SWL

JAN 2017

ORDER OF SHEETS

TOTAL SHEETS = 88

PROJECT ID: 5990-00-32

WITH: N/A

COUNTY: ROCK

04

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5990-00-32	WISC 2017003	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

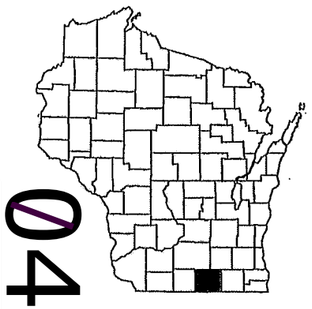
CITY OF JANESVILLE, SHARON ROAD

SPRING BROOK CREEK BRIDGE B-53-0374

LOCAL STREET

ROCK COUNTY

STATE PROJECT NUMBER
5990-00-32



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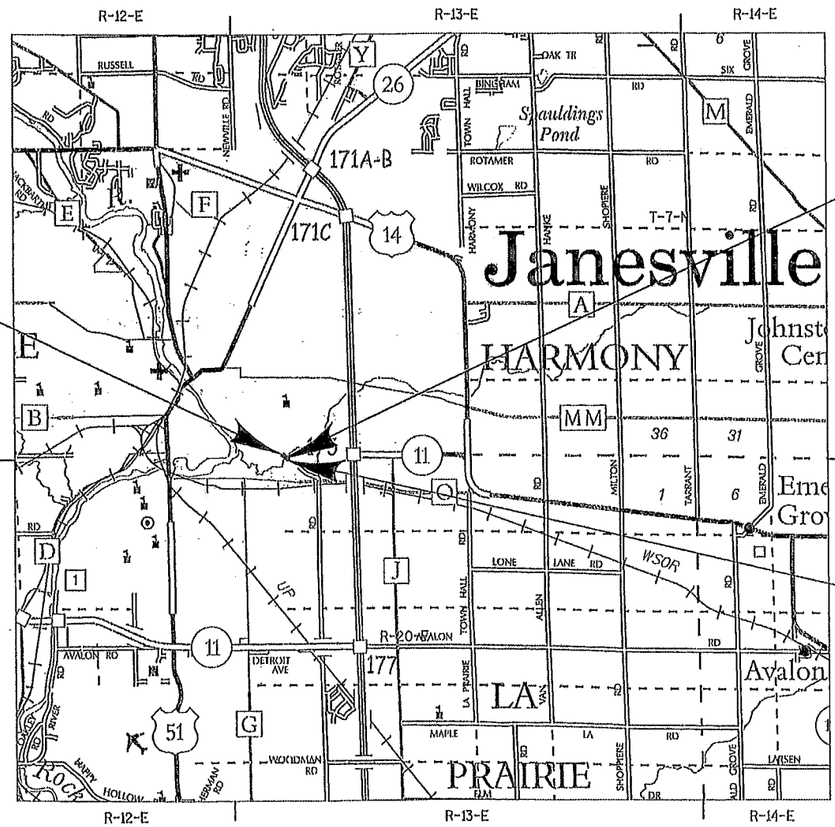

LAYOUT

SCALE 0 1 2

TOTAL NET LENGTH OF CENTERLINE = 0.045 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), ROCK COUNTY - NAD83

ELEVATIONS SHOWN ON THIS PLAN REFERENCED TO NAVD 88 (2007)

DESIGN DESIGNATION

A.A.D.T.	2017	= 740
A.A.D.T.	2037	= 820
D.H.V.		= 90
D.D.		= 52/48
T.		= N/A
DESIGN SPEED		= 30 MPH
ESALS		= 65,700

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
		TELEPHONE	T
MARSH AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	

ACCEPTED FOR CITY OF JANESVILLE

11/14/2016 (DATE) Mike Payne (CITY ENGINEER)

ORIGINAL PLANS PREPARED BY

KSingh | Engineers Scientists Consultants

WISCONSIN PROFESSIONAL ENGINEER JEREMY L. HINDS E-38775 MILWAUKEE WI

11/8/16 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	K. SINGH & ASSOCIATES, INC.
Designer	K. SINGH & ASSOCIATES, INC.
Management Consultant	KL Engineering

APPROVED FOR THE DEPARTMENT

DATE: 11/15/16 (Management Consultant Signature)

E

FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\010101_TI.DWG
LAYOUT NAME - 010101_TI - TITLE SHEET

PLOT DATE : 11/7/2016 4:45 PM PLOT BY : JEREMY HINDS PLOT NAME :

WISDOT/CADDS SHEET 10

2

GENERAL NOTES

1. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.
3. INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER.
4. THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
5. DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGED TOPSOILED, SEEDED AND EROSION CONTROL MATTED AS DIRECTED BY THE ENGINEER.
6. SEED AND INSTALL EROSION MAT ON ALL SALVAGED TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.
7. STATIONING, DISTANCES AND OFFSETS FOR SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF THE SIGNS ARE TO BE DETERMINED BY THE ENGINEER.
8. EXCAVATION BELOW SUBGRADE (EBS) IS NOT SHOWN ON THE PLANS YARDAGE BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION, DEPTH AND BACKFILL MATERIAL FOR EBS WILL BE DETERMINED BY THE ENGINEER.
9. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
10. THE LOCATIONS OF LONGITUDINAL JOINTS IN HMA PAVEMENT SHALL BE APPROVED BY THE ENGINEER.
11. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
12. SMOOTH AND EVEN JOINTS SHALL BE PROVIDED WHERE MATCHING EXISTING SAWCUTTING OR ADJACENT PAVEMENTS OR HARD SURFACES..
13. 5.0-INCH HMA PAVEMENT SHALL BE CONSTRUCTED IN TWO (2) LAYERS AS FOLLOWS:

LAYER	DEPTH (INCHES)	AGGREGATE SIZE (mm)	HMA PAVEMENT
UPPER	2.0-INCH	9.5 mm NOMINAL AGGREGATE	5 LT 58-28 S
LOWER	3.0-INCH	19.0 mm NOMINAL AGGREGATE	3 LT 58-28 S

14. RADII, ELEVATIONS, AND DIMENSIONS ARE GIVEN AT THE PAVEMENT EDGES, UNLESS OTHERWISE NOTED IN THE PLANS.
15. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

ORDER OF SECTION 2 SHEETS

OTHER AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

BUB, LAURA
WI DNR SOUTH CENTRAL REGION
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
(608) 275-3485
laura.bub@wisconsin.gov

CITY OF JANESVILLE PROJECT MANAGER

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18 N. JACKSON STREET
JANESVILLE, WI 53548
(608) 755-3165
mcgrathm@ci.janesville.wi.us

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Jhinds@ksaconsultants.com

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700 RAYOVAC DRIVE, SUITE 100
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(608) 441-5610
mary_tano@nps.gov

ICE AGE TRAIL ALLIANCE

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MADISON, WI 53708
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djames84@outlook.com

NATIONAL PARK SERVICE

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(608) 441-5610
John_madden@nps.gov

UTILITY CONTACTS

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HOGAN, JASON
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SUITE 1000
MADISON, WI 53718
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Jasonhogan@alliantenergy.com

WINDSTREAM COMMUNICATIONS

GRODI, AARON
1858 WRIGHT STREET
MADISON, WI 53704
(608) 819-5014
aaron.grodi@windstream.com

CITY OF JANESVILLE - WATER/SANITARY

THIESENHUSEN, CRAIG
123 DELAVAN DRIVE
JANESVILLE, WI 53545
(608)373-3471
thiesenhusenc@ci.janesville.wi.us

AT&T WISCONSIN

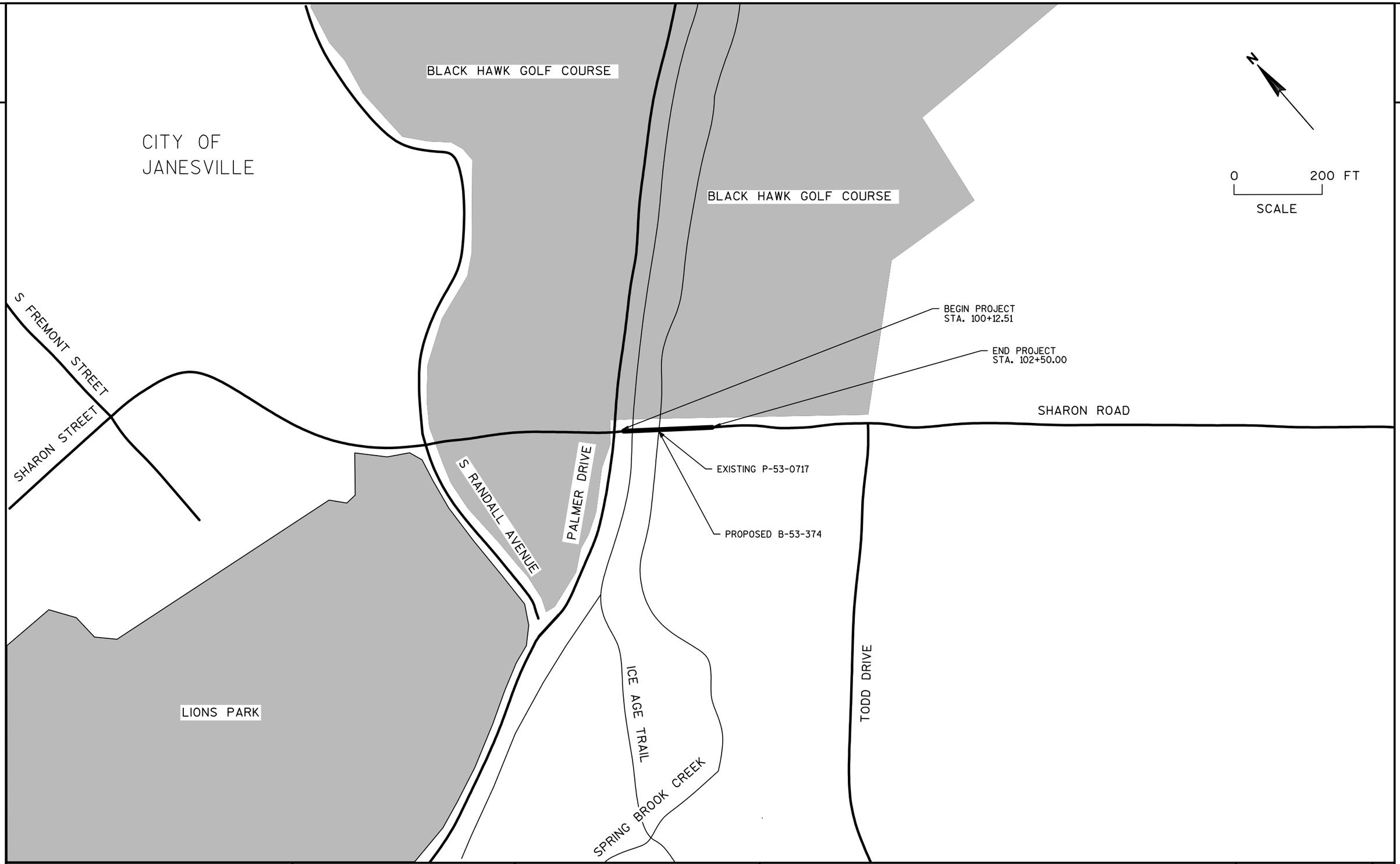
ANASON, CAROL
316 W. WASHINGTON AVENUE, ROOM 607
MADISON, WI 53703
(608)252-2385
ca2624@att.com

**DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS.

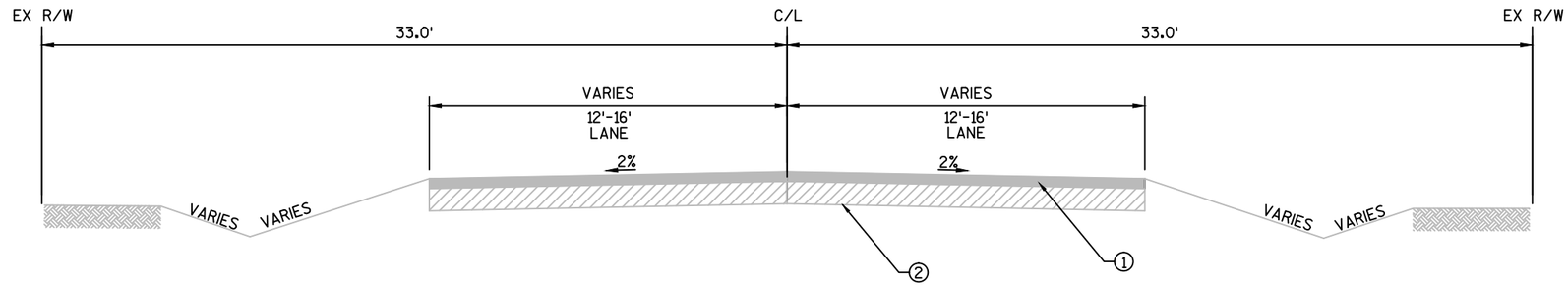
ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
CB	CATCH BASIN
C&G	CURB AND GUTTER
C-C	CENTER TO CENTER
CONC	CONCRETE
CSD	CONCRETE SURFACE DRAIN
CTR	CENTER
CWT	HUNDREDWEIGHT
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DD	DIRECTIONAL DISTRIBUTION
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
E	EAST
EB	EASTBOUND
EL OR ELEV	ELEVATION
EXIST	EXISTING
FS	FULL SUPERELEVATION
FT	FOOT
HE	HIGHWAY EASEMENT
HMA	HOT MIX ASPHALT
INCID	INCIDENTAL
INL	INLET
L	LENGTH OF CURVE
LF	LINEAR FOOT
LONG	LONGITUDINAL
LT	LEFT
MH	MANHOLE
MIN	MINIMUM
ML OR M/L	MATCH LINE
N	NORTH
NB	NORTHBOUND
NC	NORMAL CROWN
NTS	NOT TO SCALE
PAVT	PAVEMENT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
REQD	REQUIRED
R/L	REFERENCE LINE
RO	RUN OFF LENGTH
RT	RIGHT
RW OR R/W	RIGHT-OF-WAY
S	SOUTH
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWINGS
SHT	SHEET
SI	SLOPE INTERCEPT
SS	STORM SEWER
STA	STATION
SY	SQUARE YARD
SYM	SYMMETRICAL
T	TANGENT LENGTH
TEMP	TEMPORARY
TYP	TYPICAL
V	VELOCITY OR DESIGN SPEED
VAR	VARIABLE OR VARIES
W	WEST
WB	WESTBOUND
YD	YARD

2



PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK COUNTY	PROJECT OVERVIEW	SHEET 3	E



EXISTING TYPICAL SECTION
SHARON ROAD
STA 100+12.51 - STA 101+02.52
STA 101+73.07 - STA 102+50.00

LEGEND

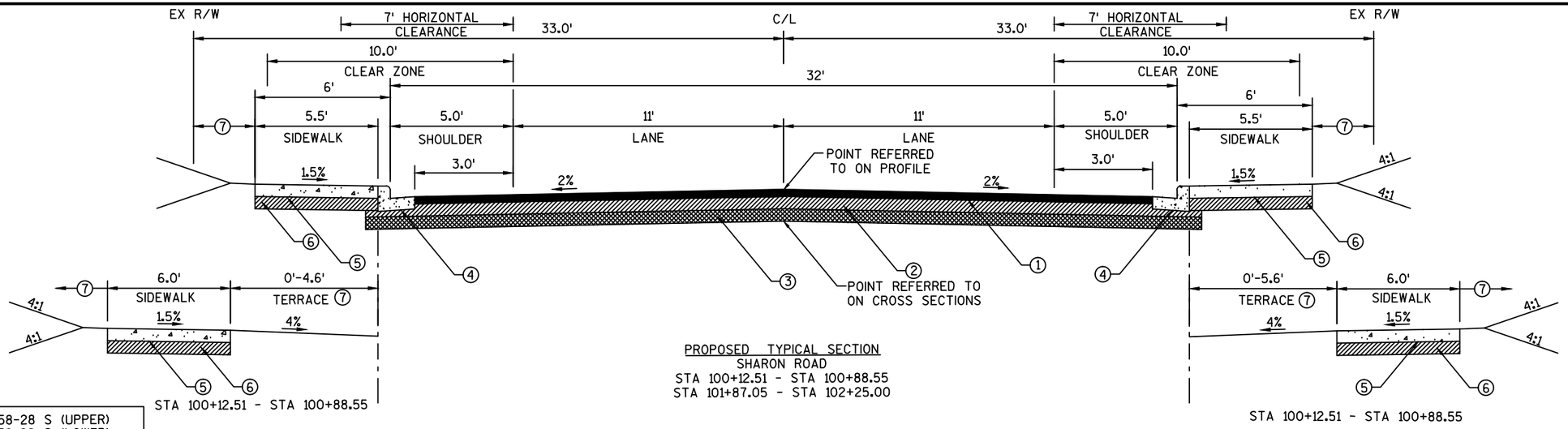
(1)	ASPHALT PAVEMENT (SEE BORING LOG)
(2)	BASE COURSE (SEE BORING LOG)

BORING LOG TABLE

STATION	OFFSET FROM CENTERLINE	LOCATION	BORING	ASPHALT THICKNESS (INCHES)	BASE COURSE THICKNESS (INCHES)	TOTAL THICKNESS (INCHES)
101+86.35	9.04'	LT	B-1	4-3/4"	8-1/4"	13"
100+98.15	14.23'	RT	B-3	7"	6"	13"

PROJECT NO:5990-00-32	HWY:SHARON ROAD	COUNTY:ROCK	TYPICAL SECTIONS	SHEET 4	E

FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\020301_TS.DWG
LAYOUT NAME - 020301_TS - EX-TYP SEC
PLOT DATE : 6/2/2016 7:25 PM PLOT BY : JEREMY HINDS PLOT NAME : PLOT SCALE : 1 IN= 5 FT



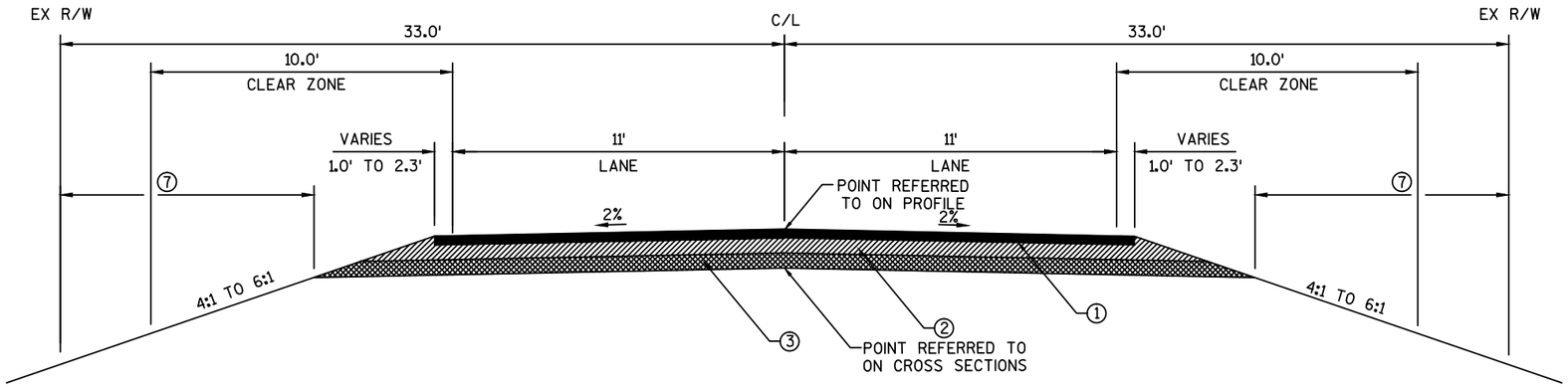
PROPOSED TYPICAL SECTION
SHARON ROAD
STA 100+12.51 - STA 100+88.55
STA 101+87.05 - STA 102+25.00

STA 100+12.51 - STA 100+88.55

STA 100+12.51 - STA 100+88.55

LEGEND

①	2.0" HMA PAVEMENT 5 LT 58-28 S (UPPER) 3.0" HMA PAVEMENT 3 LT 58-28 S (LOWER)
②	6" BASE AGGREGATE DENSE 1 1/4-INCH
③	6" BASE AGGREGATE DENSE 3-INCH
④	CONCRETE CURB & GUTTER 30-INCH TYPE L
⑤	CONCRETE SIDEWALK 5-INCH
⑥	4" BASE AGGREGATE DENSE 1 1/4-INCH
⑦	TOPSOIL, SEED AND E-MAT CLASS II, TYPE C

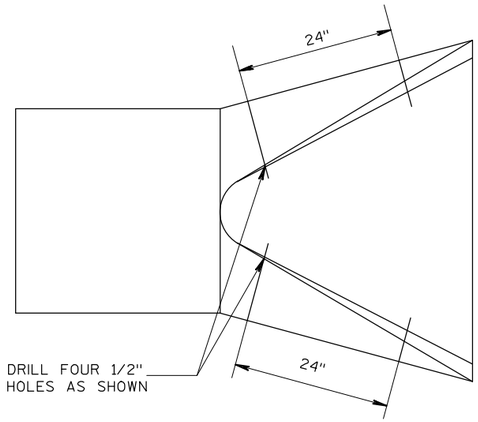


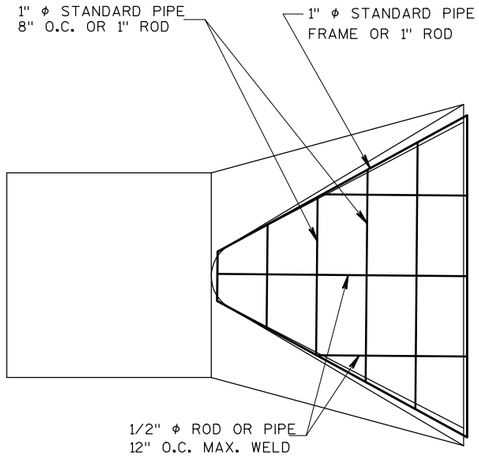
PROPOSED TYPICAL SECTION
SHARON ROAD
STA 102+25.00 - STA 102+50.00

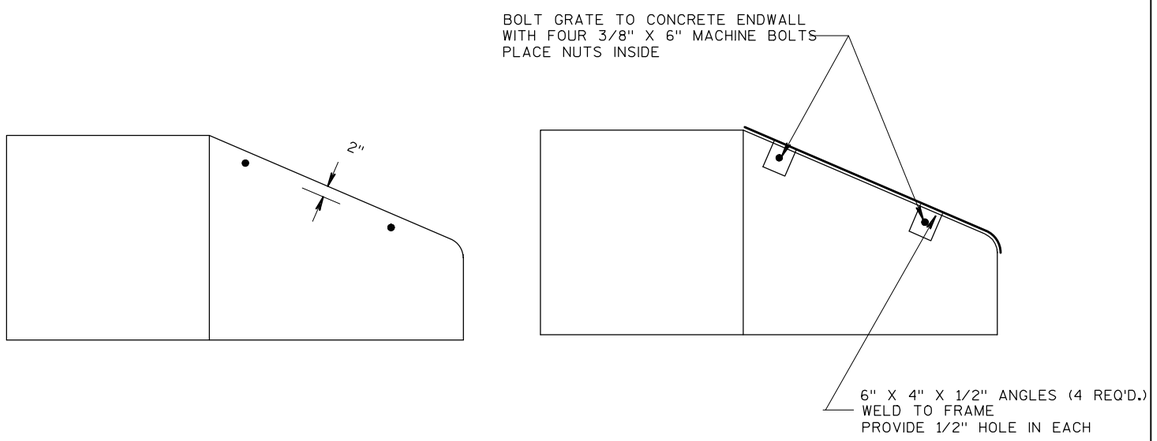
LEGEND

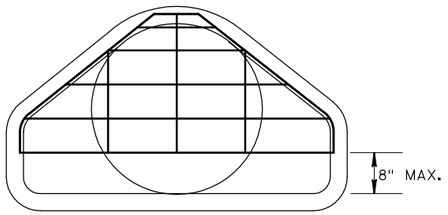
①	2.0" HMA PAVEMENT 5 LT 58-28 S (UPPER) 3.0" HMA PAVEMENT 3 LT 58-28 S (LOWER)
②	6" BASE AGGREGATE DENSE 1 1/4-INCH
③	6" BASE AGGREGATE DENSE 3-INCH
⑦	TOPSOIL, SEED AND E-MAT CLASS II, TYPE C

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	TYPICAL SECTIONS	SHEET 5	E



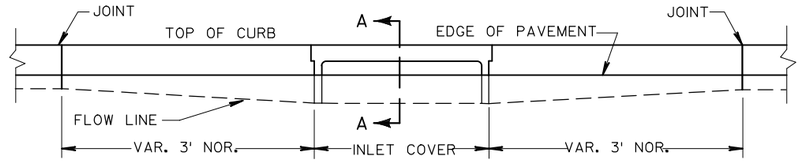




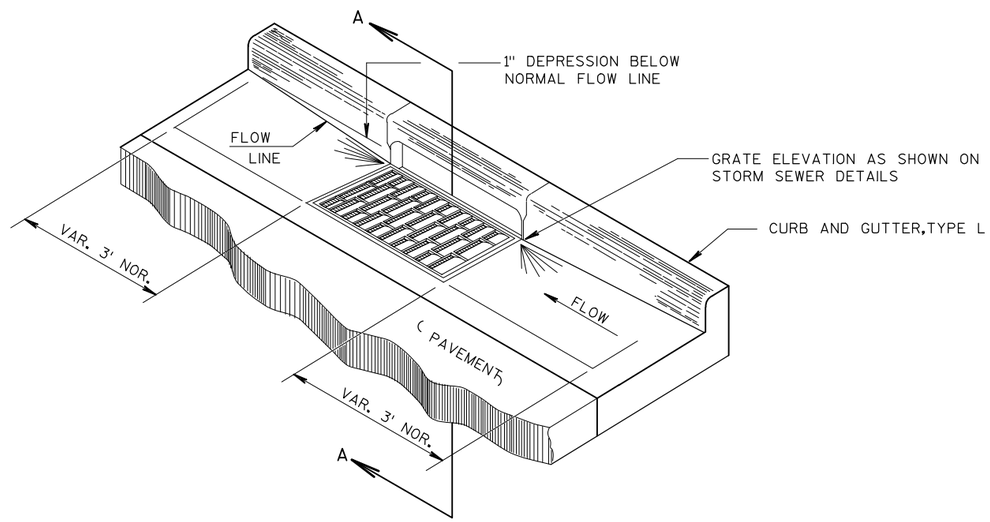


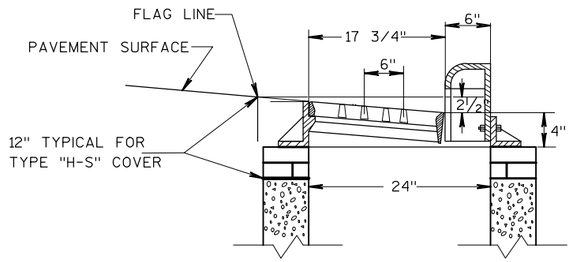
PIPE GRATE DETAIL

STA. 100+90, 29.4' RT



ELEVATION

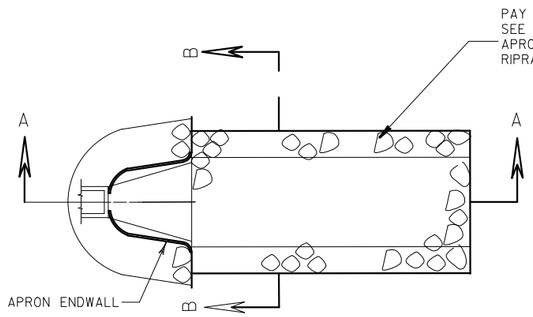




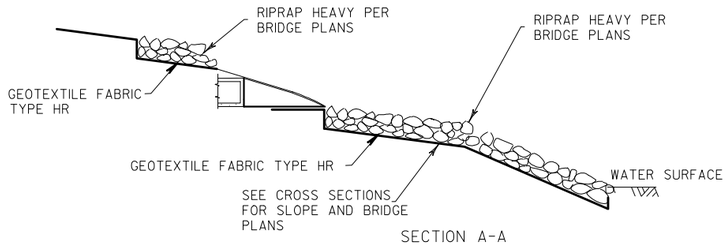
SECTION A-A

DETAIL OF CURB AND GUTTER AT INLETS

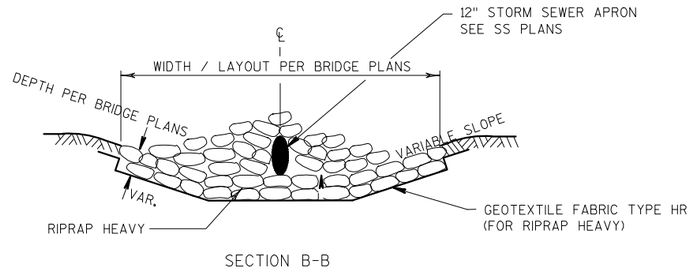
INLET 2X3-FT WITH TYPE H-S COVER



PLAN VIEW



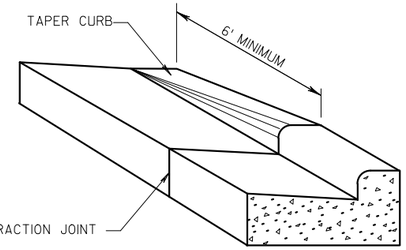
SECTION A-A



SECTION B-B

RIPRAP AND GEOTEXTILE FABRIC AT APRON ENDWALLS DETAIL

SEE EROSION CONTROL PLAN FOR LOCATIONS
STA. 100+90, 29.4' RT

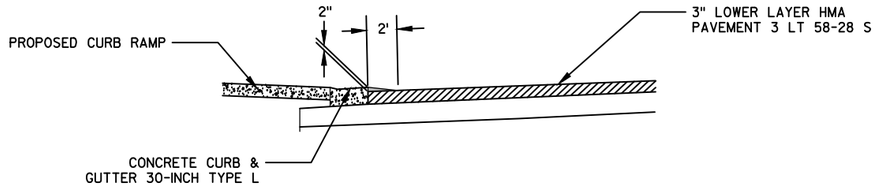


NOTES

1) TO BE USED AT ALL TERMINAL OF CURB AND GUTTER WHERE NO ABUTTING EXISTING CURB AND GUTTER OR ASPHALTIC FLUMES.

DETAIL OF CURB & GUTTER TERMINAL SECTION

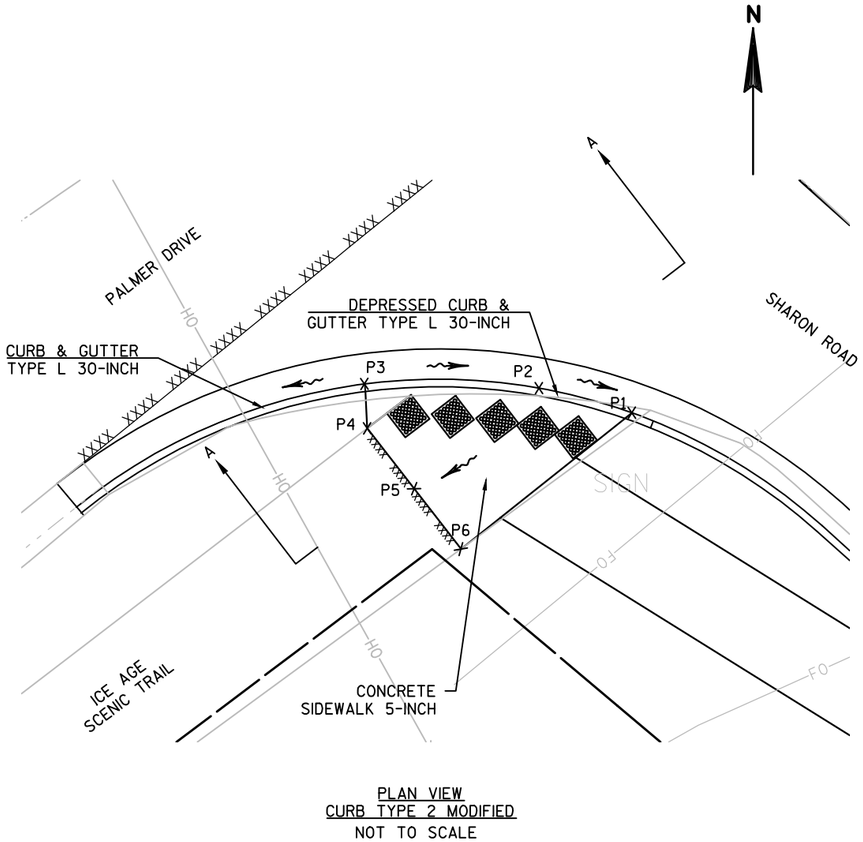
STA. 102+25, LT & RT



DETAIL FOR TEMPORARY PAVEMENT WEDGE AT CURB RAMPS

STAGE 2: CURB RAMPS FOR EAST-WEST PEDESTRIAN CROSSING

2



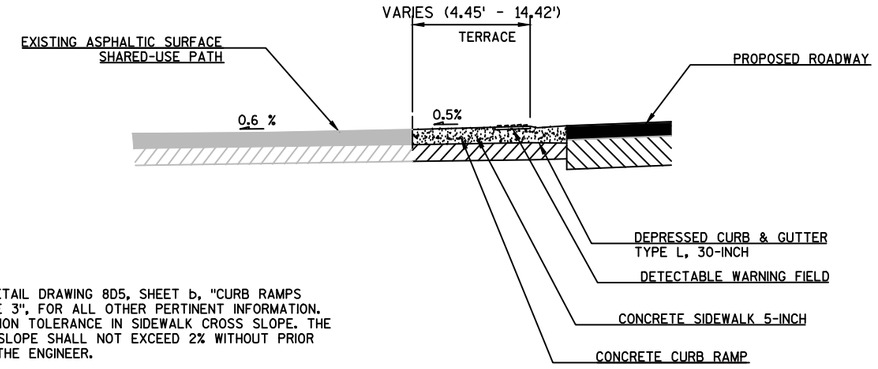
PLAN VIEW
CURB TYPE 2 MODIFIED
NOT TO SCALE

POINTS LAYOUT TABLE

POINT	NORTHING	EASTING	STATION	OFFSET	ELEV.	DESCRIPTION
P1	264895.98	499056.81	100+29.96	18.80' RT.	775.08	FLOW/CURB
P2	264897.64	499050.50	100+24.15	21.80' RT.	775.16	FLOW/CURB
P3	264897.88	499039.16	100+15.53	29.15' RT.	775.30	FLOW/CURB
P4	264894.95	499039.35	100+17.62	31.21' RT.	775.12	T/RAMP
P5	264890.97	499042.44	100+22.58	32.12' RT.	775.06	T/RAMP
P6	264886.99	499045.52	100+27.54	33.02' RT.	775.01	T/RAMP

NOTES

1. SEE STANDARD DETAIL DRAWING 8D5, SHEET b, "CURB RAMPS TYPE 2 AND TYPE 3", FOR ALL OTHER PERTINENT INFORMATION.
2. ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



SECTION A-A

CURB RAMP DETAIL
SHARON ROAD & PALMER DRIVE INTERSECTION SW CORNER

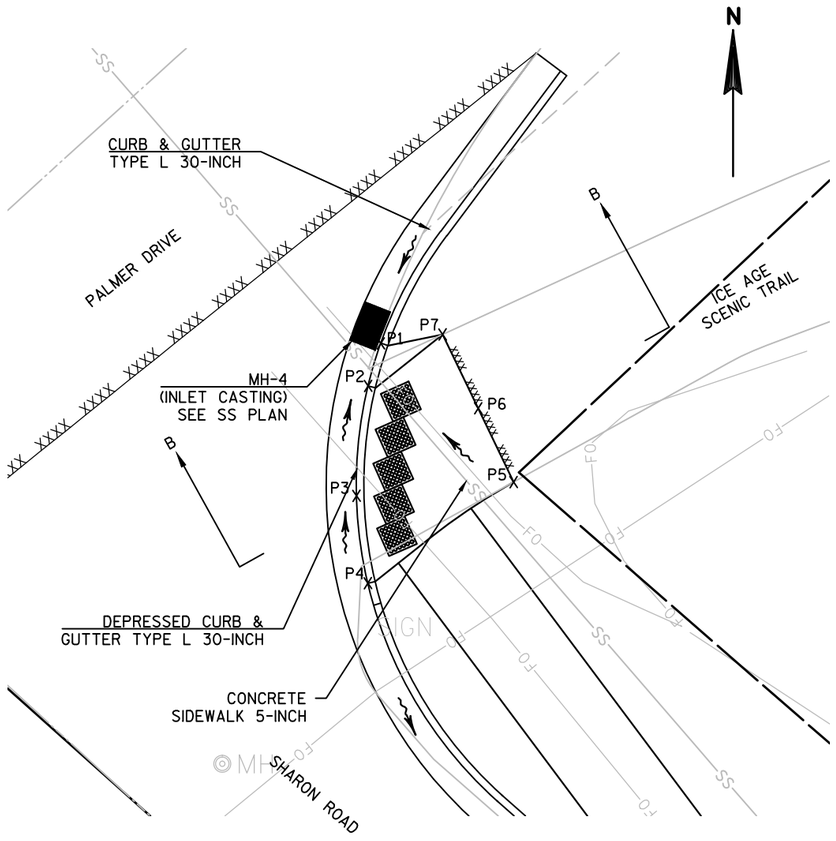
LEGEND

- CONCRETE SIDEWALK 5-INCH
- X X SAW CUT PAVEMENT
- DETECTABLE WARNING FIELD

PROJECT NO:5990-00-32	HWY:SHARON ROAD	COUNTY:ROCK	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 8	E

FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\021002_CD.DWG
LAYOUT NAME - 021002_CD - CURB RAMP DET - SW CORNER
PLOT DATE : 6/16/2016 2:48 PM PLOT BY : JEREMY HINDS PLOT NAME : PLOT SCALE : 1 IN:5 FT

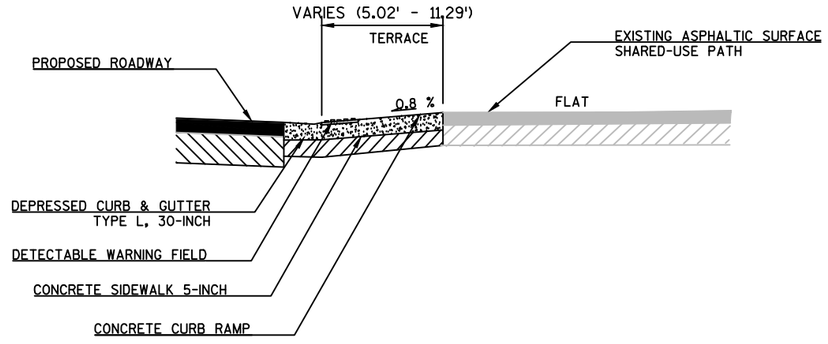
2



PLAN VIEW
CURB TYPE 2 MODIFIED
NOT TO SCALE

POINTS LAYOUT TABLE

POINT	NORTHING	EASTING	STATION	OFFSET	ELEV.	DESCRIPTION
P1	264937.09	499089.17	100+26.66	33.41' RT.	774.80	FLOW/CURB
P2	264934.27	499088.32	100+27.92	30.74' RT.	774.85	FLOW/CURB
P3	264927.03	499087.55	100+32.18	24.82' RT.	774.90	FLOW/CURB
P4	264921.25	499088.30	100+36.58	21.02' RT.	775.00	FLOW/CURB
P5	264927.93	499097.92	100+39.30	32.41' RT.	774.86	T/RAMP
P6	264932.80	499095.58	100+34.31	34.48' RT.	774.84	T/RAMP
P7	264937.66	499093.24	100+29.32	36.55' RT.	774.84	T/RAMP



SECTION B-B

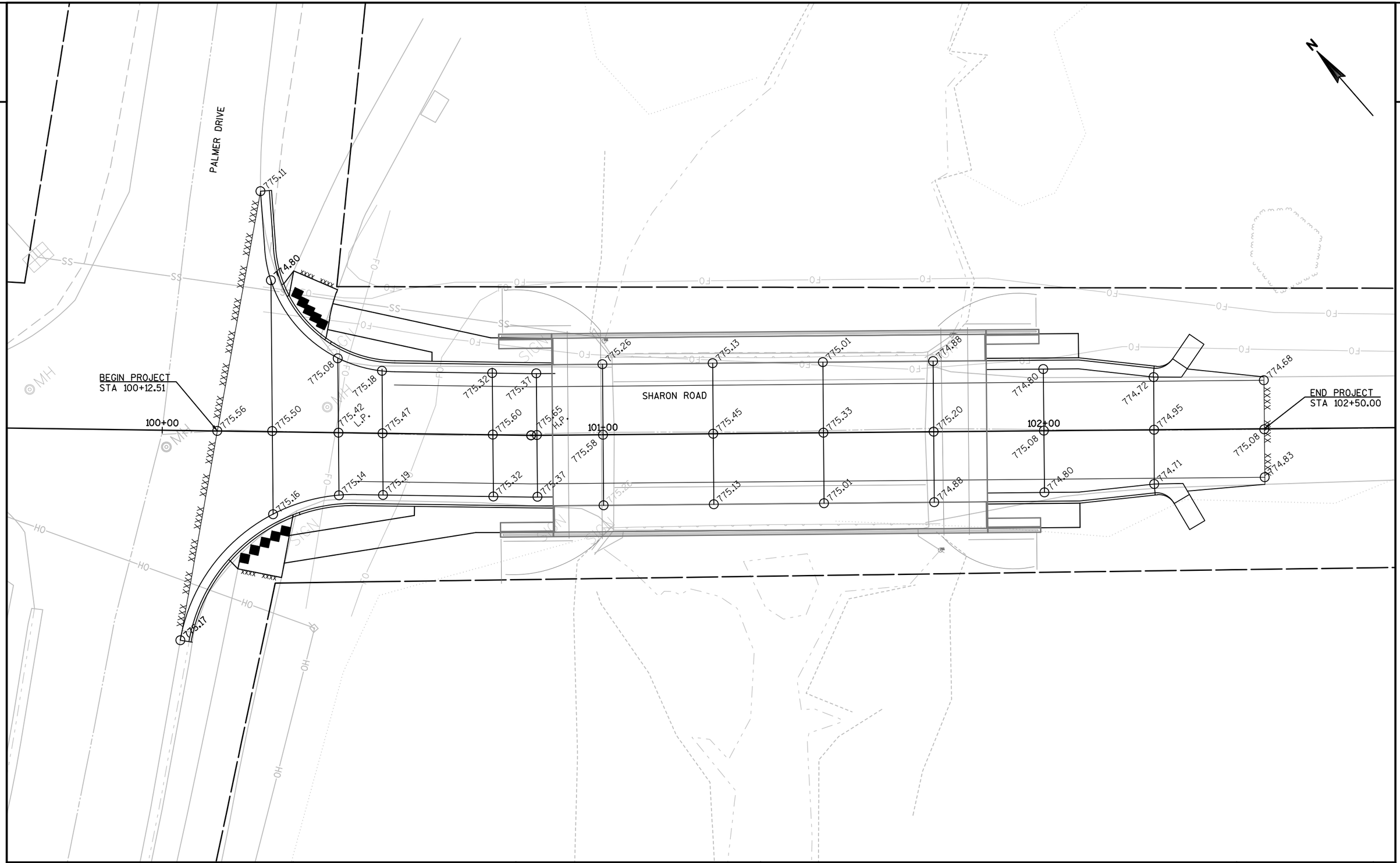
NOTES
1. SEE STANDARD DETAIL DRAWING 8D5, SHEET 6, "CURB RAMPS TYPE 2 AND TYPE 3", FOR ALL OTHER PERTINENT INFORMATION.
2. ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

CURB RAMP DETAIL
SHARON ROAD & PALMER DRIVE INTERSECTION SE CORNER

LEGEND
- CONCRETE SIDEWALK 5-INCH
- X X SAW CUT PAVEMENT
- DETECTABLE WARNING FIELD

PROJECT NO:5990-00-32	HWY: SHARON ROAD	COUNTY:ROCK	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 9	E

2

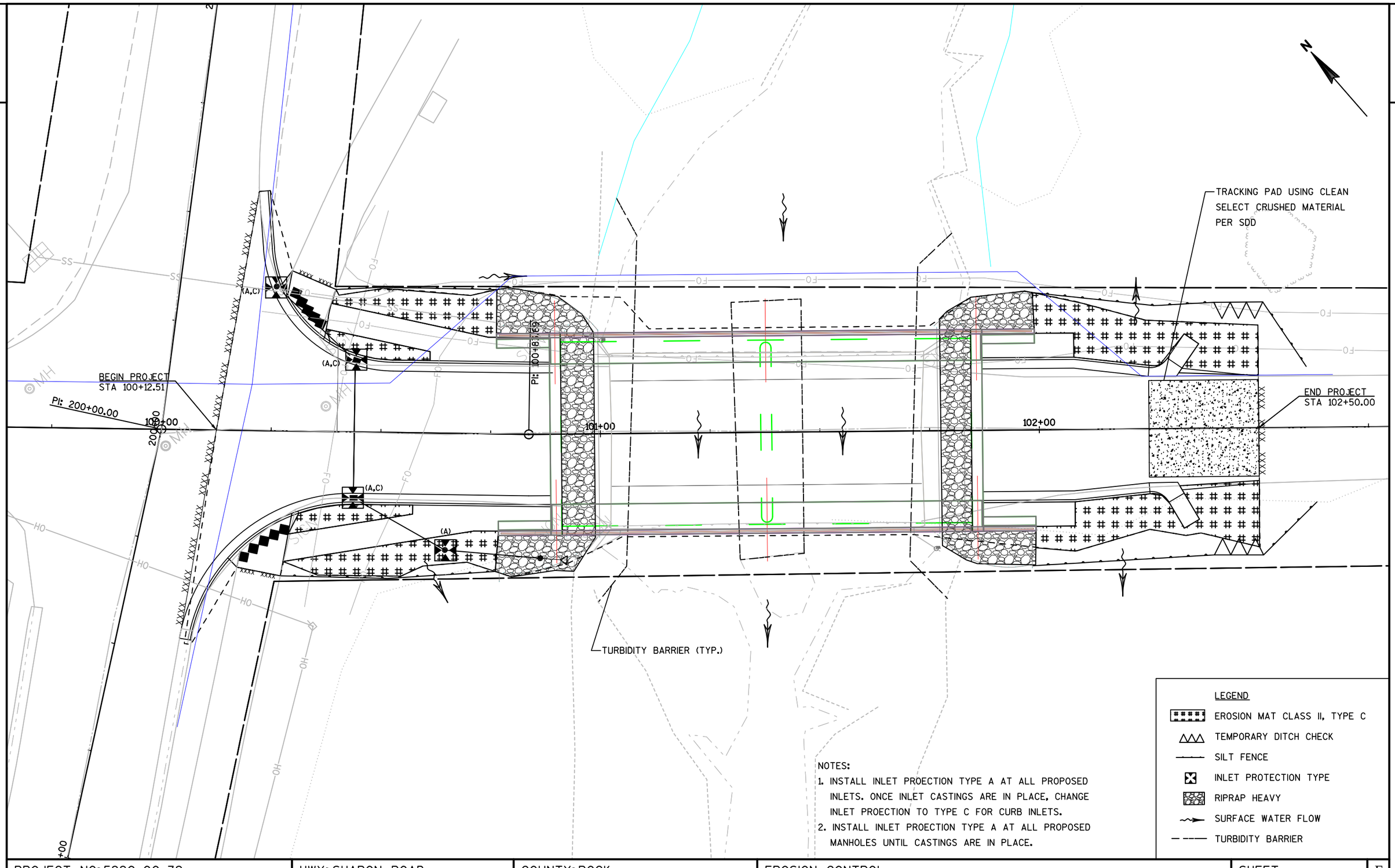


PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	PAVEMENT GRADES	SHEET 10	E

FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\021201_PG.DWG
LAYOUT NAME - 021201_PG - PAVEMENT GRADES

PLOT DATE : 6/14/2016 12:58 AM PLOT BY : JEREMY HINDS PLOT NAME : PLOT SCALE : 1 IN:20 FT

2



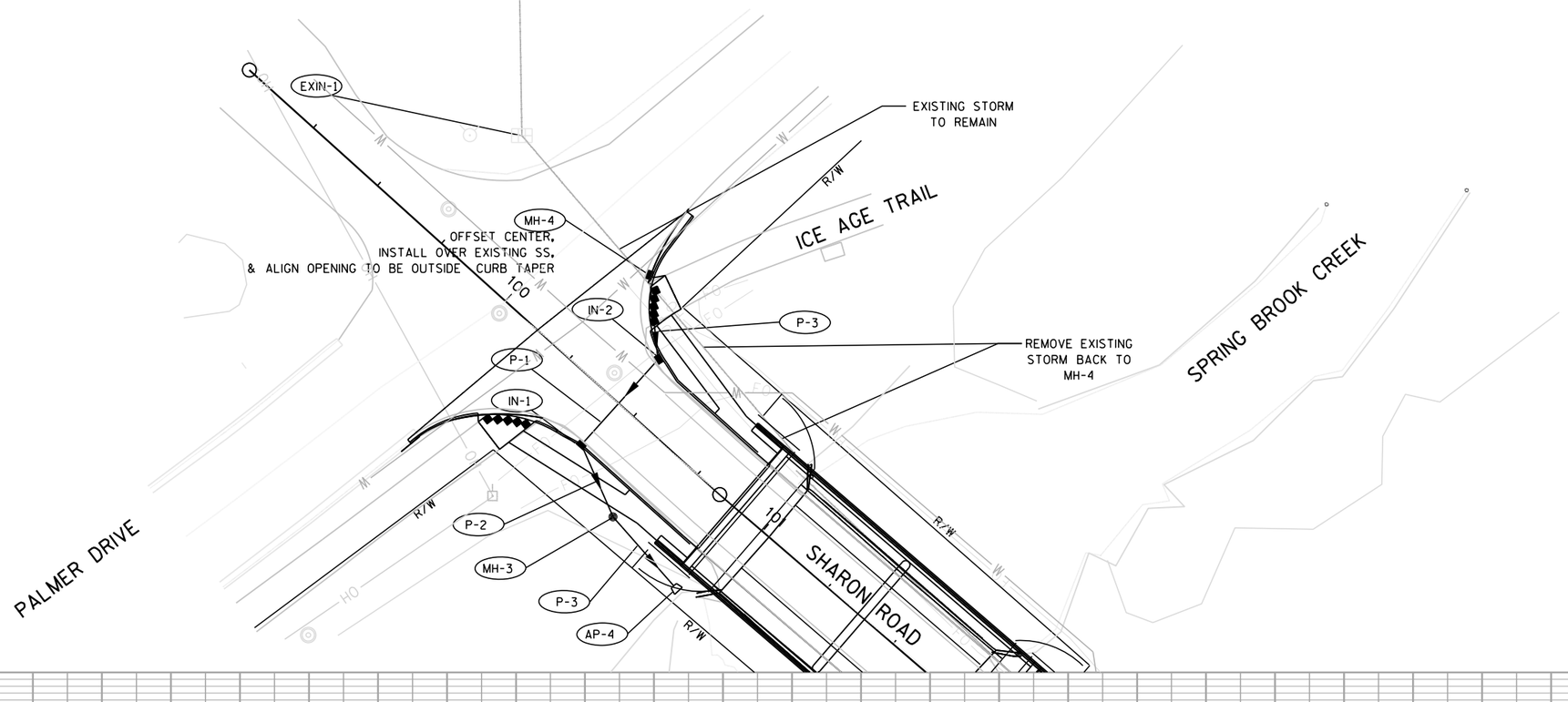
NOTES:

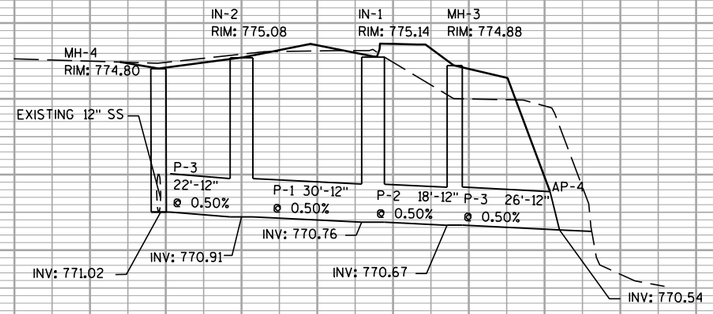
1. INSTALL INLET PROECTION TYPE A AT ALL PROPOSED INLETS. ONCE INLET CASTINGS ARE IN PLACE, CHANGE INLET PROECTION TO TYPE C FOR CURB INLETS.
2. INSTALL INLET PROECTION TYPE A AT ALL PROPOSED MANHOLES UNTIL CASTINGS ARE IN PLACE.

LEGEND

- EROSION MAT CLASS II, TYPE C
- TEMPORARY DITCH CHECK
- SILT FENCE
- INLET PROTECTION TYPE
- RIPRAP HEAVY
- SURFACE WATER FLOW
- TURBIDITY BARRIER

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	EROSION CONTROL	SHEET 11	E





PROJECT NO: 5990-00-32	HWY: SHARON RD	COUNTY: ROCK	STORM SEWER PLANS	SHEET 12	E

SHARON ROAD CLOSURE BEGINS XXX XX

FMS SIGNAGE
INSTALL 2 WEEKS PRIOR TO CLOSURE

PALMER DRIVE

P10 W11-15 30"X30" P11 W16-7L 24"X12" FACES SOUTH

P12 W11-15 30"X30" P13 W16-7R 24"X12" FACES NORTH

NO MOTOR VEHICLES R5-3 24"X24" P02

NO MOTOR VEHICLES REMOVE R05

NO MOTOR VEHICLES REMOVE R04

STOP REMOVE

STOP R1-1 30"X30" P01

BIKE ROUTE D11-1 24"X18" P04

BIKE ROUTE REMOVE R06

REMOVE R02

FMS SIGNAGE
INSTALL 2 WEEKS PRIOR TO CLOSURE

SHARON ROAD CLOSURE BEGINS XXX XX

M02 PALMER DR
M03 SHARON ST

+27.72,27.22'

+36.40,18.74'

BEGIN PROJECT
STA 100+12.51

100+00

+37.24,0.00'

SHARON ROAD

101+00

102+00

END PROJECT
STA 102+50.00

+19.15,22.88'

+30.34,16.51'

P06 W11-15 30"X30" P07 W16-7L 24"X12" FACES NORTH

P08 W11-15 30"X30" P09 W16-7R 24"X12" FACES SOUTH

SPEED LIMIT 25 REMOVE R03

REMOVE R01

STOP M01

NO MOTOR VEHICLES R5-3 24"X24" P03

NO MOTOR VEHICLES REMOVE R07

SPEED LIMIT 25 R2-1 24"X30" P05

SHARON ROAD CLOSURE BEGINS XXX XX

FMS SIGNAGE
INSTALL 2 WEEKS PRIOR TO CLOSURE

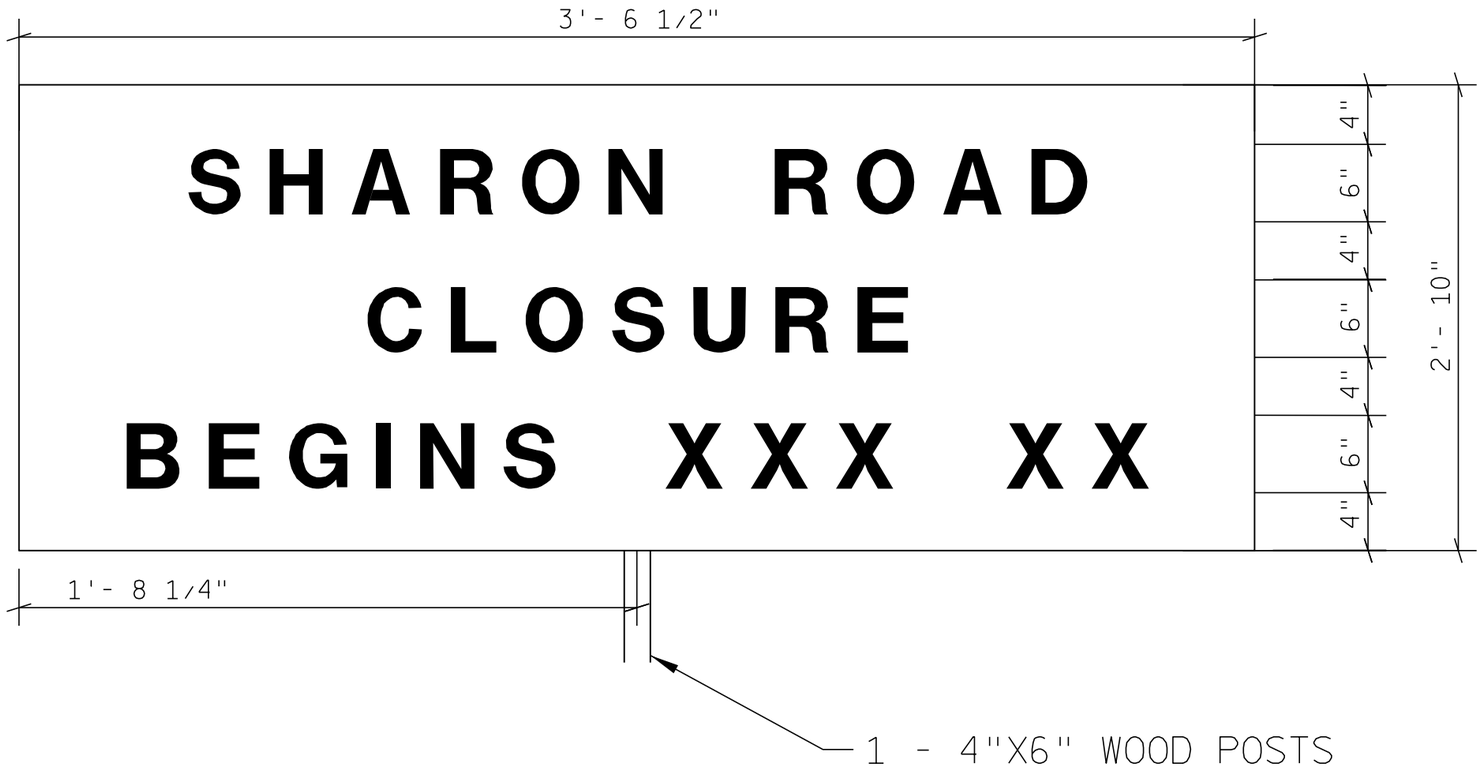
LEGEND

1. PAVEMENT MARKING EPOXY 4-INCH, WHITE
2. PAVEMENT MARKING EPOXY 4-INCH, YELLOW
3. PAVEMENT MARKING EPOXY 6-INCH, WHITE
4. PAVEMENT MARKING EPOXY 18-INCH, WHITE
5. PAVEMENT MARKING CROSSWALK EPOXY 24-INCH, WHITE

(RXX) REMOVING SIGN NUMBER
(PXX) PROPOSED SIGN NUMBER
(MXX) MOVING SIGN NUMBER
PROPOSED SIGN

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	PAVEMENT MARKING AND SIGNING	SHEET 13	E

2



PROJECT NO:5990-00-32	HWY: SHARON ROAD	COUNTY:ROCK	TRAFFIC CONTROL DETAIL: FIXED MESSAGE SIGN	SHEET 14	E

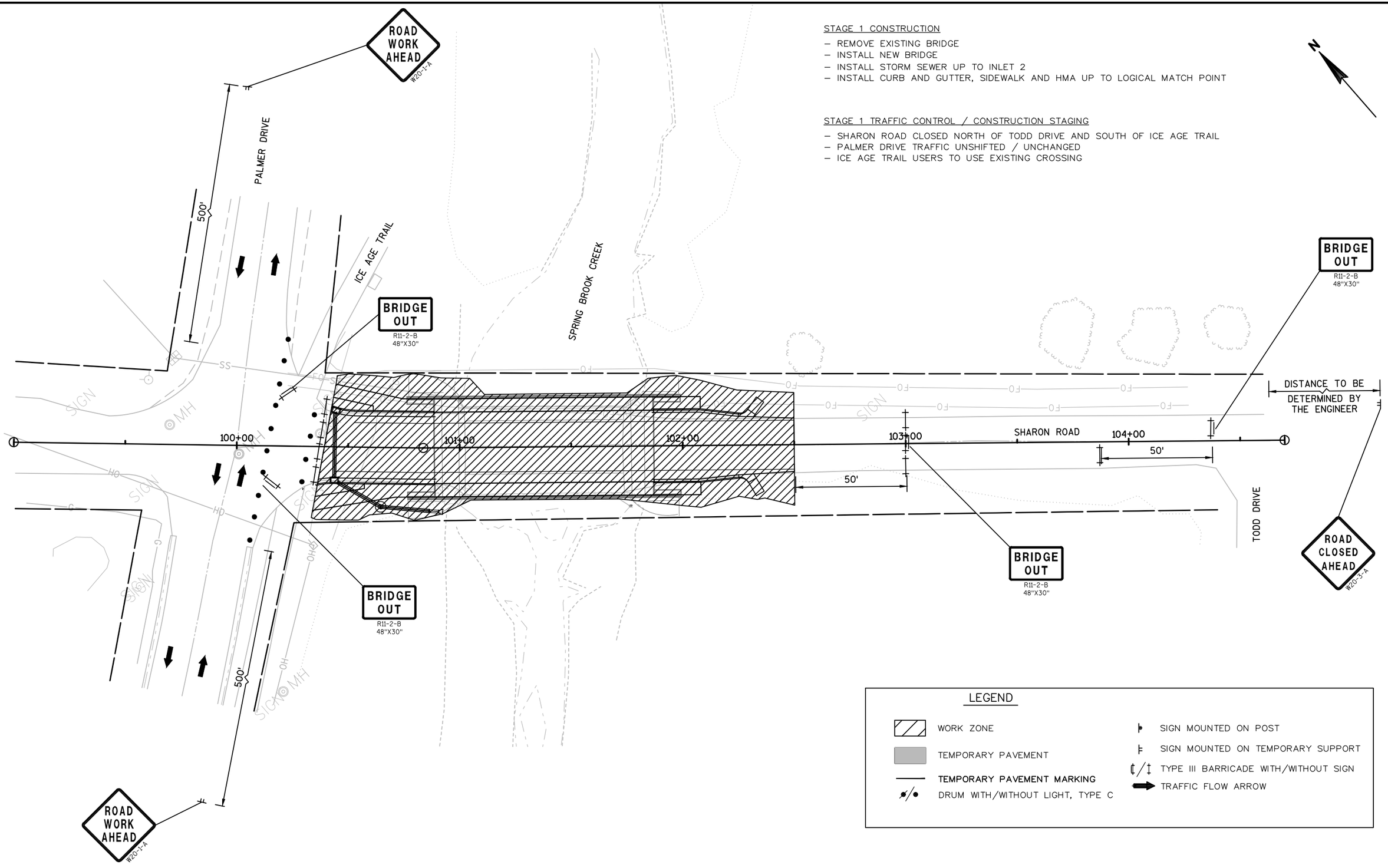
2

STAGE 1 CONSTRUCTION

- REMOVE EXISTING BRIDGE
- INSTALL NEW BRIDGE
- INSTALL STORM SEWER UP TO INLET 2
- INSTALL CURB AND GUTTER, SIDEWALK AND HMA UP TO LOGICAL MATCH POINT

STAGE 1 TRAFFIC CONTROL / CONSTRUCTION STAGING

- SHARON ROAD CLOSED NORTH OF TODD DRIVE AND SOUTH OF ICE AGE TRAIL
- PALMER DRIVE TRAFFIC UNSHIFTED / UNCHANGED
- ICE AGE TRAIL USERS TO USE EXISTING CROSSING



PROJECT NO:5990-00-32	HWY: SHARON ROAD	COUNTY:ROCK	TRAFFIC CONTROL - STAGE 1	SHEET 15	E

STAGE 2A CONSTRUCTION
- REMOVE EXISTING PAVEMENT (ROADWAY & TRAIL)
- INSTALL NEW CONCRETE SIDEWALK AND WARNING FIELDS ON EXISTING TRAIL ALIGNMENT
- INSTALL HMA LOWER COURSE
- INSTALL CURB AND GUTTER INCLUDING CURB AND SIDEWALK TAPERS
- INSTALL STORM SEWER RUN, MANHOLE 4 TO INLET 2

STAGE 2A TRAFFIC CONTROL / CONSTRUCTION STAGING
- SHARON ROAD CLOSED AND DETOURED, BARRICADE LOCATION SOUTH OF TRAIL BY ENGINEER IN FIELD
- PALMER DRIVE TRAFFIC SHIFTED VIA DRUMS AND TEMPORARY PAVEMENT MARKING
- ICE AGE TRAIL USERS SHIFTED TO TEMPORARY CROSSING, NORTH OF EXISTING TRAIL ALIGNMENT
- ICE AGE TRAIL SHALL HAVE A MINIMUM OF 8' BETWEEN DRUMS AT ALL TIMES
- SLIDE DRUMS AS NEEDED FOR LOGICAL MATCH POINTS WHILE MAINTAINING TRAIL USAGE

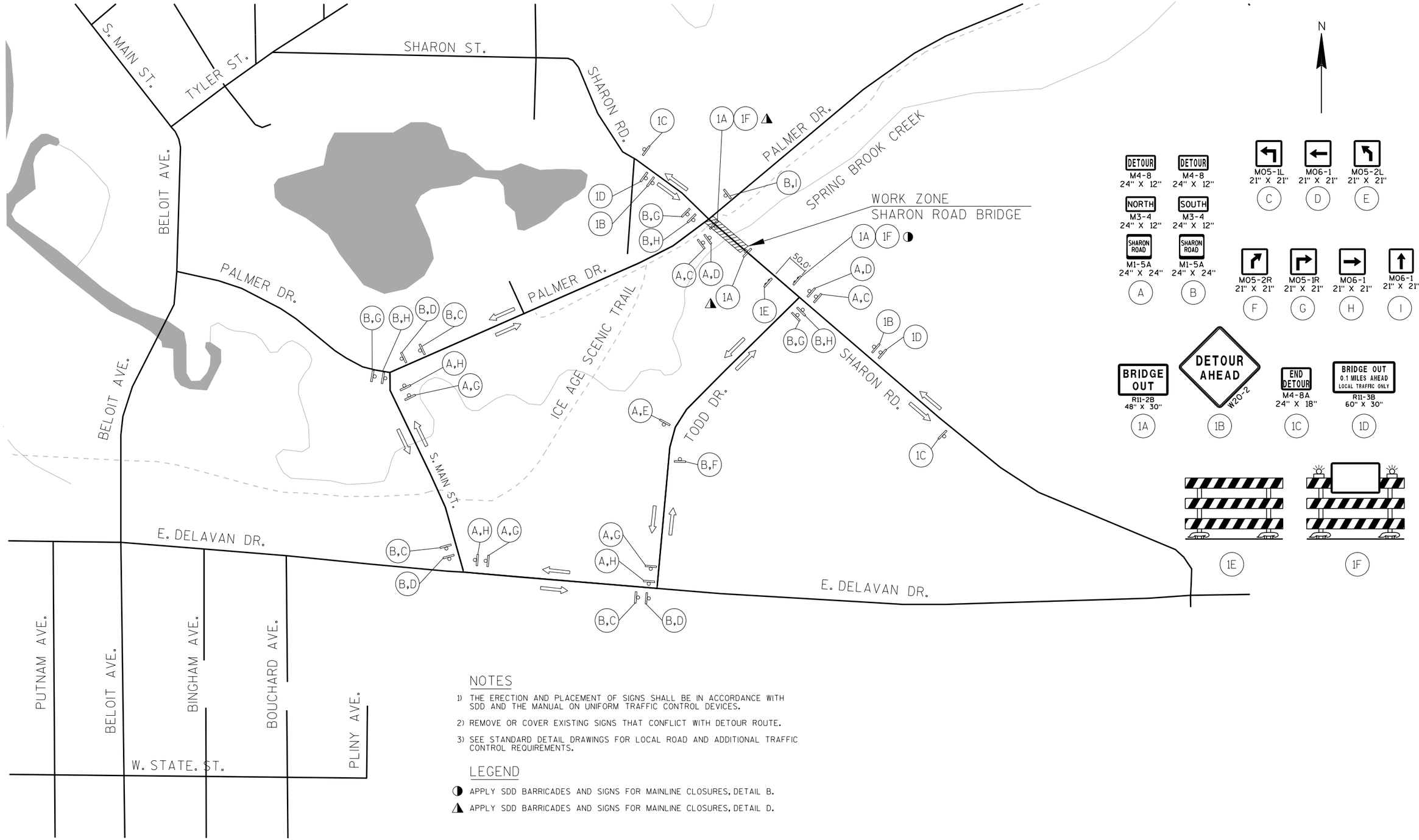
STAGE 2B CONSTRUCTION
- REMOVE EXISTING PAVEMENT (ROADWAY & TEMP. TRAIL RAMPS)
- SAWCUT CLEAN HMA EDGE ALONG PALMER DRIVE
- COMPLETE CURB AND GUTTER AND REMAINING HMA LOWER LIFT
- INSTALL HMA WEAR COURSE, REMOVE TEMPORARY DEVICES AND PROVIDE ALL RESTORATION, SIGNING AND MARKING

STAGE 2B TRAFFIC CONTROL / CONSTRUCTION STAGING
- SHARON ROAD CLOSED AND DETOURED, BARRICADE LOCATION SOUTH OF TRAIL BY ENGINEER IN FIELD
- PALMER DRIVE TRAFFIC SHIFTED VIA DRUMS AND TEMPORARY PAVEMENT MARKING
- ICE AGE TRAIL USERS SHIFTED TO EXISTING ALINGMENT ON NEW PAVEMENT, SIDEWALK AND RAMPS
- SLIDE DRUMS AS NEEDED FOR LOGICAL COMPLETION OF WORK

ROAD WORK AHEAD W20-1-A
MAX. 11' WIDTH W12-52 48"X48"
W1-6 48"X24"
PALMER DRIVE
SPRING BROOK CREEK
ICE AGE TRAIL
100'
500'
REINSTALL PALMER DRIVE CENTERLINE (DOUBLE YELLOW) IN STAGE 2B
11'
REMOVE TEMPORARY PAVEMENT & RESTORE
ROAD CLOSED R11-2 48"X30"
ADJUST LOCATION OF BARRICADES AS NEEDED TO COMPLETE WORK
ROAD CLOSED TO THRU TRAFFIC R11-4 60"X30"
DISTANCE TO BE DETERMINED BY THE ENGINEER
REMOVE TEMPORARY PAVEMENT MARKING IN STAGE 2B
100+00
101+00
SHARON ROAD
102+00
103+00
SHARON ROAD
104+00
50'
REINSTALL PALMER DRIVE CENTERLINE (DOUBLE YELLOW) IN STAGE 2B
MAINTAIN BIKE AND PEDESTRIAN ACCESS AT ALL TIMES
ROAD CLOSED R11-2 48"X30"
TODD DRIVE
REMOVE TEMPORARY PAVEMENT & RESTORE
ROAD CLOSED AHEAD W20-3-A
TEMPORARY PAVEMENT MARKING
REMOVE EXISTING PAVEMENT MARKING IN STAGE 2A RESTORE IN STAGE 2B
ICE AGE TRAIL
500'
W1-6 48"X24"
MAX. 11' WIDTH W12-52 48"X48"
100'
ROAD WORK AHEAD W20-1-A

LEGEND
- WORK ZONE STAGE 2A
- WORK ZONE STAGE 2B
- TEMPORARY PAVEMENT
- TEMPORARY PAVEMENT MARKING
- DRUM WITH/WITHOUT LIGHT, TYPE C
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- TYPE III BARRICADE WITH/WITHOUT SIGN
- TRAFFIC FLOW ARROW

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	TRAFFIC CONTROL - STAGE 2	SHEET 16	E



NOTES

1) THE ERECTION AND PLACEMENT OF SIGNS SHALL BE IN ACCORDANCE WITH SDD AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2) REMOVE OR COVER EXISTING SIGNS THAT CONFLICT WITH DETOUR ROUTE.
3) SEE STANDARD DETAIL DRAWINGS FOR LOCAL ROAD AND ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

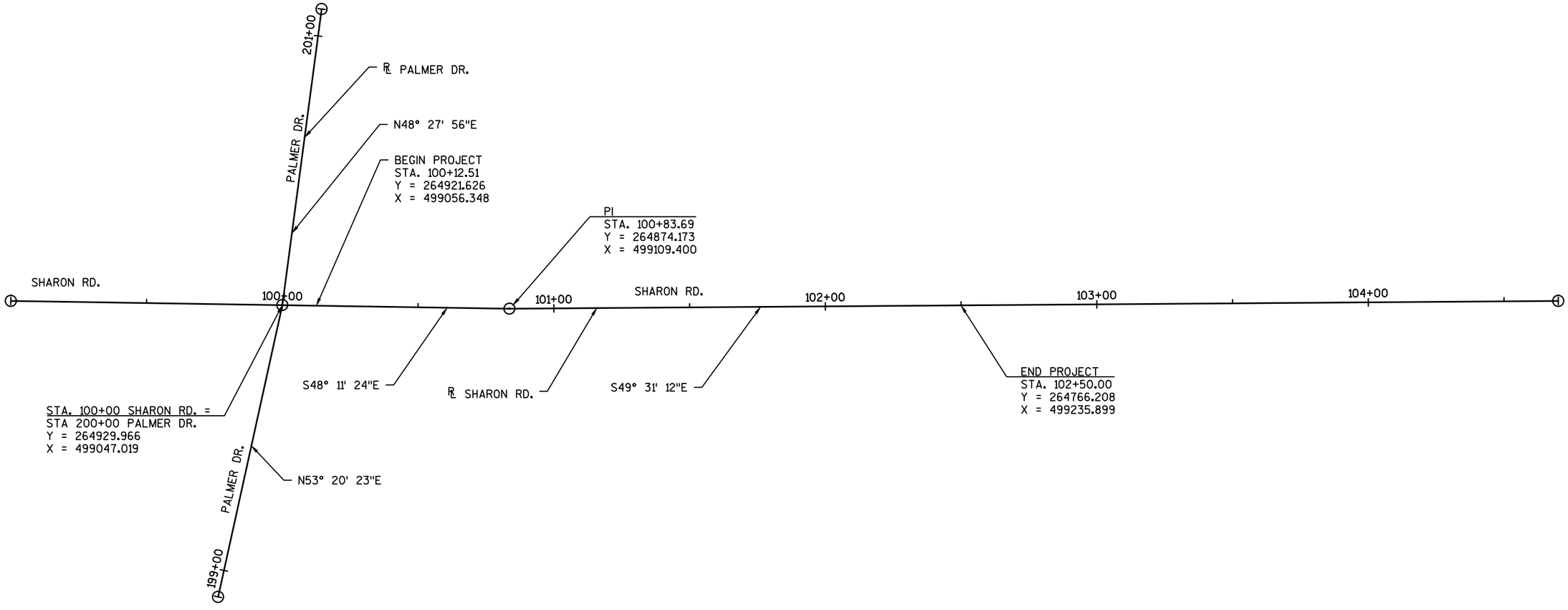
LEGEND

◑ APPLY SDD BARRICADES AND SIGNS FOR MAINLINE CLOSURES, DETAIL B.

◭ APPLY SDD BARRICADES AND SIGNS FOR MAINLINE CLOSURES, DETAIL D.

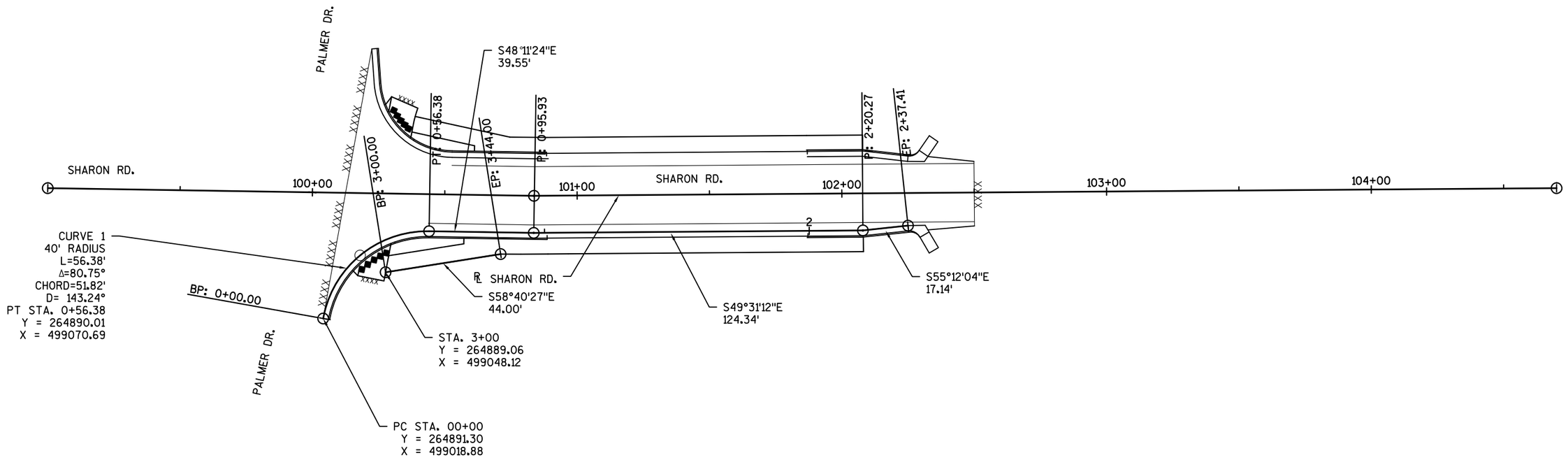
PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	DETOUR PLAN: SPRING BROOK CREEK BRIDGE	SHEET 17	E

2



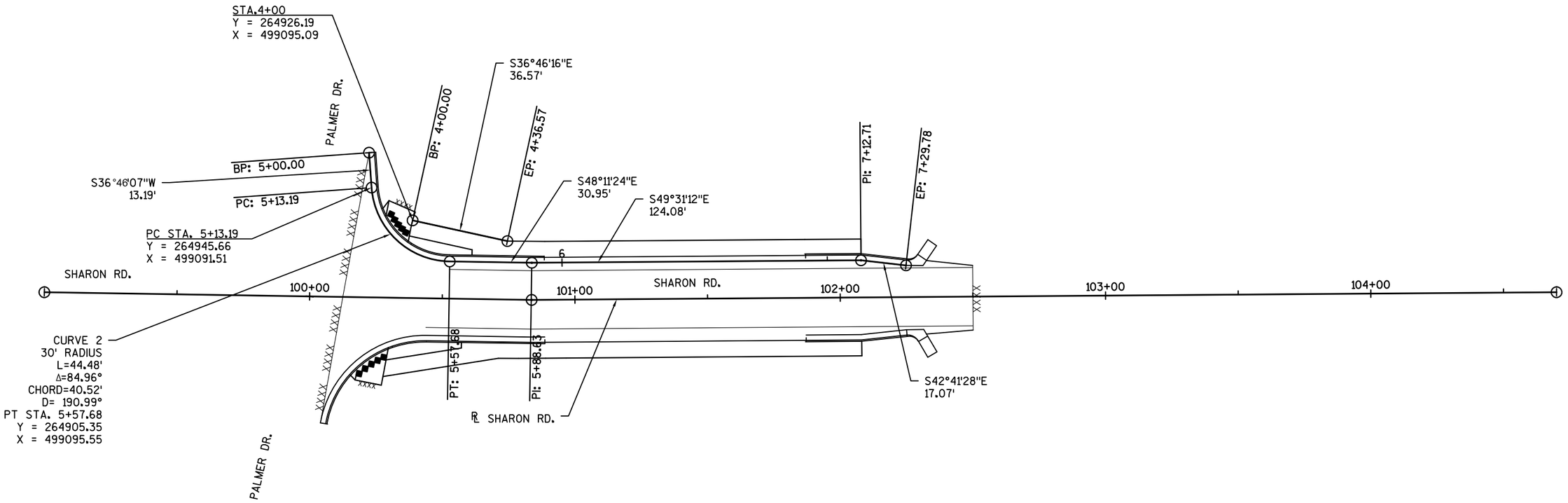
PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	ALIGNMENT DIAGRAM	SHEET 18	E

2



PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	ALIGNMENT DIAGRAM - CURB & SIDEWALK	SHEET 19	E

2



PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	ALIGNMENT DIAGRAM - CURB & SIDEWALK	SHEET 20	E

5990-00-32

Line	Item	Item Description	Unit	Total	Qty
0010	201.0105	Clearing	STA	3.000	3.000
0020	201.0205	Grubbing	STA	3.000	3.000
0030	203.0500.S	Removing Old Structure Over Waterway (station) 01. 101+37.80	LS	1.000	1.000
0040	204.0110	Removing Asphaltic Surface	SY	45.000	45.000
0050	204.0150	Removing Curb & Gutter	LF	10.000	10.000
0060	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	76.000	76.000
0070	205.0100	Excavation Common **P**	CY	235.000	235.000
0080	206.1000	Excavation for Structures Bridges (structure) 01. B-53-0374	LS	1.000	1.000
0090	208.0100	Borrow	CY	35.000	35.000
0100	210.1500	Backfill Structure Type A	TON	628.000	628.000
0110	213.0100	Finishing Roadway (project) 01. 5990-00-32	EACH	1.000	1.000
0120	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	250.000	250.000
0130	305.0130	Base Aggregate Dense 3-Inch	TON	220.000	220.000
0140	455.0605	Tack Coat	GAL	16.000	16.000
0150	460.2000	Incentive Density HMA Pavement	DOL	100.000	100.000
0160	460.5223	HMA Pavement 3 LT 58-28 S	TON	85.000	85.000
0170	460.5225	HMA Pavement 5 LT 58-28 S	TON	60.000	60.000
0180	465.0315	Asphaltic Flumes	SY	10.000	10.000
0190	502.0100	Concrete Masonry Bridges	CY	492.000	492.000
0200	502.3200	Protective Surface Treatment	SY	515.000	515.000
0210	505.0400	Bar Steel Reinforcement HS Structures	LB	5,100.000	5,100.000
0220	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	69,180.000	69,180.000
0230	513.7011	Railing Steel Type C2 (structure) 01. B-53-0374	LF	241.000	241.000
0240	516.0500	Rubberized Membrane Waterproofing	SY	26.000	26.000
0250	517.1010.S	Concrete Staining (structure) 01. B-53-0374	SF	2,640.000	2,640.000
0260	517.1015.S	Concrete Staining Multi-Color (structure) 01. B-53-0374	SF	893.000	893.000
0270	517.1050.S	Architectural Surface Treatment (structure) 01. B-53-0374	SF	893.000	893.000
0280	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	1.000	1.000
0290	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,900.000	1,900.000
0300	601.0419	Concrete Curb & Gutter 30-Inch Type L	LF	275.000	275.000
0310	602.0410	Concrete Sidewalk 5-Inch	SF	1,110.000	1,110.000
0320	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	40.000	40.000
0330	606.0300	Riprap Heavy	CY	170.000	170.000
0340	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	96.000	96.000
0350	611.0530	Manhole Covers Type J	EACH	1.000	1.000
0360	611.0639	Inlet Covers Type H-S	EACH	3.000	3.000

5990-00-32

Line	Item	Item Description	Unit	Total	Qty
0370	611.2006	Manholes 6-FT Diameter	EACH	1.000	1.000
0380	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0390	611.3230	Inlets 2x3-FT	EACH	1.000	1.000
0400	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0410	611.9800.S	Pipe Grates	EACH	1.000	1.000
0420	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0430	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0440	619.1000	Mobilization	EACH	1.000	1.000
0450	624.0100	Water	MGAL	5.000	5.000
0460	625.0100	Topsoil	SY	170.000	170.000
0470	628.1504	Silt Fence	LF	225.000	225.000
0480	628.1520	Silt Fence Maintenance	LF	225.000	225.000
0490	628.2027	Erosion Mat Class II Type C	SY	220.000	220.000
0500	628.6005	Turbidity Barriers	SY	180.000	180.000
0510	628.7005	Inlet Protection Type A	EACH	5.000	5.000
0520	628.7015	Inlet Protection Type C	EACH	4.000	4.000
0530	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0540	628.7560	Tracking Pads	EACH	1.000	1.000
0550	630.0140	Seeding Mixture No. 40	LB	4.000	4.000
0560	630.0200	Seeding Temporary	LB	4.000	4.000
0570	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	5.000	5.000
0580	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0590	637.2210	Signs Type II Reflective H	SF	54.000	54.000
0600	638.2102	Moving Signs Type II	EACH	3.000	3.000
0610	638.2602	Removing Signs Type II	EACH	5.000	5.000
0620	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0630	642.5001	Field Office Type B	EACH	1.000	1.000
0640	643.0100	Traffic Control (project) 01. 5990-00-32	EACH	1.000	1.000
0650	643.0300	Traffic Control Drums	DAY	1,700.000	1,700.000
0660	643.0420	Traffic Control Barricades Type III	DAY	925.000	925.000
0670	643.0705	Traffic Control Warning Lights Type A	DAY	1,850.000	1,850.000
0680	643.0715	Traffic Control Warning Lights Type C	DAY	500.000	500.000
0690	643.0900	Traffic Control Signs	DAY	690.000	690.000
0700	643.1000	Traffic Control Signs Fixed Message	SF	20.000	20.000
0710	643.2000	Traffic Control Detour (project) 01. ID 5990-00-32	EACH	1.000	1.000
0720	643.3000	Traffic Control Detour Signs	DAY	8,160.000	8,160.000
0730	644.1410.S	Temporary Pedestrian Surface Asphalt	SF	415.000	415.000
0740	644.1601.S	Temporary Curb Ramp	EACH	2.000	2.000
0750	645.0120	Geotextile Type HR	SY	210.000	210.000
0760	646.0103	Pavement Marking Paint 4-Inch	LF	400.000	400.000

5990-00-32

Line	Item	Item Description	Unit	Total	Qty
0770	646.0106	Pavement Marking Epoxy 4-Inch	LF	730.000	730.000
0780	646.0600	Removing Pavement Markings	LF	650.000	650.000
0790	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	18.000	18.000
0800	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	100.000	100.000
0810	647.0796	Pavement Marking Crosswalk Epoxy 24-Inch	LF	105.000	105.000
0820	650.4000	Construction Staking Storm Sewer	EACH	5.000	5.000
0830	650.4500	Construction Staking Subgrade	LF	140.000	140.000
0840	650.5000	Construction Staking Base	LF	140.000	140.000
0850	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	275.000	275.000
0860	650.6500	Construction Staking Structure Layout (structure) 01. B-53-0374	LS	1.000	1.000
0870	650.9910	Construction Staking Supplemental Control (project) 01. 5990-00-32	LS	1.000	1.000
0880	650.9920	Construction Staking Slope Stakes	LF	140.000	140.000
0890	690.0150	Sawing Asphalt	LF	150.000	150.000
0900	690.0250	Sawing Concrete	LF	6.000	6.000
0910	715.0502	Incentive Strength Concrete Structures	DOL	2,952.000	2,952.000
0920	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	850.000	850.000
0930	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	450.000	450.000
0940	SPV.0090	Special 01. Construction Staking Sidewalks	LF	200.000	200.000

3

CLEARING AND GRUBBING

CAT. 0010	STA	to	STA	CLEARING 201.0110 STA	GRUBBING 201.0205 STA
	100+00	to	102+50	3	3
			TOTAL:	**3**	**3**

REMOVING CURB & GUTTER

CAT. 0010	STA	Loc.	204.0150 LF
	100+05	47' RT	10
			10

REMOVING STORM SEWER

CAT. 0010	STA	Loc.	204.0245 REMOVING STORM SEWER 12-INCH LF
	100+75	LT	76
			76

REMOVING ASPHALTIC SURFACE

CAT. 0010	STA	Loc.	204.0110 SY	COMMENTS
	100+25	LT	25	EXISTING TEMP RAMPS
	100+25	RT	20	EXISTING TEMP RAMPS
	100+25	LT& RT	2	EXISTING TEMP WEDGES - PRE-FINAL WEAR COURSE
			45	

3

EARTHWORK

CAT. 0010	ROADWAY	FROM / TO STATION	205.0100 EXCAVATION COMMON **P** (1) CY		SALVAGED UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL (6)	EXPANDED FILL (7)	208.1000 BORROW (8) CY	MASS ORDINATE +/- (9)	WASTE (10)
			CUT (2)	EBS EXCAVATION				FACTOR 1.20			
	SHARON RD. (S. APPROACH)	100+12 TO 100+88	117	--	74	43	62	78	35	-35	-35
	SHARON RD. (N. APPROACH)	101+87 TO 102+50	118	--	31	87	73	88	0	0	0
TOTALS			235	--	105	131	135	166	35	-35	-35
TOTAL EXCAVATION COMMON				235							

1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

2) SALVAGED / UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT UNLESS EXISTING PAVEMENT IS BELOW SUBGRADE.

4) EXISTING PAVEMENT VOLUME (CY), NOT AVAILABLE FOR FILL. ALL SALVAGED / UNUSABLE PAVEMENT MATERIAL EITHER BELOW OR ABOVE SUBGRADE IS SHOWN WITHIN THE WE ENERGIES ROW.

5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

6) UNEXPANDED FILL - FILL FROM END AREA EARTHWORK VOLUMES

7) EXPANDED FILL FACTOR = 1.20 (EXPANDED FILL DOES NOT CONTAIN EBS)

8) BORROW = EXPANDED FILL MINUS AVAILABLE MATERIAL

9) MASS ORDINATE = AVAILABLE MATERIAL - EXPANDED FILL. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE STAGE. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE STAGE.

10) WASTE = MASS ORDINATE IF POSITIVE (FOR INFORMATION ONLY - BORROW = MASS ORDINATE IF NEGATIVE)

3

BASE AGGREGATE ITEMS

CAT. 0010	ROADWAY	STA	TO	STA	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0130 BASE AGGREGATE DENSE 3-INCH TON
	SHARON ROAD ROADWAY					
		100+12	-	100+88	146	146
		101+87	-	102+50	75	75
	SHARON ROAD SIDEWALK					
		100+17	-	100+80	22	--
		101+87	-	102+08	8	--
TOTAL					250	220

ASPHALTIC PAVEMENT ITEMS

CAT. 0010	ROADWAY	STA	TO	STA	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5225 HMA PAVEMENT 5 LT 58-28 S TON	460.2000 INCENTIVE DENSITY HMA PAVEMENT DOL
	SHARON ROAD							
		100+12	-	100+80	8	52	37	60
		101+88	-	102+50	8	33	23	40
	TOTAL				16	85	60	100

3

CONCRETE SIDEWALK

CAT. 0010	STATION			LOCATION	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF
	100+17	-	100+80	LT	410	20
	100+17	-	100+80	RT	470	20
	101+87	-	102+08	LT	115	--
	101+87	-	102+08	RT	115	--
	TOTAL:				1,110	40

TEMPORARY ASPHALT

CAT. 0010	STA	LOC.	644.1410.S TEMPORARY PEDESTRIAN SURFACE ASPHALT SF	644.1601.S TEMPORARY CURB RAMP EACH	COMMENTS
	100+25	LT	205	1	TEMPORARY RAMP - STAGE 2A
	100+25	RT	170	1	TEMPORARY RAMP - STAGE 2A
	100+25	LT & RT	40	--	TEMPORARY WEDGES -STAGE 2B
			415	**2**	

CURB AND GUTTER ITEMS

CAT. 0010	STATION			LOCATION	601.0419 CONCRETE CURB & GUTTER 30-INCH TYPE L LF
	100+12	-	100+89	RT	104
	100+12	-	100+89	LT	95
	101+87	-	102+25	RT	38
	101+87	-	102+25	LT	38
	TOTAL:				275

EROSION MATERIALS

CAT. 0010	LOCATION	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2027 EROSION MAT CLASS II TYPE C SY	628.6005 TURBIDITY BARRIERS SY	628.7504 TEMPORARY DITCH CHECKS LF
	SHARON ROAD	4	3	205	205	190	160	20
	UNDISTRIBUTED	1	1	20	20	30	20	10
	TOTALS:	**5**	**4**	**225**	**225**	**220**	**180**	**30**

3

STORM SEWER STRUCTURES - CONCRETE

CAT. 0010	STRUCTURE	STATION	OFFSET*	611.2006 MANHOLES 6-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3230 CONCRETE INLETS 2X3-FT EACH	RIM ELEVATION	INVERT ELEVATION	DEPTH*** FT
	IN-1	100+40	15.0' RT	--	1	--	775.14	771.01	2.83
	IN-2	100+40	15.5' LT	--	--	1	775.08	771.16	2.62
	MH-3	100+65	26.5' RT	--	--	--	774.88	770.92	2.66
	MH-4	100+25.5	32.7' LT	1	1	--	774.80	771.02	2.48
				1	2	1			

REMARKS

* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE

*** DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6 -INCH ADJUSTMENT RING HEIGHT

STORM SEWER STRUCTURES - CONCRETE - COVERS

CAT. 0010	STRUCTURE	STATION	OFFSET	611.0639 INLET COVERS TYPE H-S EACH	611.0530 MANHOLE COVERS TYPE J EACH
	IN-1	100+40	15.0' RT	1	--
	IN-2	100+40	15.5' LT	1	--
	MH-3	100+65	26.5' RT	--	1
	MH-4	100+25.5	32.7' LT	1	--
				3	1

3

ASPHALTIC FLUMES

CAT. 0010	STATION	LOCATION	465.0315 SY
	102+25	RT	5
	102+25	LT	5
	TOTAL		10

ADJUSTING MANHOLE COVERS

CAT. 0030	STA	611.8110
	100+37, 5.7' LT	1
		1

TRACKING PADS

CAT. 0010	STA	628.7560	COMMENTS
	102+50	1	SOUTH PROJECT LIMITS
		1	

STORM SEWER PIPES - CONCRETE

CAT. 0010	FROM - TO	LF	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
	MH-4 - IN-2	22	771.02	770.91	0.005
	IN-2 - IN-1	30	770.91	770.76	0.005
	IN-1 - MH-3	18	770.76	770.67	0.005
	MH-3 - AP-4	26	770.67	770.54	0.005
		96			

608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH

STORM SEWER APRONS

CAT. 0010	STRUCTURE	STATION	OFFSET*	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH EACH	611.9800.S PIPE GRATES EACH	INVERT ELEVATION
	AP-4	100+90	29.4' RT	1	1	770.54
				1	1	

REMARKS

* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE

REMOVING SIGNS

CAT. 0010	SIGN #	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS SF	COMMENT
	R01	1	--	MOUNTED ON BRIDGE
	R02	1	--	MOUNTED ON BRIDGE
	R03	1	1	SPEED LIMIT
	R04	1	1	STOP SIGN
	R05	1	--	SAME POSTS AS R04
		5	2	

MOVING SIGNS

CAT. 0010	STA. / LOC.	SIGN #	638.2102 MOVING SIGNS TYPE II EACH	COMMENT
	100+33, RT	M01	1	EXISTING 6"x6" TRAIL STOP SIGN
	100+40, LT	M02	1	PALMER DRIVE
	100+40, LT	M03	1	SHARON ST
			3	

PERMANENT SIGNING SUMMARY

CAT. 0010	SIGN #	SIGN CODE	SIGN DIM	634.0614 POSTS WOOD 4x6 x 14-FT EACH	634.0616 POSTS WOOD 4x6 x 16 FEET EACH	637.0202 SIGNS TYPE II REFLECTIVE H SF	REMARKS
	P01	R1-1	30"X30"	1	--	5.00	
	P02	R5-3	24"X24"	1	--	4.00	
	P03	R5-3	24"X24"	1	--	4.00	
	P04	D11-1	24"X18"	1	--	3.00	
	P05	R2-1	24"X30"	1	--	5.00	
	P06	W11-15	30"X30"	--	1	6.25	
	P07	W16-7L	24"X12"	--	--	2.00	MOUNT WITH P06
	P08	W11-15	30"X30"	--	--	6.25	MOUNT WITH P06
	P09	W16-7L	24"X12"	--	--	2.00	MOUNT WITH P06
	P10	W11-15	30"X30"	--	1	6.25	
	P11	W16-7L	24"X12"	--	--	2.00	MOUNT WITH P10
	P12	W11-15	30"X30"	--	--	6.25	MOUNT WITH P10
	P13	W16-7L	24"X12"	--	--	2.00	MOUNT WITH P10
				5	2	54.00	

RESTORATION

	625.0100 TOPSOIL SY	630.0200 SEEDING TEMPORARY LB	630.0140 SEEDING MIXTURE NO. 40 LB	624.0100 WATER MGAL	COMMENTS
SHARON ROAD	170	--	4	5	WATER FOR BASE AGG. & SEED
UNDISTRIBUTED	--	4	--	--	
TOTALS:	**170**	**4**	**4**	**5**	

PAVEMENT MARKING ITEMS

CAT. 0010	LOCATION	STATIONS	646.0103 PAVEMENT MARKING PAINT 4-INCH YELLOW LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH WHITE LF	647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH LF	647.0796 PAVEMENT MARKING CORSSWALK EPOXY 24-INCH LF
	SHARON ROAD							
		100+12 to 102+50	--	430	--	18	100	105
	PALMER DRIVE							
			400	300	--	--	--	--
			400	730		18	100	105

SAWING

CAT. 0010	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
	100+12	LT / RT	105	--
	100+12	RT	10	3
	100+12	LT	10	3
	102+50	LT / RT	25	--
	TOTAL		150	6

3

CONSTRUCTION STAKING

CAT. 0010	LOCATION	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB AND GUTTER LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	SPV.0090.01 CONSTRUCTION STAKING SIDEWALKS LF
	100+12 - 100+88	5	77	77	199	77	158
	101+87 - 102+50	--	63	63	76	63	42
	TOTAL	5	140	140	275	140	200

TRAFFIC DETOUR ITEMS

CATEGORY	643.2000 TRAFFIC CONTROL DETOUR ID 5990-00-32 EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS DAYS
CAT. 0010	.23	102	8,160
CAT. 0020	.77	--	--
	1		8,160

3

TRAFFIC CONTROL ITEMS

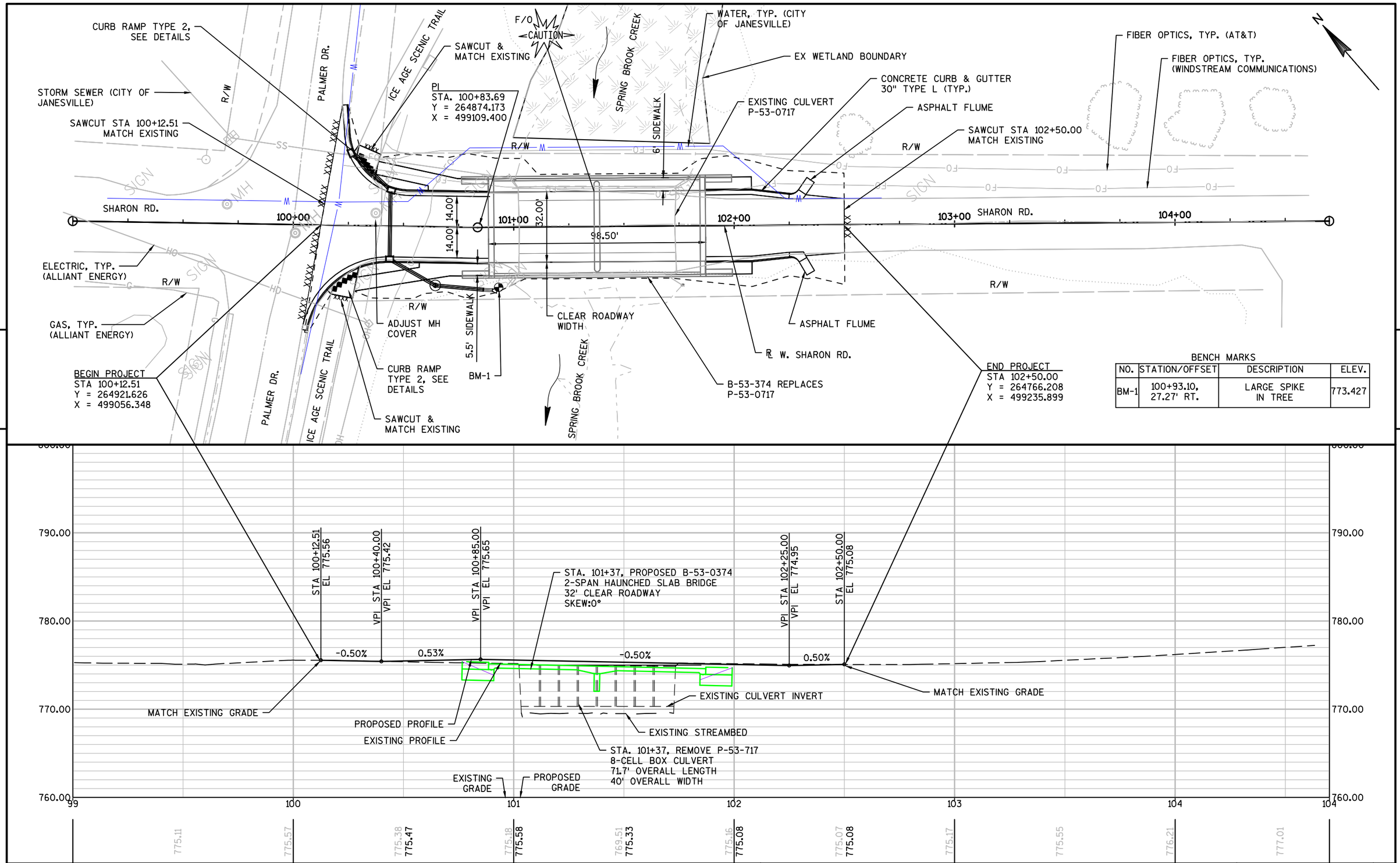
CAT. 0010	STAGE	LOCATION	DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS
	1	PALMER DRIVE	69	14	966	--	--	--	--	--	--	2	138
	1	SHARON ROAD	69	--	--	10	690	20	1,380	--	--	5	345
	2	PALMER DRIVE	18	39	734	2	36	4	72	27	500	5	90
	2	SHARON ROAD	18	--	--	10	199	20	398	--	--	6	117
		TOTAL			1,700		925		1,850		500		690

FIXED MESSAGE SIGNS

CAT. 0010	LOCATION	SIGN SIZE IN			SF	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF
	PALMER DRIVE WEST	42.5	X	34	10	1	10
	PALMER DRIVE EAST	42.5	X	34	10	1	10
	TOTAL						20

REMOVING PAVEMENT MARKINGS

CAT. 0010	LOC.	646.0600 LF	COMMENTS
	PALMER DRIVE	200	EXISTING CENTERLINE, STAGE 1
	PALMER DRIVE	450	FOLLOWING BARRIER REMOVAL, STAGE 2
		650	



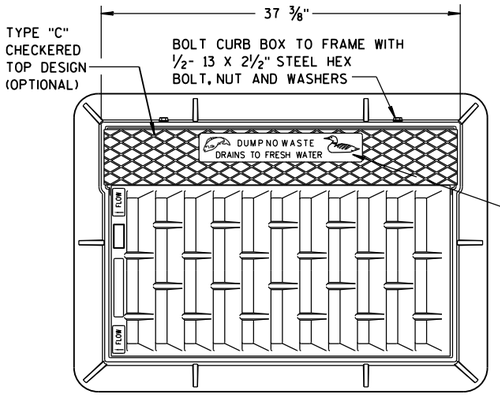
PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	PLAN AND PROFILE: SHARON RD.	SHEET 29	E

FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - SHEET - (3)
PLOT DATE : 7/28/2016 3:16 PM
PLOT BY : JEREMY HINDS
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

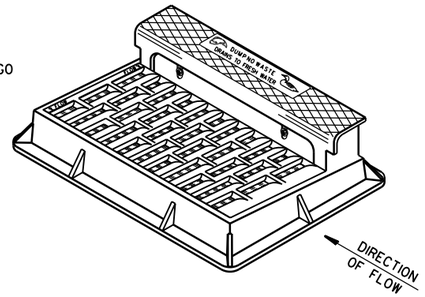
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-17A	CURB RAMPS TYPES 1 AND 1-A
08D05-17B	CURB RAMPS TYPES 2 AND 3
08D05-17C	CURB RAMPS TYPES 4A AND 4A1
08D05-17D	CURB RAMPS TYPE 4B AND 4B1
08D05-17E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F03-03	DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALLS AND STEPS
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C05-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-03A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-03B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-03C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-01B	ATTACHMENT OF SIGNS TO POSTS

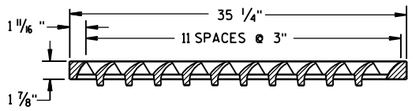
6

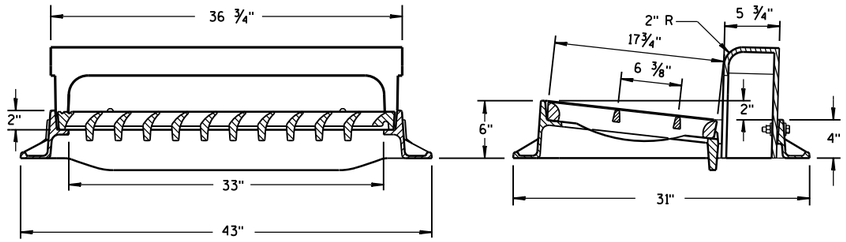


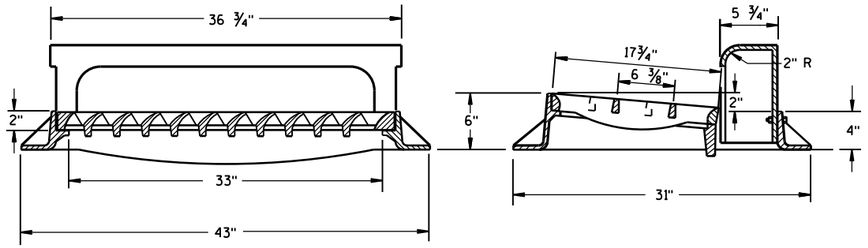
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

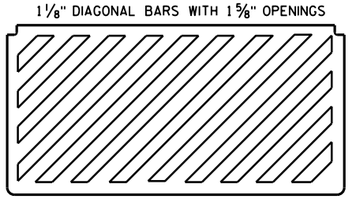






TYPE "H"

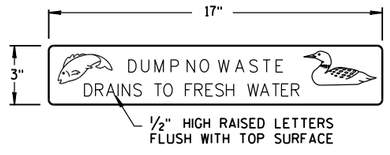
NOTE: EITHER CASTING IS ACCEPTABLE



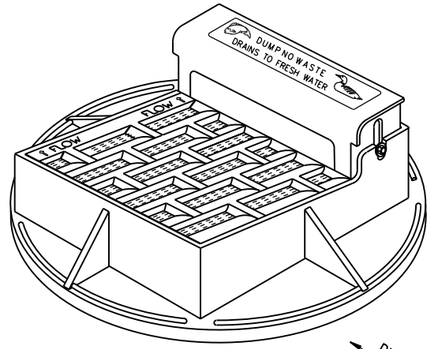
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

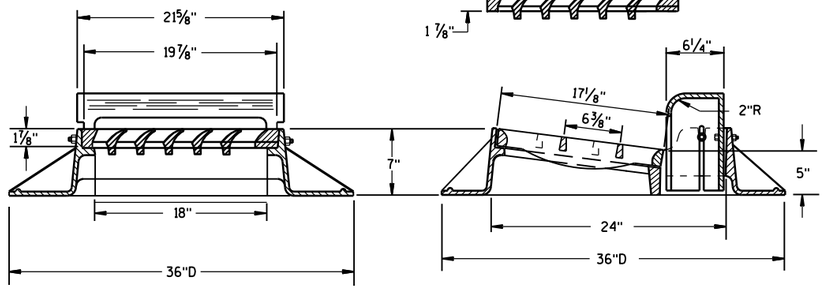


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



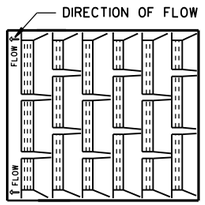
TYPE "A"

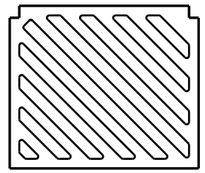
GENERAL NOTES

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

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

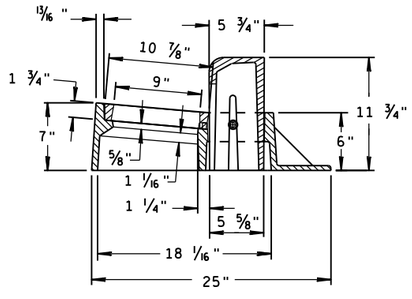


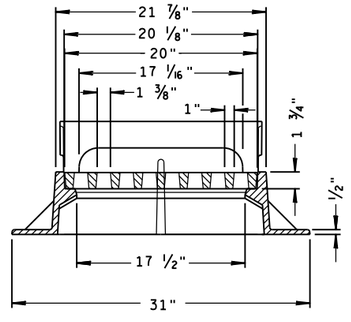


SPECIAL GRATE FOR TYPE "A" COVER

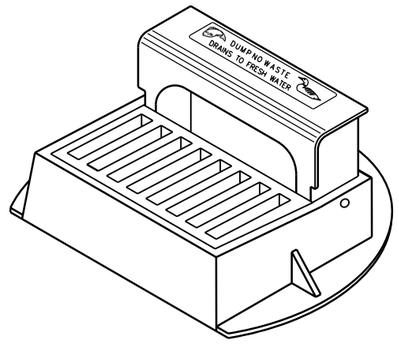
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"

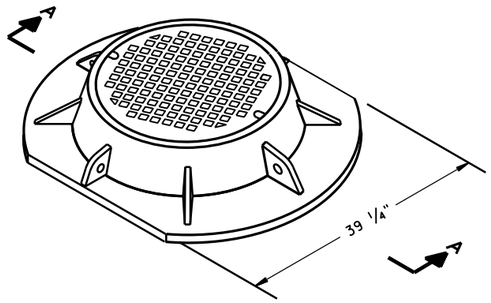


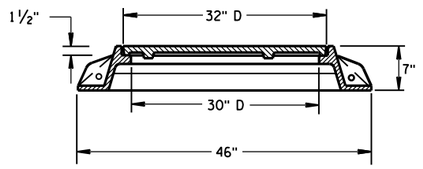
INLET COVERS TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

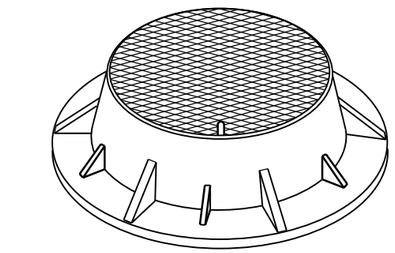
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

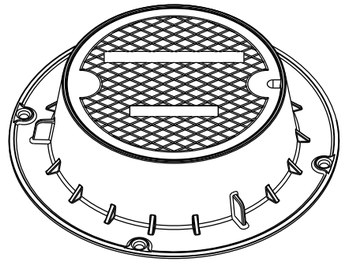
6
S.D.D. 8 A 5-19a

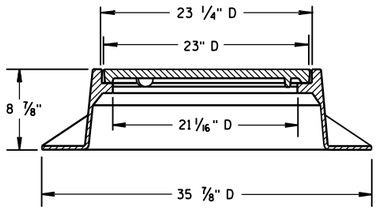


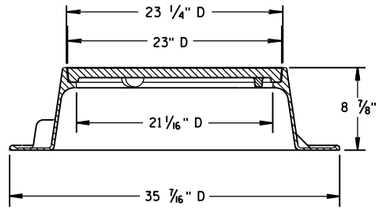


SECTION A-A
TYPE "K"









TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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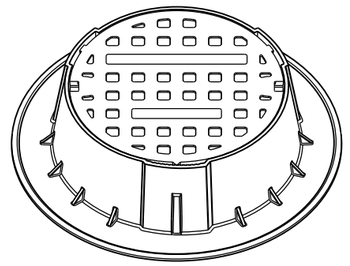
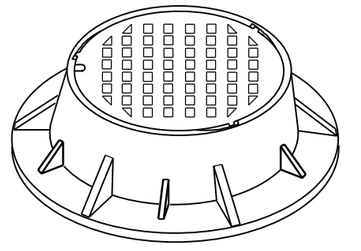
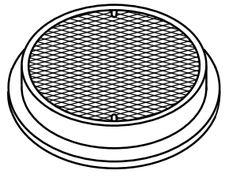
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

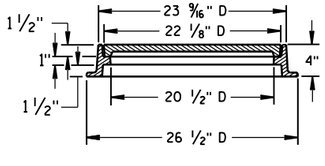
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.





TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE





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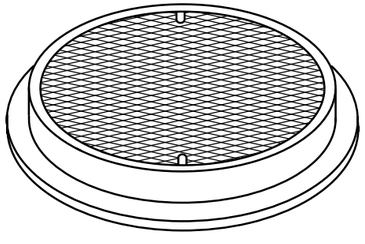

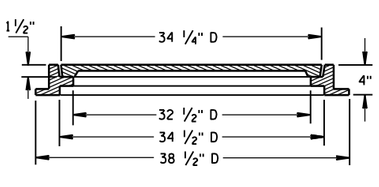

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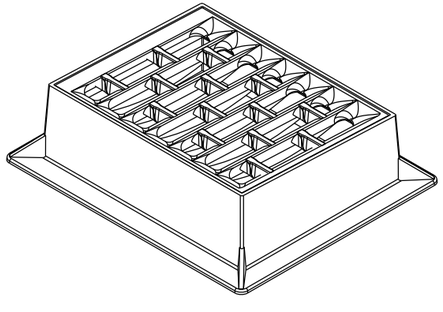
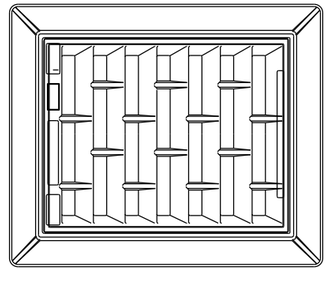
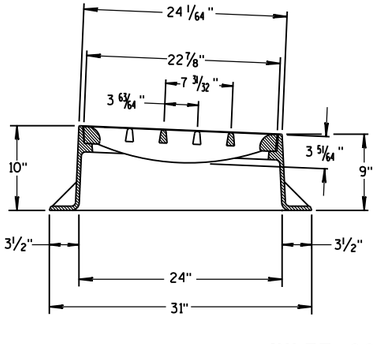
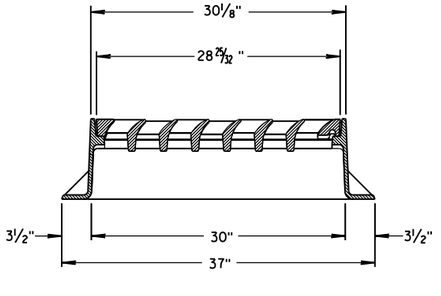






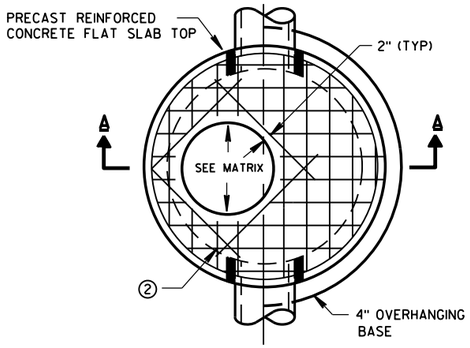


INLET COVER TYPE "BW"

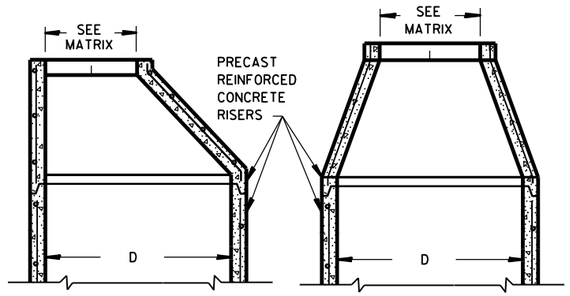
INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

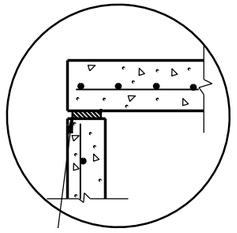


PLAN VIEW CIRCULAR OPENING

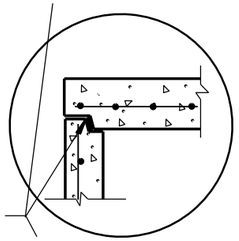


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

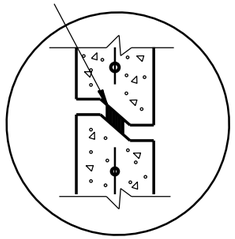


TOP WITH PLAIN END JOINT



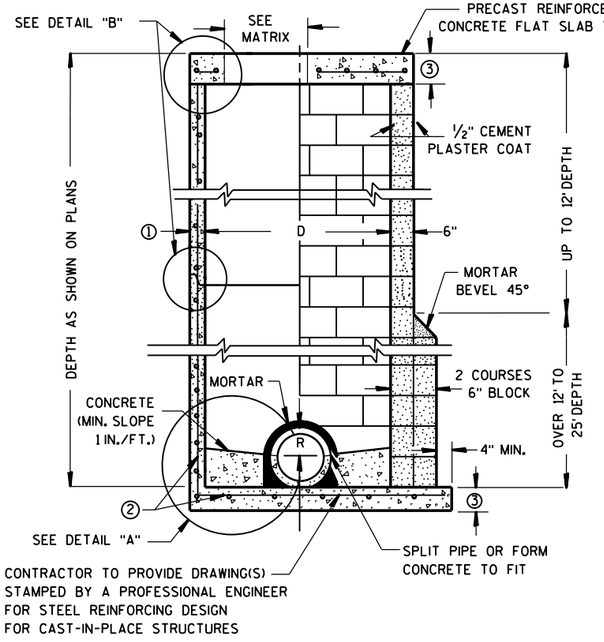
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



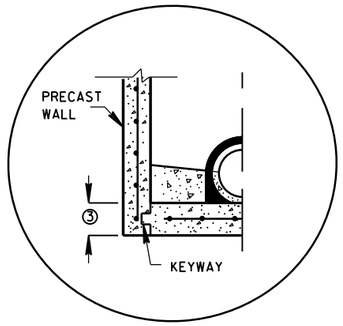
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

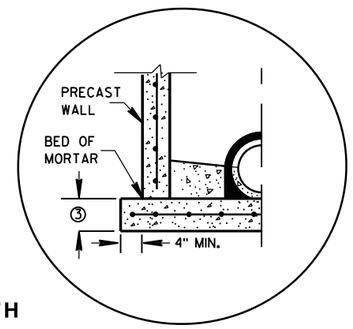


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

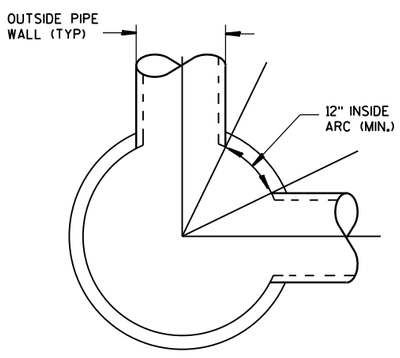


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

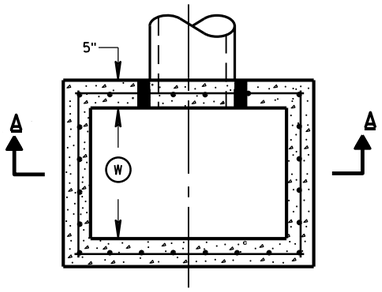
MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

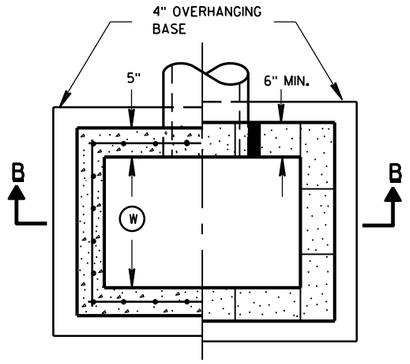
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

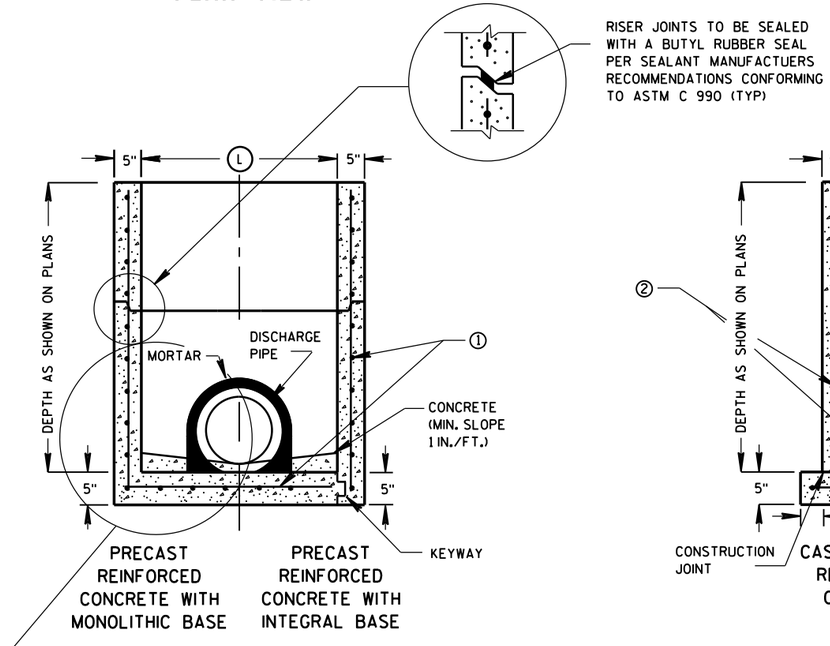
6
S.D.D. 8 B 9-1



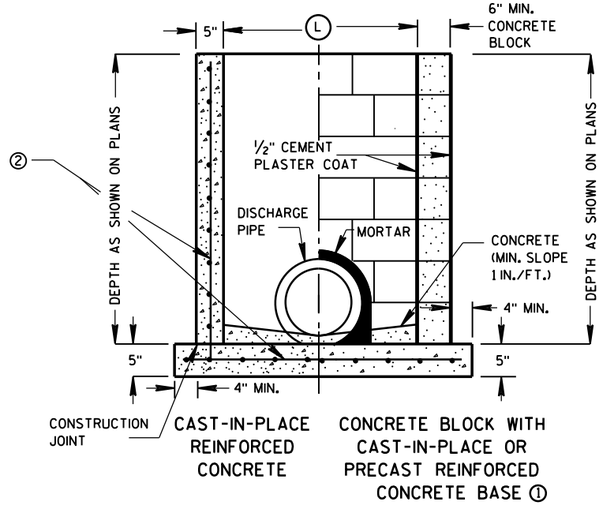
PLAN VIEW



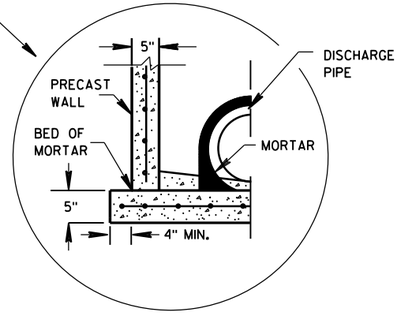
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

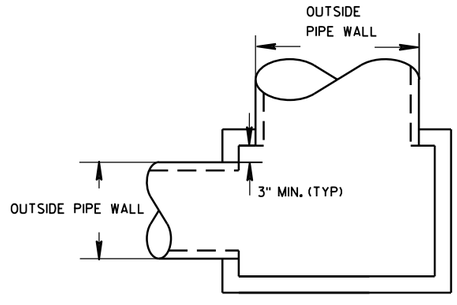
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

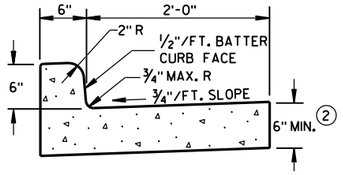
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

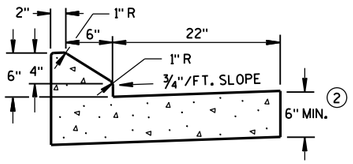
APPROVED
6/5/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DE
ENGINEER

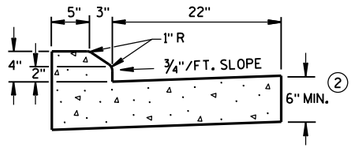
6
S.D.D. 8 C 7-1



TYPES A & D ①

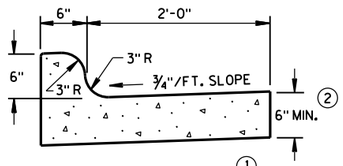


6" SLOPED CURB TYPES G & J ①

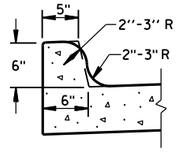


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

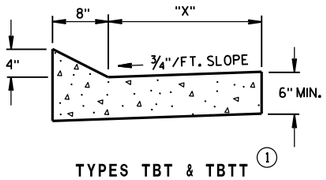


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

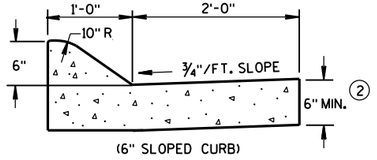
CONCRETE CURB & GUTTER 30"



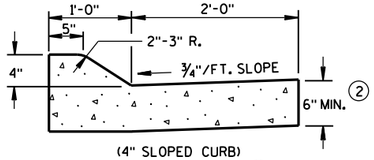
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"

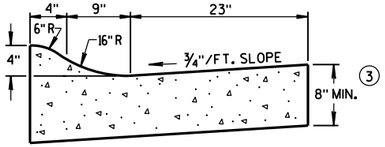


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

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.

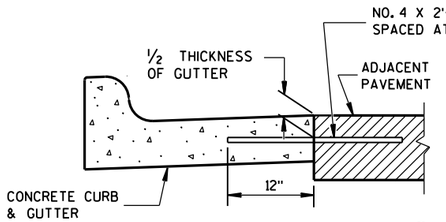
① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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.

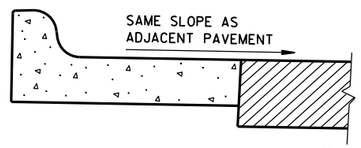
③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

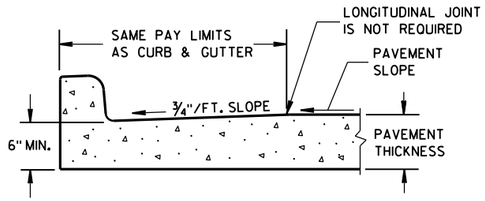
⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



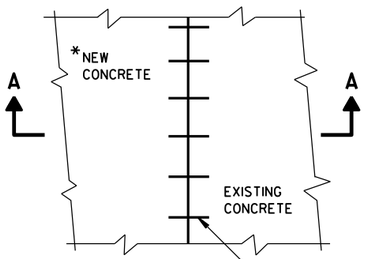
TYPICAL TIE BAR LOCATION ①



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

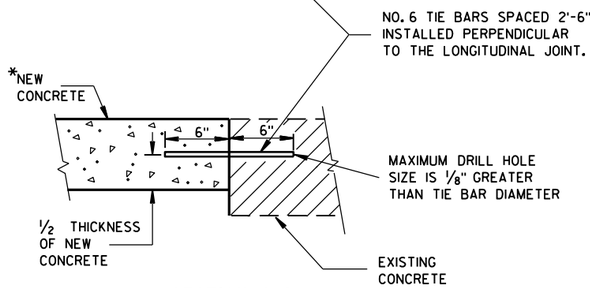


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



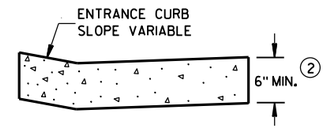
PLAN VIEW

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

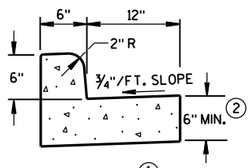


SECTION A-A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

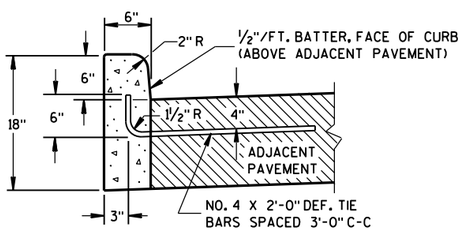


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

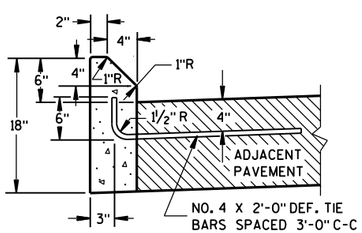


① TYPES A & D

CONCRETE CURB & GUTTER 18"

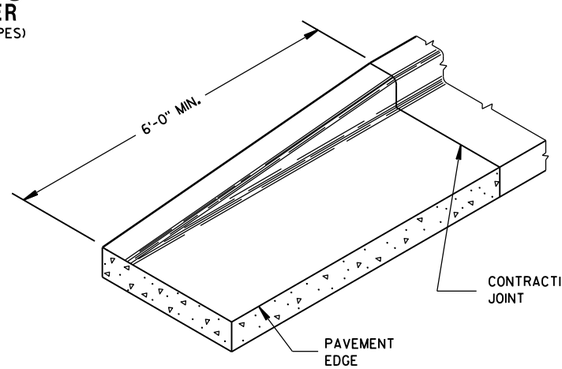


① TYPES A & D



① TYPES G & J

CONCRETE CURB



END SECTION CURB & GUTTER

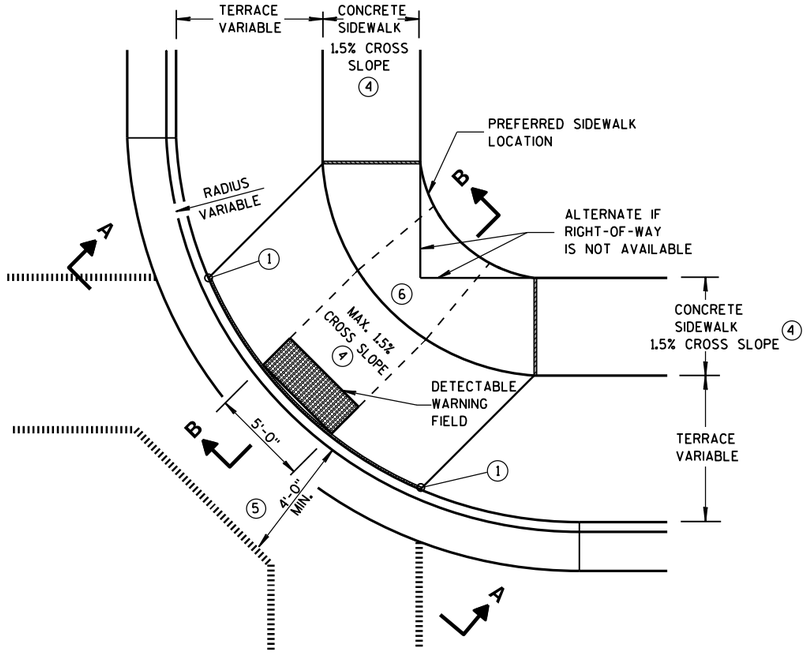
CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

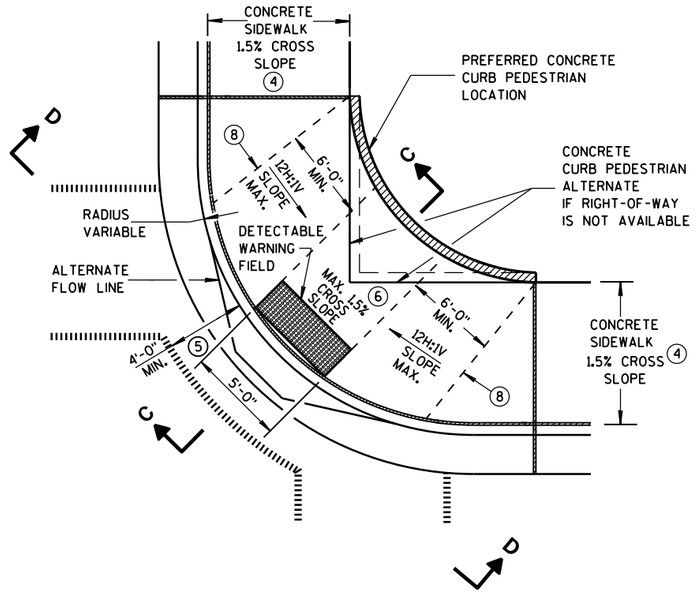
S.D.D. 8 D 1-18



PLAN VIEW

TYPE 1 RAMP

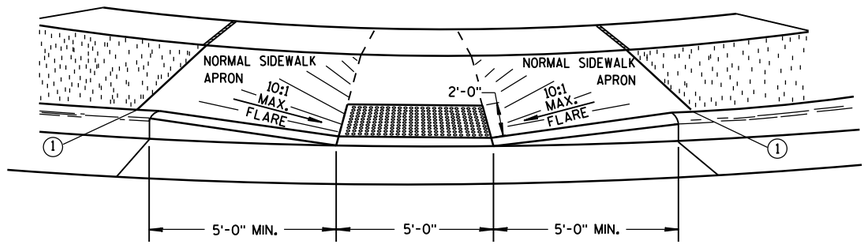
(CENTER OF CORNER RADIUS)



PLAN VIEW

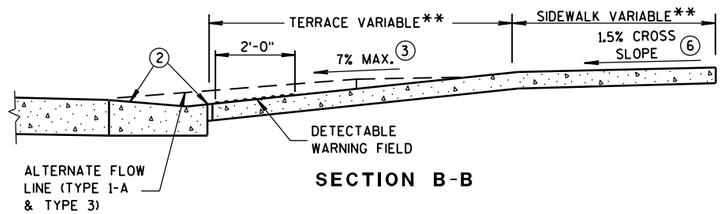
TYPE 1-A RAMP

(NO TERRACE)

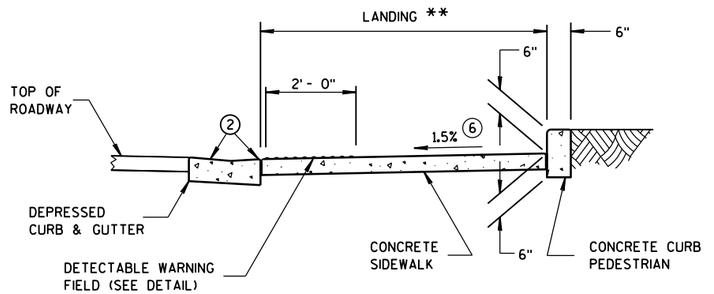


VIEW A-A

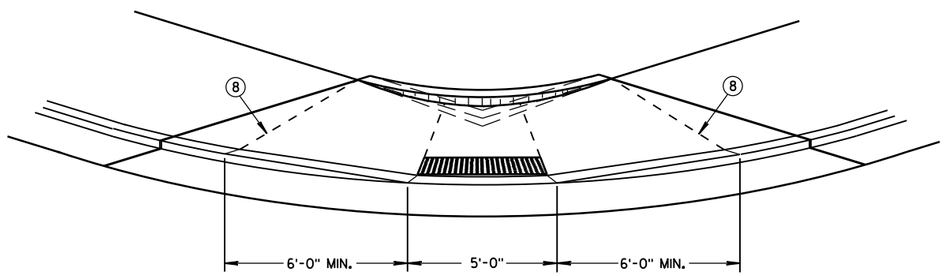
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

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

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

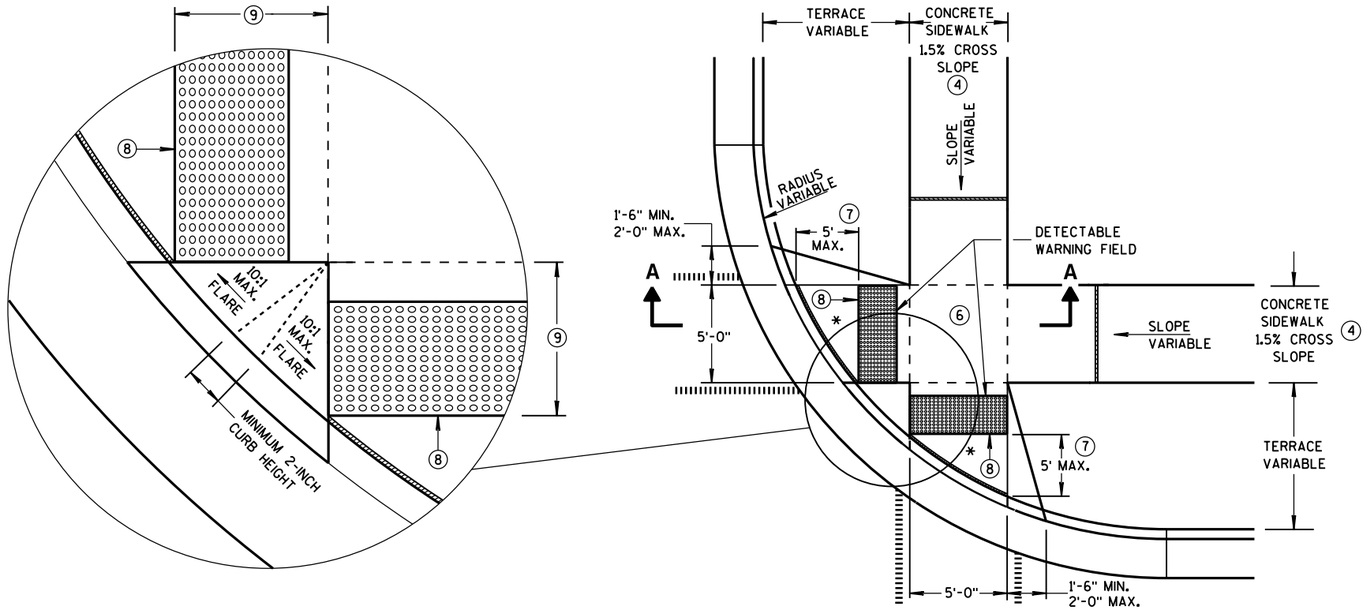
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 8 D 5-17a

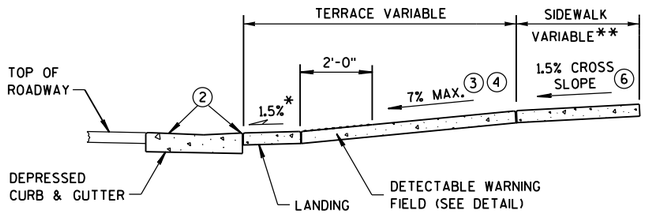


PLAN VIEW

TYPE 2 RAMP

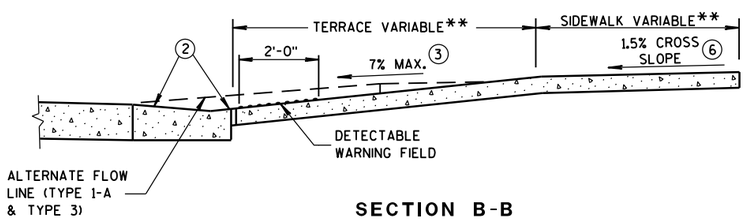
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

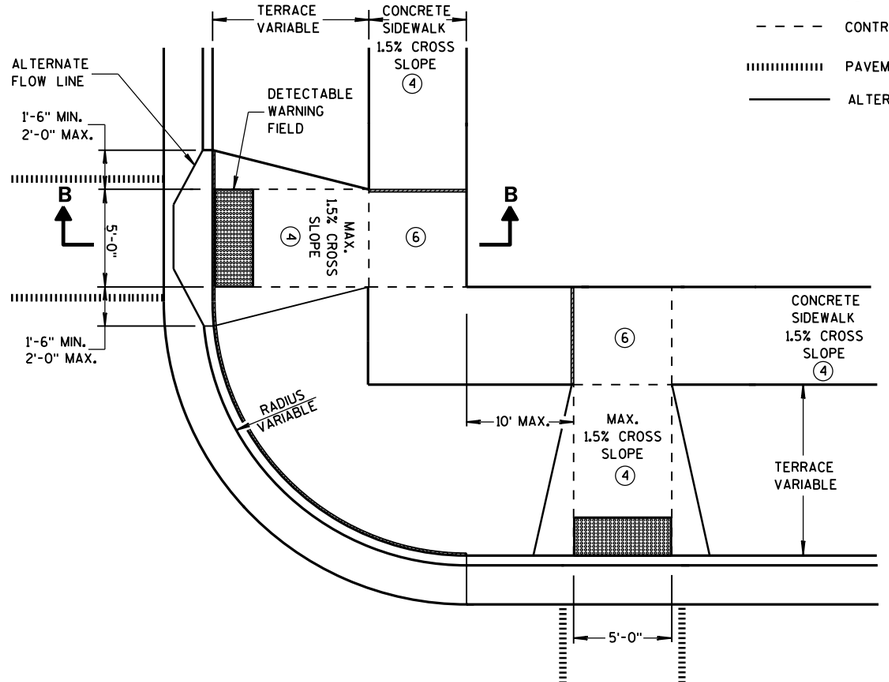
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



PLAN VIEW

TYPE 3 RAMP

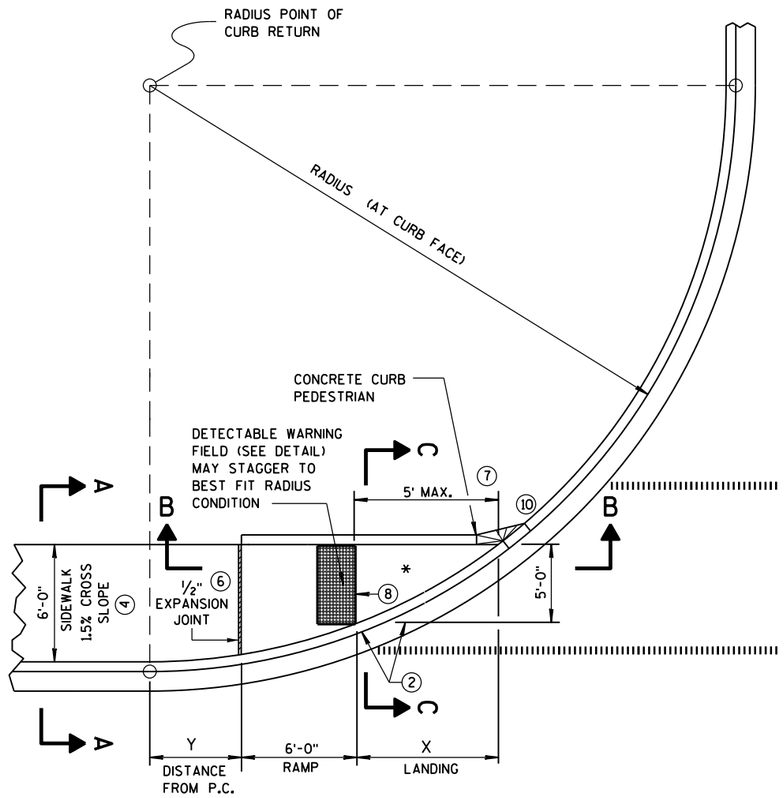
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

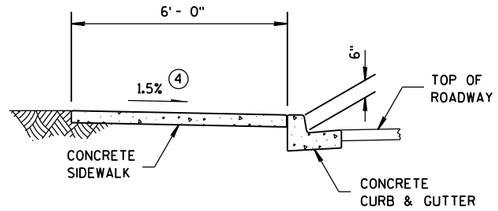
S.D.D. 8 D 5-17b



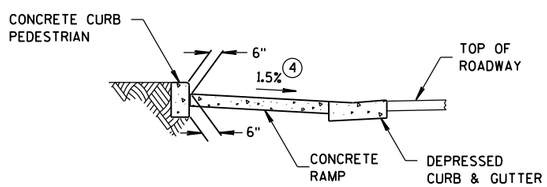
CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X	Y
20 FEET	7'-11"	0'-2"
30 FEET	10'-2¾"	1'-7½"
40 FEET	12'-1¼"	2'-10"
50 FEET	13'-8¾"	3'-10¾"
60 FEET	15'-2"	4'-10¼"

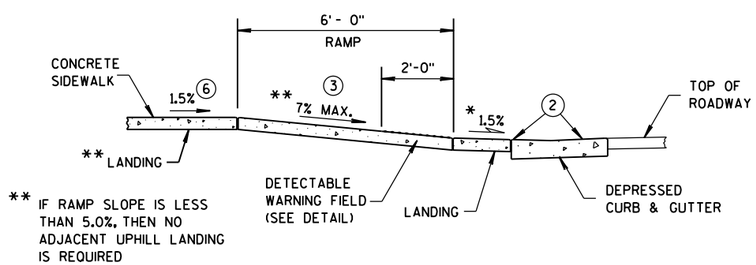
INTERMEDIATE RADII CAN BE INTERPOLATED



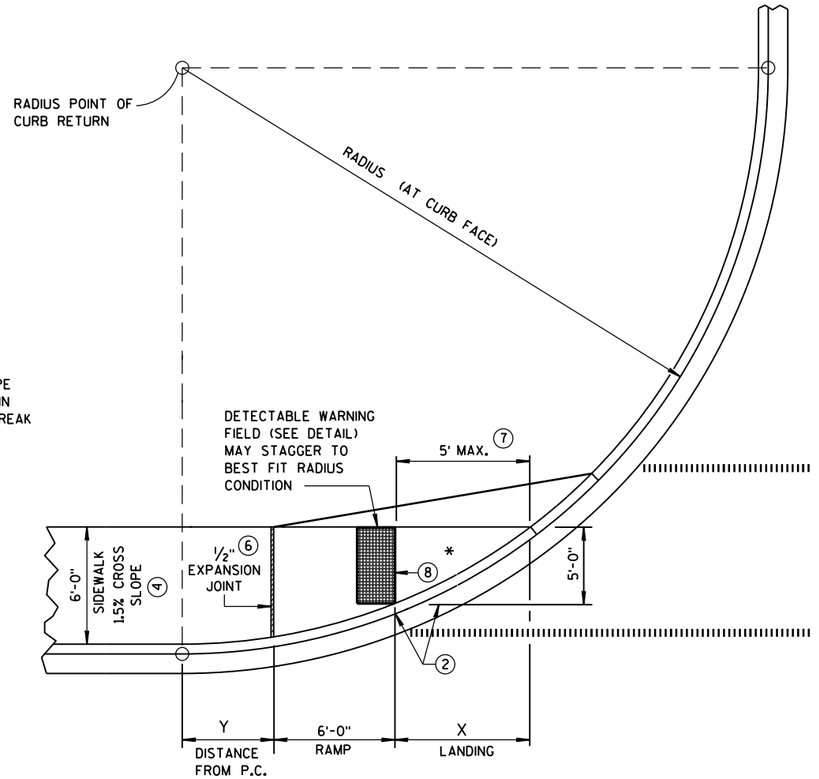
SECTION A-A FOR TYPE 4A



SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

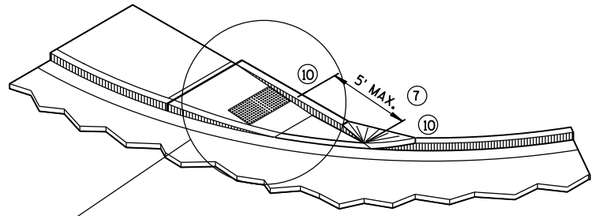
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

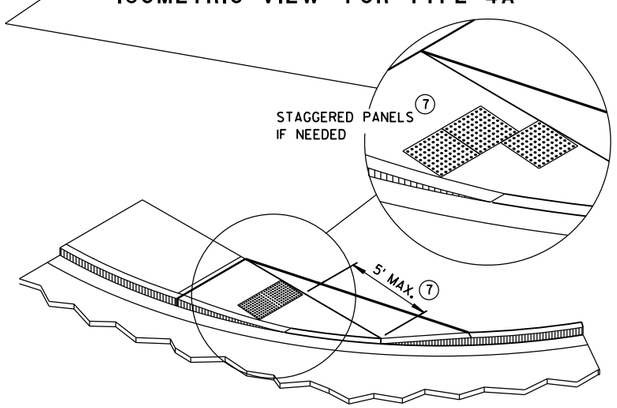
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

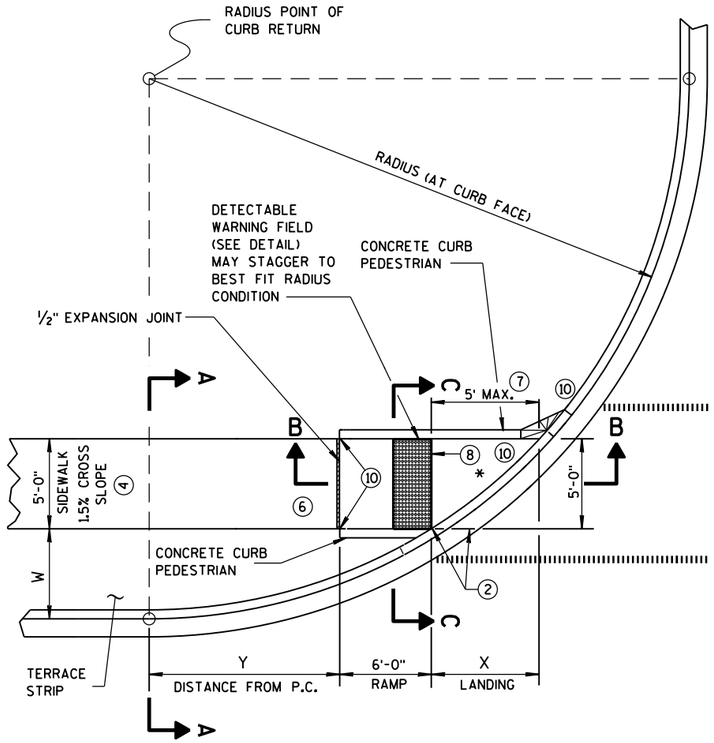
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

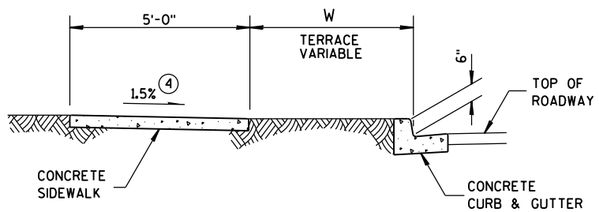
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

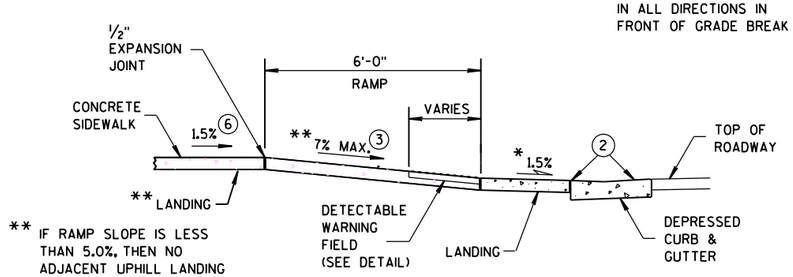
S.D.D. 8 D 5-17c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



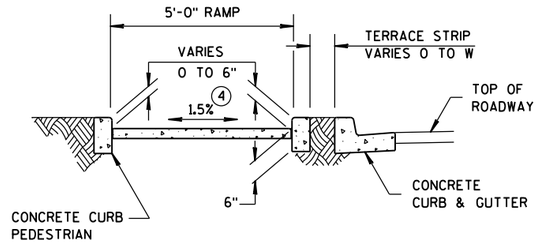
SECTION B-B FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)



SECTION C-C FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-6¾"	3'-3"	8'-6¼"
30 FEET	7'-9¼"	5'-10½"	6'-9½"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"
40 FEET	9'-4"	7'-10"	8'-2¾"	10'-3"	7'-4¾"	12'-3¾"	6'-8½"	14'-1¼"	6'-1¾"	15'-8½"
50 FEET	10'-8"	9'-6½"	9'-5½"	12'-3¼"	8'-6½"	14'-7½"	7'-9¾"	16'-8¼"	7'-2½"	18'-6¼"
60 FEET	11'-10¼"	11'-0¾"	10'-6½"	14'-1¼"	9'-6½"	16'-8½"	8'-9¼"	18'-11¾"	8'-1½"	21'-0½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

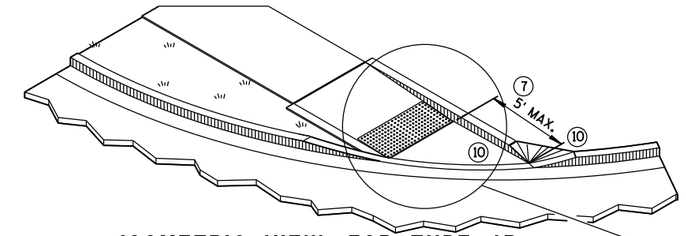
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

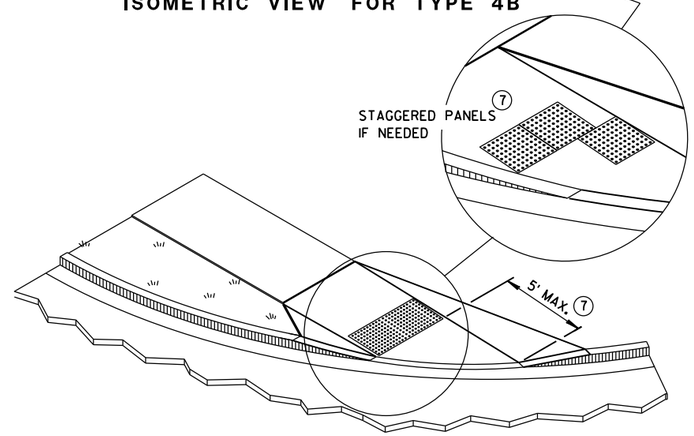
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

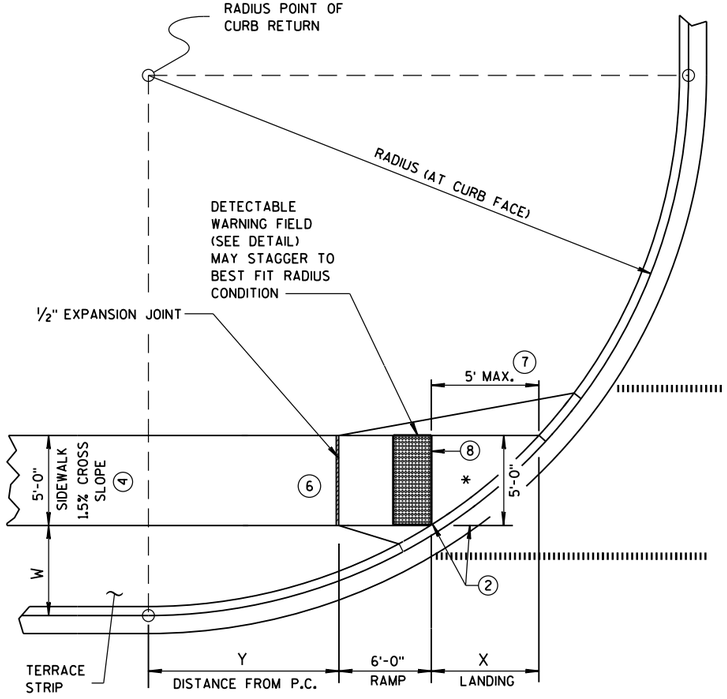
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1



CURB RAMP TYPE 4B1
PLAN VIEW

CURB RAMPS
TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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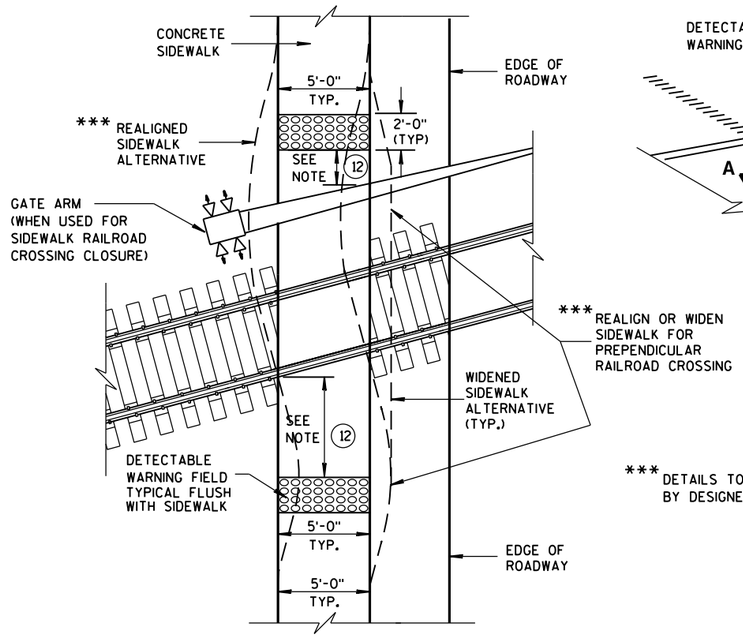
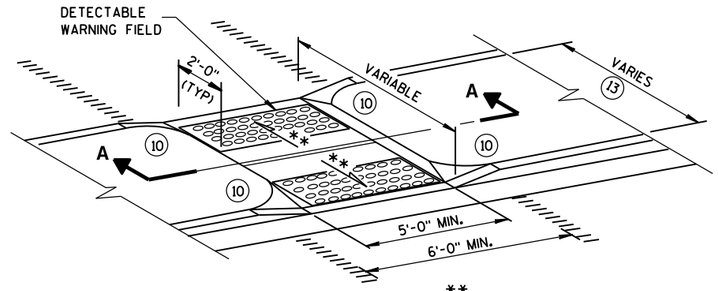
S.D.D. 8 D 5-17d



*** DETAILS TO BE DETERMINED BY DESIGNER

TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

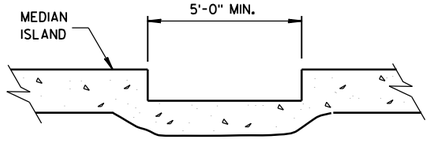
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

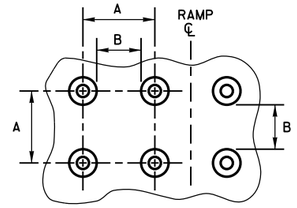
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



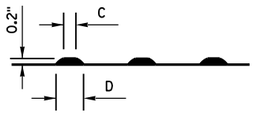
SECTION A-A

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

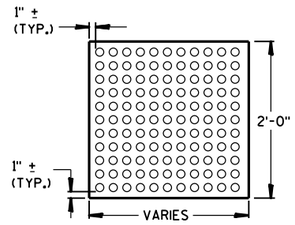


PLAN VIEW

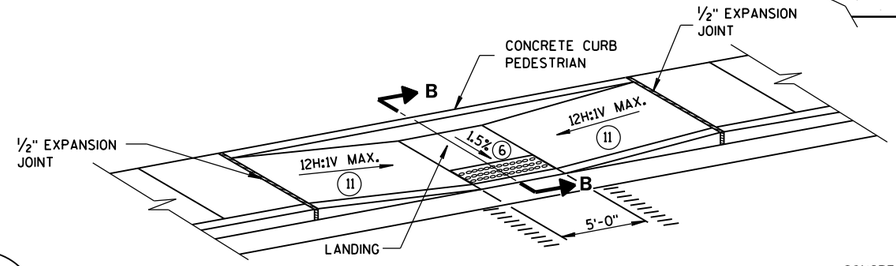


ELEVATION VIEW

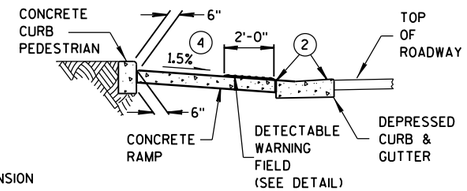
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



PLAN VIEW
DETECTABLE WARNING FIELD (TYPICAL)

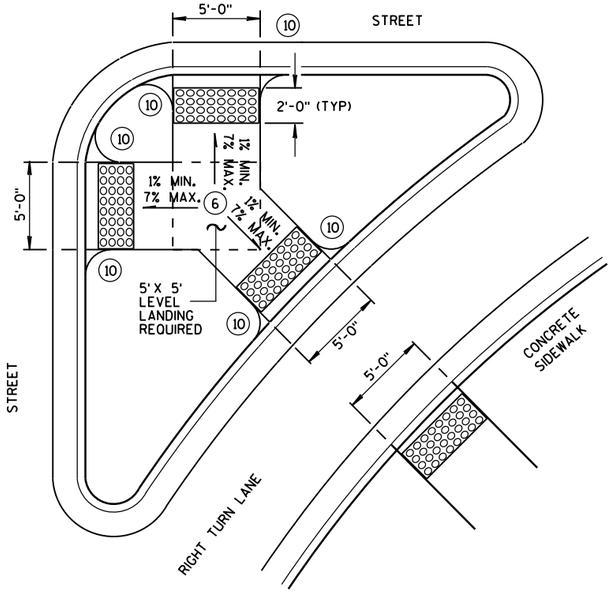


MID-BLOCK CROSSING
TYPE 7A

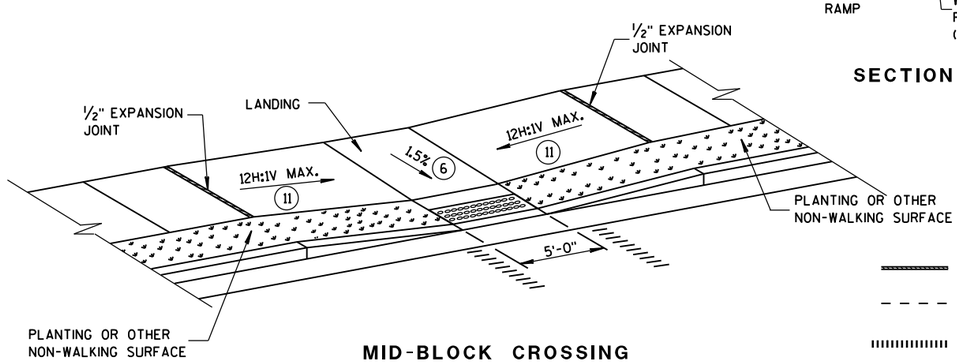


SECTION B-B

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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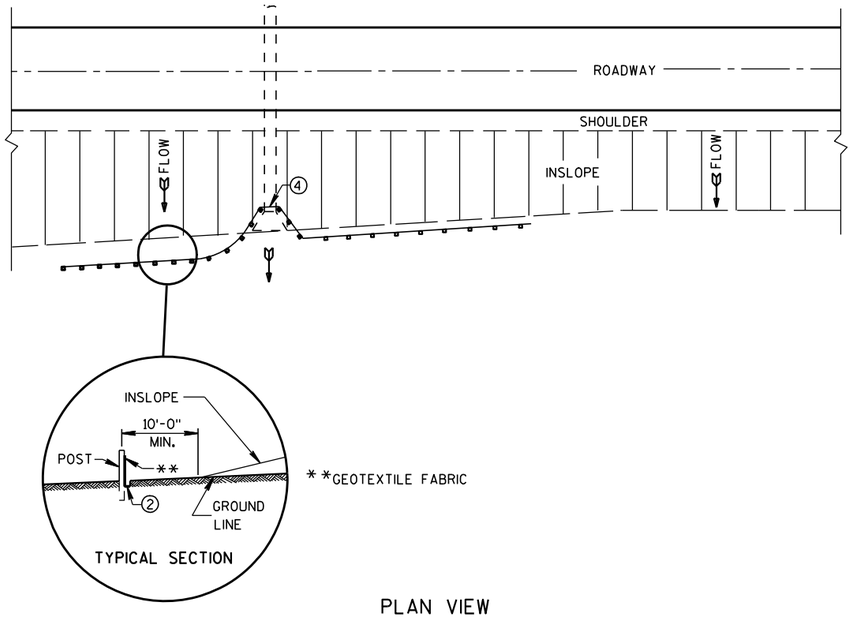
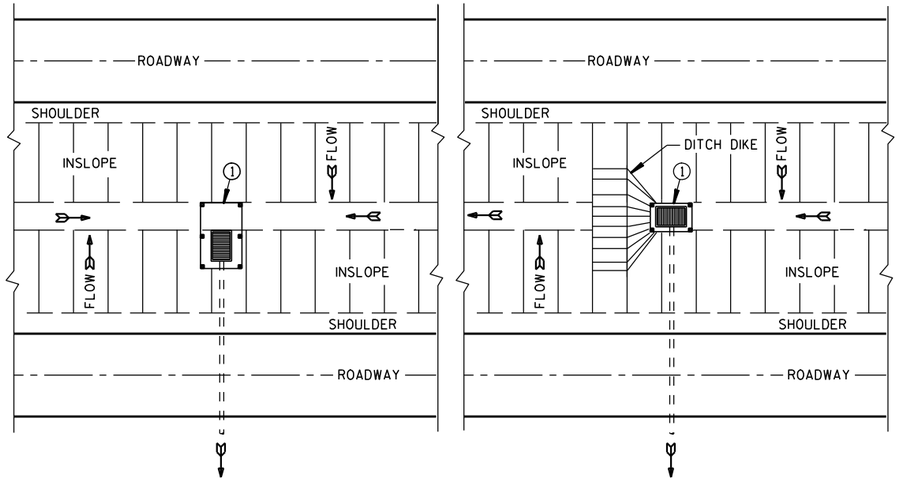


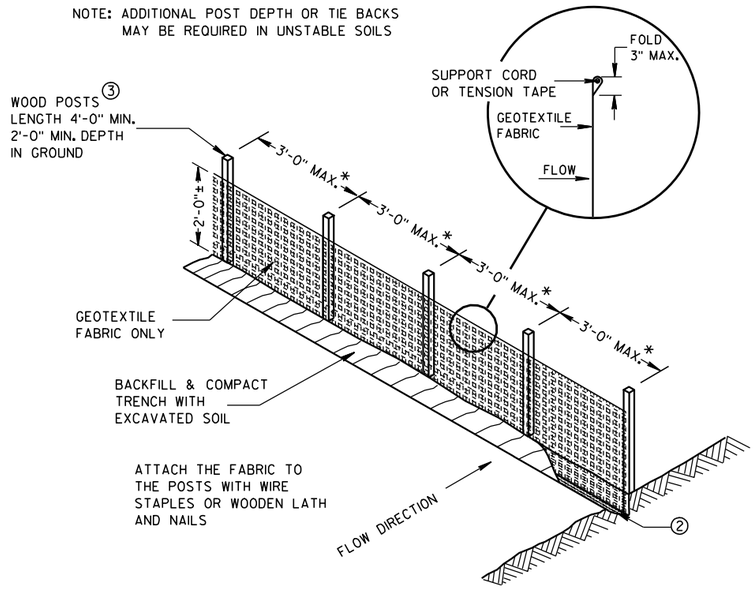
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



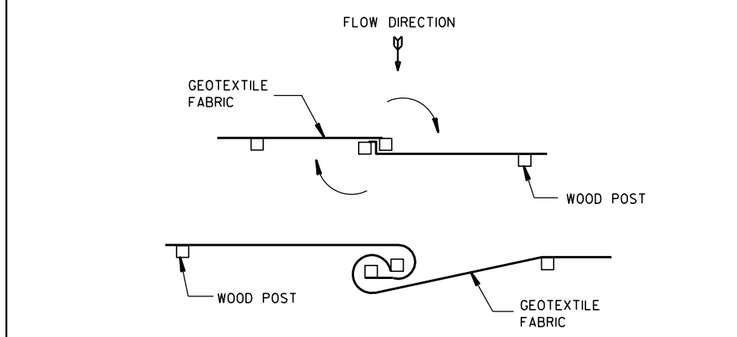
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

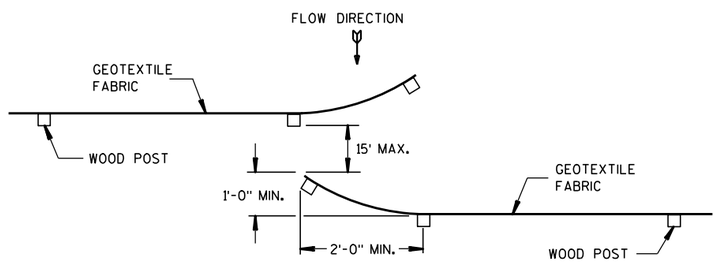


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE



TWIST METHOD



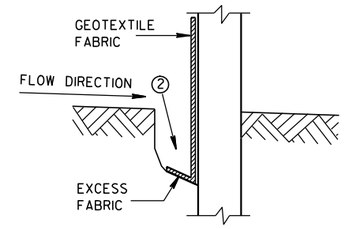
HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5

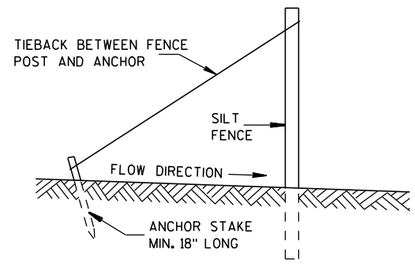
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 9-6

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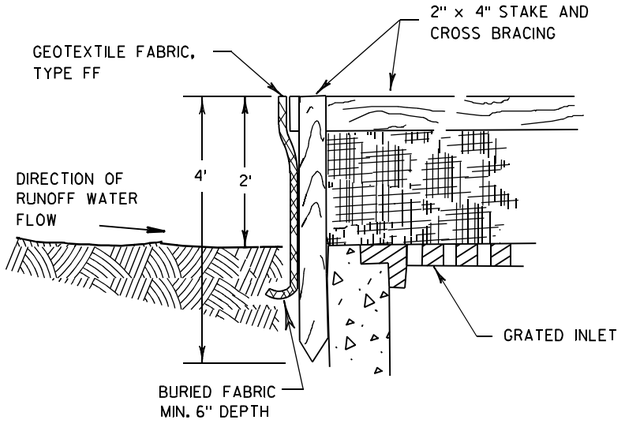
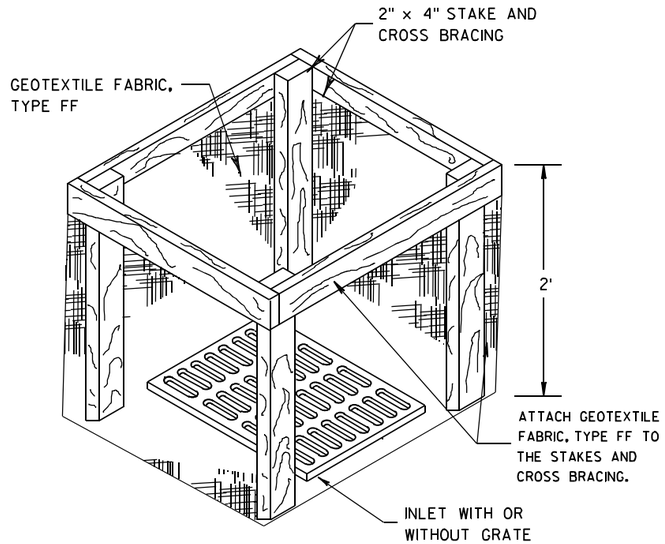
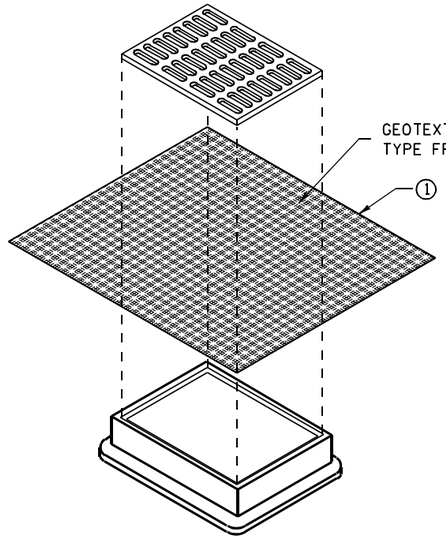
S.D.D. 8 E 9-6



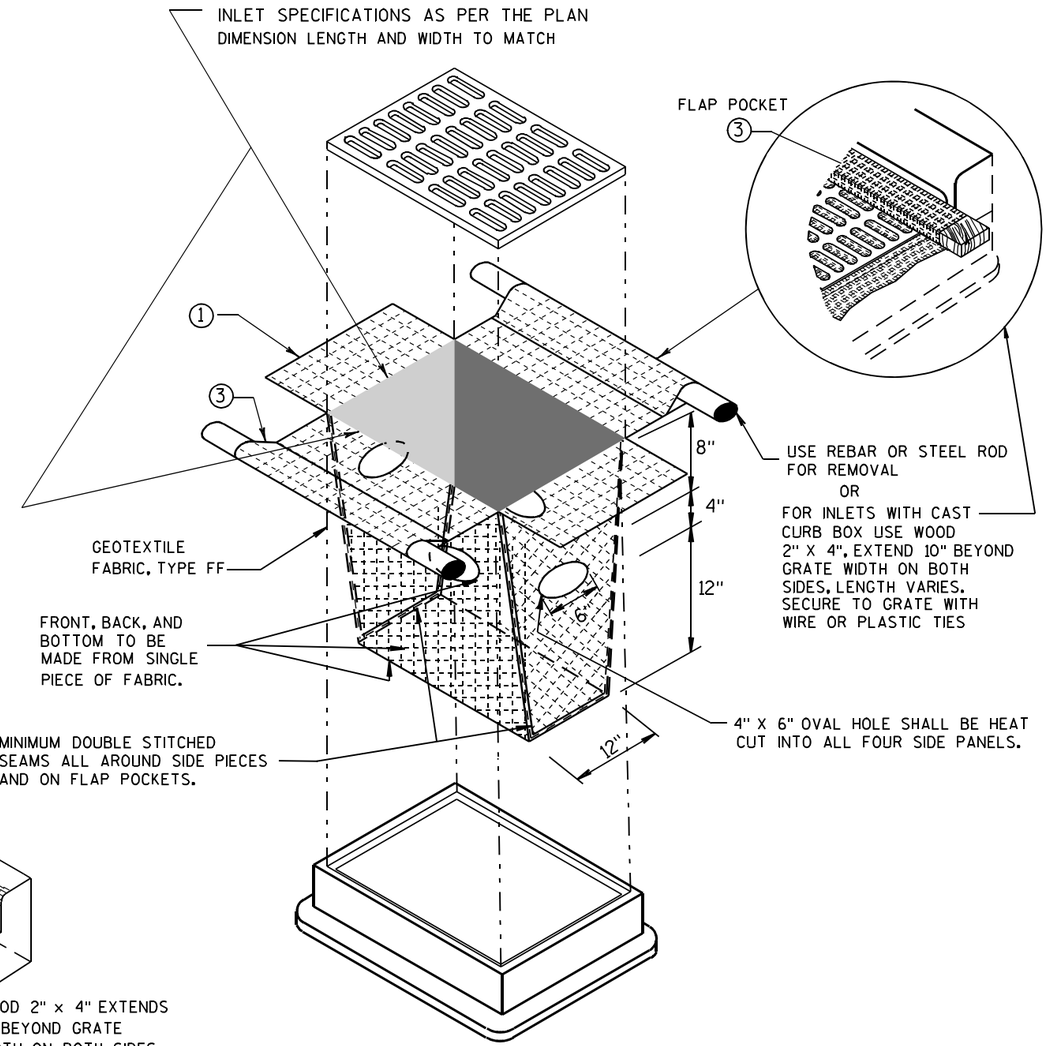


INLET PROTECTION, TYPE A



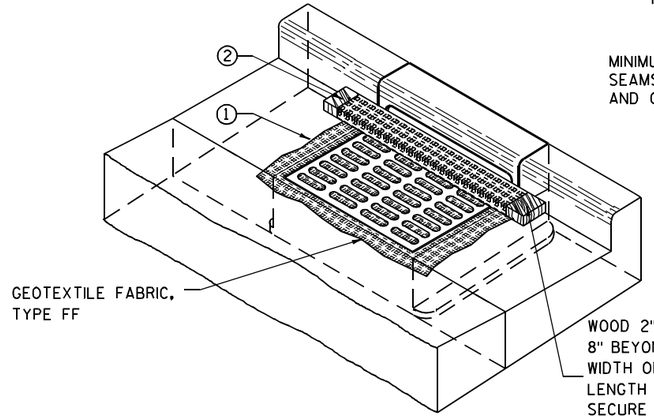
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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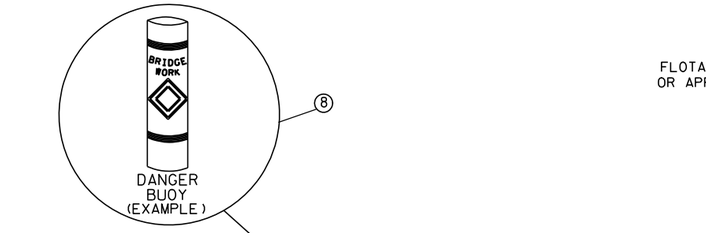
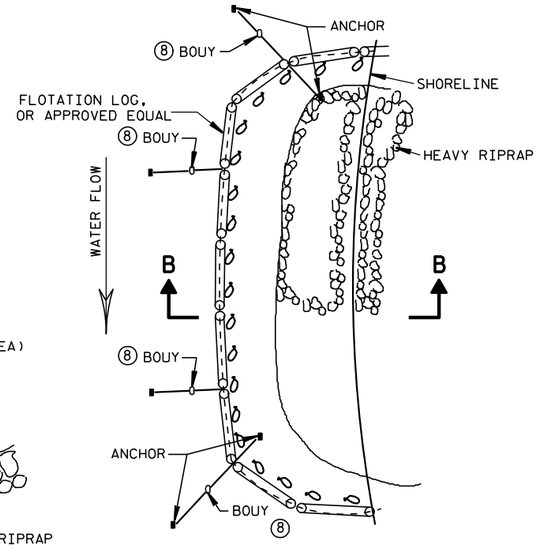
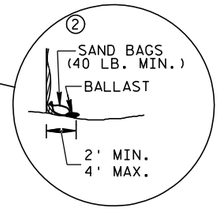
S.D.D. 8 E 10-2

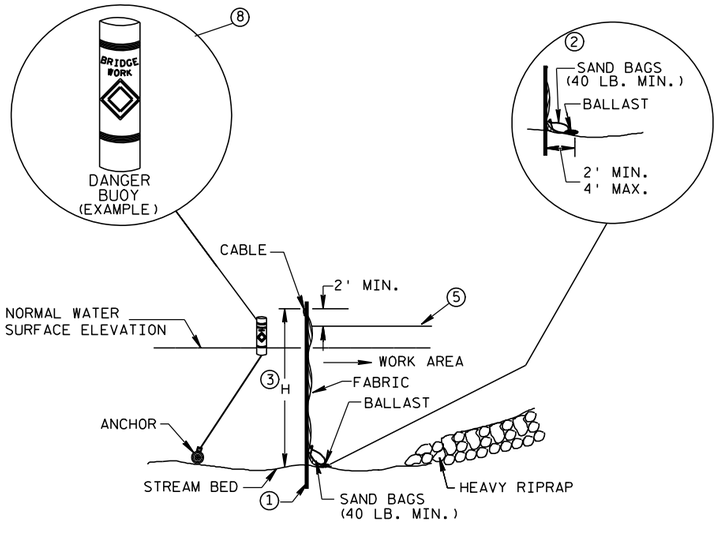


SECTION B-B

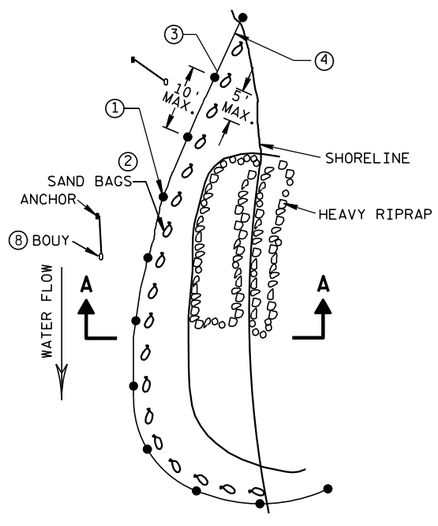




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

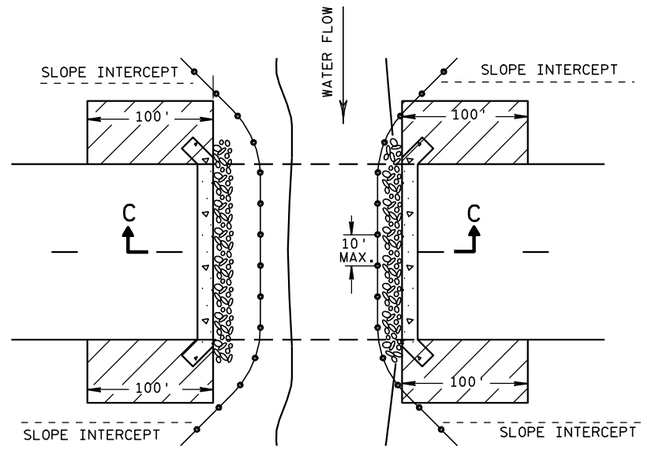
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

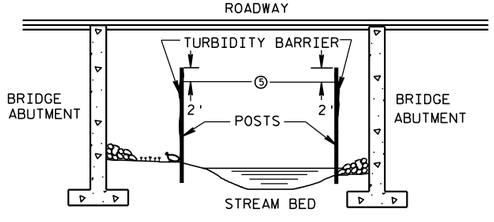
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 11-2

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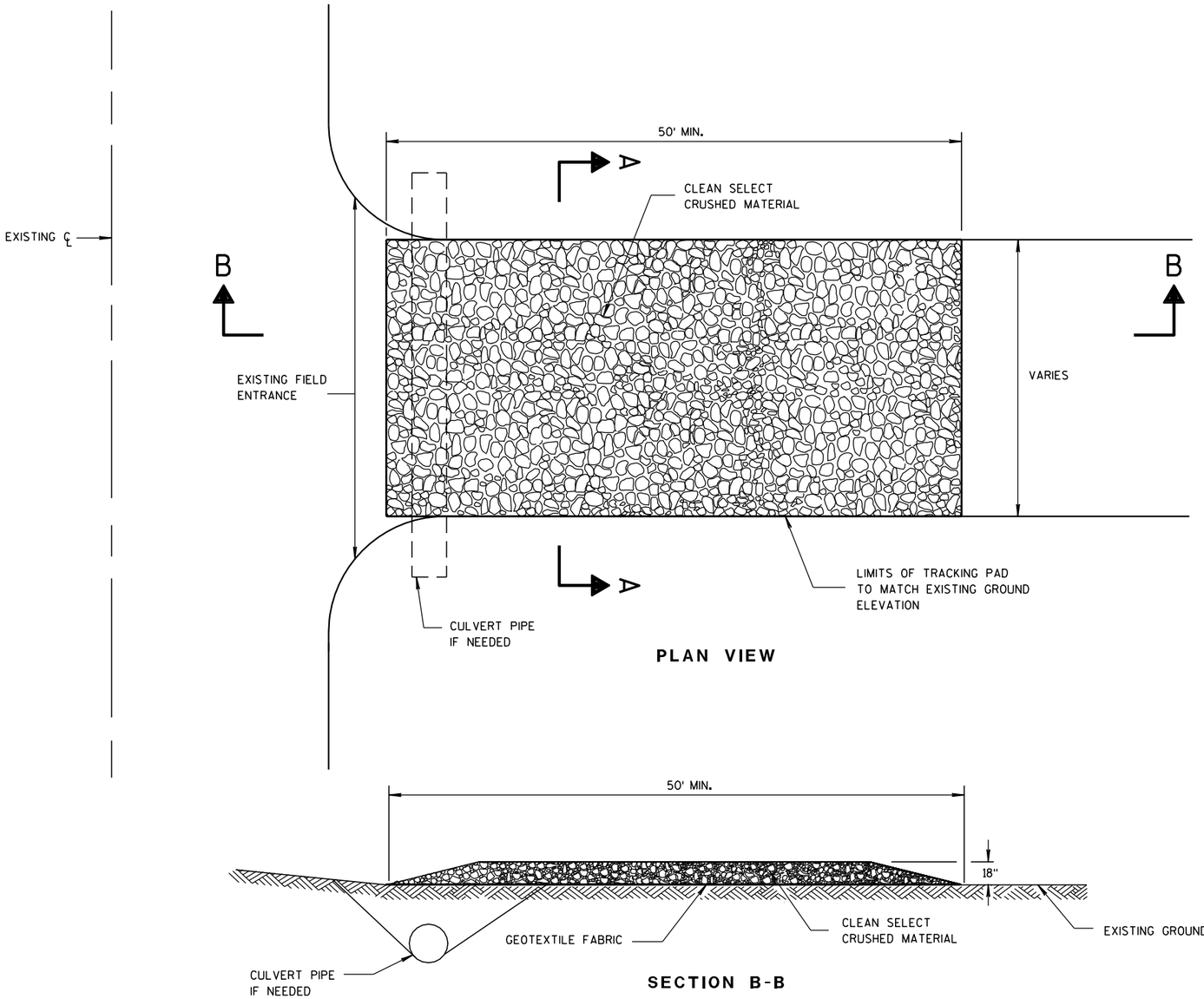
S.D.D. 8 E 11-2



PLAN VIEW

SECTION B-B

GENERAL NOTES

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

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

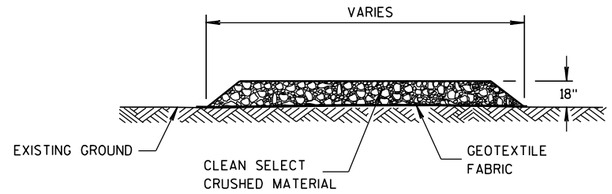
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER
44	ENT

6

S.D.D. 8 E 14-1

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

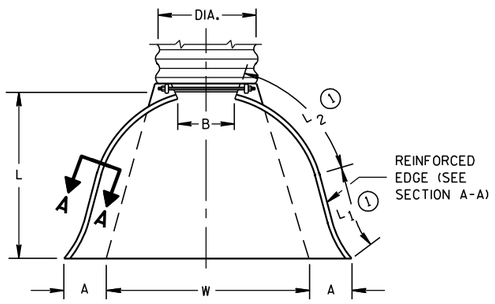
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

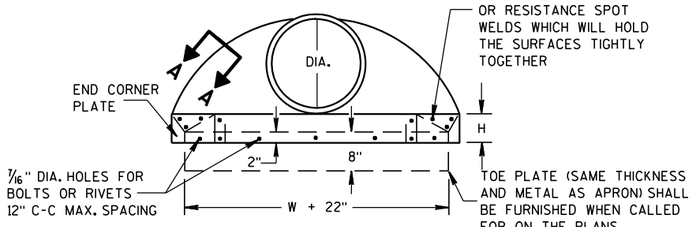
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

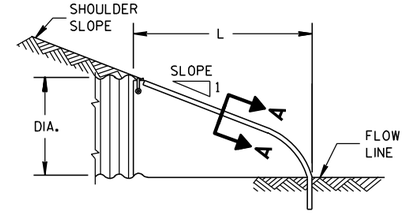
*MINIMUM
**MAXIMUM



PLAN VIEW

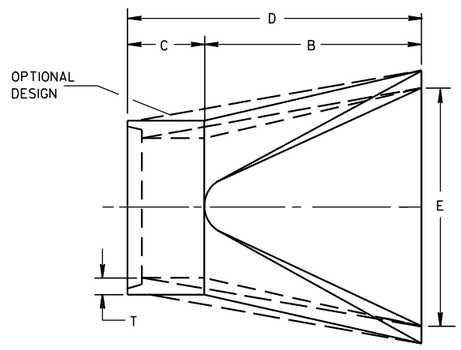


END VIEW

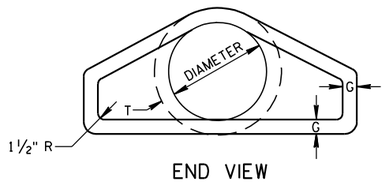


SIDE ELEVATION

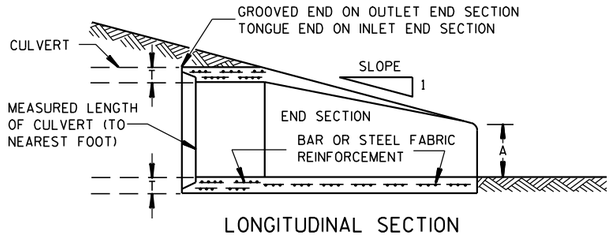
METAL ENDWALLS



PLAN

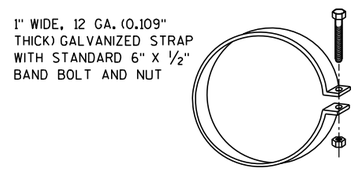


END VIEW



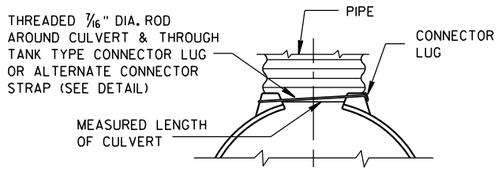
LONGITUDINAL SECTION

CONCRETE ENDWALLS

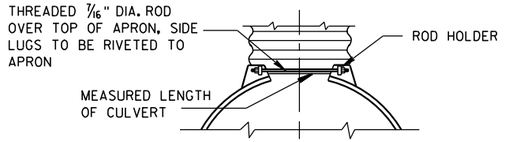


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

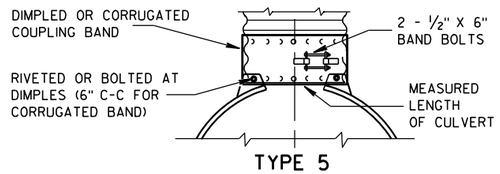


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

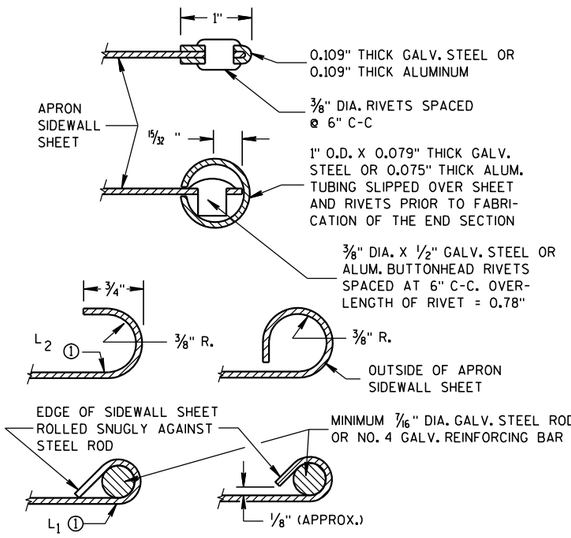
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

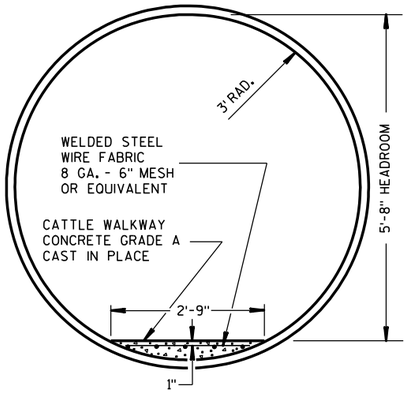
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

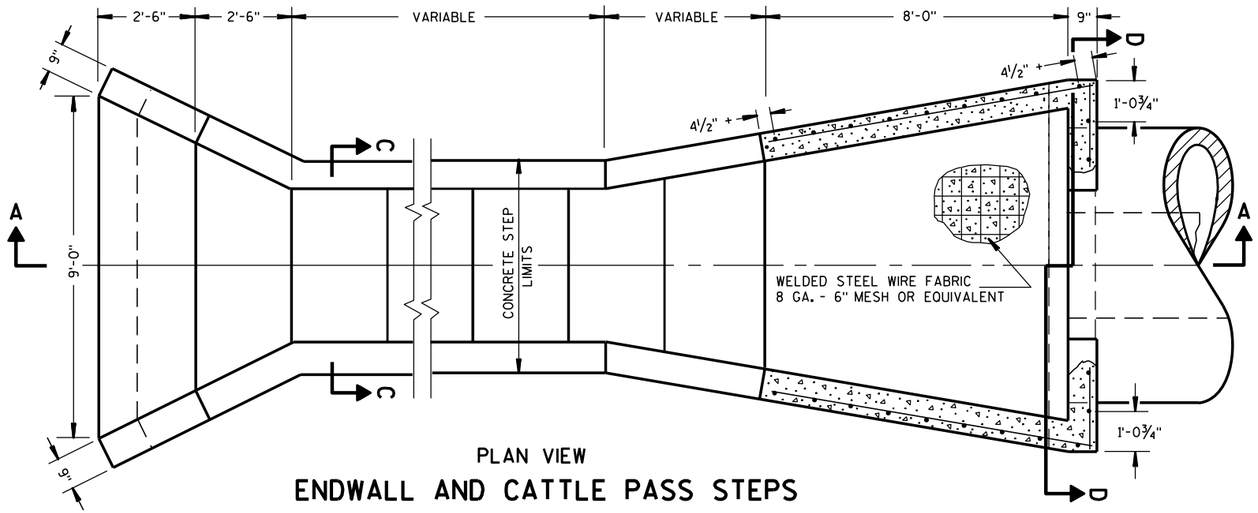
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



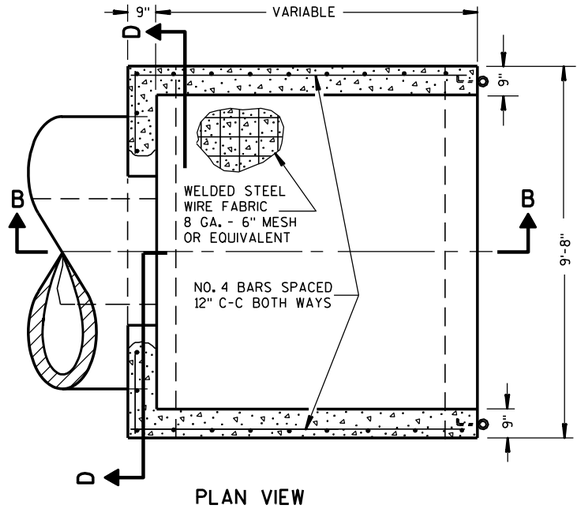
CROSS SECTION

CORRUGATED METAL PIPE CATTLE PASS



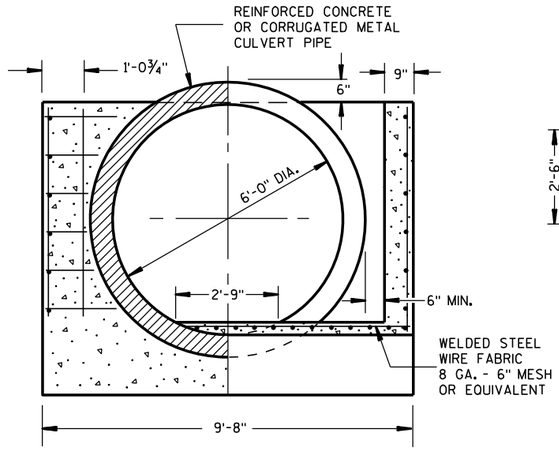
PLAN VIEW

ENDWALL AND CATTLE PASS STEPS

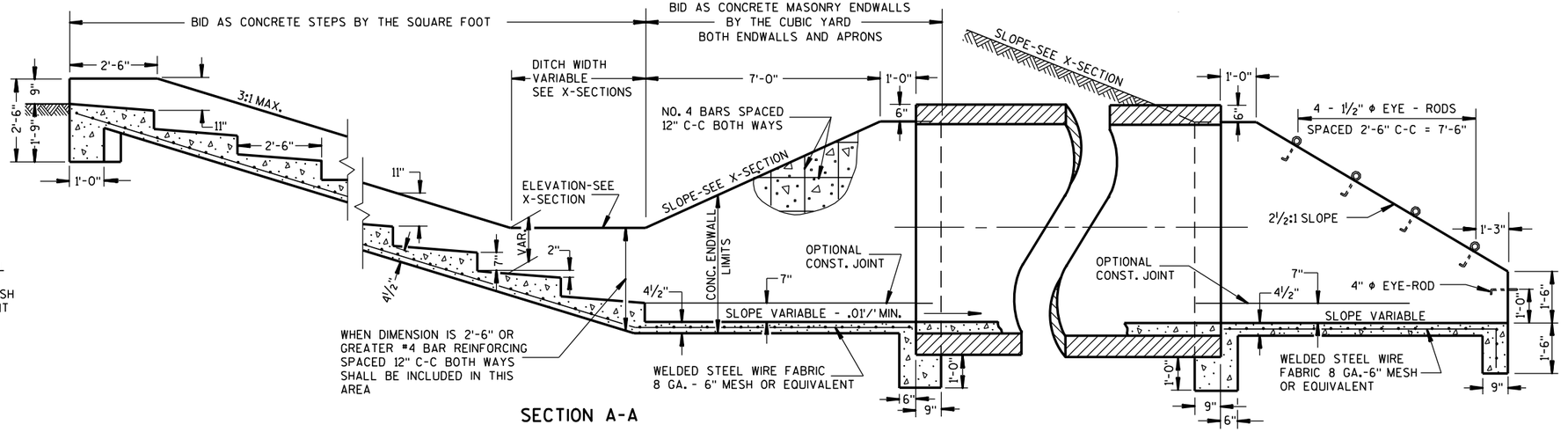


PLAN VIEW

ENDWALL FOR CATTLE PASS

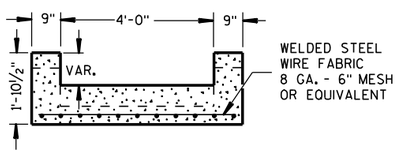


SECTION D-D

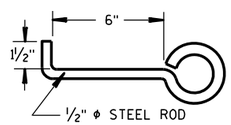


SECTION A-A

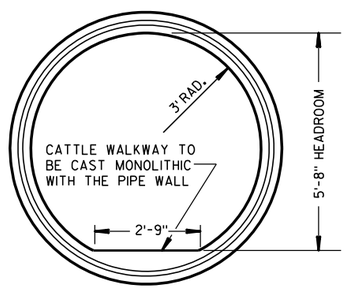
SECTION B-B



SECTION C-C



EYE-ROD ANCHOR



END VIEW

REINFORCED CONCRETE PIPE CATTLE PASS

GENERAL NOTES

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

ALL STEEL REINFORCEMENT IN ENDWALLS AND CATTLE PASS STEPS SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

ALL STEEL REINFORCEMENT OR FABRIC USED AS SHOWN ABOVE SHALL BE INCIDENTAL TO THE BID ITEM OF WHICH IT IS AN INTEGRAL PART.

EYE-RODS FOR FENCE CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR AS AN INCIDENTAL TO THE BID ITEM OF CONCRETE MASONRY, ENDWALLS AND SHALL BE GALVANIZED.

CONCRETE USED FOR THE CATTLE WALKWAY WITHIN THE PIPE SHALL BE INCIDENTAL TO THE BID ITEM OF PIPE CATTLE PASS.

DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALL AND STEPS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/6/75 — DATE

/S/ Harold Fiedler — STATE DESIGN ENGINEER

HWYS

FHWA

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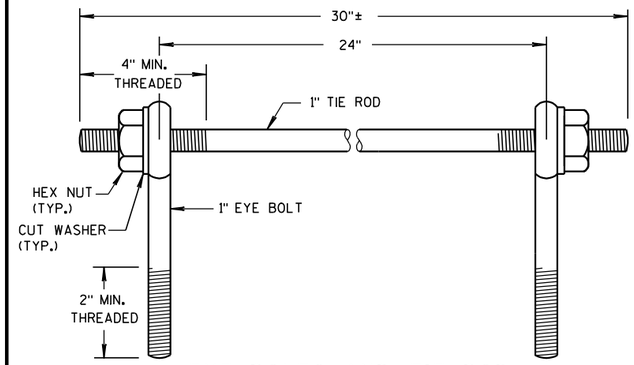
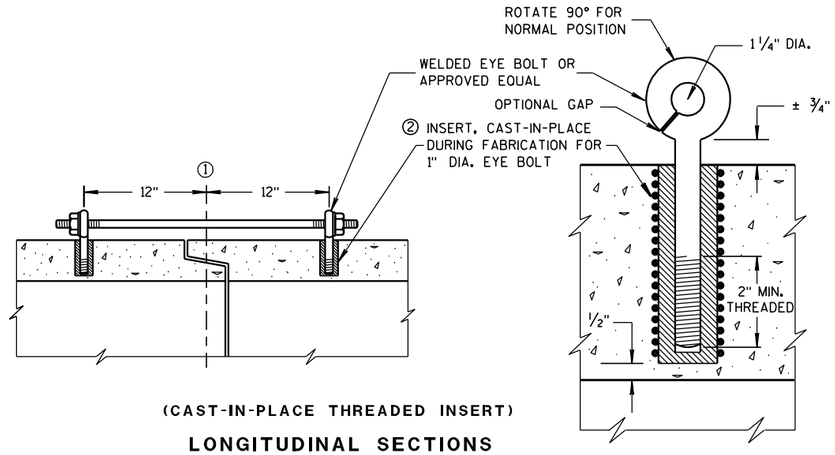
S.D.D. 8 F 3-3

6

S.D.D. 8 F 3-3



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

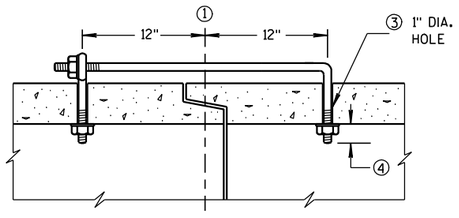
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

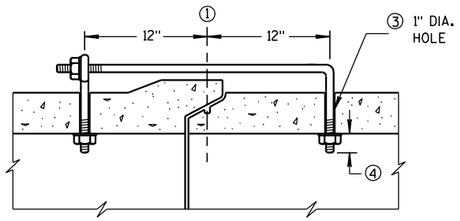
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

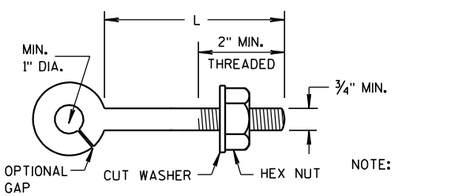


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

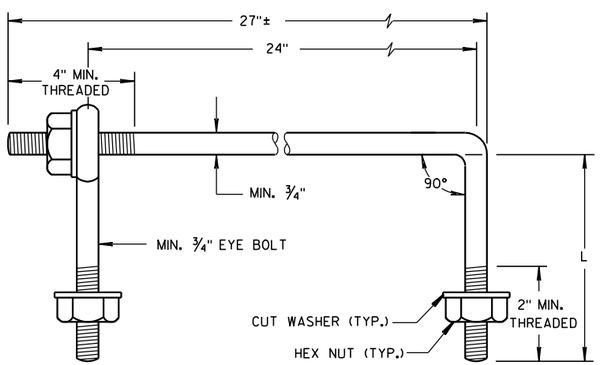
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

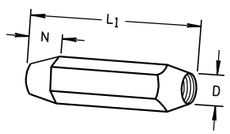
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



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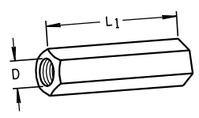
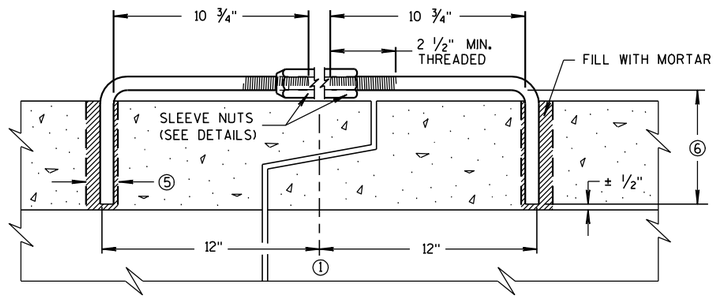


PLAIN

RIGHT AND LEFT THREADS

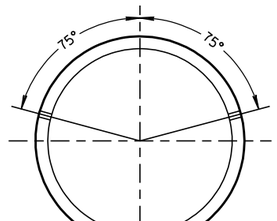
SLEEVE NUTS



LONGITUDINAL SECTION

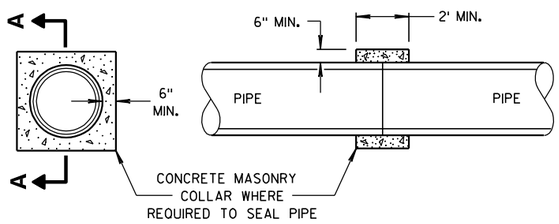
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
47 — 'MENT
FHWA

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S.D.D. 8 F 4-7

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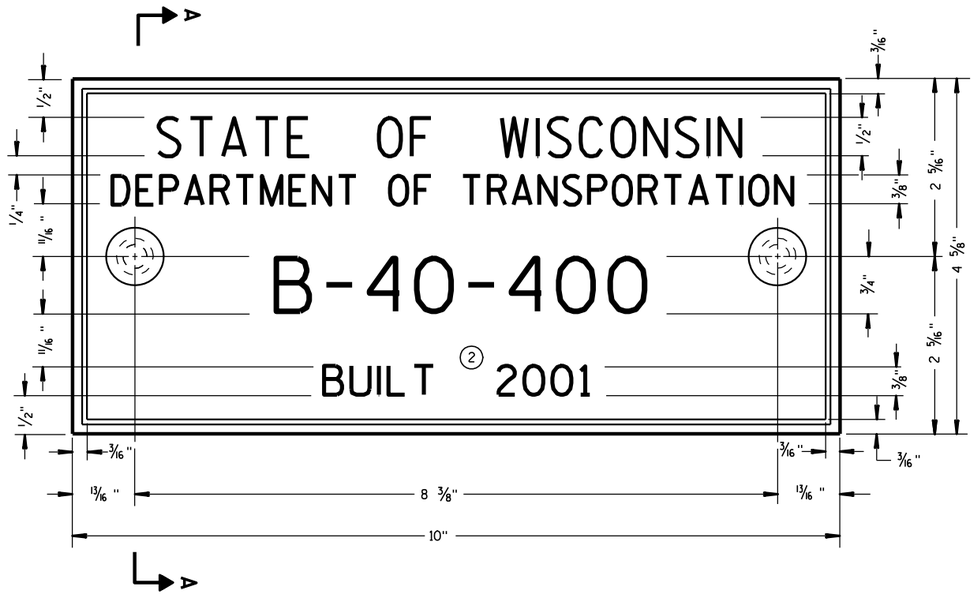
S.D.D. 8 F 4-7



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

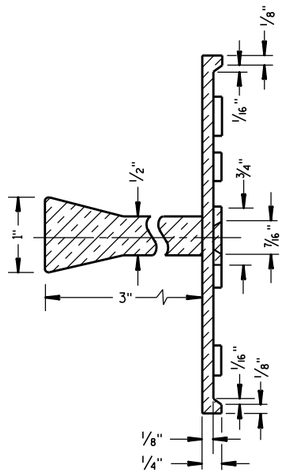
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

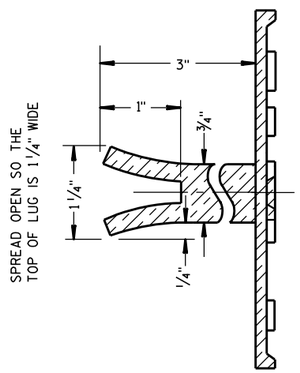
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

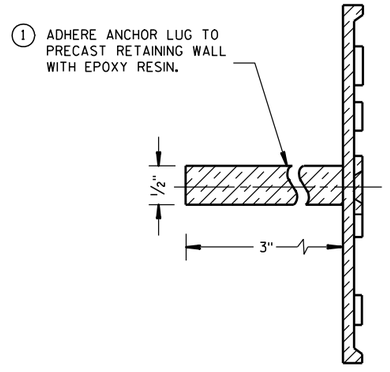
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

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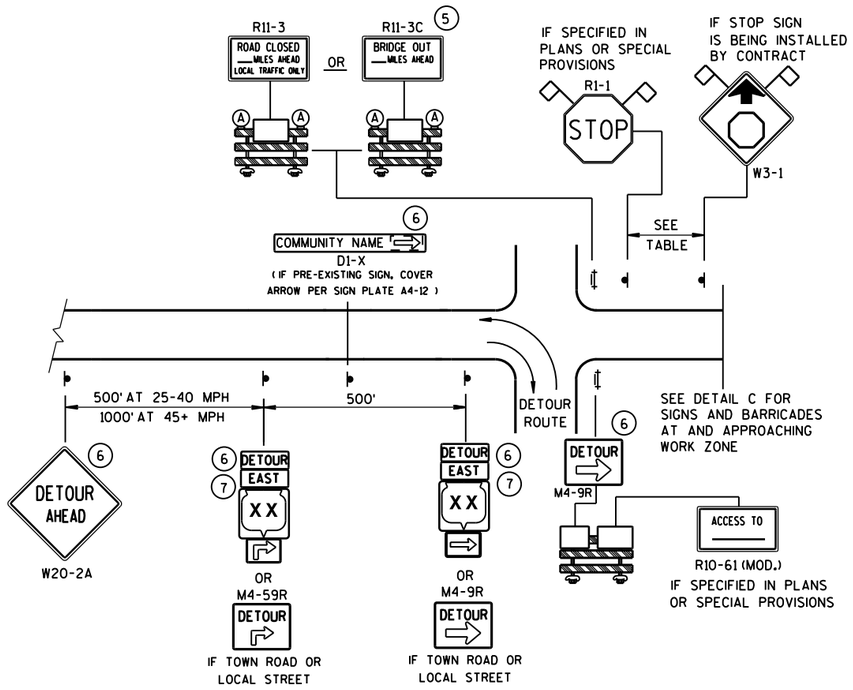
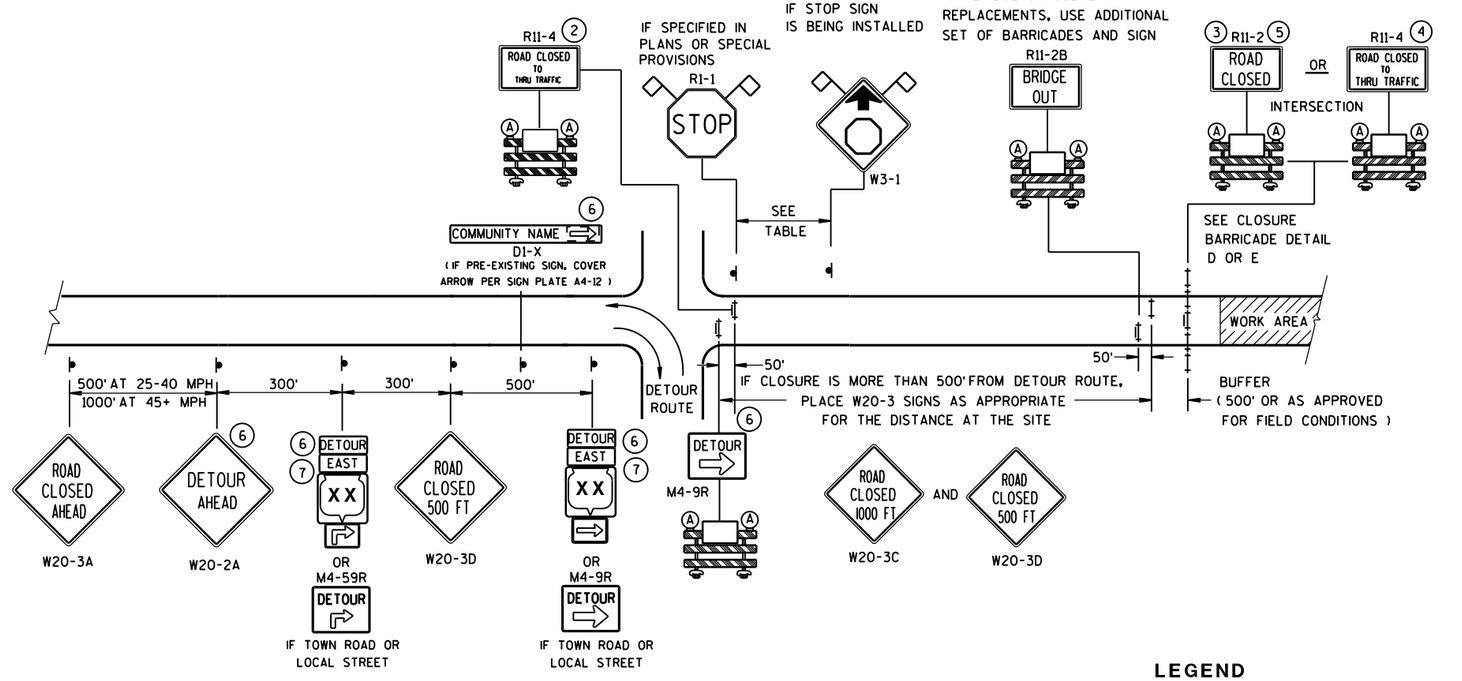
S.D.D. 12 A 3-10



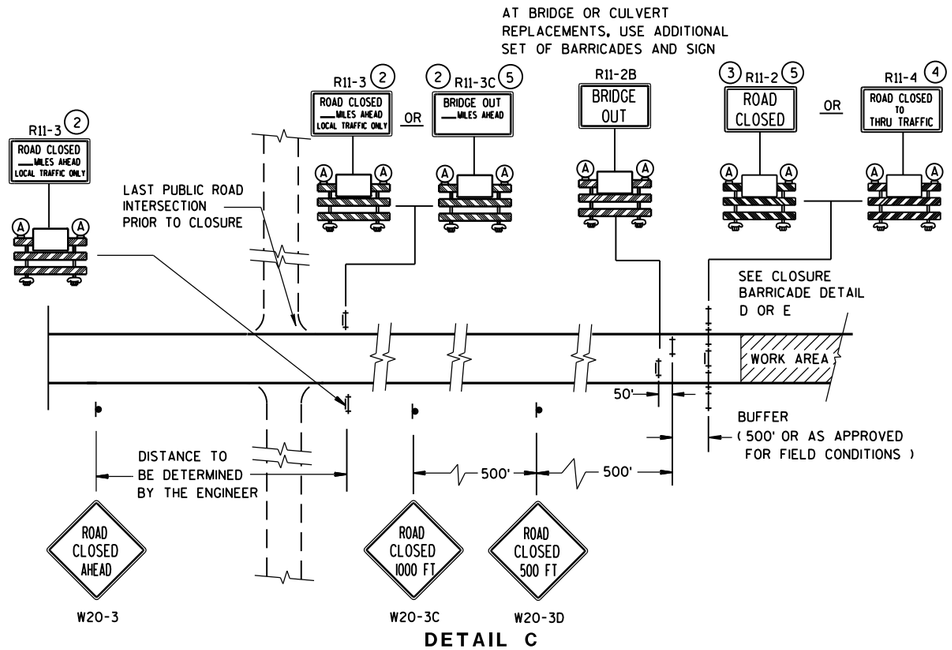
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

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S.D.D. 15 C 2-6a

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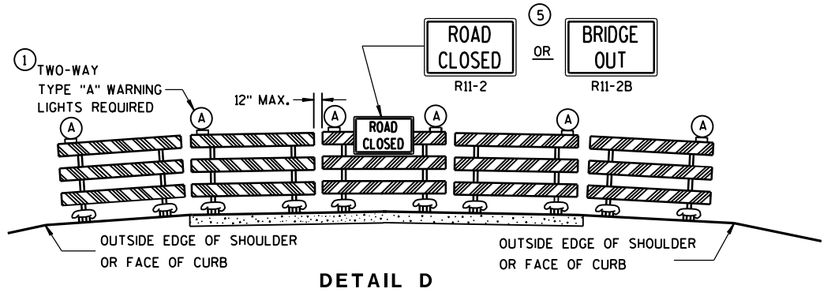
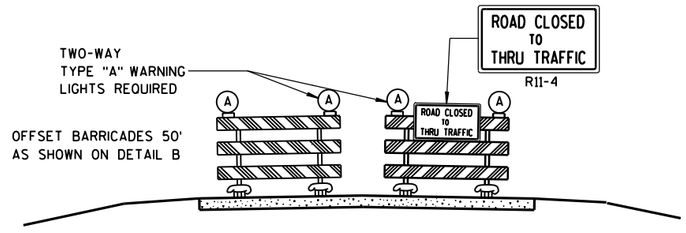
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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.

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.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- 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.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. 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. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FIC

FHWA

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S.D.D. 15 C 2-6b

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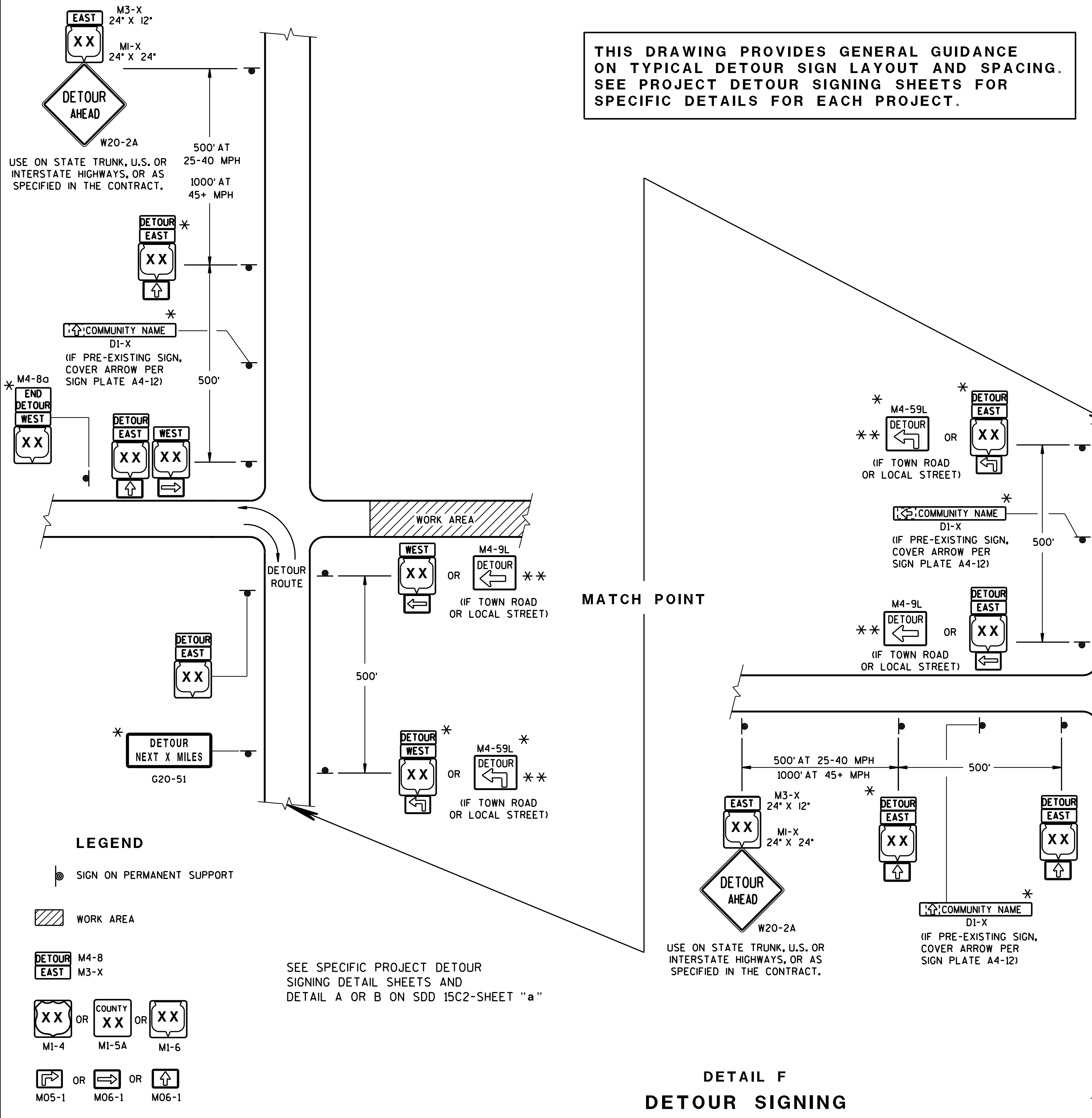
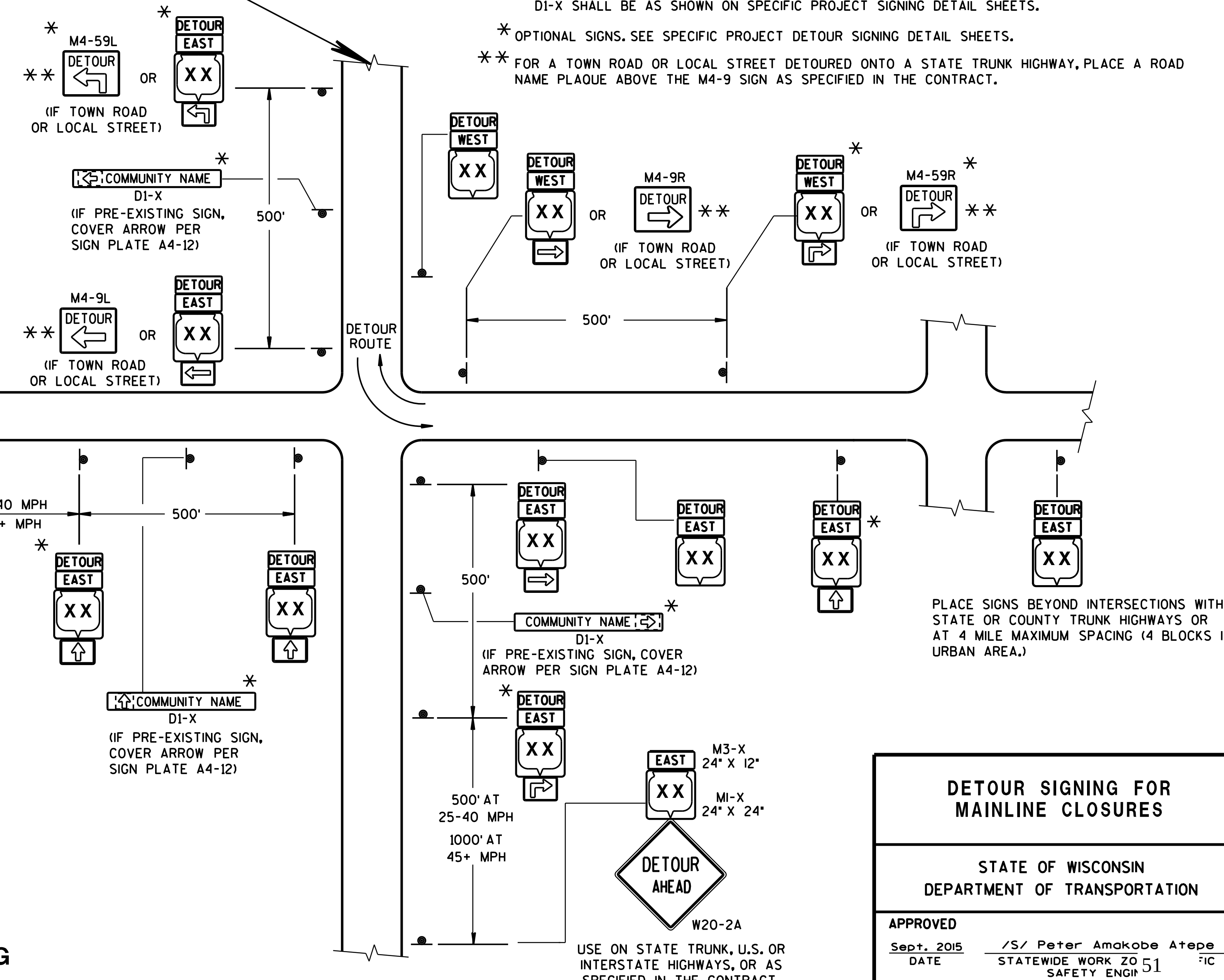
S.D.D. 15 C 2-6b

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.

DETAIL F

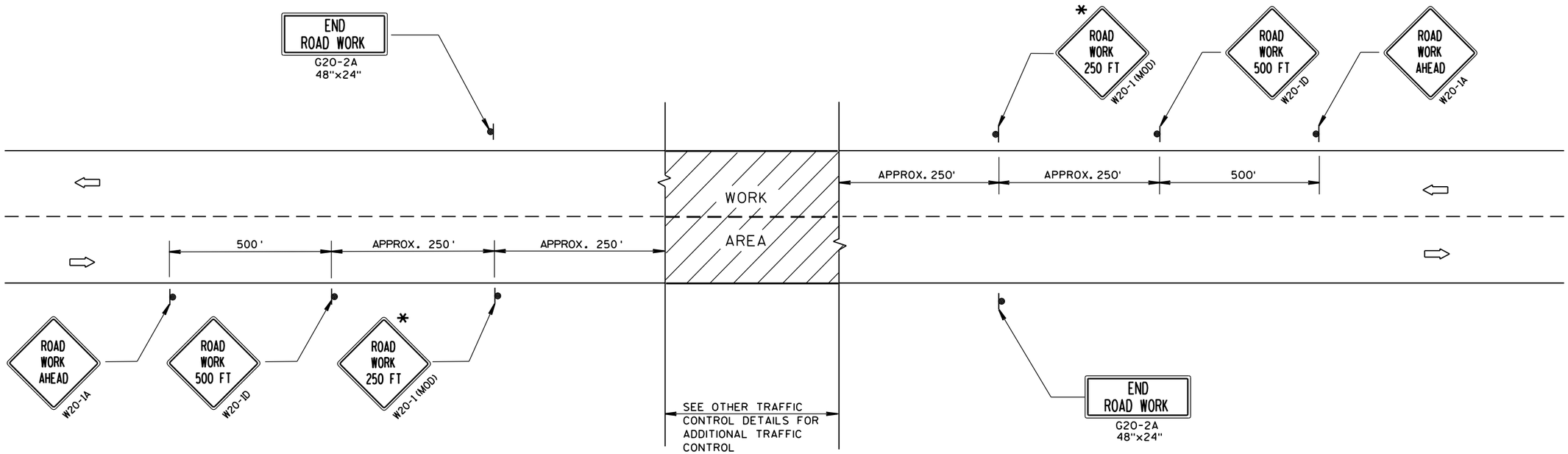
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

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.

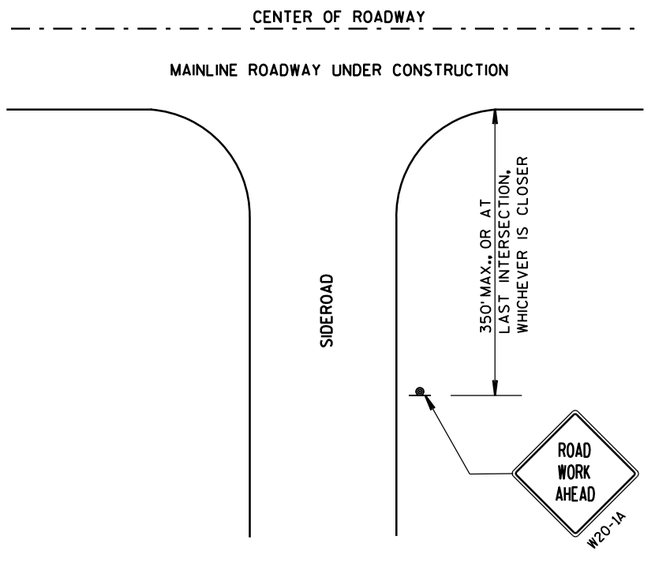
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

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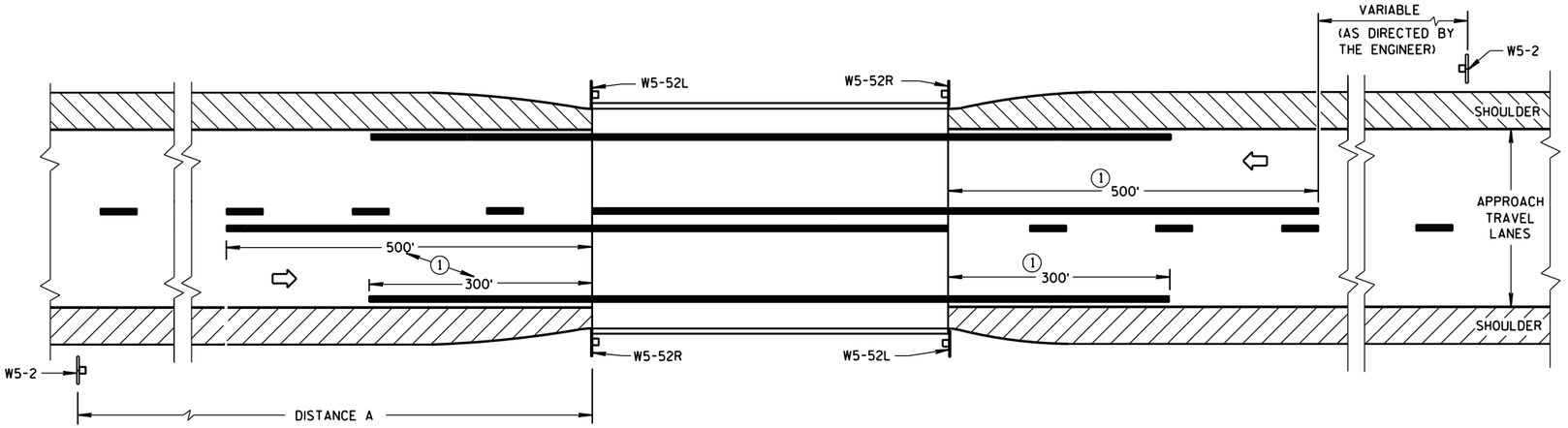
S.D.D. 15 C 5-3



GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

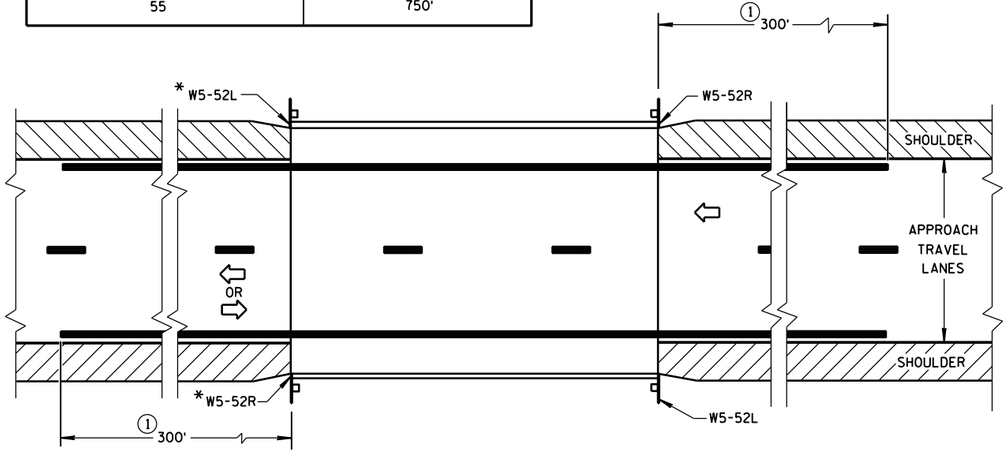
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

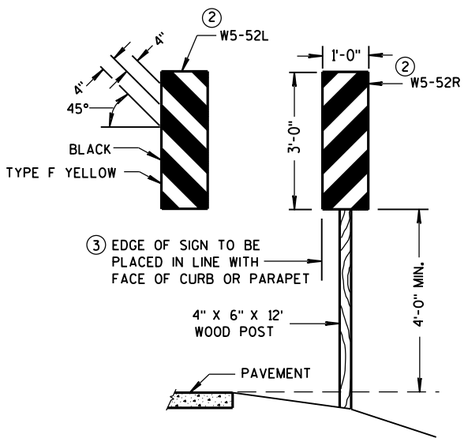


*OMIT ON ONE-WAY TRAVELLED WAYS

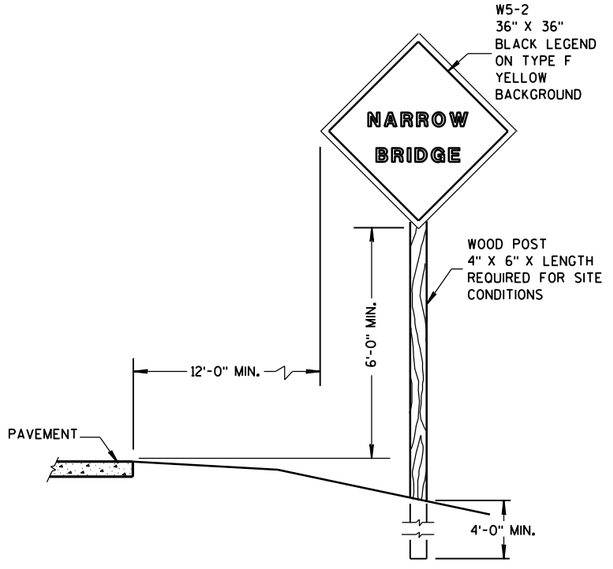
SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

FHWA

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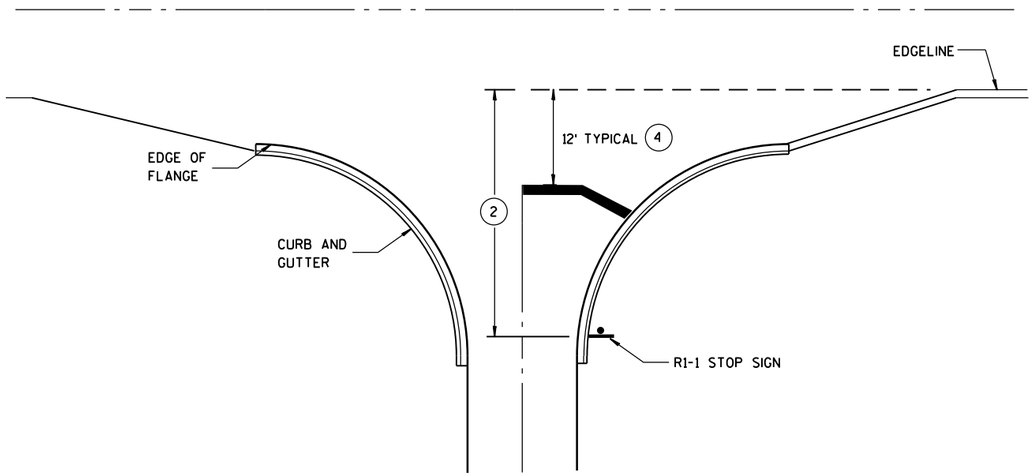
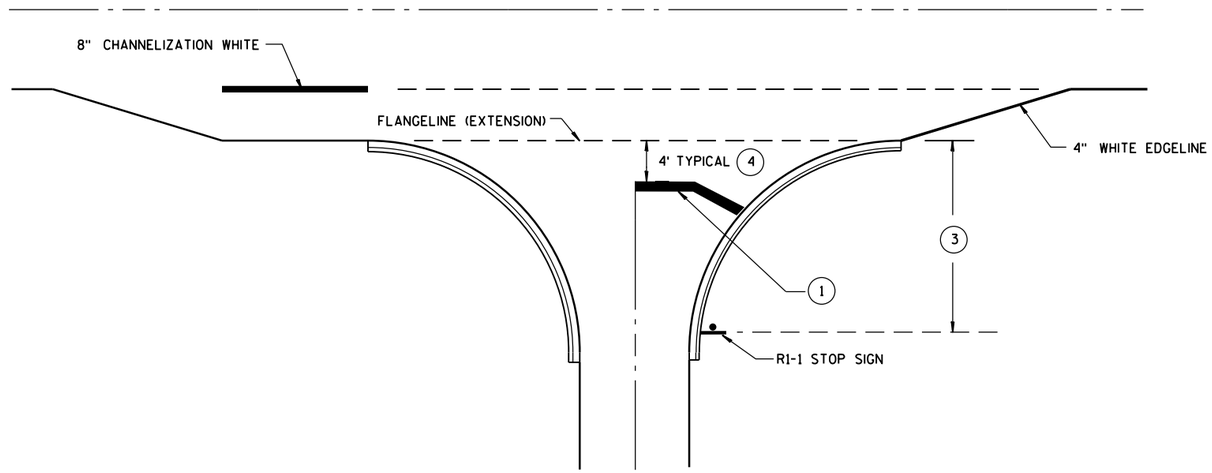
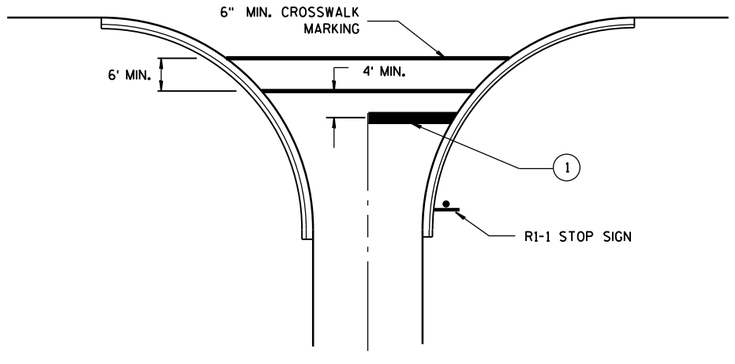
S.D.D. 15 C 6-7



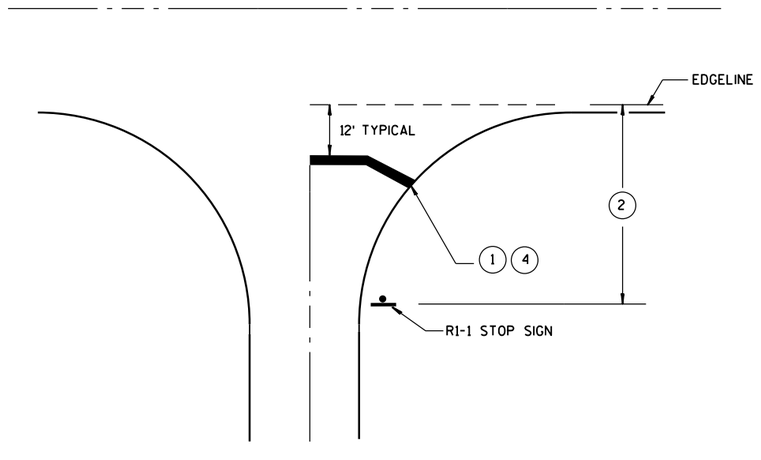
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR

NEER

FHWA

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S.D.D. 15 C 33-2

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

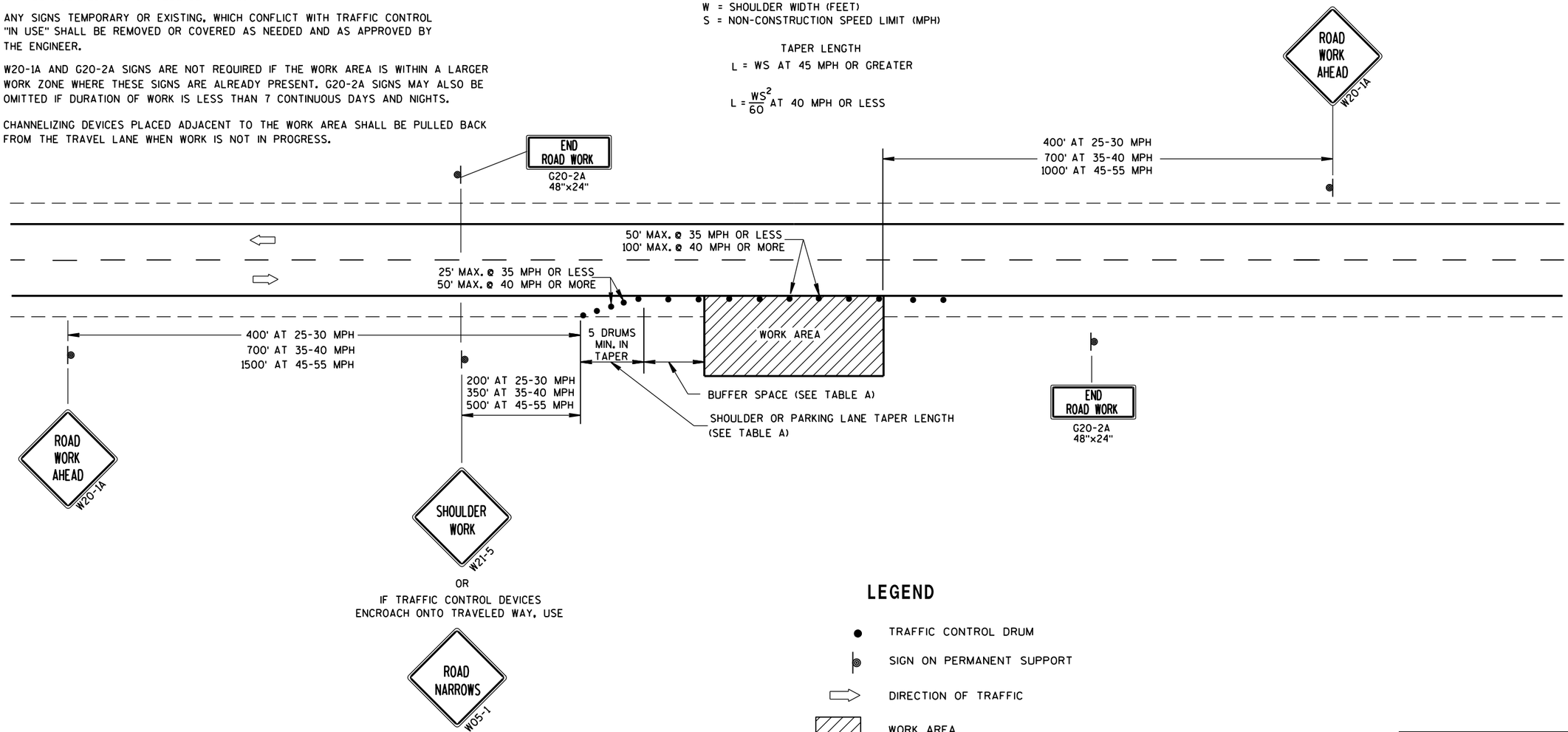
W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

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

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

July 14, 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZO SAFETY ENGI FIC

FHWA

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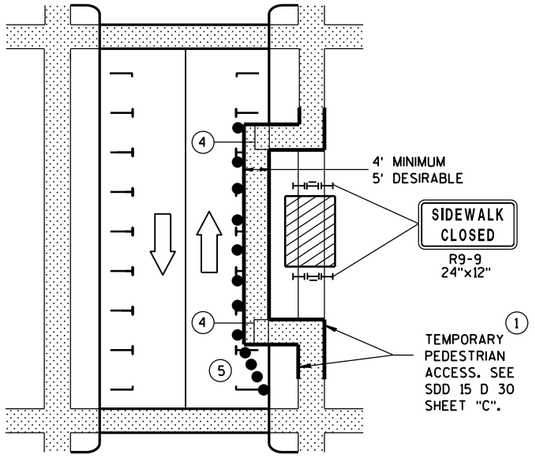
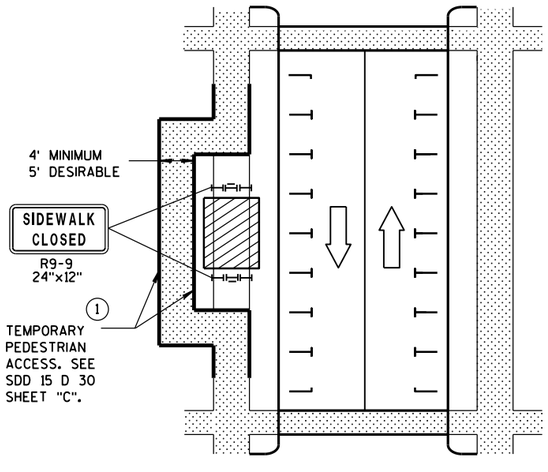
S.D.D. 15 D 28-3

NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

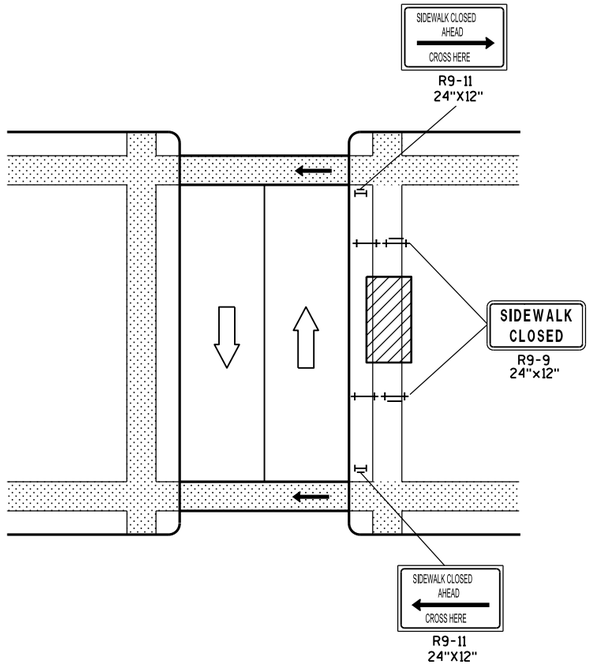


MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

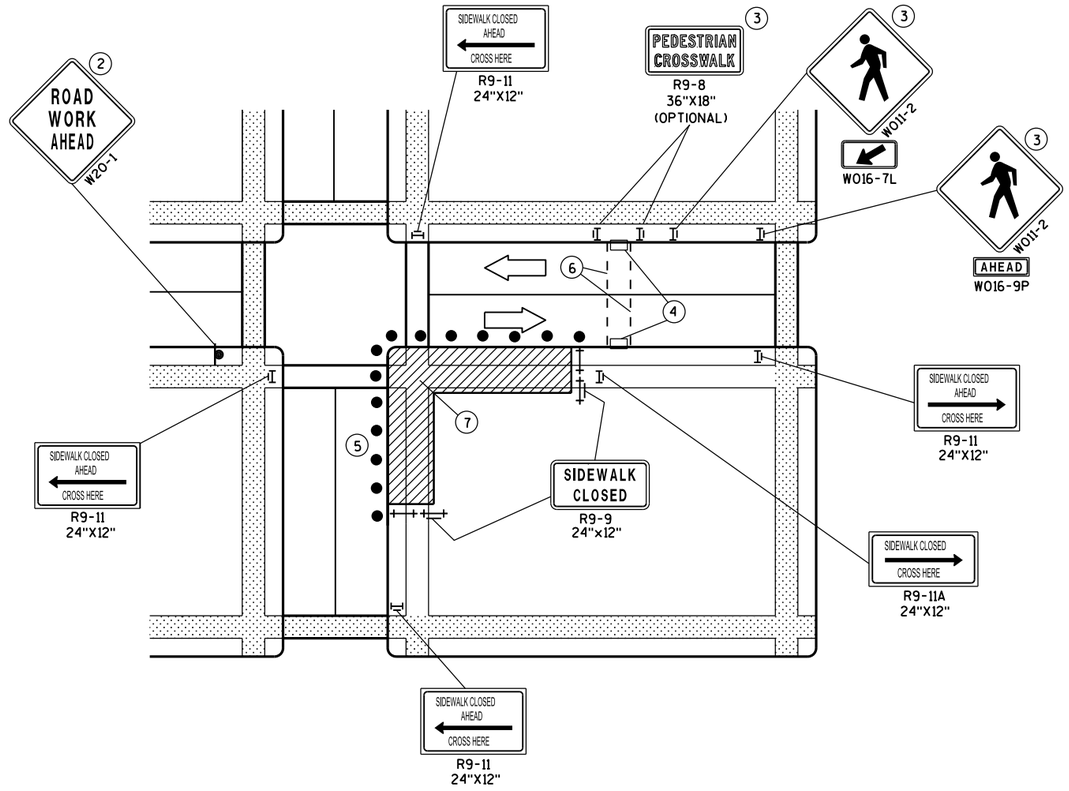
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

(1) IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.

(2) "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

(3) IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.

(4) TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".

(5) DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

(7) LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

- SIGN ON PERMANENT SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- DIRECTION OF TRAFFIC
- TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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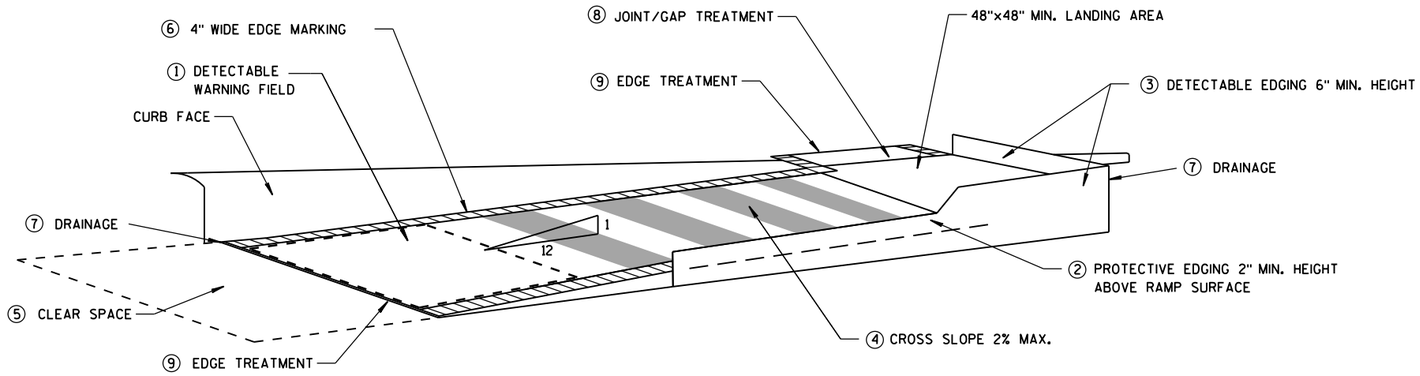
S.D.D. 15 D 30-3a



TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".

② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

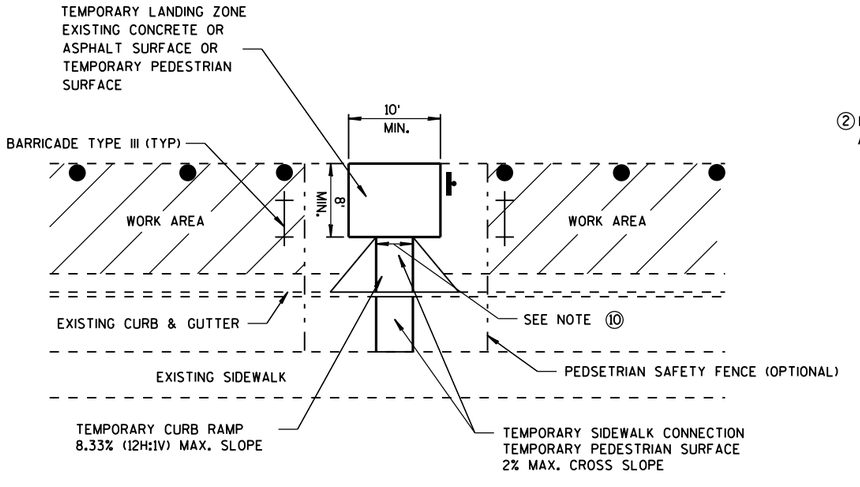
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

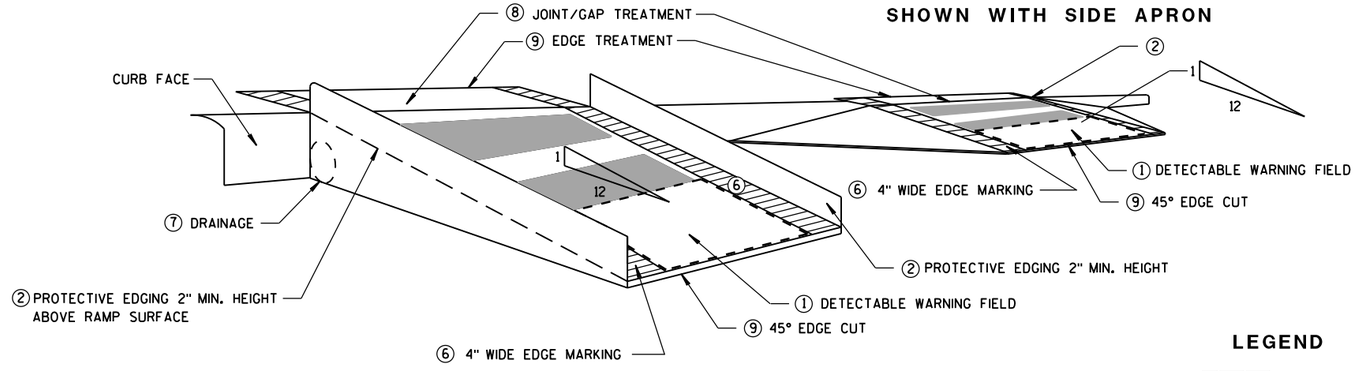
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

⑩ 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

LEGEND

WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER

FHWA

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S.D.D. 15 D 30-3b

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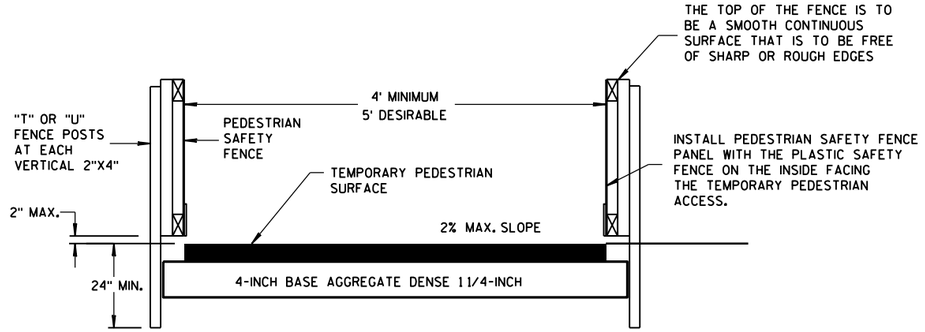
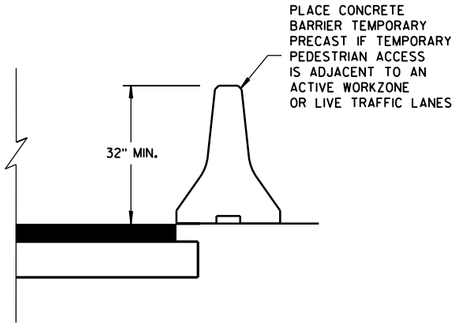
S.D.D. 15 D 30-3b

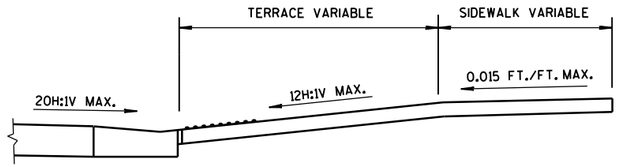




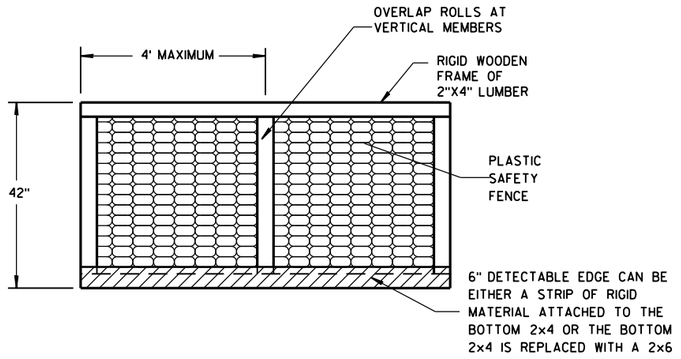
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

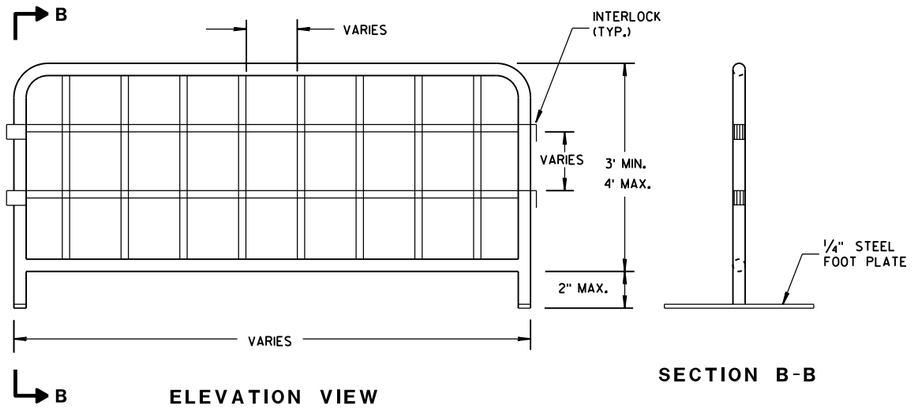
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



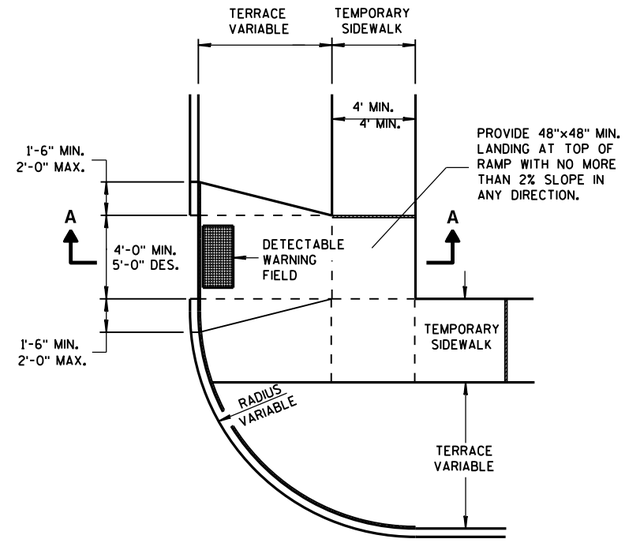
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

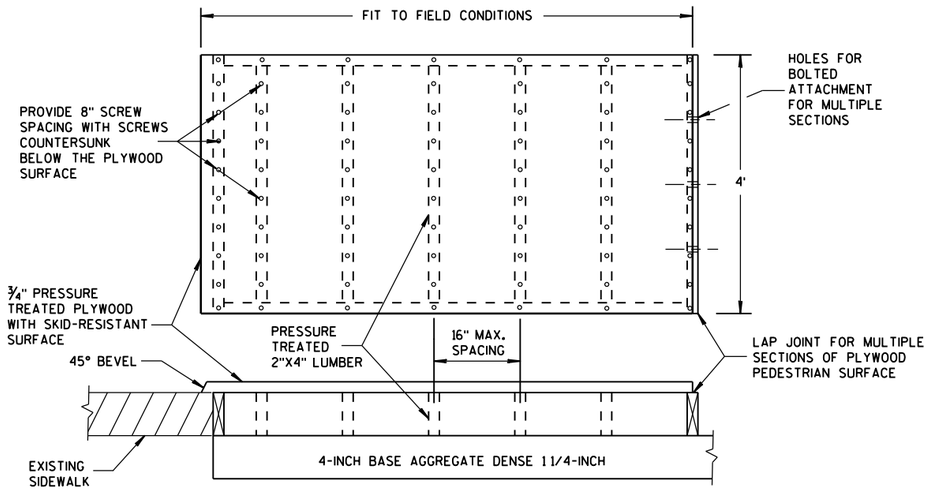
TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



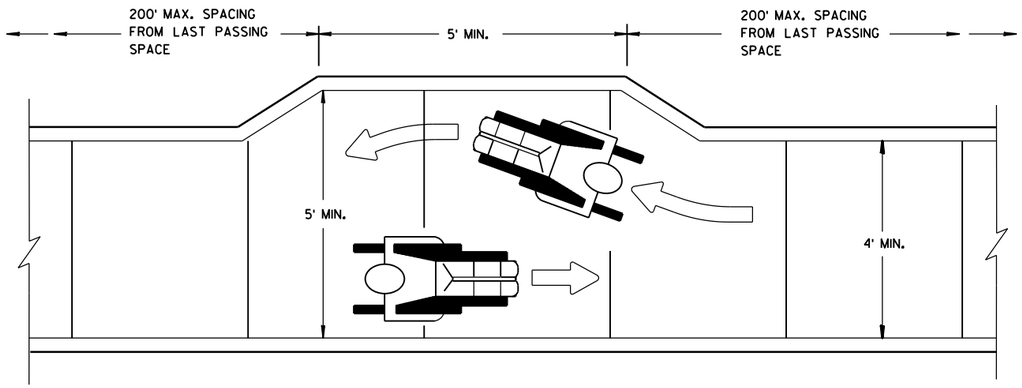
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZON IC
SAFETY ENGIN
FHWA

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S.D.D. 15 D 30-3c

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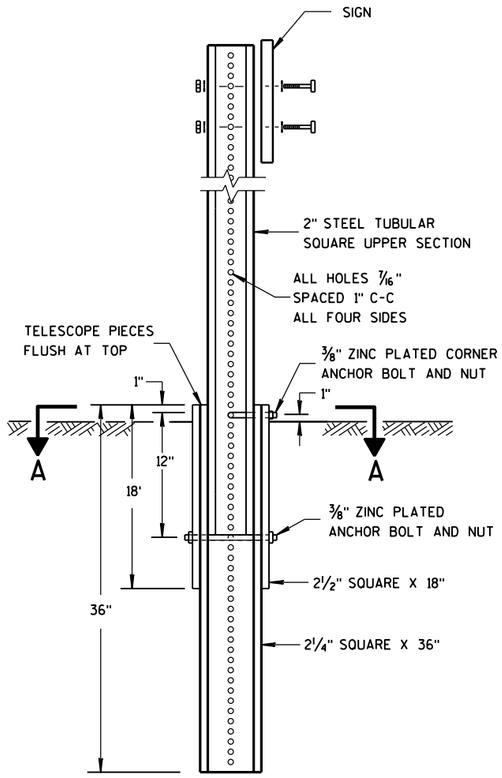
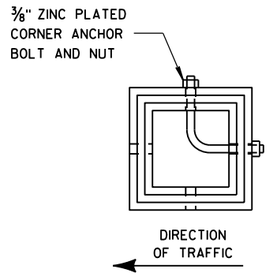
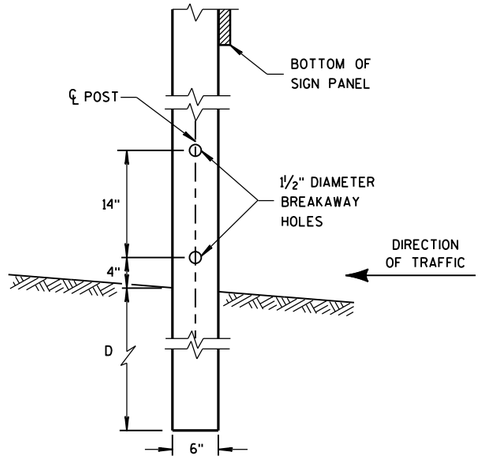
S.D.D. 15 D 30-3c



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



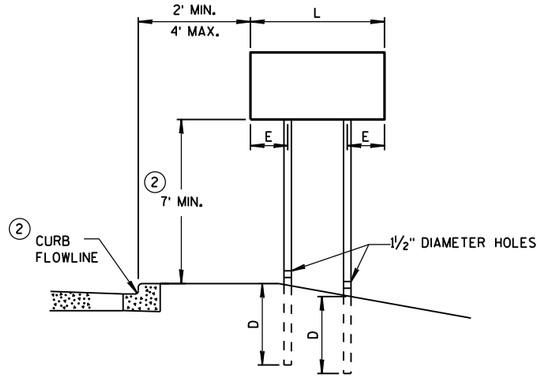
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

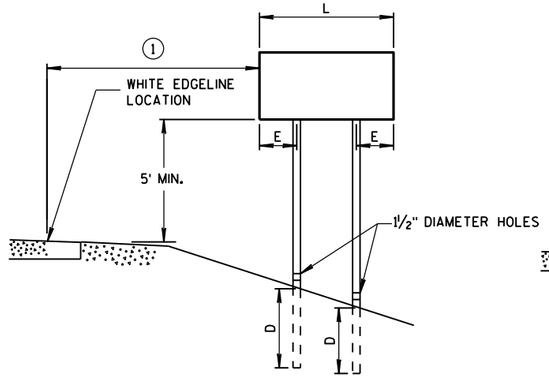
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

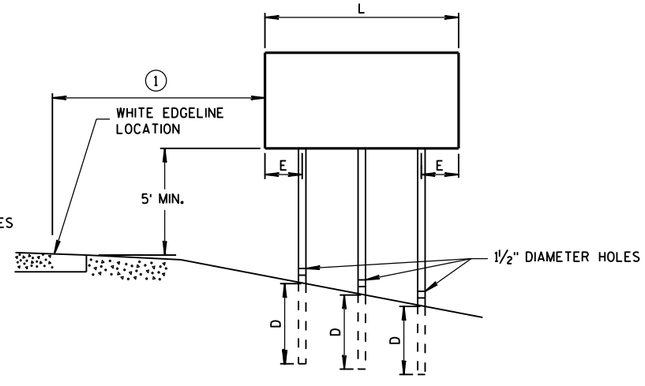
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

STATE OF WISCONSIN DEPARTMENT OF TRANSPO

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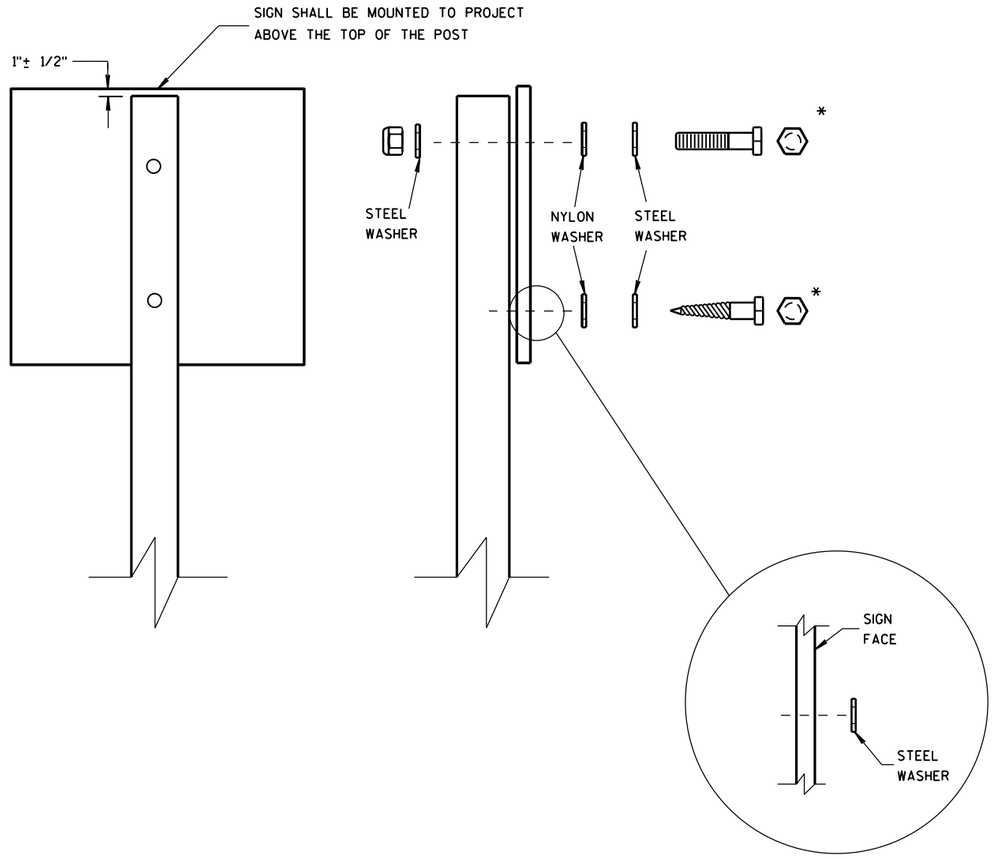
S.D.D. 15 D 38-1a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

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S.D.D. 15 D 38-1b

S.D.D. 15 D 38-1b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

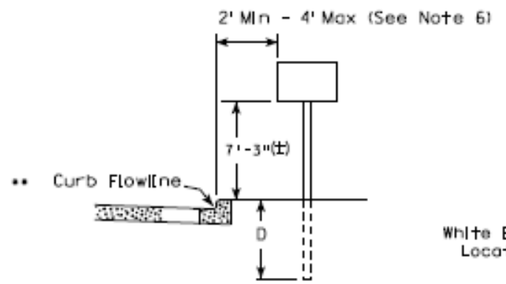
Feb. 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

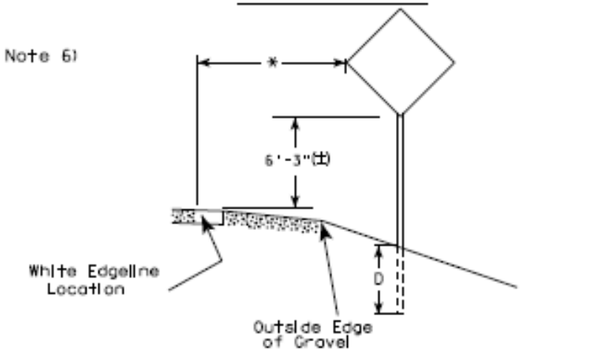
FHWA

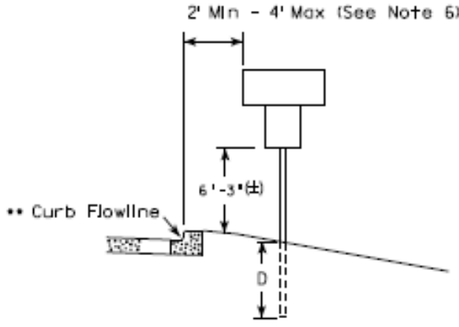
SIGN

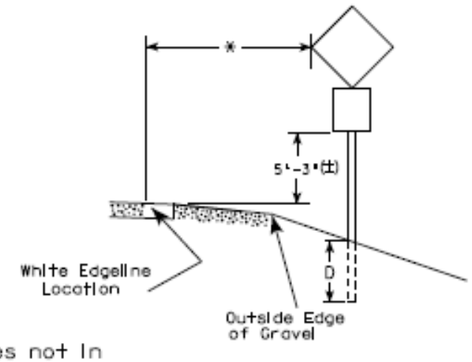
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

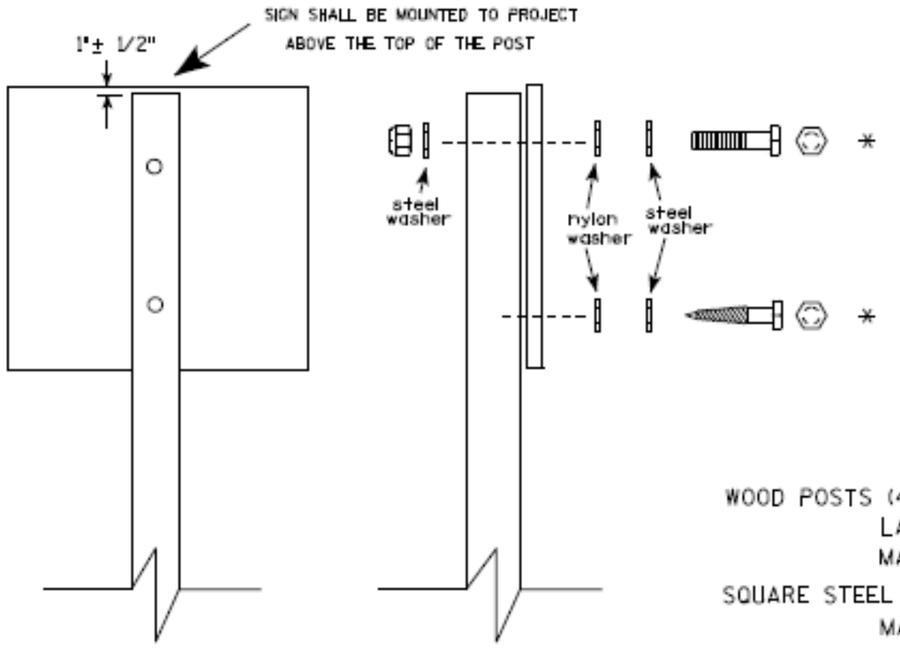
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 61	E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

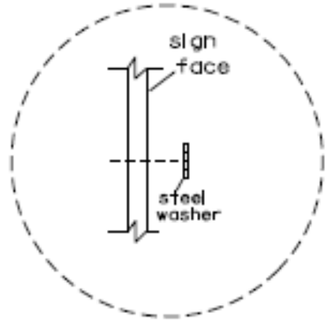
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
- MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
- RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
- 1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

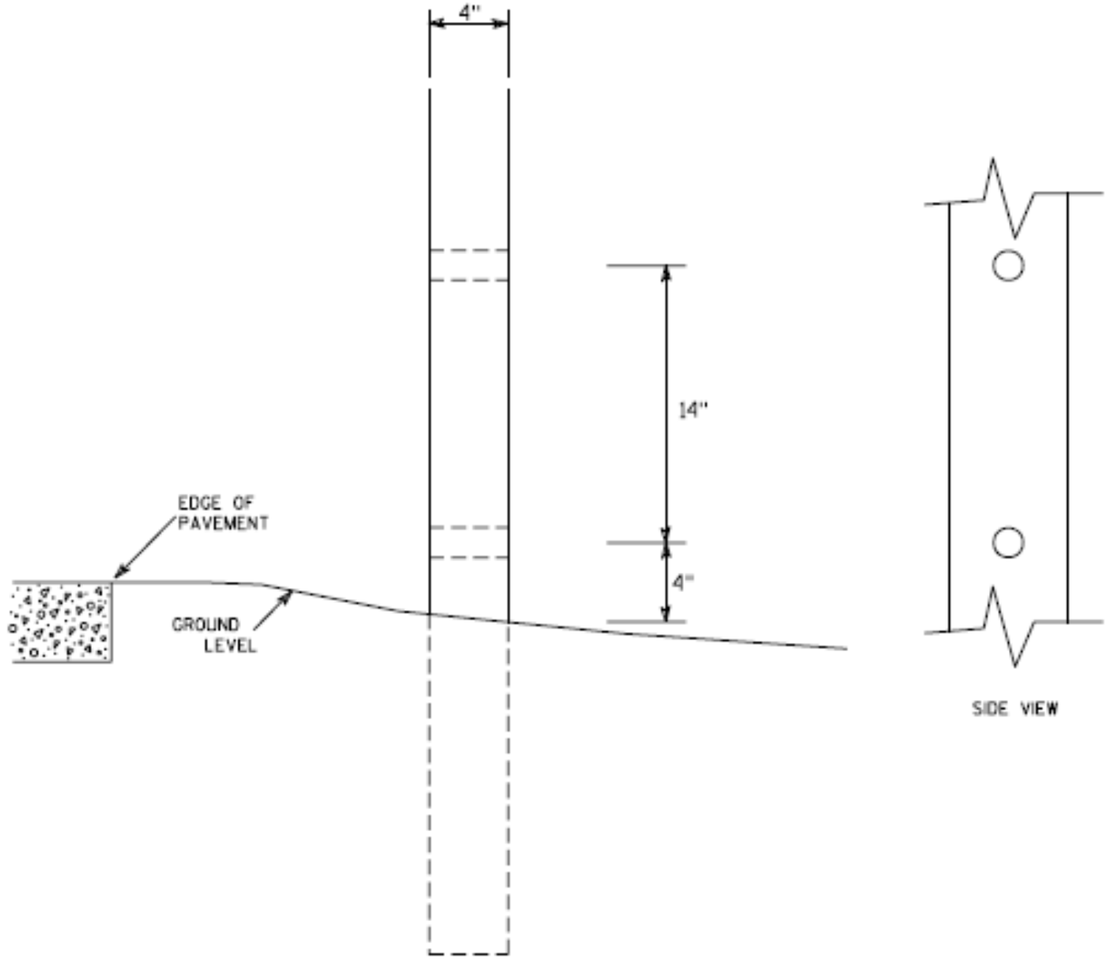
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 62	E



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

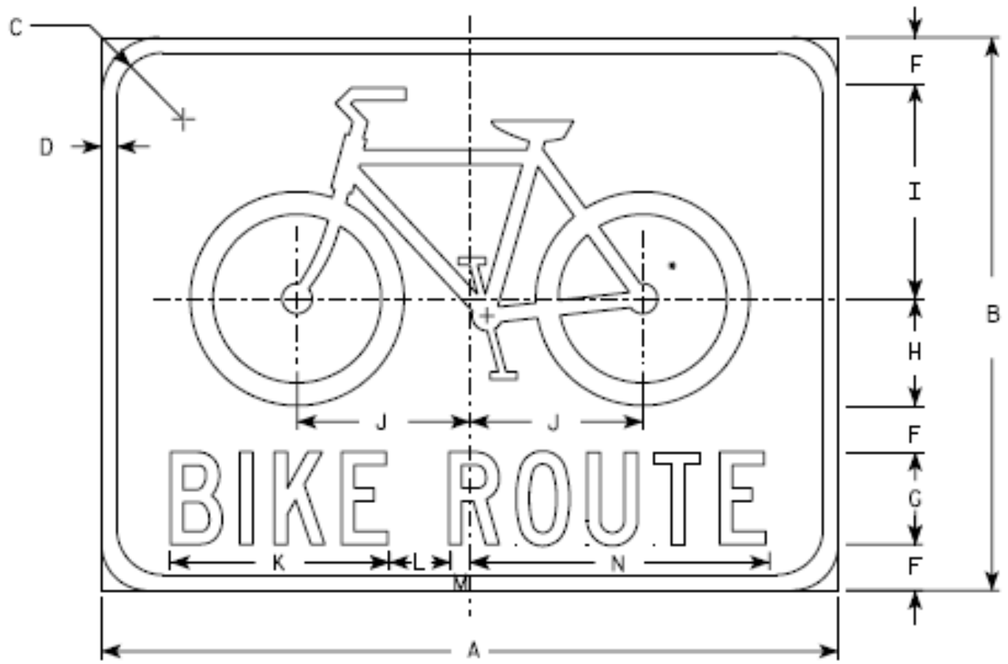
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED: Charles J Sippel for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 63	E



D11-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

* See W11-1 for symbol design

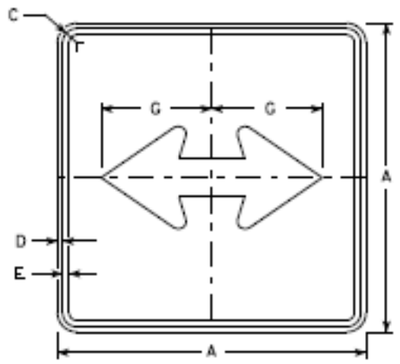
Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 450 mm
3	750 mm X 600 mm
4	
5	

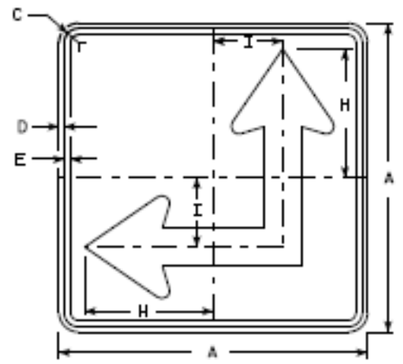
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m²
1																												
2	24	18	1 ½	½		1 ½	3	3 ½	7	5 ⅝	7 ⅛	2	⅝	9 ¾													3.0	0.27
3	30	24	1 ¼	⅝		2	4	4 ¾	9 ¼	7 ½	9 ½	2 ⅝	⅞	13													5.0	0.45
4																												
5																												

STANDARD SIGN
D11-1
WISCONSIN DEPT OF TRANSPORTATION
APPROVED Matthew R Rauch for State Traffic Engineer
DATE 3/24/04 PLATE NO. D11-11

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 64	E



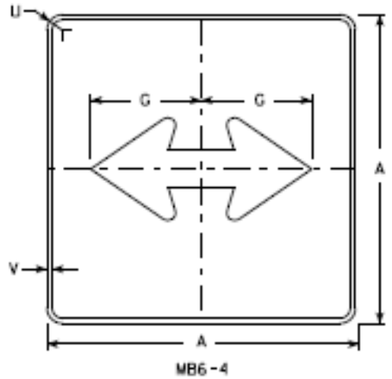
M6-4
MM6-4
MO6-4
MP6-4



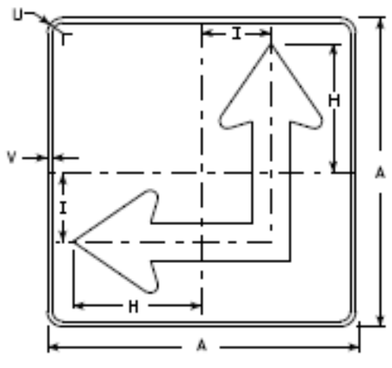
M6-6
MM6-6
MO6-6
MP6-6

NOTES

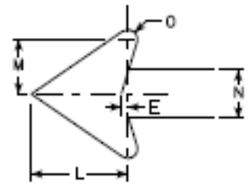
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White
   MK6-4 and MK6-6 Background - Green
   Message - White
   MM6-4 and MM6-6 Background - White
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow
5. M6-6R same as M6-6L except arrow points ahead and right.



MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 3/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 1/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 1/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 1/8	1/2					6.25

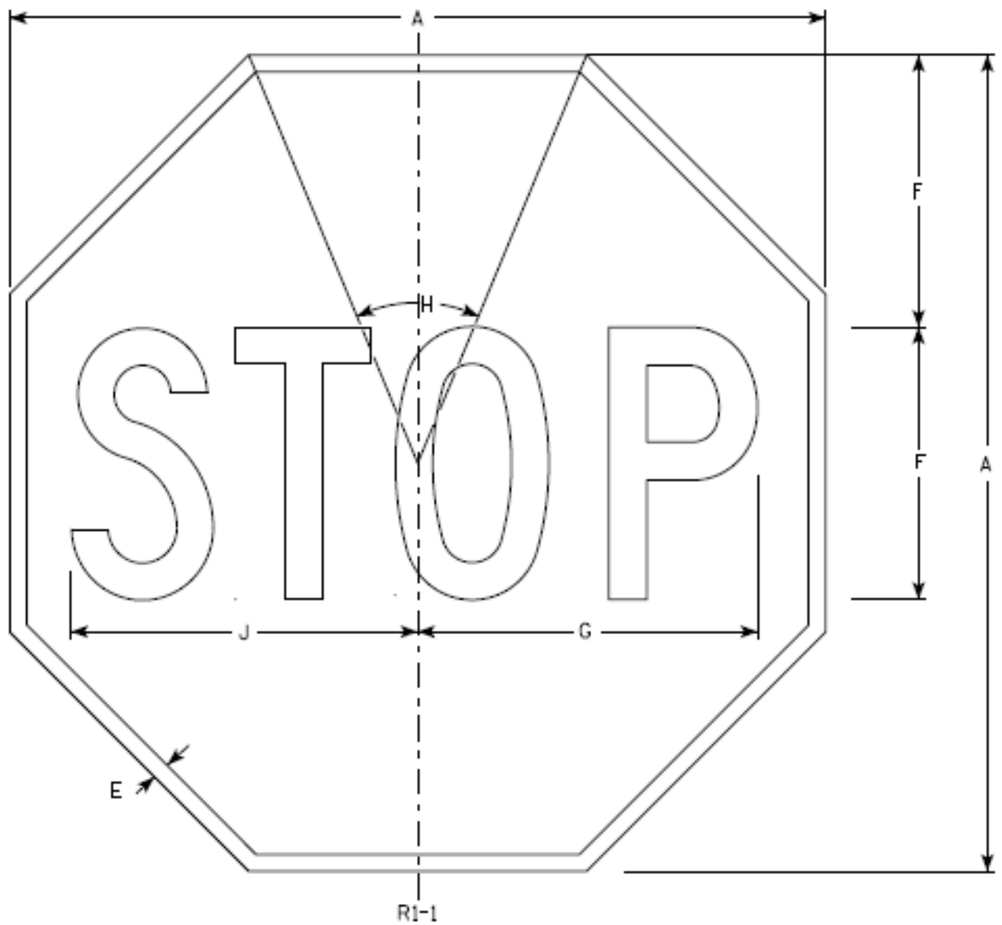
STANDARD SIGN
M6-4 & M6-6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew L Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 65	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

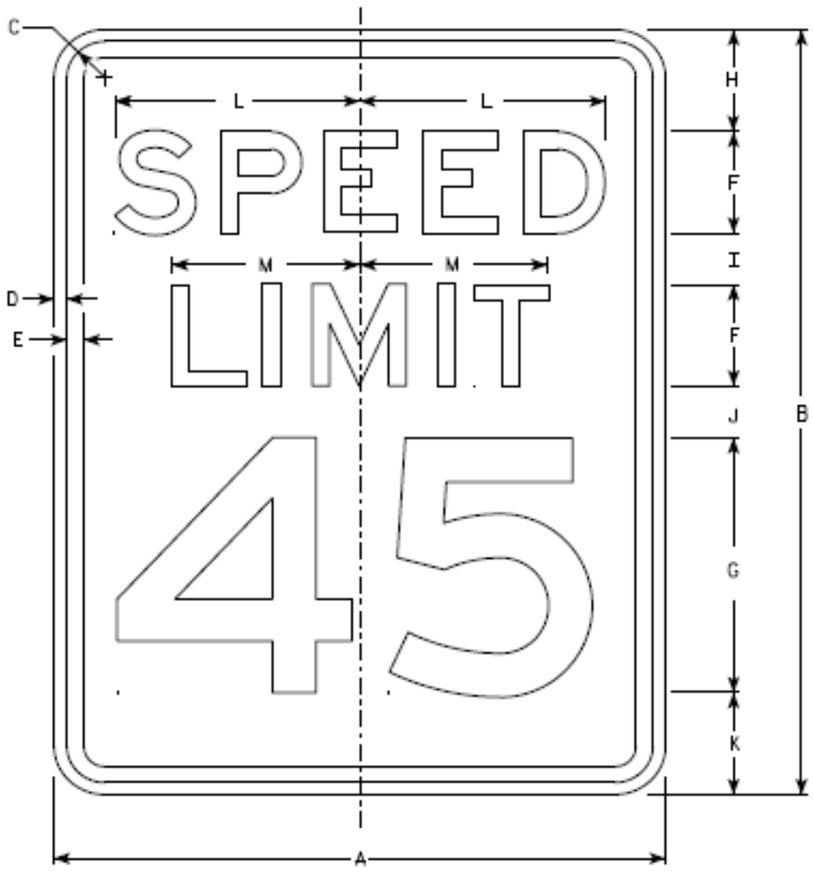
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.12

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 66	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Sq. Ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

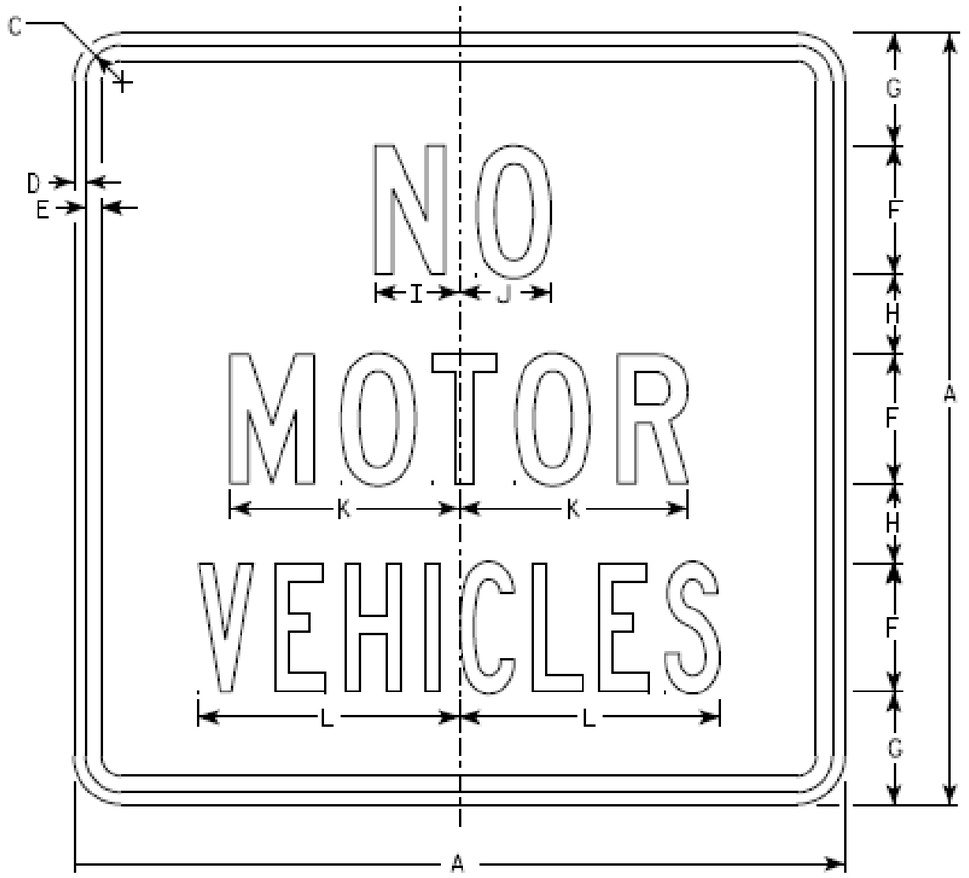
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.1S

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 67	E



R5-3

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - See Note 5.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 & 2 are Series C.
   Line 3 is Series B.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	ASR
1																											
2S	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8															4.0
2M	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8															4.0
3																											
4																											
5																											

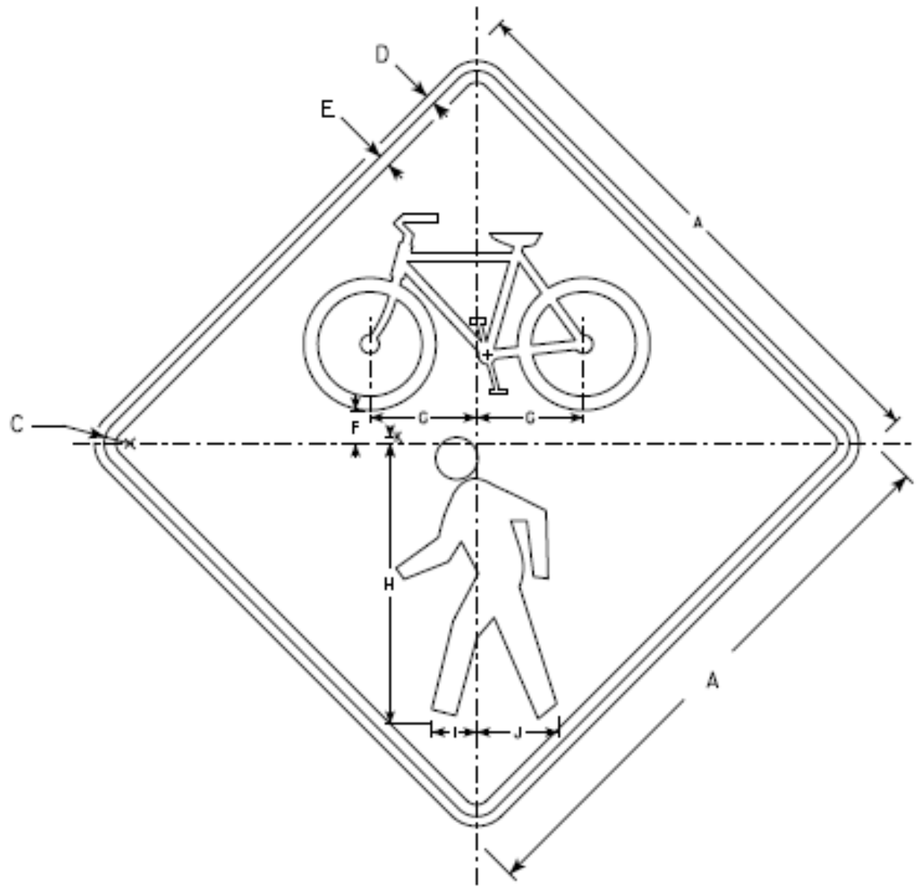
STANDARD SIGN
R5-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew L Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-3.2

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 68	E



W11-15

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	SQ. FT.
1	24		1 1/8	3/8	1/2	1 3/8	4 5/8	12	1 7/8	3 1/2	1/4																4.0
2S	30		1 3/8	1/2	5/8	1 3/4	5 3/4	15	2 3/8	4 3/8	3/8																6.25
2M	36		1 5/8	5/8	3/4	2 1/8	6 7/8	18	2 7/8	5 1/4	3/8																9.0
3	36		1 5/8	5/8	3/4	2 1/8	6 7/8	18	2 7/8	5 1/4	3/8																16.0
4	48		2 1/4	3/4	1	2 7/8	9 1/8	24	3 7/8	7	1/2																16.0
5																											

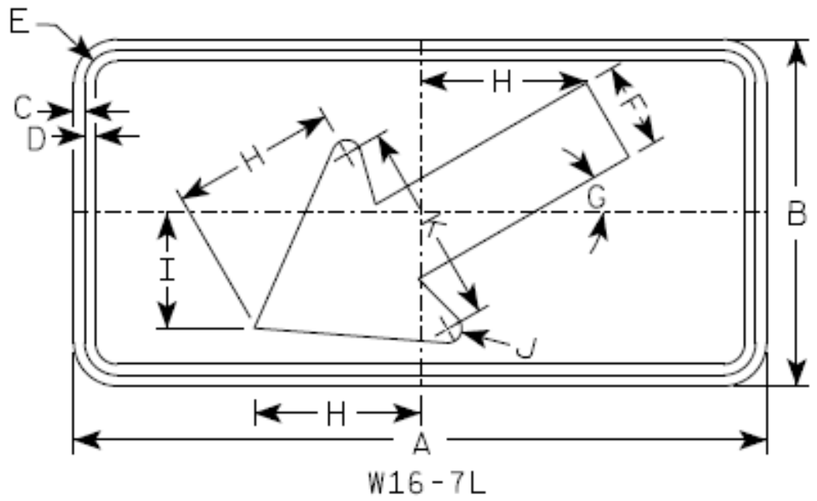
STANDARD SIGN
W11-15

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch
for State Traffic Engineer

DATE 2/13/14 PLATE NO. W11-15.4

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 69	E



W16-7L

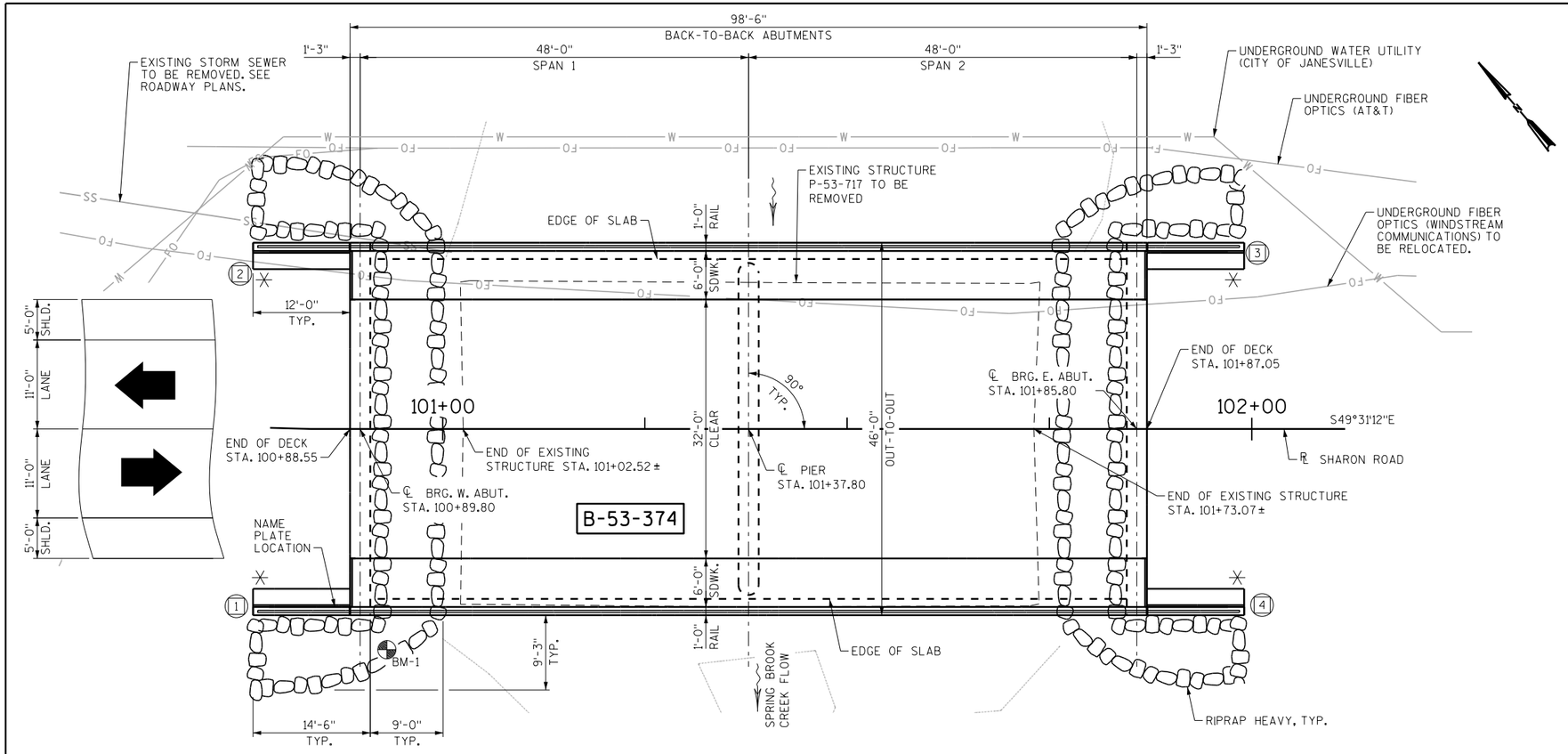
NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W16-7R is the same as W16-L except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	SQ. FT.
1																											
2S	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4																											8
5																											8

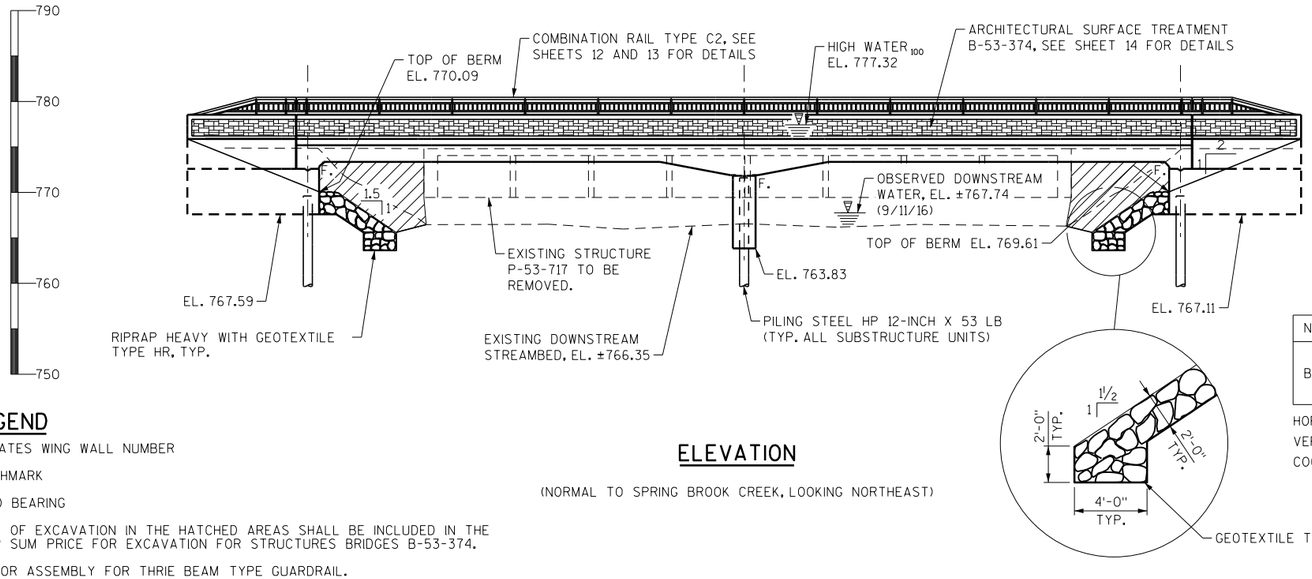
STANDARD SIGN
W16-7
WISCONSIN DEPT OF TRANSPORTATION
APPROVED Matthew R Rauch for State Traffic Engineer
DATE 11/02/10 PLATE NO. W16-7.5

PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	SIGN PLATES	SHEET NO: 70	E



PLAN

(TWO-SPAN HAUNCHED SLAB)



ELEVATION

(NORMAL TO SPRING BROOK CREEK, LOOKING NORTHEAST)

LEGEND

- (X) INDICATES WING WALL NUMBER
- BENCHMARK
- F. FIXED BEARING
- COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR EXCAVATION FOR STRUCTURES BRIDGES B-53-374.
- ANCHOR ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.03
OPERATING RATING FACTOR: RF = 1.33
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE.....f'c = 4,000 P.S.I.
CONCRETE MASONRY, SUBSTRUCTURE.....f'c = 3,500 P.S.I.
CONCRETE MASONRY, ALL OTHER.....f'c = 3,500 P.S.I.

HIGH STRENGTH BAR STEEL REINFORCEMENT GRADE 60.....fy = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS AND PIER TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO THE REQUIRED DRIVING RESISTANCE FOUND BELOW, PER PILE, AS DETERMINED BY THE MODIFIED GATES FORMULA.

	REQUIRED DRIVING RESISTANCE	ESTIMATED LENGTH
W. ABUT.	150 TONS **	70'-0"
PIER	210 TONS **	85'-0"
E. ABUT.	150 TONS **	70'-0"

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 5773 C.F.S.
Q_{BRIDGE} = 3167 C.F.S.
$Q_{ROADWAY}$ = 2606 C.F.S.
VEL. = 7.51 F.P.S.
HW_{100} = EL. 777.32
WATERWAY AREA = 721 SQ. FT.
DRAINAGE AREA = 50.7 SQ. MI.
SCOUR CRITICAL CODE = 5

ROAD OVERTOPPING FREQUENCY

FREQUENCY = 10 YEARS
Q_{10} = 2899 C.F.S.

2 YEAR FREQUENCY

Q_2 = 2175 C.F.S.
HW_2 = EL. 775.1

TRAFFIC VOLUME

SHARON ROAD

A.D.T. = 740 (2015)
A.D.T. = 820 (2037)
R.D.S. = 35 MPH

LIST OF DRAWINGS

BENCHMARK

NO.	STA./OFFSET	DESCRIPTION	ELEV.
BM-1	100+93.10, 27.27' RT	LARGE SPIKE IN TREE	773.42

HORIZONTAL DATUM AND ADJUSTMENT: NAD83
VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2007)
COORDINATE REFERENCE SYSTEM: WCCS ROCK COUNTY

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER, P.E. (608) 266-8489
CONSULTANT:
JEREMY HINDS, P.E. (262) 821-1171

WISCONSIN
JEREMY L. HINDS
E-38775
FRANKSVILLE, WI
PROFESSIONAL ENGINEER
7/14/2016

STATE PROJECT NUMBER
5990-00-32

NO.	DATE	REVISION	BY

KSingh Engineers Scientists Consultants

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/05/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-53-374

SHARON ROAD OVER SPRING BROOK CREEK

COUNTY	CITY
ROCK	JANESVILLE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
NLD	VJD	NLD	JLH

GENERAL PLAN AND ELEVATION

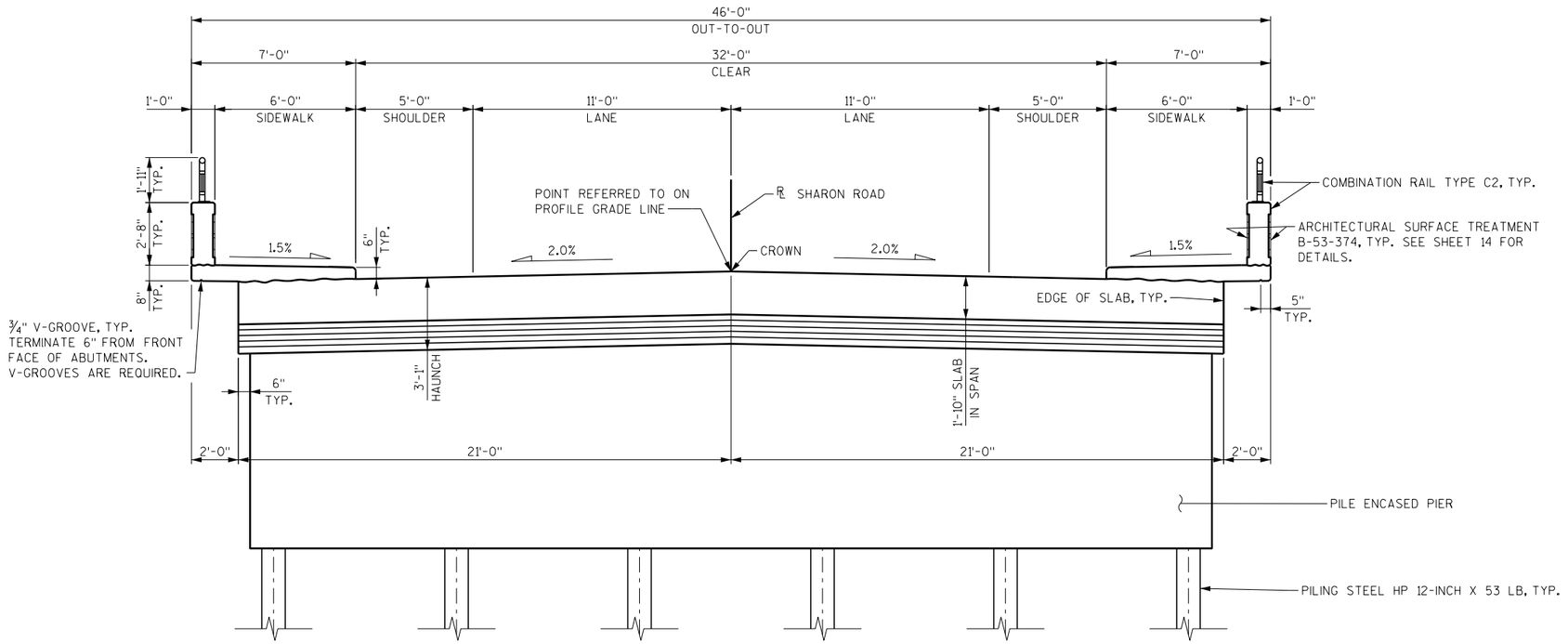
SHEET 1 OF 14
71

8

8

STATE PROJECT NUMBER

5990-00-32



CROSS SECTION THRU BRIDGE

(LOOKING NORTHEAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES ¾" UNLESS NOTED OTHERWISE.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

AT THE BACK FACE OF ABUTMENT, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMIT OF EXCAVATION FOR THE STRUCTURES.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY" AND GEOTEXTILE TYPE HR" TO THE EXTENTS SHOWN ON SHEET 1.

RIPRAP HEAVY SHALL BE PLACED PRIOR TO THE ERECTION OF THE FALSEWORK.

CONTRACTOR SHALL PLACE RIPRAP HEAVY TO AN ELEVATION BELOW STRUCTURE FALSEWORK TO ENSURE EVEN DISTRIBUTION IN SPRINGBROOK CREEK PRIOR TO POURING THE DECK.

THE STREAMBED IN FRONT OF THE ABUTMENT SHALL BE COVERED WITH RIPRAP HEAVY AS SHOWN ON SHEET 1.

THE EXISTING STREAMBED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIER.

THE QUANTITY FOR BACKFILL STRUCTURE TYPE A, BID ITEM 210.1500, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

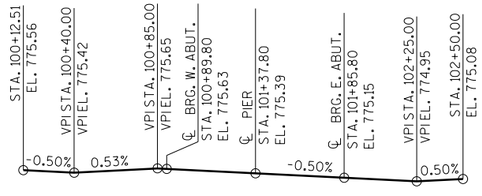
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP OF THE CONCRETE DECK AND SIDEWALK. SEE SHEET 14 FOR DETAILS.

EXISTING STRUCTURE P-53-717 IS TO BE REMOVED. IT IS AN EIGHT-CELL REINFORCED CONCRETE CULVERT, ±40'-0" WIDE, ±70'-6" LONG, AS SHOWN ON SHEET 1.

IF TOUCH UP STAINING IS REQUIRED AFTER INSTALLATION IS COMPLETE, ALL TOUCH UP STAINING IS TO BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	WEST ABUTMENT	PIER	EAST ABUTMENT	SUPER-STRUCTURE	TOTAL
203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY 101+37.80	LS	-	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-53-374	LS	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	314	-	314	-	628
502.0100	CONCRETE MASONRY BRIDGES	CY	54	31	54	353	492
502.3200	PROTECTIVE SURFACE TREATMENT	SY	17	-	17	481	515
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,550	-	2,550	-	5,100
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,030	1,590	2,040	63,520	69,180
513.7011	RAILING STEEL TYPE C2 B-53-374	LF	22	-	22	197	241
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	13	-	13	-	26
517.1010.S	CONCRETE STAINING B-53-374	SF	345	497	345	1,453	2,640
517.1015.S	CONCRETE STAINING MULTI-COLOR B-53-374	SF	85	-	85	723	893
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-53-374	SF	85	-	85	723	893
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	525	850	525	-	1,900
606.0300	RIPRAP HEAVY	CY	85	-	85	-	170
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	-	100	-	200
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	-	2	-	4
645.0120	GEOTEXTILE TYPE HR	SY	105	-	105	-	210
	NON BID ITEMS						
	PREFORMED JOINT FILLER	SIZE	-	-	-	-	1/2" & 3/4"
	NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER	SIZE	-	-	-	-	1"



PROFILE GRADE LINE - SHARON ROAD

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

CROSS SECTION, QUANTITIES, AND GENERAL NOTES

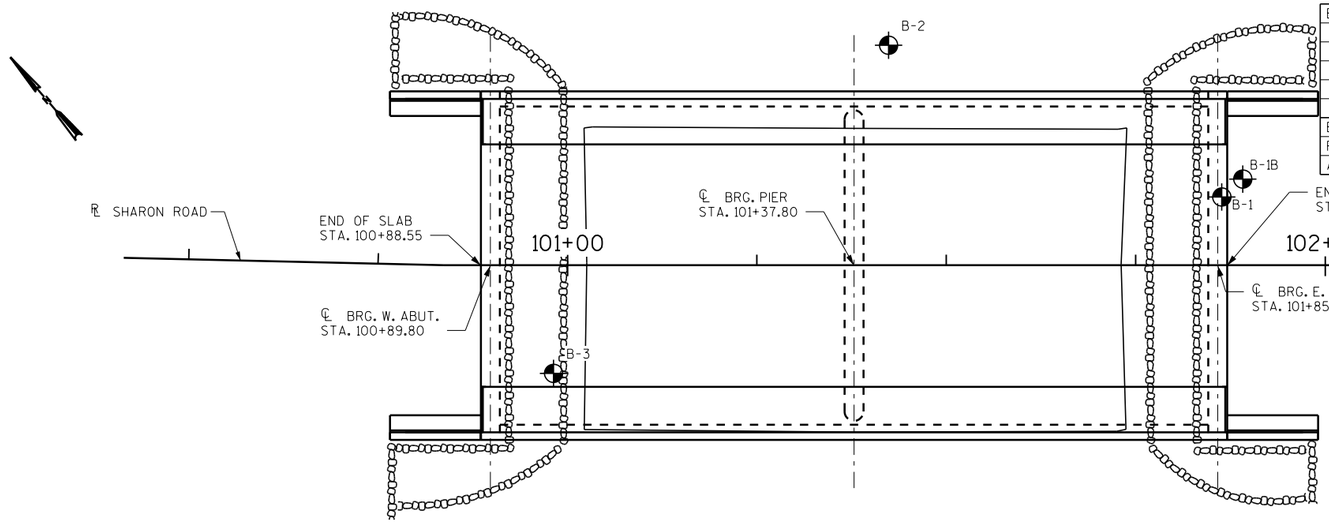
SHEET 2 OF 14
72

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	10/08/2015	264814.408	499193.353
1B	2/18/2016	264814.410	499197.000
2	10/12/2015	264858.189	499172.905
3	10/09/2015	264853.962	499111.159

BORINGS COMPLETED BY: SOILS & ENGINEERING SERVICES, INC.
REPORT COMPLETED BY: K. SINGH & ASSOCIATES, INC.
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) ROCK COUNTY



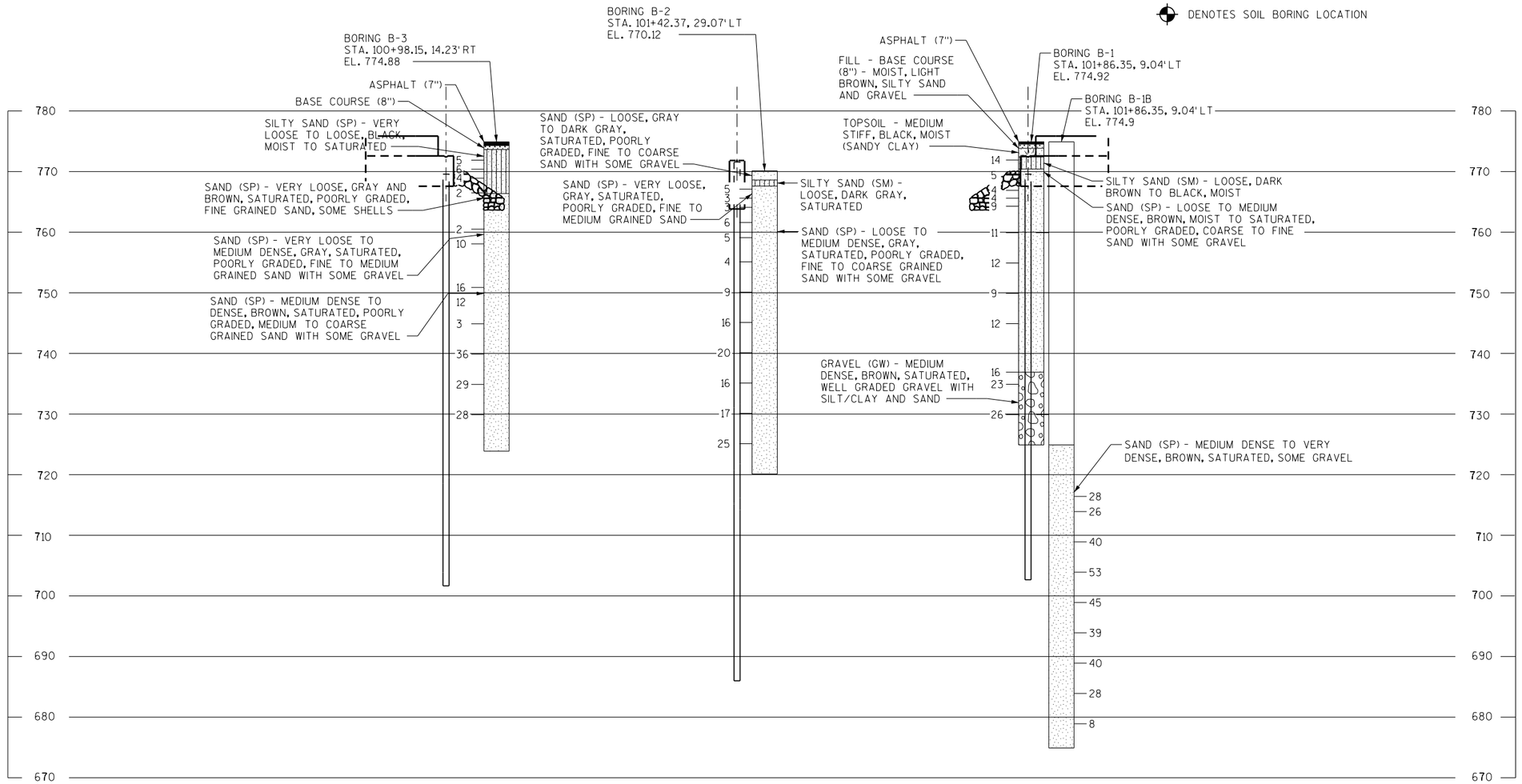
NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON ℄ SHARON ROAD.

LEGEND

DENOTES SOIL BORING LOCATION



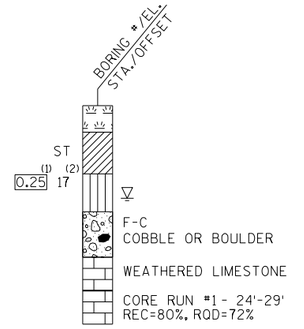
STATE PROJECT NUMBER

5990-00-32

MATERIAL SYMBOLS

ASPHALT, TOPSOIL, PEAT, CONCRETE, FILL, GRAVEL, SAND, CLAY, SILT, BOULDERS OR COBBLES, LIMESTONE, BEDROCK (UNKNOWN), SHALE, SANDSTONE, IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

SUBSURFACE EXPLORATION

SHEET 3 OF 14
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STATE PROJECT NUMBER

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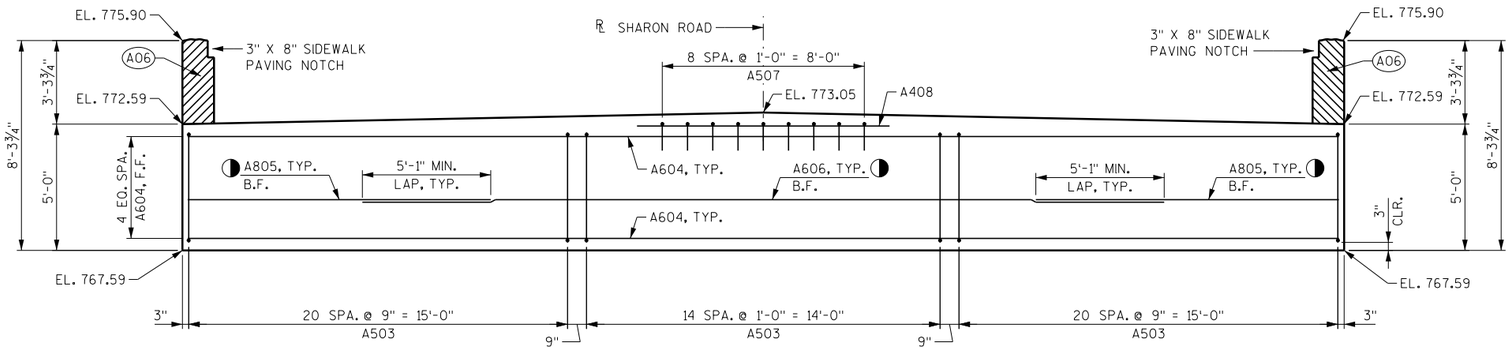
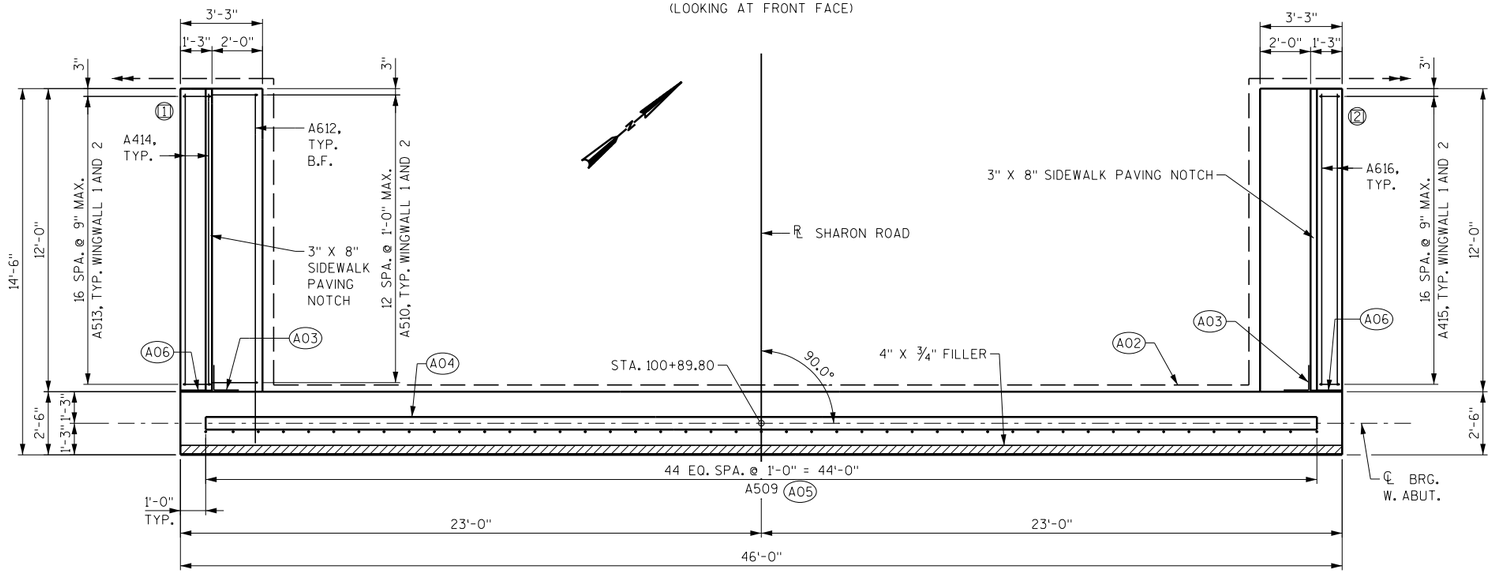
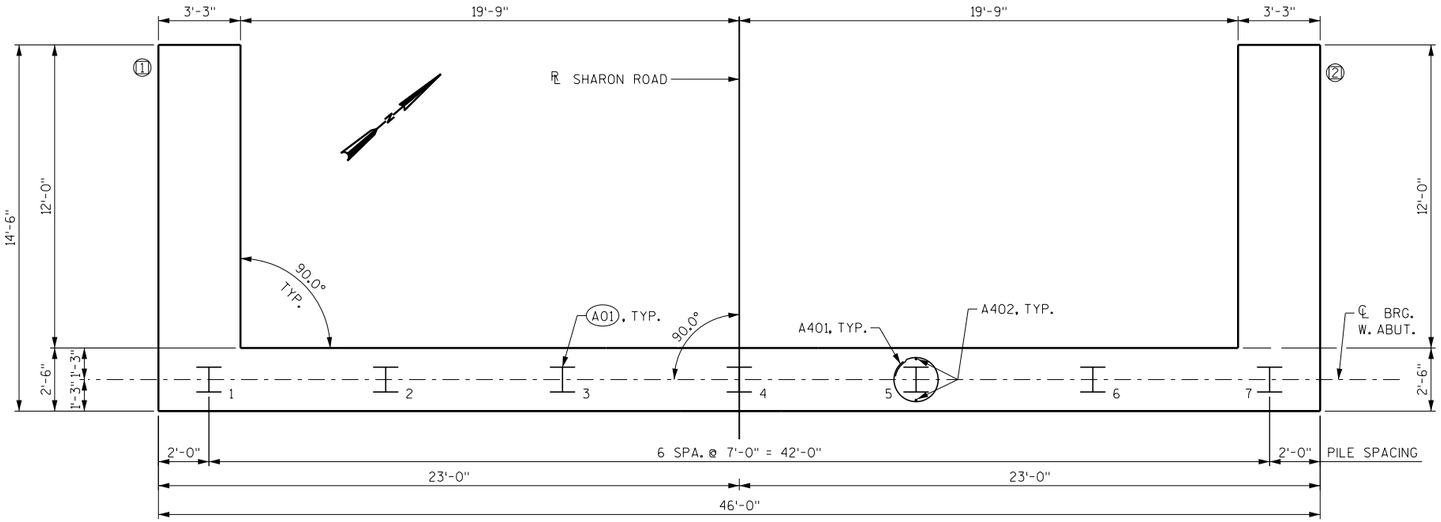


ELEVATION

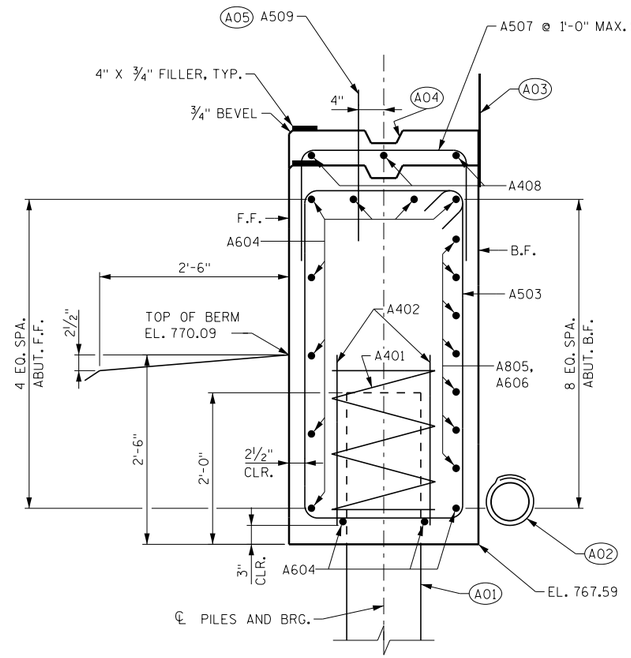
(LOOKING AT FRONT FACE)



PLAN



PILE LAYOUT



TYPICAL SECTION THRU BODY

LEGEND

(A01) SUPPORT ABUTMENT ON PILING STEEL HP 12-INCH X 53 LB". ESTIMATED LENGTH 70'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

(A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 5 FOR DETAILS. PLACE ABOVE OBSERVED WATER ELEVATION.

(A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A04) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".

(A05) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".

(A06) ½" FILLER - EXTEND FROM SEAT TO TOP OF VERTICAL CONCRETE PARAPET. FILLER INCLUDED ON WING LENGTH.

◑ SEE "TYPICAL SECTION THRU BODY" ON THIS SHEET FOR SPACING.

(X) INDICATES WINGWALL NUMBER

F.F. FRONT FACE

B.F. BACK FACE

NOTES

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

FOR PILE SPLICE DETAIL, SEE SHEET 7.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

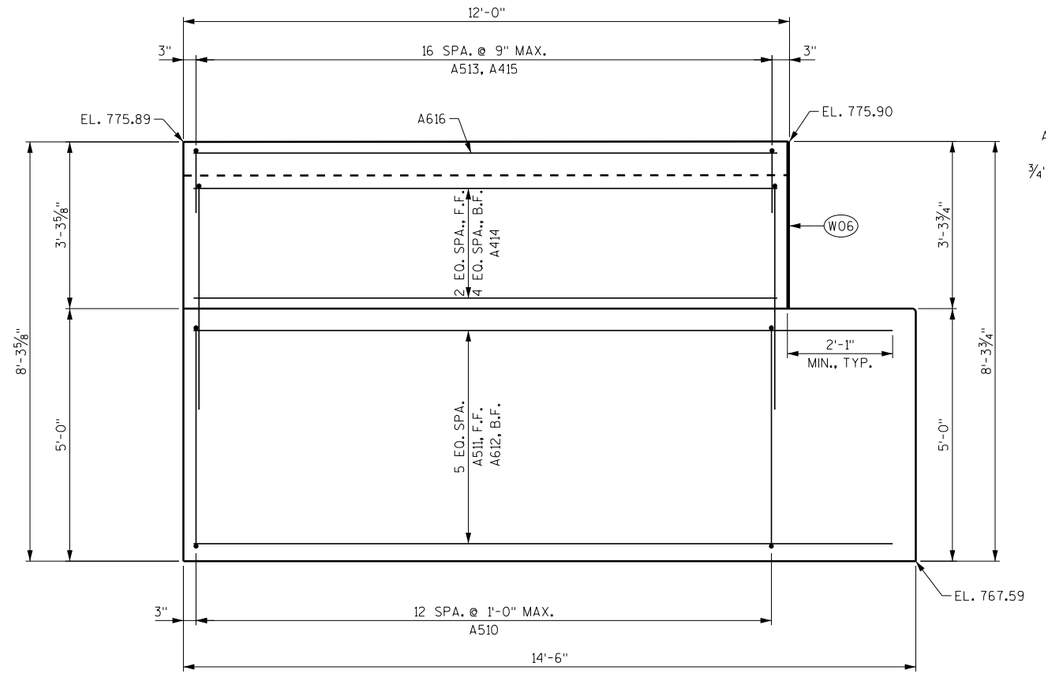
WEST ABUTMENT

SHEET 4 OF 14
74

8

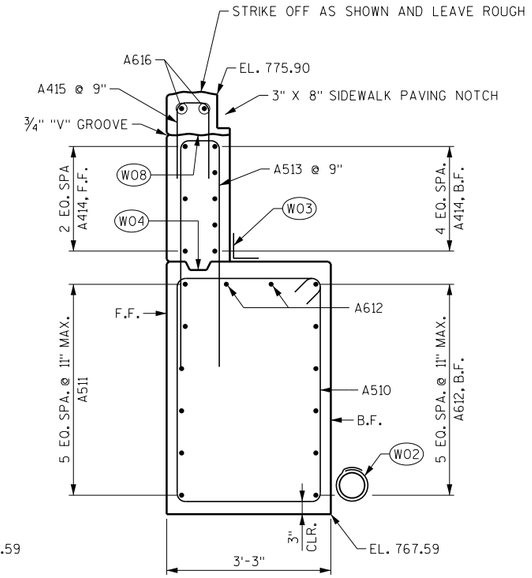
8

FILE NAME : P:\8508 Sharon Road Bridge\Structural\CADD\Sheet\B-53-0374_04_West Abutment.dgn PLOT DATE : 7/14/2016 2:45:39 PM PLOT BY : ndecent PLOT SCALE : 6.000000 sf / in.



WING ELEVATION

(WING 1 SHOWN, WING 2 SIMILAR)



SECTION THRU WING

LEGEND

(W02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET. PLACE ABOVE OBSERVED WATER ELEVATION.

(W03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(W04) OPTIONAL CONST. JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.

(W06) ½" FILLER - EXTEND FROM SEAT TO TOP OF VERTICAL CONCRETE PARAPET. FILLER INCLUDED ON WING LENGTH.

(W07) FOR PARAPET REINFORCEMENT ON WINGWALLS, SEE SHEET 12.

(W08) OPTIONAL CONST. JOINT, LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. IF JOINT IS USED, UTILIZE RUBBERIZE MEMBRANE WATERPROOFING (COST INCIDENTAL TO BID ITEM CONCRETE MASONRY BRIDGES).

F.F. FRONT FACE

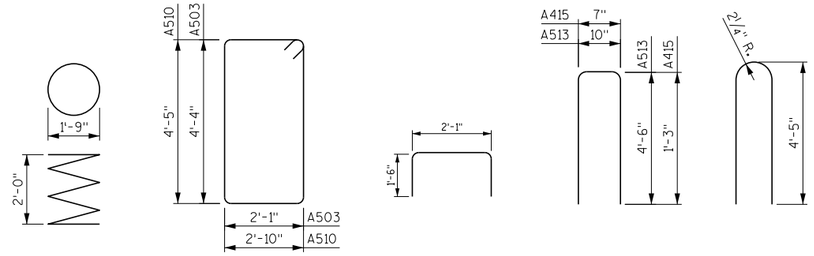
B.F. BACK FACE

NOTE

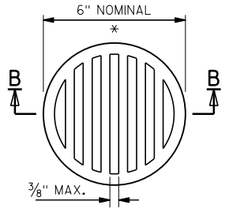
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

W. ABUT. - BILL OF BARS						UNCOATED = 2550 LBS
MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	COATED = 2030 LBS LOCATION
A401		7	28'-0"		X	BODY - AT PILES
A402		14	2'-3"			BODY - AT PILES
A503		57	13'-5"		X	BODY - VERTICAL
A604		11	45'-6"			BODY - HORIZONTAL, F.F., TOP, BOTTOM
A805		14	12'-0"			BODY - HORIZONTAL, B.F.
A606		7	31'-9"			BODY - HORIZONTAL, B.F.
A507		9	4'-10"		X	BODY - VERTICAL - MID SLAB SEAT
A408		3	10'-0"			BODY - HORIZONTAL - MID SLAB SEAT
A509	X	45	2'-0"			BODY - VERTICAL DOWELS
A510	X	26	15'-1"		X	WING - BODY - VERTICAL STIRRUP
A511	X	12	13'-11"			WING - BODY - HORIZONTAL, F.F.
A612	X	16	13'-11"			WING - BODY - HORIZONTAL
A513	X	34	9'-7"		X	WING - STEM - VERTICAL
A414	X	16	11'-6"			WING - STEM - HORIZONTAL
A415	X	34	3'-5"		X	WING - STEM - VERTICAL AT SIDEWALK NOTCH
A616	X	4	11'-6"			WING - STEM - HORIZONTAL AT SIDEWALK NOTCH
(W07) A517	X	32	9'-5"		X	PARAPET - VERTICAL DOWEL
(W07) A418	X	12	11'-7"			PARAPET - HORIZONTAL

BENDING DIMENSIONS ARE OUT-TO-OUT OF BARS



A401 A503, A510 A507 A513, A415 A517



SECTION B-B

RODENT SHIELD DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM PIPE UNDERDRAIN WRAPPED 6-INCH.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

STATE PROJECT NUMBER

5990-00-32

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

WEST ABUTMENT DETAILS

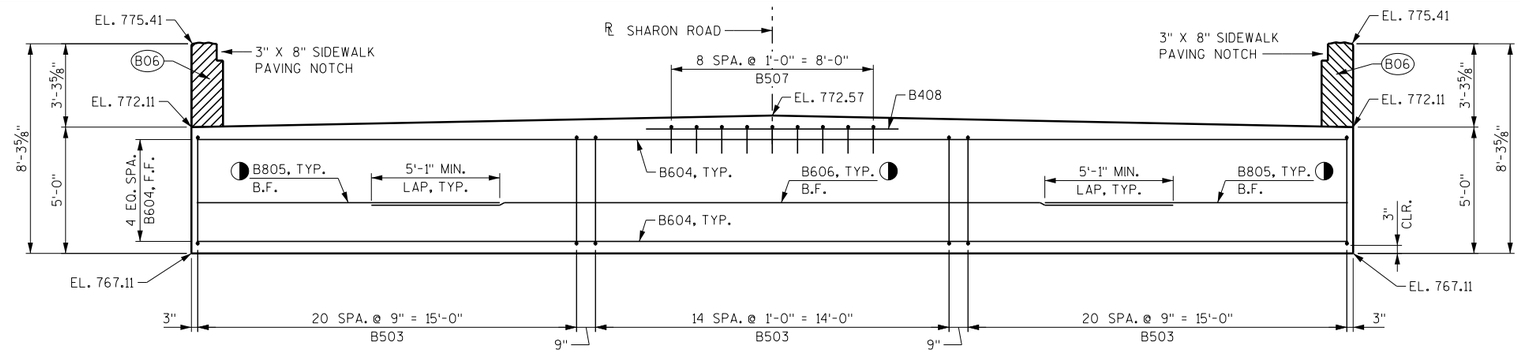
SHEET 5 OF 14
75

8

8

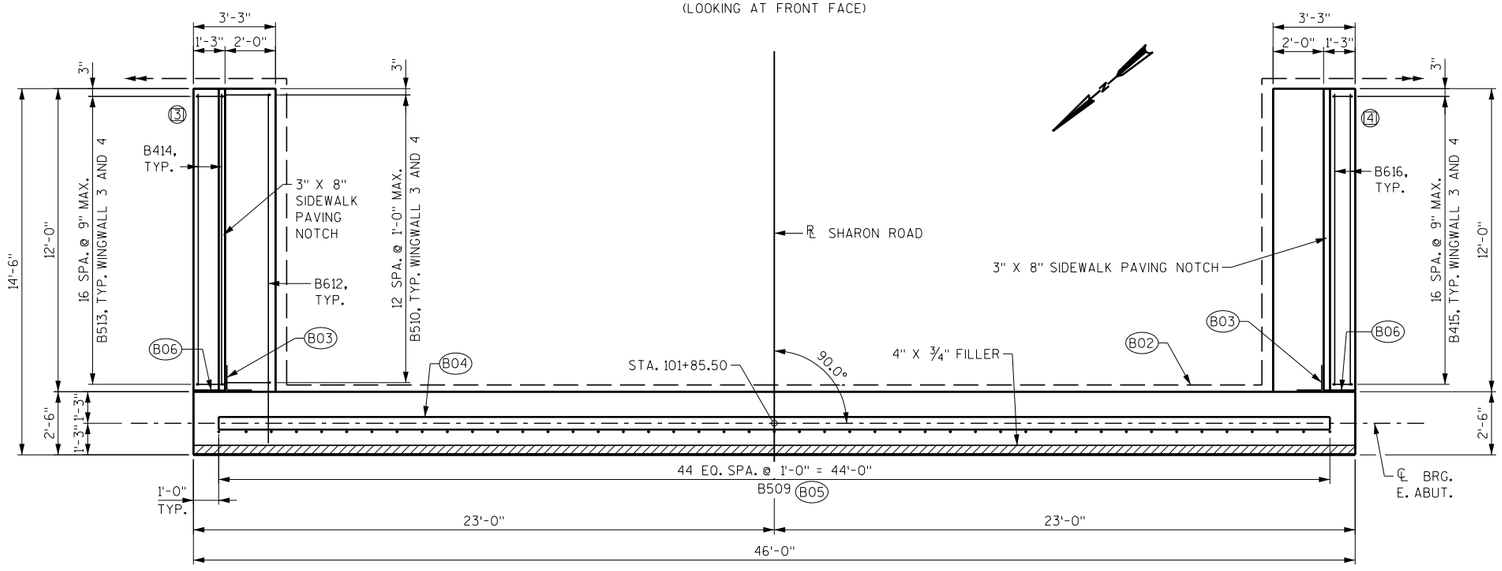
STATE PROJECT NUMBER

5990-00-32

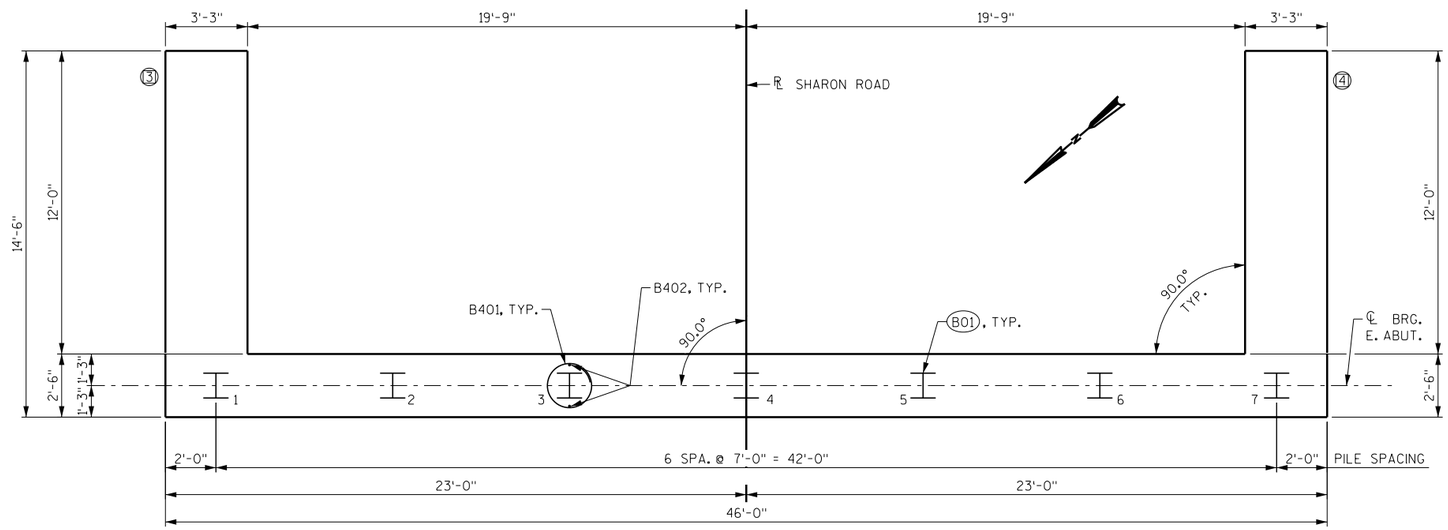


ELEVATION

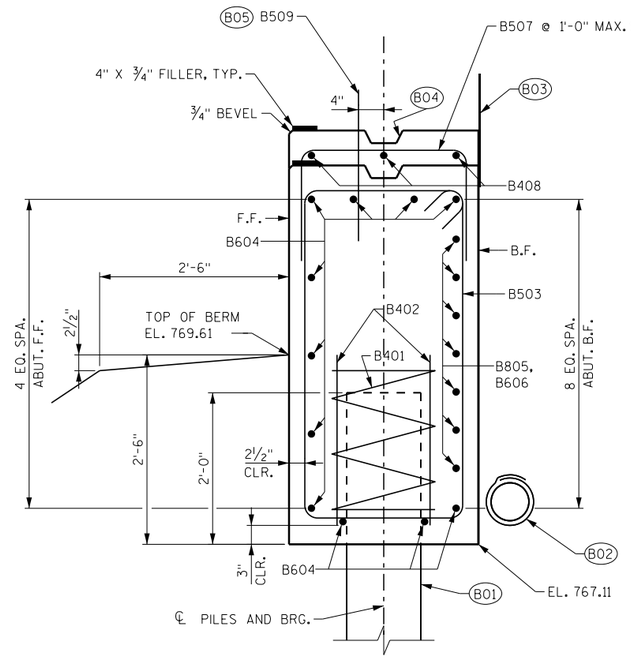
(LOOKING AT FRONT FACE)



PLAN



PILE LAYOUT



TYPICAL SECTION THRU BODY

LEGEND

(B01) SUPPORT ABUTMENT ON PILING STEEL HP 12-INCH X 53 LB. ESTIMATED LENGTH 70'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

(B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 5 FOR DETAILS. PLACE ABOVE OBSERVED WATER ELEVATION.

(B03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(B04) KEYED CONST. JOINT FORMED BY BEVELED 2" X 6".

(B05) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".

(B06) ½" FILLER - EXTEND FROM SEAT TO TOP OF VERTICAL CONCRETE PARAPET. FILLER INCLUDED ON WING LENGTH.

◑ SEE "TYPICAL SECTION THRU BODY" ON THIS SHEET FOR SPACING.

(X) INDICATES WINGWALL NUMBER

F.F. FRONT FACE

B.F. BACK FACE

NOTES

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

FOR PILE SPLICE DETAIL, SEE SHEET 7.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

EAST ABUTMENT

SHEET 6 OF 14
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8

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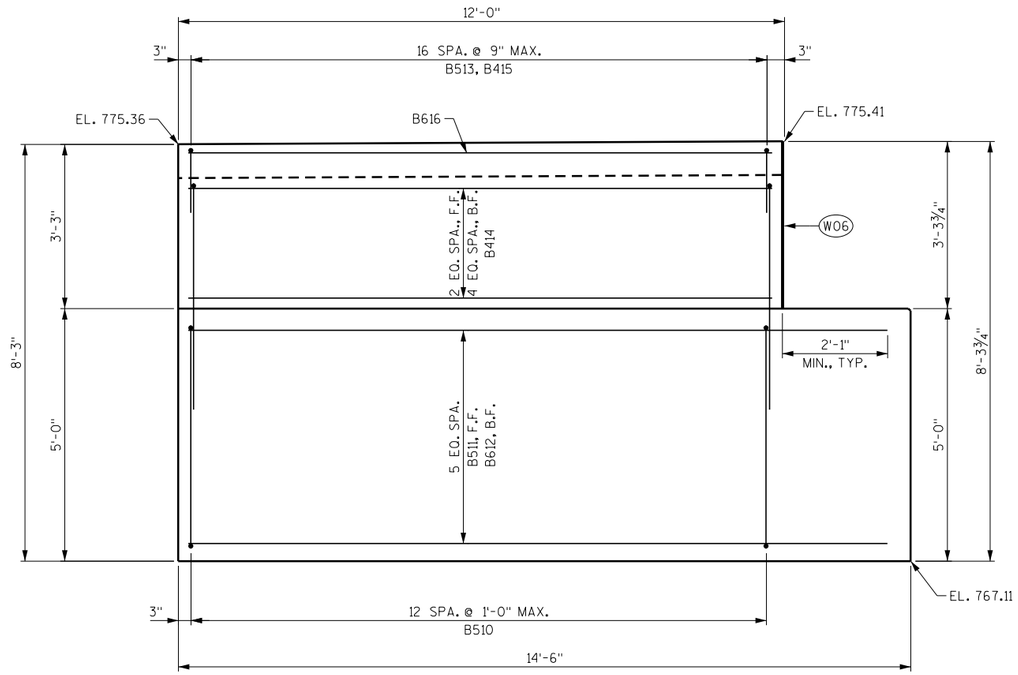
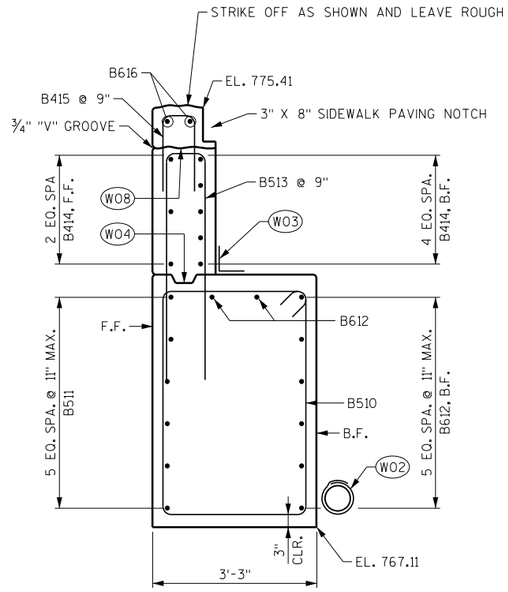
STATE PROJECT NUMBER

5990-00-32



WING ELEVATION

(WING 3 SHOWN, WING 4 SIMILAR)



SECTION THRU WING

LEGEND

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(W08) OPTIONAL CONST. JOINT, LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. IF JOINT IS USED, UTILIZE RUBBERIZE MEMBRANE WATERPROOFING (COST INCIDENTAL TO BID ITEM CONCRETE MASONRY BRIDGES).

F.F. FRONT FACE

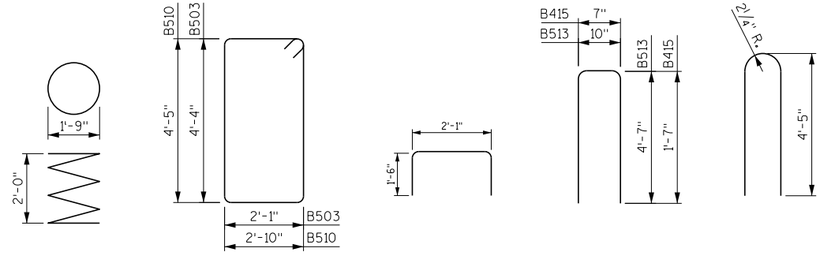
B.F. BACK FACE

NOTE

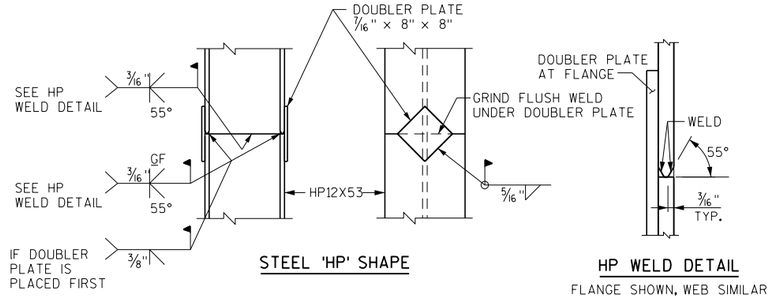
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

E. ABUT. - BILL OF BARS						UNCOATED = 2550 LBS
MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	COATED = 2040 LBS LOCATION
B401		7	28'-0"		X	BODY - AT PILES
B402		14	2'-3"			BODY - AT PILES
B503		57	13'-5"		X	BODY - VERTICAL
B604		11	45'-6"			BODY - HORIZONTAL, F.F., TOP, BOTTOM
B805		14	12'-0"			BODY - HORIZONTAL, B.F.
B606		7	31'-9"			BODY - HORIZONTAL, B.F.
B507		9	4'-10"		X	BODY - VERTICAL - MID SLAB SEAT
B408		3	10'-0"			BODY - HORIZONTAL - MID SLAB SEAT
B509	X	45	2'-0"			BODY - VERTICAL DOWELS
B510	X	26	15'-1"		X	WING - BODY - VERTICAL STIRRUP
B511	X	12	13'-11"			WING - BODY - HORIZONTAL, F.F.
B612	X	16	13'-11"			WING - BODY - HORIZONTAL
B513	X	34	9'-9"		X	WING - STEM - VERTICAL
B414	X	16	11'-6"			WING - STEM - HORIZONTAL
B415	X	34	3'-7"		X	WING - STEM - VERTICAL AT SIDEWALK NOTCH
B616	X	4	11'-6"			WING - STEM - HORIZONTAL AT SIDEWALK NOTCH
(W07) B517	X	32	9'-5"		X	PARAPET - VERTICAL DOWEL
(W07) B418	X	12	11'-7"			PARAPET - HORIZONTAL

BENDING DIMENSIONS ARE OUT-TO-OUT OF BARS



B401 B503, B510 B507 B513, B415 B517



STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

EAST ABUTMENT DETAILS

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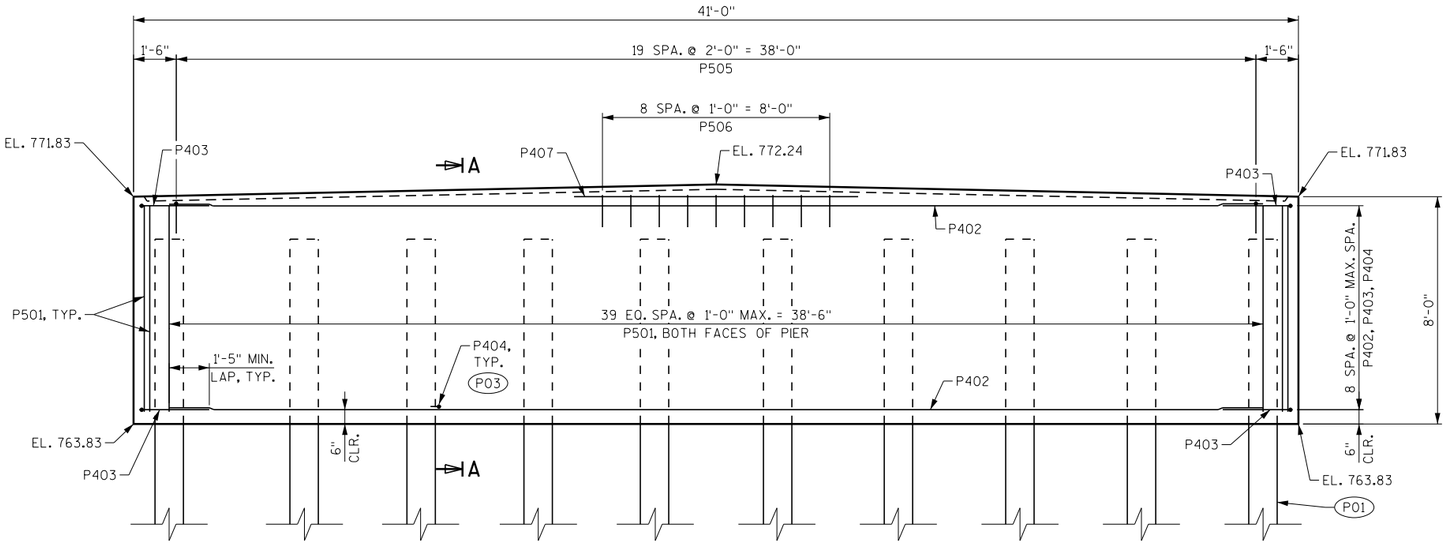
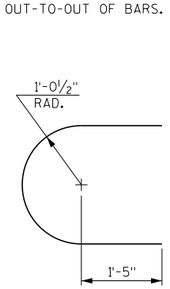


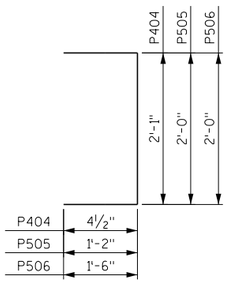
ELEVATION

PIER - BILL OF BARS						
MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	COATED = 1590 LBS LOCATION
P501	X	86	7'-3"			PIER VERTICAL
P402	X	18	38'-6"			PIER HORIZONTAL
P403	X	18	6'-2"		X	PIER HORIZONTAL END
P404	X	90	2'-8"		X	PIER TIES
P505	X	20	4'-1"		X	PIER TOP
P506	X	9	4'-9"		X	PIER TOP MIDDLE
P407	X	3	10'-0"			PIER HORIZONTAL TOP
P508	X	40	2'-0"			PIER DOWELS

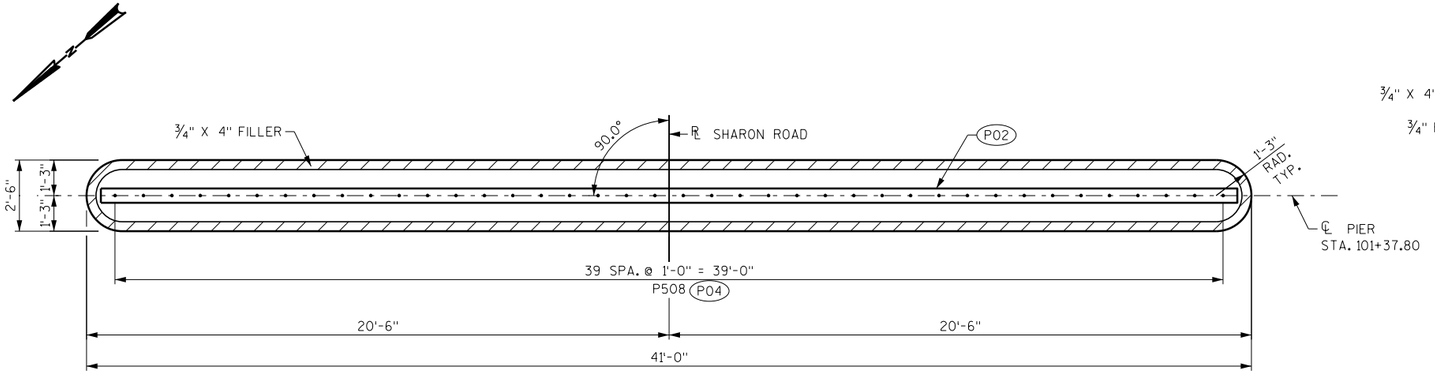
BENDING DIMENSIONS ARE OUT-TO-OUT OF BARS.



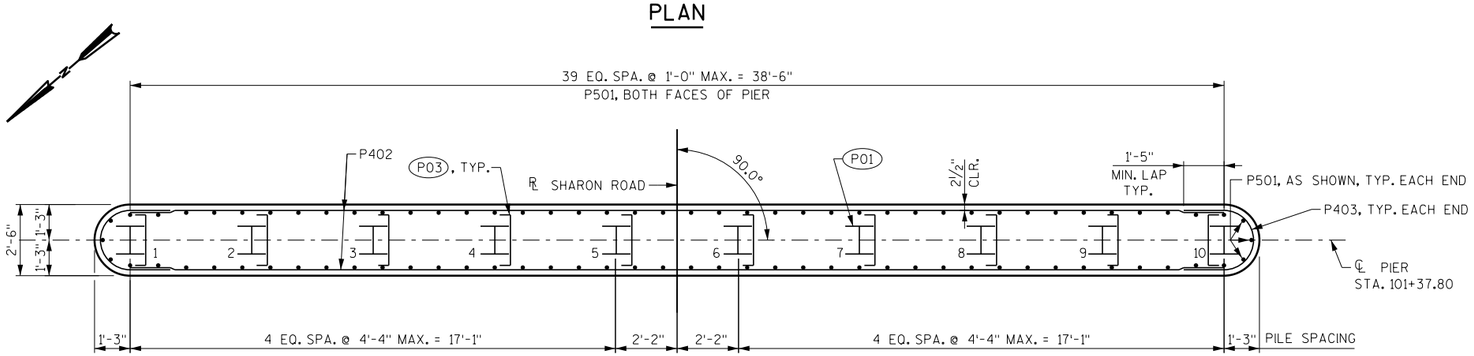
P403



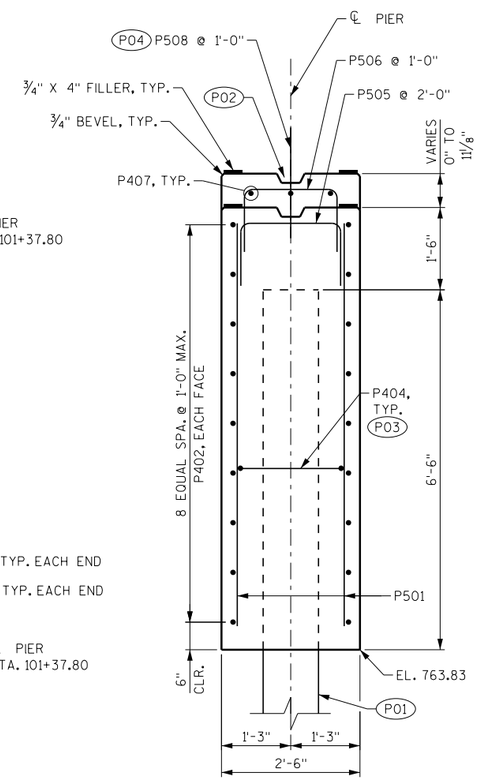
P404, P505, P506



PLAN



PILE LAYOUT



SECTION A-A

LEGEND

(P01) SUPPORT PIER ON PILING STEEL HP 12-INCH X 53 LB. ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

(P02) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".

(P03) P404. PLACE BARS ADJACENT TO EACH PILE ON ONE SIDE ONLY. VERTICAL SPACING = 1'-0" MAX.

(P04) P508. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

NOTES

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ¾" FILLER WITH NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONRETE).

FOR PILE SPLICE DETAIL, SEE SHEET 7.

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PIER

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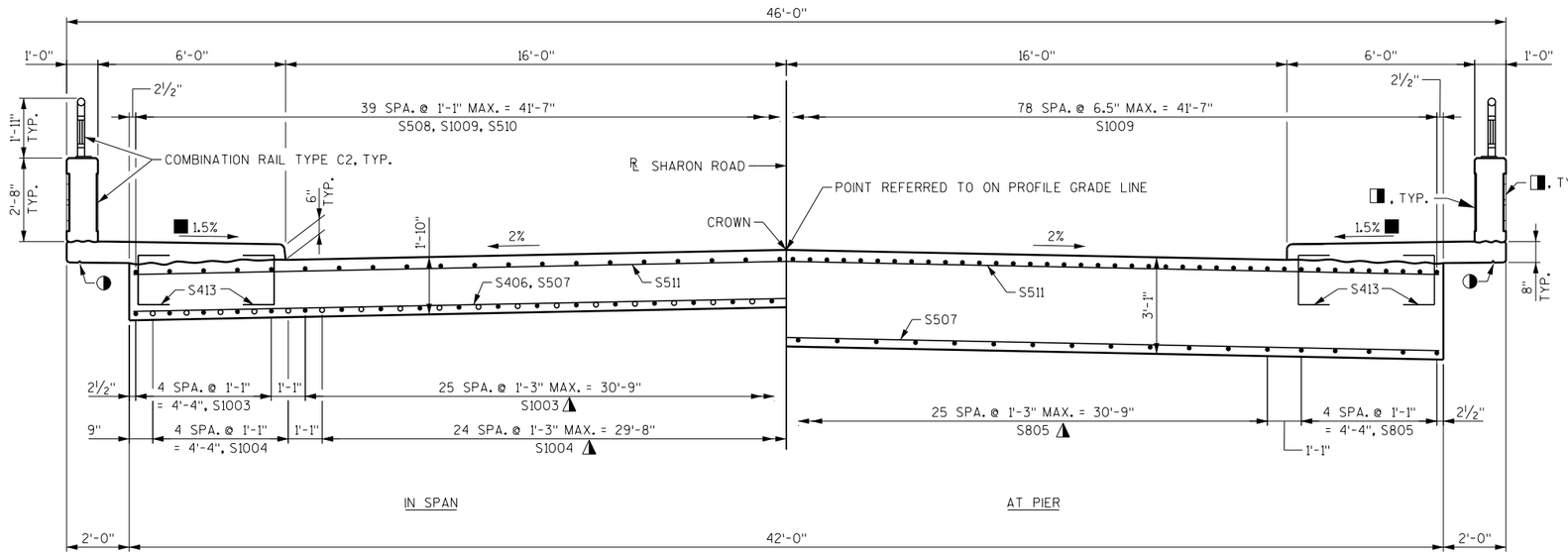


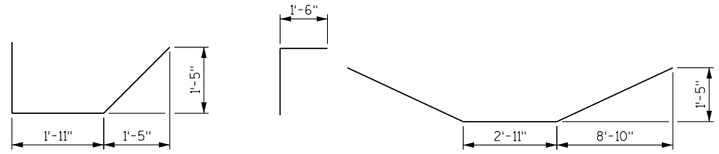
CROSS SECTION THRU ROADWAY

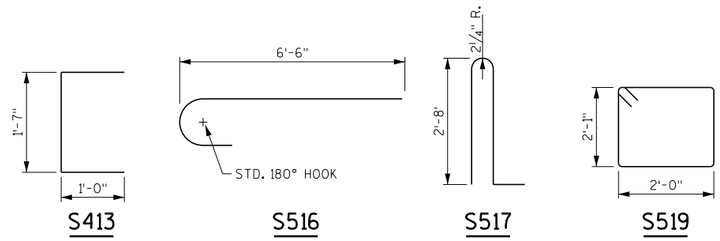
(LOOKING SOUTHEAST. SEE SHEET 11 FOR SIDEWALK AND PARAPET REINFORCEMENT)

SUPERSTRUCTURE - BILL OF BARS

COATED = 63520 LBS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
S501	X	86	5'-4"		X	VERT. SLAB AT ABUTMENT
S502	X	86	3'-1"		X	VERT. SLAB AT ABUTMENT
S1003	X	72	45'-0"			SLAB LONG. BOTTOM
S1004	X	70	34'-3"			SLAB LONG. BOTTOM
S805	X	36	20'-10"		X	SLAB LONG. BOTTOM AT PIER
S406	X	72	41'-7"			SLAB TRANS. BOTTOM
S507	X	45	41'-7"			SLAB TRANS. BOTTOM
S508	X	40	22'-3"			SLAB LONG. TOP, SPAN 1
S1009	X	79	48'-3"			SLAB LONG. TOP
S510	X	40	38'-6"			SLAB LONG. TOP, SPAN 2
S511	X	104	41'-7"			SLAB TRANS TOP
S412	X	24	5'-0"			HORIZ. SLAB AT ABUTMENT
S413	X	788	3'-5"		X	SIDEWALK DOWEL AT SLAB
S414	X	132	2'-10"			SIDEWALK TRANSVERSE BOTTOM
S415	X	78	33'-10"			SIDEWALK LONGITUDINAL
S516	X	394	7'-1"		X	SIDEWALK TRANSVERSE TOP
S517	X	198	6'-8"		X	PARAPET VERTICAL DOWEL
S418	X	36	33'-10"			PARAPET HORIZONTAL
S519	X	12	8'-9"		X	ABUTMENT DIAPHRAGM VERTICAL AT CORNERS





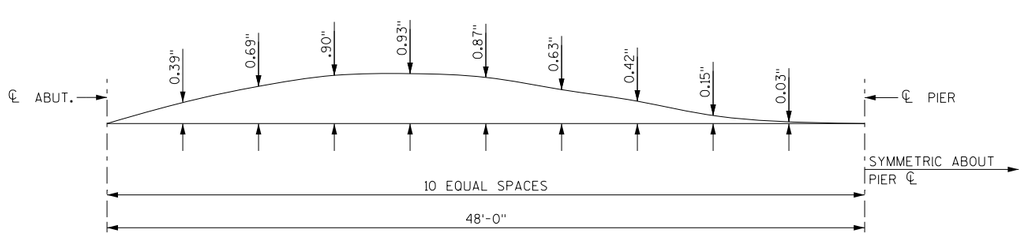
TOP OF DECK ELEVATIONS

LOCATION	C/L BRG. W. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	C/L PIER
STATION	100+89.80	100+94.60	100+99.40	101+04.20	101+09.00	101+13.80	101+18.60	101+23.40	101+28.20	101+33.00	101+37.80
N. EDGE OF SLAB	775.21	775.18	775.16	775.13	775.11	775.09	775.06	775.04	775.01	774.99	774.97
CROWN (℄)	775.63	775.60	775.58	775.55	775.53	775.51	775.48	775.46	775.43	775.41	775.39
S. EDGE OF SLAB	775.21	775.18	775.16	775.13	775.11	775.09	775.06	775.04	775.01	774.99	774.97

LOCATION	C/L PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	C/L BRG. E. ABUT.
STATION	101+37.80	101+42.60	101+47.40	101+52.20	101+57.00	101+61.80	101+66.60	101+71.40	101+76.20	101+81.00	101+85.80
N. EDGE OF SLAB	774.97	774.94	774.92	774.89	774.87	774.85	774.82	774.80	774.77	774.75	774.73
CROWN (℄)	775.39	775.36	775.34	775.31	775.29	775.27	775.24	775.22	775.19	775.17	775.15
S. EDGE OF SLAB	774.97	774.94	774.92	774.89	774.87	774.85	774.82	774.80	774.77	774.75	774.73

- ELEVATIONS SHOWN ARE FINISHED DECK ELEVATIONS AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

- DECK ELEVATIONS SHALL BE TAKEN PRIOR TO SIDEWALK CONSTRUCTION ASSUMING A 2% CROSS SLOPE FROM EDGE OF DECK TO CURB FACE.



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF THE PIER, AND AT MIDSPAN TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN ℄.

NOTES

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

PARAPETS PLACED ON TOP OF THIS SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

LEGEND

◭ SPACING SYMMETRIC ABOUT ℄.

◑ ¾" CONT. DRIP V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENTS. V-GROOVES ARE REQUIRED.

◨ FOR ARCHITECTURAL SURFACE TREATMENT B-53-374, SEE SHEET 14.

■ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

SUPERSTRUCTURE

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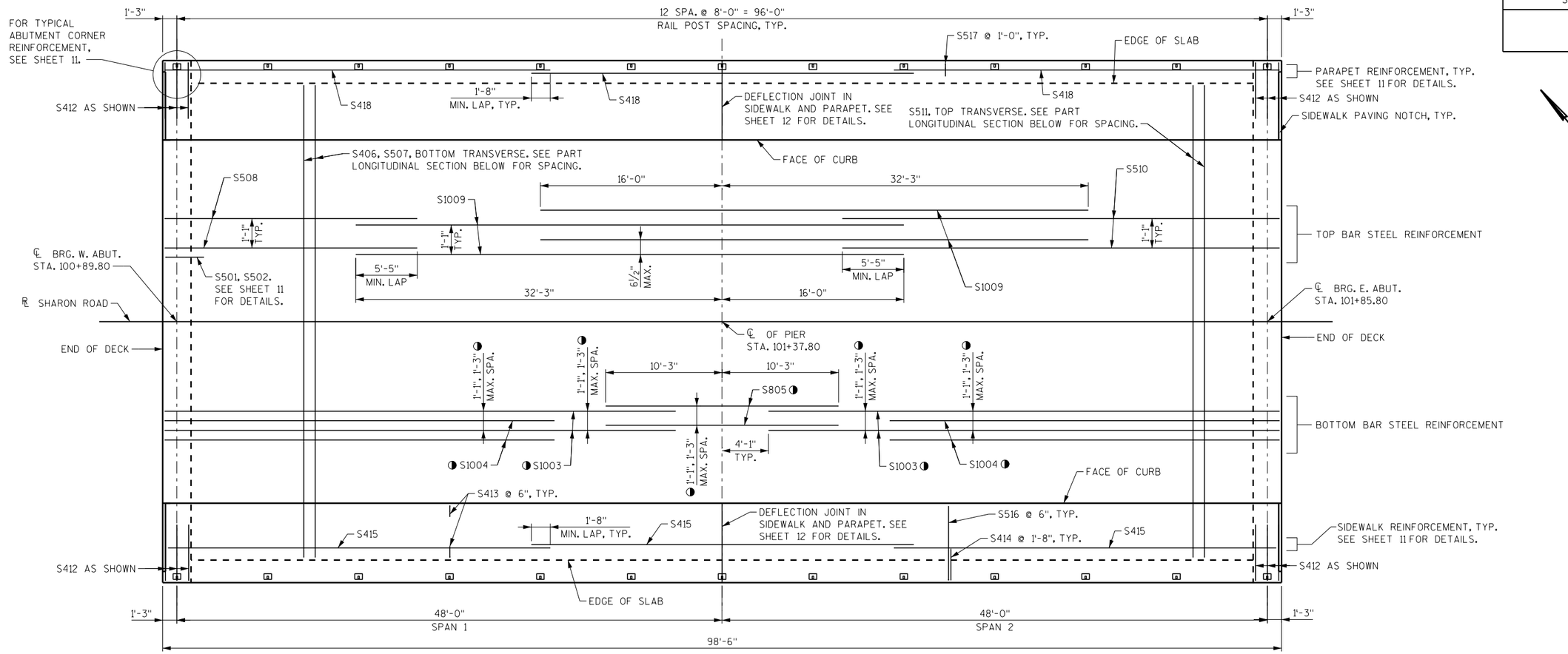
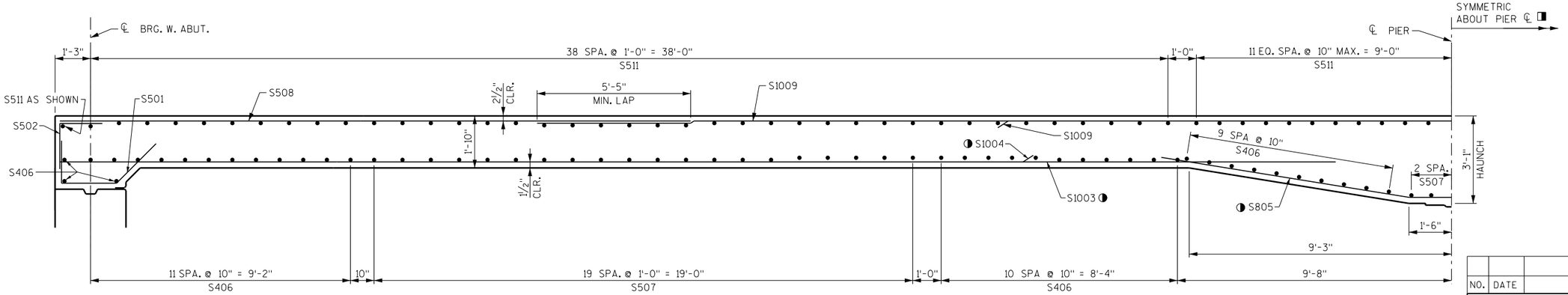


PLAN



PART LONGITUDINAL SECTION

(SHOWING SPAN 1, SPAN 2 SIMILAR EXCEPT AS NOTED)

LEGEND

◨ EXCEPT FOR S508/S510. SEE PLAN VIEW ON THIS SHEET.

◑ SEE CROSS SECTION ON SHEET 9 FOR BOTTOM LONGITUDINAL REINFORCEMENT SPACING LOCATIONS.

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STRUCTURE B-53-374

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SUPERSTRUCTURE DETAILS 1

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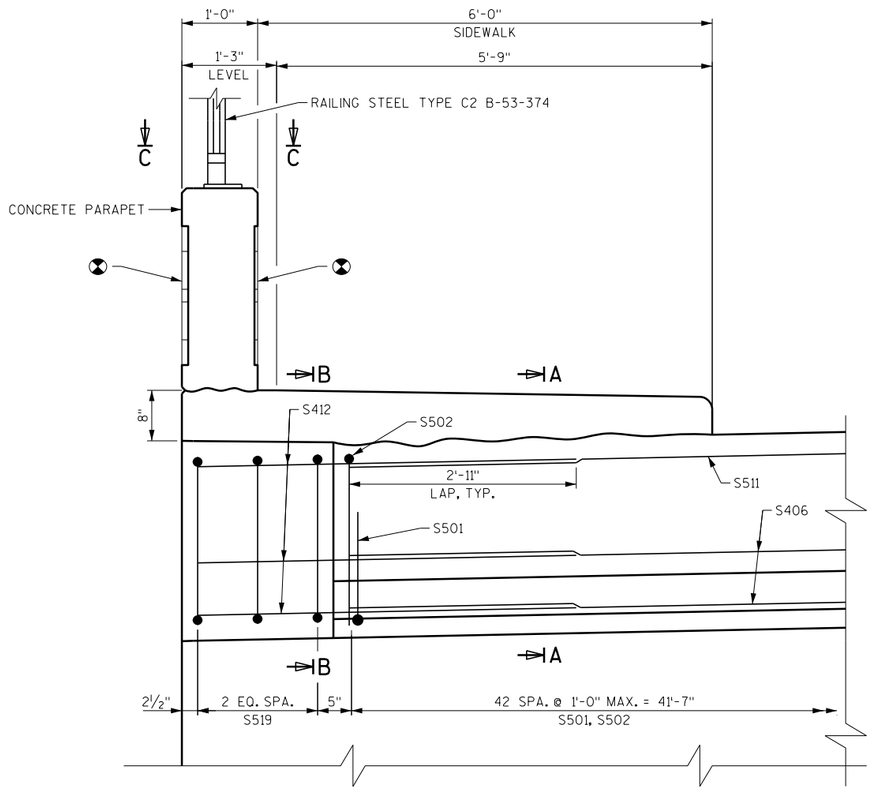
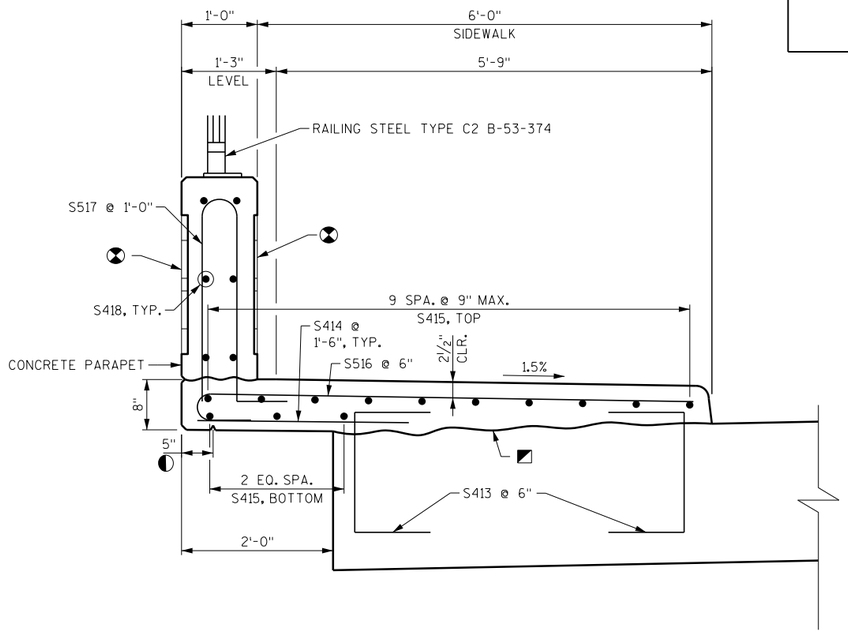


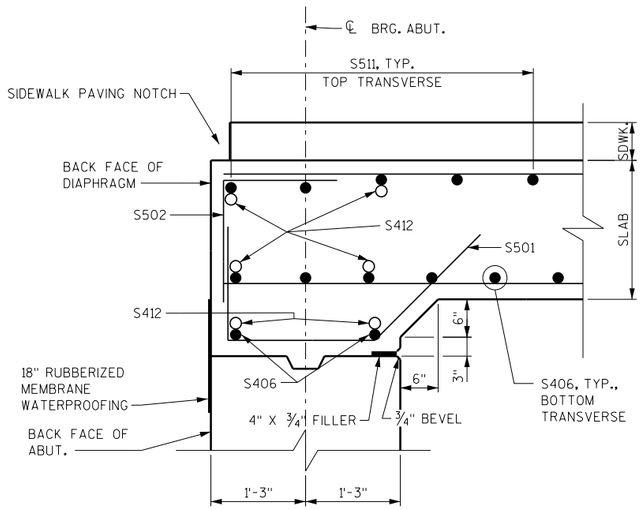
SECTION AT ABUTMENT CORNER

(SLAB LONG. REINF. NOT SHOWN)

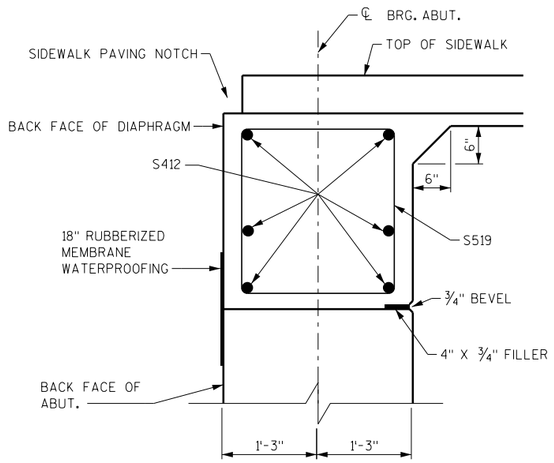


SECTION AT SIDEWALK

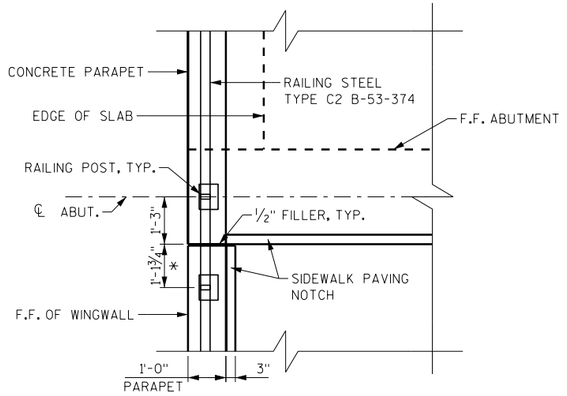
(SLAB LONG. REINF. NOT SHOWN)



SECTION A-A



SECTION B-B



SECTION C-C

LEGEND

- CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE CROSS-SLOPE.
- ¾" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.
- FOR ARCHITECTURAL SURFACE TREATMENT B-53-374, SEE SHEET 14.
- * LENGTH INCLUDES ½" FILLER.

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STRUCTURE B-53-374

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SUPERSTRUCTURE DETAILS 2

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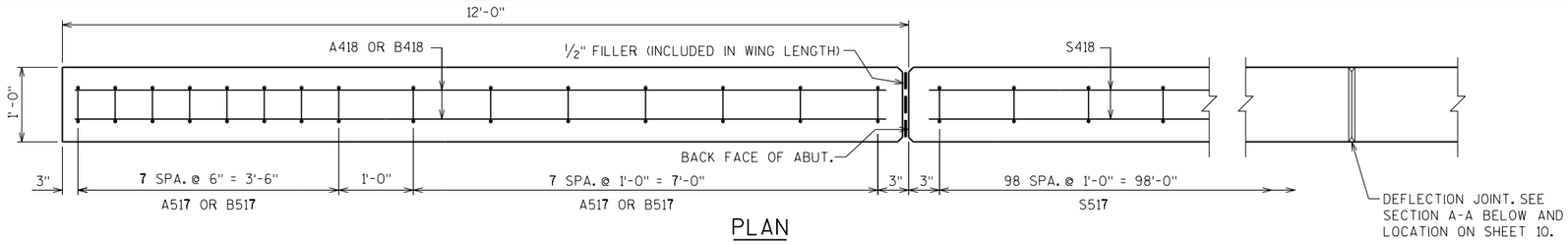
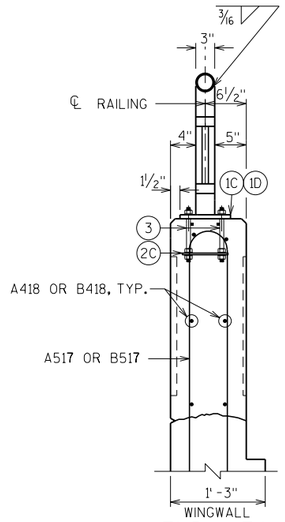
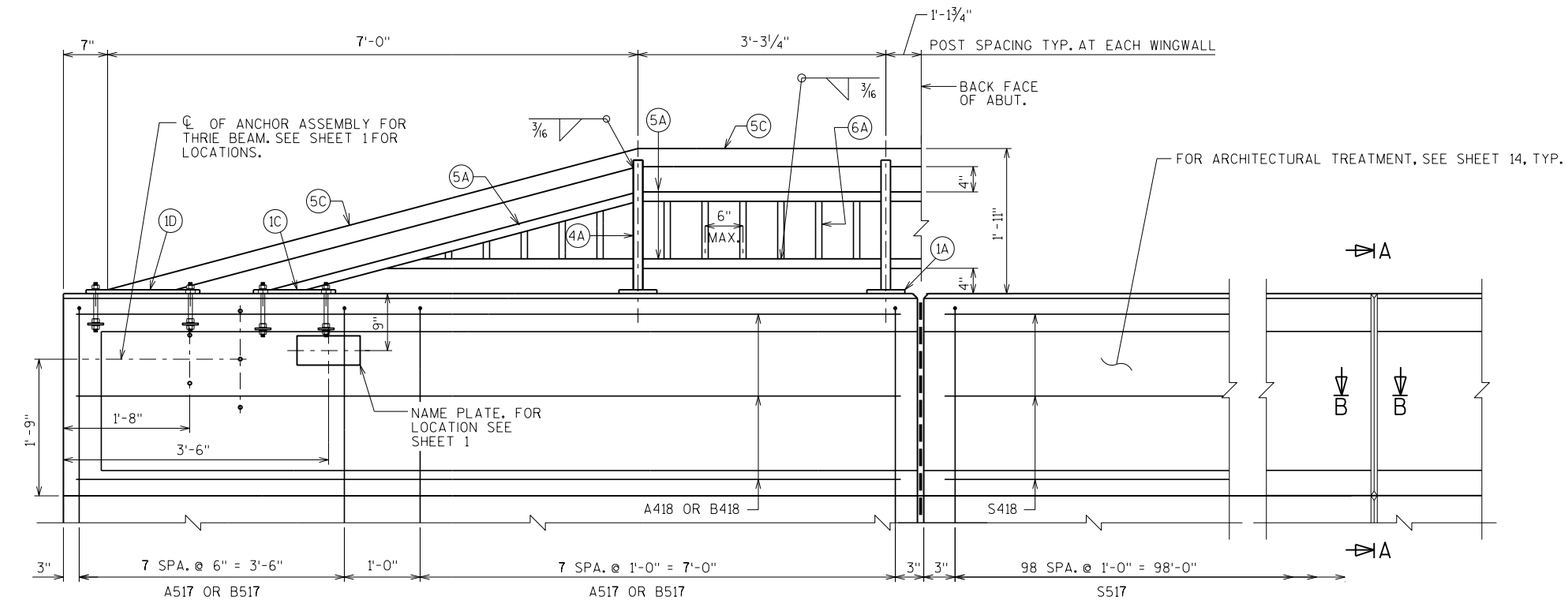


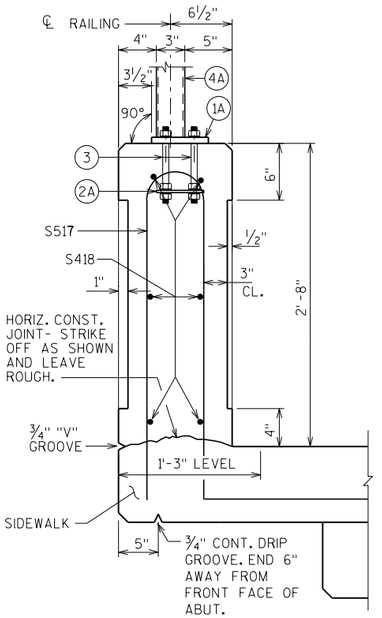
PLAN



END VIEW



INSIDE ELEVATION OF PARAPET

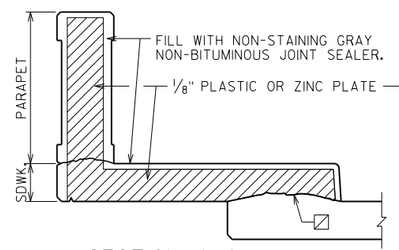


SECTION THRU PARAPET ON BRIDGE

NOTES

RAILING REINFORCEMENT INFORMATION ON THE WING WALLS IS INCLUDED IN THE ABUTMENT BILL OF BARS ON SHEETS 5 AND 7.

WEIGHT OF RAILING REINFORCEMENT ON THE WING WALLS IS INCLUDED IN THE ABUTMENT WEIGHTS SHOWN ON SHEETS 5 AND 7.



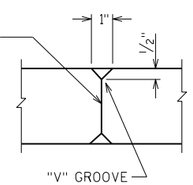
SECTION A-A

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION A-A BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

SLAB STRUCTURES WITH A SIDEWALK SHOULD HAVE A DEFLECTION JOINT IN THE SIDEWALK AND PARAPET OVER THE PIERS.

▨ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.



SECTION B-B

NO.	DATE	REVISION	BY

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STRUCTURE B-53-374

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COMBINATION RAIL TYPE "C2"

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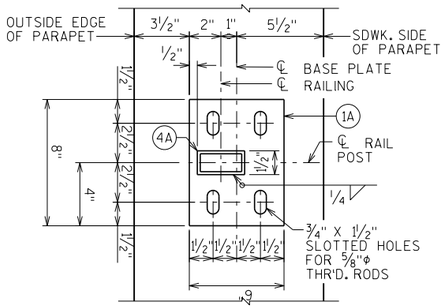
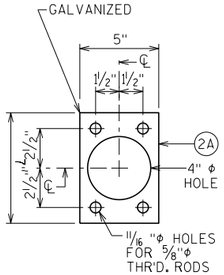
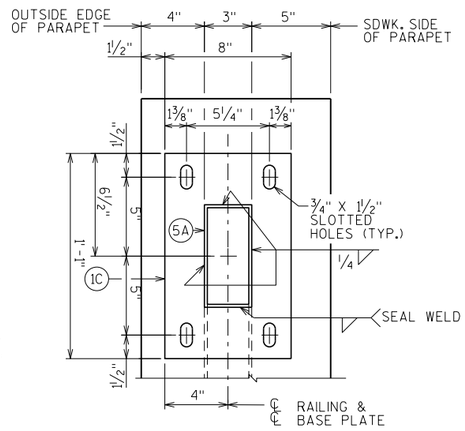


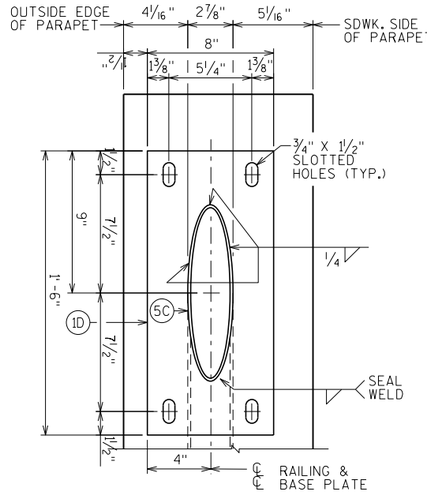
TYPICAL RAIL POST BASE PLATE



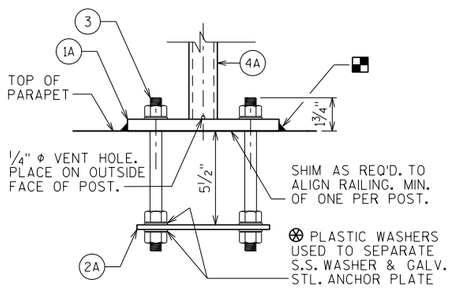
ANCHOR PLATE



END RAIL BASE PLATE

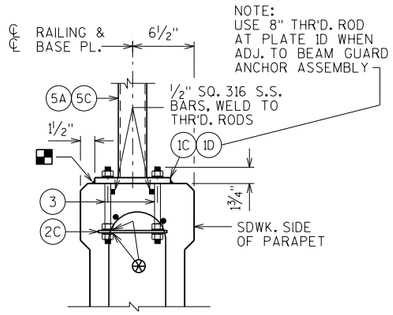


END RAIL BASE PLATE



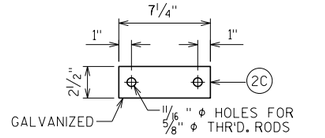
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



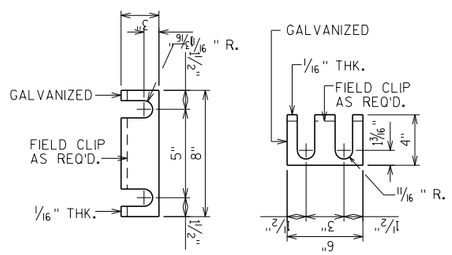
ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



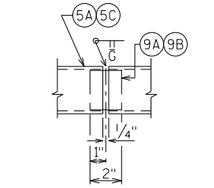
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE



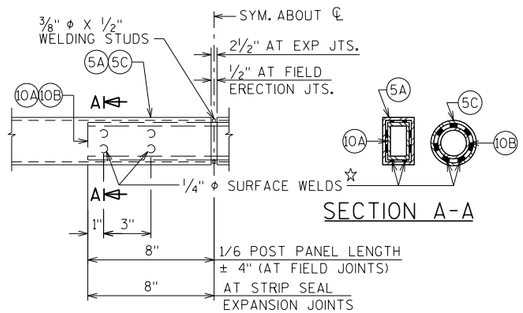
RAIL POST SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

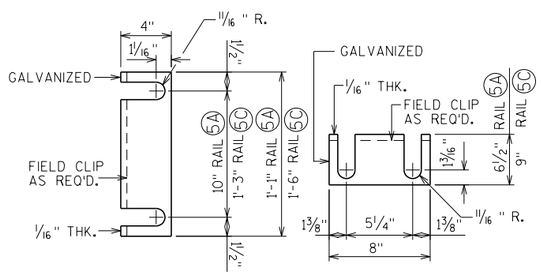
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



END RAIL SHIM DETAIL

(2 SETS PER POST)

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(1D) PLATE ⅝" X 8" X 1'-6" WITH ¾" X 1½" SLOTTED HOLES

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16 " φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16 " φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE: 4 EQUIVALENT STAINLESS STEEL CONCRETE MASONRY ANCHORS TYPE S ⅝-INCH. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(5C) STRUCTURAL TUBING 2½" φ (STANDARD SIZE) (2.875" O.D.). WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(6A) BAR 1" X 1" PICKETS. WELD TO NO. 5. PLACE VERTICAL.

(6C) BAR 1" X 1½" PICKETS. WELD TO NO. 11. PLACE VERTICAL.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(9B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" φ (STANDARD SIZE) (2.375" O.D.)

(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL JTS.)

(10B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" φ (STANDARD SIZE) (2.375" O.D.) (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C2 B-53-374", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE. CONTRACTOR MAY DRILL AND EXPOXY THE RAILING ANCHORAGES INTO THE PARAPET AFTER THE PARAPET IS CURED OUT AND IN CONJUCTION WITH THE RAILING ERECTION.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 36118.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

BENCHMARK CAP SHALL BE PLACED IN A LOCATION NOT IN CONFLICT WITH THE LOCATION OF THE ANCHOR PLATES.

LEGEND

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

COMBINATION RAIL TYPE "C2" DETAILS

SHEET 13 OF 14
83

8

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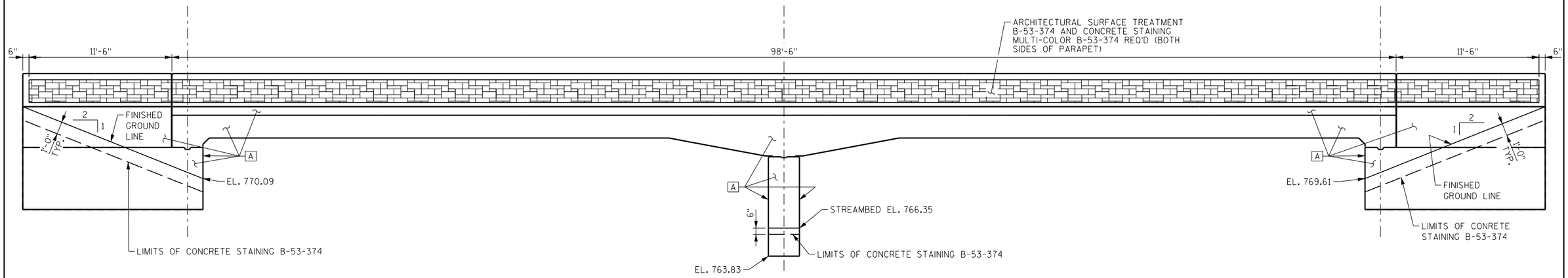
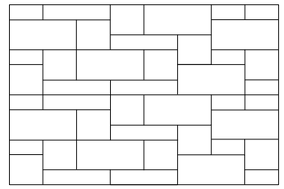
STATE PROJECT NUMBER
5990-00-32

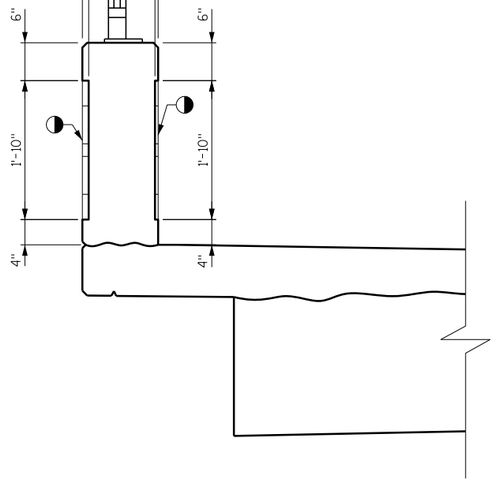


ELEVATION

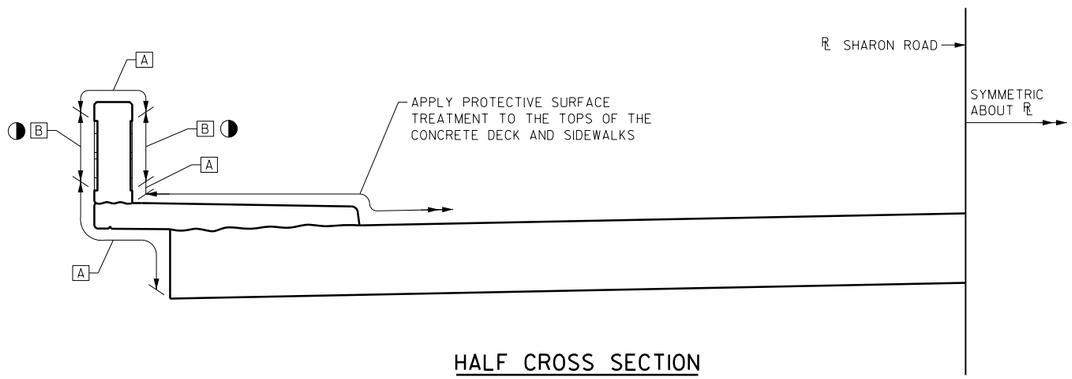
(FOR STAINING PATTERN ON PARAPET, SEE HALF CROSS SECTION BELOW)



VINTAGE STONE PATTERN



SECTION THRU PARAPET ON BRIDGE



HALF CROSS SECTION

(FOR STAINING PATTERN ON SUBSTRUCTURE AND OTHER SUPERSTRUCTURE LOCATIONS, SEE ELEVATION ABOVE)

NOTES

THE FINISH OF THE ARCHITECTURAL SURFACE TREATMENT B-53-374 SHALL ACHIEVE THE LOOK OF THE "VINTAGE STONE PATTERN" (FROM ROCKWOOD RETAINING WALLS OR EQUIVALENT) AND SANTA FE COLORATION WITH A MAXIMUM RELIEF OF 1/2" ON THE INSIDE FACE OF PARAPETS AND 1" AT ALL OTHER LOCATIONS.

FORMLINER PATTERN SHALL BE LOCATED ON THE BACK AND FRONT FACES OF THE PARAPET.

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO THE TOP OF THE PARAPET.

THE CONTRACTOR SHALL USE CARE IN MATCHING THE FORM LINER PATTERN ACROSS THE VERTICAL JOINTS BETWEEN THE PARAPET AND WING WALLS TO ENSURE CONTINUITY IN THE STONE PATTERN.

CONCRETE STAINING B-53-374 SHALL BE FS 36424. STAIN ALL EXPOSED SURFACES, EXCEPT THE TOP SURFACE OF THE ROADWAY AND SIDEWALKS, INCLUDING 1'-0" BELOW THE GROUND LINE AT ABUTMENTS AND 6" BELOW THE GROUND LINE AT THE PIER.

LEGEND

◑ ARCHITECTURAL SURFACE TREATMENT B-53-374

CONCRETE STAINING SCHEDULE

MARK	FEDERAL COLOR	LOCATION
A	FS 36424	PARAPET, OUTSIDE EDGE OF SIDEWALK AND SLAB, WINGWALLS, ABUTMENTS, PIER

CONCRETE STAINING MULTI-COLOR SCHEDULE

MARK	COLOR	LOCATION
B	"SANTA FE" COLORATION OR EQUIVALENT	PARAPET AT ARCHITECTURAL SURFACE TREATMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-53-374

DRAWN BY NLD | PLANS CK'D. JLH

ARCHITECTURAL SURFACE TREATMENT

SHEET 14 OF 14
84

8

8

FILE NAME : P:\8508 Sharon Road Bridge\Structural\CADD\Sheet\B-53-0374_14_Arch Surf Treat.dgn PLOT DATE : 7/14/2016 2:46:03 PM PLOT BY : ndecent PLOT SCALE : 7.999984 sf / in.

		SHARON ROAD						
		AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY) (Unadjusted)		
STATION	Distance	Cut	Fill	Cut	Fill	Cut 1.00	Fill 1.00	Mass Ordinate
102+29	0.00	60.1	0.0	0	0	0	0	0
100+50	21.00	53.2	39.8	44	15	44	15	29
100+75	25.00	42.6	39.7	44	37	88	52	36
100+88	13.00	38.7	0.0	29	10	117	62	55
Bridge Gap								
101+87	0.00	55.7	0.0	0	0	117	62	55
102+00	13.00	57.5	22.3	27	5	144	67	77
102+25	25.00	47.9	41.8	49	30	193	97	96
102+50	25.00	43.8	40.1	42	38	235	135	100
SHARON ROAD				**235**	**135**	**235**	**135**	**100**

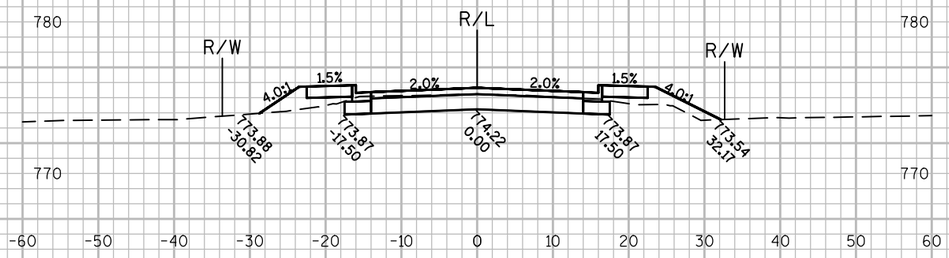
9

9

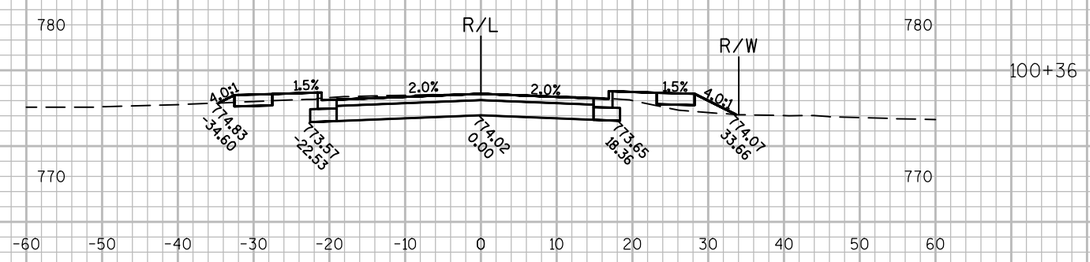
PROJECT NO: 5990-00-32	HWY: SHARON ROAD	COUNTY: ROCK	EARTHWORK DATA	SHEET NO: 85	E

BRIDGE GAP
STA. 100+89 TO 101+87

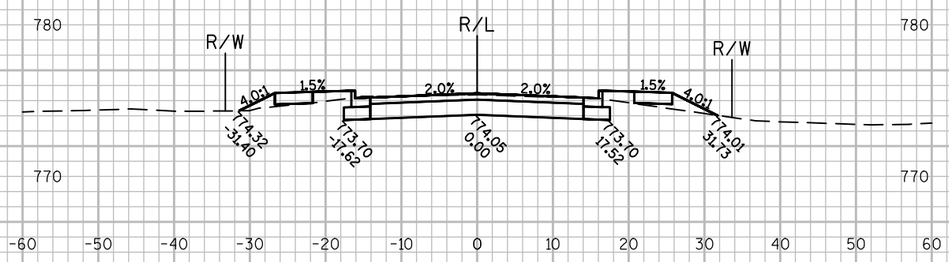
100+75



100+89



100+36



100+50

BEGIN PROJECT
STA. 100+12.51

10 FT
20 FT

9

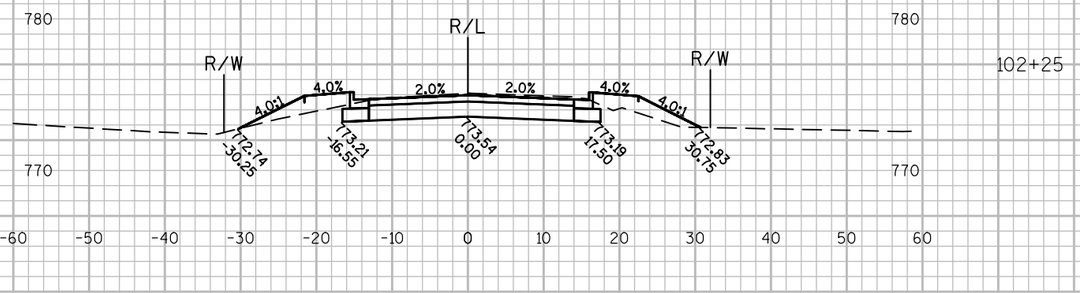
9

PROJECT NO: 5990-00-32	HWY: SHARON RD	COUNTY: ROCK	CROSS SECTIONS: SHARON RD	SHEET 86	E

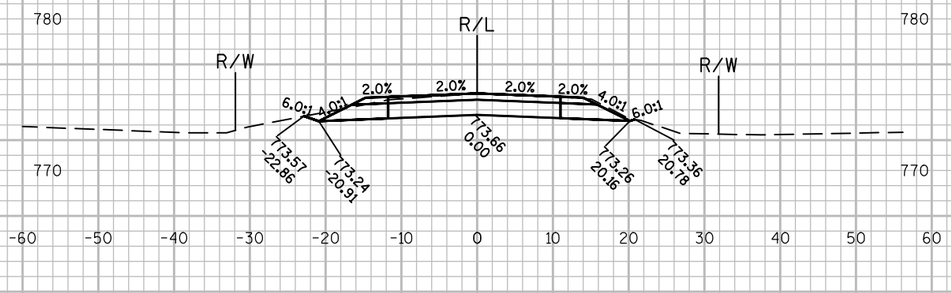
FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS

PLOT DATE : 6/20/2016 1:41 PM PLOT BY : JEREMY HINDS PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

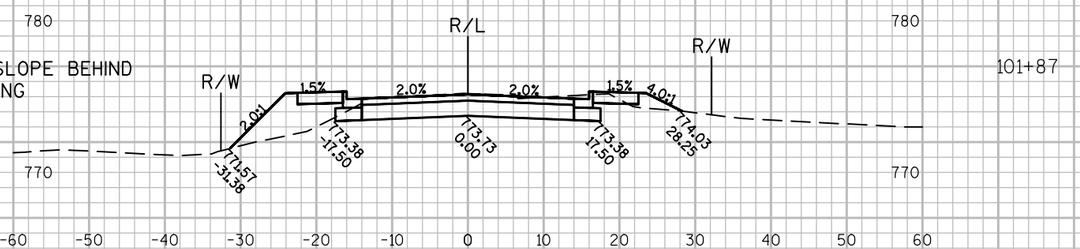


102+25

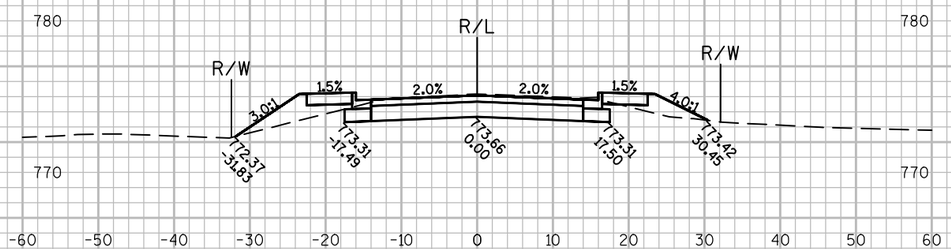


102+50
END PROJECT

2:1 SLOPE BEHIND
RAILING



101+87



102+00

BRIDGE GAP
STA. 100+89 TO 101+87

10 FT
20 FT

9

9

PROJECT NO: 5990-00-32	HWY: SHARON RD	COUNTY: ROCK	CROSS SECTIONS: SHARON RD	SHEET 87	E

FILE NAME : P:\8508 SHARON ROAD BRIDGE\TRANSPORTATION\CADD\8508 SHARON RD\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090202_XS

PLOT DATE : 6/20/2016 1:41 PM PLOT BY : JEREMY HINDS PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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