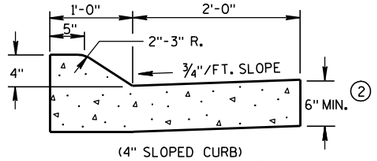


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

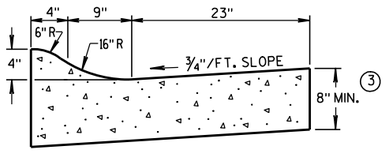


(6" SLOPED CURB)



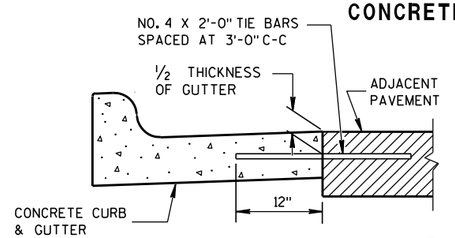
(4" SLOPED CURB)

TYPES A & D (1)

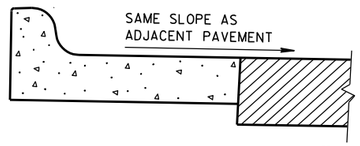


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

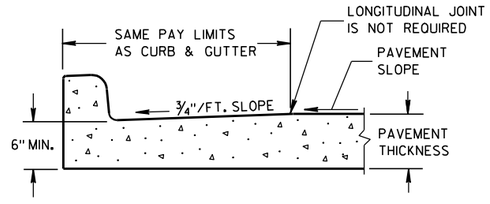
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

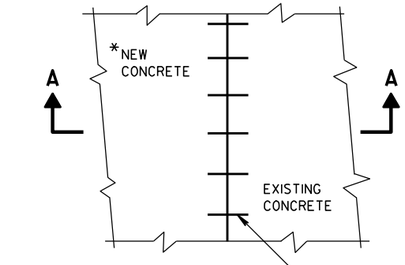
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

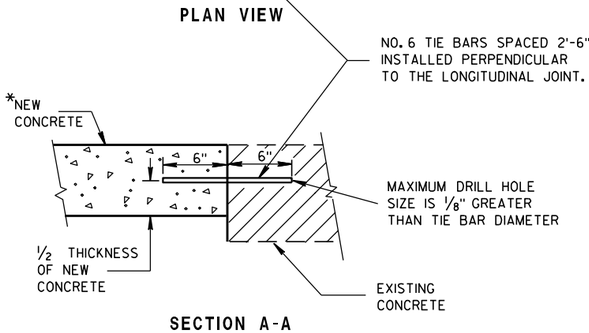


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



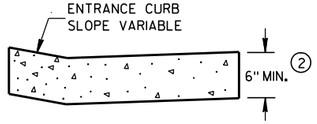
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

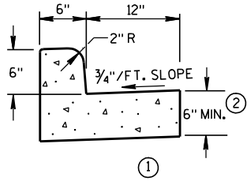


SECTION A-A

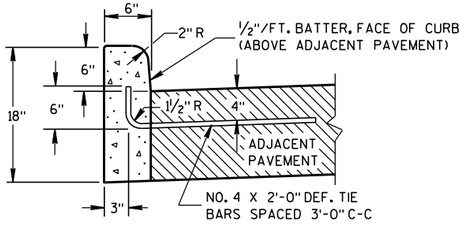
TIE BARS DRILLED INTO EXISTING PAVEMENT



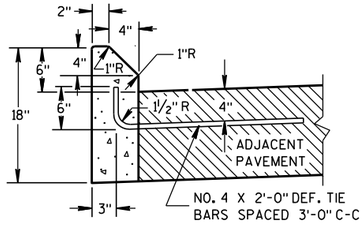
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



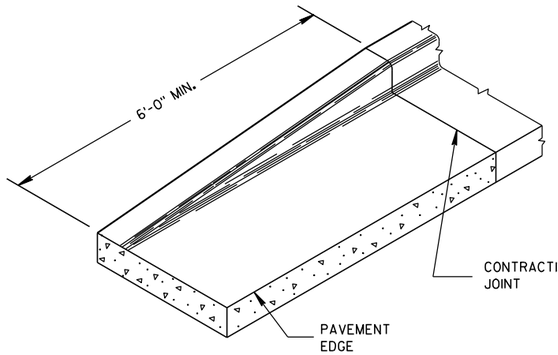
(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES A & D



(1)
TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB

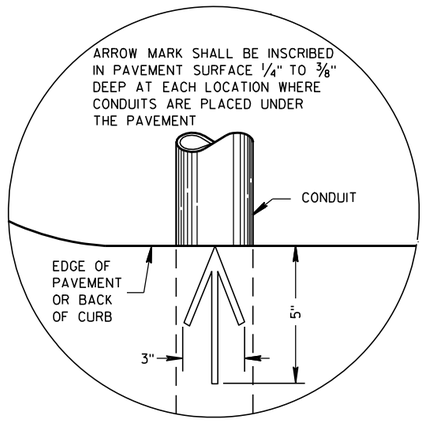
CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA

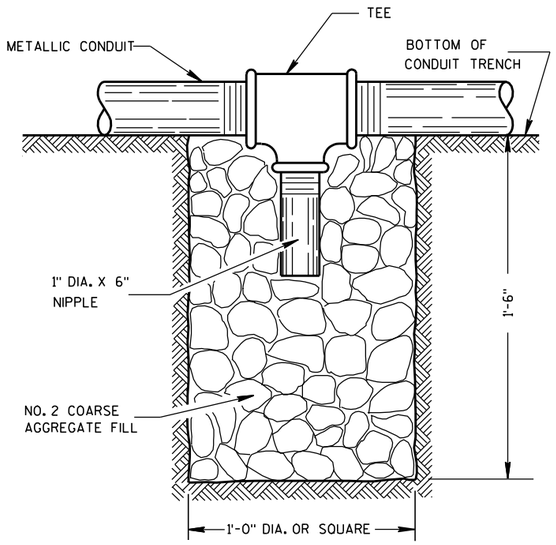
6

S.D.D. 8 D 1-17



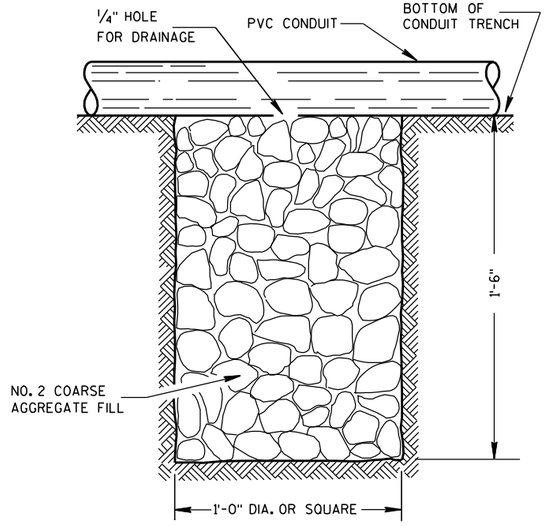
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

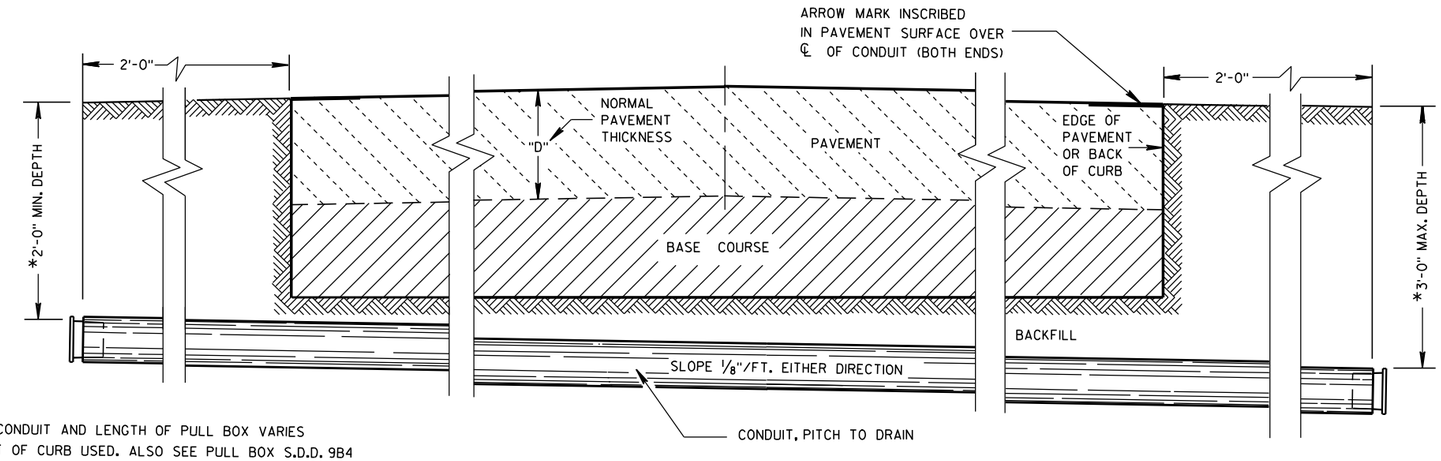
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03 — DATE

/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI

FHWA — HWYS

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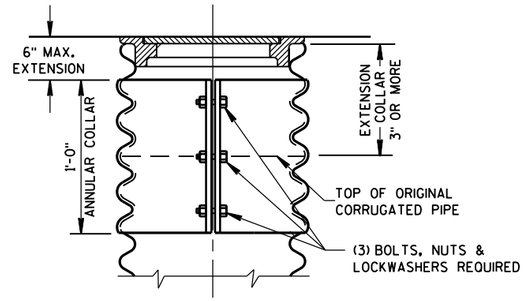
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

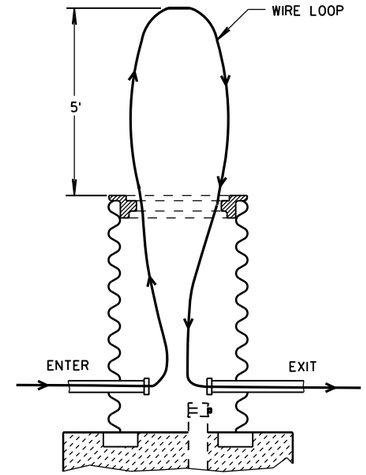
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

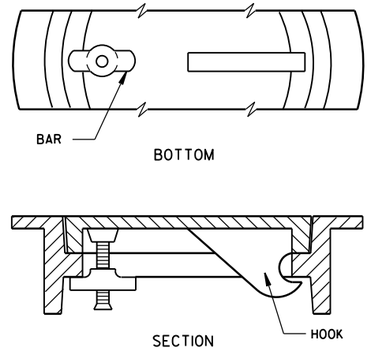
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

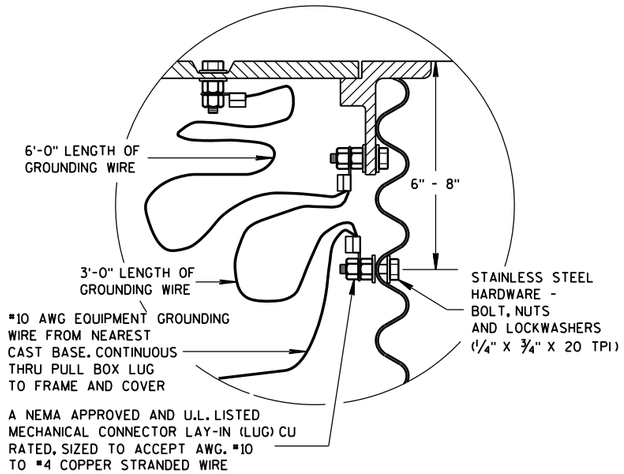


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

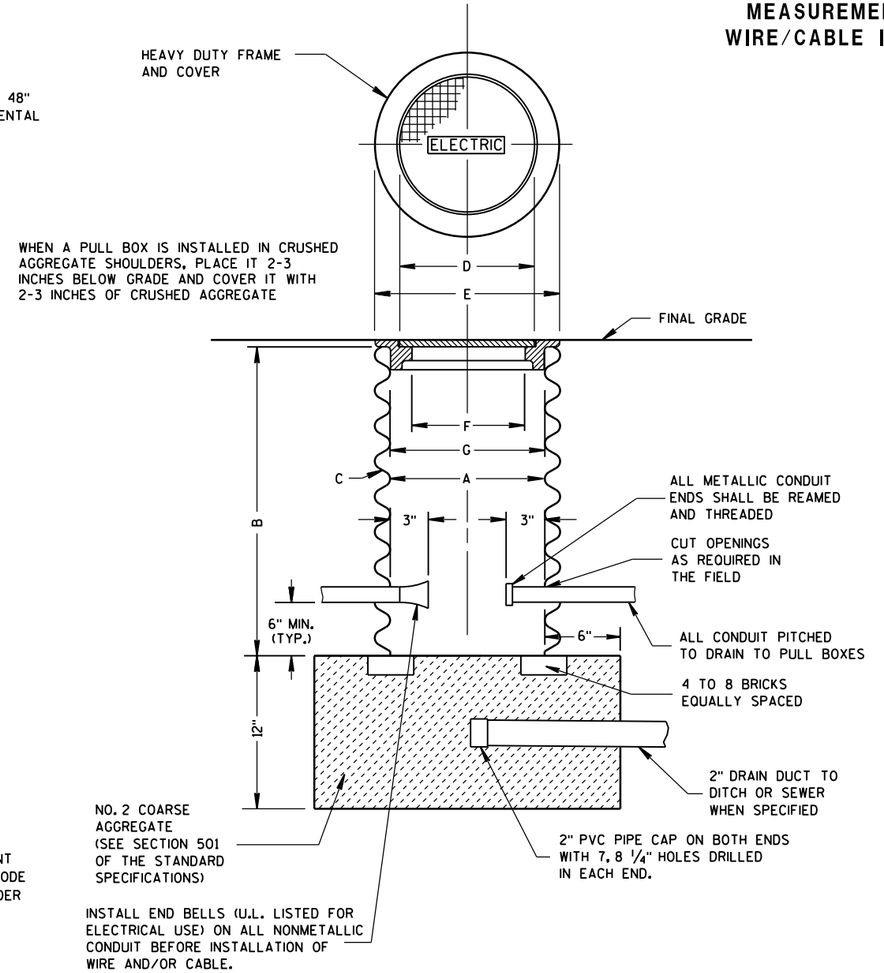


ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

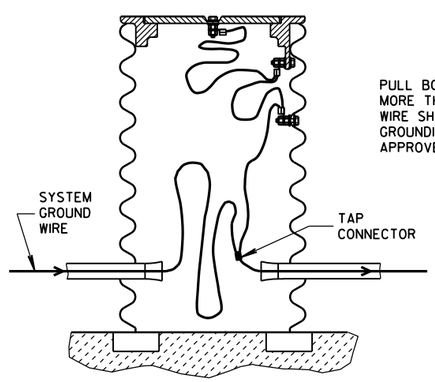
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-7-2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

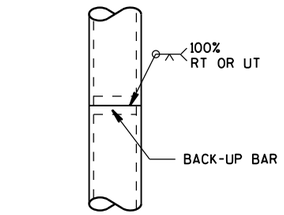
6

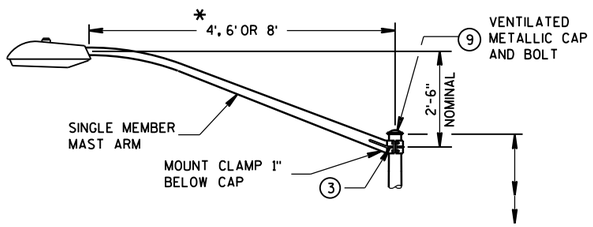
S.D.D. 9 B 4-10

FOR MANUFACTURERS USE ONLY

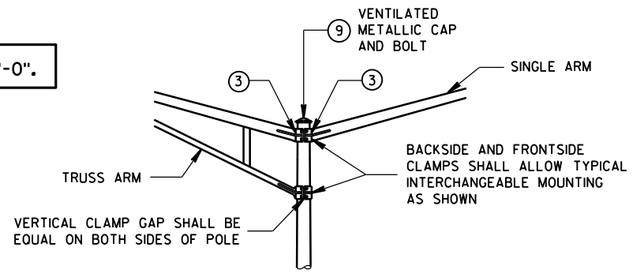
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.

*RISE FOR 4' ARM SHALL BE 2'-0".





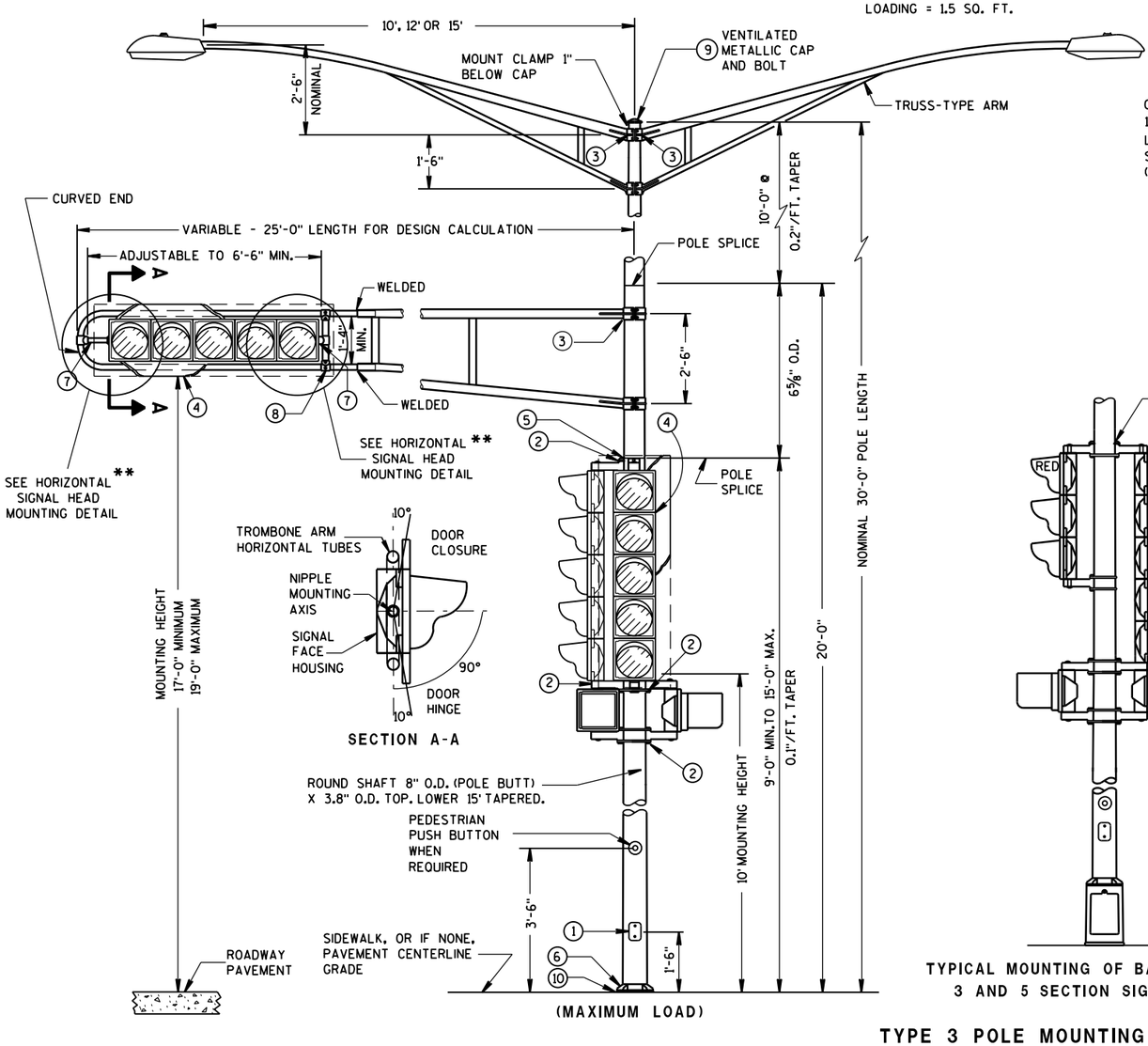
POLE SPLICE DETAIL



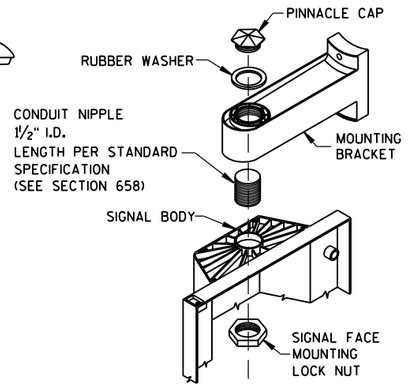
INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

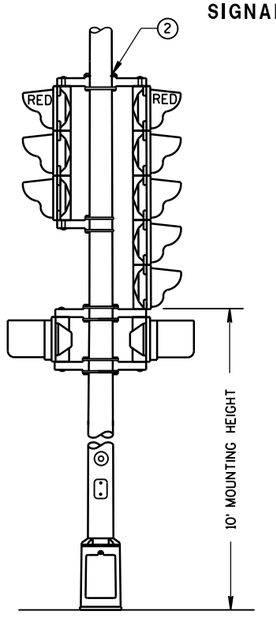
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.



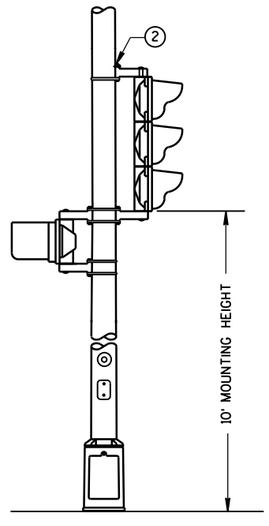
TYPE 3 POLE MOUNTING CONFIGURATION



SIGNAL FACE MOUNTING DETAIL
(BANDED)



TYPICAL MOUNTING OF BACK TO BACK
3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION
SIGNAL FACE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.

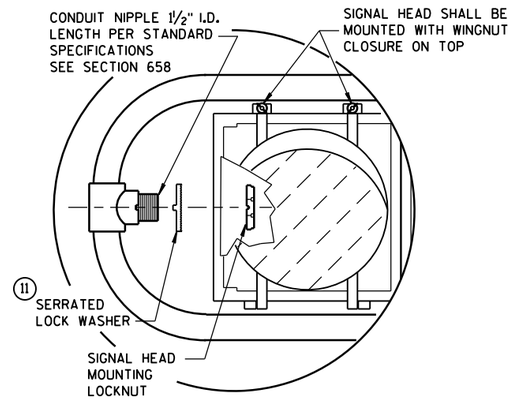
(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL**

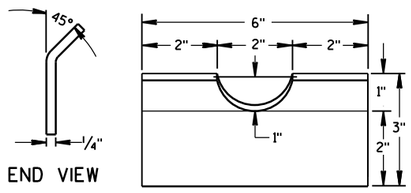
** SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

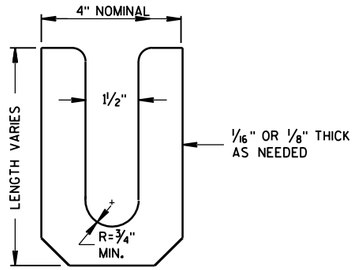
S.D.D. 9 E 1-12b



FRONT VIEW

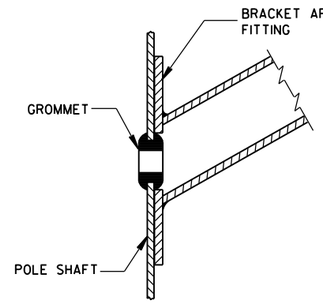
RECTANGULAR CLAMP SHIM

(4 TO A SET)

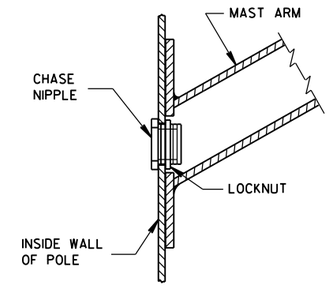


LEVELING SHIM (15)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)

(14) VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")

SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".

SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".

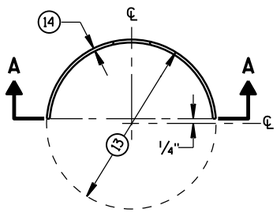
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

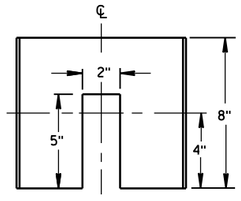
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(15) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



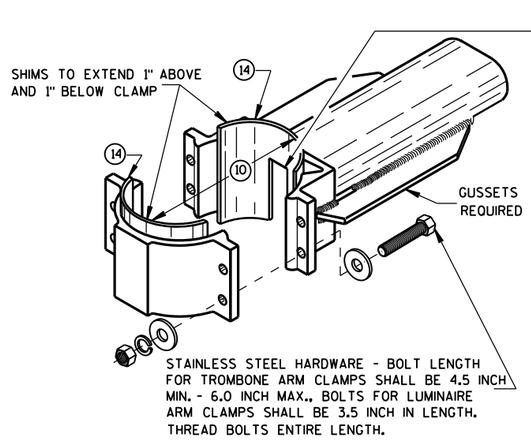
PLAN VIEW



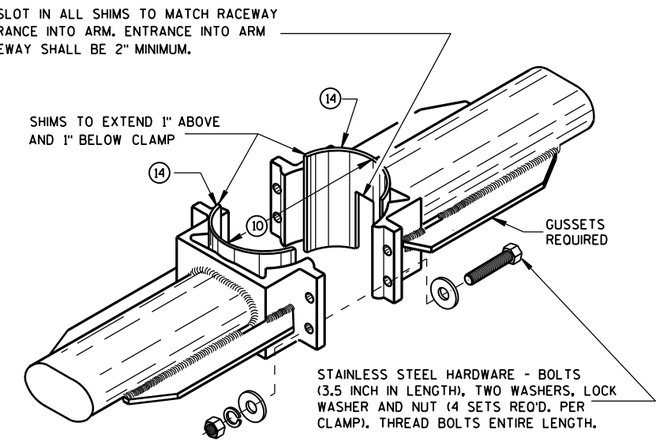
SECTION A-A

CIRCULAR CLAMP SHIM

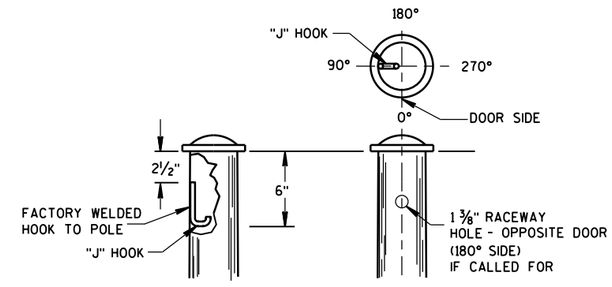
(2 TO A SET)



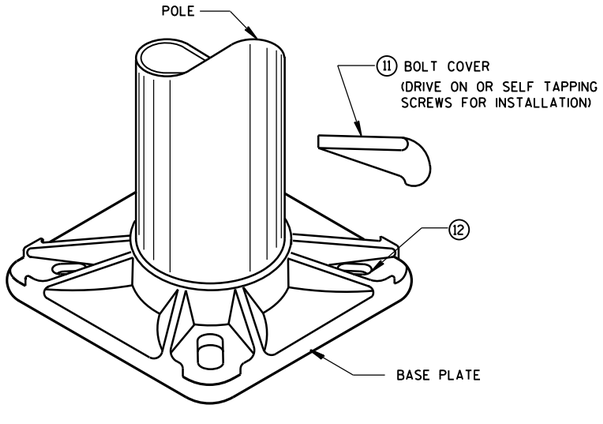
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



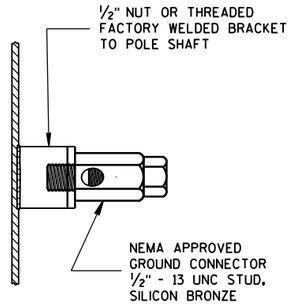
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

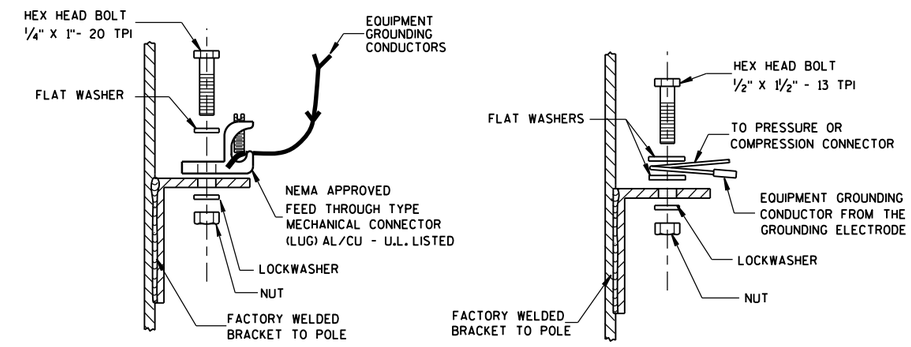


TYPICAL "J" HOOK LOCATION



BASE PLATE





TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/7/2013 DATE
/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA

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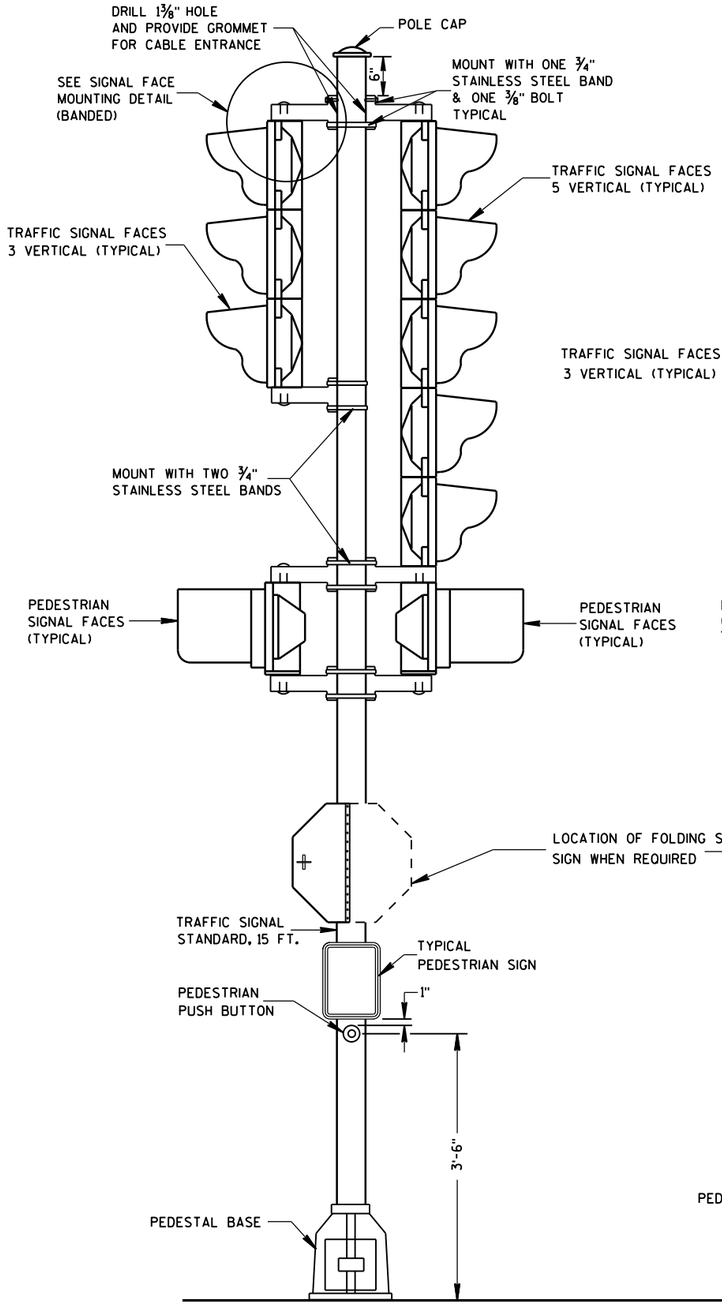
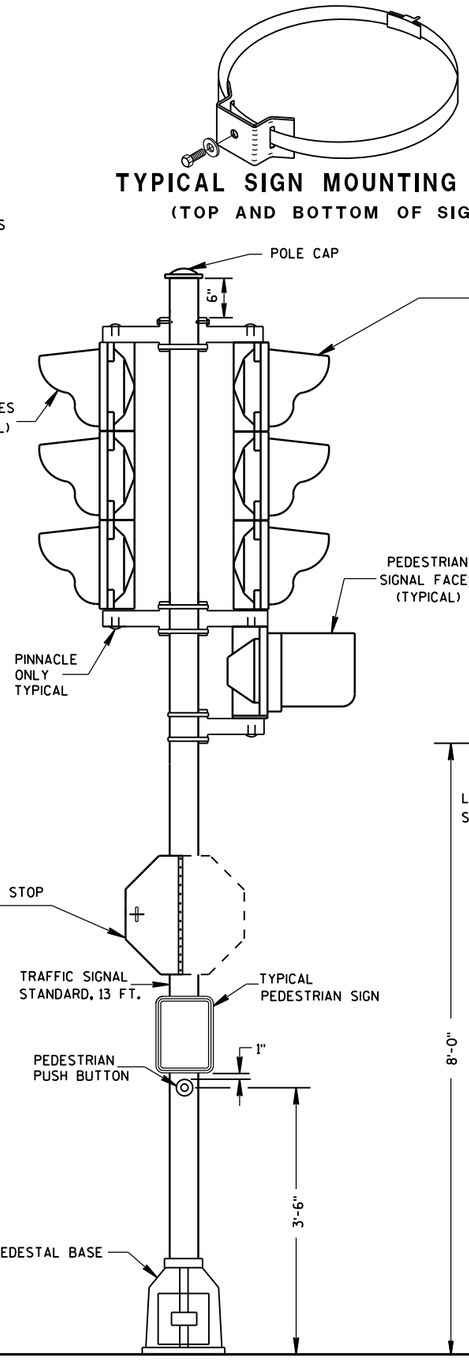
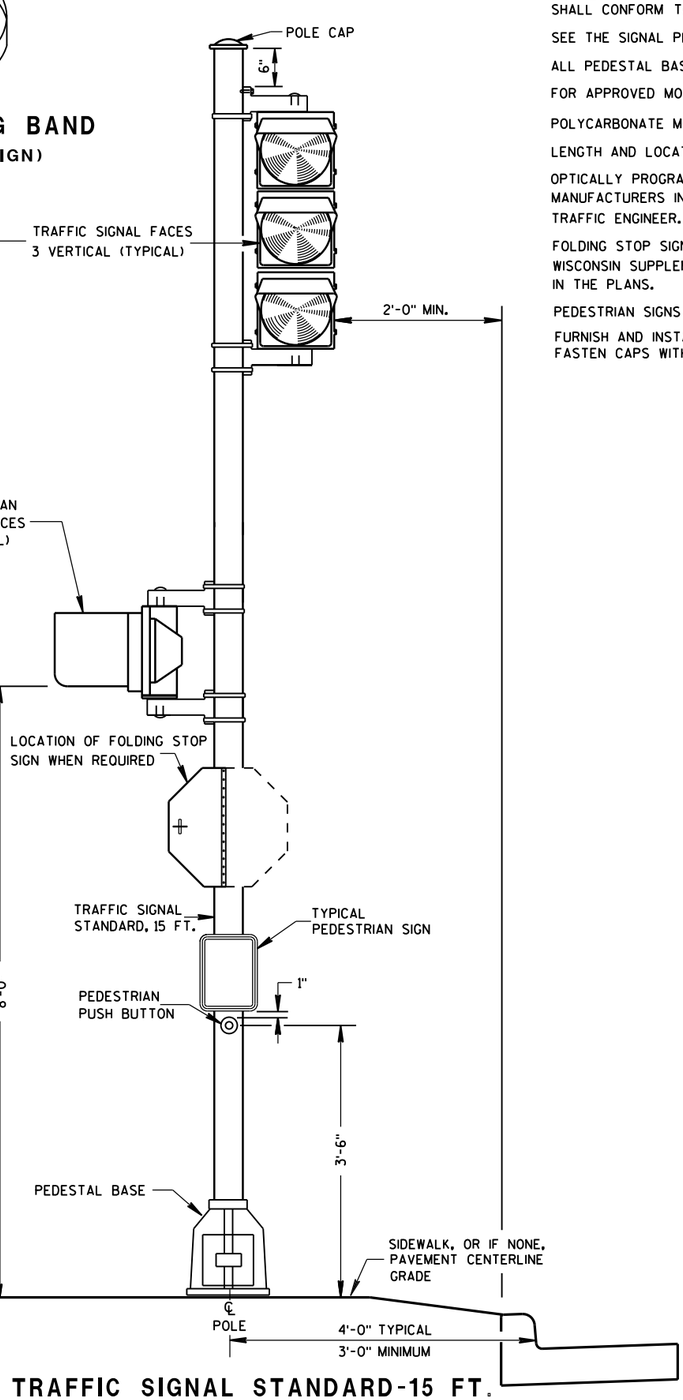


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

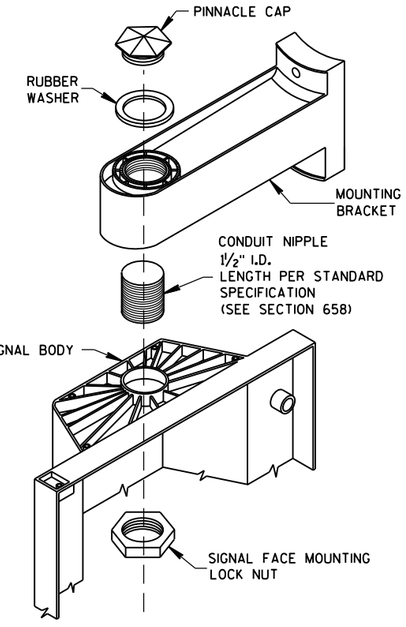
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SIGNAL FACE MOUNTING DETAIL
(BANDED)

TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 2/28/2013 — DATE /S/ Ahmet Demirbilek — STATE ELECTRICAL FHWA

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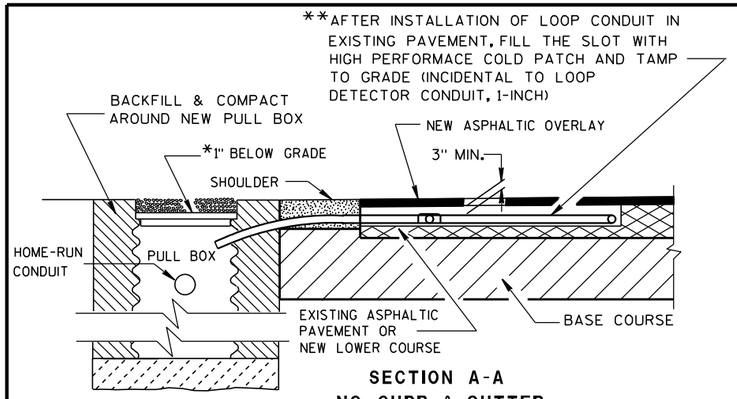
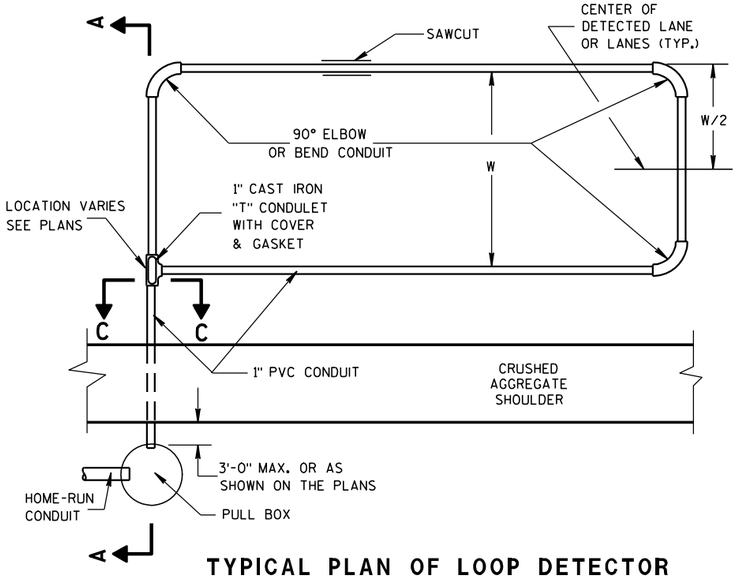


SECTION A-A

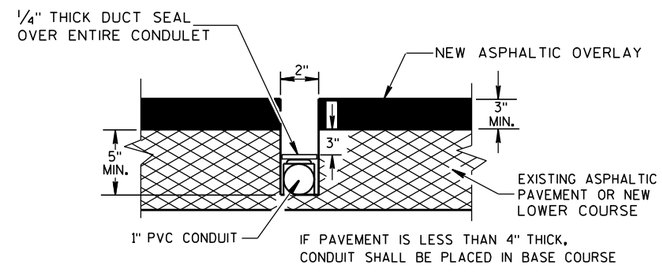
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW

SECTION C-C

LOOP DETECTOR SLOT DETAIL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY 1/2 INCH. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

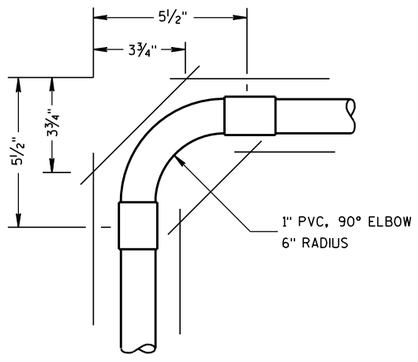
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

DRIVE A 1 1/2" MAX. PK NAIL INTO THE NEW ASPHALTIC OVERLAY AND ON TOP OF THE CONDULET AFTER THE NEW ASPHALTIC OVERLAY IS INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.

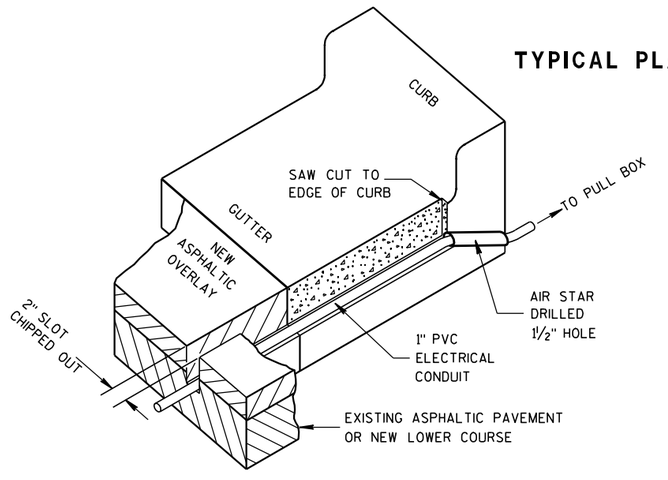
** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/ PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN APPROVAL BY THE PROJECT ENGINEER.



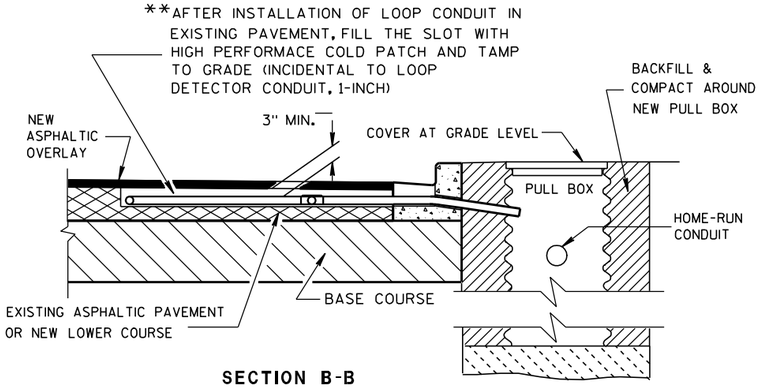
TOP VIEW

CORNER SAW SLOT DETAIL



ISOMETRIC VIEW

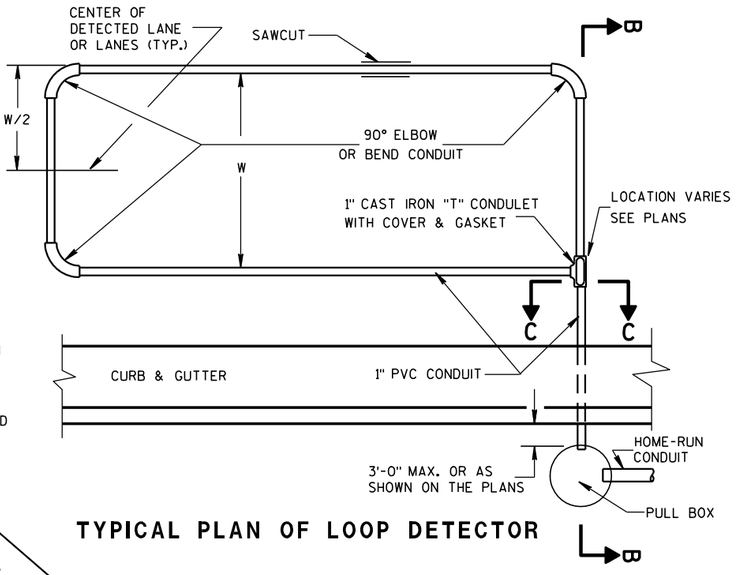
TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT



SECTION B-B

CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR

LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/7/06 DATE

/S/ Balu Ananthanarayanan
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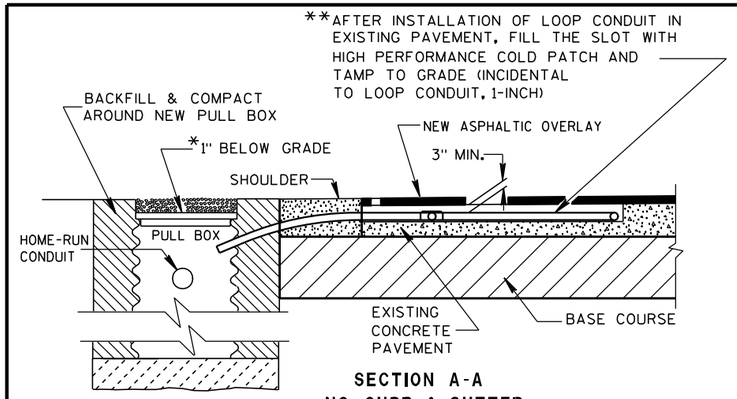

SECTION A-A
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

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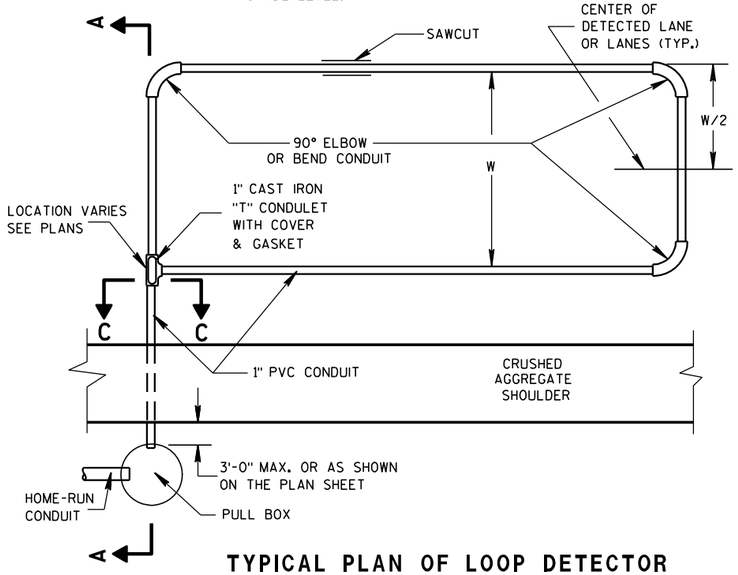
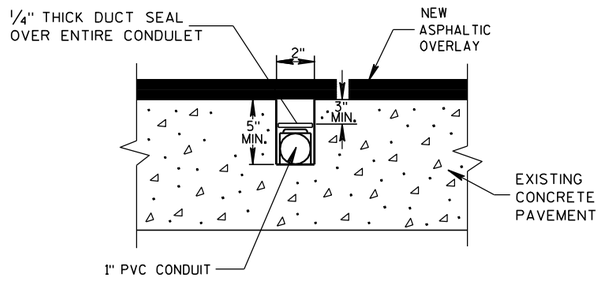


TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW
SECTION C-C

LOOP DETECTOR SLOT DETAIL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

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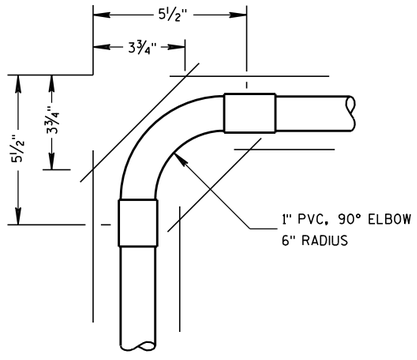
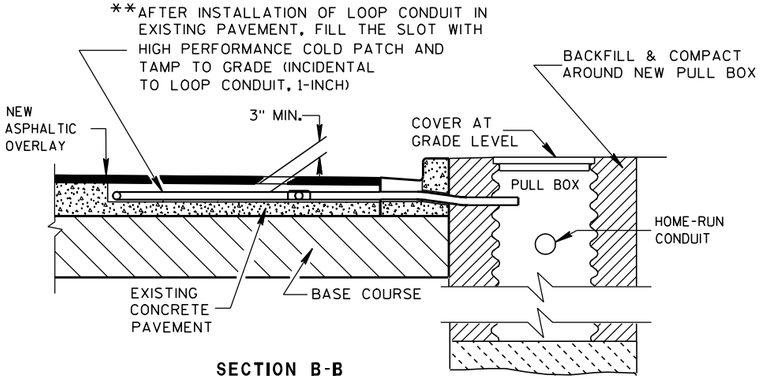
DRIVE A 1 1/2" MAX. PK NAIL INTO THE NEW ASPHALTIC OVERLAY AND ON TOP OF THE CONDULET AFTER THE NEW ASPHALTIC OVERLAY IS INSTALLED, IF REQUESTED BY THE DISTRICT TRAFFIC SECTION.

** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/ PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".



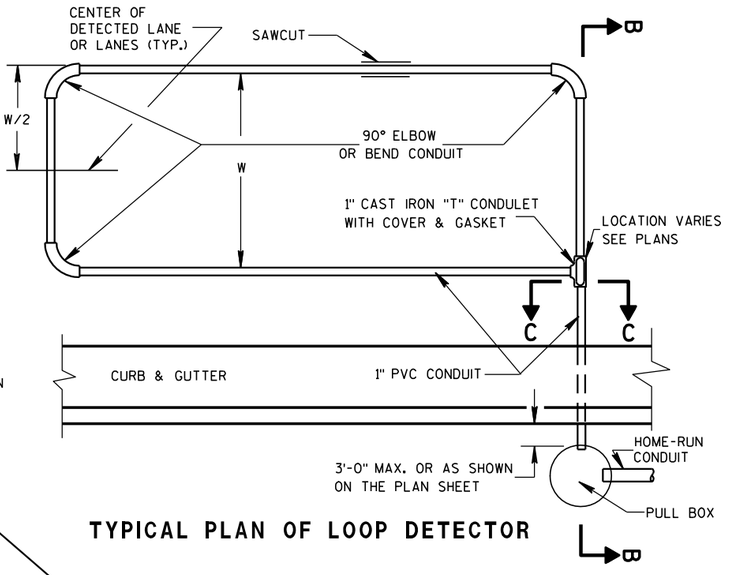
TOP VIEW

CORNER SAW SLOT DETAIL

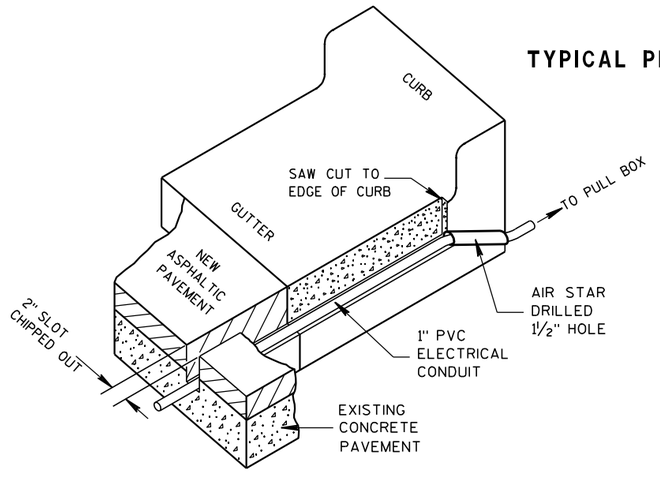


SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC OVERLAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/7/06 DATE
/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI
FHWA

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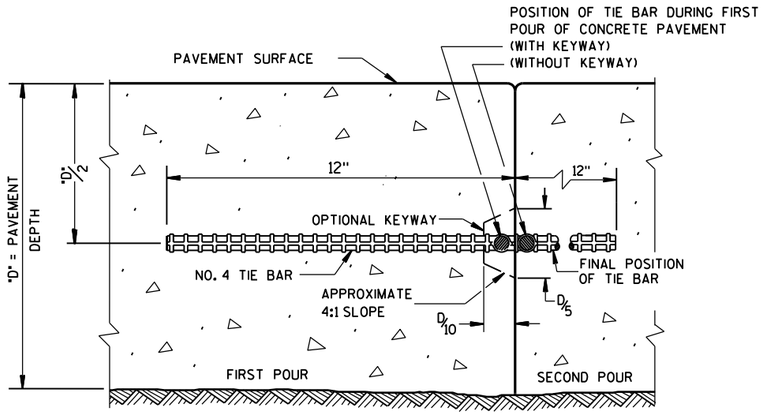
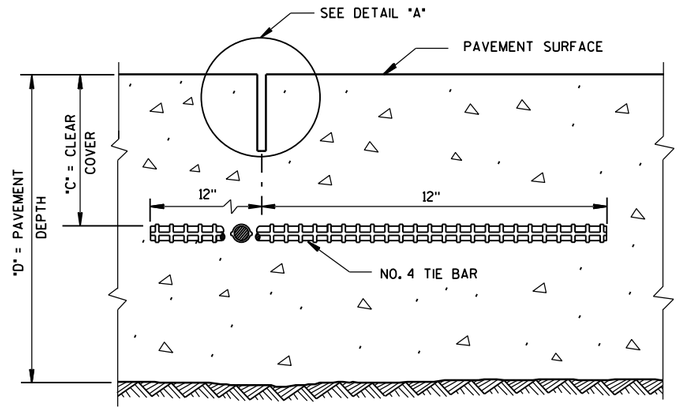


CONSTRUCTION JOINT



SAWED JOINT

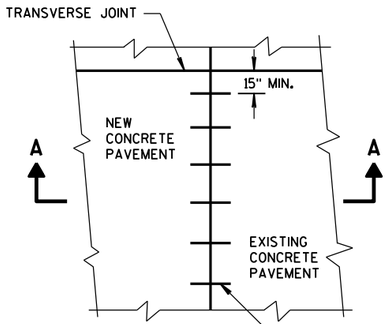
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

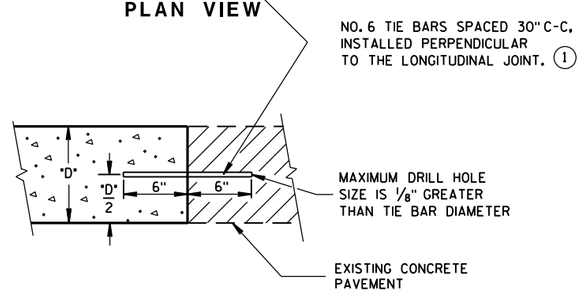
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

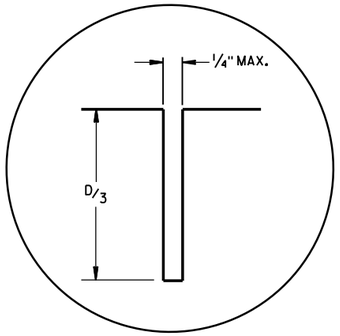


PLAN VIEW



SECTION A-A

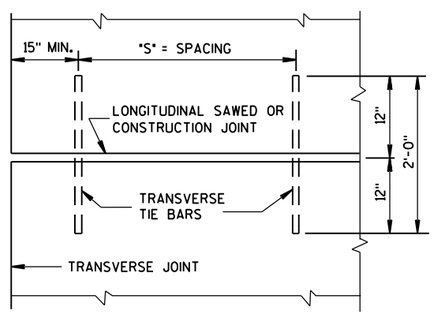
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

ENGINEER

FHWA

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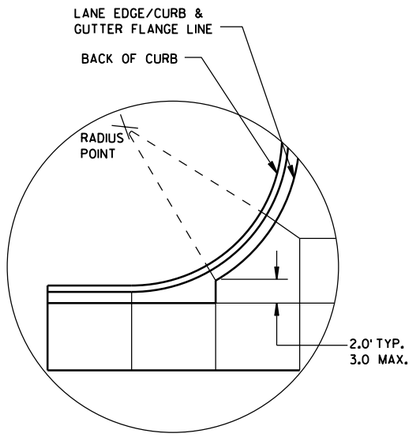
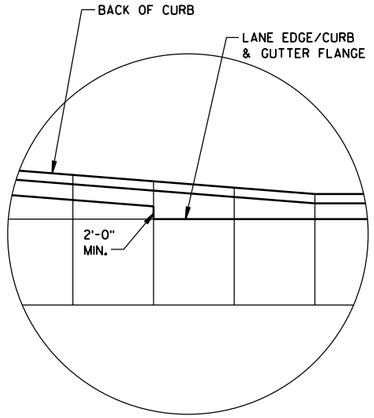


DETAIL "A"



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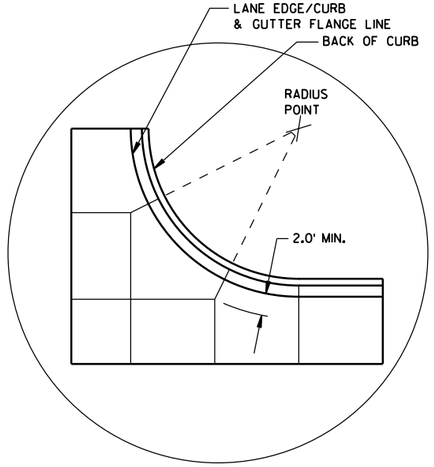

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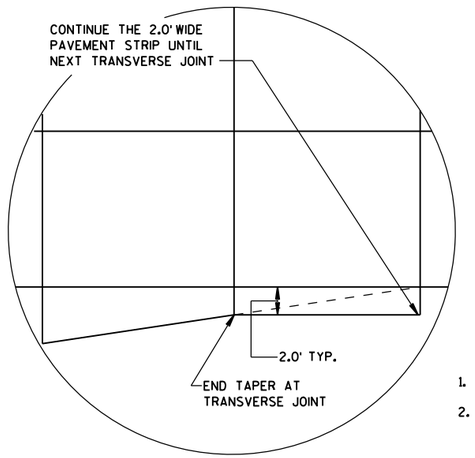


DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

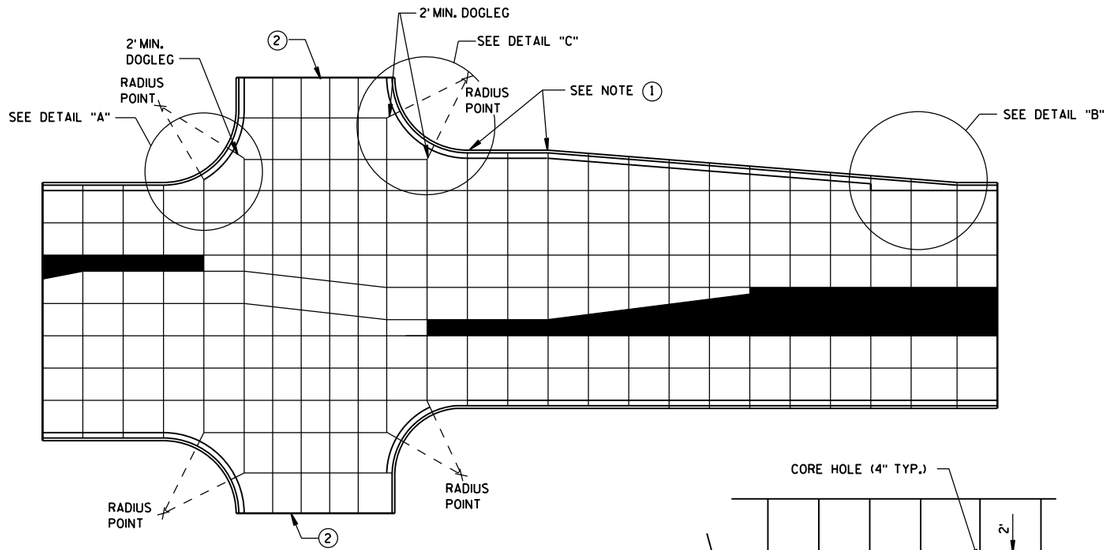
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

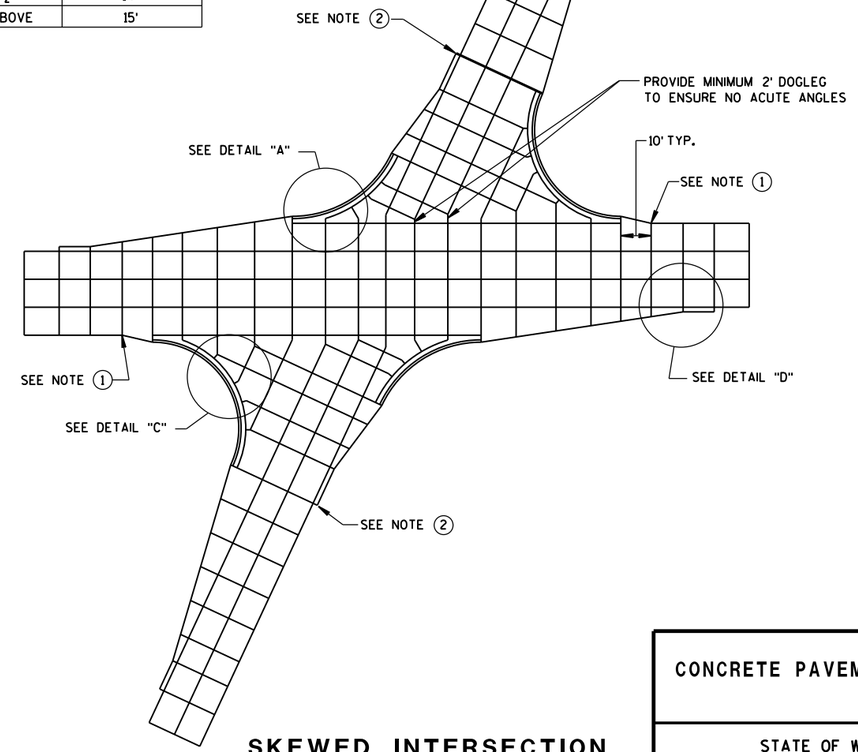
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



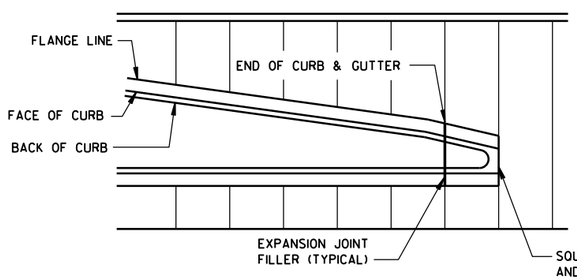
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

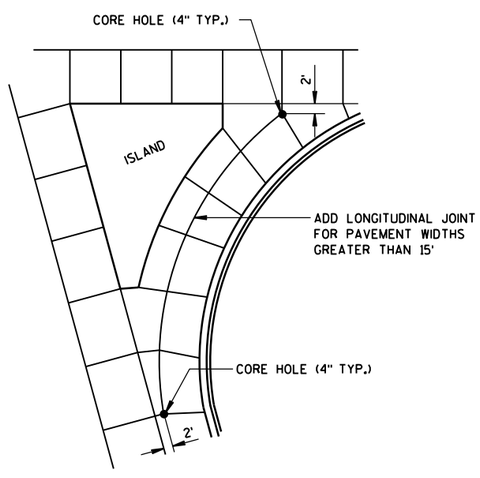
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

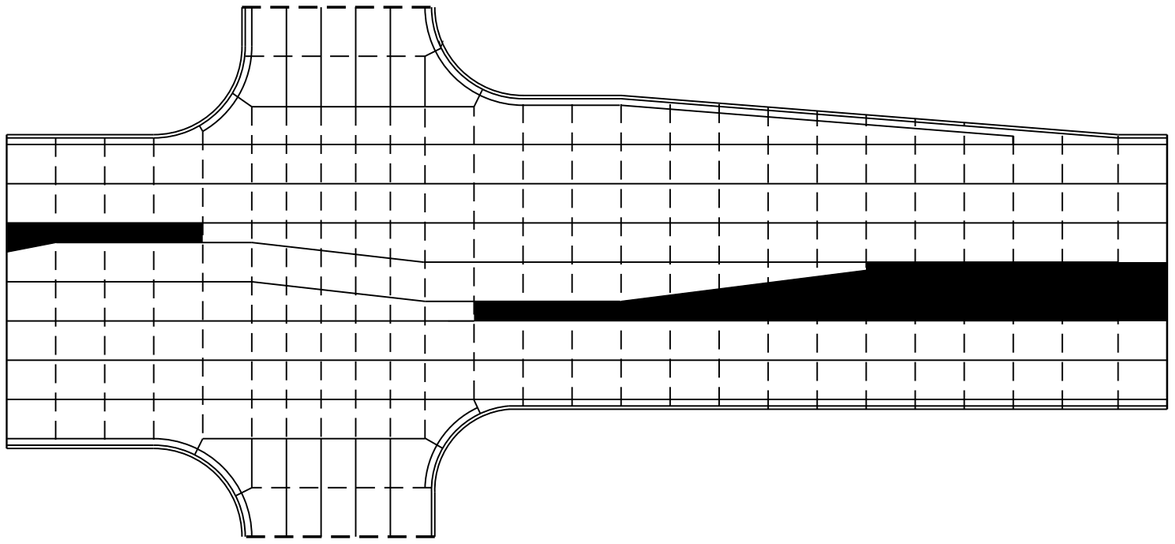
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

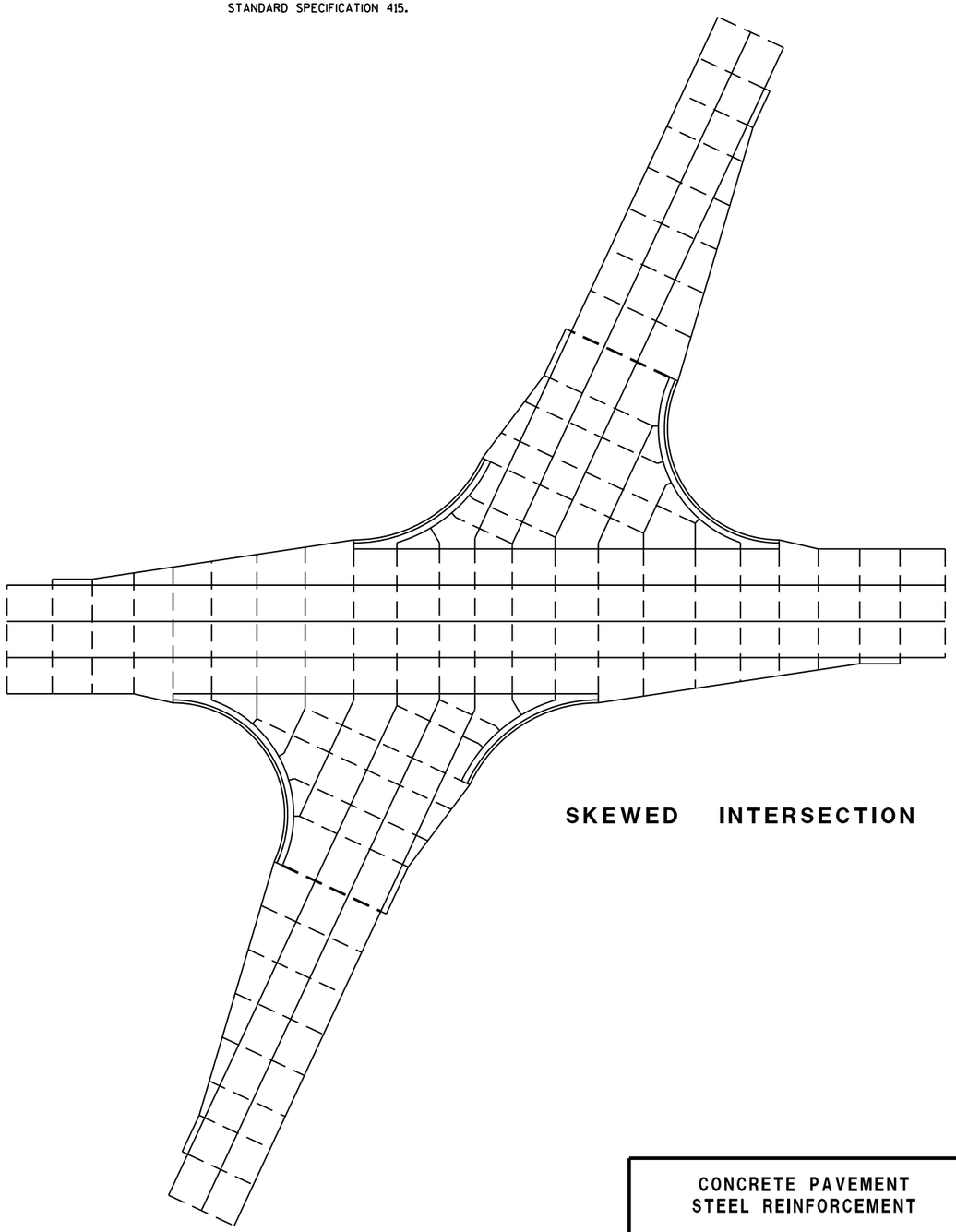
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

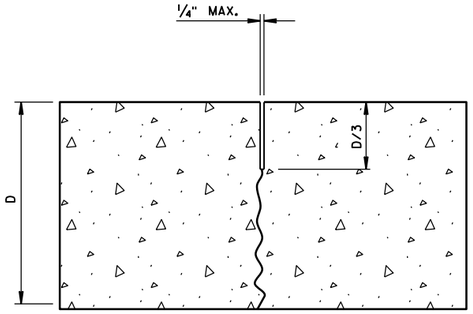
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

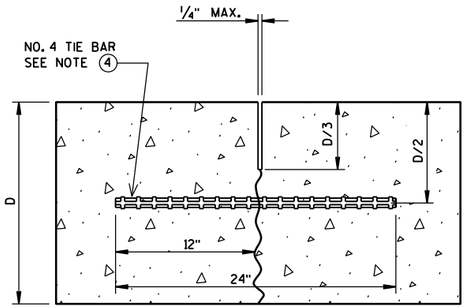
S.D.D. 13 C 18-2b

6

S.D.D. 13 C 18-2b



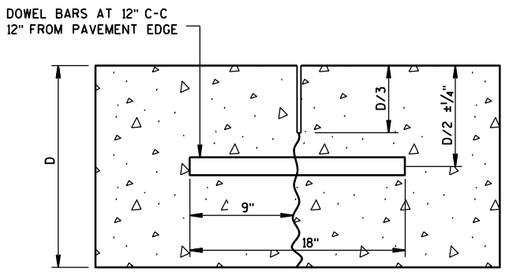
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

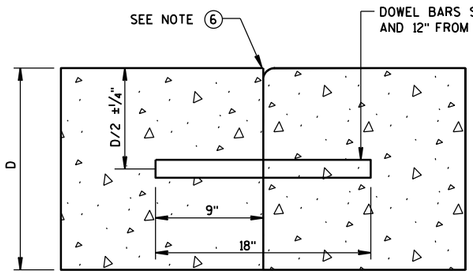
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.



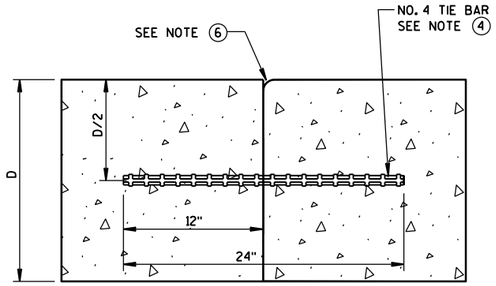
DOWELED-TRANSVERSE

CONTRACTION JOINTS

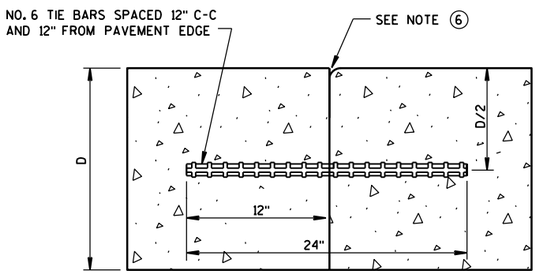
SEE NOTE (2)



DOWELED TRANSVERSE

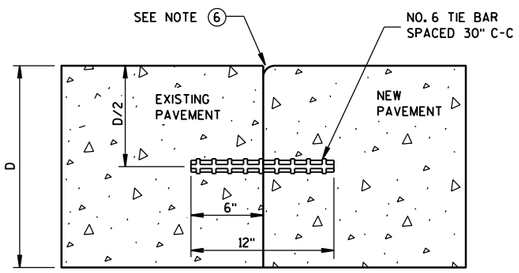


TIED LONGITUDINAL



TIED TRANSVERSE

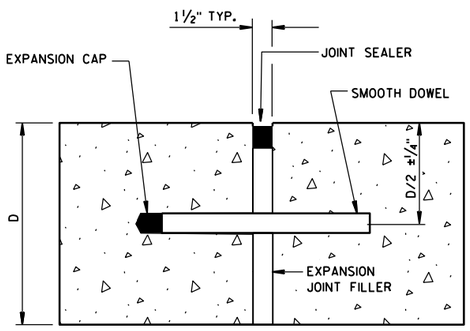
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

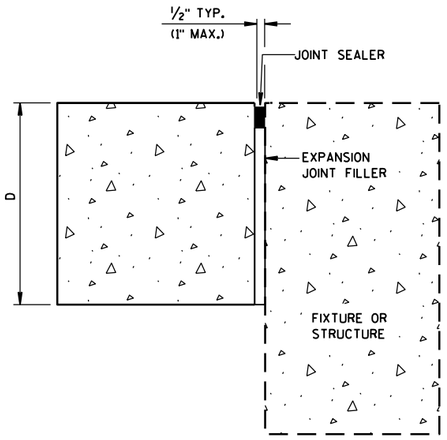
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

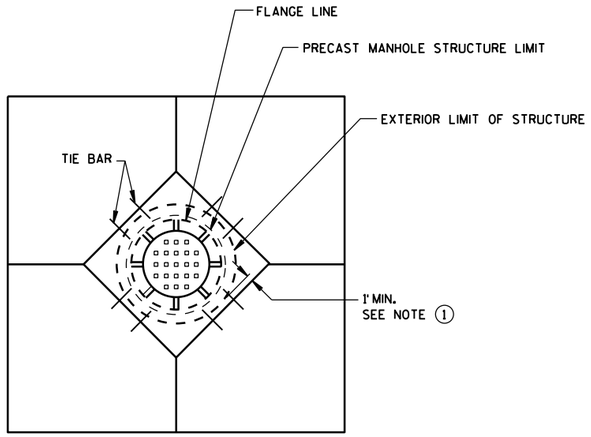
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

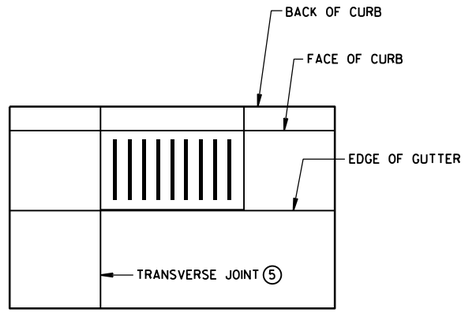
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

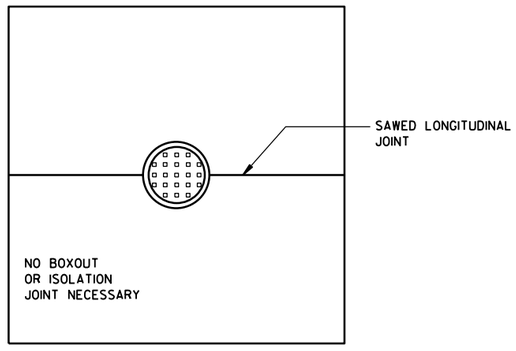
S.D.D. 13 C 18-2c



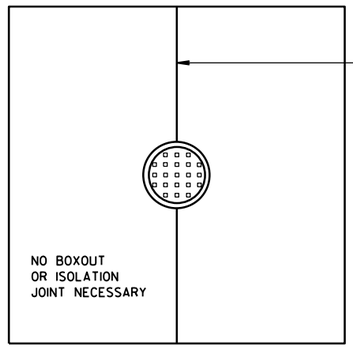
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



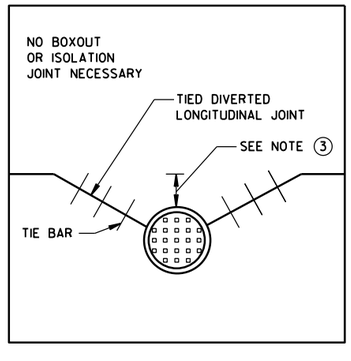
INLET WITH TRANSVERSE JOINT



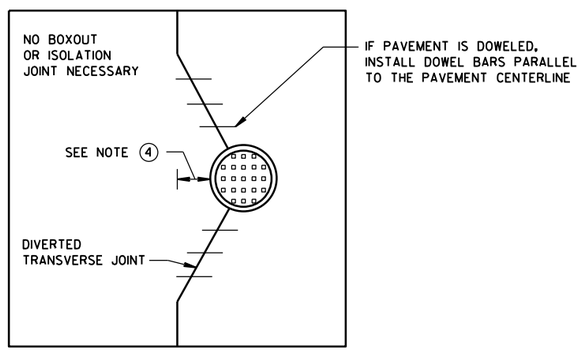
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

NEER

FHWA

6

S.D.D. 13 C 18-2d

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

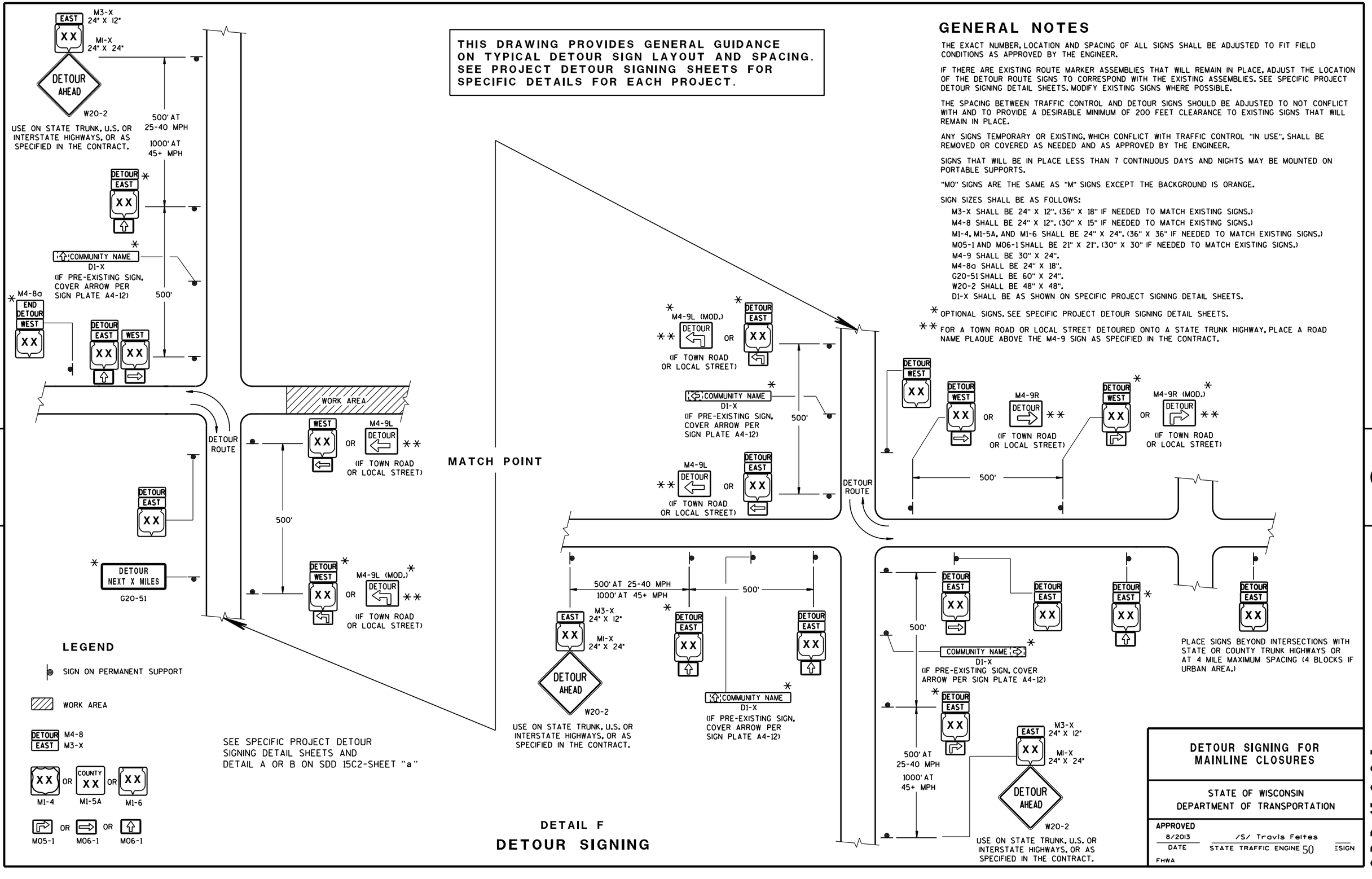
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8, M3-X
- XX OR COUNTY XX OR XX — M1-4, M1-5A, M1-6
- M05-1 OR M06-1 OR M06-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

DETAIL F

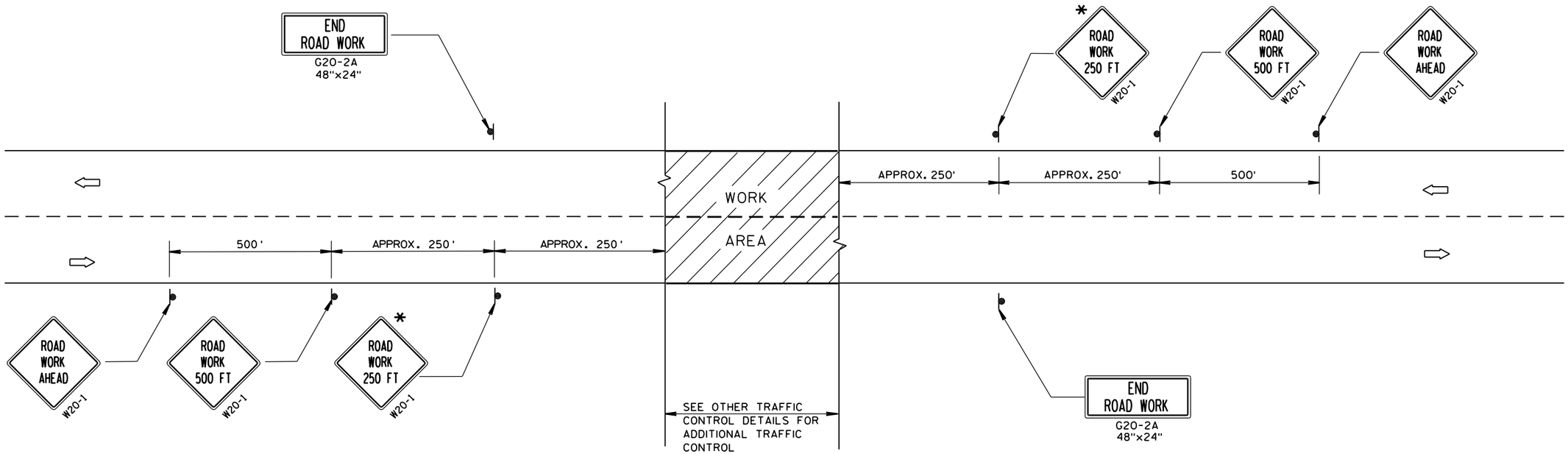
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 C 2-5c



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

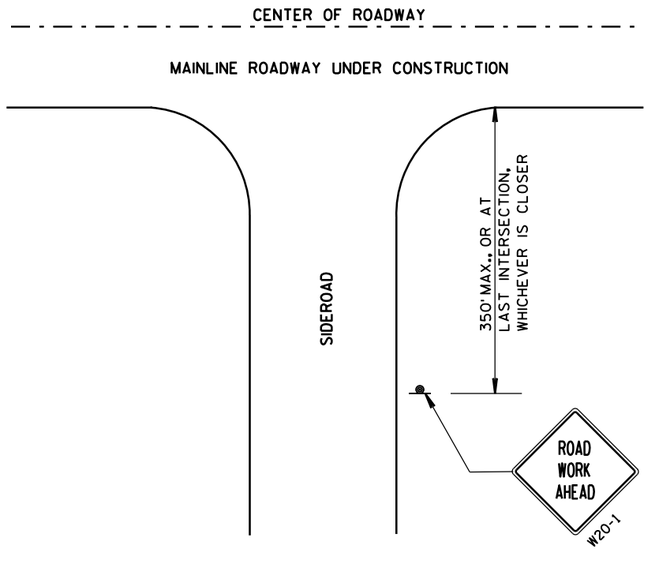
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

SIGN

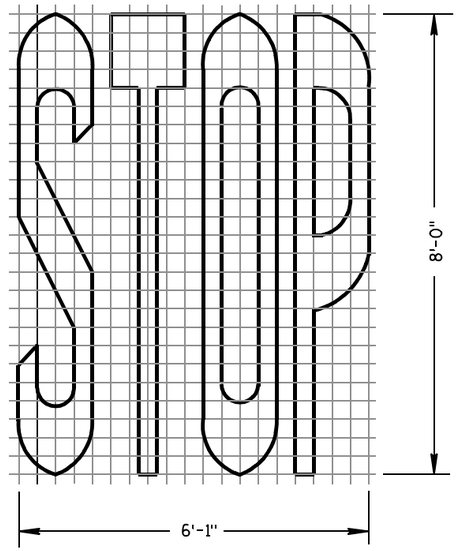
6

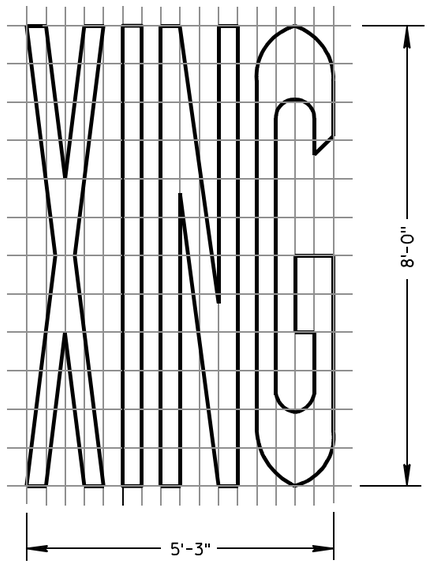
S.D.D. 15 C 5-2

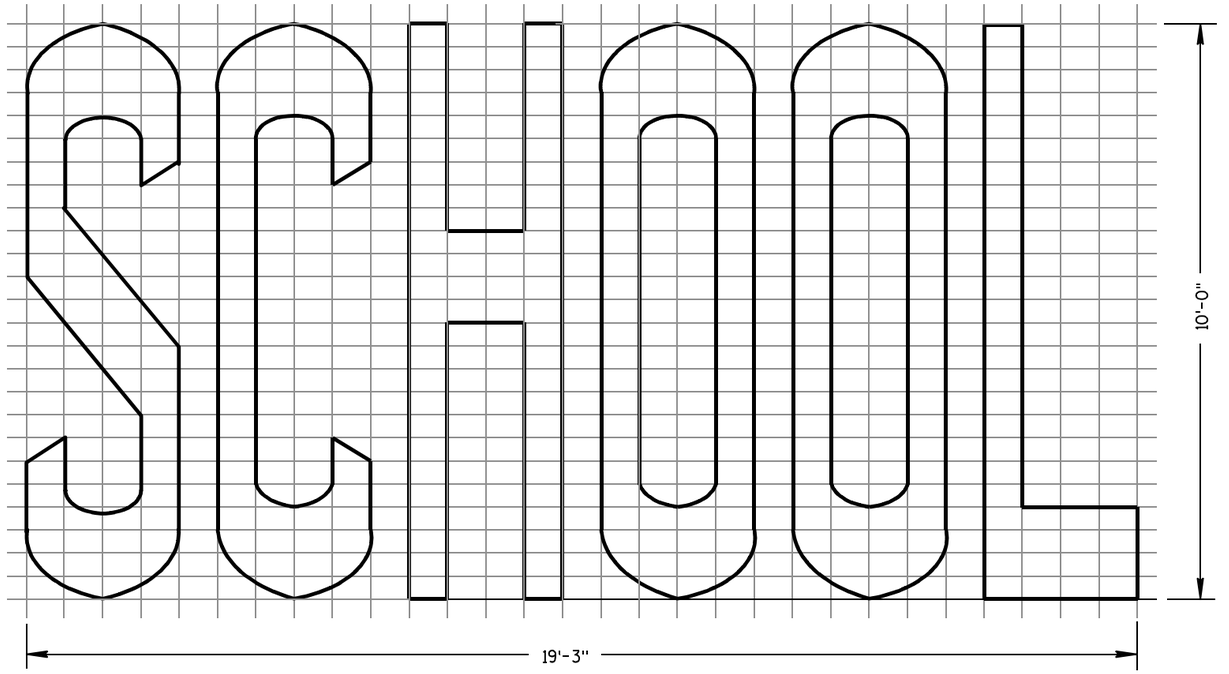
GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

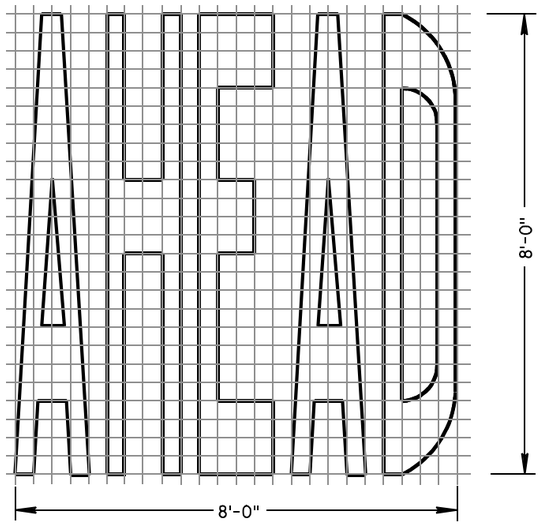
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

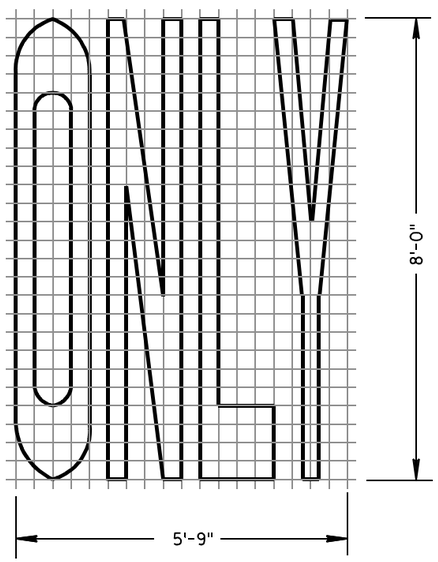


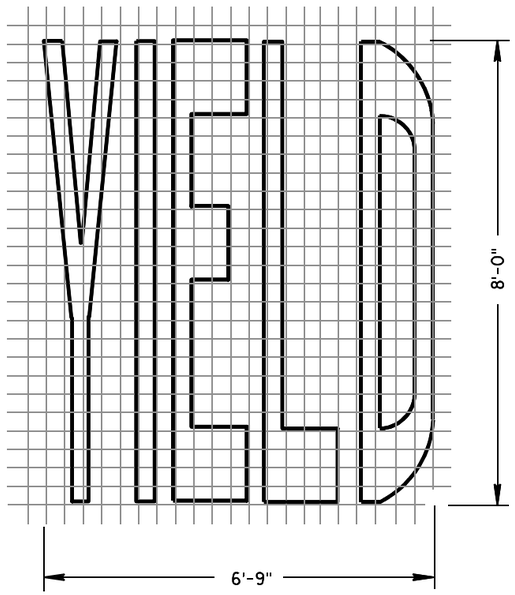


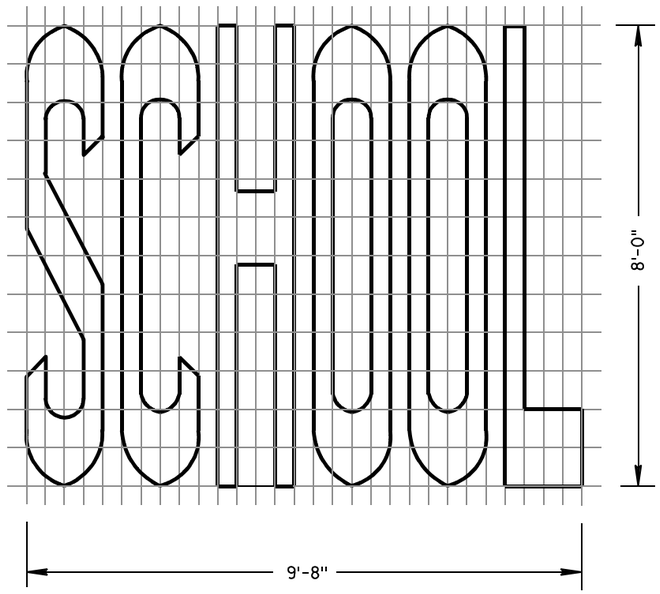


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER — IGN

FHWA

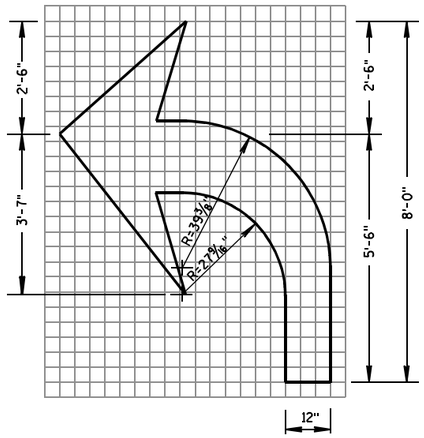
6

S.D.D. 15 C 7-12b

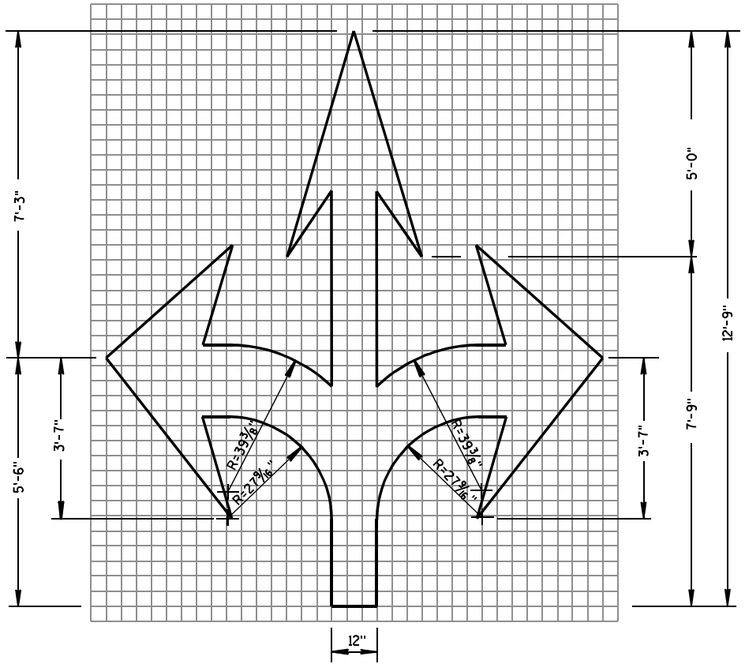
GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

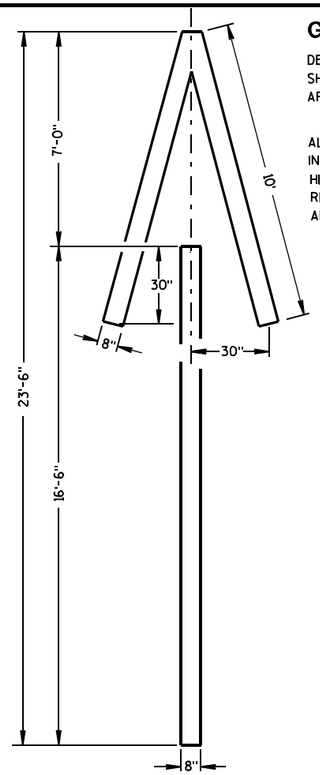
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



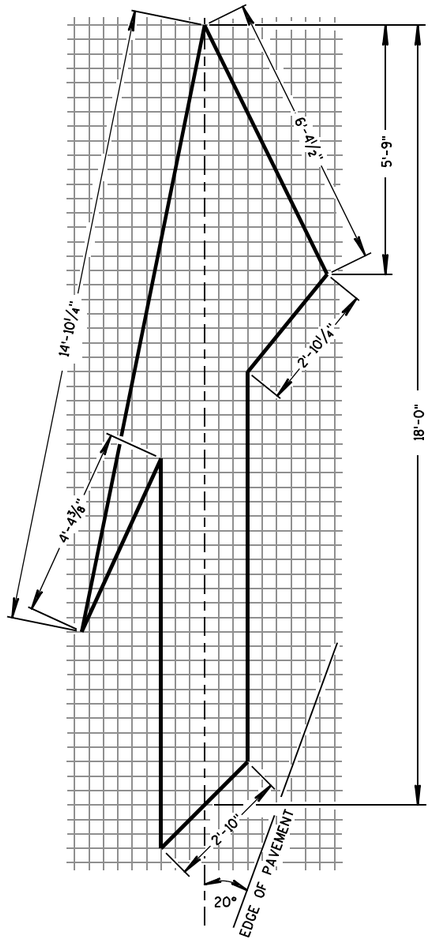
TYPE 2



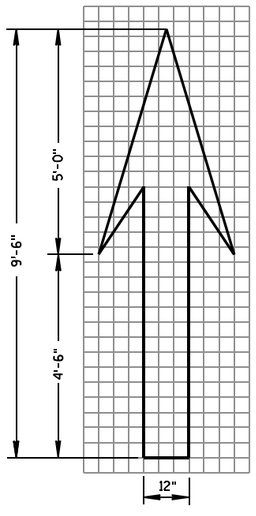
TYPE 6



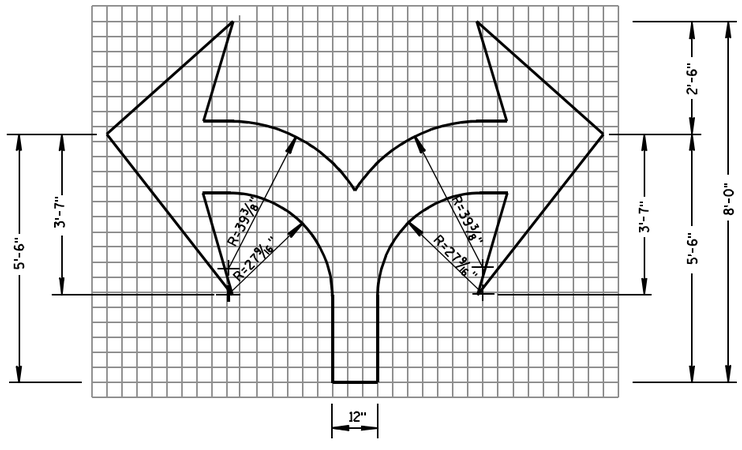
TYPE 4



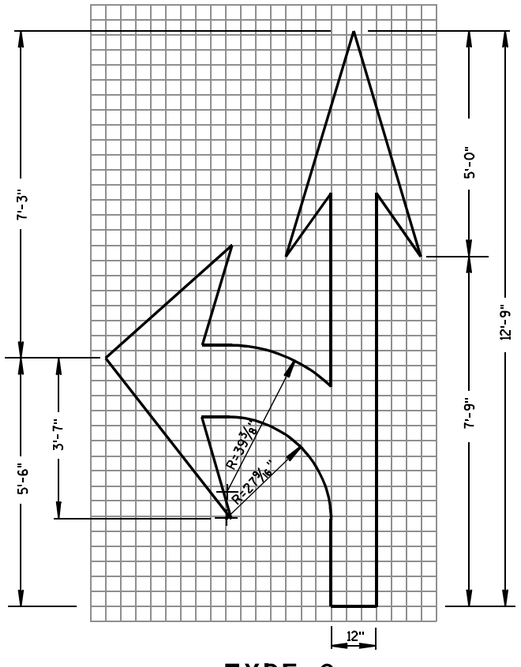
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

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S.D.D. 15 C 7-12c

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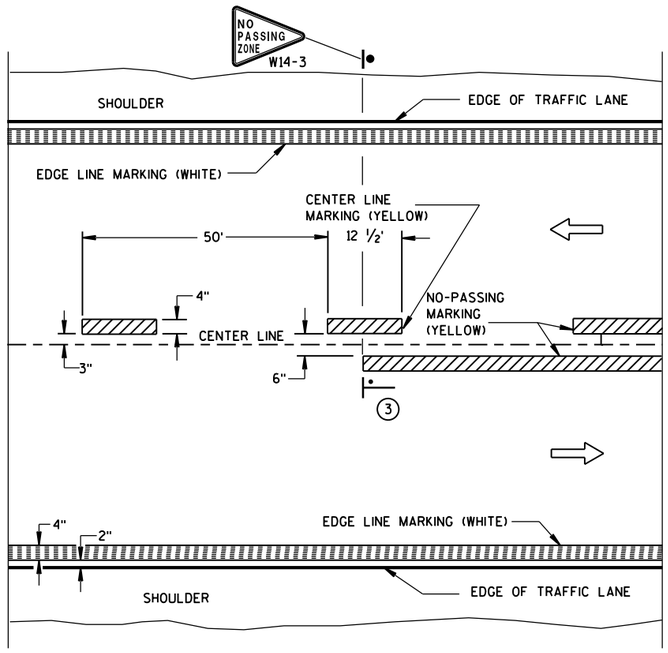
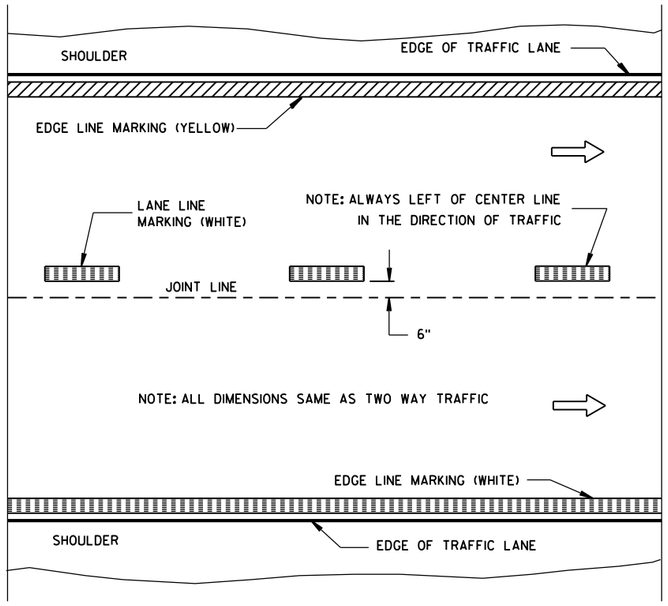
S.D.D. 15 C 7-12c

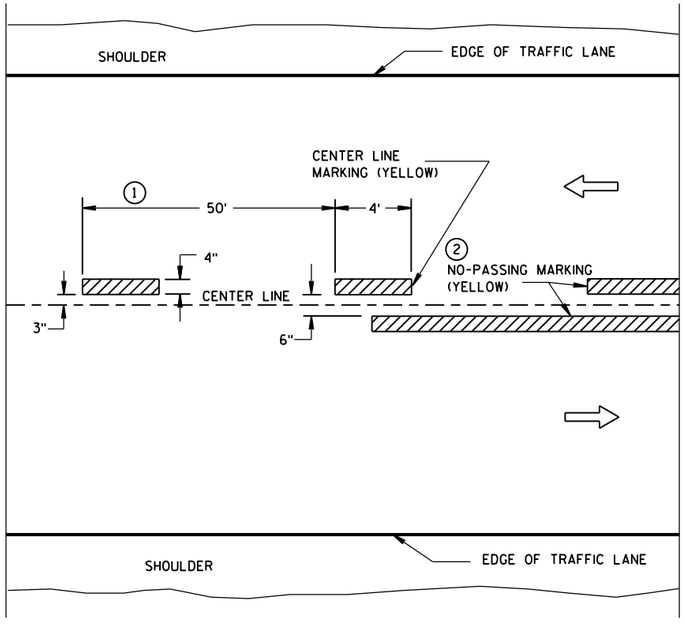


TWO WAY TRAFFIC

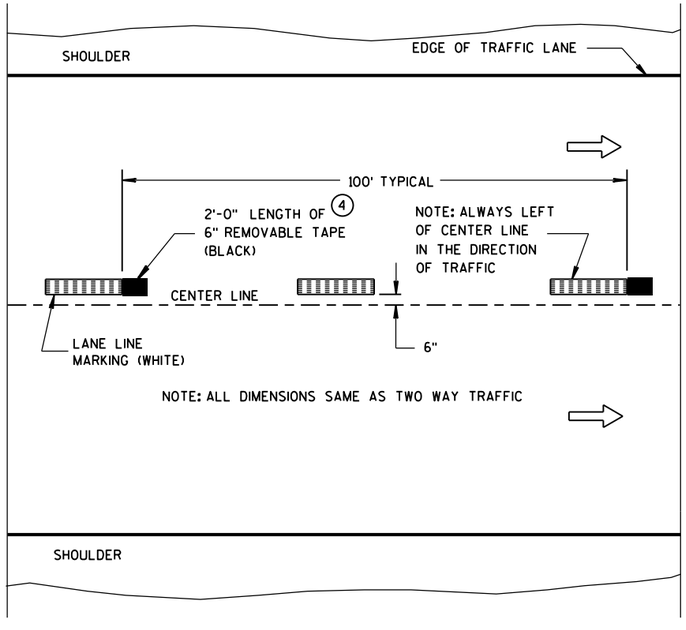


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

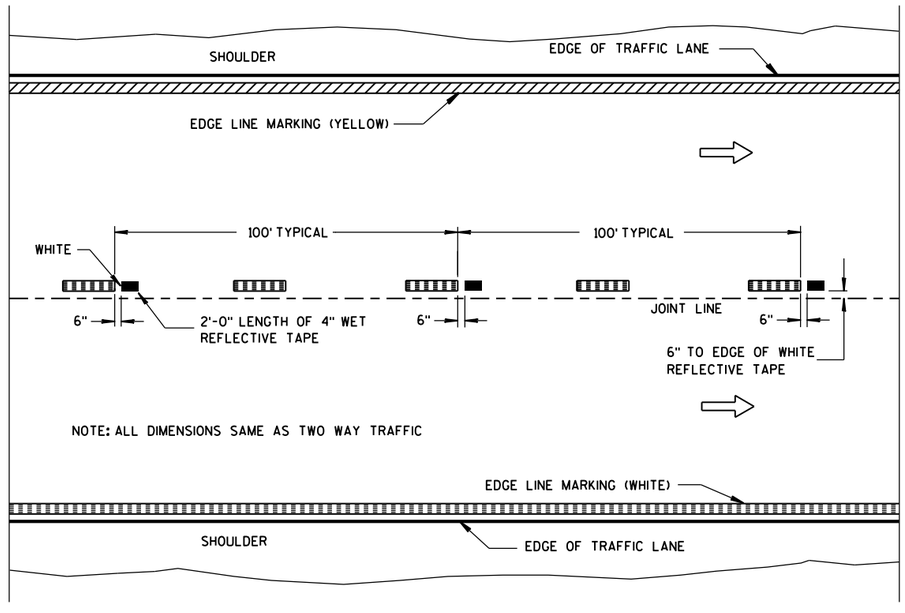
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

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S.D.D. 15 C 8-16a

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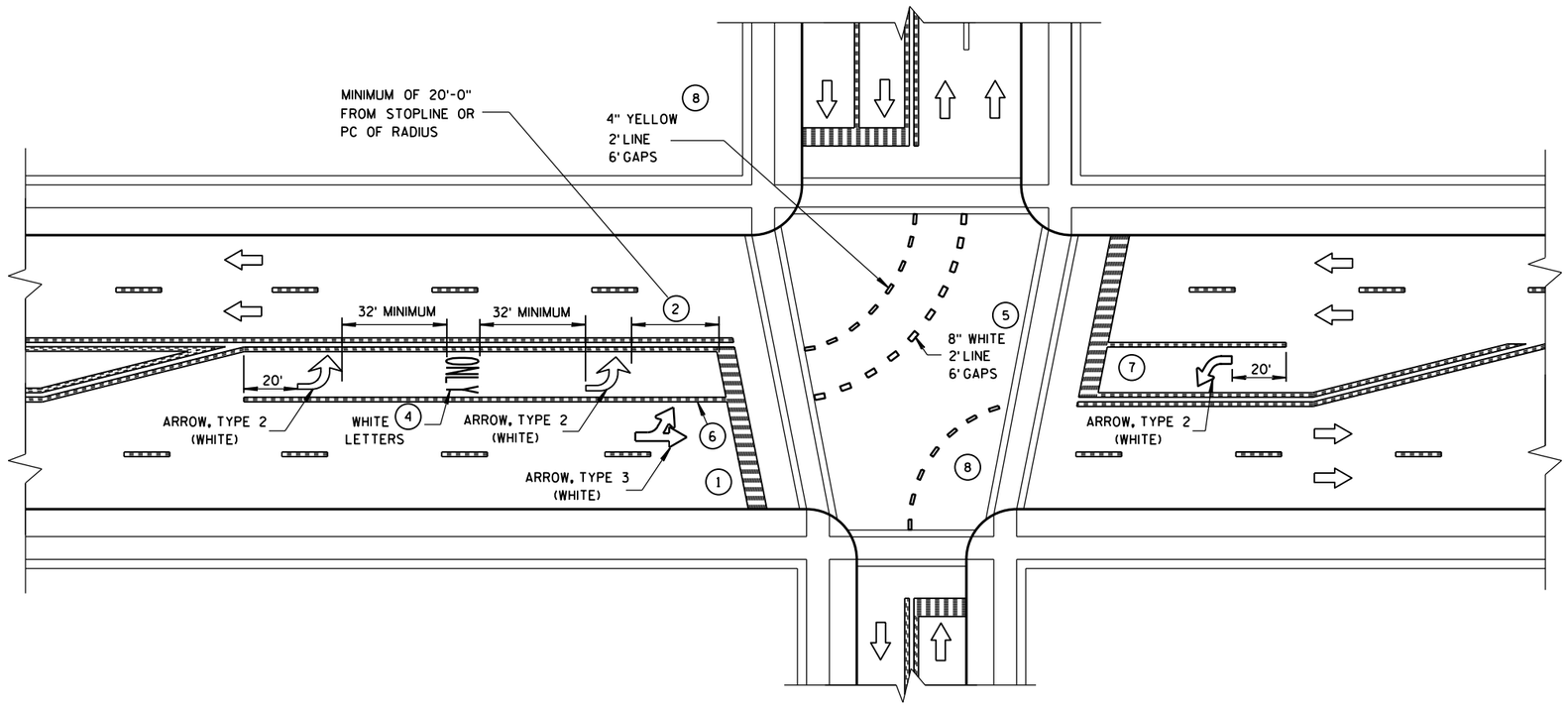
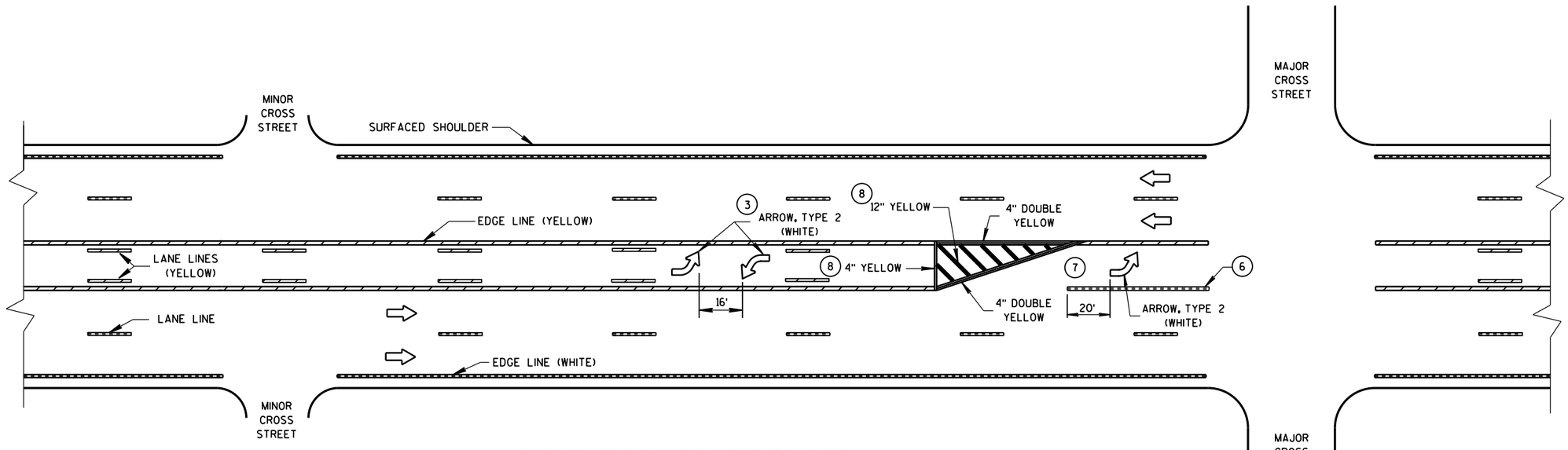
S.D.D. 15 C 8-16a



GENERAL NOTES

1. STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
3. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
5. 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
6. 8" WHITE
7. ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
8. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

PAVEMENT MARKING (LEFT TURN LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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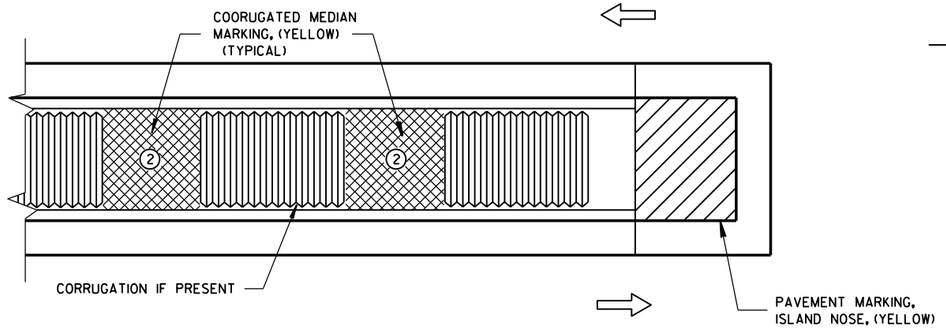
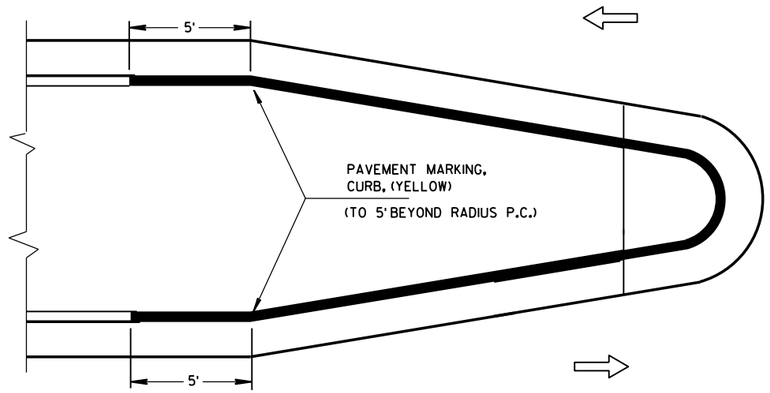
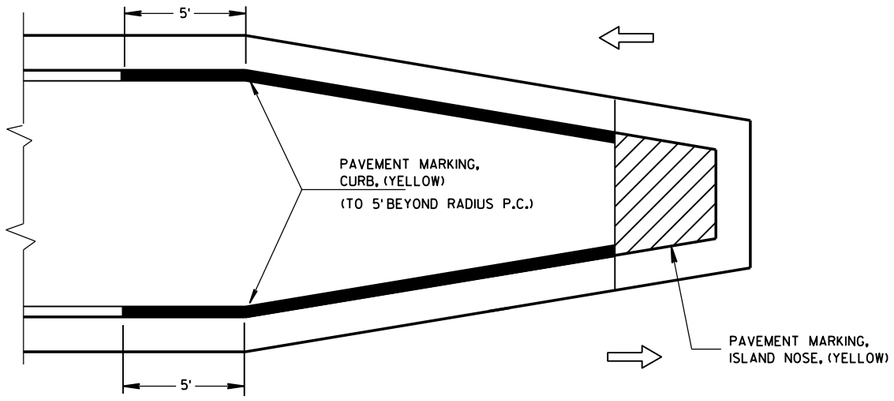
S.D.D. 15 C 8-16e



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

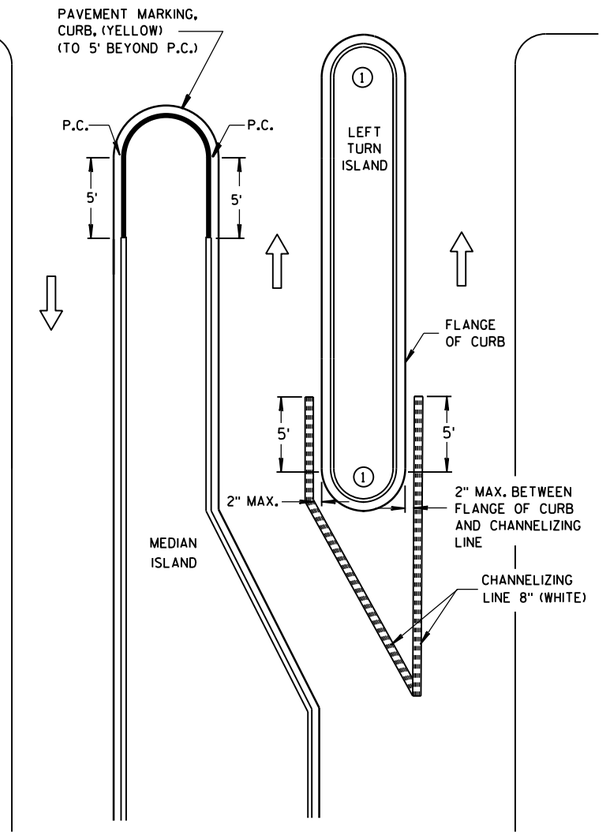


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

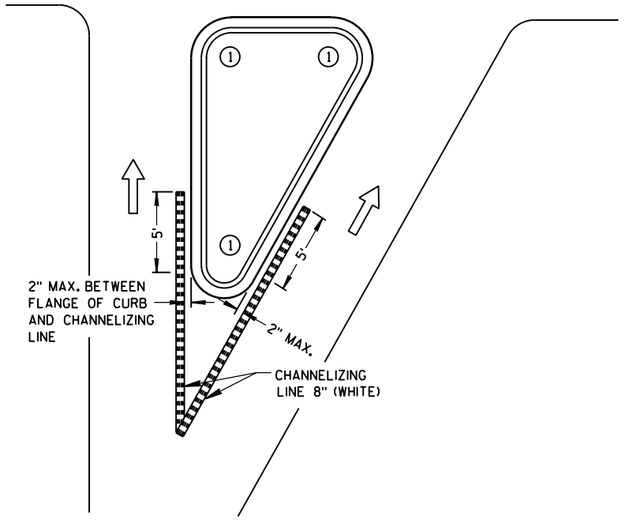


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.

2. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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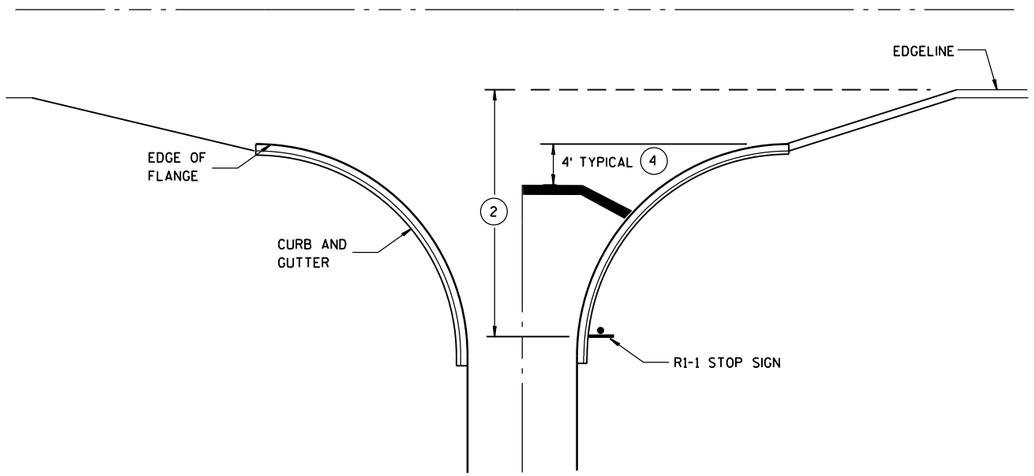
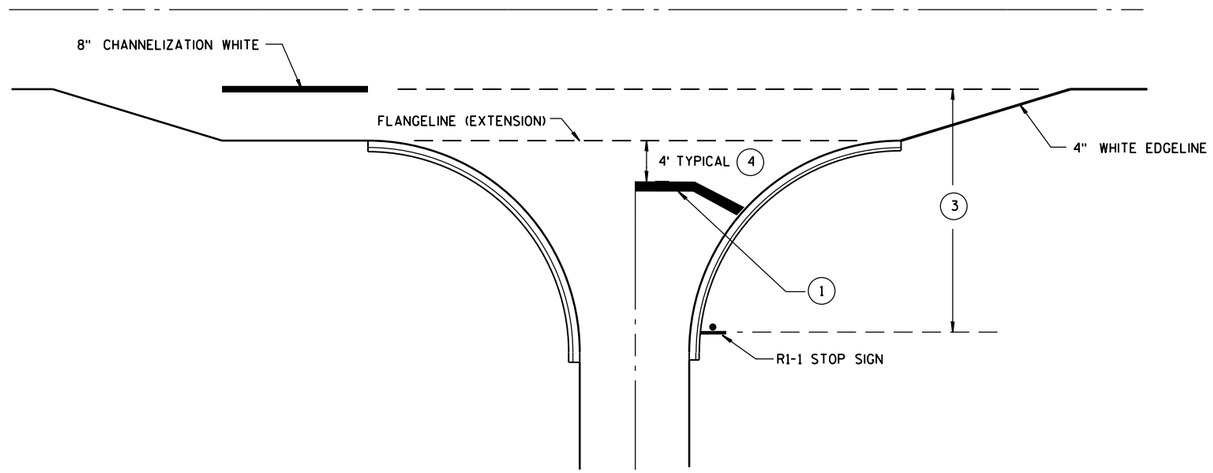
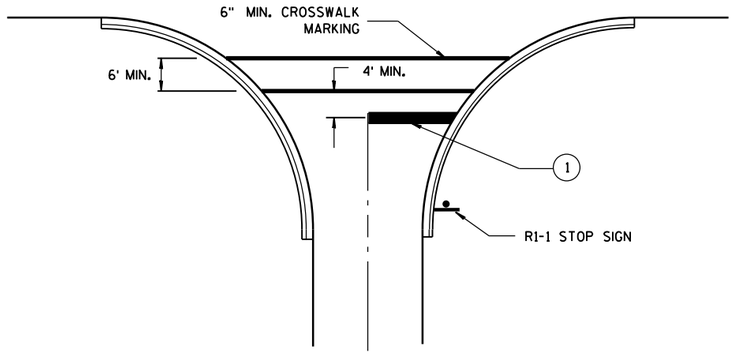


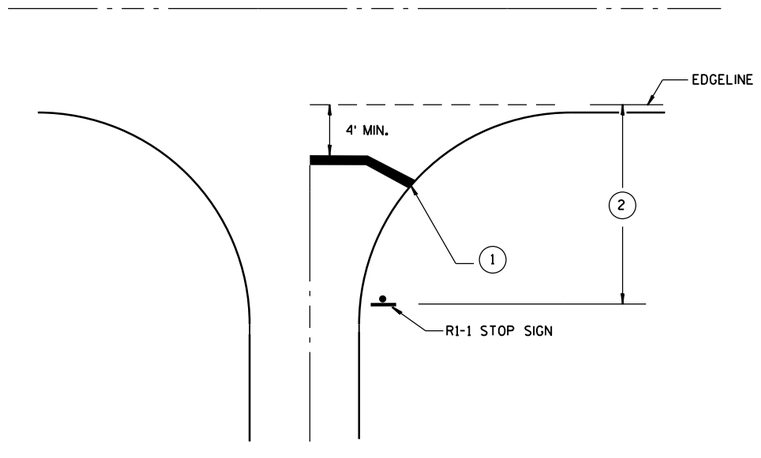
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

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Wisconsin Department of Transportation

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