

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENSE, 1-1/4 INCH.
2. TRANSVERSE JOINTS IN THE SIDEWALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
4. INLET SCREENS ARE TO BE PLACED BETWEEN THE FRAME AND GRATE OF CATCH BASINS / INLETS TO PREVENT SOIL FROM ENTERING THE SEWERS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURES ARE NO LONGER NECESSARY.
5. ALL STATION AND OFFSET OF CURB REFERENCED IN THE PLANS ARE TO THE FACE OF THE CURB.
6. ALL ELEVATIONS ARE REFERENCED TO CITY OF MILWAUKEE DATUM.
7. ASPHALT JOINT SHALL ALWAYS BE ABOVE 140°F(DEGREES) WHEN ANOTHER MAT IS PLACED ALONGSIDE.
8. ALL LONGITUDINAL AND TRANSVERSE CONCRETE PAVEMENT JOINT REQUIRING SEALING SHALL BE SEALED IN ACCORDANCE WITH THE PLAN DETAIL AND SPECIFICATIONS.
9. EROSION CONTROL AND TRAFFIC CONTROL DEVICES SHOWN AT SUGGESTED LOCATIONS.

STANDARD ABBREVIATIONS

- ASPH. - ASPHALT
- B.M. - BENCH MARK
- CTR. - CENTER
- C/L - CENTER LINE
- COMB. - COMBINED
- CONC. - CONCRETE
- C.W. - CONCRETE WALK
- COR. - CORNER
- C - CURB
- EB - EAST BOUND
- ELEV. - ELEVATION
- ENT. - ENTRANCE
- EXIST. - EXISTING
- F - FLANGE
- G - GUTTER, OR GAS
- HYD. - HYDRANT
- LT. - LEFT
- MMSD - MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
- PGL - PROFILE GRADE LINE
- P/L - PROPERTY LINE
- R OR RAD. - RADIUS
- RET. - RETAINING
- RT. - RIGHT
- R/W - RIGHT OF WAY
- TEL - AMERITECH
- TES - TRAFFIC ENGINEERING, AND ELECTRICAL SERVICES
- T/L - TRANSIT LINE
- WB - WEST BOUND
- WEP - WISCONSIN ELECTRIC POWER

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
UTILITY CONTACT
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
UTILITY PLAN
EROSION CONTROL PLAN
LIGHTING PLAN
CUC PLAN
PAVEMENT MARKING PLAN
TRAFFIC CONTROL PLAN
ALIGNMENT PLAN

UTILITY CONTACTS

AMERICAN TRANSMISSION COMPANY

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CHARTER COMMUNICATIONS

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WI 53212
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charles.br @charter.com

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PHONE: 414-708-4251
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PHONE: 414-704-1026
brahim.gaddour@lumen.com

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PHONE: (414) 254-1865
daniel.bandor@we-energies.com

WE ENERGIES - GAS

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PHONE: (414) 254-1865
daniel.bandor@we-energies.com

OTHER CONTACTS

CITY OF MILWAUKEE- STRUCTURES SECTION

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CITY OF MILWAUKEE- DESIGNER CONTACT

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MILWAUKEE COUNTY TRANSIT SYSTEM, COORDINATOR OF STREET SUPERVISION

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WISCONSIN DEPT. OF NATURAL RESOURCES

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kristina.betzold@wisconsin.gov

CITY OF MILWAUKEE, DPW/ COMMUNICATIONS

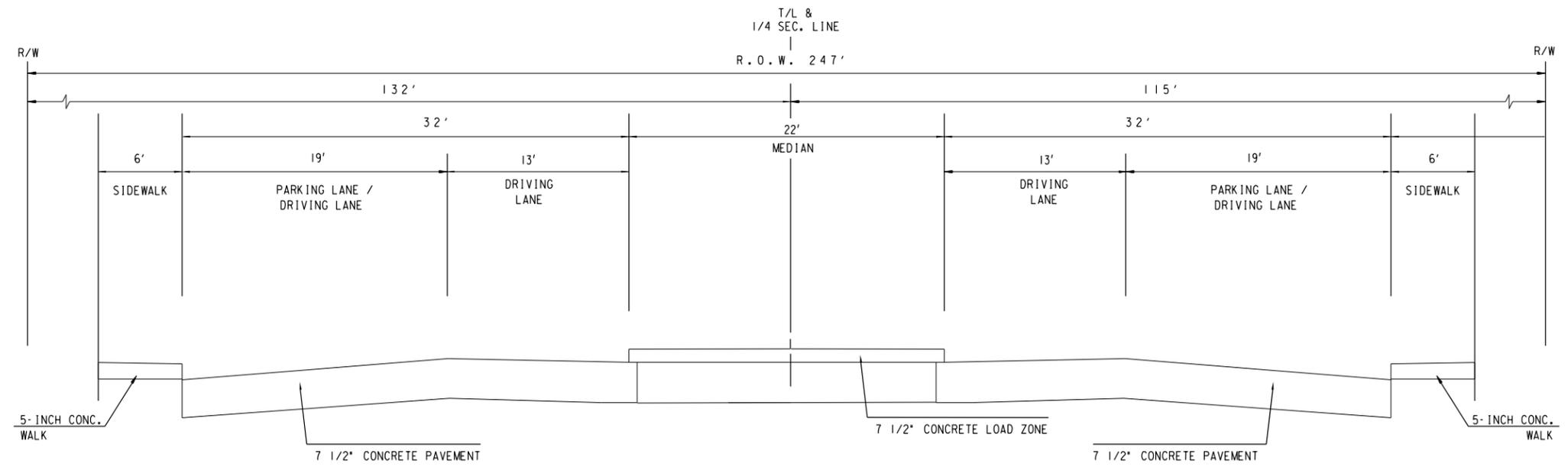
BRYAN PAWLAK
1440 W. CANAL ST.
MILWAUKEE, WI 53233
DISPATCH: 414-286-3686



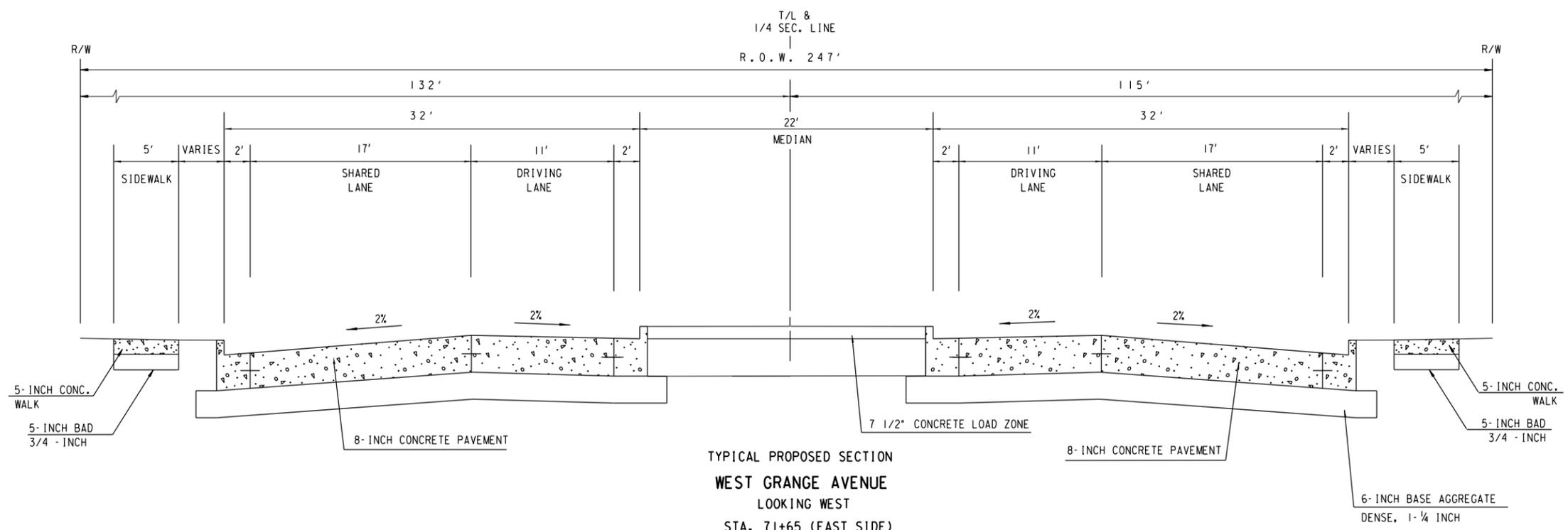
Dial **811** or (800) 242-8511

www.DiggersHotline.com

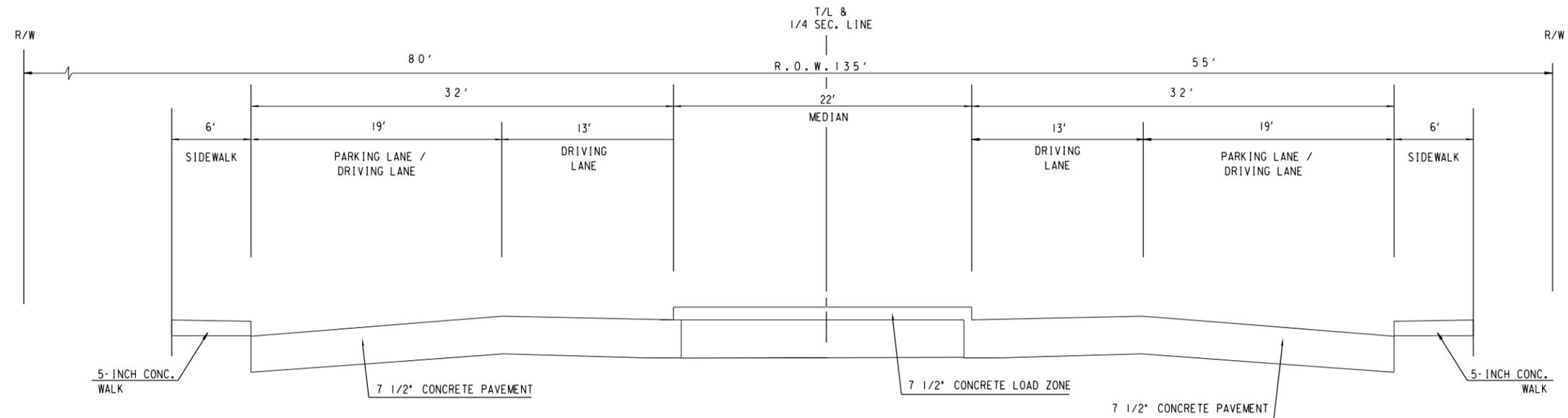




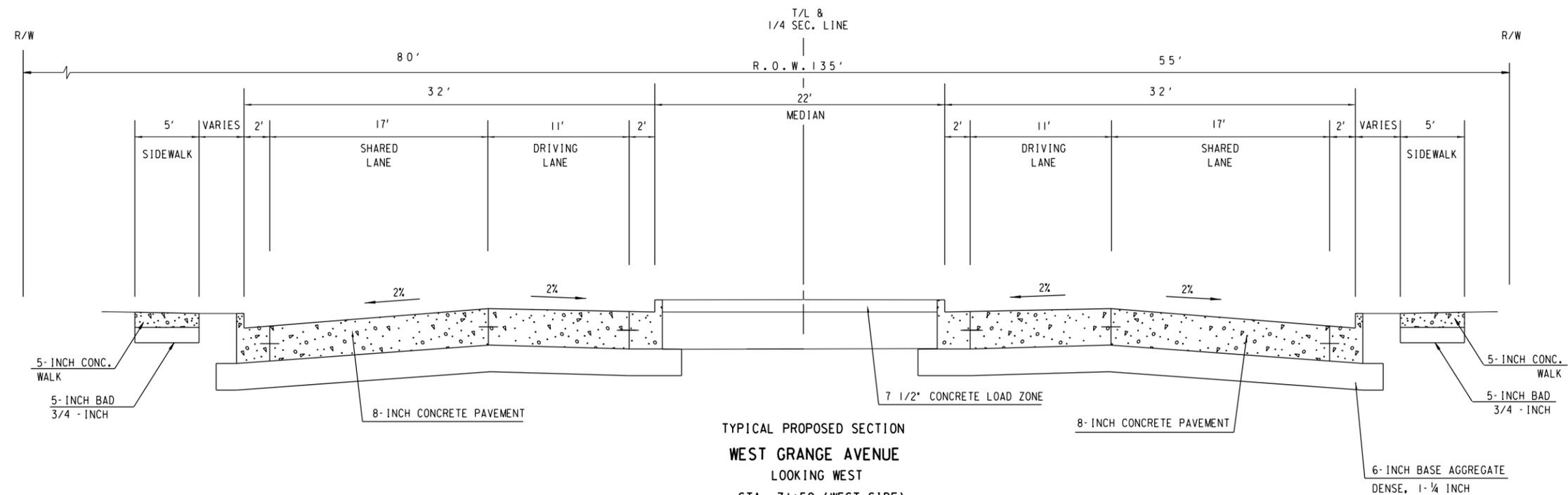
TYPICAL EXISTING SECTION
WEST GRANGE AVENUE
LOOKING WEST
STA. 69+85 (EAST SIDE)



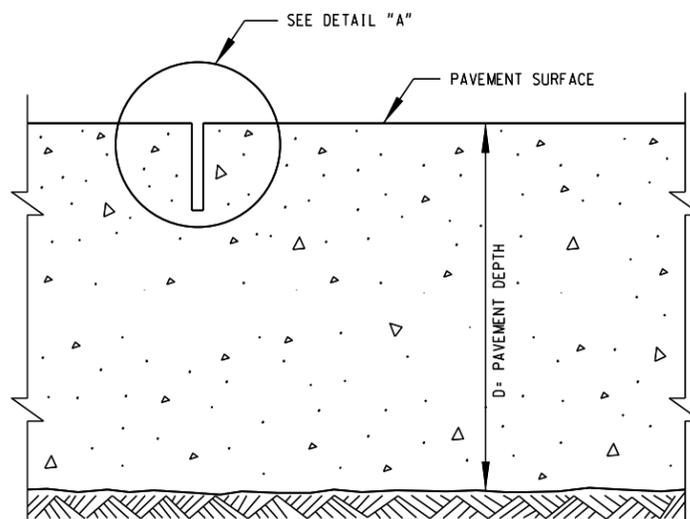
TYPICAL PROPOSED SECTION
WEST GRANGE AVENUE
LOOKING WEST
STA. 71+65 (EAST SIDE)



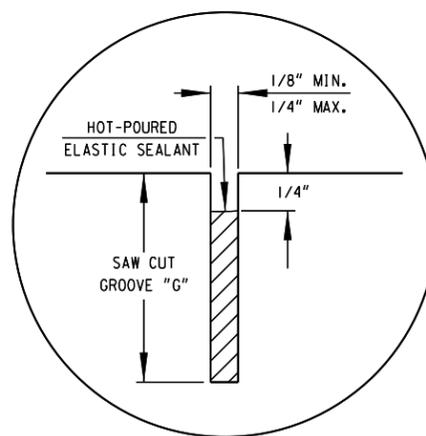
TYPICAL EXISTING SECTION
WEST GRANGE AVENUE
LOOKING WEST
STA. 71+50 (WEST SIDE)



TYPICAL PROPOSED SECTION
WEST GRANGE AVENUE
LOOKING WEST
STA. 71+50 (WEST SIDE)

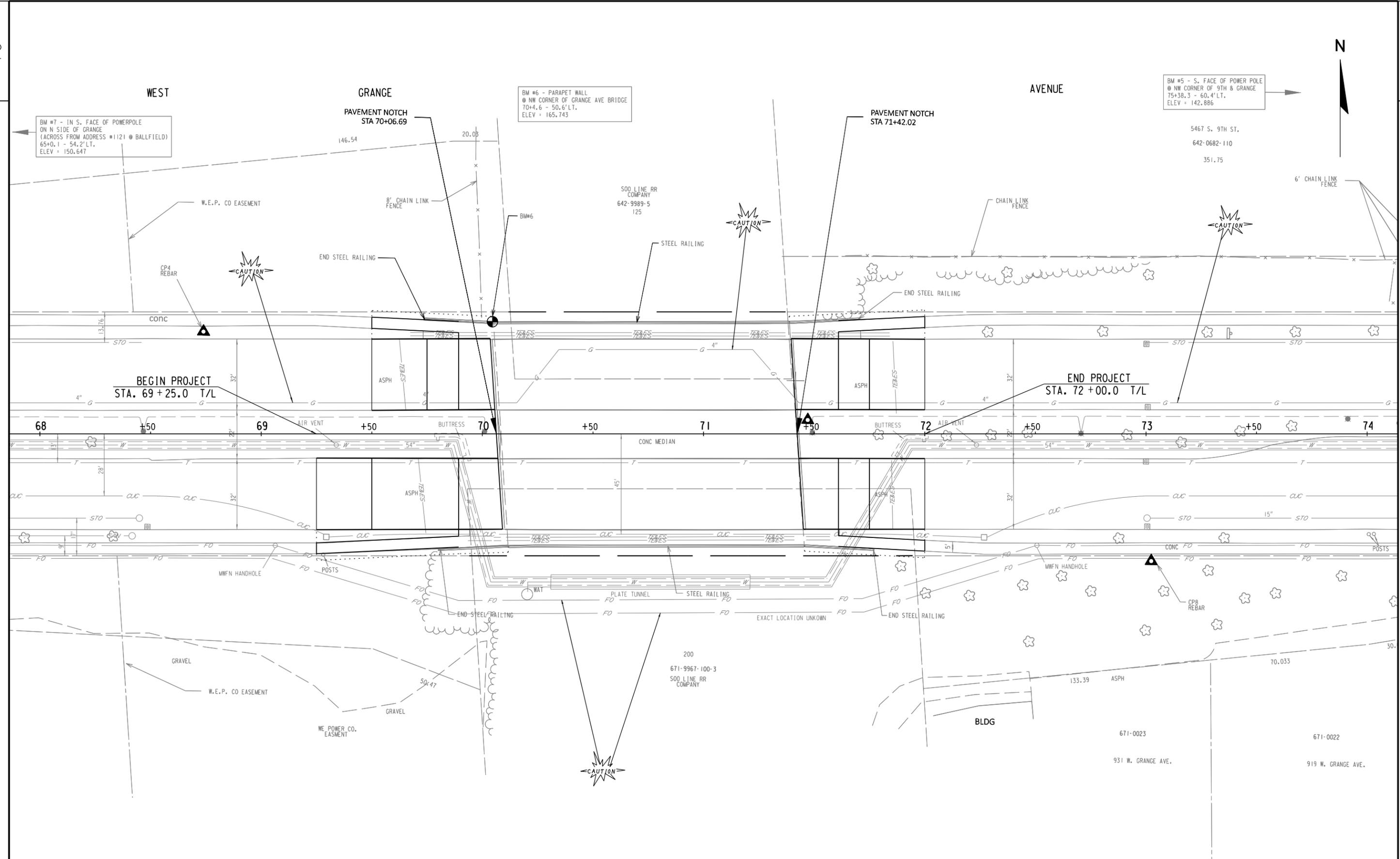


SAWED CONSTRUCTION JOINT



DETAIL "A"

HOT Poured JOINT SEALANT DETAIL



BM #7 - IN S. FACE OF POWERPOLE
ON N SIDE OF GRANGE
(ACROSS FROM ADDRESS #1121 @ BALLFIELD)
65+0.1 - 54.2' LT.
ELEV = 150.647

BM #6 - PARAPET WALL
@ NW CORNER OF GRANGE AVE BRIDGE
70+4.6 - 50.6' LT.
ELEV = 165.743

BM #5 - S. FACE OF POWER POLE
@ NW CORNER OF 9TH & GRANGE
75+38.3 - 60.4' LT.
ELEV = 142.886

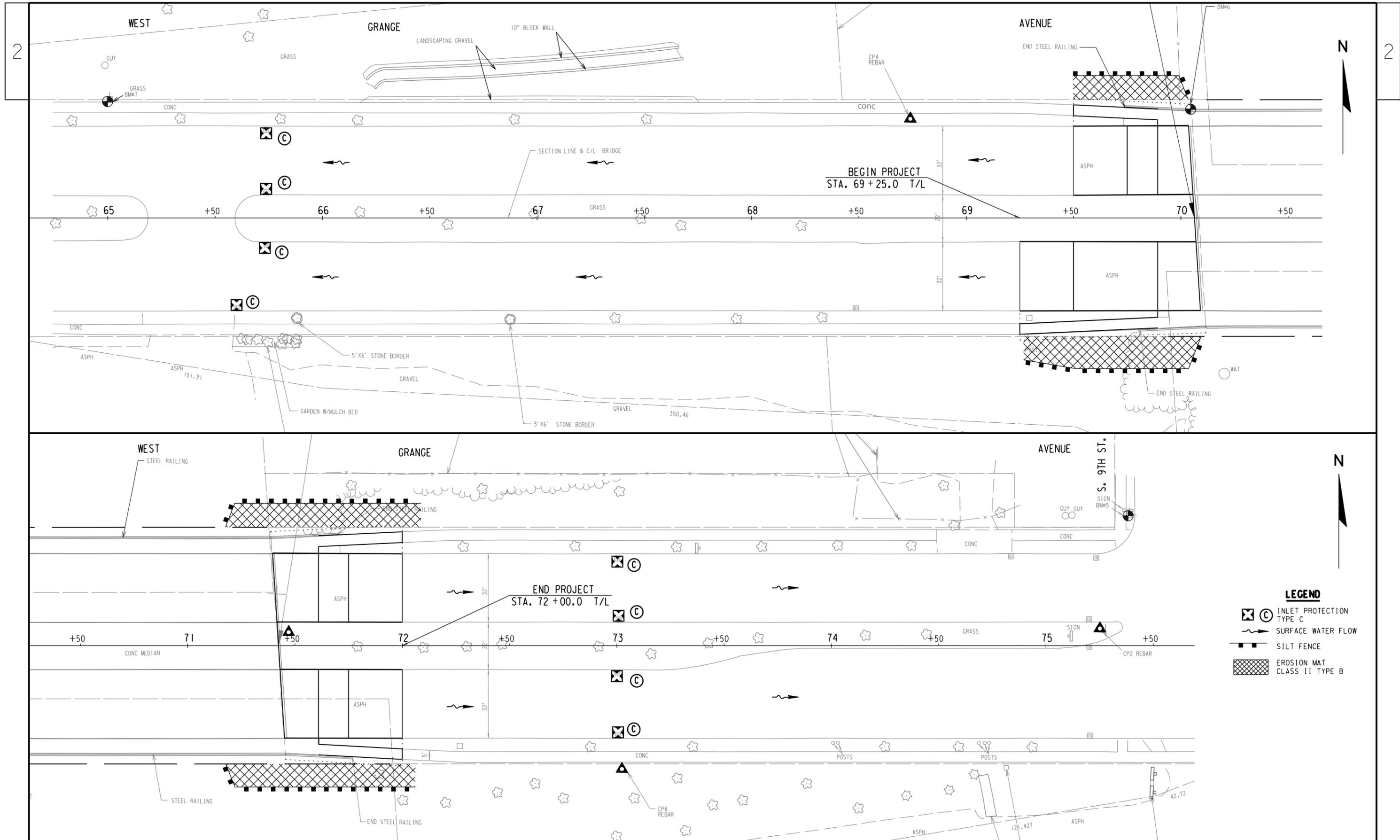
5467 S. 9TH ST.
642-0682-110
351.75

500 LINE RR
COMPANY
642-9989-5
125

200
671-9967-100-3
500 LINE RR
COMPANY

671-0023
931 W. GRANGE AVE.

671-0022
919 W. GRANGE AVE.



- LEGEND**
- INLET PROTECTION TYPE C
 - SURFACE WATER FLOW
 - SILT FENCE
 - EROSION MAT CLASS II TYPE B

STATE PROJECT NUMBER 2365-07-70

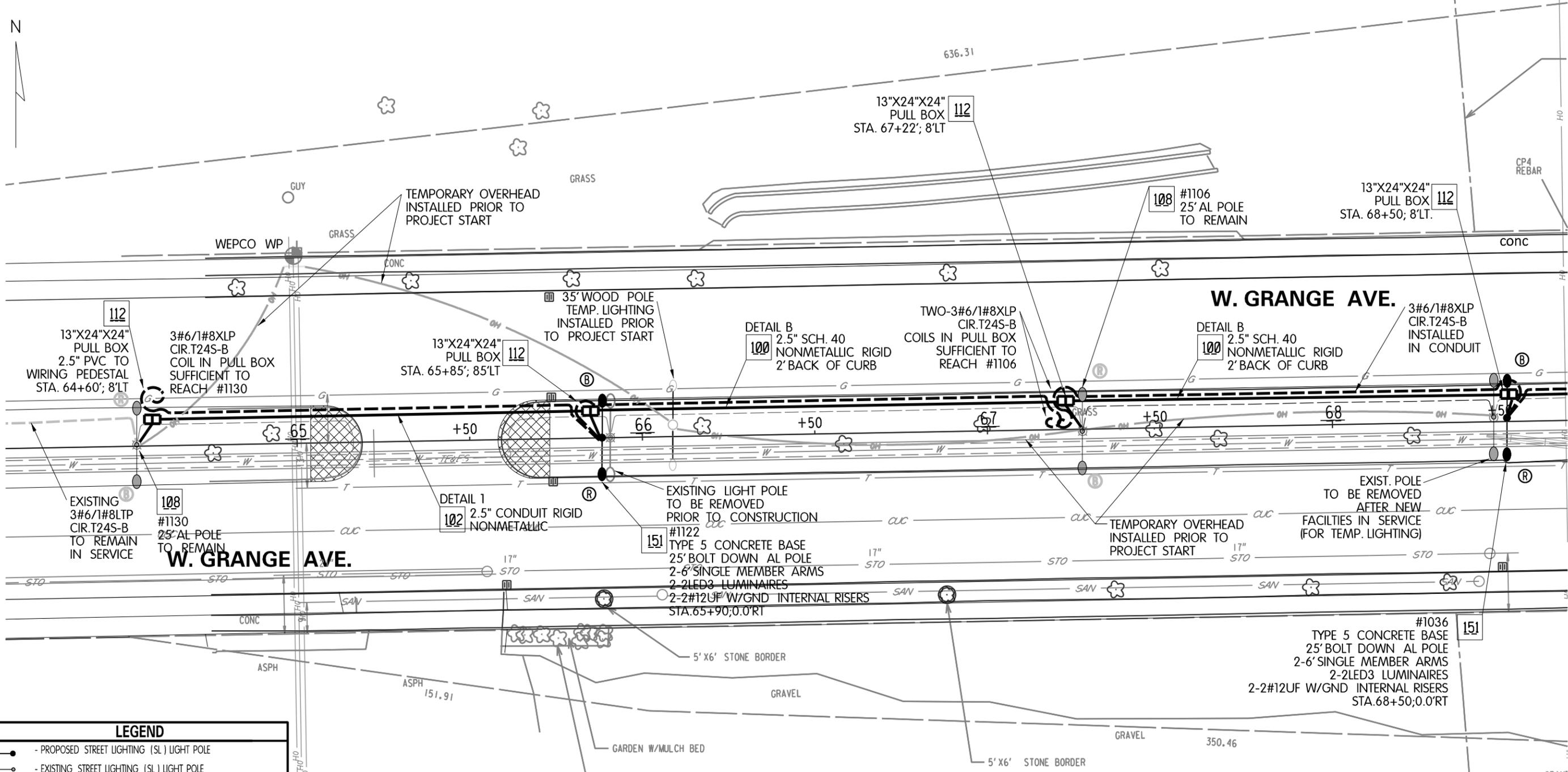
HWY: W GRANGE AVE

COUNTY: MILWAUKEE

EROSION CONTROL

SCALE FEET 0' 40'

SHEET NO: E



LEGEND	
	- PROPOSED STREET LIGHTING (SL) LIGHT POLE
	- EXISTING STREET LIGHTING (SL) LIGHT POLE
	- EXISTING ELECTRICAL OVERHEAD
	- PROPOSED CONCRETE BASE TYPE 5
	- PROPOSED PVC CONDUIT (SCHED. & SIZE NOTED ON PLAN)
	- PVC CONDUIT (EXISTING)
	- ELECTRICAL SL PULL BOX (CHECK PLAN FOR SIZE)
	- PROPOSED SL CABLE
	- EXISTING SL CABLE (NOTED: IN SERVICE OR ABANDON)
	- SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION
	- CONNECT TO BLACK CABLE
	- CONNECT TO RED CABLE

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS. CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT. PULL ROPE (3/8" NYLON) REQUIRED IN VACANT CONDUIT. SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

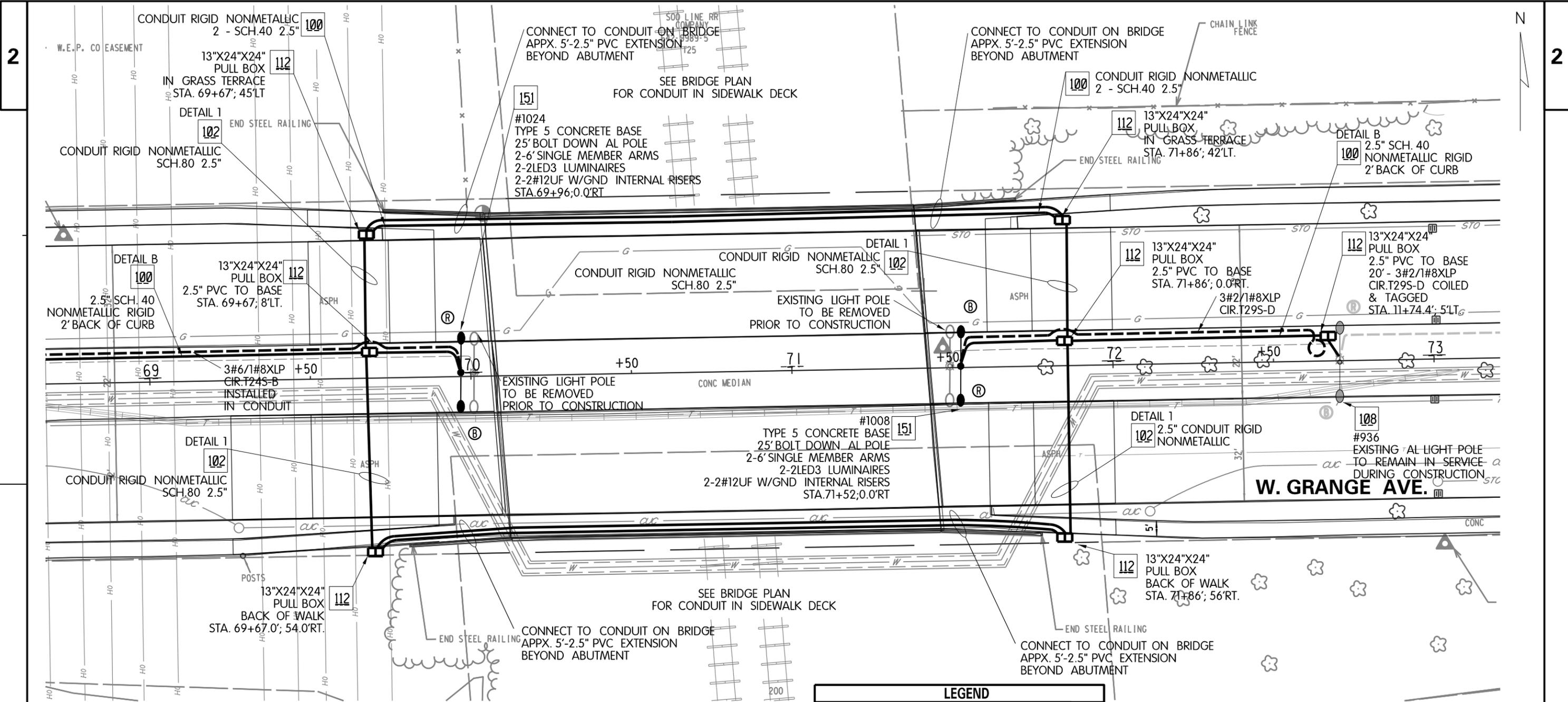
CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

TYPICAL RECTANGULAR PULL BOX SHOULD BE INSTALLED AS SHOWN ON PLAN, BUT WHEN IT IS NOT POSSIBLE A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS, AND FIRE HYDRANTS SHOULD BE USED.

HYDROVAC ALL LIGHT POLE BASES.

CONNECTIONS WITHIN HANDHOLE USING ILSCO-PBTS OR POLARIS-ISP2 MULTITAP CONNECTOR





NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS. CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT. PULL ROPE (3/8" NYLON) REQUIRED IN VACANT CONDUIT. SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS. CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

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HYDROVAC ALL LIGHT POLE BASES. CONNECTIONS WITHIN HANDHOLE USING ILSCO-PBTS OR POLARIS-ISP2 MULTITAP CONNECTOR

LEGEND

- PROPOSED STREET LIGHTING (SL) LIGHT POLE
- EXISTING STREET LIGHTING (SL) LIGHT POLE
- EXISTING ELECTRICAL OVERHEAD
- PROPOSED CONCRETE BASE TYPE 5
- PROPOSED PVC CONDUIT (SCHED. & SIZE NOTED ON PLAN)
- PVC CONDUIT (EXISTING)
- ELECTRICAL SL PULL BOX (CHECK PLAN FOR SIZE)
- PROPOSED SL CABLE
- EXISTING SL CABLE - (NOTED IN SERVICE OR ABANDON)
- SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION
- CONNECT TO BLACK CABLE
- CONNECT TO RED CABLE



STREET LIGHTING GENERAL NOTES:

PRIOR TO CONSTRUCTION, THE LOCATION OF UNDERGROUND UTILITIES SHALL BE DETERMINED IN THE FIELD BY CONTACTING "DIGGERS HOTLINE."

STREET LIGHTING SHALL BE INSTALLED IN COMPLIANCE WITH WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 652 EXCEPT:

THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCLUDING REPAIRS, REPLACEMENT OR RELOCATION ETC. OF STREET LIGHTING FACILITIES IF THE CONTRACTOR DOES ANY DEVIATION FROM THE STREET LIGHTING DESIGN WITHOUT THE STREET LIGHTING ENGINEERS SIGNED PERMISSION.

- 1 DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- 2 LOCATIONS OF THE PVC CONDUITS WHERE THEY ARE REQUIRED ARE IDENTIFIED IN THE PRINTS. HOWEVER, INSTALLATION MAY REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. APPROPRIATE ADJUSTMENT ON CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. ANY RELOCATIONS MUST BE APPROVED BY THE ENGINEER. FIELD MARK EACH CONDUIT LOCATION BY STAMPING AND PAINTING WITH RED PAINT ON TOP AND BACKSIDE OF CURB.
- 3 TYPICAL CONDUIT INSTALLED UP TO DIRECT BURIED STREET LIGHT POLES IS AS FOLLOWS 3-INCH OR 2.5-INCH (AS NOTED) SCHEDULE 40 RIGID PVC TO STREET LIGHTING METAL HOUSING (PEDESTAL), THE 1.5-INCH SCHEDULE 40 RIGID PVC TO STREET LIGHT POLE CABLE SLOT, AND THE 2-INCH SCHEDULE 40 RIGID PVC TO SIGNAL STANDARD BASE AND RISER FOR TRAFFIC SIGNAL ON STREET LIGHT POLE.
- 4 DEPTH OF CONDUIT INSTALLED BELOW THE STREETS, HIGHWAYS, ROADS, AND ALLEYS SHALL BE 24-INCHES MINIMUM AND 36-INCHES MAXIMUM. (MEASURED FROM FINISHED FLANGE LINE)
- 5 CONDUIT INSTALLED BEHIND CURB, AND UNDER DRIVEWAYS SHALL BE INSTALLED AT A DISTANCE OF 6 INCHES AWAY FROM THE BACK OF CURB TO THE CENTER LINE OF CONDUIT, AND 18 INCHES DOWN MEASURED FROM THE TOP OF CURB OR FINISHED GRADE TO THE TOP OF CONDUIT.
- 6 WHEN THERE IS MORE THAN ONE CONDUIT TO BE INSTALLED, PLACE ALL CONDUITS IN THE SAME TRENCH.
- 7 ANY EXCEPTION TO THE MINIMUM OR MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- 8 THE CONTRACTOR OR HIS SUBCONTRACTOR MUST MAKE SURE THE AREA BEHIND CURB AND/OR TRENCH SHALL BE FREE OF DEBRIS AND OVERPOUR AND SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.
- 9 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.
- 10 ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (SEE NEC 352.28 2008 CODE)
- 11 PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED IMMEDIATELY AFTER INSTALLATION WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.
- 12 ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.
- 13 CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX OR JUNCTION BOX OR BASE TO BASE, ETC.).
- 14 PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUIT.
- 15 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 UNLESS OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.
- 16 WHEN ENDS OF CONDUIT DO NOT CONNECT TO A PULL BOX / VAULT AND WILL END UP UNDER CONCRETE WALK. THE CONTRACTOR IS REQUIRED TO LEAVE A 24" X 24" BOX FORM CENTERED OVER THE END OF CONDUIT AND FILL THE BOXFORM WITH CRUSHED GRAVEL. (PER WISDOT SPEC 209.2.1(I) GRANULAR BACKFILL)
- 17 ALL PIPE CROSSINGS AND PULL BOXES / VAULTS SHALL BE AT LEAST SIX (6) FEET AWAY FROM FIRE HYDRANTS, UNLESS NOTED OTHERWISE, OR APPROVED BY THE STREET LIGHTING ENGINEER.
- 18 ALL POLES AND TRAFFIC STANDARDS IN CONCRETE ARE REQUIRED TO HAVE A 30"X30" BOX SHAPED JOINT PLACED AROUND THEM USING AN EXPANSION JOINT FILLER. UNLESS NOTED OTHERWISE (SEE DETAIL 122)
- 19 TYPICAL RECTANGULAR PULL BOXES / VAULTS SHOULD BE INSTALLED AS SHOWN ON PLANS, BUT WHEN IT IS NOT POSSIBLE, A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS AND FIRE HYDRANTS SHOULD BE USED, OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.

STREET LIGHTING GENERAL NOTES:

- 20 LIGHT POLES AND TRAFFIC STANDARDS INSTALLED BEHIND THE CURB MUST MEET A MINIMUM DISTANCE OF 24 INCHES FROM THE FACE OF CURB TO THE CURB SIDE FACE OF THE POLE OR TRAFFIC STANDARD.
- 21 A PLAQUE WITH THE POLE NUMBER AS SHOWN ON THE PLANS SHALL BE AFFIXED ONTO THE POLE SHAFT.
- 22 COORDINATE NEW CONDUIT CONNECTIONS WITH EXISTING CONDUIT, DUCT PACKAGES, AND PULL BOXES/ VAULTS/ MANHOLES WITH CITY OF MILWAUKEE STREET LIGHTING. THE CITY REQUIRES THREE WORKING DAYS ADVANCED NOTICE. CONTACT ELECTRICAL SUPERVISOR STREET LIGHTING - MORGAN MONNOT (OFFICE 414-286-5942 (CELL) 414-708-4251 STREET LIGHTING - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434 STREET LIGHTING - DISPATCHER @ 414-286-5944 TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148 TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687
- 23 IMMEDIATELY AFTER THE CONTRACTOR HAS COMPLETED ALL THE ELECTRICAL PULL BOXES / VAULTS, CONDUIT AND CONDUIT CONNECTIONS, AND JUST BEFORE ELECTRICAL WORK IS COVERED UP WITH CONCRETE, SOIL, OR ETC. THE CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SHOP SUPERVISORS FOR FINAL INSPECTION AND APPROVAL OF ALL WORK. STREET LIGHTING - MORGAN MONNOT (OFFICE 414-286-5942 (CELL) 414-708-4251 STREET LIGHTING - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434 STREET LIGHTING - NEAL KARWEIK (OFFICE) 414-286-5943 (CELL) 414-708-4245 STREET LIGHTING - THOMAS HUGHES (OFFICE) 414-286-3457 (CELL) 414-708-3175 STREET LIGHTING - DISPATCHER @ 414-286-5944 TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148 TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687
- 24 CONDUIT WILL ONLY BE INSTALLED AFTER THE CURB IS POURED, UNLESS APPROVED BY BOTH THE ENGINEER & STREET LIGHTING SHOP SUPERVISOR.

PROVIDE AS-BUILT DRAWINGS DETAILING THE FINAL PLACEMENT OF CONDUIT, CABLING, EQUIPMENT, AND GEOMETRIC MODIFICATIONS UNDER THE CONTRACT. PROVIDE PDF COPY CONFORMING TO CMM 1-65.14, OR RECORD ALL CHANGES IN RED INK ONLY ON THE AS-LET (DESIGN) PAPER DRAWINGS. THE CITY OF MILWAUKEE DPW ENGINEER WILL REJECT AS-BUILTS WITH INCOMPLETE OR INCORRECT CONTENT OR NOT CONFORMING TO CMM STANDARDS.

SHEET 1 OF 8

PROJECT NO. 2365-07-70

GRANGE BRIDGE

COUNTY: MILWAUKEE

STREET LIGHTING - DETAILS

SHEET

E

STREET LIGHTING GENERAL NOTES:

AS-BUILT GUIDELINES:

PROVIDE AS-BUILT DRAWINGS DETAILING THE FINAL PLACEMENT OF CONDUIT, CABLING, EQUIPMENT, AND GEOMETRIC MODIFICATIONS UNDER THE CONTRACT. PROVIDE PDF COPY CONFORMING TO CMM 1-65.14, OR RECORD ALL CHANGES IN RED INK ONLY ON THE AS-LET (DESIGN) PAPER DRAWINGS. THE ENGINEER WILL REJECT AS-BUILTS WITH INCOMPLETE OR INCORRECT CONTENT OR NOT CONFORMING TO CMM STANDARDS.

IT IS CRITICAL THAT THE CONTRACTOR WORK ON THE AS-BUILT DRAWINGS WHILE THE JOB IS PROGRESSING, SO CHANGES ARE DOCUMENTED WHILE THEY ARE STILL FRESH IN YOUR MIND.

IF THERE IS A STRUCTURE DRAWING, INCLUDE ALL STRUCTURES DRAWING SHEETS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSERT ANY ADDENDUM OR REPLACEMENT DRAWING SHEETS. TO DO THIS, RENUMBER THEM SIMILARLY TO THE ORIGINAL DRAWING SHEET.

FOR EXAMPLE:

REVISED SHEET 5 WOULD REPLACE SHEET 5. HOWEVER, ALL THE ORIGINAL SHEETS SHALL REMAIN IN THE AS-BUILT. IF THE SHEET HAS BEEN REPLACED CROSS IT OUT WITH AN X AND INDICATE THE NUMBER OF ITS REPLACEMENT SHEET. IF ADDITIONAL SHEETS WERE ADDED, INSERT THEM IN THE ORIGINAL LOCATION AND LABEL THEM WITH THE PREVIOUS SHEET NUMBER FOLLOWED BY AN "A", "B", "C", ETC.

NOTE THE SHEET CHANGES ON THE TITLE SHEET UNDER THE ORDER OF SHEETS.

THE TITLE SHEET OF THE AS-BUILT DRAWING SHOULD INCLUDE THE FOLLOWING INFORMATION:

AS-BUILT DRAWING
SUPERVISOR:
PROJECT MANAGER:
CONTRACTOR LEADER:
CONTRACTOR COMPANY:
WORK STARTED:
WORK COMPLETED:

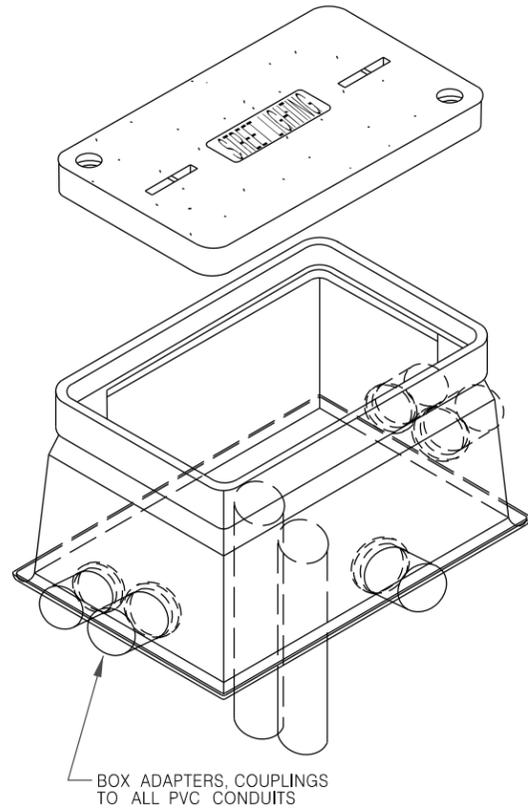
LINE OUT OR CROSS OUT ALL CHANGED INFORMATION AND WRITE-IN THE CORRECTED INFORMATION ABOVE THE ORIGINAL OR CLOSE TO IT WHEREVER POSSIBLE. USE BLANK SPACES ON THE DRAWING SO NOTES ARE NOT SUPERIMPOSED. DRAWINGS WITH EXCESSIVE DETAIL MAY REQUIRE AN ALTERNATE APPROACH. NUMBERED CHANGES OR ADDITIONS MAY BE SHOWN ON SUPPLEMENTAL NON-DRAWING SHEETS.

- LOCATE AND CLEARLY LABEL ALL CONDUIT RUNS, FITTINGS, SPLICE VAULTS, PULL BOXES, METER PEDESTALS, CONCRETE BASES, TRANSFORMERS, POLES AND OTHER APPURTENANCES IN TWO DIRECTIONS. SWING TIES SHOULD BE MADE FROM THE OBJECTS THAT ARE PERMANENT IN NATURE AND VISIBLE ON THE FINISHED SURFACE.
- STREET NAMES SHALL BE ON ALL SHEETS.
- SHOW ALL SIZES AND MATERIAL TYPES OF PIPES AND CONDUITS, IF CHANGED OR MODIFIED FROM ORIGINAL DESIGN.
- ALL HORIZONTAL DISTANCES SHALL BE SHOWN TO THE NEAREST TENTH OF A FOOT (I.E., 205.3'). ALL VERTICAL DISTANCES SHALL BE TO THE NEAREST INCH (I.E., 24")
- SHOW LOCATION AND ELEVATIONS ON PIPES AND FITTINGS WHERE CHANGES OR DEFLECTIONS IN DIRECTION OCCUR.
- SPECIAL DETAIL DRAWINGS MAY BE REQUIRED WHERE INSTALLATIONS ARE NOT SHOWN ON APPROVED CONSTRUCTION DRAWINGS FOR WHATEVER REASON OR WHERE REQUIRED FOR CLARITY.
- TYPICAL SERVICE INSTALLATION DETAILS WITH DEVIATIONS FROM ORIGINAL PLANS OR STANDARD DETAILS SHALL BE NOTED ON AS-BUILT DRAWINGS.
- NO ARBITRARY MARK-UPS WILL BE PERMITTED.

IF THERE ARE NO CORRECTIONS OR ADDITIONS TO THE AS-LET PLAN(S) PUT "NO CHANGE" ON THE SHEET WITH ALL OTHER REQUIRED AS-BUILT INFORMATION.

SEND TO:
CITY OF MILWAUKEE
INFRASTRUCTURE SERVICES DIVISION
TRANSPORTATION SECTION
STREET LIGHTING & CUC MANAGER
841 NORTH BROADWAY
ROOM 920
MILWAUKEE, WISCONSIN 53202

SHEET 2 OF 8



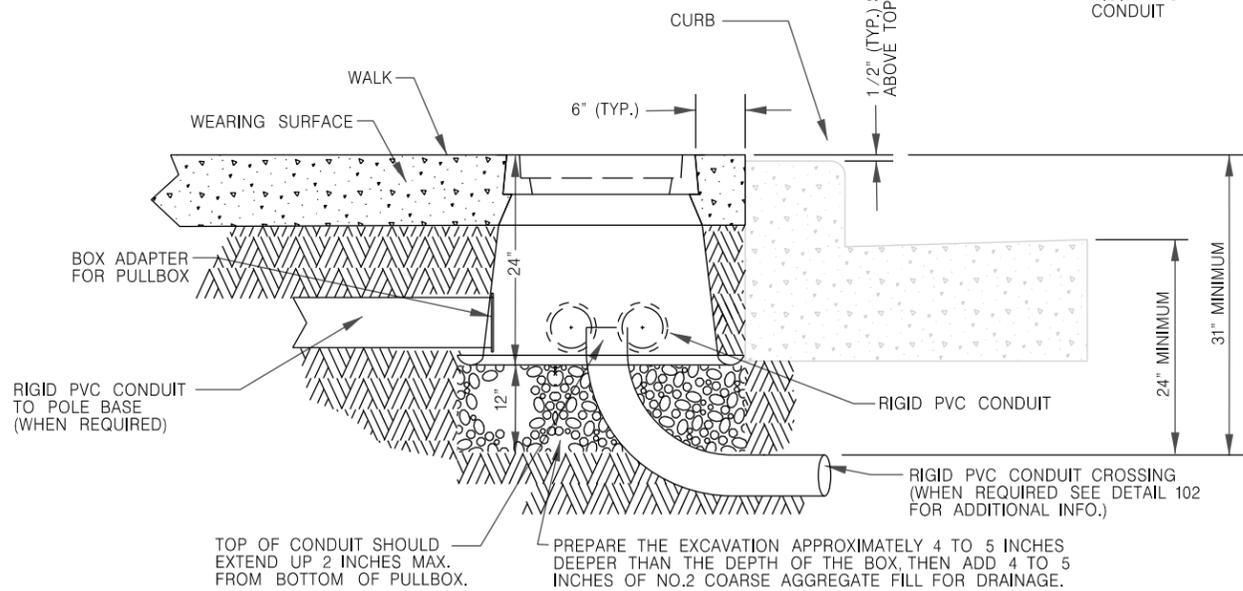
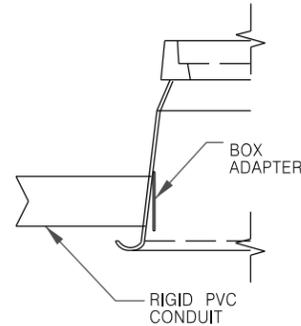
HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W / 2 BOLTS
COLOR: GRAY

ELECTRICAL PULLBOX
FLARED WALL
BOX W / NO BASE
COLOR: GRAY

(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS

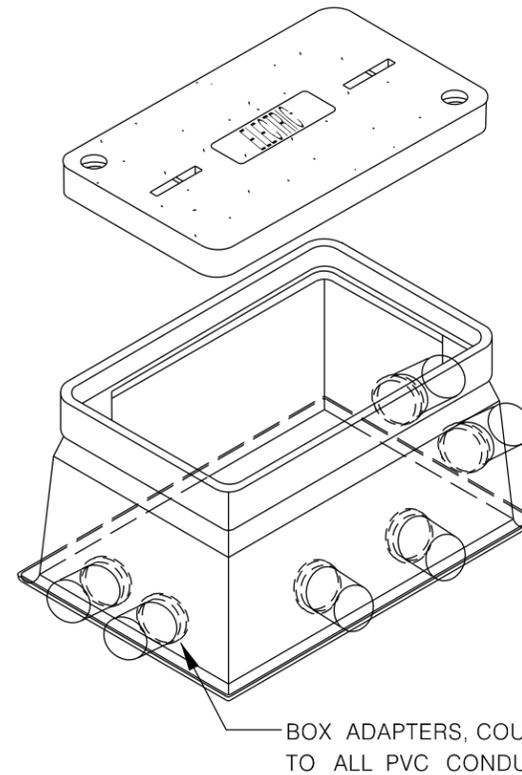


112

DETAIL
TYPICAL PULLBOX INSTALLATION IN WALK

NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

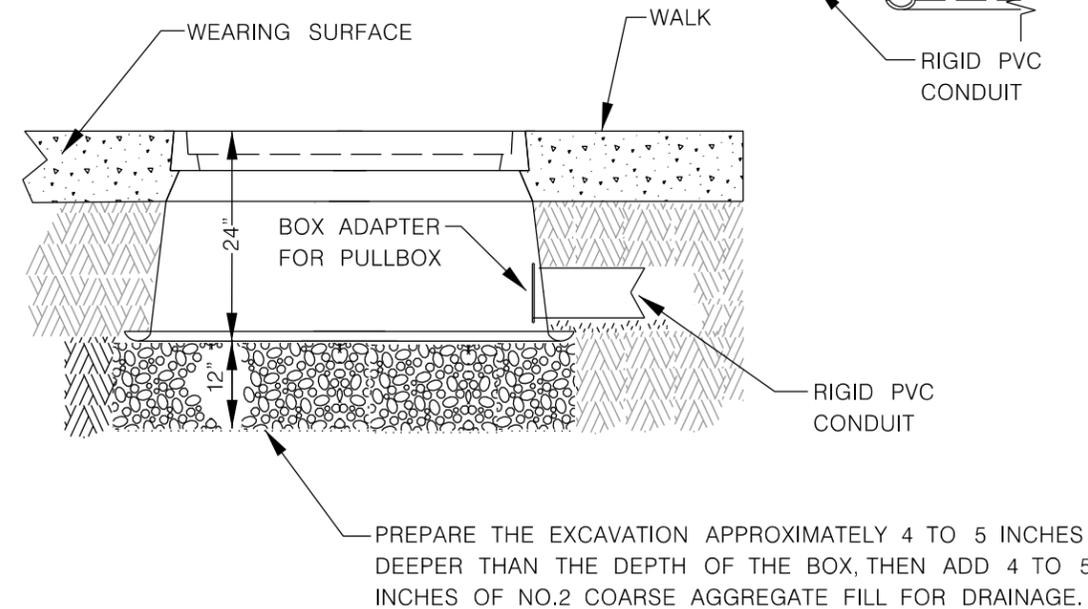
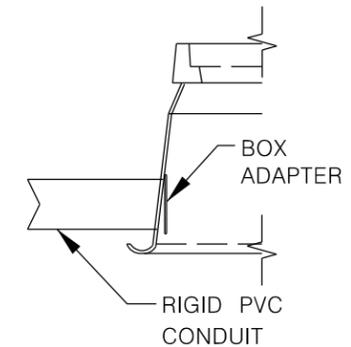


HEAVY DUTY COVER
W/ ELECTRIC LOGO
& W / 2 BOLTS
COLOR: GRAY

ELECTRICAL PULLBOX
FLARED WALL
BOX W / NO BASE
COLOR: GRAY
(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS



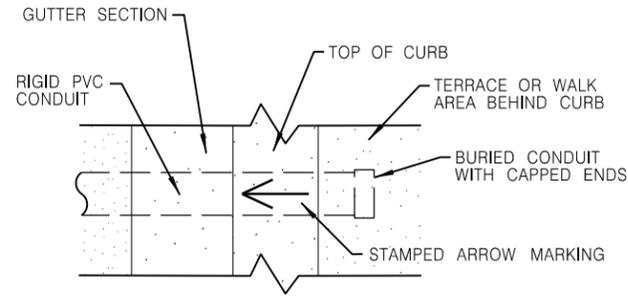
113

DETAIL
TYPICAL PULLBOX INSTALLATION
IN SIDEWALK

NOT TO SCALE

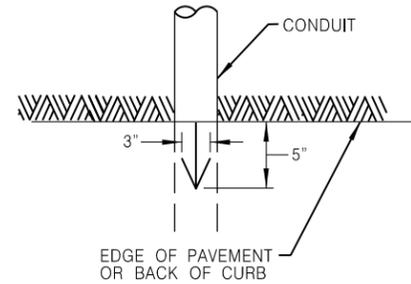
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOTE:
 ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4-INCH TO 3/8-INCH DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER THE PAVEMENT.



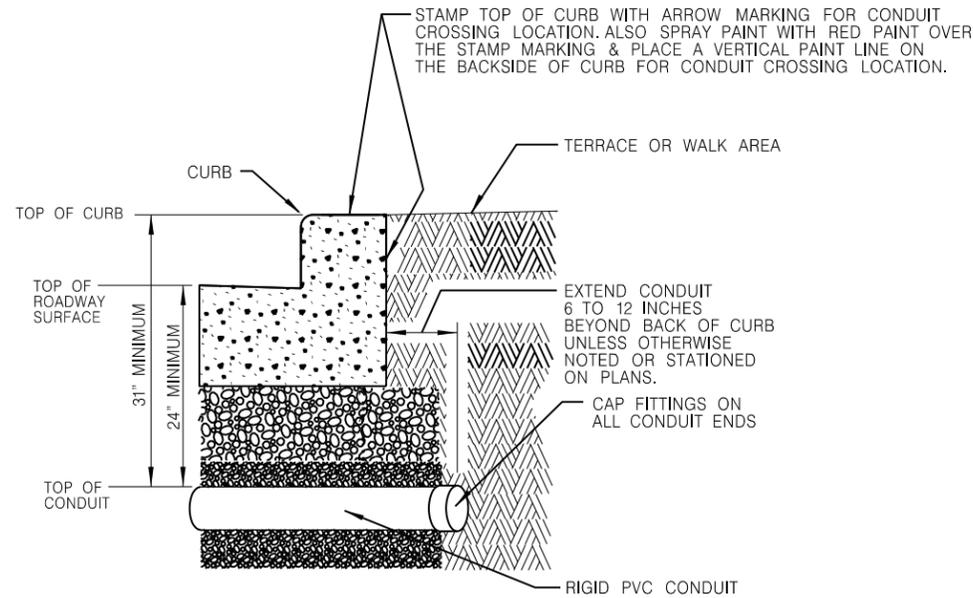
TOP VIEW OF CURB STAMPING

NOT TO SCALE



ARROW MARK

NOT TO SCALE



102

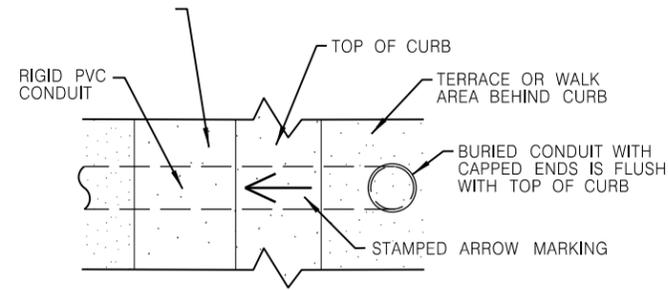
DETAIL VERSION #1

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

NOT TO SCALE

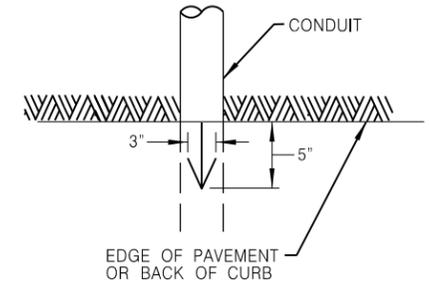
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
 CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOTE:
 ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4-INCH TO 3/8-INCH DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER THE PAVEMENT.



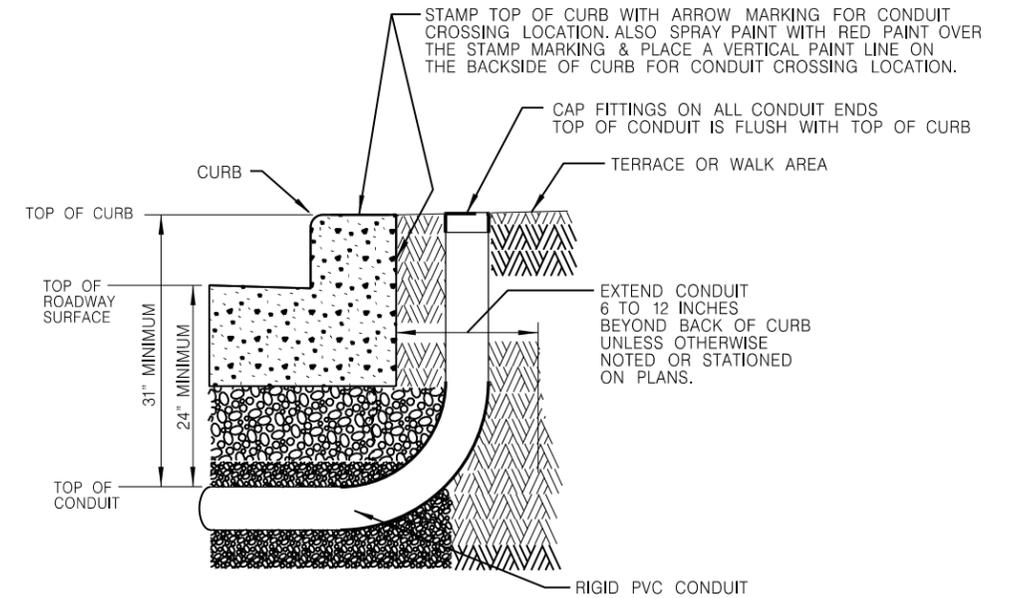
TOP VIEW OF CURB STAMPING

NOT TO SCALE



ARROW MARK

NOT TO SCALE



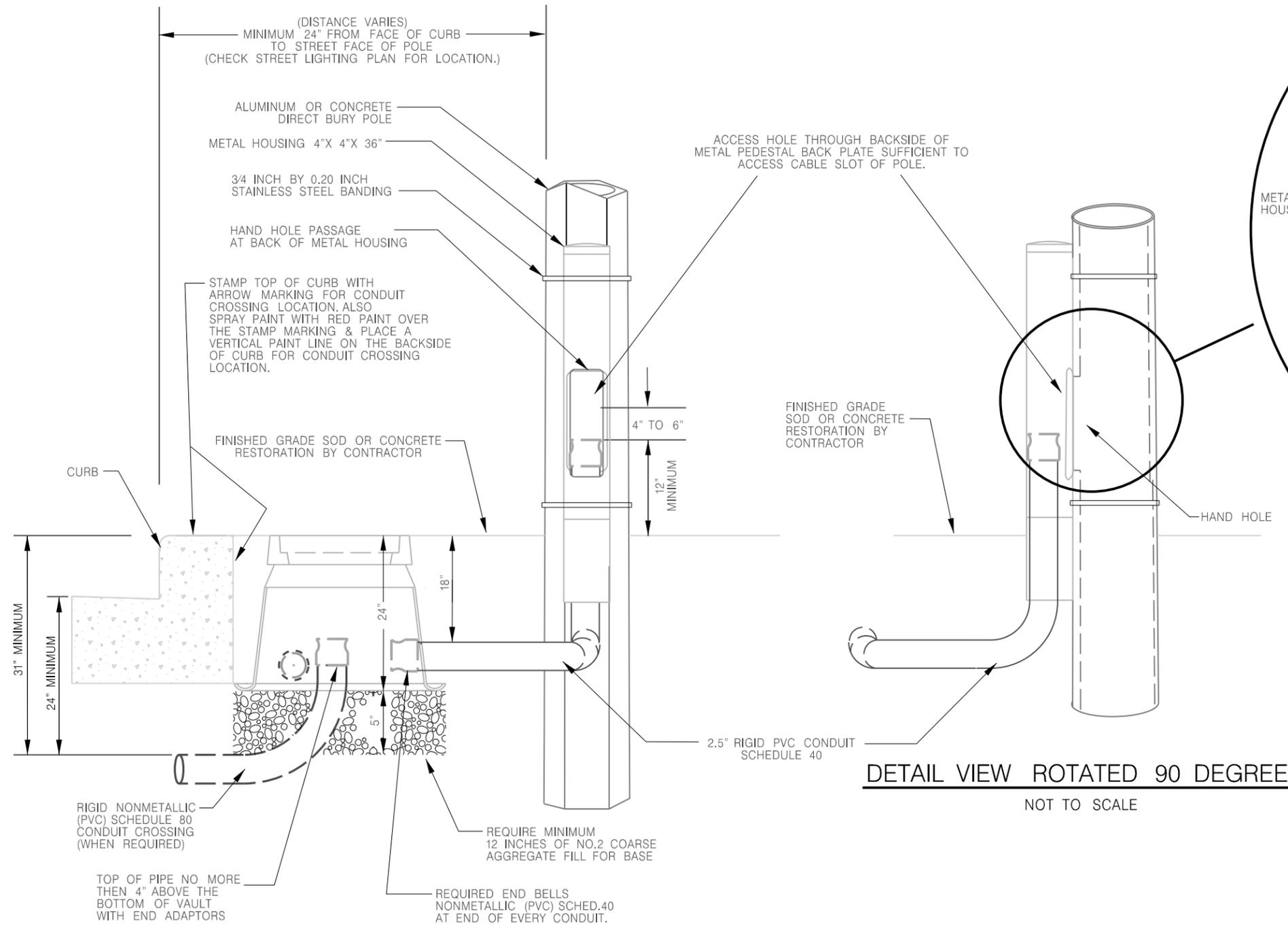
102

DETAIL VERSION #2

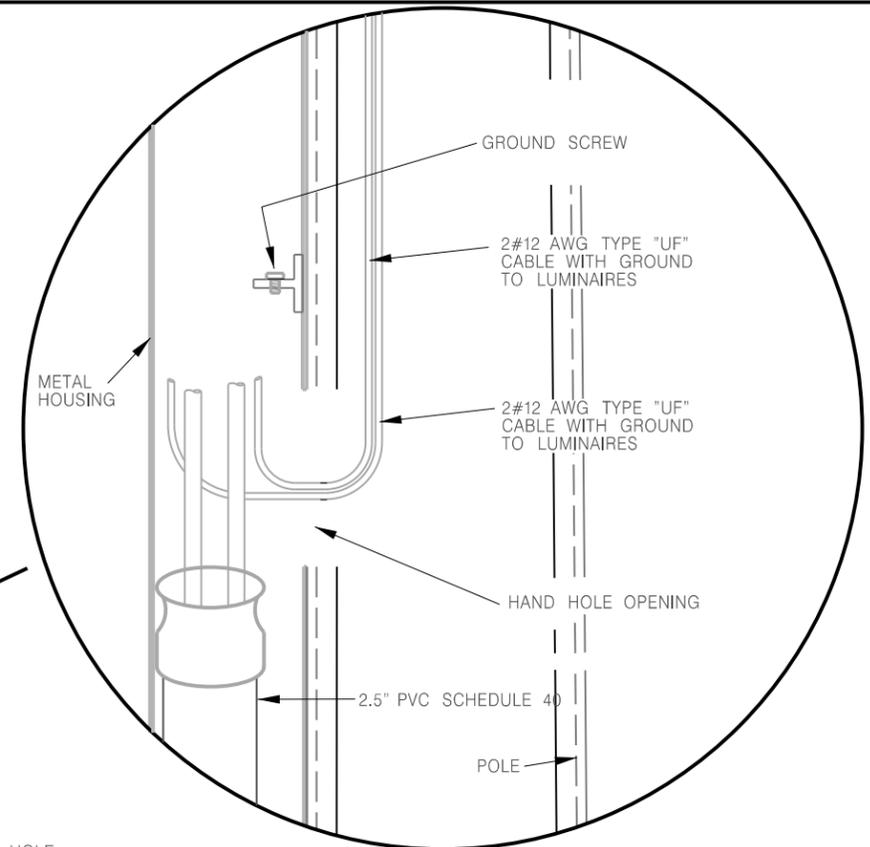
TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

NOT TO SCALE

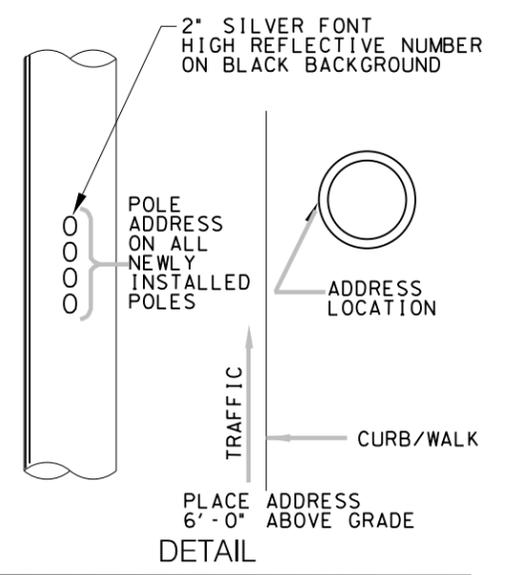
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
 CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



DETAIL VIEW ROTATED 90 DEGREES
NOT TO SCALE



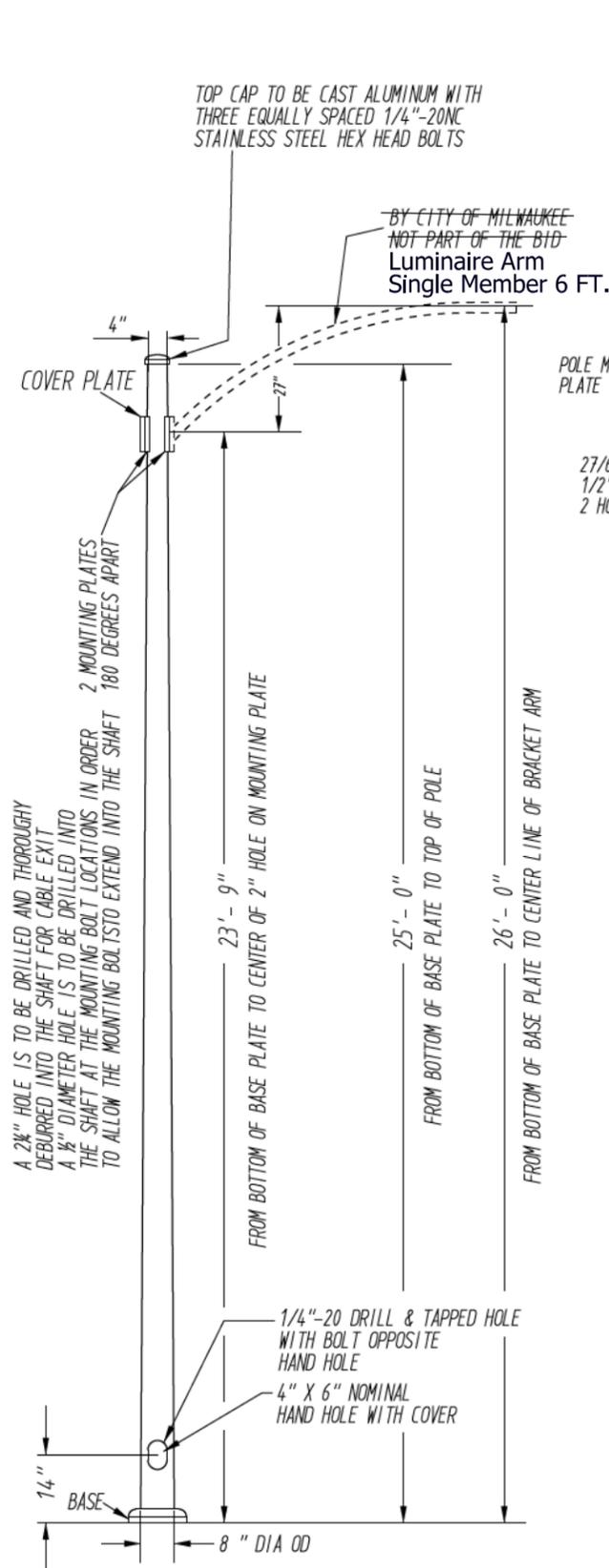
DETAIL
**CABLES WITHIN
METAL HOUSING**
NOT TO SCALE



151 **POLE ADDRESS NUMBERING**

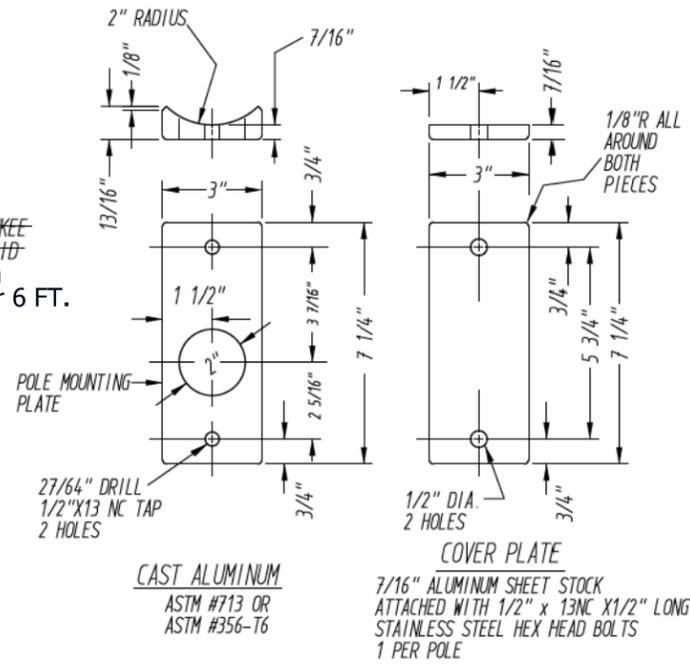
108 **DETAIL**
**TYPICAL CONDUIT INSTALLATION
FROM PULLBOX TO METAL HOUSING
ON POLE**

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



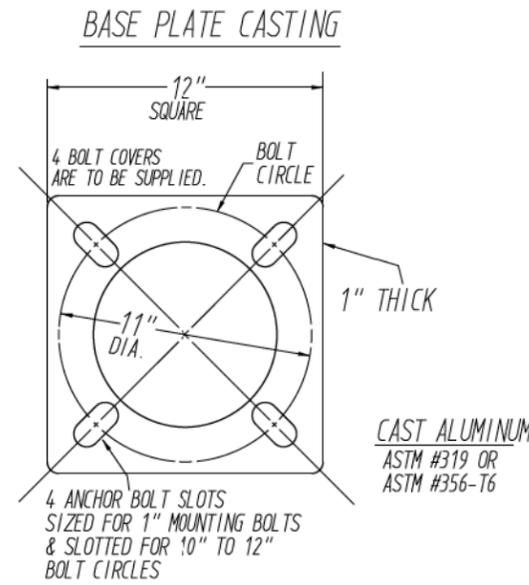
25' Bolt Down AL Pole

G:\Street Lighting Specs\Poles Aluminum Bolt Down\B-14-13 26FT.dwg

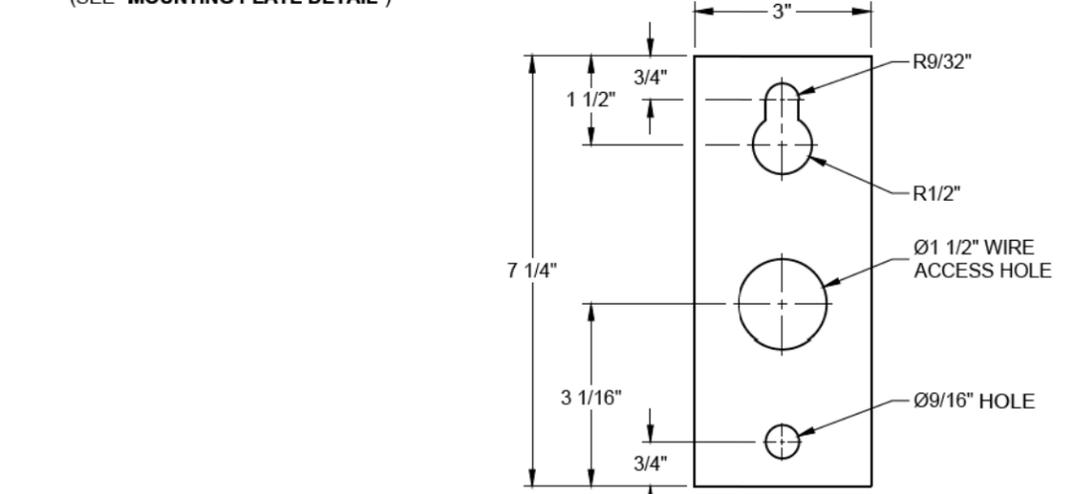
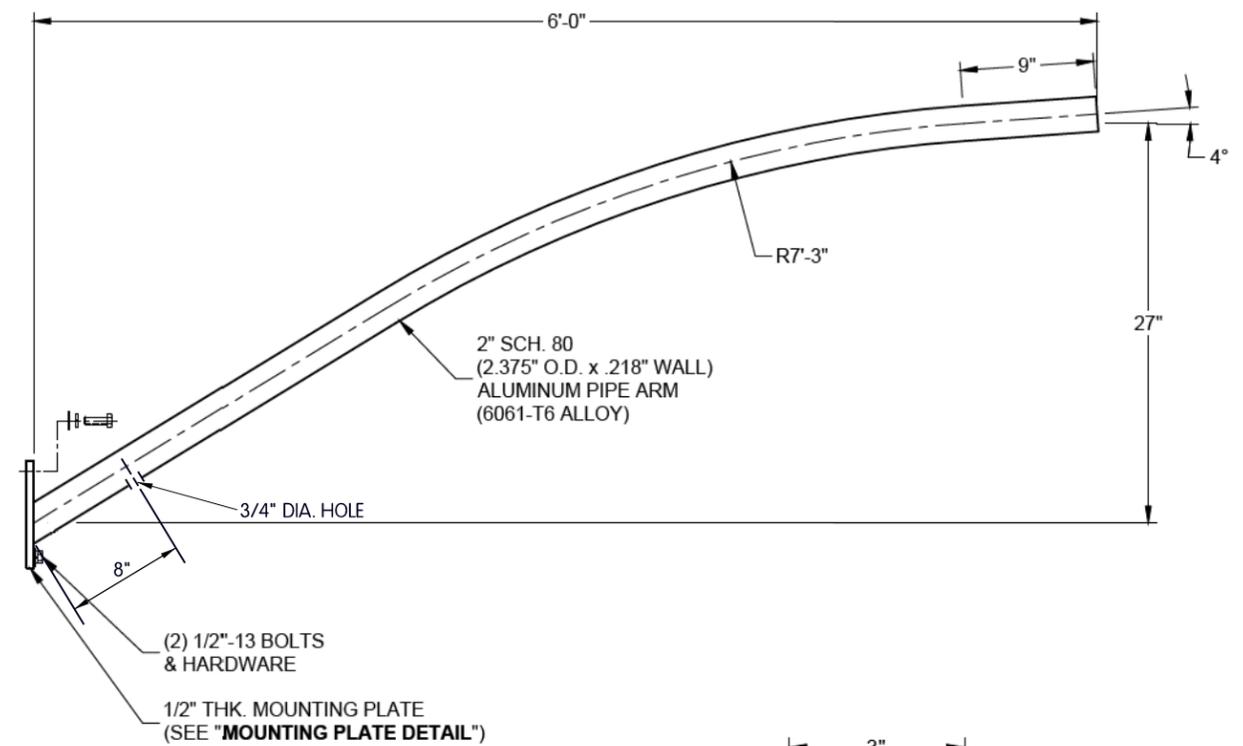


CAST ALUMINUM
ASTM #713 OR
ASTM #356-T6

COVER PLATE
7/16" ALUMINUM SHEET STOCK
ATTACHED WITH 1/2" x 13NC X1/2" LONG
STAINLESS STEEL HEX HEAD BOLTS
1 PER POLE



REVISED DATE:	REVISED BY:
SPEC. NO. 12c-C-1	
BOLT DOWN ALUMINUM POLE 26 FOOT MOUNTING HEIGHT	
CITY OF MILWAUKEE D.P.W. TRANSPORTATION SECTION INFRASTRUCTURE SERVICES DIVISION	
STREET LIGHTING DIVISION	
DATE 11-14-14	SCALE: NONE
DRAWN DK	DESIGN BES
CHECKED [Signature]	APPROVED [Signature]
SUPERSEDES	DRG. # B-14-13
SUPERSEDED BY	



MOUNTING PLATE DETAIL
1/2" THK. ALUMINUM
(6061-T6 ALLOY)

Accepted by *[Signature]*
CITY OF MILWAUKEE
STREET LIGHTING

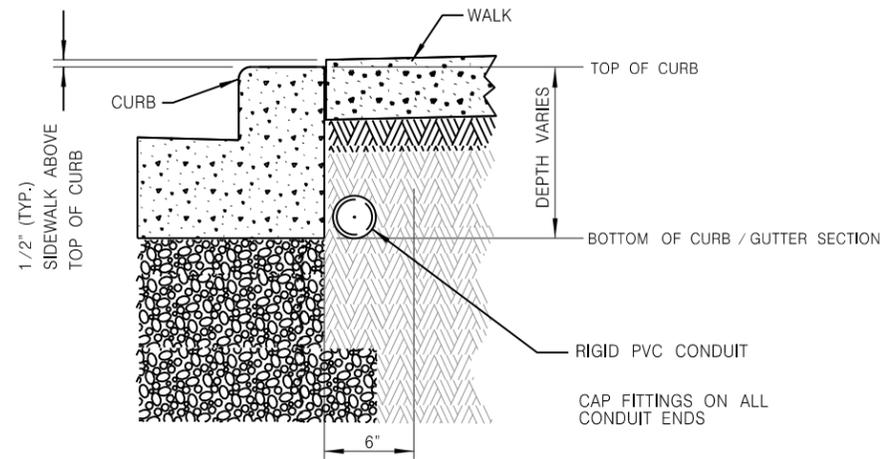
DO NOT SCALE

Oct 8, 2020

LUMINAIRE ARMS SINGLE MEMBER 6-Ft.

SHEET 6 OF 8

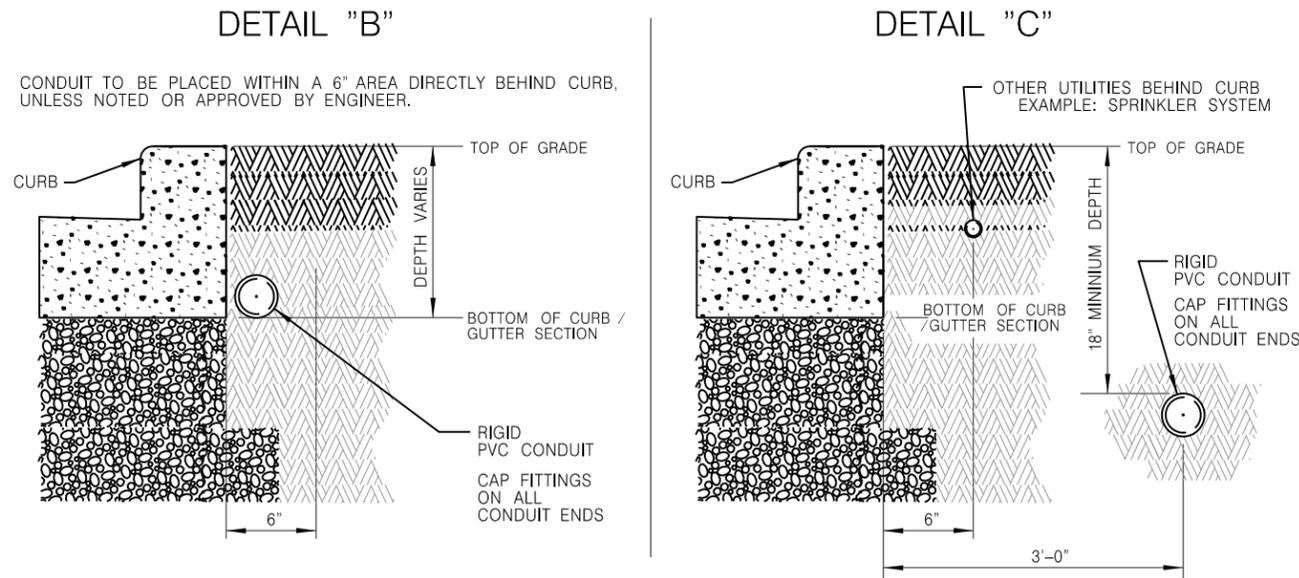
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.
2.) CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.



100 DETAIL "A" TYPICAL CONDUIT INSTALLATION BEHIND CURB NOT TO SCALE

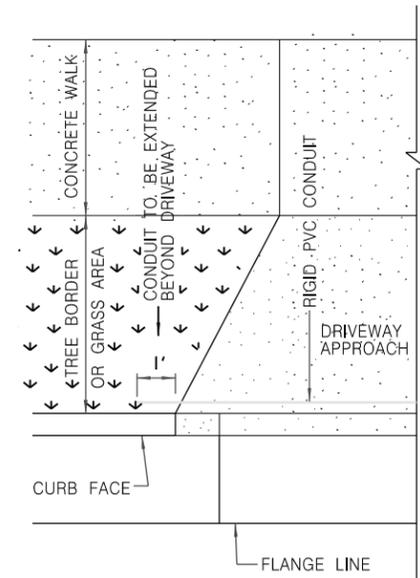
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

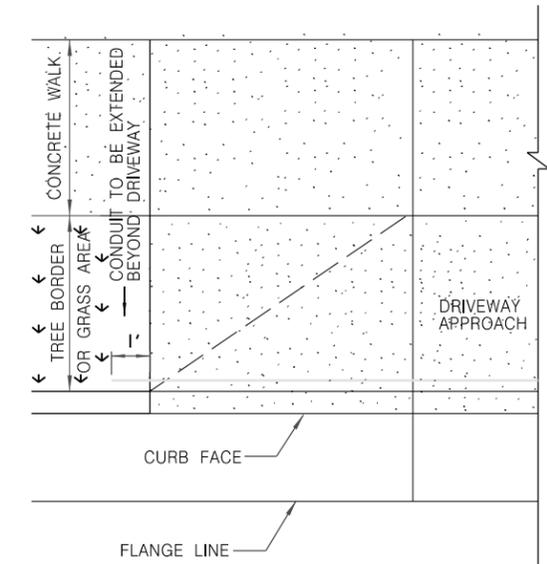


100 DETAIL "B" & "C" TYPICAL CONDUIT INSTALLATION BEHIND CURB NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

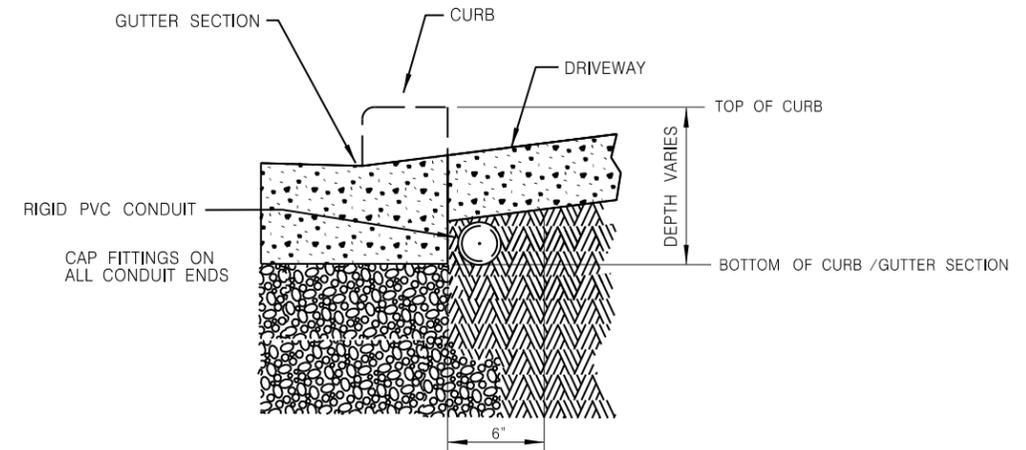


TYPICAL PLAN VIEW FOR FLARED DRIVEWAY



TYPICAL PLAN VIEW FOR DEPRESSED DRIVEWAY

NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.
2.) CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.

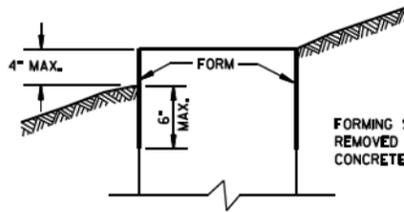


101 DETAIL TYPICAL CONDUIT INSTALLATION UNDER DRIVEWAYS OR PEDESTRIAN RAMPS NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

9C2: Concrete Bases Types 1, 2, 5 and 6

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.

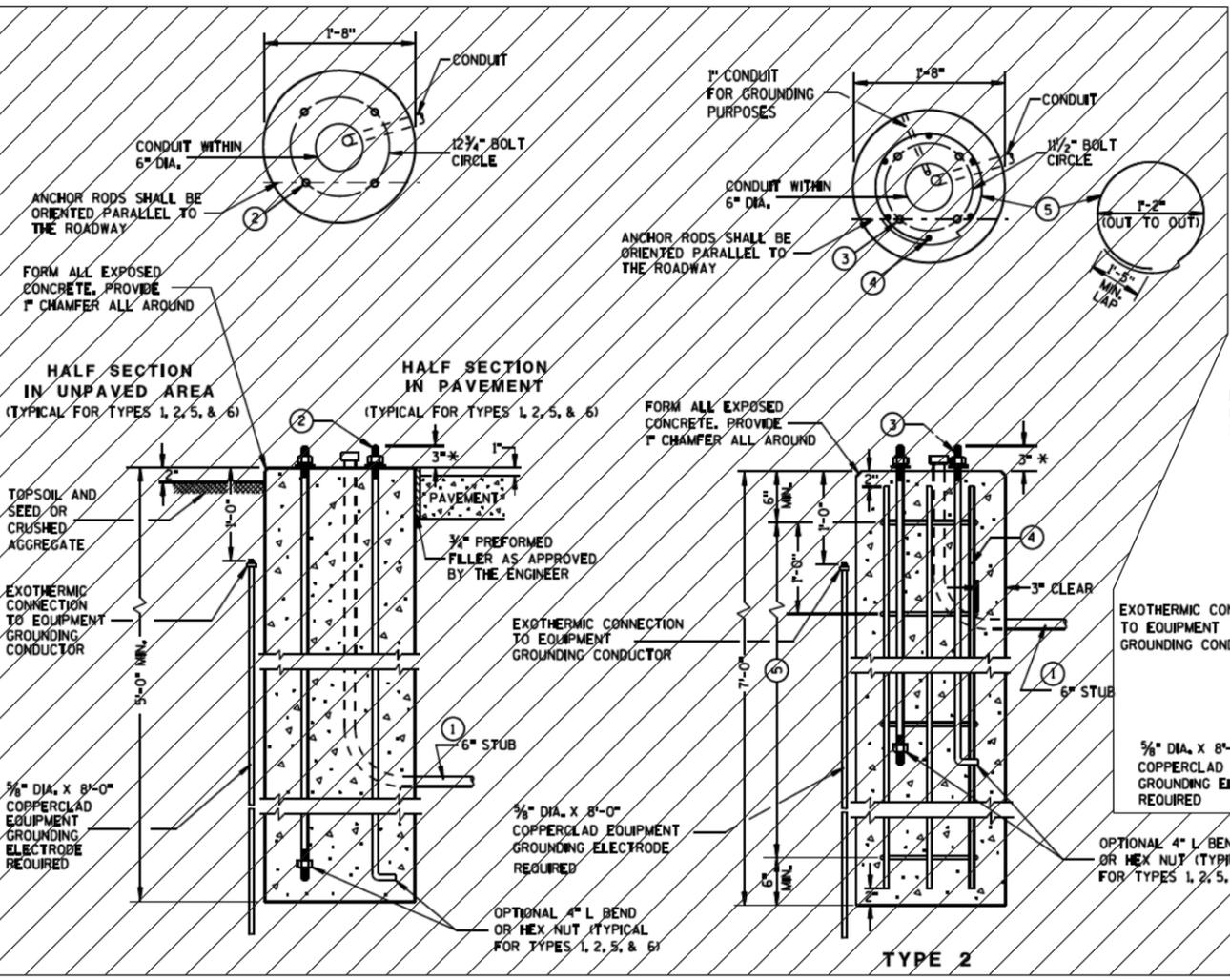
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

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

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. THE 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.



CONCRETE BASES

* 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.

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

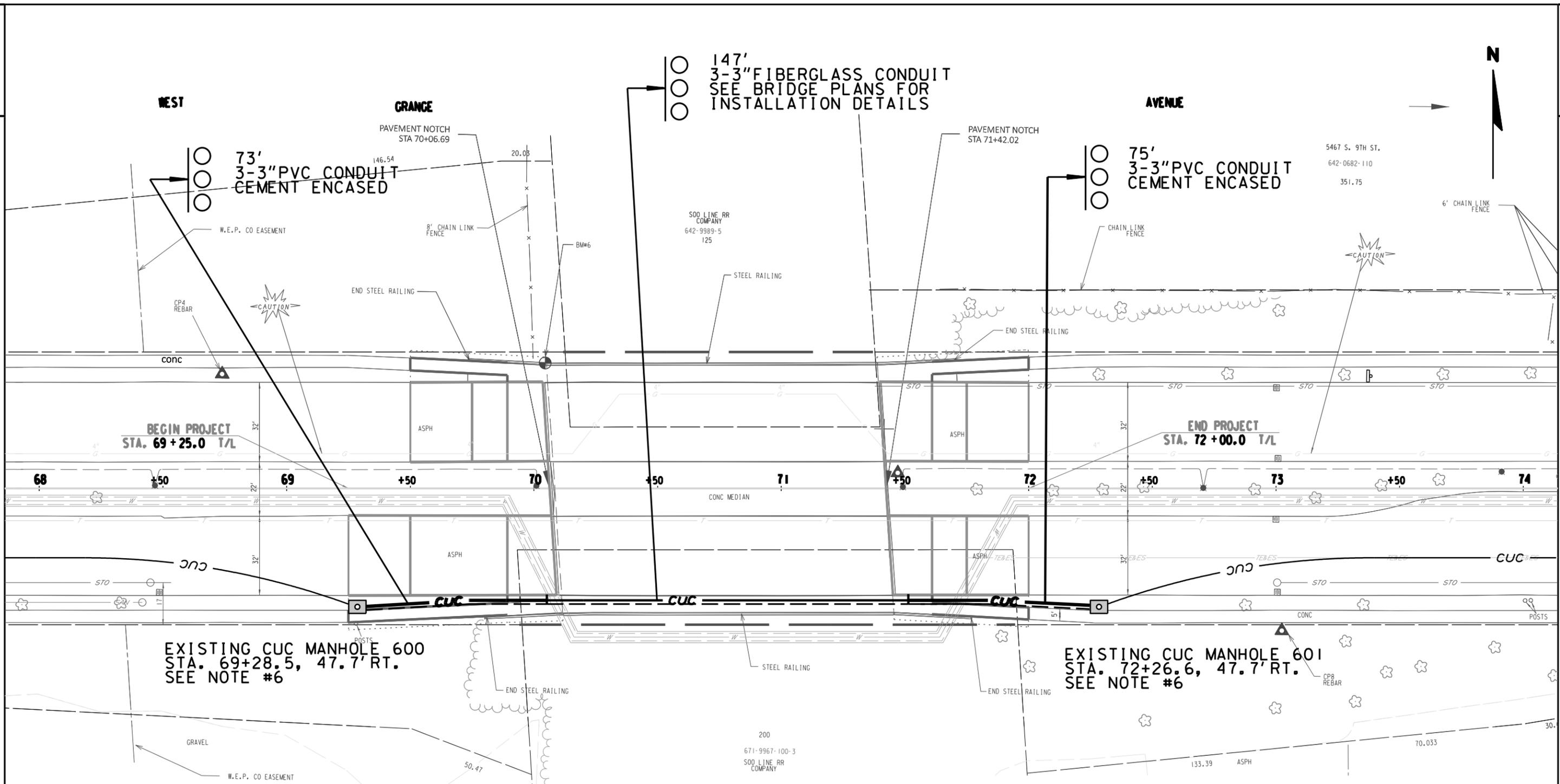
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2004 /S/ Arnet Demirbilek
DATE STATE ELECTRICAL ENGINEER

FHWA

S.D.D. 9 C 2-7

S.D.D. 9 C 2-7

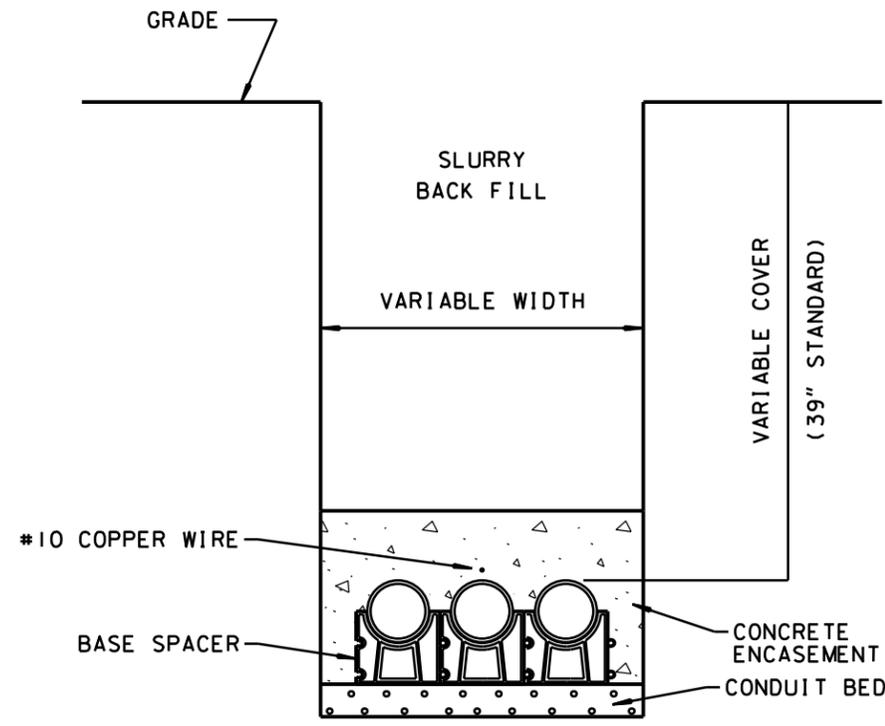


NOTES:

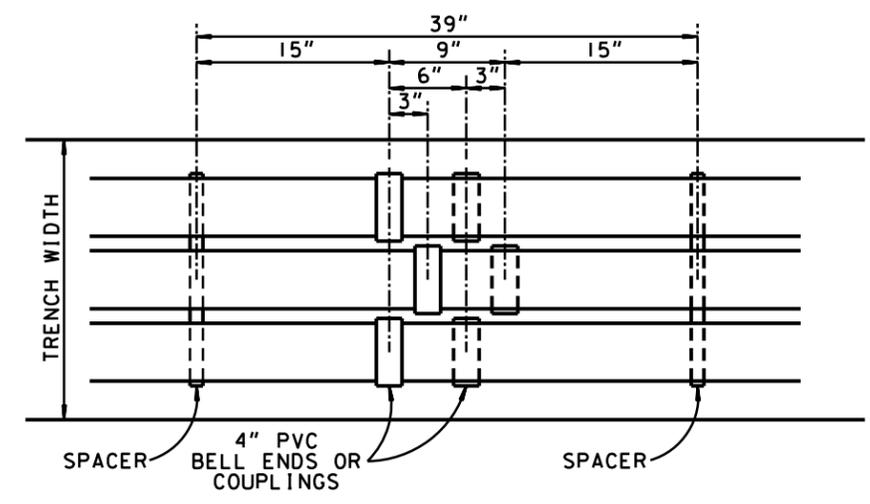
- 1) CONSTRUCTION STAKING FOR THE CITY UNDERGROUND CONDUIT (CUC) FACILITIES IS TO BE INCLUDED IN AND PAID FOR UNDER THE BID ITEM 650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS
- 2) THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
- 3) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
- 4) DIMENSIONS SHOWN ARE TO CENTER OF MANHOLE, DUCT PACKAGE OR UTILITY.
- 5) MAINTAIN A STANDARD DEPTH OF 39-INCHES BETWEEN FINISHED GRADE AND TOP OF CONDUIT.
- 6) REMOVE ABANDONED CONDUIT FROM MANHOLE WALL AND INSTALL THE PROPOSED CONDUIT INTO THE MANHOLE AT THE SAME LOCATION.

LEGEND

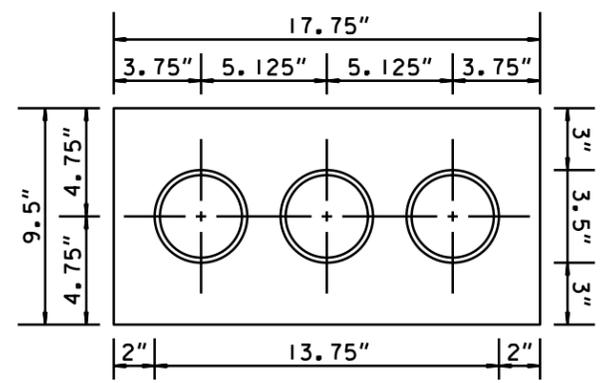
- CUC —** PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT, NUMBER OF RUNS AS NOTED.
- PROPOSED CUC MANHOLE
- ◻** EXISTING CUC MANHOLE
- CUC —** EXISTING CONDUIT
- - -** ABANDONED CONDUIT



CROSS SECTION VIEW, TYP.
N.T.S.

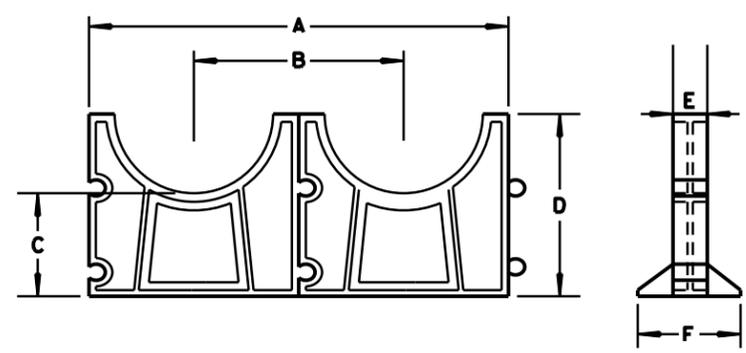


PLAN VIEW

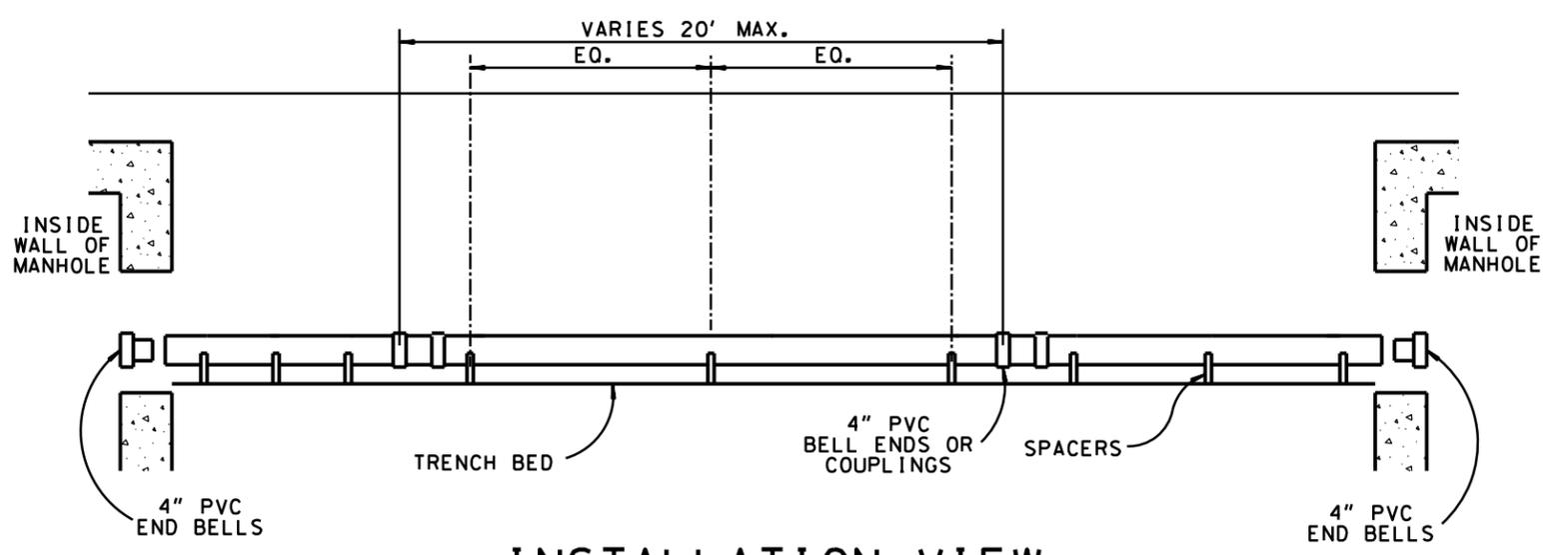


**CONCRETE ENCASEMENT
CROSS SECTION VIEW, TYP.**

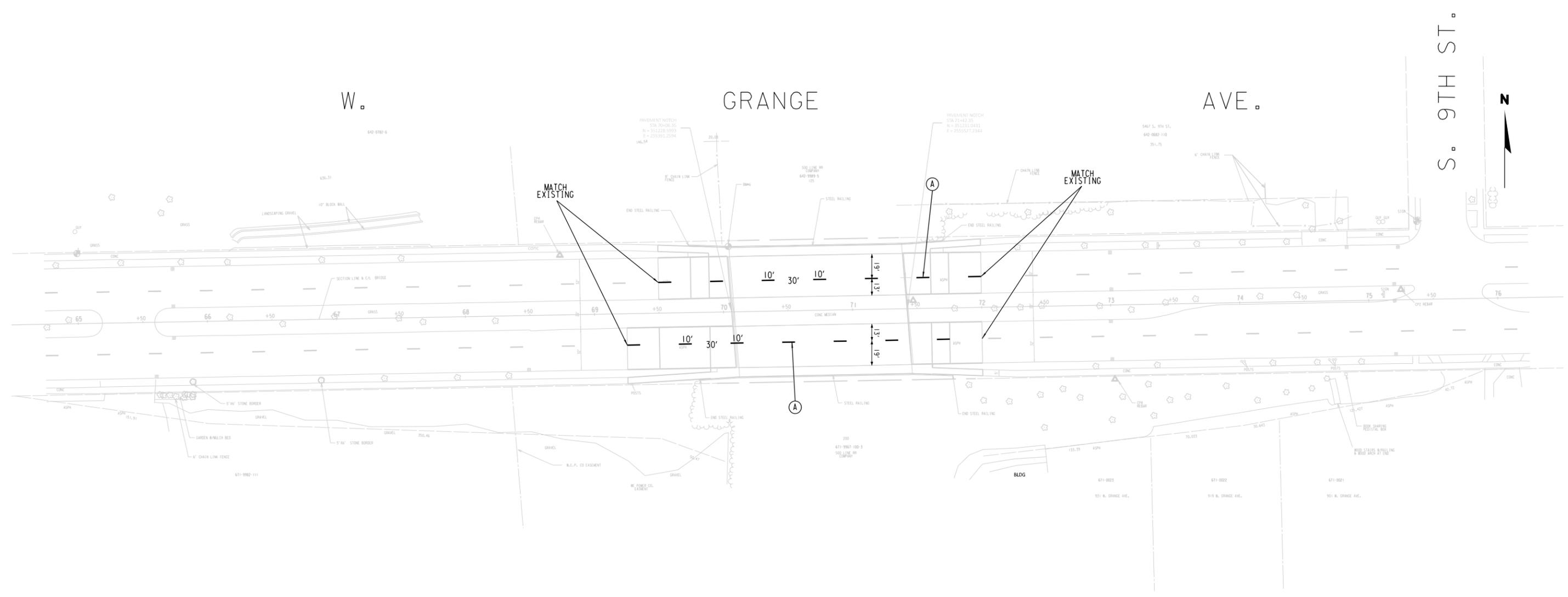
COND.	3"	4"
A	10 1/4"	12 1/4"
B	5.13"	6.13"
C	3"	3"
D	4 3/4"	5.31"
E	1"	1"
F	3"	3"



BASE SPACER



INSTALLATION VIEW



S. 9TH ST.

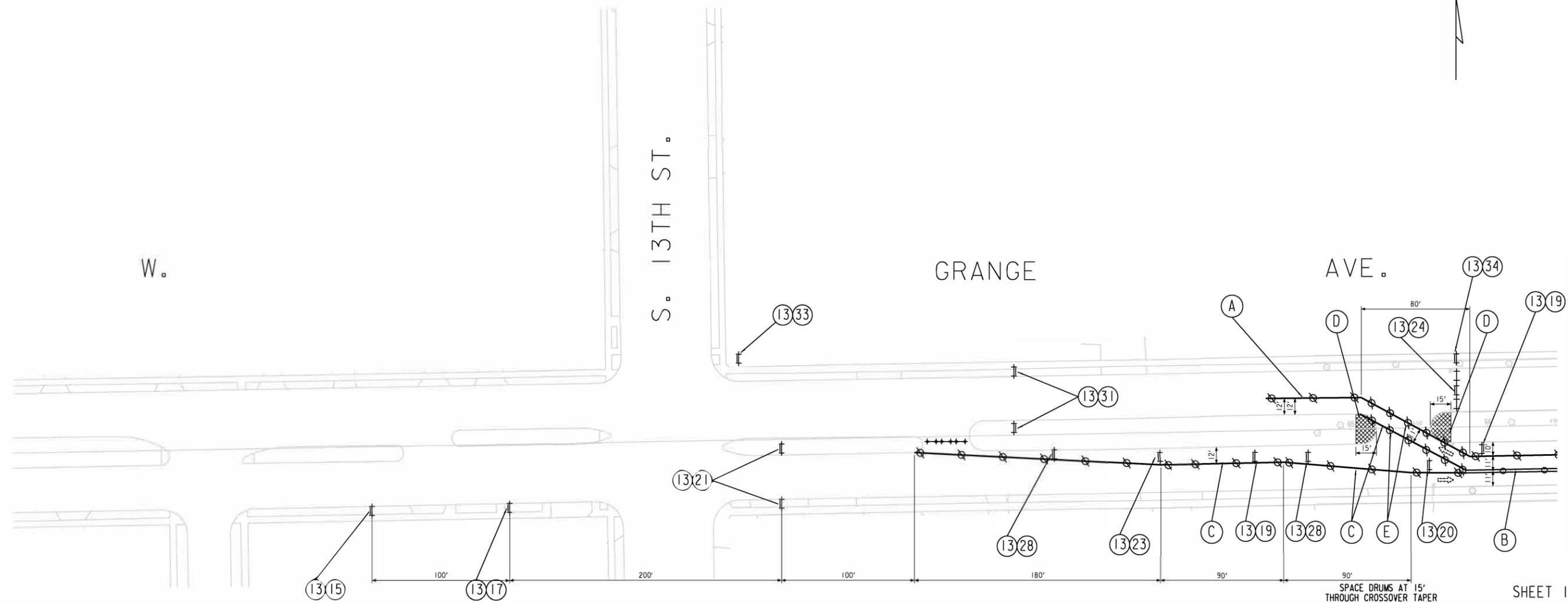


(A) PAVEMENT MARKING EPOXY, 4-INCH WHITE

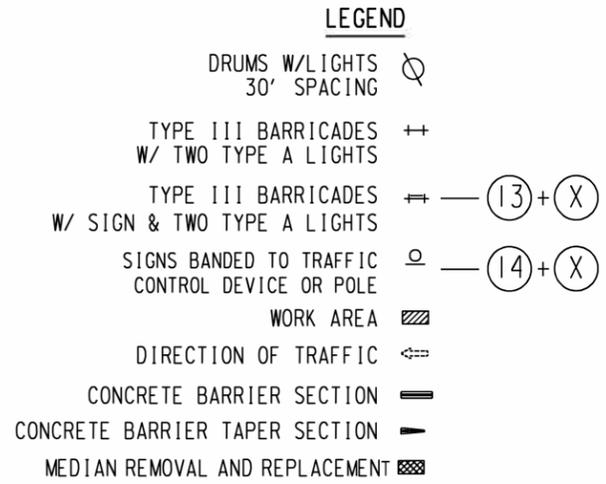
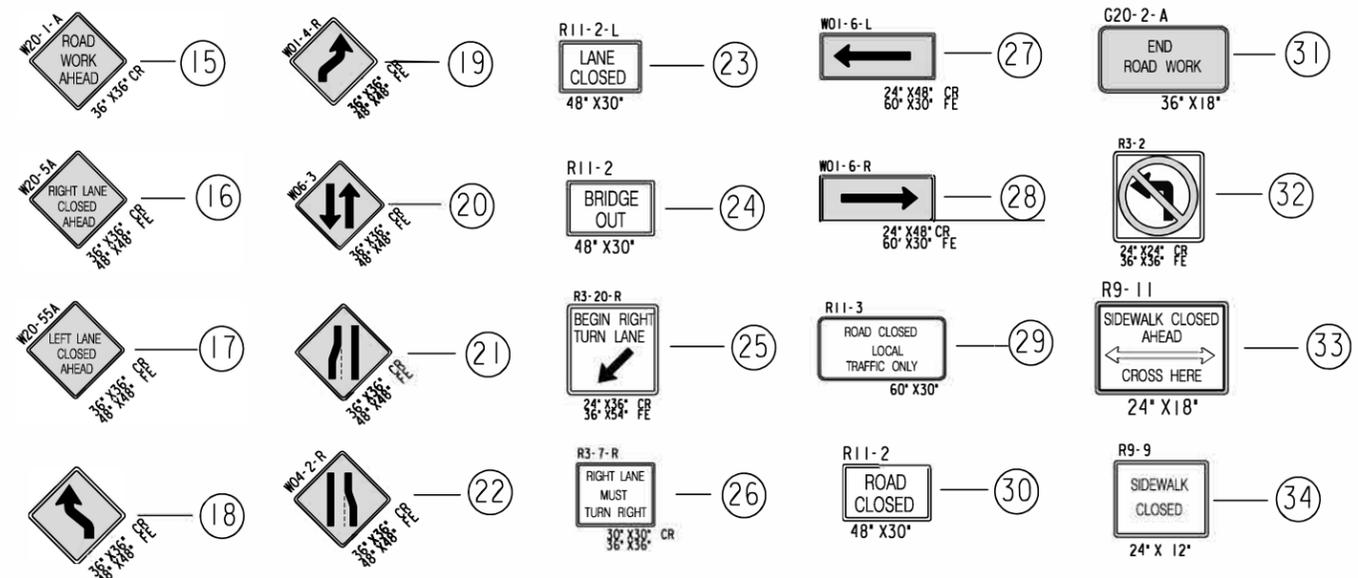
SHEET 1 OF 1

STATE PROJECT NUMBER 2365-07-70	HWY: GRANGE AVE	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 80'	SHEET NO: E
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STAGE I



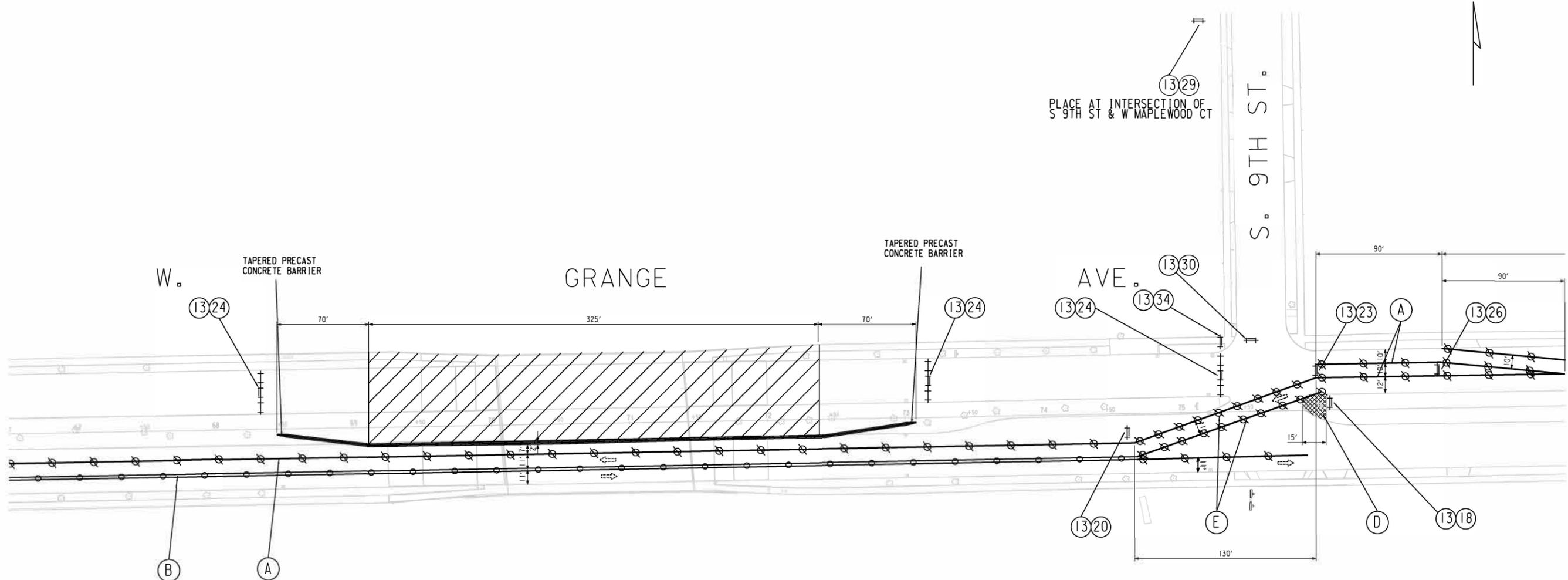
SHEET 1 OF 6



- (A) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (WHITE)
- (B) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (DOUBLE YELLOW)
- (C) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (YELLOW)
- (D) MEDIAN REMOVAL AND REPLACEMENT
- (E) SPACE DRUMS AT 15' THROUGH CROSSOVER TAPER

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

STAGE I



SHEET 2 OF 6

(15)	(19)	(23)	(27)	(31)
(16)	(20)	(24)	(28)	(32)
(17)	(21)	(25)	(29)	(33)
(18)	(22)	(26)	(30)	(34)

LEGEND

DRUMS W/LIGHTS 30' SPACING

TYPE III BARRICADES W/ TWO TYPE A LIGHTS

TYPE III BARRICADES W/ SIGN & TWO TYPE A LIGHTS

SIGNS BANDED TO TRAFFIC CONTROL DEVICE OR POLE

WORK AREA

DIRECTION OF TRAFFIC

CONCRETE BARRIER SECTION

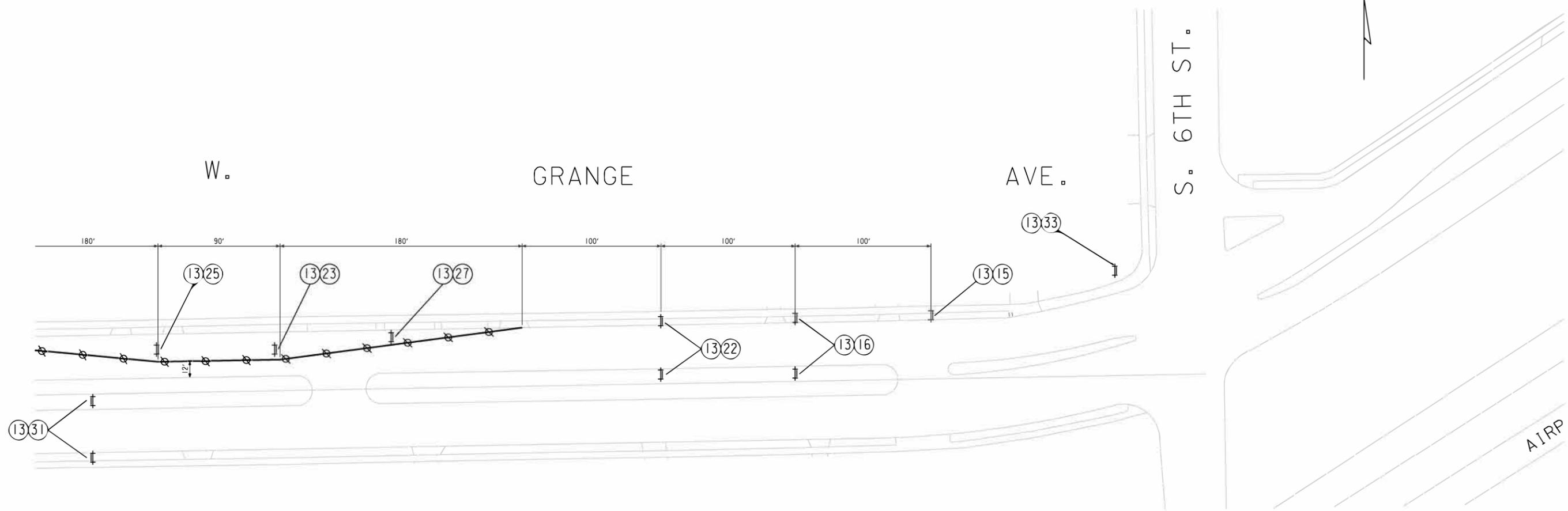
CONCRETE BARRIER TAPER SECTION

MEDIAN REMOVAL AND REPLACEMENT

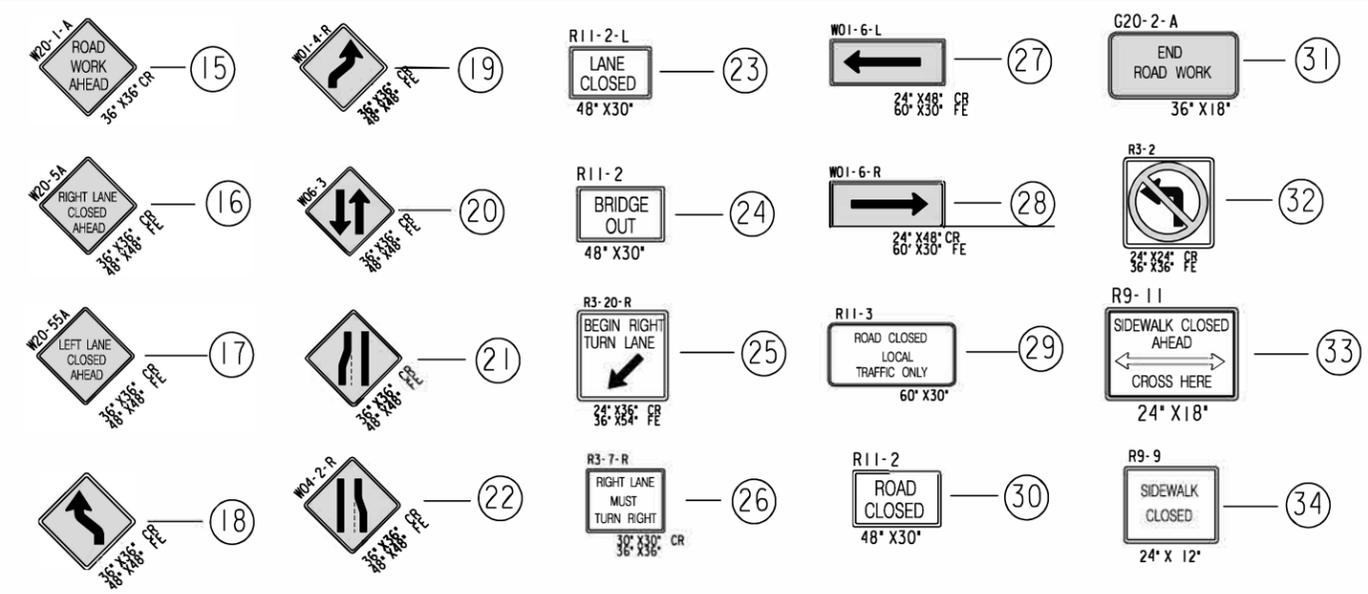
- (A) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (WHITE)
- (B) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (DOUBLE YELLOW)
- (C) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (YELLOW)
- (D) MEDIAN REMOVAL AND REPLACEMENT
- (E) SPACE DRUMS AT 15' THROUGH CROSSOVER TAPER

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

STAGE I



SHEET 3 OF 6



LEGEND

DRUMS W/LIGHTS 30' SPACING

TYPE III BARRICADES W/ TWO TYPE A LIGHTS

TYPE III BARRICADES W/ SIGN & TWO TYPE A LIGHTS

SIGNS BANDED TO TRAFFIC CONTROL DEVICE OR POLE

WORK AREA

DIRECTION OF TRAFFIC

CONCRETE BARRIER SECTION

CONCRETE BARRIER TAPER SECTION

MEDIAN REMOVAL AND REPLACEMENT

(A) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (WHITE)

(B) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (DOUBLE YELLOW)

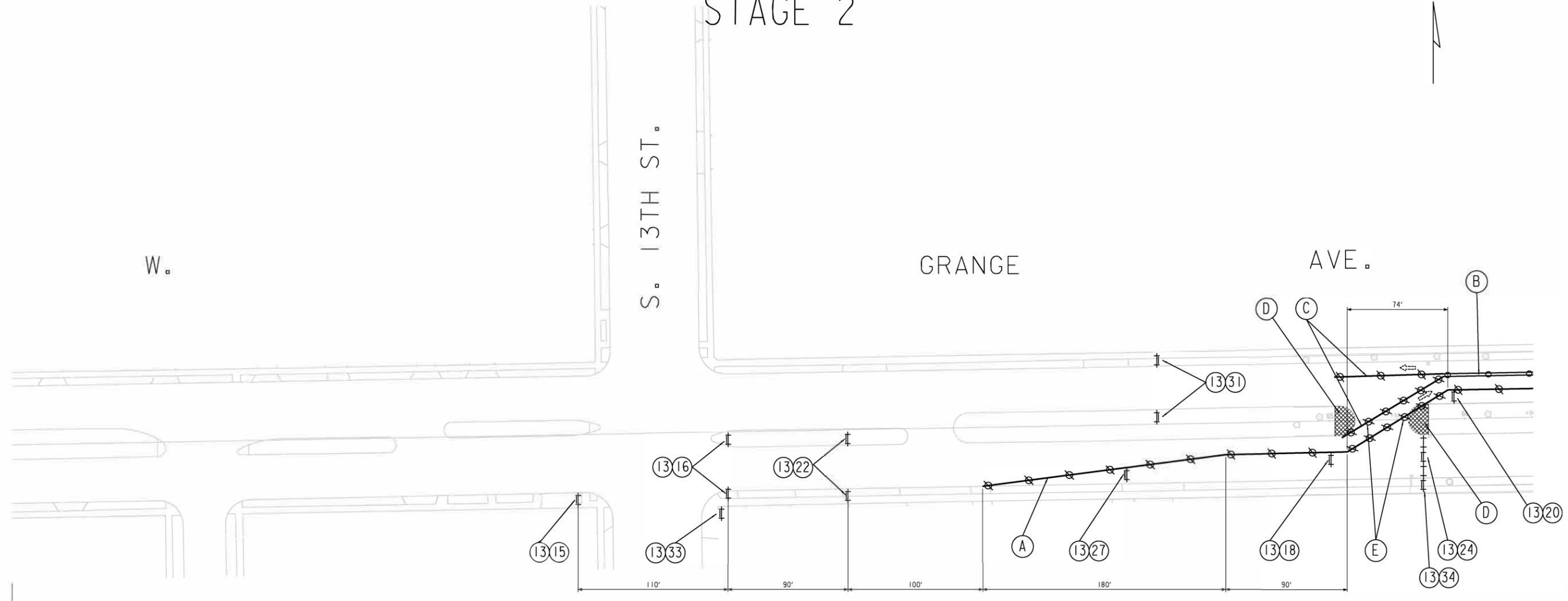
(C) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (YELLOW)

(D) MEDIAN REMOVAL AND REPLACEMENT

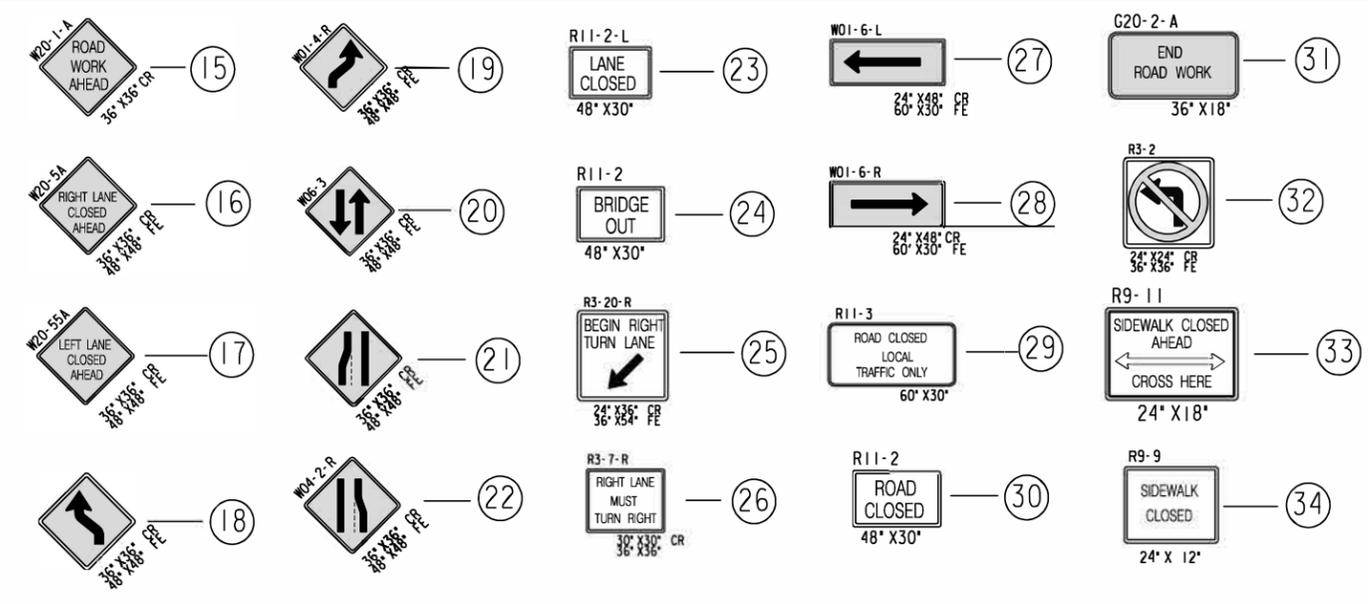
(E) SPACE DRUMS AT 15' THROUGH CROSSOVER TAPER

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

STAGE 2



SHEET 4 OF 6



LEGEND

DRUMS W/LIGHTS 30' SPACING

TYPE III BARRICADES W/ TWO TYPE A LIGHTS

TYPE III BARRICADES W/ SIGN & TWO TYPE A LIGHTS

SIGNS BANDED TO TRAFFIC CONTROL DEVICE OR POLE

WORK AREA

DIRECTION OF TRAFFIC

CONCRETE BARRIER SECTION

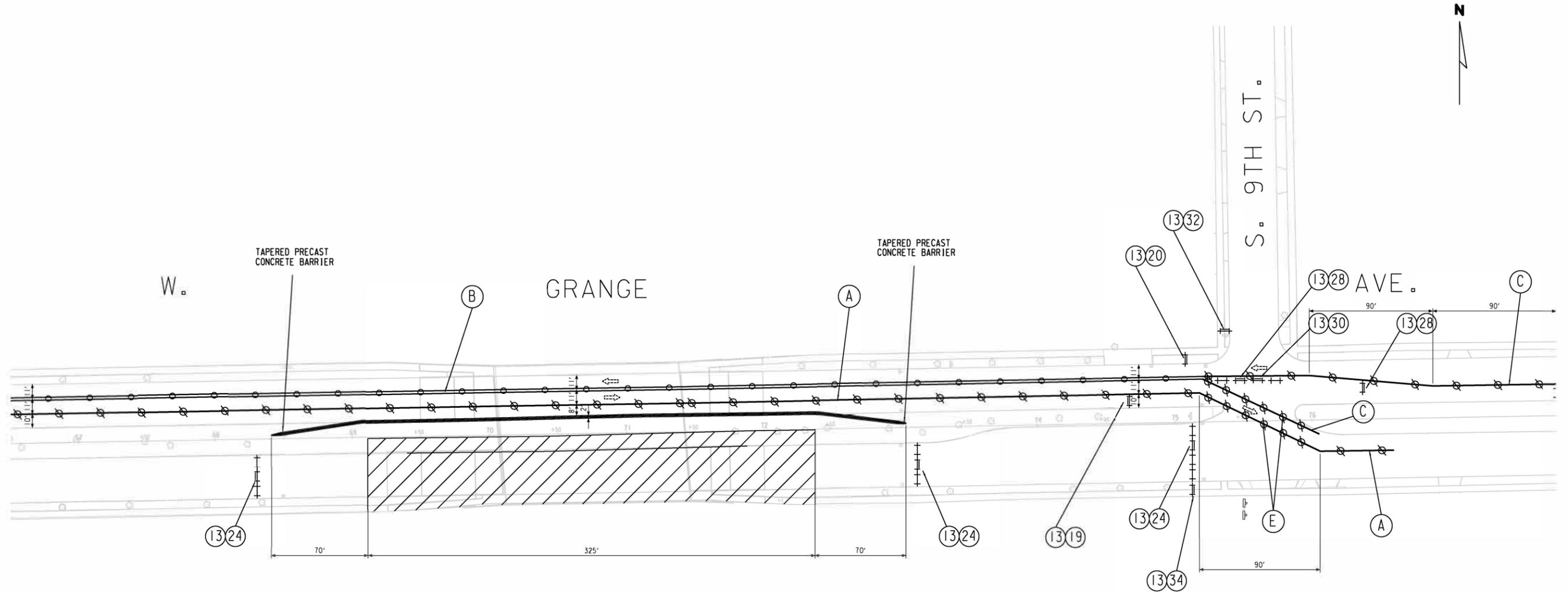
CONCRETE BARRIER TAPER SECTION

MEDIAN REMOVAL AND REPLACEMENT

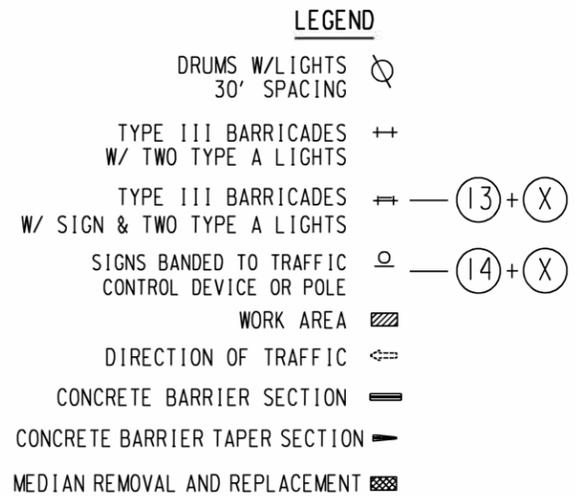
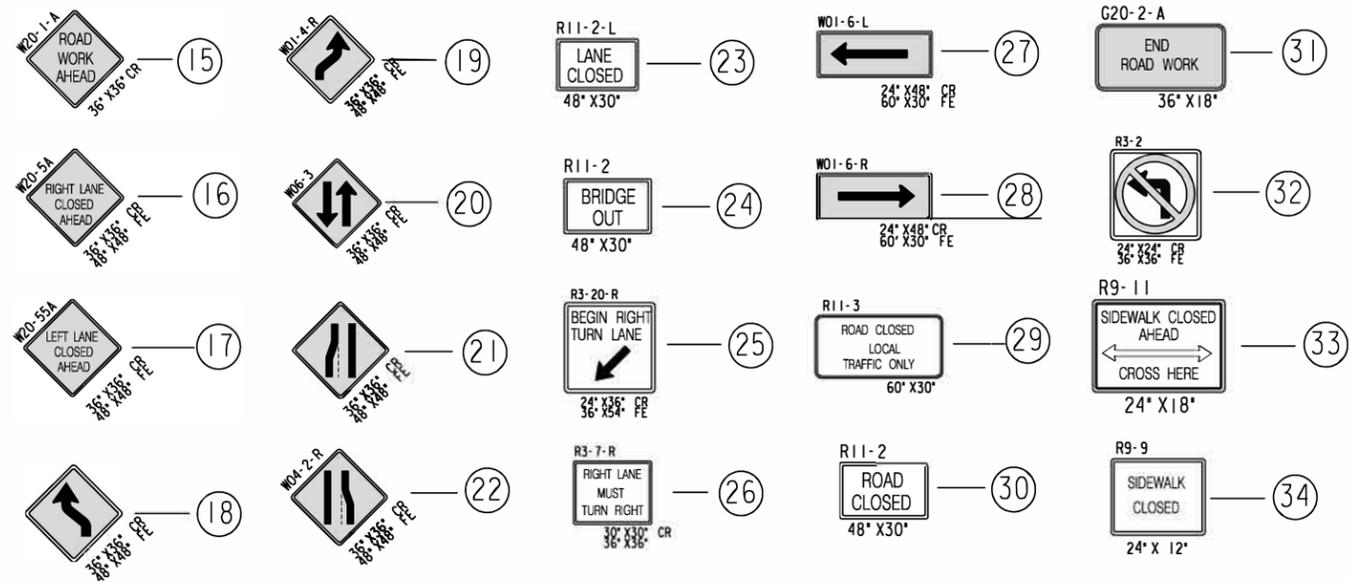
- (A) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (WHITE)
- (B) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (DOUBLE YELLOW)
- (C) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (YELLOW)
- (D) MEDIAN REMOVAL AND REPLACEMENT
- (E) SPACE DRUMS AT 15' THROUGH CROSSOVER TAPER

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

STAGE 2



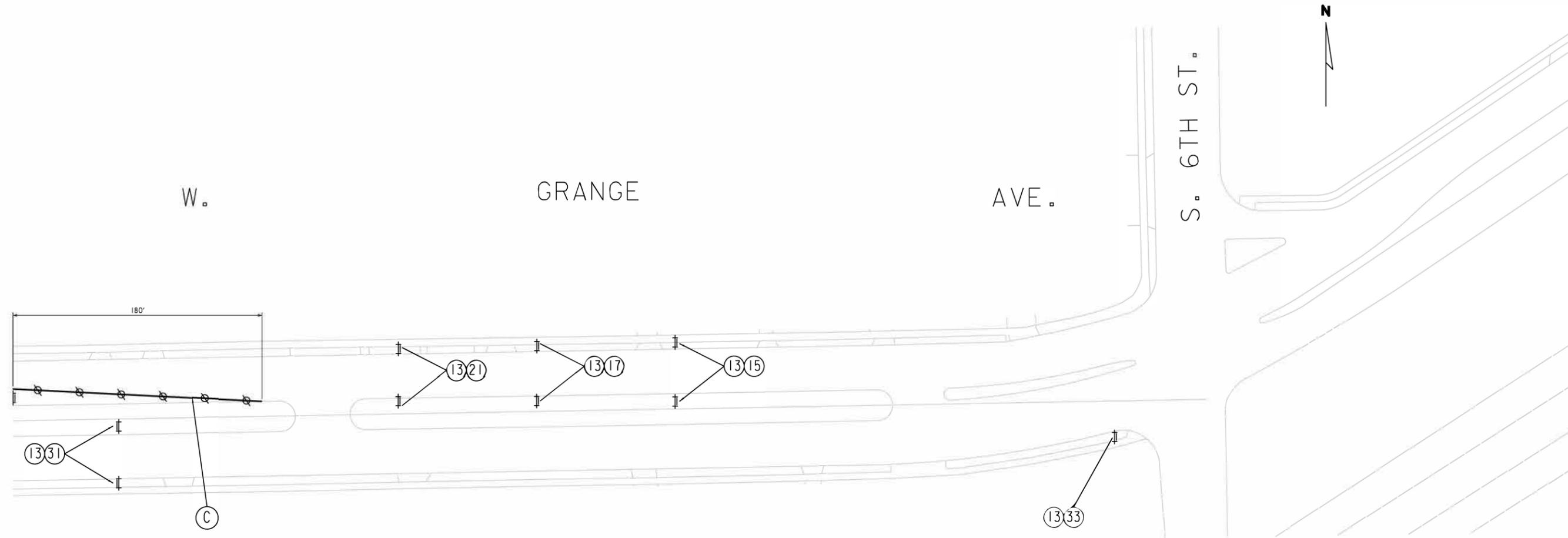
SHEET 5 OF 6



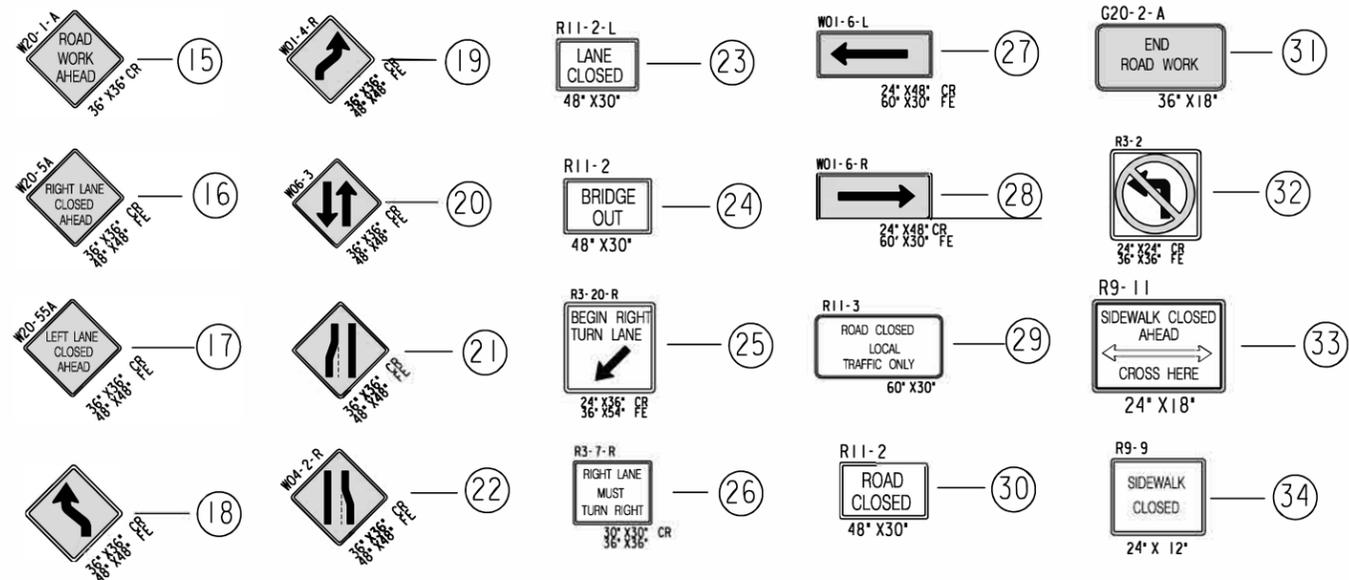
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- (D) MEDIAN REMOVAL AND REPLACEMENT
- (E) SPACE DRUMS AT 15' THROUGH CROSSOVER TAPER

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

STAGE 2



SHEET 6 OF 6



LEGEND

DRUMS W/LIGHTS 30' SPACING

TYPE III BARRICADES W/ TWO TYPE A LIGHTS

TYPE III BARRICADES W/ SIGN & TWO TYPE A LIGHTS

SIGNS BANDED TO TRAFFIC CONTROL DEVICE OR POLE

WORK AREA

DIRECTION OF TRAFFIC

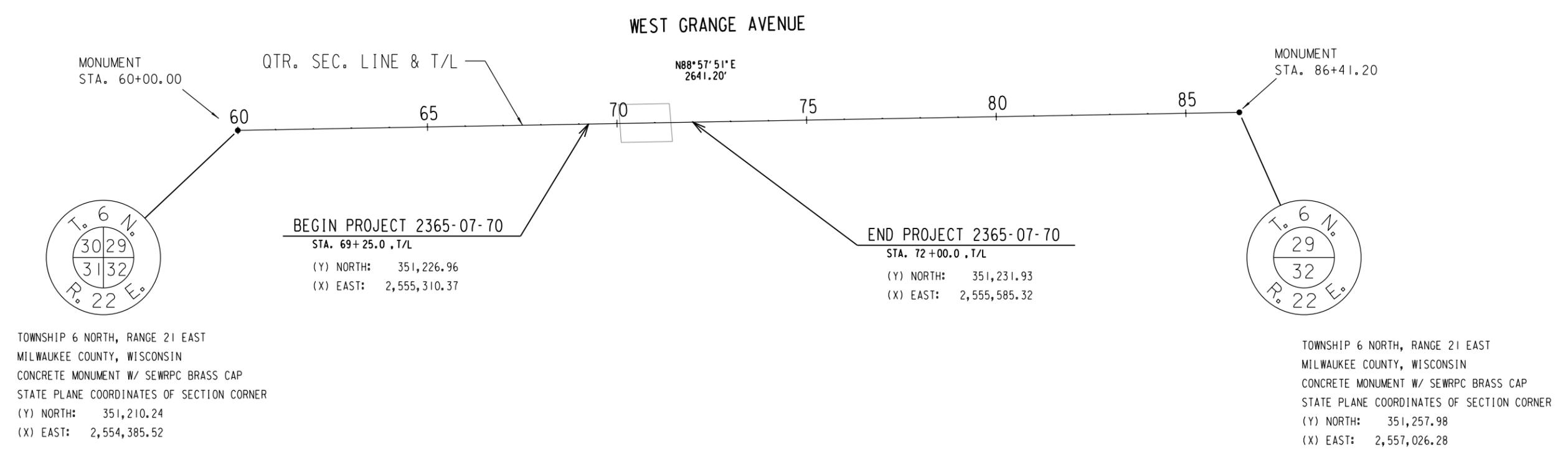
CONCRETE BARRIER SECTION

CONCRETE BARRIER TAPER SECTION

MEDIAN REMOVAL AND REPLACEMENT

- (A) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (WHITE)
- (B) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (DOUBLE YELLOW)
- (C) TEMP MARKING LINE REMOVABLE TAPE 4 INCH (YELLOW)
- (D) MEDIAN REMOVAL AND REPLACEMENT
- (E) SPACE DRUMS AT 15' THROUGH CROSSOVER TAPER

NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL SIGNS SHALL BE BANDED TO EXISTING UTILITY POLES UNLESS OTHERWISE NOTED. CONTRACTOR RESPONSIBLE FOR COVERING ALL CONFLICTING PAVEMENT MARKINGS. CONTRACTOR RESPONSIBLE FOR COVERING ALL SIGNS THAT ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS.



Estimate Of Quantities

2365-07-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	180.000	180.000
0004	201.0210	Grubbing	SY	180.000	180.000
0006	203.0211.S	Abatement of Asbestos Containing Material (structure) 001. B-40-500	EACH	1.000	1.000
0008	203.0220	Removing Structure (structure) 001. B-40-500	EACH	1.000	1.000
0010	203.0330	Debris Containment (structure) 001. B-40-500	EACH	1.000	1.000
0012	204.0100	Removing Concrete Pavement	SY	632.000	632.000
0014	204.0115	Removing Asphaltic Surface Butt Joints	SY	375.000	375.000
0016	204.0150	Removing Curb & Gutter	LF	637.000	637.000
0018	204.0155	Removing Concrete Sidewalk	SY	199.000	199.000
0020	205.0100	Excavation Common	CY	157.000	157.000
0022	206.1000	Excavation for Structures Bridges (structure) 001. B-40-500	LS	1.000	1.000
0024	210.1500	Backfill Structure Type A	TON	595.000	595.000
0026	213.0100	Finishing Roadway (project) 001. 2365-07-70	EACH	1.000	1.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	209.000	209.000
0030	415.0080	Concrete Pavement 8-Inch	SY	257.000	257.000
0032	415.0410	Concrete Pavement Approach Slab	SY	288.000	288.000
0034	416.0610	Drilled Tie Bars	EACH	210.000	210.000
0036	416.0620	Drilled Dowel Bars	EACH	100.000	100.000
0038	455.0605	Tack Coat	GAL	50.000	50.000
0040	465.0105	Asphaltic Surface	TON	68.000	68.000
0042	502.0100	Concrete Masonry Bridges	CY	560.000	560.000
0044	502.3200	Protective Surface Treatment	SY	1,545.000	1,545.000
0046	502.3210	Pigmented Surface Sealer	SY	161.000	161.000
0048	502.4204	Adhesive Anchors No. 4 Bar	EACH	276.000	276.000
0050	502.4205	Adhesive Anchors No. 5 Bar	EACH	360.000	360.000
0052	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	124,420.000	124,420.000
0054	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	28.000	28.000
0056	506.3015	Welded Stud Shear Connectors 7/8x6-Inch	EACH	1,221.000	1,221.000
0058	506.3025	Welded Stud Shear Connectors 7/8x8-Inch	EACH	3,567.000	3,567.000
0060	506.7050.S	Removing Bearings (structure) 001. B-40-500	EACH	28.000	28.000
0062	509.1500	Concrete Surface Repair	SF	109.000	109.000
0064	509.9025.S	Epoxy Injection Crack Repair	LF	271.000	271.000
0066	509.9026.S	Cored Holes 2-Inch Diameter	EACH	4.000	4.000
0068	513.7011	Railing Steel Type C2	LF	395.000	395.000
0070	516.0100	Dampproofing	SY	45.000	45.000
0072	516.0500	Rubberized Membrane Waterproofing	SY	36.000	36.000
0074	517.0901.S	Preparation and Coating of Top Flanges (structure) 001. B-40-500	EACH	1.000	1.000
0076	517.1801.S	Structure Repainting Recycled Abrasive (structure) 001. B-40-500	EACH	1.000	1.000
0078	517.4501.S	Negative Pressure Containment and Collection of Waste Materials (structure) 001. B-40-500	EACH	1.000	1.000
0080	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0082	601.0331	Concrete Curb & Gutter 31-Inch	LF	511.000	511.000
0084	602.0410	Concrete Sidewalk 5-Inch	SF	1,513.000	1,513.000
0086	603.8000	Concrete Barrier Temporary Precast Delivered	LF	930.000	930.000
0088	603.8125	Concrete Barrier Temporary Precast Installed	LF	930.000	930.000
0090	616.0406	Fence Chain Link Salvaged 6-FT	LF	20.000	20.000
0092	618.0100	Maintenance And Repair of Haul Roads (project) 001. 2365-07-70	EACH	1.000	1.000
0094	619.1000	Mobilization	EACH	1.000	1.000
0096	620.0300	Concrete Median Sloped Nose	SF	453.000	453.000

Estimate Of Quantities

2365-07-70

Line	Item	Item Description	Unit	Total	Qty
0098	625.0100	Topsoil	SY	611.000	611.000
0100	628.1504	Silt Fence	LF	160.000	160.000
0102	628.1520	Silt Fence Maintenance	LF	160.000	160.000
0104	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0106	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0108	628.2023	Erosion Mat Class II Type B	SY	270.000	270.000
0110	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0112	630.0120	Seeding Mixture No. 20	LB	8.000	8.000
0114	631.0300	Sod Water	MGAL	5.000	5.000
0116	631.1000	Sod Lawn	SY	611.000	611.000
0118	642.5201	Field Office Type C	EACH	1.000	1.000
0120	643.0300	Traffic Control Drums	DAY	13,035.000	13,035.000
0122	643.0420	Traffic Control Barricades Type III	DAY	6,636.000	6,636.000
0124	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	60.000	60.000
0126	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	60.000	60.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	8,453.000	8,453.000
0130	643.0715	Traffic Control Warning Lights Type C	DAY	13,035.000	13,035.000
0132	643.0900	Traffic Control Signs	DAY	6,320.000	6,320.000
0134	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
0136	643.5000	Traffic Control	EACH	1.000	1.000
0138	646.1020	Marking Line Epoxy 4-Inch	LF	140.000	140.000
0140	646.9000	Marking Removal Line 4-Inch	LF	140.000	140.000
0142	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	8,320.000	8,320.000
0144	650.4500	Construction Staking Subgrade	LF	275.000	275.000
0146	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	59.000	59.000
0148	650.6500	Construction Staking Structure Layout (structure) 001. B-40-500	LS	1.000	1.000
0150	650.7000	Construction Staking Concrete Pavement	LF	275.000	275.000
0152	650.8500	Construction Staking Electrical Installations (project) 001. 2365-07-70	LS	1.000	1.000
0154	650.9910	Construction Staking Supplemental Control (project) 001. 2365-07-70	LS	1.000	1.000
0156	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	574.000	574.000
0158	652.0610	Conduit Special 2 1/2-Inch	LF	1,600.000	1,600.000
0160	654.0105	Concrete Bases Type 5	EACH	5.000	5.000
0162	690.0250	Sawing Concrete	LF	453.000	453.000
0164	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	257.000	257.000
0166	999.2000.S	Installing and Maintaining Bird Deterrent System (Station) 001. 70+75	EACH	1.000	1.000
0168	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0170	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	4,000.000	4,000.000
0172	SPV.0060	Special 001. Adjusting Water Boxes	EACH	2.000	2.000
0174	SPV.0060	Special 302. Pull Boxes 13-Inch x 24-Inch x 24-Inch	EACH	16.000	16.000
0176	SPV.0060	Special 320. Poles Type 25-AL-BD	EACH	5.000	5.000
0178	SPV.0060	Special 345. Luminaire Arms Singer Member 6-Ft	EACH	10.000	10.000
0180	SPV.0060	Special 375. Luminaire Utility LED 2	EACH	10.000	10.000
0182	SPV.0060	Special 400. Underdeck Utility Structure B-40-500, City of Milwaukee Communications	EACH	1.000	1.000
0184	SPV.0060	Special 425. Installing Conduit into Existing Manhole	EACH	2.000	2.000
0186	SPV.0060	Special 501. Bearing Maintenance	EACH	1.000	1.000
0188	SPV.0060	Special 590. AT&T Communications Duct Protection B-40-500	EACH	1.000	1.000
0190	SPV.0090	Special 002. Construction Staking Concrete Sidewalk	LF	1,513.000	1,513.000
0192	SPV.0090	Special 306. Cable Type 3#6/1#8 XLPE Type USE-2 Electrical Cable	LF	800.000	800.000
0194	SPV.0090	Special 308. Cable Type 3#2/1#8 XLPE Type USE-2 Electrical Cable	LF	500.000	500.000

Estimate Of Quantities

2365-07-70

Line	Item	Item Description	Unit	Total	Qty
0196	SPV.0090	Special 311. 2#12UF W/Ground (Internal Riser Cable Per Luminaire)	LF	310.000	310.000
0198	SPV.0090	Special 413. 3-Duct Conduit Cement Encased 3 Inch DB-60	LF	138.000	138.000
0200	SPV.0180	Special 001. Joint Sealing	SY	545.000	545.000

FINISHING ROADWAY

CATEGORY 0010	213.0100.001 FINISHING ROADWAY PROJECT 2365-07-70
<u>LOCATION</u>	<u>EACH</u>
W. GRANGE AVENUE	1
TOTAL	1

REMOVAL ITEMS

CATEGORY 0010

	201.0110	201.0210	204.0100	204.0115	204.0150	204.0155	690.0250*
			REMOVING CONCRETE PAVEMENT	REMOVING ASPHALTIC SURFACE BUTT JOINTS	REMOVING CURB & GUTTER	REMOVING CONCRETE SIDEWALK	SAWING CONCRETE
<u>LOCATION</u>	<u>CLEARING SY</u>	<u>GRUBBING SY</u>	<u>SY</u>	<u>SY</u>	<u>LF</u>	<u>SY</u>	<u>LF</u>
W. GRANGE AVENUE	180	180	632	375	637	199	128
PROJECT TOTAL	180	180	632	375	637	199	128

*QUANTITY SHOWN ELSEWHERE

EXCAVATION COMMON

CATEGORY 0010	205.0100 EXCAVATION COMMON
<u>LOCATION</u>	<u>CY</u>
W. GRANGE AVENUE	157
PROJECT TOTAL	157

EARTHWORK SUMMARY

FROM/TO STATION	LOCATION	ITEM 205.0100 EXCAVATION COMMON (1)		SALVAGED UNUSEABLE PAVEMENT (4) CY	AVAILABLE MATERIAL (5) CY	UNEXPANDED FILL CY	EXPANDED FILL (6) CY	MASS ORDINATE (7) CY	WASTE CY	BORROW (8) CY
		CUT (2) CY	EBS (3) CY							
2365-07-70	W GRANGE AVENUE	157	0	157	0	0	0	0	157	0

- 1) Common Excavation is the sum of the Cut and EBS Columns; Item number 205.0100
- 2) Salvaged/Unusable Pavement Material is included in the Cut
- 3) EBS to be backfilled with Base Aggregate Dense 1-1/4 Inch
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusable Pavement Material
- 6) Expanded Fill Factor = 1.2
- 7) The Mass Ordinate + or - quantity calculated for the Division. Plus quantity indicates excess of material, minus indicates a shortage of material
- 8) To be bid as part of Base Aggregate Dense 1-1/4 Inch

ROADWAY CONSTRUCTION ITEMS

CATEGORY 0010

	305.0120 BASE AGGREGATE DENSE 1-1/4 INCH TON	415.0080 CONCRETE PAVEMENT 8-Inch SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	601.0331 CONCRETE CURB & GUTTER 31-INCH LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	616.0406 FENCE CHAIN LINK SALVAGED 6' LF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	SPV.0180.001 JOINT SEALING SF
W. GRANGE AVENUE	209	257	288	210	100	50	68	511	1,513	20	453	545
PROJECT TOTAL	209	257	288	210	100	50	68	511	1,513	20	453	545

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL

CATEGORY 0010

650.9910
CONSTRUCTION STAKING
SUPPLEMENTAL
CONTROL
PROJECT 2365-07-70

LOCATION	LS
W. GRANGE AVENUE	1
TOTAL	1

CONSTRUCTION STAKING

CATEGORY 0010

	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5500 CONSTRUCTION STAKING CURB & GUTTER LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT EACH	SPV.0090.002 CONSTRUCTION STAKING CONCRETE SIDEWALK LF
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LOCATION	LF	LF	EACH	LF
W. GRANGE AVENUE	275	59	275	1,513
PROJECT TOTAL	275	59	275	1,513

CONSTRUCTION STAKING STRUCTURE

CATEGORY 0020

650.6500.001
CONSTRUCTION
STAKING
STRUCTURE LAYOUT
B-40-0500
LS

LOCATION	LS
B-40-0500	1
PROJECT TOTAL	1

EROSION CONTROL ITEMS

CATEGORY 0010

LOCATION	625.0100 TOPSOIL SY	628.1504 SILT FENCE LF	628.1504 SILT FENCE MAINTENANCE LF	628.2023 EROSION MAT CLASS II TYPE B SY	630.0120 SEEDING MIXTURE NO. 20 LB	631.1000 SOD LAWN SY	631.0300 SOD WATER MGAL	628.7015 INLET PROTECTION TYPE C EACH
W. GRANGE AVENUE	611	160	160	270	8	611	5	8
PROJECT TOTAL	611	160	160	270	8	611	5	8

MOBILIZATIONS EROSION CONTROL

CATEGORY 0010

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 2365-07-70	2	5
PROJECT TOTAL	2	5

MOBILIZATION

CATEGORY 0010

LOCATION	619.1000 MOBILIZATION EACH
PROJECT 2365-07-70	1
TOTAL	1

FIELD OFFICE

CATEGORY 0010

LOCATION	642.5201 FIELD OFFICE TYPE C EACH
PROJECT 2365-07-70	1
TOTAL	1

3

3

TRAFFIC CONTROL

CATEGORY 0010

LOCATION	DAYS	643.3000		643.0420		643.0500	643.0600	643.0705		643.0715		643.0900		643.0920
		TRAFFIC CONTROL		CONTROL BARRICADES		FLEXIBLE TUBULAR	FLEXIBLE TUBULAR	WARNING LIGHTS		WARNING LIGHTS		TRAFFIC CONTROL SIGNS		COVERING SIGNS
		EACH	DAY	EACH	DAY	MARKER POSTS EACH	MARKER BASES EACH	EACH	DAY	EACH	DAY	EACH	DAY	EACH
STAGE 1	79	93	7347	45	3555	29	29	50	3950	93	7347	42	3318	5
STAGE 2	79	72	5688	39	3081	31	31	57	4503	72	5688	38	3002	5
PROJECT TOTAL		13,035		6,636		60	60	8,453		13,035		6,320		10

TRAFFIC CONTROL SIGNS

SYMBOL	ITEMS	SIZE	STAGE-1	STAGE-2
13-15	W20-1-A	36"X36"	2	3
13-17	W20-55A	36"X36"	1	2
13-21		36"X36"	2	2
13-33	R9-11	24"x12"	1	1
13-31	G20-2-A	36"X18"	4	4
13-28	W01-6-R	24"X48"	2	2
13-23	R11-2-L	48"X30"	2	0
13X20	W06-3	36"X36"	2	2
13x19	W01-4-R	36"x36"	1	1
13x24	R11-2	48"X30"	2	2
13X35	R9-9	24"X12"	2	2
13X30	R11-2	48"X30"	1	1
13X26	R3-7-R	30"X30"	1	0
13X18		36"X36"	1	1
13X16	W20-5A	36"X36"	2	2
13X29	R11-3	60"X30"	1	0
13X25	R3-20-R	24"X36"	1	0
13X27	W01-6-L	24"X48"	1	1
13X22	W04-2-R	36"X36"	2	2
13X15	W20-1-A	36"X36"	1	2
13X34	R9-11	24"X12"	1	1
13X22	W04-2-R	36"X36"	2	2
13X32	R3-2	24"X24"	0	1
TOTAL SIGNS			42	38

TRAFFIC CONTROL

CATEGORY 0010

LOCATION	643.5000 TRAFFIC CONTROL EACH
W. GRANGE AVENUE	1
TOTAL	1

CONCRETE BARRIER

CATEGORY 0010

LOCATION	DAYS	603.8000	603.8125
		CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
STAGE 1	79	465	465
STAGE 2	79	465	465
PROJECT TOTAL		930	930

PAVEMENT MARKING

CATEGORY 0010

LOCATION	646.1020	646.9000
	MARKING LINE EPOXY 4-INCH (WHITE) LF	MARKING REMOVAL LINE 4-INCH LF
STAGE 1	0	140
STAGE 2	140	0
TOTAL	140	140

ADJUSTING WATER BOXES

CATEGORY 0030

LOCATION	SPV.0060.001
	ADJUSTING WATER BOXES EACH
W. GRANGE AVENUE	2
TOTAL	2

TEMPORARY PAVEMENT MARKING

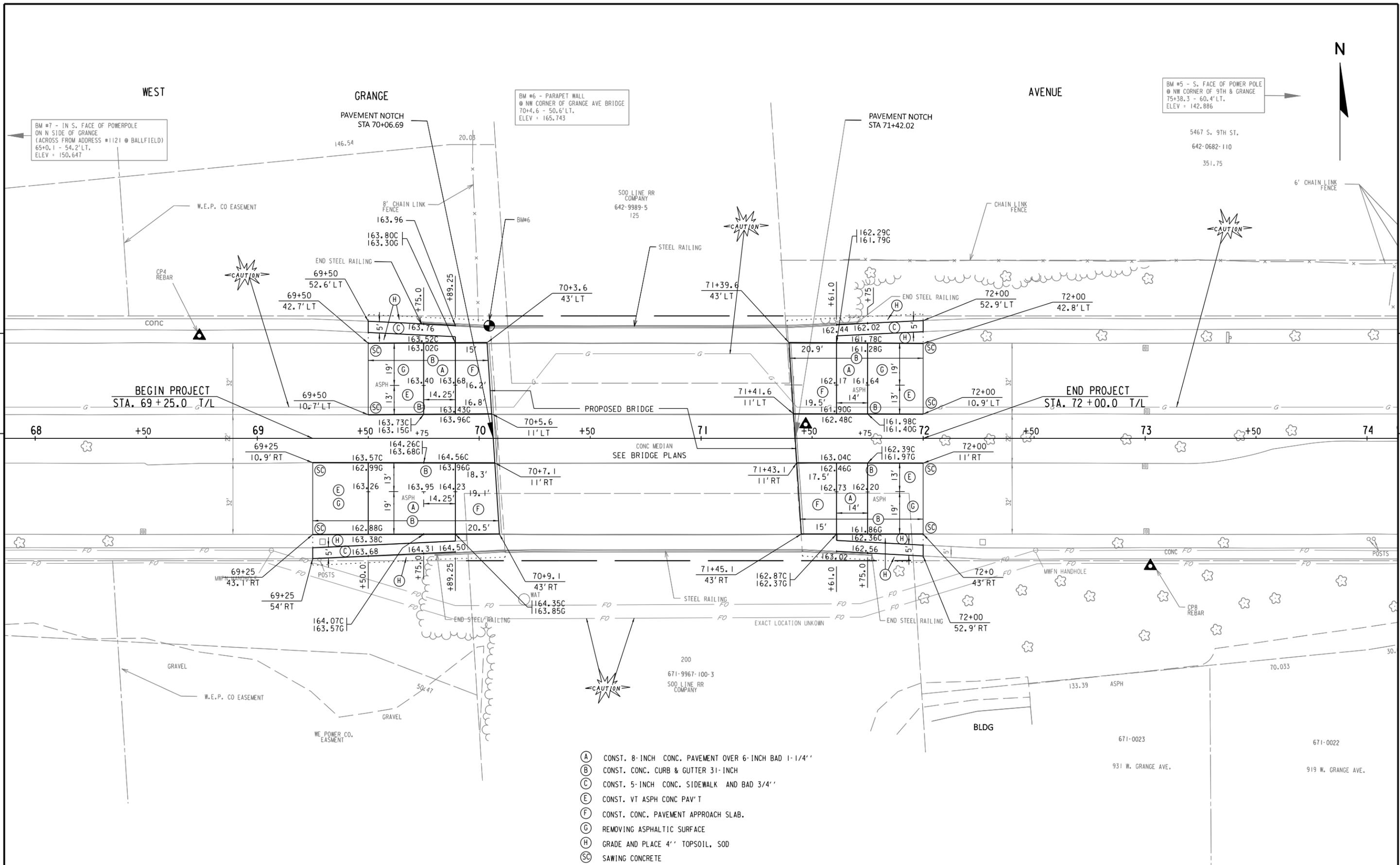
CATEGORY 0010

LOCATION	649.0150	
	(WHITE)	(YELLOW)
	LF	LF
STAGE 1	1,960	2,450
STAGE 2	1,390	2,520
PROJECT TOTAL	3,350	4,970
TOTAL	8,320	

STREET LIGHTING ITEMS

Bid Item	Description	Unit	Quantity
650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS	LS	1
652.0610	CONDUIT SPECIAL 2 1/2-INCH	LF	1600
654.0105	CONCRETE BASES TYPE 5	EACH	5
SPV.0060.302	PULL BOXES 13-INCH x 24-INCH x 24-INCH	EACH	16
SPV.0060.320	POLES TYPE 25-AL-BD	EACH	5
SPV.0090.311	2#12UF W/GROUND (INTERNAL RISER CABLE PER LUMINAIRE)	LF	310
SPV.0090.306	CABLE TYPE 3#6/1#8 XLPE Type USE-2 Electrical Cable	LF	800
SPV.0090.308	CABLE TYPE 3#2/1#8 XLPE Type USE-2 Electrical Cable	LF	500
SPV.0060.345	LUMINAIRE ARMS SINGLE MEMBER 6-Ft.	EACH	10
SPV.0060.375	LUMINAIRE UTILITY LED 2	EACH	10

CITY UNDERGROUND CONDUIT				
MISCELLANEOUS QUANTITIES				
LOCATION			SPV.0060.425	SPV.0090.413
			INSTALLING CONDUIT INTO EXISTING MANHOLE	3- DUCT CONDUIT CEMENT ENCASED 3 INCH DB-60
			EACH	LF
MANHOLE 600	-	STA 69+28.6, 47.7 RT	1	--
MANHOLE 600	TO	5' WEST OF ABUTMENT	--	68
5' WEST OF ABUTMENT	TO	5' EAST OF ABUTMENT	--	--
5' EAST OF ABUTMENT	TO	MANHOLE 601	--	--
MANHOLE 601	-	STA 72+26.6, 47.7 RT	1	70
TOTAL			2	138



BM #7 - IN S. FACE OF POWERPOLE
ON N SIDE OF GRANGE
(ACROSS FROM ADDRESS #1121 @ BALLFIELD)
65+0.1 - 54.2' LT.
ELEV = 150.647

BM #6 - PARAPET WALL
@ NW CORNER OF GRANGE AVE BRIDGE
70+4.6 - 50.6' LT.
ELEV = 165.743

BM #5 - S. FACE OF POWER POLE
@ NW CORNER OF 9TH & GRANGE
75+38.3 - 60.4' LT.
ELEV = 142.886

5467 S. 9TH ST.
642-0682-110
351.75

500 LINE RR
COMPANY
642-9989-5
125

200
671-9967-100-3
500 LINE RR
COMPANY

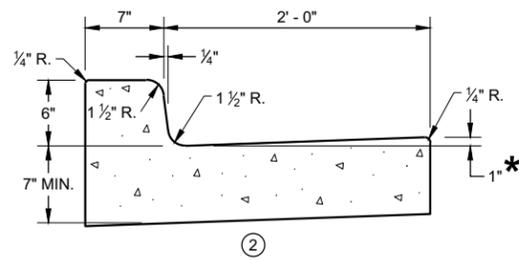
671-0023
931 W. GRANGE AVE.

671-0022
919 W. GRANGE AVE.

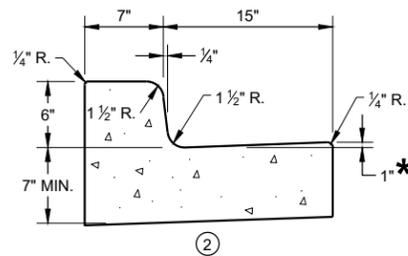
- (A) CONST. 8-INCH CONC. PAVEMENT OVER 6-INCH BAD 1-1/4"
- (B) CONST. CONC. CURB & GUTTER 31-INCH
- (C) CONST. 5-INCH CONC. SIDEWALK AND BAD 3/4"
- (E) CONST. VT ASPH CONC PAV'T
- (F) CONST. CONC. PAVEMENT APPROACH SLAB.
- (G) REMOVING ASPHALTIC SURFACE
- (H) GRADE AND PLACE 4' TOPSOIL, SOD
- (SC) SAWING CONCRETE

Standard Detail Drawing List

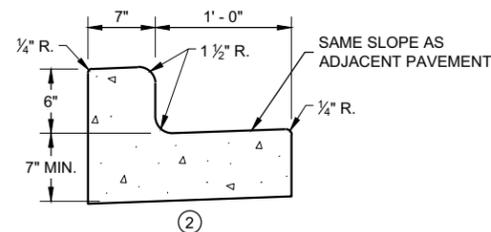
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C18-07A	CONCRETE PAVEMENT JOINTING
13C18-07B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-07C	CONCRETE PAVEMENT JOINT TYPES
13C18-07D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-08A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



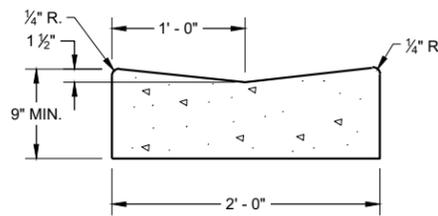
CONCRETE CURB AND GUTTER 31" ①



CONCRETE CURB AND GUTTER 22" ①

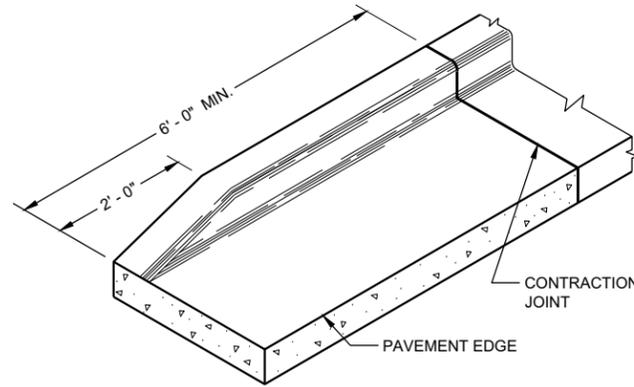


CONCRETE CURB AND GUTTER 19" ①

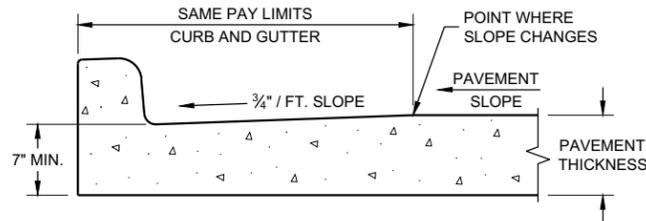


CONCRETE GUTTER 24" ①

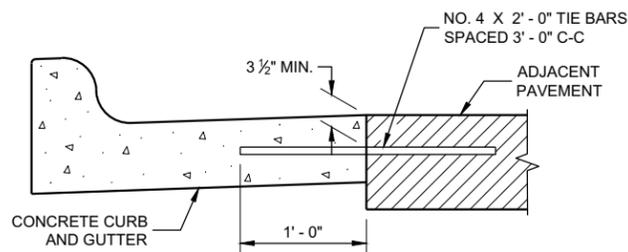
* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



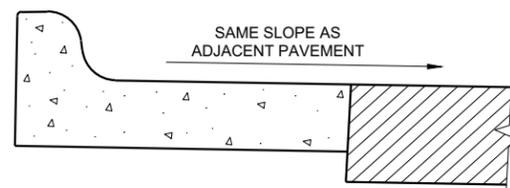
END SECTION CURB AND GUTTER



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



TYPICAL TIE BAR LOCATION ①



HIGH SIDE SECTION ③
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

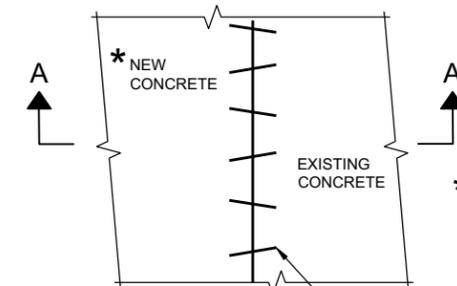
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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

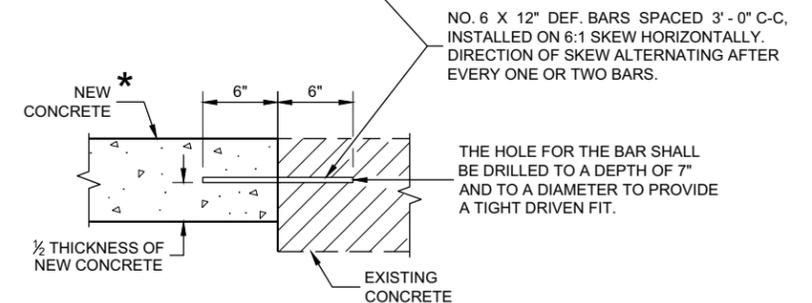
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PLAN VIEW

* EXISTING AND NEW CONCRETE MAY BE CURB AND GUTTER, SURFACE DRAINS, PAVEMENT OR OTHER CONCRETE STRUCTURE.



SECTION A - A

PAVEMENT TIES

NO. 6 X 12" DEF. BARS SPACED 3' - 0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.

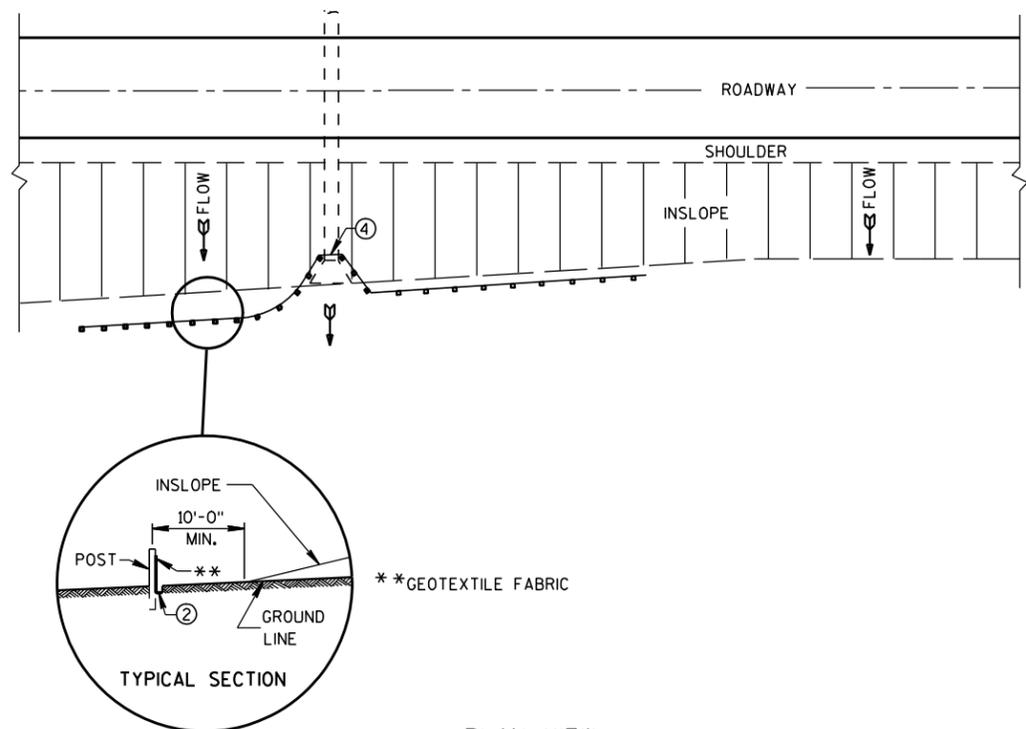
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
(For Optional use in Milwaukee Co. Only)

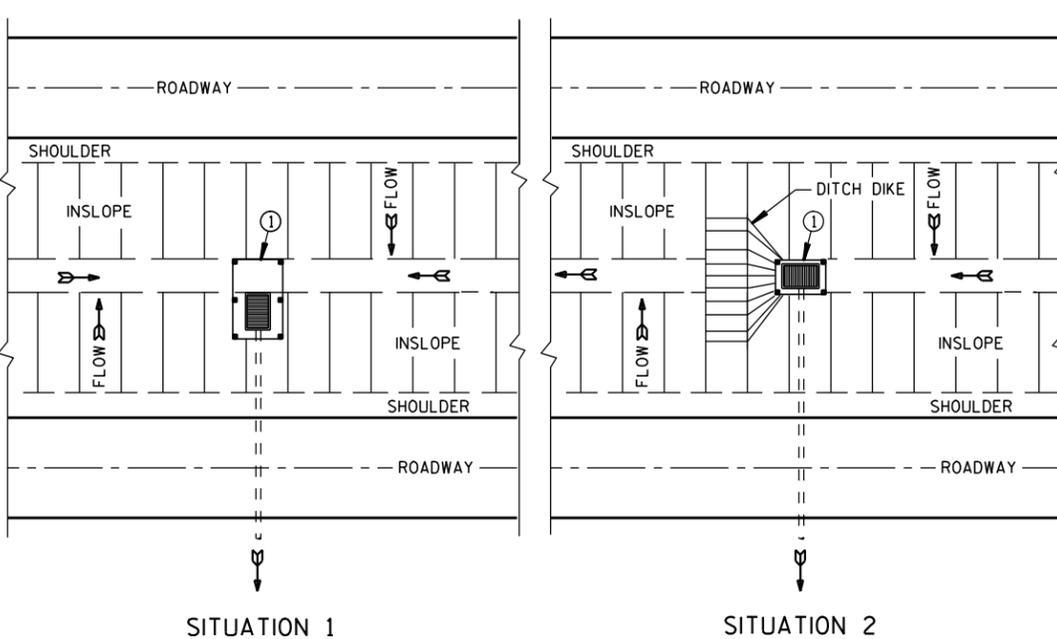
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

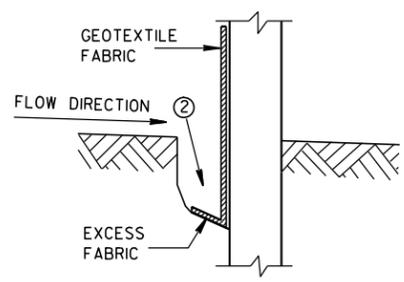


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

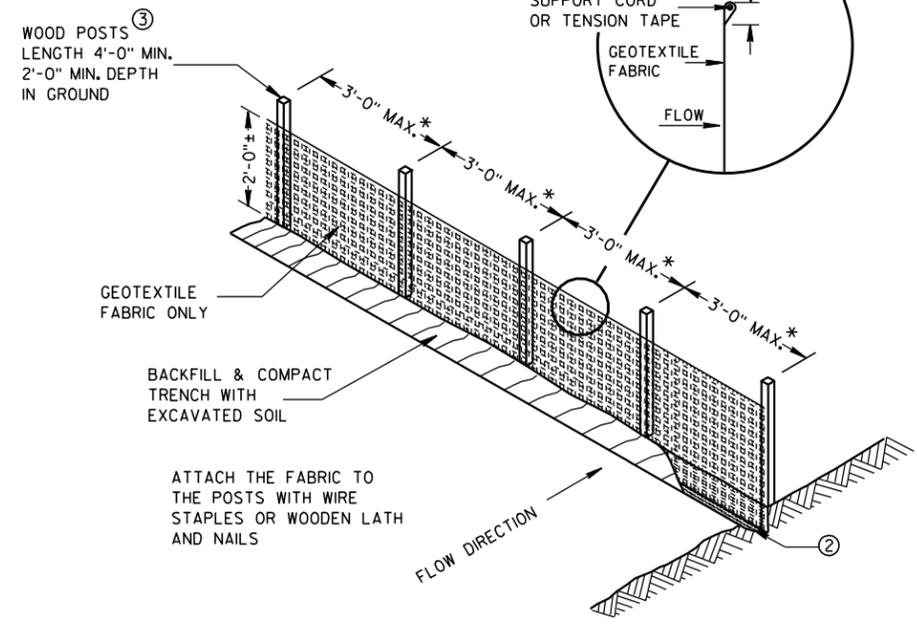
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



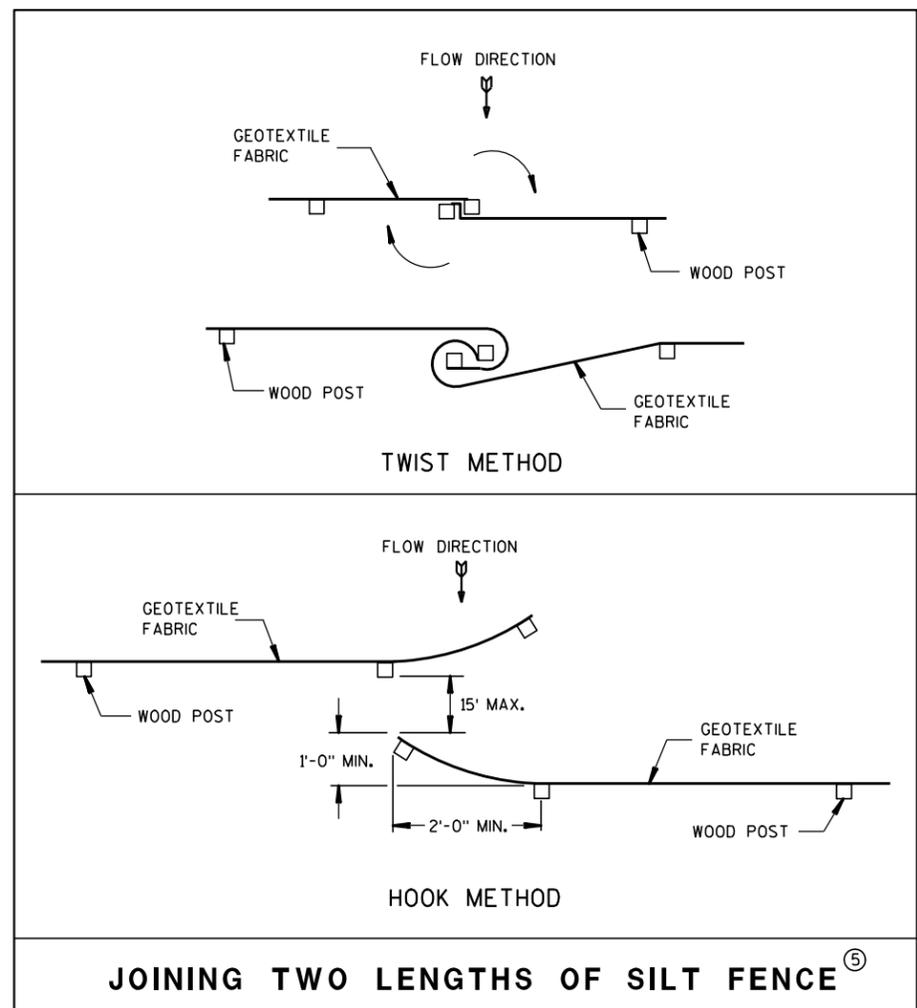
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

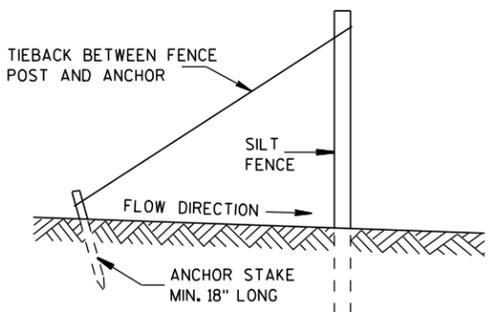


* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

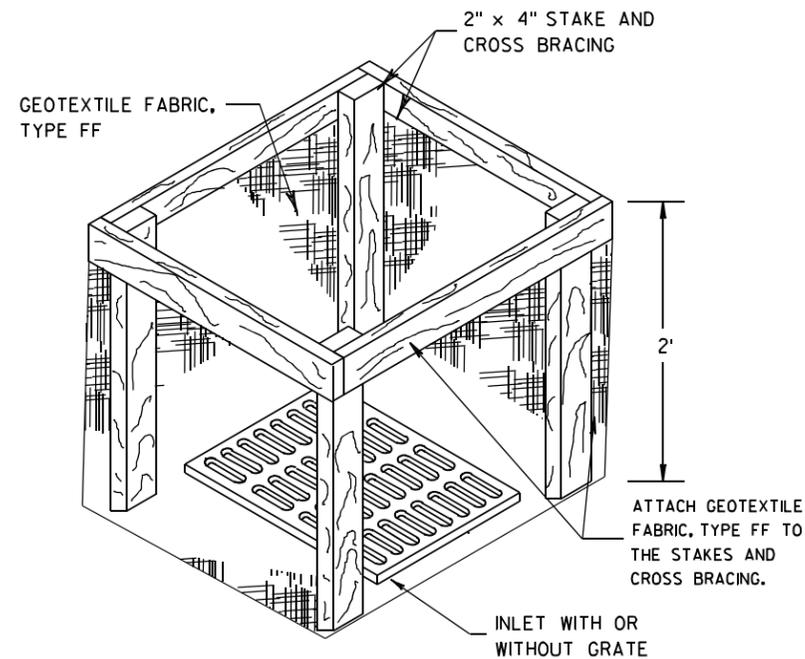
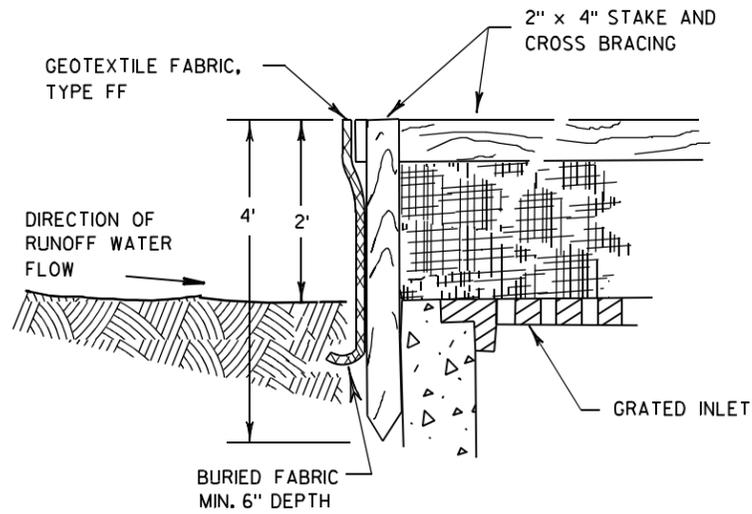


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



INLET PROTECTION, TYPE A

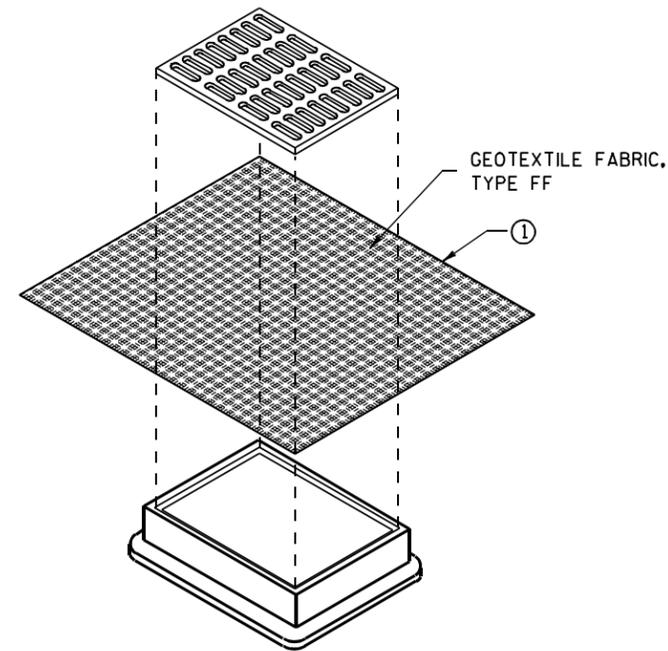
GENERAL NOTES

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.

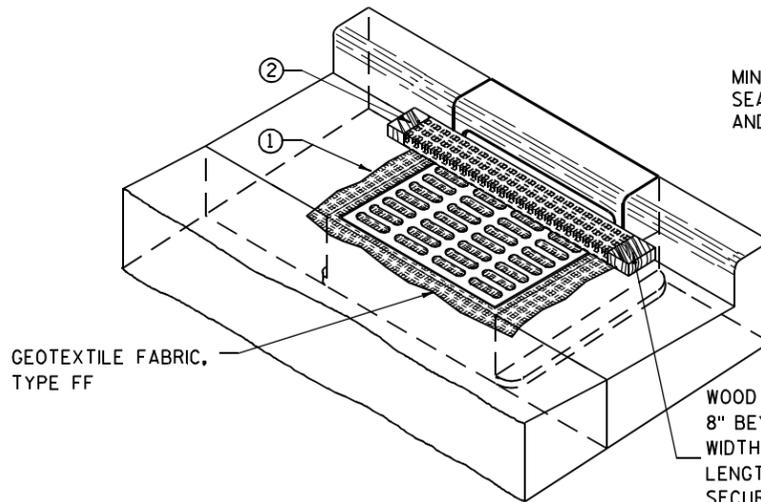
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

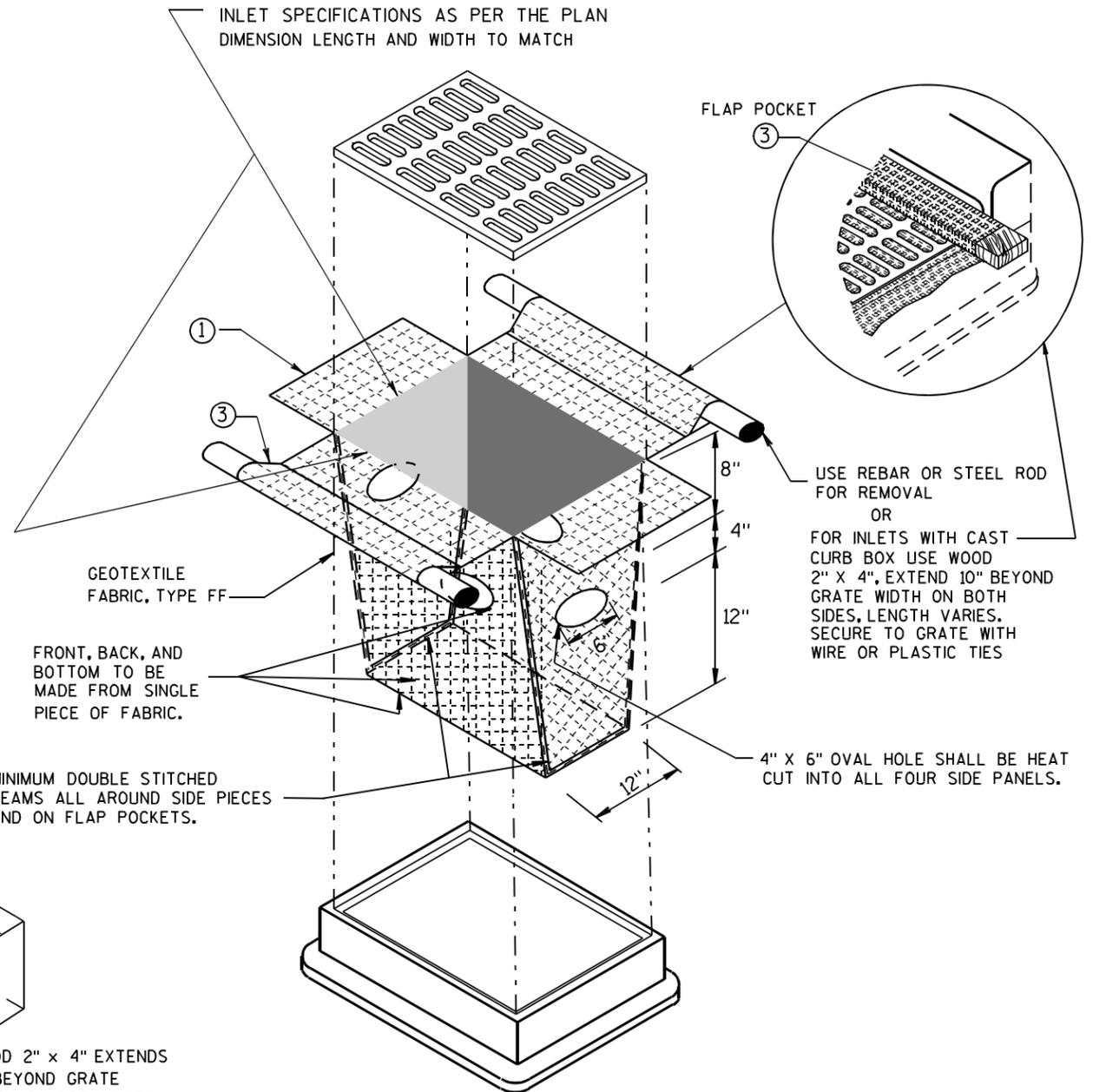
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



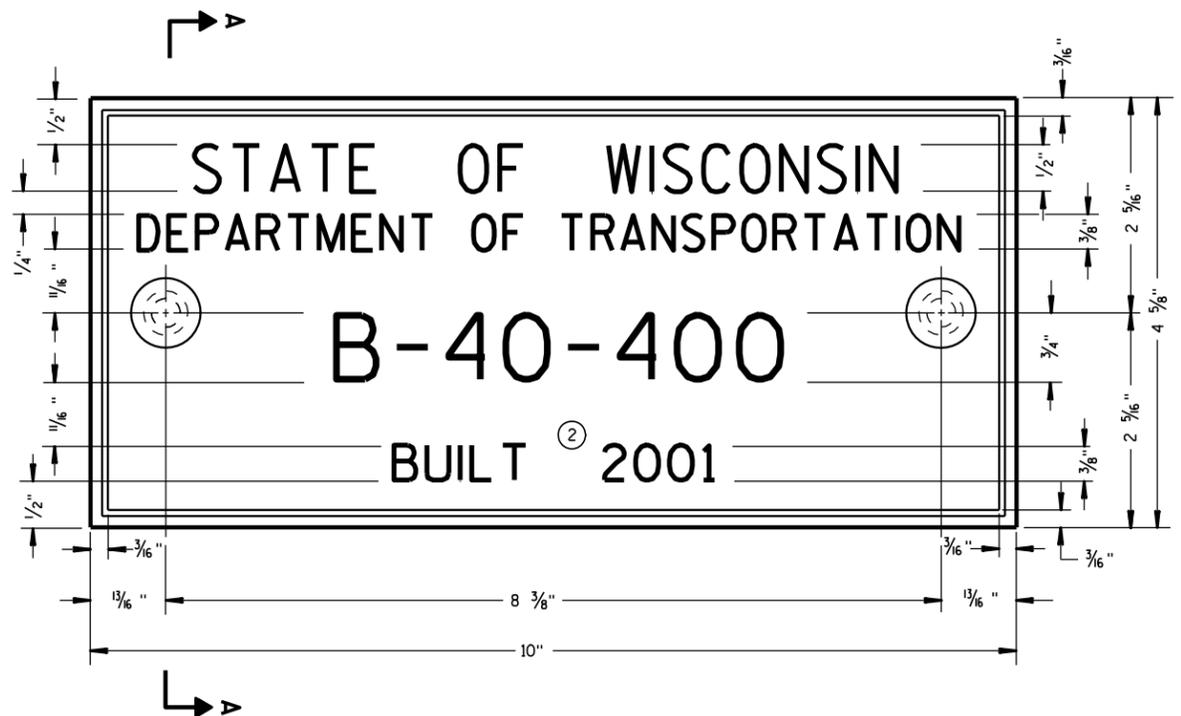
INLET PROTECTION, TYPE D

(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 Connestra
DATE
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



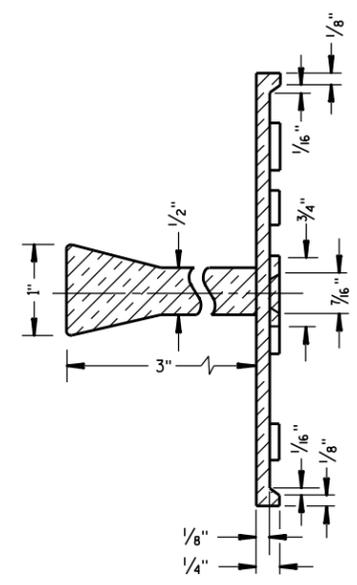
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

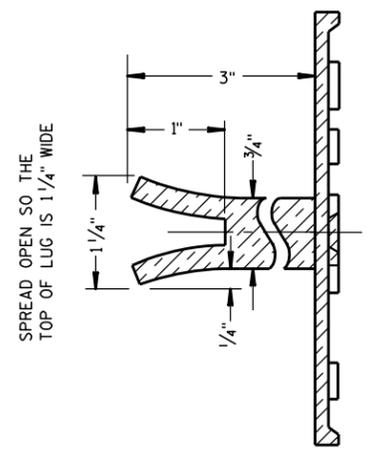
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



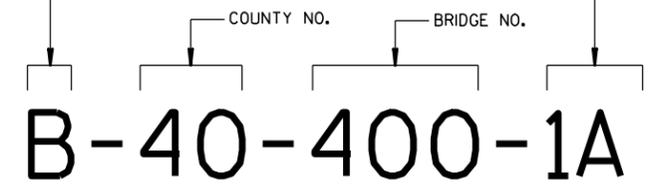
ALTERNATE LUG

6

6

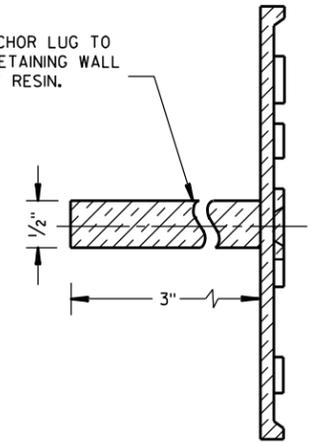
FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

- B = BRIDGE
- C = CULVERT
- R = RETAINING WALL
- UNIT NO. FOR MULTIPLE UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

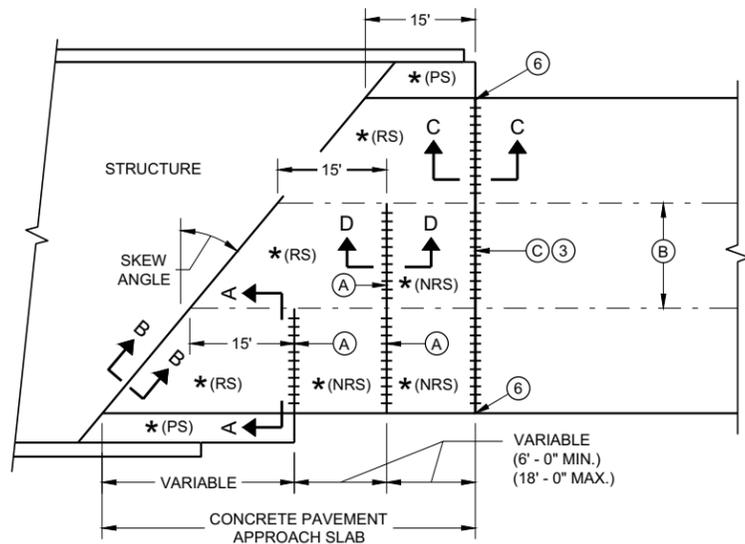


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

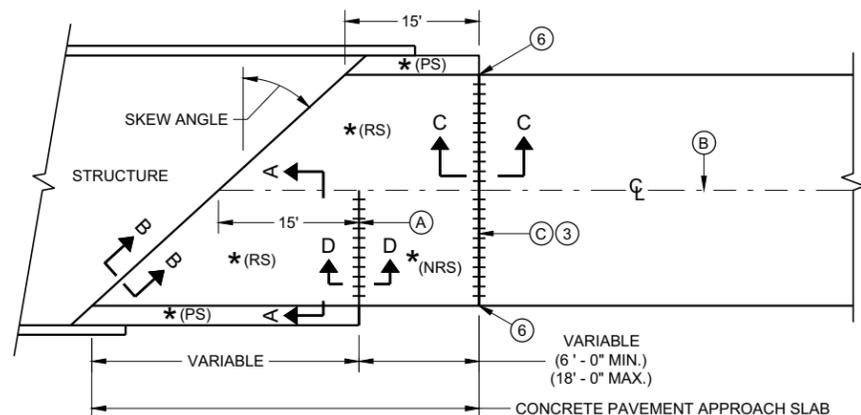
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

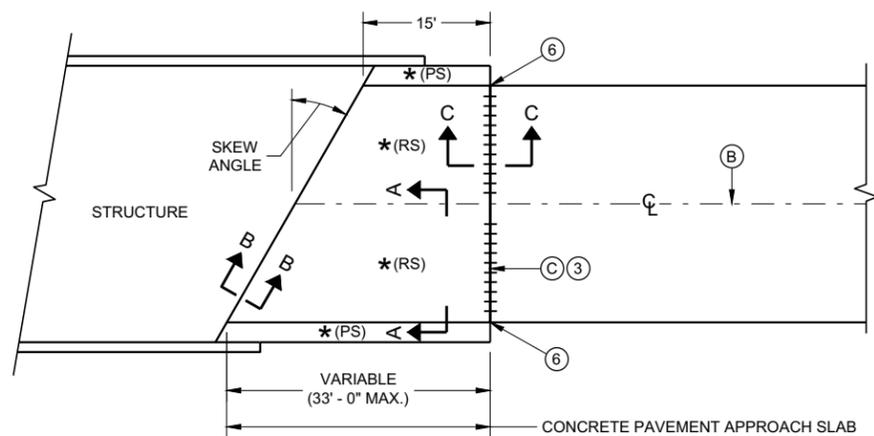
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



**SKewed APPROACH
(PAVEMENT MORE THAN TWO LANES)**

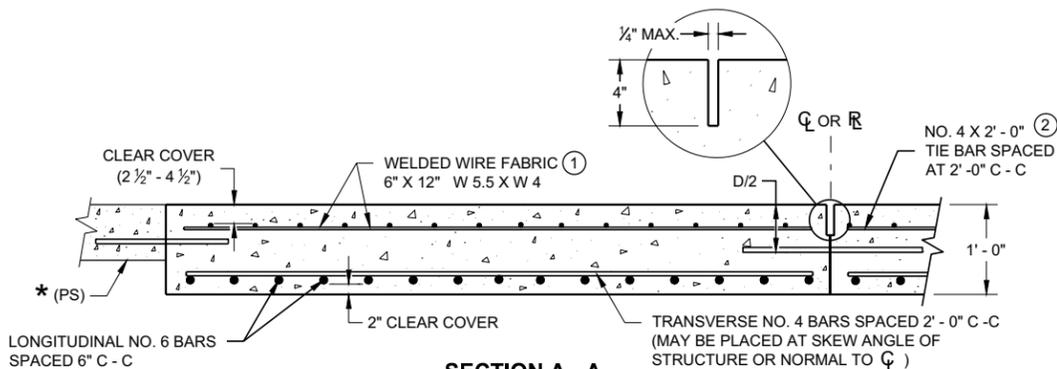


**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

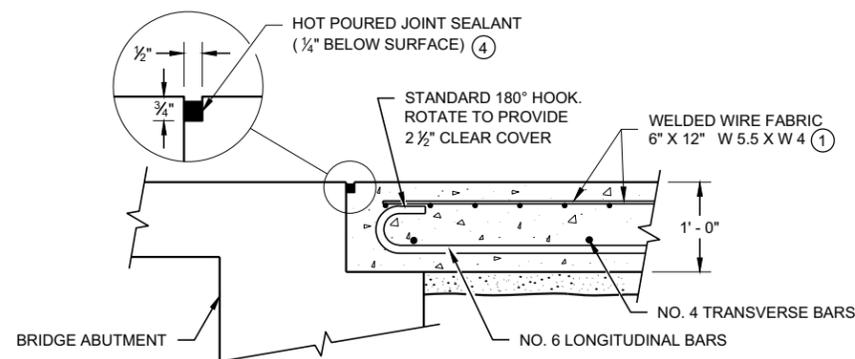


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

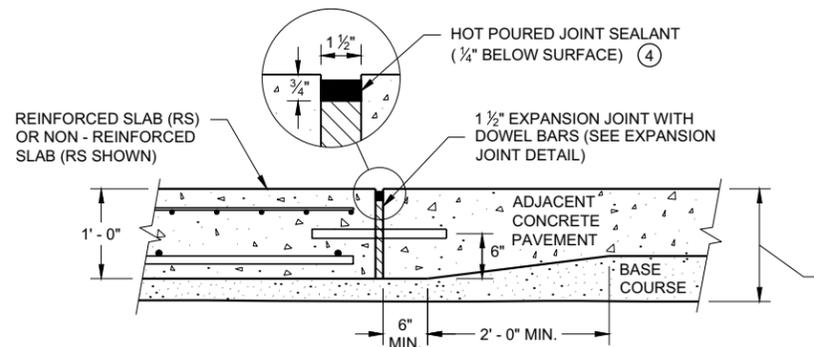
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



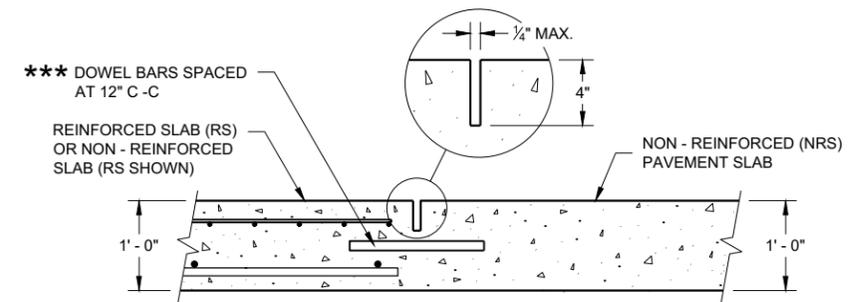
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

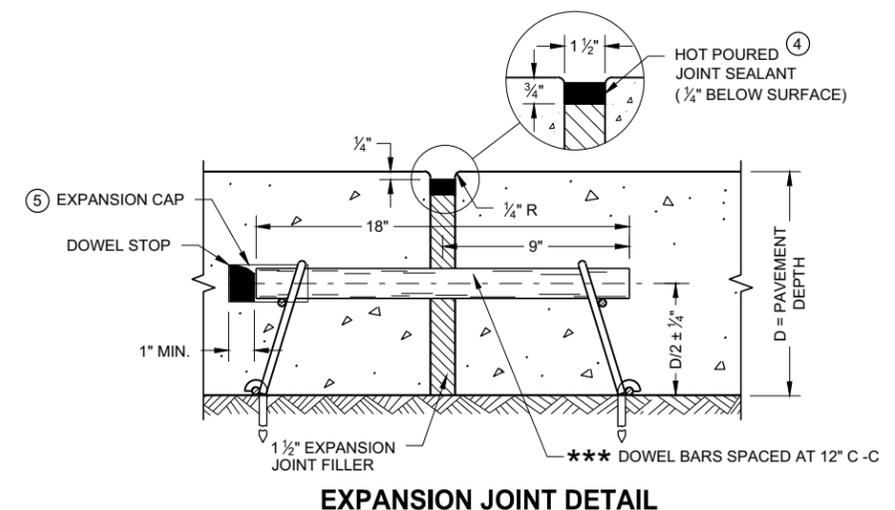
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO \bar{C} OR \bar{R} .
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO \bar{C} OR \bar{R} .



**SECTION D - D
CONTRACTION JOINT**



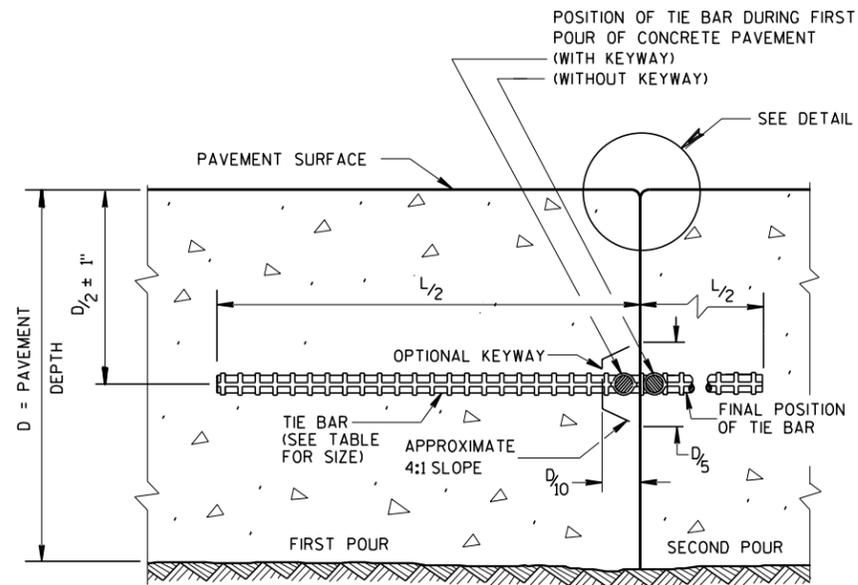
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

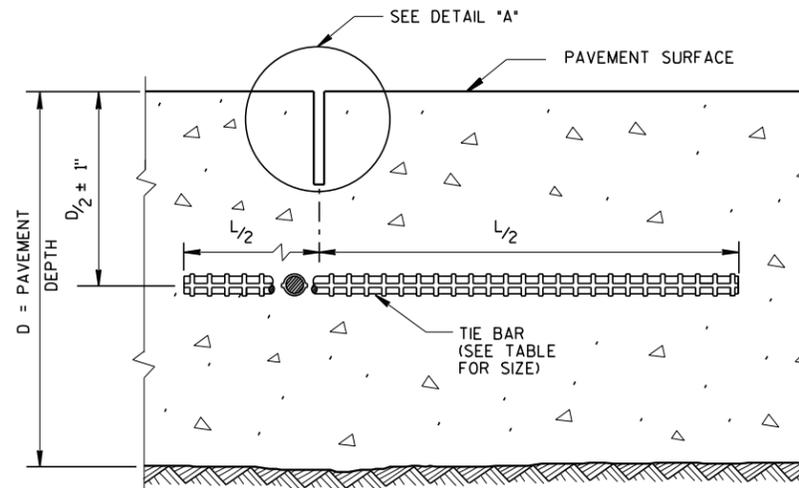
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE DATE PAVEMENT SUPERVISOR

FHWA



CONSTRUCTION JOINT



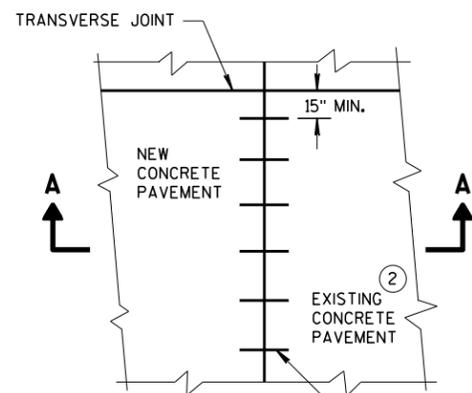
SAWED JOINT

GENERAL NOTES

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

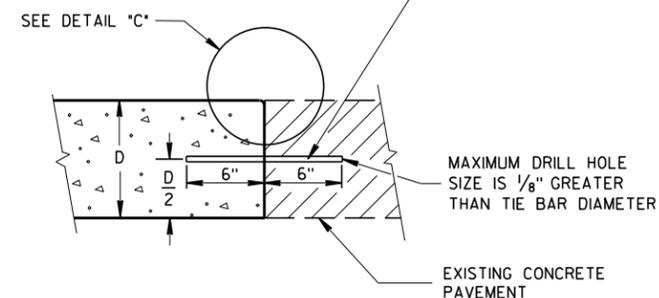
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



PLAN VIEW

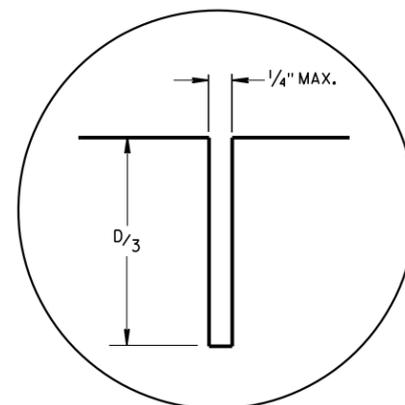
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



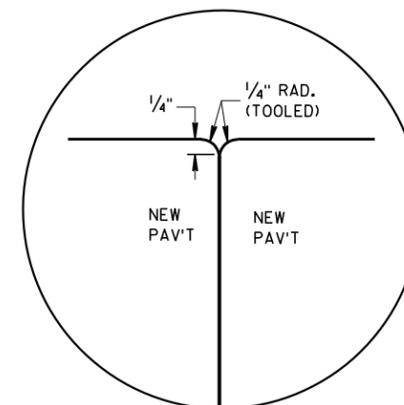
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**

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

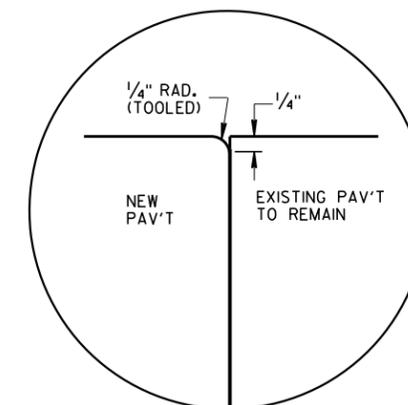
EXISTING CONCRETE PAVEMENT



DETAIL "A"



DETAIL "B"



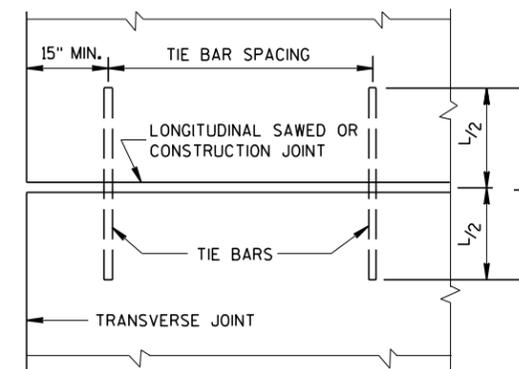
DETAIL "C"

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.

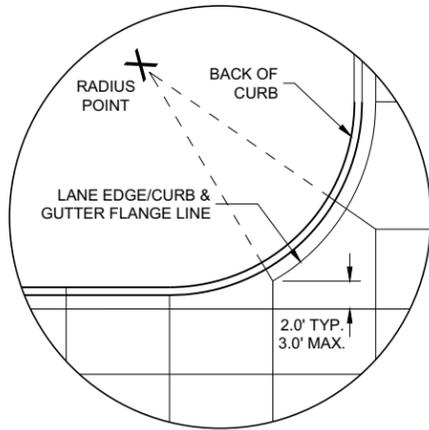


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

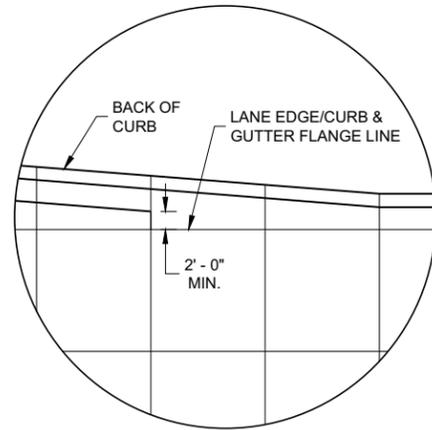
**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

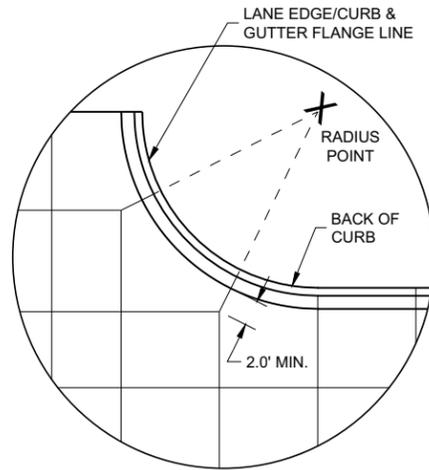
APPROVED
March 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



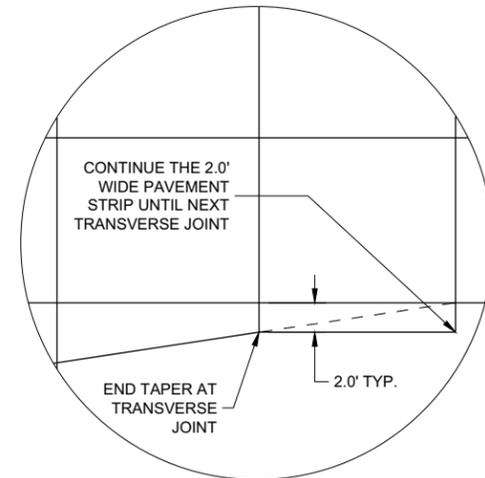
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

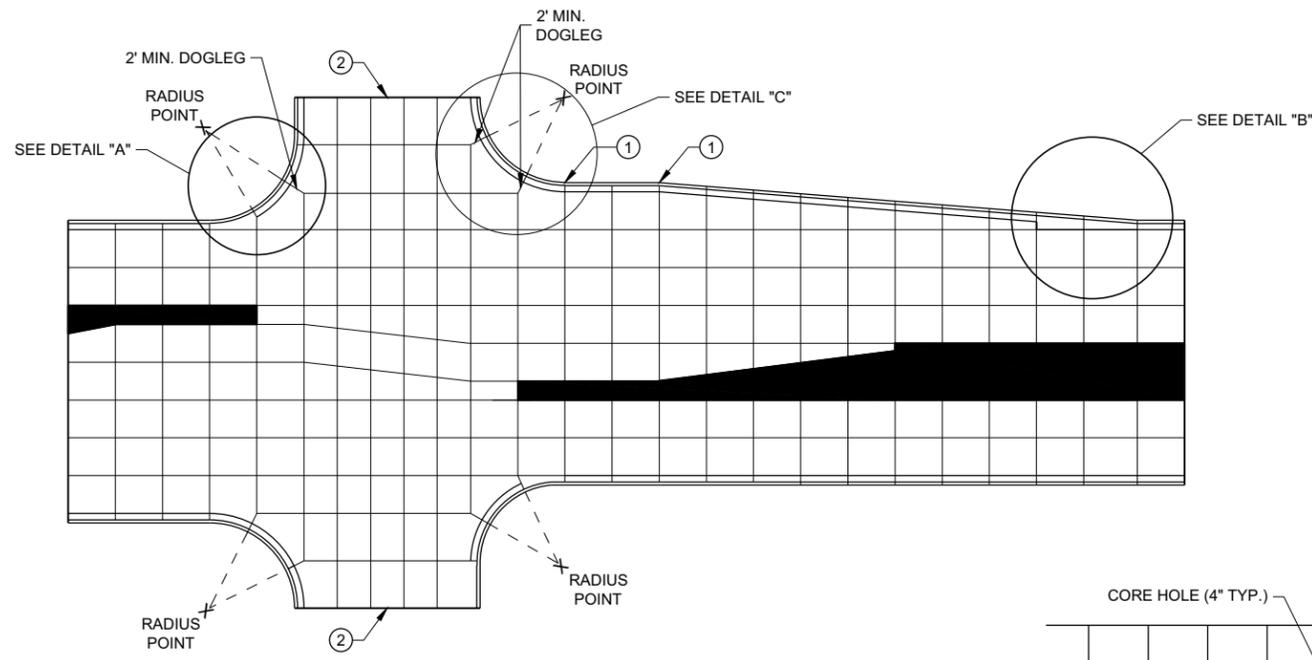
GENERAL NOTES

- 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.

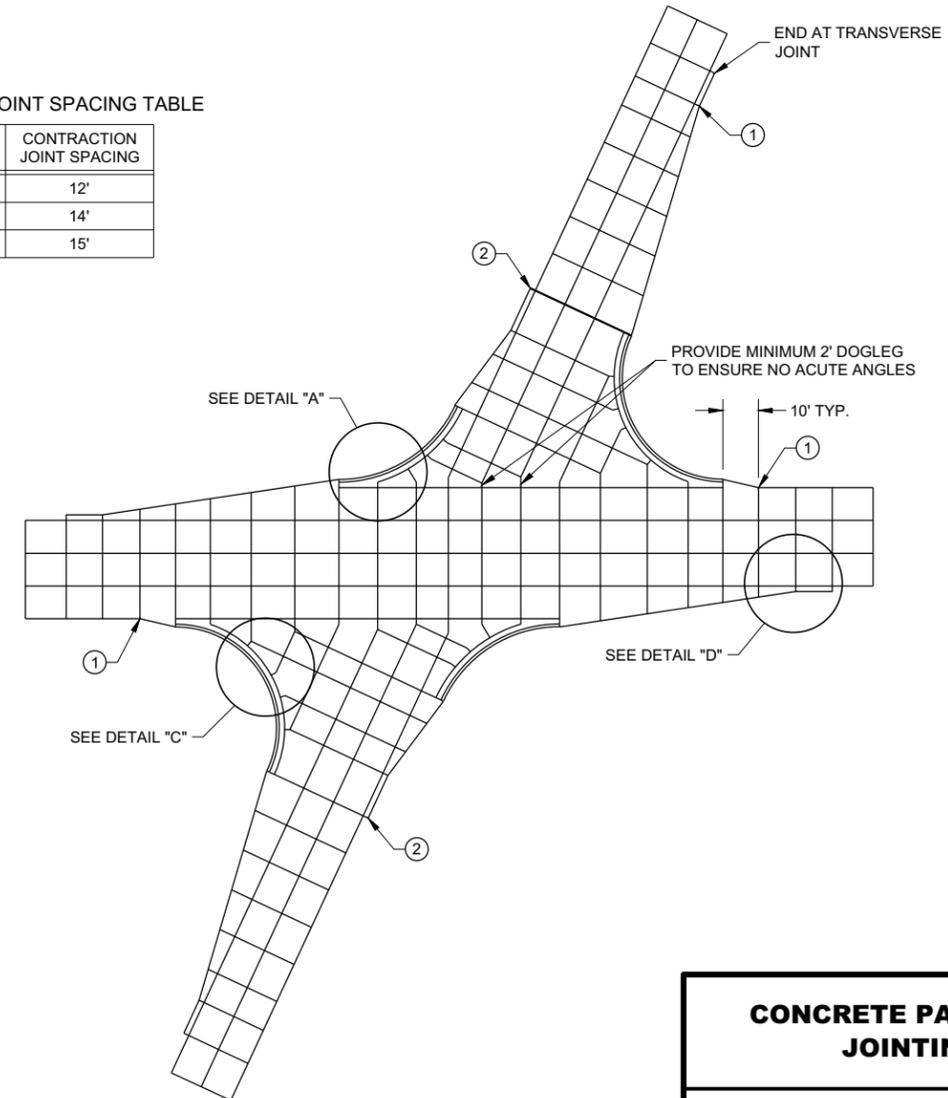
- ① PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
- ② CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
- ③ THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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

PAVEMENT DEPTH AND JOINT SPACING TABLE

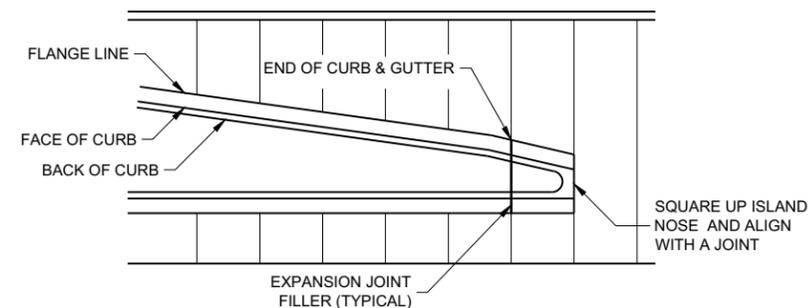
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



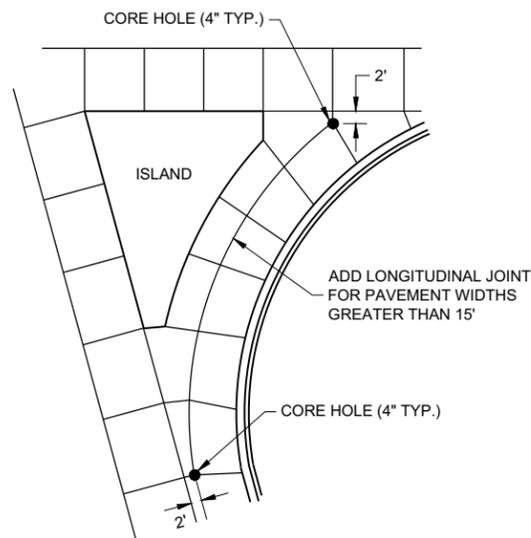
STANDARD INTERSECTION



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

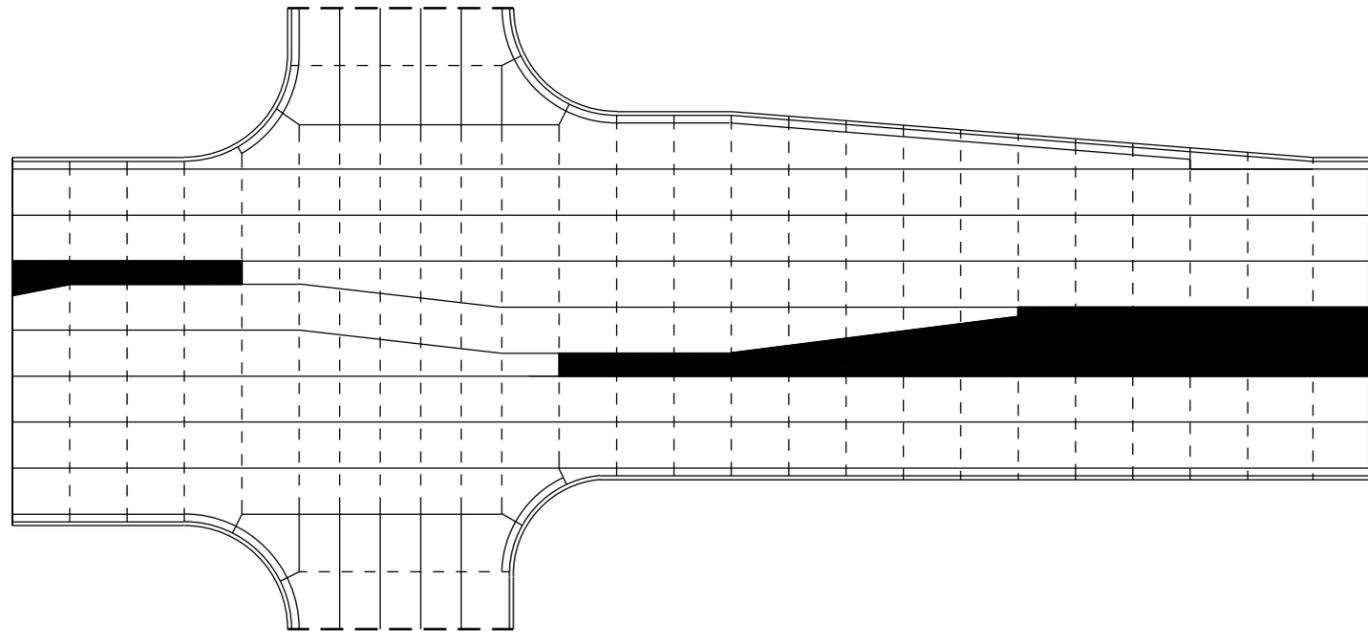
LEGEND

- - - - - POTENTIAL DOWELED EXPANSION JOINT
- - - - - DOWELED JOINT
- TIED JOINT

GENERAL NOTES

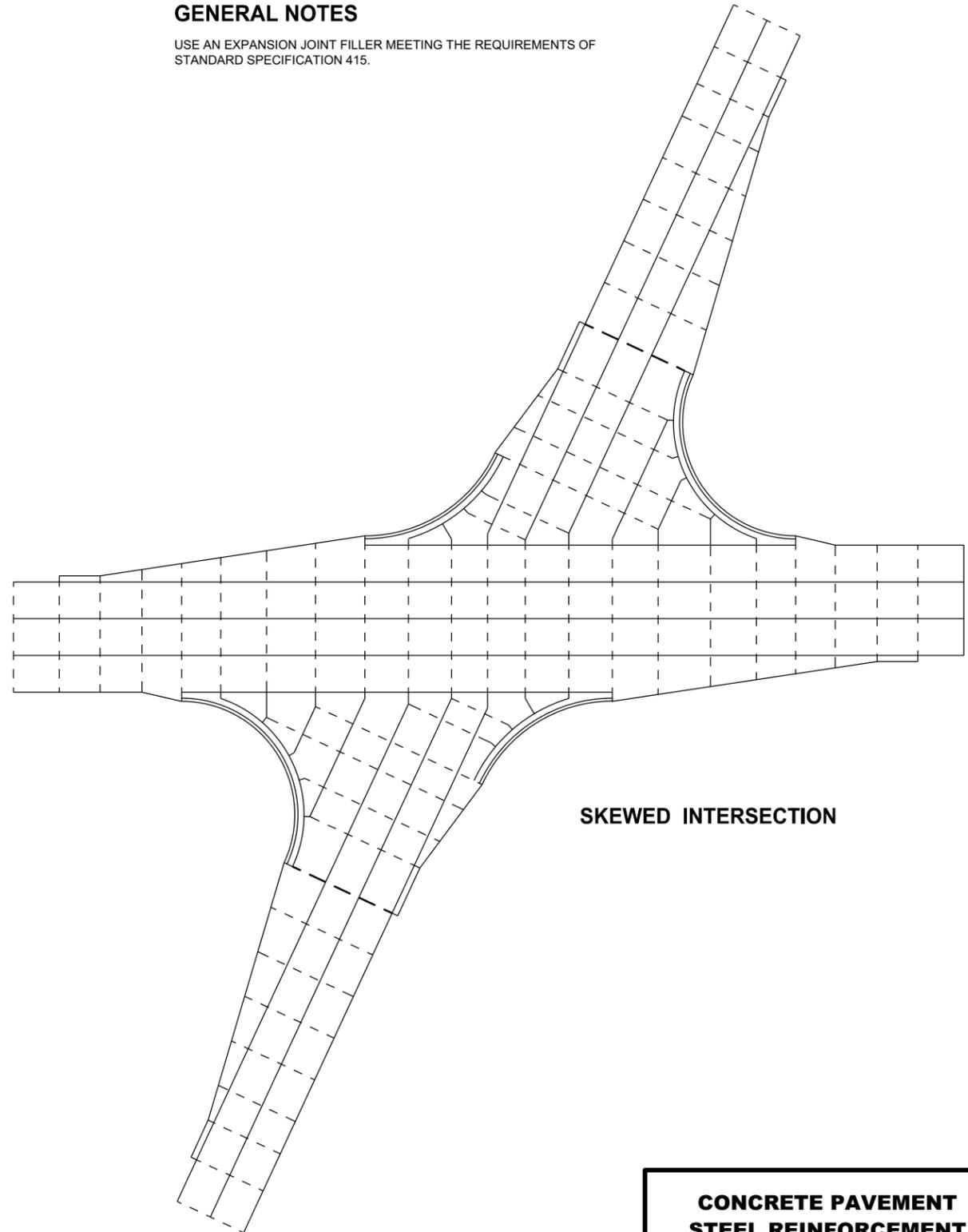
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.

6



STANDARD INTERSECTION

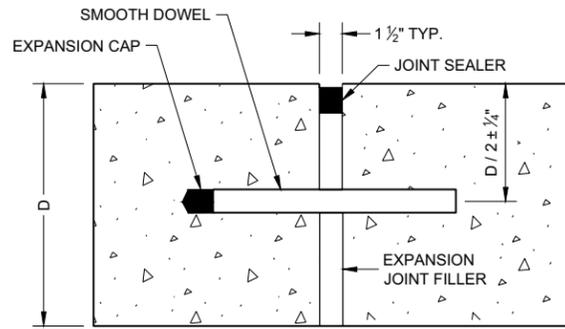
6



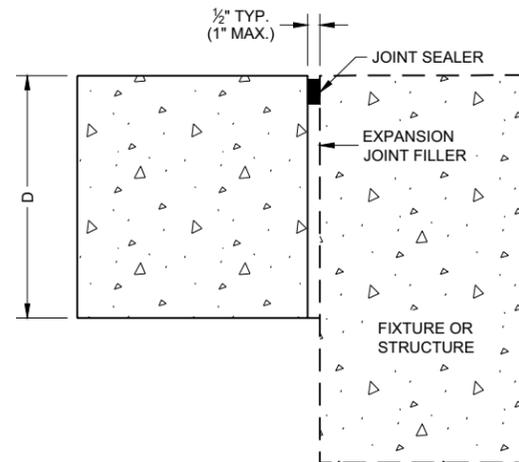
SKEWED INTERSECTION

**CONCRETE PAVEMENT
STEEL REINFORCEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DOWELED TRANSVERSE ①



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

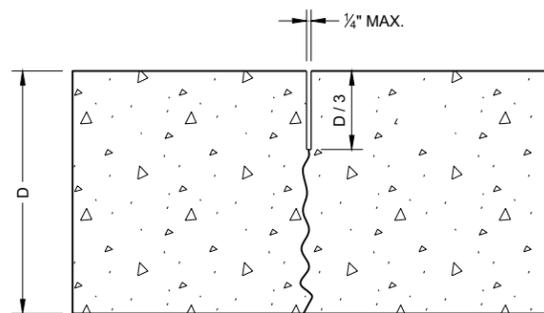
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
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	NO. 4*	30"	24" **

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

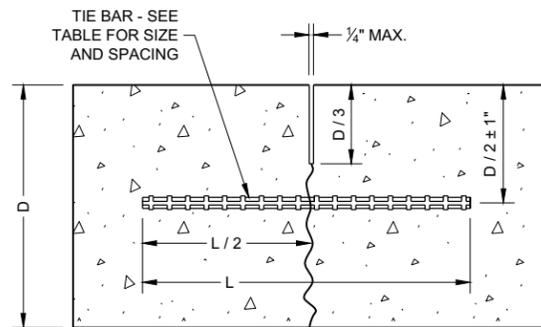
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

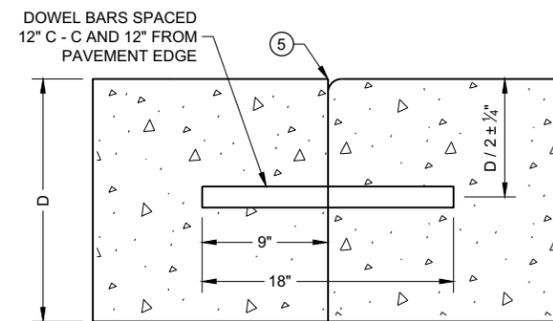
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM 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" RADIUS.
- ⑥ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



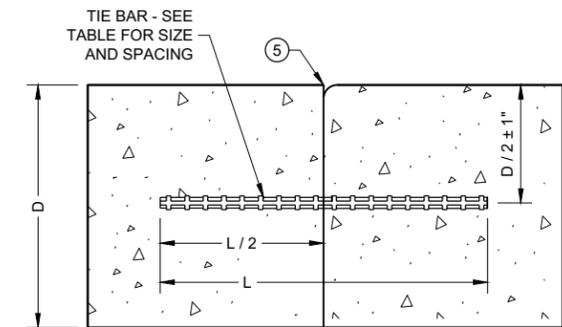
UNDOWELED TRANSVERSE



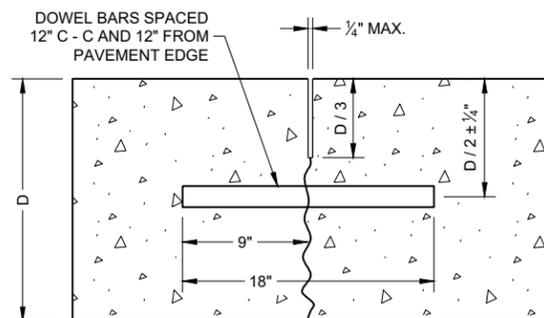
TIED LONGITUDINAL



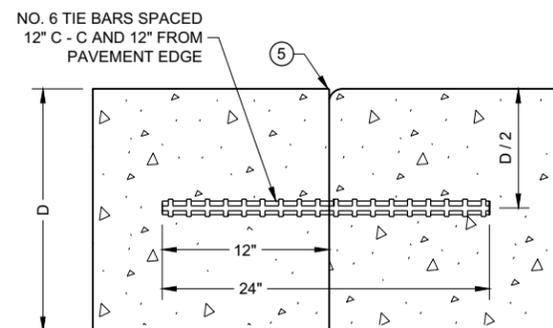
DOWELED TRANSVERSE ③



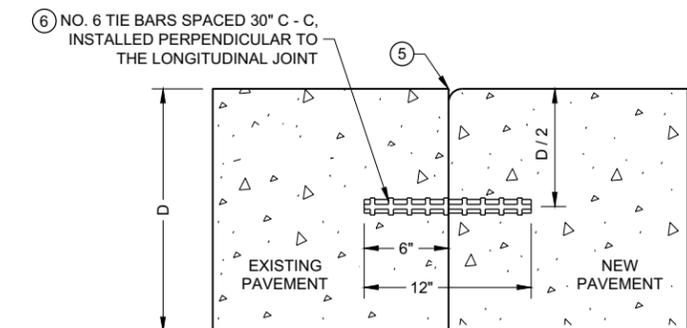
TIED LONGITUDINAL



DOWELED TRANSVERSE



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



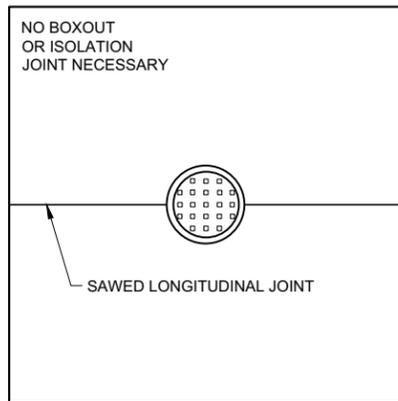
TIED LONGITUDINAL TO EXISTING

CONTRACTION JOINTS ②

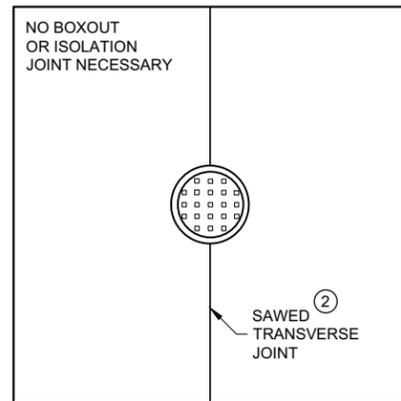
CONSTRUCTION JOINTS ④

CONCRETE PAVEMENT JOINT TYPES

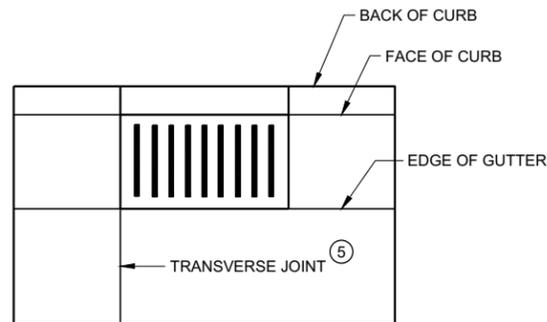
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MANHOLE WITH LONGITUDINAL JOINT



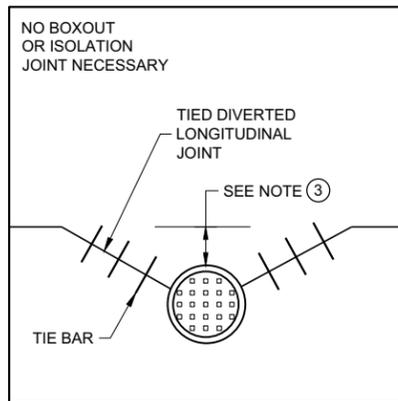
MANHOLE WITH TRANSVERSE JOINT



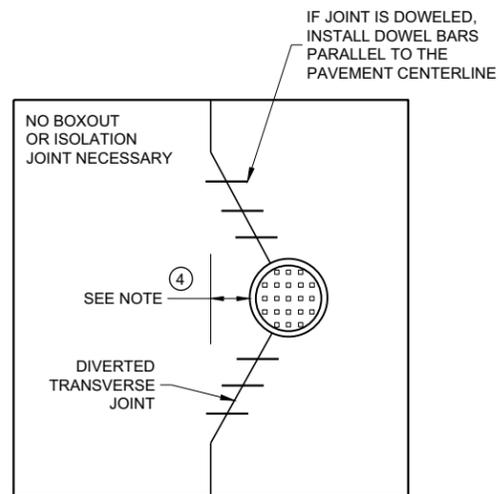
INLET WITH TRANSVERSE JOINT

GENERAL NOTES

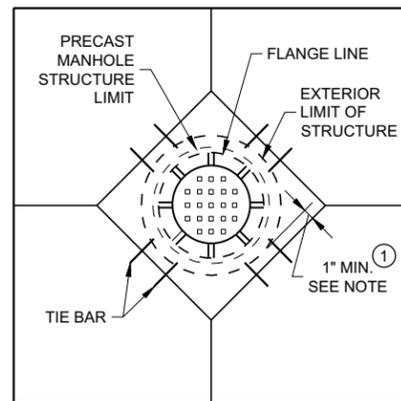
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE 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 REINFORCEMENT REBAR AROUND THE MANHOLE.
- ④ IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 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 REINFORCEMENT REBAR AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

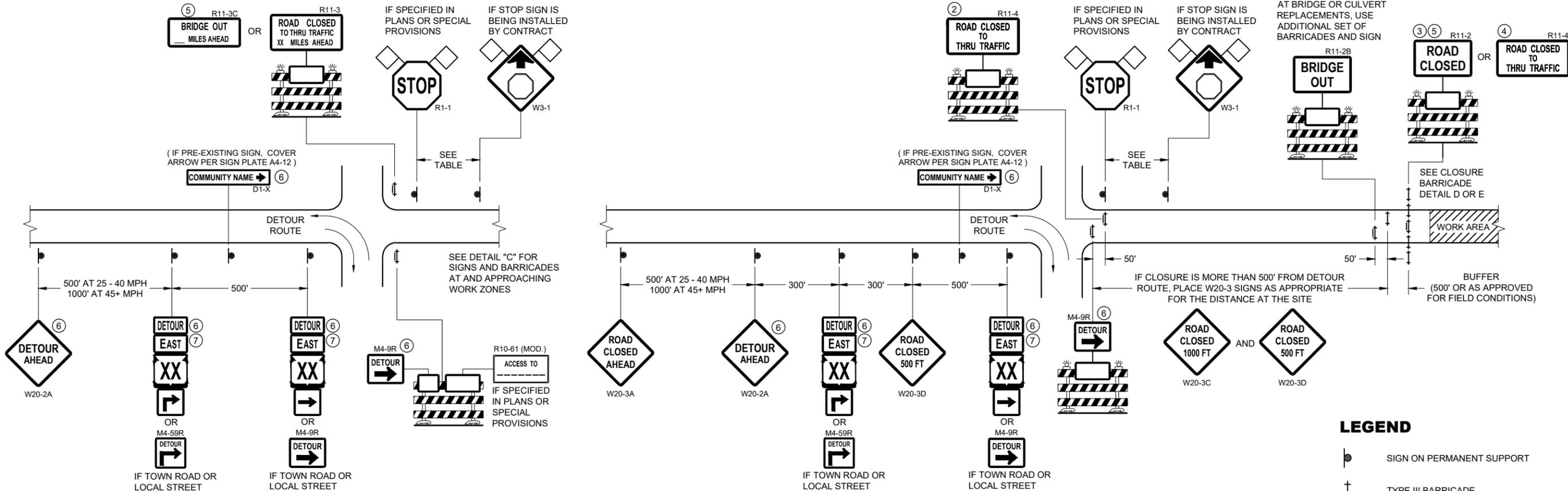


DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Peter Kemp P.E.
 DATE PAVEMENT SUPERVISOR
 FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

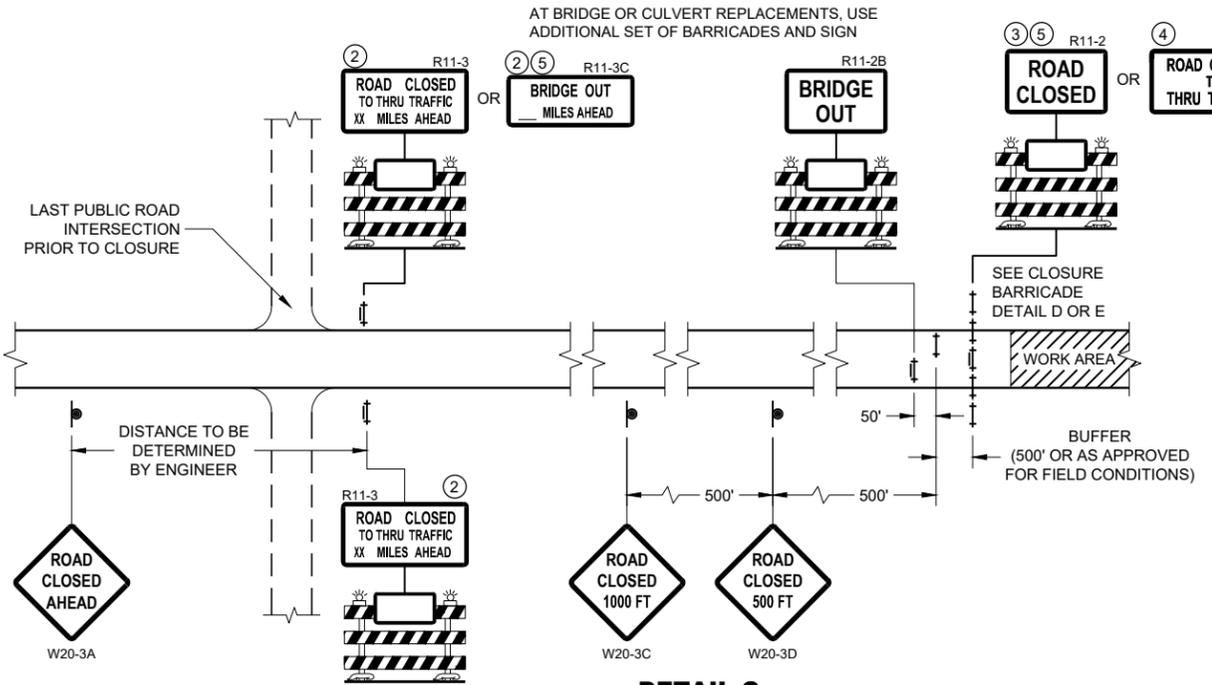
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



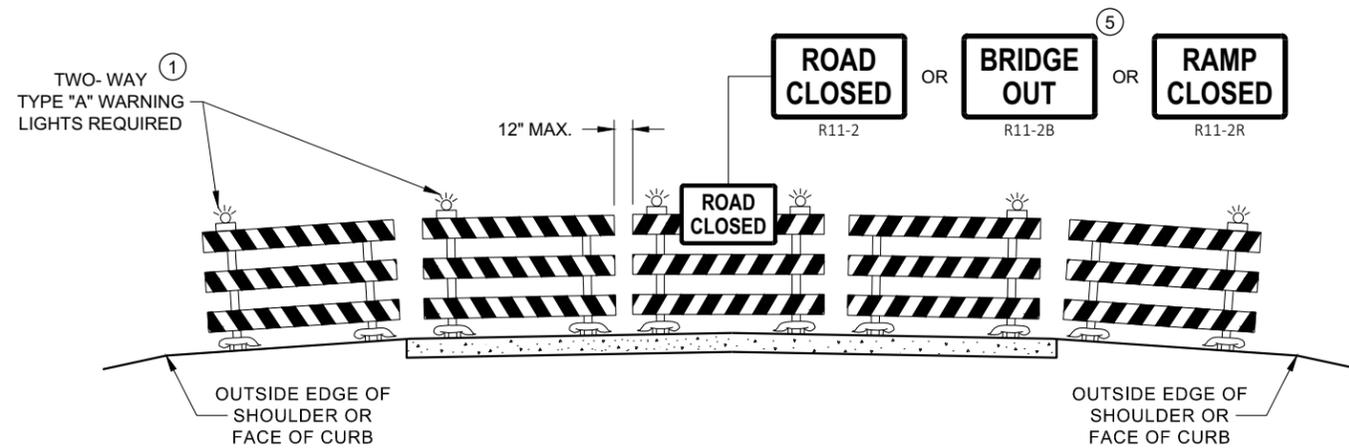
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

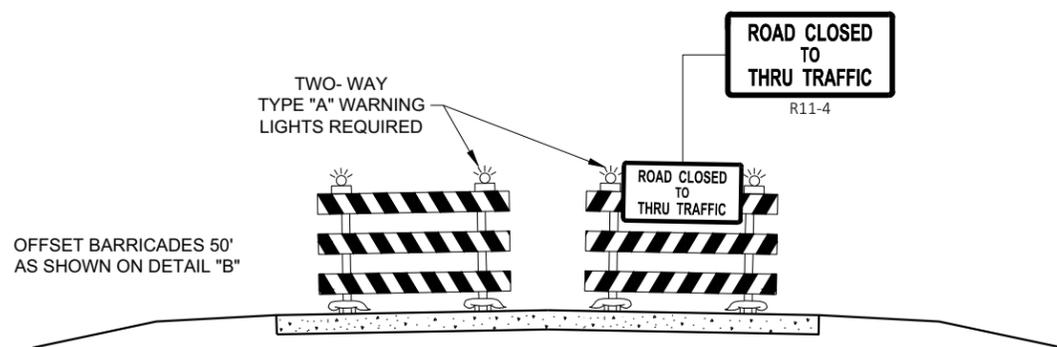
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE DATE WORK ZONE ENGINEER
FHWA



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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 SHALL, 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" (36" X 18" 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)
- MO5 - 1 AND MO6 - 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 AN 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 ROAD 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
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

GENERAL NOTES

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

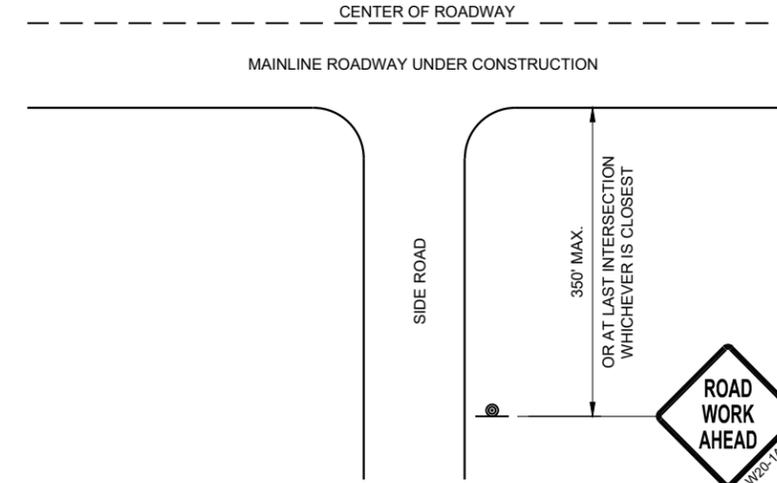
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

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

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

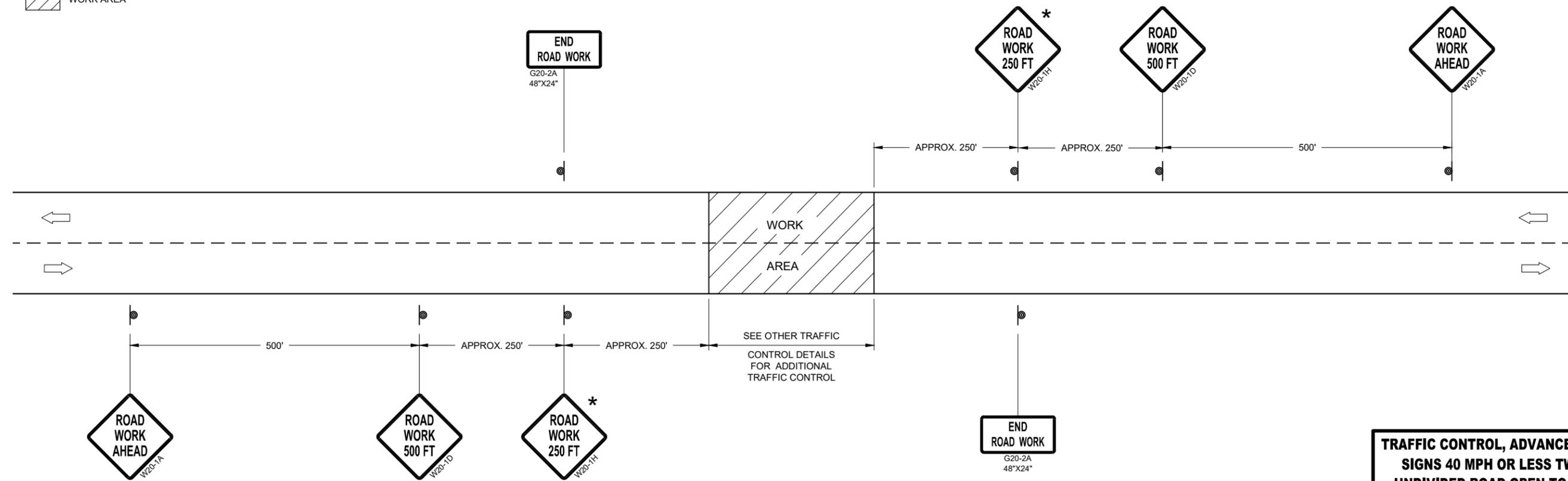
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



**TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL**

LEGEND

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



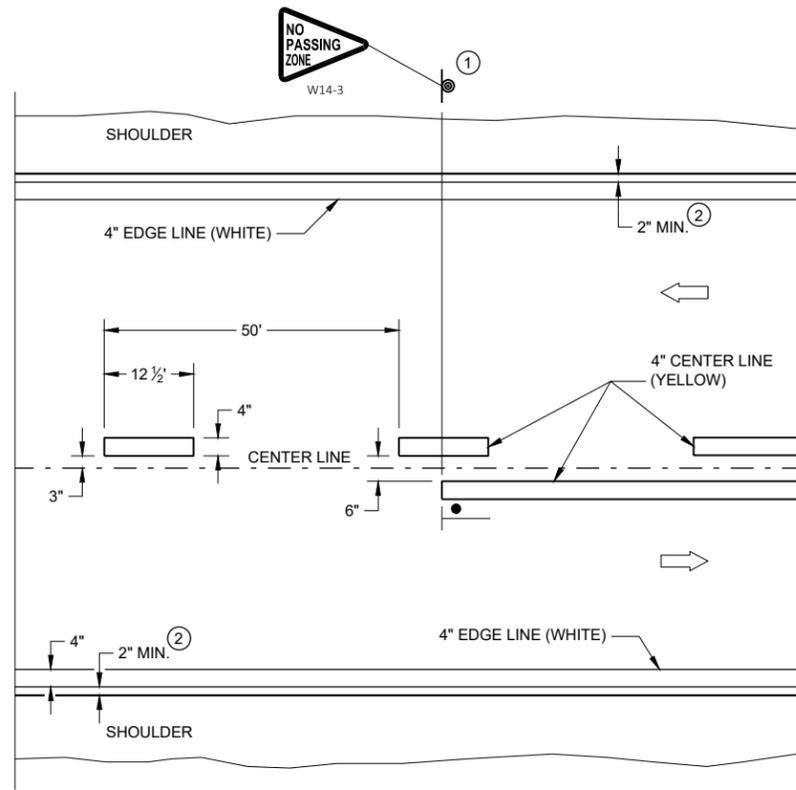
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

**TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC**

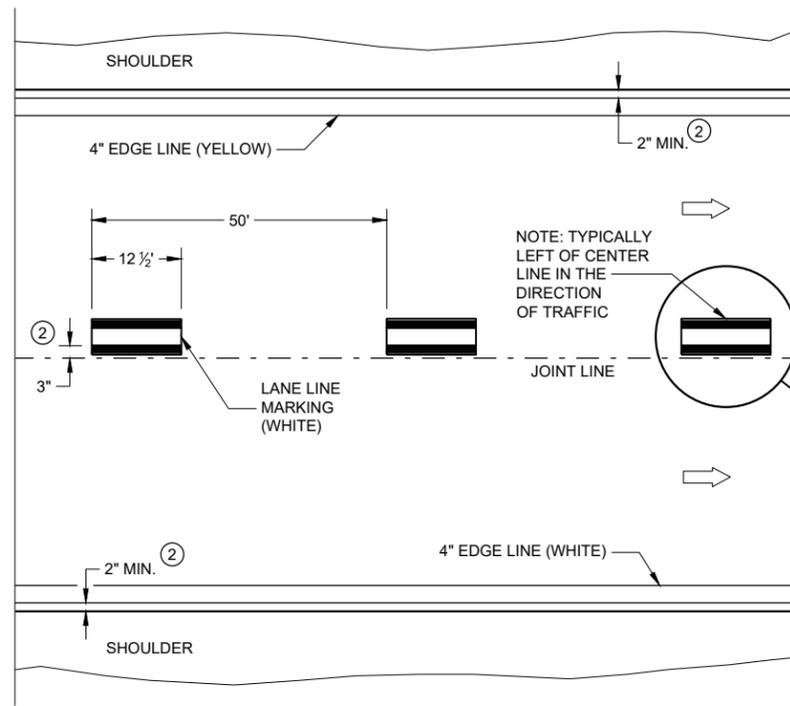
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

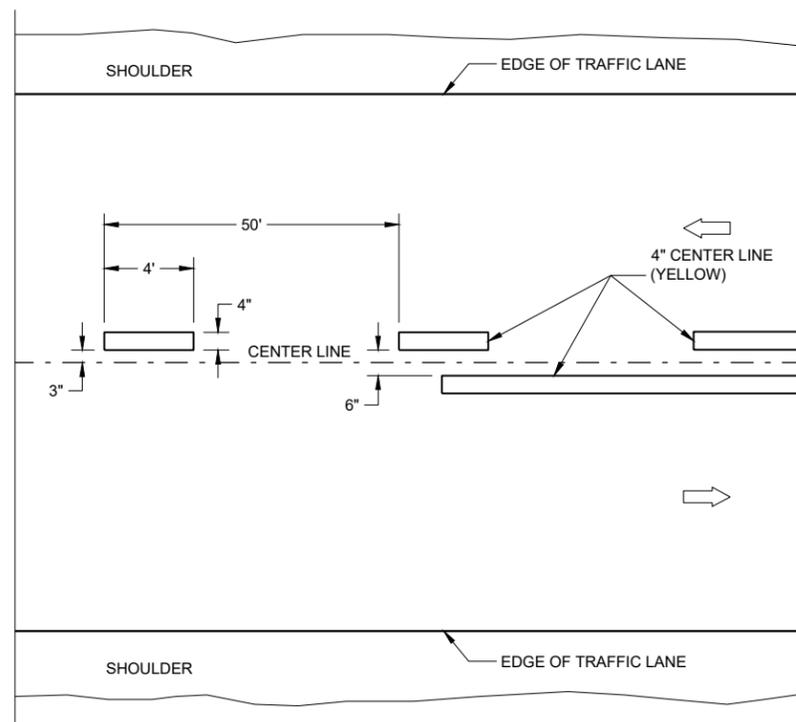


TWO WAY TRAFFIC

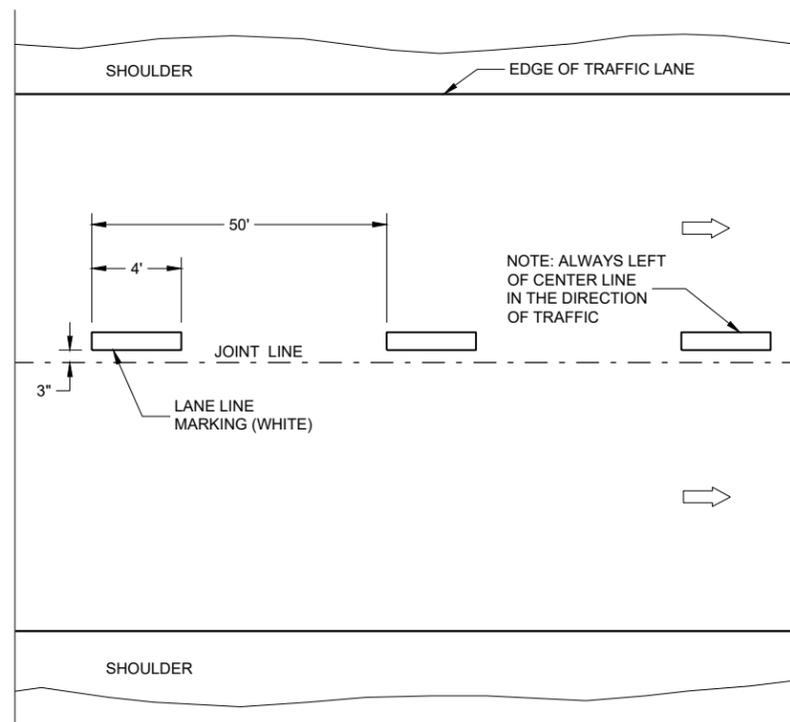


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

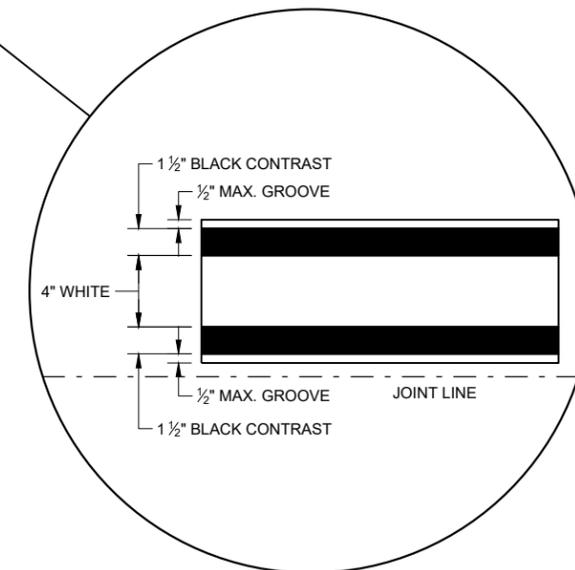
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

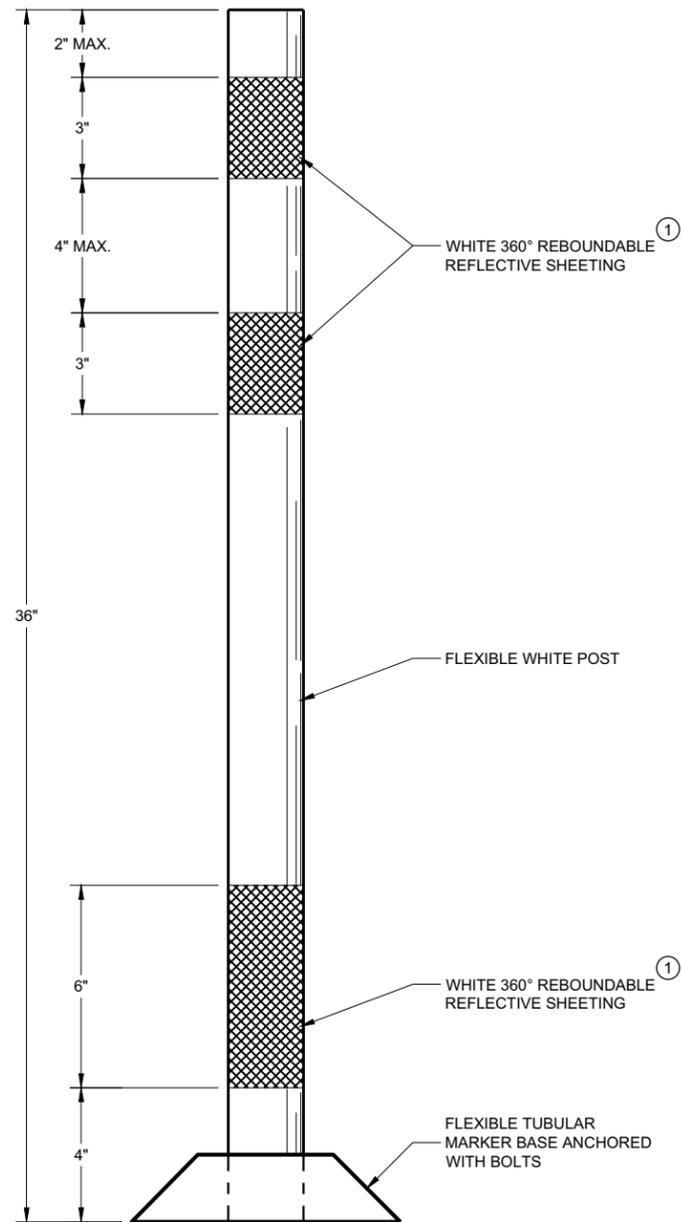
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



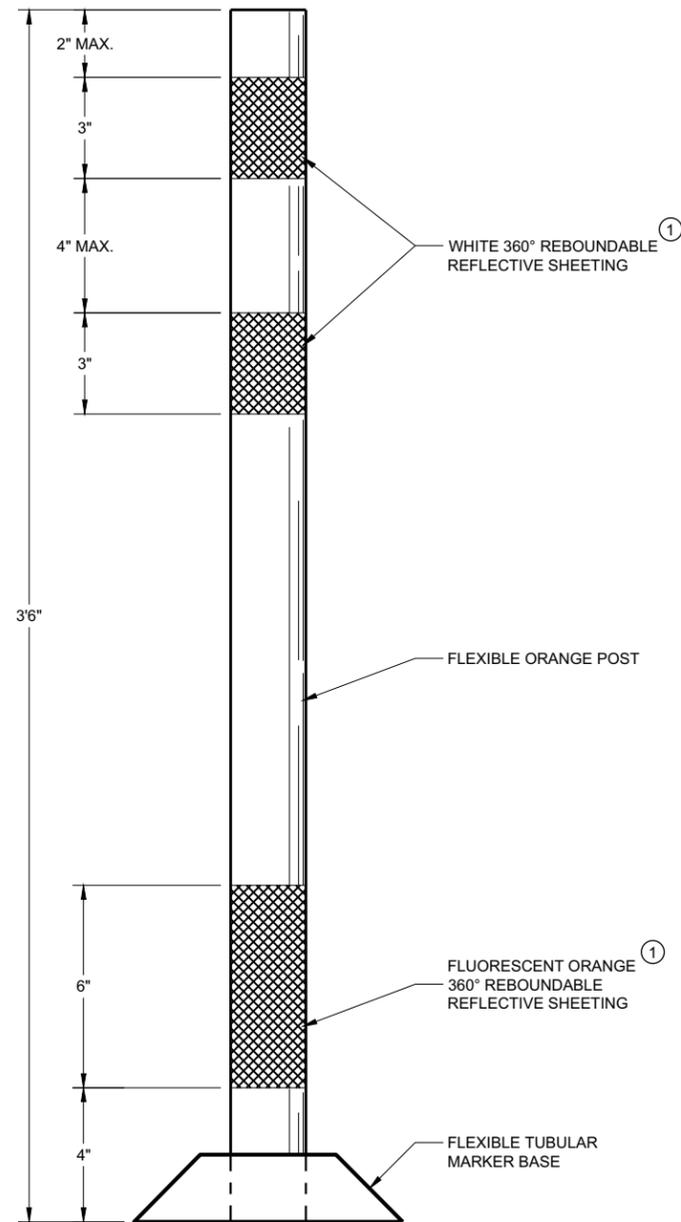
**LONGITUDINAL MARKING
(MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Matthew Rauch
DATE STATEWIDE SIGNING AND MARKING
ENGINEER



**FLEXIBLE TUBULAR
MARKER POST
PERMANENT CROSSOVER**



**FLEXIBLE TUBULAR
MARKER POST
WORK ZONE**

GENERAL NOTES

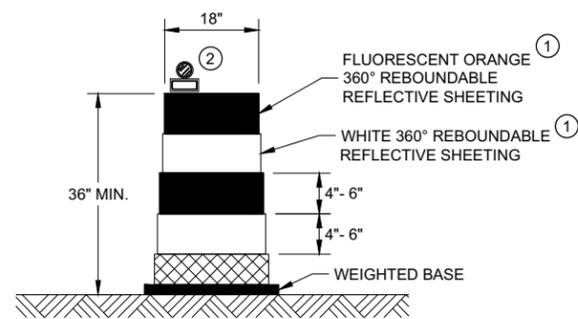
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

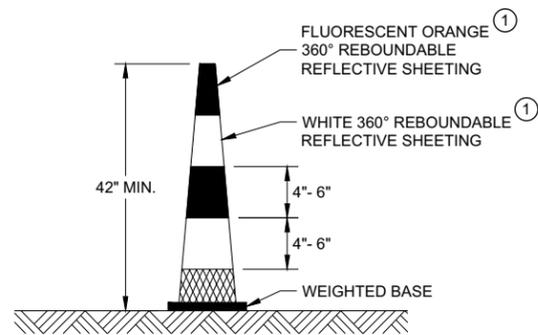
THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

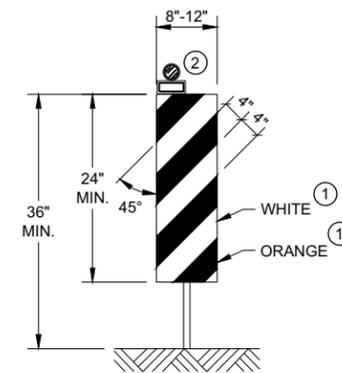


DRUM



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

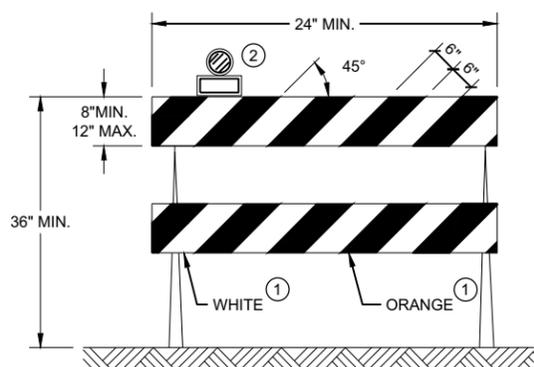


VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.

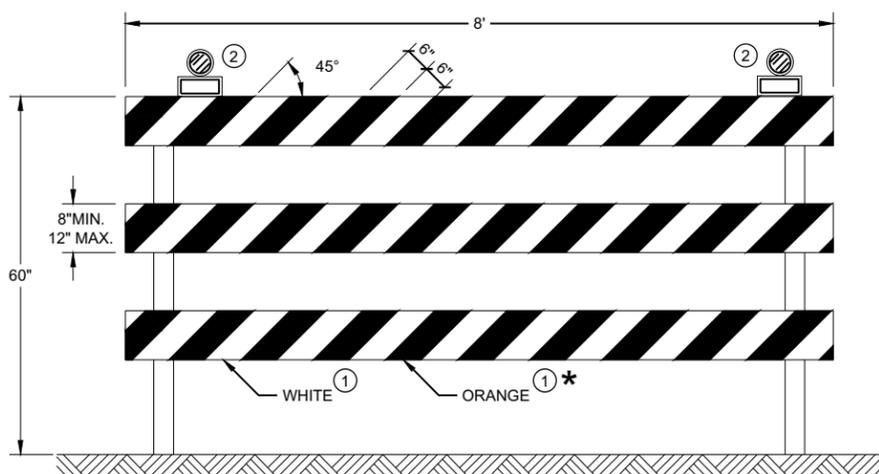
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

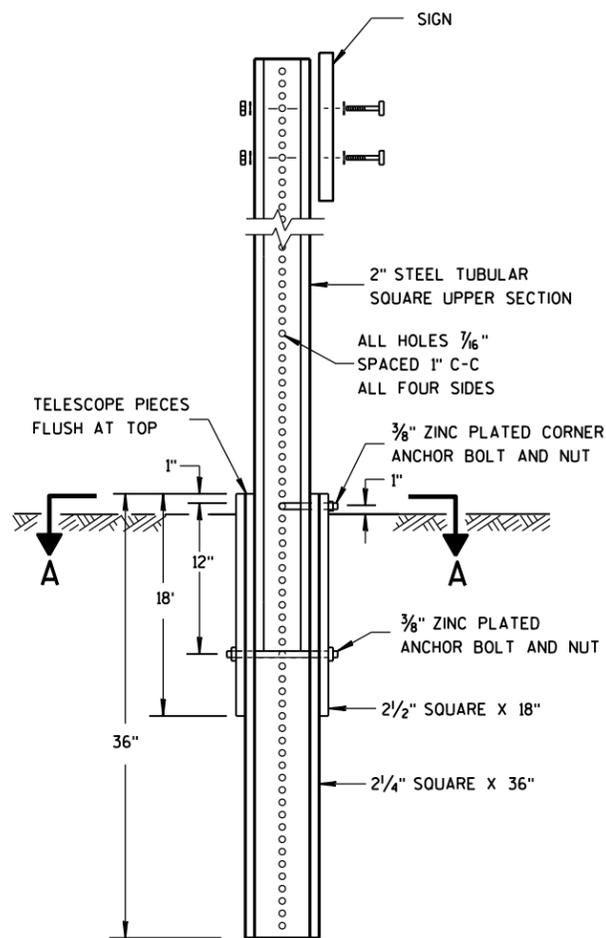
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



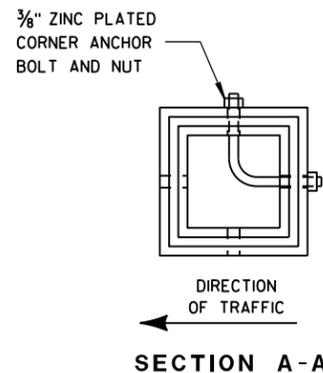
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

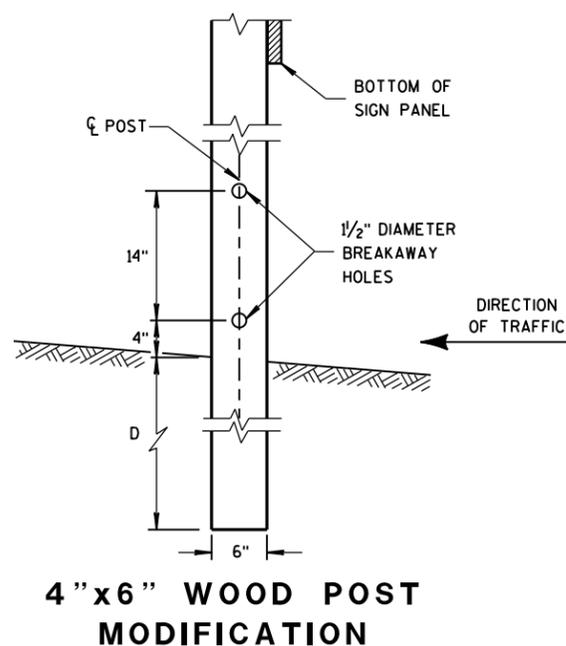
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

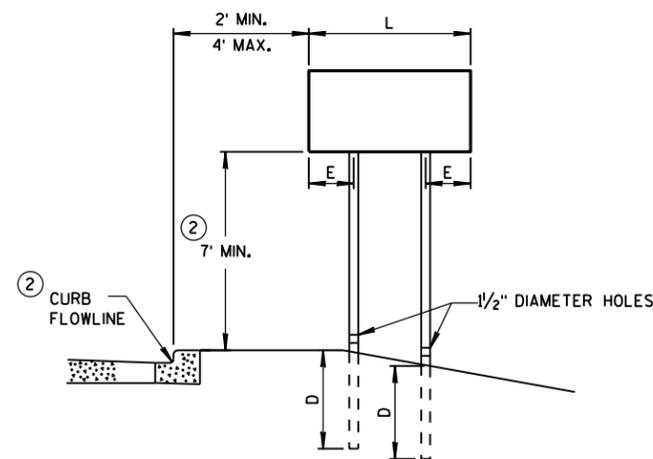
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



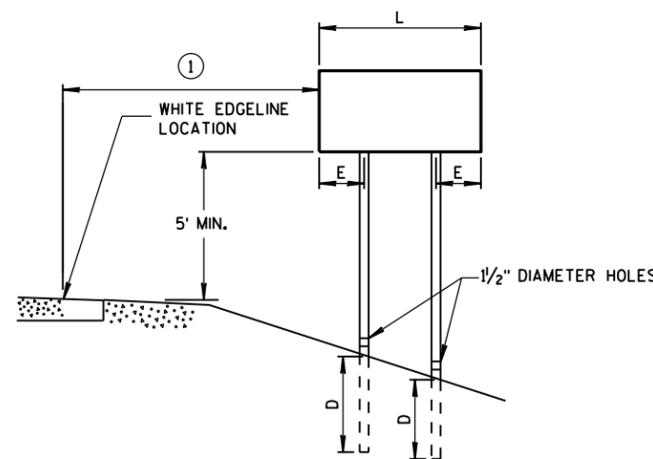
SECTION A-A



4"x6" WOOD POST MODIFICATION



URBAN AREA



RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

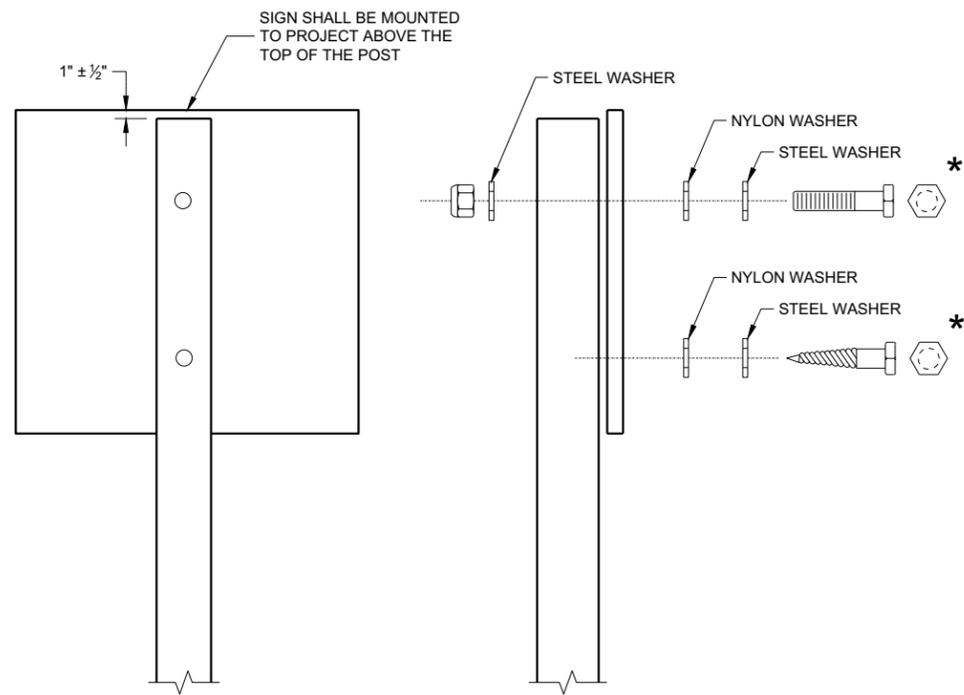
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

WOOD POST (4" x 6")
 LAG SCREWS - 3/8" x 3"
 MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
 MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
 RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
 BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
 GRIP RANGE 0.042 - 0.375 INCH

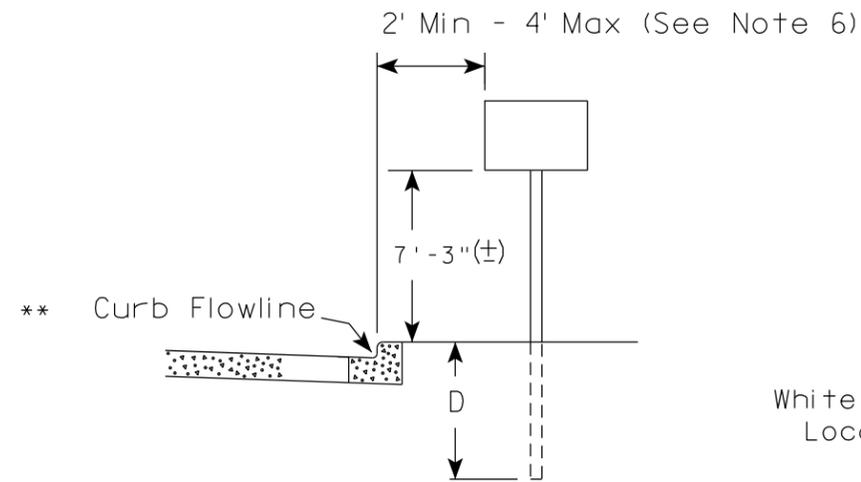
WASHERS (ALL POSTS) -
 1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

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

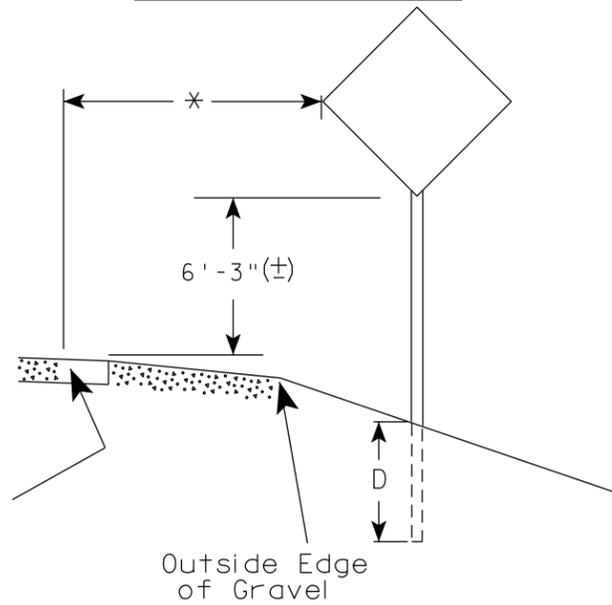
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA

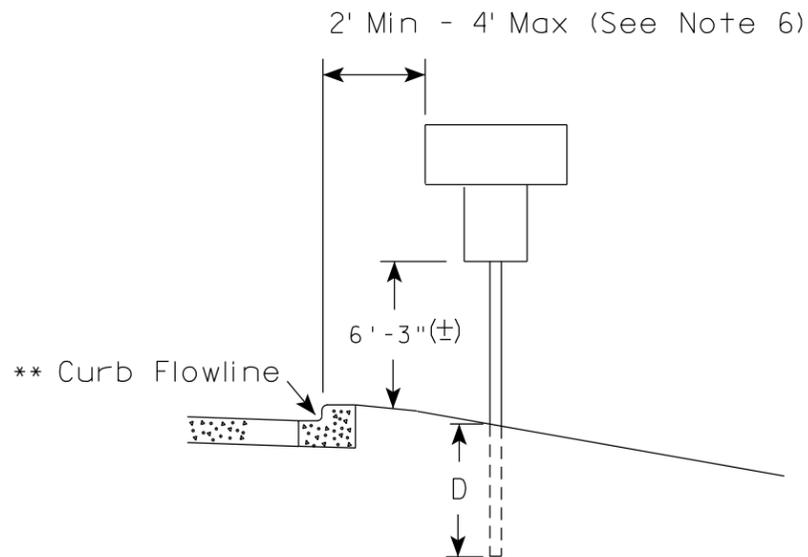
RURAL AREA (See Note 2)



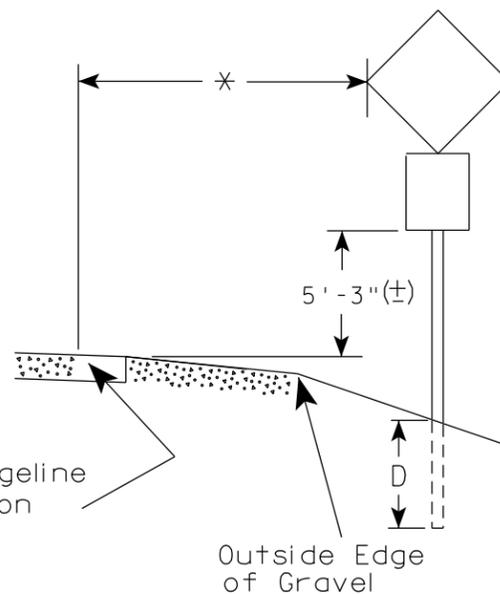
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

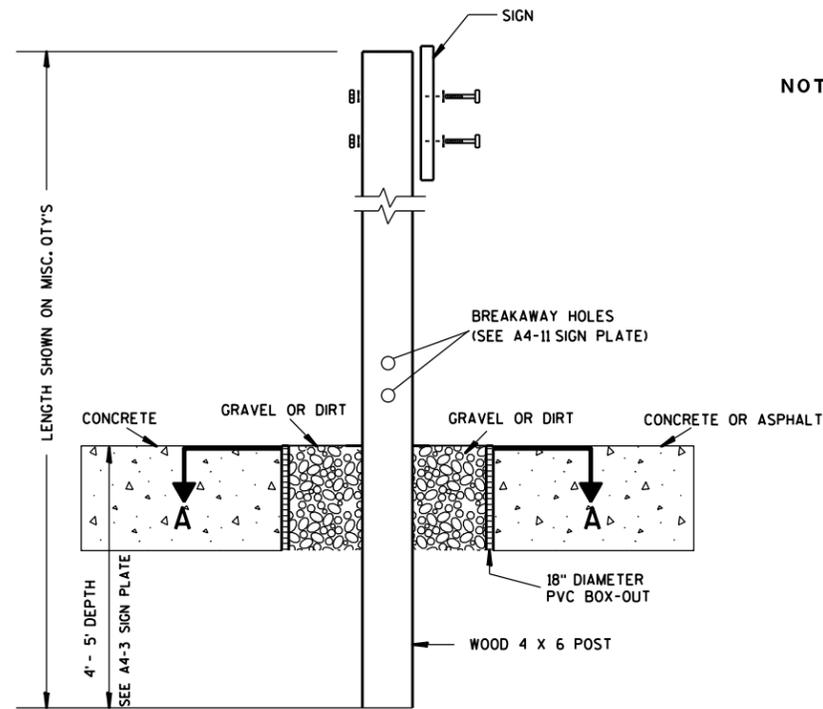
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

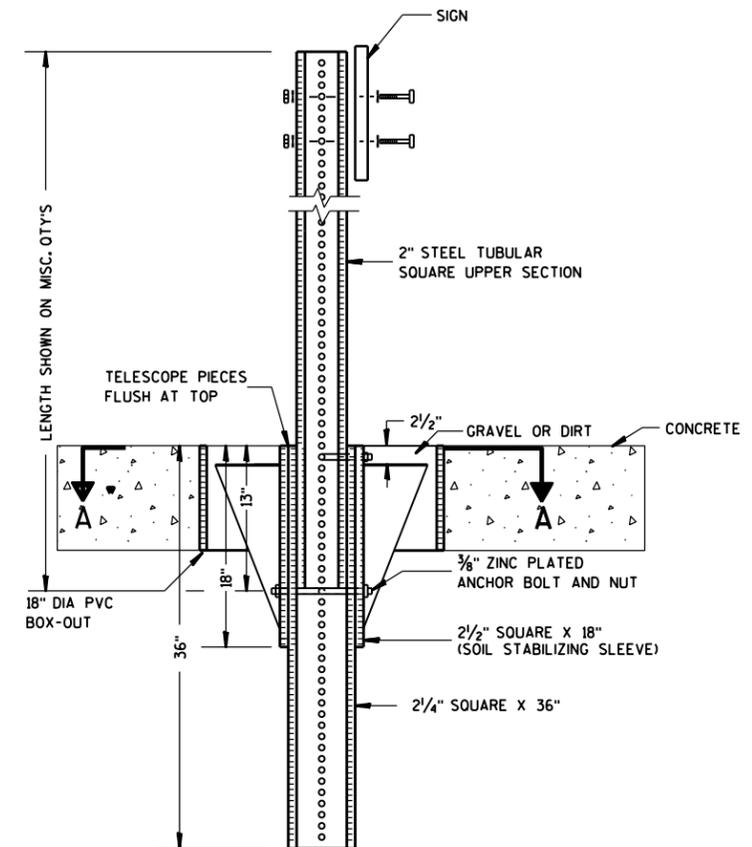
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

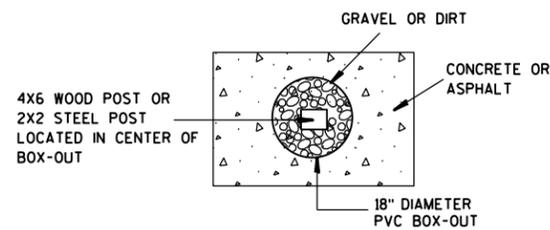
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

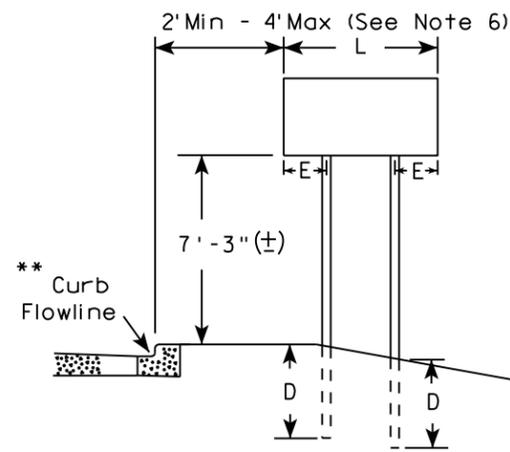
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

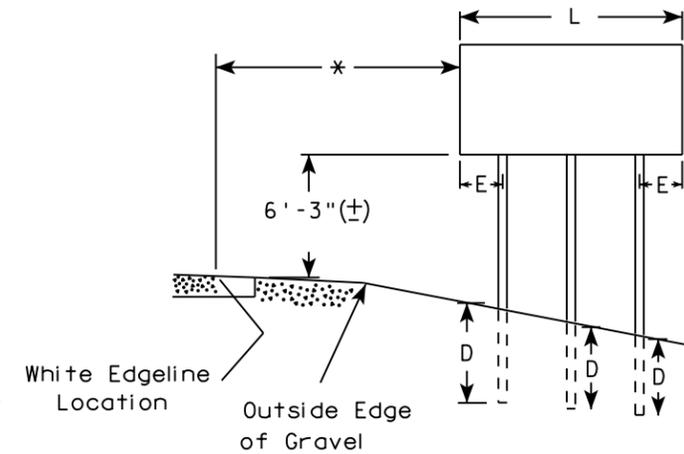
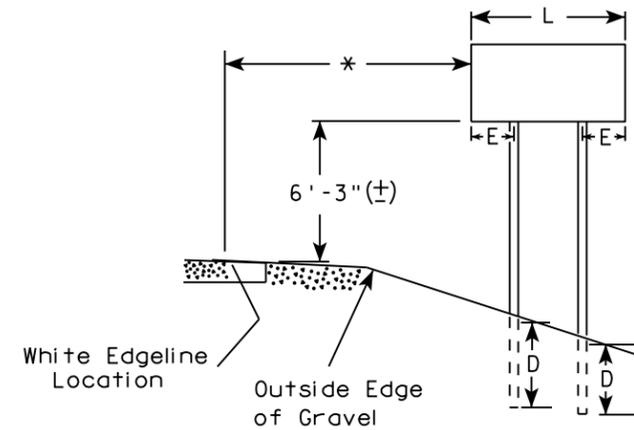
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

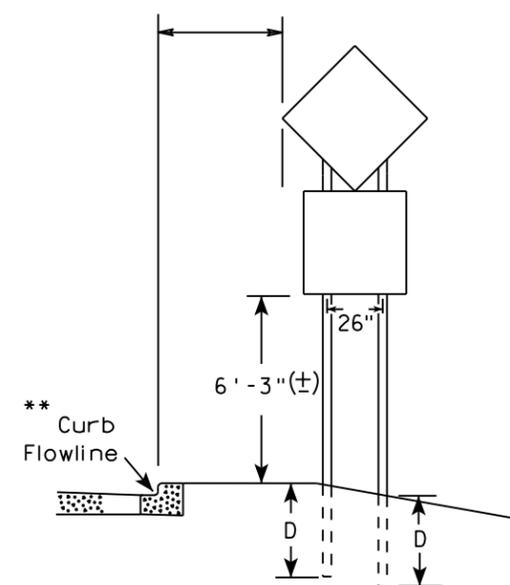
URBAN AREA



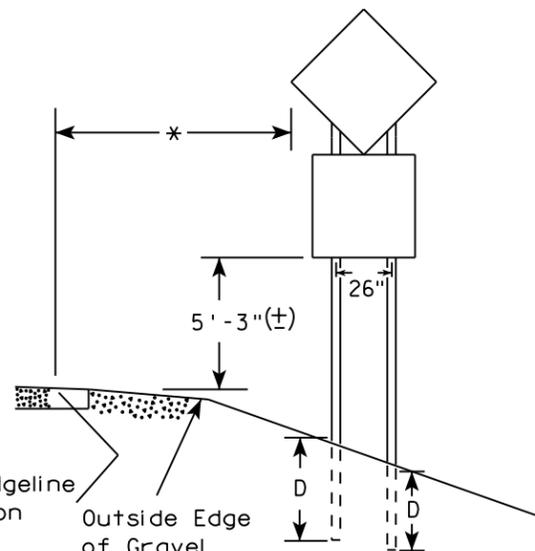
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

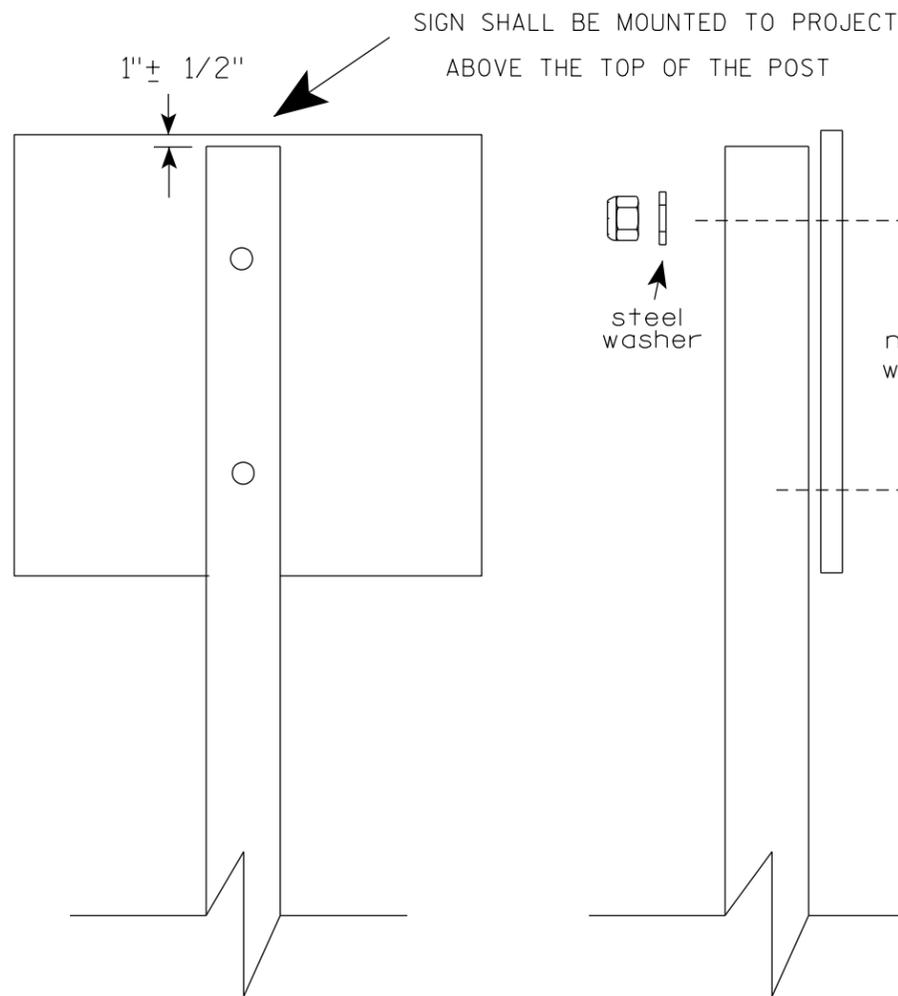
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15



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

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

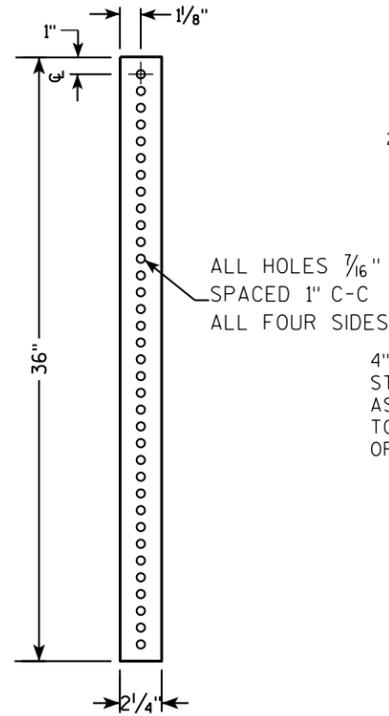
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
 O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

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

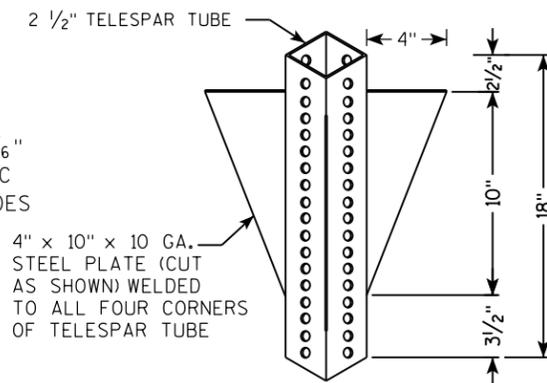
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

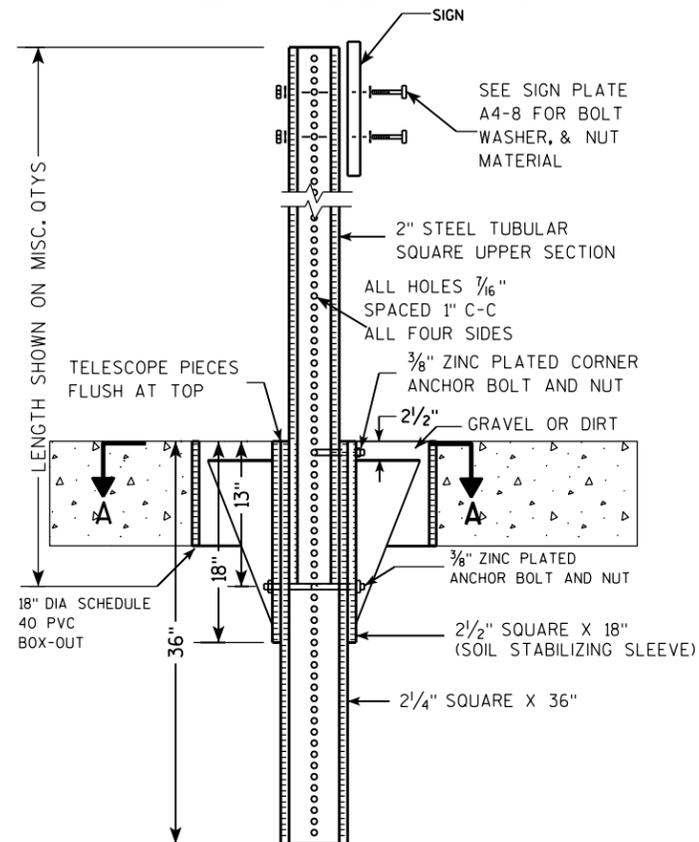
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



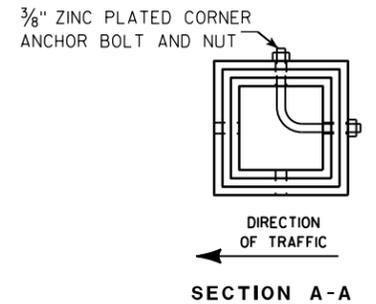
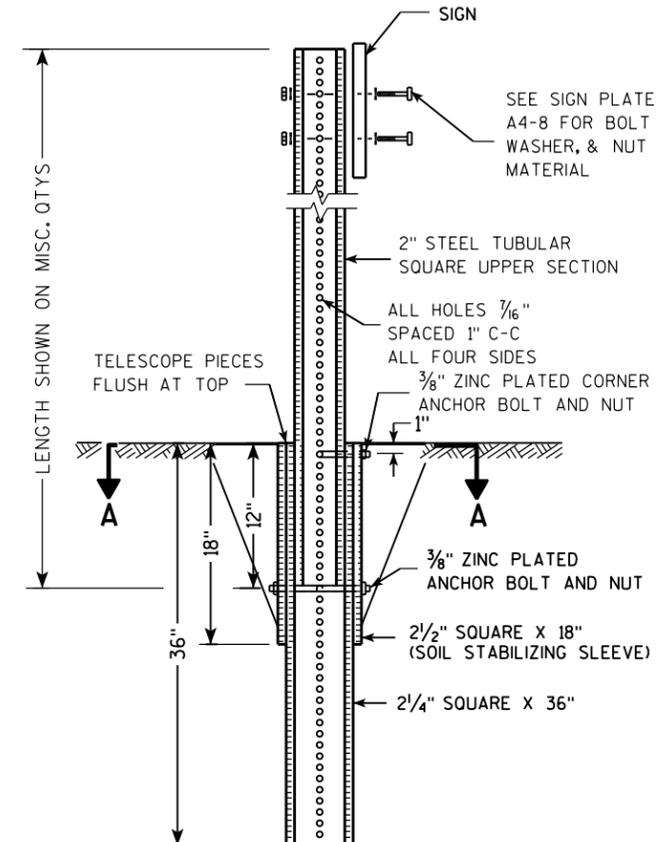
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

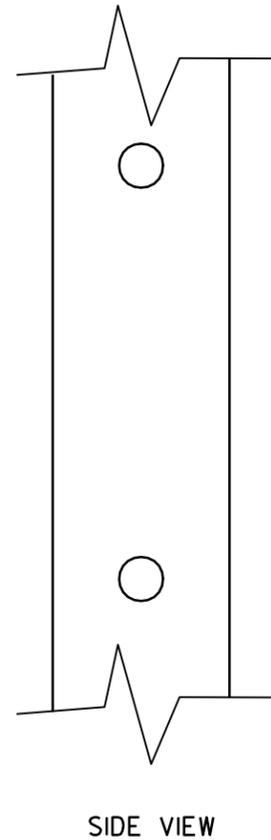
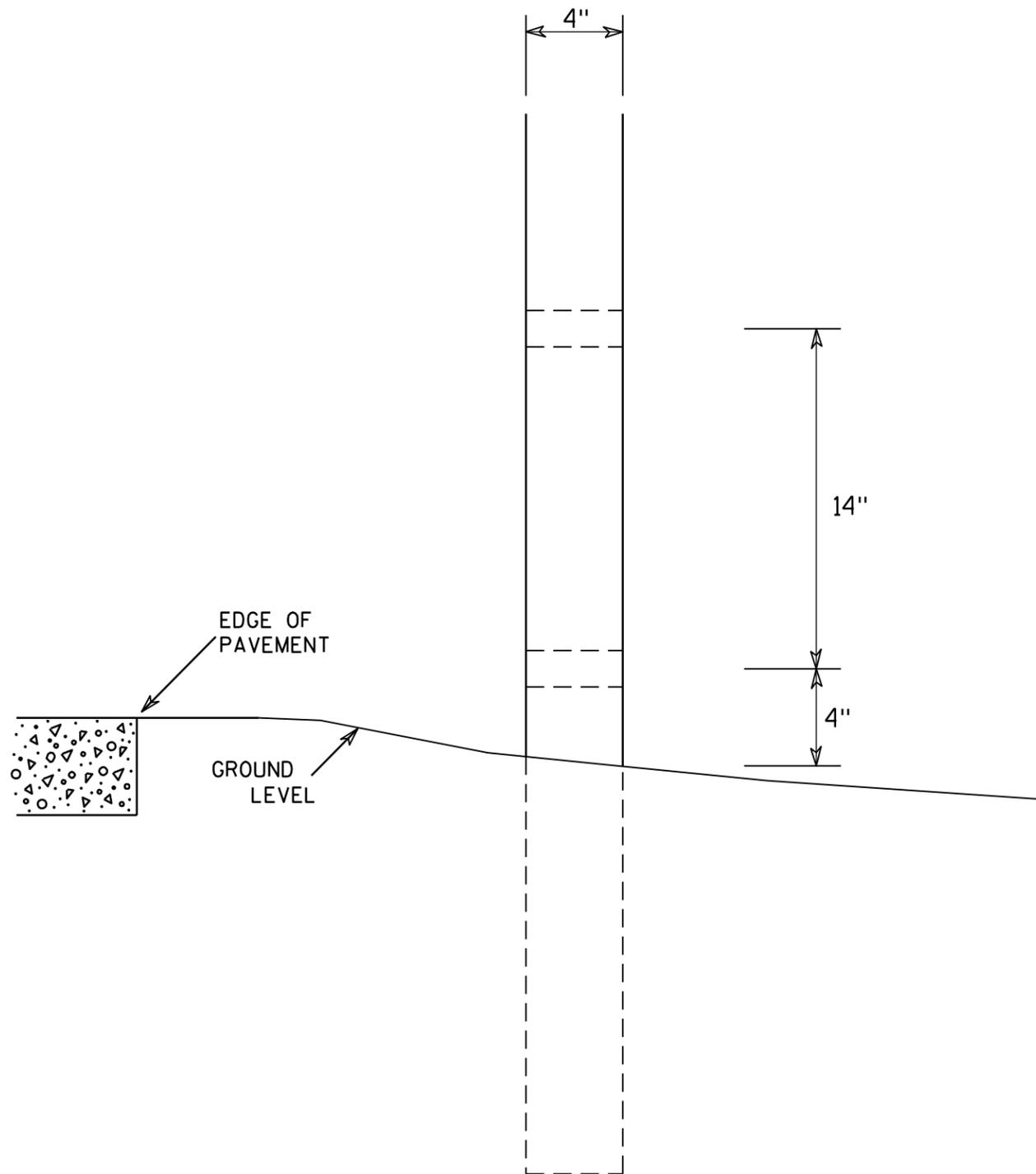
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

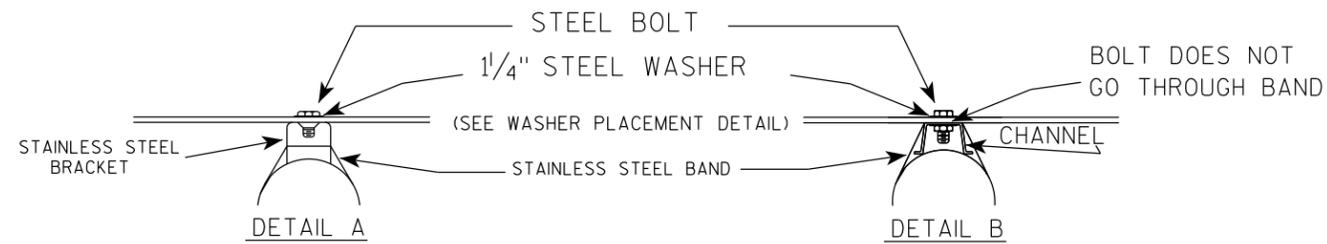
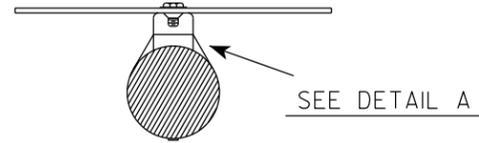
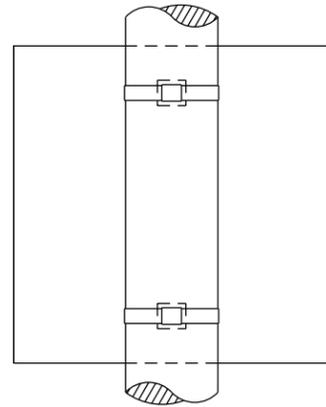
7

7

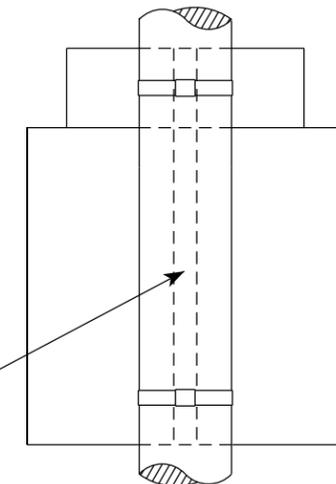
4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	 <small>for State Traffic Engineer</small>
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

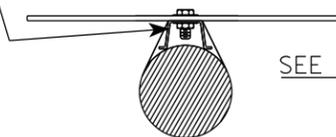
SINGLE SIGN



"J" ASSEMBLY

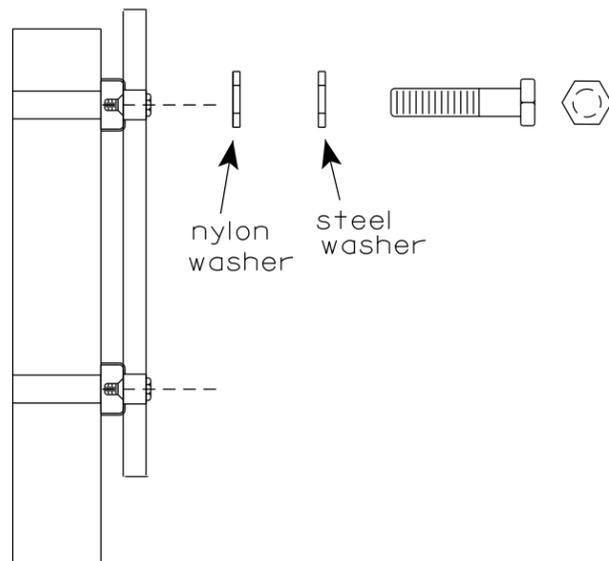


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



- GENERAL NOTES**
1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
 2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
 3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.
 4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

WASHER PLACEMENT



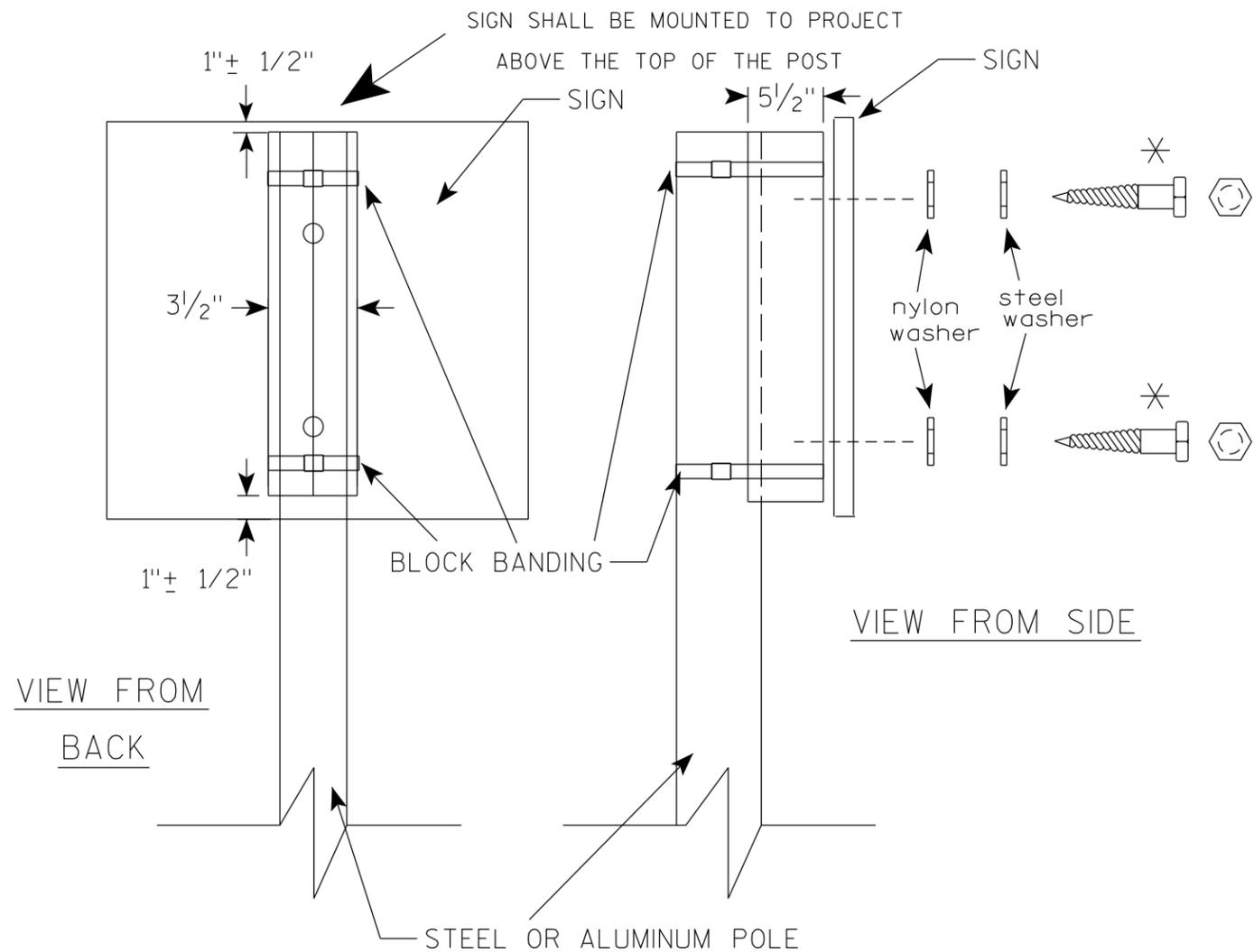
WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

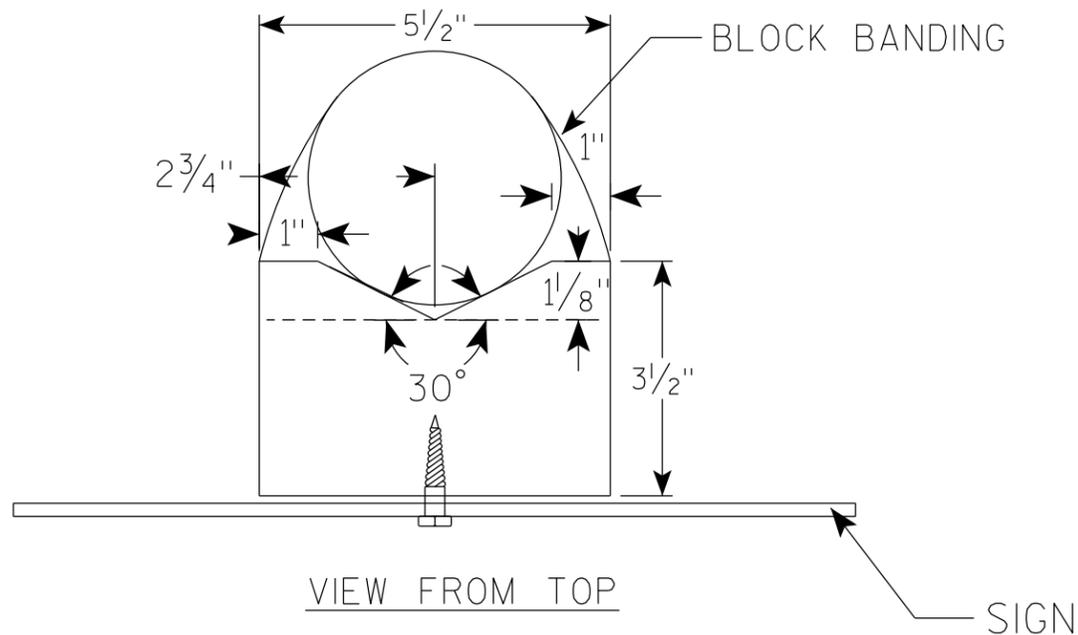
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

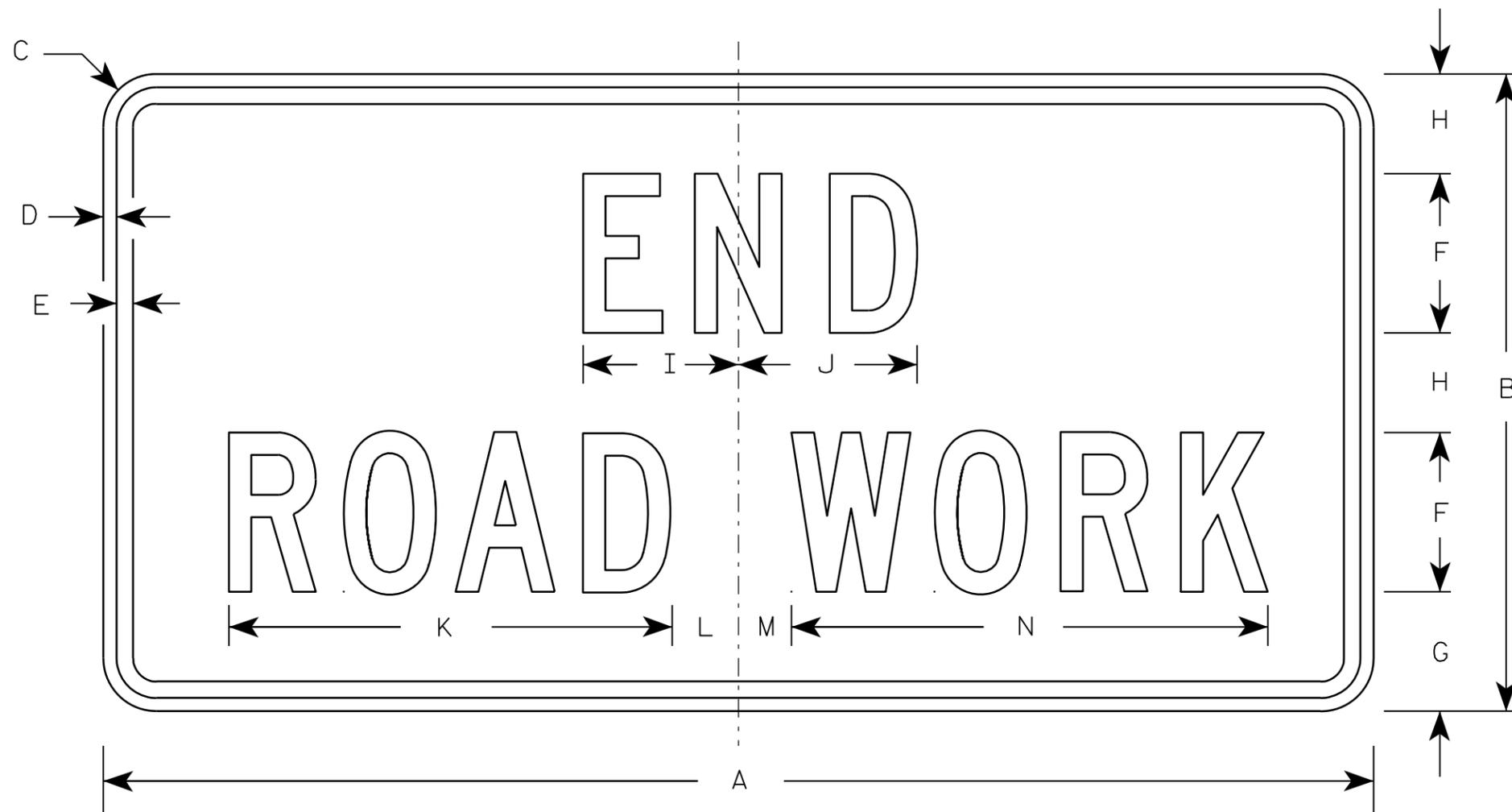
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE <u>6/10/19</u>	PLATE NO. <u>A5-10.2</u>

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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.



G20-2A

7

7

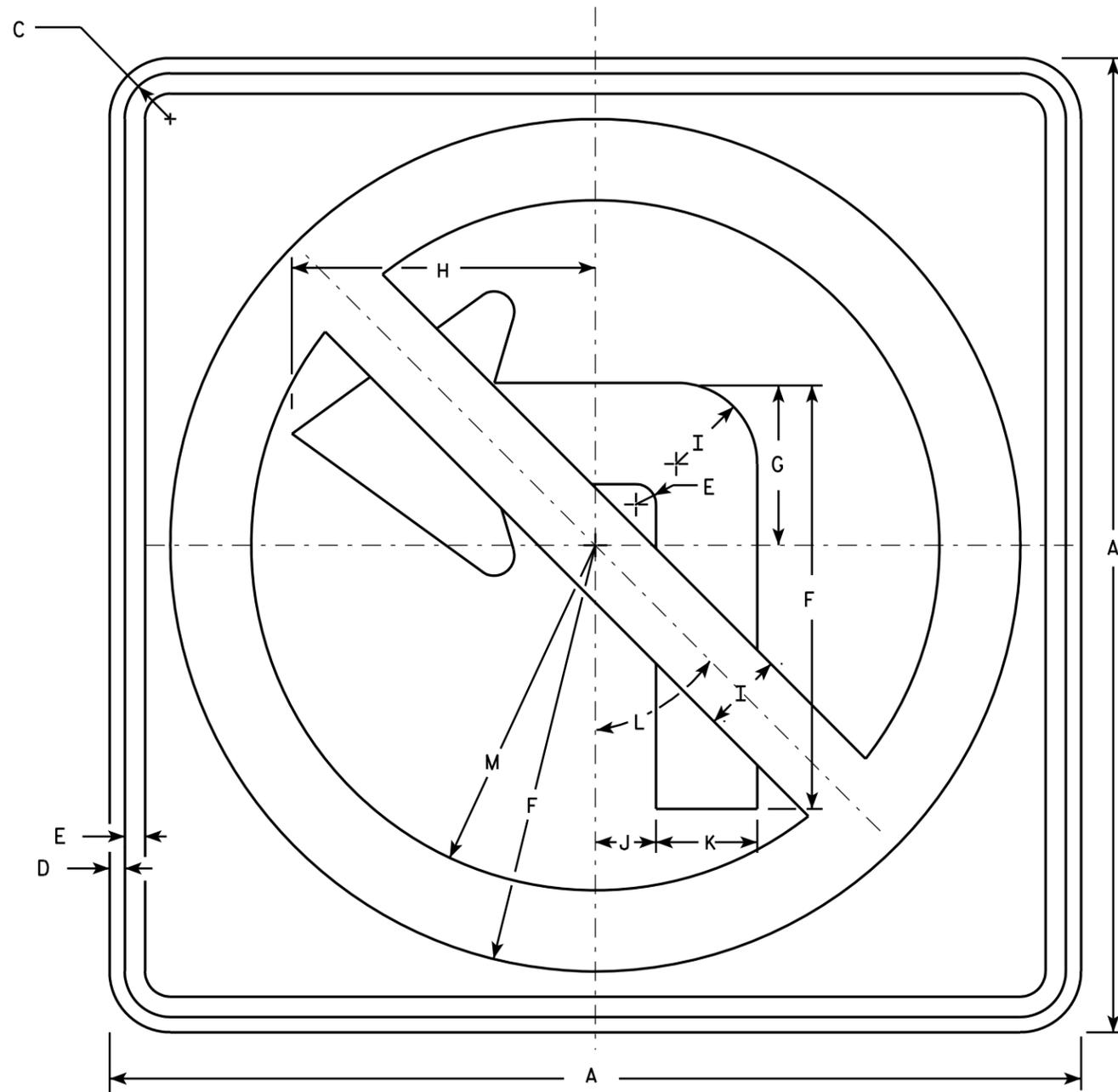
Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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 sq.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

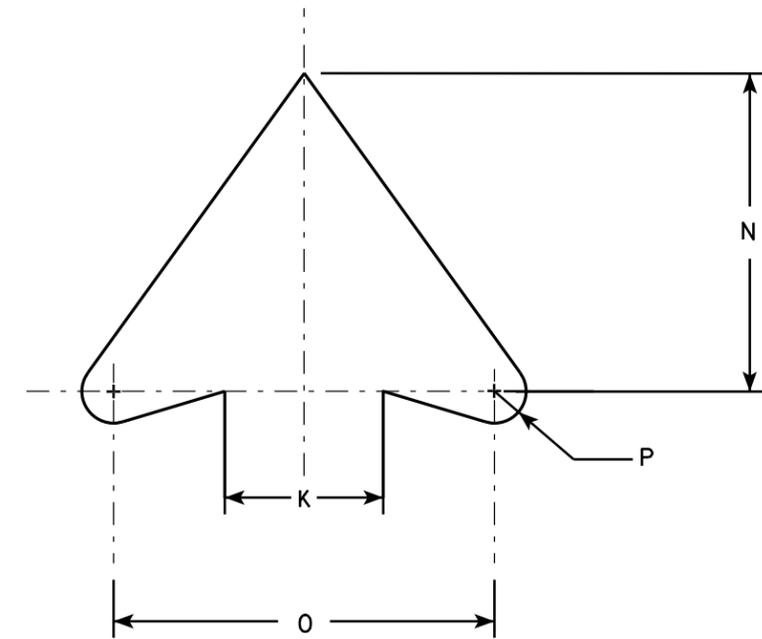
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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R3-2

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 - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

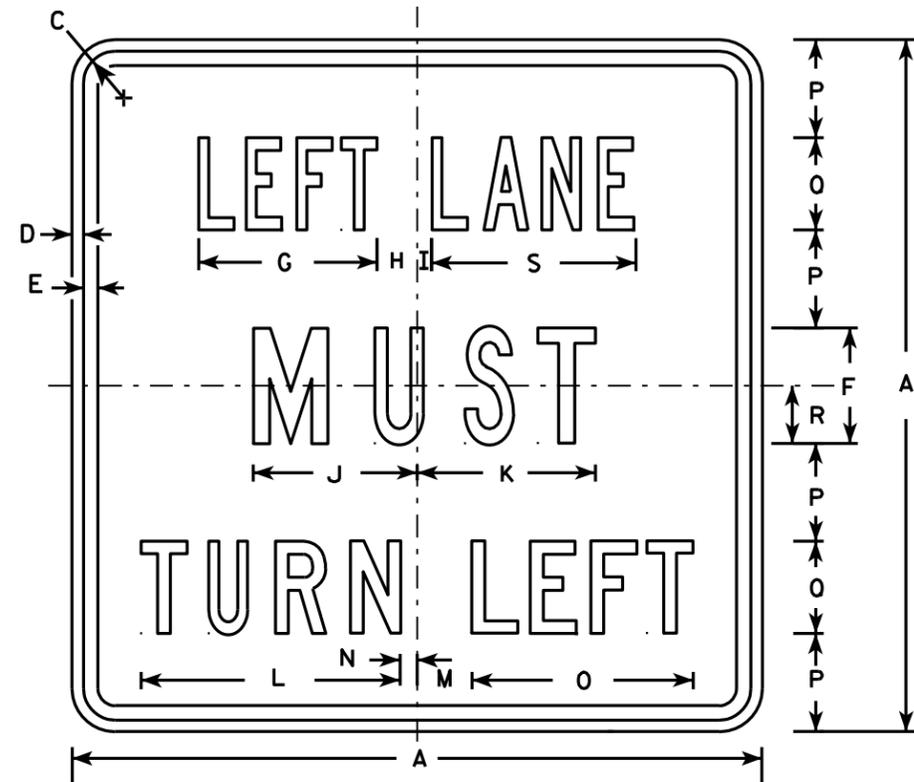
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

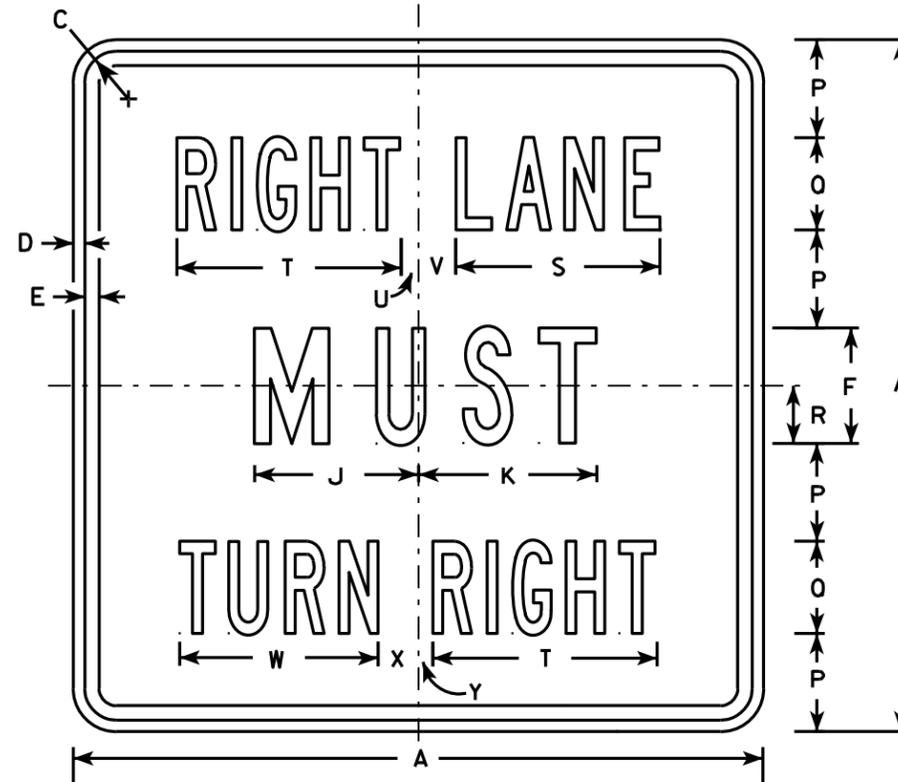
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - Line 1 is Series B.
Line 2 is Series C.
Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
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.



R3-7L



R3-7R

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	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

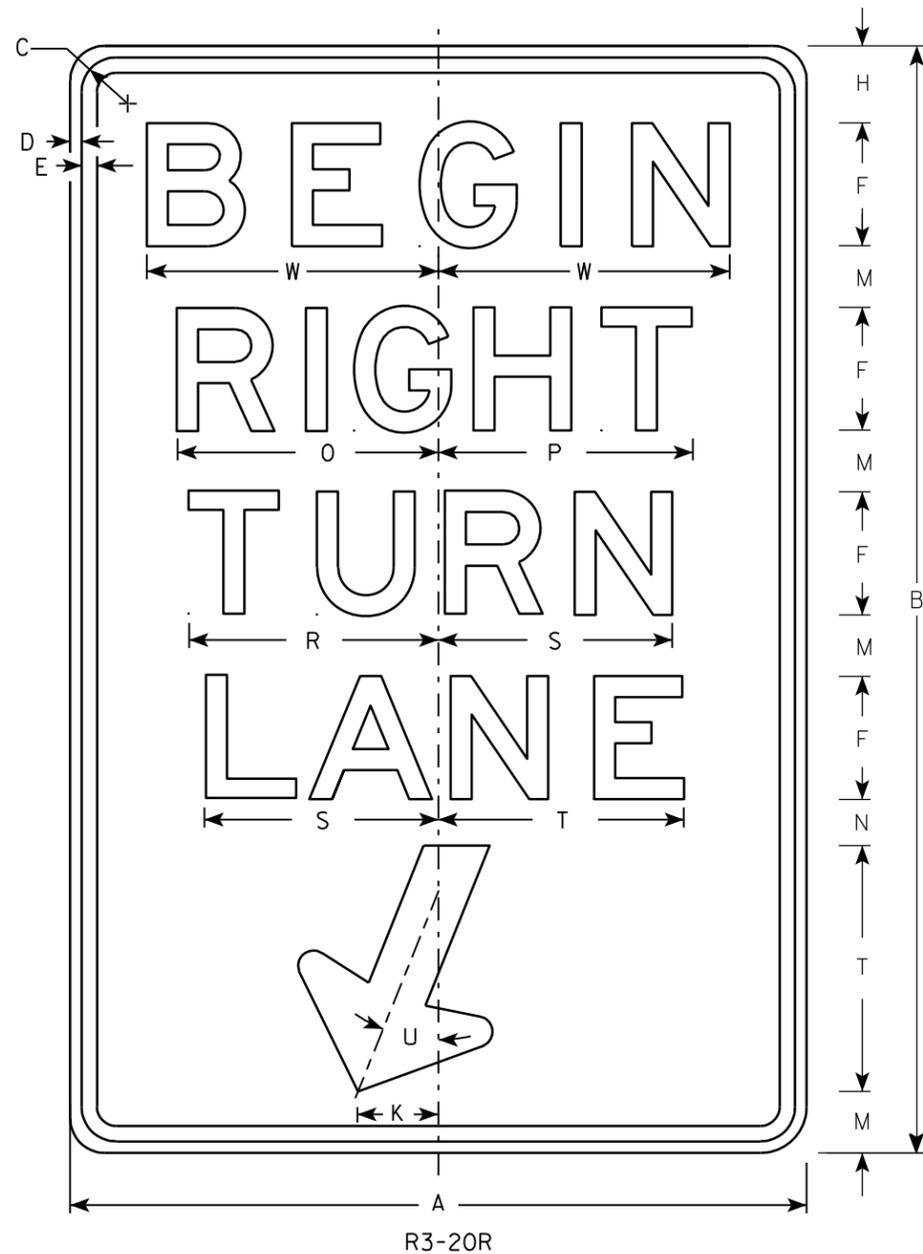
STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

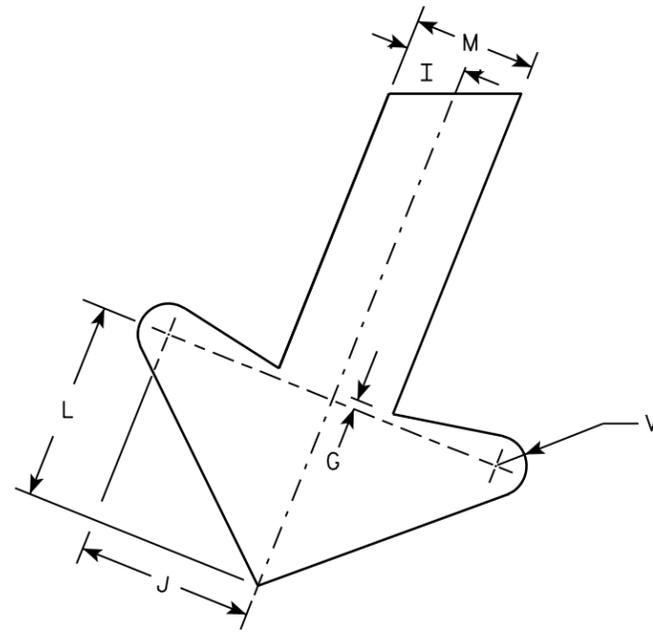
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R3-20R

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

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	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0	
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0	
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5	
4																												
5																												

STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

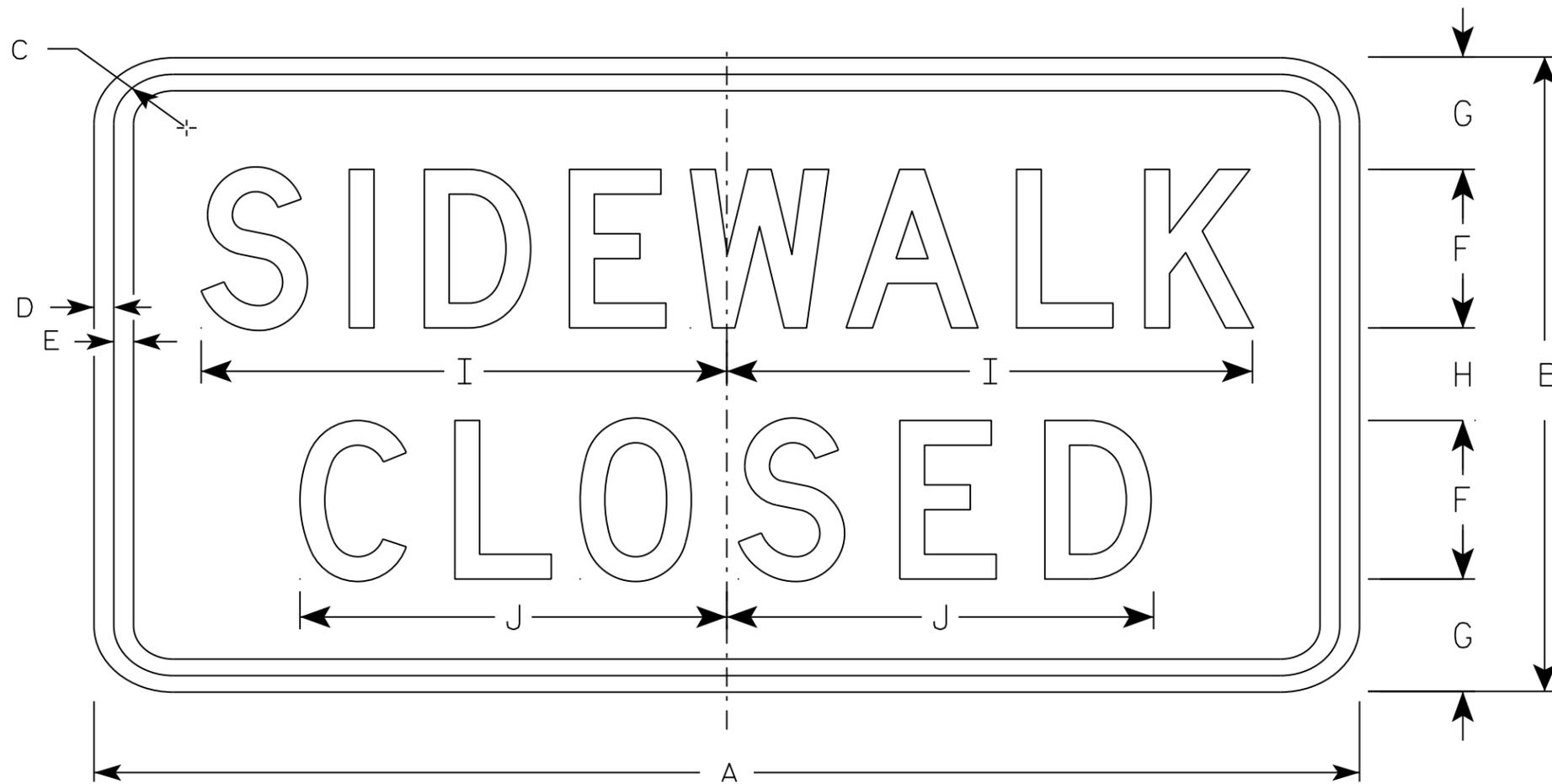
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
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.
5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.



R9-9

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	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

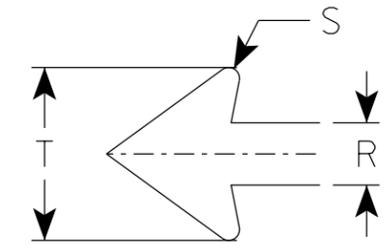
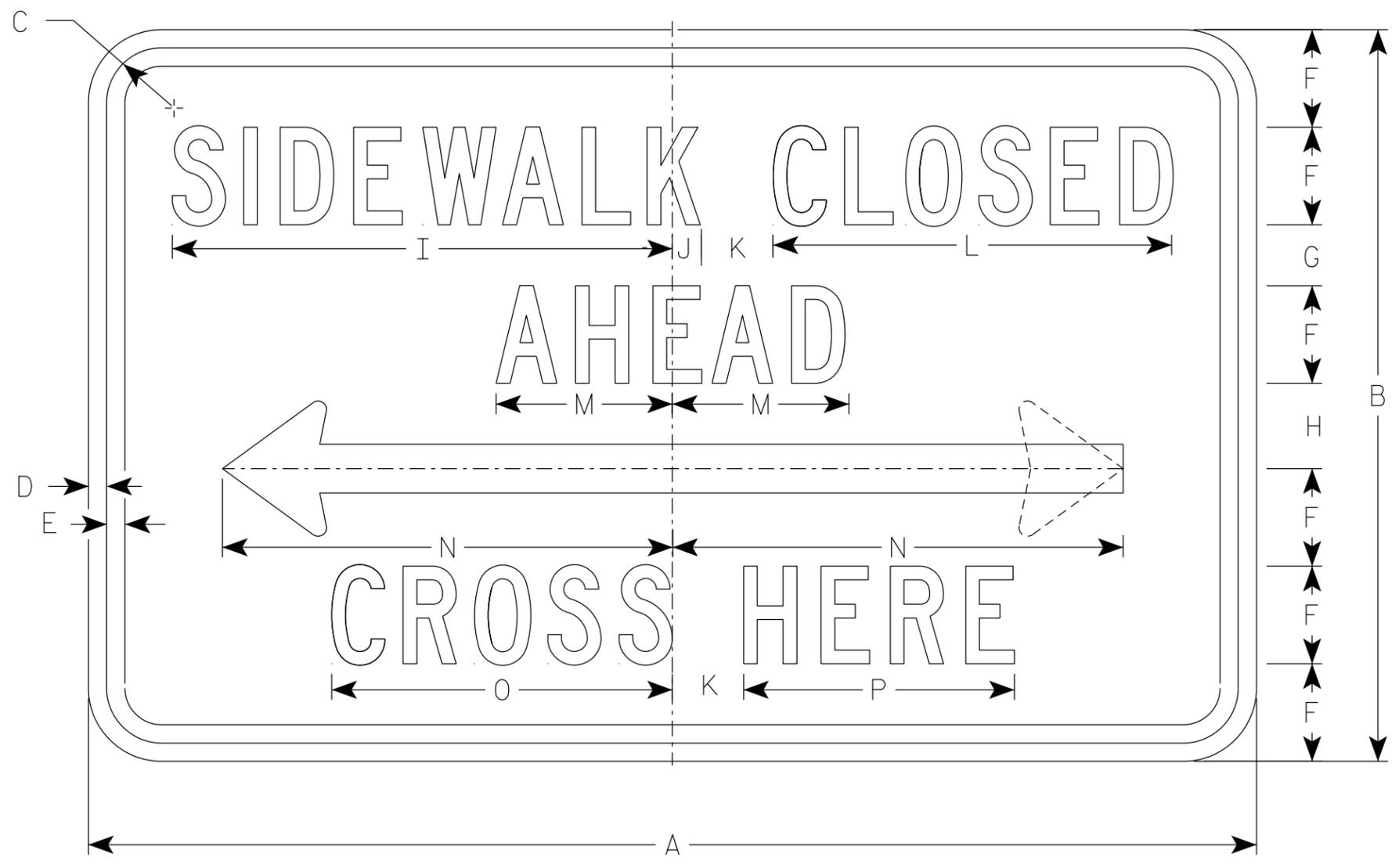
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. R9-9.6

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C except Size 1 is 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.
5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.
6. R9-11D (double arrow)
R9-11L (left arrow)
R9-11R (right arrow)



R9-11

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	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
2M	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
3	30	15	1 1/8	3/8	1/2	2	1 1/2	1 1/2	13	3/4	2	10 1/4	4 5/8	12 3/8	8 7/8	6 7/8		1 1/4	1/4	3 5/8							3.125
4																											
5																											

STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

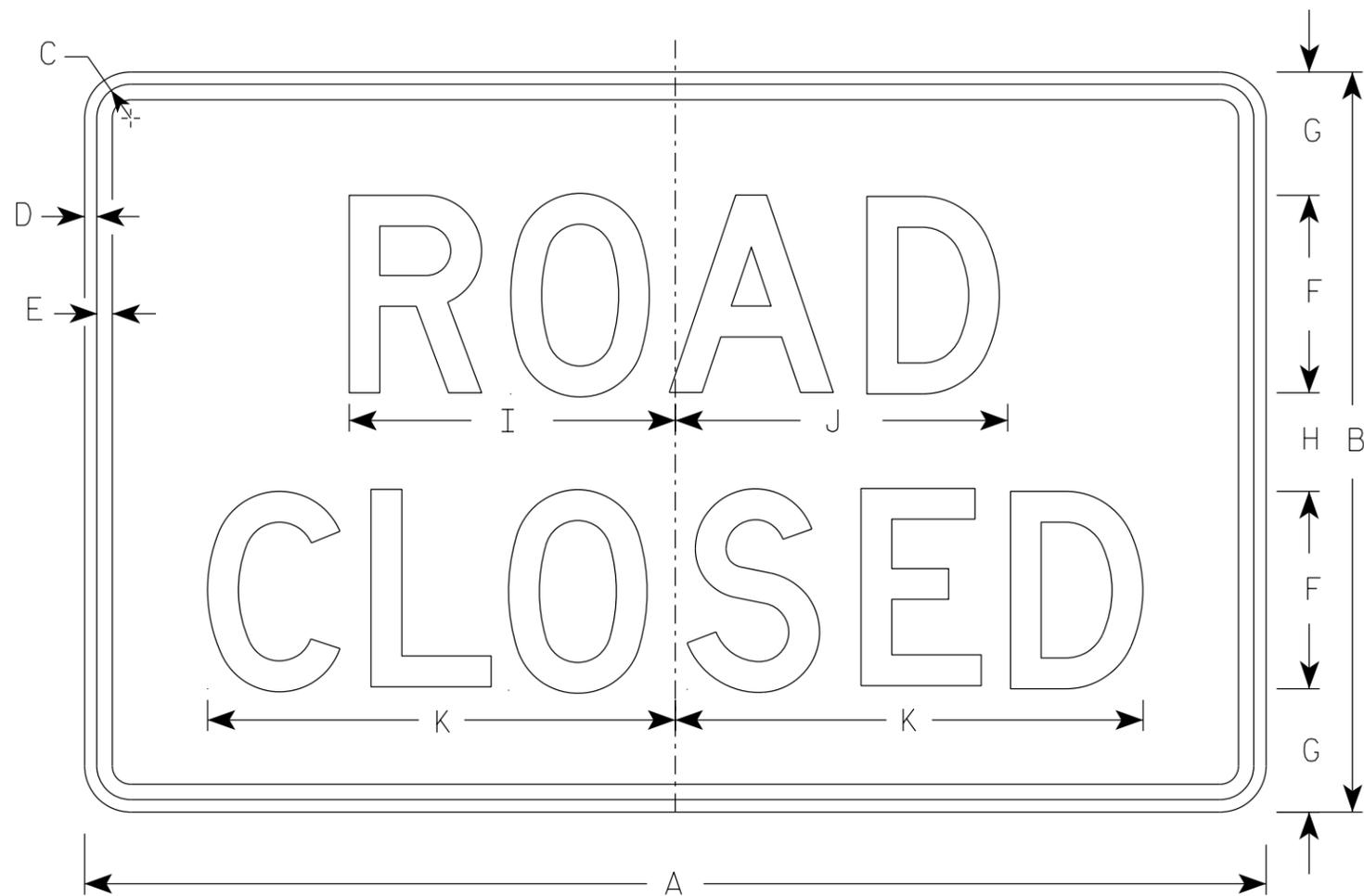
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/30/2021 PLATE NO. R9-11.4

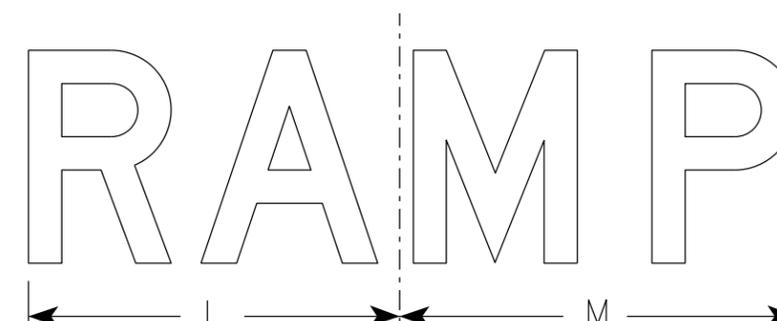
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

7

7



R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
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.
5. Modify the message as required.

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	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

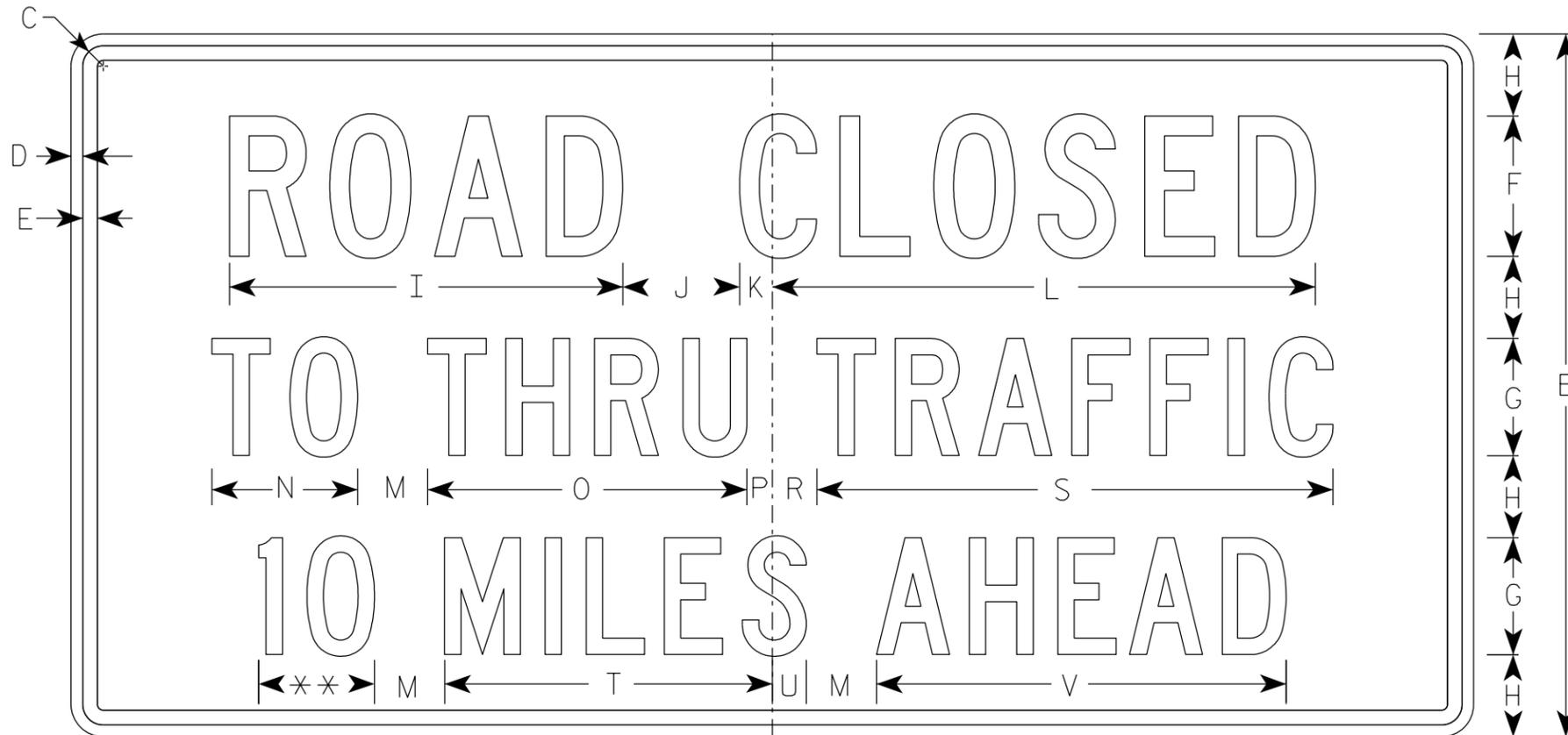
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

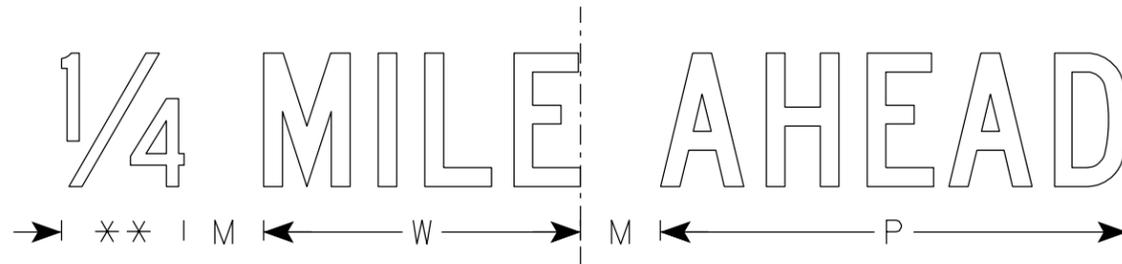
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
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.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3

** See Note 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.
1	36	18	1 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8			4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

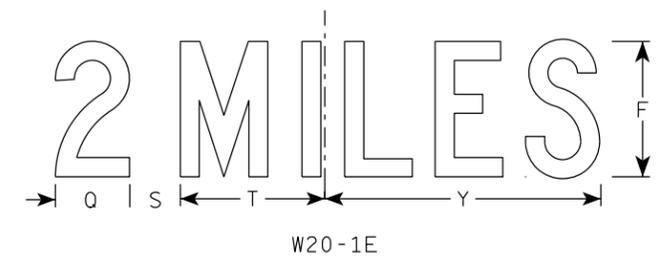
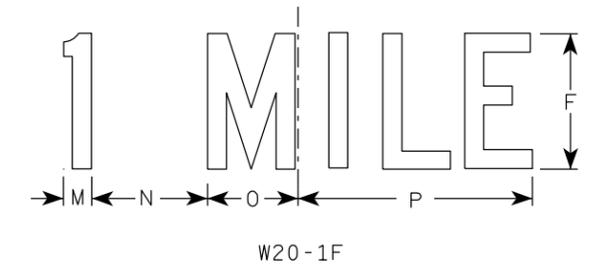
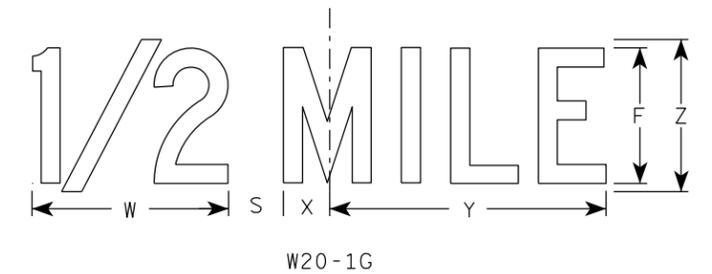
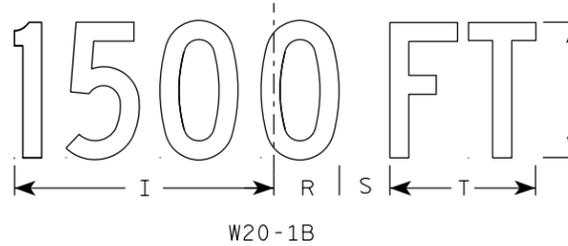
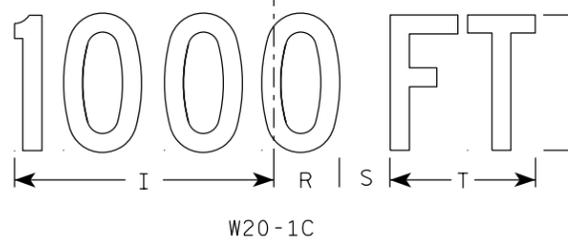
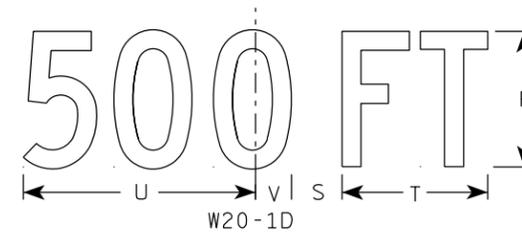
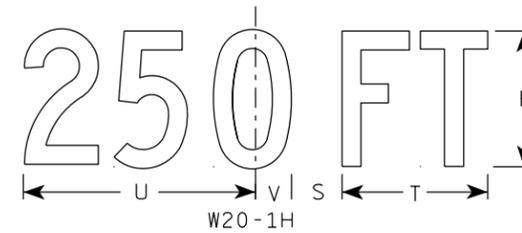
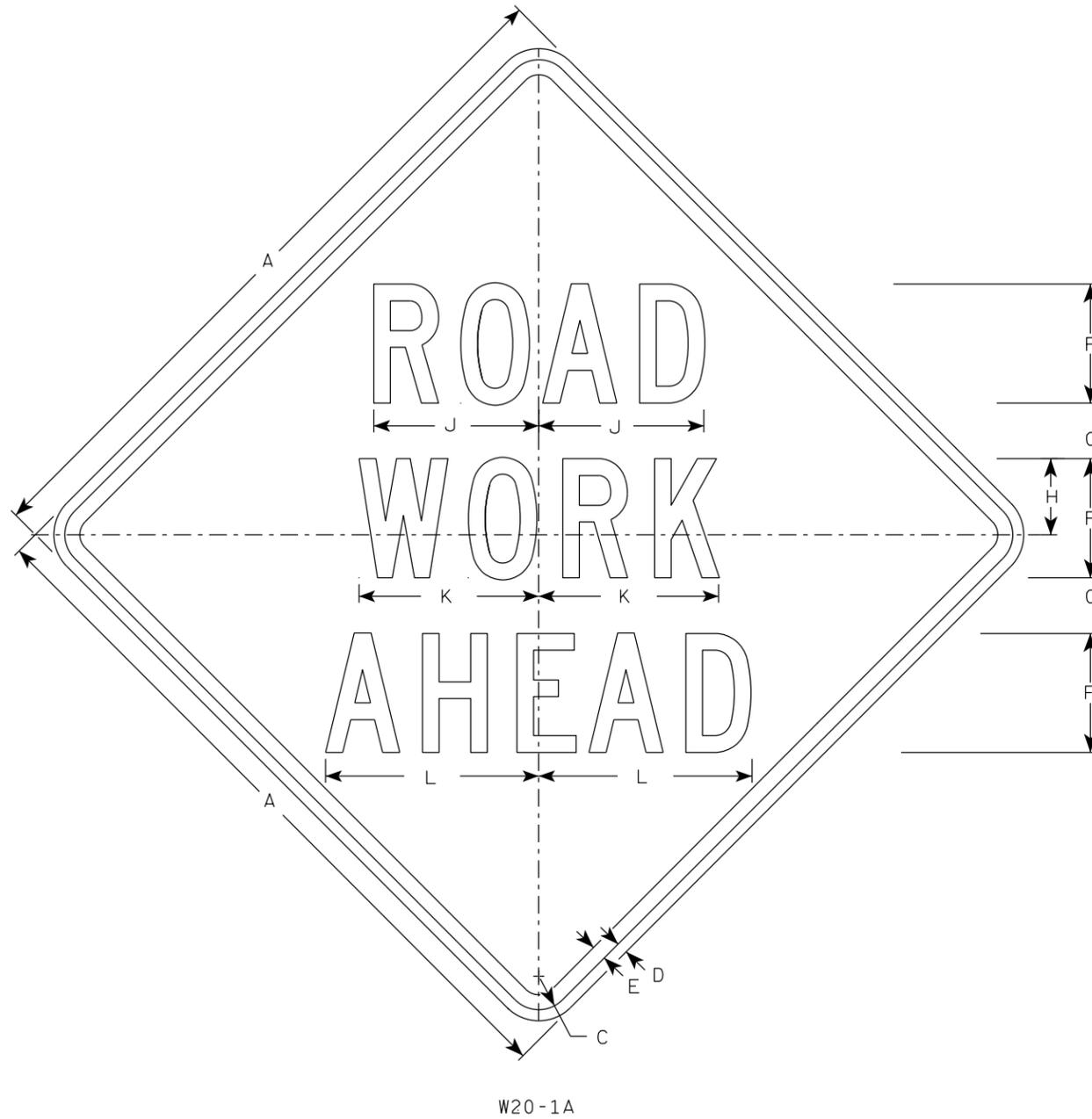
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/14/2021 PLATE NO. R11-3.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
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	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

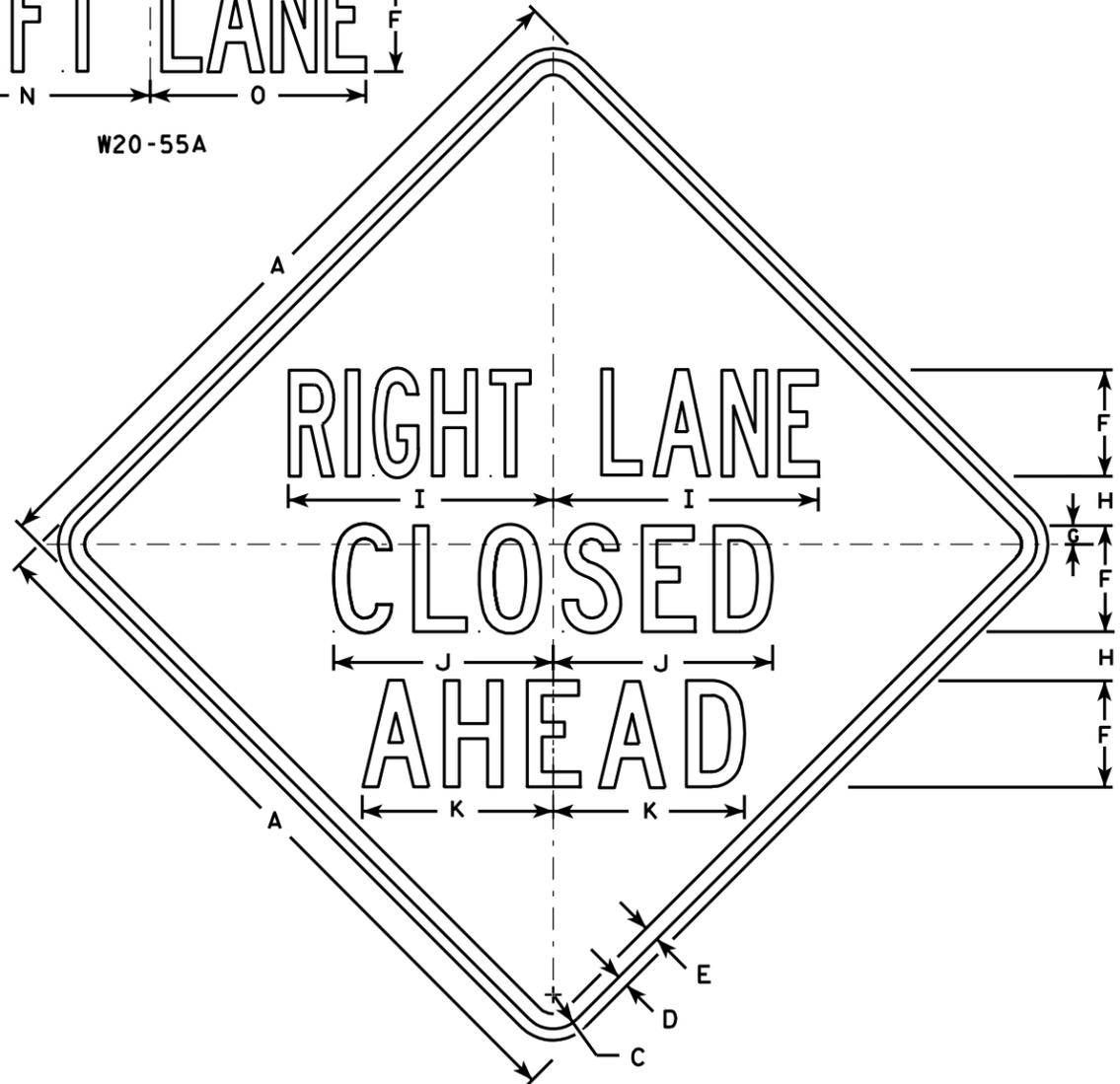
DATE 3/25/2020 PLATE NO. W20-1.11

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

NOTES

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

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

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	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

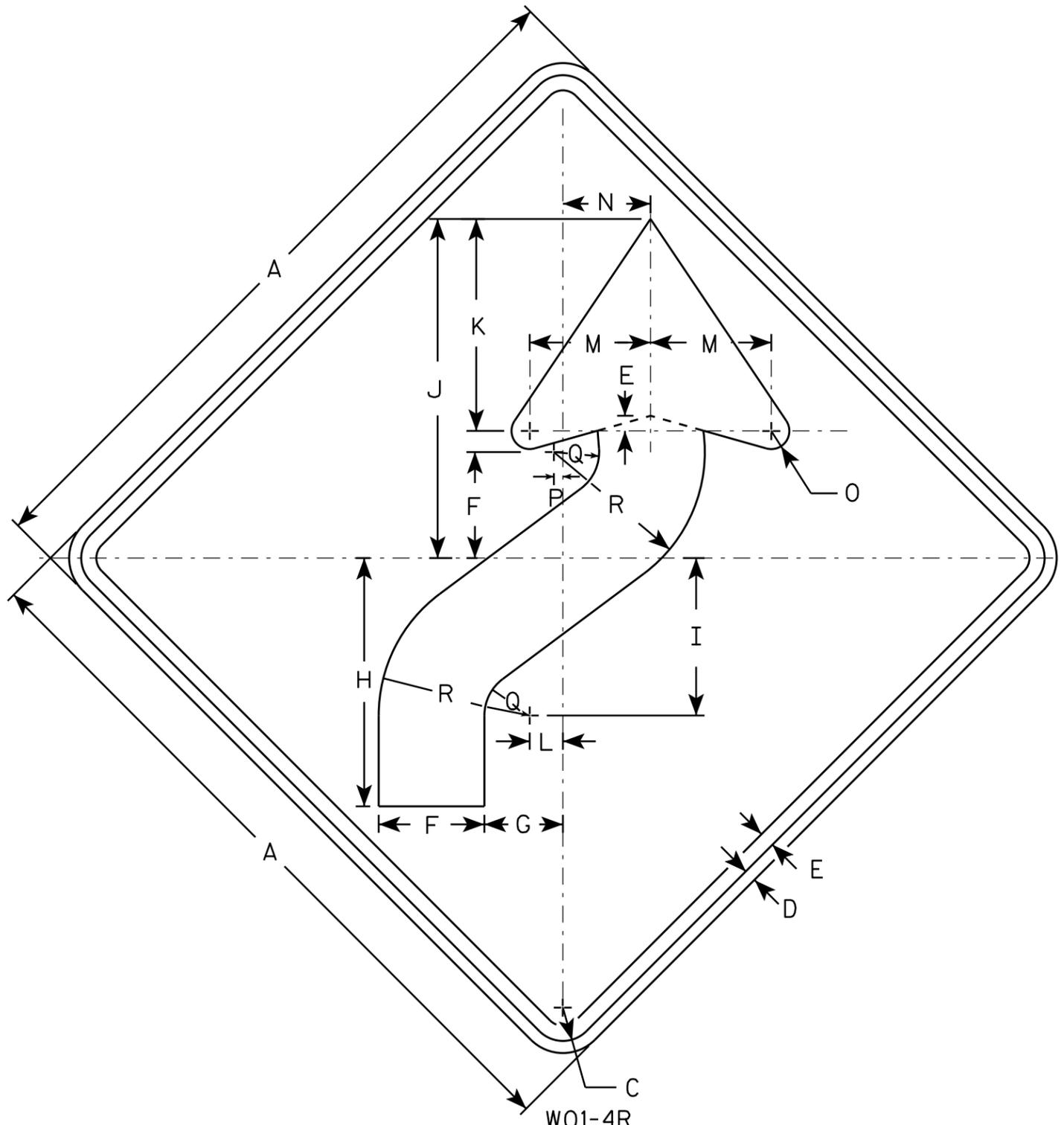
STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

7

7

W01-4R

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	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

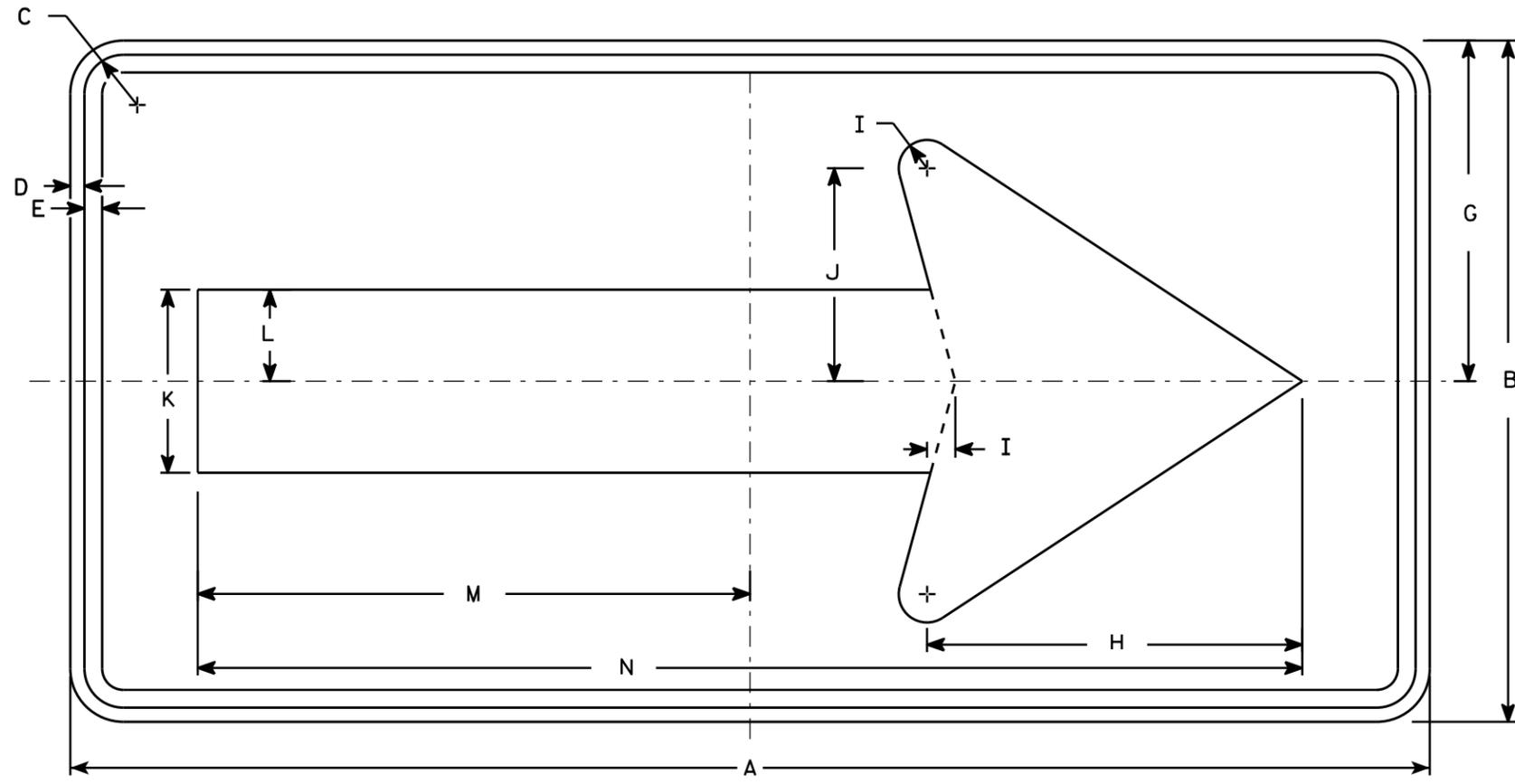
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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.



W01-6

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	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

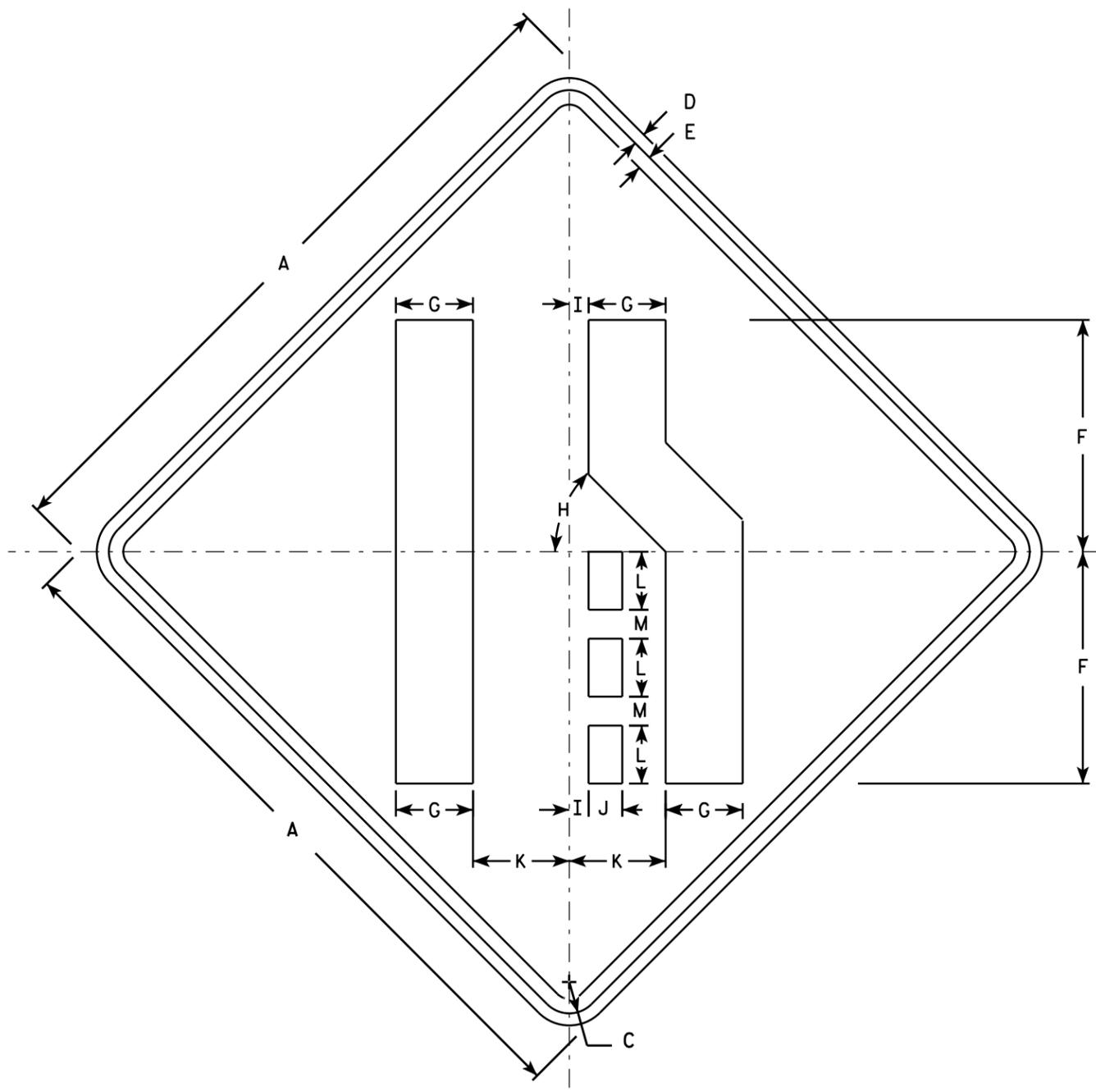
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

7

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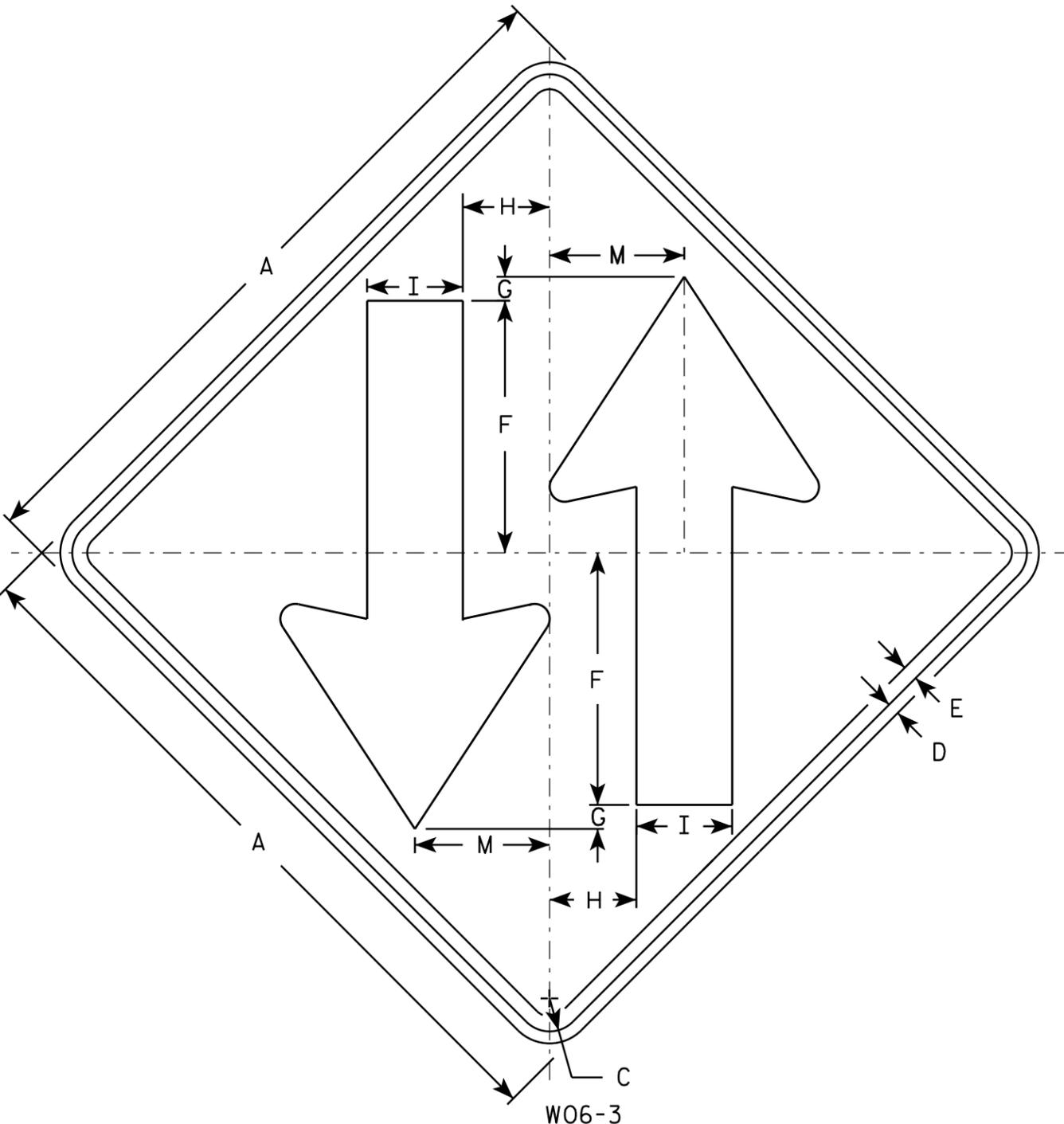
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

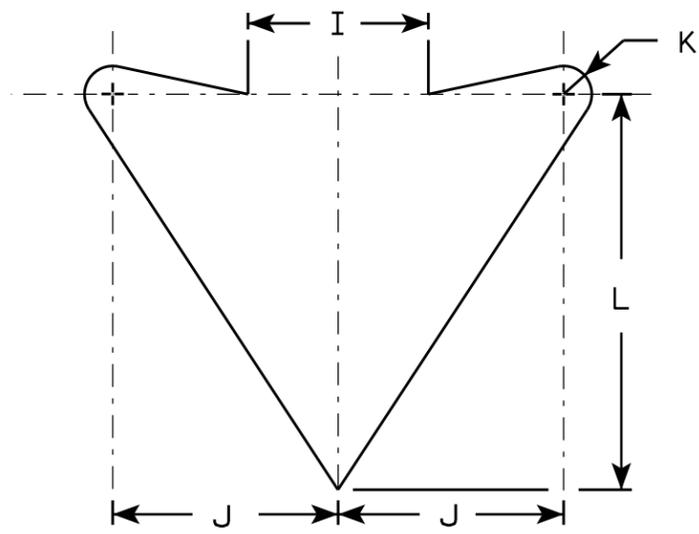
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-2.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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.



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	36		1 5/8	5/8	3/4	12	1	4 1/4	5	6	3/4	10 1/2	6 3/4														9.0
2S	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
2M	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
3	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
4	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
5	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0

STANDARD SIGN
W06-3

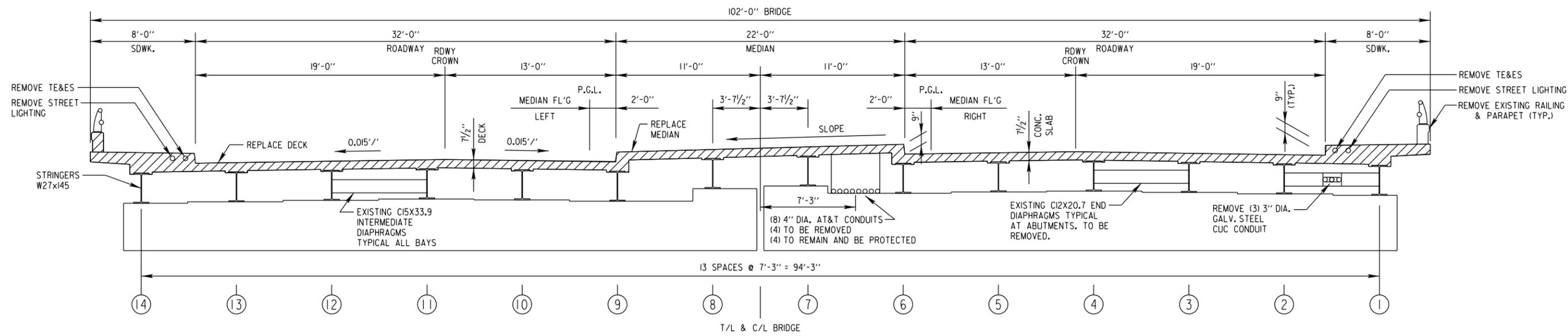
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
For State Traffic Engineer

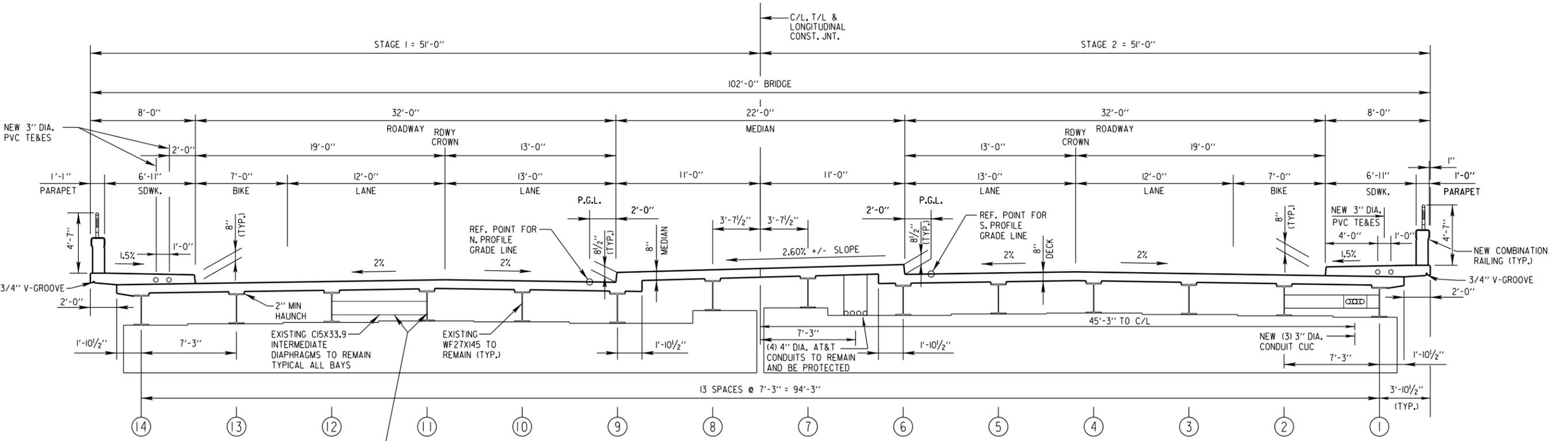
DATE 11/20/13 PLATE NO. W06-3.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

M:\STR\B09001\2020 REHAB\PLANS\02-SUPERSTRUCTURE CROSS SECTION.DGN



EXISTING SECTION THRU BRIDGE
LOOKING EAST



PROPOSED SECTION THRU BRIDGE
LOOKING EAST

NOTES:

- DIMENSIONS NORMAL TO T/L & C/L
- EXISTING C12X20.7 END DIAPHRAGMS AT ABUTMENTS ARE TO BE REMOVED (INCIDENTAL TO BID ITEM 203.0220 "REMOVING STRUCTURE B-40-0500")
- SEE BID ITEM SPV.0060.590 "AT&T COMMUNICATIONS DUCT PROTECTION B-40-500" FOR PROTECTING CONDUITS DURING DECK REMOVAL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY G.J.R.		PLANS CK'D. K.M.F. J.P.H.	
SUPERSTRUCTURE CROSS SECTIONS			SHEET 2 OF 20

REVISED: 07-16-2021 BY GJR

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GENERAL NOTES

ALL STATIONS AND ELEVATIONS ARE IN FEET. DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS. ELEVATIONS ARE REFERRED TO CITY OF MILWAUKEE DATUM: 580.6 NGVD. DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED. BEVEL EXPOSED CONCRETE EDGES 3/4" UNLESS OTHERWISE NOTED. THE FIRST DIGIT OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT. ALL CONCRETE REMOVAL SHALL BE DEFINED BY 1 INCH DEEP SAW CUT. EXISTING GROUND LINE SHALL BE USED AS UPPER LIMITS OF EXCAVATION FOR STRUCTURE. SPACES EXCAVATED AND NOT OCCUPIED BY NEW CONSTRUCTION SHALL BE BACKFILLED WITH STRUCTURE BACKFILL. JOINT FILLER SHALL CONFORM TO AASHTO DESIGNATION M 153 TYPE I, II, OR III, OR AASHTO DESIGNATION M213. PAINT FOR STEEL GIRDERS TO MATCH AMS STANDARD NO. 595A, COLOR NO. 15102. PAINT FOR STEEL RAILING TO MATCH AMS STANDARD NO. 595A, COLOR NO. 27038. VARIATIONS TO NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY FIELD ENGINEER TO STRUCTURES DESIGN SECTION FOR REVIEW. THE CONTRACTOR SHALL SUPPLY NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR (1976). ALL EXISTING STEEL SHALL BE SANDBLASTED AND PAINTED UNDER BID ITEMS 517.0901.S "PREPARATION AND COATING OF TOP FLANGES B-40-500", 517.1801.S "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-500", AND 517.4501.S "NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-40-500." UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE. TEMPORARY MINIMUM CLEARANCE OF 21'-0" SHALL BE MAINTAINED ABOVE RAILROAD TRACKS AT ALL TIMES UNLESS PRIOR CONSENT IS GIVEN BY ENGINEER. FOR RAILROAD COORDINATION, REFER TO RAILROAD MINIMUM REQUIREMENTS AS PART OF SPECIAL PROVISIONS. PORTIONS OF EXISTING WF27X145 GIRDER ENDS EMBEDDED IN ABUTMENT GIRDER END DIAPHRAGM TO BE PAINTED PRIOR TO PLACEMENT OF CONCRETE USING BID ITEMS 517.1801.S "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-500" AND 517.4501.S "NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-40-500." AN AVERAGE HAUNCH OF 3.92" WAS USED IN THE QUANTITY CALCULATION OF BID ITEM 502.0100, "CONCRETE MASONRY BRIDGES" AND SHOULD BE USED IN CALCULATING PAYMENT.

ESTIMATE OF QUANTITIES

Table with columns: ITEM NUMBER, BID ITEMS, UNIT, WEST ABUT., PIER 1, PIER 2, EAST ABUT., SUPER., TOTAL. Includes items like REMOVING STRUCTURE B-40-500, ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-40-500, DEBRIS CONTAINMENT B-40-500, etc.

* QUANTITY SHOWN IS FOR REMOVING THE ABUTMENT'S BACKWALL. SAME ITEM IS SHOWN ON ROADWAY MISCELLANEOUS TABLE FOR REMOVING CONCRETE PAVEMENT.

DESIGN DATA

DEAD LOAD CONCRETE = 150 PCF F.W.S. = 20 PSF PARAPET & STEEL RAILING = 397 PLF LIVE LOAD DESIGN LOADING: HS-20 INVENTORY RATING HS-31 OPERATING RATING HS-51 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 215 KIPS MATERIAL PROPERTIES CONCRETE SUPERSTRUCTURE f'c = 4,000 PSI CONCRETE SUBSTRUCTURE f'c = 3,500 PSI BAR STEEL REINFORCEMENT fy = 60,000 PSI TRAFFIC VOLUME ADT (2017) = 9,900 ADT (2037) = 11,400 R.D.S. = 35 MPH UTILITIES CITY UNDERGROUND COMMUNICATIONS (CUC) AND TRAFFIC ENGINEERING AND ELECTRICAL SERVICES (TE&ES) SHALL BE TEMPORARILY RELOCATED PRIOR TO CONSTRUCTION. CUC AND TE&ES CONDUITS SHALL BE REINSTALLED BY CONTRACTOR DURING CONSTRUCTION. SEE PROJECT SPECIFICATIONS. AT&T (AT&T) CONDUITS SHALL BE PROTECTED DURING CONSTRUCTION. SEE PROJECT SPECIFICATIONS.

BRIDGE REMOVAL AND CONSTRUCTION NOTES

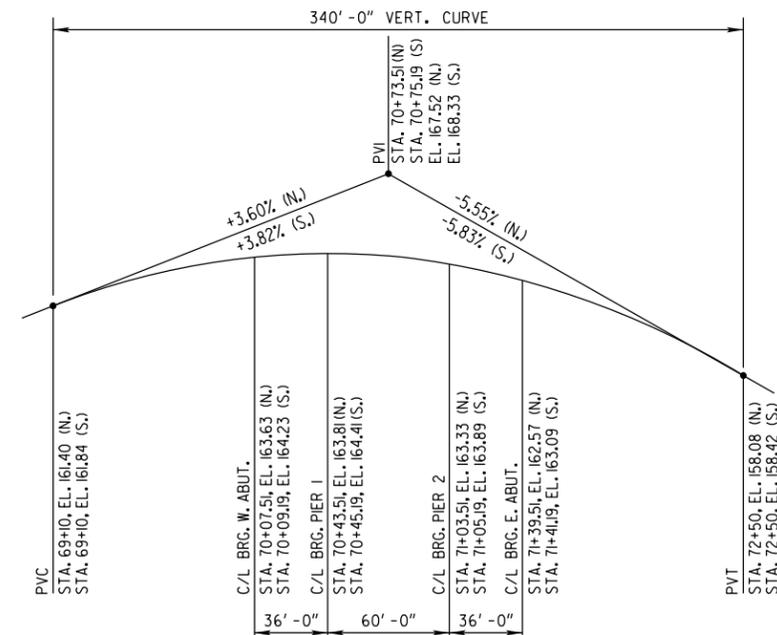
EXISTING BRIDGE PLANS ARE ON FILE IN CITY OF MILWAUKEE INFRASTRUCTURE SERVICES DIVISION'S STRUCTURAL DESIGN UNIT, ROOM 907, FRANK P. ZEIDLER MUNICIPAL BUILDING, 841 N. BROADWAY, MILWAUKEE, WI 53202 PHONE (414)-286-0463.

EXISTING BRIDGE DECK, SIDEWALK AND RAILINGS WILL BE REMOVED IN TWO STAGES TO KEEP WEST GRANGE AVENUE OPEN FOR 2-WAY TRAFFIC DURING CONSTRUCTION. EXISTING NORTH SIDE OF BRIDGE IS TO BE REMOVED FIRST WHILE 2-WAY TRAFFIC IS TO BE CARRIED BY EXISTING SOUTH SIDE OF BRIDGE. AFTER PROPOSED NORTH SIDE OF BRIDGE IS COMPLETED, TRAFFIC WILL BE DIVERTED TO NEWLY FINISHED NORTH SIDE ROADWAY AND PROPOSED SOUTH SIDE ROADWAY WILL BE CONSTRUCTED.

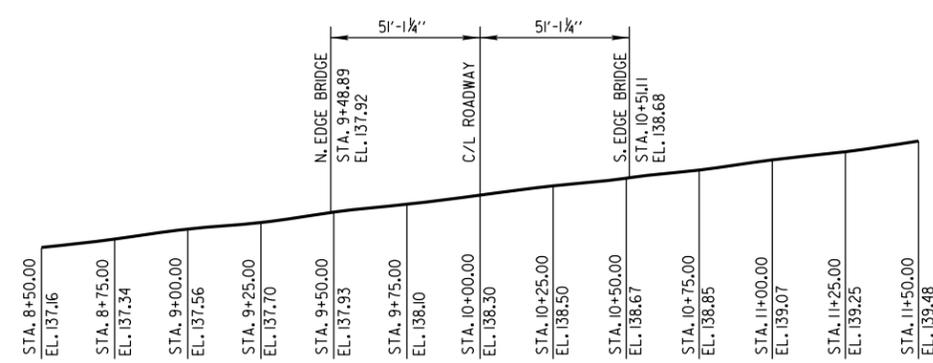
REMOVE EXISTING BRIDGE DECK B-40-500 OVER CANADIAN PACIFIC RAILWAY IN LARGE SECTIONS AND CONFORMING TO CONTRACTOR'S APPROVED STRUCTURE REMOVAL AND CLEAN-UP PLAN.

PROPOSED IMPROVEMENTS

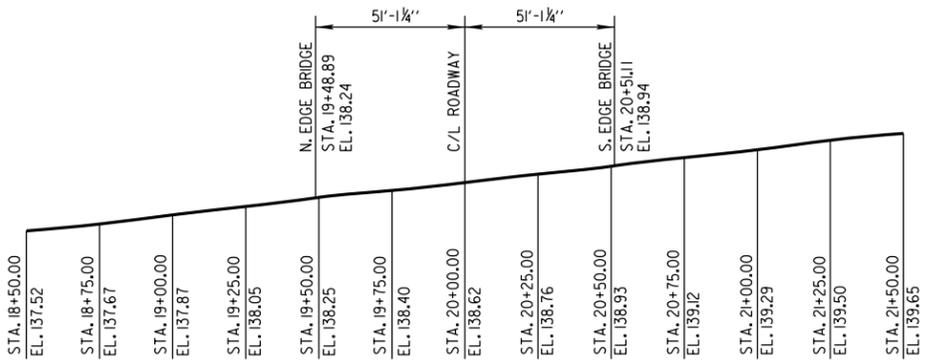
PROJECT AS PROPOSED CONSISTS OF: REMOVAL OF EXISTING BRIDGE DECK, SIDEWALK AND RAILINGS; CONCRETE SURFACE REPAIR OF ABUTMENTS AND PIERS AS DIRECTED BY ENGINEER; EXPANSION BEARING REPLACEMENT AT ABUTMENTS; PREPPING AND PAINTING STEEL SUPERSTRUCTURE; INSTALLATION OF GIRDER SHEAR STUD CONNECTORS; PLACEMENT OF NEW CONCRETE BRIDGE DECK; INSTALLATION OF NEW BRIDGE WALK, MEDIAN AND RAILING.



NORTH AND SOUTH PROFILE GRADE LINES (P.G.L.) ON WEST GRANGE AVENUE BRIDGE

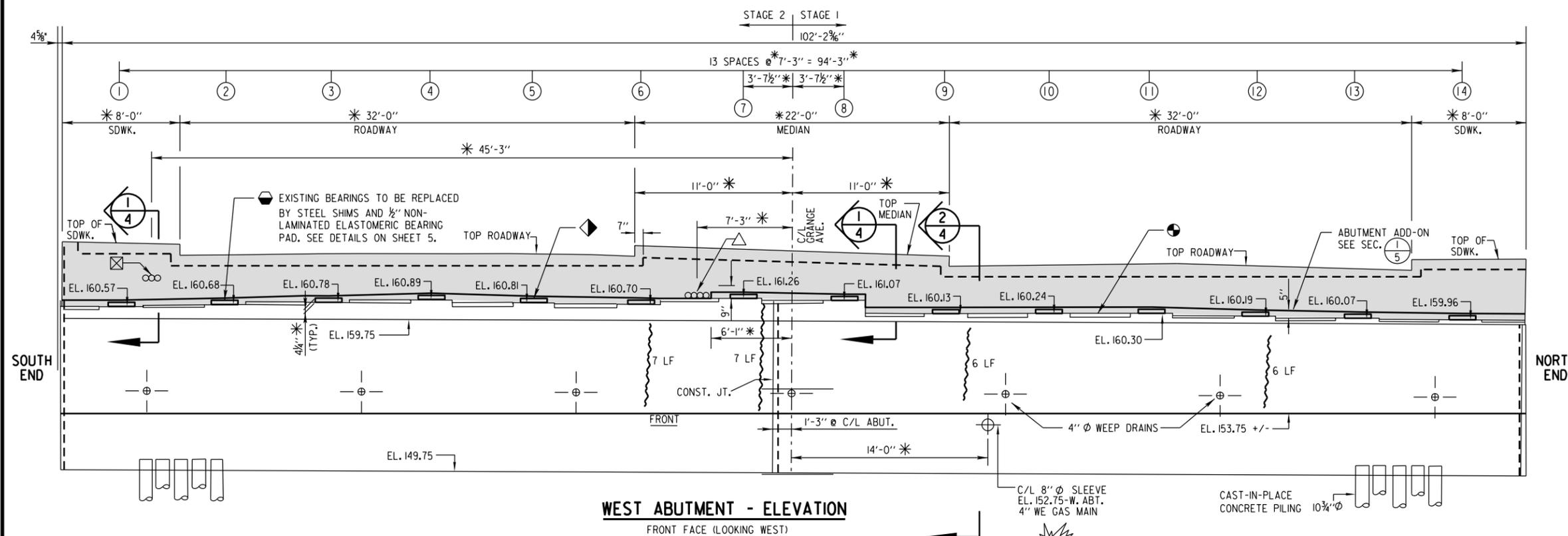


PROFILE GRADE LINE ALONG WEST TRACK, WEST RAIL, CP RR



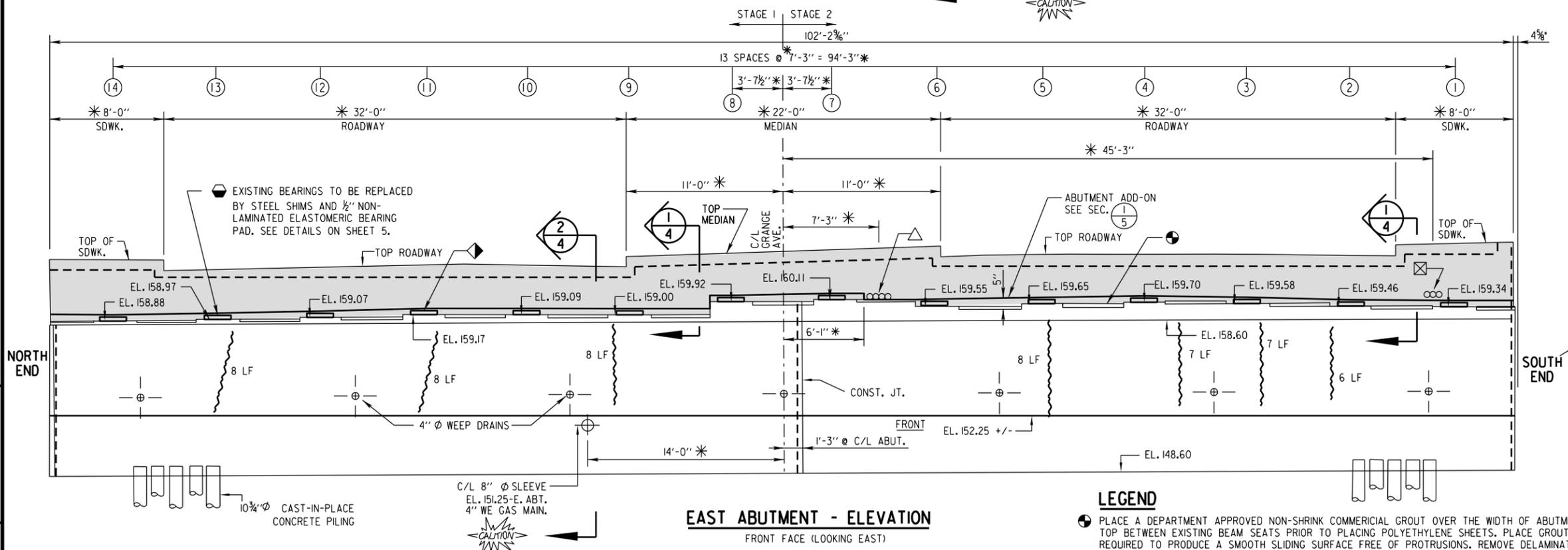
PROFILE GRADE LINE ALONG EAST TRACK, WEST RAIL, CP RR

Table with columns: NO., DATE, REVISION, BY. Includes project title 'STRUCTURE B-40-500', estimator 'ESTIMATE OF QUANTITIES', and sheet number 'SHEET 3 OF 20'.



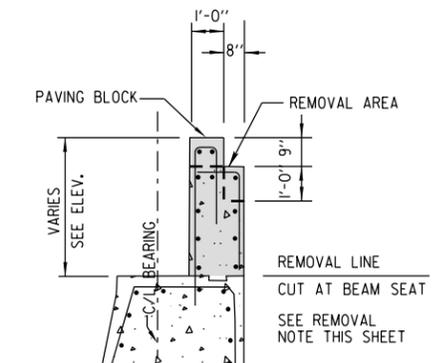
WEST ABUTMENT - ELEVATION

FRONT FACE (LOOKING WEST)

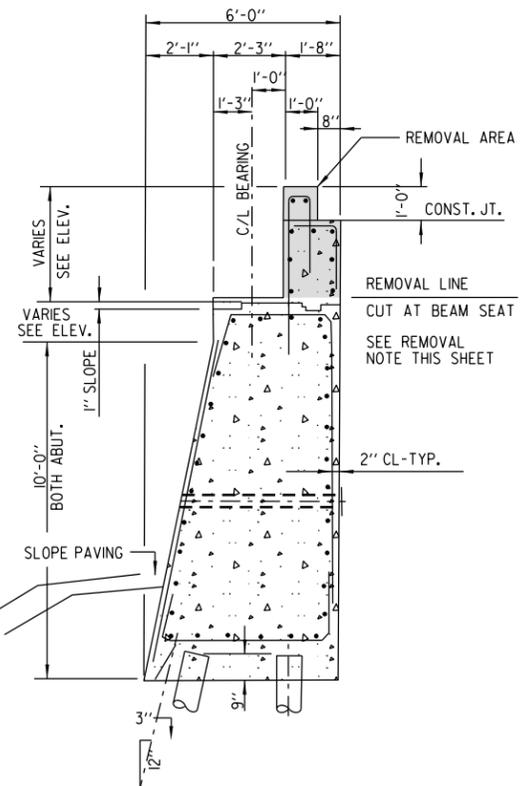


EAST ABUTMENT - ELEVATION

FRONT FACE (LOOKING EAST)



1/4 SECTION EXISTING ABUTMENT AT SIDEWALK AND MEDIAN



2/4 SECTION EXISTING ABUTMENT AT ROADWAY

- KEY:**
- = CONCRETE REMOVAL AREA
 - = EPOXY INJECTION CRACK REPAIR (X') L.F.
 - = GIRDER NUMBER
 - = (8) 4" DIA. (EXISTING)
 - = (4) 4" DIA. (PROPOSED)
 - = AT&T CONDUITS TO REMAIN AND BE PROTECTED. SEE BLOCK OUT DETAILS ON SHEET 14.
 - = SEE BID ITEM SPV.0060.590 "AT&T COMMUNICATIONS DUCT PROTECTION B-40-500" FOR PROTECTING CONDUITS DURING DECK REMOVAL.
 - = (3) 3" DIA. (EXISTING) TO BE REMOVED WITH DECK REMOVAL.
 - = (3) 3" DIA. (PROPOSED) TO BE INSTALLED AFTER DECK IS COMPLETED. SEE BLOCK OUT DETAILS ON SHEET 14.

REMOVAL NOTE:

FOR BID ITEM 690.0250 "SAWING CONCRETE", SAW CUT TO FOLLOW A LINE APPROXIMATELY 5" ABOVE C/L OF EACH BEAM SEAT FOLLOWING APPROXIMATE CROSS SLOPE OF EXISTING DECK/MEDIAN. ABRUPT CHANGE IN ELEVATION OF SAW CUT LINE OCCURS AT MEDIAN/DECK INTERFACE. APPROX. 1' AT NORTH SIDE, 6" AT SOUTH SIDE OF MEDIAN.

- LEGEND**
- PLACE A DEPARTMENT APPROVED NON-SHRINK COMMERCIAL GROUT OVER THE WIDTH OF ABUTMENT TOP BETWEEN EXISTING BEAM SEATS PRIOR TO PLACING POLYETHYLENE SHEETS. PLACE GROUT AS REQUIRED TO PRODUCE A SMOOTH SLIDING SURFACE FREE OF PROTRUSIONS. REMOVE DELAMINATED OR LOOSE CONCRETE AND CLEAN THE SURFACE PRIOR TO PLACING GROUT. ADDITIONAL SURFACE PREPARATION MAY BE REQUIRED PER THE MANUFACTURER'S INSTRUCTION. MIX, PLACE, AND CURE NON-SHRINK COMMERCIAL GROUT PER THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER. DO NOT APPLY LOADS TO THE NON-SHRINK COMMERCIAL GROUT UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,500 P.S.I. IS ACHIEVED. NON-SHRINK COMMERCIAL GROUT AND SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY BRIDGES".
 - BURN OFF EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE AND GRIND SMOOTH.
 - PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING STEEL SHIMS AND BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
 - * DIMENSION TAKEN NORMAL TO C/L GRANCE AVE.

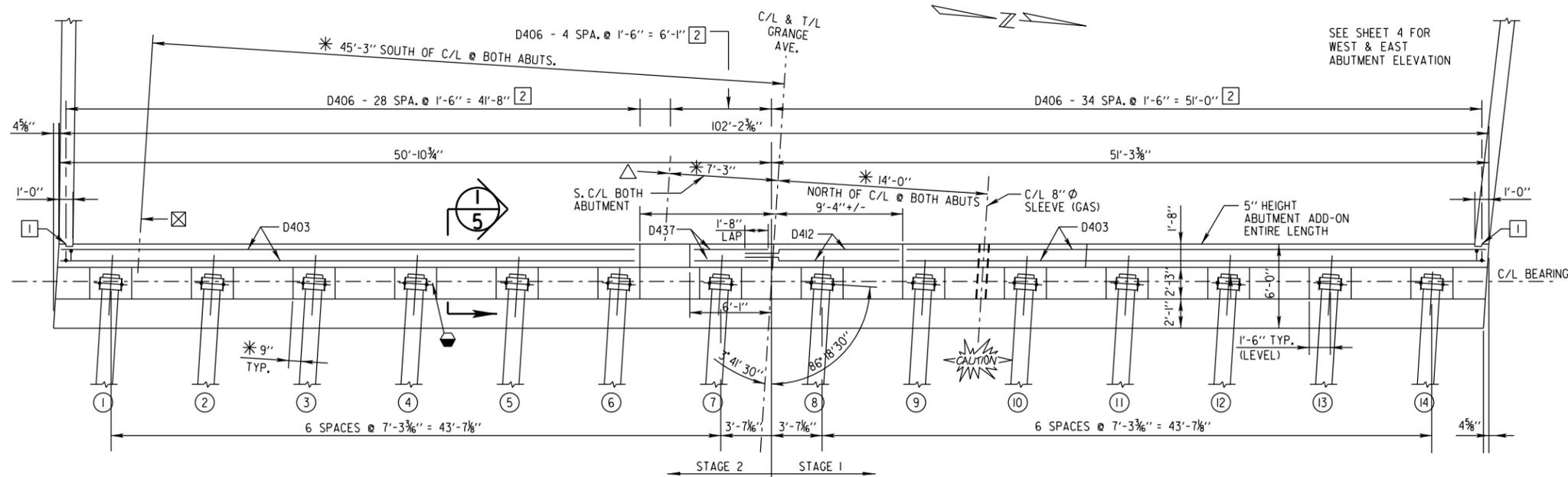
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY GJR		PLANS CK'D. JH	
ABUTMENT REPAIR AND REMOVAL			SHEET 4 OF 20

W: STRB0900.2020 REHAB PLANS 05 ABUTMENT BEARING DETAILS S.DGN

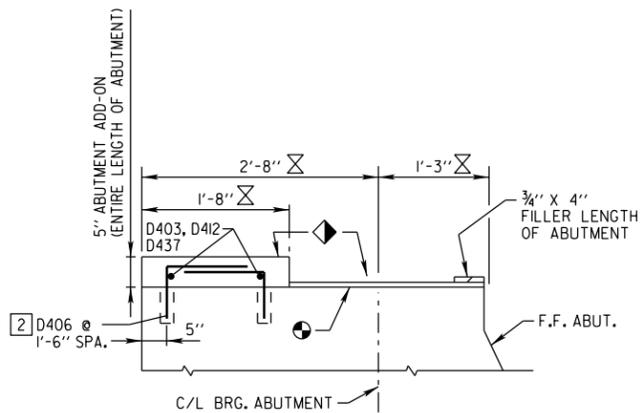
REVISED: 07-16-2021 BY CJR

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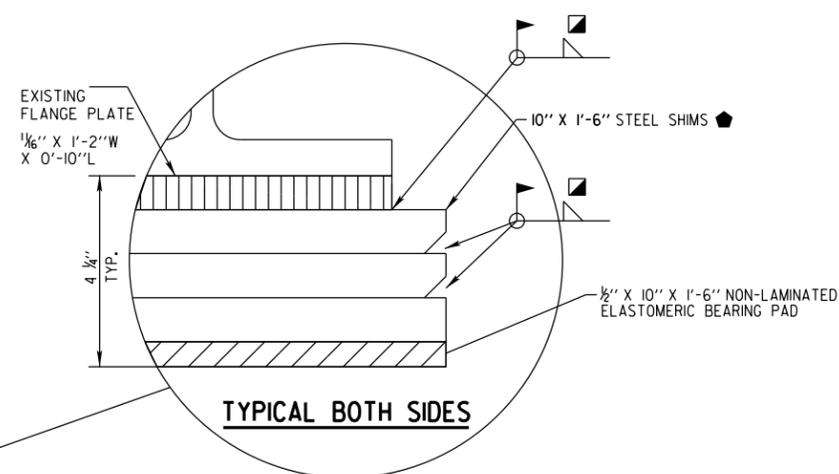
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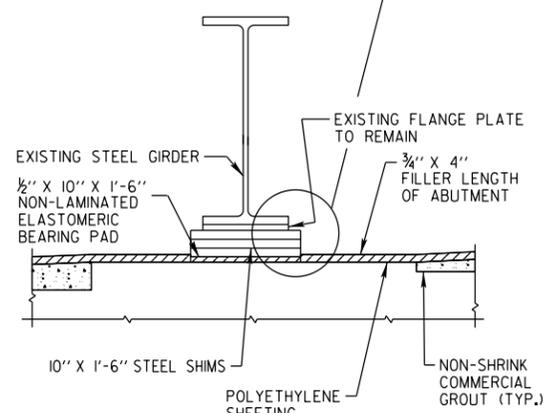
WEST ABUTMENT- PLAN VIEW
EAST ABUTMENT SIMILAR



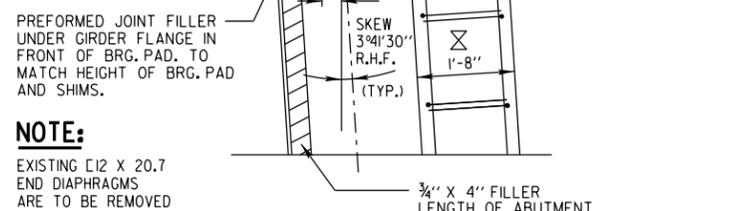
SECTION 1-5
TYP. BOTH ABUTMENTS



TYPICAL BOTH SIDES



BEARING ELEVATION
PERPENDICULAR TO GIRDER



BEARING PLAN

NOTE:
EXISTING C12 X 20.7 END DIAPHRAGMS ARE TO BE REMOVED

TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	+ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/8"
OVER 1/2" TO 3/4"	1/2"
OVER 3/4" TO 1 1/2"	5/8"
OVER 1 1/2"	3/4"

+ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.
▲ MIN. PASS SIZE IS 3/16"

BEARING NOTES:

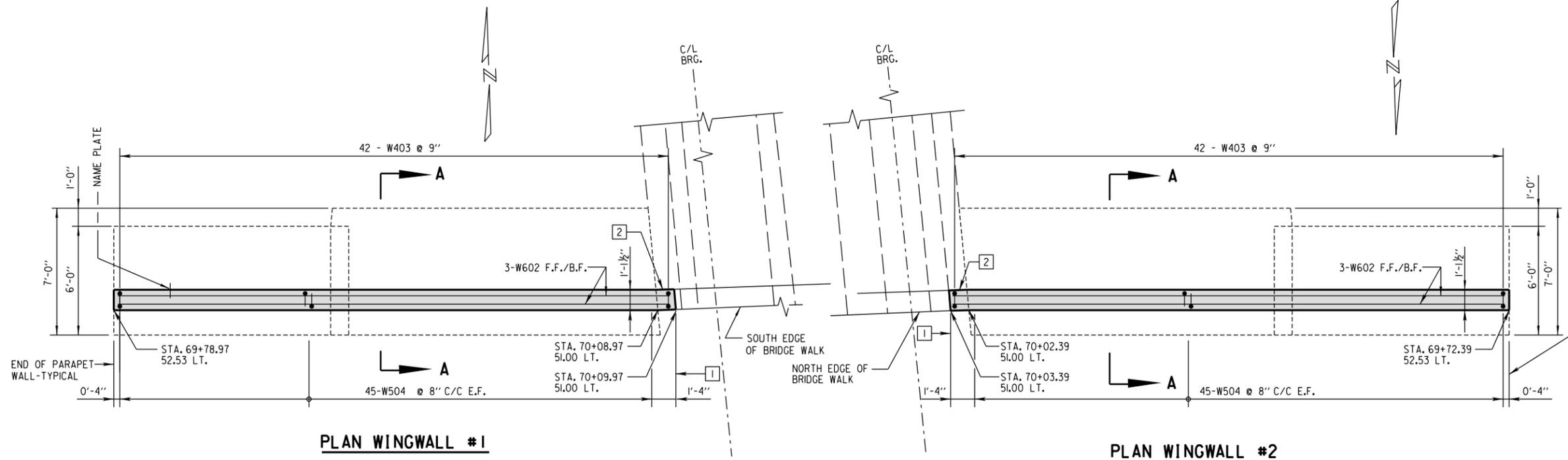
- USE EXISTING GIRDER BEARING ELEVATIONS FOR NEW ELASTOMERIC BEARING PADS ELEVATIONS.
- ALL BEARINGS ARE SYMMETRICAL ABOUT C/L OF GIRDER AND C/L OF BEARING.
- ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
- ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.
- SHIM PLATES SHALL CONFORM TO ASTM A709 GRADE 50W. SHIM PLATES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC NON-LAMINATED". SHIM PLATES SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER.
- 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- D406 BARS ARE ADHESIVE ANCHORED NO. 4 BARS. EMBED 1'-0" MIN. IN CONCRETE.
- GIRDER NUMBER.
- PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING STEEL SHIMS AND BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- PLACE A DEPARTMENT APPROVED NON-SHRINK COMMERCIAL GROUT OVER THE WIDTH OF ABUTMENT TOP BETWEEN EXISTING BEAM SEATS PRIOR TO PLACING POLYETHYLENE SHEETS. PLACE GROUT AS REQUIRED TO PRODUCE A SMOOTH SLIDING SURFACE FREE OF PROTRUSIONS. REMOVE DELAMINATED OR LOOSE CONCRETE AND CLEAN THE SURFACE PRIOR TO PLACING GROUT. ADDITIONAL SURFACE PREPARATION MAY BE REQUIRED PER THE MANUFACTURER'S INSTRUCTION. MIX, PLACE, AND CURE NON-SHRINK COMMERCIAL GROUT PER THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER. DO NOT APPLY LOADS TO THE NON-SHRINK COMMERCIAL GROUT UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,500 P.S.I. IS ACHIEVED. NON-SHRINK COMMERCIAL GROUT AND SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY BRIDGES".
- BURN OFF EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE AND GRIND SMOOTH.
- USE EXISTING GIRDER BEARING ELEVATIONS FOR NEW ELASTOMERIC BEARING PADS ELEVATIONS.

GENERAL NOTES:

- * DIMENSION TAKEN NORMAL TO C/L GRANGE AVE.
- ⊗ DIMENSION NORMAL TO C/L BRG.
- (8) 4" DIA. (EXISTING)
(4) 4" DIA. (PROPOSED)
AT&T CONDUITS TO REMAIN AND BE PROTECTED. SEE BLOCK OUT DETAILS ON SHEET I4. SEE BID ITEM SPV.0060.590 "AT&T COMMUNICATIONS DUCT PROTECTION B-40-500" FOR PROTECTING CONDUITS DURING DECK REMOVAL.
- (3) 3" DIA. (EXISTING) TO BE REMOVED WITH DECK REMOVAL.
(3) 3" DIA. (PROPOSED) TO BE INSTALLED AFTER DECK IS COMPLETED. SEE BLOCK OUT DETAILS ON SHEET I4.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY: G.J.R.		PLANS CK'D: J.P.H.	
ABUTMENT BEARING DETAILS			SHEET 5 OF 20

W: \STRAB0900\2020 REHAB\PLANS\06-WINGWALL #1 & #2 DETAILS.DGN



PLAN WINGWALL #1

PLAN WINGWALL #2

BILL OF BARS - WINGWALL

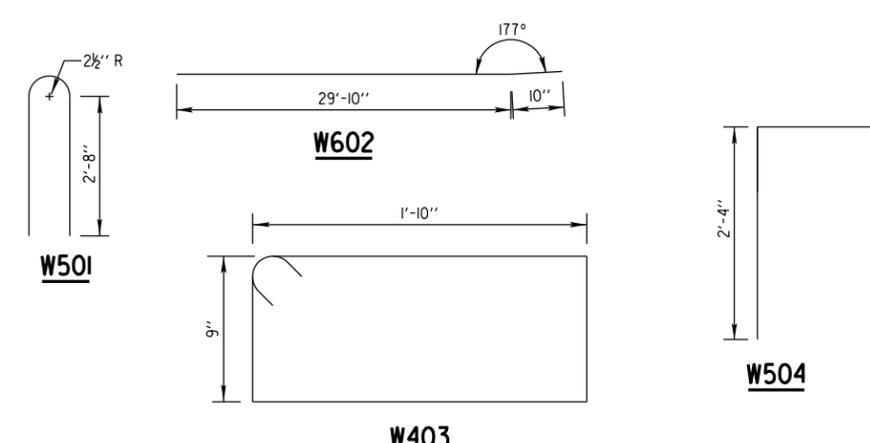
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
W501	X	152	6' - 1"	X	WINGWALL PARAPET DOWELS
W602	X	24	30' - 8"	X	WINGWALL - HORIZONTAL F.F. & B.F. CAP (#1 - #4)
W403	X	168	5' - 2"	X	WINGWALL STIRRUPS (#1 - #4)
W504	X	360	2' - 9"	X	WINGWALL VERTICAL DOWEL F.F. & B.F. (#1 - #4)

LEGEND

	NEW CONCRETE
	EXISTING CONCRETE
	EPOXY INJECTION CRACK REPAIR, X LF

KEY

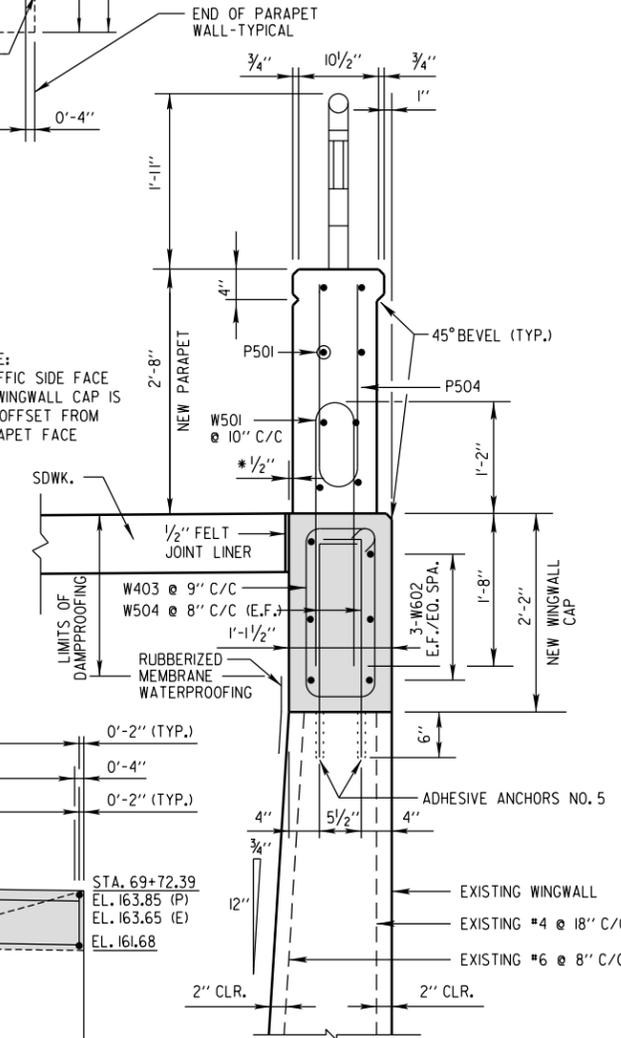
F.F. = FRONT FACE
 B.F. = BACK FACE
 E.F. = EACH FACE
 (P) = PROPOSED ELEVATION
 (E) = EXISTING ELEVATION



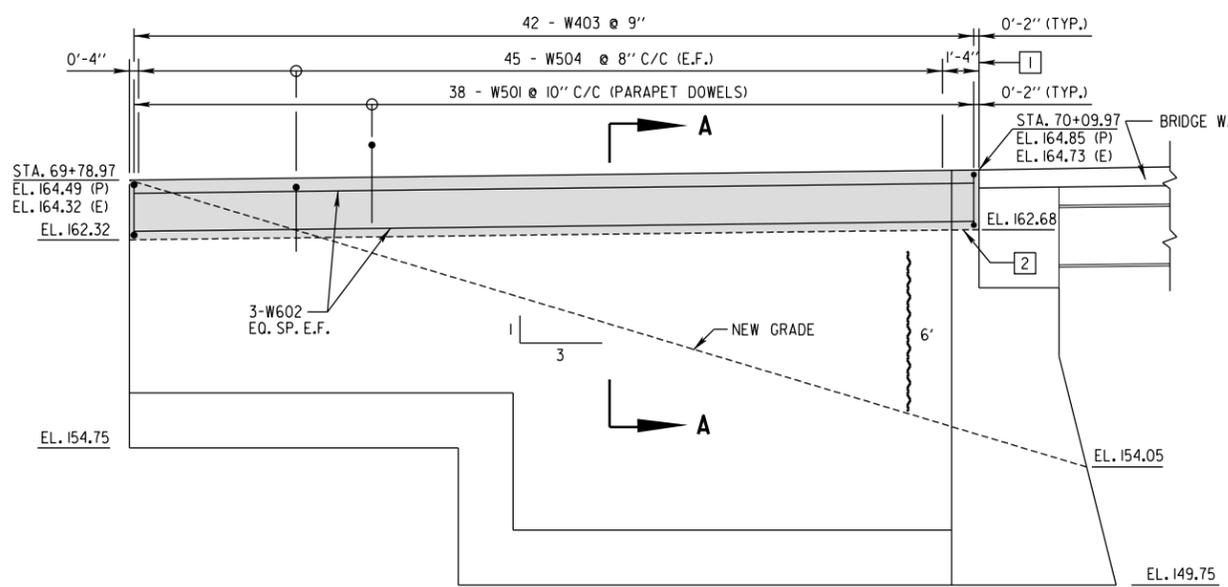
NOTE:

- 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- STEEL TROWEL HORIZONTAL SURFACE OF ABUTMENT NOTCH. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS BETWEEN WINGWALL CAP AND HORIZONTAL SURFACE OF ABUTMENT NOTCH. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

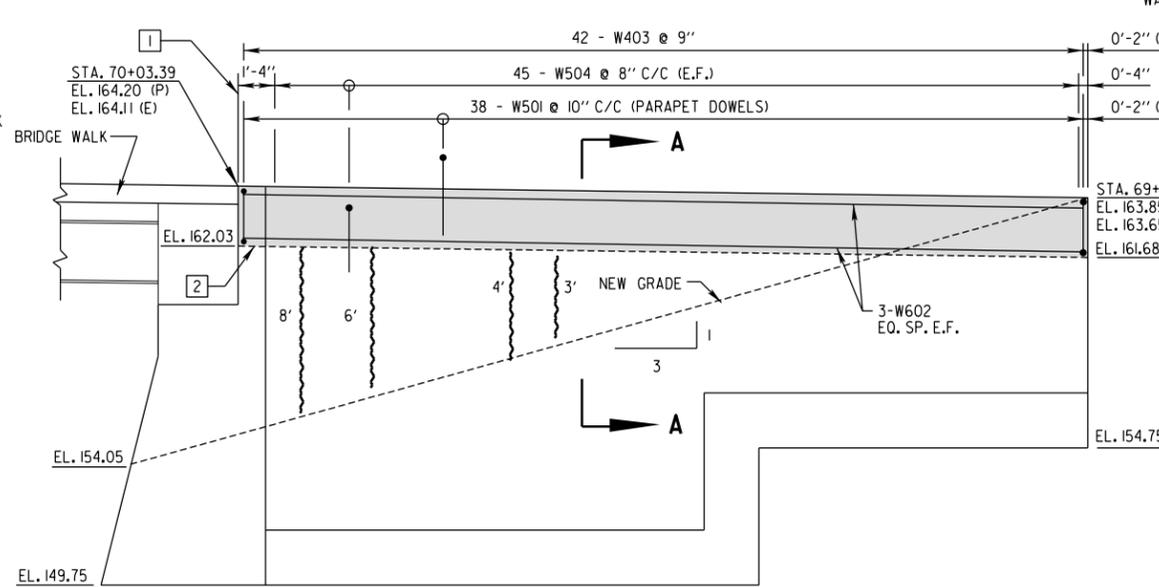
* NOTE: TRAFFIC SIDE FACE OF WINGWALL CAP IS 1/2" OFFSET FROM PARAPET FACE



WINGWALL SECTION A-A
(#1 & #2)



ELEVATION WINGWALL #1
(LOOKING NORTH)



ELEVATION WINGWALL #2
(LOOKING SOUTH)

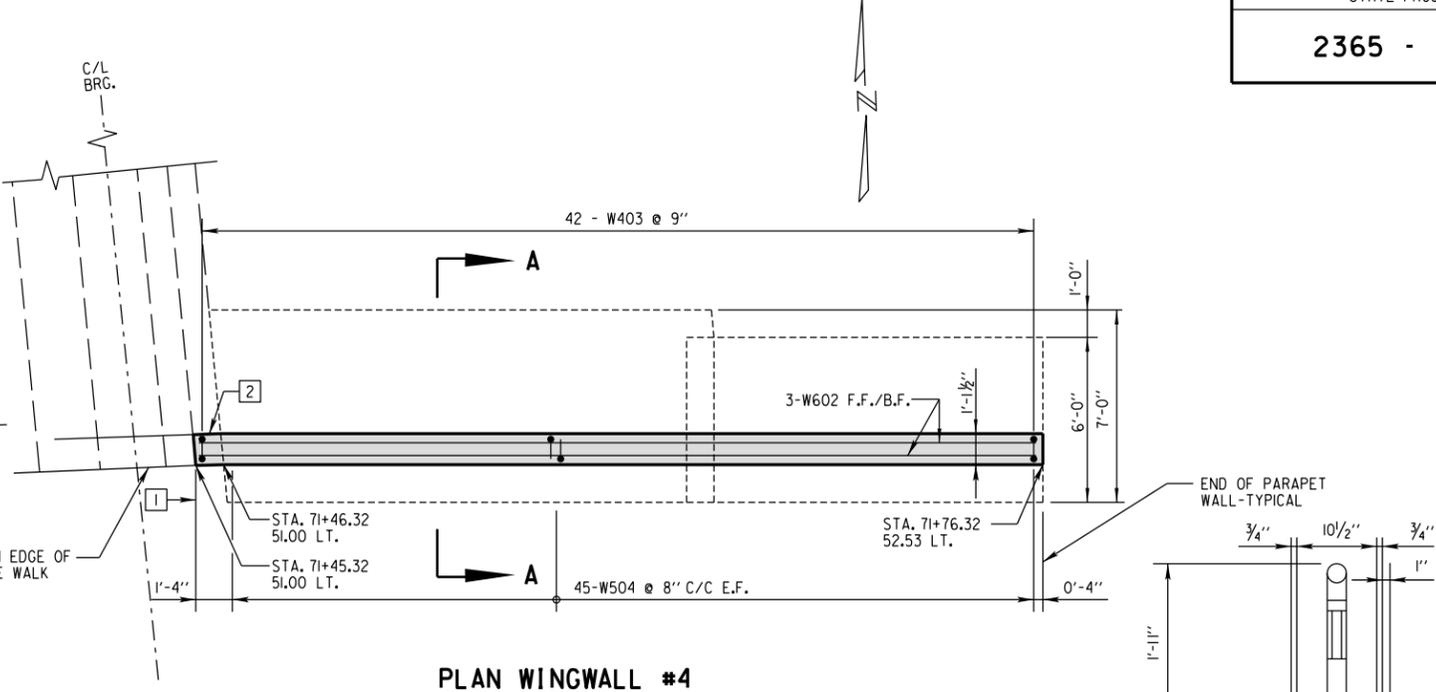
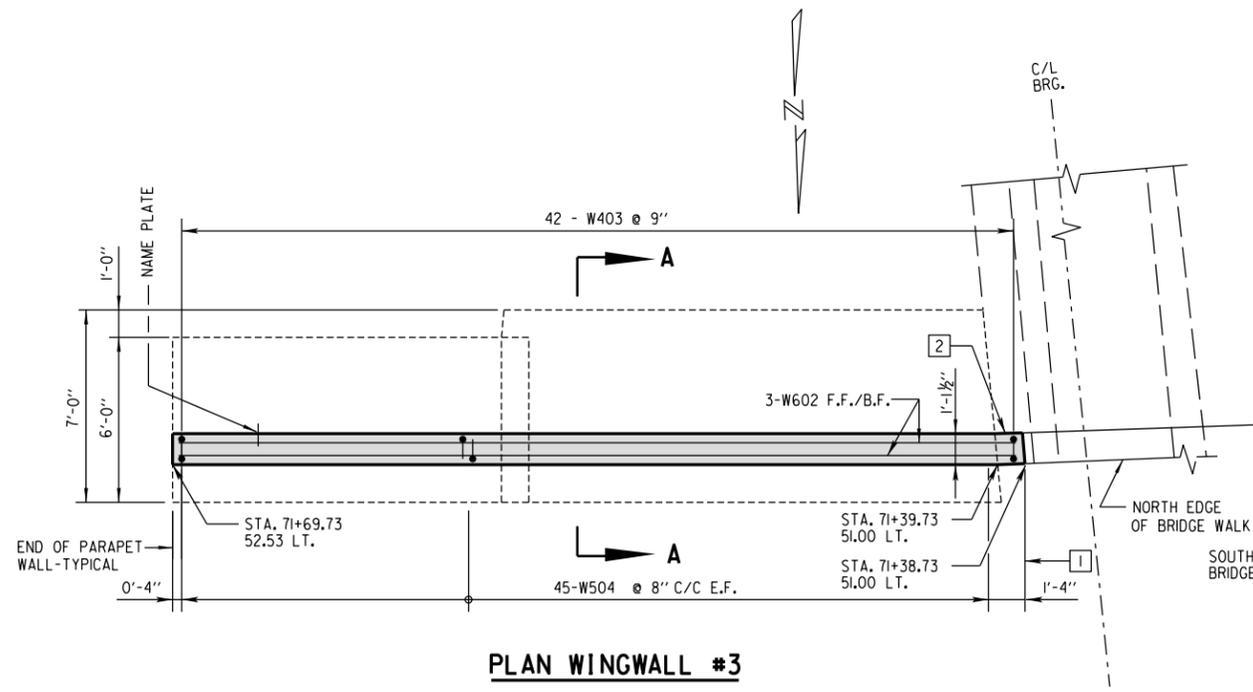
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY RA		PLANS CK'D.	
WINGWALL #1 & #2 DETAILS			SHEET 6 OF 20

REVISED: 05-24-2021 BY GJR

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W:\STRAB0900\2020 REHAB\PLANS\07_WINGWALL #3 & #4 DETAILS.DGN



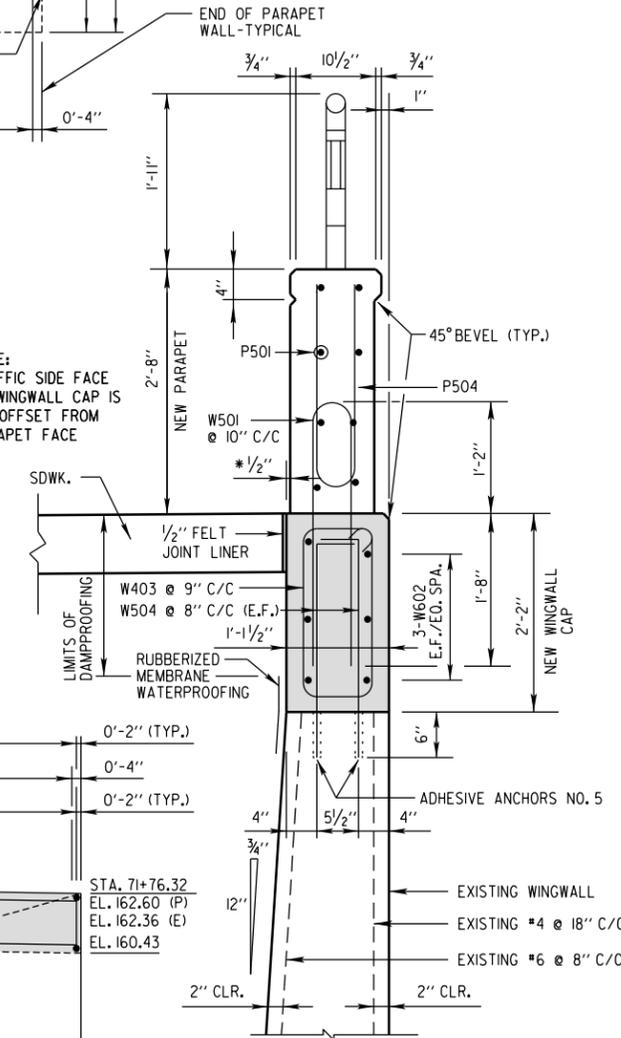
LEGEND

	NEW CONCRETE
	EXISTING CONCRETE
	EPOXY INJECTION CRACK REPAIR, X LF

KEY

F.F. = FRONT FACE
 B.F. = BACK FACE
 E.F. = EACH FACE
 (P) = PROPOSED ELEVATION
 (E) = EXISTING ELEVATION

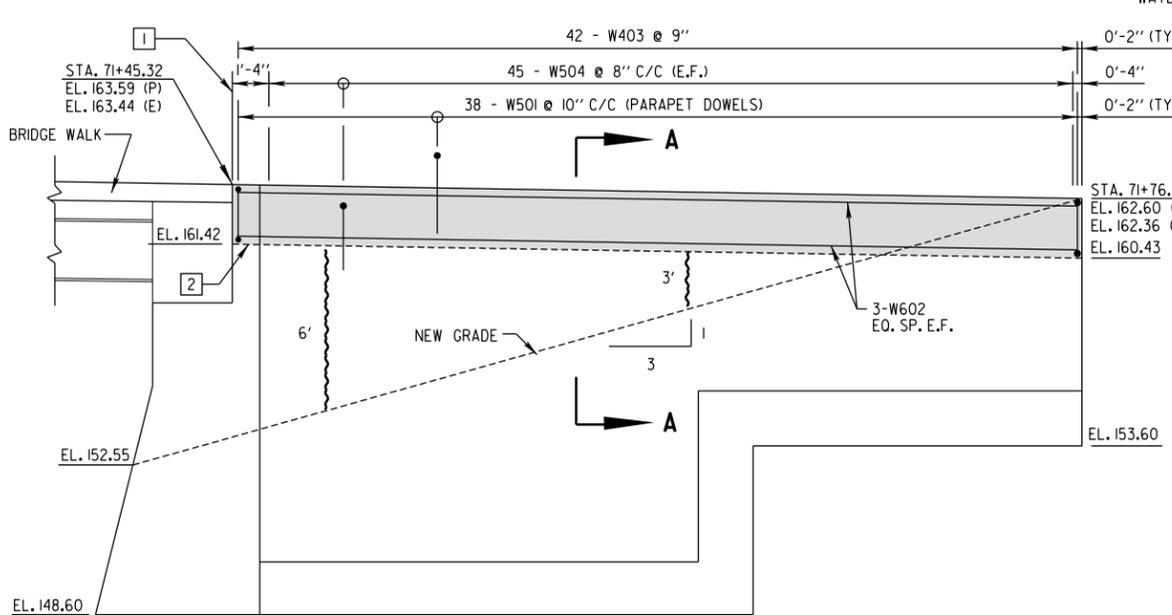
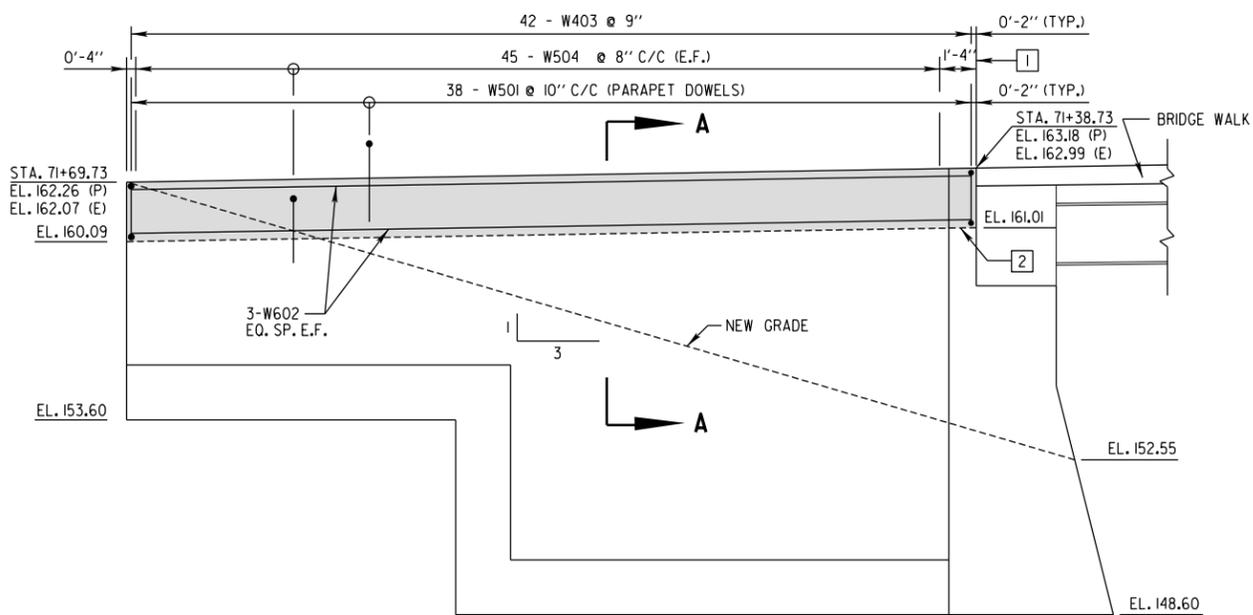
* NOTE: TRAFFIC SIDE FACE OF WINGWALL CAP IS 1/2" OFFSET FROM PARAPET FACE



NOTE:

1 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

2 STEEL TROWEL HORIZONTAL SURFACE OF ABUTMENT NOTCH. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS BETWEEN WINGWALL CAP AND HORIZONTAL SURFACE OF ABUTMENT NOTCH. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

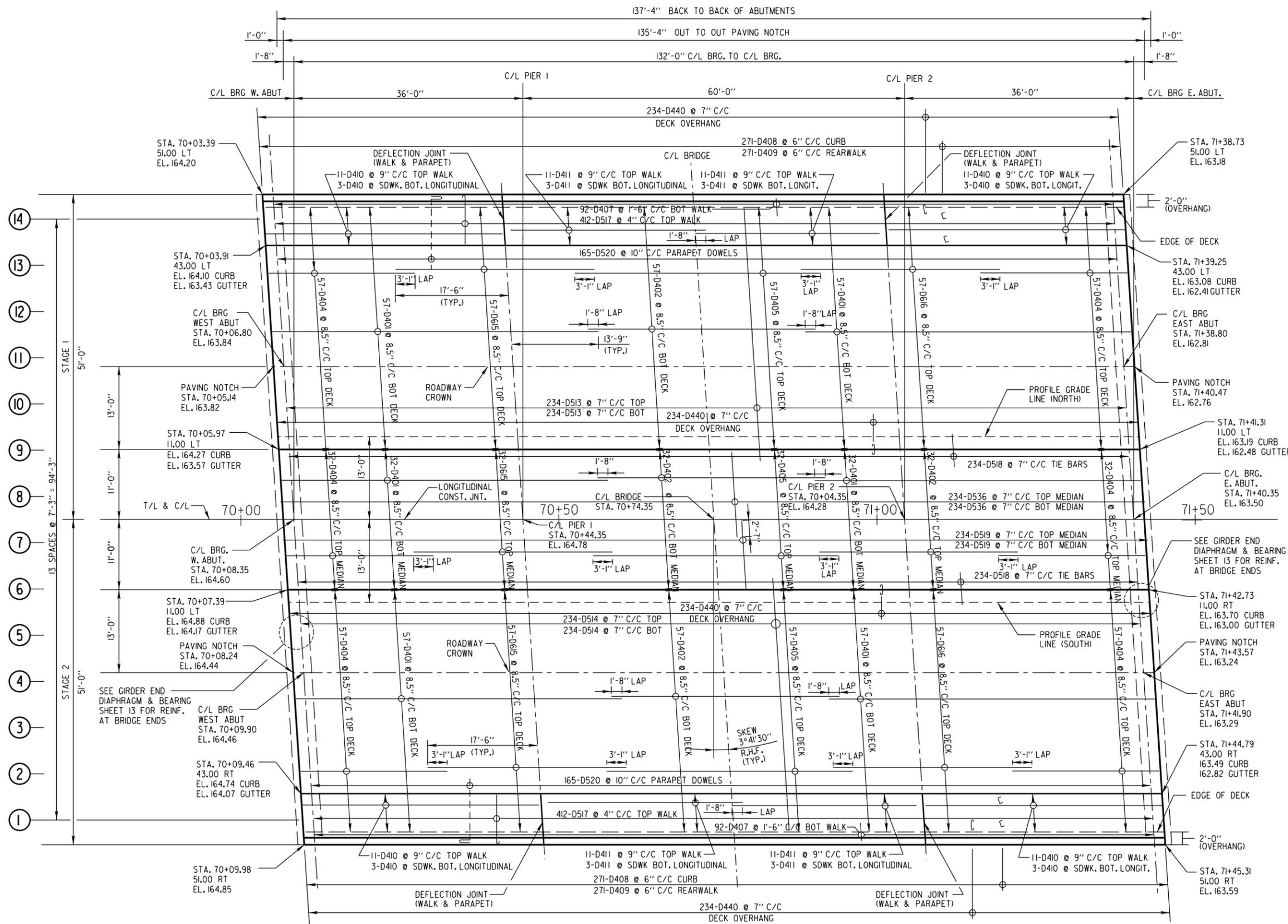


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY RA		PLANS CK'D.	
WINGWALL #3 & #4 DETAILS			SHEET 7 OF 20

8

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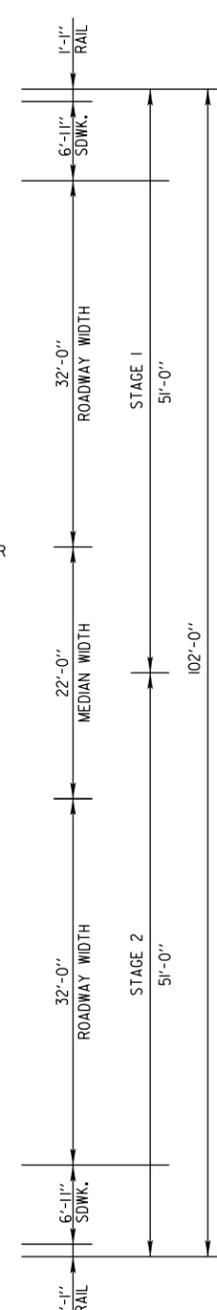
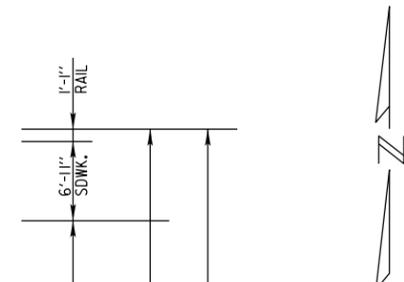
REVISED: 05-24-2021 GJR



DECK PLAN

NOTE:

UTILITIES NOT SHOWN FOR CLARITY
 OFFSET UPPER AND LOWER STEEL LAYERS BY 1/2 BAR SPACING
 TOP STEEL CLEARANCE = 2 1/2"
 BOTTOM STEEL CLEARANCE = 1 1/2"



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY		PLANS CK'D.	
G.J.R.		H.D.	
DECK PLAN			SHEET 8 OF 20

M:\STR\B090012020 REHAB\PLANS\09_DECK BILL OF BARS & SHEAR STUD DETAILS.DGN

BILL OF BARS - DECK

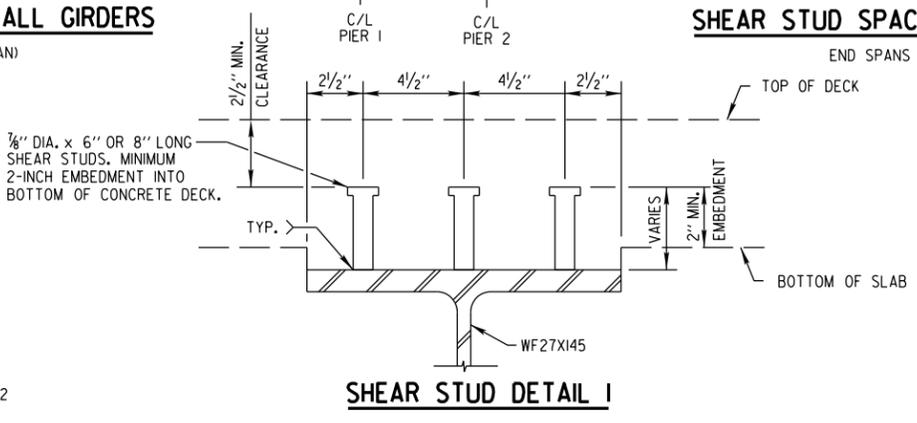
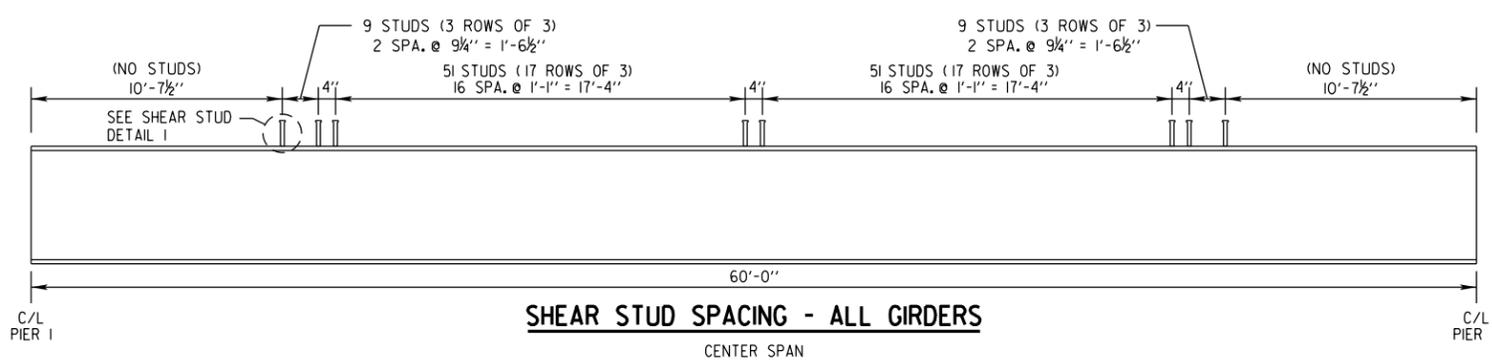
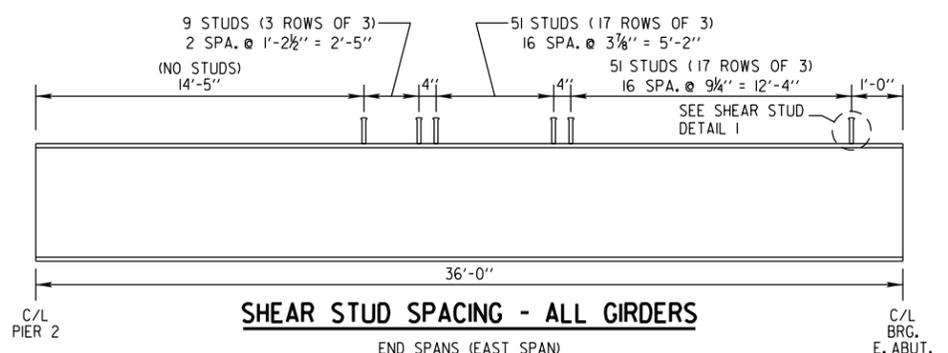
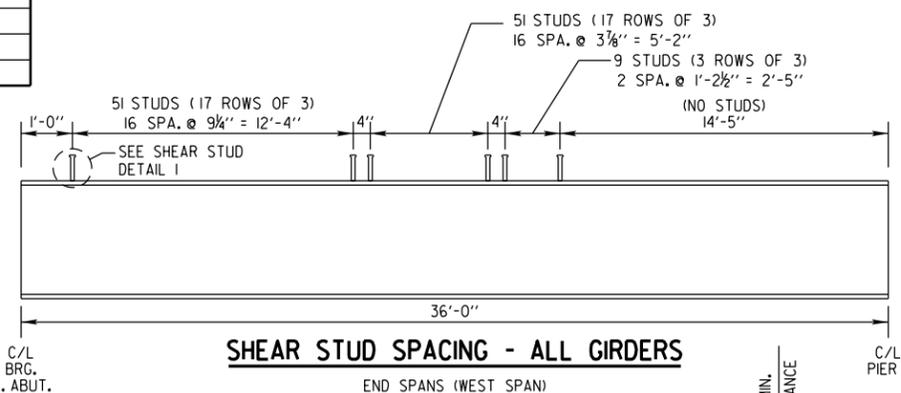
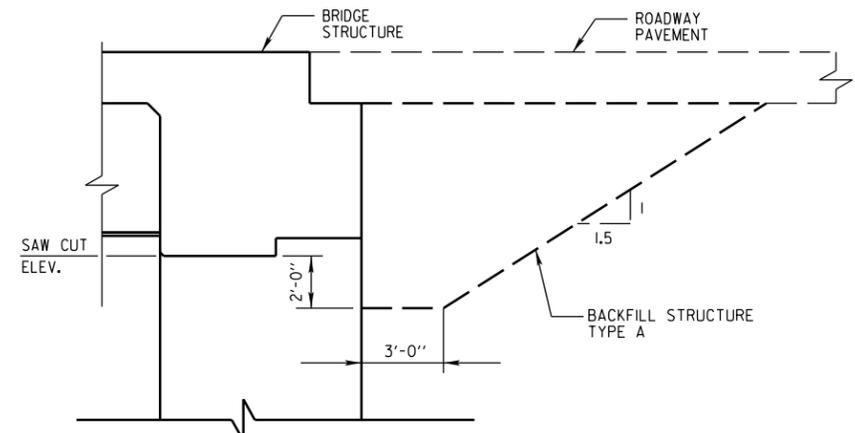
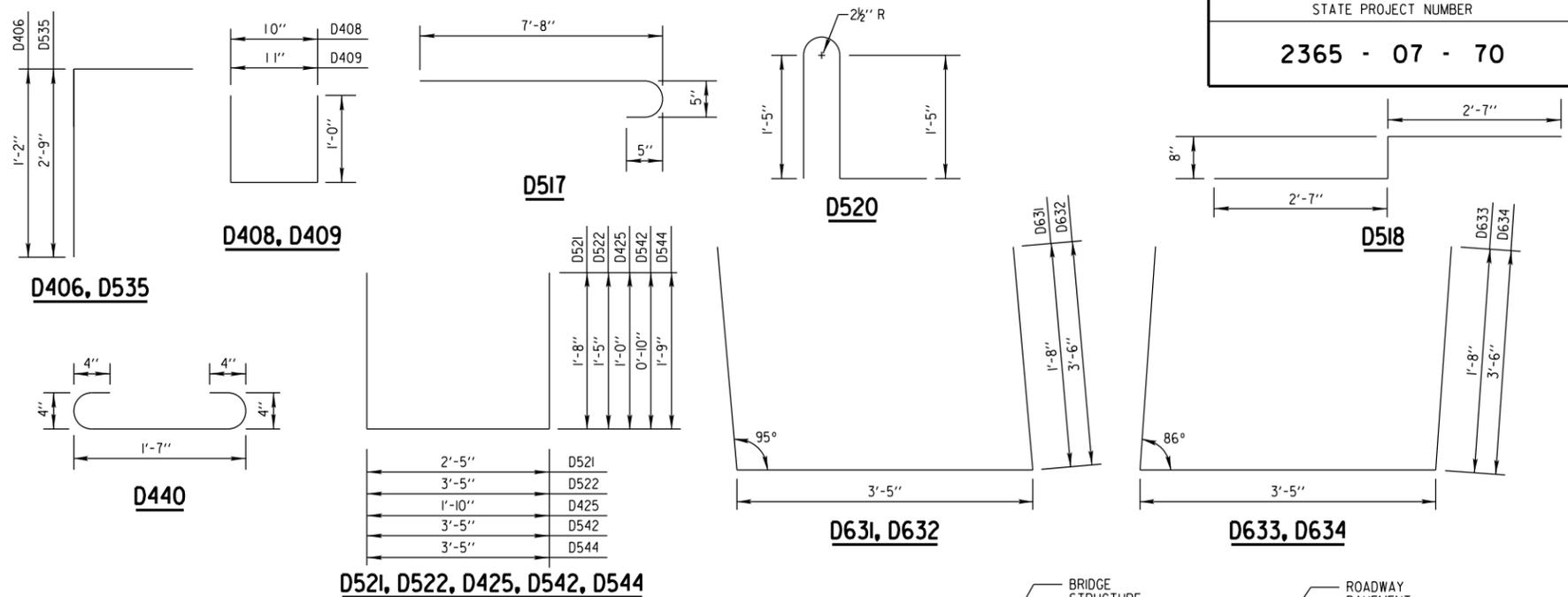
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
D401	X	292	51'-3"		SPAN 1,3 - LONGITUDINAL BOTTOM - NORTH & SOUTH DECKS, MEDIAN
D402	X	146	35'-10"		SPAN 2 - LONGITUDINAL BOTTOM - NORTH & SOUTH DECKS, MEDIAN
D403	X	8	41'-5"		ABUTMENT NOTCH HORIZONTAL STAGES 1 & 2
D404	X	292	23'-1"		SPAN 1,3 - LONGITUDINAL TOP - NORTH & SOUTH DECKS, MEDIAN
D405	X	146	38'-8"		SPAN 2 - LONGITUDINAL TOP - NORTH & SOUTH DECKS, MEDIAN
D406	X	138	2'-2"	X	ABUTMENT NOTCH ANCHORS VERTICAL STAGES 1 & 2
D407	X	184	2'-10"		SPAN 1,2,3 - SIDEWALK TRANSVERSE - BOTTOM - NORTH & SOUTH
D408	X	542	2'-8"	X	SPAN 1,2,3 - SIDEWALK TRANSVERSE - CURB - NORTH & SOUTH
D409	X	542	2'-9"	X	SPAN 1,2,3 - SIDEWALK TRANSVERSE - REARWALK - NORTH & SOUTH
D410	X	56	37'-4"		SPAN 1,3 - SIDEWALK LONGITUDINAL - TOP & BOTTOM - NORTH & SOUTH
D411	X	56	30'-8"		SPAN 2 - SIDEWALK LONGITUDINAL - TOP & BOTTOM - NORTH & SOUTH
D412	X	4	11'-0"		ABUTMENT NOTCH HORIZONTAL MEDIAN STAGE 1
D513	X	468	39'-9"		SPAN 1,2,3 - TRANSVERSE - TOP & BOTTOM - DECK STAGE 1
D514	X	468	39'-9"		SPAN 1,2,3 - TRANSVERSE - TOP & BOTTOM - DECK STAGE 2
D615	X	146	31'-3"		SPAN 1,2 - LONGITUDINAL - TOP - NORTH & SOUTH
D616	X	146	31'-3"		SPAN 2,3 - LONGITUDINAL - TOP - NORTH & SOUTH
D517	X	824	8'-3"	X	SPAN 1,2,3 - SIDEWALK TRAVERSE - TOP - NORTH & SOUTH
D518	X	468	5'-7"	X	SPAN 1,2,3 - NORTH & SOUTH TRANSVERSE - MEDIAN TIE BARS
D519	X	468	10'-8"		SPAN 1,2,3 - TRANSVERSE - TOP & BOTTOM MEDIAN STAGE 2
D520	X	330	4'-4"	X	SPAN 1,2,3 - PARAPET DOWELS - NORTH & SOUTH
D521	X	264	7'-9"	X	ABUTMENT DIAPH. - VERTICAL
D522	X	528	6'-0"	X	ABUTMENT DIAPH. - VERTICAL STIRRUPS
D623	X	24	41'-5"		ABUTMENT DIAPH. - HORIZONTAL DECK STAGES 1 & 2
D624	X	16	14'-1"		ABUTMENT DIAPH. - HORIZONTAL MEDIAN STAGE 1
D425	X	212	3'-8"	X	ABUTMENT DIAPH. - VERTICAL
D626	X	8	41'-5"		ABUTMENT DIAPH. - HORIZONTAL DECK STAGES 1 & 2
D627	X	16	10'-8"		ABUTMENT DIAPH. - HORIZONTAL MEDIAN STAGE 2
D528	X	56	6'-0"		ABUTMENT DIAPH. - HORIZONTAL THRU GIRDERS
D529	X	12	3'-0"		ABUTMENT DIAPH. END - VERTICAL
D630	X	153	5'-0"		ABUTMENT DIAPH. - HORIZONTAL BETWEEN GIRDERS - F.F.
D631	X	2	6'-5"	X	ABUTMENT DIAPH. END - HORIZONTAL WINGS 2 & 4
D632	X	6	10'-1"	X	ABUTMENT DIAPH. END - HORIZONTAL WINGS 2 & 4
D633	X	2	6'-5"	X	ABUTMENT DIAPH. END - HORIZONTAL WINGS 1 & 3
D634	X	6	10'-1"	X	ABUTMENT DIAPH. END - HORIZONTAL WINGS 1 & 3
D535	X	32	4'-9"	X	ABUTMENT DIAPH. END - VERTICAL
D536	X	468	13'-7"		SPAN 1, 2, 3 - TRANSVERSE - TOP & BOTTOM MEDIAN STAGE 1
D437	X	4	5'-9"		ABUTMENT NOTCH HORIZONTAL MEDIAN STAGE 2
D638	X	3	6'-9"		ABUT. DIAPH. - HORIZONTAL BETWEEN GIRDERS - MEDIAN STAGE 1
D639	X	3	3'-4"		ABUT. DIAPH. - HORIZONTAL BETWEEN GIRDERS - MEDIAN STAGE 2
D440	X	936	2'-7"	X	STAGES 1 & 2 DECK OVERLAY BOTTOM
D541	X	8	2'-10"		CUC BLOCK OUT F.F. & B.F. DIAGONAL
D542	X	3	4'-10"	X	CUC BLOCK OUT VERTICAL TIE STIRRUPS
D543	X	4	3'-6"		AT&T BLOCK OUT F.F. & B.F. DIAGONAL
D544	X	4	6'-8"	X	AT&T BLOCK OUT VERTICAL TIE STIRRUPS

NOTES:

AFTER REMOVAL OF DECK, AND BEFORE ORDERING THE SHEAR STUDS, THE CONTRACTOR SHALL SHOOT GRADES OF THE TOP OF THE GIRDERS TO DETERMINE HAUNCH HEIGHTS. ORDER APPROPRIATE SIZE STUDS AS NEEDED TO ACHIEVE MINIMUM 2" EMBEDMENT INTO BOTTOM OF NEW DECK SLAB.

AN AVERAGE HAUNCH OF 3.92" WAS USED IN THE QUANTITY CALCULATION OF BID ITEM 502.0100, "CONCRETE MASONRY BRIDGES" AND SHOULD BE USED IN CALCULATING PAYMENT.

STATE PROJECT NUMBER
2365 - 07 - 70



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	
DECK BILL OF BARS AND SHEAR STUD DETAILS			SHEET 9 OF 20

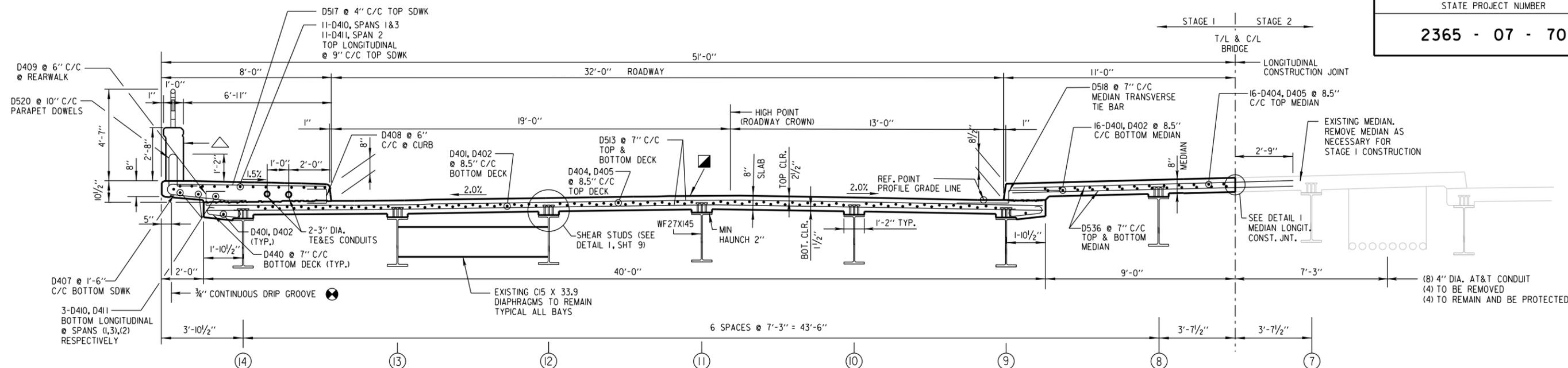
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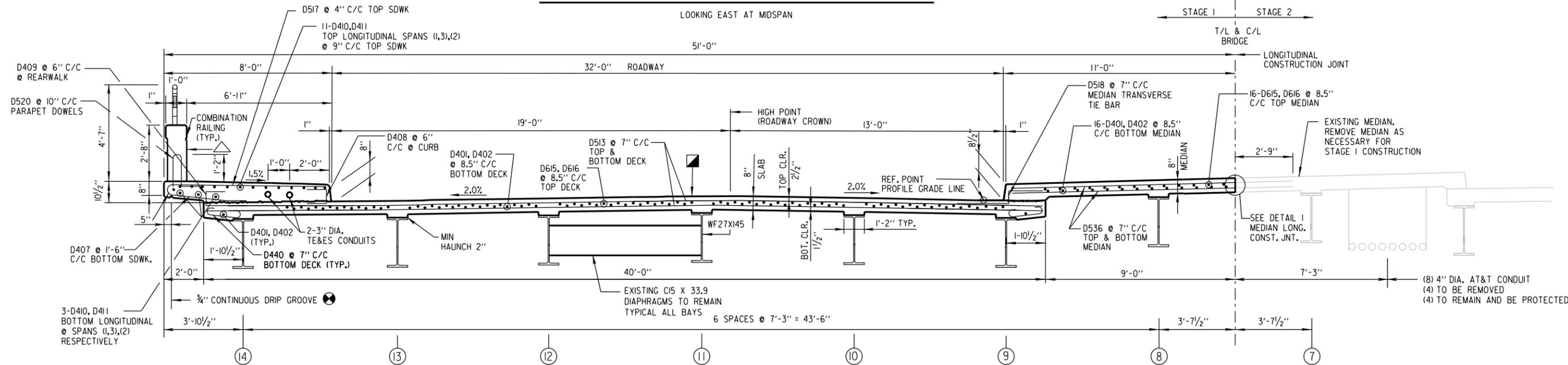
REVISED DATE: 06-01-2021 BY: GJR

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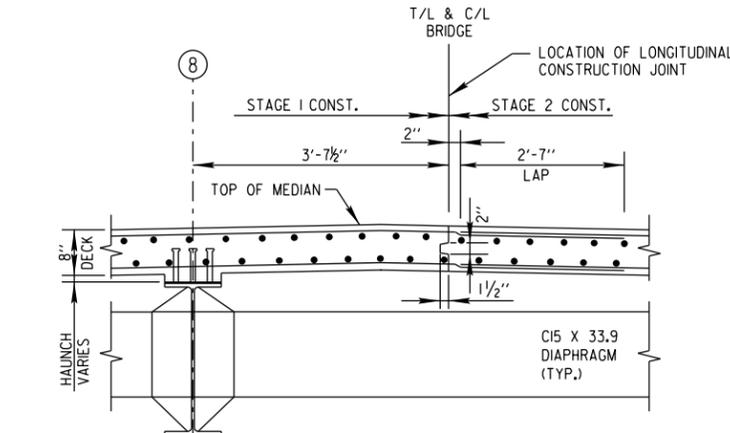
REVISED: 05-28-2021 BY G.J.R.



DECK CROSS SECTION OF STAGE I - ALL SPANS



DECK CROSS SECTION OF STAGE I - ALL SPANS



DETAIL I - MEDIAN LONGITUDINAL CONSTRUCTION JOINT

(VIEW LOOKING EAST)

NOTE:

- ⊗ 3/4" V-GROOVE REQ-D, EXTEND TO 0'-6" FROM F.F. OF ABUT. DIAPHRAGM (TYP.)
- ▣ COAT WITH 'PROTECTIVE SURFACE TREATMENT' AS PER STANDARD SPECIFICATIONS (ROADWAY, CURB, MEDIAN, TOP OF WALK AND TOP OF WING WALL)
- △ COAT WITH 'PIGMENTAL SURFACE SEALER' AS PER STANDARD SPECIFICATIONS (INSIDE FACE AND TOP OF CONCRETE PARAPET).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	
DECK CROSS SECTION STAGE I			SHEET 10 OF 20

W:\STR\B0900\2020 REHAB\PLANS\12_DECK GRADES.DGN

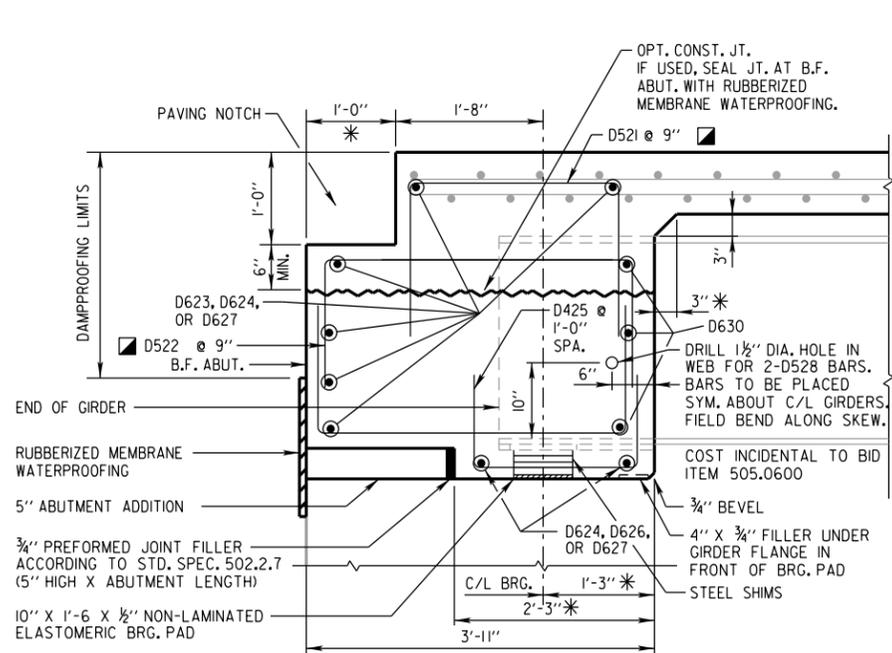
STATE PROJECT NUMBER

2365 - 07 - 70

NORTH DECK GRADES																																		
SPAN 1 = 36'-0"													SPAN 2 = 60'-0"									SPAN 3 = 36'-0"												
BRIDGE LENGTH	GIRDER NO.	DESC.	C/L BEARING WEST ABUTMENT	0.1S ₁	0.2S ₁	0.3S ₁	0.4S ₁	0.5S ₁	0.6S ₁	0.7S ₁	0.8S ₁	0.9S ₁	C/L BEARING PIER 1	0.1S ₂	0.2S ₂	0.3S ₂	0.4S ₂	0.5S ₂	0.6S ₂	0.7S ₂	0.8S ₂	0.9S ₂	C/L BEARING PIER 2	0.1S ₃	0.2S ₃	0.3S ₃	0.4S ₃	0.5S ₃	0.6S ₃	0.7S ₃	0.8S ₃	0.9S ₃	C/L BEARING EAST ABUTMENT	
		TYPICAL INTERIOR & EXTERIOR DEAD LOAD DEFLECTION (in)	0.00	0.0126	0.0215	0.02409	0.01959	0.0087	-0.0062	-0.0213	-0.03069	-0.0267	0.00	0.10569	0.2466	0.3777	0.4686	0.501	0.4686	0.3777	0.2466	0.10569	0.00	-0.0267	-0.0306	-0.0213	-0.0062	0.0087	0.0195	0.024	0.0215	0.0126	0.00	
132'-0"	N. EDGE	T.DECK	163.33	163.36	163.40	163.42	163.45	163.47	163.49	163.50	163.51	163.52	163.53	163.53	163.52	163.50	163.47	163.43	163.38	163.32	163.25	163.17	163.08	163.03	162.97	162.90	162.83	162.76	162.69	162.61	162.53	162.44	162.35	
	14	T.DECK	163.37	163.40	163.43	163.46	163.49	163.51	163.53	163.54	163.55	163.56	163.56	163.56	163.55	163.53	163.50	163.46	163.41	163.36	163.29	163.21	163.12	163.06	163.00	162.94	162.87	162.80	162.72	162.64	162.56	162.48	162.39	
	GUTTER	T.DECK	163.45	163.49	163.52	163.55	163.57	163.59	163.61	163.63	163.64	163.64	163.65	163.65	163.63	163.61	163.58	163.54	163.49	163.43	163.37	163.29	163.20	163.14	163.08	163.01	162.95	162.87	162.80	162.72	162.64	162.55	162.46	
	13	T.DECK	163.52	163.55	163.58	163.61	163.64	163.66	163.67	163.69	163.70	163.71	163.71	163.71	163.70	163.68	163.65	163.60	163.55	163.50	163.43	163.35	163.26	163.20	163.14	163.07	163.01	162.93	162.86	162.78	162.70	162.61	162.52	
	12	T.DECK	163.67	163.70	163.73	163.76	163.78	163.80	163.82	163.83	163.85	163.85	163.86	163.86	163.85	163.84	163.82	163.79	163.75	163.70	163.63	163.56	163.48	163.40	163.34	163.28	163.21	163.14	163.07	162.99	162.91	162.83	162.74	162.65
	11	T.DECK	163.82	163.85	163.88	163.91	163.93	163.95	163.97	163.98	164.00	164.01	164.02	164.00	163.98	163.96	163.93	163.89	163.84	163.77	163.70	163.62	163.53	163.47	163.41	163.35	163.28	163.20	163.13	163.05	162.96	162.88	162.79	
	RD. CROWN	T.DECK	163.84	163.88	163.91	163.94	163.96	163.98	164.00	164.01	164.02	164.03	164.03	164.02	164.01	163.99	163.96	163.91	163.86	163.80	163.73	163.65	163.56	163.50	163.44	163.37	163.30	163.23	163.15	163.07	162.99	162.90	162.81	
	10	T.DECK	163.73	163.76	163.79	163.82	163.84	163.86	163.88	163.89	163.90	163.91	163.91	163.91	163.89	163.87	163.84	163.79	163.74	163.68	163.61	163.53	163.44	163.38	163.31	163.25	163.18	163.10	163.03	162.95	162.86	162.78	162.69	
	PGL	T.DECK	163.63	163.66	163.69	163.72	163.74	163.76	163.78	163.79	163.80	163.81	163.81	163.80	163.79	163.77	163.73	163.69	163.64	163.57	163.50	163.42	163.33	163.27	163.21	163.14	163.07	162.99	162.92	162.84	162.75	162.67	162.57	
	GUTTER	T.DECK	163.59	163.63	163.66	163.68	163.70	163.72	163.74	163.75	163.76	163.77	163.77	163.76	163.75	163.72	163.69	163.65	163.59	163.53	163.46	163.38	163.29	163.23	163.16	163.10	163.03	162.95	162.87	162.79	162.71	162.62	162.53	
9	T.DECK	163.59	163.62	163.65	163.68	163.70	163.72	163.74	163.75	163.76	163.76	163.77	163.76	163.75	163.72	163.69	163.65	163.59	163.53	163.46	163.37	163.28	163.22	163.16	163.09	163.02	162.95	162.87	162.79	162.71	162.62	162.53		
S. EDGE	T.DECK	163.55	163.59	163.62	163.64	163.67	163.68	163.70	163.71	163.72	163.73	163.73	163.72	163.71	163.68	163.65	163.61	163.55	163.49	163.42	163.34	163.24	163.18	163.12	163.05	162.98	162.91	162.83	162.75	162.67	162.58	162.49		

MEDIAN GRADES																																	
SPAN 1 = 36'-0"													SPAN 2 = 60'-0"									SPAN 3 = 36'-0"											
BRIDGE LENGTH	GIRDER NO.	DESC.	C/L BEARING WEST ABUTMENT	0.1S ₁	0.2S ₁	0.3S ₁	0.4S ₁	0.5S ₁	0.6S ₁	0.7S ₁	0.8S ₁	0.9S ₁	C/L BEARING PIER 1	0.1S ₂	0.2S ₂	0.3S ₂	0.4S ₂	0.5S ₂	0.6S ₂	0.7S ₂	0.8S ₂	0.9S ₂	C/L BEARING PIER 2	0.1S ₃	0.2S ₃	0.3S ₃	0.4S ₃	0.5S ₃	0.6S ₃	0.7S ₃	0.8S ₃	0.9S ₃	C/L BEARING EAST ABUTMENT
		TYPICAL INTERIOR & EXTERIOR DEAD LOAD DEFLECTION (in)	0.00	0.0126	0.0215	0.02409	0.01959	0.0087	-0.0062	-0.0213	-0.03069	-0.0267	0.00	0.10569	0.2466	0.3777	0.4686	0.501	0.4686	0.3777	0.2466	0.10569	0.00	-0.0267	-0.0306	-0.0213	-0.0062	0.0087	0.0195	0.024	0.0215	0.0126	0.00
132'-0"	N. EDGE	T.MEDIAN	164.30	164.33	164.36	164.39	164.41	164.43	164.45	164.46	164.47	164.47	164.48	164.47	164.46	164.43	164.40	164.36	164.30	164.24	164.17	164.09	163.99	163.93	163.87	163.80	163.73	163.66	163.58	163.50	163.42	163.33	163.24
	8	T.MEDIAN	164.50	164.53	164.57	164.59	164.61	164.63	164.65	164.66	164.67	164.68	164.68	164.67	164.66	164.63	164.60	164.55	164.50	164.44	164.36	164.28	164.18	164.12	164.06	163.99	163.92	163.84	163.76	163.68	163.60	163.51	163.41
	C/L	T.MEDIAN	164.60	164.63	164.66	164.69	164.71	164.73	164.75	164.76	164.77	164.78	164.78	164.77	164.76	164.73	164.70	164.65	164.60	164.53	164.46	164.37	164.28	164.22	164.15	164.08	164.01	163.93	163.85	163.77	163.68	163.59	163.50
	7	T.MEDIAN	164.70	164.73	164.76	164.79	164.81	164.83	164.85	164.86	164.87	164.88	164.88	164.87	164.86	164.83	164.79	164.75	164.69	164.63	164.55	164.47	164.37	164.31	164.24	164.17	164.10	164.02	163.94	163.86	163.77	163.68	163.58
	S. EDGE	T.MEDIAN	164.90	164.93	164.97	164.99	165.02	165.04	165.05	165.06	165.07	165.08	165.08	165.07	165.06	165.03	164.99	164.95	164.89	164.82	164.75	164.66	164.56	164.50	164.43	164.36	164.28	164.21	164.12	164.04	163.95	163.86	163.76

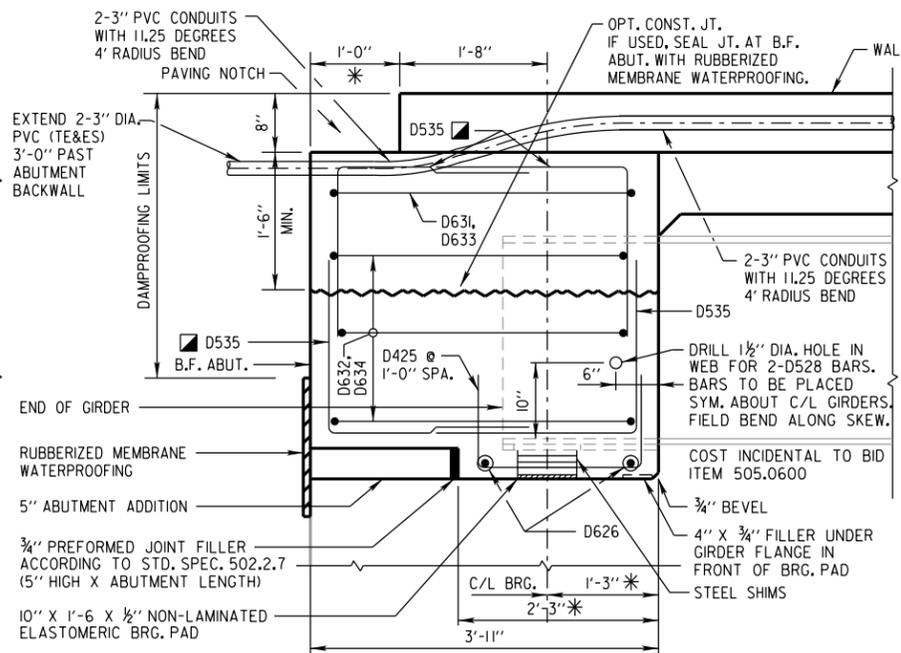
SOUTH DECK GRADES																																	
SPAN 1 = 36'-0"													SPAN 2 = 60'-0"									SPAN 3 = 36'-0"											
BRIDGE LENGTH	GIRDER NO.	DESC.	C/L BEARING WEST ABUTMENT	0.1S ₁	0.2S ₁	0.3S ₁	0.4S ₁	0.5S ₁	0.6S ₁	0.7S ₁	0.8S ₁	0.9S ₁	C/L BEARING PIER 1	0.1S ₂	0.2S ₂	0.3S ₂	0.4S ₂	0.5S ₂	0.6S ₂	0.7S ₂	0.8S ₂	0.9S ₂	C/L BEARING PIER 2	0.1S ₃	0.2S ₃	0.3S ₃	0.4S ₃	0.5S ₃	0.6S ₃	0.7S ₃	0.8S ₃	0.9S ₃	C/L BEARING EAST ABUTMENT
		TYPICAL INTERIOR & EXTERIOR DEAD LOAD DEFLECTION (in)	0.00	0.0126	0.0215	0.02409	0.01959	0.0087	-0.0062	-0.0213	-0.03069	-0.0267	0.00	0.10569	0.2466	0.3777	0.4686	0.501	0.4686	0.3777	0.2466	0.10569	0.00	-0.0267	-0.0306	-0.0213	-0.0062	0.0087	0.0195	0.024	0.0215	0.0126	0.00
132'-0"	N. EDGE	T.DECK	164.15	164.18	164.22	164.24	164.27	164.29	164.30	164.32	164.32	164.33	164.33	164.32	164.31	164.28	164.25	164.20	164.14	164.08	164.00	163.91	163.81	163.75	163.68	163.61	163.54	163.46	163.38	163.29	163.20	163.11	163.01
	6	T.DECK	164.19	164.22	164.25	164.28	164.30	164.32	164.34	164.35	164.36	164.37	164.37	164.36	164.35	164.32	164.28	164.24	164.18	164.11	164.03	163.95	163.85	163.79	163.72	163.65	163.57	163.49	163.41	163.33	163.24	163.14	163.05
	GUTTER	T.DECK	164.19	164.23	164.26	164.28	164.31	164.33	164.34	164.36	164.36	164.37	164.37	164.36	164.35	164.32	164.29	164.24	164.18	164.11	164.04	163.95	163.85	163.79	163.72	163.65	163.58	163.50	163.41	163.33	163.24	163.15	163.05
	PGL	T.DECK	164.23	164.27	164.30	164.32	164.35	164.37	164.38	164.40	164.40	164.41	164.41	164.40	164.39	164.36	164.32	164.28	164.22	164.15	164.08	163.99	163.89	163.83	163.76	163.69	163.61	163.53	163.45	163.37	163.28	163.18	163.09
	5	T.DECK	164.34	164.37	164.40	164.43	164.45	164.47	164.49	164.50	164.51	164.51	164.51	164.51	164.49	164.46	164.42	164.38	164.32	164.25	164.17	164.09	163.99	163.92	163.85	163.78	163.71	163.63	163.55	163.46	163.37	163.28	163.18
	RD. CROWN	T.DECK	164.46	164.49	164.52	164.55	164.57	164.59	164.61	164.62	164.63	164.63	164.63	164.62	164.61	164.58	164.54	164.49	164.43	164.36	164.29	164.20	164.10	164.03	163.96	163.89	163.82	163.74	163.66	163.57	163.48	16	



1 SECTION THRU ABUT. DIAPH. AT ROADWAY/MEDIAN

* DIMENSIONS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.

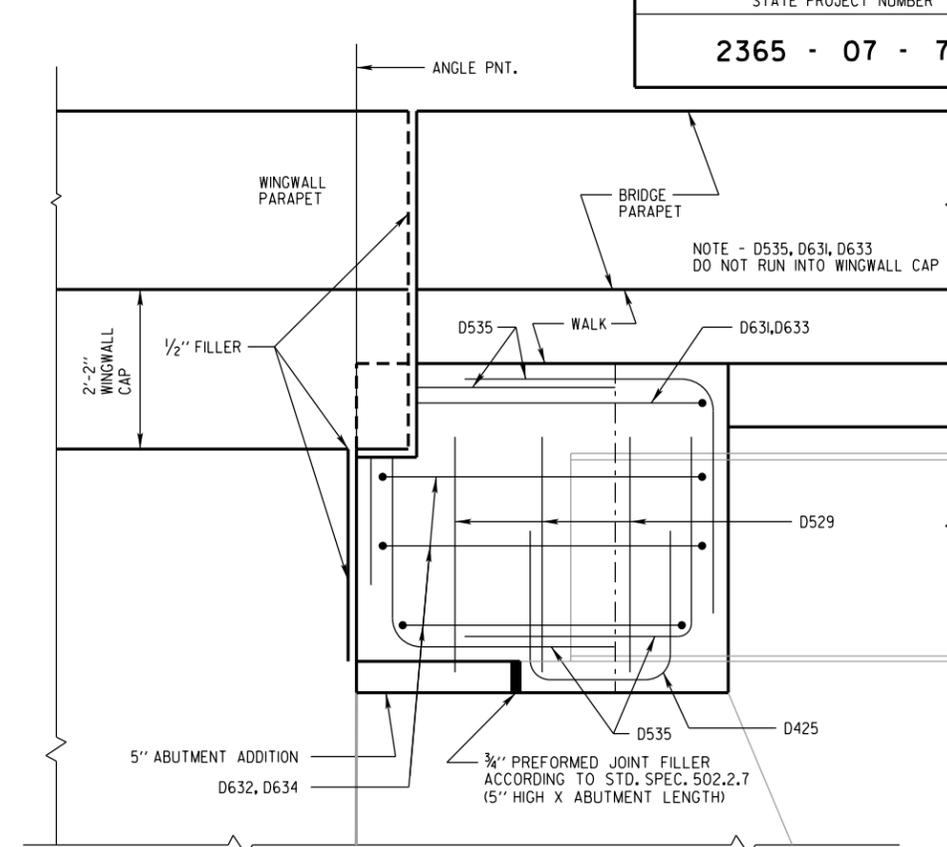
■ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C/L GIRDERS



2 SECTION THRU ABUT. DIAPH. AT WALK

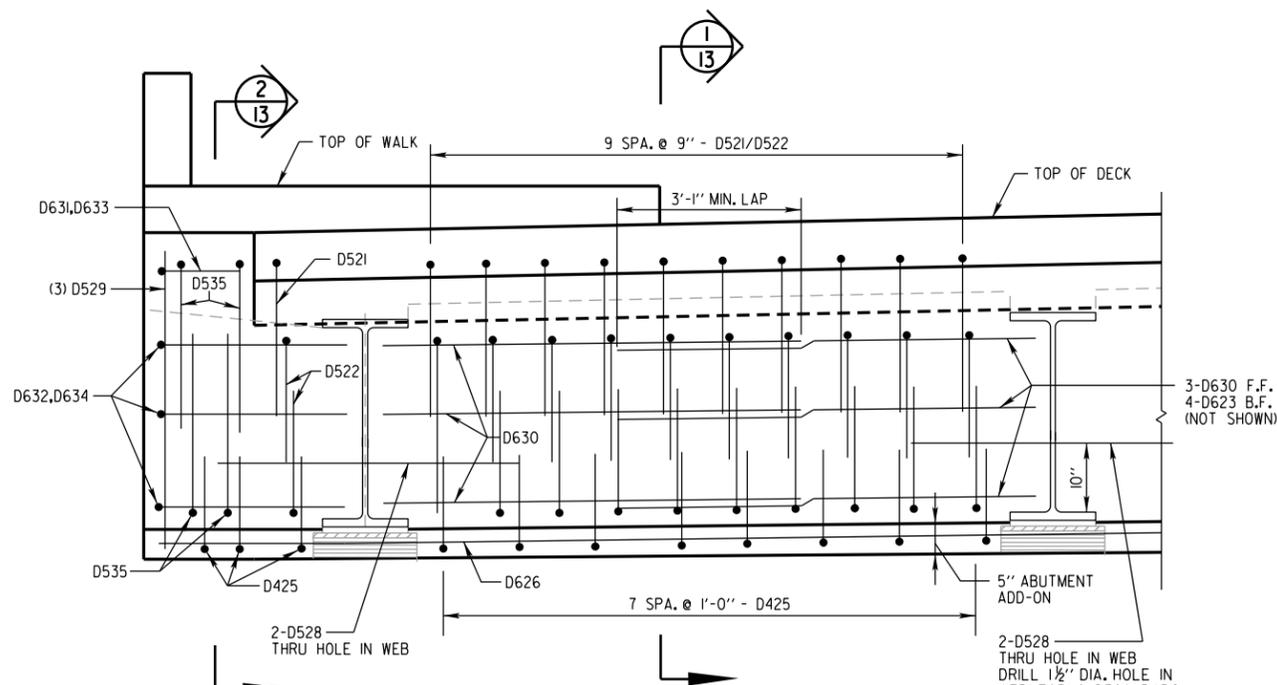
* DIMENSIONS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.

■ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C/L GIRDERS



ABUT. DIAPH. END/WING ELEVATION

WEST ABUT. SHOWN. EAST IS SIMILAR



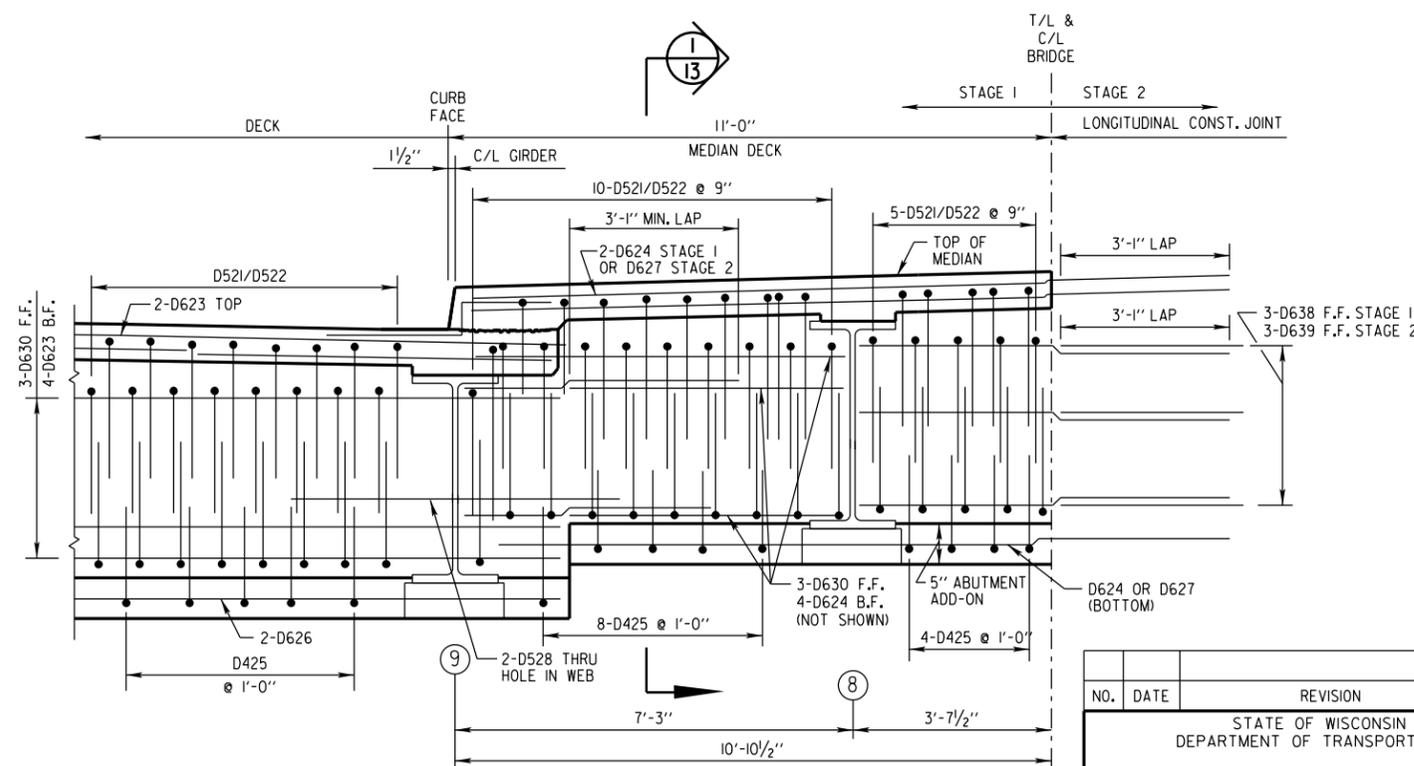
PART TRANSVERSE SECTION AT EAST ABUTMENT

NOTE: WALK/PARAPET BARS NOT SHOWN FOR CLARITY.

NOTE: PORTIONS OF EXISTING WF27X145 GIRDER ENDS EMBEDDED IN ABUTMENT GIRDER END DIAPHRAGM TO BE PAINTED PRIOR TO PLACEMENT OF CONCRETE USING BID ITEMS 517.1801S "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-500" AND 517.4501S "NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-40-500."

TRANSITION AT WALK/DECK (LOOKING EAST)
(WEST ABUTMENT SIMILAR)

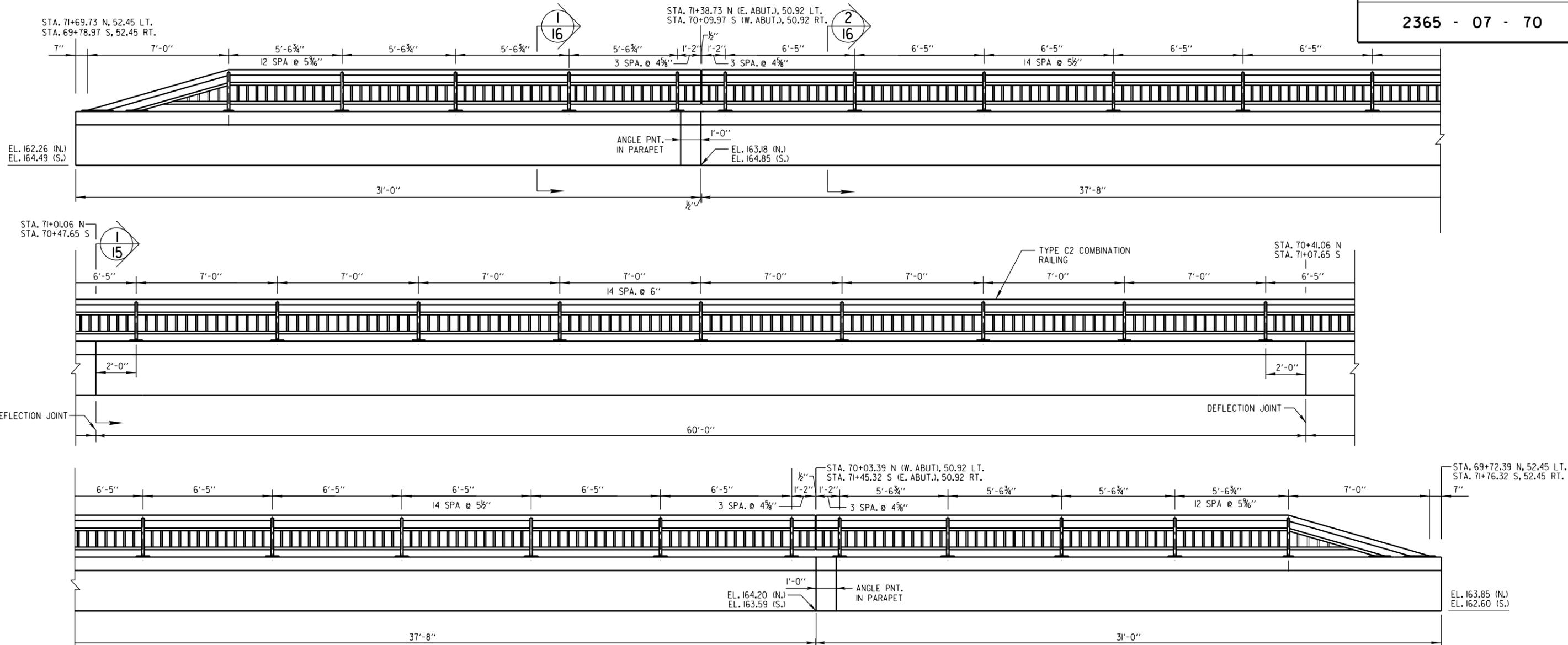
2-D528 THRU HOLE IN WEB DRILL 1 1/2" DIA. HOLE IN WEB FOR 2-D528 BARS. BARS TO BE PLACED SYM. ABOUT C/L GIRDERS. FIELD BEND ALONG SKEW. COST INCIDENTAL TO BID ITEM 505.0600. SEE SECTION 13 FOR LOCATION AT GIRDER END.



PART TRANSVERSE SECTION AT EAST ABUTMENT TRANSITION AT DECK/MEDIAN

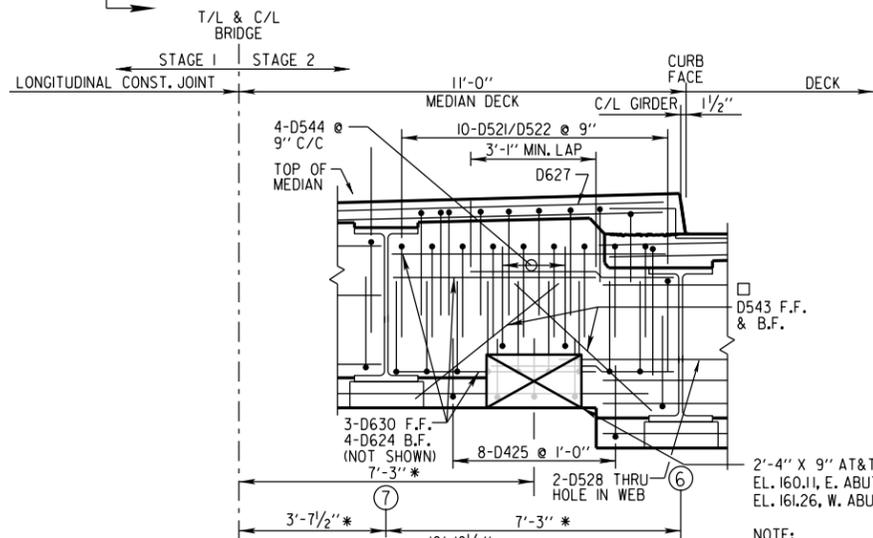
(LOOKING EAST)
(WEST ABUTMENT SIMILAR)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	
EAST AND WEST ABUTMENT GIRDER END DIAPHRAGM			SHEET 13 OF 20



FIELD VERIFY LOCATION OF END OF EXISTING WINGWALLS PRIOR TO SUBMITTING RAILING SHOP DRAWINGS.

NORTH FACE OF NORTH BRIDGE RAILING - LOOKING SOUTH
SOUTH FACE OF SOUTH BRIDGE RAILING - LOOKING NORTH

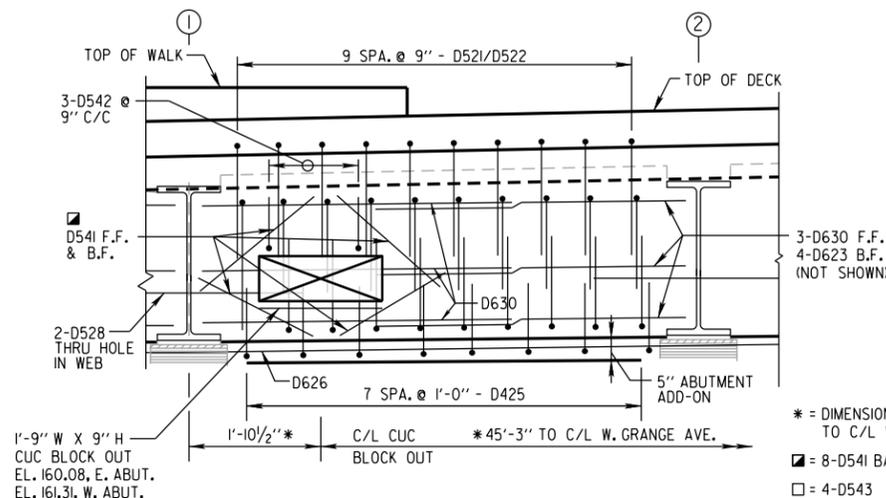


DETAIL OF AT&T BLOCK OUT OPENING AT EAST ABUTMENT DIAPHRAGM END
 (LOOKING EAST - WEST ABUTMENT SIMILAR)

2'-4" X 9" AT&T BLOCK OUT
 EL. 160.11, E. ABUT.
 EL. 161.26, W. ABUT.

NOTE:
 CUT D522, D623, D425, D627,
 D528, D630 AS NEEDED

SEE BID ITEM SPV.0060.590 "AT&T COMMUNICATIONS DUCT PROTECTION B-40-500" FOR PROTECTING CONDUITS DURING DECK REMOVAL.



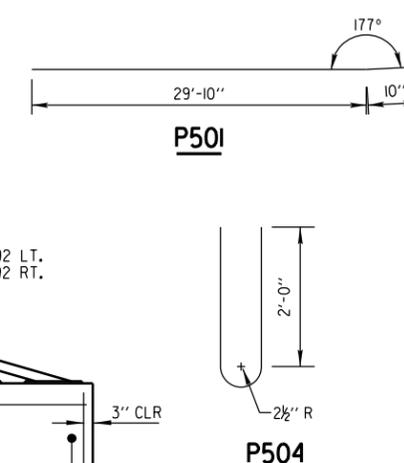
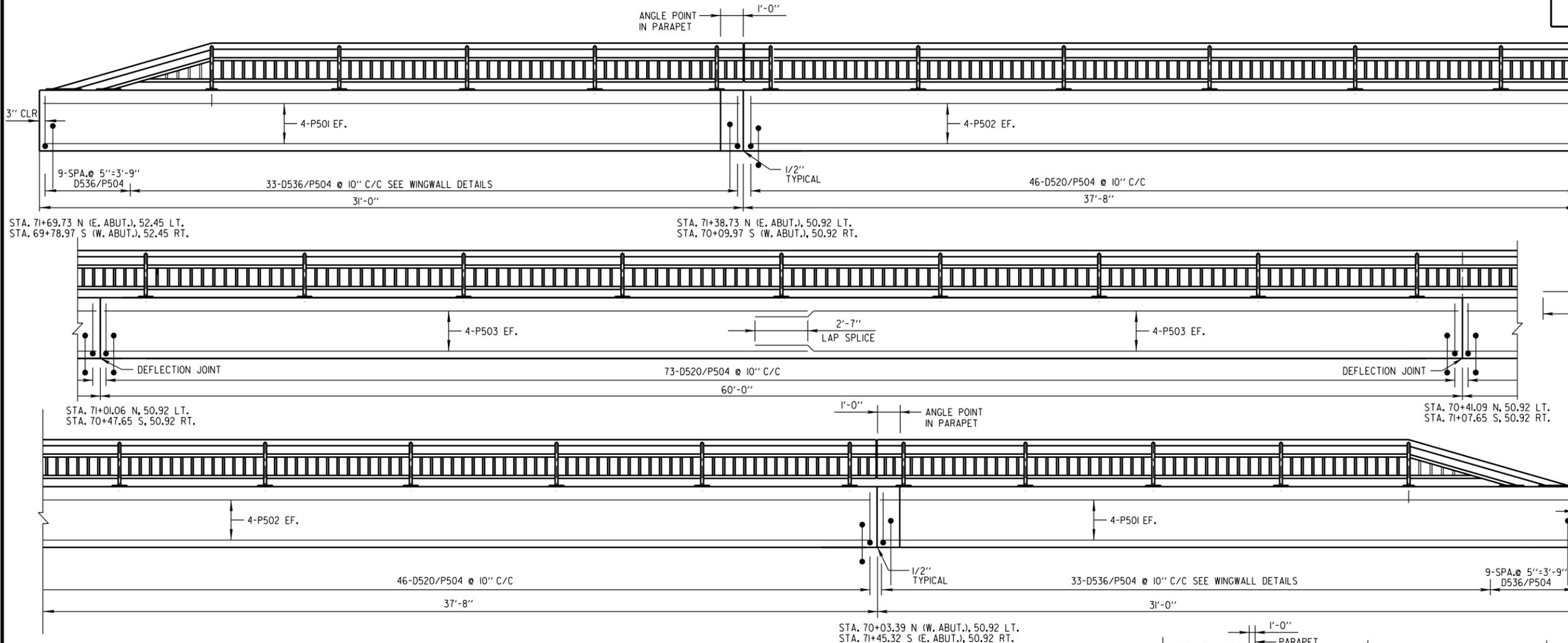
DETAIL OF CUC BLOCK OUT OPENING AT WEST ABUTMENT DIAPHRAGM END
 (WEST ABUTMENT LOOKING WEST, EAST ABUTMENT SIMILAR)

* = DIMENSIONS TAKEN NORMAL TO C/L W. GRANGE AVE.

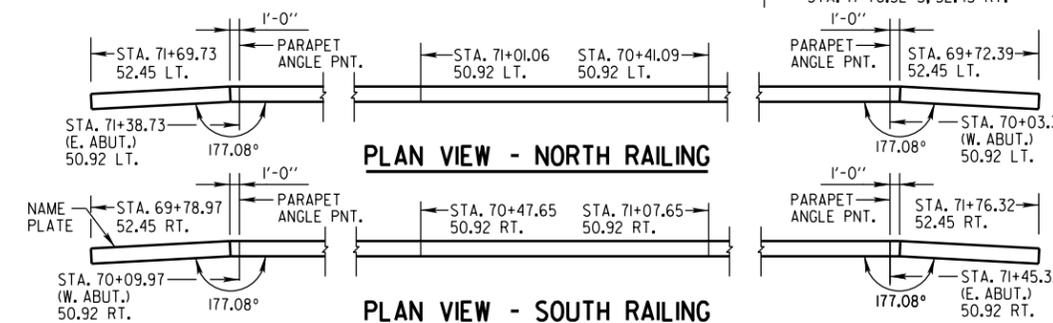
■ = 8-D541 BARS 4 FF, 4 BF
 □ = 4-D543 BARS 2 FF, 4 BF

NOTE:
 CUT D521, D522, D623, D425,
 D528, D630 AS NEEDED

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	
BRIDGE RAILING ELEVATIONS & UTILITY BLOCK OUT DETAILS			SHEET 14 OF 20

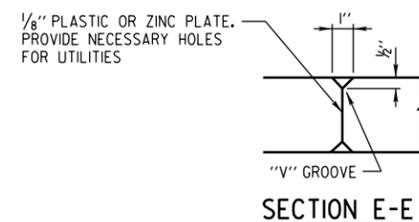
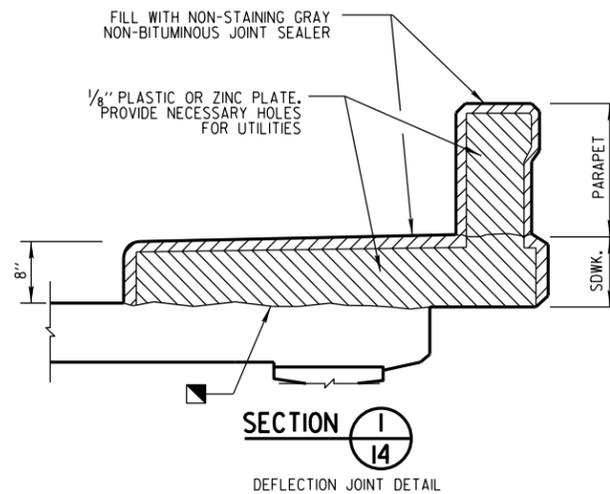


NORTH FACE OF NORTH BRIDGE RAILING - LOOKING SOUTH
SOUTH FACE OF SOUTH BRIDGE RAILING - LOOKING NORTH



BILL OF BARS - PARAPET

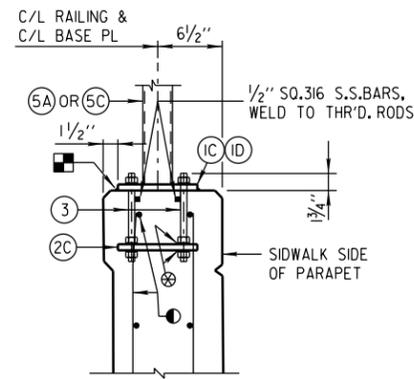
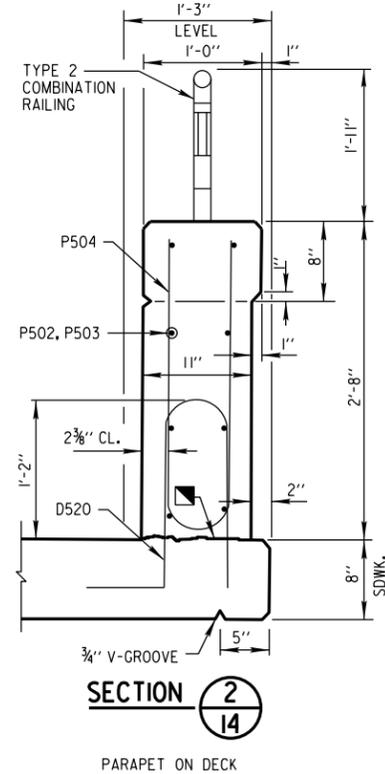
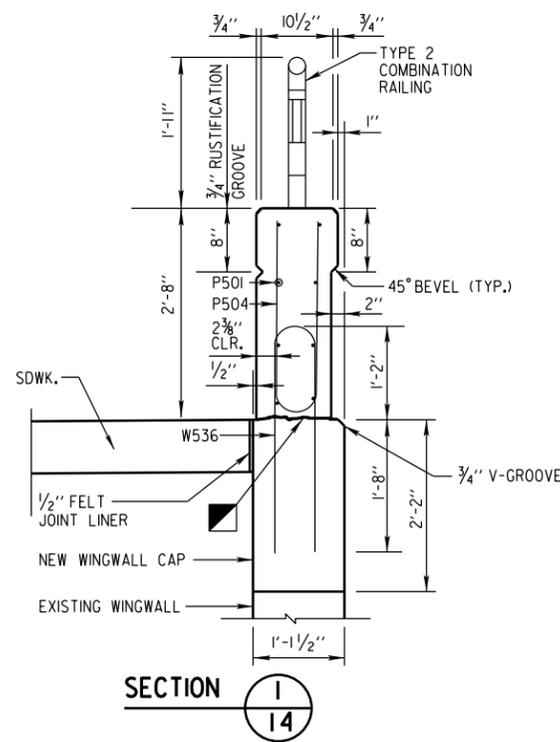
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	X	32	30' - 8"	X	PARAPET- WINGWALLS HORIZONTAL
P502	X	32	37' - 4"		PARAPET- BRIDGE HORIZONTAL SPAN 1&3
P503	X	32	31' - 2"		PARAPET- BRIDGE HORIZONTAL SPAN 2
P504	X	502	4' - 9"	X	PARAPET- VERTICAL



NOTE

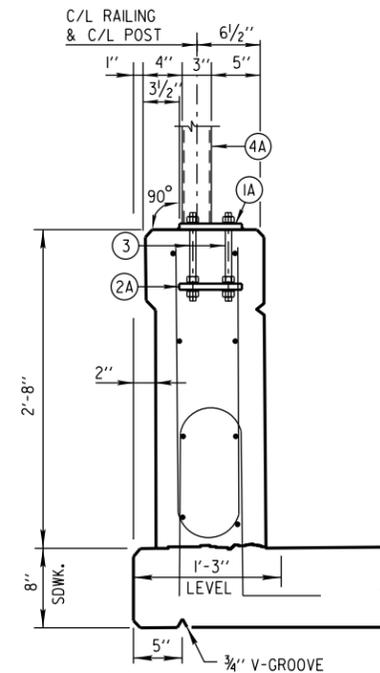
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION "D" BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY		PLANS CK'D.	
BY G.J.R.		H.D.	
RAILING BAR DETAILS AND SECTIONS			SHEET 15 OF 20

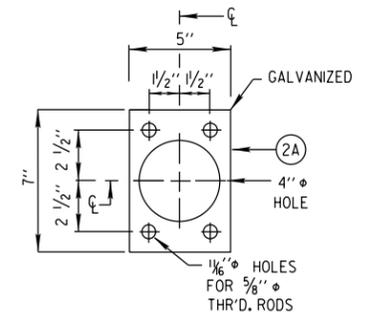


ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN ADHESIVE ANCHORS ARE USED

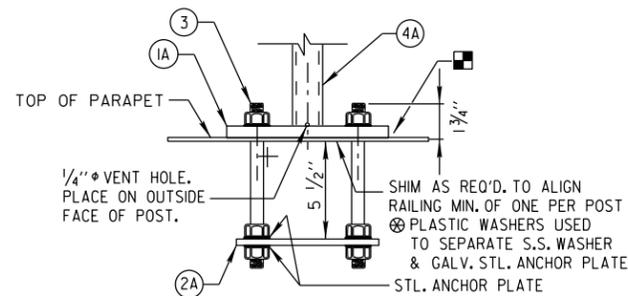


SECTION THRU PARAPET ON BRIGE



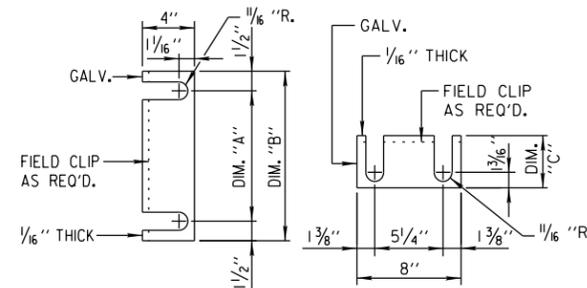
ANCHOR PLATE

FOR 3" x 1 1/2" x 3/16" POSTS (4A)



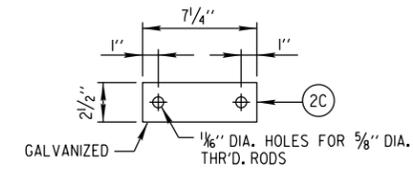
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED



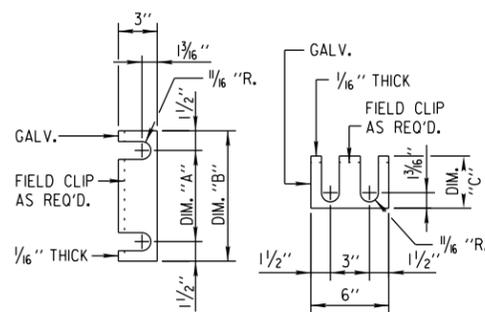
END RAIL SHIM DETAIL

8" X 1'-1" BASE PLATE (C) DIM. "A" = 10", DIM. "B" = 1'-1", DIM. "C" = 6 1/2"
 8" X 1'-6" BASE PLATE (D) DIM. "A" = 1'-3", DIM. "B" = 1'-6", DIM. "C" = 9"
 (2 SETS PER POST)



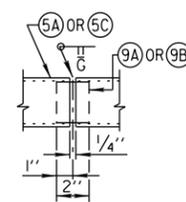
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES (C) (D)
 2 REQ'D PER END RAIL BASE PL



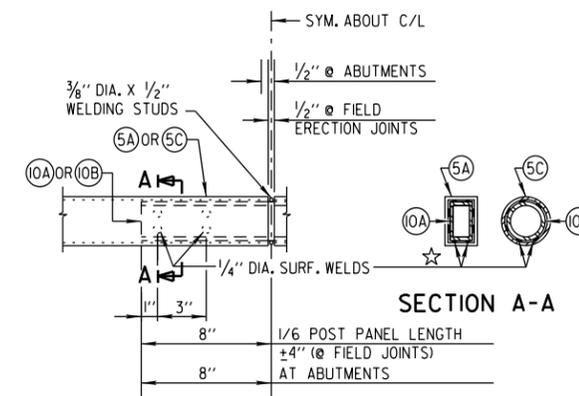
RAIL POST SHIM PLATE

6" X 8" BASE PL (A) DIM. "A" = 5", DIM. "B" = 8", DIM. "C" = 4"
 (2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



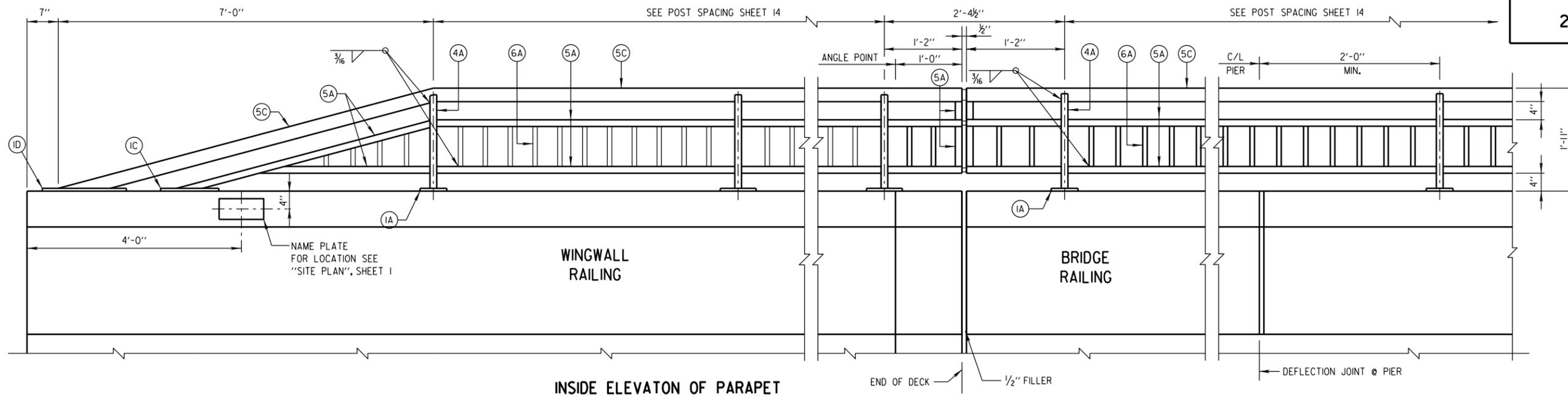
SECTION A-A

FIELD ERECTION JOINT DETAIL

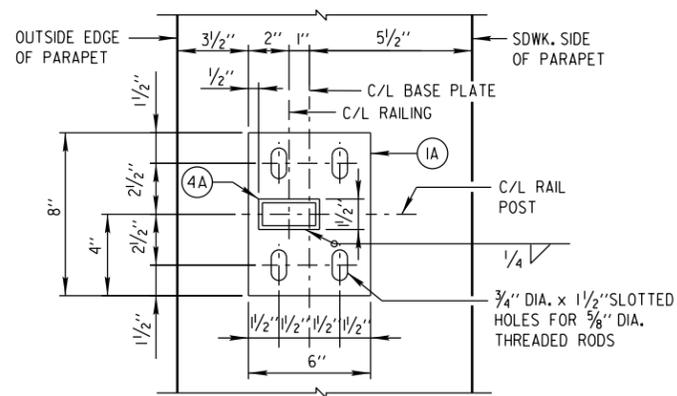
☆ MIN. 5/8" FLAT SURF. DIA. PUNCHING OR STUDS MAY BE USED AS AN ALT.

- WHEN ADHESIVE ANCHORS ARE USED, FIELD BEND AND/OR DISPLACE TO AVOID HITTING LONGITUDINAL BAR WHEN DRILLING FOR ADHESIVE ANCHORS.
- ⊗ PLASTIC WASHERS USED TO SEPARATE S.S. WASHER & GALV. STL. ANCHOR PLATE
- ▣ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN & LEAVE ROUGH.
- CAULK AROUND PERIMETER OF BASE PLATES, NO. 1 AND FILL BOLT SLOT OPENING IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BTUMINOUS JOINT SEALER SEE SHEET 17 FOR LEGEND AND RAILING NOTES

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY G.J.R.		PLANS CK'D. H.D.	
PARAPET DETAILS			SHEET 16 OF 20

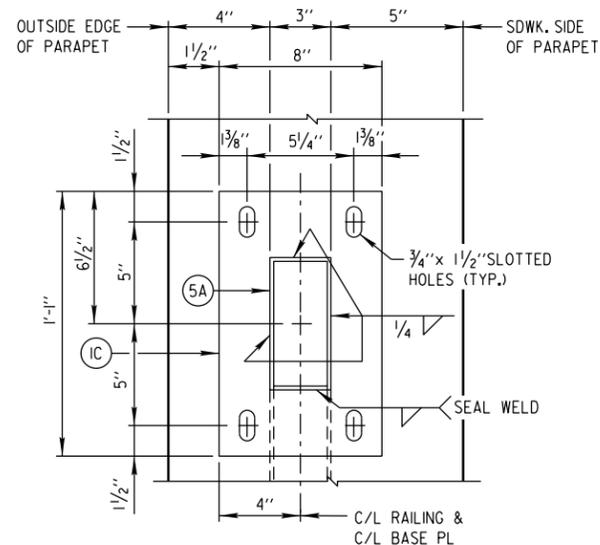


INSIDE ELEVATION OF PARAPET



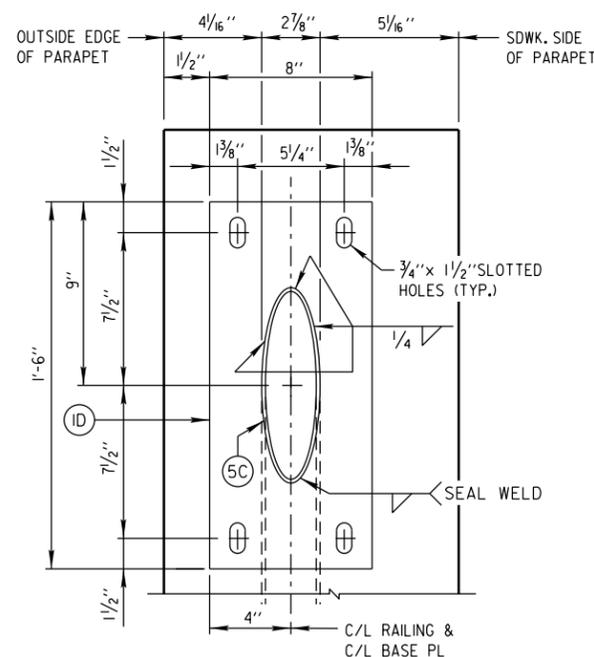
TYPICAL RAIL POST BASE PLATE

FOR 3" X 1 1/2" X 3/16" POSTS (4A)



END RAIL BASE PLATE

FOR 3" X 1 1/2" X 3/16" POSTS (5A)



END RAIL BASE PLATE

FOR 2 1/2" DIA. STD. PIPE RAIL (5C)

LEGEND

- (1A) PLATE 5/8" X 6" X 8" WITH 3/4" X 1 1/2" SLOTTED HOLES.
- (1C) PLATE 5/8" X 8" X 8" WITH 3/4" X 1 1/2" SLOTTED HOLES.
- (1D) PLATE 5/8" X 8" X 1'-6" WITH 3/4" X 1 1/2" SLOTTED HOLES.
- (2A) 1/4" X 5" X 7" ANCHOR PLATE WITH 1/16" DIA. HOLES FOR THR'D RODS NO. 3
- (2C) 1/4" X 2 1/2" X 7 1/4" ANCHOR PLATE WITH 1/16" DIA. HOLES FOR THR'D RODS NO. 3.
- (3) 5/8" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 5/8-IN. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS) ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.
- (4A) STRUCTURAL TUBING 3" X 1 1/2" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & NO. 5.
- (5A) STRUCTURAL TUBING 3" X 1 1/2" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.
- (5C) STRUCTURAL TUBING 2 1/2" DIA. (STANDARD SIZE) RAIL (2.875" O.D.). WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.
- (6A) BAR 1" X 1" PICKETS. WELD TO NO. 5 (SPACE AT 6" MAX. C/L TO C/L SPACING). PLACE VERTICAL.
- (9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".
- (9B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" DIA. (STANDARD SIZE) (2.375" O.D.)
- (10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" AT FIELD ERECTION JOINTS).
- (10B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" DIA. (STANDARD SIZE) (2.375" O.D.) (1'-4" AT FIELD ERECTION JOINTS).

RAILING NOTES

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

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

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

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

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

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

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

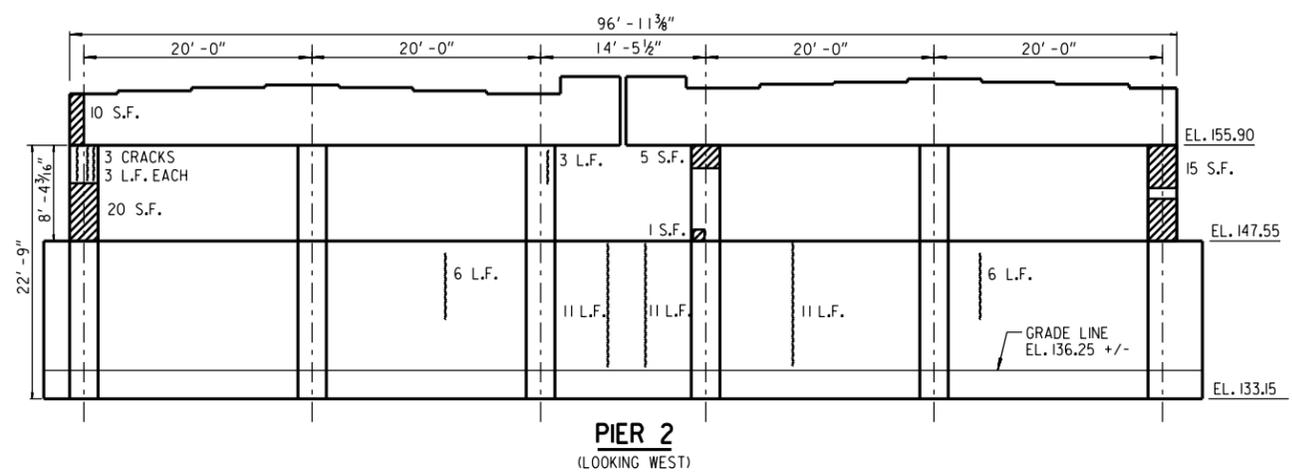
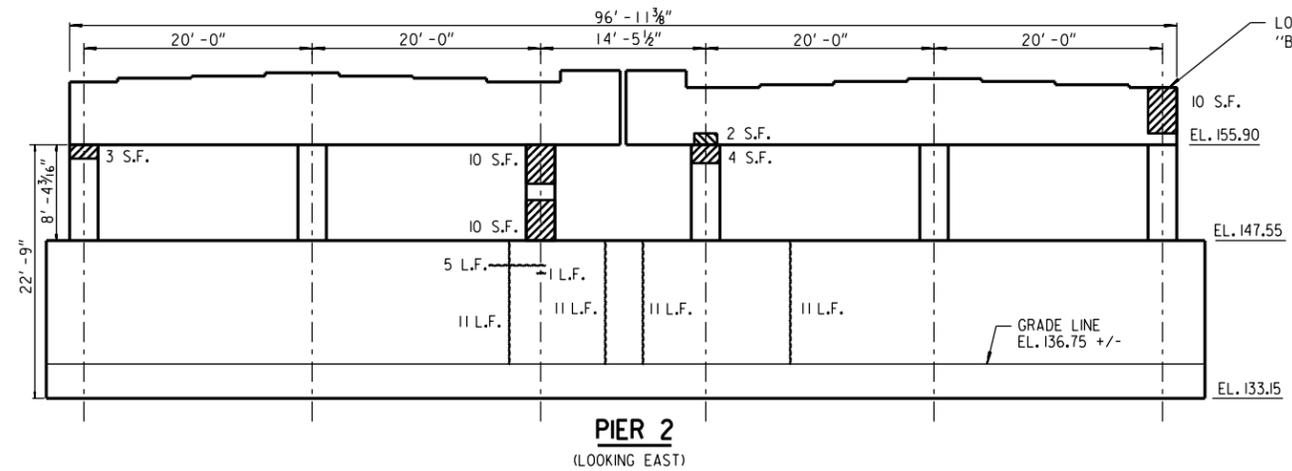
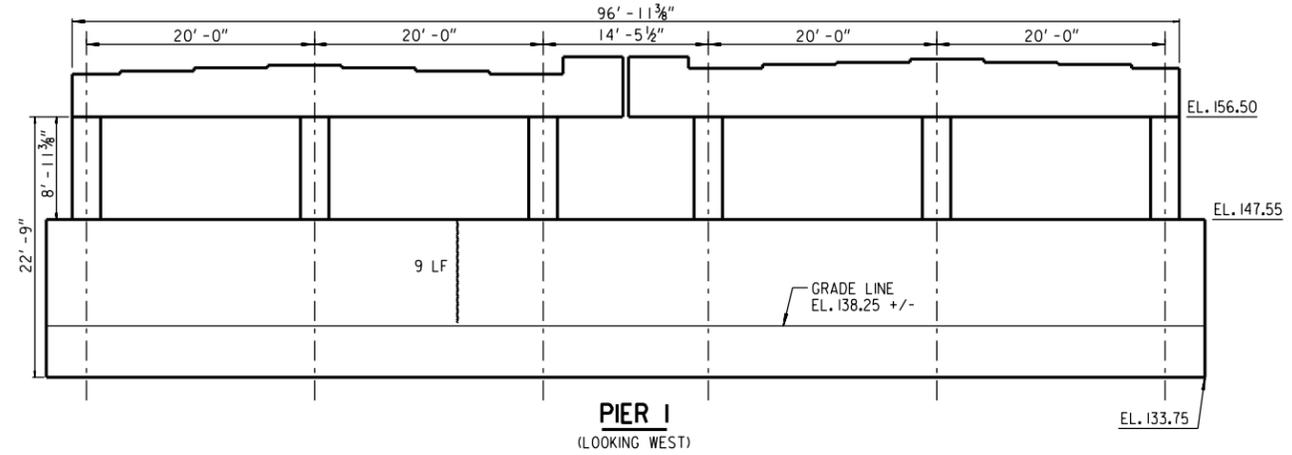
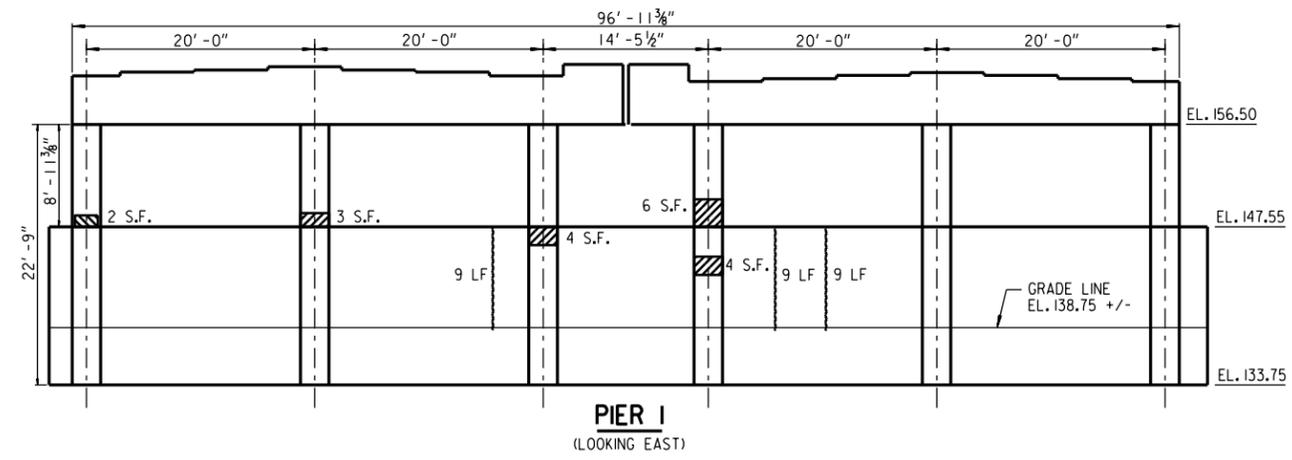
ALL MATERIAL (EXCEPT NO. 3) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE CONTRACT DOCUMENTS". THE RAILING SHALL BE PAINTED AMS STANDARD NO. 595A, COLOR NO. 27038 (BLACK).

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

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

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

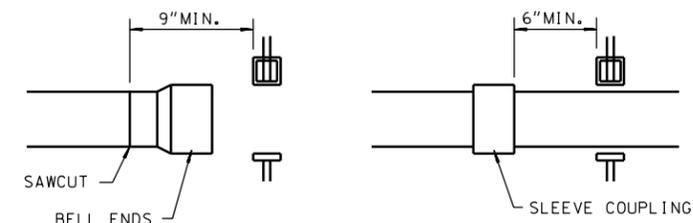
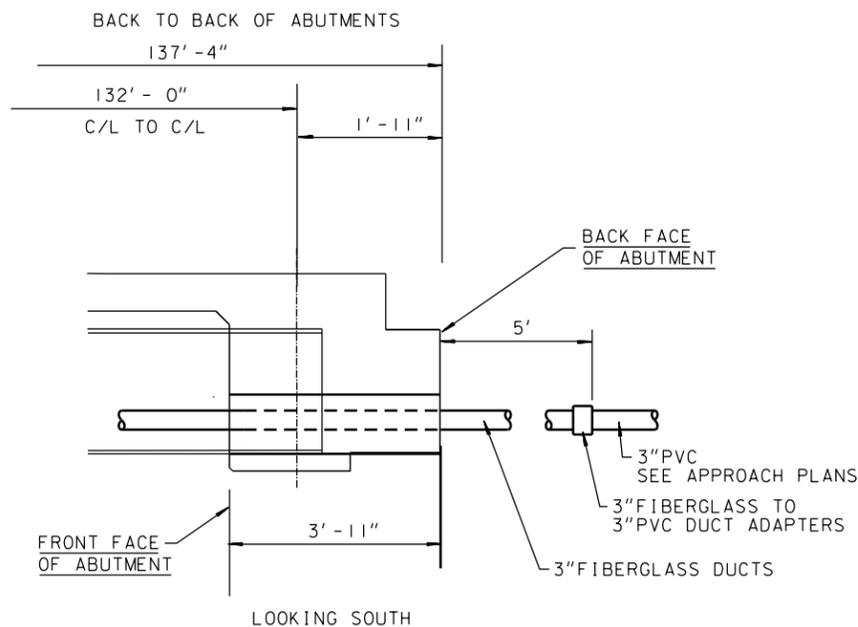
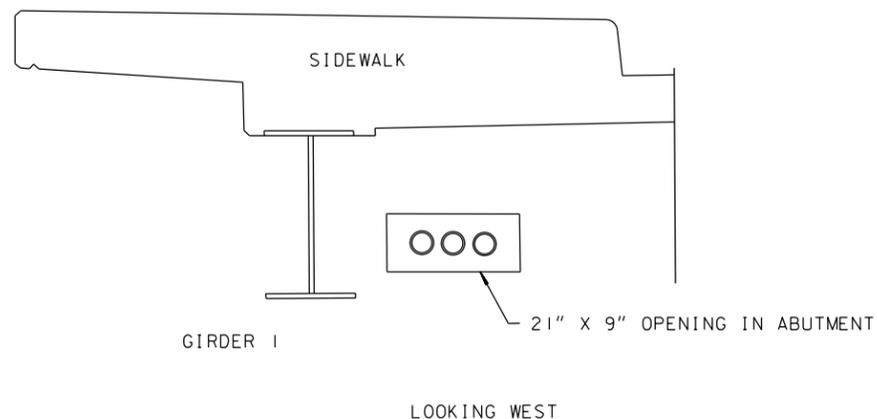
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY		PLANS CK'D. H.D.	
BY G.J.R.			
STEEL RAILING DETAILS			SHEET 17 OF 20



KEY

	EPOXY INJECTION CRACK REPAIR (LF)
	CONCRETE SURFACE REPAIR (SF)

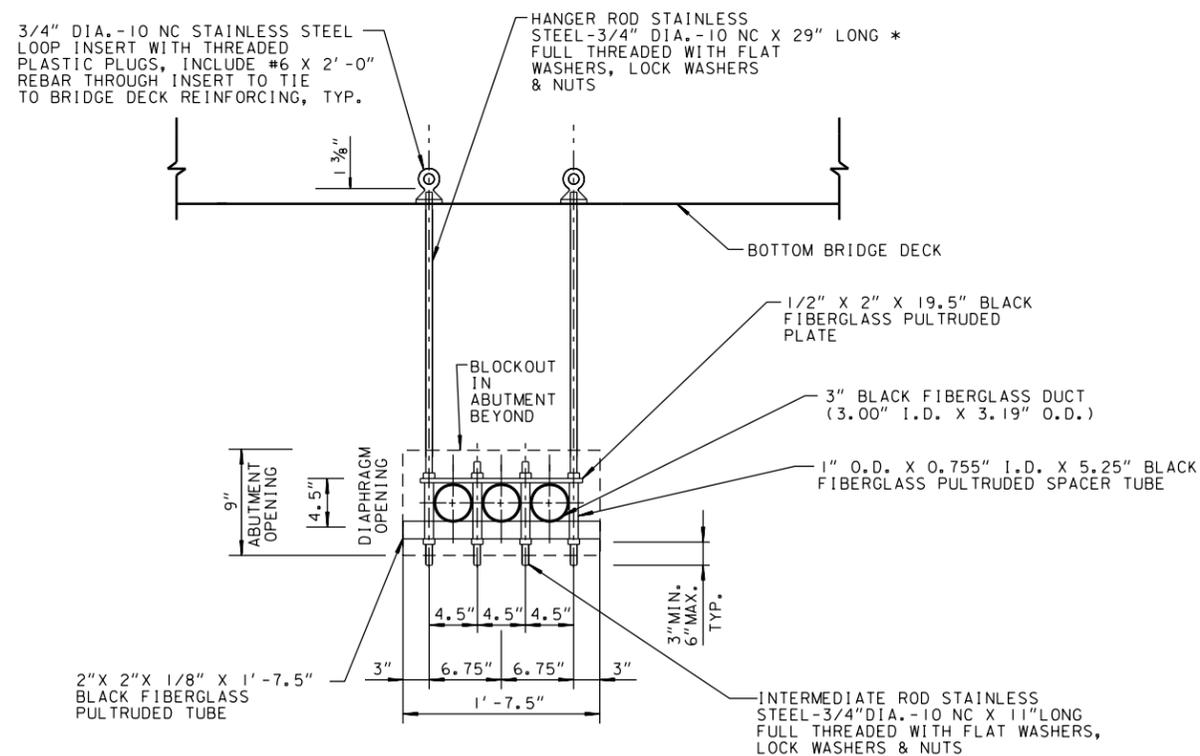
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY		PLANS CK'D.	
M.M.M.		J.P.H.	
PIER 1 AND 2 REPAIR			SHEET 18 OF 20



CLEARANCES FOR SLEEVE COUPLINGS AND BELL ENDS

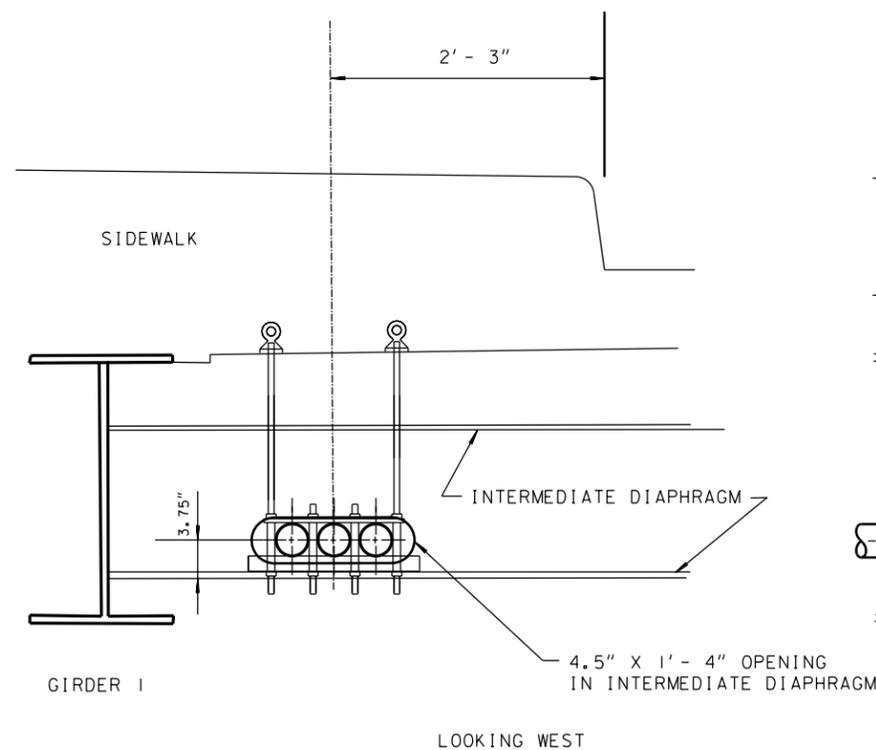
NOTES:
A BELLED END OR COUPLING SHOULD BE NO CLOSER THAN 6" ON EITHER SIDE OF A SUPPORT AS SHOWN ABOVE. A TAPE MEASURE CAN BE USED TO PREDETERMINE THESE LOCATIONS AND THE CONDUIT CAN BE SAW CUT TO THE PROPER LENGTH BEFORE IT IS THREADED THROUGH THE HANGERS AS SHOWN ABOVE.

3 DUCT CITY COMMUNICATION HANGER PACKAGE THROUGH ABUTMENT

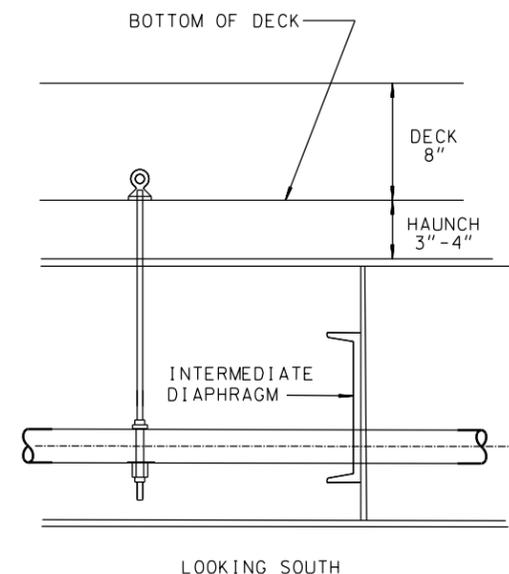


TYPICAL 3 DUCT CITY COMMUNICATION HANGER PACKAGE

* THE CONTRACTOR SHALL FIELD VERIFY HANGER LENGTHS IN ORDER TO AVOID CONFLICTS WITH DIAPHRAGM CROSSING.

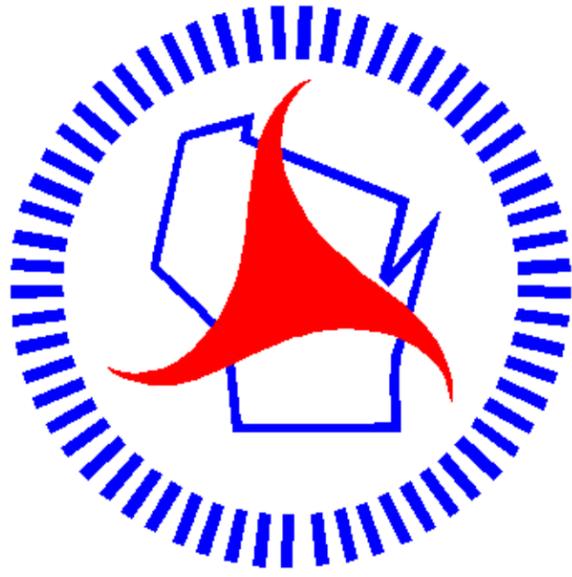


3 DUCT CITY COMMUNICATION HANGER PACKAGE THROUGH INTERMEDIATE DIAPHRAGM



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-500			
DRAWN BY K.L.R.		PLANS CK'D. K.L.R.	
CUC DETAILS			SHEET 20 OF 20

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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