

MAD
WITH:
PROJECT ID: 3803-00-65, 3803-00-66
COUNTY: DODGE

FEBRUARY 2018

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile (Includes Erosion Control Plan)
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 114



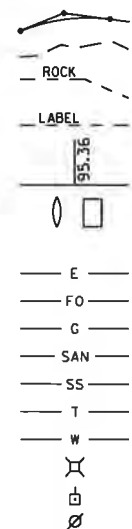
DESIGN DESIGNATION

A.A.D.T.	2018	=	7050
A.A.D.T.	2038	=	7750
D.H.V.		=	400
D.O.		=	59.41
T.		=	8.0%
DESIGN SPEED		=	30 MPH
ESALS		=	1,400,000

CONVENTIONAL SYMBOLS

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

- PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such)
- SPECIAL DITCH
- GRADE ELEVATION
- CULVERT (Profile View)
- UTILITIES
- ELECTRIC
- FIBER OPTIC
- GAS
- SANITARY SEWER
- STORM SEWER
- TELEPHONE
- WATER
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CITY OF BEAVER DAM, NORTH SPRING STREET (WEST MAPLE AVENUE TO MACKIE STREET)

LOCAL STREET DODGE COUNTY

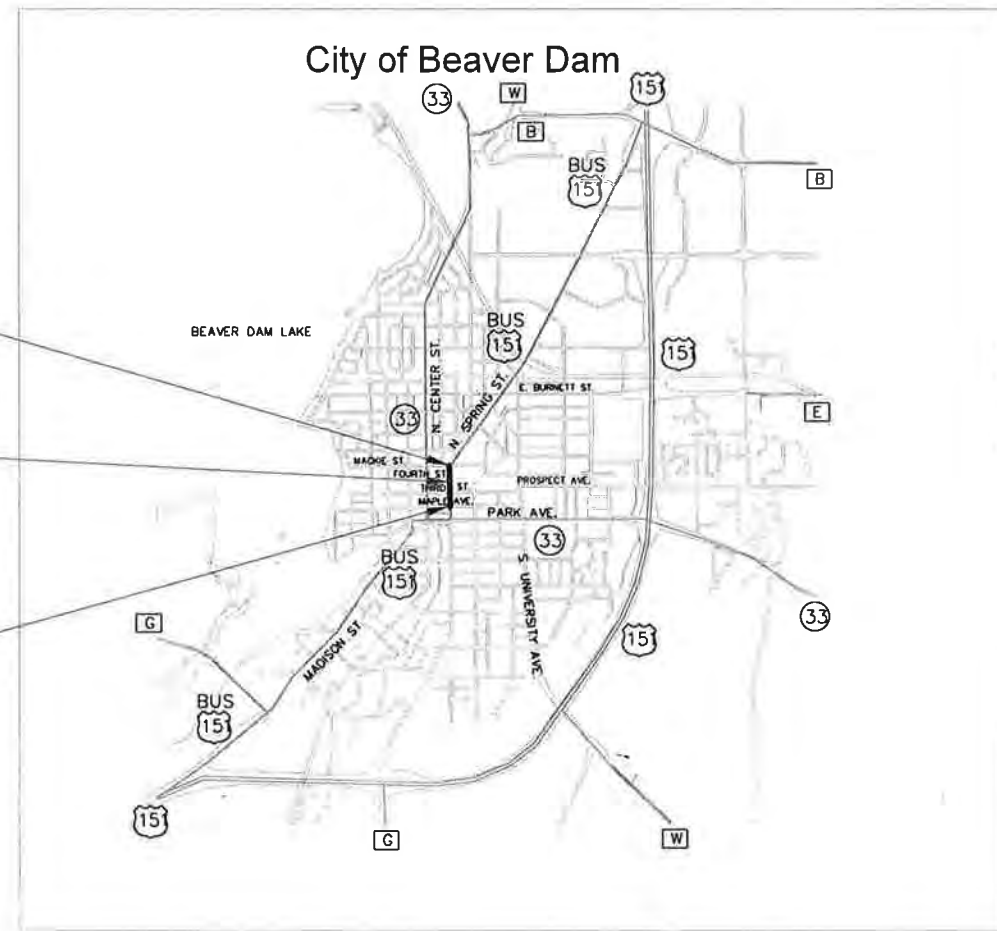
ROADWAY
STATE PROJECT NUMBER
3803-00-65

SANITARY SEWER & WATERMAIN
STATE PROJECT NUMBER
3803-00-66

PROJECT END
STA = 23+07.60
Y = 724665.08
X = 847555.47

NORTH SPRING STREET
0.210 MI.

PROJECT BEGIN
STA = 10+98.00
Y = 723557.71
X = 847556.29



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.210 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DODGE COUNTY, NAVD88 (1988), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3803-00-65	WISC 2018081	1
3803-00-66		

ACCEPTED FOR
CITY OF BEAVER DAM
DATE: 7/17/17 MAYOR

ORIGINAL PLANS PREPARED BY
MSA
PROFESSIONAL SERVICES
TRANSPORTATION / MUNICIPAL DEVELOPMENT

TODD M. JANSSEN
E-39742
BEAVER DAM, WI
PROFESSIONAL ENGINEER

DATE: 07/18/17 (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor MSA PROFESSIONAL SERVICES, INC.
Designer MSA PROFESSIONAL SERVICES, INC.
Management Consultant KL Engineering

APPROVED FOR THE DEPARTMENT
DATE: 7/31/17 Management Consultant Signature

E

GENERAL NOTES

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

THE LOCATIONS OF PRIVATE ENTRANCES WILL BE DETERMINED BY THE ENGINEER.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.

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

DISTURBED NON-PAVEMENT AREAS WITHIN THE RIGHT-OF-WAY SHALL BE SODDED.

THE EROSION CONTROL FEATURES ARE SHOWN ON THE PLAN AND ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

EXPANSION JOINTS TO BE CONSTRUCTED AT ALL RADIUS POINTS IN CURB AND GUTTER.

PAVEMENT, SIDEWALK, CURB, AND DRIVEWAY REMOVAL ITEMS SHALL BE REMOVED TO AN EXISTING JOINT OR SAWCUT WHERE SHOWN ON THE PLANS.

THE LIMITS OF PAVEMENT REMOVAL ON SIDE STREETS IS APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER.

UNDISTRIBUTED QUANTITIES OF INLET PROTECTION TYPE C ARE TO BE USED FOR EXISTING INLETS BEYOND THE CONSTRUCTION LIMITS THAT MAY BE SUSCEPTIBLE TO EROSION FROM THE JOB SITE DUE TO EXISTING DRAINAGE PATTERNS. THE UNDISTURBED QUANTITIES SHALL NOT BE USED WITHOUT APPROVAL BY THE ENGINEER.

STANDARD ABBREVIATIONS

BDUSD	BEAVER DAM UNIFIED SCHOOL DISTRICT
BM	BENCHMARK
CL OR €	CENTERLINE
X	EAST GRID COORDINATE
MH	MANHOLE
Y	NORTH GRID COORDINATE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PL	PROPERTY LINE
R	RADIUS
REQD	REQUIRED
R/W	RIGHT-OF-WAY
TLE	TEMPORARY LIMITED EASEMENT
FL	FLOW LINE
TOC	TOP OF CURB

INDEX OF TYPICAL SECTIONS & DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUTION DETAILS
PAVING DETAILS
SANITARY SEWER & WATERMAIN
STORM SEWER
PAVEMENT MARKING & SIGNAGE
STREET LIGHTING
TRAFFIC SIGNAL
TRAFFIC CONTROL
ALIGNMENT DATA
CONTROL POINT TIES

UTILITIES

STORM, STREET & LIGHTING
CITY OF BEAVER DAM
ATTN: RITCHIE PILTZ
205 S. LINCOLN AVENUE
BEAVER DAM, WI 53916
(920) 887-4600 X326
rpiltz@cityofbeaverdam.com

WATER & SEWER
BEAVER DAM UTILITIES
ATTN: ROB MINNEMA
1213 N. CENTER STREET
BEAVER DAM, WI 53916
(920) 887-4624
rminnema@cityofbeaverdam.com

TELEPHONE & FIBER OPTIC
AT&T WISCONSIN
ATTN: CHUCK BARTELT
70 E. DIVISION STREET
FOND DU LAC, WI 54935
(920) 929-1013
cb1461@att.com

CITY OF BEAVER DAM

DIRECTOR OF FACILITIES & ENGINEERING
RITCHIE PILTZ
205 S. LINCOLN AVENUE
BEAVER DAM, WI 53916
(920) 887-4600 X326
rpiltz@cityofbeaverdam.com

DIRECTOR OF UTILITIES
ROB MINNEMA
1213 N. CENTER STREET
BEAVER DAM, WI 53916
(920) 887-4624
rminnema@cityofbeaverdam.com

PROJECT DESIGNER

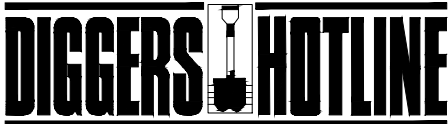
MSA PROFESSIONAL SERVICES, INC.
ATTN: TODD M. JANSSEN
201 CORPORATE DRIVE
BEAVER DAM, WI 53916
TELEPHONE: (920) 392-5144
tjanssen@msa-ps.com

WDNR LIASON

WISCONSIN DEPARTMENT OF
NATURAL RESOURCES
ATTN: ERIC HEGGELUND
3911 FISH HATCHERY ROAD
FITCHBURG, WI. 53711
(608) 275-3301
eric.heggelund@wisconsin.gov

ELECTRIC
ALLIANT ENERGY
ATTN: PERRY BOECK
120 E. MAPLE AVENUE
BEAVER DAM, WI 53916
(920) 887-6061
perryboeck@alliantenergy.com

GAS
ALLIANT ENERGY
ATTN: PERRY BOECK
120 E. MAPLE AVENUE
BEAVER DAM, WI 53916
(920) 887-6061
perryboeck@alliantenergy.com

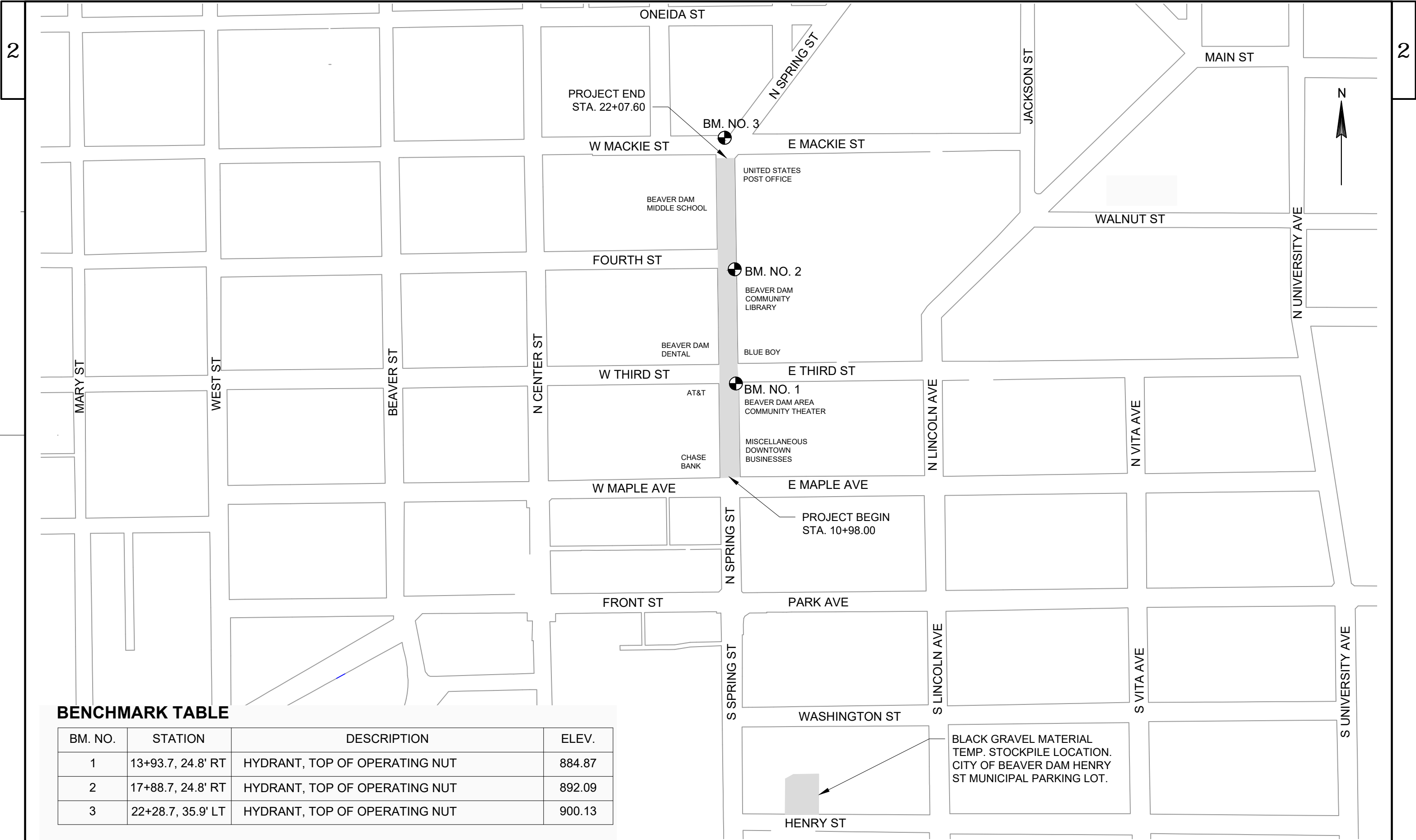


Dial 811 or (800) 242-8511
www.DiggersHotline.com

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS.

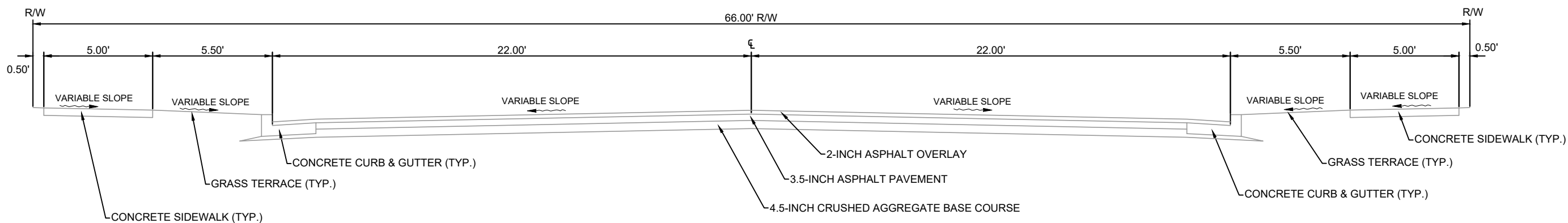
FIBER OPTIC CABLE
BEAVER DAM UNIFIED
SCHOOL DISTRICT (BDUSD)
ATTN: BRENT MARON
705 MCKINLEY STREET
BEAVER DAM, WI 53916
(920) 885-7300 X1143
maronb@bdusd.org

CABLE
CHARTER COMMUNICATIONS
ATTN: NICK FRASE
N3760 CTH DJ
JUNEAU, WI 53039
(920) 304-6797
nick.frase@charter.com

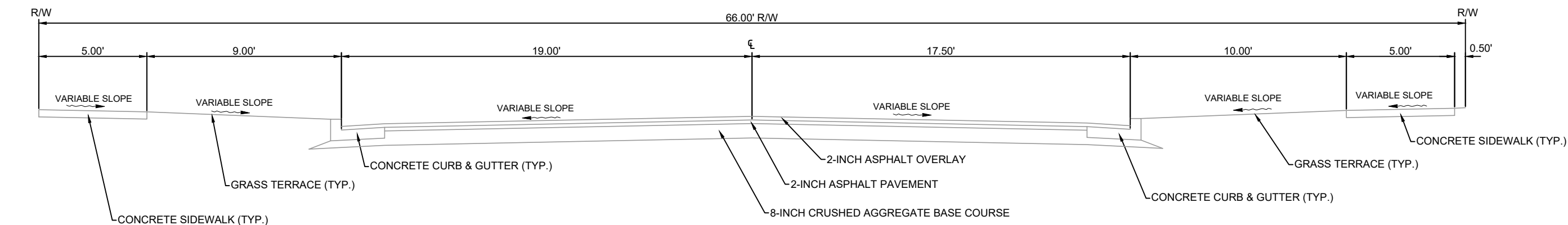


BENCHMARK TABLE

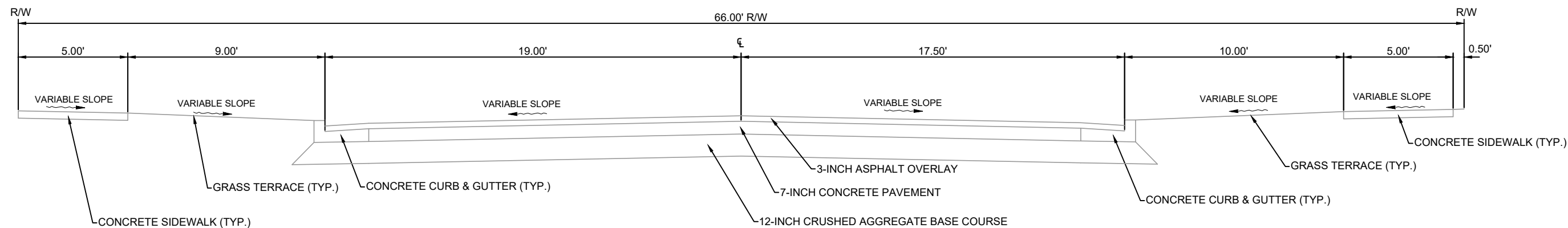
BM. NO.	STATION	DESCRIPTION	ELEV.
1	13+93.7, 24.8' RT	HYDRANT, TOP OF OPERATING NUT	884.87
2	17+88.7, 24.8' RT	HYDRANT, TOP OF OPERATING NUT	892.09
3	22+28.7, 35.9' LT	HYDRANT, TOP OF OPERATING NUT	900.13



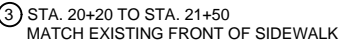
EXISTING NORTH SPRING STREET - 45 FT BOC TO BOC - 66 FT R/W
STA. 10+98 TO STA. 14+25
SCALE: NONE

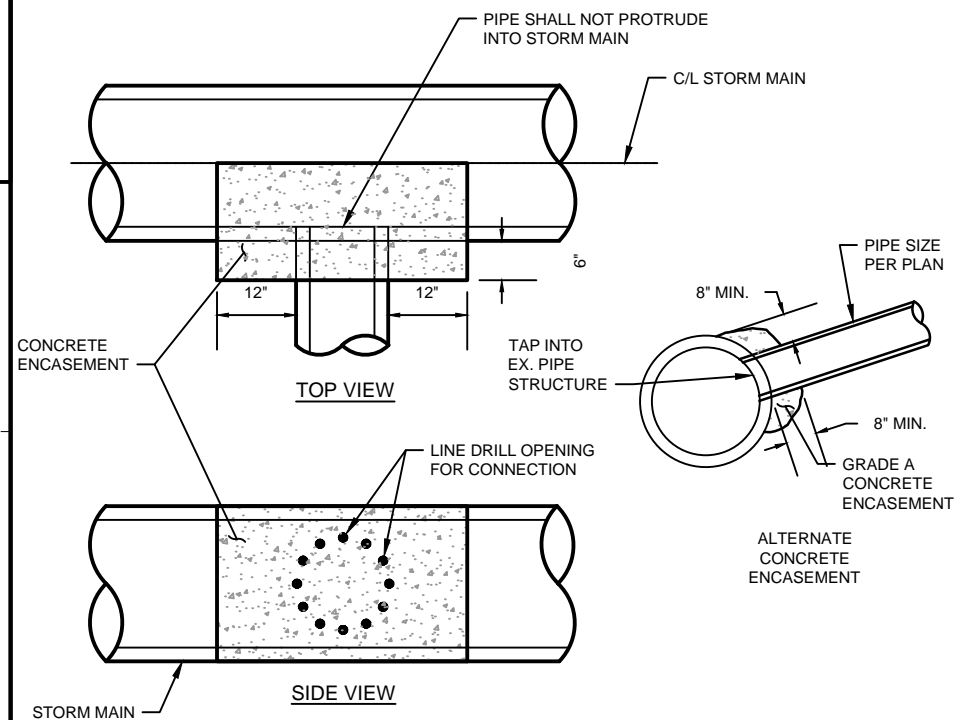


EXISTING NORTH SPRING STREET - 37.5 FT BOC TO BOC - 66 FT R/W
STA. 14+25 TO STA. 18+25
SCALE: NONE

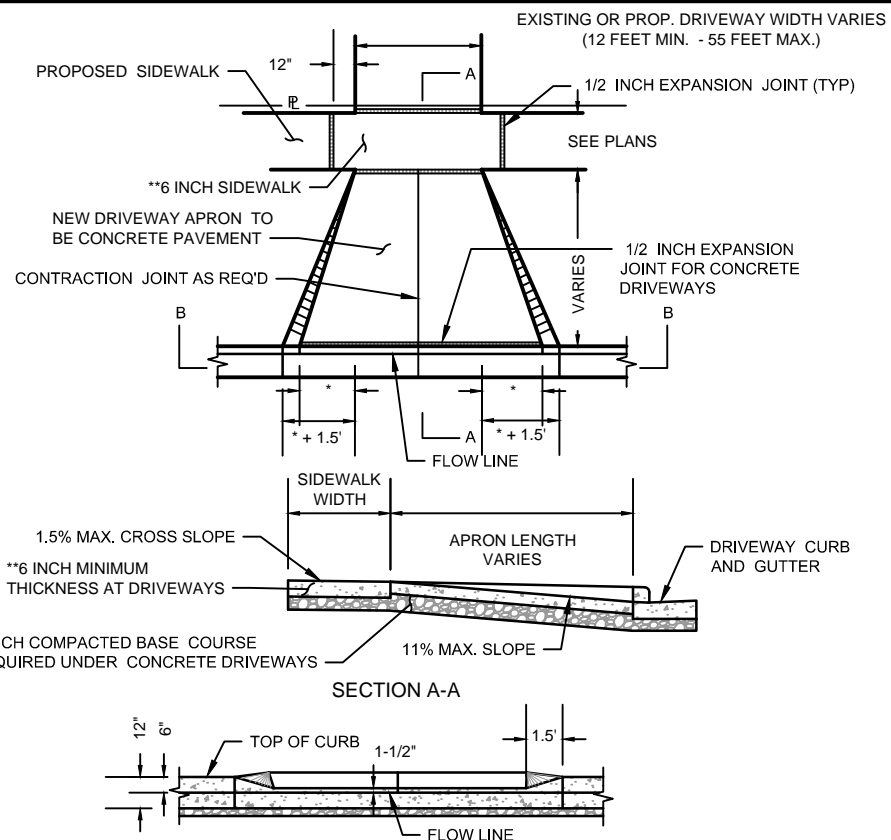


EXISTING NORTH SPRING STREET - 37.5 FT BOC TO BOC - 66 FT R/W
STA. 18+25 TO STA. 22+07.60
SCALE: NONE



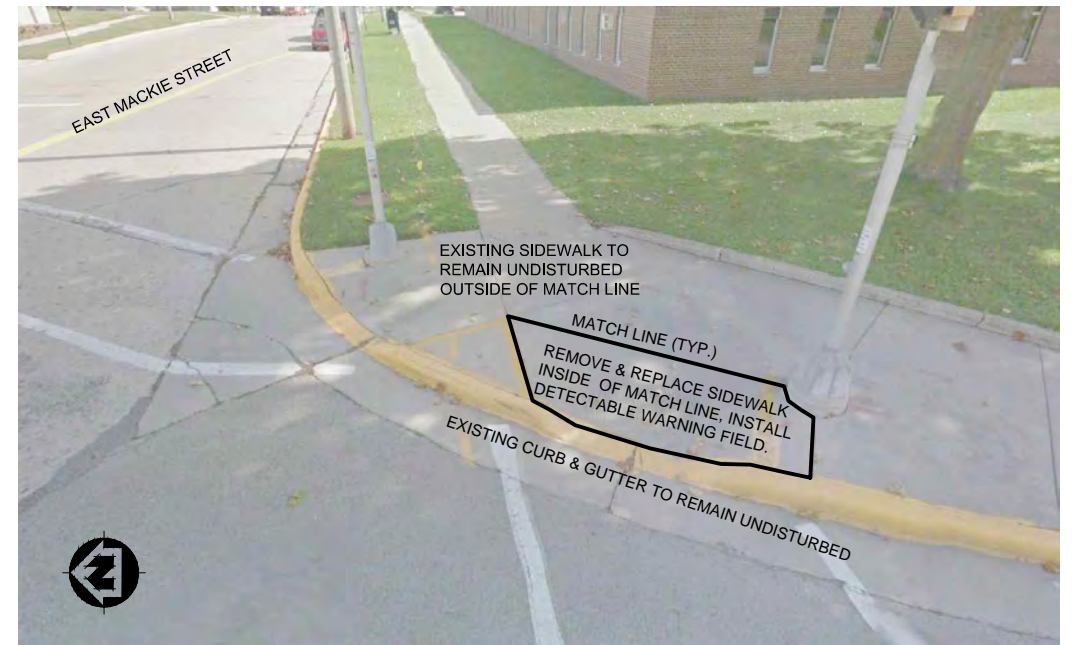


STORM SEWER TAP DETAIL (BLIND CONNECTION)
NO SCALE

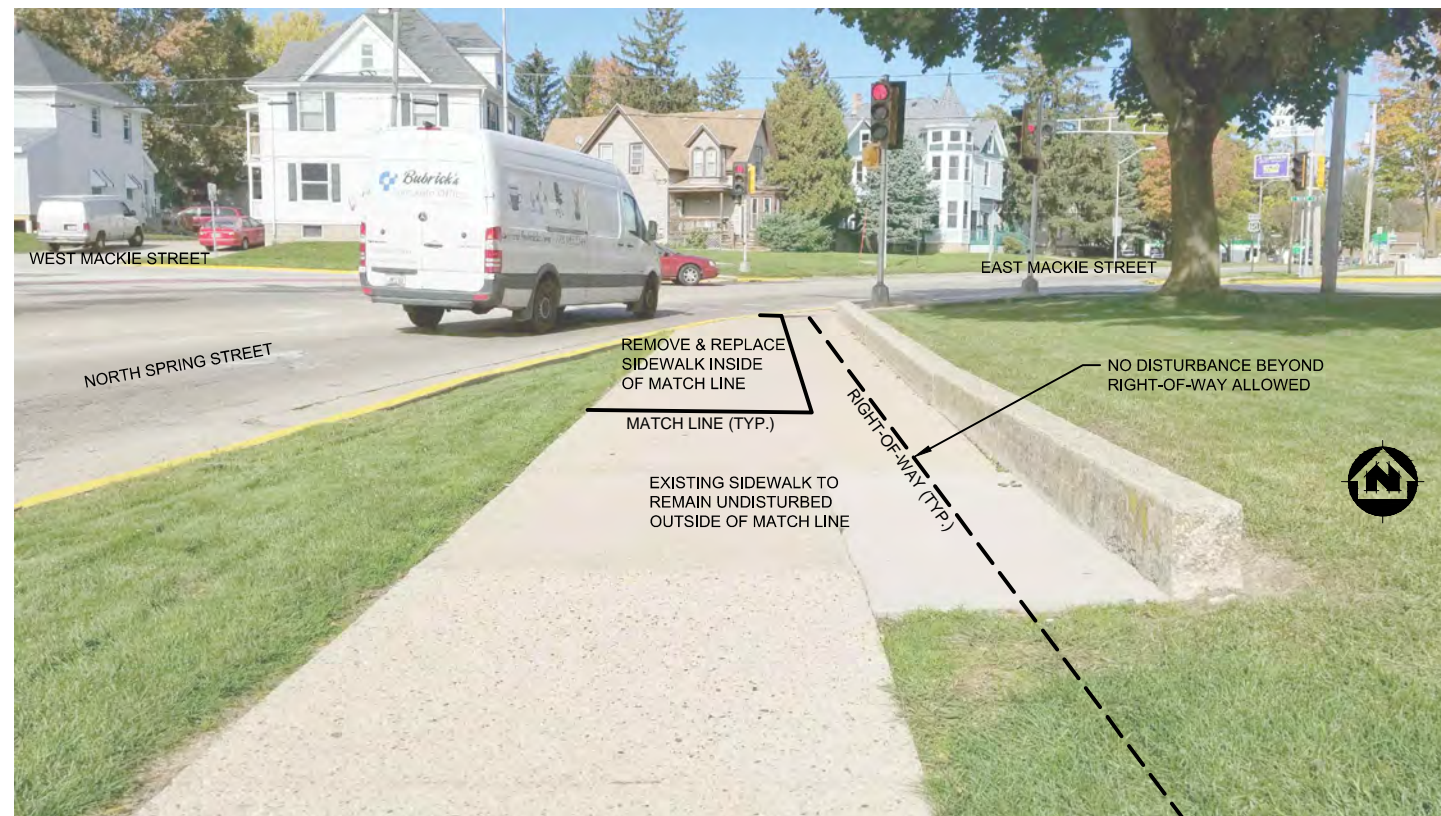


DRIVEWAY DETAIL
NO SCALE

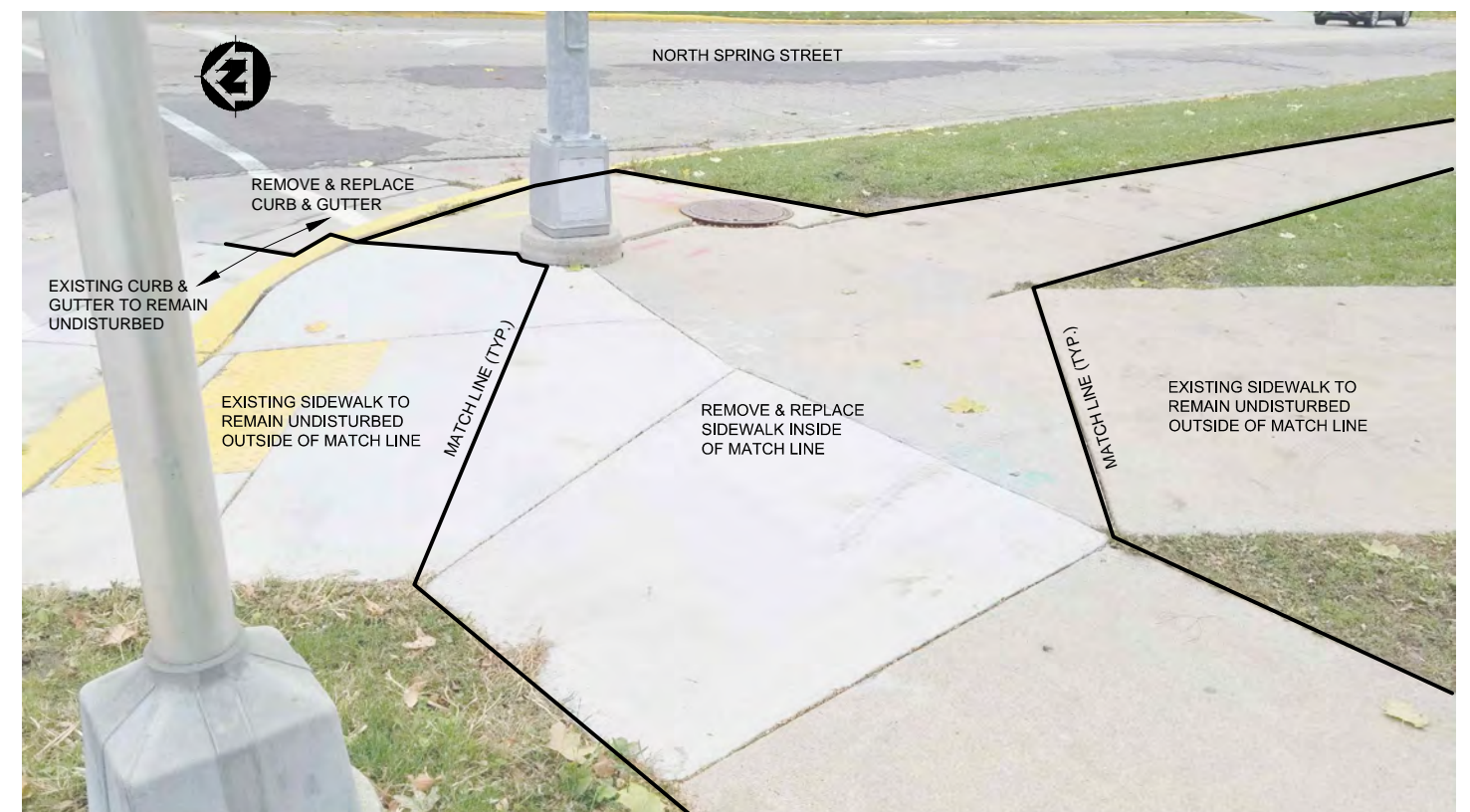
* = 1.5' RESIDENTIAL, 4.5' COMMERCIAL
** = PAID FOR AS CONCRETE DRIVEWAY, 6-INCH



MACKIE STREET SOUTHEAST CURB RAMP DETAIL
NO SCALE






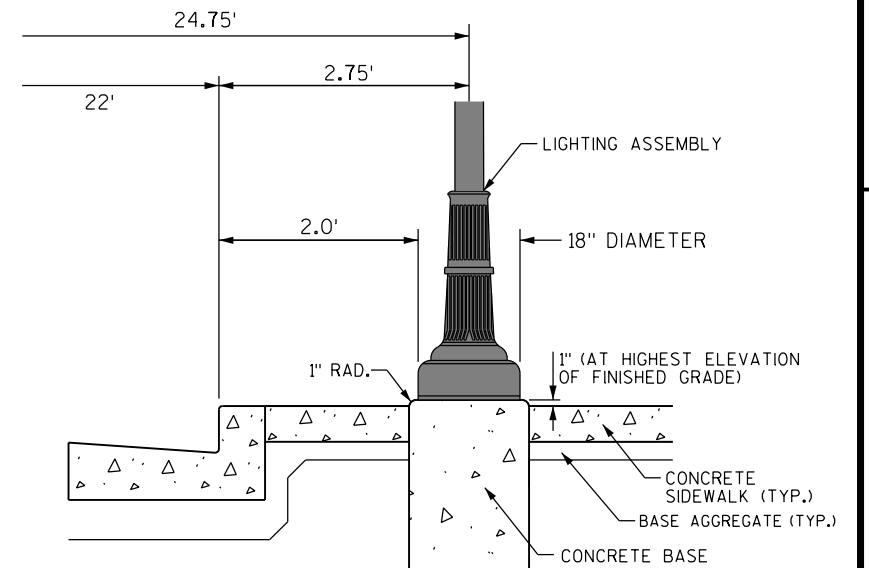
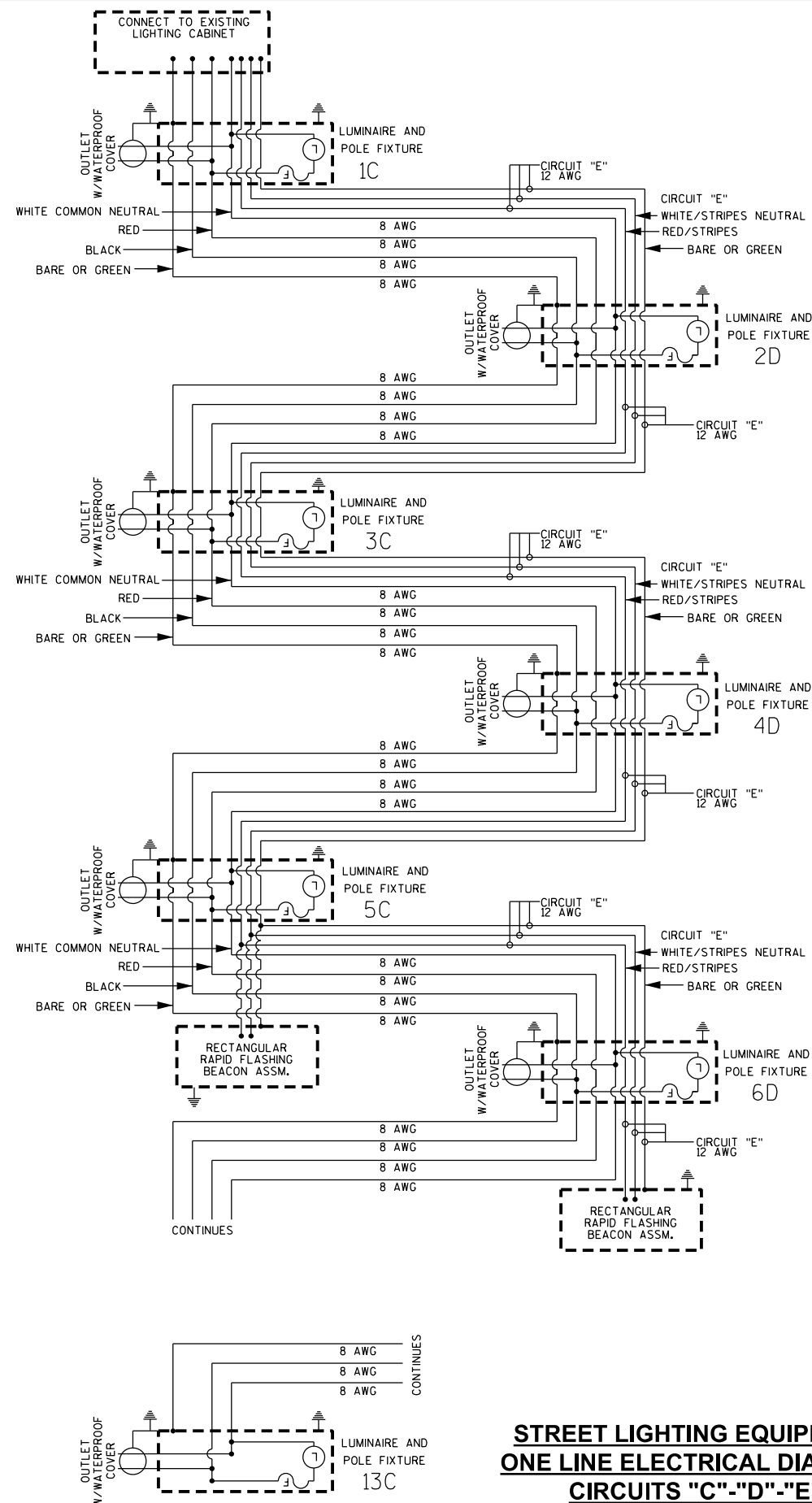
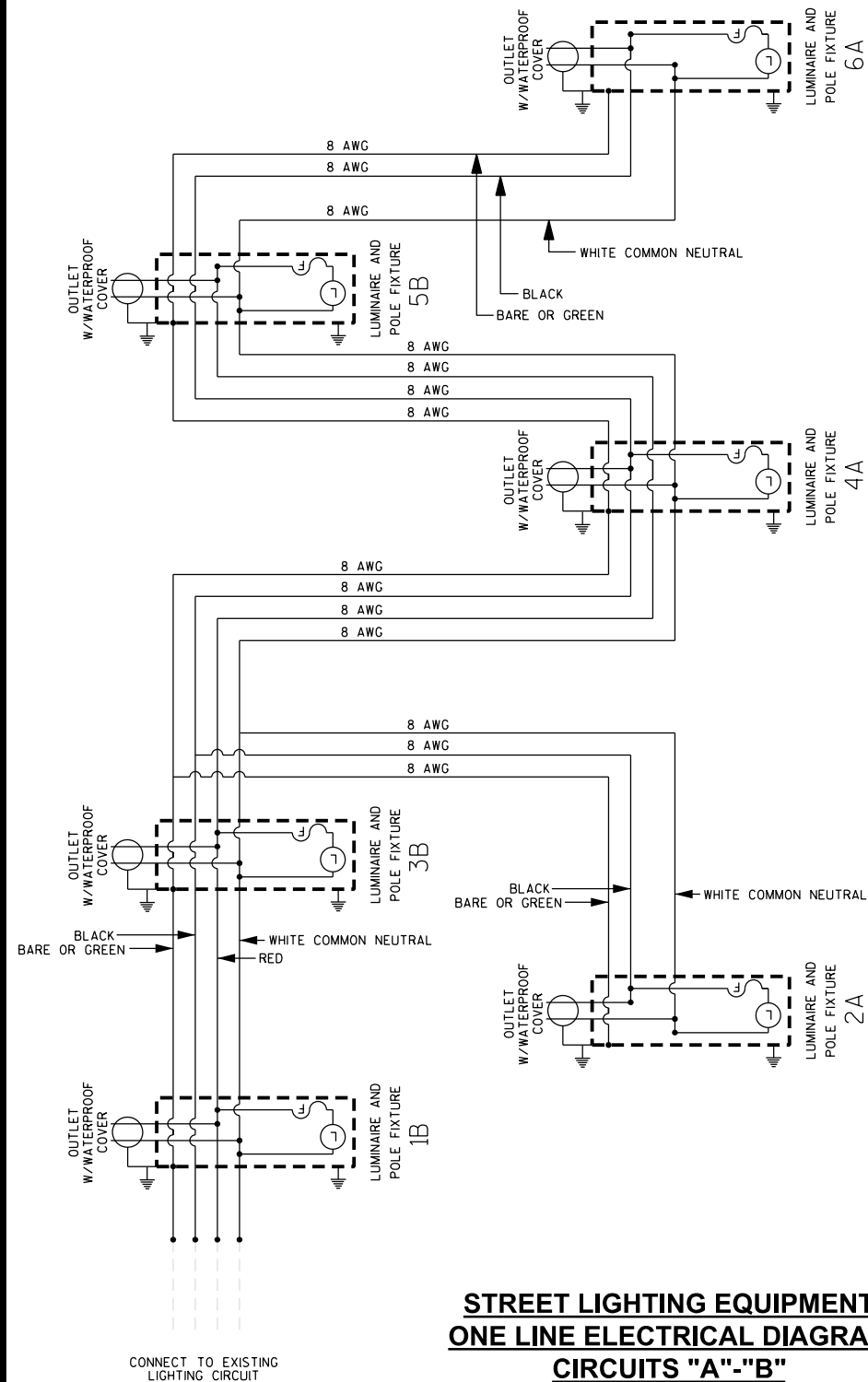
UNITED STATES POST OFFICE MATCH LINE DETAIL
NO SCALE



MACKIE STREET SOUTHWEST CURB RAMP DETAIL
NO SCALE

LEGEND

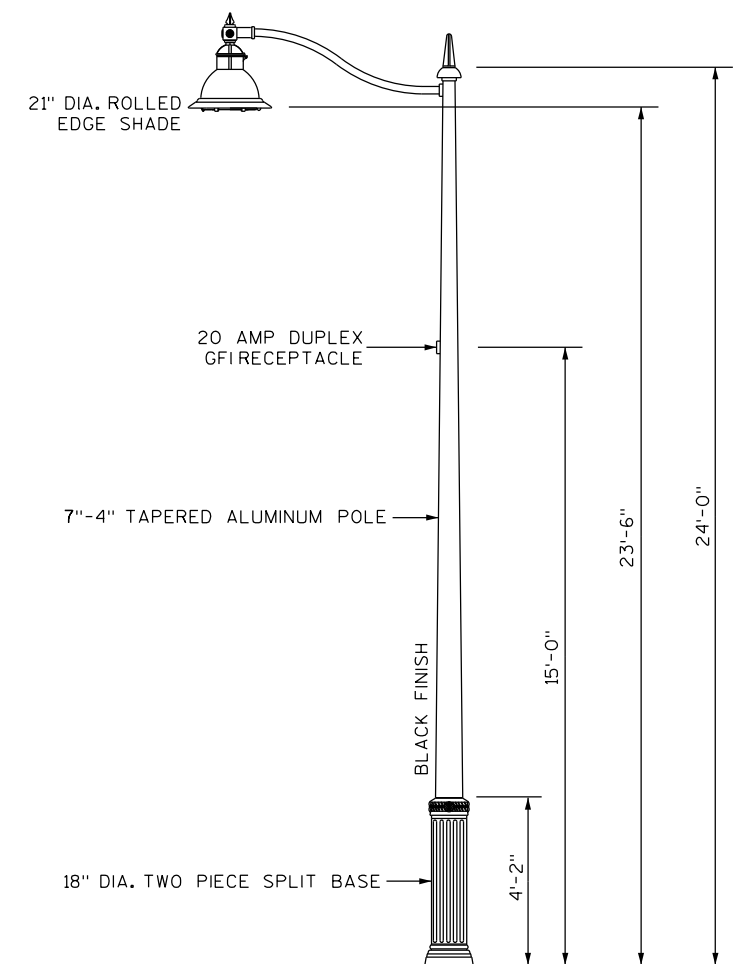
-  EARTH GROUND
 FUSE
 L.E.D. DRIVER



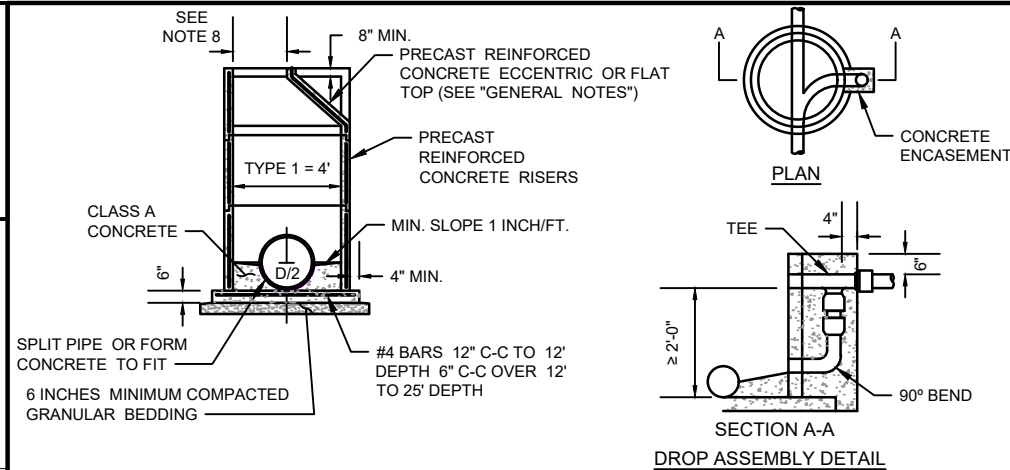
LIGHT POLE LOCATION DETAIL

SPV - CONCRETE BASE TYPE 5 MODIFIED

SPV - LIGHTING ASSEMBLY ROADWAY DECORATIVE 126W-LED SPECIAL



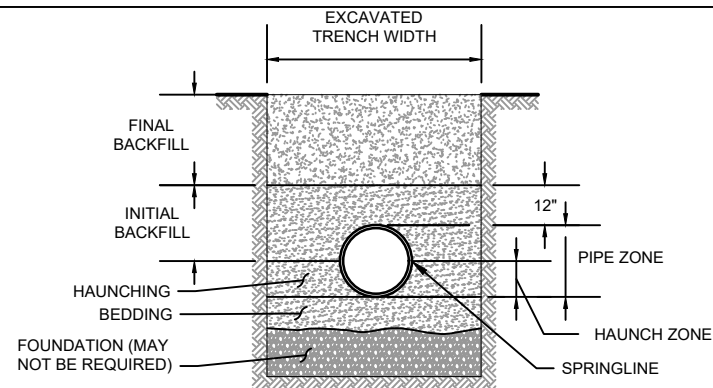
LIGHTING ASSEMBLY DETAIL



GENERAL NOTES:

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING AND THE APPLICABLE SPECIAL CONDITIONS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
- DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.
- PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.
- ECCENTRIC CONE TOPS SHALL BE USED ON ALL STRUCTURES 5 FEET OR GREATER IN DEPTH, AND FLAT TOPS SHALL BE USED ONLY ON STRUCTURES LESS THAN 5 FEET IN DEPTH, UNLESS DIRECTED BY THE ENGINEER.
- PRECAST REINFORCED CONCRETE RISERS MAY BE PLACED WITH TONGUE UP OR DOWN.
- ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.
- DROP CONNECTIONS SHALL BE USED WHEN THE PIPE INVERT IS MORE THAN 2 FEET ABOVE THE MANHOLE INVERT. PRECAST STRUCTURE MANWAY CLEAR OPENING SHALL MATCH CASTING - REFER TO STANDARD SPECIFICATION DIVISION 33 AND THE APPLICABLE SPECIAL CONDITIONS.
 - OPENING SHALL BE 24" FOR R-1550 CASTINGS
 - OPENING SHALL BE 27" FOR R-1642 CASTINGS
- DROP CONNECTION AND ASSEMBLY SHALL BE CONSTRUCTED WITH DUCTILE IRON PIPE.

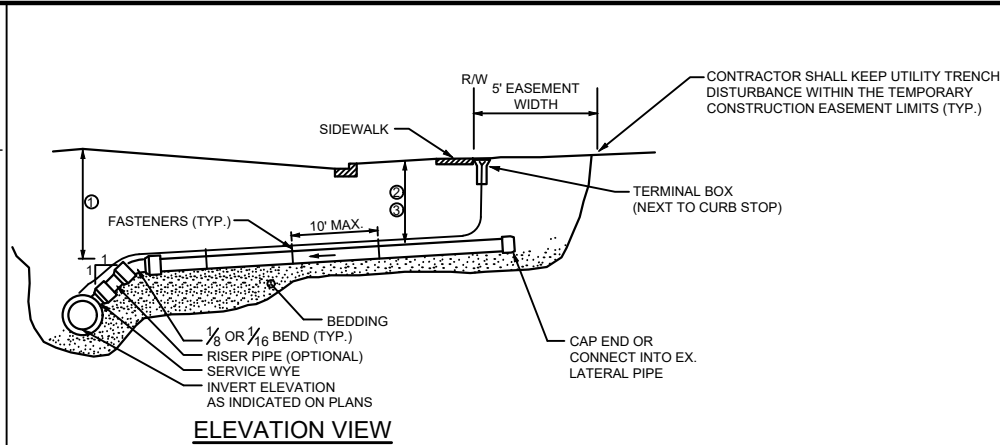
PRECAST REINFORCED CONCRETE SANITARY MANHOLE DETAIL
NO SCALE



GENERAL NOTES:

- DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO ASTM D2321.
- CLASS II EMBEDMENT MATERIAL SHALL BE CLEAN, COARSE-GRAINED SOILS WITH LITTLE TO NO FINES. NO PARTICLES LARGER THAN 1 1/2 -INCHES SHALL BE USED IN THE PIPE EMBEDMENT.
- WHERE HYDRAULIC GRADIENT EXISTS USE A WELL-GRADED MIXTURE TO MINIMIZE MIGRATION OF FINES FROM ADJACENT SOIL.
- CLASS II MATERIAL IS SUITABLE AS A FOUNDATION AND FOR REPLACING OVER- EXCAVATED AND UNSTABLE TRENCH BOTTOM. INSTALL AND COMPACT IN 6-INCH MAXIMUM LAYERS.
- INSTALL AND COMPACT BEDDING IN 6-INCH MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 INCH (6 INCH IN ROCK CUTS.)
- INSTALL AND COMPACT HAUNCHING IN 6-INCH MAXIMUM LAYERS. WORK IN AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT.
- INSTALL AND COMPACT INITIAL BACKFILL TO A MINIMUM OF 12 INCH ABOVE PIPE CROWN.
- EMBEDMENT COMPACTION:
 - MINIMUM DENSITY 85% STANDARD PROCTOR. USE HAND TAMPERS OR VIBRATORY COMPACTORS.

CLASS II - PVC SANITARY AND WATERMAIN PIPE EMBEDMENT DETAIL
NO SCALE



NOTES FOR LATERAL INSTALLATION:

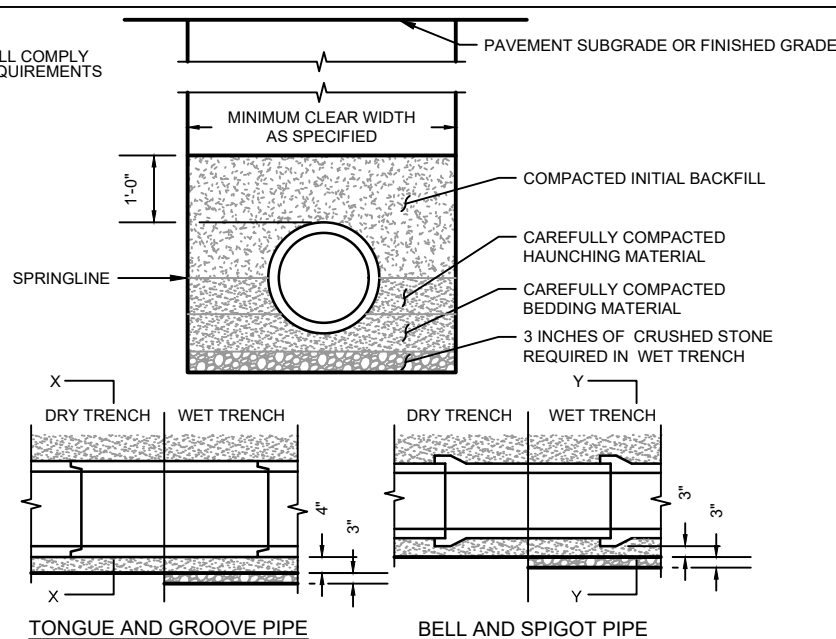
- MINIMUM DEPTH OF COVER UNDER ROADWAY = 7 FEET.
- MINIMUM DEPTH OF COVER UNDER GRASS AREAS = 5 1/2 FEET.
- LATERAL SLOPES SHALL BE 1/8 INCH PER FOOT MINIMUM AND 1/2 INCH PER FOOT MAXIMUM.

NOTES FOR TRACER WIRE INSTALLATION:

- THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE.
- GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED WITH THE NON-CONDUCTIVE SERVICE. PIPE TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER MAIN OR AS DETERMINED BY THE ENGINEER OR OWNER.
- TRACER WIRE SHALL BE RESTRAINED BY CABLE-TIES, TAPE, OR BY NON-CORROSIVE FASTENER APPROVED BY THE OWNER, INSTALLED EVERY 10 FEET ALONG SERVICE. DO NOT WRAP TRACER WIRE AROUND THE PIPE.
- TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TERMINAL BOX (SEE SPEC). SPLICES IN TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT OR COMPRESSION-TYPE CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.
- TRACER WIRE SHALL BE INSTALLED ALONG ALL NEWLY INSTALLED SANITARY LATERALS (INCIDENTAL TO SANITARY LATERAL PIPING).

SANITARY SEWER LATERAL DETAIL
SCALE: NONE

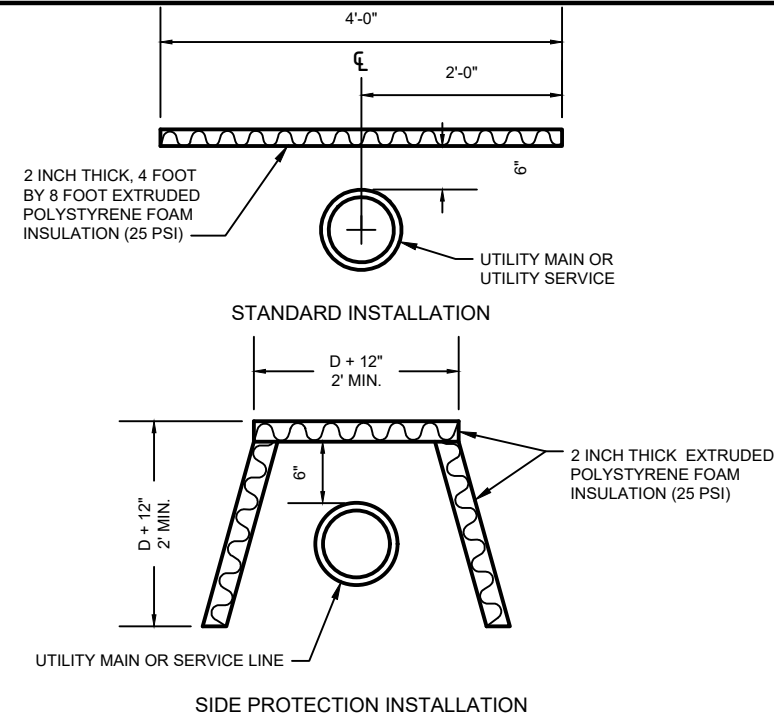
TRENCHES SHALL COMPLY WITH OSHA REQUIREMENTS



GENERAL NOTES:

- BEDDING AND HAUNCHING MATERIAL SHALL BE WELL-GRADED 3/4 TO 1/4 INCH CRUSHED STONE OR OTHER NON-COHESIVE MATERIAL NOT SUBJECT TO MIGRATION AND FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
- BEDDING MATERIAL TO BE PLACED BEFORE SETTING PIPE, 4 INCH MINIMUM UNDER BARREL WITH 3 INCH MINIMUM UNDER BELL.
- INITIAL BACKFILL SHALL BE DENSELY COMPACTED, NON-COHESIVE FINELY DIVIDED MATERIAL FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
- IN ROCK OR OTHER UNCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6-INCHES AND REFILLED WITH GRANULAR MATERIAL.

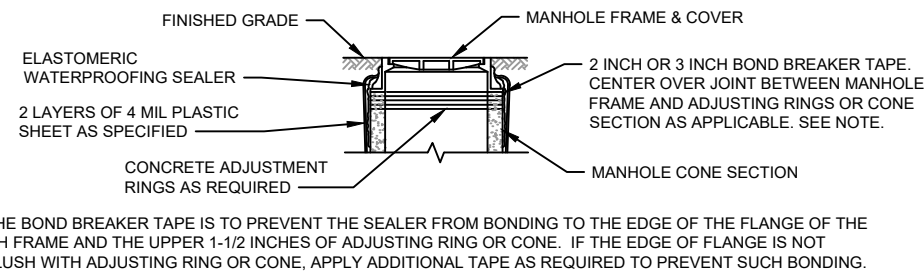
CLASS B - DUCTILE IRON WATERMAIN PIPE EMBEDMENT DETAIL
NO SCALE



GENERAL NOTES:

- THE SIDE PROTECTION INSTALLATION SHALL BE USED WHERE FROST WILL PENETRATE BELOW THE PIPE INVERT.

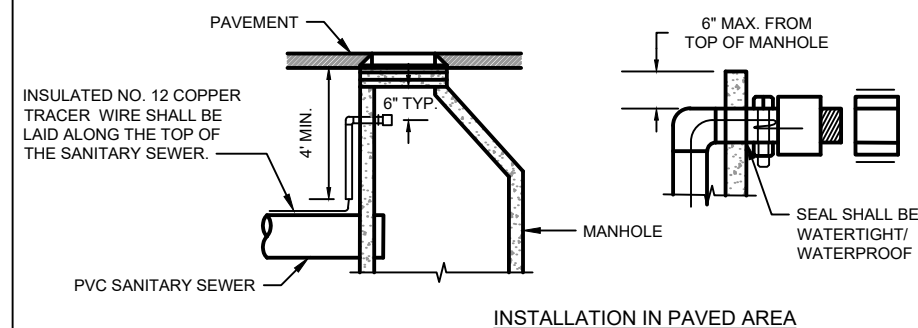
PIPE INSULATION DETAIL
NO SCALE



THE BOND BREAKER TAPE IS TO PREVENT THE SEALER FROM BONDING TO THE EDGE OF THE FLANGE OF THE MH FRAME AND THE UPPER 1-1/2 INCHES OF ADJUSTING RING OR CONE. IF THE EDGE OF FLANGE IS NOT FLUSH WITH ADJUSTING RING OR CONE, APPLY ADDITIONAL TAPE AS REQUIRED TO PREVENT SUCH BONDING.

ELASTOMERIC FRAME/CHIMNEY SEAL

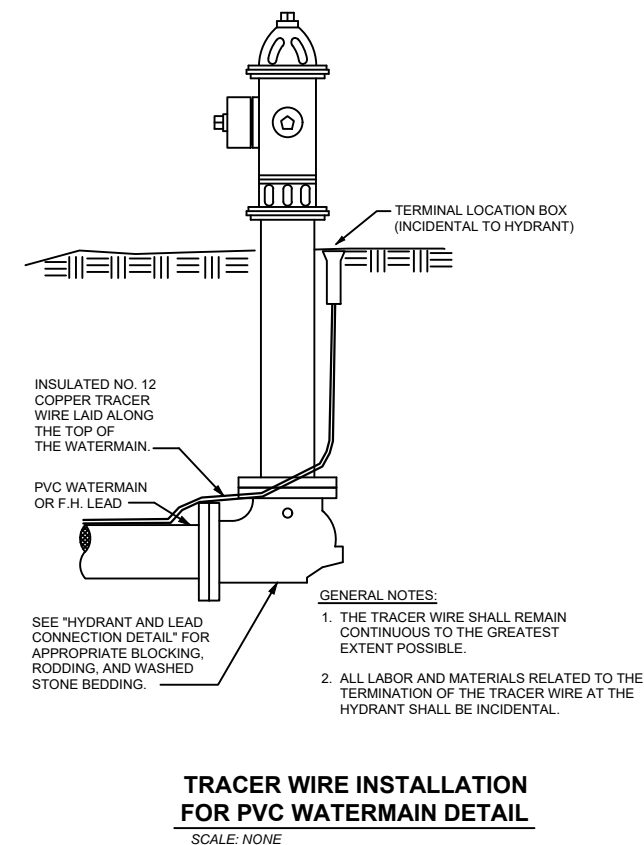
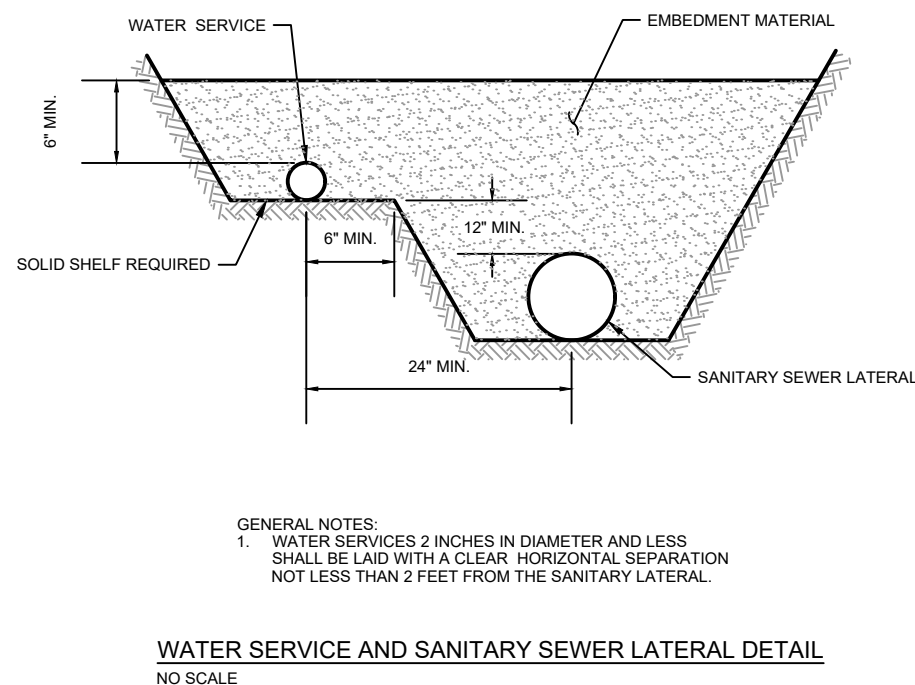
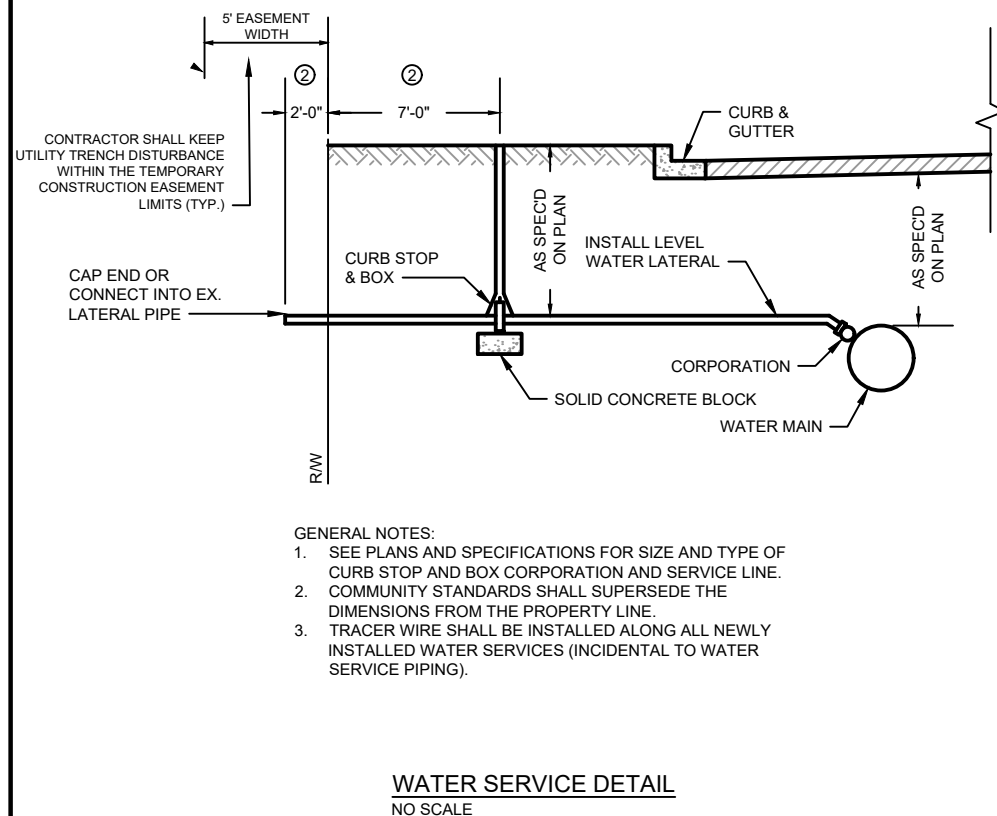
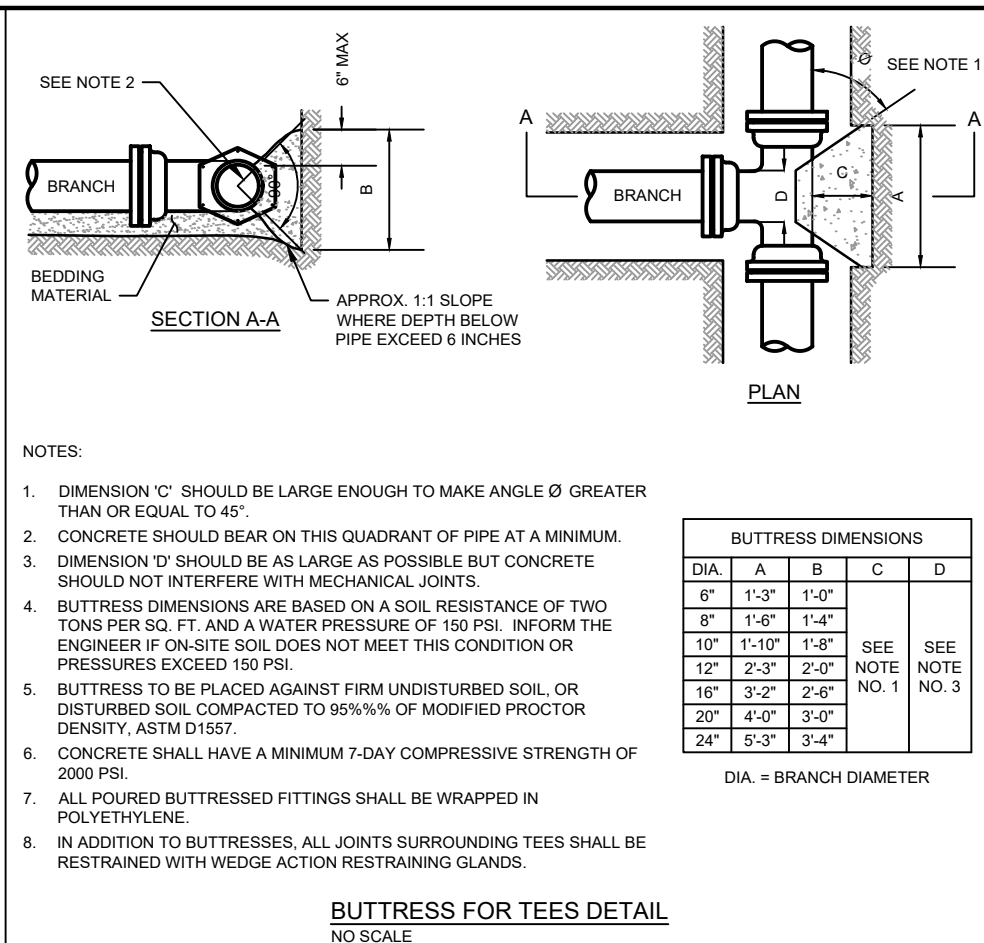
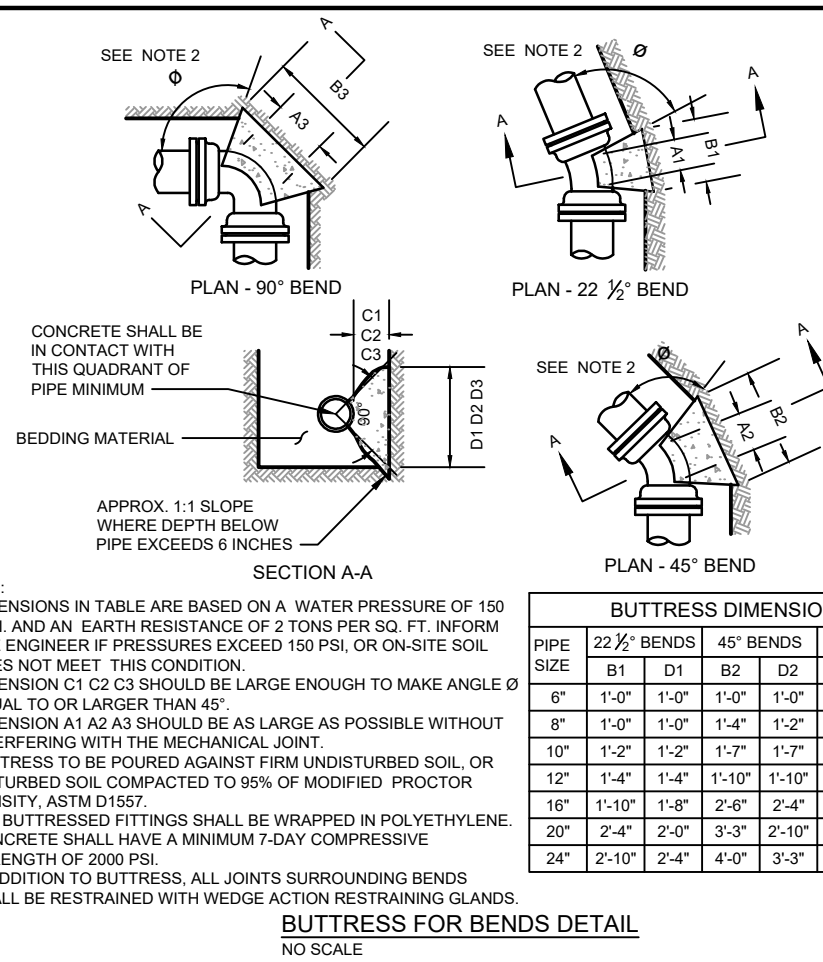
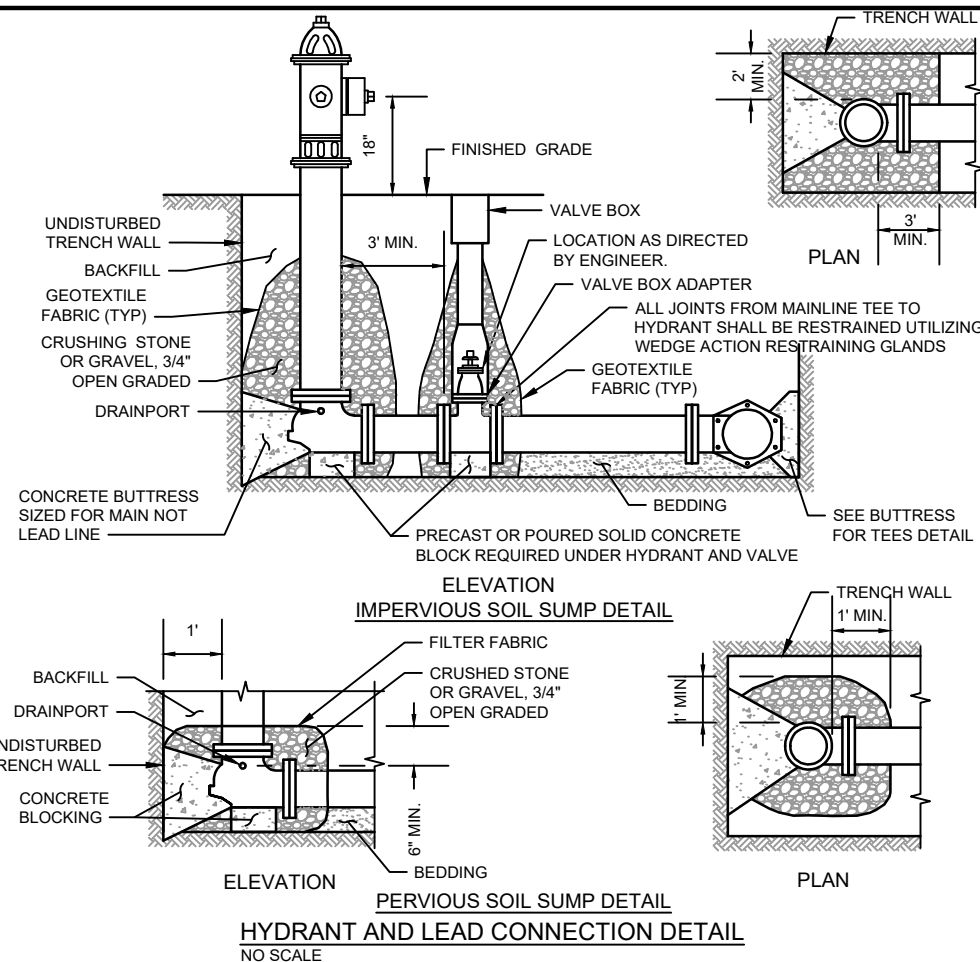
SANITARY MANHOLE WATERPROOFING DETAIL
NO SCALE

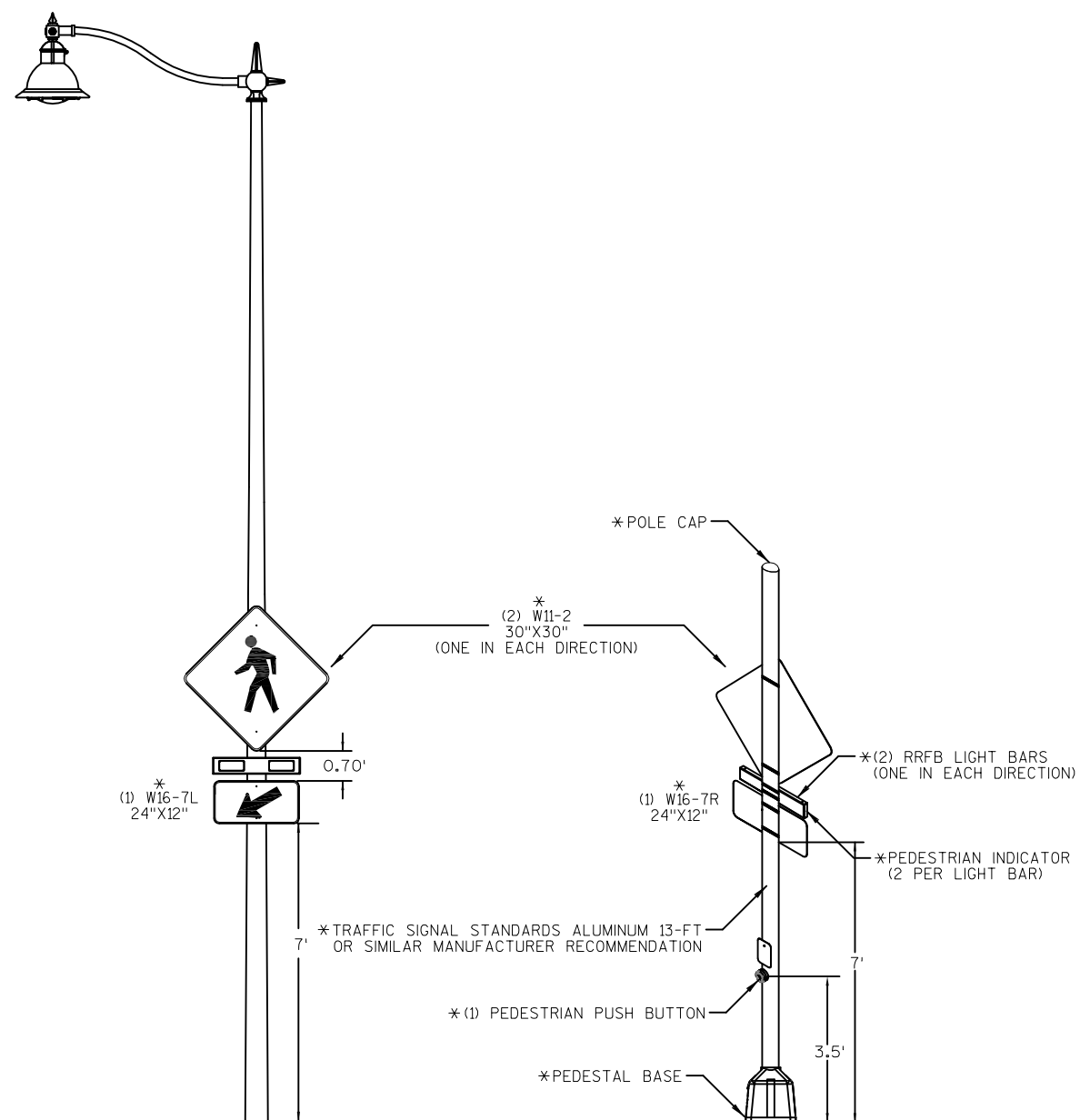


GENERAL NOTES:

- THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE.
- A THREADED, FEMALE PVC SCHEDULE 40 PLUG AND MALE COUPLING GLUED TO 3/4 INCH SCHEDULE 40 SHALL BE INSTALLED IN OR ADJACENT TO THE VALVE VAULT AND MANHOLE.
- WIRE PIGTAIL SHALL BE WRAPPED AROUND BOLT AND READILY ACCESSIBLE, WITH SUFFICIENT LENGTH FOR EASY CONNECTION.

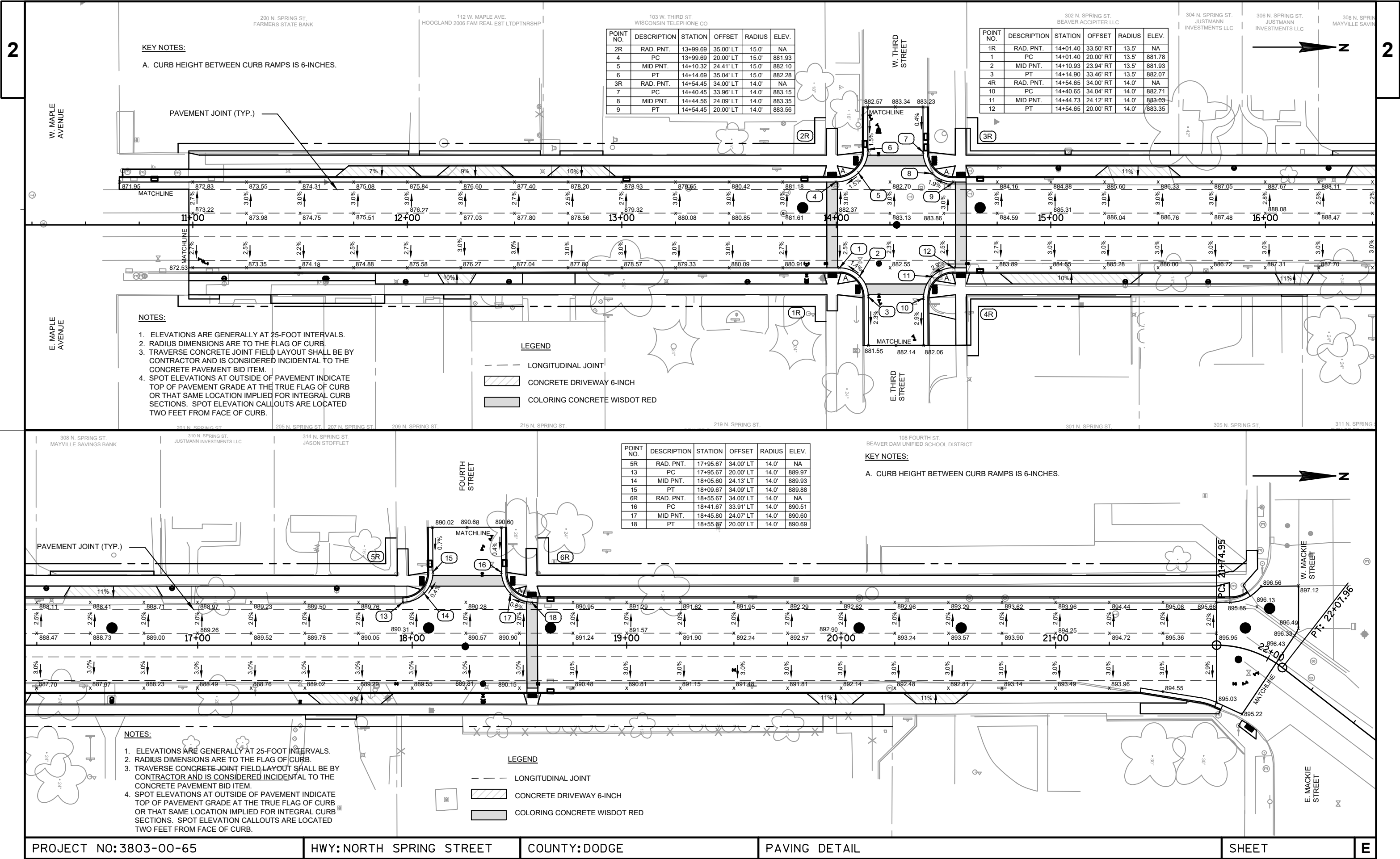
TRACER WIRE INSTALLATION AT SANITARY MANHOLE DETAIL
NO SCALE





STA. 18+61.30, 24.75' RT (SINGLE SIDED)

PLOT DATE : \$\$...plottingdate...\$\$ PLOT BY : \$\$...plotuser...\$\$ PLOT NAME : -----PLOT SCALE : \$\$....plotscale....\$\$ WISDOT/CADDS SHEET 42



PROJECT NO:3803-00-65

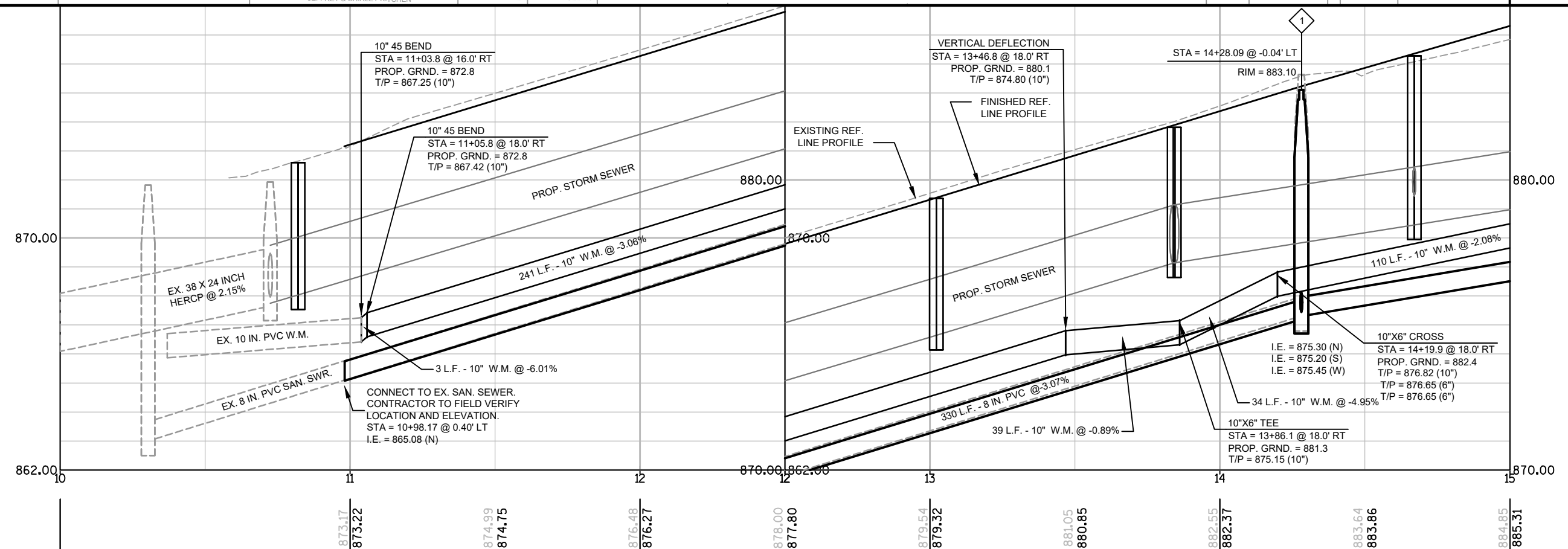
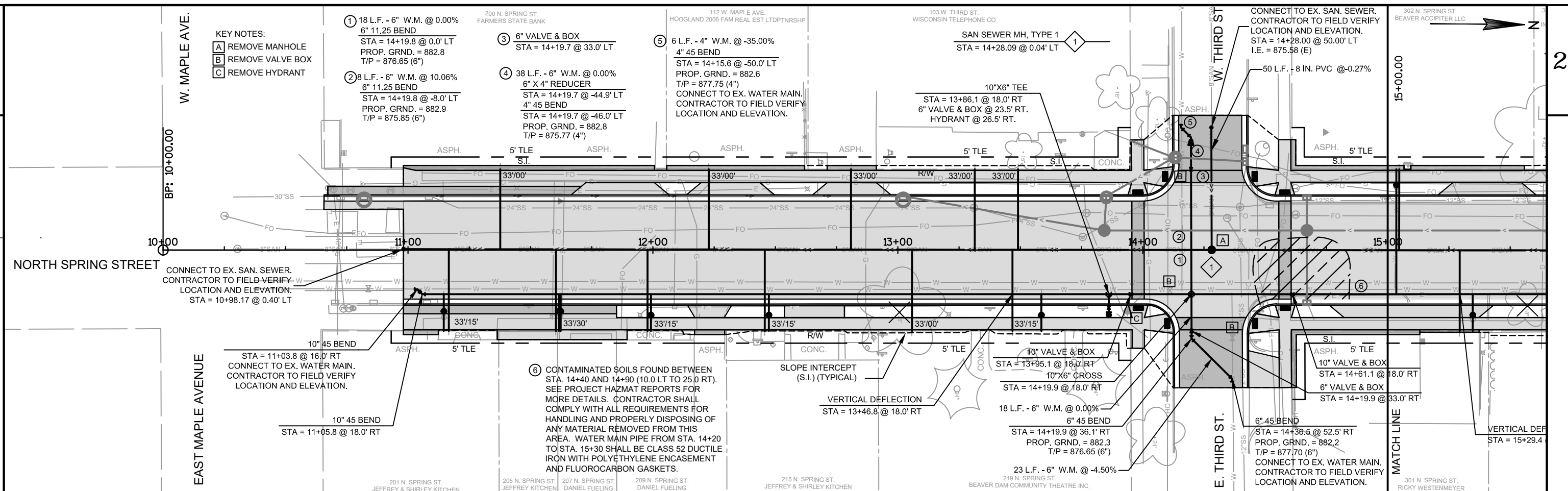
HWY:NORTH SPRING STREET

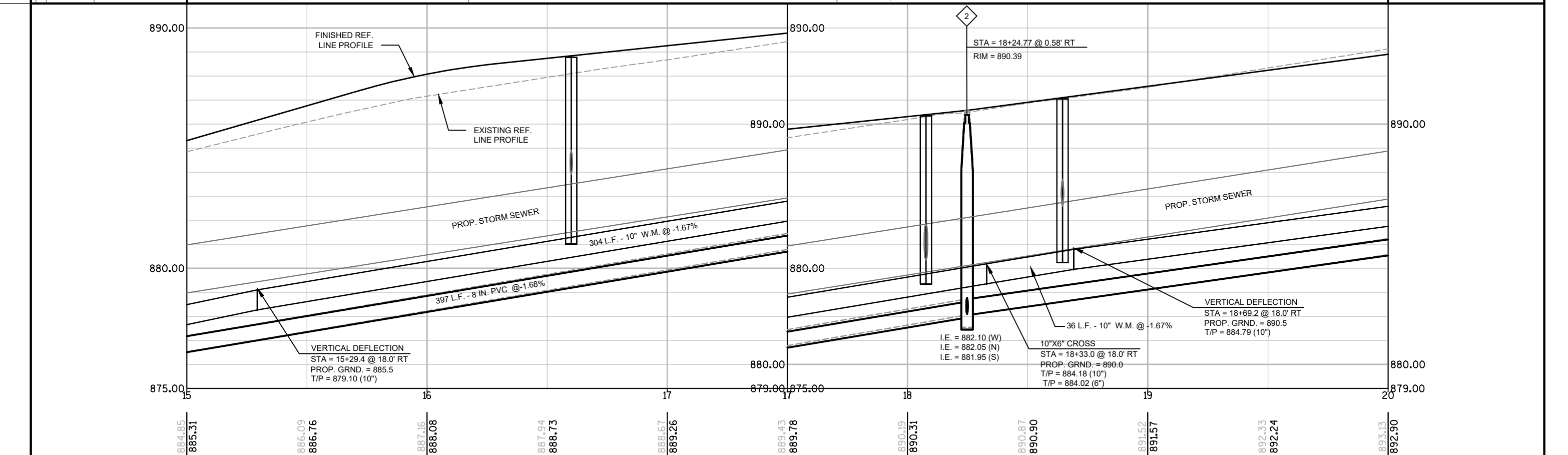
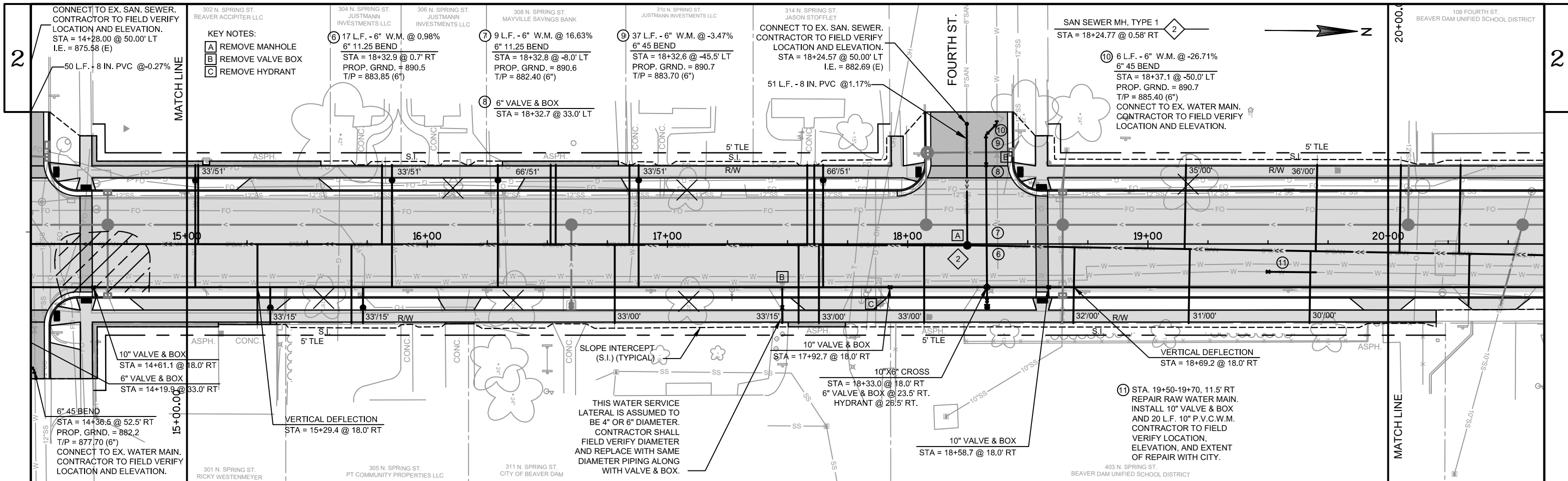
COUNTY:DODGE

PAVING DETAIL

SHEET

E

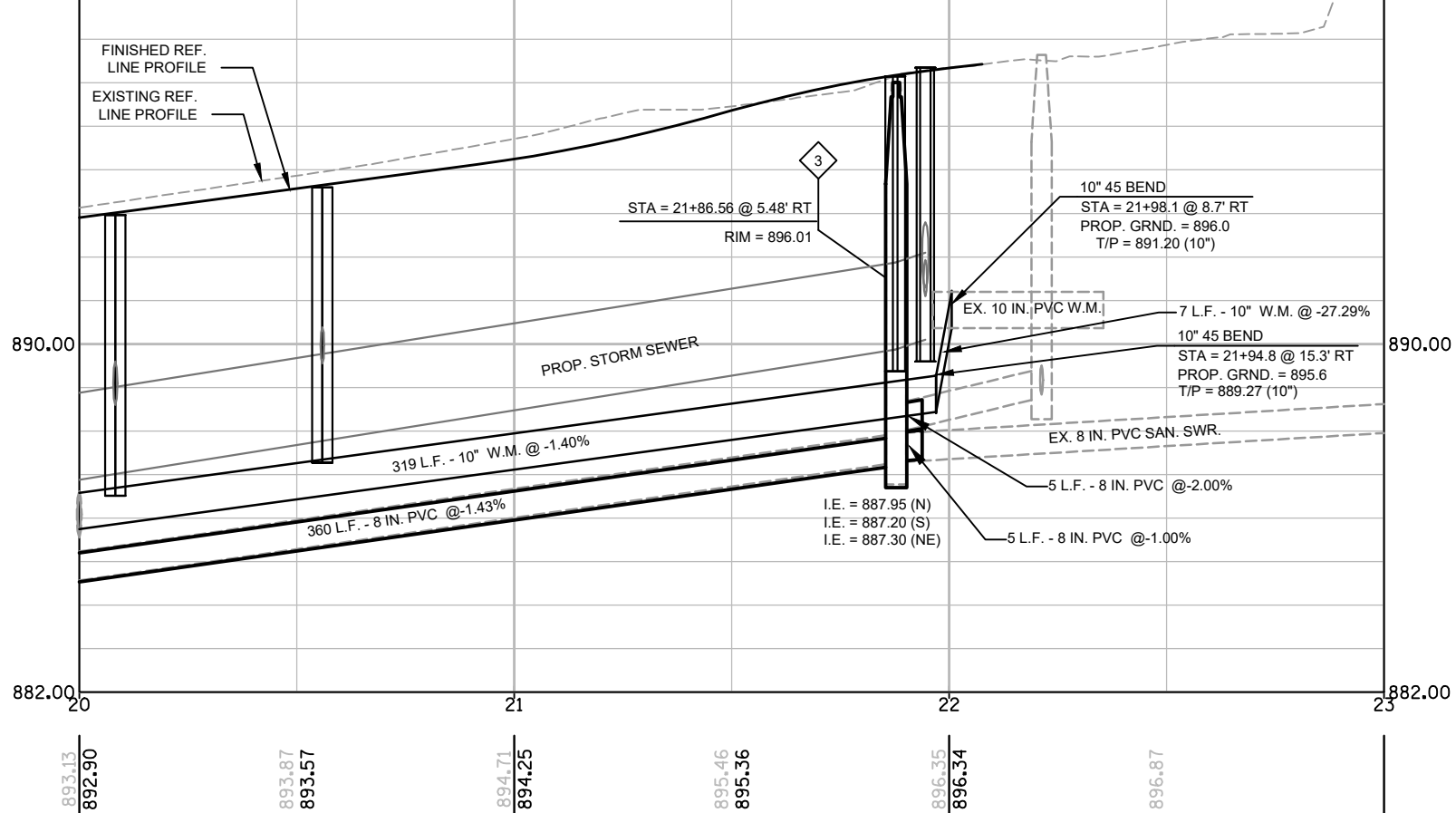
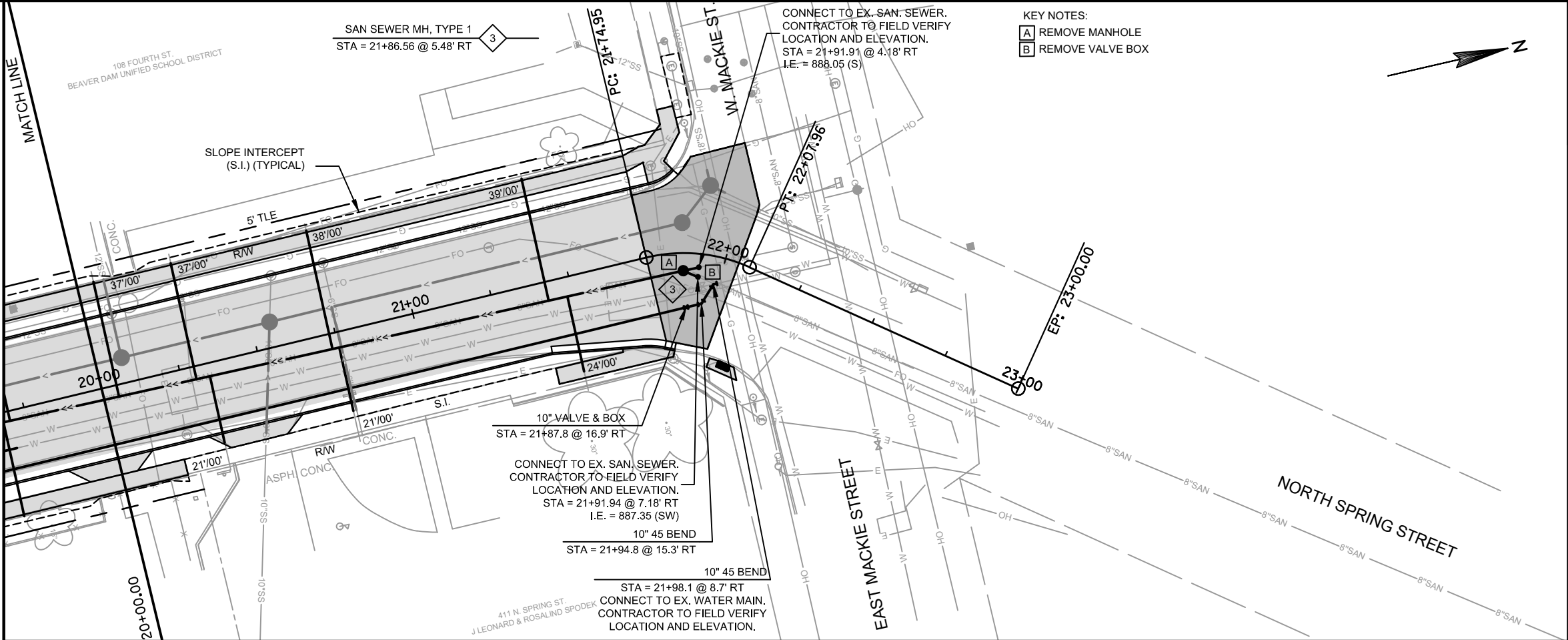


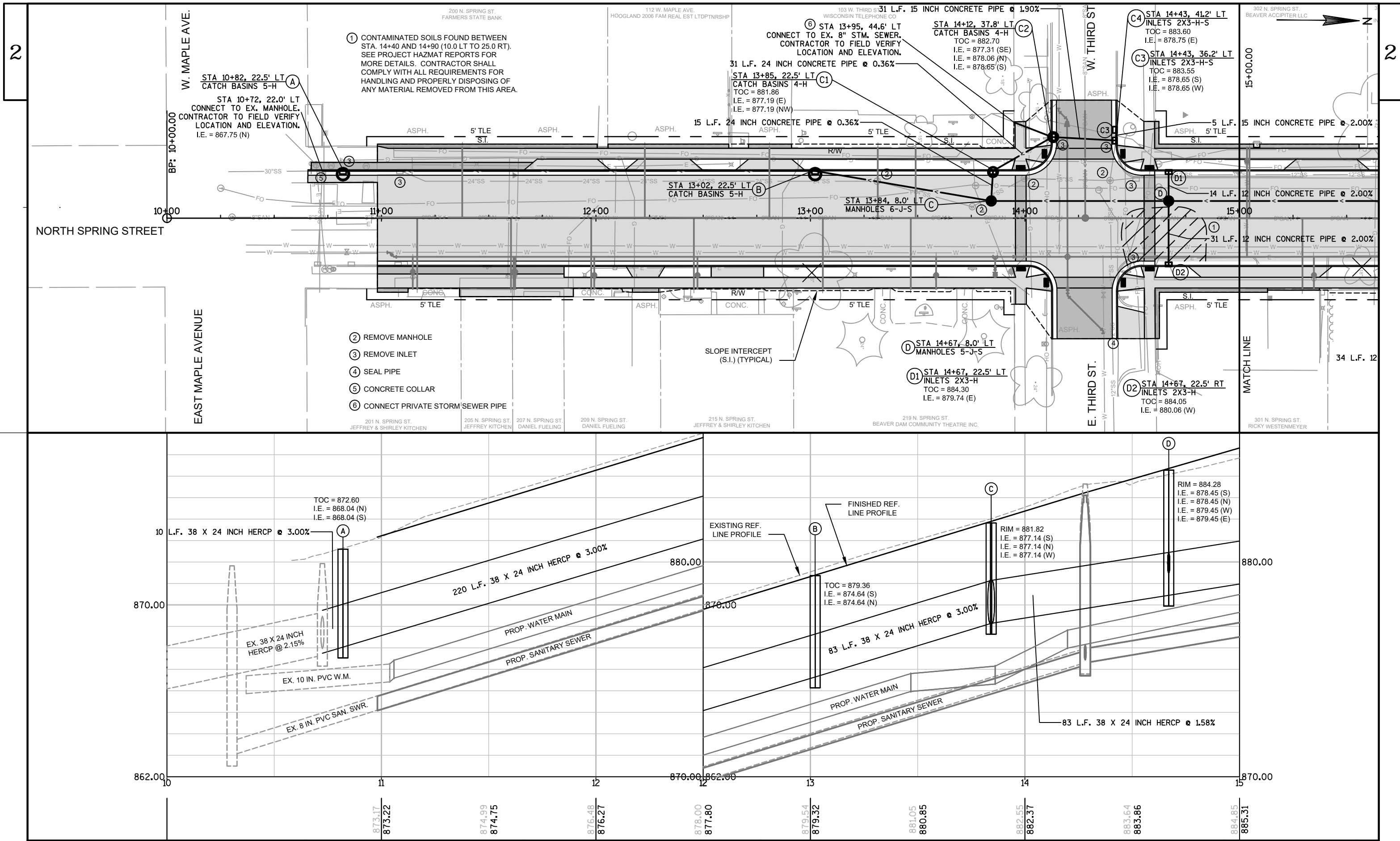


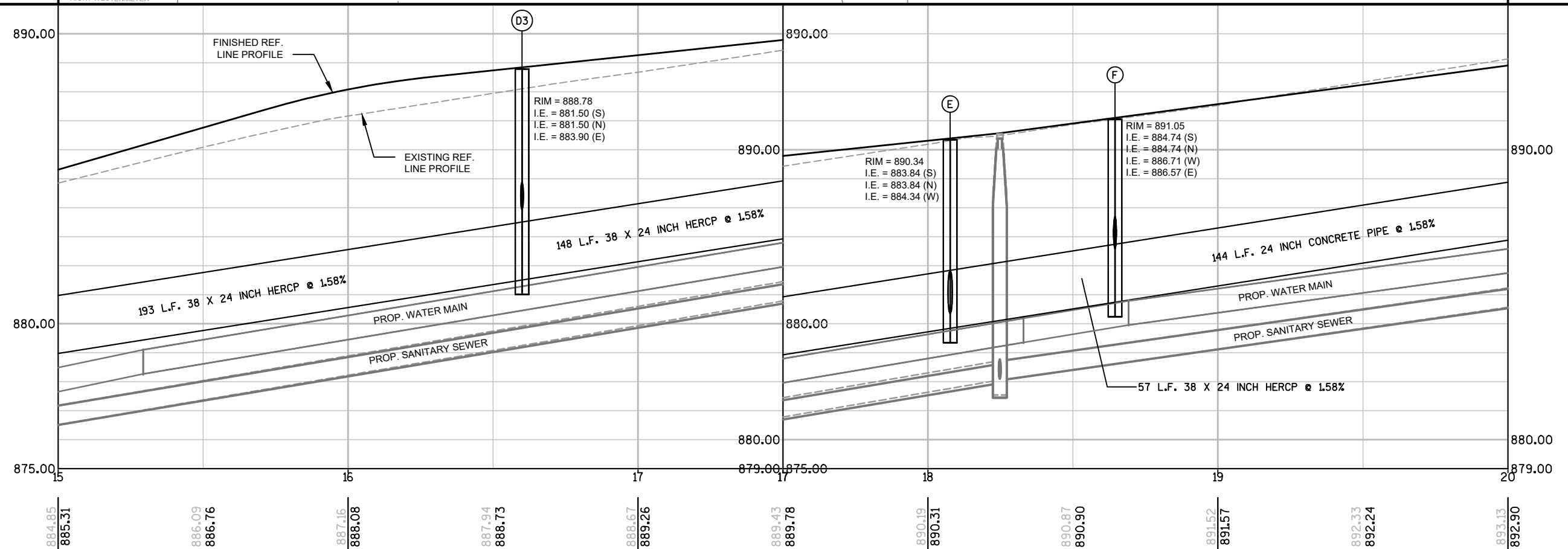
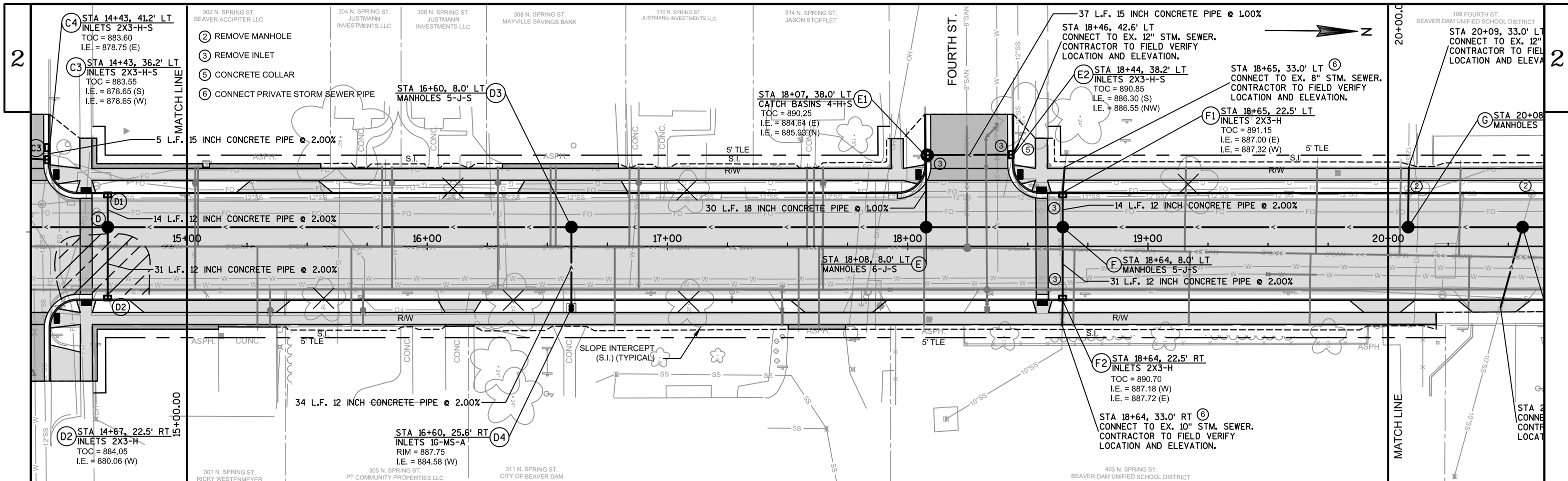
PROJECT NO:3803-00-66	HWY:NORTH SPRING STREET	COUNTY:DODGE	SANITARY SEWER AND WATER MAIN PLAN	SHEET	E
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GENERAL SANITARY SEWER AND WATER MAIN CONSTRUCTION NOTES:

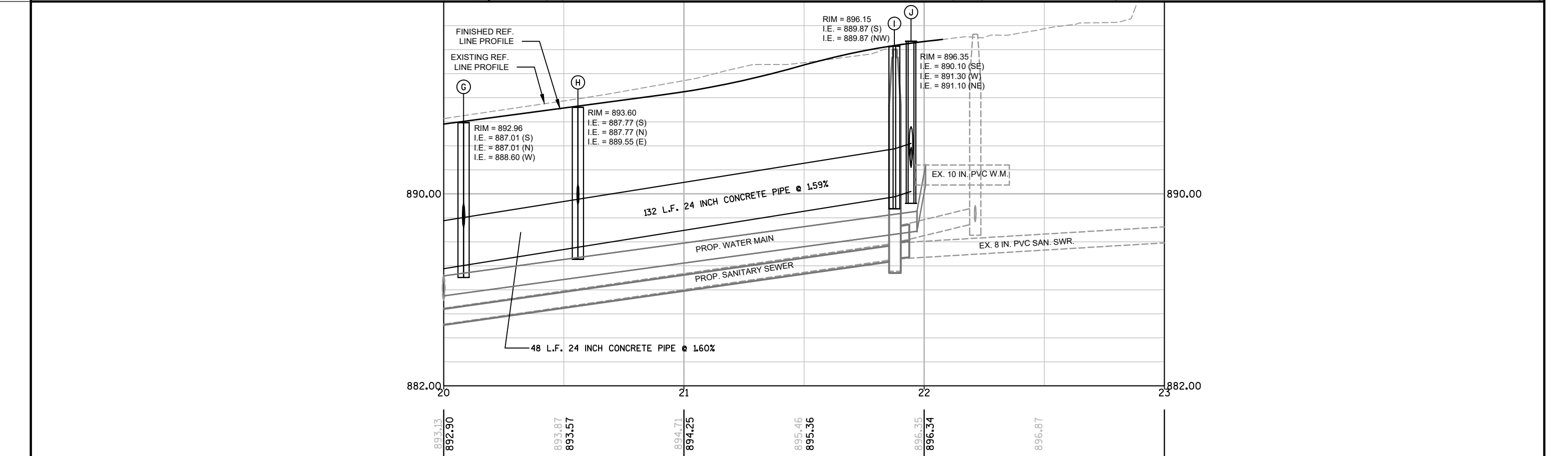
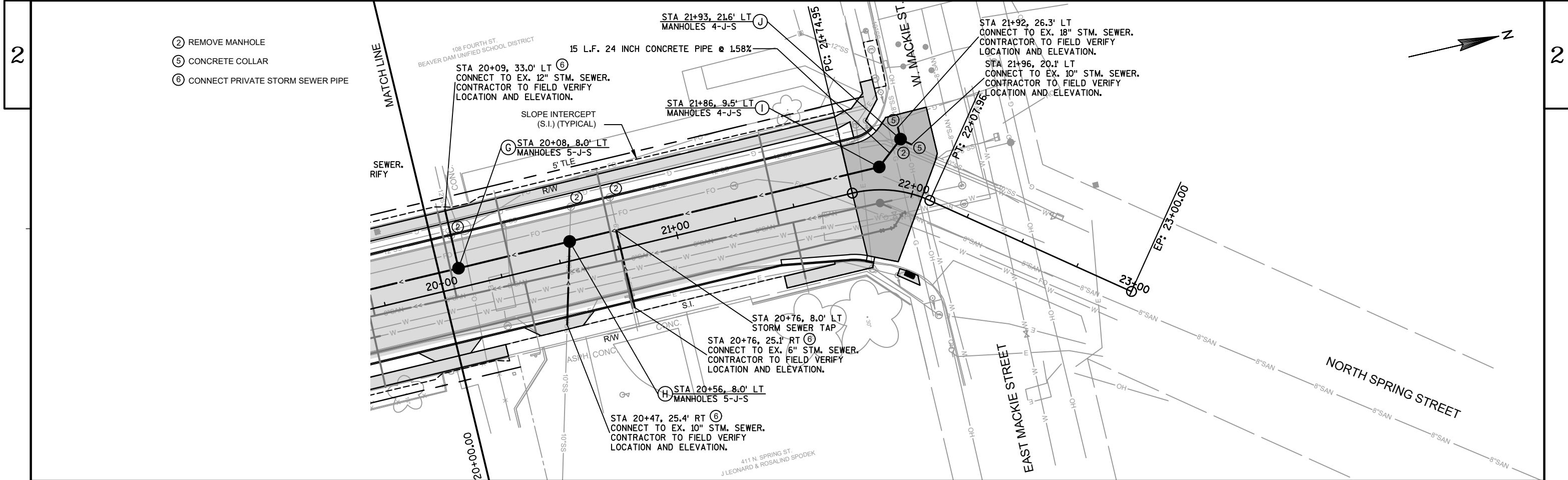
1. 28'/00" - THIS TEXT DENOTES "PROPOSED INSTALLED LENGTH OF SANITARY LATERAL / PROPOSED INSTALLED LENGTH OF WATER SERVICE LATERAL"
2. THE SANITARY LATERAL LOCATIONS ARE SHOWN AS PER THE TELEVISION REPORTS FURNISHED BY THE CITY. NOT ALL LOCATIONS MAY BE ACTIVE. THE CONTRACTOR SHALL DYE TEST THE LATERALS TO VERIFY WHICH ONES ARE ACTIVE AND RECONNECT ONLY THE ACTIVE LATERALS. INVESTIGATION AND DYE TESTING SHALL BE INCIDENTAL TO THE SANITARY SEWER CONSTRUCTION. THE SIZE/MATERIAL OF THE EXISTING SANITARY LATERALS IS UNKNOWN. THE CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF BOTH 4" AND 6" DIAMETER CONNECTION FITTINGS AND PIPE ON HAND TO MAKE EQUIVALENT SIZE REPLACEMENTS TO A POINT NEAR THE R/W LINE AS DIRECTED BY THE FIELD ENGINEER. ALL 4" AND 6" DIAMETER SANITARY LATERAL REPLACEMENTS SHALL BE PAID ACCORDING TO THE SAME GENERIC BID ITEM FOR SANITARY WYE FITTING AND SANITARY LATERAL REPLACEMENT AND NO DIFFERENTIATION SHALL BE MADE FOR PIPE SIZE. NEW SANITARY SEWER LATERAL PIPE MATERIAL SHALL BE PVC.
3. THE SIZE/MATERIAL OF EXISTING WATER SERVICE LATERALS IS UNKNOWN. THE CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF BOTH 1" AND 2" DIAMETER CONNECTION FITTINGS AND PIPE ON HAND TO MAKE EQUIVALENT SIZE REPLACEMENTS TO A POINT NEAR THE R/W LINE AS DIRECTED BY THE FIELD ENGINEER. ALL 1" AND 2" DIAMETER WATER SERVICE LATERAL REPLACEMENTS SHALL BE PAID ACCORDING TO THE SAME GENERIC BID ITEM FOR WATER SERVICE CORPORATION/CURB STOP/BOX AND WATER SERVICE LATERAL REPLACEMENT AND NO DIFFERENTIATION SHALL BE MADE FOR PIPE SIZE. NEW WATER SERVICE LATERAL PIPE MATERIAL SHALL BE COPPER.
4. A 7 FEET DEPTH OF COVER OVER ALL NEWLY INSTALLED WATER MAINS AND SERVICES IS DESIRED FOR THIS PROJECT. THE CONTRACTOR SHALL MAINTAIN A MINIMUM DEPTH OF COVER OF 5.0 FEET UNLESS DIRECTED OTHERWISE BY THE CITY. IF THE NEWLY INSTALLED WATER SERVICE OR MAIN IS INSTALLED WITH COVER LESS THAN 7 FEET, THE CONTRACTOR SHALL INSULATE THE WATER PIPING ACCORDING TO THE INSULATION DETAIL AND PROJECT SPECIFICATIONS (INSULATION SHALL BE INCIDENTAL TO THE WATERMAIN CONSTRUCTION). THE DEPTH OF COVER SHALL BE BASED ON FINISHED GROUND ELEVATIONS. INSULATION SHALL ALSO BE INSTALLED AT ALL LOCATIONS WHERE STORM SEWER CROSSES THE WATER MAIN (INCIDENTAL). MINIMUM VERTICAL SEPARATION DISTANCE WHERE WATERMAIN CROSSES OVER SEWERS IS 6 INCHES. MINIMUM VERTICAL SEPARATION DISTANCE WHERE WATERMAIN CROSSES UNDER SEWERS IS 18 INCHES. FINAL ELEVATIONS OF THE WATERMAIN WILL BE DETERMINED DURING CONSTRUCTION BY THE FIELD ENGINEER AND/OR CITY STAFF.
5. ALL PROPOSED SANITARY SEWER AND WATER UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THIS CONSTRUCTION PLAN, THE PROJECT SPECIFICATIONS, THE LATEST EDITION OF THE WISCONSIN STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION, AND ANY CONDITIONS OF APPROVAL.
6. TRACER WIRE SHALL BE INSTALLED ALONG ALL SANITARY SEWER, SANITARY LATERALS, WATER MAIN, AND WATER SERVICES (INCIDENTAL TO THE SPECIFIC PIPING). TRACER WIRE SHALL BE SURFACED AT ALL SANITARY MANHOLES, HYDRANTS, WATER SERVICE VALVES/CURB STOPS, AND SANITARY LATERAL TRACER WIRE TERMINAL BOXES.
7. THE NEW WATER MAIN SHALL BE INSTALLED AND TESTED WHILE THE EXISTING WATER MAIN IS STILL IN OPERATION TO KEEP WATER SERVICE TO RESIDENTS AND BUSINESSES FOR AS LONG AS POSSIBLE. THE CONTRACTOR SHALL COORDINATE WITH THE CITY AND/OR FIELD ENGINEER REGARDING DEFLECTING WATER MAIN AND WATER SERVICE PIPING TO AVOID CONFLICTS WITH THE PROP. SANITARY & STORM IMPROVEMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF WATER CONNECTION POINTS TO THE EXISTING WATER SYSTEM AND SHALL NOTIFY THE ENGINEER OF POSSIBLE HIGH POINTS IN THE WATER MAIN WITHOUT AIR RELEASE. A 7.0 FEET DEPTH OF COVER OVER ALL NEWLY INSTALLED WATER UTILITY PIPING IS DESIRED FOR THIS PROJECT UNLESS DIRECTED OTHERWISE BY THE CITY. NO WATER PIPING SHALL BE INSTALLED WITH A DEPTH OF COVER LESS THAN 5.0 FEET. ALL NEWLY INSTALLED WATER MAIN WITH COVER LESS THAN 7.0 FEET SHALL BE INSULATED ACCORDING TO THE SPECIFICATIONS AND INSULATION DETAIL. INSULATION SHALL ALSO BE INSTALLED AT ALL LOCATIONS WHERE STORM SEWER CROSSES THE WATER MAIN. MINIMUM VERTICAL SEPARATION DISTANCE WHERE WATER MAIN CROSSES OVER SEWERS IS 6 INCHES. MINIMUM VERTICAL SEPARATION DISTANCE WHERE WATER MAIN CROSSES UNDER SEWERS IS 18 INCHES. UNLESS PROHIBITED BY FIELD CONDITIONS, THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAIN AND SEWER MAIN PIPING SHALL BE 8 FEET.
8. ALL BENDS, FERNCO CONNECTORS, FITTINGS, AND OTHER MATERIALS NOT SPECIFICALLY ITEMIZED ON THE BID BUT NECESSARY TO MAKE A WATERTIGHT CONNECTION TO THE EXISTING SANITARY OR WATER PIPING AS WELL AS TO PROVIDE A COMPLETE WORKING SYSTEM SHALL BE INCIDENTAL TO CONSTRUCTION. ALL SAWCUTTING NECESSARY FOR UTILITY INSTALLATION SHALL BE INCIDENTAL TO CONSTRUCTION. ALL PROPOSED SANITARY SEWER AND WATER PIPING CONNECTIONS INTO EXISTING PIPING OR STRUCTURES SHALL BE INCIDENTAL TO CONSTRUCTION. ALL EXISTING SANITARY SEWER AND WATER PIPE ABANDONMENT AS WELL AS THE REMOVAL OF EX. MANHOLES, HYDRANTS, VALVE BOXES, AND CURB STOPS THAT ARE NO LONGER IN USE SHALL BE INCIDENTAL TO THE LUMP SUM REMOVAL BID ITEMS.







PROJECT NO:3803-00-65	HWY:NORTH SPRING STREET	COUNTY:DODGE	STORM SEWER PLAN	SHEET	E
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PROJECT NO:3803-00-65

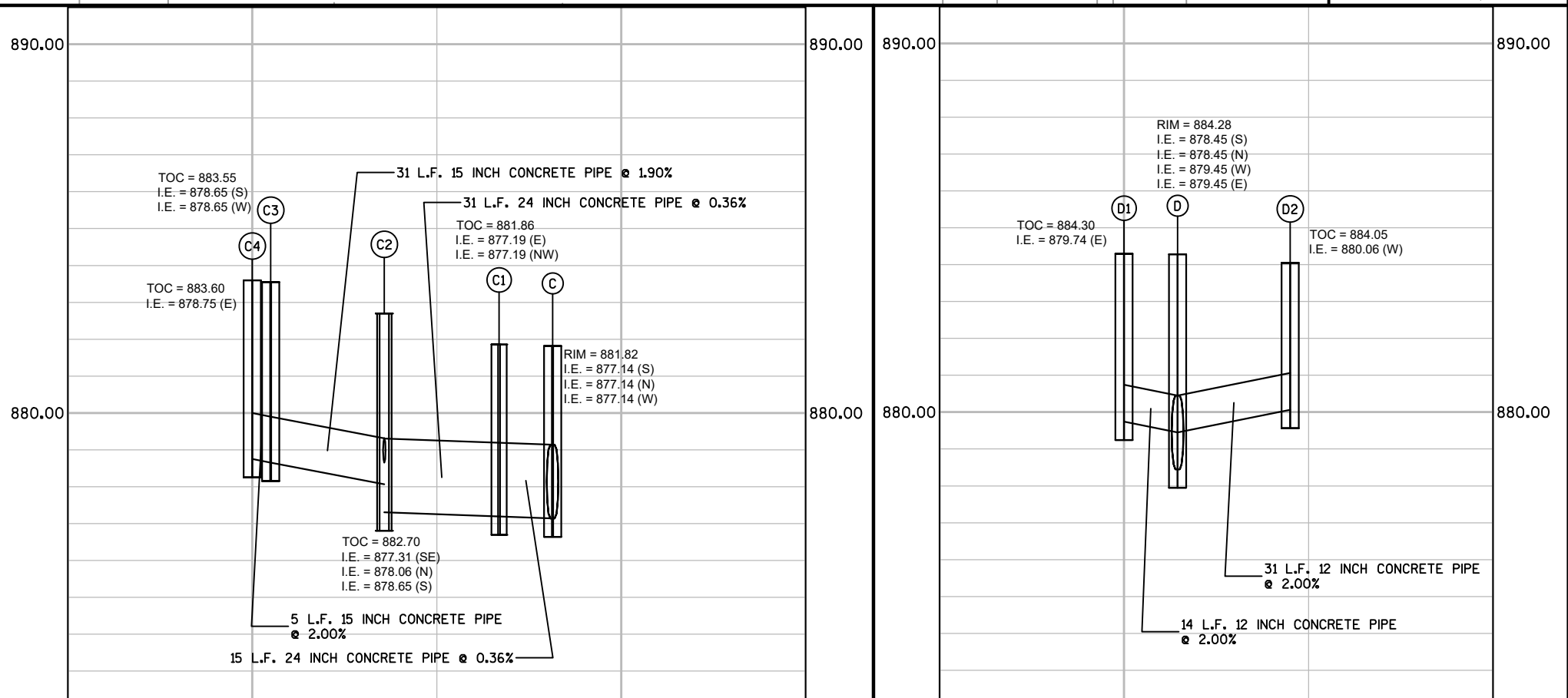
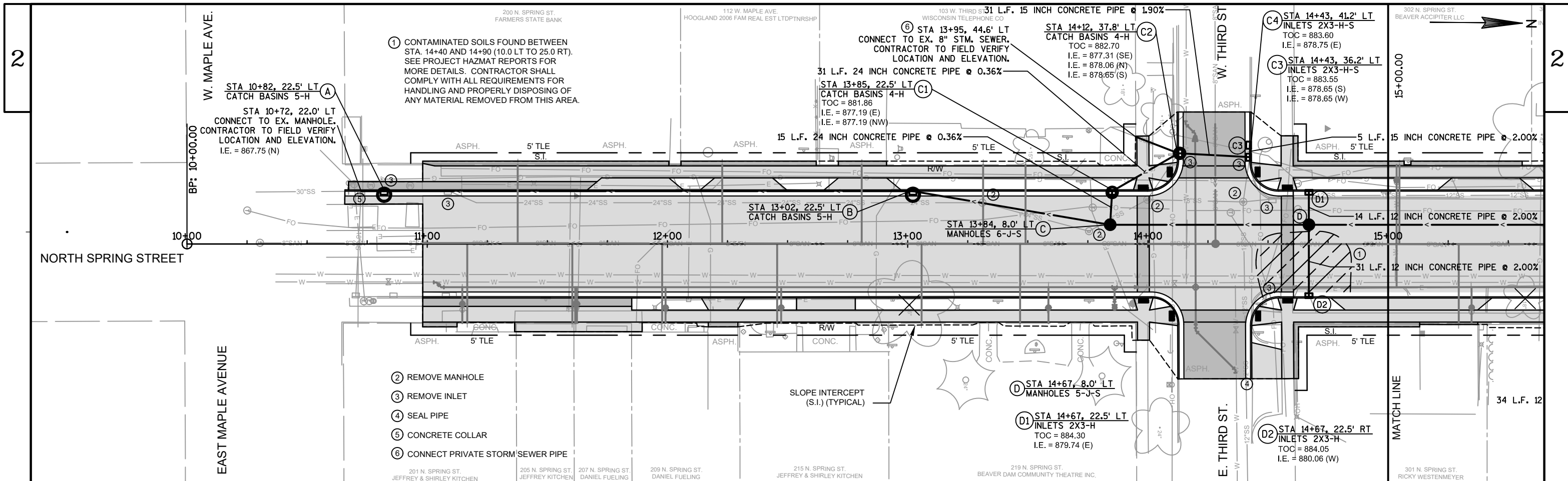
HWY:NORTH SPRING STREET

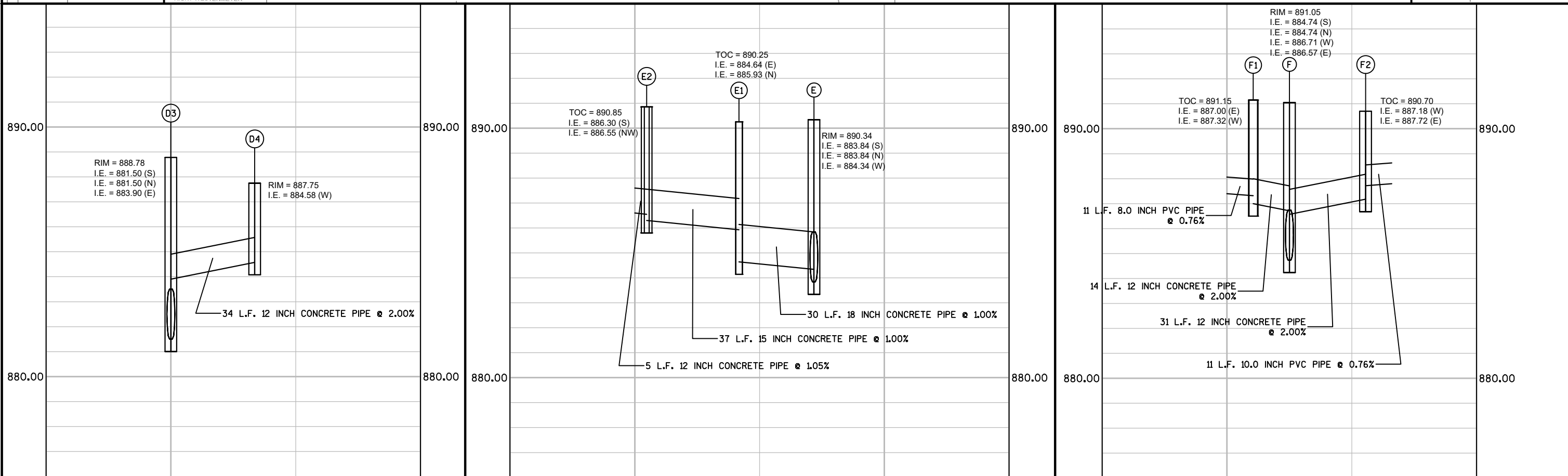
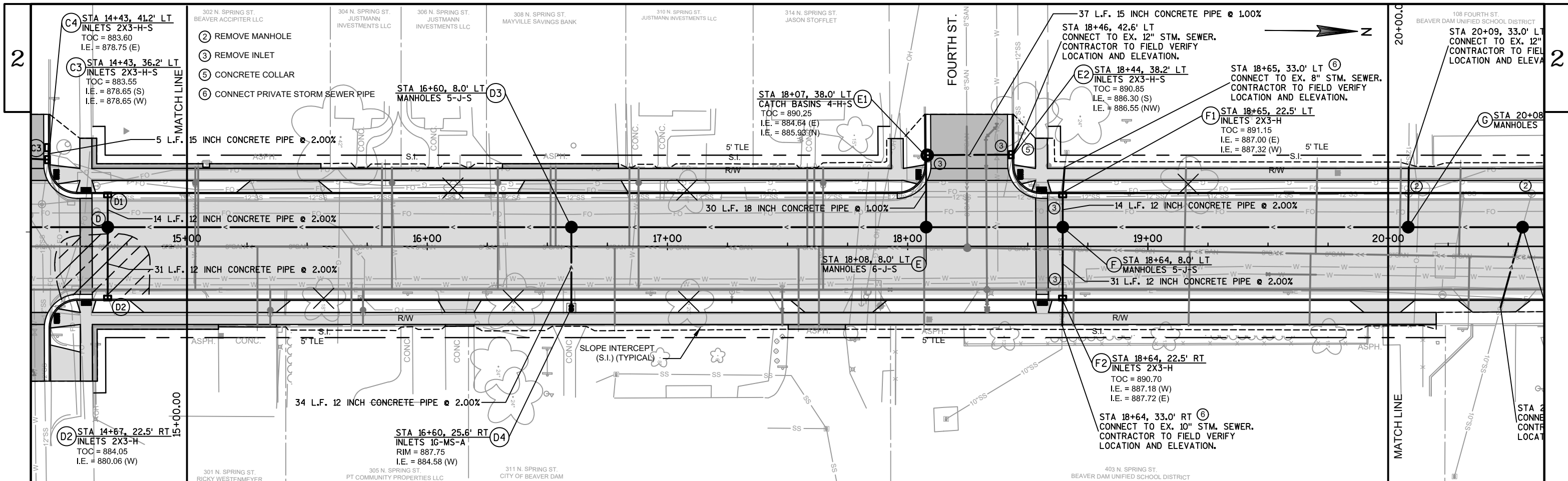
COUNTY:DODGE

STORM SEWER PLAN

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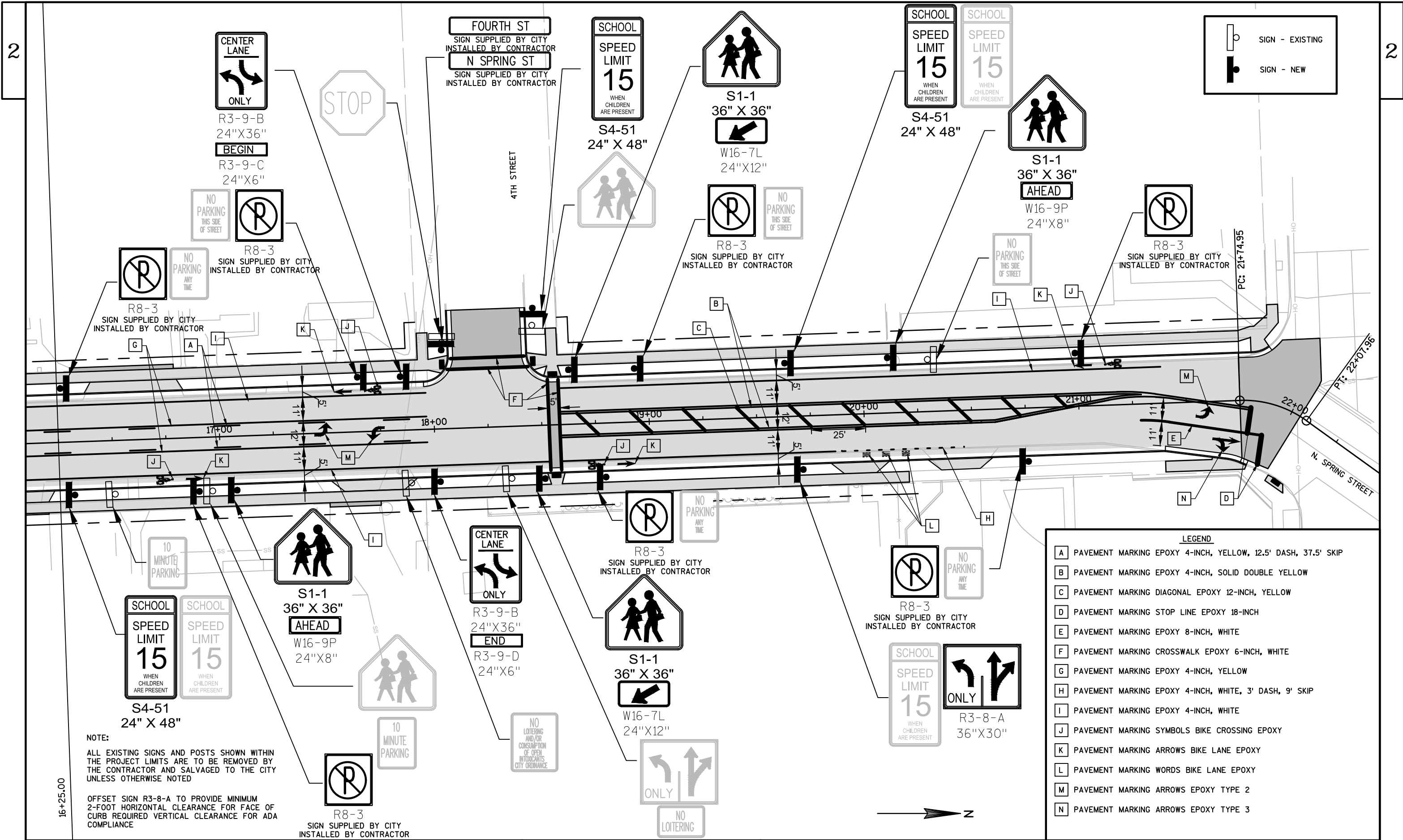




2

OFFSET SIGN R3-8-A TO PROVIDE MINIMUM
2-FOOT HORIZONTAL CLEARANCE FOR FACE OF
CURB REQUIRED VERTICAL CLEARANCE FOR ADA
COMPLIANCE





PROJECT NO:3803-00-65

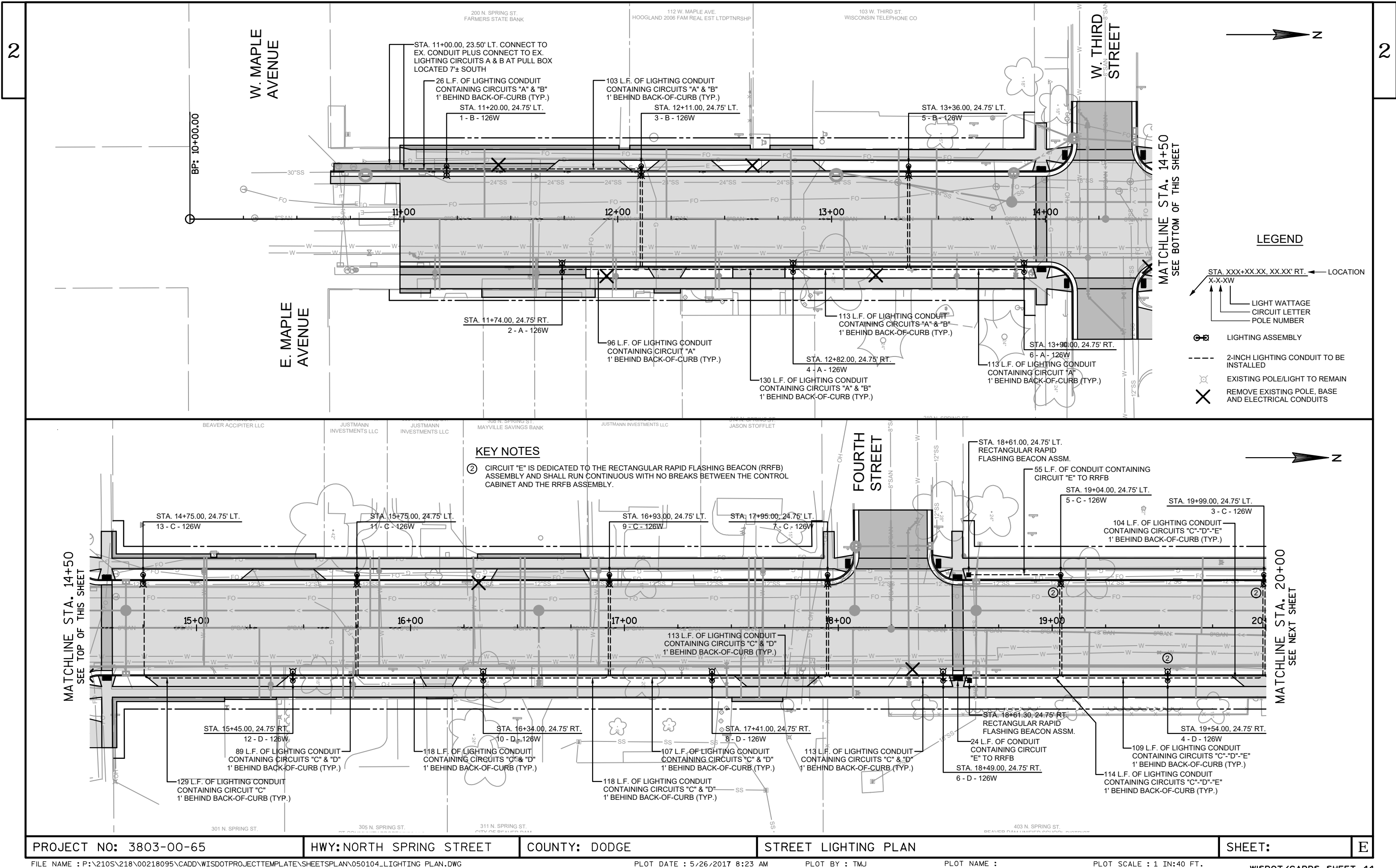
HWY:NORTH SPRING STREET

COUNTY:DODGE

PERMANENT SIGNING AND PAVEMENT MARKINGS

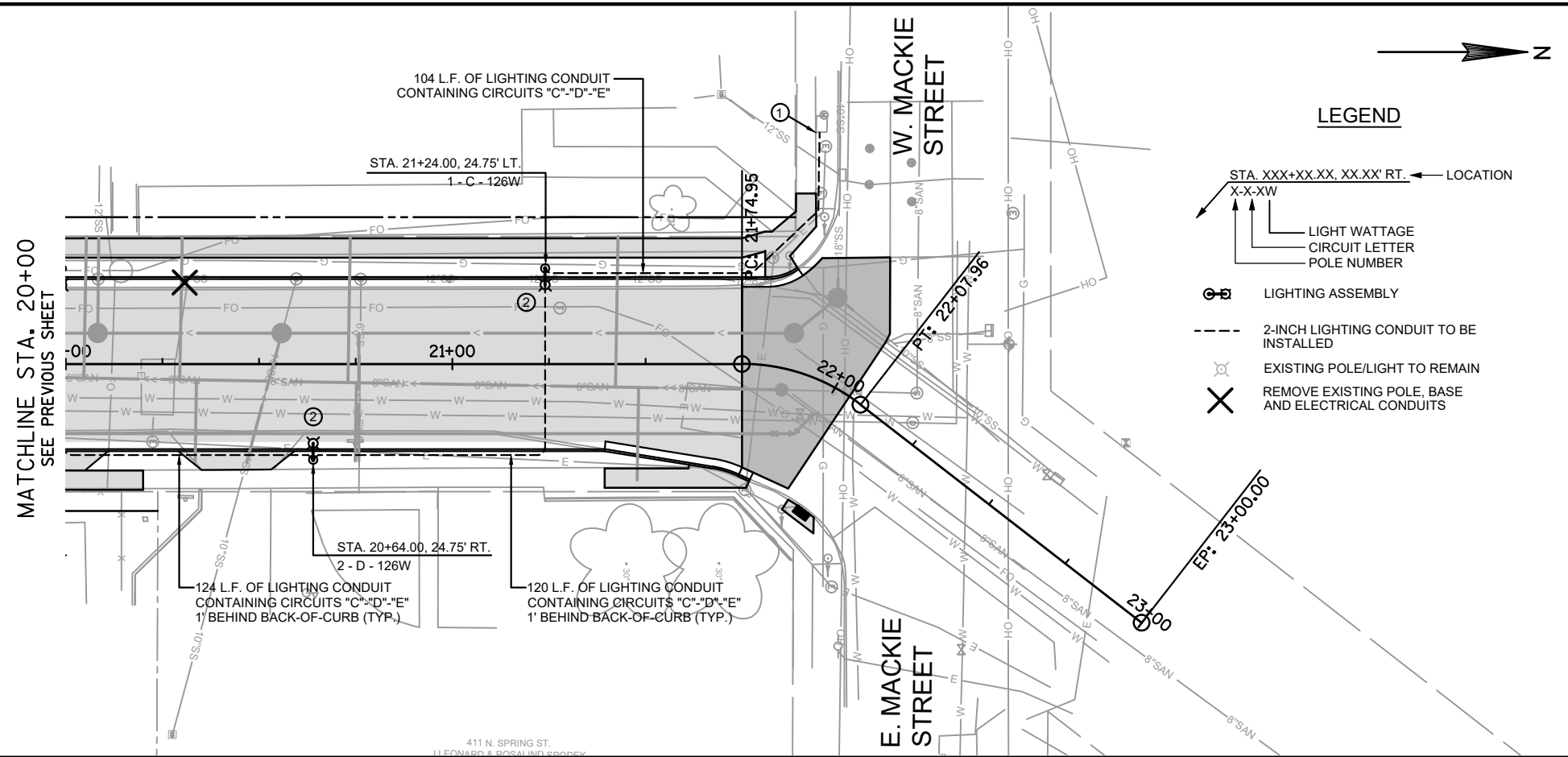
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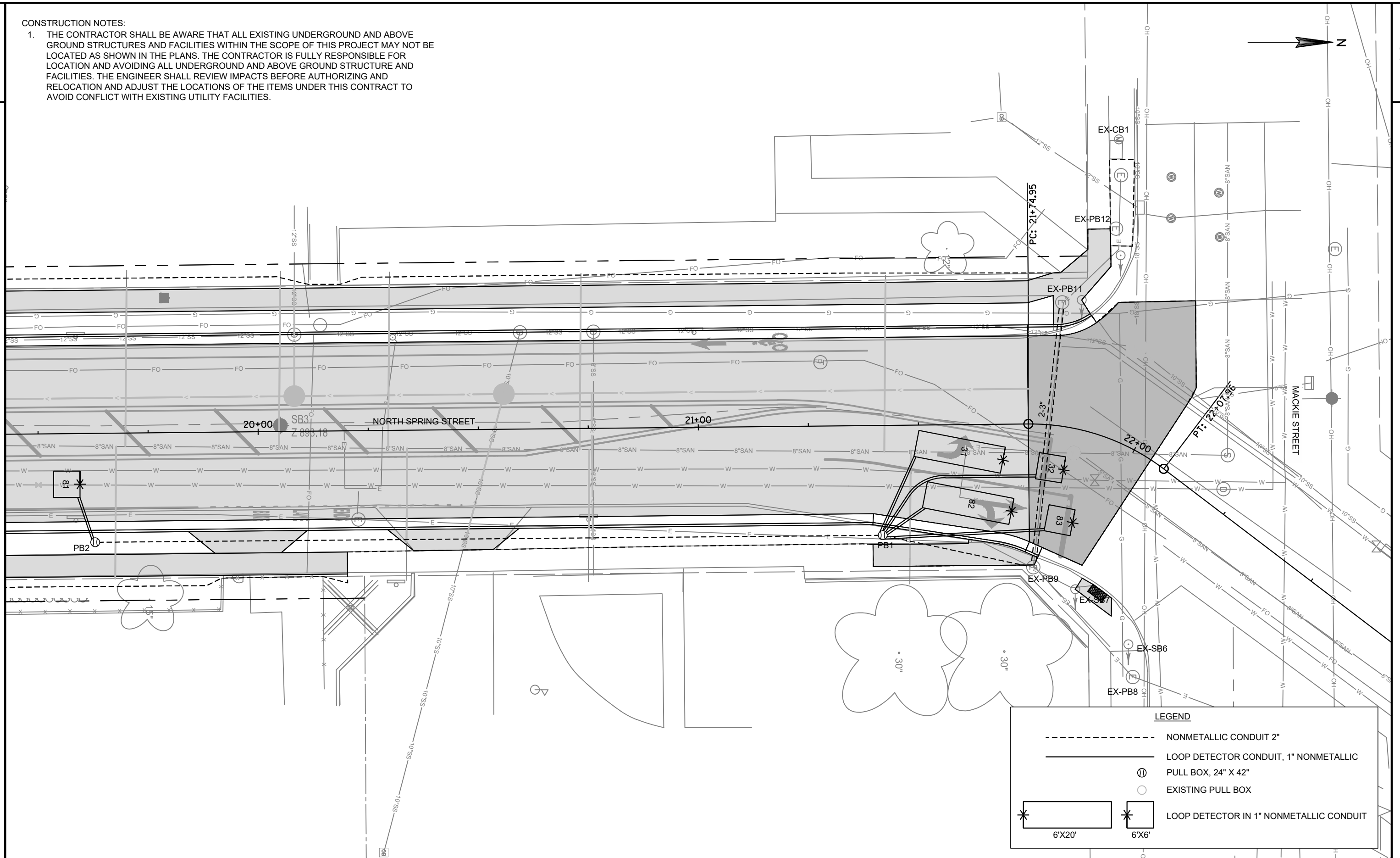
KEY NOTES

- ① CONNECT NEW CONDUIT TO EXISTING CONDUIT LOCATED AT THE EXTERIOR BASE OF THE CONTROL CABINET. RUN NEW ELECTRICAL CIRCUITS INSIDE CABINET AND CONNECT TO EXISTING CIRCUIT BREAKERS.
- ② CIRCUIT "E" IS DEDICATED TO THE RECTANGULAR RAPID FLASHING BEACON (RRFB) ASSEMBLY AND SHALL RUN CONTINUOUS WITH NO BREAKS BETWEEN THE CONTROL CABINET AND THE RRFB ASSEMBLY.



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED AS SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATION AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURE AND FACILITIES. THE ENGINEER SHALL REVIEW IMPACTS BEFORE AUTHORIZING AND RELOCATION AND ADJUST THE LOCATIONS OF THE ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.



PROJECT NO: 3803-00-65

HWY: NORTH SPRING STREET





COUNTY: DODGE

TRAFFIC SIGNAL MODIFICATIONS

SHEET

E

LEGEND

-  TYPE III BARRICADE WITH/WITHOUT SIGN
-  POST MOUNTED SIGN
-  WORK AREA
-  TRAFFIC FLOW ARROW

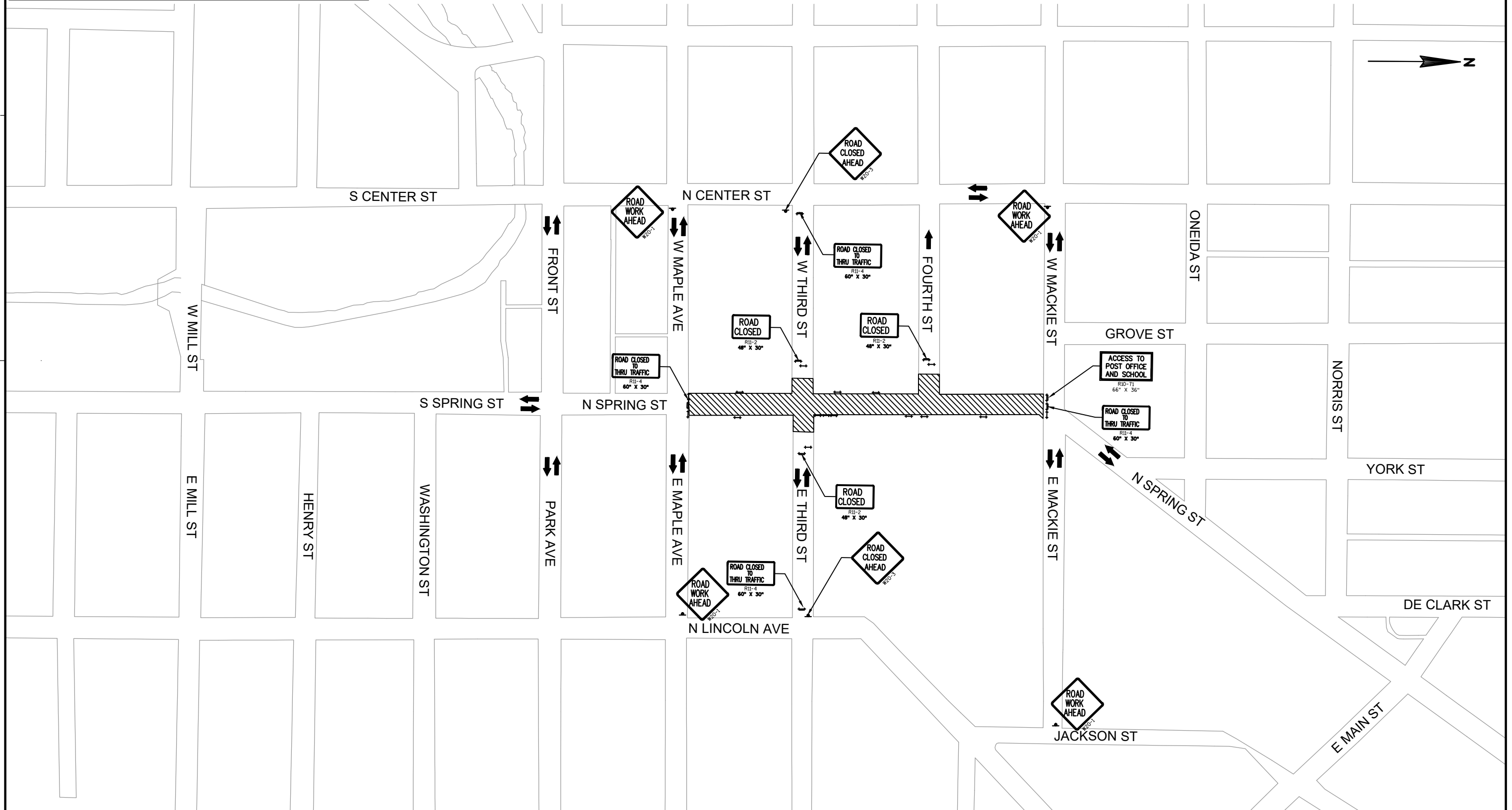
GENERAL TRAFFIC CONTROL NOTES

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

ADDITIONAL DRUMS OR BARRICADES MAY BE REQUIRED ADJACENT TO DROP OFFS, OPEN TRENCHES, OR PROTRUSIONS (INCLUDING MANHOLE COVERS, WATER VALVES AND INLETS). THE COST FOR THESE EXTRA MARKERS SHALL BE INCIDENTAL TO THE TRAFFIC CONTROL BID ITEM.

SEE TRAFFIC CONTROL PLAN (VEHICLE DETOUR), TRAFFIC CONTROL PLAN (PEDESTRIAN DETOUR), AND MACKIE STREET TRAFFIC CONTROL FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

PROVIDE PEDESTRIAN AND VEHICULAR ACCESS TO THE UNITED STATES POST OFFICE AT ALL TIMES DURING CONSTRUCTION BY STAGING CONSTRUCTION OPERATIONS AS NECESSARY. COORDINATE PEDESTRIAN AND VEHICULAR ACCESS TO THE UNITED STATES POST OFFICE WITH THE LOCAL POST MASTER.



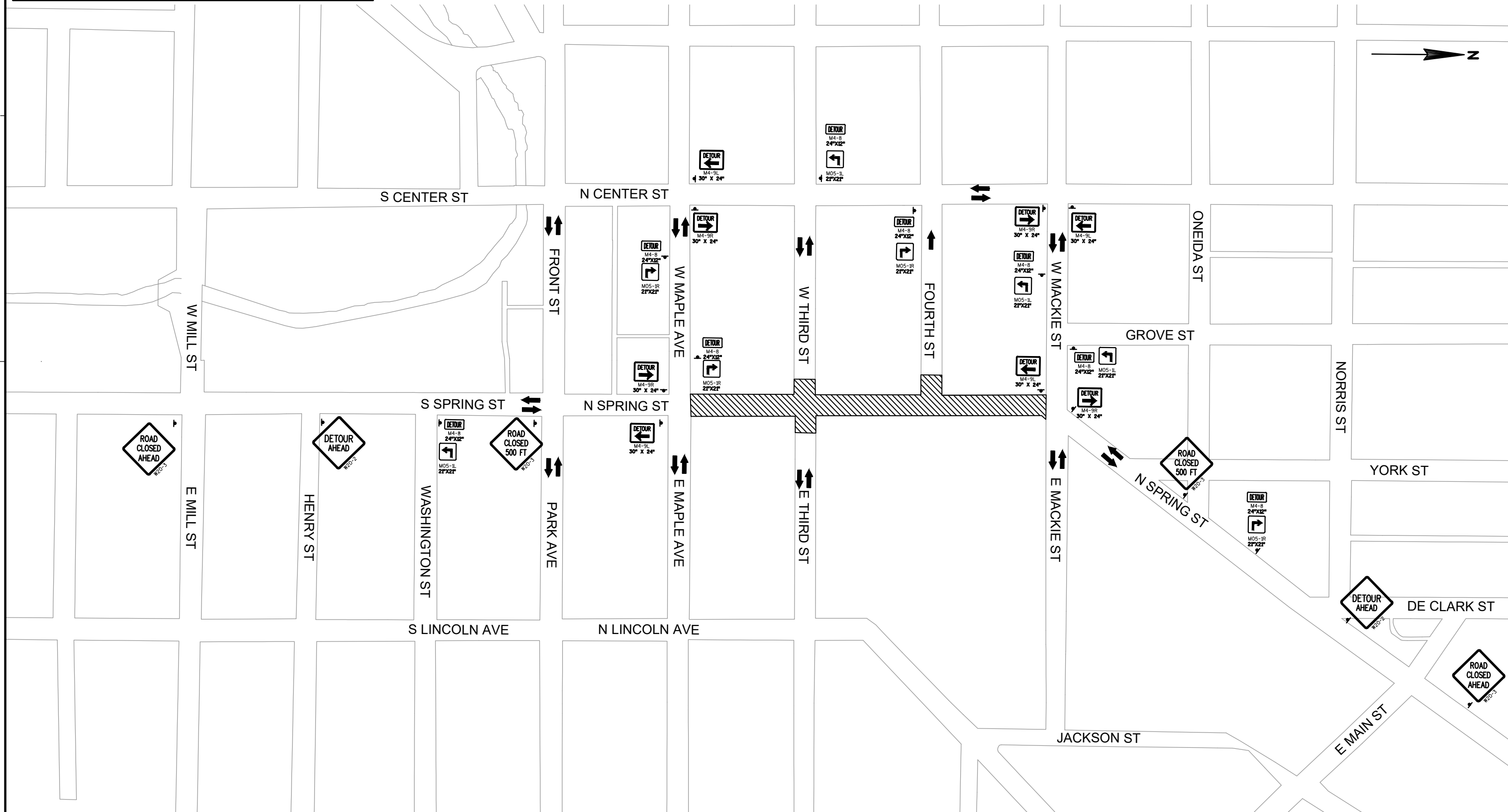
LEGEND

- POST MOUNTED SIGN
- WORK AREA
- TRAFFIC FLOW ARROW

GENERAL TRAFFIC CONTROL NOTES

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

SEE TRAFFIC CONTROL PLAN (GENERAL), TRAFFIC CONTROL PLAN (PEDESTRIAN DETOUR), MACKIE STREET TRAFFIC CONTROL FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.



LEGEND

- TYPE II BARRICADE WITH SIGN
- TYPE III BARRICADE WITH SIGN
- POST MOUNTED SIGN
- WORK AREA
- TRAFFIC FLOW ARROW

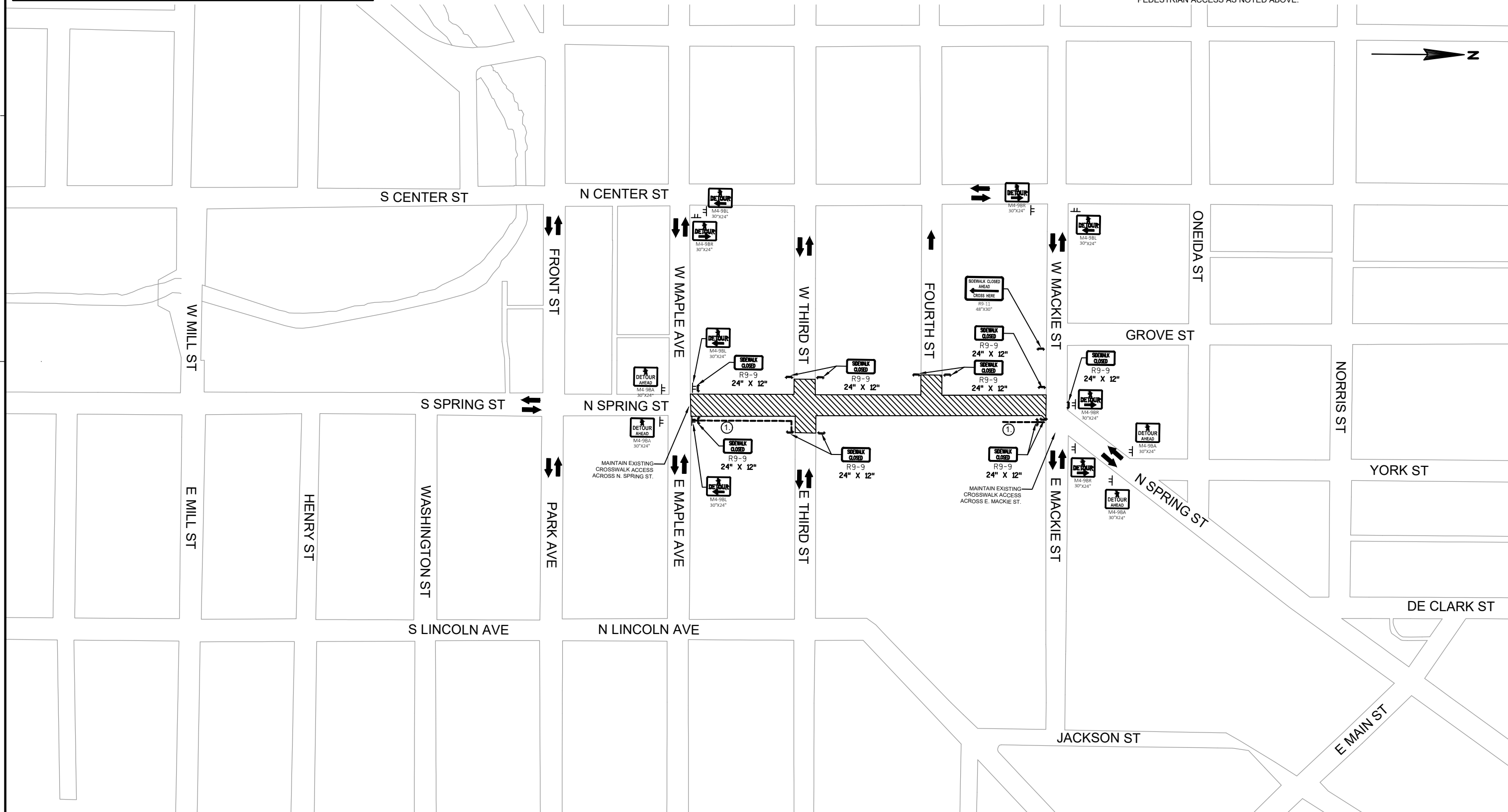
GENERAL TRAFFIC CONTROL NOTES

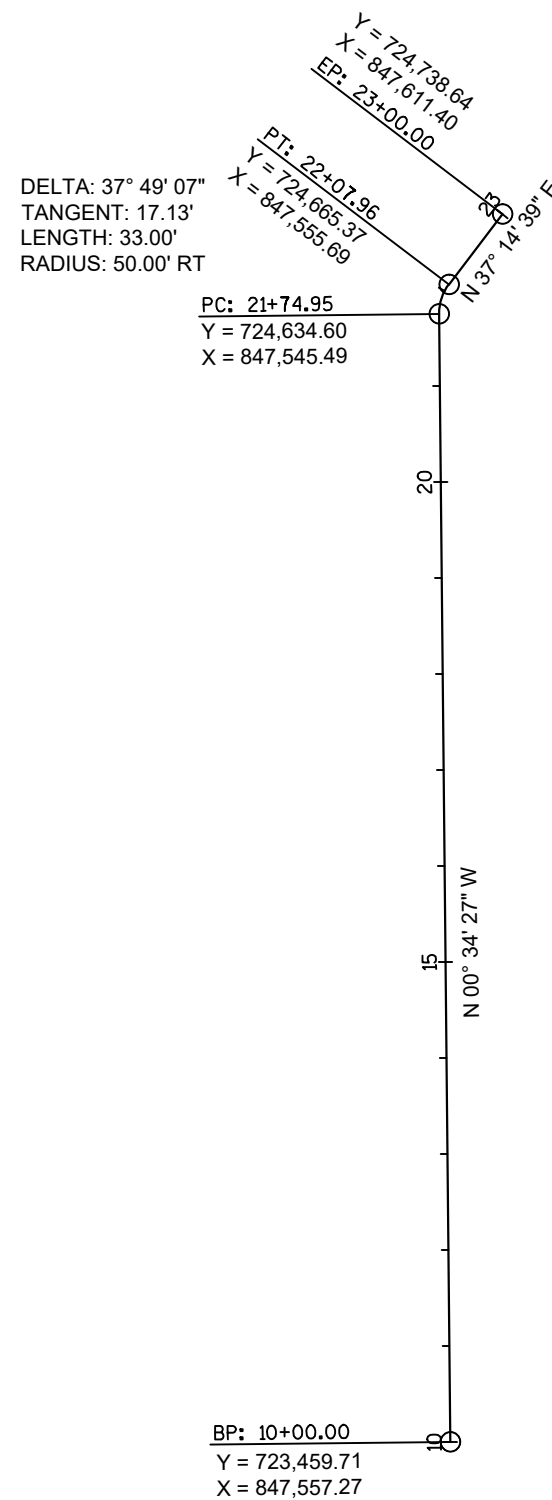
THE EXACT LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

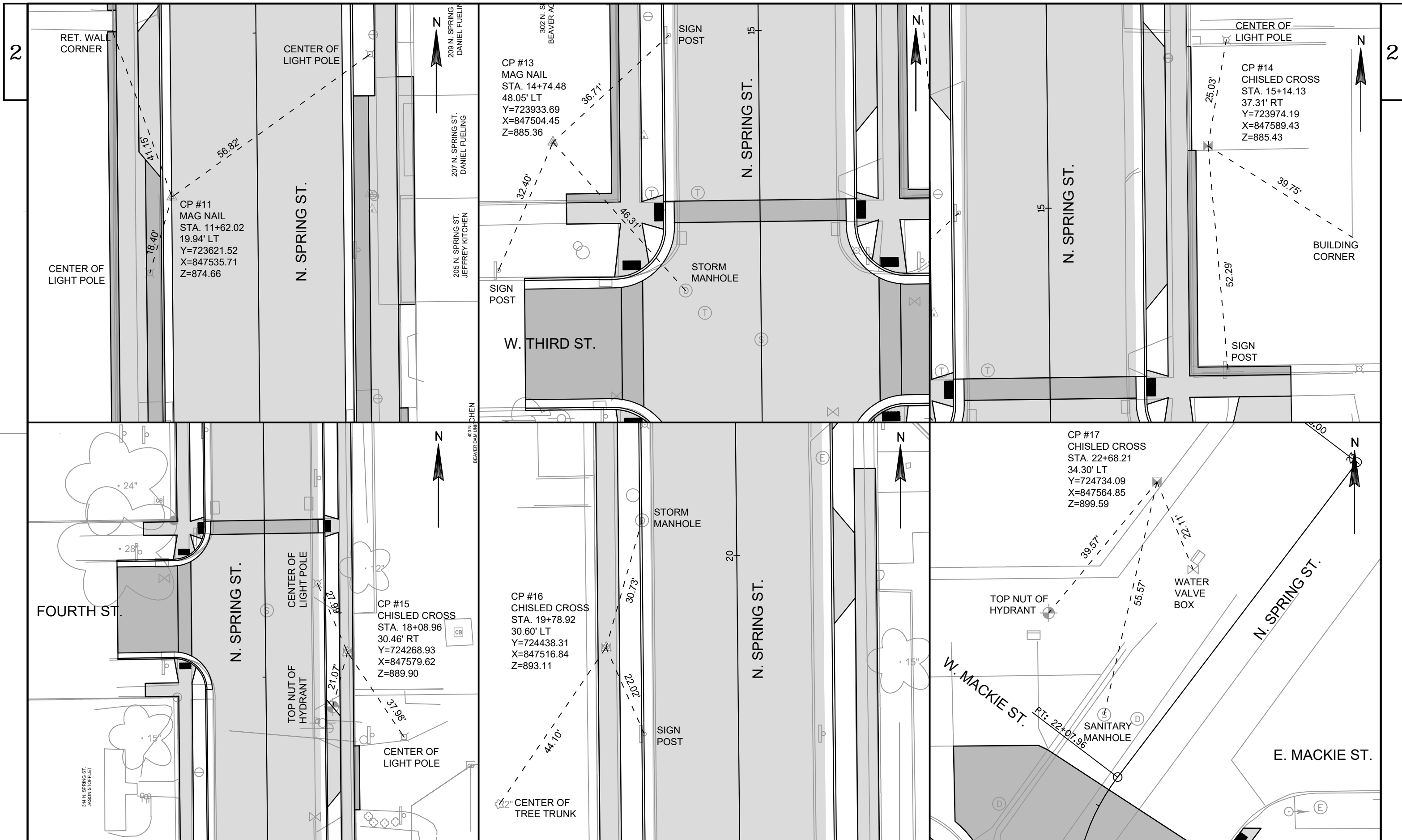
SEE TRAFFIC CONTROL PLAN (GENERAL), TRAFFIC CONTROL PLAN (VEHICLE DETOUR), AND MACKIE STREET TRAFFIC CONTROL FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

KEY NOTE:

- MAINTAIN EXISTING SIDEWALK TO PROVIDE PEDESTRIAN ACCESS TO THE BUSINESSES AND BEAVER DAM AREA COMMUNITY THEATER ALONG THE EAST SIDE OF THE STREET BETWEEN MAPLE AVENUE AND THIRD STREET, AS WELL AS THE UNITED STATES POST OFFICE AT THE SOUTHEAST CORNER OF MACKIE STREET, UNTIL REMOVAL IS ABSOLUTELY NECESSARY. SIDEWALK SHALL BE REPLACED WITHIN SEVEN CALENDAR DAYS OF REMOVAL. STAGE CONSTRUCTION AND PROVIDE PEDESTRIAN ACCESS TO THESE BUSINESSES DURING NORMAL BUSINESS HOURS AT ALL TIMES DURING THE CONSTRUCTION. ADJUST SIDEWALK CLOSED SIGNAGE SHOWN ON THIS SHEET AS NECESSARY TO MAINTAIN PEDESTRIAN ACCESS AS NOTED ABOVE.







Estimate Of Quantities

3803-00-65 3803-00-66

Line	Item	Item Description	Unit	Total	Qty	Qty
0002	201.0120	Clearing	ID	148.000	148.000	
0004	201.0220	Grubbing	ID	148.000	148.000	
0006	204.0100	Removing Pavement	SY	2,093.000	2,093.000	
0008	204.0150	Removing Curb & Gutter	LF	1,529.000	1,529.000	
0010	204.0155	Removing Concrete Sidewalk	SY	1,306.000	1,306.000	
0012	204.0210	Removing Manholes	EACH	8.000	8.000	
0014	204.0220	Removing Inlets	EACH	10.000	10.000	
0016	204.0245	Removing Storm Sewer (size) 01. 6-Inch	LF	50.000	50.000	
0018	204.0245	Removing Storm Sewer (size) 02. 8-Inch	LF	33.000	33.000	
0020	204.0245	Removing Storm Sewer (size) 03. 10-Inch	LF	70.000	70.000	
0022	204.0245	Removing Storm Sewer (size) 04. 12-Inch	LF	961.000	961.000	
0024	204.0245	Removing Storm Sewer (size) 05. 18-Inch	LF	80.000	80.000	
0026	204.0245	Removing Storm Sewer (size) 06. 24-Inch	LF	305.000	305.000	
0028	204.0280	Sealing Pipes	EACH	1.000	1.000	
0030	205.0100	Excavation Common	CY	5,255.000	5,255.000	
0032	213.0100	Finishing Roadway (project) 01. 3083-00-65	EACH	1.000	1.000	
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,700.000	2,700.000	
0036	311.0110	Breaker Run	TON	5,550.000	5,550.000	
0038	405.0100	Coloring Concrete WisDOT Red	CY	30.000	30.000	
0040	405.1000	Stamping Colored Concrete	CY	10.000	10.000	
0042	415.0080	Concrete Pavement 8-Inch	SY	4,900.000	4,900.000	
0044	416.0160	Concrete Driveway 6-Inch	SY	400.000	400.000	
0046	416.0610	Drilled Tie Bars	EACH	12.000	12.000	
0048	416.0620	Drilled Dowel Bars	EACH	20.000	20.000	
0050	465.0105	Asphaltic Surface	TON	100.000	100.000	
0052	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	30.000	30.000	
0054	520.8000	Concrete Collars for Pipe	EACH	4.000	4.000	
0056	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	850.000	850.000	
0058	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	200.000	200.000	
0060	601.0452	Concrete Curb & Gutter Integral 30-Inch Type D	LF	1,400.000	1,400.000	
0062	602.0405	Concrete Sidewalk 4-Inch	SF	10,000.000	10,000.000	
0064	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	104.000	104.000	
0066	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	129.000	129.000	
0068	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	73.000	73.000	
0070	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	35.000	35.000	
0072	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	385.000	385.000	
0074	608.2324	Storm Sewer Pipe Reinforced Concrete Horizontal	LF	794.000	794.000	

Estimate Of Quantities

3803-00-65 3803-00-66

Line	Item	Item Description	Unit	Total	Qty	Qty
		Elliptical Class HE-III 24x38-Inch				
0076	611.0535	Manhole Covers Type J-Special	EACH	9.000	9.000	
0078	611.0624	Inlet Covers Type H	EACH	8.000	8.000	
0080	611.0639	Inlet Covers Type H-S	EACH	4.000	4.000	
0082	611.0645	Inlet Covers Type MS-A	EACH	1.000	1.000	
0084	611.1004	Catch Basins 4-FT Diameter	EACH	3.000	3.000	
0086	611.1005	Catch Basins 5-FT Diameter	EACH	2.000	2.000	
0088	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000	
0090	611.2005	Manholes 5-FT Diameter	EACH	5.000	5.000	
0092	611.2006	Manholes 6-FT Diameter	EACH	2.000	2.000	
0094	611.3230	Inlets 2x3-FT	EACH	7.000	7.000	
0096	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000	
0098	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3803-00-65	EACH	1.000	1.000	
0100	619.1000	Mobilization	EACH	1.000	0.750	0.250
0102	624.0100	Water	MGAL	55.000	55.000	
0104	625.0100	Topsoil	SY	1,400.000	1,400.000	
0106	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000	
0108	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000	
0110	628.7010	Inlet Protection Type B	EACH	1.000	1.000	
0112	628.7015	Inlet Protection Type C	EACH	25.000	25.000	
0114	628.7020	Inlet Protection Type D	EACH	7.000	7.000	
0116	631.0300	Sod Water	MGAL	8.400	8.400	
0118	631.1000	Sod Lawn	SY	1,400.000	1,400.000	
0120	637.2210	Signs Type II Reflective H	SF	73.240	73.240	
0122	637.2230	Signs Type II Reflective F	SF	37.790	37.790	
0124	638.2602	Removing Signs Type II	EACH	28.000	28.000	
0126	638.3000	Removing Small Sign Supports	EACH	21.000	21.000	
0128	642.5001	Field Office Type B	EACH	1.000	1.000	
0130	643.0300	Traffic Control Drums	DAY	3,500.000	3,500.000	
0132	643.0410	Traffic Control Barricades Type II	DAY	2,000.000	2,000.000	
0134	643.0420	Traffic Control Barricades Type III	DAY	5,500.000	5,500.000	
0136	643.0800	Traffic Control Arrow Boards	DAY	150.000	150.000	
0138	643.0900	Traffic Control Signs	DAY	11,500.000	11,500.000	
0140	643.5000	Traffic Control	EACH	1.000	1.000	
0142	644.1420.S	Temporary Pedestrian Surface Plywood	SF	500.000	500.000	
0144	644.1601.S	Temporary Curb Ramp	EACH	15.000	15.000	
0146	644.1616.S	Temporary Pedestrian Safety Fence	LF	250.000	250.000	
0148	646.1020	Marking Line Epoxy 4-Inch	LF	4,058.000	4,058.000	
0150	646.3020	Marking Line Epoxy 8-Inch	LF	110.000	110.000	

Estimate Of Quantities

3803-00-65 3803-00-66

Line	Item	Item Description	Unit	Total	Qty	Qty
0152	646.5020	Marking Arrow Epoxy	EACH	14.000	14.000	
0154	646.5120	Marking Word Epoxy	EACH	6.000	6.000	
0156	646.5220	Marking Symbol Epoxy	EACH	6.000	6.000	
0158	646.6120	Marking Stop Line Epoxy 18-Inch	LF	79.000	79.000	
0160	646.7120	Marking Diagonal Epoxy 12-Inch	LF	141.000	141.000	
0162	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	431.000	431.000	
0164	650.4000	Construction Staking Storm Sewer	EACH	22.000	22.000	
0166	650.4500	Construction Staking Subgrade	LF	1,077.000	1,077.000	
0168	650.7000	Construction Staking Concrete Pavement	LF	1,077.000	1,077.000	
0170	650.9910	Construction Staking Supplemental Control (project) 01. 3083-00-65	LS	1.000	1.000	
0172	650.9920	Construction Staking Slope Stakes	LF	1,077.000	1,077.000	
0174	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	2,334.000	2,334.000	
0176	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	120.000	120.000	
0178	652.0800	Conduit Loop Detector	LF	432.000	432.000	
0180	653.0140	Pull Boxes Steel 24x42-Inch	EACH	2.000	2.000	
0182	654.0101	Concrete Bases Type 1	EACH	2.000	2.000	
0184	655.0230	Cable Traffic Signal 5-14 AWG	LF	50.000	50.000	
0186	655.0280	Cable Traffic Signal 19-14 AWG	LF	409.000	409.000	
0188	655.0610	Electrical Wire Lighting 12 AWG	LF	4,732.000	4,732.000	
0190	655.0620	Electrical Wire Lighting 8 AWG	LF	7,834.000	7,834.000	
0192	655.0700	Loop Detector Lead In Cable	LF	828.000	828.000	
0194	655.0800	Loop Detector Wire	LF	1,864.000	1,864.000	
0196	690.0150	Sawing Asphalt	LF	600.000	600.000	
0198	690.0250	Sawing Concrete	LF	400.000	400.000	
0200	715.0415	Incentive Strength Concrete Pavement	DOL	1,470.000	1,470.000	
0202	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	475.000	475.000	
0204	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000	
0206	SPV.0035	Special 01. Salvaging and Reinstalling Existing Subsurface Black Gravel Soil Layer	CY	1,200.000	1,200.000	
0208	SPV.0060	Special 01. Connection to Existing Electrical Circuit	EACH	2.000	2.000	
0210	SPV.0060	Special 02. Concrete Base Type 5 Modified Special	EACH	19.000	19.000	
0212	SPV.0060	Special 03. Lighting Assembly Roadway Decorative 126W-LED Special	EACH	19.000	19.000	
0214	SPV.0060	Special 04. Removing Base, Pole & Luminaire	EACH	8.000	8.000	
0216	SPV.0060	Special 05. Install City Furnished Street Signs	EACH	15.000	15.000	
0218	SPV.0060	Special 06. Storm Sewer Tap	EACH	1.000	1.000	
0220	SPV.0060	Special 07. Sanitary Manhole	EACH	3.000		3.000
0222	SPV.0060	Special 08. Sanitary Manhole Cover Type J	EACH	3.000		3.000
0224	SPV.0060	Special 09. Sanitary Wye 8-Inch Main	EACH	36.000		36.000

Estimate Of Quantities

3803-00-65 3803-00-66

Line	Item	Item Description	Unit	Total	Qty	Qty
0226	SPV.0060	Special 10. Corporation, Curb Stop & Box (Set)	EACH	13.000		13.000
0228	SPV.0060	Special 11. Water Valve & Box 6-Inch	EACH	6.000		6.000
0230	SPV.0060	Special 12. Water Valve & Box 10-Inch	EACH	6.000		6.000
0232	SPV.0060	Special 13. Fire Hydrant	EACH	2.000		2.000
0234	SPV.0060	Special 14. Tees 10"X6"X10"	EACH	2.000		2.000
0236	SPV.0060	Special 15. Crosses 10"X6"	EACH	2.000		2.000
0238	SPV.0060	Special 16. Bend 45-Degree 4-Inch	EACH	2.000		2.000
0240	SPV.0060	Special 17. Bend 11.25-Degree 6-Inch	EACH	4.000		4.000
0242	SPV.0060	Special 18. Bend 45-Degree 6-Inch	EACH	4.000		4.000
0244	SPV.0060	Special 19. Bend 45-Degree 10-Inch	EACH	4.000		4.000
0246	SPV.0060	Special 20. Reducer 6"X4"	EACH	1.000		1.000
0248	SPV.0060	Special 21. Utility Line Opening	EACH	10.000	6.000	4.000
0250	SPV.0060	Special 22. U-Channel Sign Post 12 FT	EACH	13.000	13.000	
0252	SPV.0060	Special 23. U-Channel Sign Post 13 FT	EACH	4.000	4.000	
0254	SPV.0060	Special 24. U-Channel Sign Post 14 FT	EACH	11.000	11.000	
0256	SPV.0060	Special 25. Connect Private Storm Sewer Pipe	EACH	6.000	6.000	
0258	SPV.0060	Special 26. Fluorocarbon Gaskets	EACH	10.000		10.000
0260	SPV.0060	Special 27. Repair Existing Loop Detector	EACH	2.000	2.000	
0262	SPV.0090	Special 01. Sanitary Lateral 4-Inch or 6-Inch	LF	1,250.000		1,250.000
0264	SPV.0090	Special 02. Water Service 1-Inch to 2-Inch	LF	400.000		400.000
0266	SPV.0090	Special 03. Sanitary Sewer Pipe 8-Inch	LF	1,250.000		1,250.000
0268	SPV.0090	Special 04. PVC Water Main 4-Inch	LF	10.000		10.000
0270	SPV.0090	Special 05. PVC Water Main 6-Inch	LF	250.000		250.000
0272	SPV.0090	Special 06. PVC Water Main 10-Inch	LF	1,040.000		1,040.000
0274	SPV.0090	Special 07. Ductile Iron Water Main 10-Inch	LF	110.000		110.000
0276	SPV.0090	Special 08. PVC Storm Sewer Pipe 6-Inch	LF	35.000	35.000	
0278	SPV.0090	Special 09. PVC Storm Sewer Pipe 8-Inch	LF	30.000	30.000	
0280	SPV.0090	Special 10. PVC Storm Sewer Pipe 10-Inch	LF	50.000	50.000	
0282	SPV.0090	Special 11. PVC Storm Sewer Pipe 12-Inch	LF	25.000	25.000	
0284	SPV.0105	Special 01. Removing Lighting Conduit & Wire	LS	1.000	1.000	
0286	SPV.0105	Special 02. Remove Existing Sanitary Structure	LS	1.000		1.000
0288	SPV.0105	Special 03. Remove Existing Water Structure	LS	1.000		1.000
0290	SPV.0105	Special 04. Rectangular Rapid Flashing Beacon (RRFB) with Pedestrian Activation	LS	1.000	1.000	
0292	SPV.0105	Special 05. Repair Traffic Signal Conduit & Wiring	LS	1.000	1.000	
0294	SPV.0195	Special 01. Excavation, Hauling, Dewatering and Disposal of Contaminated Soil	TON	450.000	450.000	

CLEARING AND GRUBBING				
CATEGORY	STATION	LOCATION	201.0120 CLEARING ID	201.0220 GRUBBING ID
0010	13+01	26 RT	36	36
	15+57	23 RT	18	18
	16+11	23 LT	8	8
	16+36	24 RT	24	24
	17+08	23 LT	18	18
	17+09	24 RT	20	20
	19+17	25 LT	24	24
TOTAL PROJECT 3803-00-65			148	148

REMOVING PAVEMENT, CURB & GUTTER, AND CONCRETE SIDEWALK						
				204.0100 REMOVING PAVEMENT	204.0150 REMOVING CURB & GUTTER	204.0155 REMOVING CONCRETE SIDEWALK
CATEGORY	STATION	TO STATION	LOCATION	SY	LF	SY
0010	11+00	14+25	RT & LT	84	686	506
	14+25	18+25	RT & LT	219	843	452
	18+25	22+00	RT & LT	1,790	0	348
	TOTAL PROJECT 3803-00-65			2,093	1,529	1,306

REMOVING MANHOLES AND INLETS					
CATEGORY	STATION	LOCATION	204.0210 REMOVING MANHOLES EACH	204.0220 REMOVING INLETS EACH	
0010	10+82	22 LT	-	1	
	11+09	22 LT	-	1	
	13+31	17 LT	1	-	
	13+75	5 LT	1	-	
	14+00	18 LT	1	-	
	14+13	38 LT	-	1	
	14+40	18 LT	1	-	
	14+42	36 LT	-	1	
	14+52	19 LT	-	1	
	14+54	18 RT	-	1	
	18+08	36 LT	-	1	
	18+44	38 LT	-	1	
	18+63	19 LT	-	1	
	18+64	17 RT	-	1	
	20+08	22 LT	1	-	
	20+60	22 LT	1	-	
	20+76	22 LT	1	-	
	21+93	22 LT	1	-	
	TOTAL PROJECT 3803-00-65			8	10

REMOVING STORM SEWER AND SEALING PIPES										
				204.0245.01 REMOVING STORM SEWER 6-INCH LF	204.0245.02 REMOVING STORM SEWER 8-INCH LF	204.0245.03 REMOVING STORM SEWER 10-INCH LF	204.0245.04 REMOVING STORM SEWER 12-INCH LF	204.0245.05 REMOVING STORM SEWER 18-INCH LF	204.0245.06 REMOVING STORM SEWER 24-INCH LF	204.028 SEALING PIPES EACH
CATEGORY 0010	10+72	13+75	LT	-	-	-	-	-	305	-
	13+75	14+52	LT	-	-	-	-	80	-	-
	13+95	14+13	LT	-	19	-	-	-	-	-
	14+00	14+13	LT	-	-	-	24	-	-	-
	14+40	14+54	LT & RT	-	-	-	106	-	-	1
	14+52	21+93	LT	-	-	-	831	-	-	-
	18+63	18+65	LT	-	14	-	-	-	-	-
	18+64	18+65	RT	-	-	16	-	-	-	-
	20+45	20+60	LT & RT	-	-	49	-	-	-	-
	20+76	20+77	LT & RT	50	-	-	-	-	-	-
	21+93	21+96	LT	-	-	5	-	-	-	-
	TOTAL PROJECT 3803-00-65			50	33	70	961	80	305	1

Division	From/To Station	Location	Common Excavation (1)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste
			(Item # 205.0100)							
			Cut (2)	EBS Excavation (3)						
CATEGORY 0010	11+00 to 21+50	N Spring Street	4055	0	1092	2963	6	7	2956	2956
	UNDISTRIBUTED		0	1200	0	0	0	0	0	0
PROJECT TOTAL			5255		1092	2963	6	7	2956	2956

NOTE: COMMON EXCAVATION TO BE PAID AS PLAN CUT QUANTITY PLUS ACTUAL FIELD MEASURED EBS EXCAVATION QUANTITY

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.

3) EBS Excavation to be backfilled with existing subsurface black gravel material and/or Breaker Run.

4) Salvaged/Unusable Pavement Material

5) Available Material = Cut - Salvaged/Unusable Pavement Material

13) Expanded Fill. Factor = 1.25

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

DENSE GRADED BASE AND BREAKER RUN				
CATEGORY	STATION	TO STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON
0010	10+00	15+00	1,009	1,578
	15+00	20+00	1,119	1,835
	20+00	23+00	458	741
	UNDISTRIBUTED		114	1,395
	TOTAL PROJECT 3803-00-65			2,700

CONCRETE COLLARS FOR PIPE			
CATEGORY	STATION	LOCATION	520.8000 CONCRETE COLLARS FOR PIPES EACH
0010	10+72	22 LT	1
	18+46	43 LT	1
	21+92	26 LT	1
	21+96	20 LT	1
TOTAL PROJECT 3803-00-65			4

PAVEMENTS										
CATEGORY	STATION	TO STATION	405.0100 COLORING CONCRETE WISDOT RED CY	405.1000 STAMPING COLORED CONCRETE CY	415.0080 CONCRETE PAVEMENT 8-INCH SY	416.0160 CONCRETE DRIVEWAY 6-INCH SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	465.0105 ASPHALTIC SURFACE TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
0010	10+00	15+00	17	8	1814	152	10	18	32	17
	15+00	20+00	9	-	2235	190	-	-	19	7
	20+00	23+00	-	-	789	21	-	-	43	1
	UNDISTRIBUTED		4	2	62	38	2	2	6	5
	TOTAL PROJECT 3803-00-65			30	10	4,900	400	12	20	30

CONCRETE CURB & GUTTER AND SIDEWALK							
			600.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D	601.0452 CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D	602.0405 CONCRETE SIDEWALK 4-INCH	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW
CATEGORY	STATION	TO STATION	LF	LF	LF	SF	SF
0010	10+00	15+00	720	92	79	4179	64
	15+00	20+00	46	45	933	4245	32
	20+00	23+00	36	18	315	1347	8
	UNDISTRIBUTED		48	45	73	229	-
	TOTAL PROJECT 3803-00-65			850	200	1,400	10,000

STORM SEWER PIPE													
CATEGORY	STATION	TO STATION	LOCATION	608.0312	608.0315	608.0318	608.0324	608.2324	SPV.0090.08	SPV.0090.09	SPV.0090.10	SPV.0090.11	
				STORM SEWER PIPE	STORM SEWER PIPE	STORM SEWER PIPE	STORM SEWER PIPE	STORM SEWER PIPE	REINFORCED CONCRETE	PVC STORM	PVC STORM	PVC STORM	PVC STORM
				REINFORCED CONCRETE	REINFORCED CONCRETE	REINFORCED CONCRETE	REINFORCED CONCRETE	REINFORCED CONCRETE	HORIZONTAL ELLIPTICAL	SEWER PIPE	SEWER PIPE	SEWER PIPE	SEWER PIPE
				CLASS III	CLASS III	CLASS III	CLASS III	CLASS III	CLASS HE-III	6-INCH	8-INCH	10-INCH	12-INCH
				12-INCH	15-INCH	18-INCH	24-INCH	24 X 38-INCH	LF	LF	LF	LF	
0010	10+72	10+82	LT	-	-	-	-	10	-	-	-	-	
	10+82	13+02	LT	-	-	-	-	220	-	-	-	-	
	13+02	13+84	LT	-	-	-	-	83	-	-	-	-	
	13+84	14+67	LT	-	-	-	-	83	-	-	-	-	
	13+84	13+85	LT	-	-	-	15	-	-	-	-		
	13+85	14+12	LT	-	-	-	31	-	-	-	-	-	
	13+95	14+12	LT	-	-	-	-	-	-	19	-	-	
	14+12	14+43	LT	-	31	-	-	-	-	-	-	-	
	14+43	14+43	LT	-	5	-	-	-	-	-	-	-	
	14+67	14+67	LT	14	-	-	-	-	-	-	-	-	
	14+67	14+67	LT & RT	31	-	-	-	-	-	-	-	-	
	14+67	16+60	LT	-	-	-	-	193	-	-	-	-	
	16+60	16+60	LT & RT	34	-	-	-	-	-	-	-	-	
	16+60	18+08	LT	-	-	-	-	148	-	-	-	-	
	18+08	18+64	LT	-	-	-	-	57	-	-	-	-	
	18+08	18+07	LT	-	-	30	-	-	-	-	-	-	
	18+07	18+44	LT	-	37	-	-	-	-	-	-	-	
	18+44	18+46	LT	5	-	-	-	-	-	-	-	-	
	18+64	18+65	LT	14	-	-	-	-	-	-	-	-	
	18+65	18+65	LT	-	-	-	-	-	-	11	-	-	
	18+64	18+64	LT & RT	31	-	-	-	-	-	-	-	-	
	18+64	18+64	RT	-	-	-	-	-	-	-	11	-	
	18+64	20+08	LT	-	-	-	144	-	-	-	-	-	
	20+08	20+56	LT	-	-	-	48	-	-	-	-	-	
	20+08	20+09	LT	-	-	-	-	-	-	-	-	25	
	20+56	20+45	LT & RT	-	-	-	-	-	-	-	34	-	
	20+56	21+86	LT	-	-	-	132	-	-	-	-	-	
	20+76	20+76	LT & RT	-	-	-	-	-	35	-	-	-	
	21+86	21+93	LT	-	-	-	15	-	-	-	-	-	
	21+93	21+92	LT	-	-	5	-	-	-	-	-	-	
	21+93	21+96	LT	-	-	-	-	-	-	-	5	-	
TOTAL PROJECT 3803-00-65				129	73	35	385	794	35	30	50	25	

STORM SEWER STRUCTURES													
CATEGORY	STATION	LOCATION	611.0535	611.0624	611.0639	611.0645	611.1004	611.1005	611.2004	611.2005	611.2006	611.3230	611.3901
			MANHOLE	INLET	INLET	INLET	CATCH BASINS	CATCH BASINS	MANHOLES	MANHOLES	MANHOLES	INLETS	INLETS
			COVERS	COVERS	COVERS	COVERS	4-FT	5-FT	4-FT	5-FT	6-FT	2X3-FT	2X3-FT
			TYPE J-SPECIAL	TYPE H	TYPE H-S	TYPE MS-A	DIAMETER	DIAMETER	DIAMETER	DIAMETER	DIAMETER	DIAMETER	DIAMETER
			EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
0010	10+82	22.5 LT	-	1	-	-	-	1	-	-	-	-	-
	13+02	22.5 LT	-	1	-	-	-	1	-	-	-	-	-
	13+84	8.0 LT	1	-	-	-	-	-	-	-	1	-	-
	13+85	22.5 LT	-	1	-	-	1	-	-	-	-	-	-
	14+12	37.8 LT	-	1	-	-	1	-	-	-	-	-	-
	14+43	36.2 LT	-	-	1	-	-	-	-	-	-	1	-
	14+43	41.2 LT	-	-	1	-	-	-	-	-	-	1	-
	14+67	8.0 LT	1	-	-	-	-	-	-	1	-	-	-
	14+67	22.5 LT	-	1	-	-	-	-	-	-	-	1	-
	14+67	22.5 RT	-	1	-	-	-	-	-	-	-	1	-
	16+60	8.0 LT	1	-	-	-	-	-	-	1	-	-	-
	16+60	25.6 RT	-	-	-	1	-	-	-	-	-	-	1
	18+07	38.0 LT	-	-	1	-	1	-	-	-	-	-	-
	18+08	8.0 LT	1	-	-	-	-	-	-	-	1	-	-
	18+44	38.2 LT	-	-	1	-	-	-	-	-	-	1	-
	18+64	8.0 LT	1	-	-	-	-	-	-	1	-	-	-
	18+64	22.5 RT	-	1	-	-	-	-	-	-	-	1	-
	18+65	22.5 LT	-	1	-	-	-	-	-	-	-	1	-
	20+08	8.0 LT	1	-	-	-	-	-	-	1	-	-	-
	20+56	8.0 LT	1	-	-	-	-	-	-	1	-	-	-
	21+86	9.5 LT	1	-	-	-	-	-	1	-	-	-	-
	21+93	21.6 LT	1	-	-	-	-	-	1	-	-	-	-
TOTAL PROJECT 3803-00-65			9	8	4	1	3	2	2	5	2	7	1

WATER				
CATEGORY	STATION	TO STATION	LOCATION	624.0100
				WATER MGAL
0010	10+00	15+00	LT & RT	20
	15+00	20+00	LT & RT	22
	20+00	23+00	LT & RT	9
	UNDISTRIBUTED			3
TOTAL PROJECT 3803-00-65				55

TOPSOIL				
CATEGORY	STATION	TO STATION	LOCATION	625 0100
				TOPSOIL
0010	10+00	15+00	LT & RT	329
	15+00	20+00	LT & RT	626
	20+00	23+00	LT & RT	215
	UNDISTRIBUTED			230
TOTAL PROJECT 3803-00-65				1,400

EROSION CONTROL						
CATEGORY	STATION	TO STATION	LOCATION	628.7010	628.7015	628.7020
				INLET PROTECTION TYPE B EACH	INLET PROTECTION TYPE C EACH	INLET PROTECTION TYPE D EACH
0010	10+00	15+00	LT & RT	-	13	5
	15+00	20+00	LT & RT	1	6	2
	20+00	23+00	LT & RT	-	-	-
	UNDISTRIBUTED			-	6	-
TOTAL PROJECT 3803-00-65				1	25	7

SODDING					
CATEGORY	STATION	TO STATION	LOCATION	631.0300	631.1000
				SOD WATER MGAL	SOD LAWN SY
0010	10+00	15+00	LT & RT	2.0	329
	15+00	20+00	LT & RT	3.8	626
	20+00	23+00	LT & RT	1.3	215
	UNDISTRIBUTED			1.4	230
TOTAL PROJECT 3803-00-65				8.4	1,400

PERMANENT SIGNING													
CATEGORY	STATION	OFFSET	LOCATION	SIGN CODE	SIGN MESSAGE	WIDTH (IN.)	HT. (IN.)	637.2210	637.2230	SPV.0060.22	SPV.0060.23	SPV.0060.24	NOTES
								SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	U-CHANNEL SIGN POST 12 FT EACH	U-CHANNEL SIGN POST 13 FT EACH	U-CHANNEL SIGN POST 14 FT EACH	
0010	11+50	25'	LT	R3-8-A	INTERSECTION LANE CONTROL SIGN	36	30	7.50	-	-	1	-	CITY SUPPLIED SIGN
	11+70	25'	RT	R8-3R	NO PARKING SYMBOL WITH ARROW	18	24	-	-	1	-	-	
	13+75	25'	LT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	
	13+75	25'	RT	R8-3L	NO PARKING SYMBOL WITH ARROW	18	24	-	-	1	-	-	
	14+10	40'	LT	R1-1	STOP SIGN	30	30	5.18	-	-	1	-	CITY SUPPLIED SIGN
	14+47	36'	RT	R1-1	STOP SIGN	30	30	5.18	-	-	1	-	
	14+71	20'	LT	R3-9-B	CENTER LANE LEFT TURN ONLY	24	36	6.00	-	-	-	1	
	14+71	20'	LT	R3-9-D	END	24	6	1.00	-	-	-	-	
	14+74	30'	RT	R3-9-B	CENTER LANE LEFT TURN ONLY	24	36	6.00	-	-	-	1	
	14+74	30'	RT	R3-9-C	BEGIN	24	6	1.00	-	-	-	-	
	15+05	25'	LT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	15+45	25'	RT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	16+25	25'	LT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	16+30	25'	RT	S4-51	SCHOOL SPEED LIMIT ASSEMBLY	24	48	6.63	1.38	-	-	1	
	16+90	25'	RT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	17+07	30'	RT	S1-1	SCHOOL ZONE	36	36	-	6.75	-	-	1	
	17+07	30'	RT	W 16-9P	AHEAD PLAQUE	24	8	-	1.33	-	-	-	
	17+65	25'	LT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	17+85	20'	LT	R3-9-B	CENTER LANE LEFT TURN ONLY	24	36	6.00	-	-	-	1	
	17+85	20'	LT	R3-9-C	BEGIN	24	6	1.00	-	-	-	-	
	18+02	30'	RT	R3-9-B	CENTER LANE LEFT TURN ONLY	24	36	6.00	-	-	-	1	
	18+02	30'	RT	R3-9-D	END	24	6	1.00	-	-	-	-	
	18+04	37'	LT	-	STREET NAME SIGNS	-	-	-	-	1	-	-	CITY SUPPLIED SIGNS
	18+48	49'	LT	S4-51	SCHOOL SPEED LIMIT ASSEMBLY	24	48	6.63	1.38	-	-	1	
	18+51	30'	RT	S1-1	SCHOOL ZONE	36	36	-	6.75	-	-	1	
	18+51	30'	RT	W16-7L	YELLOW DIAGONAL ARROW	24	12	-	2.00	-	-	-	
	18+63	20'	LT	S1-1	SCHOOL ZONE	36	36	-	6.75	-	-	1	
	18+63	20'	LT	W16-7L	YELLOW DIAGONAL ARROW	24	12	-	2.00	-	-	-	
	18+80	25'	RT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	18+95	25'	LT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	19+65	25'	LT	S4-51	SCHOOL SPEED LIMIT ASSEMBLY	24	48	6.63	1.38	-	-	1	
	19+65	30'	RT	R3-8-A	INTERSECTION LANE CONTROL SIGN	36	30	7.50	-	-	1	-	
	20+09	30'	LT	S1-1	SCHOOL ZONE	36	36	-	6.75	-	-	1	
	20+09	30'	RT	W 16-9P	AHEAD PLAQUE	24	8	-	1.33	-	-	-	
	20+75	25'	RT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
	21+00	25'	LT	R8-3	NO PARKING SYMBOL	24	24	-	-	1	-	-	CITY SUPPLIED SIGN
TOTAL PROJECT 3803-00-65								73.24	37.79	13	4	11	

EXISTING SIGNING						
CATEGORY	STATION	LOCATION	SIGN MESSAGE	638.2602	638.3000	NOTES:
				REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
0010	11+50	LT	INTERSECTION LANE CONTROL SIGN, CHAMBER INFORMATION, AND NO PARKING HERE TO CORNER SIGN	1	-	MOUNTED TO LIGHT POLE
	11+50	RT	2 HR PARKING SIGN	1	1	
	11+95	RT	NO MANUALLY PROPELLED VEHICLES, 30 MIN PARKING SIGNS	1	-	MOUNTED TO LIGHT POLE
	12+65	LT	NO MANUALLY PROPELLED VEHICLES, 30 MIN PARKING SIGNS	1	-	MOUNTED TO LIGHT POLE
	12+85	RT	2 HR PARKING SIGN	1	1	
	13+20	RT	30 MIN PARKING SIGN	1	-	MOUNTED TO LIGHT POLE
	13+35	RT	NO PARKING HERE TO CORNER SIGN	1	1	
	13+75	LT	NO PARKING HERE TO CORNER SIGN	1	1	
	13+75	RT	NO PARKING ANY TIME SIGN	1	1	
	14+10	LT	STOP SIGN	1	1	
	14+47	RT	STOP SIGN	1	1	
	15+05	LT	NO PARKING THIS SIDE OF STREET SIGN	1	1	
	16+00	RT	NO PARKING ANY TIME SIGN	1	1	
	16+25	LT	NO PARKING ANY TIME SIGN	1	1	
	16+30	RT	SCHOOL SPEED LIMIT SIGN	1	1	METAL POLE
	16+50	RT	10 MIN PARKING SIGN	1	1	
	16+90	RT	SCHOOL CROSSING, 10 MIN PARKING SIGNS	1	1	WOOD POLE
	17+65	LT	NO PARKING THIS SIDE OF STREET SIGN	1	1	
	17+80	RT	NO LOITERING INFORMATION SIGN	1	-	MOUNTED TO LIGHT POLE
	18+05	LT	STOP SIGN	1	1	
	18+35	RT	INTERSECTION LANE CONTROL, NO LOITERING SIGN	1	-	MOUNTED TO LIGHT POLE
	18+50	LT	PEDESTRIAN CROSSING SIGN	1	1	
	18+80	RT	NO PARKING ANY TIME SIGN	1	1	
	18+95	LT	NO PARKING THIS SIDE OF STREET SIGN	1	1	
	19+70	LT	SCHOOL SPEED LIMIT SIGN	1	1	WOOD POLE
	19+65	RT	SCHOOL SPEED LIMIT SIGN	1	1	WOOD POLE
	20+25	LT	NO PARKING THIS SIDE OF STREET SIGN	1	-	MOUNTED TO LIGHT POLE
	20+75	RT	NO PARKING ANY TIME SIGN	1	1	
TOTAL PROJECT 3803-00-65				28	21	

PAVEMENT MARKINGS

CATEGORY	LOCATION	646.1020	646.1020	646.1020	646.3020	646.5020	646.5020	646.5020	646.5220	646.5120	646.6120	646.7120	646.7420
		MARKING LINE EPOXY 4-INCH (WHITE) LF	MARKING LINE EPOXY 4-INCH (YELLOW) LF	MARKING LINE EPOXY 4-INCH (YELLOW)* LF	MARKING LINE EPOXY 8-INCH (WHITE) LF	MARKING ARROW EPOXY TYPE 2 EACH	MARKING ARROW EPOXY TYPE 3 EACH	MARKING ARROW EPOXY BIKE LANE EACH	MARKING SYMBOL EPOXY BIKE CROSSING EACH	MARKING WORD EPOXY BIKE LANE EACH	MARKING STOP LINE EPOXY 18-INCH LF	MARKING DIAGONAL EPOXY 12-INCH (YELLOW) LF	MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE) LF
0010	MAPLE AVE TO 3RD STREET	56	-	806	55	1	1	-	-	-	26	10	-
	3RD STREET INTERSECTION	-	-	-	-	-	-	-	-	-	27	-	275
	3RD STREET TO 4TH STREET	707	897	-	-	4	-	4	4	3	-	-	-
	4TH STREET INTERSECTION	-	-	-	-	-	-	-	-	-	-	-	156
	4TH STREET TO MACKIE STREET	420	-	1,172	55	1	1	2	2	3	26	131	-
TOTAL PROJECT 3803-00-65		1,183	897	1,978	110	6	2	6	6	6	79	141	431

* LENGTH ACCOUNTS FOR A DOUBLE YELLOW PAVEMENT MARKING

CONSTRUCTION STAKING

CATEGORY	STATION	TO STATION	650.4000	650.4500	650.7000	650.9920
			CONSTRUCTION STAKING STORM SEWER EACH	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING CONCRETE PAVEMENT LF	CONSTRUCTION STAKING SLOPE STAKES LF
0010	10+00	15+00	10	402	402	402
	15+00	20+00	8	500	500	500
	20+00	23+00	4	175	175	175
TOTAL PROJECT 3803-00-65			22	1,077	1,077	1,077

SAWING

				690.0150	690.0250
				SAWING	SAWING
CATEGORY	STATION	TO STATION	LOCATION	ASPHALT LF	CONCRETE LF
0010	10+00	15+00	RT & LT	343	98
	15+00	20+00	RT & LT	179	50
	20+00	23+00	RT	0	213
	UNDISTRIBUTED			78	39
TOTAL PROJECT 3803-00-65				600	400

STORM SEWER TAP

CATEGORY	STATION	LOCATION	SPV.0060.06
			EACH
0010	20+76	8 LT	1
TOTAL PROJECT 3803-00-65			1

SANITARY MANHOLE AND COVER

CATEGORY	STATION	LOCATION	SPV.0060.07	SPV.0060.08
			SANITARY MANHOLE EACH	SANITARY MANHOLE COVER TYPE J EACH
0010	14+28.1	0.04 LT	1	1
	18+24.8	0.58 RT	1	1
	21+86.6	5.48 RT	1	1
TOTAL PROJECT 3803-00-66			3	3

LIGHTING CONDUIT & WIRE

CATEGORY	STATION	TO STATION	652.0225	655.0610	655.0620	SPV.0060.01
			CONDUIT RIGID NONMETALIC SCHEDULE 40 2-INCH LF	ELECTRICAL WIRE LIGHTING 12 AWG LF	ELECTRICAL WIRE LIGHTING 8 AWG LF	CONNECTION TO EXISTING ELECTRICAL CIRCUIT EACH
0010	CONNECT TO EXSTING		-	-	-	1
	11+00.00	11+20.00	26	-	104	-
	POLE 1-B		-	130	-	-
	11+20.00	12+11.00	103	-	412	-
	POLE 3-B		-	130	-	-
	12+11.00	11+74.00	96	-	288	-
	POLE 2-A		-	130	-	-
	POLE 3 - B		-	-	-	-
	12+11.00	12+82.00	130	-	520	-
	POLE 4-A		-	130	-	-
	12+82.00	13+36.00	113	-	452	-
	POLE 5-B		-	130	-	-
	13+36.00	13+90.00	113	-	339	-
	POLE 6-A		-	130	-	-
	POLE 13-C		-	130	-	-
	14+75.00	15+45.00	129	-	387	-
	POLE 12-D		-	130	-	-
	15+45.00	15+75.00	89	-	356	-
	POLE 11-C		-	130	-	-
	15+75.00	16+34.00	118	-	472	-
	POLE 10-D		-	130	-	-
	16+34.00	16+93.00	118	-	472	-
	POLE 9-C		-	130	-	-
	16+93.00	17+41.00	107	-	428	-
	POLE 8-D		-	130	-	-
	17+41.00	17+95.00	113	-	452	-
	POLE 7-C		-	130	-	-
	17+95.00	18+49.00	113	-	452	-
	POLE 6-D		-	130	-	-
	RRFB		-	-	-	-
	18+61.30	18+49.00	24	72	-	-
	POLE 6-D		-	-	-	-
	18+49.00	19+04.00	114	342	456	-
	POLE 5-C		-	-	-	-
	RRFB		-	-	-	-
	18+61.00	19+04.00	55	165	-	-
	POLE 5-C		-	130	-	-
	19+04.00	19+54.00	109	327	436	-
	POLE 4-D		-	130	-	-
	19+54.00	19+99.00	104	312	416	-
	POLE 3-C		-	130	-	-
	19+99.00	20+64.00	124	372	496	-
	POLE 2-D		-	130	-	-
	20+64.00	21+24.00	120	360	480	-
	POLE 1-C		-	130	-	-
	21+24.00	21+84.00	104	312	416	-
	CONNECT TO EXSTING		-	-	-	1
TOTAL PROJECT 3803-00-65			2122	4732	7834	2

SALVAGING AND REINSTALLING EXSTING
SUBSURFACE BLACK GRAVEL SOIL LAYER

			SPV.0035.01
CATEGORY	STATION	LOCATION	CY
0020	UNDISTRIBUTED		1200
TOTAL PROJECT 3803-00-65			1200

LIGHTING UNITS

CATEGORY	STRUCTURE	STATION	LOCATION		SPV.0060.02	SPV.0060.03
					CONCRETE BASE TYPE 5 MODIFIED SPECIAL EACH	LIGHTING ASSEMBLY ROADWAY DECORATIVE 126W-LED SPECIAL EACH
0010	1-B	11+20.00	24.75'	LT	1	1
	2-A	11+74.00	24.75'	RT	1	1
	3-B	12+11.00	24.75'	LT	1	1
	4-A	12+82.00	24.75'	RT	1	1
	5-B	13+36.00	24.75'	LT	1	1
	6-A	13+90.00	24.75'	RT	1	1
	13-C	14+75.00	24.75'	LT	1	1
	12-D	15+45.00	24.75'	RT	1	1
	11-C	15+75.00	24.75'	LT	1	1
	10-D	16+34.00	24.75'	RT	1	1
	9-C	16+93.00	24.75'	LT	1	1
	8-D	17+41.00	24.75'	RT	1	1
	7-C	17+95.00	24.75'	LT	1	1
	6-D	18+49.00	24.75'	RT	1	1
	5-C	19+04.00	24.75'	LT	1	1
	4-D	19+54.00	24.75'	RT	1	1
	3-C	19+99.00	24.75'	LT	1	1
	2-D	20+64.00	24.75'	RT	1	1
	1-C	21+24.00	24.75'	LT	1	1
TOTAL PROJECT 3803-00-65					19	19

INSTALL CITY FURNISHED STREET SIGNS

CATEGORY	STATION	LOCATION		SPV.0060.05	NOTES
				EACH	
0020	11+70	25'	RT	1	NO PARKING SYMBOL WITH ARROW
	13+75	25'	LT	1	NO PARKING SYMBOL
	13+75	25'	RT	1	NO PARKING SYMBOL WITH ARROW
	14+10	40'	LT	1	STREET NAME
	14+47	36'	RT	1	STREET NAME
	15+05	25'	LT	1	NO PARKING SYMBOL
	15+45	25'	RT	1	NO PARKING SYMBOL
	16+25	25'	LT	1	NO PARKING SYMBOL
	16+90	25'	RT	1	NO PARKING SYMBOL
	17+65	25'	LT	1	NO PARKING SYMBOL
	18+04	37'	LT	1	STREET NAME
	18+80	25'	RT	1	NO PARKING SYMBOL
	18+95	25'	LT	1	NO PARKING SYMBOL
	20+75	25'	RT	1	NO PARKING SYMBOL
	21+00	25'	LT	1	NO PARKING SYMBOL
TOTAL PROJECT 3803-00-65				15	

REMOVING LIGHTING SYSTEM

CATEGORY	STATION	LOCATION		SPV.0060.04
				REMOVING BASE, POLE & LUMINAIRE EACH
0010	11+44	25.4'	LT	1
	11+95	26.6'	RT	1
	12+63	25.0'	LT	1
	13+21	26.2'	RT	1
	14+49	22.3'	RT	1
	16+32	21.0'	LT	1
	18+35	19.5'	RT	1
	20+31	21.1'	LT	1
TOTAL PROJECT 3803-00-65				8

SANITARY LATERAL AND WATER SERVICE

CATEGORY	STATION	LOCATION	SPV.0060.09	SPV.0090.01	SPV.0090.02	SPV.0060.10
			SANITARY WYE 8-INCH MAIN EACH	SANITARY LATERAL 4 OR 6-INCH LF	WATER SERVICE 1 TO 2-INCH LF	CORPORATION, CURB STOP & BOX (SET) EACH
0020	11+15	RT	-	-	15	1
0010	11+17	RT	1	33	-	-
0010	11+38	LT	1	33	-	-
0010	11+60	RT	1	33	-	-
0020	11+62	RT	-	-	15	1
0020	11+62	RT	-	-	15	1
0010	11+98	RT	1	33	-	-
0020	11+99	RT	-	-	15	1
0010	12+23	LT	1	33	-	-
0010	12+46	RT	1	33	-	-
0020	12+47	RT	-	-	15	1
0010	12+81	LT	1	33	-	-
0010	13+06	RT	1	33	-	-
0010	13+31	LT	1	33	-	-
0010	13+47	RT	1	33	-	-
0010	13+49	LT	1	33	-	-
0020	13+59	RT	-	-	15	1
0020	15+04	LT	-	-	51	1
0010	15+05	LT	1	33	-	-
0010	15+29	RT	1	33	-	-
0020	15+35	RT	-	-	15	1
0010	15+68	RT	1	33	-	-
0020	15+73	RT	-	-	15	1
0010	15+81	LT	1	33	-	-
0020	15+85	LT	-	-	51	1
0020	16+29	LT	-	-	51	1
0010	16+51	LT	1	33	-	-
0010	16+53	LT	1	33	-	-
0010	16+78	RT	1	33	-	-
0010	16+84	LT	1	33	-	-
0020	16+88	LT	-	-	51	1
0010	17+55	RT	1	33	-	-
0010	17+58	LT	1	33	-	-
0010	17+61	LT	1	33	-	-
0010	17+63	RT	1	33	-	-
0020	17+65	LT	-	-	51	1
0010	18+07	RT	1	33	-	-
0010	18+69	RT	1	32	-	-
0010	19+16	LT	1	35	-	-
0010	19+17	RT	1	31	-	-
0010	19+67	RT	1	30	-	-
0010	19+70	LT	1	36	-	-
0010	20+05	LT	1	37	-	-
0010	20+30	LT	1	37	-	-
0010	20+33	RT	1	21	-	-
0010	20+74	LT	1	38	-	-
0010	20+75	RT	1	21	-	-
0010	21+43	LT	1	39	-	-
0010	21+48	RT	1	24	-	-
0010	UNDISTRIBUTED		-	77	-	-
0020	UNDISTRIBUTED		-	-	25	-
0010	TOTAL PROJECT 3803-00-66		36	1250	-	-
0020	TOTAL PROJECT 3803-00-66		-	-	400	13

WATER APPURTENANCES SUMMARY												
CATEGORY	STATION	OFFSET DIR.	SPV.0060.11	SPV.0060.12	SPV.0060.13	SPV.0060.14	SPV.0060.15	SPV.0060.16	SPV.0060.17	SPV.0060.18	SPV.0060.19	SPV.0060.20
			WATER VALVE & BOX 6-INCH	WATER VALVE & BOX 10-INCH	FIRE HYDRANT	TEES 10X6X10	CROSSES 10X6	BEND 45-DEG. 4-INCH	BEND 11.25-DEG. 6-INCH	BEND 45-DEG. 6-INCH	BEND 45-DEG. 10-INCH	REDUCER 6X4
			EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
0020	11+03.8	16.0 RT	-	-	-	-	-	-	-	-	1	-
	11+05.8	18.0 RT	-	-	-	-	-	-	-	-	1	-
	13+86.1	18.0 RT	-	-	-	1	-	-	-	-	-	-
	13+86.1	23.5 RT	1	-	-	-	-	-	-	-	-	-
	13+86.1	26.5 RT	-	-	1	-	-	-	-	-	-	-
	13+95.1	18.0 RT	-	1	-	-	-	-	-	-	-	-
	14+19.9	18.0 RT	-	-	-	-	1	-	-	-	-	-
	14+19.9	33.0 RT	1	-	-	-	-	-	-	-	-	-
	14+19.9	36.1 RT	-	-	-	-	-	-	-	1	-	-
	14+36.5	52.5 RT	-	-	-	-	-	-	-	1	-	-
	14+19.8	0.0 LT	-	-	-	-	-	-	1	-	-	-
	14+19.8	8.0 LT	-	-	-	-	-	-	1	-	-	-
	14+19.7	33.0 LT	1	-	-	-	-	-	-	-	-	-
	14+19.7	44.9 LT	-	-	-	-	-	-	-	-	-	1
	14+19.7	46.0 LT	-	-	-	-	-	1	-	-	-	-
	14+15.6	50.0 LT	-	-	-	-	-	1	-	-	-	-
	14+61.1	18.0 RT	-	1	-	-	-	1	-	-	-	-
	17+47.8	18.0 RT	-	-	-	1	-	-	-	-	-	-
	17+47.8	26.5 RT	1	-	-	-	-	-	-	-	-	-
	17+92.7	18.0 RT	-	1	-	-	-	-	-	-	-	-
	18+33.0	18.0 RT	-	-	-	-	1	-	-	-	-	-
	18+33.0	23.5 RT	1	-	-	-	-	-	-	-	-	-
	18+33.0	26.5 RT	-	-	1	-	-	-	-	-	-	-
	18+32.9	0.7 RT	-	-	-	-	-	-	1	-	-	-
	18+32.8	8.0 LT	-	-	-	-	-	-	1	-	-	-
	18+32.7	33.0 LT	1	-	-	-	-	-	-	-	-	-
	18+32.6	45.5 LT	-	-	-	-	-	-	-	1	-	-
	18+37.1	50.0 LT	-	-	-	-	-	-	-	1	-	-
	18+58.7	18.0 RT	-	1	-	-	-	-	-	-	-	-
	19+50.0	11.6 RT	-	1	-	-	-	-	-	-	-	-
	21+87.8	16.9 LT	-	1	-	-	-	-	-	-	-	-
	21+94.8	15.3 RT	-	-	-	-	-	-	-	-	1	-
	21+98.1	8.7 RT	-	-	-	-	-	-	-	-	1	-
TOTAL PROJECT 3803-00-66			6	6	2	2	2	2	4	4	4	1

UTILITY LINE OPENING (ULO)				
PROJECT	CATEGORY	STATION	LOCATION	EACH
3803-00-65	0010	UNDISTRIBUTED		6
3803-00-66	0010	UNDISTRIBUTED		2
3803-00-66	0020	UNDISTRIBUTED		2
TOTAL PROJECT 3803-00-65, 3803-00-66				10

CONNECT PRIVATE STORM SEWER PIPE				
SPV.0060.25 CONNECT PRIVATE STORM SEWER PIPE				
CATEGORY	STATION	LOCATION	PIPE	EACH
0010	13+95	45 LT	1	
	18+64	33 RT	1	
	18+65	33 LT	1	
	20+09	33 LT	1	
	20+47	25 RT	1	
	20+76	25 RT	1	
TOTAL PROJECT 3803-00-65				6

SANITARY SEWER PIPE				
SPV 0090.03				
SANITARY SEWER PIPE				
8-INCH				
CATEGORY	STATION	TO STATION	LOCATION	LF
0010	10+98	14+28	LT	330
	14+28	14+28	LT	50
	14+28	18+25	RT	397
	18+25	18+25	LT	51
	18+25	21+87	RT	360
	21+87	21+92	RT	5
	21+87	21+92	RT	5
UNDISTRIBUTED				52
TOTAL PROJECT 3803-00-66				1250

TRAFFIC CONTROL ITEMS																
CATEGORY	LOCATION	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	LF
0010	TRAFFIC CONTROL PLAN (GENERAL)	140	-	-	-	24	3,360	-	-	14	1,960	-	-	-	-	-
	TRAFFIC CONTROL PLAN (VEHICLE DETOUR)	140	-	-	-	-	-	-	-	30	4,200	-	-	-	-	-
	TRAFFIC CONTROL PLAN (PEDESTRIAN DETOUR)	140	-	-	12	1,680	12	1,680	-	25	3,500	-	-	-	-	-
	MACKIE STREET TRAFFIC CONTROL	140	18	2,520	-	-	1	140	1	140	11	1,540	-	-	-	-
	UNDISTRIBUTED (TEMP. PED. ACCOMODATIONS)	14	40	560	-	-	-	-	-	-	-	-	-	450	10	210
	UNDISTRIBUTED (GENERAL)	-	-	420	-	320	-	320	-	10	-	300	1	50	5	40
TOTAL PROJECT 3803-00-65				3,500		2,000		5,500		150		11,500	1	500	15	250

WATER MAIN PIPE										
CATEGORY	STATION	LOCATION	TO	STATION	LOCATION	SPV.0090.04	SPV.0090.05	SPV.0090.06	SPV.0090.07	SPV.0060.26
						PVC WATER MAIN 4-INCH LF	PVC WATER MAIN 6-INCH LF	PVC WATER MAIN 10-INCH LF	DUCTILE IRON WATER MAIN 10-INCH LF	FLUOROCARBON GASKETS 10-INCH EACH
0020	11+03.8	16.0 RT		11+05.8	18.0 RT	-	-	3	-	-
	11+05.8	18.0 RT		13+46.8	18.0 RT	-	-	241	-	-
	13+46.8	18.0 RT		13+86.1	18.0 RT	-	-	39	-	-
	13+86.1	18.0 RT		13+86.1	26.5 RT	-	9	-	-	-
	13+86.1	18.0 RT		14+19.9	18.0 RT	-	-	34	-	-
	14+19.9	18.0 RT		14+19.9	36.1 RT	-	18	-	-	-
	14+19.9	36.1 RT		14+36.5	52.5 RT	-	23	-	-	-
	14+19.9	18.0 RT		14+19.8	0.0 LT	-	18	-	-	-
	14+19.8	0.0 LT		14+19.8	8.0 LT	-	8	-	-	-
	14+19.8	8.0 LT		14+19.7	46.0 LT	-	38	-	-	-
	14+19.7	46.0 LT		14+15.6	50.0 LT	6	-	-	-	-
	14+19.9	18.0 RT		15+29.4	18.0 RT	-	-	-	110	7
	15+29.4	18.0 RT		18+33.0	18.0 RT	-	-	304	-	-
	17+47.8	18.0 RT		17+47.8	33.0 RT	-	15	-	-	-
	18+33.0	18.0 RT		18+33.0	26.5 RT	-	9	-	-	-
	18+33.0	18.0 RT		18+32.9	0.7 RT	-	17	-	-	-
	18+32.9	0.7 RT		18+32.8	8.0 LT	-	9	-	-	-
	18+32.8	8.0 LT		18+32.6	45.5 LT	-	37	-	-	-
	18+32.6	45.5 LT		18+37.1	50.0 LT	-	6	-	-	-
	18+33.0	18.0 RT		18+69.2	18.0 RT	-	-	36	-	-
	18+69.2	18.0 RT		21+94.8	15.3 RT	-	-	319	-	-
	21+94.8	15.3 RT		21+98.1	8.7 RT	-	-	7	-	-
UNDISTRIBUTED						4	44	57	-	3
TOTAL PROJECT 3803-00-66						10	250	1040	110	10

REMOVE EXISTING SANITARY STRUCTURE				
SPV.0105.02 LUMP SUM-FOR INFORMATIONAL PURPOSES ONLY				
CATEGORY	STATION	LOCATION	REMOVE EX MANHOLE	COMMENTS
			EACH	
0010	14+28	0.04 LT	1	SAME TRENCH AS NEW SANITARY
	18+25	0.58 RT	1	SAME TRENCH AS NEW SANITARY
	21+87	5.48 RT	1	SAME TRENCH AS NEW SANITARY
TOTAL PROJECT 3803-00-66			3	

REMOVE EXISTING WATER STRUCTURE						
SPV.0105.03 LUMP SUM-FOR INFORMATIONAL PURPOSES ONLY						
CATEGORY	STATION	DIST.	DIR	REMOVE EX VALVE BOX	REMOVE EX HYDRANT	
				EACH	EACH	
0020	13+94	24.8	RT	-	1	
	14+11	16.0	RT	1	-	
	14+16	33.8	LT	1	-	
	14+37	35.7	RT	1	-	
	17+48	17.8	RT	1	-	
	17+89	24.8	RT	-	1	
	18+37	37.4	LT	1	-	
	21+94	10.0	RT	1	-	
TOTAL PROJECT 3803-00-66				6	2	

EXCAVATION, HAULING, DEWATERING AND DISPOSAL OF CONTAMINATED SOIL					
SPV.0195.01 SPECIAL					
PROJECT	CATEGORY	STATION	TO STATION	LOCATION	TON
3803-00-65	0020	14+40	14+90	LT & RT	450
TOTAL PROJECT 3803-00-65					450

3

CONDUIT RIGID NONMETALLIC					
★					
		652.0225	652.0235		
		SCHEDULE 40	SCHEDULE 40		
		2-INCH	3-INCH		
CATEGORY	FROM	TO	LF	LF	
0010	EX-PB11	EX-PB9	-	120	2-3"
	EX-PB9	PB1	34	-	-
	PB1	PB2	178	-	-
	TOTAL PROJECT 3803-00-65		212	120	

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

LOOP DETECTORS								
						652.0800 CONDUIT LOOP DETECTOR	655.0700 LOOP DETECTOR LEAD IN CABLE	655.0800 LOOP DETECTOR WIRE
CATEGORY	LOOP NUMBER	STATION	OFFSET	SIZE	NUMBER OF TURNS	LF	LF	LF
0010	NORTH SPRING STREET & MACKIE STREET INTERSECTION							
	31	21+70	8.1' RT	6'x20'	3	92	130	276
	32	21+85	9.7' RT	6'x6'	4	106	130	424
	81	19+59	11.5' RT	6'x6'	5	44	308	220
	82	21+71	19.8' RT	6'x20'	4	74	130	296
	83	21+92	20.8' RT	6'x6'	3	96	130	288
PROJECT SUBTOTAL						412	828	1504
NORTH SPRING STREET & MAPLE AVENUE INTERSECTION								
UNDISTRIBUTED					-	20	-	360
TOTAL PROJECT 3803-00-65						432	828	1,864

REPAIR EXISTING LOOP DETECTOR

SPV.0060.27			
CATEGORY	STATION	LOCATION	EACH
0010	10+79	17' LT	1
	10+91	17' LT	1
TOTAL PROJECT 3808-00-65			2

RECTANGULAR RAPID FLASHING BEACON (RRFB) WITH PEDESTRIAN ACTIVATION

SPV.0105.04					654.0101
					CONCRETE
					BASES TYPE 1
CATEGORY	STATION	LOCATION	LS	EACH	NOTES
0010	18+61.00	24.5' LT	-	1	7' MOUNTING HEIGHT, SEE DETAIL
	18+61.30	24.75' RT	-	1	7' MOUNTING HEIGHT, SEE DETAIL
TOTAL PROJECT 3808-00-65			1	2	

PULL BOXES STEEL

653.0140				
24x42-INCH				
CATEGORY	NUMBER	STATION	LOCATION	EACH
0010	PB1	21+41.6	25.0' RT	1
	PB2	19+62.7	24.7' RT	1
TOTAL PROJECT 3803-00-65				2

CABLE TRAFFIC SIGNAL

			655.0230	655.0280
			5-14 AWG	19-14 AWG
CATEGORY	FROM	TO	LF	LF
0010	NORTH SPRING STREET & MACKIE STREET INTERSECTION			
	EX-CB1	EX-SB7	-	154
	EX-CB1	EX-SB6	-	205
	UNDISTRIBUTED		50	50
TOTAL PROJECT 3808-00-65			50	409

REPAIR TRAFFIC SIGNAL CONDUIT & WIRING

SPV.0105.05			
CATEGORY	STATION	LOCATION	LS
0010	21+80	LT/RT	1
TOTAL PROJECT 3808-00-65			1

3

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE

SECTION CORNER
NOTATION FOR COMBUSTIBLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES

R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN

CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
SIXTEENTH CORNER MONUMENT

ELECTRIC POLE
TELEPHONE POLE
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)
ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

COMPENSABLE
NON-COMPENSABLE

PARCEL NUMBER
UTILITY NUMBER
SECTION NUMBER

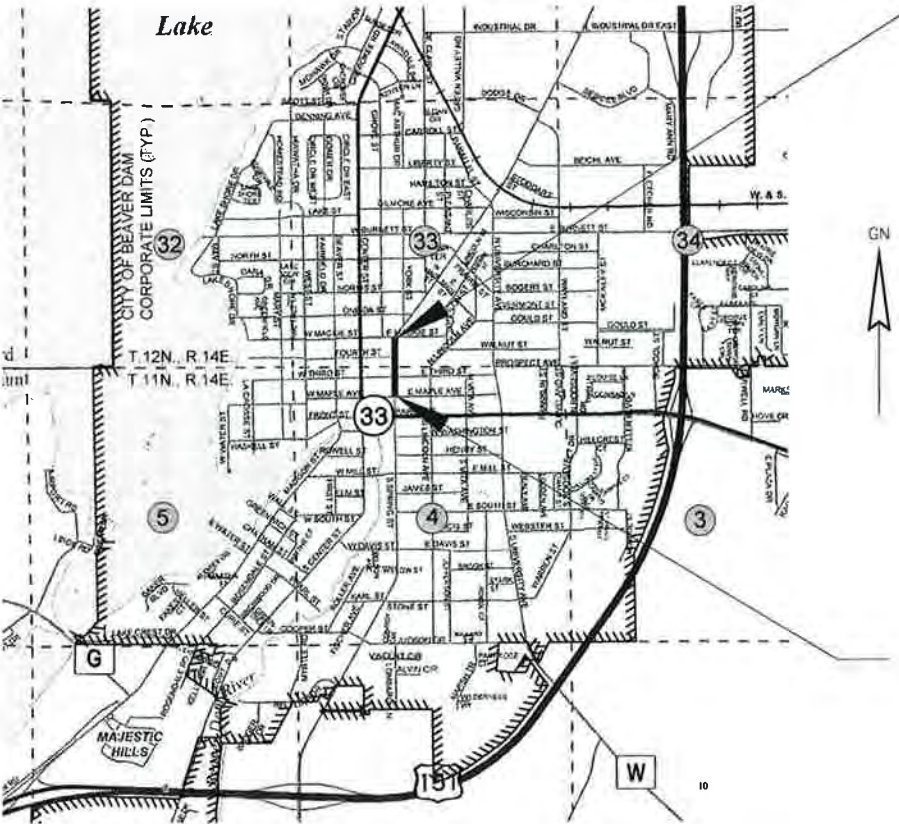
CONVENTIONAL UTILITY SYMBOLS

WATER
GAS
TELEPHONE OVERHEAD
TRANSMISSION LINES
ELECTRIC
CABLE TELEVISION
FIBER OPTIC
SANITARY SEWER
STORM SEWER



END RELOCATION ORDER

STA 23+00.00
547.45' W. OF AND 1980.04' S. OF THE
CENTER OF SEC. 33, T.12N., R.14E.



CITY OF BEAVER DAM
TOTAL NET LENGTH OF CENTERLINE
= 0.246 MILES

LAYOUT

0 0.7 MI.

SCALE

BEGIN RELOCATION ORDER

STA 10+00.00
712.24' W. OF AND 2258.39' N. OF THE
CENTER OF SEC. 4, T.11N., R.14E.

R/W PROJECT NUMBER 3803-00-64	SHEET NUMBER 4.01	TOTAL SHEETS 5
FEDERAL PROJECT NUMBER N/A		
PLAT OF RIGHT-OF-WAY REQUIRED FOR CITY OF BEAVER DAM, N. SPRING STREET (WEST MAPLE AVENUE TO MACKIE STREET)		
LOCAL STREET	DODGE COUNTY	
CONSTRUCTION PROJECT NUMBER 3803-00-65/66		

CONVENTIONAL ABBREVIATIONS			
ACCESS POINT/ DRIVEWAY CONNECTION	AP	REFERENCE LINE	R/L
ACCESS RIGHTS	AR	RELEASE OF RIGHTS	ROR
ACRES	AC.	REMAINING	REM.
AND OTHERS	ET.AL.	RIGHT-OF-WAY	R/W
CENTERLINE	C/L	SECTION	SEC.
CERTIFIED SURVEY MAP	CSM	STATION	STA.
CORNER	COR.	TEMPORARY LIMITED EASEMENT	TLE
DOCUMENT	DOC.	VOLUME	V.
EASEMENT	EASE.	CURVE DATA	
HIGHWAY EASEMENT	H.E.	LONG CHORD	LCH
LAND CONTRACT	LC	LONG CHORD BEARING	LCB
MONUMENT	MON.	RADIUS	R
PAGE	P.	DEGREE OF CURVE	D
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA	DELTA
PROPERTY LINE	P.L.	LENGTH OF CURVE	L
RECORDED AS	(100')	TANGENT	TAN

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, DODGE COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLEs) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

ORIGINAL PLAT PREPARED BY:

TRANSPORTATION • MUNICIPAL
DEVELOPMENT • ENVIRONMENTAL

DATE 01/17/2017

(REGISTERED LAND SURVEYOR)

REVISION DATE
OCT. 20, 2017, NC

CITY OF BEAVER DAM
DODGE COUNTY WISCONSIN

APPROVED BY THE CITY OF BEAVER DAM

DATE 1.17.17

SIGNATURE
Thomas A. Kenney

SCHEDULE OF LANDS & INTEREST REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES
ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE
TRANSFER OF LAND INTEREST TO THE CITY OF BEAVER DAM

4

PARCEL NUMBER	SHEET NUMBER	OWNER(S) NUMBER	INTEREST REQUIRED	R/W ACRES REQUIRED			TLE SQ. FT.
				NEW	EXISTING	TOTAL	
1	4.04	JEFFERY & SHIRLEY KITCHEN	TLE	---	---	---	219.45
2	4.04	FARMERS STATE BANK	TLE	---	---	---	561.59
3	4.04	JEFFERY KITCHEN	TLE	---	---	---	120.00
4	4.04	DANIEL FUELING	TLE	---	---	---	120.00
5	4.04	DANIEL FUELING	TLE	---	---	---	225.00
6	4.04	HOOGLAND 2006 FAM PEAL EST LTDPTNRSHP	TLE	---	---	---	289.20
7	4.04	JEFFERY & SHIRLEY KITCHEN	TLE	---	---	---	309.89
8	4.04	BEAVER DAM COMMUNITY THEATRE INC.	TLE	---	---	---	550.62
9	4.04	WISCONSIN TELEPHONE CO.	TLE	---	---	---	718.06
10	4.04	BEAVER ACCIPITER LLC	TLE	---	---	---	553.70
11	4.04	RICKY WESTENMEYER	TLE	---	---	---	514.92
12	4.04	PT COMMUNITY PROPERTIES LLC	TLE	---	---	---	380.29
13	4.04	JUSTMANN INVESTMENTS LLC	TLE	---	---	---	147.18
14	4.04-4.05	JUSTMANN INVESTMENTS LLC	TLE	---	---	---	175.69
15	4.05	JUSTMANN INVESTMENTS LLC	TLE	---	---	---	290.00
16	4.05	JUSTMANN INVESTMENTS LLC	TLE	---	---	---	265.00
17	4.05	CITY OF BEAVER DAM	TLE	---	---	---	878.46
18	4.05	JASON STOFFLET	TLE	---	---	---	344.84
19	4.05	BEAVER DAM UNIFIED SCHOOL DISTRICT	TLE	---	---	---	1155.20
20	4.05	BEAVER DAM UNIFIED SCHOOL DISTRICT	TLE	---	---	---	1710.55

4

REVISION DATE OCTOBER 20, 2017

DATE JANUARY 17, 2017

SCALE, FEET



HWY: N. SPRING STREET

COUNTY: DODGE

STATE R/W PROJECT NUMBER 3803-00-64

CONSTRUCTION PROJECT NUMBER 3803-00-65/66

PLAT SHEET 4.02

PS&E SHEET

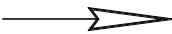
E

END RELOCATION ORDER
STATION 23+00.00
Y 724738.64
X 847611.40

MACKIE STREET

CITY OF BEAVER DAM
SECTION 4, T.11N., R.14E.
SECTION 33, T.12N., R.14E.
DODGE COUNTY, WISCONSIN

GN



NOTE:
EXISTING R/W ESTABLISHED FROM
BICKNELL'S ADDITION TO THE CITY OF
BEAVER DAM, OUTLOT 22 AND 24 OF THE
ORIGINAL 4TH WARD, ORIGINAL 3RD WARD,
BROWER'S PLAT, CERTIFIED SURVEY MAPS
OF RECORD, PLAT OF SURVEYS AND
EXISTING IRONS LOCATED IN THE FIELD.

SW 1/4

19

FOURTH STREET

SE 1/4

18

16

15

14

13

10

17

12

11

SE 1/4 SW 1/4 OF SECTION 33, T.12N., R.14E.
NE 1/4 NW 1/4 OF SECTION 4, T.11N., R.14E.

E. THIRD STREET

WN 1/4

N. SPRING STREET

NE 1/4

8

7

5

4

3

1

2

6

9

E. MAPLE AVENUE

BEGIN RELOCATION ORDER
STATION 10+00.00
Y 723459.71
X 847557.27

REVISION DATE OCTOBER 20, 2017

DATE JANUARY 17, 2017

SCALE, FEET
NOT TO SCALE

HWY: N. SPRING STREET

COUNTY: DODGE

STATE R/W PROJECT NUMBER 3803-00-64

CONSTRUCTION PROJECT NUMBER 3803-00-65/66

PLAT SHEET 4.03

PS&E SHEET

E

CITY OF BEAVER DAM

NOTE:
EXISTING R/W ESTABLISHED FROM
BROWERS PLAT OF BEAVER DAM, OUTLOTS
54, AND 55 OF THE ORIGINAL 3RD WARD,
CERTIFIED SURVEY MAP NO. 2949, AND
EXISTING IRONS LOCATED IN THE FIELD.

UTILITY OWNERS

- CABLE TV - CHARTER COMMUNICATIONS
- ELECTRIC - ALLIANT ENERGY
- ELECTRIC - CITY OF BEAVER DAM
- FIBER OPTIC - AT&T
- FIBER OPTIC - BEAVER DAM UNIFIED SCHOOL DISTRICT
- GAS - ALLIANT ENERGY (ALL)
- TELECOMMUNICATION - AT&T (ALL)
- SANITARY SEWER, WATERMAIN, AND STORM SEWER - CITY OF BEAVER DAM (ALL)

TILE-GRADING ALIGNMENT DATA

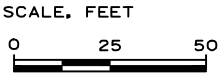
TILE 3 = 0.003 AC.
TILE 4 = 0.003 AC.
TILE 5 = 0.005 AC.
TILE 7 = 0.007 AC.

P.I. = 10+00.00
Y = 723459.71
X = 847557.27

TILE POINT	STATION	OFFSET
T-100	10+93	33 RT
T-101	10+93	38 RT
T-102	10+93	33 LT
T-103	10+93	38 LT
T-104	11+37	33 RT
T-105	11+37	38 RT
T-106	11+61	33 RT
T-107	11+61	38 RT
T-108	11+85	33 RT
T-109	11+85	38 RT
T-110	12+05	33 LT
T-111	12+05	38 LT
T-112	12+30	33 RT
T-113	12+30	38 RT
T-114	12+63	33 LT
T-115	12+63	38 LT
T-116	12+92	33 RT
T-117	12+92	38 RT
T-118	13+90	38 RT
T-119	13+90	45 RT
T-120	13+95	45 RT
T-121	13+95	33 RT
T-122	13+90	38 LT
T-123	13+90	50 LT
T-124	13+95	50 LT
T-125	13+95	33 LT
T-126	14+61	33 LT
T-127	14+61	50 LT
T-128	14+66	50 LT
T-129	14+66	38 LT
T-130	14+61	33 RT
T-131	14+61	61 RT
T-132	14+66	61 RT
T-133	14+66	38 RT
T-134	15+41	33 RT
T-135	15+41	38 RT
T-136	15+60	33 LT
T-137	15+60	38 LT
T-138	15+89	33 LT
T-139	15+89	38 LT

REVISION DATE OCTOBER 20, 2017, NC

DATE JANUARY 17, 2017



HWY: N. SPRING STREET

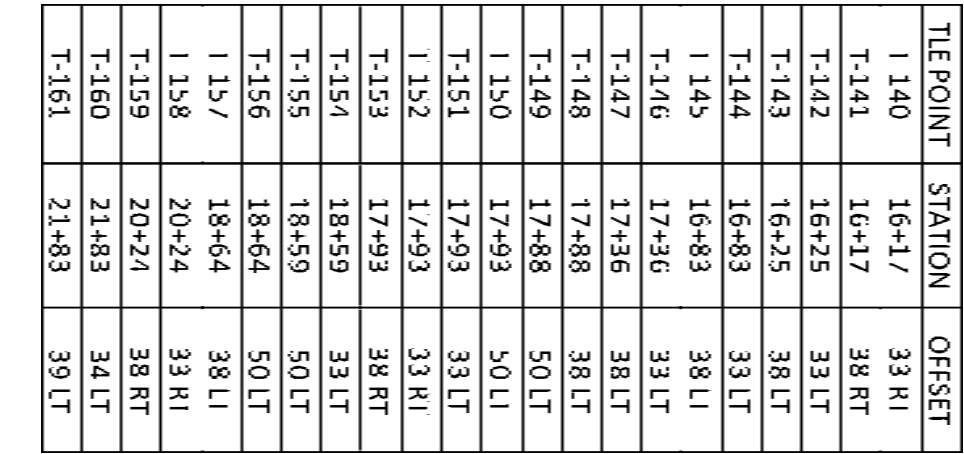
COUNTY: DODGE

STATE R/W PROJECT NUMBER 3803-00-64

CONSTRUCTION PROJECT NUMBER 3803-00-65/66

PLAT SHEET 4.04

PS&E SHEET



UTILITY OWNERS

CABLE TV - CHARTER COMMUNICATIONS

ELECTRIC - ALLIANT ENERGY

ELECTRIC - CITY OF BEAVER DAM

FIBER OPTIC - AT&T

FIBER OPTIC - BEAVER DAM UNIFIED
SCHOOL DISTRICT

GAS - ALLIANT ENERGY (ALL)

TELECOMMUNICATION - AT&T (ALL)

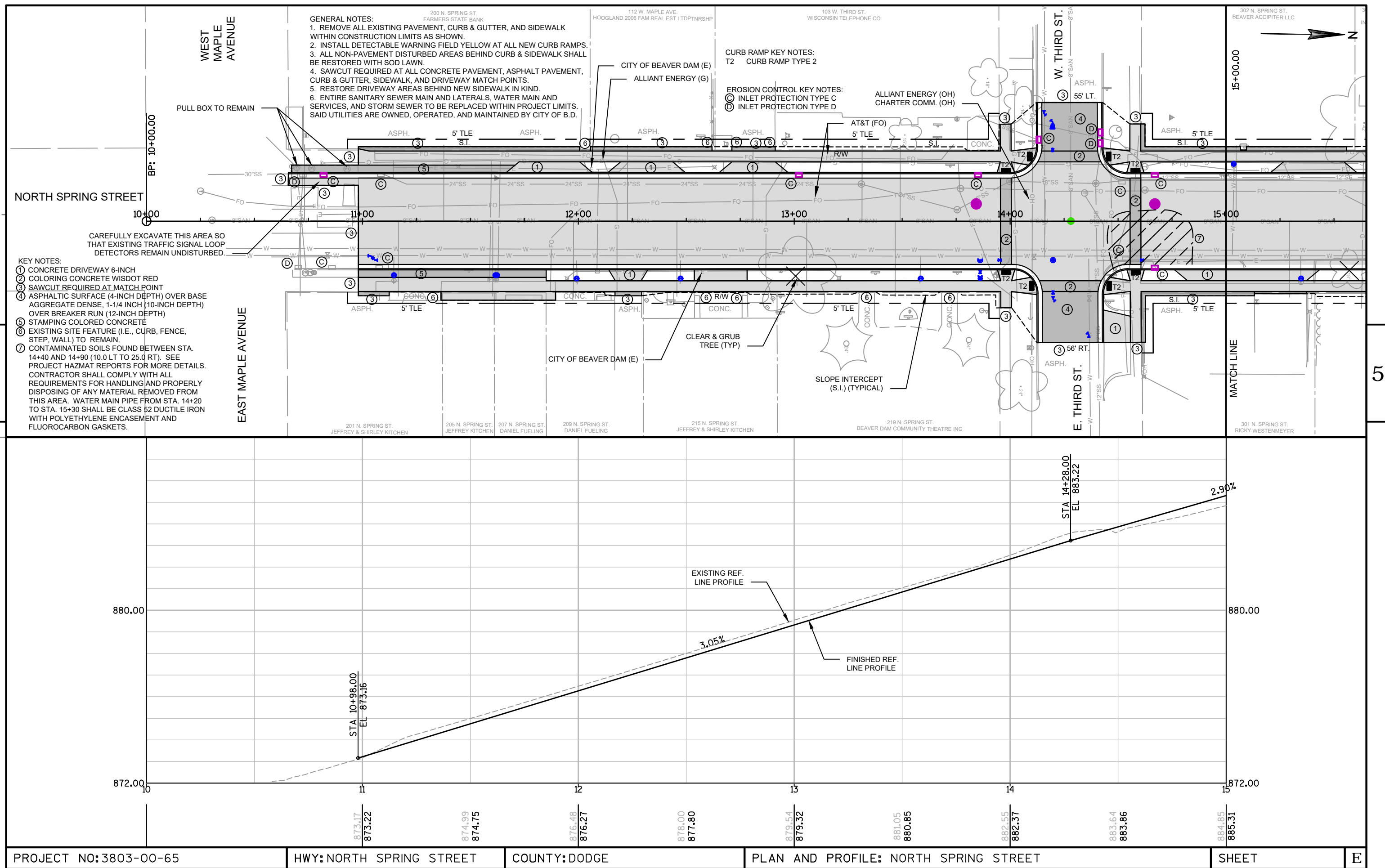
SANITARY SEWER, WATERMAIN, AND
STORM SEWER - CITY OF BEAVER DAM
(ALL)

P.C. = 21+74.95
Y = 724634.60
X = 847545.49

P.T. = 22+07.96
Y = 724665.37
X = 847555.69

E.P. = 23+00.00
Y = 724738.64
X = 847611.40

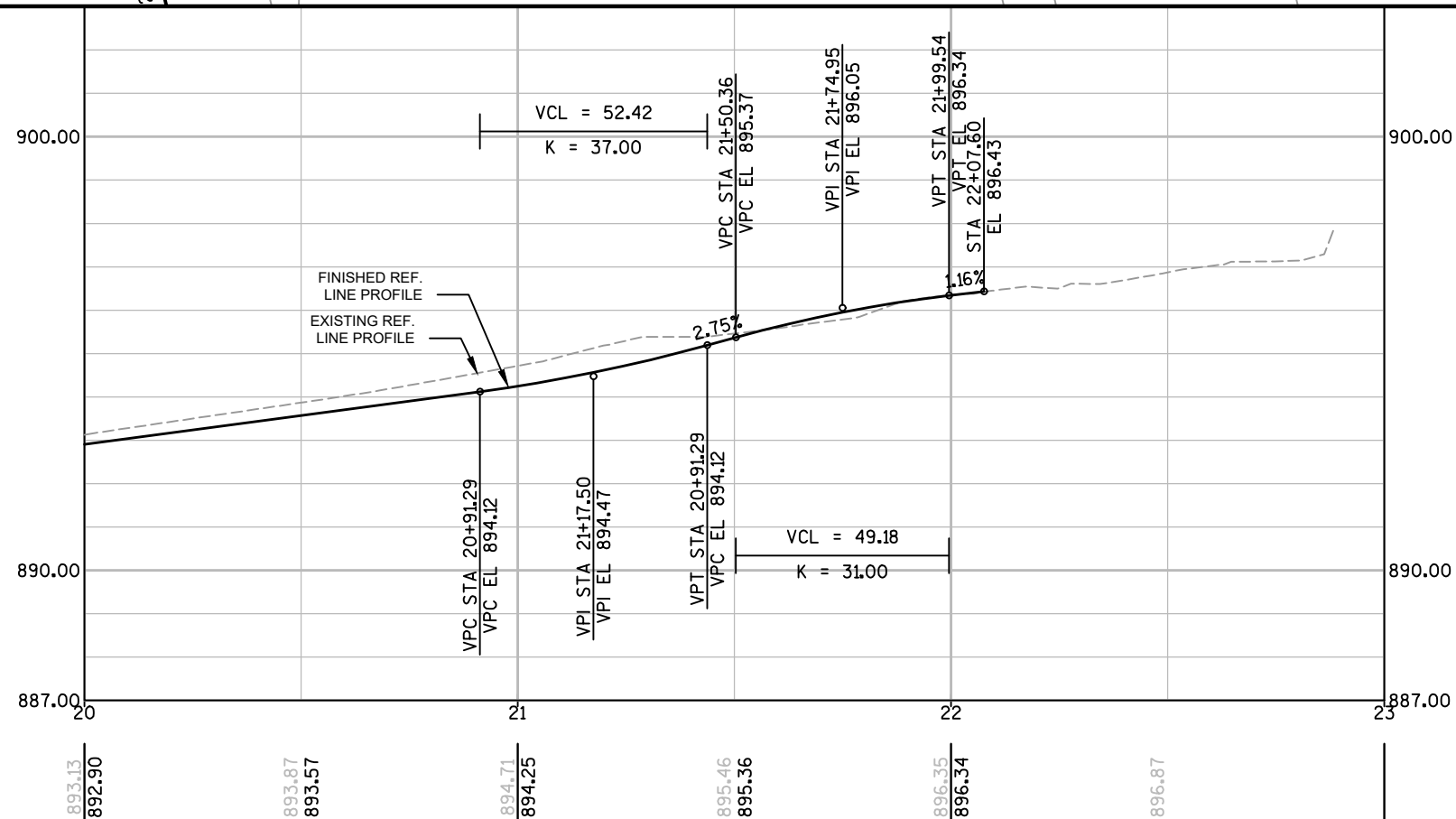
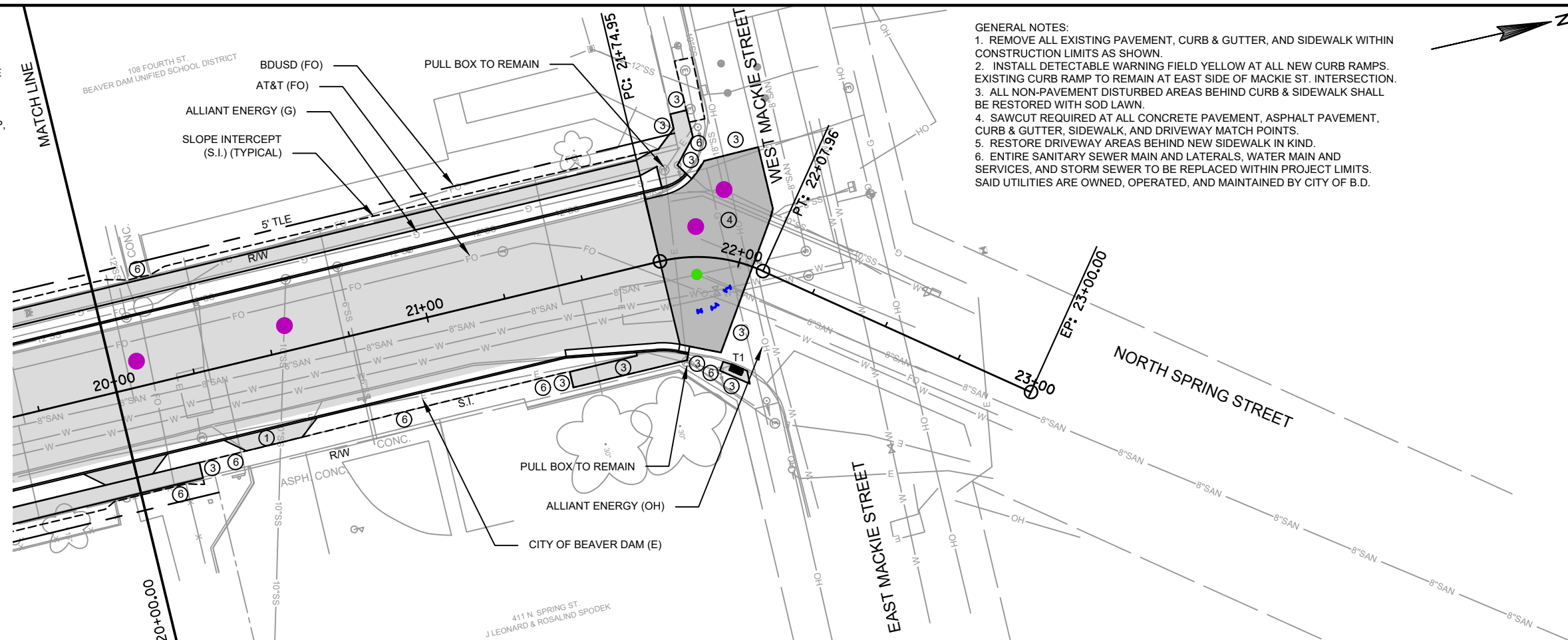
TILE POINT	STATION	OFFSET
T-140	16+17	33 RI
T-141	16+17	38 RT
T-142	16+25	33 LT
T-143	16+25	38 LT
T-144	16+83	33 LT
T-145	16+83	38 LI
T-146	17+36	33 LT
T-147	17+36	38 LT
T-148	17+88	38 LT
T-149	17+88	50 LT
T-150	17+93	50 LI
T-151	17+93	33 LT
T-152	17+93	33 RI
T-153	17+93	38 RT
T-154	18+59	33 LT
T-155	18+59	50 LT
T-156	18+64	50 LT
T-157	18+64	38 LI
T-158	20+24	33 RI
T-159	20+24	38 RT
T-160	21+83	34 LT
T-161	21+83	39 LT



- KEY NOTES:
- 1 CONCRETE DRIVEWAY 6-INCH
 - 2 N/A
 - 3 SAWCUT REQUIRED AT MATCH POINT
 - 4 ASPHALTIC SURFACE (4-INCH DEPTH) OVER BASE AGGREGATE DENSE, 1-1/4 INCH (10-INCH DEPTH) OVER BREAKER RUN (12-INCH DEPTH)
 - 5 N/A
 - 6 EXISTING SITE FEATURE (I.E., CURB, FENCE, STEP, WALL, SIDEWALK) TO REMAIN.
 - 7 N/A

CURB RAMP KEY NOTES:
T1 CURB RAMP TYPE 1

- GENERAL NOTES:
1. REMOVE ALL EXISTING PAVEMENT, CURB & GUTTER, AND SIDEWALK WITHIN CONSTRUCTION LIMITS AS SHOWN.
 2. INSTALL DETECTABLE WARNING FIELD YELLOW AT ALL NEW CURB RAMP.
 3. EXISTING CURB RAMP TO REMAIN AT EAST SIDE OF MACKIE ST. INTERSECTION.
 4. ALL NON-PAVEMENT DISTURBED AREAS BEHIND CURB & SIDEWALK SHALL BE RESTORED WITH SOD LAWN.
 5. SAWCUT REQUIRED AT ALL CONCRETE PAVEMENT, ASPHALT PAVEMENT, CURB & GUTTER, SIDEWALK, AND DRIVEWAY MATCH POINTS.
 6. RESTORE DRIVEWAY AREAS BEHIND NEW SIDEWALK IN KIND.
 7. ENTIRE SANITARY SEWER MAIN AND LATERALS, WATER MAIN AND SERVICES, AND STORM SEWER TO BE REPLACED WITHIN PROJECT LIMITS. SAID UTILITIES ARE OWNED, OPERATED, AND MAINTAINED BY CITY OF B.D.



PROJECT NO:3803-00-65

HWY:NORTH SPRING STREET

COUNTY:DODGE

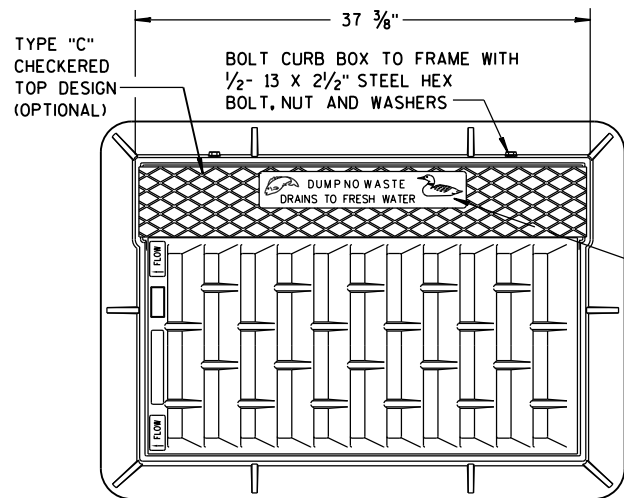
PLAN AND PROFILE: NORTH SPRING STREET

SHEET

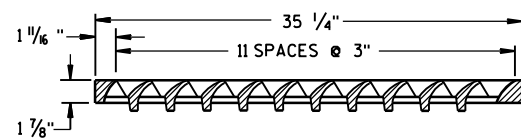
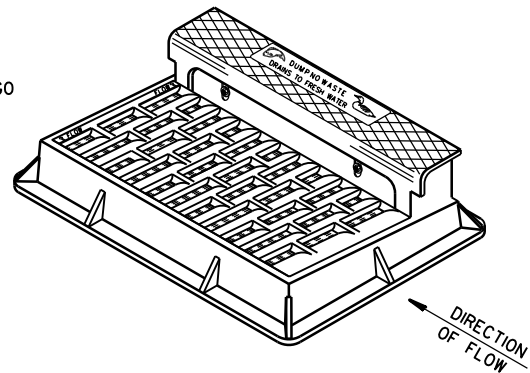
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Standard Detail Drawing List

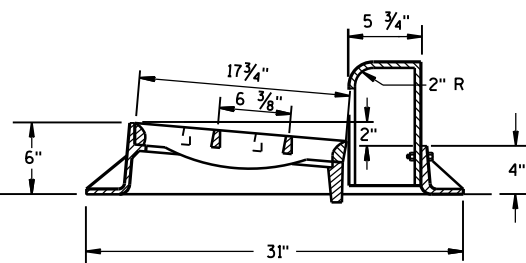
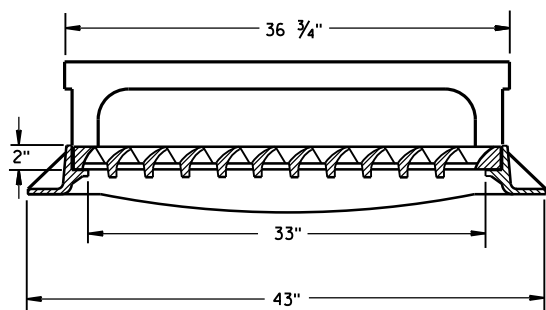
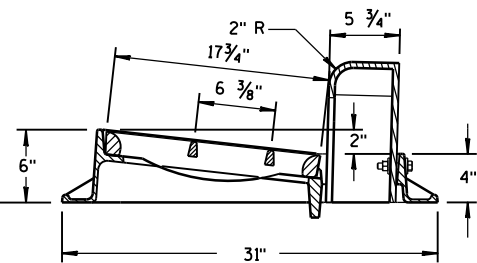
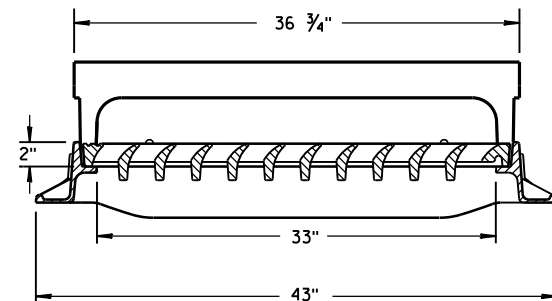
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08A08-02	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-18A	CURB RAMPS TYPES 1 AND 1-A
08D05-18B	CURB RAMPS TYPES 2 AND 3
08D05-18C	CURB RAMPS TYPES 4A AND 4A1
08D05-18D	CURB RAMPS TYPE 4B AND 4B1
08D05-18E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09F08-04	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)
09F12-04	LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-05A	CONCRETE PAVEMENT JOINTING
13C18-05B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-05C	CONCRETE PAVEMENT JOINT TYPES
13C18-05D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C07-13A	PAVEMENT MARKING SYMBOLS
15C07-13B	PAVEMENT MARKING WORDS
15C07-13C	PAVEMENT MARKING ARROWS
15C07-13E	PAVEMENT MARKING FOR BIKE LANES
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C08-17B	PAVEMENT MARKING (TURN LANES)
15C12-05	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C18-03	MEDIAN ISLAND MARKING
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
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



**NOTE:
GRATE IS REVERSIBLE.**

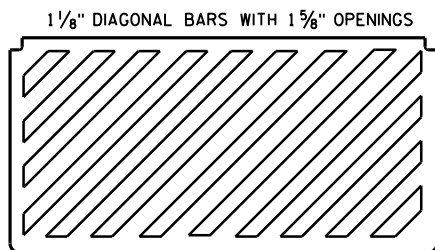


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

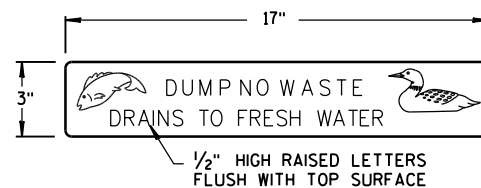


TYPE "H"

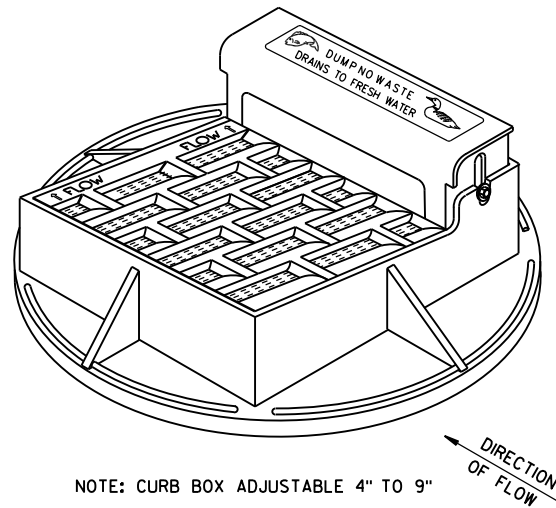
NOTE: EITHER CASTING IS ACCEPTABLE



**SPECIAL GRATE FOR
TYPE "H" COVER**
(MEASURES 35 1/4" X 17 3/4" X 2")
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

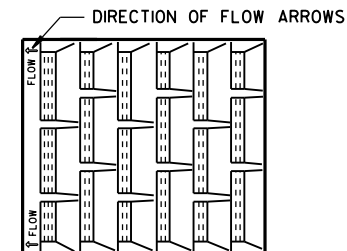


LOGO DETAIL

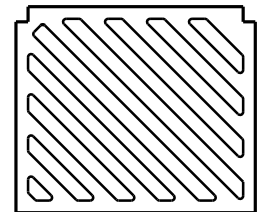


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

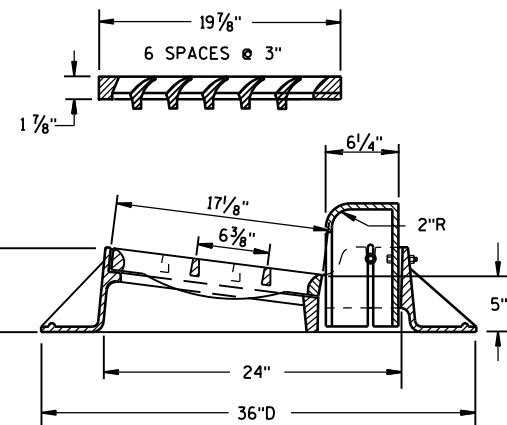
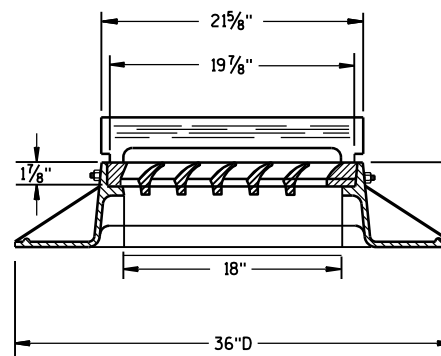
**NOTE:
GRATE IS REVERSIBLE.**



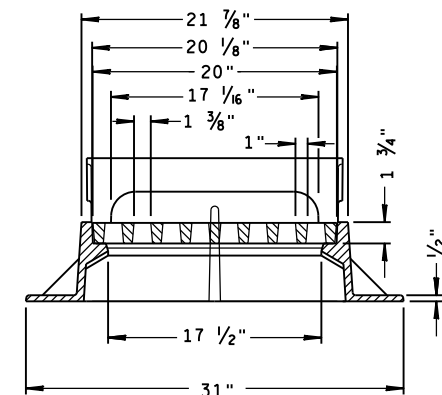
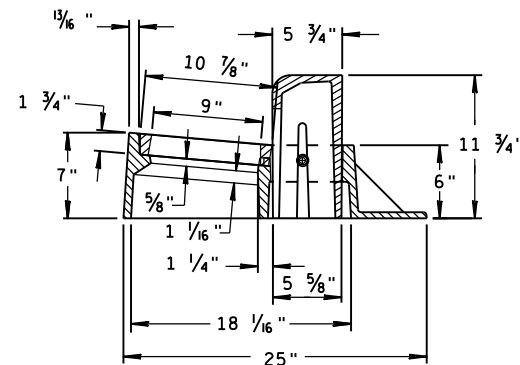
1" DIAGONAL BARS
WITH 1 1/2" OPENINGS



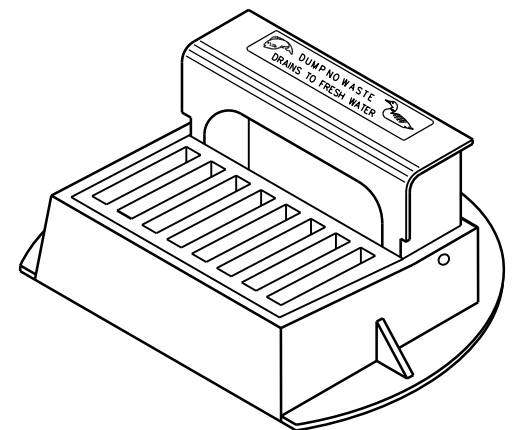
**SPECIAL GRATE FOR
TYPE "A" COVER**
(MEASURES 19 3/4" X 17" X 1 1/8")
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"



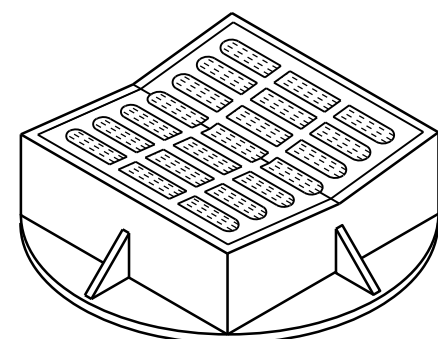
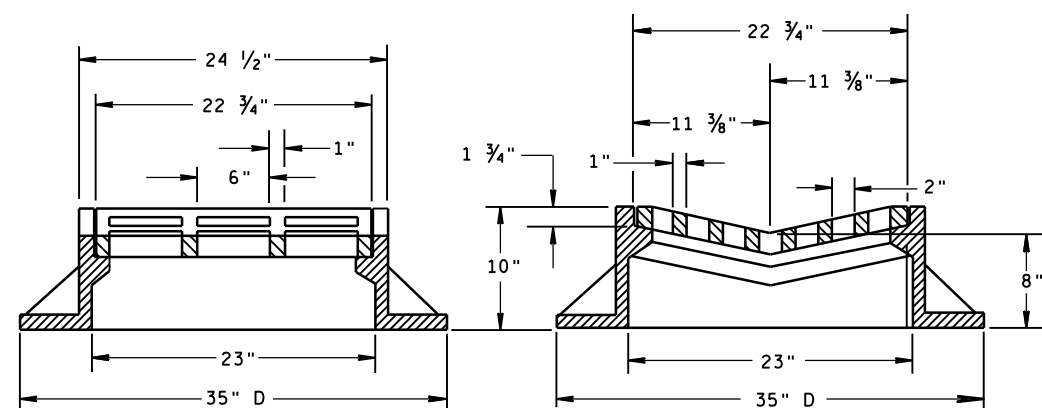
TYPE "Z"



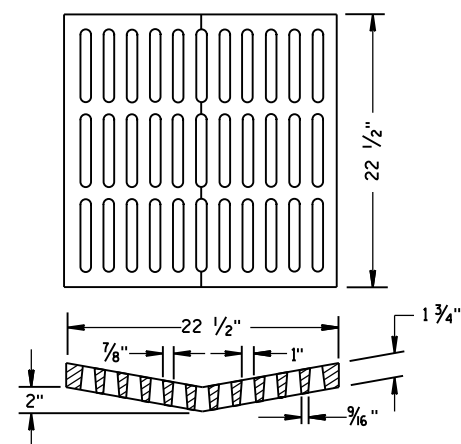
**INLET COVERS
TYPE A, H, A-S, H-S & Z**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

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

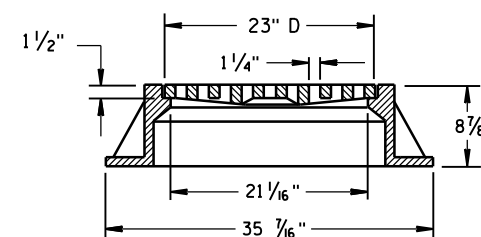
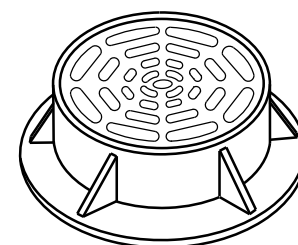
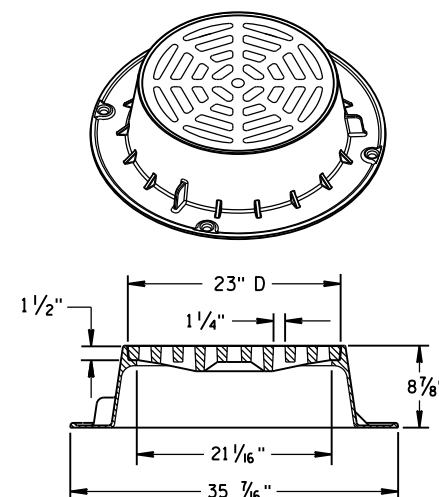


TYPE "B"



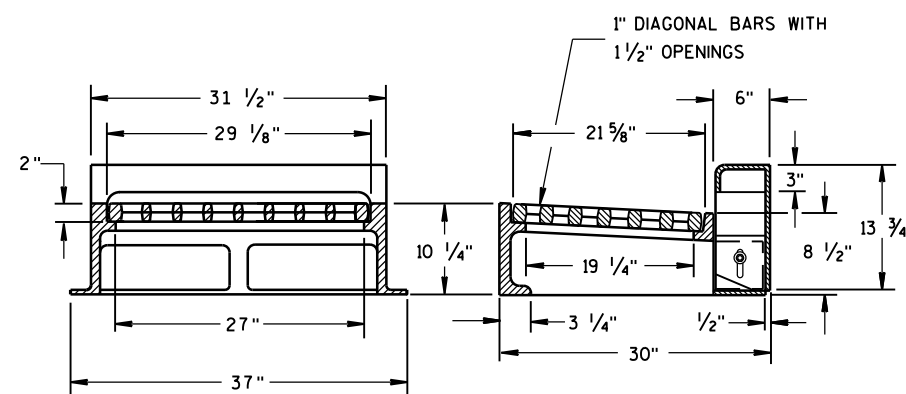
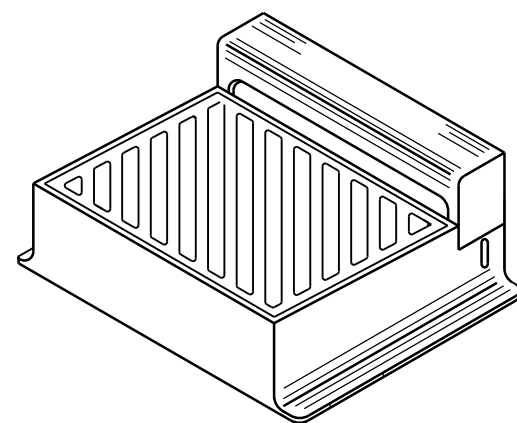
ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

NOTE: EITHER CASTING IS ACCEPTABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

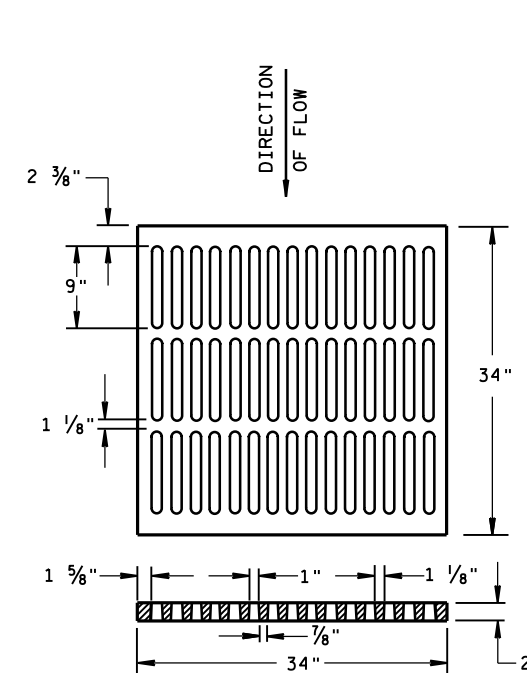
TYPE "WM"

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.

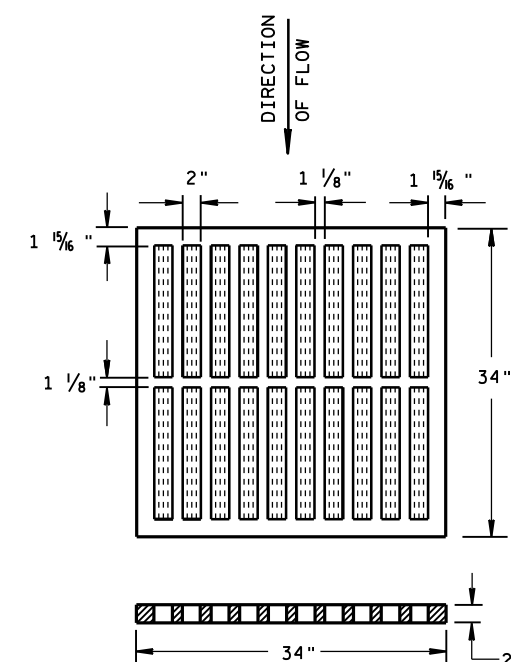
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

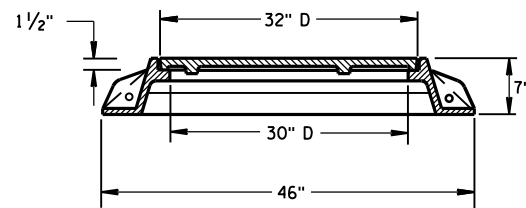
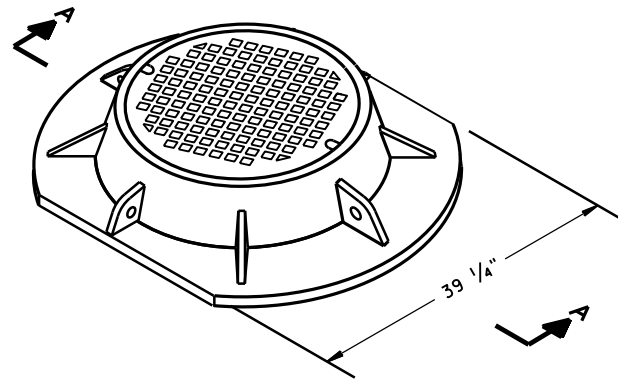
USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE

**INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM**

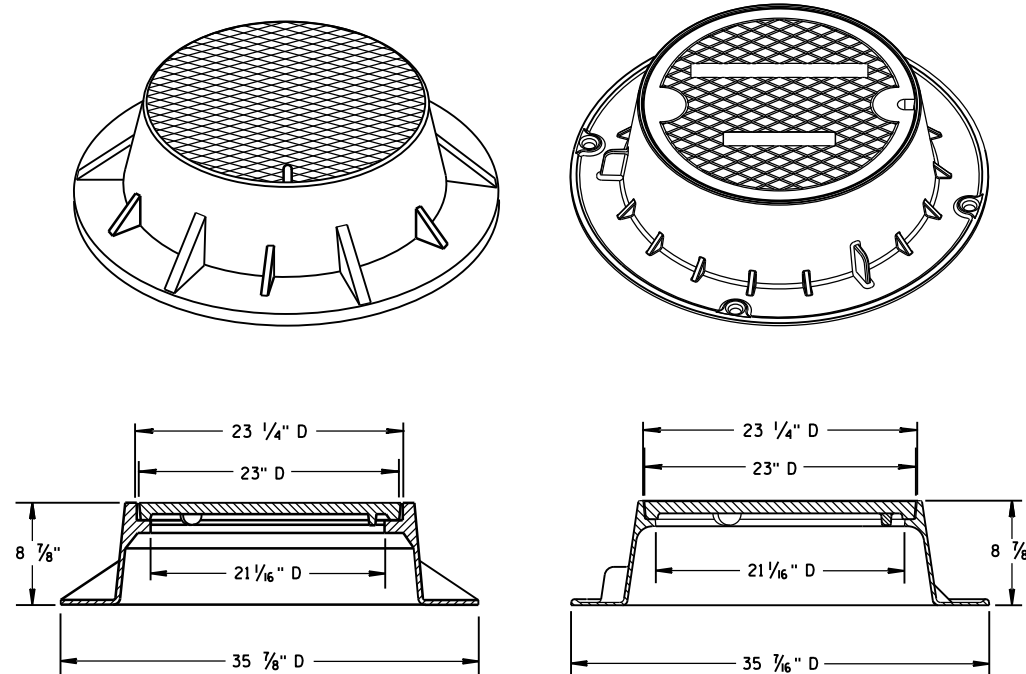
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

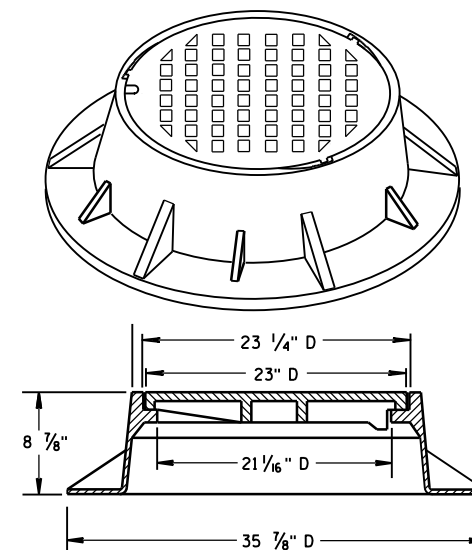
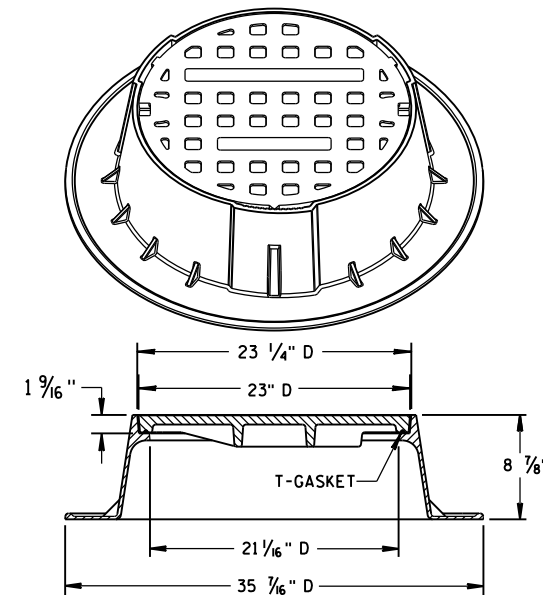


SECTION A-A
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

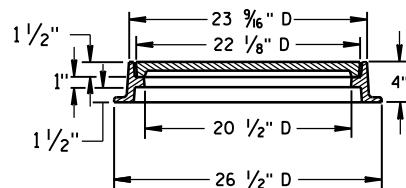
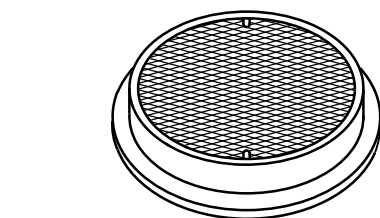


TYPE "J" SPECIAL

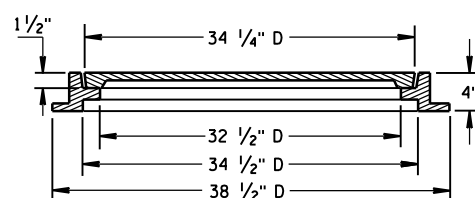
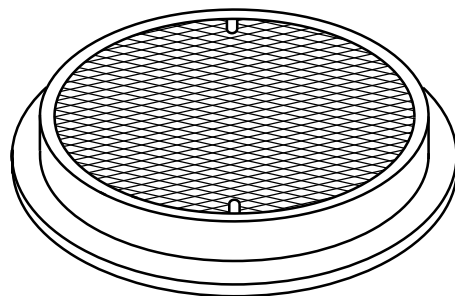
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

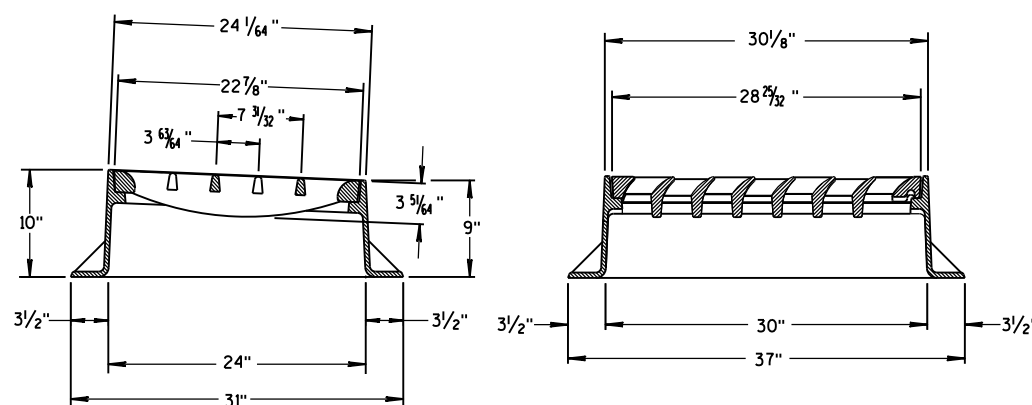
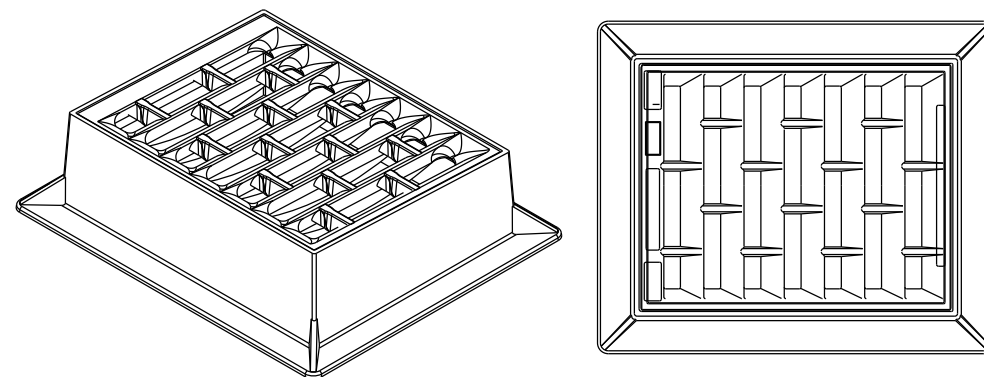
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

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

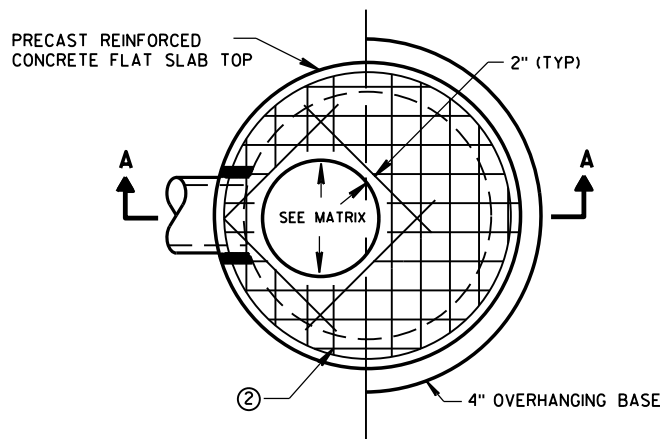
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

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

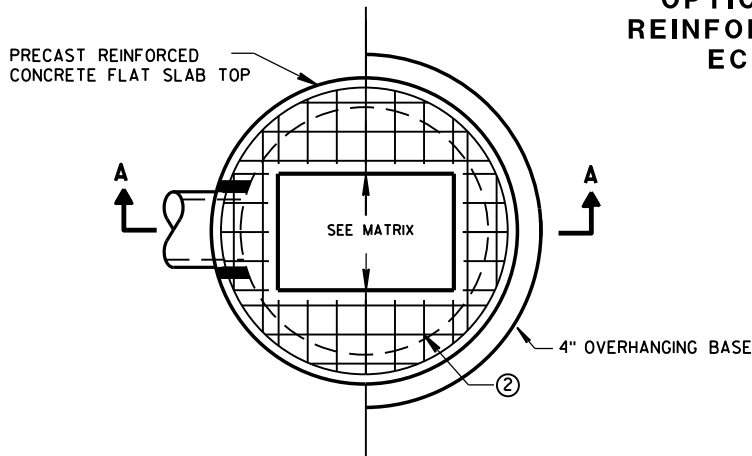
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

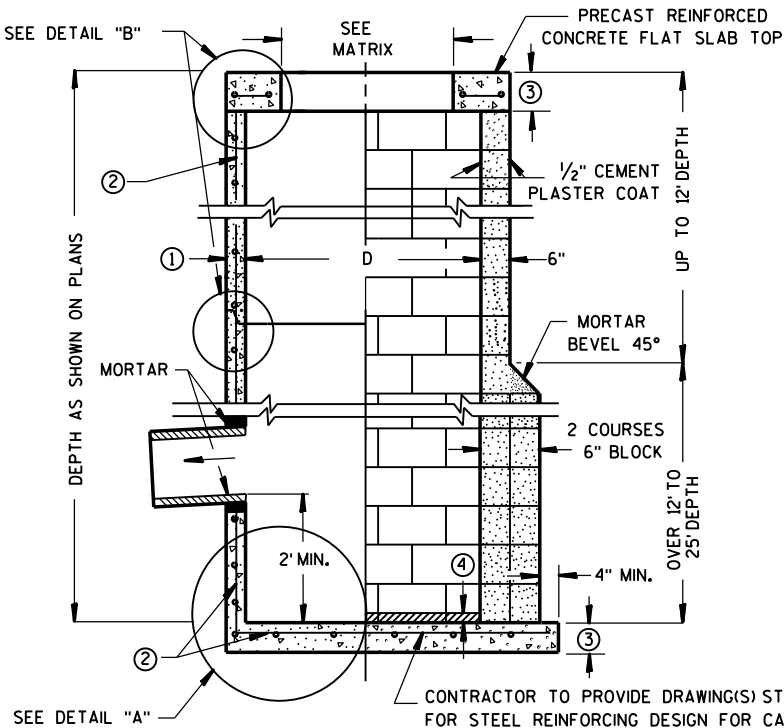
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW CIRCULAR OPENING



PLAN VIEW RECTANGULAR OPENING

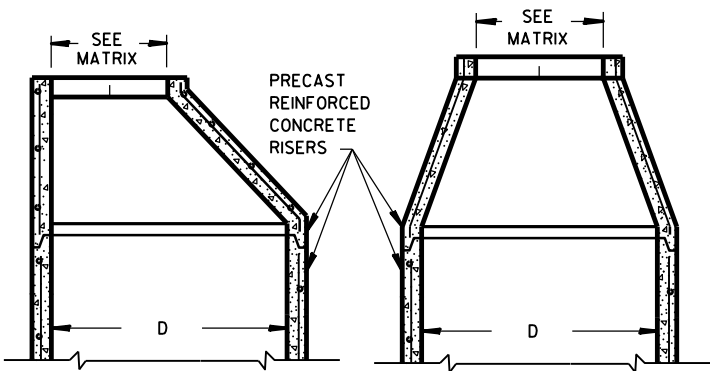


SECTION A-A

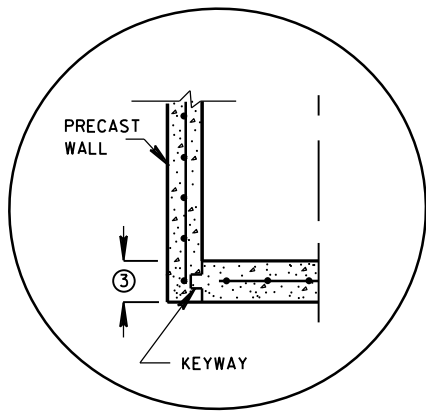
PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

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

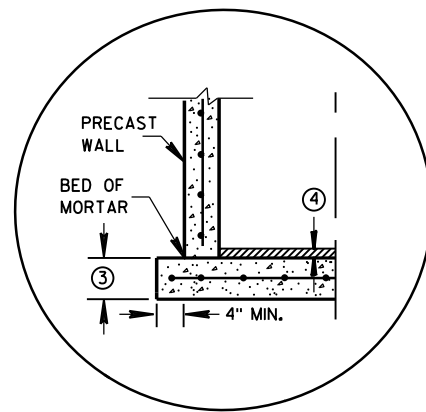
OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP



OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP



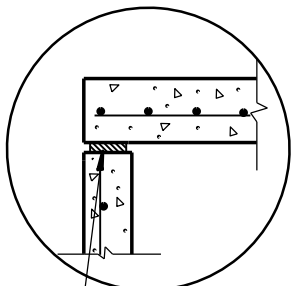
PRECAST REINFORCED
CONCRETE WITH INTEGRAL BASE OPTION



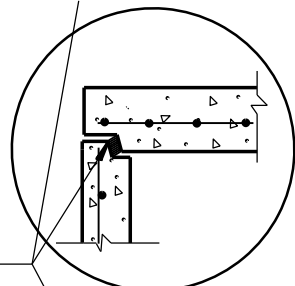
SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "A"

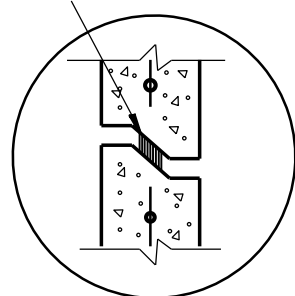
JOINTS TO BE SEALED WITH
A BUTYL RUBBER SEAL PER
SEALANT MANUFACTURERS
RECOMMENDATIONS
CONFORMING TO ASTM C 990
(TYP)



TOP WITH PLAIN END JOINT

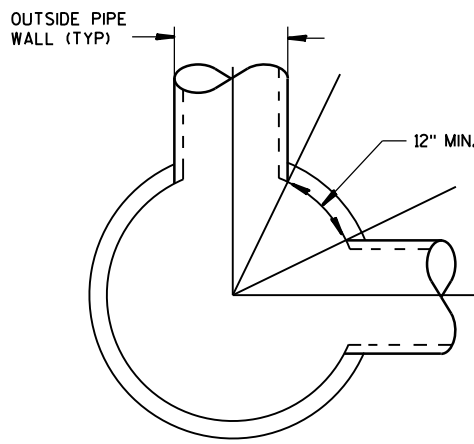


TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"



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 CATCH BASIN 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 FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

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 1/2 INCH 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.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

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

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".

- MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.
- FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- 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".
- 1" CONCRETE KEY POURED AFTER INSTALLATION. 2" SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE OPENING SIZE (FT)	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2X2	X	X					X		X		
	2 DIA.				X							X
4-FT- 6-FT	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2 DIA.				X							X
	2X3						X					
	2.5X3					X						

PIPE MATRIX

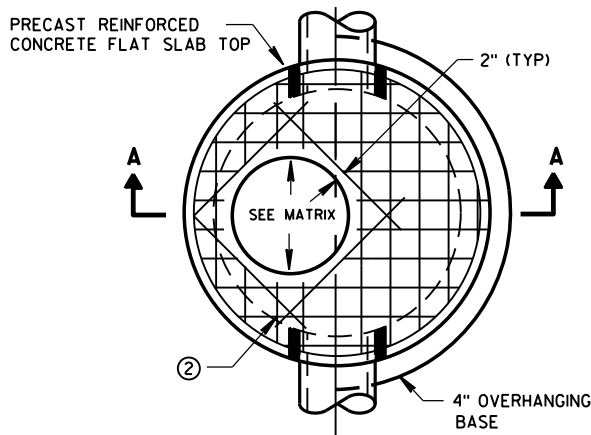
CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

CATCH BASINS 3-FT,
4-FT, 5-FT AND
6-FT DIAMETER

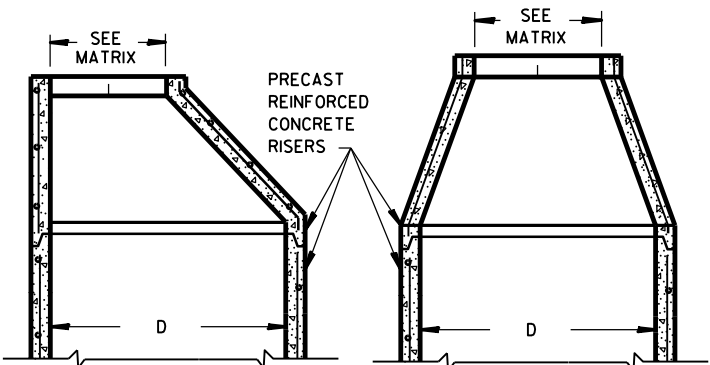
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

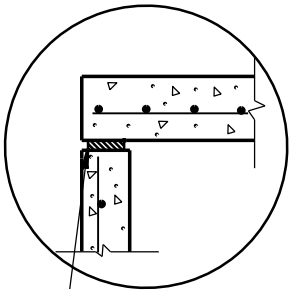


PLAN VIEW CIRCULAR OPENING

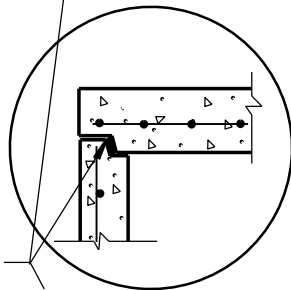


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

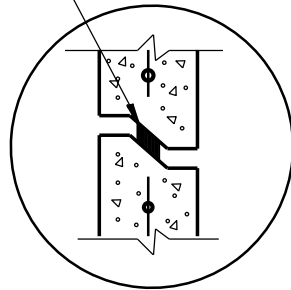
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

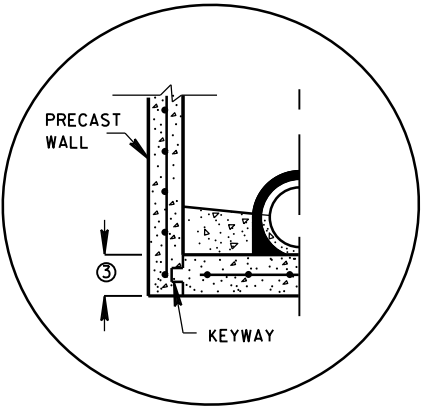


TOP WITH TONGUE AND GROOVE JOINT

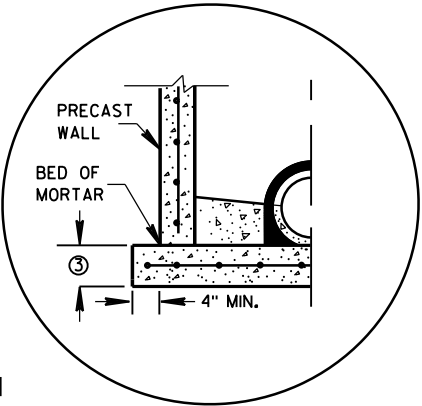


DETAIL "B"

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

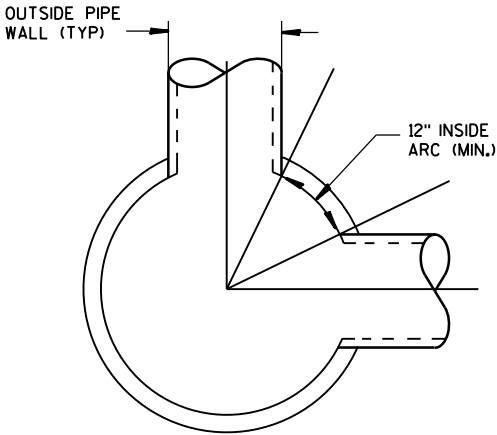


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

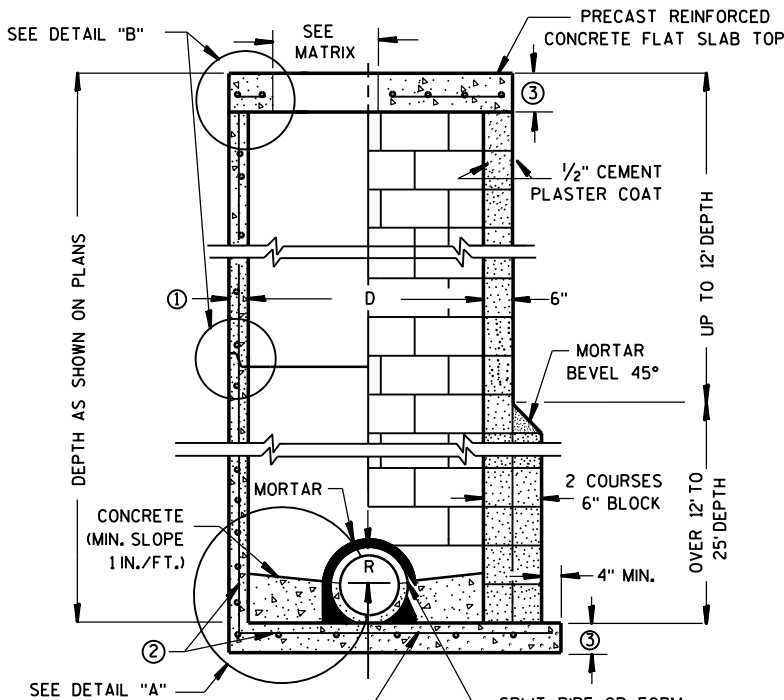


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



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

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

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

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 FOUNDATION 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.

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 1/2" 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 PERMITTED 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

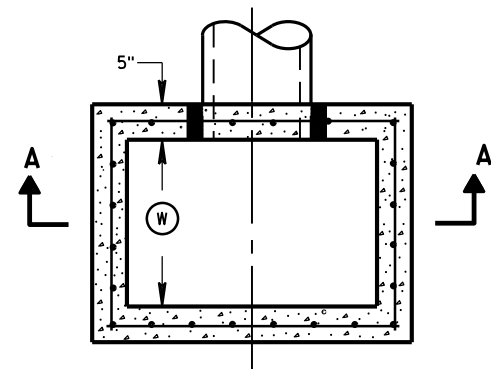
PIPE MATRIX

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

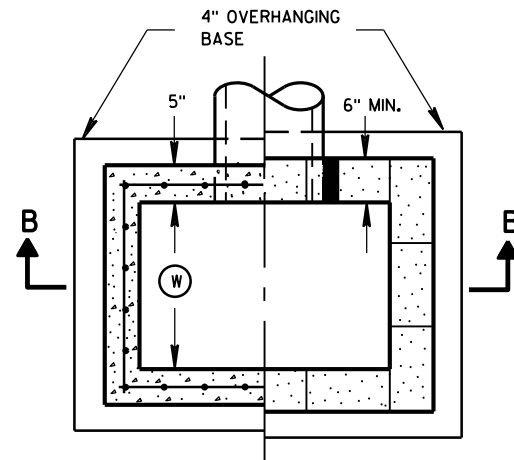
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

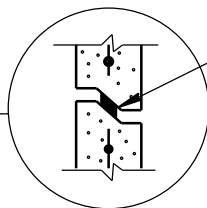
APPROVED
DATE: Sept., 2016
FOR: /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA



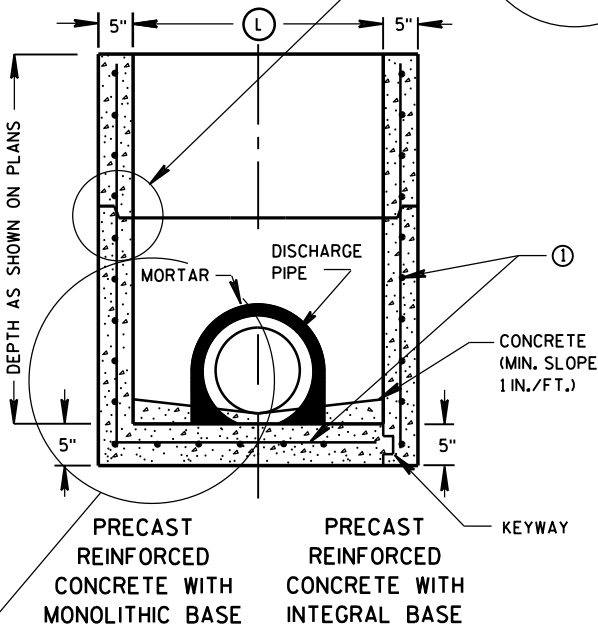
PLAN VIEW



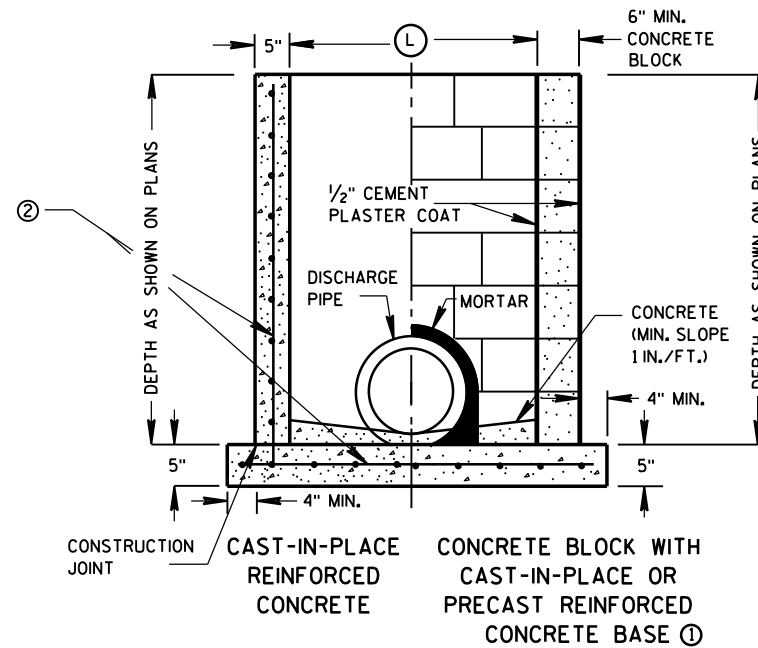
PLAN VIEW



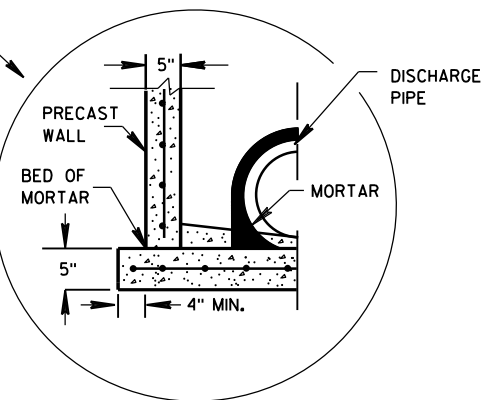
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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

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 FOUNDATION 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.

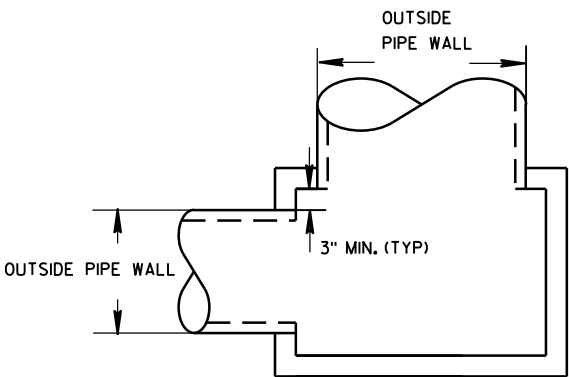
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (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

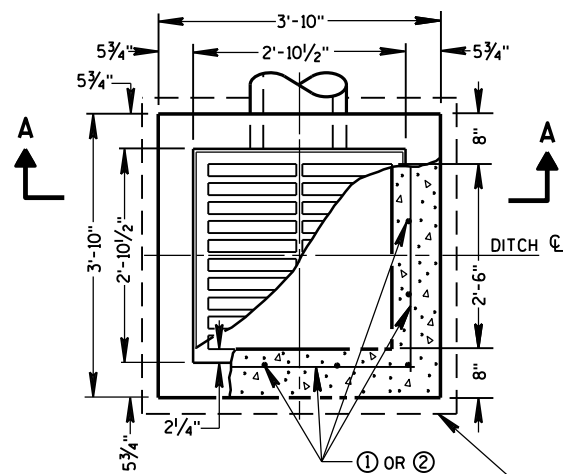


DETAIL "A"

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

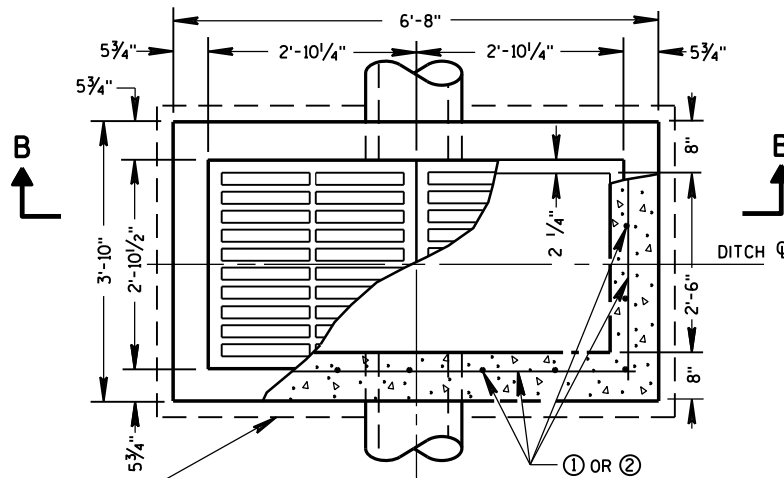
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

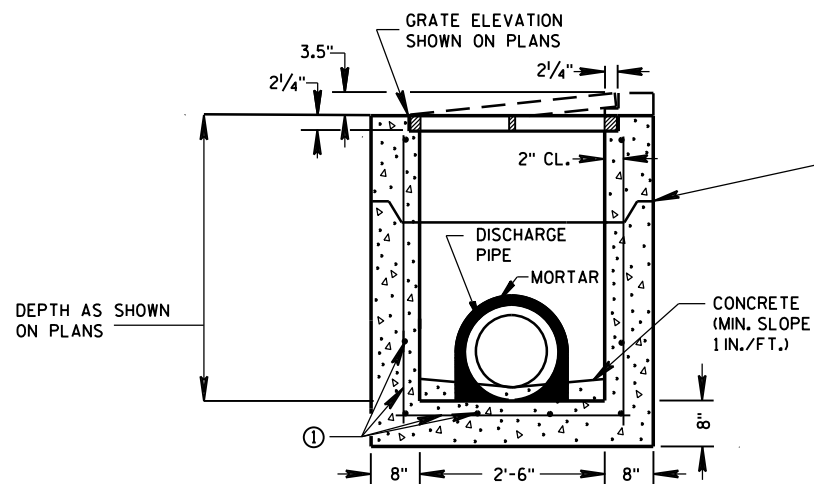


PLAN VIEW

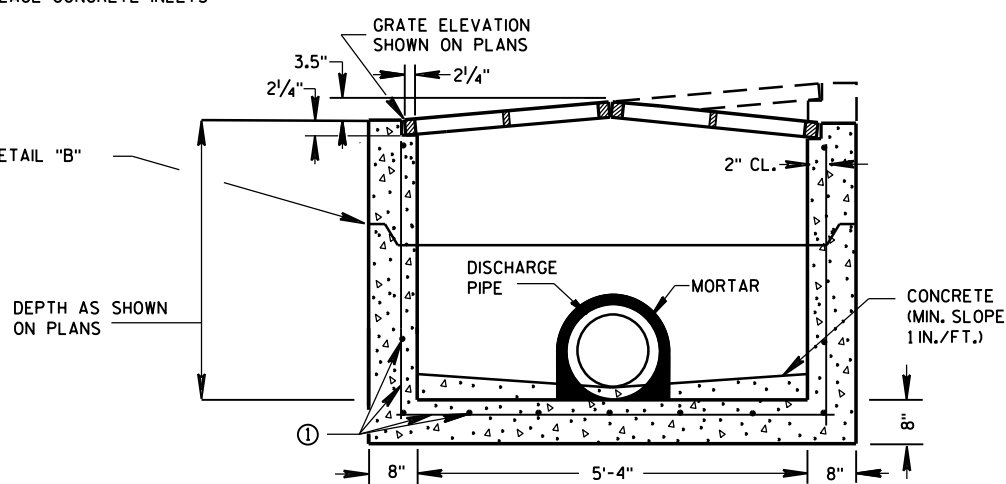
4" OVERHANGING BASE ON REINFORCED
CAST-IN-PLACE CONCRETE INLETS



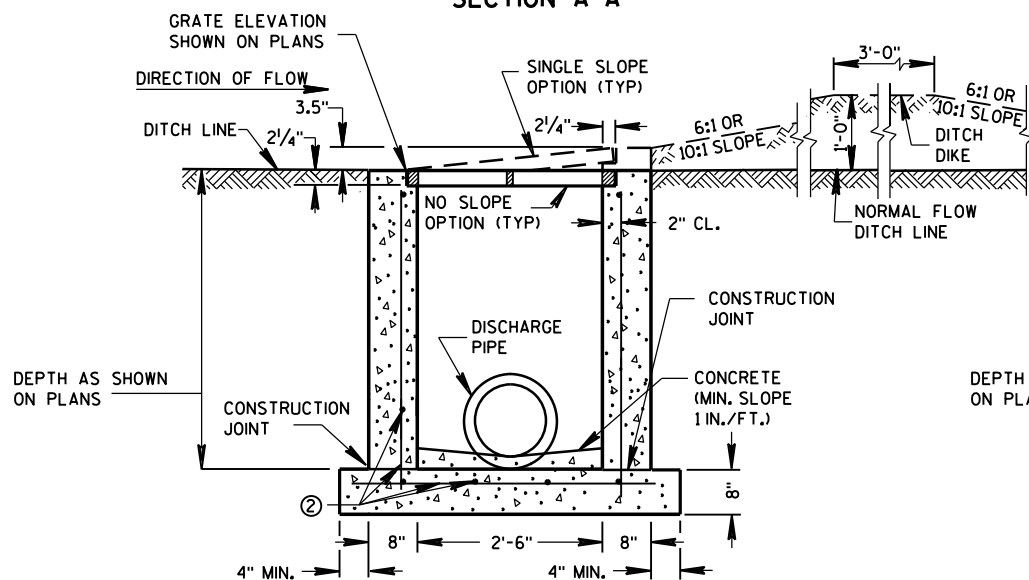
PLAN VIEW



PRECAST REINFORCED CONCRETE
SECTION A-A

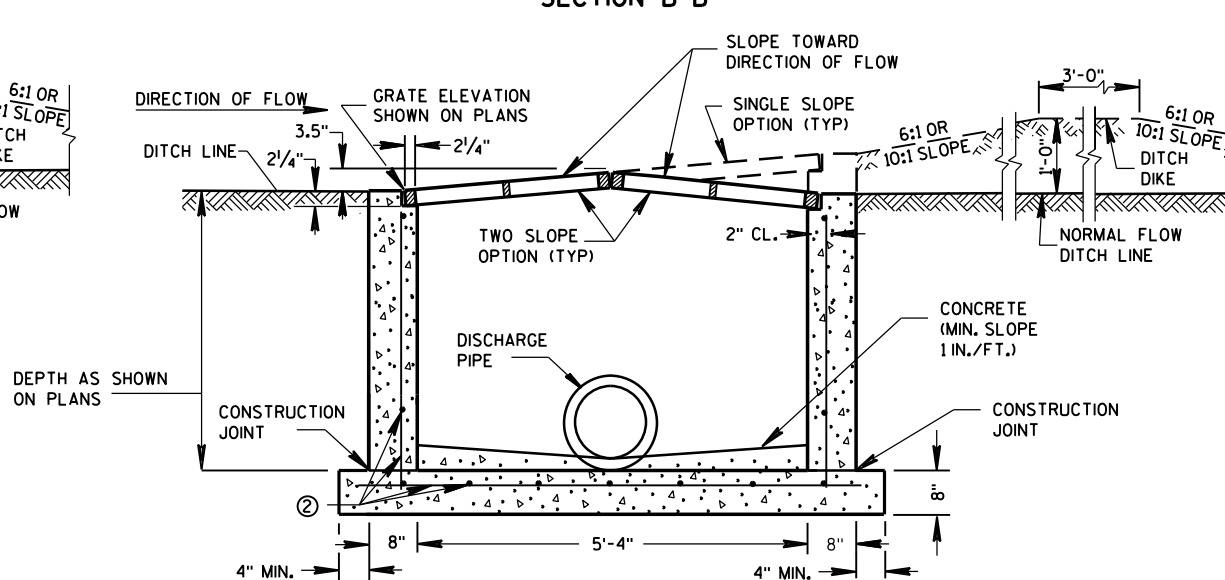


PRECAST REINFORCED CONCRETE
SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE
SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE
SECTION B-B

INLETS MEDIAN 2 GRATE

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 INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE 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 FOUNDATION 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.

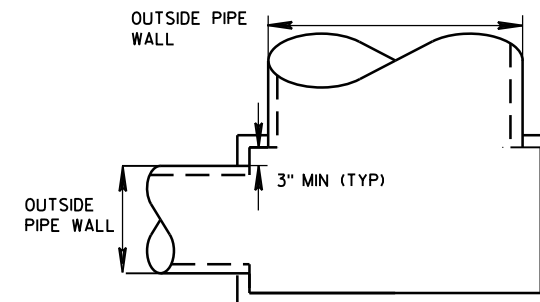
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" 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.

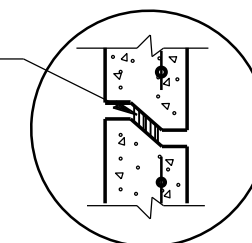
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



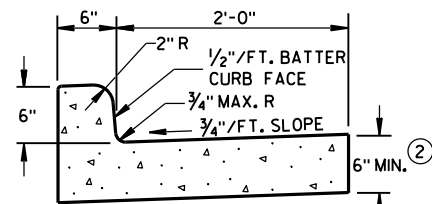
DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

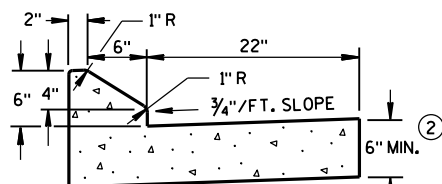
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016
DATE
FHWA

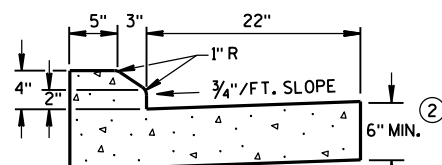
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



TYPES A & D ①

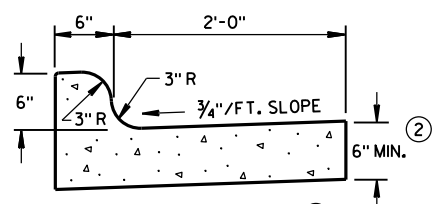


6" SLOPED CURB TYPES G & J ①



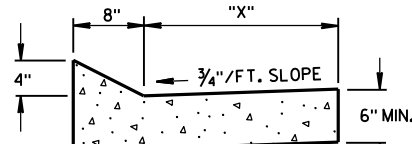
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



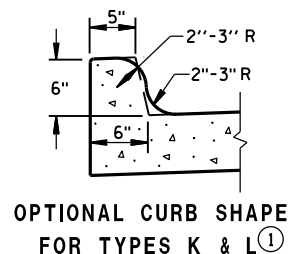
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

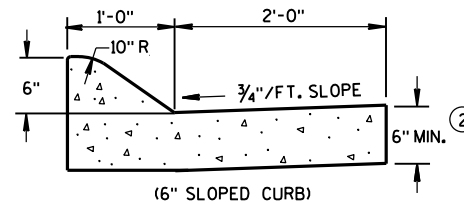


TYPES TBT & TBTT ①
CONCRETE CURB & GUTTER

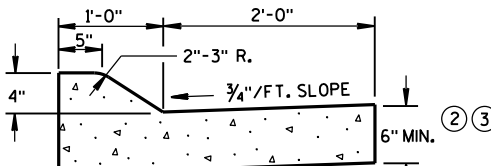
TBT & TBTT	"X"
30"	22"
36"	28"



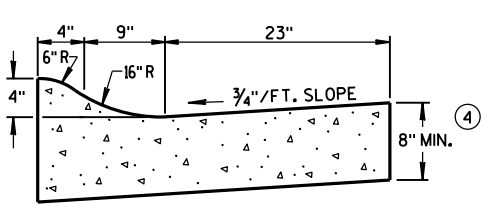
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



(6" SLOPED CURB)



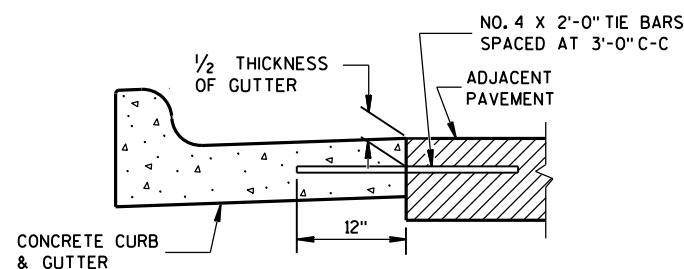
(4" SLOPED CURB)
TYPES A & D ①



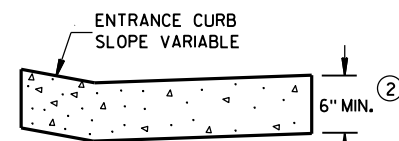
4" SLOPED CURB TYPES R & T ① ⑤
CONCRETE CURB & GUTTER 36"

GENERAL NOTES

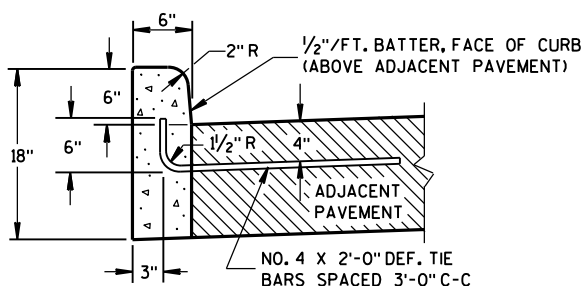
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- INTEGRAL CURB & GUTTER SHALL CONFORM 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.
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
 - 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.
 - USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
 - 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.
 - THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
 - WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



TYPICAL TIE BAR LOCATION ①

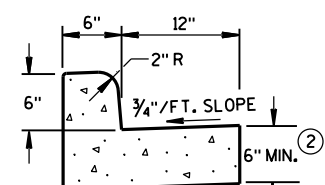


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

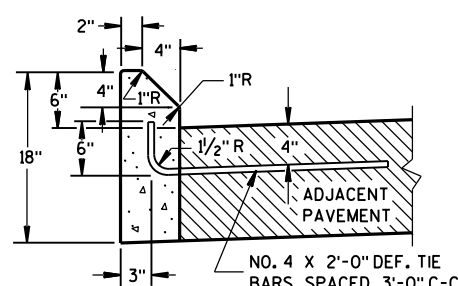


TYPES A & D ①

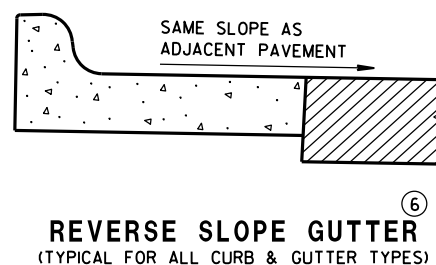
CONCRETE CURB



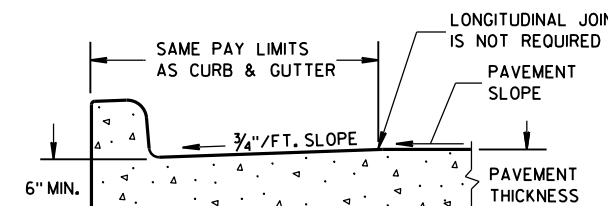
TYPES A & D
CONCRETE CURB & GUTTER 18"



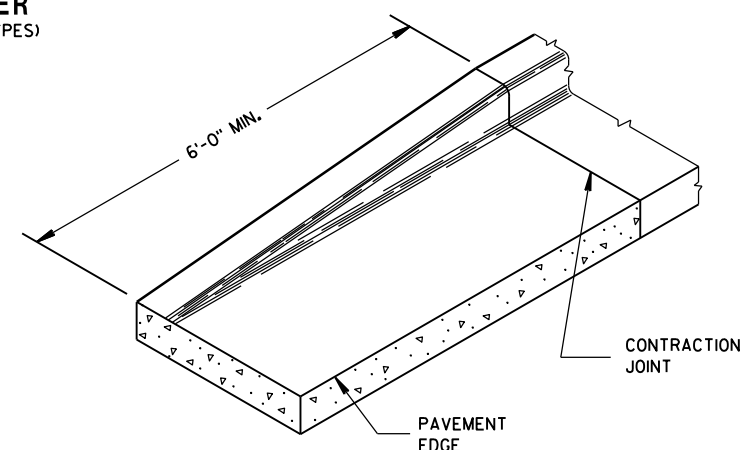
TYPES G & J ①



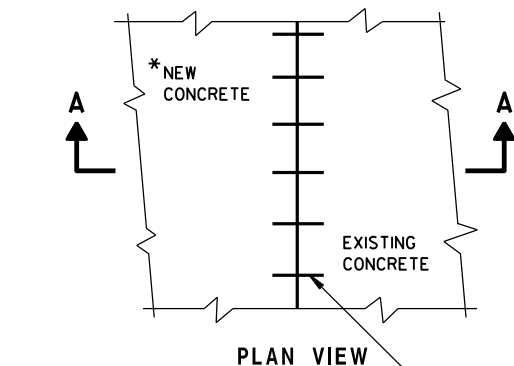
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)



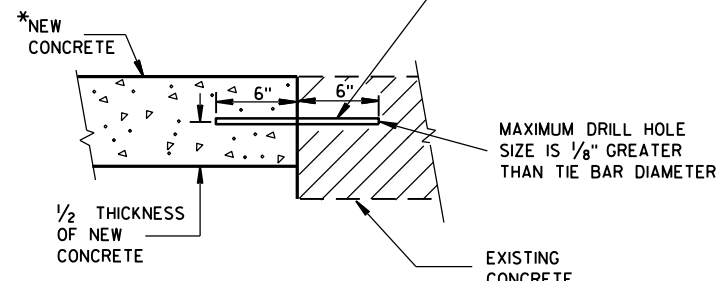
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER



PLAN VIEW



SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

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

NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

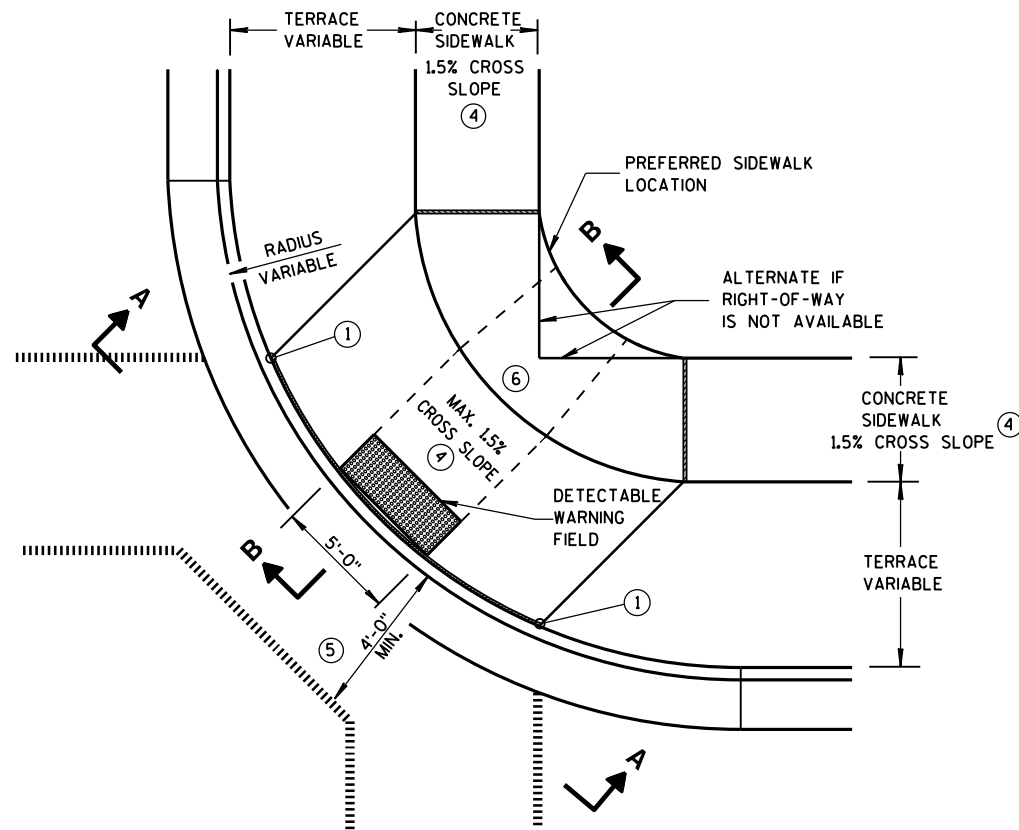
MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

EXISTING CONCRETE

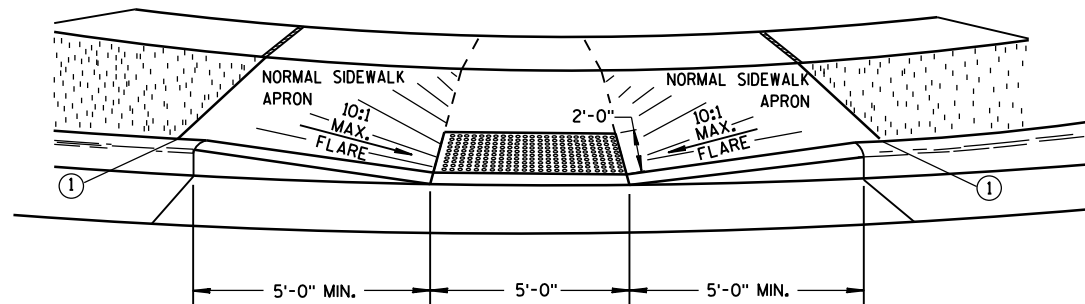
CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

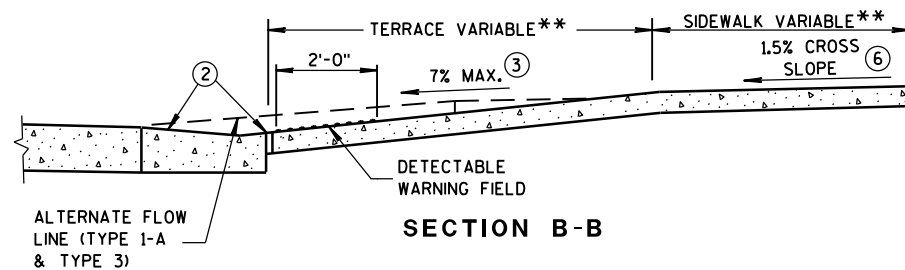


**PLAN VIEW
TYPE 1 RAMP**
(CENTER OF CORNER RADIUS)

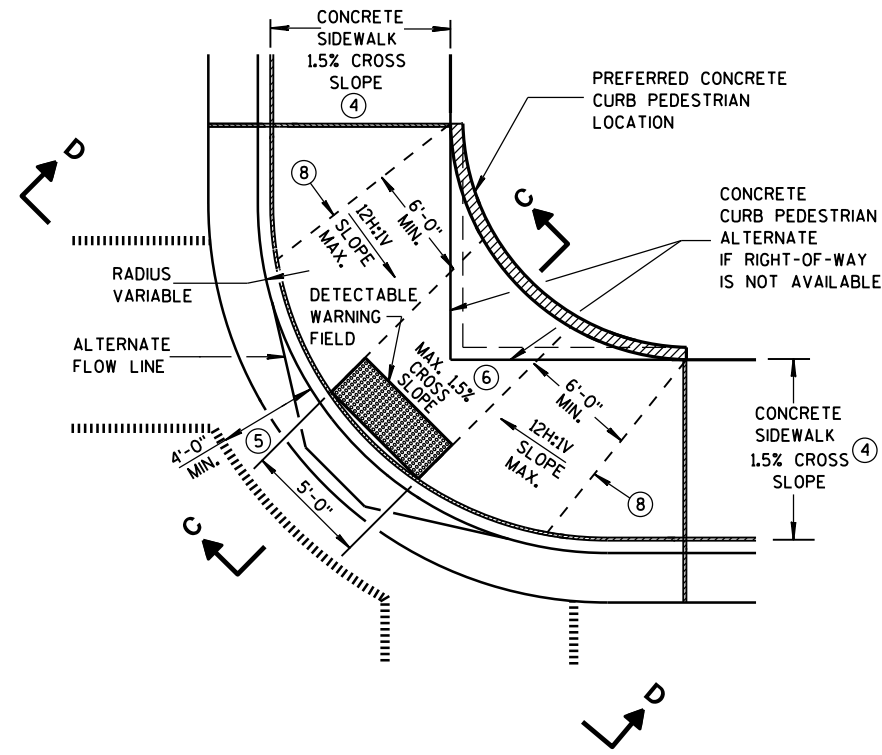


VIEW A-A

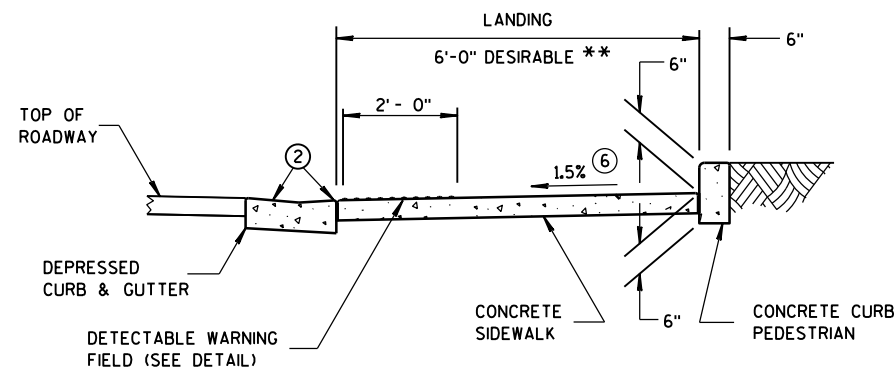
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



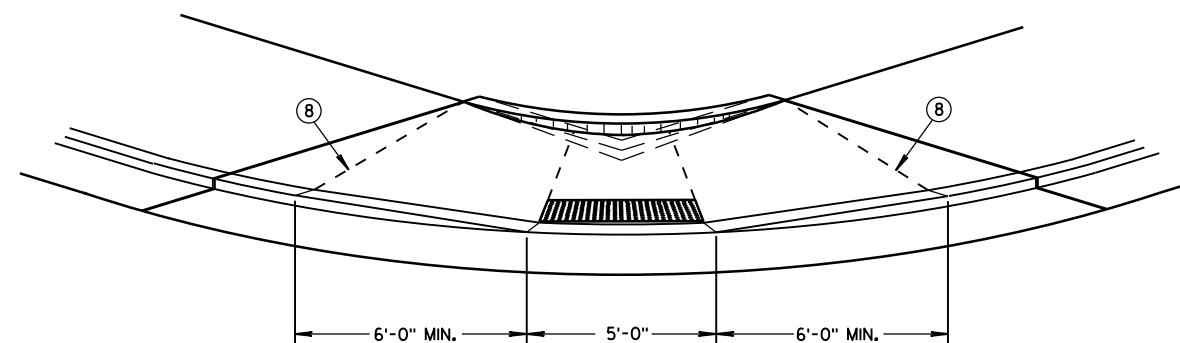
SECTION B-B



**PLAN VIEW
TYPE 1-A RAMP**
(NO TERRACE)



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.

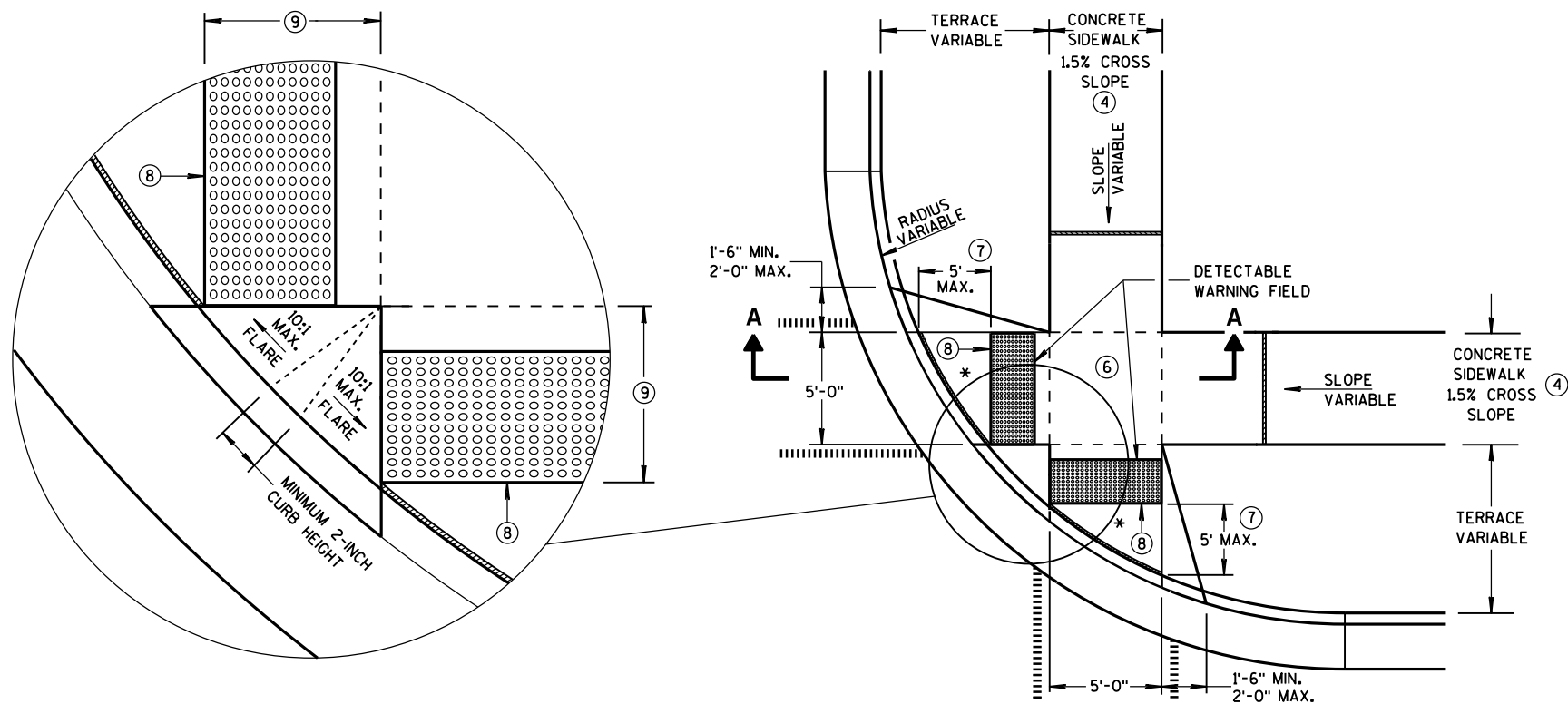
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. 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 $\pm 0.5\%$ 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.
- 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

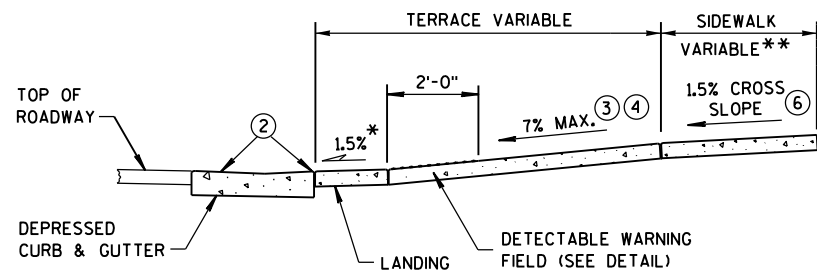
**CURB RAMPS
TYPES 1 AND 1-A**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



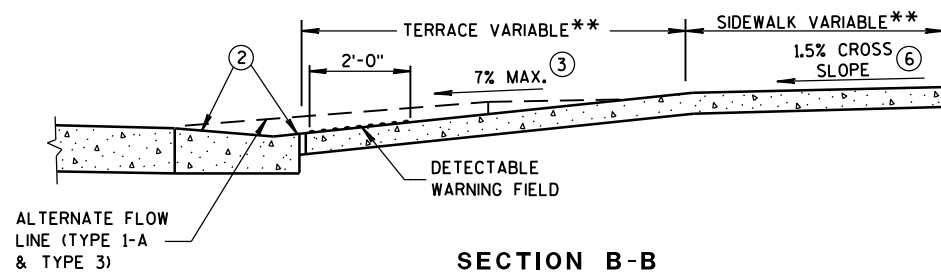
**PLAN VIEW
TYPE 2 RAMP**
(ON LINE WITH SIDEWALK)

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



SECTION A-A

** WIDTH SHOWN ELSEWHERE
IN THE PLANS



SECTION B-B

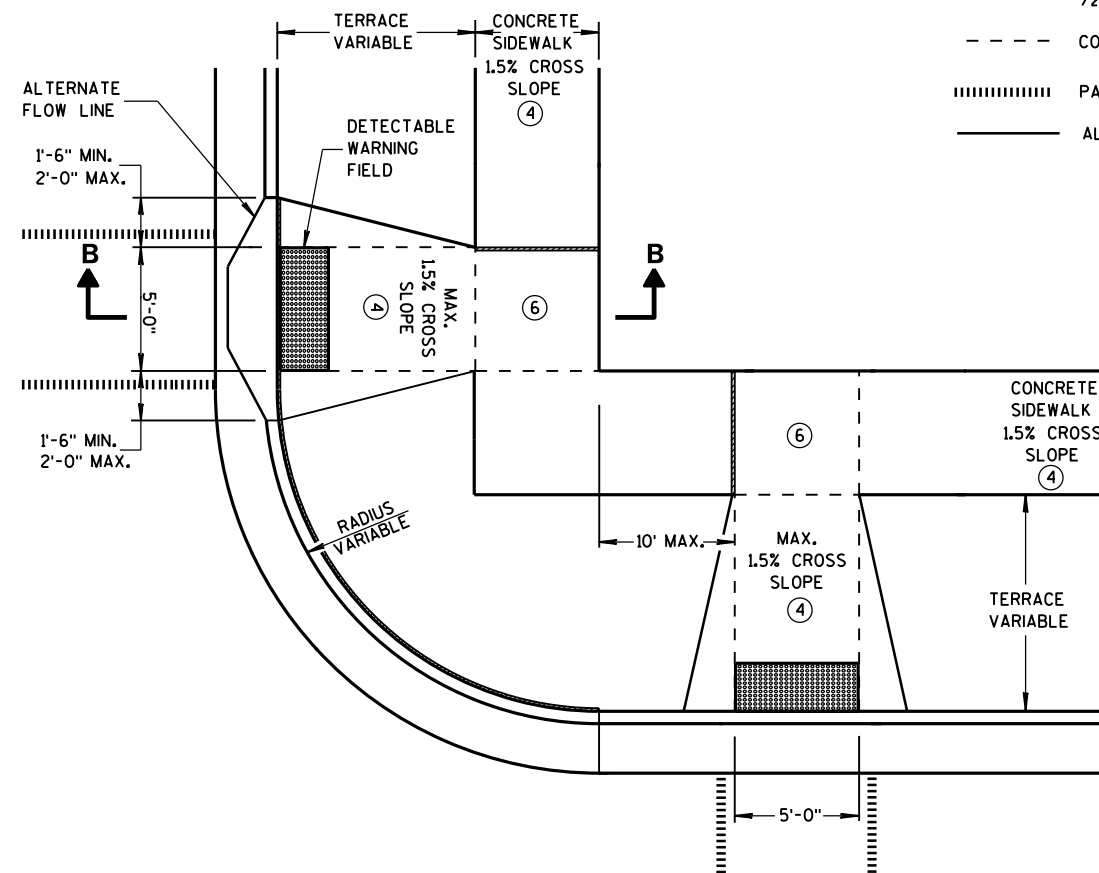
GENERAL NOTES

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.
- 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. USE EQUAL-SIZE PANELS TO DEVELOP OVERLAPPING, STAGGERED ROWS. 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

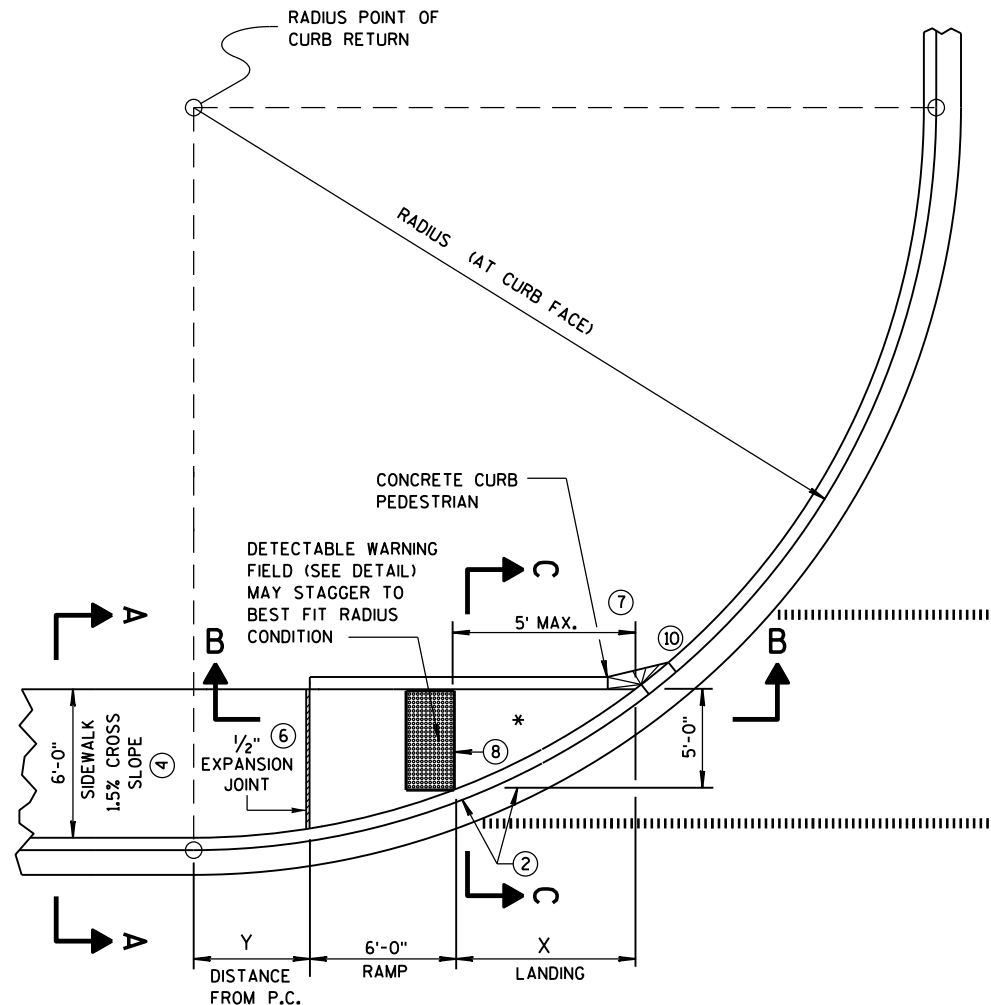
- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



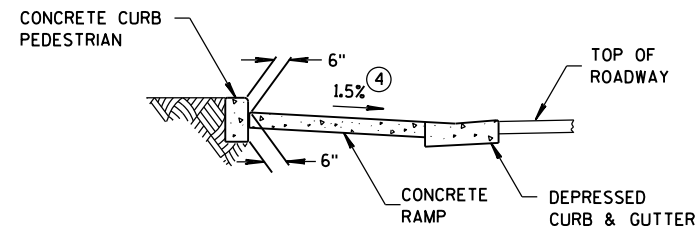
**PLAN VIEW
TYPE 3 RAMP**
(OUTSIDE OF CROSSWALK AREA)

**CURB RAMPS
TYPES 2 AND 3**

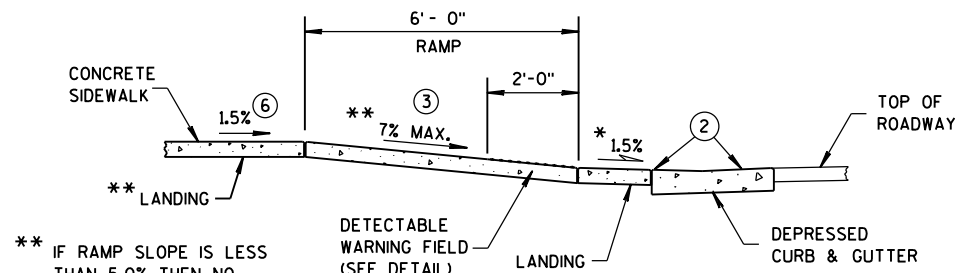
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP TYPE 4A
PLAN VIEW



SECTION C-C FOR TYPE 4A

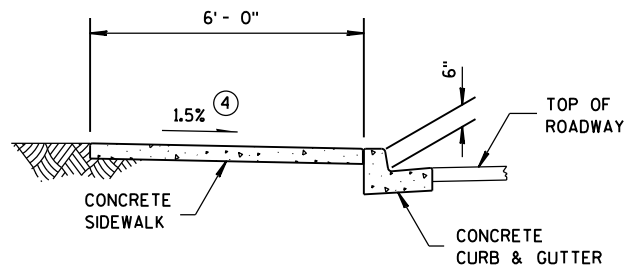


SECTION B-B FOR TYPE 4A

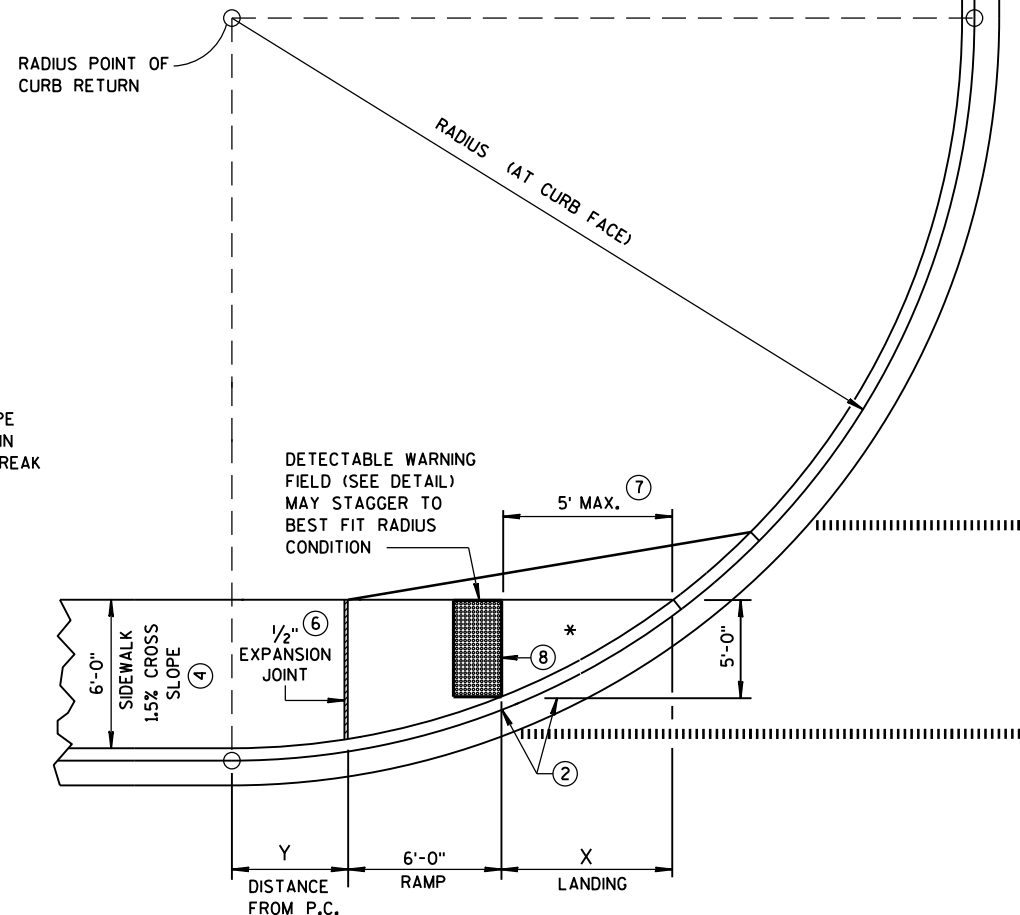
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

RADIUS (AT CURB FACE)	X	Y
20 FEET	7'-11"	0'-2"
30 FEET	10'-2 3/4"	1'-7 1/2"
40 FEET	12'-1 1/4"	2'-10"
50 FEET	13'-8 3/4"	3'-10 3/4"
60 FEET	15'-2"	4'-10 1/4"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



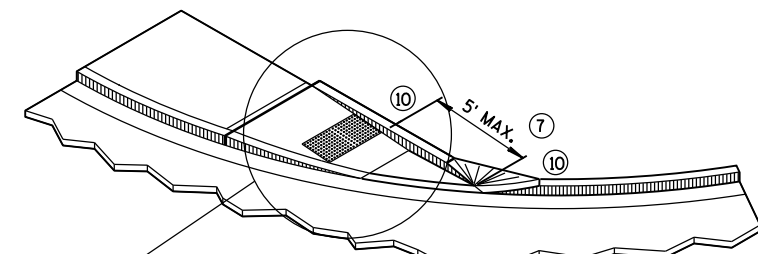
CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

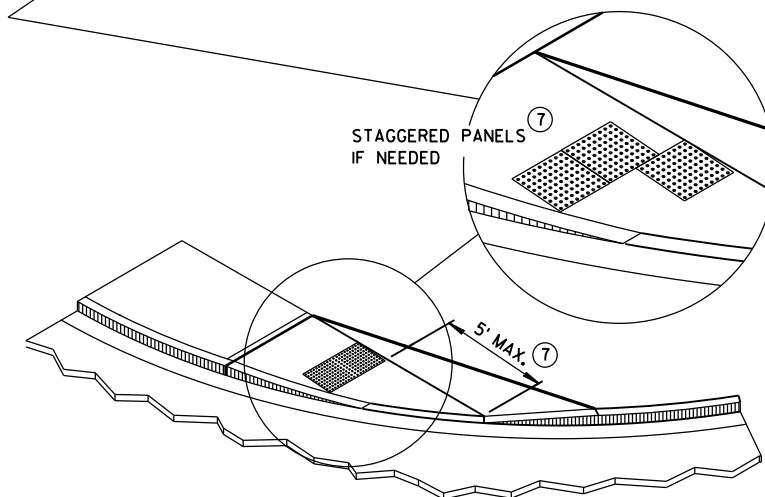
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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

- 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%.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- 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. USE EQUAL-SIZE PANELS TO DEVELOP OVERLAPPING, STAGGERED ROWS. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



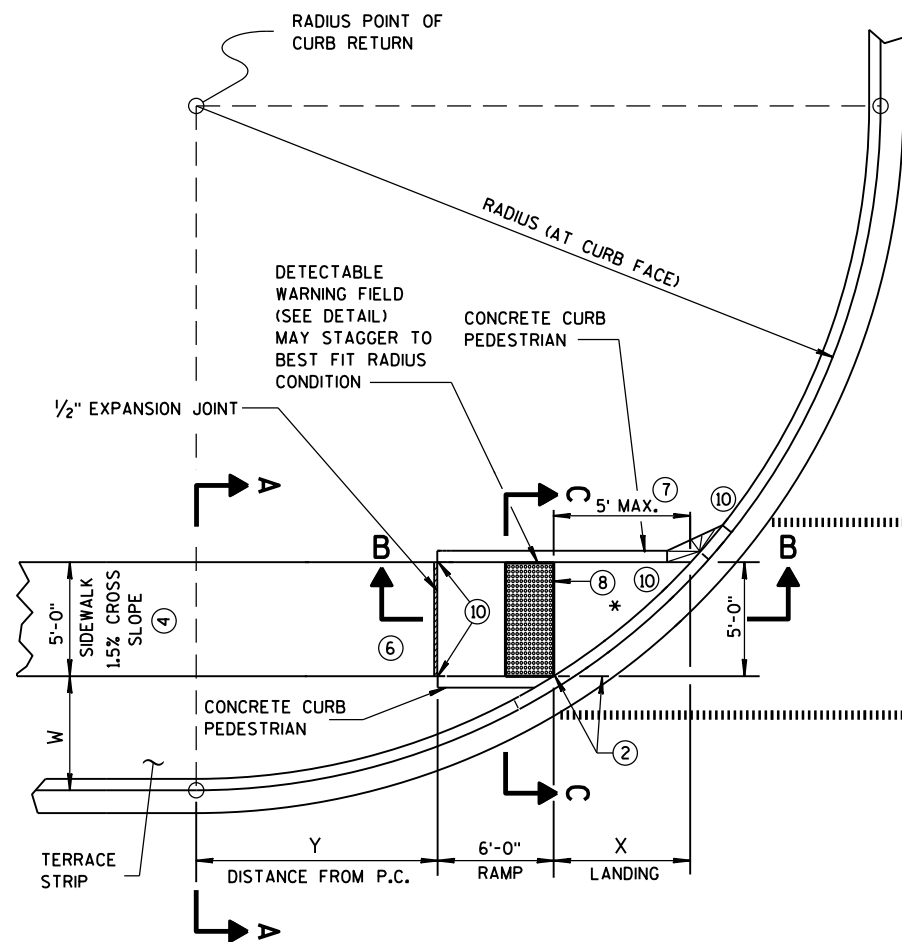
ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

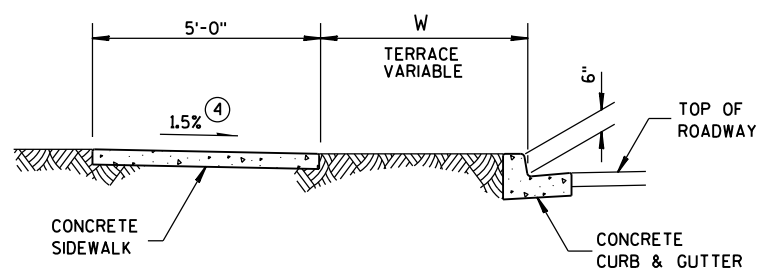
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

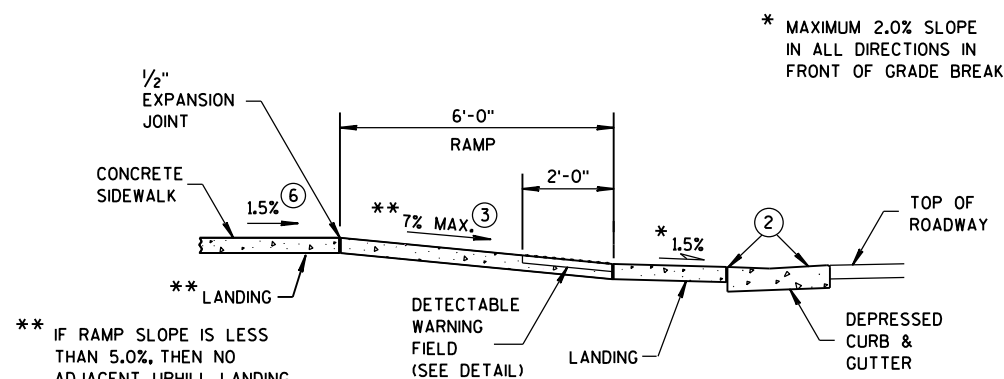
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP TYPE 4B
PLAN VIEW

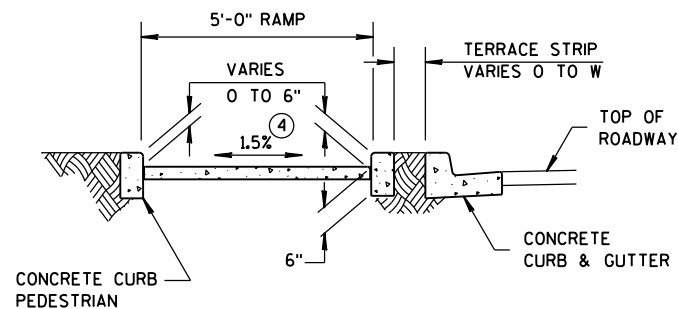


SECTION A-A FOR TYPE 4B

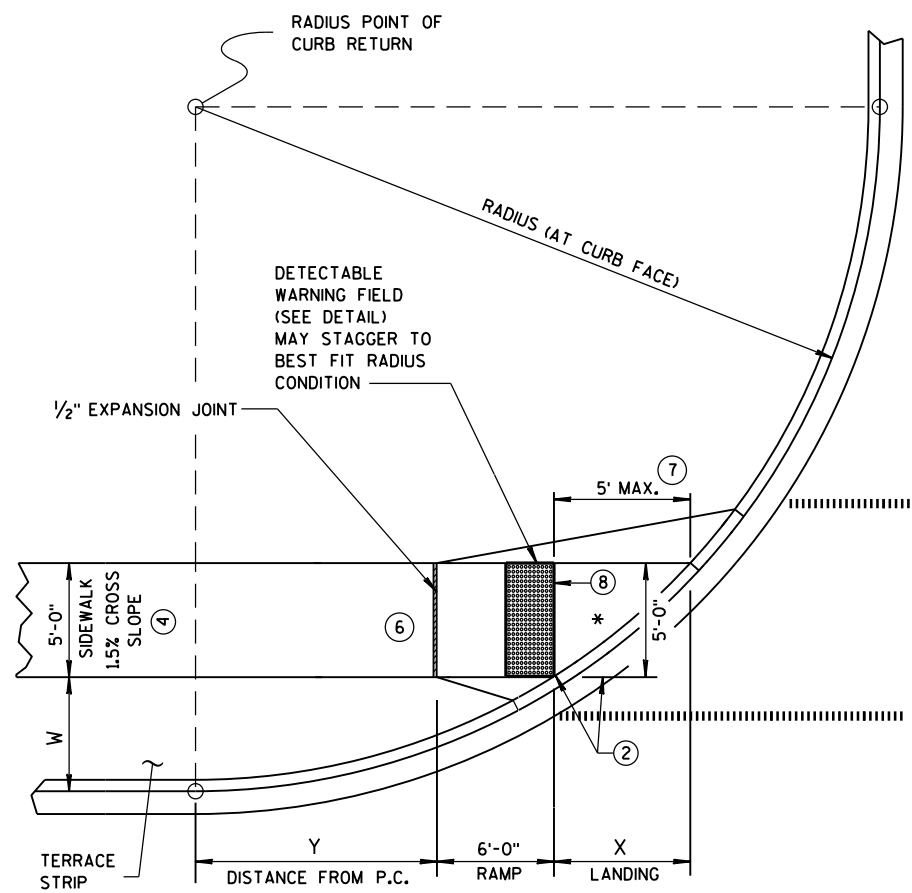


SECTION B-B FOR TYPE 4B

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



SECTION C-C FOR TYPE 4B



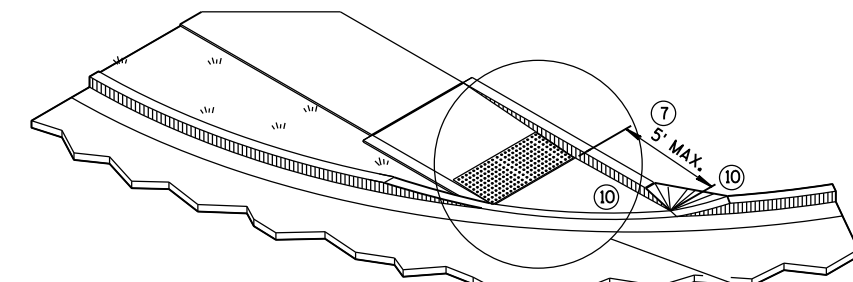
CURB RAMP TYPE 4B1
PLAN VIEW

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'-9 3/4"	3'-6 1/2"	4'-11 1/2"	5'-1 3/4"	4'-3 3/4"	6'-5 1/2"	3'-8 3/4"	7'-6 3/4"	3'-3"	8'-6 1/4"
30 FEET	7'-9 1/4"	5'-10 1/2"	6'-9 1/2"	7'-11 1/4"	6'-0 1/4"	9'-8"	5'-5"	11'-1 3/4"	4'-10 3/4"	12'-5 3/4"
40 FEET	9'-4"	7'-10"	8'-2 3/4"	10'-3"	7'-4 3/4"	12'-3 3/4"	6'-8 1/2"	14'-1 1/4"	6'-1 3/4"	15'-8 1/2"
50 FEET	10'-8"	9'-6 1/2"	9'-5 1/2"	12'-3 1/4"	8'-6 1/2"	14'-7 1/2"	7'-9 3/4"	16'-8 1/4"	7'-2 1/2"	18'-6 1/4"
60 FEET	11'-10 1/4"	11'-0 3/4"	10'-6 1/2"	14'-1 1/4"	9'-6 1/2"	16'-8 1/2"	8'-9 1/4"	18'-11 3/4"	8'-1 1/2"	21'-0 1/2"

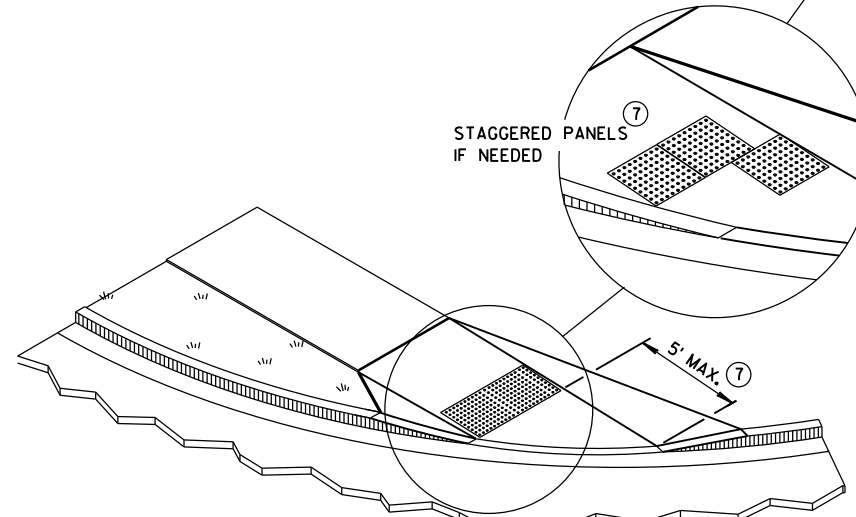
GENERAL NOTES

INTERMEDIATE RADII CAN BE INTERPOLATED

- 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.
- (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. USE EQUAL-SIZE PANELS TO DEVELOP OVERLAPPING, STAGGERED ROWS. 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.



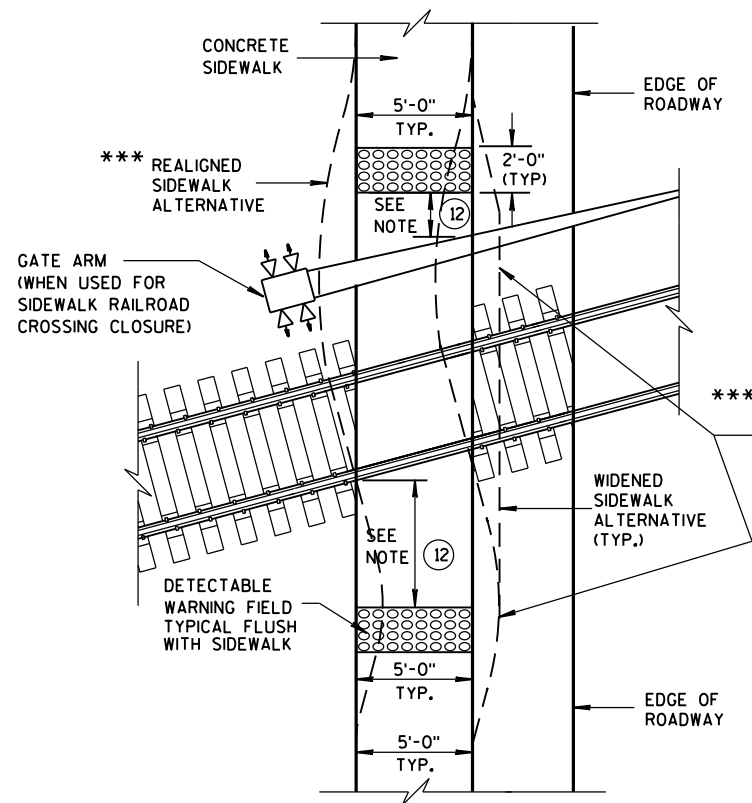
ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

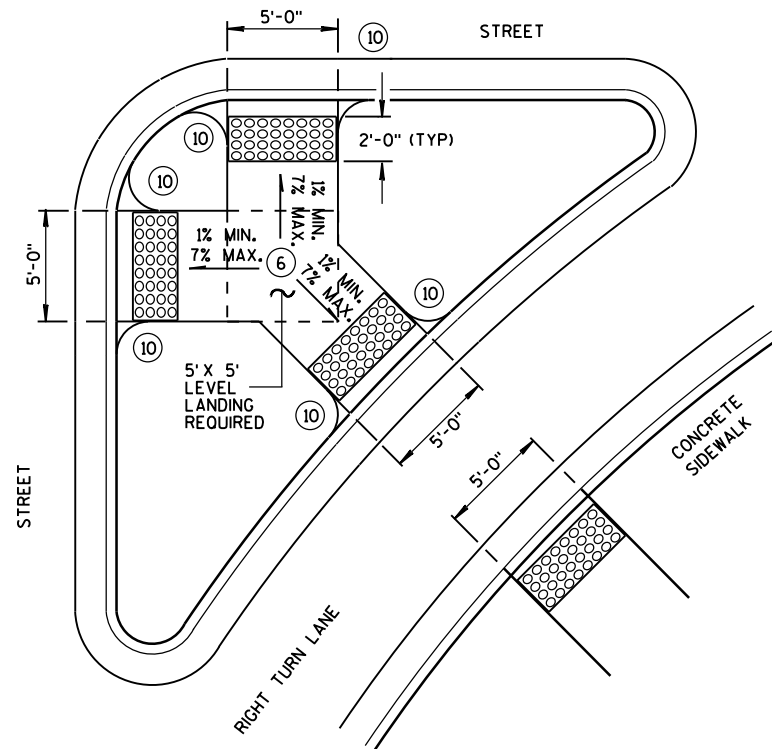
CURB RAMPS
TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

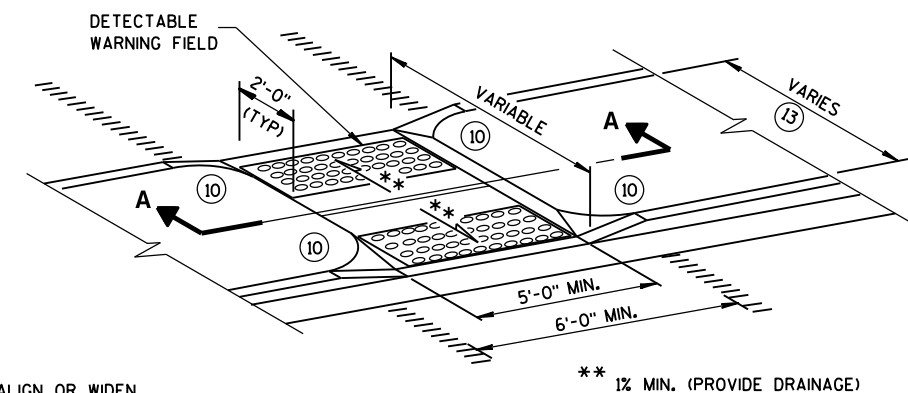


TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING

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

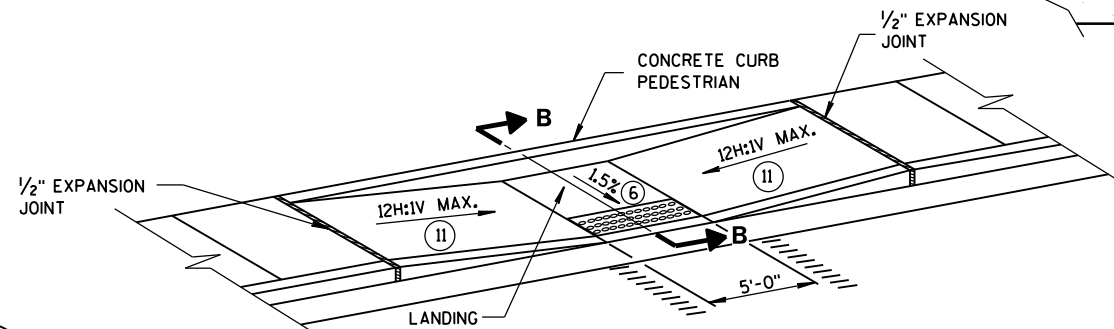


TYPE 6
DETECTABLE WARNING AT ISLANDS

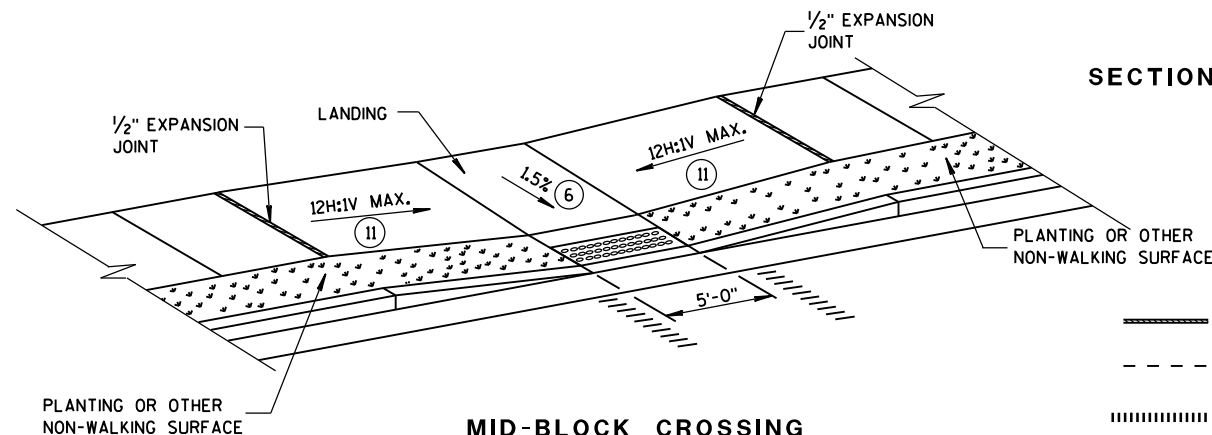


MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

*** DETAILS TO BE DETERMINED BY DESIGNER

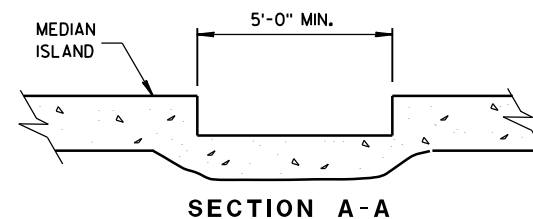


MID-BLOCK CROSSING
TYPE 7A

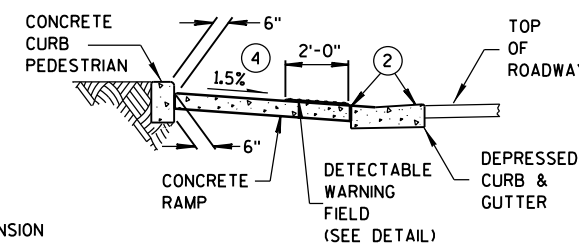


MID-BLOCK CROSSING
TYPE 7B

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



SECTION A-A



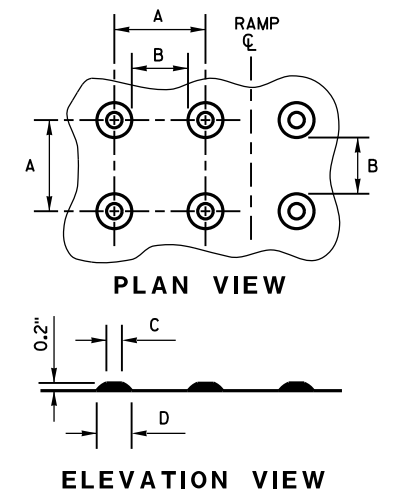
SECTION B-B

LEGEND

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

GENERAL NOTES

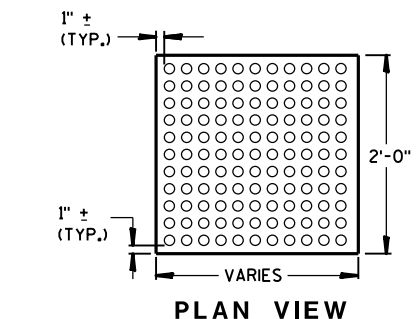
- SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE 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%.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- 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.
- DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



	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.

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

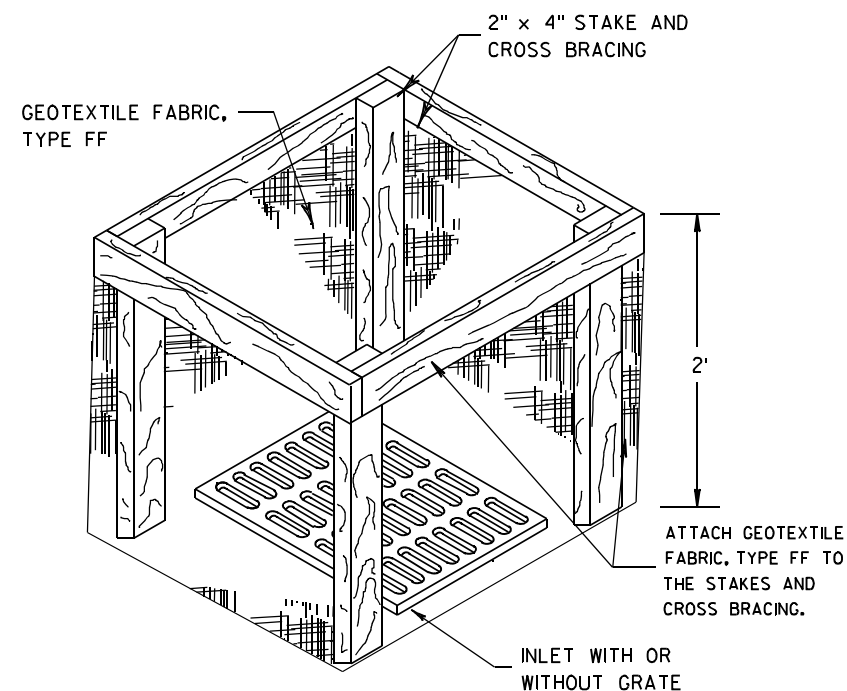
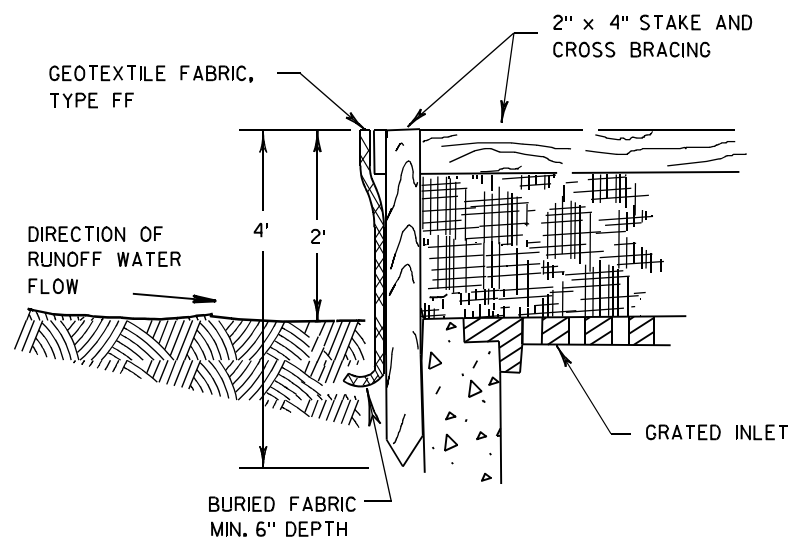


DETECTABLE WARNING
FIELD (TYPICAL)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



INLET PROTECTION, TYPE A

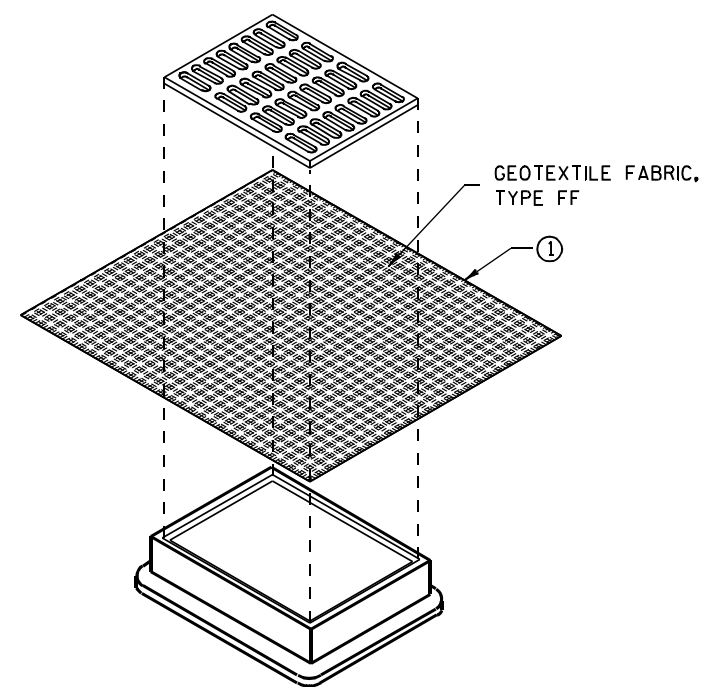
GENERAL NOTES

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.

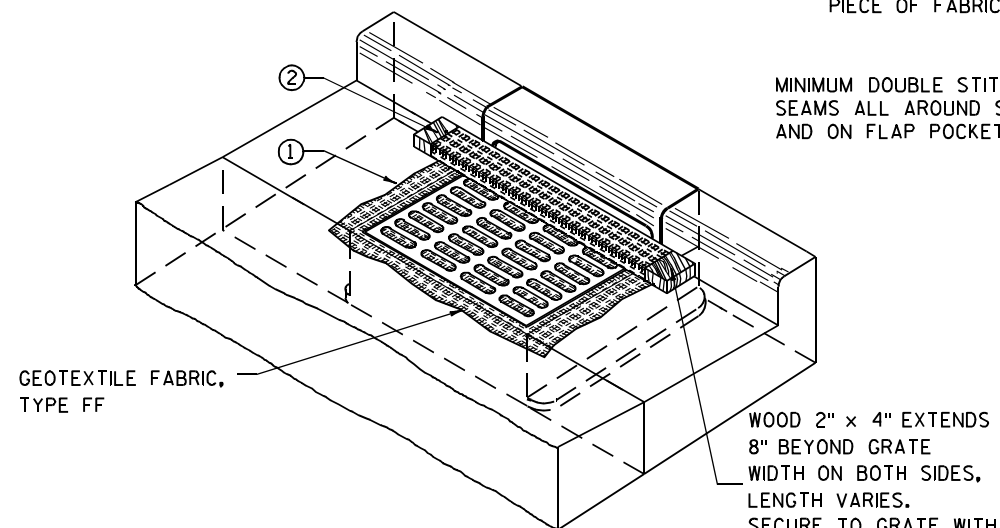
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

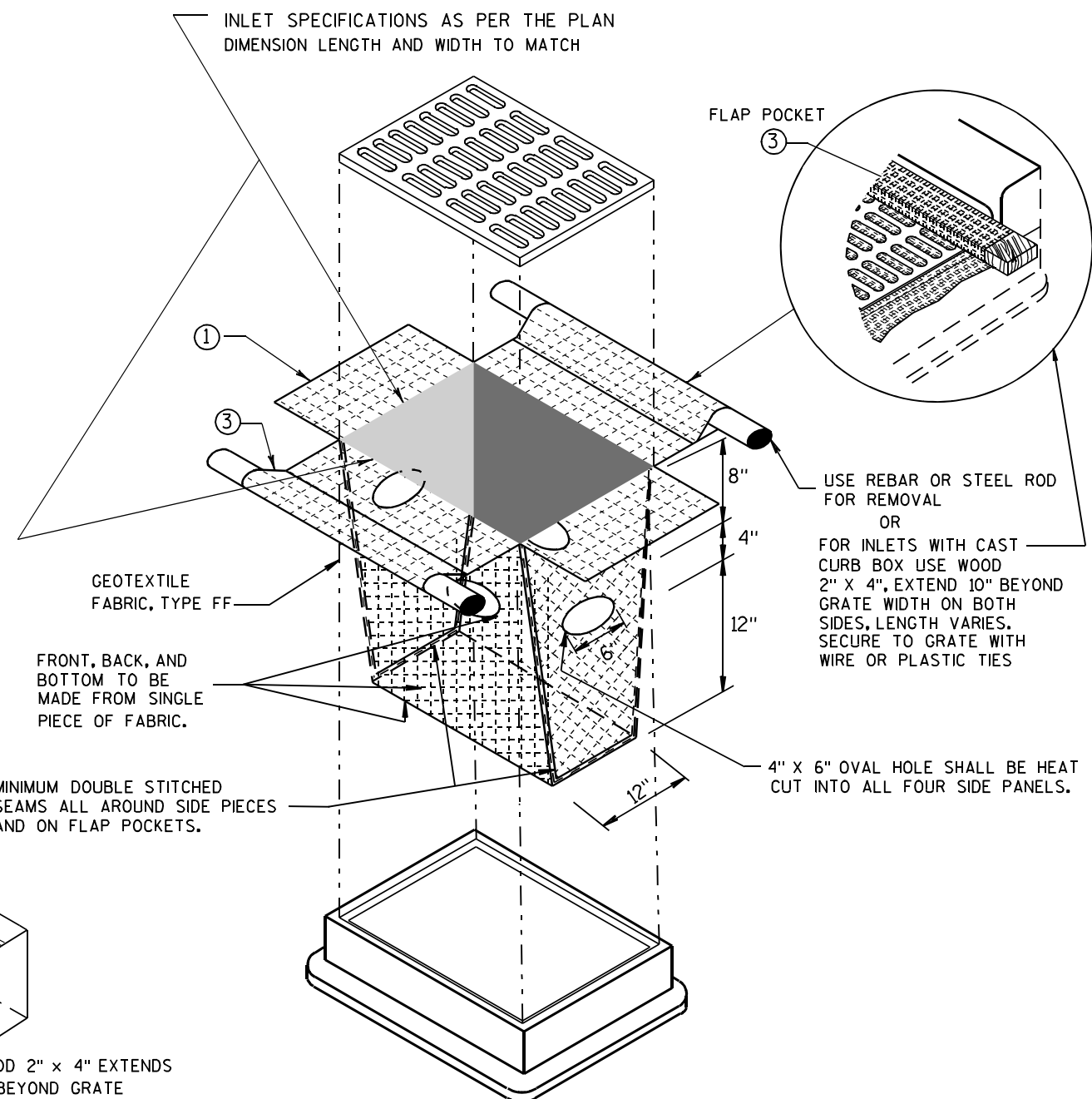
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



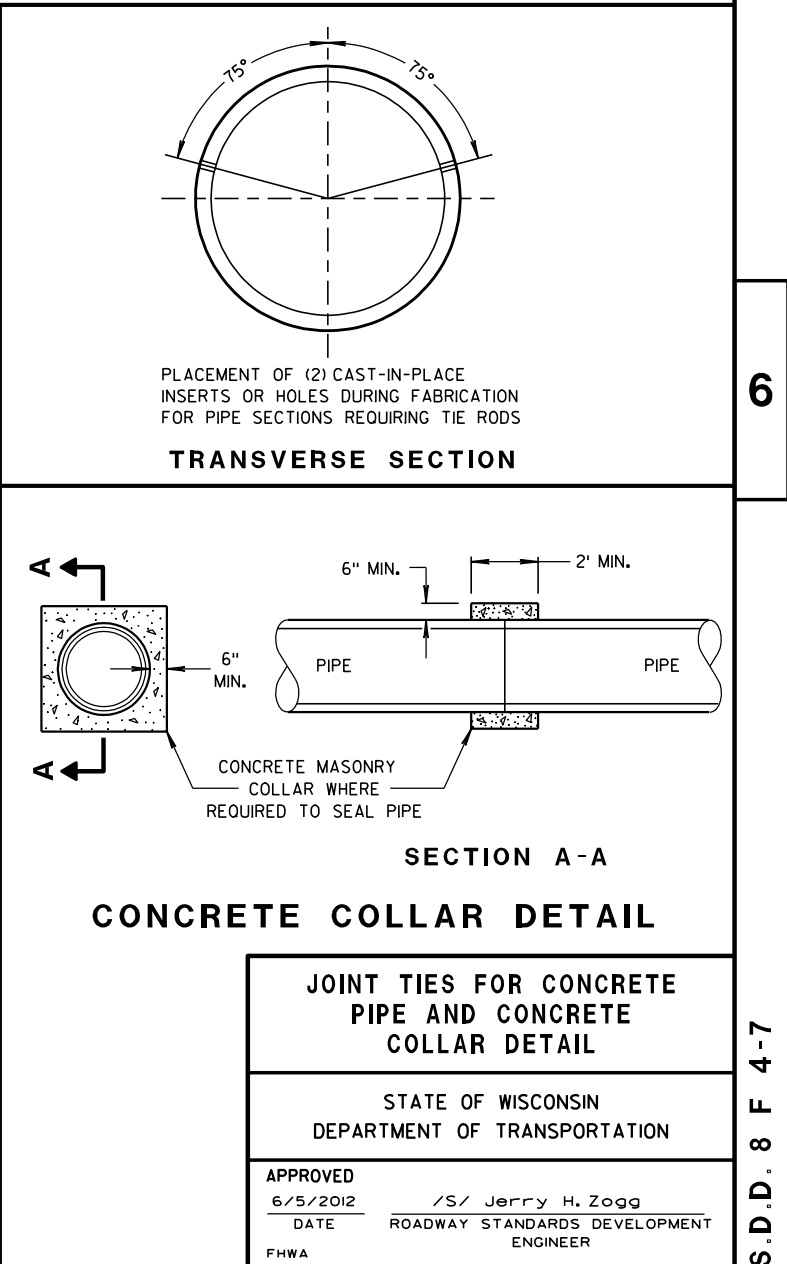
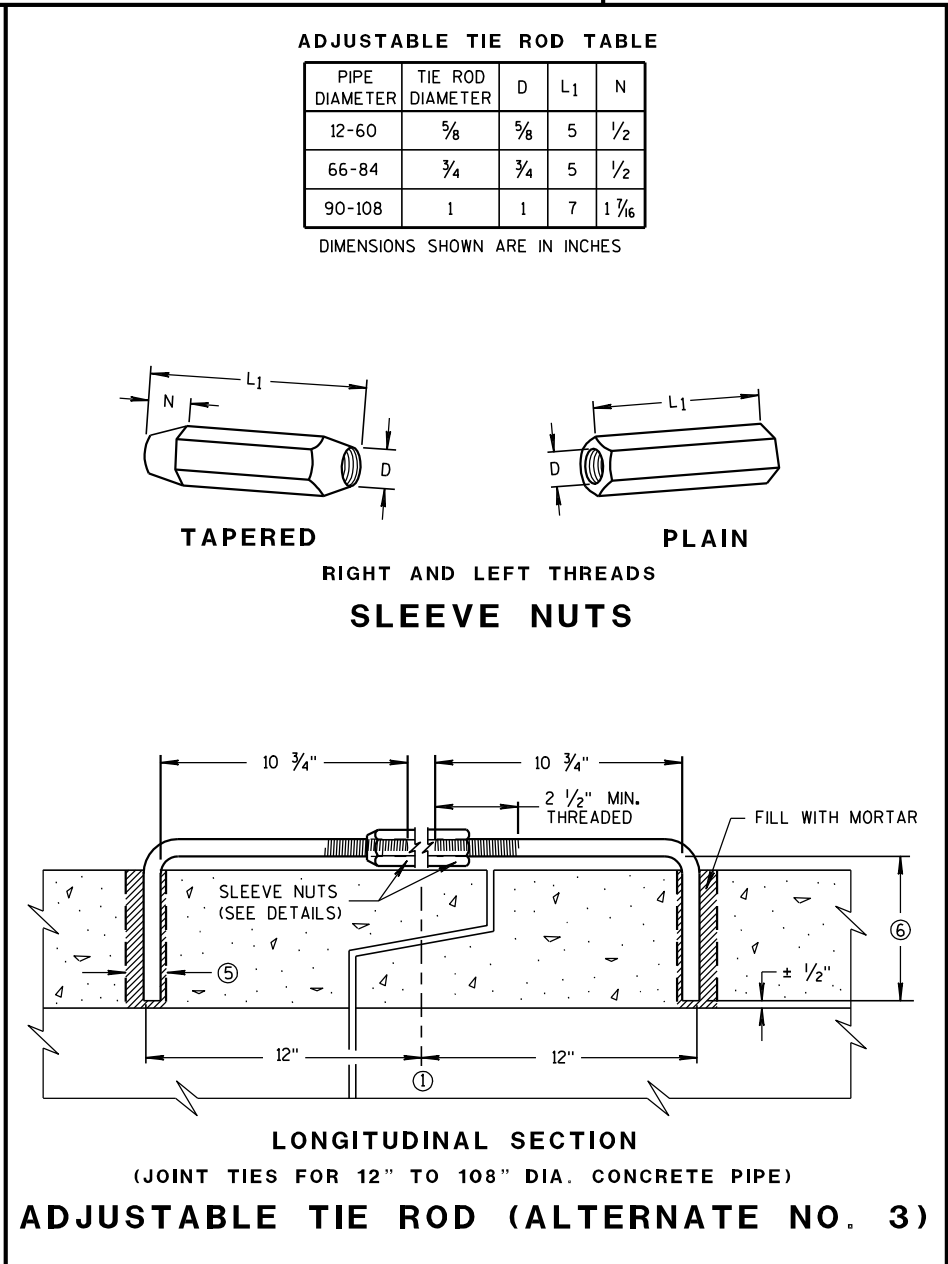
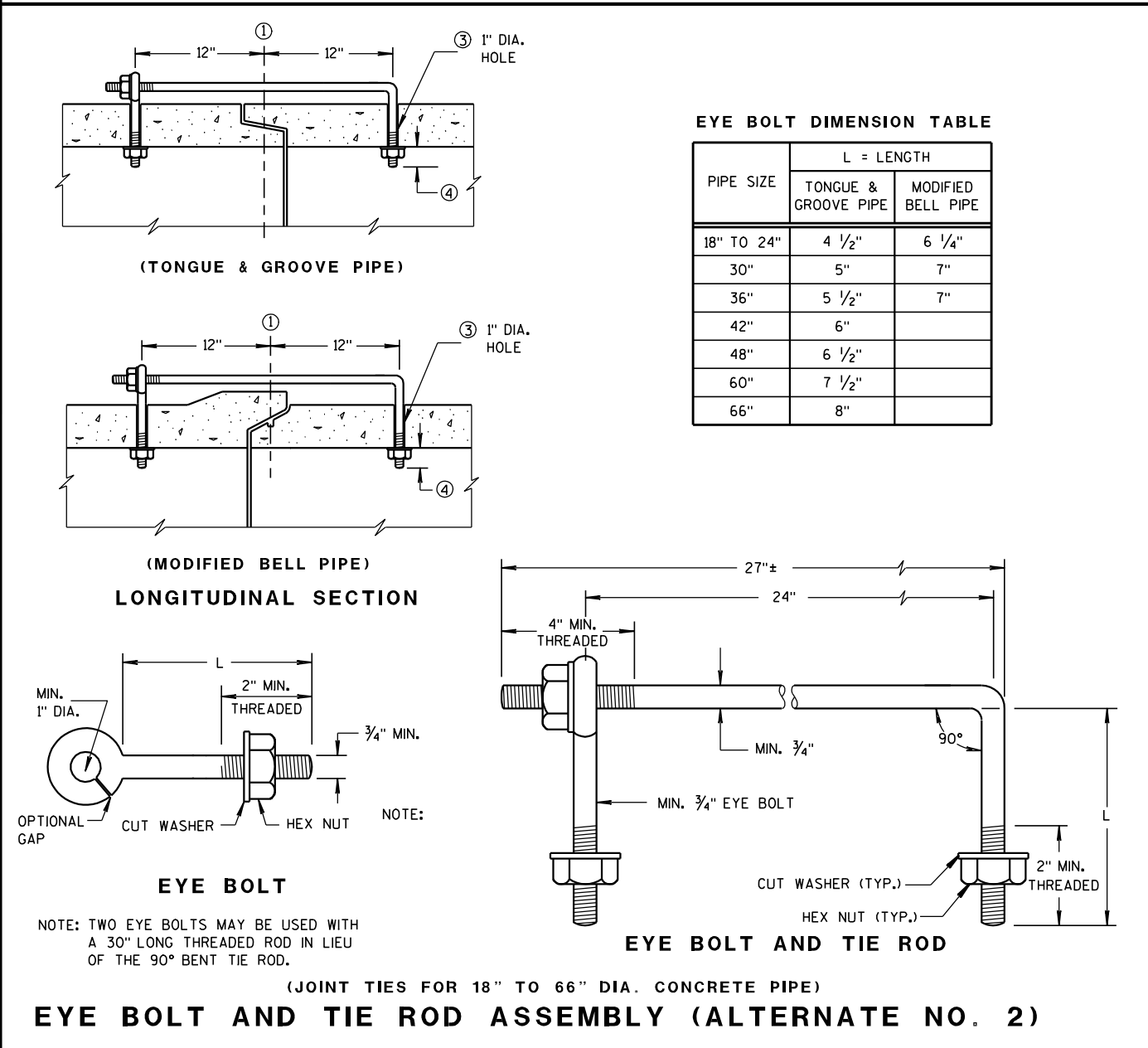
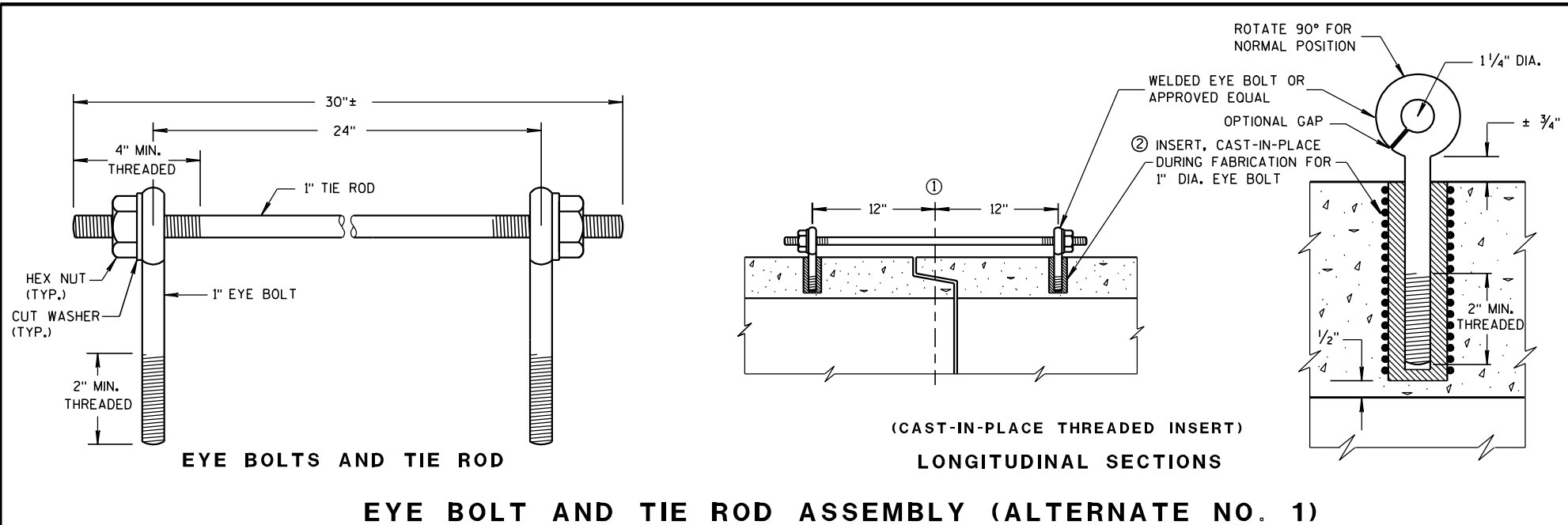
INLET PROTECTION, TYPE D

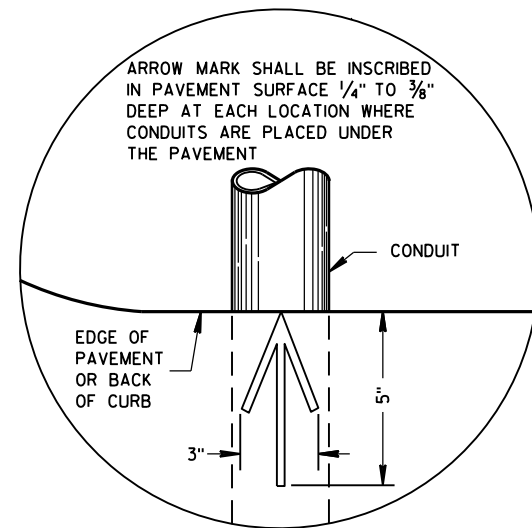
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

**INLET PROTECTION
TYPE A, B, C, AND D**

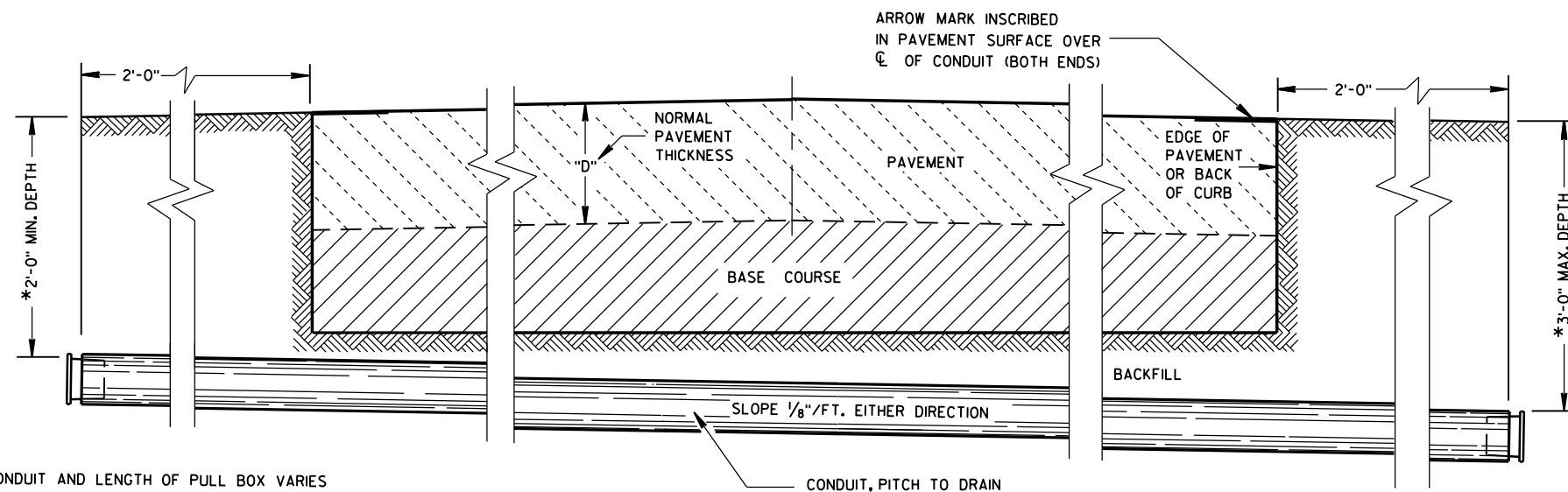
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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





PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

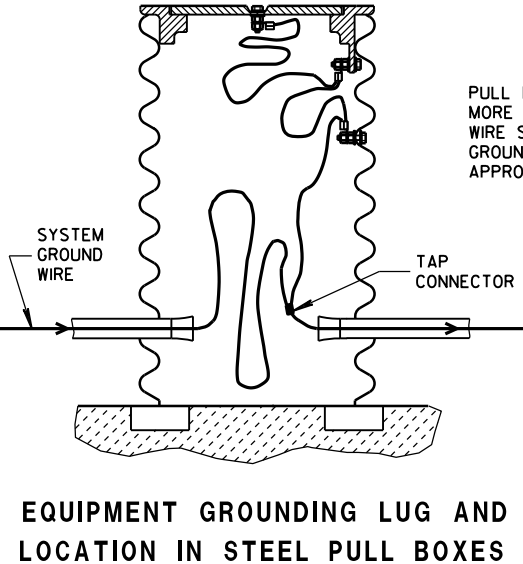
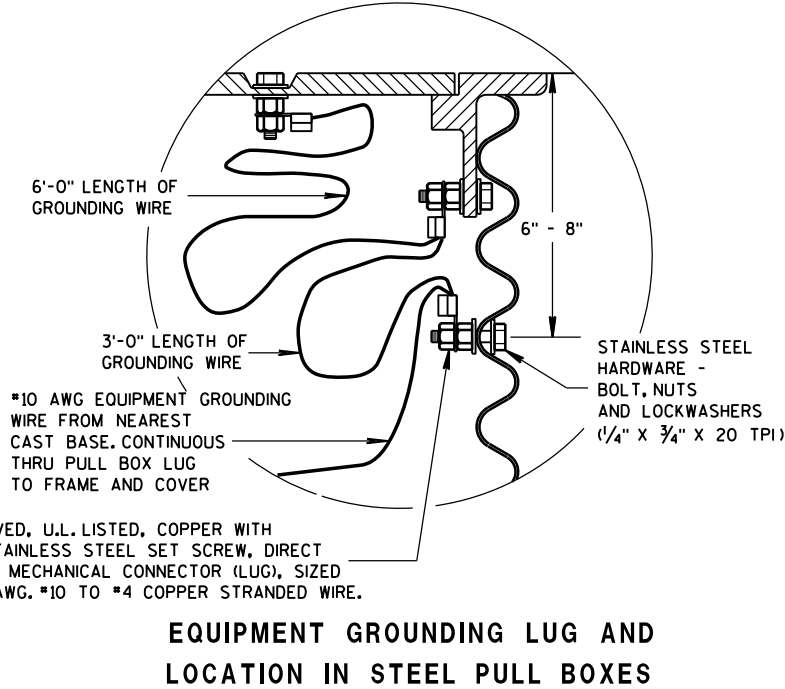
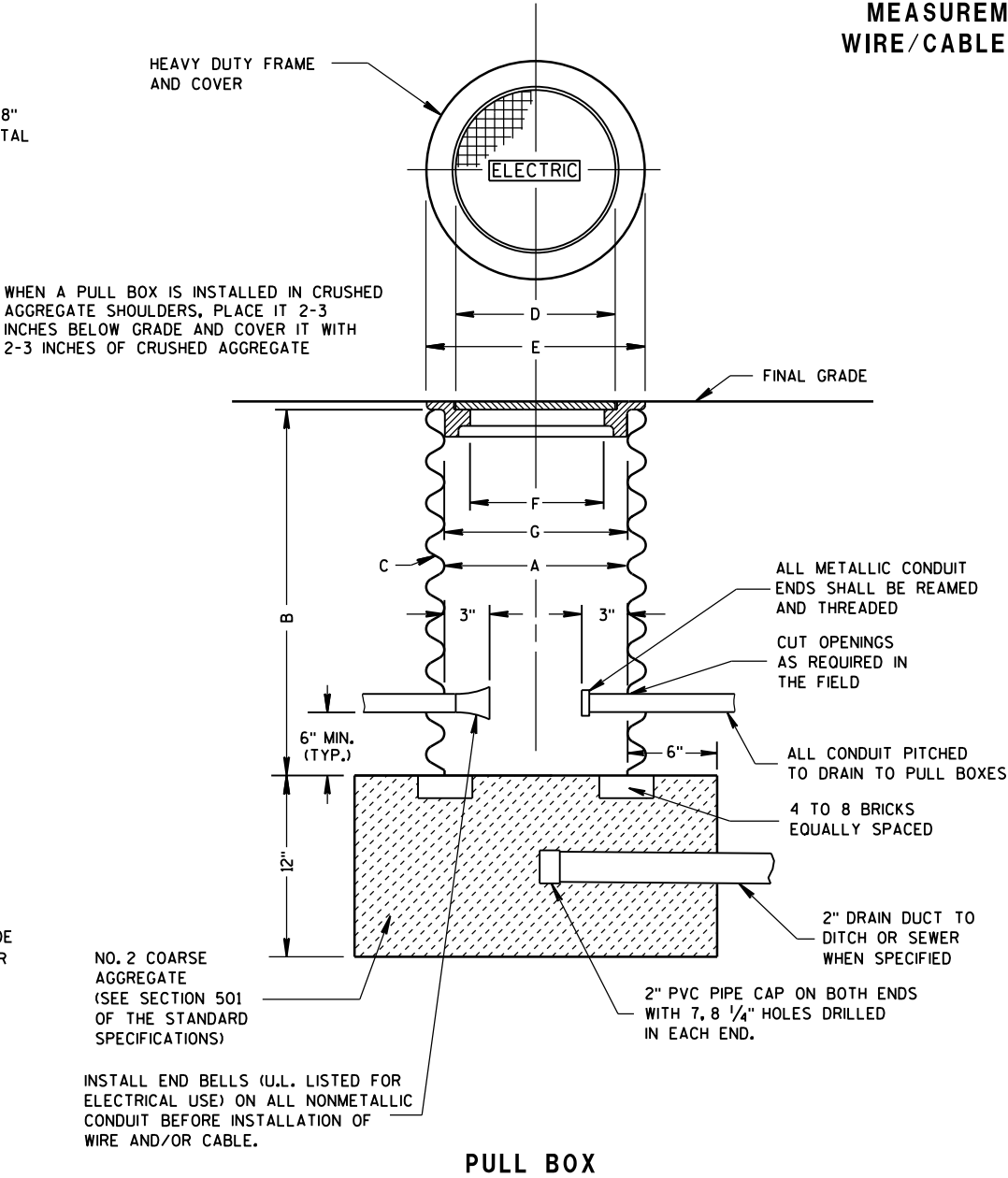
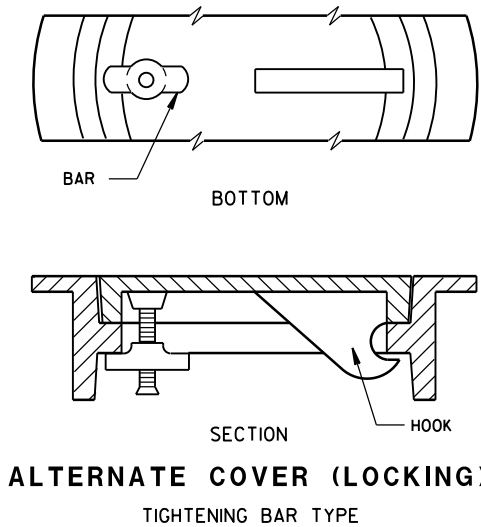
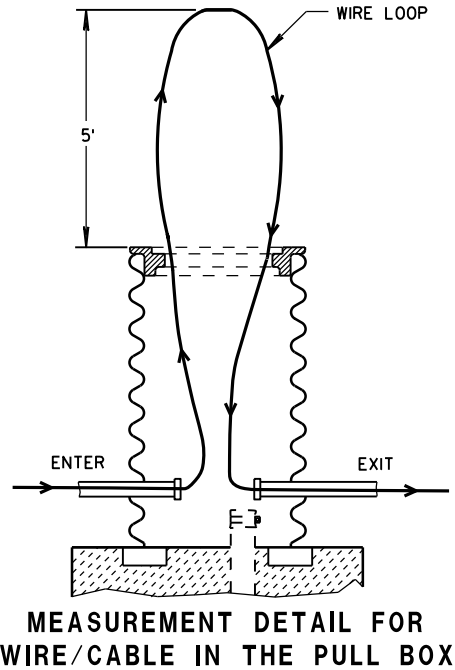
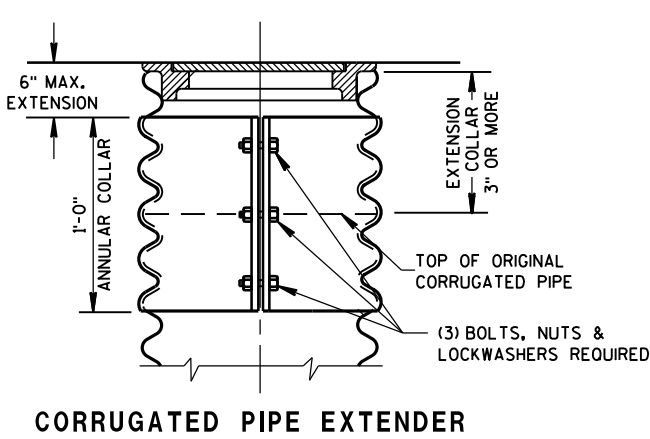
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

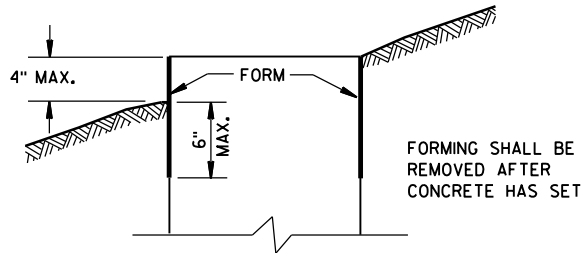
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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



PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

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

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG. STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

2 (4) 1" DIA. X 3'-6" ANCHOR RODS.

3 (4) 1" DIA. X 5'-0" ANCHOR RODS.

4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

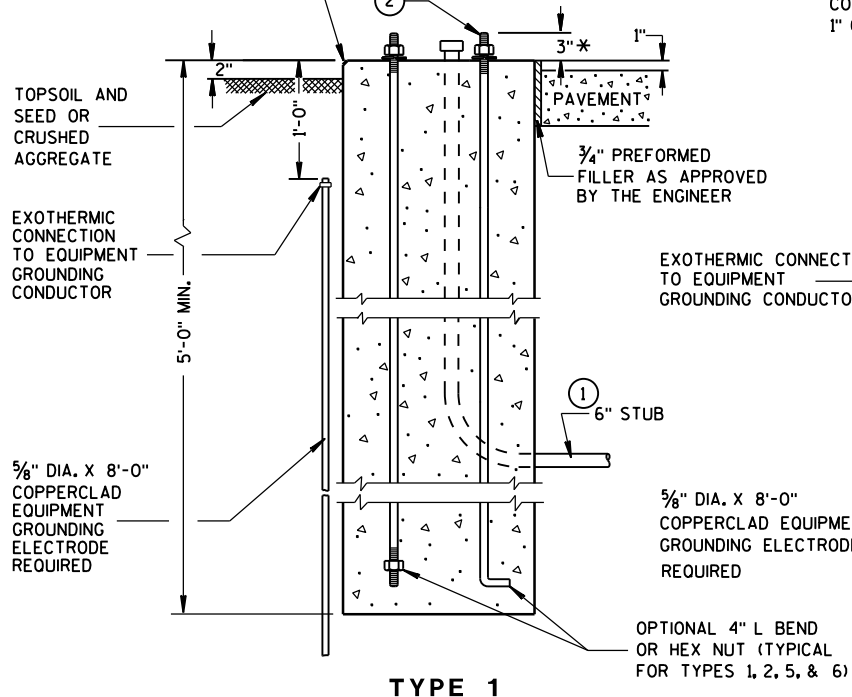
5 (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

6 (4) 1" DIA. X 3'-6" ANCHOR RODS.

7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

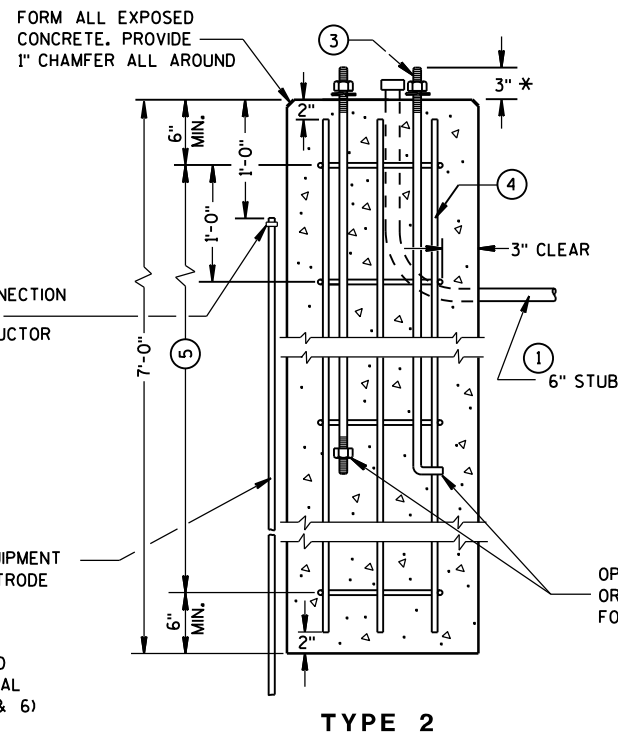
8 (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5, & 6)



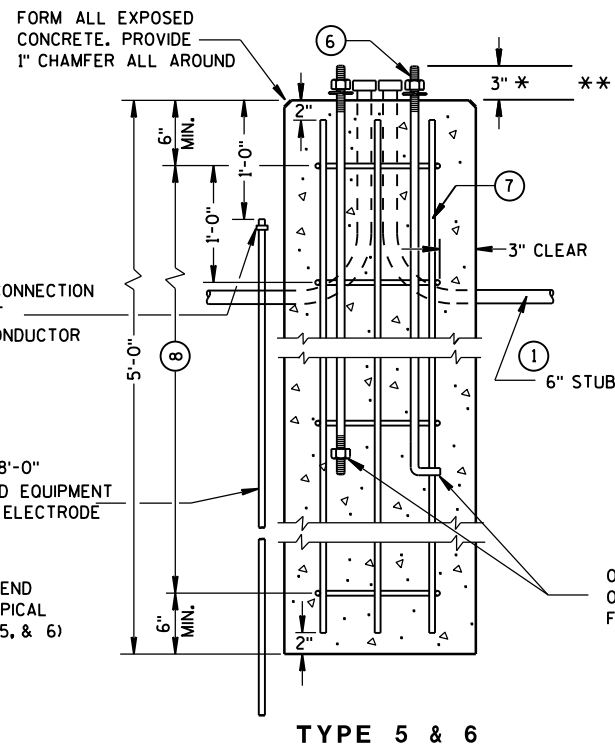
TYPE 1

HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5, & 6)



TYPE 2

CONCRETE BASES



TYPE 5 & 6

CONCRETE BASES,
TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

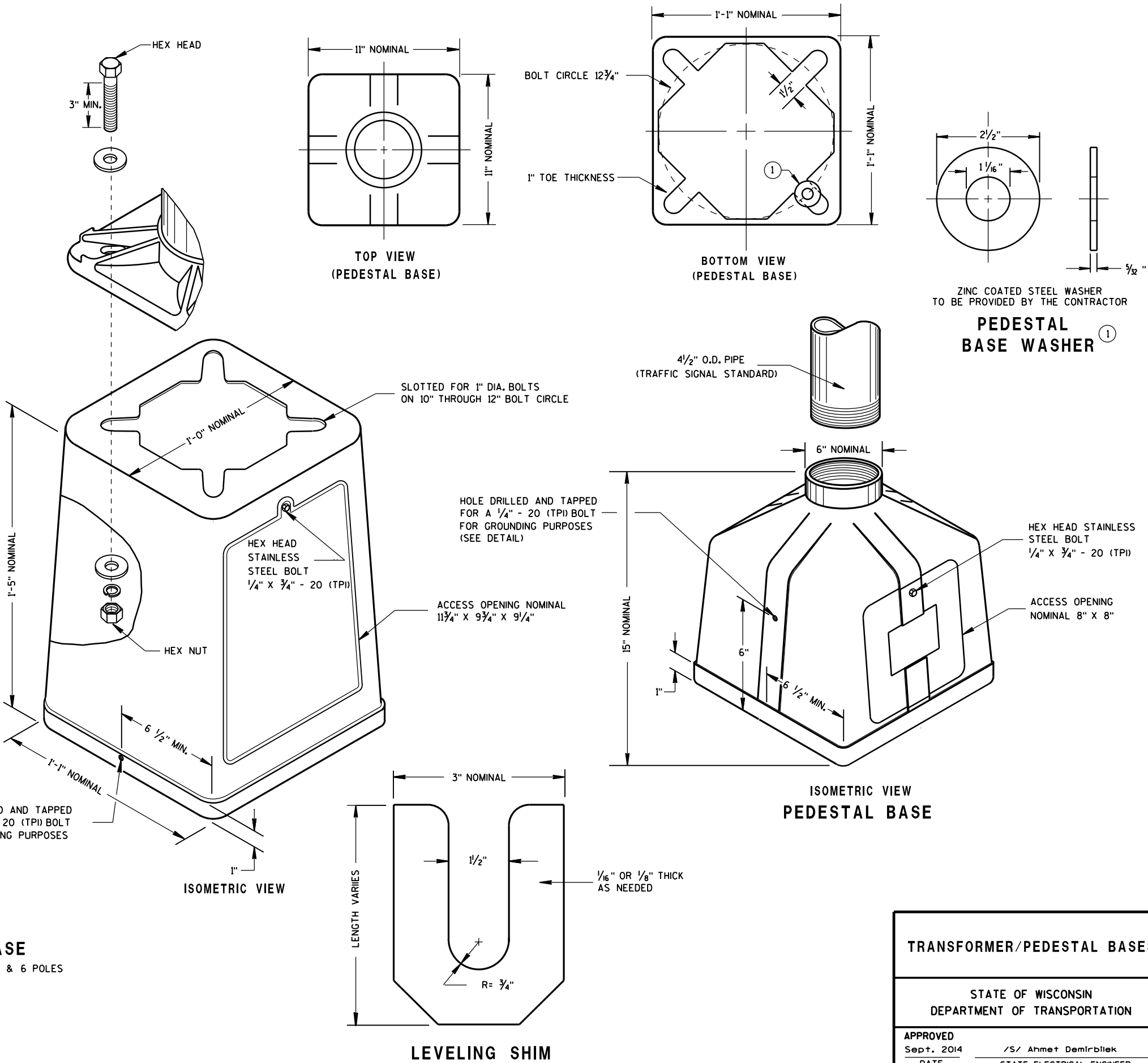
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

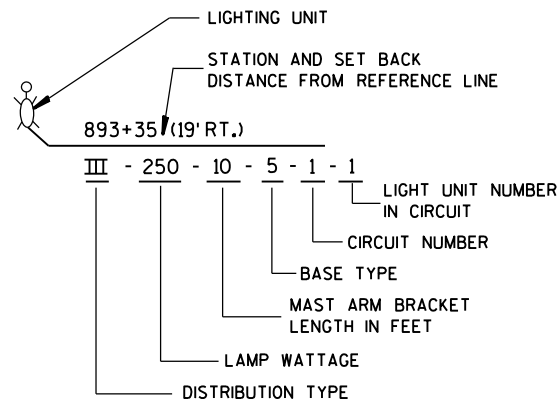
THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



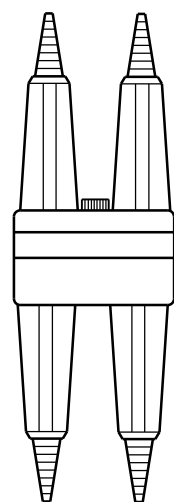
TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

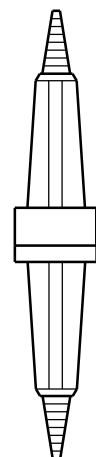
APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



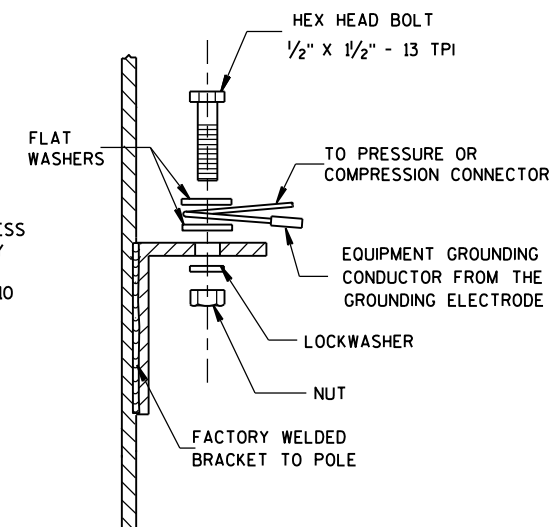
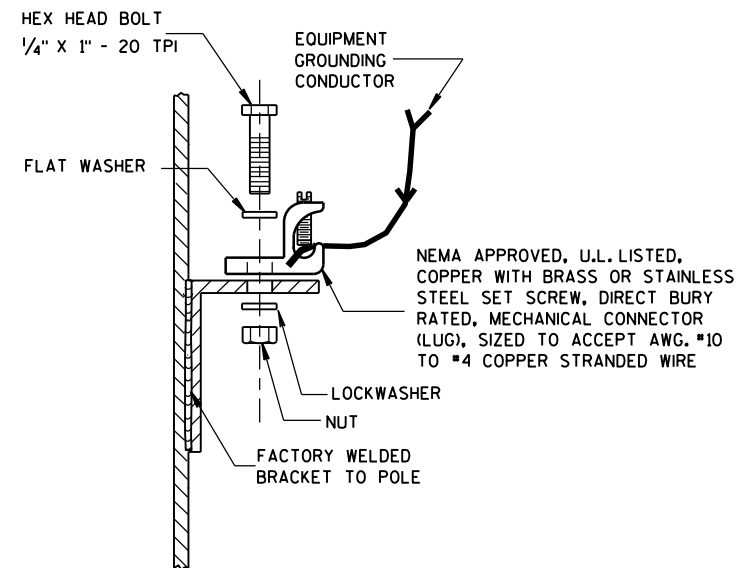
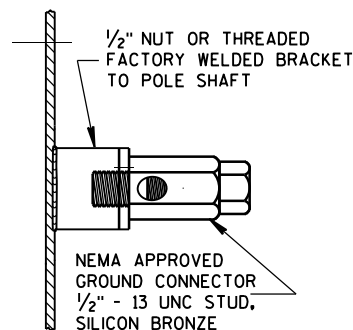
**LIGHTING UNIT CODE
(TYPICAL)**



**DETAIL "A"
BREAKAWAY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT**



**DETAIL "B"
BREAKAWAY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT**



TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES

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

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

ADDITIONAL CONDUCTORS
AND FUSE FOR TWIN
LIGHTING UNITS

EQUIPMENT GROUNDING
CONDUCTOR(S) TO LUMINAIRE(S)

APPROVED MECHANICAL TYPE
CONNECTOR FOR EQUIPMENT
GROUNDING CONDUCTORS.
COMPRESSION, CRIMP OR
WIRE NUT CONNECTORS ARE
NOT ALLOWED.

TYPICAL GROUNDING CONNECTION -
STAINLESS STEEL BOLT,
NUT AND WASHERS
1/2" X 1/2" - 13 TPI

AWG #4 (MIN.) BARE EQUIPMENT
GROUNDING CONDUCTOR.
NOTE: THIS WIRE SHALL BE
CONTINUOUS WITHOUT SPLICES
FROM THE GROUNDING ELECTRODE
TO THE EQUIPMENT GROUNDING
CONDUCTOR SPICE CONNECTOR.

INSULATED EQUIPMENT GROUNDING
CONDUCTORS FROM SYSTEM RACEWAY

EXOTHERMICALLY WELDED
TO GROUNDING ELECTRODE

CONDUCTORS TO
LUMINAIRES SHALL BE #12 AWG,
COPPER STRANDED, U.S.E. RATED,
XLP INSULATED. SINGLE
LIGHTING UNIT SHOWN

CIRCUIT TAGS, BOTH SIDES
OF ALL FUSES (TYPICAL)

IN LINE SINGLE POLE FUSE ASSEMBLY.
600 VAC, WITH 5 AMP FAST ACTING
FUSE (SEE DETAIL "B")
TAPE AND VARNISH
CRIMPED END FERRULES

HANDHOLE & COVER

18" PIGTAIL BETWEEN
CONNECTOR AND FUSEHOLDER

APPROVED INSULATED MULTITAP
TERMINAL BLOCK TYPE CONNECTORS.
COMPRESSION, CRIMP OR WIRE NUT
CONNECTORS ARE NOT ALLOWED.

INSULATED UNGROUNDED CIRCUIT
CONDUCTORS FROM SYSTEM RACEWAY

ALTERNATE PHASE UNGROUNDED
CIRCUIT CONDUCTOR PASSING
THROUGH THIS POLE

**3 WIRE - 120, 240 OR 480 VAC (UNGROUND CONDUCTOR)
WITH GROUNDED CONDUCTOR AND
WITH EQUIPMENT GROUNDING CONDUCTOR**

TWIN LIGHTING UNITS REQUIRE
INDIVIDUAL SETS OF UNGROUNDED
CONDUCTORS AND FUSE ASSEMBLY.

AWG #4 (MIN.) BARE EQUIPMENT
GROUNDING CONDUCTOR.
NOTE: THIS WIRE SHALL BE
CONTINUOUS WITHOUT SPLICES
FROM THE GROUNDING ELECTRODE
TO THE EQUIPMENT GROUNDING
CONDUCTOR SPICE CONNECTOR.

EQUIPMENT GROUNDING
CONDUCTOR(S) TO LUMINAIRE(S)

TYPICAL GROUNDING CONNECTION -
STAINLESS STEEL BOLT,
NUT AND WASHERS
1/2" X 1/2" - 13 TPI

APPROVED MECHANICAL TYPE
CONNECTOR FOR EQUIPMENT
GROUNDING CONDUCTORS.
COMPRESSION, CRIMP OR
WIRE NUT CONNECTORS ARE
NOT ALLOWED.

INSULATED EQUIPMENT GROUNDING
CONDUCTORS FROM SYSTEM RACEWAY

EXOTHERMICALLY WELDED
TO GROUNDING ELECTRODE

**2 WIRE - 240 OR 480 VAC (UNGROUND CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR**

CIRCUIT TAGS, BOTH SIDES
OF ALL FUSES (TYPICAL)

IN LINE FUSE ASSEMBLY
TWO POLE, 600 VAC,
WITH 5 AMP FAST ACTING
FUSE (SEE DETAIL "A")
TAPE AND VARNISH
CRIMPED END FERRULES

HANDHOLE & COVER

18" PIGTAIL BETWEEN
CONNECTORS AND FUSEHOLDERS

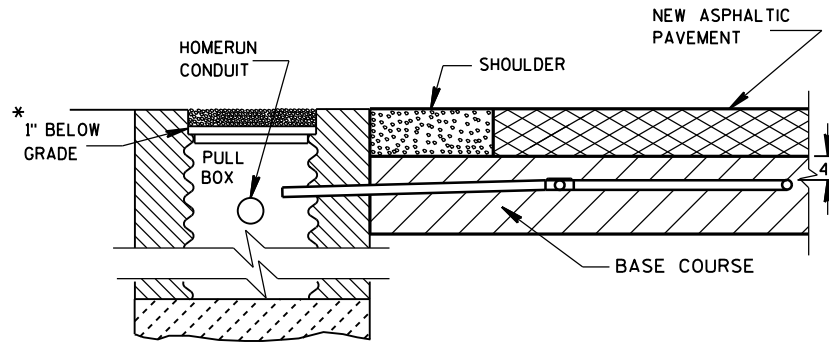
APPROVED INSULATED MULTITAP
TERMINAL BLOCK TYPE CONNECTORS.
COMPRESSION, CRIMP OR WIRE NUT
CONNECTORS ARE NOT ALLOWED.

INSULATED UNGROUNDED CIRCUIT
CONDUCTORS FROM SYSTEM RACEWAY

**NON-FREEWAY LIGHTING UNIT
POLE WIRING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

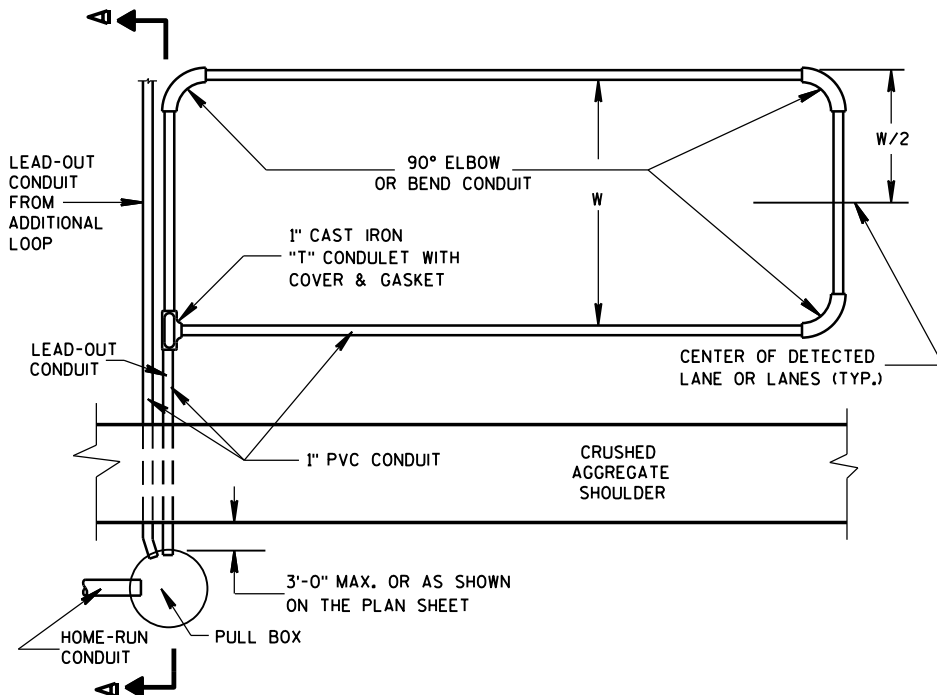
APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



SECTION A-A
NO CURB & GUTTER

DETECTOR LOOP INSTALLATION DETAIL

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



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

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

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

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

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

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

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

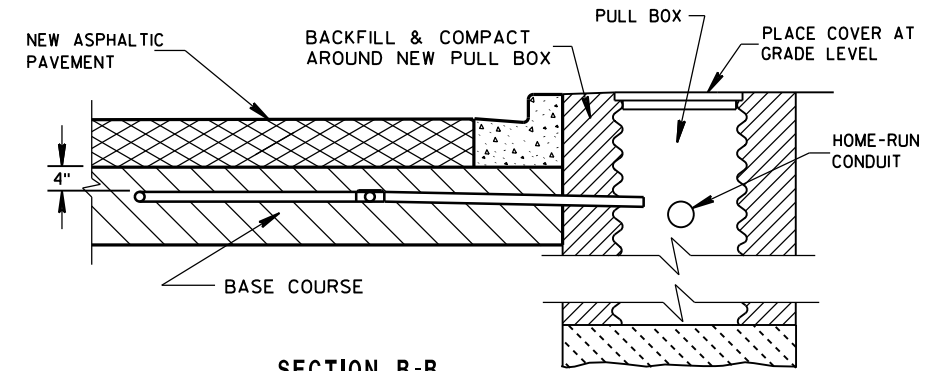
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

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

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

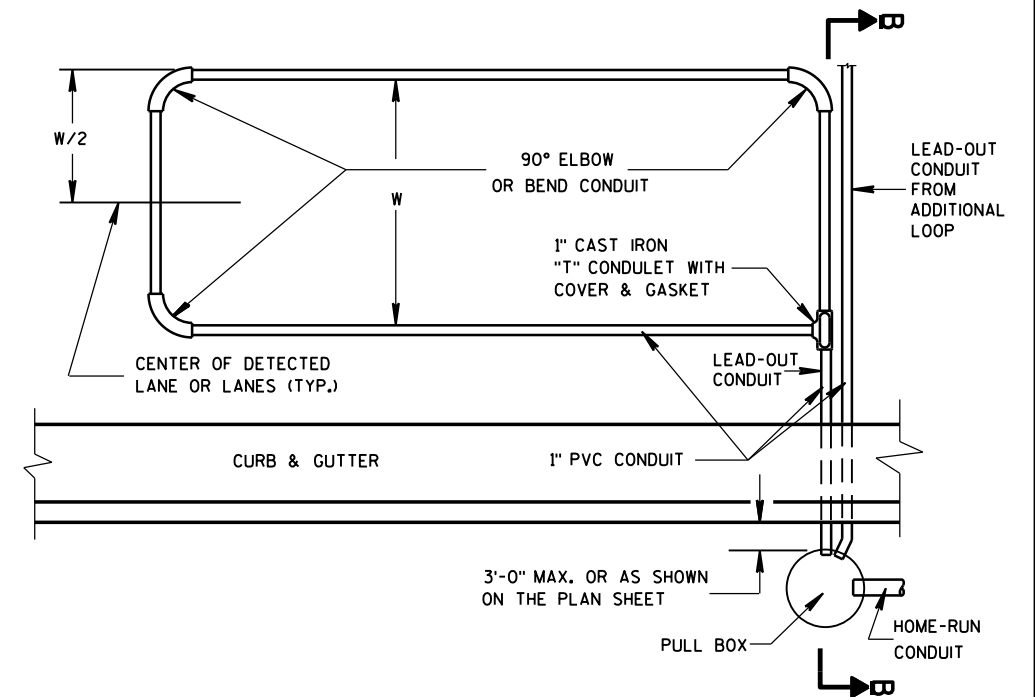
WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".



SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



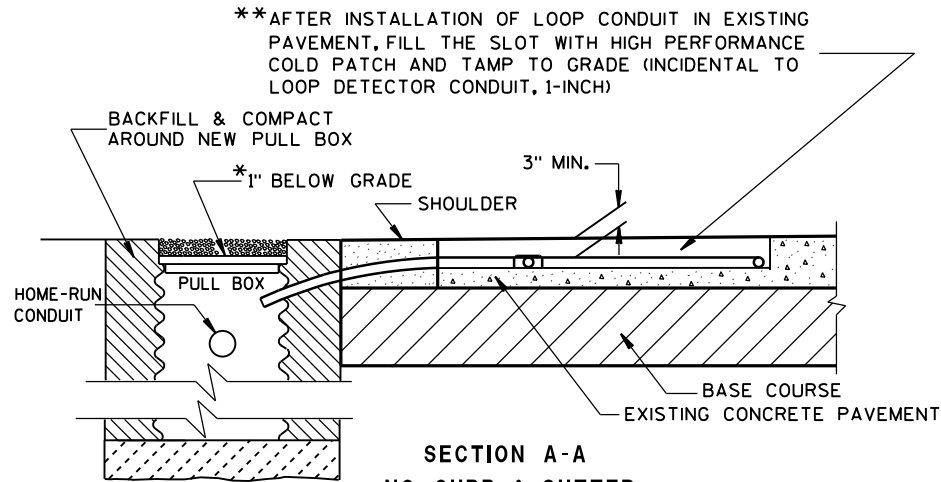
TYPICAL PLAN OF LOOP DETECTOR

LOOP DETECTOR PLACED
IN CRUSHED AGGREGATE BASE
(NEW ASPHALTIC PAVEMENT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

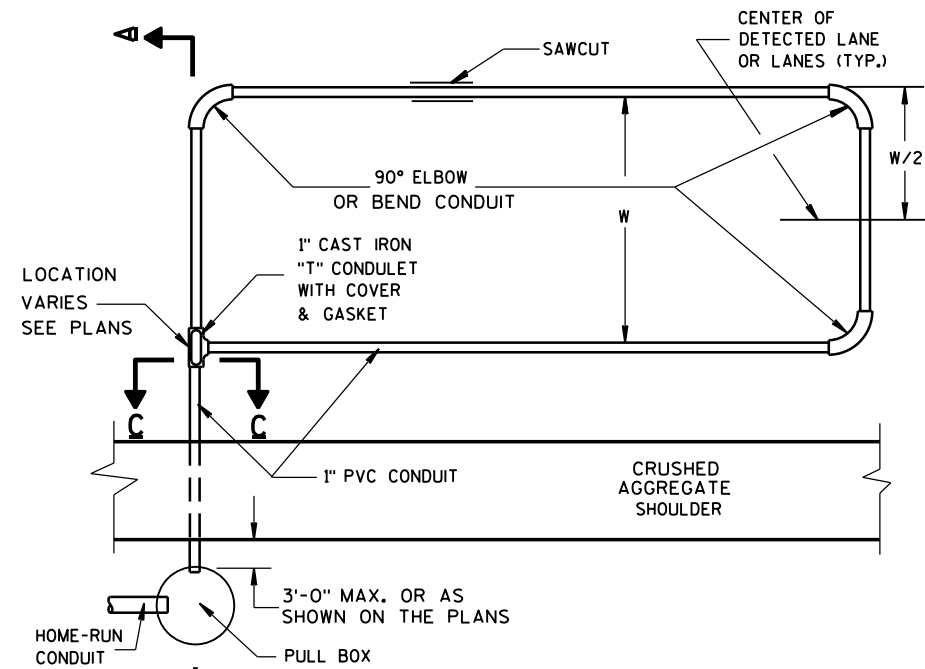
APPROVED
Sept. 2014
DATE
FHWA

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

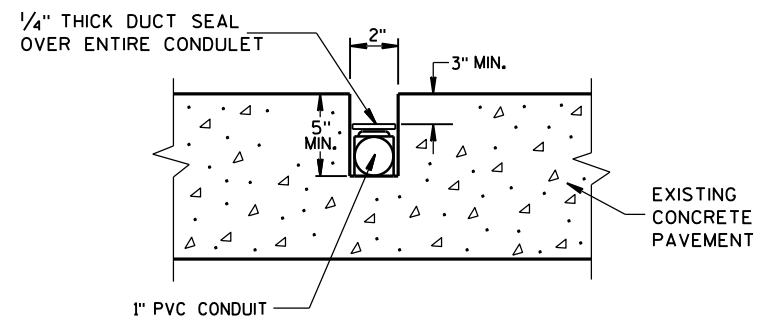


**SECTION A-A
NO CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**

**RECESS PULL BOX SO THAT THE COVER IS 3\"/>



TYPICAL PLAN OF LOOP DETECTOR



**SIDE VIEW
SECTION C-C
LOOP DETECTOR SLOT DETAIL**

GENERAL NOTES

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

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

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

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

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY 1/2 INCH.

ONCE THE 2\"/>

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

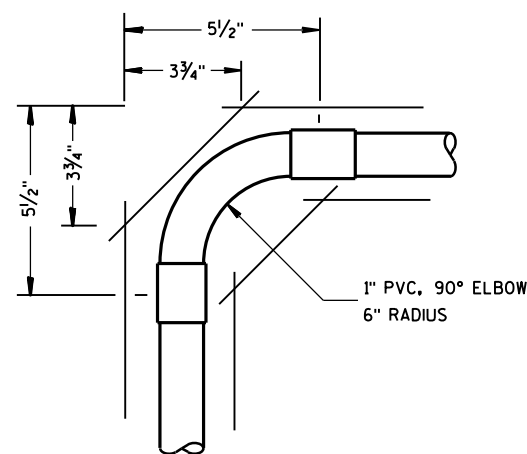
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

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

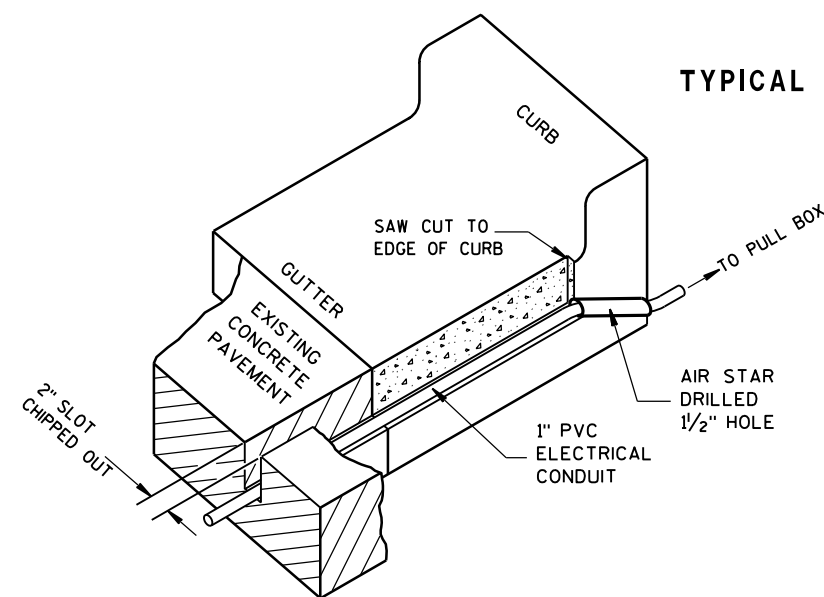
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

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

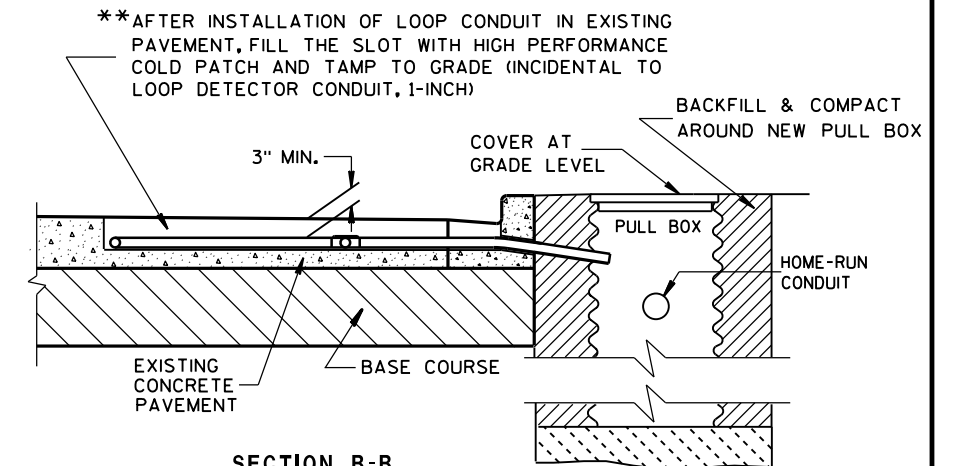
IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN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



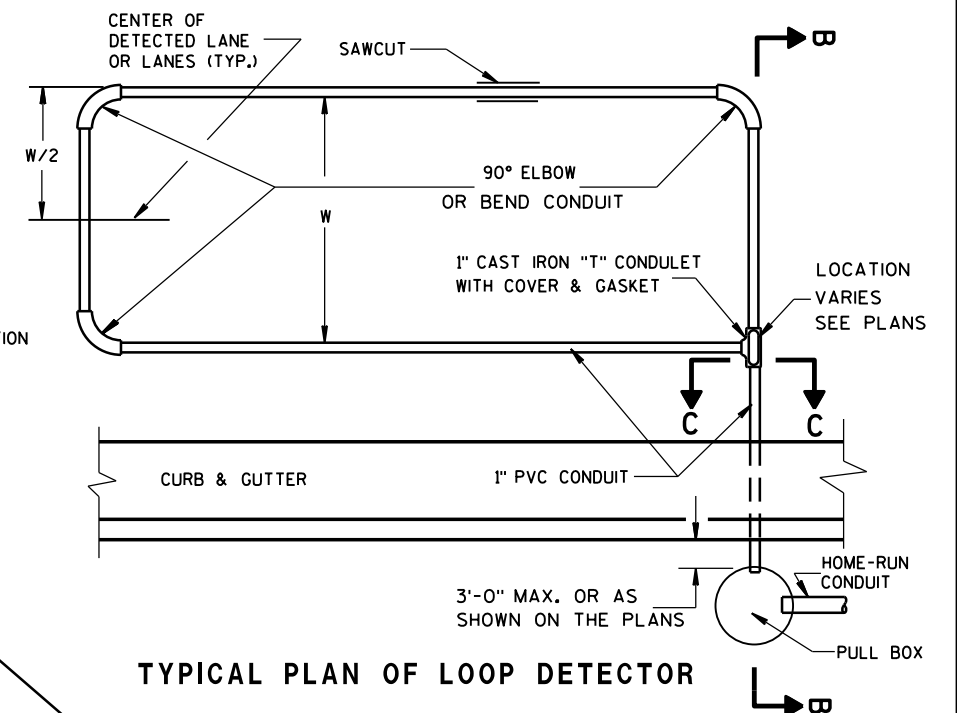
**TOP VIEW
CORNER SAW SLOT DETAIL**



**ISOMETRIC VIEW
TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT**



**SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**



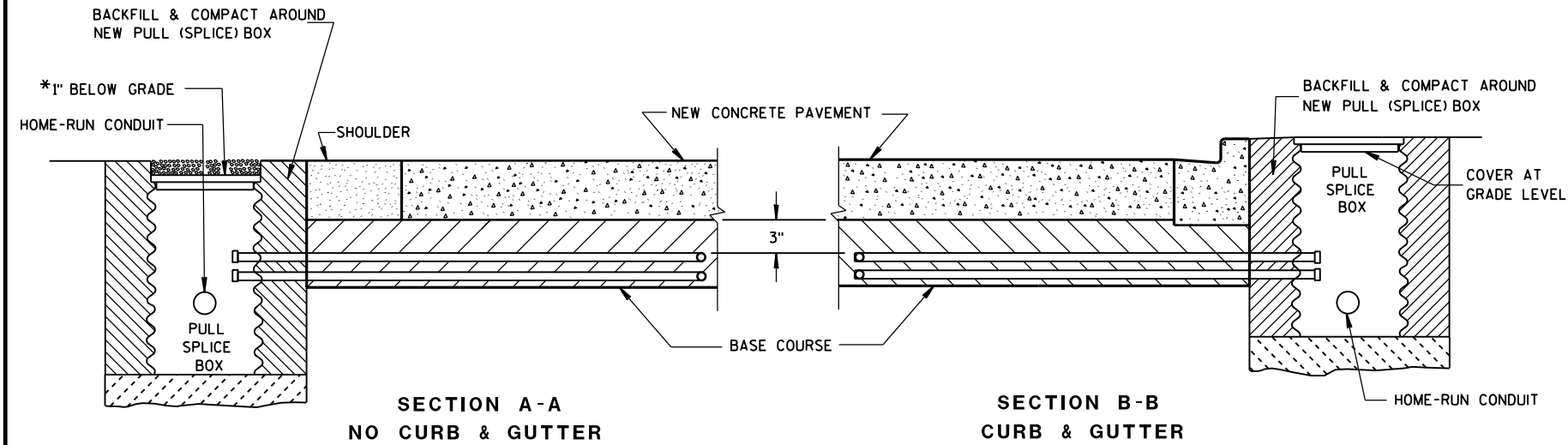
TYPICAL PLAN OF LOOP DETECTOR

**LOOP DETECTOR INSTALLED IN
EXISTING CONCRETE PAVEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE
FHWA

/S/ Ahmet Demirebilek
STATE ELECTRICAL ENGINEER

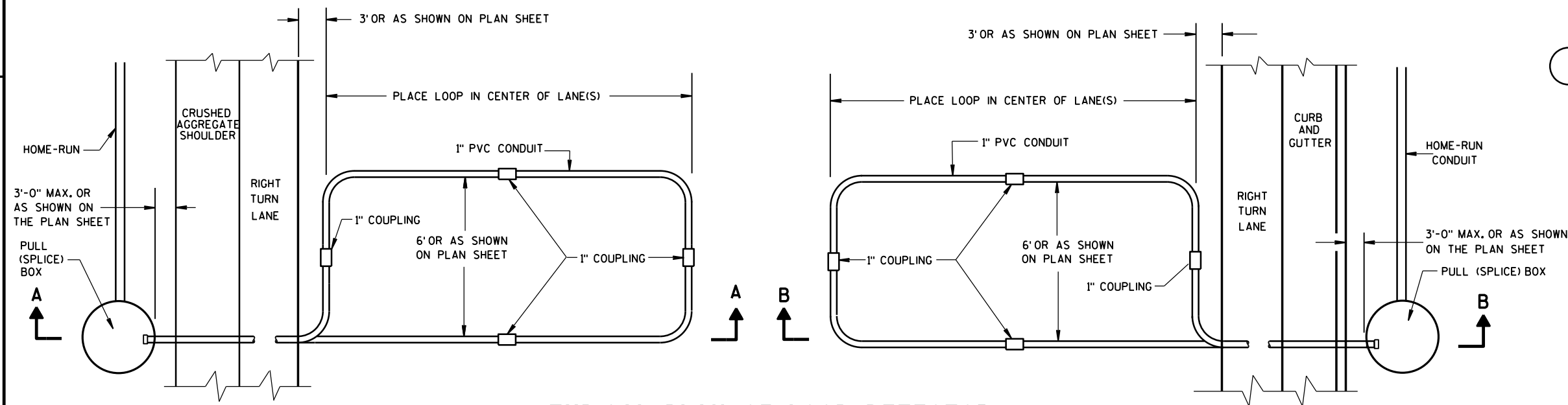


*RECESS PULL (SPlice) BOX SO THAT THE COVER IS 3\"

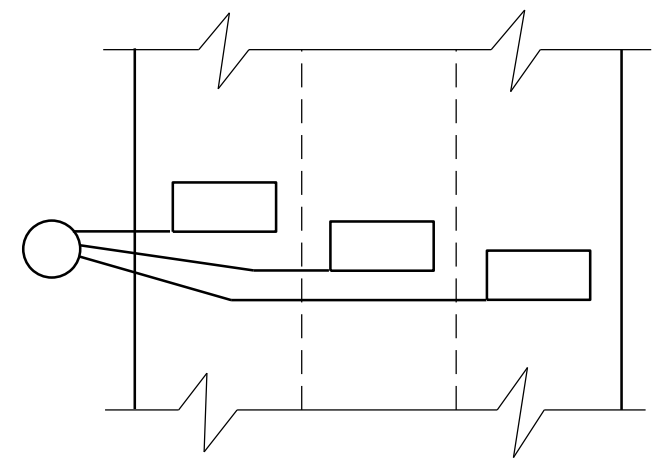
LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.
- PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPlice) BOX.
- SPlices SHALL BE INSTALLED BY USING CAST IN PLACE SPlice KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPlices TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPlices SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPlice KIT.
- MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.
- AFTER SPlicing THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.
- LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.
- THE #12 AWG. LOOP WIRE IN THE PULL (SPlice) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPliced TO THE LOOP LEAD-IN CABLE.
- SPlices OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPlice) BOXES AT THE SIDE OF THE ROAD.
- THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPlice) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPlice) BOX, AND BE INSTALLED IN ONE, NON-SPliced CONTINUOUS LENGTH.
- PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.
- SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 24\"

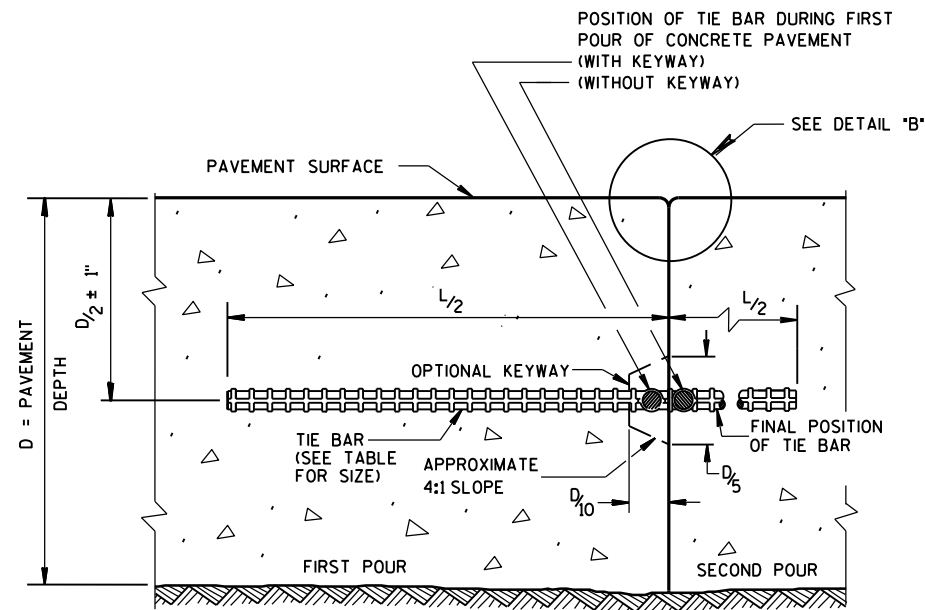


MULTI-LANE INSTALLATION

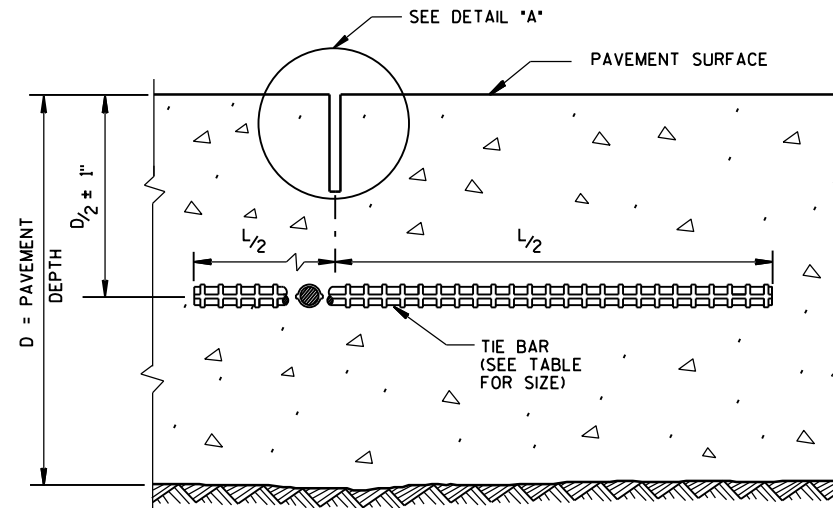
LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	

6

6



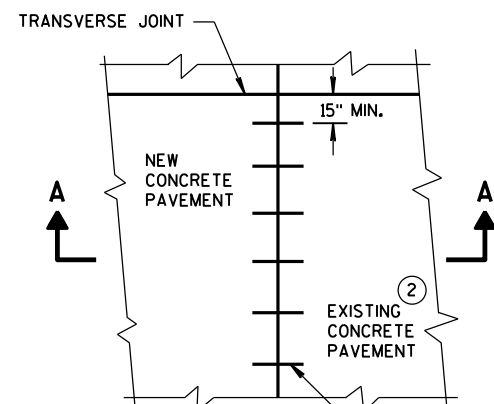
CONSTRUCTION JOINT



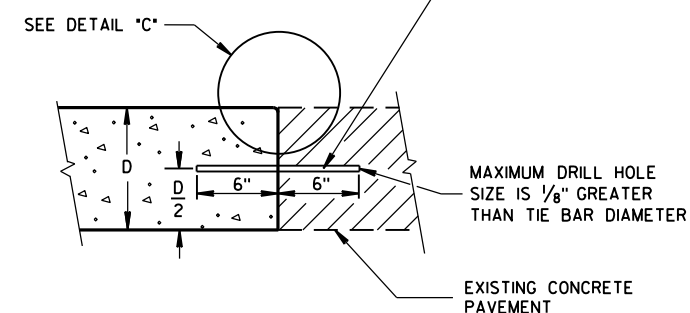
SAWED JOINT

GENERAL NOTES

- DO NOT SEAL OR FILL LONGITUDINAL JOINTS.
- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



PLAN VIEW

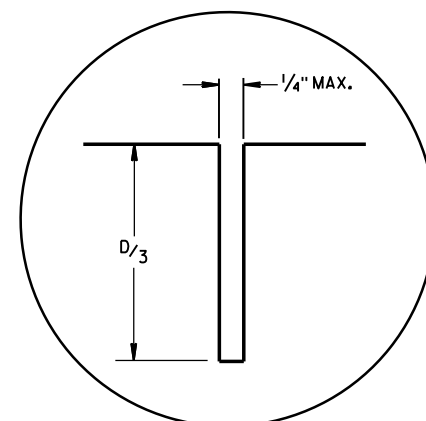


SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

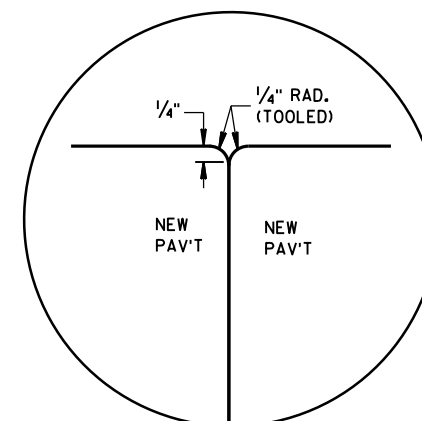
NO. 6 TIE BARS SPACED 30" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT. ①

MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

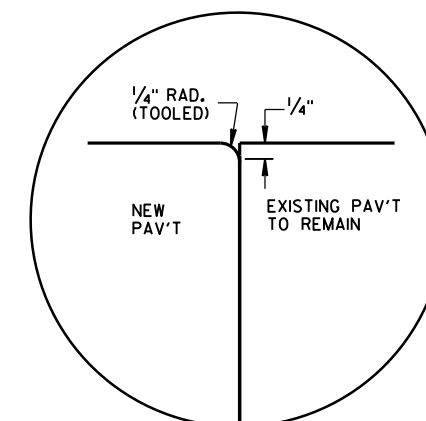
EXISTING CONCRETE
PAVEMENT



DETAIL "A"



DETAIL "B"



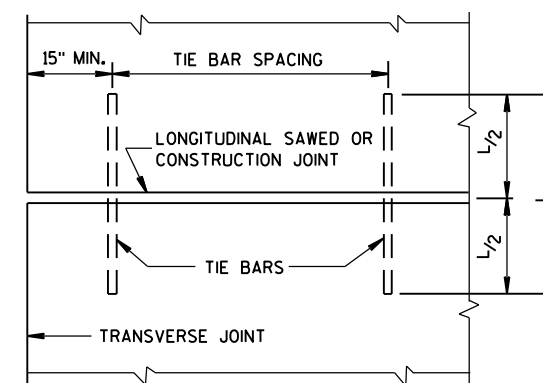
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

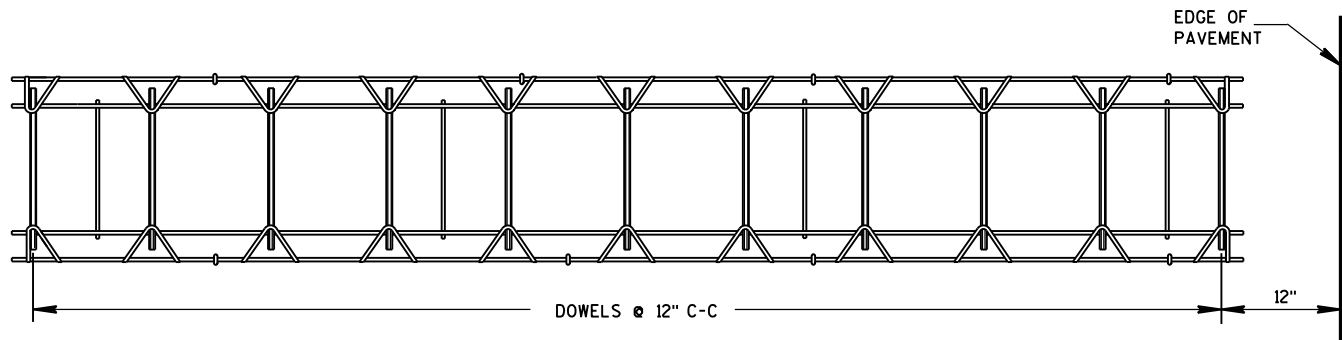


PLAN VIEW
SHOWING LOCATION OF TIE BARS

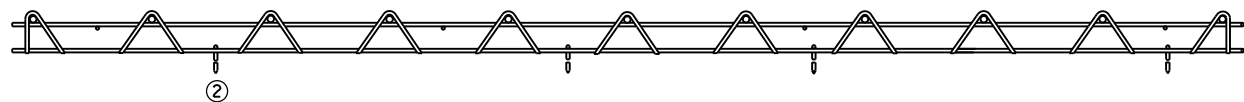
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

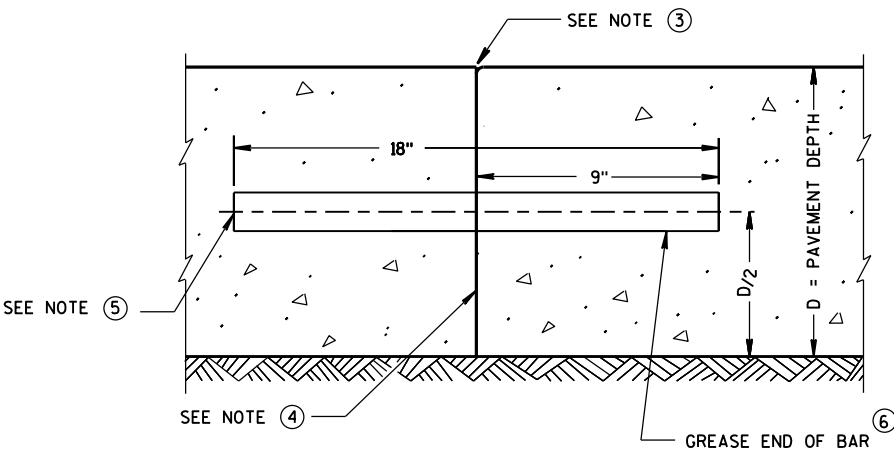
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



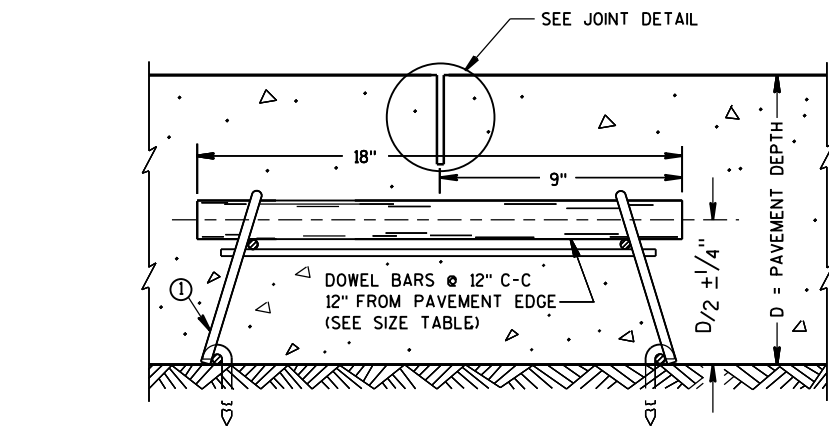
PLAN VIEW



SIDE VIEW
CONTRACTION JOINT DOWEL ASSEMBLY



TRANSVERSE CONSTRUCTION JOINT



DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

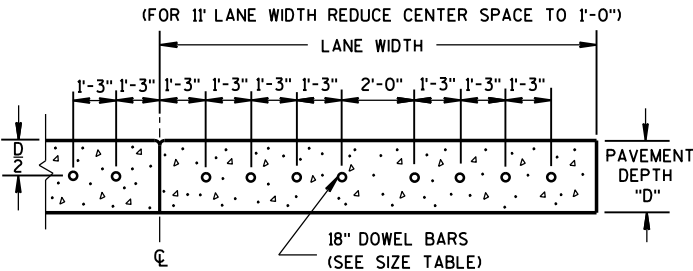
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

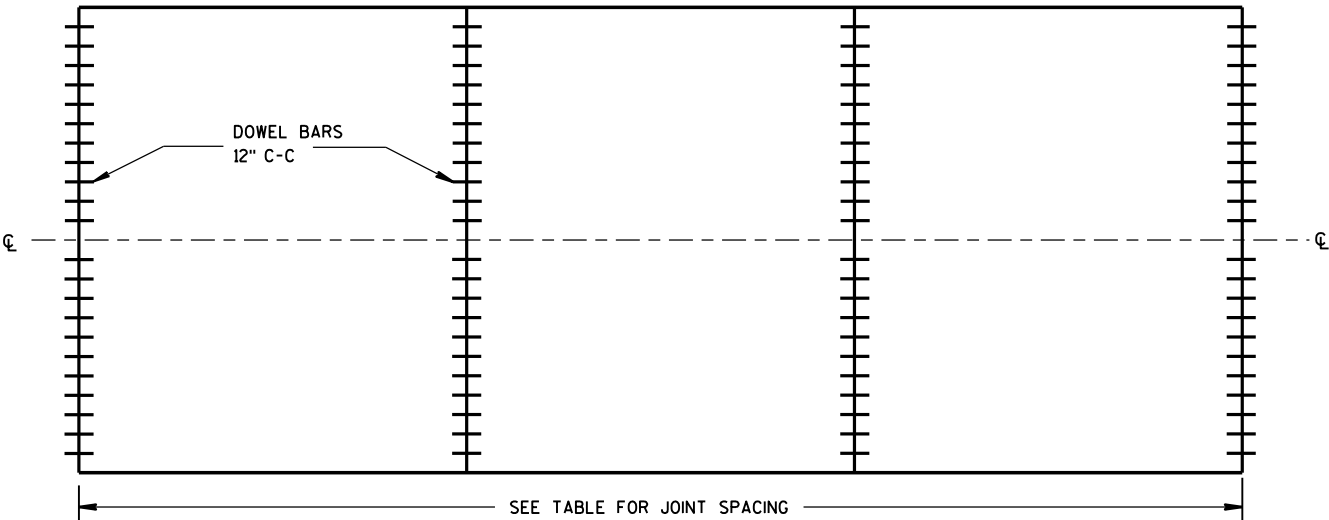
CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

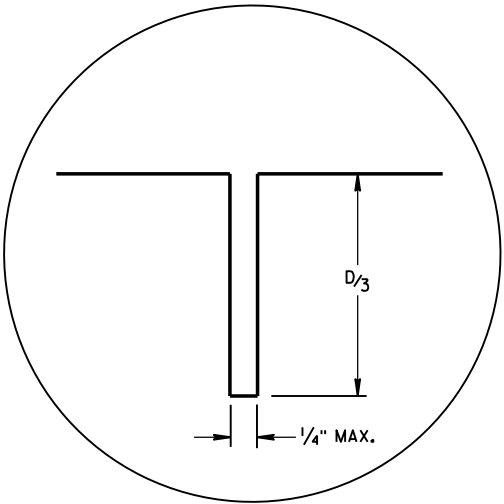
- OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.
- PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DRILLED DOWEL BAR CONSTRUCTION JOINT



CONTRACTION JOINT LOCATIONS

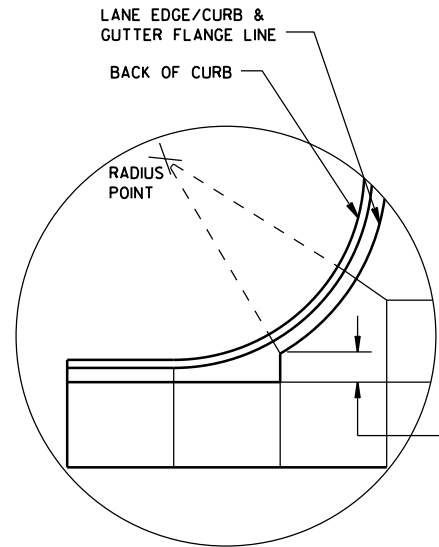


JOINT DETAIL

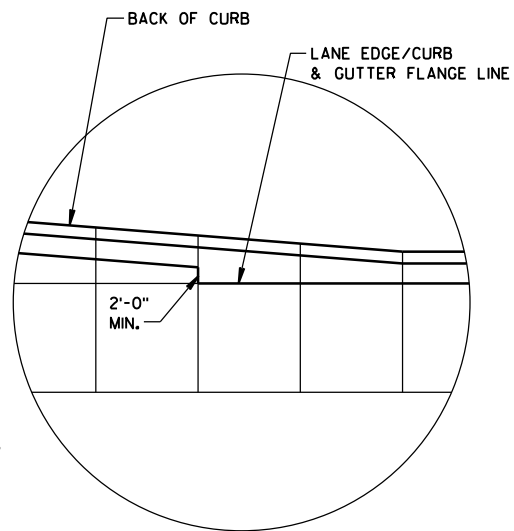
URBAN DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

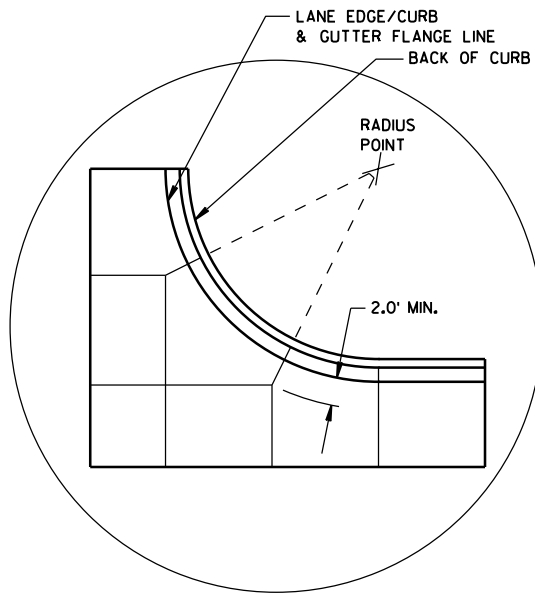
APPROVED
5/3/2013 /S/ Deb Bischoff
DATE PAVEMENT POLICY & DESIGN ENGINEER
FHWA



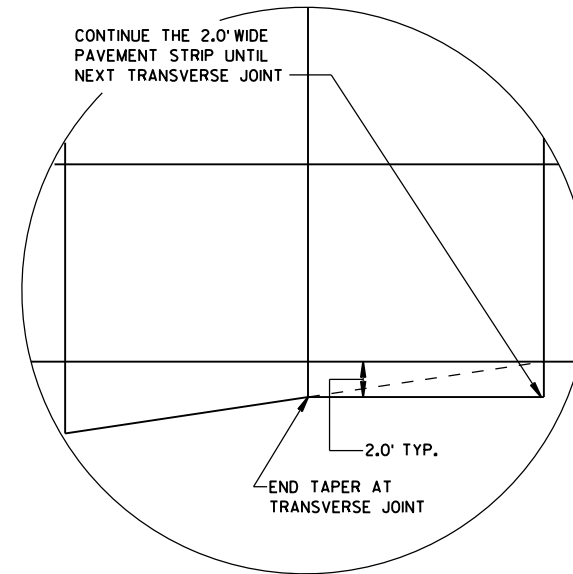
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

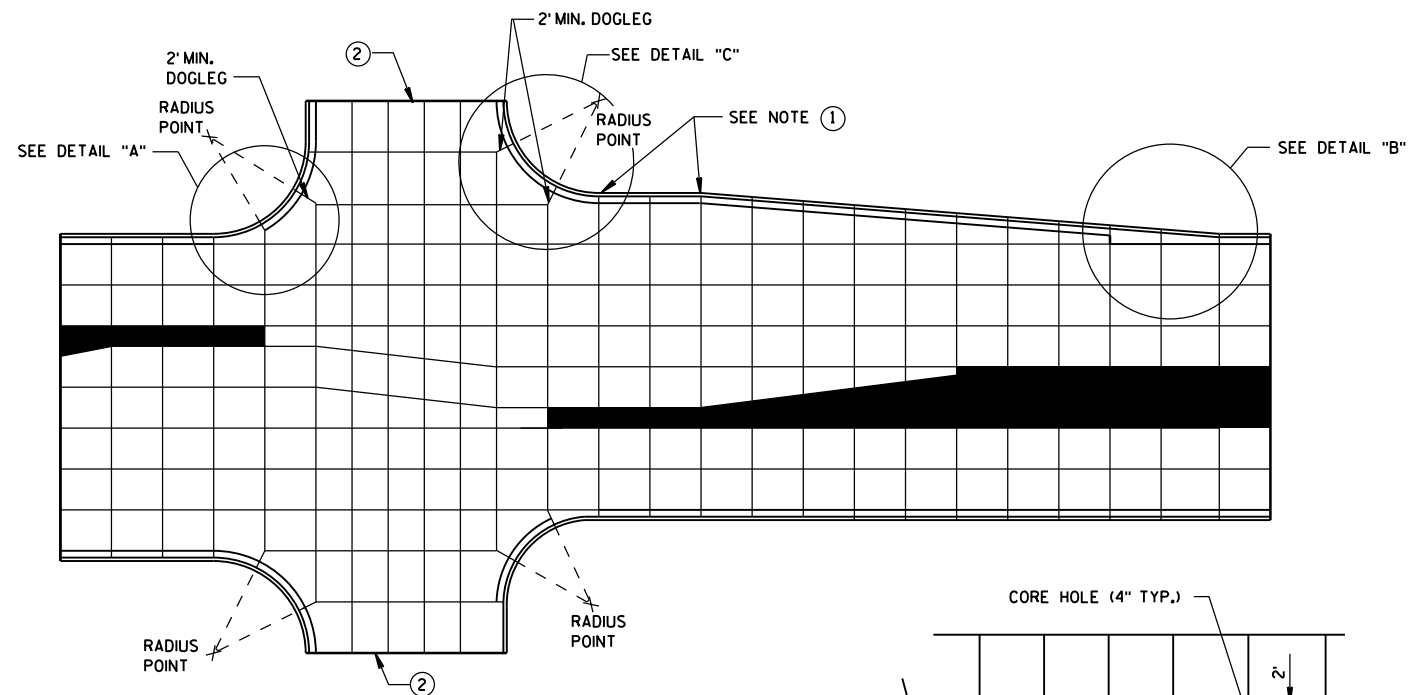
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

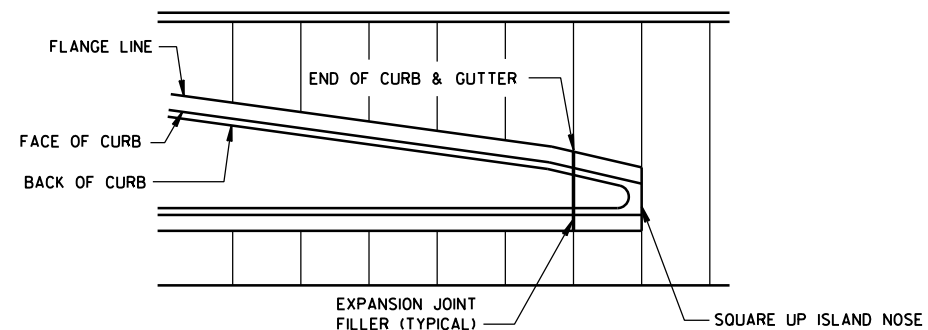
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

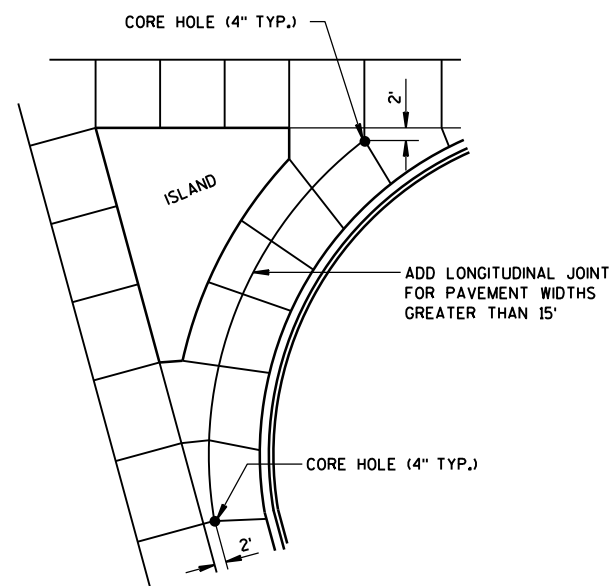
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



STANDARD INTERSECTION



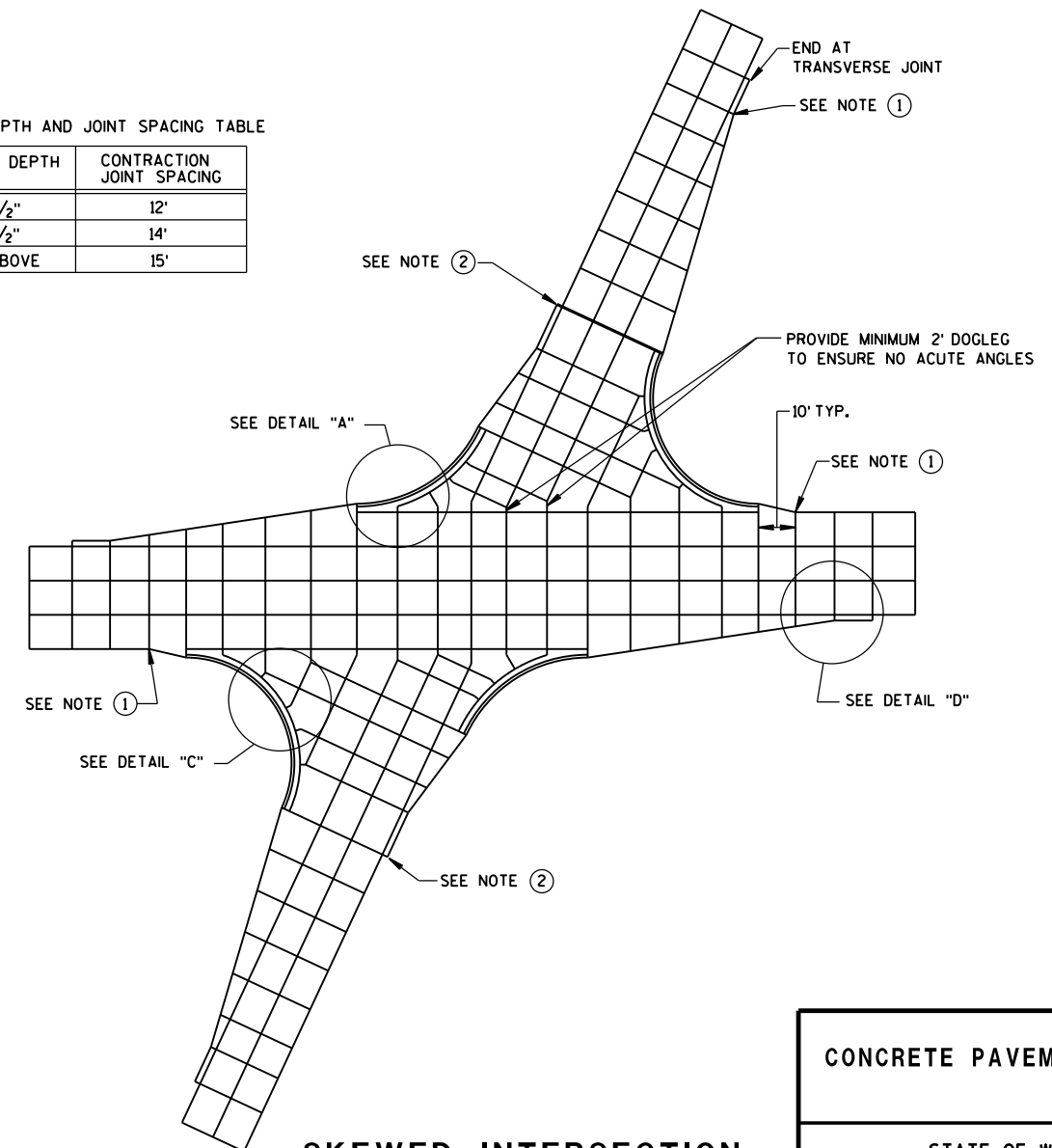
APPROACH TO MEDIAN



LARGE RIGHT TURN

PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

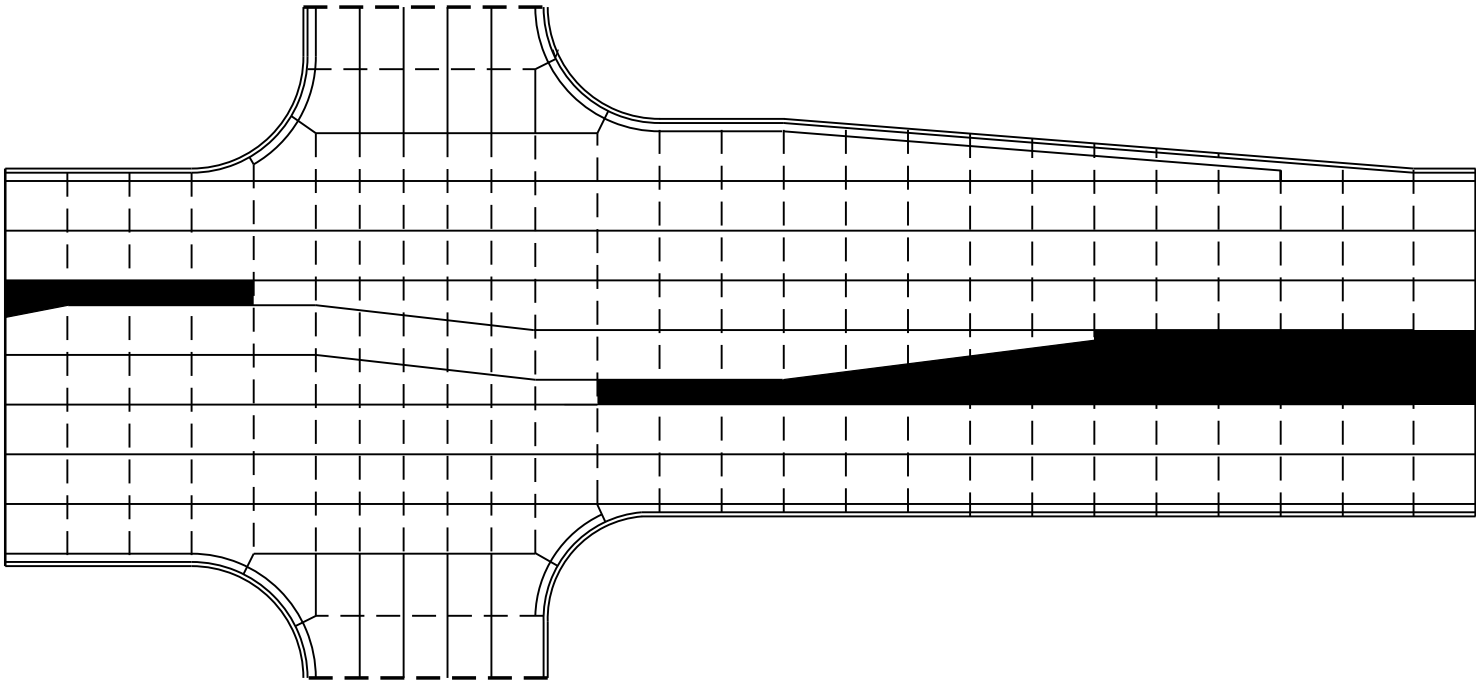
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

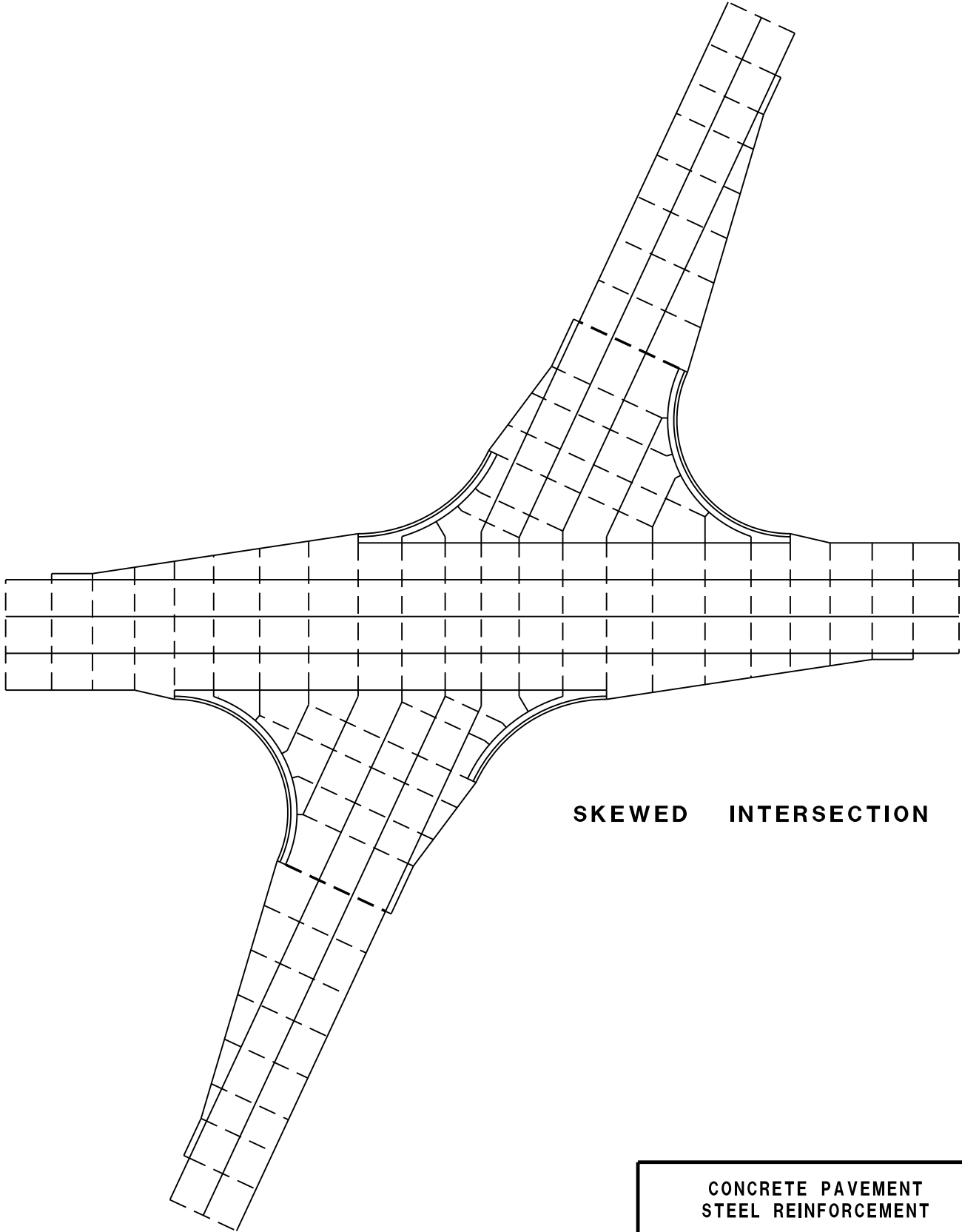
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT

GENERAL NOTES

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



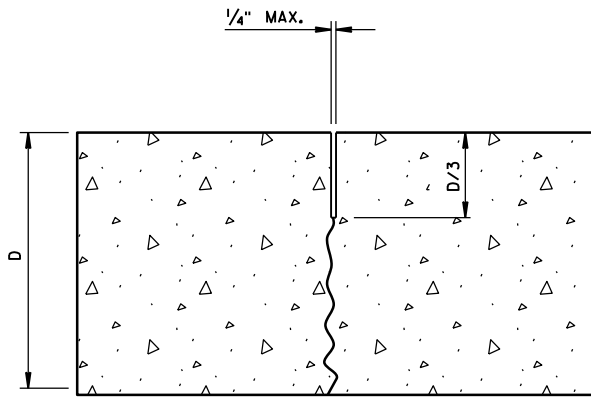
STANDARD INTERSECTION



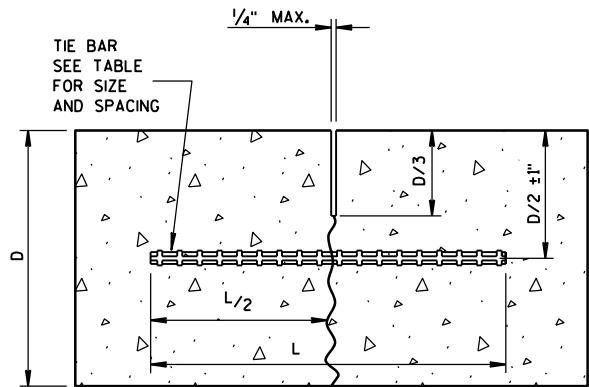
SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

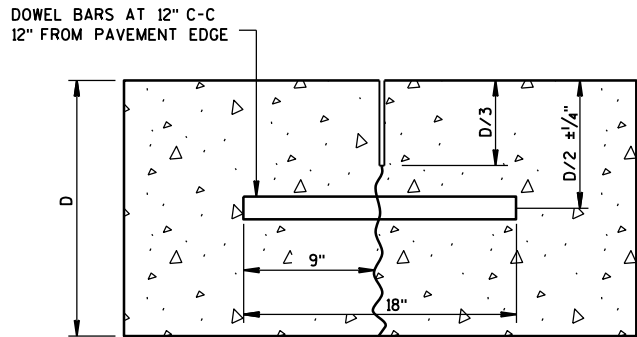
TIE BAR TABLE			
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
	NO. 5	36"	36"
≥ 10 1/2"	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

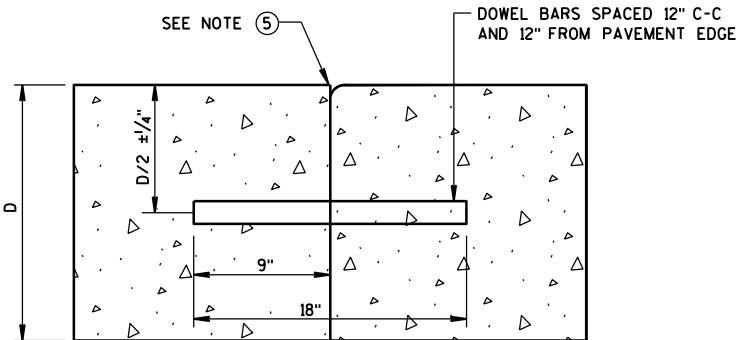
- 1 USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- 2 SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
- 3 LOCATE CONSTRUCTION JOINTS A MINIMUM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



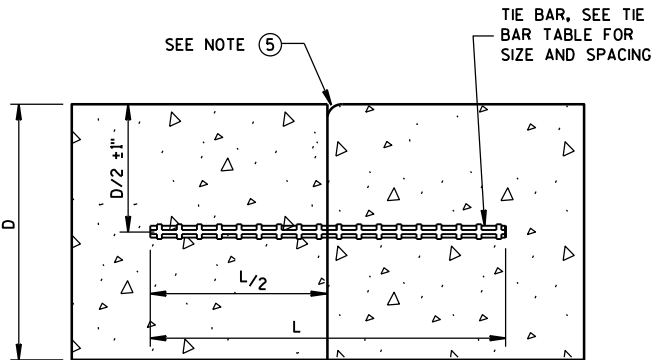
DOWELED-TRANSVERSE

CONTRACTION JOINTS

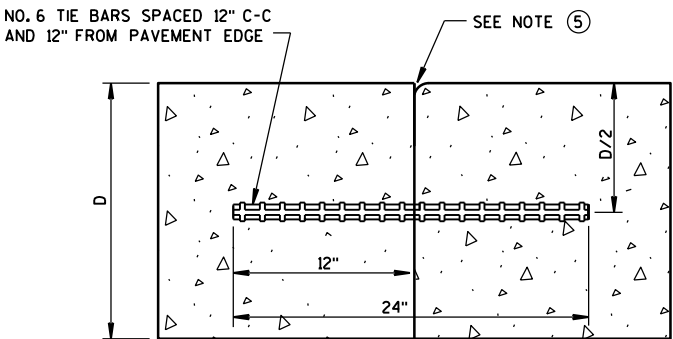
SEE NOTE 2



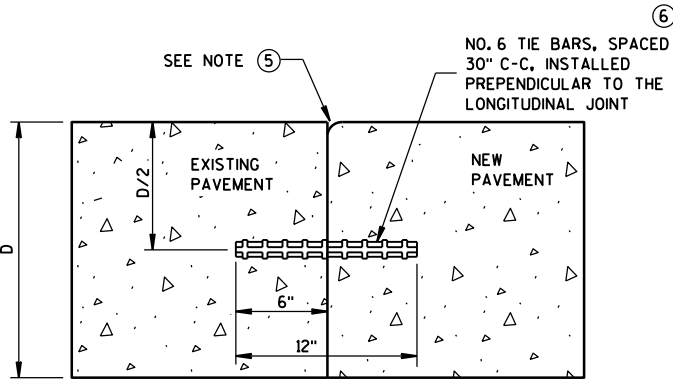
DOWELED TRANSVERSE 3



TIED LONGITUDINAL



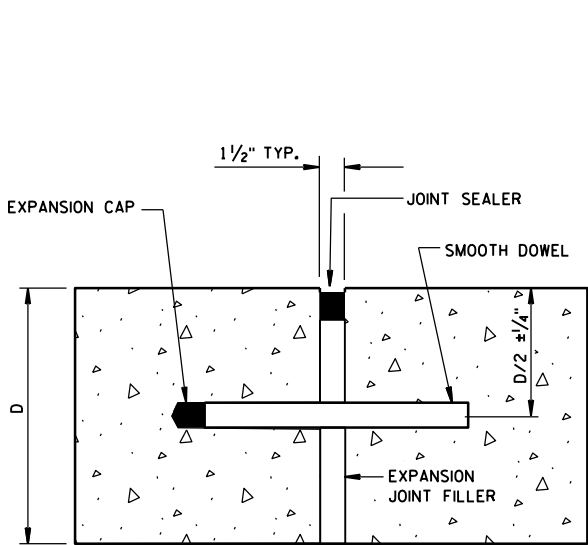
TIED TRANSVERSE 3
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



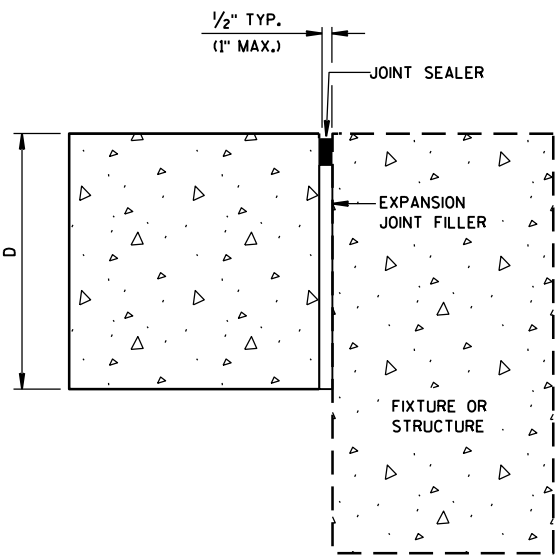
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS

SEE NOTE 4



DOWELED-TRANSVERSE
SEE NOTE 1

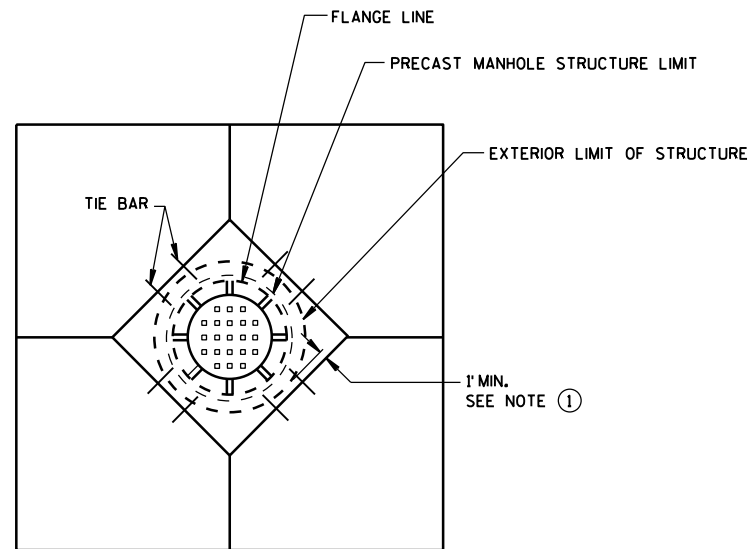


UNTIED-LONGITUDINAL

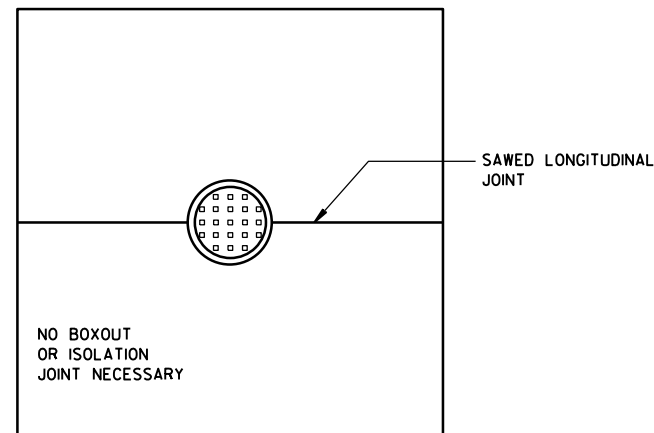
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

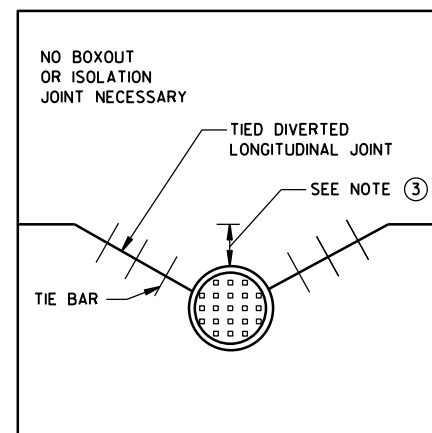
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



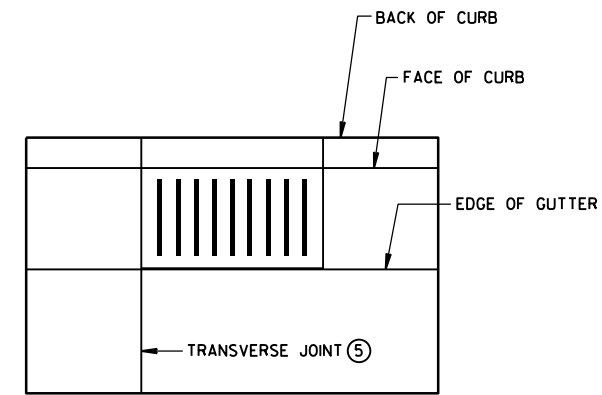
**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**



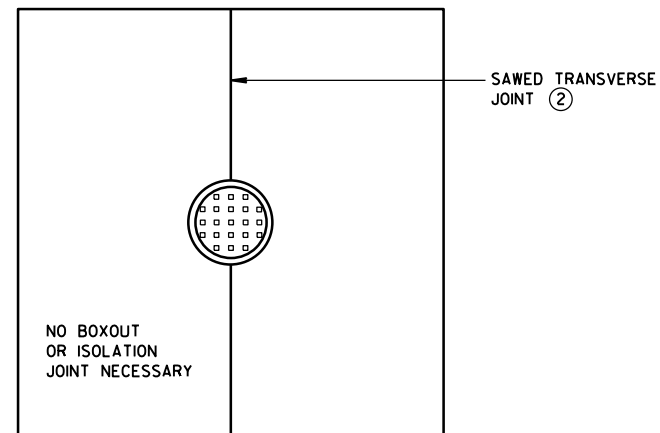
**MANHOLE WITH
LONGITUDINAL JOINT**



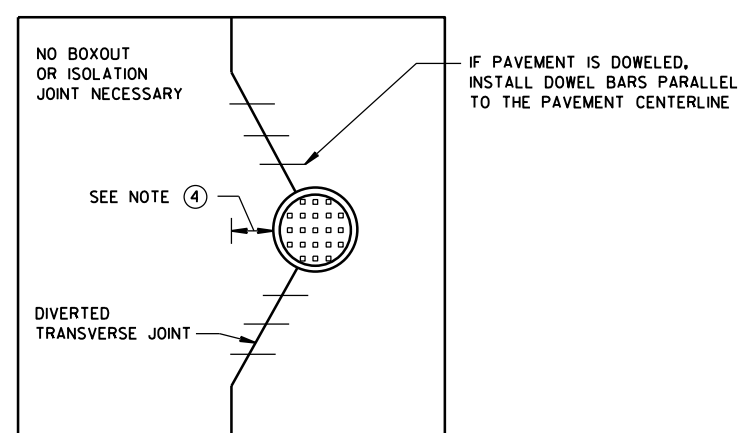
**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH
TRANSVERSE JOINT**



**MANHOLE WITH
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

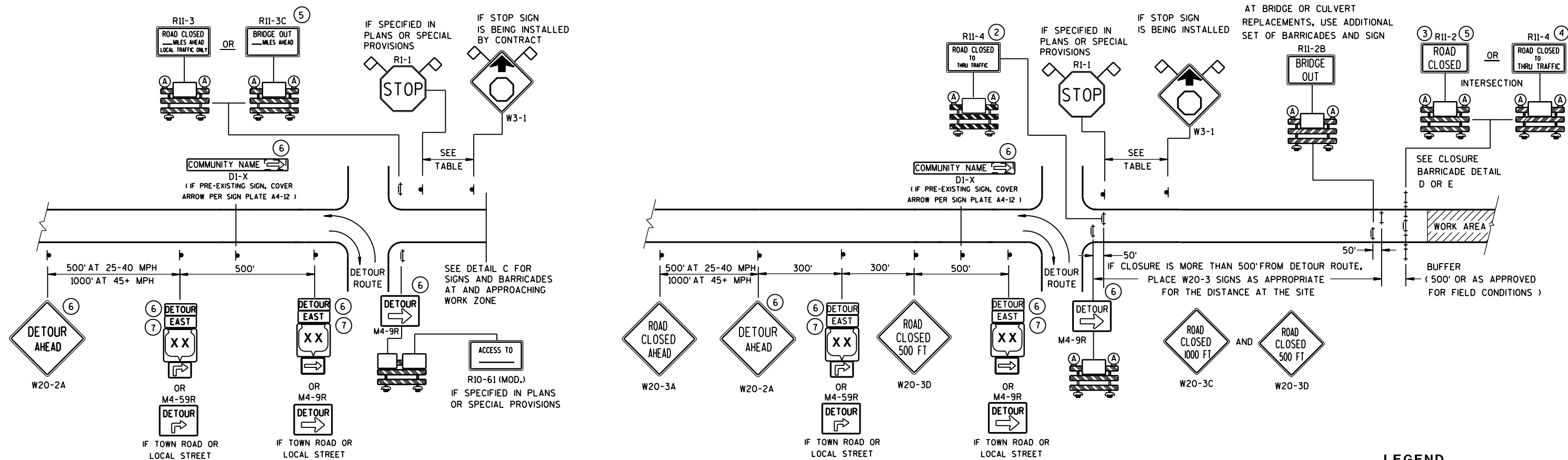
GENERAL NOTES

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ④ IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

**CONCRETE PAVEMENT
JOINTING AT UTILITY FIXTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

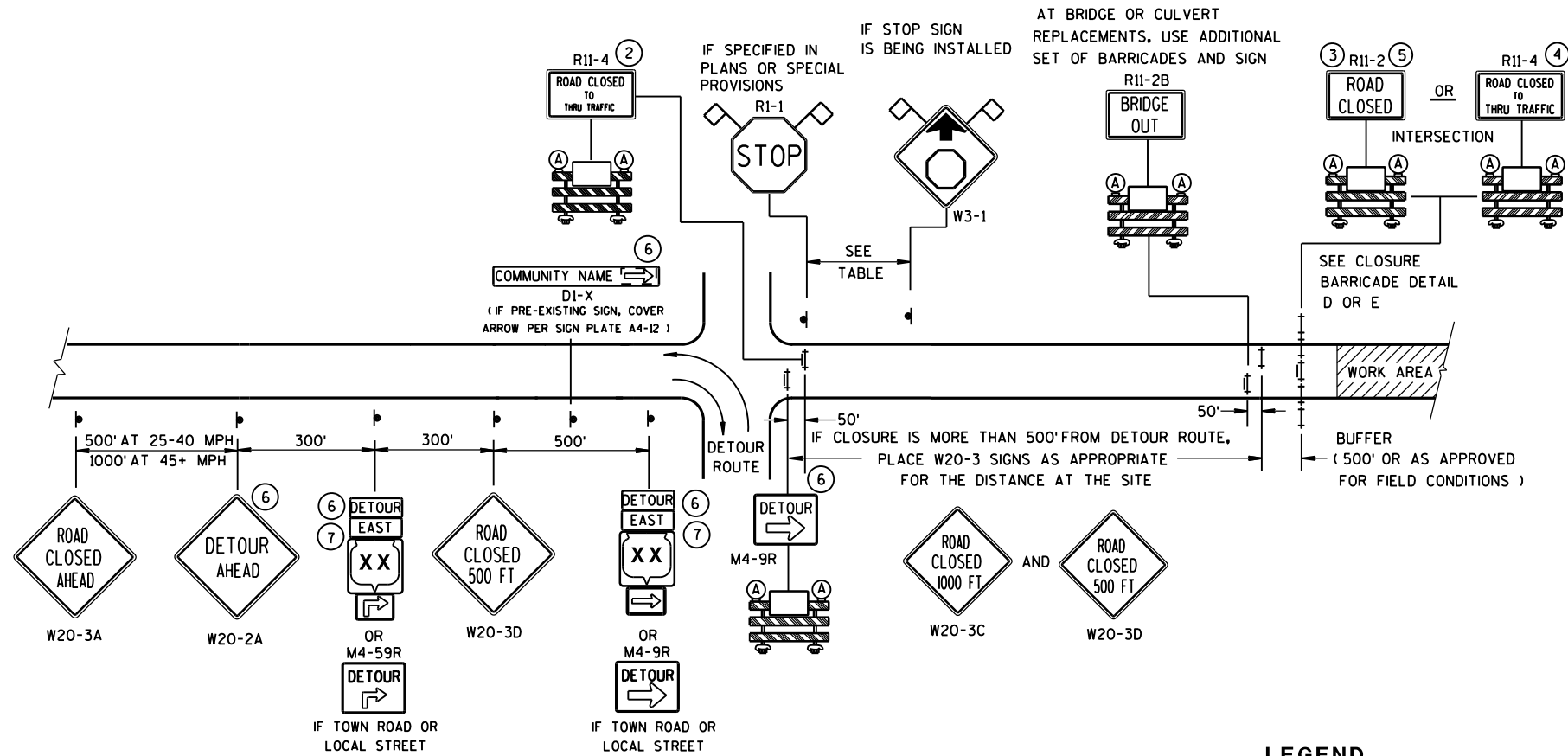
APPROVED
December, 2016 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

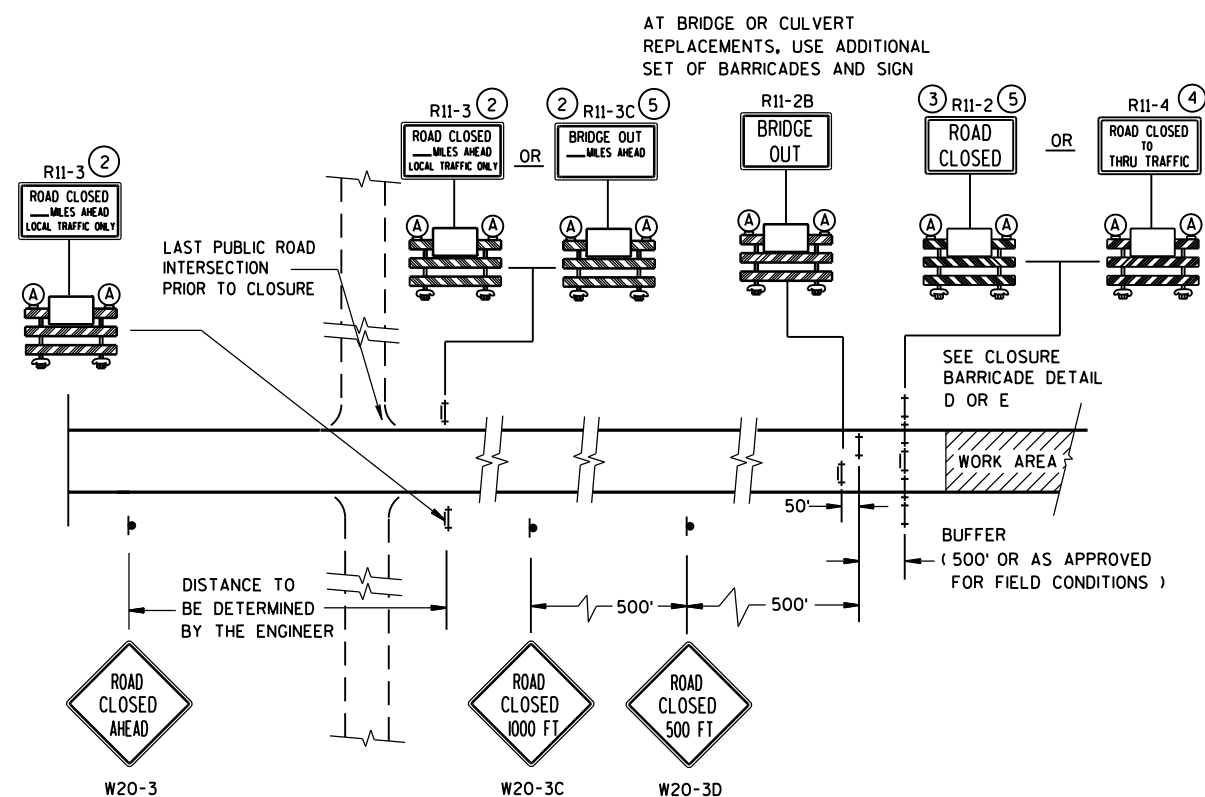
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR














WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

- ### LEGEND

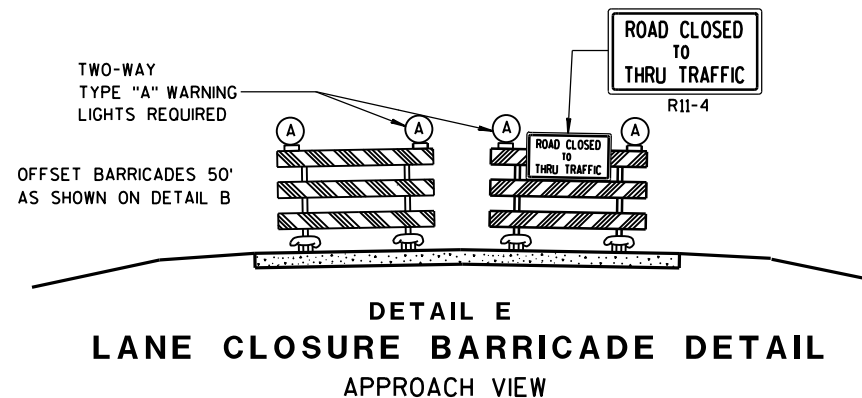
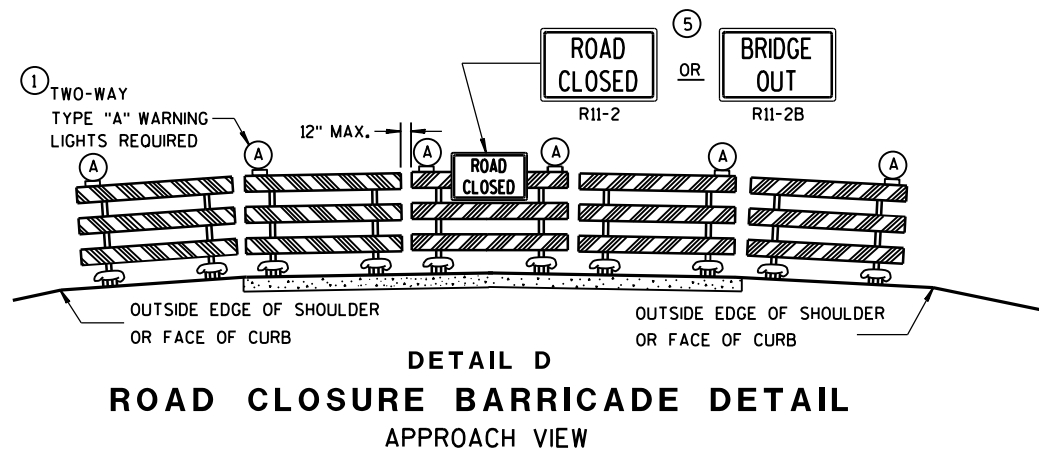
-  SIGN ON PERMANENT SUPPORT
 TYPE III BARRICADE
 TYPE III BARRICADE WITH ATTACHED SIGN
 TYPE "A" WARNING LIGHT (FLASHING)
 WORK AREA
 M4-8
 M3-X
 M1-4
OR
 M1-5A
OR
 M1-6
 M05-1
OR
 M06-1
 FLAGS, 16" X 16" MIN., (ORANGE)

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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.

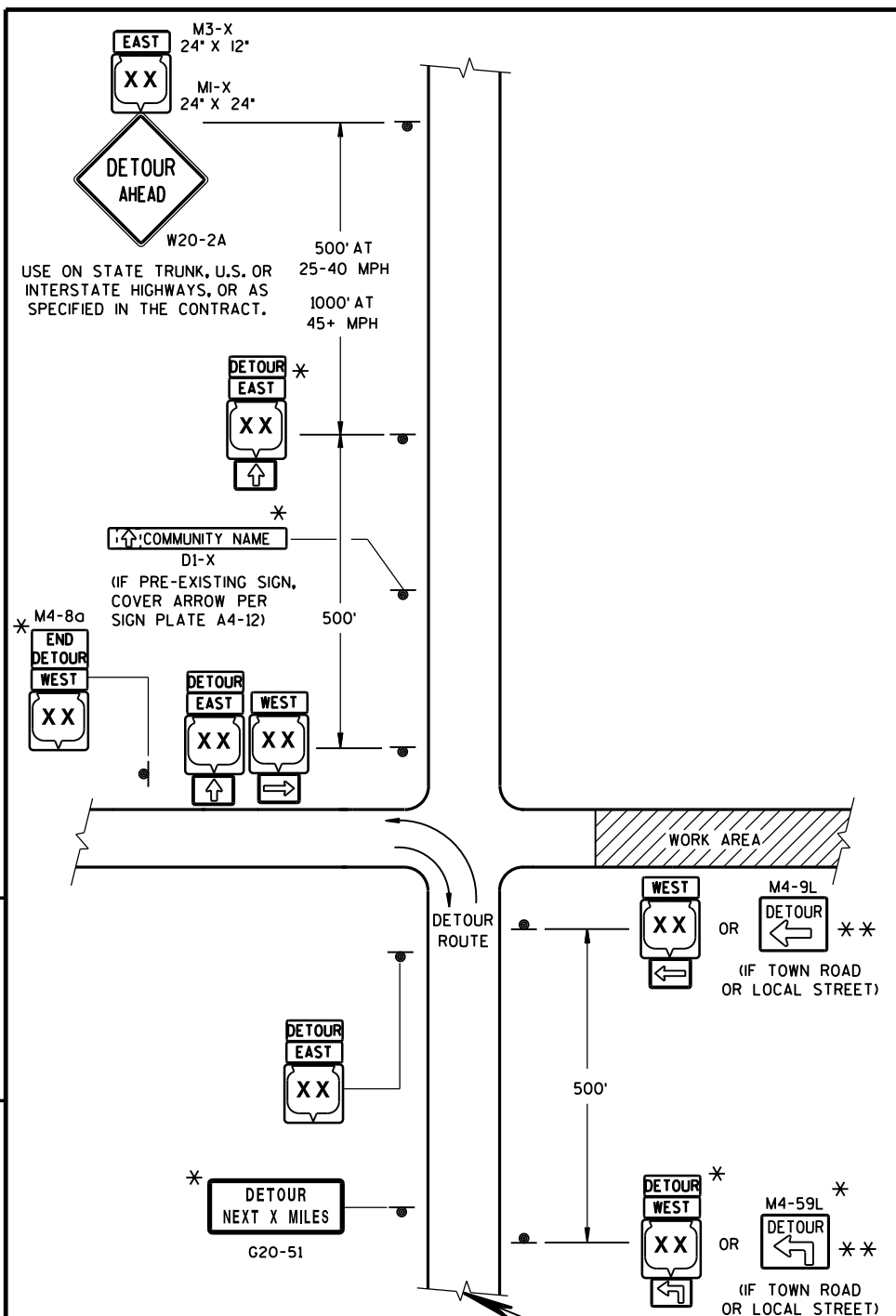
R1-1 SHALL BE 36" X 36".

- 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 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



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

MATCH POINT

DETAIL F
DETOUR SIGNING

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.

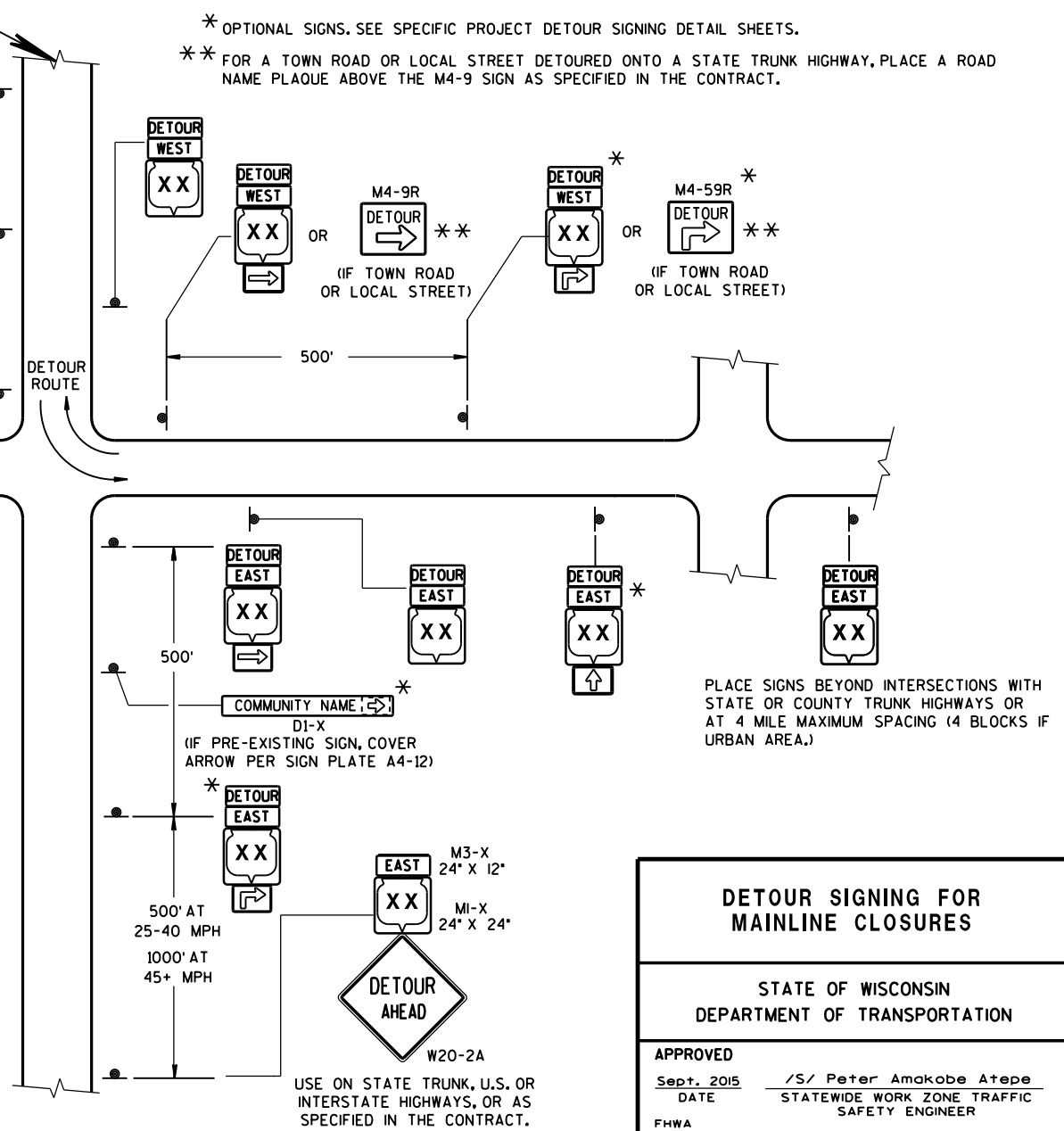
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

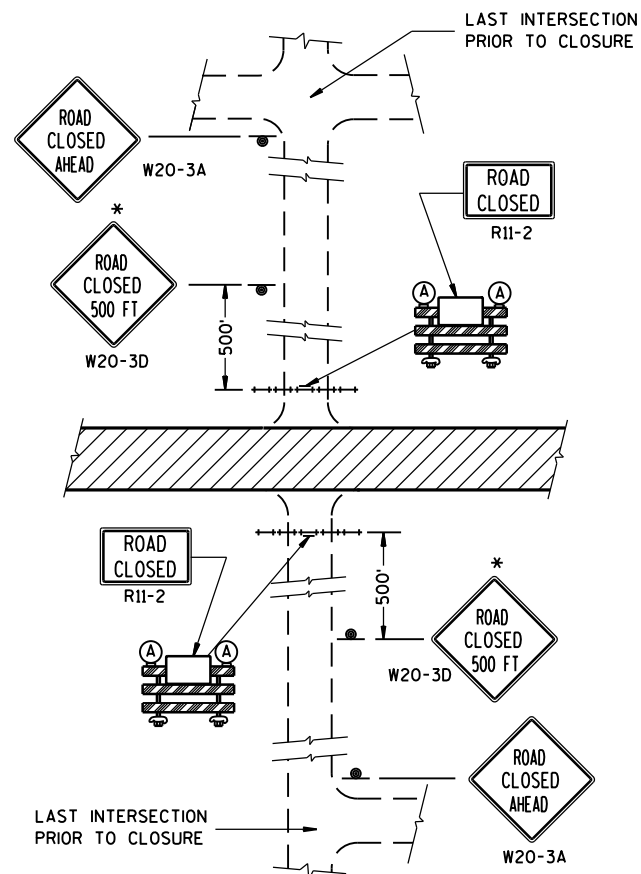
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO 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.

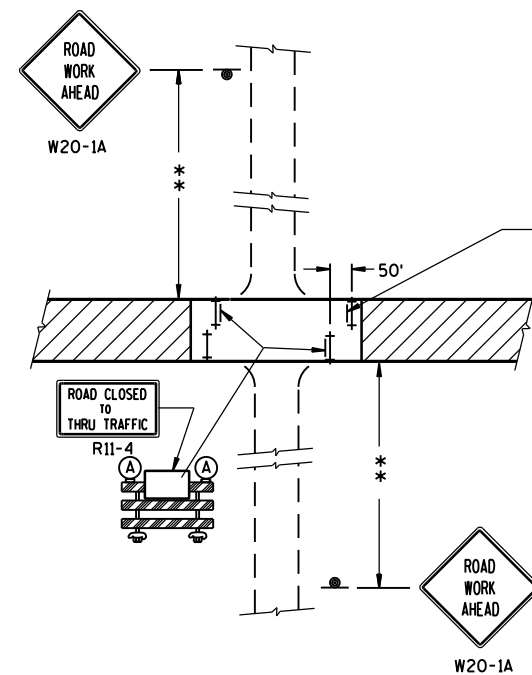
** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



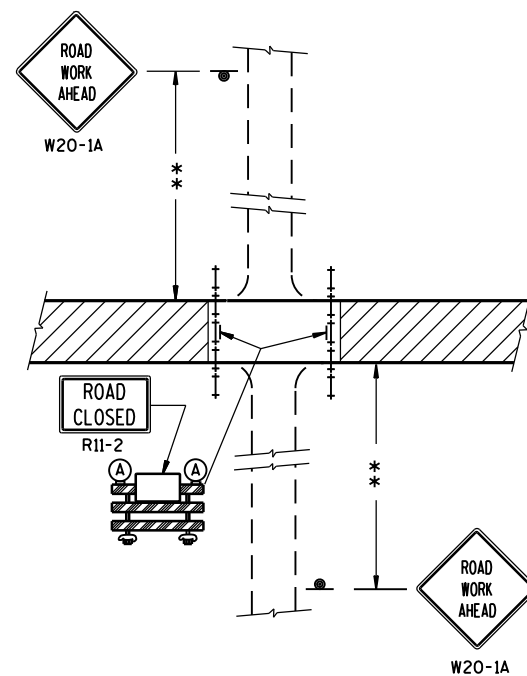
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FWHA	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER



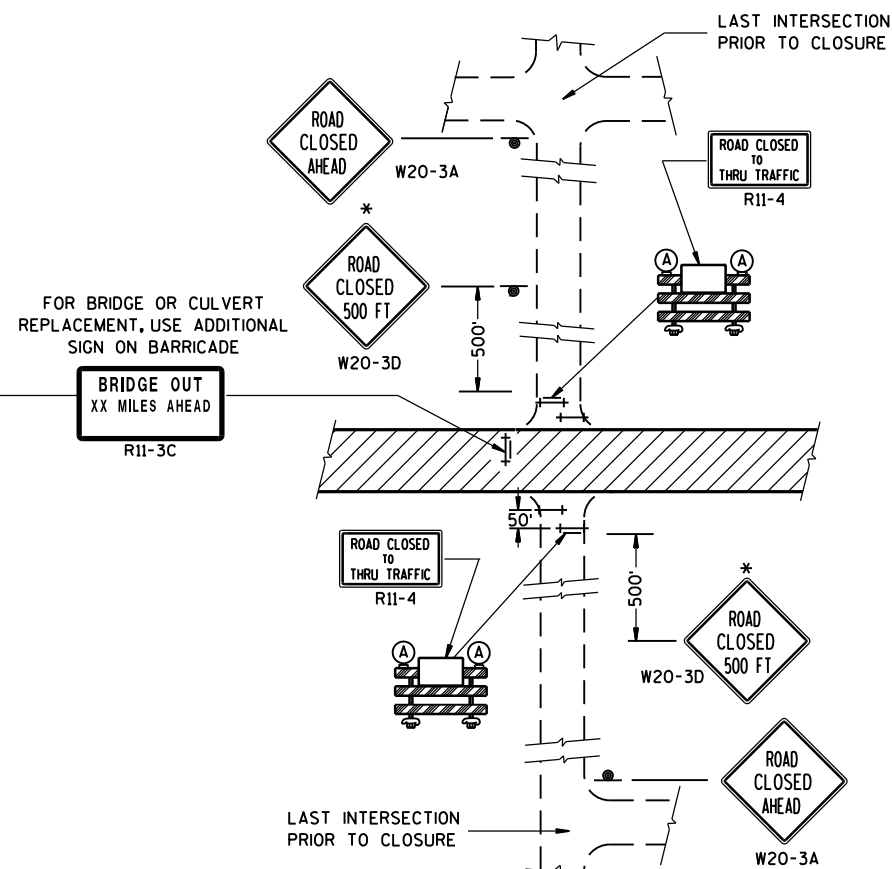
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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.

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.

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015

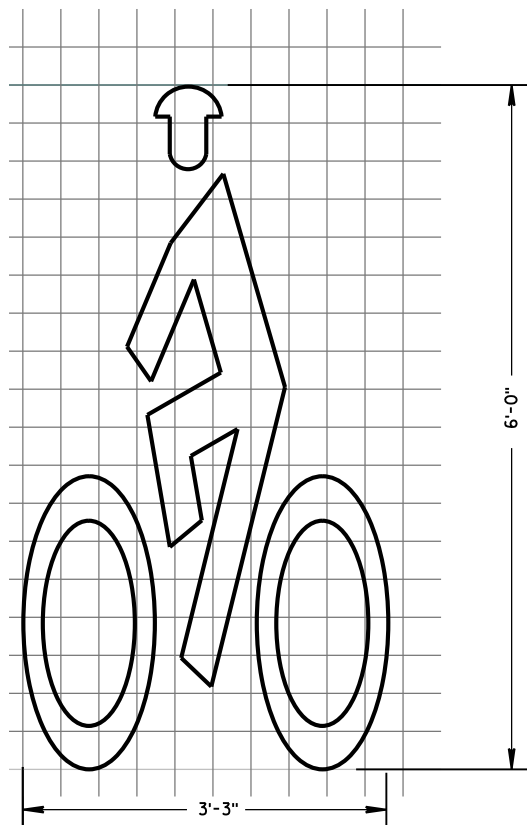
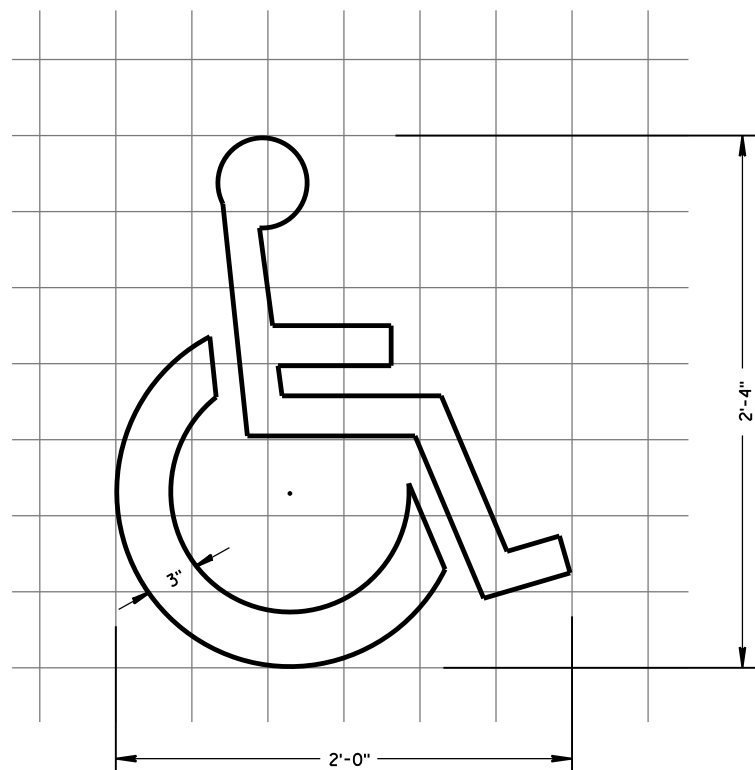
DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC

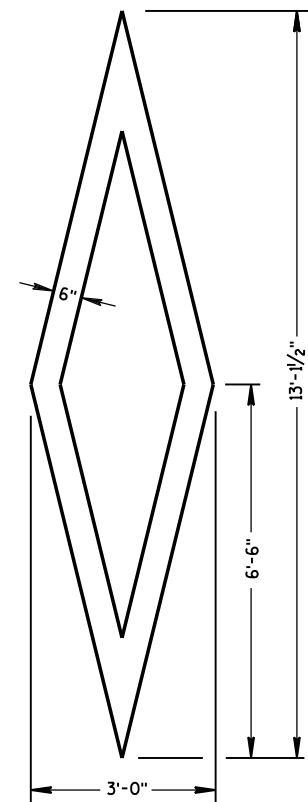
SAFETY ENGINEER



BIKE CROSSING SYMBOL

GENERAL NOTES

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

PREFERENTIAL
LANE SYMBOL

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/18/16

DATE

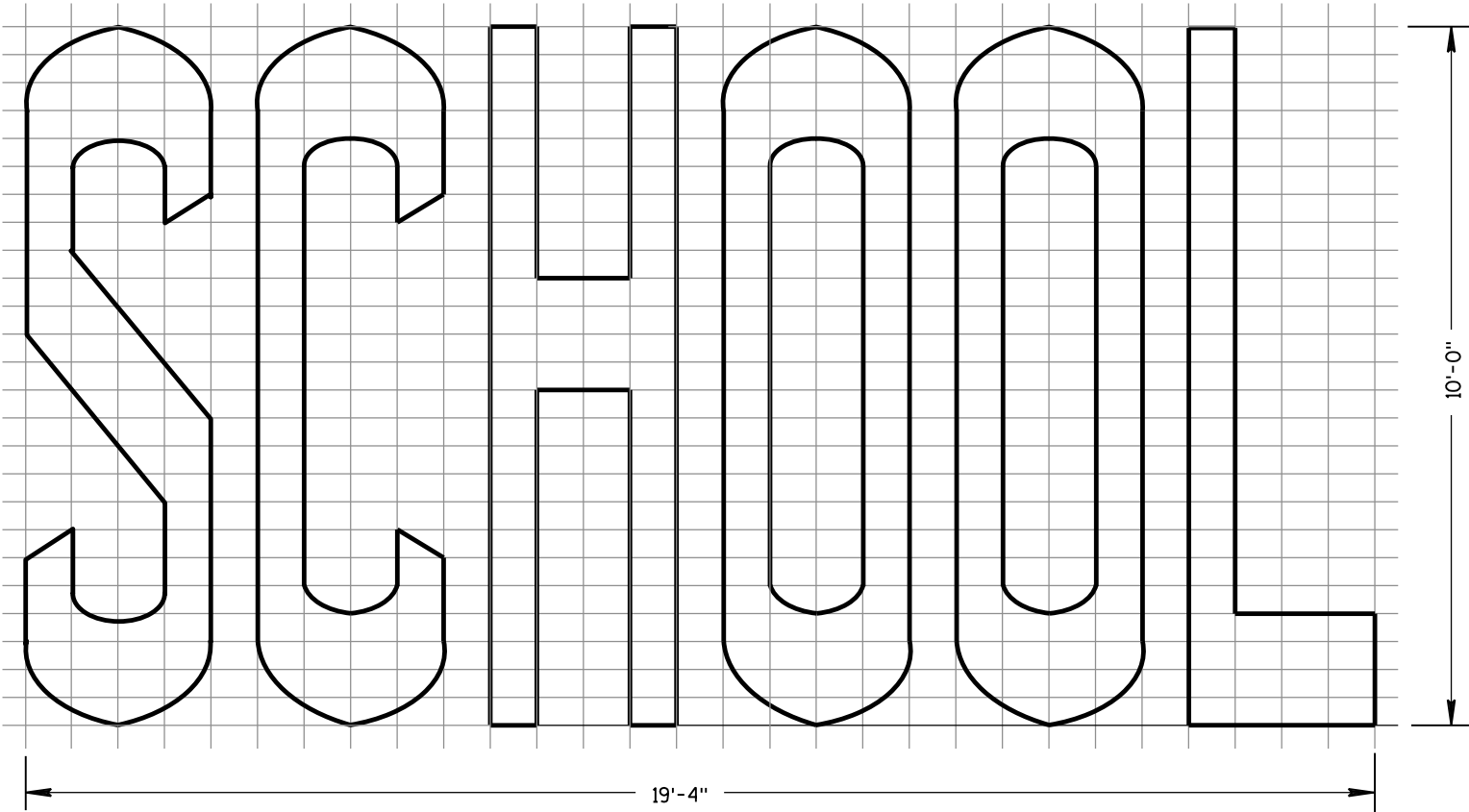
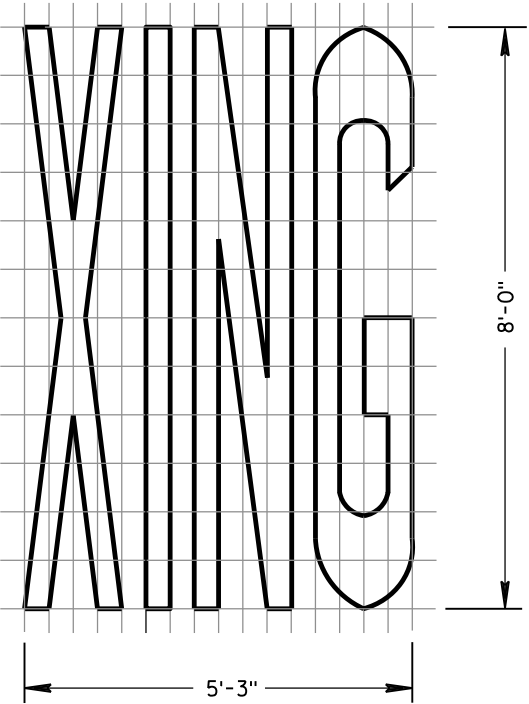
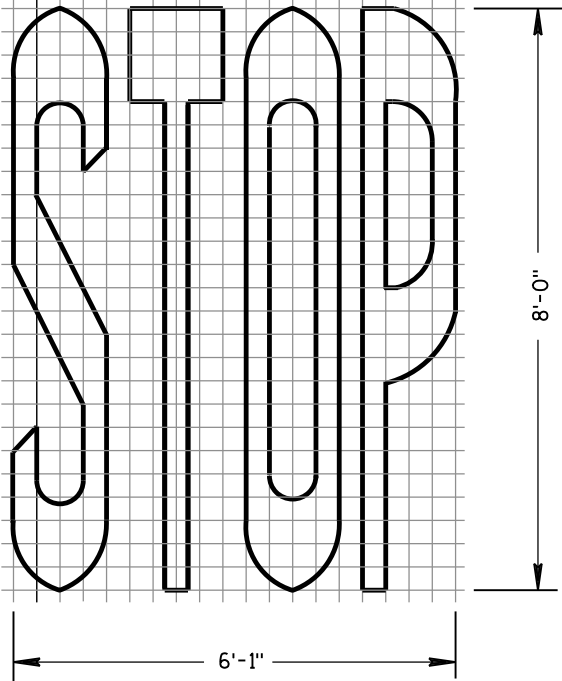
/S/ Matthew R. Rauch

STATE SIGNING AND MARKING ENGINEER

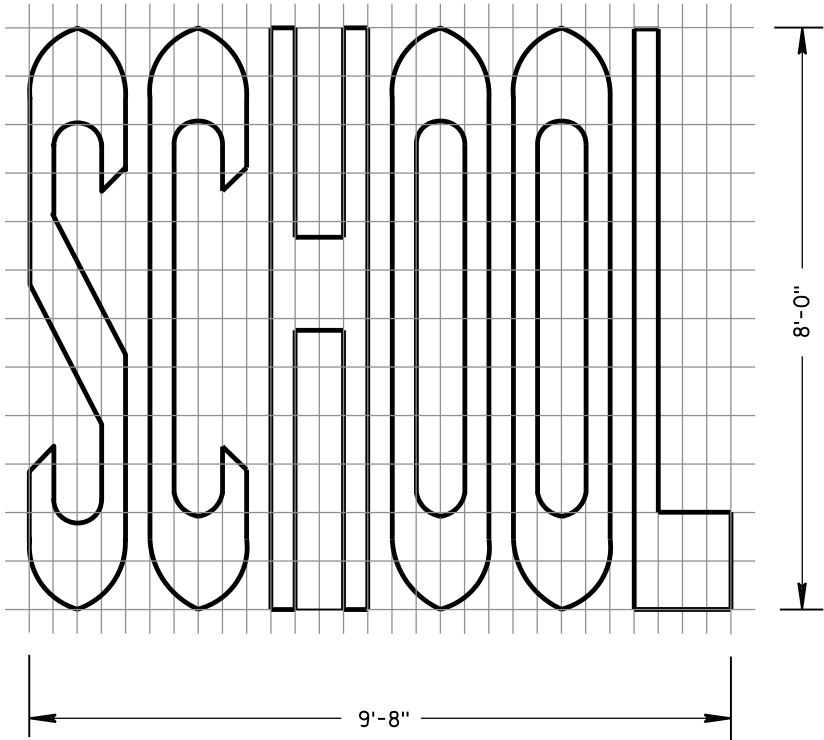
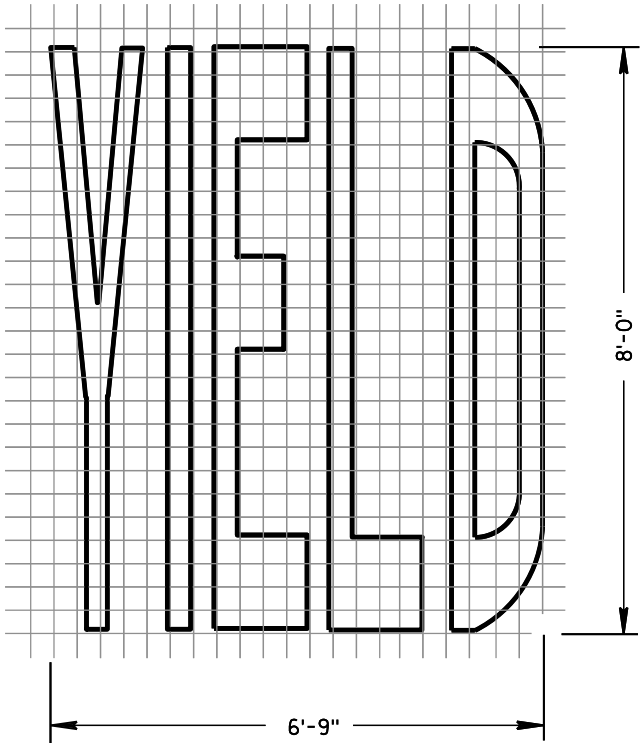
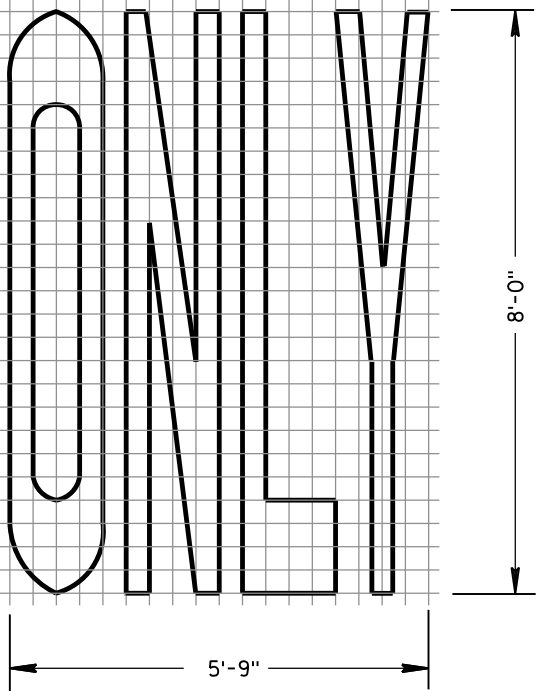
FHWA

GENERAL NOTES

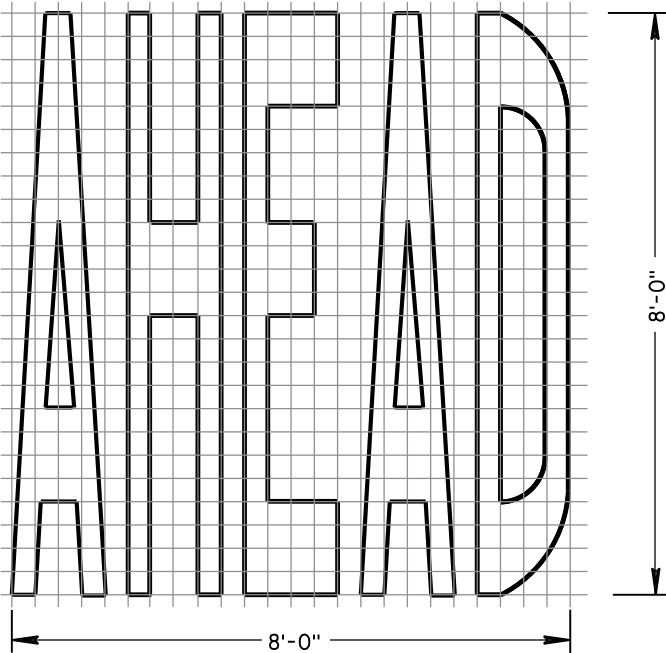
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



TWO-LANE



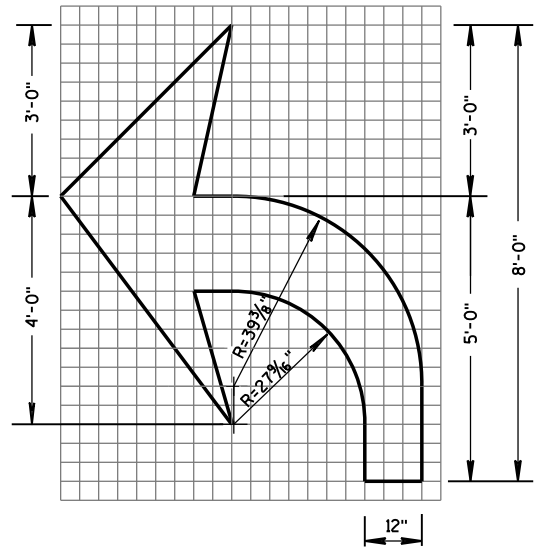
SINGLE-LANE



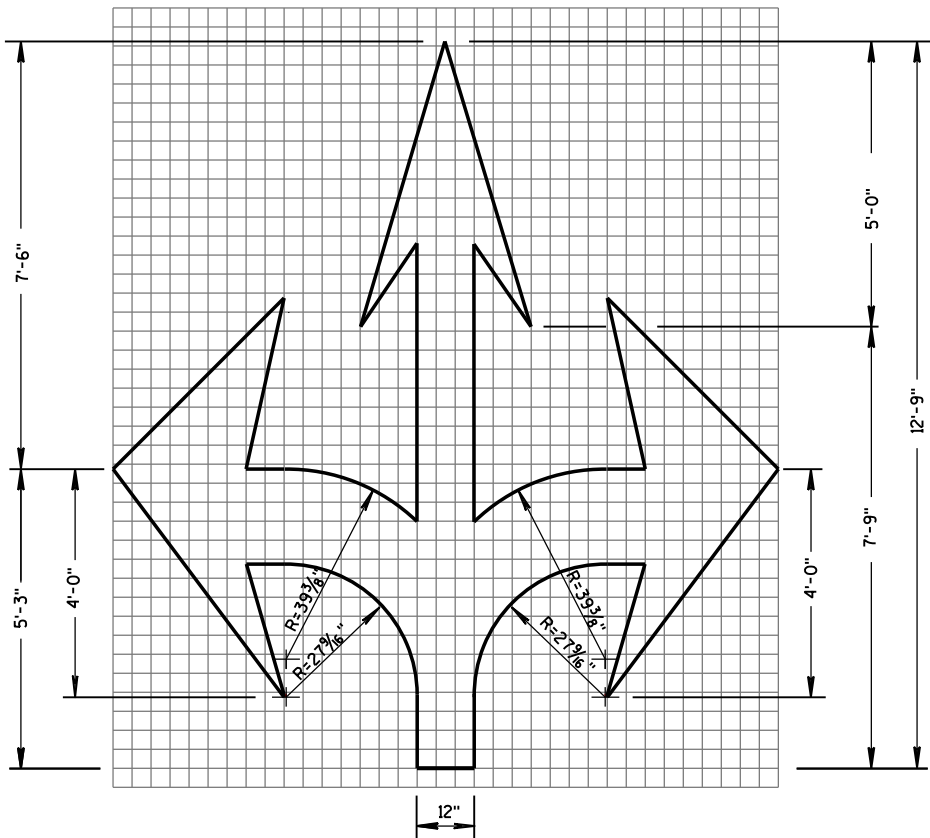
PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

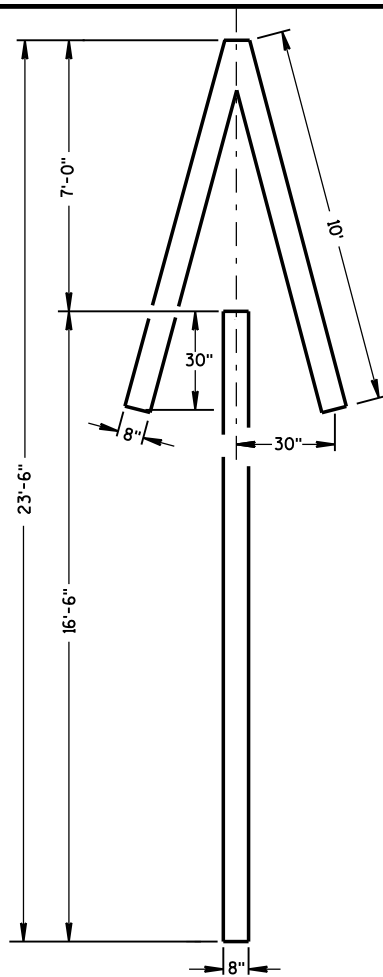
APPROVED
4-18-16 DATE /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



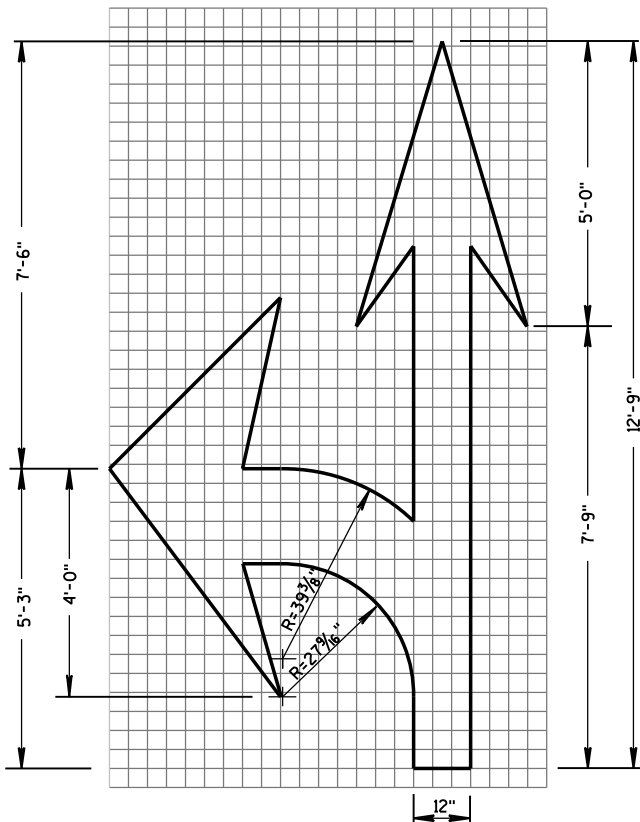
TYPE 2



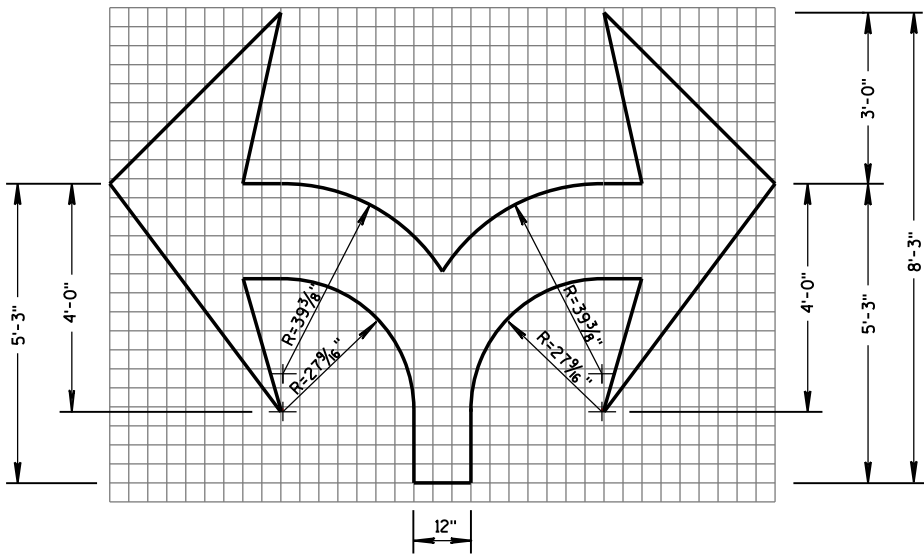
TYPE 6



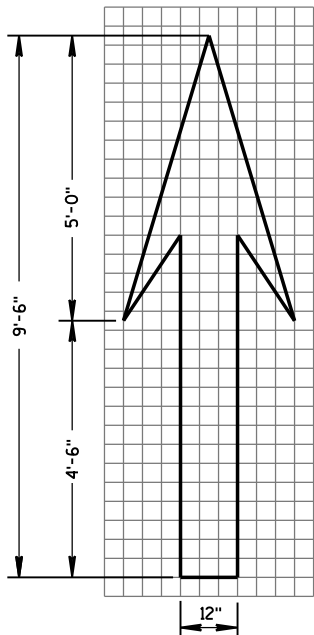
TYPE 4



TYPE 3



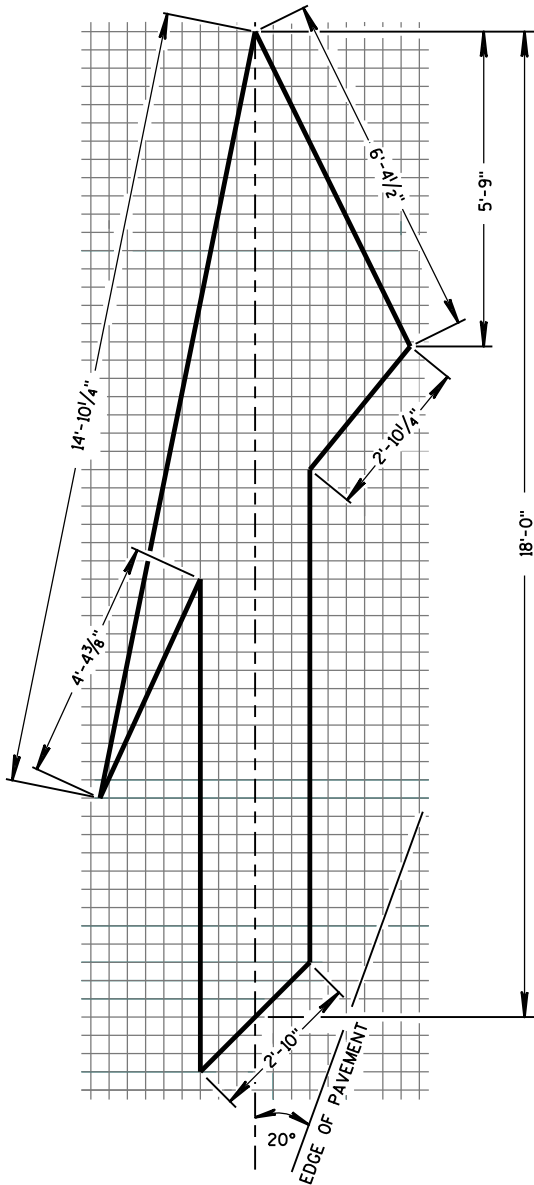
TYPE 7



TYPE 1

GENERAL NOTES

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

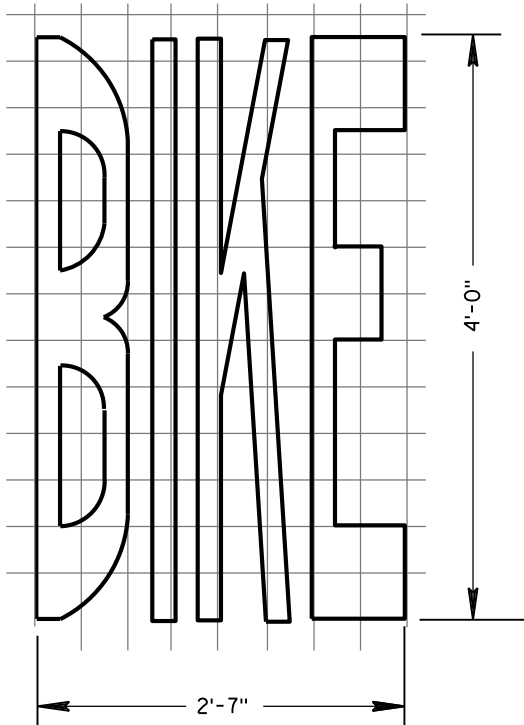


TYPE 5 LANE DROP ARROW

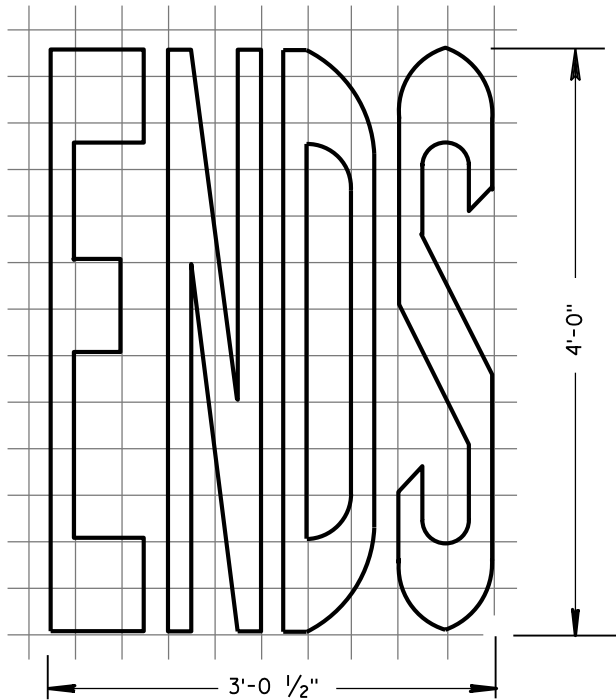
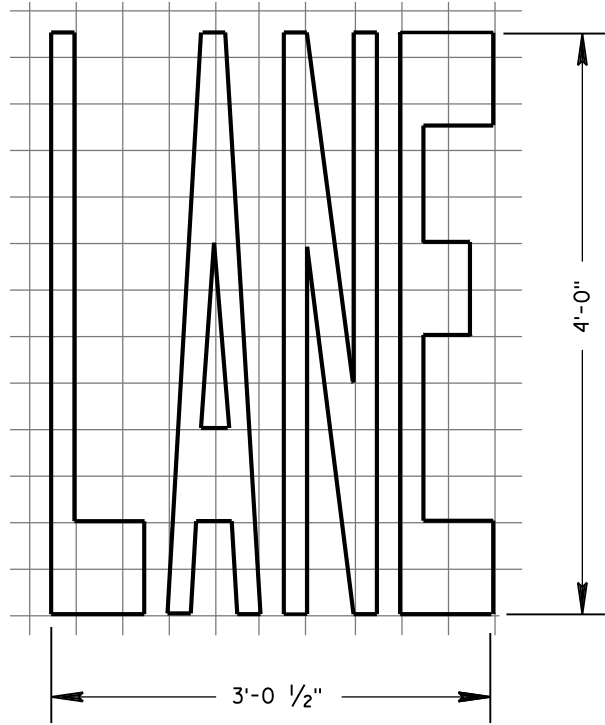
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

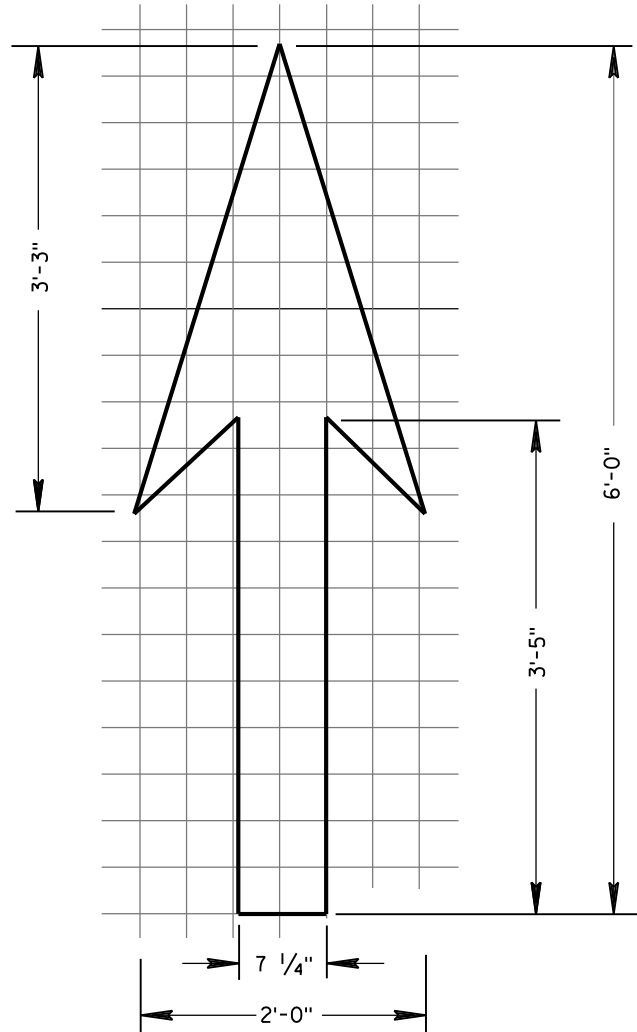
APPROVED
4-18-16 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



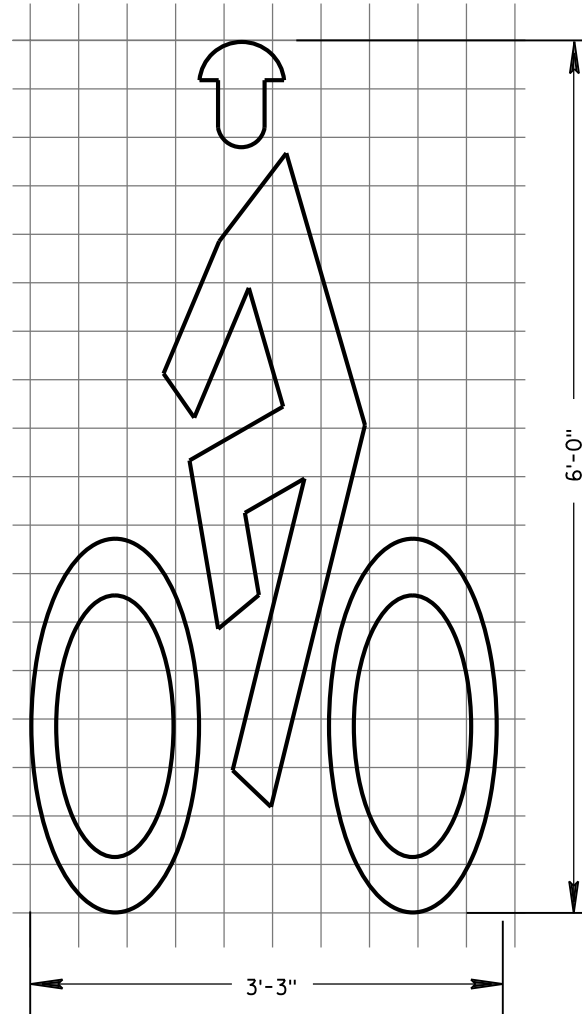
BIKE LANE WORDS



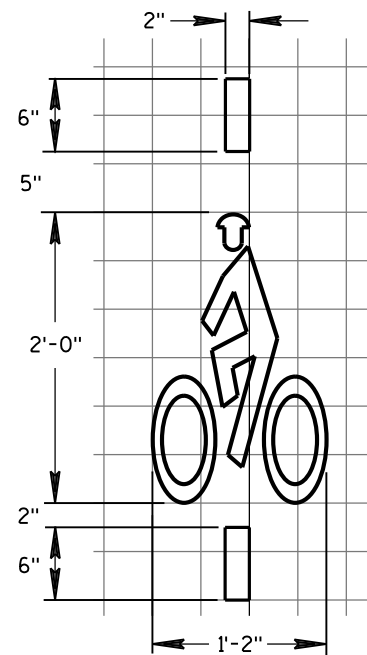
BIKE LANE WORDS



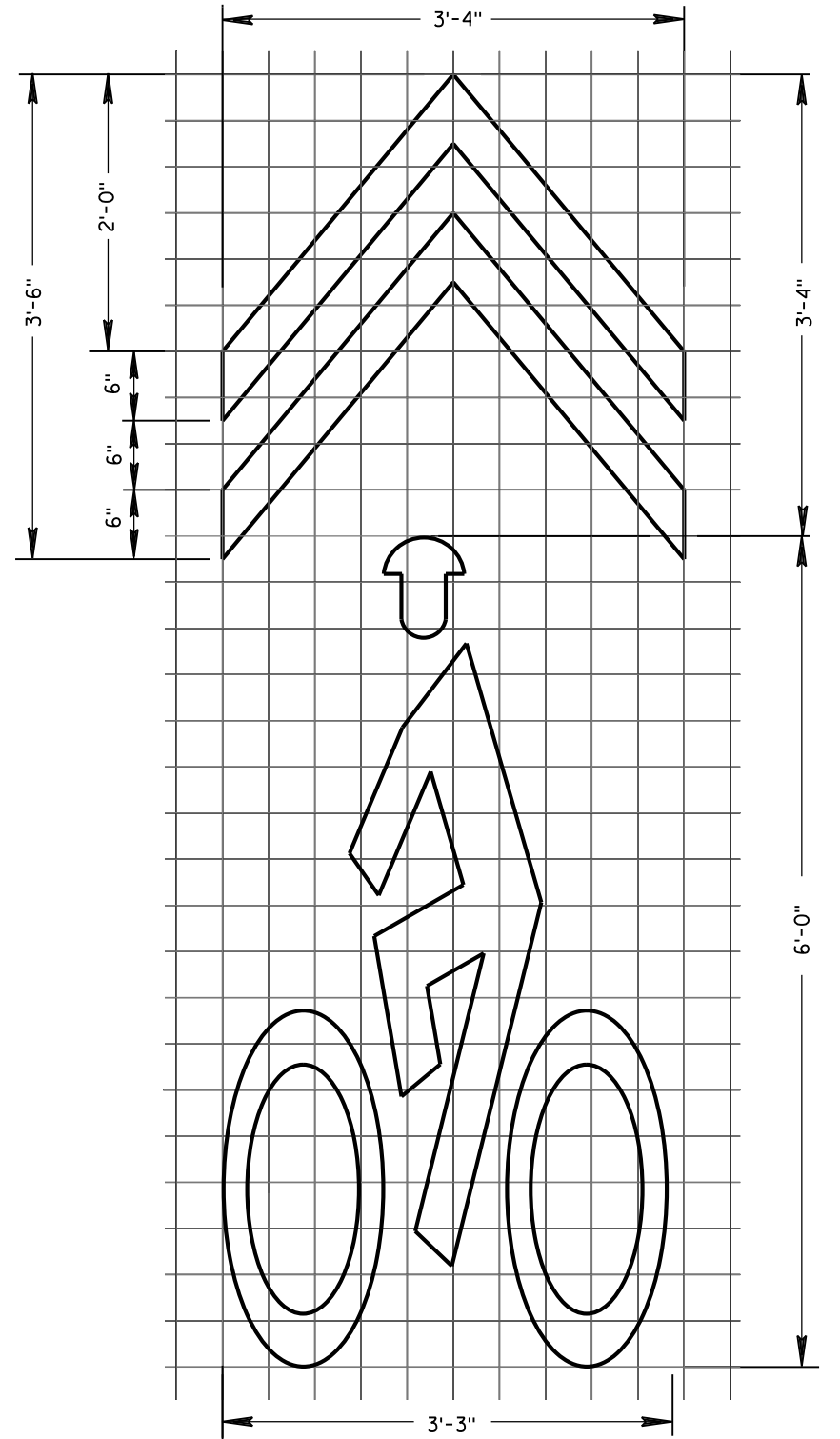
BIKE LANE ARROW



BIKE LANE SYMBOL



BICYCLE DETECTOR PAVEMENT MARKING

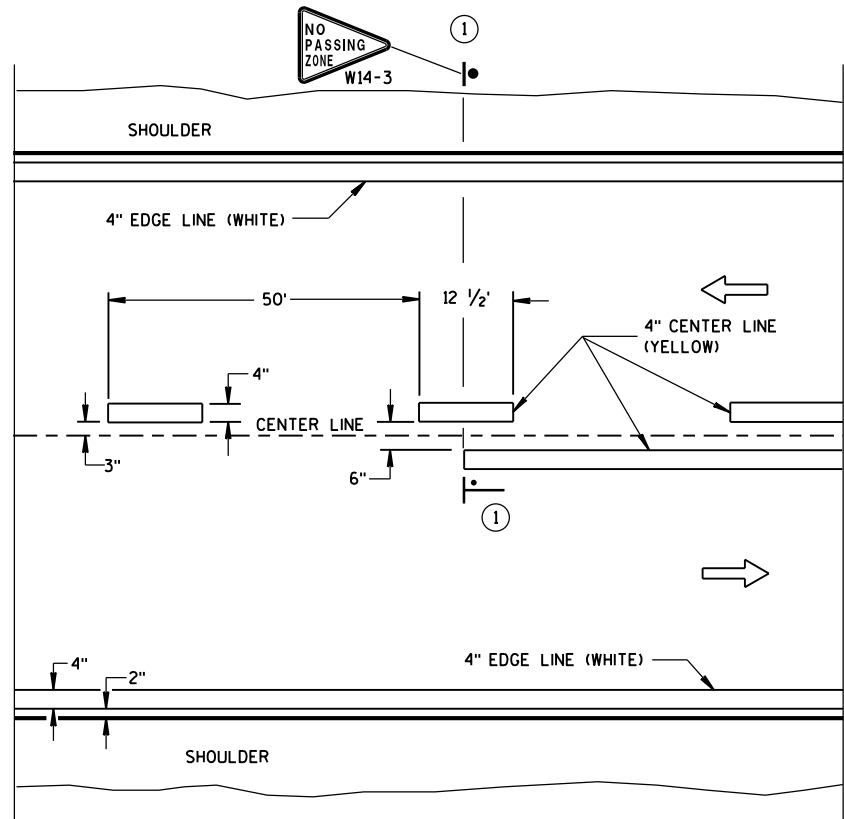


BIKE SYMBOL FOR SHARED LANE

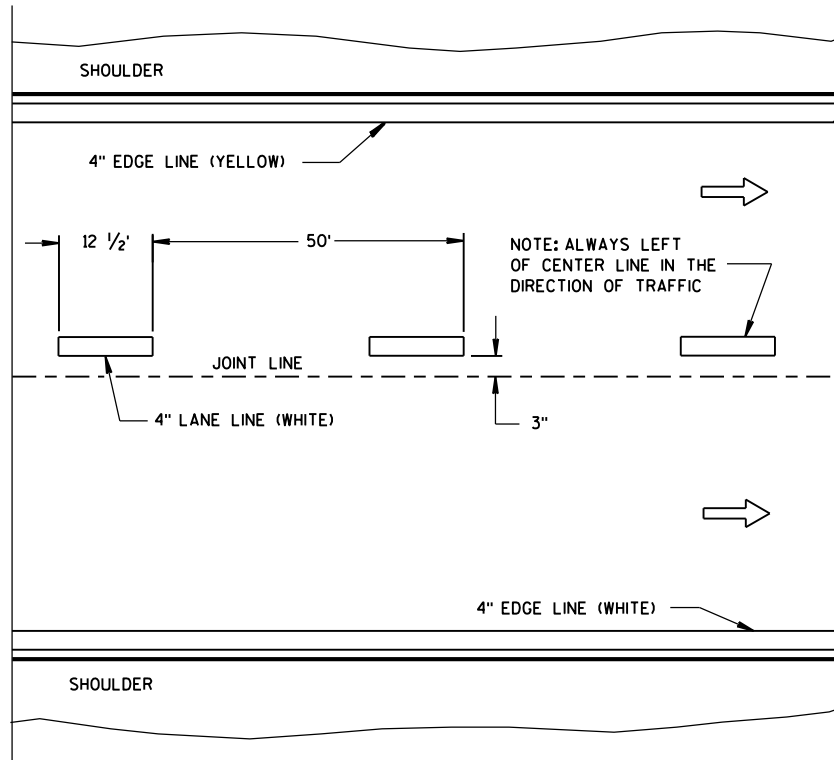
GENERAL NOTES

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

PAVEMENT MARKING FOR BIKE LANES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-18-2016 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	

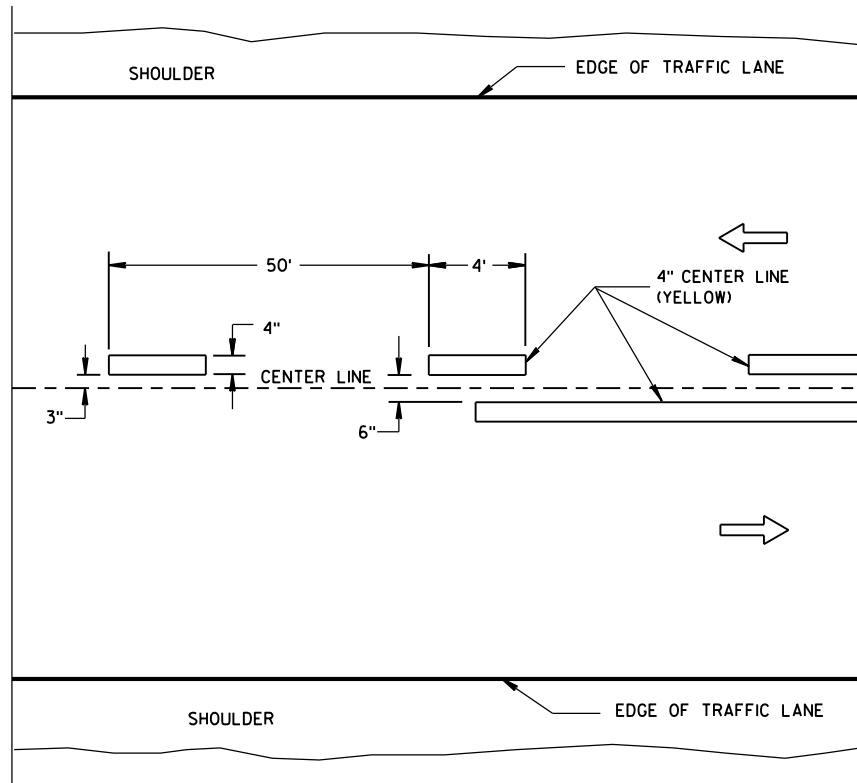


TWO WAY TRAFFIC

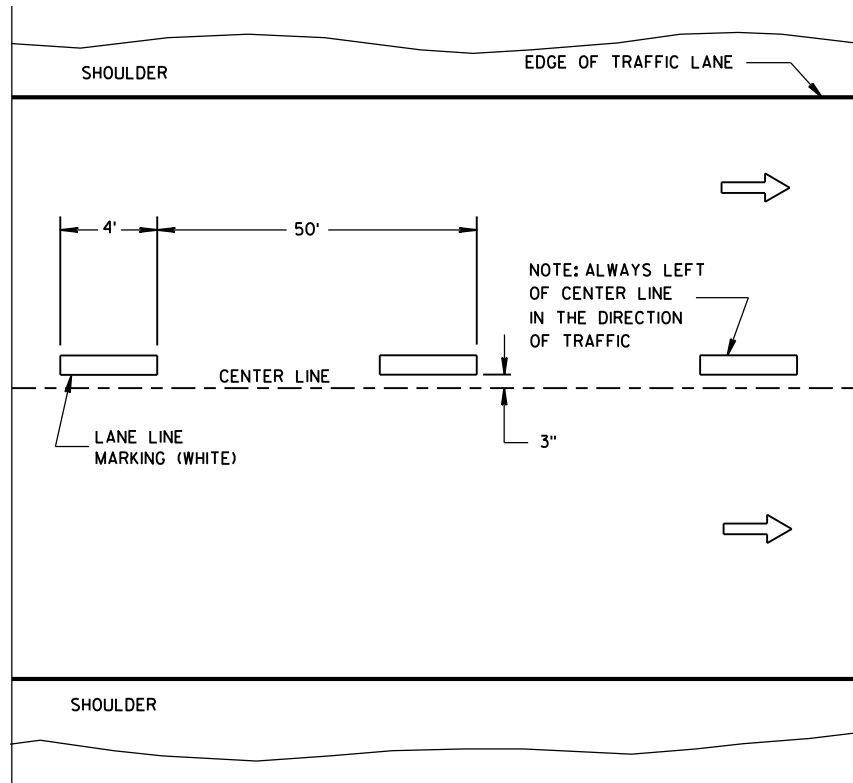


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



TWO WAY LEFT TURN LANE

- L = LENGTH OF TURN BAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

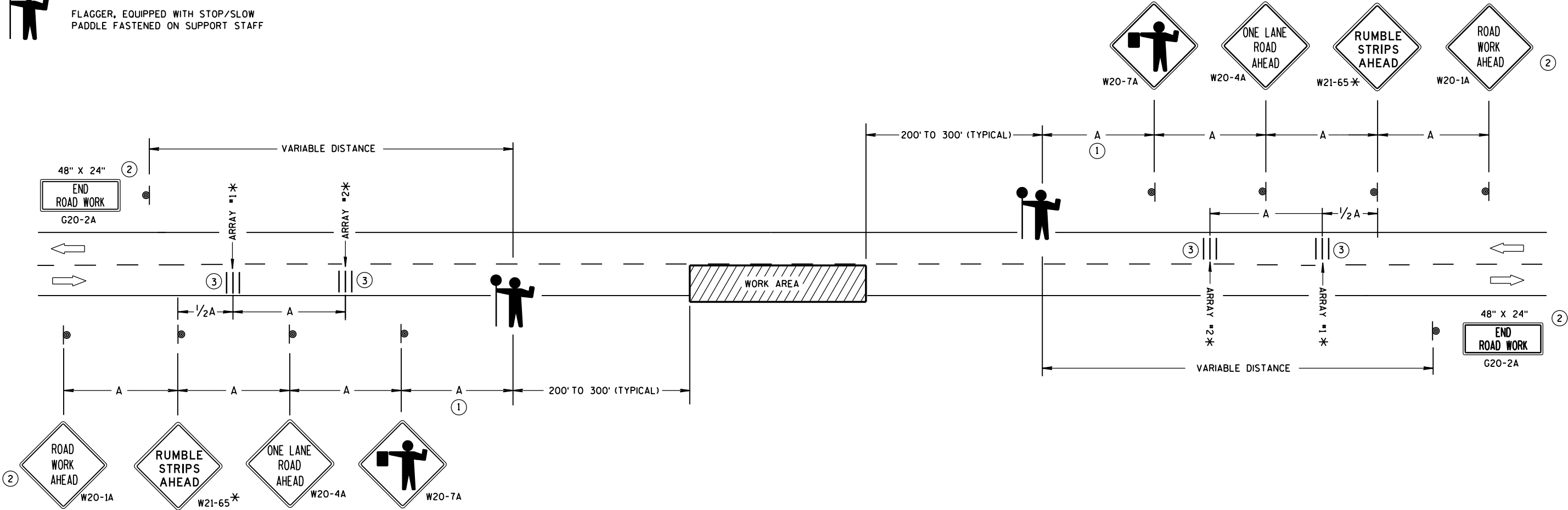
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING A.



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

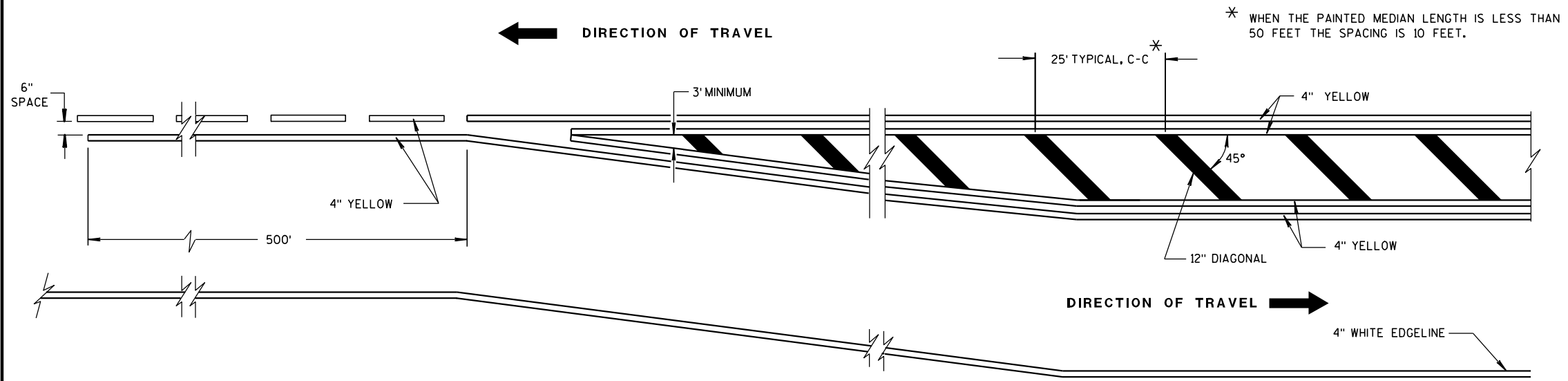
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

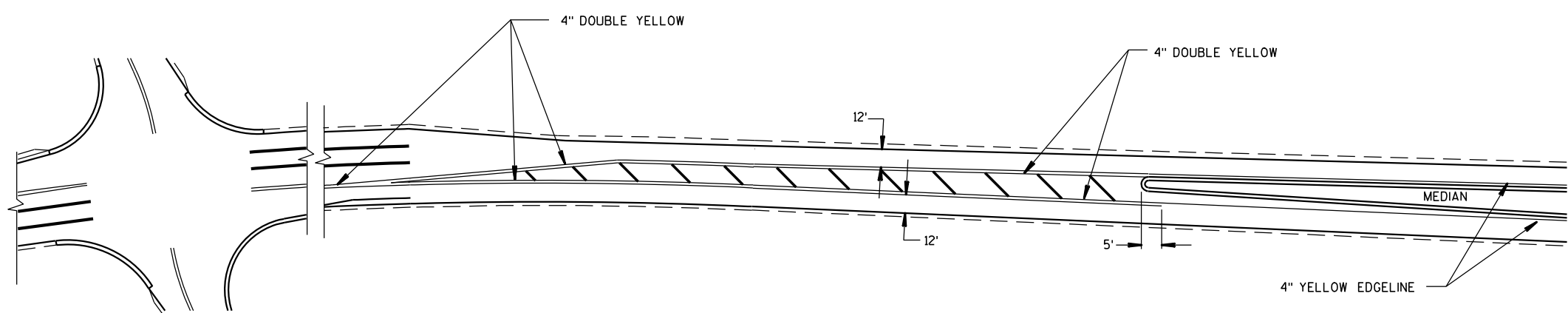
APPROVED
December, 2016 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA



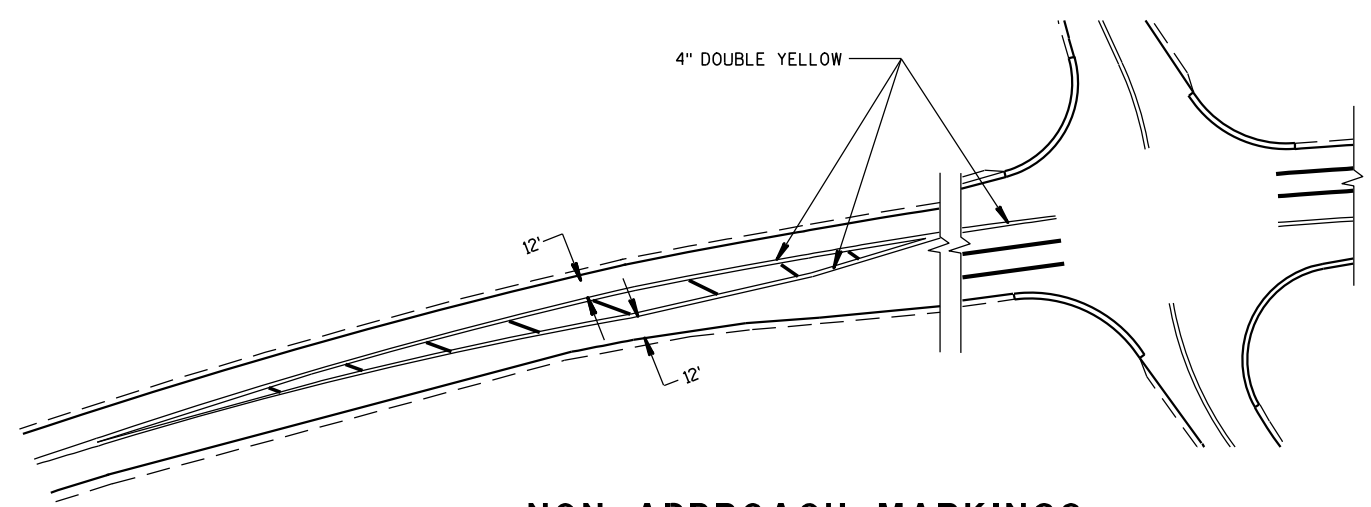
GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

MEDIAN ISLAND DETAIL

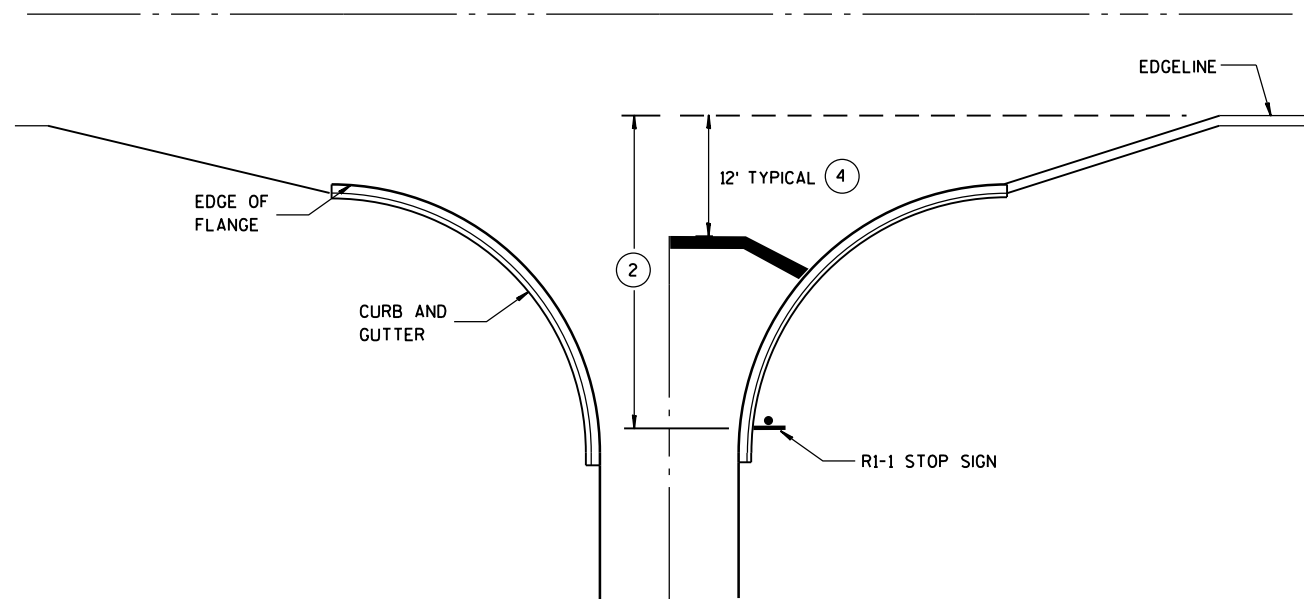


APPROACH MARKINGS FOR OTHER MEDIAN TYPES

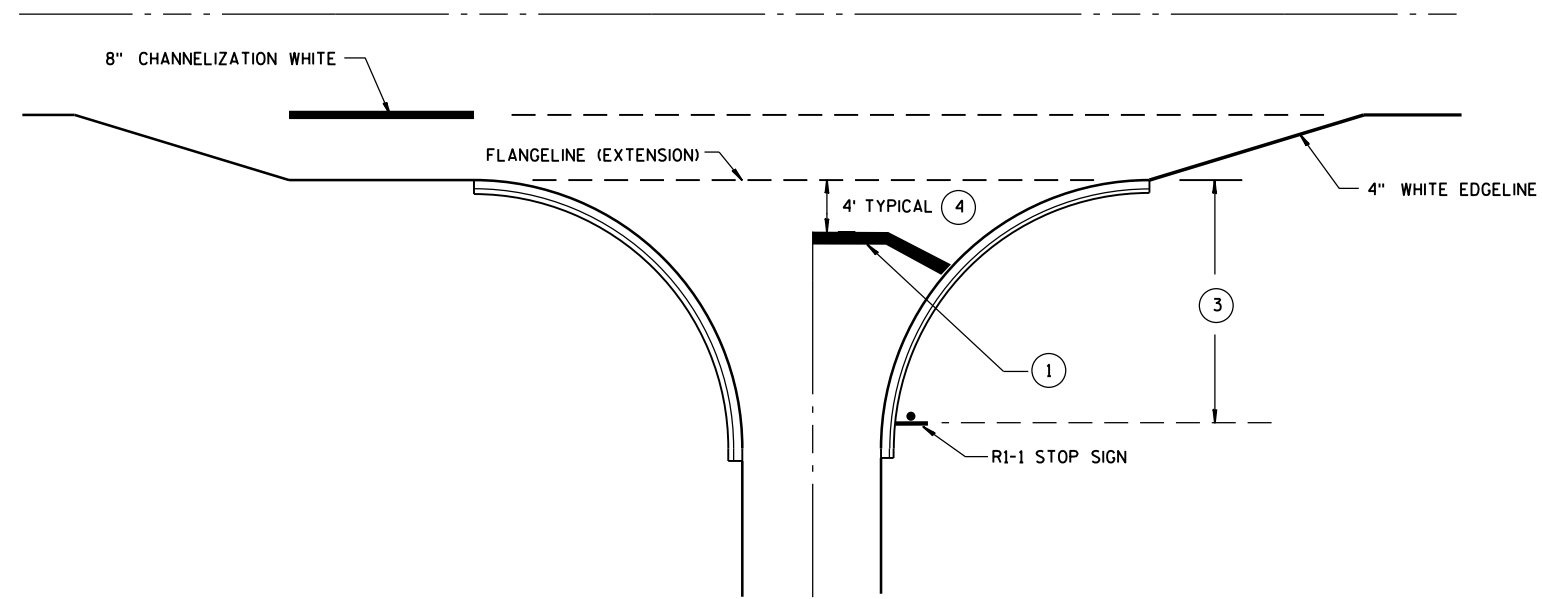


NON APPROACH MARKINGS

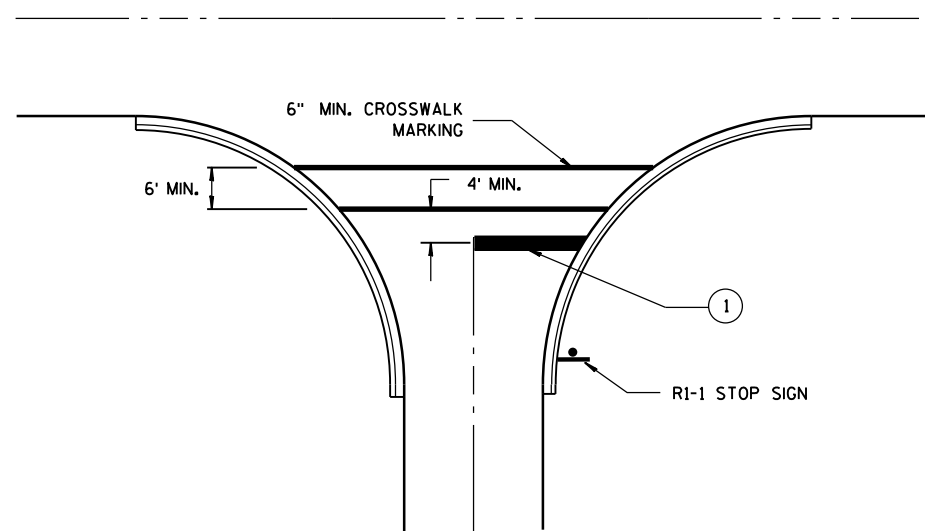
MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Notbohm STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



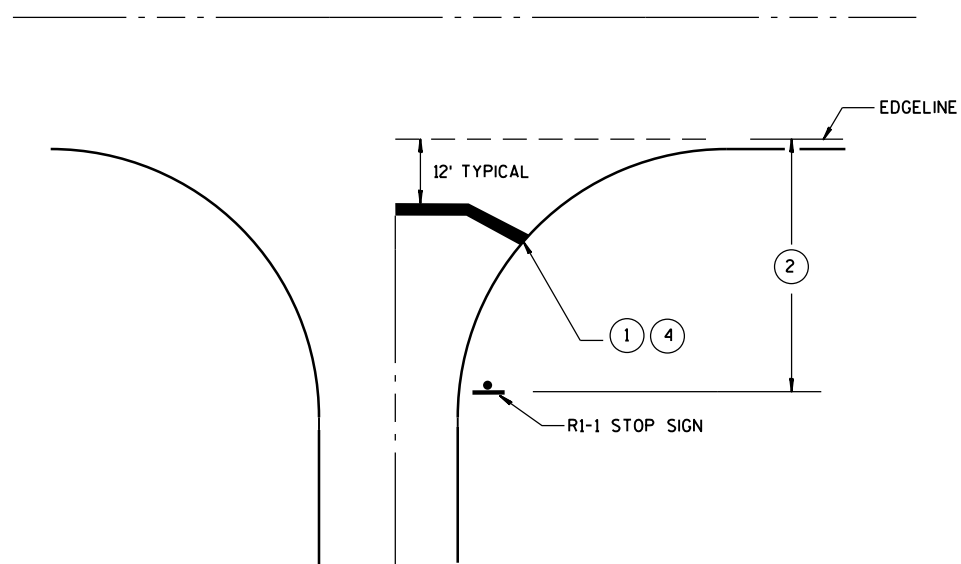
**TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER**



**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 EDGE LINE 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

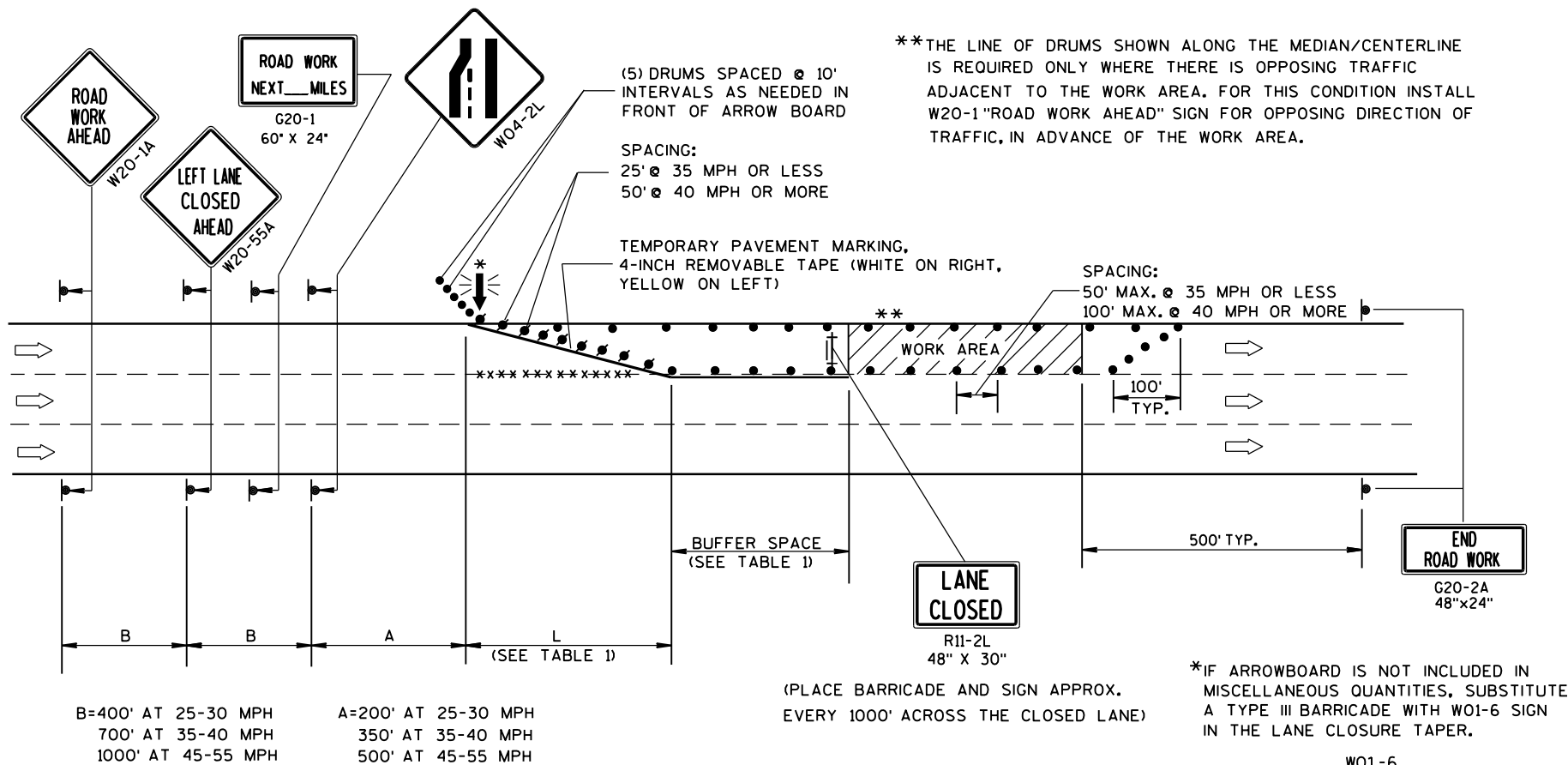
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

FHWA

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER



GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

ALL SIGNS ARE 48"x48" 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, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

BARRICADES IN A CLOSED LANE 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.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

TRAFFIC CONTROL,
SINGLE LANE CLOSURE,
NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

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

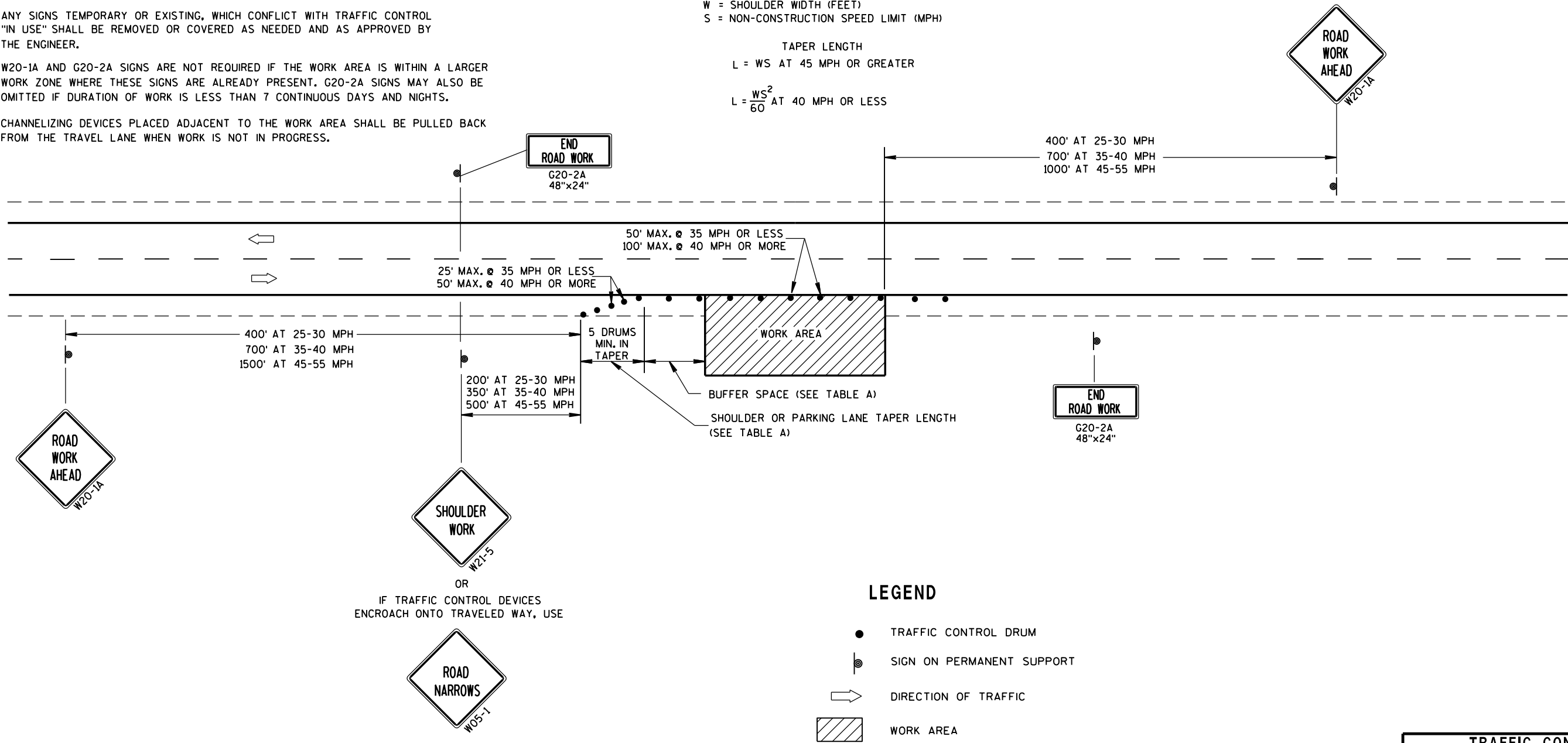
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

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 = $\frac{1}{3}L$

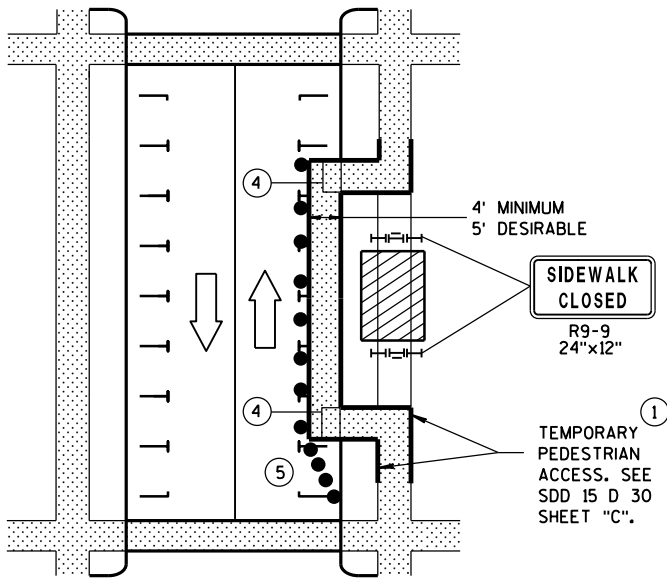


LEGEND

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

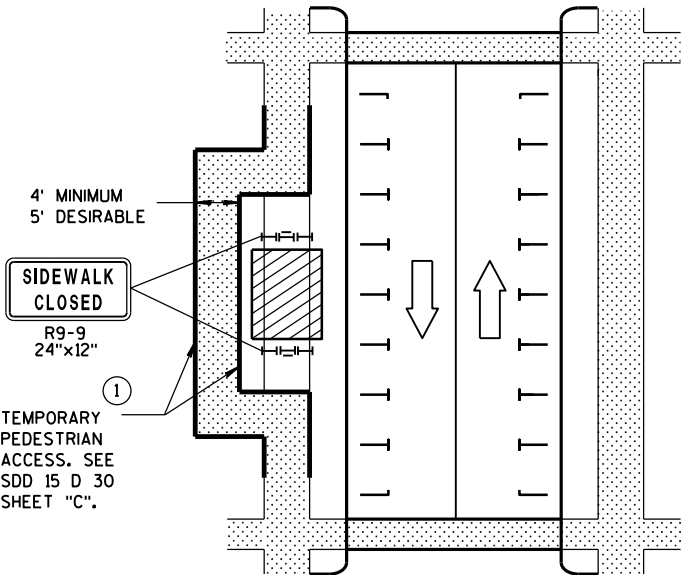
TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

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

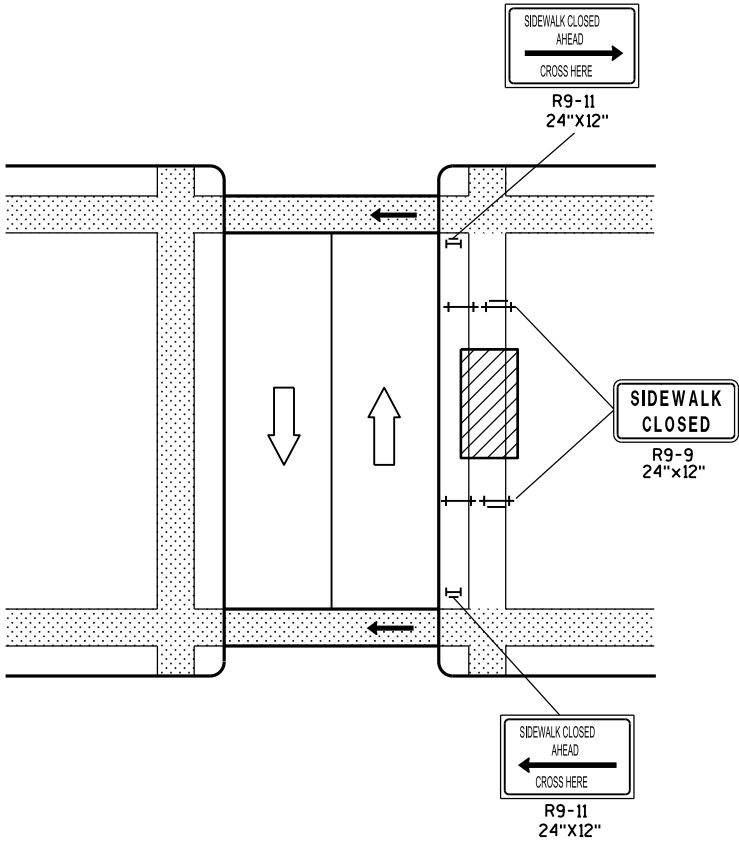


MID-BLOCK SIDEWALK CLOSURE
IN PARKING LANE

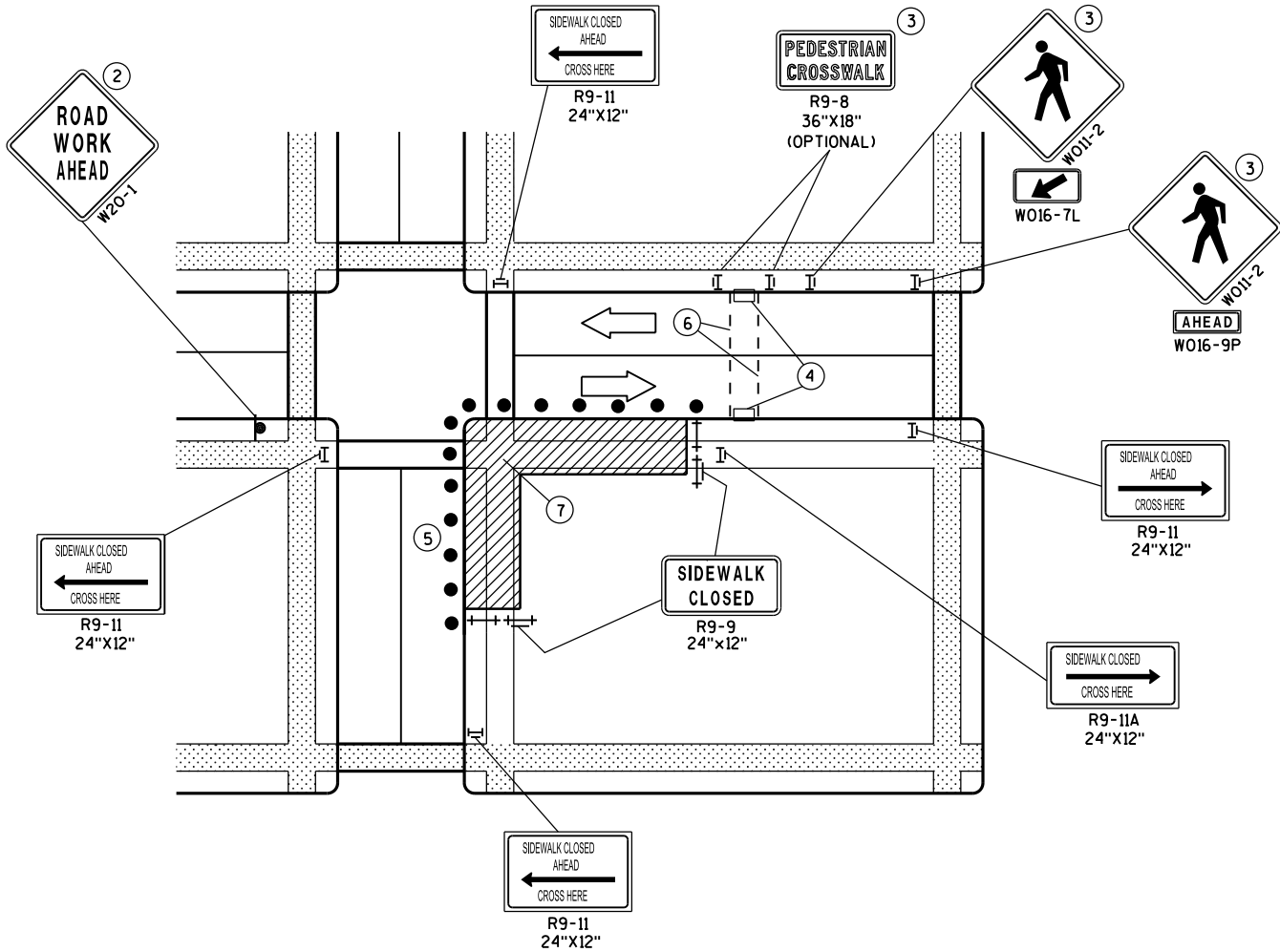
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE 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.

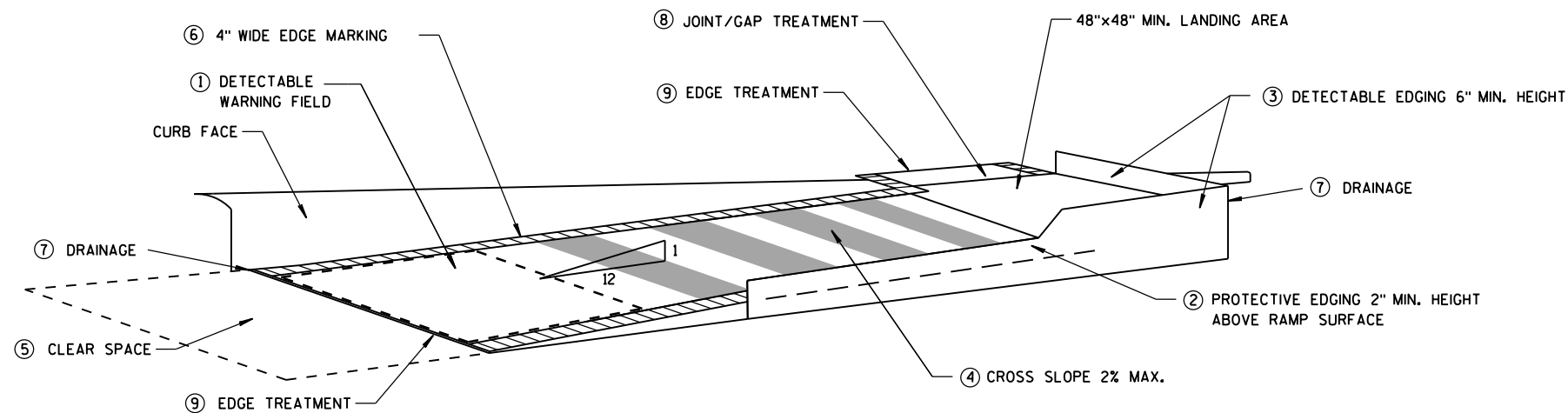
- IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.
- "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".
- DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- 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 CONTROL DRUM

TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

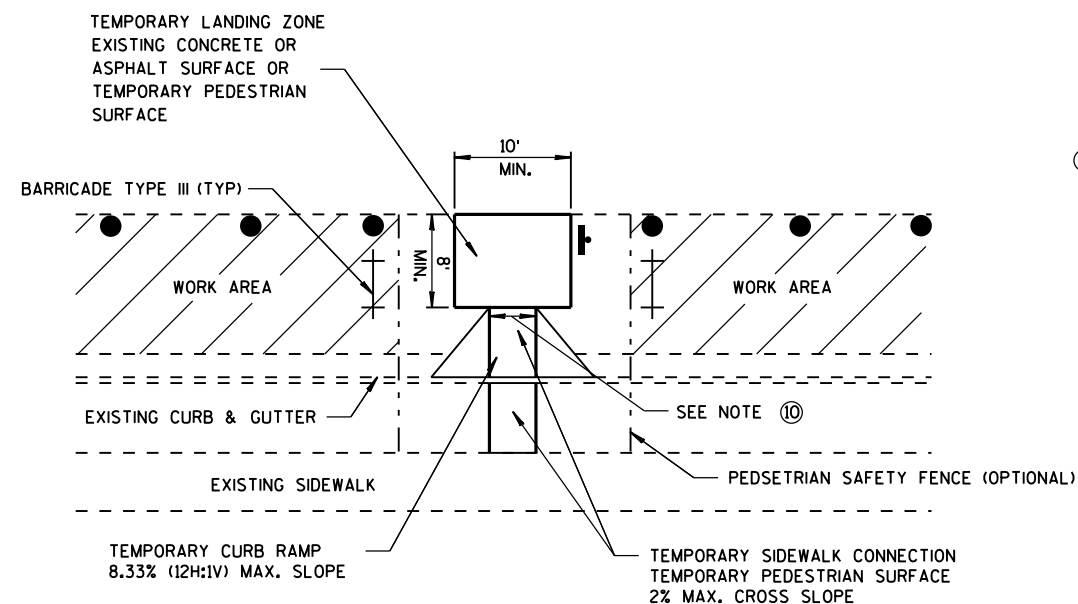
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



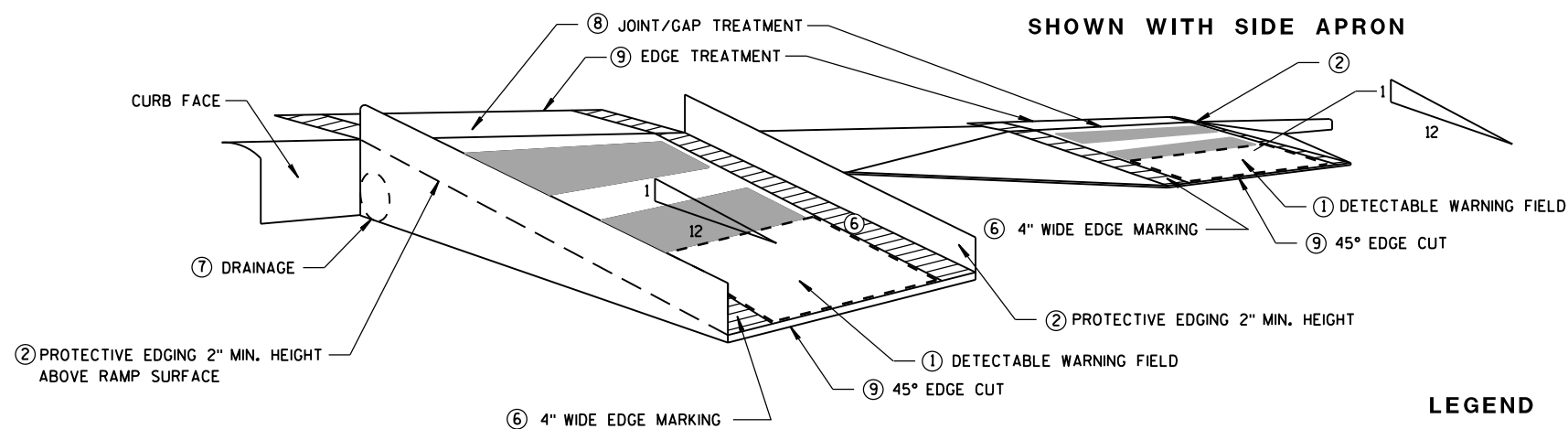
TEMPORARY CURB RAMP
PARALLEL TO CURB

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 PEDESTRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

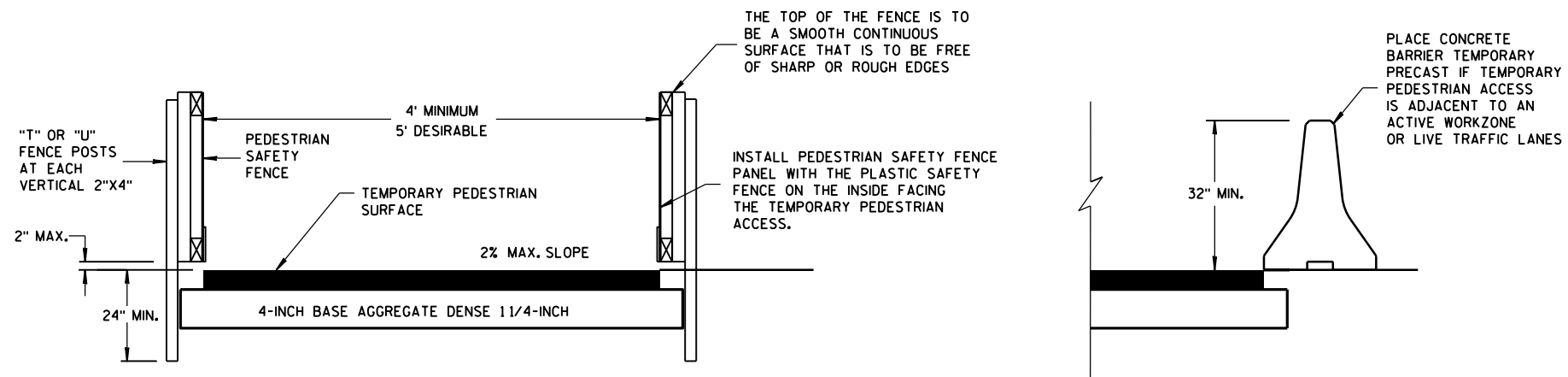
LEGEND

- WORK AREA (diagonal hatching)
- TYPE III BARRICADE (vertical line with cross-ticks)
- TRAFFIC CONTROL DRUM (solid black circle)

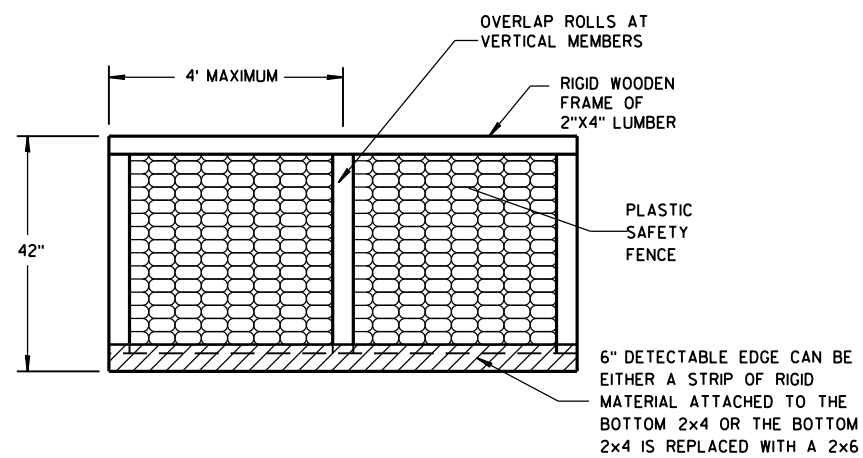
TRAFFIC CONTROL,
TEMPORARY ADA COMPLIANT
PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

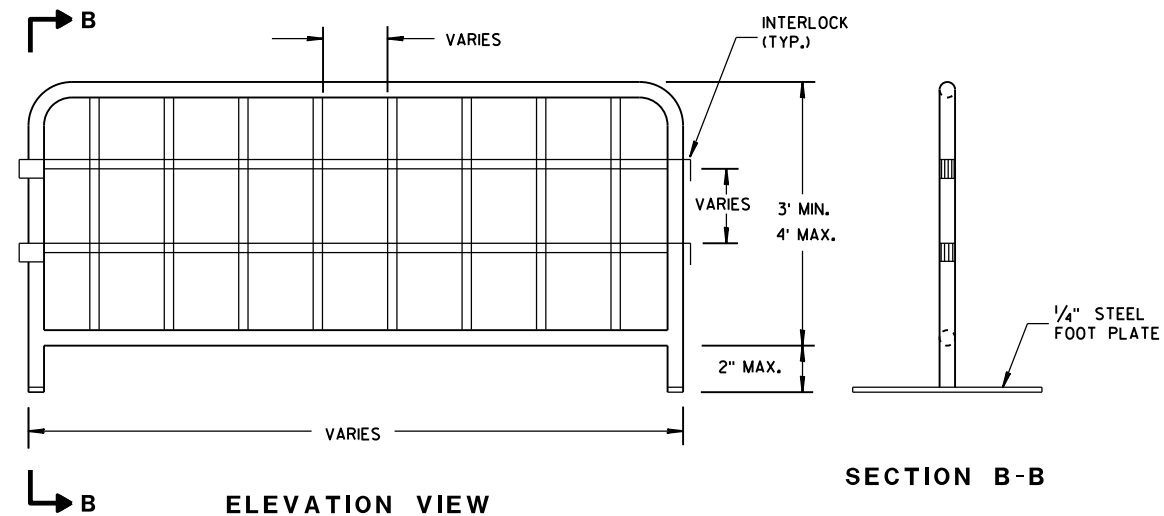
APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



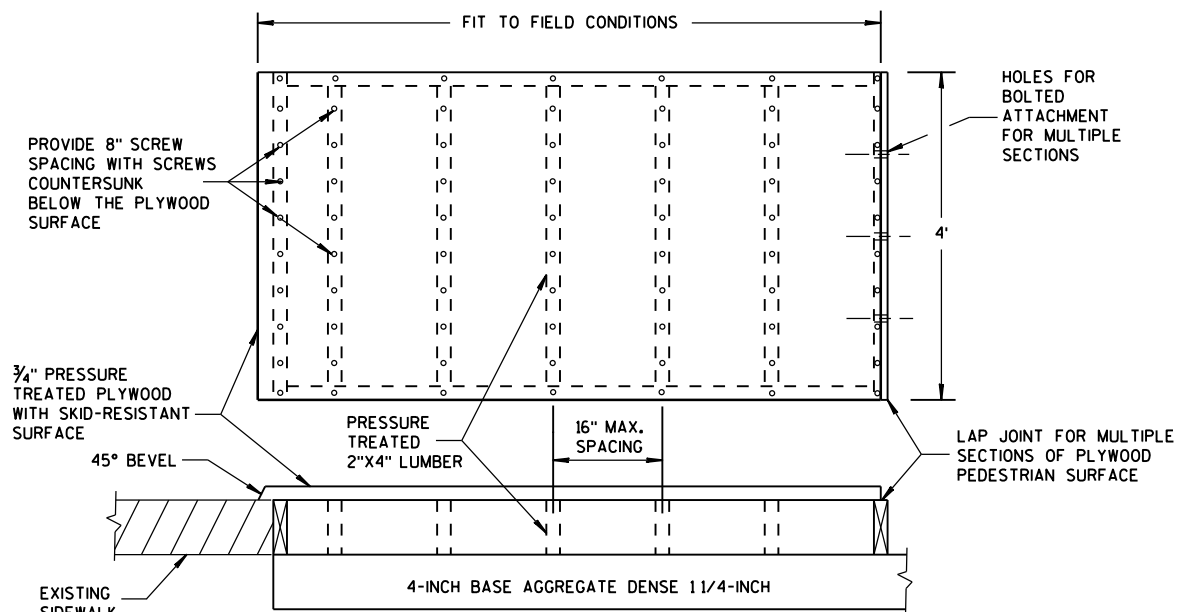
TEMPORARY PEDESTRIAN ACCESS



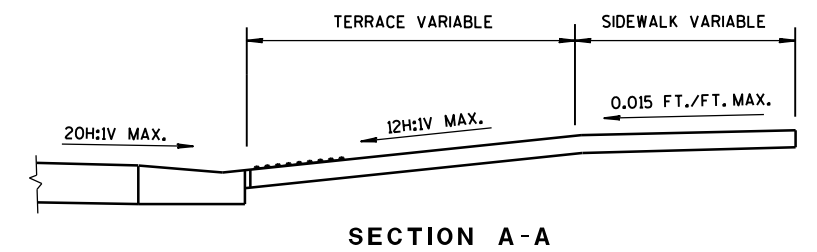
PEDESTRIAN SAFETY FENCE



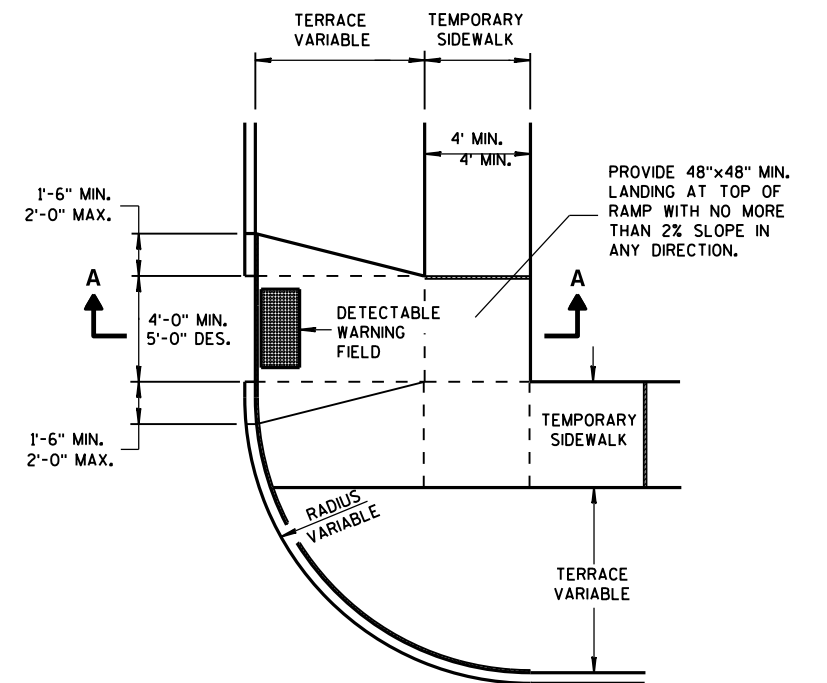
TEMPORARY PEDESTRIAN STEEL BARRICADE



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



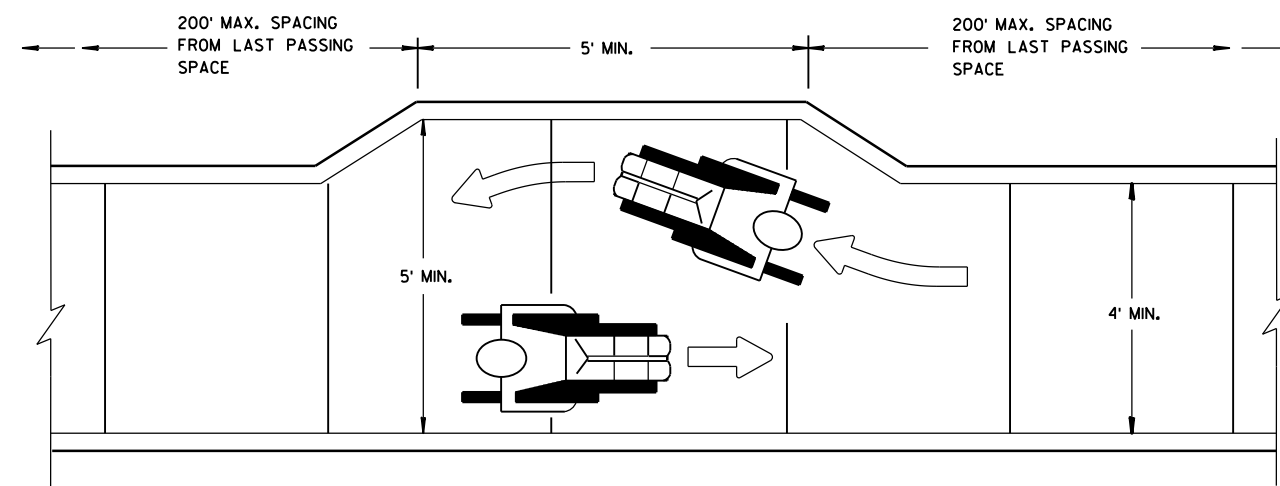
SECTION A-A



PLAN VIEW

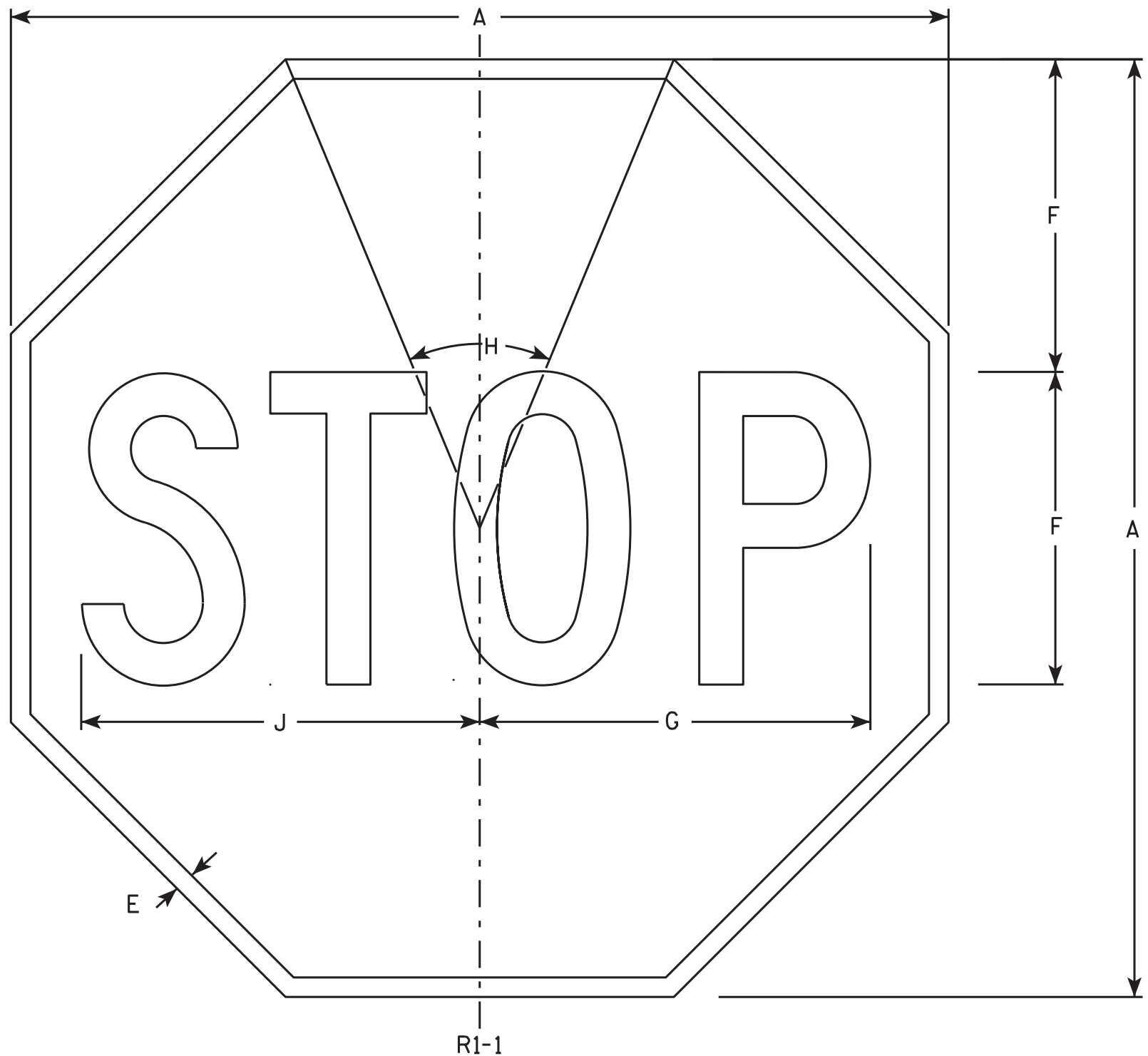
TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



NARROW SIDEWALK PASSING DETAIL

<p>TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED June 2016 DATE</p>	<p>/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER</p>
<p>FHWA</p>	



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

R1-1

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

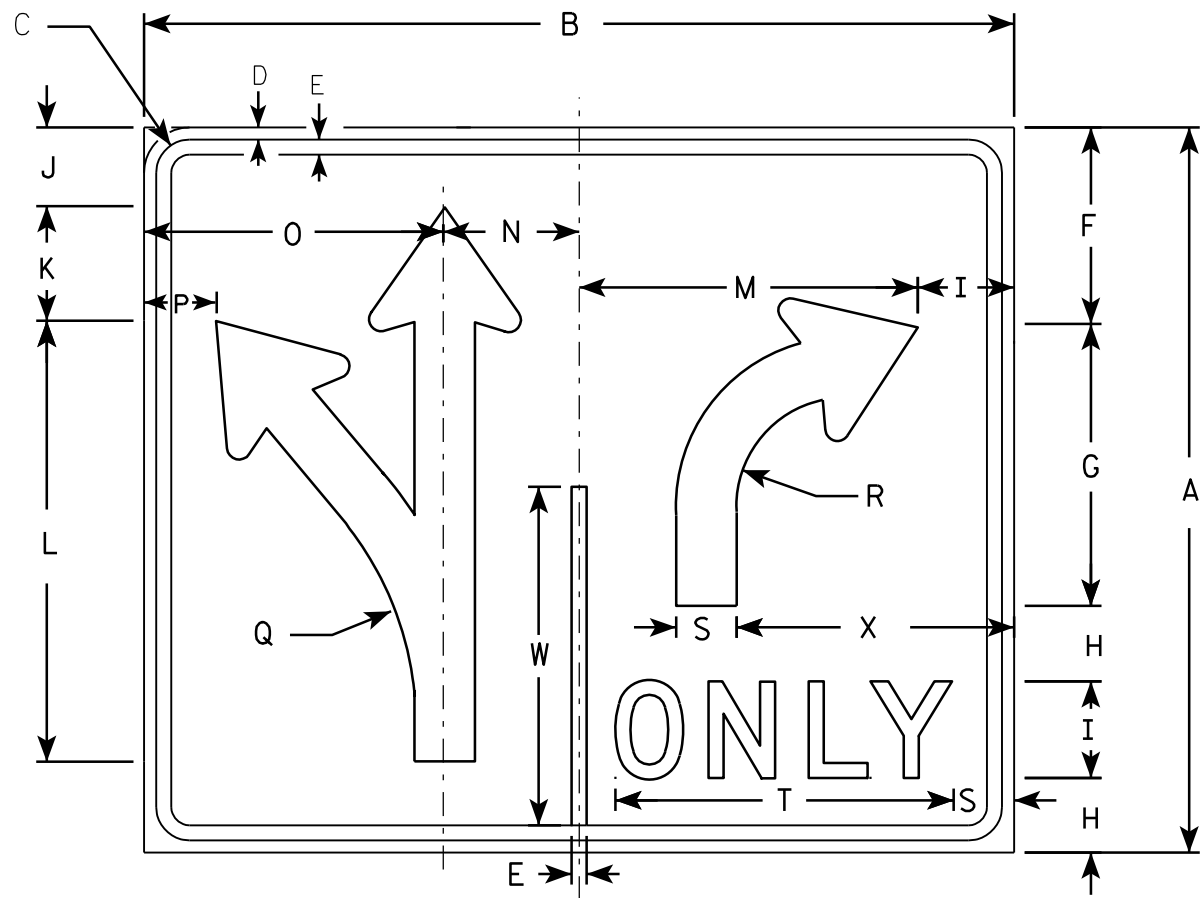
PROJECT NO:

HWY:

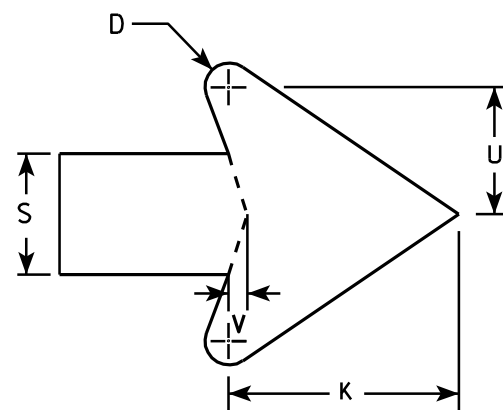
COUNTY:

SHEET NO:

E



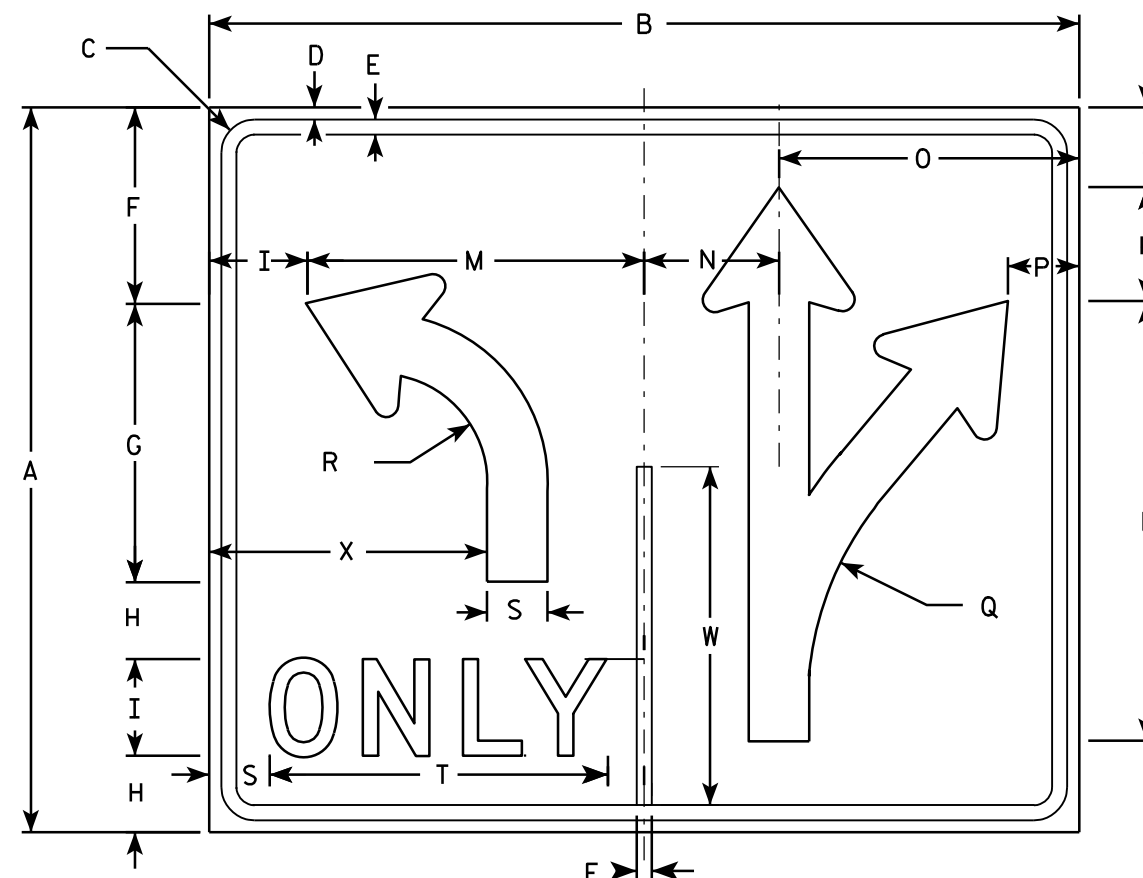
R3-8



ARROW DETAIL

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 - D
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.



R3-8A

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																											
2S	30	36	1 ³ / ₈	¹ / ₂	⁵ / ₈	8 ¹ / ₈	11 ⁵ / ₈	3 ¹ / ₈	4	3 ¹ / ₄	4 ³ / ₄	18 ¹ / ₄	14	5 ⁵ / ₈	12 ³ / ₈	3	13 ¹ / ₄	4 ¹ / ₂	2 ¹ / ₂	14	2 ⁵ / ₈	³ / ₈	14	11 ¹ / ₂			7.5
2M	30	36	1 ³ / ₈	¹ / ₂	⁵ / ₈	8 ¹ / ₈	11 ⁵ / ₈	3 ¹ / ₈	4	3 ¹ / ₄	4 ³ / ₄	18 ¹ / ₄	14	5 ⁵ / ₈	12 ³ / ₈	3	13 ¹ / ₄	4 ¹ / ₂	2 ¹ / ₂	14	2 ⁵ / ₈	³ / ₈	14	11 ¹ / ₂			7.5
3																											
4	48	54	2 ¹ / ₄	³ / ₄	1	13 ¹ / ₄	18 ¹ / ₂	5 ¹ / ₈	6	5 ¹ / ₄	7 ¹ / ₈	29 ¹ / ₈	21	8 ³ / ₈	18 ⁵ / ₈	4 ³ / ₈	21 ⁷ / ₈	7 ¹ / ₄	3 ³ / ₄	20 ⁵ / ₈	4	⁵ / ₈	22 ³ / ₈	17 ¹ / ₄			18.0
5	48	54	2 ¹ / ₄	³ / ₄	1	13 ¹ / ₄	18 ¹ / ₂	5 ¹ / ₈	6	5 ¹ / ₄	7 ¹ / ₈	29 ¹ / ₈	21	8 ³ / ₈	18 ⁵ / ₈	4 ³ / ₈	21 ⁷ / ₈	7 ¹ / ₄	3 ³ / ₄	20 ⁵ / ₈	4	⁵ / ₈	22 ³ / ₈	17 ¹ / ₄			18.0

STANDARD SIGN R3-8 & R3-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8.5

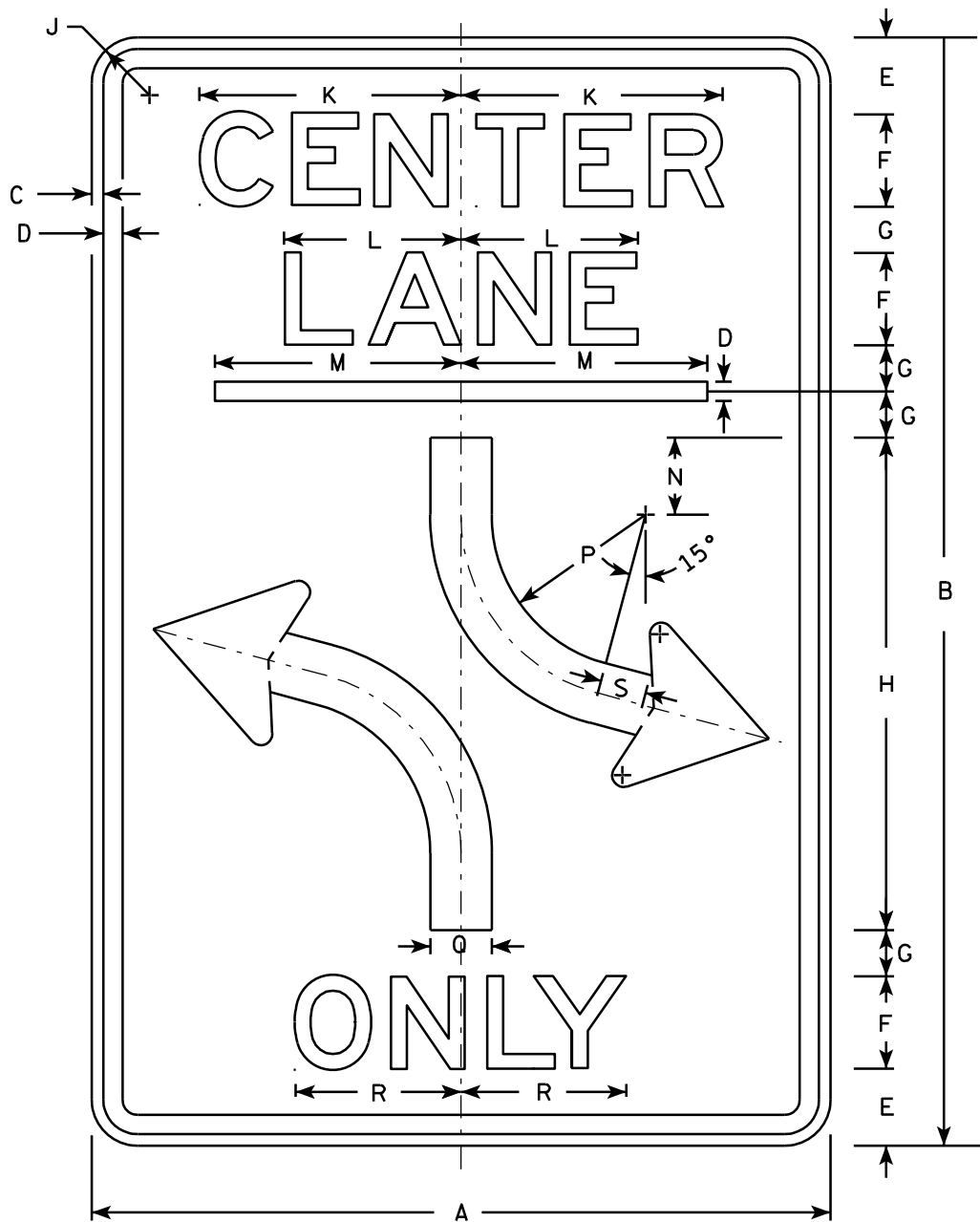
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

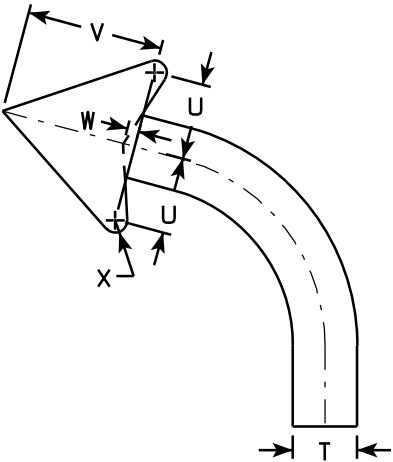
E



R3-9B

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.



ARROW DETAIL

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																											
2S	24	36	$\frac{3}{8}$	$\frac{1}{2}$	2 $\frac{1}{2}$	3	1 $\frac{1}{2}$	16		1 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{3}{4}$	8	2 $\frac{1}{2}$		6	2	5 $\frac{1}{8}$	1 $\frac{1}{2}$		2 $\frac{3}{8}$	4 $\frac{3}{8}$	$\frac{3}{8}$				6.0
2M	24	36	$\frac{3}{8}$	$\frac{1}{2}$	2 $\frac{1}{2}$	3	1 $\frac{1}{2}$	16		1 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{3}{4}$	8	2 $\frac{1}{2}$		6	2	5 $\frac{1}{8}$	1 $\frac{1}{2}$		2 $\frac{3}{8}$	4 $\frac{3}{8}$	$\frac{3}{8}$				6.0
3	36	48	$\frac{5}{8}$	$\frac{7}{8}$	3 $\frac{1}{2}$	5	1 $\frac{1}{2}$	20		2 $\frac{1}{4}$	14 $\frac{1}{8}$	9 $\frac{1}{2}$	12	3		4	3	9 $\frac{7}{8}$	2		3 $\frac{1}{2}$	6 $\frac{1}{8}$	$\frac{1}{2}$				12.0
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
R3-9B

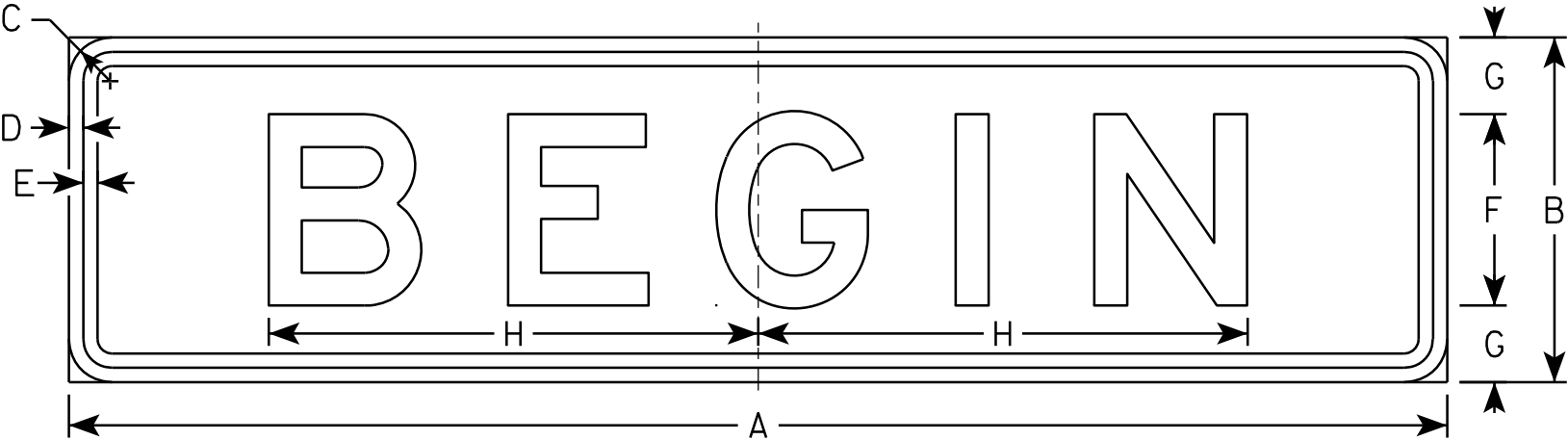
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

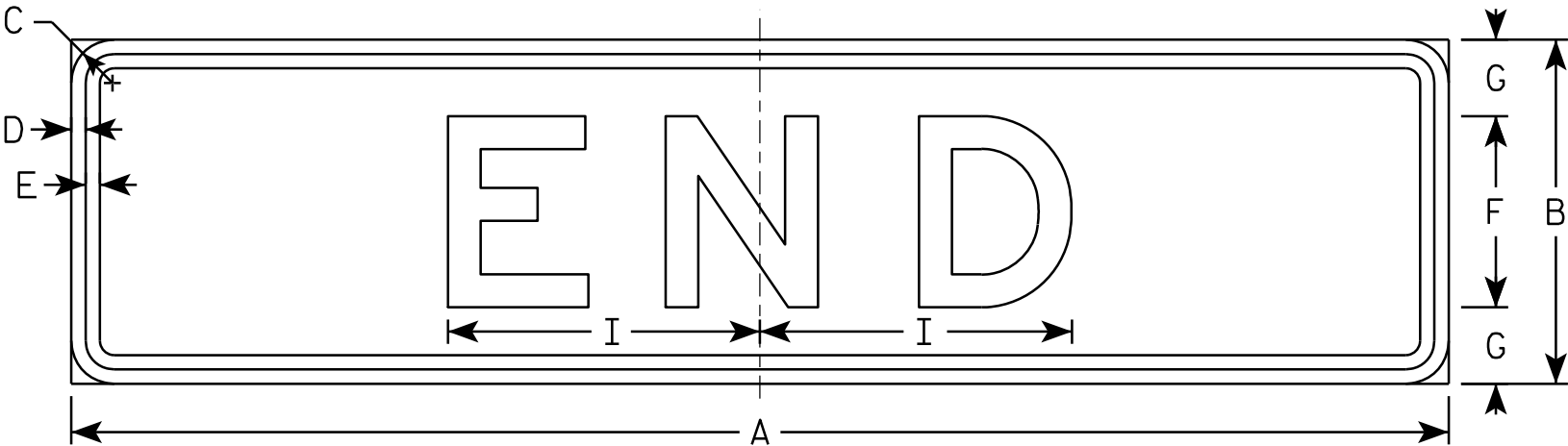
DATE 3/24/2011 PLATE NO. R3-9B.5

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.



R3-9C



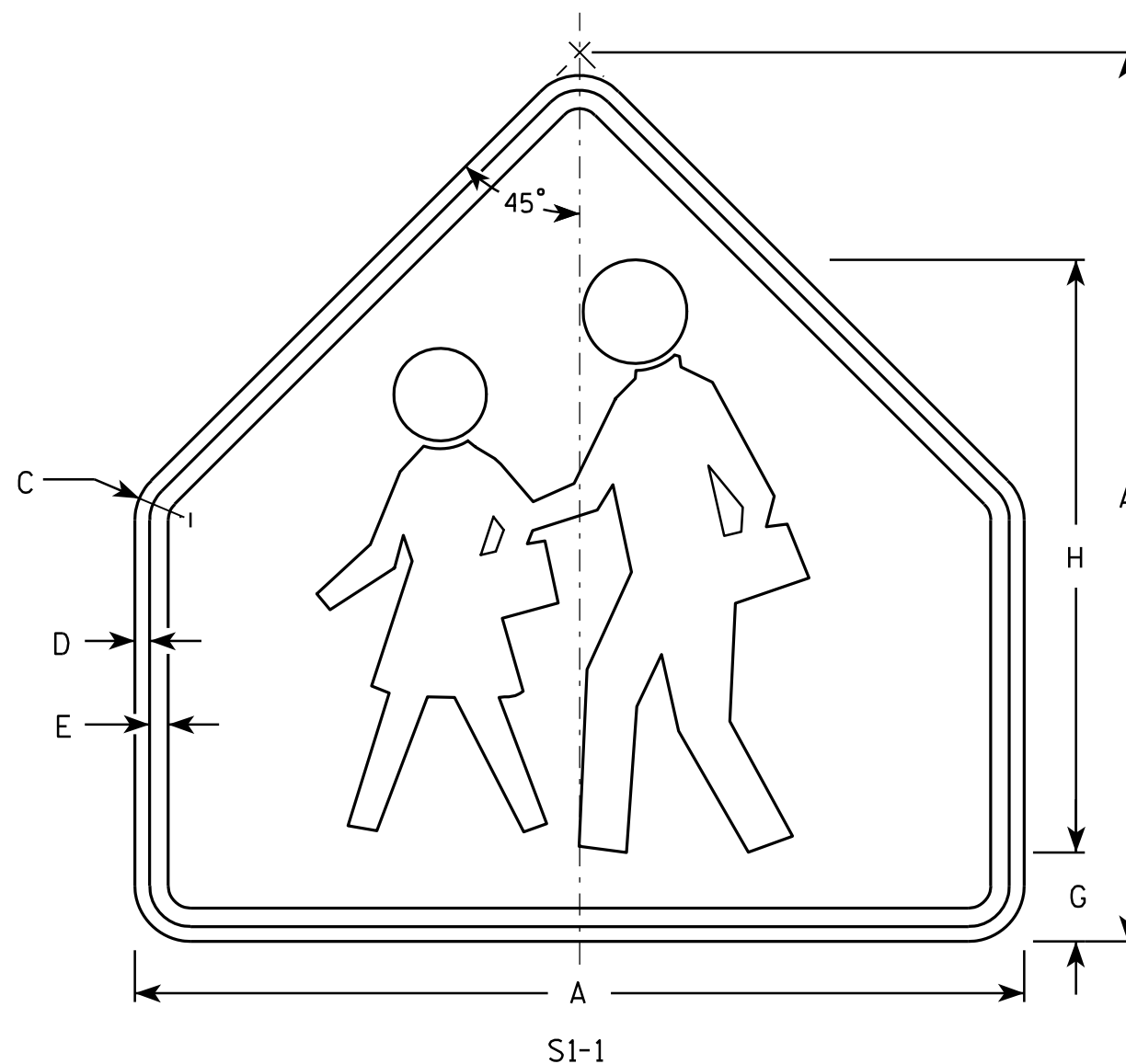
R3-9D

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																											
2S	24	6	1 1/8	3/8	3/8	3	1 1/2	7 3/4	4 7/8																		1.0
2M	24	6	1 1/8	3/8	3/8	3	1 1/2	7 3/4	4 7/8																		1.0
3	36	9	1 1/8	3/8	3/8	5	2	12 3/4	8 1/8																		1.86
4																											
5																											

STANDARD SIGN
R3-9C & R3-9D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/24/2011 PLATE NO. R3-9C.2



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow-Green
Message - Black
- 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	Area sq. ft.
1	30		1 3/8	1/2	5/8		3	20																			4.69
2	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
3	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
4	48		2 1/4	3/4	1		4 3/4	32																			12
5																											

STANDARD SIGN S1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/30/05 PLATE NO. S1-1.8

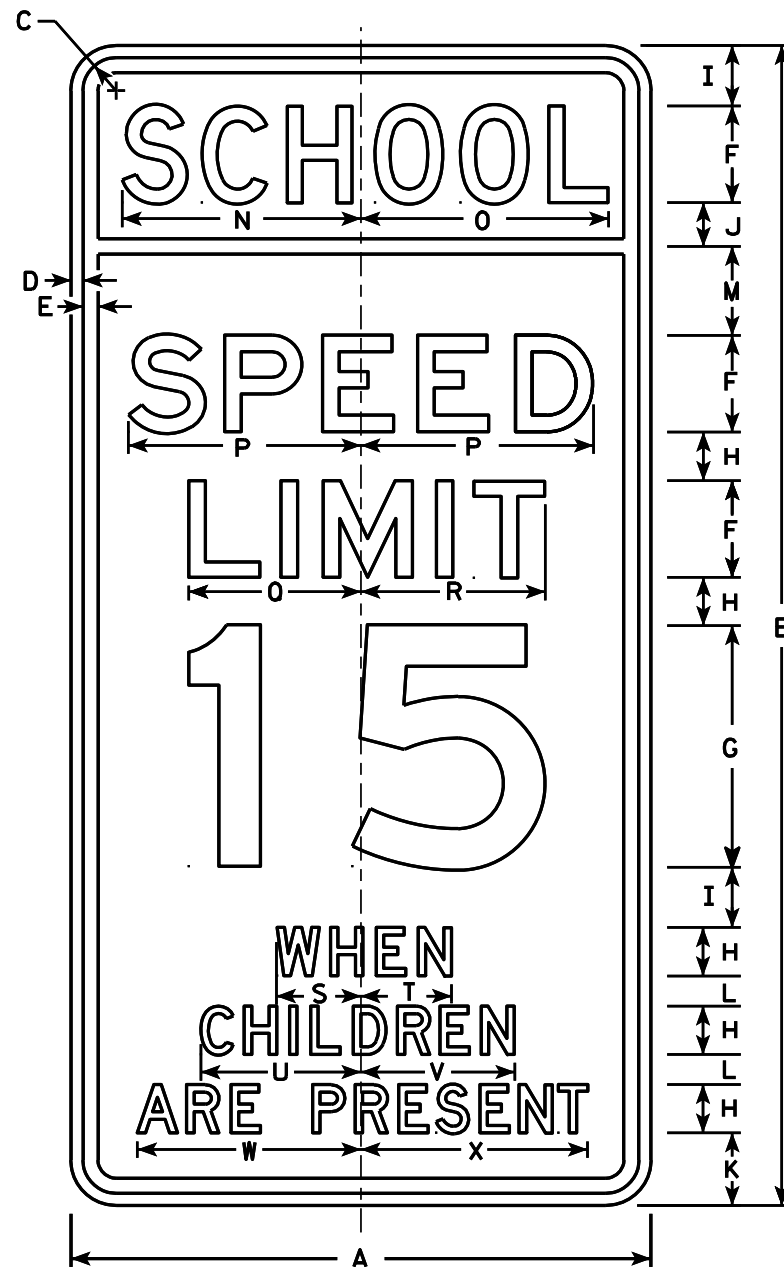
PROJECT NO: HWY: COUNTY: SHEET NO: E

Metric equivalent
for this sign is:

SIZE	
1	
2	600 mm X 1200 mm
3	900 mm X 1800 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 m ²
1																												
2	24	48	1 ⅜	½	⅝	4	10	2	2 ½	1 ¾	3	1 ¼	3 ¾	9 ⅞	10 ¼	9 ⅝	7 ⅛	7 ⅝	3 ½	3 ⅜	6 ⅝	6 ⅜	9 ¼	9 ⅜			8.00	0.72
3	36	72	2 ¼	¾	1	6	15	3	3 ¾	2 ¾	4 ½	1 ⅞	5 ½	15	15 ¼	14 ½	11 ¼	11 ½	5 ½	5 ¾	10	9 ¾	14	14 ⅛			18.00	1.62
4																												
5																												

PROJECT NO:			HWY:			COUNTY:						SHEET NO:			E
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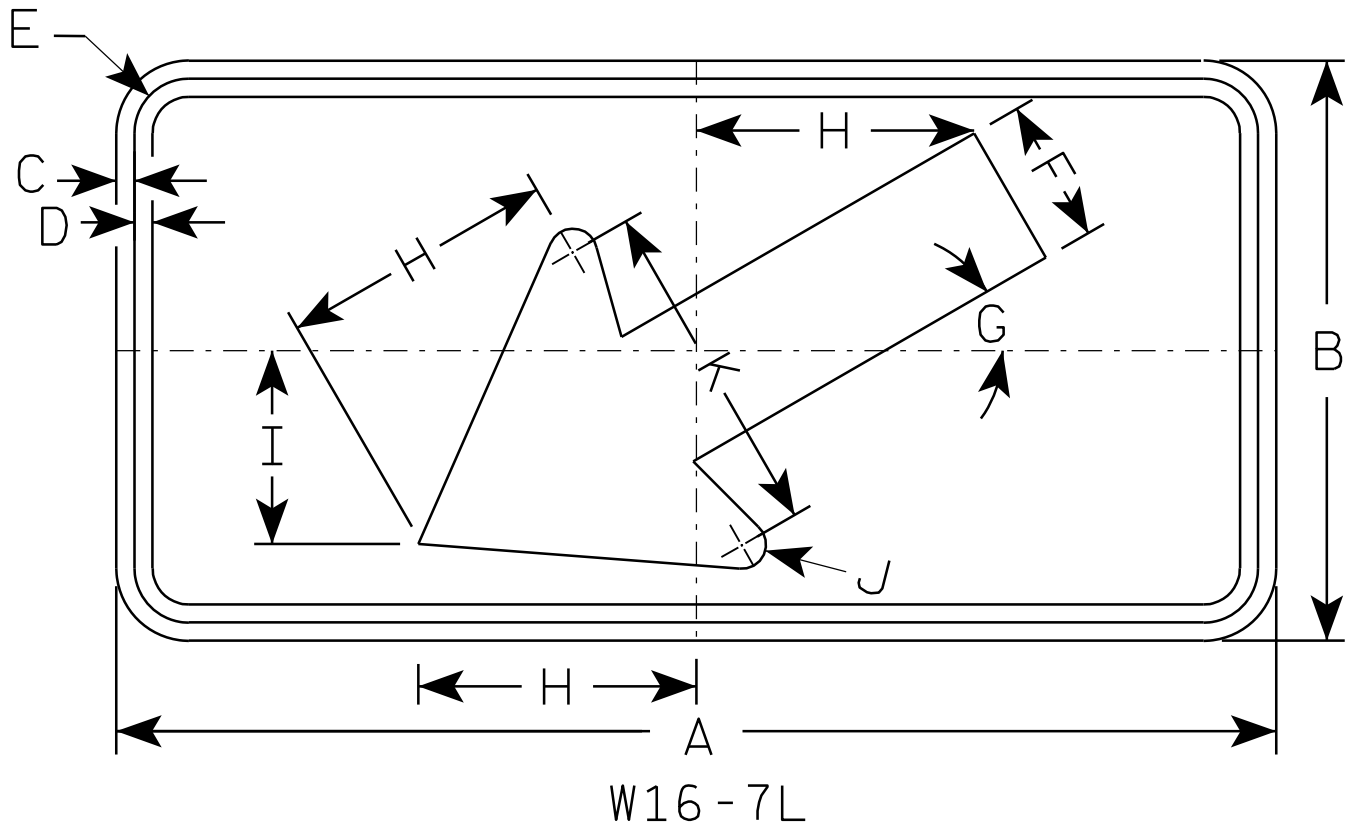
S4-51

NOTES

- Sign is Type II - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition. (See note 5).
- Color:
Background - See note 5
Message - Black
- Message Series - See note 6
- CornerRadius 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.
- Top panel (SCH00L) background - Yellow Green -Type F Reflective.
Lower panel background - White -Type H Reflective.
- From top to bottom:
Lines 1, 5, 6 & 7 are series D
Lines 2, 3 & 4 are series E
- Line 4 substitute appropriate numerals and
adjust spacing to achieve proper balance.

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.



7

7

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																											
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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
W16-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

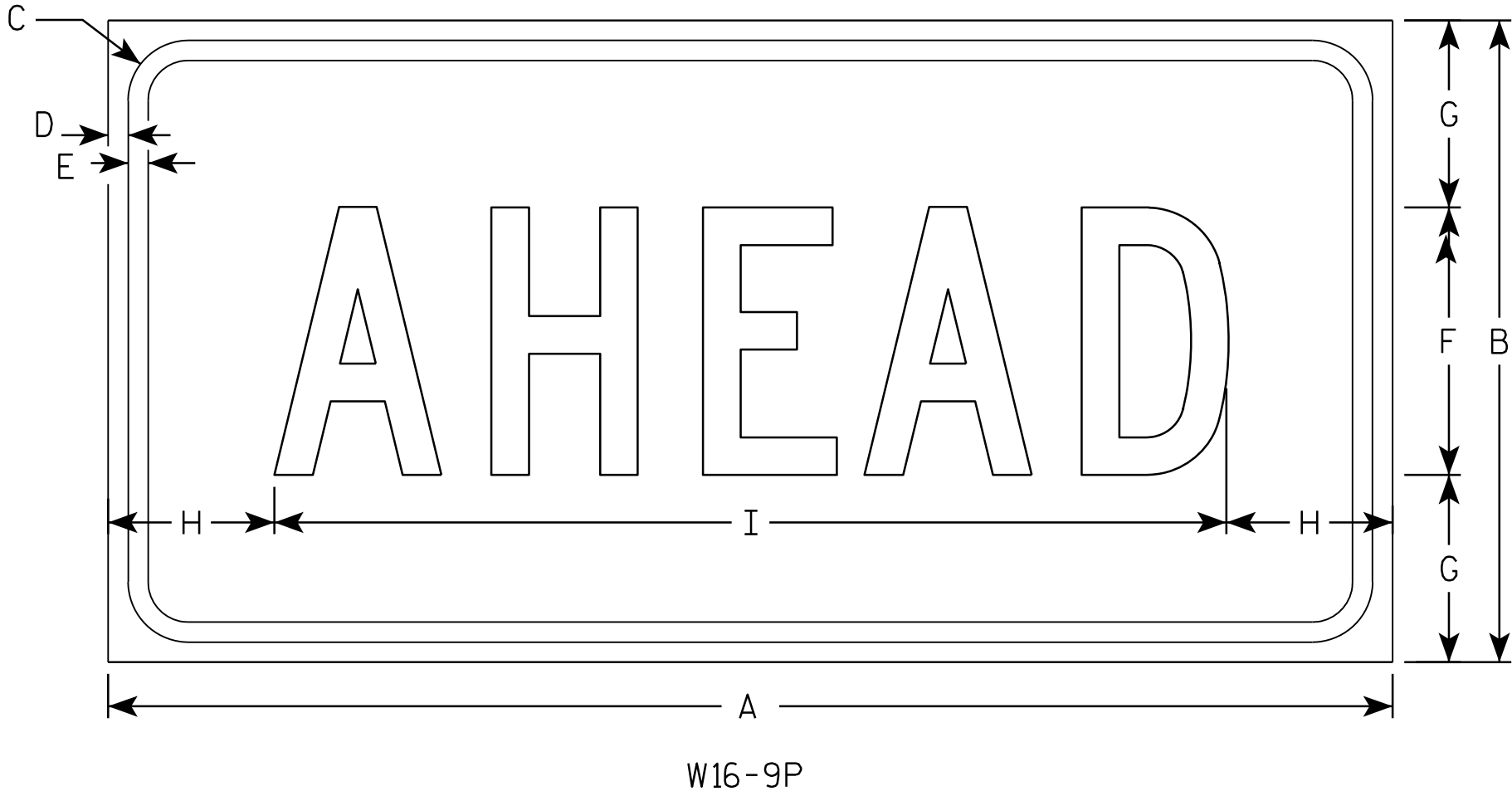
DATE 11/02/10 PLATE NO. W16-7.5

7

7

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. 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.



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																											
2S	24	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN

W16-9P

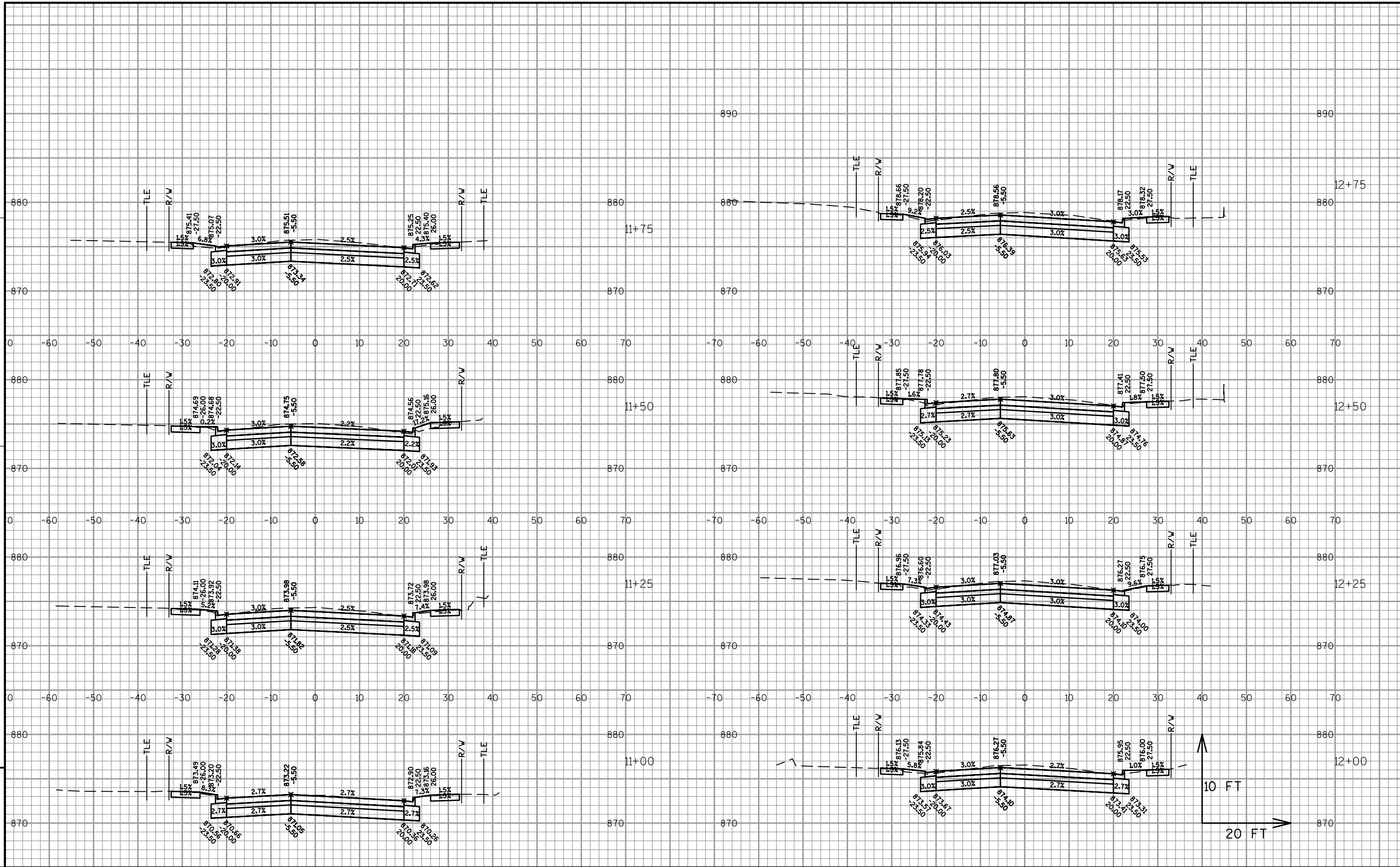
WISCONSIN DEPT OF TRANSPORTATION

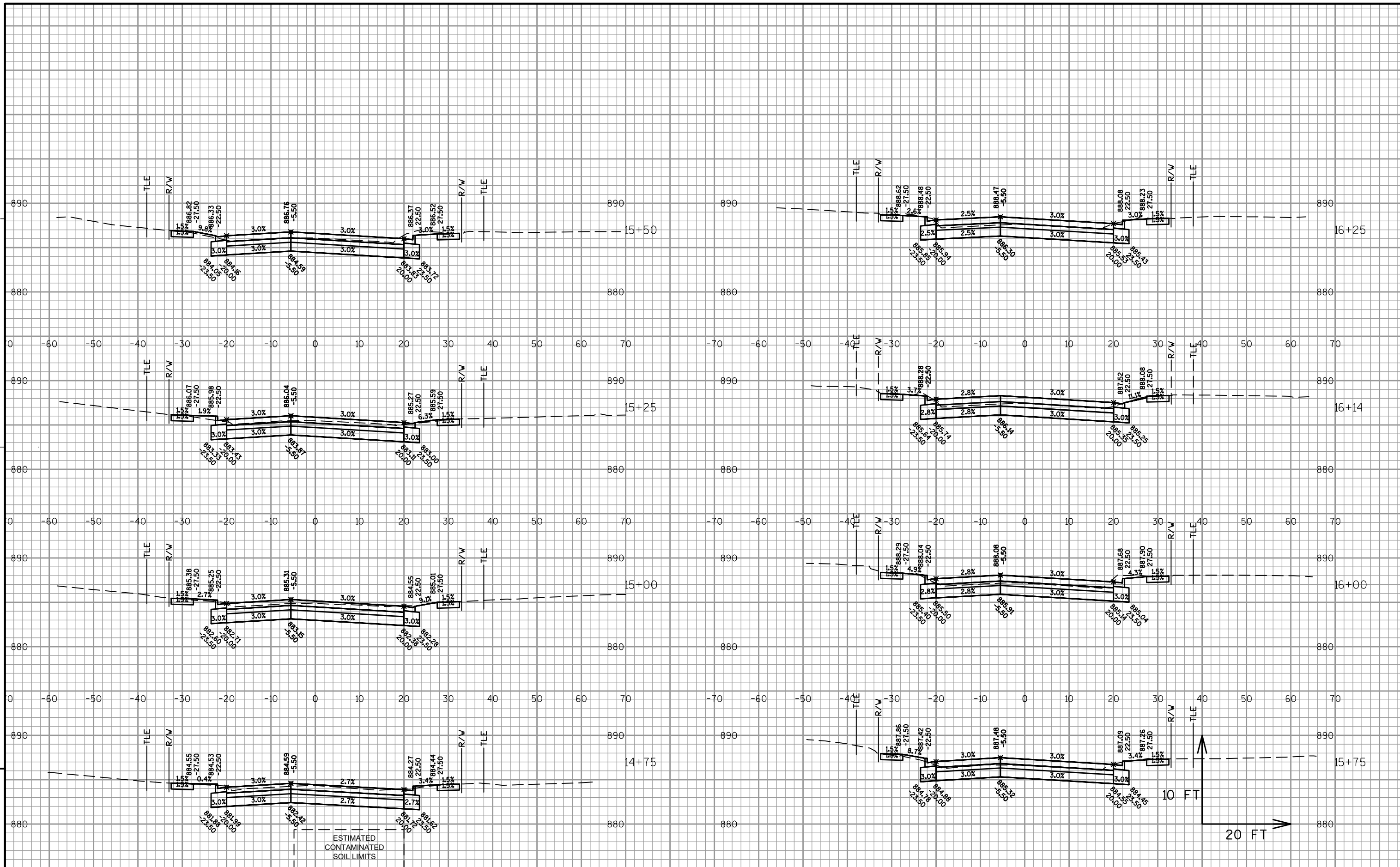
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

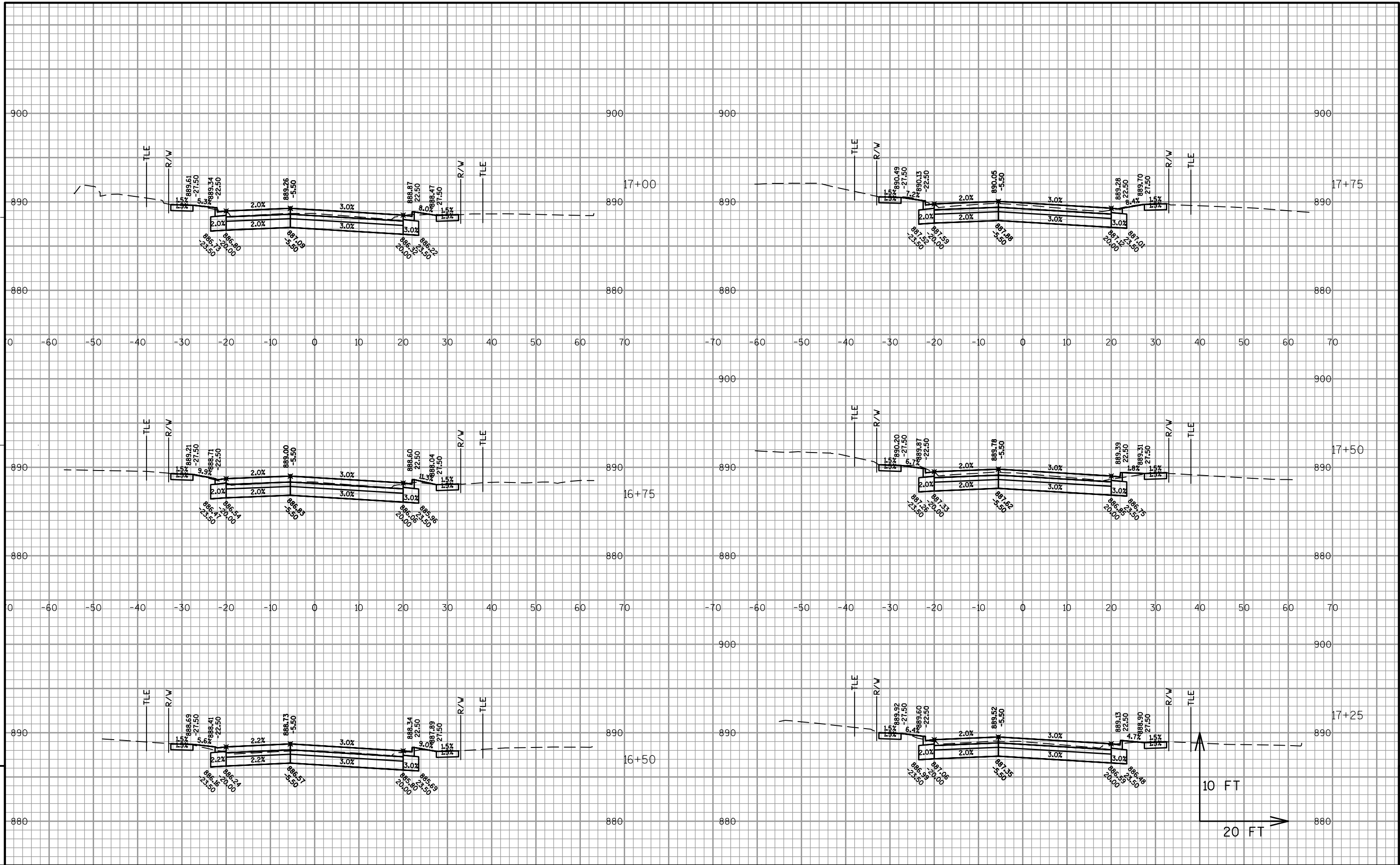
DATE 12/28/10 PLATE NO. W16-9P.6

STATION	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded Fill 1.25	
11+00.00	1100		100	28	0	0	0	0	0	0	0
11+25.00	1125	25	118	28	0	101	26	0	101	0	75
11+50.00	1150	25	105	30	2	103	27	1	204	1	150
11+75.00	1175	25	106	30	1	98	28	1	302	3	218
12+00.00	1200	25	116	29	0	103	27	0	404	3	293
12+25.00	1225	25	112	30	0	105	27	0	510	3	371
12+50.00	1250	25	108	25	0	102	25	0	612	4	447
12+75.00	1275	25	119	29	0	105	25	0	717	4	527
13+00.00	1300	25	118	25	0	110	25	0	826	4	612
13+25.00	1325	25	111	25	0	106	23	0	932	4	695
13+50.00	1350	25	123	25	0	108	23	0	1041	4	780
13+75.00	1375	25	115	25	0	110	23	0	1151	4	867
14+00.00	1400	25	108	28	0	103	24	0	1254	4	946
14+25.00	1425	25	129	51	0	110	37	0	1364	5	1020
14+50.00	1450	25	79	20	0	97	33	0	1461	5	1083
14+75.00	1475	25	93	20	0	80	19	0	1540	5	1144
15+00.00	1500	25	100	20	0	89	19	0	1630	5	1214
15+25.00	1525	25	81	22	0	84	20	0	1714	5	1278
15+50.00	1550	25	81	22	0	75	20	0	1789	5	1333
15+75.00	1575	25	83	17	0	76	18	0	1865	6	1391
16+00.00	1600	25	73	17	0	72	16	0	1937	6	1447
16+25.00	1625	25	73	17	0	67	16	0	2004	6	1498
16+50.00	1650	25	82	21	0	72	18	0	2076	6	1552
16+75.00	1675	25	75	21	0	73	20	0	2149	6	1606
17+00.00	1700	25	91	17	0	77	18	0	2226	6	1665
17+25.00	1725	25	93	21	0	85	18	0	2311	6	1732
17+50.00	1750	25	84	22	0	82	20	0	2393	6	1794
17+75.00	1775	25	100	22	0	85	20	0	2478	6	1859
18+00.00	1800	25	86	22	0	86	20	0	2565	6	1924
18+25.00	1825	25	76	65	0	75	40	0	2640	7	1959
18+50.00	1850	25	96	35	0	80	46	0	2719	7	1992
18+75.00	1875	25	103	33	0	92	32	0	2812	7	2053
19+00.00	1900	25	117	33	0	102	31	0	2914	7	2124
19+25.00	1925	25	121	33	0	110	31	0	3024	7	2203
19+50.00	1950	25	111	33	0	107	31	0	3131	7	2280
19+75.00	1975	25	121	33	0	107	31	0	3239	7	2356
20+00.00	2000	25	124	33	0	113	31	0	3352	7	2438
20+25.00	2025	25	116	32	0	111	30	0	3463	7	2519
20+50.00	2050	25	128	36	0	113	32	0	3576	7	2600
20+75.00	2075	25	131	32	0	120	32	0	3696	7	2689
21+00.00	2100	25	126	32	0	119	29	0	3814	7	2778
21+25.00	2125	25	136	34	0	121	30	0	3935	7	2869
21+50.00	2150	25	123	37	0	120	33	0	4055	7	2956
						4055	1092	6			

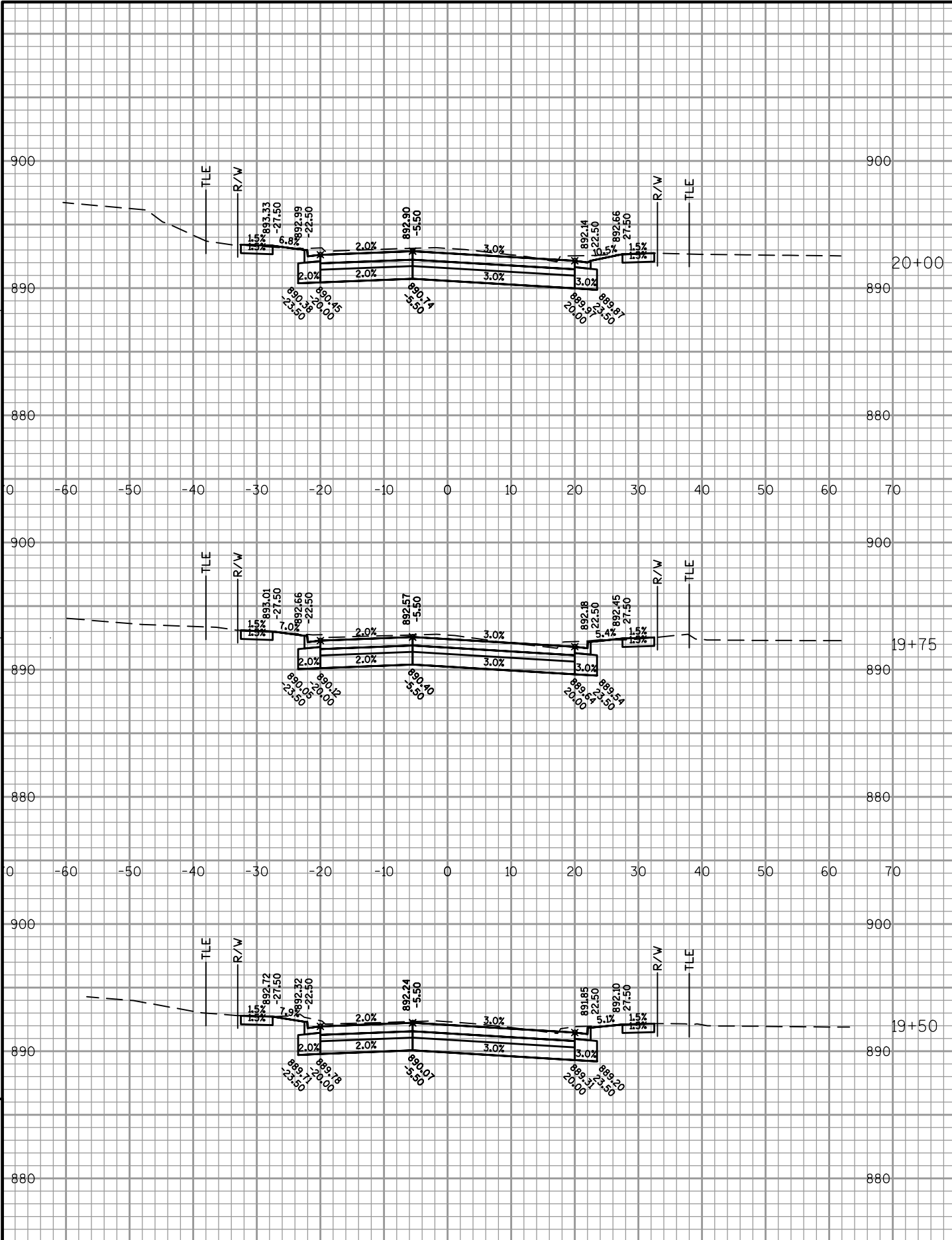
Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume



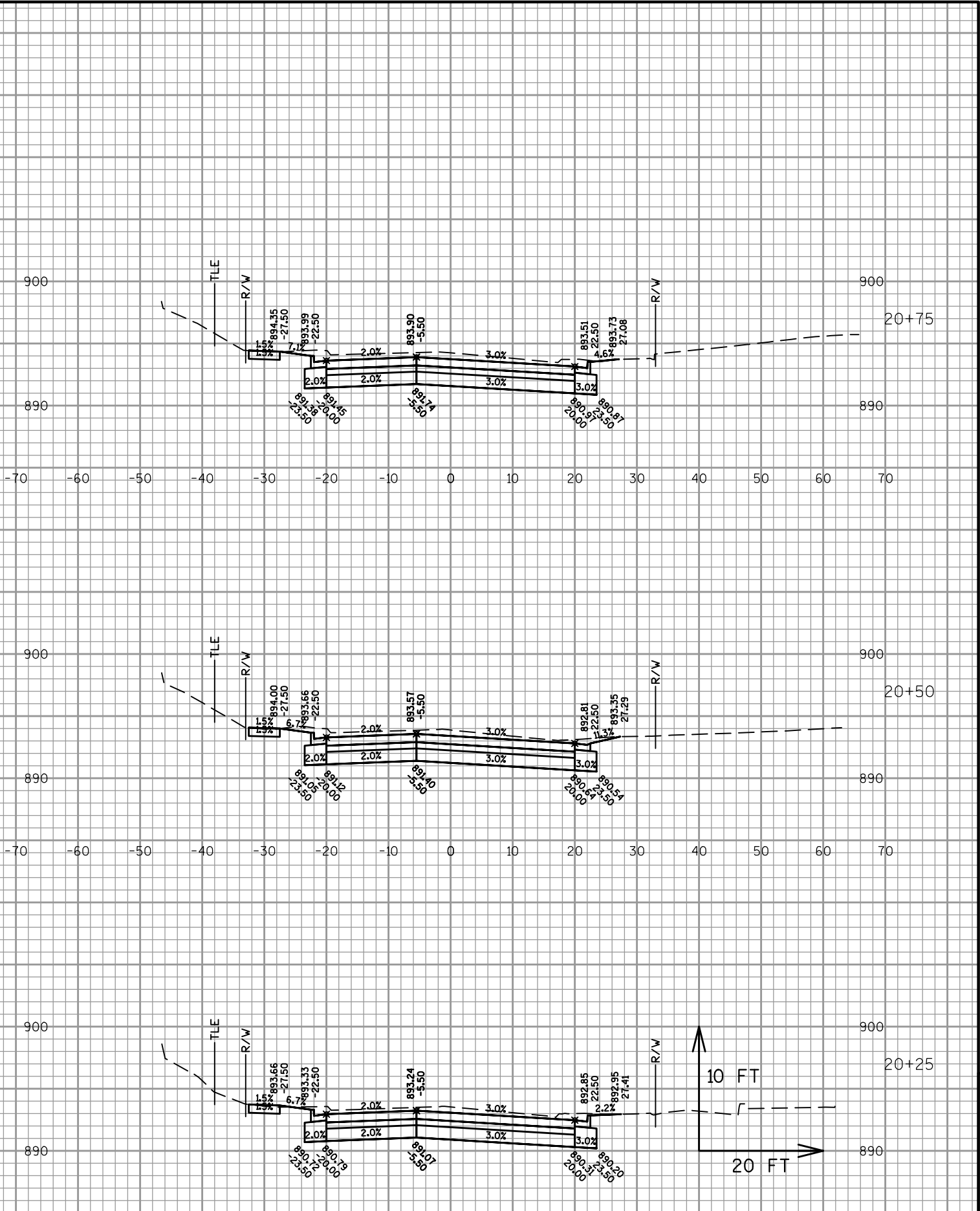




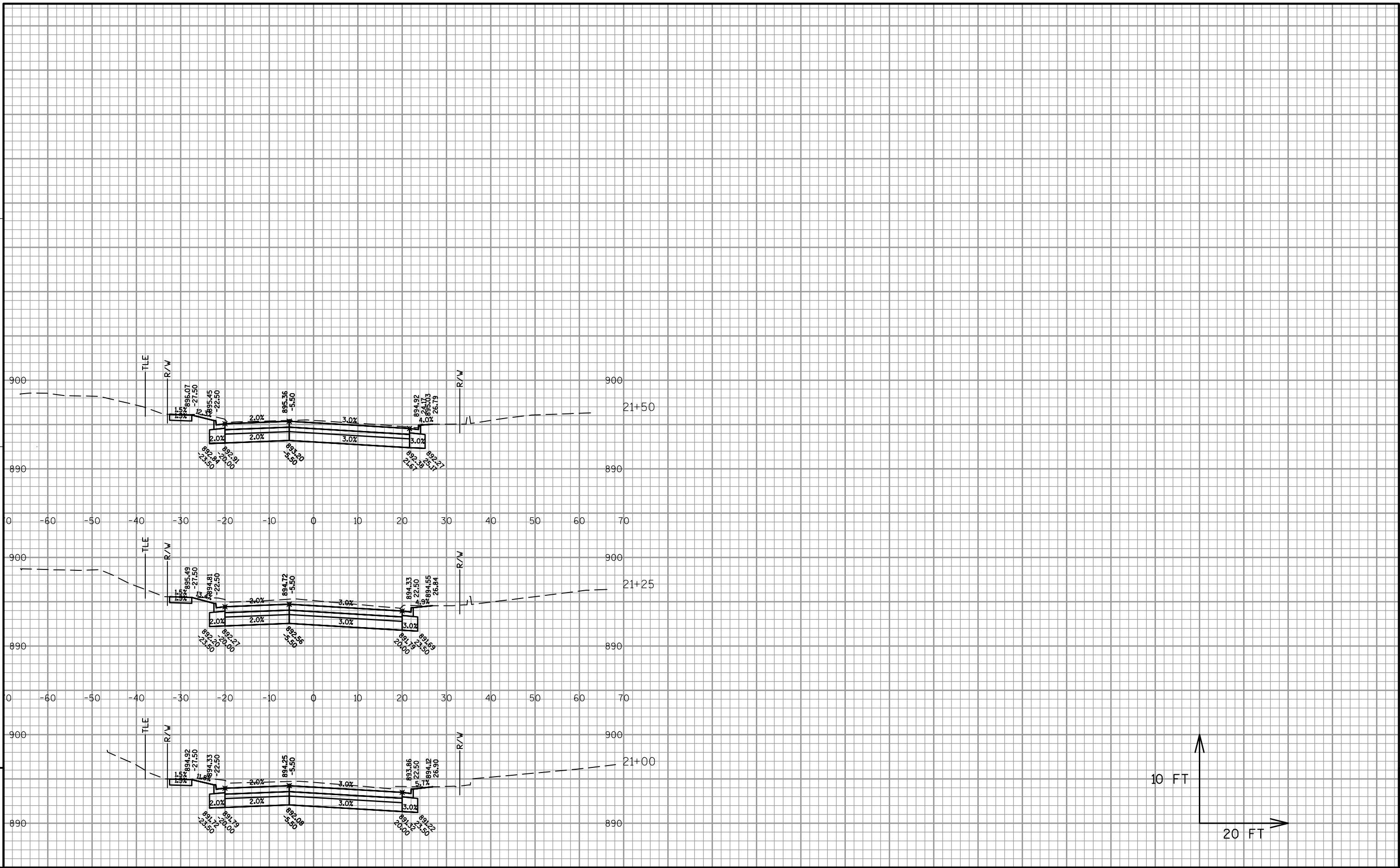
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Notes



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