

ORDER OF SHEETS

SECTION NO.	TITLE
1	TYPICAL SECTIONS AND DETAILS
2	ESTIMATE OF QUANTITIES
3	MISCELLANEOUS QUANTITIES
4	RIGHT OF WAY PLAT
5	PLAN AND PROFILE
6	STANDARD DETAIL DRAWINGS
7	SIGN PLATES
8	STRUCTURE PLANS
9	COMPUTER EARTHWORK DATA
9	CROSS SECTIONS

TOTAL: 114



DESIGN DESIGNATION

A.D.T. (CURRENT)	= LESS THAN 500
A.D.T. 2037	= LESS THAN 500
D.H.V.	=
D.	=
T.	=
DESIGN SPEED	= 30 MPH
ESALS	=

CONVENTIONAL SIGNS

COUNTY LINE	---	CABLE TELEVISION	TV
TOWNSHIP OR RANGE LINE	---	CITY UNDERGROUND CONDUIT	CUC
SECTION LINE	---	ELECTRIC	E
CORPORATE OR CITY LIMITS	---	GAS	G
PROPERTY LINE	P.L.	TRAFFIC & ELECTRICAL SERVICES	TE&ES
STANDARD BENCH MARK	●	MILWAUKEE METRO SEWERAGE DISTRICT	MMSD
EXISTING RIGHT OF WAY LINE	R/W	STEAM	STEAM
BUILDING LIMITS	---	WATER	W
PROPOSED SEWER LATERAL	---	FIRE & POLICE CALL BOX	☒
BASE OF SURVEY LINE	---	LIGHT POLE	●
CONCRETE WALK/DWY. REMOVAL	XXXXXX	POWER POLE	●
LIMITS OF CONCRETE PAVEMENT REMOVAL	XXXXXX	TELEPHONE OR TELEGRAPH POLE	☒
CATCH BASIN OR INLET	☐	TRAFFIC SIGNAL	☒
EXISTING	☐	TRAFFIC SIGNAL CONTROL BOX	☒
PROPOSED	☐	HYDRANT	☒
COMBUSTIBLE FLUIDS UNDER PRESSURE	CAUTION	GAS OR WATER GATE VALVE	☒
RAILROADS	+++++	MANHOLES - SEWER	○
FENCE	---	UTILITY (TYPE)	☐
	(TYPE)	TREES - EXISTING	●
		TREES - TO BE REMOVED	☒

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SOUTH DANA COURT

BRIDGE OVER LAND P-40-0589

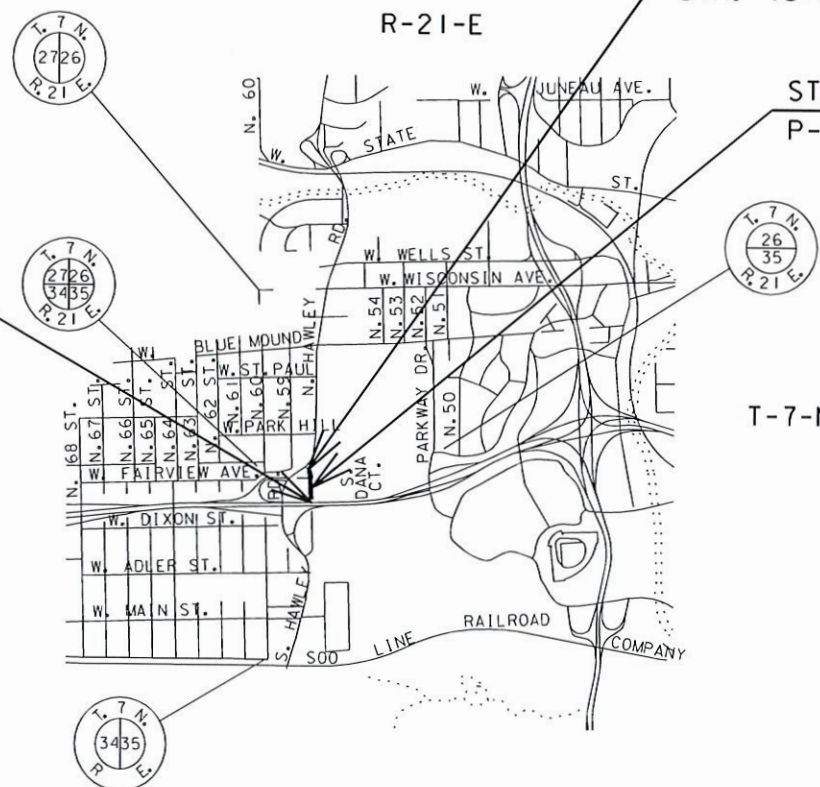
LOCAL STREET  
MILWAUKEE COUNTY

STATE PROJECT NUMBER  
2984-51-70

BEGIN PROJECT 2984-51-70  
STA. 10+81.0, T/L  
Y. = 382,135.0150  
X. = 2,538,744.2446

END PROJECT 2984-51-70  
STA. 15+31.0, T/L

STRUCTURE  
P-40-0589



TOTAL NET LENGTH OF CENTERLINE = 0.085 MI (URBAN)

THE COORDINATES ON THIS PLAN ARE BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM, MILWAUKEE COUNTY, NAD 27 SOUTH ZONE. COMBINED SCALE AND SEA LEVEL REDUCTION FACTOR .9992542

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF MILWAUKEE DATUM.

TO CONVERT ELEVATIONS SHOWN ON THIS PLAN TO NATIONAL GEODESIC VERTICAL DATUM OF 1929, ADD 580.603 TO ELEVATIONS SHOWN ON THIS PLAN.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2984-51-70		

Accepted For  
City of Milwaukee

1/28/21  
(Date)

Commissioner of Public Works

Original Plans Prepared By



1/28/2021  
(Date)

City Engineer

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
SURVEYOR	CITY OF MILWAUKEE
DESIGNER	CITY OF MILWAUKEE
PROJECT MANAGER	GREG HAFEMAN
DISTRICT EXAMINER	
DISTRICT SUPERVISOR	JEFF BOHEN
C.O. EXAMINER	

APPROVED FOR DISTRICT OFFICE

DATE: 01/29/2021

(SIGNATURE)

E

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENSE, 1-1/4 INCH.
2. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4" OF TOPSOIL, SODDED AND FERTILIZED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.
4. TRANSVERSE JOINTS IN THE SIDEWALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. 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. THE CONTRACTOR SHALL CONTACT DIGGERS HOTLINE AND OTHER UTILITIES NOT AFFILIATED WITH DIGGERS HOTLINE.
6. 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.

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
ELEV.	- ELEVATION
ENT.	- ENTRANCE
EXIST.	- EXISTING
F	- FLANGE
G	- GUTTER, OR GAS
HAST	- HANK AARON STATE TRAIL
HYD.	- HYDRANT
LT.	- LEFT
MMSD	- MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
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
WEP	- WISCONSIN ELECTRIC POWER

ORDER OF SECTION 2 SHEETS

GENERAL NOTES

PROJECT OVERVIEW

TYPICAL SECTIONS

CONSTRUCTION DETAILS

RAMP DETAILS

EROSION CONTROL PLAN

UTILITIES & DRAINAGE

SEEDING PLAN

STREET LIGHTING PLAN

CITY UNDERGROUND CONDUIT PLAN

TRAFFIC CONTROL

ALIGNMENT PLAN

UTILITY CONTACTS

AMERICAN TRANSMISSION CO (ATC)  
TONY MARCINIAK  
W234 N2000 RIDGEVIEW PARKWAY CT  
PO BOX 47 WAUKESHA, WI 53187  
AMARCINIAK@ATCLLC.COM

AT&T WISCONSIN  
JAY BULANEK  
2005 PEWAUKEE RD  
WAUKESHA, WI 53188  
PHONE: 262-896-7669  
JB5175@ATT.COM

CHARTER/ SPECTRUM  
CHARLES BRASILE  
1320 N. DR. MARTIN LUTHER KING JR. DR.  
MILWAUKEE, WI 53212  
PHONE: 414-908-4822  
CHARLES.BRASILE@CHARTER.COM

CITY OF MILWAUKEE - COMMUNICATIONS  
JOE MACIEJEWSKI  
841 N. BROADWAY  
MILWAUKEE, WI 53202  
PHONE: 414-286-3640

CITY OF MILWAUKEE - SEWERS  
ZAFAR YOUSUF  
841 N. BROADWAY, RM. 501  
MILWAUKEE, WI 53202  
PHONE: 414-286-2467  
ZAFAR.YOUSUF@MILWAUKEE.GOV

CITY OF MILWAUKEE - STREET LIGHTING  
DENIS KOZELEK  
841 N. BROADWAY, RM. 920  
MILWAUKEE, WI 53202  
PHONE: 414-286-3252  
DKOZEL@MILWAUKEE.GOV

CITY OF MILWAUKEE, TRAFFIC SIGNALS  
SCOTT REINBACHER  
841 NORTH BROADWAY  
MILWAUKEE, WI 53202  
PHONE: 414-286-3232  
SREINB@MILWAUKEE.GOV

CITY OF MILWAUKEE - UNDERGROUND CONDUIT  
KAREN ROGNEY  
841 N. BROADWAY, RM. 501  
MILWAUKEE, WI 53202  
PHONE: 414-286-3243  
KAREN.ROGNEY@MILWAUKEE.GOV

CITY OF MILWAUKEE - WATER  
JOSHUA IWEN  
841 N. BROADWAY, RM. 409  
MILWAUKEE, WI 53202  
PHONE: 414-286-3640  
JIWEN@MILWAUKEE.GOV

WE ENERGIES - ALL CORRESPONDANCE  
NICOLE SMULLEN  
333 W. EVERETT ST., RM. A291  
MILWAUKEE, WI 53203  
PHONE: 414-221-5617  
NICOLE.SMULLEN@WE-ENERGIES.COM

WE ENERGIES - ELECTRIC  
ALEX DANTINNE  
333 W EVERETT ST-A299  
MILWAUKEE, WI 53203  
ALEX.DANTINNE@WE-ENERGIES.COM

WE ENERGIES - GAS  
ALEX DANTINNE  
333 W EVERETT ST-A299  
MILWAUKEE, WI 53203  
ALEX.DANTINNE@WE-ENERGIES.COM

OTHER CONTACTS

CITY OF MILWAUKEE - DESIGN  
SAMUEL MEDHIN  
841 N. BROADWAY, RM. 902  
MILWAUKEE, WI 53202  
PHONE: 414-286-0474  
SMEDHI@MILWAUKEE.GOV

CITY OF MILWAUKEE - FORESTRY  
JAMES KRINGER  
841 N. BROADWAY, RM. 801  
MILWAUKEE, WI 53202  
PHONE: 414-708-2428  
JAMES.KRINGER@MILWAUKEE.GOV

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT  
MICKI KLAPPA-SULLIVAN  
260 W. SEEBOTH ST.  
MILWAUKEE, WI 53204  
PHONE: 414-225-2178  
MKLAPPASULLIVAN@MMSD.COM

MILWAUKEE COUNTY - DEPT. OF TRANSPORTATION  
ANDREA WEDDLE-HENNING  
2711 W. WELLS ST., SUITE 300  
MILWAUKEE, WI 53208  
PHONE: 414-278-4934

SEWRPC - LAND MONUMENTS  
JOHN WASHBURN  
W239 N1812 ROCKWOOD DR.  
WAUKESHA, WI 53187  
PHONE: 262-547-6722 EXT 295

WISCONSIN DEPT. OF NATURAL RESOURCES  
KRISTINA BETZOLD  
2300 N. DR. MARTIN LUTHER KING, JR. DR.  
MILWAUKEE, WI 53212  
PHONE: 414-263-8517  
KRISTINA.BETZOLD@WISCONSIN.GOV

CITY OF MILWAUKEE-UTILITY COORDINATOR  
ELLIOT SMYTH  
841 N.BROADWAY, RM 710  
MILWAUKEE, WI 53202  
PHONE: 414-704-0468  
ESMYTH@MILWAUKEE.GOV

DIGGERS



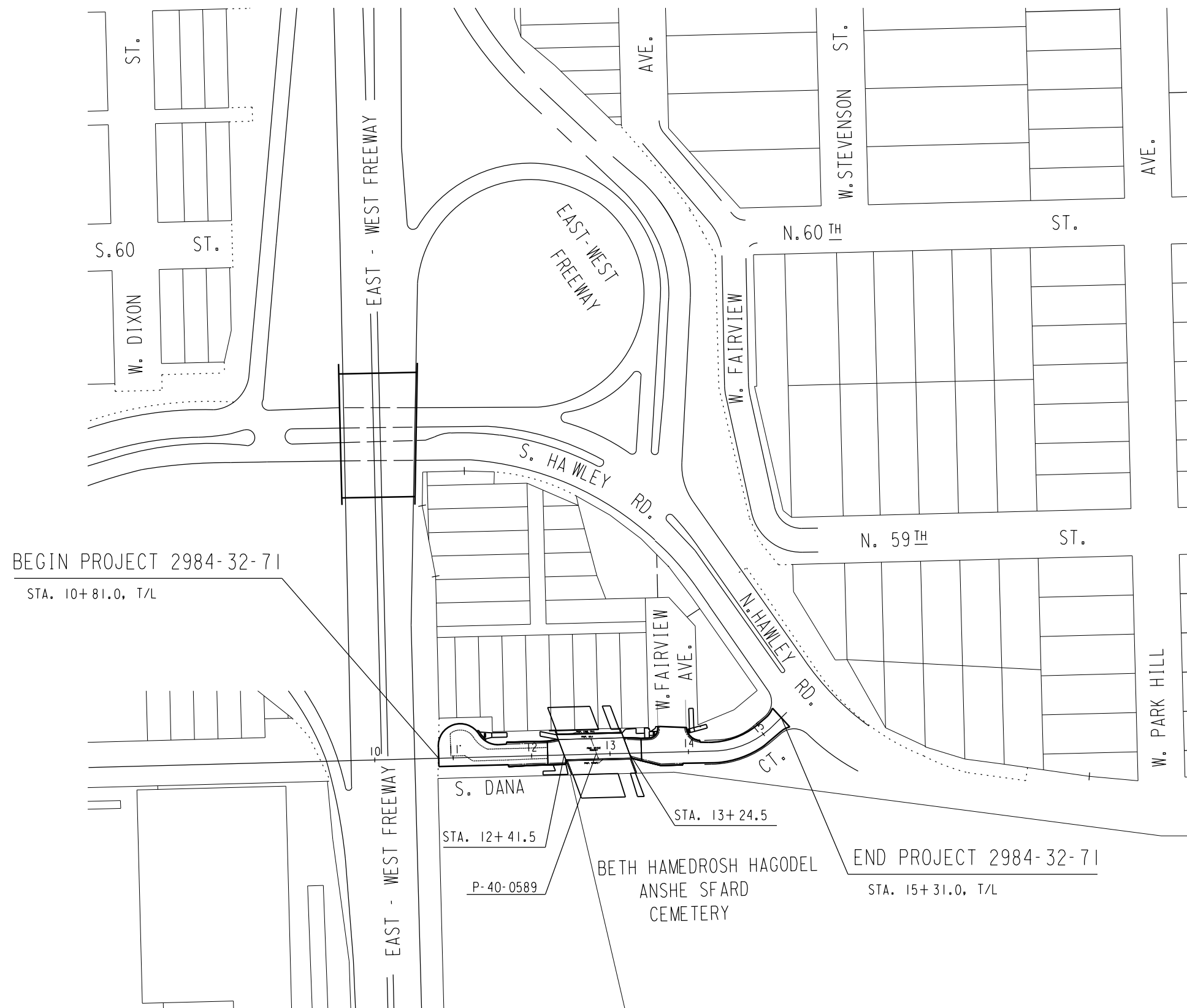
HOTLINE

Dial

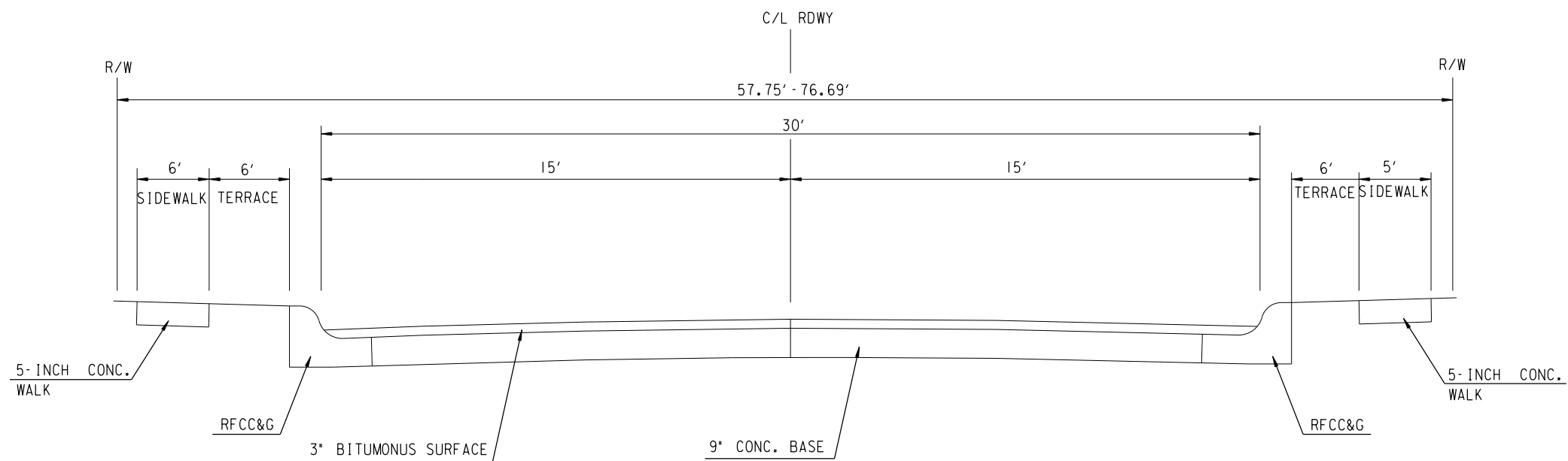


or (800) 242-8511

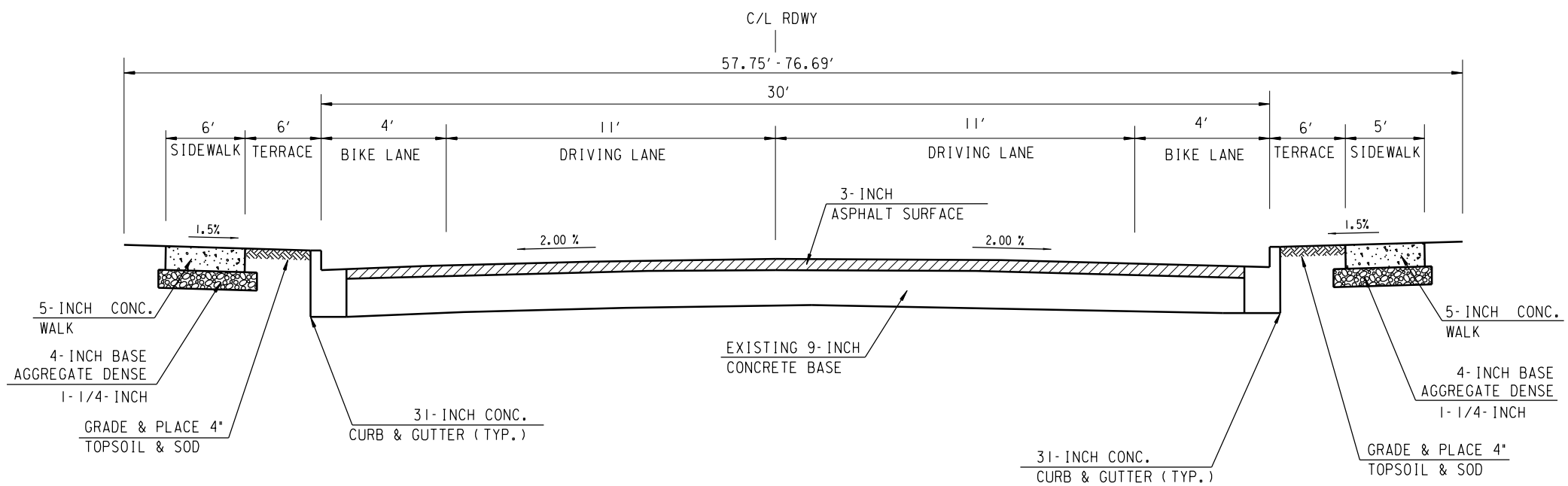
[www.DiggersHotline.com](http://www.DiggersHotline.com)



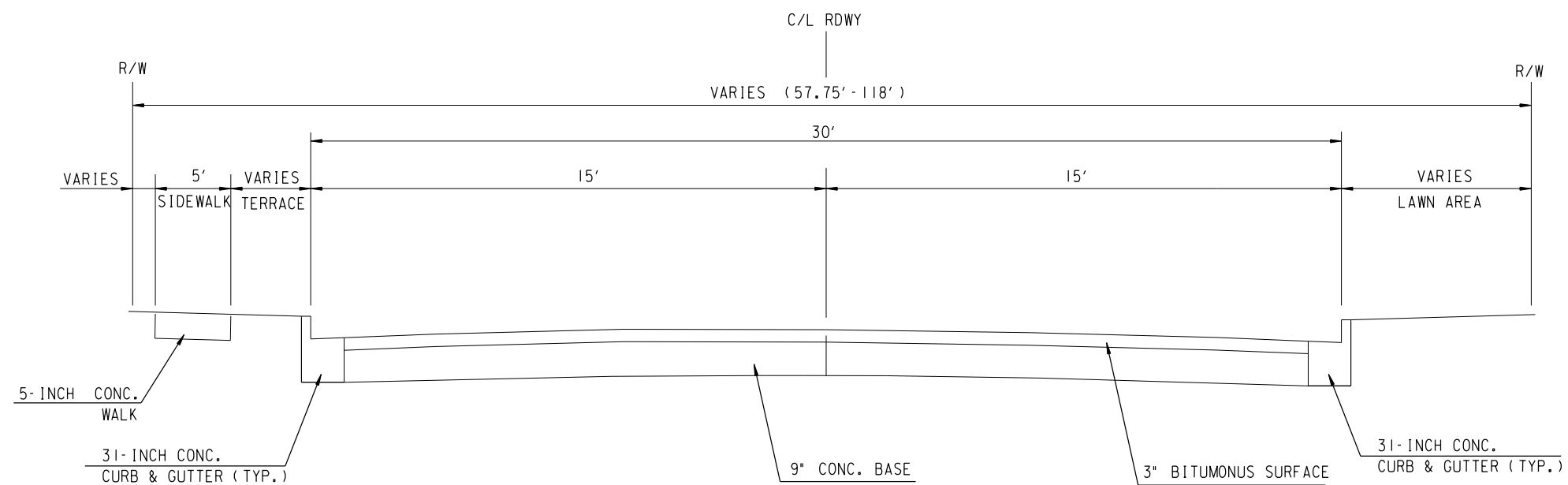




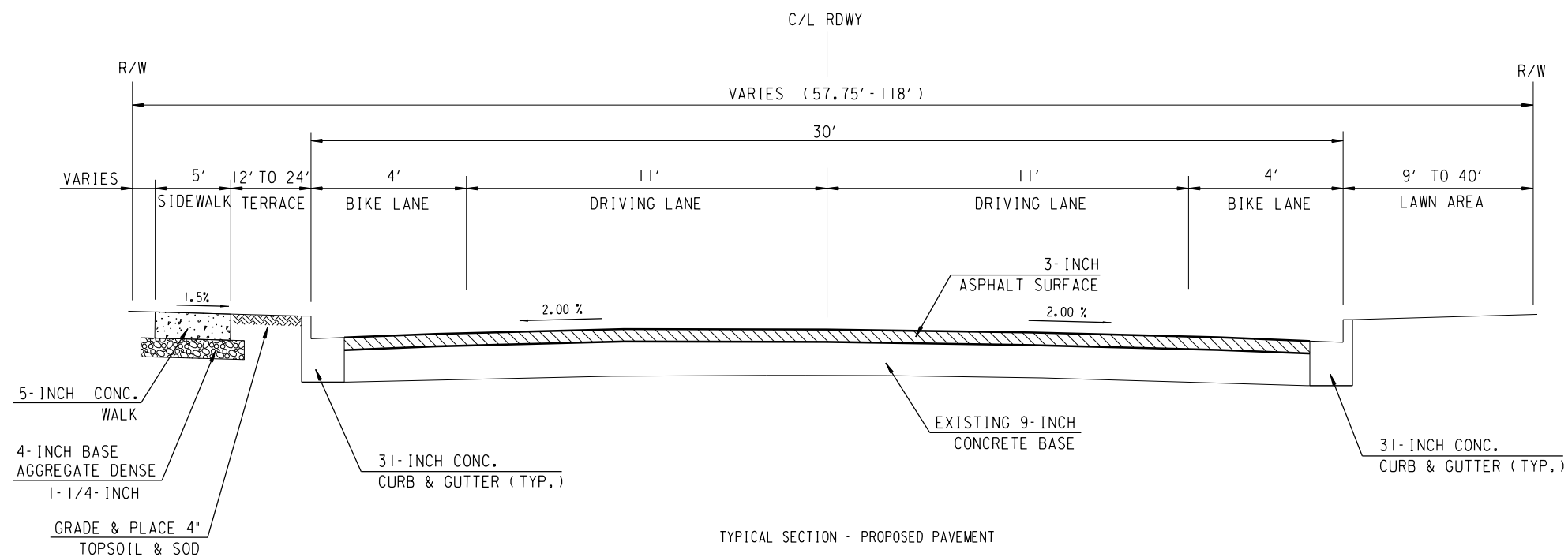
TYPICAL SECTION - EXISTING PAVEMENT  
SOUTH DANA CT OVER WISCONSIN ELECTRIC POWER CO. RIGHT OF WAY  
APPROACHES ROADWAY  
STA. 11 + 50 TO 12 + 39  
(LOOKING NORTH)



TYPICAL SECTION - PROPOSED PAVEMENT  
SOUTH DANA CT OVER WISCONSIN ELECTRIC POWER CO. RIGHT OF WAY  
APPROACHES ROADWAY  
STA. 11 + 50 TO 12 + 39  
(LOOKING NORTH)



TYPICAL SECTION - EXISTING PAVEMENT  
SOUTH DANA CT OVER WISCONSIN ELECTRIC POWER CO. RIGHT OF WAY  
APPROACHES ROADWAY  
STA. 12 + 39 TO 15 + 31  
(LOOKING NORTH)

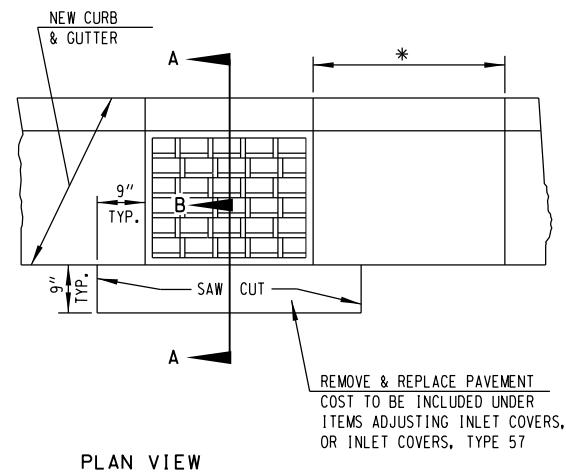


TYPICAL SECTION - PROPOSED PAVEMENT  
SOUTH DANA CT OVER WISCONSIN ELECTRIC POWER CO. RIGHT OF WAY  
APPROACHES ROADWAY  
STA. 12 + 39 TO 15 + 31  
(LOOKING NORTH)

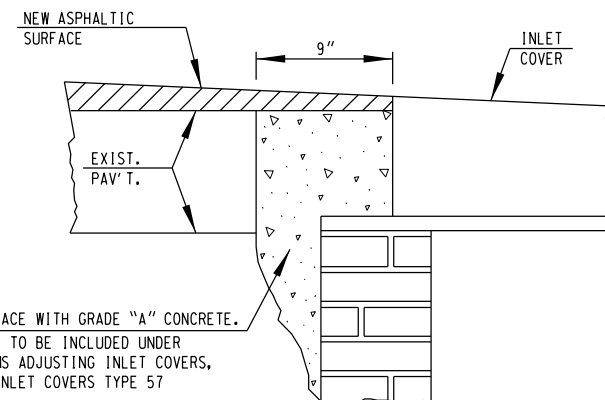


## REVISÉD DATE: 2-11-2021 BY AA

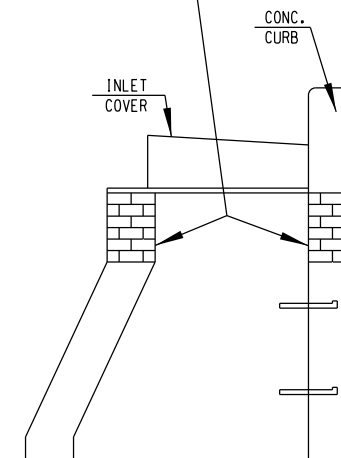
\* REMOVE 3'-0" CURB & GUTTER MIN. OR TO THE NEAREST JOINT, 6'-0" MAX. UNLESS OTHERWISE DIRECTED ON THE PLAN.



PLAN VIEW



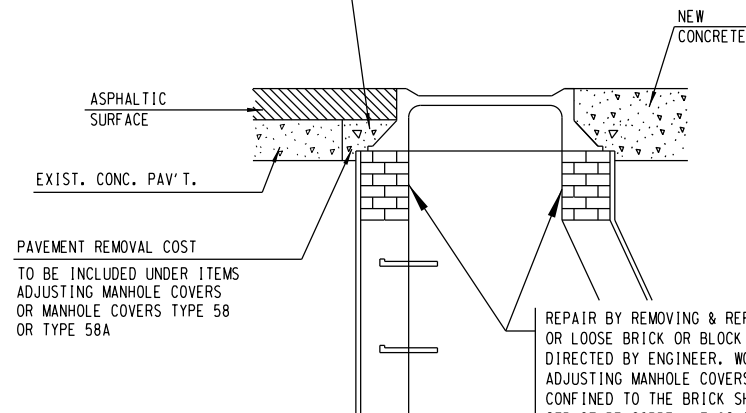
SECTION A-B



SECTION A-A

### ADJUSTING INLET COVERS

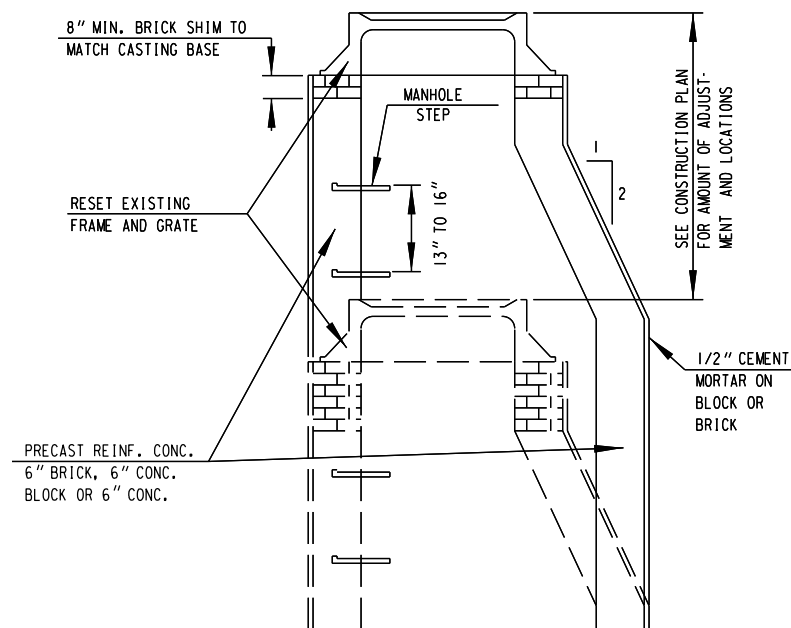
REPLACE WITH CONCRETE BASE  
COST TO BE INCLUDED UNDER  
ITEMS ADJUSTING MH COVERS,  
OR MANHOLE COVERS TYPE 58  
OR TYPE 58A TYPE Q



### ADJUSTING MANHOLE COVERS

OR MANHOLE COVERS TYPE 58A

REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING MANHOLE COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM. ANY WORK MORE EXTENSIVE THAN DESCRIBED IMMEDIATELY ABOVE SHALL BE CONSTRUED AS WORK UNDER RECONSTRUCTING MANHOLES. DEPTHS OF BRICKWORK TO BE REPAIRED, AS INDICATED ON THE PLAN, ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

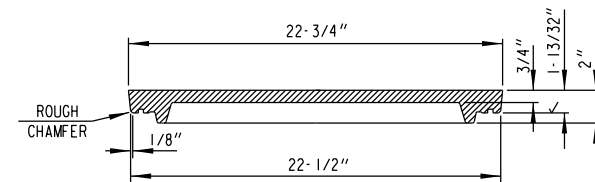


CORBEL MAY BE REVERSED  
STRAIGHT SIDE LEANED  
SLIGHTLY TO CLEAR CURB HEAD.

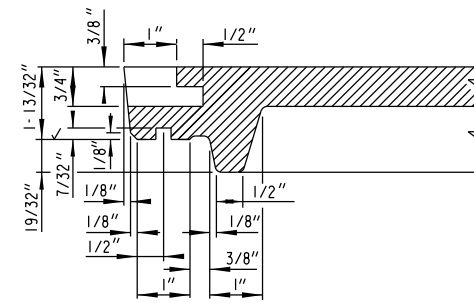
REPAIR BY REMOVING AND REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO THE DEPTH AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. DEPTHS AS INDICATED ON PLAN ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

### RECONSTRUCTING MANHOLES AND INLETS

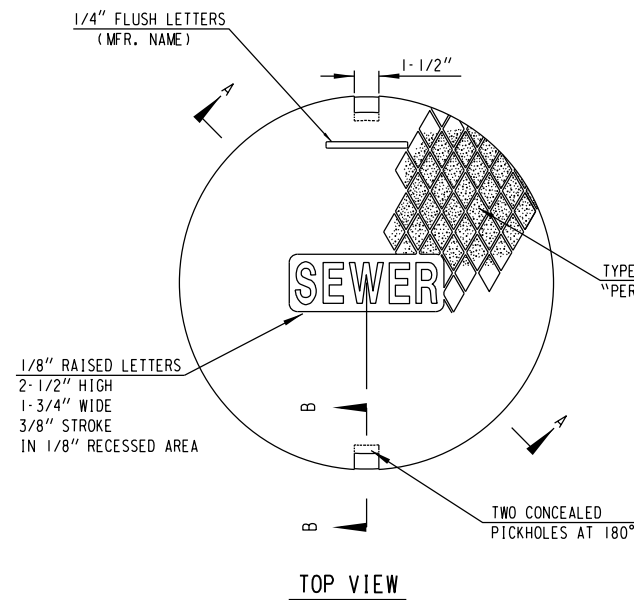
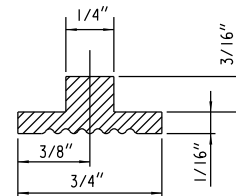




SECTION A-A



SECTION B-B



TOP VIEW

AS CAST "I" - SEAL GROVE IN  
LID SEAT FOR OIL- RESISTANT  
GASKET, NITRILE (60 DURO)

TYPE "C" LID DESIGN WITH  
"PERMA-GRIP" TEXTURE

1" MACHINED

BOTTOM VIEW

### MANHOLE COVER - TYPE MS58A

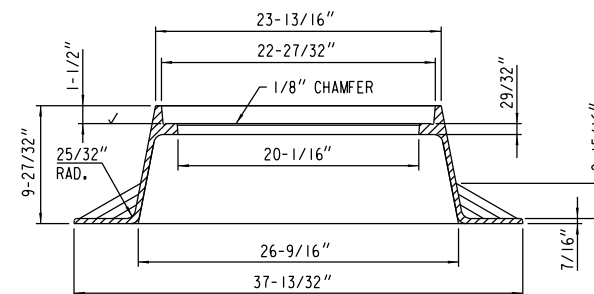
LID - 107 LBS.

#### NOTE:

ALL CASTINGS SHALL BEAR THE FOLLOWING  
IDENTIFICATION MARKS IN THE FORM OF LEGIBLE  
LETTERS OR NUMERALS RAISED 1/8" HAVING A  
DIGIT OR LETTER HEIGHT OF ONE INCH ON  
LOWER FACE OF LID:

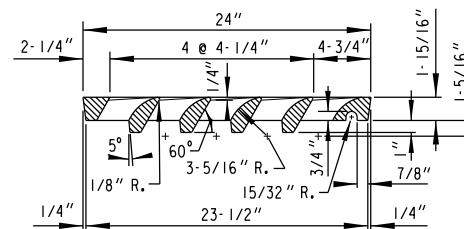
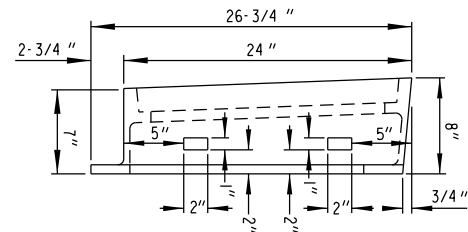
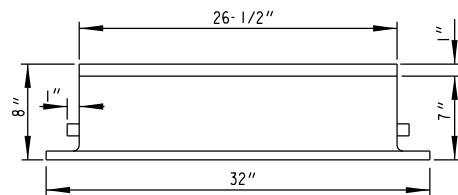
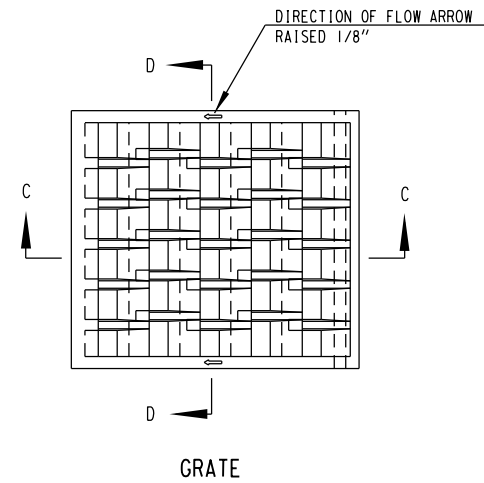
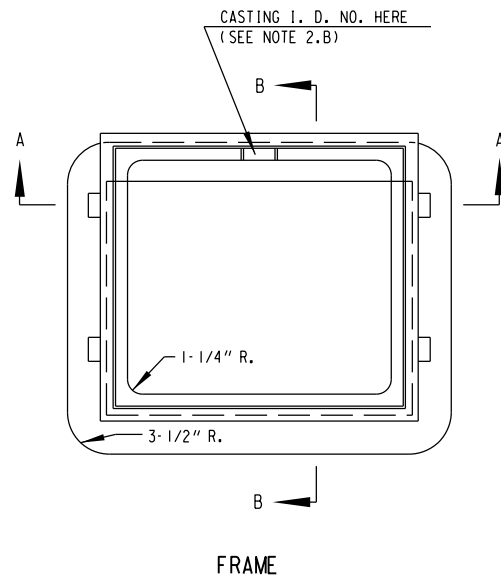
1. THE INITIALS OR MONOGRAM OF THE  
FOUNDRY.
2. THE CONTRACT NUMBER AND YEAR MADE.
3. THE CASTING IDENTIFICATION NUMBER.
4. THE SERIAL NUMBER OF THE INDIVIDUAL  
CASTING.

NOTE: ALL EXTERIOR EDGES SHALL BE GROUND.

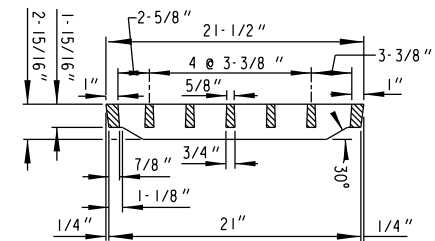


### MANHOLE FRAME - TYPE MS21

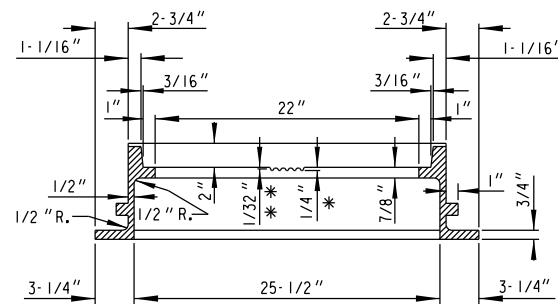
FRAME - 182 LBS.



SECTION C-C



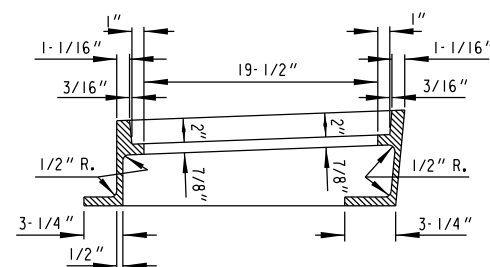
SECTION D-D



SECTION A-A

\* DEPRESSION FOR LETTERS

\* \* CLEARANCE FROM TOP OF  
LETTERS TO FACE OF SEAT



SECTION B-B

## INLET COVER - TYPE MS 57

LID-145 LBS., FRAME-204 LBS.

## GENERAL NOTES

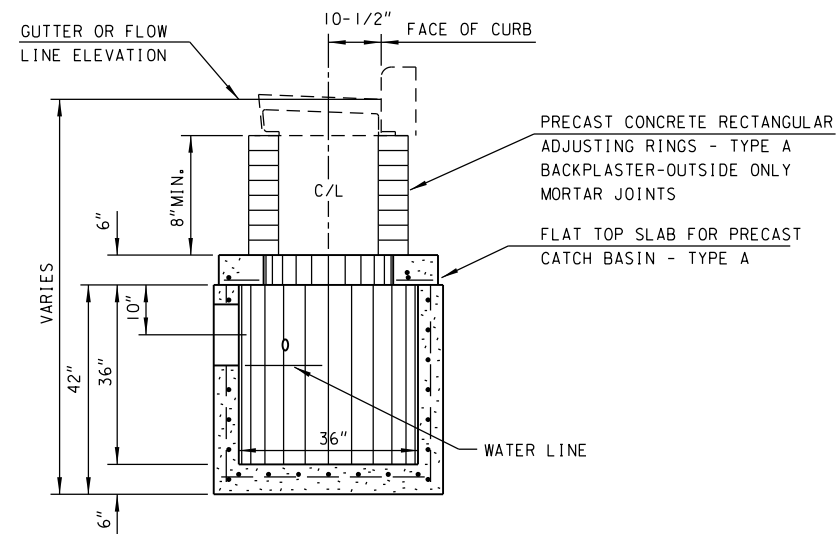
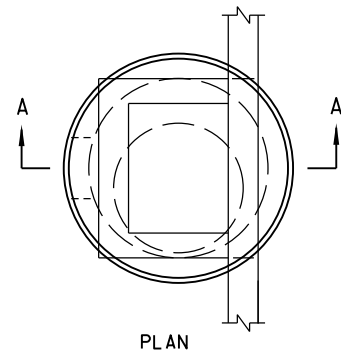
- ALL EDGES ARE TO BE GROUND
- ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8-INCH

## ON THE FRAME

- ON THE UPPER FACE OF THE FLANGE IN 1-INCH HIGH LETTERS THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.
- ON THE SEAT OF THE FRAME IN 1-INCH HIGH LETTERS, THE CASTING IDENTIFICATION NUMBER (51).

## ON THE GRATE

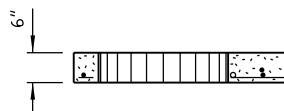
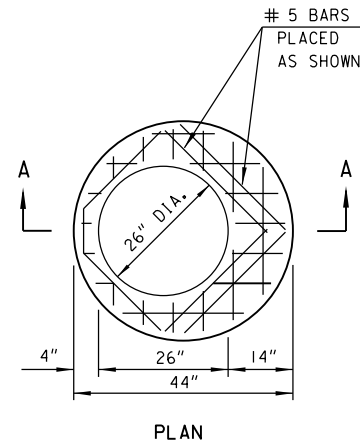
- ON THE UPPER SIDE OF THE GRATE IN 1-INCH HIGH LETTERS, THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE, THE CASTING IDENTIFICATION NUMBER (57) AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.



SECTION A-A

**CATCH BASIN - TYPE 45A****GENERAL NOTES**

1. PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199 AND ASTM DESIGNATION C-478 AND THESE DETAILED REQUIREMENTS WHICH SHALL GOVERN WHERE THEY ALTER THE AASHTO AND ASTM STANDARDS.
2. ALL REINFORCEMENT STEEL SHALL BE GRADE 60 OR GREATER AND EMBEDDED AT LEAST 1" CLEAR.
3. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 4" IN DEPTH WHICH MEETS REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.
4. SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON PLAN.



SECTION A-A

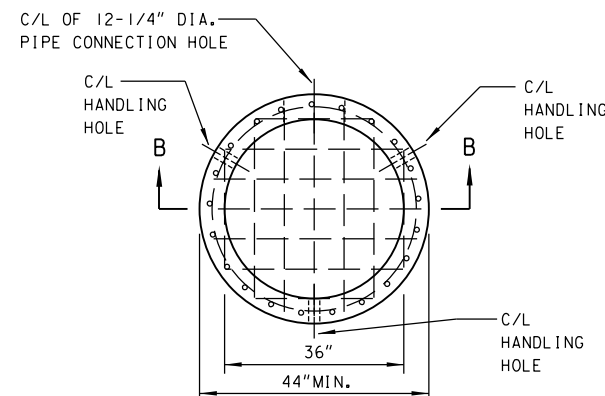
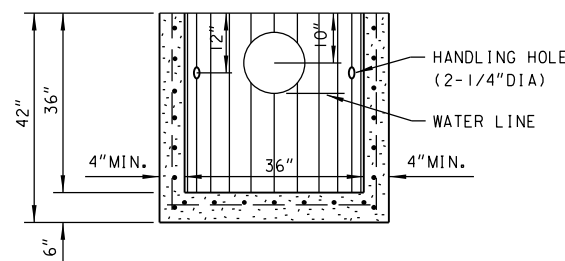
**TOP SLAB - TYPE A**

FLAT TOP SLAB SHALL BE 6" THICK REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.32 SQ. IN. PER LINEAL FOOT IN BOTH DIRECTIONS, PLACED NEAR THE BOTTOM OF THE SLAB WITH 1" CLEAR COVER.

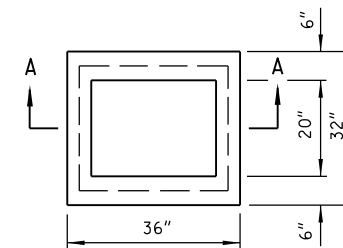
ADDITIONALLY, NO. 5 BARS SHALL BE PLACED AROUND TOP SLAB OPENING AS SHOWN.

REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

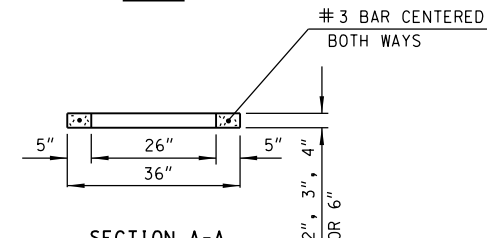
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

**RISER SECTION WITH INTEGRAL BASE PLAN**

SECTION B-B



PLAN



SECTION A-A

**RECTANGULAR ADJUSTING RING - TYPE A**

THE ADJUSTING RINGS SHALL BE 2", 3", 4" OR 6" IN HEIGHT.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 3300 P.S.I.

CIRCUMFERENTIAL AND LONGITUDINAL REINFORCEMENT IN THE RISER SECTION SHALL EACH CONSIST OF ONE LAYER OF STEEL NOT LESS THAN 0.12 SQ. IN. PER FOOT AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.

THE BASE SLAB SHALL BE REINFORCED WITH ONE LAYER OF STEEL WITH A MINIMUM AREA OF 0.32 SQ. IN. PER FOOT IN BOTH DIRECTIONS, PLACED ABOVE THE MIDPOINT OF THE SLAB.

RISER SECTION AND BASE SLAB REINFORCEMENT SHALL BE TIED OR WELDED TOGETHER.

TWO TO THREE HANDLING HOLES 2-1/4" IN DIAMETER AND A PIPE CONNECTION HOLE 12-1/4" IN DIAMETER SHALL BE CAST OR CORED IN THE RISER SECTION AT THE LOCATIONS SHOWN. LIFTING DEVICES MAY BE SUBSTITUTED FOR HANDLING HOLES.

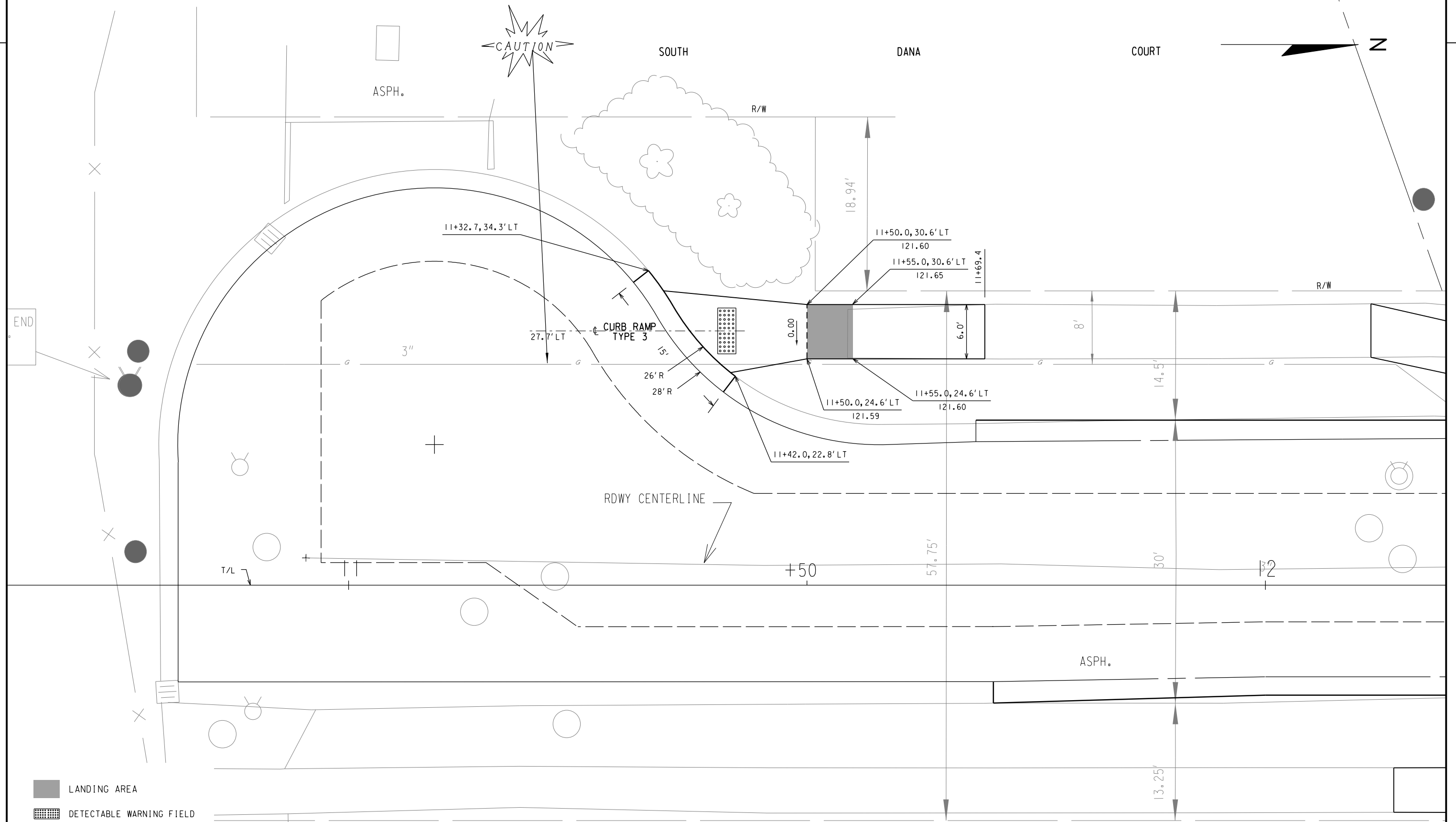
NO JOINTS OR HOLES SHALL BE BELOW THE WATERLINE.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4000 P.S.I.

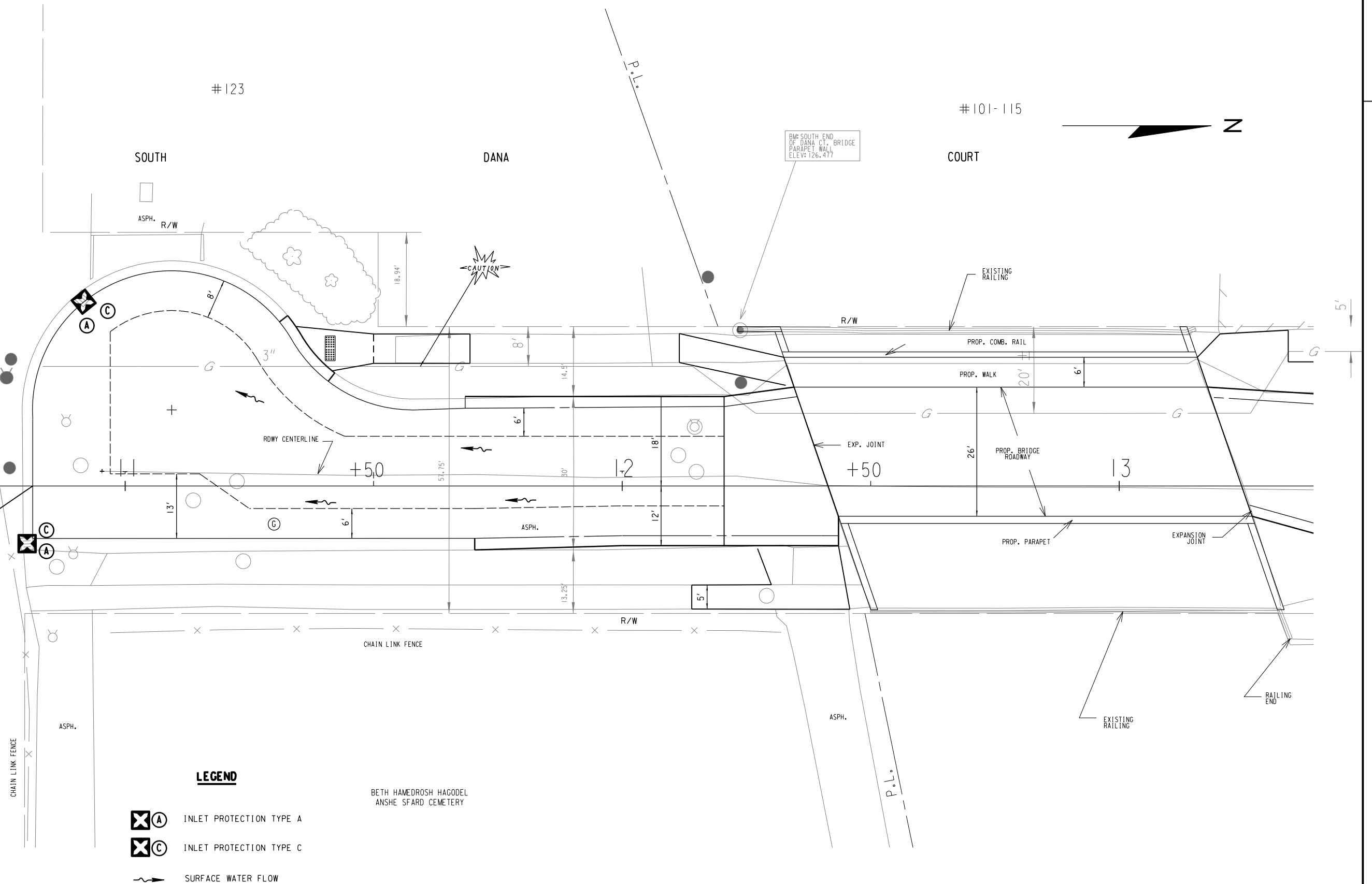
RISER SECTION MAY TAPER TO A 33" INTERNAL DIAMETER AT IT'S BOTTOM PROVIDED A 44" MINIMUM OUTSIDE DIAMETER IS MAINTAINED.



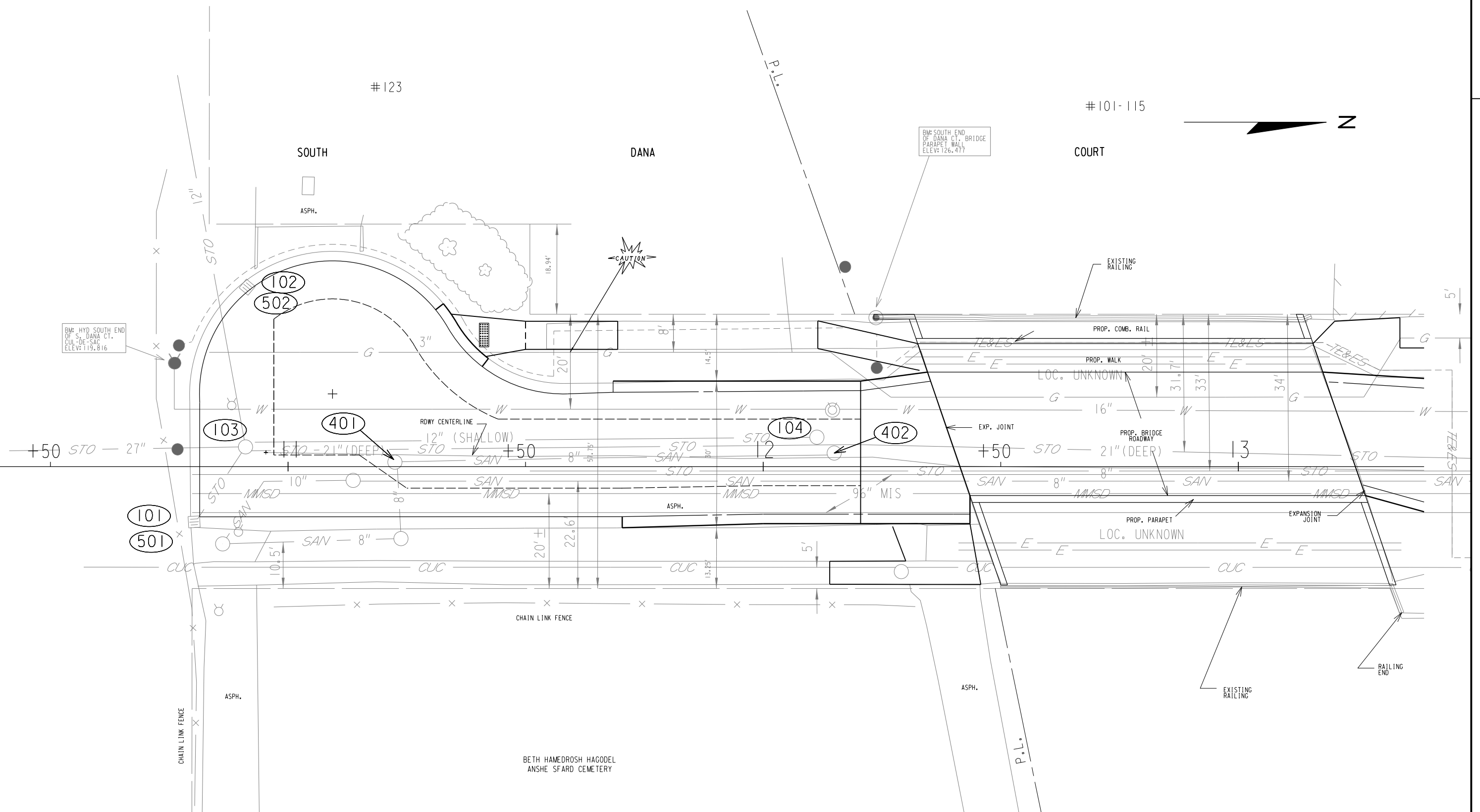




BEGIN PROJECT  
STA. 10+81.0 T/L

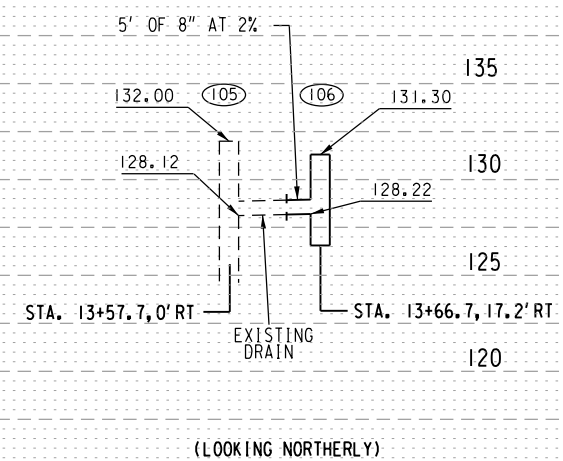


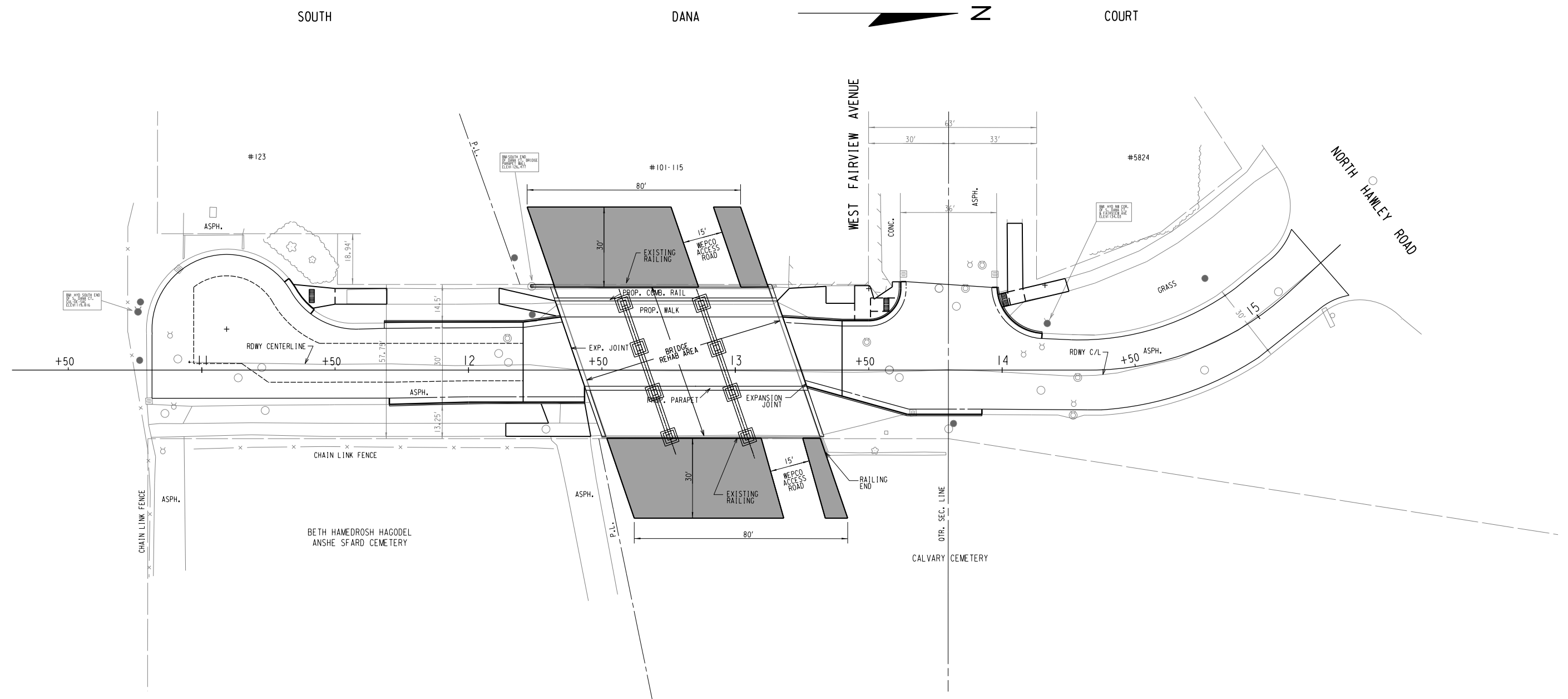










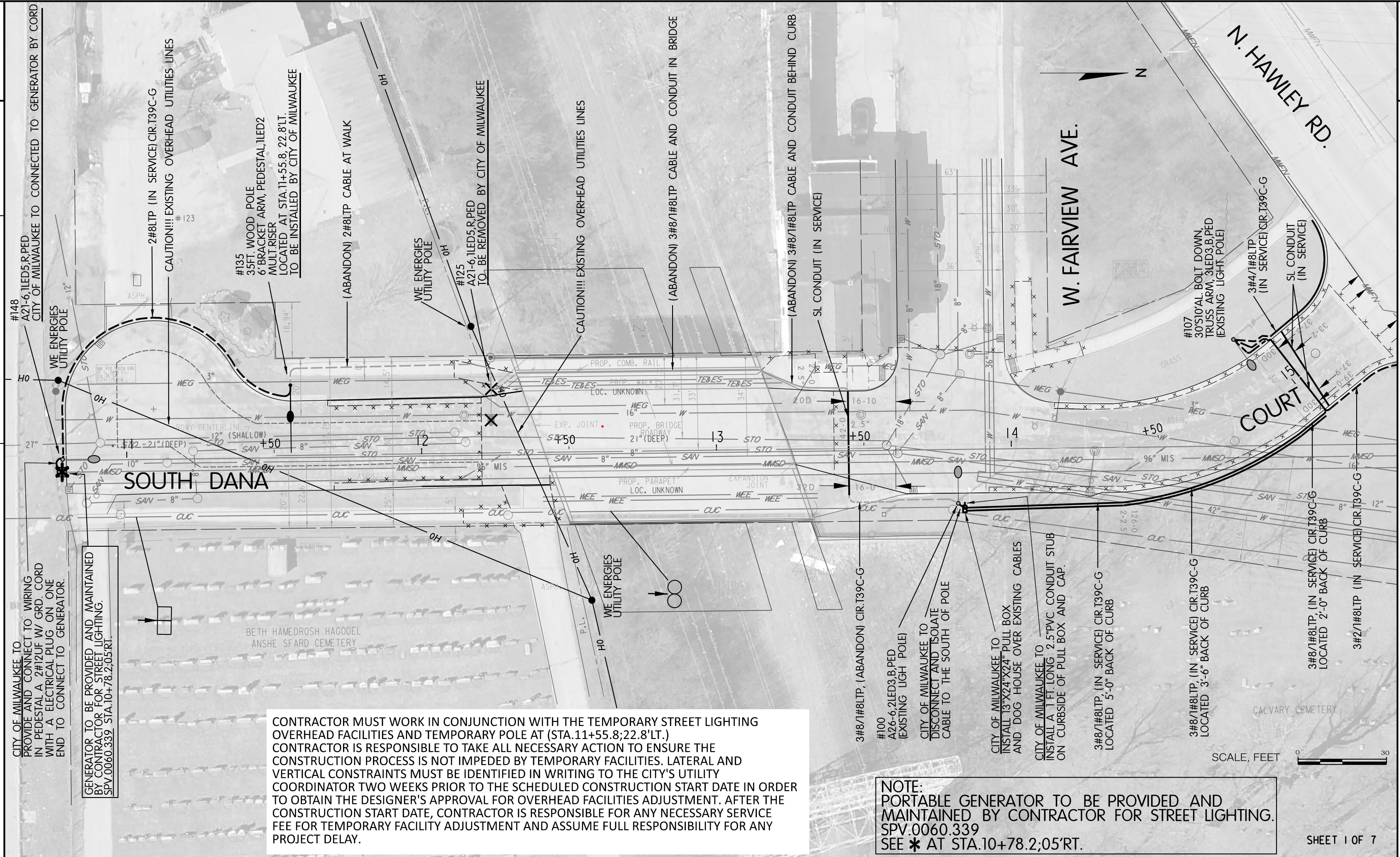


## LEGEND:



SEEDING MIXTURE NO. 70







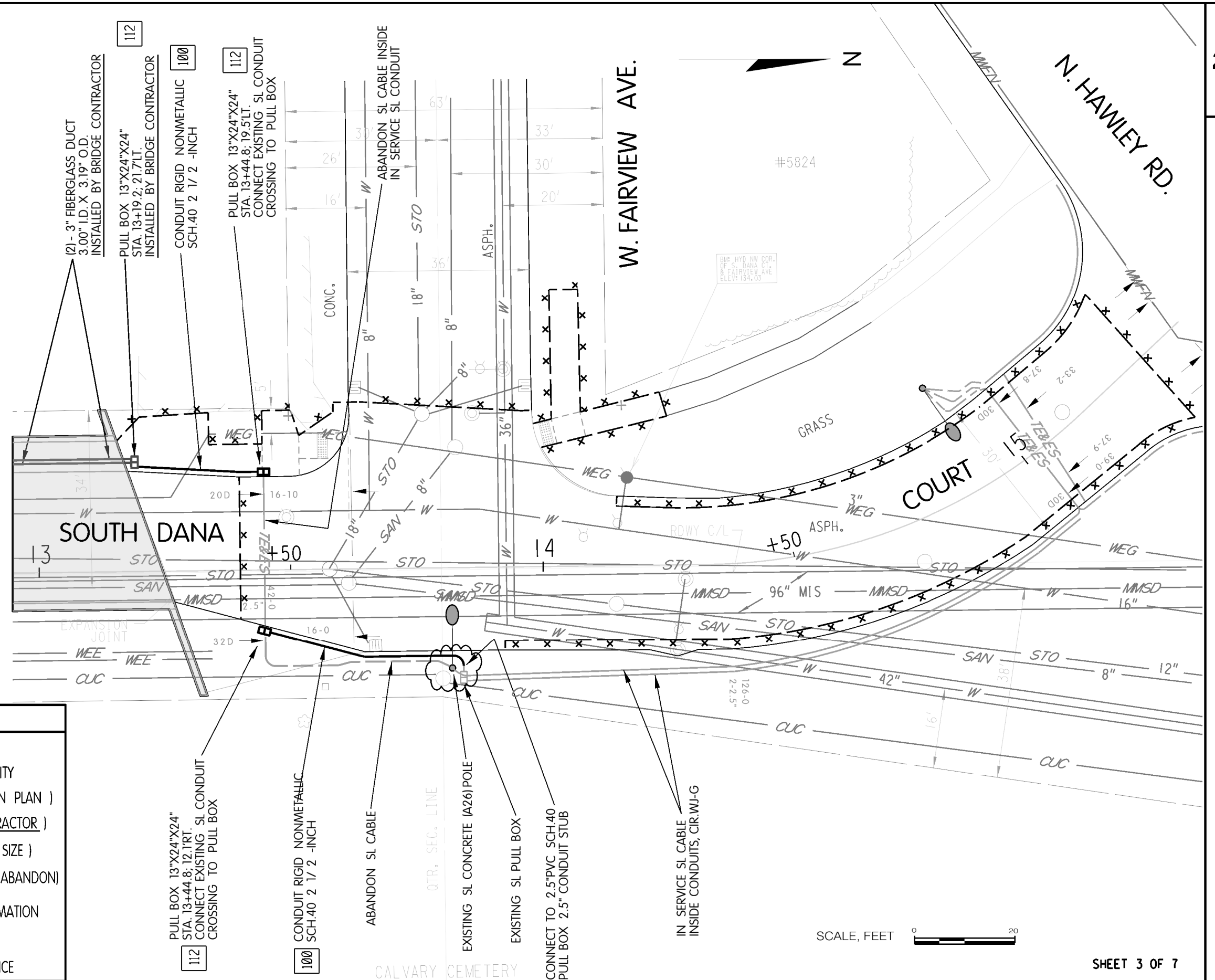


CONTINUED ON SHEET 2









**SHEET 2 OF 7**

DANA COURT  
BRIDGE  
STRUCTURE

CONTINUED FROM SHEET 1



## LEGEND

-  - EXISTING STREET LIGHTING (SL) LIGHT POLE
-  - PROPOSED (SL) LIGHT POLE INSTALLED BY CITY
-  - PVC CONDUIT (SCHEDULE & SIZE NOTED ON PLAN)
-  - PVC CONDUIT (INSTALLED BY BRIDGE CONTRACTOR)
-  - ELECTRICAL SL PULL BOX (CHECK PLAN FOR SIZE)
-  - EXISTING SL CABLE- (NOTED: IN SERVICE OR ABANDON)
-  - SEE DETAIL NUMBER FOR ADDITIONAL INFORMATION
-  - USE CAUTION WHEN EXCAVATING!!!  
STREET LIGHTING ELECTRICAL CABLE IN SERVICE

PROJECT NO. 2984-51-70

HWY: S. DANA CT.

COUNTY: MILWAUKEE

STREET LIGHTING CONDUIT PLAN

SHEET

E

TRAFFIC & STREET LIGHTING GENERAL NOTES:

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

STREET LIGHTING & TRAFFIC SIGNALS 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 OR TRAFFIC SIGNAL FACILITIES IF THE CONTRACTOR DOES ANY DEVIATION FROM THE STREET LIGHTING OR TRAFFIC SIGNAL 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.I. 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(1) 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.

TRAFFIC & 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.

TRAFFIC & 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 COMAPNY:  
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.

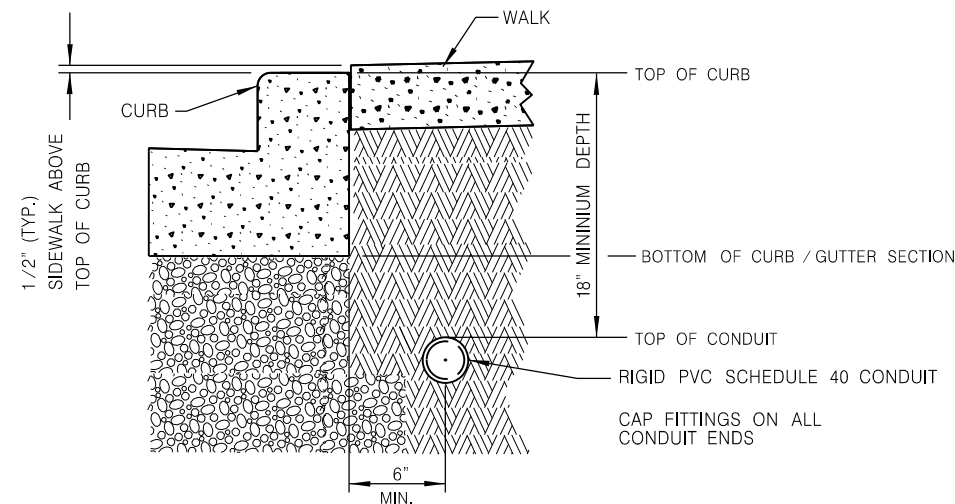
IF THERE ARE NO CORRECTIONS OR ADDITIONS TO THE AS-LET PLAN(S) PUT "NO CHANGE" ON THE SHEET WITH ALL OTHER REQUIRED AS-BUILT INFORMATION.

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

## WISDOT/CADDS SHEET 42



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

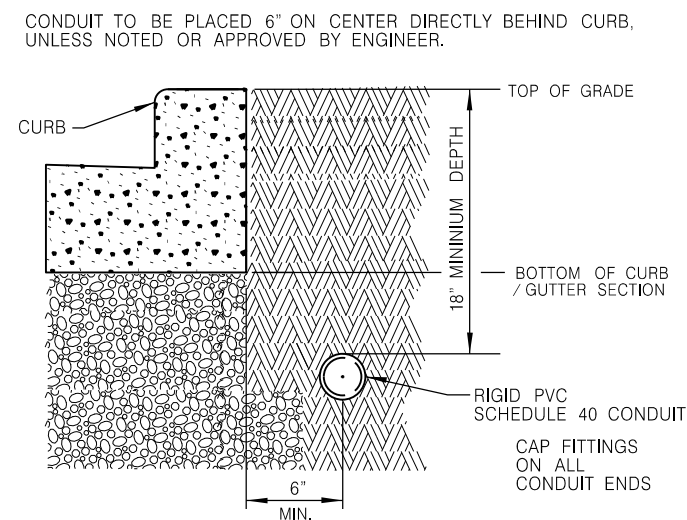


**100** DETAIL "A"  
TYPICAL CONDUIT INSTALLATION  
BEHIND CURB NOT TO SCALE

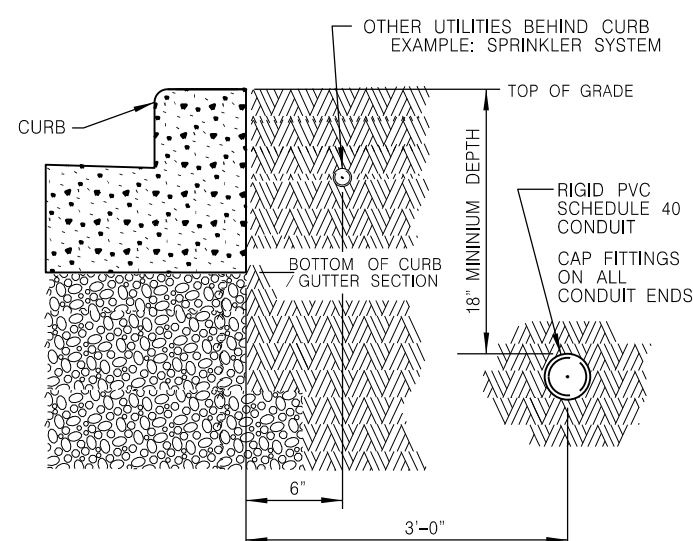
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

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

DETAIL "B"

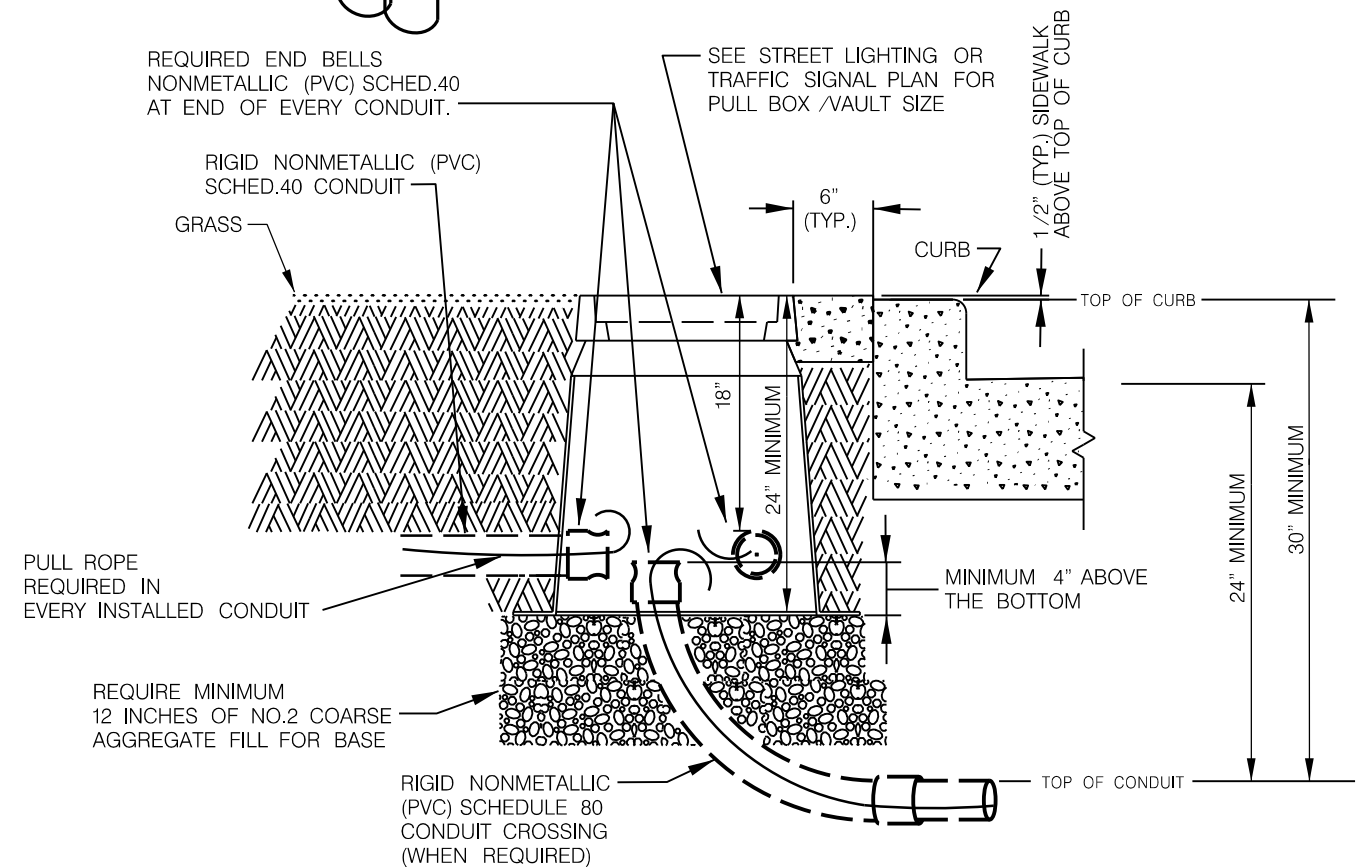
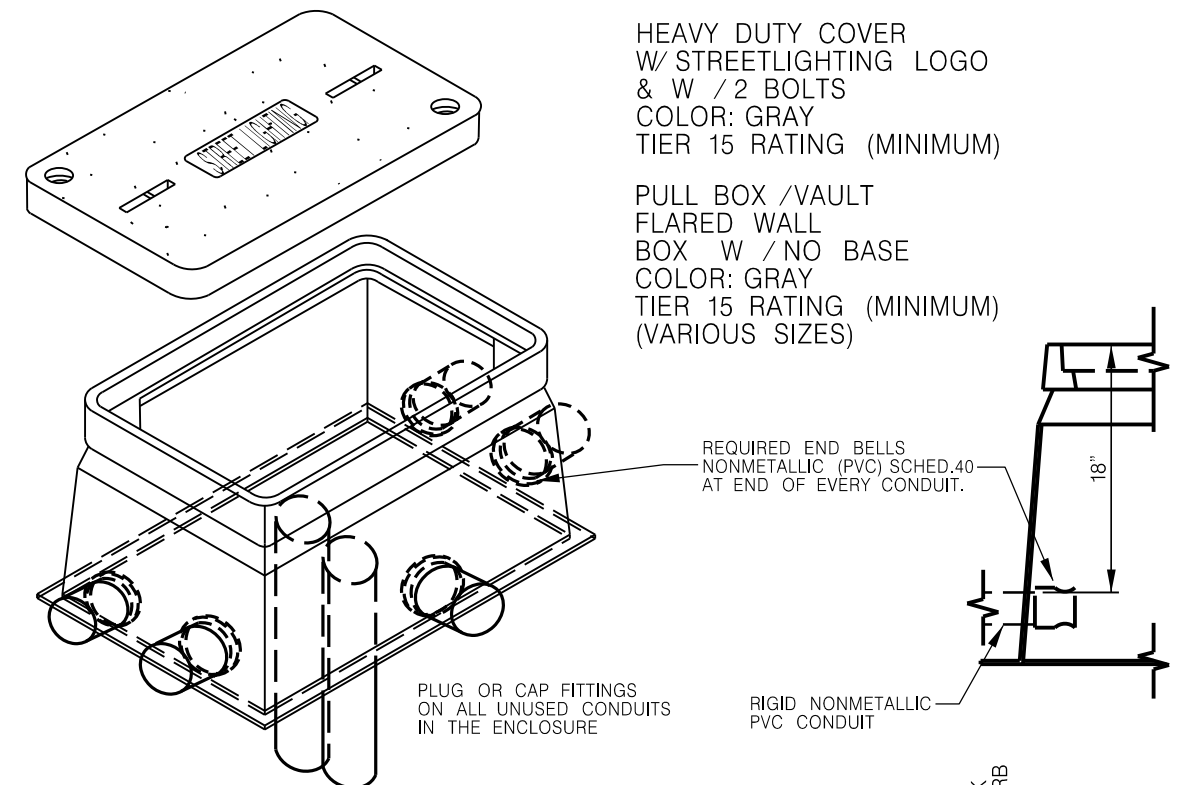


DETAIL "C"



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

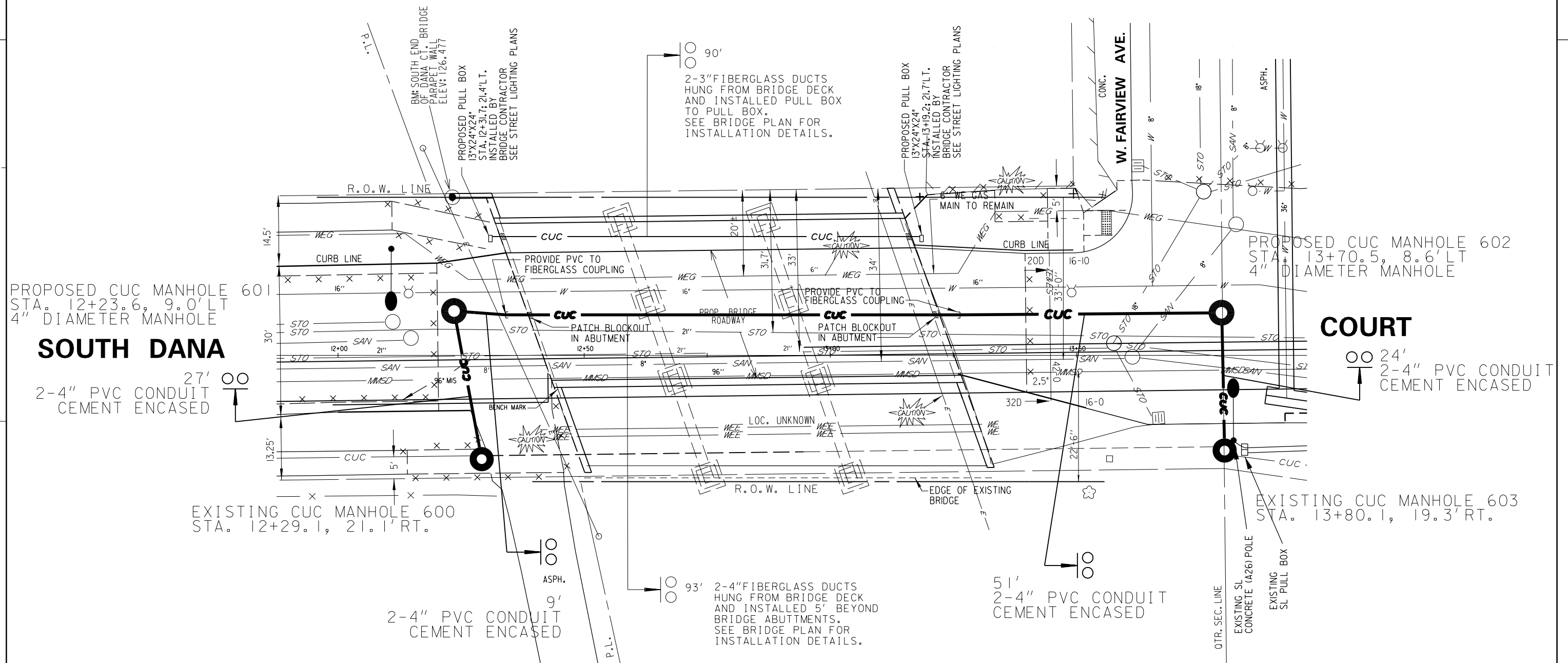
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.  
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



**112** DETAIL NOT TO SCALE  
TYPICAL PULL BOX /VAULT INSTALLATION  
IN EITHER PAVEMENT OR GRASS AREAS

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

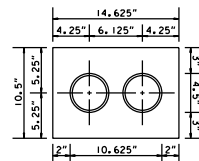
SHEET 7 OF 7



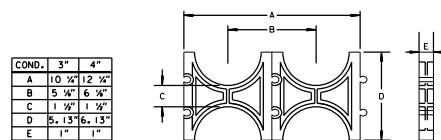
- 1) CONSTRUCTION STAKING FOR THE CITY UNDERGROUND CONDUIT (CUC) FACILITIES IS TO BE INCLUDED IN AND PAID FOR UNDER THE BID ITEM 650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS
- 2) THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER 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

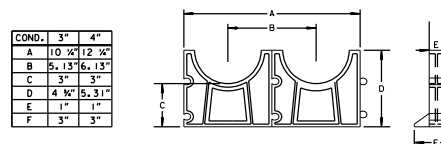
- |         |  |
|---------|--|
| — CUC — | PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT, NUMBER OF RUNS AS NOTED. |
| ○       | PROPOSED CUC MANHOLE   |
| ◼       | EXISTING CUC MANHOLE   |
| — CUC — | EXISTING CONDUIT   |
| - - -   | ABANDONED CONDUIT  |



**CROSS SECTION VIEW**  
N.T.S.

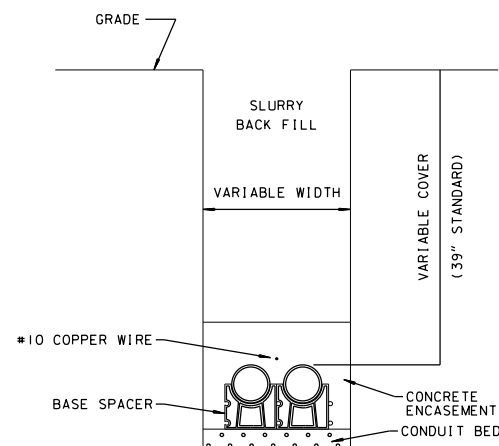


**INTERMEDIATE SPACER**

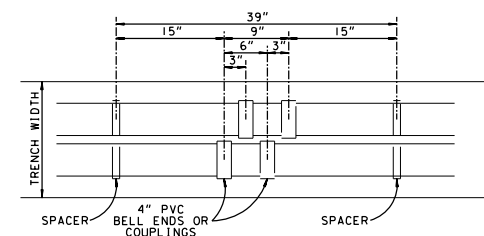


**BASE SPACER**

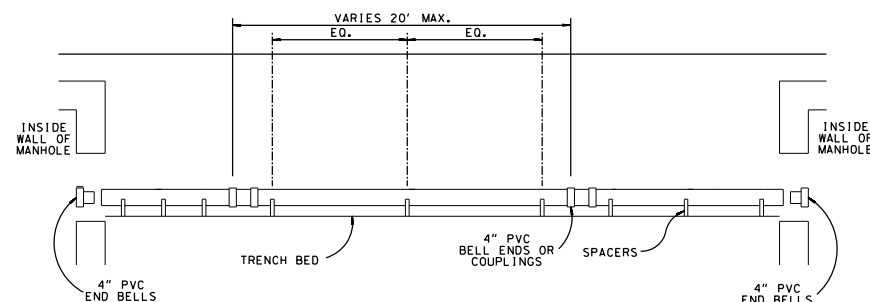
**INTERMEDIATE AND BASE SPACER DETAIL**



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



**PLAN VIEW**

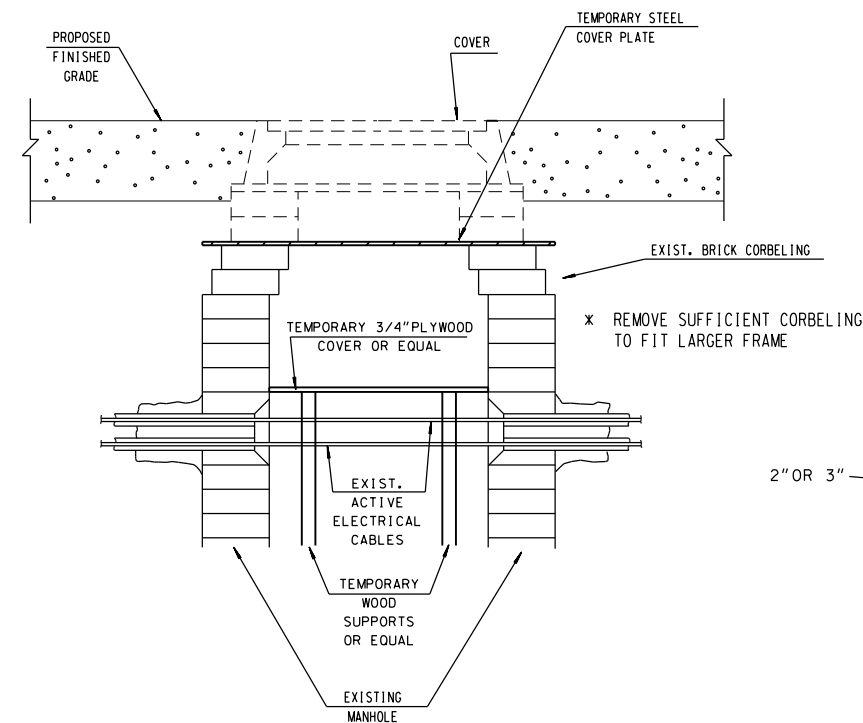


**INSTALLATION VIEW**

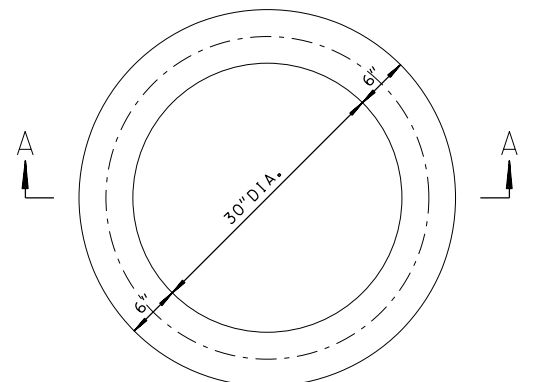
**DUCT INSTALLATION DETAIL**

STATE PROJECT NUMBER

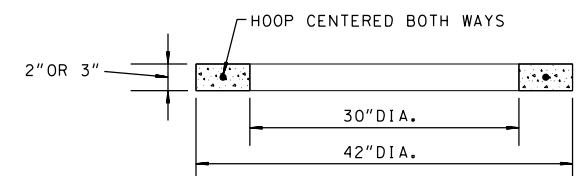
2984 - 51 - 70



**BRICK ROUND MANHOLE**



**PLAN**



**SECTION A-A**

THE ADJUSTING RING  
SHALL BE 2" OR 3"  
IN HEIGHT.

THE CIRCUMFERENTIAL STEEL  
SHALL BE CENTERED WITHIN  
THE RING.

AREA OF CIRCUMFERENTIAL  
STEEL = 0.07 SQ. INCH PER  
VERTICAL FOOT WITH A  
MINIMUM OF .024 SQ. INCH  
IN ANY ONE RING.

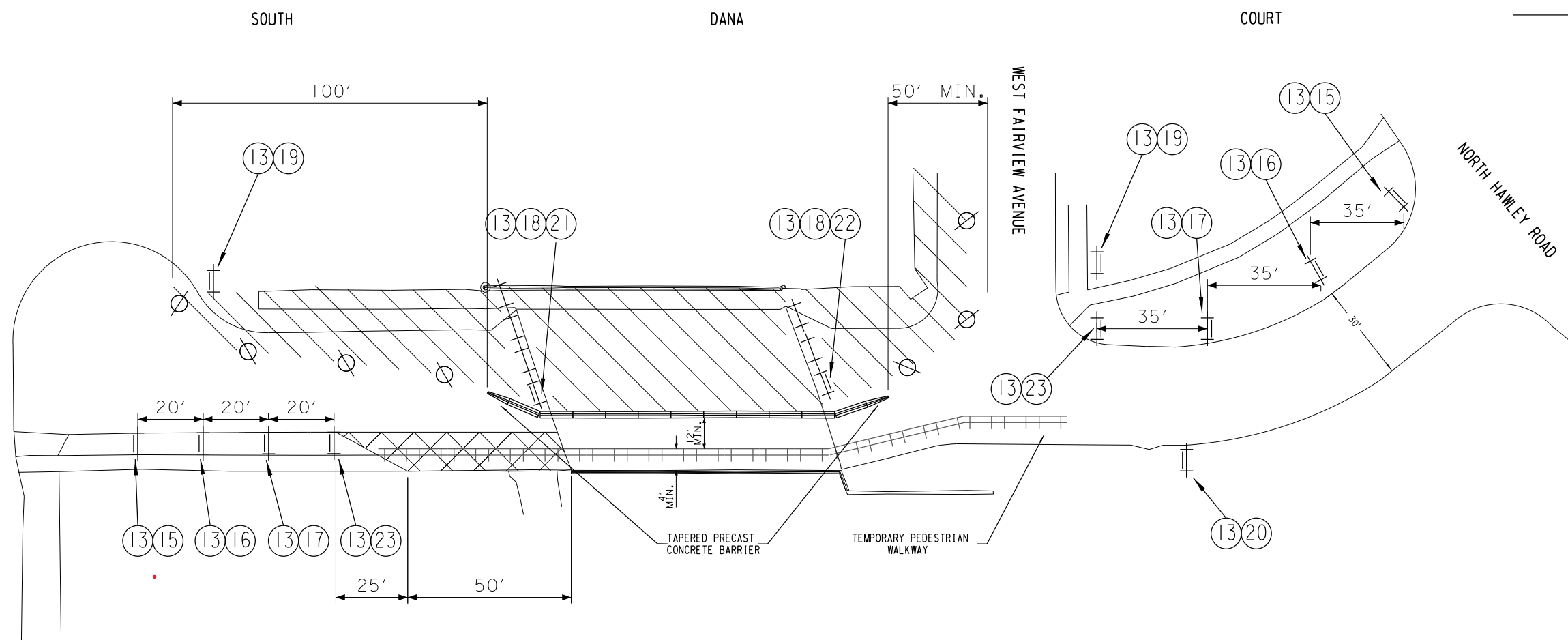
THE MINIMUM COMPRESSIVE  
STRENGTH OF THE CONCRETE  
CORE SHALL BE 4000 P.S.I.

**CONCRETE ADJUSTING RING**

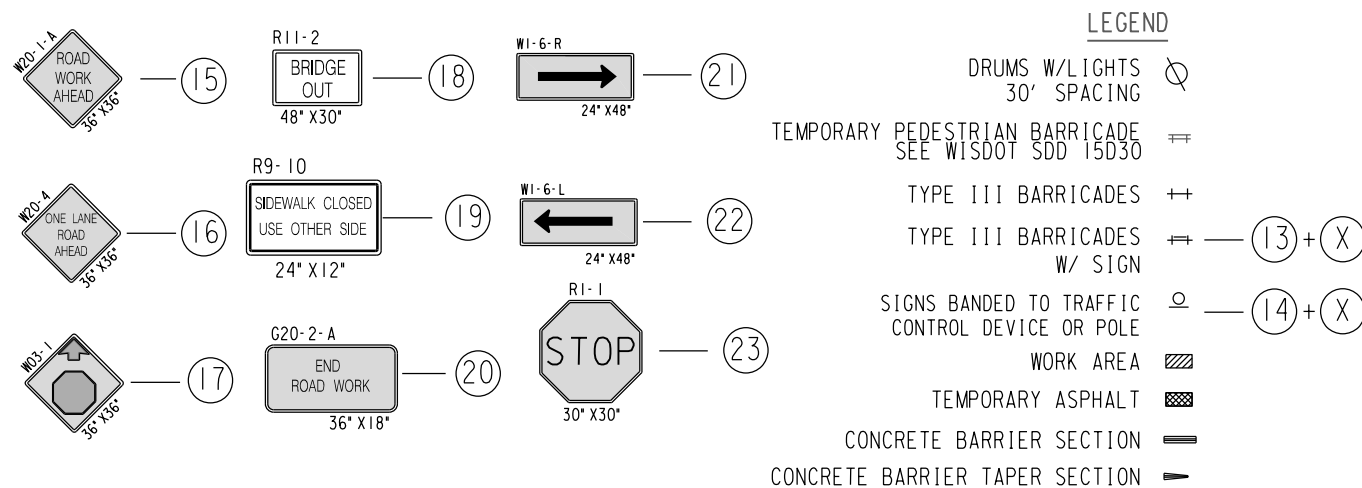
**ADJUSTING CUC MANHOLES**



## STAGE I



SHEET 1 OF 1



NOTE: ALL SIGNING SHALL BE THE CONTRACTORS RESPONSIBILITY.

ALL SIGNS SHALL BE BANDO 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.

STATE PROJECT NUMBER 2984-51-70

HWY: S DANA CT

COUNTY: MILWAUKEE

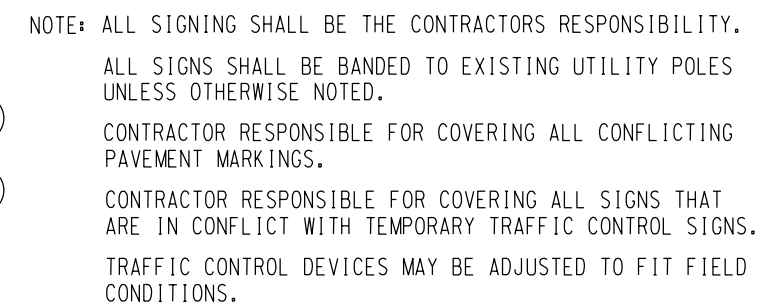
TRAFFIC CONTROL

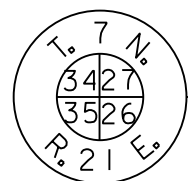
SCALE FEET 0' 40'

SHEET NO:

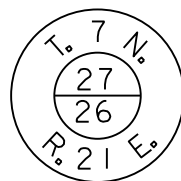
E

COURT



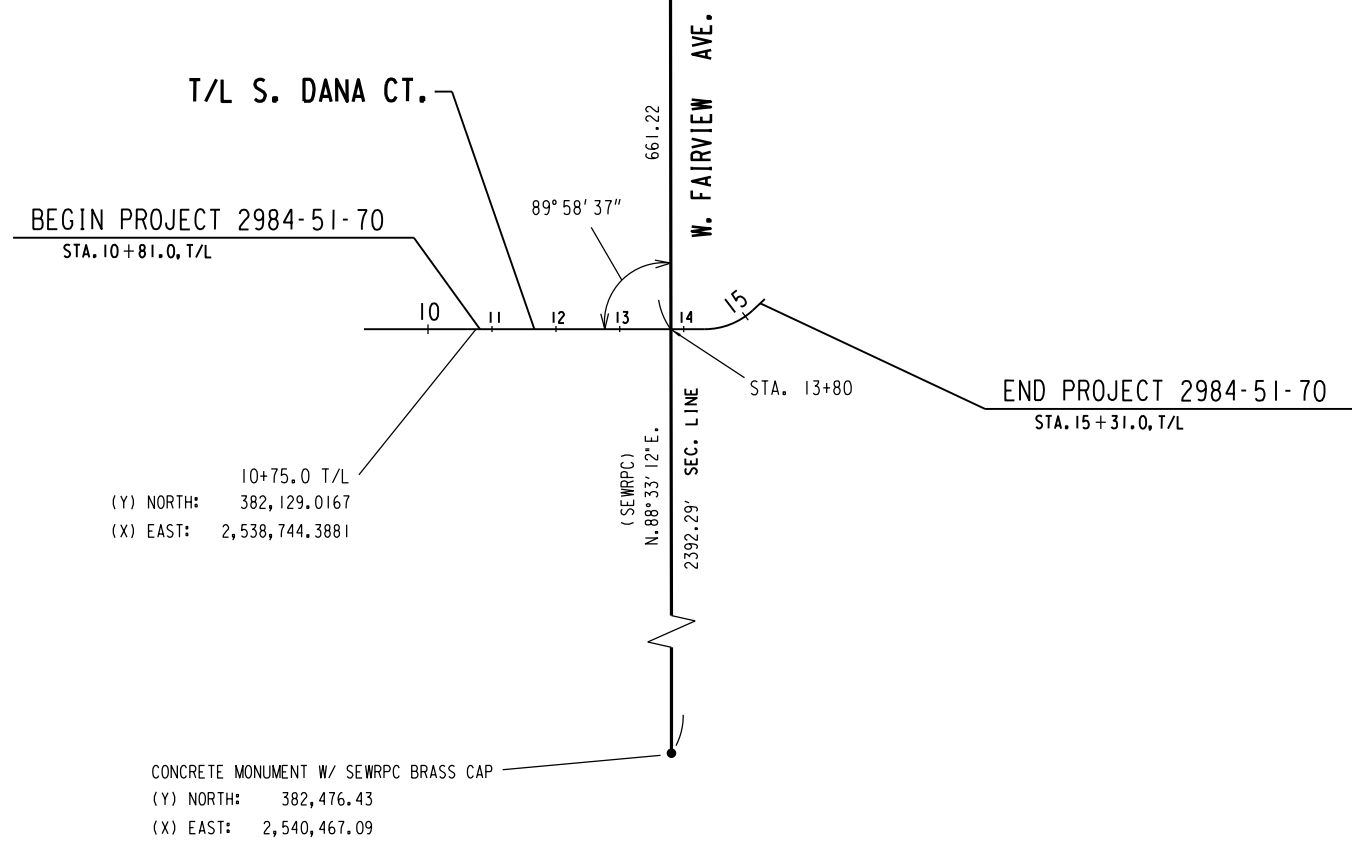


TOWNSHIP 7 NORTH, RANGE 21 EAST  
MILWAUKEE COUNTY, WISCONSIN  
CONCRETE MONUMENT W/ SEWRPC BRASS CAP  
STATE PLANE COORDINATES OF SECTION CORNER  
(Y) NORTH: 382,416.03  
(X) EAST: 2,538,075.49



TOWNSHIP 7 NORTH, RANGE 21 EAST  
MILWAUKEE COUNTY, WISCONSIN  
CONCRETE MONUMENT W/ SEWRPC BRASS CAP  
STATE PLANE COORDINATES OF SECTION CORNER  
(Y) NORTH: 385,087.60  
(X) EAST: 2,538,007.59

(SEWRPC)  
2672.43'  
N. 01° 27' 27" W.



(SEWRPC) THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

Estimate Of Quantities

2984-51-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	460.000	460.000
0004	201.0220	Grubbing	ID	42.000	42.000
0006	203.0200	Removing Old Structure (station) 001. 12+81.34	LS	1.000	1.000
0008	204.0100	Removing Concrete Pavement	SY	86.000	86.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	715.000	715.000
0012	204.0150	Removing Curb & Gutter	LF	259.000	259.000
0014	204.0155	Removing Concrete Sidewalk	SY	137.000	137.000
0016	204.0215	Removing Catch Basins	EACH	3.000	3.000
0018	205.0100	Excavation Common	CY	115.000	115.000
0020	206.1000	Excavation for Structures Bridges (structure) 001. P-40-589	LS	1.000	1.000
0022	210.1500	Backfill Structure Type A	TON	90.000	90.000
0024	213.0100	Finishing Roadway (project) 001. 2984-51-70	EACH	1.000	1.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	49.000	49.000
0028	320.0155	Concrete Base 9-Inch	SY	20.000	20.000
0030	415.0410	Concrete Pavement Approach Slab	SY	86.000	86.000
0032	416.0170	Concrete Driveway 7-Inch	SY	16.000	16.000
0034	416.0610	Drilled Tie Bars	EACH	20.000	20.000
0036	455.0605	Tack Coat	GAL	74.000	74.000
0038	465.0105	Asphaltic Surface	TON	208.000	208.000
0040	502.0100	Concrete Masonry Bridges	CY	133.000	133.000
0042	502.3200	Protective Surface Treatment	SY	305.000	305.000
0044	502.3210	Pigmented Surface Sealer	SY	115.000	115.000
0046	502.4205	Adhesive Anchors No. 5 Bar	EACH	158.000	158.000
0048	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	25,653.000	25,653.000
0050	506.0105	Structural Steel Carbon	LB	520.000	520.000
0052	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	30.000	30.000
0054	506.3015	Welded Stud Shear Connectors 7/8x6-Inch	EACH	256.000	256.000
0056	506.3025	Welded Stud Shear Connectors 7/8x8-Inch	EACH	904.000	904.000
0058	506.3030	Welded Stud Shear Connectors 7/8x9-Inch	EACH	184.000	184.000
0060	506.3035	Welded Stud Shear Connectors 7/8x10-Inch	EACH	336.000	336.000
0062	506.7050.S	Removing Bearings (structure) 001. P-40-589	EACH	30.000	30.000
0064	509.1500	Concrete Surface Repair	SF	195.000	195.000
0066	509.9025.S	Epoxy Injection Crack Repair	LF	280.000	280.000
0068	509.9026.S	Cored Holes 2-Inch Diameter	EACH	4.000	4.000
0070	511.1200	Temporary Shoring (structure) 001. P-40-589	SF	80.000	80.000
0072	513.4056	Railing Tubular Type H	LF	103.000	103.000
0074	516.0100	Dampproofing	SY	61.000	61.000
0076	516.0500	Rubberized Membrane Waterproofing	SY	24.000	24.000
0078	517.0900.S	Preparation and Coating of Top Flanges (structure) 001.	LS	1.000	1.000

Estimate Of Quantities

2984-51-70

Line	Item	Item Description	Unit	Total	Qty
		P-40-589			
0080	517.1800.S	Structure Repainting Recycled Abrasive (structure) 001. P-40-589	LS	1.000	1.000
0082	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 001. P-40-589	LS	1.000	1.000
0084	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0086	601.0331	Concrete Curb & Gutter 31-Inch	LF	259.000	259.000
0088	602.0410	Concrete Sidewalk 5-Inch	SF	810.000	810.000
0090	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	24.000	24.000
0092	603.8000	Concrete Barrier Temporary Precast Delivered	LF	125.000	125.000
0094	603.8125	Concrete Barrier Temporary Precast Installed	LF	250.000	250.000
0096	611.8110	Adjusting Manhole Covers	EACH	4.000	4.000
0098	616.0206	Fence Chain Link 6-FT	LF	128.000	128.000
0100	619.1000	Mobilization	EACH	1.000	1.000
0102	625.0100	Topsoil	SY	670.000	670.000
0104	628.7005	Inlet Protection Type A	EACH	3.000	3.000
0106	628.7015	Inlet Protection Type C	EACH	5.000	5.000
0108	629.0210	Fertilizer Type B	CWT	0.200	0.200
0110	630.0170	Seeding Mixture No. 70	LB	7.000	7.000
0112	631.0300	Sod Water	MGAL	2.000	2.000
0114	631.1000	Sod Lawn	SY	105.000	105.000
0116	642.5201	Field Office Type C	EACH	1.000	1.000
0118	643.0300	Traffic Control Drums	DAY	762.000	762.000
0120	643.0420	Traffic Control Barricades Type III	DAY	2,544.000	2,544.000
0122	643.0705	Traffic Control Warning Lights Type A	DAY	5,088.000	5,088.000
0124	643.0715	Traffic Control Warning Lights Type C	DAY	762.000	762.000
0126	643.0900	Traffic Control Signs	DAY	2,274.000	2,274.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	644.1810	Temporary Pedestrian Barricade	LF	212.000	212.000
0132	650.4500	Construction Staking Subgrade	LF	150.000	150.000
0134	650.6500	Construction Staking Structure Layout (structure) 001. P-40-589	LS	1.000	1.000
0136	650.7000	Construction Staking Concrete Pavement	LF	200.000	200.000
0138	650.8500	Construction Staking Electrical Installations (project) 001. 2984-51-70	LS	1.000	1.000
0140	650.9000	Construction Staking Curb Ramps	EACH	3.000	3.000
0142	650.9910	Construction Staking Supplemental Control (project) 001. 2984-51-70	LS	1.000	1.000
0144	652.0230	Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch	LF	150.000	150.000
0146	690.0150	Sawing Asphalt	LF	50.000	50.000
0148	690.0250	Sawing Concrete	LF	40.000	40.000

Estimate Of Quantities

2984-51-70

Line	Item	Item Description	Unit	Total	Qty
0150	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0152	715.0502	Incentive Strength Concrete Structures	DOL	798.000	798.000
0154	999.1000.S	Seismograph 001. P-40-589	LS	1.000	1.000
0156	999.1500.S	Crack and Damage Survey 001. P-40-589	LS	1.000	1.000
0158	999.2000.S	Installing and Maintaining Bird Deterrent System	EACH	1.000	1.000
0160	SPV.0060	Special 001. Adjusting Water Service Boxes	EACH	2.000	2.000
0162	SPV.0060	Special 002. Adjusting Water Manholes Frame & Lid	EACH	3.000	3.000
0164	SPV.0060	Special 100. Adjusting Sanitary Manhole	EACH	4.000	4.000
0166	SPV.0060	Special 102. Inlet Covers Type 57	EACH	3.000	3.000
0168	SPV.0060	Special 103. Manhole Covers Type 58-A	EACH	1.000	1.000
0170	SPV.0060	Special 110. Catch Basin Type 45A	EACH	3.000	3.000
0172	SPV.0060	Special 302. Fiberglass/Polymer Concrete Pull Box 13-Inch X 24-Inch X 24-Inch	EACH	4.000	4.000
0174	SPV.0060	Special 339. Portable Generator To Power Existing Street Lights	EACH	1.000	1.000
0176	SPV.0060	Special 400. Adjusting CUC Manhole Cover	EACH	2.000	2.000
0178	SPV.0060	Special 401. 4' Diameter Manhole Type CUC	EACH	2.000	2.000
0180	SPV.0060	Special 425. Installing Conduit Into Existing Manhole	EACH	2.000	2.000
0182	SPV.0060	Special 536. Girder Repair Detail 1	EACH	10.000	10.000
0184	SPV.0060	Special 537. Girder Repair Detail 2	EACH	10.000	10.000
0186	SPV.0090	Special 001. Construction Staking Concrete Sidewalk	LF	200.000	200.000
0188	SPV.0090	Special 002. Storm Sewer Pipe Corrugated PVC, 8-Inch	LF	15.000	15.000
0190	SPV.0090	Special 402. 2-Duct Cement Encased 4 Inch Rigid Nonmetallic Conduit DB-60	LF	111.000	111.000
0192	SPV.0105	Special 400. Underdeck Utility Structure P-40-589 City Of Milwaukee Comm Conduit	LS	1.000	1.000
0194	SPV.0105	Special 401. Underdeck Utility Structure P-40-589 City Of Milwaukee Elect Conduit	LS	1.000	1.000
0196	SPV.0105	Special 590. Gas Main Protection (P-40-589)	LS	1.000	1.000
0198	SPV.0105	Special 597. Cross Bracing Adjustment P-40-589	LS	1.000	1.000

REMOVALS

ITEM NO. UNIT PAY CATEGORY	CLEARING 201.0110 SY 0010	GRUBBING 201.0220 ID 0010	REMOVING CONCRETE PAVEMENT 204.0100 SY 0010	REMOVING ASPHALTIC SURFACE 204.0120 SY 0010      0030		REMOVING CURB & GUTTER 204.0150 LF 0010	REMOVING CONCRETE SIDEWALK 204.0155 SY 0010	SAWING ASPHALT 690.0150 LF 0010	SAWING CONCRETE 690.0250 LF 0010
LOCATION									
STA 10+81 TO 15+31    LT	230	21	43	58	371	160	112	25	20
SUBTOTALS (LEFT)	230	21	43	58	371	160	112	25	20
STA 10+81 TO 15+31    RT	230	21	43	38	248	99	25	25	20
SUBTOTALS (RIGHT)	230	21	43	38	248	99	25	25	20
GRAND TOTALS	460	42	86	96	619	259	137	50	40

ROADWAY CONSTRUCTION ITEMS

ITEM NO. UNIT PAY CATEGORY	BASE AGGREGATE DENSE 1 1/4-INCH 305.0120 TON 0010	CONCRETE BASE 9-INCH 320.0155 SY 0010	CONCRETE PAVEMENT APPROACH SLAB 415.0410 SY 0010	CONCRETE DRIVEWAY 7-INCH 416.0170 SY 0010	DRILLED TIE BARS 416.0610 EACH 0010	CONCRETE CURB & GUTTER 31-INCH 601.0331 LF 0010	CONCRETE SIDEWALK 5-INCH 602.0410 SF 0010	CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA 602.0515 SF 0010
LOCATION								
STA 10+81 TO 15+31    LT	30	10	43	7	10	129.5	690	24
SUBTOTALS (LEFT)	30	10	43	7	10	129.5	690	24
STA 10+81 TO 15+31    RT	19	10	43	9	10	129.5	120	0
SUBTOTALS (RIGHT)	19	10	43	9	10	129.5	120	0
GRAND TOTALS	49	20	86	16	20	259	810	24

	FINISHING	
	ROADWAY	MOBILIZATION
ITEM NO.	213.0100	619.1000
UNIT PAY	EACH	EACH
CATEGORY	0010	0010
LOCATION		
PROJECT 2984-51-70	1	1
GRAND TOTALS		
	1	1

LANDSCAPING ITEMS								
		TOPSOIL	INLET PROTECTION TYPE A	INLET PROTECTION TYPE C	FERTILIZER TYPE B	SEEDING MIXTURE No.70	SOD WATER	SOD LAWN
ITEM NO.		625.0100	628.7005	628.7015	629.0210	630.0170	631.0300	631.1000
UNIT PAY		SY	EACH	EACH	CWT	LB	MGAL	SY
CATEGORY		0010	0010	0010	0010	0010	0010	0010
LOCATION								
STA 10+81 TO 15+31	LT	350	1	3	0.1	3.5	1	75
SUBTOTALS (LEFT)		350	1	3	0.1	3.5	1	75
STA 10+81 TO 15+31	RT	320	2	2	0.1	3.5	1	30
SUBTOTALS (RIGHT)		320	2	2	0.1	3.5	1	30
GRAND TOTALS								
		670	3	5	0.2	7	2	105



CONSTRUCTION STAKING ITEMS

		CONST. STAKING SUBGRADE 650.4500 LF 0010	CONST. STAKING LAYOUT P-40-0589 650.6500 LS 0020	CONST. STAKING CONCRETE PAVEMENT 650.7000 LF 0010	CONST. STAKING ELECTRICAL INSTALLATIONS 2984-51-70 650.8500 LS 0010	CONST. STAKING CURB RAMPS 650.9000 EACH 0010	CONST. STAKING SUPPLEMENTAL CONTROL (PROJECT) 650.9910 LS 0010	CONST. STAKING CONCRETE SIDEWALK SPV.0090.001 LF 0010
LOCATION								
STA 10+81 TO 15+31	LT	75	1	100	1	3	↕	170
SUBTOTALS (LEFT)		75	1	100	1	3		170
STA 10+81 TO 15+31	RT	75	0	100	0	0		30
SUBTOTALS (RIGHT)		75	0	100	0	0	↕	30
GRAND TOTALS		150	1	200	1	3		200

ASPHALT ITEMS

		TACK COAT		ASPHALTIC SURFACE	
ITEM NO.		455.0605		465.0105	
UNIT PAY		GAL		TON	
CATEGORY		0010	0030	0010	0030
LOCATION					
STA 10+81 TO 15+31	LT	5	32	17	112
SUBTOTALS (LEFT)		5	32	17	112
STA 10+81 TO 15+31	RT	5	32	11	68
SUBTOTALS (RIGHT)		5	32	11	68
GRAND TOTALS		10	64	28	180

FIELD OFFICE

		FIELD OFFICE TYPE C 642.5201 EACH 0020
LOCATION		
PROJECT 2984-51-70		1
GRAND TOTALS		1

TRAFFIC CONTROL ITEMS

TRAFFIC CONTROL ITEMS REQUIRED (CATEGORY 0010)		STAGE 1  (Each) * (Days)		STAGE 2  (Each) * (Days)		TOTAL  (DAYS)	ITEMS	STAGE 1	STAGE 2	SIZE
ITEM #	DESCRIPTION									
643.0300	TRAFFIC CONTROL DRUMS	7	90	2	66	762	W20-1-A	2	2	36"x36"
643.0420	TRAFFIC CONTROL BARRICADES TYPE III	18	90	14	66	2,544	W20-4	2	2	36"X36"
643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	36	90	28	66	5,088	W03-1	2	2	36"X36"
643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	7	90	2	66	762	R11-2	2	2	48"x30"
643.0900	TRAFFIC CONTROL SIGNS	15	90	14	66	2,274	R9-9	2	-	12"X24"
							G20-2-A	1	2	36"X18"
643.5000	TRAFFIC CONTROL					1	W1-6-R	1	1	24"X48"
NOTES:  # ALL DRUMS HAVE ONE STEADY BURNING YELLOW LIGHT (LIGHTS ARE TO BE PAID FOR SEPERATLY UNDER THEIR APPROPRIATE BID ITEM)  ## ALL TYPE III BARRICADES HAVE TWO (2) FLASHING YELLOW LIGHTS (LIGHTS ARE TO BE PAID FOR SEPERATLY UNDER THEIR APPROPRIATE BID ITEM)							W1-6-L	1	1	24"X48"
							R1-1	2	2	30"X30"
							TOTAL	15	14	

CONCRETE BARRIER			
		CONCRETE BARRIER	CONCRETE BARRIER
		TEMPORARY PRECAST DELIVERED	TEMPORARY PRECAST INSTALLED
		ITEM NO. 603.8000	603.8125
		UNIT PAY LF	LF
LOCATION	CATEGORY	0010	0010
STAGE 1		125	125
STAGE 2		-	125
PROJECT TOTAL		125	250

PEDESTRIAN BARRICADE		
		TEMPORARY PEDESTRIAN BARRICADE
		ITEM NO. 644.1810
		UNIT PAY LF
LOCATION	CATEGORY	0010
STAGE 1		212
STAGE 2		-
PROJECT TOTAL		212

3

EXISTING AND PROPOSED SEWER STRUCTURES								SEWER PIPES								
STRUCTURE NUMBER	STRUCTURE TYPE	STATION	CENTERLINE OFFSET	COVER ELEV.	DEPTH <sup>a</sup> (FT)	FRAME & LID	STRUCTURE REMARKS	FROM STRUCTURE	TO STRUCTURE	INVERTS		SLOPE (FT/FT)	PLAN LENGTH	PIPE SIZE (IN)	PIPE MATERIAL	PIPE REMARKS
										INLET	OUTLET					
101	STORM INLET- 45A	10+79.0	11.7'RT	119.67	4.91	MS-57		101	EXISTING DRAIN	116.59	116.49	0.02000	5	8	PVC	CONNECT TO EXISTING DRAIN
102	STORM INLET- 45A	10+90.5	38.5'LT	119.68	4.91	MS-57		102	EXISTING DRAIN	116.60	116.50	0.02000	5	8	PVC	CONNECT TO EXISTING DRAIN
103	EXISTING MANHOLE	10+91.0	4.2'LT	120.15			ADJUST ONLY									
104	EXISTING MANHOLE	12+11.3	6.2'LT	125.58			ADJUST ONLY									
105	EXISTING MANHOLE	13+57.7	0'RT	132.00		MS-58A	NEW FRAME & LID ONLY									
106	STORM INLET- 45A	13+66.7	17.2'RT	131.30	4.91	MS-57		106	EXISTING DRAIN	128.22	128.12	0.02000	5	8	PVC	CONNECT TO EXISTING DRAIN
107	EXISTING MANHOLE	13+76.3	30.6'LT	132.90			ADJUST ONLY									
108	EXISTING MANHOLE	14+14.6	7.8'RT	133.71			ADJUST ONLY									

^ DEPTH = COVER ELEVATION - LOWEST PIPE INVERT ELEVATION + SUMP(FOR STORM INLETS)

		ADJUSTING MANHOLE COVERS		INLET COVERS TYPE MS 57		MANHOLE COVERS TYPE MS 58-A		CATCH BASIN TYPE 45A		STORM SEWER PIPE CORRUGATED PVC 8-INCH		ADJUSTING SANITARY MANHOLE	
ITEM NO.		611.8110		SPV.0060.102		SPV.0060.103		SPV.0060.110		SPV.0090.002		SPV.0060.100	
UNIT PAY		EACH		EACH		EACH		EACH		LF		EACH	
CATEGORY		0010	0030	0010	0030	0030	0010	0030	0010	0030	0030	0030	0030
LOCATION													
STA 10+81 TO 15+31		2	2	1	2	1	1	2	5	10	4		
GRAND TOTALS		2	2	1	2	1	1	2	5	10	4		

STORM CATCH BASIN REMOVALS

		REMOVING CATCH BASINS 204.0215 EACH	
ITEM NO. UNIT PAY CATEGORY		0010	0030
LOCATION			
STA 10+81 TO 15+31		LT	0 1
SUBTOTALS (LEFT)		0	1
STA 10+81 TO 15+31		RT	1 1
SUBTOTALS (RIGHT)		1	1
GRAND TOTALS		1	2

	ADJUSTING WATER SERVICE BOXES	ADJUSTING WATER MANHOLES FRAME & LID
ITEM NO.	SPV.0060.001	SPV.0060.002
UNIT PAY	EACH	EACH
CATEGORY	0030	0030
LOCATION		
PROJECT 2984-51-70		
GRAND TOTALS	2	3

STREET LIGHTING MATERIALS OFF THE BRIDGE

	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	FIBERGLASS/ POLYMER CONCRETE PULL BOX 13-INCH x 24-INCH x 24-INCH	PORTABLE GENERATOR TO POWER EXISTING STREET LIGHTS
ITEM NO.	652.0230	SPV.0060.302	SPV.0060.339
UNIT PAY	LF	EACH	EACH
CATEGORY	0010	0010	0010
LOCATION			
PROJECT 2984-51-70	150	4	1
GRAND TOTALS	150	4	1

CITY UNDERGROUND CONDUIT

	ADJUSTING CUC MANHOLE COVER	4' DIAMETER MANHOLE TYPE CUC	INSTALLING CONDUIT ITO EXISTING MANHOLE	2-DUCT CEMENT ENCASED 4 INCH RIGID NON METALLIC CONDUIT DB-60
ITEM NO.	SPV.0060.400	SPV.0060.401	SPV.0060.425	SPV.0090.402
UNIT PAY	EACH	EACH	EACH	LF
CATEGORY	0030	0030	0030	0030
LOCATION				
MANHOLE 600- STA 12+29.1, 21.1 RT	1		1	
MANHOLE 600 TO MANHOLE 601				27
MANHOLE 601- STA 12+2361, 9.0 LT		1		
MANHOLE 601 TO 5' SOUTH OF ABUTMENT				9
5' SOUTH OF ABUTMENT TO 5' NORTH OF ABUTMENT				
5' EAST OF ABUTMENT TO MANHOLE 602				51
MANHOLE 602- STA 13+70.5, 8.6 LT		1		
MANHOLE 602 TO MANHOLE 603				24
MANHOLE 603 TO STA 13+80.1, 19.3 RT	1		1	
PROPOSED PULL BOX TO PROPOSED PULL BOX				
TOTAL	2	2	2	111

EARTH WORK SUMMARY

STATION/ TO STATION	LOCATION	EXCAVATION COMMON (I) ITEM NO. 205.0100	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (3)	AVAILABLE MATERIAL (4)	EXPANDED FILL (5)	MASS ORDINATE ± (6)	WASTE	BORROW
		CUT (2)						
		CY	CY	CY	CY	CY	CY	CY
STA 10+81 TO 15+31	S. DANA CT.	115	115	0	0	115	115	0

EXISTING ASPHALTIC PAV'T THICKNESS IS VARIABLE

1) NO EBS IS ANTICIPATED, IF EBS IS REQUIRED IT WILL BE PAID AS EXCAVATION COMMON, ITEM NO. 205.0100

2) SALVAGED/ UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

3) SALVAGED/ UNUSABLE PAVEMENT MATERIAL.

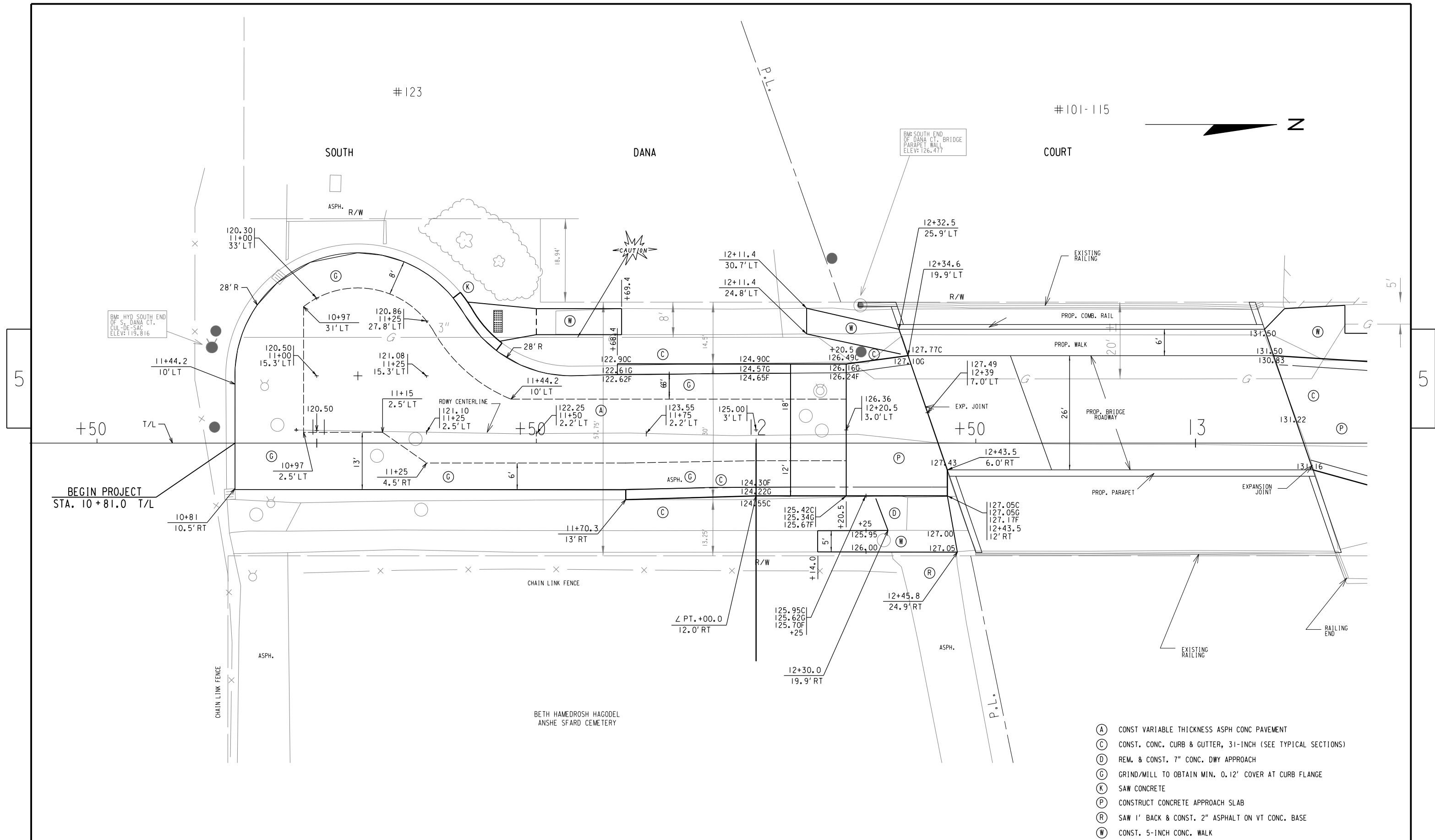
4) AVAILABLE MATERIAL = CUT - SALVAGED/ UNUSABLE PAVEMENT MATERIAL

5) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL.

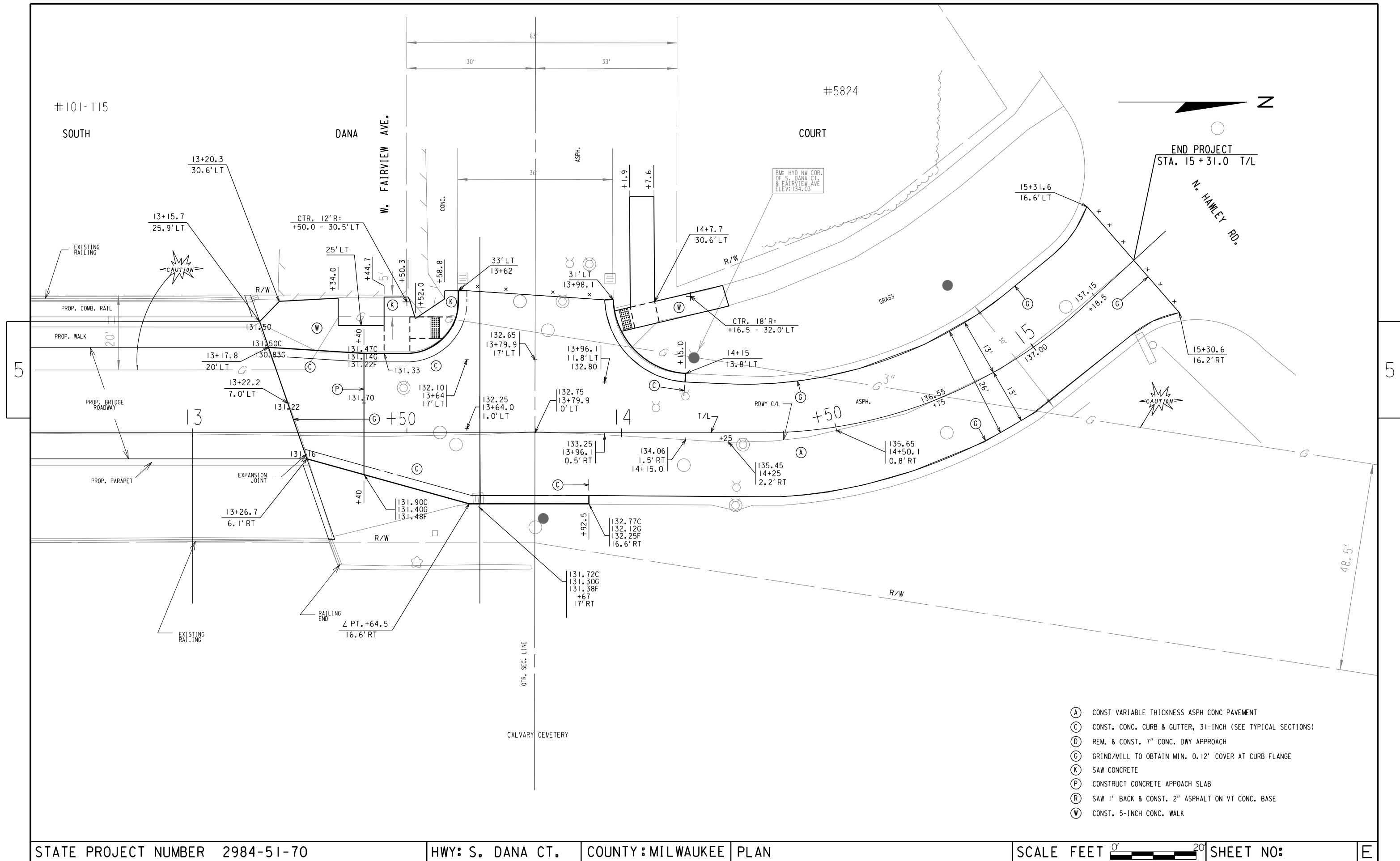
CUT FILL QUANTITY

STATION	CUT CY	FILL CY	LARGEST CUT IN FEET
11+50 TO 11+75	3.6	0	2.2
11+75 TO 12+00	9.1	0	2.2
12+00 TO 12+25	17.2	0	2.2
12+25 TO 12+50	14.8	0	2.2
12+50 TO 13+00	-	-	-
13+00 TO 13+25	5.0	0	2.2
13+25 TO 13+50	27.7	0	2.2
13+50 TO 13+75	19.8	0	2.2
13+75 TO 14+00	5.7	0	2.2
14+00 TO 14+25	10.4	0	2.2
14+25 TO 14+50	1.7	0	0.6
SUMMARY	115	0	





- (A) CONST VARIABLE THICKNESS ASPH CONC PAVEMENT
- (C) CONST. CONC. CURB & GUTTER, 31-INCH (SEE TYPICAL SECTIONS)
- (D) REM. & CONST. 7" CONC. DWY APPROACH
- (G) GRIND/MILL TO OBTAIN MIN. 0.12' COVER AT CURB FLANGE
- (K) SAW CONCRETE
- (P) CONSTRUCT CONCRETE APPROACH SLAB
- (R) SAW 1' BACK & CONST. 2" ASPHALT ON VT CONC. BASE
- (W) CONST. 5-INCH CONC. WALK



STATE PROJECT NUMBER 2984-51-70

HWY: S. DANA CT.

COUNTY: MILWAUKEE

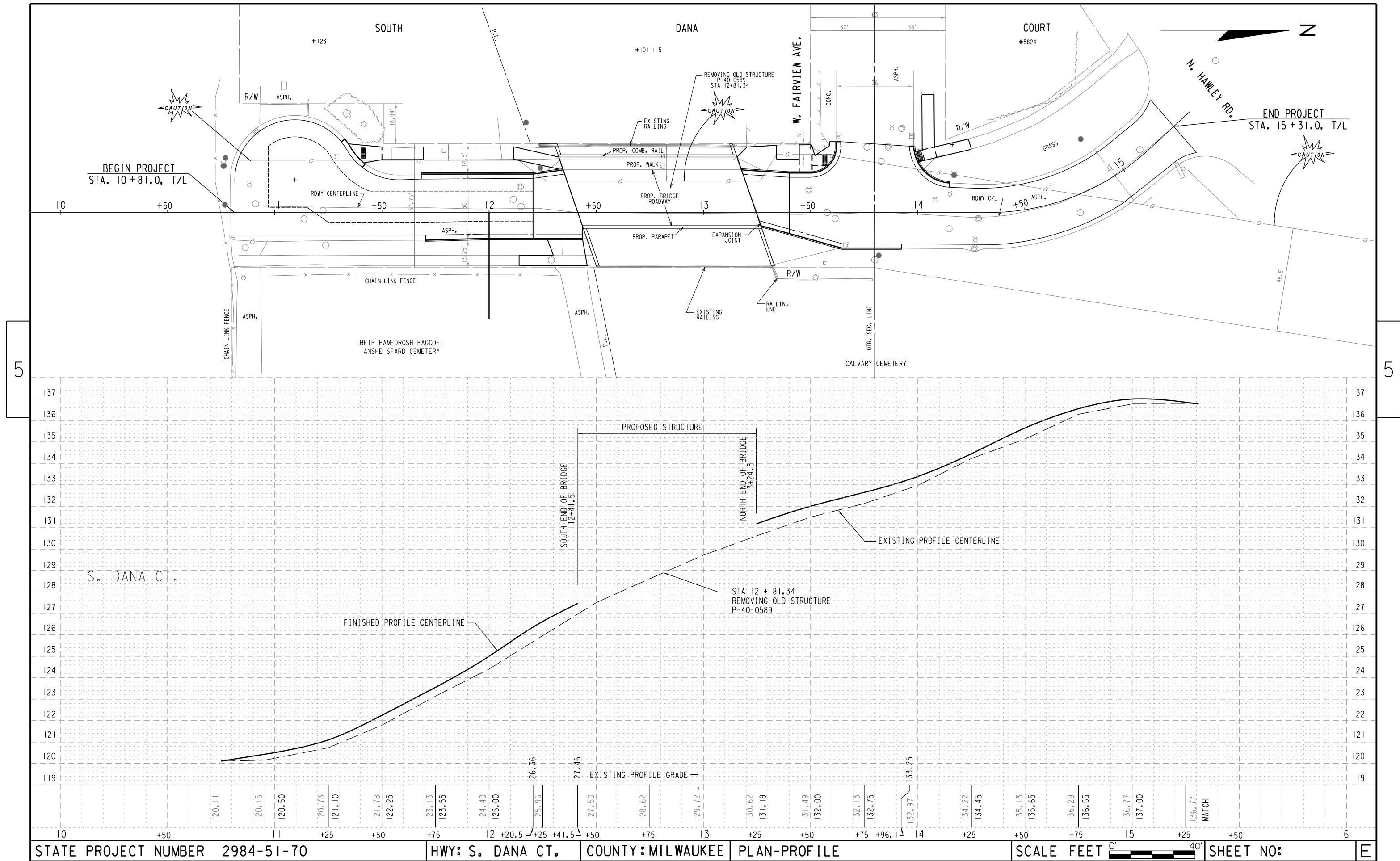
PLAN

SCALE FEET

0' 20'

SHEET NO:

E



STATE PROJECT NUMBER 2984-51-70

HWY: S. DANA CT.

COUNTY: MILWAUKEE

PLAN-PROFILE

SCALE FEET

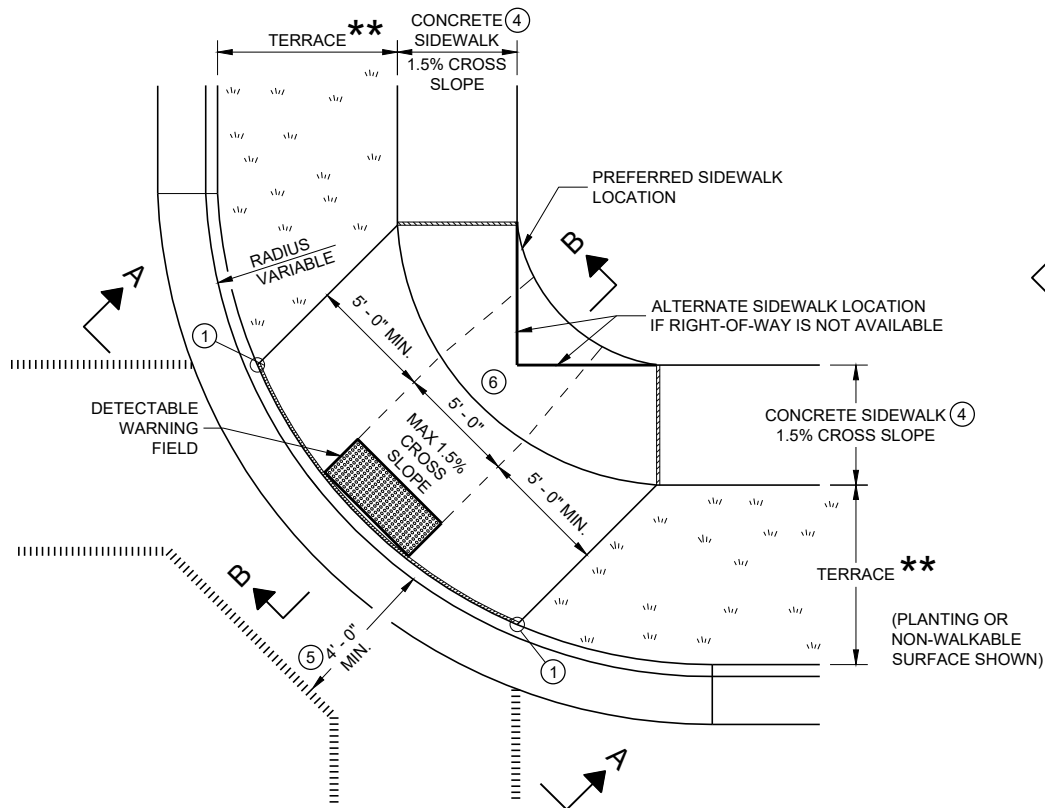
0' 40'

SHEET NO:

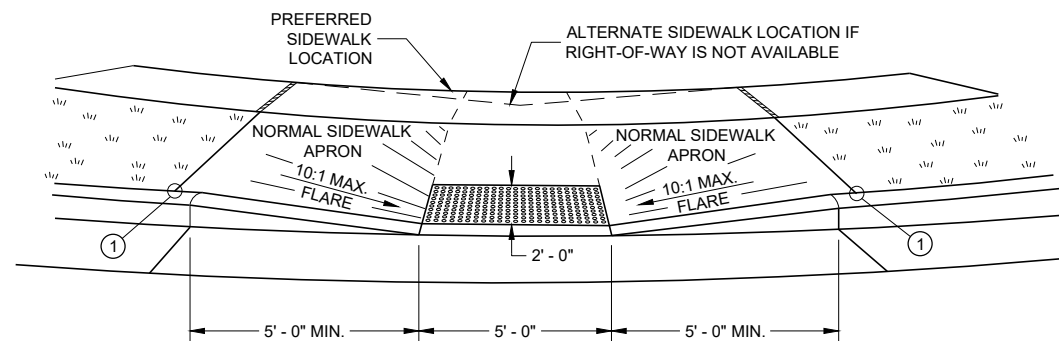
E

Standard Detail Drawing List

08D05-20A	CURB RAMPS TYPES 1 AND 1-A
08D05-20B	CURB RAMPS TYPES 2 AND 3
08D05-20C	CURB RAMPS TYPES 4A AND 4A1
08D05-20D	CURB RAMPS TYPE 4B AND 4B1
08D05-20E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-20F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-10	CONDUIT
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C15-06A	CONCRETE BASE
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
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D30-06A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-06B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

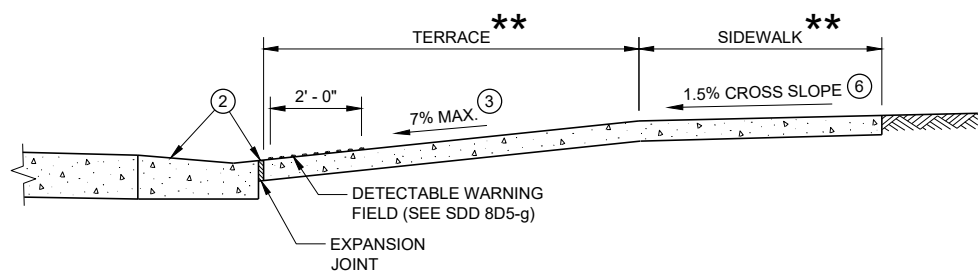


**PLAN VIEW**  
**CURB RAMP TYPE 1**  
**(CENTER OF CORNER RADIUS)**

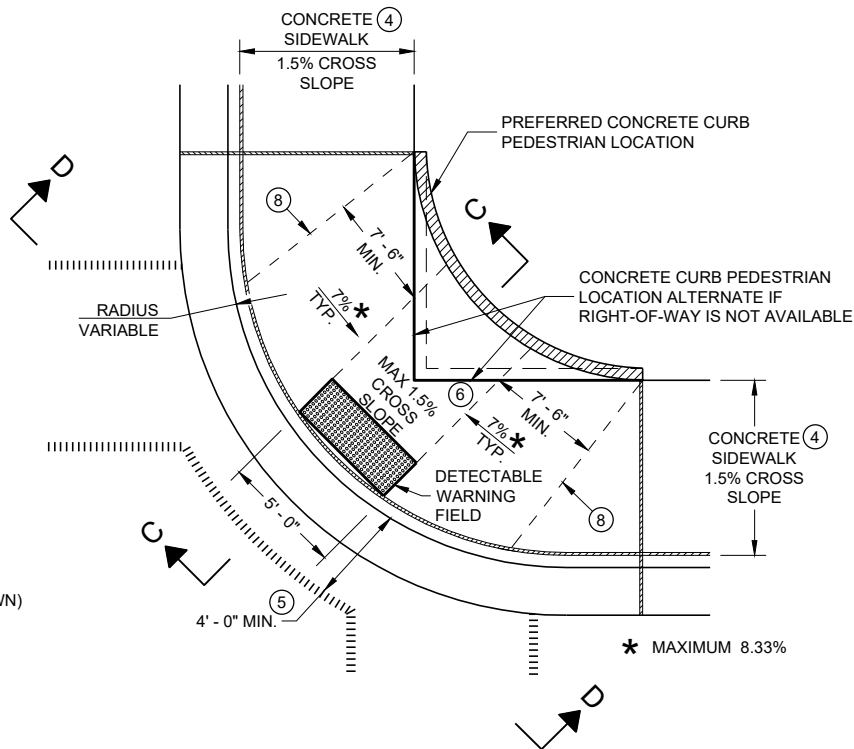


**VIEW A - A FOR TYPE 1**

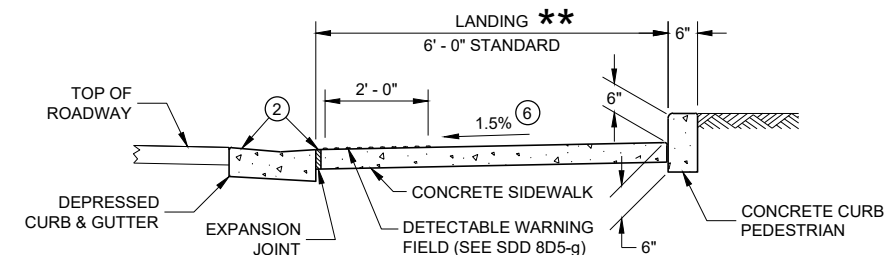
\*\* WIDTH SHOWN ELSEWHERE  
IN THE PLANS



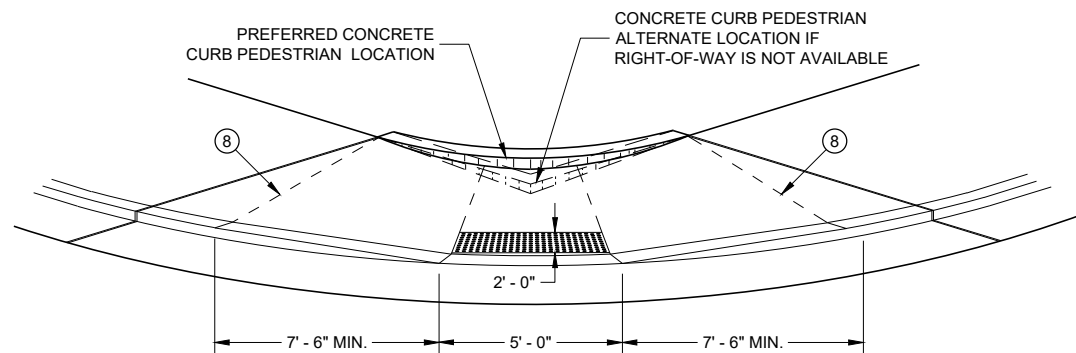
**SECTION B - B FOR TYPE 1**



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



**SECTION C - C FOR TYPE 1 - A**



**VIEW D - D FOR TYPE 1 - A**

## GENERAL NOTES

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

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

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

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

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

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

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

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

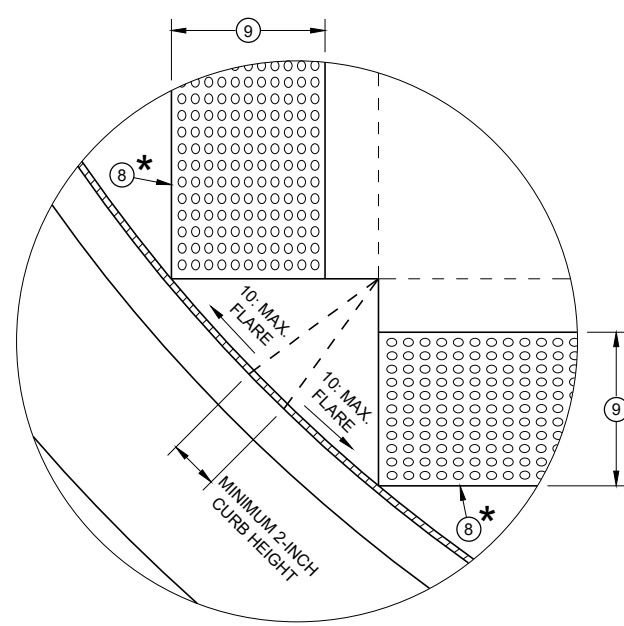
- THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

## LEGEND

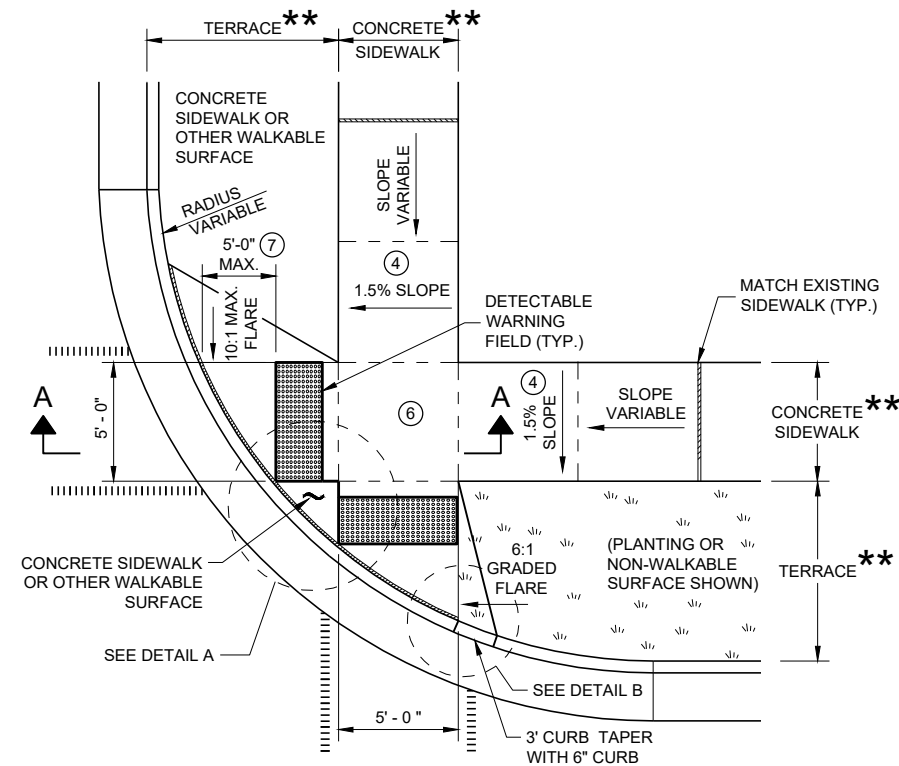
- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

## CURB RAMPS TYPE 1 AND 1-A

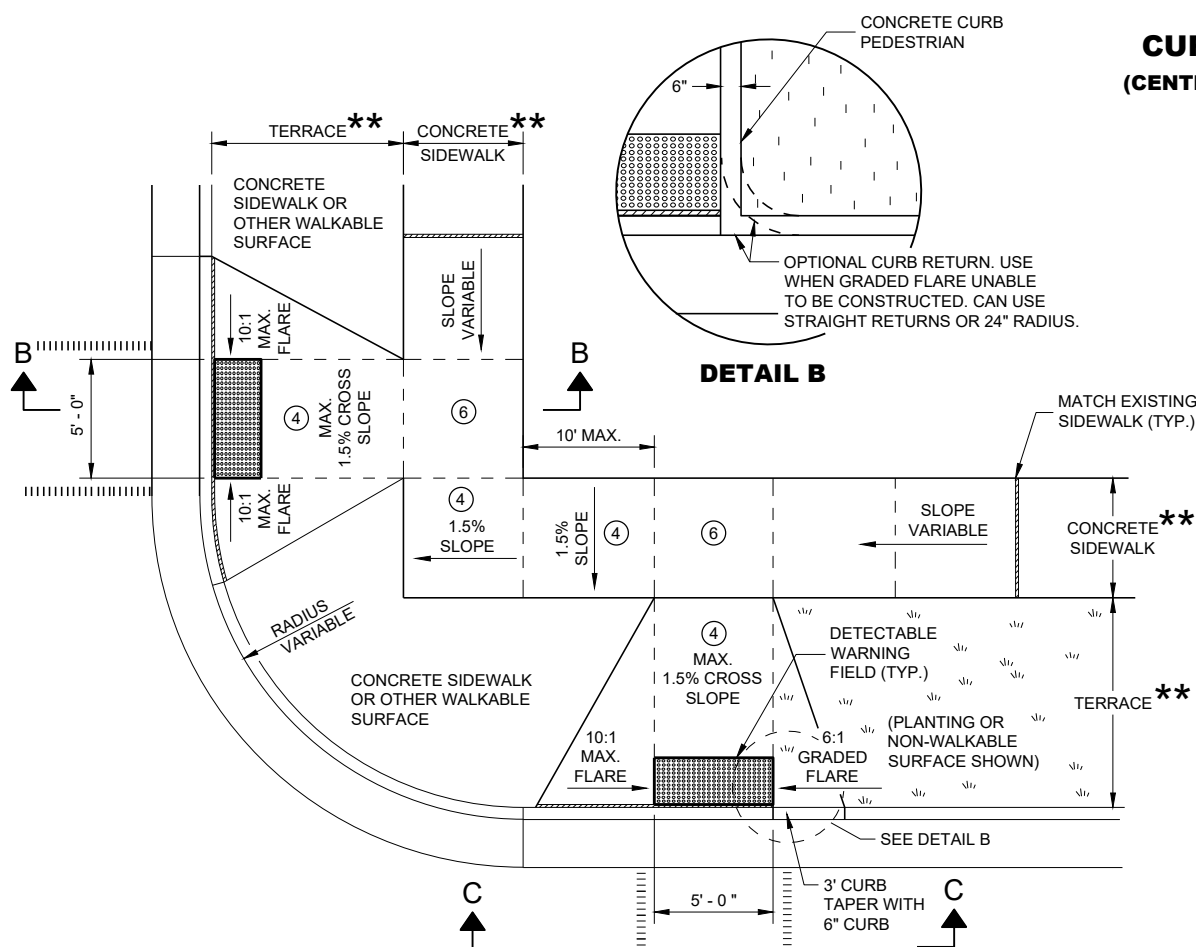
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



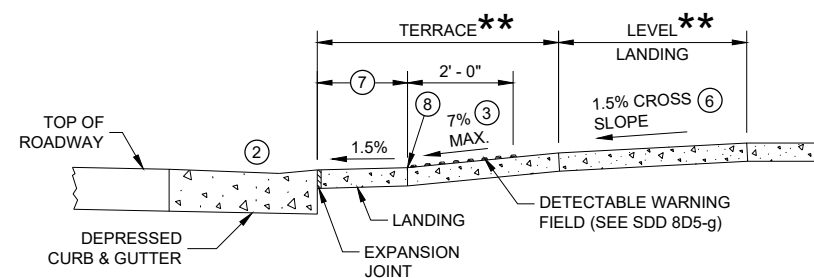
### DETAIL A



**PLAN VIEW**  
**CURB RAMP TYPE 2**  
**(CENTER OF CORNER RADIUS)**



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






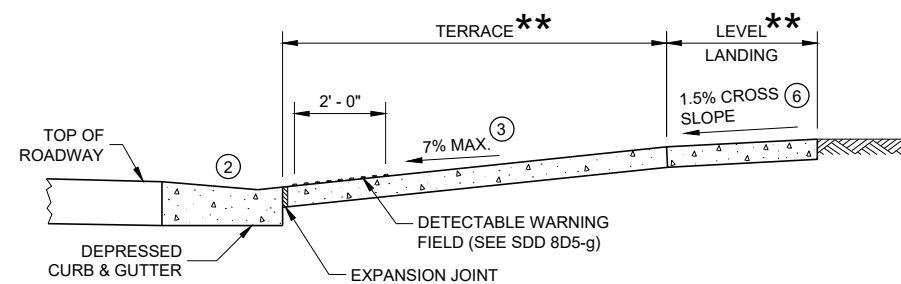
## SECTION A - A FOR TYPE 2

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

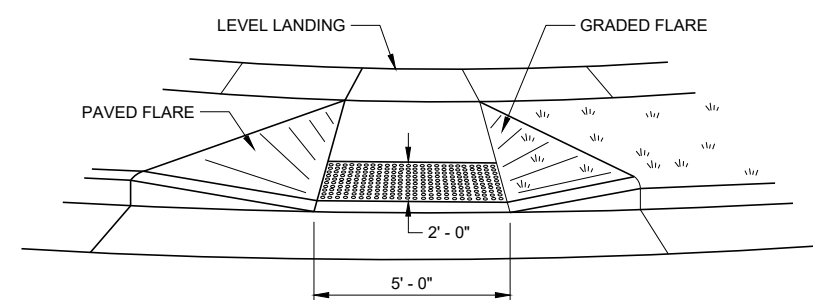
**\*\* WIDTH SHOWN ELSEWHERE  
IN THE PLANS**

## LEGEND

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



### SECTION B - B FOR TYPE 3



**VIEW C - C FOR TYPE 3**

## GENERAL NOTES

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

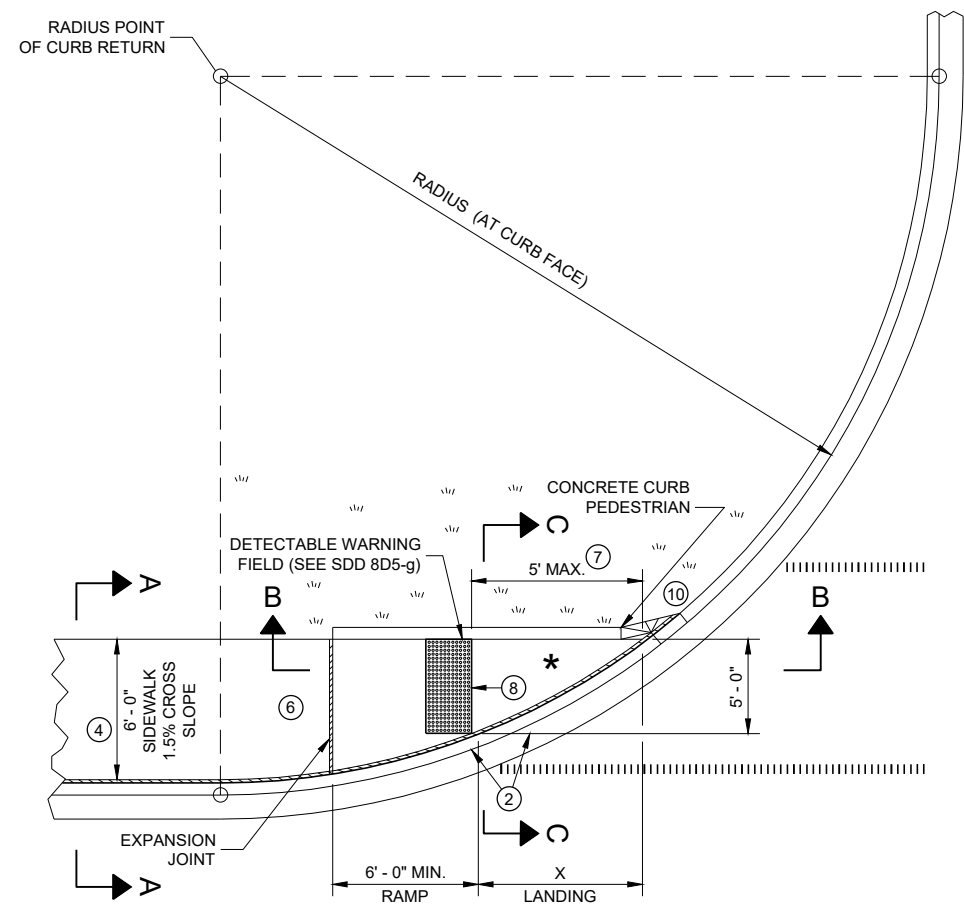
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

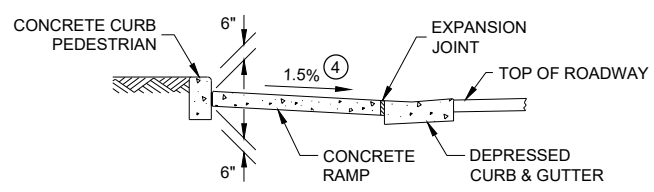
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN  $\frac{1}{4}$  - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.
- ④  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

## CURB RAMPS TYPE 2 AND 3

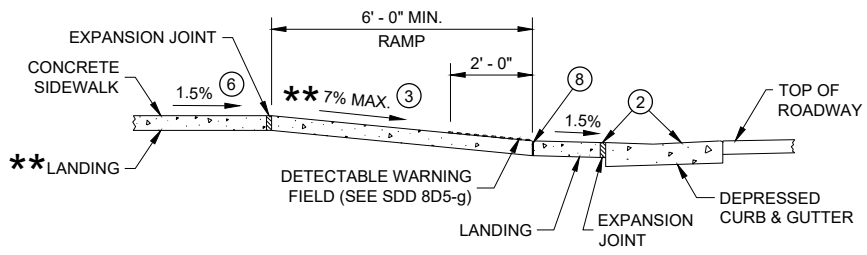
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



PLAN VIEW  
CURB RAMP TYPE 4A



SECTION C - C FOR TYPE 4A



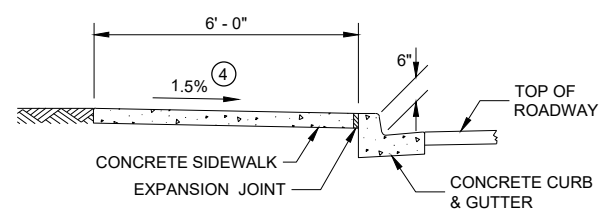
SECTION B - B FOR  
TYPE 4A AND TYPE 4A1

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

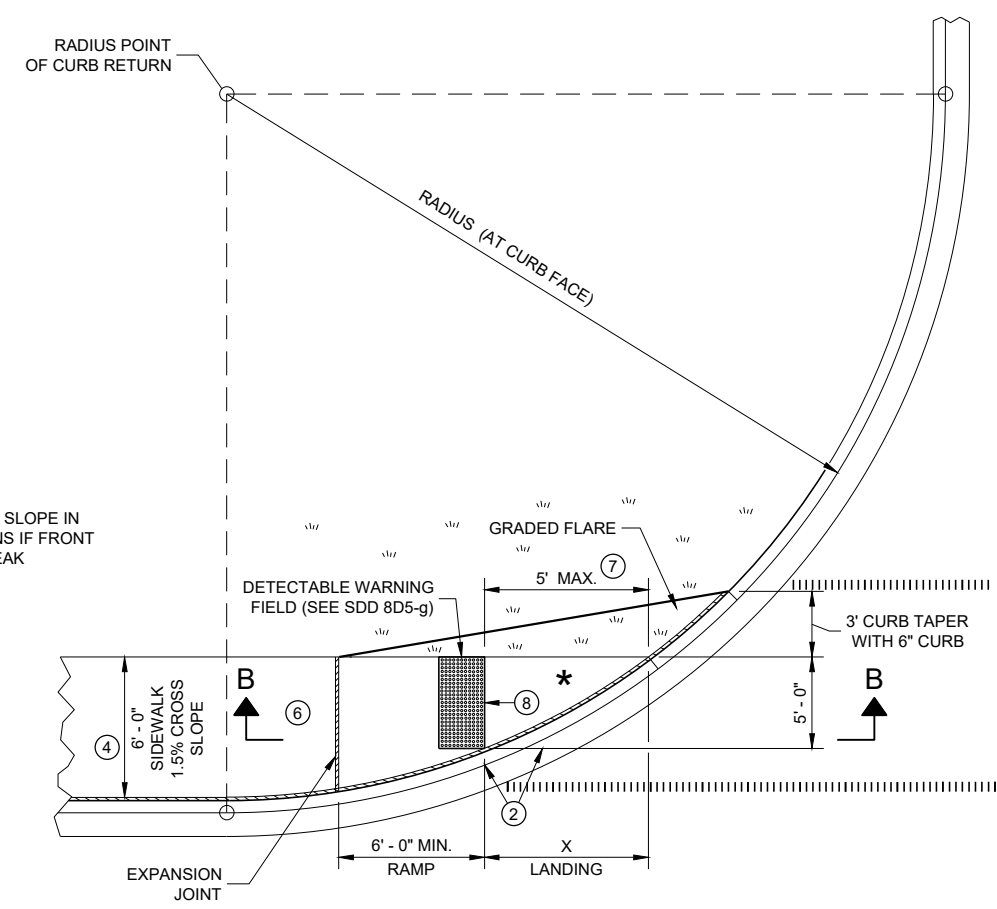
\* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"
15 FEET	6' - 5 1/2"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A



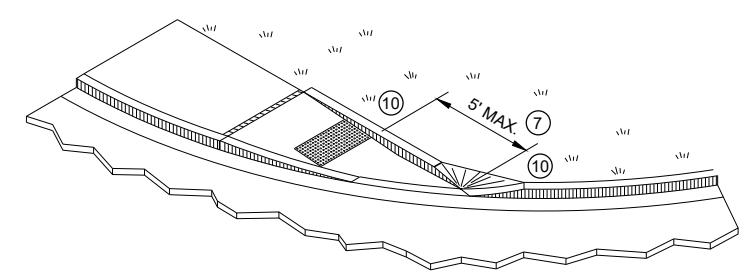
PLAN VIEW  
CURB RAMP TYPE 4A1

### GENERAL NOTES

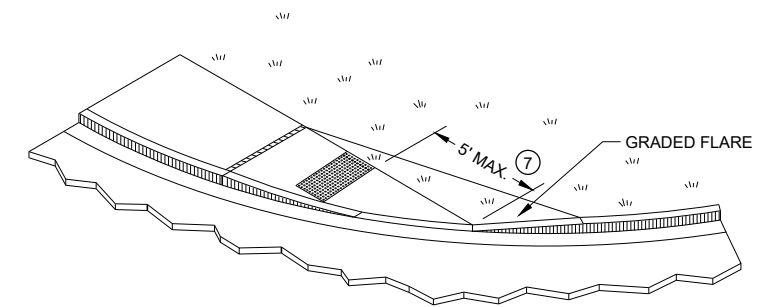
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

### LEGEND

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



ISOMETRIC VIEW FOR TYPE 4A

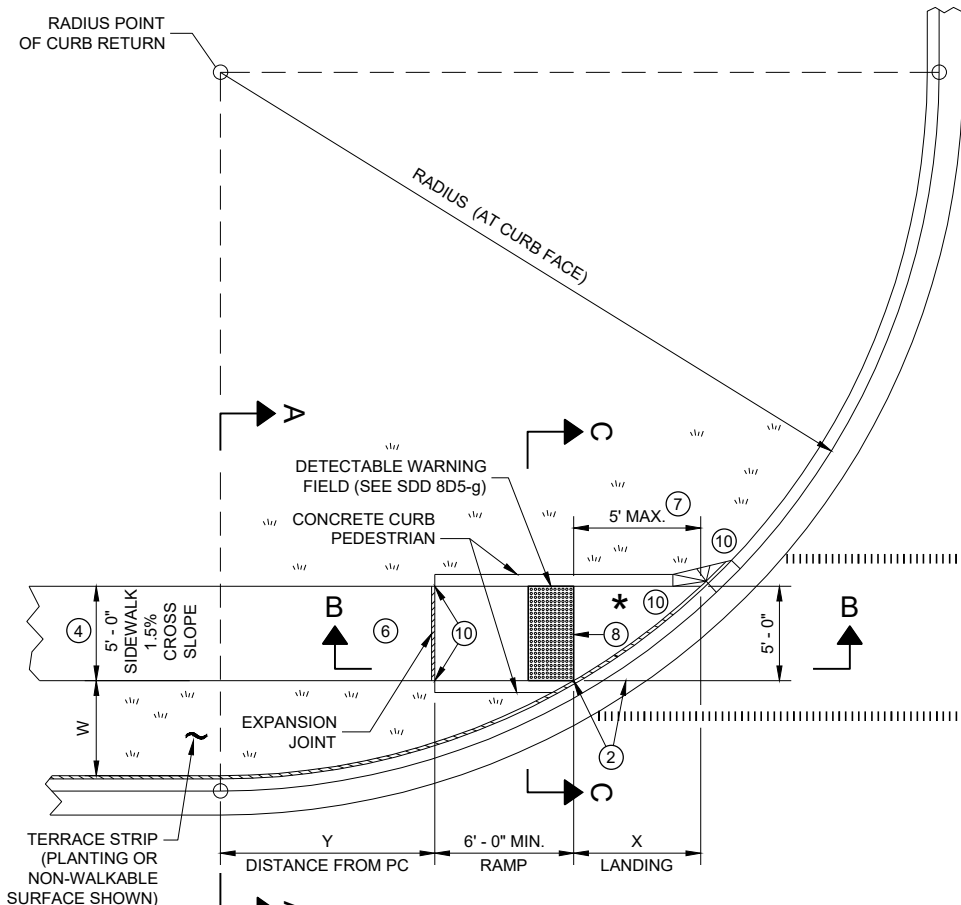


ISOMETRIC VIEW FOR TYPE 4A1

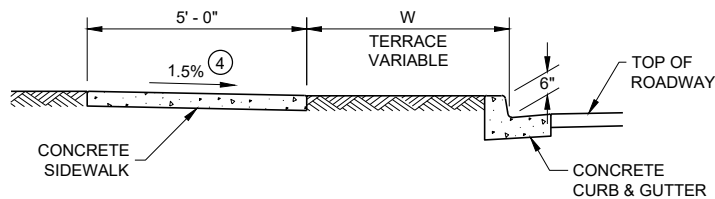
### CURB RAMPS TYPE 4A AND 4A1

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

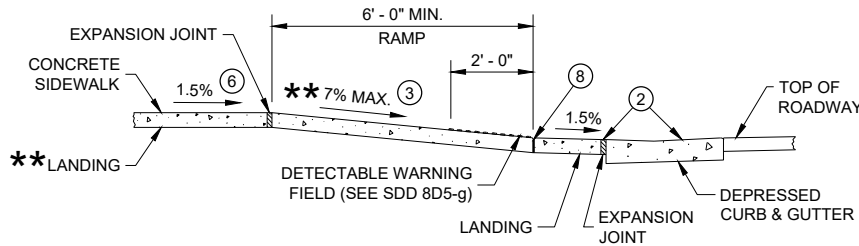




PLAN VIEW  
CURB RAMP TYPE 4B



SECTION A - A FOR TYPE 4B



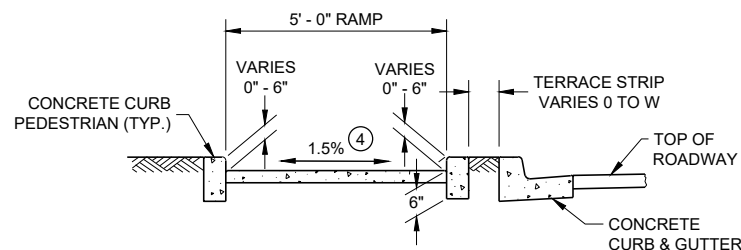
\*\* IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B - B FOR  
TYPE 4B AND TYPE 4B1

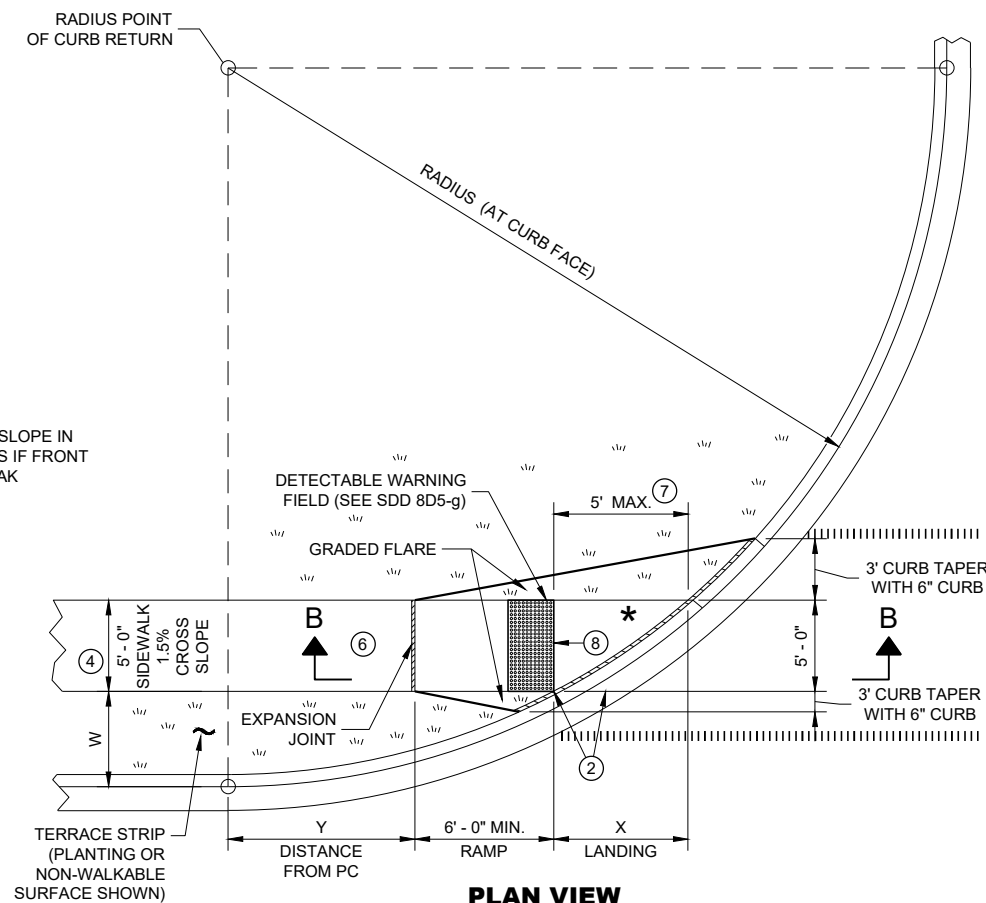
\* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 1/4"	0' - 5"	2' - 1"	1' - 4 1/2"	1' - 5"	2' - 1"	0' - 10"	2' - 7 1/2"	0' - 3 3/4"	3' - 0 1/4"						
15 FEET	4' - 6 3/4"	2' - 1 3/4"	3' - 9"	3' - 5 3/4"	3' - 1 1/4"	4' - 6"	2' - 6 3/4"	5' - 4 1/2"	2' - 1"	6' - 1"	1' - 8"	6' - 8 1/2"	1' - 3 1/4"	7' - 2 1/2"	0' - 10 3/4"	7' - 7 1/4"
20 FEET	5' - 9 3/4"	3' - 6 1/2"	4' - 11 1/2"	5' - 1 3/4"	4' - 3 1/4"	6' - 5 1/2"	3' - 8 3/4"	7' - 7"	3' - 3"	8' - 6 1/2"	2' - 10"	9' - 4 1/2"	2' - 5 1/2"	10' - 1 1/4"	2' - 1 1/4"	10' - 9"
30 FEET			6' - 9 1/4"	7' - 11 1/4"	6' - 0 1/4"	9' - 8"	5' - 5"	11' - 1 3/4"	4' - 10 3/4"	12' - 5 3/4"	4' - 5 1/2"	13' - 7 3/4"	4' - 0 3/4"	14' - 8 1/2"	3' - 8 1/2"	15' - 8 1/4"
40 FEET									6' - 1 3/4"	15' - 8 1/2"	5' - 8"	17' - 2"	5' - 3"	18' - 5 3/4"	4' - 10 3/4"	19' - 8 1/4"
50 FEET															5' - 10 1/4"	23' - 2"

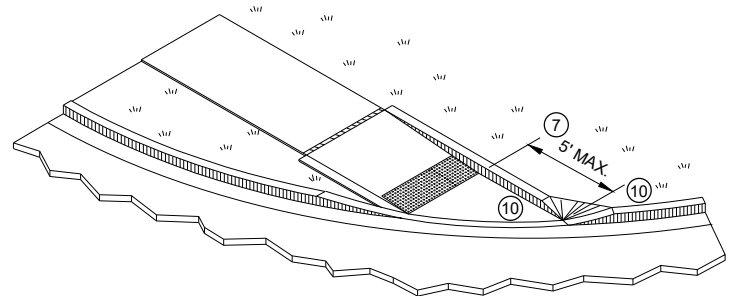
INTERMEDIATE RADII CAN BE INTERPOLATED  
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH  
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



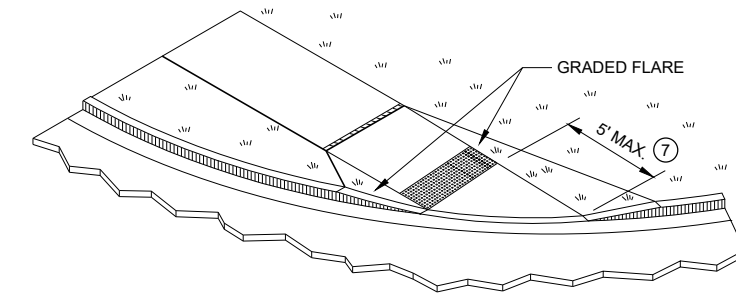
SECTION C - C FOR TYPE 4B



PLAN VIEW  
CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

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

GENERAL NOTES

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

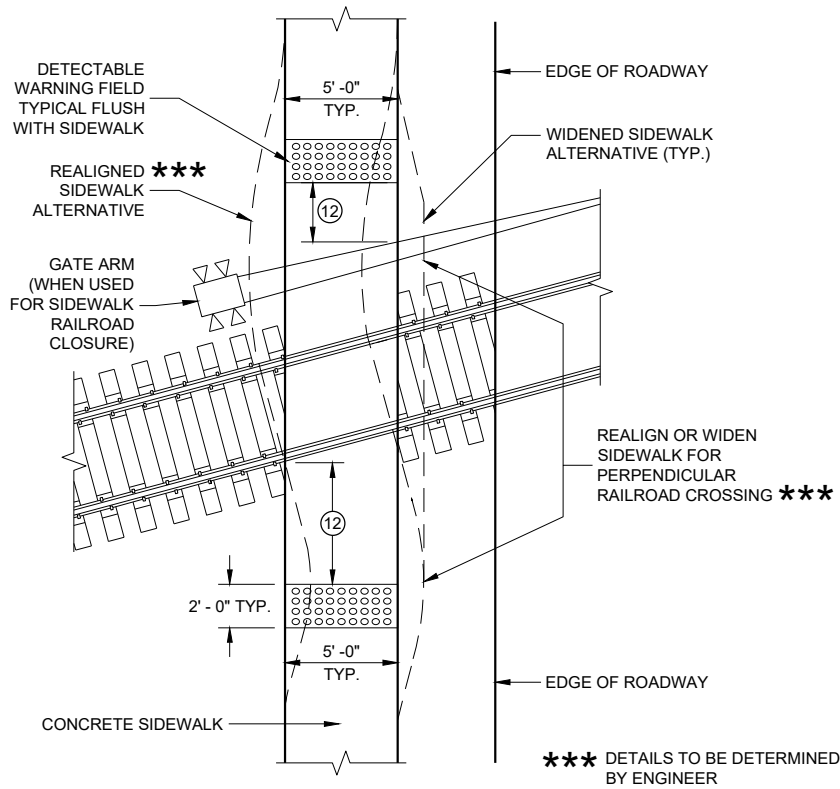
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

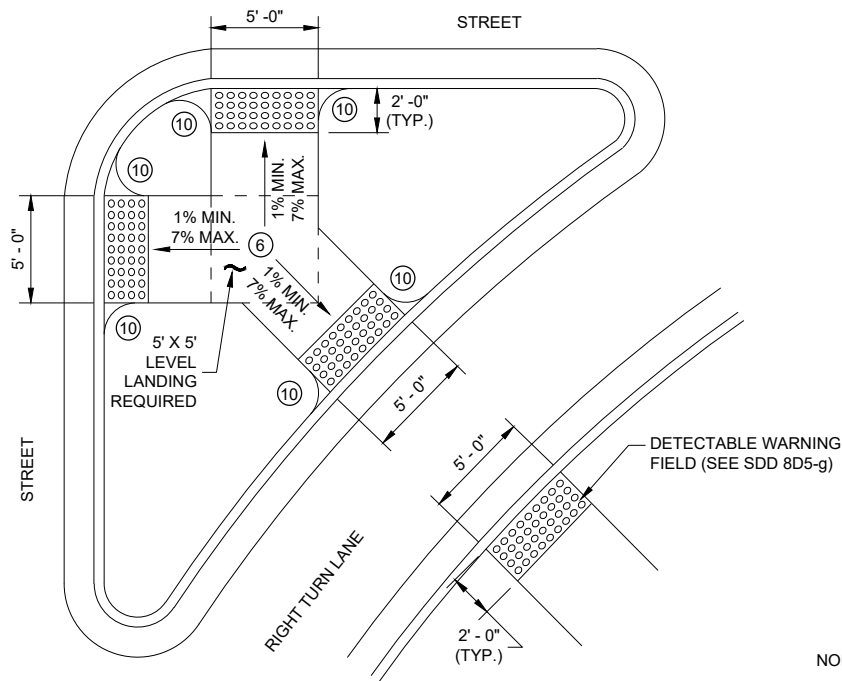
CURB RAMPS  
TYPE 4B AND 4B1

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CURB RAMP TYPE 8**

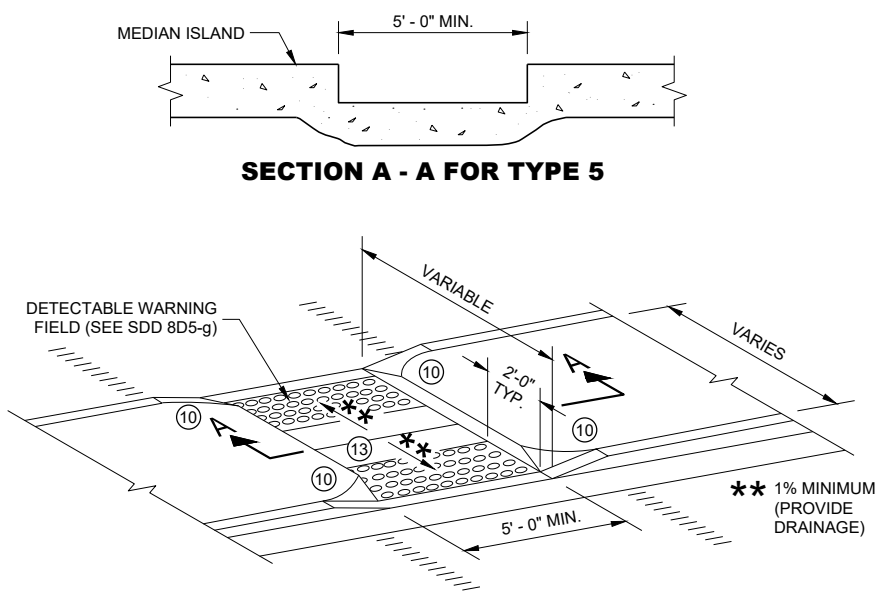
**DETECTABLE WARNINGS AT RAILROAD CROSSING**



**CURB RAMP TYPE 6**

**DETECTABLE WARNING AT ISLANDS**

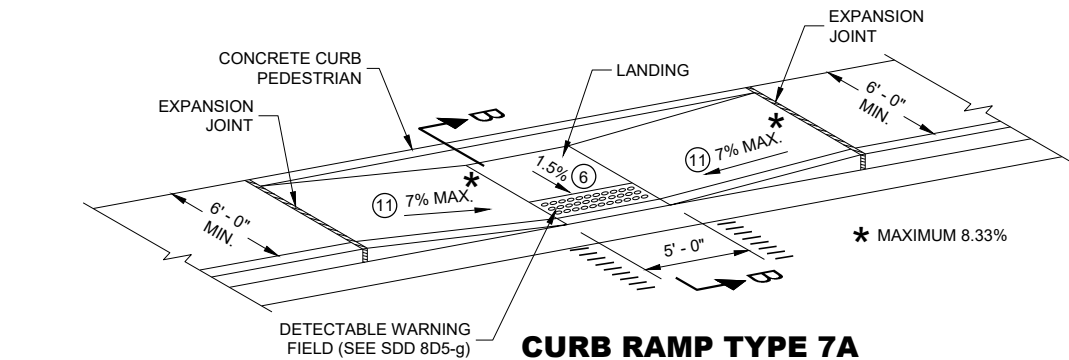
REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



**SECTION A - A FOR TYPE 5**

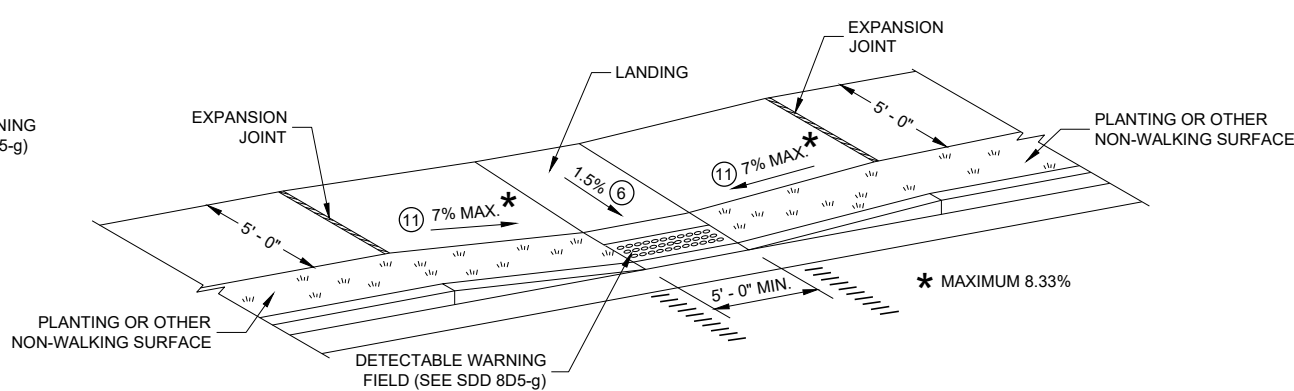
**CURB RAMP TYPE 5**

**MEDIAN ISLAND  
NON-ELEVATED PEDESTRIAN CROSSING**



**CURB RAMP TYPE 7A**

**MID BLOCK CROSSING**



**CURB RAMP TYPE 7B**

**MID BLOCK CROSSING**

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

**GENERAL NOTES**

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

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

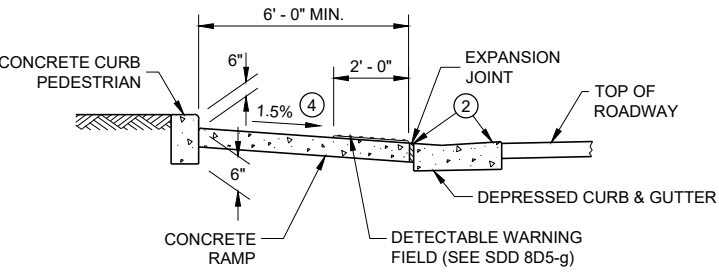
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

- (2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- (3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- (4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- (6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- (10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- (11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- (12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- (13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

**LEGEND**

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



**SECTION B - B FOR TYPE 7A**

**CURB RAMPS  
TYPE 5, 6, 7A, 7B & 8**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED**

Diagram illustrating the radial detectable warning field placement when the 5-foot grade break distance per SDD 8D5-c is exceeded.

Key components and dimensions shown:

- EXPANSION JOINT**: Located at the start of the detectable warning field.
- DETECTABLE WARNING FIELD RADIAL**: The main area of the detectable warning field.
- GRADED FLARE**: The transition area between the detectable warning field and the ramp.
- SEE DETAIL A**: Reference to a detail view of the ramp surface.
- MIN. 2'-0" DWF COVERAGE**: Minimum detectable warning field coverage required.
- LANDING 'XR'**: The landing area for the ramp.
- RAMP**: The sloped surface of the ramp.
- 6'-0" MIN.**: Minimum length of the ramp.
- 5'-0"**: Distance from the expansion joint to the start of the detectable warning field.
- 3'-0" CURB TAPER WITH 6" CURB**: The curb taper and curb height at the end of the ramp.
- 1.5% CROSS SLOPE**: The cross slope of the sidewalk.
- \* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK**: Note indicating the maximum slope requirement.

### PLAN VIEW

## CURB RAMP TYPE 4A1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

The diagram illustrates the plan view of Curb Ramp Type 4A1. It shows a ramp with a 7% typical grade (\*\*\* 7% TYP.) and a 6'-0" minimum landing (6'-0" MIN. LANDING). The ramp is flanked by concrete sidewalks (CONCRETE SIDEWALK) and expansion joints (EXPANSION JOINT). A radial detectable warning field (RADIAL DETECTABLE WARNING FIELD (SEE SDD 8D5-g)) is shown on the ramp. The grade break distance (GRADE BREAK DIST.) is greater than 5 feet. The diagram also shows a depressed curb and gutter (DEPRESSED CURB & GUTTER) and a top of roadway (TOP OF ROADWAY). Callouts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100 are used to identify specific components and dimensions.

\*\*\*\*\* LANDING

CONCRETE SIDEWALK

EXPANSION JOINT

TOP OF ROADWAY

DEPRESSED CURB & GUTTER

RADIAL DETECTABLE WARNING FIELD (SEE SDD 8D5-g)

6'-0" MIN. LANDING

7% TYP.

1.5%

1.5%

GRADE BREAK DIST.

\*\*\*\*\*

\*\*\* MAXIMUM 8.33%

**SECTION A - A FOR TYPE 4A1**

**RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED**

DETECTABLE WARNING FIELD RADIAL

SEE DETAIL B

GRADED FLARE

3' CURB TAPER WITH 6" CURB

5'-0"

1.5% CROSS SLOPE

5'-0"

2'-0"

3' CURB TAPER WITH 6" CURB

EXPANSION JOINT

GRADED FLARE

TERRACE STRIP

6'-0" MIN.

LANDING 'XR'

\* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

PLAN VIEW

**CURB RAMP TYPE 4B1**

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

EXPANSION JOINT

CONCRETE SIDEWALK

1.5% (6)

6' - 0" MIN. RAMP

7% TYP. (8)

LANDING 'XR' (14)

(GRADE BREAK DIST.)

1.5% (2)

EXPANSION JOINT




TOP OF ROADWAY

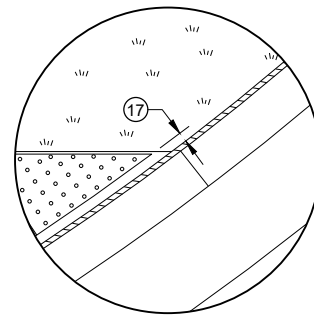
DEPRESSED CURB & GUTTER

RADIAL DETECTABLE WARNING FIELD (SEE SDD 8D5-g)

SECTION B - B FOR TYPE 4B1

## LEGEND

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



**DETAIL A**

## GENERAL NOTES

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

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN  $\frac{1}{4}$  - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑭ CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- ⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN  $\frac{1}{8}$ " DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- ⑯ USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- ⑰ A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

**RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED**

NOTE: SECOND TYPE 2

CONCRETE SIDEWALK \*\*

EXPANSION JOINT

TOP OF ROADWAY

DEPRESSED CURB & GUTTER

TERRACE

SIDEWALK

LANDING 'XR' (GRADE BREAK DIST.)

1.5%\*

7% TYP.

1.5% CROSS SLOPE

RADIAL DETECTABLE WARNING FIELD (SEE SDD 8D5-g)

Callouts: 2, 4, 6, 8, 14

**SECTION C - C FOR TYPE 2**

10:1 MAX FLARE

8 14

2'-0"

GRADED FLARE

LANDING \*\*XR

TERRACE \*\*

5'-0"

3' CURB TAPER WITH 6" CURB

DETECTABLE WARNING FIELD RADIAL

SEE DETAIL C

\*\*\*

\* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

\*\* WIDTH SHOWN ELSEWHERE IN THE PLANS

\*\*\* MAXIMUM 8.33%

17

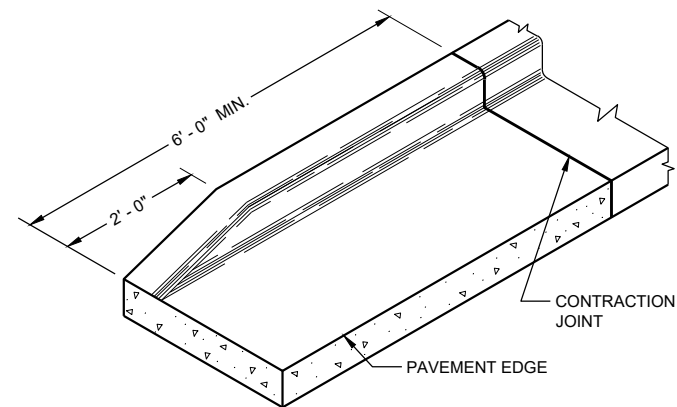
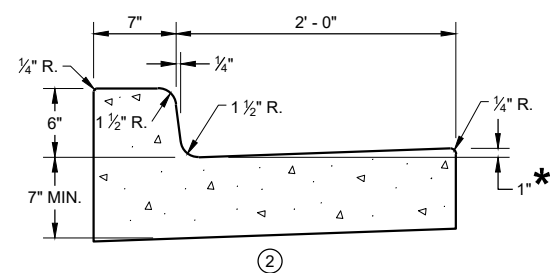
**DETAIL C**

SURFACE

**PLAN VIEW**  
**CURB RAMP TYPE 2**  
**(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**  
**(ON LINE WITH SIDEWALK)**

## CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



## GENERAL NOTES

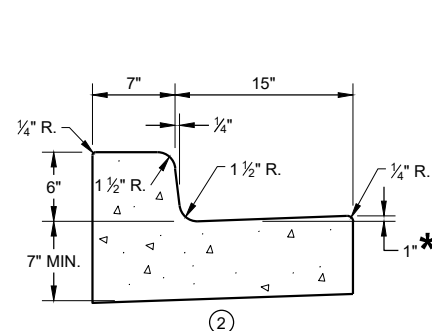
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

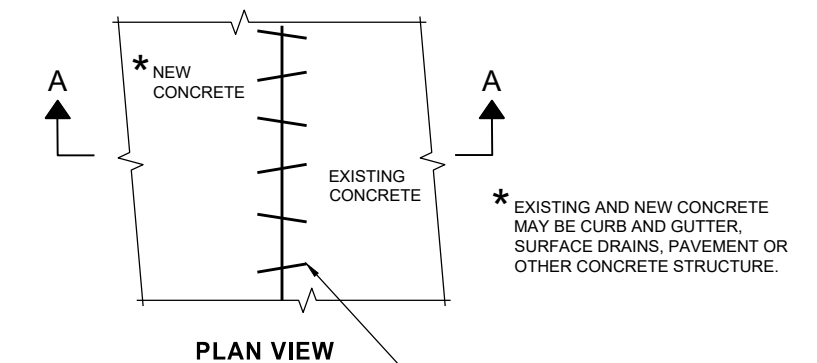
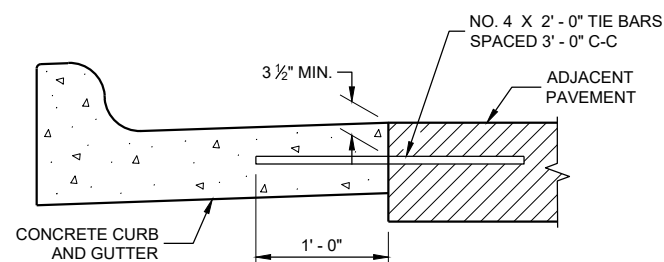
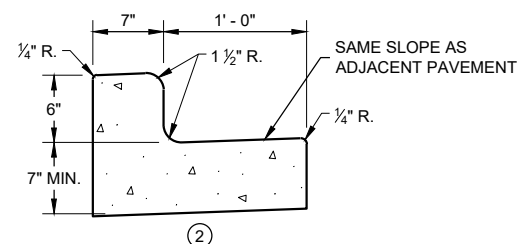
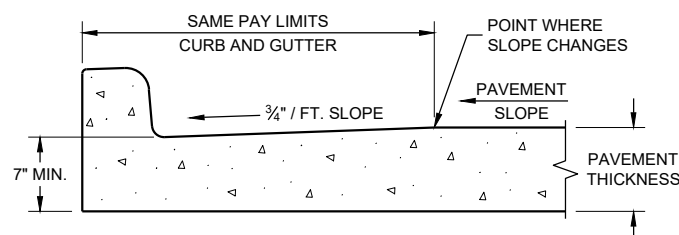
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

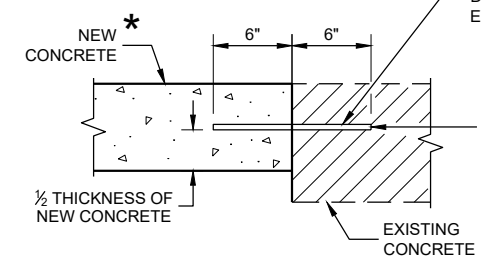
- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
-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



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



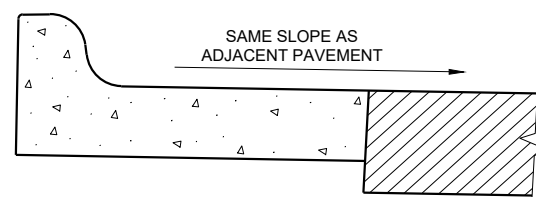
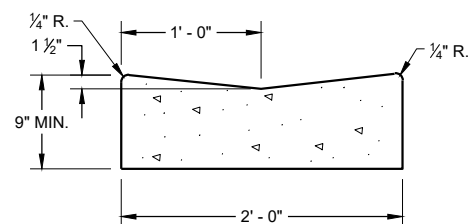
NO. 6 X 12" DEF. BARS SPACED 3' - 0" C-C,  
INSTALLED ON 6:1 SKEW HORIZONTALLY.  
DIRECTION OF SKEW ALTERNATING AFTER  
EVERY ONE OR TWO BARS.



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

**SECTION A - A**

**PAVEMENT TIES**



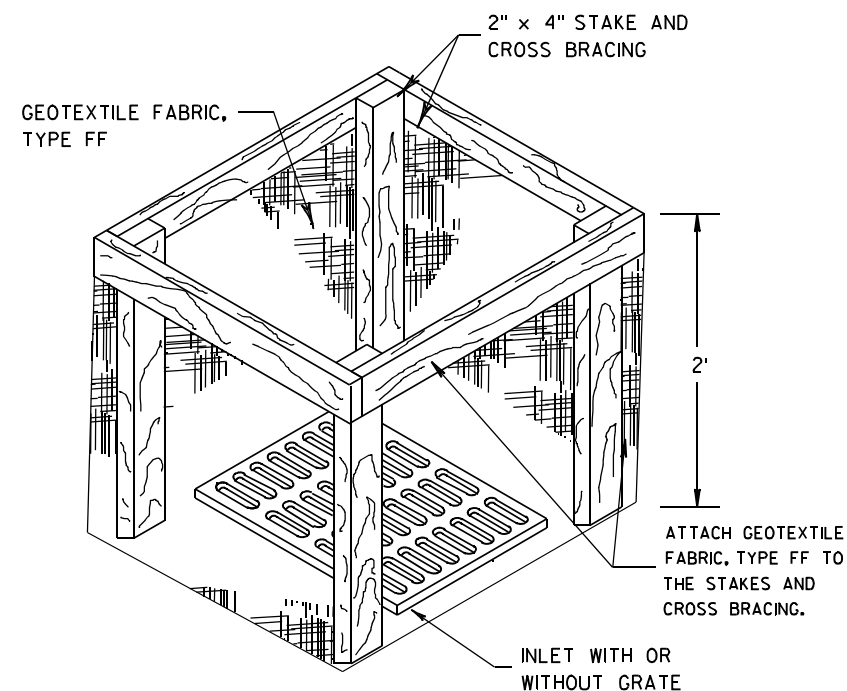
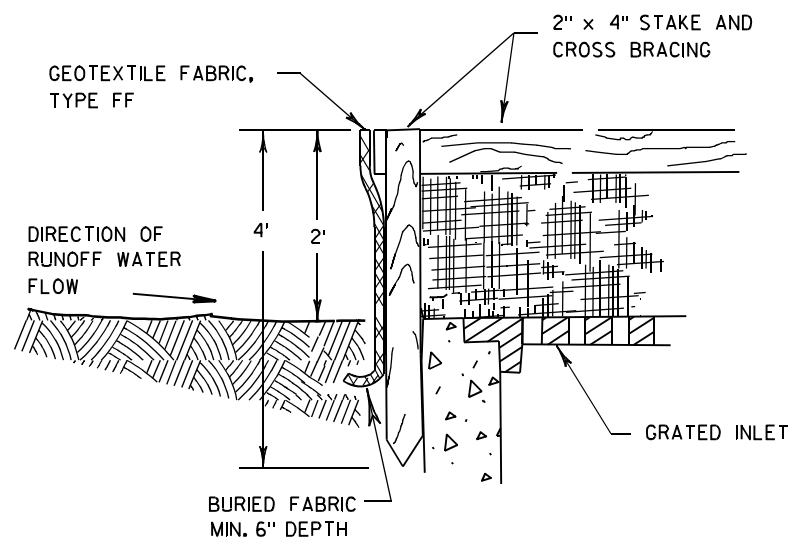
### **HIGH SIDE SECTION** <sup>③</sup> (TYPICAL FOR ALL CURB & GUTTER TYPES)

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020  
DATE

/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



**INLET PROTECTION, TYPE A**

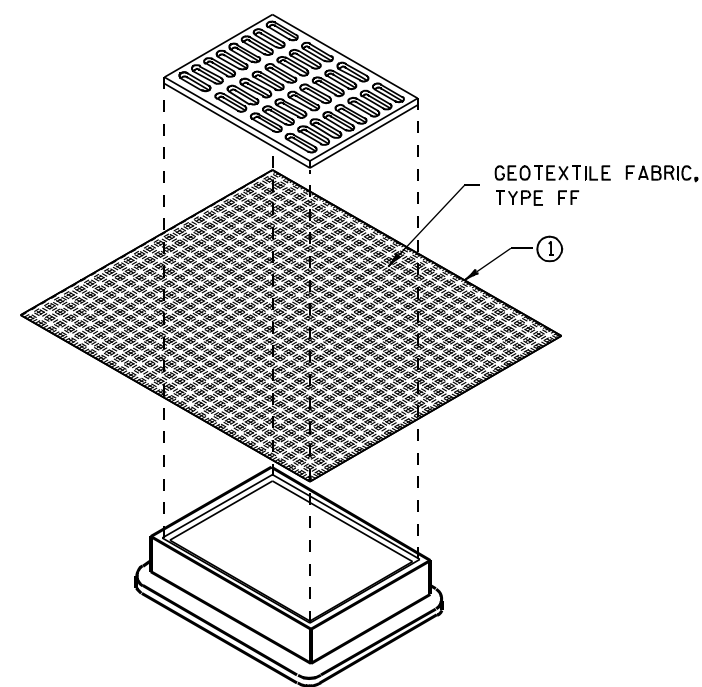
**GENERAL NOTES**

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

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

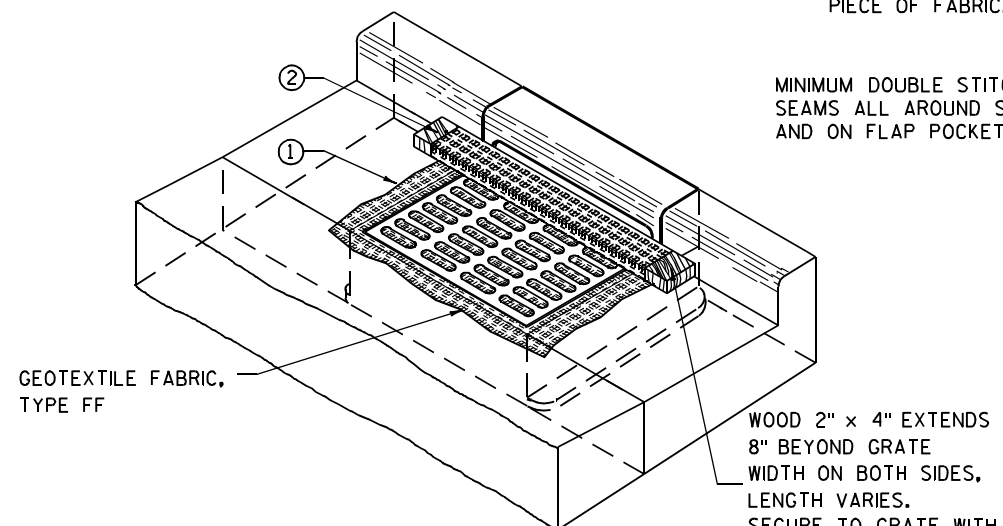
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



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

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



**INLET PROTECTION, TYPE C (WITH CURB BOX)**

**INSTALLATION NOTES**

**TYPE B & C**

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

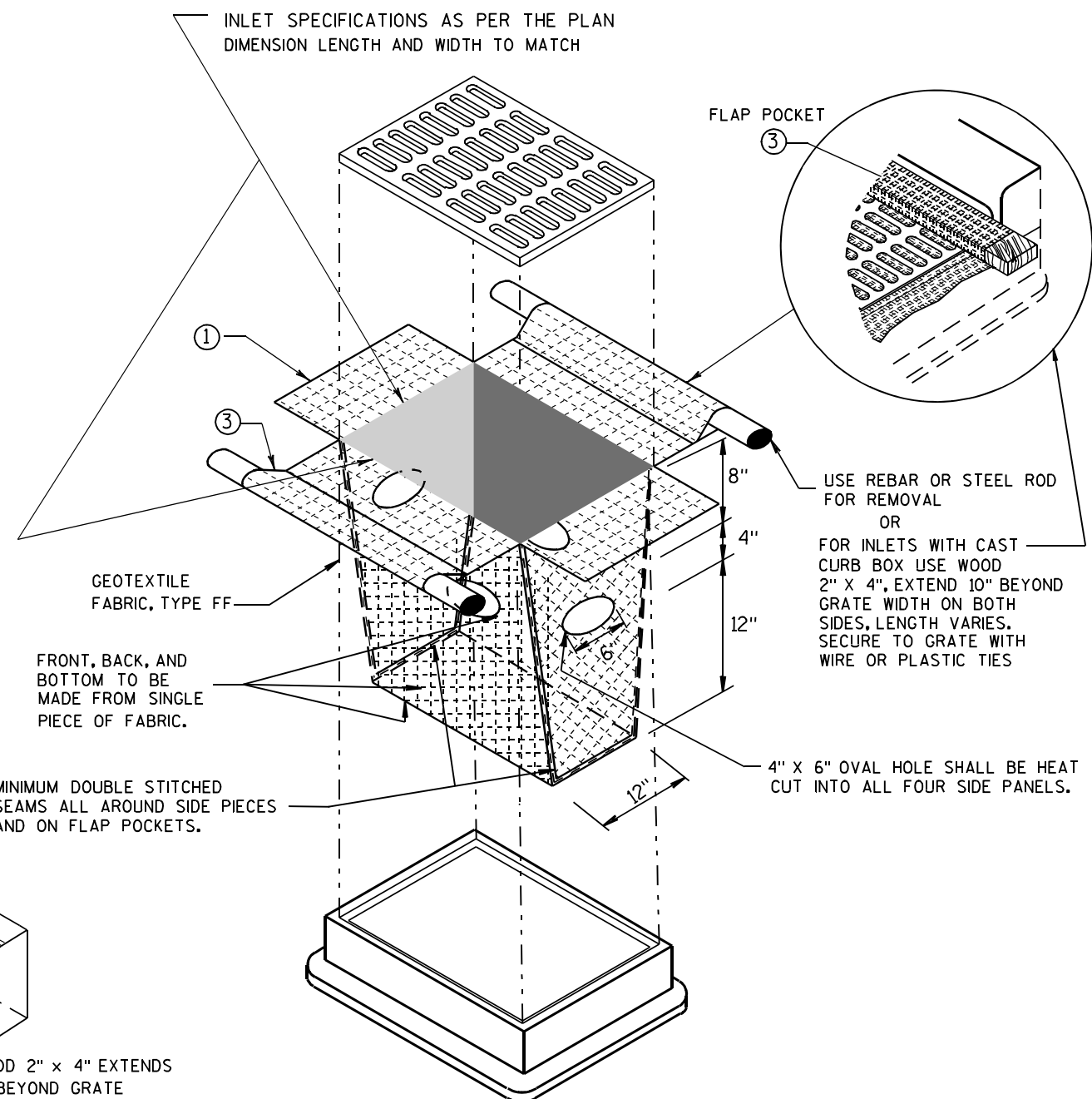
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

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

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

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



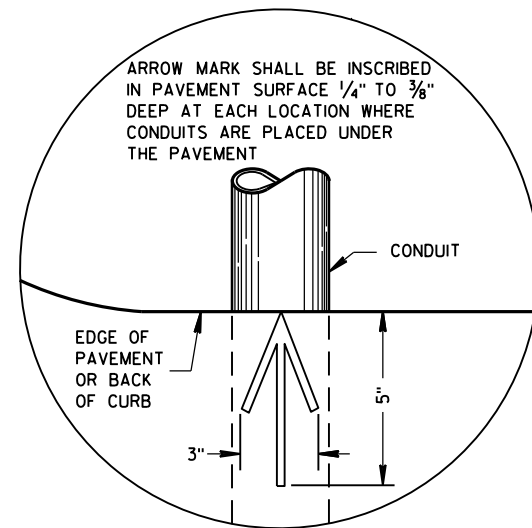
**INLET PROTECTION, TYPE D**

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

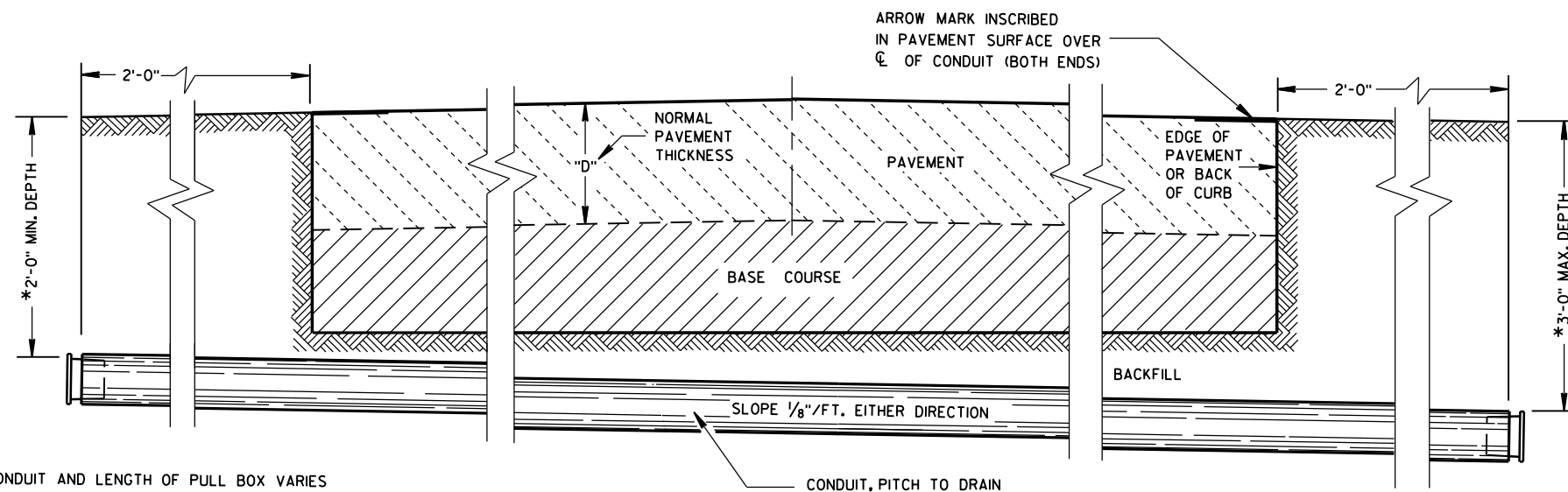
**INLET PROTECTION  
TYPE A, B, C, AND D**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW  
ARROW MARK



SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

## GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

## CONDUIT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

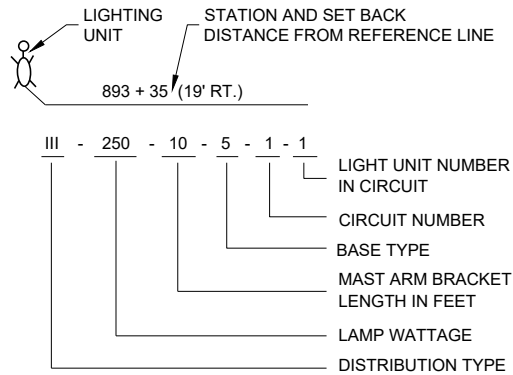
APPROVED  
March, 2017 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL ENGINEER  
FHWA

GENERAL NOTES

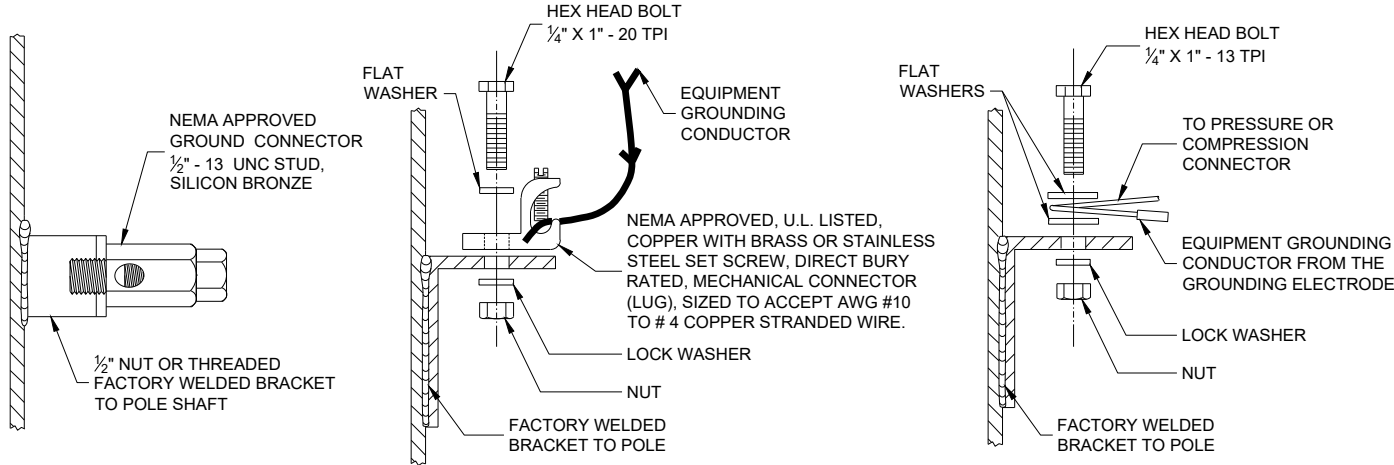
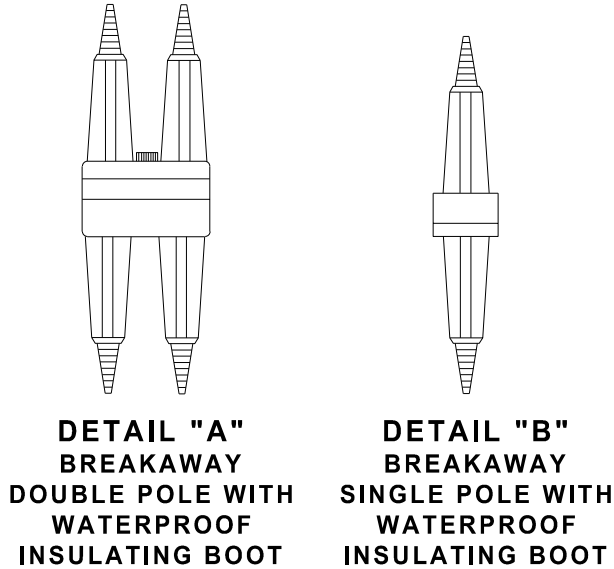
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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

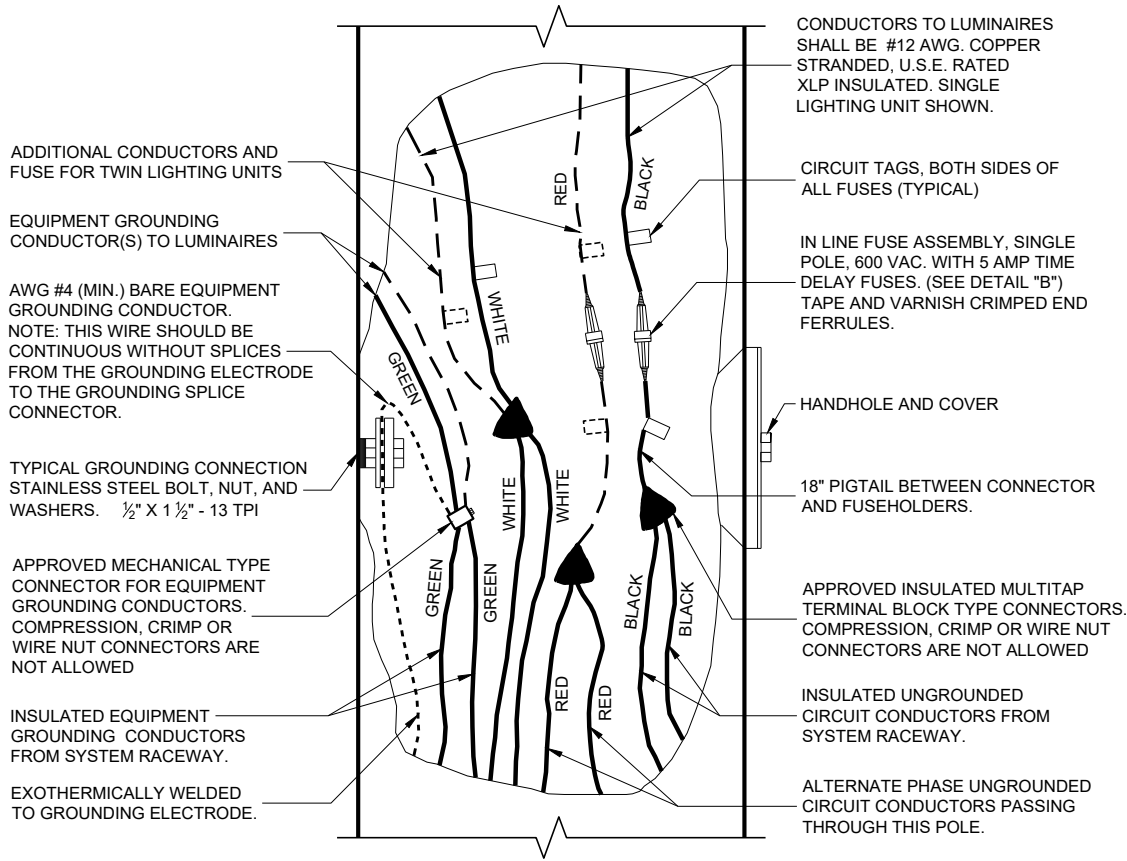


LIGHTING UNIT CODE (TYPICAL)



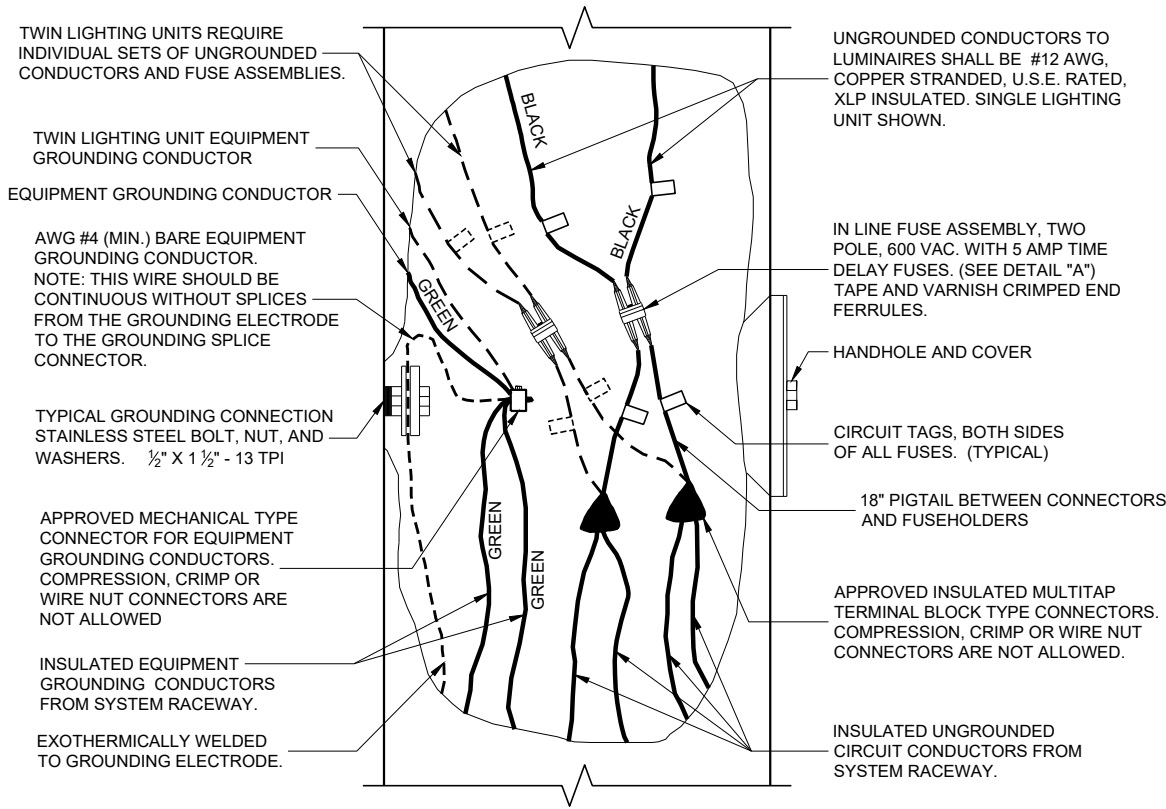
TYPICAL GROUNDING CONNECTIONS  
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

6



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTORS)  
WITH GROUNDING CONDUCTOR AND  
EQUIPMENT GROUNDING CONDUCTOR

6



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

NON - FREEWAY LIGHTING UNIT  
POLE WIRING

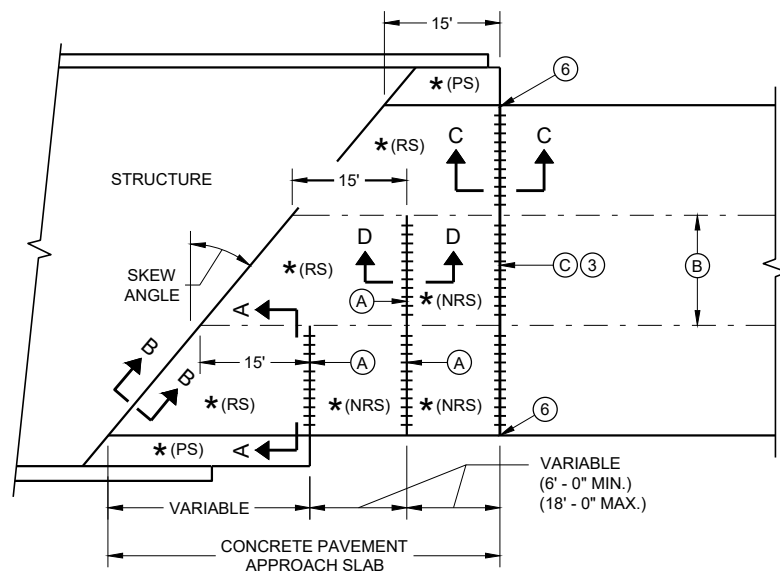
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL ENGINEER  
FHWA

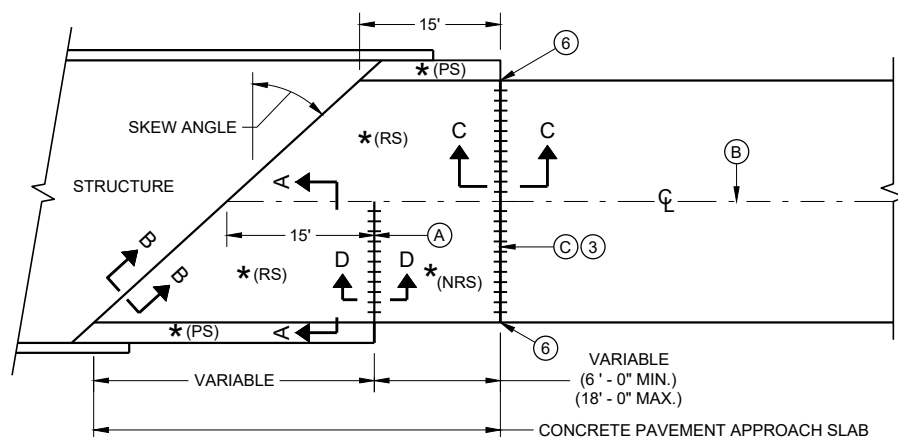
SDD 09E03 - 06

SDD 09E03 - 06

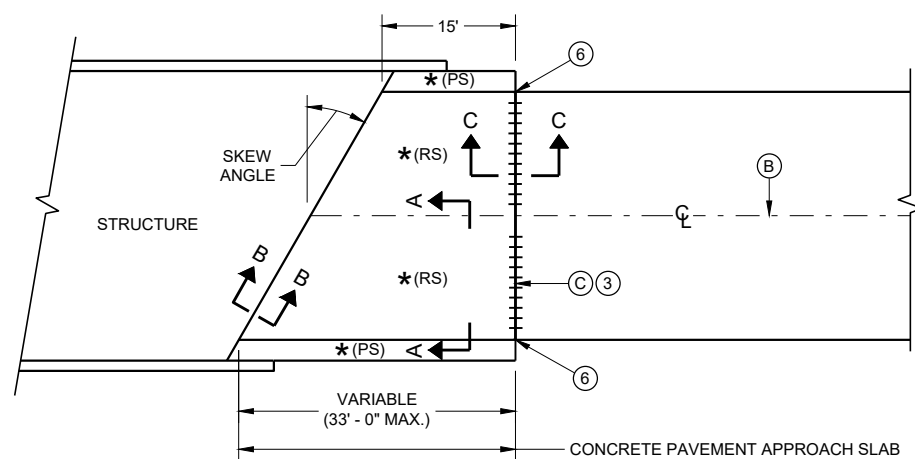




**SKewed Approach  
(Pavement more than two lanes)**



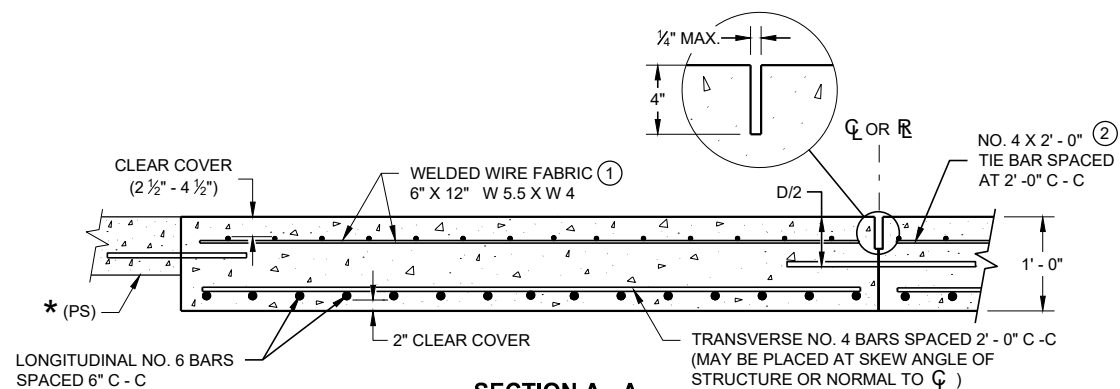
**SKews > 20°  
(Pavement width ≤ 30')**



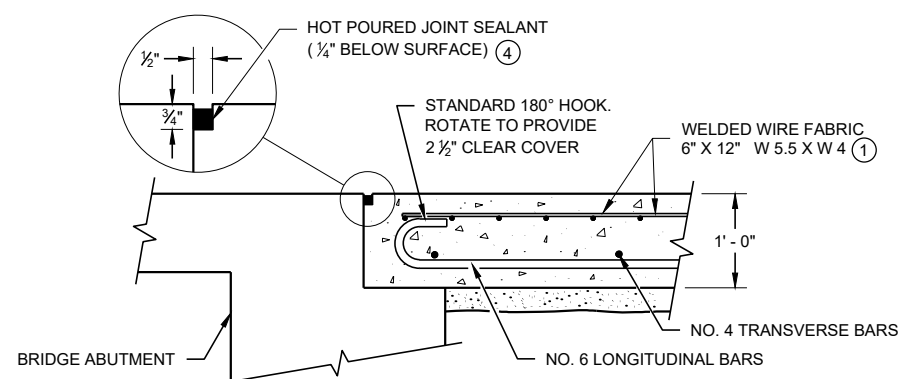
**SKews ≤ 20°  
(Pavement width ≤ 30')**

**APPROACH SLAB AND ADJACENT PAVEMENT**

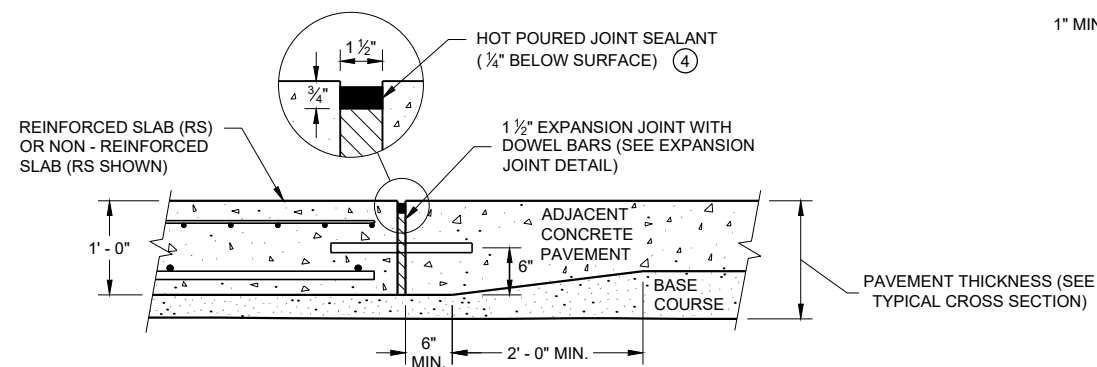
- \* (RS) = REINFORCED CONCRETE SLAB
- \* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- \* (NRS) = NON - REINFORCED CONCRETE SLAB
- \*\*\* STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A  
REINFORCEMENT POSITIONING DETAIL**



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



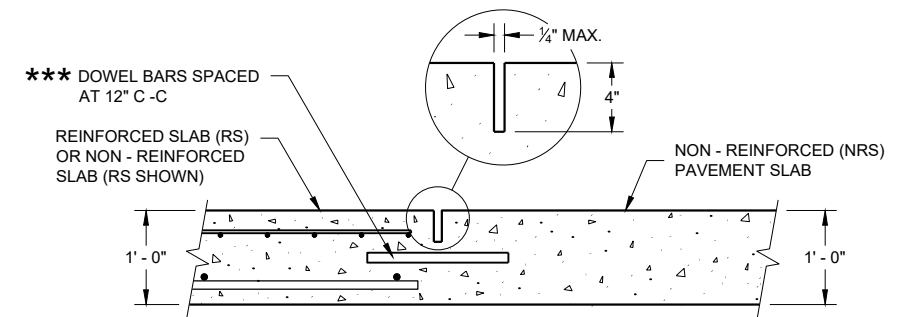
**SECTION C - C  
TRANSITION DETAIL  
APPROACH SLAB TO ADJACENT PAVEMENT**

## GENERAL NOTES

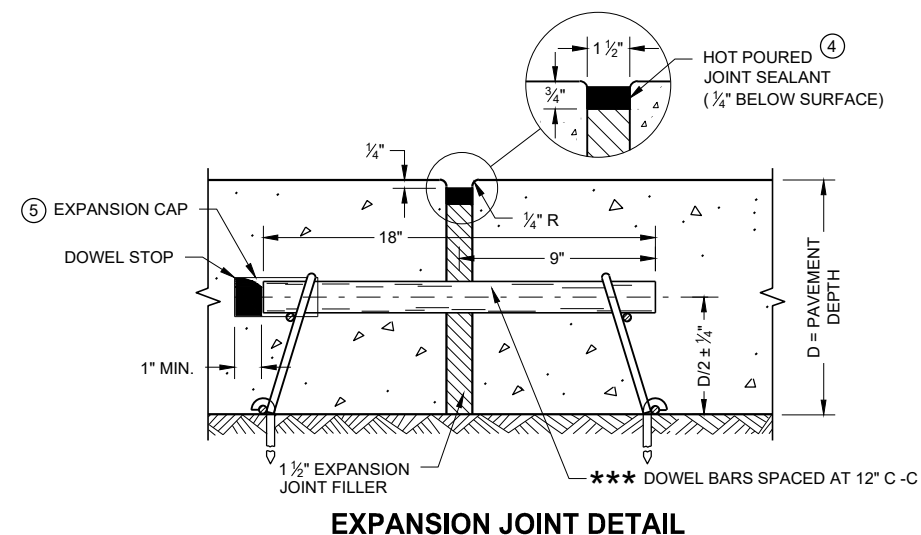
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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  $\mathcal{C}$  OR  $\mathcal{R}$ .
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .



**SECTION D - D  
CONTRACTION JOINT**



**EXPANSION JOINT DETAIL**

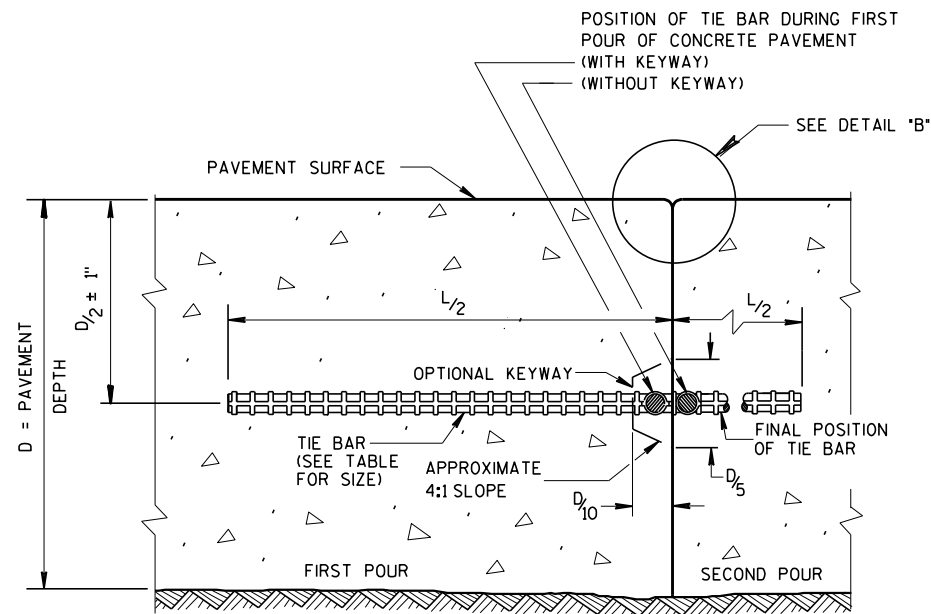
## CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

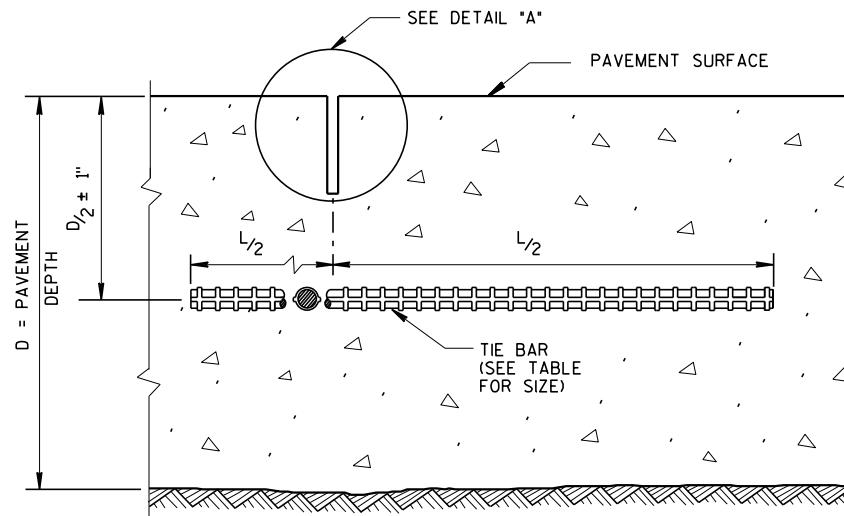
APPROVED  
November 2018 /S/ Peter Kemp, P.E.  
DATE PAVEMENT SUPERVISOR

FHWA





CONSTRUCTION JOINT



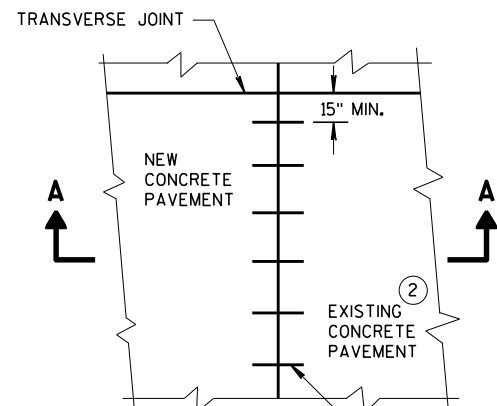
SAWED JOINT

GENERAL NOTES

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

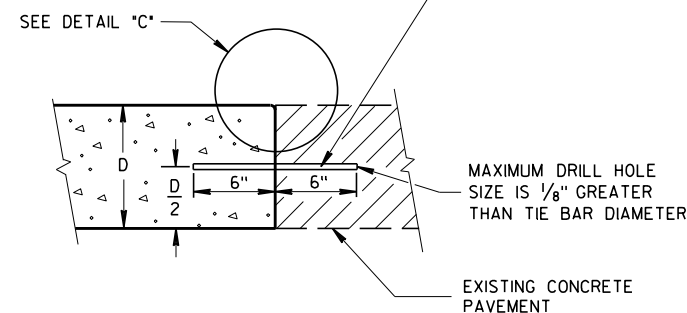
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

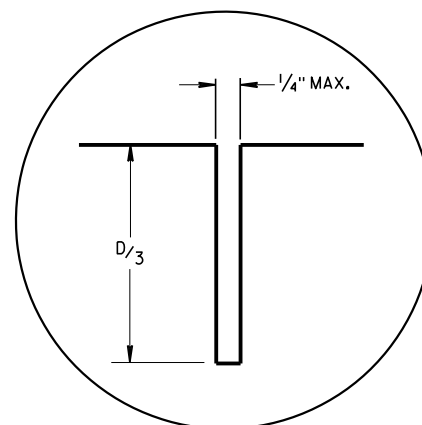


PLAN VIEW

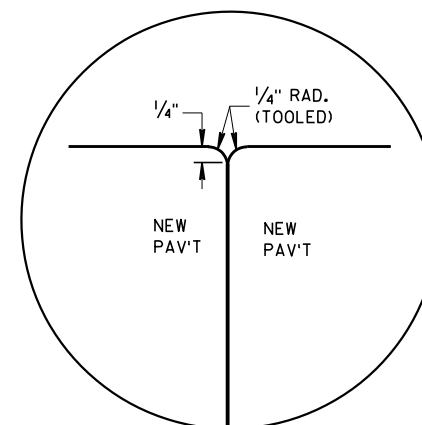
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



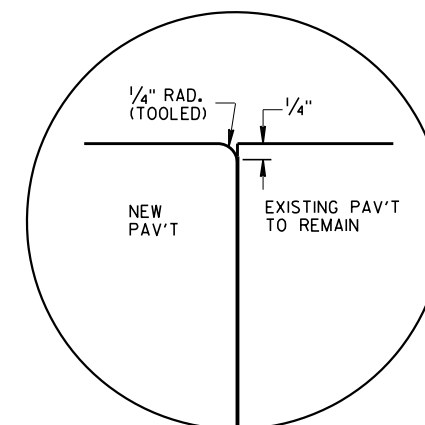
SECTION A-A  
LONGITUDINAL CONSTRUCTION JOINT  
TIE BARS ANCHORED  
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



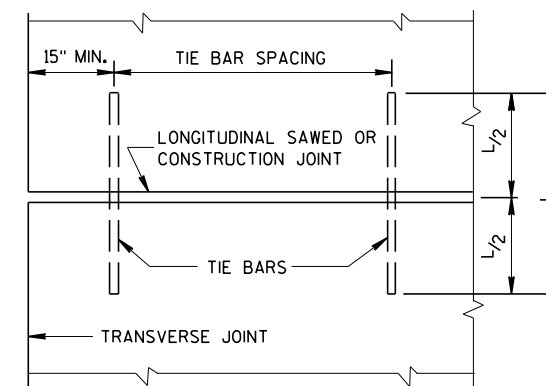
DETAIL "C"

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.

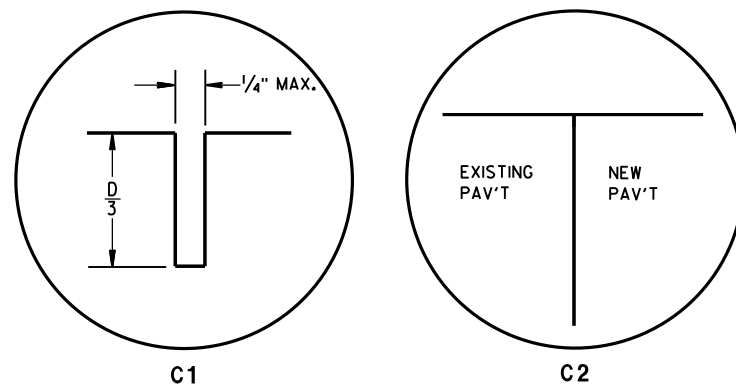


PLAN VIEW  
SHOWING LOCATION OF TIE BARS

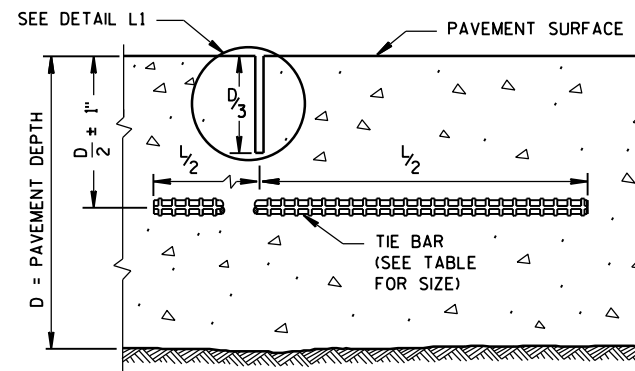
CONCRETE PAVEMENT  
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

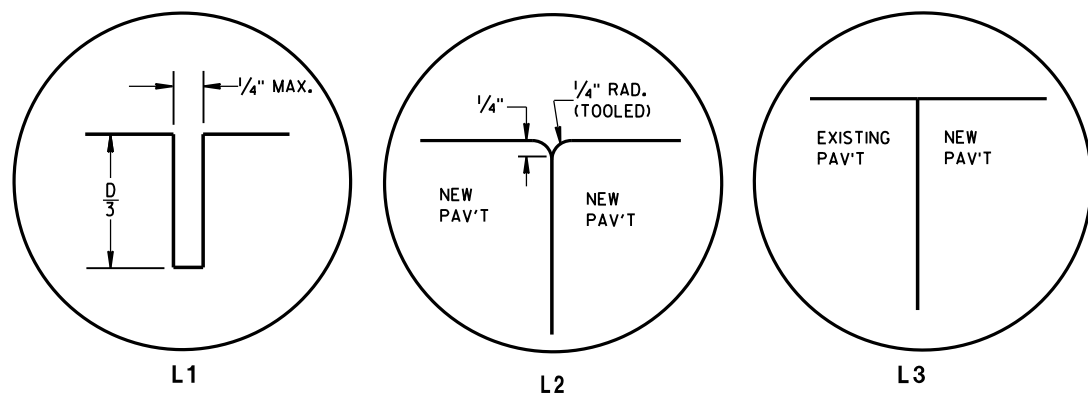
APPROVED  
March 2018 /S/ Peter Kemp, P.E.  
DATE PAVEMENT SUPERVISOR  
FHWA



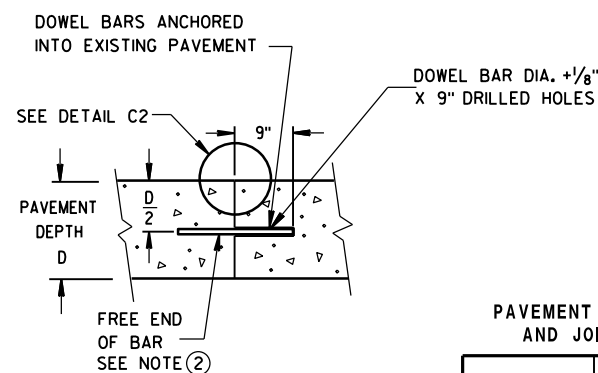
TRANSVERSE JOINTS



SECTION C-C  
SAWED JOINT



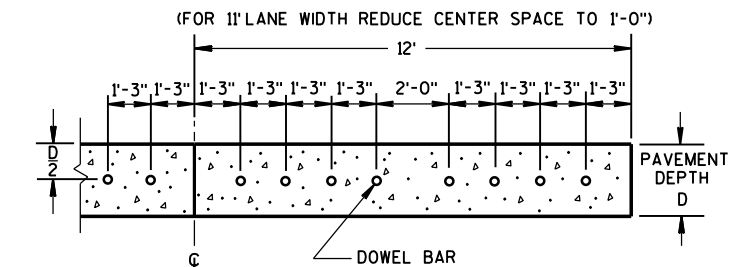
LONGITUDINAL JOINTS



SECTION D-D

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



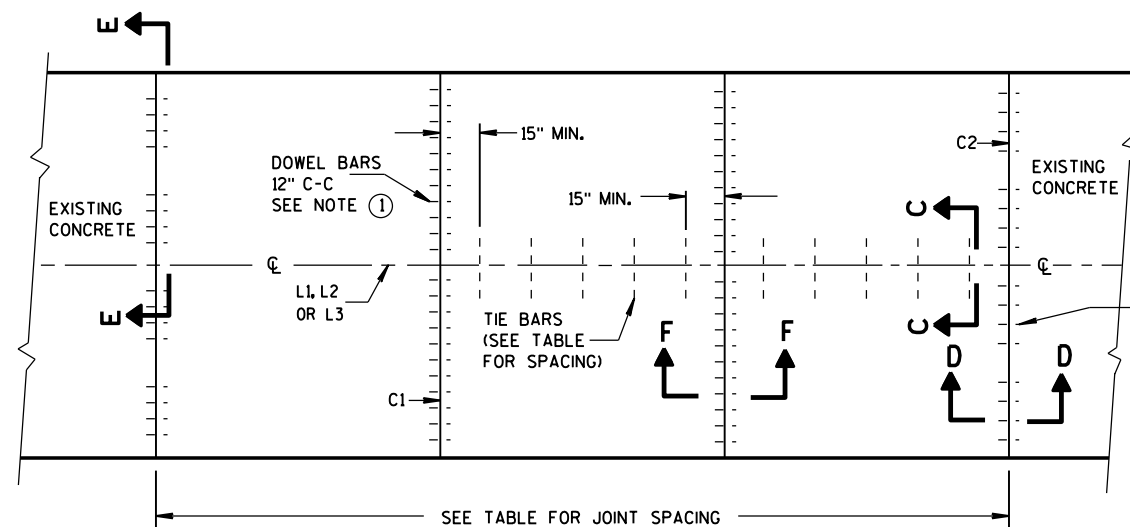
SECTION E-E  
SPACING OF DOWEL BARS  
ANCHORED INTO EXISTING PAVEMENT

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" **

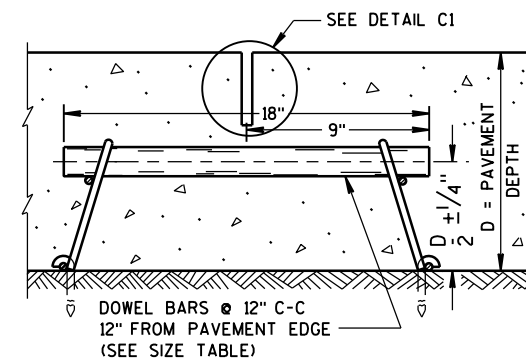
\* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



PLAN VIEW  
CONCRETE BASE  
CONTRACTION JOINT LOCATIONS

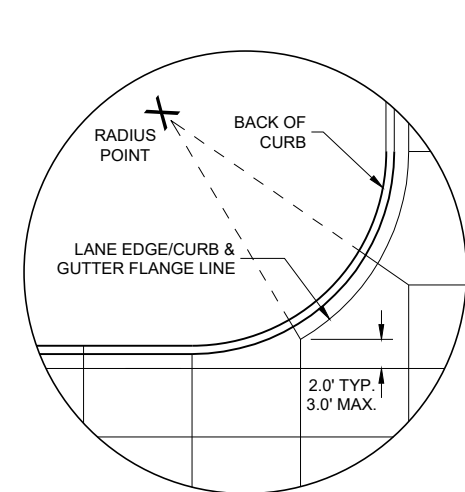
DOWEL BARS ANCHORED INTO EXISTING PAVEMENT, 15" C-C



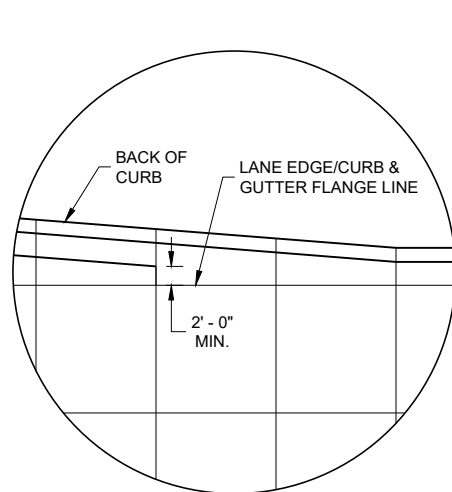
SECTION F-F  
CONTRACTION JOINT

CONCRETE BASE

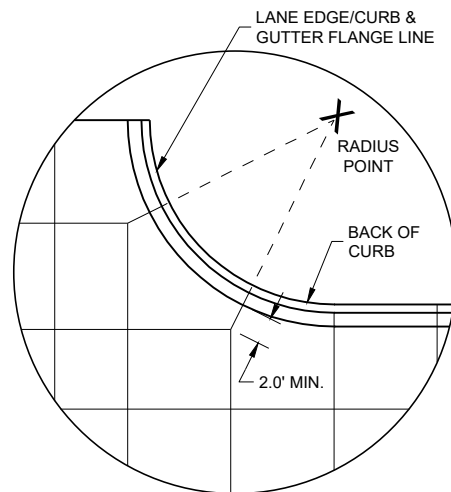
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



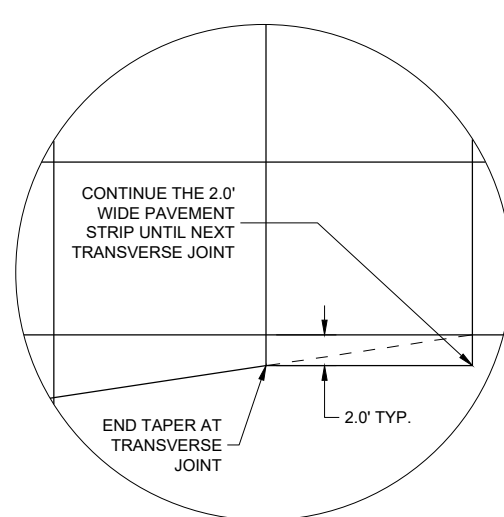
DETAIL "A"



DETAIL "B"



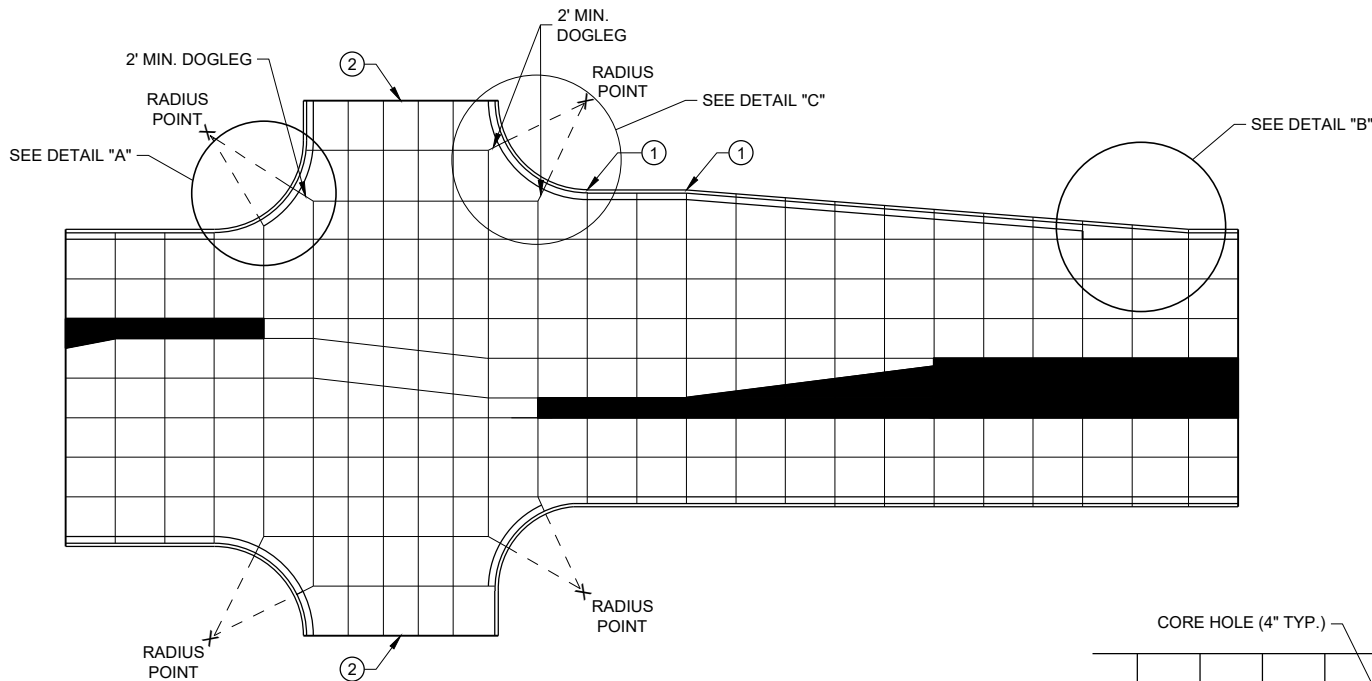
DETAIL "C"



DETAIL "D"

GENERAL NOTES

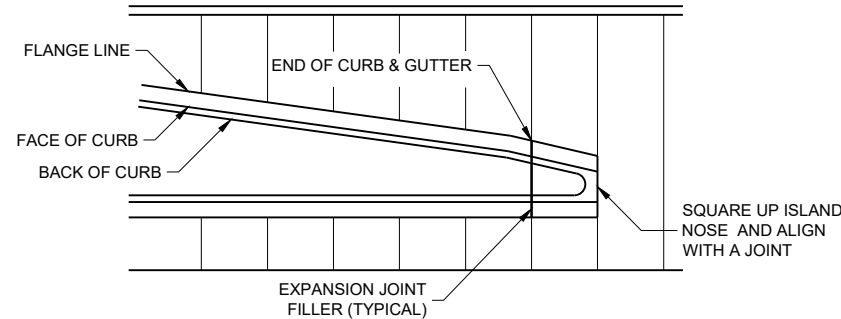
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER 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 HEDGE OF RADIUS.
  - 3 THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



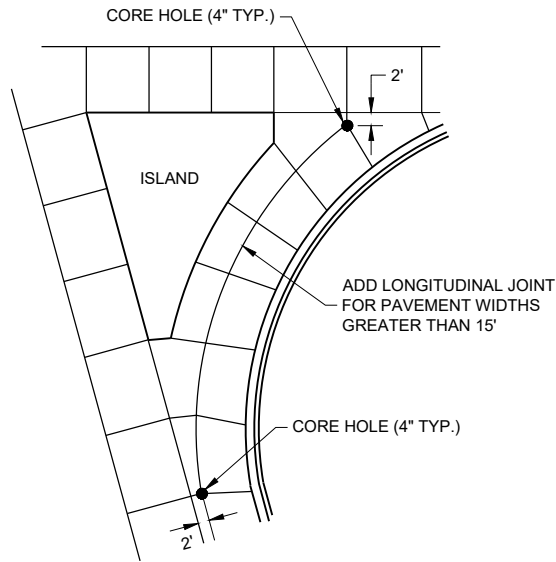
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

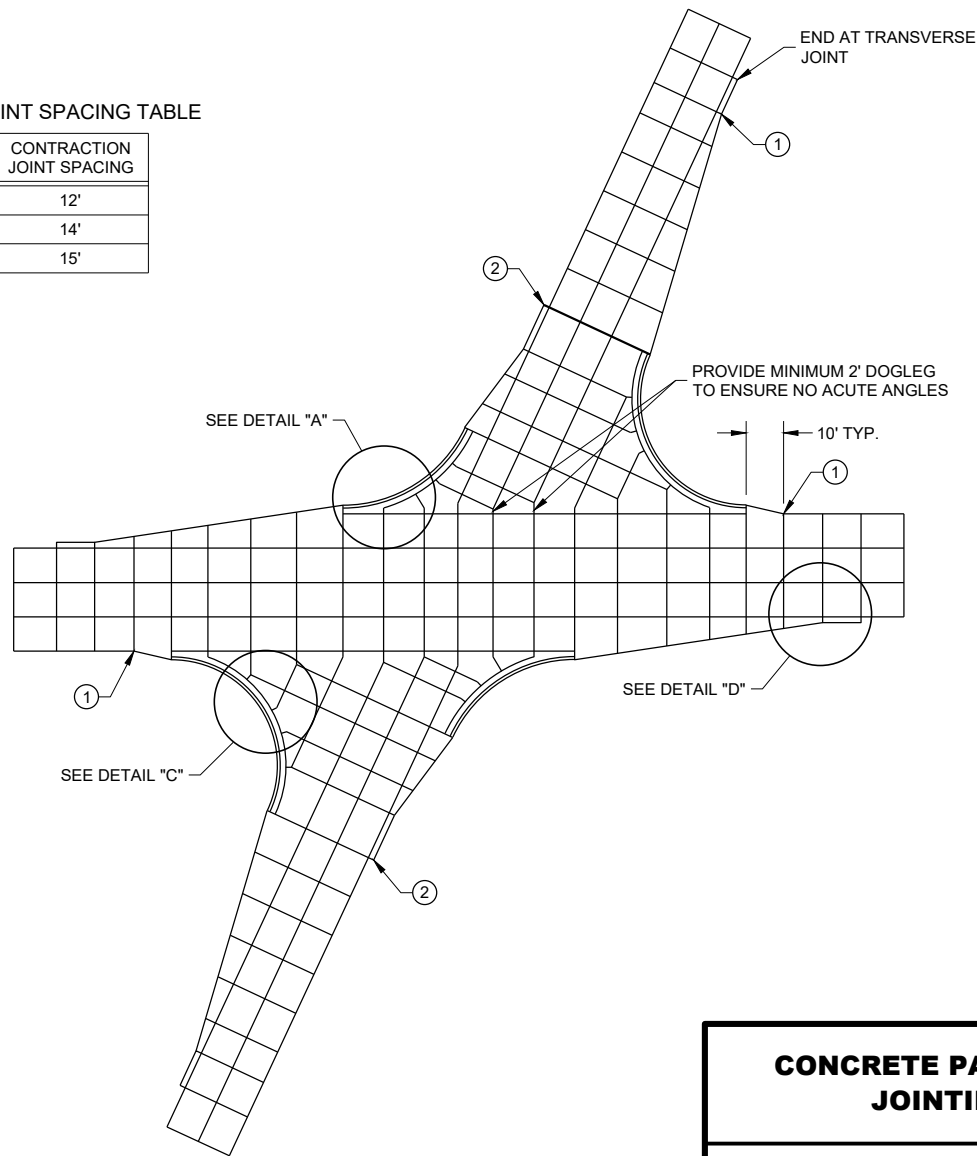
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



APPROACH TO MEDIAN



LARGE RIGHT TURN



SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

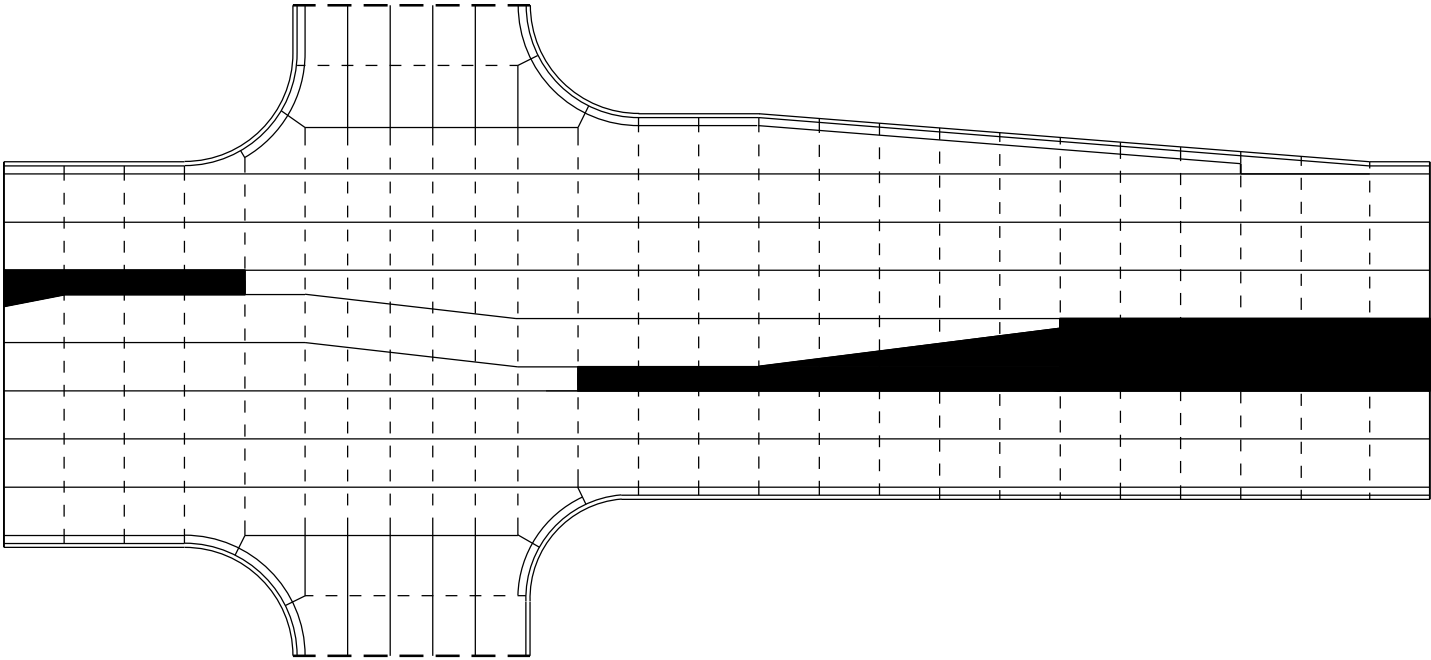
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND

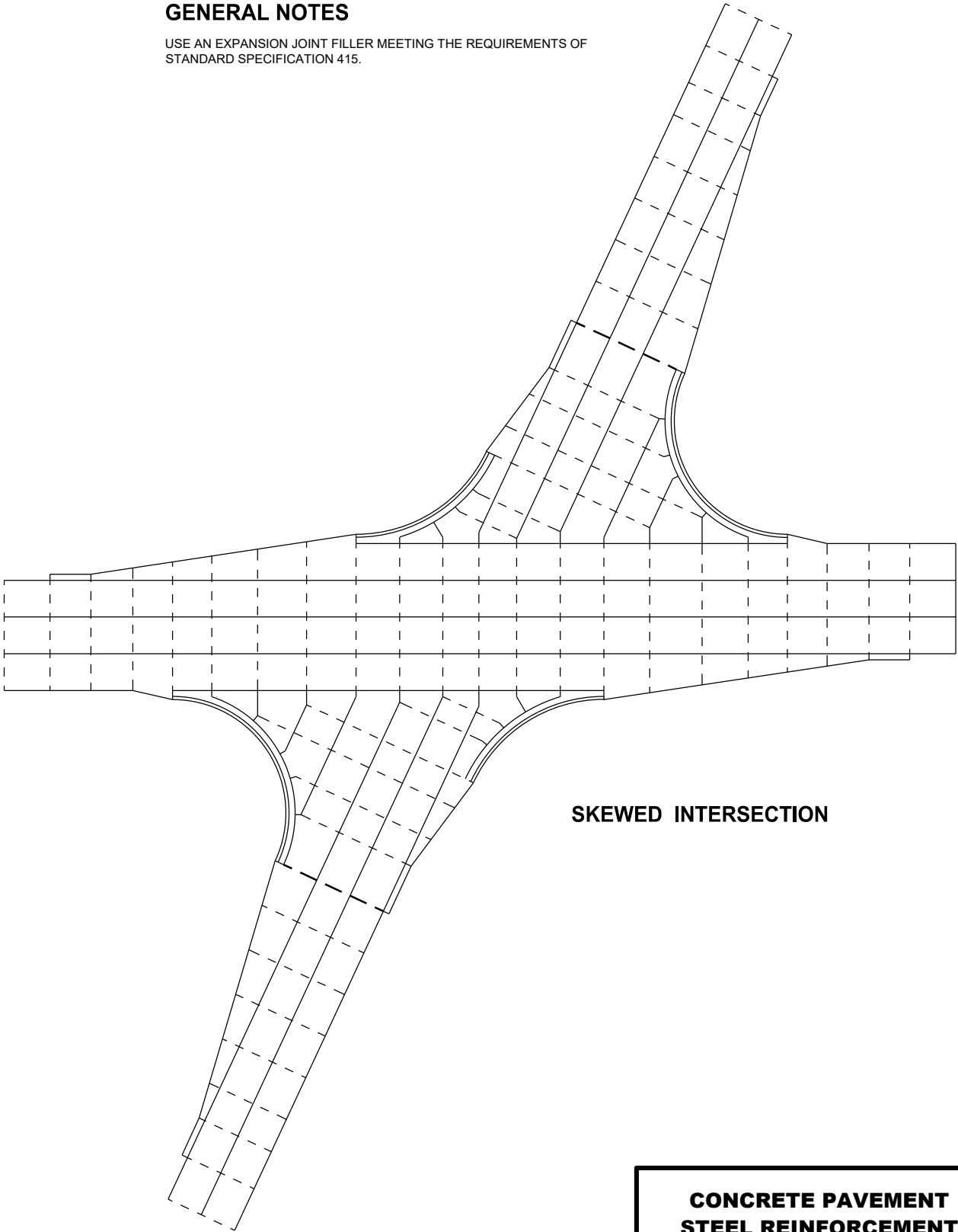
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT

GENERAL NOTES

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



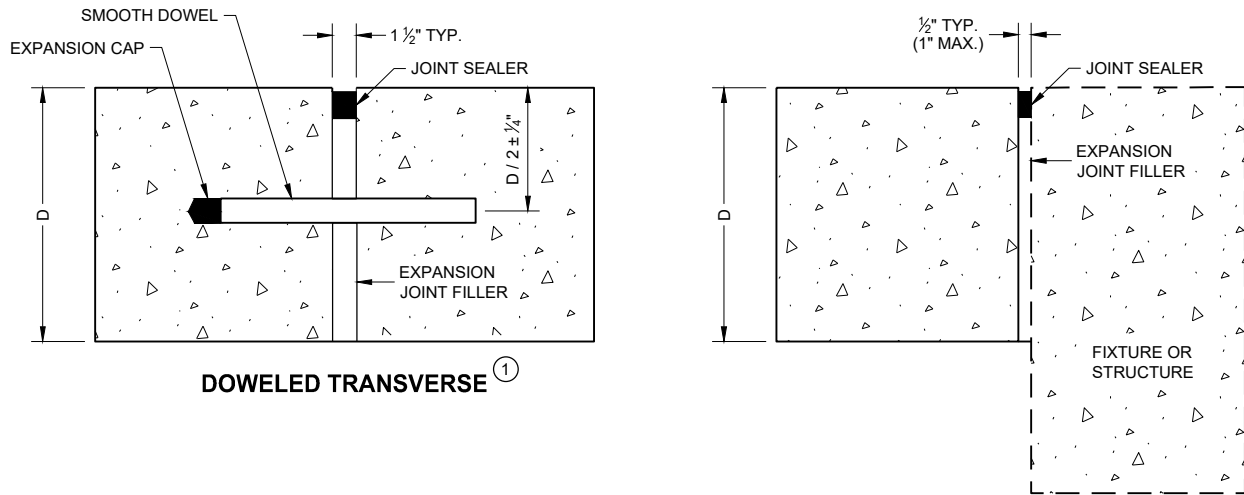
STANDARD INTERSECTION



SKEWED INTERSECTION

CONCRETE PAVEMENT  
STEEL REINFORCEMENT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



EXPANSION JOINTS

UNTIED - LONGITUDINAL

TIE BAR TABLE

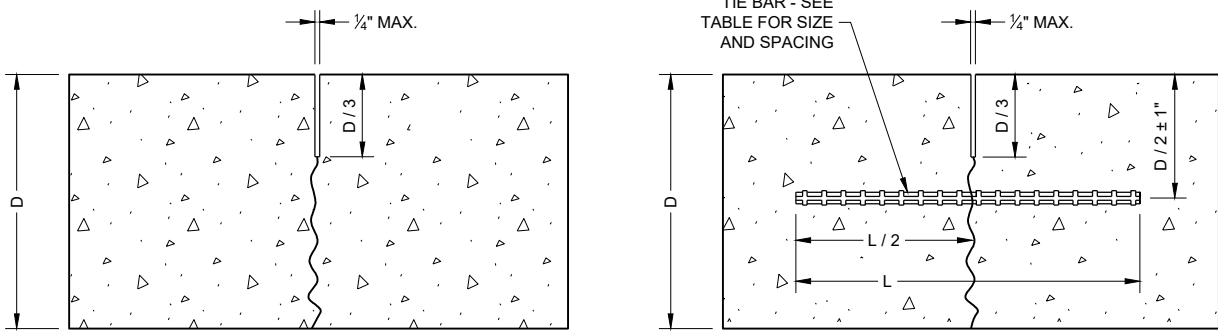
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
$< 10\frac{1}{2}"$	NO. 4	30"	36"
$\geq 10\frac{1}{2}"$	NO. 5	36"	36"
	NO. 4 *	30"	24" **

\* 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.

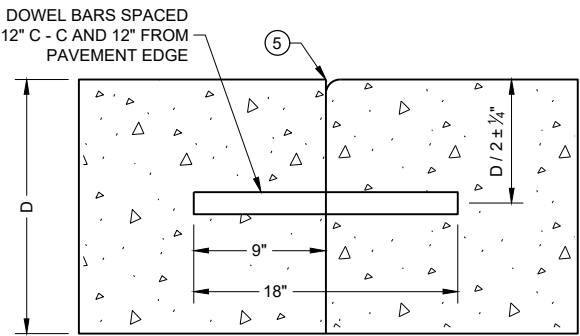
GENERAL NOTES

- 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  $\frac{1}{4}"$  RADIUS.
- ⑥ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

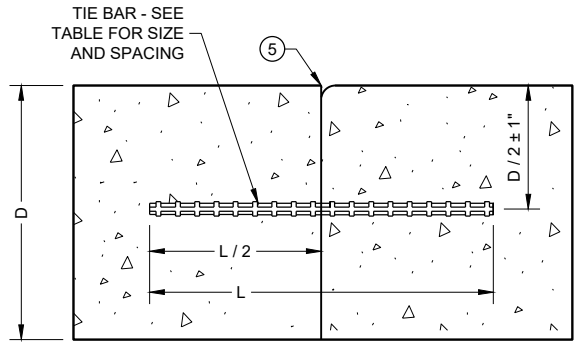


UNDOWELED TRANSVERSE

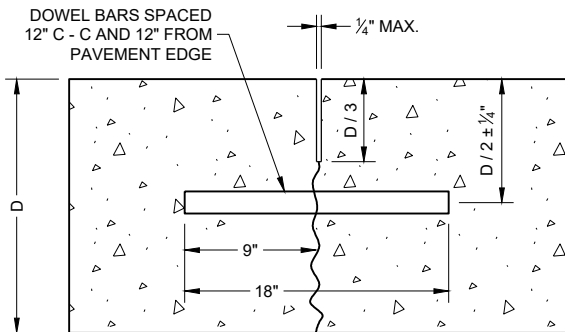
TIED LONGITUDINAL



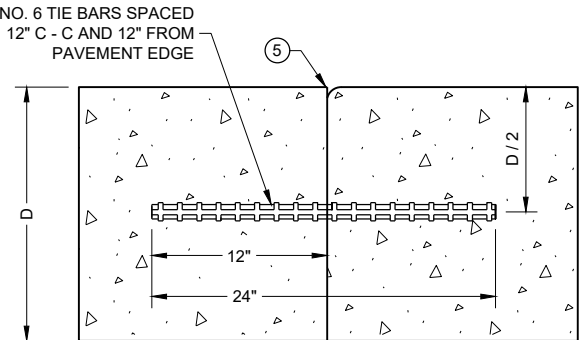
DOWELED TRANSVERSE ③



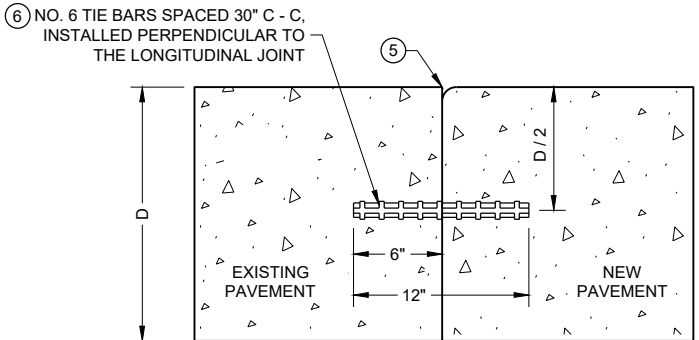
TIED LONGITUDINAL



DOWELED TRANSVERSE



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



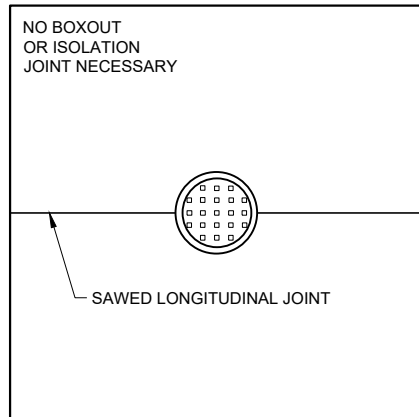
TIED LONGITUDINAL TO EXISTING

CONTRACTION JOINTS ②

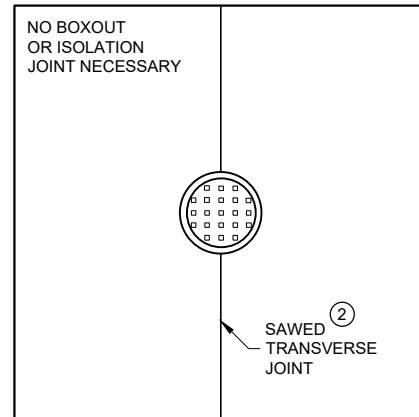
CONSTRUCTION JOINTS ④

CONCRETE PAVEMENT  
JOINT TYPES

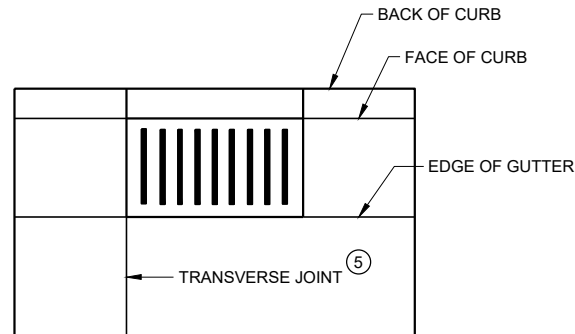
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**MANHOLE WITH  
LONGITUDINAL JOINT**



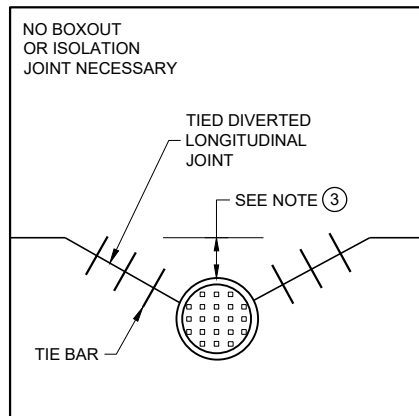
**MANHOLE WITH  
TRANSVERSE JOINT**



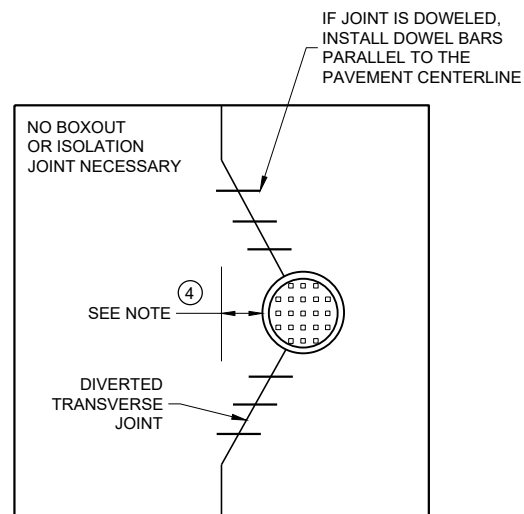
**INLET WITH  
TRANSVERSE JOINT**

### GENERAL NOTES

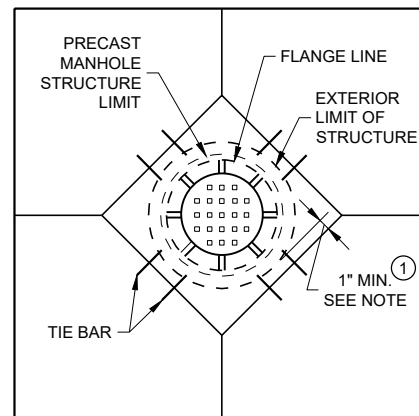
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE 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**

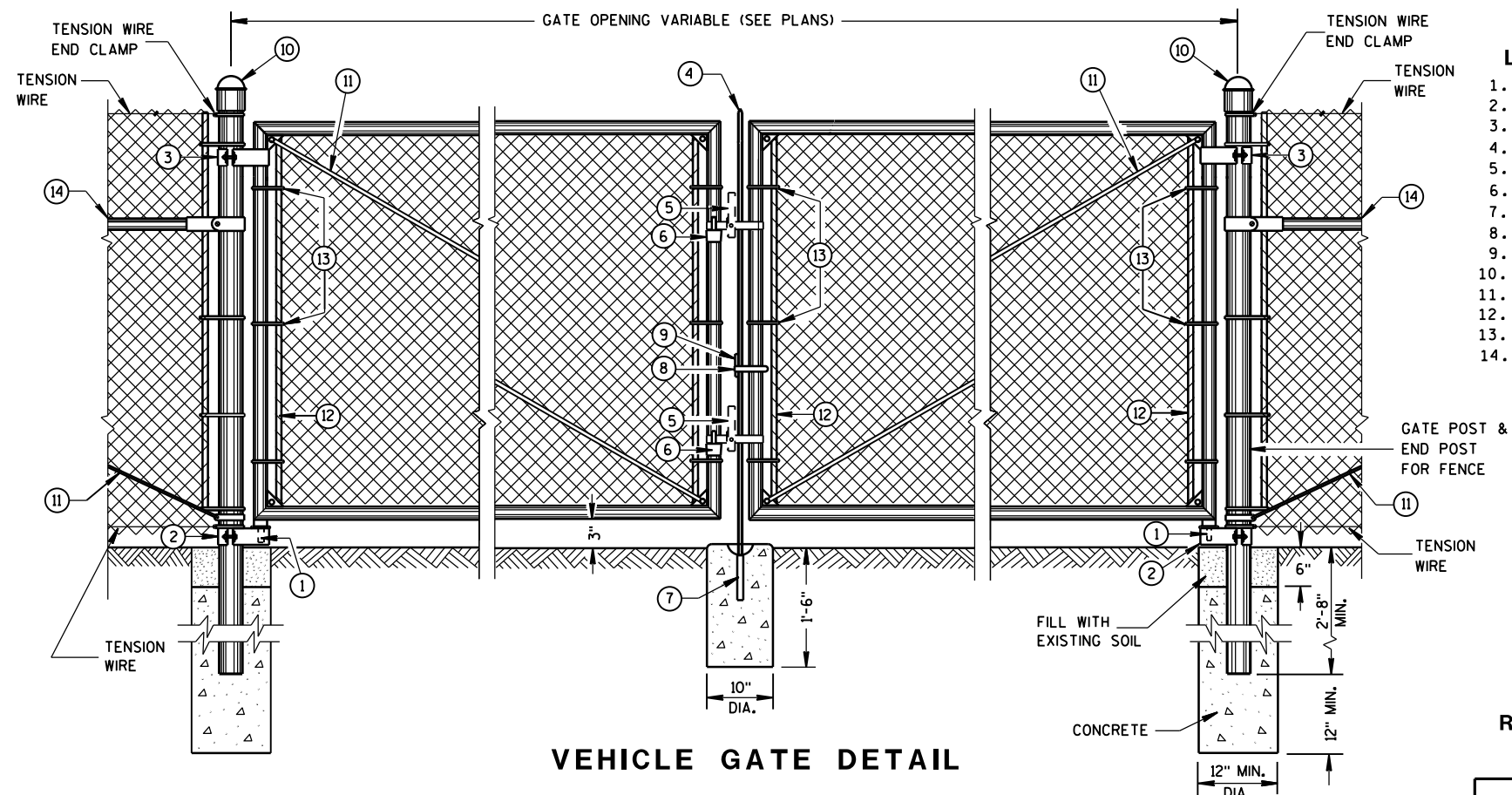


**DIAGONAL MANHOLE BOXOUT  
FOR CONSTRUCTION JOINTS**

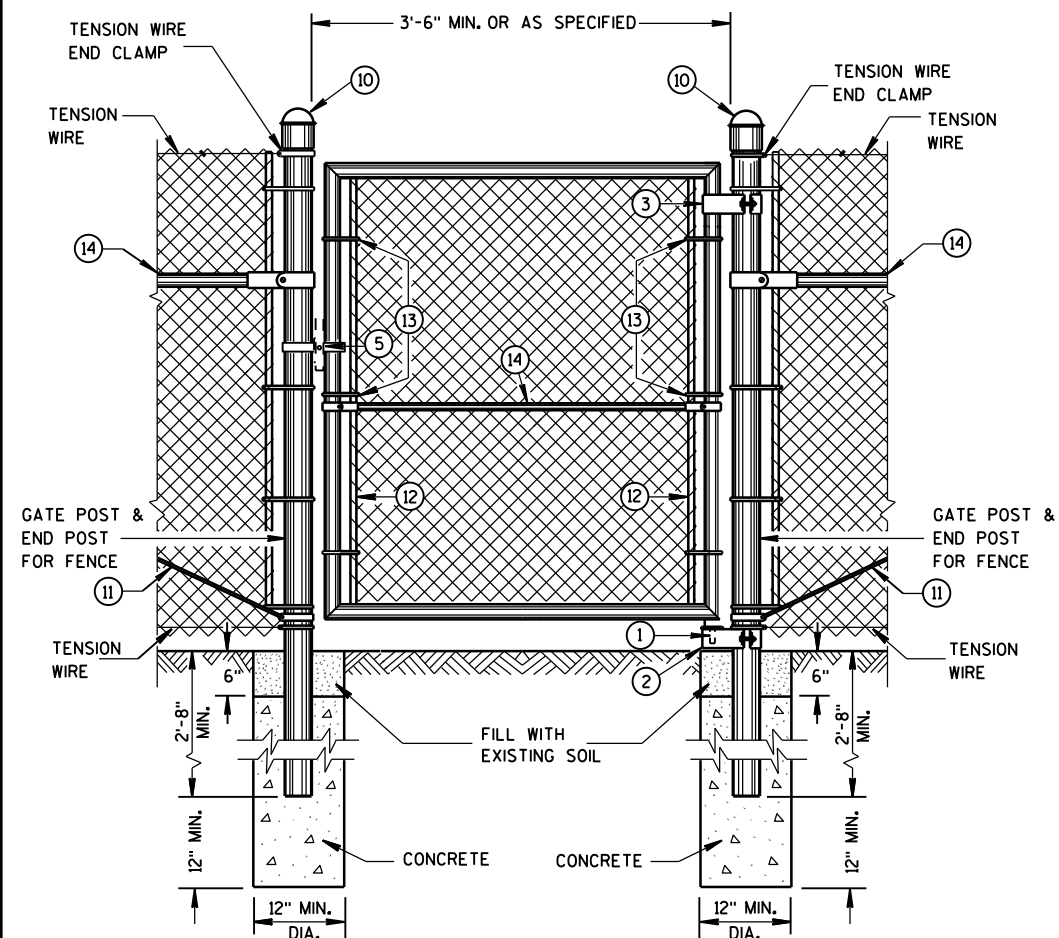
### CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



## VEHICLE GATE DETAIL



## PEDESTRIAN GATE DETAIL

- ## LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH \*
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

\*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

## GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

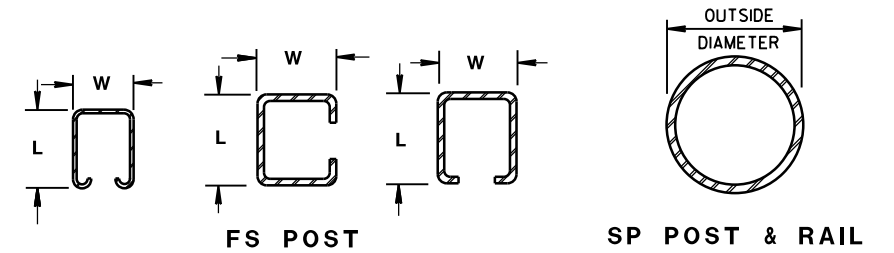
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



### CROSS SECTIONS OF POSTS AND RAILS

**ROLLED-FORMED STEEL FENCE POST  
(2.0 OZ./SQ. FT. COATING)**

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

**ROUND STEEL FENCE POST  
(1.8 OZ./SQ. FT. COATING)**

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

## REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

## REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2+
	GREATER THAN OR EQUAL TO 8 FT.	FS3

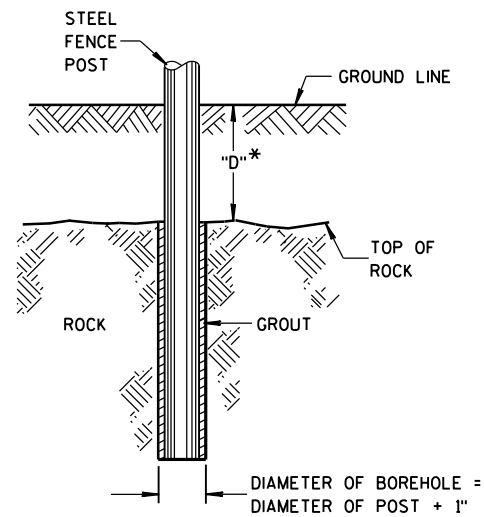
## BRACE RAIL TYPES

USE		TYPE
BRACE RAIL	X	SP1 OR FS1

\*\* INCLUDES END, CORNER, ANGLE, INTERSECTION AND  
INTERMEDIATE BRACED POSTS

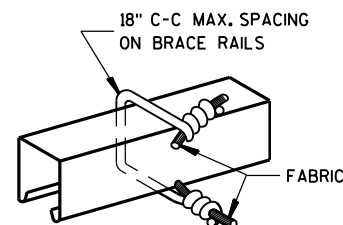
**FENCE CHAIN LINK**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



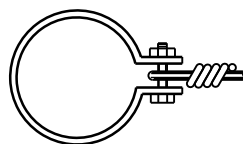
\* IF "D" IS LESS THAN 2'-6",  
DRILL ROCK AND INSTALL GROUT

### ROCK INSTALLATION OF LINE POST

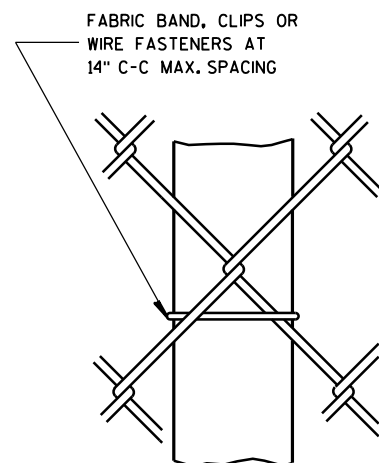


### BRACE RAIL FABRIC FASTENER

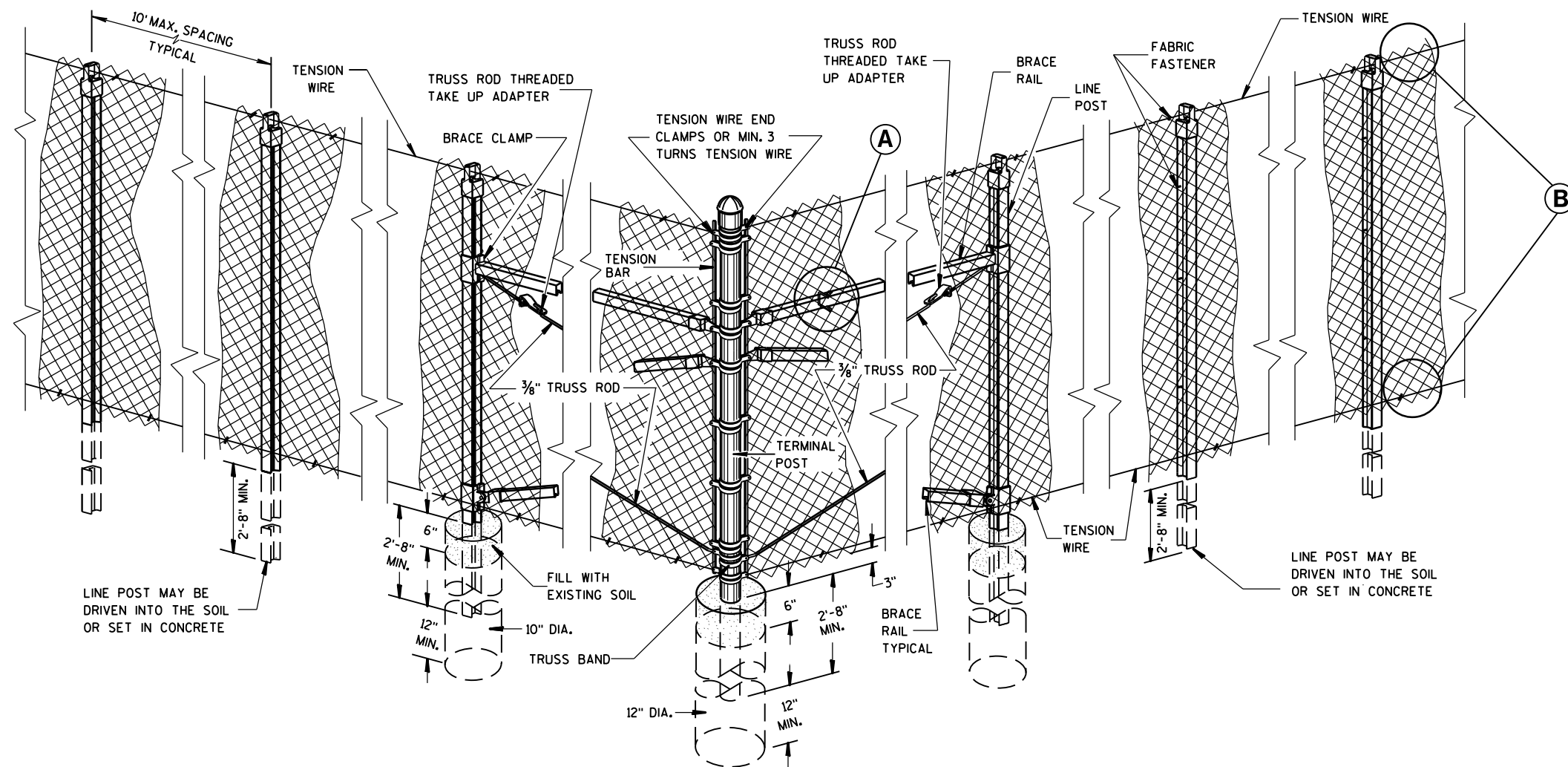
(A)



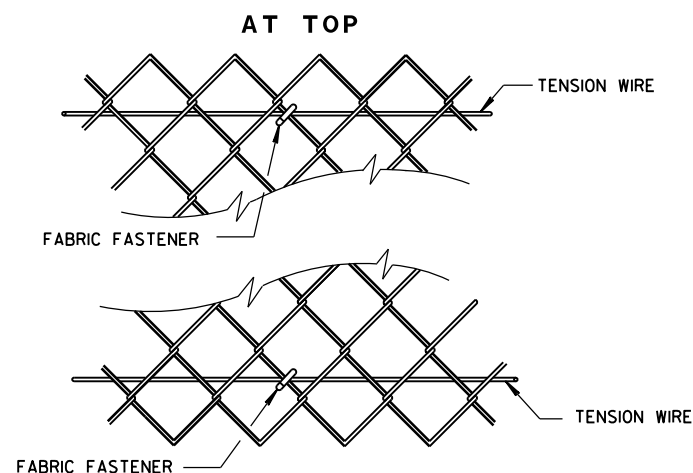
### TENSION WIRE END CLAMP



### LINE POST FABRIC FASTENER



### END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



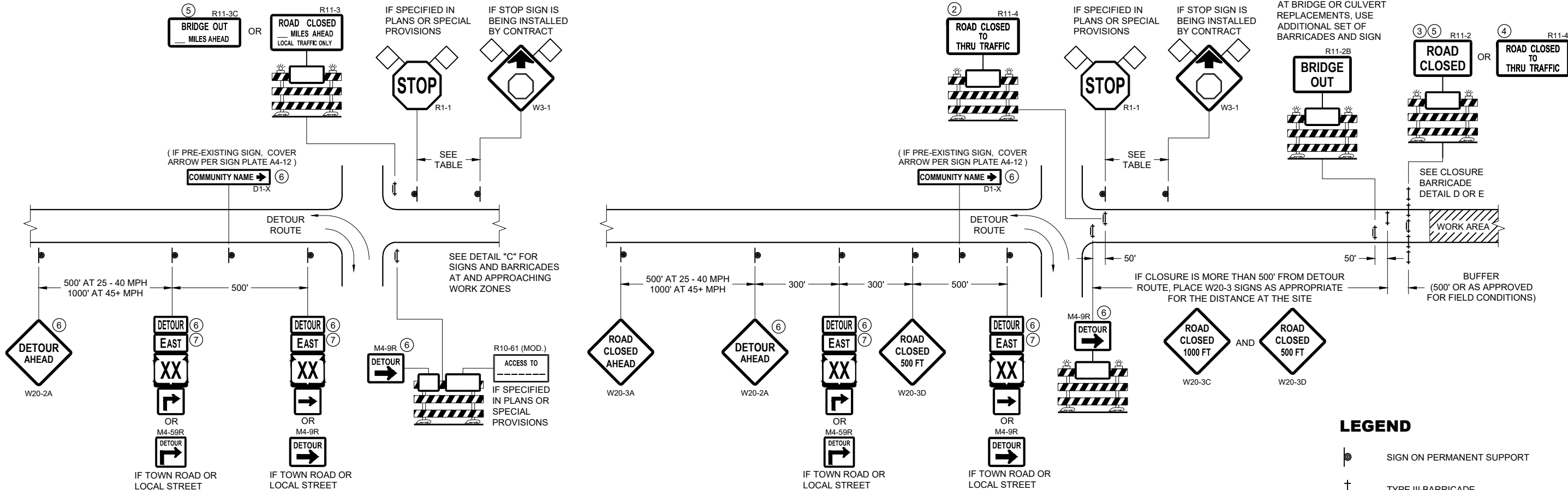
(B)

### FENCE CHAIN LINK

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DEPARTMENT OF TRANSPORTATION

APPROVED  
FEB. 2015  
DATE /S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



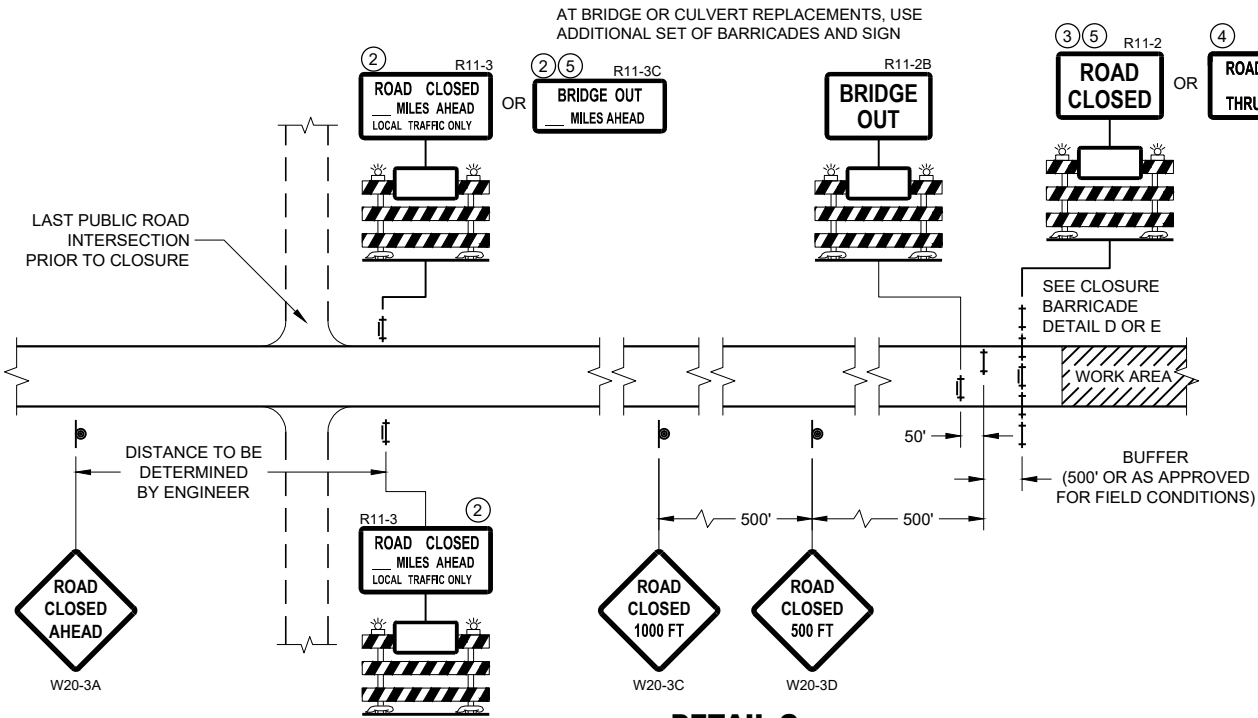


**DETAIL A**  
**MAINLINE CLOSURE WITH POSTED DETOUR**

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 )



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

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

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

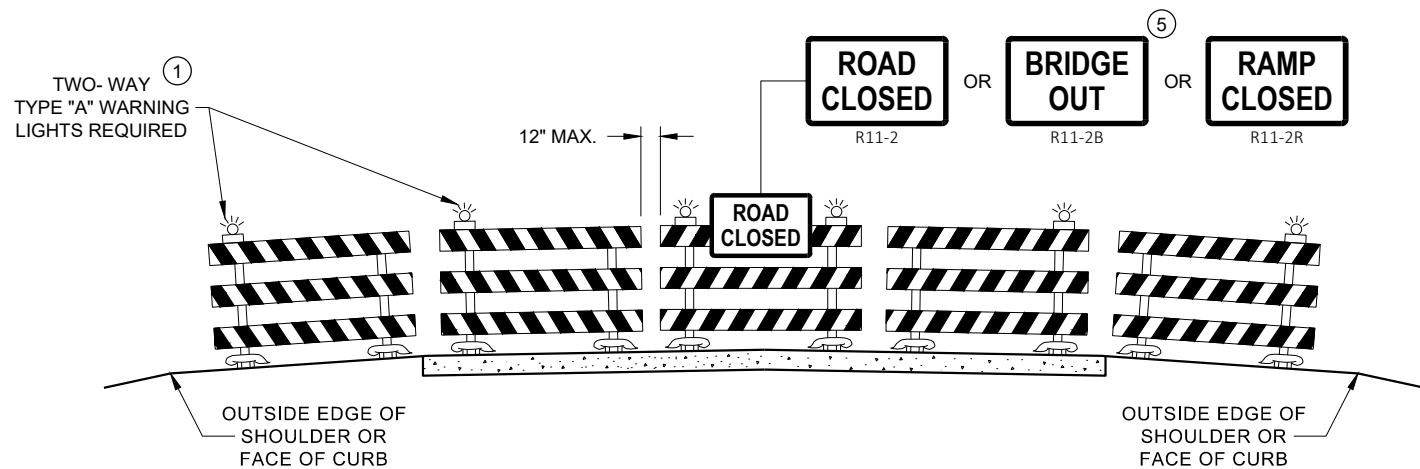
**LEGEND**

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

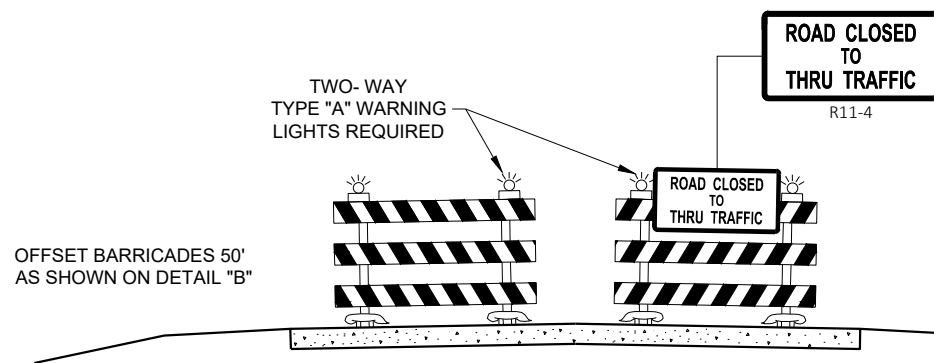
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
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:

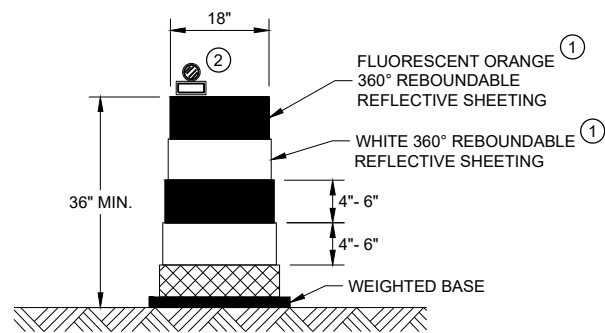
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 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.

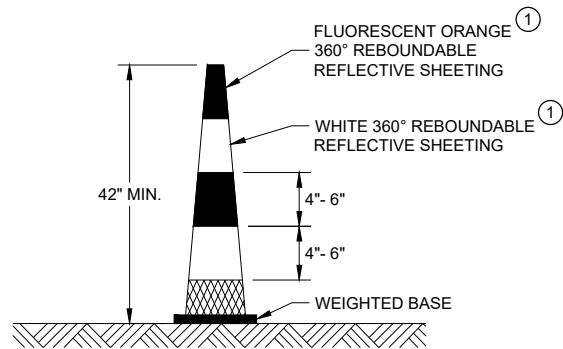
**BARRICADES AND SIGNS**  
**FOR**  
**VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

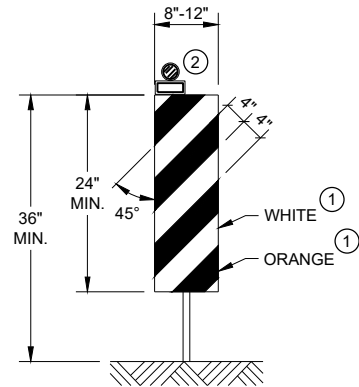


DRUM



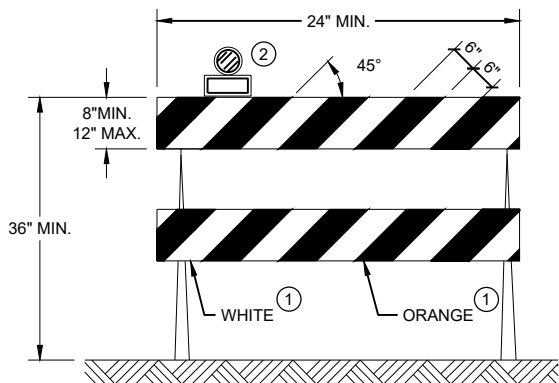
42" CONE

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS



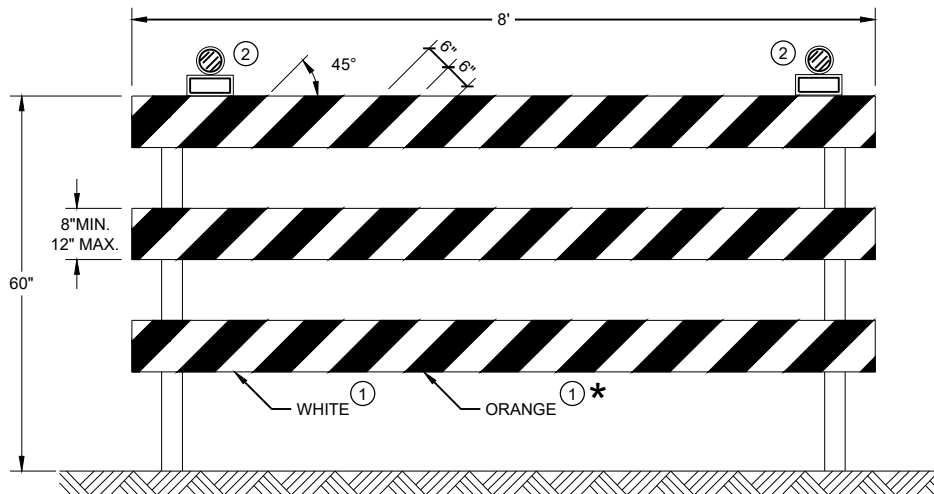
VERTICAL PANEL

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



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.

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.

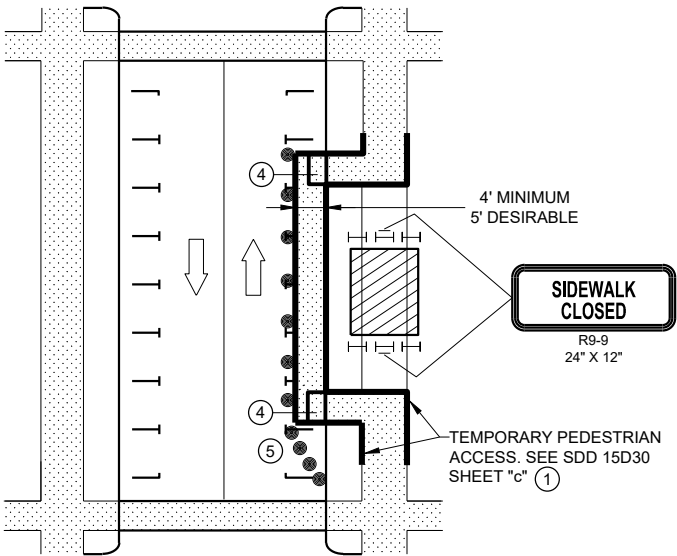
CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2017 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

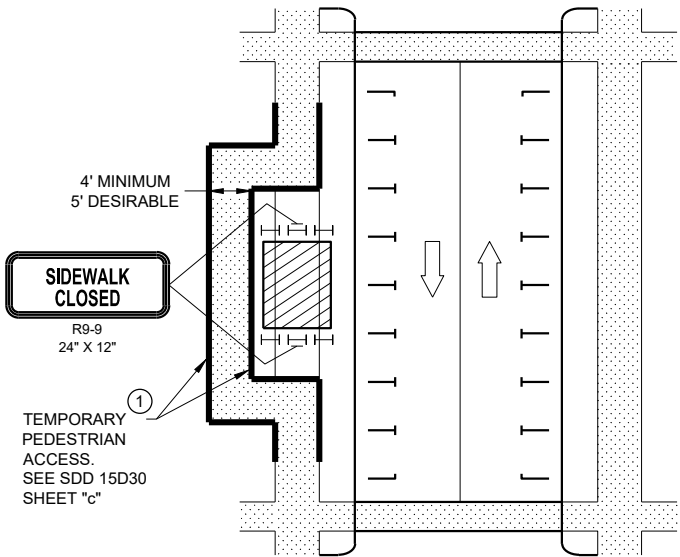
FHWA

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

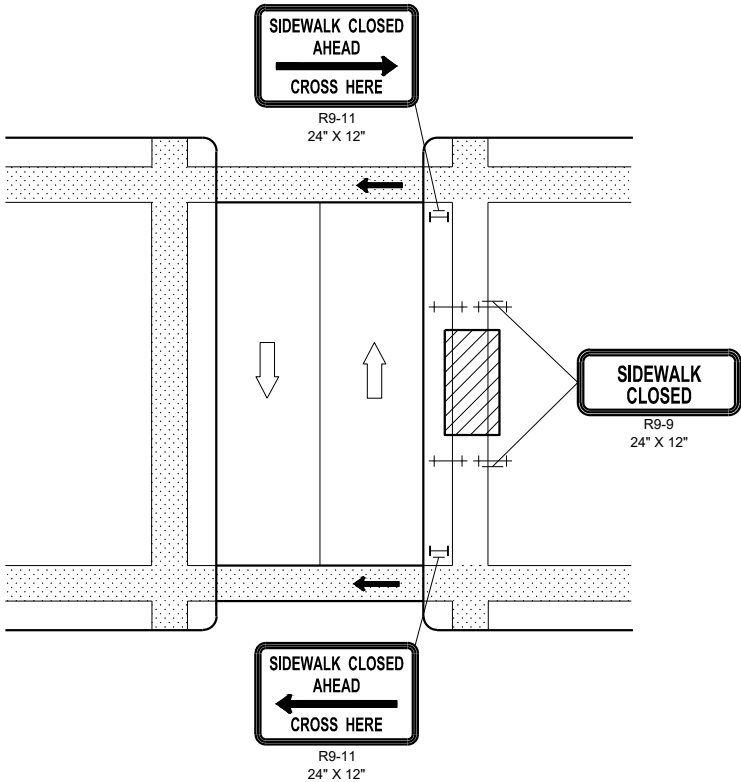


MID-BLOCK SIDEWALK CLOSURE  
IN PARKING LANE

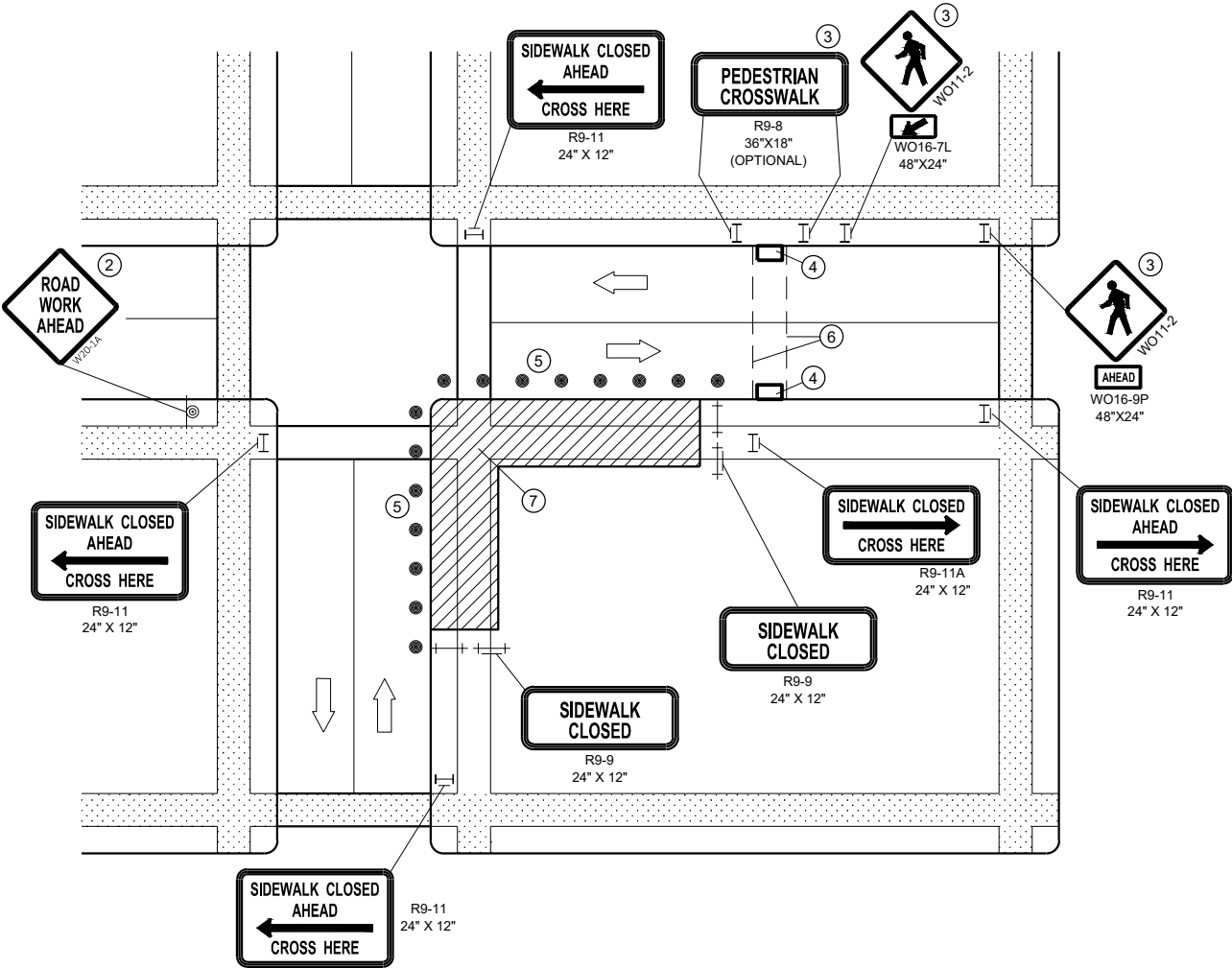
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK  
CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

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

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

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

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

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

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

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

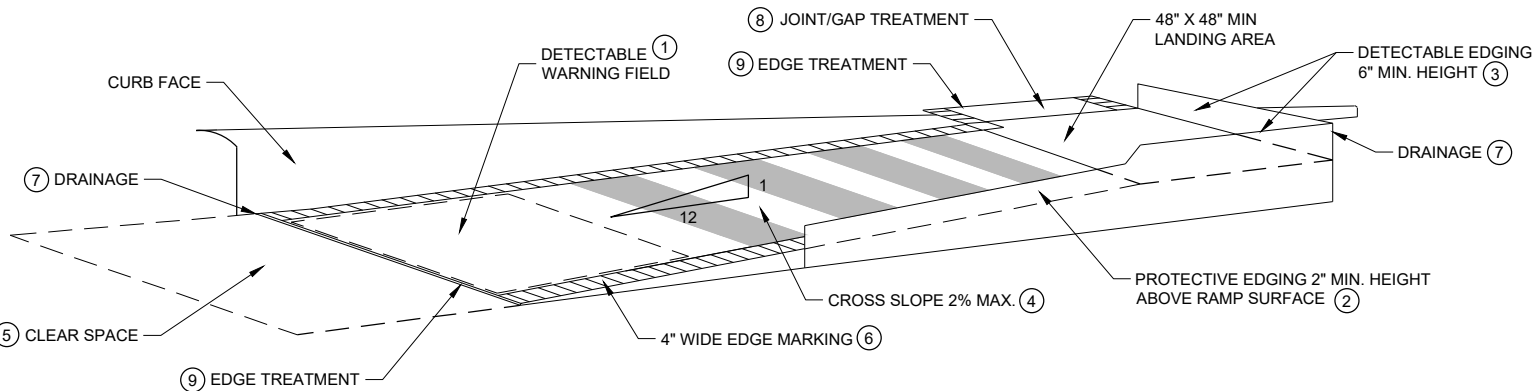
- ① IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE
- ② "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- ③ IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND WO11-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- ④ TEMPORARY CURB RAMPS. SEE SDD 15D30 SHEET "b'.
- ⑤ DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- ⑥ TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- ⑦ LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

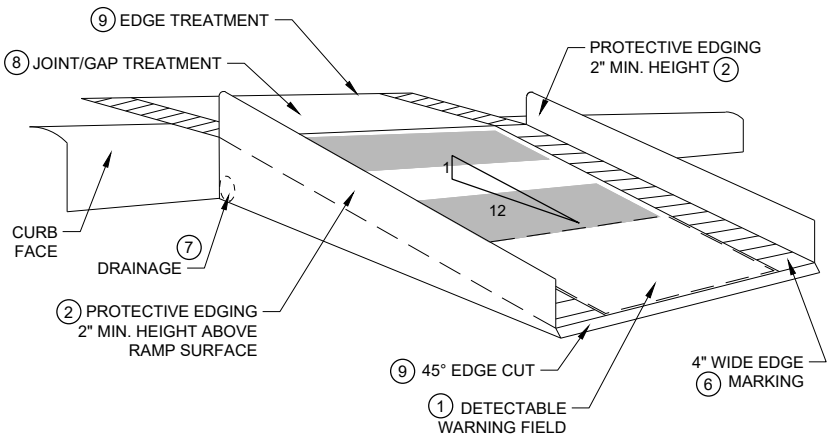
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN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

TRAFFIC CONTROL,  
PEDESTRIAN ACCOMMODATION

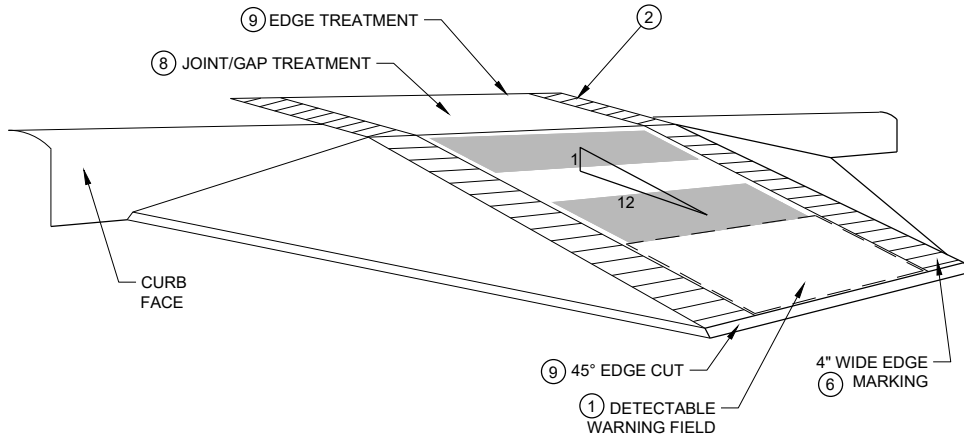
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



TEMPORARY CURB RAMP PARALLEL TO CURB



WITH PROTECTIVE EDGE

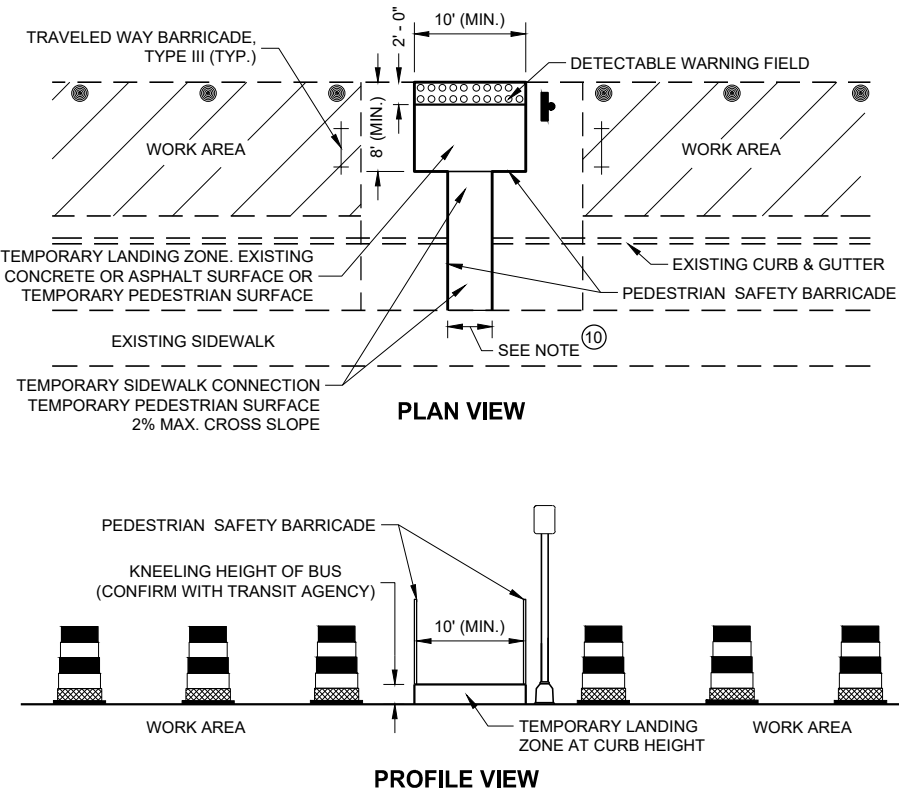


WITH SIDE APRON

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

- NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
- ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.
- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 08D05, SHEET "e".
  - 2 PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
  - 3 DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
  - 4 CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
  - 5 CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
  - 6 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
  - 7 DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
  - 8 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
  - 9 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".
  - 10 5' WIDE MIN. WITH PEDESTRIAN SAFETY BARRICADE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY BARRICADE.

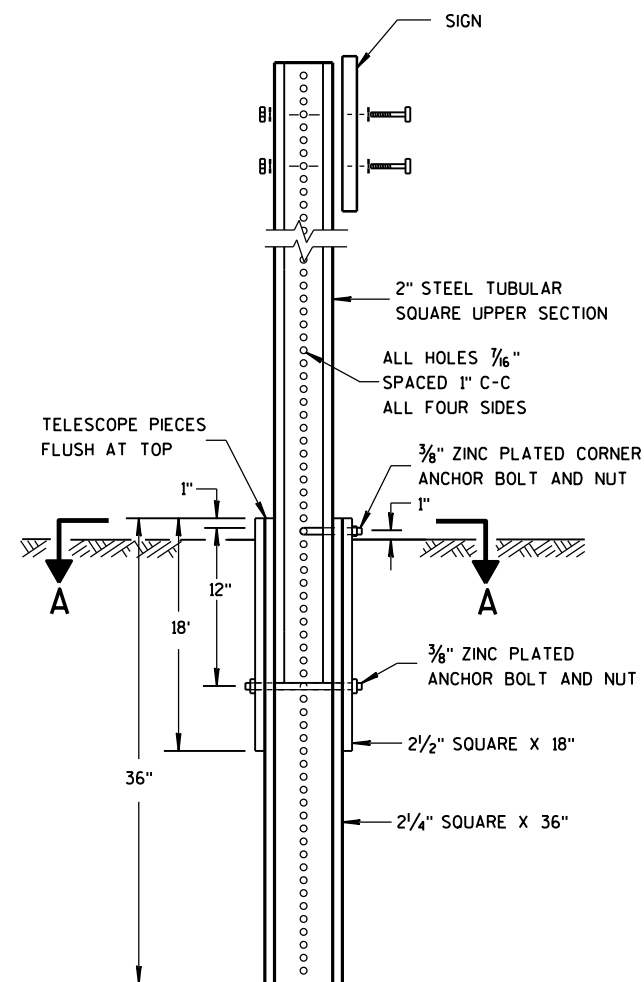


TEMPORARY BUS STOP PAD

- LEGEND
- TRAFFIC CONTROL DRUM
  - † TYPE III BARRICADE
  - ▨ WORK AREA

TRAFFIC CONTROL,  
PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

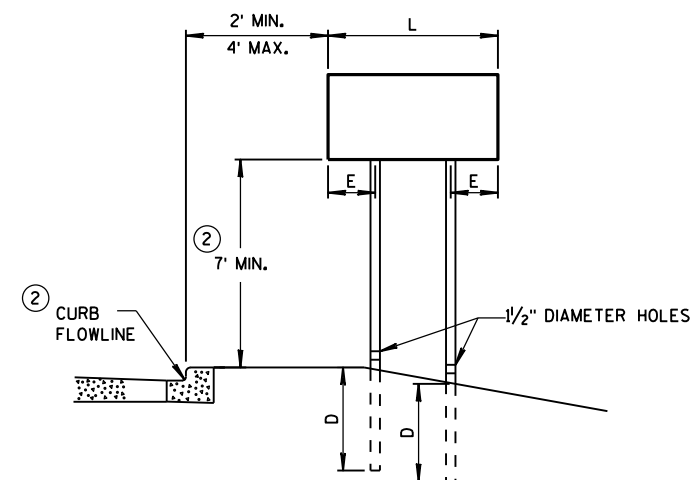
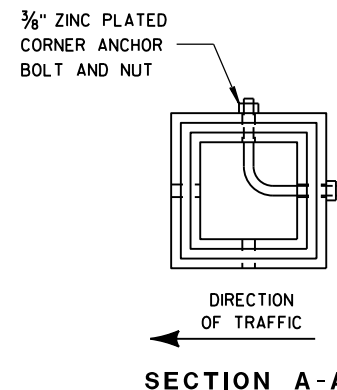


DETAIL OF TUBULAR  
STEEL SIGN POST

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

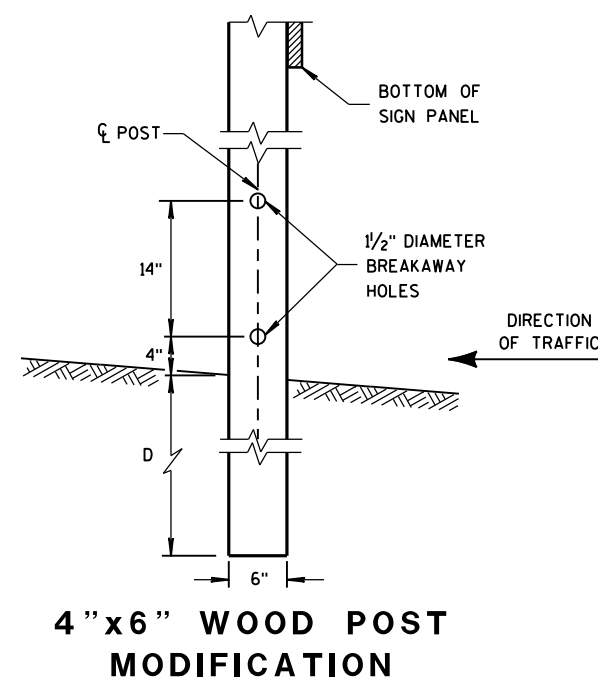
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL  
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).  
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED  
ON TUBULAR STEEL POSTS.



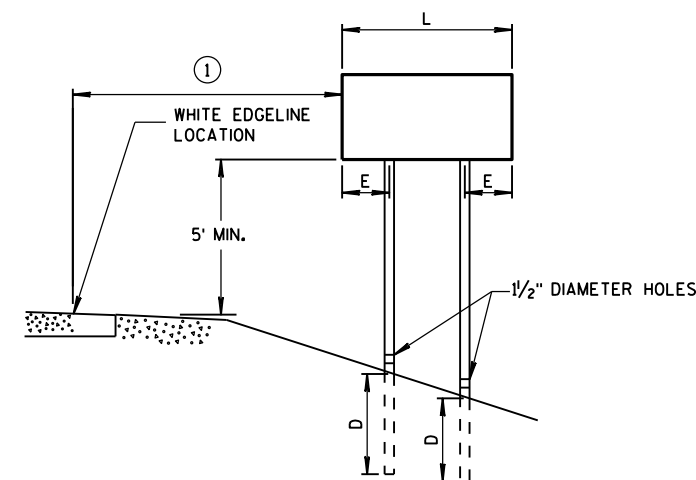
URBAN AREA

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 "x6 " WOOD POST  
MODIFICATION



RURAL AREA

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

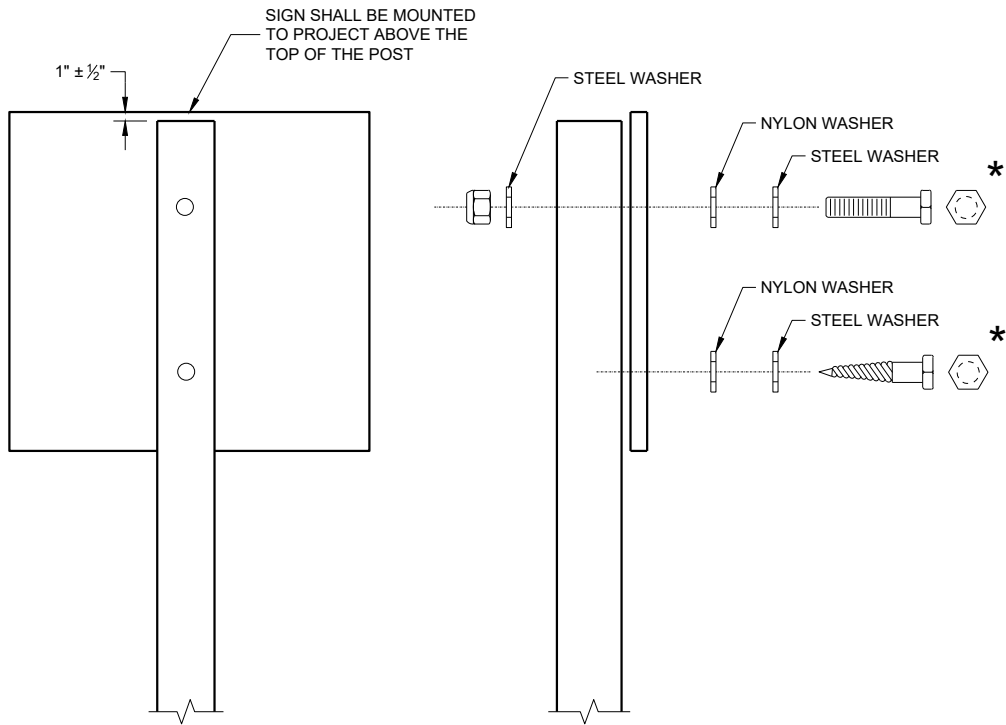
SEE NOTE ③

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  
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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 - ¾" x 3"  
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

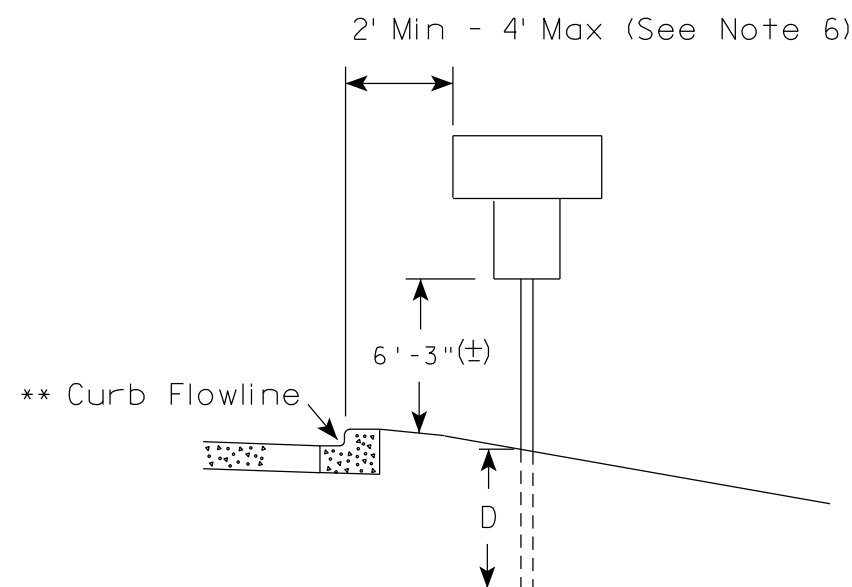
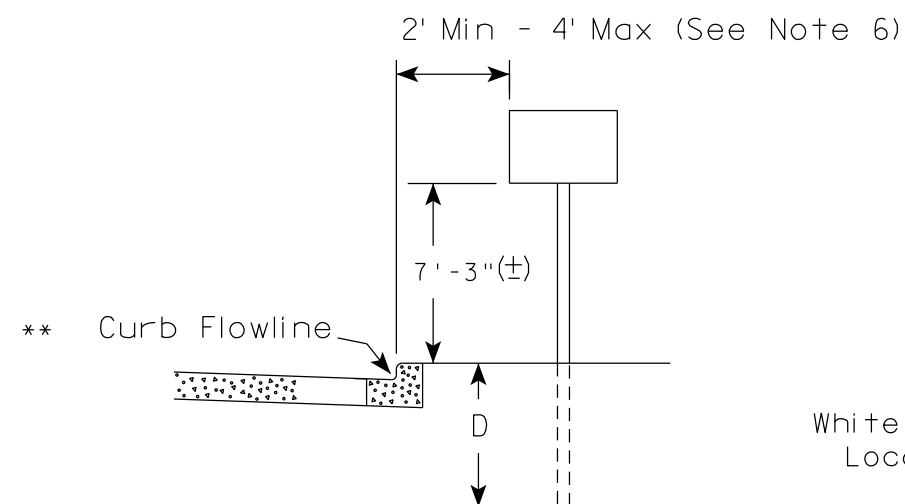
SQUARE STEEL POST (2" x 2")  
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS  
RIVETS - ⅝" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM  
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,  
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -  
1 ¼" O.D. x ⅜" I.D. x ⅛" STEEL  
1 ¼" O.D. x ⅜" 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.

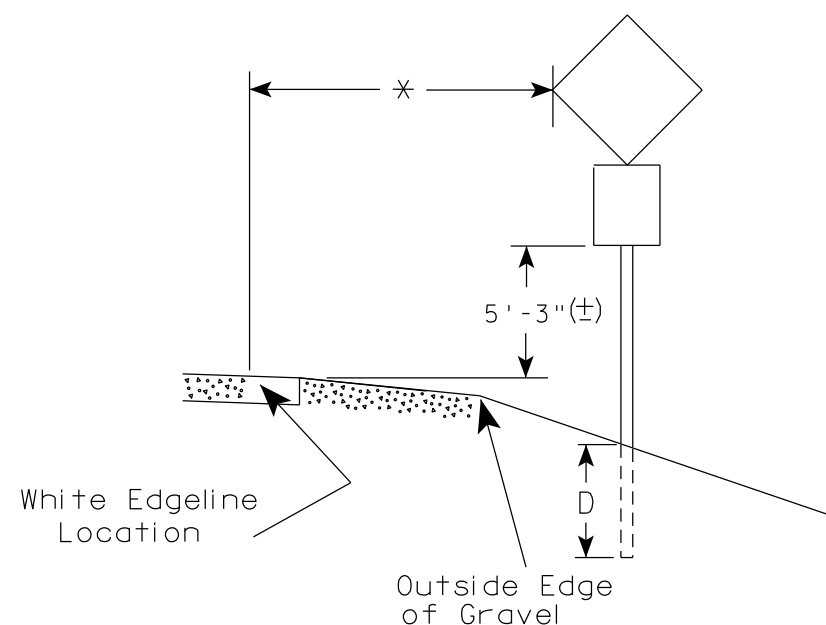
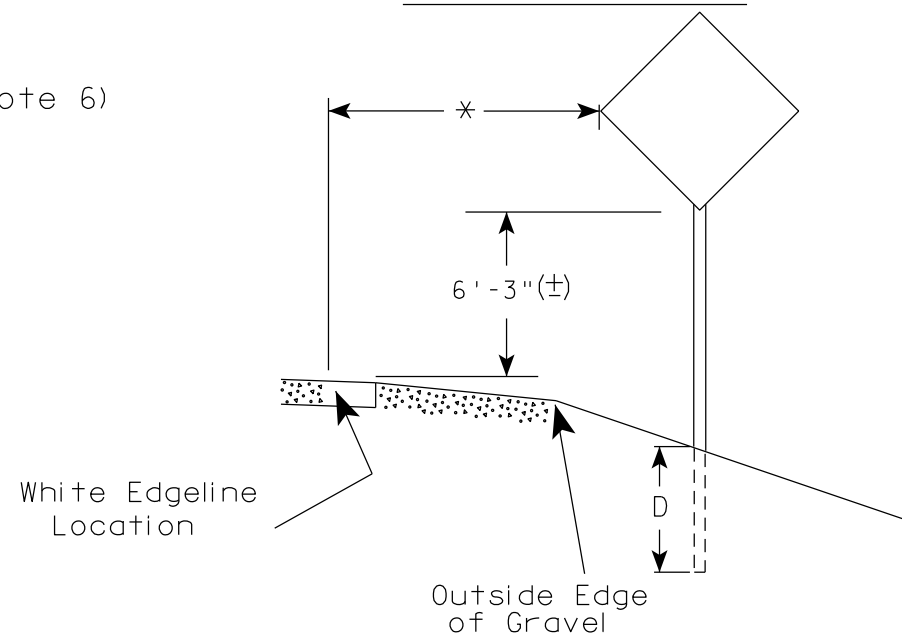
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

# URBAN AREA



✱✱ 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.

# RURAL AREA (See Note 2)



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

## POST EMBEDMENT DEPTH

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

## GENERAL NOTES

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- 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" (±).
- For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- The (±) tolerance for mounting height is 3 inches.
- Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the 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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E





### 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

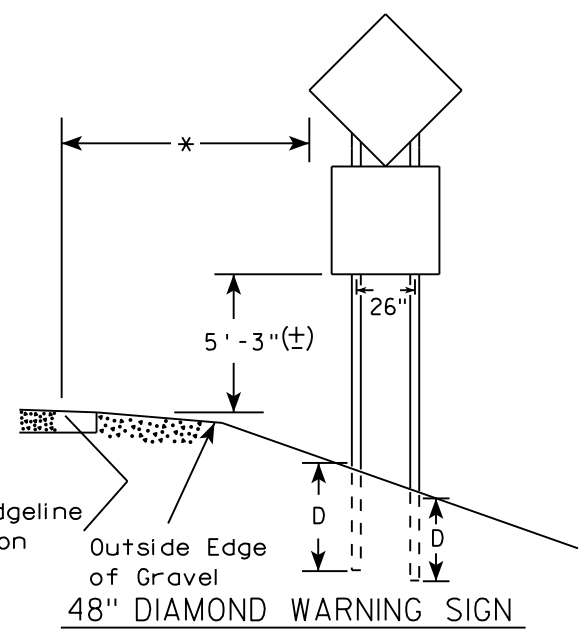
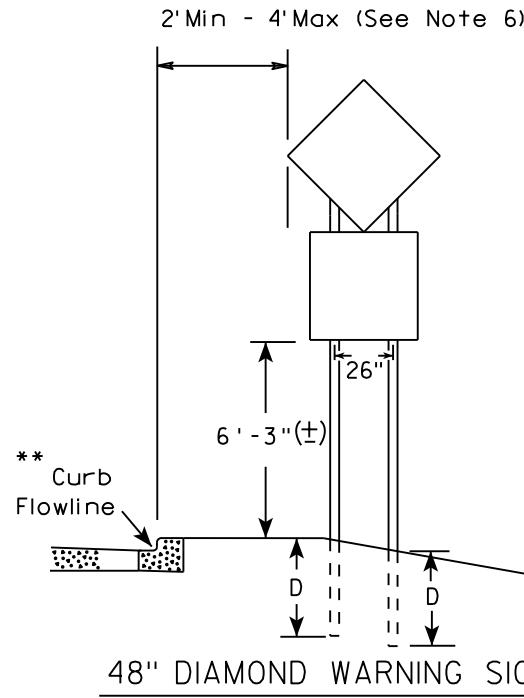
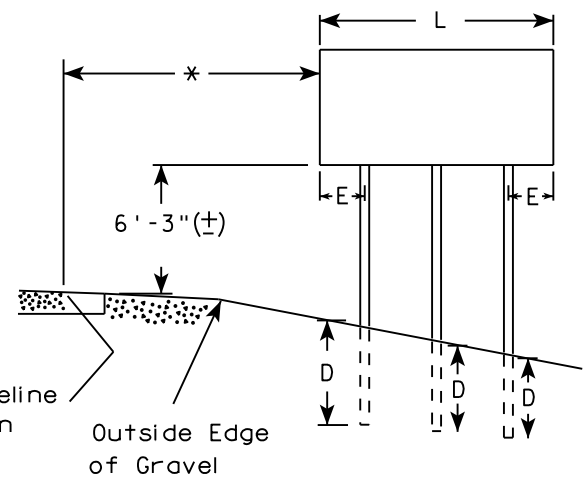
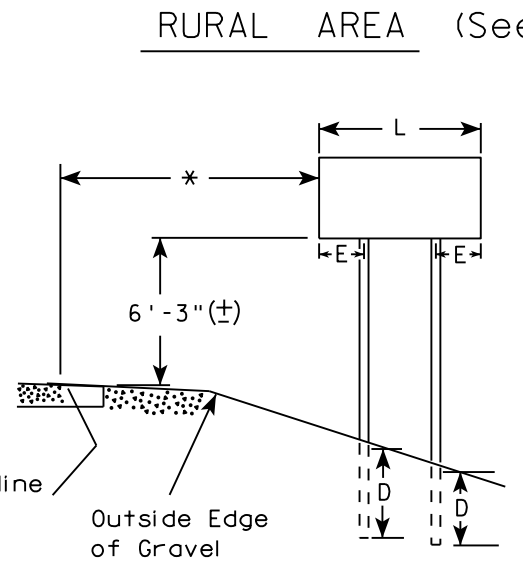
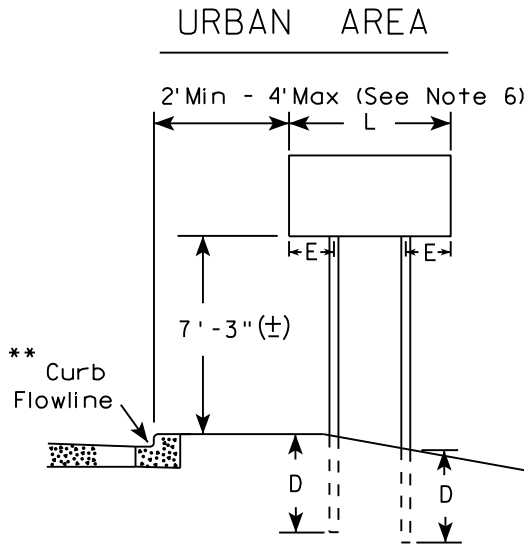
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- 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" (±).

\* 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

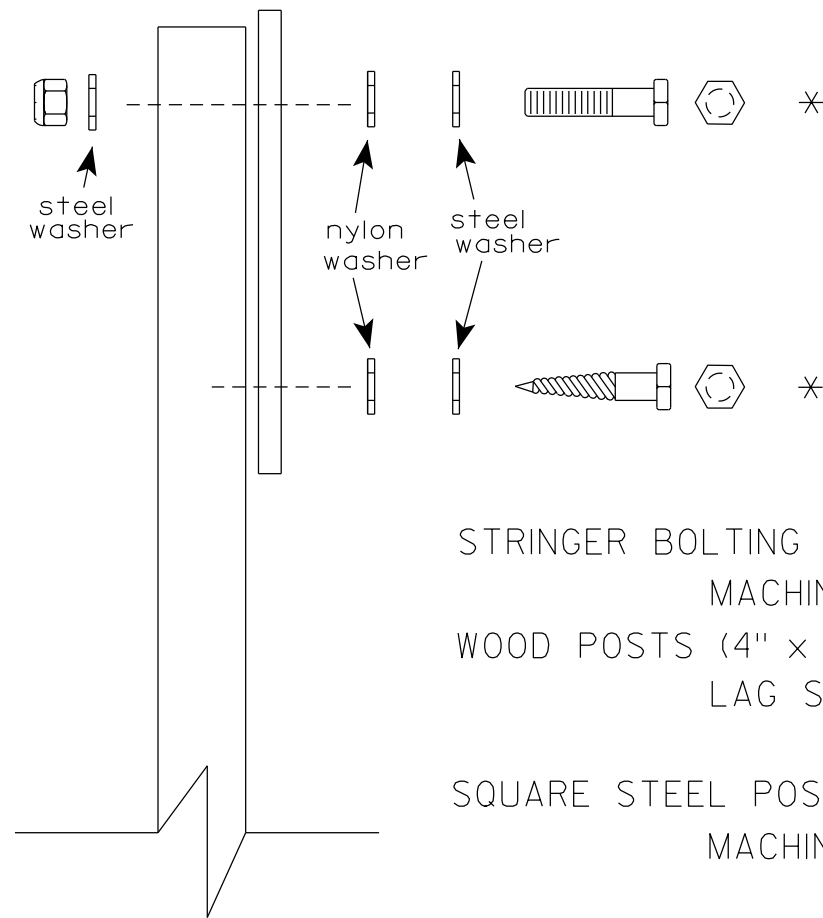
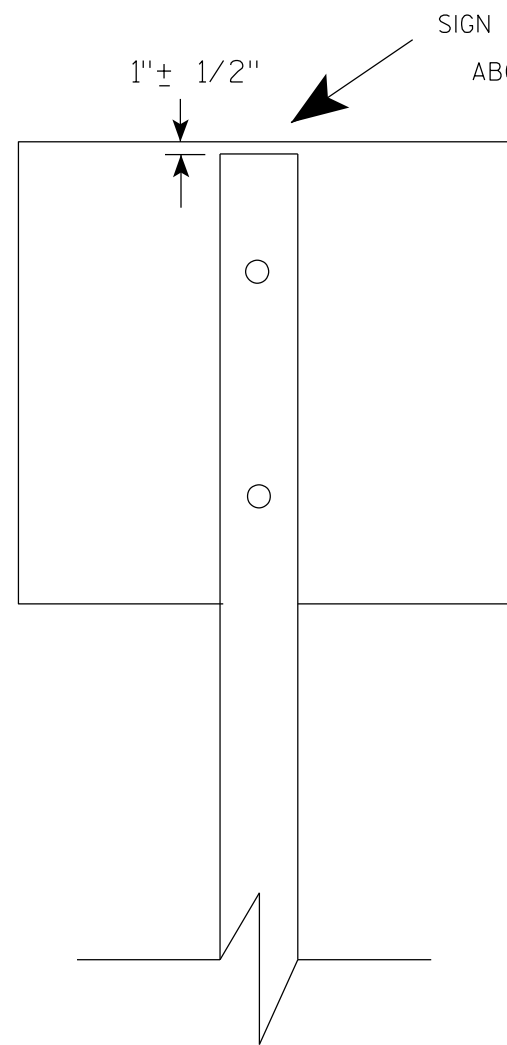
Area of Sign Installation ( Sq. Ft. )	D ( Min )
20 or Less	4'
Greater than 20	5'

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 :

- 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.

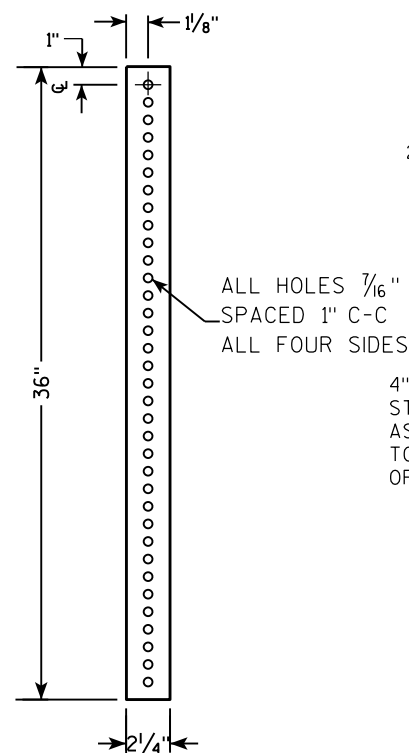
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

**2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH**



2 1/2" TELES-  
PAR TUBE

4" x 10" x 10 GA.  
STEEL PLATE (CUT  
AS SHOWN) WELDED  
TO ALL FOUR CORNERS  
OF TELES-  
PAR TUBE

4"

2 1/2"

10"

3 1/2"

18"

TELESCOPE PIECES  
FLUSH AT TOP

18" DIA SCHEDULE  
40 PVC  
BOX-OUT

36"

13"

18"

2 1/2" GRAVEL OR DIRT

3/8" ZINC PLATED  
ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18"  
(SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

2" STEEL TUBULAR  
SQUARE UPPER SECTION

ALL HOLES 7/16"  
SPACED 1" C-C  
ALL FOUR SIDES

SEE SIGN PLATE  
A4-8 FOR BOLT  
WASHER, & NUT  
MATERIAL

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY, INCLUDING DIMENSIONS AND MATERIAL SPECIFICATIONS.

**Dimensions:**

- Overall height: 36"
- Section A-A: 18" (top section), 12" (bottom section)
- Section B-B: 1" (width of the base plate)

**Materials and Components:**

- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES  $\frac{7}{16}$ " SPACED 1" C-C
- ALL FOUR SIDES
- $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
- $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- 2 1/4" SQUARE X 36"
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

**Notes:**

- TELESCOPE PIECES FLUSH AT TOP
- LENGTH SHOWN ON MISC. QTYS

DIRECTION  
OF TRAFFIC

SECTION A-A

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:

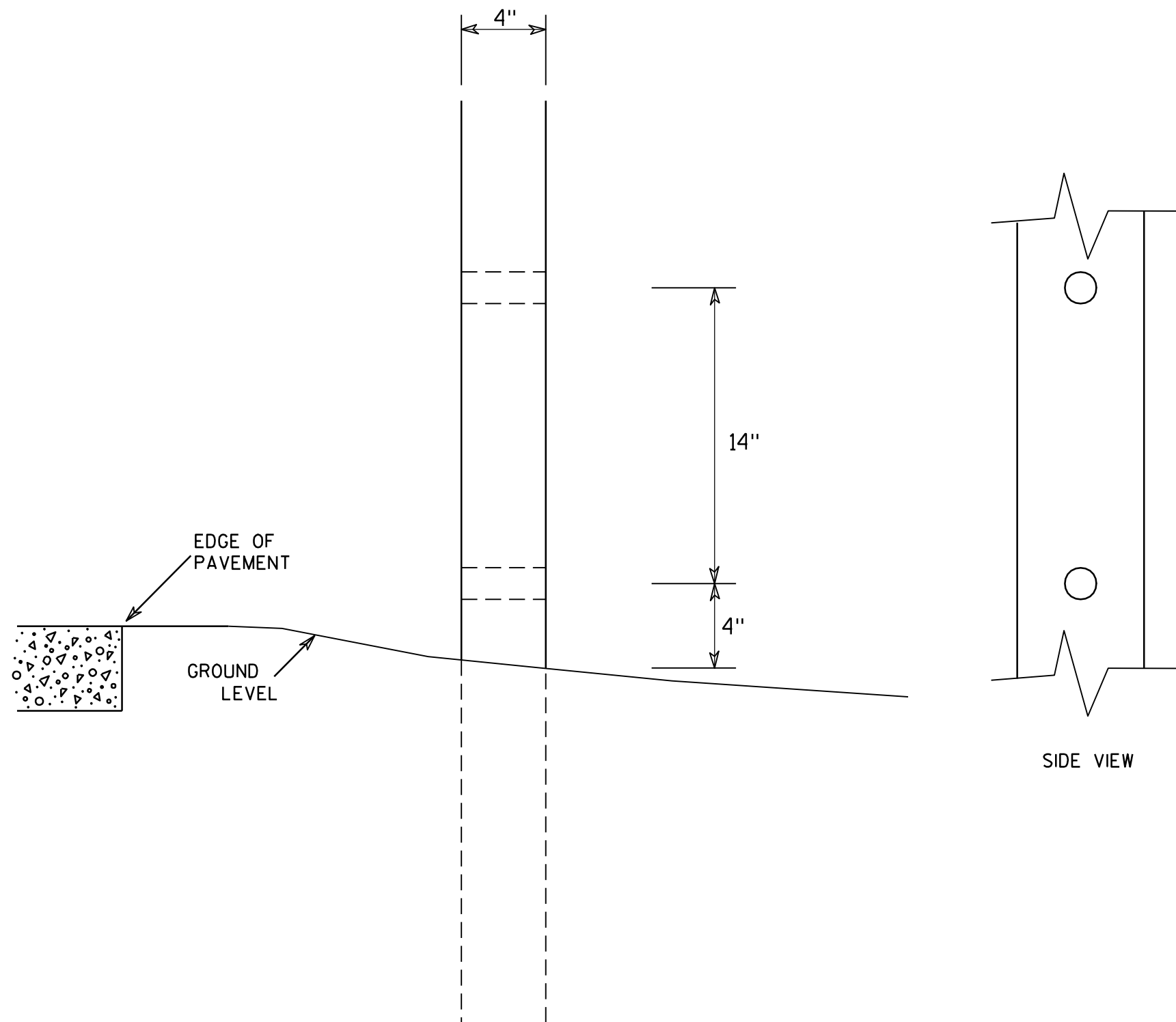
HWY:

COUNTY:

SHEET NO:

1

7



### 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

### 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

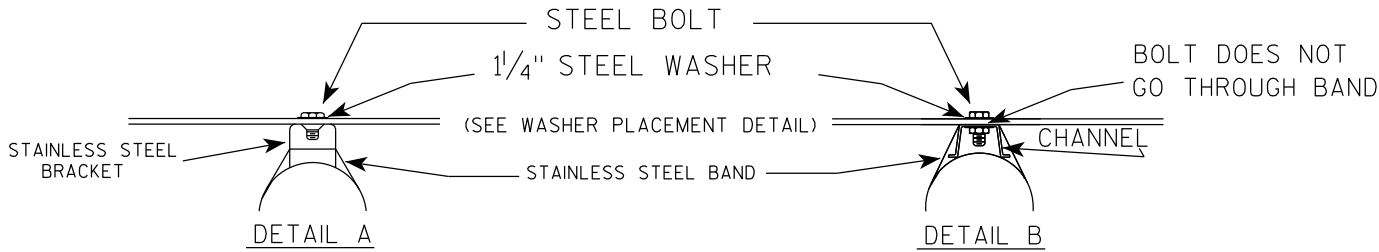
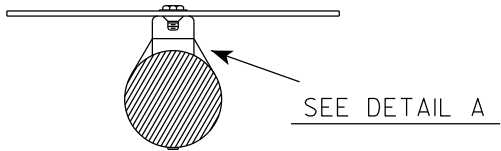
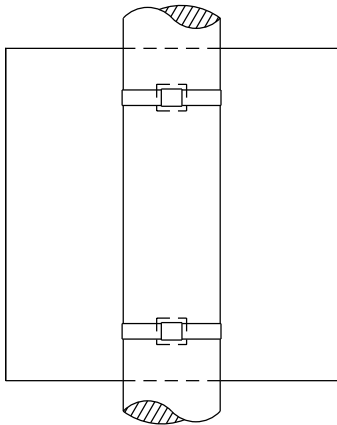
COUNTY:

SHEET NO:

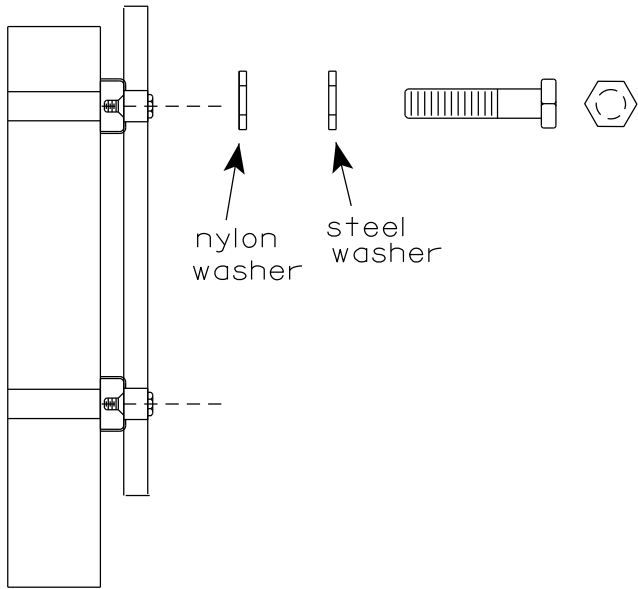
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

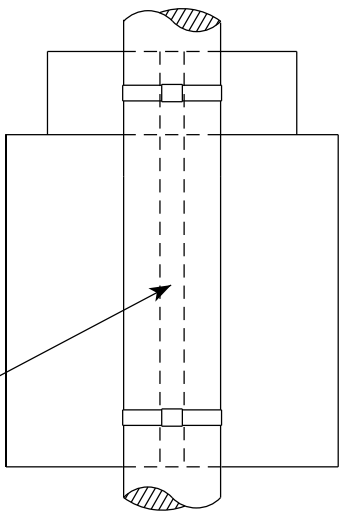


WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

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 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

"J" ASSEMBLY



SEE DETAIL B

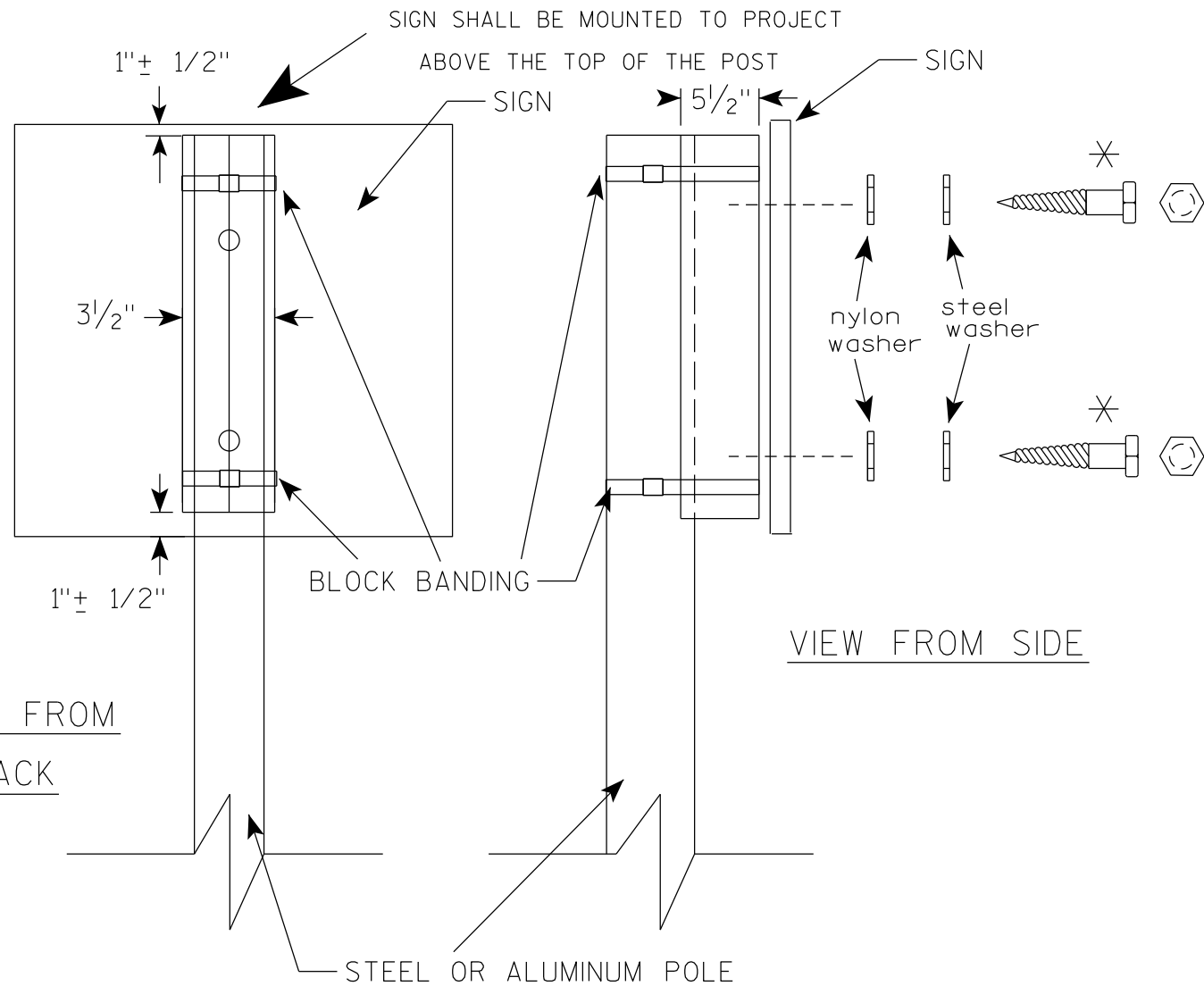
STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

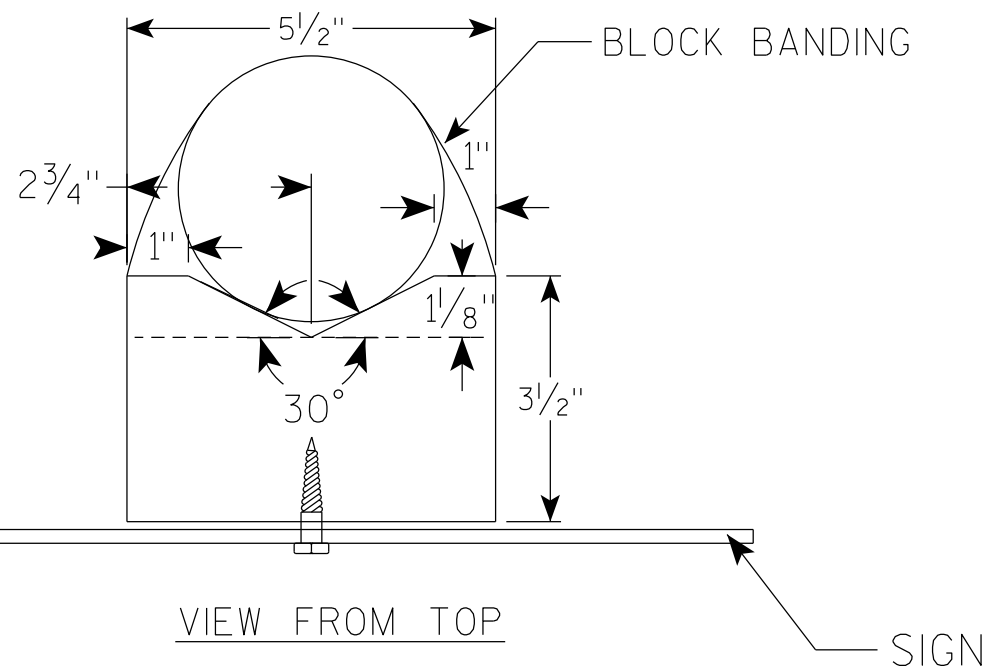
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

VIEW FROM  
BACK



VIEW FROM SIDE



## 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,  $\frac{3}{4}$ " 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  $1\frac{1}{4}$ " O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE  $1\frac{1}{4}$ " O.D. X  $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE  $\frac{3}{8}$ " X  $2\frac{1}{2}$ "

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch  
for State Traffic Engineer

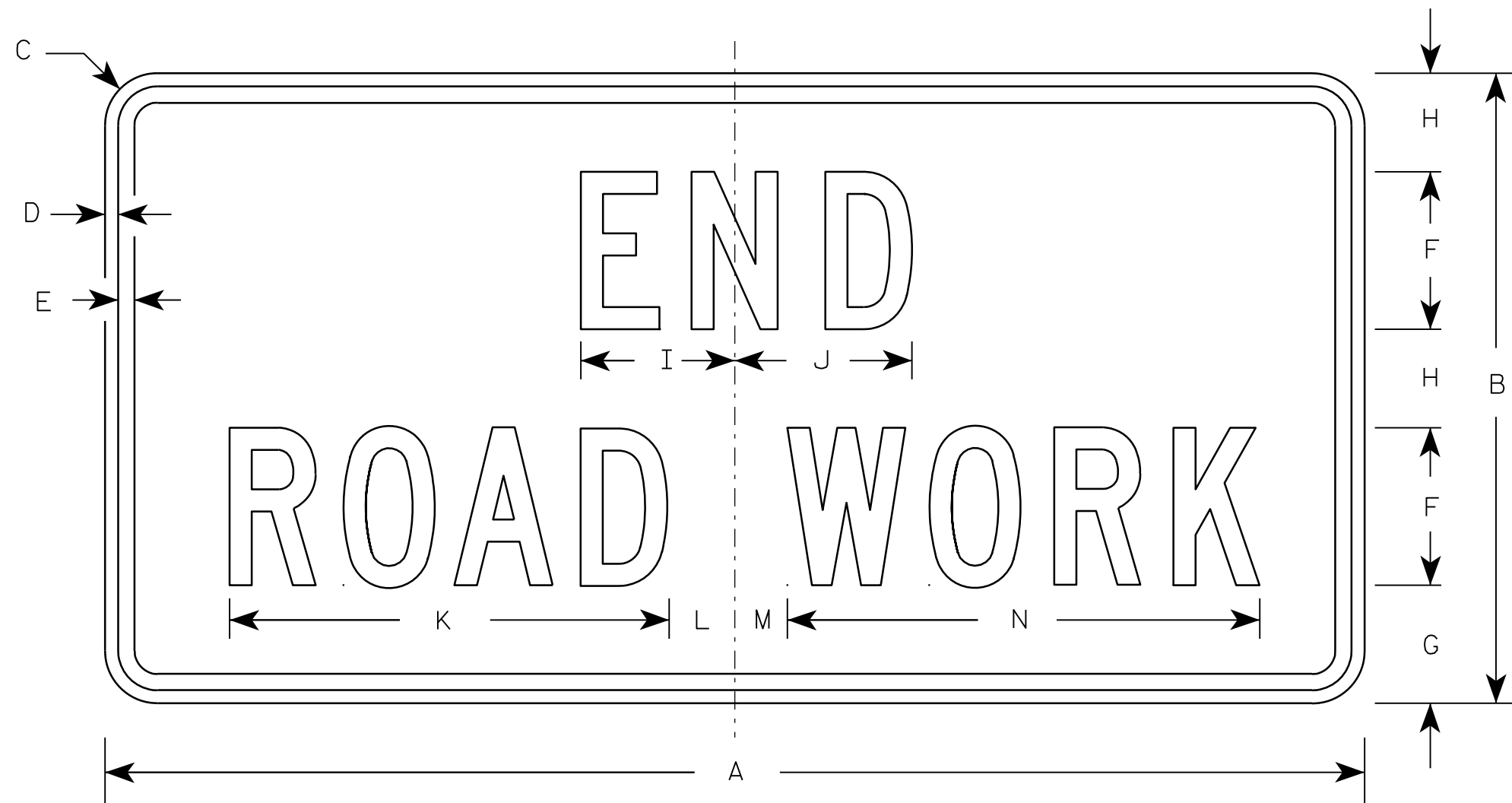
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO:

E

7



G20-2A

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.

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 m <sup>2</sup>
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

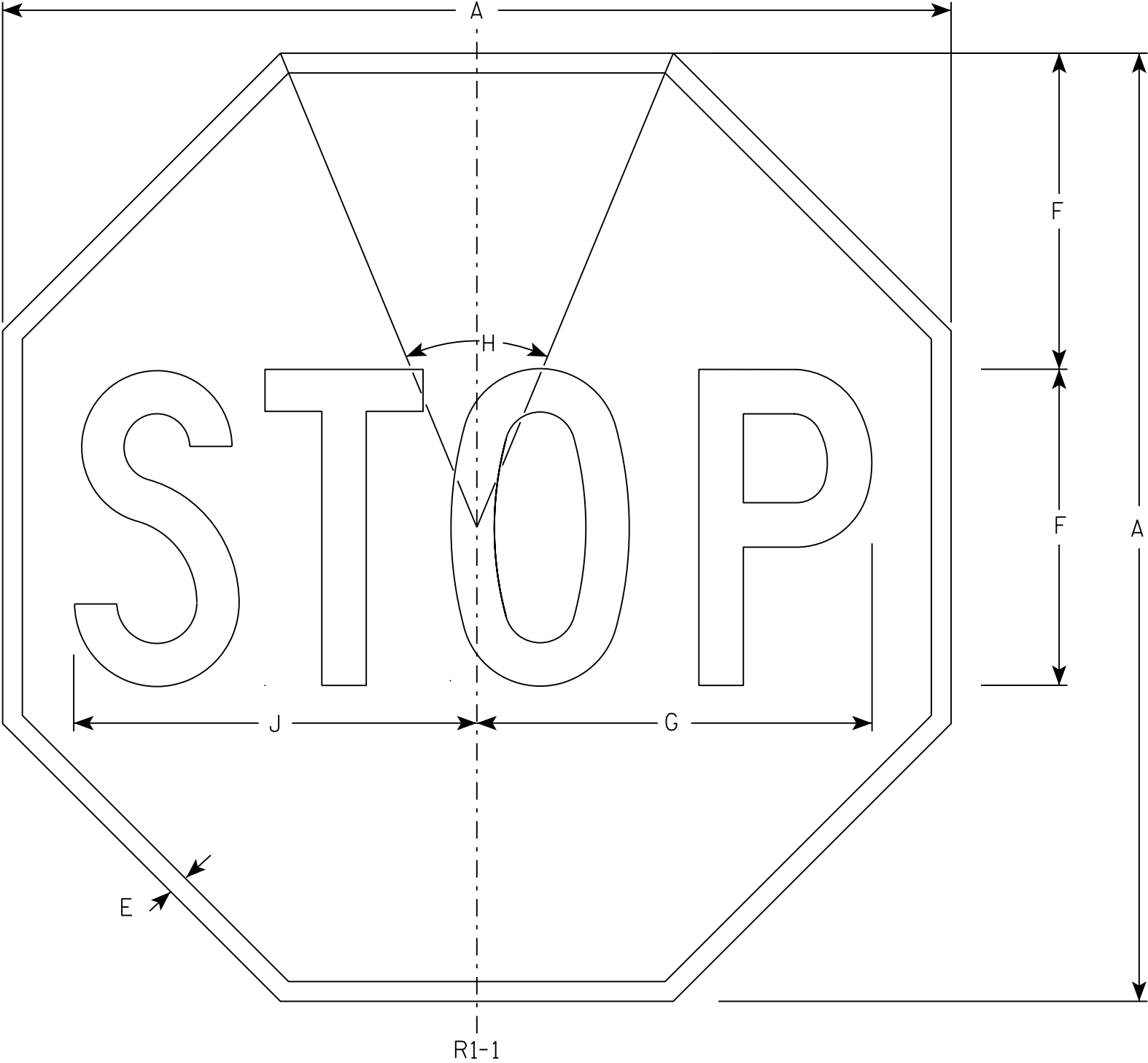
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

7



7



NOTES

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

7

R1-1

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

STANDARD SIGN

R1 - 1

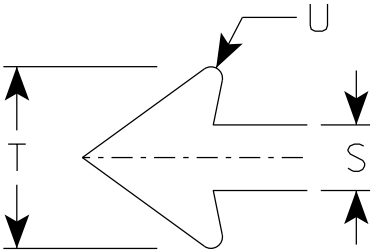
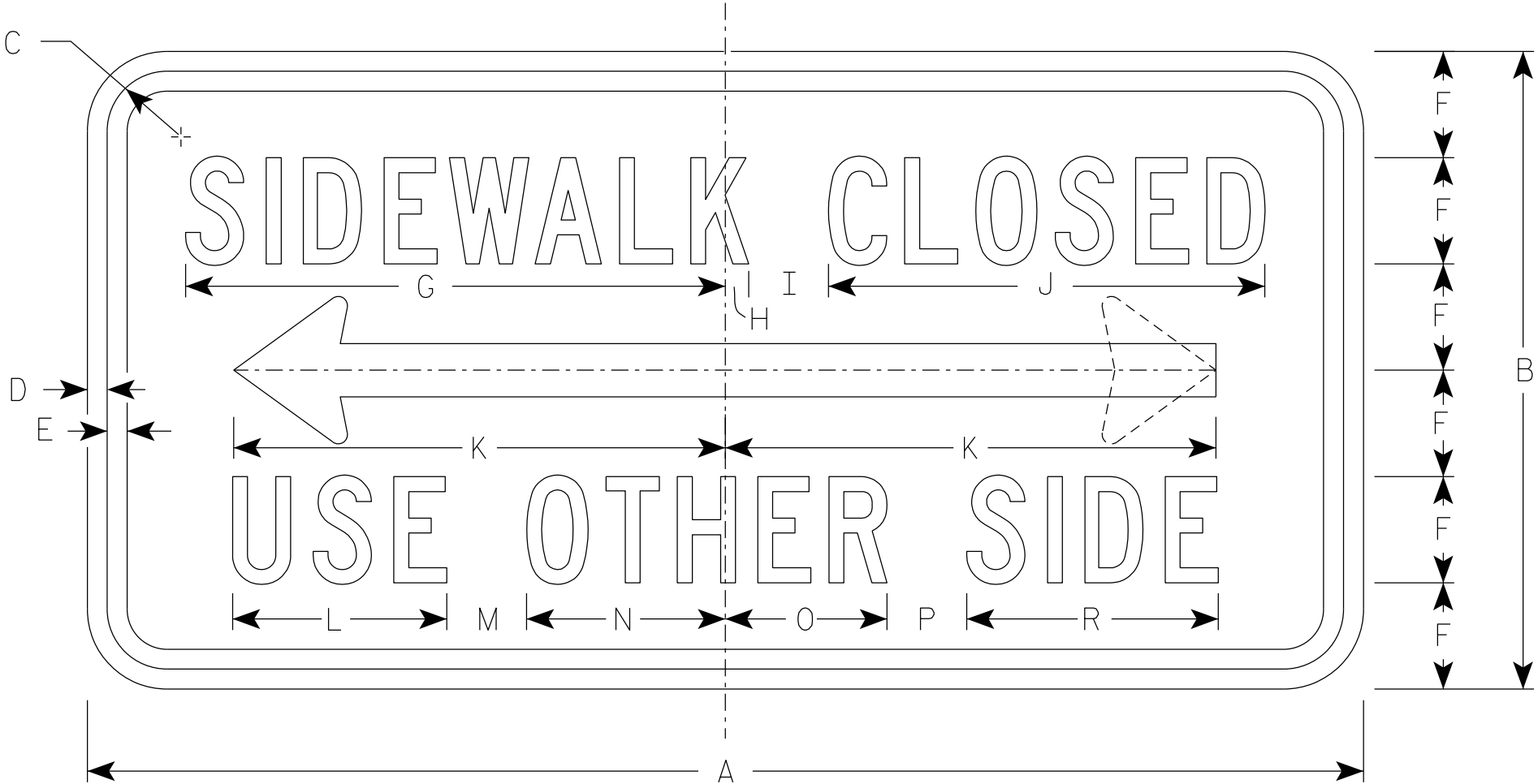
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

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. Use Size 2 for sidewalks. Use Size 3 for paths and trails.



ARROW DETAIL

R9-10

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

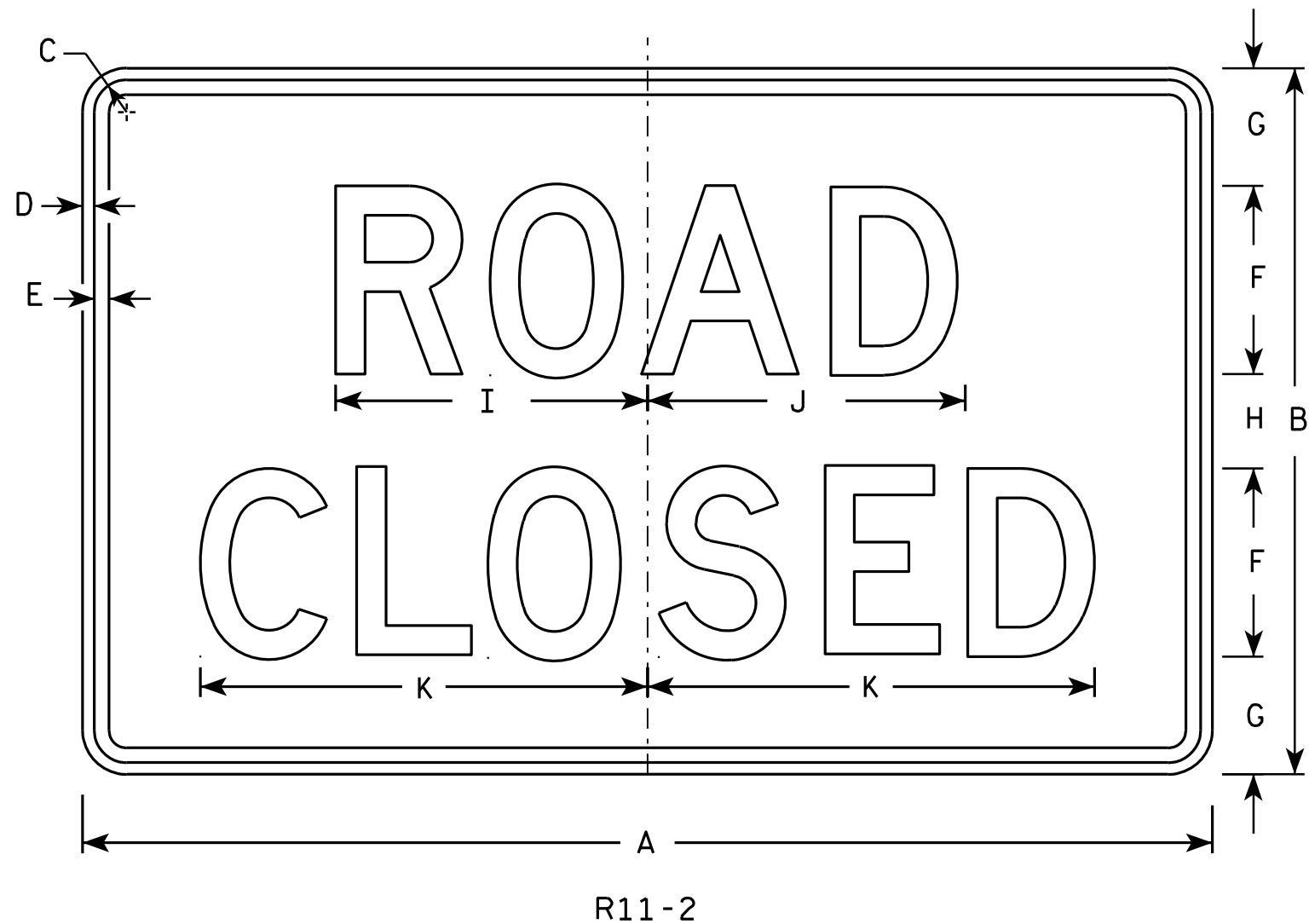
PROJECT NO:

HWY:

COUNTY:

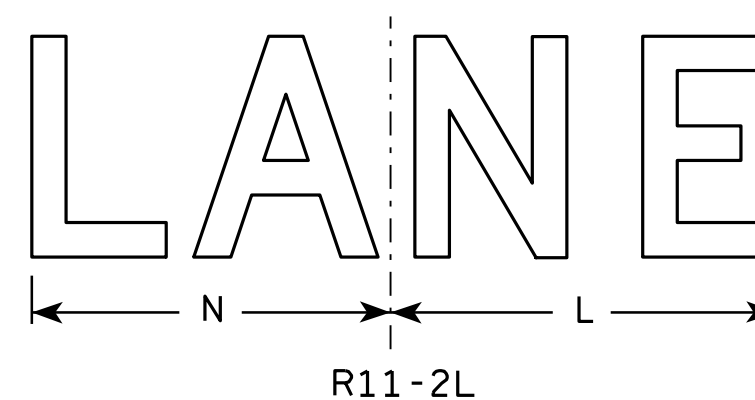
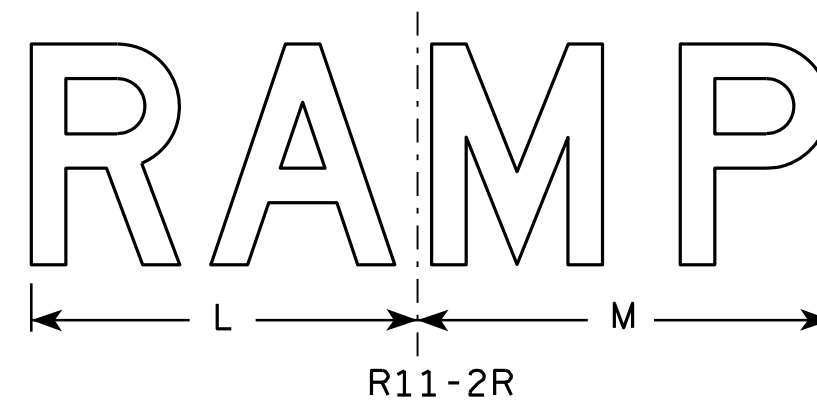
SHEET NO:

E



### NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - White  
Message - Black
- Message Series - D
- 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.
- Modify the message as required.



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													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													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													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													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													10.0

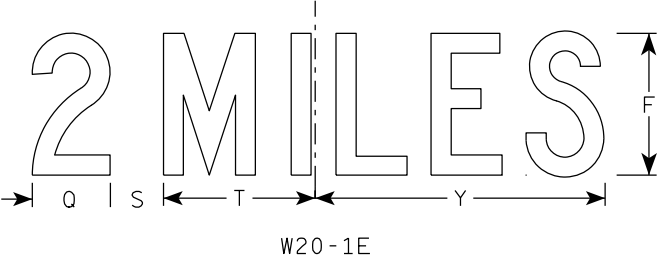
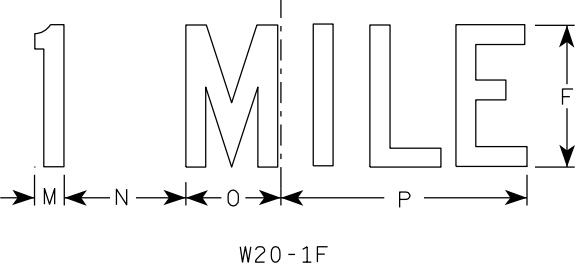
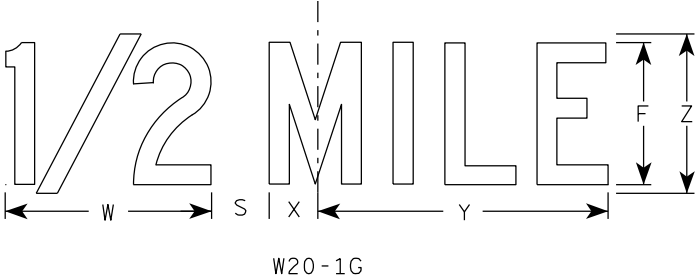
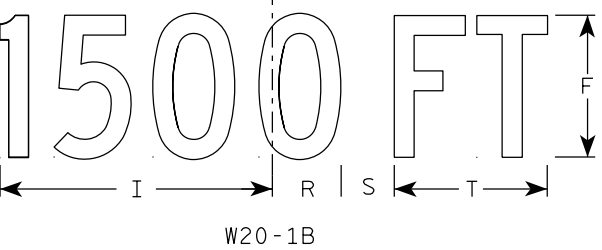
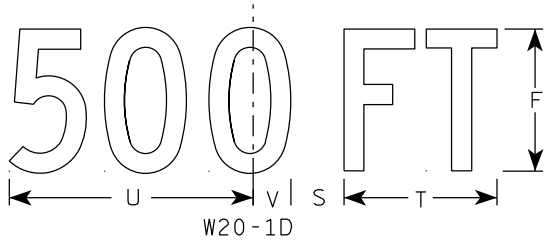
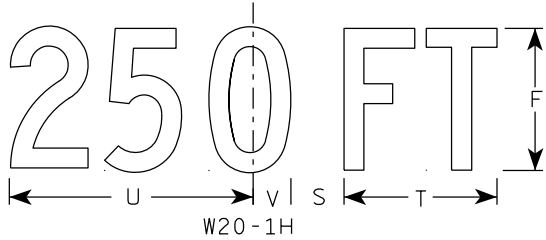
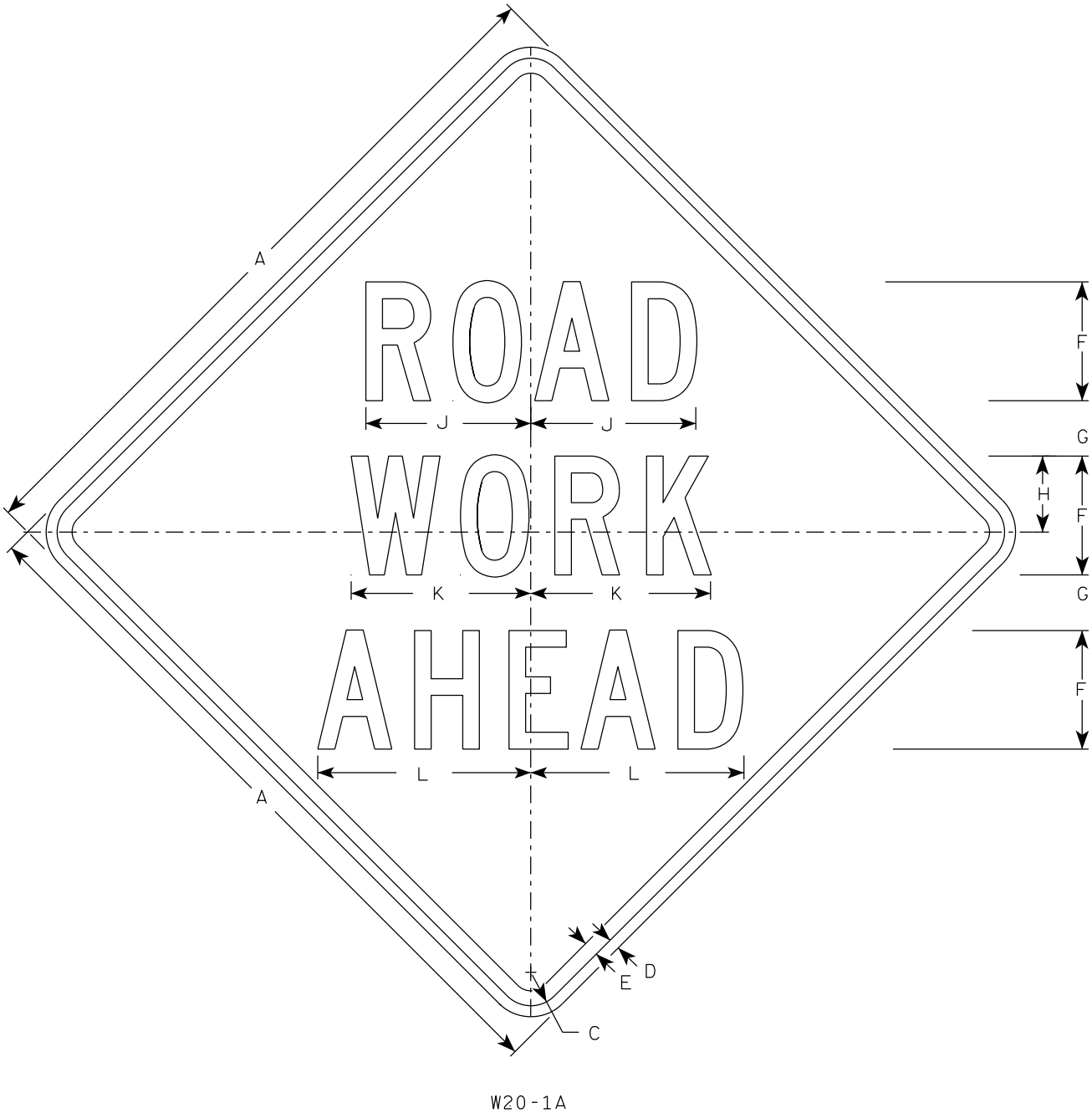
### STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer  
DATE 4/1/11 PLATE NO. R11-2.10

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.



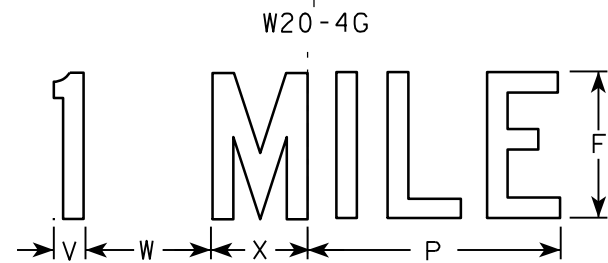
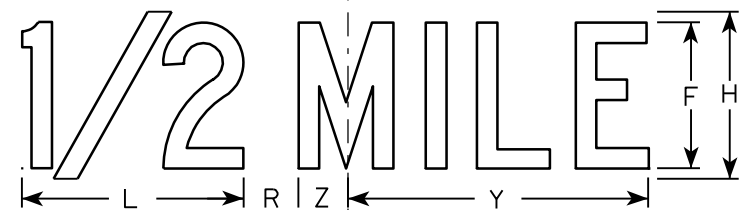
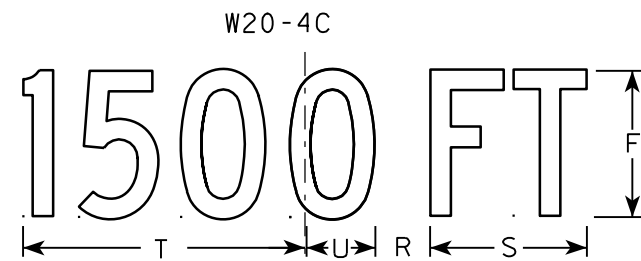
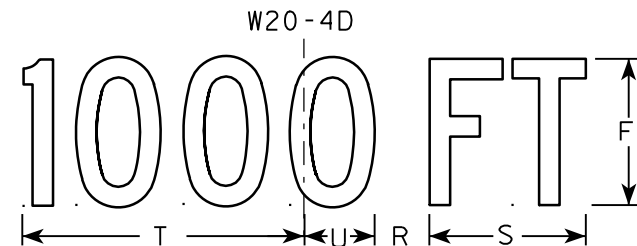
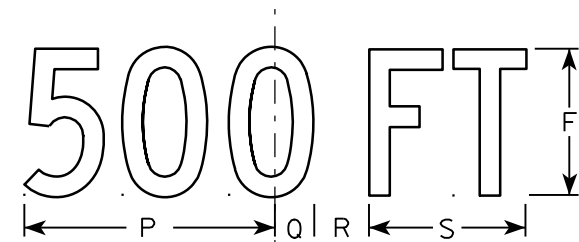
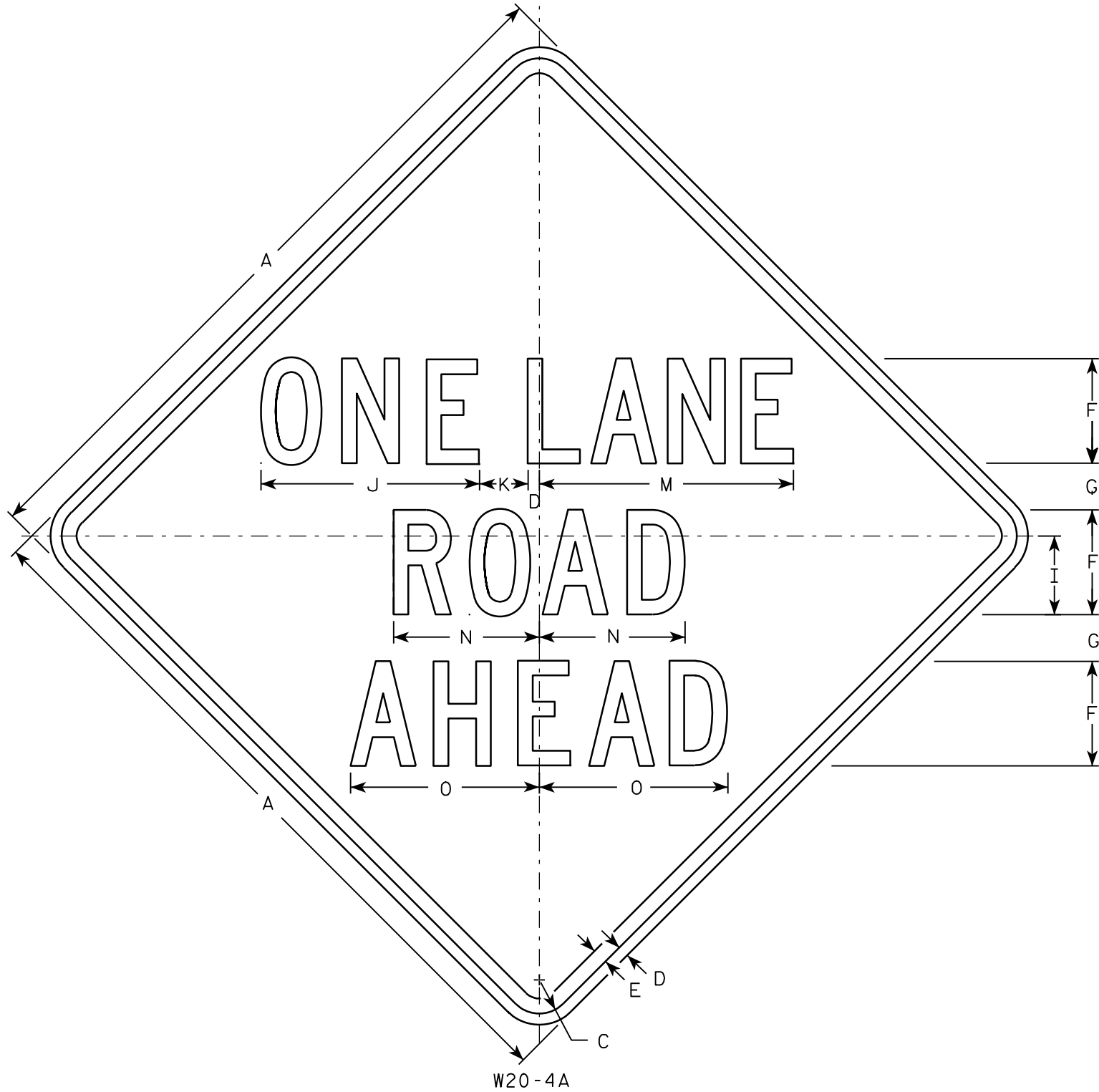
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A <sub>req</sub> sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	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



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.

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

STANDARD SIGN  
W20-4A, B, C, D, F & G

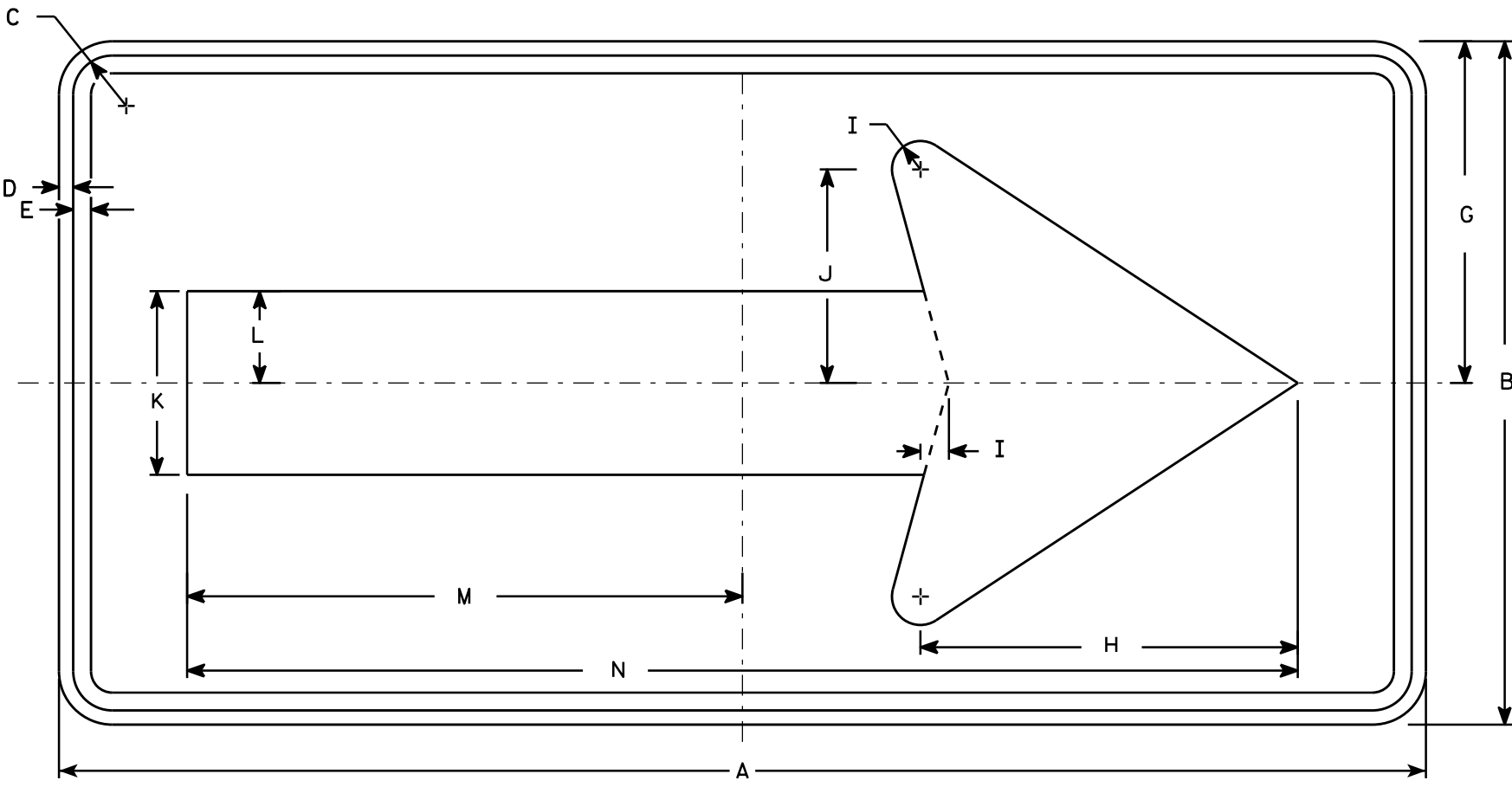
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-4.9

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

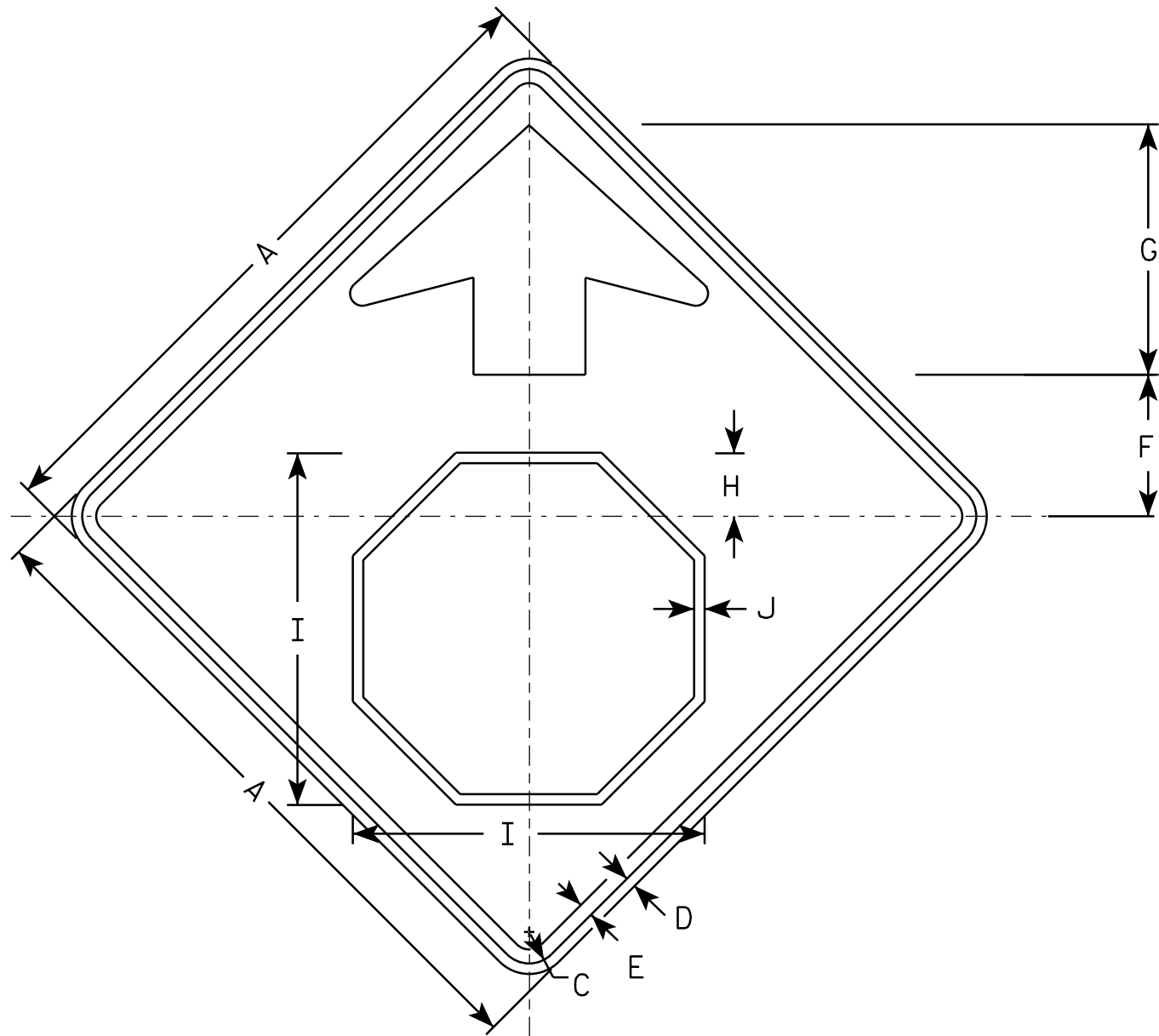
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
2M	48	24	1 3⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
3	60	30	1 3⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	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

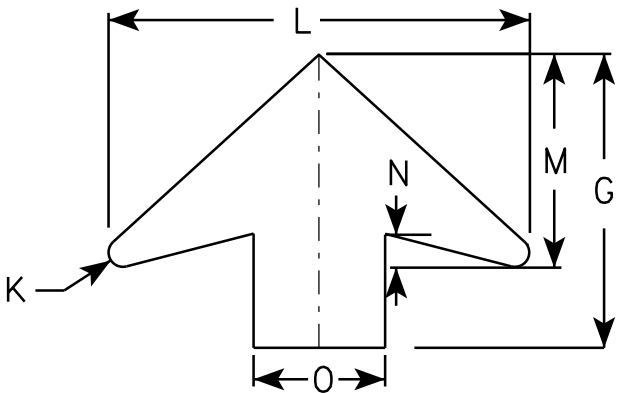
DATE 11/18/13 PLATE NO. W01-6.1



W03-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
 Background - ORANGE  
 Arrow & Border - BLACK  
 Stop Symbol - WHITE BORDER ON RED BACKGROUND



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	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2S	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
2M	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
3	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

PROJECT NO:

STANDARD SIGN  
W03-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W03-1.1

SHEET NO:

E

W:\STR\B1102\2021\PLANS\01\_SITE & ELEVATION.DGN

REVISED: 03-12-2020 BY GJR

8

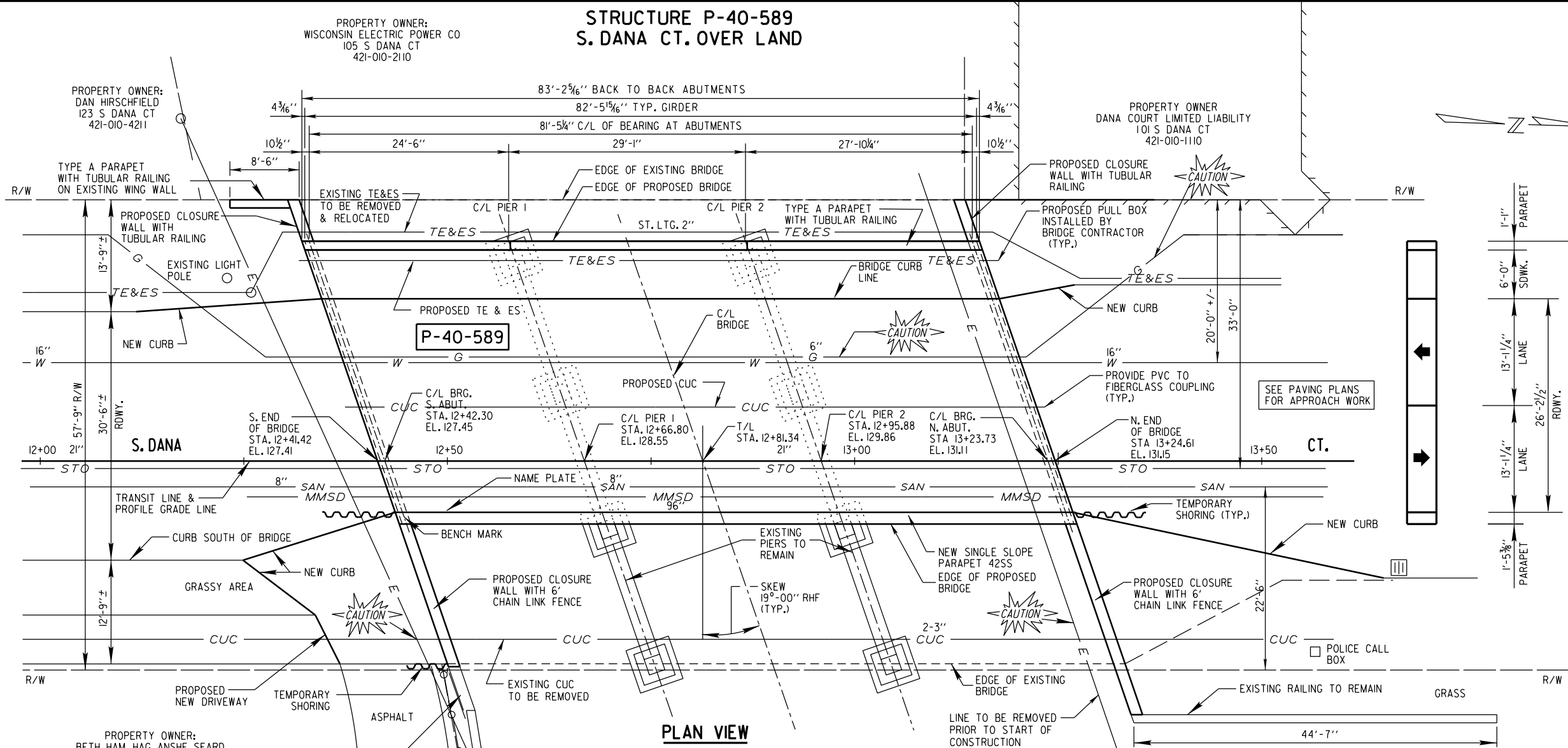
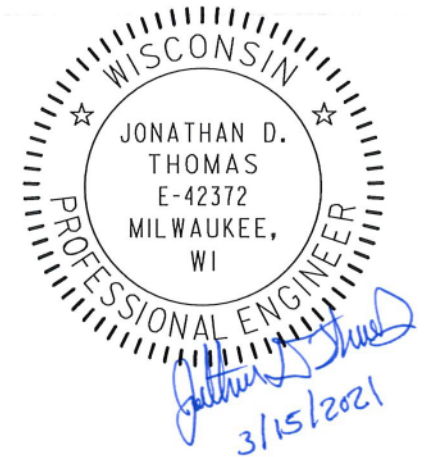
STRUCTURE P-40-589  
S. DANA CT. OVER LAND

STATE PROJECT NUMBER

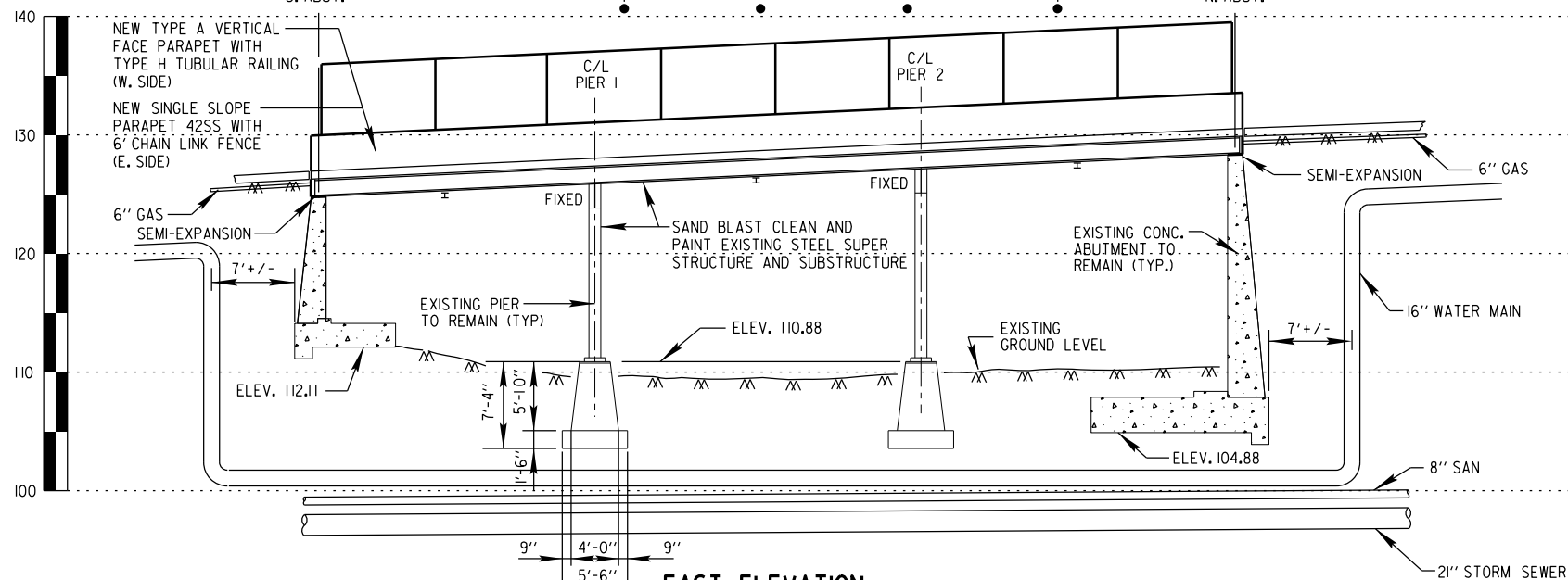
2984 - 51 - 70

LIST OF DRAWINGS

1. SITE PLAN AND ELEVATION
2. SUPERSTRUCTURE CROSS SECTIONS
3. ESTIMATE OF QUANTITIES
4. ABUTMENT REPAIR PLAN
5. STEEL REPAIR PLAN AND MOMENT PLATE DETAILS
6. GIRDER END DIAPHRAGM AND SHEAR STUD SPACING
7. DECK PLAN
8. DECK BILL OF BARS
9. DECK GRADES
10. DECK CROSS SECTIONS
11. WEST PARAPET DETAILS AND PLAN
12. WEST TUBULAR RAILING DETAILS AND ELEVATION
13. SINGLE SLOPE PARAPET 42SS DETAILS AND PLAN
14. CHAIN LINK FENCING ELEVATION AND DETAILS
15. N.W. AND N.E. CLOSURE WALLS
16. S.W. AND S.E. CLOSURE WALLS
17. GIRDER REPAIR DETAIL 1
18. GIRDER REPAIR DETAIL 2
19. STAGED CONSTRUCTION TRAFFIC CONTROL
20. CUC/TE&ES PLAN
21. CUC/TE&ES HANGER DETAIL
22. CUC/TE&ES DIAPHRAGM DETAIL



PLAN VIEW



EAST ELEVATION  
(NORMAL TO SUBSTRUCTURE)

WISDOT BRIDGE OFFICE CONTACT:  
AARON BONK 608-261-0261

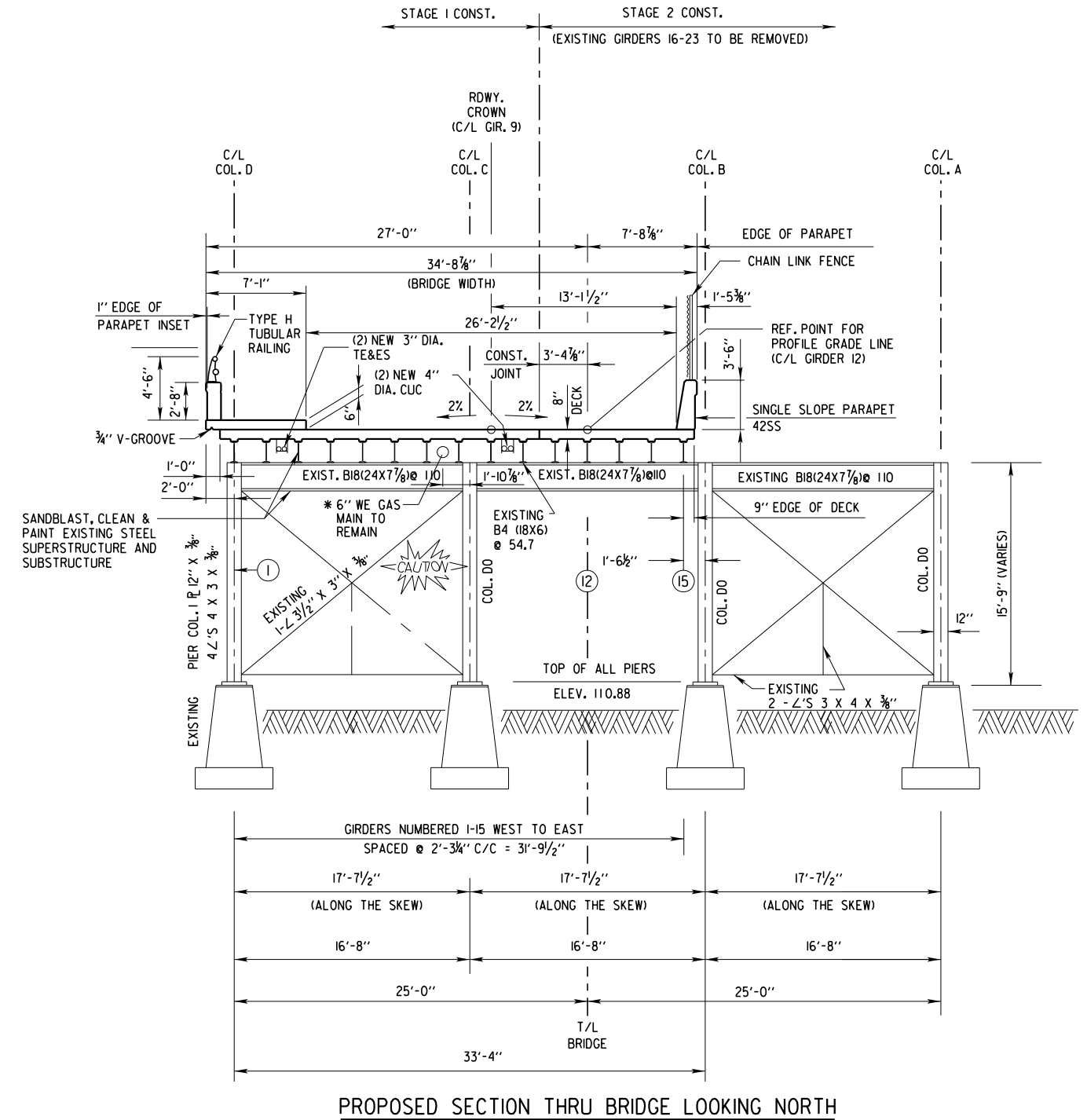
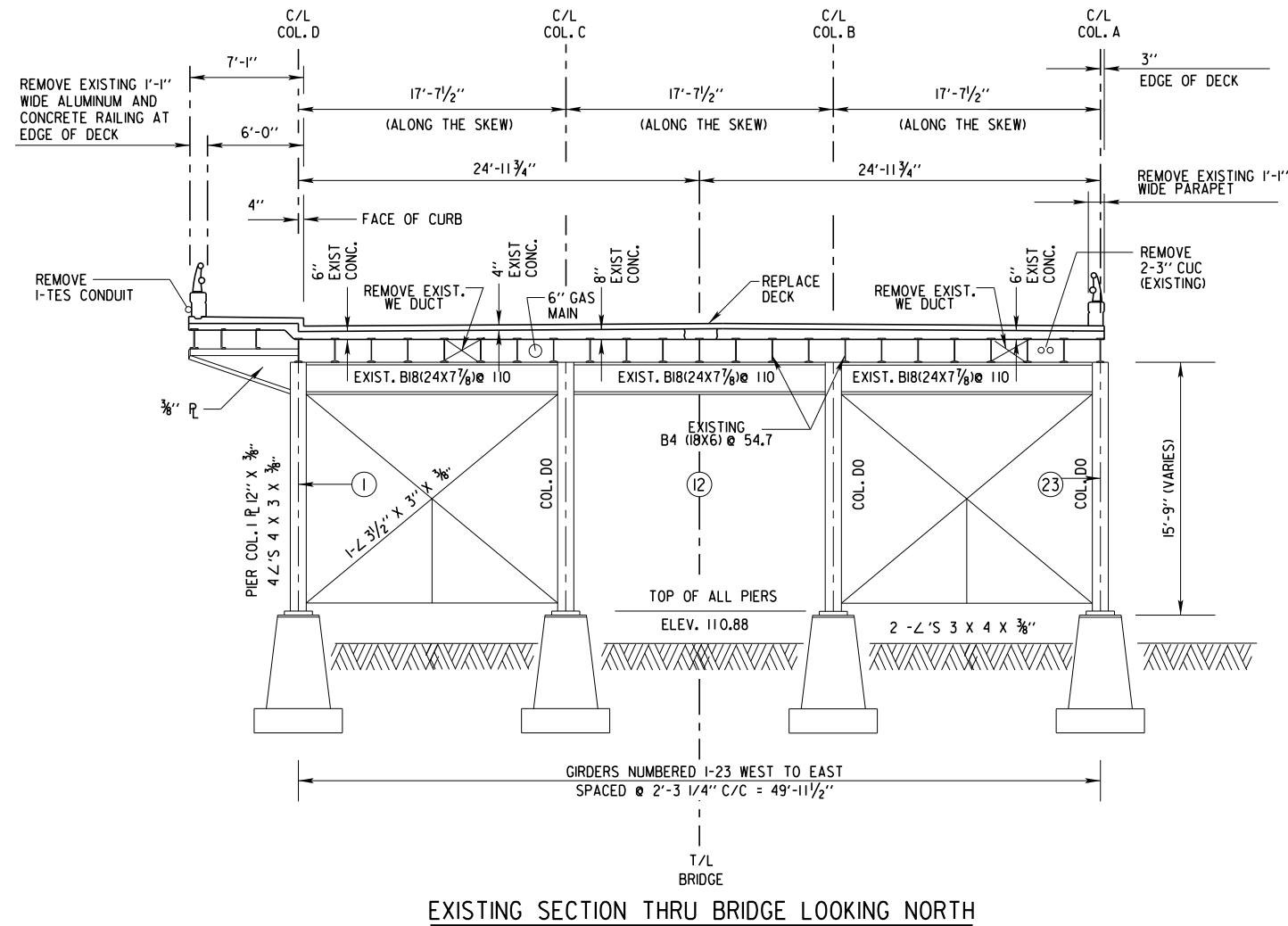
CITY OF MILWAUKEE CONTACT:  
JONATHAN THOMAS 414-286-0463

BENCH MARK:  
HYDRANT, NE ARROW BONNET  
BOLT AT NW CORNER OF  
FAIRVIEW AVE. & DANA CT.  
EL. 134.047

NO.	DATE	REVISION	BY
		ORIGINAL PLANS PREPARED BY CITY OF MILWAUKEE DEPARTMENT OF PUBLIC WORKS INFRASTRUCTURE SERVICES DIVISION	
		STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>[Signature]</i> SDR 03/16/21 CHIEF STRUCTURES DESIGN ENGINEER DATE	
STRUCTURE P-40-589			
S. DANA CT. OVER LAND			
COUNTY	MILWAUKEE	TOWN/CITY/ VILLAGE	MILWAUKEE
DESIGN SPEC.	REHABILITATION N/A		
DESIGNED BY	H.D.	DESIGN CK'D.	J.P.H.
DRAWN BY	M.P.F.	PLANS CK'D.	J.H.
SITE PLAN AND ELEVATION			SHEET 1 OF 22

8



**NOTES**

ALL DIMENSIONS SHOWN ARE  
NORMAL TO ROADWAY EXCEPT AS  
INDICATED BY NOTE "ALONG THE SKEW".

\* 6" Ø WE ENERGIES GAS LINE TO REMAIN  
IN SERVICE DURING BRIDGE CONSTRUCTION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS J.P.H.
SUPERSTRUCTURE CROSS SECTIONS		SHEET 2 OF 22	

W:\STRAB\102\2021\PLANS\03-ESTIMATE OF QUANTITIES.DGN

REVISED: 03-15-2021 BY: SB

8

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 OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES BRIDGES P-40-589 SHALL BE THE EXISTING GROUND LINE.

SPACES EXCAVATED AND NOT OCCUPIED BY NEW CONSTRUCTION SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

JOINT FILLER SHALL CONFORM TO AASHTO DESIGNATION M 153 TYPE I, II, OR III, OR AASHTO DESIGNATION M213.

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

SEE ROADWAY PLANS FOR EXISTING AND PROPOSED UTILITY LOCATIONS.

CONCRETE INSERTS FOR UTILITY COMPANY TO BE FURNISHED BY UTILITY COMPANY AND PLACED BY CONTRACTOR. COSTS OF PLACING UTILITY COMPANY INSERTS SHALL BE INCLUDED IN BID PRICE FOR CONCRETE MASONRY BRIDGES.

STEEL PAINTING COLOR TO MATCH AMS STANDARD NO.595C, COLOR NO.25052.

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 (1927).

ALL EXISTING STEEL SHALL BE SANDBLASTED AND PAINTED UNDER BID ITEMS 517.0900.S "PREPARATION AND COATING OF TOP FLANGES (STRUCTURE P-40-589)", 517.1800.S "STRUCTURE REPAINTING RECYCLED ABRASIVE P-40-589", AND 517.4500.S "NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS P-40-589."

AMERICAN TRANSMISSION COMPANY HIGH VOLTAGE TRANSMISSION LINES AND WE-ENERGIES ELECTRIC LINES ARE LOCATED OVER THE CONSTRUCTION SITE. SEE SPECIAL PROVISIONS REGARDING ALL WORK DONE AT THIS LOCATION.

EXISTING ABUTMENTS AND PIERS ARE TO REMAIN IN PLACE AS SHOWN AND INCORPORATED INTO NEW CONSTRUCTION.

CLEAN, STRAIGHTEN, EPOXY COAT AND INCORPORATE EXISTING BAR STEEL REINFORCEMENT INTO NEW WORK, WHERE APPLICABLE.

ALL CONCRETE REMOVALS SHALL BE DEFINED BY A 1" DEEP SAW CUT.

IF AN ITEM IS LISTED OR DESCRIBED IN SPECIAL PROVISIONS AND IS NOT SPECIFICALLY SHOWN ON DRAWINGS, OR IF AN ITEM IS SHOWN ON THE DRAWINGS AND IS NOT SPECIFICALLY LISTED OR DESCRIBED IN SPECIAL PROVISIONS, THEN IT SHALL BE CONSIDERED A PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. IF IT IS NOT OBVIOUS AS TO WHICH PAY ITEM IT BELONGS, THEN ENGINEER SHALL BE CONSULTED FOR INTERPRETATION, AND THE ENGINEER'S DECISION SHALL GOVERN.

WELDING NOT SHOWN ON THE PLANS WILL NOT BE PERMITTED, EXCEPT BY WRITTEN PERMISSION FROM THE ENGINEER AND WITH AN APPROVED WELD PROCEDURE BY THE CONTRACTOR.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

ESTIMATE OF QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER.	CLOSURE WALLS	TOTAL
203.0200	REMOVING OLD STRUCTURE STA. I2+81.34	LS					1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES P-40-589	LS					1
210.1500	BACKFILL STRUCTURE TYPE A	TON	45	45			90
502.0100	CONCRETE MASONRY BRIDGES	CY			116	17	133
502.3200	PROTECTIVE SURFACE TREATMENT	SY			305		305
502.3210	PIGMENTED SURFACE SEALER	SY			75	40	115
502.4205	ADHESIVE ANCHORS NO.5 BAR	EACH				158	158
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB			23,941	1,712	25,653
506.0105	STRUCTURAL STEEL CARBON	LB			520		520
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	15	15			30
506.3015	WELDED STUD SHEAR CONNECTORS 7/8 X 6-INCH	EACH			256		256
506.3025	WELDED STUD SHEAR CONNECTORS 7/8 X 8-INCH	EACH			904		904
506.3030	WELDED STUD SHEAR CONNECTORS 7/8 X 9-INCH	EACH			184		184
506.3035	WELDED STUD SHEAR CONNECTORS 7/8 X 10-INCH	EACH			336		336
506.7050.S	REMOVING BEARINGS P-40-589	EACH	15	15			30
509.1500	CONCRETE SURFACE REPAIR	SF	134	61			195
509.9025.S	EPOXY INJECTION CRACK REPAIR	LF	80	200			280
509.9026.S	CORED HOLES 2-INCH DIAMETER	EACH	2	2			4
511.1200	TEMPORARY SHORING P-40-589	SF	50	30			80
513.4056	RAILING TUBULAR TYPE H	LF			84	19	103
516.0100	DAMPProofING	SY	31	30			61
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	12			24
517.0900.S	PREPARATION AND COATING OF TOP FLANGES P-40-589	LS					1
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE P-40-589	LS					1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS P-40-589	LS					1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH					1
616.0206	FENCE CHAIN LINK 6-FT	LF			84	44	128
999.1000.S	SEISMOGRAPH	LS					1
999.1500.S	CRACK AND DAMAGE SURVEY	LS					1
SPV.0060.536	GIRDER REPAIR DETAIL 1	EACH			10		10
SPV.0060.537	GIRDER REPAIR DETAIL 2	EACH			10		10
SPV.0105.400	UNDERDECK UTILITY STRUCTURE P-40-589, CITY OF MILWAUKEE COMMUNICATIONS CONDUIT	LS			1		1
SPV.0105.401	UNDERDECK UTILITY STRUCTURE P-40-589, CITY OF MILWAUKEE ELECTRICAL CONDUIT	LS			1		1
SPV.0105.590	GAS MAIN PROTECTION P-40-589	LS					1
SPV.0105.597	CROSS BRACING ADJUSTMENT P-40-589	LS					1
	NON-BID ITEMS						
	PREFORMED JOINT FILLER						
	NON-BITUMINOUS JOINT FILLER						
	NAME PLATE						
	PLASTIC OR ZINC SHEETS 1/8-INCH						
	POLYETHYLENE SHEETS						

DESIGN DATA

DEAD LOAD  
CONCRETE = 150 PCF  
F.W.S. = 20 PSF  
W. RAILING = 395 PLF  
E. RAILING = 581 PLF

LIVE LOAD  
INVENTORY RATING HS-18  
OPERATING RATING HS-30  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 195 KIPS

MATERIAL PROPERTIES  
CONCRETE SUPERSTRUCTURE f'c = 4,000 PSI  
CONCRETE SUBSTRUCTURE f'c = 3,500 PSI  
BAR STEEL REINFORCEMENT fy = 60,000 PSI  
STEEL PLATES AND ANGLES Fy = 36,000 PSI

TRAFFIC VOLUME

ADT (2018) = 52  
ADT (2043) = 100  
R.D.S. = 25 MPH

UTILITIES

CITY UNDERGROUND COMMUNICATION (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.

BRIDGE REMOVAL AND CONSTRUCTION NOTES

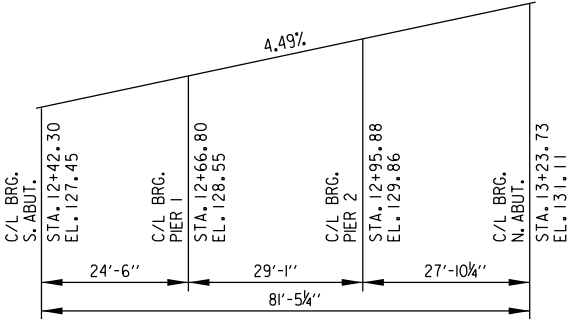
EXISTING BRIDGE PLANS ARE ON FILE IN CITY OF MILWAUKEE INFRASTRUCTURE SERVICES DIVISION'S STRUCTURAL DESIGN UNIT, ROOM 907, FRANK P. ZEIDLER MUNICIPAL BUILDING, 841 N. BROADWAY, MILWAUKEE, WI 53202 PHONE (414)-286-0463.

EXISTING BRIDGE DECK WILL BE REMOVED IN TWO STAGES TO KEEP S. DANA COURT OPEN FOR 2-WAY TRAFFIC (ONE DIRECTION AT ANY GIVEN TIME) DURING CONSTRUCTION. EXISTING SOUTHBOUND ROADWAY IS TO BE REMOVED FIRST WHILE 2-WAY TRAFFIC IS TO BE CARRIED BY EXISTING NORTHBOUND ROADWAY. AFTER PROPOSED SOUTHBOUND ROADWAY IS COMPLETED THE NORTHBOUND ROADWAY WILL BE REMOVED.

REMOVE EXISTING BRIDGE DECK P-40-589 OVER LAND IN LARGE SECTIONS AND CONFORMING TO CONTRACTOR'S APPROVED STRUCTURE REMOVAL AND CLEAN-UP PLAN.

PROPOSED IMPROVEMENTS

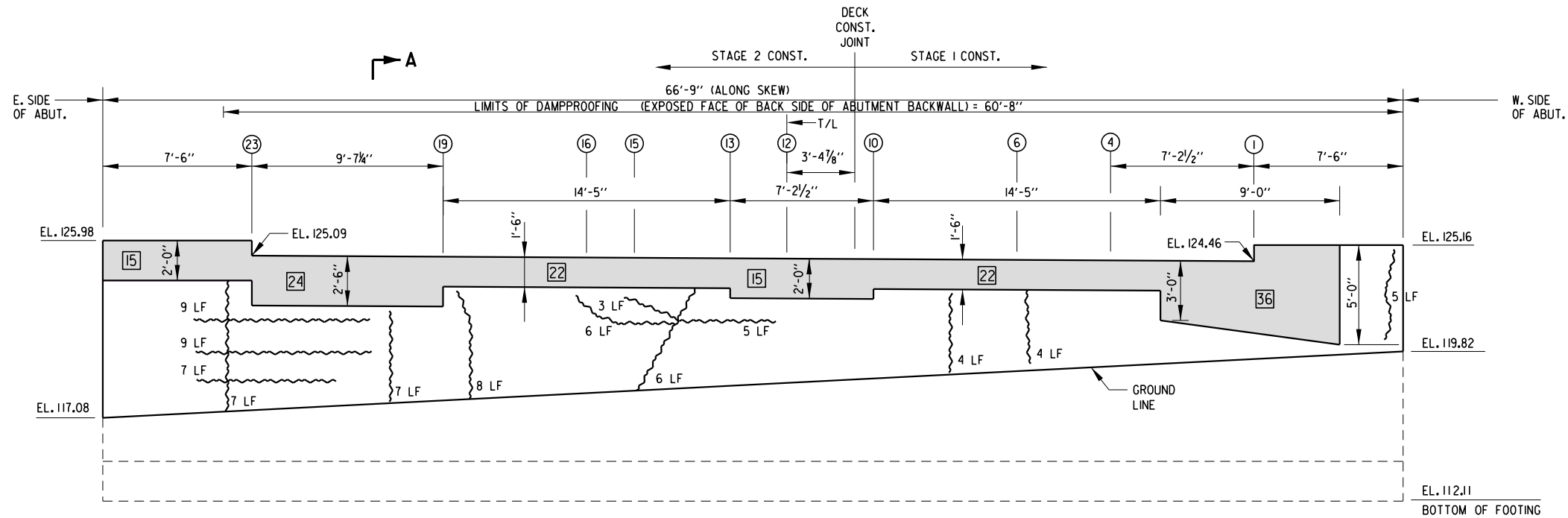
PROJECT AS PROPOSED CONSISTS OF: REMOVAL OF EXISTING BRIDGE DECK AND RAILINGS; REMOVAL OF EXISTING SUPERSTRUCTURE STRUCTURAL STEEL AT THE EAST 1/3 OF BRIDGE AND THE WALK FRAMING ON THE WEST SIDE OF BRIDGE; CONCRETE SURFACE REPAIR AND EPOXY INJECTION CRACK REPAIR OF ABUTMENTS AS DIRECTED BY ENGINEER; PREPPING AND PAINTING STEEL SUBSTRUCTURE AND SUPERSTRUCTURE; INSTALLATION OF GIRDER SHEAR STUD CONNECTORS; PLACEMENT OF NEW CONCRETE BRIDGE DECK AND WALK; INSTALLATION OF NEW BRIDGE RAILING; REPLACE BEARINGS AT ABUTMENTS.



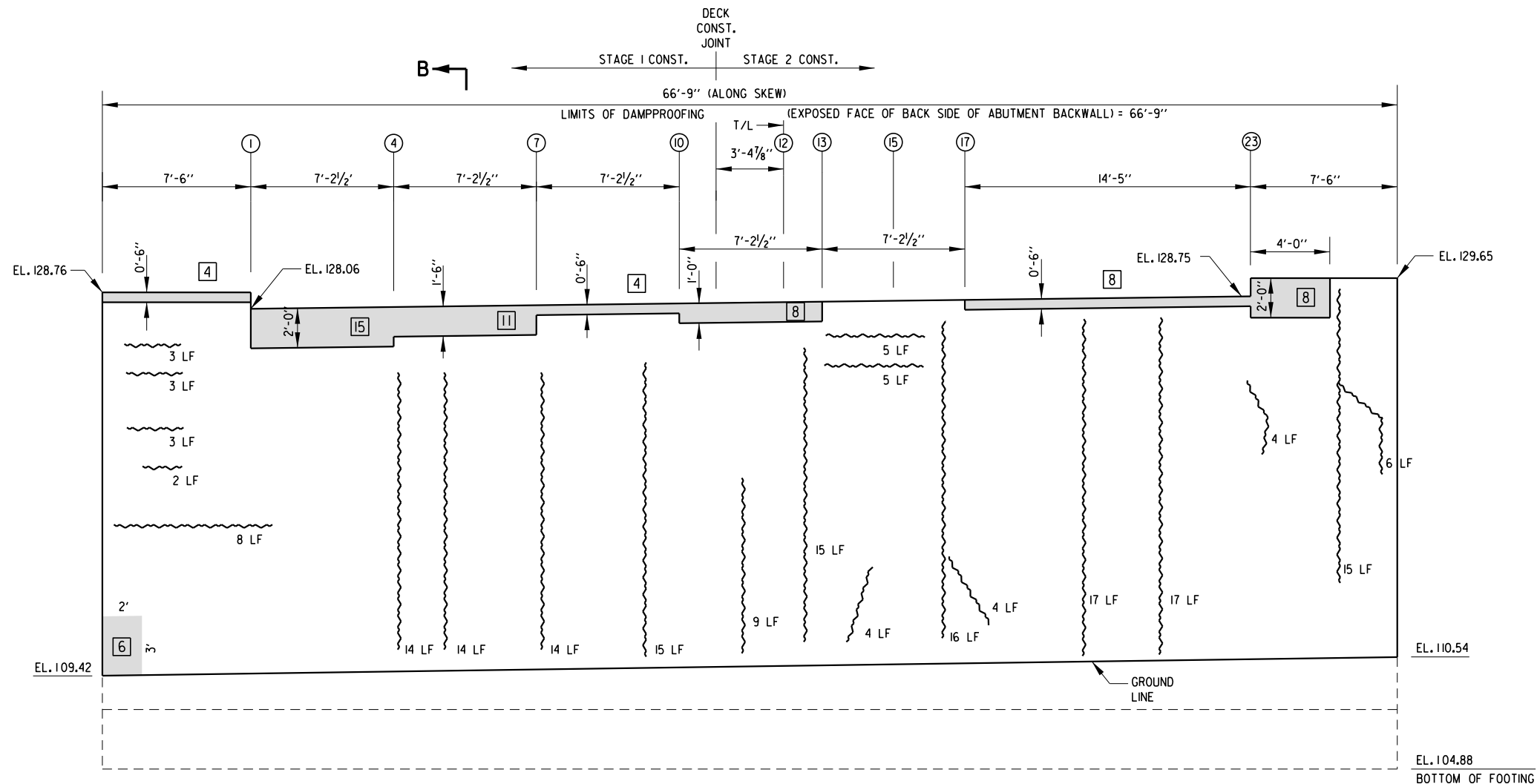
PROFILE GRADE LINE (P.G.L.)  
ALONG T/L OF  
SOUTH DANA COURT BRIDGE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS CK'D. M.V. J.P.H.
ESTIMATE OF QUANTITIES			SHEET 3 OF 22

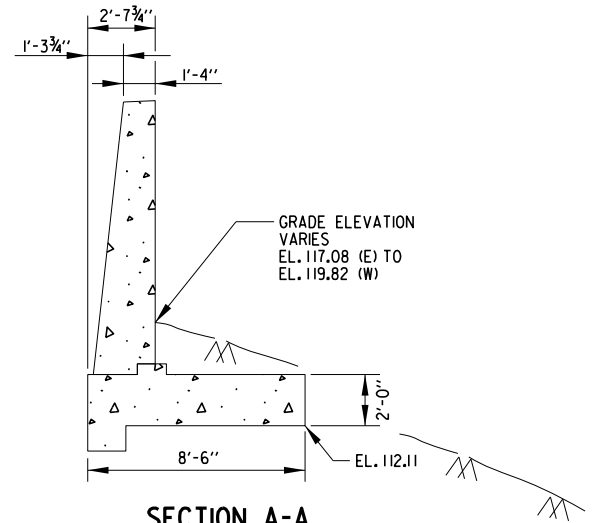
8



**SOUTH ABUTMENT ELEVATION**  
(LOOKING SOUTH)



**NORTH ABUTMENT ELEVATION**  
(LOOKING NORTH)



**SECTION A-A**  
**SOUTH ABUTMENT**

**KEY:**

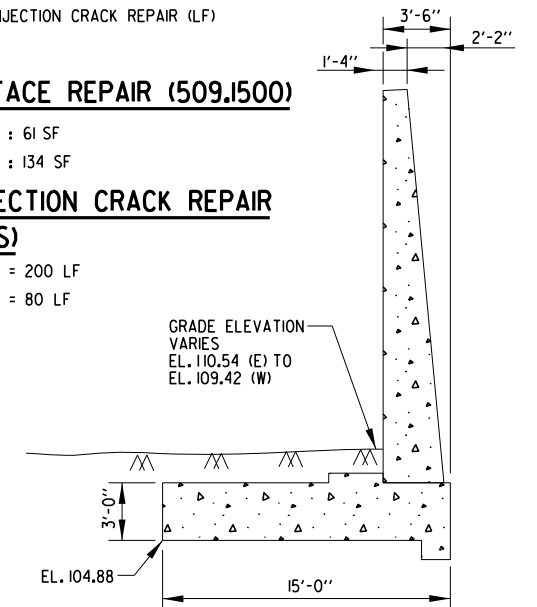
- (X) = GIRDER NUMBER
- (XX) = SF OF CONC. SURFACE REPAIR
- [ ] = CONC. SURFACE REPAIR AREA
- ~ = EPOXY INJECTION CRACK REPAIR (LF)

**CONC. SURFACE REPAIR (509.I500)**

NORTH ABUTMENT : 61 SF  
SOUTH ABUTMENT : 134 SF

**EPOXY INJECTION CRACK REPAIR (509.9025.S)**

NORTH ABUTMENT = 200 LF  
SOUTH ABUTMENT = 80 LF



**SECTION B-B**  
**NORTH ABUTMENT**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS CK'D. J.P.H.
ABUTMENT REPAIR PLAN		SHEET 4 OF 22	

KEY:

= EXISTING GIRDER REMOVAL

= EXISTING H2 (5X5) @ 18.7 NOTE 1 - SHIM CENTER BAY H2 (5X5) @ 18.7 TO INSTALL BOTTOM PL'S AT GIRDER 1, 11, 13 & 15 (BID ITEM SPV.0105.597)

= REMOVE H2 (5X5) @ 18.7 TO EAST SIDE OF GIRDER #15 FLANGE

= EXISTING GIRDER NUMBER

= GIRDER REPAIR DETAIL 1 OR 2 (BID ITEMS SPV.0060.536 & SPV.0060.537)

= 1/2" PLATE ADDED TO BOTTOM FLANGE 5'-8" N. & S. OF (XX) C/L BRIDGE

= 1/2" PLATE ADDED TO BOTTOM FLANGE 6'-11" N. & S. OF (XX) C/L BRIDGE

ENGINEER TO MAKE DETERMINATION OF GIRDER LOCATIONS FOR GIRDER REPAIR DETAIL (1 OF 2) AT BOTH THE NORTH AND SOUTH ABUTMENT LOCATIONS

NOTES:

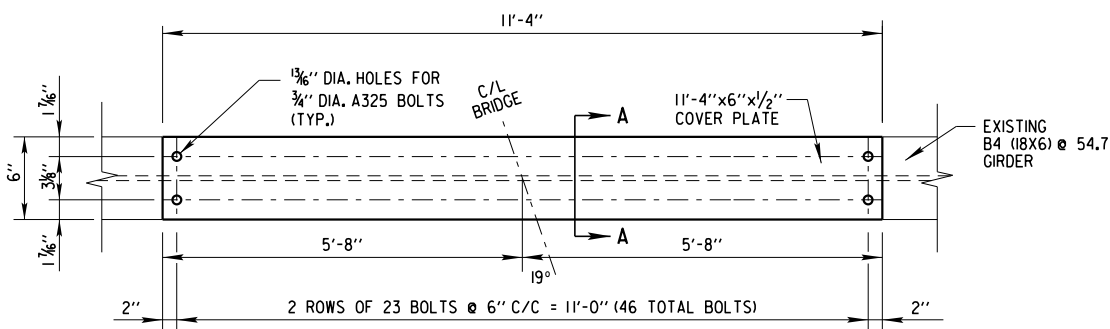
4-kV POWER LINES RUN OVER BRIDGE AT ELEV. 170.00 +/-

SEE GIRDER 1 & 2 REPAIR DETAILS ON SHEETS 17 & 18

SECTION A-A  
BOLTED MOMENT PLATE DETAIL

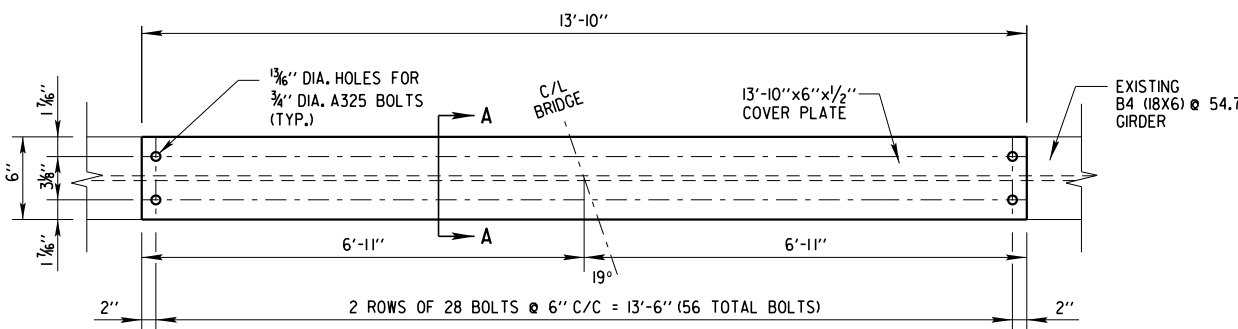
NOTE:  
BEVELED WASHERS ARE ALLOWED.  
ALL BOLTS SHALL BE GALVANIZED.  
USE 2 WASHERS AT EACH BOLT LOCATION.

STEEL FRAMING PLAN



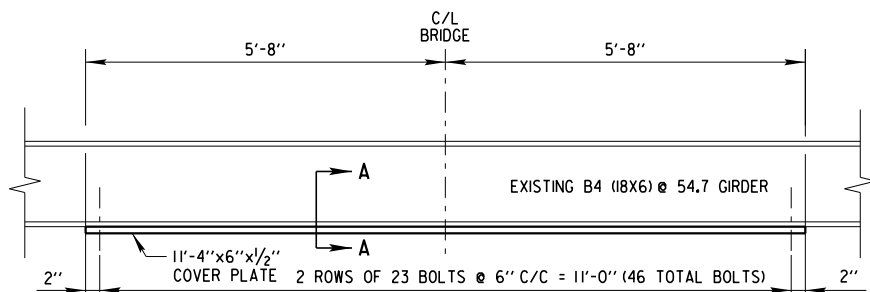
INTERIOR GIRDERS 11 AND 13  
NEW MOMENT PLATE DETAILS

BOTTOM VIEW OF GIRDER (LOOKING UP)



EXTERIOR GIRDERS 1 AND 15  
NEW MOMENT PLATE DETAILS

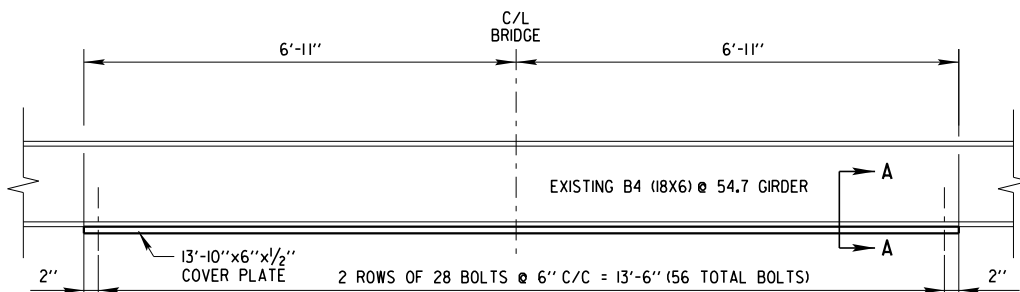
BOTTOM VIEW OF GIRDER (LOOKING UP)



INTERIOR GIRDERS 11 AND 13  
NEW MOMENT PLATE DETAILS

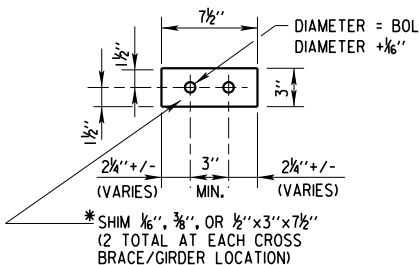
ELEVATION VIEW

2 - 11'-4" x 6" x 1/2"  
FOR GIRDERS 11 & 13  
AT C/L OF BRIDGE



EXTERIOR GIRDERS 1 AND 15  
NEW MOMENT PLATE DETAILS

ELEVATION VIEW



CROSS BRACE SHIM DETAILS

NOTES

1/2" SHIM THICKNESS AT GIRDERS 2, 10, 12, 14  
3/8" SHIM THICKNESS AT GIRDERS 3-9

\* FIELD DRILL HOLES IN SHIMS TO MATCH EXISTING BOLT SPACING

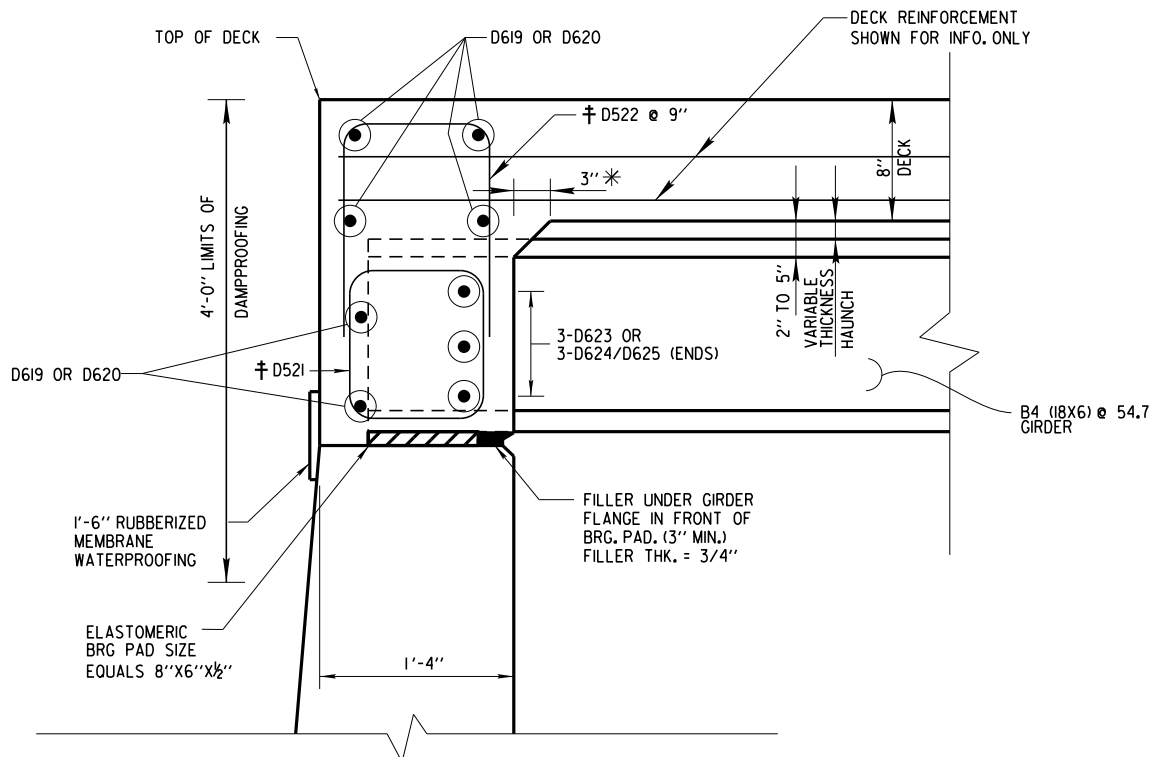
SHIM NOT REQUIRED AT GIRDERS 1, 11, 13, 15

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		PLANS CK'D.	M.V. J.P.H.
M.P.F.			
STEEL REPAIR PLAN AND MOMENT PLATE DETAILS			SHEET 5 OF 22

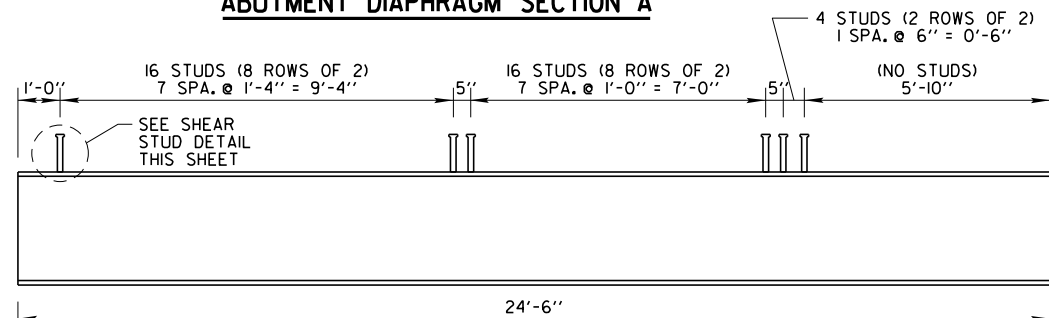
W:\STRB\1102\2021\PLANS\06-ABUTMENT DIAPHRAGM.DGN

REVISED: 11-30-2020 BY GJR

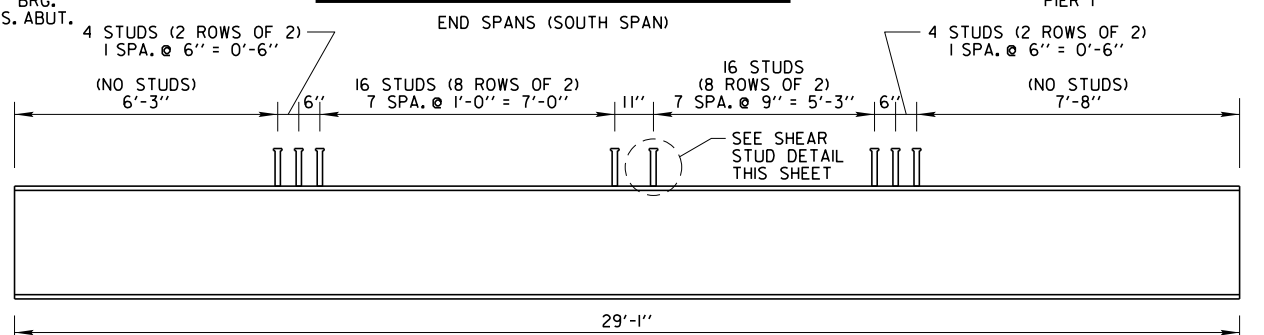
8



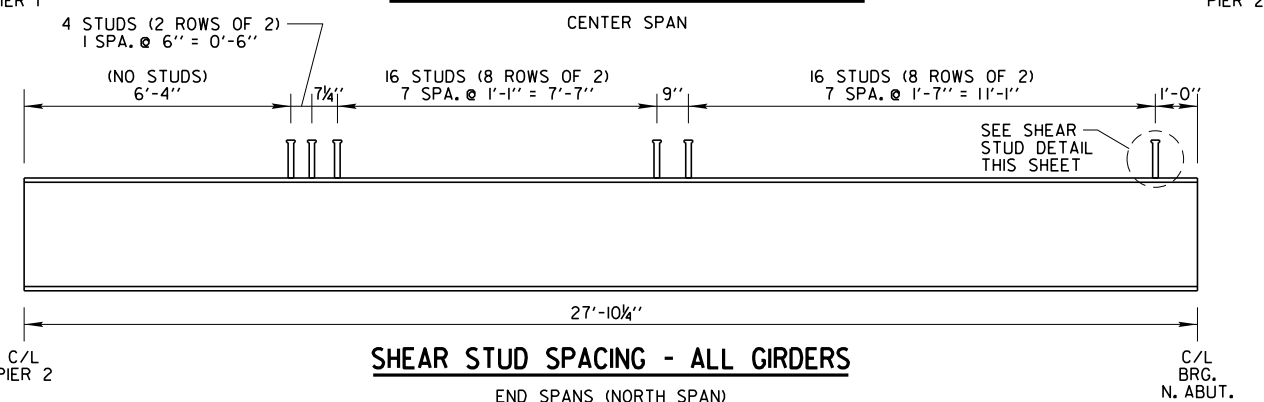
ABUTMENT DIAPHRAGM SECTION A



SHEAR STUD SPACING - ALL GIRDERS

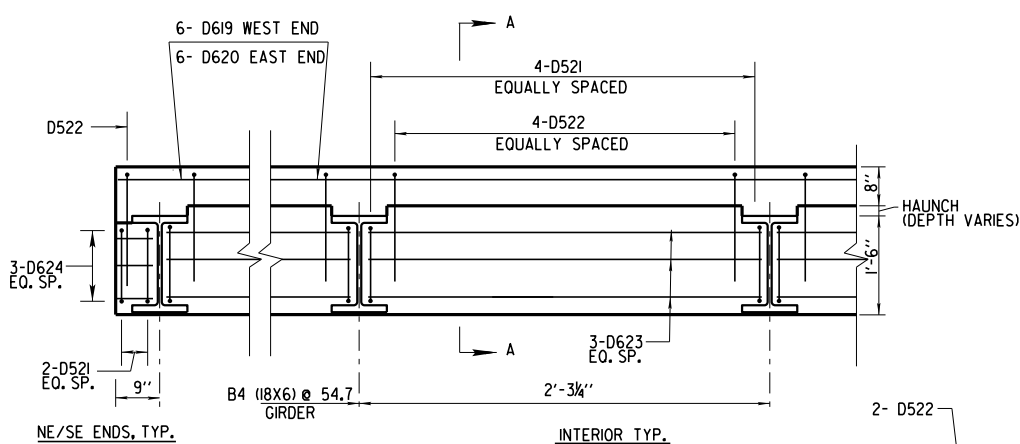


SHEAR STUD SPACING - ALL GIRDERS



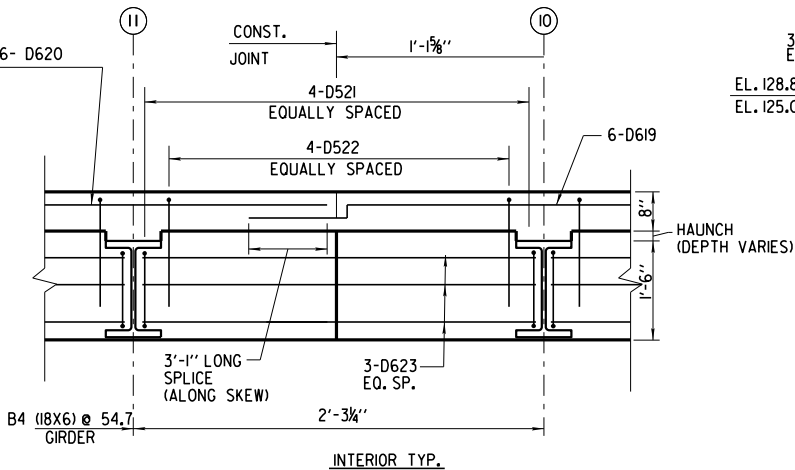
SHEAR STUD SPACING - ALL GIRDERS

END SPANS (NORTH SPAN)



SOUTH ABUTMENT DIAPHRAGM ELEVATION - EAST SIDE

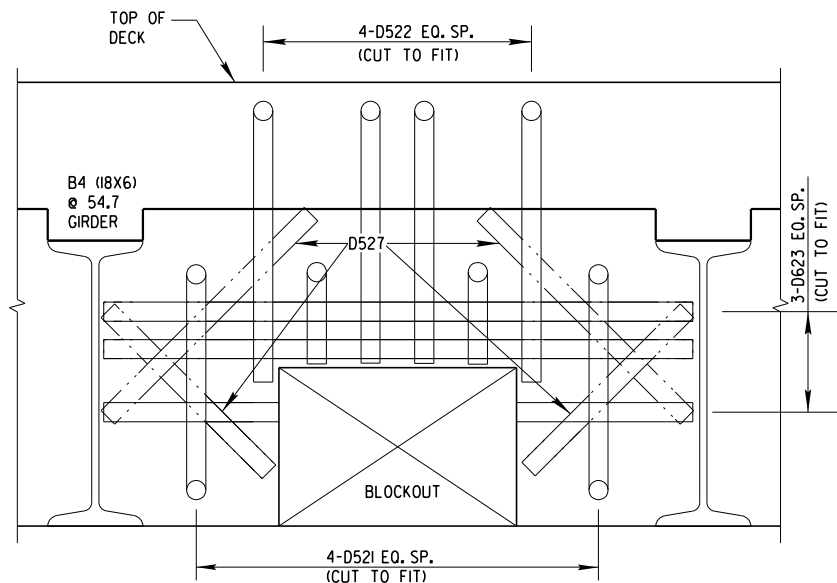
LOOKING SOUTH (TYP. COND. ON NORTH ABUTMENT)



SOUTH ABUTMENT DIAPHRAGM ELEVATION AT CONST. JOINT

LOOKING SOUTH (TYP. COND. ON NORTH ABUTMENT)

**BLOCK OUT OPENINGS**  
C.U.C., BETWEEN GIRDERS 9 & 10  
1'-6" W x 10" H  
TE&ES, BETWEEN GIRDERS 1 & 2  
1'-3" W x 10" H



DETAIL 2 FOR BLOCK OUT OPENINGS IN N. & S. ABUTMENT DIAPHRAGM

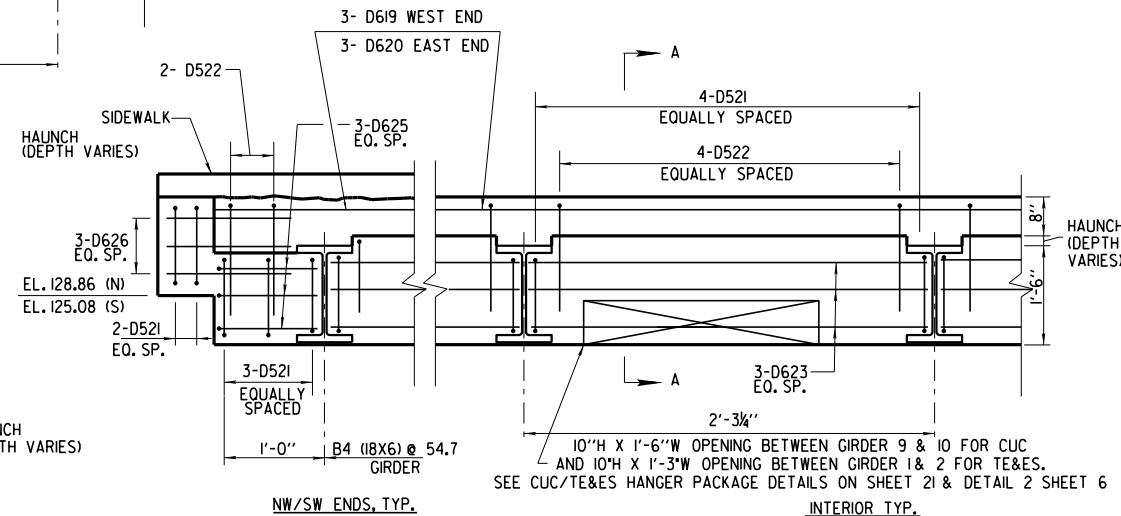
(LOCATED BETWEEN GIRDERS 1 & 2 AND 9 & 10)

STATE PROJECT NUMBER

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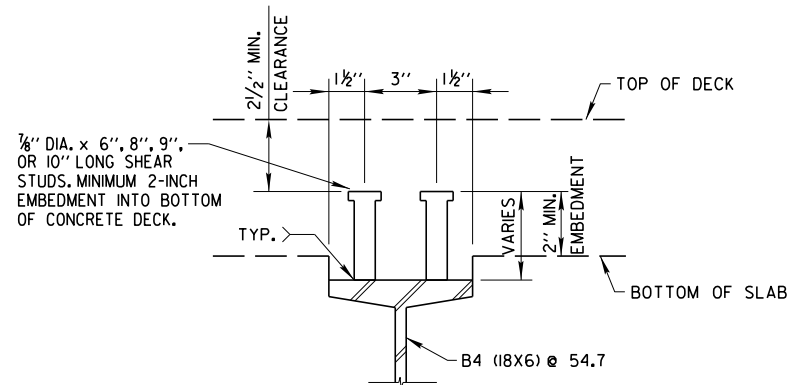
LEGEND

- \* DIMENSION IS TAKEN NORMAL TO SUBSTRUCTURE UNITS
- ‡ BARS PLACED PARALLEL TO GIRDERS, SPACING PERPENDICULAR TO C/L GIRDERS.



NORTH ABUTMENT DIAPHRAGM ELEVATION - WEST SIDE

LOOKING NORTH (TYP. COND. ON SOUTH ABUTMENT)



SHEAR STUD DETAIL 1

NOTES:

ALL DIMENSIONS SHOWN ARE NORMAL TO ROADWAY, EXCEPT AS INDICATED BY NOTE \*ALONG THE SKEW.\*

USE EXISTING GIRDER BEARING ELEVATIONS FOR NEW ELASTOMERIC BEARING PAD ELEVATIONS.

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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS CK'D. J.H.
GIRDER END DIAPHRAGM AND SHEAR STUD SPACING		SHEET 6 OF 22	



OFFSET UPPER AND LOWER STEEL LAYERS BY  $\frac{1}{2}$  BAR SPACING  
TOP STEEL CLEARANCE =  $2\frac{1}{2}$ "  
BOTTOM STEEL CLEARANCE =  $1\frac{1}{2}$ "

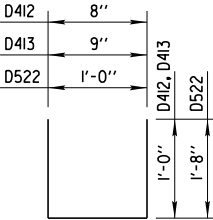
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS CK'D. H. J.P.
DECK PLAN		SHEET 7 OF 22	

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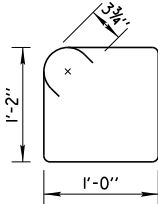
REVISED DATE: 11-3-2020 BY: DB

BILL OF BARS - DECK

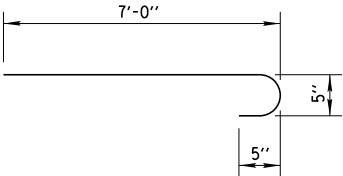
BAR MARK	COATED	NO. REQ'D.	LENGTH	BENT	LOCATION
D401	X	286	25'-6"		SPAN 1,2,3- TRANSVERSE TOP & BOTTOM - STAGE 1
D402	X	286	11'-4"		SPAN 1,2,3- TRANSVERSE TOP & BOTTOM - STAGE 2
D403	X	49	40'-6"		SPAN 1,2 - LONGITUDINAL BOTTOM - STAGES 1 & 2
D404	X	49	43'-11"		SPAN 2,3 - LONGITUDINAL BOTTOM - STAGES 1 & 2
D405	X	49	18'-9"		SPAN 1- LONGITUDINAL TOP - STAGES 1 & 2
D406	X	49	15'-2"		SPAN 2 - LONGITUDINAL TOP - STAGES 1 & 2
D407	X	49	21'-6"		SPAN 3 - LONGITUDINAL TOP - STAGES 1 & 2
D408	X	13	24'-11"		SPAN 1- SIDEWALK LONGITUDINAL - BOTTOM & TOP - STAGE 1
D409	X	13	28'-11"		SPAN 2 - SIDEWALK LONGITUDINAL - BOTTOM & TOP - STAGE 1
D410	X	13	28'-4"		SPAN 3 - SIDEWALK LONGITUDINAL - BOTTOM & TOP - STAGE 1
D411	X	56	2'-0"		SPAN 1,2,3- SIDEWALK TRANSVERSE - BOTTOM - STAGE 1
D412	X	166	2'-6"	X	SPAN 1,2,3 - SIDEWALK TRANSVERSE - CURB - STAGE 1
D413	X	166	2'-7"	X	SPAN 1,2,3 - SIDEWALK TRANSVERSE - EDGE DECK - STAGE 1
D614	X	49	18'-11"		SPAN 1,2 - LONGITUDINAL - TOP - STAGE 1 & 2
D615	X	49	20'-2"		SPAN 2,3 - LONGITUDINAL - TOP - STAGE 1 & 2
D516	X	251	7'-7"	X	SPAN 1,2,3 - SIDEWALK TRANSVERSE - TOP - STAGE 1
D517	X	110	4'-4"	X	SPAN 1,2,3 - PARAPET DOWELS - STAGE 1
D518	X	133	4'-5"	X	SPAN 1,2,3 - PARAPET DOWELS - STAGE 2
D619	X	12	26'-11"		DIAPHRAGM TRANSVERSE - N.W. & S.W. - STAGE 1
D620	X	12	11'-3"		DIAPHRAGM TRANSVERSE - N.E. & S.E. - STAGE 2
D521	X	126	5'-0"	X	DIAPHRAGM STIRRUPS - LOWER - STAGE 1 & 2
D522	X	118	4'-1"	X	DIAPHRAGM STIRRUPS - UPPER - STAGE 1 & 2
D623	X	84	2'-1"		DIAPHRAGM HORIZONTAL F.F. - STAGE 1 & 2
D624	X	6	0'-6"		DIAPHRAGM HORIZONTAL F.F. - N.E. & S.E. - STAGE 2
D625	X	6	0'-9"		DIAPHRAGM HORIZONTAL F.F. - N.W. & S.W. (LOWER) - STAGE 1
D626	X	6	1'-8"		DIAPHRAGM HORIZONTAL F.F. - N.W. & S.W. (UPPER) - STAGE 1
D527	X	8	1'-8"		DIAPHRAGM DIAGONAL - AT CUC/TE&ES BOX OUTS - STAGE 1



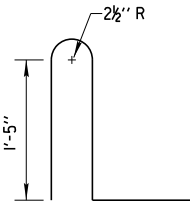
D41 2, D413, D522



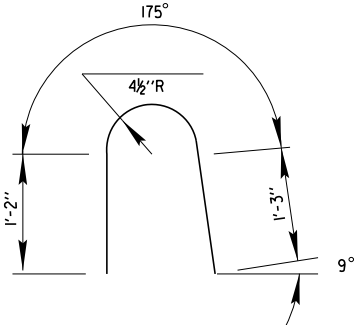
D521



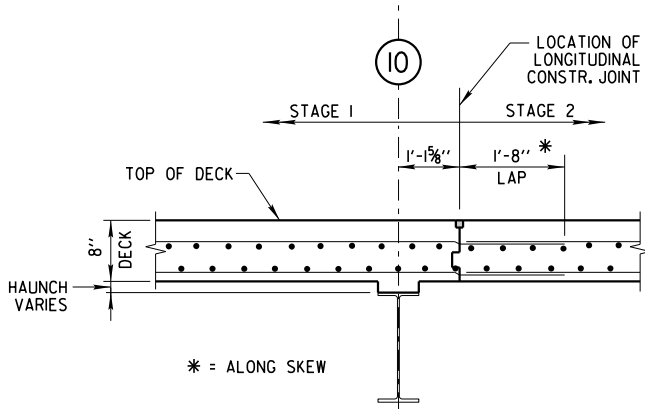
D516



D517



D518



(VIEW LOOKING NORTH)

DECK LONGITUDINAL CONSTRUCTION JOINT

PLACED ALONG LONGITUDINAL CONSTRUCTION JOINT OF BRIDGE DECK

STATE PROJECT NUMBER

2984 - 51 - 70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	H. D.
DECK BILL OF BARS			SHEET 8 OF 22

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REVISED: 12-01-2020 BY GJR

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TOP OF DECK ELEVATIONS SPAN 1													
SPAN LENGTH "L"	GIRDER NO.	DESC.	C/L BRG. S. ABUT.	0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	C/L BRG. PIER 1
24'-6"	TYP. INTERIOR & EXTERIOR TOTAL DEAD LOAD DEFLECTION (IN.)		0.00	.05	.09	.12	.14	.14	.14	.12	.09	.05	0.00
	WEST EDGE	T. DECK	126.81	126.92	127.03	127.14	127.25	127.36	127.47	127.58	127.69	127.80	127.91
	1	T. DECK	126.84	126.95	127.06	127.17	127.28	127.39	127.50	127.61	127.72	127.83	127.94
	2	T. DECK	126.92	127.03	127.14	127.25	127.36	127.47	127.58	127.69	127.80	127.91	128.02
	3	T. DECK	127.00	127.11	127.22	127.33	127.44	127.55	127.66	127.77	127.88	127.99	128.10
	GUTTER	T. DECK	127.02	127.13	127.24	127.35	127.46	127.57	127.68	127.79	127.90	128.01	128.12
	4	T. DECK	127.08	127.19	127.30	127.41	127.52	127.63	127.74	127.85	127.96	128.07	128.18
	5	T. DECK	127.16	127.27	127.38	127.49	127.60	127.71	127.82	127.93	128.04	128.15	128.26
	6	T. DECK	127.24	127.35	127.46	127.57	127.68	127.79	127.90	128.01	128.12	128.23	128.34
	7	T. DECK	127.32	127.43	127.54	127.65	127.76	127.87	127.98	128.09	128.20	128.31	128.42
	8	T. DECK	127.40	127.51	127.62	127.73	127.84	127.95	128.06	128.17	128.28	128.39	128.50
	9	T. DECK	127.48	127.59	127.70	127.81	127.92	128.03	128.14	128.25	128.36	128.47	128.58
	10	T. DECK	127.47	127.58	127.69	127.80	127.91	128.02	128.13	128.24	128.35	128.46	128.57
	CONST. JOINT	T. DECK	127.47	127.58	127.69	127.80	127.91	128.02	128.13	128.24	128.35	128.46	128.57
	11	T. DECK	127.46	127.57	127.68	127.79	127.90	128.01	128.12	128.23	128.34	128.45	128.56
	12	T. DECK	127.45	127.56	127.67	127.78	127.89	128.00	128.11	128.22	128.33	128.44	128.55
	13	T. DECK	127.44	127.55	127.66	127.77	127.88	127.99	128.10	128.21	128.32	128.43	128.54
	14	T. DECK	127.43	127.54	127.65	127.76	127.87	127.98	128.09	128.20	128.31	128.42	128.53
	15	T. DECK	127.42	127.53	127.64	127.75	127.86	127.97	128.08	128.19	128.30	128.41	128.52
	EAST EDGE	T. DECK	127.42	127.53	127.64	127.75	127.86	127.97	128.08	128.19	128.30	128.41	128.52

TOP OF DECK ELEVATIONS SPAN 2													
SPAN LENGTH "L"	GIRDER NO.	DESC.	C/L BRG. PIER 1	0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	C/L BRG. PIER 2
29'-1"	TYP. INTERIOR & EXTERIOR TOTAL DEAD LOAD DEFLECTION (IN.)		0.00	.09	.17	.23	.27	.29	.27	.23	.17	.09	0.00
	WEST EDGE	T. DECK	127.91	128.04	128.17	128.30	128.43	128.56	128.69	128.83	128.96	129.09	129.22
	1	T. DECK	127.94	128.07	128.20	128.33	128.46	128.59	128.72	128.86	128.99	129.12	129.25
	2	T. DECK	128.02	128.15	128.28	128.41	128.54	128.67	128.80	128.94	129.07	129.20	129.33
	3	T. DECK	128.10	128.23	128.36	128.49	128.62	128.75	128.88	129.02	129.15	129.28	129.41
	GUTTER	T. DECK	128.12	128.25	128.38	128.51	128.64	128.77	128.90	129.04	129.17	129.30	129.43
	4	T. DECK	128.18	128.31	128.44	128.57	128.70	128.83	128.96	129.10	129.23	129.36	129.49
	5	T. DECK	128.26	128.39	128.52	128.65	128.78	128.91	129.04	129.18	129.31	129.44	129.57
	6	T. DECK	128.34	128.47	128.60	128.73	128.86	128.99	129.12	129.26	129.39	129.52	129.65
	7	T. DECK	128.42	128.55	128.68	128.81	128.94	129.07	129.20	129.34	129.47	129.60	129.73
	8	T. DECK	128.50	128.63	128.76	128.89	129.02	129.15	129.28	129.42	129.55	129.68	129.81
	9	T. DECK	128.58	128.71	128.84	128.97	129.10	129.23	129.36	129.50	129.63	129.76	129.89
	10	T. DECK	128.57	128.70	128.83	128.96	129.09	129.22	129.35	129.49	129.62	129.75	129.88
	CONST. JOINT	T. DECK	128.57	128.70	128.83	128.96	129.09	129.22	129.35	129.49	129.62	129.75	129.88
	11	T. DECK	128.56	128.69	128.82	128.95	129.08	129.21	129.34	129.48	129.61	129.74	129.87
	12	T. DECK	128.55	128.68	128.81	128.94	129.07	129.20	129.33	129.47	129.60	129.73	129.86
	13	T. DECK	128.54	128.67	128.80	128.93	129.06	129.19	129.32	129.46	129.59	129.72	129.85
	14	T. DECK	128.53	128.66	128.79	128.92	129.05	129.18	129.31	129.45	129.58	129.71	129.84
	15	T. DECK	128.52	128.65	128.78	128.91	129.04	129.17	129.30	129.44	129.57	129.70	129.83
	EAST EDGE	T. DECK	128.52	128.65	128.78	128.91	129.04	129.17	129.30	129.44	129.57	129.70	129.83

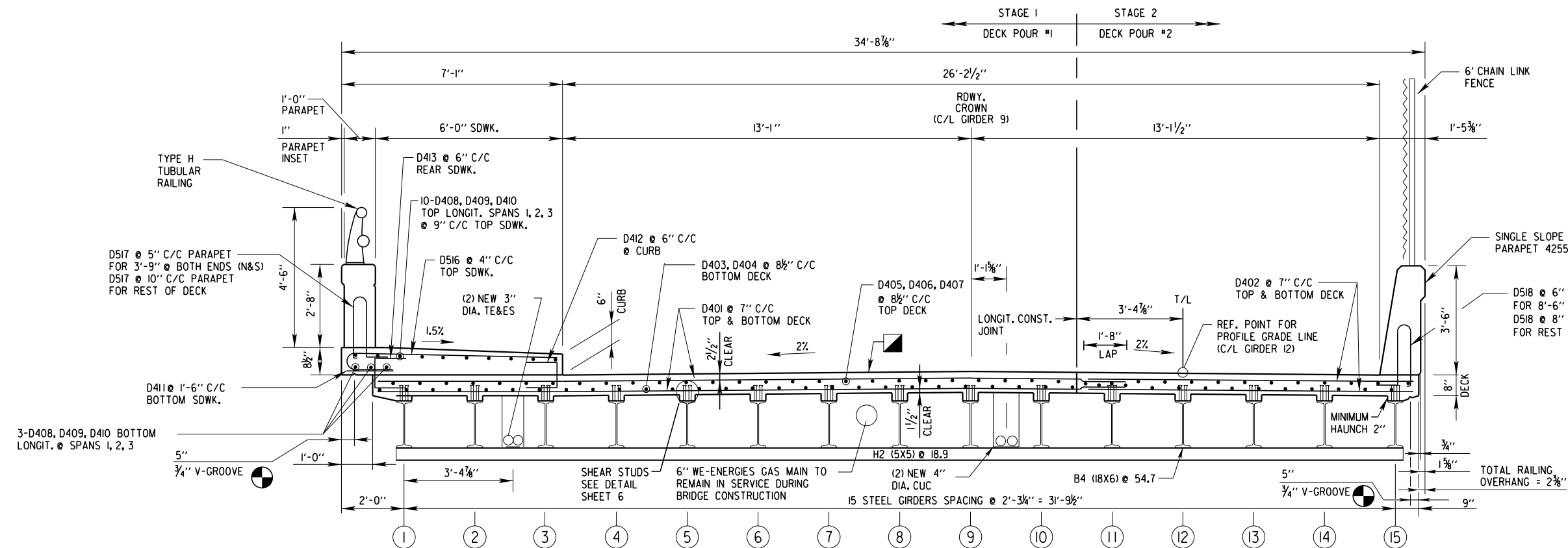
TOP OF DECK ELEVATIONS SPAN 3													
SPAN LENGTH "L"	GIRDER NO.	DESC.	C/L BRG. PIER 2	0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	C/L BRG. N. ABUT.
27'-10¼"	TYP. INTERIOR & EXTERIOR TOTAL DEAD LOAD DEFLECTION (IN.)		0.00	.07	.14	.19	.22	.23	.22	.19	.14	.07	0.00
	WEST EDGE	T. DECK	129.22	129.34	129.47	129.60	129.72	129.85	129.97	130.10	130.22	130.35	130.47
	1	T. DECK	129.25	129.37	129.50	129.62	129.75	129.87	130.00	130.12	130.25	130.37	130.50
	2	T. DECK	129.33	129.45	129.58	129.70	129.83	129.95	130.08	130.20	130.33	130.45	130.58
	3	T. DECK	129.41	129.53	129.66	129.78	129.91	130.03	130.16	130.28	130.41	130.53	130.66
	GUTTER	T. DECK	129.43	129.55	129.68	129.80	129.93	130.05	130.18	130.30	130.43	130.55	130.68
	4	T. DECK	129.49	129.61	129.74	129.86	129.99	130.11	130.24	130.36	130.49	130.61	130.74
	5	T. DECK	129.57	129.69	129.82	129.94	130.07	130.19	130.32	130.44	130.57	130.69	130.82
	6	T. DECK	129.65	129.77	129.90	130.02	130.15	130.27	130.40	130.52	130.65	130.77	130.90
	7	T. DECK	129.73	129.85	129.98	130.10	130.23	130.35	130.48	130.60	130.73	130.85	130.98
	8	T. DECK	129.81	129.93	130.06	130.18	130.31	130.43	130.56	130.68	130.81	130.93	131.06
	9	T. DECK	129.89	130.01	130.14	130.26	130.39	130.51	130.64	130.76	130.89	131.01	131.14
	10	T. DECK	129.88	130.00	130.13	130.25	130.38	130.50	130.63	130.75	130.88	131.00	131.13
	CONST. JOINT	T. DECK	129.88	130.00	130.13	130.25	130.37	130.50	130.62	130.75	130.87	131.00	131.12
	11	T. DECK	129.87	129.99	130.12	130.24	130.37	130.49	130.62	130.74	130.87	130.99	131.12
	12	T. DECK	129.86	129.98	130.11	130.23	130.36	130.48	130.61	130.73	130.86	130.98	131.11
	13	T. DECK	129.85	129.97	130.10	130.22	130.35	130.47	130.60	130.72	130.85	130.97	131.10
	14	T. DECK	129.84	129.96	130.09	130.21	130.34	130.46	130.59	130.71	130.84	130.96	131.09
	15	T. DECK	129.83	129.95	130.08	130.20	130.33	130.45	130.58	130.70	130.83	130.95	131.08
	EAST EDGE	T. DECK	129.83	129.95	130.08	130.20	130.32	130.45	130.57	130.70	130.82	130.95	131.07

STATE PROJECT NUMBER			
2984 - 51 - 70			

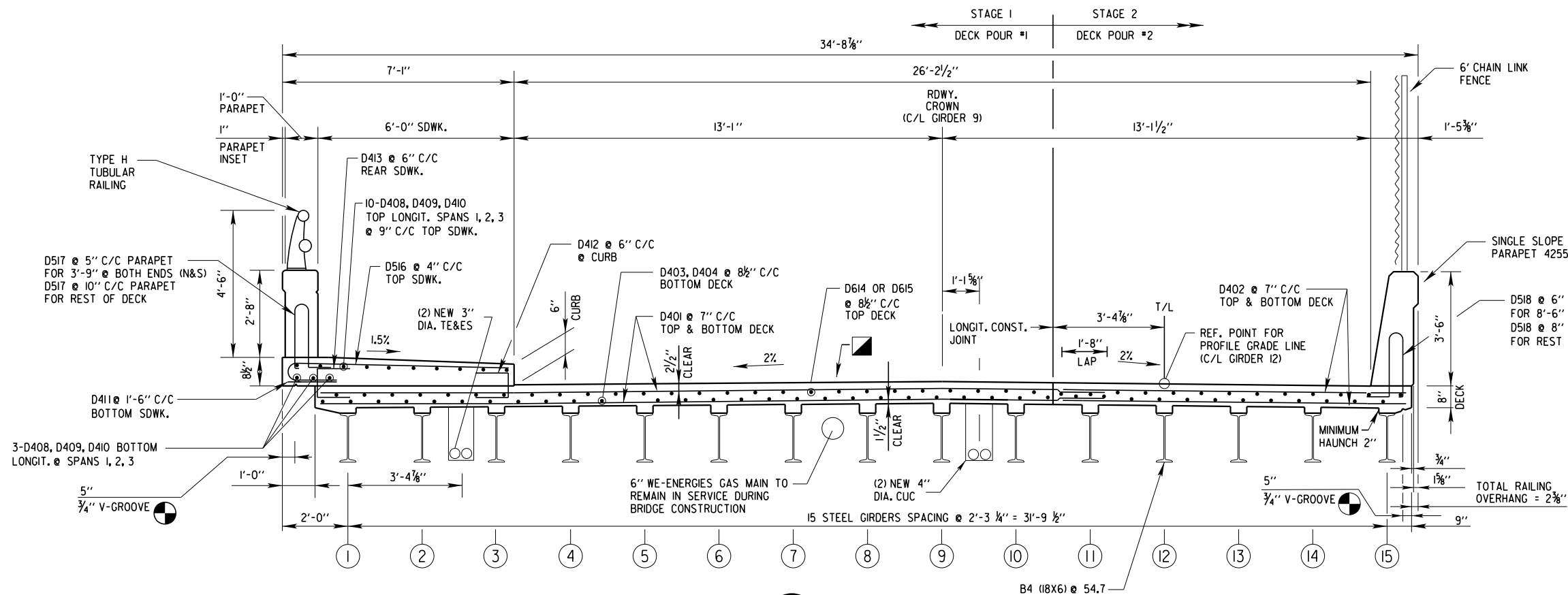
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
		DRAWN BY G.J.R.	PLANS CK'D. J.P.H.
DECK GRADES			SHEET 9 OF 22

8





**1**  
**7** CROSS SECTION  
LOOKING NORTH MIDSPAN  
(NORMAL TO TRANSIT LINE)



**2**  
**7** CROSS SECTION  
LOOKING NORTH NEAR PIER  
(NORMAL TO TRANSIT LINE)

**NOTES:**

3/4" V-GROOVE REQ'D. EXTEND TO 2'-0" FROM FRONT FACE OF ABUT. BODY.

COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER STANDARD SPECIFICATIONS (ROADWAY, CURB AND TOP OF WALK).

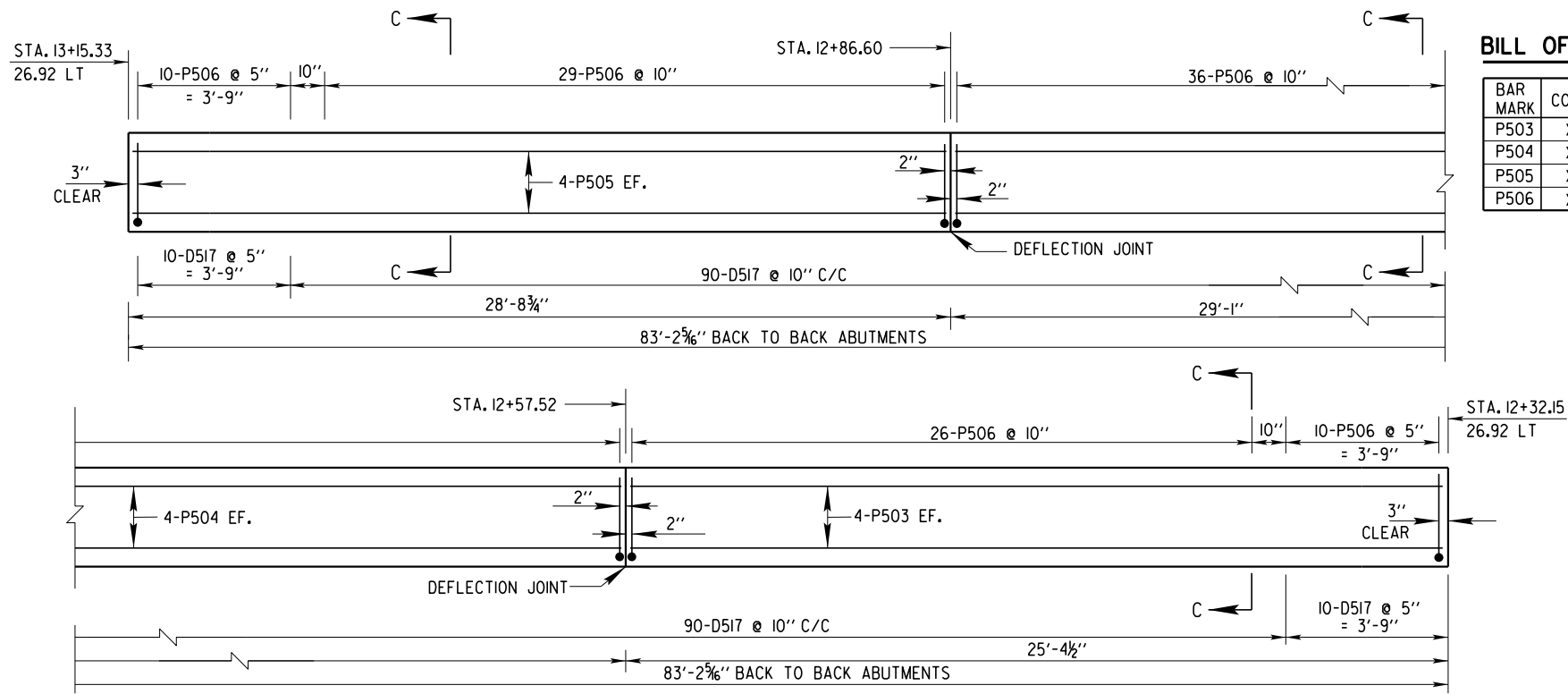
USE "PIGMENTED SURFACE SEALER" ON FRONT FACE AND TOP OF BRIDGE RAILING PARAPETS AND CLOSURE WALLS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	
DECK CROSS SECTIONS		SHEET 10 OF 22	

W:\STR\B1102\2020\PLANS\11\_WEST PARAPET DETAILS AND PLAN.DGN

REVISED: 11-25-2020 GJR

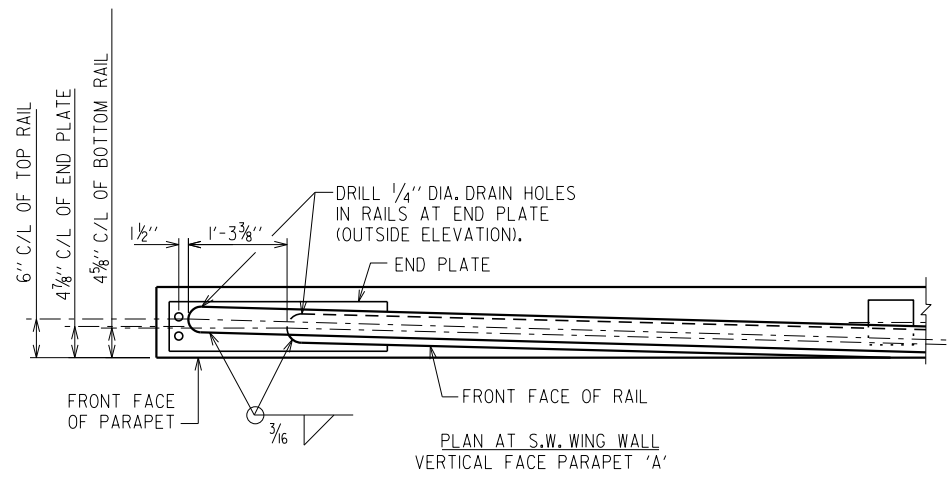
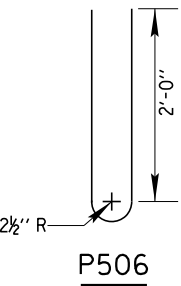
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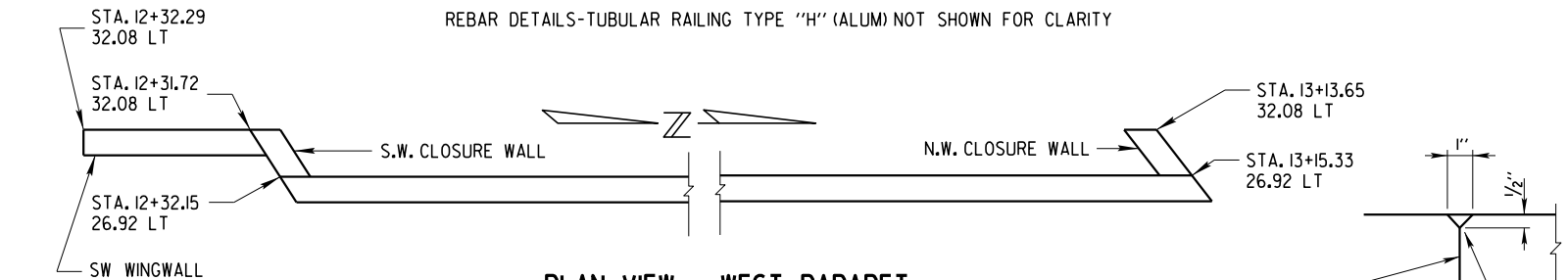
**WEST FACE OF WEST BRIDGE PARAPET - LOOKING EAST**  
REBAR DETAILS-TUBULAR RAILING TYPE "H" (ALUM) NOT SHOWN FOR CLARITY

**BILL OF BARS - WEST PARAPET**

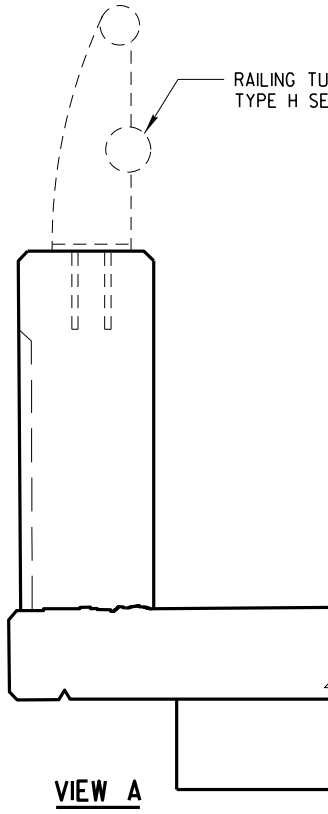
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
P503	X	8	25'-3"		PARAPET - BRIDGE HORIZONTAL SPAN 1
P504	X	8	28'-9"		PARAPET - BRIDGE HORIZONTAL SPAN 2
P505	X	8	28'-2"		PARAPET - BRIDGE HORIZONTAL SPAN 3
P506	X	111	4'-9"	X	PARAPET - VERTICAL ALL SPANS



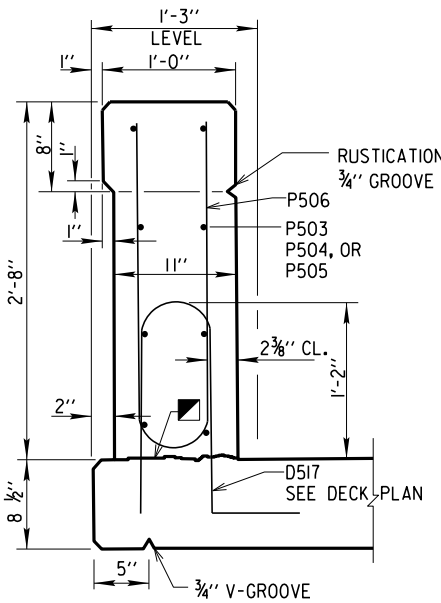
**DETAIL OF RAIL BEND AT ABUTMENTS**



**PLAN VIEW - WEST PARAPET CLOSURE WALL AND WINGWALL**

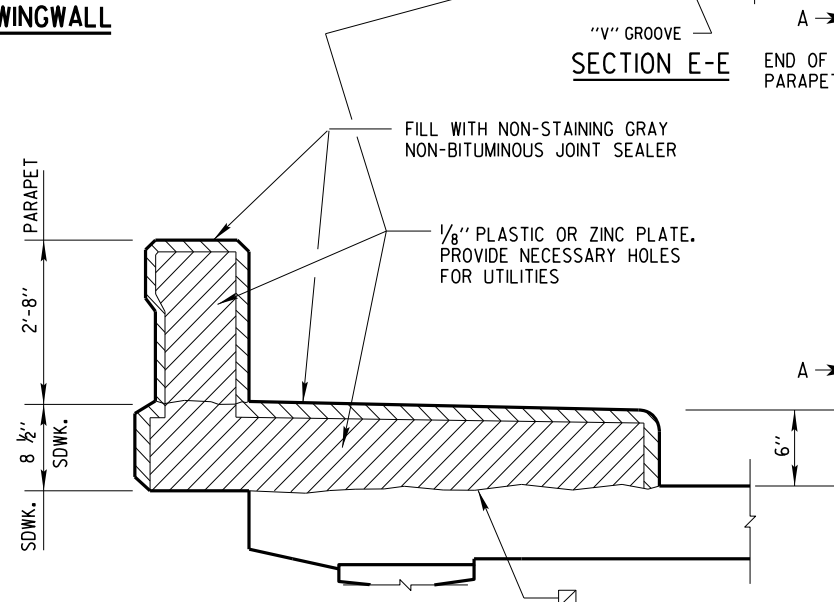


**VIEW A**



**SECTION C**

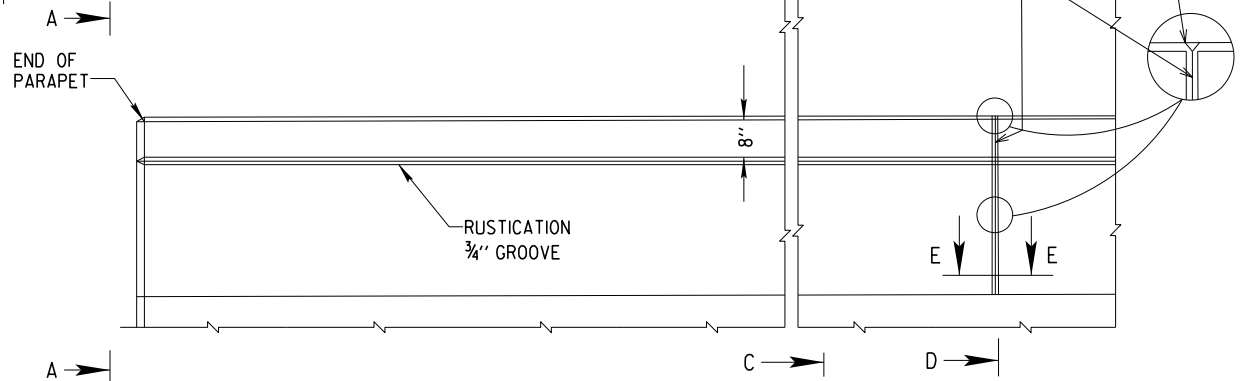
(PARAPET ON SIDEWALK)  
(RAILING NOT SHOWN FOR CLARITY)



**SECTION D**

**DEFLECTION JOINT DETAIL**

HORIZONTAL CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.



**AT ABUTMENT**

**AT DEFLECTION JOINT**

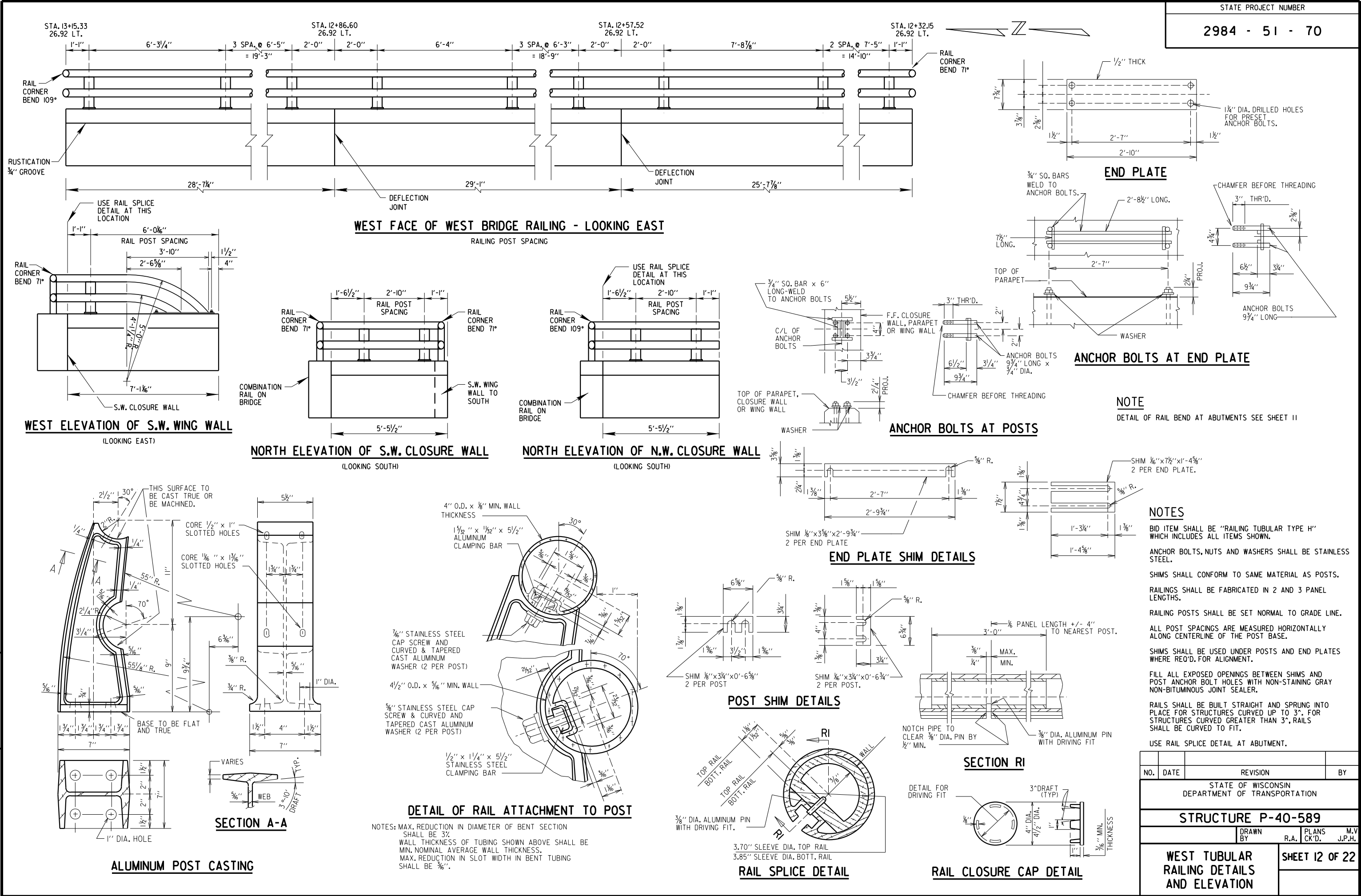
**ELEVATION OF WEST PARAPET**

**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.

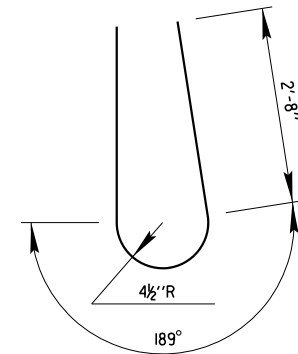
STATE PROJECT NUMBER  
**2984 - 51 - 70**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE P-40-589</b>			
DRAWN BY R.A.		PLANS CK'D. J.P.	M.V. J.P.
<b>WEST PARAPET DETAILS AND PLAN</b>			<b>SHEET 11 OF 22</b>

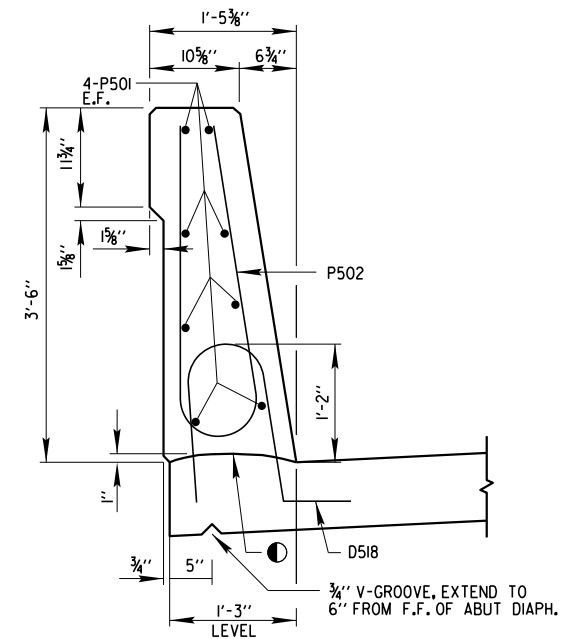


2984 - 51 - 70

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	X	16	42'-5"		PARAPET- HORIZONTAL F.F & B.F.
P502	X	133	6'-8"	X	PARAPET- BRIDGE VERTICAL



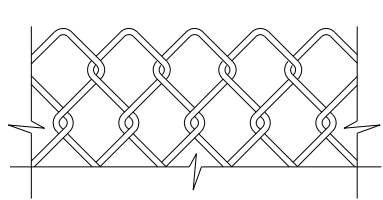
P502



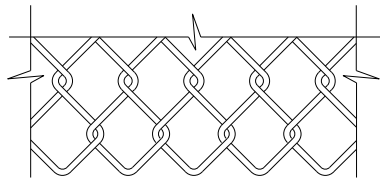
SECTION 1  
13

● CONST. JOINT  
STRIKE OFF AS SHOWN

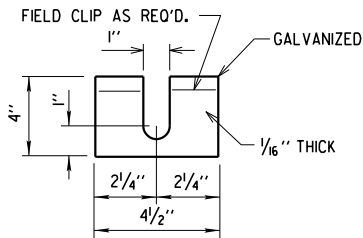
NO.		DATE		REVISION		BY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION							
STRUCTURE P-40-589							
				DRAWN BY		PLANS CK'D.	
				J.A.C.		M.V. J.P.H.	
SINGLE SLOPE PARAPET 42SS DETAILS AND PLAN						SHEET 13 OF 22	



TOP DETAIL



BOTTOM DETAIL

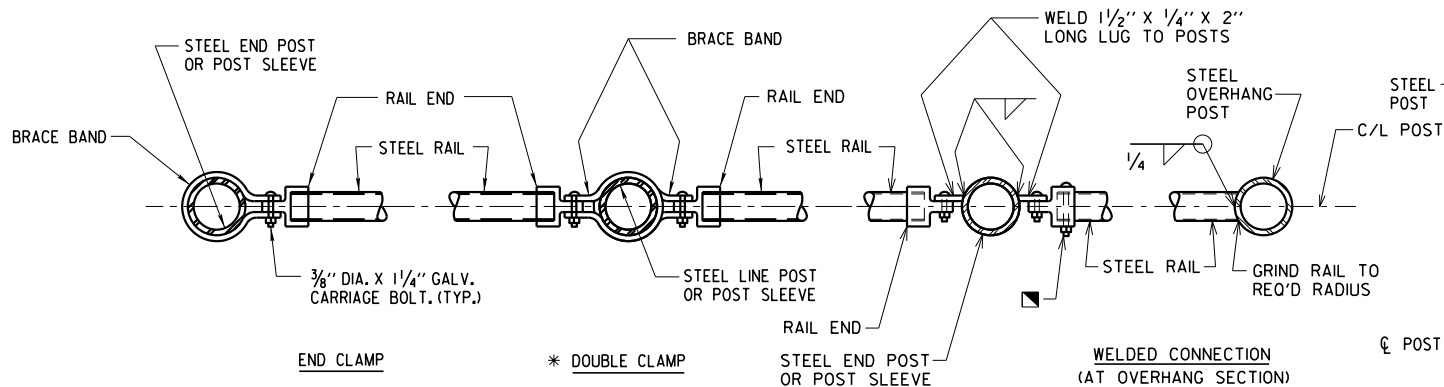


POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

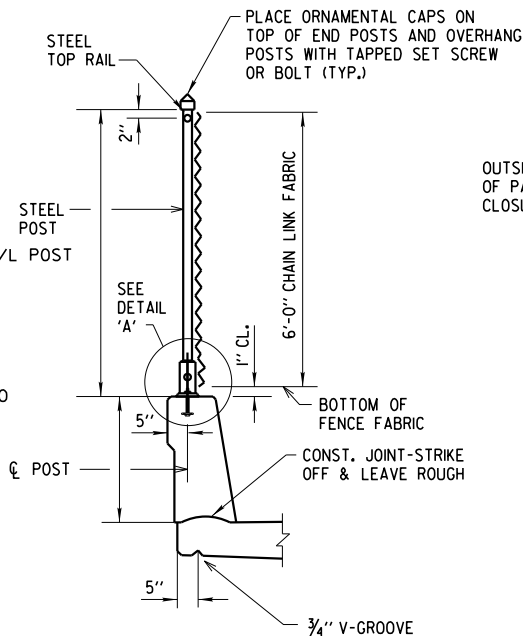
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12

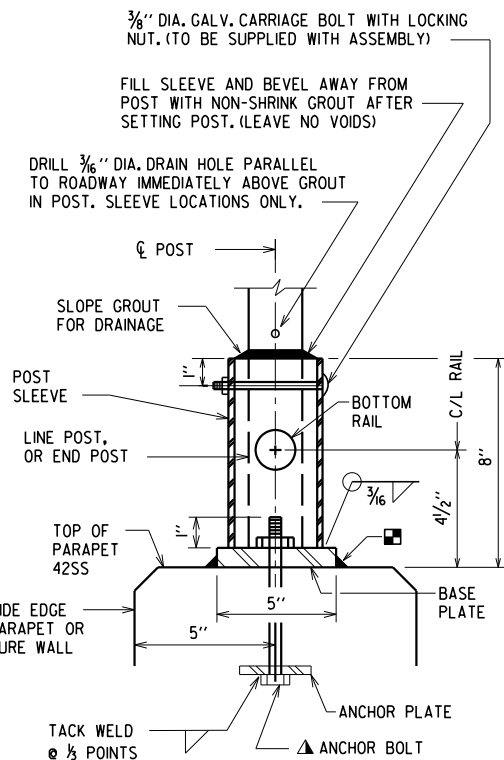


SECTION A-A

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

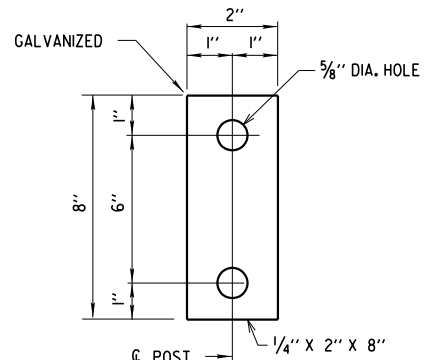


SECTION THRU FENCE ON SINGLE SLOPE PARAPET



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION  
NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

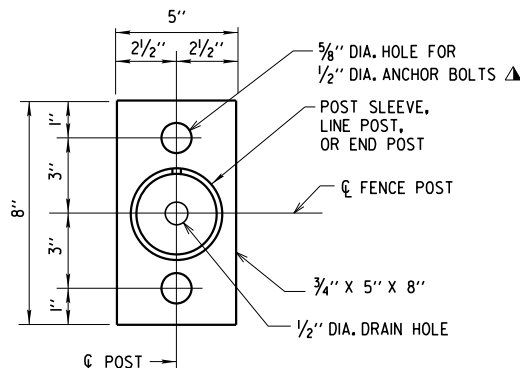


ANCHOR PLATE

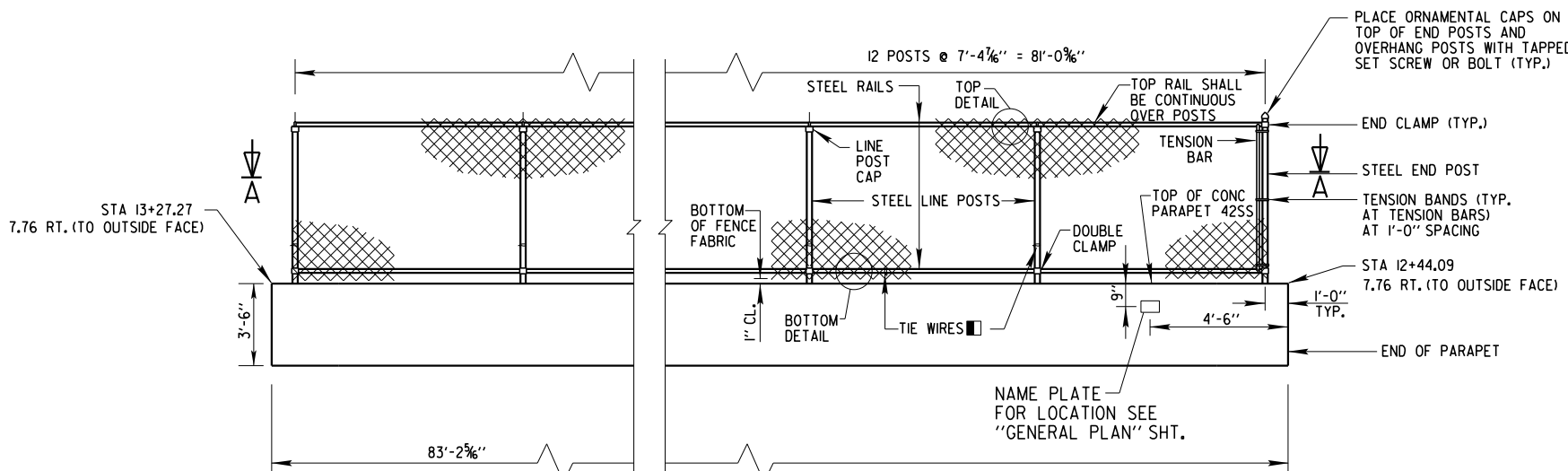
NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.

NOTES

- POSTS ARE TO BE SET VERTICAL.
- METALLIC-COATED FENCE SYSTEM:  
ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL, EXCEPT THE FENCE FABRIC WHICH MAY BE ALUMINUM-COATED STEEL OR GALVANIZED STEEL.
- FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626.
- THE BID ITEM SHALL BE "FENCE CHAIN LINK 6 - FT.
- COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.
- 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 CUT.
- BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.
- ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.
- CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
- ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 1/2-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.
- ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".
- BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.
- MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.



BASE PLATE



WEST FACE OF EAST BRIDGE PARAPET - LOOKING EAST (INSIDE FACE)

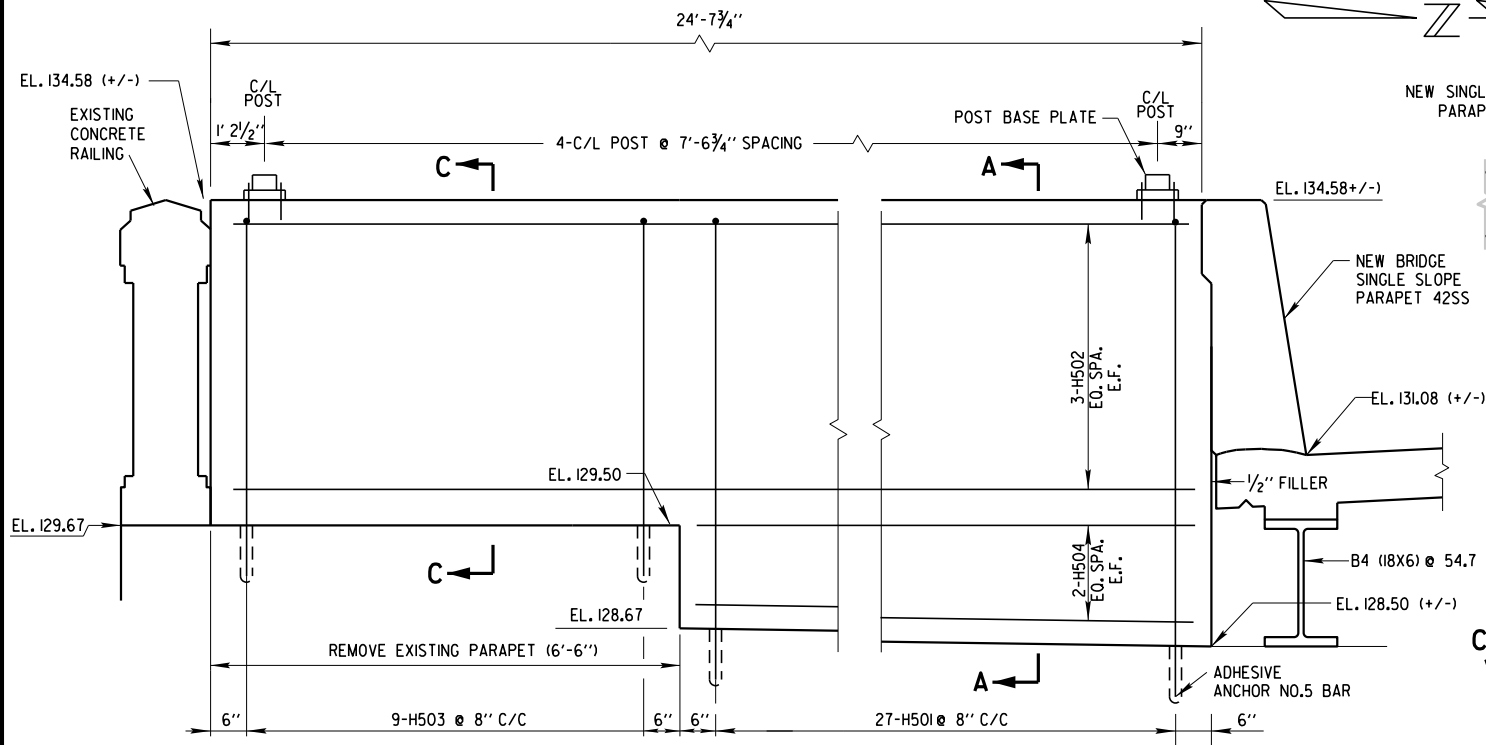
INSIDE FACE OF PARAPET 42SS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS CK'D. M.V. J.P.H.
CHAIN LINK FENCING ELEVATION AND DETAILS		SHEET 14 OF 22	

W:\STR\B1102\2021\PLANS\15\_NW & NE CLOSURE WALLS.DGN

REVISED: 11-17-2020 BY MMM

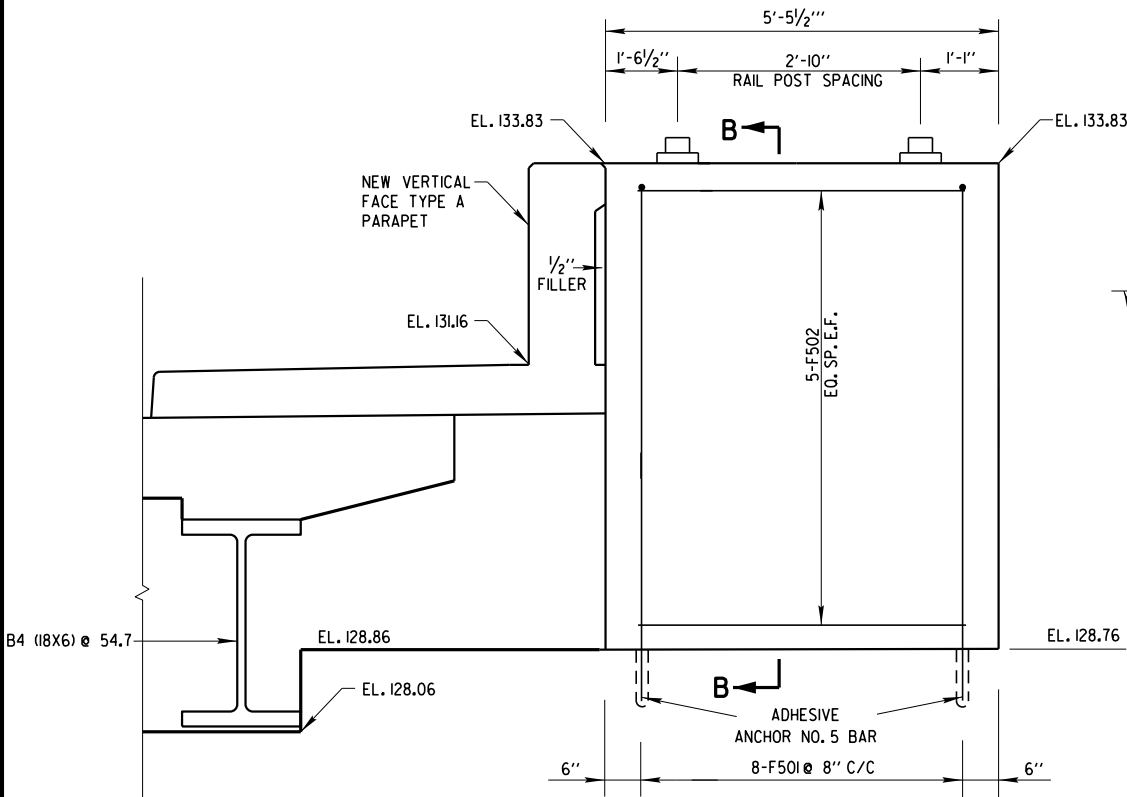
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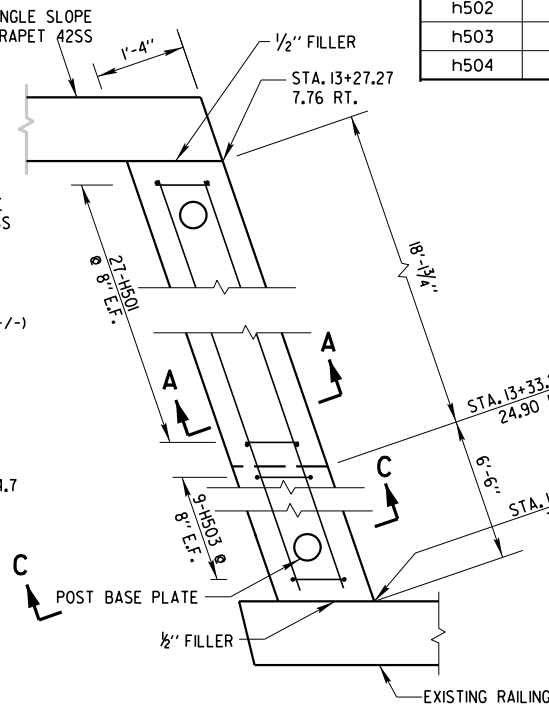
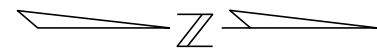
NORTH ELEVATION N.E. CLOSURE WALL  
(LOOKING SOUTH)

**NOTE**

ALL ADHESIVE ANCHORS NO. 5 BAR  
SHALL HAVE A MINIMUM EDGE CLEARANCE OF 4\"/>



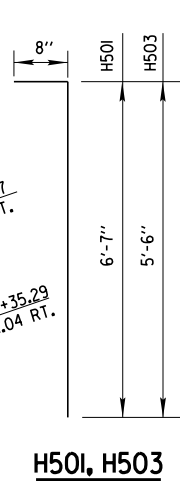
NORTH ELEVATION N.W. CLOSURE WALL  
(LOOKING SOUTH)



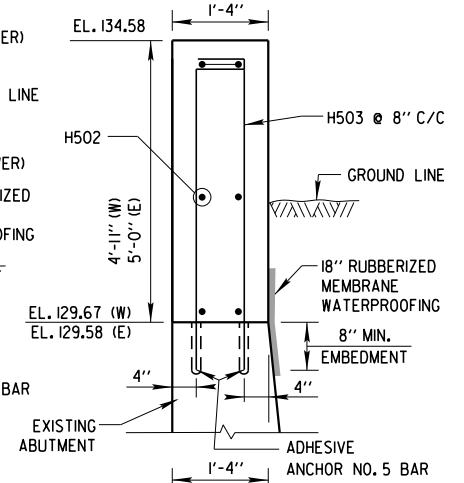
PLAN VIEW N.E. CLOSURE WALL

**BILL OF BARS - N.E. CLOSURE WALL**

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
h501	X	54	7'-3"	X	VERTICAL DOWEL (W)
h502	X	6	24'-3"		HORIZONTAL
h503	X	18	6'-2"		VERTICAL DOWEL (E)
h504	X	4	17'-9"		HORIZONTAL



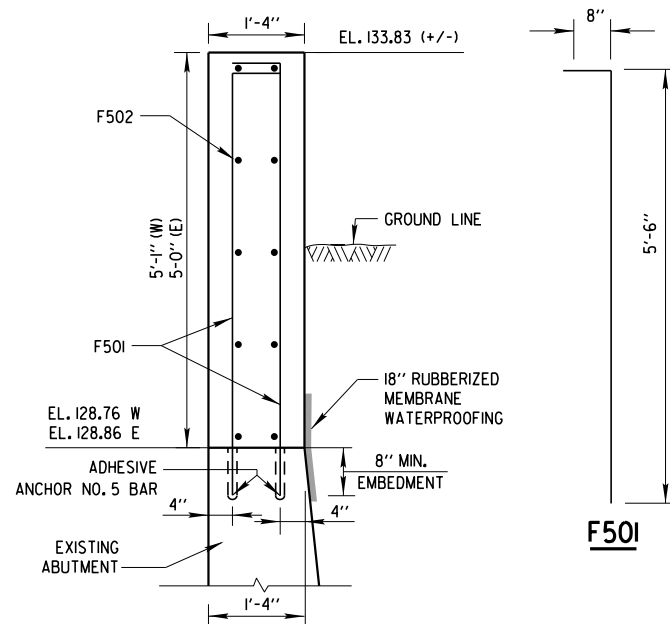
SECTION A-A  
N.E. CLOSURE WALL  
(WEST SIDE)



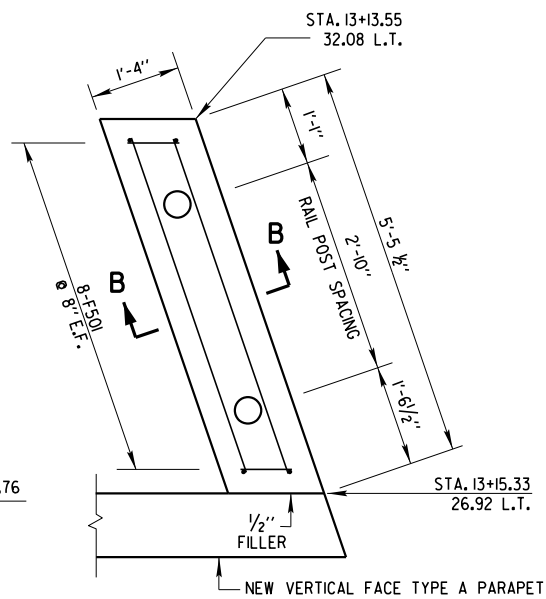
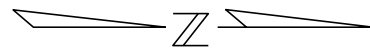
SECTION C-C  
N.E. CLOSURE WALL  
(EAST SIDE)

**BILL OF BARS - N.W. CLOSURE WALL**

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
F501	X	16	6'-2"	X	VERTICAL DOWEL
F502	X	10	5'-1"		HORIZONTAL



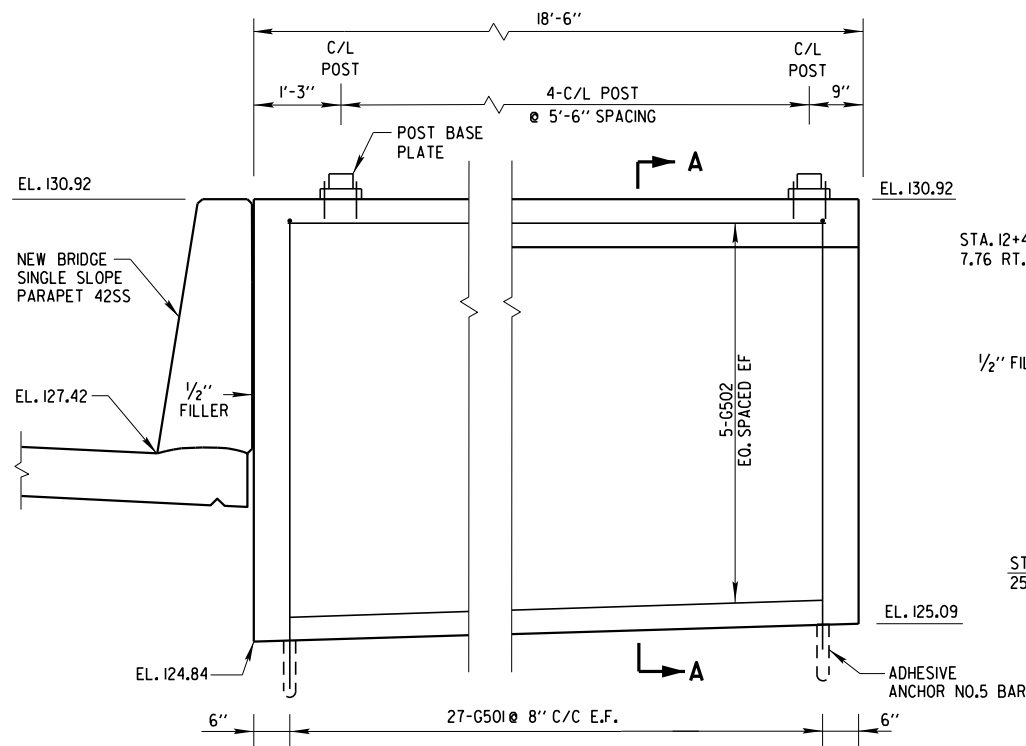
SECTION B-B  
N.W. CLOSURE WALL



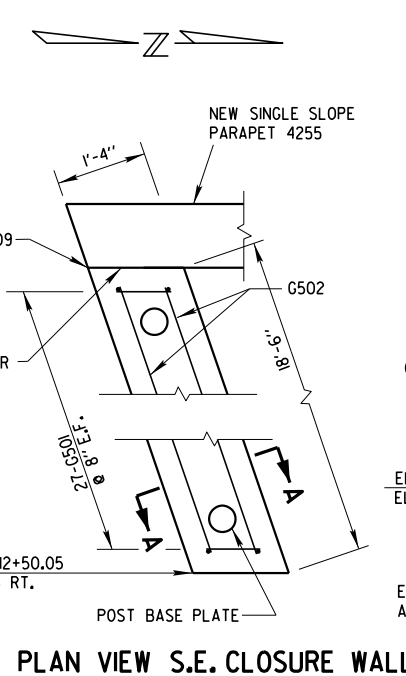
PLAN VIEW N.W. CLOSURE WALL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		M.P.F.	PLANS CK'D. J.P.H.
N.W. AND N.E. CLOSURE WALLS		SHEET 15 OF 22	

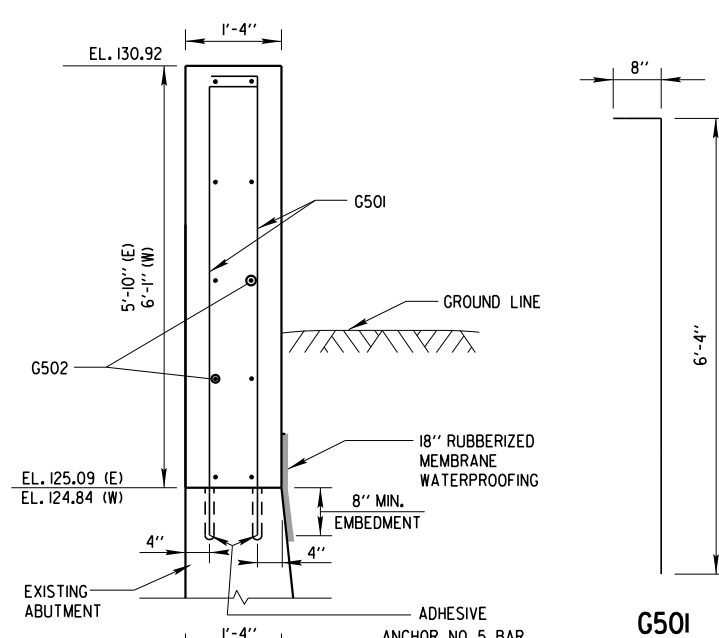
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**SOUTH ELEVATION S.E. CLOSURE WALL  
(LOOKING NORTH)**



**PLAN VIEW S.E. CLOSURE WALL**



**SECTION A-A  
S.E. CLOSURE WALL**

**BILL OF BARS - SE CLOSURE WALL**

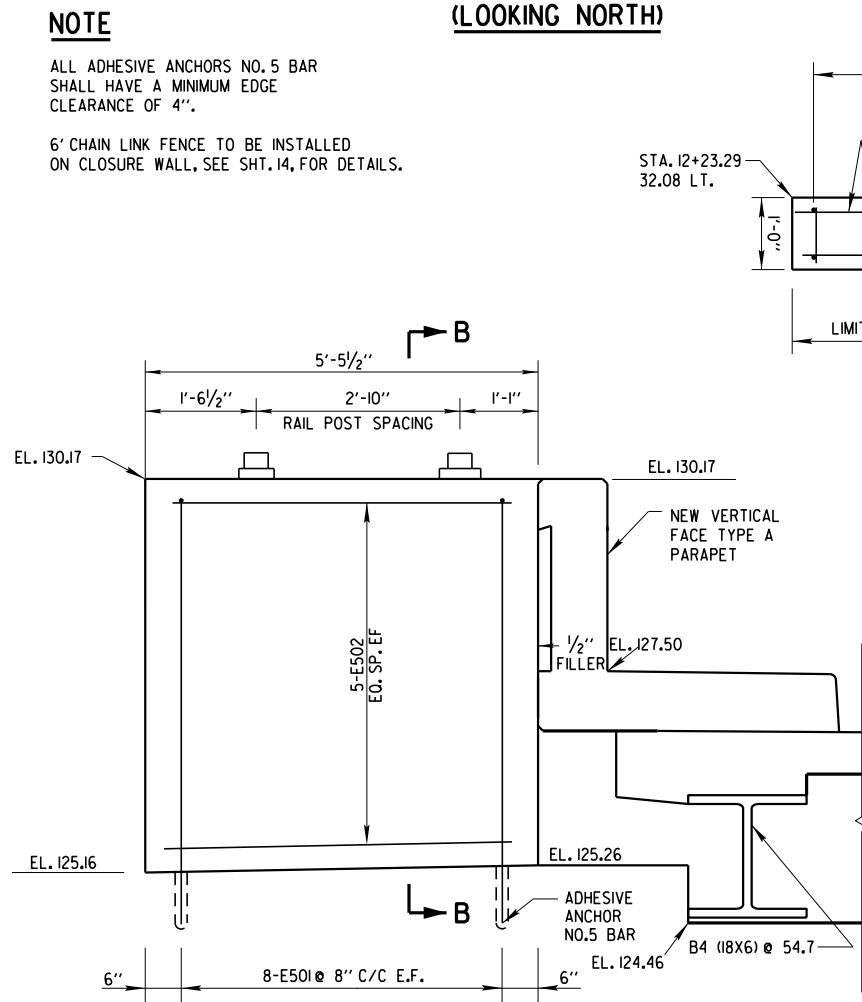
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
G501	X	54	7'-0"	X	VERTICAL DOWEL
G502	X	10	18'-2"		HORIZONTAL

**BILL OF BARS - SW CLOSURE WALL & WING WALL**

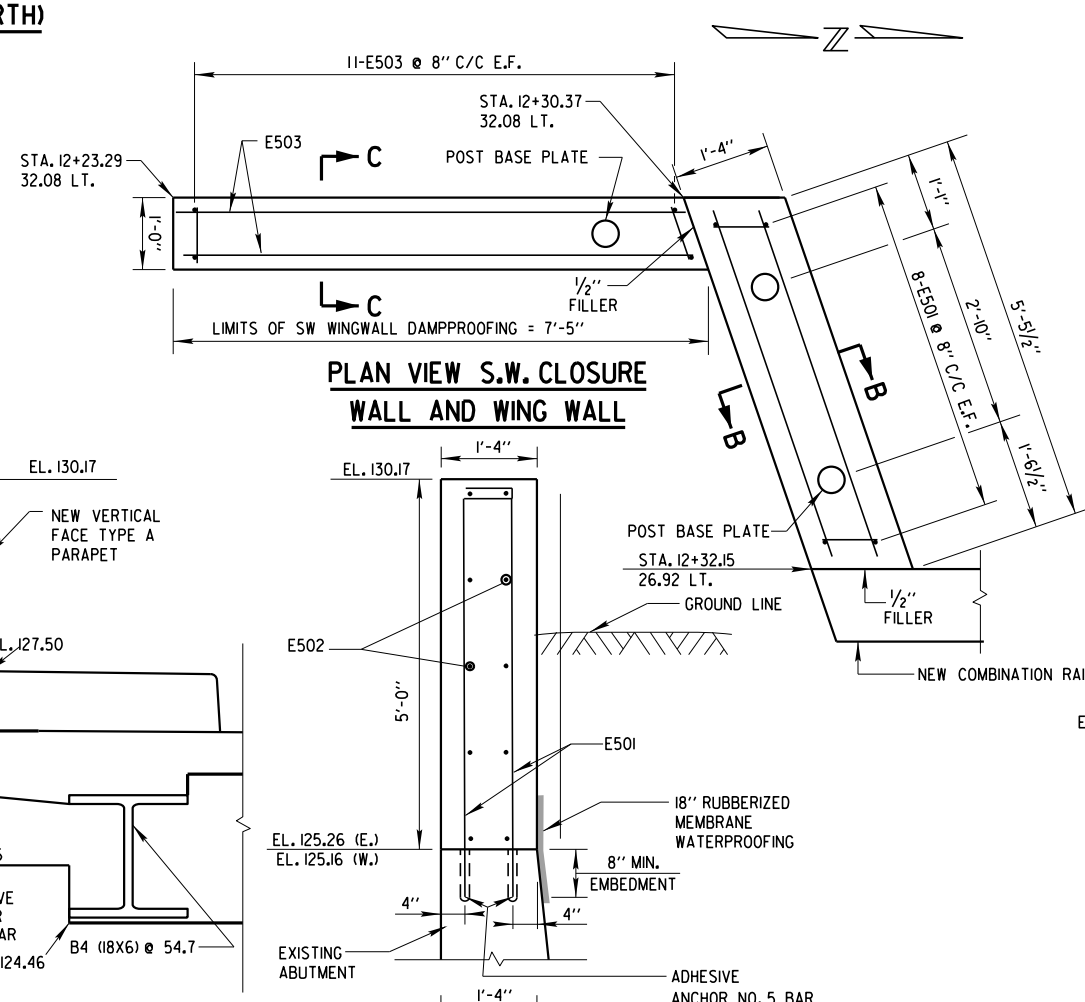
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
E501	X	16	6'-1"	X	VERTICAL DOWEL CLOSURE WALL
E502	X	10	5'-1"		HORIZONTAL CLOSURE WALL
E503	X	22	5'-2"	X	VERTICAL DOWEL WING WALL
E504	X	8	7'-1"		HORIZONTAL WING WALL

**NOTE**

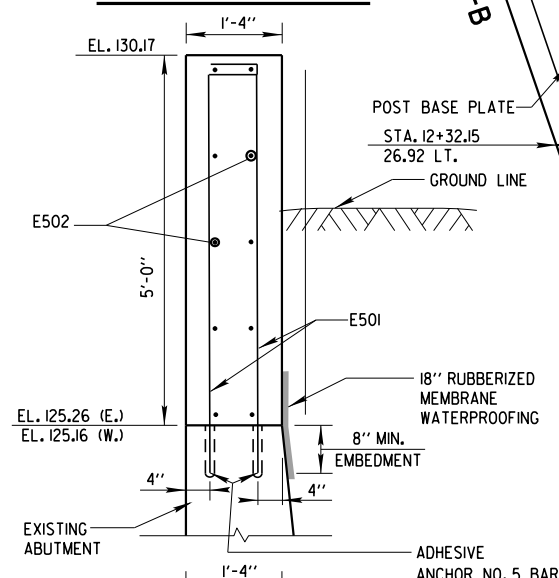
ALL ADHESIVE ANCHORS NO. 5 BAR SHALL HAVE A MINIMUM EDGE CLEARANCE OF 4".  
6' CHAIN LINK FENCE TO BE INSTALLED ON CLOSURE WALL, SEE SHT. 14, FOR DETAILS.



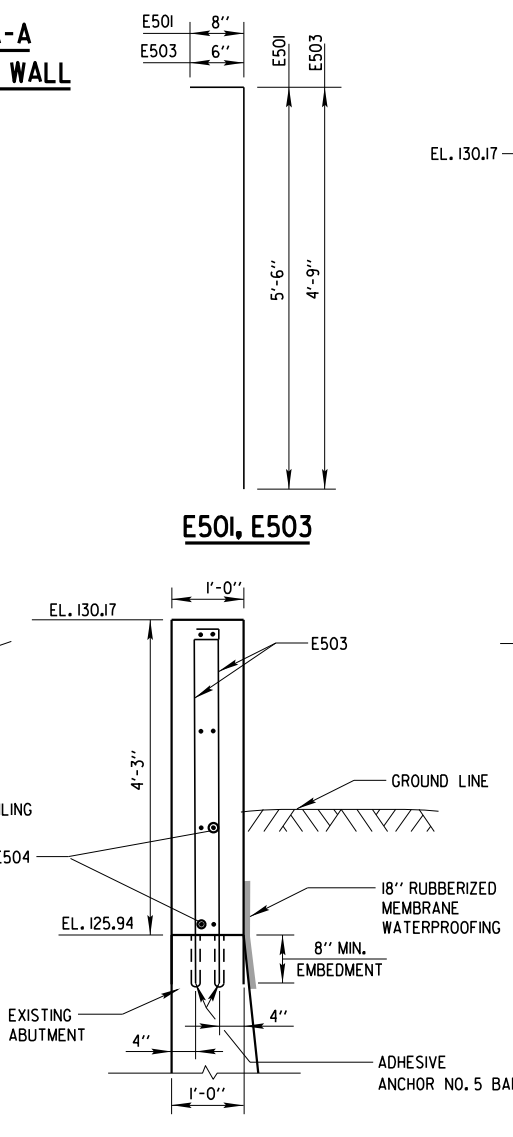
**SOUTH ELEVATION S.W. CLOSURE WALL  
(LOOKING NORTH)**



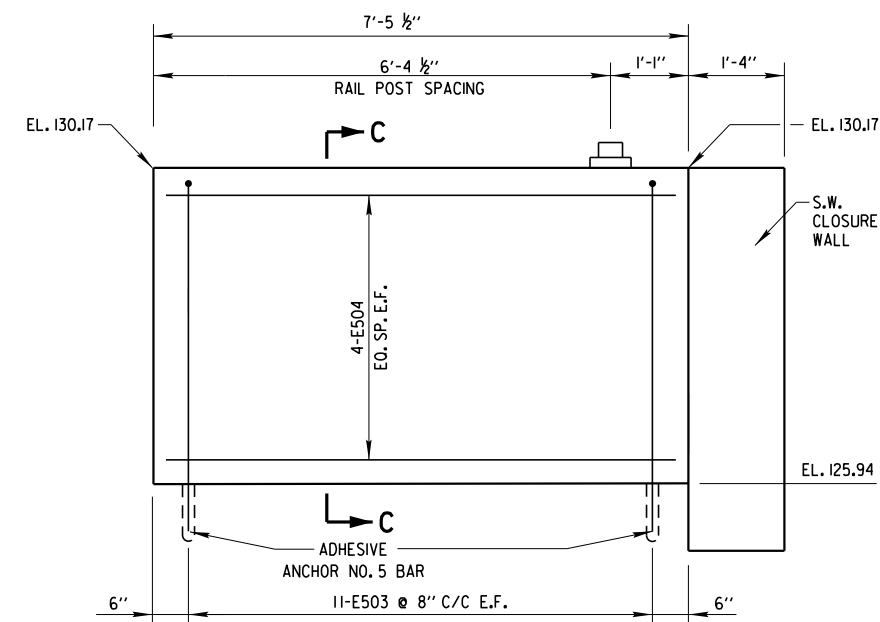
**PLAN VIEW S.W. CLOSURE WALL AND WING WALL**



**SECTION B-B  
S.W. CLOSURE WALL**



**SECTION C-C  
S.W. WING WALL**

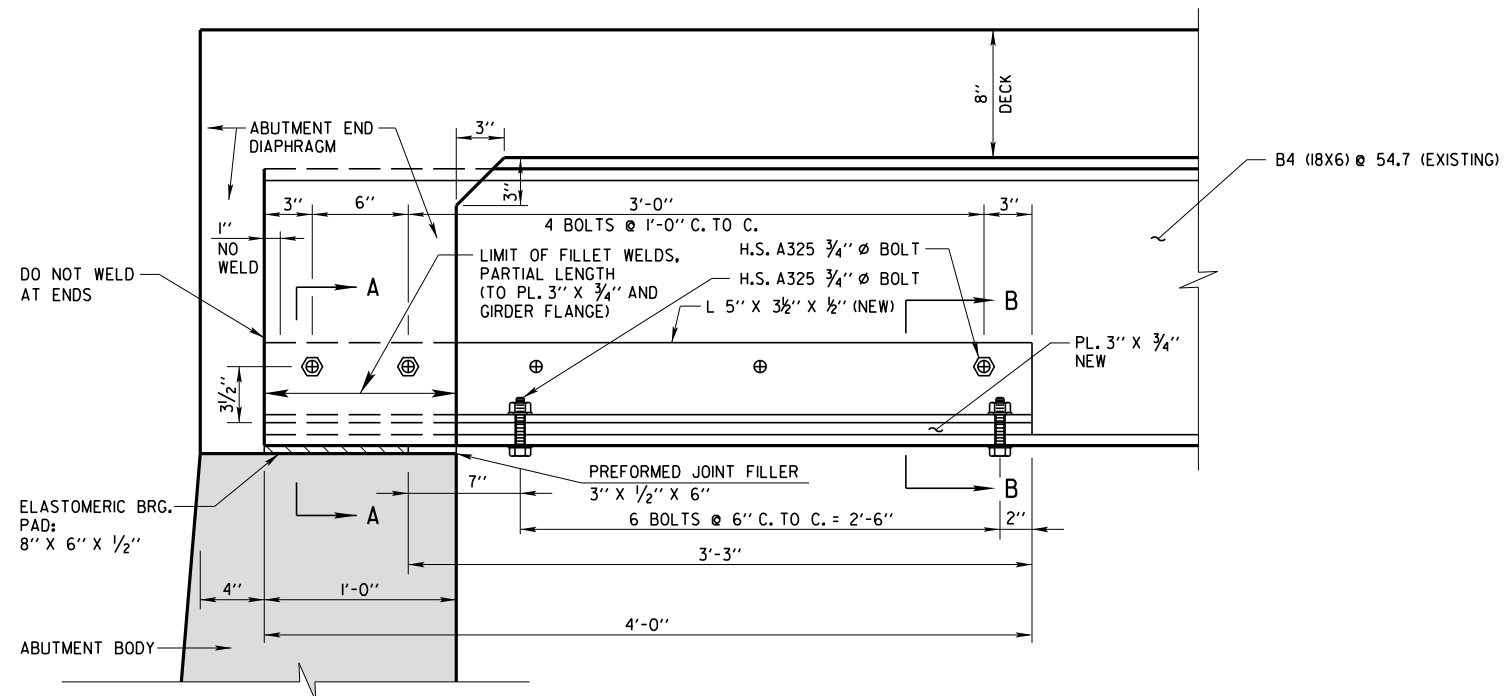


**EAST ELEVATION S.W. WING WALL  
(LOOKING WEST)  
(INSIDE FACE)**

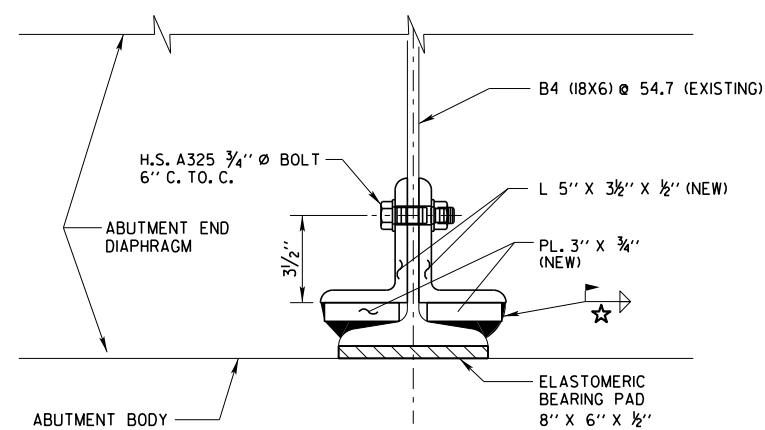
**NOTE**

WING WALL PARAPET NOT SHOWN FOR CLARITY.

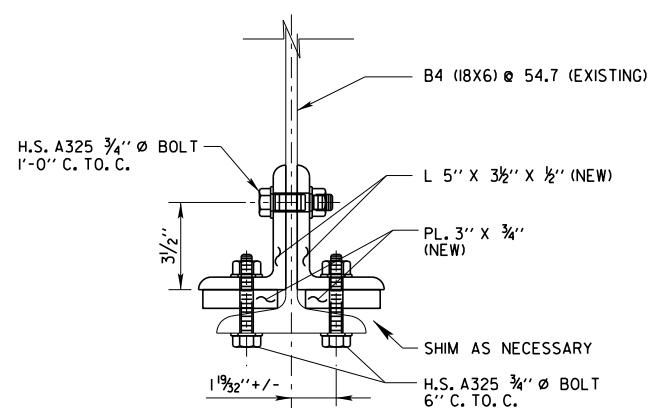
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY		PLANS CK'D.	M.V.
S.W. AND S.E. CLOSURE WALLS		SHEET 16 OF 22	



REPAIR OF GIRDERS AT  
NORTH AND SOUTH ABUTMENT  
ELEVATION VIEW



GIRDER REPAIR AT  
NORTH AND SOUTH ABUTMENT  
SECTION A-A



REPAIR OF GIRDERS AT  
NORTH AND SOUTH ABUTMENT  
SECTION B-B

## NOTE

DO NOT LET TEMPERATURE AT RUBBER SOLE PLATE INTERFACE EXCEED 200°F DURING WELDING.

REMOVE PRIMER IN AREAS TO BE WELDED.

PRIOR TO INSTALLING PLATES & ANGLES, REMOVE RUST SCALE FROM EXISTING WEB AND BOTTOM FLANGE.

PROVIDE PRIMER ON NEW AND EXISTING STEEL CONTACT SURFACES BEFORE INSTALLATION.

PROVIDE THREE COAT PAINT SYSTEM ON NEW AND EXISTING STEEL, AS DESCRIBED IN SPECIAL PROVISION, AFTER INSTALLATION.

ALL STEEL CONNECTIONS SHALL BE FRICTION TYPE, USING 3/4" DIA. GRADE A325 BOLTS AND HARDWARE, USING 1/8" DIA. DRILLED HOLES. USE 2 WASHERS AT EACH BOLT LOCATION. ALL BOLTS SHALL BE GALVANIZED.

STRUCTURAL PLATES AND ANGLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE A36.

INSTALL STEEL SHIMS AS NECESSARY TO CLOSE GAP BETWEEN THE REPAIR ANGLE, PL 3"x3/4" AND THE GIRDER BOTTOM FLANGE (OR THE ELASTOMERIC BEARING PAD IF FLANGE IS DETERIORATED). STEEL SHIMS SHALL BE 1/2" THICK MAX. (TYP. ALL GIRDERS)

GRIND EDGE OF 3"x3/4" PL. AS NECESSARY.

SEE STEEL REPAIR PLAN (SHEET 5) FOR GIRDER REPAIR LOCATIONS.

ENGINEER TO MAKE DETERMINATION OF GIRDER LOCATIONS FOR GIRDER REPAIR DETAIL 1 AFTER EXISTING DECK REMOVAL IS COMPLETE.

FOLLOW ALL APPLICABLE REQUIREMENTS OF CONSTRUCTION AND MATERIALS MANUAL SECTION 520.

## APPLICABLE CODE REQUIREMENTS

AASHTO/AWS D1.5M/D1.5:2020-AMDI BRIDGE WELDING CODE, LATEST EDITION

AWS D1.1/D1.1M:2020 STRUCTURAL WELDING CODE-STEEL, LATEST EDITION

## TABLE OF FILLET WELD SIZES



MATERIAL THICKNESS OF THICKER PART JOINED.	± MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	△ 5/16"
OVER 1 1/2" TO 2 1/4"	△ 3/8"
OVER 2 1/4" TO 6"	△ 1/2"

± EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

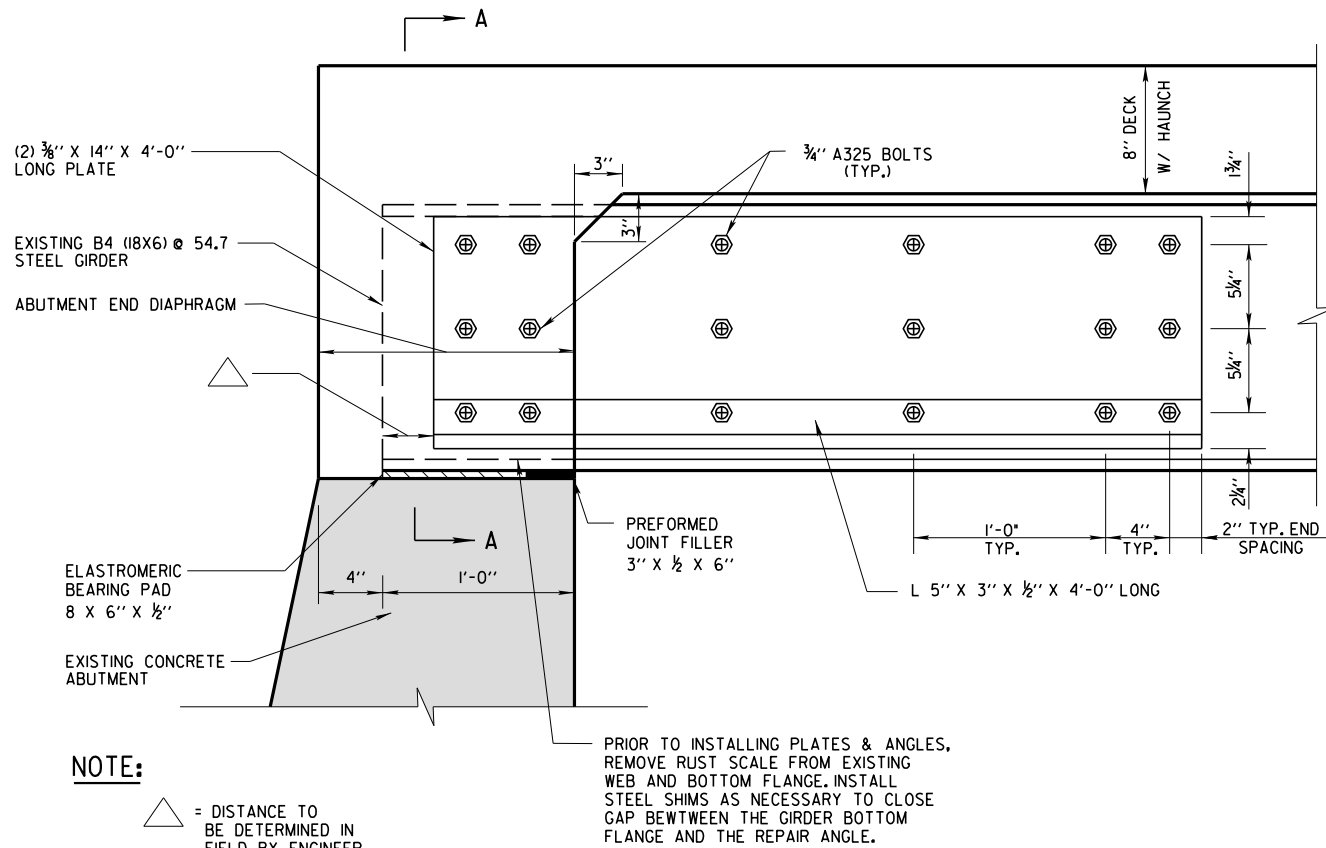
△ MIN. PASS SIZE IS 3/16"

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STRUCTURE P-40-589			
DRAWN BY		PLANS CK'D.	H.D.
GJR.		J.P.H.	
GIRDER REPAIR DETAIL 1			SHEET 17 OF 22

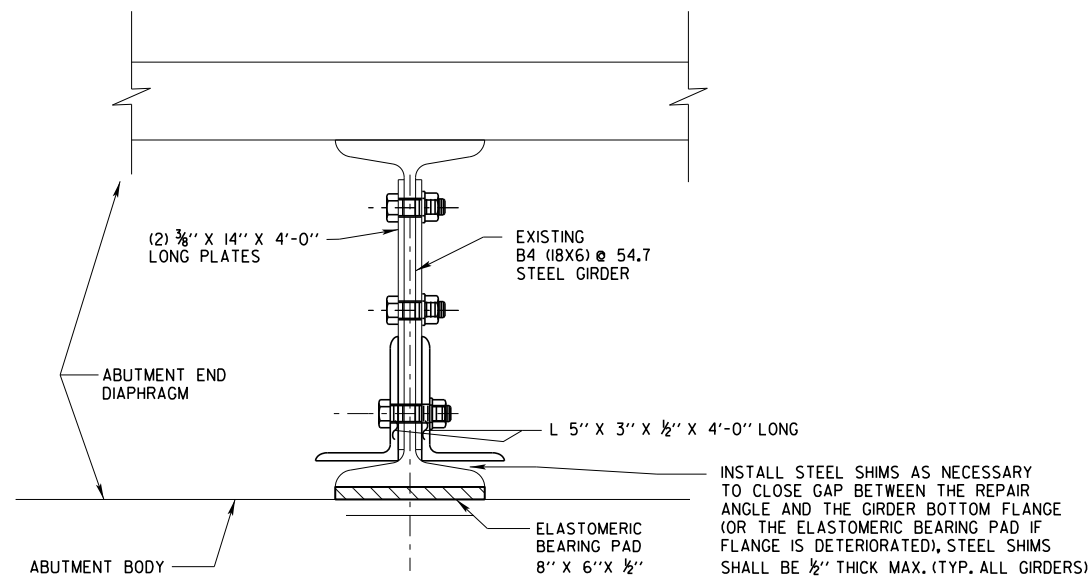


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REVISED: 11-16-2020 MM



REPAIR OF GIRDERS AT  
NORTH AND SOUTH ABUTMENT  
ELEVATION VIEW



SECTION A-A

STATE PROJECT NUMBER

2984 - 51 - 70

**NOTE:**

PROVIDE PRIMER ON NEW AND EXISTING STEEL CONTACT SURFACES BEFORE INSTALLATION.

PROVIDE THREE COAT PAINT SYSTEM ON NEW AND EXISTING STEEL, AS DESCRIBED IN SPECIAL PROVISION, AFTER INSTALLATION.

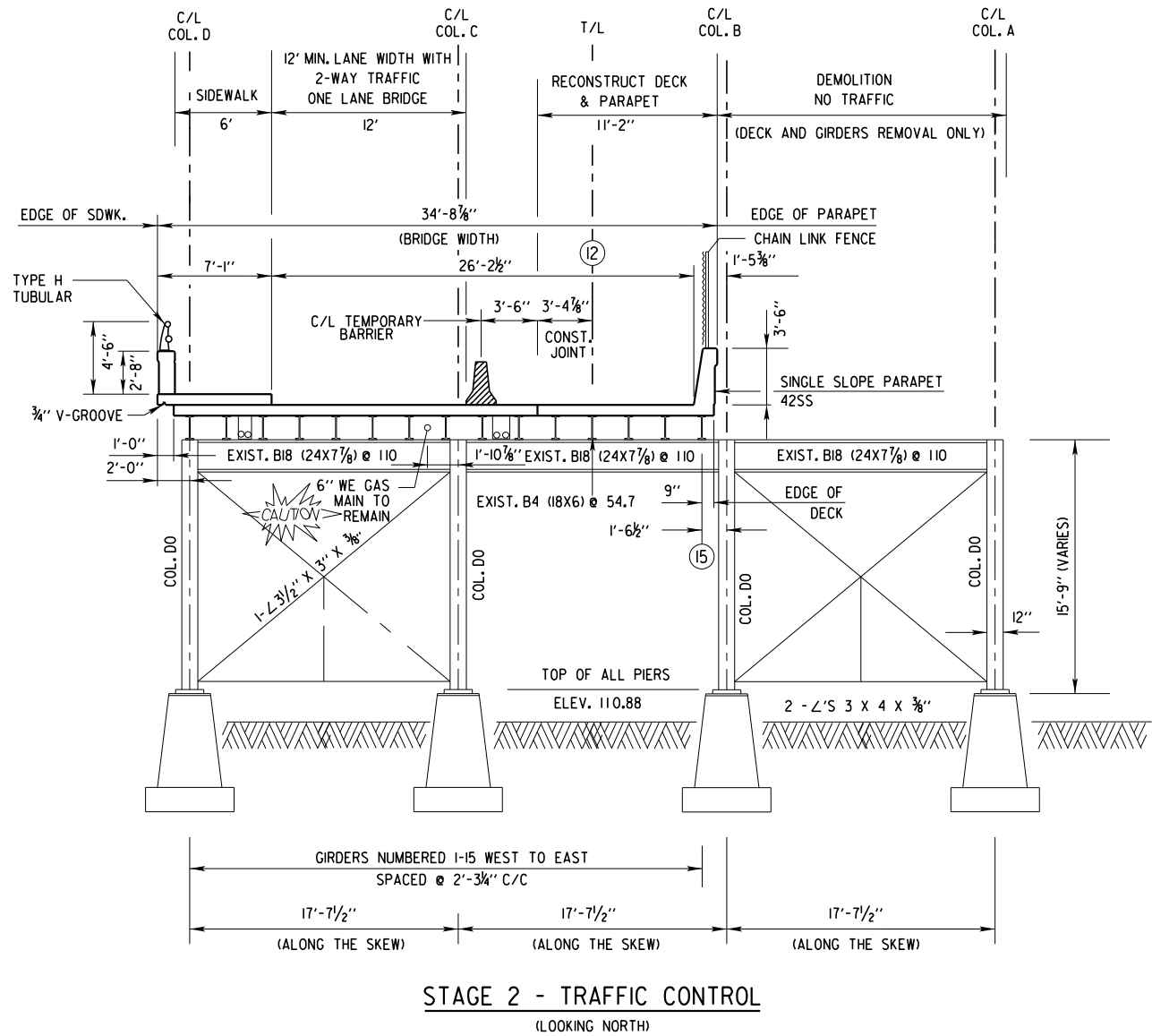
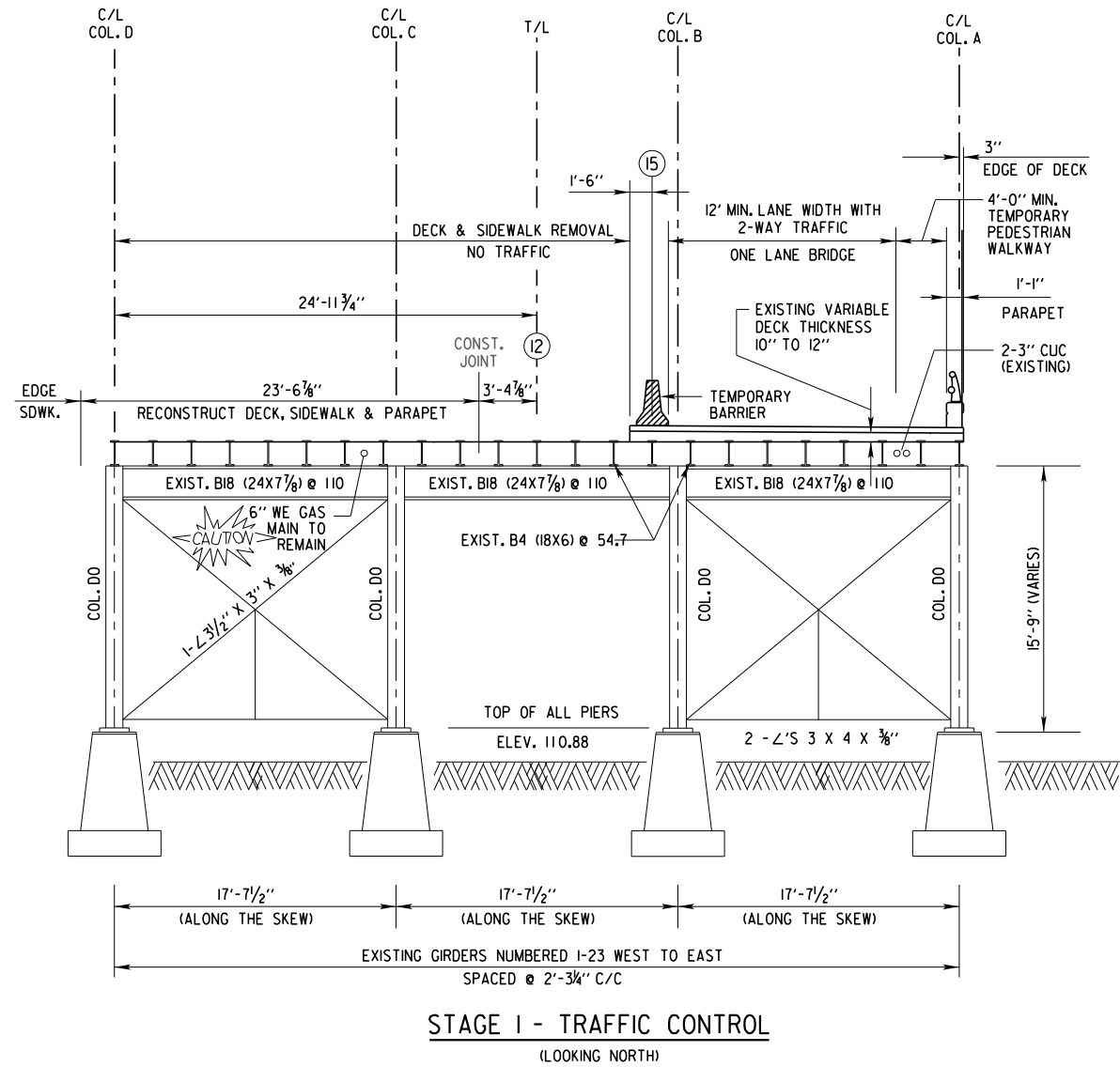
ALL STEEL CONNECTIONS SHALL BE MADE WITH 3/4" DIA. A325 BOLTS AND HARDWARE USING 7/8" DIA. DRILLED HOLES. USE 2 WASHERS AT EACH BOLT LOCATION.

STRUCTURAL PLATES AND ANGLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE A36.

SEE STEEL REPAIR PLAN (SHEET 5) FOR GIRDER REPAIR LOCATIONS.

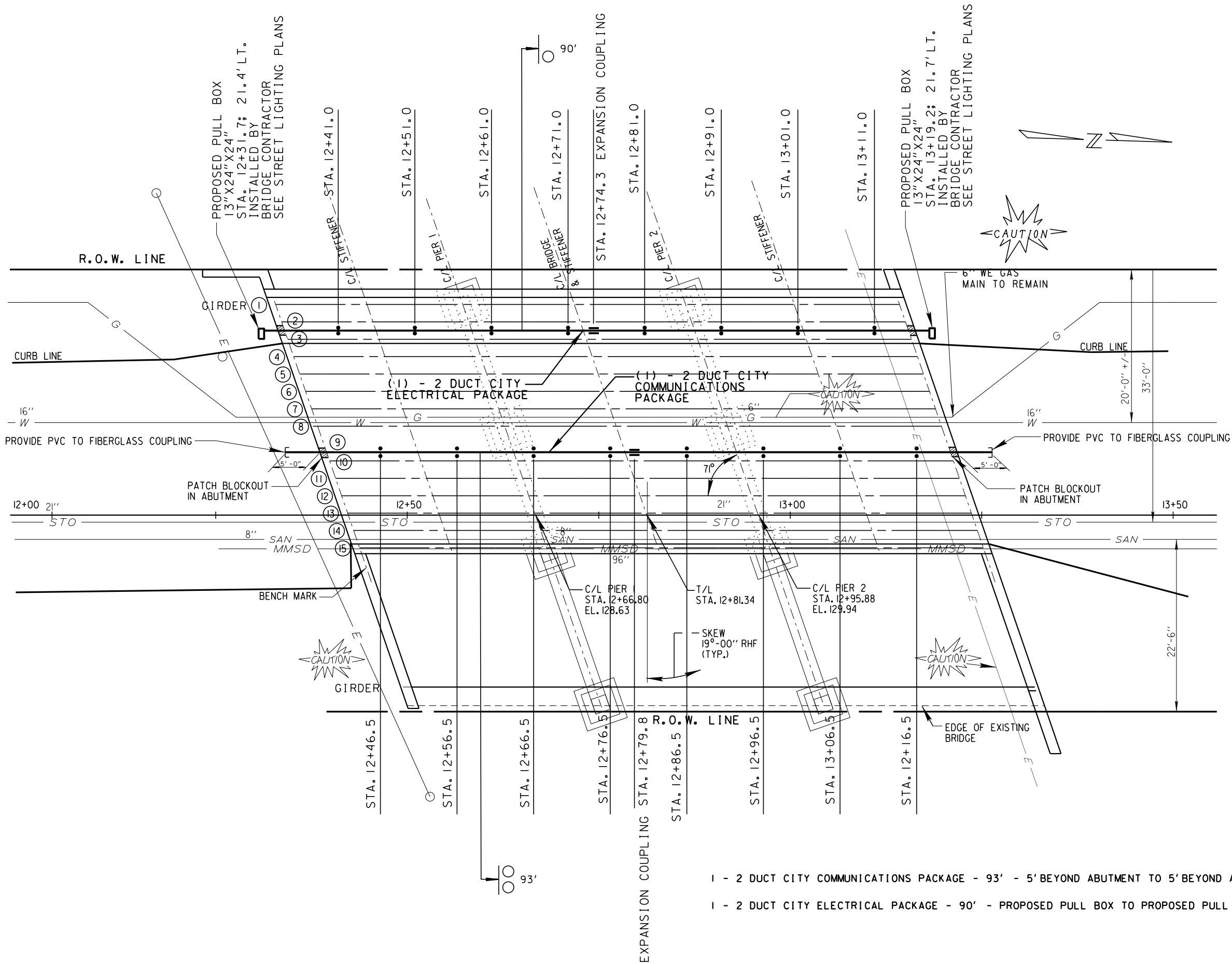
ENGINEER TO MAKE DETERMINATION OF GIRDER LOCATIONS FOR GIRDER REPAIR DETAIL 2, AFTER EXISTING DECK IS REMOVED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	H.D.
GIRDER REPAIR DETAIL 2			SHEET 18 OF 22

**NOTE**

ALL DIMENSIONS SHOWN ARE NORMAL TO ROADWAY EXCEPT AS INDICATED BY NOTE "ALONG THE SKEW".

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<b>STRUCTURE P-40-589</b>			
DRAWN BY G.J.R.		PLANS CK'D. J.P.H.	
STAGED CONSTRUCTION TRAFFIC CONTROL		SHEET 19 OF 22	



1 - 2 DUCT CITY COMMUNICATIONS PACKAGE - 93' - 5' BEYOND ABUTMENT TO 5' BEYOND ABUTMENT  
1 - 2 DUCT CITY ELECTRICAL PACKAGE - 90' - PROPOSED PULL BOX TO PROPOSED PULL BOX

STATE PROJECT NUMBER  
2984 - 51 - 70

**GENERAL NOTES**

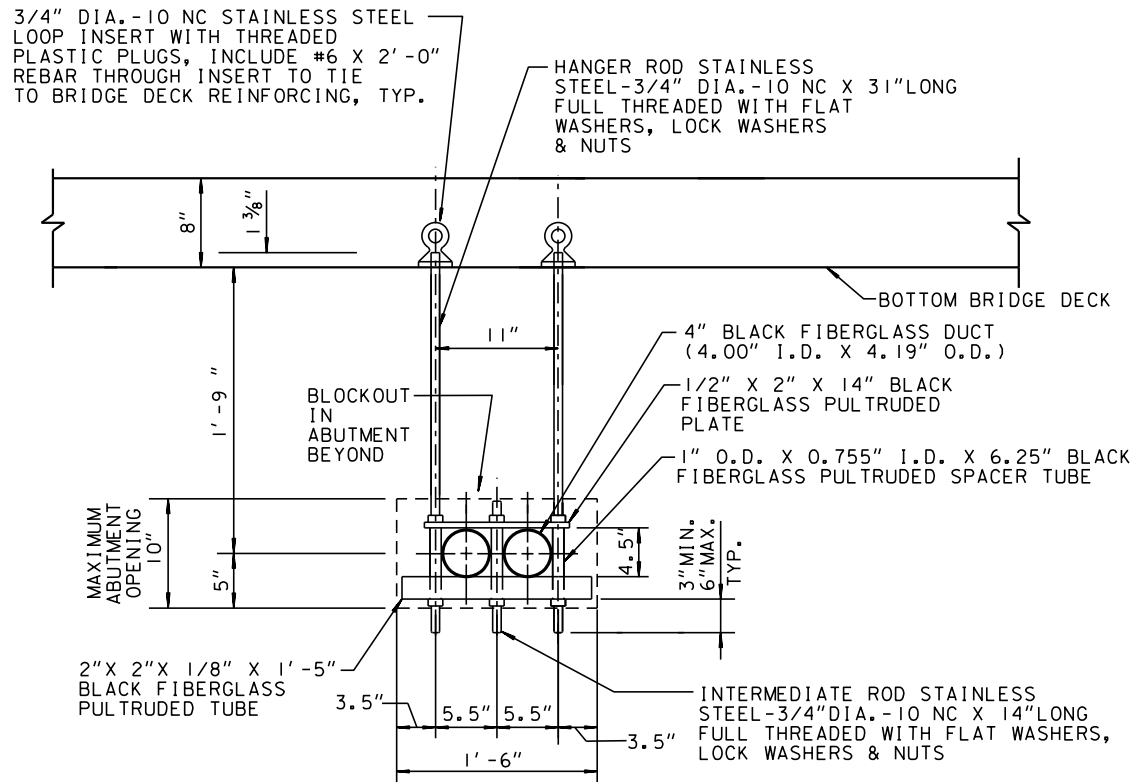
- DRAWINGS SHALL NOT BE SCALED.
- ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.
- ALL STATIONS ARE IN FEET AND ARE ALONG THE R/L FOR S. DANA COURT
- ALL COMPONENTS SHALL HAVE A MINIMUM 75 YEAR DESIGN LIFE.
- EACH 4" DIA. CONDUIT WEIGHS 9 LBS.
- ALL HORIZONTAL SUPPORT MEMBERS TO BE MADE OF BLACK FIBERGLASS PULTRUDED MATERIAL.
- FIBERGLASS MEMBERS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM E-84, CLASS 1 FLAME RATING AND SELF-EXTINGUISHING REQUIREMENTS OF ASTM D-635, A SURFACE VEIL SHALL BE APPLIED DURING PULTRUSION TO INSURE A RESIN RICH SURFACE AND ULTRAVIOLET RESISTANCE.
- ALL CUTS AND HOLES SHOULD BE PROPERLY SEALED PER MANUFACTURERS RECOMMENDATIONS TO PREVENT CORROSION.
- ALL METAL HANGER MEMBERS SHALL BE STAINLESS STEEL.
- FURNISH CONCRETE FOR BRIDGES CONFORMING TO SECTION 501, GRADE E. CONTRACTOR MAY USE PREMIXED BAG CEMENT PER ENGINEER'S APPROVAL.
- SPACE HANGERS A MAXIMUM 10'-0". LOCATE CONDUIT HANGERS BETWEEN GIRDERS 2 & 3 FOR THE 2 DUCT CITY ELECTRICAL PACKAGE. SEE P-40-589 BRIDGE PLANS.
- SPACE HANGERS A MAXIMUM 10'-0". LOCATE CONDUIT HANGERS BETWEEN GIRDERS 9 & 10 FOR THE 2 DUCT CITY COMMUNICATION PACKAGE. SEE P-40-589 BRIDGE PLANS.
- ALL FIBERGLASS JOINTS SHALL BE EPOXIED PER MANUFACTURER'S SPECIFICATIONS.
- EXTEND CONDUIT 5'-0" FROM BACK FACE OF ABUTMENT. PROVIDE PVC TO FIBERGLASS COUPLING.
- INSTALL EXPANSION JOINT PER LOCATION ON THE PLAN. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY D. K.		PLANS CK'D. D. K.	
CUC/TE&S PLAN			SHEET 20 OF 22

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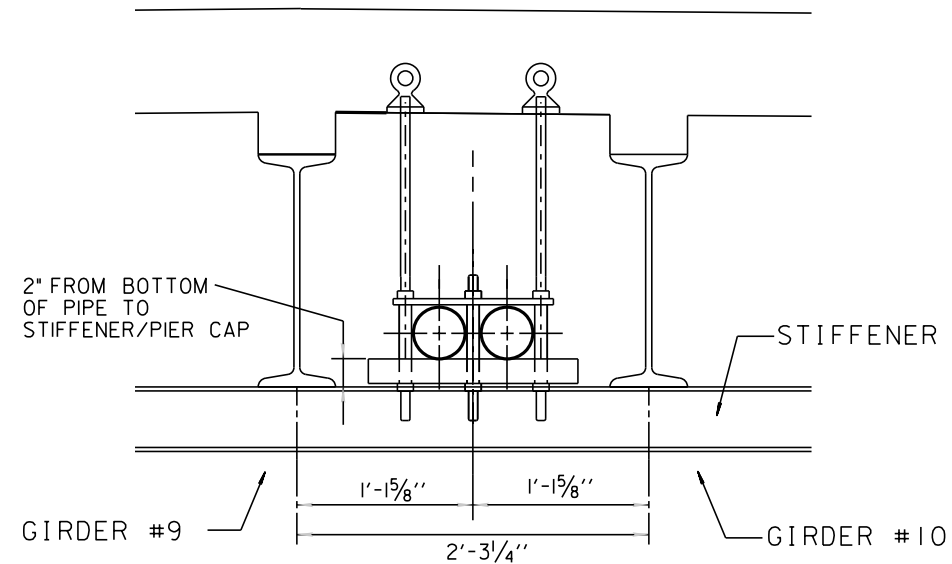
REVISED DATE: 12-01-2020 BY SB

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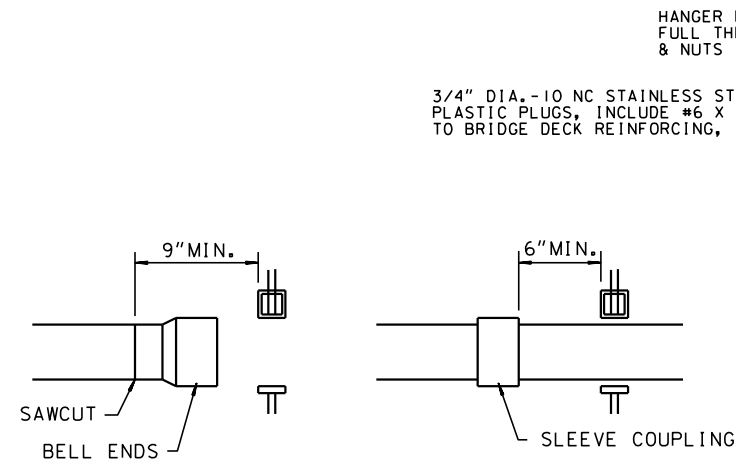


### 2 DUCT CITY COMMUNICATION HANGER PACKAGE DETAIL

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

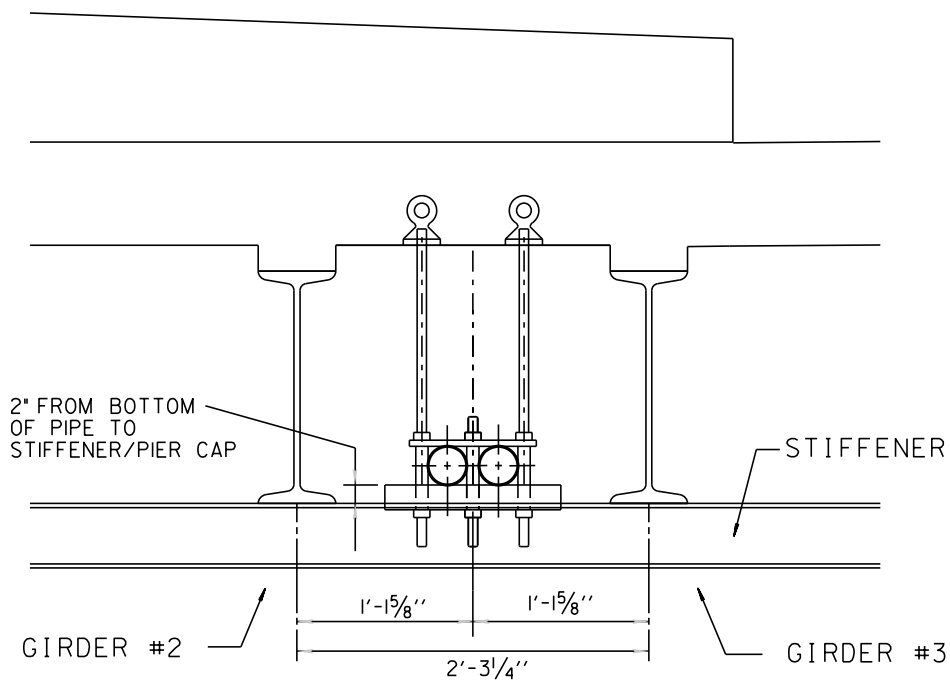


### 2 DUCT CITY COMMUNICATION DIAPHRAGM DETAIL



### CLEARANCES FOR SLEEVE COUPLINGS AND BELL ENDS

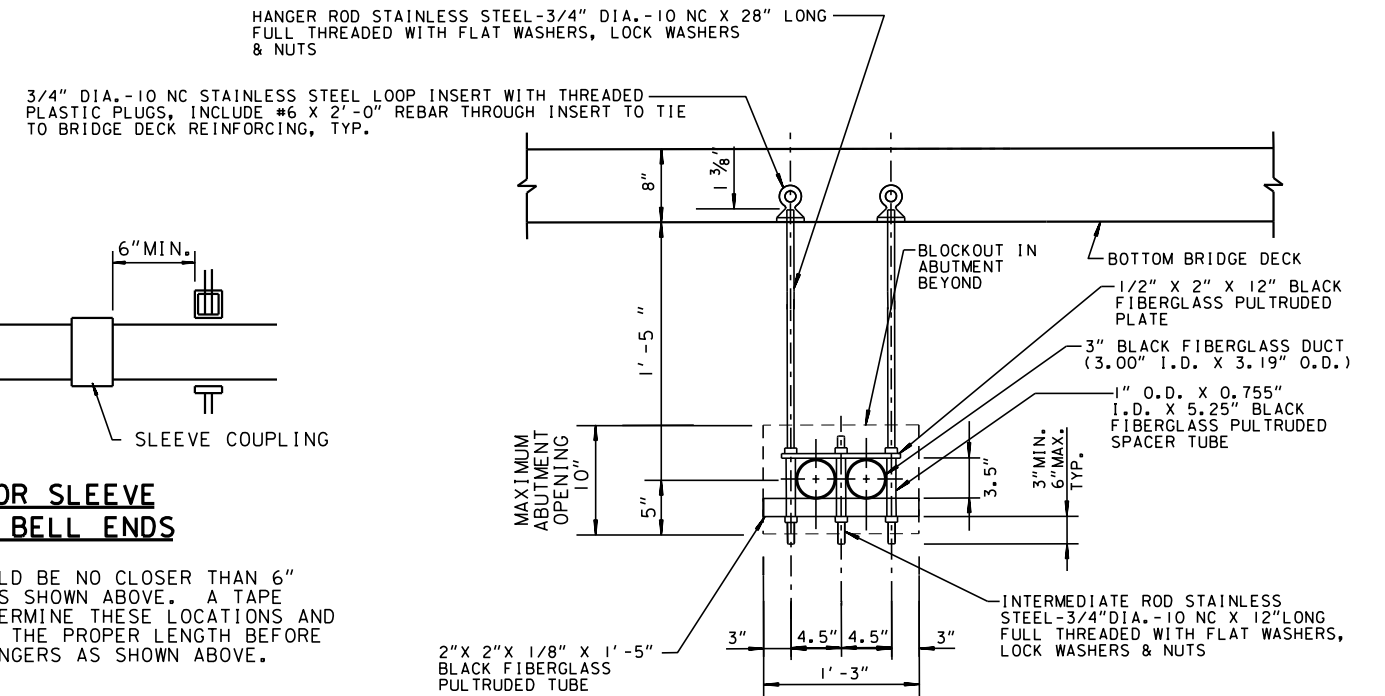
NOTES:  
A BELLED END OR COUPLING SHOULD BE NO CLOSER THAN 6" ON EITHER SIDE OF A SUPPORT AS SHOWN ABOVE. A TAPE MEASURE CAN BE USED TO PREDETERMINE THESE LOCATIONS AND THE CONDUIT CAN BE SAW CUT TO THE PROPER LENGTH BEFORE IT IS THREADED THROUGH THE HANGERS AS SHOWN ABOVE.



### 2 DUCT CITY ELECTRICAL DIAPHRAGM DETAIL

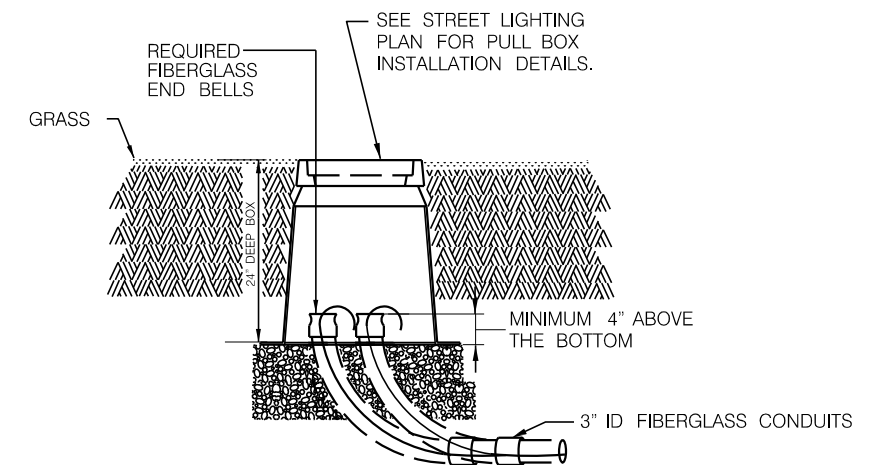
STATE PROJECT NUMBER

2984 - 51 - 70



### 2 DUCT CITY ELECTRICAL HANGER PACKAGE DETAIL

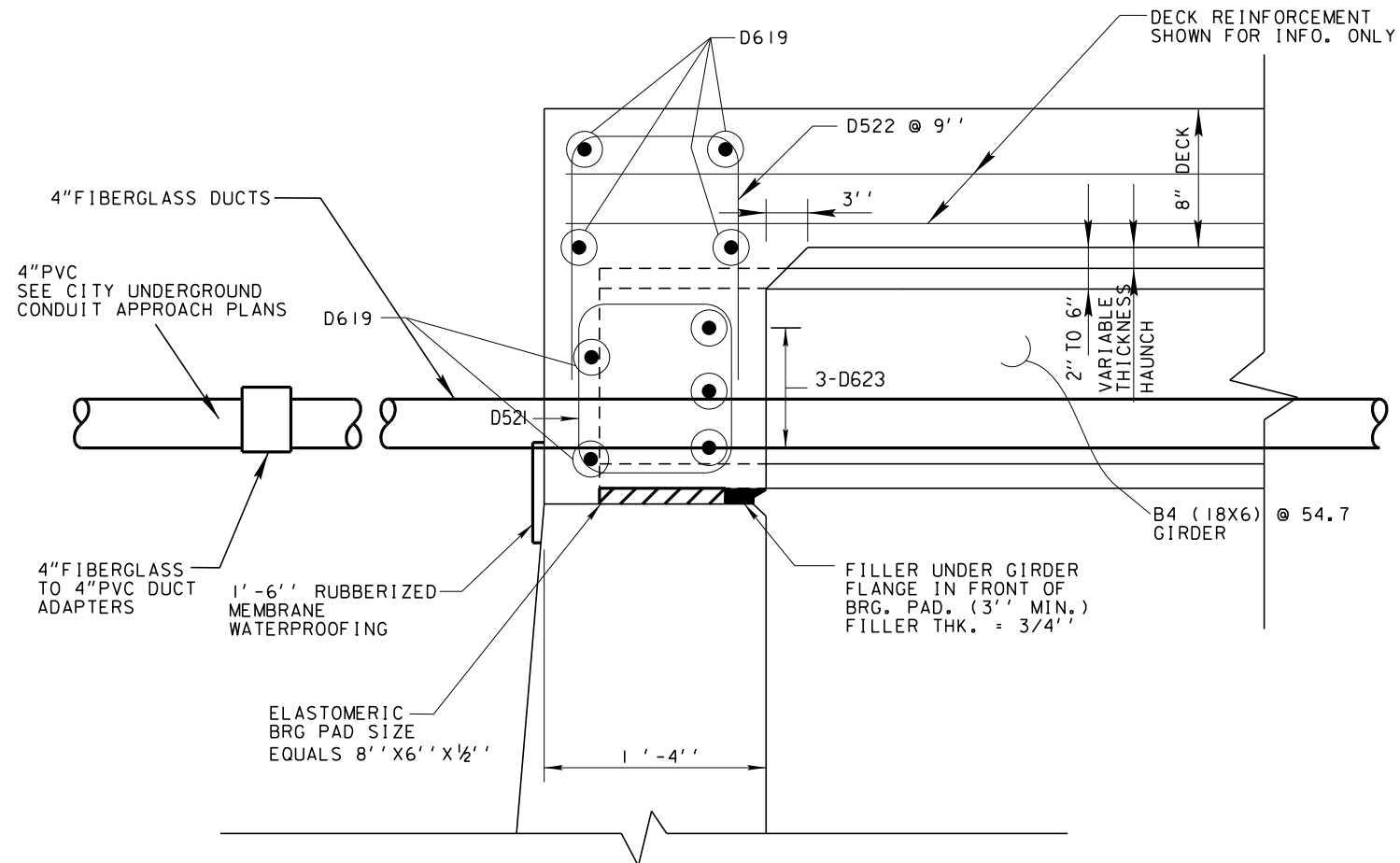
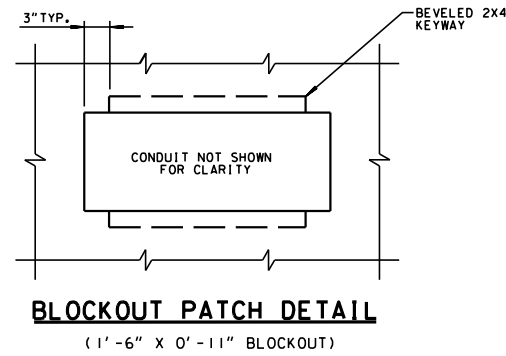
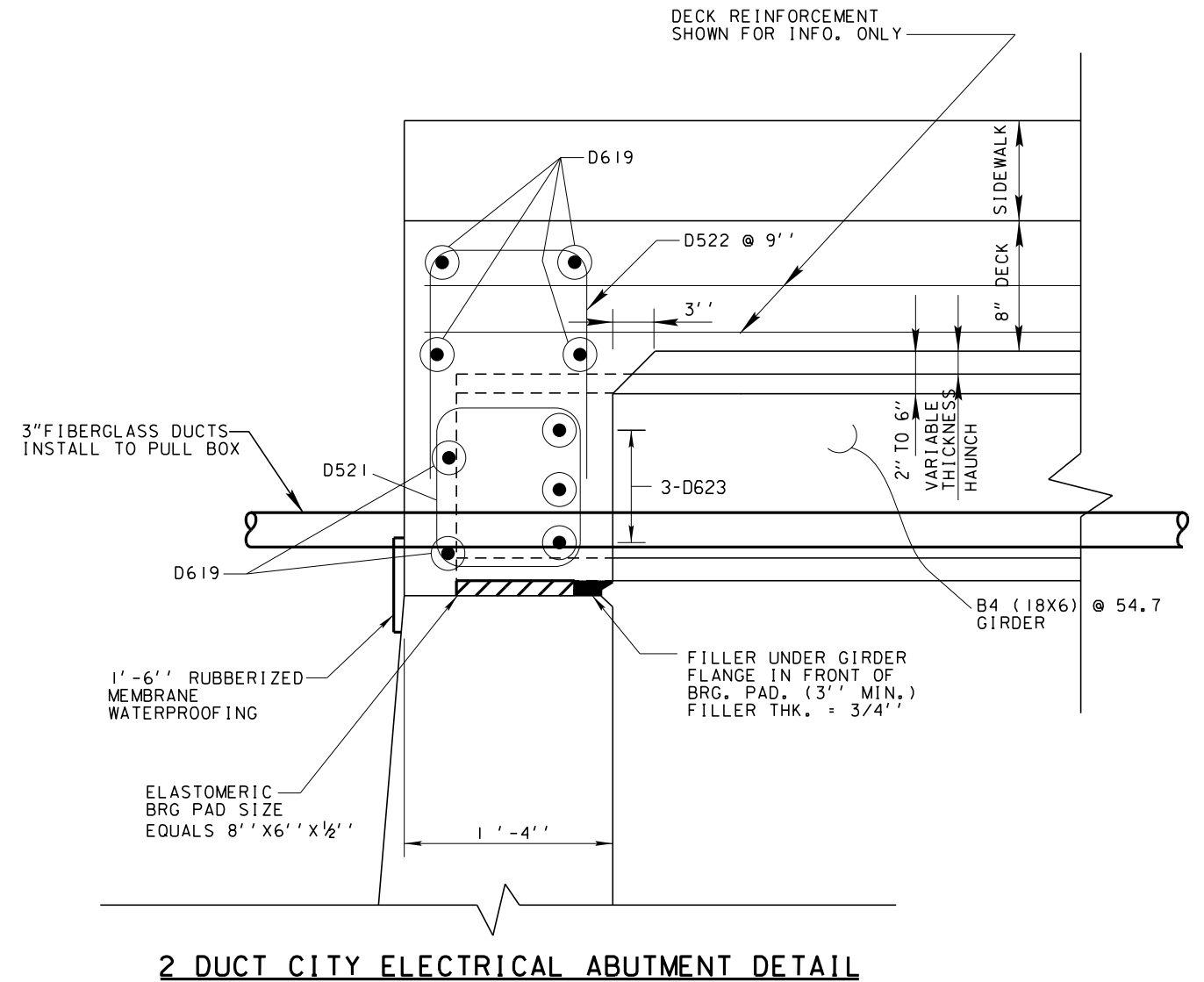
THE CONTRACTOR SHALL FIELD VERIFY HANGER LENGTHS IN ORDER TO AVOID CONFLICTS.



### PULL BOX DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY D. K.		PLANS CK'D. D. K.	D. K.
CUC/TE&ES HANGER DETAIL			SHEET 21 OF 22

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**2 DUCT CITY COMMUNICATION ABUTMENT DETAIL****2 DUCT CITY ELECTRICAL ABUTMENT DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-40-589			
DRAWN BY D. K.		PLANS CK'D. D. K.	D. K.
CUC/TE&ES DIAPHRAGM DETAIL			SHEET 22 OF 22

## Notes



## ***Wisconsin Department of Transportation***

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